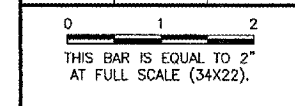
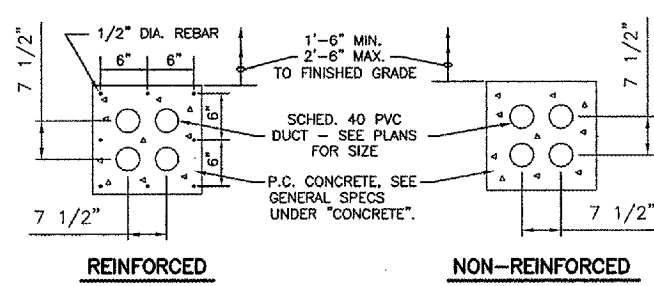
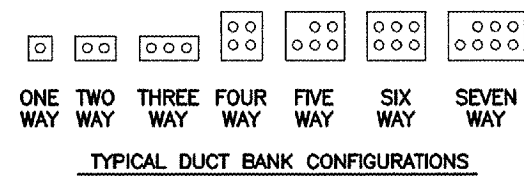
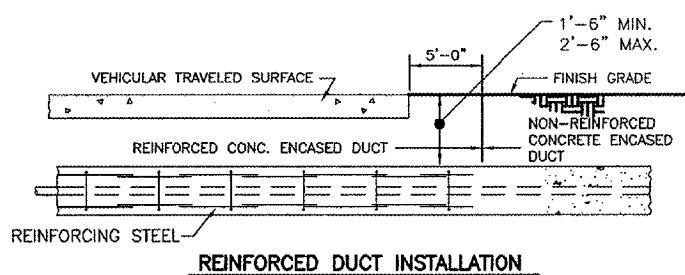


REVISIONS		
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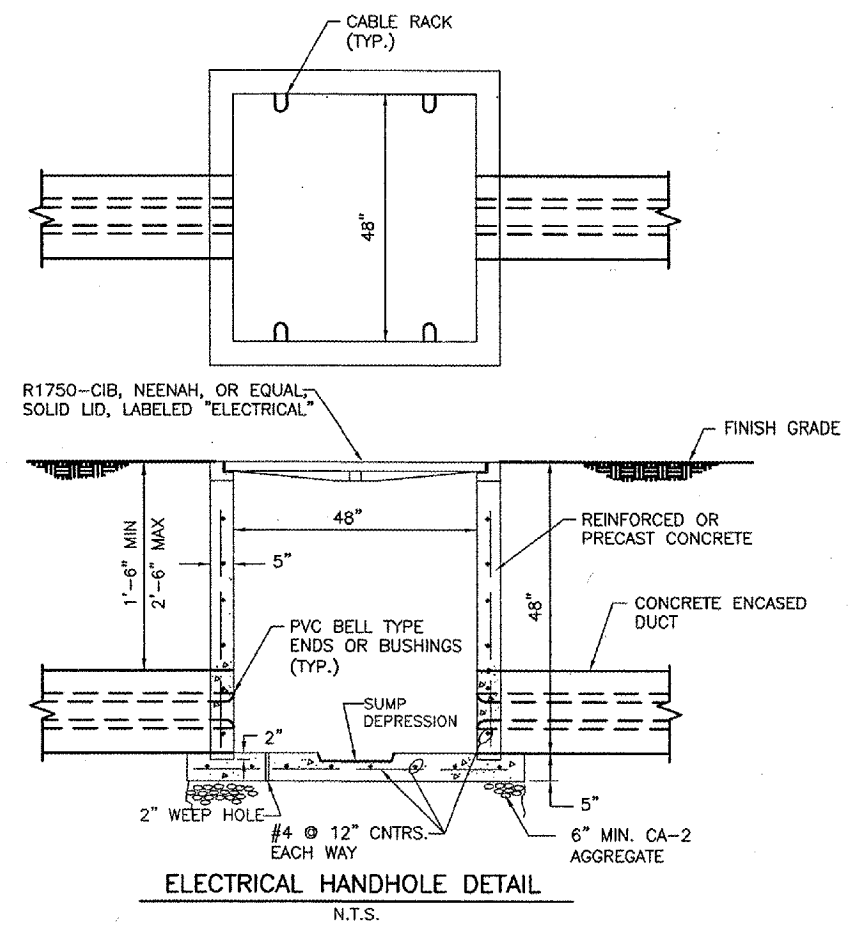
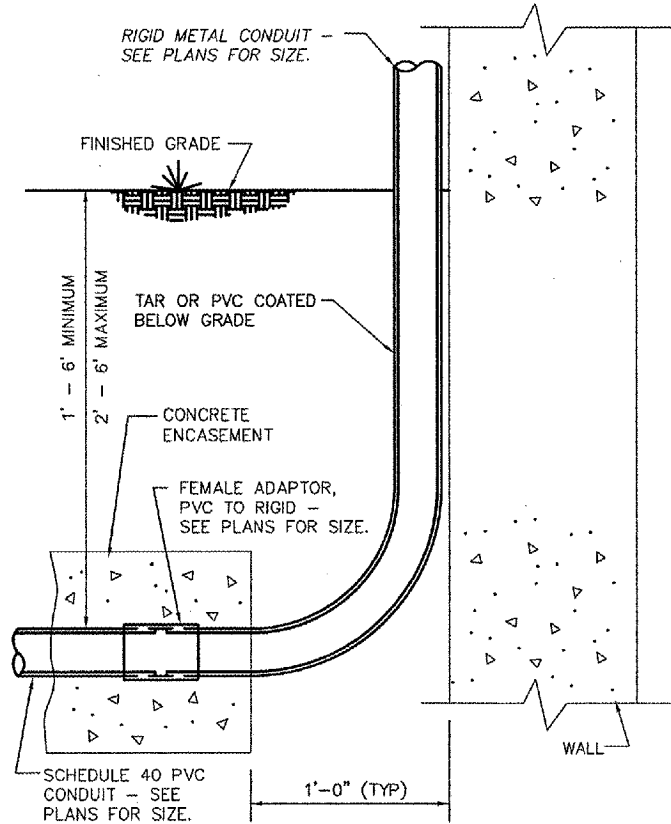


CHICAGO ROCKFORD INTERNATIONAL AIRPORT  
 ROCKFORD, ILLINOIS

UNDERGROUND DUCT DETAIL



- NOTES**
- 1.) ALL DIMENSIONS ARE MINIMUM.
  - 2.) REINFORCED STEEL TO BE MIN. #4 REBAR, MIN. 18" LAP.



**CONDUCTOR FILL IN CONDUIT SEALS:**

CONTRACTOR SHALL COMPLY WITH ARTICLE 501-5.c.6 OF THE NEC, WHICH READS:

"THE CROSS-SECTIONAL AREA OF THE CONDUCTORS PERMITTED IN A [CONDUIT] SEAL SHALL NOT EXCEED 25 PERCENT OF THE CROSS-SECTIONAL AREA OF A CONDUIT OF THE SAME TRADE SIZE UNLESS IT IS SPECIFICALLY APPROVED FOR A HIGHER PERCENTAGE OF FILL."

CONTRACTOR SHALL VERIFY COMPLIANCE WITH ARTICLE PRIOR TO INSTALLATION OF ALL CONDUIT SEALS ON THIS PROJECT.

CONDUIT SEALS INSTALLED IN VIOLATION OF THIS REQUIREMENT SHALL BE REPLACED BY THE CONTRACTOR (INCLUDING ALL CONDUCTORS IF SEALING COMPOUND HAS BEEN INSTALLED) AT THE CONTRACTOR'S EXPENSE.

**NEMA 4 & NEMA 4X ENCLOSURES**

TO MAINTAIN THE ENCLOSURE NEMA 4 OR NEMA 4X RATING, ALL ENCLOSURES RATED NEMA 4 OR NEMA 4X SHALL HAVE WATERTIGHT HUBS AT CONDUIT ENTRANCES WHICH ARE U.L. LISTED NEMA 4 OR NEMA 4X, AS NECESSARY, AND SUITABLE FOR USE WITH THE RESPECTIVE ENCLOSURE.

**MANHOLE AND HANDHOLE SIZING**

MANHOLE MIN. SIZE: 10'x8'x8'D. HANDHOLE MIN. SIZE: 4'x4'x4'. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF ARTICLE 110 SECTION V. THIS MAY RESULT IN MANHOLES AND HANDHOLES SIZED LARGER THAN DETAILED HERE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT WORK.

**MANHOLE AND HANDHOLE WIRING NOTES**

- 1.) ALL WIRING IN MANHOLES AND HANDHOLES SHALL BE LABELED INSIDE MANHOLES AND HANDHOLES. LABELING MATERIALS SHALL BE SUITABLE FOR USE IN THE ENVIRONMENT AND SHALL BE WATERPROOF. LABELS SHALL IDENTIFY EACH 480V, 240V AND 120V AND MONITOR CIRCUIT PER MASTER CIRCUIT LABELING SCHEDULE DEVELOPED BY ELECTRICAL CONTRACTOR.
- 2.) WHEREVER POSSIBLE, WIRING TO INDIVIDUAL STRUCTURES AND PIECES OF EQUIPMENT SHALL BE GROUPED TOGETHER IN MANHOLES AND HANDHOLES (SEE NOTE #3, BELOW, FOR ADDITIONAL REQUIREMENTS). MULTIPLE CONDUCTORS OF INDIVIDUAL CIRCUITS SHALL BE TIE-WRAPPED TOGETHER AND LABELED.
- 3.) WHEREVER POSSIBLE, 480V WIRING, 120V/240V WIRING AND MONITOR/ALARM WIRING SHALL BE SEPARATED FROM EACH OTHER IN MANHOLES AND HANDHOLES. MONITOR WIRING SHALL BE ROUTED ABOVE 120V/240V WIRING WHICH, IN TURN, SHALL BE ROUTED ABOVE 480V WIRING.
- 4.) ALL WIRING THROUGH MANHOLES SHALL BE ATTACHED TO CABLE RACKS.
- 5.) MANHOLE (NOT SHOWN) IS GENERALLY SIMILAR TO HARTFORD 10'x8'x8' TYPE "A".
- 6.) HANDHOLE IS GENERALLY SIMILAR TO HARTFORD 4'x4'x4' TYPE "S".

**PAY ITEM NOTES**

- 1.) ALL 4-WAY CONCRETE ENCASED DUCTS SHALL BE PAID UNDER PAY ITEM AR110504.
- 2.) ALL HANDHOLES SHALL BE PAID UNDER PAY ITEM 110610.
- 3.) ALL CABLES/DUCTS BETWEEN MAMETER, SANITARY LIFT STATION, CHEMICAL/ELECTRICAL BUILDING SHALL BE PAID UNDER PAY ITEM 800132.
- 4.) ALL CABLES/DUCTS BETWEEN SAMPLING MANHOLE, DIVERSION STRUCTURE, UTILITY POLE AND STORM WATER SAMPLING BUILDING SHALL BE PAID UNDER PAY ITEM 800131.

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<b>FINAL SUBMITTAL</b>	
SHEET	41 OF 63 SHEETS