GEUS Residential Builder Summary

- Contact GEUS before plans are finalized to determine the electric meter location. **Cost of unnecessary additional facilities required to serve home, due to unapproved meter locations, will be paid by builder before electrical service can be established.**
- Builder is responsible for making sure that plat and easement requirements are met**. Approval of permit by City or GEUS cannot relieve property owner of deed restrictions and easement requirements. Please check plat or survey before constructing fences.**
- GEUS will evaluate project and ask for a CIAC (Contribution In Aid to Construction) as a condition of serving if installation costs exceed short term anticipated revenue. All temporary services (Saw poles) require CIAC for up and down costs.
- Single Phase ringless meter sockets up to 320 amp to be provided by builder. We recommend Milbank. Integral lever bypass required for 320 amp meter sockets. Sockets that do not demonstrate adequate clamping force on meter will not be energized. Contact GEUS engineering for guidance when 320 amp socket is not adequate.
- Underground electrical conduit (3”) must be installed to GEUS specifications (at least 3’ deep with warning tape no deeper than 18”) between meter location and designated GEUS location. Contact GEUS to determine where to terminate underground conduit. Consult GEUS engineering for conduit requirements for services greater than 200 amps. GEUS will provide conductor to single family residential homes. Underground electrical conduit must be inspected before trench Is backfilled. GEUS recommends a ¾” conduit be installed alongside of 3” conduit for future CATV or internet.
- For Duplexes Only: Conductor meeting GEUS specs (4/0 or 350 kcmil URD) is to be installed by builder for 2 dwelling structures see attached sheet for more details. Consult GEUS engineering for conduit/ conductor requirements for services greater than 200 amps.
- Service equipment (disconnect and breaker/ fuse) must be immediately adjacent to meter base. For areas outside city limits, an outside emergency disconnect is require per 2020 NEC 230.85.
- For overhead services, house knob/ weatherhead/ mast must be high enough to obtain required vertical clearances. (18”: roof within 6’ of mast, 36”: roof > 6’ from mast, 10’: pedestrian surfaces, 12’: residential driveways, 18’: commercial driveways, and 22’: roads)
- For overhead services, tree branches must be cleared to allow sufficient clearance for service conductors
- Only one GEUS service drop allowed with no more than 6 grouped disconnects for one and two family dwellings. Each dwelling must have an individual meter. See attached sheet for more information
- Grounding Electrode System must meet NEC requirements (2- 8’ rods 6’ apart, concrete encased electrode…). GEUS requires that the NEC compliant Grounding Electrode System must include a visible 8’ ground rod near the meter base.

Electrical Service Checklist

- ☐ All hardware suitable for outdoors and protected from rusting (no sheetrock screws or unprotected hardware) (Hot dip galvanized hardware preferred)
- ☐ All exposed wood supporting meter and service equipment pressure treated and suitable for ground contact where necessary
- ☐ All metal support hardware in contact with ground is adequately protected from corrosion (aluminum or unprotected steel not acceptable)
- ☐ Foundation secure and able to withstand anticipated forces. Soil is tamped where necessary.
- ☐ Adequate length of wires (24”) at service weather head (overhead)
- ☐ Weather head and attachment point tall enough for adequate clearance of overhead conductors (NEC 230.9 and 230.24) (<300v between conductors: bottom of drip loop 18” to roof within 6’ of mast less than 4’ from edge) See chart for more details
- ☐ Weather head and attachment point adequate for required utility clearances (10’ residential pedestrian surface, 12’ residential driveways, 12’ nonresidential pedestrian surfaces, 18’ commercial driveways) See chart for more details
- ☐ Meter base height acceptable (Middle of meter 5-6 feet from grade)
- ☐ All conduits mechanically secure to enclosure and supported (NEC 300.10 and 300.12)
- ☐ All enclosures mechanically secure to supporting structure (NEC 110.12 and 110.13)
- ☐ Conductors protected by conduit bushing where necessary (NEC 300.4)
- ☐ All metal conduits before overcurrent protection bonded with at least 1 bonding bushing or hub with screws (NEC 250.92)
- ☐ Meter enclosure bonded to grounded conductor (Neutral)(NEC 250.92(B)(1))
- ☐ Service Equipment enclosure bonded to grounded conductor (Neutral)(NEC 250.24(B))
- ☐ Grounded conductor (Neutral) identified at weather head, meter, and service equipment (NEC 200.6)
- ☐ Grounding Electrode System adequate. 2 ground rods or other combination per NEC 250.53(2). Vapor barriers underneath concrete encased rebar are not considered a valid grounding electrode. GEUS requires that the NEC compliant Grounding Electrode System must include a visible 8’ ground rod near the meter base.
- ☐ Grounding Electrode System (Ground rod(s) …) connected to Grounded Conductor at Service Disconnect with suitable wire and connectors (NEC 250.66A).
- ☐ Building metal if present (structural steel, metal water pipe…) bonded to Grounded Conductor at Service Disconnect with suitable wire and connectors (NEC 250.104)
- ☐ Switches or breakers no higher than 6’7” (NEC 404.8)
- ☐ No more than 6 service disconnects or ability for more than 6 disconnects (a 42 space MLO panel with 6 breakers is not acceptable) (NEC 230.71)
- ☐ For projects under 2020 NEC (outside of city limits) 1 & 2 Family Dwellings have emergency disconnect located outside of structure (2020 NEC 230.85)
- ☐ Overcurrent protection provided in service equipment (fused disconnect or breaker) (NEC 230.91)
- ☐ If Main Breaker is back-fed, retaining screw or clip secures breaker (NEC 408.36(D))
- ☐ Conductors are an adequate size. Calculation provided if conductor ampacity less than overcurrent protection rating. (NEC 230.42, NEC 310 and 240.4(B))
- ☐ All connections adequate. No more than 1 conductor per connector (unless specifically approved) (NEC 110.14(A))
- ☐ No service wires in same conduit as non-service wires. (NEC 230.7)
- ☐ No wires may pass through meter base (except grounding electrode conductors)

GEUS Metering Requirements

General:

- Ringless with provision for meter seal. (ring meter sockets may be approved by GEUS in specific situations such as temporary power)
- **Trans-socket meters not permitted for GEUS services**
- Meter sockets and CT cabinets must be rated at least NEMA 3R for outdoors
- 600 volt insulation
- Listed by NRTL (UL, ETL…) to UL 414 requirements and meet ANSI C12.7 and NEMA 250 requirements
- Must be mounted with center of meter between 5’ and 6’ from the finished grade (exceptions apply)
- Location must be approved by GEUS before installation
- Must be outside of building with unobstructed access at least 3 feet in all directions (charges may be assessed for meter obstruction if fences/animals inhibit GEUS access to meter)
- Must be clearly permanently identified with service address (including A, B or unit number)(No Sharpie)
- Must be 5 feet away from driveway or other surfaces intended for vehicle traffic or protected by structural elements such as bollards
- Cannot be installed on GEUS transformers or poles.
- Must be bonded per NEC requirements
- Only service conductors for that specific meter point are permitted in a CT Can or self-contained meter socket.
    - Tap cans or wireways (provided by customer) may be required for multiple meter points
- Meter sockets are intended for GEUS revenue metering and may not be used for any other purpose

Self-Contained Sockets:

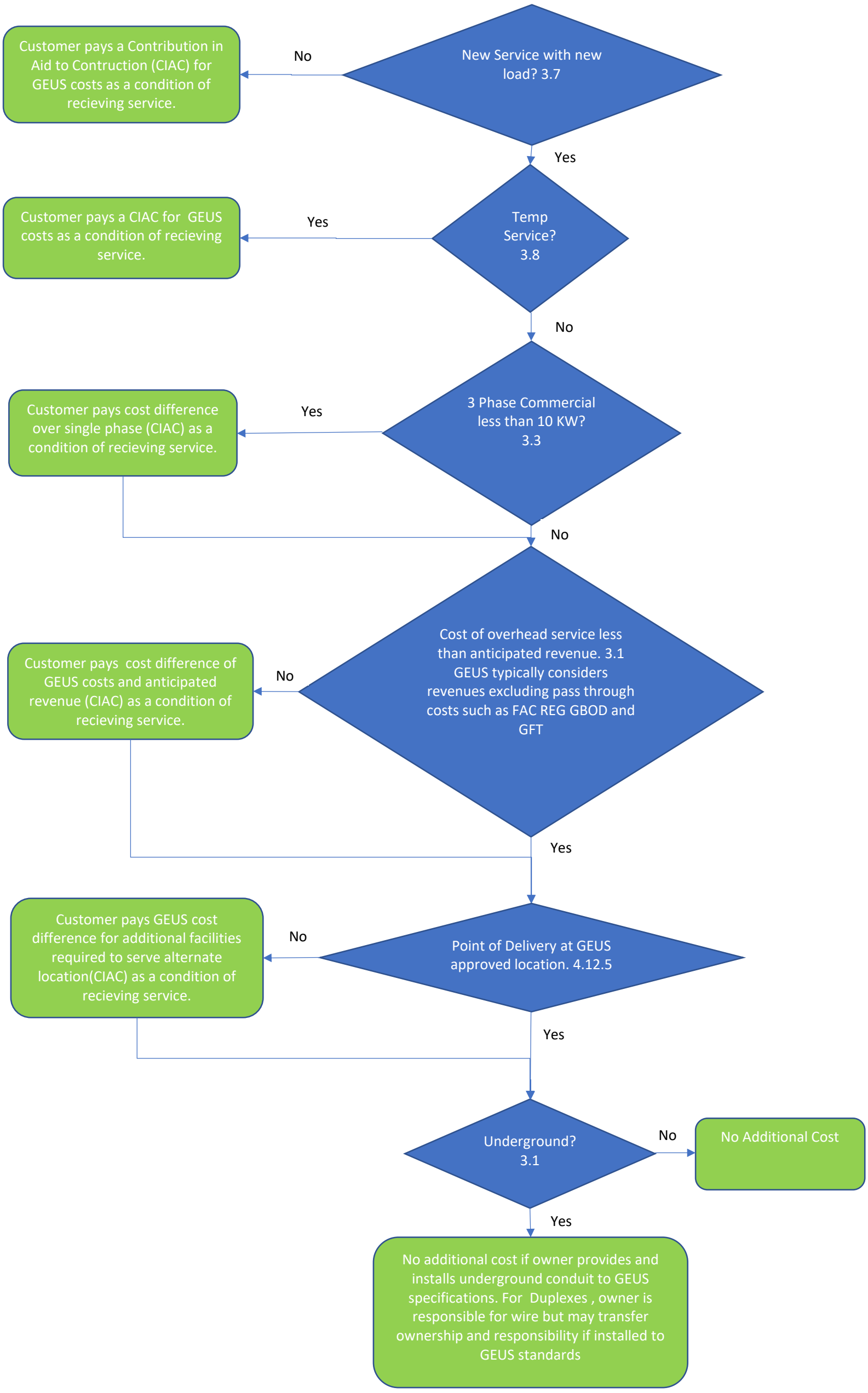
- Provided by customer (we recommend Milbank) We have meters for 1s,2s,14s,15s,16s self-contained sockets.
- Maximum service size:
    - 3 Phase : 200 amps continuous 250 amps max
    - 1 Phase: 320 amps continuous 400 amps max (320 amp meter sockets require approval from GEUS)
    - GEUS reserves right to restrict self-contained meter sockets in certain situations (high continuous loads)
    - A larger compatible meter socket greater the maximum service size may be used if the service and service equipment do not exceed the maximum size.
        - Example: 320 amp 3 phase meter socket on a 200 amp 3 phase service.
- Continuous rating of meter socket must be greater than or equal to:
    - NEC calculated load (125% of continuous+ 100% of non-continuous) divided by 125%
    - Main breaker size (or sum of main breakers) divided by 125%
    - Examples:
        - 320 amp socket with 2-200 amp main breaker panels
        - 200 amp socket with 225 amp main breaker
- Per UL standards Meter sockets are designed and tested for 100% loading continuously and 120% loading for short time periods (2 hours)
- Sockets that do not demonstrate adequate clamping force on meter will not be energized
- Service equipment must be located as close as practical to meter socket
- Lever bypass required for 320 amp sockets
- 480 volt self-contained meter sockets require:
    - prominent voltage labeling
    - a disconnect ahead of meter
- Service equipment ahead of meter requires permission and must comply with NEC 250.142(B)

Instrument rated meters (CT Metering)

- Meter socket typically purchased from GEUS by customer
    - Availability limited by warehouse stock. Recommend purchasing from GEUS well before the energization date.
    - Alternate sockets must meet GEUS specifications and have GEUS approval
- Used when self-contained meters are not adequate, or when required by GEUS engineering
- The dot on the current transformer (CT) shall face the utility source
- CTs may be mounted in customer provided cabinet or GEUS transformer depending on situation. Contact GEUS engineering for guidance
    - Transformer mounted CTs
        - Require meter to be mounted within 50 feet of transformer
        - Meter cannot be mounted on transformer
        - 1" PVC conduit must be provided between meter socket and transformer
        - Stand-alone strut rack preferred
        - Service Equipment must be located as close as practical to Point of Delivery (NEC Service Point)
        - Can only be used if a transformer serves a single meter point
    - Cabinet mounted CT
        - Required for overhead transformers and underground transformers serving multiple customers/accounts.
        - Meter to be mounted adjacent to cabinet with 1" metal conduit between cabinet and meter socket
            - Hubs or other listed watertight connector required for top and side conduit connections above exposed energized parts
        - Cabinet and metal conduit(s) must be bonded to grounded conductor(s) per NEC (lock rings are not acceptable as bonding ahead of service equipment but may be used to mechanically secure conduit)
        - Service equipment must be located as close as practical to cabinet
        - No splices or terminal blocks permitted in cabinet unless specific approval is received from GEUS engineering
            - Approved splices and terminal blocks may require a larger size cabinet
        - Only service conductors for that specific meter point are permitted in CT Cans.
            - Tap cans or wireways, provided by customer, may be required to be installed ahead of multiple meter points
        - Cabinet must be located outside free from obstructions (3 feet in all directions) that would prevent cabinet from being opened or prevent access to cabinet. Top of cabinet must be less than 6' from finished grade. Alternate locations must be approved by GEUS engineering.
        - Cabinet must be approved by GEUS engineering
        - Cabinet provided by customer.
        - Cabinet must have pad locking and sealing provisions
        - Cabinet shall have ¾" plywood backing for CT mounting
        - Cabinet (provided by customer) shall have minimum dimensions as follows

	300—600 amp		700-1600 amp	
	1 phase	3 phase	1 phase	3 phase
30x30x10	X			
32x36x13		X	X	
36x46x13				X

Will I need to pay for Electrical Service Construction?



Type of Service	Service Point (Demarcation)	Service between customer and GEUS				Meter Socket/ Meter Pedestal. (Special Provisions Apply for Instrument Rated Meters)				Notes
		Conduit Installation	Conductor Installation	Connections at service point	Ownership Conduit and Conductor	Materials	Installation	Connections	Ownership and responsibility	
Overhead	Weatherhead conductors	N/A	GEUS	GEUS	GEUS	Owner	Owner	Owner	Owner	Owner to install suitable anchor for service wires
Single Family Underground Individual	Meter Base terminals Line side	Supplied and installed by Owner	GEUS	GEUS on approved meter base	GEUS	Owner	Owner	GEUS Top/ Owner Bottom	Owner	Owner responsible for installation of undergound conduit to GEUS designated point
Underground Duplex No Ownership Transfer	Transformer Secondary Terminal, Secondary Pedestal, or Riser at GEUS pole	Supplied and installed by Owner	Owner	GEUS	Owner	Owner	Owner	Owner	Owner	Only 1 GEUS service permitted per building with no more than 6 grouped disconnects. Disconnects in individual dwellings are not considered grouped.
Underground Duplex on individual lot. Ownership Transfer approved by GEUS	Termination point of underground conductors at building	Supplied and installed by Owner	Supplied and installed by Owner	GEUS	GEUS if installed to GEUS design and ownership transferred to GEUS	Owner	Owner	Owner	Owner	Owner responsible for installation of undergound conduit and conductor to GEUS designated point. GEUS must accept ownership and will only accept ownership on systems built to GEUS design using materials available in GEUS warehouse. Only 1 GEUS service permitted per building with no more than 6 grouped disconnects. Disconnects in individual dwellings are not considered grouped.

Minimum Clearance for Overhead Service Drops

Minimum Clearances from NESC for covered overhead service drop cable on a messenger (triplex, quad…) (including drip loops) connected to building. Clearances are vertical unless otherwise noted

	1 Phase 124/240 or 3 phase 120/208	3 phase 120/240 delta with wild leg	1 or 3 phase 480
Customer owned conductors on drip loop from roof overhang less than 4'+	1.5'	1.5'	8'
Customer owned conductors on drip loop from roof or overhang greater than 4'+	3'	3'	8'
Roof within 6' of mast no more than 4' from edge	1.5'	1.5'	1.5'
Roof Greater than 6' from mast	3'	3	3'
Accessible Roofs, balconies, attached decks fire escapes	10'	10'	10'
Under Accessible Roofs, balconies, attached decks fire escapes	3'	3'	3'
Horizontal clearance porches decks fire escapes…	5'	5'	5'
Windows all directions except above	3'	3'	3'
Residential Pedestrian Surface*	10'	10.5'	-
Residential Driveway	12'	12.5	-
Non-Residential Pedestrian surface*	12'	12'	12'
Commercial Driveway++	18'	18'	18'
Public Road++	22'	22'	22'
Railroad	24'	24'	24'

+ Determined by NEC

++ Determined by Stricter GEUS service policy

* areas where riders on horses or other large animals, vehicles, or other mobile units exceeding 8 feet are not reasonably anticipated

Customer Wire Size for Full Service Capability based on NEC

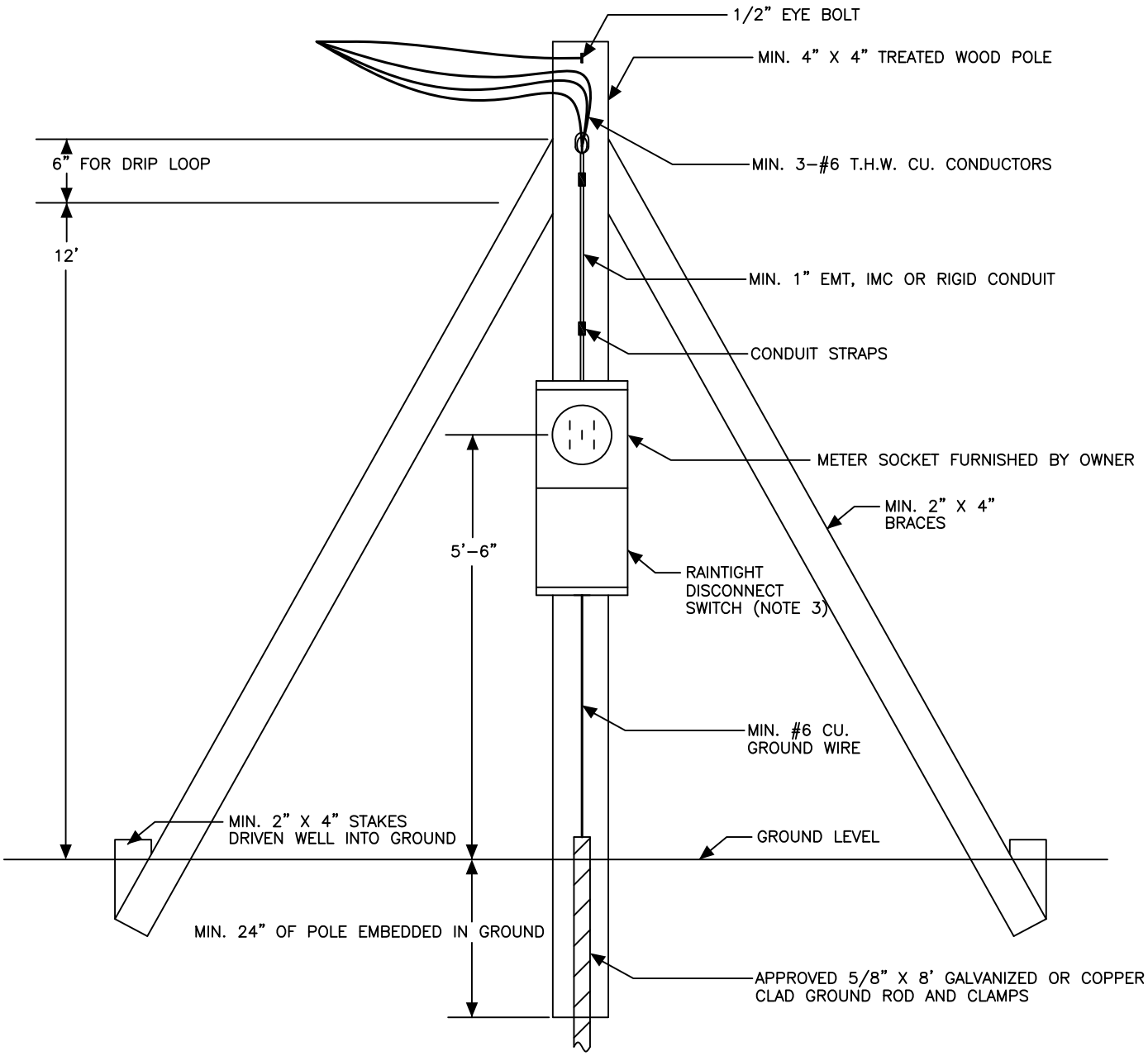
Breaker rating (amps)	Min Meter socket rating (amps)	Single Phase Dwelling unit (entire load) per NEC 310.15(B)(7)		Non Dwelling unit and individual panels of dwelling unit		Parallel conductors (Minimum of 1/0 AWG)			
						Same Conduit		Different Conduit	
		Copper	Aluminum	Copper	Aluminum	Copper	Aluminum	Copper	Aluminum
100	100	4 AWG (102 amps)	2 AWG (108 amps)	3 AWG (100 amps)	1 AWG (100 amps)				
125	125	2 AWG (139 amps)	1/0 AWG (145 amps)	1 AWG (130 amps)	2/0 AWG (135 amps)		2-1/0 AWG (216 amps)		2-1/0 AWG (240 amps)
150	125	1 AWG (157 amps)	2/0 AWG (163 amps)	1/0 AWG (150 amps)	3/0 AWG (155 amps)		2-1/0 AWG (216 amps)		2-1/0 AWG (240 amps)
175	150	1/0 AWG (181 amps)	3/0 AWG (187 amps)	2/0 AWG (175 amps)	4/0 AWG (180 amps)	2-1/0 AWG (272 Amps)	2-1/0 AWG (216 amps)	2-1/0 AWG (300 amps)	2-1/0 AWG (240 amps)
200	200	2/0 AWG (211 amps)	4/0 AWG (217 amps)	3/0 AWG (200 amps)	250 MCM (205 amps)	2-1/0 AWG (272 Amps)	2-1/0 AWG (216 amps)	2-1/0 AWG (300 amps)	2-1/0 AWG (240 amps)
300 (2-150 or 100 & 200)	320	250 MCM (307 amps)	350 MCM (301 amps)	350 MCM (310 amps)	500 MCM (310 amps)	2-2/0 AWG (312 Amps)	2-4/0 AWG (328 amps	2-1/0 AWG (300 amps)	2-4/0 AWG (360 amps)
325 (200 & 125)	320	300 MCM (343 amps)	400 MCM (325 amps)	400 MCM (335 amps)	600 MCM (340 amps)	2-3/0 AWG (360 Amps)	2-4/0 AWG (328 amps	2-2/0 AWG (350 amps	2-4/0 AWG (360 amps)
400 (2- 200)	320	400 MCM (404 amps)	600 MCM (410 amps)	600 MCM (420 amps)	900 MCM (425 amps)	2-4/0 AWG (416 amps)	2-300 MCM (368 amps)	2-3/0 AWG (400 amps)	2-250 MCM (410 amps)

Conduit size for 3 wire single phase service (6 wires if parallel)	1.25"	1.5"	2"	2.5"	3"	4"

Meter sockets are rated for 100% load continuously and 120% load for short periods of time. Breakers are rated for 80% load continuously and 100% load for short periods of time.

Wires are sized for fully loaded service. Smaller wire sizes may be permitted in certain situations depending on calculated load and NEC rules. If smaller wire is provided the burden of proof is on the installer.

320 amp meter socket for GEUS customers must be single phase.



FRONT VIEW

NOTES:

1.) DISTANCE TO GEUS SECONDARY POLE SHALL NOT BE MORE THAN 100' FOR 100 AMP OR SMALLER SERVICES AND NOT MORE THAN 75' FOR 150 AMP AND 200 AMP SERVICES. FOR SERVICES LARGER THAN 200 AMP, CONSULT WITH GEUS ENGINEERING DEPARTMENT.

2.) A MINIMUM CLEARANCE OF 18' IS REQUIRED OVER COMMERCIAL DRIVEWAYS AND PARKING LOTS. A MINIMUM of 22' CLEARANCE IS REQUIRED OVER PUBLIC STREETS.

3.) DUAL ELEMENT FUSES OR CIRCUIT BREAKERS SHALL BE USED IN RAIN TIGHT ENCLOSURE. NO PLUG-TYPE FUSES ALLOWED. G.F.I. PROTECTION REQUIRED ON 120V RECEPTACLE.

4.) CUSTOMER SHALL BE RESPONSIBLE FOR PROVIDING PROPER IDENTIFICATION AT THE SERVICE LOCATION PRIOR TO SERVICE BEING RENDERED.

5.) MINIMUM 24" CONDUCTOR TAILS AT WEATHER HEAD. NEUTRAL SHALL BE CLEARLY IDENTIFIED.

6.) CUSTOMER MUST CONTACT ALL UTILITIES TO OBTAIN LOCATES PRIOR TO EXCAVATION.

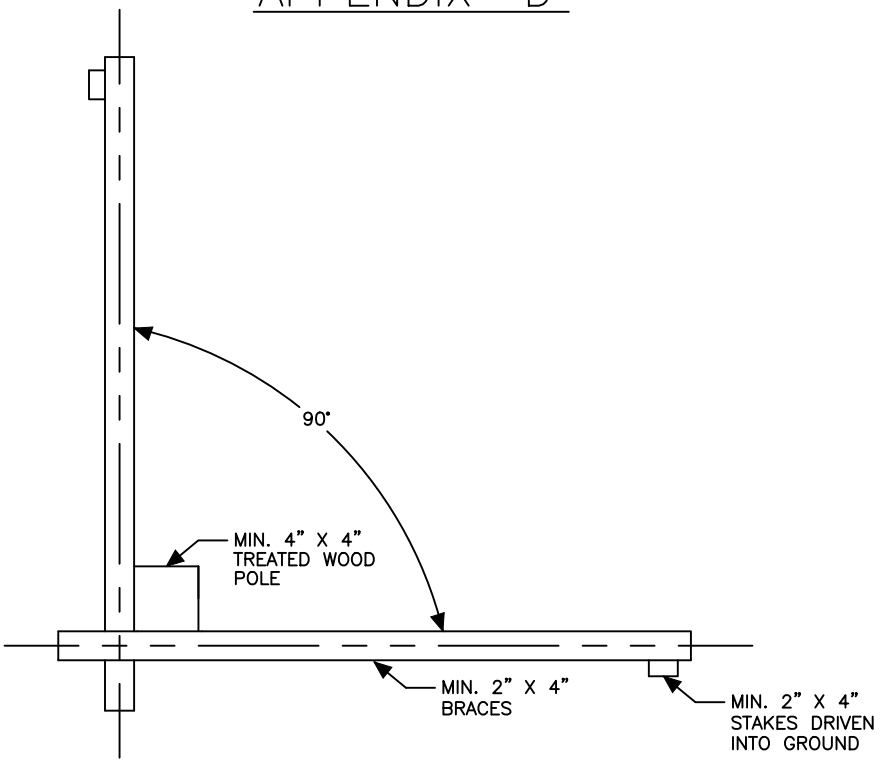
GEUS Energizing the Community

DRAWN BY	JKS
CHK'D BY	ZVM
APPROVED BY	ADC

TEMPORARY CONSTRUCTION SERVICE FROM OVERHEAD SYSTEM

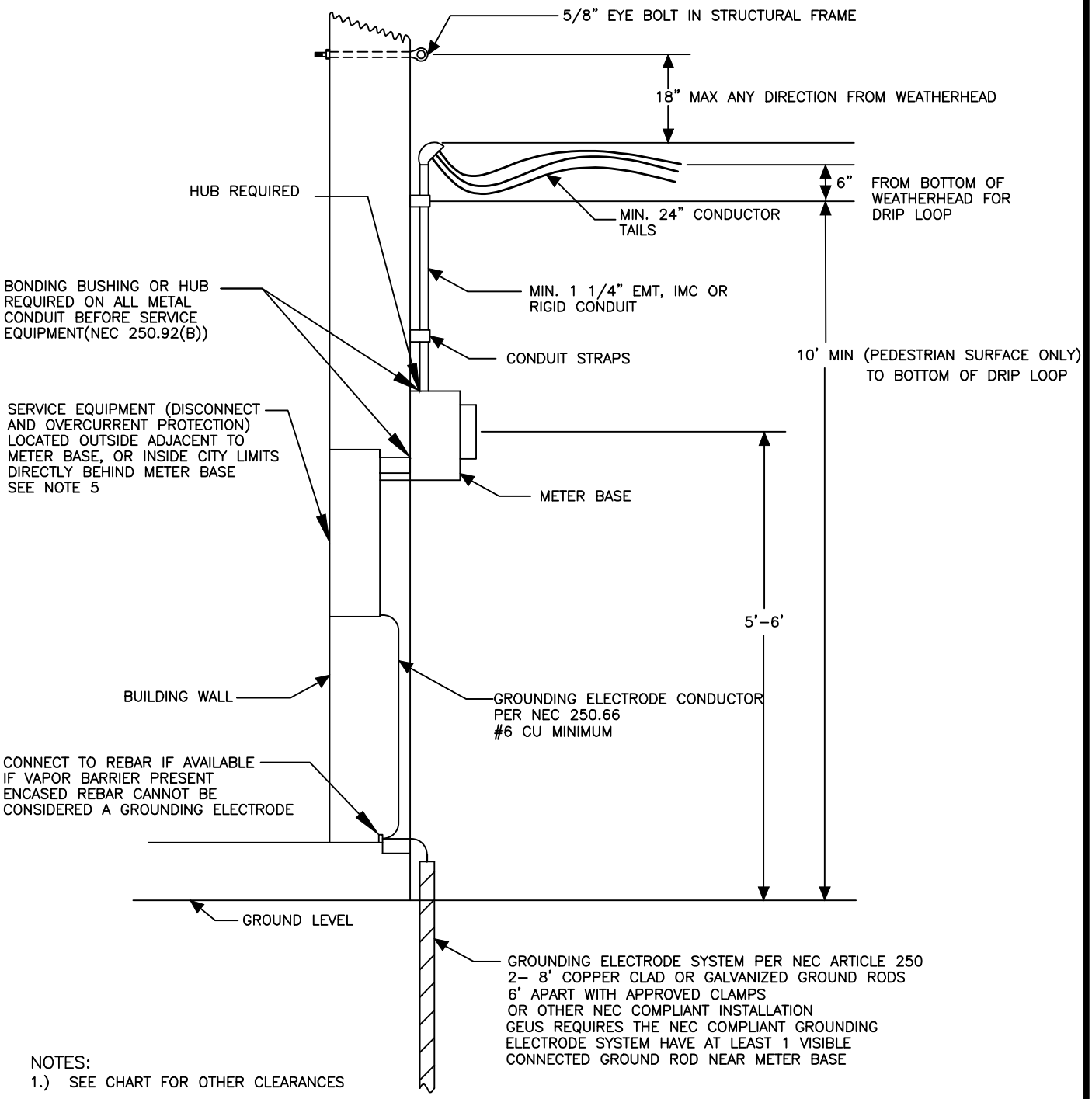
DATE	6/20/2016
DWG NO.	Q1.1.1

APPENDIX "D"



TOP VIEW

GEUS Energizing the Community	DRAWN BY JKS CHK'D BY ZVM APPROVED BY ADC	TEMPORARY CONSTRUCTION SERVICE FROM OVERHEAD SYSTEM	DATE 6/20/2016 DWG NO. Q1.1.2



NOTES:

1.) SEE CHART FOR OTHER CLEARANCES

2.) A MINIMUM 24" CONDUCTOR EXTENDED FROM WEATHER HEAD, WITH NEUTRAL CONDUCTOR PLAINLY IDENTIFIED.

3.) METER BASE MUST BE SECURELY AND PERMANENTLY MOUNTED TO EXTERIOR OF BUILDING WALL.

4.) EYE BOLT TO BE INSTALLED BY CUSTOMER.

5.) OUTSIDE DISCONNECT REQUIRED FOR ALL 1 & 2 FAMILY DWELLINGS OUTSIDE CITY LIMITS. (2020 NEC 230.85)

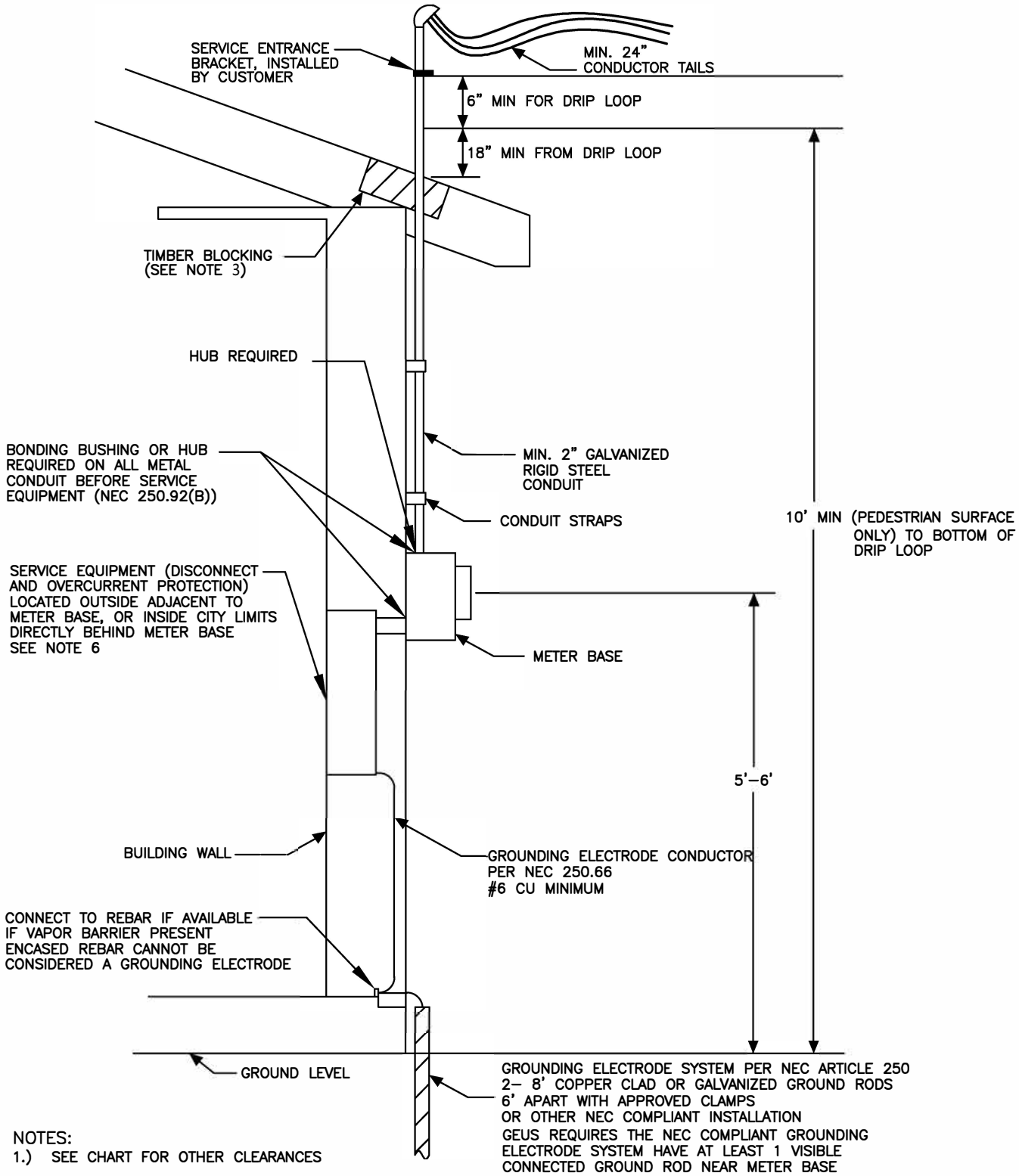
GEUS Energizing the Community

DRAWN BY	CHK'D BY	APPROVED BY
JKS	JRS	ZVM

SERVICE ENTRANCE FOR HOUSES WITH ADEQUATE HEIGHT

DATE: 7/25/2022

DWG NO. Q1.2



NOTES:

1.) SEE CHART FOR OTHER CLEARANCES

2.) A MINIMUM OF 24" CONDUCTOR TAILS EXTEND FROM WEATHER HEAD WITH NEUTRAL CONDUCTOR PLAINLY IDENTIFIED

3.) MAST SHALL HAVE SUFFICIENT SUPPORT (EX. 2" X 6" FRAMING BETWEEN RAFTERS TO REINFORCE ROOF DECKING). WHERE SERVICE IS LONG OR EXTRA HEAVY, THE ELECTRICAL INSPECTOR MAY REQUIRE ADDITIONAL SUPPORT.

4.) FOR ROOF OVERHANG GREATER THAN 48" ALL EXPOSED CONDUCTORS INCLUDING DRIP LOOP MUST BE 3' FROM ROOF

5.) METER BASE MUST BE SECURELY AND PERMANENTLY MOUNTED TO EXTERIOR OF BUILDING WALL.

6.) OUTSIDE DISCONNECT REQUIRED FOR ALL 1 & 2 FAMILY HOMES OUTSIDE CITY LIMITS. (2020 NEC 230.85)

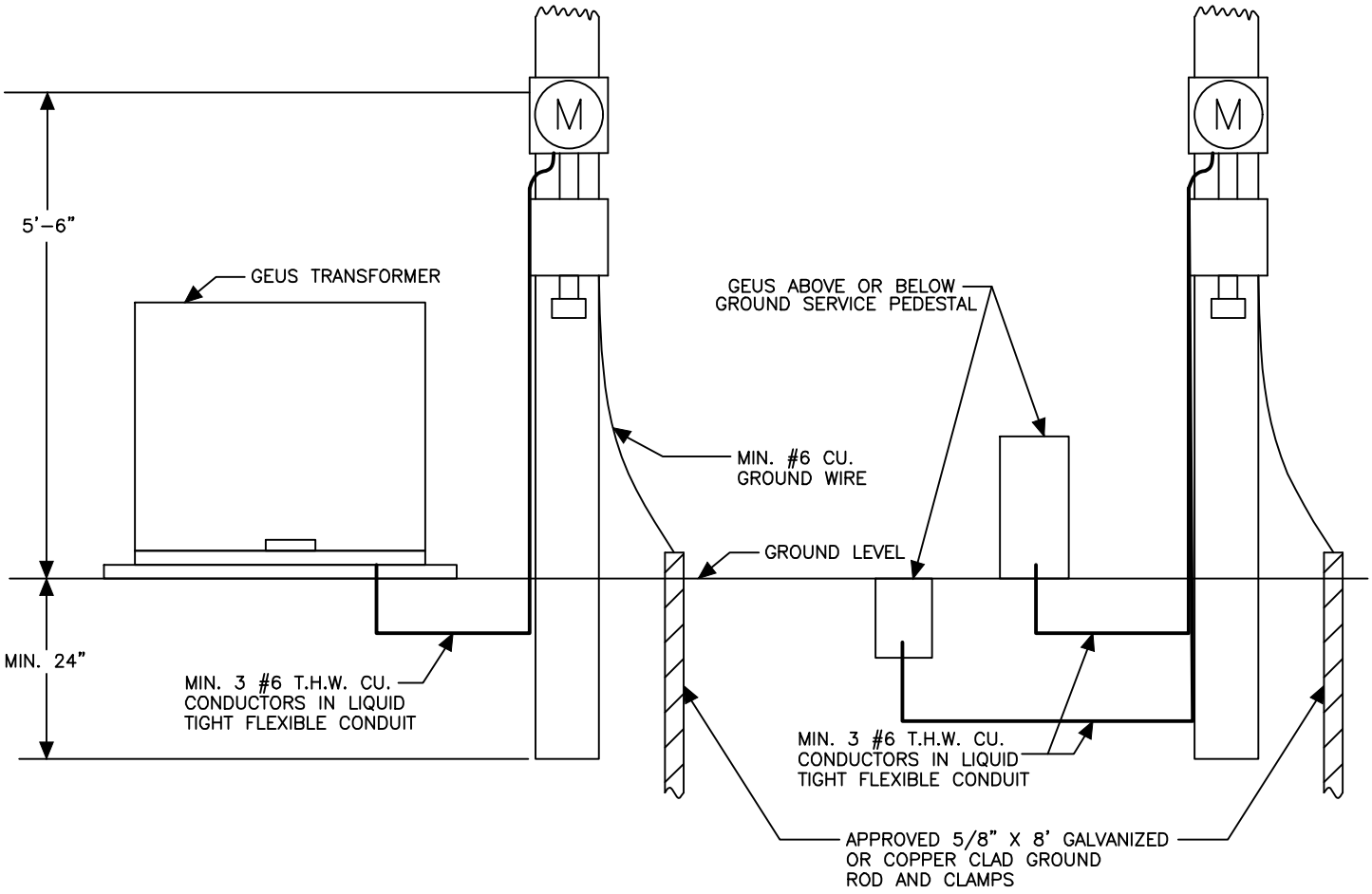
GEUS Energizing the Community

DRAWN BY	CHK'D BY	APPROVED BY
JKS	ZVM	ADC

SERVICE ENTRANCE FOR HOUSES WITH LOW ROOF

DATE: 6/20/2016

DWG NO.: Q1.3



NOTES:

1.) DUAL ELEMENT FUSES OR CIRCUIT BREAKERS SHALL BE USED IN RAINTIGHT ENCLOSURE. NO PLUG TYPE FUSES ALLOWED G.F.I. PROTECTION REQUIRED ON 120V RECEPTACLE.

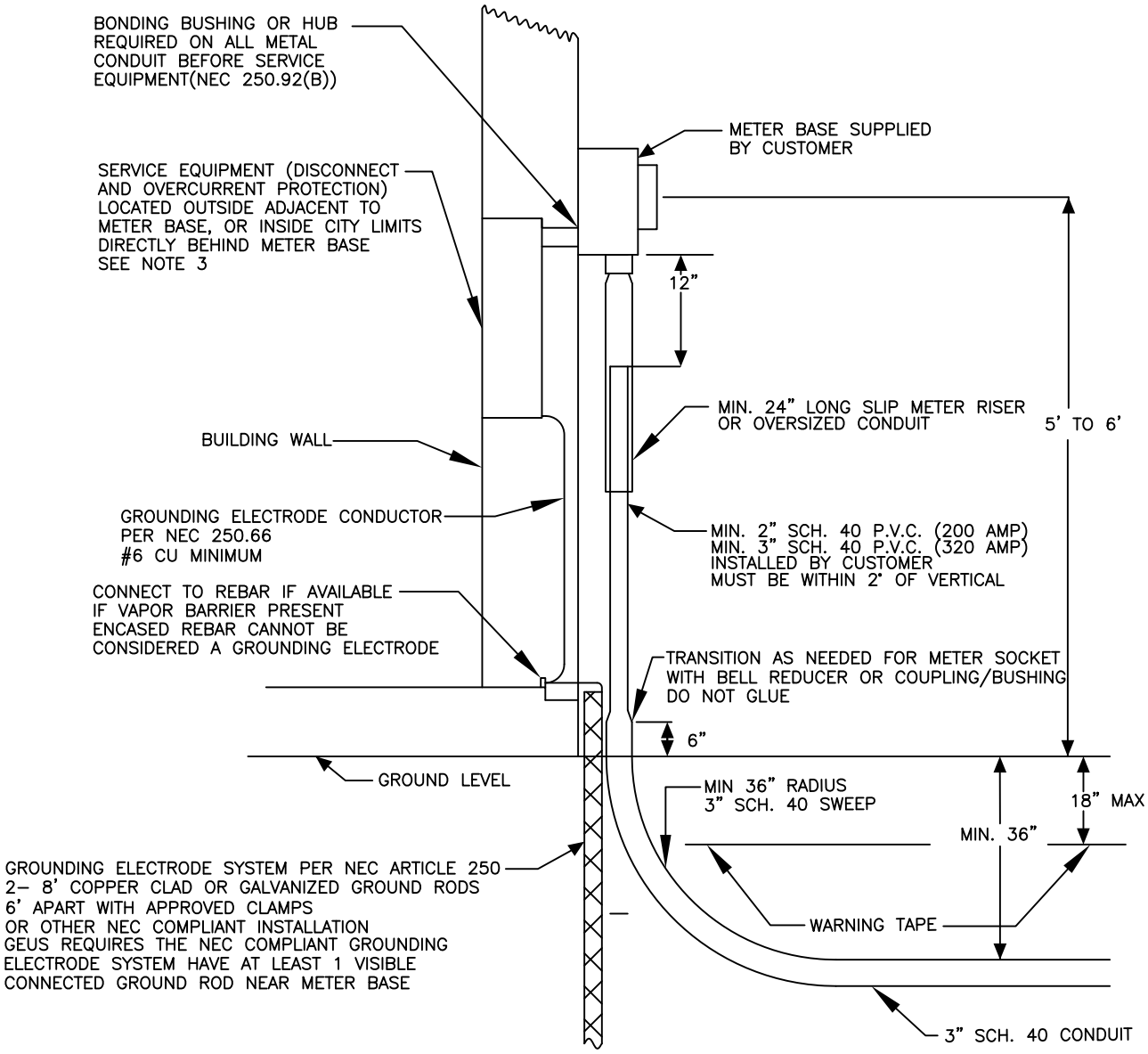
2.) CUSTOMER SHALL BE RESPONSIBLE FOR PROVIDING PROPER IDENTIFICATION AT THE SERVICE LOCATION PRIOR TO SERVICE BEING RENDERED.

3.) CUSTOMER TO PROVIDE 36" OF SERVICE ENTRANCE CONDUCTOR BEYOND CONDUIT.

4.) CUSTOMER MUST CONTACT ALL UTILITIES TO OBTAIN LOCATES PRIOR TO EXCAVATION.

GEUS Energizing the Community

DRAWN BY JKS	TEMPORARY CONSTRUCTION SERVICE FROM UNDERGROUND SYSTEM	DATE 6/20/2016
CHK'D BY ZVM		DWG NO. UQ1.1
APPROVED BY ADC		



NOTES:

1.) METER BASE MUST BE SECURELY AND PERMANENTLY MOUNTED TO EXTERIOR OF BUILDING WALL.

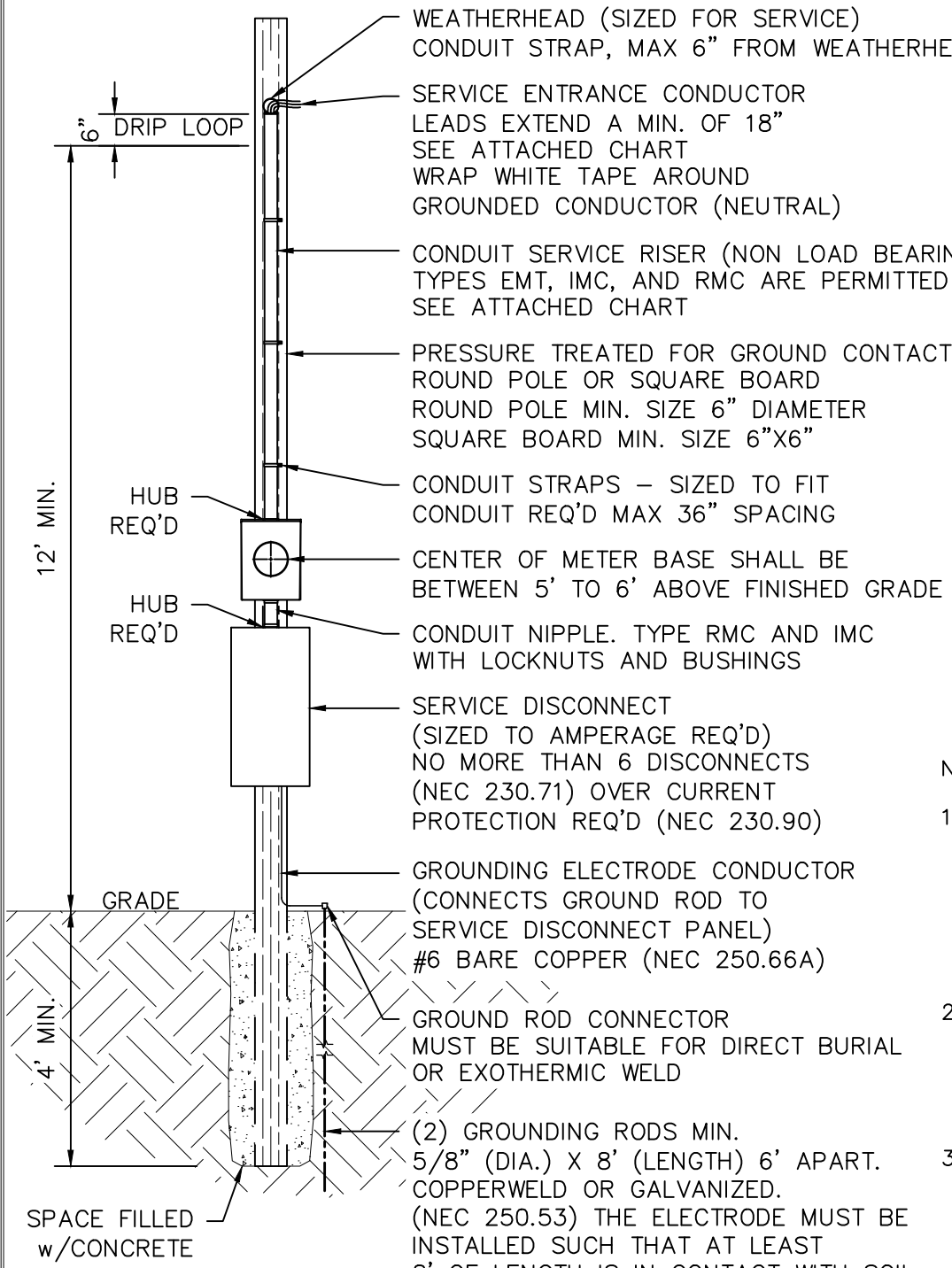
2.) CUSTOMER MUST CONTACT ALL UTILITIES TO OBTAIN LOCATES PRIOR TO EXCAVATION.

3.) OUTSIDE DISCONNECT REQUIRED FOR ALL 1 & 2 FAMILY DWELLINGS OUTSIDE OF CITY LIMITS. (2020 NEC 230.85)

GEUS Energizing the Community

DRAWN BY JKS	RESIDENTIAL UNDERGROUND SERVICE	DATE 6/20/2016	
CHK'D BY ZVM		DWG NO. UQ1.2	
APPROVED BY ADC			

PERMANENT OVERHEAD SERVICE – DWELLINGS (METER POLE)



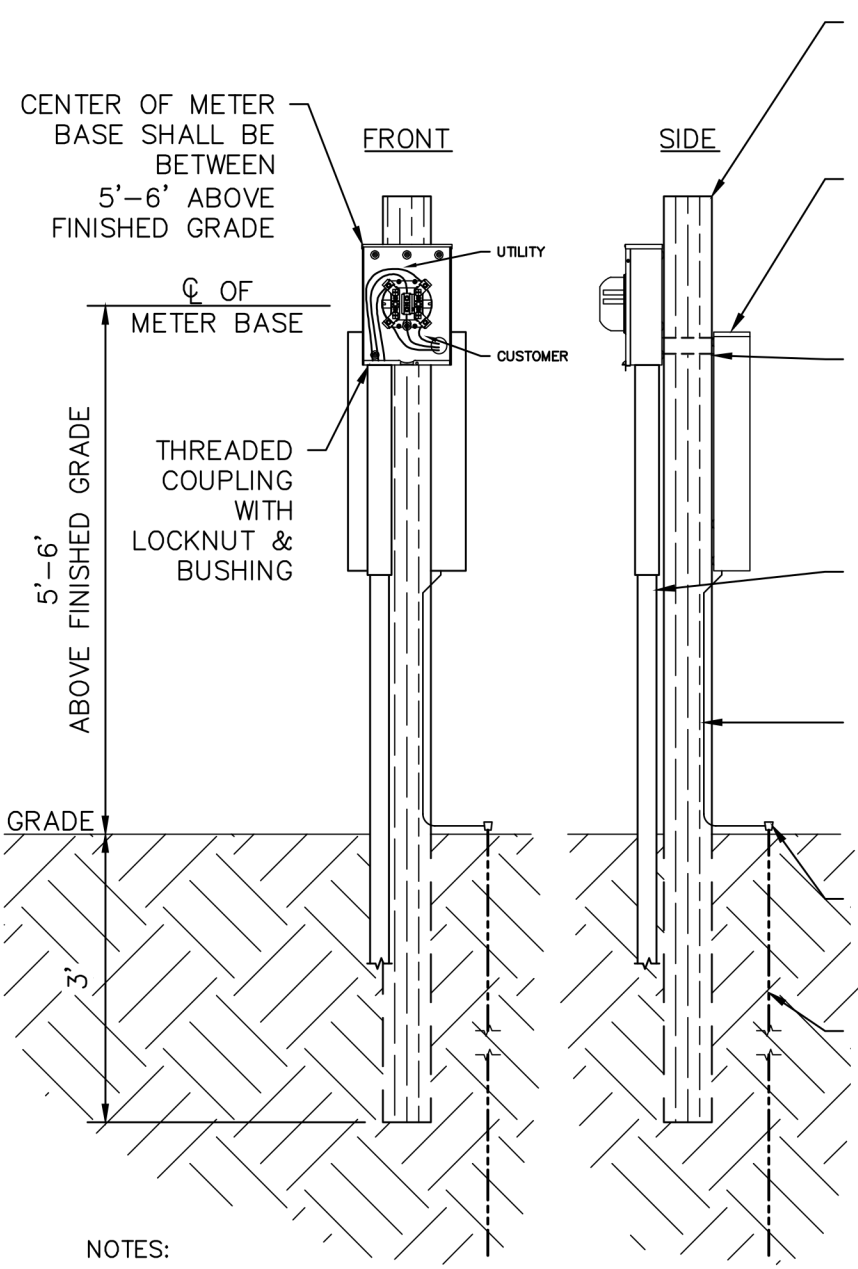
NOTES:

1. ALL 125V, SINGLE–PHASE SERVICE RECEPTACLES INSTALLED OUTDOORS SHALL HAVE GROUND–FAULT–CIRCUIT–INTERRUPTER PROTECTION FOR PERSONNEL.
2. GOVERNING BODIES SUCH AS COUNTIES, MUNICIPALITIES, ETC. WITH LEGAL JURISDICTION; MAY ENFORCE ADDITIONAL RULES AND REGULATIONS
3. WHERE LOCAL INSPECTION AUTHORITY IS NOT INVOLVED, METER INSTALLATIONS SHOULD BE WIRED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE OR GEUS SPECIFICATIONS WHEN THE GEUS SPECIFICATIONS EXCEED THOSE OF THE NATIONAL ELECTRIC CODE.

SHEET#	MULTI SHEET DRAWING INFORMATION:	DRAWN BY:	APPROVED BY:	SHEET INFORMATION:
001		JAD	JS	PERMANENT OH SERVICE DWELLINGS (METER POLE)
		DATE: 03/22/21	SCALE: 3/8" = 1'0"	
		REVISION DATE:	DWG NAME: Permanent Overhead Service Meter Pole (Dwellings).dwg	

GEUS Energizing the Community

PERMANENT UNDERGROUND SERVICE (METER POLE)



PRESSURE TREATED FOR GROUND CONTACT MIN, 6" DIA. ROUND POLE OR 4"X6" SQUARE POLE (METAL POLE IN CONCRETE ALSO ACCEPTABLE)

SERVICE DISCONNECT (SIZED TO AMPERAGE REQ'D) NO MORE THAN 6 DISCONNECTS (NEC 230.71) OVER CURRENT PROTECTION REQ'D (NEC 230.90)

CONDUIT NIPPLE. TYPE RMC & IMC WITH LOCKNUTS & BUSHINGS (NEC 250.92B) GROUNDING BUSHING REQ'D. SEE ATTACHED CHART FOR CONDUIT & WIRE SIZE.

CONDUIT (MIN. 2") w/EXPANSION JOINT FOR THE MECHANICAL PROTECTION OF PERMANENT UNDERGROUND ENTRANCE CONDUCTORS.

GROUNDING ELECTRODE CONDUCTOR (CONNECTING GROUND ROD TO SERVICE DISCONNECT PANEL) #6 BARE COPPER. STAPLED TO POLE EVERY 6". (NEC 250.66A)

GROUND ROD CONNECTOR MUST BE SUITABLE FOR DIRECT BURIAL OR EXOTHERMIC WELD

(2) GROUNDING RODS MIN. 5/8" (DIA.) X 8' (LENGTH) 6' APART. COPPERWELD OR GALVANIZED. (NEC 250.53) THE ELECTRODE MUST BE INSTALLED SUCH THAT AT LEAST 8' OF LENGTH IS IN CONTACT WITH SOIL. MUST BE IN SOIL, NOT CONCRETE.

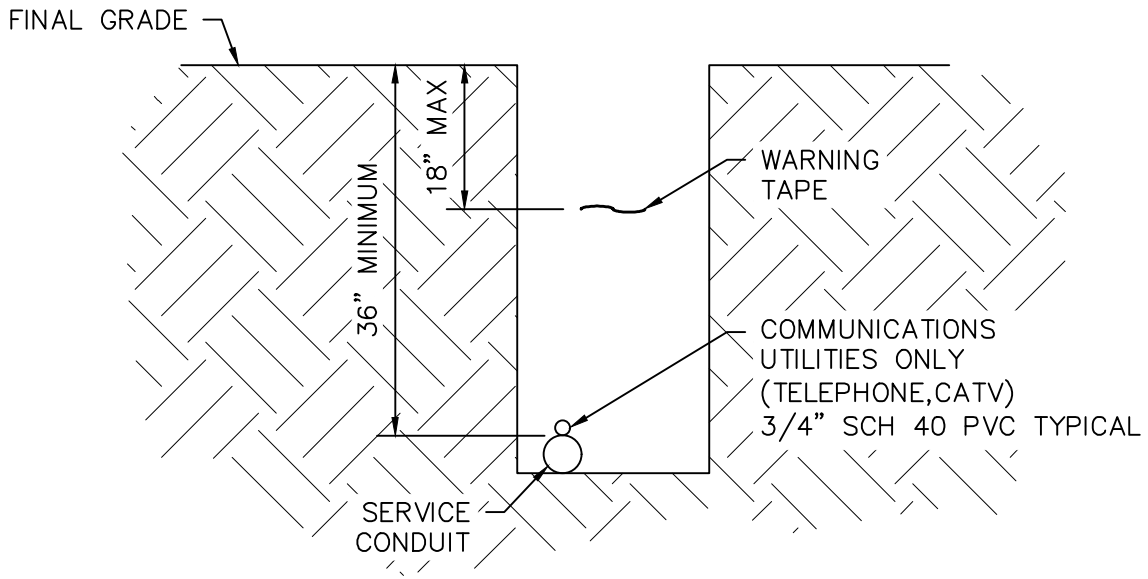
NOTES:

1. ALL 125V, SINGLE–PHASE SERVICE RECEPTACLES INSTALLED OUTDOORS SHALL HAVE GROUND–FAULT–CIRCUIT– INTERRUPTER PROTECTION FOR PERSONNEL.
2. GOVERNING BODIES SUCH AS COUNTIES, MUNICIPALITIES, ETC. WITH LEGAL JURISDICTION; MAY ENFORCE ADDITIONAL RULES AND REGULATIONS
3. WHERE LOCAL INSPECTION AUTHORITY IS NOT INVOLVED, METER INSTALLATIONS SHOULD BE WIRED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE OR GEUS SPECIFICATIONS WHEN THE GEUS SPECIFICATIONS EXCEED THOSE OF THE NATIONAL ELECTRIC CODE.

SHEET#	MULTI SHEET DRAWING INFORMATION:	DRAWN BY:	APPROVED BY:	SHEET INFORMATION:
001		JAD	JS	PERMANENT UG SERVICE (METER POLE)
		DATE: 03/22/21	SCALE: 1/2" = 1'0"	
		REVISION DATE:	DWG NAME: Permanent Underground Service (Meter Pole).dwg	

GEUS Energizing the Community

SERVICE CONDUIT INSTALLATION



NOTES:

1. CONSULT GEUS ENGINEERING FOR CONDUIT SIZE AND QUANTITY.
2. ALL CONDUIT SHALL BE SCH 40 PVC.
3. THIS CONSTRUCTION STANDARD IS FOR LABOR AND EQUIPMENT ONLY.
4. DISTANCE FROM CENTER OF TRENCH TO PROPERTY LINE OR EASEMENT TO BE COORDINATED BETWEEN GEUS ENGINEERING AND DEVELOPER PRIOR TO CONDUIT INSTALLATION.

GEUS Energizing the Community

SHEET INFORMATION: SERVICE CONDUIT INSTALLATION

APPROVED BY: ZM

SCALE: 1/2"=1'-0"

DWG NAME: GEUS Underground Specification Drawings.dwg

DRAWN BY: CJC

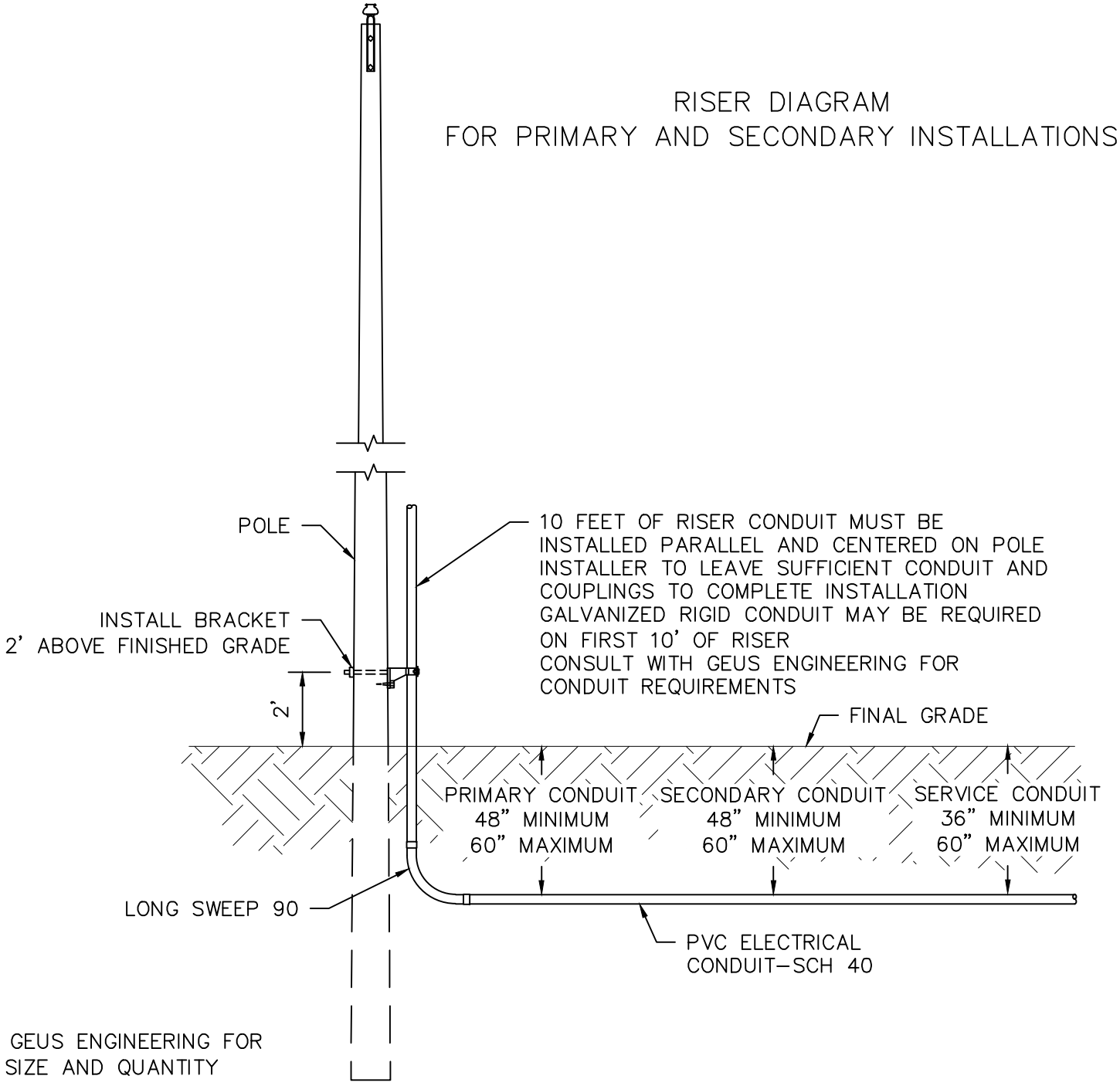
DATE: 07/14/22

REVISION DATE:

MULTI SHEET DRAWING INFORMATION: GEUS UNDERGROUND SPECIFICATION DRAWINGS

SHEET# C3

RISER DIAGRAM
FOR PRIMARY AND SECONDARY INSTALLATIONS



NOTES:

1. CONSULT GEUS ENGINEERING FOR CONDUIT SIZE AND QUANTITY

Energizing the Community

SHEET INFORMATION: RISER DIAGRAM FOR PRIMARY AND SECONADRY INSTALLATIONS

APPROVED BY: ZM

SCALE: 1/4"=1'-0"

DWG NAME: GEUS Underground Specification Drawings.dwg

DRAWN BY: CJC

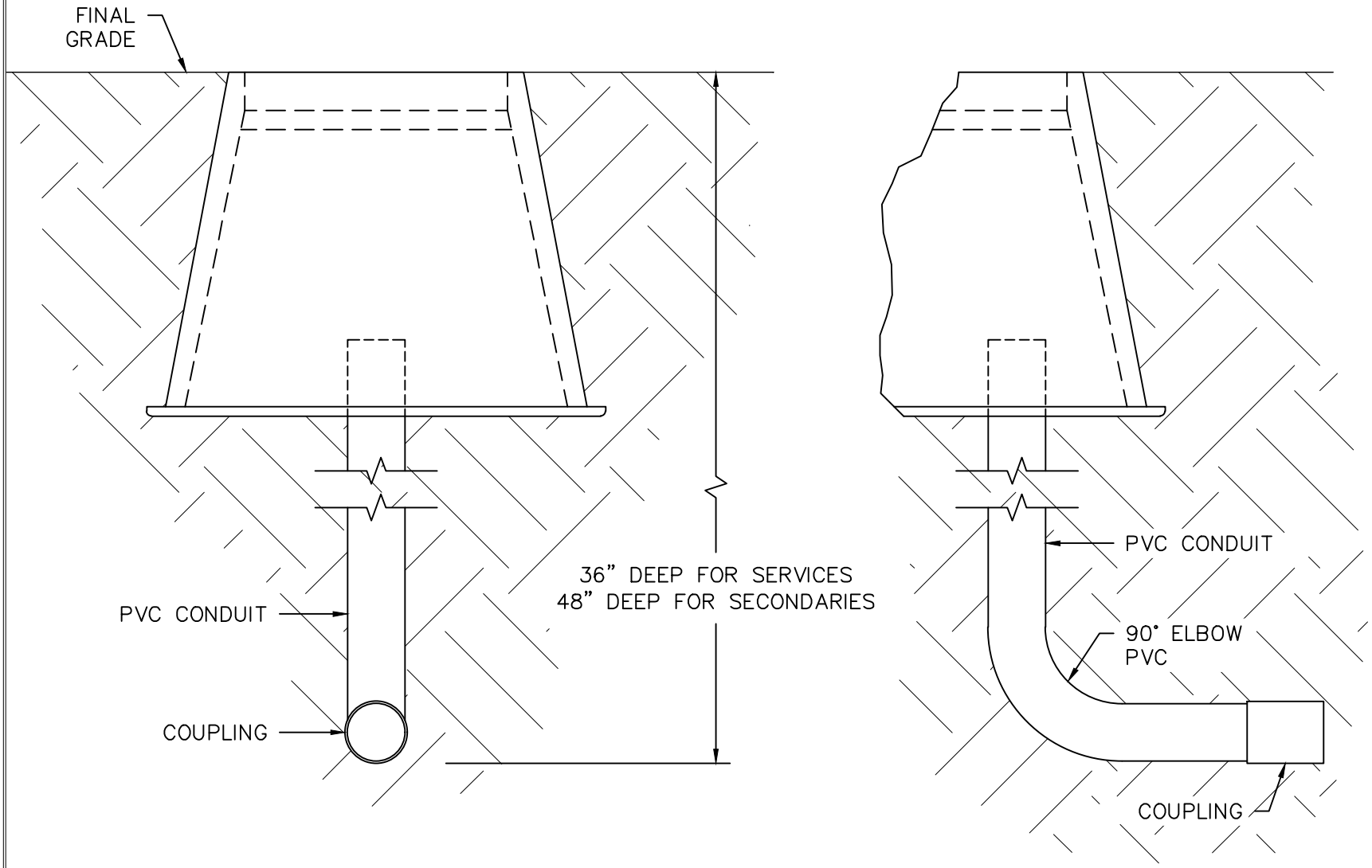
DATE: 07/14/22

REVISION DATE:

MULTI SHEET DRAWING INFORMATION: GEUS UNDERGROUND SPECIFICATION DRAWINGS

SHEET# C 8

SUBSURFACE PEDESTAL



NOTES:

1. CONSULT GEUS ENGINEERING FOR CONDUIT SIZE AND QUANTITY.

Energizing the Community

SHEET INFORMATION: SUBSURFACE PEDESTAL

APPROVED BY: ZM

SCALE: 1-1/2"=1'-0"

DWG NAME: GEUS Underground Specification Drawings.dwg

DRAWN BY: CJC

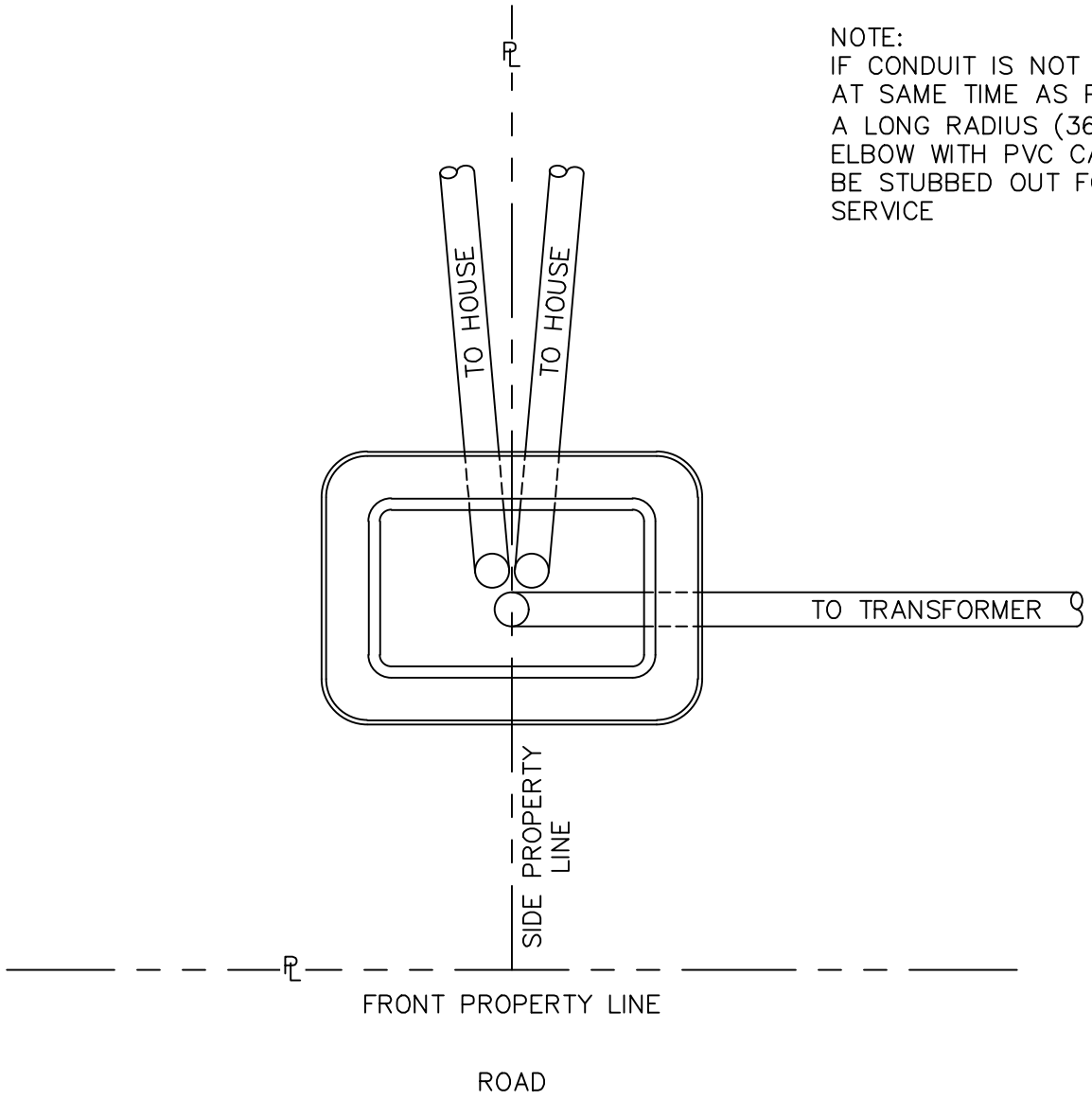
DATE: 07/14/22

REVISION DATE:

MULTI SHEET DRAWING INFORMATION: GEUS UNDERGROUND SPECIFICATION DRAWINGS

SHEET# D 1

SECONDARY PEDESTAL INSTALLATION



Energizing the Community

SHEET INFORMATION: SECONDARY PEDESTAL INSTALLATION

APPROVED BY: ZM

SCALE: 3/4"=1'-0"

DWG NAME: GEUS Underground Specification Drawings.dwg

DRAWN BY: CJC

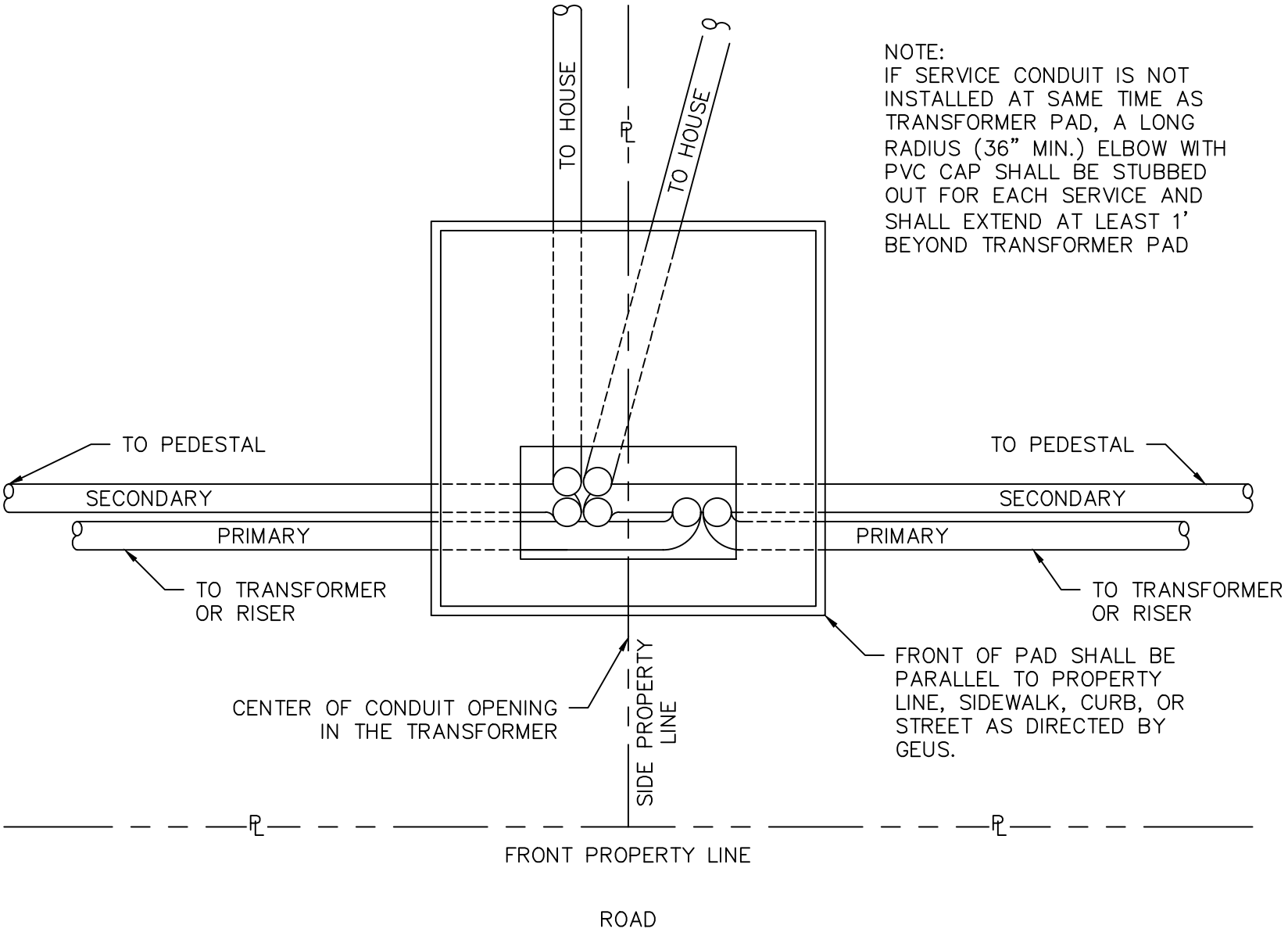
DATE: 07/14/22

REVISION DATE:

MULTI SHEET DRAWING INFORMATION: GEUS UNDERGROUND SPECIFICATION DRAWINGS

SHEET# D2

FRONT LOT TRANSFORMER PAD INSTALLATION
REFER TO SINGLE PHASE XFRMR PAD DRAWING FOR CONDUIT SPACING

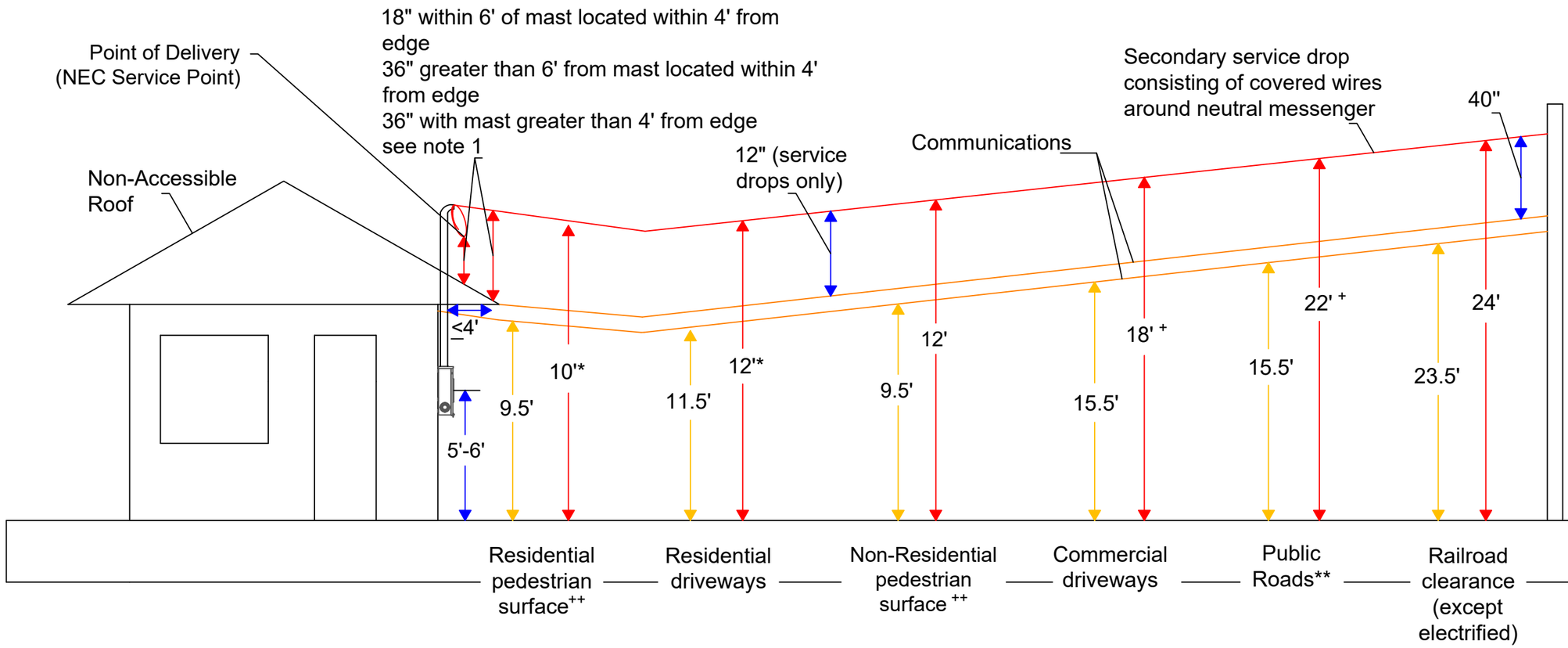


GEUS Energizing the Community

GEUS Underground Specification Drawings 4-24-2023.dwg

SHEET INFORMATION:	SINGLE PHASE TRANSFORMER PAD INSTALLATION
APPROVED BY:	ZVM
SCALE:	3/4"=1'-0"
DWG. NAME:	GEUS Underground Specification Drawings 4-24-2023.dwg
DRAWN BY:	JRS
DATE:	07/14/22
REVISION DATE:	4/26/23
MULTI SHEET DRAWING INFORMATION:	GEUS UNDERGROUND SPECIFICATION DRAWINGS
SHEET#	T2

Communication line clearance set to NESC standards. Clearances may vary for different individual utility standards and codes



* Supply service drops limited to 150V to ground

** For clearance over state highways, refer to TAC Title 43 Rule 21.41

\+ Determined by stricter GEUS service policy requirements

++ Areas where riders on horses or other animals prohibited or not reasonably expected

Note 1: Per NEC 230.24(A), customer owned conductors (drip loop) at 480 volt must be 8 ft. from roof surface

SEE TABLE FOR OTHER CASES

GEUS Energizing the Community

SHEET INFORMATION:

APPROVED BY: JS

SCALE: NTS

DWG NAME: Vertical Clearance Over Surfaces.dwg

REVISED BY: CJC

DATE: 07/13/22

REVISION DATE:

MULTI SHEET DRAWING INFORMATION:

Minimum Acceptable Clearances

SHEET#