# INDEX OF SHEETS

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IS-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

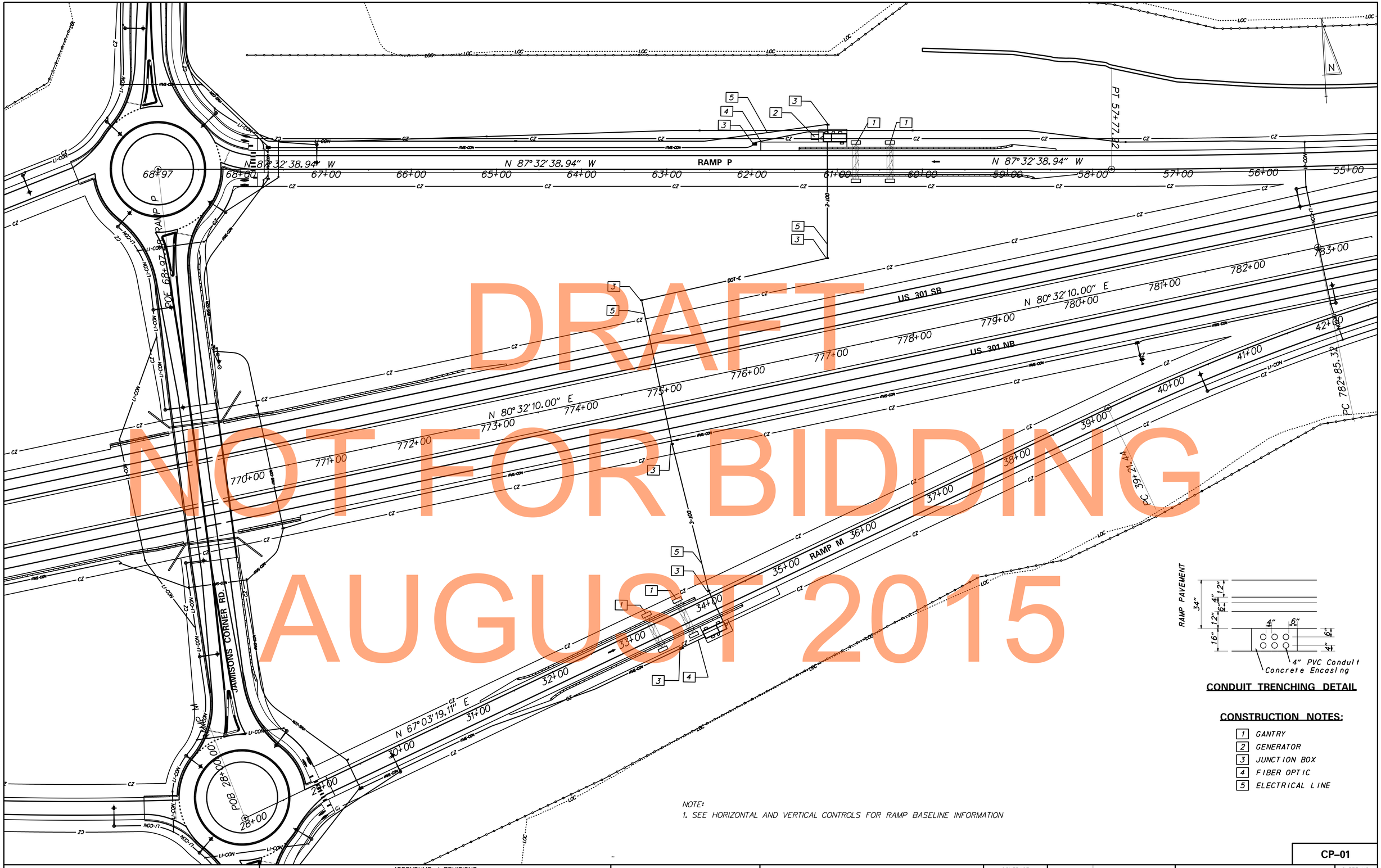
US 301
SR 896 TO SR 1

CONTRACT T200950343
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: TQD
CHECKED BY: BDP

INDEX SHEET

SHEET NO. 833
TOTAL SHTS. 875

LAST REVISED: 3/12/2008
H:\50343_TOLL-PLAZA\GENERAL\XREFS\SB_A1_WRA.DGN







**CONDUIT TRENCHING DETAIL**

**CONSTRUCTION NOTES:**

1. GANTRY
2. GENERATOR
3. JUNCTION BOX
4. FIBER OPTIC
5. ELECTRICAL LINE

NOTE:
1. SEE HORIZONTAL AND VERTICAL CONTROLS FOR RAMP BASELINE INFORMATION

CP-01

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

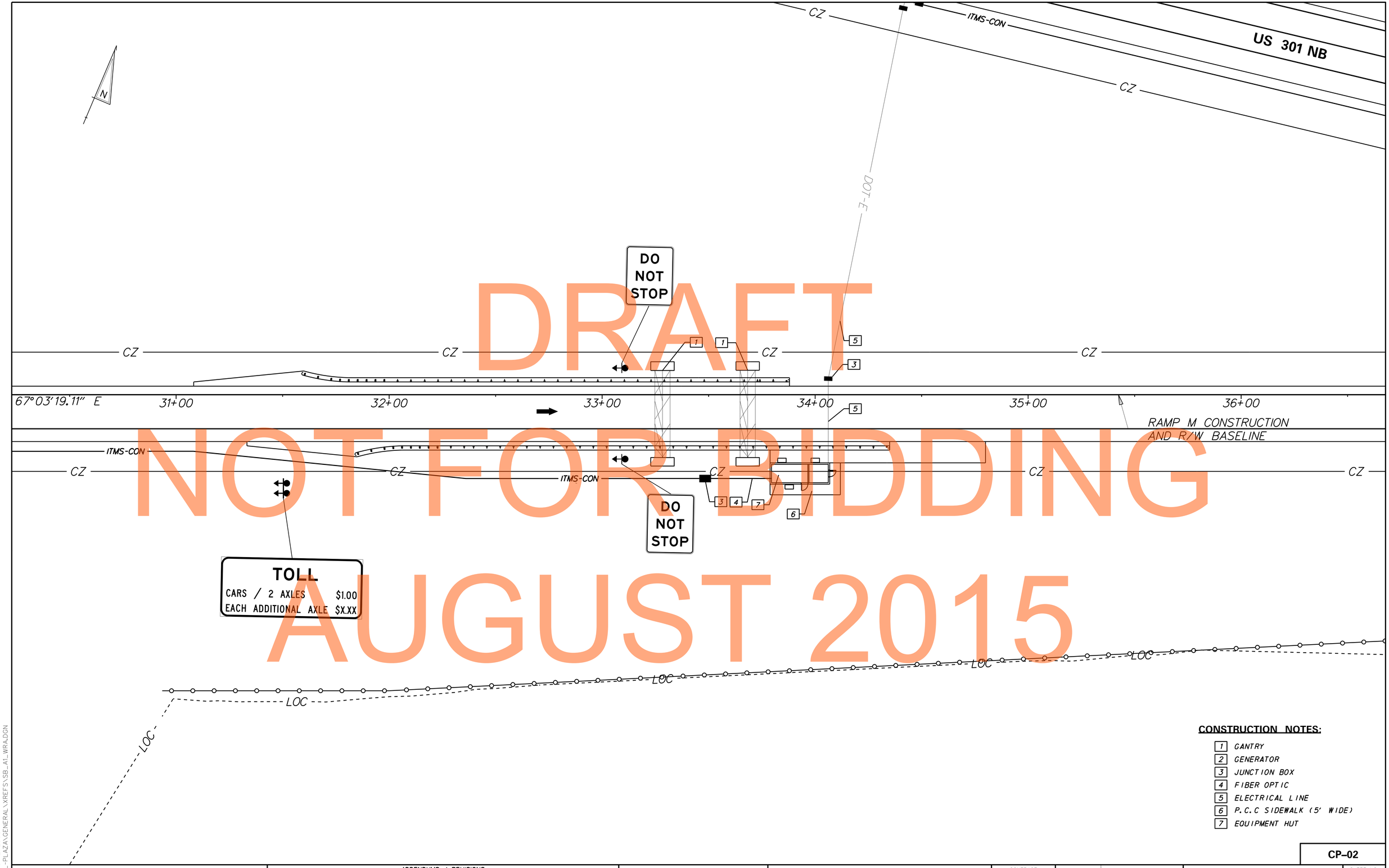
ADDENDUMS / REVISIONS

SCALE 0 50 100 150 FEET

**US 301**
**SR 896 TO SR 1**

| CONTRACT | BRIDGE NO. | SHEET NO. |
|---|---|---|
| T200950343 | | 834 |
| COUNTY | DESIGNED BY: TQD | TOTAL SHTS. |
| NEW CASTLE | CHECKED BY: BDP | 875 |

**GENERAL LAYOUT CONSTRUCTION PLAN**






**CONSTRUCTION NOTES:**

1. GANTRY
2. GENERATOR
3. JUNCTION BOX
4. FIBER OPTIC
5. ELECTRICAL LINE
6. P.C.C SIDEWALK (5' WIDE)
7. EQUIPMENT HUT

CP-02

| | | | | | | |
|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | SCALE 0 20 40 60 FEET | US 301 SR 896 TO SR 1 | CONTRACT T200950343 / COUNTY NEW CASTLE | BRIDGE NO. / DESIGNED BY: TQD / CHECKED BY: BDP | CONSTRUCTION PLAN | SHEET NO. 835 / TOTAL SHTS. 875 |

LAST REVISED: 3/12/2008
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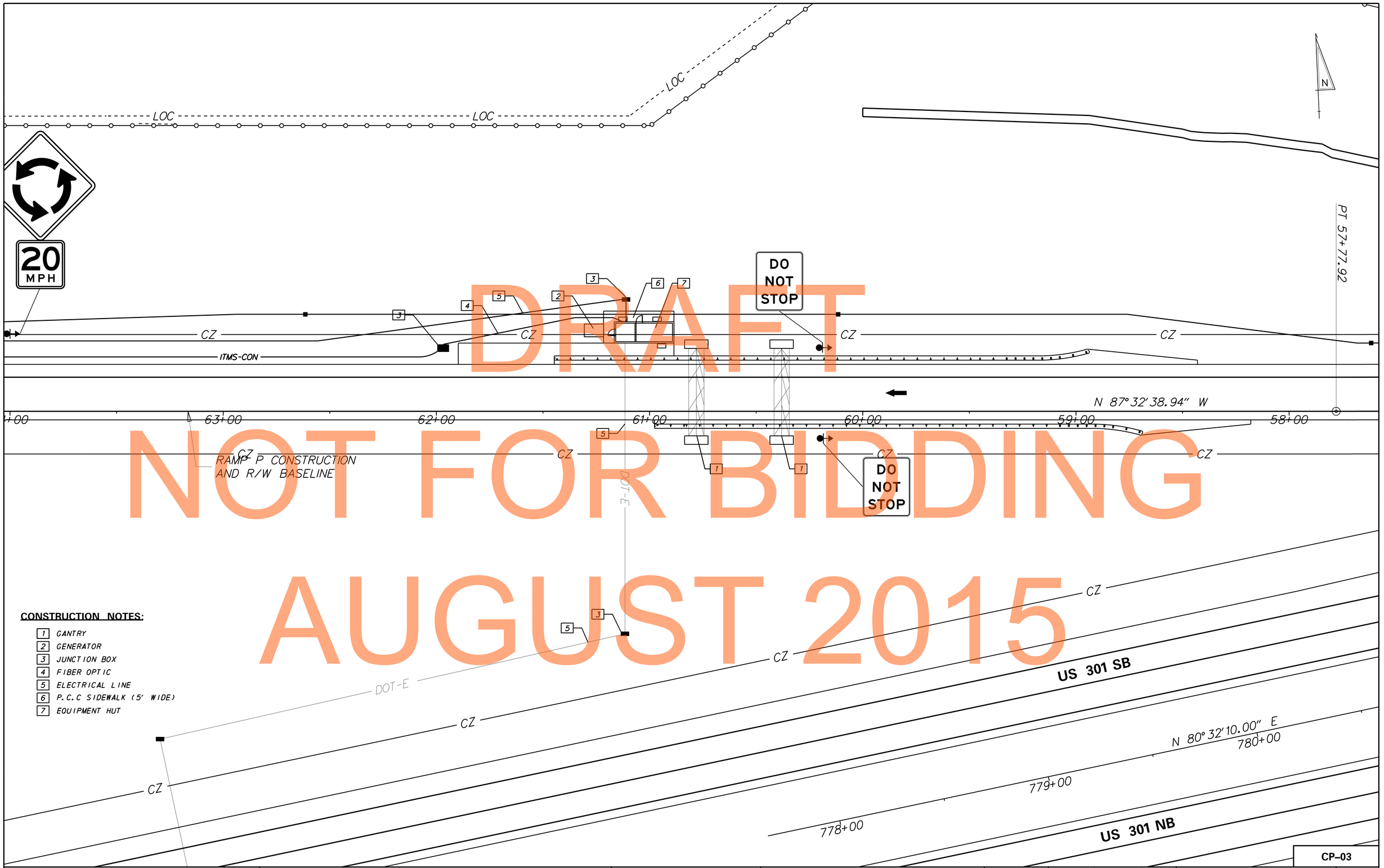


**CONSTRUCTION NOTES:**

1. GANTRY
2. GENERATOR
3. JUNCTION BOX
4. FIBER OPTIC
5. ELECTRICAL LINE
6. P.C.C SIDEWALK (5' WIDE)
7. EQUIPMENT HUT

CP-03

| | | | | | | |
|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | SCALE 0 20 40 60 FEET | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | CONSTRUCTION PLAN |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: TQD | SHEET NO. 836 |
| | | | | | CHECKED BY: BDP | TOTAL SHTS. 875 |

LAST REVISED: 3/12/2008
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# GENERAL NOTES

1. ALL WORK SHALL BE COORDINATED WITH DELDOT.
2. COORDINATION OF WORK: THE CONTRACTOR HAS THE RESPONSIBILTY 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.
3. VERIFY AND COORDINATE THE LOCATION OF EQUIPMENT WITH ELECTRICAL, AND MECHANICAL DRAWINGS.
4. ALL DIMENSIONS SHOWN TO FACE OF CMU OR CENTERLINE OF COLUMN GRID UNLESS OTHERWISE NOTED. DIMENSIONS NOTED "CLEAR" SHALL BE FROM FINISH FACE TO FINISH FACE.
5. ALL DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO FABRICATION, ERECTION, AND/OR INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMEDYING ANY DIMENSIONAL ERRORS IN FABRICATION, ERECTION, AND/OR INSTALLATION WITHOUT ADDITIONAL COST TO THE OWNER AND WITHOUT ADDITIONAL TIME TO PROJECT SCHEDULE.
6. FOR ALL DIMENSIONS NOT SHOWN ON FLOOR PLAN REFER TO ENLARGED PLANS.
7. ALL MASONRY DIMENSIONS, MO, ETC ARE NOMINAL DIMENSIONS UNLESS OTHERWISE NOTED.
8. SEE SPECIFICATIONS FOR ALL INTERIOR AND EXTERIOR SIGNAGE REQUIREMENTS.
9. FE INDICATES FIRE EXTINGUISHER. SURFACE MOUNTED UNITS
10. INTERIOR DOOR DIMENSIONS ARE TO MASONRY OPENINGS UNLESS OTHERWISE NOTED.
11. SEE MECHANICAL / ELECTRICAL DRAWINGS FOR EXACT LOCATION OF CURB AND TYPE OF EQUIPMENT. SEE STRUCTURAL DRAWINGS FOR REINFORCING REQUIREMENTS.
12. 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.
13. ALL CEILINGS TO RECEIVE SAME PAINT FINISH AS THE ROOM WALLS UNLESS OTHERWISE NOTED.

# ARCHITECTURAL ABBREVIATIONS

| | |
|---|---|
| ABV | ABOVE |
| AC | AIR CONDITIONER |
| ACST | ACOUSTIC |
| ADDL | ADDITIONAL |
| ADJ | ADJACENT |
| AFF | ABOVE FINISH FLOOR |
| AGGR | AGGREGATE |
| AL | ALUMINUM |
| ALT | ALTERNATE |
| ARCH | ARCHITECTURAL |
| ASB | ASBESTOS |
| ASPH | ASPHALT |
| ASPHRS | ASPHALT ROOF SHINGLES |
| ASSN | ASSOCIATION |
| ASST | ASSISTANT |
| ASSY | ASSEMBLY |
| AVE | AVENUE |
| AVG | AVERAGE |
| B/O | BOTTOM OF |
| BALC | BALCONY |
| BD | BOARD |
| BETW | BETWEEN |
| BLDG | BUILDING |
| BLKG | BLOCKING |
| BLR | BOILER |
| BM | BEAM |
| BP | BASE PLATE |
| BRDG | BRIDGING |
| BRG | BEARING |
| BS | BOTH SIDES |
| BSMT | BASEMENT |
| CAB | CABINET |
| CAP | CAPACITY |
| CARP | CARPET |
| CDR | COILING DOOR |
| CER | CERAMIC |
| CER TILE | CERAMIC TILE |
| CI | CAST IRON |
| CIP | CAST-IRON PIPE |
| CJ | CONTROL JOINT |
| CL | CENTERLINE |
| CLG | CEILING |
| CLO | CLOSET |
| CLR | CLEAR |
| CMIU | CONCRETE MASONRY INSULATED UNIT |
| CMU | CONCRETE MASONRY UNIT |
| CNCL | CONCEALED |
| CO | CLEANOUT |
| COM | COMPANY |
| COL | COLUMN |
| COMP | COMPOSITION |
| CONC | CONCRETE |
| CONSTR | CONSTRUCTION |
| CONT | CONTINUOUS |
| CONTR | CONTRACTOR |
| CRV | CURVED |
| CSK | COUNTERSINK |
| CTD | COATED |
| CTR | CENTER |
| CUH | CABINET UNIT HEATER |
| D | DEPTH |
| DBL | DOUBLE |
| DEG | DEGREE |
| DEPT | DEPARTMENT |
| DET | DETAIL |
| DGL | DIAGONAL |
| DIA | DIAMETER |
| DIM | DIMENSION |
| DIV | DIVISION |
| DL | DEAD LOAD |
| DMPF | DAMPPROOFING |
| DN | DOWN |
| DPN | DEMOUNTABLE PARTITION |
| | MANUFACTURER |
| DR | DOOR |
| DS | DOWNSPOUT |
| DW | DISHWASHER |
| DWG | DRAWING |
| E | EAST |
| EA | EACH |
| EGEN | EMERGENCY GENERATOR |
| EF | EXHAUST FAN |
| EIFS | EXTERIOR INSULATION & FINISH SYSTEM |
| EL | ELEVATION |
| ELEC | ELECTRICAL |
| ELEV | ELEVATOR |
| ENTR | ENTRANCE |
| EPDM | ETHYLENE PROPYLENE DIENE MONOMER |
| ETC | ETCETERA |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| EWC | ELECTRIC WATER COOLER |
| EXH | EXHAUST |
| EXIST | EXISTING |
| EXP | EXPANSION |
| EXP JT | EXPANSION JOINT |
| EXT | EXTERIOR |

| | |
|---|---|
| FAB | FABRICATE |
| FBD | FIBERBOARD |
| FC | FILE CABINET |
| FD | FLOOR DRAIN |
| FDN | FOUNDATION |
| FDR | FIRE DOOR |
| FE | FIRE EXTINGUISHER |
| FEC | FIRE EXTINGUISHER & CABINET |
| FHY | FIRE HYDRANT |
| FIN | FINISH |
| FL | FLASHING |
| FLEX | FLEXIBLE |
| FLG | FLANGE |
| FLR | FLOOR |
| FLRG | FLOORING |
| FP | FIREPROOF |
| FRP | FIBERGLASS-REINFORCED PLASTICS |
| FT | FOOT |
| FTG | FOOTING |
| FURN | FURNITURE |
| GA | GAUGE |
| GALV | GALVANIZED |
| GAR | GARAGE |
| GEN | GENERATOR |
| GL | GLASS |
| GLU-LAM | GLUE-LAMINATED |
| GOVT | GOVERNMENT |
| GR | GRADE |
| GRD | GROUND |
| GVL | GRAVEL |
| GWB | GYPSUM WALLBOARD |
| GYP | GYPSUM |
| H | HIGH |
| HCP | HANDICAP |
| HDWE | HARDWARE |
| HM | HOLLOW METAL |
| HMD | HOLLOW METAL DOOR |
| HORIZ | HORIZONTAL |
| HPT | HIGH POINT |
| HT | HEIGHT |
| HTR | HEATER |
| HVAC | HEATING, VENTILATING, & AIR CONDITIONING |
| ID | INSIDE DIAMETER |
| IE | THAT IS |
| IH | INTAKE HOOD |
| IN | INCH |
| INSUL | INSULATION |
| INTR | INTERIOR |
| JST | JOIST |
| JT | JOINT |
| LAB | LABORATORY |
| LAM | LAMINATE |
| LAV | LAVATORY |
| LG | LENGTH |
| LH | LEFT HAND |
| LIB | LIBRARY |
| LIN | LINEAR |
| LL | LIVE LOAD |
| LLH | LONG LEG HORIZONTAL |
| LLV | LONG LEG VERTICAL |
| LPT | LOW POINT |
| LT | LIGHT |
| LWC | LIGHTWEIGHT CONCRETE |
| MAINT | MAINTENANCE |
| MAS | MASONRY |
| MATL | MATERIAL |
| MAX | MAXIMUM |
| MECH | MECHANICAL |
| MEMB | MEMBRANE |
| MEZZ | MEZZANINE |
| MFR | MANUFACTURER |
| MGR | MANAGER |
| MH | MANHOLE |
| MIL | MILITARY |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MET | METAL |
| ML | METAL LATH |
| MLDG | MOLDING |
| MLP | METAL LATH AND PLASTER |
| MO | MASONRY OPENING |
| MOD | MOTOR OPERATED DAMPER |
| MTG | MOUNTING |
| N | NORTH |
| NA | NOT APPLICABLE |
| NIC | NOT IN CONTRACT |
| NO | NUMBER |
| NRC | NOISE-REDUCTION COEFFICIENT |
| NTS | NOT TO SCALE |
| OA | OVERALL |
| OC | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OFF | OFFICE |
| OH | OPPOSITE HAND |
| OHDR | OVERHEAD DOOR |
| OPNG | OPENING |
| OPP | OPPOSITE |

| | |
|---|---|
| OSB | ORIENTED STRAND BOARD |
| P/L | PROPERTY LINE |
| PASS | PASSENGER |
| PERF | PERFORATED |
| PL | PLATE |
| PLAS | PLASTER |
| PLBG | PLUMBING |
| PLYWD | PLYWOOD |
| PNL | PANEL |
| PNT | PAINT |
| PORC | PORCELAIN |
| PR | PAIR |
| PREFAB | PREFABRICATED |
| PROJ | PROJECT |
| PSF | POUNDS PER SQUARE FOOT |
| PSI | POUNDS PER SQUARE INCH |
| PT | POINT |
| PTD | PAINTED |
| PTN | PARTITION |
| PVC | POLYVINYL CHLORIDE |
| QTF | QUARRY-TILE FLOOR |
| R | RADIUS |
| RI | RISER |
| RD | ROOF DRAIN |
| REF | REFRIGERATOR |
| REINF | REINFORCE |
| REQD | REQUIRED |
| RET | RETURN |
| REV | REVISION |
| REG | REGISTER |
| RFG | ROOFING |
| RH | RIGHT HAND |
| RM | ROOM |
| RWC | RAIN WATER CONDUCTOR |
| S | SOUTH |
| SAPC | SUSPENDED ACOUSTICAL PANEL CEILING |
| SCHED | SCHEDULE |
| SDG | SIDING |
| SEC | SECTION |
| SF | SQUARE FOOT |
| SGFT | STRUCTURAL GLAZED FACING TILE |
| SH | SHOWER |
| SHM | SECURITY HOLLOW METAL |
| SHT | SHEET |
| SI | INTERNATIONAL SYSTEM OF UNITS |
| SIM | SIMILAR |
| SKY | SKYLIGHT |
| SLDR | SLIDING DOOR |
| SMLS | SEAMLESS |
| SPA | SPACED |
| SPEC | SPECIFICATION |
| SPKLR | SPRINKLER |
| SPKR | SPEAKER |
| SQ | SQUARE |
| SS | STAINLESS STEEL |
| STD | STANDARD |
| STL | STEEL |
| STOR | STORAGE |
| STRUCT | STRUCTURE/STRUCTURAL |
| STWY | STAIRWAY |
| SUPT | SUPERINTENDENT |
| SUPVR | SUPERVISOR |
| SURF | SURFACE |
| SUSP | SUSPENDED/SUSPENSION |
| SYS | SYSTEM |
| T | TREAD |
| T/O | TOP OF |
| T&B | TOP AND BOTTOM |
| T&G | TONGUE AND GROOVE |
| TAN | TANGENT |
| TDD | TELECOMMUNICATION DISPLAY DEVICE |
| TEL | TELEPHONE |
| TEMP | TEMPORARY |
| TER | TERRAZZO |
| THRU | THROUGH |
| TLT | TOILET |
| TRTD | TREATED |
| TYP | TYPICAL |
| UNO | UNLESS NOTED OTHERWISE |
| VAT | VINYL ASBESTOS TILE |
| VCT | VINYL COMPOSITION TILE |
| VEND | VENDING MACHINE |
| VERT | VERTICAL |
| VIF | VERIFY IN FIELD |
| VTR | VENT THRU ROOF |
| W | WEST |
| WI | WIDE |
| W/ | WITH |
| W/O | WITHOUT |
| WBD | WALLBOARD |
| WC | WATER CLOSET |
| WD | WOOD |
| WDR | WOOD DOOR |
| WH | WATER HEATER |
| WTRPRF | WATERPROOFING |
| WWF | WELDED WIRE FABRIC |
| XFMR | TRANSFORMER |

# SYMBOLS LEGEND

- 101 — DOOR NUMBER REFERENCE
- 101 — ROOM NUMBER REFERENCE
- W2 — WINDOW TYPE REFERENCE
- L-1 — LINTEL TYPE REFERENCE
- LV1 — LOUVER TYPE REFERENCE
- 0.0 — COLUMN REFERENCE
- 5 — TOILET ACCESSORY REFERENCE
- 1 — PARTITON TYPE REFERENCE
- 1 — INDICATES PARTITION HEIGHT TO BE 4" ABOVE CEILING
- INDICATES PARTITION HEIGHT TO EXTEND TO UNDERSIDE OF STRUCTURAL DECK ABOVE
- ELEVATION INDICATION
- 0 — REVISION REFERENCE
- REVISION CLOUD

- A / A-2 — SECTION REFERENCE / DRAWING ON WHICH SECTION APPEARS
- A / A-2 — DETAIL REFERENCE / DRAWING ON WHICH DETAIL APPEARS
- A, B, C, D / A-2 — MULTIPLE ELEVATION REFERENCE / DRAWING ON WHICH ELEVATIONS APPEAR
- A / A-2 — SINGLE ELEVATION REFERENCE / DRAWING ON WHICH ELEVATION APPEARS
- A / A-2 — LARGE SCALE PLAN/SECTION/ DETAIL REFERENCE / DRAWING ON WHICH LARGE SCALE PLAN/SECTION/DETAIL APPEARS
- N — NORTH ARROW REFERENCE

# MATERIALS LEGEND

- BRICK
- CMU
- ACOUSTICAL CMU
- CMIU
- SGFT / GLAZED CMU
- STEEL
- ALUMINUM
- FINISH LUMBER
- DIMENSIONAL LUMBER
- SHIM
- CONCRETE
- GYP BD / GROUT
- BATT INSULATION
- RIGID INSULATION
- COARSE AGGREGATE / BALLAST
- PLYWOOD
- ACOUSTICAL PANEL
- TILE
- OSB
- EARTH

NOTE: SOME OF THESE SYMBOLS AND MATERIALS MAY NOT BE REPRESENTED ON THE DRAWINGS.

# 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 SUPRESSION SYSTEM PROVIDED FOR ETC ROOM |
| FIRE ALARM SYSTEM | 907 | FIRE ALARM NOT REQUIRED | FIRE ALARM PROVIDED |
| FIRE RESISTANCE RATING | | | |
| 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 | |



A-1

DELAWARE
DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
|---|---|
| | |
| | |
| | |
| | |

US 301
SR 896 TO SR 1

| | |
|---|---|
| CONTRACT | T200950343 |
| COUNTY | NEW CASTLE |
| BRIDGE NO. | |
| DESIGNED BY: | DRE |
| CHECKED BY: | JRS |

ARCHITECTURAL LEGENDS, SYMBOLS AND ABBREVIATIONS

| | |
|---|---|
| SHEET NO. | 837 |
| TOTAL SHTS. | 875 |

LAST REVISED: 3/12/2008
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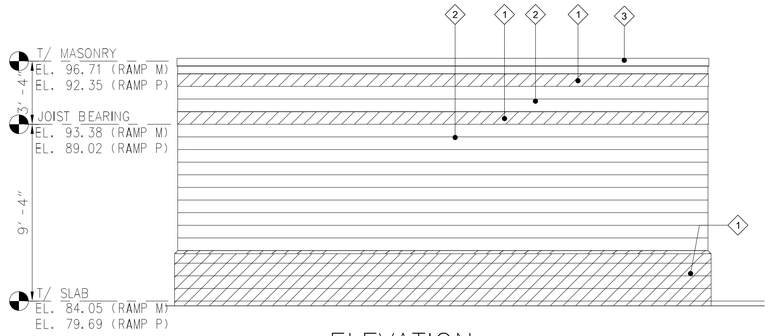
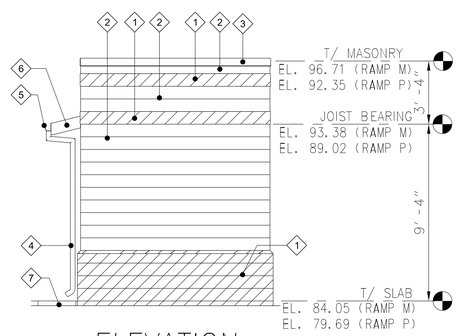



ELEVATION
SCALE: 1/4" = 1'-0" (1 A-2)



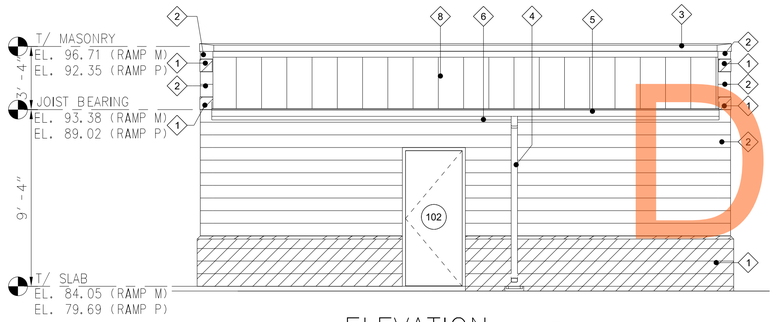

ELEVATION
SCALE: 1/4" = 1'-0" (2 A-2)

## KEYNOTES

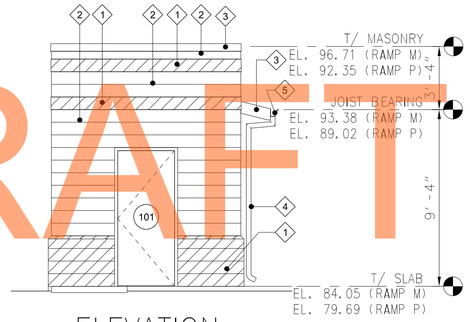
1 SPLIT FACE CMU COLOR #1
2 MATTE FACE CMU COLOR #2
3 METAL COPING
4 METAL DOWNSPOUT
5 METAL GUTTER
6 METAL FASCIA
7 SPLASHBLOCK
8 STANDING SEAM METAL ROOF
9 LIGHT GAUGE METAL TRUSS
10 3/4" PLYWOOD SHEATHING
11 RIGID INSULATION
12 VAPOR BARRIER OVER COURSE AGGREGATE
13 CONCRETE FOOTING. SEE STRUCTURAL 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, 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
SCALE: 1/4" = 1'-0" (3 A-2)

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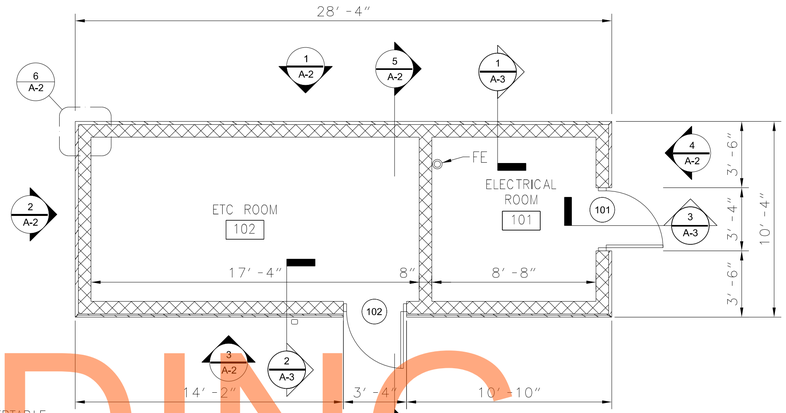
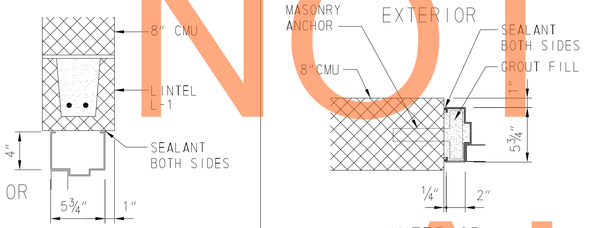


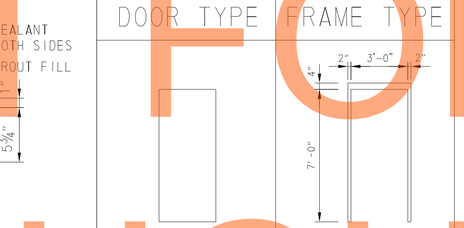

FLOOR PLAN
SCALE: 1/4" = 1'-0"




1

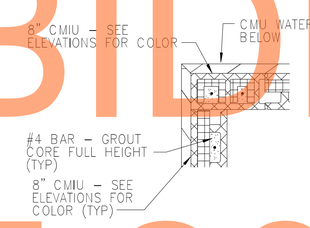



2

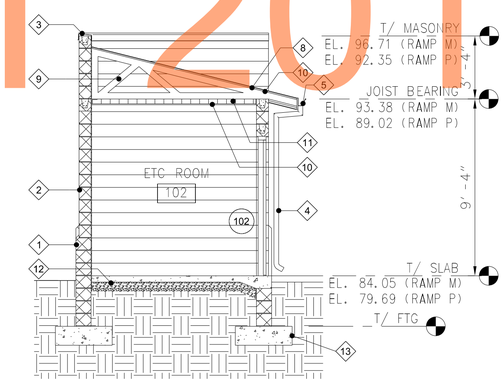



A 1

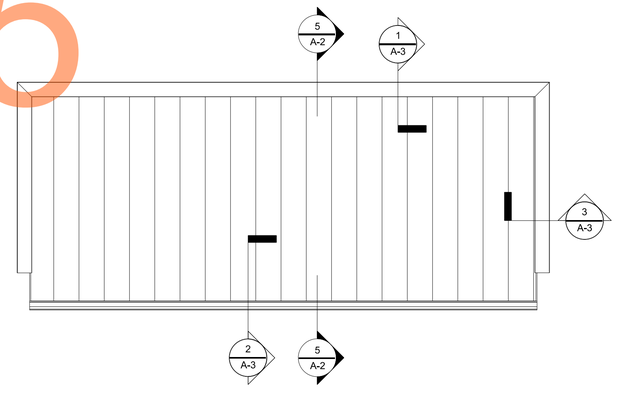
LINTEL SCHEDULE
L-1 8" PRE-CAST CMU LINTEL BEAR 6" ON EITHER JAMB



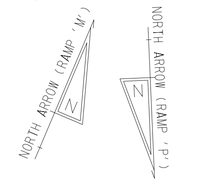

DETAIL
SCALE: 3/4" = 1'-0" (6 A-2)




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



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




## ROOM FINISHES

| LOCATION | ROOM NO. | ROOM NAME | FLOORS MATERIALS | | | | | BASES MATERIALS | | | | | WALLS MATERIALS | | | | | CEILINGS MATERIALS | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | CONCRETE W/ SEALER | CONCRETE W/ EPOXY COATING | NOT USED | NOT USED | NOT USED | PAINTED | NOT USED | NOT USED | NOT USED | NOT USED | CMU | NOT USED | NOT USED | NOT USED | NOT USED | PAINT | ½" PLYWOOD | NOT USED | NOT USED | NOT USED | PAINT | CEILING HEIGHT | |
| | | | 1 | 2 | 4 | 5 | 6 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | P | 1 | 2 | 3 | 4 | P | | |
| | 101 | ELECTRICAL ROOM | 1 | | | | | 1 | | | | | 1 | | | | | P | 1 | | | | P | 9'-0" | |
| | 102 | ETC ROOM | | 2 | | | | 1 | | | | | 1 | | | | | P | 1 | | | | P | 9'-0" | |

## DOORS AND FRAMES

| LOCATION | DOOR NO. | DOOR SIZE W | H | T | MAT | TYPE | GLASS | LOUVER W | LOUVER H | FRAME MAT | FRAME TYPE | FRAME DETAILS HEAD | JAMB(S) | SILL | FIRE RATING LAB | FIRE RATING HOUR | HARDWARE SET NO. | HARDWARE KEYSIDE ROOM NO. | LINTEL | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RAMP M | 101 | 3'-0" | 7'-0" | 1 3/4" | HM | A | | | | HM | 1 | 1 | 2 | | | | 1 | EXT | L-1 | SMOKE SEALS AND CLOSER REQUIRED. CARD READER. |
| | 102 | 3'-0" | 7'-0" | 1 3/4" | HM | A | | | | HM | 1 | 1 | 2 | | | | 2 | EXT | L-1 | CARD READER. |
| RAMP P | 101 | 3'-0" | 7'-0" | 1 3/4" | HM | A | | | | HM | 1 | 1 | 2 | | | | 1 | EXT | L-1 | SMOKE SEALS AND CLOSER REQUIRED. CARD READER. |
| | 102 | 3'-0" | 7'-0" | 1 3/4" | HM | A | | | | HM | 1 | 1 | 2 | | | | 2 | EXT | L-1 | CARD READER. |



LAST REVISED: 3/12/2008
H:\50343_TOLL-PLAZA\GENERAL\XREFS\SB_A1_WRA.DGN

**DELAWARE DEPARTMENT OF TRANSPORTATION**

ADDENDUMS / REVISIONS

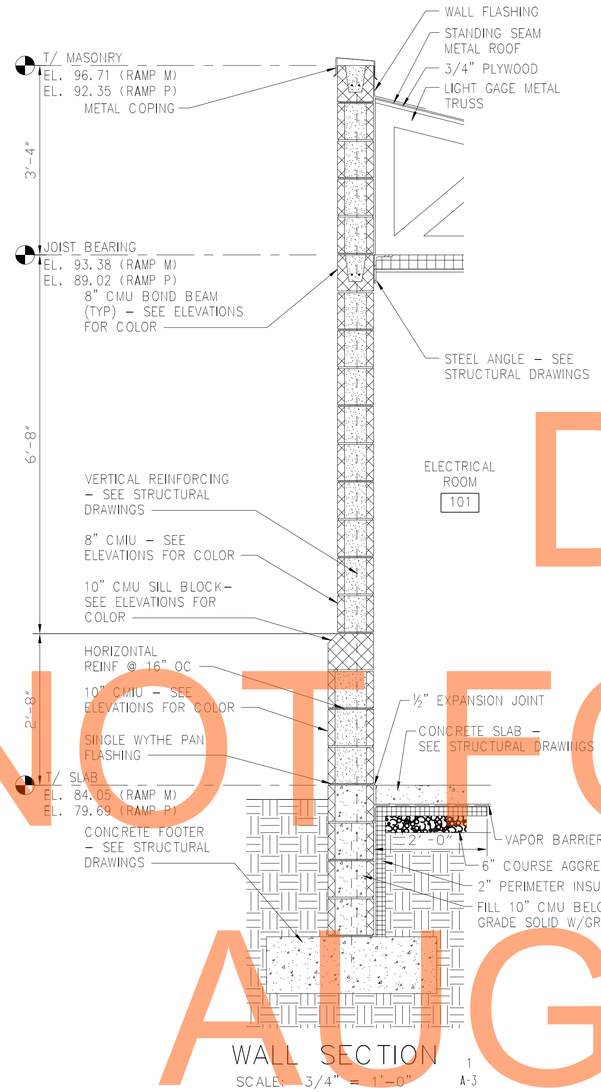
**US 301**
**SR 896 TO SR 1**

| CONTRACT | BRIDGE NO. | |
|---|---|---|
| T200950343 | DESIGNED BY: BJO | |
| COUNTY | CHECKED BY: JRS | |
| NEW CASTLE | | |

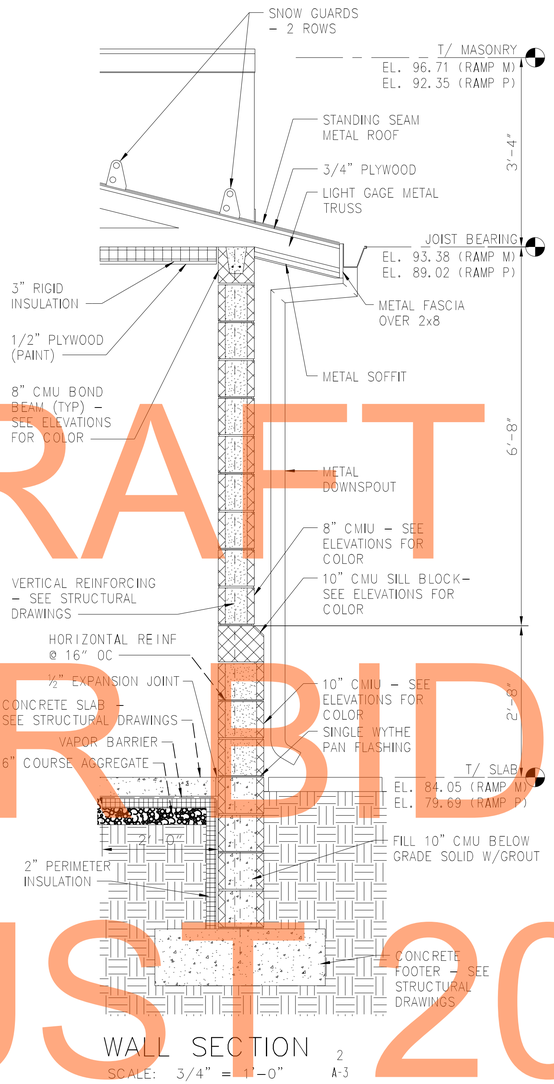
**ARCHITECTURAL PLANS, ELEVATIONS, AND DETAILS**

A-2

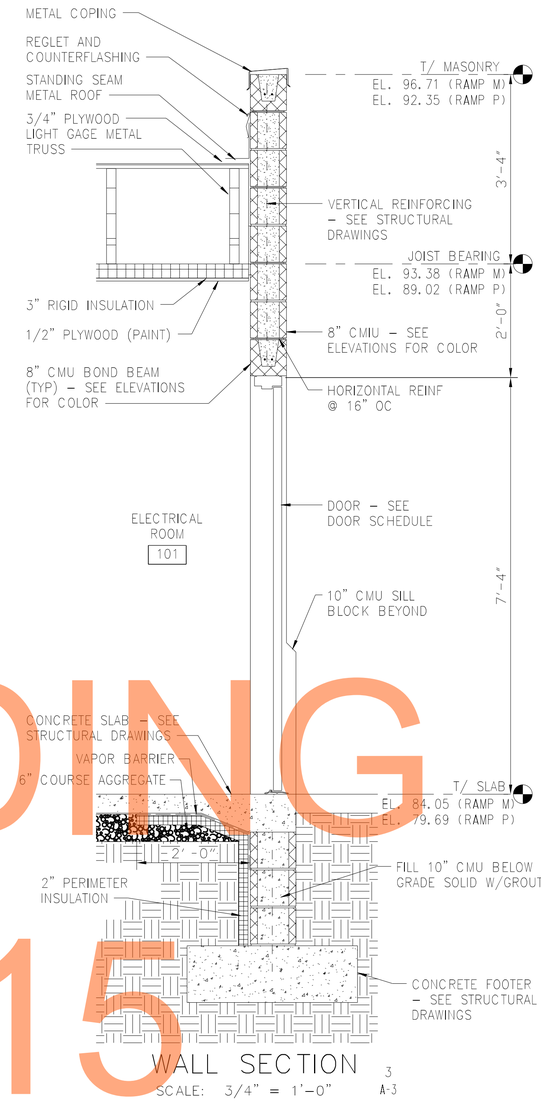
| SHEET NO. |
|---|
| 838 |
| TOTAL SHTS. |
| 875 |




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

NOTE: SEE BUILDING ELEVATIONS ON DRAWING A-2 FOR LOCATION DESIGNATIONS OF SPLIT FACE AND MATTE FACE CMU.

A-3

| | | | | | |
|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | ARCHITECTURAL WALL SECTIONS |
| | | | COUNTY NEW CASTLE | DESIGNED BY: BJO | SHEET NO. 839 |
| | | | | CHECKED BY: JRS | TOTAL SHTS. 875 |

LAST REVISED: 3/12/2008
H:\50343_TOLL-PLAZA\GENERAL\XREFS\SB_A1_WRA.DGN

# 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
2. DESIGN LOADS:

   WIND LOAD:
   - BASIC WIND SPEED (3 SECOND GUST) _ _ _ _ _ _ _ _ _ 90 MPH
   - WIND IMPORTANCE FACTOR _ _ _ _ _ _ _ _ _ _ _ _ _ 1.0
   - WIND EXPOSURE _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ C

FOUNDATIONS

1. THE MAXIMUM ALLOWABLE SOIL BEARING PRESSURE FOR SPREAD FOOTING IS 4,000 PSF.
2. ALL CONCRETE SLABS AND FOOTINGS BEARING ON SOIL SHALL BE UNDERLAIN BY A MINIMUM OF 6 INCHES OF NO. 57 STONE (UNO).

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 REINFORMENT 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 ¼" LARGER THAN BOLT DIAMETER FOR BASE PLATE. PROVIDE BOLT HOLES ⅛" 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 PLACE 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 SPECIFICED 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

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



ST-01

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | STRUCTURAL GENERAL NOTES & ABBREVIATIONS | SHEET NO. 840 |
|---|---|---|---|---|---|---|
| | | | COUNTY NEW CASTLE | DESIGNED BY: AB | | TOTAL SHTS. 875 |
| | | | | CHECKED BY: CAM | | |

LAST REVISED: 3/12/2008
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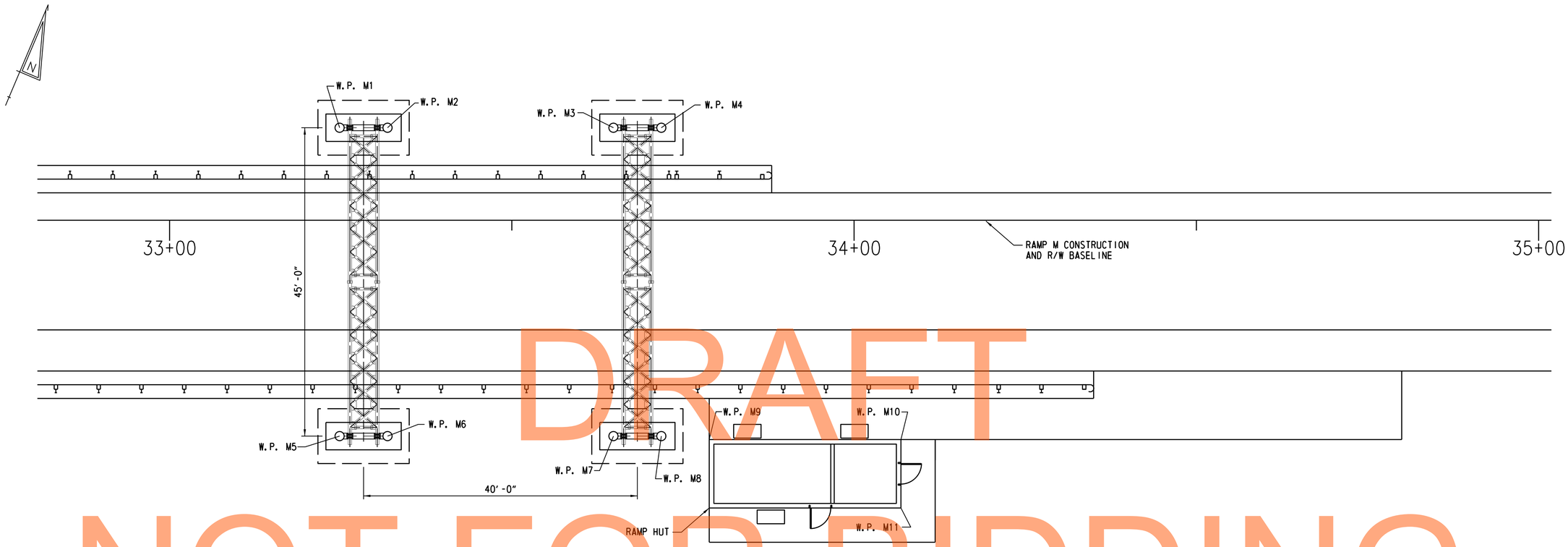




## WORKING POINT COORDINATES

| WORKING POINTS | NORTHING | EASTING | STATION | OFFSET |
|---|---|---|---|---|
| W.P. M1 | 555035.8987 | 582473.3726 | 33+24.84 | 13.50 LT. |
| W.P. M2 | 555038.6276 | 582479.8188 | 33+31.84 | 13.50 LT. |
| W.P. M3 | 555051.4928 | 582510.2077 | 33+64.84 | 13.50 LT. |
| W.P. M4 | 555054.2217 | 582516.6539 | 33+71.84 | 13.50 LT. |
| W.P. M5 | 554994.4592 | 582490.9158 | 33+24.84 | 31.50 RT. |
| W.P. M6 | 554997.1881 | 582497.3620 | 33+31.84 | 31.50 RT. |
| W.P. M7 | 555010.0532 | 582527.7509 | 33+64.84 | 31.50 RT. |
| W.P. M8 | 555012.7822 | 582534.1971 | 33+71.84 | 31.50 RT. |
| W.P. M9 | 555015.0506 | 582540.8382 | 33+78.84 | 32.00 RT. |
| W.P. M10 | 555025.9662 | 582566.6229 | 34+06.84 | 32.00 RT. |
| W.P. M11 | 555016.7574 | 582570.5213 | 34+06.84 | 42.00 RT. |

RAMP M - GANTRY PLAN
SCALE: 1/8"=1'-0"

NOTES:
1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. FOR GANTRY ELEVATION, SEE SHEET ST-04.
3. FOR FOUNDATION DETAILS, SEE SHEET ST-05.
4. FOR GANTRY STRUCTURE DETAILS, SEE SHEETS ST-06, ST-07, AND ST-08.
5. FOR EQUIPMENT HUT FOUNDATION AND SLAB, SEE SHEET ST-09.

ST-02

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

CONTRACT T200950343
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: AB
CHECKED BY: CAM

STRUCTURAL
GANTRY PLAN
RAMP M

SHEET NO. 841
TOTAL SHTS. 875

LAST REVISED: 3/12/2008
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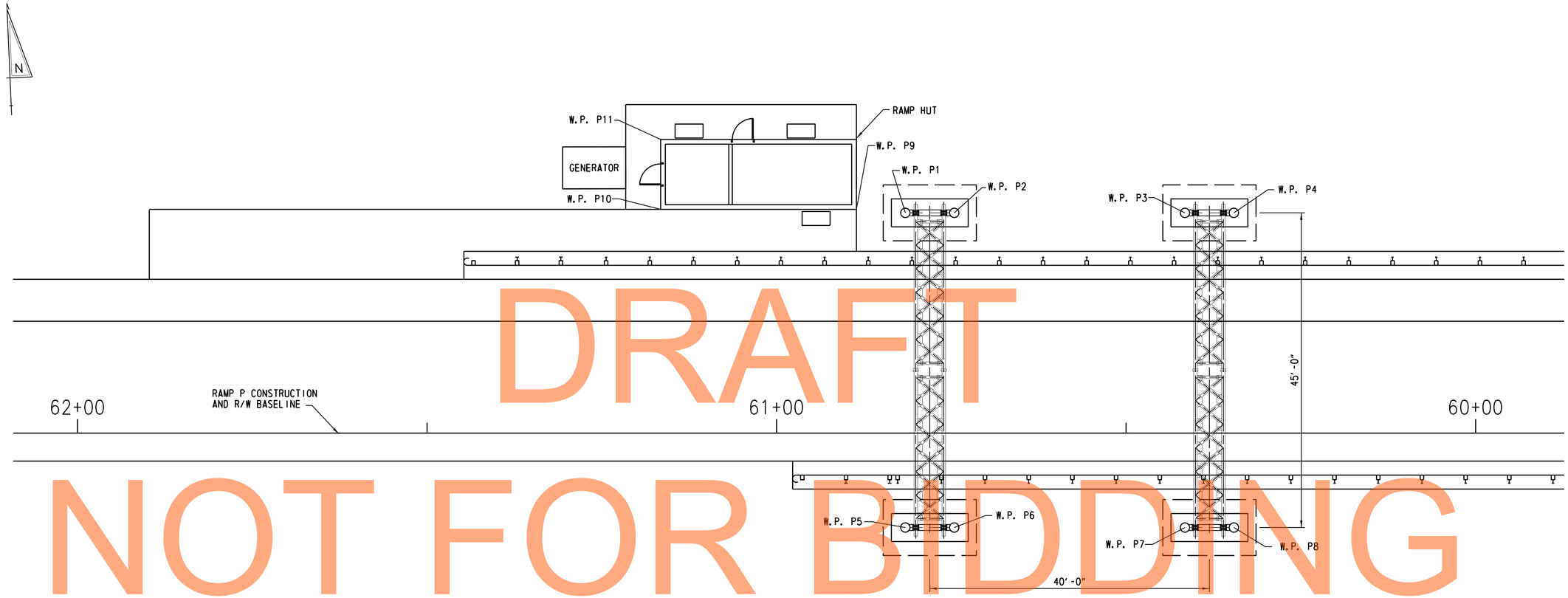




RAMP P - GANTRY PLAN
SCALE: 1/8"=1'-0"

WORKING POINT COORDINATES

| WORKING POINTS | NORTHING | EASTING | STATION | OFFSET |
|---|---|---|---|---|
| W.P. P1 | 555580.7906 | 582742.2783 | 60+81.58 | 31.50 RT. |
| W.P. P2 | 555580.4906 | 582749.2719 | 60+74.58 | 31.50 RT. |
| W.P. P3 | 555579.0768 | 582782.2416 | 60+41.58 | 31.50 RT. |
| W.P. P4 | 555578.7768 | 582789.2351 | 60+34.58 | 31.50 RT. |
| W.P. P5 | 555535.8319 | 582740.3501 | 60+81.58 | 13.50 LT. |
| W.P. P6 | 555535.5320 | 582747.3436 | 60+74.58 | 13.50 LT. |
| W.P. P7 | 555534.1181 | 582780.3133 | 60+41.58 | 13.50 LT. |
| W.P. P8 | 555533.8182 | 582787.3069 | 60+34.58 | 13.50 LT. |
| W.P. P9 | 555581.5901 | 582735.3062 | 60+88.58 | 32.00 RT. |
| W.P. P10 | 555582.7899 | 582707.3319 | 61+16.58 | 32.00 RT. |
| W.P. P11 | 555592.7807 | 582707.7604 | 61+16.58 | 42.00 RT. |

NOTES:
1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. FOR GANTRY ELEVATION, SEE SHEET ST-04.
3. FOR FOUNDATION DETAILS, SEE SHEET ST-05.
4. FOR GANTRY STRUCTURE DETAILS, SEE SHEETS ST-06, ST-07, AND ST-08.
5. FOR EQUIPMENT HUT FOUNDATION AND SLAB, SEE SHEET ST-09.

ST-03

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

CONTRACT T200950343
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: AB
CHECKED BY: CAM

STRUCTURAL
GANTRY PLAN
RAMP P

SHEET NO. 842
TOTAL SHTS. 875

LAST REVISED: 3/12/2008
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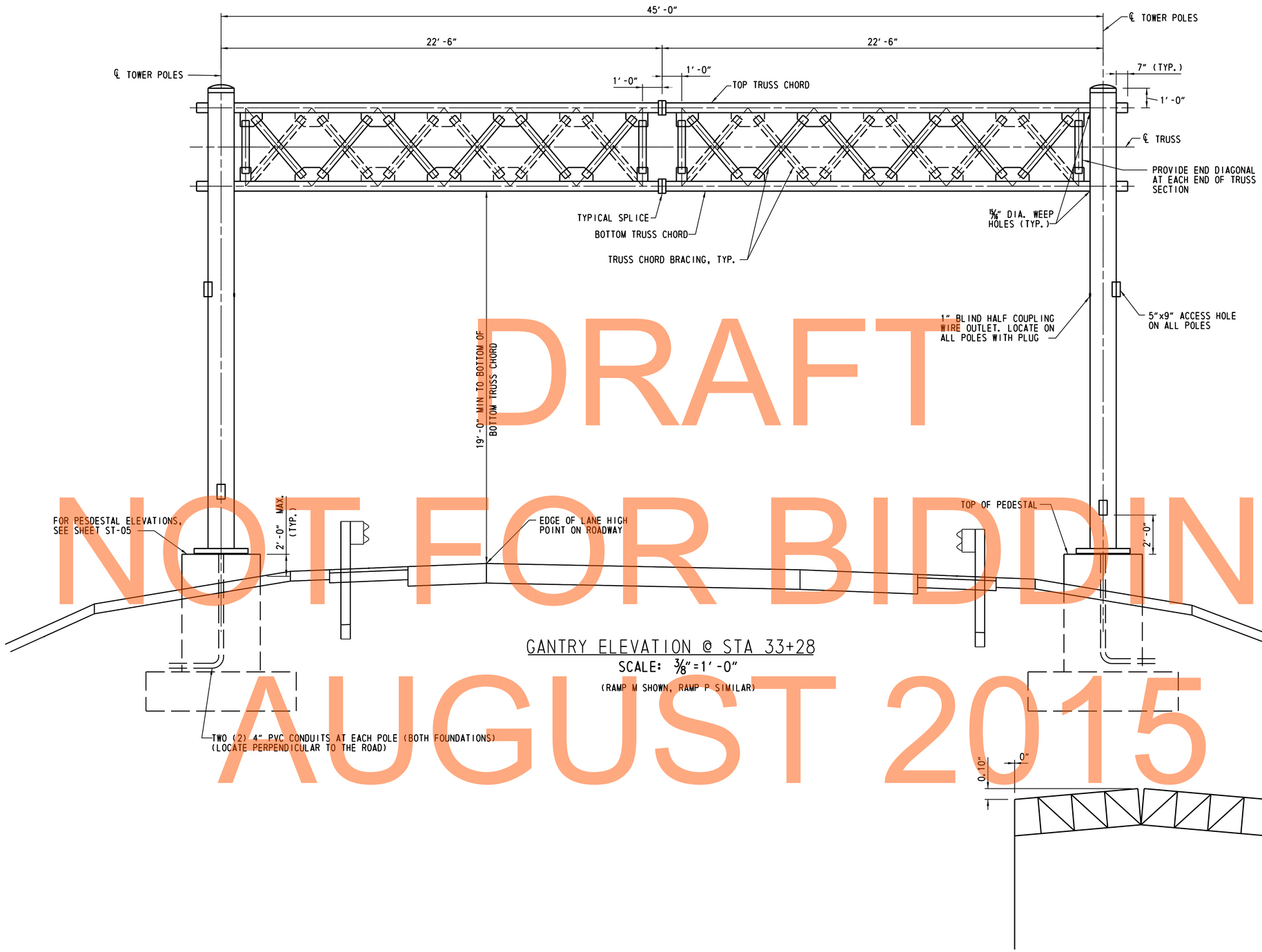


GANTRY ELEVATION @ STA 33+28

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

(RAMP M SHOWN, RAMP P SIMILAR)




GANTRY CAMBER DIAGRAM

SCALE: NTS

NOTES:
1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. FOR STRUCTURE DETAILS, SEE SHEETS ST-06, ST-07, AND ST-08.
3. FOR FOUNDATION DETAILS, SEE SHEET ST-05.



ST-04

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | STRUCTURAL GANTRY ELEVATION RAMPS M & P | SHEET NO. 843 |
|---|---|---|---|---|---|---|---|
| | | | | COUNTY NEW CASTLE | DESIGNED BY: AB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: CAM | | |

LAST REVISED: 3/12/2008
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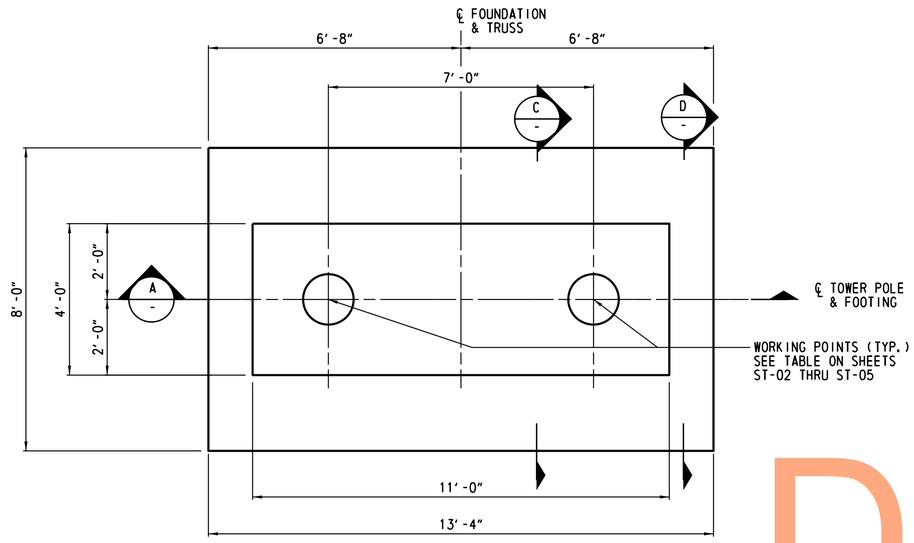
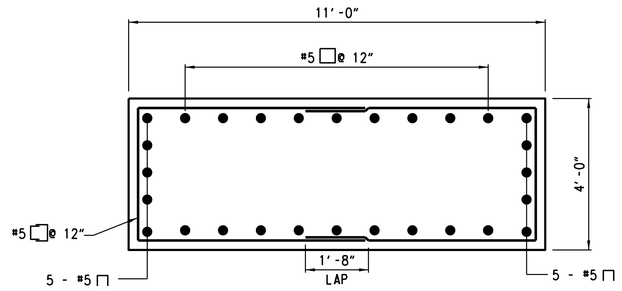
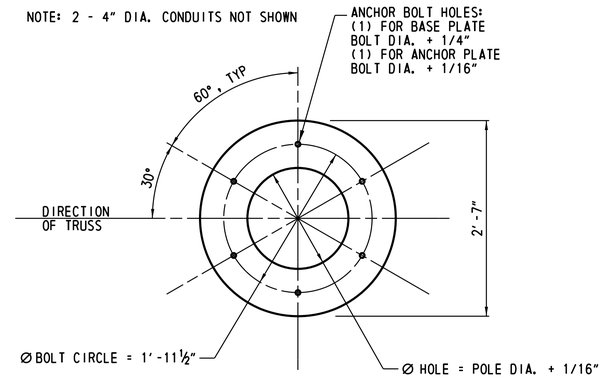


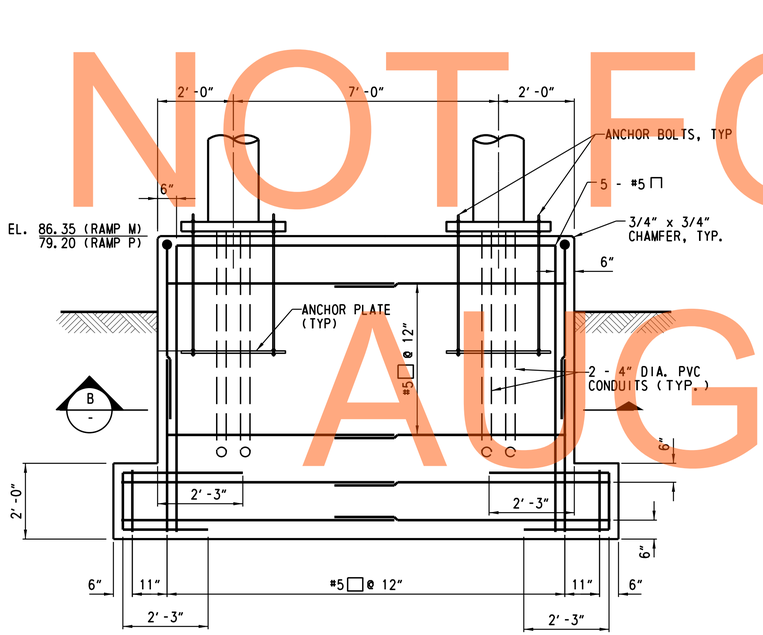

PLAN
SCALE: 1/2″=1′-0″



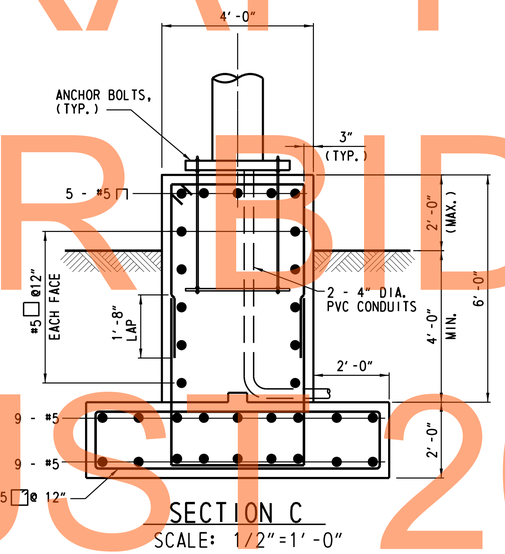

SECTION B
SCALE: ½″=1′-0″
NOTE: 2 - 4″ DIA. CONDUITS NOT SHOWN



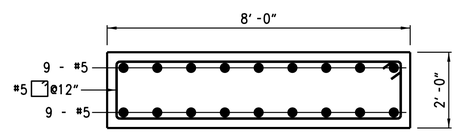

BASE PLATE PLAN VIEW
SCALE: 1″=1′-0″



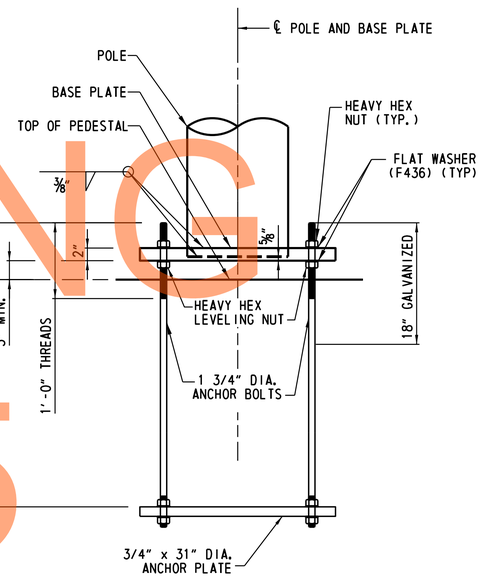

SECTION A
SCALE: ½″=1′-0″




SECTION C
SCALE: 1/2″=1′-0″




SECTION D
SCALE: ½″=1′-0″



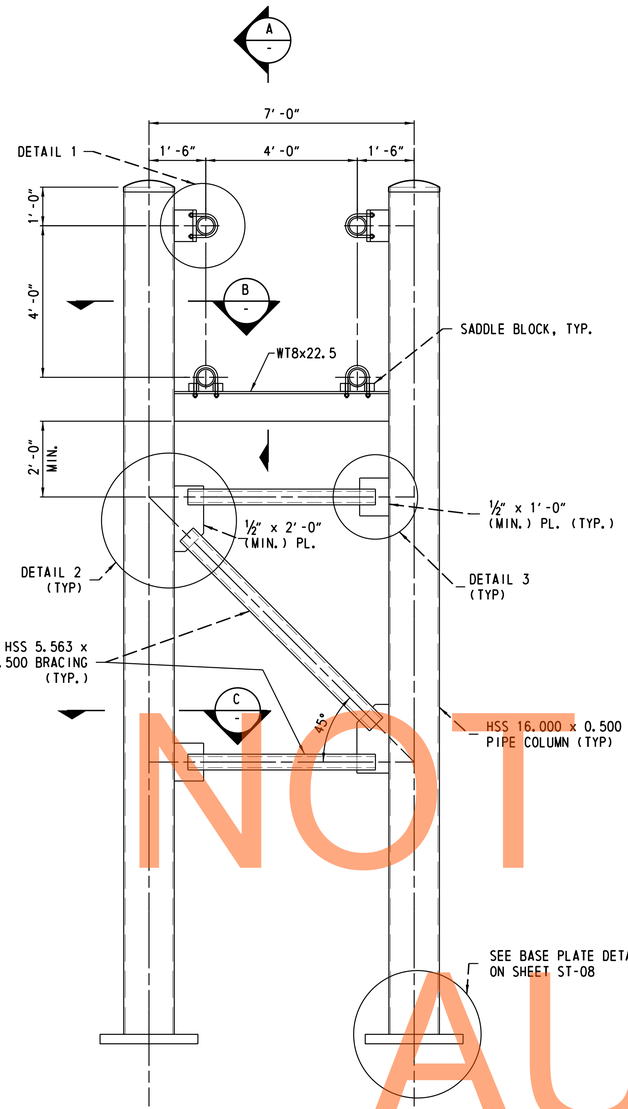

BASE PLATE & ANCHOR PLATE DETAIL
SCALE: 1″=1′-0″
NOTE: 2 - 4″ DIA. CONDUITS NOT SHOWN



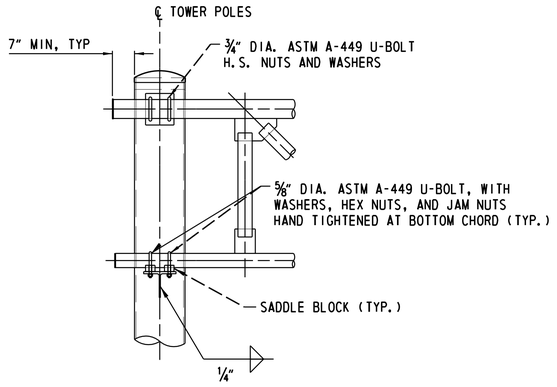
ST-05

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | STRUCTURAL GANTRY FOUNDATION DETAILS | SHEET NO. 844 |
|---|---|---|---|---|---|---|
| | | | COUNTY NEW CASTLE | DESIGNED BY: AB | | TOTAL SHTS. 875 |
| | | | | CHECKED BY: CAM | | |

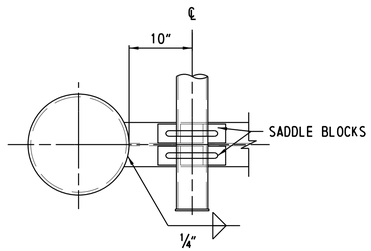
LAST REVISED: 3/12/2008
H:\50343_TOLL-PLAZA\GENERAL\XREFS\SB_A1_WRA.DGN



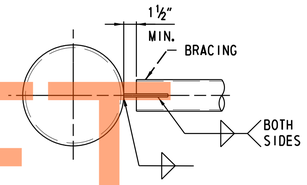

TOWER ELEVATION
SCALE: 1/2"=1'-0"



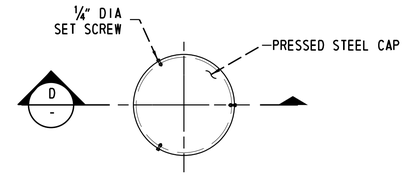

SECTION A
SCALE: ½"=1'-0"



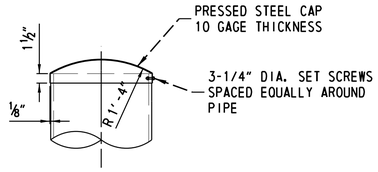

SECTION B
SCALE: 1"=1'-0"



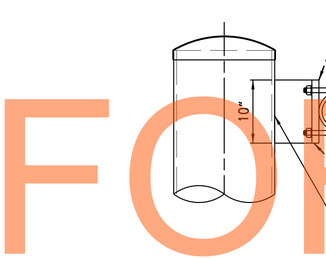

SECTION C
SCALE: 1"=1'-0"



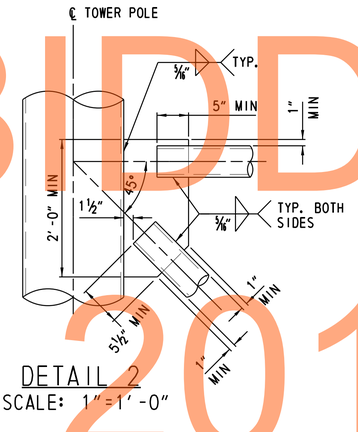

PIPE CAP DETAIL
SCALE: 1"=1'-0"



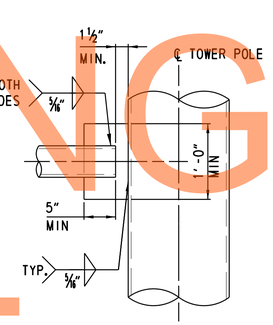

SECTION D
SCALE: 1"=1'-0"



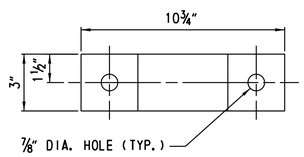

DETAIL 1
SCALE: 1"=1'-0"



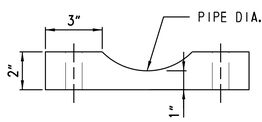

DETAIL 2
SCALE: 1"=1'-0"




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




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-05.
3. FOR COPE HOLE DETAILS, SEE SHEET ST-08.
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.

ST-06

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. |
|---|---|
| T200950343 | |
| COUNTY | DESIGNED BY: AB |
| NEW CASTLE | CHECKED BY: CAM |

STRUCTURAL
GANTRY TOWER ELEVATION & SECTIONS

| SHEET NO. | TOTAL SHTS. |
|---|---|
| 845 | 875 |

LAST REVISED: 3/12/2008
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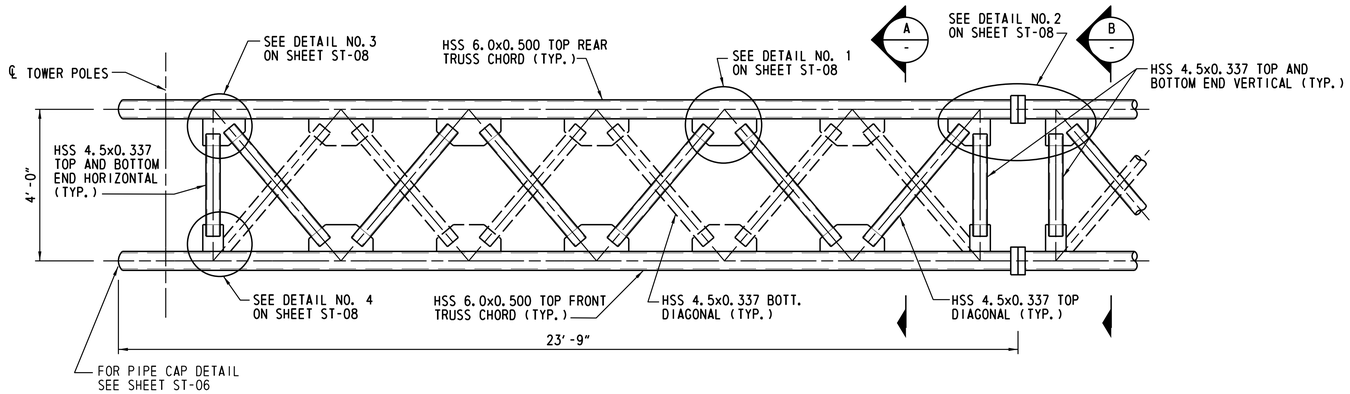
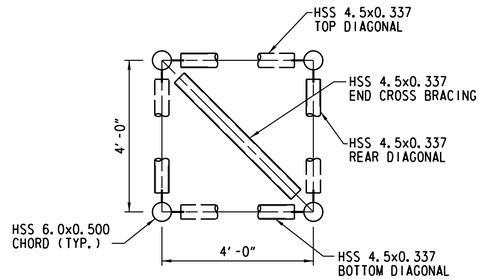
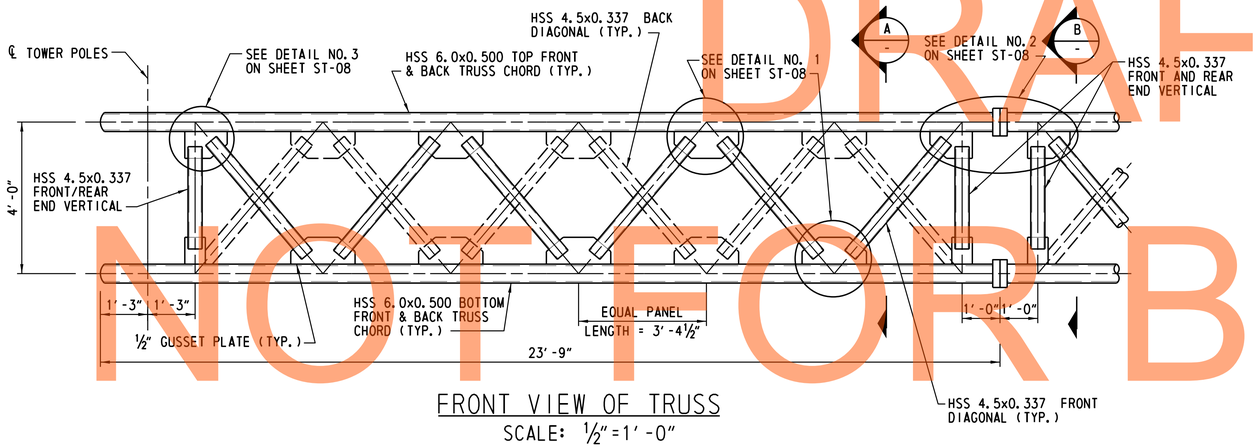


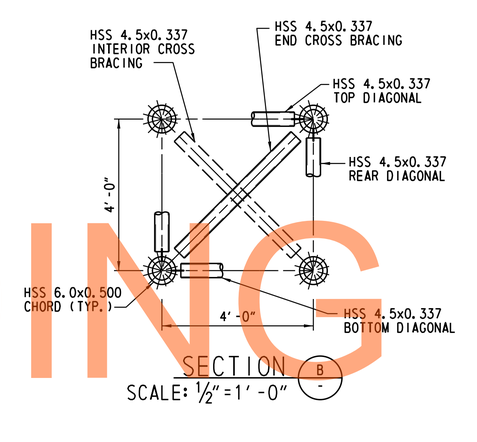

TOP VIEW OF TRUSS
SCALE: ½"=1'-0"




SECTION A
SCALE: ½"=1'-0"




FRONT VIEW OF TRUSS
SCALE: ½"=1'-0"




SECTION B
SCALE: ½"=1'-0"



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.



DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

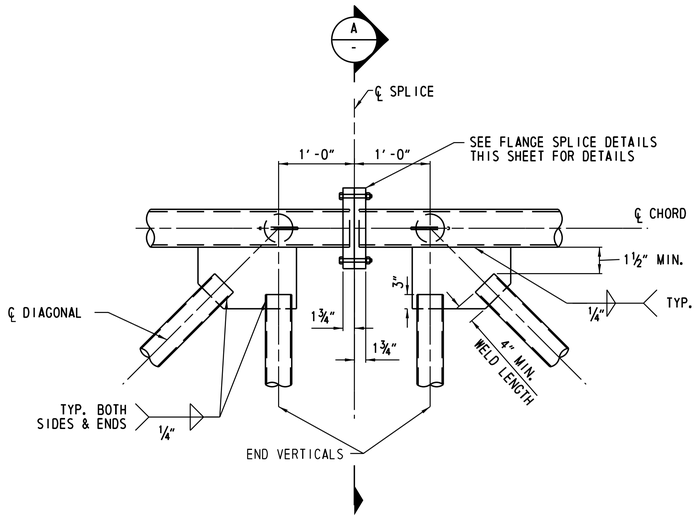
US 301
SR 896 TO SR 1

CONTRACT T200950343
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: AB
CHECKED BY: CAM

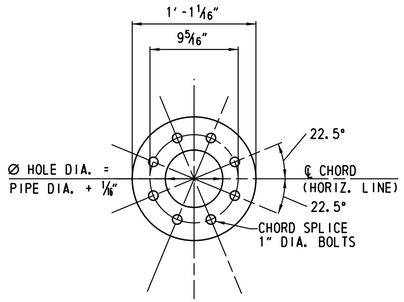
STRUCTURAL GANTRY TRUSS DETAILS I

SHEET NO. 846
TOTAL SHTS. 875

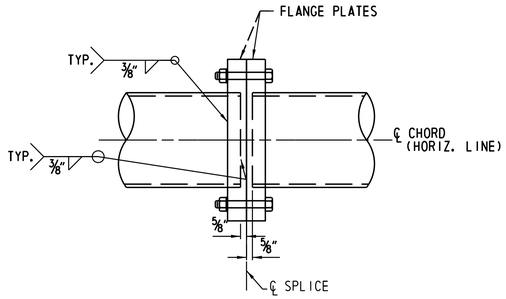
LAST REVISED: 3/12/2008
H:\50343_TOLL-PLAZA\GENERAL\XREFS\SB_A1_WRA.DGN



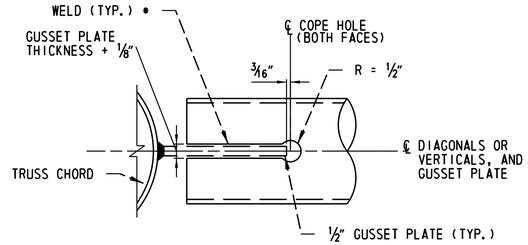

## DETAIL 2
SCALE: 1"=1'-0"




## SECTION A
SCALE: 1 ½"=1'-0"

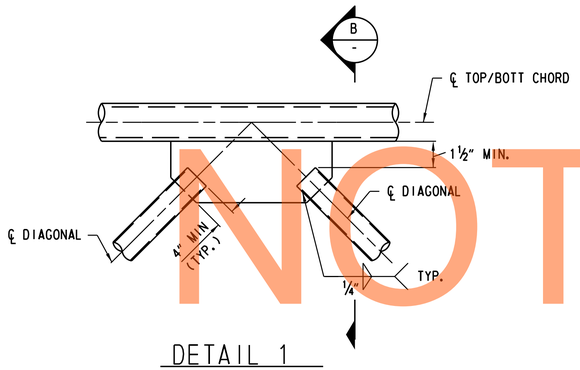



## FLANGE SPLICE DETAIL
SCALE: NTS



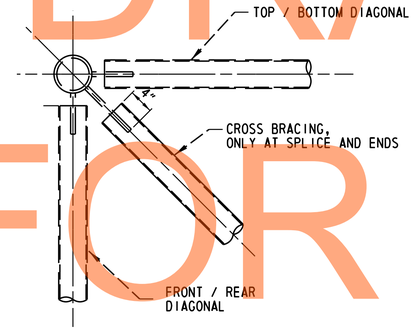

## COPE HOLE DETAIL (TYP.)
SCALE: NTS

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

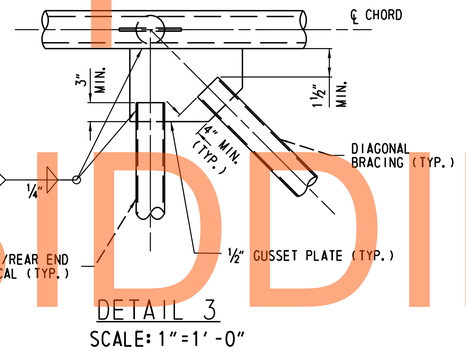



## DETAIL 1
SCALE: 1"=1'-0"

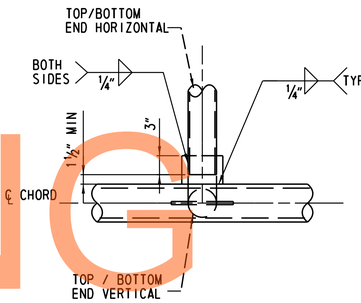
CROSS BRACING ONLY AT SPLICE & ENDS




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




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




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

NOTES:

1. FOR GENERAL NOTES, SEE SHEET ST-01.
2. CHORD SPLICE BOLTS SHALL BE ASTM A325 HIGH STRENGTH STEEL BOLTS, HOLES IN SPLICE PLATE SHALL BE 1/16" LARGER THAN BOLT DIAMETER.
3. ASTM A325 SPLICE BOLTS SHALL BE HEAVY HEXAGON TYPE AND SHALL BE FURNISHED WITH HEAVY HEXAGON NUTS AND WASHER.
4. THE THREADED PORTION OF THE SPLICE BOLTS SHALL BE EXCLUDED FROM THE SHEAR PLANE OF THE SPLICE.
5. 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.



ST-08

DELAWARE
DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
|---|---|
| | |
| | |
| | |

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. |
|---|---|
| T200950343 | |
| COUNTY | DESIGNED BY: AB |
| NEW CASTLE | CHECKED BY: CAM |

STRUCTURAL GANTRY TRUSS DETAILS II

| SHEET NO. |
|---|
| 847 |
| TOTAL SHTS. |
| 875 |

LAST REVISED: 3/12/2008
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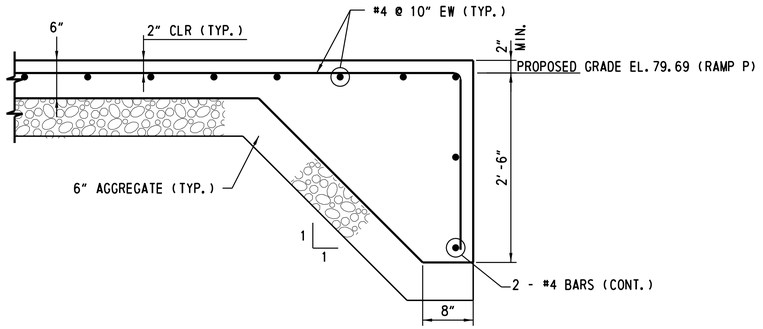
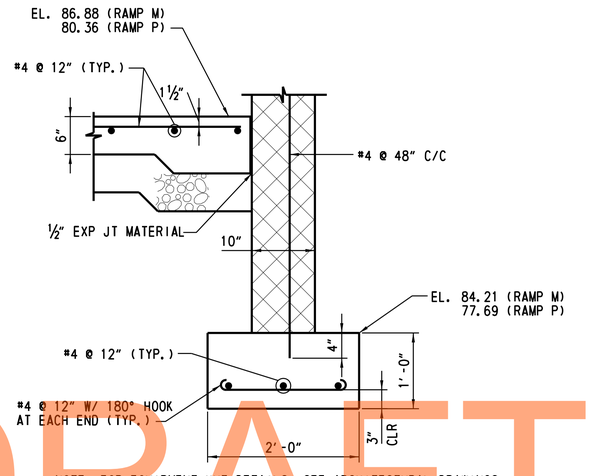



NOTES:

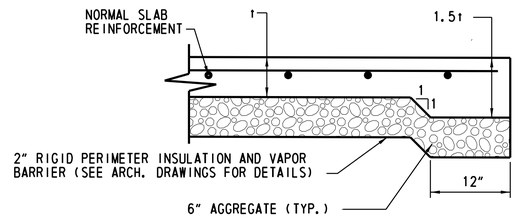
1. THE DIMENSIONS OF THE GENERATOR PAD ARE 10'-6"x5'-6".
2. THE DESIGN OF THE GENERATOR PAD IS FOR A 6500 LB. UNIT THAT MEASURES 8'-6"x3'-6". ACTUAL SIZE AND WEIGHT OF GENERATOR SHALL BE COORDINATED WITH THE ELECTRICAL DISCIPLINE.
3. THE GENERATOR PAD SHALL EXTEND AN ADDITIONAL 1 FT. ON EACH SIDE OF 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"

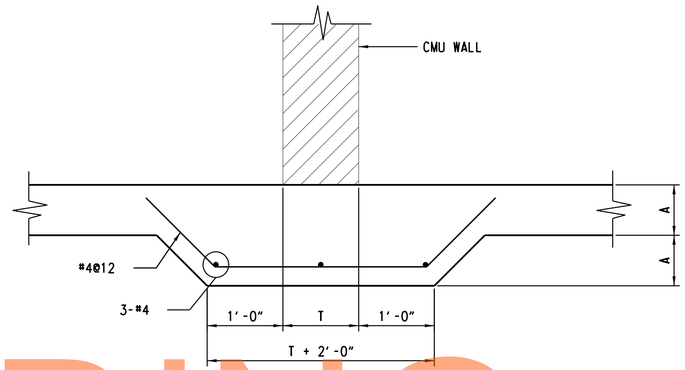



NOTE: FOR EQUIPMENT HUT DETAILS, SEE ARCHITECTURAL DRAWINGS

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

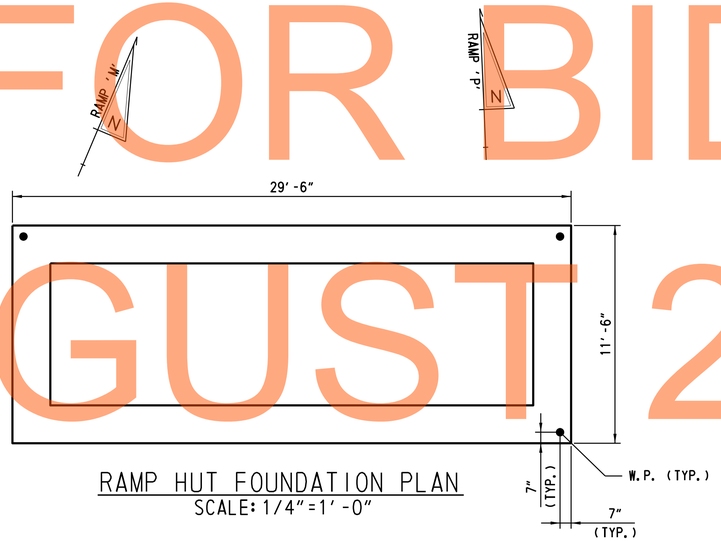



THICKENED SLAB EDGE
SCALE: NTS

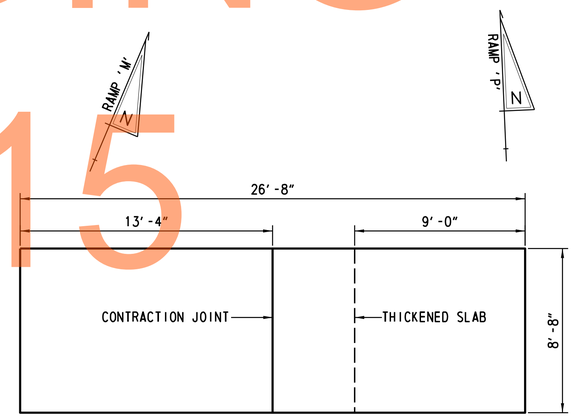



THICKENED SLAB AT MASONRY WALLS
SCALE: NTS


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




RAMP HUT FOUNDATION PLAN
SCALE: 1/4"=1'-0"




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

NOTES:

1. FOR GENERAL STRUCTURAL NOTES, REFER TO SHEET ST-01.
2. FOR DETAILS OF EQUIPMENT HUT, REFER TO SHEET A-2.

NOTES:

1. ALTERNATE BARS SHALL BE STOPPED 2" ON BOTH SIDES OF CONTRACTION JOINT.
2. PLACE 1" DEEP SAW CUT CONTRACTION JOINT.



ST-09

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | US 301 SR 896 TO SR 1 | CONTRACT T200950343 | BRIDGE NO. | STRUCTURAL MISC. STRUCTURES SECTIONS AND DETAILS | SHEET NO. 848 |
|---|---|---|---|---|---|---|
| | | | COUNTY NEW CASTLE | DESIGNED BY: CAB | | TOTAL SHTS. 875 |
| | | | | CHECKED BY: CAM | | |

LAST REVISED: 3/12/2008
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## ABBREVIATIONS

(NOT ALL ABBREVIATIONS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

| | |
|---|---|
| ABV | ABOVE |
| AC | AIR COMPRESSOR |
| ACCU | AIR COOLED CONDENSING UNIT |
| ACU | AIR CONDITIONING UNIT |
| AD | ACCESS DOOR |
| AFF | ABOVE FINISHED FLOOR |
| AFR | ABOVE FINISHED ROOF |
| AHU | AIR HANDLING UNIT |
| AP | ACCESS PANEL |
| APD | AIR PRESSURE DROP |
| APPROX. | APPROXIMATE |
| AS | AIR SEPERATOR |
| ATC | AUTOMATIC TEMPERATURE CONTROL |
| AUTO | AUTOMATIC |
| AVG | AVERAGE |
| AVS | AIR VOLUME MEASUREMENT STATION |
| AWT | AVERAGE WATER TEMPERATURE |
| BCU | BUILDING CONTROL UNIT |
| BDD | BACK DRAFT DAMPER |
| BFP | BACK FLOW PREVENTOR |
| BG | BLAST GATE |
| BLDG | BUILDING |
| BOL | BOTTOM OF LOUVER |
| BOD | BOTTOM OF DUCT/BASIS OF DESIGN |
| BOI | BOTTOM OF INSULATION |
| BOT | BOTTOM |
| BTU | BRITISH THERMAL UNIT |
| BTUH | BRITISH THERMAL UNIT PER HOUR |
| CA | COMPRESSED AIR |
| CAP | CAPACITY |
| CAV | CONSTANT AIR VOLUME |
| CBV | CIRCUIT BALANCING VALVE |
| CC | COOLING COIL |
| CD | CEILING DIFFUSER\CONDENSATE DRAIN |
| CFM | CUBIC FEET PER MINUTE |
| CH | CHILLER |
| CHP | CONCRETE HOUSEKEEPING PAD |
| CHWS | CHILLED WATER SUPPLY |
| CHWR | CHILLED WATER RETURN |
| CI | CAST IRON |
| CLG | CEILING |
| CMU | CONCRETE MASONARY UNIT |
| CO | CLEAN OUT |
| COL | COLUMN |
| COMP | COMPRESSOR |
| CONC | CONCRETE |
| COND | CONDENSATE |
| CONN | CONNECTION |
| CONTD | CONTINUED |
| CONV | CONVECTOR |
| COP | COEFFICIENT OF PERFROMANCE |
| CT | COOLING TOWER |
| CU | CONDENSING UNIT |
| CUH | CABINET UNIT HEATER |
| CV | CONSTANT AIR VOLUME BOX |
| CVS | CONTROL VALVE STATION |
| CW | COLD WATER |
| D | DAMPER |
| DDC | DIRECT DIGITAL CONTROL |
| DEPT | DEPARTMENT |
| DIA | DIAMETER |
| DIAG | DIAGRAM |
| DIFF | DIFFERENTIAL |
| DISC | DISCONNECT |
| DIV | DIVISION |
| DIW | DOWN IN WALL |
| DL | DOOR LOUVER |
| DN | DOWN |
| DWG | DRAWING |
| DX | DIRECT EXPANSION |
| DPI | DIFFERENTIAL PRESSURE INDICATOR |
| DPT | DIFFERENTIAL PRESSURE TRANSMITTER |
| (E),EXIST | EXISTING |
| EA | EACH OR EXHAUST AIR |
| EAT | ENTERING AIR TEMPERATURE |
| EAV | EXHAUST AIR VALVE |
| ECC | ECCENTRIC |
| EDB | ENTERING DRY BULB |
| EDH | ELECTRIC DUCT HEATER |
| EER | ENERGEY EFFICIENCY RATING |
| EF | EXHAUST FAN |
| EG | EXHAUST GRILLE |
| EL | ELEVATION |
| ELEC | ELECTRIC |
| EQ | EQUAL |
| EQUIP | EQUIPMENT |
| ER | EXHAUST REGISTER |
| ES | END SWITCH |
| ESP | EXTERNAL STATIC PRESSURE |
| ET | EXPANSION TANK |
| EUH | ELECTRIC UNIT HEATER |
| EWT | ENTERING WATER TEMPERATURE |
| EXP | EXPANSION |
| °F | DEGREES FAHRENHEIT |
| FA | FROM ABOVE |
| FB | FROM BELOW |
| FC | FLEXIBLE CONNECTION |
| FCU | FAN COIL UNIT |
| FCV | FLOW CONTROL VALVE |
| FD | FIRE DAMPER/FLOOR DRAIN |
| FIN | FINISHED |
| FL | FLANGE |
| FLA | FULL LOAD AMPS |
| FLEX | FLEXIBLE |
| FLR | FLOOR |
| FM | FLOW METER |
| FO | FAIL OPEN |
| FOB | FLAT ON BOTTOM |
| FOT | FLAT ON TOP |
| FP | FIRE PROTECTION |
| FPB | FAN POWERED BOX |
| FPM | FEET PER MINUTE |
| FPS | FEET PER SECOND |
| FS | FLOW SWITCH |
| FT | FEET, FLASH TANK |
| FTR | FIN TUBE RADIATION |
| FV | FACE VELOCITY |
| GA | GAUGE |
| GAL | GALLON |
| GALV | GALVANIZED |
| GC | GENERAL CONTRACTOR |
| GPD | GALLONS PER DAY |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GRD | GROUND |
| GRS/LB | GRAINS PER POUND |
| GUH | GAS FIRED UNIT HEATER |
| H | HUMIDIFIER |
| HC | HEATING COIL |
| HD | HEAD (PRESSURE IN FEET) |
| HOA | HAND OFF AUTO SWITCH |
| HORIZ. | HORIZONTAL |
| HP | HORSEPOWER |
| HRU | HEAT RECOVERY UNIT |
| HWHC | HOT WATER HEATING COIL |
| HWS | HOT WATER SUPPLY |
| HWR | HOT WATER RETURN |
| HVAC | HEATING VENTILATION AND AIR CONDITIONING |
| HVU | HEATING AND VENTILATION UNIT |
| HX | HEAT EXCHANGER |
| HZ | HERTZ |
| H2O | WATER |
| ID | INSIDE DIMENSION |
| IN | INCHES |
| INFO | INFORMATION |
| IN WG | INCHES IN WATER COLUMN |
| INV | INVERT |
| IPLV | INTEGRATED PART LOAD VALUE |
| KE | KITCHEN EXHAUST |
| KEH | KITCHEN EXHAUST HOOD |
| KW | KILOWATT |
| L | LENGTH |
| LAT | LEAVING AIR TEMPERATURE |
| LBG | LINEAR BAR GRILLE |
| LBS | POUNDS |
| LBS/HR | POUNDS PER HOUR |
| LD | LINEAR DIFFUSER |
| LDB | LEAVING DRY BULB TEMPERATURE |
| LIN | LINEAR |
| LRA | LOCKED ROTOR AMPS |
| LVR | LOUVER |
| LWB | LEAVING WET BULB TEMPERATURE |
| LWT | LEAVING WATER TEMPERATURE |
| M | MOTOR |
| MAU | MAKE UP AIR UNIT |
| MAX | MAXIMUM |
| MB | MIXING BOX |
| MBH | THOUSANDS OF BTU PER HOUR |
| MC | MECHANICAL CONTRACTOR |
| MD | MOTORIZED DAMPER |
| MED | MEDIUM |
| MER | MECHANICAL EQUIPMENT ROOM |
| MFR | MANUFACTURER |
| MIN | MINIMUM |
| MISC | MISCELLANEOUS |
| MOD | MODULATING |
| N/A | NOT APPLICABLE |
| NG | NATURAL GAS |
| NC | NORMALLY CLOSED |
| NEG | NEGATIVE |
| NIC | NOT IN CONTRACT |
| No | NUMBER |
| NO | NORMALLY OPEN |
| NOM | NOMINAL |
| NTS | NOT TO SCALE |
| OA | OUTSIDE AIR |
| OAI | OUTSIDE AIR INTAKE |
| OAT | OUTSIDE AIR TEMPERATURE |
| OC | ON CENTER |
| OCC | OCCUPIED• |
| OD | OUTSIDE DIMENSION |
| ODP | OPEN DRIP PROOF |
| PC | PLUMBING CONTRACTOR |
| PD | PRESSURE DROP |
| PERF | PERFORATED |
| PNEU | PNEUMATIC |
| POS | POSITIVE |
| PRV | PRESSURE REDUCING VALVE |
| PS | PRESSURE SWITCH |
| PSA | PRIMARY SUPPLY AIR |
| PSI | POUNDS PER SQUARE INCH |
| PSIG | POUNDS PER SQUARE INCH VALVE |
| PT | PRESSURE TRANSMITTER |
| PVC | POLYVINYL CHOLORIDE |
| RA | RETURN AIR |
| RD | ROOF DRAIN |
| RF | RETURN FAN |
| RG | RETURN GRILLE |
| RH | RELATIVE HUMIDITY |
| RHC | REHEAT COIL |
| RL | REFRIGERANT LIQUID |
| RLA | RATED LOAD AMPS |
| RM | ROOM |
| RPM | REVOLUTIONS PER MINUTE |
| RR | RETURN REGISTER |
| RS | REFRIGERANT SUCTION |
| RTU | ROOFTOP AIR HANDLING UNIT |
| RV | RELIEF VALVE |
| SA | SUPPLY AIR |
| SAV | SUPPLY AIR VALVE |
| SCH | SCHEDULE |
| SD | SMOKE DAMPER |
| SF | SUPPLY FAN |
| SG | SUPPLY GRILLE |
| SHT | SHEET |
| SP | STATIC PRESSURE |
| SPEC | SPECIFICATION |
| SQ | SQUARE |
| SR | SUPPLY REGISTER |
| SRV | SAFETY RELIEF VALVE |
| SS | STAINLESS STEEL |
| ST | SOUND TRAP |
| SW | SWITCH |
| SUCT | SUCTION |
| SUP | SUPPLY |
| SYS | SYSTEM |
| T | THERMOSTAT |
| TAD | TRANSFER AIT DUCT |
| TEMP | TEMPERATURE |
| TF | TRANSFER FAN |
| TG | TRANSFER GRILLE |
| TK | TANK |
| TP | TOTAL PRESSURE |
| TRAN | TRANSITION |
| TS | TEMPERATURE SWITCH |
| TYP | TYPICAL |
| UH | UNIT HEATER |
| VAC | VACUUM |
| VAV | VARIABLE AIR VOLUME |
| VD | VOLUME DAMPER |
| VEL | VELOCITY |
| VERT | VERTICAL |
| VFD | VARIABLE FREQUENCY DRIVE |
| VTR | VENT THRU ROOF |
| W | WIDTH |
| WB | WET BULB |
| WG | WATER GAUGE |
| WH | WATER HEATER |
| WPD | WATER PRESSURE DROP |
| WT | WEIGHT |
| X | VARIABLE |
| 2 POS | TWO POSITION |

## 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)
- SV — COMBINATION STRAINER AND SHUT OFF VALVE WITH PETES PLUGS
- FV — COMBINATION FLOW CONTROL VALVE AND SHUT OFF VALVE WITH PETES PLUGS
- CIRCUIT BALANCING VALVE
- TPV — TEMPERATURE/PRESSURE RELIEF VALVE
- FLEXIBLE CONNECTION
- PIPE GUIDE
- RELIEF/SAFETY VALVE
- AUTOMATIC FILL VALVE
- MV — MANUAL AIR VENT
- AV — AUTOMATIC AIR VENT (EXTEND DISCHARGE TO DRAIN)
- FLOW METER-ORIFICE
- DIRECTION OF FLOW
- DIRECTION OF SLOPE
- STRAINER
- STRAINER WITH BLOW OFF VALVE
- BFP — BACK-FLOW PREVENTOR
- PIPE RISING UP
- PIPE DROPPING DOWN
- TEE OUTLET DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- UNION - SCREWED OR FLANGED
- BLIND FLANGE
- A — PIPE ANCHOR
- EJ — EXPANSION JOINT
- AQUASTAT
- ELECTRICALLY TRACED PIPING
- W, H — EXPANSION LOOP (WxH)
- PT — PRESSURE / TEMPERATURE TEST STATION
- THERMOMETER

## DUCTWORK

(NOT ALL COMPONENTS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

| DOUBLE LINE | | SINGLE LINE |
|---|---|---|
| | FLEXIBLE DUCTWORK | |
| 20X12 | NEW DUCTWORK - DUCT SIZE INDICATED INCLUDES ALLOWANCE FOR ACOUSTIC LINING WHERE APPLICABLE | 20X12 |
| | RADIUS ELBOW | |
| | VANED ELBOW | |
| | BRANCH DUCT TAKE-OFF | |
| D R | RISE OR DROP DIRECTION OF AIR FLOW | D R |
| SIZE CFM | DIFFUSER (TYPE, NECK, CFM) | |
| SIZE CFM | CEILING RETURN/EXHAUST REGISTER (R) OR GRILLE (G) (TYPE, NECK, CFM) | |
| SIZE CFM | SUPPLY AIR GRILLE (G) OR SUPPLY AIR REGISTER (R) (TYPE, NECK, CFM) | |
| SIZE CFM | RETURN AND/OR EXHAUST AIR GRILLE (G) OR REGISTER (R) (TYPE, NECK, CFM) | |
| VD | VOLUME DAMPER W / LOCKING QUADRANT | |
| SD | SMOKE DAMPER W / AD | |
| FD | FIRE DAMPER W / AD | |
| FSD | FIRE & SMOKE DAMPER W / AD | |
| M | MOTORIZED DAMPER (OPPOSED BLADE) | |
| | CENTRIFUGAL FAN | |
| | DOME FAN | |
| 8 | AXIAL FAN | |
| | AIR VOLUME MEASUREMENT STATION | |
| T | THERMOSTAT | |
| H | HUMIDISTAT | |
| S | SMOKE DETECTOR | |
| U | UNDERCUT | |
| DL 12X12 | 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 | |
| CO2 | CARBON DIOXIDE MONITOR | |

## REFERENCE SYMBOLS

(NOT ALL SYMBOLS MAY APPEAR ON THESE CONTRACT DOCUMENTS)

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

## LINE DESIGNATIONS

(NOT ALL LINETYPES MAY APPEAR ON THESE CONTRACT DOCUMENTS)

- CD — CONDENSATE DRAIN
- D — DRAIN
- EA — EXHAUST AIR
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- NG — NATURAL GAS
- RA — RETURN AIR
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- SA — SUPPLY AIR
- —P—P—P— VENDOR PROVIDED EQUIIP
- —#— —#— —#— LOW VOLTAGE WIRING



M–01

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. | |
|---|---|---|
| T200911308 | DESIGNED BY: CLG | |
| COUNTY | CHECKED BY: DWF | |
| NEW CASTLE | | |

MECHANICAL SYMBOLS, ABBREVIATIONS & GENERAL NOTES

| SHEET NO. |
|---|
| 849 |
| TOTAL SHTS. |
| 875 |

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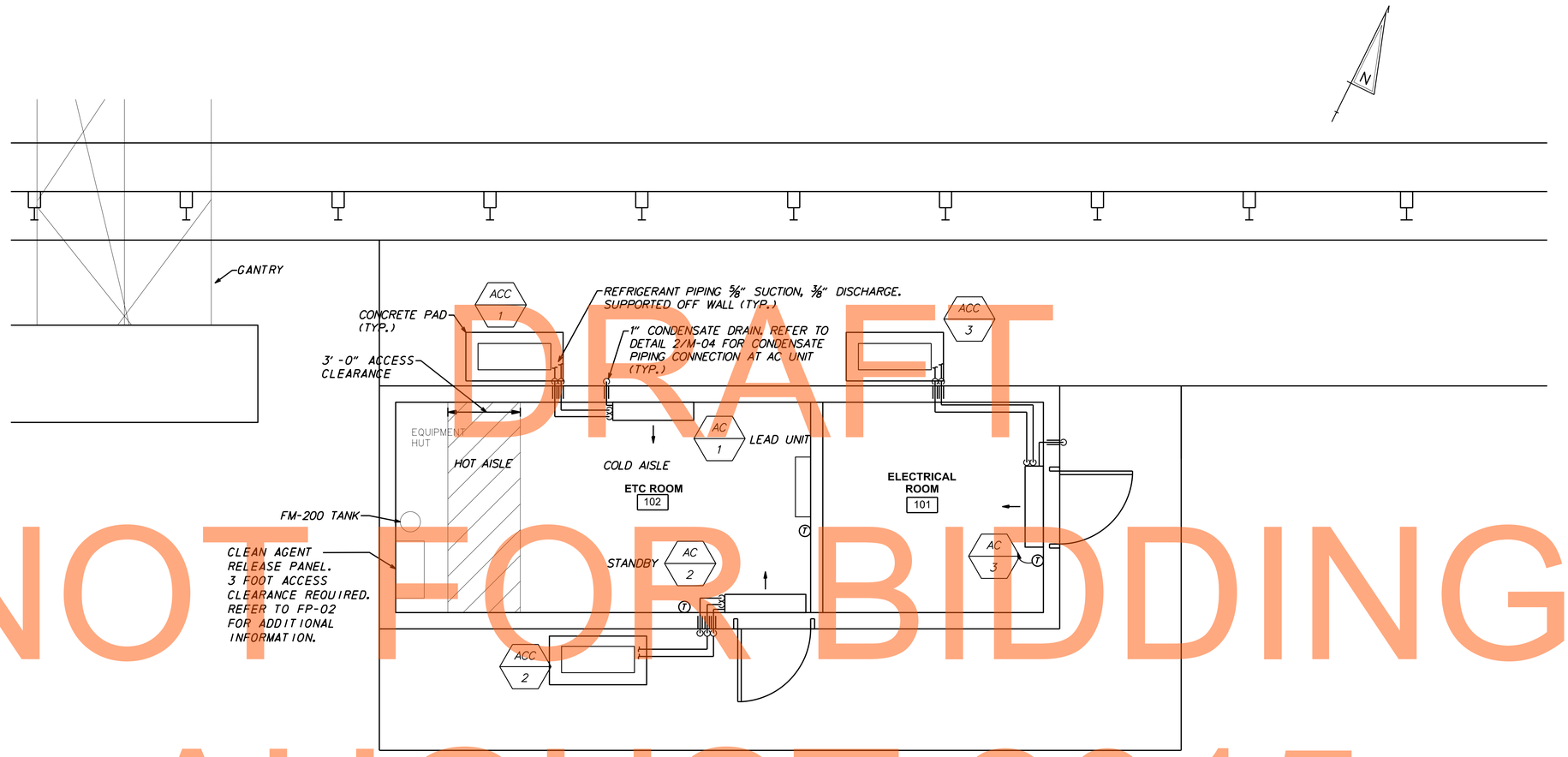


NOTE: ETC EQUIPMENT TO BE SUPPLIED BY OTHERS. WALL MOUNT OR OTHER SOLUTIONS MAY BE UTILIZED. ANY CHANGES MUST BE APPROVED BY THE ETC CONTRACTOR.

MECHANICAL RAMP HUT PLAN RAMP 'M'

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



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M-02

DELAWARE DEPARTMENT OF TRANSPORTATION

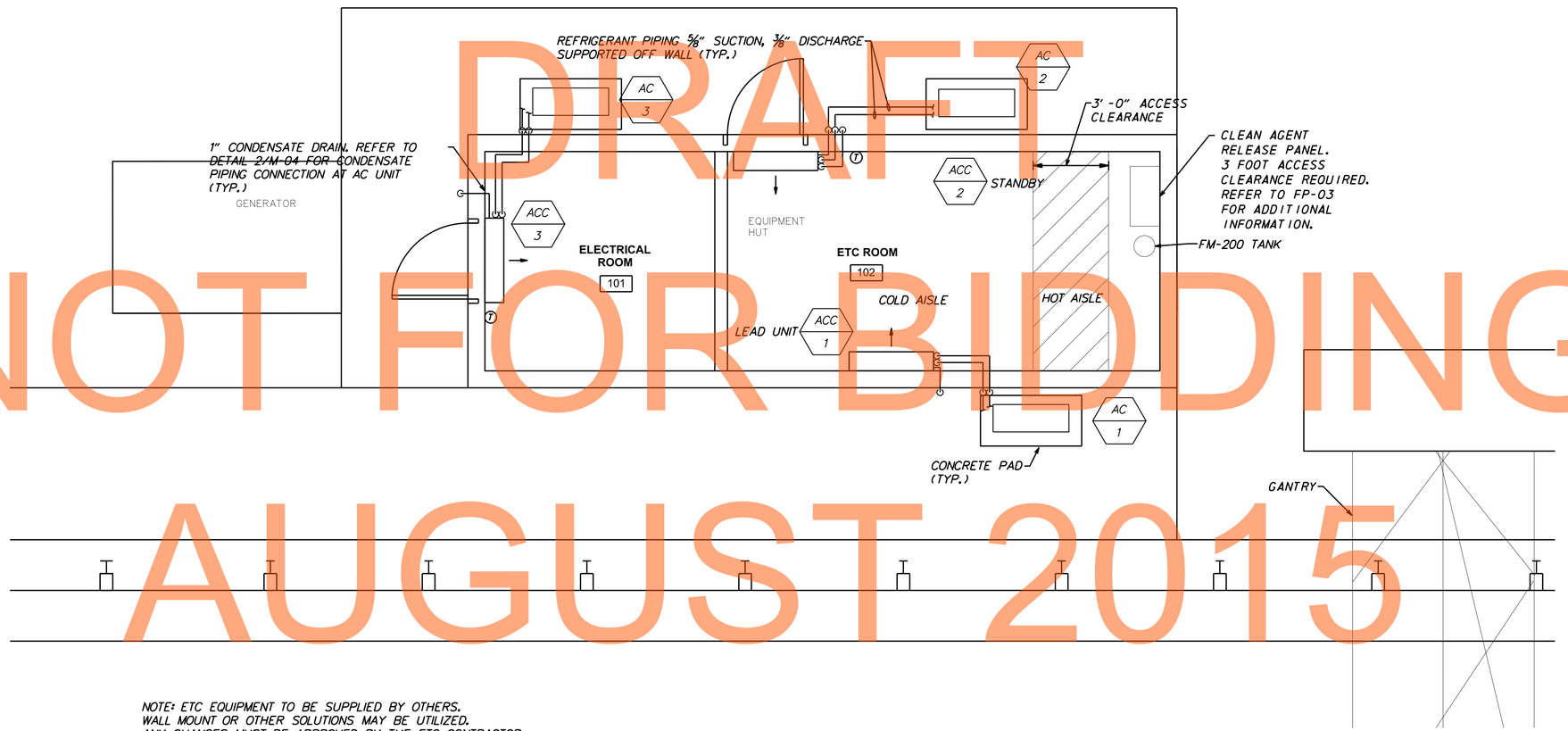
ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. | |
|---|---|---|
| T200911308 | DESIGNED BY: ASC | |
| COUNTY | CHECKED BY: CLG | |
| NEW CASTLE | | |

MECHANICAL RAMP 'M' PLAN

| SHEET NO. |
|---|
| 850 |
| TOTAL SHTS. |
| 875 |




NOTE: ETC EQUIPMENT TO BE SUPPLIED BY OTHERS.
WALL MOUNT OR OTHER SOLUTIONS MAY BE UTILIZED.
ANY CHANGES MUST BE APPROVED BY THE ETC CONTRACTOR.

## MECHANICAL RAMP HUT PLAN RAMP 'P'

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

M-03

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | MECHANICAL RAMP HUT PLAN RAMP 'P' | SHEET NO. 851 |
|---|---|---|---|---|---|---|---|
| | | | | COUNTY NEW CASTLE | DESIGNED BY: ASC | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: CLG | | |

LAST REVISED: 3/12/2008
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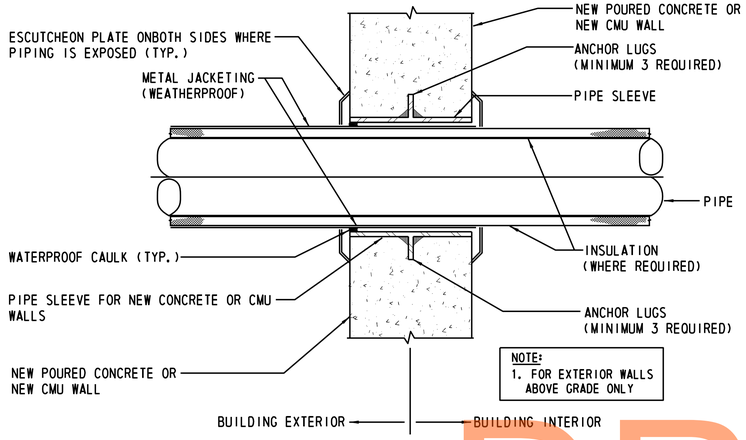
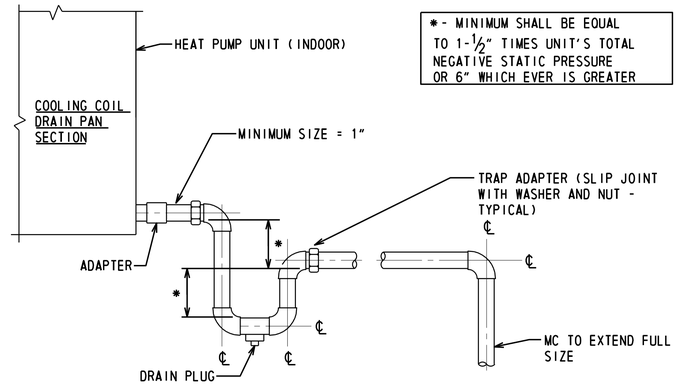
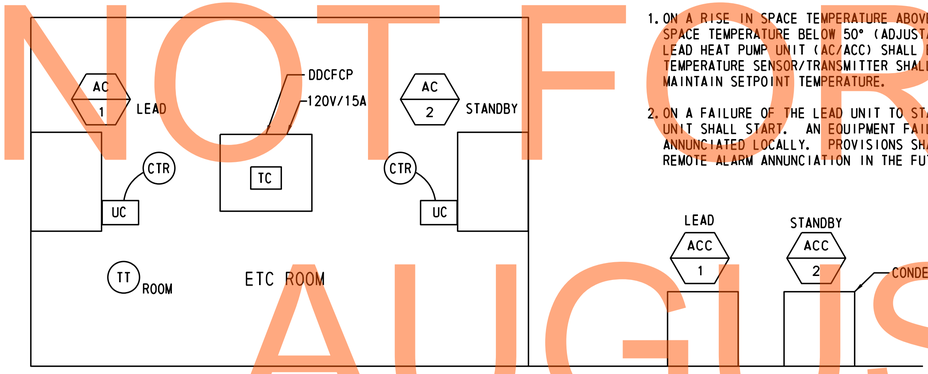



1 PIPE SLEEVE - EXTERIOR WALL ABOVE GRADE
SCALE: NONE




2 DETAIL - CONDENSATE DRAIN
SCALE: NONE




ETC ROOM TEMPERATURE CONTROL SEQUENCE

1. ON A RISE IN SPACE TEMPERATURE ABOVE 80° OR ON A DROP SPACE TEMPERATURE BELOW 50° (ADJUSTABLE), THE SELECTED LEAD HEAT PUMP UNIT (AC/ACC) SHALL BE ENERGIZED. SPACE TEMPERATURE SENSOR/TRANSMITTER SHALL CYCLE UNIT TO MAINTAIN SETPOINT TEMPERATURE.
2. ON A FAILURE OF THE LEAD UNIT TO START, THE STANDBY UNIT SHALL START. AN EQUIPMENT FAILURE ALARM SHALL BE ANNUNCIATED LOCALLY. PROVISIONS SHALL BE MADE FOR REMOTE ALARM ANNUNCIATION IN THE FUTURE.

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.

3 ETC ROOM/TEMPERATURE CONTROL DIAGRAM
SCALE: NONE

## 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 |
| 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 |
| 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 NOTES |

NOTES:
1. FURNISH HEAT PUMP WITH SINGLE POINT POWER CONNECTION, DISCONNECT SWITCH, LOW AMBIENT CONTROL DOWN TO 0°F, AND MOUNTING HARDWARE.





DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: CLG
CHECKED BY: DWF

MECHANICAL DETAILS & SCHEDULES

SHEET NO. 852
TOTAL SHTS. 875

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VALVE SYMBOLS

FM-200 RELEASE VALVE

PIPING ELEMENT SYMBOLS

FM-200 — FM-200 PIPING

FM-200 RELEASE NOZZLE

DEVICE SYMBOLS

A — ALARM HORN AND STROBE

R — RELEASE HORN AND STROBE

AB — MANUAL ABORT SWITCH

M — MANUAL PULL STATION

S — SMOKE DETECTOR (PHOTO ELECTRIC)

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 STRUCTRAL 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 SUPRESSION 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.
11. FM-200 PROTECTED SPACE IS TO BE SEALED AND LEAK TESTED AS PER NFPA-2001 AND ALL LOCAL AND STATE REQUIREMENTS.




FIRE PROTECTION RAMP HUT PLAN RAMP 'M'

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

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FP-01

DELAWARE DEPARTMENT OF TRANSPORTATION

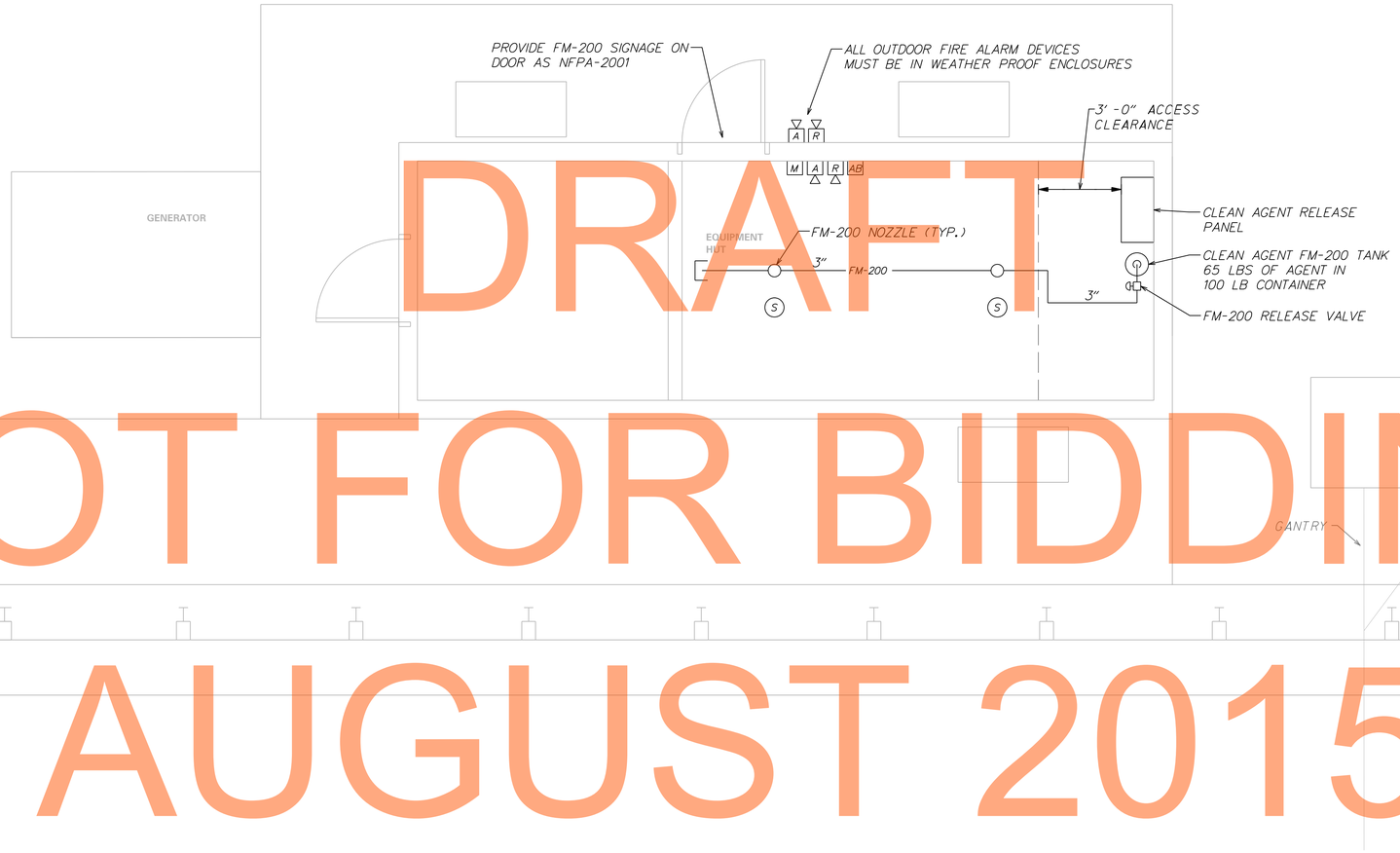
ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: MLW
CHECKED BY: DWF

FIRE PROTECTION RAMP 'M' PLAN

SHEET NO. 853
TOTAL SHTS. 875






FIRE PROTECTION RAMP HUT PLAN RAMP 'P'
SCALE: 1/2" = 1'-0"

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FP-02

DELAWARE
DEPARTMENT OF TRANSPORTATION

| ADDENDUMS / REVISIONS | |
|---|---|
| | |
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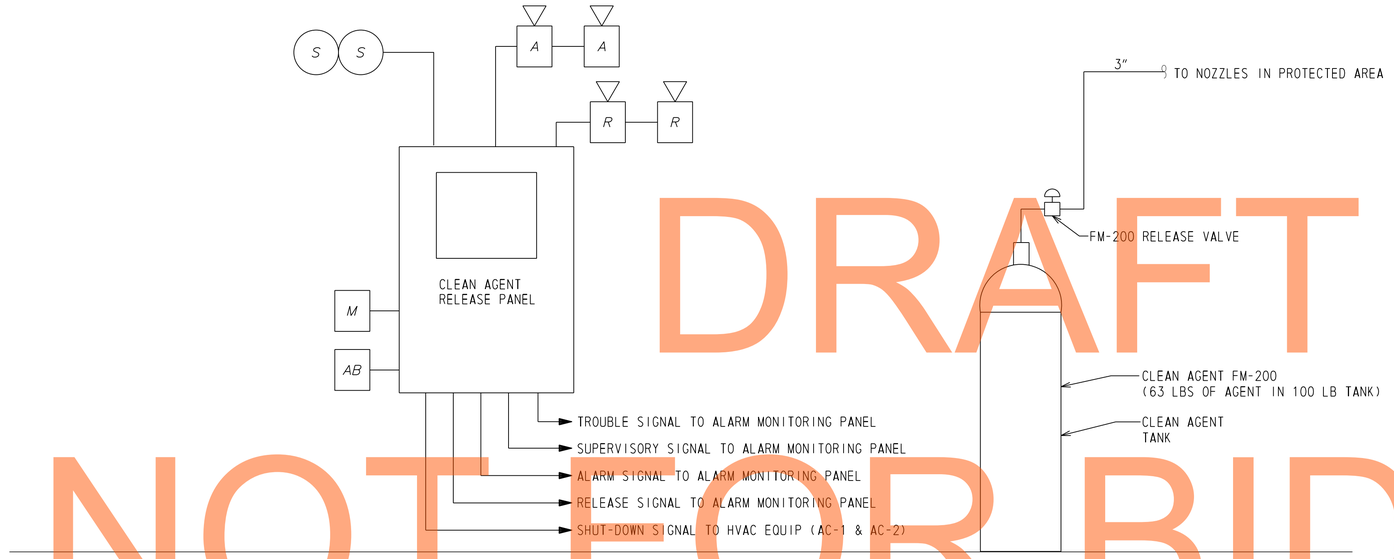
| | |
| | |

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. | |
|---|---|---|
| T200911308 | DESIGNED BY: MLW | |
| COUNTY | | |
| NEW CASTLE | CHECKED BY: DWF | |

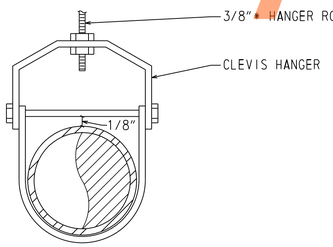
FIRE PROTECTION
RAMP HUT
PLAN RAMP 'P'

| SHEET NO. |
|---|
| 854 |
| TOTAL SHTS. |
| 875 |




CLEAN AGENT FIRE SUPPRESSION SYSTEM SCHEMATIC

SCALE: NONE




CLEVIS HANGER DETAIL

SCALE: NONE

*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 INITATE 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 RECIEVING SIGNAL FROM MANUAL ABORT SWITCH THE CLEAN AGENT RELEASE PANEL SHALL:*

*1. DISARM TANK VALVE*



FP-02

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | FIRE PROTECTION DETAILS | SHEET NO. 855 |
|---|---|---|---|---|---|---|---|
| | | | | COUNTY NEW CASTLE | DESIGNED BY: MLW | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: DWF | | |

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

- LP-1 — CIRCUIT
- 2x2 FLUORESCENT FIXTURE
- A — FIXTURE TYPE
- a — 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

$S_3$ — SWITCH, 3-WAY

$S_4$ — SWITCH, 4-WAY

$S_D$ — SWITCH, DIMMER

$S_P$ — SWITCH WITH PILOT LIGHT

TC — TIME CLOCK

DIRECTIONAL MOTION DETECTOR LIGHT CONTROL

MULTI-DIRECTIONAL MOTION DETECTOR LIGHT CONTROL

OS — WALL OCCUPANCY SENSOR

VS — WALL VACANCY SENSOR

S — SPECIAL PURPOSE LIGHT SWITCH: DESCRIPTION OF SWITCH WILL BE AS NOTED ON DRAWINGS

PHOTOELECTRIC CONTROL

LIGHTING CONTACTOR:
- LC1 — REPRESENTS LIGHTING CONTACTOR IDENTIFICATION

LIGHTING CONTACTOR REMOTE CONTROL:
- LC1 — 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 — C — CEILING MOUNTED FIRE ALARM STROBE; (75) — CANDELL RATING (15 U.O.N.)
- F — 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

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

## GENERAL POWER:

SINGLE RECEPTACLE (NEMA 5-20R)
- GF — RECEPTACLE WIRED TO GROUND FAULT CIRCUIT BREAKER
- IG — ISOLATED GROUND
- S — SWITCHED
- TR — TAMPER RESISTANT
- WP — WEATHER RESISTANT RECEPTACLE W/IN-USE COVER (WET LOCATION)
- WR — WEATHER RESISTANT RECEPTACLE W/NON-IN-USE COVER (DAMP LOCATION)

DUPLEX RECEPTACLE (NEMA 5-20R)

DOUBLE DUPLEX RECEPTACLE

GROUND FAULT CIRCUIT INTERRUPTER (DUPLEX 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

P — WALL BOX FOR MODULAR FURNITURE WHIP

J — JUNCTION BOX

NON FUSED SAFETY SWITCH
- (3R) — ENCLOSURE NEMA RATING
- 30A — SWITCH RATING

F — FUSED SAFETY SWITCH
- 30AS — SWITCH RATING
- 20AF — FUSE RATING

MAGNETIC MOTOR STARTER
- (12) — ENCLOSURE NEMA RATING
- 2 — NEMA SIZE

COMBINATION MAGNETIC MOTOR STARTER
- 3 — NEMA SIZE

CB — ENCLOSED CIRCUIT BREAKER

CONTACTOR

$S_T$ — TIME SWITCH

$S_M$ — MANUAL MOTOR SWITCH (WITHOUT OVERLOADS)

$S_{MT}$ — MANUAL MOTOR STARTER (WITH THERMAL OVERLOADS)

$S_{MP}$ — MANUAL MOTOR SWITCH WITH PILOT LIGHT

NS — CONTROL STATION, TYPE AS NOTED

MUSHROOM SWITCH

MOTOR (HORSEPOWER INDICATED ON PLANS)

T — TRANSFORMER

GENERATOR

MOD — MOTOR OPERATED DAMPER

T — THERMOSTAT

UPS — UNINTERRUPTIBLE POWER SUPPLY

SPD — SURGE PROTECTIVE DEVICE

UNIT HEATER

## COMMUNICATIONS:

- S — CEILING SPEAKER
- S — WALL MOUNTED SPEAKER
- S S — WALL MOUNTED DOUBLE SPEAKER
- S — POLE MOUNTED SPEAKER
- S S — POLE MOUNTED DOUBLE SPEAKER
- VOICE DATA OUTLET
- DATA OUTLET
  - 6 — INDICATES NUMBER OF PORTS
- FLOOR MOUNTED OUTLET
- CATV — CABLE TELEVISION OUTLET
- TELEPHONE OUTLET
  - P — PAY PHONE
  - W — WALL MOUNTED
- C — WALL BOX FOR SYSTEMS FURNITURE VOICE/DATA WHIP
- TTC — TELEPHONE TERMINAL CABINET

## ACCESS CONTROL/INTRUSION ALARM:

- AICP — ACCESS/INTRUSION ALARM CONTROL PANEL
- D — DOOR CONTACT
- KP — ACCESS KEYPAD
- ACR — 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

G — BARE COPPER CONDUCTOR BURIED OR EMBEDDED IN CONCRETE

GND — GROUND BUS

## ONE LINE DIAGRAM:

52 — MEDIUM VOLTAGE DRAWOUT CIRCUIT BREAKER

LOW VOLTAGE DRAWOUT CIRCUIT BREAKER
- AF — AMP FRAME
- AT — AMP TRIP
- EO — ELECTRICALLY OPERATED

CIRCUIT BREAKER

ST — SHUNT TRIP
GF - GROUND FAULT
EO - ELECTRICALLY OPERATED

DISCONNECT, ISOLATION OR SAFETY SWITCH

FUSED CUTOUT

FUSED LOAD BREAK SWITCH

MEDIUM VOLTAGE MOTOR STARTER

MAGNETIC MOTOR STARTER. NUMERAL INDICATES NEMA SIZE
FVNR UNLESS OTHERWISE NOTED.
FVR - 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

480/120 — POTENTIAL TRANSFORMER
- RATIO
- 2 — NUMBER REQUIRED

600/5 — CURRENT TRANSFORMER
- RATIO
- 2 — NUMBER REQUIRED

GROUND FAULT CURRENT TRANSFORMER

5 — MOTOR, NUMBER INDICATES HORSE POWER

GENERATOR

ATS — ATS - AUTOMATIC TRANSFER SWITCH; MTS - MANUAL TRANSFER SWITCH

METER
- A - AMMETER
- V - VOLTMETER
- W - WATTMETER
- WH - WATT HOURMETER
- KWH - KILOWATT HOUR
- KVAR - KILOVAR METER
- VAR - VAR METER
- HZ - FREQUENCY METER
- PF - POWER FACTOR METER

DPM — DIGITAL POWER METER

AS — METER TRANSFER SWITCH
- AS - AMMETER SWITCH
- VS - VOLTMETER SWITCH

SPD — SURGE PROTECTIVE DEVICE

LIGHTNING ARRESTOR

KEY INTERLOCK

FUSE

e, f — ELECTRONIC POWER FUSE

DRAWOUT DEVICE

GROUND

## MISCELLANEOUS:

EQUIPMENT IDENTIFICATION

A / E5 — SECTION IDENTIFICATION; SECTION NOMENCLATURE; SHEET NUMBER ON WHICH SECTION IS SHOWN

A / E5 — SITE WORK

BLDG PLANS

2 / E5 — 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

HANDHOLE

HH-x — MANHOLE
- MH-x

## CONDUIT FEEDERS & BRANCH CIRCUITS:

- CONDUIT
- CONDUIT - EMBEDDED IN FLOOR OR EARTH
- CONDUIT TURNED UP
- CONDUIT TURNED DOWN
- CONDUIT CAPPED
- CIRCUIT HOME RUN
- 10 — FEEDER IDENTIFICATION (SEE FEEDER LEGEND ON DRAWING)
- (3)#8 AWG, (1)#10 GRD-1"C. — CONDUIT FEEDER IDENTIFICATION
- TYPICAL FEEDER WITH NO SIZE IDENTIFICATION SEE GENERAL NOTE 9

## WIRING METHODS:

A. INTERIOR
1. EXPOSED AREAS NOT SUBJECT TO PHYSICAL ABUSE-EMT.
2. EXPOSED AREAS SUBJECT TO ABUSE-RIGID STEEL CONDUIT.
3. CONCEALED IN STUD WALL OR ABOVE SUSPENDED CEILING-EMT OR TYPE MC CABLE.
4. CONCEALED IN MASONRY WALLS - EMT OR RIGID STEEL CONDUIT.

C. EXTERIOR
1. RIGID STEEL CONDUIT

D. BELOW GRADE
1. CONCRETE ENCASED-SCHEDULE 40 PVC
2. DIRECT BURIED-SCHEDULE 40 PVC

E. PENETRATIONS
1. UP THROUGH GRADE-PVC COATED RIGID STEEL
2. THROUGH FOUNDATION WALLS-PVC COATED RIGID STEEL

## ABBREVIATIONS:

| | |
|---|---|
| A OR AMP | AMPERE |
| AC | ALTERNATING CURRENT |
| AFF | ABOVE FINISHED FLOOR |
| AFG | ABOVE FINISHED GRADE |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AIC | AMPERE INTERRUPTING CAPACITY |
| AL | ALUMINUM |
| ATS | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AWG | AMERICAN WIRE GAUGE |
| BFG | BELOW FINISHED GRADE |
| BLDG | BUILDING |
| BOS | BOTTOM OF STEEL |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| CP | CONTROL PANEL |
| CPT | CONTROL POWER TRANSFORMER |
| CT | CURRENT TRANSFORMER |
| CU | COPPER |
| DISC | DISCONNECT |
| DIV | DIVISION |
| DN | DOWN |
| DS | DISCONNECT SWITCH |
| EC | ELECTRICAL CONTRACTOR |
| EGC | ELECTRICAL GROUNDING CONDUCTOR |
| EMT | ELECTRICAL METALLIC TUBING |
| EF | EXHAUST FAN |
| ECH | ELECTRIC CABINET HEATER |
| EQC | EQUIPMENT GROUNDING CONDUCTOR |
| EUH | ELECTRIC UNIT HEATER |
| EWC | ELECTRIC WATER COOLER |
| FAAP | FIRE ALARM ANNUNCIATOR PANEL |
| FACP | FIRE ALARM CONTROL PANEL |
| FBO | FURNISHED BY OTHERS |
| FC | FAILS CLOSED |
| F/T | FEED THROUGH |
| FU | FUSE |
| FRE | FIBERGLASS REINFORCED EPOXY |
| FWE | FURNISHED WITH EQUIPMENT |
| GF | GROUND FAULT |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| GRD | GROUND |
| HID | HIGH INTENSITY DISCHARGE |
| HP | HORSEPOWER |
| HPS | HIGH PRESSURE SODIUM |
| HVAC | HEAT-VENT-AIR CONDITIONING |
| IG | ISOLATED GROUND |
| IND | INDUSTRIAL |
| JIC | JOINT INDUSTRIAL COUNCIL |
| KV | KILOVOLT |
| KVA | KILOVOLT AMPERE |
| KVAR | KILOVARS |
| KW | KILOWATT |
| LA | LIGHTNING ARRESTOR |
| LC | LIGHTING CONTACTOR |
| LTG | LIGHTING |
| MC | METAL CLAD |
| MCB | MAIN CIRCUIT BREAKER |
| MCC | MOTOR CONTROL CENTER |
| MFR | MANUFACTURE |
| MI | MINERAL INSULATED |
| MLO | MAIN LUG ONLY |
| MOA | MULTI-OUTLET ASSEMBLY |
| MOD | MOTOR OPERATED DAMPER |
| MS | MOTOR STARTER |
| MT | MANUAL TRANSFER SWITCH |
| MTD | MOUNTED |
| MV | MEDIUM VOLTAGE |
| N/A | NOT APPLICABLE |
| NC | NORMALLY CLOSED |
| NEC | NATIONAL ELECTRICAL CODE |
| NEUT | NEUTRAL |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| No. | NUMBER |
| NTS | NOT TO SCALE |
| PF | POWER FACTOR |
| PH | PHASE |
| PM | POWER MONITOR |
| PNL | PANEL |
| PT | POTENTIAL TRANSFORMER |
| PVC | POLYVINYL CHLORIDE |
| RECP | RECEPTACLES |
| RGS | RIGID GALVANIZED STEEL(CONDUIT) |
| RTD | RESISTANCE TEMPERATURE DETECTOR |
| RVAT | REDUCED VOLTAGE AUTOTRANSFORMER |
| RVSS | REDUCED VOLTAGE SOLID STATE |
| SC | SURGE CAPACITOR |
| SN | SOLID NEUTRAL |
| SPD | SURGE PROTECTIVE DEVICE |
| STP | SHIELDED TWISTED PAIR |
| STT | SHIELDED TWISTED TRIPLET |
| SW | SWITCH |
| SWBD | SWITCHBOARD |
| TC | TRAY-CABLE |
| TOS | TOP OF STEEL |
| TTB | TELEPHONE TERMINAL BOARD |
| TTC | TELEPHONE TERMINAL CABINET |
| TYP | TYPICAL |
| UL | UNDERWRITERS LABORATORIES |
| UH | UNIT HEATER |
| UON | UNLESS OTHERWISE NOTED |
| UPS | UNINTERRUPTIBLE POWER SUPPLY |
| V | VOLT |
| VA | VOLT AMPERE |
| VAR | VOLT AMPERE REACTIVE |
| W | WIRE |
| WP | WEATHERPROOF |
| WR | WEATHER RESISTANT |
| XFMR | TRANSFORMER |
| 1-PH | SINGLE PHASE |
| 3-PH | THREE PHASE |

## GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NFPA-70) AS ADOPTED AND AMENDED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
2. 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.
3. EQUIPMENT LOCATIONS ARE SHOWN FOR REFERENCE ONLY. REFER TO ARCHITECTURAL, HVAC, PLUMBING, FIRE PROTECTION AND EQUIPMENT PLANS FOR EQUIPMENT LOCATIONS.
4. 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.
5. COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INTERFERENCES.
6. 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).
7. ALL PENETRATIONS THROUGH FLOORS, WALLS AND RATED PARTITIONS SHALL BE SEALED WITH UL LISTED FIRE SEALANT MATERIALS TO MAINTAIN THE RATING OF THE SEPARATION.
8. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE PROVIDED WITH EVERY FEEDER AND BRANCH CIRCUIT.
9. ALL WIRING SHALL BE COPPER. WHERE CONDUCTOR SIZES ARE NOT INDICATED ON THE DRAWINGS, MINIMUM WIRING SHALL BE 2 NO. 12 AWG & NO. 12 EGC FOR SINGLE PHASE CIRCUITS LESS THAN 100 FEET AND 3 NO. 12 & NO. 12 EGC FOR THREE PHASE CIRCUITS. WIRE SIZE FOR 20 AMP-120 VOLT BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 100 FEET SHALL BE 2 NO. 10 AWG & NO. 10 EGC IN ¾"C. BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 200 FEET SHALL BE 2 NO. 8 AWG & NO. 8 EGC IN 1" C. BRANCH CIRCUITS WITH CIRCUIT LENGTH GREATER THAN 300 FEET UP TO 450 FEET SHALL BE 2 NO. 6 AWG & NO. 6 EGC IN 1" C. SHORT TAPS OFF THE MAIN RUN TO INDIVIDUAL OUTLETS SHALL BE PERMITTED TO BE NO. 12 AWG.



| 7/30/15 | E-01 |
|---|---|

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. |
|---|---|
| T200911308 | |
| COUNTY | DESIGNED BY: JLG |
| NEW CASTLE | CHECKED BY: RAK |

ELECTRICAL LEGEND, SYMBOLS & ABBREVIATIONS

| SHEET NO. | TOTAL SHTS. |
|---|---|
| 856 | 875 |

LAST REVISED: 3/12/2008
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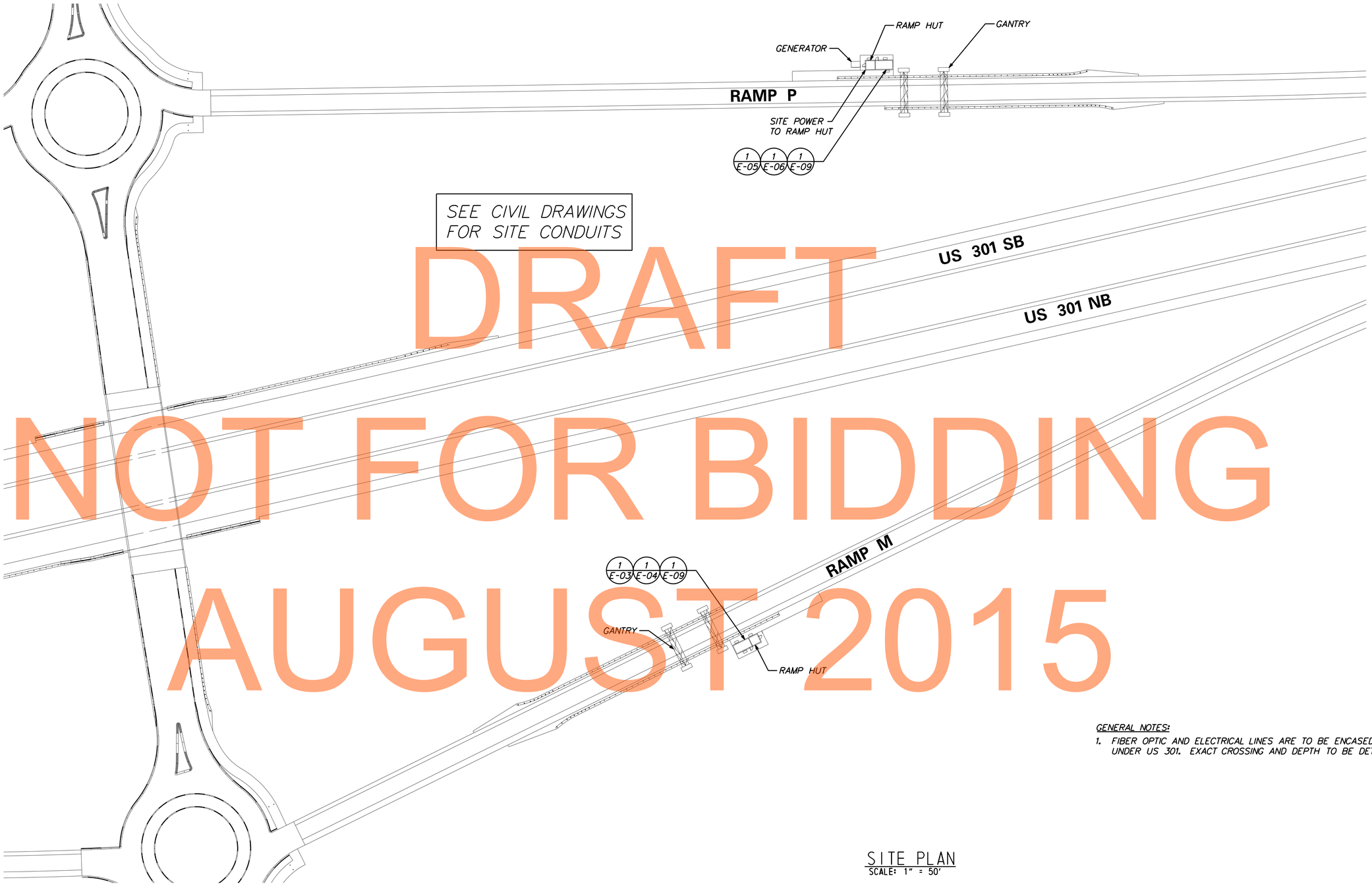




SITE PLAN
SCALE: 1" = 50'

GENERAL NOTES:

1. FIBER OPTIC AND ELECTRICAL LINES ARE TO BE ENCASED IN CONCRETE UNDER US 301. EXACT CROSSING AND DEPTH TO BE DETERMINED.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | 7/30/15 | E-02 |
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | SCALE 0 50 100 150 FEET | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ELECTRICAL KEY PLAN | SHEET NO. 857 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |

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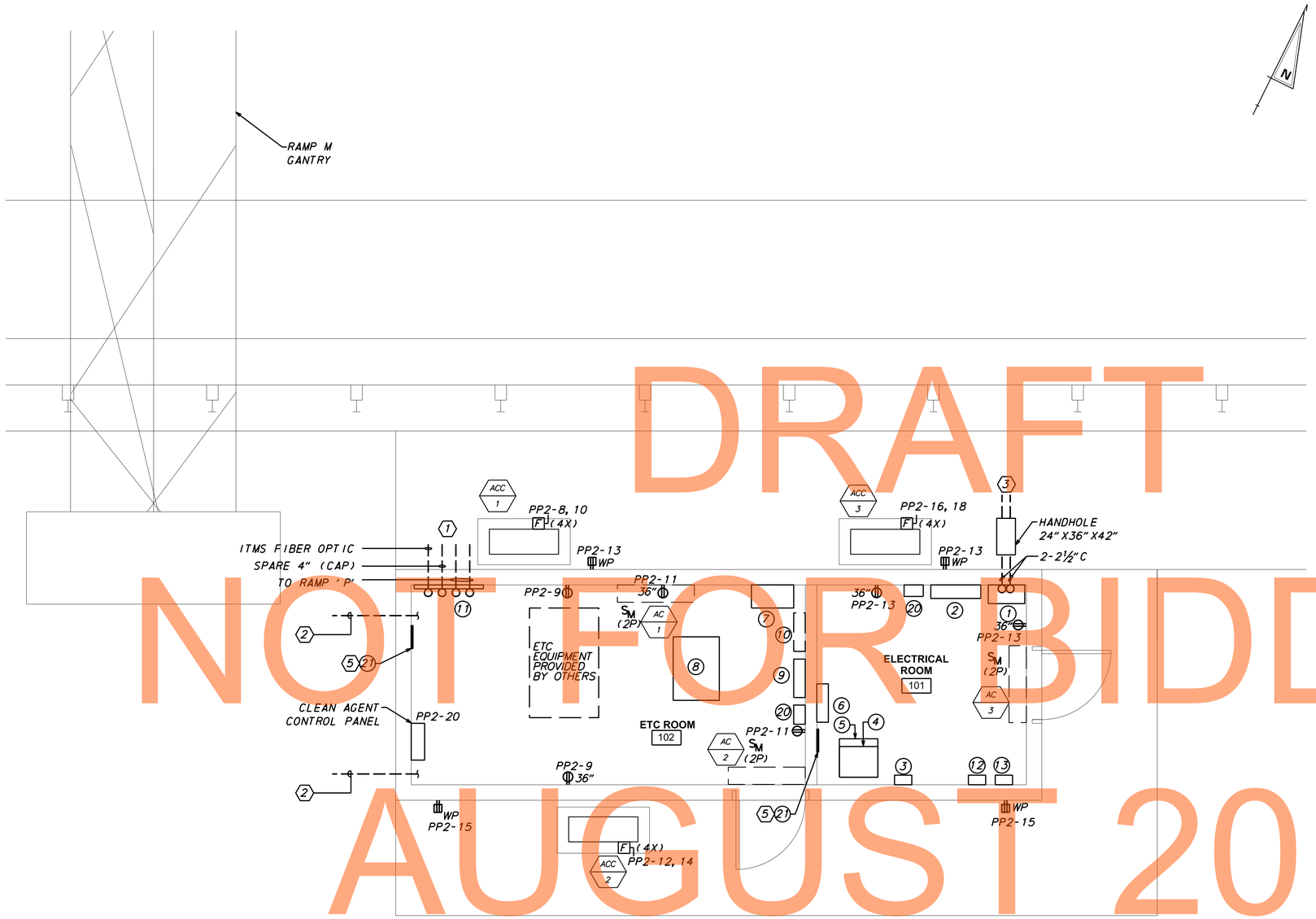
# RAMP M

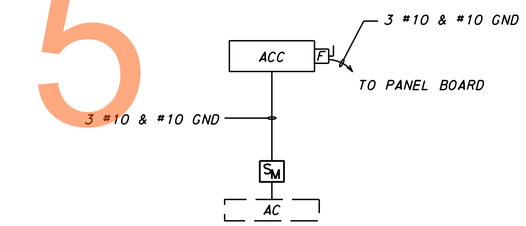
| DESIGNATION | DESCRIPTION |
|---|---|
| 1 | BUILDING DISCONNECT (100A) |
| 2 | PANEL 'DP-2' |
| 3 | 15KVA TRANSFORMER SECONDARY CIRCUIT BREAKER |
| 4 | 15KVA TRANSFORMER (MOUNTED ABOVE) |
| 5 | 30KVA TRANSFORMER (FLOOR) |
| 6 | PANEL 'PP-2' |
| 7 | UPS MAINTENANCE BYPASS SWITCH |
| 8 | UPS |
| 9 | 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 |




1 / E-03 ELECTRICAL RAMP HUT POWER PLAN RAMP 'M'
SCALE: 3/8" = 1'-0"

KEY NOTES:

1. CONDUITS FOR ITMS FIBER OPTIC BACKBONE CONNECTION AND CONDUITS TO ELECTRICAL HUT 'P'. PROVIDE GROUNDING TYPE BUSHINGS. SEE CIVIL DRAWINGS FOR CONDUIT SIZE.
2. SEE DRAWINGS ETC-3 & ETC-4 FOR ETC CONDUIT QUANTITY AND SIZES.
3. TWO CONDUITS FROM RAMP 'P' HUT PANEL DP-1. SEE CIVIL DRAWINGS FOR CONTINUATION.
4. NOT USED.
5. COPPER GROUND BUS, STORM COPPER OR EQUAL. 4"X12"XO.25".




2 / E-03 DUCTLESS SPLIT SYSTEM WIRING

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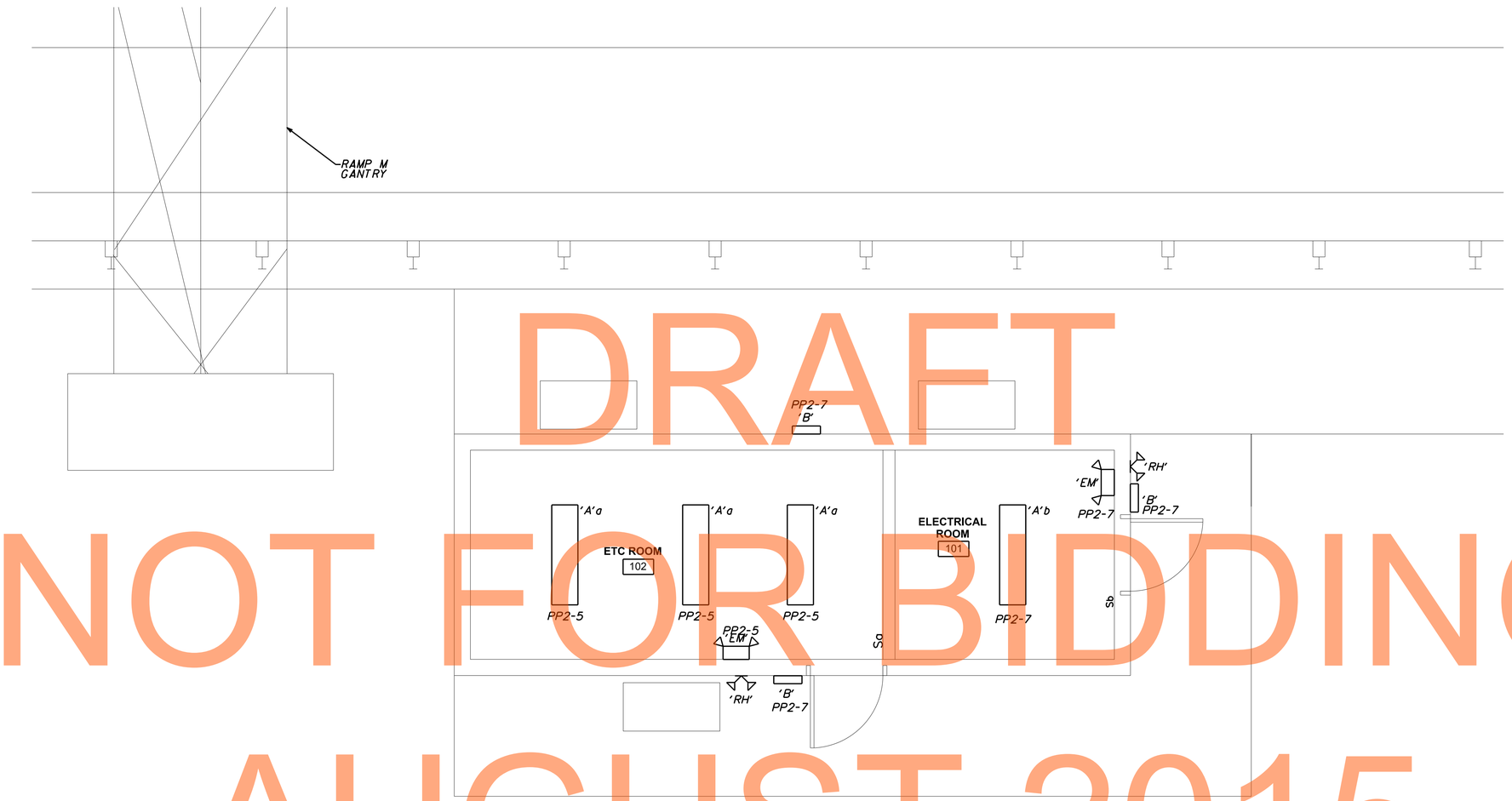
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | 7/30/15 | E-03 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | ELECTRICAL RAMP HUT POWER PLAN RAMP 'M' | SHEET NO. 858 |
| | | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 |






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

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

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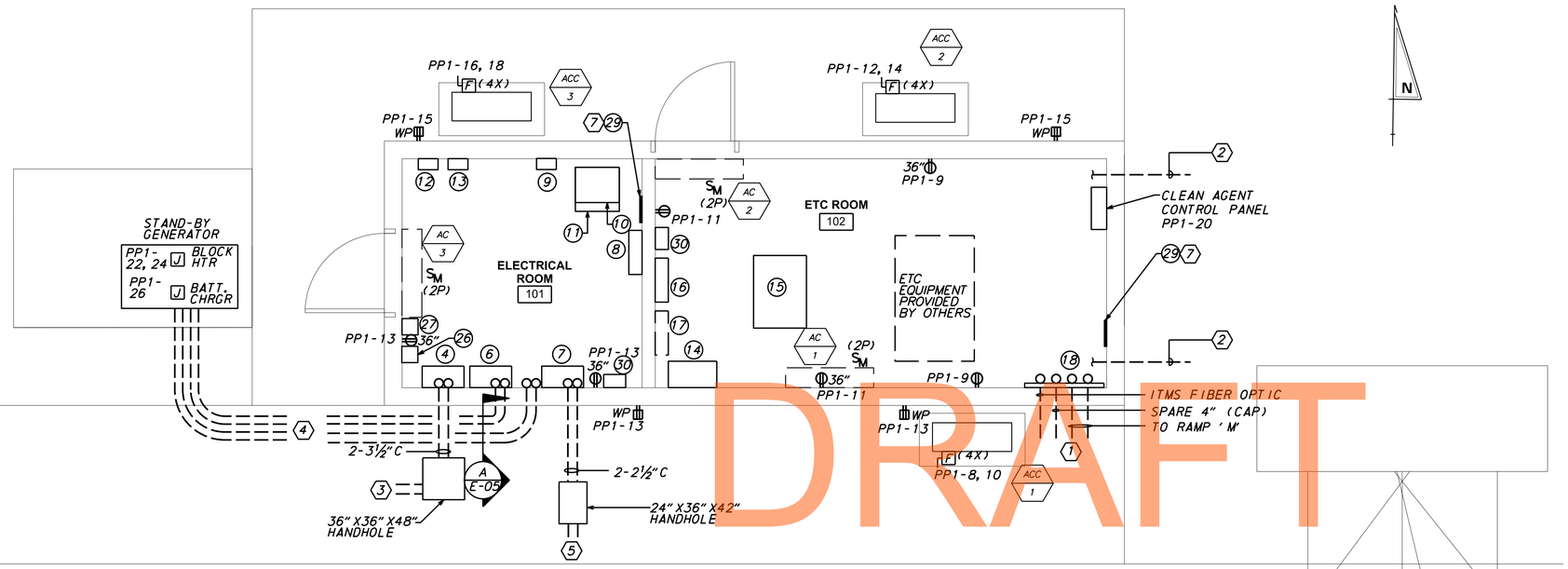
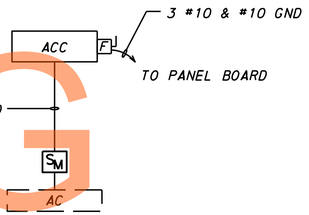
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ELECTRICAL RAMP HUT LIGHTING PLAN RAMP 'M' | 7/30/15 | E-04 |
|---|---|---|---|---|---|---|---|---|
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | | SHEET NO. 859 | |
| | | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 | |




## RAMP P

| DESIGNATION | DESCRIPTION |
|---|---|
| 1 | NOT USED |
| 2 | NOT USED |
| 3 | NOT USED |
| 4 | BUILDING 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) |

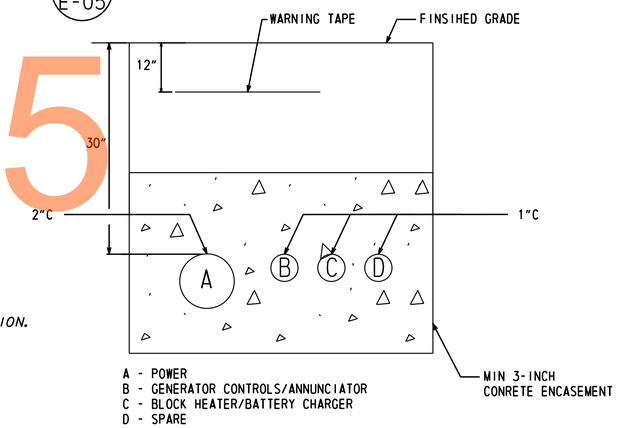
## 1 / E-05 ELECTRICAL RAMP HUT POWER PLAN RAMP 'P'

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

**KEY NOTES:**

1. CONDUITS FOR ITMS FIBER OPTIC BACKBONE CONNECTION AND CONDUITS TO HUT AT RAMP 'M'. PROVIDE GROUNDING TYPE BUSHINGS. SEE CIVIL DRAWINGS FOR CONDUIT SIZE.
2. SEE DRAWINGS ETC-6 & ETC-7 FOR ETC CONDUIT QUANTITY AND SIZES.
3. CONDUIT FOR BUILDING POWER FROM SITE DISTRIBUTION.
4. CONDUIT TO GENERATOR.
5. POWER CONDUIT TO RAMP 'M' (DP-2). SEE CIVIL DRAWINGS FOR CONTINUATION.
6. NOT USED
7. COPPER GROUND BUS. STORM COPPER OR EQUAL. 4"X12"XO.25"

## 2 / E-05 DUCTLESS SPLIT SYSTEM WIRING




A - POWER
B - GENERATOR CONTROLS/ANNUNCIATOR
C - BLOCK HEATER/BATTERY CHARGER
D - SPARE

## SECTION 'A'



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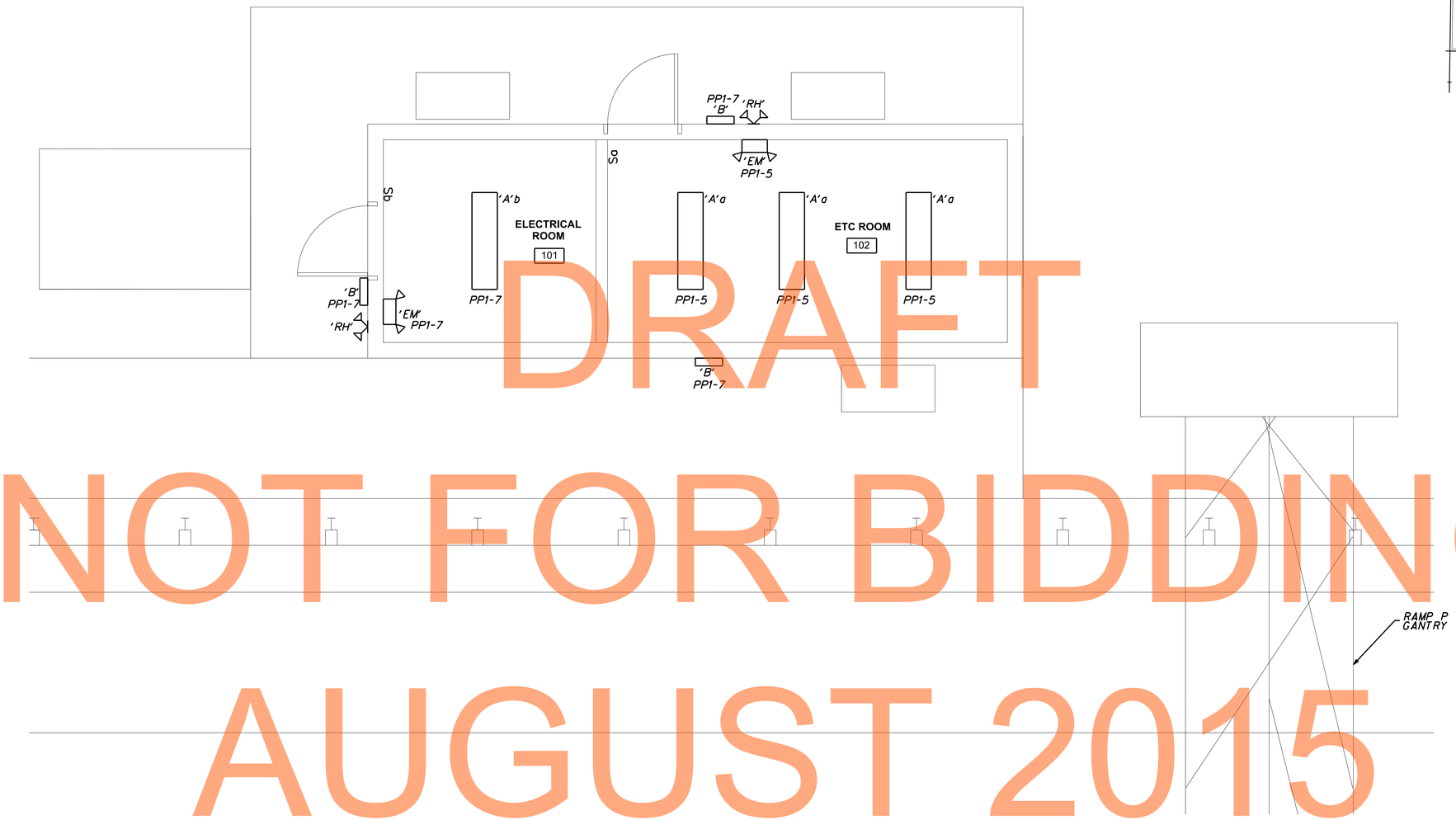
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ELECTRICAL RAMP HUT POWER PLAN RAMP 'P' | 7/30/15 | E-05 |
|---|---|---|---|---|---|---|---|
| | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | | SHEET NO. 860 | |
| | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 | |

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






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

LAST REVISED: 3/12/2008
K:\50343_AET\GENERAL\XREFS\SB_A1_WRA.DGN

| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | 7/30/15 | E-06 |
|---|---|---|---|---|---|---|---|
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | ELECTRICAL RAMP HUT LIGHTING PLAN RAMP 'P' | SHEET NO. 861 |
| | | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 |

**PANEL DESIGNATION: DP-1**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 200A MCB

LOCATION: ELECTRICAL ROOM - RAMP 'P'
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 AØ | BØ | CØ | LOAD - KVA AØ | BØ | CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 4.0 | | | 7.2 | | | | | 2 |
| 3 | 30 | 15 KVA XMFR (UPS) | | 4.0 | | | 8.8 | | DP-2 (RAMP 'M') | 100 | 4 |
| 5 | | | | | 4.0 | | | 7.7 | | | 6 |
| 7 | | | 3.5 | | | - | | | | | 8 |
| 9 | 50 | 30 KVA XMFR (PP-1) | | 6.8 | | | - | | SURGE PROTECTIVE DEVICE (SPD) | 40 | 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 | 7.2 | 8.8 | 7.7 | TOTAL | | |

PANEL CONNECTED LOAD
AØ 14.7
BØ 19.6
CØ 17.4
51.7 TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS

**PANEL DESIGNATION: UPP-1**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 60A MCB

LOCATION: ETC ROOM - RAMP 'P'
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 AØ | BØ | CØ | LOAD - KVA AØ | BØ | CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | | | | | | | SURGE PROTECTIVE DEVICE (SPD) | 40 | 40 |
| 41 | | | | | | | | | | | 42 |
| | | TOTAL | | | | | | | TOTAL | | |

PANEL CONNECTED LOAD
AØ ____
BØ ____
CØ ____
____ TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS
___ FEED THRU LUGS

**PANEL DESIGNATION: PP-1**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 100A MCB

LOCATION: ELECTRICAL ROOM - RAMP 'P'
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 AØ | BØ | CØ | LOAD - KVA AØ | BØ | CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | SPARE | - | | | - | | | | | 2 |
| 3 | 20 | SPARE | | - | | | - | | SPARE | 15 | 4 |
| 5 | 20 | ETC ROOM LIGHTING | | | 0.3 | | | - | | | 6 |
| 7 | 20 | ELECT RM/EXTERIOR LTG | 0.2 | | | 2.0 | | | | | 8 |
| 9 | 20 | RECEPT - ETC ROOM | | 0.4 | | | 2.0 | | ACC-1 | 30 | 10 |
| 11 | 20 | RECEPT - ETC ROOM | | | 0.4 | | | - | | | 12 |
| 13 | 20 | RECEPT - ELEC RM/OUTDOOR | 0.8 | | | - | | | ACC-2 (STAND BY) | 30 | 14 |
| 15 | 20 | RECEPT - OUTDOOR | | 0.4 | | | 2.0 | | | | 16 |
| 17 | 15 | SPARE | | | - | | | 2.0 | ACC-3 | 30 | 18 |
| 19 | 20 | SPARE | | | | 0.2 | | | CLEAN AGENT PANEL | 20 | 20 (1) |
| 21 | 20 | SPARE | | | | | 2.0 | | | | 22 |
| 23 | 20 | SPARE | | | | | | 2.0 | GENERATOR BLOCK HEATER | 30 | 24 |
| 25 | 20 | SPARE | | | | 0.3 | | | GENERATOR BATT. CHARGER | 20 | 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 | 2.5 | 6.0 | 4.0 | TOTAL | | |

PANEL CONNECTED LOAD
AØ 3.5
BØ 6.8
CØ 5.7
16.0 TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS

(1) PROVIDE LOCKDOG ON CIRCUIT BREAKER HANDLE.

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

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

ADDENDUMS / REVISIONS

**US 301**
**SR 896 TO SR 1**

| CONTRACT | BRIDGE NO. |
|---|---|
| T200911308 | |
| COUNTY | DESIGNED BY: JLG |
| NEW CASTLE | CHECKED BY: RAK |

**ELECTRICAL PANEL SCHEDULES**

7/30/15 | E-07

SHEET NO. 862
TOTAL SHTS. 875

**PANEL DESIGNATION: DP-2**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 100A M.L.O.

LOCATION: ELECTRICAL ROOM - RAMP 'M'
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 AØ | LOAD - KVA BØ | LOAD - KVA CØ | LOAD - KVA AØ | LOAD - KVA BØ | LOAD - KVA CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | 4.0 | | | 3.2 | | | | | 2 |
| 3 | 30 | 15 KVA XFMR (UPS) | | 4.0 | | | 4.8 | | 30 KVA XFMR (PP-2) | 50 | 4 |
| 5 | | | | | 4.0 | | | 3.7 | | | 6 |
| 7 | | | - | | | - | | | | | 8 |
| 9 | 40 | SURGE PROTECTIVE DEVICE (SPD) | | - | | | - | | SPARE | 30 | 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 | 4.0 | 4.0 | 4.0 | 3.2 | 4.8 | 3.7 | TOTAL | | |

PANEL CONNECTED LOAD
AØ 7.2
BØ 8.8
CØ 7.7
23.7 TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS

**PANEL DESIGNATION: UPP-3**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 60A MCB

LOCATION: ETC ROOM - RAMP 'M'
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 AØ | LOAD - KVA BØ | LOAD - KVA CØ | LOAD - KVA AØ | LOAD - KVA BØ | LOAD - KVA CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | | | | | | | SURGE PROTECTIVE DEVICE (SPD) | 40 | 40 |
| 41 | | | | | | | | | | | 42 |
| | | TOTAL | | | | | | | TOTAL | | |

PANEL CONNECTED LOAD
AØ ____
BØ ____
CØ ____
____ TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS
___ FEED THRU LUGS

**PANEL DESIGNATION: PP-2**

TYPE: -
NUMBER OF POLES: 42
MAIN BUS RATING: 225A
MAIN RATING: 100A MCB

LOCATION: ELECTRICAL ROOM - RAMP 'M'
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 AØ | LOAD - KVA BØ | LOAD - KVA CØ | LOAD - KVA AØ | LOAD - KVA BØ | LOAD - KVA CØ | DESCRIPTION | CIR. BKR. | CIR. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 20 | SPARE | - | | | - | | | | | 2 |
| 3 | 20 | SPARE | | - | | | - | | SPARE | 15 | 4 |
| 5 | 20 | ETC ROOM LIGHTING | | | 0.3 | | | - | | | 6 |
| 7 | 20 | ELEC RM/EXTERIOR LTG | 0.2 | | | 2.0 | | | ACC-1 | 30 | 8 |
| 9 | 20 | RECEPT - ETC ROOM | | 0.4 | | | 2.0 | | | | 10 |
| 11 | 20 | RECEPT - ETC ROOM | | | 0.4 | | | - | ACC-2 (STAND BY) | 30 | 12 |
| 13 | 20 | RECEPT - ELEC RM/OUTDOOR | 0.8 | | | - | | | | | 14 |
| 15 | 20 | RECEPT - OUTDOOR | | 0.4 | | | 2.0 | | ACC-3 | 30 | 16 |
| 17 | 15 | SPARE | | | - | | | 2.0 | | | 18 |
| 19 | 20 | SPARE | | | | 0.2 | | | CLEAN AGENT PANEL | 20 | 20 (1) |
| 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 | 2.2 | 4.0 | 2.0 | TOTAL | | |

PANEL CONNECTED LOAD
AØ 3.2
BØ 4.8
CØ 3.7
11.7 TOTAL

___ SOLID NEUTRAL BUS
___ EQUIPMENT GROUND BUS

(1) PROVIDE LOCKDOG ON CIRCUIT BREAKER HANDLE.

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



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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

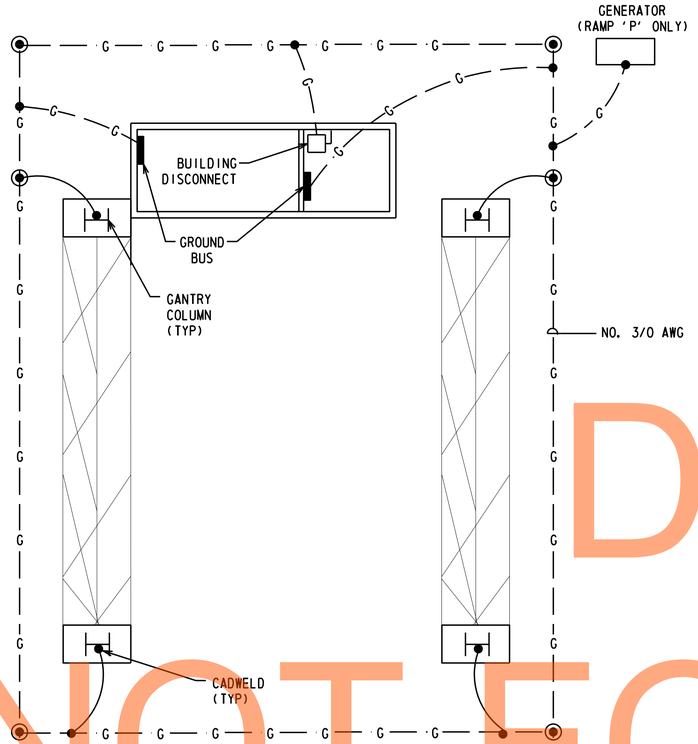
US 301
SR 896 TO SR 1

CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: JLG
CHECKED BY: RAK

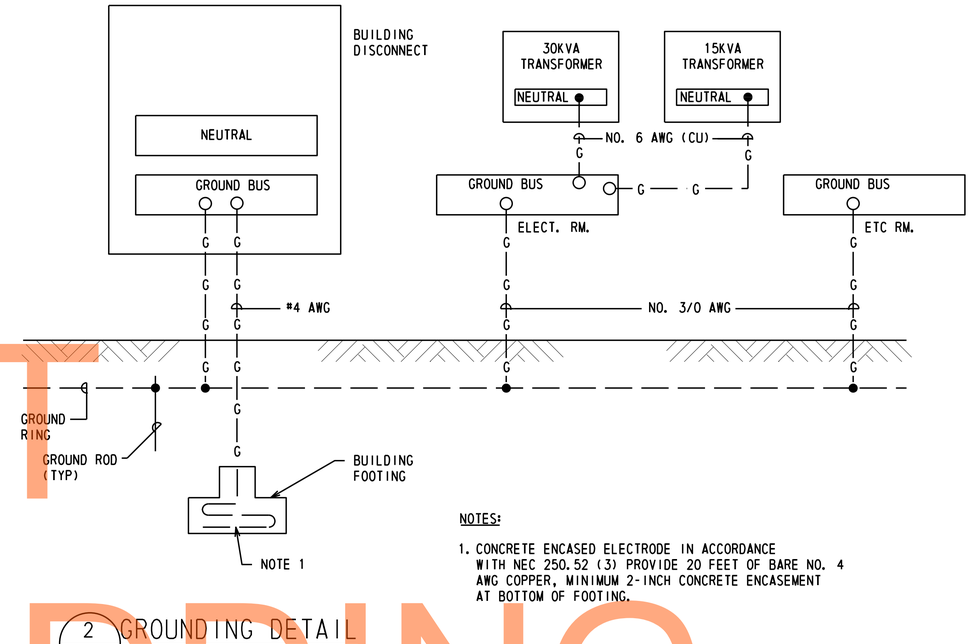
7/30/15 | E-08

ELECTRICAL
PANEL SCHEDULES

SHEET NO. 863
TOTAL SHTS. 875




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




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



LAST REVISED: 3/12/2008
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| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | 7/30/15 | E-09 |
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ELECTRICAL DETAILS | SHEET NO. 864 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |

## LUMINAIRE SCHEDULE

| FIXTURE TYPE | MANUFACTURER AND CATALOG NO. | VOLT | SYSTEM | | | | LAMP | MOUNTING | | | | INPUT WATTS | NOTES | DESCRIPTION | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | INCAND. | FLUOR. | HID | NO. | WATTS | SURF. | RECESS | WALL | OTHER | | | | |
| 'A' | LITHONIA 'AFST' SERIES | 120/277 | | ● | | 3 | 32W T8 | ● | | | | 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 ARHCITECTURAL 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 KYRPTON | | | ● | | - | (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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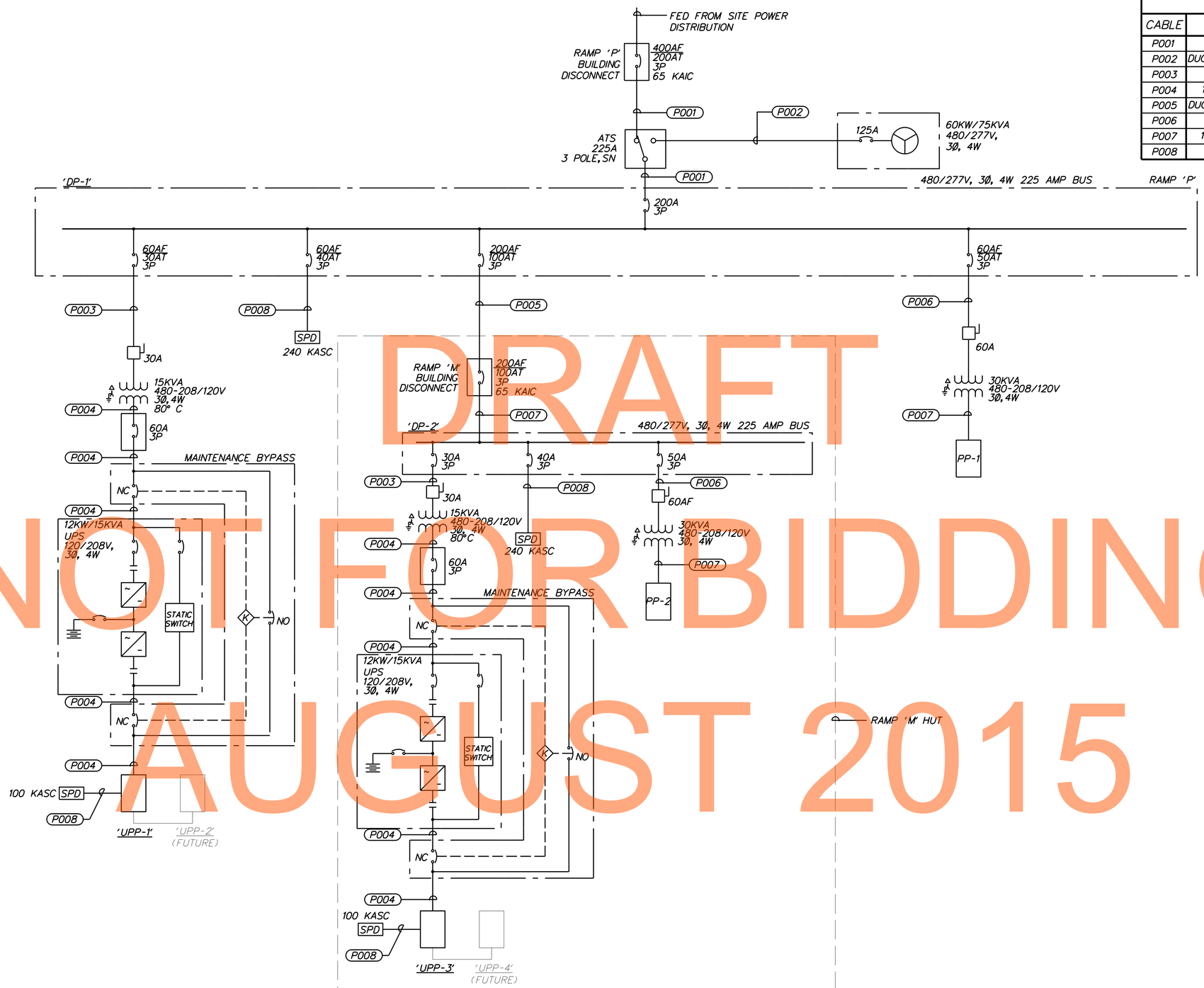
| | | | | | | |
|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ELECTRICAL LUMINAIRE SCHEDULE |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JLG | |
| | | | | | CHECKED BY: RAK | |

7/30/15 | E-10

SHEET NO. 865 | TOTAL SHTS. 875

| 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 | ¾" | 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. 4/0 AWG & NO. 3 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 |




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



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

ADDENDUMS / REVISIONS

US 301
SR 896 TO SR 1

| CONTRACT | BRIDGE NO. |
|---|---|
| T200911308 | |
| COUNTY | DESIGNED BY: JLG |
| NEW CASTLE | CHECKED BY: RAK |

7/30/15 | E-11

ELECTRICAL
MAIN ONE LINE DIAGRAM

| SHEET NO. | TOTAL SHTS. |
|---|---|
| 866 | 875 |

LEGEND:

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

GENERAL NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. ALL CONDUIT PENETRATIONS UP THROUGH GRADE AND THROUGH FOUNDATIONS SHALL BE PVC-COATED GALVANIZED RIGID STEEL CONDUIT (PCRMC). ALL OTHER EXPOSED OUTDOOR CONDUITS SHALL BE GALVANIZED 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 |
| A.C. | ALTERNATING CURRENT |
| A/C | AIR CONDITIONING |
| ADJ. | ADJACENT |
| AE | AUTOMATIC ENTRY |
| A.F.F. | ABOVE FINISHED FLOOR |
| A.F.G | ABOVE FINISHED GRADE |
| A.I.C. | AMPERE INTERRUPTING CAPACITY |
| A.T.S. | AUTOMATIC TRANSFER SWITCH |
| AUTO | AUTOMATIC |
| AVI | AUTOMATIC VEHICLE IDENTIFICATION |
| AWG | AMERICAN WIRE GAUGE |
| BCC | BOOTH CONTROL CENTER |
| BLDG. | BUILDING |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| C.P. | CONTROL PANEL |
| CNTL | CONTROL CABLE/CONDUIT |
| CONTR | CONTRACTOR |
| COTB. | CANOPY OVERRIDE TERMINATION BOX |
| CNTOR | CONTACTOR |
| D.C. | DIRECT CURRENT |
| DE | DEDICATED ENTRY |
| DIA. | DIAMETER |
| D.S. | DISCONNECT SWITCH |
| E.C. | ELECTRICAL CONTRACTOR |
| 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 |
| LTG. | 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 |
| N.I.C. | NOT IN CONTRACT |
| N.O. | NORMALLY OPEN |
| No. | NUMBER |
| N.T.S. | NOT TO SCALE |
| O.C. | ON CENTER |
| OH | OVERHEAD |
| PNL. | PANEL |
| PWR | POWER CABLE/CONDUIT |
| PVC | POLYVINYL CHLORIDE |
| PCRMC | PVC-COATED RIGID METAL CONDUIT |
| R.G.S. | RIGID GALVANIZED STEEL |
| SB | SOUTHBOUND |
| SCI | SIGN CONTROLLER INTERFACE |
| SW | SWITCH |
| T.B. | TOLL BOOTH |
| T.S. | TRAFFIC SIGNAL |
| TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSION |
| TYP. | TYPICAL |
| U.L. | UNDERWRITERS LABORATORIES |
| U.N.O. | UNLESS NOTED OTHERWISE |
| UPS | UNINTERRUPTED POWER SUPPLY |
| V | VOLT |
| VES | VEHICLE ENFORCEMENT SYSTEM |
| W.P. | WEATHERPROOF |
| X | EXIT |
| PED. ACC. | PEDESTRIAN ACCESSWAY |



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7/30/15 | ETC-01

DELAWARE
DEPARTMENT OF TRANSPORTATION

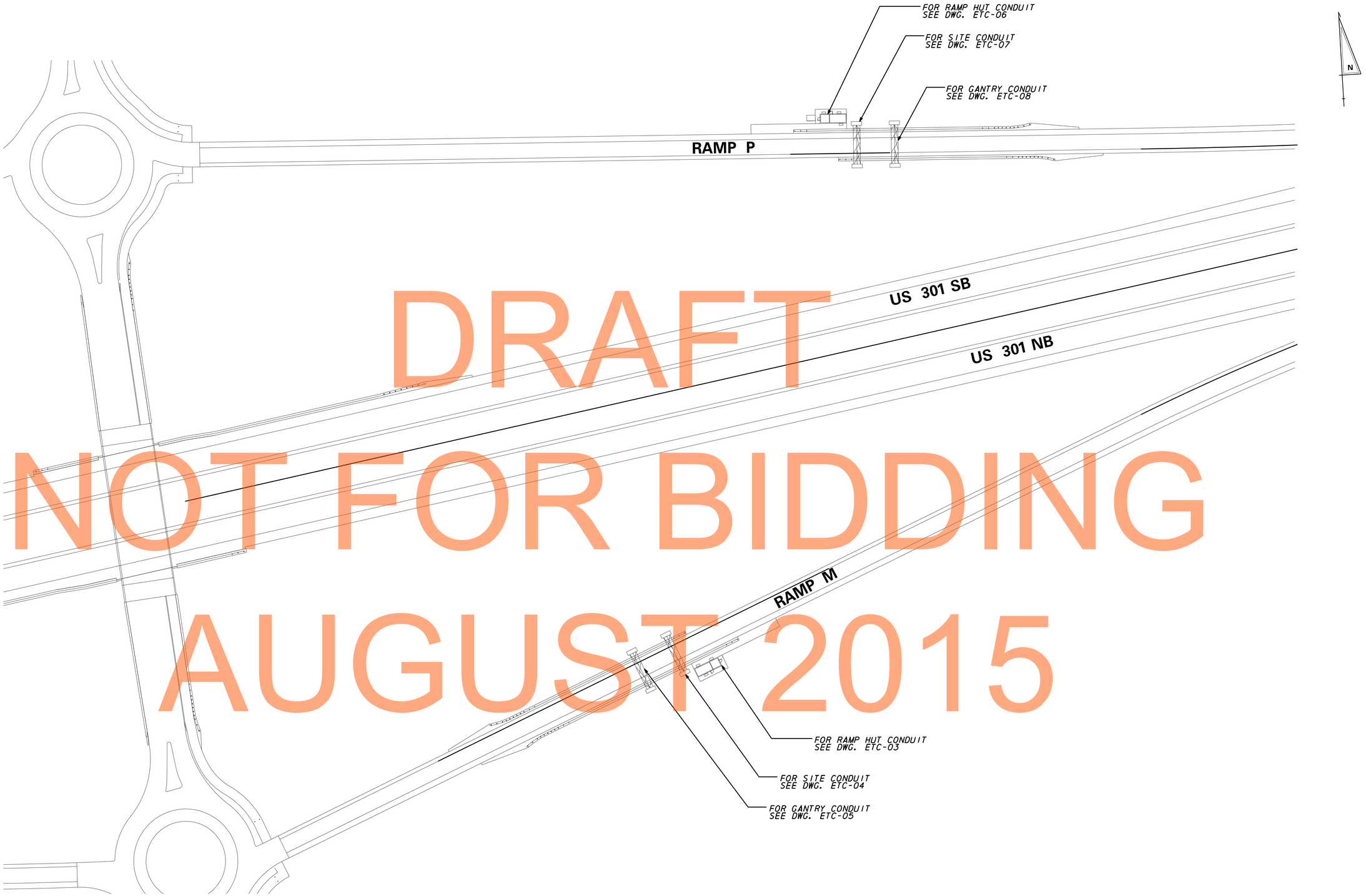
| ADDENDUMS / REVISIONS | |
|---|---|
| | |
| | |
| | |
| | |

US 301
SR 896 TO SR 1

| | |
|---|---|
| CONTRACT | T200911308 |
| COUNTY | NEW CASTLE |
| BRIDGE NO. | |
| DESIGNED BY: | JTB |
| CHECKED BY: | RAK |

ETC
LEGEND, SYMBOLS
& ABBREVIATIONS

| | |
|---|---|
| SHEET NO. | 867 |
| TOTAL SHTS. | 875 |






SITE PLAN - RAMPS M & P
SCALE: 1" = 50'

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DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
0 50 100 150
FEET

US 301
SR 896 TO SR 1

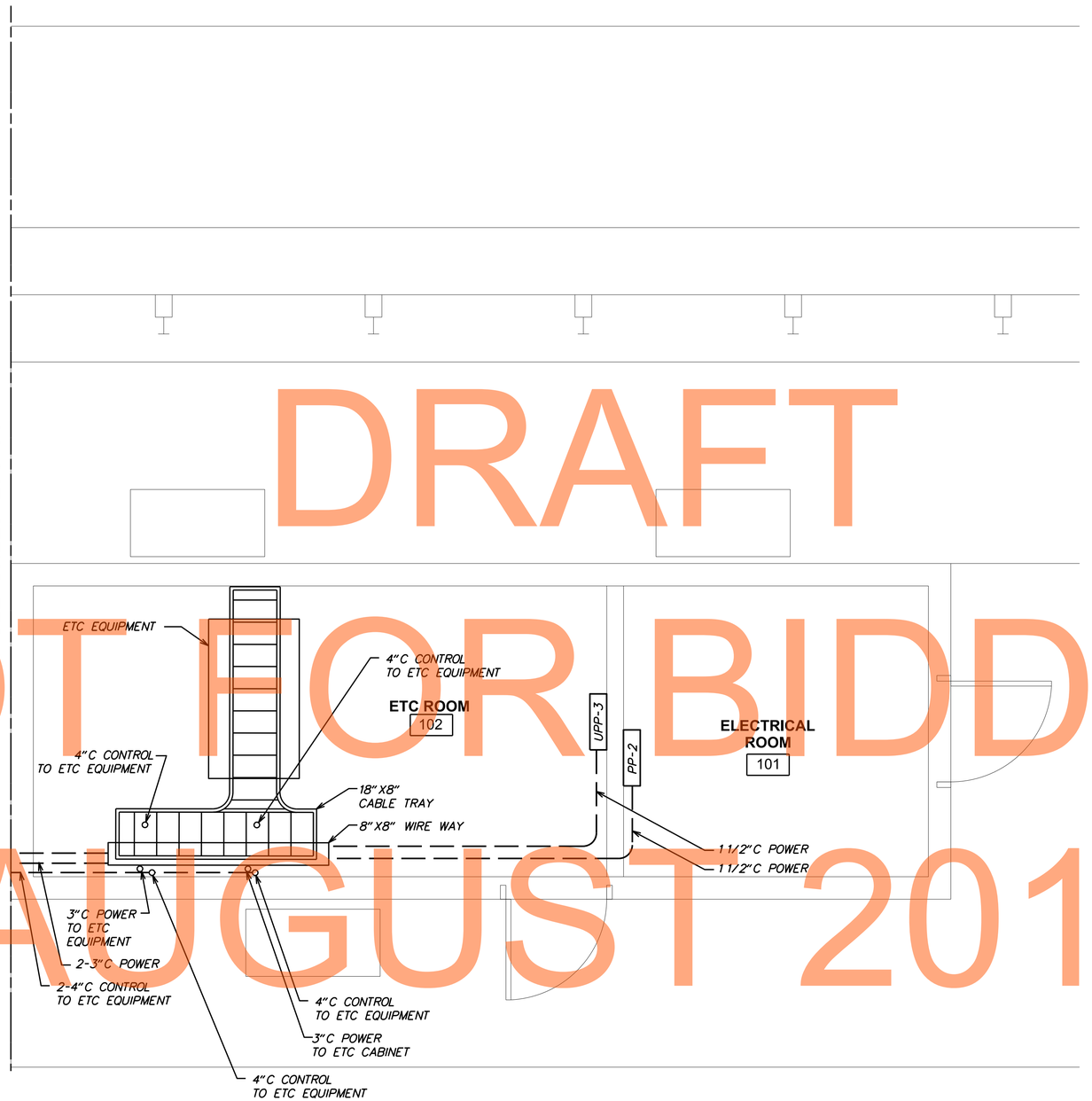
CONTRACT T200911308
COUNTY NEW CASTLE
BRIDGE NO.
DESIGNED BY: JTB
CHECKED BY: RAK

7/30/15 | ETC-02

ETC
OVERALL
SITE PLAN

SHEET NO. 868
TOTAL SHTS. 875

NOTES:
1. CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.
2. ALL ETC EQUIPMENT TO BE HOUSED WITHIN THE "ETC ROOM".




ETC RAMP HUT CONDUIT PLAN AET RAMP 'M'
SCALE: 1/2" = 1'-0"



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|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC RAMP HUT CONDUIT PLAN AET RAMP 'M' | 7/30/15 ETC-03 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | SHEET NO. 869 |
| | | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 |


ETC SITE CONDUIT PLAN AET RAMP 'M'
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-09 FOR GANTRY COLUMN CONDUIT DETAILS.

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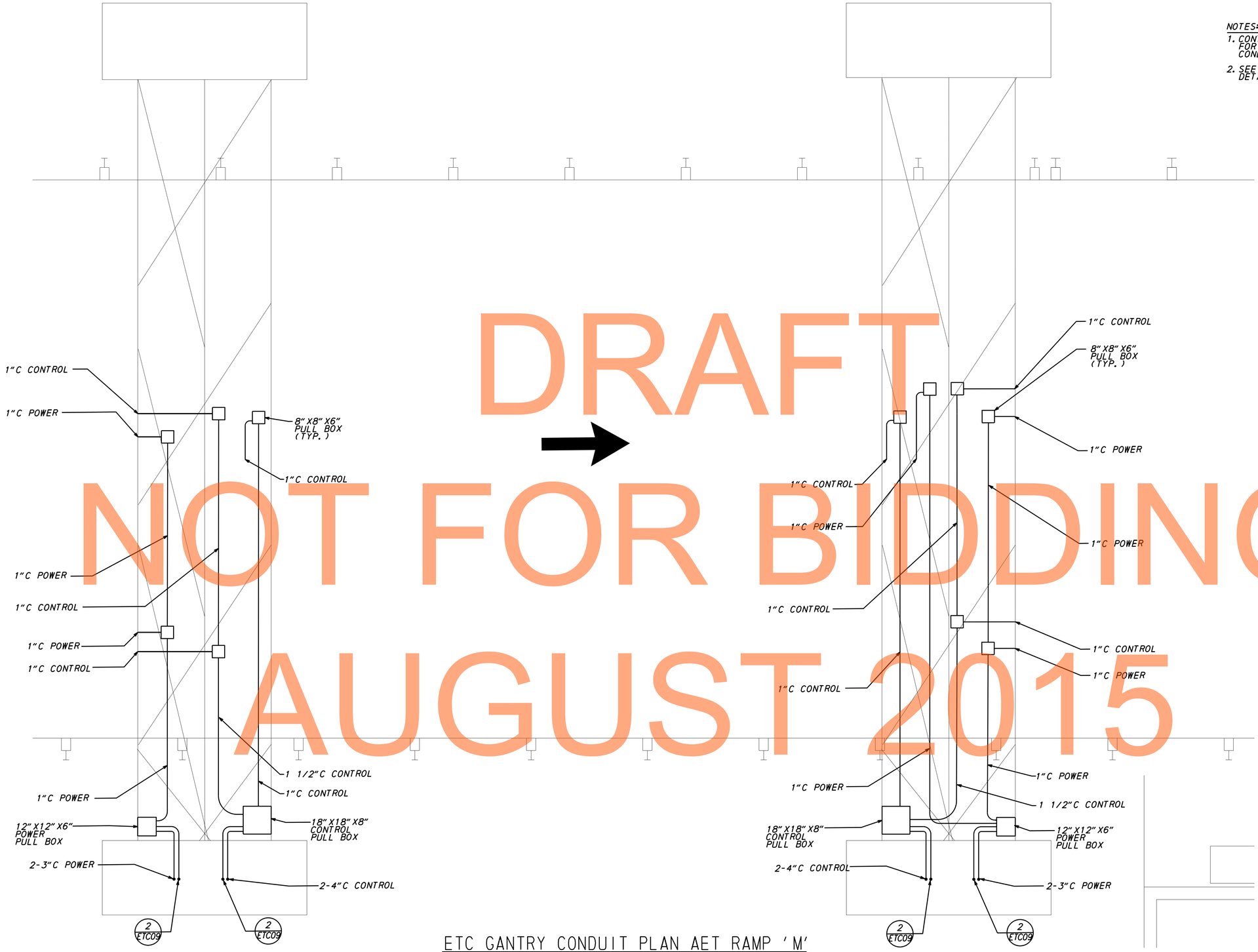
|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC SITE CONDUIT PLAN AET RAMP 'M' | SHEET NO. 870 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |

7/30/15 | ETC-04

NOTES:
1. CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.
2. SEE DWG. ETC-09 FOR GANTRY COLUMN CONDUIT DETAILS.




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



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC GANTRY CONDUIT PLAN AET RAMP 'M' | 7/30/15 ETC-05 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | SHEET NO. 871 |
| | | | | | CHECKED BY: RAK | | TOTAL SHTS. 875 |

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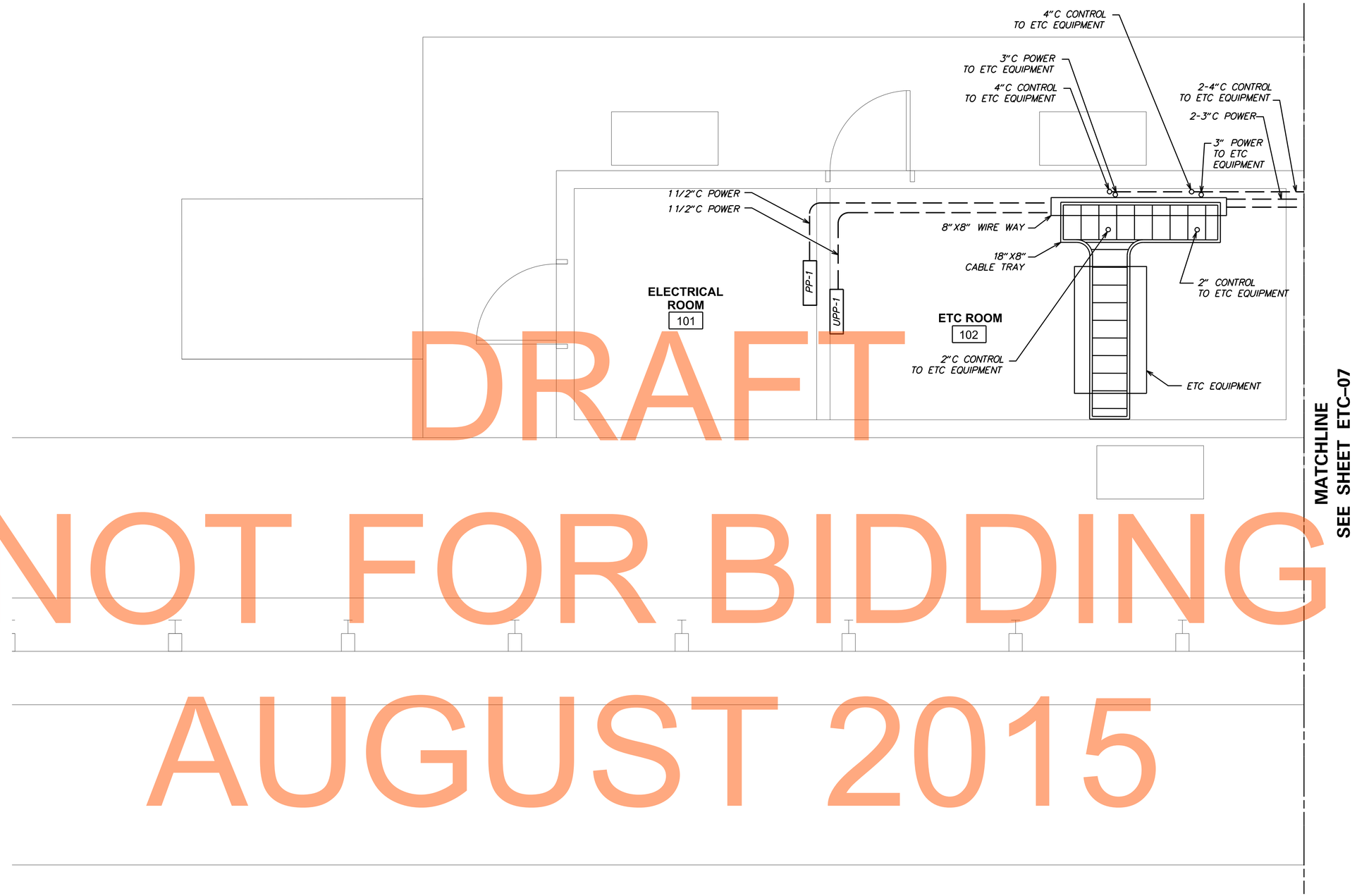




ETC SITE AND HUT CONDUIT PLAN AET RAMP 'P'
SCALE: 1/2" = 1'-0"

*NOTES:*

1. *CONTRACTOR SHALL COORDINATE WITH ETC CONTRACTOR FOR EXACT EQUIPMENT LOCATIONS AND ADJUST FINAL CONDUIT ROUTING AS NECESSARY.*
2. *ALL ETC EQUIPMENT TO BE HOUSED WITHIN "ETC ROOM".*

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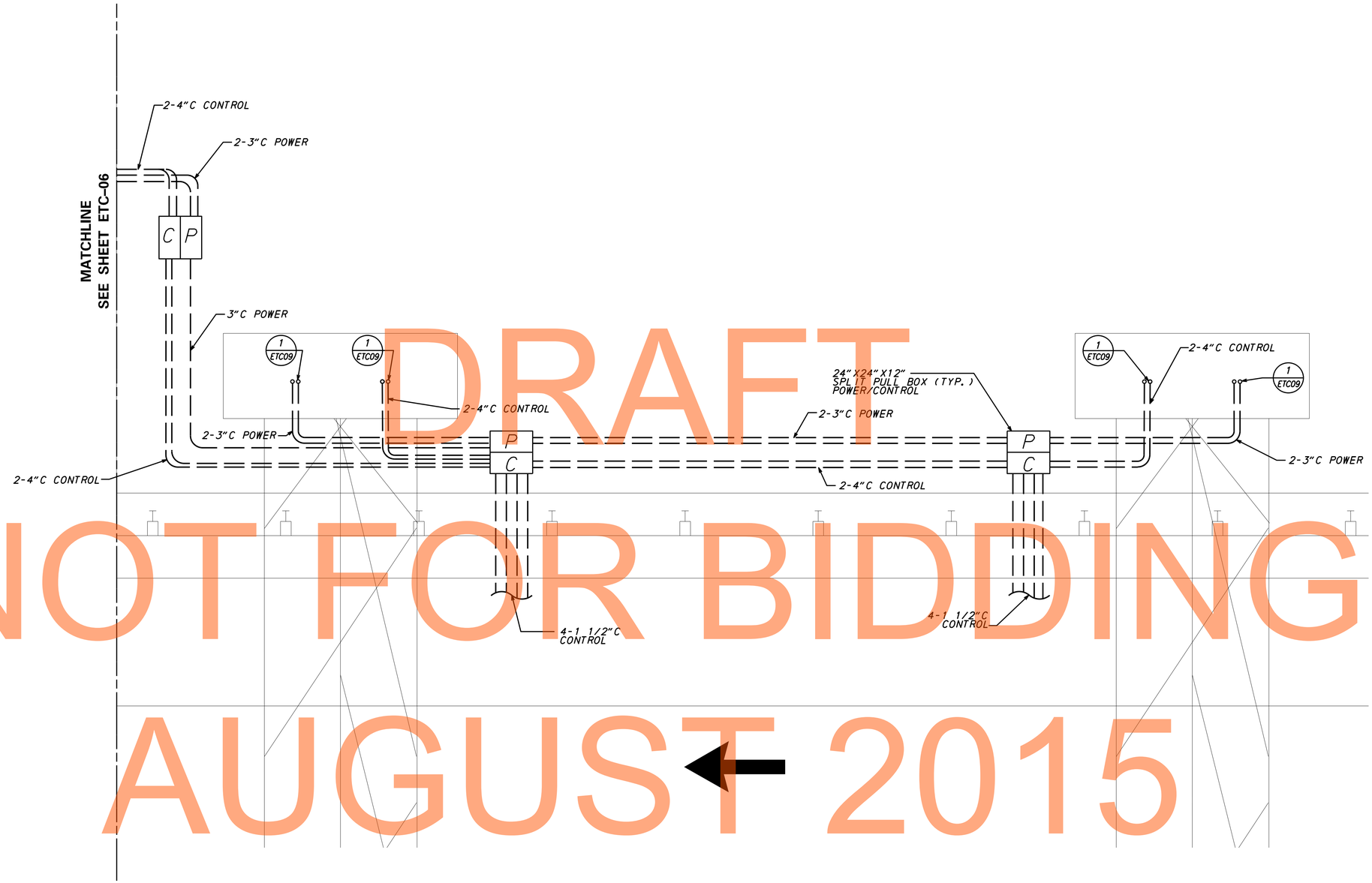
|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC RAMP HUT CONDUIT PLAN AET RAMP 'P' | SHEET NO. 872 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |

7/30/15 | ETC-06






ETC SITE AND HUT CONDUIT PLAN AET RAMP 'P'
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-09 FOR GANTRY COLUMN CONDUIT DETAILS.

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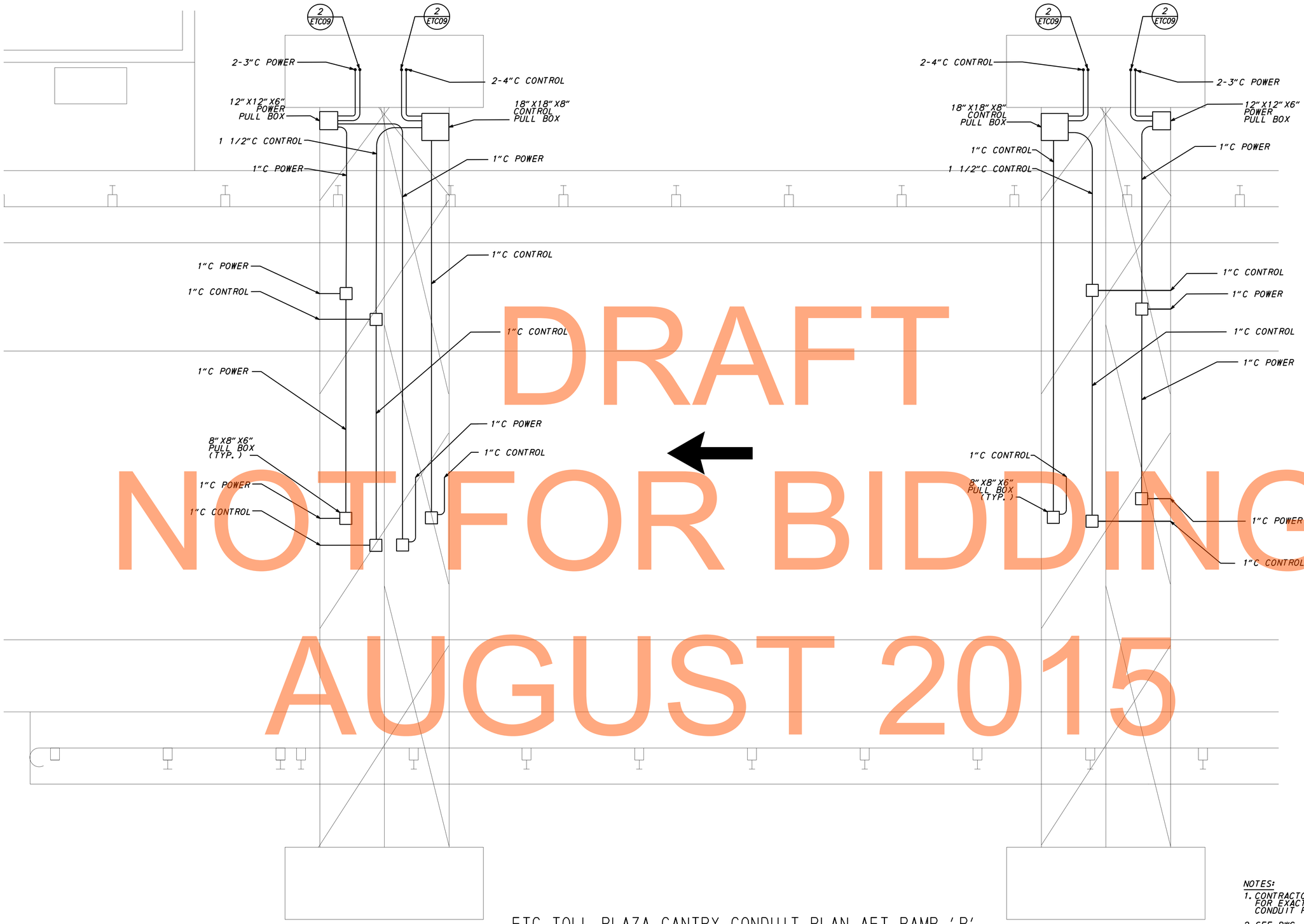
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC SITE CONDUIT PLAN AET RAMP 'P' | SHEET NO. 873 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | 7/30/15 | ETC-07 |






ETC TOLL PLAZA GANTRY CONDUIT PLAN AET RAMP 'P'
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-09 FOR GANTRY COLUMN CONDUIT DETAILS.

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|---|---|---|---|---|---|---|---|
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC GANTRY CONDUIT PLAN AET RAMP 'P' | SHEET NO. 874 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |

7/30/15 | ETC-08

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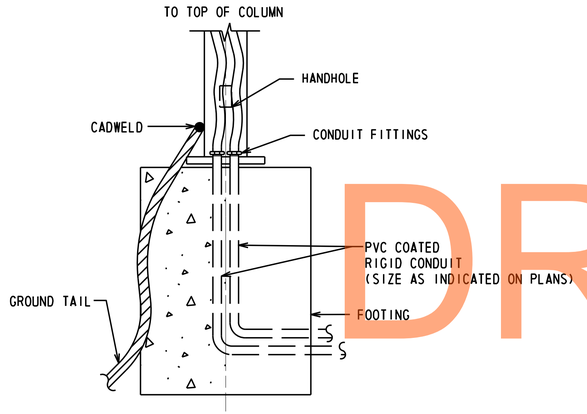
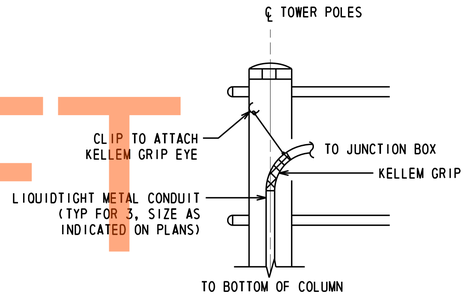



1 ETC09 TYPICAL GANTRY COLUMN BOTTOM ELEVATION
N.T.S.




2 ETC09 TYPICAL GANTRY COLUMN TOP ELEVATION
N.T.S.



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| | | | | | | 7/30/15 | ETC–09 |
| DELAWARE DEPARTMENT OF TRANSPORTATION | ADDENDUMS / REVISIONS | | US 301 SR 896 TO SR 1 | CONTRACT T200911308 | BRIDGE NO. | ETC DETAILS | SHEET NO. 875 |
| | | | | COUNTY NEW CASTLE | DESIGNED BY: JTB | | TOTAL SHTS. 875 |
| | | | | | CHECKED BY: RAK | | |