MANHOLE GENERAL NOTES:

1. MANHOLES MAY BE POURED-IN-PLACE OR PRECAST.
2. FOR POURED-IN-PLACE MANHOLES, BOTTOM IS ONE POUR, SIDES ARE ONE POUR, AND TOP IS ONE POUR, ALL WITH KEYED JOINTS, AND APPROPRIATE WATER STOP.
3. PRECAST MANHOLES SHALL BE A BOTTOM HALF AND A TOP HALF WITH A "V" SHAPED KEY WAY BUILT INTO EACH HALF. AT INSTALLATION BOTTOM KEYWAY SHALL BE FILLED HALF WAY WITH WATER STOP CAULK ALL WAY ROUND THE BOTTOM HALF BEFORE PLACING TOP HALF IN PLACE.
4. PROVIDE A HIGH VENT AND A LOW VENT. HIGH VENT IS OUTLET, LOW VENT IS INLET. MATERIAL TO BE RCP OR PVC.
5. TOTAL SIZE OF MANHOLE SHALL BE 12'x8'x7' INSIDE (UNLESS NOTED OTHERWISE).
6. PROVIDE PULLING EYES, ONE IN THE WALL OPPOSITE EACH DUCT BANK AND ONE RECESSED IN THE CENTER OF THE MANHOLE FLOOR.
7. PROVIDE BELL ENDS ON ALL CONDUITS.
8. ALL CONDUIT AND BOXES SHALL BE SCH 40 PVC.
9. ELECTRICAL DISCONNECTS SHALL BE NEMA 4 AND DEVICES SHALL BE NEMA 3R.
10. PROVIDE TWO VAPOR PROOF, 5000° K, LED LIGHT FIXTURES AS INDICATED. FIXTURES SHALL BE A SYLVANIA VAPOR TIGHT LED SERIES SIMILAR TO ITEM NUMBER 74531 OR EQUAL.
11. EXHAUST FAN TO MEET OSHA REQUIREMENTS SHALL BE SIMILAR TO GREENHECK FAN CORP MODEL NUMBER SE1-12-432-D OR EQUAL. CONNECT FAN TO OPERATE WHEN LIGHT SWITCH IS TURNED ON.
12. PROVIDE A NON-GFI SINGLE USE RECEPTACLE WITH WEATHER PROOF COVER FOR SUMP PUMP USE.
13. PROVIDE A GFI DUPLEX RECEPTACLE WITH WEATHER PROOF COVER FOR GENERAL USE.
14. PROVIDE AND INSTALL CABLING RACKS ON ALL FOUR WALLS FROM TOP TO BOTTOM WITH BRACKETS AS REQUIRED TO SUPPORT CABLING. RACKS SHALL BE COMPRISED OF GALVANIZED STEEL UNISTRUT EMBEDDED INTO THE CONCRETE WALLS.
15. MANHOLE REBAR SPACING AND CONCRETE THICKNESSES ARE ESTIMATED. MANHOLE IS TO BE CONSTRUCTED BASED ON THE DIMENSIONS AND FEATURES OUTLINED IN THESE DETAILS. THE SHOP DRAWINGS SHALL BE STAMPED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF KENTUCKY.
16. CABLES ARE TO BE SUPPORTED FROM BRACKETS WITH PLASTIC OR FIBERGLASS DONUT STYLE INSULATORS TO ENCOMPASS ALL FOUR CABLES TOGETHER PER CIRCUIT.
17. H-20 TRUCK LOADING ON ALL MANHOLES.
18. COVER SHALL BE 32" DIAMETER MINIMUM. 32" DIA. CLEAR OPENING MUST BE MAINTAINED. HOE MC-680 OR MC-780 ROUND MANHOLE FRAME AND COVER.
19. WATERPROOF EXTERIOR SURFACES BELOW GRADE PORTION OF SIDES AND TOPS OF MANHOLES. SEE DETAILS.
20. ALL DUCTBANKS SHALL BE DOWELED INTO THE MANHOLE WALL WHICH THEY ENTER WITH AT LEAST SIX 12" LONG #4 REBAR.
21. MANHOLE LADDER AND LADDERS EXTENSIONS SHALL BE HOLLIDAY PRODUCTS LD1 AND LE1 OR EQUIVALENT.
MANHOLE LADDER (SEE NOTE 22)

WEATHERPROOF LIGHT SWITCH - TYPICAL (SEE NOTE 10)

DUCTBANK (TYPICAL). SEE SITE UTILITY PLANS FOR SIZE, QUANTITY, AND ORIENTATION.

SUMP PIT DO NOT LOCATE SUMP PIT UNDER LADDER.

WEATHERPROOF DISCONNECT FOR FAN (SEE NOTE 11)

DUCTBANK (TYPICAL). SEE SITE UTILITY PLANS FOR SIZE, QUANTITY, AND ORIENTATION.

UNISTRUT CABLING RACK IMBEDS. (TYPICAL): PROVIDE ON ALL FOUR WALLS AND COORDINATE WITH MANHOLE DUCTBANKS AND EQUIPMENT. (SEE NOTE 14)

PROVIDE POWER TO NEW MANHOLE VIA DUCTBANK. SEE SITE PLAN FOR CONTINUATION.

SUMP PUMP DISCHARGE LINE. SEE SITE PLAN FOR CONTINUATION.

WEATHERPROOF LIGHT SWITCH - TYPICAL (SEE NOTE 11)

DUCTBANK (TYPICAL). SEE SITE UTILITY PLANS FOR SIZE, QUANTITY, AND ORIENTATION.

PULLING IRON - TYPICAL (SEE NOTE 6)

LIGHT FIXTURE - TYPICAL (SEE NOTE 10)

DUCTBANK (TYPICAL). SEE SITE UTILITY PLANS FOR SIZE, QUANTITY, AND ORIENTATION.

TOP OF MANHOLE ROOF SUB GRADE BELOW FINISHED GRADE.
SECTION A-A THROUGH ELECTRIC MANHOLE

NO SCALE

ALL LOW VOLTAGE WIRING IN 1" PVC MINIMUM.
MANHOLE EXHAUST FAN DETAIL

1. Side wall direct drive exhaust fan. Aluminum blade model ER-02 and corrosion resistant fasteners.
2. Galvanized steel construction with aluminum blade propeller and corrosion resistant fasteners.
3. Provide OSHA approved motor side guard.

CHAMFER ALL SIDES
GRADE MANHOLE EXTERIOR WALL DISCHARGE EXHAUST INTAKE

12" PVC PIPE OR RCP
#57 OR #48 STONE

12" PVC OR RCP PIPE

#4 PROG. "C" C.C. (OPTIONAL)

260543D04 UNDERGROUND DUCTS & RACEWAYS
Dated: 12/2019
Applies to: All Projects
University of Kentucky
NOTE: SUMP-PUMP -- ZOELLER PUMP MODEL NO 2137, 2 SUBMERSIBLE SUMP PUMP RATED FOR HIGH TEMPERATURES - 200°F INTERMITTED, 50 GPM @ 15 FT. HEAD, 0.5 HP, 120V/1Ø POWER. PROVIDE WITH FLOAT SWITCH. PUMP SHALL BE SELF-VENTING.

SUMP PUMP FOR VAULT AND MANHOLE

CHECK VALVE

2" DISCHARGE LINE TAKE TO NEAREST STORM INLET FOR CONTINUATION

DRILL 3/16" DIA. WEEP HOLE BELOW CHECK VALVE AND BELOW WATER LEVEL.

UNION

STRAINER
CONTINUOUS 2” OVERLAP OF LIQUID MEMBRANE RUBBERIZED-ASPHALT SHEET WATERPROOFING DOWN WALL TO EDGE OF FOOTING

LAYOUT MEMBRANE HORIZONTALLY STARTING AT BOTTOM WITH SUCCESSIVE SHEETS LAPPED OVER DRAINAGE SHEET TOP AND SIDES

PROTECTION BOARD ALONG TOP AND SIDE

BENTONITE MEMBRANE OVER CONCRETE MUDSLAB AFTER CONC POUR TURN UP FOOTING EDGE OVER TOP OF WALL MEMBRANE

RUBBERIZED-ASPHALT SHEET WATERPROOFING ACROSS TOP SLAB LAYOUT MEMBRANE LENGTHWISE WITH SUCCESSIVE SHEETS LAPPED OVER

2” MINIMUM THICKNESS CONCRETE MUDMAT

**NOTE**: THIS WATERPROOFING METHOD IS TO BE USED ON BOTH CAST-IN-PLACE AND Precast MANHOLE STRUCTURES.

260543D06 UNDERGROUND DUCTS & RACEWAYS

Dated: 12/2019
Applies to: All Projects
University of Kentucky
TYPICAL INSTALLATION DETAIL OF DUCTBANK UNDER ROADWAY OR PARKING LOT

NOTES:
1. SEE SITE UTILITY PLANS FOR NUMBER AND SIZE OF CONDUITS IN EACH DUCTBANK. SEE ALSO DUCTBANK SECTIONS FOR ADDITIONAL INFORMATION.
2. ALL DUCTBANKS SHALL BE DOWELED INTO THE MANHOLE WALL WHICH THEY ENTER WITH AT LEAST FOUR 12-INCH LONG #4 REBAR.
3. PROVIDE PROTECTIVE FENCE IF TRENCH IS OUTSIDE CONSTRUCTION AREA.
CONCRETE ENVELOPE

CONDUITS

3"

3"

3"

3"

3"

3"

FINISH GRADE

NO SCALE

#4 Rebar - Continuous (Use #6 Rebar for 6 or more Conduits in Ductbank). Add additional rods - equally spaced - for each additional 12" increase in Ductbank width and/or height.

TYPICAL PRIMARY ELECTRICAL DUCTBANK INSTALLATION DETAIL

(1) 2" Conduit for future site lighting installed 24" below grade at ductbank. Conduit provided and coordinated with Owner for installation prior to backfill.

36" MIN.

WARNING TAPE - 12" below finished Grade

DYE CONCRETE TOP 3" RED FOR ELECTRICAL DUCT.

DUCT BANKS AND CONDUIT SYSTEMS ARE ELECTRICAL FACILITIES FOR POWER DISTRIBUTION. IN ORDER FOR THE ELECTRICAL SYSTEM TO PERFORM AT ITS FULL CAPACITY, THESE SYSTEMS SHALL BE CONSTRUCTED IN A NEAT AND WORKMANLIKE MANNER TO ENSURE THAT:

1. All joints are tightly sealed against water intrusion.
2. All joints are properly aligned, square and have adequate cure time.
3. All edges are deburred and beveled to prevent damage to cables.
4. Conduit runs are adequately supported so they do not become distorted during encasement or backfill.

260543D08 UNDERGROUND DUCTS & RACEWAYS

Dated: 12/2019

Applies to: All Projects

University of Kentucky