

## DISTRIBUTION MANHOLES AND COMPONENTS INSPECTION

# DISTRIBUTION MANHOLE FIELD INSPECTION FORM

MANHOLE ID : \_\_\_\_\_ OFFICE : \_\_\_\_\_ TOWN : \_\_\_\_\_ WARD : \_\_\_\_\_

GEOGRAPHIC LOC. : \_\_\_\_\_  INSIDE LOOP (Chicago - CBD)  O'HARE AIRPORT

INSPECTION SCHEDULE DATE: \_\_\_\_\_ DATE INSPECTED: \_\_\_\_\_ INSPECTOR NAME: \_\_\_\_\_

No Problems Found/All Conditions OK as left  Follow Up work required. See CMs checked below

**(General Info)** LATITUDE: \_\_\_\_\_ LONGITUDE: \_\_\_\_\_

LEL LEVEL: \_\_\_\_\_ (enter value from meter) MANHOLE ABANDONED:  YES ASSET ELEVATION:  BELOW GRADE  ABOVE GRADE

PRIMARY CABLE PRESENT:  YES  NO TRANSMISSION ONLY:  YES LID SHAPE:  ROUND  RECTANGLE  N/A VAULT

SECONDARY CABLE PRESENT:  YES  NO ENTRANCE COVER ADA COMPLIANT:  YES  NO  N/A

ASSET LOCATION:  STREET  SIDEWALK  PARKWAY  IN BUILDING  RIGHT OF WAY

SECONDARY BUS SYSTEM: EXISTING:  YES  NO  NEEDS REPAIR / MAINTENANCE STRAY VOLTAGE:  PRESENT - (PRI 10)  NOT PRESENT

**(Environmental)**

OIL/FUEL:  PRESENT NATURAL GAS:  PRESENT FOREIGN FLUID:  PRESENT OIL RESERVOIR:  LEAKING

**(Upkeep)**

DEBRIS:  NEEDS CLEANING STANDING WATER:  PUMPING REQUIRED WATER LEVEL: \_\_\_\_\_ % FULL (25, 50, 75, 100)

LADDER EXISTING:  YES  NO LADDER:  NEEDS INSTALL OR REPAIR LADDER SIZE (FOR INSTALL/REPAIR): \_\_\_\_\_ (FT.)

PULLING EYE CONDITION:  NEEDS REPAIR OR MISSING WILDLIFE / INSECT INFESTATION:  PRESENT

**(Structural)**

PAVED OVER:  YES CONDUIT:  COLLAPSED  NEEDS PLUGGING

ENTRANCE COVER:  REPLACE COVER

ENTRANCE FRAME:  CRACKS ROOF BEAM:  BEAM RUSTED THRU

ENTRANCE BRICK/MORTAR:  NEEDS REPAIR ROOF BRICK:  BRICK MISSING

ENTRANCE JOINT TO ROOF:  > 1/2 INCH DEEP GAP ROOF CRACK:  > 1/4 INCH IN WIDTH WALL BRICK:  >5 ADJACENT MISSING

ENTRANCE NECK (CONCRETE):  VERTICAL CRACKS WALL CRACK:  > 1/8 INCH IN WIDTH WALL BULGE:  >3 INCH OUT OF PLUMB

ROOF REBAR EXPOSED:  <25% OF CIRCUMF  50% OR MORE OF CIRCUMF > 6 INCH  25-50% OF CIRCUMF >1 FT

WALL REBAR EXPOSED:  <25% OF CIRCUMF  50% OR MORE OF CIRCUMF > 6 INCH  25-50% OF CIRCUMF >1 FT

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<b>(Grounding)</b>	
BOND LOOP : <input type="checkbox"/> NEEDS REPAIR	<input type="checkbox"/> NOT PRESENT
PERIMETER GROUND : <input type="checkbox"/> NEEDS REPAIR	<input type="checkbox"/> NOT PRESENT
GROUND ROD PRESENT : <input type="checkbox"/> YES	<input type="checkbox"/> NO

<b>(Transformer)</b>	<b>(Switch)</b>
TR OIL LEAK : <input type="checkbox"/> NEEDS REPAIR	SWITCH OIL LEAK : <input type="checkbox"/> NEEDS REPAIR
TR CONNECTIONS : <input type="checkbox"/> NEEDS REPAIR	SWITCH CONNECTIONS : <input type="checkbox"/> NEEDS REPAIR
TR GROUND : <input type="checkbox"/> NEEDS REPAIR	SWITCH GROUND : <input type="checkbox"/> NEEDS REPAIR
	SF6 GAUGE : <input type="checkbox"/> NOT GREEN

<b>(Corrosion)</b>	
ANODE LEAD MOUNTED NEAR NECK : <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	BOND LEAD MOUNTED NEAR NECK : <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A

<b>(Sec Bus)</b>		
SEC BUS : <input type="checkbox"/> NEEDS REPAIR	SEC BUS CONNECTIONS : <input type="checkbox"/> NEEDS REPAIR	BLOWN LIMITER (s) FOUND : _____ (enter #)

<b>(Count of Cables)</b>	
CABLES IN MANHOLE : _____ (Enter number)	CABLES WITH ASBESTOS : _____ (Enter number)

<b>(Cable Support)</b>			
CABLE HANGER : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)	DUCT SHIELD : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)
BRACKET : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)	SADDLE : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)
CHANNEL : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)	JOINT SADDLE : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)
CABLE CLAMP : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)	INSULATED CABLE CLAMP : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)
TR CABLE SUPPORT : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)	CABLE INSULATOR : <input type="checkbox"/> NEEDS REPAIR	COUNT #: _____ (to replace)

**INSPECTOR COMMENTS:**

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# DISTRIBUTION MANHOLE FIELD INSPECTION FORM

(Cable Related Problems Found)	(Add separate form for cables #3 and #4, and so on)
<p><b>Cable #1 Identification</b></p> <p>Circuit Number : _____</p> <p>DUCT POSITION : _____ (Enter the 2 digit duct position)</p> <p>DUCT DIRECTION : _____ (E, N, NE, NW, S, SE, SW, or W)</p> <p>CABLE TYPE : _____ (EXCc, EXCcJ, EXL, EXLJ, PL, PLJ, XLPE)</p> <p>CABLE SIZE : _____ VOLTAGE CLASS : _____ (kV)</p> <p>UNMAPPED SEC CABLE : <input type="checkbox"/> YES    UNMAPPED PRI CABLE : <input type="checkbox"/> YES</p> <p><b>Cable CMs</b></p> <p><u>CABLE OFF BRACKET</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE ON GROUND</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>TRAINING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SPACING NOT TO SPEC</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE BOND</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE JACKET</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE LEAK</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH CORRODED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH CRACKS</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH FATIGUE</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE CONCENTRICS</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SLIPPED TERMINATION</u> : <input type="checkbox"/> NEEDS REPAIR    SWITCH # _____</p> <p><u>CONDUCTOR EXPOSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><b>Joint/End Cap CMs</b></p> <p><u>JOINT LEAKING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT BULGED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p>JOINT BULGED BELOW THRESHOLD : <input type="checkbox"/></p> <p>Max Allow Circumf = _____ (inch)    Actual Measured Circumf = _____ (inch)</p> <p><u>JOINT BLOWN OPEN</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT COLLAPSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT WATERPROOFING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CORROSION ON JOINT</u> : <input type="checkbox"/> NEEDS REPAIR (rust, pin hole, etc.)</p> <p><u>ENDCAP COLLAPSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>ENDCAP LEAKING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>ENDCAP UNRACKED</u> : <input type="checkbox"/> NEEDS REPAIR</p>	<p><b>Cable #2 Identification</b></p> <p>Circuit Number : _____</p> <p>DUCT POSITION : _____ (Enter the 2 digit duct position)</p> <p>DUCT DIRECTION : _____ (E, N, NE, NW, S, SE, SW, or W)</p> <p>CABLE TYPE : _____ (EXCc, EXCcJ, EXL, EXLJ, PL, PLJ, XLPE)</p> <p>CABLE SIZE : _____ VOLTAGE CLASS : _____ (kV)</p> <p>UNMAPPED SEC CABLE : <input type="checkbox"/> YES    UNMAPPED PRI CABLE : <input type="checkbox"/> YES</p> <p><b>Cable CMs</b></p> <p><u>CABLE OFF BRACKET</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE ON GROUND</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>TRAINING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SPACING NOT TO SPEC</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE BOND</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE JACKET</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE LEAK</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH CORRODED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH CRACKS</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SHEATH FATIGUE</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CABLE CONCENTRICS</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>SLIPPED TERMINATION</u> : <input type="checkbox"/> NEEDS REPAIR    SWITCH # _____</p> <p><u>CONDUCTOR EXPOSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><b>Joint/End Cap CMs</b></p> <p><u>JOINT LEAKING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT BULGED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p>JOINT BULGED BELOW THRESHOLD : <input type="checkbox"/></p> <p>Max Allow Circumf = _____ (inch)    Actual Measured Circumf = _____ (inch)</p> <p><u>JOINT BLOWN OPEN</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT COLLAPSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>JOINT WATERPROOFING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>CORROSION ON JOINT</u> : <input type="checkbox"/> NEEDS REPAIR (rust, pin hole, etc.)</p> <p><u>ENDCAP COLLAPSED</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>ENDCAP LEAKING</u> : <input type="checkbox"/> NEEDS REPAIR</p> <p><u>ENDCAP UNRACKED</u> : <input type="checkbox"/> NEEDS REPAIR</p>

## DISTRIBUTION MANHOLES AND COMPONENTS INSPECTION

# INSPECTION CHECKLIST (1 OF 2)

*Select appropriate attribute and priority during creation of WR/WO. Select value added work when applicable.*

Manhole Insp (MHC)      Manhole Number: \_\_\_\_\_

Grouping:	Attribute:	Default Value	Value Choices:		
Structural	LEL	102-LEL LEVEL HIGH	N / Y	LEL LEVEL HIGH	
	201-ENTRANCE	OK / NA	BRICK/MORTAR NEEDS REPAIR		
	201-ENTRANCE	OK / NA	COVER DAMAGED	COVER REPLACED	
	201-ENTRANCE	OK / NA	FRAME NEEDS REPAIR		
	201-ENTRANCE	OK / NA	JOINT TO ROOF > 1/2 INCH GAP		
	201-ENTRANCE	OK / NA	NECK NEEDS REPAIR		
	202-LADDER	OK / NA	NEEDS REPAIR	REQUIRED	
	203-PULLING EYE CONDITION	OK / NA	MISSING	NEEDS REPAIR	
	204-ROOF	OK / NA	BEAM RUSTED THRU		
	204-ROOF	OK / NA	BRICK MISSING		
	204-ROOF	OK / NA	CRACK > 1/4 INCH IN WIDTH		
	204-ROOF	OK / NA	REBAR EXPOSED 25-50 OF CIRC	REBAR EXPOSED <25 PERCENT CIRC	REBAR EXPOSED >50 OF CIRC
	205-WALL	OK / NA	BRICK >5 ADJACENT MISSING		
	205-WALL	OK / NA	BULGE >3 INCH OUT OF PLUMB		
205-WALL	OK / NA	CRACK > 1/8 INCH IN WIDTH			
205-WALL	OK / NA	REBAR EXPOSED 25-50 OF CIRC	REBAR EXPOSED <25 PERCENT CIRC	REBAR EXPOSED >50 OF CIRC	
Cable Support	301-SUPPORT HARDWARE	OK / NA	CABLE HANGER NEEDS REPAIR	CABLE HANGER REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	CABLE CLAMP NEEDS REPAIR	CABLE CLAMP REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	BRACKET NEEDS REPAIR	BRACKET REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	CABLE INSULATOR NEEDS REPAIR	CABLE INSULATOR REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	CABLE PINS NEEDS REPAIR	CABLE PINS REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	JOINT SADDLE NEEDS REPAIR	JOINT SADDLE REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	DUCT SHIELD NEEDS REPAIR	DUCT SHIELD REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	SADDLE NEEDS REPAIR	SADDLE REPAIRED	
	301-SUPPORT HARDWARE	OK / NA	CHANNEL NEEDS REPAIR		
	301-SUPPORT HARDWARE	OK / NA	INSULATED CABLE CLAMP NEEDS REPAIR	INSULATED CABLE CLAMP REPAIRED	
303-TR CABLE SUPPORT	OK / NA	TR CABLE SUPPORT NEEDS REPAIR	TR CABLE SUPPORT REPAIRED		
Cable	401-CABLE	OK / NA	BOND		
	401-CABLE	OK / NA	CONCENTRICS		
	401-CABLE	OK / NA	CONDUCTOR EXPOSED		
	401-CABLE	OK / NA	CORROSION		
	401-CABLE	OK / NA	JACKET		
	401-CABLE	OK / NA	LEAK		
	401-CABLE	OK / NA	OFF BRACKET		
	401-CABLE	OK / NA	ON GROUND NEEDS REPAIR	ON GROUND REPAIRED	
	401-CABLE	OK / NA	SLIPPED TERMINATION		
	401-CABLE	OK / NA	SPACING ON RACK NOT TO SPEC		
Conduit	402-CONDUIT	OK / NA	COLLAPSED		
	402-CONDUIT	OK / NA	NEEDS PLUGGING		
End Cap	403-ENDCAP	OK / NA	COLLAPSED		
	403-ENDCAP	OK / NA	LEAKING		
	403-ENDCAP	OK / NA	UNRACKED		
Cable Joints	404-JOINT	OK / NA	BLOWN OPEN		
	404-JOINT	OK / NA	BULGED		
	404-JOINT	OK / NA	BULGED LESS THAN MAX		
	404-JOINT	OK / NA	COLLAPSED		
	404-JOINT	OK / NA	CORROSION		
	404-JOINT	OK / NA	LEAKING		
Oil Reservoir	405-OIL RESERVOIR	OK / NA	LEAKING		
	405-OIL RESERVOIR	OK / NA	WATERPROOFING NEEDS REPAIR	WATERPROOFING REPAIRED	
Sheath	406-SHEATH	OK / NA	CORRODED		
	406-SHEATH	OK / NA	CRACKS		
	406-SHEATH	OK / NA	FATIGUE		

Level 1

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## DISTRIBUTION MANHOLES AND COMPONENTS INSPECTION

# INSPECTION CHECKLIST (2 OF 2)

*Select appropriate attribute and priority during creation of WR/WO. Select value added work when applicable.*

Manhole Insp (MHC)      Manhole Number: \_\_\_\_\_

Grouping:	Attribute:	Default Value	Value Choices:		
Corrosion	501-ANODE LEAD MOUNTED NEAR NECK	Y/ N / NA	NEEDS REMOUNTING		
	502-BOND LEAD MOUNTED NEAR NECK	Y/ N / NA	NEEDS REMOUNTING		
Grounding	503-GROUND CONNECTION	OK / NA	GROUND LOOP NEEDS REPAIR	GROUND LOOP REPAIRED	
	503-GROUND CONNECTION	OK / NA	PERIMETER GROUND MISSING		
	503-GROUND CONNECTION	OK / NA	PERIMETER GROUND NEEDS REPAIR	PERIMETER GROUND REPAIRED	
	503-GROUND CONNECTION	OK / NA	SWITCH GROUND NEEDS REPAIR	SWITCH GROUND REPAIRED	
	503-GROUND CONNECTION	OK / NA	TR GROUND NEEDS REPAIR	TR GROUND REPAIRED	
Secondary	601-CABLE LIMITER	OK / NA	BLOWN 1	BLOWN >1	LEAKING
	602-SEC BUS	OK / NA	SEC BUS NEEDS REPAIR		
	603-SEC BUS CONNECTIONS	OK / NA	SEC BUS CONNECTIONS NEEDS REPAIR		
Equipment	701-FAULT INDICATORS	OK / NA	FAULT INDICATORS NEED REPAIR	FAULT INDICATORS REPAIRED	
	702-SF6 GAUGE	OK / NA	SF6 GAUGE NOT GREEN		
	704-TRANSFORMER	OK / NA	MINOR OIL LEAK	ACTIVE OIL LEAK	
	704-TRANSFORMER	OK / NA	CONNECTIONS NEED REPAIR		
Environmental	801-CONTAMINANTS	OK / NA	DEBRIS PRESENT		
	801-CONTAMINANTS	OK / NA	FOREIGN FLUID		
	801-CONTAMINANTS	OK / NA	NATURAL GAS PRESENT		
	801-CONTAMINANTS	OK / NA	OIL/FUEL PRESENT		
	802-WILDLIFE INFESTATION	OK / NA	WILDLIFE INFESTATION PRESENT		

Legend:

CM Priority 10
CM Priority 20
CM Priority 30
CM Priority 40
SP Priority 40
Info Only
Item Corrected During Inspection