ADDENDUM #1 - July 19, 2016

CITY OF MATTOON
PUBLIC WORKS BUILDING
401 DEWITT AVE EAST

Please incorporate the following changes into the bid documents for the project:

Specification Section 01010
Revised Specification Page 01010-1 attached.

Deleted the words “the upper layers of the existing soil” from Section 1.01(B)(5).
It was an editing error.

Added a paragraph to Section 1.01(D) identifying the topsoil stripping and replacement requirements.

Earthwork
Added Specification Sections 02230 Site Clearing and 02300 Earthwork.
New Specifications and Table of Contents Revisions attached.

Plan Sheet E1.02
Revised Plan Sheet attached.

Changed the Circuit Breaker Designations for Infrared Heaters IH-1 & IH-2.
Changed the Circuit Breaker Designations for Infrared Heaters IH-5 & IH-6.

Plan Sheet E6.01
Revised Plan Sheet attached.

Panel P2 Schedule
Added Circuit Breaker Designations for Infrared Heaters IH-15 & IH-16.

Panel P3 Schedule
Added Circuit Breaker Designations for Infrared Heaters IH-1 & IH-2.
Added Circuit Breaker Designations for Infrared Heaters IH-5 & IH-6.

Lighting Fixture Schedule
Highlighted the horizontal grid lines between fixture types.
Added Hubbell/Columbia Model #’s for Fixtures F7, F9, & F13.
Added Philips Commercial Lighting Fixtures as an allowable substitution.

OWNER: Dean Barber, Director
Public Works Department
208 North 19th Street
Mattoon, IL 61938

ARCHITECT/ENGINEER: The Upchurch Group, Inc.
123 North 15th Street
Mattoon , IL 61938

PROJECT MANUAL FOR: Mattoon Public Works Building
401 Dewitt Avenue East
Mattoon, IL 61938

DATE: July 8, 2016

The General Conditions, Supplementary Conditions and Division 1, General Requirements are hereby made a part of each division and section of the project specifications.

1. GENERAL.

1.01 REQUIREMENTS INCLUDE.

A. Work covered by contract documents is delineated on the Drawings and specified in the Project Manual, consisting generally of the following:

Construction of a new pre-engineered metal building having a footprint of approximately 33,800 square feet including spaces finished for offices as well as spaces for equipment maintenance and storage on a previously undeveloped site.

B. The City of Mattoon will complete the following items in advance of the start of construction for this contract:

1. Construct the entrance on Dewitt Avenue East. (Done.)
2. All demolition work shown on Plan Sheet C1.01. (July 15 estimated completion.)
3. Relocation of the existing ditch and 12" field tile. (Done.)
4. Removal of the existing field tile under the proposed building. (July 15 estimated completion.)
5. Removal and replacement of the compressible soil under the proposed building foundations. (July 15 estimated completion.) ~~the upper layers of the existing soil.~~ Addendum #1
6. The sanitary sewer crossing at the relocated ditch shown on Note 9 on Plan Sheet C1.03. (Done.)

C. The City of Mattoon will complete all of the exterior concrete work, except as noted below, after completion of this project. The Contractor shall complete the following items:

1. The Concrete Stoops shown on Plans Sheet C1.02 and the Structural Drawings.
2. The concrete Sidewalk and Curb shown on Plan Sheet C1.02 and the Architectural Drawings.

D. The Contractor shall complete all of the remaining earthwork for the site. This includes the embankment under the proposed building, parking areas, and roadways, as well as the excavation and embankment for the detention basin. Embankment material may be obtained from City stockpiles located on the site, City stockpiles located on Old State Road ½ mile west of 9th Street, and/or from City stockpiles located at 2521 N. 6th Dtreet (CSO SatelliteTreatment Facility currently under construction). All of the embankment material under the building shall be takenfrom the east City stockpile on Old State Road. The Contractor shall load, haul, place, and compact the embankment material.

Earthwork shall be completed to +/- 0.10 feet of the proposed elevations shown in the plans. A total pavement and subbase thickness of 11" shall be assumed for all paving work to be performed by the City.

The Contractor is not required to perform any grading, shaping, or seeding in the relocated ditch, or on that portion of the site east of the relocated ditch.

E. The Contractor shall complete all of the remaining work in the plans and specifications in order to complete the proposed site improvements and building.

Contractor to strip and stockpile the upper 12" of topsoil under the proposed building. Contractor to strip and stockpile the upper 6" of topsoil in all other areas in advance of excavation or embankment. Contractor to place 6" of topsoil in all areas to be seeded. Excess topsoil to remain stockpiled on site. Addendum #1

1.02 DEFINITIONS. The following terms are used throughout the contract documents. The work will be governed in accord with the definitions.

A. Fabricated: Fabricated pertains to items specifically assembled or made of selected materials or components to meet individual design requirements.

B. Manufactured: Manufactured means standard units, usually mass produced by an established manufacturer of the respective item.

SECTION 02230 - SITE CLEARING

1. GENERAL

1.01 WORK INCLUDES

A. Base Bid:

1. General Contractor to:

a. Clear site of plant life and grass, where needed, for topsoil, embankment, base and/or pavement.

b. Remove: COMPLETED BY OWNER. ADDENDUM#1

~~1) Trees, shrubs, stumps, and root systems as necessary.~~

2) Surface debris.

~~3) Subsurface debris to be removed as required by the geotechnical report and the Architect/Engineer.~~

COMPLETED BY OWNER. ADDENDUM#1

1.02 REFERENCES

A. Standard Specifications for Road and Bridge Construction in Illinois, adopted January 1, 2012, and all updates current at time of bidding.

B. Change all references from “Engineer” to “Architect/Engineer”.

2. PRODUCTS NOT USED

3. EXECUTION

3.01 INSPECTION

A. Before beginning work, properly locate and verify all present underground utilities and other related existing improvements and protect same wherever they may be encountered in the proposed new construction.

B. Maintain all benchmarks, monuments and other reference points. If disturbed or destroyed, restore as directed by Architect/Engineer.

C. No clearing shall be started until the Contractor has established limits of work and until the Architect/Engineer has inspected the site with the Contractor and has given definite instructions as to the limits of clearing. Prior to removal of any tree over 6” in diameter, obtain Architect/Engineer’s approval.

3.02 CLEARING

A. Clear designated areas in accordance with IDOT Specification, Section 201, Articles 201.01 through 201.09. All areas within the limits of the proposed ~~new pavement~~ IMPROVEMENTS ADDENDUM#1 shall be cleared and stripped.

B. Material unsuitable for use as fill shall be disposed of offsite in accordance with IDOT Specification, Section 202, Article 202.03. Stripped topsoil material shall be used in the upper layer of embankments outside the limits of the pavement surfaces.

SEE ALSO SPECIFICATION 01010. ADDENDUM#1

C. Clear undergrowth and deadwood, without disturbing subsoil.

D. Carefully remove existing signs for reinstallation

3.03 PROTECTION

A. Protect plant growth and features remaining for final landscaping.

B. Protect bench marks and existing work from damage or displacement.

C. Maintain designated site access for vehicle and pedestrian traffic.

D. Store existing signs and protect from damage.

3.04 REMOVAL

A. Remove all vegetation, debris, organic material and otherwise objectionable materials which are not suitable for use as fill for embankments or for support of structural loads or slabs from within the designated area.

B. Remove soft, spongy, and/or yielding material off-site as directed by A/E.

C. Broken concrete, utility lines and other unsuitable material shall be disposed of by the Contractor off the project site according to Article 202.03 of the IDOT Standard Specifications.

END SECTION

SECTION 02300 EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

A. Work Included in this Section:

1. Preparing subgrades for slabs-on-grade walks, pavements, turf, grasses, and plants.
2. Excavating and backfilling for buildings and structures
3. Excavating and backfilling for pavements and walks.
4. Excavating and backfilling trenches for utilities and pits for buried utility structures.
5. Excavating and backfilling topsoil.
6. Engineered Fill

1.02 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Structural aggregate layer placed beneath a flexible hot mix asphalt surface or bituminous surface treatment.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

G. Fill: Satisfactory soil materials used to raise existing grades.

H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

K. Surface Course: Structural aggregate layer which serves as the finished roadway surface.

L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.03 REFERENCES:

A. Specified references, or cited portions thereof, current at date of bidding documents, govern the work.

B. American National Standards Institute/American Society for Testing and Materials (ANSI/ASTM):

1. C136 - Sieve Analysis of Fine and Course Aggregate
2. ASTM D698: Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5 lb. Rammer and 12 in. Drop.
3. Illinois Modified AASHTO T 310 - Direct Transmission Density/Backscatter Moisture

C. Specifications for Road and Bridge Construction in Illinois, adopted April 1, 2016, and all updates current at time of bidding.

D. Standard Specifications for Water & Sewer Main Construction in Illinois, 7th Edition, 2014.

E. Illinois Department of Transportation Subgrade Stability Manual, May 1, 2005.

F. Geotechnical Report prepared by Holcomb Foundation Engineering Co., 5/21/15.

G. Illinois Department of Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", June 1, 2012.

1.04 COMPACTION TESTING

A. Testing will be performed by a qualified testing agency hired by the Owner.

B. When, during progress of work, tests indicate that compacted materials do not meet specifications, remove defective work, replace and retest, as directed in writing by Engineer.

C. Ensure that all compacted fills are tested before proceeding with placement of surface materials.

1.05 ADHERENCE TO SPECIFICATIONS

A. Any proposed deviations from earthwork construction presented in the project specifications and plan drawings shall be coordinated with the Civil Consultant, the Geotechnical Consultant, the Architect, and the Owner.

B. Trenching and backfilling for utilities shall be performed according to the provisions of the Standard Specifications for Water and Sewer Construction in Illinois, except references to measurement and payment, unless various items are specifically addressed in these Project Specifications.

PART 2 PRODUCTS

2.01 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter; also included as satisfactory soils are those soil groups listed as "unsatisfactory soils" provided they are modified as necessary and/or approved for use by the project Geotechnical Engineer.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Fill Soils: Satisfactory soils placed and compacted to bring subgrade up to plan grade.

2. Satisfactory Soils placed beneath paved areas or under floor slabs shall have a maximum liquid limit (LL) of 40 and a maximum plasticity index (PI) of 20.

E. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand according to ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve, 30 to 60 percent passing the No. 4 sieve, and not more than 12 percent passing a No. 200 sieve. Alternatively, provide *CA-6 or CA-10 Aggregate per Illinois Department of Transportation's Standard Specifications Section 1004.* Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans. Low plasticity earth from on site excavation or from off site sources that are moisture controlled, placed in lifts, and compacted per the Geotechnical Report is acceptable.

F. Bedding and haunching for pipes: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand according to ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve. Alternatively, provide *CA-6, CA-9, CA-10, CA-18, FA-1, FA-2, FA-5, FA-6, FA-10, or FA-21 aggregate per Illinois Department of Transportation's Standard Specifications Sections 1003 and 1004.* Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

G. Drainage Course (or Drainage Fill): Narrowly graded mixture of washed crushed stone, or crushed gravel according to ASTM D 448, coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve. Alternatively,

provide *CA-07 or CA-11 Aggregate per Illinois Department of Transportation's Standard Specifications Section 1004.* Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

H. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand according to ASTM D 448, coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve. Alternatively, provide *CA-07 or CA-11 Aggregate per Illinois Department of Transportation's Standard Specifications Section 1004.* Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

I. Sand: ASTM C 33; fine aggregate. Alternatively, provide *FA-1, FA-2, FA-5, FA-6, FA-10, or FA-21aggregate per Illinois Department of Transportation's Standard Specifications Section 1003.*

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

K. Topsoil: Friable loam free from subsoil, roots, grass, excessive amount of weeds, stones and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4% and a maximum of 25% organic matter.

L. Backfill and Fill: Satisfactory soil materials.

M. Base Course: Gravel, crushed gravel, or crushed stone aggregate CA-6 or CA-10 per Illinois Department of Transportation's Standard Specifications Section 1004. The Plasticity Index (PI) shall be 0-6 for gravel and 0-4 for crushed stone and crushed gravel.

N. Subbase Course: Gravel, crushed gravel, or crushed stone aggregate CA-6 or CA-10 per Illinois Department of Transportation's Standard Specifications Section 1004. The Plasticity Index (PI) shall be 0-9 for gravel. Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

O. Surface Course: Gravel, crushed gravel, or crushed stone aggregate CA-6 or CA-10 per Illinois Department of Transportation's Standard Specifications Section 1004. The Plasticity Index (PI) shall be 2-9 for gravel.

P. Trench Backfill: Fine aggregate sand FA-1, FA-2, FA-6, or FA-21 per Illinois Department of Transportation's Standard Specification Section 1003. Also acceptable is crushed concrete according to IDOT Standard Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

Q. Initial Backfill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand according to ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve. Alternatively, provide *CA-6, CA-9, CA-10, CA-18, FA-1, FA-2, FA-5, FA-6, FA-10, or FA-21 aggregate per Illinois Department of Transportation's Standard Specifications Sections 1003 and 1004.* Also acceptable is crushed concrete according to IDOT Standard

Specification 1004 and the IDOT Bureau of Materials and Physical Research's Policy Memorandum, "Recycling Portland Cement Concrete into Aggregate", graded into the IDOT gradations called for in the plans.

2.02 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

A. Mixture of Portland Cement, sand, and water with a compressive strength at 28 and 180 days greater than or equal to 30 psi and less than 150 psi per Illinois Department of Transportation's Standard Specifications Section 1019.04. Fly ash may be added to the mixture per the above IDOT specification.

2.03 DRAINAGE GEOTEXTILES

A. Woven or non-woven fabrics consisting of filaments of polypropylene, polyester, or polyethylene meeting the requirements of Article 1080.05 of the Illinois Department of Transportation's Standard Specifications, "Geotextile Fabric for French Drains".

PART 3 EXECUTION

3.01 PREPARATION

A. Clear site in accordance with "Site Clearing" Specification.

B. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

C. Protect excavations by shoring, bracing, sheet piling, underpinning or other methods to prevent cave-in or loose soil from falling into excavation.

D. Protect and maintain erosion and sedimentation controls during earth moving operations.

E. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

F. Before starting excavation, establish location and extent of underground utilities occurring in work area. Contact – Joint Utility Locating Information for Excavators (J.U.L.I.E.)

G. Notify utility companies to remove and relocate lines which are in the way of excavation.

H. Maintain, reroute, or extend existing utility lines to remain which pass through work area.

I. Notify Architect/Engineer immediately of unexpected subsurface conditions. Confirm notification in writing. Discontinue work until Architect/Engineer issues written notification to resume work.

J. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.

K. Trees, shrubs, fences and all other property and surface structures shall be protected during construction unless their removal is called for in the contract documents. All properties destroyed shall be restored to original conditions.

3.02 DEWATERING

A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.

B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.03 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions that are identified in the bidding documents.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

B. Excavations at Edges of Tree and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

2. Cut and protect roots according to Article 201.06(a) of the Illinois Department Standard Specifications.

C. Excavate topsoil from areas to be further excavated, re-landscaped or re-graded and stockpile in designated area on site. ~~Excess topsoil shall be removed from site in accordance with Article 202.03 of the IDOT Standard Specifications.~~ ADDENDUM#1

3.04 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus ~~1 inch.~~ 0.10 FEET ADDENDUM#1 If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

2. Correct unauthorized excavation in accord with Engineer's written authorization.

3. Protect existing foundations during excavation of new foundation system. Excavations shall not interfere with normal 45 degree bearing splay of any foundation.

3.05 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.06 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: Maximum 12” each side of pipe when trench width is less than 5 feet without trench protection, 18” each side of pipe when trench width is greater than 5 feet, or less than 5 feet with protection.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.

2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.

3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.

4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.

3. Cut and protect roots according to Article 201.06(a) of the Illinois Department Standard Specifications.

E. Where a firm foundation is not encountered at the required depth due to soft, spongy, or otherwise unsuitable soil, all such unsuitable soil under the pipe and for the width of the trench shall be removed and replaced with well-compacted foundation material.

F. If the excavation has been made beyond or below the required lines or grades, such excavated spacy shall be filled and the foundation brought to grade with well-compacted foundation material.

G. Where rock is encountered, the Contractor shall notify the Engineer to have the material classified as rock prior to excavation. When rock is encountered in the bottom of the trench, it shall be removed to an elevation eight (8) inches below the bottom of the pipe and replaced with well-compacted foundation material.

3.07 SUBGRADE INSPECTION

A. Notify Engineer when excavations have reached required subgrade.

B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Prepare, compact, and proof roll the subgrade in accordance with the Specification "Subgrade Preparation".

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.08 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, shall be used unless otherwise directed by Engineer.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

3.09 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent erosion.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees. Stockpile height shall not exceed 8 feet.

Remove excess or unsatisfactory soil materials from site.

3.10 BACKFILL PREPARTION

A. Prior to backfill operations, complete the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, perimeter insulation and underground utilities.

2. Surveying locations of underground utilities and locations provided by utility companies for Record Documents.

3. Testing and inspecting underground utilities.

4. Removing concrete formwork.

5. Removing trash and debris.

6. Removing temporary shoring and bracing, and sheeting.

7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.11 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.

D. Pipe laying and stabilizing:

1. pipe shall be laid and jointed to the applicable requirements for the type of pipe line and pipe material being installed.

2. After the pipe has been laid and, when required, well-compacted haunching material shall be placed for the entire width of the trench and length of the pipe; except where the pipe outlets from an embankment or natural ground, impervious material shall be placed for the last three (3) feet of the pipe. Haunching material will be required for all pipe installations; except, where rigid pipe materials are used for water mains or force mains. The haunching material shall be place longitudinally along the pipe in maximum six (6) inch layers, loose measure. The elevation of the haunching material on each side of the pipe shall be the same. Special care shall be taken to completely fill the space under the pipe haunches.

3. Compaction of foundation, bedding, and haunching material shall be by ramming or tamping to the satisfaction of the Engineer.

E. Place and compact haunching and initial backfill to a height of 12 inches over the pipe or conduit.

1. Initial backfill shall be carefully deposited in uniform layers not exceeding six (6) inches thick, loose measure. The filling of the trench shall be carried on simultaneously on both sides of the pipe in such a manner that damage to the pipe or injurious side pressures do not occur. The material in each layer shall be well-compacted by mechanical means to the satisfaction of the Engineer. Care shall be taken to avoid contact between the pipe and compaction equipment. Compaction equipment shall not be used directly over the pipe until sufficient backfill has been placed to insure that such equipment will not damage or disturb the pipe

F. Backfill voids with satisfactory soil while removing shoring and bracing.

G. Place and compact final backfill to final subgrade elevation.

1. Under Pavement or Sidewalk to 2 feet outside of pavement or sidewalk

a. Trench backfill shall be deposited in uniform layers not exceeding six (6) inches thick, loose measure, and each layer shall be compacted by mechanical means.

2. Outside 2 feet from pavement or sidewalk

a. Satisfactory soils for fill material above middle of pipe for rigid pipe and above the initial backfill for flexible pipe.

3. Controlled Low Strength Material (CLSM) shall be placed at locations shown on the plans, or, at the contractor's option with the approval of the Engineer. The CLSM shall be distributed evenly in the trench and allowed to harden. The mix may be subjected to loading upon approval of the Engineer, or, when a penetration of one and one-half (1.5) inches/blow or less has been obtained with a dynamic cone penetration (DCP) test. The mix shall not be exposed to freezing temperatures or wet weather conditions during the first twenty-four hours (24) after placement.

4. When sheeting and bracing trench protection have been used, it shall be removed as soon as practicable; however, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner meeting the approval of the Engineer. When the Contractor constructs the trench with sloped or benched sides, backfilling for the full width of the excavation shall be as hereinbefore specified, except no additional compensation will be allowed for backfill material required outside the limits of the specified trench width.

3.12 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

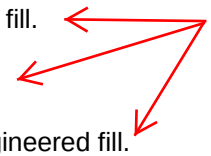
1. Under grass and planted areas, use satisfactory soil material.

2. Under walks and pavements, use satisfactory soil material.

3. Under steps and ramps, use engineered fill.

4. Under building slabs, use engineered fill.

5. Under footings and foundations, use engineered fill.



OR SATISFACTORY SOIL MATERIAL. SEE ALSO SPECIFICATION 01010. ADDENDUM#1

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

D. Place topsoil, during dry weather, in areas where seeding, sodding, and planting will be performed. Place to the following minimum depths, up to finished grade elevations:

1. 6" for seeded areas

2. 4" for sodded areas

3. 24" for shrub beds

4. 18” for flower beds

3.13 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each engineered fill, fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place engineered fill, backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3. Moisten site soils as necessary to eliminate conditions that would cause dust or soil loss due to wind erosion. Do not apply water in a manner that will cause surface erosion of the soils due to water runoff.

4. If site grading is performed when soils are wet, the subgrade may pump to such a degree that it may have to be removed and replaced, or, require hydrated lime incorporated per IDOT Standard Specification Section 302 for drying prior to compaction. Such lime modification may be specifically required elsewhere in these contract documents for this project, regardless of soil moisture levels.

3.14 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 98 percent if cohesive engineered fill, or 100 percent if granular engineered fill.
OR 95% IF SOIL FILL. ADDENDUM#1

2. ~~Under pavements, in cut areas prepare the subgrade per the “Subgrade Preparation“ specification. In fill areas compact each layer of backfill or fill soil material at 95 percent.~~ ADDENDUM#1

3. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
ADDENDUM#1

4. Under turf or unpaved areas, ~~scarify and recompact top 6 inches below subgrade and~~ compact each layer of backfill or fill soil material at 90 percent.

5. For utility trenches, compact each layer of final backfill material at 95 percent under paved areas and building floors, and at 90 percent under turf or unpaved areas.

D. Compact aggregate Engineered Fill to not less than the 100% of maximum dry unit weight according to ASTM D 698.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Turf or Unpaved Areas: Plus or minus ~~1 inch.~~

2. Walks: Plus or minus ~~1 inch.~~

3. Pavements: Plus or minus ~~1/2 inch.~~

0.10 FEET
ADDENDUM#1

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.16 Reserved

3.17 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.

2. Determine that fill material and maximum lift thickness comply with requirements.

3. Determine, at the required frequency, that in-place density of compacted subgrade and fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Engineer.

E. Testing agency will test compaction of soils in place according to ASTM D 1556 or AASHTO T191 (sand cone), ASTM D 2167 (rubber balloon), ASTM D 6938 or Illinois Modified AASHTO T310 (Direct Transmission Density/Backscatter Moisture) (nuclear), and ASTM D 2937 (drive cylinder), as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three tests.

2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length, but no fewer than two tests.

3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length, but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.18 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.19 RESTORATION OF UTILITY TRENCHES

A. Wherever conduits are constructed under traveled roadways, driveways, sidewalks, or other traveled surfaces, a temporary surface shall be placed over the top of the trench as soon as possible after compaction has been satisfactorily completed. The temporary surface shall be a minimum of 8 inches of surface course aggregate, unless otherwise shown on the plans, mechanically compacted to the satisfaction of the Engineer.

1. Where ordered by the Engineer, dust control over temporary surfaces shall be accomplished by treatments of calcium chloride, bituminous material with seal coat aggregate, or water per Section 24 of the Standard Specifications for Water and Sewer Construction in Illinois.

B. Restore any paved or grass surfaces not otherwise addressed on the project drawings per the applicable provisions of Section 21 of the Standard Specifications for Water and Sewer Construction in Illinois.

3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION

GENERAL NOTES

1) ALL WORK SHALL BE IN CONFORMANCE WITH NEC2014 AND ALL LOCAL APPLICABLE CODES.

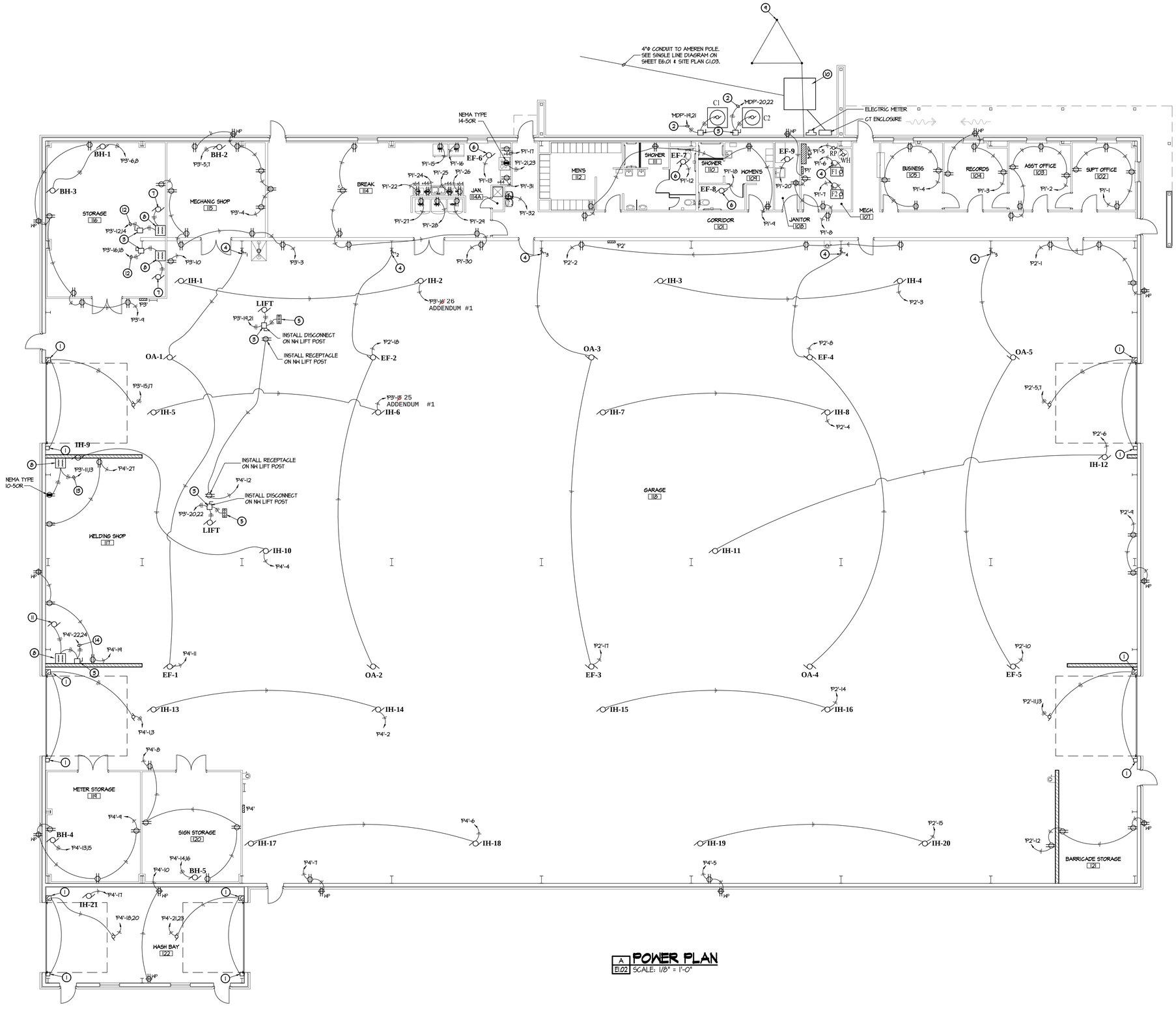
2) INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS.

PLAN LEGEND

	WIRING CONCEALED IN RACEWAY OR CONDUIT LOCATED IN WALL OR CEILING. EQUIPMENT GROUND TO BE INCLUDED FOR EACH CIRCUIT
	120V, 20 AMP DUPLEX RECEPTACLE W/ BOTTOM MOUNTED 16" A.F.F. UNLESS OTHERWISE NOTED
	120V, 20 AMP QUADPLEX RECEPTACLE W/ BOTTOM MOUNTED 18" A.F.F. UNLESS OTHERWISE NOTED
	G.F.C.I. TYPE 120V. DUPLEX RECEPTACLE
L1	ELECTRICAL PANEL W/ DESIGNATION
	ELECTRIC MOTOR
TT	MANUAL MOTOR STARTER (TT SWITCH) @ 44" A.F.F. "3" DESIGNATES 3-POLE
	SAFETY SWITCH SIZED AS NOTED
	208V-240V RECEPTACLE, NEMA TYPE W/ BOTTOM MOUNTED 16" A.F.F. UNLESS OTHERWISE NOTED
C	120V, DUPLEX RECEPTACLE MOUNTED ABOVE CEILING TILE WITH FACE FLUSH WITH CEILING
C	DOOR OPERATOR CONTROLLER @ 44" A.F.F.
IH	INFRA-RED HEATER
BH	BASEBOARD HEATER
OA	OUTSIDE AIR INTAKE
EF	EXHAUST FAN
C	CONDENSING UNIT
F	FURNACE
RP	RECIRCULATING PUMP
LIFT	4 POST TRUCK LIFT

PLAN NOTES

1. PROVIDE CONTROL AND POWER WIRING TO DOOR OPERATOR AND DOOR SENSOR.
2. PROVIDE (3) #6 THWN AND (1) #10 GROUND IN 3/4"Ø CONDUIT.
3. PROVIDE DISCONNECT, SEE SINGLE LINE DIAGRAM ON SHEET E6.01 FOR SIZE AND TYPE. INSTALL ON NA POLE OF LIFT.
4. THERMAL TRIP SWITCH AND POWER WIRING INCLUDING CONDUIT BY ELECTRICAL SUB-CONTRACTOR. COORDINATE WITH MECHANICAL SUB-CONTRACTOR. SWITCH SHALL HAVE AN INDICATOR LAMP TO INDICATE WHETHER THE FAN IS IN OPERATION OR NOT.
5. LIFT SWITCH BY LIFT SUPPLIER, WIRING BY ELECTRICAL SUB-CONTRACTOR. INSTALL ON NA POLE OF LIFT.
6. EXHAUST FAN SHALL BE WIRED THROUGH ROOM LIGHTS, WHEN LIGHTS ARE ON EXHAUST FAN SHALL OPERATE.
7. EXISTING AIR COMPRESSOR TO BE RELOCATED BY CITY, WIRING BY ELECTRICAL SUB-CONTRACTOR.
8. PROVIDE BUCK & BOOST TRANSFORMER, SEE SINGLE LINE DIAGRAM FOR SIZE AND TYPE.
9. 3-POINT GROUND FIELD WITH GROUNDING RODS AT 10' CENTERS. SEE POWER RISER DIAGRAM ON E6.01.
10. TRANSFORMER BY AMEREN, COORDINATE OPENING IN CONCRETE, SEE SINGLE LINE DIAGRAM ON SHEET E6.01.
11. EXISTING WELDER (DIALARC 250) TO BE RELOCATED BY CITY, WIRING BY ELECTRICAL SUB-CONTRACTOR.
12. PROVIDE (3) #8 THWN AND (1) #10 GROUND IN 3/4"Ø CONDUIT.
13. PROVIDE (3) #4 THWN AND (1) #8 GROUND IN 1"Ø CONDUIT.
14. PROVIDE (3) #1 THWN AND (1) #6 GROUND IN 1-1/4"Ø CONDUIT.



A E1.02 POWER PLAN
SCALE: 1/8" = 1'-0"

The Contractor shall obtain and verify all dimensions and conditions at job site and be fully responsible for same.

The Upchurch Group
architects
engineers
surveyors
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Mattoon, IL 61938
Phone: 217.235.3177
upchurchgroup@upchurchgroup.com

POWER PLAN

City of Mattoon
Public Works Building
401 Dewitt Avenue East
Mattoon, Coles County, Illinois 61938

Drawn TG
Date July 8, 2016
Project No.
2015018

NORTH

sheet no.
E1.02

PANEL 'P1' SCHEDULE

MAIN: 200A VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4
BUS: 200 AMPERE TYPE: NEMA-1 MOUNTING: SURFACE

DESCRIPTION	LOAD (WATTS)	BREAKER AMP.	P	CKT. NO.		CKT. NO.	BREAKER P	BREAKER AMP.	LOAD (WATTS)	DESCRIPTION
RECEPT. - SUPER. OFFICE (102)	720	20	1	1	2	2	1	20	900	RECEPT. - ASST. OFFICE (103)
RECEPT. - RECORDS (104) & EXTERIOR	720	20	1	3	4	4	1	20	720	RECEPT. - BUSINESS (105)
WATER HEATER & RE-CIRCULATION PUMP	847	20	1	5	6	6	1	20	1,428	FURNACE - F1
FURNACE - F2	1,428	20	1	7	8	8	1	20	900	RECEPT. - MECH. (107), JANITOR (108), EXTERIOR
RECEPT. - WOMEN'S (109) & MEN'S (112)	900	20	1	9	10	10	1	20	1,152	LIGHTS - SUPT(102), ASST(103) REC.(104), BUS.(105)
LIGHTS - CORRIDOR (101)	1,064	20	1	11	12	12	1	20	1,235	LIGHTS & EXHAUST - MENS (112)
LIGHTS & EXHAUST - BREAK (114)	1,663	20	1	13	14	14	1	20	302	LIGHTS - OUTSIDE CANOPY
REFRIGERATOR	750	20	1	15	16	16	1	20	750	REFRIGERATOR
RECEPT. - BREAK (114) NORTH COUNTER	180	20	1	17	18	18	1	20	888	LIGHTS & EXHAUST - WOMEN'S (109)
LIGHTS - MECHANICAL (107) & JANITOR (108)	142	20	1	19	20	20	1	20	667	EXHAUST FAN EF-4 - JANITOR (108)
STOVE	3,700	50	2	21	22	22	1	20	1,000	MICROWAVE (RECEPTACLE MOUNTED IN CABINET)
				23	24	24	1	20	1,680	COFFEE
COFFEE	1,680	20	1	25	26	26	1	20	1,000	MICROWAVE (RECEPTACLE MOUNTED IN CABINET)
VENDING MACHINE	690	20	1	27	28	28	1	20	690	VENDING MACHINE
VENDING MACHINE	690	20	1	29	30	30	1	20	900	RECEPT. - BREAK (114) & GARAGE (118) WEST
RECEPT. - BREAK (114) NORTH COUNTER	180	20	1	31	32	32	1	20	340	WATER COOLERS
SITE LIGHTS - NORTH WEST OF DRIVE	412	20	1	33	34	34	1	20	-	SPARE
SPARE	-	20	1	35	36	36	1	20	-	SPARE
SPARE	-	20	1	37	38	38	1	20	-	SPARE
SPARE	-	20	1	39	40	40	1	20	-	SPARE
SPARE	-	20	1	41	42	42	1	20	-	SPARE
10,022	TOTAL VA/ Φ A									
9,634	TOTAL VA/ Φ B									
10,162	TOTAL VA/ Φ C									
30,418	TOTAL VA									

PANEL 'P2' SCHEDULE

MAIN: 200A VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4
BUS: 200 AMPERE TYPE: NEMA-1 MOUNTING: SURFACE

DESCRIPTION	LOAD (WATTS)	BREAKER AMP.	P	CKT. NO.		CKT. NO.	BREAKER P	BREAKER AMP.	LOAD (WATTS)	DESCRIPTION
RECEPT. - GARAGE (118) NW CORNER	720	20	1	1	2	2	1	20	540	RECEPT. - GARAGE (118) WEST WALL MIDDLE
INFRARED HEATERS - IH-3, IH-4	1,104	20	1	3	4	4	1	20	1,104	INFRARED HEATERS - IH-1, IH-9
GARAGE DOOR - NORTHWEST	2,288	20	2	5	6	6	1	20	1,104	INFRARED HEATERS - IH-11, IH-12
				7	8	8	1	20	1,200	EF-4 AND OA-4
RECEPT. - GARAGE (118) NORTH	360	20	1	9	10	10	1	20	1,200	EF-5 AND OA-5
GARAGE DOOR - NORTHEAST	2,288	20	2	11	12	12	1	20	720	RECEPT. - BARRICADE STORAGE (121)
				13	14	14	1	20	1,104	SPARE- INFRARED HEATERS IH-15, IH-16
INFRARED HEATERS - IH-19, IH-20	1,104	20	1	15	16	16	1	20	720	RECEPT. - GARAGE (117) MIDDLENORTH
EF-3 AND OA-3	1,200	20	1	17	18	18	1	20	1,200	EF-2 AND OA-2
LIGHTS - EXTERIOR	570	20	1	19	20	20	1	20	760	LIGHTS - GARAGE (118) NORTH ROW
LIGHTS - GARAGE (118), NORTH ROW 9&10	1,500	20	1	21	22	22	1	20	1,500	LIGHTS - GARAGE (118), MIDDLE ROW 7&8
LIGHTS - GARAGE (118), MIDDLE ROW 5&6	1,500	20	1	23	24	24	1	20	1,500	LIGHTS - GARAGE (118) SOUTH ROW 3 & 4
LIGHTS - GARAGE (118), SOUTH ROW 1 &2	1,260	20	1	25	26	26	1	20	-	SPARE
SPARE	-	20	1	27	28	28	1	20	-	SPARE
SPARE	-	20	1	29	30	30	1	20	-	SPARE
SPARE	-	20	1	31	32	32	1	20	-	SPARE
SPARE	-	20	1	33	34	34	1	20	-	SPARE
SPARE	-	20	1	35	36	36	1	20	-	SPARE
SPARE	-	20	1	37	38	38	1	20	-	SPARE
SPARE	-	20	1	39	40	40	1	20	-	SPARE
SPARE	-	20	1	41	42	42	1	20	-	SPARE
7,338	TOTAL VA/ Φ A									
8,542	TOTAL VA/ Φ B									
9,512	TOTAL VA/ Φ C									
25,442	TOTAL VA									

PANEL 'P3' SCHEDULE

MAIN: 225A VOLTAGE: 208Y/120V PHASE: 3 WIRE: 4
BUS: 225 AMPERE TYPE: NEMA-1 MOUNTING: SURFACE

DESCRIPTION	LOAD (WATTS)	BREAKER AMP.	P	CKT. NO.		CKT. NO.	BREAKER P	BREAKER AMP.	LOAD (WATTS)	DESCRIPTION
LIGHTS - STORAGE (116) & MECHANIC SHOP (115)	768	20	1	1	2	2	1	20	448	LIGHTS - UPPER STORAGE ABOVE STOR. & MECH.
RECEPT. - MECHANIC SHOP (115) S & E WALL	1,080	20	1	3	4	4	1	20	1,080	RECEPT. - MECHANIC SHOP (115) N & W WALL
BH-2	1,500	20	2	5	6	6	2	20	3,000	BH-1 & BH-3
				7	8	8				
RECEPT. - STORAGE (116)	900	20	1	9	10	10	1	20	180	RECEPT. - GARAGE (118) SW CORNER
WELDERS (MILLERMATIC 251)	9,660	70	2	11	12	12	2	40	5,060	AIR COMPRESSOR (STORAGE 116)
				13	14	14				
GARAGE DOOR - SOUTHWEST	2,288	20	2	15	16	16	2	40	5,060	AIR COMPRESSOR (STORAGE 116)
				17	18	18				
VEHICLE LIFT - WEST	11,100	50	3	19	20	20	3	50	11,100	VEHICLE LIFT - EAST
				21	22	22				
				23	24	24				
ADDENDUM #1 ~~SPARE~~ INFRARED HEATERS IH-5,IH-6	1,104	-	20	25	26	26	1	20	1,104	- ~~SPARE~~ INFRARED HEATERS IH-1,IH-2 ADDENDUM #1
SPARE	-	20	1	27	28	28	1	20	-	SPARE
SPARE	-	20	1	29	30	30	1	20	-	SPARE
SPARE	-	20	1	31	32	32	1	20	-	SPARE
SPARE	-	20	1	33	34	34	1	20	-	SPARE
SPARE	-	20	1	35	36	36	1	20	-	SPARE
SPARE	-	20	1	37	38	38	1	20	-	SPARE
SPARE	-	20	1	39	40	40	1	20	-	SPARE
SPARE	-	20	1	41	42	42	1	20	-	SPARE
18,226	TOTAL VA/ Φ A									
14,314	TOTAL VA/ Φ B									
20,684	TOTAL VA/ Φ C									
53,224	TOTAL VA									

PANEL 'MDP' SCHEDULE

MAIN BREAKER: 800A VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4
BUS: 800 AMPERE TYPE: NEMA-1 MOUNTING: SURFACE

DESCRIPTION	LOAD (WATTS)	BREAKER AMP.	P	CKT. NO.		CKT. NO.	BREAKER P	BREAKER AMP.	LOAD (WATTS)	DESCRIPTION
				1	2	2				
PANEL 'P1'	30,418	200	3	3	4	4	3	200	25,442	PANEL 'P2'
				5	6	6				
				7	8	8				
PANEL 'P3'	53,224	225	3	9	10	10	3	225	41,176	PANEL 'P4'
				11	12	12				
				13	14	14				
SPACE	-	-	3	15	16	16	3	-	-	SPACE
				17	18	18				
				19	20	20				
BREAK ROOM/LOCKER ROOM AC - 'C1'	5,415	60	2	21	22	22	2	50	4,785	OFFICE SPACE AC - 'C2'
SPARE	-	-		23	24	24	1	-	-	SPARE
SPACE	-	-		25	26	26	1	-	-	SPACE
SPACE	-	-		27	28	28	1	-	-	SPACE
SPACE	-	-		29	30	30	1	-	-	SPACE
55,187	TOTAL VA/ Φ A									
55,187	TOTAL VA/ Φ B									
50,086	TOTAL VA/ Φ C									
160,460	TOTAL VA									

PANEL 'P4' SCHEDULE

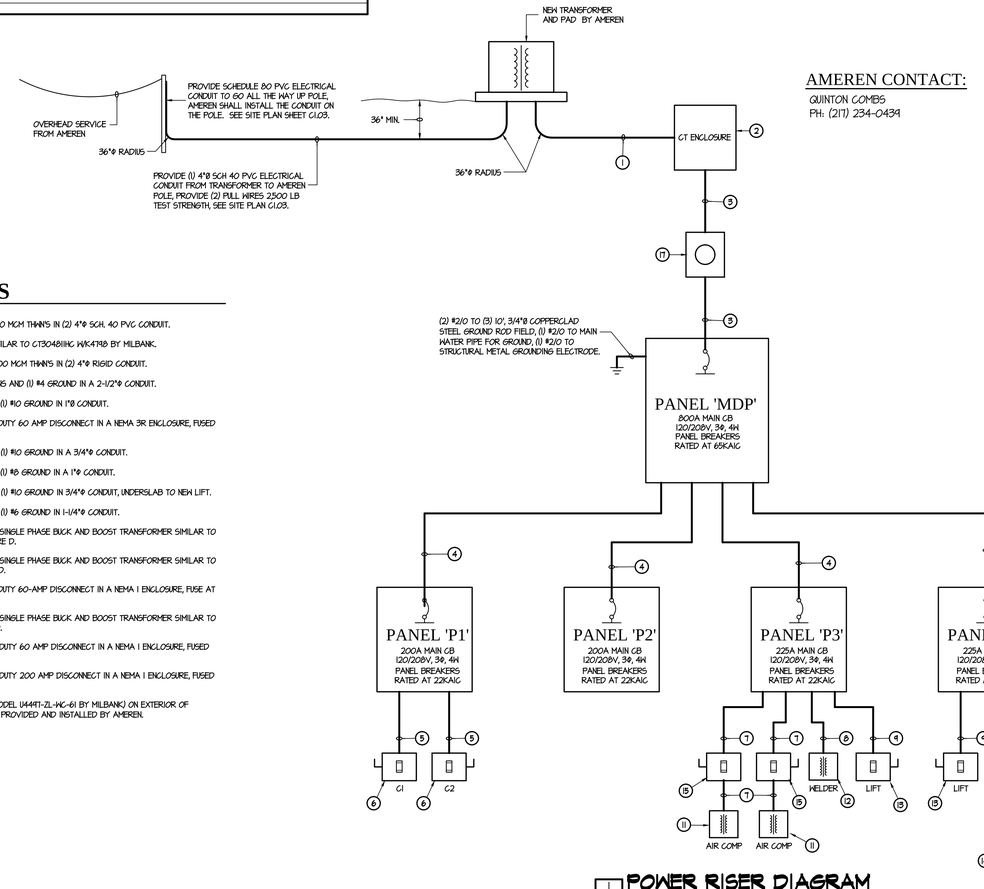
MAIN: 225A VOLTAGE: 208Y/120 PHASE: 3 WIRE: 4
BUS: 225 AMPERE TYPE: NEMA-1 MOUNTING: SURFACE

DESCRIPTION	LOAD (WATTS)	BREAKER AMP.	P	CKT. NO.		CKT. NO.	BREAKER P	BREAKER AMP.	LOAD (WATTS)	DESCRIPTION
						2				
GARAGE DOOR - SOUTHEAST	2,288	20	2	1	2	4	1	20	1,104	INFRARED HEATERS - IH-13, IH-14
				3	4	6	1	20	1,104	INFRARED HEATERS - IH-9, IH-10
RECEPT. - GARAGE STOR. (118) EAST WALL NORTH	360	20	1	5	6	8	1	20	1,104	INFRARED HEATERS - IH-17, IH-18
RECEPT. - GARAGE (118) EAST WALL SOUTH	360	20	1	7	8	10	1	20	720	RECEPT. - SIGN STORAGE (120)
RECEPT. - METER STORAGE (119)	720	20	1	9	10	12	1	20	360	RECEPT. - WASH BAY (122) & EXTERIOR
EF-1 AND OA-1	1,200	20	1	11	12	14	1	20	360	RECEPT. - ON NH LOFT POST
				13	14	16				
BH-4	1,500	20	2	15	16		2	20	1,500	BH-5
INFRARED HEATERS - IH-21	552	20	1	17	18	20	1	20	2,288	GARAGE DOOR - WASH BAY (122) SOUTH
RECEPT. - GARAGE (118) SOUTH & EXTERIOR	540	20	1	19	20					
				21	22	24	2	125	20,700	WELDER (DIALARC 250)
GARAGE DOOR - WASH BAY (122) NORTH	2,288	20	2	23	24					
LIGHTS - METER (119), SIGN (120), WASH BAY (122)	1,152	20	1	25	26	26	1	20	256	LIGHTS - UPPER STORAGE ABOVE METER & SIGN
RECEPT. - WELDING SHOP (111)	720	20	1	27	28	28	1	20	-	SPARE
SPARE	-	20	1	29	30	30	1	20	-	SPARE
SPARE	-	20	1	31	32	32	1	20	-	SPARE
SPARE	-	20	1	33	34	34	1	20	-	SPARE
SPARE	-	20	1	35	36	36	1	20	-	SPARE
SPARE	-	20	1	37	38	38	1	20	-	SPARE
SPARE	-	20	1	39	40	40	1	20	-	SPARE
SPARE	-	20	1	41	42	42	1	20	-	SPARE
7,920	TOTAL VA/ Φ A									
17,042	TOTAL VA/ Φ B									
16,214	TOTAL VA/ Φ C									
41,176	TOTAL VA									

LIGHTING FIXTURE SCHEDULE

MARK	MOUNTING: SURFACE	MOUNTING: RECESSED	MANUFACTURER	MODEL NO.	LAMP	REMARKS
			COLUMBIA	P424-3326-L236-S-EU		3" PARABOLIC TROFFER W/0 CELL SEMISPECULAR
F1		CEILING	LITHONIA	2PM3 6 B 3 32 I8LD MVOLT GEBI0I5	(3) F32, T8	LOUVER, 2'X4', ELECTRONIC BALLAST
			WILLIAMS	HE3G-D24-332-365-EB2/I-UNV		INBOARD/OUTBOARD SWITCHING, LAY-IN CEILING
			COLUMBIA	JT824-2326-AI2L25-EU		2'x4' STATIC TROFFER, WITH ACRYLIC LENS
F2		CEILING	LITHONIA	2GT8 2 32 AI2I25 MVOLT GEBI0I5	(2) 32W, T8	2-LAMP, ELECTRONIC BALLAST, LAY-IN CEILING
			WILLIAMS	LPT-24-232-5AI2I25-EB2-UNV		
			COLUMBIA	JT824-2326-AI2L25-EU-EL		SAME AS F2 EXCEPT EQUIPPED WITH EMERGENCY
F2A		CEILING	LITHONIA	2GT8 2 32 AI2I25 MVOLT GEBI0I5 EL	(2) 32W, T8	BATTERY PACK AND INTEGRAL TEST SWITCH
			WILLIAMS	LPT-24-232-5AI2I25-EB2-UNV-EMTA		
			COLUMBIA	WTI4-232F-AI2L25-EU		1'x4' STATIC WET LOCATION TROFFER, WITH ACRYLIC
F3		CEILING	LITHONIA	WRT F 2 32 - AI2I25 MVOLT GEBI0I5	(2) 32W, T8	LENS, 2-LAMP, ELECTRONIC BALLAST, HARD CEILING
			WILLIAMS	EPF-514-232-R-AI2I25-WET-EB2-UNV		
			COLUMBIA	WTI4-232F-AI2L25-EU-EL		SAME AS F3 EXCEPT EQUIPPED WITH EMERGENCY
F3A		CEILING	LITHONIA	WRT F 2 32 - AI2I25 MVOLT GEBI0I6-EL	(2) 32W, T8	BATTERY PACK AND INTEGRAL TEST SWITCH
			WILLIAMS	EPF-514-232-R-AI2I25-WET-EB2-UNV-EMTA		
			COLUMBIA	JT824-3326-AI2L25-12EU		2'x4' STATIC TROFFER, WITH ACRYLIC LENS
F4		CEILING	LITHONIA	2GT8 3 32 AI2I25 MVOLT GEBI0I5	(3) 32W, T8	3-LAMP, ELECTRONIC BALLAST, LAY-IN CEILING
			WILLIAMS	LPT-24-332-5AI2I25-EB2/I-UNV		INBOARD/OUTBOARD SWITCHING
			COLUMBIA	JT824-3326-AI2L25-12EU-EL		SAME AS F4 EXCEPT EQUIPPED WITH EMERGENCY
F4A		CEILING	LITHONIA	2GT8 3 32 AI2I25 MVOLT GEBI0I6-EL	(3) 32W, T8	BATTERY PACK AND INTEGRAL TEST SWITCH
			WILLIAMS	LPT-24-332-5AI2I25-EB2/I-UNV-EMT		
			COLUMBIA	CSR4-232-U-EU		4' INDUSTRIAL, WITH UPLIGHT
F5	CEILING		LITHONIA	LA 2 32 MVOLT GEBI0I5	(2) 32W, T8	2-LAMP, ELECTRONIC BALLAST
			WILLIAMS	80-4-232-UL-EB2-UNV		
			COLUMBIA	XEM4-232-RP-EU		4' LOW PROFILE ENCLOSED AND GASKETED INDUSTRIAL,
F6	CEILING		LITHONIA	FEM4 2 32 - EMPCL MVOLT GEBI0I5 LP835	(2) 32W, T8	2-LAMP, ELECTRONIC BALLAST, POLYCARBONATE
			WILLIAMS	96-4-232-PC-EB2-UNV		LENS
			COLUMBIA	XEM4-232-RP-EU-EL		SAME AS F6 EXCEPT EQUIPPED WITH EMERGENCY
F6A	CEILING		LITHONIA	FEM4 2 32 - EMPCL MVOLT GEBI0I5 LP835-EL	(2) 32W, T8	BATTERY PACK AND INTEGRAL TEST SWITCH
			WILLIAMS	96-4-232-PC-EB2-UNV-EM		
	ADDENDUM#1		HUBBELL	LC6LED-120-6LCLED5-40K8-WH	LED	6" DOWNLIGHT, RECESSED, 1,000 LUMEN, 4,000 K
F7		CEILING	LITHONIA	REAL6C D6	(1) 26W	LED LAMP, 120V, WET LISTED, SEMI-SPECULAR
			WILLIAMS	LED560-1100-MB/CAL		PHOTOCELL CONTROL
			HUBBELL	PVL3 - 30LU - 4K - PC	LED	LED WALL MOUNTED AREA LIGHT, 5,000 LUMEN
F8	WALL		LITHONIA	THP LED 30C 700 40K T3M MVOLT PE	(1) 68W	4,000 K, UNIVERSAL VOLTAGE TAP, PHOTOCELL CONTROL.
						FINISH TO BE SELECTED BY OWNER.
	ADDENDUM#1		HUBBELL	PVL3-180L-4K-035U-DB-PC	LED	LED WALL MOUNTED AREA LIGHT, 2,000 LUMEN
F9	WALL		LITHONIA	THP LED 10C 700 40K T3M MVOLT PE	(1) 26W	4,000 K, UNIVERSAL VOLTAGE TAP, PHOTOCELL CONTROL.
						FINISH TO BE SELECTED BY OWNER.
			COLUMBIA	W2-214-EPU		2' VANITY FIXTURE, TWO 14 WATT T5 LAMPS,
F10	WALL		LITHONIA	WL 2 14 - MVOLT GEBI0I5	(2) 14W, T5	ELECTRONIC BALLAST
			WILLIAMS	WMA-2-214T5S-A-EB2-UNV		MOUNT ABOVE BATHROOM MIRROR
			DUAL-LITE	HGX U R W 5W	LED 6	COMBINATION SINGLE FACE EXIT SIGN W/EMERGENCY
F11	UNIV		LITHONIA	LHQM S H 3 R N	(2) 5W	LIGHTS, RED LETTERS WHITE FACE, LED
			WILLIAMS	EXIT/EM-SF-R-WHT		120V, WITH EMERGENCY BATTERY BACK-UP
			COLUMBIA	LLHV4-5OL-W5T-EU	LED	LED HIGH BAY, WIDE DISTRIBUTION, 12,000 LUMEN
F12		CEILING	LITHONIA	IBL 12L WD - LPT50 MVOLT	125W	NO SHIELDING, 5,000K, MULTI-TAP TRANSFORMER
						DAMP LISTED, RATED FOR TEMPS FROM -10° TO 45° C
			COLUMBIA	LLHV4-5OL-W5T-EU-ELL14	LED	SAME AS F12 EXCEPT EQUIPPED WITH EMERGENCY
F12A		CEILING	LITHONIA	IBL 12L WD - LPT50 MVOLT-12412	125W	BATTERY PACK
	ADDENDUM#1		HUBBELL	WP9L-3-P70-120L-4K-UNV-DB-PC		18,000 LUMEN LED AREA FIXTURE ON 20' ROUND POLE,
F13	20' POLE		LITHONIA	MR2 LED 60C 1000 40K T3M MVOLT RPA DDXBD, POLE: RSS 20 4B DMRAS DDB	(1) 206 W	4,000 K, UNIVERSAL VOLTAGE TAP, PHOTOCELL CONTROL, DARK BRONZE FINISH ON FIXTURE AND POLE

ADDENDUM #1 - PHILIPS COMMERCIAL LIGHTING FIXTURES WILL BE ALLOWED AS AN "OR EQUAL" SUBSTITUTION. BIDDERS SHALL HAVE FULL RESPONSIBILITY FOR VERIFYING THAT ANY SUBSTITUTIONS MEET OR EXCEED THE MANUFACTURER'S PUBLISHED SPECIFICATIONS FOR THE MODEL #'S NAMED ABOVE.



AMEREN CONTACT:
QUINTON COMBS
PH: (217) 234-0434

PLAN NOTES

1. PROVIDE (2) SETS OF (4) 500 MCM THWN IN (2) 4"Φ SCH. 40 PVC CONDUIT.
2. PROVIDE GT ENCLOSURE SIMILAR TO GT3048IIHG W/K4748 BY MILBANK.
3. PROVIDE (2) SETS OF (4) 500 MCM THWN IN (2) 4"Φ RIGID CONDUIT.
4. PROVIDE (4) 250 MCM THWN AND (1) #4 GROUND IN A 2-1/2"Φ CONDUIT.
5. PROVIDE (3) #6 THWN AND (1) #10 GROUND IN 1"Φ CONDUIT.
6. PROVIDE A 2-POLE HEAVY DUTY 60 AMP DISCONNECT IN A NEMA 3R ENCLOSURE, FUSED AT 60 AMPS.
7. PROVIDE (3) #8 THWN AND (1) #10 GROUND IN A 3/4"Φ CONDUIT.
8. PROVIDE (3) #4 THWN AND (1) #8 GROUND IN A 1"Φ CONDUIT.
9. PROVIDE (4) #8 THWN AND (1) #10 GROUND IN 3/4"Φ CONDUIT, UNDERSLAB TO NEW LIFT.
10. PROVIDE (3) #1 THWN AND (1) #6 GROUND IN 1-1/4"Φ CONDUIT.
11. PROVIDE A 208V TO 230V SINGLE PHASE BUCK AND BOOST TRANSFORMER SIMILAR TO MODEL T509V46F BY SQUARE D.
12. PROVIDE A 208V TO 230V SINGLE PHASE BUCK AND BOOST TRANSFORMER SIMILAR TO MODEL E5546F BY SQUARE D.
13. PROVIDE A 3-POLE HEAVY DUTY 60-AMP DISCONNECT IN A NEMA 1 ENCLOSURE, FUSE AT 50-AMPS.
14. PROVIDE A 208V TO 230V SINGLE PHASE BUCK AND BOOST TRANSFORMER SIMILAR TO MODEL 3546F BY SQUARE D.
15. PROVIDE A 2-POLE, HEAVY DUTY 60 AMP DISCONNECT IN A NEMA 1 ENCLOSURE, FUSED AT 40 AMPS.
16. PROVIDE A 2-POLE, HEAVY DUTY 200 AMP DISCONNECT IN A NEMA 1 ENCLOSURE, FUSED AT 125 AMPS.
17. PROVIDE METER SOCKET (MODEL U4491-ZL-WG-61 BY MILBANK) ON EXTERIOR OF BUILDING. METER SHALL BE PROVIDED AND INSTALLED BY AMEREN.

1 POWER RISER DIAGRAM
E6.01 SCALE: N.T.S.

The Contractor shall obtain and verify all dimensions and conditions at job site and be fully responsible for same.

The Upchurch Group
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LIGHTING FIXTURE AND PANEL SCHEDULES

City of Mattoon
Public Works Building
401 Dewitt Avenue East
Mattoon, Coles County, Illinois 61938

Drawn TG
Date July 8, 2016
Project No. 2015018

NORTH

sheet no. E6.01