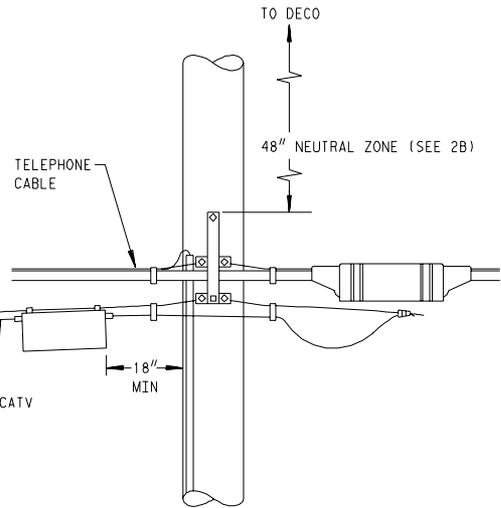
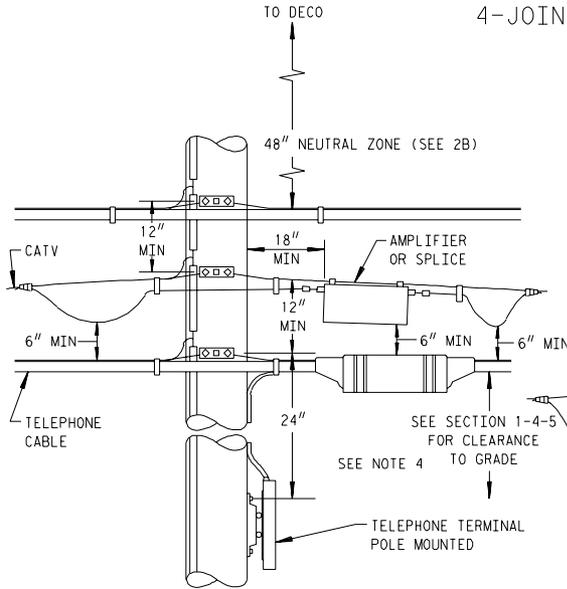
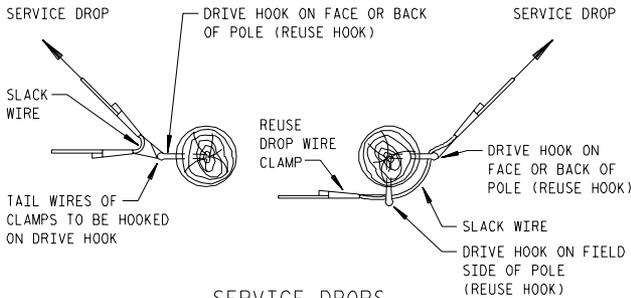


4-JOINT USE



VERTICAL SEPARATION BETWEEN CABLES
DETAIL 403

VERTICAL SEPARATION BETWEEN CABLES
WITH "L" BRACKET
DETAIL 403A

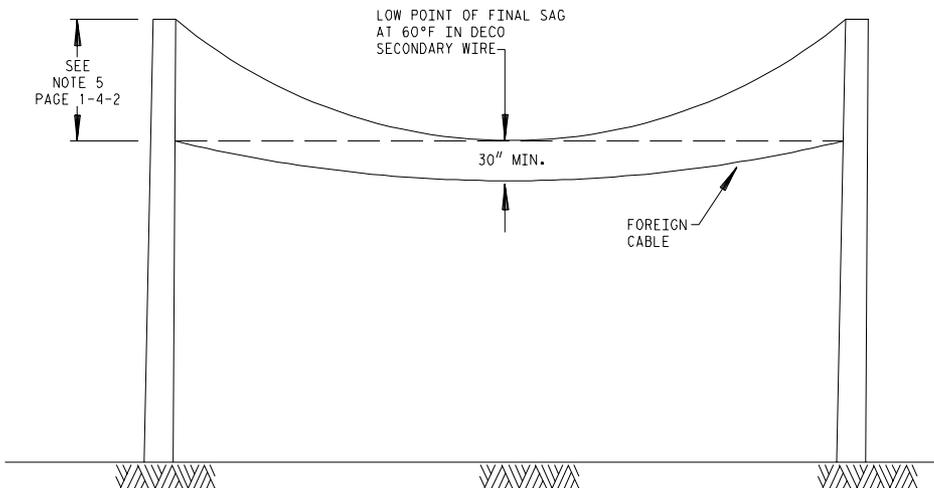


SERVICE DROPS
DETAIL 403B

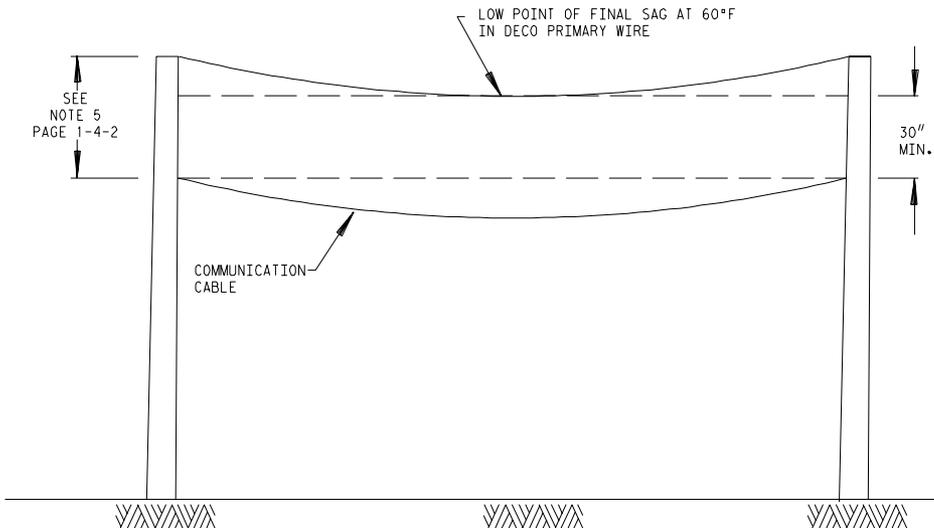
1. CONSTRUCTION LIMITED TO TANGENT, MINOR ANGLE WITH ASSOCIATED GUYS, SERVICE DROPS, TELEPHONE, OR CABLE TV, OR COMMUNICATION CABLES.
2. CLEARANCE BETWEEN FOREIGN CABLES AND DECO CONSTRUCTION:
 - A. VERTICAL SEPARATION BETWEEN FOREIGN CABLES 12" MIN. BUT MAY BE REDUCED TO 4" MIN. FOR CROSSING.
 - B. 48" PREFERRED. 40" MIN. NEUTRAL ZONE MUST BE MAINTAINED FROM DECO ATTACHMENT TO FOREIGN ATTACHMENTS. (REFER TO PAGE 1-4-2-NOTE 5 FOR CLEARANCES).
3. METHODS OF BONDING AND GROUNDING:
 - A. ALL CABLE SUPPORTING STRANDS AND ASSOCIATED GUYS SHALL BE BONDED AND COMMON GROUNDED ON EVERY POLE WHERE GROUNDS EXIST. REFER TO PAGE 1-4-7 FOR CONSTRUCTION DETAILS.
4. DO NOT INSTALL POLE ADJACENT TO A FOREIGN CABLE STRAND MOUNTED TERMINAL OR A CABLE TV AMPLIFIER.
5. THERE IS NO SPECIFIED ORDER FOR FOREIGN CABLES.
6. CHANGES OTHER THAN DETAIL NUMBERS MADE TO THIS PAGE MUST BE REFLECTED ON REFERENCE PAGE 1-2-39.

VERTICAL SEPARATION
AND SERVICE DROPS

4-JOINT USE



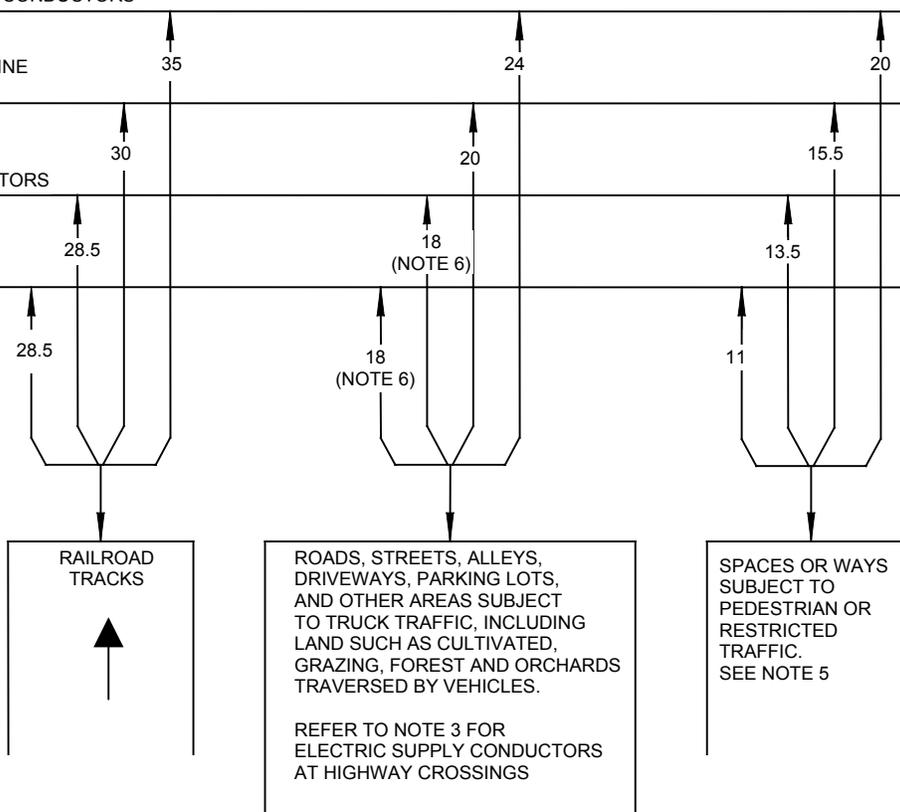
CLEARANCE TO SECONDARY
DETAIL 404



CLEARANCE TO PRIMARY
DETAIL 404A

4-JOINT USE

CLEARANCE HEIGHTS ARE IN FEET

4.8-13KV
OPEN PRIMARY LINE CONDUCTORS0 TO 750 VOLT
OPEN SECONDARY LINE
CONDUCTORS0 TO 750 VOLT
MULTIPLEX CONDUCTORSMESSENGERS,
COMMUNICATIONS,
NEUTRALS, AND
GROUNDED GUYS

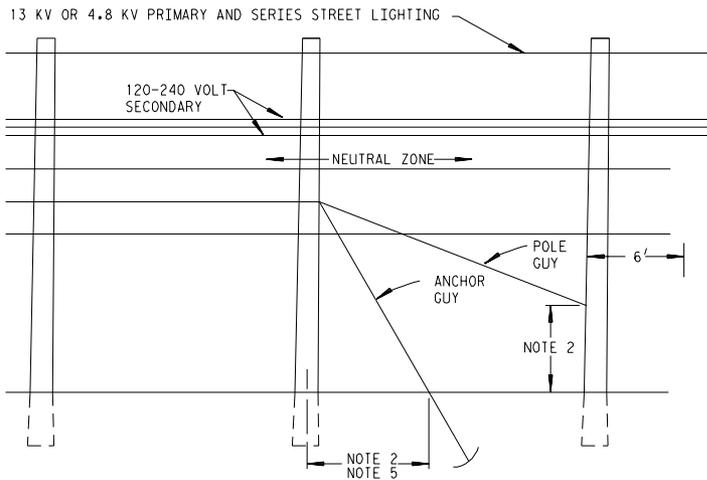
→ **CHART 405**

Notes:

1. Clearances shall be calculated at maximum final sag at the maximum operating temperature of the conductor. Clearances in the chart include the 1.5- to 5-ft sag adders shown on page 1-11-1 in the Lines Construction Manual. Refer to Section 18 in the Lines Construction Manual for sags.
2. Where the height of attachment to a building or other installation does not permit service drops to meet these values, clearances in the Alternate Chart for Service Drops on page 1-11-9 in the Lines Construction Manual may be used.
3. Michigan statutes require a minimum clearance of 22 feet for electric supply conductors at highway crossings. Highways include major streets or roads which are direct traffic routes. Clearances apply at the center or edge of the highway.
4. Trucks are defined as any vehicle exceeding 8 feet in height; clearances for trucks are based on a vehicle height of 14 feet.
5. Pedestrian and restricted traffic areas are those where vehicles exceeding 8 feet in height are prohibited or not normally encountered nor anticipated.
6. Clearance may be reduced to 17 feet in road rights-of-way where the wires, conductors, or cables **do not overhang** the traveled way of the roadway. 17 feet of clearance also applies at crossings over, or running along, alleys, driveways or parking lots.
7. No clearance from ground is required for anchor guys not crossing tracks, rails, roads, streets, driveways, or pathways.
8. Changes other than detail numbers made to this page must be reflected on reference page 1-11-8 in the Lines Construction Manual.

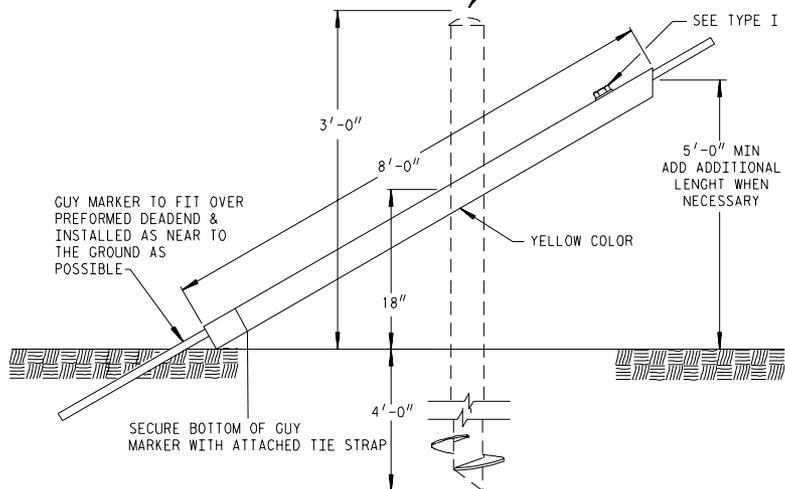
**VERTICAL CLEARANCE OF DISTRIBUTION
WIRES, CONDUCTORS, OR CABLE ABOVE
GROUND, ROADWAY, OR RAILS**

4-JOINT USE



GUYING
DETAIL 406

POWER INSTALLED GUARD POST (ED NO. 240-0834) MAY BE ORDERED FOR EXTRA PROTECTION WHERE PARKING CONDITIONS CREATE HAZZARD.
SET GUARD POST 2'-0" APART BETWEEN CENTERS. (ONE POST ON EACH SIDE OF ANCHOR GUY)



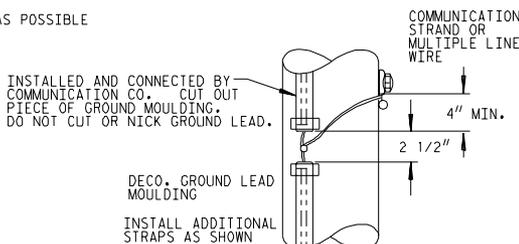
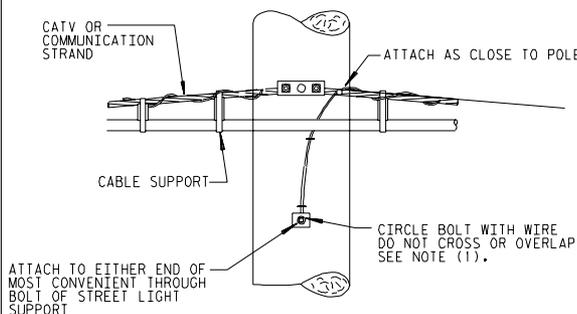
INSTALLATION OF PLASTIC GUY MARKER
DETAIL 406A

NOTES:

1. STRINGING SAGS FOR FOREIGN CABLES ARE TO BE ADJUSTED SO THAT THE REQUIRED STRENGTH LIMITS OF 60% OF ULTIMATE UNDER HEAVY LOADED CONDITIONS ARE NOT EXCEEDED.
2. ALL CONDUCTOR DEADENDS SHALL BE ANCHOR OR POLE GUYED (ANCHOR GUY PREFERRED). POLE GUY ATTACHMENT HEIGHTS ARE TO BE AT THE LOAD AND AT A MINIMUM 8'-0" ABOVE GROUND.
3. GUYS ARE TO BE BONDED TO MESSENGER WIRES TO EFFECTIVELY GROUND THE GUY WIRES. A MINIMUM OF 4 GROUNDS PER MILE ON THE MESSENGER IS REQUIRED.
4. AERIAL CROSSING CLEARANCE REQUIRED BETWEEN FOREIGN CABLE AND SECONDARY SUPPLY CONDUCTORS IS 48" MINIMUM WITHIN 6' OF POLE AND 24" MINIMUM BEYOND 6' FROM POLE.
5. ANCHORS SHALL BE INSTALLED WITH A MINIMUM OF 4' HORIZONTAL CLEARANCE FROM ADJACENT ANCHORS.

GUYING REQUIREMENTS

4-JOINT USE

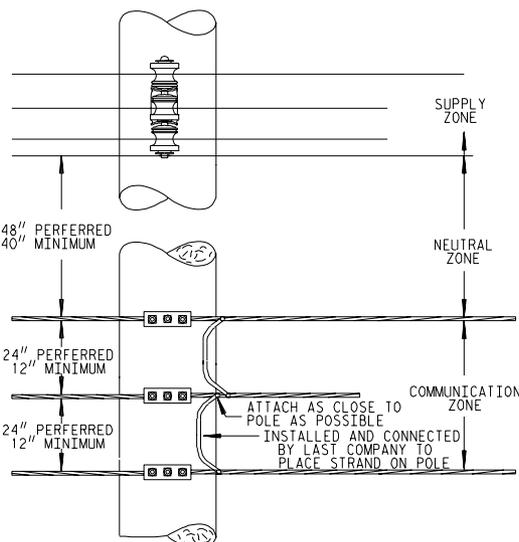


FOREIGN CABLE STRAND TO D.E. Co. STREET LIGHT BRACKET
DETAIL 407

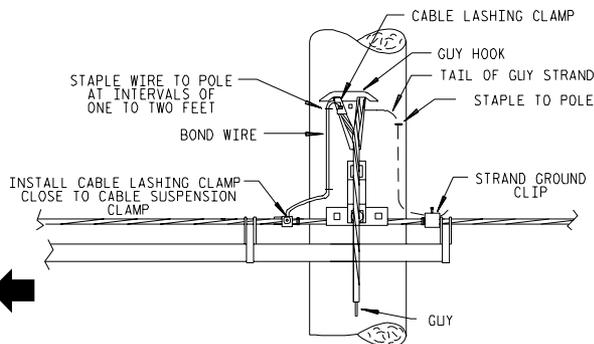
FOREIGN CABLE STRAND TO D.E. Co. GROUNDING CONDUCTOR
DETAIL 407A

NOTES:

1. FOREIGN STRAND MUST BE BONDED TO A D.E. Co. STREET LIGHT BRACKET OR STREET LIGHT SUSPENSION STRAND WHEN THE VERTICAL CLEARANCES CANNOT BE OBTAINED.
THE D.E. Co. WILL INSTALL THE BOND: WHEN A D.E. Co. STREET LIGHT IS TO BE INSTALLED ON A POLE HAVING EXISTING COMMUNICATION STRAND. THE COMMUNICATION Co. WILL INSTALL THE BOND: (SEE NOTE 4) WHEN THE STRAND IS TO BE INSTALLED ON A POLE HAVING AN EXISTING D.E. Co. STREET LIGHT.
2. BOND WIRE SHALL BE NO. 6 OR LARGER, BARE OR COVERED.
3. IF BOND WIRE IS MORE THAN 12" LONG, STAPLE TO POLE.
4. THE FOREIGN Co. MAY ATTACH THE BOND WIRE TO THE STRAND AND LEAVE SUFFICIENT WIRE TO REACH THE FIXTURE, BUT IT SHALL NOT BE ATTACHED UNTIL IT IS DETERMINED THAT THE INSULATING TRANSFORMER IS A STANDARD APPROVED TYPE. THE COMMUNICATION Co. SHALL REFER EACH CASE TO THE D.E. Co. SERVICE PLANNER WHO WILL DETERMINE THE TYPE OF TRANSFORMER. IF THE TRANSFORMER IS SATISFACTORY, THE COMMUNICATION Co. SHALL COMPLETE THE BOND. IF IT IS NECESSARY TO REPLACE THE TRANSFORMER, THE COMMUNICATION Co. SHALL REQUEST SUCH REPLACEMENT BY JOINT USE MEMO. THE D.E. Co. SHALL COMPLETE THE BOND AT THE TIME OF TRANSFORMER REPLACEMENT.
5. INTERSECTING CABLE RUNS- BOND AT EVERY JOINT USE POLE AT INTERSECTING LEADS.
PARALLELING CABLE RUNS- BOND AT THE FIRST AND LAST POLE, AND ON INTERMEDIATE POLES AT APPROXIMATELY EQUAL INTERVALS OR NOT MORE THAN 750 FEET.
6. BONDING IS REQUIRED WHEN A POLE GROUND EXISTS.
7. COMMON BONDING IS PREFERRED (DETAIL 407B) WHEN A POLE GROUND DOES NOT EXIST. IF IT IS ESSENTIAL OR DESIRABLE FOR OTHER REASONS TO ESTABLISH VERTICAL SEPERATION OF 40" OR MORE, BONDING IS NOT NECESSARY.
8. FOR FIGURE 8 COMMUNICATION CABLE GROUND CONNECTOR SEE DETAIL 2205G.
9. THERE IS NO SPECIFIED ORDER FOR FOREIGN CABLES.
10. THE BRACKET SHOULD BE BONDED WHEN A POLE GROUND IS PRESENT ON THE POLE. IN SUCH INSTANCES, THERE IS NO NEED TO MULTI-GROUND THE INDIVIDUAL CABLES.
11. CHANGES OTHER THAN DETAIL NUMBERS MADE TO THIS PAGE MUST BE REFLECTED ON REFERENCE PAGE 1-15-18.2 IN THE LINES CONSTRUCTION MANUAL.



FOREIGN STRAND TO D.E. Co. COMMUNICATION CABLE STRAND
DETAIL 407B



BONDING WITH TAIL OF GUY OR GROUND WIRE
DETAIL 407C

JOINT USE POLE COMMON GROUNDING AND BONDING (TELEPHONE AND CABLE TV)