NOTES:
1. FEEDERS 3 AND 4 SWITCHGEAR WILL BE REMOVED.
2. THE EAST BUS CONNECTION BETWEEN NORTH AND SOUTH BUS WILL BE REMOVED.
3. FEEDER 3 AND 4 FOUNDATION REMOVED.
NOTES:

1. PRIOR TO FABRICATION, CONTRACTOR SHALL FIELD MEASURE EXISTING CONDITIONS TO PREPARE SHOP DRAWING. ALL FIELD MEASUREMENTS SHALL BE AT CONTRACTOR'S EXPENSE.

2. DRAWINGS ARE FURNISHED AS A GUIDE. CONTRACTOR SHALL FURNISH THE RELEVANT INSTRUCTIONS OF THE APPLICABLE NATIONAL OR LOCAL ENGLIC. CONSTRUCTION, HEALTH AND SAFETY CODES AT THE CONTRACTOR'S EXPENSE.

3. SELECT THE APPROPRIATE RULES AND REGULATIONS FOR THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CODES.

4. CONTRACTOR:
   A. MEASURE ABOVE AND BELOW OIL AND WATER LEVELS THAT ARE TO BE TAKEN FOR BOTH CEMENT OR CRETE.
   B. REPORT ALL MEASUREMENTS TO THE CONTRACTOR'S SHOP DRAWING. SHEET METAL CHARTS SHOWING WHERE THE MEASUREMENTS WERE TAKEN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS.

5. BUCKETS:
   A. SELECT TYPE OF BLOCKS AND MIXTURE OF 3:1:1 COMPOSITION.
   B. SELECT BLOCKS TO BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.

6. COMPLETE MATERIALS
   A. CONCRETE
      1. SUPERIORITY 30-Day Compressive Strength: 4000 psi
      2. CEMENT CONTENT: 5000 psi
      3. WET DENSITY: 140 lbs/cu. ft
      4. WATER CEMENT RATIO: 0.40
   B. CONCRETE TEMPERATURE DETERMINATION
      1. TECHNIQUE TO DETERMINE CONCRETE TEMP.
      2. CONCRETE TEMPERATURE TO BE DETERMINED DURING FABRICATION TO ACCOMMODATE THE CONTRACTOR'S REQUEST.

7. COMPLETE DESIGN
   A. CONCRETE FABRICATION AND PLANT CONCRETE IN ACCORDANCE WITH ACI 318-11 SPECIFICATIONS OF STRUCTURAL CONCRETE FOR BUILDINGS.
   B. CONCRETE STRENGTH TO BE IN ACCORDANCE WITH THE FOLLOWING
      - COVER:
        1. (TYPE A) 1/2" PLATE
        2. (TYPE B) 1/2" EPS
        3. (TYPE C) 1/2" EPS
   C. PLANT CONCRETE FABRICATION ACCORDING TO ACI 318-11 STANDARD FOR CONCRETE.
   D. FABRICATE CONCRETE WITH A 2-INCH MINIMUM COVER.
   E. INSTALL WATER BOUNDARY AT ALL CONSTRUCTION Joints.
   F. ALL WIRE MESH MUST BE CAST INTO A 3-INCH MINIMUM COVER. ALL WIRE MESH MUST BE CAST INTO A 3-INCH MINIMUM COVER.
   G. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   H. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   I. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   J. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   K. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   L. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   M. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   N. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   O. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.
   P. INSTALL BOLTS FOR ALL REBAR SUPPORTS IN CONCRETE.

8. STEEL MATERIALS
   A. STRUCTURAL STEEL, BEAMS
      1. TYPICAL DIMENSIONS: 10 INCH WIDE X 6 INCH HIGH X 2 INCH THICK
      2. HIGH STRENGTH BOLTS:
         1) BOLTS SHALL BE 3/4 INCH DIAMETER AND 3" LONG (WITH HOLE)
         2) BOLTS SHALL BE 3/4 INCH DIAMETER AND 3" LONG (WITH HOLE)
         3) BOLTS SHALL BE 3/4 INCH DIAMETER AND 3" LONG (WITH HOLE)
   B. ANCHOR BOLTS, WELDING AS SHOWN:
      1. WELDING: (A) 7/8" X 1 1/2" X 1 1/2" SADDLE BARS.
      2. TYPICAL DIMENSIONS: 1/2" X 1/2" X 1/2" SQUARE BARS.
      3. SHAPED CORNERS SHALL BE 1/2" X 1/2" X 1/2" SQUARE BARS.
   C. EXPANSION JOINTS:
      1. INSTALL JOINTS 3" WITH 1 1/2" DIAMETER WELDED BARS.
      2. INSTALL JOINTS 3" WITH 1 1/2" DIAMETER WELDED BARS.
      3. INSTALL JOINTS 3" WITH 1 1/2" DIAMETER WELDED BARS.
      4. INSTALL JOINTS 3" WITH 1 1/2" DIAMETER WELDED BARS.
      5. INSTALL JOINTS 3" WITH 1 1/2" DIAMETER WELDED BARS.

10. CONSTRUCTION
    A. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    B. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    C. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
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    U. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    V. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    W. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    X. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    Y. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.
    Z. SHANKS AND BRACKETS SHALL BE IN ACCORDANCE WITH THE CONTRACTOR'S REQUEST.

NOTES:
1. FOUNDATION LABELS:
   S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14

EASTERN ILLINOIS UNIVERSITY
69KV SUBSTATION

DESIGN BY:
D. BAUGHER

DRAWN BY:
C. HICKMAN

CHECKED BY:
T. MONTAG

DATE:
02-16-10

CADD FILE NAME:
09014Q-ES02Q.dwg

DRAWING NO.
ES021

REV.
N:
5/3/10 10:58am
chickman
NOTES:
1. USE SAME FOUNDATION, BASEPLATE, AND ANCHOR BOLT DIMENSIONS AS S10.
2. FOUNDATION LABELS:
   515 - TRANSFORMER
   516 - CABLE SUPPORT STRUCTURE
   517 - 15KV SWITCHGEAR
   518 - 5KV SWITCHGEAR
3. SAW CUT FOUNDATION AND REMOVE TO FULL DEPTH (~3 FT.). CUT FOUNDATION TO ACCOMMODATE THE INSTALLATION OF THE NEW 15KV SWITCHGEAR FOUNDATION.

REV.
DATE
04-16-10
05-18-10
05-25-10

DESCRIPTION
ISSUED FOR CONSTRUCTION
ADDED CONDUIT TRENCH
MODIFIED S17

DWN CMH CMH RLV

DMB DMB DMB

Sealed
Only When
Signed in
Blue Ink

LICENSED
ENGINEER
STRUCTURAL

EXP.
DATE
11-30-2010

Engineers — Architects — Technicians
Design — Construction — Field Service
(913) 681-2881
16041 Foster Street, P.O. Box 1000, Stilwell, Kansas 66085-1000
Illinois License # 184-000823

EASTERN ILLINOIS UNIVERSITY
7TH STREET SUBSTATION FOUNDATION LAYOUT

DESIGN BY: D. BAUGHER
DRAWN BY: C. HICKMAN
CHECKED BY: T. MONTAG
DATE: 02-16-10

SEGA PROJECT NO. 09-0140
CADD FILE NAME: 090140-ESQ22.dwg
DRAWING NO. ES022

REV. 2

EIJ PROJECT # 10-4535
15KY CIRCUIT BREAKER FOUNDATION (S12)

SCHEDULE

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NOTES:
1. **GROUND LEVEL VERTICAL BRACKETS** SHOWN CORRECTLY. USE BRACKETS FOR LINE PLATE IN MASONRY OR CONCRETE.
2. **PLATE AND ANCHOR BOLTS** PROVIDED BY GENERAL CONTRACTOR.
NOTES:
1. MATCH T.O.C. ELEVATION WITH EXISTING CONCRETE FOUNDATIONS.
2. SEE DRAWING ES041 FOR DETAILS ABOUT CONDUITS.
TO MANHOLE #111

TO PLANT GROUND

LEGEND
- EXOTHERMIC CONNECTION
- V* GROUND ROD
- GROUND WIRE STUB-UP
- 4/0 COPPER CABLE

KEY DRAWINGS
1. FOR FOUNDATION PLAN SEE DWG# ES020
2. FOR THE ENERGY CENTER SITE GROUNDING PLAN SEE DWG# UE200.
3. FOR THE ENERGY CENTER SITE PREP GROUNDING PLAN SEE DWG# UE201.
4. FOR GROUNDING DETAILS, SEE DWG#’S ES032, ES033, ES034.

NOTES
1. GROUND GRID TO BE INSTALLED AS DIMENSIONED.
2. GROUND GRID TO BE BURIED A MINIMUM OF 24" BELOW DIRT GRADE. GROUND GRID TO EXTEND A MINIMUM OF 3-0" OUTSIDE FENCE.
3. GROUND GRID IS DESIGNED FOR A 2000 QM SLAG RESISTIVITY VALUE.
4. GROUND GRID IS DESIGNED FOR A 1,962 AMP FAULT CURRENT WITH A GROWTH FACTOR OF 1.5 AND SAFETY FACTOR 1.2.
5. IEEE 80 SPLIT FACTOR: AVAILABLE GRID CURRENT.
6. GROUND GRID IS DESIGNED FOR A 100 QM SOIL RESISTIVITY.
7. ALL GROUNDING CONDUCTOR ABOVE DIRT GRADE, CONNECTING STRUCTURES AND EQUIPMENT TO THE MAIN GROUND GRID, SHALL BE 4/0 COPPER CABLE.
8. ALL FENCE POSTS, FABRIC AND BARB WIRE TO BE GROUNDED. FENCE TO BE GROUNDED EVERY 50'.
9. FIELD TO CONNECT GROUND GRID TO SUBSTATION LIGHTS.

DESIGN BY: K. DUNN
DRAWN BY: T. OSTERTAG
CLIENT ID: HON00103
CHECKED BY: B. CULTON
DATE: 12-09-09
SEGA PROJECT NO.: 09-0140
CADD FILE NAME: 0914Q-ES030.dwg
DRAWING NO.: ES030
REV.: 0

EASTERN ILLINOIS UNIVERSITY
69KV SUBSTATION GROUNDING LAYOUT

EASTERN ILLINOIS UNIVERSITY
69KV SUBSTATION GROUNDING LAYOUT

TO PLANT GROUND
RING GROUNDING

TO PLANT GROUND
RING GROUNDING

TO PLANT GROUND
RING GROUNDING
LEGEND

1. INDICATES NEW FOUNDATION
2. INDICATES EXISTING FOUNDATION
3. INDICATES CABLE CONNECTION
4. INDICATES CABLE CONNECTION
5. INDICATES NEW GROUND ROD
6. INDICATES EXISTING GROUND ROD
7. INDICATES NEW 10' GROUND ROD
8. INDICATES EXISTING CABLE CONNECTION
9. INDICATES NEW GROUNDING TO BE INSTALLED
10. INDICATES EXISTING GROUNDING
11. INDICATES NEW GROUND WIRE STUB-UP

NOTES
1. GROUND GRID TO BE BURIED A MINIMUM OF 24" BELOW DIRT GRADE
2. GROUND GRID CABLE TO BE 4/0 BARE COPPER CABLE
3. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL GROUND CABLE, GROUND RODS, CLAMPS, CONNECTORS, AND EXOTHERMIC/MECHANICAL CONNECTOR MATERIALS

REFERENCE DRAWINGS
1. FOR FOUNDATION PLAN SEE DRAWING ES022
2. FOR GROUNDING DETAILS SEE DRAWING'S ES032, ES033, ES034

REV DATE 04-16-10
DESCRIPTION ISSUED FOR CONSTRUCTION
DWN TMO CHK BAC
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Sealed Only When Signed in Blue Ink
062-047120 REGISTERED PROFESSIONAL ENGINEER
EXP DATE 11-30-2011
"■'■
Engineers - Architects - Technicians
Design - Construction - Field Service
(913) 681-2881
16041 Foster P.O. Box 1000
Stilwell, Kansas 66085-1000
Illinois License #184-000823
EASTERN ILLINOIS UNIVERSITY
7TH STREET SUBSTATION
GROUNDING LAYOUT
DESIGN BY K. DUNN
DRAWN BY T. OESTERTAG
CHECKED BY B. CULTON
DATE 01-12-10
SEGA PROJECT NO 09-0140
CADD FILE NAME Q914Q-ES031 dwg
DRAWING NO ES031 REV 0

EASTERN ILLINOIS UNIVERSITY
EUI PROJECT # 10-4535
7TH STREET SUBSTATION
GROUNDING LAYOUT

ES031
GENERAL NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL GROUND CABLE, GROUND RODS, CLAMPS, CONNECTORS, AND EXOTHERMIC/MECHANICAL CONNECTION MATERIALS.
2. ALL BELOW GRADE CONNECTIONS SHALL BE HEAVY DUTY TYPE.
3. GROUND FENCE POSTS AND FABRIC AT A MAXIMUM INTERVAL OF TWENTY (20) FEET.
4. GROUND EVERY GATE POST AND CORNER POST.
5. FENCE GROUND SHALL BE ROUTED 3'-0" OUTSIDE THE FENCE FOR THE ENTIRE LENGTH OF THE FENCE.
6. CONSTRUCTION PLAN AND DETAIL FOR THE INSTALLATION OF PERIMETER FENCE IS FOUND ON DWG C803.
7. ATTACH #2 BARE COPPER CABLE TO TOP FENCE POST WITH SPLIT BOLT CLAMP, ANDERSON GC-110, SIZED FOR FENCE POST.
8. ATTACH BARE COPPER CABLE TO BARB WIRE AND FENCE FABRIC WITH TINNED BRONZE SPLIT BOLT CONNECTOR, ANDERSON CPS.
9. WARNING SIGN INSTALLATION (TYPICAL)
   - ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.
   - PLACE SUBSTATION FENCE WARNING SIGNS CENTERED ON ALL GATES, 25' FROM FENCE CORNERS, AND AT EVENLY SPACED INTERVALS NO GREATER THAN 50' APART.
   - TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
   - ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.

KEY NOTES:
- GROUND BUS (BY SWITCHGEAR MANUFACTURER)
- GROUND ROD CONNECTOR
- #4/0 AWG BCW GROUND CONDUCTOR (TYPICAL)
- 4/0 GROUND GRID (TYPICAL)
- CRUSHED ROCK SURFACE-

NOTES:
1. PLACE SUBSTATION FENCE WARNING SIGNS CENTERED ON ALL GATES, 25' FROM FENCE CORNERS, AND AT EVENLY SPACED INTERVALS NO GREATER THAN 50' APART.
2. TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
3. ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.
   - PLACE SUBSTATION FENCE WARNING SIGNS CENTERED ON ALL GATES, 25' FROM FENCE CORNERS, AND AT EVENLY SPACED INTERVALS NO GREATER THAN 50' APART.
   - TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
   - ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.

DANGER
KEEP OUT!
HIGH VOLTAGE INSIDE WILL CAUSE SEVERE INJURY OR DEATH
- TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
- ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.

NOTES:
1. PLACE SUBSTATION FENCE WARNING SIGNS CENTERED ON ALL GATES, 25' FROM FENCE CORNERS, AND AT EVENLY SPACED INTERVALS NO GREATER THAN 50' APART.
2. TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
3. ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.
   - PLACE SUBSTATION FENCE WARNING SIGNS CENTERED ON ALL GATES, 25' FROM FENCE CORNERS, AND AT EVENLY SPACED INTERVALS NO GREATER THAN 50' APART.
   - TOP EDGE OF ALL SIGNS TO BE 5'-0" ABOVE GROUND.
   - ATTACH SIGNS TO FENCE WITH ELECTROMARK FENCE CLIPS.
NOTES:
1. GROUND TABS FOR STRUCTURE SUPPLIED WITH STRUCTURE BY MANUFACTURER.
2. CONTRACTOR IS RESPONSIBLE FOR SUPPLIES AND INSTALLING ALL GROUNDING CABLE, GROUNDING RODS, CLAMPS, CONNECTORS, AND EXOTHERMIC/MECHANICAL CONNECTION MATERIALS.

scale in feet

1. POWER CABLE GROUNDING DETAIL
2. TYPICAL MANHOLE GROUNDING DETAIL
3. TYPICAL MANHOLE GROUNDING DETAIL
4. LIGHTNING MAST GROUNDING DETAIL

scale in feet

DEAD END AND SURGE ARRESTOR DETAIL
NOTES:
1. CONDUIT DETAILS ARE SHOWN ON DRAWINGS ES042.
2. CONDUIT STUB-UPS ON THIS DRAWING ARE SHOWN IN THE APPROXIMATE LOCATIONS.
3. MINIMUM DEPTH OF COVER FOR ALL DIRECT BURIED CONDUITS SHALL BE 2-6" FROM FINISHED GRADE TO TOP OF CONDUITS.
4. SEE RACEWAY SCHEDULE FOR CONDUIT SIZES.
5. FIELD TO ROUTE CONDUITS AS NECESSARY FOR SUBSTATION LIGHTS.

LEGEND:
- UNDERGROUND CONDUIT
- ELECTRICAL CONDUIT SHOWING GENERAL LOCATION OF STUB-UP
- SUBSTATION FENCE
- TO INCL. USE
- TO MAIN FEEDER
- SERVICE #2
- SERVICE #3
- ROADWAY

SCALE: IN FEET
SUBSTATION LAYOUT PLAN

PROFESSIONAL ENGINEER: K. DUNN
DRAWN BY: T. OSTERTAG
CLIENT I.D.: HON00103
CHECKED BY: B. CULTON
DATE: 12-09-09

SEGA PROJECT NO. 09-0140
CADD FILE NAME: 0914Q-ES040.dwg
DRAWING NO. ES040
REV. N:

EASTERN ILLINOIS UNIVERSITY
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LEGEND

- Indicates new conduit to be installed
- Indicates existing conduit

NOTE:
1. Conduits to be 5" PVC Schedule 40.
2. Conduits to be buried a minimum of 2'-6" below finished grade.
3. Conduit bending radius to be a minimum of 24".
4. Conduit stub-ups on this drawing are shown in approximate locations.
5. See Raceway Schedule for conduit sizes.
6. Seal end of conduit with duct seal after pulling cables.
7. All direct buried substation conduit shall be Schedule 40 PVC with RGS risers. Transition from RGS to PVC below grade.
8. Field to reroute Manhole #15 existing conduits to connect with new 15KV switchgear.
9. All conduit shall be concrete encased.

REFERENCE DRAWINGS:
1. For foundation details see DWG. ES026.
2. For conduit details see DWG. ES042.

Typical Conduit Riser Detail

Scale in feet

Design by: K. Dunn
Drawn by: T. Ostertag
Client ID: H000103
Checked by: B. Culton
Date: 01-12-10

Drawn for:
EASTERN ILLINOIS UNIVERSITY
7TH STREET STATION
CONDUIT LAYOUT

CADD File Name: 0914Q-ES041.dwg

Drawing No.: ES041
Rev.: 0

N:2009\0914Q\dwgs\pd\0914Q-ES041.dwg 4/15/10 1:19pm tostertag
GENERAL NOTES:
1. SEAL END OF CONDUIT WITH DUCT SEAL AFTER PULLING CABLES.
2. ALL DIRECT BURIED SUBSTATION CONDUIT MUST BE GUARD BURIED AND TRANSITION FROM RGS TO PVC BEHIND MANHOLE.
3. CONDUIT THROUGH SUBSTATION WALLS SHALL BE CONNECTED TO PVC WITH RGS ELBOWS AND VISIBLY."
CONDUIT-POWER

CONDUIT-PLANT POWER

CONDUIT-POWER

CONDUIT-CONTROLS DETAIL

CONDUIT-QCS

TO CHANNEL DUCT BANK DETAIL

NOTES:

1. ALL CONDUITS SHALL BE COVERED IN CONCRETE ENCASMENT.

2. THE BASE LEVEL OF DUCT BANK, AS PER PLANS, IS ABOVE THE LEVEL OF FINISHED GRADE.

3. ALL CONDUITS SHALL BE COVERED IN CONCRETE ENCASMENT.

4. ALL CONDUITS SHALL BE COVERED IN CONCRETE ENCASMENT.

5. THE TOP OF THE DUCT BANK SHALL ALIGN WITH THE TOP OF THE DUCT BANK ENCASMENT.

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82. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

83. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

84. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

85. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

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93. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

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97. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

98. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

99. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.

100. CONDUITS SHALL ALIGN WITH DUCT BANK ENCASMENT.
NOTES:

1. PULLING IRONS MUST BE ABLE TO WITHSTAND 6000 LBS OF PULL TENSION.

2. LOCATIONS AND CAPACITIES OF SWIFT LIFT ANCHOR ARE TO BE DETERMINED BY MANHOLE SUPPLIER.

3. LADDER OPENING FOR PULLING IRONS MUST BE RIGID GALVANIZED STEEL.

4. CONDUITS ARE 5" UNLESS OTHERWISE NOTED.

5. ALL CONDUITS ENTERING MANHOLE SHALL BE WEATHERPROOFED WITH TAR BASED SEALER.

LEGEND:

TOP-BOTTOM HALF DIVISION

CONDUIT NUMBERS

PULLING IRON

SECTION

PLAN VIEW

MANHOLE #110

ES051

MAIN-HOLE DETAILS

MANHOLE #110

MANHOLE DETAIL

A SECTION

B SECTION

C SECTION

D SECTION

E SECTION

F SECTION

G SECTION

H SECTION

I SECTION

J SECTION

K SECTION

L SECTION

M SECTION

N SECTION

O SECTION

P SECTION

Q SECTION

R SECTION

S SECTION

T SECTION

U SECTION

V SECTION

W SECTION

X SECTION

Y SECTION

Z SECTION

MANHOLE #110

SCALE IN FEET

1/2" = 1'-0"
NOTES:
1. PULLING IRONS MUST BE ABLE TO WITHSTAND 6000 LBS OF PULL TENSION.
2. LOCATIONS AND CAPACITIES OF LADDER CONNECTORS ARE TO BE DETERMINED BY MANHOLE SUPPLIER.
3. CONDUITS SHALL BE RIGID GALVANIZED STEEL.
4. EXTERIOR SHALL BE WEATHERPROOFED WITH TAR BASED SEALER.
5. CONDUITS ARE 5" UNLESS OTHERWISE NOTED.

LEGEND:
- TOP BOTTOM HALF DIVISION
- KNOCKOUT
- CONDUIT NUMBERS

SECTION 9-0" 8-0"

MANHOLE #111

SCALE: 1" = 10' FEET

[Diagram with various dimensions and notes]
NOTES:
1. PULLING IRONS MUST BE ABLE TO WITHSTAND 6000 LBS OF PULL TENSION.
2. LOCATIONS AND CAPACITIES OF SWIFT LIFT ANCHOR FOR THE TOP AND BASE SECTIONS ARE TO BE DETERMINED BY MANHOLE SUPPLIER.
3. EXTERIOR SHALL BE WEATHERPROOFED WITH TARP BASE SEALER.
4. CONDUITS ARE 5" UNLESS OTHERWISE NOTED.
5. CONDUITS ENTERING MANHOLE SHALL BE RIGID GALVANIZED STEEL.

LEGEND:
- USED KNOCKOUT
- CONDUIT NUMBERS
- PULLING IRON

MANHOLE DETAILS
MANHOLE #112

DESIGNER:
K. DUNN

DRAFTER:
T. OSTERTAG

ISSUED FOR CONSTRUCTION

DWN CHK KRD

CADD FILE NAME: 09140-ES053

DRAWING NO.
ES053

REV.
0
NOTES:
1. PULLING IRONS MUST BE MADE TO WITHSTAND 6000 LBS OF PULL TENSION.
2. LOCATIONS AND DIAMETERS OF SWIFT LIFTS AND IRons ARE TO BE DETERMINED BY MANHOLE SUPPLIER.
3. OUTSIDE WALLS SHALL BE W/ PULLING IRONS MOUNTED ON THE BAMS WALL.
4. CONDUITS ARE TO BE USED ONLY WHERE SPECIFIED.
5. ALL CONDUITS ENTERING MANHOLE SHALL BE RIGID GALVANIZED STEEL.

LEGEND:
- TOP-BOTTOM HALF DIVISION
- USED鋼HEAVY
- CONDUIT NUMBERS

SECTION

PLAN VIEW

SEGA PROJECT #: 10-4535
EASTERN ILLINOIS UNIVERSITY
MANHOLE DETAILS
MANHOLE #113

DESIGN BY: K. DUNN
DRAWN BY: T. OSTERTAG
CHECKED BY: B. CULTON
DATE: 12-18-09

EASTERN ILLINOIS UNIVERSITY MANHOLE DETAIL MANHOLE #113
SCALE 1 IN = 2 FT

Honeywell

Sealed Only When Signed in Blue Ink

Illinois License #: 184-000823

ENGINEERS - ARCHITECTS - TECHNICIANS
DESIGN - CONSTRUCTION - FIELD SERVICE
(913) 681-2881
16041 Foster P.O. Box 1000 Stilwell, Kansas 66085-1000

EASTERN ILLINOIS UNIVERSITY
09-140 Manhole Details

CADD FILE NAME: 09140-ES054
DRAWING NO. ES054
REV. 0

N:\2009\09140\dwgs\pd\09140-ES054.dwg
3/24/10 9:06am tostertag
NOTES:
1. CONDUIT DETAILS ARE SHOWN ON DRAWINGS.
2. ALL CONDUITS ENTERING MANHOLE SHALL BE RIGID GALVANIZED STEEL.
3. SEE RACEWAY SCHEDULE FOR CONDUIT SIZES.

LEGEND:
- CONDUIT
- SEWER MANHOLE
- SEWER CONNECTORS
NOTES:
1. MANHOLE MUST BE ABLE TO WITHSTAND 6000 LBS PULL TENSION.
2. LOCATIONS AND DIMENSIONS OF MANHOLE MUST BE DETERMINED BY MANHOLE SUPPLIER.
3. EXHAUST SHOULDN'T BE LOCATED IN PROXIMITY TO MANHOLE SUPPLIER.
4. CONDUCTORS MAY BE 6" UNLESS OTHERWISE NOTED.
5. ALL CONDUIT ORNERY MANHOLE SHALL BE HOOK MAINTAINED.

LEGEND:
1. SECTION
2. PLAN VIEW
3. ELEVATION VIEW

NOTES:
1. PULLING IRONS MUST BE ABLE TO WITHSTAND 6000 LBS OF PULL TENSION.
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3. ELEVATION VIEW

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3. ELEVATION VIEW

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LEGEND:
1. SECTION
2. PLAN VIEW
3. ELEVATION VIEW
NOTES:

1. SEE DWG. A100 FOR EQUIPMENT KEYNOTES.
See DWG. SB102 and SB105 for skid location.