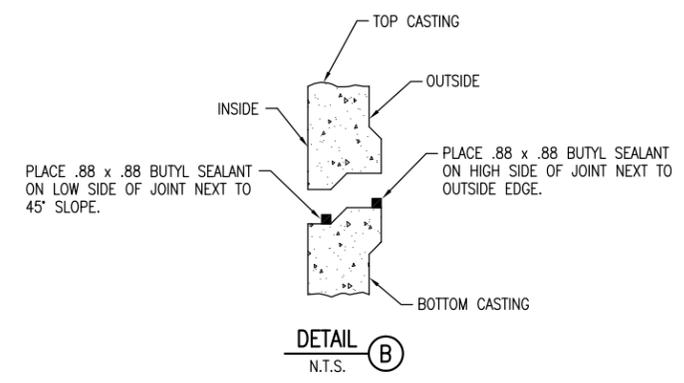
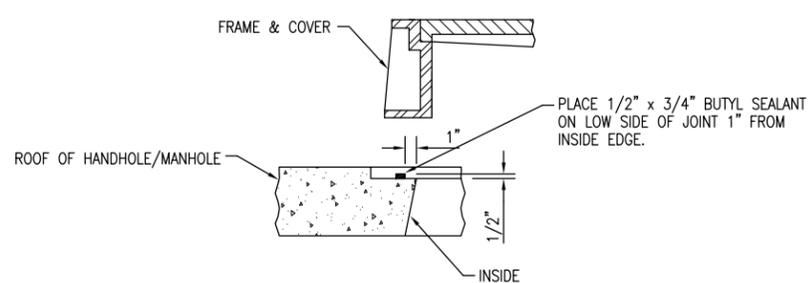


DUCT BANK NOTES:

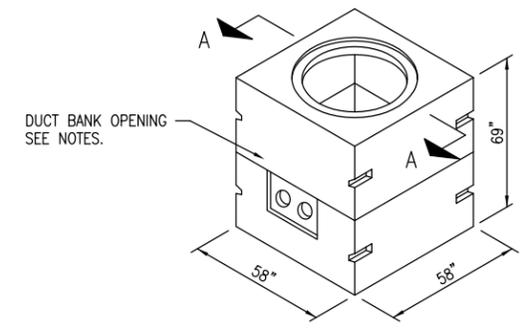
1. ALL DIMENSION ARE MINIMUM.
2. INCLUDE DUCT SPACERS AS MANUFACTURED BY UNDERGROUND DEVICES INC., TO MAINTAIN PROPER SEPARATION OF CONDUITS.
3. REBAR IS REQUIRED TO ACCOMMODATE FUTURE DUCT EXTENSIONS & INTERFACE AT DUCT BANK TERMINATIONS. DUCT BANKS TERMINATING IN MANHOLES DO NOT REQUIRE REBAR AT TERMINATIONS.
4. CONDUITS FOR CONCRETE ENCASED DUCT SHALL BE SCHEDULE 40 PVC CONFORMING TO ITEM 110.
5. MINIMUM DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 18" BELOW FINISHED GRADE. DEPTH OF TOP OF DUCT ENCASEMENT SHALL BE 42" MINIMUM TO FINISHED GRADE IN CULTIVATED/FARMED AREAS.
6. HIGH VOLTAGE AND LOW VOLTAGE CIRCUITS SHALL NOT BE INSTALLED IN THE SAME RACEWAY, CONDUIT, DUCT, HANDHOLE, OR MANHOLE.
7. HOMERUN CABLES FOR A RESPECTIVE CIRCUIT SHALL BE INSTALLED IN THE SAME RACEWAY OR DUCT.
8. INSTALL DUCT BANKS WITH SLOPE TO DRAIN WHERE TERMINATING IN MANHOLES OR HANDHOLES.



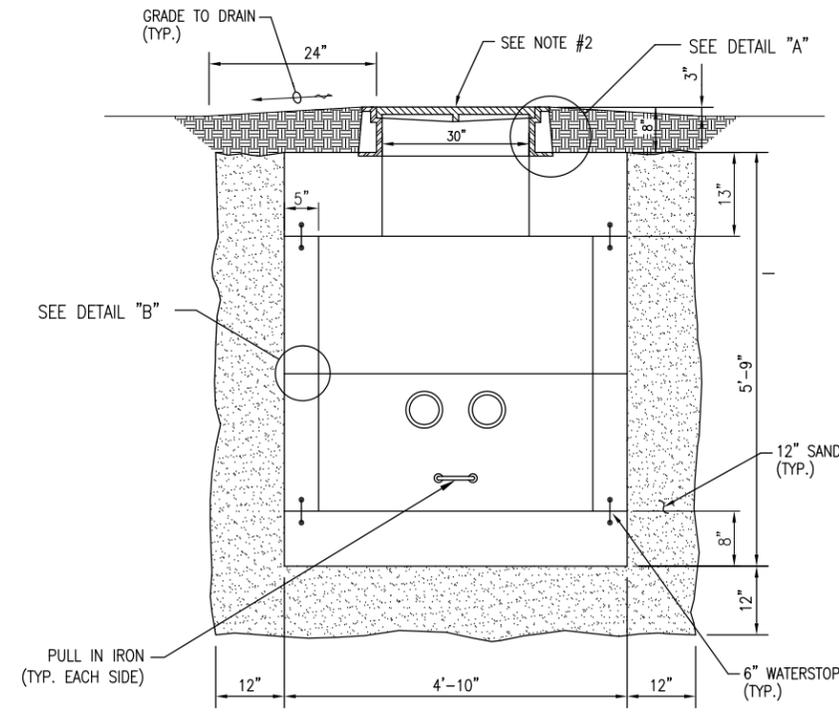
DETAIL B
N.T.S.



DETAIL A
N.T.S.



PRECAST 4'x4'x4' AIRPORT MANHOLE
N.T.S.



SECTION A
N.T.S.

4'x4'x4' AIRPORT MANHOLE DETAILS
N.T.S. (NOT TO SCALE)

PRECAST 4'x4'x4' AIRPORT MANHOLE NOTES

1. 4'x4'x4' AIRPORT MANHOLE SHALL BE CONSTRUCTED TO MEET THE FOLLOWING:
DESIGN CRITERIA:
 - 1) DESIGN SPECIFICATIONS: ACI 318, ASTM C858, FAA AC 150/5320-6D
 - 2) DESIGN LOADING:
 B727-200 (210,000 LB. TAXI WEIGHT, 97,600 LB. MAX. GEAR)
 B777-200/300 (752,000 LB. TAXI WEIGHT, 352,000 LB. MAX. GEAR)
 - 3) LIVE LOAD SURCHARGE: 24.5% OF THE WHEEL LOAD SOIL PRESSURE
 - 4) CONCRETE COMPRESSIVE STRENGTH: $F'_c = 5,000$ PSI
 - 5) REINFORCING STEEL: ASTM A706, $F_y = 60,000$ PSI**DESIGN ASSUMPTIONS:**
 - 1) GROUND WATER LEVEL: 3'-6" BELOW GRADE
 - 2) EARTH COVER: 0'-8" - 2'-0"
 - 3) LIVE LOAD IMPACT: $I = 20\%$
 - 4) COEFFICIENT OF ACTIVE EARTH PRESSURE: $K_a = 0.3$
 - 5) SPECIFIC WEIGHT OF STD. AGGREGATE CONCRETE: 150 PCF
 - 6) SPECIFIC WEIGHT OF DRY EARTH: 100 PCF
 - 7) SPECIFIC WEIGHT OF SATURATED EARTH: 120 PCF
 - 8) EQUIVALENT FLUID PRESSURE OF DRY EARTH: 30 PSF
 - 9) EQUIVALENT FLUID PRESSURE OF SATURATED EARTH: 80 PSF
2. AIRPORT MANHOLE FRAME & LID SHALL BE CAPABLE OF WITHSTANDING MINIMUM 100,000 POUND LOADS AS CALLED FOR IN FAA ADVISORY CIRCULAR AC 150/5320-6D APPENDIX 3 ITEM 2.d. (1). AIRPORT MANHOLE FRAME & LID SHALL BE NEENAH CATALOG NO. R-3492-A OR APPROVED EQUAL. 4'x4'x4' AIRPORT MANHOLE SHALL BE PROVIDED FOR USE WITH TELEPHONE UTILITY LINES AND CABLES. LID FOR TELEPHONE MANHOLE SHALL BE LABELED "TELEPHONE" OR IN ACCORDANCE WITH THE SERVING TELEPHONE COMPANY REQUIREMENTS. COORDINATE LETTERING WITH MFR.
3. COORDINATE DUCT BANK INTERFACE & OPENINGS WITH THE MANHOLE MFR. CONTRACTOR SHALL SLOPE DUCT BANK TO PRECAST MANHOLE OPENINGS. ALL OPENINGS SHALL BE SEALED WATERTIGHT AFTER DUCT BANK INSTALLATION.
4. 4'x4'x4' AIRPORT MANHOLE SHALL BE MANUFACTURED BY A CONCRETE ELECTRICAL MANHOLE PRODUCER ON THE ILLINOIS DEPARTMENT OF TRANSPORTATION APPROVED LIST OF CERTIFIED PRECAST CONCRETE PRODUCERS.
5. 4'x4'x4' AIRPORT MANHOLE SHALL BE PAID FOR UNDER ITEM AR110714 ELECTRICAL MANHOLE 4' PER EACH.
6. COORDINATE INSTALLATION OF MANHOLES WITH RESPECTIVE FINISHED GRADE ELEVATIONS.
7. INCLUDE FLOOR SUMP OR DRAINAGE PIPE.
8. ALL CORING, INTERFACE, AND LABOR ASSOCIATED WITH CONDUIT, DUCT, CABLE IN UNIT DUCT, AND/OR CABLE ENTRIES WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE MANHOLE AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

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REVISION	DATE

SAINT LOUIS DOWNTOWN AIRPORT
 A Division of Bi-State Development Agency
 BLOCK GRANT PROJ.: 3-17-0039-B29
 IL PROJ.: CPS-4210

Hanson Project No.	11A0190	LAYOUT	KNL	02/15/13
Filename	E-502-DTL.dwg	DRAWN	MLH	02/15/13
Scale	NOT TO SCALE	REVIEWED	BSS	03/08/13
Date	03/08/13			

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GRADE DITCH PARALLEL TO MAIN RUNWAY
 ELECTRICAL DETAILS SHEET 2