

Illinois Tollway Base Sheet Revisions

Section M		Base Sheet Drawings	
Drawing	Modification Summary	Effective: 2020-03-01	
Pole Assembly (ITS)-Series 1000			
M-ITS-1000	Elevation Views Pole Mounted ITS Element Assembly		
	Use 1 1/2" stainless conduits for power and fiber to ITS Enclosure instead of 2". Corrected the MVDS mounting height on elevation details Use 1 1/2" stainless conduit for ITS Disconnect switch		
M-ITS-1001	General Notes Pole Mounted ITS Assembly		
	Note added on placement of battery enclosure		
M-ITS-1002	ITS Standard Foundation		
	Note added to use 12 ft helix foundation for slopes over 1:6		
M-ITS-1003	ITS Concrete Service Pad		
	Shows option for back-to-back mounted ITS enclosures.		
M-ITS-1004	Cabinet Wiring Diagram - ITS Pole Mounted Enclosure (Solar Powered MVDS) (2 sheets)		
	Sheet 1: Revised layout to better accommodate future expansion.		
Dynamic Message Sign (ITS)-Series 1100			
M-ITS-1100 to M-ITS-1108	DMS		
	(Typical) Revised Type 1 nomenclature to Walk-in (Typical) Revised Type 2 nomenclature to Front Access		
M-ITS-1101	DMS Type 1 Site Grounding Plan		
	Revised to show paved median structure		
M-ITS-1108	DMS Cabinet Wiring Diagram		
	Clarified wiring diagram Updated switch model		
Cabinet Wiring (ITS)-Series 1200			
M-ITS-1200 to M-ITS-1217	Cabinet Wiring Diagrams		
	New Cat6 surge suppressor Axis T8061 for Axis PoE camera and Ditek for Cohu PoE camera Revised layout for Cisco 4000 switch, power supply, Cohu PoE injectors Revised 1214-1216 plan to remove Cisco switch Added Level 3 Cisco license (L-IE4000-RTU=) Modified gator patch model number		
Roadway Weather Information System (ITS)-Series 1300			
M-ITS-1300	RWIS Pole, Sensor Mounting Detail		
	General note to have manufacturer to supervise installation and commissioning Revised to show option for co-located CCTV camera and ITS enclosure Clarified the mounting height measured from pavement surface Installed new ITS Enclosure back to back to the RPU enclosure Add ITS Disconnect switch within 50 feet from primary pole Show RWIS cabinet configuration for the 3 electrical services		
M-ITS-1301	RWIS Cabinet Wiring Diagram		
	Removed Cisco switch and gator patch from RPU enclosure		
M-ITS-1302	Typical RWIS Site Installation Plan		
	Proposed location of temperature sensors are site specific, final position to be determined by the Engineer in consultation with manufacturer. Correct sensor beam position to be in the wheel track for primary and secondary pole. Power cable from primary pole to secondary pole not to be spliced		
M-ITS-1303	RWIS Grounding Schematic		
	Corrections and additional detail to grounding diagram		

 New Sheet

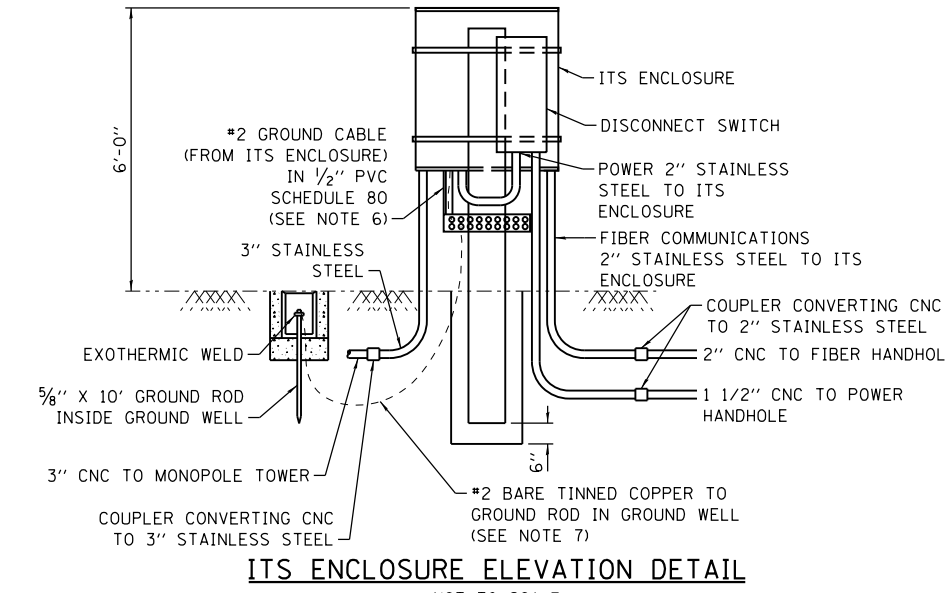
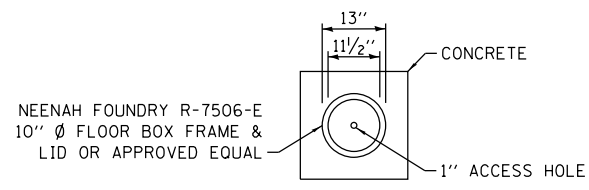
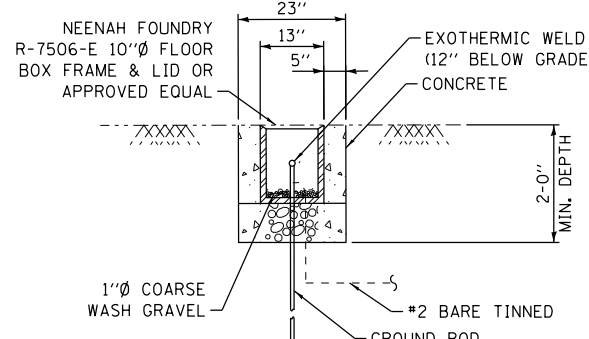
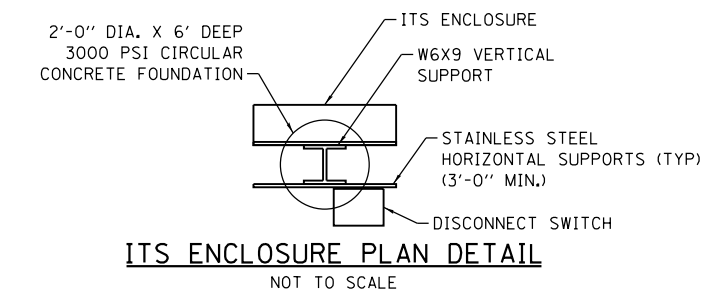
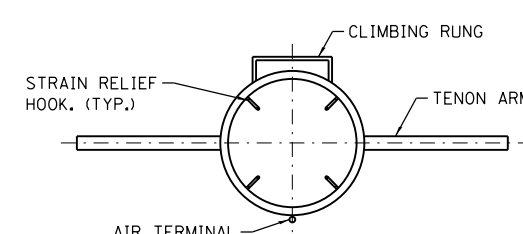
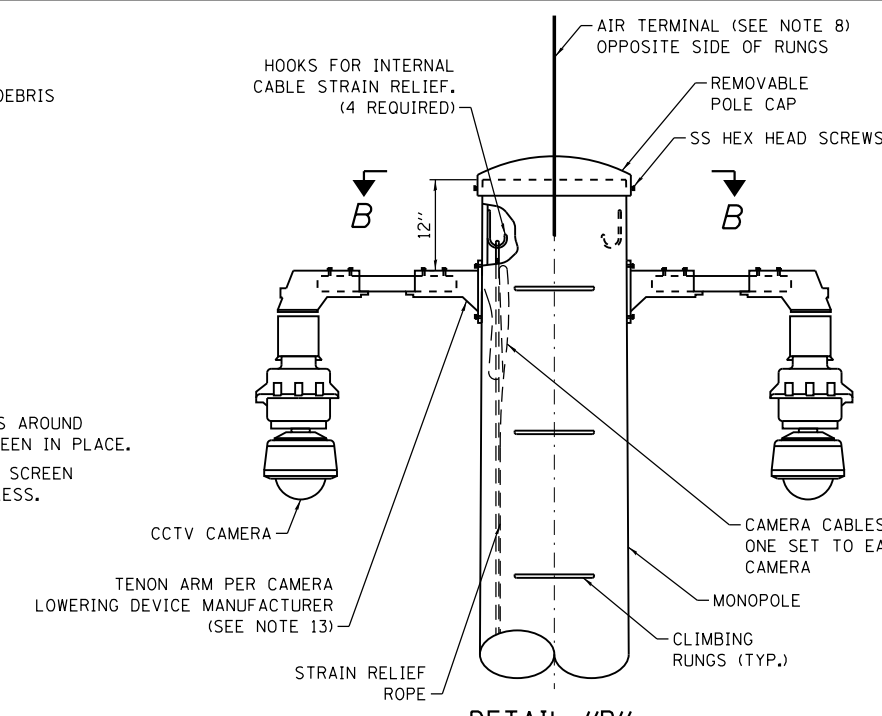
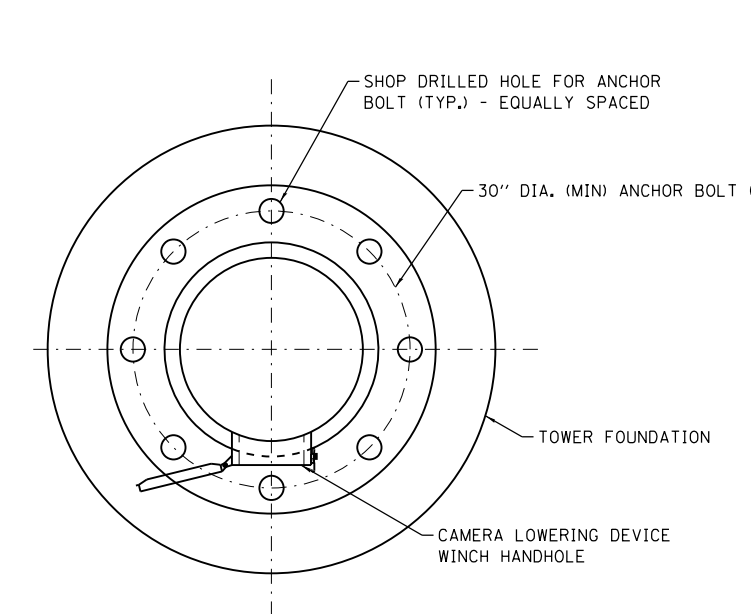
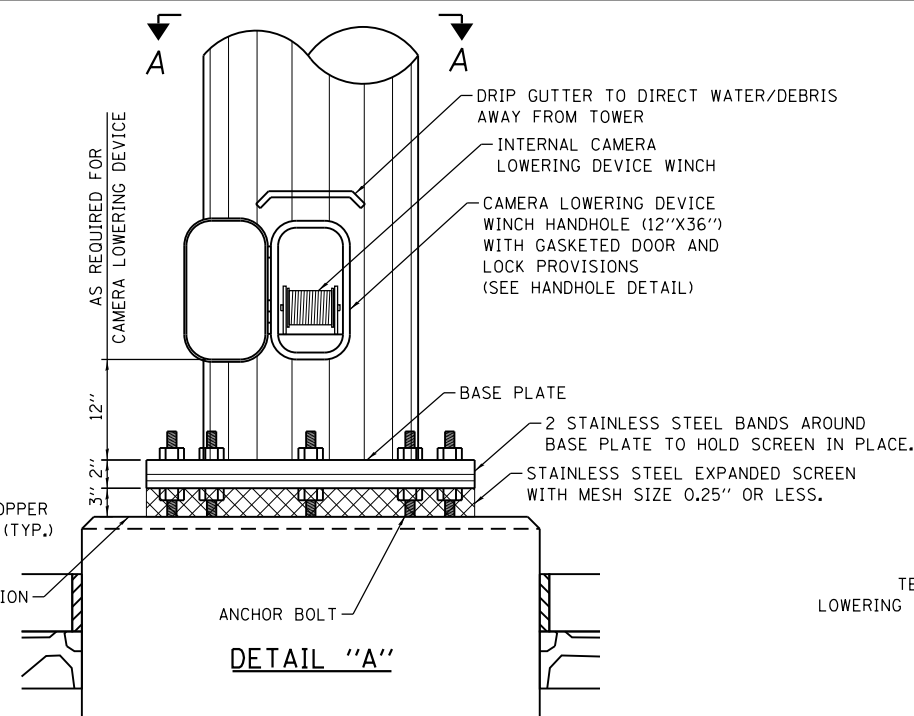
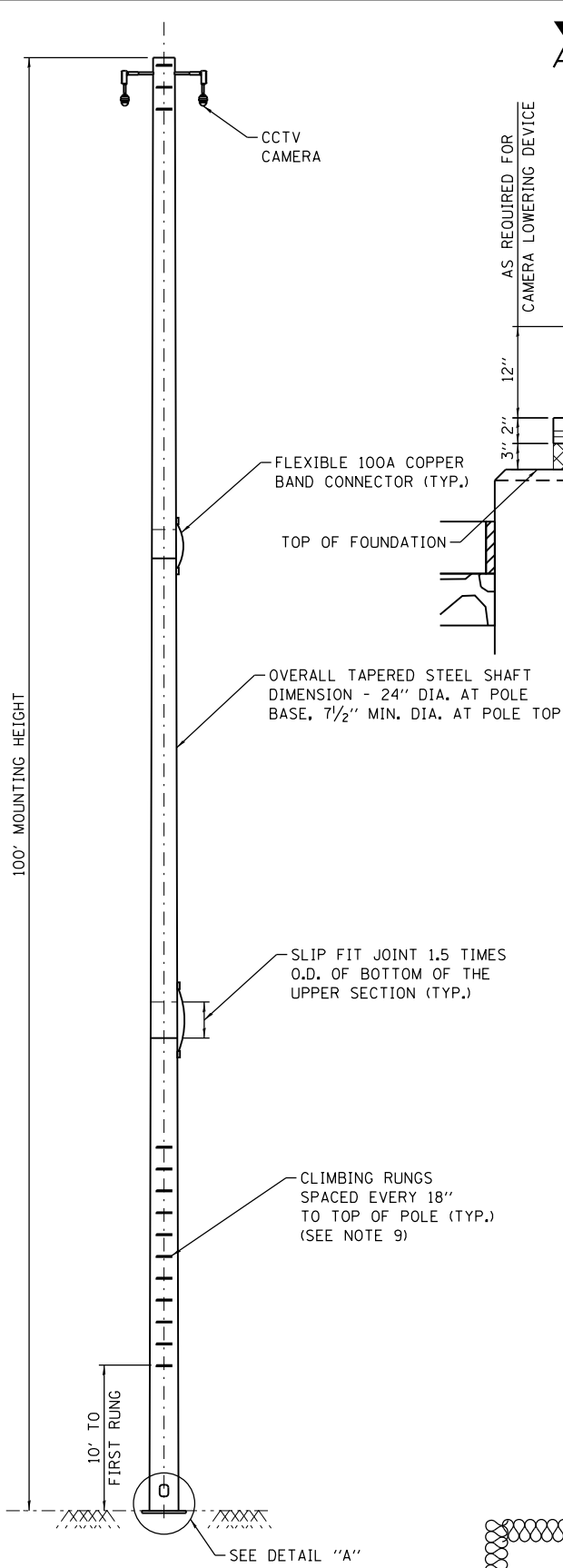
 Retired Standard

Illinois Tollway Base Sheet Revisions

Section M		Base Sheet Drawings	
Drawing	Modification Summary	Effective: 2020-03-01	
Solar Powered Generator (ITS)-Series 1400			
M-ITS-1400	Solar Power Generator Details		
	Enclosure changed to Nema 4X		
Tower Mounted CCTV (ITS)-Series 1500			
M-ITS-1500	ITS Details Tower Mount Camera Details		
	Vertical distance between the two cameras is 24 in min. Both cameras to be installed on same side of the tower structure		
M-ITS-1501	ITS Details Tower Mount Camera Details, 300' Cat6 or More		
	Retired		
M-ITS-1502	ITS Details Tower Mount Camera Details, 300' Cat6 or Less		
	Vertical distance between the two cameras is 24 in min. Both cameras to be installed on same side of the tower structure		
M-ITS-1503	Cabinet Wiring Diagram Tower Mounted CCTV ITS Assembly		
	New Cat6 surge suppressor model		
	Revised layout of Cisco switch, power supply and Cohu PoE injector		
Weigh-in-Motion (ITS)-Series 1600			
M-ITS-1600	Weigh-In-Motion Cabinet and Foundation Details		
	Show two permanent antennas installed on top of WIM cabinet		
M-ITS-1603	Weigh-In-Motion Detector Loop and Quartz Sensor Detail		
	Show parking area for one vehicle for annual calibration		
M-ITS-1607	Weigh-In-Motion Height Detector		
	Added detail for overheight detector		
Flashing Sign Beacon (ITS)-Series 1700			
M-ITS-1701	Cabinet Layout and Wiring ITS Pole Mounted Enclosure (1-CCTV and Flashing Sign Beacon)		
	Update enclosure layout		
IPDC Facility (ITS)-Series 1800			
M-ITS-1800	IPDC Facility		
	No change		
Conduit Details at Integral Abutment Bridge (ITS)-Series 1900			
M-ITS-1900	Conduit Details at Integral Abutment Bridge with MSE Wall (Sheet 3)		
	No change		
100 FT. Monopole (ITS)-Series 2000			
M-ITS-2000	100 FT. Monopole Closed Circuit Television (CCTV) Camera Tower		
	Pole cap to use hex head screws		
	Show revised grounding around service pad		

 New Sheet

 Retired Standard



NOTES

1. THE MONOPOLE TOWER SHALL MEET CURRENT AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS".
2. CAMERA WIRES SHALL EXTEND 24 INCHES LONGER THAN THEIR RESPECTIVE TENON ARM AND SHALL BE TRAINED BACK INTO THE ARM/POLE WHICH SHALL THEN BE CLOSED WITH A CAP AS SPECIFIED. ALL WIRES SHALL BE CAPPED WITH HEAT SHRINK INSULATING BOOTS. CRIMP CAPS ARE UNACCEPTABLE. ALL WIRES SHALL BE TAGGED WITH WIRE MARKERS AT BOTH ENDS. THE TENON ARMS SHALL BE TAGGED CORRESPONDING TO THE WIRING CONTAINED WITHIN.
3. ALL MULTI-CONDUCTOR CABLES SHALL BE FITTED WITH A HEAT-SHRINK MULTI-LEG BOOT. THE BOOT SHALL MEET MILITARY SPECIFICATION MIL-I-81765/1.
4. TENON ARM SHALL BE AS REQUIRED BY CAMERA LOWERING DEVICE MANUFACTURER.
5. CAMERA MOUNTING HARDWARE SHALL BE WATERTIGHT.
6. USE METAL BUSHING WHEN CONNECTING PVC TO CABINET. USE GROMMETS AT BOTH ENDS OF CONDUIT TO SEAL CONDUIT BUT ALLOW GROUND CABLE TO RUN THROUGH BOTH ENDS.
7. GROUND ROD SHALL BE PLACED A MINIMUM OF 10' FROM THE FOUNDATION. A GROUND WELL SHALL BE INCLUDED TO PERMIT ACCESS TO THE GROUND ROD CONNECTION. CONNECTION TO THE GROUND BUS BAR AND THE GROUND ROD SHALL BE EXOTHERMIC WELD.
8. AIR TERMINAL SHALL EXTEND A MINIMUM OF 3 FEET ABOVE TOP OF TOWER. AIR TERMINAL SHALL CONNECT TO TOWER USING STRAPS OR CLAMPS APPROVED BY THE ENGINEER. AIR TERMINAL SHALL BE EXOTHERMIC WELDED TO A #2/0 GROUNDING CONDUCTOR. GROUNDING CONDUCTOR SHALL BE STRAPPED TO MONOPOLE TOWER EVERY 10 FEET. GROUNDING CONDUCTOR SHALL EXTEND TO AND BE EXOTHERMIC WELDED TO THE NEAREST TOWER GROUND ROD.
9. CLIMBING RUNGS SHALL BE ORIENTED 90° FROM TENON ARMS AND ON THE SIDE OF POLE FACING AWAY FROM TRAFFIC.
10. FOUNDATION SHALL BE IN ACCORDANCE WITH SECTION 837 OF THE STANDARD SPECIFICATIONS AND PAID FOR AS LIGHT TOWER FOUNDATION, 48" DIAMETER (83700300).
11. MONOPOLE, LOWERING DEVICE, AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISION "MONOPOLE CCTV CAMERA TOWER ASSEMBLY".
12. THE MONOPOLE TOWER, ITS ENCLOSURE, AND FENCE GROUNDING SHALL BE IN ACCORDANCE WITH ILLINOIS TOLLWAY SPECIAL PROVISION "ITS ELEMENT SITE GROUNDING".
13. TENON ARMS MAY OPTIONALLY BE "TOP-MOUNTED".

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CAD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER MUST ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES MUST BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

MONOPOLE TOWER

GROUND WELL ELEVATION DETAIL

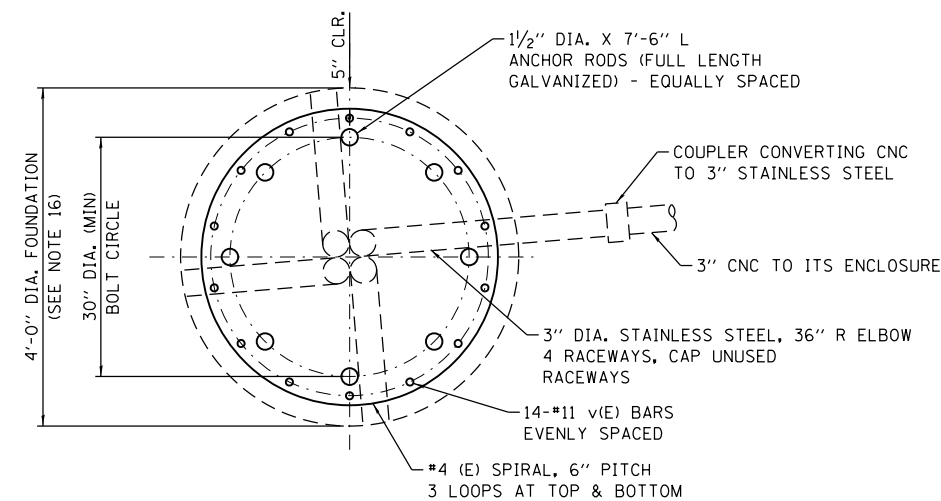
GROUND WELL PLAN DETAIL

ITS ENCLOSURE ELEVATION DETAIL



100 FT. MONOPOLE CLOSED CIRCUIT TELEVISION (CCTV) CAMERA TOWER

DATE
3-01-2020

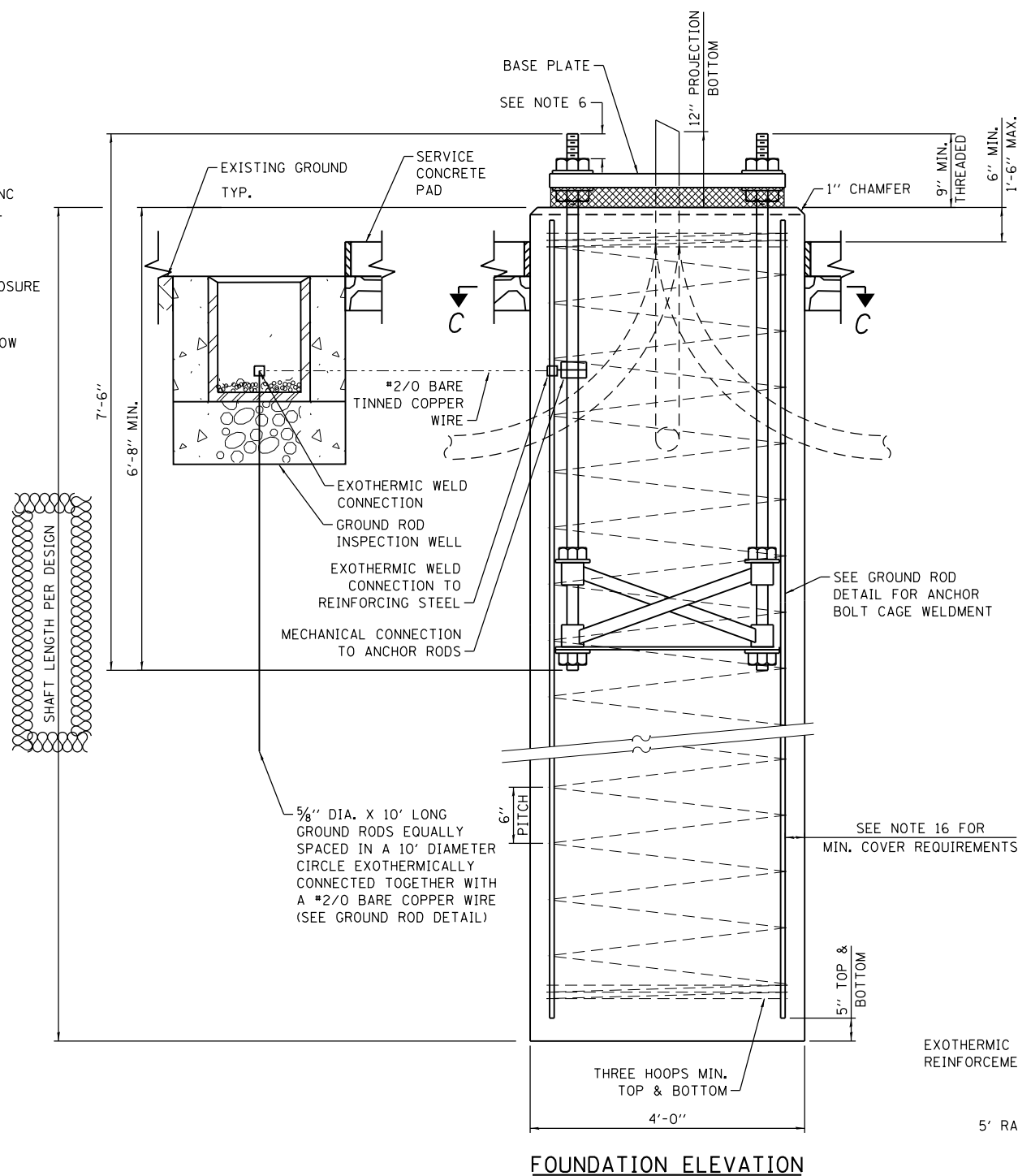


SECTION C-C

MONOPOLE FOUNDATION SCHEDULE

STATION	SHAFT LENGTH	BAR	NUMBER	SIZE	LENGTH	SHAPE
		v(E)	14	11	SHAFT LENGTH-10"	—
		#4 SPIRAL (E) - SEE FOUNDATION ELEVATION				
		v(E)	14	11	SHAFT LENGTH-10"	—
		#4 SPIRAL (E) - SEE FOUNDATION ELEVATION				
		v(E)	14	11	SHAFT LENGTH-10"	—
		#4 SPIRAL (E) - SEE FOUNDATION ELEVATION				

SHAFT LENGTH TABLE			
SOIL CONSISTENCY	AVERAGE STRENGTH	SHAFT LENGTH	
	Qu in tsf		
Cohesive	SOFT	< 0.5	22'-6"
	MEDIUM	0.5 to 1	18'-6"
	STIFF	1 to 2	15'-6"
	VERY STIFF	2 to 4	13'-6"
	HARD	> 4	12'-0"
	N in BLOWS/FT.		
Granular	VERY LOOSE	< 5	18'-0"
	LOOSE	5 to 10	16'-6"
	MEDIUM	10 to 25	15'-6"
	DENSE	25 to 50	15'-0"
	VERY DENSE	> 50	14'-0"



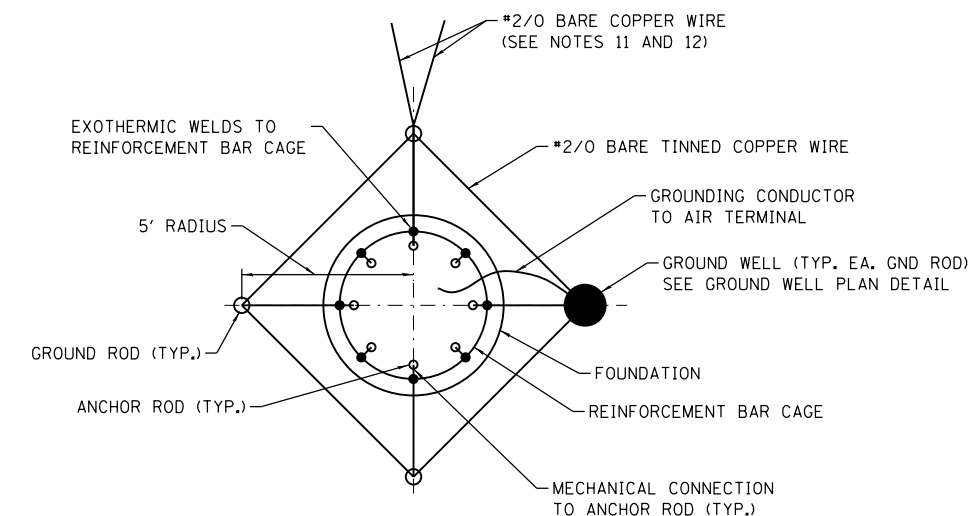
FOUNDATION ELEVATION

NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CAD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER MUST ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES MUST BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET. THE SHAFT LENGTH CAN BE DETERMINED FROM THE "SHAFT LENGTH TABLE". THE DESIGN SECTION ENGINEER MUST CONDUCT A SUBSURFACE INVESTIGATION AT EACH FOUNDATION LOCATION TO DETERMINE THE ACTUAL SOIL PROPERTIES. SHOULD THE INVESTIGATION REVEAL THE PRESENCE OF SOILS OTHER THAN WHAT IS IN THE "SHAFT LENGTH TABLE", THE DESIGN SECTION ENGINEER SHALL DESIGN AND DETAIL THE DRILLED SHAFT FOUNDATION TO MEET THE ACTUAL SOIL CONDITIONS. THE SOIL BORING LOG(S) SHALL BE INCLUDED IN THE CONTRACT PLANS.

NOTES

- THE ANCHOR RODS SHALL BE VERTICAL. NO ADJUSTMENT SHALL BE ALLOWED AFTER THE FOUNDATION IS PLACED.
- THE TOP OF THE FOUNDATION TO 18" BELOW GRADE SHALL BE FORMED.
- SURFACE WATER WILL NOT BE PERMITTED TO ENTER THE HOLE AND ALL WATER WHICH MAY HAVE INFILTRATED INTO THE HOLE SHALL BE REMOVED BEFORE PLACING CONCRETE.
- TWO ANCHOR RODS OPPOSITE EACH OTHER SHALL HAVE ROD THREADS PEENED AFTER NUTS ARE INSTALLED.
- A MINIMUM OF THREE FULL THREADS SHALL REMAIN EXPOSED AFTER MONOPOLE TOWER IS INSTALLED.
- STEEL ANCHOR ROD FORMS SHALL NOT BE REMOVED FOR A MINIMUM OF 3 DAYS AFTER CONCRETE IS POURED. THE TOWER SHALL NOT BE SET UNTIL THE CONCRETE HAS BEEN CURED ACCORDING TO ART. 1020.13 OF THE STANDARD SPECIFICATIONS, OR AS APPROVED BY THE ENGINEER.
- ANCHOR ROD QUANTITY, DIAMETER, AND LENGTH SHALL BE DETERMINED BY THE TOWER MANUFACTURER AND APPROVED BY THE ENGINEER. EACH FOUNDATION SHALL HAVE A MINIMUM OF 8 ANCHOR RODS.
- COORDINATE THE ROD CIRCLE DIAMETER OF THE TOWER WITH THE DIAMETER OF THE ANCHOR ROD CAGE.
- THE FOUNDATION SHALL BE POURED MONOLITHICALLY AND SHALL HAVE NO CONSTRUCTION JOINTS.
- ALL GROUNDING INDICATED ON THE PLANS SHALL BE INCLUDED IN THE COST OF ITS ELEMENT SITE GROUNDING.
- FOUNDATION GROUNDING RING IS TO BE CONNECTED TO PLAZA BUILDING GROUNDING HALO, IF WITHIN 100 FEET OF ONE ANOTHER.
- FOUNDATION GROUNDING RING IS TO BE CONNECTED TO ITS ENCLOSURE GROUNDING.
- REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DIFFERENT SOILS ARE FOUND DURING CONSTRUCTION THAN AS SHOWN IN THE SOIL BORINGS.
- THE DRILLED SHAFT FOUNDATION CONCRETE SHALL BE CLASS DS WITH A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI. THE REINFORCEMENT BARS SHALL HAVE A MINIMUM FIELD STRENGTH OF 60,000 PSI.
- FOUNDATION DIAMETER BASED ON 5" CONCRETE COVER. THE MINIMUM COVER SHALL BE 3" IN DRY SHAFT EXCAVATION AND 4" IN A WET HOLE. WHEN ROCK IS ENCOUNTERED A 5" COVER AGAINST SOIL AND A 2" COVER AGAINST ROCK SHALL BE REQUIRED.

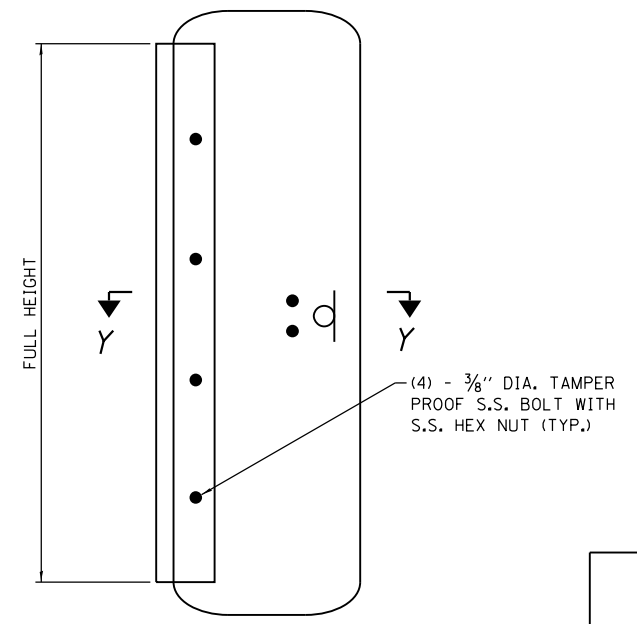
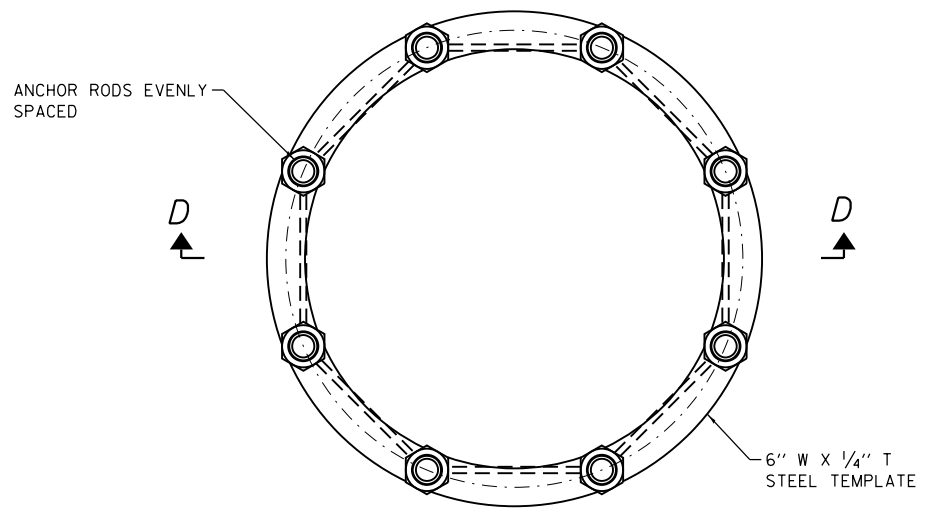
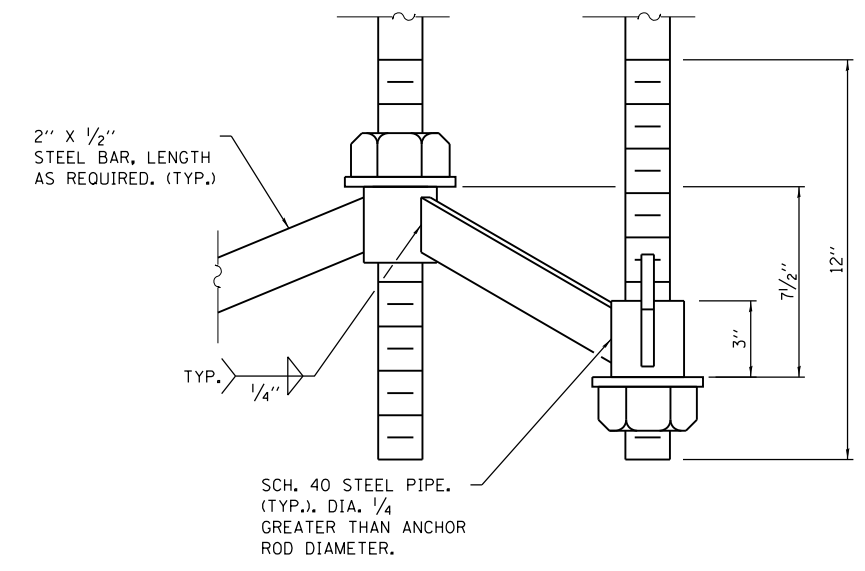
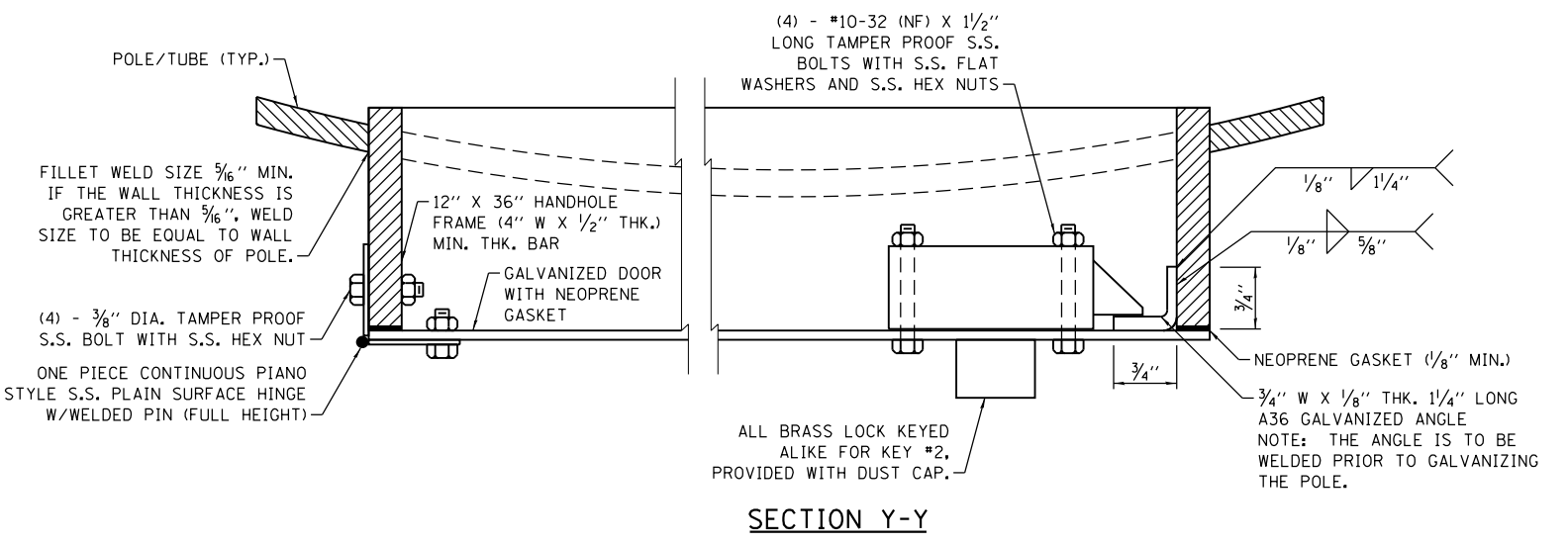
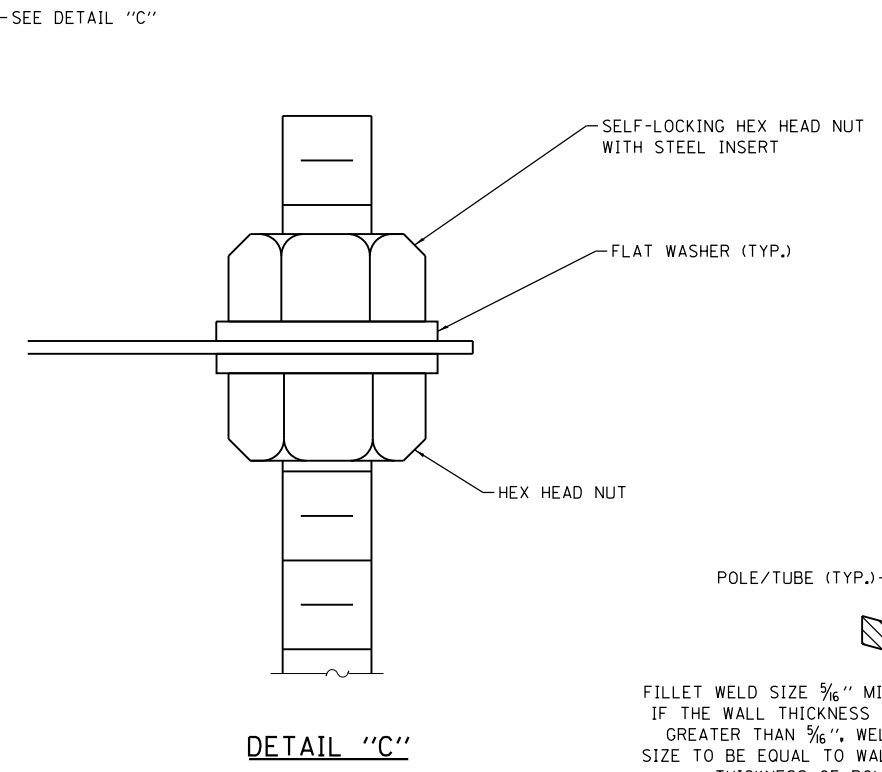
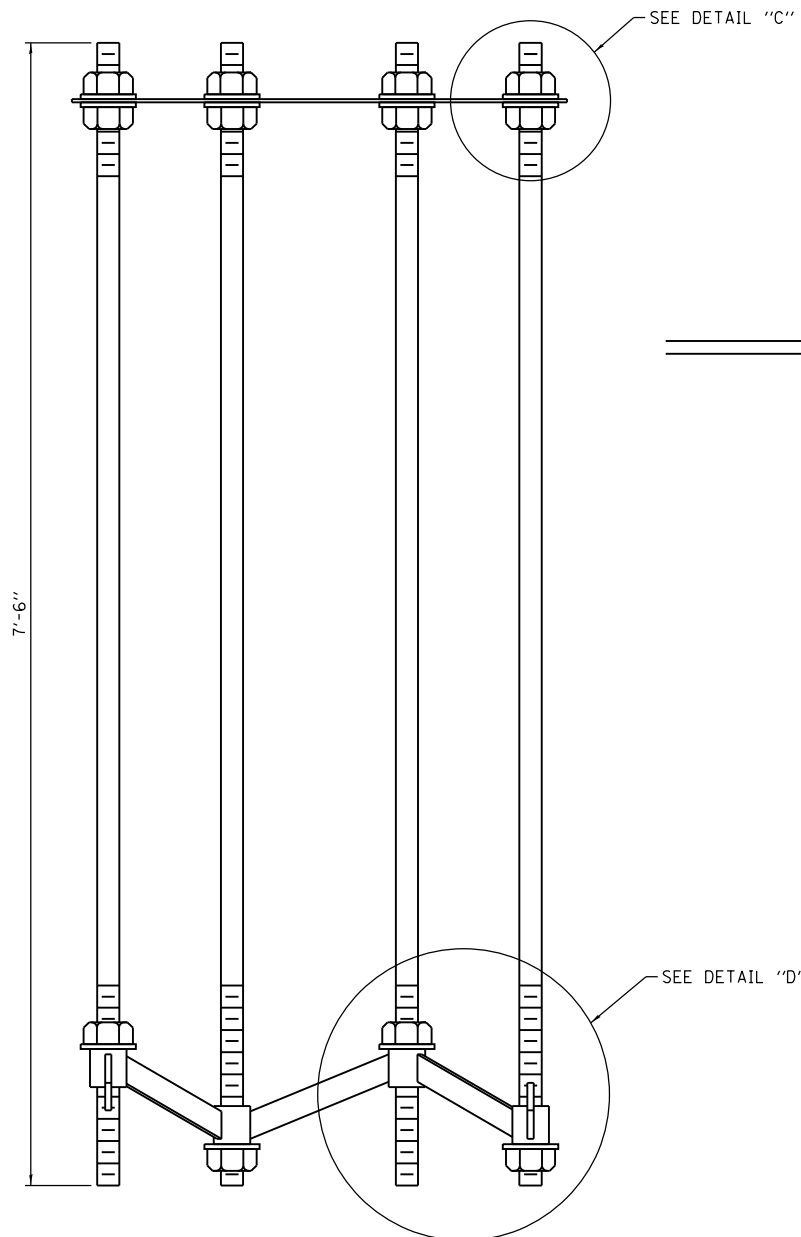


GROUND ROD DETAIL



100 FT. MONOPOLE CLOSED
CIRCUIT TELEVISION
(CCTV) CAMERA TOWER

DATE
3-01-2020



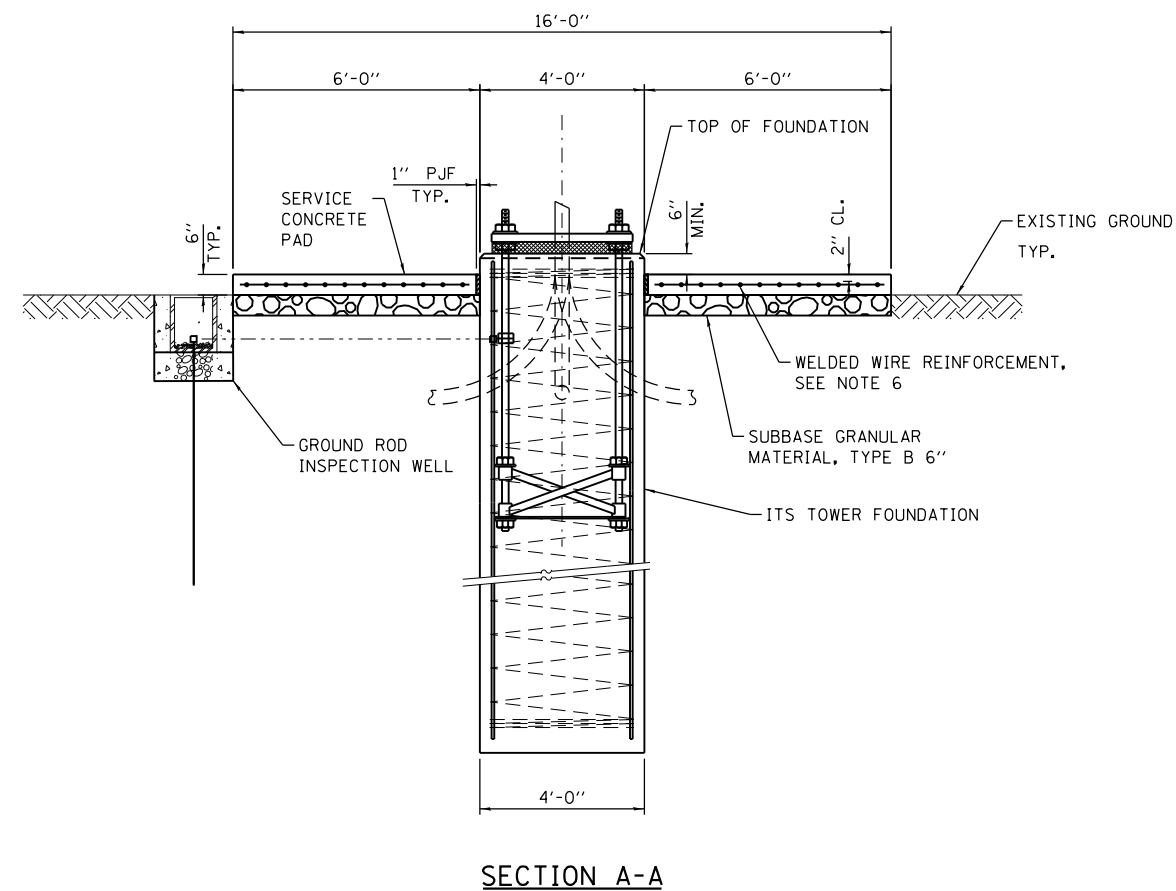
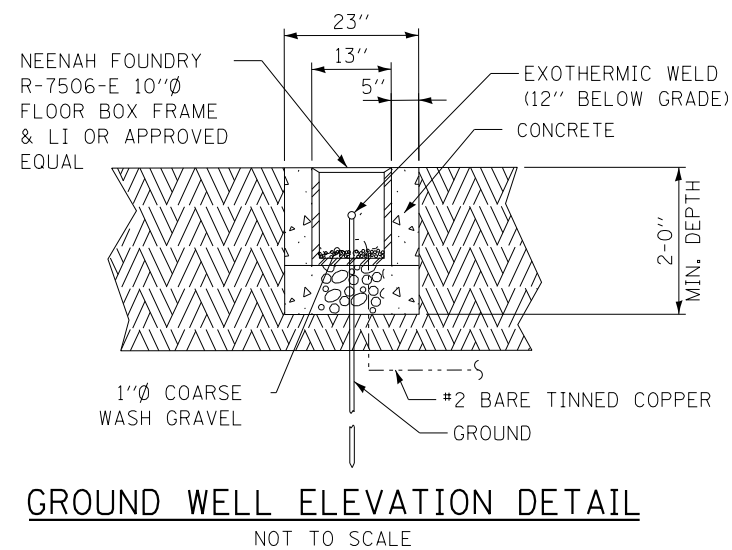
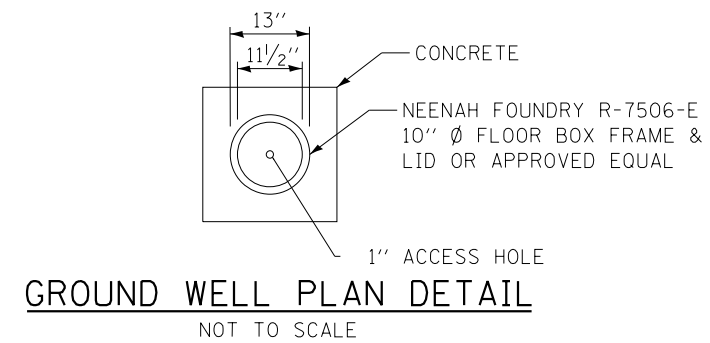
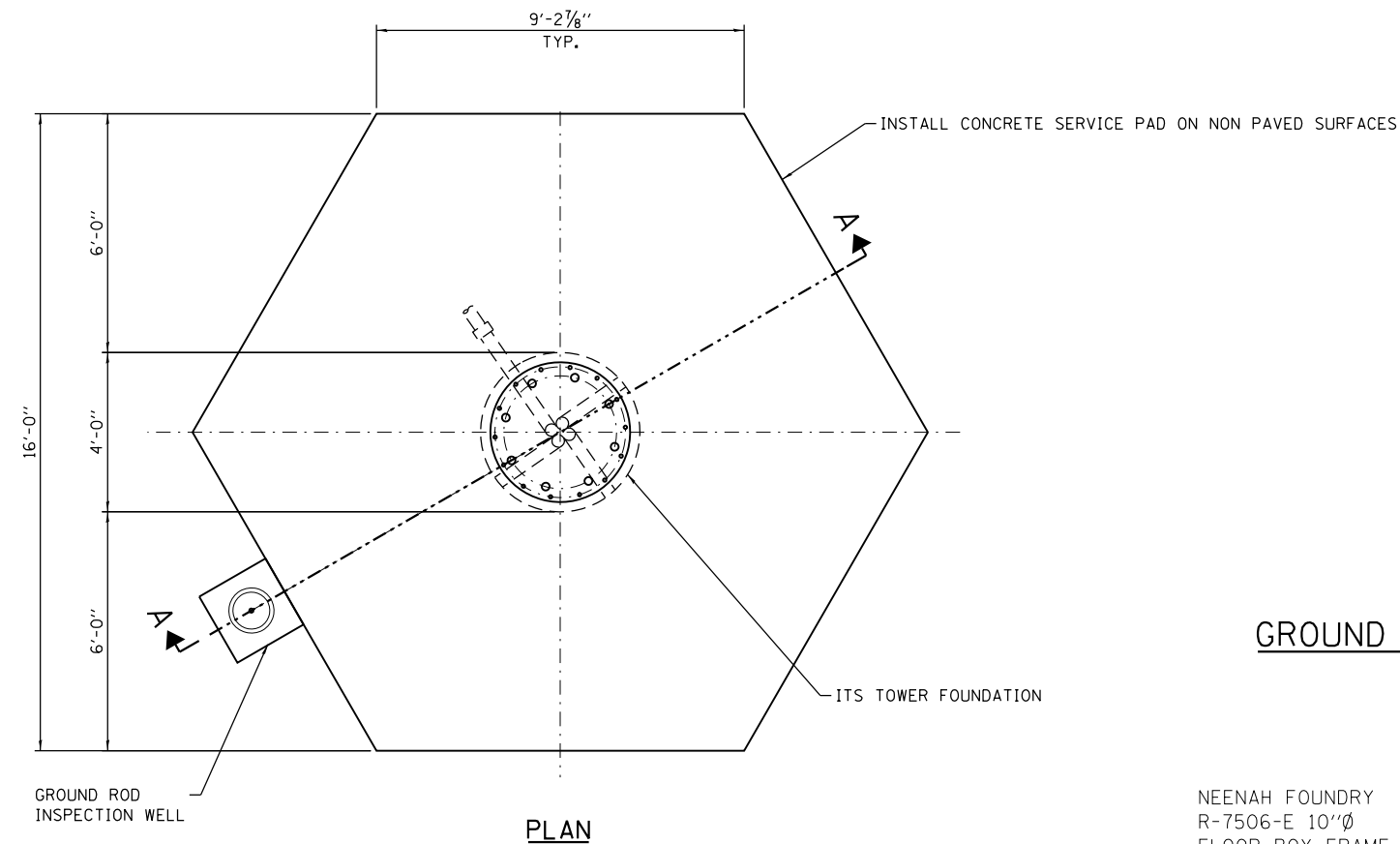
NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CAD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER MUST ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES MUST BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.



100 FT. MONOPOLE CLOSED
CIRCUIT TELEVISION
(CCTV) CAMERA TOWER

DATE
3-01-2020



NOTE TO DESIGNER

THIS BASE SHEET SHOWS TYPICAL NEW CONSTRUCTION BUT IT IS NOT A STANDARD DRAWING. IT REQUIRES COMPLETION BY THE DESIGNER PRIOR TO INSERTION INTO A CONTRACT. MICROSTATION FILES AND THE "CAD STANDARDS MANUAL" ARE AVAILABLE ON THE ILLINOIS TOLLWAY WEBSITE. THE DESIGNER MUST ACCEPT THE RESPONSIBILITY OF THE DESIGN OF THIS SHEET UPON ITS COMPLETION AND INSERTION INTO A CONTRACT. ALL "NOTE TO DESIGNER" BOXES MUST BE REMOVED BY THE DESIGNER PRIOR TO INSERTION OF THE SHEET INTO THE PLAN SET.

NOTES

1. THE CONCRETE COMPRESSIVE STRENGTH SHALL BE F'C = 3,500 PSI. THE WELDED WIRE FABRIC GRADE SHALL BE FY = 65,000 PSI.
2. WELDED WIRE REINFORCEMENT SHALL HAVE A MINIMUM AREA OF 0.31 INCH IN EACH DIRECTION.
3. MIN. 3,000 PSF SOIL BEARING CAPACITY IS REQUIRED BELOW THE SERVICE PAD.



100 FT. MONOPOLE CLOSED
CIRCUIT TELEVISION
(CCTV) CAMERA TOWER

DATE
3-01-2020