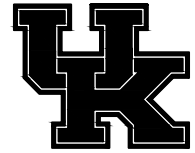


260543D01 UNDERGROUND DUCTS & RACEWAYS

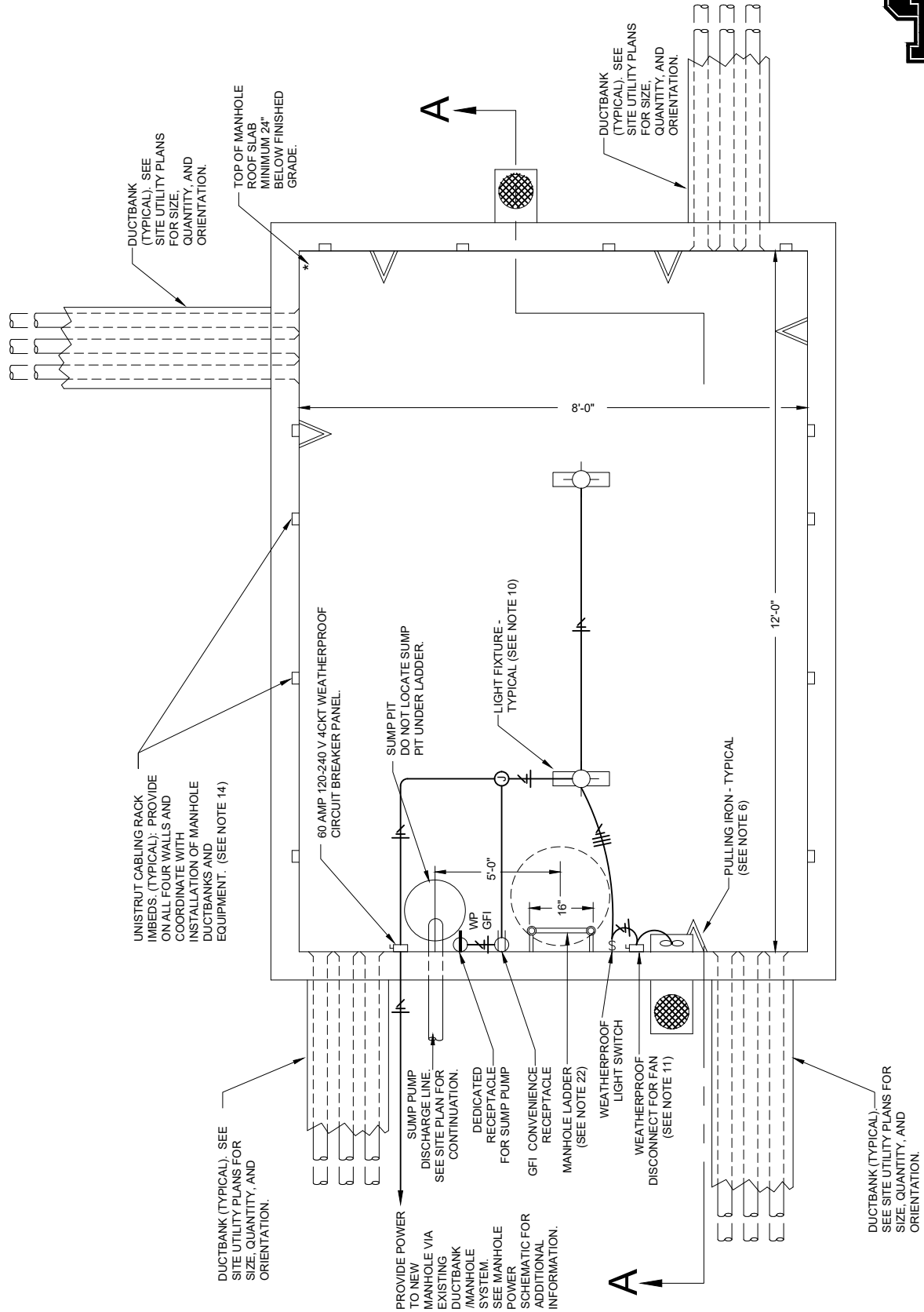
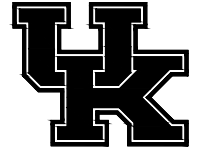
Construction Details - Electrical Manhole



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 HALFWAY 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 EQUAL

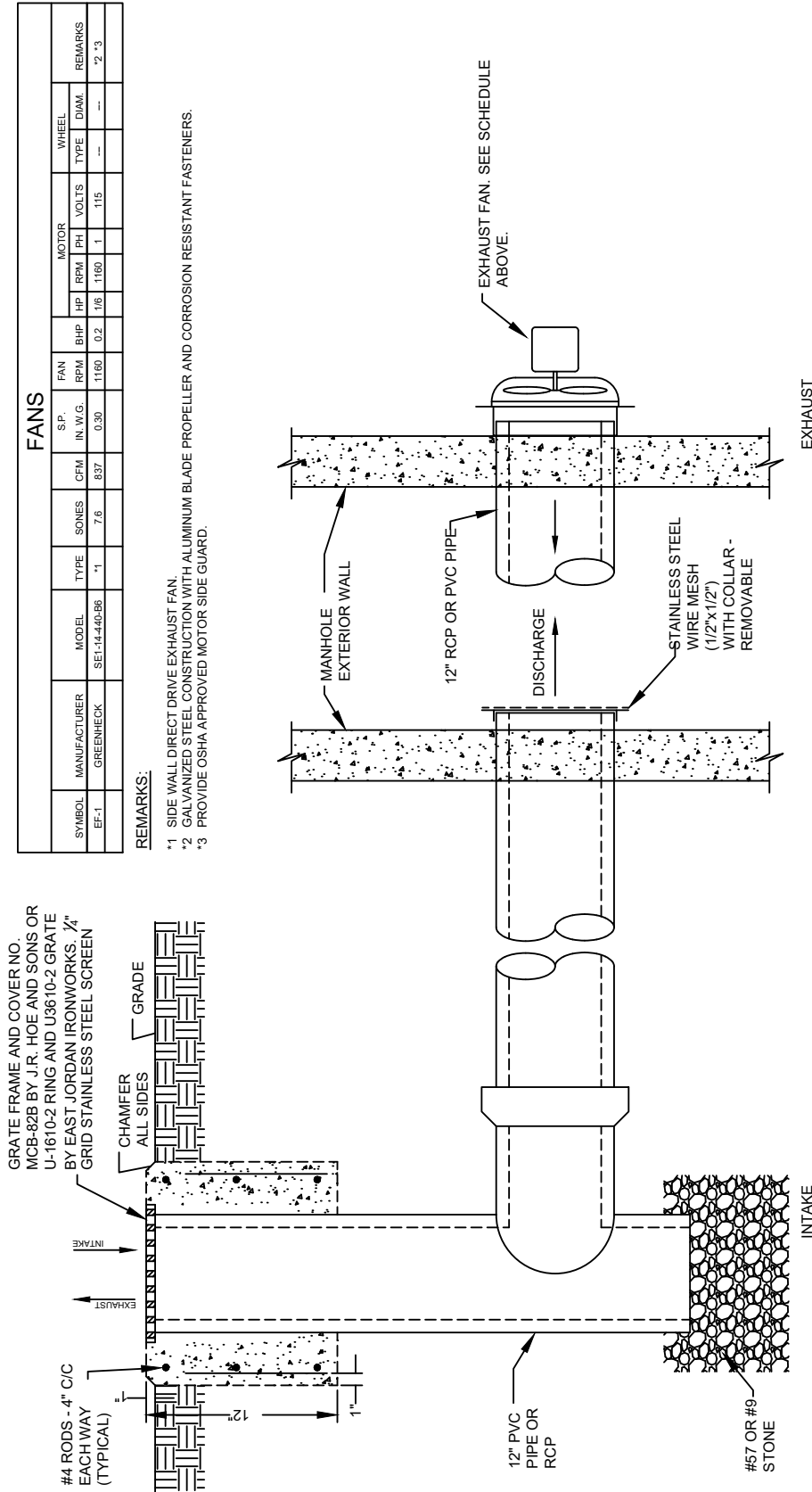
260543D02 UNDERGROUND DUCTS & RACEWAYS Construction Details - Electrical Manhole Plan



PLAN - ELECTRIC MANHOLE

NO SCALE

260543D04 UNDERGROUND DUCTS & RACEWAYS Construction Details - Manhole Exhaust Fan



FANS

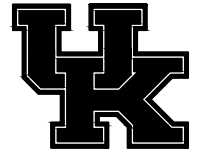
SYMBOL	MANUFACTURER	MODEL	TYPE	SIZES	CFM	IN. W.G.	FAN			MOTOR			WHEEL		REMARKS
							RPM	BHP	HP	RPM	PH	VOLTS	TYPE	DIM.	
EF-1	GREENHECK	SE-14-440-B6	1	7.6	837	0.30	1160	0.2	1/6	1160	1	115	---	---	*2 *3

REMARKS:
 *1 SIDE WALL DIRECT DRIVE EXHAUST FAN.
 *2 GALVANIZED STEEL CONSTRUCTION WITH ALUMINUM BLADE PROPELLER AND CORROSION RESISTANT FASTENERS.
 *3 PROVIDE OSHA APPROVED MOTOR SIDE GUARD.

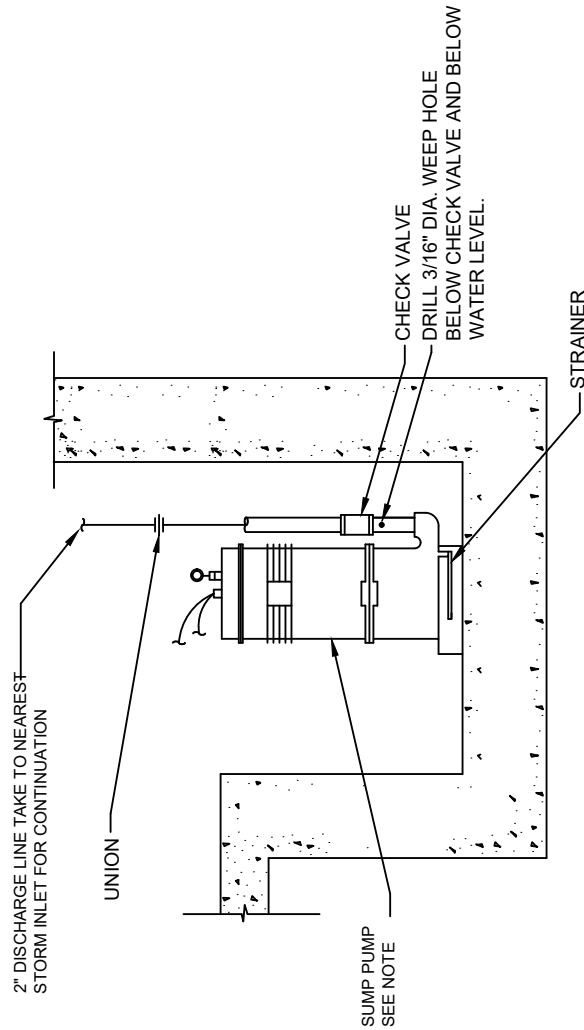
MANHOLE EXHAUST FAN DETAIL

NO SCALE

260543D05 UNDERGROUND DUCTS & RACEWAYS Construction Details - Manhole Sump Pump



SUMP PUMP FOR VAULT AND MANHOLE
NOTE: SUMP-PUMP -- ZOELLER PUMP MODEL NO 2137,
1½" 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.

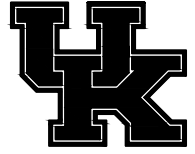


MANHOLE SUMP PUMP DETAIL

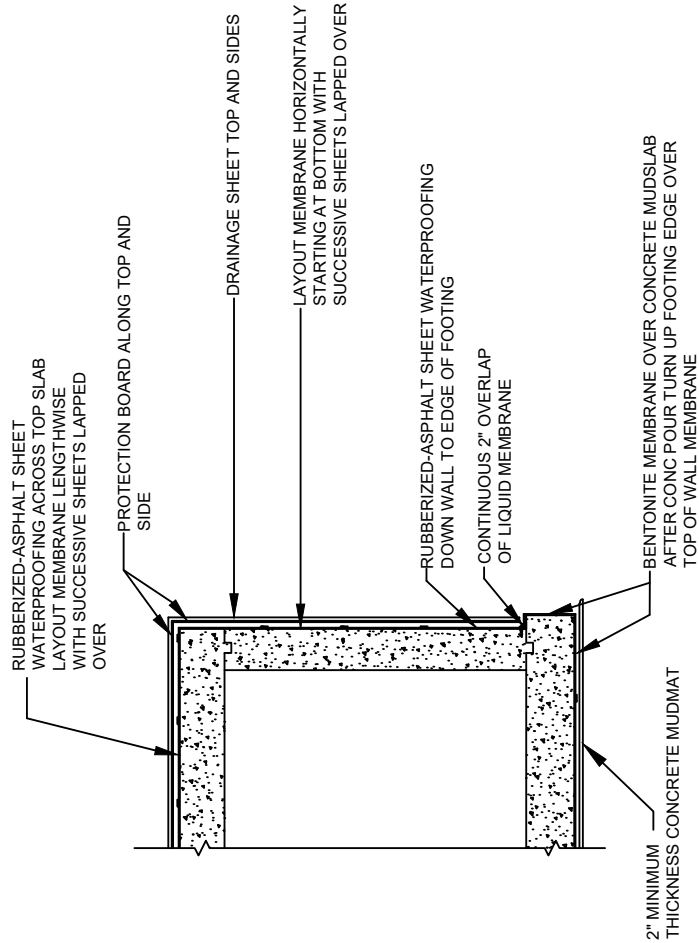
NO SCALE

260543D06 UNDERGROUND DUCTS & RACEWAYS

Construction Details - Typical Manhole Waterproofing



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

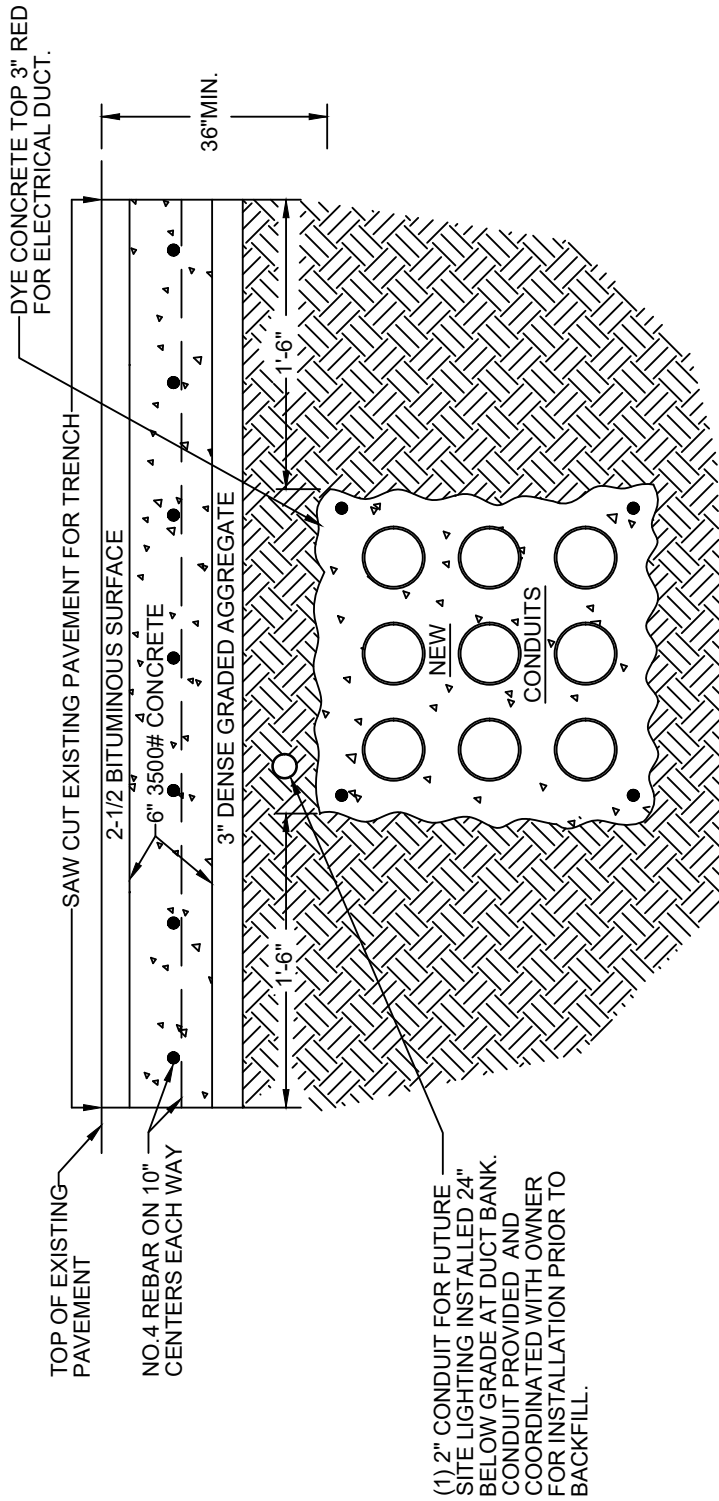
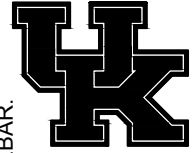


TYPICAL WATERPROOFING DETAIL

NO SCALE

260543D07 UNDERGROUND DUCTS & RACEWAYS

Construction Details - Ductbank Installation Detail



TYPICAL INSTALLATION DETAIL OF DUCTBANK UNDER ROADWAY OR PARKING LOT

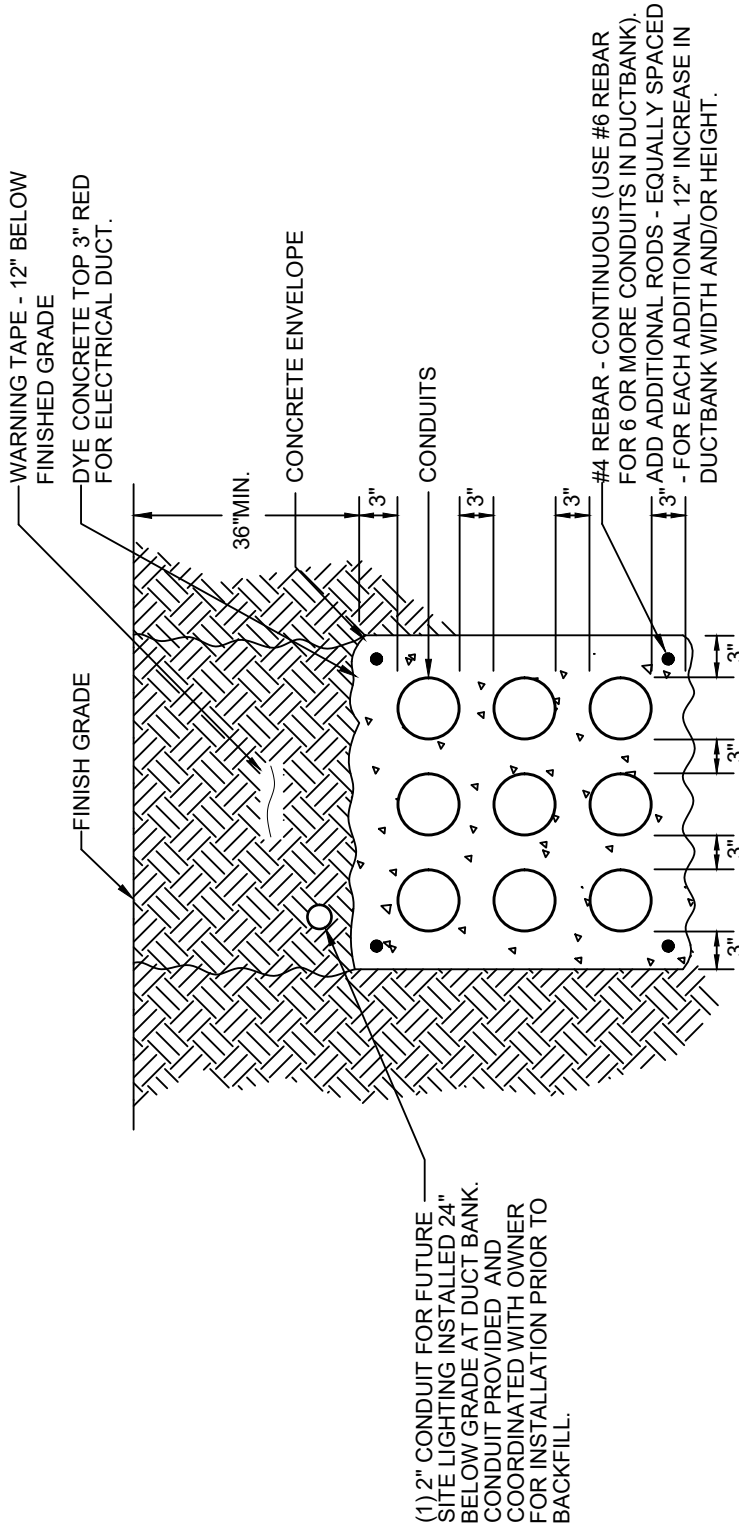
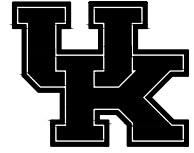
NO SCALE

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.

260543D08 UNDERGROUND DUCTS & RACEWAYS

Construction Details - Ductbank Installation Detail



TYPICAL PRIMARY ELECTRICAL DUCTBANK INSTALLATION DETAIL

NO SCALE

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.