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ADDENDUMS / REVISIONS	

NOT TO SCALE

**US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: TD
NEW CASTLE	CHECKED BY: BP

INDEX SHEET

<b>IS-06</b>
SHEET NO. <b>811</b>
TOTAL SHTS. <b>850</b>

## EXISTING SYMBOLS

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE CATCH BASIN
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	GAS PUMP - SERVICE STATION
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER VENT OR CLEANOUT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD

MANMADE ROADSIDE FEATURES	
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	MAILBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE

## PROPOSED SYMBOLS

CONSTRUCTION	
	CONCRETE SAFETY BARRIER - PERMANENT
	BIOFILTRATION SWALE
	BUTT JOINT
	CONSTRUCTION BASELINE
	CURB, TYPE 1 & TYPE 3
	CURB, TYPE 2
	CURB & GUTTER, TYPE 1
	CURB & GUTTER, TYPE 2
	CURB & GUTTER, TYPE 3
	CURB & GUTTER, TYPE 4
	CLEAR ZONE
	DRAINAGE INLET
	DITCH
	FENCE - METAL
	FENCE - WOOD
	FLARED END SECTION
	GUARDRAIL, TYPES 1 & 3
	GUARDRAIL, TYPE 2
	GUARDRAIL END TREATMENT - PARALLEL
	GUARDRAIL END TREATMENT - PARABOLIC
	HORIZONTAL CLEARANCE
	JUNCTION BOX - DRAINAGE
	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP
	P.C.C. SIDEWALK @ 6"
	UNDERDRAIN
	UNDERDRAIN OUTLET

EROSION & SEDIMENT CONTROL	
	DEWATERING BASIN
	EROSION CONTROL BLANKET
	EARTH DIKE
	INLET SEDIMENT CONTROL
	PERIMETER DIKE/SWALE
	PORTABLE SEDIMENT TANK
	REINFORCED SILT FENCE
	SANDBAG DIKE
	SANDBAG DIVERSION
	STONE CHECK DAM
	STABILIZED CONSTRUCTION ENTRANCE
	SILT FENCE
	SUMP PIT, TYPE 1
	SUMP PIT, TYPE 2
	SEDIMENT TRAP
	SEDIMENT TRAP WITH INLET AS OUTLET
	SEDIMENT TRAP PIPE OUTLET
	STILLING WELL
	TEMPORARY SWALE
	TEMPORARY SLOPE DRAIN

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONCRETE SAFETY BARRIER
	CURB OR CURB & GUTTER
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	CURB OPENING
	CURB RAMP / TYPE
	CURB RAMP / TYPE - WITHOUT SIDEWALK SURFACE DETECTABLE WARNING SYSTEM
	DRAINAGE INLET
	DO NOT DISTURB
	FLARED END SECTION
	FILTRATION STRUCTURE
	GUARDRAIL
	JUNCTION BOX
	LANDSCAPE PLANTINGS
	MANHOLE
	MONUMENT - RIGHT-OF-WAY
	PIPE
	RELOCATE BY CONTRACTOR
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS
	SEDIMENT TRAP
	SILT FENCE
	UNDERDRAIN

CONSTRUCTION PHASING SYMBOLS	
	BARRICADE, TYPE 3
	CONCRETE SAFETY BARRIER - PORTABLE
	CONSTRUCTION WARNING SIGN LOCATION
	CONSTRUCTION WARNING SIGN
	CRASH CUSHION ARRAY
	DRUM - TRAFFIC CONTROL
	PHASING TRAFFIC FLOW ARROW

LANDSCAPING	
	SHRUBBERY
	CONIFEROUS TREE
	DECIDUOUS TREE

IDENTIFIERS	
	DOWNSPOUT
	SIDEWALK

PAVEMENT SECTION(S)	
	OVERLAY PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	RECONSTRUCTED PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS
	DRIVEWAY AND ENTRANCE PAVEMENT - SEE TYPICAL SECTIONS FOR MATERIALS AND DEPTHS

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING RIGHT-OF-WAY
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT
	PROPOSED RIGHT-OF-WAY BASELINE
	HISTORIC RIGHT-OF-WAY BASELINE

TRAFFIC	
	ITMS CONDUIT
	SIGNAL CONDUIT
	CONDUIT JUNCTION WELL
	LUMINAIRE
	PAVEMENT MARKINGS
	PAVEMENT STRIPING
	TRAFFIC SIGN

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD

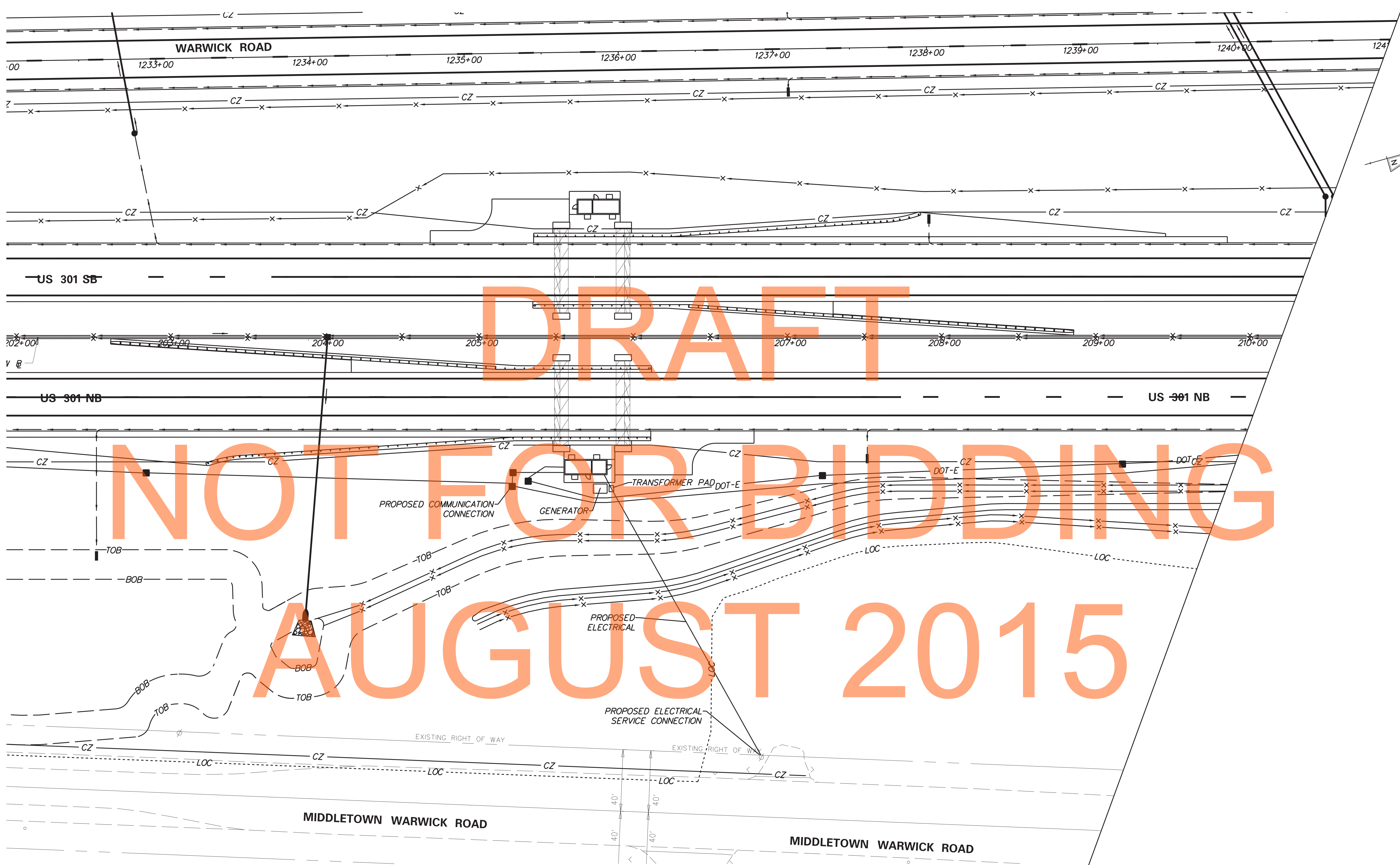
CONTRACT  
T200811301  
COUNTY  
NEW CASTLE

BRIDGE NO.  
DESIGNED BY: TD  
CHECKED BY: BP

LEGEND

LG-03

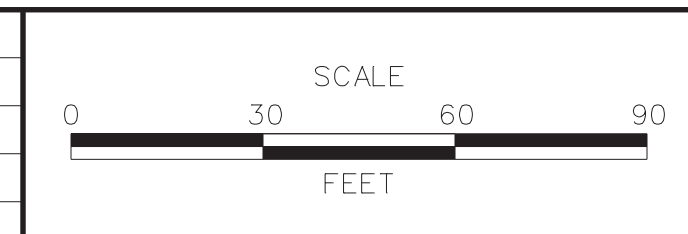
SHEET NO.  
812  
TOTAL SHTS.  
850



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AUGUST 2015

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS



**US 301**  
**MARYLAND STATE LINE**  
**TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JS
	CHECKED BY: GW

**UTILITY**  
**CONSTRUCTION PLAN**

<b>UT-46</b>
SHEET NO. 813
TOTAL SHTS. 850

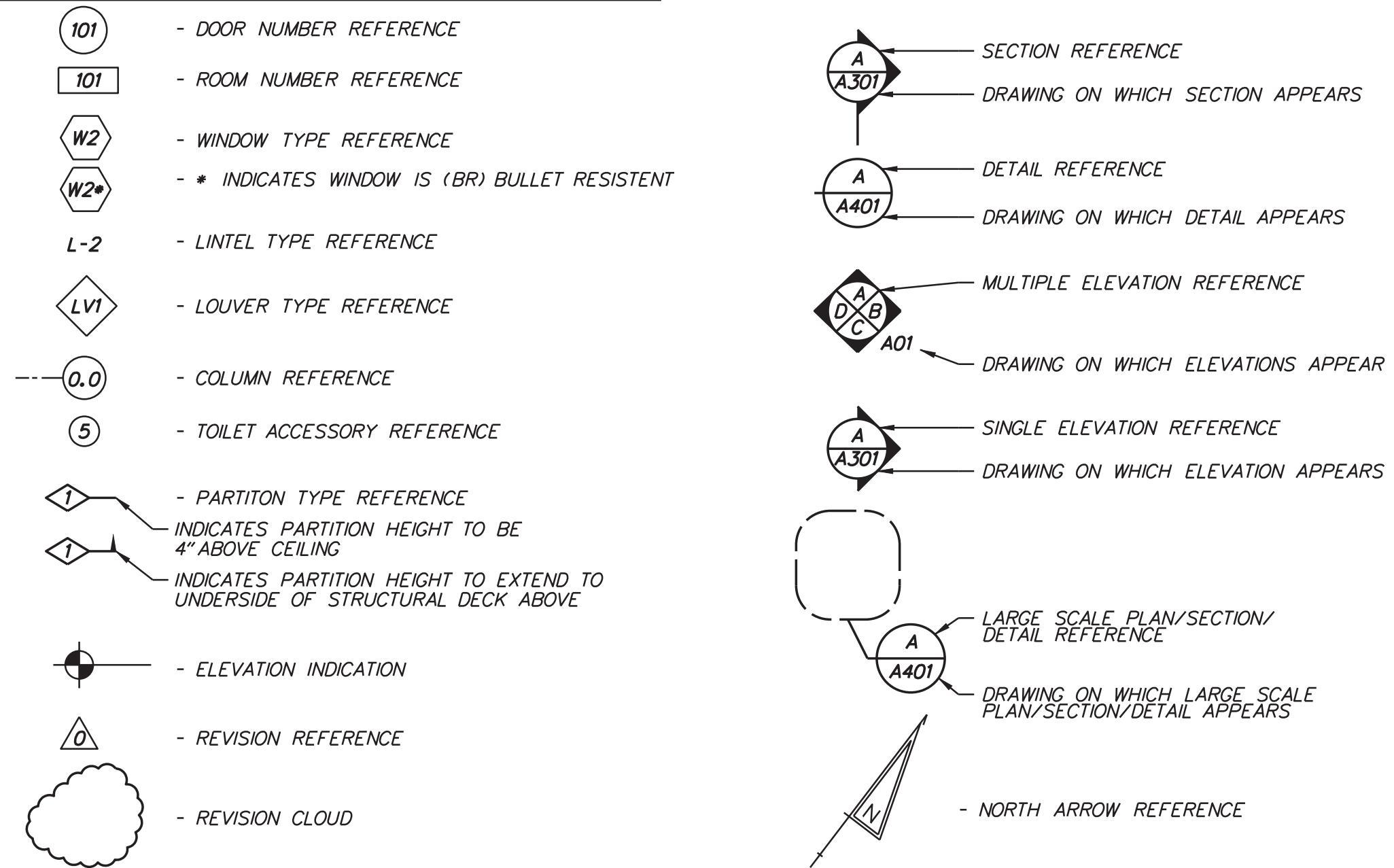
# GENERAL NOTES

- ALL WORK SHALL BE COORDINATED WITH THE AUTHORITY.
- COORDINATION OF WORK: THE CONTRACTOR HAS THE RESPONSIBILITY TO COORDINATE THE WORK OF SUBCONTRACTORS TO SUIT PROJECT CONDITIONS. THE CONTRACT SCOPE OF WORK SHALL INCLUDE ALL WORK TO PROVIDE A FINISHED CLEAN AND NEAT APPEARANCE.
- VERIFY AND COORDINATE THE LOCATION OF EQUIPMENT WITH ELECTRICAL, PLUMBING AND MECHANICAL DRAWINGS.
- ALL DIMENSIONS SHOWN TO FACE OF CMU/STUD OR CENTERLINE OF COLUMN GRID UNLESS OTHERWISE NOTED. DIMENSIONS NOTED "CLEAR" SHALL BE FROM FINISH FACE TO FINISH FACE.
- ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION, ERECTION, AND/OR INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMEDIATING ANY DIMENSIONAL ERRORS IN FABRICATION, ERECTION, AND/OR INSTALLATION WITHOUT ADDITIONAL COST TO THE OWNER AND WITHOUT ADDITIONAL TIME TO PROJECT SCHEDULE.
- FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF MILLWORK.
- FOR ALL DIMENSIONS NOT SHOWN ON FLOOR PLAN REFER TO ENLARGED PLANS.
- ALL MASONRY DIMENSIONS, MO, ETC ARE NOMINAL DIMENSIONS UNLESS OTHERWISE NOTED.
- SEE SPECIFICATIONS FOR ALL INTERIOR AND EXTERIOR SIGNAGE REQUIREMENTS.
- FE INDICATES FIRE EXTINGUISHER. SURFACE MOUNTED UNITS
- INTERIOR DOOR DIMENSIONS ARE TO MASONRY OPENINGS UNLESS OTHERWISE NOTED.
- SEE MECHANICAL / ELECTRICAL DRAWINGS FOR EXACT LOCATION OF CURB AND TYPE OF EQUIPMENT. SEE STRUCTURAL DRAWINGS FOR REINFORCING REQUIREMENTS.
- REFER TO A-18 FOR PARTITION TYPES AND FIRE RATINGS.
- ALL PARTITIONS SHALL EXTEND TO THE UNDERSIDE OF THE STRUCTURAL DECK AND/OR TO BOTTOM OF TRUSS AND BE SEALED TIGHTLY WITH NON-COMBUSTIBLE SEALANT. ALL FIRE RATED WALLS SHALL BE FILLED WITH AN APPROVED MATERIAL TO PROHIBIT THE PASSAGE OF FIRE.
- OPENINGS IN RATED PARTITIONS FOR CONDUIT, PIPING, AND OTHER ITEMS SHALL BE FILLED WITH AN APPROVED NON-COMBUSTIBLE MATERIAL OR APPROVED PRODUCT TO PROHIBIT THE PASSAGE OF FIRE AND SMOKE.
- ALL GYPSUM WALL BOARD SOFFITS AND CEILINGS TO RECEIVE SAME PAINT FINISH AS THE ROOM WALLS UNLESS OTHERWISE NOTED.
- PROVIDE FIRE RETARDANT TREATED BLOCKING AND BRACING IN ALL CHASE WALLS, AND FURRED WALLS TO SUPPORT FIXTURES, ACCESSORIES, GRAB BARS, HAND RAILS, ETC.
- ALL EXPOSED GYPSUM EDGES SHALL HAVE METAL TRIM EDGES UNLESS OTHERWISE NOTED.

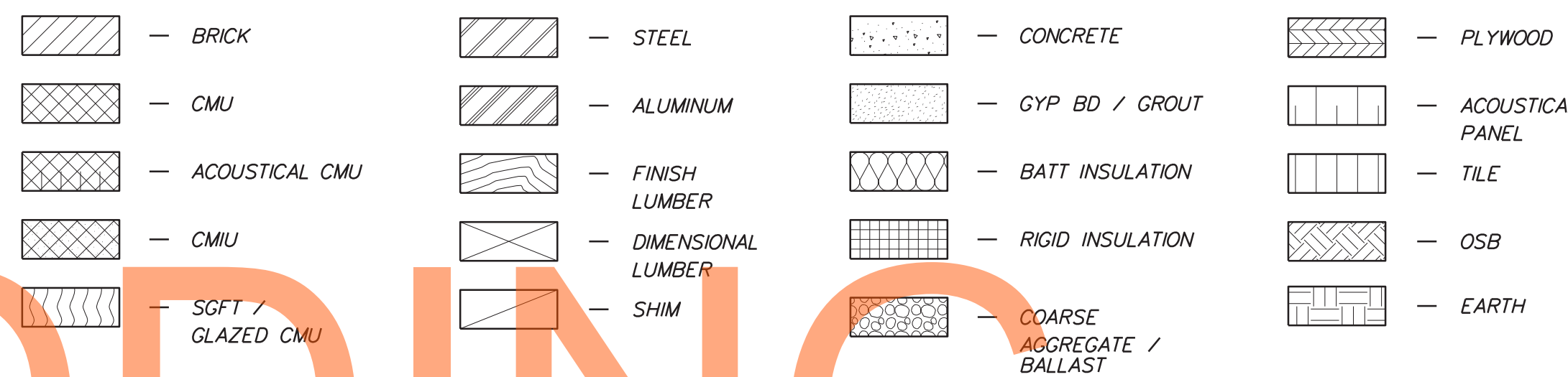
# ARCHITECTURAL ABBREVIATIONS

ABV	ABOVE	FBD	FIBERBOARD	OSB	ORIENTED STRAND BOARD
AC	AIR CONDITIONER	FC	FILE CABINET	P/L	PROPERTY LINE
ACST	ACOUSTIC	FD	FLOOR DRAIN	PASS	PASSENGER
ADDL	ADDITIONAL	FDN	FOUNDATION	PERF	PERFORATED
ADJ	ADJACENT	FDR	FIRE DOOR	PL	PLATE
AFF	ABOVE FINISH FLOOR	FE	FIRE EXTINGUISHER	PLAS	PLASTER
AGGR	AGGREGATE	FEC	FIRE EXTINGUISHER & CABINET	PLBG	PLUMBING
AL	ALUMINUM	FHY	FIRE HYDRANT	PLYWD	PLYWOOD
ALT	ALTERNATE	FIN	FINISH	PNL	PANEL
ARCH	ARCHITECTURAL	FL	FLASHING	PNT	PAINT
ASB	ASBESTOS	FLEX	FLEXIBLE	PORC	PORCELAIN
ASPH	ASPHALT	FLG	FLANGE	PR	PAIR
ASPHRS	ASPHALT ROOF SHINGLES	FLR	FLOOR	PREFAB	PREFABRICATED
ASSN	ASSOCIATION	FLRG	FLOORING	PROJ	PROJECT
ASST	ASSISTANT	FP	FIREPROOF	PSF	POUNDS PER SQUARE FOOT
ASSY	ASSEMBLY	FRP	FIBERGLASS-REINFORCED PLASTICS	PT	POINT
AVE	AVENUE			PTD	PAINTED
AVG	AVERAGE	FT	FOOT	PTN	PARTITION
B/O	BOTTOM OF	FTG	FOOTING	PVC	POLYVINYL CHLORIDE
BALC	BALCONY	FURN	FURNITURE	QTF	QUARRY-TILE FLOOR
BD	BOARD	GA	GAUGE	R	RADIUS
BETW	BETWEEN	GALV	GALVANIZED	RI	RISER
BLDG	BUILDING	GAR	GARAGE	RD	ROOF DRAIN
BLKG	BLOCKING	GEN	GENERATOR	REF	REFRIGERATOR
BLR	BOILER	GL	GLASS	REINF	REINFORCE
BM	BEAM	GLU-LAM	GLUE-LAMINATED	REQD	REQUIRED
BP	BASE PLATE	GOVT	GOVERNMENT	RET	RETURN
BRDG	BRIDGING	GR	GRADE	REV	REVISION
BRG	BEARING	GRD	GROUND	REG	REGISTER
BS	BOTH SIDES	GVL	GRAVEL	RFG	ROOFING
BSMT	BASEMENT	GWB	GYPSUM WALLBOARD	RH	RIGHT HAND
CAB	CABINET	GYP	GYPSUM	RM	ROOM
CAP	CAPACITY	H	HIGH	RWC	RAIN WATER CONDUCTOR
CARP	CARPET	HCP	HANDICAP	S	SOUTH
CDR	COILING DOOR	HDWE	HARDWARE	SAPC	SUSPENDED ACOUSTICAL PANEL CEILING
CER	CERAMIC	HM	HOLLOW METAL	SB	SOUTH BOUND
CER TILE	CERAMIC TILE	HMD	HOLLOW METAL DOOR	SCHED	SCHEDULE
CI	CAST IRON	HORIZ	HORIZONTAL	SDG	SIDING
CIP	CAST-IRON PIPE	HPT	HIGH POINT	SEC	SECTION
CJ	CONTROL JOINT	HT	HEIGHT	SF	SQUARE FOOT
CL	CENTERLINE	HTR	HEATER	SFT	STRUCTURAL GLAZED FACING TILE
CLG	CEILING	HVAC	HEATING, VENTILATING, & AIR CONDITIONING	SH	SHOWER
CLO	CLOSET	ID	INSIDE DIAMETER	SHM	SECURITY HOLLOW METAL
CLR	CLEAR	IE	THAT IS	SHT	SHEET
CMU	CONCRETE MASONRY INSULATED UNIT	IH	INTAKE HOOD	SI	INTERNATIONAL SYSTEM OF UNITS
CMU	CONCRETE MASONRY UNIT	IN	INCH	SIM	SIMILAR
CNCL	CANCEALED	INSUL	INSULATION	SKY	SKYLIGHT
CO	CLEANOUT	INTR	INTERIOR	SLDR	SLIDING DOOR
COM	COMPANY	JST	JOIST	SMLS	SEAMLESS
COL	COLUMN	JT	JOINT	SPA	SPACED
COMP	COMPOSITION	LAB	LABORATORY	SPEC	SPECIFICATION
CONC	CONCRETE	LAM	LAMINATE	SPKLR	SPRINKLER
CONSTR	CONSTRUCTION	LAV	LAVATORY	SPKR	SPEAKER
CONT	CONTINUOUS	LG	LENGTH	SO	SQUARE
CONTR	CONTRACTOR	LH	LEFT HAND	SS	STAINLESS STEEL
CRV	CURVED	LIB	LIBRARY	STD	STANDARD
CSK	COUNTERSINK	LIN	LINEAR	STL	STEEL
CTD	COATED	LL	LIVE LOAD	STOR	STORAGE
CTR	CENTER	LLH	LONG LEG HORIZONTAL	STRUCT	STRUCTURE/STRUCTURAL
CUH	CABINET UNIT HEATER	LLV	LONG LEG VERTICAL	STWY	STAIRWAY
D	DEPTH	LPT	LOW POINT	SUPT	SUPERINTENDENT
DBL	DOUBLE	LT	LIGHT	SUPVR	SUPERVISOR
DEG	DEGREE	LWC	LIGHTWEIGHT CONCRETE	SURF	SURFACE
DEPT	DEPARTMENT	MAINT	MAINTENANCE	SUSP	SUSPENDED/SUSPENSION
DET	DETAIL	MAS	MASONRY	SYS	SYSTEM
DGL	DIAGONAL	MATL	MATERIAL	T	TREAD
DIA	DIAMETER	MAX	MAXIMUM	T/O	TOP OF
DIM	DIMENSION	MECH	MECHANICAL	T&B	TOP AND BOTTOM
DIV	DIVISION	MEMB	MEMBRANE	T&G	TONGUE AND GROOVE
DL	DEAD LOAD	MEZZ	MEZZANINE	TAN	TANGENT
DMPF	DAMP-PROOFING	MFR	MANUFACTURER	TDD	TELECOMMUNICATION DISPLAY DEVICE
DN	DOWN	MGR	MANAGER	TEL	TELEPHONE
DPN	DEMOUNTABLE PARTITION MANUFACTURER	MH	MANHOLE	TEMP	TEMPORARY
DR	DOOR	ML	MILITARY	TER	TERRAZZO
DS	DOWNSPOUT	MIN	MINIMUM	THRU	THROUGH
DW	DISHWASHER	MISC	MISCELLANEOUS	TLT	TOILET
DWG	DRAWING	MET	METAL	TRTD	TREATED
E	EAST	ML	METAL LATH	TYP	TYPICAL
EA	EACH	MLDG	MOLDING	UNO	UNLESS NOTED OTHERWISE
EGEN	EMERGENCY GENERATOR	MLP	METAL LATH AND PLASTER	VAT	VINYL ASBESTOS TILE
EF	EXHAUST FAN	MO	MASONRY OPENING	VCT	VINYL COMPOSITION TILE
EIFS	EXTERIOR INSULATION & FINISH SYSTEM	MOD	MOTOR OPERATED DAMPER	VEND	VENDING MACHINE
EL	ELEVATION	MTG	MOUNTING	VERT	VERTICAL
ELEC	ELECTRICAL	N	NORTH	VIF	VERIFY IN FIELD
ELEV	ELEVATOR	NA	NOT APPLICABLE	VTR	VENT THRU ROOF
ENTR	ENTRANCE	NB	NORTH BOUND	W	WEST
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	NC	NOT IN CONTRACT	WI	WIDE
ETC	ETCETERA	NO	NUMBER	W/	WITH
EQ	EQUAL	NRC	NOISE-REDUCTION COEFFICIENT	W/O	WITHOUT
EQUIP	EQUIPMENT	NTS	NOT TO SCALE	WBD	WALLBOARD
EWC	ELECTRIC WATER COOLER	OA	OVERALL	WC	WATER CLOSET
EXH	EXHAUST	OC	ON CENTER	WD	WOOD
EXIST	EXISTING	OD	OUTSIDE DIAMETER	WDR	WOOD DOOR
EXP	EXPANSION	OFF	OFFICE	WH	WATER HEATER
EXP JT	EXPANSION JOINT	OH	OPPOSITE HAND	WTRPRF	WATERPROOFING
EXT	EXTERIOR	OHDR	OVERHEAD DOOR	WWF	WELDED WIRE FABRIC
FAB	FABRICATE	OPNG	OPENING	XFMR	TRANSFORMER
		OPP	OPPOSITE		

# SYMBOLS LEGEND



# MATERIALS LEGEND



# CODE CRITERIA

ALL CODE REFERENCES ARE FROM THE INTERNATIONAL BUILDING CODE 2006

DESCRIPTION	CODE REFERENCE	REQUIREMENT	PROVIDED
GENERAL USE GROUP SIMILAR TO:	312.1	UTILITY AND MISCELLANEOUS GROUP (U)	UTILITY AND MISCELLANEOUS GROUP (U)
CONSTRUCTION TYPE:	TABLES 601	TYPE 2-B	TYPE 2-B
NO. OF STORIES	TABLE 503	2 STORIES (MAX)	1 STORY
BUILDING AREA	TABLE 503	8,500 SF (MAX)	293 SF
SPECIAL REQUIREMENTS	CHAPTER 4 - N/A		
SPRINKLERED	DELAWARE STATE FIRE PREVENTION REG.	NOT REQUIRED	CLEAN AGENT FIRE SUPPRESSION SYSTEM PROVIDED FOR ETC ROOM
FIRE ALARM SYSTEM	907	FIRE ALARM	FIRE ALARM PROVIDED
FIRE RESISTANCE RATING		NOT REQUIRED	
BUILDING ELEMENTS			
1. STRUCTURAL FRAME	TABLE 601	0 HOURS	0 HOURS
2. BEARING WALLS	TABLE 601	0 HOURS	0 HOURS
3. NON-BEARING WALLS	TABLE 601	0 HOURS	0 HOURS
4. FLOOR CONSTRUCTION	TABLE 601	0 HOURS	0 HOURS
5. ROOF CONSTRUCTION	TABLE 601	0 HOURS	0 HOURS
OTHER ELEMENTS			
1. SHAFT ENCLOSURES	707	N/A	
2. EXIT ENCLOSURES	1020.1	N/A	

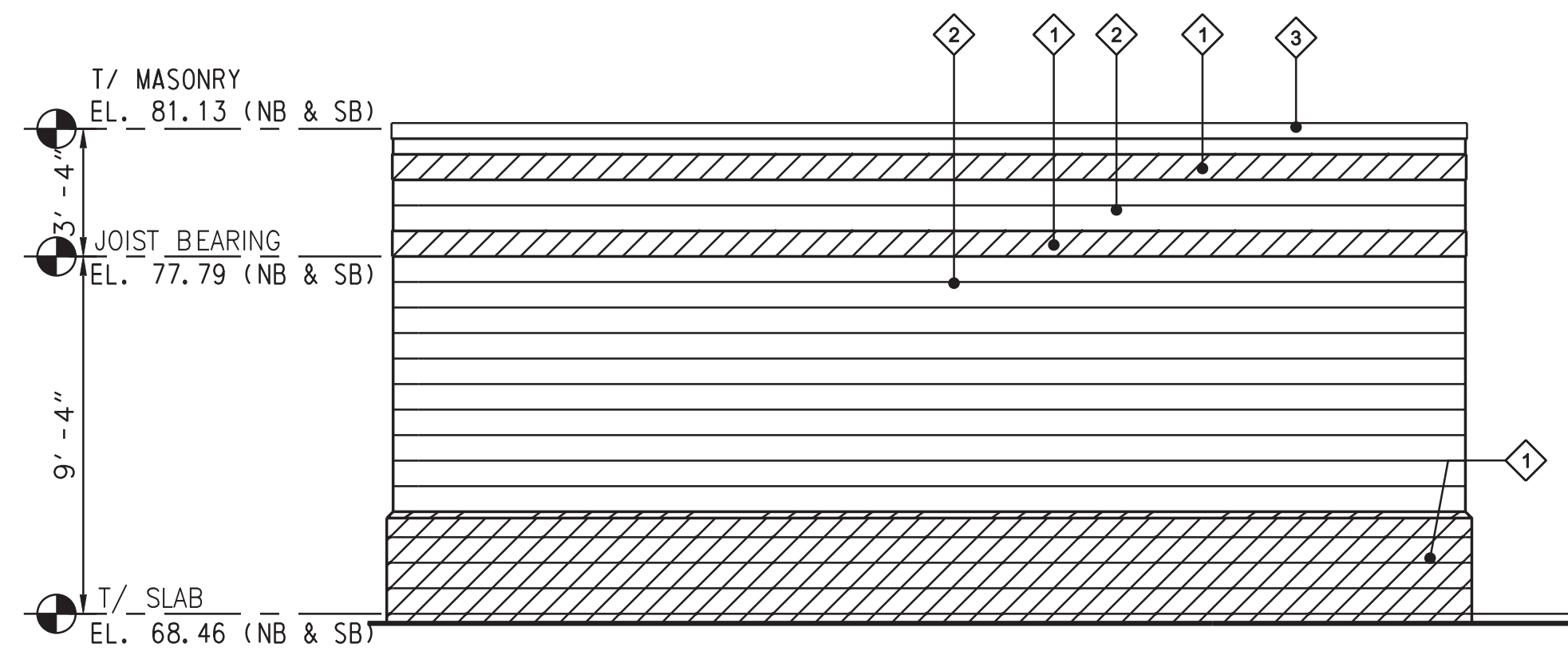
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KEYNOTES

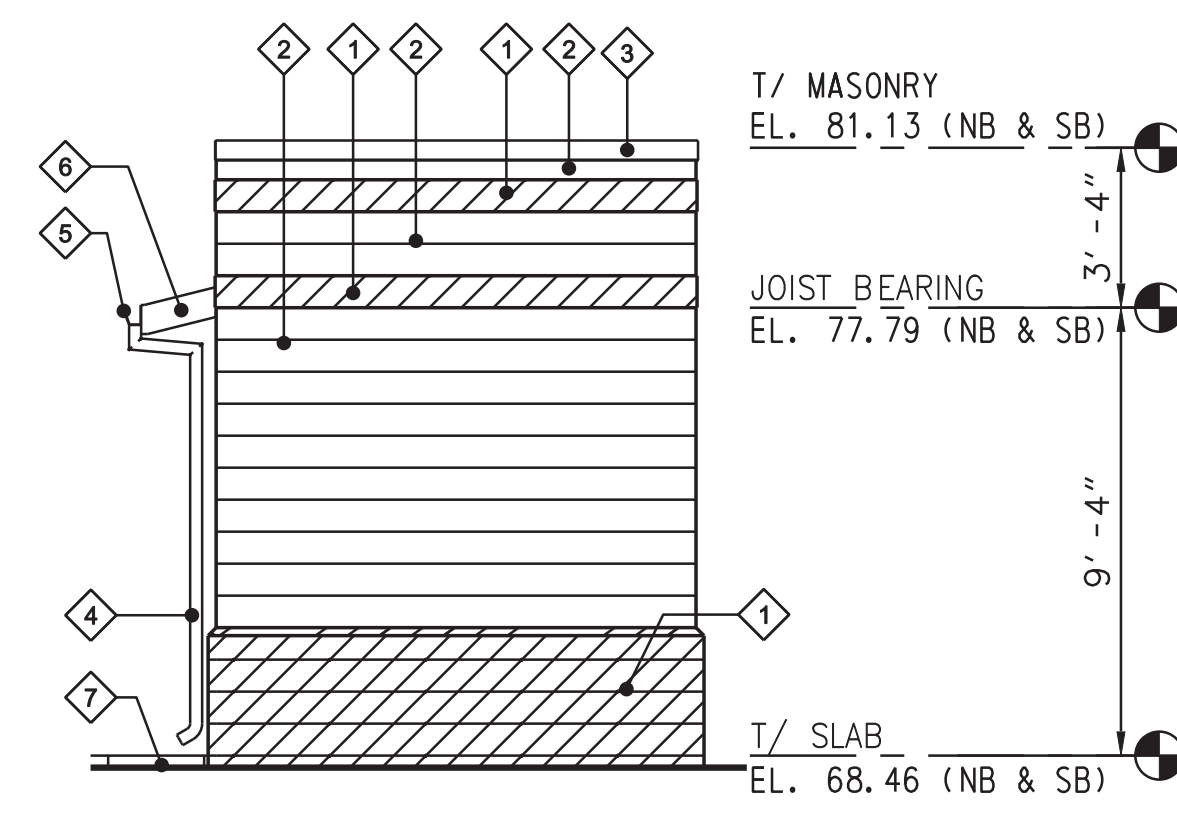
- 1 SPLIT FACE CMU COLOR #1
- 2 MATTE FACE CMU COLOR #2
- 3 METAL COPING
- 4 METAL DOWNSPOUT
- 5 METAL GUTTER
- 6 METAL FASCIA
- 7 SPLASHBLOCK
- 8 STANDING SEAM METAL ROOF
- 9 LIGHT GAUGE METAL TRUSS
- 10 3/4" PLYWOOD SHEATHING
- 11 RIGID INSULATION
- 12 VAPOR BARRIER OVER COURSE AGGREGATE
- 13 CONCRETE FOOTING. SEE STRUCTURAL DRAWINGS

FLOOR PLAN NOTES

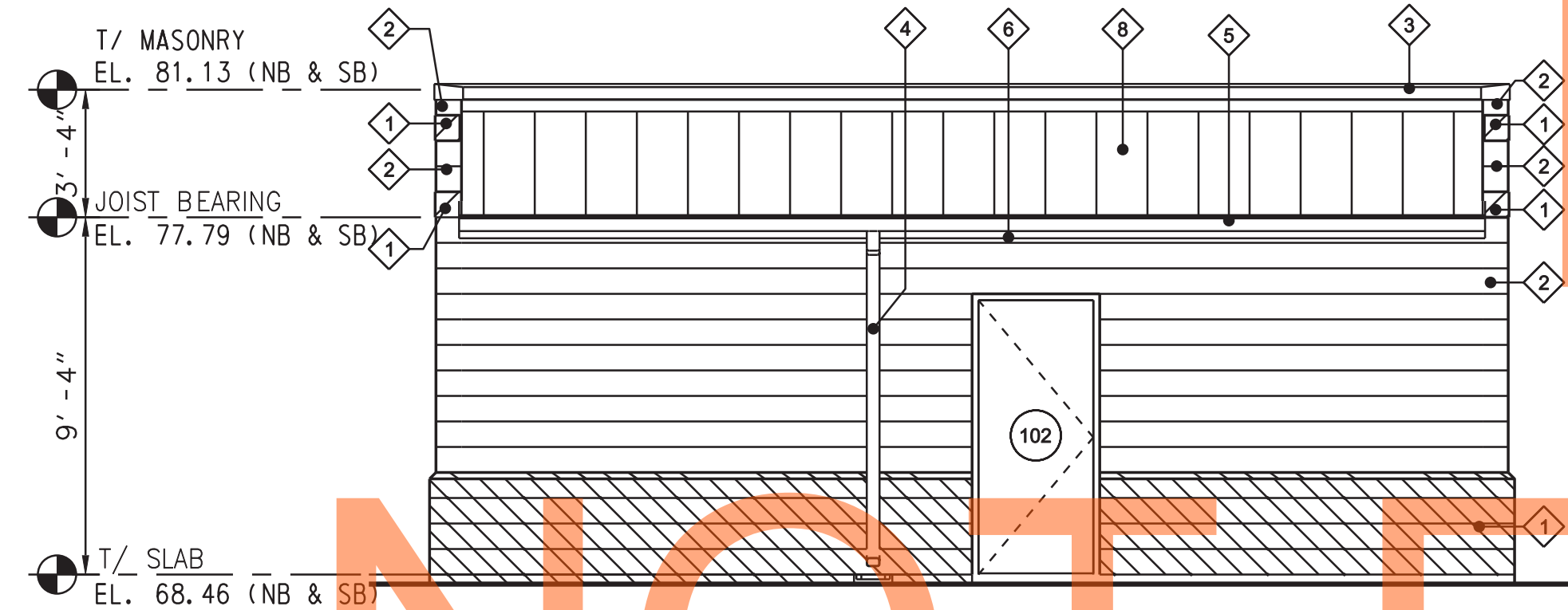
1. MASONRY DIMENSIONS ARE NOMINAL UNLESS NOTED OTHERWISE.
2. DIMENSIONS AT CMU WALLS ARE TO THE FACE OF CMU UNLESS NOTED OTHERWISE.
3. PROVIDE LINTELS FOR OPENINGS IN MASONRY WALLS INCLUDING BUT NOT LIMITED TO OPENINGS FOR DOORS, WINDOWS, LOUVERS, AND MECHANICAL AND ELECTRICAL PENETRATIONS.
4. THE INSIDE EDGE OF DOOR FRAMES SHALL BE SET 4" CLEAR FROM THE FINISH FACE OF THE ADJACENT PERPENDICULAR PARTITION UNLESS OTHERWISE DIMENSIONED.
5. SEE CIVIL DRAWINGS FOR FINISHED FIRST FLOOR ELEVATION.
6. SEE CIVIL DRAWINGS FOR CONCRETE PADS AND BOLLARD LOCATIONS AT EXTERIOR DOORS.



ELEVATION 1  
SCALE: 1/4" = 1'-0" A-2

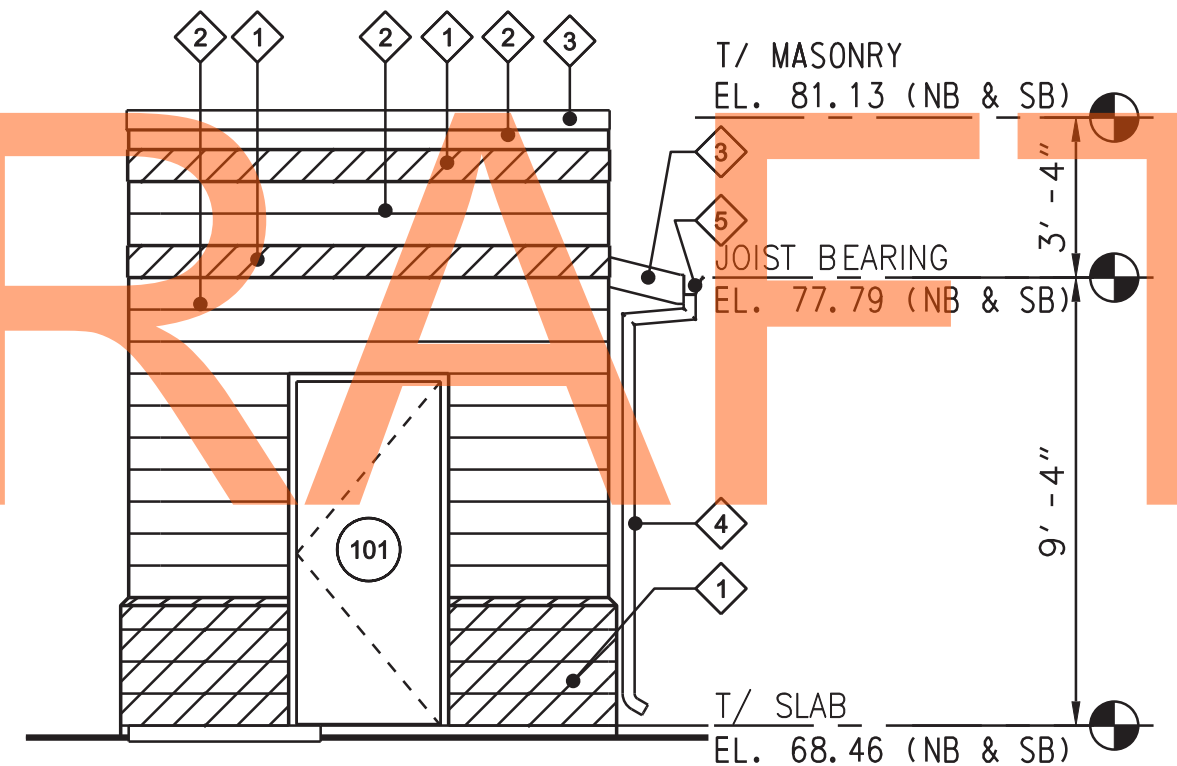


ELEVATION 2  
SCALE: 1/4" = 1'-0" A-2

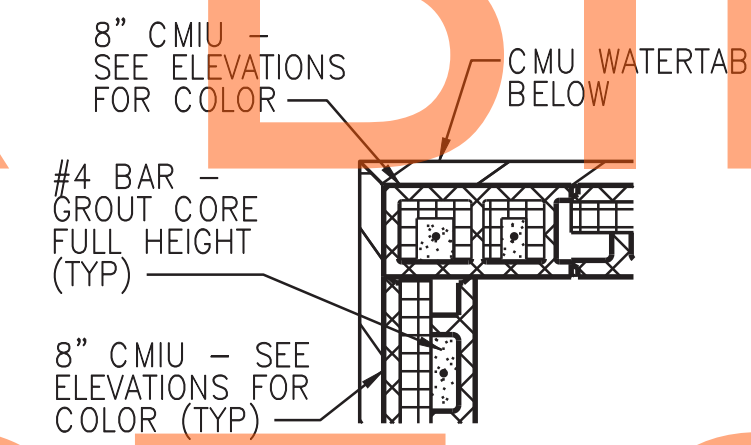


ELEVATION 3  
SCALE: 1/4" = 1'-0" A-2

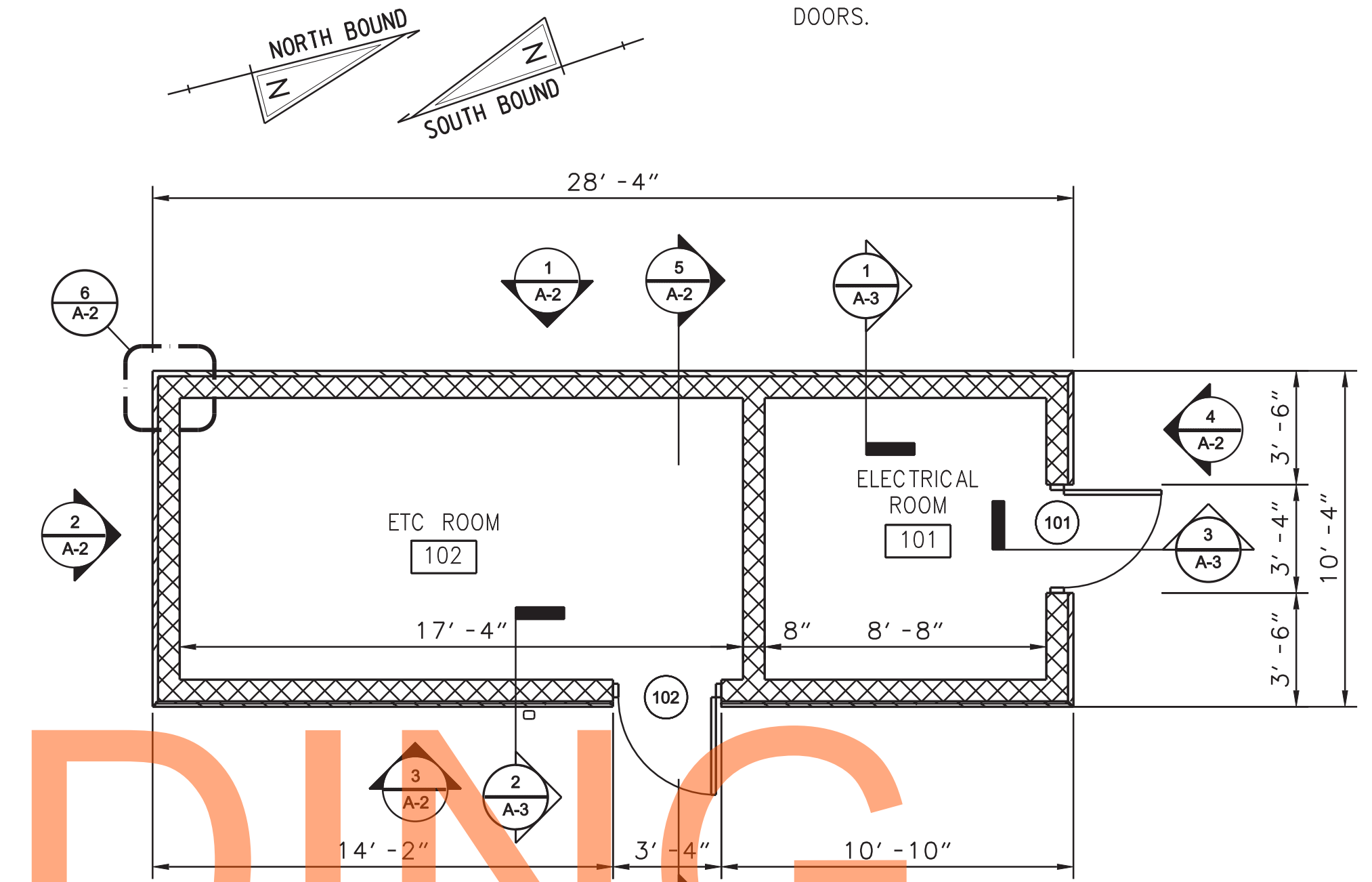
LINTEL SCHEDULE  
L-1 8" PRE-CAST CMU LINTEL BEAR 6" ON EITHER JAMB



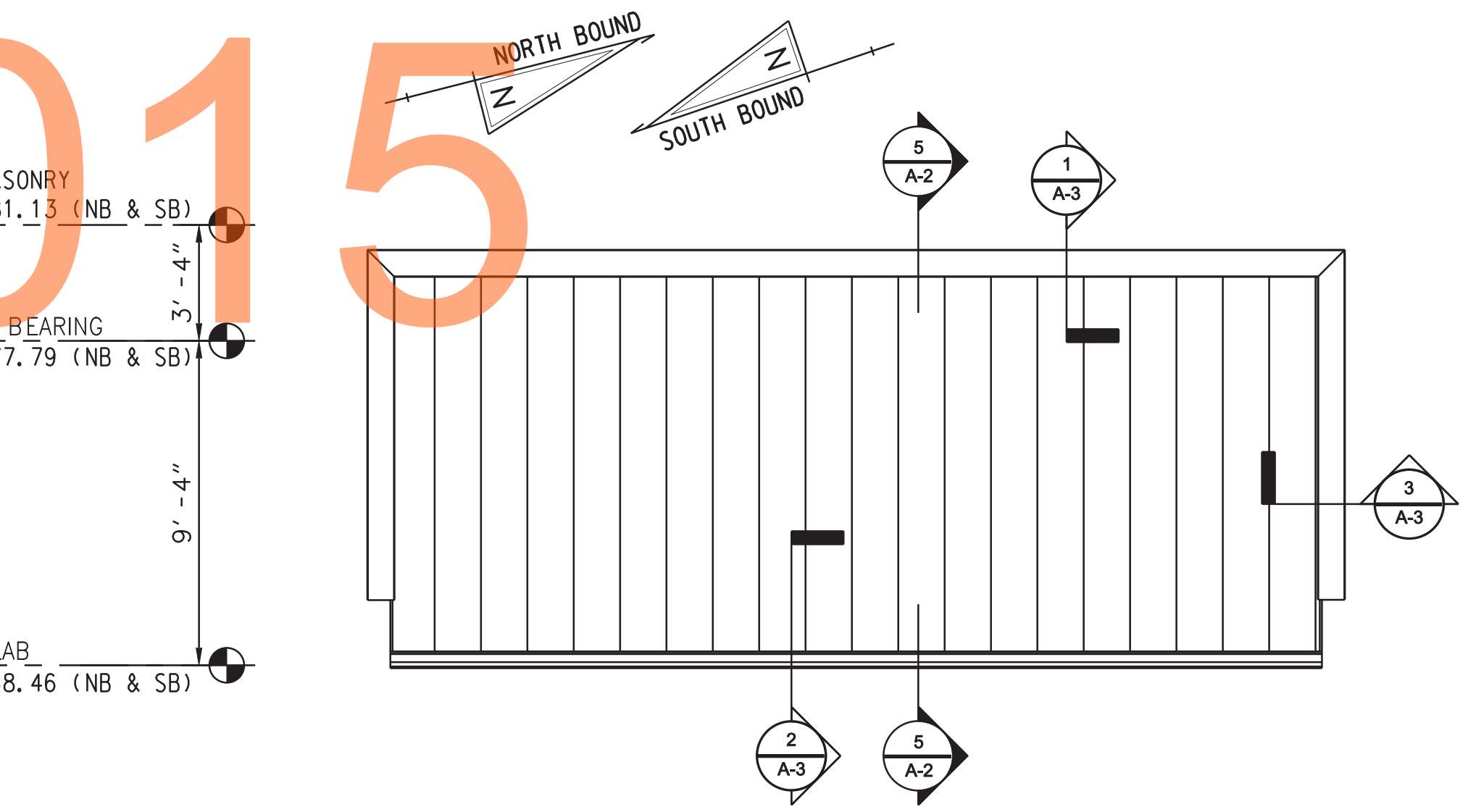
ELEVATION 4  
SCALE: 1/4" = 1'-0" A-2



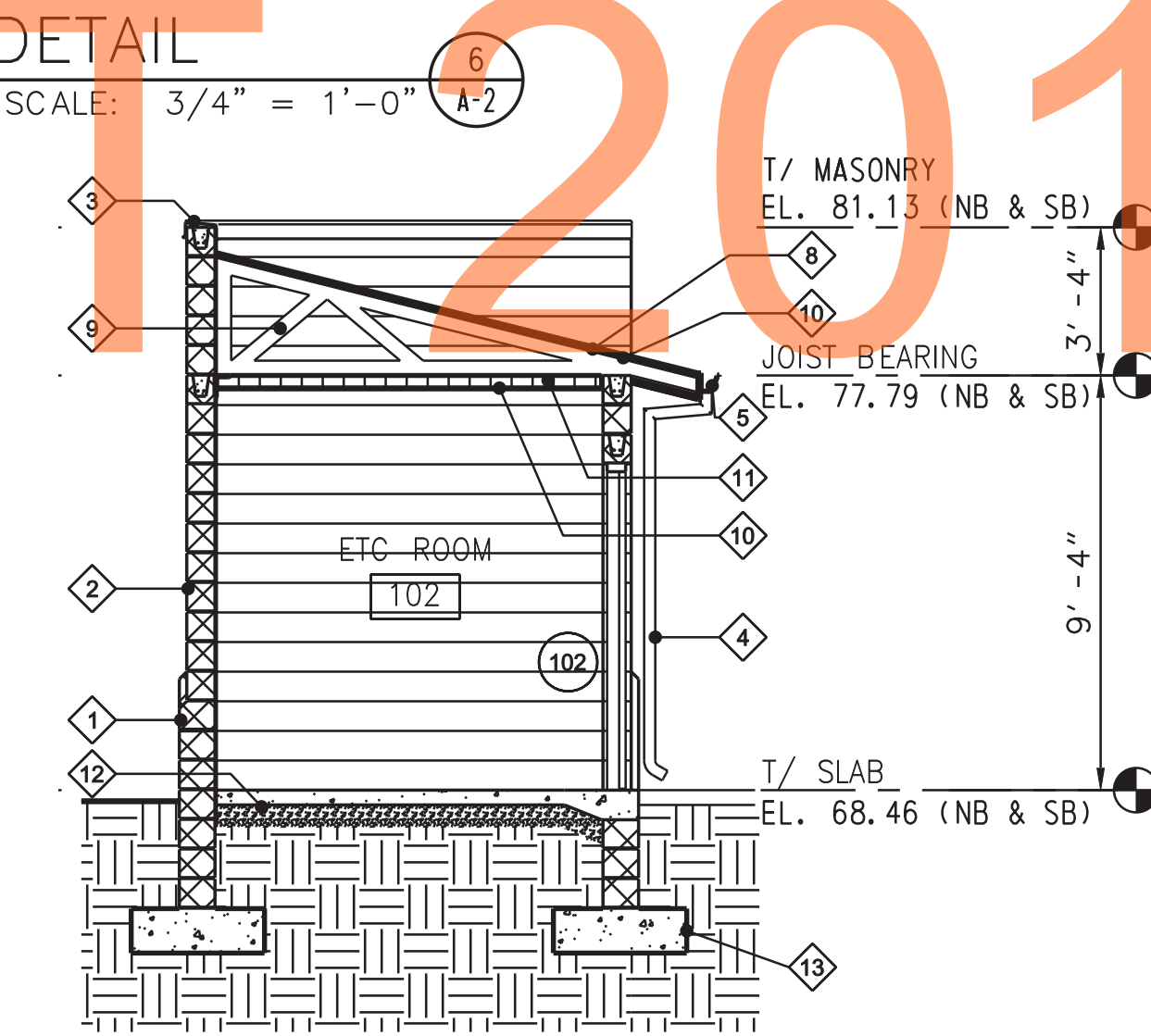
DETAIL 6  
SCALE: 3/4" = 1'-0" A-2



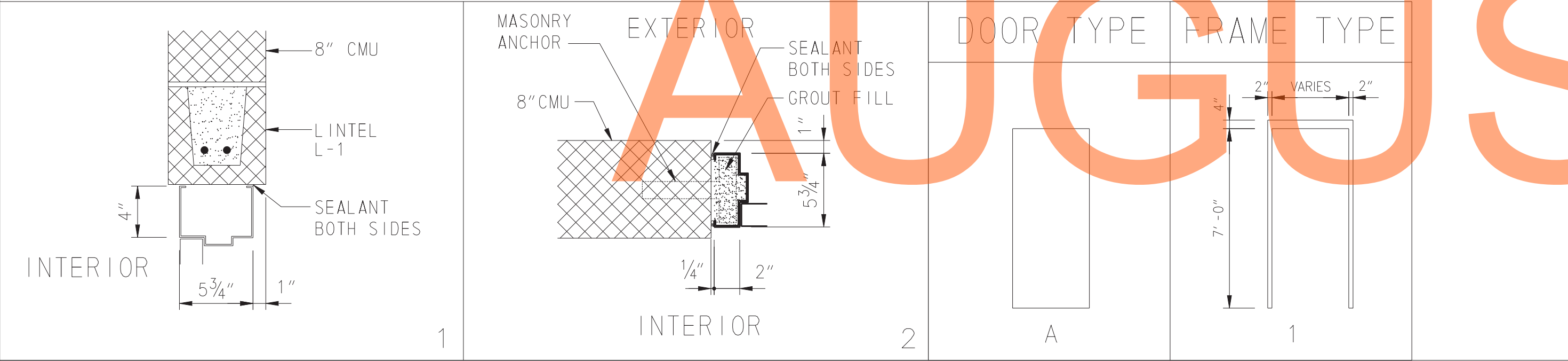
FLOOR PLAN  
SCALE: 1/4" = 1'-0"



ROOF PLAN  
SCALE: 1/4" = 1'-0"



BUILDING SECTION 5  
SCALE: 1/4" = 1'-0" A-2



DOORS AND FRAMES

DOOR NO.	DOOR			FRAME			FIRE RATING		HARDWARE		L INTEL	REMARKS
	SIZE	LOUVER	DETAILS	LAB	HOUR	SET NO.	KEYSIDE ROOM NO.					
101	3'-0" x 7'-0"	1 3/4"	HM A			1	EXT	L-1	CARD READER.			
102	3'-0" x 7'-0"	1 3/4"	HM A			2	EXT	L-1	CARD READER.			
101	3'-0" x 7'-0"	1 3/4"	HM A			1	EXT	L-1	CARD READER.			
102	3'-0" x 7'-0"	1 3/4"	HM A			2	EXT	L-1	CARD READER.			

ADDENDUMS / REVISIONS

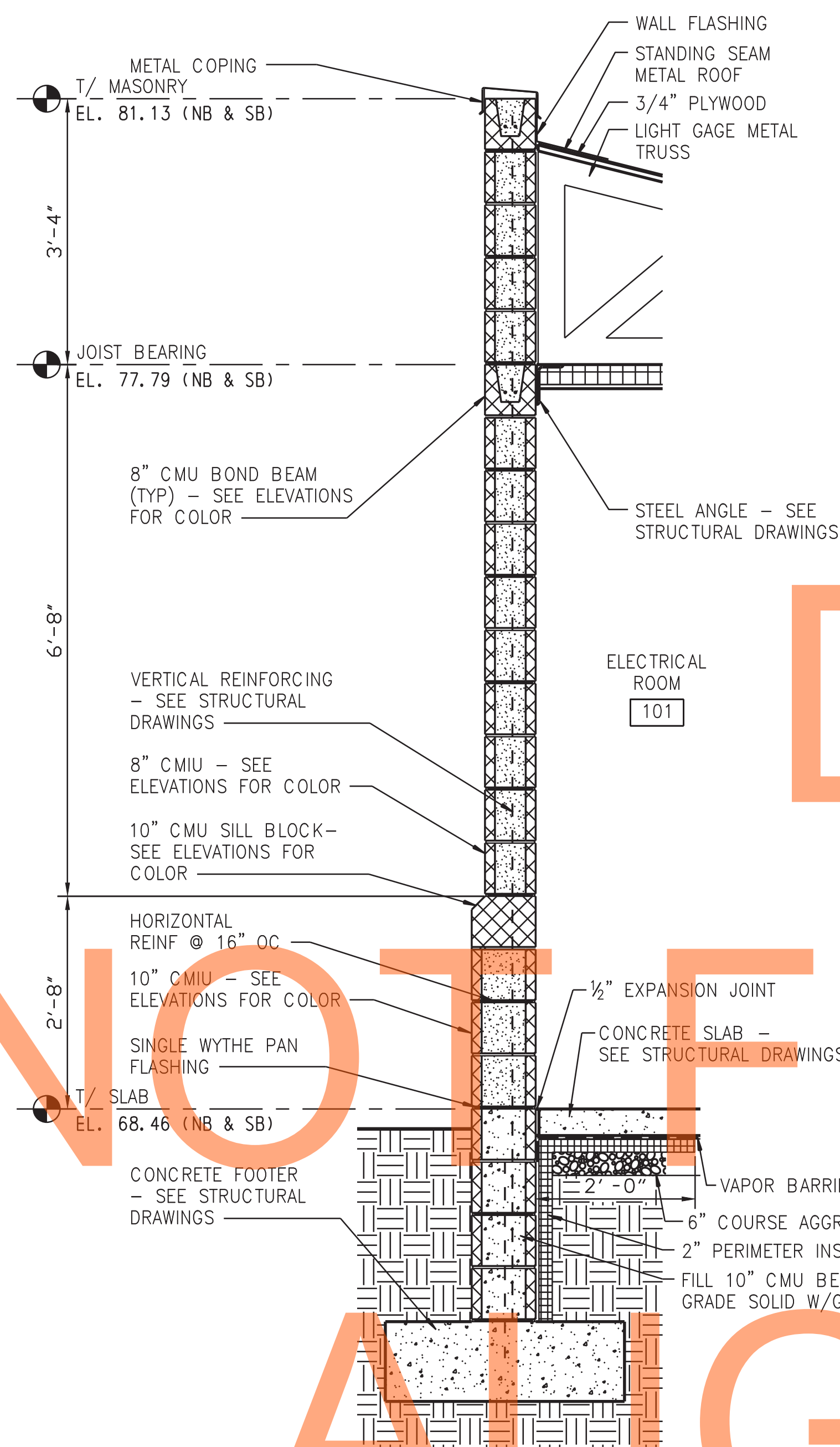
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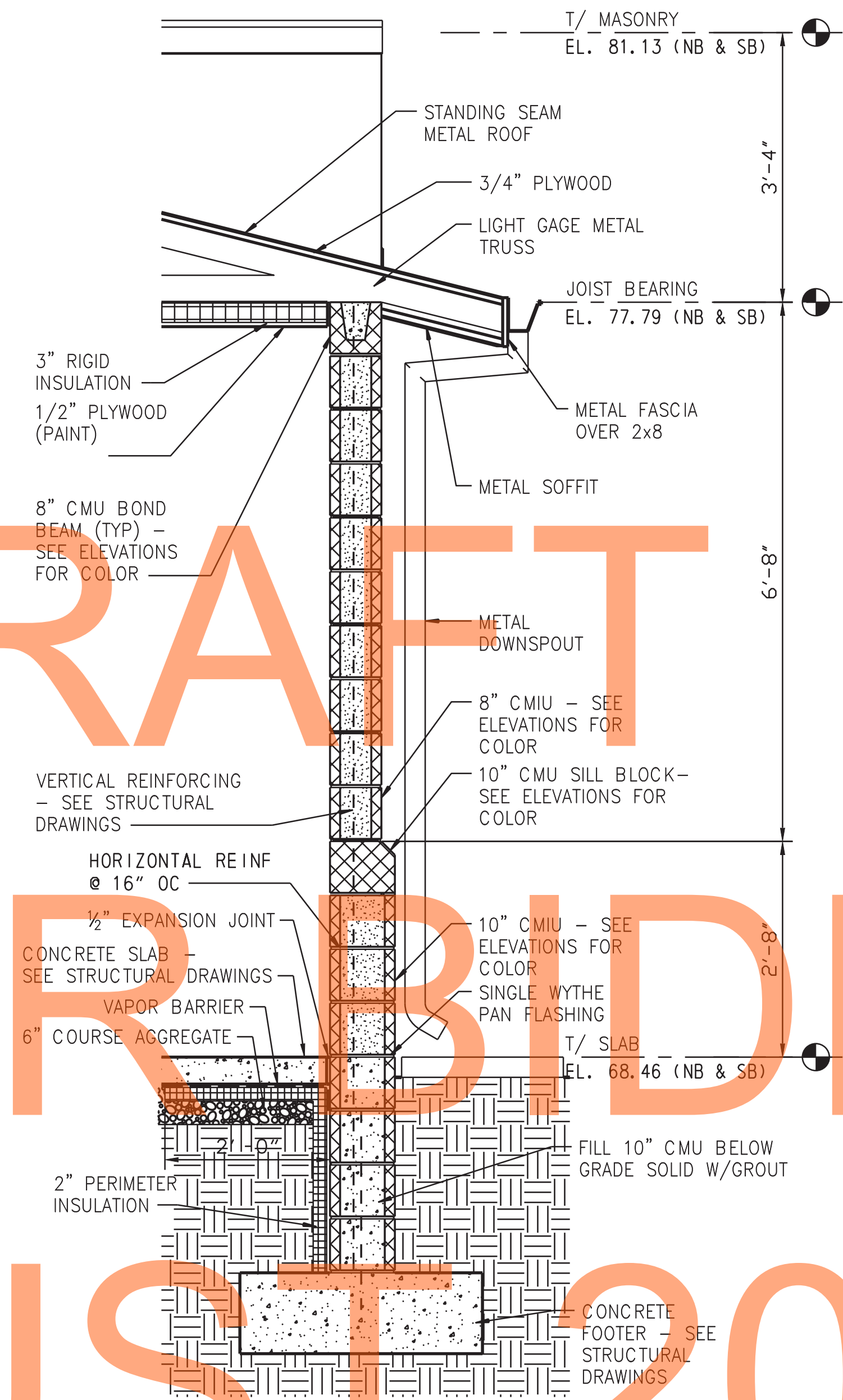
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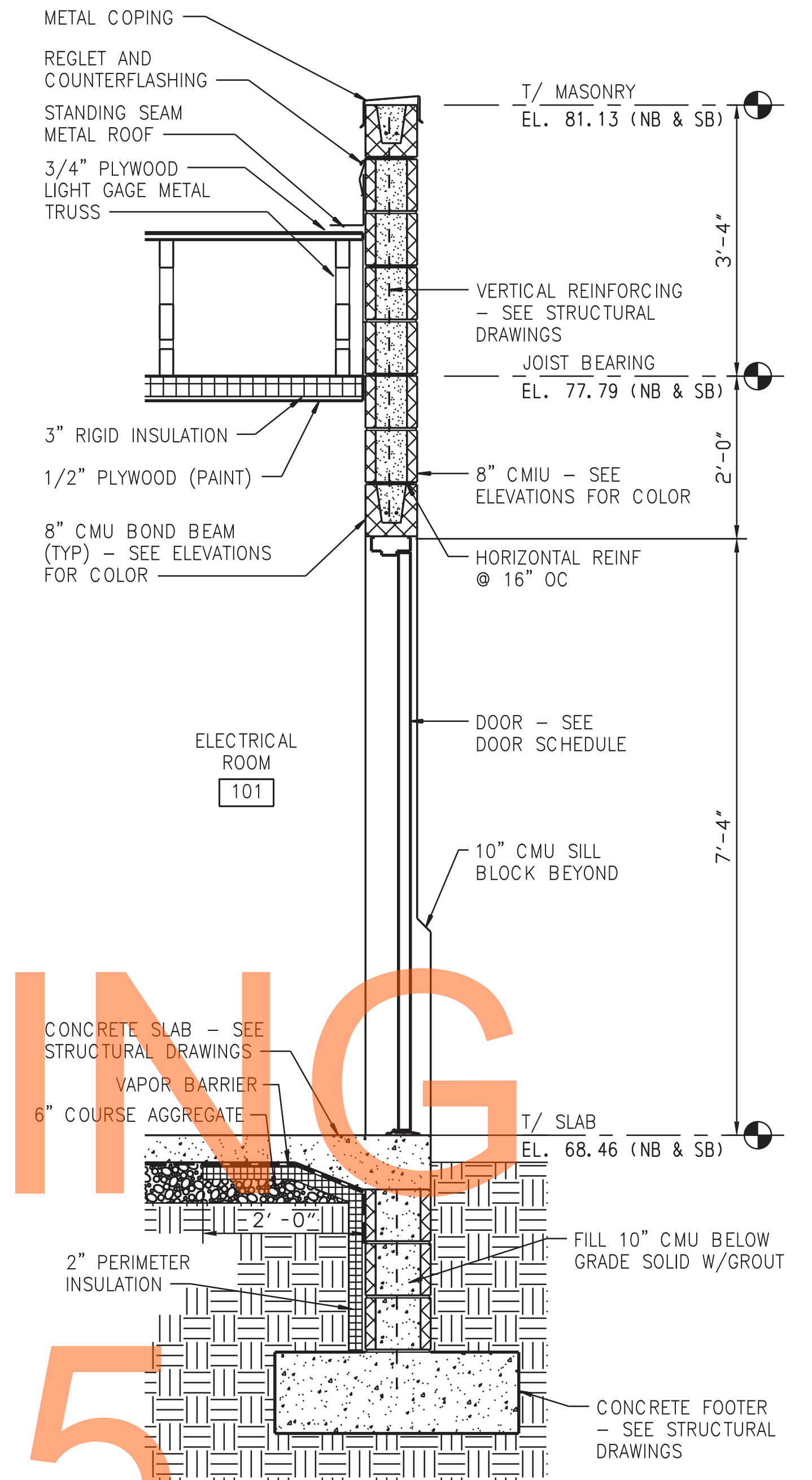
AUGUST 2015



WALL SECTION 1  
SCALE: 3/4" = 1'-0" (A-3)



WALL SECTION 2  
SCALE: 3/4" = 1'-0" (A-3)



WALL SECTION 3  
SCALE: 3/4" = 1'-0" (A-3)

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS	

CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: BJO
NEW CASTLE	CHECKED BY: JRS

<b>A-3</b>	
SHEET NO.	816
TOTAL SHTS.	850

**GENERAL STRUCTURAL NOTES:**

**GENERAL**

1. THE STRUCTURE IS DESIGNED TO ACT AS A STRUCTURAL UNIT UPON COMPLETION. CONTRACTOR SHALL DESIGN AND PROVIDE NECESSARY BRACING, TEMPORARY SUPPORTS, AND SHORING TO RESIST FORCES, INCLUDING UPLIFT, ON THE STRUCTURE DURING CONSTRUCTION.
2. WORK SHALL BE COORDINATED WITH THE VARIOUS TRADES TO AVOID CONFLICT OR INTERFERENCE WITH REINFORCING STEEL OR STRUCTURAL STEEL MEMBERS.
3. THE LOCATION OF ALL AERIAL FACILITIES SHALL BE IDENTIFIED IN THE FIELD BEFORE CONSTRUCTION COMMENCES AND PSE&G PROXIMITY REQUIREMENTS ADHERED TO.

**DESIGN CRITERIA**

1. APPLICABLE CODES AND SPECIFICATIONS  
IBC 2006 W/ NEW CASTLE COUNTY CODE  
ASCE 7-05, MINIMUM BUILDING LOADS - AS APPLICABLE  
AISC 360-05, MANUAL OF STEEL CONSTRUCTION - LOAD AND RESISTANCE FACTOR DESIGN  
ACI 318-05, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY

**DESIGN LOADS:**

ROOF LIVE LOAD	17 PSF
SNOW LOAD:	
GROUND SNOW LOAD	.25 PSF
ROOF SNOW LOAD	20 PSF
TERRAIN FACTOR	C
THERMAL FACTOR	1.2
EXPOSURE FACTOR	0.9
IMPORTANCE FACTOR	1.0
WIND LOAD:	
BASIC WIND SPEED (.3 SECOND GUST)	90 MPH
WIND IMPORTANCE FACTOR	1.0
WIND EXPOSURE	C

**SEISMIC LOADS:**

FRAMING SYSTEM:  
STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, EXCLUDING CANTILEVER COLUMN SYSTEMS (NORTH/SOUTH); CANTILEVERED COLUMN SYSTEMS DETAILED TO CONFORM TO THE REQUIREMENTS FOR ORDINARY STEEL MOMENT FRAMES.

DESIGN BASIS: EQUIVALENT LATERAL FORCE PROCEDURE	
0.2 SEC SPECTRAL RESPONSE	0.235
1.0 SEC SPECTRAL RESPONSE	0.08
SITE CLASS	D
SEISMIC DESIGN CATEGORY	B
SEISMIC IMPORTANCE FACTOR	1.0
RESPONSE MODIFICATION FACTOR	3.0
DEFLECTION AMPLIFICATION FACTOR	3.0
BASE SHEAR	.15 K

**FOUNDATIONS**

1. THE MAXIMUM ALLOWABLE SOIL BEARING PRESSURE FOR SPREAD FOOTING IS 4,000 PSF.
2. ALL CONCRETE SLABS, FOOTINGS AND PRECAST ELEMENTS BEARING ON SOIL SHALL BE UNDERLAIN BY A MINIMUM OF 6 INCHES OF NO. 57 STONE (UNO).
3. ALL AREAS EXCAVATED FOR THE BUILDING BASEMENT ARE TO BE BACKFILLED AND SUPPORT STRIP FOOTINGS SHALL BE USING NO. 57 STONE COMPACTED IN 8" LIFTS (MAX).

**CONCRETE**

1. ALL CONCRETE FOR STRUCTURES EXCEPT FOR PRECAST ITEMS SHALL BE AIR-ENTRAINED CONCRETE (EXCEPT INTERIOR SLABS) WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 POUNDS PER SQUARE INCH AT 28 DAYS.
2. REINFORCEMENT BARS SHALL BE NEW BILLET STEEL CONFORMING TO A.S.T.M. DESIGNATION A615, GRADE 60, DEFORMED.
3. WELDED WIRE FABRIC SHALL CONFORM TO A.S.T.M. DESIGNATION A185.
4. WATERSTOPS SHALL BE POLYVINYL CHLORIDE, 6"x3/8" IN CONSTRUCTION JOINTS AND 9"x 3/8" W/CENTER BULB IN EXPANSION JOINTS UNLESS SHOWN OTHERWISE.
5. CONCRETE DESIGN IS IN CONFORMANCE WITH "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (A.C.I. 318-05).
6. DETAIL, FABRICATE AND ERECT REINFORCEMENT BARS, INCLUDING BAR SUPPORTS, SPACES, ETC. IN ACCORDANCE WITH "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" (A.C.I. 315-92).
7. UNLESS SHOWN OTHERWISE, BARS AT SPLICES SHALL BE LAPPED IN ACCORDANCE WITH THE TABLE "REINFORCING STEEL LAP SPLICES AND EMBEDMENTS" SHOWN ON THIS SHEET.
8. CONCRETE COVER FOR REINFORCEMENT BARS SHALL CONFORM TO THE FOLLOWING, UNLESS INDICATED OTHERWISE ON THE DRAWINGS:
 

A. UNFORMED SURFACES IN CONTACT WITH GROUND	3 INCHES
B. FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO WEATHER, AND ALL WALLS	2 INCHES
C. ALL COLUMNS, BEAMS	1- 1/2 INCHES
D. EXTERIOR EXPOSURE, TOP OF SLABS	1- 1/2 INCHES
E. INTERIOR EXPOSURE TOP AND BOTTOM OF SLABS	1 INCH
9. CHAMFER EXPOSED CONCRETE EDGES 3/4 INCH X 3/4 INCH UNLESS NOTED OTHERWISE.
10. LATERAL LOADS SHALL NOT BE APPLIED TO ANY WALL PRIOR TO ACHIEVING THE 28 DAY CONCRETE COMPRESSIVE STRENGTH. ALL SUPPORTING FLOORS AND SLABS AT TOP OF WALLS MUST ALSO BE IN PLACE.
11. TUNNEL AND TUNNEL STAIRWAY SHALL BE MANUFACTURED WITH PRECAST CONCRETE. PRECAST CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5000 POUNDS PER SQUARE INCH AT 28 DAYS.

**GANTRY NOTES:**

1. PROVIDE MATERIALS AND WORKMANSHIP IN THE ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, ANSI/AASHTO/AWS/D1.5-2002 BRIDGE WELDING CODE AND CONTRACT SPECIAL PROVISIONS. USE ANSI/AWS/D1.1-2002 FOR WELDING NOT COVERED IN ANSI/AASHTO/AWS/D1.5-2002.
2. DESIGN SPECIFICATIONS: AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS 2009, 5TH EDITION.
3. ALL DIMENSIONS SHOWN ARE HORIZONTAL, EXCEPT AS NOTED.
4. USE CLASS A CEMENT CONCRETE f'c = 3000 PSI IN PEDESTALS AND FOOTINGS.
5. CHAMFER EXPOSED CONCRETE EDGES 1" X 1" EXCEPT AS NOTED.
6. PROVIDE A MINIMUM OF 2" CONCRETE COVER ON REINFORCEMENT BARS, EXCEPT AS NOTED.
7. PROVIDE GRADE 60 REINFORCEMENT BARS THAT MEET THE REQUIREMENTS OF ASTM A615/A 615-96A FOR CONCRETE REINFORCEMENT. DO NOT WELD REINFORCEMENT BARS.
8. USE UNCOATED REINFORCEMENT BARS.
9. PROVIDE MINIMUM LAP AND EMBEDMENT LENGTH OF 20 DIAMETERS OR IN ACCORDANCE WITH AASHTO.
10. RAKE-FINISH ALL HORIZONTAL CONSTRUCTION JOINTS EXCEPT AS NOTED.
11. THE DESIGN WIND VELOCITY IS 90 MPH.
12. THE DESIGN ICE LOAD IS 3 PSF.
13. ALL STRUCTURAL DETAILS HAVE BEEN DESIGNED FOR FATIGUE RESISTANCE UNDER THE FOLLOWING FATIGUE LOADS:
  - NATURAL WIND GUST (5.2 \* Cd PSF)
  - TRUCK INDUCED GUSTS (18.8 \* Cd PSF)
14. PROVIDE STRUCTURAL STEEL CONFORMING TO THE FOLLOWING:
  - ASTM A 53, GRADE B, Fy = 35 KSI FOR PIPE COLUMNS, CHORDS AND STRUTS.
  - AASHTO M 270M, GRADE 36, (ASTM A709M, GRADE 36) FOR SHAPES AND PLATES.
  - ALL STEEL SHALL MEET SUPPLEMENTARY REQUIREMENTS FOR NOTCH TOUGHNESS, (CHARPY TESTING, ZONE #2 NON-FRACTURE CRITICAL).
15. PROVIDE ANCHOR BOLT HOLES 1/4" LARGER THAN BOLT DIAMETER FOR BASE PLATE. PROVIDE BOLT HOLES 1/8" LARGER THAN BOLT DIAMETER FOR ANCHOR PLATE.
16. USE TEMPLATES TO ACCURATELY SET BASE PLATE ANCHOR BOLTS TO CORRECT ELEVATION AND ALIGNMENT. SECURELY BRACE ANCHOR BOLTS AGAINST DISPLACEMENT BEFORE PEDESTAL CONCRETE IS PLACED AND DURING CONCRETE CURING.
17. GROUT PADS SHALL NOT BE USED. BASE PLATES AND EXPOSED ANCHOR BOLTS SHALL BE PLACED SO RUN-OFF AND/OR RAIN WATER CANNOT RUN ONTO OR POND AT THIS AREA.
18. PROVIDE DOUBLE NUTS AND WASHERS FOR EACH ANCHOR BOLT.
19. GALVANIZED HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO M164/ASTM A325.
20. GALVANIZED HEAT TREATED NUTS SHALL CONFORM TO AASHTO M292/ASTM A1494 OR AASHTO M291/ASTM A563 GRADE 2H, DH. GALVANIZED HARDENED STEEL WASHERS SHALL CONFORM TO AASHTO M293/ASTM F436.
21. GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 55.
22. INSTALL ACCESS HOLES ON POLE OPPOSITE DIRECTION OF TRAFFIC.
23. DIMENSIONS ARE BASED ON A NORMAL TEMPERATURE OF 68° F.
24. VERIFY ALL ELEVATIONS AND DIMENSIONS IN THE FIELD.
25. FOOTINGS WILL BE POURED AGAINST FILL COMPACTED TO 98% RELATIVE MAXIMUM DENSITY OR ON UNDISTURBED MATERIAL.
26. DIVERT ALL SURFACE RUNOFF AWAY FROM EXCAVATIONS. PERFORM ALL EXCAVATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT DEWATERING SO THAT EXCAVATIONS ARE DRY ENOUGH FOR INSPECTION AND CONSTRUCTION.
27. COORDINATE, LOCATE AND CONDUCT ALL WORK RELATED TO PUBLIC AND PRIVATE UTILITIES IN ACCORDANCE WITH DELDOT UTILITIES MANUAL.
28. VERIFY AND LOCATE ALL EXISTING UTILITIES PRIOR TO STARTING WORK. CONDUCT OPERATIONS IN A MANNER WHICH ENSURES THAT THE UTILITIES WILL NOT BE DISTURBED OR ENDANGERED, AND ASSUME FULL RESPONSIBILITY FOR ANY DAMAGE TO UTILITIES DURING CONSTRUCTION. THE DEPARTMENT DOES NOT ASSUME RESPONSIBILITY FOR REIMBURSEMENT, PARTICIPATION IN DESIGN AND/OR REVISIONS, OR LIABILITY FOR ACCURACY OF TYPE, SIZE AND LOCATION OF ANY UTILITY.
29. WELDING OF STEEL SHALL BE AS SPECIFIED IN THE CONSTRUCTION SPECIFICATIONS.
30. PIPE, COLUMNS AND CHORDS ARE DENOTED BY DIAMETER AND THICKNESS.
31. DESIGN AND PROVIDE TEMPORARY SUPPORTS AS REQUIRED TO RETAIN EXCAVATED EARTH SURFACES IN ACCORDANCE WITH SPECIFICATIONS.
32. PROVIDE CONNECTIONS AT SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SHOP DRAWINGS FOR STRUCTURAL STEEL SHALL BE SUBMITTED FOR APPROVAL.
33. VERIFY THE LOCATION OF ALL CONDUIT ROUGH-INS WITH THE EQUIPMENT MANUFACTURER AND COMMISSION'S REPRESENTATIVE, PRIOR TO PLACEMENT OF CONCRETE FOUNDATIONS.
34. PRIOR TO FABRICATION, CONTRACTOR MUST VERIFY CLEARANCE AND ADJUST THE PROPOSED MOUNTING HEIGHT ACCORDINGLY AND AS DIRECTED BY DELDOT.
35. TRUSS CAMBER SHALL BE INCORPORATED DURING FABRICATION. THE CONTRACTOR SHALL ACHIEVE CAMBER BY TILTING THE POLE AND ADJUSTING LEVELING NUTS DURING INSTALLATION.

**STRUCTURAL ABBREVIATIONS**

AL. OR ALUM.	ALUMINUM	LG.	LONG
APPROX.	APPROXIMATE	LLH	LONG LEG HORIZONTAL
B/B	BACK TO BACK	LLV	LONG LEG VERTICAL
BOTT.	BOTTOM	LP	LOW POINT
B/	BOTTOM OF	MAX.	MAXIMUM
BTWN	BETWEEN	MIN.	MINIMUM
CJ	CONSTRUCTION JOINT	NO.	NUMBER
C/C	CENTER TO CENTER	N.T.S.	NOT TO SCALE
CIR	CIRCULAR	O/C	ON CENTER
CL	CENTERLINE	O.D.	OUTSIDE DIAMETER
CLR	CLEAR	OPP.	OPPOSITE
CMU	CONCRETE MASONRY UNIT	R	PLATE
COL	COLUMN	PSF	POUNDS PER SQUARE FOOT
CONC.	CONCRETE	PSI	POUNDS PER SQUARE INCH
CONST.	CONSTRUCTION	R	RISER
CONT	CONTINUOUS	RAD.	RADIUS
DIA.	DIAMETER	REINF.	REINFORCEMENT
EA.	EACH	REQ'D	REQUIRED
EF	EACH FACE	SC	SLIP CRITICAL
EL OR ELEV	ELEVATION	SCH	SCHEDULE
EMBED.	EMBEDMENT	SF	SQUARE FOOT
EQ.	EQUAL	SIM	SIMILAR
EQUIP.	EQUIPMENT	SPA.	SPACES
EW	EACH WAY	SO.	SQUARE
EXIST	EXISTING	S.S.	STAINLESS STEEL
EXP.	EXPANSION	ST	STRUCTURAL TUBE
EXT.	EXTERIOR	STD.	STANDARD
FD	FLOOR DRAIN	T	TREAD
FIN.	FINISHED	T&B	TOP AND BOTTOM
FLR.	FLOOR	T/	TOP OF
FT	FEET	TYP.	TYPICAL
FTG.	FOOTING	U.N.O.	UNLESS NOTED OTHERWISE
HORIZ.	HORIZONTAL	W/	WITH
HP	HIGH POINT	WWF	WELDED WIRE FABRIC
I.D.	INSIDE DIAMETER		
INT.	INTERIOR		
JT.	JOINT		
KSF	THOUSAND POUNDS PER SQUARE FOOT		

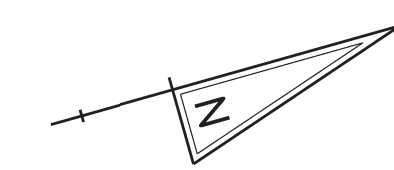
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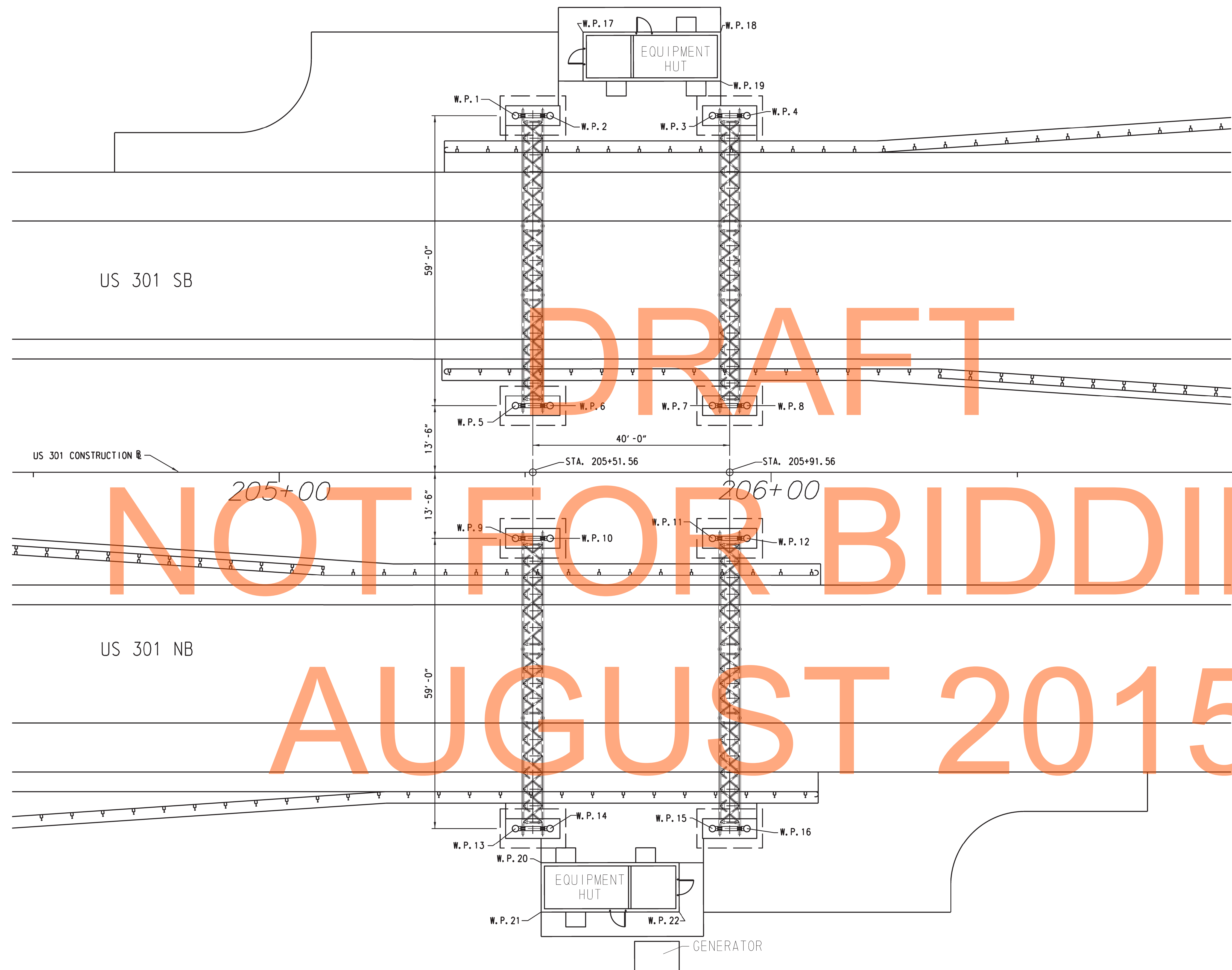
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<b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS	<b>US 301 MARYLAND STATE LINE TO LEVELS ROAD</b>	CONTRACT T200811301	BRIDGE NO.	<b>STRUCTURAL GENERAL NOTES &amp; ABBREVIATIONS</b>	SHEET NO. 817
			COUNTY NEW CASTLE	DESIGNED BY: AB		TOTAL SHTS. 850
				CHECKED BY: CAM		

ST-01



WORKING POINT COORDINATES				
WORKING POINTS	NORTHING	EASTING	STATION	OFFSET
W. P. 1	517595.9129	573133.8094	205+48.06	72.50 LT.
W. P. 2	517602.6524	573135.7013	205+55.06	72.50 LT.
W. P. 3	517634.4243	573144.6204	205+88.06	72.50 LT.
W. P. 4	517641.1637	573146.5123	205+95.06	72.50 LT.
W. P. 5	517579.9667	573190.6136	205+48.06	13.50 LT.
W. P. 6	517586.7062	573192.5055	205+55.06	13.50 LT.
W. P. 7	517618.4780	573201.4246	205+88.06	13.50 LT.
W. P. 8	517625.2175	573203.3165	205+95.06	13.50 LT.
W. P. 9	517572.6715	573216.6005	205+48.06	13.50 RT.
W. P. 10	517579.4110	573218.4925	205+55.06	13.50 RT.
W. P. 11	517611.1829	573227.4116	205+88.06	13.50 RT.
W. P. 12	517617.9223	573229.3035	205+95.06	13.50 RT.
W. P. 13	517556.7253	573273.4047	205+48.06	72.50 RT.
W. P. 14	517563.4648	573275.2967	205+55.06	72.50 RT.
W. P. 15	517595.2366	573284.2158	205+88.06	72.50 RT.
W. P. 16	517601.9761	573286.1077	205+95.06	72.50 RT.
W. P. 17	517613.6630	573121.1870	205+61.74	89.45 LT.
W. P. 18	517640.6209	573128.7547	205+89.74	89.45 LT.
W. P. 19	517637.9182	573138.3825	205+89.74	79.45 LT.
W. P. 20	517559.8318	573281.5042	205+53.24	79.45 RT.
W. P. 21	517557.1290	573291.1321	205+53.24	89.45 RT.
W. P. 22	517584.0870	573298.6997	205+81.24	89.45 RT.



NOT FOR BIDDING

AUGUST 2015

**GANTRY PLAN**  
SCALE: 1/4" = 1' - 0"

- NOTES:**
1. FOR GENERAL NOTES, SEE SHEET ST-01.
  2. FOR GANTRY ELEVATION, SEE SHEET ST-03.
  3. FOR FOUNDATION DETAILS, SEE SHEET ST-04.
  4. FOR GANTRY STRUCTURE DETAILS, SEE SHEETS ST-05, ST-06, AND ST-07.
  5. FOR EQUIPMENT HUT FOUNDATION AND SLAB, AND GENERATOR SLAB, SEE SHEET ST-08.

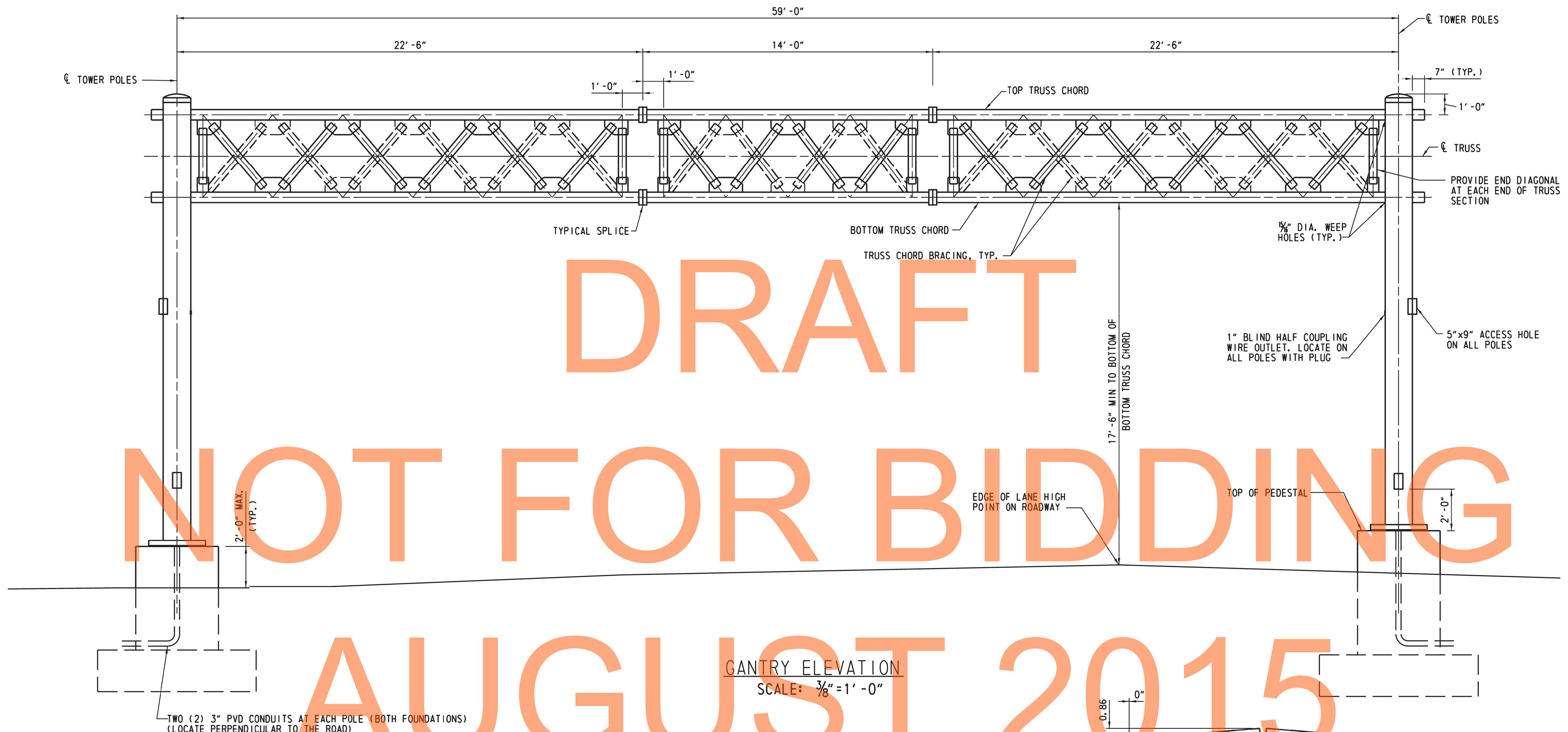
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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: AB
	CHECKED BY: CAM

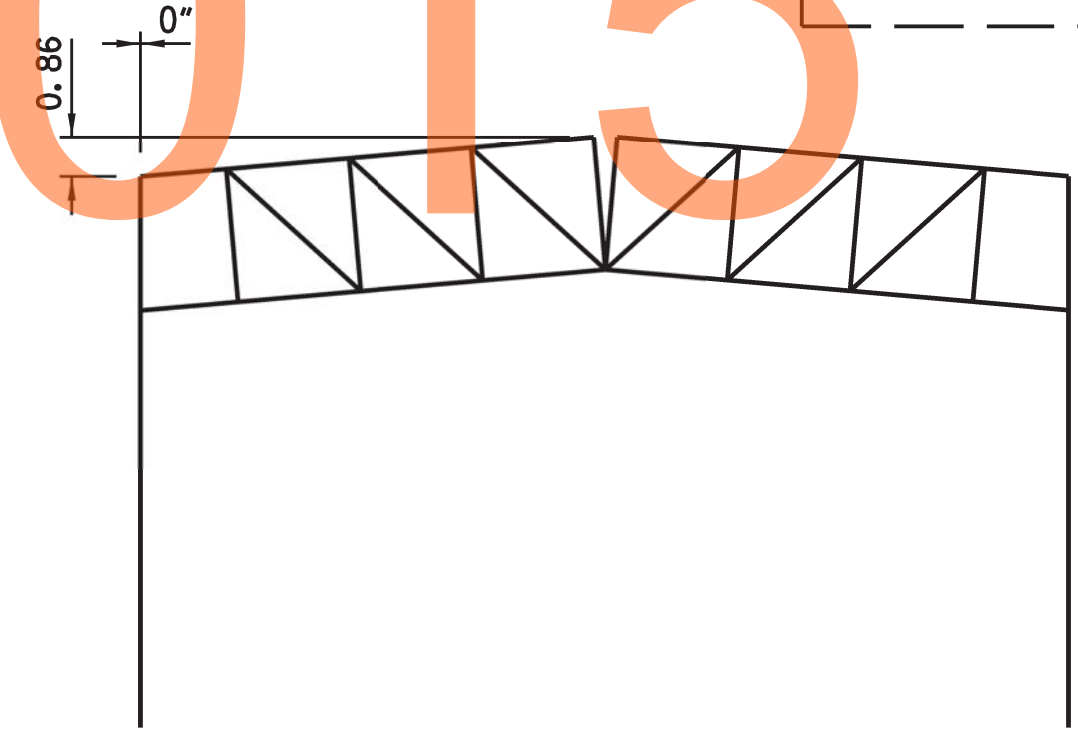
<b>STRUCTURAL</b> <b>GANTRY PLAN</b>	SHEET NO. 818
	TOTAL SHTS. 850





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GANTRY ELEVATION  
SCALE: 3/8" = 1'-0"



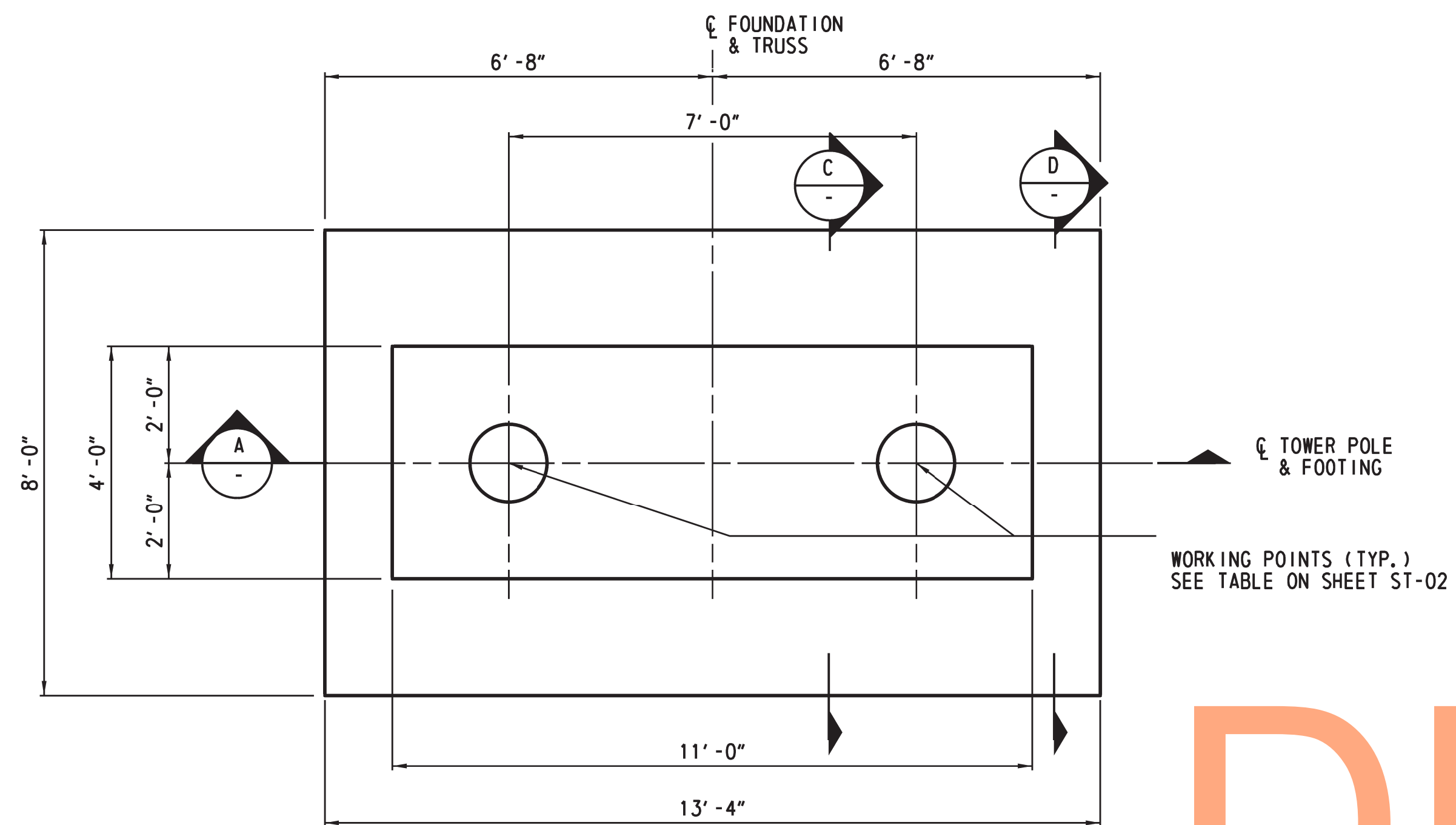
GANTRY CAMBER DIAGRAM  
SCALE: NTS

- NOTES:
1. FOR GENERAL NOTES, SEE SHEET ST-01.
  2. FOR STRUCTURE DETAILS, SEE SHEETS ST-05, ST-06, AND ST-07.
  3. FOR FOUNDATION DETAILS, SEE SHEET ST-04.

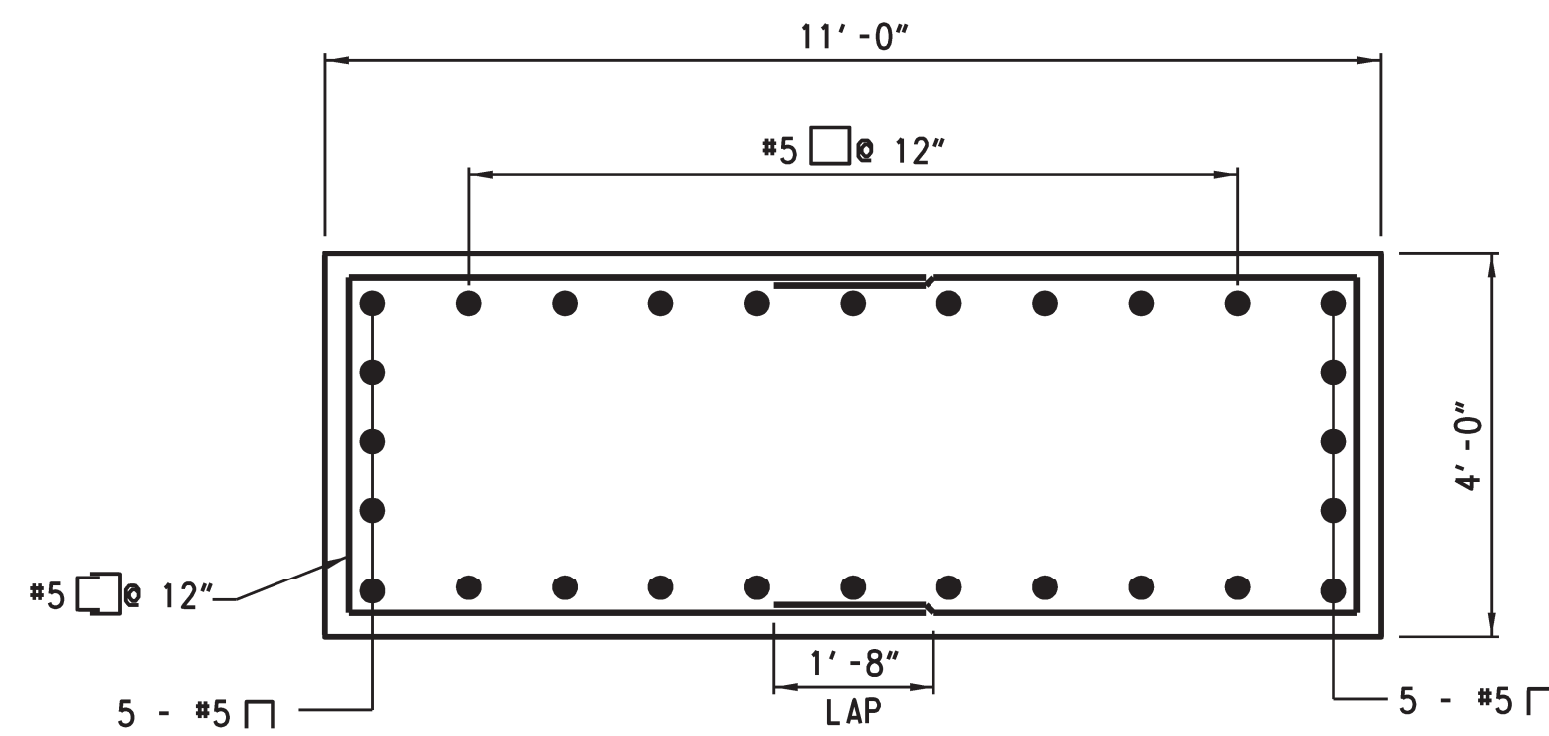
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ADDENDUMS / REVISIONS

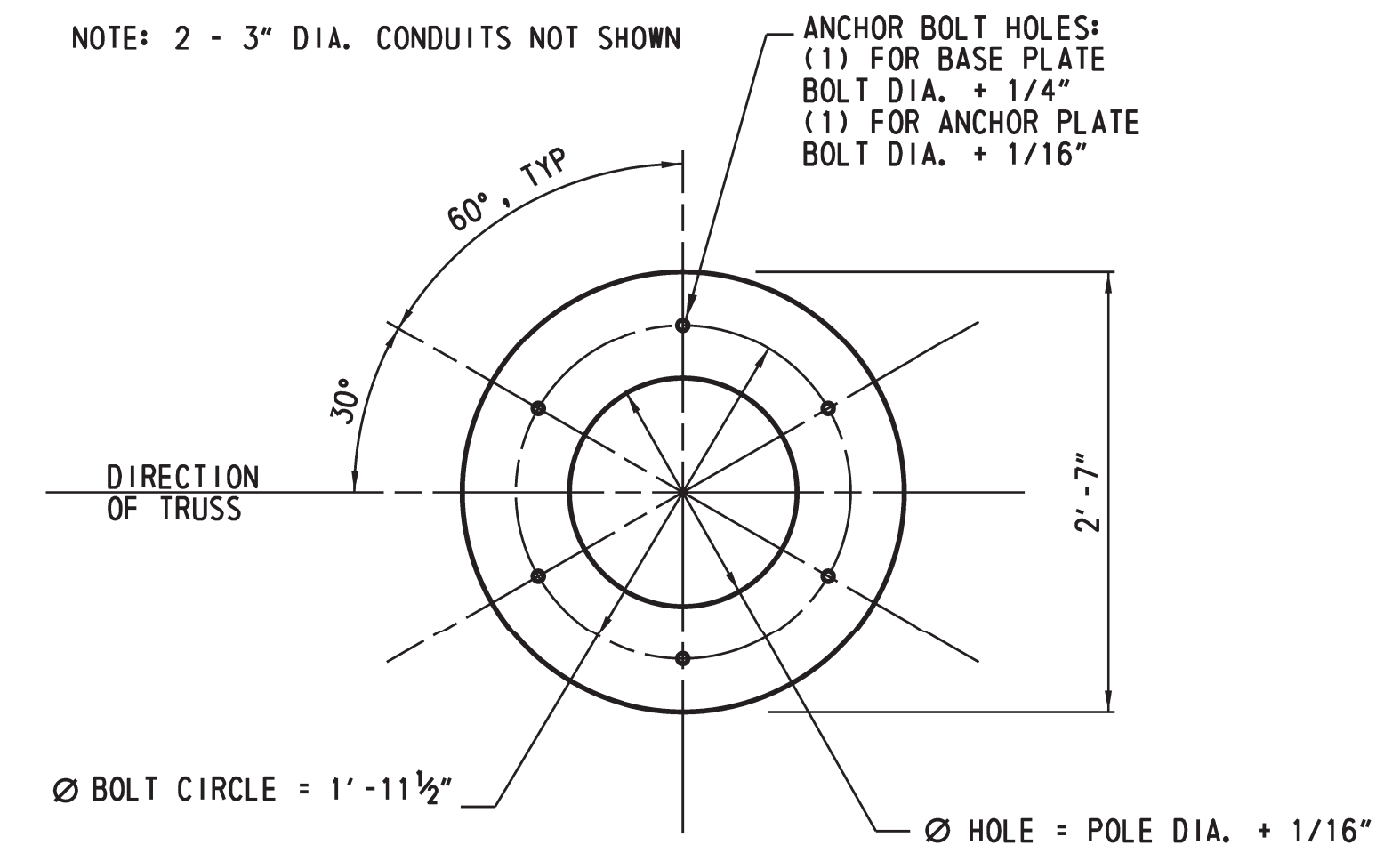
CONTRACT T200811301	BRIDGE NO. 
COUNTY NEW CASTLE	DESIGNED BY: <b>AB</b> CHECKED BY: <b>CAM</b>



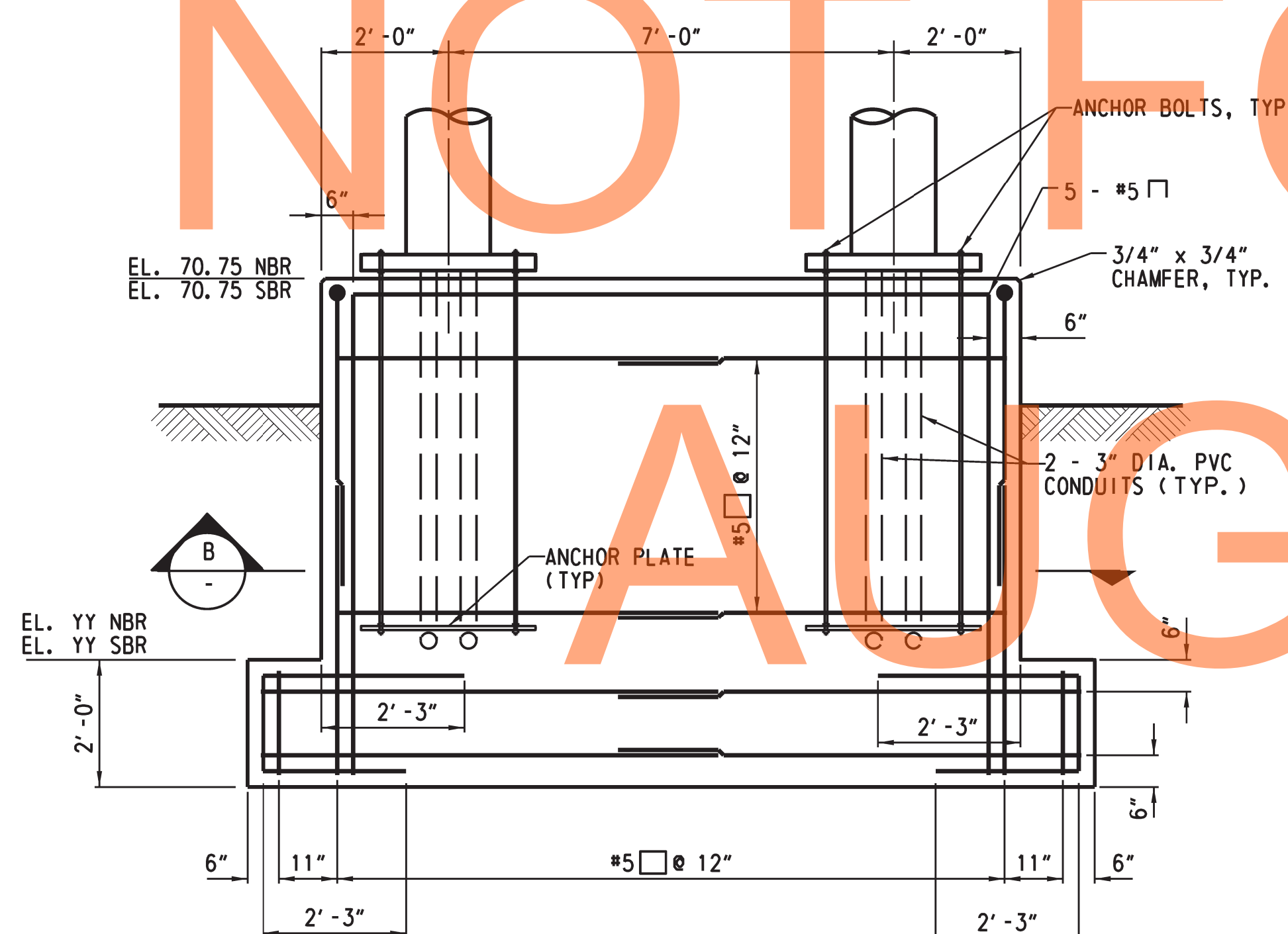
**PLAN**  
SCALE: 1/2" = 1' - 0"



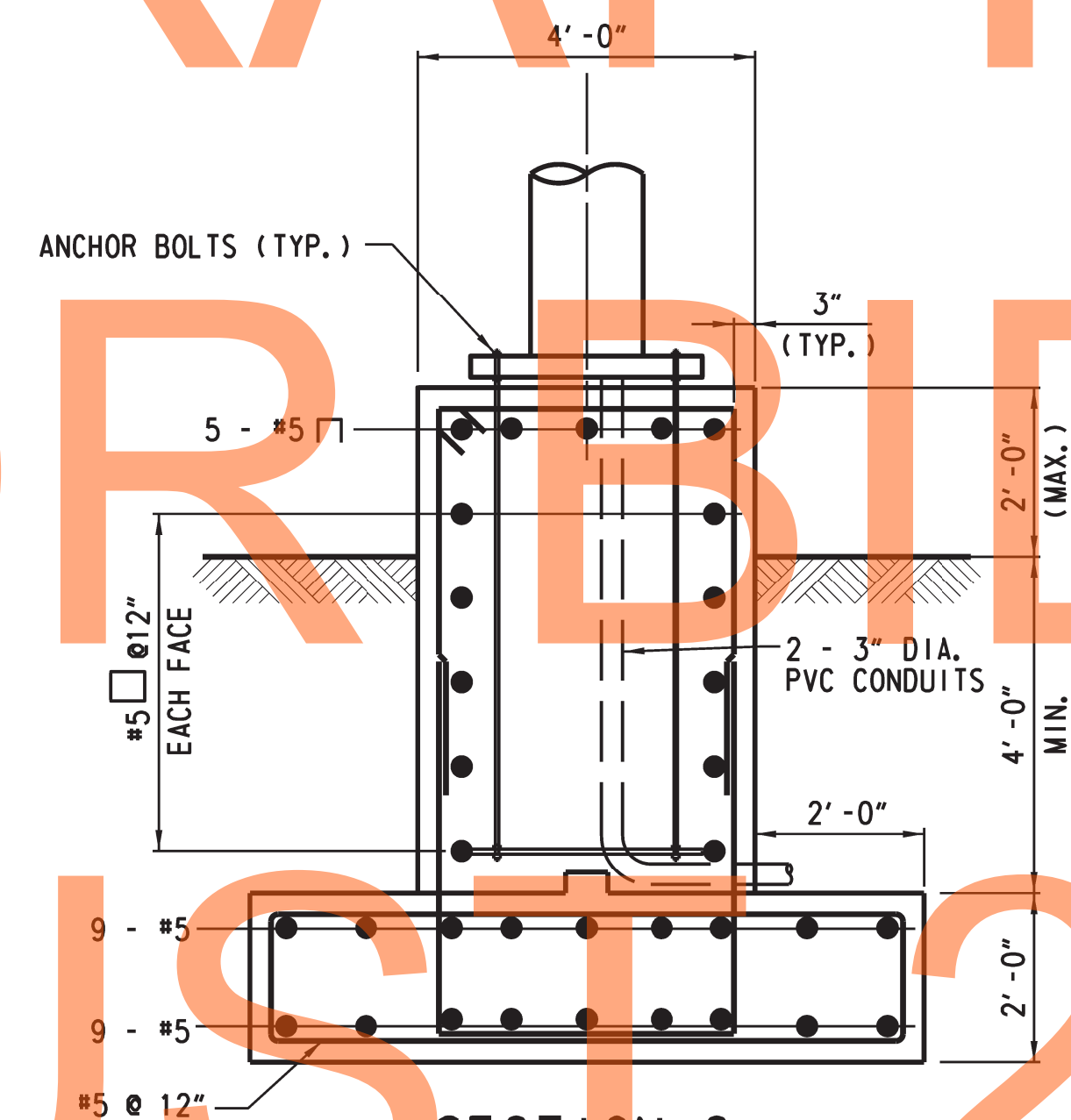
**SECTION B**  
SCALE: 1/2" = 1' - 0"  
NOTE: 2 - 3" DIA. CONDUITS NOT SHOWN



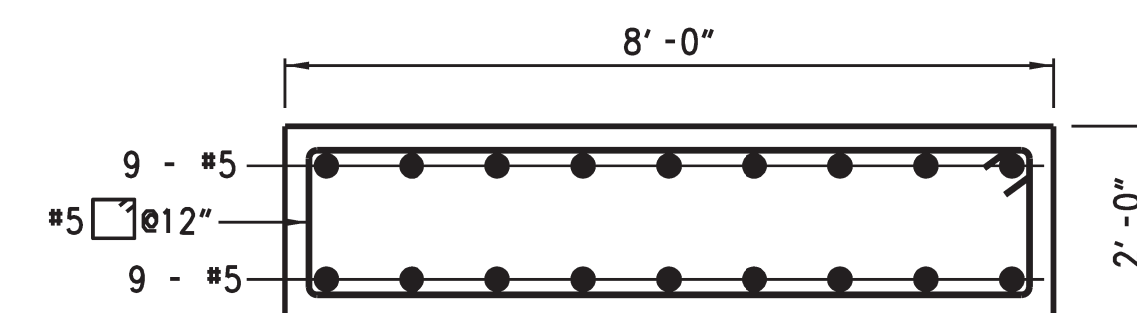
**BASE PLATE PLAN VIEW**  
SCALE: 1" = 1' - 0"



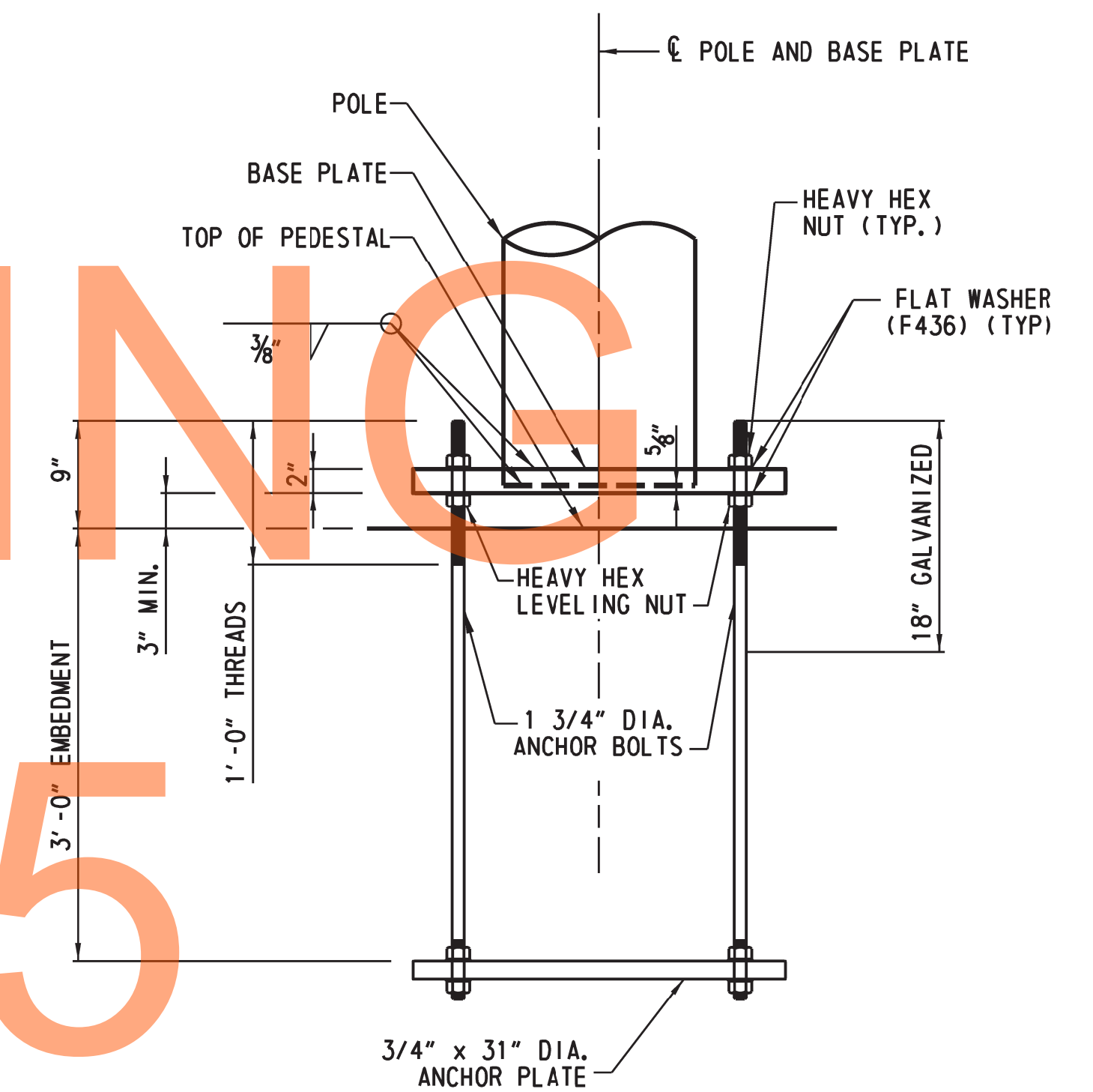
**SECTION A**  
SCALE: 1/2" = 1' - 0"



**SECTION C**  
SCALE: 1/2" = 1' - 0"



**SECTION D**  
SCALE: 1/2" = 1' - 0"



**BASE PLATE & ANCHOR PLATE DETAIL**  
SCALE: 1" = 1' - 0"

NOTE: 2 - 3" DIA. CONDUITS NOT SHOWN

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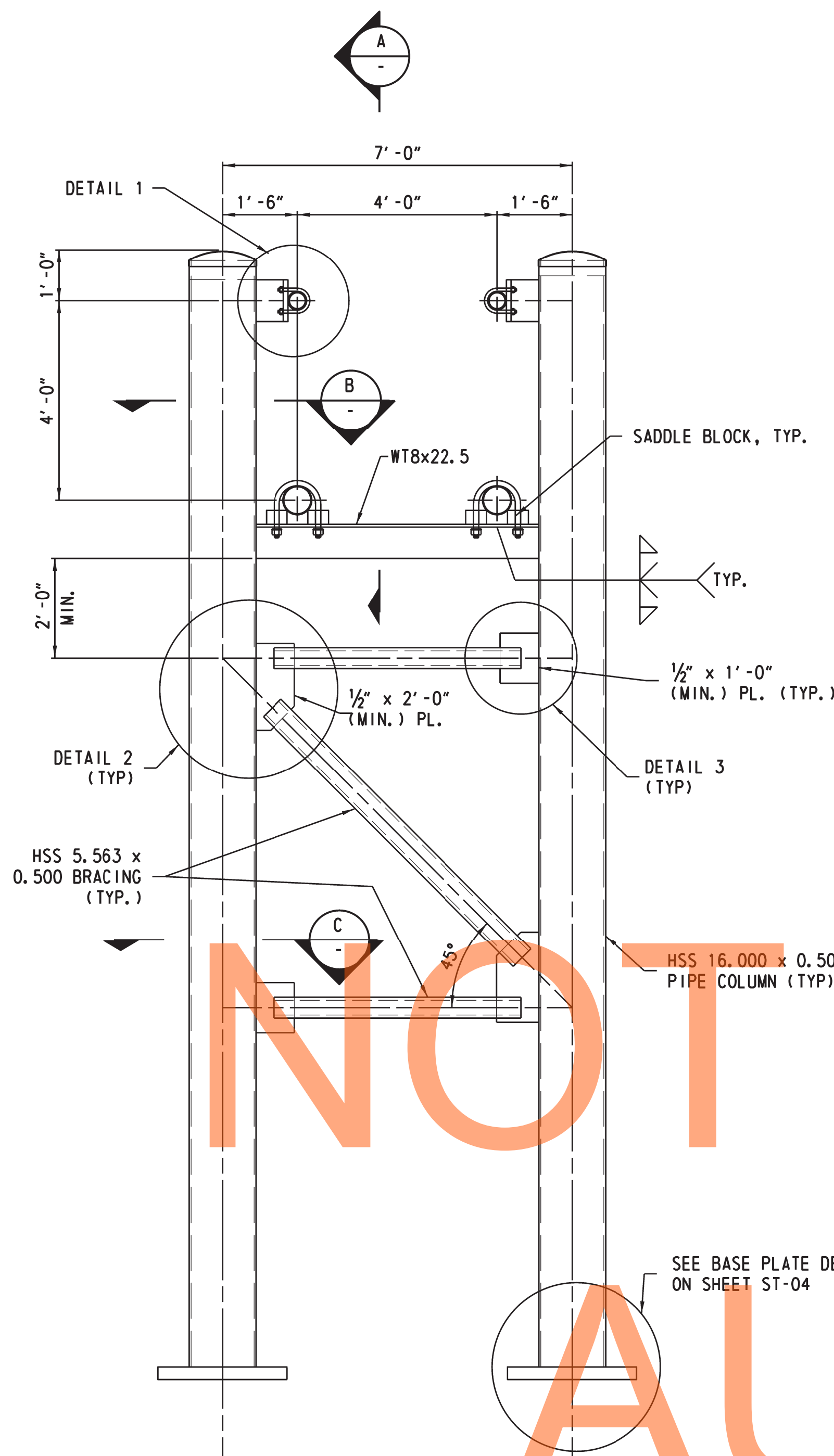
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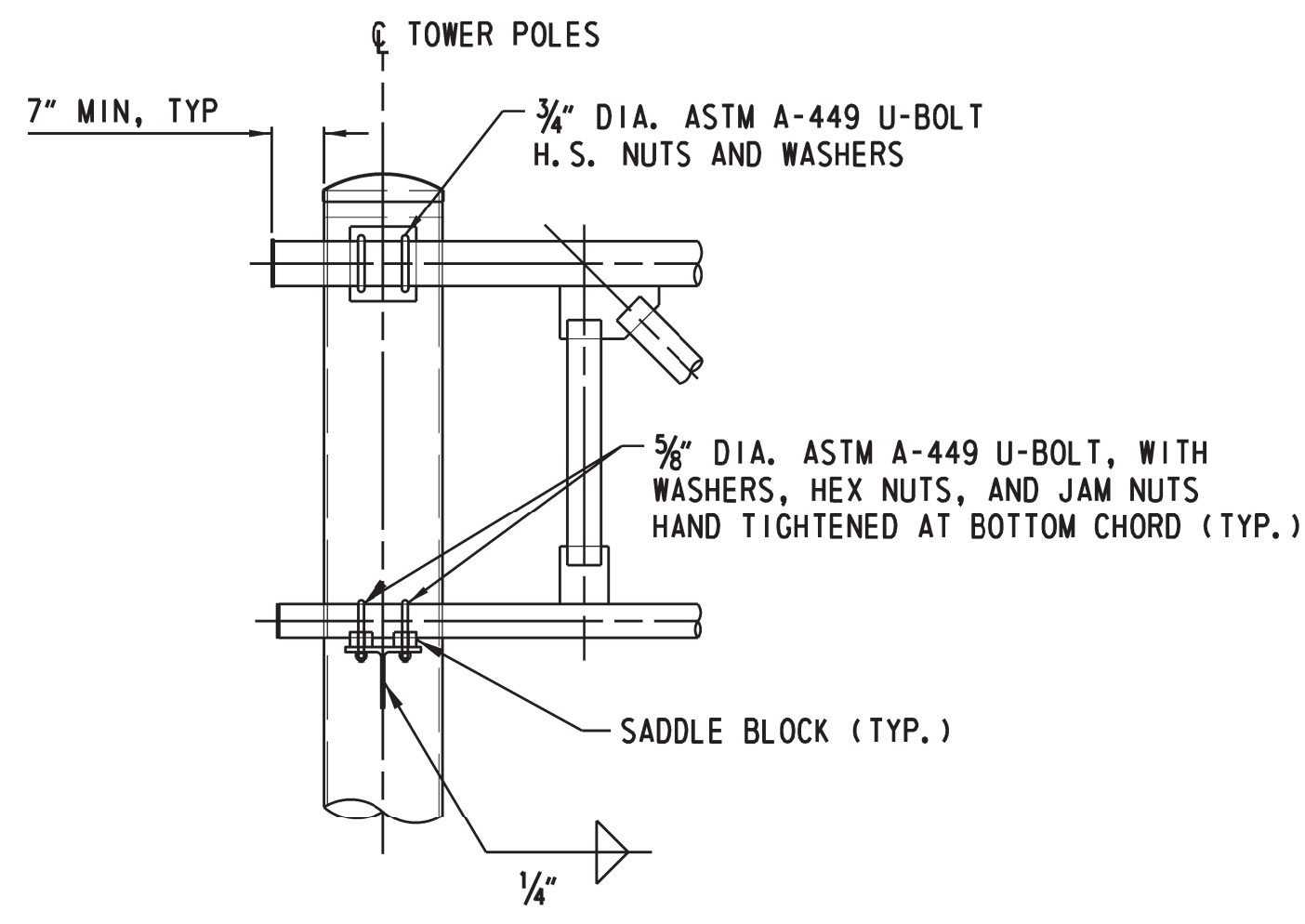
ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: AB
	CHECKED BY: CAM

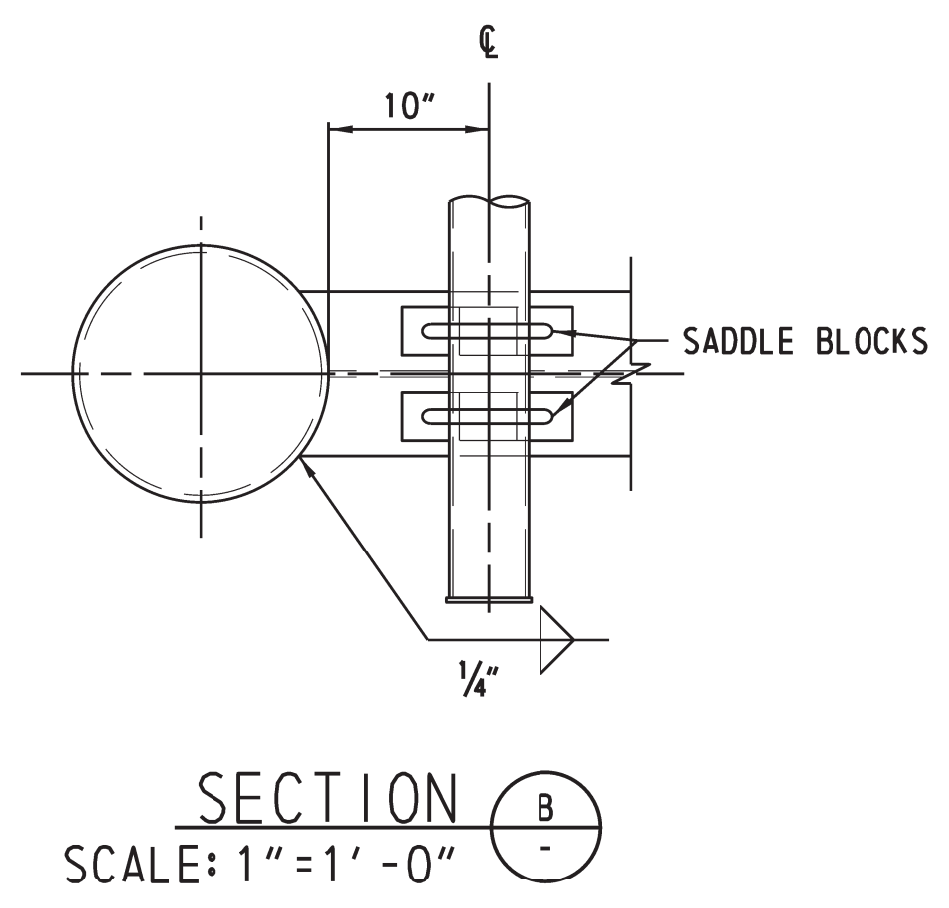
SHEET NO. 820
TOTAL SHTS. 850



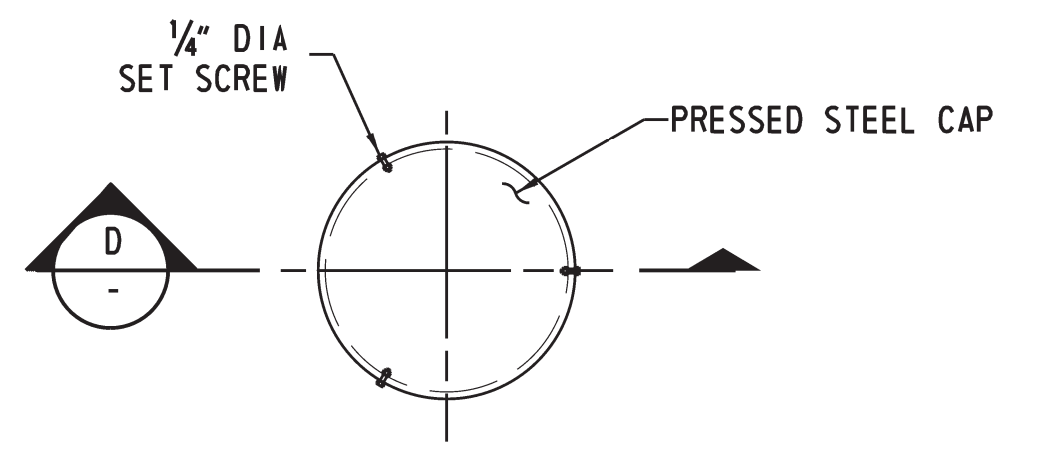
TOWER ELEVATION  
SCALE: 1/2"=1'-0"



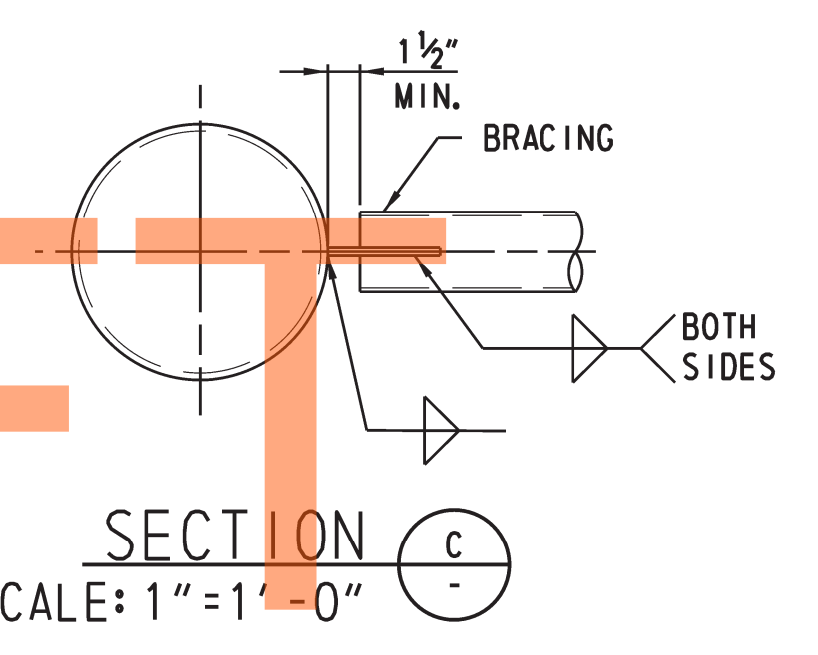
SECTION A  
SCALE: 1/2"=1'-0"



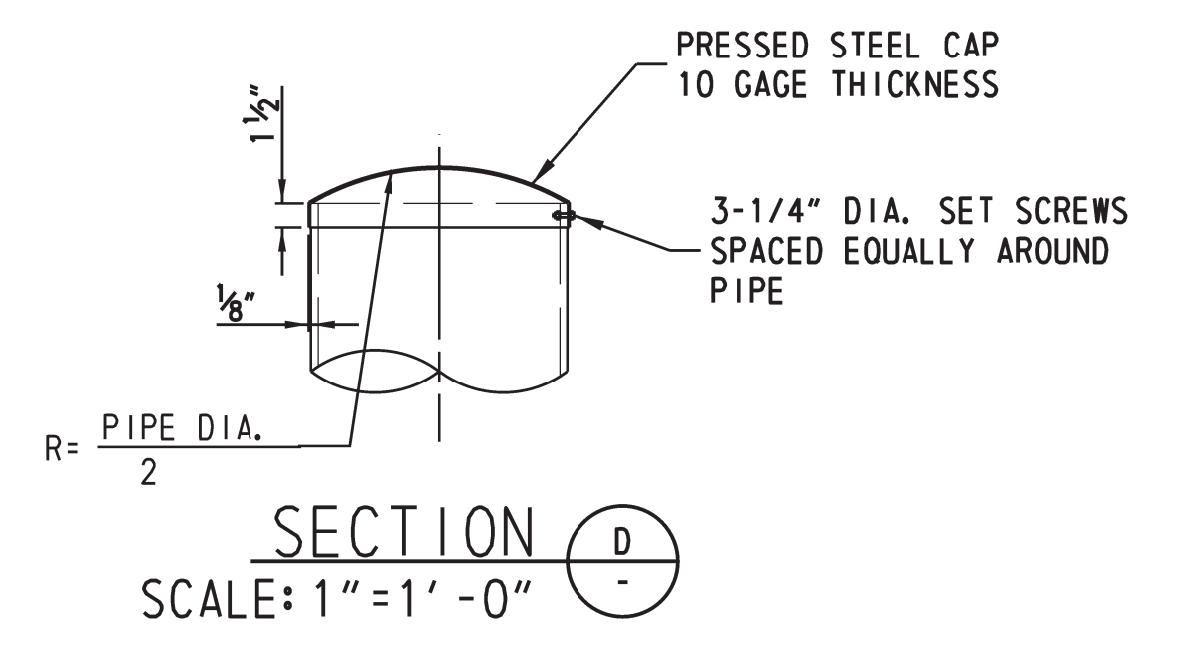
SECTION B  
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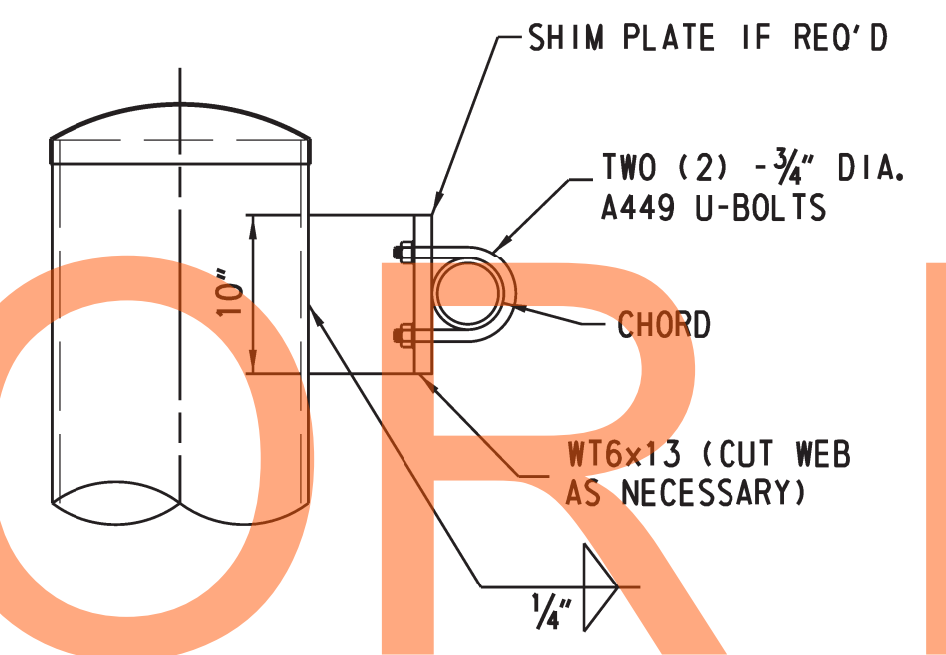
PIPE CAP DETAIL  
SCALE: 1"=1'-0"



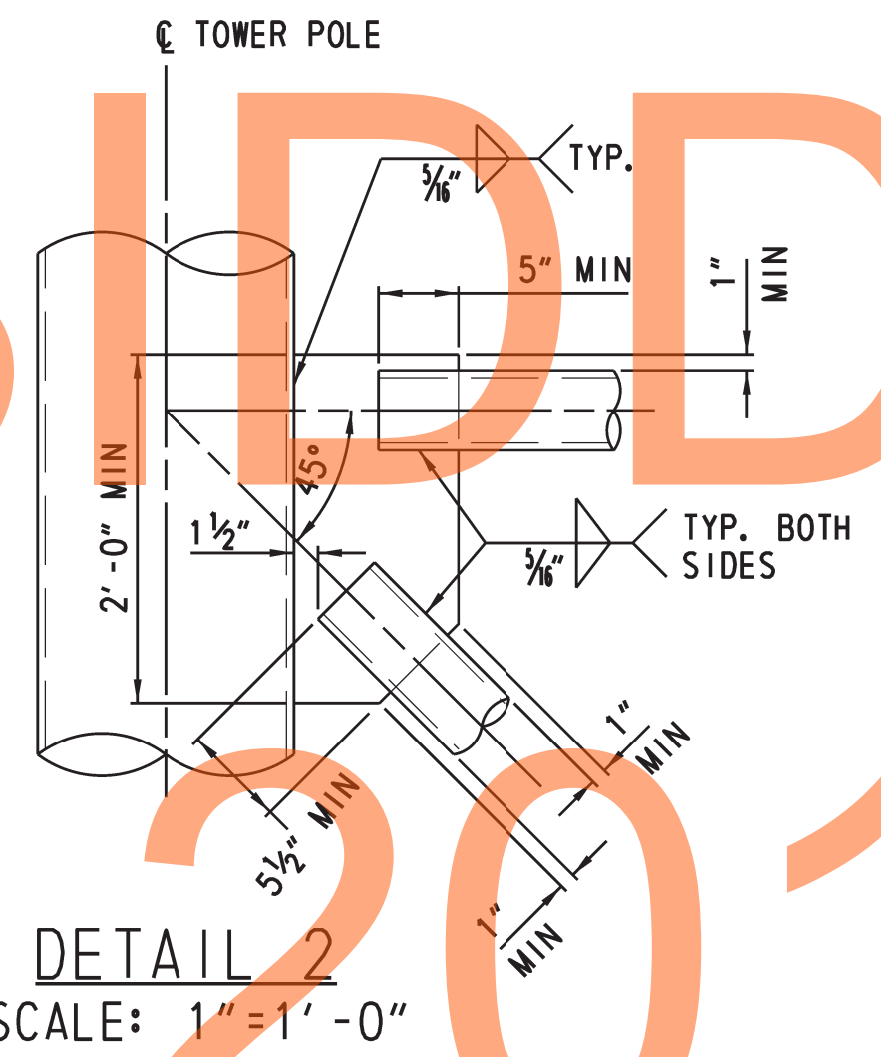
SECTION C  
SCALE: 1"=1'-0"



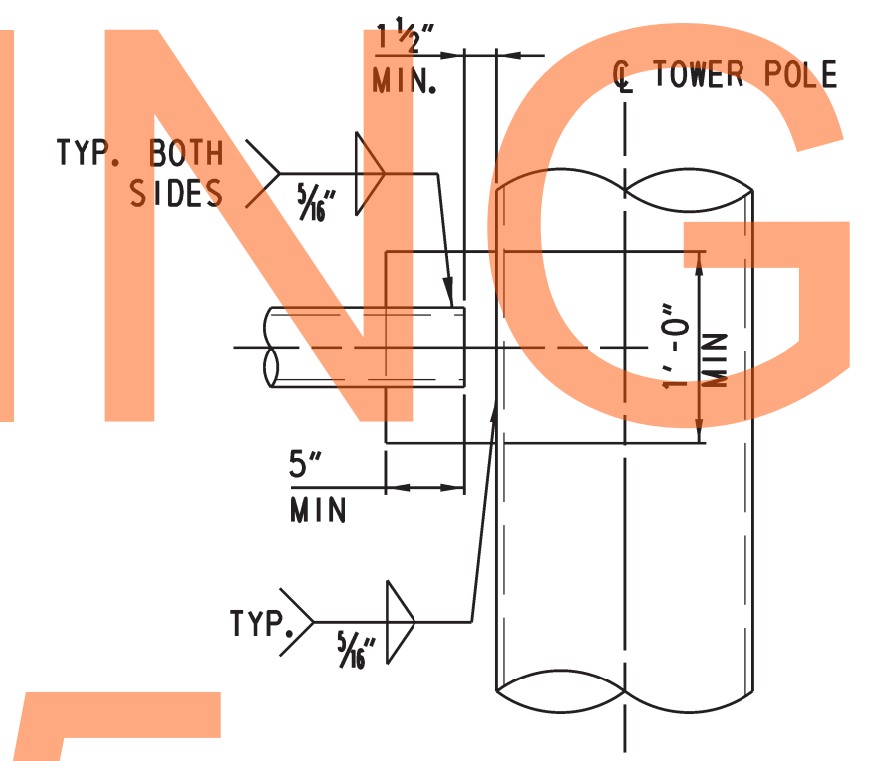
SECTION D  
SCALE: 1"=1'-0"



DETAIL 1  
SCALE: 1"=1'-0"

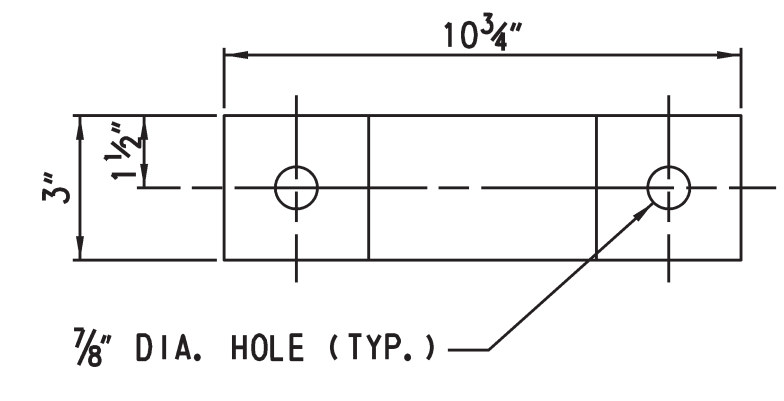


DETAIL 2  
SCALE: 1"=1'-0"

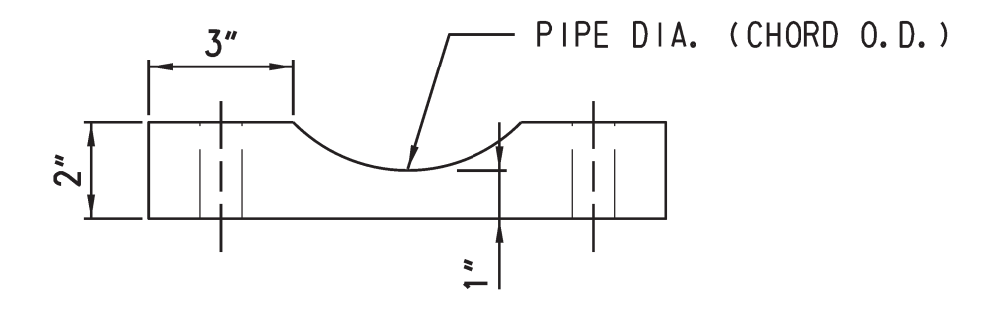


DETAIL 3  
SCALE: 1"=1'-0"

SEE BASE PLATE DETAIL ON SHEET ST-04



PLAN



ELEVATION

SADDLE BLOCK DETAIL  
SCALE: 3"=1'-0"

NOTES:

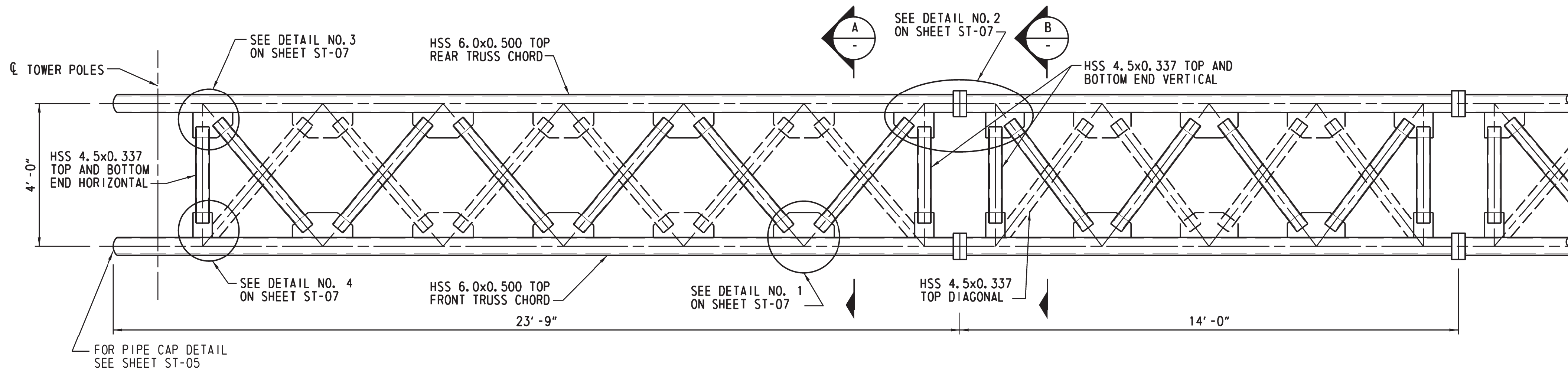
1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. FOR BASE PLATE, ANCHOR BOLT AND ANCHOR PLATE DETAILS, SEE SHEET ST-04,
3. FOR COPE HOLE DETAILS, SEE SHEET ST-07.
4. TO PREVENT INTERSECTING FILLET WELDS ON OPPOSITE SIDES OF COMMON PLANE, PROVIDE A WELD "HOLDBACK" AT THE EDGE OF THE GUSSET PLATE IN THE BRACING MEMBERS EQUAL TO THE MINIMUM WELD SIZE REQUIRED. ENSURE MINIMUM TOTAL WELD LENGTHS ARE ACHIEVED.

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ADDENDUMS / REVISIONS

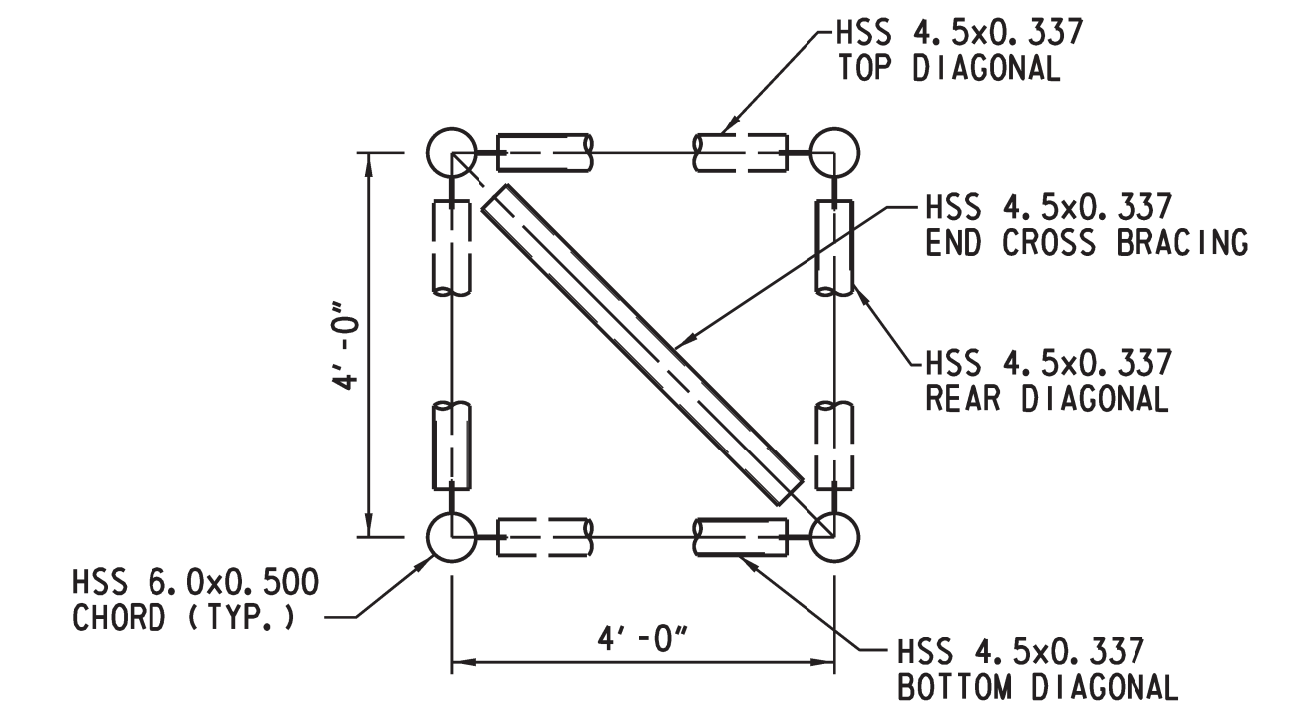
CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: AB
	CHECKED BY: CAM

ST-05	
SHEET NO.	821
TOTAL SHTS.	850

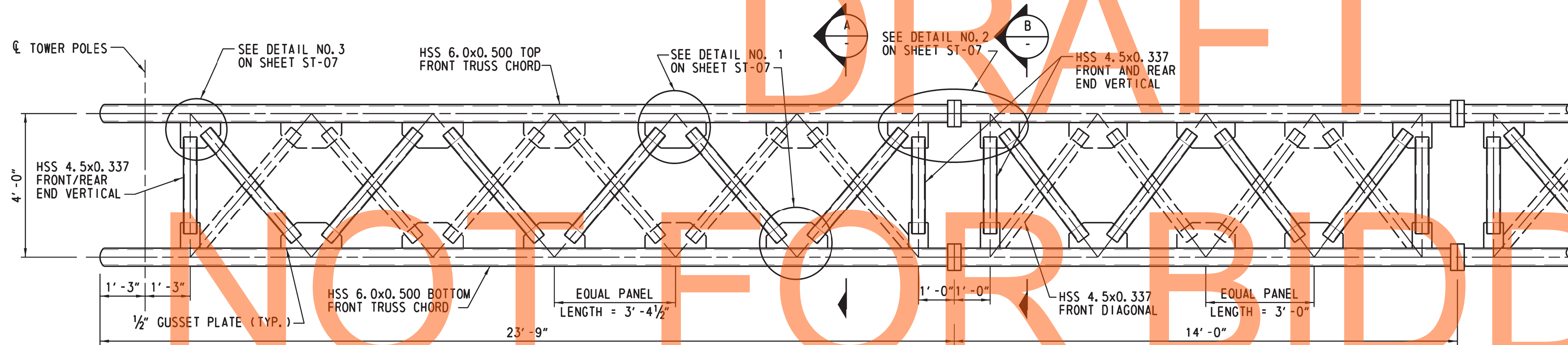


TOP VIEW OF TRUSS

SCALE: 1/2" = 1' - 0"

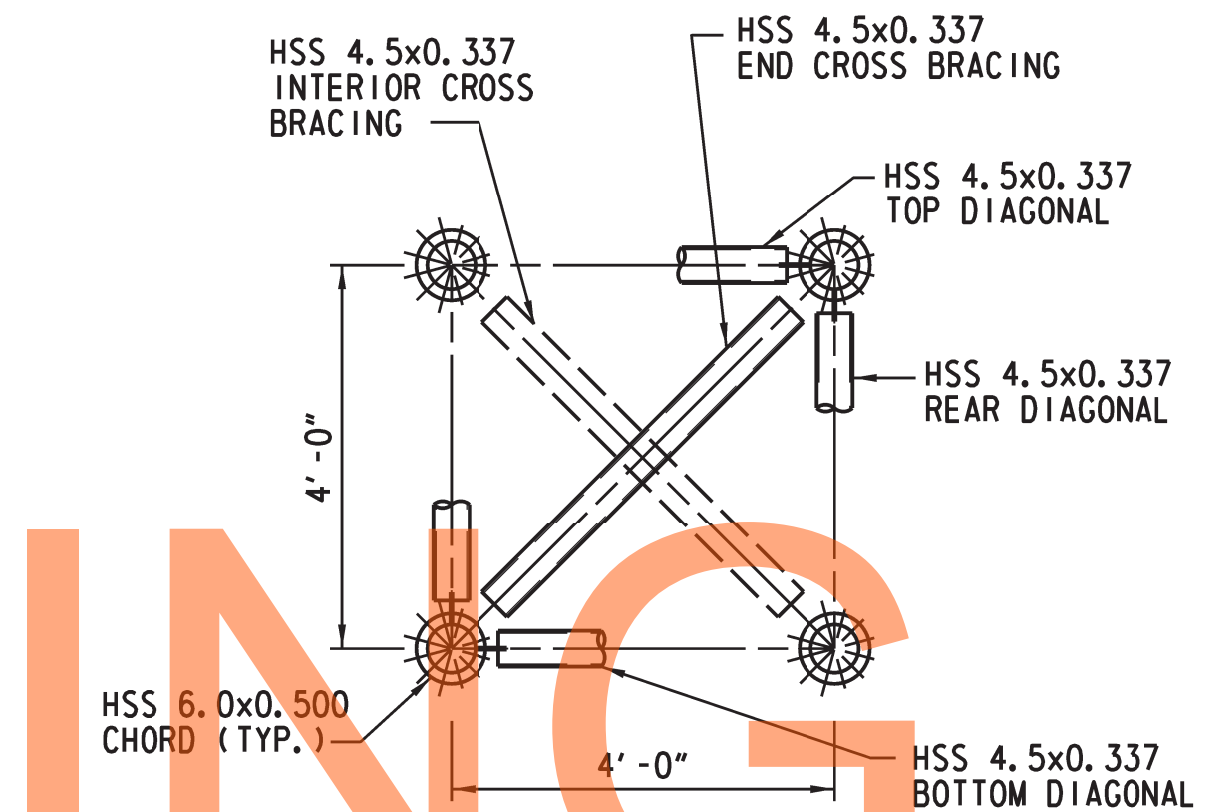


SECTION A  
SCALE: 1/2" = 1' - 0"



FRONT VIEW OF TRUSS

SCALE: 1/2" = 1' - 0"



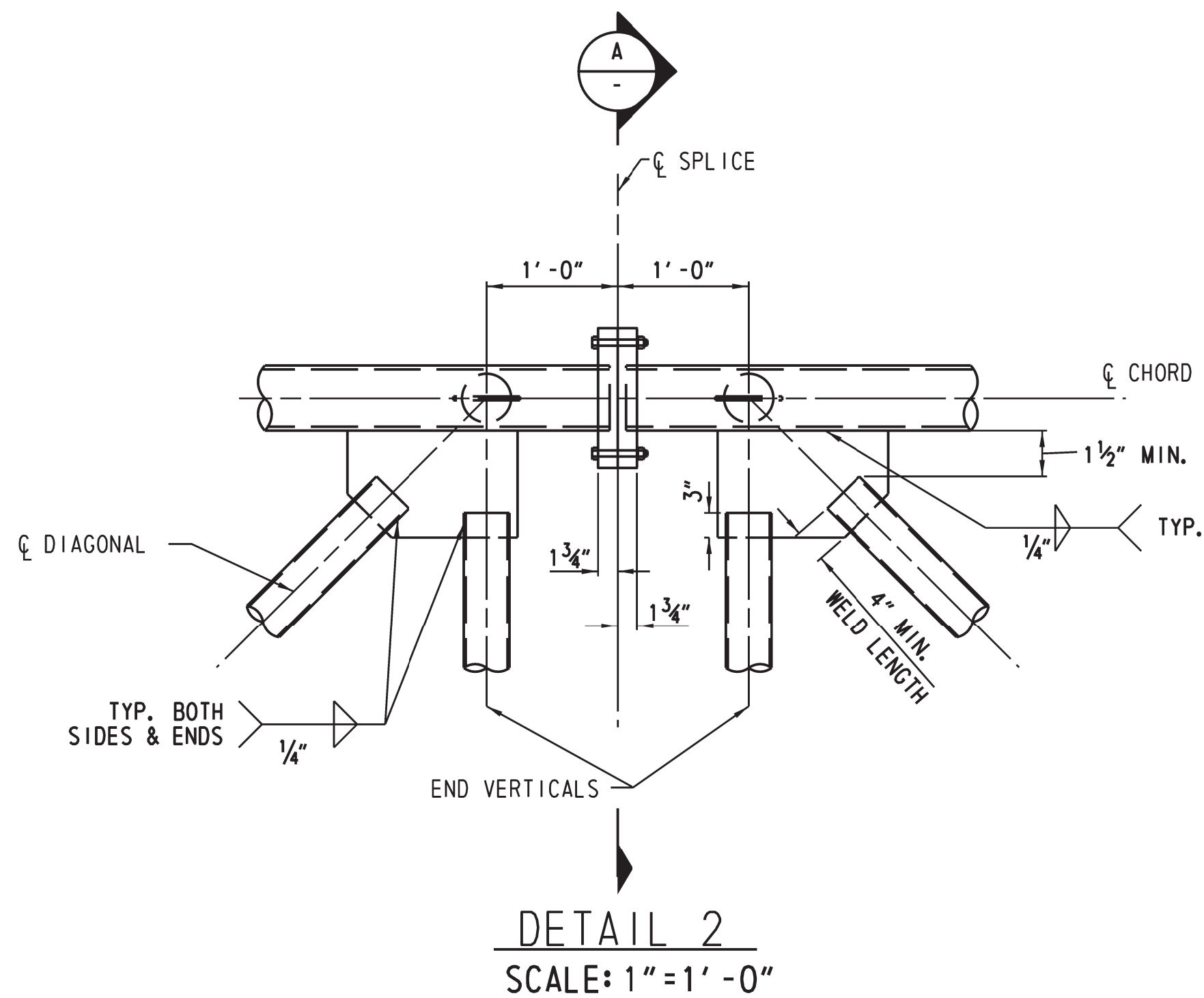
SECTION B  
SCALE: 1/2" = 1' - 0"

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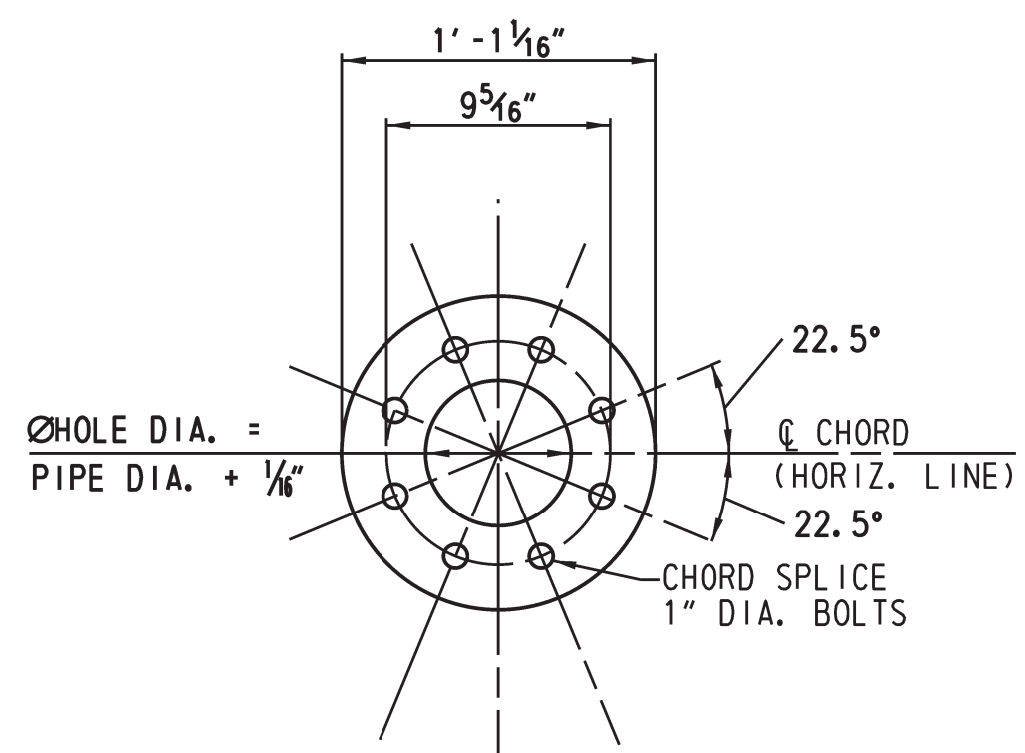
NOTES:

1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. TEMPORARY END FRAME TO BE USED TO PROVIDE ADDITIONAL SUPPORT TO ENDS OF TRUSS CHORDS DURING FABRICATION AND GALVANIZING PROCESSES. REMOVE AND REPAIR GALVANIZING AT POINTS OF CONTACT PRIOR TO TRUSS ASSEMBLY AND ERECTION. TEMPORARY FRAME IS NOT PART OF THE STRUCTURE AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.
3. TRUSSES SHALL BE FABRICATED WITH CAMBER AT THE CENTER OF THE SPAN EQUAL TO THE VALUE GIVEN BY THE CAMBER DIAGRAM ON THE CONTRACT DRAWING. ALL TRUSSES SHALL BE ASSEMBLED IN THE SHOP IN A NO LOAD CONDITION TO ENSURE FIT AT SPLICES AND TO CHECK CAMBER.

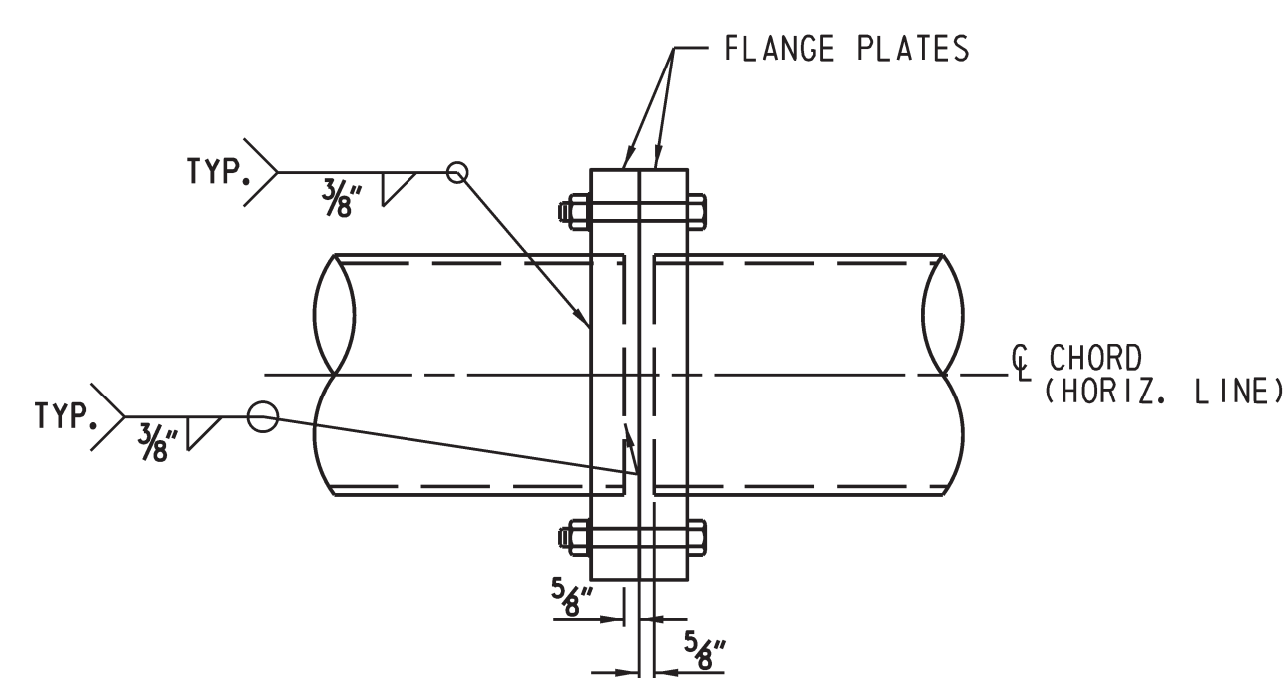
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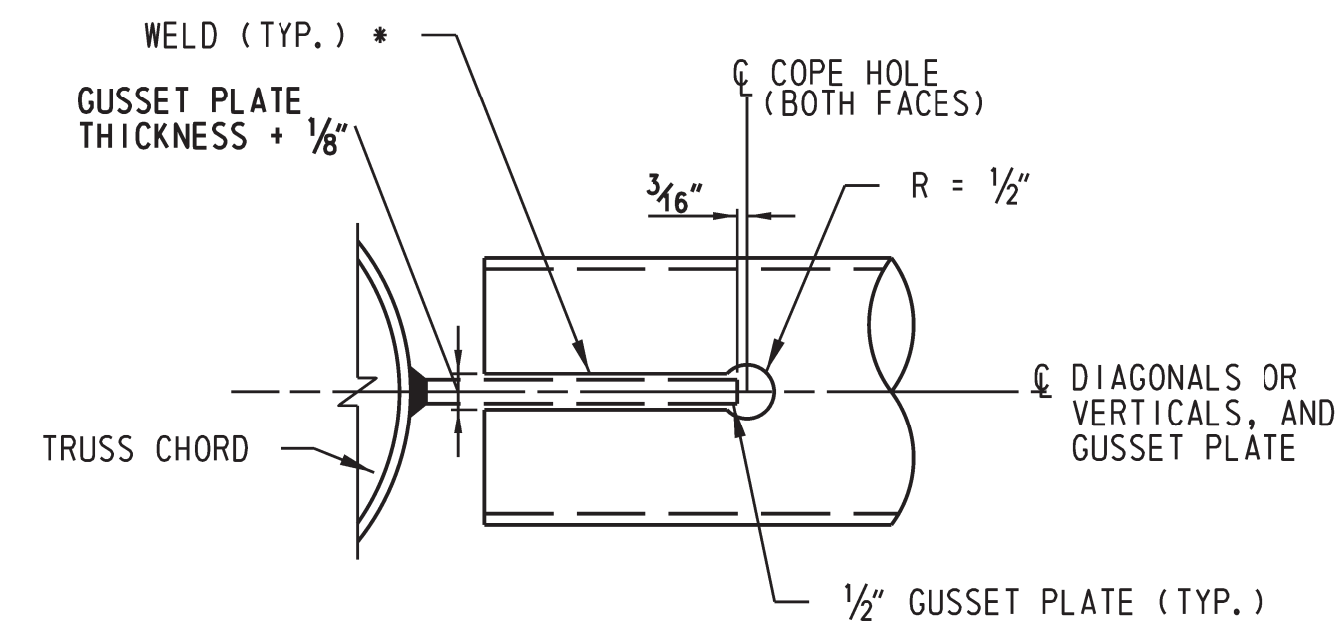
DETAIL 2  
SCALE: 1" = 1' - 0"



SECTION A  
SCALE: 1 1/2" = 1' - 0"

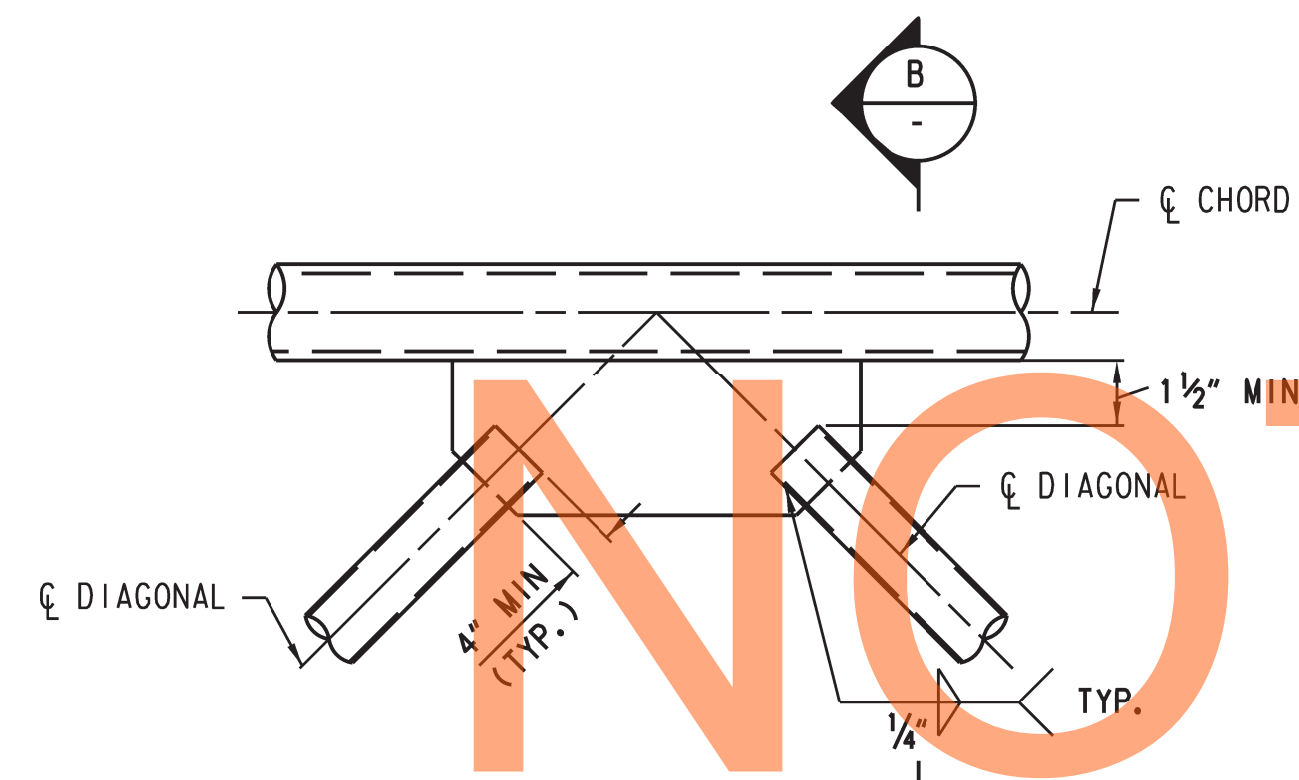


FLANGE SPLICE DETAIL  
SCALE: 1 1/2" = 1' - 0"



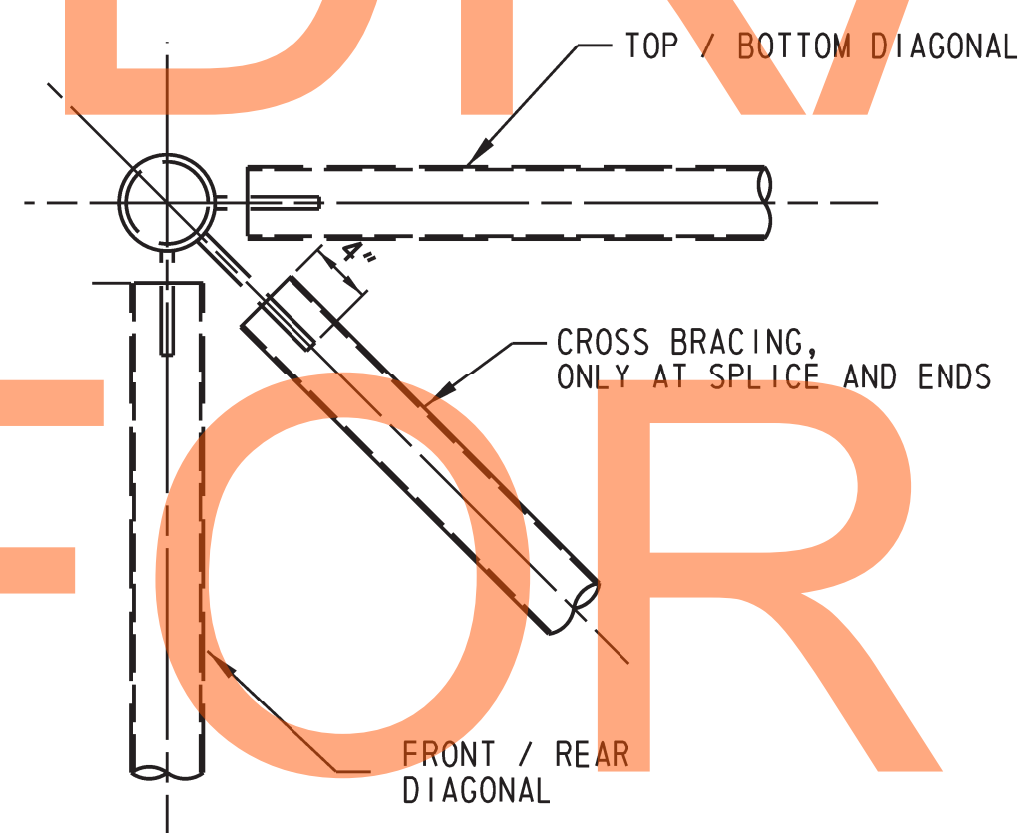
COPE HOLE DETAIL (TYP.)  
SCALE: NTS

\* - PROVIDE A WELD "HOLDBACK" AT THE EDGE OF THE GUSSET PLATE IN THE BRACING MEMBER EQUAL TO THE MINIMUM WELD SIZE REQUIRED.

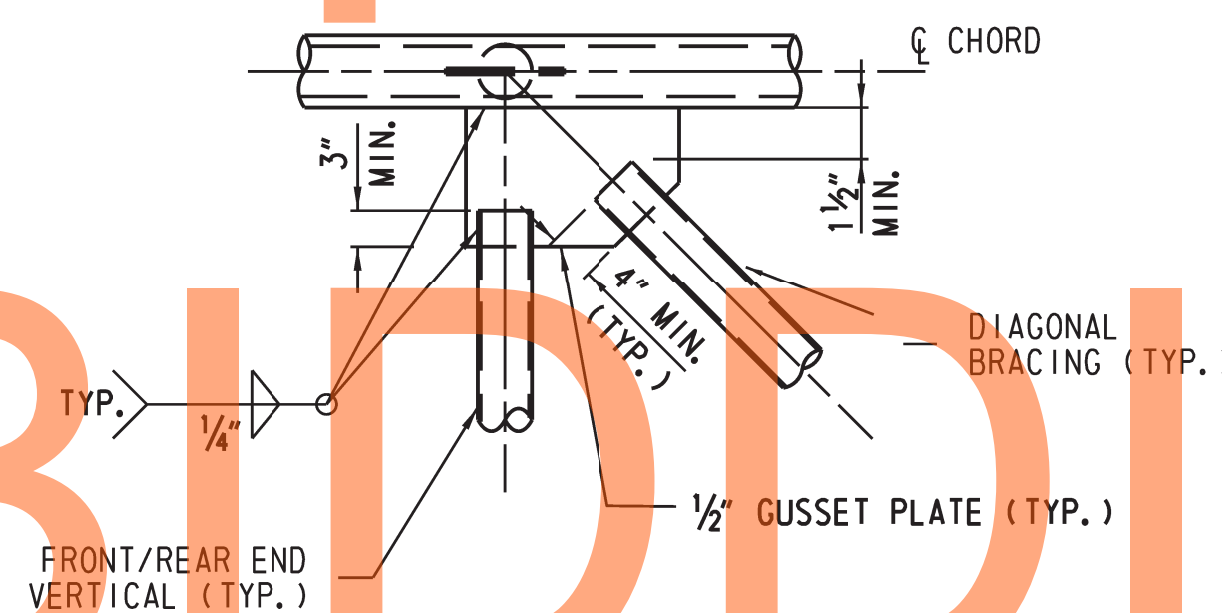


DETAIL 1  
SCALE: 1" = 1' - 0"

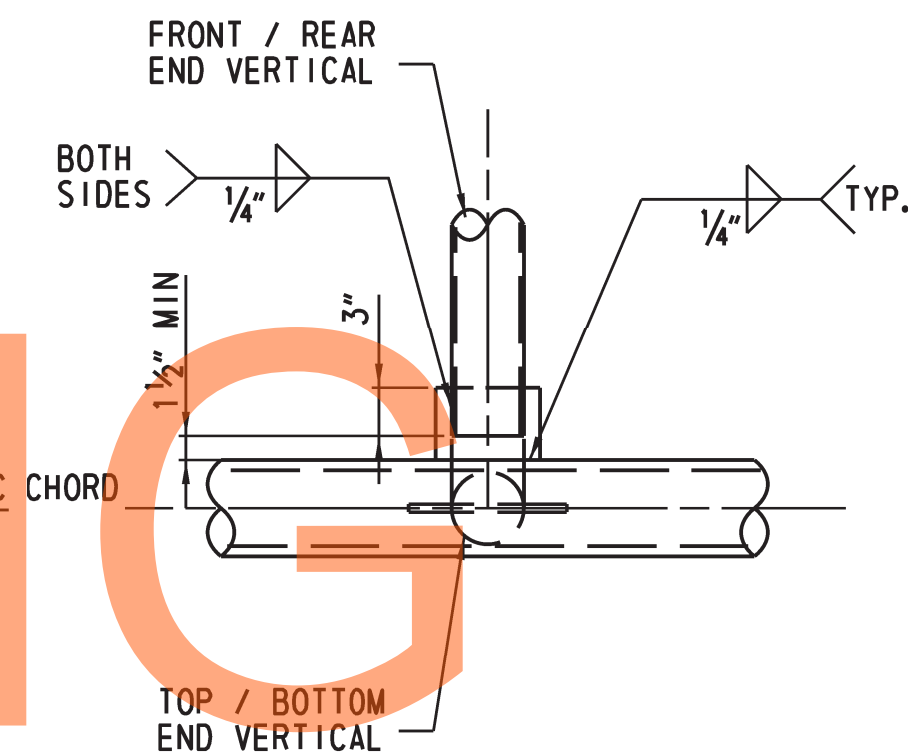
CROSS BRACING ONLY AT SPLICE & ENDS



SECTION B  
SCALE: 1" = 1' - 0"



DETAIL 3  
SCALE: 3/4" = 1' - 0"



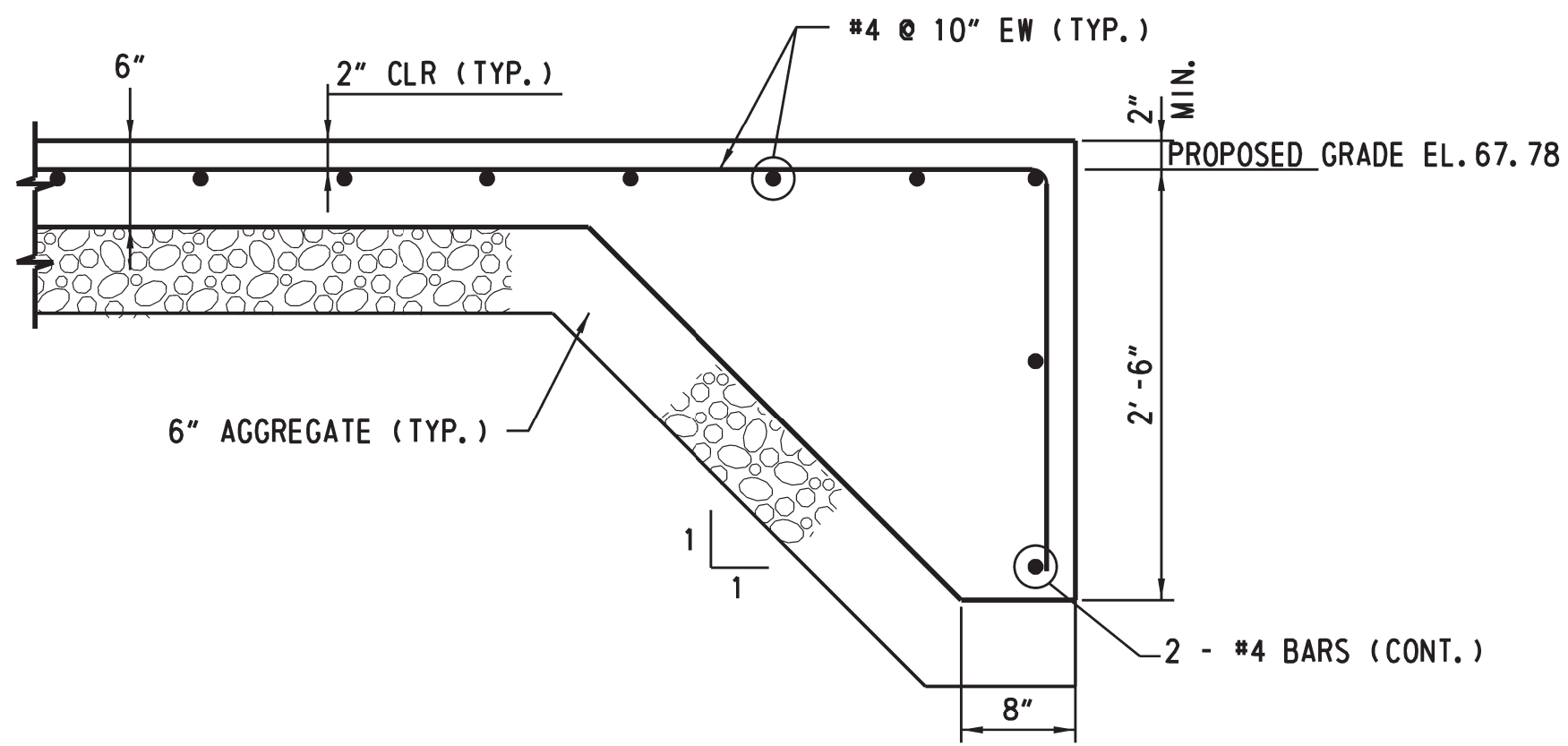
DETAIL 4  
SCALE: 1" = 1' - 0"

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NOTES:

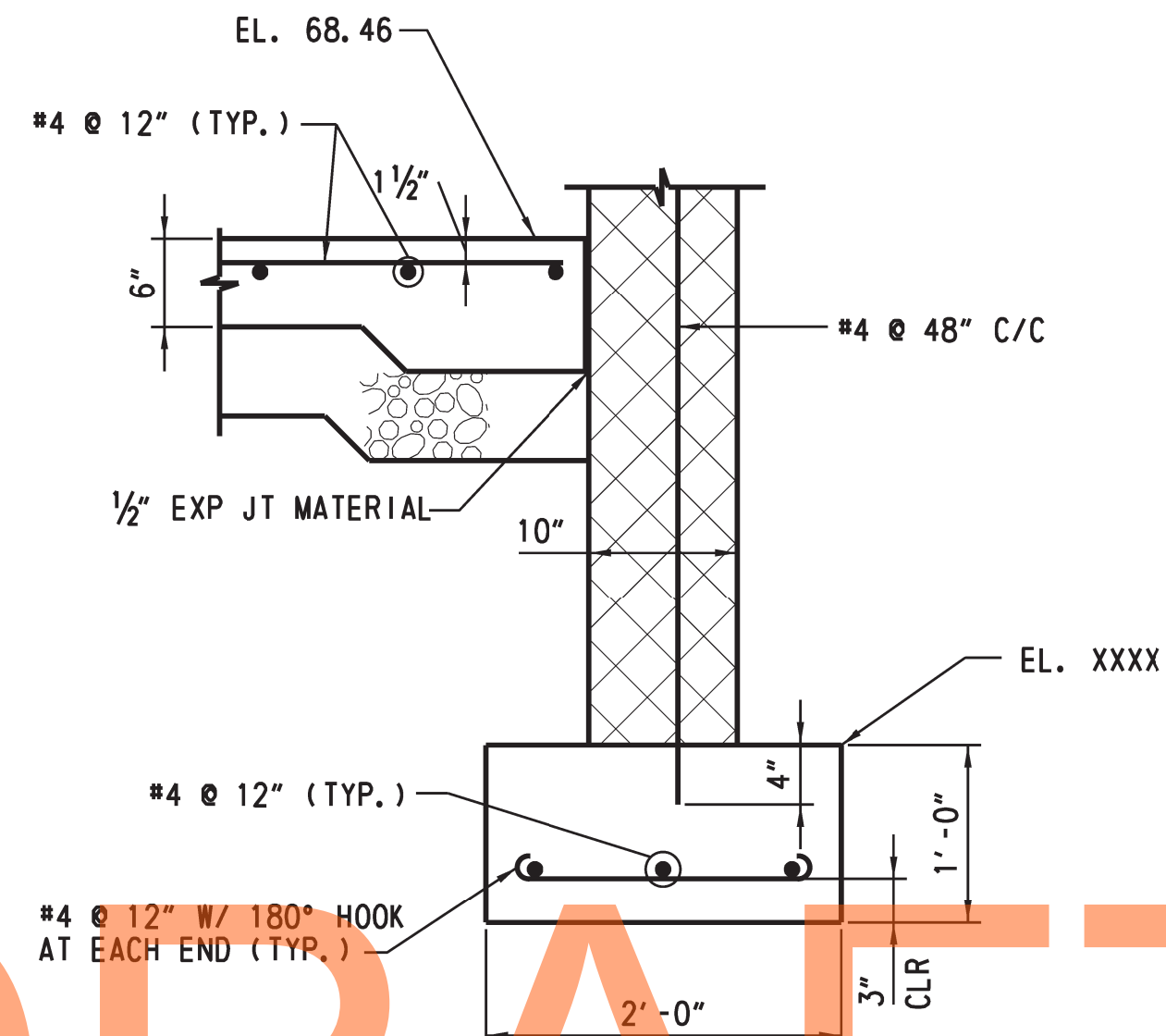
- FOR GENERAL NOTES, SEE SHEET ST-01.
- CHORD SPLICE BOLTS SHALL BE ASTM A325 HIGH STRENGTH STEEL BOLTS, HOLES IN SPLICE PLATE SHALL BE 1/16" LARGER THAN BOLT DIAMETER.
- ASTM A325 SPLICE BOLTS SHALL BE HEAVY HEXAGON TYPE AND SHALL BE FURNISHED WITH HEAVY HEXAGON NUTS AND WASHER.
- THE THREADED PORTION OF THE SPLICE BOLTS SHALL BE EXCLUDED FROM THE SHEAR PLANE OF THE SPLICE.
- TO PREVENT INTERSECTING FILLET WELDS ON OPPOSITE SIDES OF COMMON PLANE, PROVIDE A WELD "HOLDBACK" AT THE EDGE OF THE GUSSET PLATE IN THE BRACING MEMBERS EQUAL TO THE MINIMUM WELD SIZE REQUIRED. ENSURE MINIMUM TOTAL WELD LENGTH ARE ACHIEVED.

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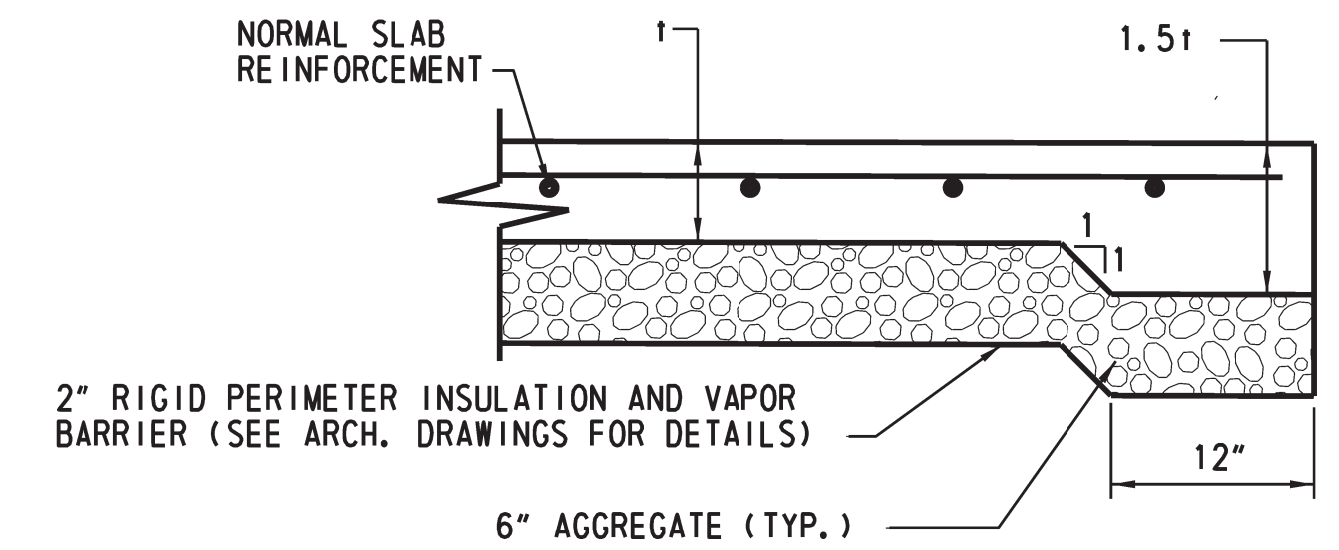
- NOTES:
1. THE DIMENSIONS OF THE GENERATOR PAD ARE 10'-6"x5'-6".
  2. THE DESIGN OF THE GENERATOR PAD IS FOR A 6500 LB. UNIT THAT MEASURES 8'-6"x3'-6". ACTUAL SIZE AND WEIGHT OF GENERATOR SHALL BE COORDINATED WITH THE ELECTRICAL DISCIPLINE.
  3. THE GENERATOR PAD SHALL EXTEND AN ADDITIONAL 1 FT. ON EACH SIDE OF THE APPROVED UNIT.
  4. PROVIDE BONDOUT TO ACCOMMODATE CONDUITS FROM BELOW. COORDINATE SIZE AND LOCATION WITH GENERATOR VENDOR SUBMITTALS.

GENERATOR PAD DETAIL  
SCALE: 1" = 1'-0"

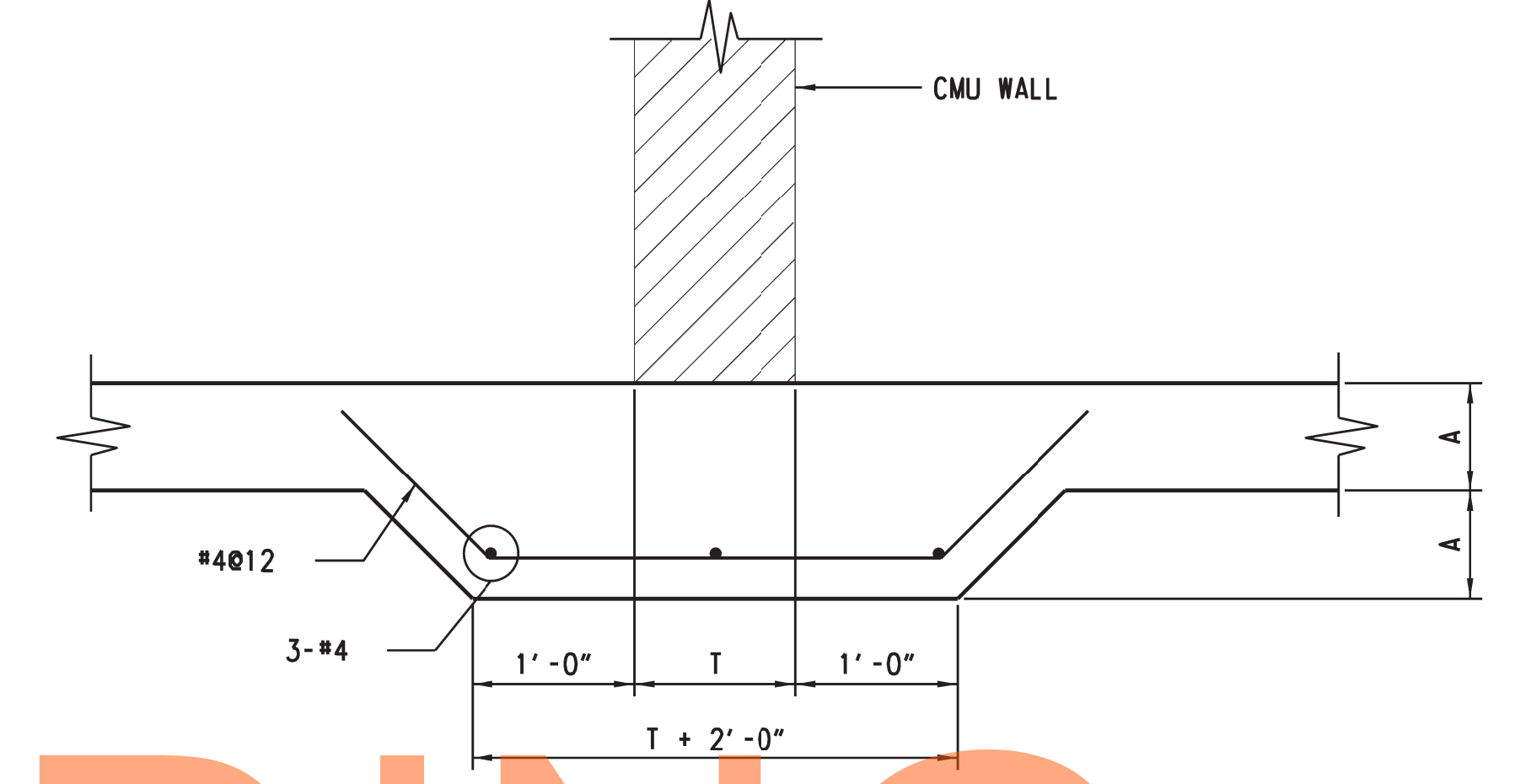


NOTE: FOR EQUIPMENT HUT DETAILS, SEE ARCHITECTURAL DRAWINGS

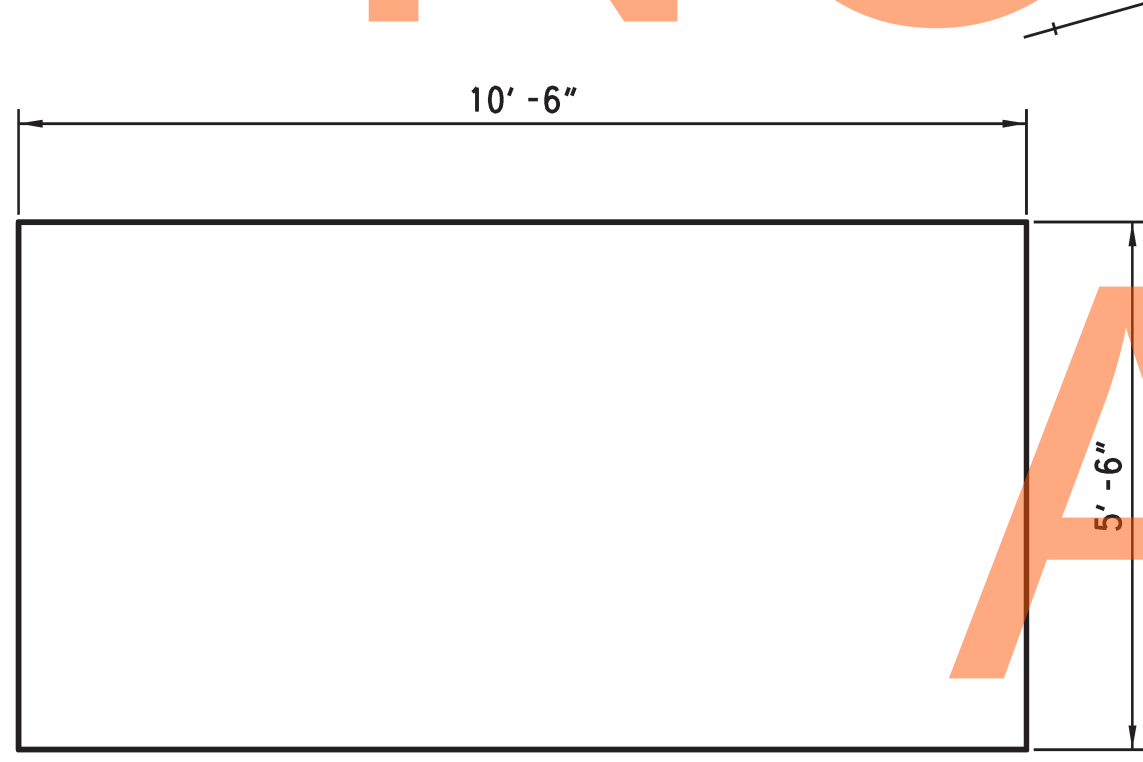
EQUIPMENT HUT DETAIL  
SCALE: 1" = 1'-0"



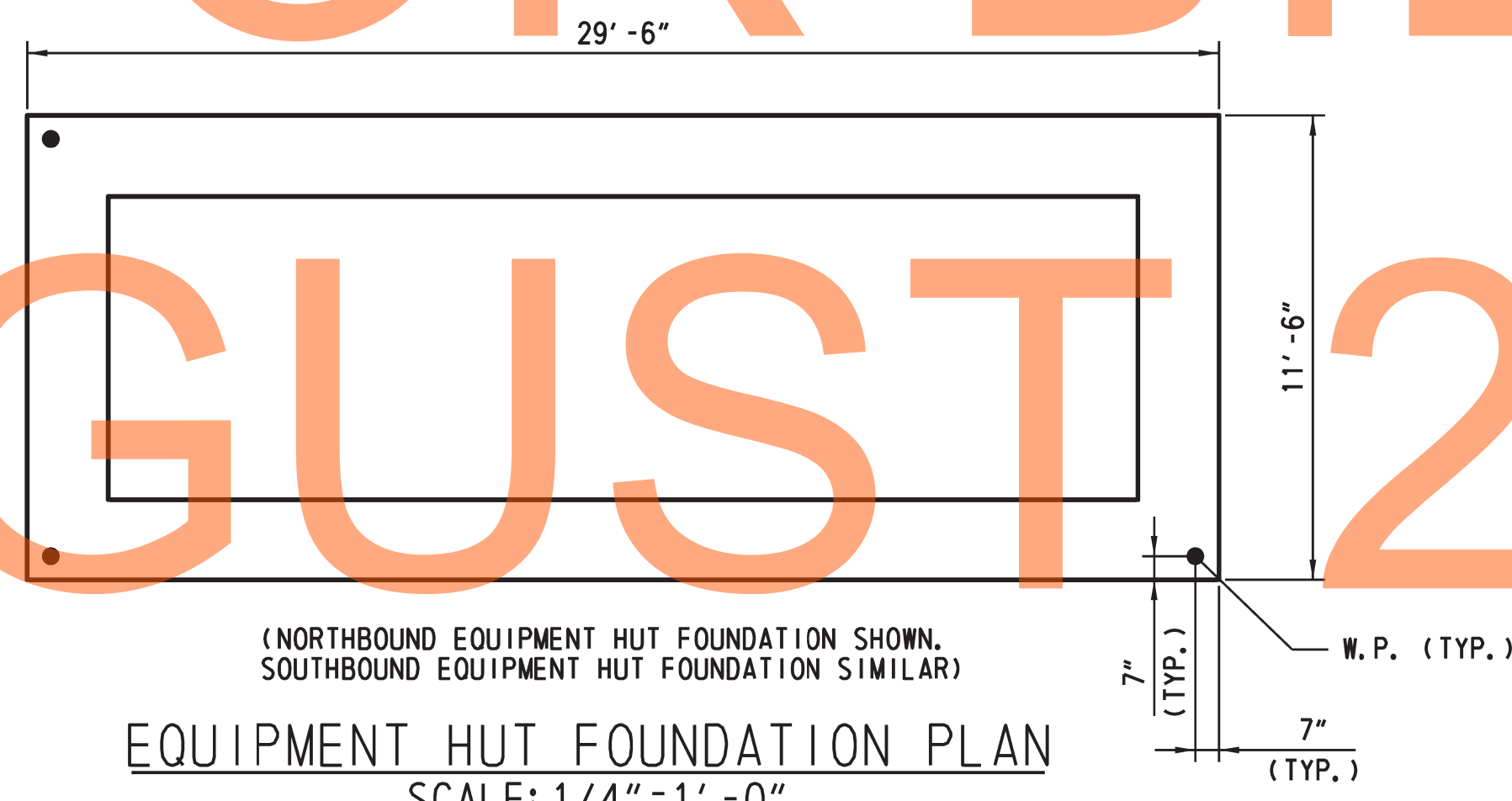
THICKENED SLAB EDGE  
SCALE: NTS



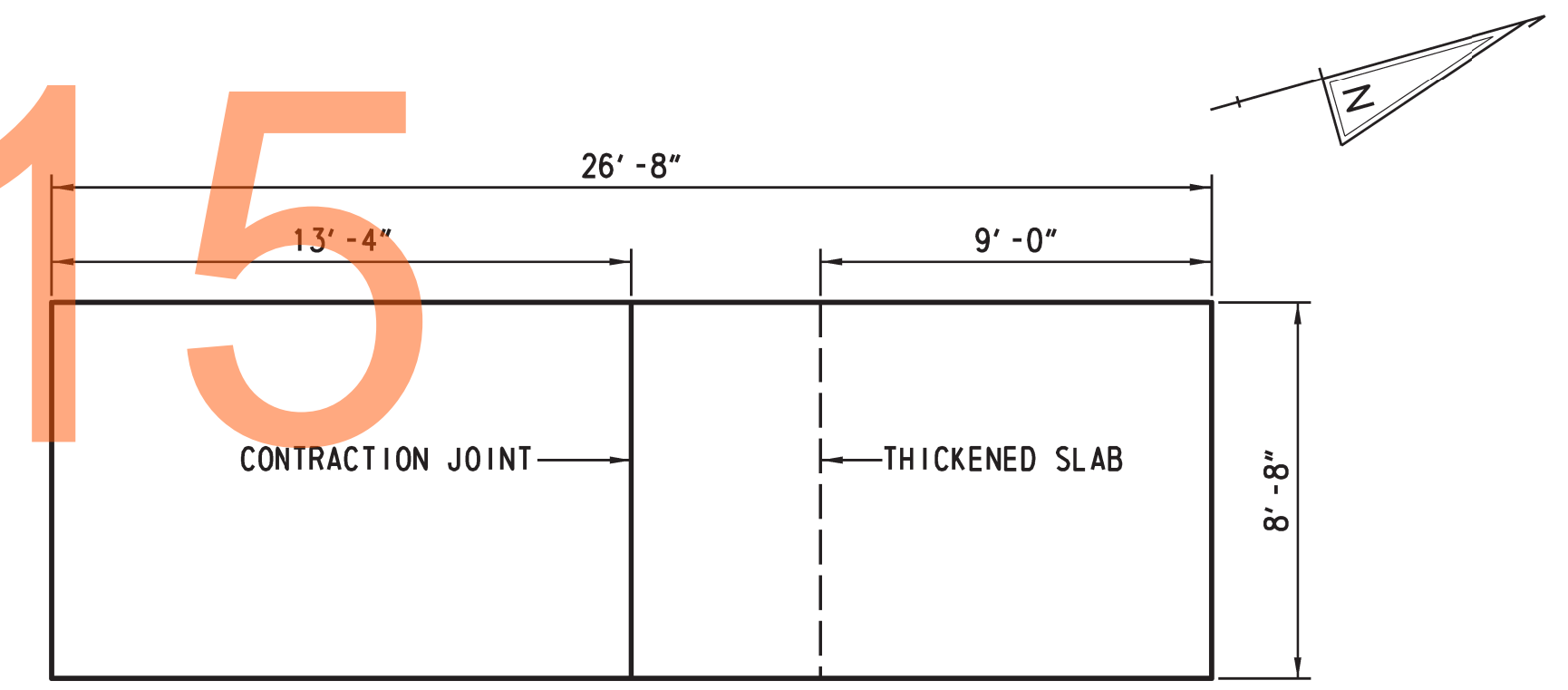
THICKENED SLAB AT MASONRY WALLS  
SCALE: NTS



GENERATOR PAD PLAN  
SCALE: 1/2" = 1'-0"



(NORTHBOUND EQUIPMENT HUT FOUNDATION SHOWN, SOUTHBOUND EQUIPMENT HUT FOUNDATION SIMILAR)  
EQUIPMENT HUT FOUNDATION PLAN  
SCALE: 1/4" = 1'-0"



(NORTHBOUND EQUIPMENT HUT SLAB SHOWN, SOUTHBOUND EQUIPMENT HUT SLAB SIMILAR)

EQUIPMENT HUT SLAB PLAN  
SCALE: 1/4" = 1'-0"

- NOTES:
1. FOR GENERAL NOTES, REFER TO SHEET ST-01.
  2. FOR LOCATION OF GENERAL PAD AND EQUIPMENT HUT, REFER TO SHEET DT-01
  3. FOR DETAILS OF EQUIPMENT HUT, REFER TO SHEET A-2.
  4. FOR WORKING POINT COORDINATES, REFER TO SHEET ST-02.

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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: CA3
	CHECKED BY: CAM

<b>STRUCTURAL</b> <b>MISC. STRUTURES</b> <b>SECTIONS AND DETAILS</b>	SHEET NO. 824
	TOTAL SHTS. 850

**ABBREVIATIONS**

(NOT ALL ABBREVIATIONS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

ABV ABOVE	ET EXPANSION TANK
AC AIR COMPRESSOR	EUH ELECTRIC UNIT HEATER
ACCU AIR COOLED CONDENSING UNIT	EWT ENTERING WATER TEMPERATURE
ACU AIR CONDITIONING UNIT	EXP EXPANSION
AD ACCESS DOOR	*F DEGREES FAHRENHEIT
AFF ABOVE FINISHED FLOOR	FA FROM ABOVE
AFR ABOVE FINISHED ROOF	FB FROM BELOW
AHU AIR HANDLING UNIT	FC FLEXIBLE CONNECTION
AP ACCESS PANEL	FCU FAN COIL UNIT
APD AIR PRESSURE DROP	FCV FLOW CONTROL VALVE
APPROX. APPROXIMATE	FD FIRE DAMPER/FLOOR DRAIN
AS AIR SEPARATOR	FIN FINISHED
ATC AUTOMATIC TEMPERATURE CONTROL	FL FLANGE
AUTO AUTOMATIC	FLA FULL LOAD AMPS
AVG AVERAGE	FLEX FLEXIBLE
AVS AIR VOLUME MEASUREMENT STATION	FLOOR FLOOR
AWT AVERAGE WATER TEMPERATURE	FM FLOW METER
BCU BUILDING CONTROL UNIT	FO FAIL OPEN
BDD BACK DRAFT DAMPER	FOB FLAT ON BOTTOM
BFP BACK FLOW PREVENTOR	FOT FLAT ON TOP
BG BLAST GATE	FP FIRE PROTECTION
BLDG BUILDING	FPB FAN POWERED BOX
BOL BOTTOM OF LOUVER	FPM FEET PER MINUTE
BOD BOTTOM OF DUCT/BASIS OF DESIGN	FPS FEET PER SECOND
BOI BOTTOM OF INSULATION	FS FLOW SWITCH
BOT BOTTOM	FT FEET, FLASH TANK
BTU BRITISH THERMAL UNIT	FTR FIN TUBE RADIATION
BTUH BRITISH THERMAL UNIT PER HOUR	FV FACE VELOCITY
CA COMPRESSED AIR	GA GAUGE
CAP CAPACITY	GAL GALLON
CAV CONSTANT AIR VOLUME	GALV GALVANIZED
CBV CIRCUIT BALANCING VALVE	GC GENERAL CONTRACTOR
CC COOLING COIL	GPD GALLONS PER DAY
CD CEILING DIFFUSER/CONDENSATE DRAIN	GPH GALLONS PER HOUR
CFM CUBIC FEET PER MINUTE	GPM GALLONS PER MINUTE
CH CHILLER	GRD GROUND
CHP CONCRETE HOUSEKEEPING PAD	GRS/LB GRAINS PER POUND
CHWS CHILLED WATER SUPPLY	GUH GAS FIRED UNIT HEATER
CHWR CHILLED WATER RETURN	H HUMIDIFIER
CI CAST IRON	HC HEATING COIL
CLG CEILING	HD HEAD (PRESSURE IN FEET)
CMU CONCRETE MASONRY UNIT	HOA HAND OFF AUTO SWITCH
CO CLEAN OUT	HORIZ. HORIZONTAL
COL COLUMN	HP HORSEPOWER
COMP COMPRESSOR	HRU HEAT RECOVERY UNIT
CONC CONCRETE	HWHC HOT WATER HEATING COIL
COND CONDENSATE	HWS HOT WATER SUPPLY
CONN CONNECTION	HWR HOT WATER RETURN
CONTD CONTINUED	HVAC HEATING VENTILATION AND AIR CONDITIONING
CONV CONVECTOR	HVU HEATING AND VENTILATION UNIT
COP COEFFICIENT OF PERFORMANCE	HX HEAT EXCHANGER
CT COOLING TOWER	HZ HERTZ
CU CONDENSING UNIT	H2O WATER
CUH CABINET UNIT HEATER	ID INSIDE DIMENSION
CV CONSTANT AIR VOLUME BOX	IN INCHES
CVS CONTROL VALVE STATION	INFO INFORMATION
CW COLD WATER	IN WG INCHES IN WATER COLUMN
D DAMPER	INV INVERT
DDC DIRECT DIGITAL CONTROL	IPLV INTEGRATED PART LOAD VALUE
DEPT DEPARTMENT	KE KITCHEN EXHAUST
DIA DIAMETER	KEH KITCHEN EXHAUST HOOD
DIAG DIAGRAM	KW KILOWATT
DIFF DIFFERENTIAL	L LENGTH
DISC DISCONNECT	LAT LEAVING AIR TEMPERATURE
DIV DIVISION	LBG LINEAR BAR GRILLE
DIW DOWN IN WALL	LBS POUNDS
DL DOOR LOUVER	LBS/HR POUNDS PER HOUR
DN DOWN	LD LINEAR DIFFUSER
DWG DRAWING	LDB LEAVING DRY BULB TEMPERATURE
DX DIRECT EXPANSION	LIN LINEAR
DPI DIFFERENTIAL PRESSURE INDICATOR	LRA LOCKED ROTOR AMPS
DPT DIFFERENTIAL PRESSURE TRANSMITTER	LVR LOUVER
(E),EXIST EXISTING	LWB LEAVING WET BULB TEMPERATURE
EA EACH OR EXHAUST AIR	LWT LEAVING WATER TEMPERATURE
EAT ENTERING AIR TEMPERATURE	M MOTOR
EAV EXHAUST AIR VALVE	MAU MAKE UP AIR UNIT
ECC ECCENTRIC	MAX MAXIMUM
EDB ENTERING DRY BULB	MB MIXING BOX
EDH ELECTRIC DUCT HEATER	MBH THOUSANDS OF BTU PER HOUR
EER ENERGY EFFICIENCY RATING	MC MECHANICAL CONTRACTOR
EF EXHAUST FAN	MD MOTORIZED DAMPER
EG EXHAUST GRILLE	MED MEDIUM
EL ELEVATION	MER MECHANICAL EQUIPMENT ROOM
ELEC ELECTRIC	MFR MANUFACTURER
EQ EQUAL	MIN MINIMUM
EQUIP EQUIPMENT	MISC MISCELLANEOUS
ER EXHAUST REGISTER	
ES END SWITCH	
ESP EXTERNAL STATIC PRESSURE	

**PIPING ELEMENTS/VALVES**

(NOT ALL ELEMENTS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

	VALVE, SEE SPEC'S
	GLOBE VALVE
	PLUG VALVE, GAS COCK
	BUTTERFLY VALVE
	BALL VALVE
	CHECK VALVE
	GATE VALVE, ANGLE
	GLOBE VALVE, ANGLE
	THREE WAY CONTROL VALVE
	TWO WAY CONTROL VALVE
	SOLENOID VALVE
	PRESSURE REDUCING VALVE (PRV)
	COMBINATION STRAINER AND SHUT OFF VALVE WITH PETES PLUGS
	COMBINATION FLOW CONTROL VALVE AND SHUT OFF VALVE WITH PETES PLUGS
	CIRCUIT BALANCING VALVE
	TEMPERATURE/PRESSURE RELIEF VALVE
	FLEXIBLE CONNECTION
	PIPE GUIDE
	RELIEF/SAFETY VALVE
	AUTOMATIC FILL VALVE
	MANUAL AIR VENT
	AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN)
	FLOW METER-ORIFICE
	DIRECTION OF FLOW
	DIRECTION OF SLOPE
	STRAINER
	STRAINER WITH BLOW OFF VALVE
	BACK-FLOW PREVENTOR
	PIPE RISING UP
	PIPE DROPPING DOWN
	TEE OUTLET DOWN
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION - SCREWED OR FLANGED
	BLIND FLANGE
	PIPE ANCHOR
	EXPANSION JOINT
	AQUASTAT
	ELECTRICALLY TRACED PIPING
	EXPANSION LOOP (WxH)
	PRESSURE / TEMPERATURE TEST STATION
	THERMOMETER

**DUCTWORK**

(NOT ALL COMPONENTS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

	DOUBLE LINE
	FLEXIBLE DUCTWORK
	NEW DUCTWORK - DUCT SIZE INDICATED INCLUDES ALLOWANCE FOR ACOUSTIC LINING WHERE APPLICABLE
	RADIUS ELBOW
	VANED ELBOW
	BRANCH DUCT TAKE-OFF
	RISE OR DROP DIRECTION OF AIR FLOW
	DIFFUSER
	CEILING RETURN/EXHAUST REGISTER (R) OR GRILLE (G)
	SUPPLY AIR GRILLE (G) OR SUPPLY AIR REGISTER (R)
	RETURN AND/OR EXHAUST AIR GRILLE (G) OR REGISTER (R)
	VOLUME DAMPER W / LOCKING QUADRANT
	SMOKE DAMPER W / AD
	FIRE DAMPER W / AD
	FIRE & SMOKE DAMPER W / AD
	MOTORIZED DAMPER (OPPOSED BLADE)
	CENTRIFUGAL FAN
	DOMED FAN
	AXIAL FAN
	AIR VOLUME MEASUREMENT STATION
	THERMOSTAT
	HUMIDISTAT
	SMOKE DETECTOR
	UNDERCUT
	DOOR LOUVER
	CEILING MOUNTED GRILLE OR REGISTER
	DIFFUSER, 4-WAY BLOW
	DIFFUSER, 3-WAY BLOW
	DIFFUSER, 2-WAY BLOW
	DIFFUSER, 1-WAY BLOW
	LINEAR DIFFUSER
	GAS CONCENTRATION MONITOR
	CARBON DIOXIDE MONITOR

**REFERENCE SYMBOLS**

(NOT ALL SYMBOLS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

	QUANTITY
	NON POWERED EQUIPMENT (SEE SCHEDULE)
	EQUIPMENT IDENTITY ABBREVIATION
	OPTIONAL CELL
	FLOW RATE
	EQUIPMENT POWERED WITH LINE VOLTAGE
	EQUIPMENT IDENTITY ABBREVIATION
	EQUIPMENT NUMBER
	SYSTEM NUMBER (IF APPLICABLE)
	INDICATES DETAIL LETTER (APPLIES ONLY WHERE INDICATED ON DRAWINGS)
	INDICATES DRAWING ON WHICH DETAIL APPEARS
	INDICATES SECTION NUMBER
	INDICATES ON WHICH DRAWING SECTION APPEARS
	INDICATES REVISION & NUMBER
	ELEVATION REFERENCE
	CONNECT NEW TO EXISTING
	TERMINATION POINT OF DEMOLITION
	CONNECT TO MANUFACTURER'S PREPIPED CONNECTION
	PREPURCHASED EQUIPMENT
	SHEET NOTE NUMBER (SN)

**LINE DESIGNATIONS**

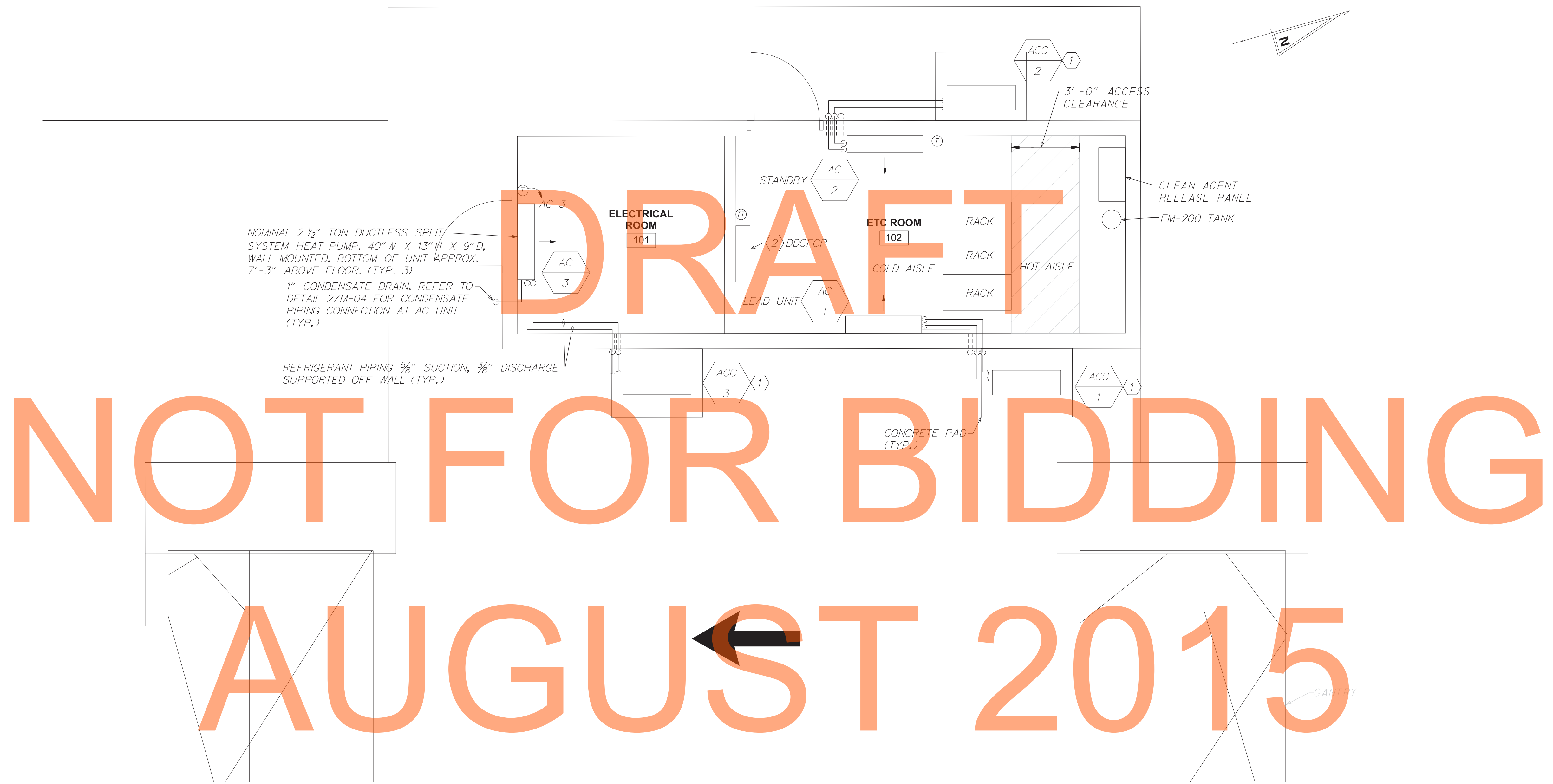
(NOT ALL LINETYPES MAY APPEAR ON THESE CONTRACT DOCUMENTS)

	CONDENSATE DRAIN
	DRAIN
	EXHAUST AIR
	HOT WATER SUPPLY
	HOT WATER RETURN
	NATURAL GAS
	RETURN AIR
	REFRIGERANT LIQUID
	REFRIGERANT SUCTION
	SUPPLY AIR
	VENDOR PROVIDED EQUIP
	LOW VOLTAGE WIRING

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GENERAL NOTES:  
 1. SEE ARCHITECTURAL DWG. A-1 FOR GENERAL NOTES.

SHEET NOTES:  
 ① REFER TO SCHEDULE ON DWG. M-04 FOR ADDITIONAL HEAT PUMP SYSTEM INFORMATION.  
 ② SEE DWG. M-04 FOR ADDITIONAL INFORMATION.



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MECHANICAL HUT PLAN 301 SB  
 SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

ADDENDUMS / REVISIONS

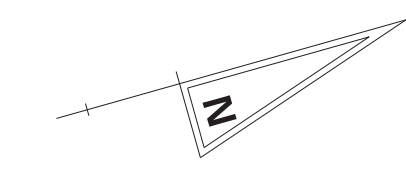
CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: CLG
	CHECKED BY: DWF

<b>M-02</b>
SHEET NO. 826
TOTAL SHTS. 850

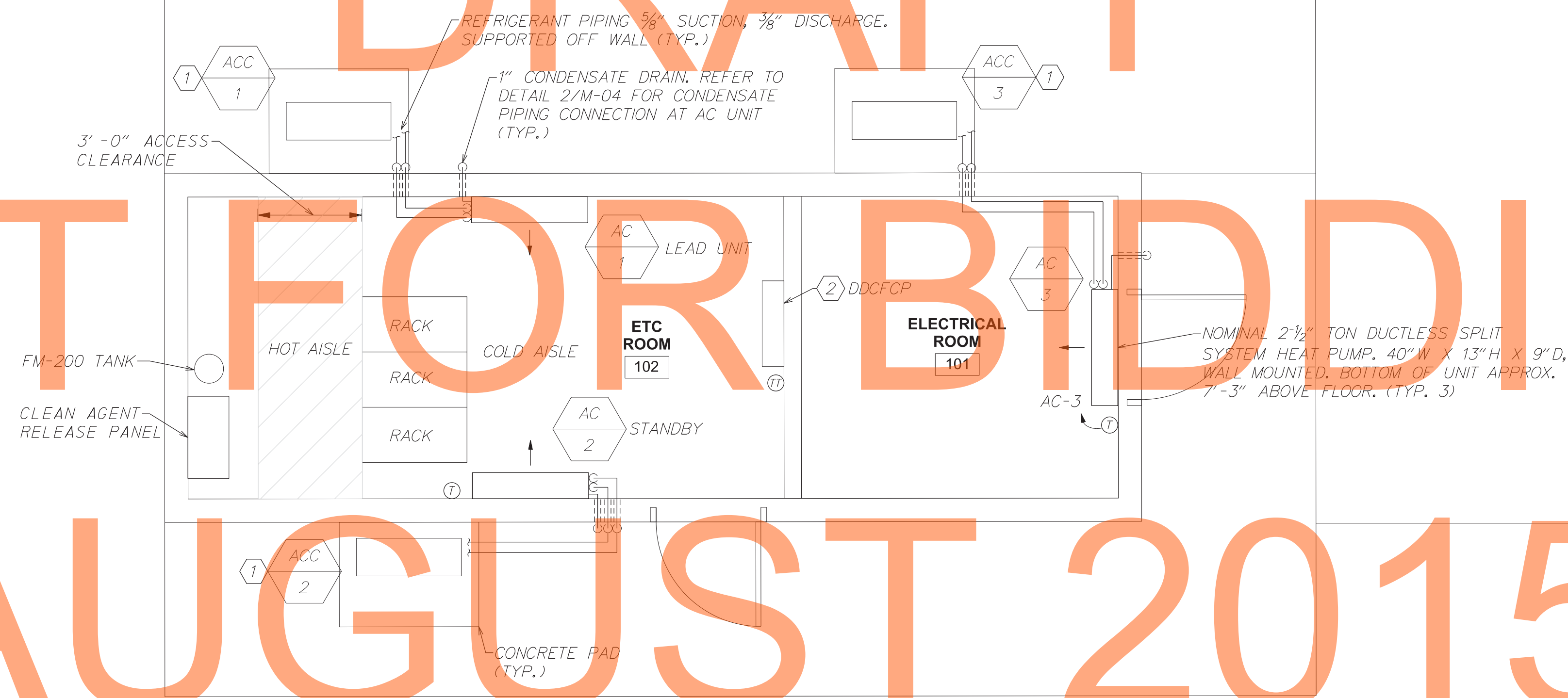


GENERAL NOTES:  
 1. SEE ARCHITECTURAL DWG. A-1 FOR GENERAL NOTES.

SHEET NOTES:  
 (1) REFER TO SCHEDULE ON DWG. M-04 FOR ADDITIONAL HEAT PUMP SYSTEM INFORMATION.  
 (2) SEE DWG. M-04 FOR ADDITIONAL INFORMATION.



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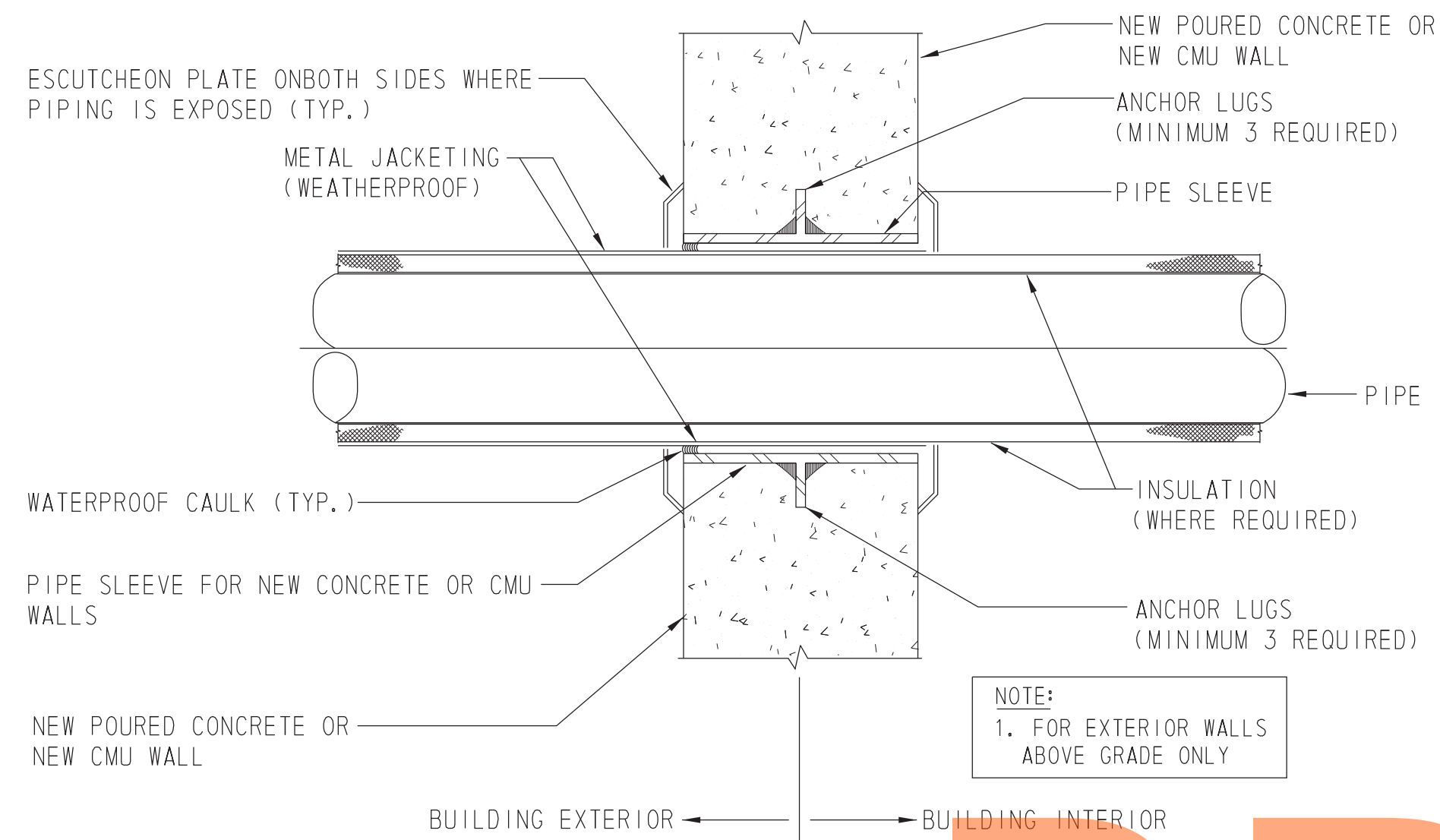
MECHANICAL HUT PLAN 301 NB  
 SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008  
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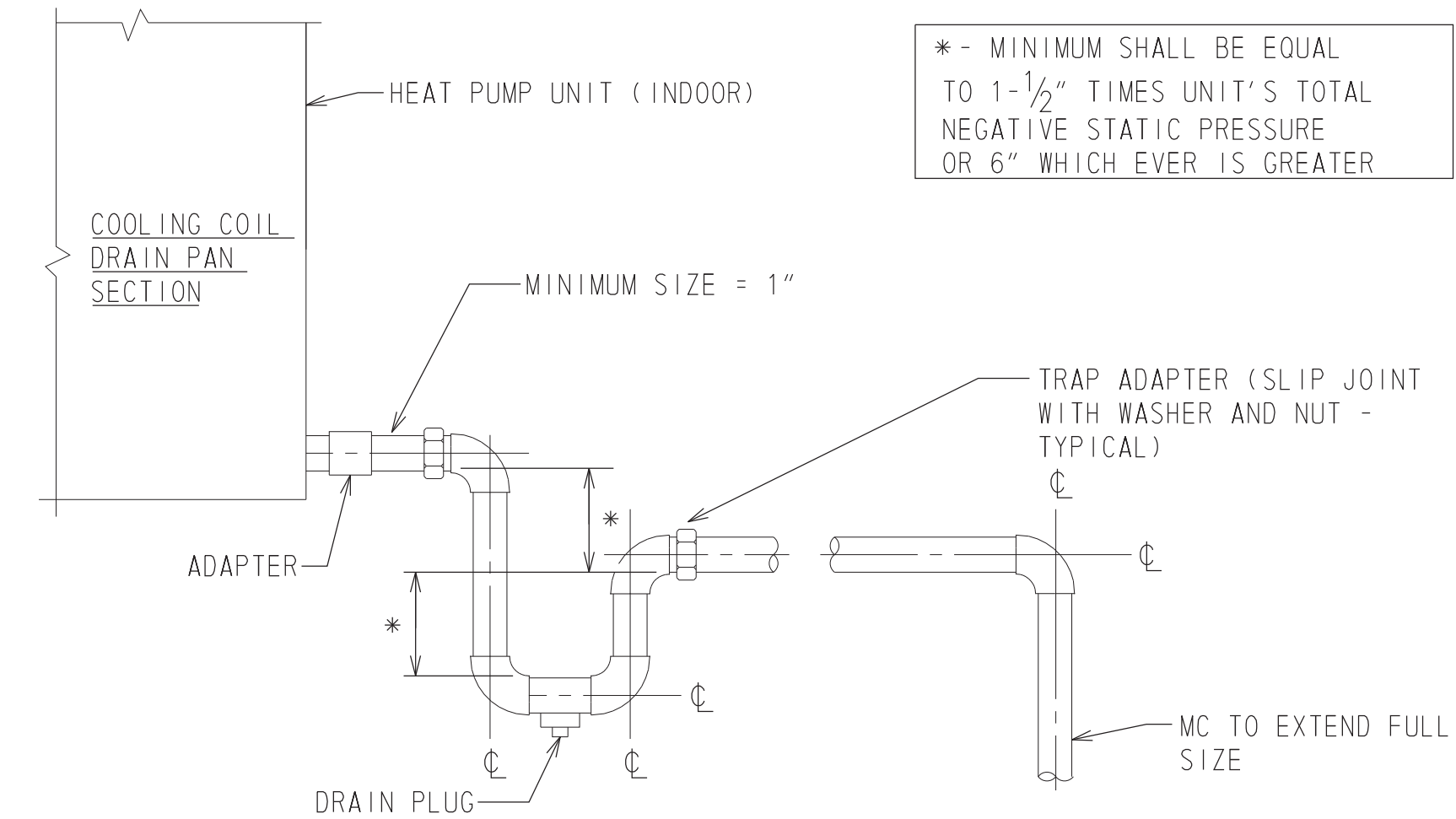
ADDENDUMS / REVISIONS

CONTRACT	BRIDGE NO.
T200811301	DESIGNED BY: CLG
COUNTY	CHECKED BY: DWF
NEW CASTLE	

SHEET NO.
827
TOTAL SHTS.
850

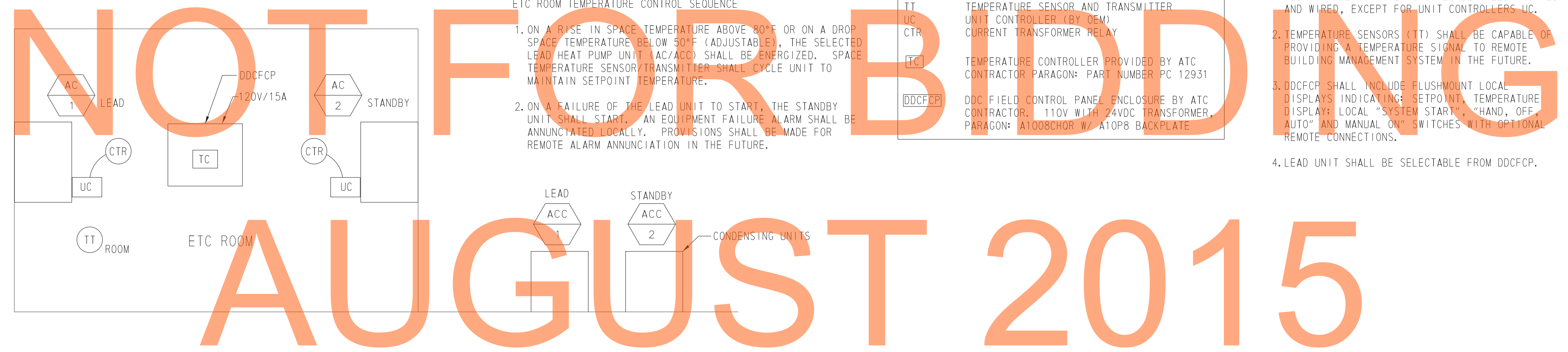


1 PIPE SLEEVE - EXTERIOR WALL ABOVE GRADE  
SCALE: NONE



2 DETAIL - CONDENSATE DRAIN  
SCALE: NONE

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3 ETC ROOM TEMPERATURE CONTROL DIAGRAM/SYMBOLS/NOTES  
SCALE: NONE

SYMBOL LIST	
TT	TEMPERATURE SENSOR AND TRANSMITTER
UC	UNIT CONTROLLER (BY OEM)
CTR	CURRENT TRANSFORMER RELAY
TC	TEMPERATURE CONTROLLER PROVIDED BY ATC CONTRACTOR PARAGON: PART NUMBER PC 12931
DDCFCP	DDC FIELD CONTROL PANEL ENCLOSURE BY ATC CONTRACTOR. 110V WITH 24VDC TRANSFORMER, PARAGON: A1008CHOR W/ A10P8 BACKPLATE

- GENERAL CONTROL NOTES:
1. ALL CONTROL COMPONENTS SHALL BE FIELD MOUNTED AND WIRED, EXCEPT FOR UNIT CONTROLLERS UC.
  2. TEMPERATURE SENSORS (TT) SHALL BE CAPABLE OF PROVIDING A TEMPERATURE SIGNAL TO REMOTE BUILDING MANAGEMENT SYSTEM IN THE FUTURE.
  3. DDCFCP SHALL INCLUDE FLUSHMOUNT LOCAL DISPLAYS INDICATING: SETPOINT, TEMPERATURE DISPLAY; LOCAL "SYSTEM START", "HAND, OFF, AUTO" AND MANUAL ON" SWITCHES WITH OPTIONAL REMOTE CONNECTIONS.
  4. LEAD UNIT SHALL BE SELECTABLE FROM DDCFCP.

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SPLIT SYSTEM HEAT PUMP UNIT SCHEDULE																
UNIT TAG	INDOOR UNIT DATA				OUTDOOR UNIT DATA				ELECTRICAL DATA			MANUFACTURER/MODEL	REMARKS			
	NOMINAL COOLING (MBH)	NOMINAL HEATING (MBH)	MAX AIRFLOW (CFM)	OA (CFM)	DIMENSIONS H/W/D (IN.)	WEIGHT (LBS.)	FAN RPM (CLG/HTG)	DIMENSIONS H/W/D (IN.)	WEIGHT (LBS.)	MAX AMPS HEATING	MAX AMPS COOLING			VOLTS	PHASE	HERTZ
AC-1/ACC-1	30	32	695	-	12-5/8 / 39-1/4 / 9	31	850/850	32-3/4 / 35-3/8 / 13	137	18.5	17	208	1	60	FUJITSU / 30 RLX	SEE NOTES 1 & 2
AC-2/ACC-2	30	32	695	-	12-5/8 / 39-1/4 / 9	31	850/850	32-3/4 / 35-3/8 / 13	137	18.5	17	208	1	60	FUJITSU / 30 RLX	SEE NOTES 1 & 2
AC-3/ACC-3	30	32	695	-	12-5/8 / 39-1/4 / 9	31	850/850	32-3/4 / 35-3/8 / 13	137	18.5	17	208	1	60	FUJITSU / 30 RLX	SEE NOTE 1

- NOTES:
1. FURNISH HEAT PUMP WITH SINGLE POINT POWER CONNECTION, DISCONNECT SWITCH, LOW AMBIENT CONTROL DOWN TO 0°F, THERMOSTAT, AND MOUNTING HARDWARE.
  2. REFER TO ETC ROOM TEMPERATURE CONTROL DIAGRAM ABOVE FOR CONTROL REQUIREMENTS FOR AC-1/ACC-1 AND AC-2/ACC-2.

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VALVE SYMBOLS



PIPING ELEMENT SYMBOLS



DEVICE SYMBOLS



GENERAL NOTES

1. SEE ARCHITECTURAL DRAWING FOR GENERAL NOTES.
2. LEGENDS, SYMBOLS, NOTES AND ABBREVIATIONS SHOWN ON THIS DRAWING PERTAIN TO FIRE PROTECTION DRAWINGS ONLY.
3. COORDINATE WITH OTHER CONTRACTORS FOR CUTTING AND PATCHING OF ALL OPENINGS, EQUIPMENT PADS, PIPE SLEEVES, ETC.
4. PROVIDE OPENINGS THROUGH CONSTRUCTION AND SLEEVES AS REQUIRED.
5. PROVIDE ALL NECESSARY TEMPORARY OR PERMANENT CAPS OR PLUGS FOR PIPING. DO NOT LEAVE PIPING OPEN ENDED.
6. ENTIRE INSTALLATION SHALL MEET THE REQUIREMENTS OF THE FOLLOWING:
  - A. NFPA 2001 - ALL APPLICABLE CHAPTERS
  - B. OWNER'S INSURANCE COMPANY
  - C. LOCAL AND STATE REGULATIONS
7. MAKE ALL NECESSARY SUBMISSIONS AND OBTAIN ALL NECESSARY PERMITS AND APPROVALS, INCLUDING ENGINEER'S APPROVAL PRIOR TO STARTING FABRICATION AND CONSTRUCTION.
8. REFER TO ARCHITECTURAL DRAWINGS FOR ROOM LAYOUTS, ROOM DIMENSIONS, CEILING HEIGHTS, BUILDING CONSTRUCTION, AND OTHER ARCHITECTURAL AND STRUCTURAL DETAILS IMPACTING DESIGN.
9. REFER TO FIRE PROTECTION SPECIFICATIONS FOR REQUIREMENTS ON MATERIALS, METHODS OF INSTALLATION, PRODUCTS AND GENERAL PROVISIONS.
10. IN ORDER TO FINALIZE THE PLAN REVIEW RELEASE FOR FIRE PROTECTION AND DEMONSTRATE COMPLIANCE WITH IFC 901.2 & IBC 907.1.1, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER THE FOLLOWING:
  - A. SHOP DRAWINGS, DETAILS, SPECIFICATIONS, FIRE SUPPRESSION CALCULATIONS, WATER SUPPLY DATA, AND EQUIPMENT DATA SHEETS, FOR THE AUTOMATIC FIRE SPRINKLER SYSTEM TO BE INSTALLED.
  - B. SHOP DRAWINGS, DETAILS, SPECIFICATIONS, EQUIPMENT DATA SHEETS, ETC. ON ALL COMPONENTS AND DEVICES TO BE INSTALLED AS PART OF THE AUTOMATIC FIRE ALARM SYSTEM
  - C. THE SHOP DRAWING SUBMISSION MUST BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF DELEWARE.

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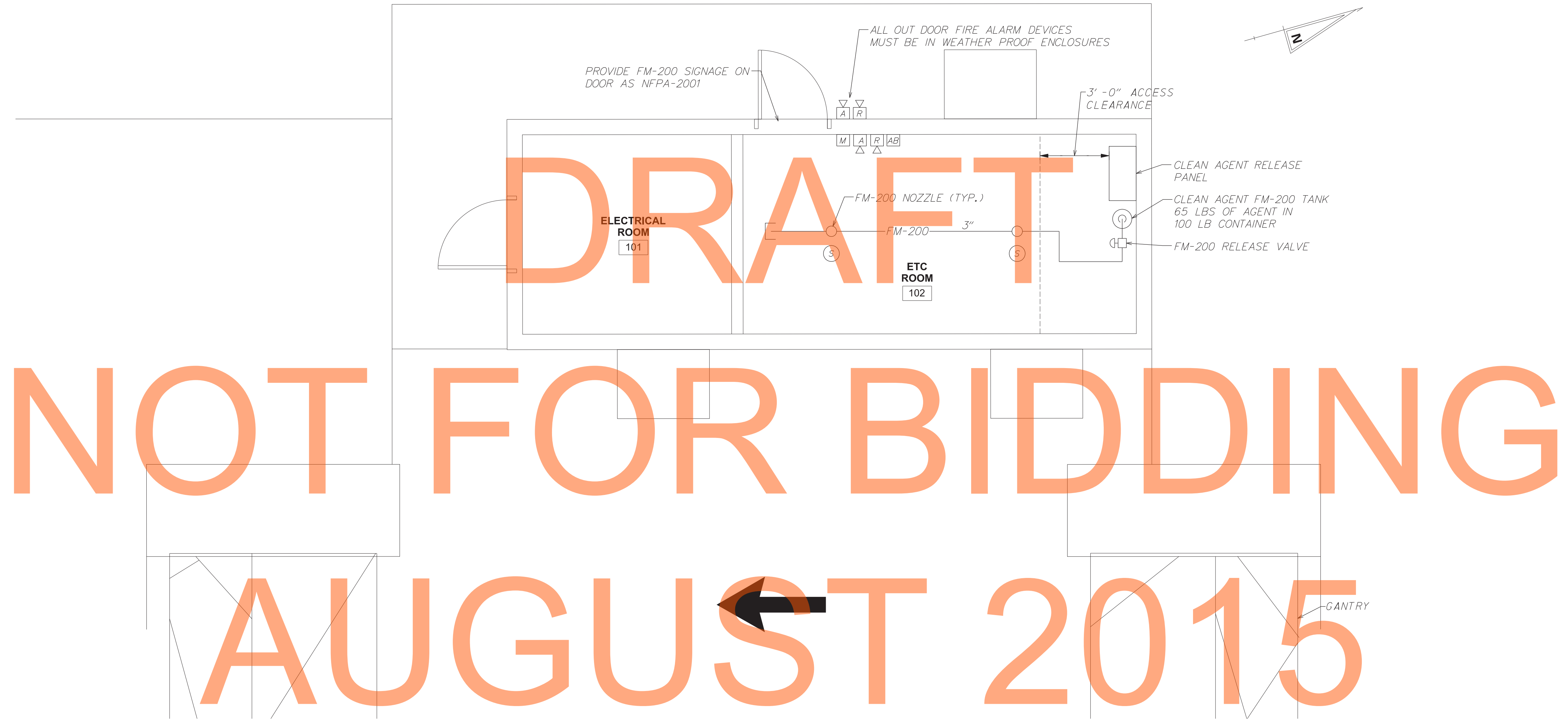
ADDENDUMS / REVISIONS


**US 301**  
**MARYLAND STATE LINE**  
**TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: MLW
NEW CASTLE	CHECKED BY: DWF

**FIRE PROTECTION**  
**SYMBOLS, ABBREVIATIONS**  
**& GENERAL NOTES**

<b>FP-01</b>	
SHEET NO.	829
TOTAL SHTS.	850



FIRE PROTECTION HUT PLAN 301 SB  
SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS	

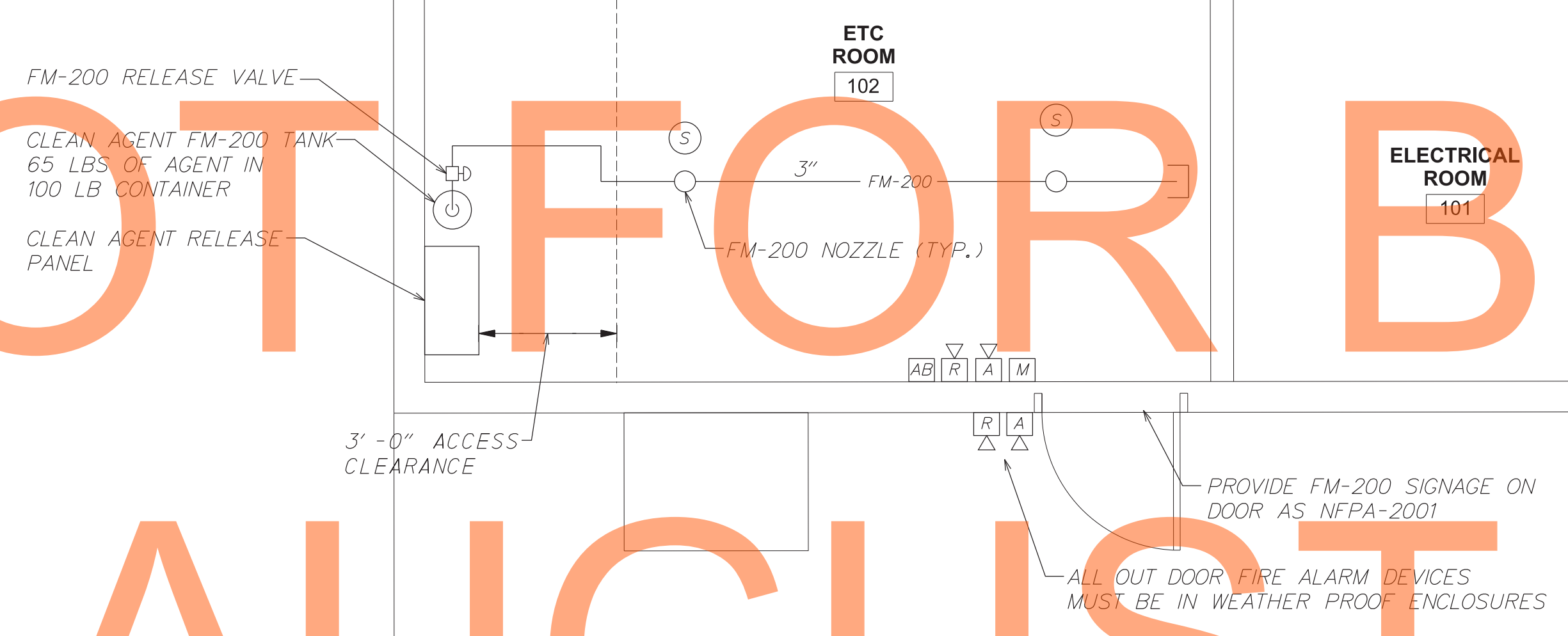
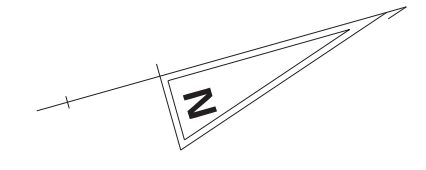
CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: MLW
	CHECKED BY: DWF

FP-02
SHEET NO. 830
TOTAL SHTS. 850

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AUGUST 2015



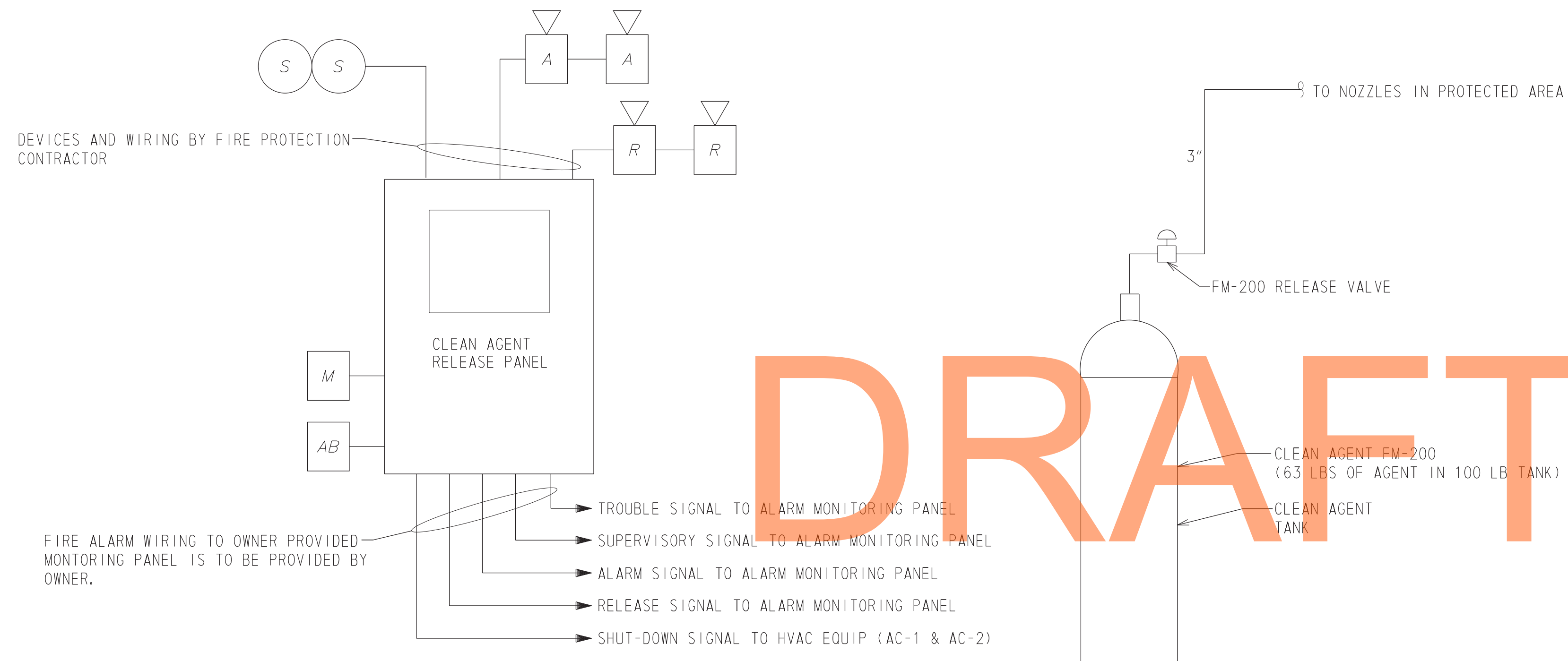
FIRE PROTECTION HUT PLAN 301 NB  
SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO. 
COUNTY NEW CASTLE	DESIGNED BY: MLW CHECKED BY: DWF

<b>FP-03</b>
SHEET NO. 831
TOTAL SHTS. 850



**SEQUENCE OF OPERATIONS**

UPON THE PULLING OF A MANUAL PULL STATION THE CLEAN AGENT RELEASE PANEL SHALL:

1. SEND ALARM SIGNAL TO MAIN BUILDING FIRE ALARM PANEL
2. SEND SIGNAL TO SHUT-DOWN HVAC EQUIPMENT
3. RING ALARM HORN AND STROBES
4. ARM THE TANK VALVE AND INITIATE 30 SECOND WAITING PERIOD
5. AT THE END OF 30 SECOND WAITING PERIOD RING RELEASE HORN AND STROBE
6. SEND SIGNAL TO TANK VALVE TO RELEASE AGENT

UPON THE TRIPPING OF ONE SMOKE DETECTOR THE CLEAN AGENT RELEASE PANEL SHALL:

1. SEND ALARM SIGNAL TO MAIN BUILDING FIRE ALARM PANEL
2. RING ALARM HORN AND STROBES.

UPON THE TRIPPING OF A SECOND SMOKE DETECTOR THE CLEAN AGENT RELEASE PANEL SHALL:

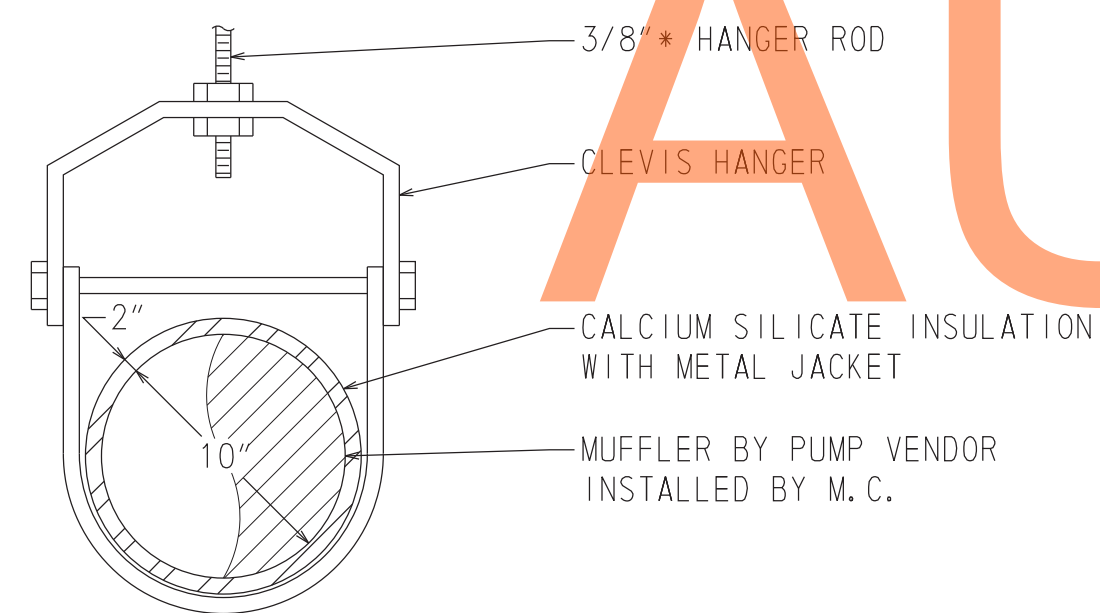
1. ARM THE TANK VALVE AND INITIATE 30 SECOND WAITING PERIOD.
2. SEND SIGNAL TO SHUT DOWN HVAC EQUIPMENT AND DE-ENERGIZE ANY DOOR OPENERS/HOLDERS.
3. AT THE END OF THE 30 SECOND WAITING PERIOD RING RELEASE HORN AND STROBES
4. SEND SIGNAL TO TANK VALVE TO RELEASE AGENT

UPON RECEIVING SIGNAL FROM MANUAL ABORT SWITCH THE CLEAN AGENT RELEASE PANEL SHALL:

1. DISARM TANK VALVE

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1 CLEAN AGENT FIRE SUPPRESSION SYSTEM SCHEMATIC  
SCALE: NONE



2 CLEVIS HANGER DETAIL  
SCALE: NONE

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

<b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS		<b>US 301 MARYLAND STATE LINE TO LEVELS ROAD</b>	CONTRACT	BRIDGE NO.	<b>FIRE PROTECTION DETAILS &amp; SCHEDULES</b>	SHEET NO.
				T200811301	DESIGNED BY: MLW		832
				COUNTY	CHECKED BY: DWF		TOTAL SHTS.
				NEW CASTLE			850
FP-04							

LIGHTING: (NOTE: SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE TYPES)

- LP-1 → CIRCUIT
  - 2x2 → 2x2 FLUORESCENT FIXTURE
  - S → FIXTURE TYPE
  - σ → CONTROL DEVICE
  - → 2x4 FLUORESCENT FIXTURE
  - → 4' FLUORESCENT FIXTURE
  - → 8' FLUORESCENT FIXTURE
  - ◐ → LIGHT FIXTURE FOR EMERGENCY ILLUMINATION
  - → CEILING MOUNTED DOWN LIGHT
  - → WALL MOUNT FIXTURE
  - ▲▲▲ → TRACK LIGHTING
  - □ → POLE STANDARD LIGHT FIXTURE (ONE LUMINAIRE INDICATED)
  - → LIGHTING BOLLARD
  - ⊗ → EXIT SIGN FIXTURE (SINGLE FACE UNIVERSAL MOUNT INDICATED)
  - ⊕ → EXIT SIGN FIXTURE W/DIRECTIONAL ARROWS (DOUBLE FACE UNIVERSAL MOUNT INDICATED)
  - S → SWITCH, SINGLE POLE
  - S<sub>3</sub> → SWITCH, 3-WAY
  - S<sub>4</sub> → SWITCH, 4-WAY
  - S<sub>D</sub> → SWITCH, DIMMER
  - S<sub>P</sub> → SWITCH WITH PILOT LIGHT
  - TC → TIME CLOCK
  - ▲ → DIRECTIONAL MOTION DETECTOR LIGHT CONTROL
  - ◆ → MULTI-DIRECTIONAL MOTION DETECTOR LIGHT CONTROL
  - OS → CEILING OCCUPANCY SENSOR
  - PP → POWER PACK FOR CEILING OCCUPANCY SENSOR
  - VS → WALL VACANCY SENSOR
  - S → SPECIAL PURPOSE LIGHT SWITCH: DESCRIPTION OF SWITCH WILL BE AS NOTED ON DRAWINGS
  - ☼ → PHOTOELECTRIC CONTROL
  - LC1 → LIGHTING CONTACTOR: REPRESENTS LIGHTING CONTACTOR IDENTIFICATION
  - LC1 → LIGHTING CONTACTOR REMOTE CONTROL: REPRESENTS LIGHTING CONTACTOR TO BE CONTROLLED
- EMERGENCY LIGHTING:**
- EMERGENCY BATTERY PACK FIXTURE WITH TWO HEADS
  - TD → TD-TIME DELAY RESET
  - REMOTE HEADS FOR EMERGENCY BATTERY PACK UNIT
- FIRE ALARM SYSTEM:**
- FACP → FIRE ALARM CONTROL PANEL
  - FAAP → FIRE ALARM ANNUNCIATOR PANEL
  - F → FIRE ALARM MANUAL PULL STATION
  - ⊗ → SMOKE DETECTOR (PHOTOELECTRIC U.O.N.)
  - ⊕ → HEAT DETECTOR (FIXED TEMP U.O.N.)
  - R → RATE OF RISE
  - D → DUCT SMOKE DETECTOR
  - FS → SPRINKLER SYSTEM WATER FLOW SWITCH
  - TS → SPRINKLER SYSTEM TAMPER SWITCH
  - F<sub>C</sub> → CEILING MOUNTED FIRE ALARM STROBE
  - (75) → CANDELL RATING (15 U.O.N.)
  - FO → FIRE ALARM SPEAKER/STROBE
  - F → FIRE ALARM SPEAKER
  - F → FIRE ALARM HORN/STROBE
  - MM → MONITOR MODULE
  - CM → CONTROL MODULE
  - RTI → REMOTE-TEST-INDICATOR
  - DH → MAGNETIC DOOR HOLDER
  - CO → CARBON MONOXIDE DETECTOR
  - SD → SMOKE DAMPER
  - DACT → DIGITAL ALARM COMMUNICATOR TRANSMITTER

- GENERAL POWER:**
- GF → SINGLE RECEPTACLE (NEMA 5-20R)
  - RECEPTACLE WIRED TO GROUND FAULT CIRCUIT BREAKER
  - IG → ISOLATED GROUND
  - TR → SWITCHED
  - WR → TAMPER RESISTANT
  - WP → WEATHER RESISTANT RECEPTACLE W/IN-USE COVER (WET LOCATION)
  - WR → WEATHER RESISTANT RECEPTACLE W/NON-IN-USE COVER (DAMP LOCATION)
  - DUPLIX RECEPTACLE (NEMA 5-20R)
  - DOUBLE DUPLIX RECEPTACLE
  - GROUND FAULT CIRCUIT INTERRUPTER (DUPLIX NEMA 5-20R)
  - SPECIAL PURPOSE RECEPTACLE (NEMA CONFIGURATION AS NOTED)
  - RECEPTACLE FLOOR MOUNTED
  - SPECIAL PURPOSE RECEPTACLE FLOOR MOUNTED (NEMA CONFIGURATION AS NOTED)
  - MULTIOUTLET ASSEMBLY: LENGTH, TYPE AND QUANTITY OF RECEPTACLES AS NOTED
  - P → POWER POLE
  - WALL BOX FOR MODULAR FURNITURE WHIP
  - J → JUNCTION BOX
  - NON FUSED SAFETY SWITCH
  - SWITCH RATING ENCLOSURE NEMA RATING
  - F → FUSED SAFETY SWITCH
  - SWITCH RATING ENCLOSURE NEMA RATING
  - MAGNETIC MOTOR STARTER
  - NEMA SIZE ENCLOSURE NEMA RATING
  - COMBINATION MAGNETIC MOTOR STARTER
  - NEMA SIZE
  - ENCLOSED CIRCUIT BREAKER
  - CONTACTOR
  - T → TIME SWITCH
  - SM → MANUAL MOTOR SWITCH (WITHOUT OVERLOADS)
  - SMT → MANUAL MOTOR STARTER (WITH THERMAL OVERLOADS)
  - SMP → MANUAL MOTOR SWITCH WITH PILOT LIGHT
  - CONTROL STATION, TYPE AS NOTED
  - MUSHROOM SWITCH
  - MOTOR (HORSEPOWER INDICATED ON PLANS)
  - TRANSFORMER
  - GENERATOR
  - MOD → MOTOR OPERATED DAMPER
  - T → THERMOSTAT
  - UPS → UNINTERRUPTIBLE POWER SUPPLY
  - SPD → SURGE PROTECTIVE DEVICE
  - UNIT HEATER
- COMMUNICATIONS:**
- S → CEILING SPEAKER
  - WS → WALL MOUNTED SPEAKER
  - WS → WALL MOUNTED DOUBLE SPEAKER
  - PS → POLE MOUNTED SPEAKER
  - PS → POLE MOUNTED DOUBLE SPEAKER
  - VO → VOICE DATA OUTLET
  - DO → DATA OUTLET
  - INDICATES NUMBER OF PORTS
  - FO → FLOOR MOUNTED OUTLET
  - CABLE TELEVISION OUTLET
  - TELEPHONE OUTLET
  - PAY PHONE
  - W → WALL MOUNTED
  - W → WALL BOX FOR SYSTEMS FURNITURE VOICE/DATA WHIP
  - TTTC → TELEPHONE TERMINAL CABINET
- ACCESS CONTROL/INTRUSION ALARMS:**
- AICP → ACCESS/INTRUSION ALARM CONTROL PANEL
  - D → DOOR CONTACT
  - KP → ACCESS KEYPAD
  - CR → ACCESS CARD READER
  - MD → MOTION DETECTOR
  - CCTV → CLOSED CIRCUIT TELEVISION CAMERA

- GROUNDING:**
- GROUND ROD
  - EXOTHERMIC WELD CONNECTION
  - MECHANICAL CONNECTION (BOLTED OR COMPRESSION)
  - BARE COPPER CONDUCTOR EXPOSED
  - BARE COPPER CONDUCTOR BURIED OR EMBEDDED IN CONCRETE
  - GND → GROUND BUS
- ONE LINE DIAGRAM:**
- MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER
  - LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
  - AMP FRAME
  - AMP TRIP
  - ELECTRICALLY OPERATED
  - CIRCUIT BREAKER
  - DISCONNECT, ISOLATION OR SAFETY SWITCH
  - ST - SHUNT TRIP
  - GF - GROUND FAULT
  - EO - ELECTRICALLY OPERATED
  - FUSED CUTOFF
  - FUSED LOAD BREAK SWITCH
  - MEDIUM VOLTAGE MOTOR STARTER
  - MAGNETIC MOTOR STARTER: NUMERICAL INDICATES NEMA SIZE
  - FVNR - FULL VOLTAGE REVERSING
  - RVAT - REDUCING VOLTAGE AUTO TRANSFORMER
  - 2S - 2 SPEED
  - RVSS - REDUCED VOLTAGE SOLID STATE
  - CAPACITOR
  - VFD → VARIABLE FREQUENCY DRIVE
  - POWER TRANSFORMER
  - CONNECTION
  - SHIELDED ISOLATION TRANSFORMER
  - POTENTIAL TRANSFORMER
  - RATIO
  - NUMBER REQUIRED
  - CURRENT TRANSFORMER
  - RATIO
  - NUMBER REQUIRED
  - GROUND FAULT CURRENT TRANSFORMER
  - MOTOR, NUMBER INDICATES HORSE POWER
  - GENERATOR
  - ATS - AUTOMATIC TRANSFER SWITCH
  - MTS - MANUAL TRANSFER SWITCH
  - METER
  - A - AMMETER
  - V - VOLTMETER
  - W - WATTMETER
  - WH - WATT HOURMETER
  - KWH - KILOWATT HOUR
  - KVAR - KILOWATT METER
  - VAR - VAR METER
  - HZ - FREQUENCY METER
  - PF - POWER FACTOR METER
  - DPM → DIGITAL POWER METER
  - METER TRANSFER SWITCH
  - AS - AMMETER SWITCH
  - VS - VOLTMETER SWITCH
  - SPD → SURGE PROTECTIVE DEVICE
  - LIGHTNING ARRESTOR
  - KEY INTERLOCK
  - FUSE
  - ELECTRONIC POWER FUSE
  - DRAWOUT DEVICE
  - GROUND

- MISCELLANEOUS:**
- EDH → EQUIPMENT IDENTIFICATION
  - SECTION IDENTIFICATION
  - SECTION NOMENCLATURE
  - SHEET NUMBER ON WHICH SECTION IS SHOWN
  - BLOG PLANS
  - DETAIL IDENTIFICATION
  - DETAIL NOMENCLATURE
  - SHEET NUMBER ON WHICH DETAIL IS SHOWN
  - C → COMMUNICATION
  - E → ELECTRIC
  - T → TELEPHONE
  - OHE → OVERHEAD ELECTRIC
  - OHT → OVERHEAD TELEPHONE
  - UTILITY POLE
  - HH-x → HANDHOLE
  - MH-x → MANHOLE
- CONDUIT FEEDERS & BRANCH CIRCUITS:**
- CONDUIT
  - CONDUIT - EMBEDDED IN FLOOR OR EARTH
  - CONDUIT TURNED UP
  - CONDUIT TURNED DOWN
  - CONDUIT CAPPED
  - CIRCUIT HOME RUN
  - FEEDER IDENTIFICATION (SEE FEEDER LEGEND ON DRAWING)
  - CONDUIT FEEDER IDENTIFICATION
  - TYPICAL FEEDER WITH NO SIZE IDENTIFICATION
  - SEE GENERAL NOTE 9
- WIRING METHODS:**
- INTERIOR
    - EXPOSED AREAS NOT SUBJECT TO PHYSICAL ABUSE-EMT
    - EXPOSED AREAS SUBJECT TO ABUSE-RIGID STEEL CONDUIT
    - ELEVATOR PIT-RIGID STEEL CONDUIT
    - CONCEALED IN STUD WALL OR ABOVE SUSPENDED CEILING-EMT OR TYPE MC CABLE
    - CONCEALED IN MASONRY WALLS - EMT OR RIGID STEEL CONDUIT
  - TUNNEL
    - RIGID STEEL CONDUIT
  - EXTERIOR
    - RIGID STEEL CONDUIT
  - BELOW GRADE
    - CONCRETE ENCASED-SCHEDULE 40 PVC
    - DIRECT BURIED-SCHEDULE 40 PVC
  - PENETRATIONS
    - UP THROUGH GRADE-PVC COATED RIGID STEEL
    - THROUGH FOUNDATION WALLS-PVC COATED RIGID STEEL

- ABBREVIATIONS:**
- |          |                                  |      |                                 |
|----------|----------------------------------|------|---------------------------------|
| A OR AMP | AMPERE                           | MC   | METAL CLAD                      |
| AC       | ALTERNATING CURRENT              | MCB  | MAIN CIRCUIT BREAKER            |
| AFF      | ABOVE FINISHED FLOOR             | MCC  | MOTOR CONTROL CENTER            |
| AFG      | ABOVE FINISHED GRADE             | MFR  | MANUFACTURE                     |
| AHJ      | AUTHORITY HAVING JURISDICTION    | MI   | MINERAL INSULATED               |
| AIC      | AMPERE INTERRUPTING CAPACITY     | MLO  | MAIN LUG ONLY                   |
| AL       | ALUMINUM                         | MOA  | MULTI-OUTLET ASSEMBLY           |
| ATS      | AUTOMATIC TRANSFER SWITCH        | MOD  | MOTOR OPERATED DAMPER           |
| AUTO     | AUTOMATIC                        | MS   | MOTOR STARTER                   |
| AWG      | AMERICAN WIRE GAUGE              | MT   | MANUAL TRANSFER SWITCH          |
| BFG      | BELOW FINISHED GRADE             | MTD  | MOUNTED                         |
| BLOG     | BUILDING                         | MV   | MEDIUM VOLTAGE                  |
| BOS      | BOTTOM OF STEEL                  | N/A  | NOT APPLICABLE                  |
| C        | CONDUIT                          | NC   | NORMALLY CLOSED                 |
| CB       | CIRCUIT BREAKER                  | NEC  | NATIONAL ELECTRICAL CODE        |
| CCTV     | CLOSED CIRCUIT TELEVISION        | NEUT | NEUTRAL                         |
| CP       | CONTROL PANEL                    | NIC  | NOT IN CONTRACT                 |
| CPT      | CONTROL POWER TRANSFORMER        | NO   | NORMALLY OPEN                   |
| CT       | CURRENT TRANSFORMER              | No.  | NUMBER                          |
| CU       | COPPER                           | NTS  | NOT TO SCALE                    |
| DISC     | DISCONNECT                       | PF   | POWER FACTOR                    |
| DIV      | DIVISION                         | PH   | PHASE                           |
| DN       | DOWN                             | PM   | POWER MONITOR                   |
| DS       | DISCONNECT SWITCH                | PNL  | PANEL                           |
| EC       | ELECTRICAL CONTRACTOR            | PT   | POTENTIAL TRANSFORMER           |
| EMT      | ELECTRICAL METALLIC TUBING       | PVC  | POLYVINYL CHLORIDE              |
| EF       | EXHAUST FAN                      | RECP | RECEPTACLES                     |
| ECH      | ELECTRIC CABINET HEATER          | RGS  | RIGID GALVANIZED STEEL(CONDUIT) |
| EGC      | ELECTRIC GROUNDING CONDUCTOR     | RTD  | RESISTANCE TEMPERATURE DETECTOR |
| EUH      | ELECTRIC UNIT HEATER             | RVAT | REDUCED VOLTAGE AUTOTRANSFORMER |
| EWC      | ELECTRIC WATER COOLER            | RVSS | REDUCED VOLTAGE SOLID STATE     |
| FAAP     | FIRE ALARM ANNUNCIATOR PANEL     | SC   | SURGE CAPACITOR                 |
| FACP     | FIRE ALARM CONTROL PANEL         | SN   | SOLID NEUTRAL                   |
| FBO      | FURNISHED BY OTHERS              | SPD  | SURGE PROTECTIVE DEVICE         |
| FC       | FAILS CLOSED                     | STP  | SHIELDED TWISTED PAIR           |
| F/T      | FEED THROUGH                     | STT  | SHIELDED TWISTED TRIPLET        |
| FU       | FUSE                             | SW   | SWITCH                          |
| FRE      | FIBERGLASS REINFORCED EPOXY      | SWBD | SWITCHBOARD                     |
| FWE      | FURNISHED WITH EQUIPMENT         | TC   | TRAY-CABLE                      |
| GF       | GROUND FAULT                     | TOS  | TOP OF STEEL                    |
| GFCI     | GROUND FAULT CIRCUIT INTERRUPTER | TTB  | TELEPHONE TERMINAL BOARD        |
| GRD      | GROUND                           | TTC  | TELEPHONE TERMINAL CABINET      |
| HID      | HIGH INTENSITY DISCHARGE         | TYP  | TYPICAL                         |
| HP       | HORSEPOWER                       | UL   | UNDERWRITERS LABORATORIES       |
| HPS      | HIGH PRESSURE SODIUM             | UH   | UNIT HEATER                     |
| HVAC     | HEAT-VENT-AIR CONDITIONING       | UON  | UNLESS OTHERWISE NOTED          |
| IG       | ISOLATED GROUND                  | UPS  | UNINTERRUPTIBLE POWER SUPPLY    |
| IND      | INDUSTRIAL                       | V    | VOLT                            |
| JIC      | JOINT INDUSTRIAL COUNCIL         | VA   | VOLT AMPERE                     |
| KV       | KILOVOLT                         | VAR  | VOLT AMPERE REACTIVE            |
| KVA      | KILOVOLT AMPERE                  | W    | WIRE                            |
| KVAR     | KILOVARS                         | WP   | WEATHERPROOF                    |
| KW       | KILOWATT                         | WR   | WEATHER RESISTANT               |
| LA       | LIGHTNING ARRESTOR               | WFMR | WEATHER RESISTANT TRANSFORMER   |
| LC       | LIGHTING CONTACTOR               | 1-PM | SINGLE PHASE                    |
| LTG      | LIGHTING                         | 3-PH | THREE PHASE                     |
- GENERAL NOTES:**
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEPA-70) AS ADOPTED AND AMENDED BY THE DELAWARE STATE FIRE MARSHALL.
  - ARCHITECTURAL FEATURES SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING DIMENSIONS, SECTIONS, ELEVATIONS, PARTITION RATINGS AND CONSTRUCTION DETAILS OF BUILDING ELEMENTS.
  - EQUIPMENT LOCATIONS ARE SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL, HVAC, PLUMBING, FIRE PROTECTION AND EQUIPMENT PLANS FOR EQUIPMENT LOCATIONS.
  - THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK AND DO NOT SHOW EVERY SUPPORT, OFFSET, FITTING OR COMPONENT. PROVIDE ALL MATERIALS FOR A COMPLETE ELECTRICAL INSTALLATION AND FIELD VERIFY ALL DIMENSIONS.
  - COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES.
  - ALL MOTOR SAFETY SWITCHES, LOCAL DISCONNECTS, MOTOR STARTERS AND DRIVES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR (DIVISION 26) UNLESS OTHERWISE NOTED ON THE DRAWINGS AS FURNISHED WITH EQUIPMENT (FWE).
  - ALL PENETRATIONS THROUGH FLOORS, WALLS AND RATED PARTITIONS SHALL BE SEALED WITH UL LISTED FIRE SEALANT MATERIALS TO MAINTAIN THE RATING OF THE SEPARATION.
  - AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED WITH EVERY FEEDER AND BRANCH CIRCUIT.
  - ALL WIRING SHALL BE COPPER. WHERE CONDUCTOR SIZES ARE NOT INDICATED ON THE DRAWINGS, MINIMUM WIRING SHALL BE 2 NO. 12 AWG & 12 GRD FOR SINGLE PHASE CIRCUITS LESS THAN 75 FEET AND 3 NO. 12 & NO. 12 GROUND FOR THREE PHASE CIRCUITS. WIRE SIZE FOR 20 AMP-120 VOLT BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 75 FEET SHALL BE (2)\*10, (1)\*10 GRD IN 3/4" C. BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 125 FEET SHALL BE (2)\*8, (1)\*8 GRD IN 3/4" C. BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 200 FEET SHALL BE (2)\*6, (1)\*6 GRD IN 3/4" C. BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 250 FEET SHALL BE (2)\*4, (1)\*4 GRD IN 1" C. SHORT TAPS OFF THE MAIN RUN TO INDIVIDUAL OUTLETS SHALL BE PERMITTED TO BE NO. 12 AWG.

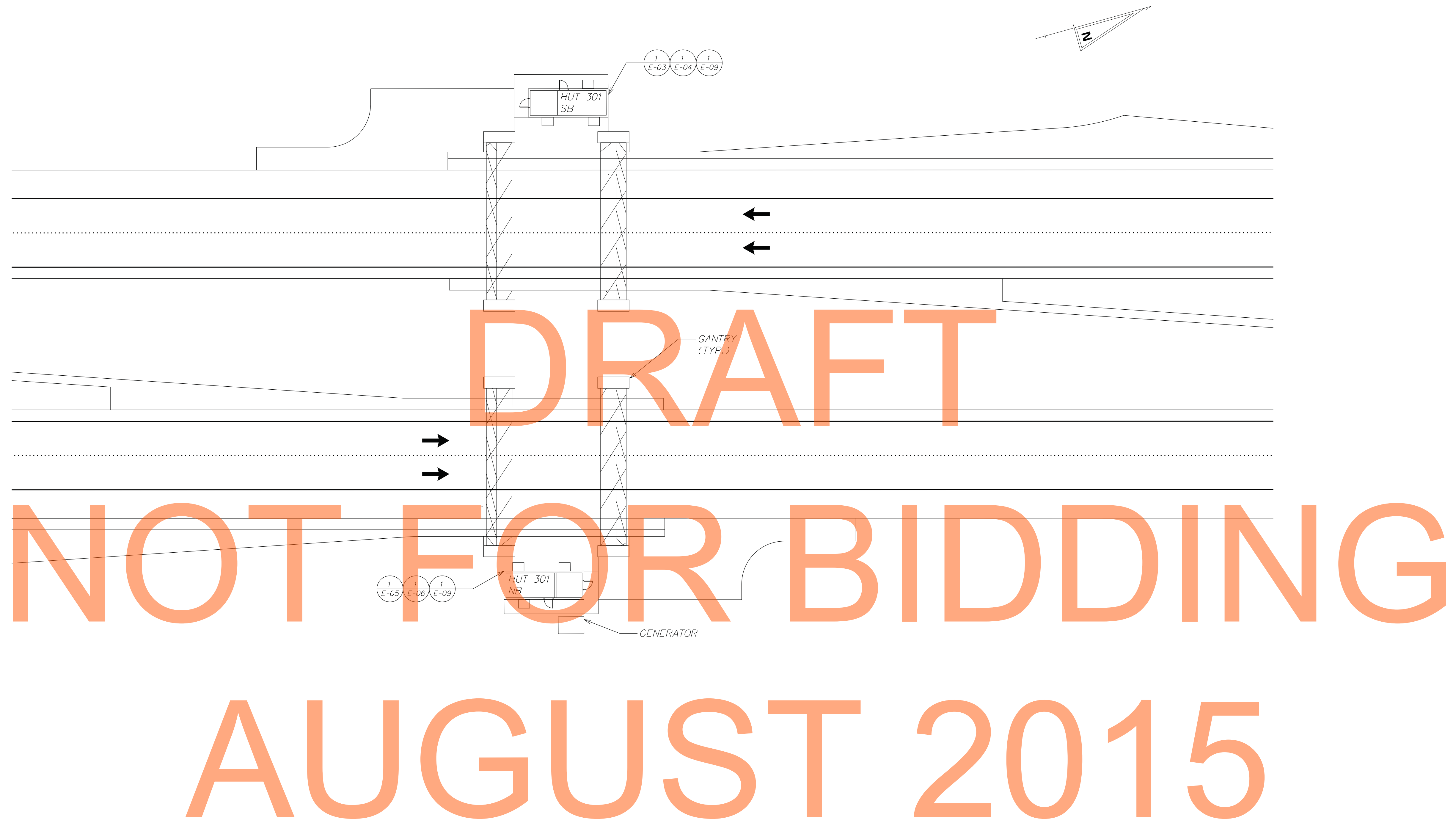
# NOT FOR BIDDING

# AUGUST 2011

SYMBOLS AND ABBREVIATIONS ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE PROJECT.

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\REFS\SB\_A1.DGN

<b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS		<b>US 301 MARYLAND STATE LINE TO LEVELS ROAD</b>	CONTRACT	BRIDGE NO.	<b>12/2012</b>	<b>E-01</b>		
				T200811301	DESIGNED BY: JLG			<b>ELECTRICAL LEGEND, SYMBOLS &amp; ABBREVIATIONS</b>	SHEET NO.
				COUNTY	CHECKED BY: RAK				833
				NEW CASTLE					TOTAL SHTS. 850



SITE PLAN  
SCALE: 1" = 20'

LAST REVISED: 3/12/2008  
K:\50343\_AET\GENERAL\_XREFS\SB\_A1.DGN



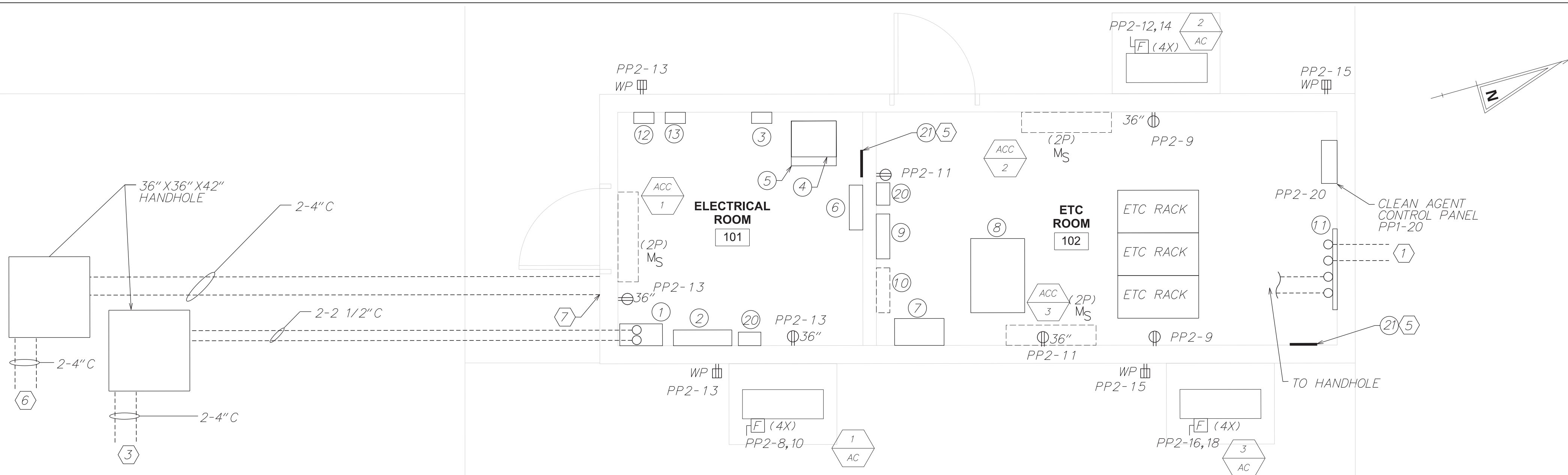
ADDENDUMS / REVISIONS

**US 301**  
**MARYLAND STATE LINE**  
**TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: JLG
NEW CASTLE	CHECKED BY: RAK

<b>12/2012</b>	<b>E-02</b>
<b>ELECTRICAL</b> <b>SITE PLAN</b>	SHEET NO. 834
	TOTAL SHTS. 850





DESIGNATION	DESCRIPTION
①	BUILDING DISCONNECT (100A)
②	PANEL 'DP-2'
③	15KVA TRANSFORMER SECONDARY CIRCUIT BREAKER
④	15KVA TRANSFORMER (MOUNTED ABOVE)
⑤	30KVA TRANSFORMER (FLOOR)
⑥	PANEL 'PP-2'
⑦	UPS MAINTENANCE BYPASS SWITCH
⑧	UPS
⑨	PANEL 'UPP-3'
⑩	PANEL 'UPP-4' (FUTURE)
⑪	3' - 0\" TELE/DATA BACKBOARD
⑫	PRIMARY DISCONNECT 15KVA TRANSFORMER
⑬	PRIMARY DISCONNECT 30KVA TRANSFORMER
⑭	NOT USED
⑮	NOT USED
⑯	NOT USED
⑰	NOT USED
⑱	NOT USED
⑲	NOT USED
⑳	SURGE PROTECTIVE DEVICE (SPD)
㉑	GROUND BUS

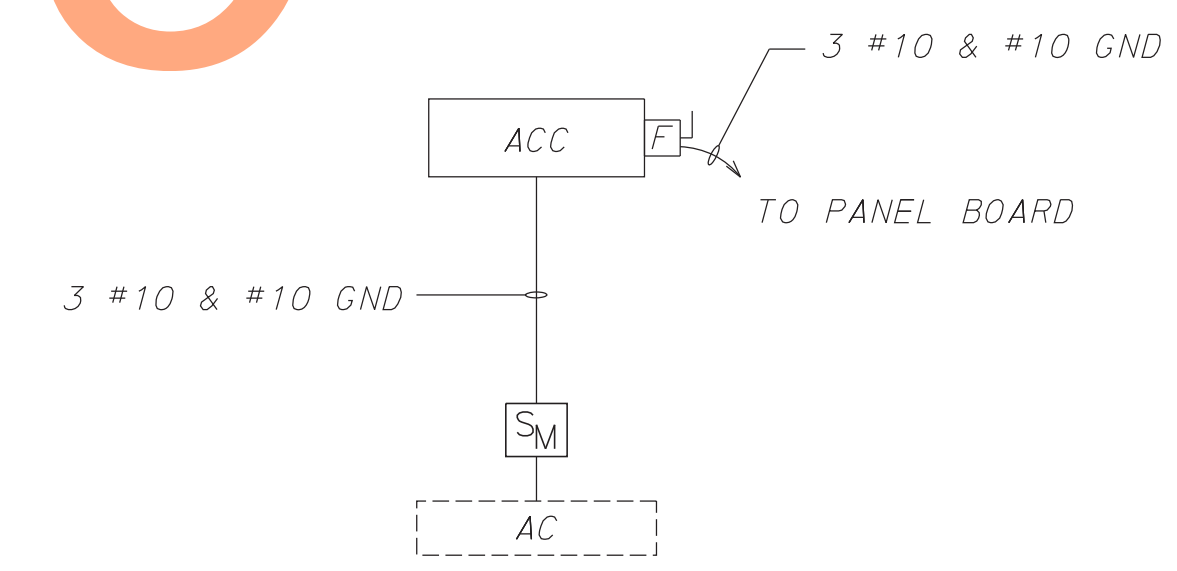
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NOT FOR BIDDING

AUGUST 2015

- KEY NOTES:**
- ① CONDUITS FOR ITMS FIBER OPTIC BACKBONE CONNECTION AND CAPPED SPARE. PROVIDE GROUNDING TYPE BUSHINGS. SEE CIVIL DRAWINGS FOR CONDUIT SIZE.
  - ② NOT USED
  - ③ TWO CONDUITS FROM 301 NB HUT PANEL DP-1.
  - ④ NOT USED
  - ⑤ COPPER GROUND BUS, STORM COPPER OR EQUAL. 4\" X 12\" X 0.25\".
  - ⑥ COMMUNICATION CONDUIT TO HUT 301 NB.
  - ⑦ CONTINUE CONDUIT UNDER SLAB AND STUB UP AT BACKBOARD IN ROOM 102.

① ELECTRICAL HUT POWER PLAN 301 SB  
SCALE: 3/8\" = 1' - 0\"



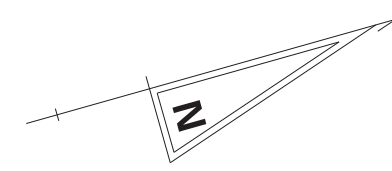
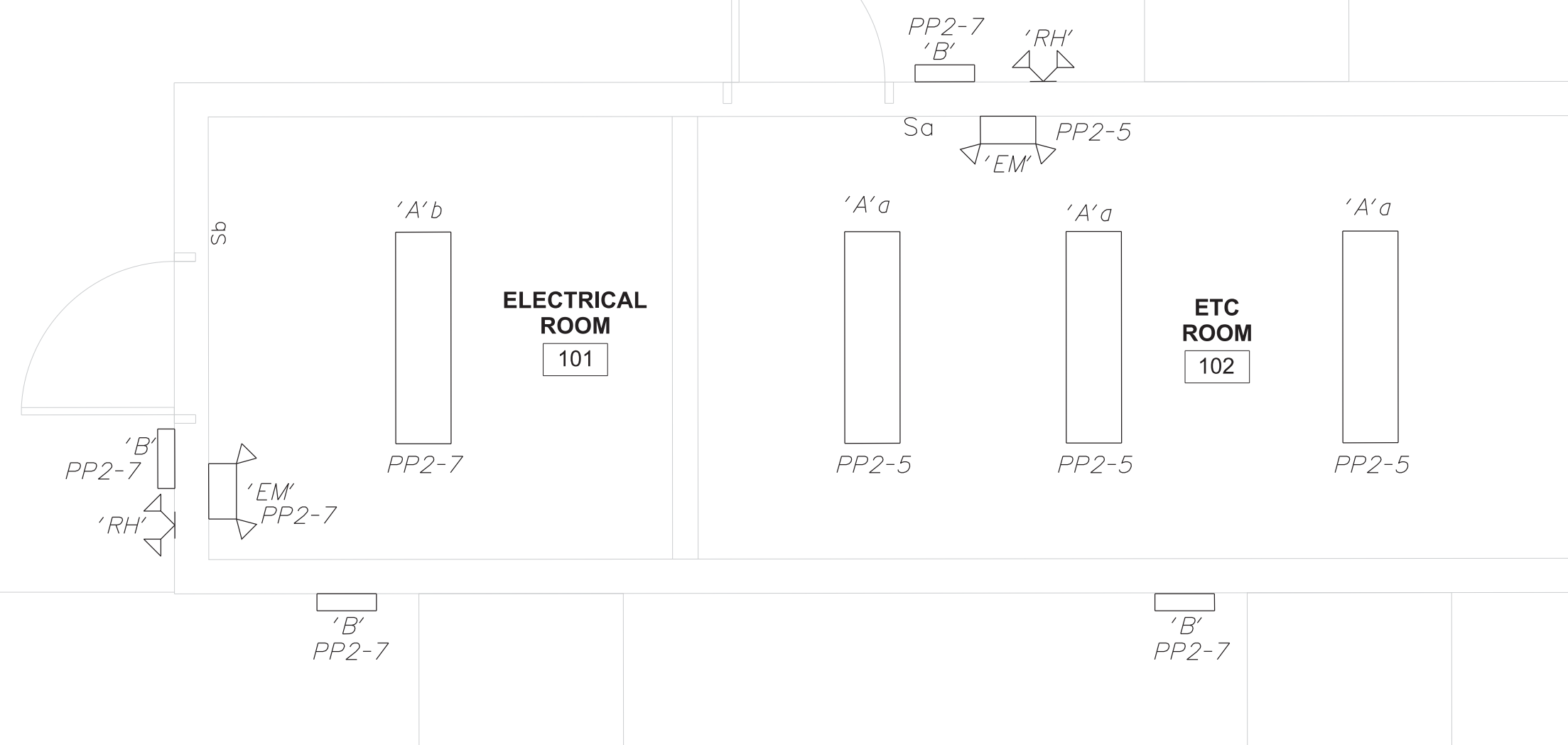
② DUCTLESS SPLIT SYSTEM WIRING  
E-03

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JLG
	CHECKED BY: RAK

12/2012	E-03
<b>ELECTRICAL HUT POWER PLAN 301 SB</b>	SHEET NO. 835
	TOTAL SHTS. 850



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1 ELECTRICAL HUT LIGHTING PLAN 301 SB  
E-04 SCALE: 3/8" = 1'-0"

*NOTES:*  
1. SEE DWG. E-10 FOR LUMINAIRE SCHEDULE.

LAST REVISED: 3/12/2008  
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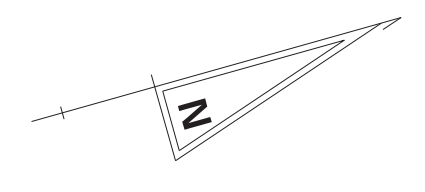


ADDENDUMS / REVISIONS

**US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	DESIGNED BY: JLG
COUNTY	CHECKED BY: RAK
NEW CASTLE	

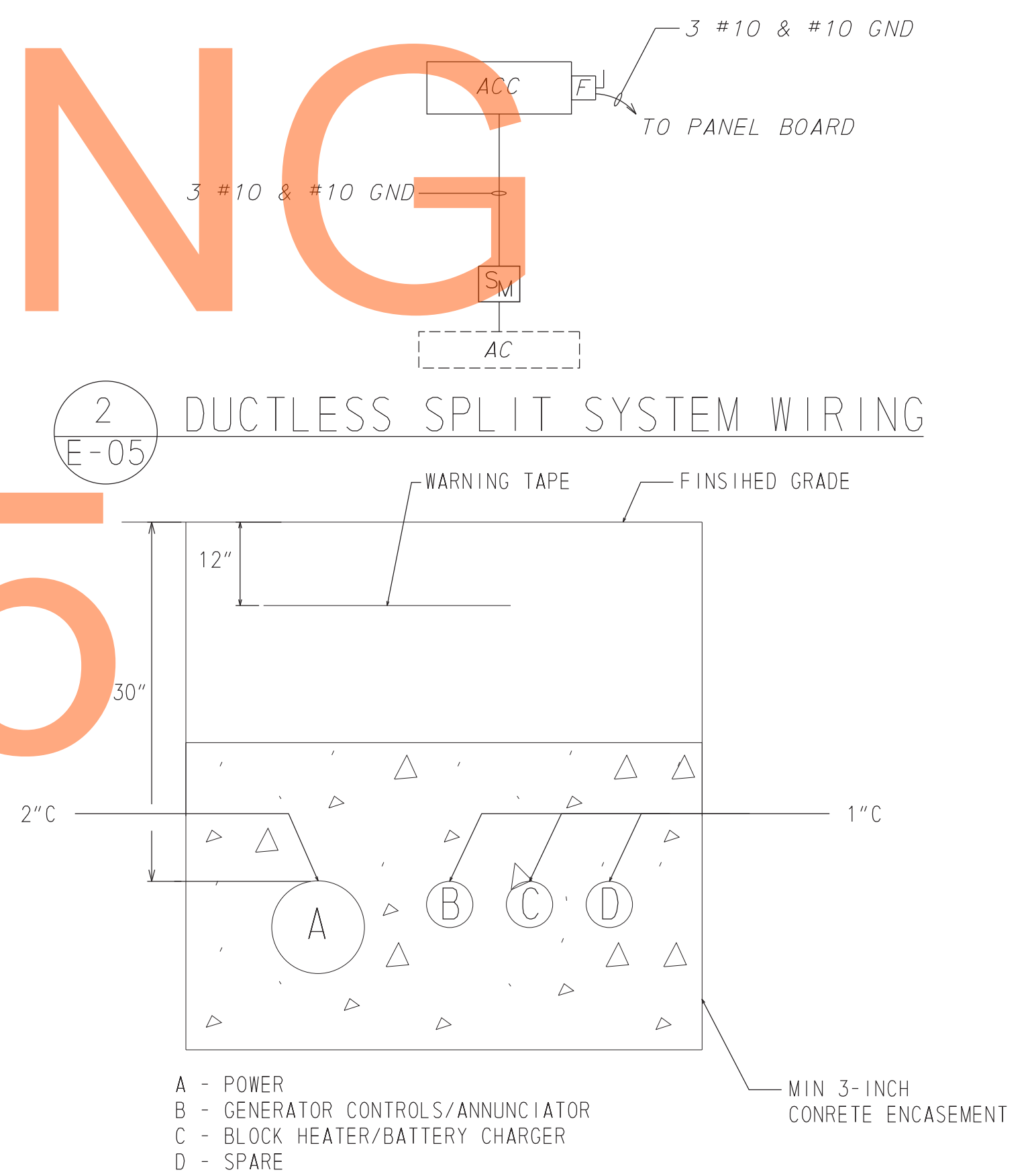
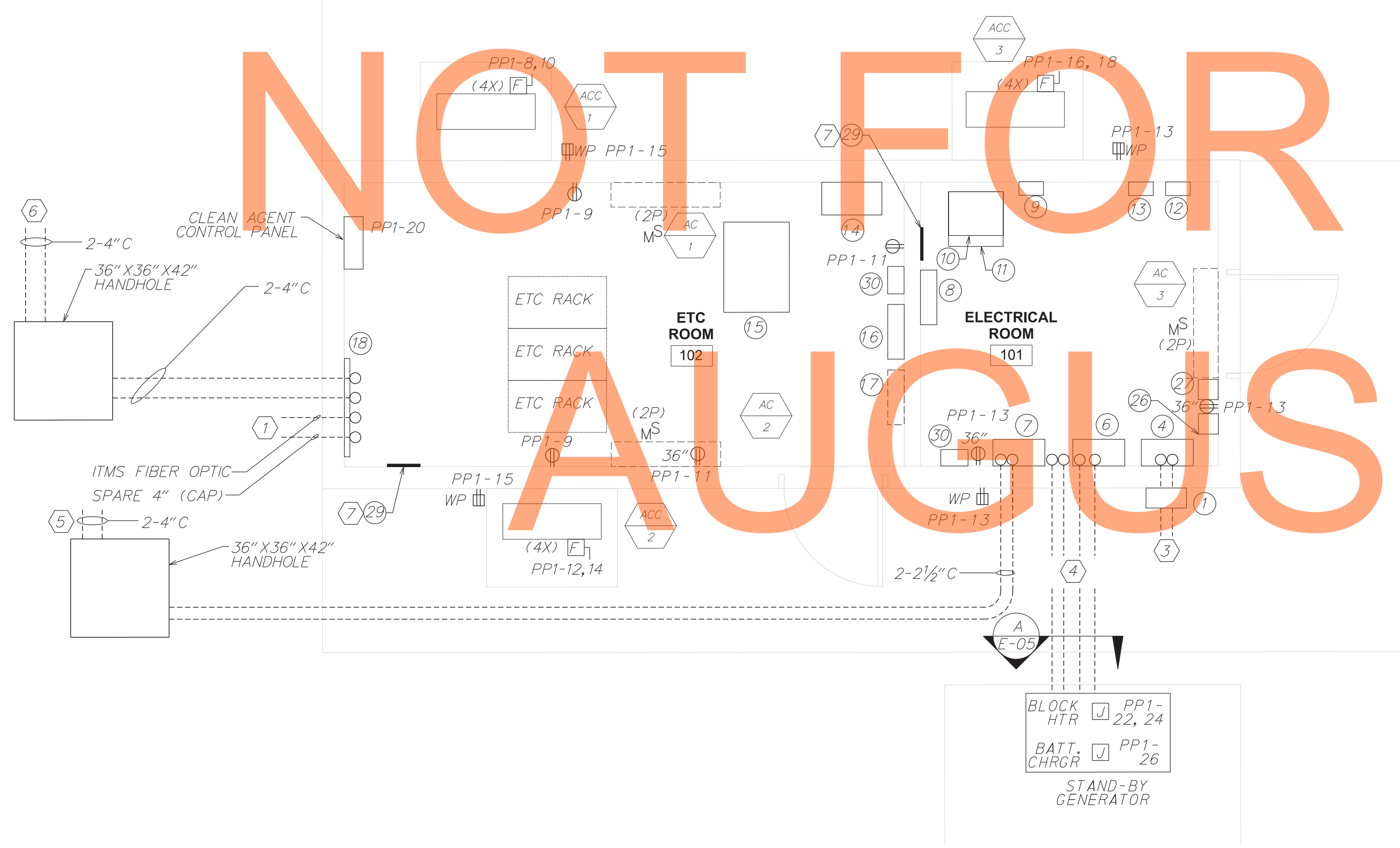
122012	E-04
ELECTRICAL HUT LIGHTING PLAN 301 SB	SHEET NO. <b>836</b> TOTAL SHTS. 850



DESIGNATION	DESCRIPTION
①	UTILITY COMPANY METER
②	NOT USED
③	NOT USED
④	SERVICE DISCONNECT (200A)
⑤	NOT USED
⑥	AUTOMATIC TRANSFER SWITCH
⑦	PANEL 'DP-1'
⑧	PANEL 'PP-1'
⑨	15KVA TRANSFORMER SECONDARY CIRCUIT BREAKER
⑩	15KVA TRANSFORMER (MOUNTED ABOVE)
⑪	30KVA TRANSFORMER (FLOOR)
⑫	PRIMARY DISCONNECT 15KVA TRANSFORMER
⑬	PRIMARY DISCONNECT 30KVA TRANSFORMER
⑭	UPS MAINTENANCE BYPASS SWITCH
⑮	UPS
⑯	PANEL 'UPP-1'
⑰	PANEL 'UPP-2' (FUTURE)
⑱	3' - 0" TELE/DATA BACKBOARD
⑲	NOT USED
⑳	NOT USED
㉑	NOT USED
㉒	NOT USED
㉓	NOT USED
㉔	NOT USED
㉕	NOT USED
㉖	GENERATOR ANNUNCIATOR
㉗	GENERATOR ESTOP
㉘	NOT USED
㉙	GROUND BUS
㉚	SURGE PROTECTIVE DEVICE (SPD)

# DRAFT

# NOT FOR BIDDING



- KEY NOTES:**
- ① CONDUITS FOR ITMS FIBER OPTIC BACKBONE CONNECTION AND CAPPED SPARE. PROVIDE GROUNDING TYPE BUSHINGS. SEE CIVIL DRAWINGS FOR CONDUIT SIZE.
  - ② NOT USED
  - ③ CONDUIT FOR UTILITY COMPANY SERVICE.
  - ④ CONDUIT TO GENERATOR.
  - ⑤ POWER CONDUIT TO RAMP 301 SB (DP-2).
  - ⑥ COMMUNICATIONS CONDUIT TO HUT 301 SB.
  - ⑦ COPPER GROUND BUS. STORM COPPER OR EQUAL. 4" X 12" X 0.25"

① ELECTRICAL HUT POWER PLAN 301 NB  
 SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

ADDENDUMS / REVISIONS

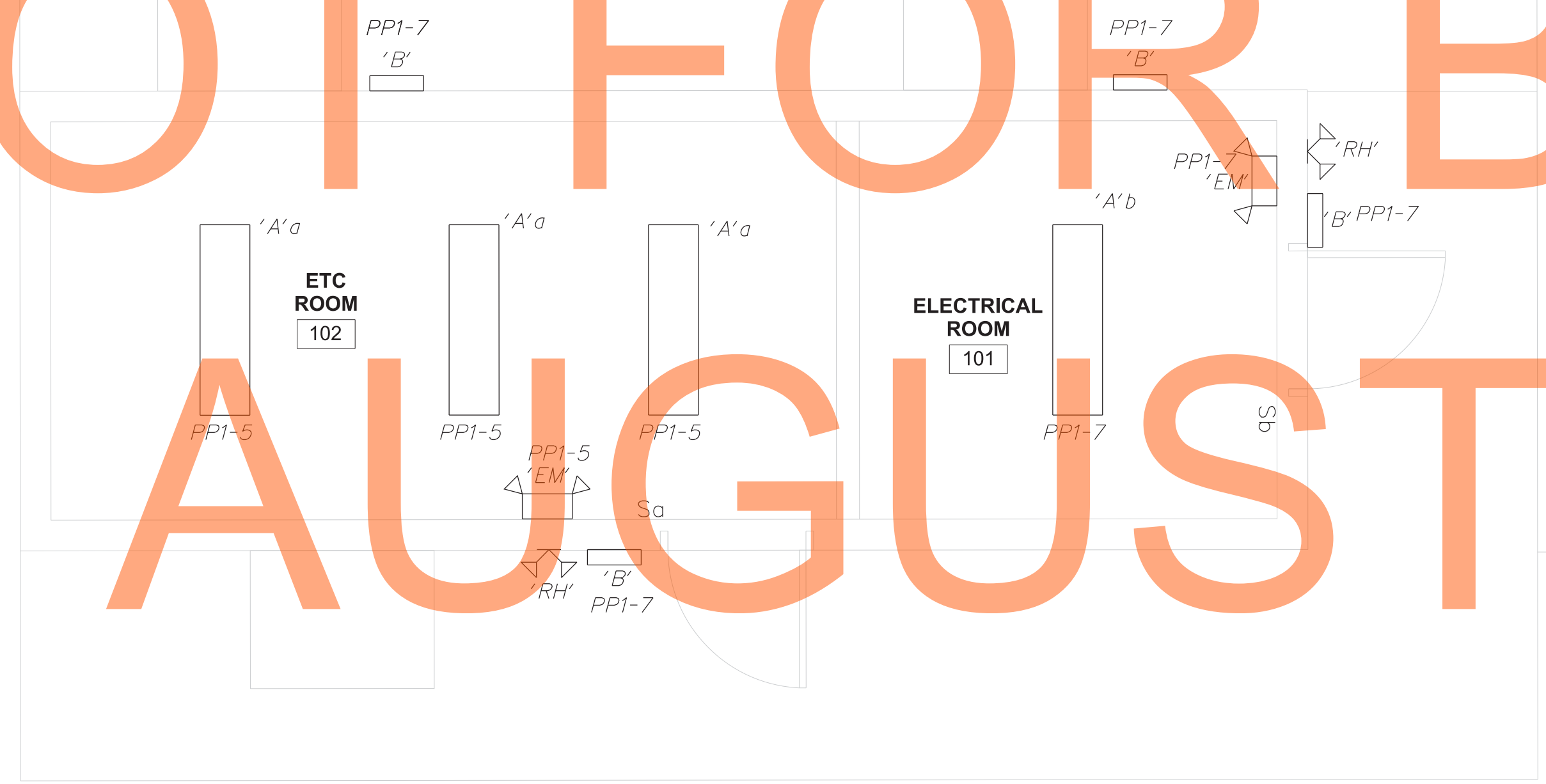
CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JLG
	CHECKED BY: RAK

12/2012	E-05
<b>ELECTRICAL HUT POWER PLAN 301 NB</b>	SHEET NO. 837
	TOTAL SHTS. 850

# DRAFT

# NOT FOR BIDDING

# AUGUST 2015



**NOTES:**  
 1. SEE DWG. E-10 FOR LUMINAIRE SCHEDULE.

1  
 E-06 ELECTRICAL HUT LIGHTING PLAN 301 NB  
 SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS	

**US 301  
 MARYLAND STATE LINE  
 TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: JLG
NEW CASTLE	CHECKED BY: RAK

12/2012	E-06
<b>ELECTRICAL    HUT    POWER PLAN    301 NB</b>	SHEET NO. <b>838</b> TOTAL SHTS. <b>850</b>

PANEL DESIGNATION		TYPE: -		LOCATION: ELECTRICAL ROOM - HUT 301NB		
DP-1		NUMBER OF POLES: 42		VOLTAGE: 480/277V, 3Ø, 4W		
		MAIN BUS RATING: 225A		PANEL MOUNTING: SURFACE		
		MAIN RATING: 200A MCB		PANEL ENCLOSURE (NEMA): 1		
				PANEL MIN. A. I. C. RATING: 65 KA		
C.I.R. No.	C.I.R. BKR.	DESCRIPTION	LOAD - KVA			C.I.R. No.
			AØ	BØ	CØ	
1			4.0			2
3	30	15 KVA XMFR (UPS)		4.0		4
5					4.0	6
7			3.5			8
9	50	30 KVA XMFR (PP-1)		6.8		10
11					5.7	12
13			-			14
15	30	SPARE				16
17						18
19						20
21						22
23						24
25						26
27						28
29						30
31						32
33						34
35						36
37						38
39						40
41						42
TOTAL			7.5	10.8	9.7	
PANEL CONNECTED LOAD			TOTAL			
AØ 14.7			— SOLID NEUTRAL BUS			
BØ 19.6			— EQUIPMENT GROUND BUS			
CØ 17.4						
51.7 TOTAL						

PANEL DESIGNATION		TYPE: -		LOCATION: ETC ROOM - HUT 301NB		
UPP-1		NUMBER OF POLES: 42		VOLTAGE: 120/208V, 3Ø, 4W		
		MAIN BUS RATING: 225A		PANEL MOUNTING: SURFACE		
		MAIN RATING: 60A MCB		PANEL ENCLOSURE (NEMA): 1		
				PANEL MIN. A. I. C. RATING: 10 KA		
C.I.R. No.	C.I.R. BKR.	DESCRIPTION	LOAD - KVA			C.I.R. No.
			AØ	BØ	CØ	
1						2
3						4
5						6
7						8
9						10
11						12
13						14
15						16
17						18
19						20
21						22
23						24
25						26
27						28
29						30
31						32
33						34
35						36
37						38
39						40
41						42
TOTAL						
PANEL CONNECTED LOAD			TOTAL			
AØ —			— SOLID NEUTRAL BUS			
BØ —			— EQUIPMENT GROUND BUS			
CØ —			— FEED THRU LUGS			
TOTAL						

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AUGUST 2015

(1) PROVIDE LOCKDOG ON CIRCUIT BREAKER HANDLE.

PANEL DESIGNATION		TYPE: -		LOCATION: ELECTRICAL ROOM - HUT 301NB		
PP-1		NUMBER OF POLES: 42		VOLTAGE: 120/208V, 3Ø, 4W		
		MAIN BUS RATING: 225A		PANEL MOUNTING: SURFACE		
		MAIN RATING: 100A MCB		PANEL ENCLOSURE (NEMA): 1		
				PANEL MIN. A. I. C. RATING: 10 KA		
C.I.R. No.	C.I.R. BKR.	DESCRIPTION	LOAD - KVA			C.I.R. No.
			AØ	BØ	CØ	
1	20	SPARE				2
3	20	SPARE				4
5	20	ETC ROOM LIGHTING			0.3	6
7	20	ELECT RM/EXTERIOR LTG	0.2			8
9	20	RECEPT - ETC ROOM		0.4		10
11	20	RECEPT - ETC ROOM			0.4	12
13	20	RECEPT - ELEC RM/OUTDOOR	0.8			14
15	20	RECEPT - OUTDOOR		0.4		16
17	15	SPARE				18
19	20	SPARE				20
21	20	SPARE				22
23	20	SPARE				24
25	20	SPARE				26
27	20	SPARE				28
29	20	SPARE				30
31	20	SPARE				32
33	20	SPARE				34
35	20	SPARE				36
37	20	SPARE				38
39	20	SPARE				40
41	20	LEC			1.0	42
TOTAL			1.0	0.8	1.7	
PANEL CONNECTED LOAD			TOTAL			
AØ 3.5			— SOLID NEUTRAL BUS			
BØ 6.8			— EQUIPMENT GROUND BUS			
CØ 5.7						
16.0 TOTAL						

PANEL DESIGNATION KEY	
DP-1	UPP-1
PP-1	

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

PANEL DESIGNATION		TYPE: -	LOCATION: ELECTRICAL ROOM - '301 SB'								
DP-2		NUMBER OF POLES: 42 MAIN BUS RATING: 225A MAIN RATING: 100A M.L.O.	VOLTAGE: 480/277V, 3Ø, 4W PANEL MOUNTING: SURFACE PANEL ENCLOSURE (NEMA): 1 PANEL MIN. A.I.C. RATING: 65 KA								
CIR. No.	CIR. BKR.	DESCRIPTION	LOAD - KVA			CIR. BKR.	CIR. No.				
			AØ	BØ	CØ						
1			4.0			3.2	2				
3	30	15 KVA XFMR (UPS)		4.0		4.8	4				
5					4.0	3.7	6				
7							8				
9	40	SURGE PROTECTIVE DEVICE (SPD)					10				
11							12				
13							14				
15							16				
17							18				
19							20				
21							22				
23							24				
25							26				
27							28				
29							30				
31							32				
33							34				
35							36				
37							38				
39							40				
41							42				
PANEL CONNECTED LOAD			TOTAL	4.0	4.0	4.0	3.2	4.8	3.7	TOTAL	
AØ 7.2			SOLID NEUTRAL BUS								
BØ 8.8			EQUIPMENT GROUND BUS								
CØ 7.7											
23.7 TOTAL											

PANEL DESIGNATION		TYPE: -	LOCATION: ETC ROOM - '301 SB'					
UPP-3		NUMBER OF POLES: 42 MAIN BUS RATING: 225A MAIN RATING: 60A MCB	VOLTAGE: 120/208V, 3Ø, 4W PANEL MOUNTING: SURFACE PANEL ENCLOSURE (NEMA): 1 PANEL MIN. A.I.C. RATING: 10 KA					
CIR. No.	CIR. BKR.	DESCRIPTION	LOAD - KVA			CIR. BKR.	CIR. No.	
			AØ	BØ	CØ			
1							2	
3							4	
5							6	
7							8	
9							10	
11							12	
13							14	
15							16	
17							18	
19							20	
21							22	
23							24	
25							26	
27							28	
29							30	
31							32	
33							34	
35							36	
37							38	
39							40	
41							42	
PANEL CONNECTED LOAD			TOTAL				TOTAL	
AØ			SOLID NEUTRAL BUS					
BØ			EQUIPMENT GROUND BUS					
CØ			FEED THRU LUGS					
TOTAL								

PANEL DESIGNATION		TYPE: -	LOCATION: ELECTRICAL ROOM - '301 SB'								
PP-2		NUMBER OF POLES: 42 MAIN BUS RATING: 225A MAIN RATING: 100A MCB	VOLTAGE: 120/208V, 3Ø, 4W PANEL MOUNTING: SURFACE PANEL ENCLOSURE (NEMA): 1 PANEL MIN. A.I.C. RATING: 10 KA								
CIR. No.	CIR. BKR.	DESCRIPTION	LOAD - KVA			CIR. BKR.	CIR. No.				
			AØ	BØ	CØ						
1	20	SPARE					2				
3	20	SPARE					4				
5	20	ETC ROOM LIGHTING			0.3		6				
7	20	ELEC RM/EXTERIOR LTG	0.2			2.0	8				
9	20	RECEPT - ETC ROOM		0.4		2.0	10				
11	20	RECEPT - ETC ROOM			0.4		12				
13	20	RECEPT - ELEC RM/OUTDOOR	0.8				14				
15	20	RECEPT - OUTDOOR		0.4		2.0	16				
17	15	SPARE				2.0	18				
19	20	SPARE				0.2	20				
21	20	SPARE					22				
23	20	SPARE					24				
25	20	SPARE					26				
27	20	SPARE					28				
29	20	SPARE					30				
31	20	SPARE					32				
33	20	SPARE					34				
35	20	SPARE					36				
37	20	SPARE					38				
39	20	SPARE					40				
41	20	LEC			1.0		42				
PANEL CONNECTED LOAD			TOTAL	1.0	0.8	1.7	2.2	4.0	2.0	TOTAL	
AØ 3.2			SOLID NEUTRAL BUS								
BØ 4.8			EQUIPMENT GROUND BUS								
CØ 3.7											
11.7 TOTAL											

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AUGUST 2015

(1) PROVIDE LOCKDOG ON CIRCUIT BREAKER HANDLE.

PANEL DESIGNATION KEY	
DP-2	UPP-3
PP-2	

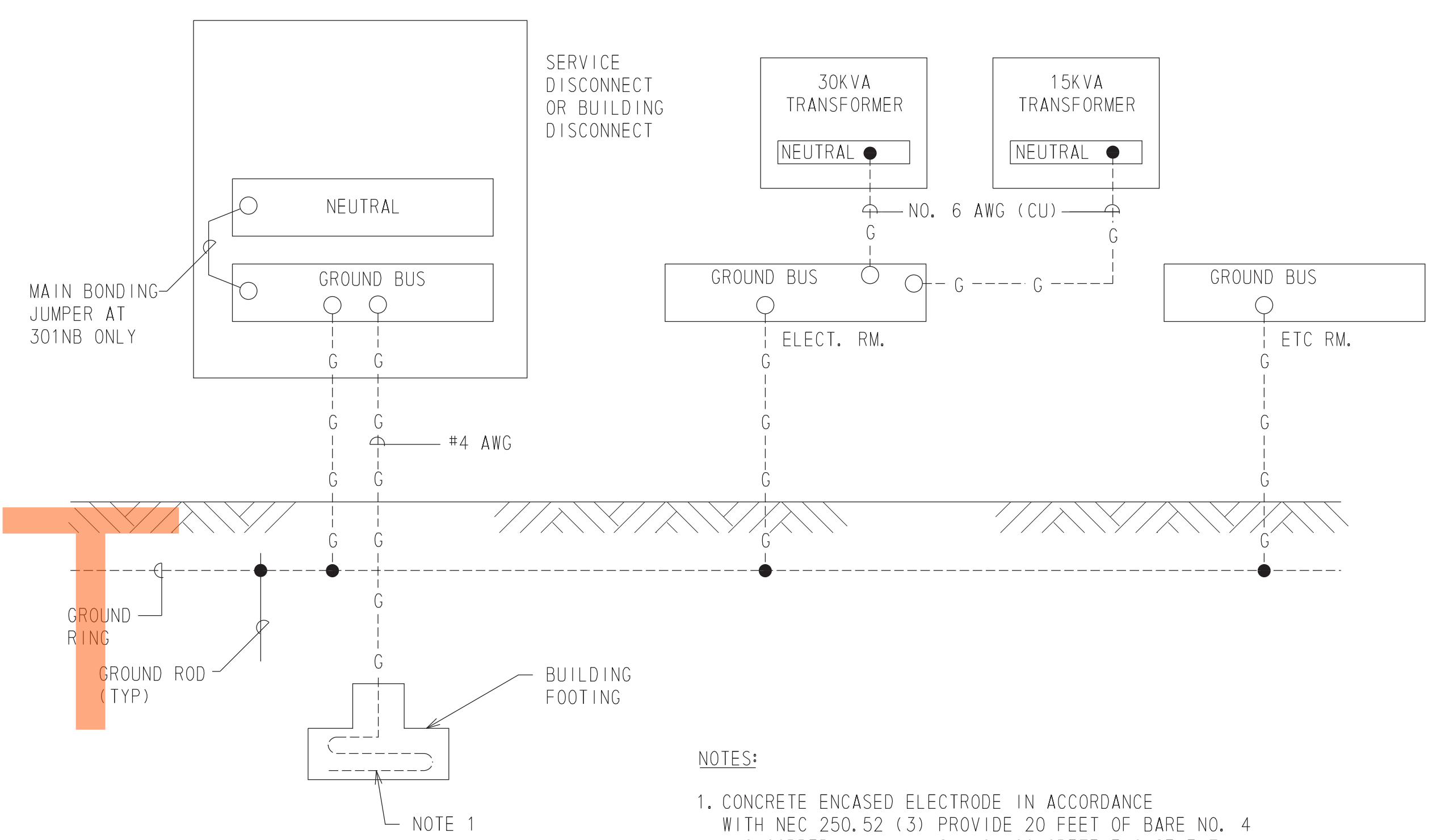
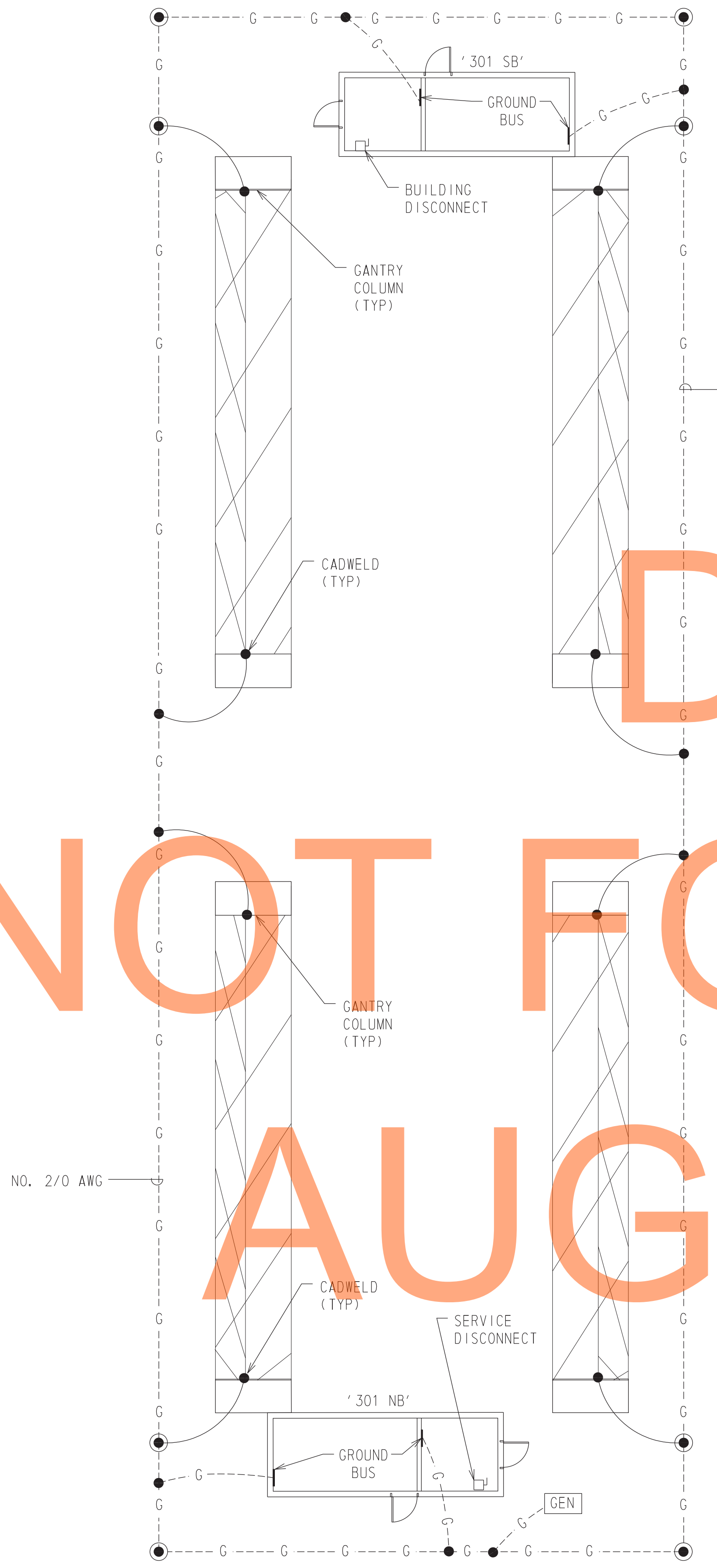
<b>DELAWARE DEPARTMENT OF TRANSPORTATION</b>	ADDENDUMS / REVISIONS	<b>US 301 MARYLAND STATE LINE TO LEVELS ROAD</b>	CONTRACT	BRIDGE NO.	<b>ELECTRICAL PANEL SCHEDULES</b>	SHEET NO.
	T200811301			DESIGNED BY: JLG		840
	COUNTY			CHECKED BY: RAK		TOTAL SHTS.
NEW CASTLE					850	

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

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AUGUST 2015



**NOTES:**

1. CONCRETE ENCASED ELECTRODE IN ACCORDANCE WITH NEC 250.52 (3) PROVIDE 20 FEET OF BARE NO. 4 AWG COPPER, MINIMUM 2-INCH CONCRETE ENCASEMENT AT BOTTOM OF FOOTING.

2 GROUNDING DETAIL  
E-09 SCALE: N. T. S.

2 GROUNDING PLAN  
E-09 SCALE: N. T. S.

LAST REVISED: 3/12/2008 K:\50343\_AET\GENERAL\XREFS\SB\_A1.DGN

ADDENDUMS / REVISIONS	

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JLG
	CHECKED BY: RAK

12/2012	E-09
<b>ELECTRICAL DETAILS</b>	
	SHEET NO. 841
	TOTAL SHTS. 850

LUMINAIRE SCHEDULE

FIXTURE TYPE	MANUFACTURER AND CATALOG NO.	VOLT	SYSTEM				LAMP WATTS	MOUNTING				INPUT WATTS	NOTES	DESCRIPTION	REMARKS
			INCAND.	FLUOR.	HID	NO.		SURF.	RECESS	WALL	OTHER				
'A'	LITHONIA 'AFST' SERIES	120/277		●		3	32W TB	●				87	①	HEAVY DUTY INDUSTRIAL, SOLID REFLECTOR	ELECTRONIC BALLAST, INSTANT START < 10% THD, WITH BALLAST DISCONNECT
'B'	LITHONIA 'TWF1' SERIES	120		●		2	26W DTT					49	①	EXTERIOR ARCHITECTURAL WALL PACK, POLYCARBONATE LENS, DIE-CAST METAL BEZEL, DARK BRONZE FINISH, UL LISTED FOR WET LOCATIONS	BOTTOM OF FIXTURE MOUNTED AT 7'-0" AFG PROVIDE WITH INTEGRAL PHOTO ELECTRIC CELL
'EM'	LITHONIA 'ELM' SERIES	120/277	●			2	9W KRYPTON			●		8	①	THERMOPLASTIC EMERGENCY UNIT, DUAL HEADS, HIGH CAPACITY 54W OUTPUT	-
'RH'	LITHONIA 'ELA' SERIES	120/277	●			2	9W KRYPTON			●		-	①	THERMOPLASTIC EMERGENCY REMOTE TWIN HEAD, 6 VOLT KRYPTON LAMPS.	-
NOTES: ① ALL LAMPS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.															

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AUGUST 2015

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ADDENDUMS / REVISIONS	

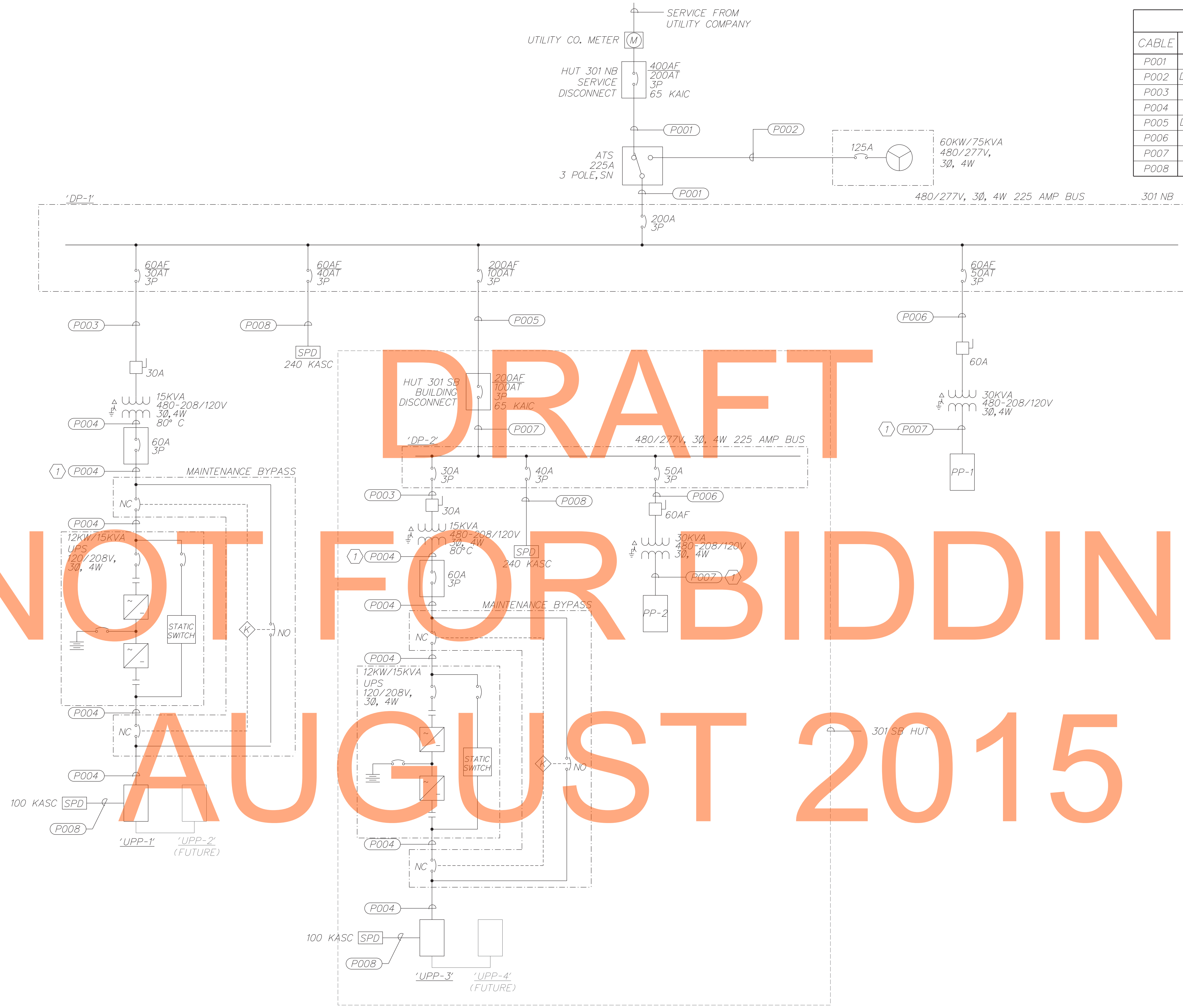
**US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JLG
	CHECKED BY: RAK

12/2012	E-10
<b>ELECTRICAL LUMINAIRE SCHEDULE</b>	
SHEET NO. 842	TOTAL SHTS. 850



FEEDER SCHEDULE		
CABLE	SIZE	WIRE
P001	2"	4-1/C NO. 3/0 AWG & NO. 4 GND
P002	DUCT BANK	4-1/C NO. 1/0 AWG & NO. 4 GND
P003	3/4"	3-1/C NO. 10 AWG & NO. 10 GND
P004	1-1/2"	4-1/C NO. 4 AWG & NO. 8 GND
P005	DUCT BANK	4-1/C NO. 2/0 AWG & NO. 4 GND
P006	1"	3-1/C NO. 6 AWG & NO. 10 GND
P007	1-1/2"	4-1/C NO. 1 AWG & NO. 6 GND
P008	1"	4-1/C NO. 6 AWG & NO. 6 GND



KEY NOTES:  
 ① MAXIMUM CONDUCTOR LENGTH 25 FEET.

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1 MAIN ONE LINE DIAGRAM  
 E-11 SCALE: N. T. S.







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ADDENDUMS / REVISIONS

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JLG
	CHECKED BY: RAK

12/2012	E-11
<b>ELECTRICAL</b>	
<b>MAIN ONE LINE DIAGRAM</b>	
SHEET NO. 843	TOTAL SHTS. 850

**LEGEND:**

	GROUND CONNECTION
	CONDUIT - EXPOSED
	CONDUIT - EMBEDDED
	CONDUIT - TURNED DOWN
	CONDUIT - TURNED UP
	POWER OR CONTROL PULLBOX

**GENERAL NOTES:**

- DRAWINGS ARE DIAGRAMMATIC IN NATURE, CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION. CONTRACTORS SHALL COORDINATE ALL WORK WITH OTHER DIVISION TRADES. LOCATE FIXTURES, DEVICES, ETC. IN ORDER TO AVOID INTERFERENCE'S.
- ARCHITECTURAL FEATURES SHOWN ON THESE DRAWINGS ARE FOR BACKGROUND INFORMATION ONLY. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ACTUAL BUILDING CONSTRUCTION OF WALLS AND CURBS. REFER TO MECHANICAL DRAWINGS FOR ACTUAL LOCATION OF EQUIPMENT.
- CONTRACTORS SHALL IN A WORKMANLIKE MANNER, PROVIDE A COMPLETE OPERABLE SYSTEM. OUTLINE DESCRIPTION AND DIAGRAMMATIC REPRESENTATION OF SYSTEM OPERATION AND EQUIPMENT DOES NOT LIMIT CONTRACTOR LIABILITY FOR INSTALLATION OF A COMPLETE AND OPERABLE SYSTEM.
- ALL WORK SHALL BE PERFORMED AS REQUIRED BY APPLICABLE SECTIONS OF THE NATIONAL ELECTRICAL CODE, LATEST EDITION, AND ALL GOVERNING LOCAL CODES, LAWS/OR REGULATIONS.
- ALL CONDUIT PENETRATIONS UP THROUGH GRADE AND THROUGH FOUNDATIONS SHALL BE PVC-COATED RIGID STEEL CONDUIT (PCRM). ALL OTHER EXPOSED OUTDOOR CONDUITS SHALL BE GALVANIZED RIGID STEEL CONDUIT. MINIMUM SIZED DIAMETER SHALL BE 1" UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL UTILIZE THE CONDUIT MANUFACTURER'S RECOMMENDED SUPPORTS FOR ALL CONDUIT ROUTINGS.

**ABBREVIATIONS:**

A	AMPERE	N.I.C.	NOT IN CONTRACT
A.C.	ALTERNATING CURRENT	N.O.	NORMALLY OPEN
A/C	AIR CONDITIONING	No.	NUMBER
ADJ.	ADJACENT	N.T.S.	NOT TO SCALE
AE	AUTOMATIC ENTRY	O.C.	ON CENTER
A.F.F.	ABOVE FINISHED FLOOR	OH	OVERHEAD
A.F.G.	ABOVE FINISHED GRADE	PNL.	PANEL
A.I.C.	AMPERE INTERRUPTING CAPACITY	PWR	POWER CABLE/CONDUIT
A.T.S.	AUTOMATIC TRANSFER SWITCH	PVC	POLYVINYL CHLORIDE
AUTO	AUTOMATIC	PCRM	PVC-COATED RIGID METAL CONDUIT
AVI	AUTOMATIC VEHICLE IDENTIFICATION	R.G.S.	RIGID GALVANIZED STEEL
AWG	AMERICAN WIRE GAUGE	SB	SOUTHBOUND
BCC	BOOTH CONTROL CENTER	SCI	SIGN CONTROLLER INTERFACE
BLDG.	BUILDING	SW	SWITCH
C	CONDUIT	T.B.	TOLL BOOTH
CB	CIRCUIT BREAKER	T.S.	TRAFFIC SIGNAL
C.P.	CONTROL PANEL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
CNTL	CONTROL CABLE/CONDUIT	TYP.	TYPICAL
CONTR	CONTRACTOR	U.L.	UNDERWRITERS LABORATORIES
COTB.	CANOPY OVERRIDE TERMINATION BOX	U.N.O.	UNLESS NOTED OTHERWISE
CNTOR	CONTACTOR	UPS	UNINTERRUPTED POWER SUPPLY
D.C.	DIRECT CURRENT	V	VOLT
DE	DEDICATED ENTRY	VES	VEHICLE ENFORCEMENT SYSTEM
DIA.	DIAMETER	W.P.	WEATHERPROOF
D.S.	DISCONNECT SWITCH	X	EXIT
E.C.	ELECTRICAL CONTRACTOR	PED. ACC.	PEDESTRIAN ACCESSWAY
EM.	EMERGENCY		
EMB.	EMBEDDED		
E.P.	EXPLOSION PROOF		
ETC	ELECTRONIC TOLL COLLECTOR		
EXH.	EXHAUST		
F.A.	FIRE ALARM		
FT.	FOOT, FEET		
FU.	FUSE		
G.C.	GENERAL CONTRACTOR		
G.F.I.	GROUND FAULT INTERRUPTER		
GRD.	GROUND		
H.I.D.	HIGH INTENSITY DISCHARGE		
HP	HORSEPOWER		
H.P.S.	HIGH PRESSURE SODIUM		
HVAC	HEAT-VENT-AIR CONDITIONING		
HTR.	HEATER		
I.G.	ISOLATED GROUND		
I.M.C.	INTERMEDIATE METAL CONDUIT		
IN.	INCH		
JB	JB		
KW.	KILOWATT		
LTC.	LIGHTING		
MIN.	MINIMUM		
M.H.	MOUNTING HEIGHT		
M.L.O.	MAIN LUG ONLY		
MTD.	MOUNTED		
MCB	MAIN CIRCUIT BREAKER		
M.C.S.	MOLDED CASE SWITCH		
NB	NORTH BOUND		
N.C.	NORMALLY CLOSED		
NF	NONFUSIBLE		

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# AUGUST 2015

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ADDENDUMS / REVISIONS

**US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD**

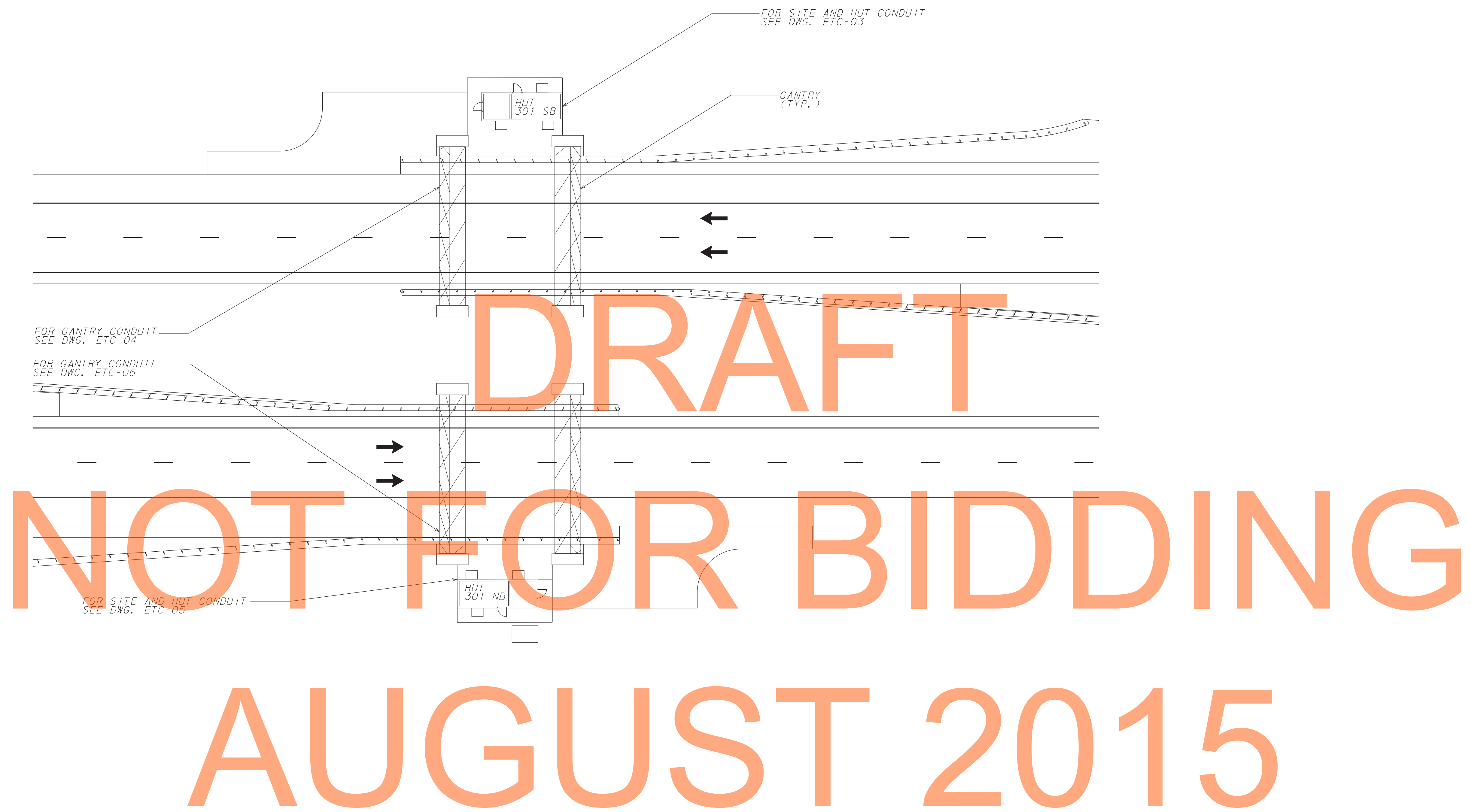
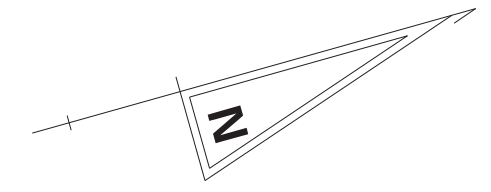
CONTRACT	BRIDGE NO.
T200811301	
COUNTY	DESIGNED BY: JTB
NEW CASTLE	CHECKED BY: RAK

12/2012

ETC-01

**ETC  
LEGEND, SYMBOLS  
& ABBREVIATIONS**

SHEET NO.
844
TOTAL SHTS.
850



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AUGUST 2015

SITE PLAN  
SCALE: 1" = 20'-0"

LAST REVISED: 3/12/2008  
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ADDENDUMS / REVISIONS

**US 301**  
**MARYLAND STATE LINE**  
**TO LEVELS ROAD**

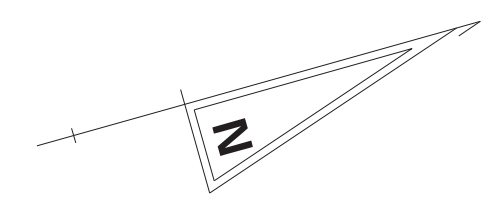
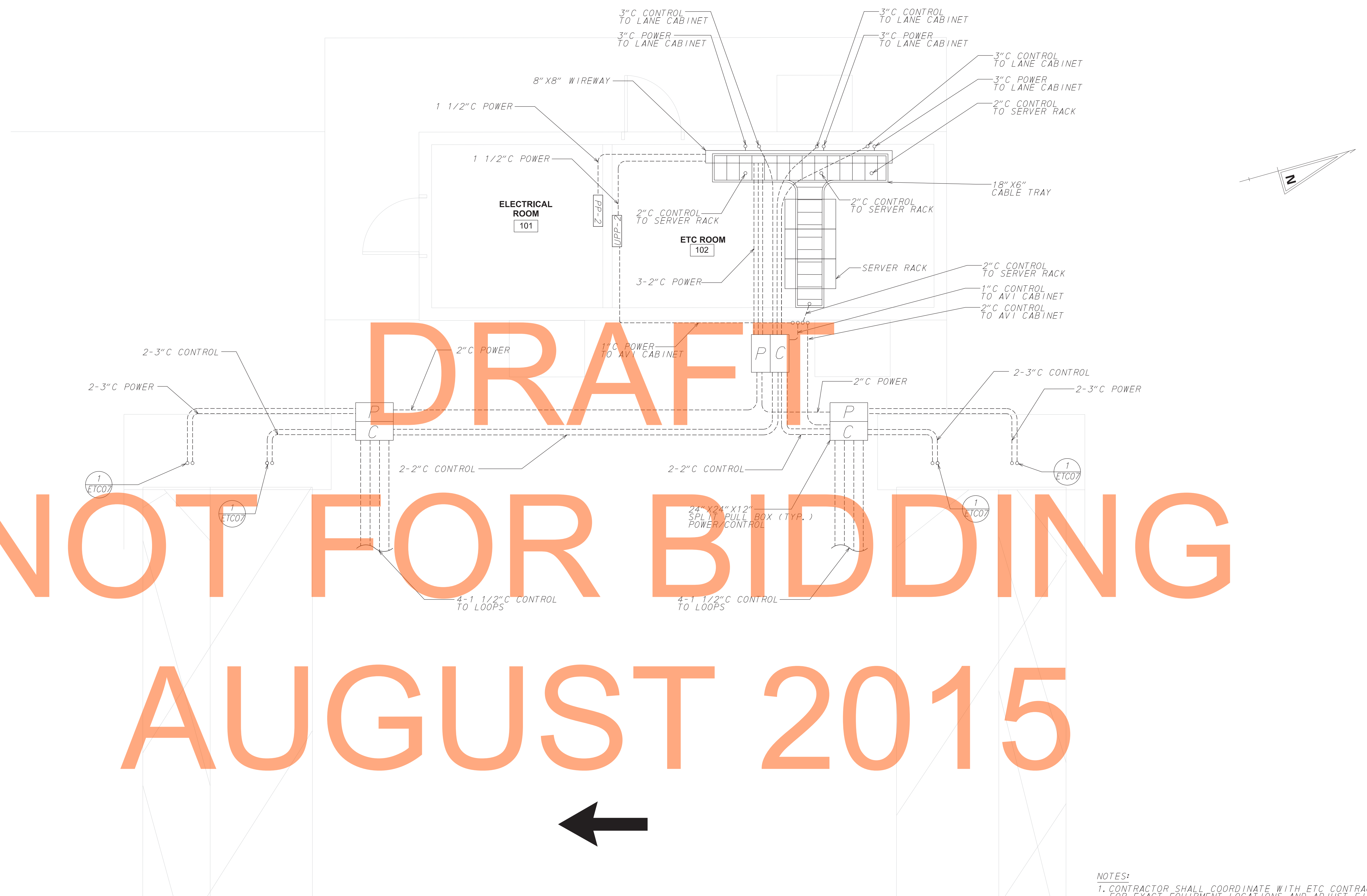
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T200811301	DESIGNED BY: JTB
COUNTY	CHECKED BY: RAK
NEW CASTLE	

12/2012	ETC-02
ETC OVERALL SITE PLAN	
SHEET NO.	845
TOTAL SHTS.	850

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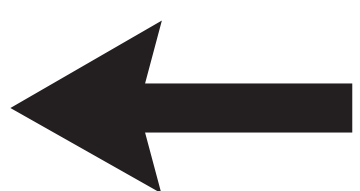
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AUGUST 2015



- NOTES:**
- CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.
  - SEE DWG. ETC-07 FOR GANTRY COLUMN CONDUIT DETAILS.

ETC SITE & HUT 301 SB - AET CONDUIT PLAN  
SCALE: 3/8" = 1'-0"



LAST REVISED: 3/12/2008  
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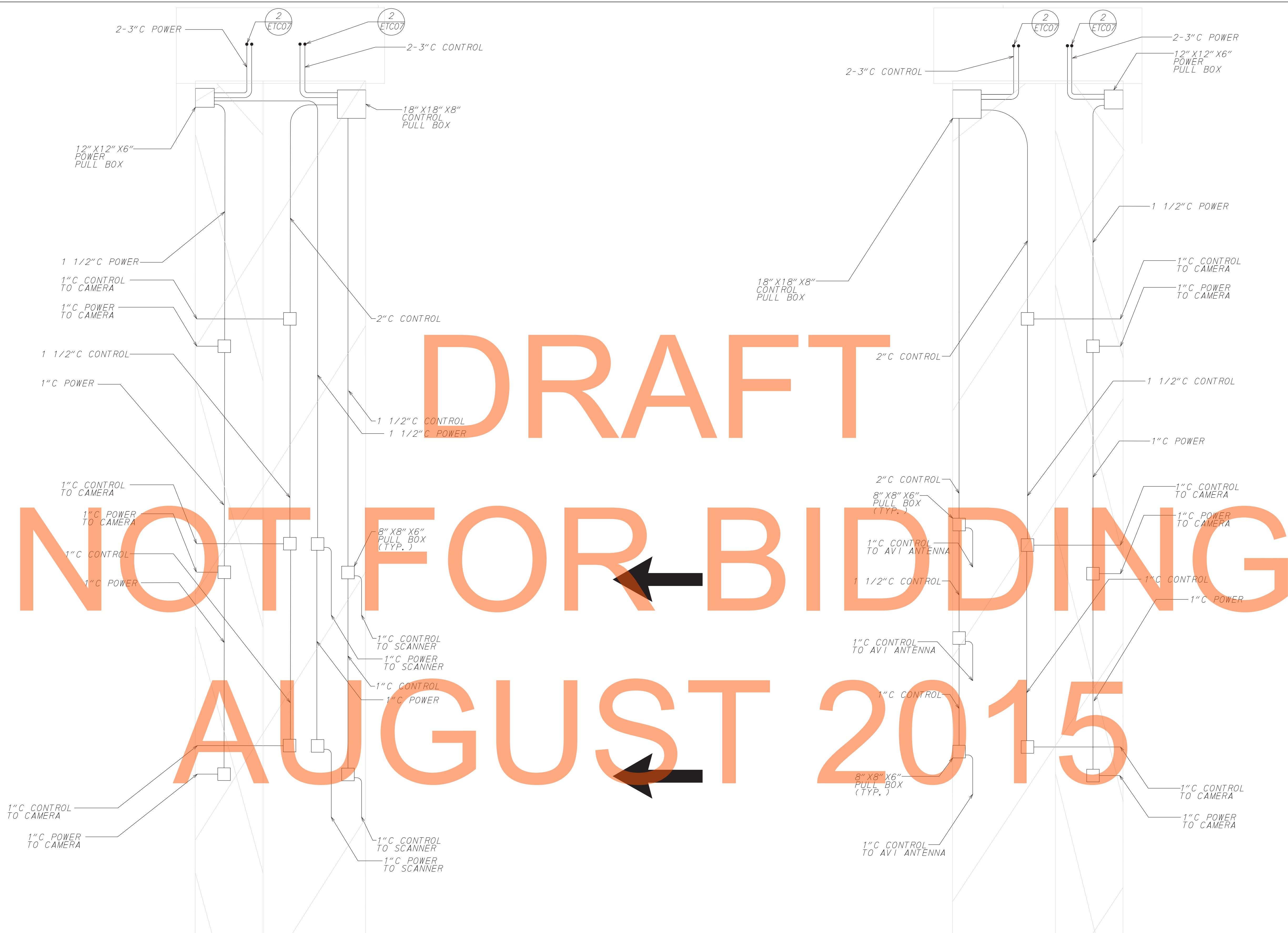


ADDENDUMS / REVISIONS

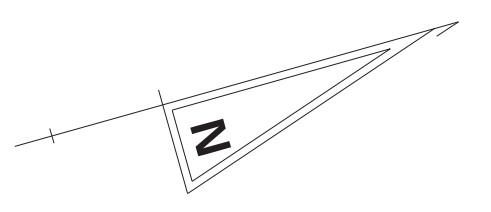
**US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD**

CONTRACT T200811301	BRIDGE NO. 
COUNTY NEW CASTLE	DESIGNED BY: JTB CHECKED BY: RAK

12/2012	ETC-03
ETC SITE & HUT 301 SB AET CONDUIT PLAN	
SHEET NO. 846	TOTAL SHTS. 850



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ETC GANTRY CONDUIT PLAN AET SB  
SCALE: 3/8" = 1'-0"

- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.
  2. SEE DWG. ETC-07 FOR GANTRY COLUMN CONDUIT DETAILS.

LAST REVISED: 3/12/2008  
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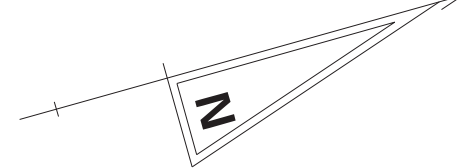
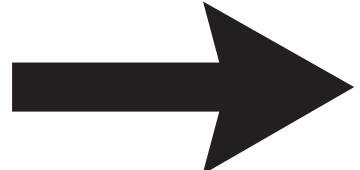


ADDENDUMS / REVISIONS

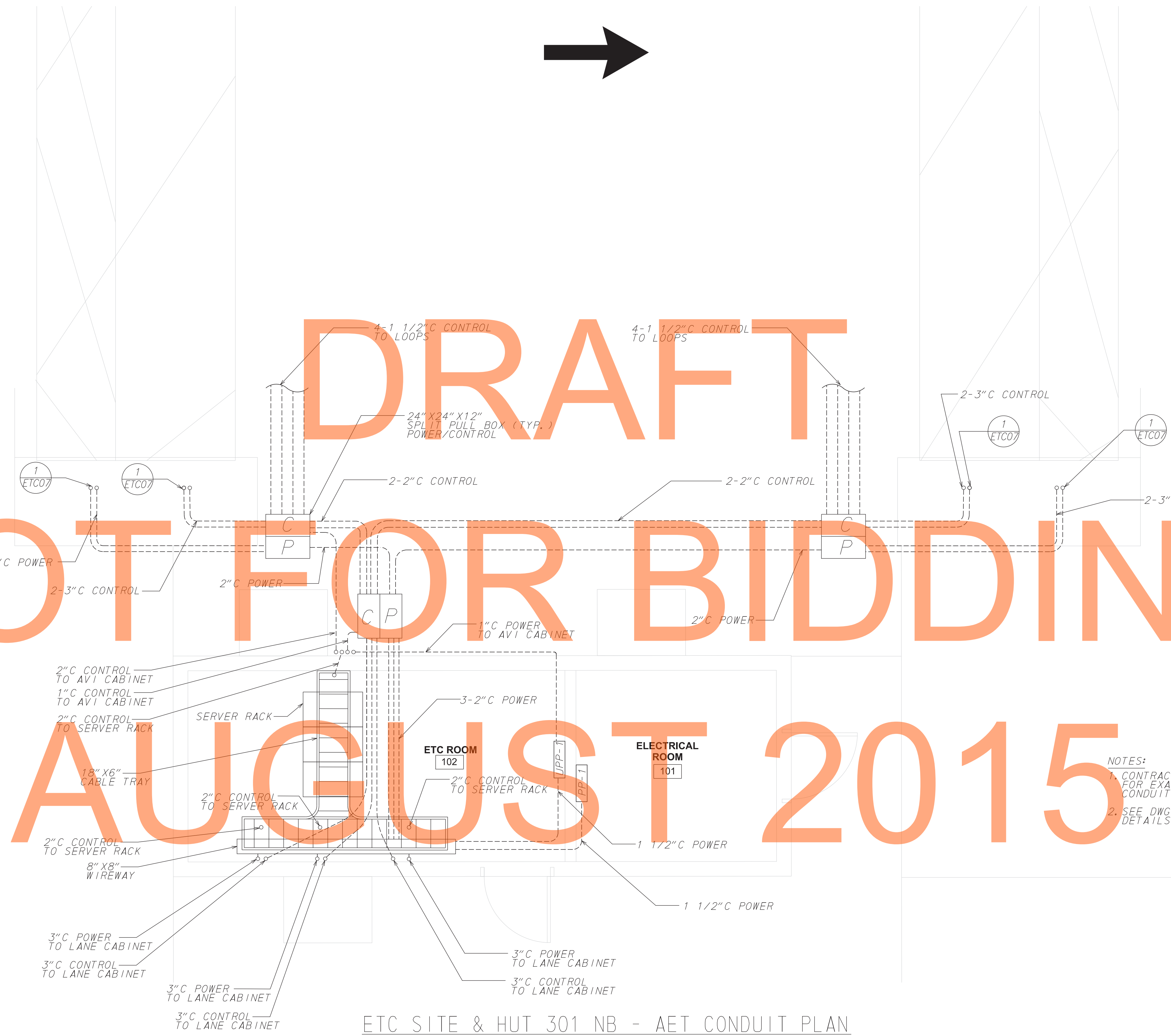
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CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JTB CHECKED BY: RAK

12/2012	ETC-04
ETC GANTRY CONDUIT PLAN AET SB	
SHEET NO. 847	TOTAL SHTS. 850



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NOTES:  
1. CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.  
2. SEE DWG. ETC-07 FOR GANTRY COLUMN CONDUIT DETAILS.

ETC SITE & HUT 301 NB - AET CONDUIT PLAN  
SCALE: 3/8" = 1'-0"

LAST REVISED: 3/12/2008  
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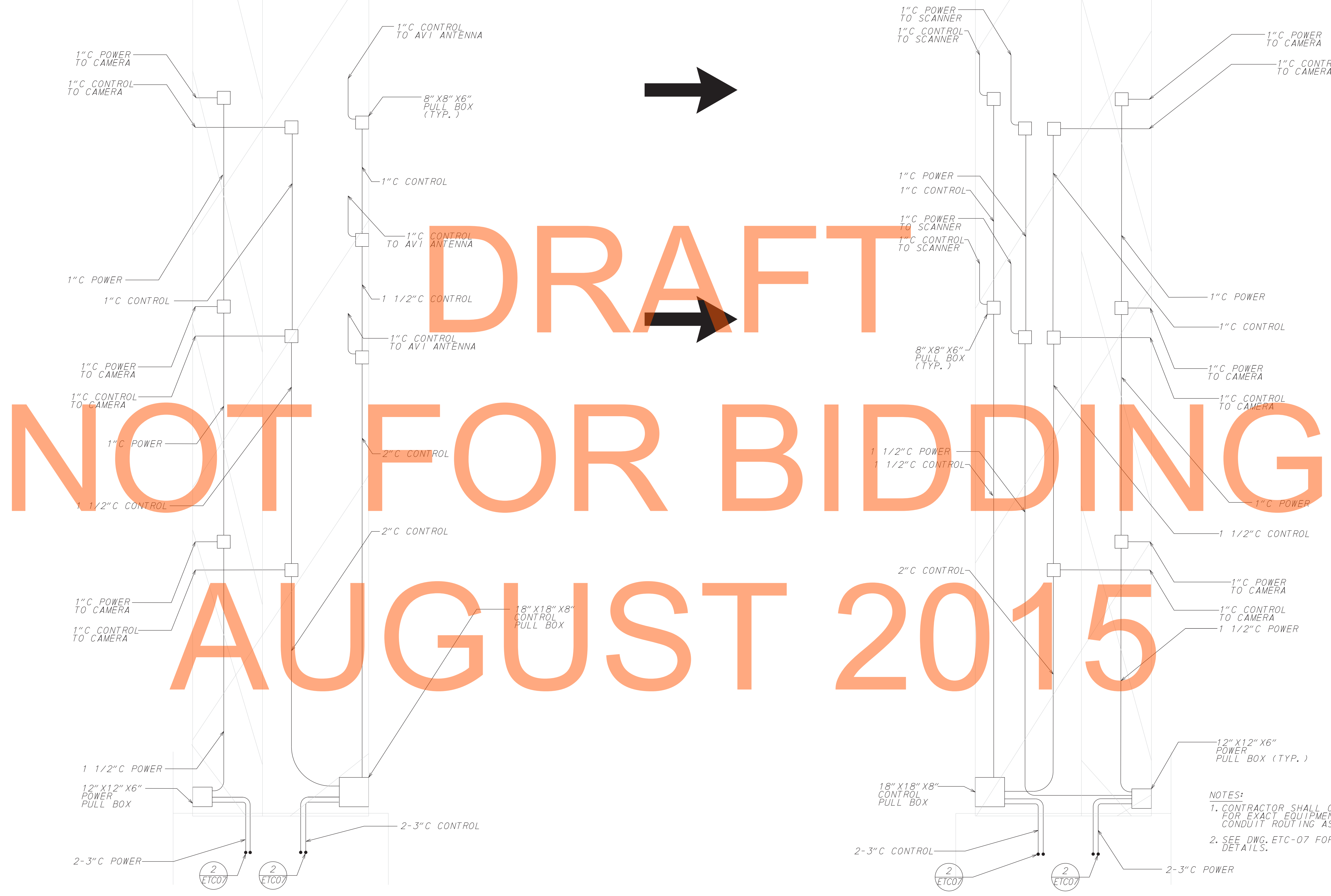
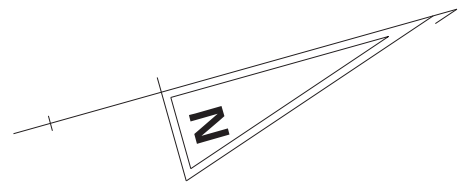


ADDENDUMS / REVISIONS

US 301  
MARYLAND STATE LINE  
TO LEVELS ROAD

CONTRACT T200811301	BRIDGE NO.
COUNTY NEW CASTLE	DESIGNED BY: JTB
	CHECKED BY: RAK

12/2012	ETC-05
ETC SITE & HUT 301 NB AET CONDUIT PLAN	
SHEET NO. 848	TOTAL SHTS. 850



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AUGUST 2015

ETC GANTRY CONDUIT PLAN AET NB  
SCALE: 3/8" = 1'-0"

- NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.
  2. SEE DWG. ETC-07 FOR GANTRY COLUMN CONDUIT DETAILS.

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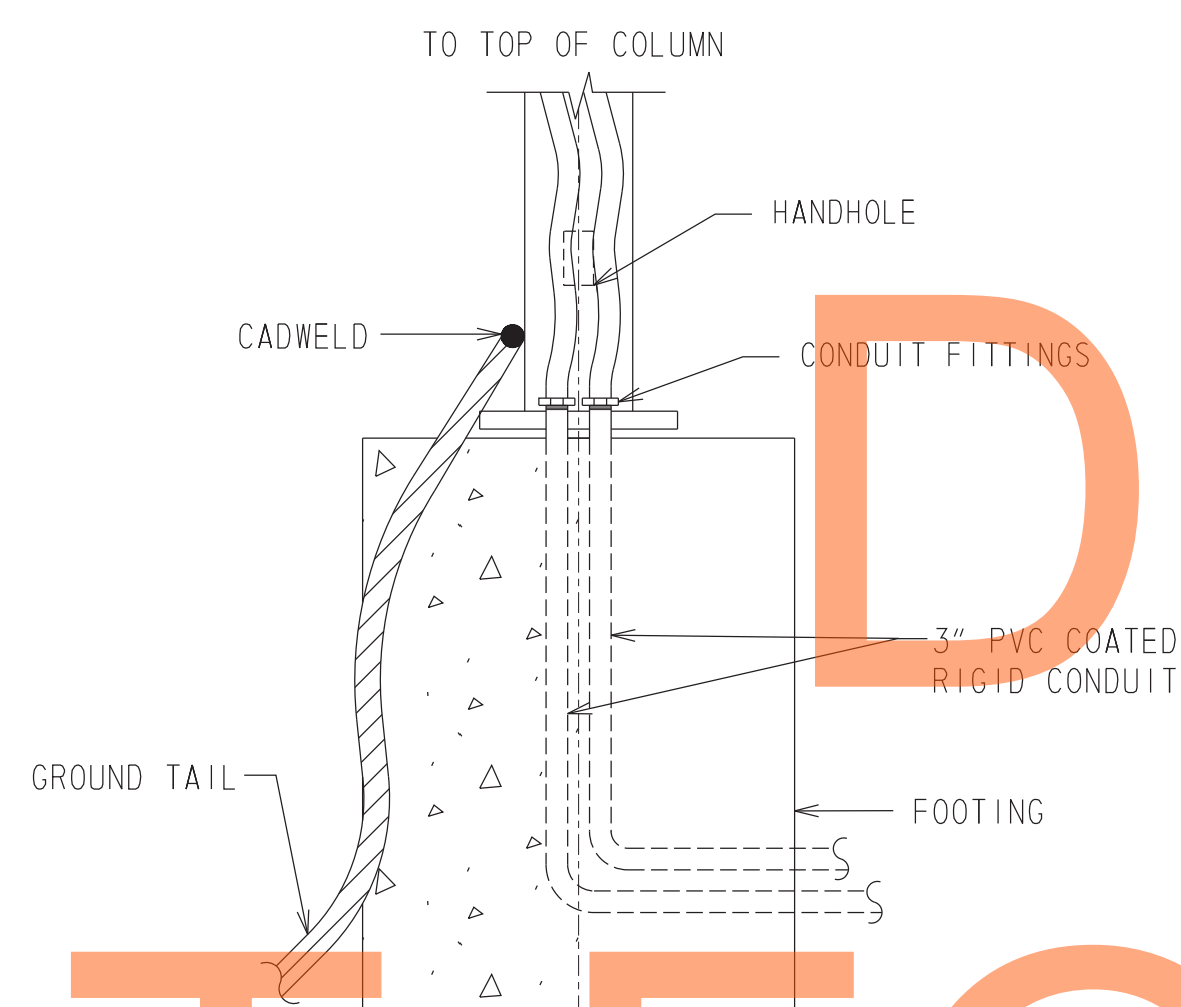
CONTRACT T200811301	BRIDGE NO. 
COUNTY NEW CASTLE	DESIGNED BY: JTB CHECKED BY: RAK

12/2012	ETC-06
ETC GANTRY CONDUIT PLAN AET NB	
SHEET NO. 849	TOTAL SHTS. 850

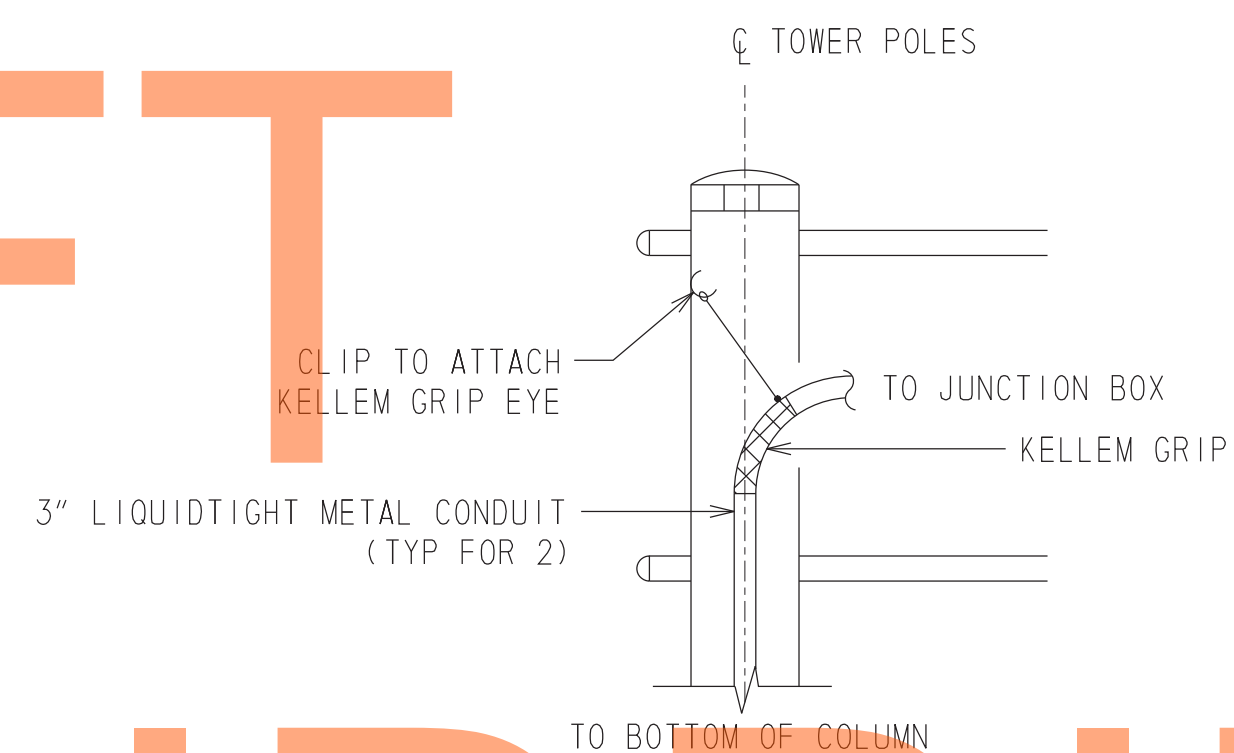
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1 TYPICAL GANTRY COLUMN BOTTOM ELEVATION  
ETC07 N.T.S.



2 TYPICAL GANTRY COLUMN TOP ELEVATION  
ETC07 N.T.S.

LAST REVISED: 3/12/2008  
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**DELAWARE**  
**DEPARTMENT OF TRANSPORTATION**

ADDENDUMS / REVISIONS

**US 301**  
**MARYLAND STATE LINE**  
**TO LEVELS ROAD**

CONTRACT	BRIDGE NO.
T200811301	DESIGNED BY: JLG
COUNTY	CHECKED BY: RAK
NEW CASTLE	

12/2012

ETC-07

**ETC**  
**DETAILS**

SHEET NO.
850
TOTAL SHTS.
850