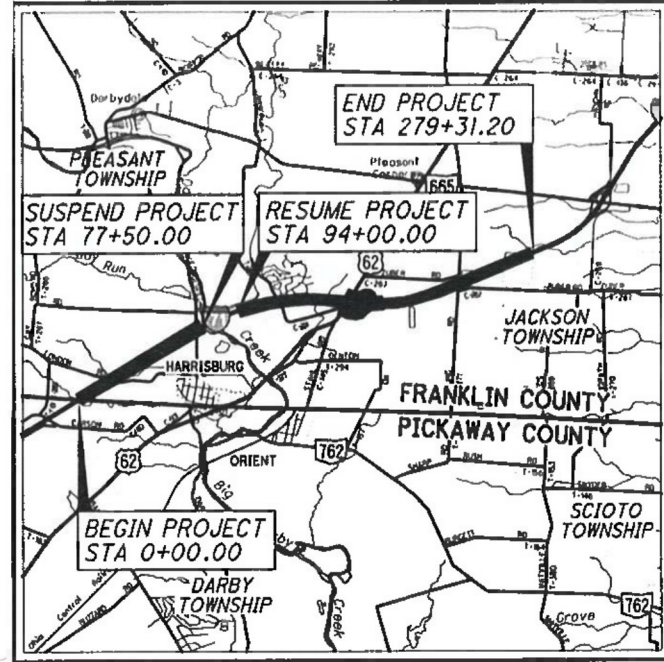


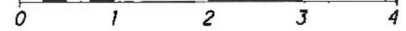
FRA - IR 71 - 0.00 (PIC)
 200389 PID - 107201
 Dist 06 08/13/2020



LOCATION MAP

LATITUDE: 39°49'30" LONGITUDE: 83°09'00"

SCALE IN MILES



| | |
|-------------------------|-------|
| PORTION TO BE IMPROVED | ----- |
| INTERSTATE HIGHWAY | ===== |
| FEDERAL ROUTES | ----- |
| STATE ROUTES | ----- |
| COUNTY & TOWNSHIP ROADS | ----- |
| OTHER ROADS | ----- |

DESIGN DESIGNATION AND DESIGN EXCEPTIONS

SEE SHEET 2



PLAN PREPARED BY:

Mead & Hunt
 4700 LAKEHURST CT, STE 110
 COLUMBUS, OH 43018
 (614) 792-5900 PHONE

STATE OF OHIO
 DEPARTMENT OF TRANSPORTATION

FRA-71-0.00 (PIC)

(DARBY TOWNSHIP)
 JACKSON TOWNSHIP
 PLEASANT TOWNSHIP
 FRANKLIN COUNTY
 (PICKAWAY COUNTY)

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| TRAFFIC CONTROL | 1031-1100 | | |

PROJECT DESCRIPTION

THIS PROJECT WILL CONSIST OF WIDENING 4.98 MILES OF I-71 FROM THE FRANKLIN/PICKAWAY COUNTY LINE NORTH TO JUST SOUTH OF THE I-71 AND SR 665 INTERCHANGE. THE PROJECT INCLUDES ADDING A THIRD LANE TO THE MEDIAN SIDE IN BOTH DIRECTIONS, REPLACING TWIN SUPERSTRUCTURES OVER THE INDIANA & OHIO RAILWAY COMPANY RAILROAD TRACKS AND US 62, AND ASSOCIATED ROADWAY, SIGNING AND DRAINAGE IMPROVEMENTS. THE PROJECT ALSO INCLUDES RECONSTRUCTION OF ALL THE RAMPS AT THE US 62 INTERCHANGE. THE PROJECT DOES NOT INCLUDE 0.31 MILE OF PREVIOUSLY CONSTRUCTED IMPROVEMENTS AT THE BIG DARBY CREEK.

PROJECT EARTH DISTURBED AREA: 139 ACRES
 ESTIMATED CONTRACTOR EARTH DISTURBED AREA: 14 ACRES
 NOTICE OF INTENT EARTH DISTURBED AREA: 153 ACRES

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

ENGINEERS SEAL:

STRUCTURES

SIGNED: *V. Balasubramanian*
 DATE: 4/9/2020

ENGINEERS SEAL:

ROADWAY

SIGNED: *Daniel C. Barnhart*
 DATE: 4/9/2020

ENGINEERS SEAL:

MOT AND LIGHTING

SIGNED: *Shawn M. McPherson*
 DATE: 4/9/2020

STANDARD CONSTRUCTION DRAWINGS

| STANDARD CONSTRUCTION DRAWINGS | | | | | | | | | | | | SUPPLEMENTAL SPECIFICATIONS | | | |
|--------------------------------|---------|---------|---------|-----------|---------|----------|---------|----------|---------|-----------|----------|-----------------------------|----------|----------|----------|
| BP-1.1 | 7/28/00 | DM-1.1 | 7/21/17 | MGS-5.2 | 7/15/16 | HL-10.11 | 7/19/19 | MT-95.30 | 7/19/19 | MT-100.00 | 1/15/16 | TC-41.50 | 10/18/13 | 800-2019 | 4/17/20 |
| BP-2.1 | 7/17/15 | DM-1.2 | 1/18/13 | MGS-5.3 | 7/15/16 | HL-10.12 | 1/20/17 | MT-95.40 | 1/17/20 | MT-101.60 | 1/17/20 | TC-42.10 | 10/18/13 | 808 | 1/18/19 |
| BP-2.2 | 7/18/08 | DM-4.1 | 7/20/18 | MGS-6.1 | 1/19/18 | HL-10.13 | 1/17/20 | MT-95.45 | 1/17/20 | MT-101.70 | 1/17/20 | TC-42.20 | 10/18/13 | 813 | 10/19/18 |
| BP-2.3 | 7/18/14 | DM-4.2 | 7/20/12 | MGS-6.2 | 7/19/19 | HL-10.31 | 1/19/18 | MT-95.70 | 1/17/20 | MT-101.75 | 1/17/20 | TC-51.11 | 1/15/16 | 821 | 4/20/12 |
| BP-3.1 | 1/17/20 | DM-4.3 | 1/15/16 | | | HL-20.11 | 4/21/17 | MT-95.71 | 1/17/20 | MT-101.80 | 1/17/20 | TC-52.10 | 10/18/13 | 832 | 10/19/18 |
| BP-5.1 | 1/18/19 | DM-4.4 | 1/15/16 | RM-1.1 | 7/18/14 | HL-20.21 | 1/19/18 | MT-95.72 | 1/17/20 | MT-101.90 | 7/21/17 | TC-52.20 | 7/20/18 | 833 | 7/19/19 |
| BP-6.1 | 7/19/13 | | | RM-4.3 | 7/18/14 | HL-30.11 | 7/19/19 | MT-95.82 | 7/19/13 | MT-102.10 | 1/17/20 | TC-61.10 | 1/17/20 | 839 | 1/17/20 |
| BP-9.1 | 1/18/19 | F-2.1 | 7/20/18 | RM-4.5 | 7/21/17 | HL-30.21 | 1/17/14 | MT-98.10 | 1/17/20 | MT-102.20 | 4/19/19 | TC-64.10 | 1/17/20 | 841 | 1/15/16 |
| | | F-3.1 | 7/19/13 | RM-4.6 | 7/19/13 | HL-30.22 | 1/17/14 | MT-98.11 | 1/17/20 | MT-102.30 | 10/16/15 | TC-65.10 | 1/17/14 | 875 | 1/18/19 |
| CB-2.1 | 7/20/18 | F-3.3 | 7/19/13 | | | HL-30.31 | 1/17/20 | MT-98.20 | 4/19/19 | MT-103.10 | 1/19/18 | TC-65.11 | 7/21/17 | 878 | 1/17/20 |
| CB-2.2 | 7/20/18 | F-3.4 | 7/19/13 | AS-1-15 | 7/17/15 | HL-30.32 | 1/17/20 | MT-98.21 | 1/17/20 | MT-104.10 | 10/16/15 | TC-71.10 | 1/19/18 | 908 | 10/20/17 |
| CB-2.3 | 1/15/16 | | | AS-2-15 | 1/18/19 | HL-40.20 | 1/17/20 | MT-98.22 | 1/17/20 | MT-105.10 | 1/17/20 | TC-72.20 | 7/20/18 | 913 | 4/21/17 |
| CB-3.2 | 1/15/16 | MGS-1.1 | 1/19/18 | GSD-1-19 | 1/18/19 | HL-50.21 | 1/18/19 | MT-98.28 | 1/17/20 | | | TC-73.20 | 1/17/20 | 921 | 4/20/12 |
| CB-3.3 | 1/15/16 | MGS-2.1 | 1/19/18 | PCB-91 | 1/18/13 | HL-60.11 | 7/21/17 | MT-98.29 | 1/17/20 | TC-12.30 | 1/19/18 | | | 939 | 1/17/20 |
| CB-3.4 | 1/15/16 | MGS-3.1 | 1/19/18 | SBR-1-13 | 7/20/18 | HL-60.12 | 7/15/16 | MT-98.30 | 7/19/19 | TC-21.20 | 7/20/18 | | | | |
| I-2.2 | 7/19/19 | MGS-3.2 | 1/18/13 | SICD-1-96 | 7/18/14 | HL-60.21 | 7/20/18 | MT-99.20 | 4/19/19 | TC-41.10 | 7/19/13 | | | | |
| | | MGS-4.2 | 7/19/13 | SICD-2-14 | 7/18/14 | HL-60.31 | 1/17/20 | MT-99.30 | 1/17/20 | TC-41.20 | 10/18/13 | | | | |
| MH-1.2 | 1/15/16 | MGS-4.3 | 1/18/13 | VPF-1-90 | 7/20/18 | | | MT-99.60 | 7/15/16 | TC-41.30 | 10/18/13 | | | | |

SPECIAL PROVISIONS

ICRY PPM APRIL 2019
 G&W Track Monitoring 01/19

APPROVED DATE 4/16/2020 DISTRICT DEPUTY DIRECTOR

APPROVED DATE 4/16/2020 DIRECTOR, DEPARTMENT OF TRANSPORTATION

FEDERAL PROJECT NO.
E180 (796)

PID NO.
107201

CONSTRUCTION PROJECT NO.

RAILROAD INVOLVEMENT
INDIANA & OHIO RAILWAY COMPANY

FRA-71-0.00

1
 1312

Contract Proposal available @
 www.contracts.dot.state.oh.us/home

X:\4037000\121957.16\107201\roadway\sheets\107201G1001.dgn Sheet 4 7/9/2020 1:58:32 PM 1636dcd

ODOT LIGHTING NOTES

THE HIGHWAY LIGHTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE 2019 OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. THIS DOCUMENT SHALL GOVERN ALL MATERIALS AND WORKMANSHIP INVOLVED IN THE IMPROVEMENTS SHOWN ON THESE PLANS, EXCEPT AS SUCH SPECIFICATIONS ARE MODIFIED BY THE FOLLOWING SPECIFICATIONS OR BY THE CONSTRUCTION DETAILS SET FORTH HEREIN.

ITEM 625, LUMINAIRE, HIGH MAST, SOLID STATE (LED), AS PER PLAN

THE LUMINAIRE ARRAYS AND ASSOCIATED ILLUMINATION TEST AREAS SPECIFIED IN CMS 725.11 ARE HEREBY WAIVED. INSTEAD, THE LUMINAIRES FOR HIGH-MAST LIGHTING SHALL MEET THE FOLLOWING REQUIREMENTS:

LUMINAIRES FOR HIGH-MAST LIGHTING UNITS SHALL BE 480 VOLT, HOLOPHANE "HMLD-II", HMLD3-PK2-30K-HVOLT-G-AW, OR EQUAL AS APPROVED BY THE ENGINEER.

OTHER LUMINAIRES WILL BE CONSIDERED IF THE DESIGNED INTENSITY AND UNIFORMITY ARE PROVIDED USING THE DESIGNED POLE LOCATIONS AND THE DESIGNED NUMBER AND TYPE OF FIXTURES PER POLE.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, LUMINAIRE, HIGH MAST, SOLID STATE (LED), AS PER PLAN FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE 480 VOLT, COOPER "NAVION", NAV-AF-02-E-480-T2R-10K-7030, AEL "AUTOBAHN ATBM", ATBM-P20-480-R2-4B-3K, LEOTEK "E-COBRA", EC4-15M2-HV-WW-2-GY-700-WL, OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ITEM 625, THE FOLLOWING SHALL APPLY:

LUMINAIRES FOR UNDERPASS LIGHTING UNITS SHALL BE 480 VOLT, 3000K, HOLOPHANE "TUNNELPASS", TNLED-3-3K-7-AH-WCR-DGRA-F1, GE EVOLVE "N-SERIES", EWN-B-H-C4-7-30-1-NGRAY-F-R-001, ELECTROMATIC "AR SERIES B2E MOUNT", LE3T4S084EB2E0X20H, OR EQUAL AS APPROVED BY ENGINEER.

LUMINAIRES FOR UNDERPASS LIGHTING UNITS WHICH ARE WALL MOUNTED SHALL BE FURNISHED WITH AN INTEGRAL FUSE HOLDER AND 10-AMPERE FUSES.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID UNDER CMS ITEM 625, LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, POWER SERVICE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF THE SPECIFICATIONS, THE FOLLOWING SHALL BE INCLUDED IN THIS ITEM OF WORK:

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS: AMERICAN ELECTRIC POWER COMPANY 850 TECH CENTER DRIVE GAHANNA, OHIO, 43230 1-800-672-2231

THE ENGINEER SHALL ENSURE THAT EACH POWER SERVICE ELECTRICAL ENERGY ACCOUNT IS IN THE NAME OF AND THAT THE BILLING ADDRESS IS TO THE OHIO DEPARTMENT OF TRANSPORTATION. THIS SHALL BE DONE NOT ONLY FOR EACH NEW POWER SERVICE ESTABLISHED BY THIS PROJECT BUT ALSO FOR EACH EXISTING POWER SERVICE, SINCE THERE MAY BE A REASSIGNMENT OF THE RESPONSIBILITY FOR AN EXISTING SERVICE AS A RESULT OF THE WORK PERFORMED BY THIS PROJECT.

THE NEW SERVICE SHALL BE A METERED POWER SERVICE. THE METER WILL BE PROVIDED BY THE POWER COMPANY AND SHALL BE INSTALLED BY THE CONTRACTOR.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, POWER SERVICE, AS PER PLAN WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, CONDUIT, 2", 725.04, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, CONDUIT, 2", 725.04, AS PER PLAN SHALL INCLUDE ALL EXPANSION FITTINGS AS INCIDENTAL TO THIS ITEM OF WORK.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR FEET FOR CMS ITEM 625, CONDUIT, 2", 725.04, AS PER PLAN WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, STRUCTURE JUNCTION BOX, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF HL-20.14 AND ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, STRUCTURE JUNCTION BOX, AS PER PLAN SHALL BE AS FOLLOWS:

THE JUNCTION BOX SHALL HAVE AN EMBOSMENT IN THE BACK OF THE BOX THAT SHALL BE DRILLED AND TAPPED FOR A 1/4"-20 CAP SCREW FOR CONNECTION OF GROUNDS.

WHEN ENCASED IN CONCRETE, THE JUNCTION BOX SHALL HAVE INWARD FLANGED COVERS AND MAY HAVE IN LIEU OF BOSSED DRILLED AND TAPPED CONNECTIONS, SLIP HOLES FIELD DRILLED TO ACCOMMODATE THE CONDUITS ENTERING THE BOX SO LONG AS EACH METALLIC CONDUIT IS EQUIPPED WITH A GROUNDING BUSHING JUMPED TO THE BOX ITSELF.

WHEN SURFACE MOUNTED, THE JUNCTION BOX MAY HAVE IN LIEU OF BOSSED DRILLED AND TAPPED CONNECTIONS, FIELD INSTALLED HUBS TO ACCOMMODATE THE CONDUITS ENTERING THE BOX.

PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR EACH CMS ITEM 625, STRUCTURE JUNCTION BOX, AS PER PLAN WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

ITEM 625, SERVICE TO UNDERPASS LIGHTING, AS PER PLAN

THIS ITEM SHALL CONSIST OF PROVIDING COMPLETE ELECTRICAL POWER, EXCEPT FOR LUMINAIRES, STRUCTURE JUNCTION BOXES, AND STRUCTURE GROUNDING, FOR UNDERPASS LIGHTING SYSTEMS. THE INSTALLATION WORK SHALL INCLUDE DISCONNECT SWITCH, CONDUITS, CONDUIT GROUNDING, MOUNTINGS, FITTINGS, CABLES AND ALL INCIDENTALS NECESSARY TO COMPLETE, READY FOR USE, THE SERVICE AS DETAILED ON THE PLANS.

THE PRICE BID FOR ITEM 625, SERVICE TO UNDERPASS LIGHTING, AS PER PLAN, SHALL INCLUDE PAYMENT FOR ALL EQUIPMENT, LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED, COMPONENT PARTS NOT SPECIFICALLY MENTIONED, BUT REQUIRED FOR SATISFACTORY OPERATION OF THIS ITEM, SHALL BE FURNISHED AND CONSIDERED PAID FOR AS PART OF THE ITEM.

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE HL AND TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.

- a. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.
- b. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.
- c. METAL PULL BOX LIDS SHALL BE BONDED BY ATTACHMENT OF THE EQUIPMENT GROUNDING CONDUCTOR TO THE FRAME DIAGONAL AS PROVIDED ON HL-30.11.
- d. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

2. CONDUITS.

- a. ANY 725.04 CONDUIT SHALL HAVE GROUNDING BUSHINGS INSTALLED AT ALL TERMINATION POINTS. THE BUSHING MATERIAL SHALL BE COMPATIBLE WITH GALVANIZED STEEL CONDUIT AND THE GROUNDING LUG MATERIAL SHALL BE COMPATIBLE FOR USE WITH COPPER WIRE. THREADED OR COMPRESSION TYPE BUSHINGS MAY BE USED.
- b. ANY 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.
- c. BOTH ENDS OF METALLIC CONDUIT SHALL BE BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.
- d. METALLIC CONDUIT MAY BE BONDED TO METALLIC BOXES THROUGH THE USE OF CONDUIT FITTINGS UL APPROVED FOR THIS TYPE OF CONNECTION, WITH THE BOX BONDED TO THE EQUIPMENT GROUNDING CONDUCTOR.

3. WIRE FOR GROUNDING AND BONDING.

- a. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:
 - i. USE SAME SIZE EQUIPMENT GROUNDING CONDUCTOR AS THE DUCT CABLE OR DISTRIBUTION CABLE CIRCUIT CONDUCTORS, WITH THE MINIMUM CONDUCTOR SIZE OF #4 AWG. BONDING JUMPERS WILL BE MINIMUM SIZE #4 AWG.
 - ii. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR #4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

GROUNDING AND BONDING (CONTINUED)

4. GROUND ROD.

- a. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.
- b. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE #4 AWG, INSULATED, COPPER.

5. POWER SERVICE AND DISCONNECT SWITCH.

- a. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.
- b. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.
 - i. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

6. STRUCTURE GROUNDING

HL-50.21 SHOWS A 1/0 AWG STRANDED COPPER CABLE USED FOR STRUCTURE GROUNDING. ADDITIONALLY, THIS SAME CABLE SHALL BE INSULATED AND ANY CONNECTIONS AND BARE COPPER STRANDS EXPOSED TO CONCRETE SHALL BE COVERED WITH MASTIC TO PREVENT CONTACT WITH THE CONCRETE.

7. PAYMENT

ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY THE CONTRACT.

LIGHT TOWER DECALS

NEW LIGHT TOWER DECALS SHALL BE PLACED ON ALL PROPOSED LIGHT TOWERS TO MATCH THE ALPHA NUMERIC IDENTIFIER AS DETAILED WITHIN THE PLANS TO CONFORM WITH THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS.

CONDUIT EXPANSION AND DEFLECTION

EXPANSION FITTINGS SHALL BE OZ TYPE AX, CROUSE HINDS TYPE XJG, OR EQUAL APPROVED BY THE ENGINEER. EACH EXPANSION FITTING SHALL PROVIDE EITHER 4 OR 8 INCHES TOTAL MOVEMENT AS SPECIFIED BY THE PLAN DETAILS AND SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS.

DEFLECTION COUPLINGS SHALL BE OZ TYPE DX, CROUSE HINDS TYPE XD, OR EQUAL APPROVED BY THE ENGINEER. EACH DEFLECTION COUPLING SHALL HAVE AN EXTERNAL COPPER BONDING JUMPER, UNLESS SPECIFIED OTHERWISE BY THE PLAN DETAILS. MINIMUM DEFLECTION CAPABILITY: 25°.

EXPANSION AND DEFLECTION FITTINGS FULLY OR PARTIALLY EMBEDDED IN CONCRETE, SOIL, OR SIMILAR MATERIAL SHALL BE COMPLETELY WRAPPED IN A NEOPRENE SLEEVE OR SHEET OF 1/2-INCH MINIMUM THICKNESS. SECURE NEOPRENE WRAP WITH TIE-WRAP PRIOR TO EMBEDMENT OF THE FITTING.

PADLOCKS AND KEYS

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNAN 660A, AND SHALL BE KEYPED IN ACCORDANCE WITH C&MS 631.06. PAYMENT SHALL BE INCLUDED IN THE BID FOR THE ITEM(S) BEING LOCKED.

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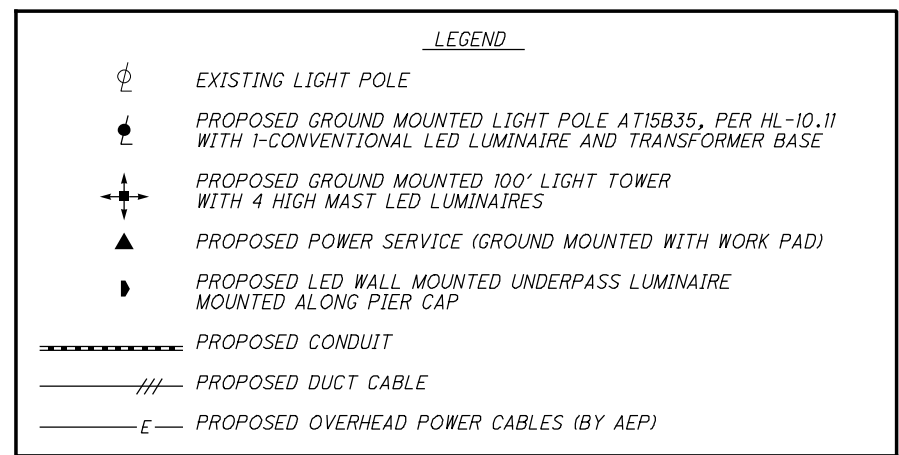
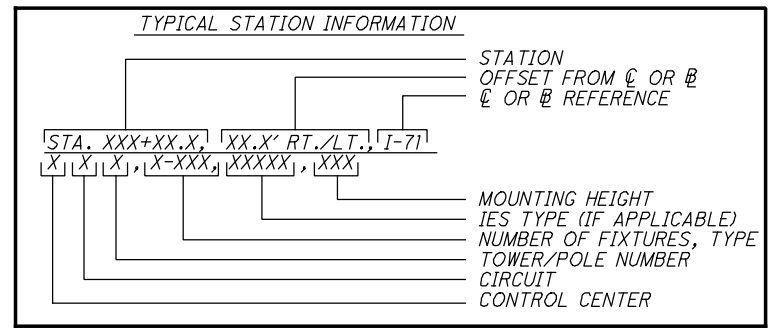
CALCULATED
DRM
CHECKED
JDS

LIGHTING NOTES

FRA - 71 - 000

1101
1312

| POWER SERVICE DATA | | | | | | | | |
|--------------------|----------------------|----------------------|-------------------------|-------------|---------------------|--------------------------|--------------------------|--------------------|
| POWER SERVICE | LINE VOLTAGE (VOLTS) | CONNECTED LOAD (KVA) | ENCLOSURE RATING (AMPS) | CIRCUIT NO. | CIRCUIT LOAD (AMPS) | CIRCUIT FUSE SIZE (AMPS) | CIRCUIT CABLE SIZE (AWG) | MAINTAINING AGENCY |
| PS-A | 480 | 6.8 | 60 | A | 1.3 | 60 | 4 | ODOT |
| | | | | B | 12.8 | 60 | 4 | |



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| REFERENCE NO. | SHEET NO. | SIDE | ROADWAY | STATION TO STATION | | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | 625 | | |
|--|-----------|-------|------------|--------------------|----------|------------------------------|-------------------------------|-----------------------------------|----------------------|--------------------------------------|--|--|-----------------------------------|---|---------------------|----------------------------------|---------------------|--|---|--|--|--------|------------------------|-----------------------|-----------------------|------------|----------------------------|----------------------------|----------------------|--|
| | | | | | | CONNECTION, FUSED PULL APART | CONNECTION, UNFUSED PERMANENT | LIGHT POLE, CONVENTIONAL, AT15B35 | LIGHT TOWER, BBBB100 | LIGHT POLE FOUNDATION, 24" X 6' DEEP | LIGHT TOWER FOUNDATION, 36" X 25' DEEP | NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE | NO. 10 AWG POLE AND BRACKET CABLE | 1-1/2" DUCT CABLE WITH THREE NO. 4 AWG 2400 VOLT CABLES | CONDUIT, 2", 725.04 | CONDUIT, 2", 725.04, AS PER PLAN | CONDUIT, 3", 725.04 | CONDUIT, 3", JACKED OR DRILLED, 725.04 | LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN | LUMINAIRE, HIGH MAST, SOLID STATE (LED), AS PER PLAN | LUMINAIRE, UNDERPASS, SOLID STATE (LED), AS PER PLAN | TRENCH | STRUCTURE JUNCTION BOX | PULL BOX, 725.08, 18" | PULL BOX, 725.08, 24" | GROUND ROD | STRUCTURE GROUNDING SYSTEM | POWER SERVICE, AS PER PLAN | PLASTIC CAUTION TAPE | SERVICE TO UNDERPASS LIGHTING, AS PER PLAN |
| | | | | | | EACH | EACH | EACH | EACH | EACH | EACH | FT | FT | FT | FT | FT | FT | EACH | EACH | EACH | EACH | EACH | EACH | EACH | FT | LS | | | | |
| 1 | 1105 | LT | I-71 | 162+56.0 | 162+62.0 | | | | | | | | | | | 6 | | | | | | | | | | | 6 | | | |
| 2 | 1105 | LT | I-71 | 162+62.0 | 162+62.0 | | | | 1 | 1 | | | | | | | | | 4 | | | | | | 2 | | | | | |
| 3 | 1105 | LT/RT | I-71 | 162+62.0 | 163+23.9 | | | | | | 222 | | | | | 64 | | | | | | | | | | | 64 | | | |
| 4 | 1105 | RT | I-71 | 163+23.9 | 163+23.9 | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| 5 | 1105 | RT | I-71 | 163+23.9 | 166+25.0 | | | | | | | 1032 | | | 77 | 257 | | | | | | | | | | | 77 | | | |
| 6 | 1105 | RT | I-71 | 166+25.0 | 166+25.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 1105 | LT/RT | I-71 | 166+25.0 | 168+85.8 | | | | | | 819 | | | | | 263 | | | | | | | | | | | 263 | | | |
| 8 | 1105 | LT | I-71 | 168+85.8 | 168+85.8 | | | | | | | | | | | | | | | | 1 | | | | | | | | | |
| 9 | 1105 | LT | I-71 | 168+85.8 | 169+12.0 | | | | | | | | | | 36 | | | | | | | | | | | | 26 | | | |
| 10 | 1105 | LT | I-71 | 169+12.0 | 169+12.0 | | | | 1 | 1 | | | | | | | | | 4 | | | | | | 2 | | | | | |
| 11 | 1105 | LT/RT | I-71 | 168+85.8 | 168+85.8 | | | | | | 396 | | | | | | | | 122 | | | | | | | | 122 | | | |
| 12 | 1105 | RT | I-71 | 168+85.8 | 168+85.8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 1105 | RT | I-71/US 62 | 168+85.8 | 28+84.7 | | | | | | | | | | 483 | | | | | | | | | | | | 473 | | | |
| 14 | 1105 | LT | US 62 | 25+30.7 | 25+30.7 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | 1 | | | | | | | |
| 15 | 1105 | LT/RT | US 62 | 25+30.7 | 25+38.7 | | | | | | | 330 | | | | | | | | | | | | | | | | | | |
| 16 | 1105 | RT | US 62 | 25+38.7 | 25+38.7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | 1105 | RT | US 62 | 25+38.7 | 26+77.1 | | | | | | | 450 | | | | | | | | | | | | | | | 140 | | | |
| 18 | 1105 | RT | US 62 | 26+77.1 | 26+77.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | 1105 | RT | US 62 | 26+77.1 | 26+81.0 | | | | | | | 210 | | | | 50 | | | | | | | | | | | 25 | | | |
| 20 | 1105 | RT | US 62 | 26+81.0 | 26+81.0 | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| 21 | 1105 | RT | US 62 | 26+77.1 | 26+84.2 | | | | | | | 93 | | | | 21 | | | | | | | | | | | 21 | | | |
| 22 | 1105 | RT | US 62 | 26+84.2 | 26+84.2 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | | 1 | | | | | | |
| 23 | 1105 | RT | US 62 | 26+77.1 | 28+22.7 | | | | | | | 927 | | | | 294 | | | | | | | | | | | 147 | | | |
| 24 | 1105 | RT | US 62 | 28+22.7 | 28+22.7 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | | 1 | | | | | | |
| 25 | 1105 | RT | US 62 | 28+22.7 | 28+84.7 | | | | | | | 423 | | | | 126 | | | | | | | | | | | 63 | | | |
| 26 | 1105 | RT | US 62 | 28+84.7 | 28+84.7 | | | | | | | | | | | | | | | | | | | | | | LS | | | |
| 27 | 1105 | RT | US 62 | 28+94.4 | 28+94.4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | 1105 | LT | US 62 | 28+75.0 | 28+75.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 1105 | LT | US 62 | 29+10.8 | 29+10.8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 1105 | RT | US 62 | 28+84.7 | 30+13.7 | | | | | | | 423 | | | | 131 | | | | | | | | | | | 131 | | | |
| 31 | 1105 | RT | US 62 | 30+13.7 | 30+13.7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | 1105 | RT | US 62 | 30+09.7 | 30+09.7 | | | | | | | | | | | | | | | | | | | | | | LS | | | |
| 33 | 1105 | LT | US 62 | 29+89.6 | 29+89.6 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | 1105 | LT | US 62 | 30+28.1 | 30+28.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 1105 | RT | US 62 | 30+13.7 | 31+57.4 | | | | | | | 462 | | | | 144 | | | | | | | | | | | 144 | | | |
| 36 | 1105 | RT | US 62 | 31+57.4 | 31+57.4 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | | | | | | | | |
| 37 | 1105 | RT | US 62 | 31+57.4 | 33+67.1 | | | | | | | 663 | | | | 211 | | | | | | | | | | | 211 | | | |
| 38 | 1105 | RT | US 62 | 33+67.1 | 33+67.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | 1105 | LT/RT | US 62 | 33+56.4 | 33+67.1 | | | | | | | 228 | | | | | | | | | | | | | | | | | | |
| 40 | 1105 | LT | US 62 | 33+56.4 | 33+56.4 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | | | | | | | | |
| 41 | 1105 | RT | US 62 | 33+67.1 | 34+93.9 | | | | | | | 411 | | | | | | | | | | | | | | | 127 | | | |
| 42 | 1105 | RT | US 62 | 34+93.9 | 34+93.9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | 1105 | RT | US 62 | 34+93.9 | 35+14.7 | | | | | | | 102 | | | | 24 | | | | | | | | | | | 24 | | | |
| 44 | 1105 | RT | US 62 | 35+14.7 | 35+14.7 | 2 | | 1 | | 1 | | | 116 | | | | | | | | | | | | | | | | | |
| 1 | 1106 | LT | I-71 | 169+12.0 | 184+79.0 | | | | | | | | | | | | | | | | | | | | | | 1566 | | | |
| 1 | 1107 | LT | I-71 | 184+79.0 | 184+79.0 | | | | | | | | | | | | | | | | | | | | | | 1566 | | | |
| 2 | 1107 | LT | I-71 | 184+79.0 | 191+42.0 | | | | | | | | | | | | | | | | | | | | | | 663 | | | |
| 3 | 1107 | LT | I-71 | 191+42.0 | 191+42.0 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 1107 | LT | I-71 | 191+42.0 | 191+48.0 | | | | | | | | | | | 6 | | | | | | | | | | | 6 | | | |
| TOTALS CARRIED TO GENERAL SUMMARY | | | | | | 12 | 21 | 6 | 4 | 6 | 4 | 7,191 | 696 | 2,768 | 1,417 | 257 | 389 | 166 | 6 | 16 | 2 | 4,299 | 4 | 8 | 2 | 14 | 1 | 1 | 4,299 | LS |

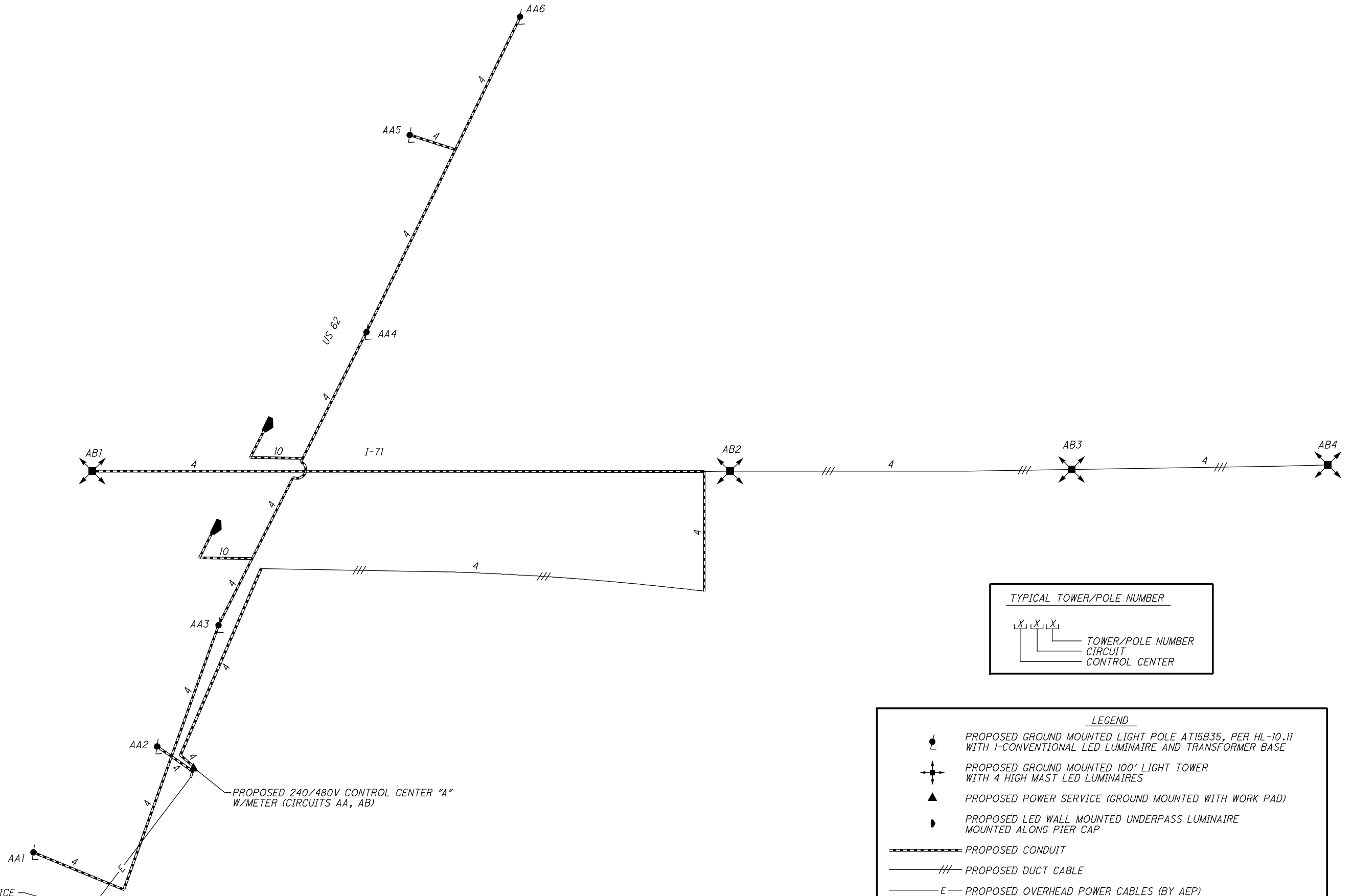
LIGHTING SUBSUMMARY

FRA - 71 - 0.00

CALCULATED
DRM
CHECKED
JDS

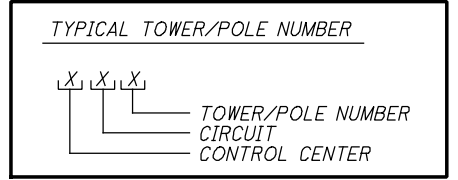
1103
1312

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PROPOSED POWER SERVICE
 POWER SERVICE ADDRESS:
 7118 HARRISBURG PIKE
 ORIENT, OH 43146

PROPOSED 240/480V CONTROL CENTER "A"
 W/METER (CIRCUITS AA, AB)



- LEGEND**
- PROPOSED GROUND MOUNTED LIGHT POLE AT15B35, PER HL-10.11 WITH 1-CONVENTIONAL LED LUMINAIRE AND TRANSFORMER BASE
 - PROPOSED GROUND MOUNTED 100' LIGHT TOWER WITH 4 HIGH MAST LED LUMINAIRES
 - PROPOSED POWER SERVICE (GROUND MOUNTED WITH WORK PAD)
 - PROPOSED LED WALL MOUNTED UNDERPASS LUMINAIRE MOUNTED ALONG PIER CAP
 - PROPOSED CONDUIT
 - PROPOSED DUCT CABLE
 - PROPOSED OVERHEAD POWER CABLES (BY AEP)
 - 4 (3)-#4 AWG DISTRIBUTION CABLES
 - 10 (3)-#10 AWG DISTRIBUTION CABLES

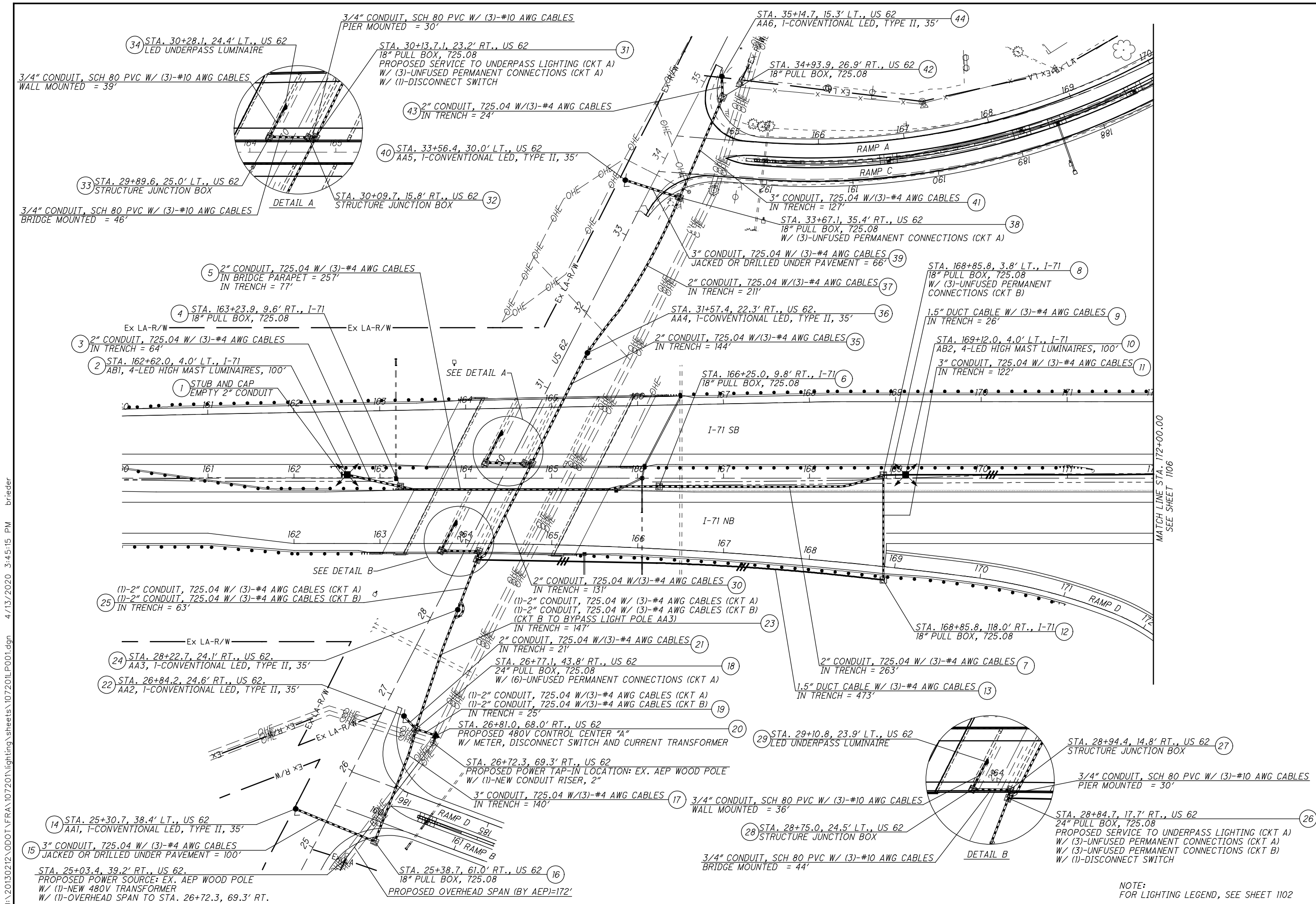
CALCULATED
 DRM
 CHECKED
 JDS

25
 50
 100
 HORIZONTAL
 SCALE IN FEET

I-71 CIRCUIT SCHEMATIC

FRA-71-0.00

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CALCULATED
DRM
CHECKED
JDS

0 50 100
25
HORIZONTAL
SCALE IN FEET

LIGHTING PLAN - I-71
STA. 160+00.00 TO STA. 172+00.00

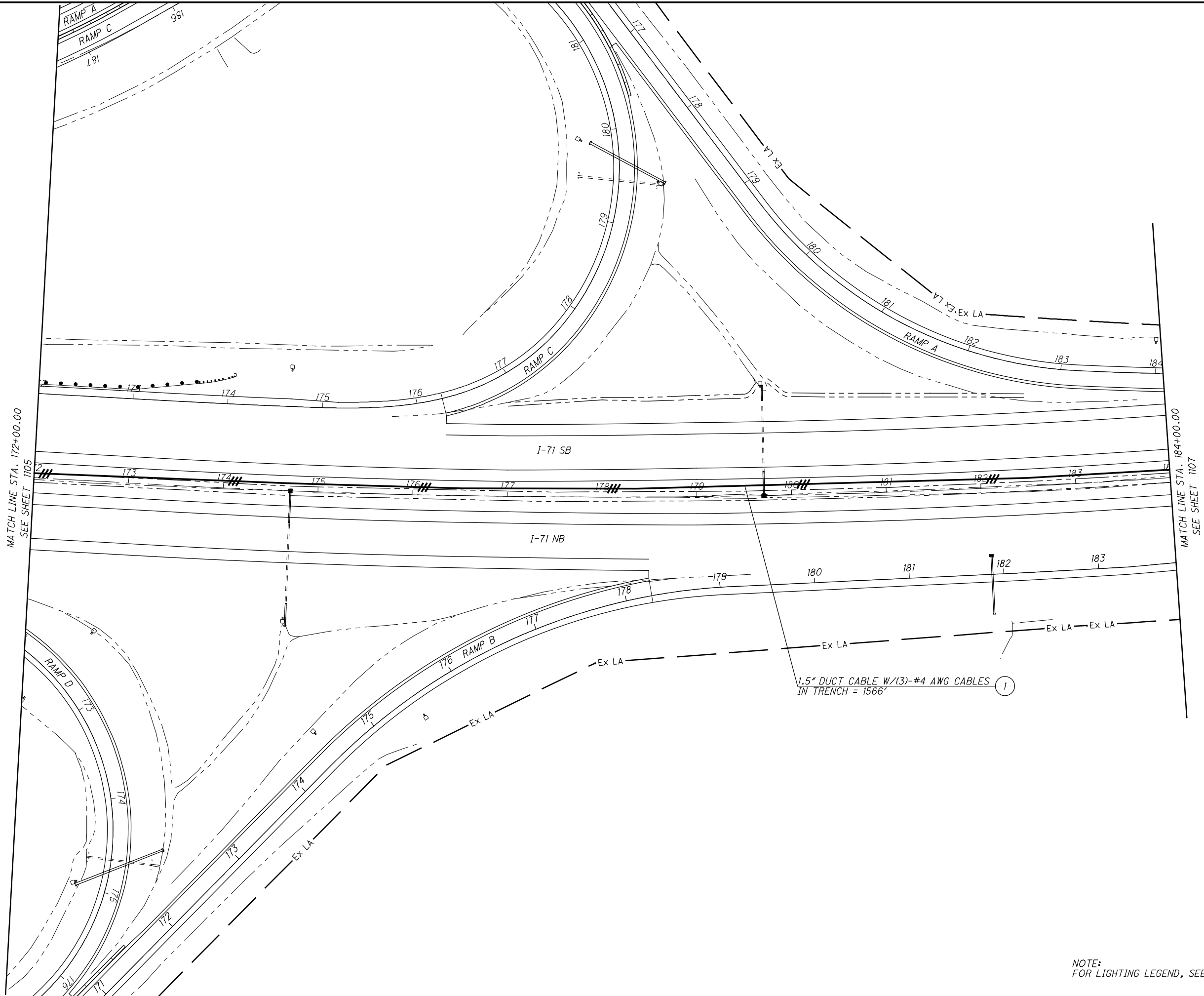
FRA-71-0.00

1105
1312

NOTE:
FOR LIGHTING LEGEND, SEE SHEET 1102

MATCH LINE STA. 172+00.00
SEE SHEET 1106

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MATCH LINE STA. 172+00.00
SEE SHEET 1105

MATCH LINE STA. 184+00.00
SEE SHEET 1107

1.5" DUCT CABLE W/(3)-#4 AWG CABLES
IN TRENCH = 1566'

NOTE:
FOR LIGHTING LEGEND, SEE SHEET 1102

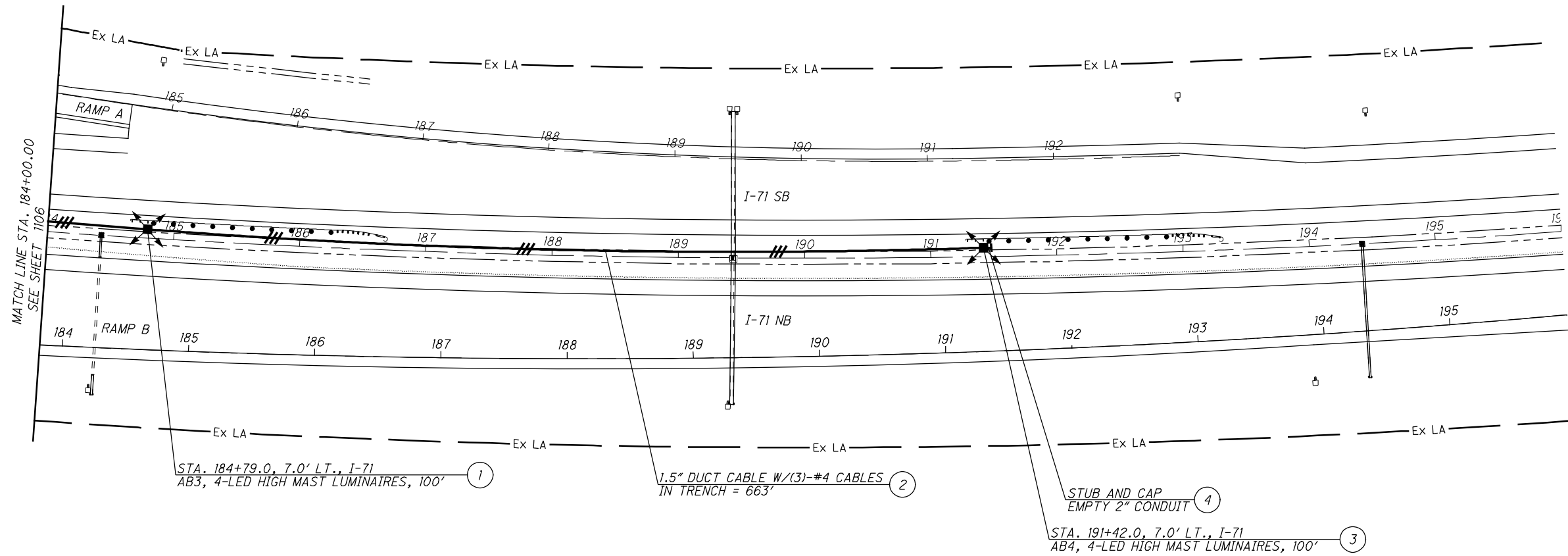
| | |
|---|-----|
|  | |
|  | |
| CALCULATED | DRM |
| CHECKED | JDS |

LIGHTING PLAN - I-71
STA. 172+00.00 TO STA. 184+00.00

FRA-71-0.00

1106
1312

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STA. 184+79.0, 7.0' LT., I-71
 AB3, 4-LED HIGH MAST LUMINAIRES, 100' (1)

1.5" DUCT CABLE W/(3)-#4 CABLES
 IN TRENCH = 663' (2)

STUB AND CAP
 EMPTY 2" CONDUIT (4)

STA. 191+42.0, 7.0' LT., I-71
 AB4, 4-LED HIGH MAST LUMINAIRES, 100' (3)

CALCULATED
 DRW
 CHECKED
 JDS

0 50 100
 HORIZONTAL
 SCALE IN FEET

LIGHTING PLAN - I-71
STA. 184+00.00 TO STA. 196+00.00

FRA-71-0.00

1107
 1312

NOTE:
 FOR LIGHTING LEGEND, SEE SHEET 1102