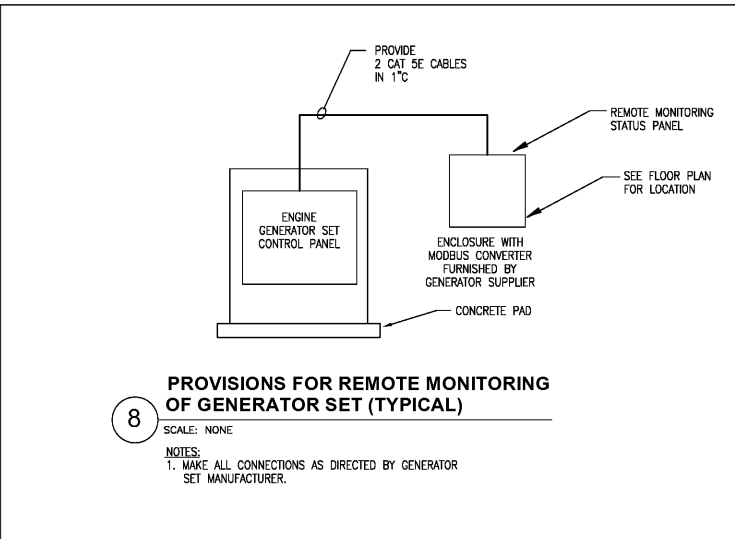
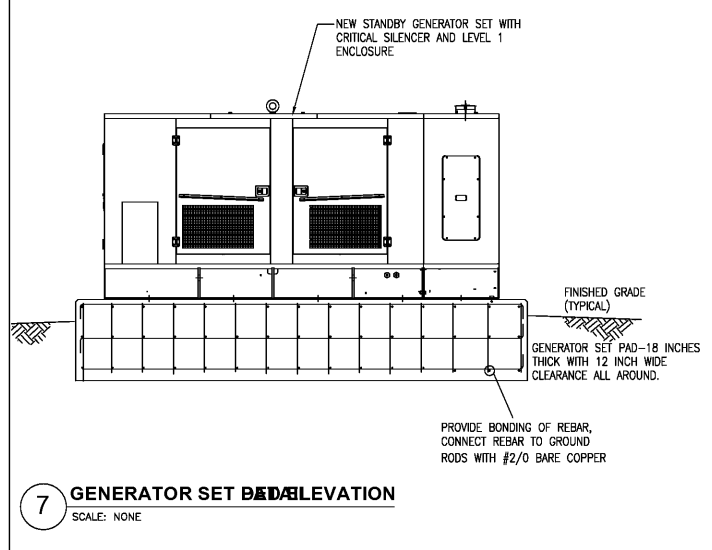


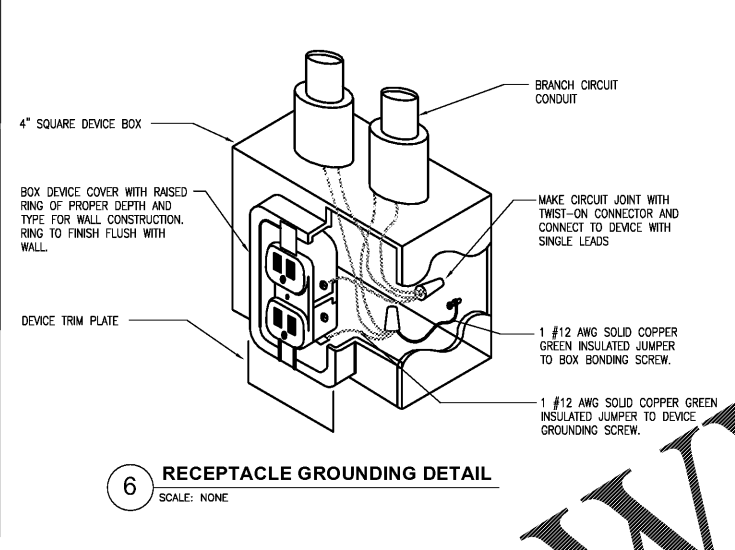
9 GENERATOR SET DETAIL
SCALE: NONE



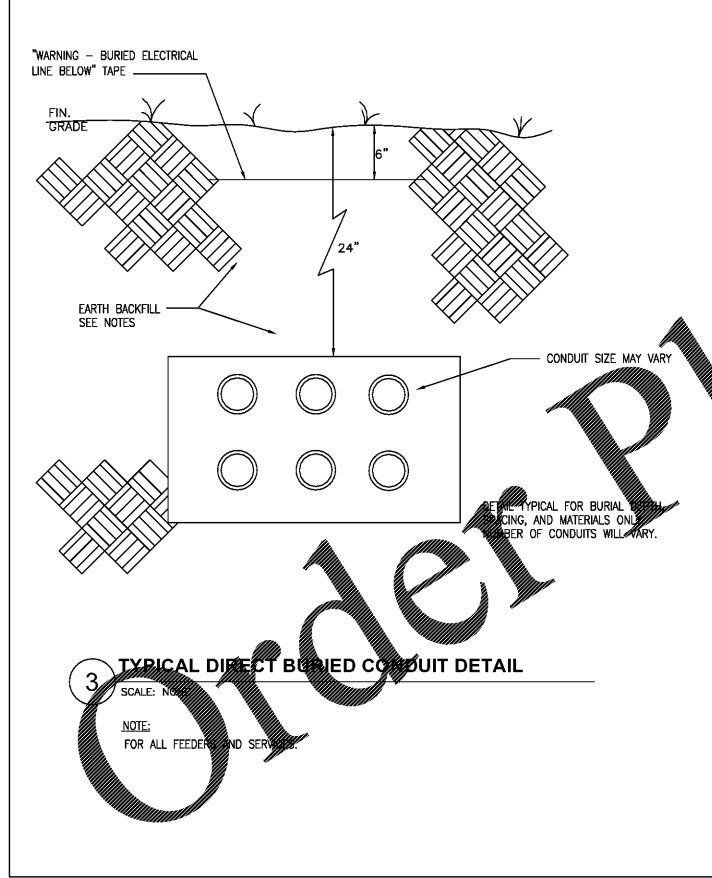
8 PROVISIONS FOR REMOTE MONITORING OF GENERATOR SET (TYPICAL)
SCALE: NONE
NOTES:
1. MAKE ALL CONNECTIONS AS DIRECTED BY GENERATOR SET MANUFACTURER.



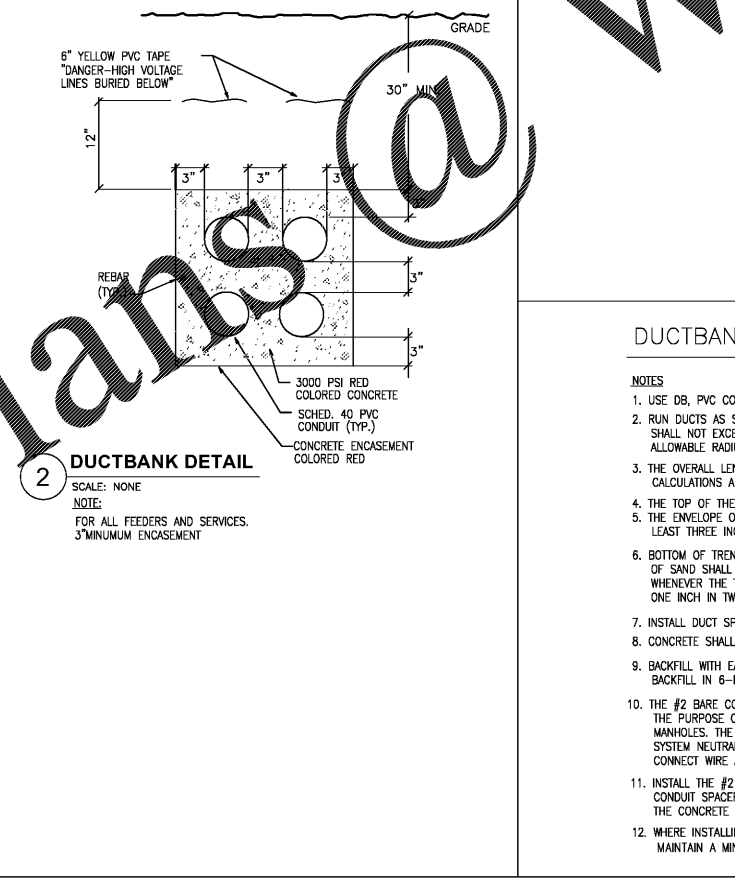
7 GENERATOR SET PAD ELEVATION
SCALE: NONE



6 RECEPTACLE GROUNDING DETAIL
SCALE: NONE



3 TYPICAL DIRECT BURIED CONDUIT DETAIL
SCALE: NONE
NOTE:
FOR ALL FEEDERS AND SERVICES.



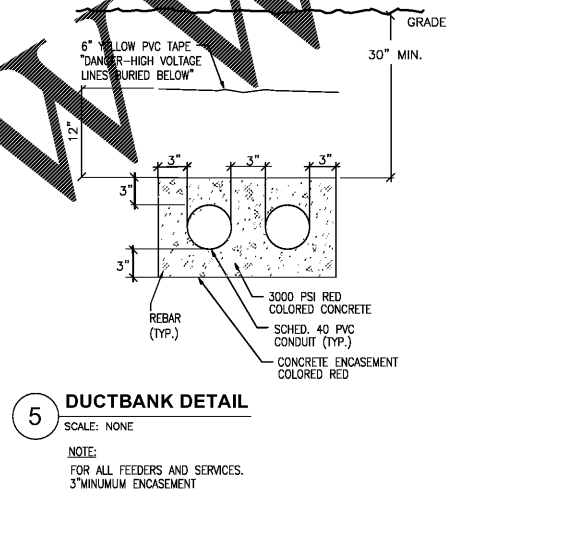
2 DUCTBANK DETAIL
SCALE: NONE
NOTE:
FOR ALL FEEDERS AND SERVICES.
3" MINIMUM ENCASEMENT

TABLE "A" - WORKING CLEARANCES

VOLTAGE TO GROUND, NOMINAL	CONDITION:		
	1	2	3
0-150	3	3	3
151-600	3	3 1/2	4

WHERE THE CONDITIONS ARE AS FOLLOWS:
 1. EXPOSED LIVE PARTS ON ONE SIDE AND NO LIVE OR GROUNDED PARTS ON THE OTHER SIDE OF THE WORKING SPACE, OR EXPOSED LIVE PARTS ON BOTH SIDES EFFECTIVELY GUARDED BY SUITABLE WOOD OR OTHER INSULATING MATERIALS. INSULATED WIRE OR INSULATED BUSBARS OPERATING AT NOT OVER 300 VOLTS SHALL NOT BE CONSIDERED LIVE PARTS.
 2. EXPOSED LIVE PARTS ON ONE SIDE AND GROUNDED PARTS ON THE OTHER SIDE.
 3. EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORK SPACE (NOT GUARDED AS PROVIDED IN CONDITION 1) WITH THE OPERATOR BETWEEN.

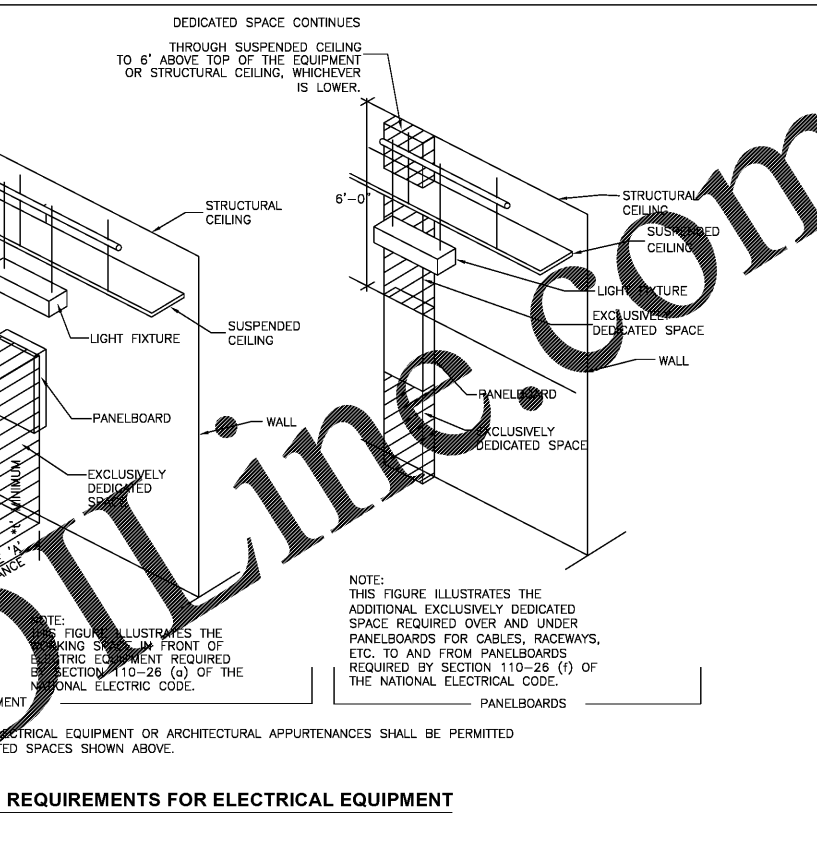
NOTE: THIS INCLUDES BUT IS NOT LIMITED TO PANELBOARDS, SAFETY SWITCHES, MOTOR STARTERS, JUNCTION BOXES AND OTHER ELECTRIC EQUIPMENT.



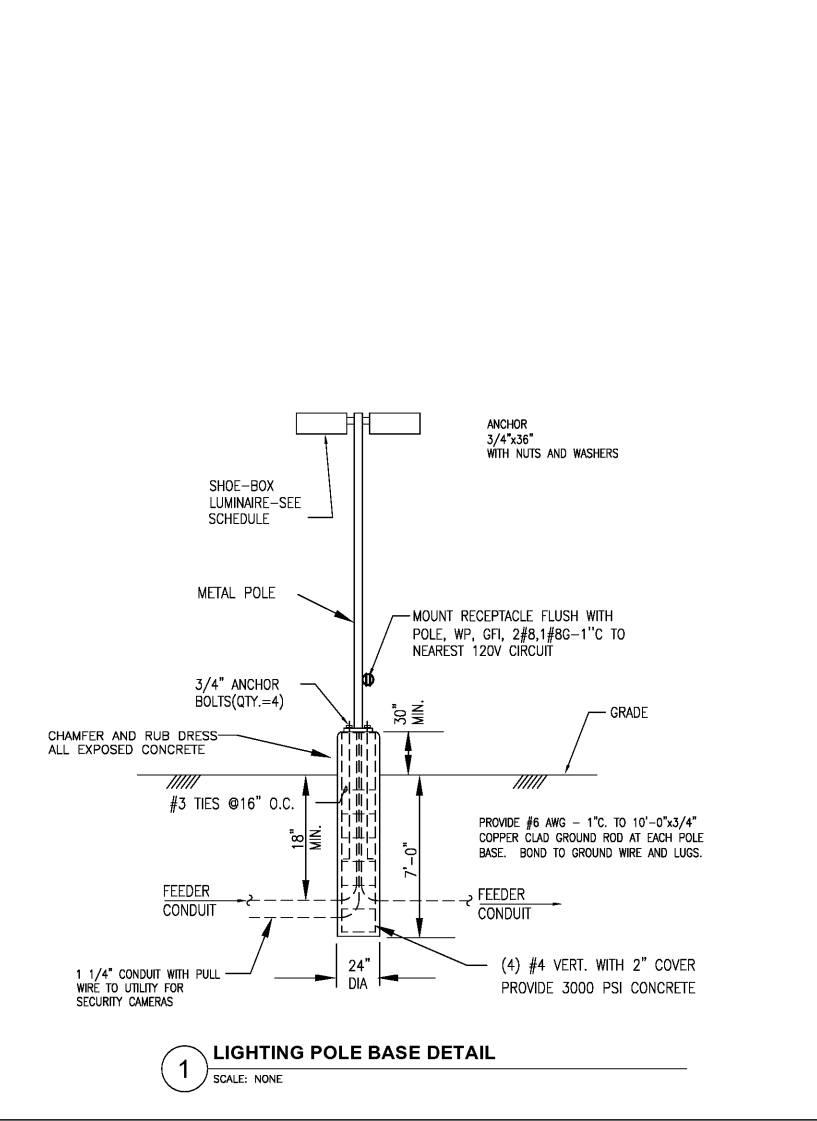
5 DUCTBANK DETAIL
SCALE: NONE
NOTE:
FOR ALL FEEDERS AND SERVICES.
3" MINIMUM ENCASEMENT

DUCTBANK GENERAL NOTES (APPLY TO ALL DUCTBANKS)

- NOTES**
- USE 68, PVC CONDUIT FOR ALL DUCT BANK INSTALLATIONS, 6" SIZE.
 - RUN DUCTS AS STRAIGHT AS POSSIBLE. THE SUM OF ALL THE BENDS WITHIN A RUN OF DUCT SHALL NOT EXCEED 180 DEGREES UNLESS CABLE-PULLING CALCULATIONS ARE MADE. THE MINIMUM ALLOWABLE RADIUS FOR BENDS IS 36".
 - THE OVERALL LENGTH OF A DUCT RUN SHALL NOT EXCEED 450 FEET UNLESS CABLE-PULLING CALCULATIONS ARE MADE.
 - THE TOP OF THE DUCT BANK ENCASEMENT SHALL BE A MINIMUM OF 24" BELOW FINAL GRADE.
 - THE ENVELOPE OF CONCRETE SURROUNDING THE PERIMETER OF THE DUCT BANK SHALL BE AT LEAST THREE INCHES THICK.
 - BOTTOM OF TRENCH SHALL BE SMOOTH AND FREE OF ROCKS AND DEBRIS. A FOUR-INCH BED OF SAND SHALL BE ADDED IF THE BOTTOM IS ROCKY, SHORING OR SLOPING IS REQUIRED WHENEVER THE TRENCH DEPTH EXCEEDS FIVE FEET. SLOPE THE TRENCH BOTTOM AT LEAST ONE INCH IN TWENTY FEET FOR DRAINAGE TOWARD THE VAULT OR MANHOLE.
 - INSTALL DUCT SPACERS APPROXIMATELY EVERY FOUR FEET ALONG THE DUCT ROUTE.
 - CONCRETE SHALL BE 2000 PSI, WITH A MAXIMUM AGGREGATE SIZE OF 3/8 INCH.
 - BACKFILL WITH EARTH THAT IS FREE OF VEGETATION, LARGE ROCKS AND OTHER FOREIGN MATTER. BACKFILL IN 6-INCH LAYERS, TAMPING EACH LAYER THOROUGHLY.
 - THE #2 BARE COPPER WIRE SHALL BE INSTALLED IN THE CONCRETE OF THE DUCT BANK FOR THE PURPOSE OF LOWERING THE GROUND RESISTANCE IN THE TRANSFORMER VAULTS AND MANHOLES. THE WIRE IS TO BE USED ONLY FOR GROUNDING, NOT AS A SUBSTITUTE FOR THE SYSTEM NEUTRAL. DO NOT CONNECT THIS WIRE TO THE NEUTRAL TERMINAL IN THE TRANSFORMER. CONNECT WIRE AT THE SERVICE ENTRANCE EQUIPMENT AS A CONCRETE ENCASED ELECTRODE PER NEC 250.52 (3).
 - INSTALL THE #2 BARE COPPER WIRE ALTERNATING FROM POSITION "a" TO POSITION "b" IN THE CONDUIT SPACERS. THE WIRE SHOULD BE SAGGED WITH A 2" CLEARANCE FROM THE BOTTOM OF THE CONCRETE DUCT BANK.
 - WHERE INSTALLING METAL RACEWAY ON INTERIOR FACE OF EXTERIOR WALLS, PROVIDE BACK STRAPS OR SUPPORTS TO MAINTAIN A MINIMUM OF 1/4" CLEARANCE FROM THE WALL.



4 DEDICATED WORKING SPACE REQUIREMENTS FOR ELECTRICAL EQUIPMENT
SCALE: NONE



1 LIGHTING POLE BASE DETAIL
SCALE: NONE

BIDDING DOCUMENTS

DESIGNED BY: FACILITIES DESIGN ARCHITECTS & ENGINEERS

CONSULTANT: DEVITA

PROJECT TITLE / DESCRIPTION: LUMBERTON EQUIPMENT SHOP NCDOT HIGHWAY DIVISION 6

STATE CONSTRUCTION ID.#: 16-12916-01A

ASSET NUMBER: 78 * 06 * 00

DATE ISSUED: 12/15/2017

DRAWN BY: MKT

CHECKED BY: MWH

SHEET NO.: E4.1