

COUNTY/ELEVATION YODER COUNTY, 6250'

WIND DESIGN DATA:

WIND SPEED = 90 MPH (ASCE 7-05)

RISK CATEGORY = III

EXPOSURE CATEGORY = C

RISK CATEGORY =	III	Ss =	0.220
SEISMIC IMPORTANCE FACTOR =	1.25	S1 =	0.065
SITE CLASS =	D	Sds =	0.235
SEISMIC DESIGN CATEGORY =	B	Sd1 =	0.104
ANALYSIS PROCEDURE USED =	EQUIVALENT LATERAL FORCE		

1. CODES USED IN DESIGN: ASCE 7-05, ASCE 113 NESC 2012, IEEE 693, ACI 318.14
2. FOUNDATION DESIGNED PER THE CTL THOMPSON GEOTECHNICAL ENGINEERING REPORT FOR YODER SUBSTATION PROJECT, DATED 01 04, 2019. THE REPORT SHALL BE REVIEWED AND FOLLOWED BY CONTRACTOR.
3. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATION.

4.1. STRUCTURAL FILL SHOULD BE PLACED IN LIFTS HAVING A MAXIMUM LOOSE LIFT THICKNESS OF 12" AND SHOULD BE COMPACTED TO A MINIMUM 95% OF ASTM D1557 OR 97% ASTM D698

5.1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF ACI 301 AND ACI 318 EXCEPT AS MODIFIED BY WILDHORSE SUBSTATION SPECIFICATIONS AND CONTRACT DOCUMENTS.

5.2. CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 305R (HOT WEATHER) OR ACI 306R (COLD WEATHER) AS APPLICABLE.

5.3. CONCRETE MIX DESIGN SHALL CONFORM TO THE LATEST EDITION OF ACI 301 AND ACI 318 AND BE SUBMITTED AND APPROVED BY DESIGN ENGINEER PRIOR TO CONCRETE PLACEMENT.

5.3.1. CONCRETE STRENGTH (F'c) SHALL COMPLY WITH ACI 318 CHAPTER 19.

5.3.2. CONCRETE MIXTURES SHALL BE DESIGNED BASED ON EXPOSURE CATEGORY [F2] AND [S0] AS DEFINED IN ACI 318 CHAPTER 19.3.

5.3.2.1. TYPE I/II PORTLAND CEMENT CONFORMING TO ASTM C150 IS REQUIRED. MINIMUM COMPRESSIVE STRENGTH SHALL BE **f'c = 4500psi**.

5.3.2.2. AIR CONTENT SHALL BE 5%±1%.

5.3.2.3. MAXIMUM WATER TO CEMENT RATIO (w/cm) OF 0.45 IS ALLOWED.

5.3.2.4. MAXIMUM NOMINAL COARSE AGGREGATE SIZE SHALL BE 3/4" UNLESS OTHERWISE IN CONTRACT DOCUMENTS. COARSE AND FINE AGGREGATES SHALL CONFORM TO ASTM C

- 6.1.  $F'_c=1500\text{PSI}$
- 6.2. SLUMP SHALL BE BETWEEN 7" TO 9"
- 6.3. 3/4" NOMINAL MAXIMUM AGGREGATE SIZE

- 7.1. INSTALLATION OF DRILLED PIERS SHALL COMPLY WITH THE LATEST REVISION OF ACI 336.1 AND ACI 336.3.
- 7.2. DRILLED PIERS SHALL NOT DEVIATE FROM THE POSITIONS SHOWN ON THE CONSTRUCTION DRAWINGS MORE THAN ½ INCH IN ANY DIRECTION. THE TOP ELEVATIONS OF ALL FOUNDATIONS SHALL BE BETWEEN 0 AND +½" OFF THE ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS.
- 7.3. PIER PLUMBNESS SHALL BE CHECKED PERIODICALLY DURING DRILLING AND VERIFIED PRIOR TO PLACEMENT OF CONCRETE. TOLERANCES SHALL NOT EXCEED 4% OF PIER DIAMETER OR 3IN.
- 7.4. DRILLED HOLES SHALL BE CLEAN AND FREE OF ANY LOOSE MATERIAL BEFORE PLACING ANY CONCRETE.
- 7.5. DRILLED HOLES SHALL NOT BE LEFT OPEN FOR ANY MORE TIME THAN ABSOLUTELY NECESSARY. CONCRETE SHALL BE PLACED IN DRILLED HOLE IMMEDIATELY AFTER DRILLING AND CLEANING ARE COMPLETE. CONTRACTOR SHALL ASSURE THAT ALL OPEN HOLES ARE PROPERLY COVERED WHEN LEFT UNATTENDED.
- 7.6. ALL CASINGS USED DURING DRILLING OF FOUNDATIONS SHALL BE CONSIDERED TEMPORARY UNLESS STATED OTHERWISE IN CONTRACT DOCUMENTS. TEMPORARY CASINGS SHALL BE REMOVED AT A RATE THAT WILL PREVENT SOIL FROM COLLAPSING AND CONTAMINATING THE CONCRETE WHILE THE CONCRETE IS BEING PLACED.
- 7.7. A TREMIE PIPE OR CONCRETE ELEPHANT'S TRUNK SHALL BE USED TO PLACE ANY FREE FALL CONCRETE IN ANY DRILLED PIER FOUNDATIONS.
- 7.8. CONCRETE PLACED FOR DRILLED PIERS SHALL BE PLACED MONOLITHICALLY TO ASSURE NO COLD JOINTS ARE FORMED.
- 7.9. CHAMFER ALL EXPOSED FORMED EDGES ¾", TYPICAL OF ALL FOUNDATION TYPES.

8.1. CONTRACTOR SHALL VERIFY ANCHOR BOLT PATTERNS, SIZE AND PROJECTIONS WITH STEEL STRUCTURE SHOP DRAWING, PRIOR TO ANCHOR BOLT PLACEMENT.

8.2. ANCHOR BOLT PROJECTIONS ABOVE THE TOP OF CONCRETE SHALL BE BETWEEN 0 TO +1/4" FROM THE SPECIFIED PROJECTIONS. INDIVIDUAL ANCHOR BOLTS SHALL NOT DEVIATE FROM THEIR SPECIFIED CENTERLINES SHOWN ON THE CONSTRUCTION DRAWINGS.

8.3. THE CENTER OF A COMPLETE SET OF BOLT GROUPS SHALL BE WITHIN 1/8" OF THE SPECIFIED CENTERLINE OF THE STRUCTURE. ANCHOR BOLTS SHALL NOT BE OUT OF PLUMB BY MORE THAN 1% OF THE HEIGHT OF THE ANCHOR BOLT.

8.4. ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 55 UNLESS SPECIFIED OTHERWISE IN DRAWINGS OR CONTRACT DOCUMENTS.

8.5. FOR THREADED ANCHOR BOLTS SPECIFYING A615 GRADE 75 REBAR, SIZES SHALL BE #14J (1 3/4") OR #18J (2 1/4") BARS ONLY. ANCHORS SHALL BE GALVANIZED PER ASTM A767.

9.4.	REINFORCING STEEL SHALL BE ASTM 615, GRADE 60 BLACK.							
9.5.	MINIMUM REBAR COVER IS 3" EXPOSED TO EARTH, 2" EXPOSED TO FORM OR AIR. COVER IS FROM CONCRETE EDGE TO STIRRUPS/TIES OR MAIN BAR (WHICHEVER OCCURS FIRST). ANY REBAR SPLICES SHALL BE AS DESIGNATED ON THE DRAWINGS OR APPROVED BY DESIGN ENGINEER.							
9.6.	REINFORCING STEEL SHALL BE ACCURATELY PLACED AND ADEQUATELY SUPPORTED BEFORE THE CONCRETE IS PLACED, AND SHALL BE SECURED AGAINST DISPLACEMENT WITHIN PERMITTED TOLERANCES. CONTRACTOR IS FREE TO SELECT THE TYPE AND CLASS OF BAR SUPPORTS REQUIRED TO MAINTAIN TOLERANCES.							
9.7.	THE USE OF SHAFT SPACERS MAY BE USED TO ENSURE PROPER ALIGNMENT OF CAGES BEFORE PLACING OF CONCRETE.							
9.8.	TOLERANCES (ONLY SINGLE PLANE PERMITTED)							
	9.8.1.	FOR #3, #4 AND #5 STRAIGHT AND BENT BARS, DIMENSIONS SHALL BE $\pm \frac{1}{2}$ ".						
	9.8.2.	FOR #6, AND LARGER STRAIGHT AND BENT BARS, DIMENSIONS SHALL BE $\pm 1$ ".						
	9.8.3.	BEND DIAMETERS FOR 90 DEGREE HOOKS SHALL INCLUDE "SPRING BACK" EFFECTS.						
9.9.	LAP SPLICE LENGTHS (ACI 318-14 TABLE 25.5.2.1, CLASS B)							
		#4 - 25"	#5 - 31"	#6 - 37"	#7 - 54"	#8 - 62"	#10 - 79"	#11 - 87"
9.10.	MINIMUM INSIDE BEND DIAMETER							
	9.10.1.	FOR 90 AND 180 DEGREE DEFORMED BARS IN TENSION (ACI 318-14, TABLE 25.3.1)						
		#4 - 3"	#5 - 3½"	#6 - 4½"	#7 - 5½"	#8 - 6"	#10 - 10½"	#11 - 11¼"
	9.10.2.	FOR 90 AND 180 DEGREE STIRRUPS, TIES AND HOOPS (ACI 318-14, TABLE 25.3.2)						
		#4 - 2"	#5 - 2½"	#6 - 4½"	#7 - 5½"	#8 - 6"		

Dwg. No.	Mfr.	Drawing Title	Reference Drawings

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YODER SUBSTATION

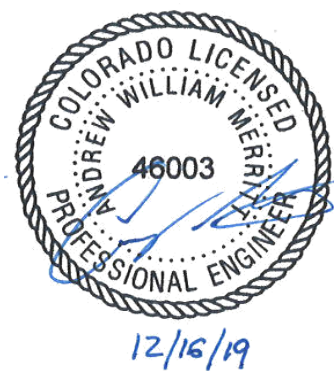
69kV – 12.47kV  
FOUNDATION NOTES

MOUNTAIN VIEW ELECTRIC  
ASSOCIATION, INCORPORATED

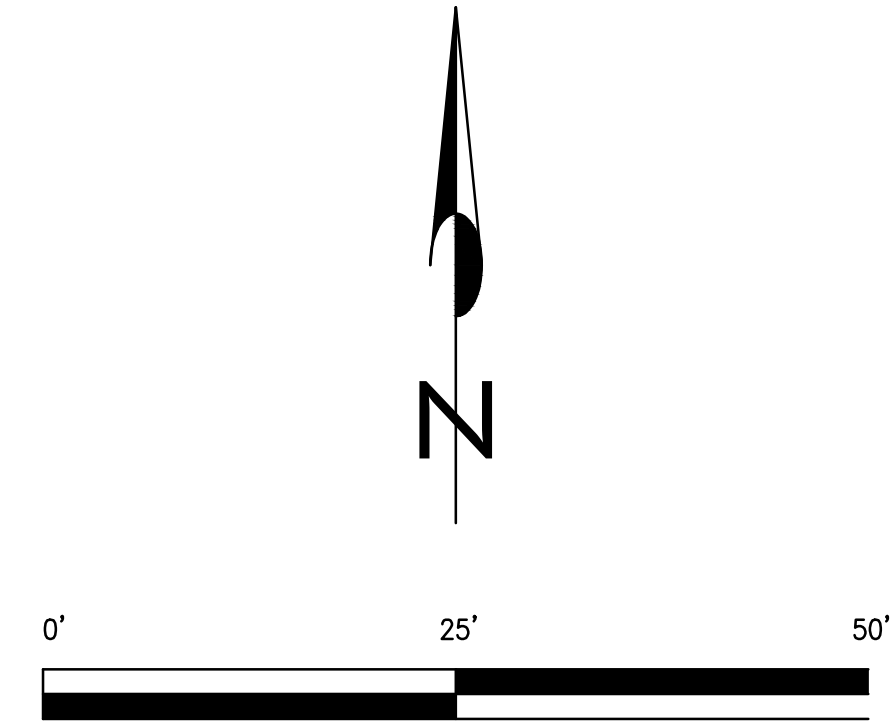
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Dwn:	Date:	09/09/19	
Appd:	Date:		

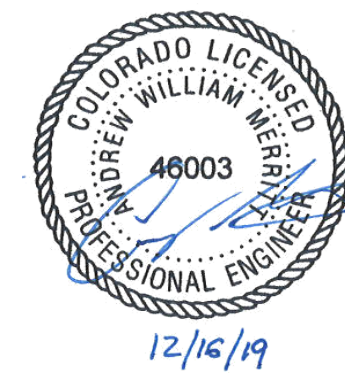
C03-00



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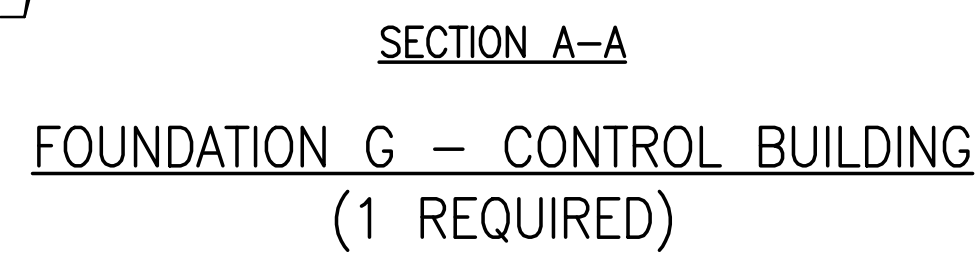
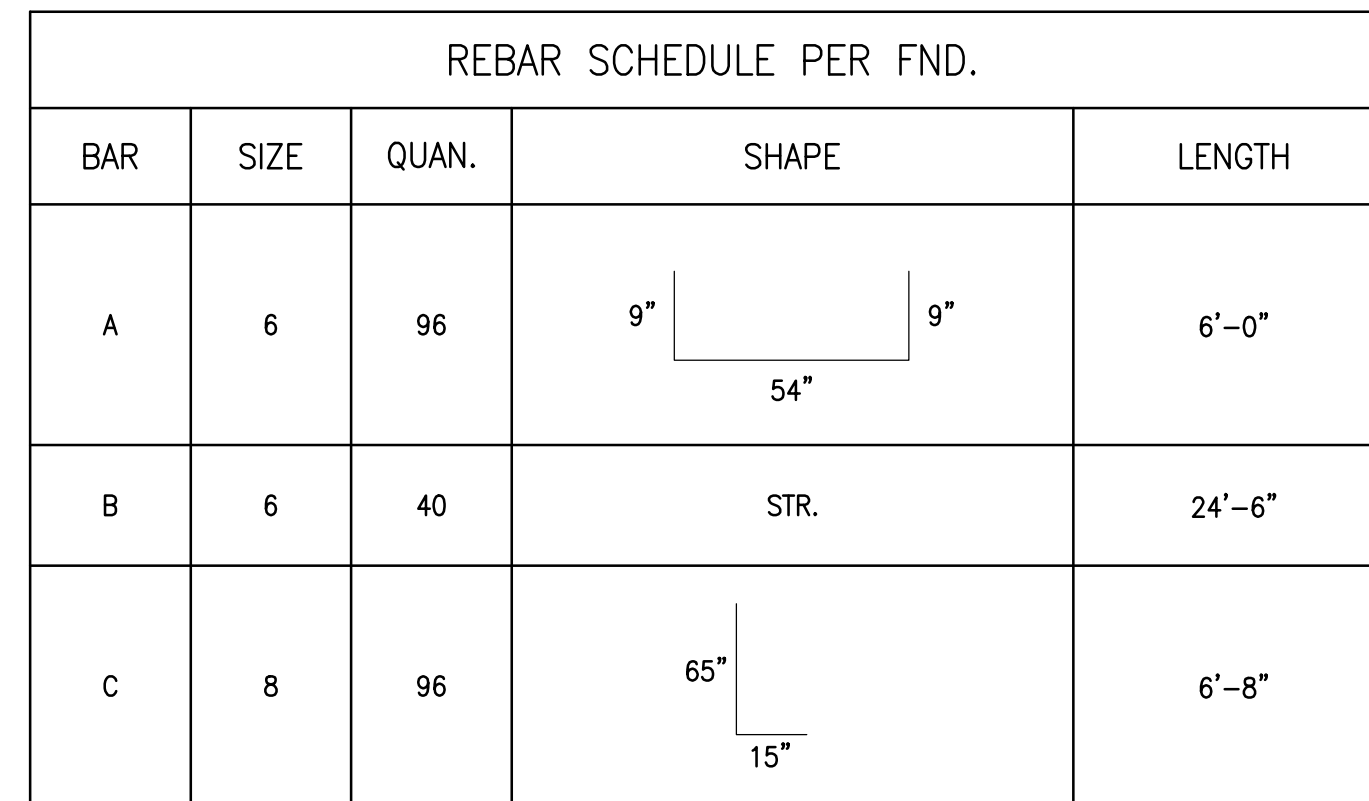
☒ DENOTES FOUNDATION DESIGNATION  
 • DENOTES FOUNDATION WORK POINT  
 ⊗ DENOTES FOUNDATION ORIENTATION



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REFERENCE DRAWINGS  
SEE DWG. C03-00 FOR FOUNDATION NOTES  
SEE DWG. C03-01 FOR FOUNDATION LAYOUT DRAWING

<div><p>MOUNTAIN VIEW ELECTRIC ASSOCIATION, INC. Your Tomorrow's Energy. Cooperative </p><p>11140 E. WOODMAN RD. FALCON CO. 80831</p></div>		<div><p><b>YODER SUBSTATION</b></p><hr/><p>69kV – 12.47kV FOUNDATION G – CONTROL BUILDING</p><p>MOUNTAIN VIEW ELECTRIC ASSOCIATION, INCORPORATED</p></div>		<div><p>UPDATED BY: <b>BPARCHONE</b>    <b>12/16/2019 2:36 PM</b>    Contract: _____</p><p>No. _____ Date: _____ Appd. _____</p><p><b>CM</b>    <b>MM</b>    <b>ISSUED FOR CONSTRUCTION</b></p></div>		<div><p>Revision _____</p><p>M.F. _____</p><p>Dwg. No. _____ Mfr. _____</p><p>Drawing Title _____</p><p>Reference Drawings _____</p></div>	
C03-09							

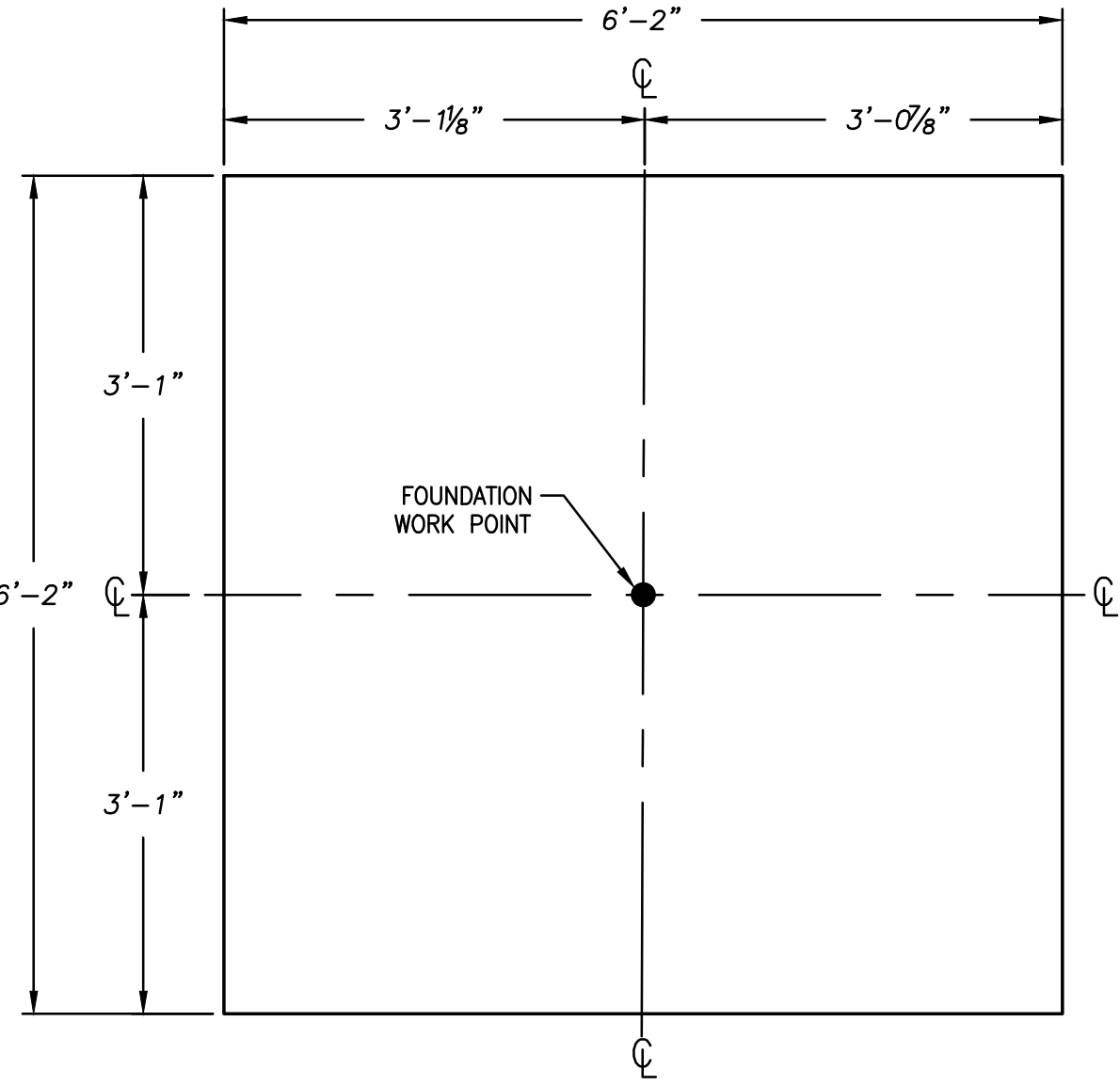
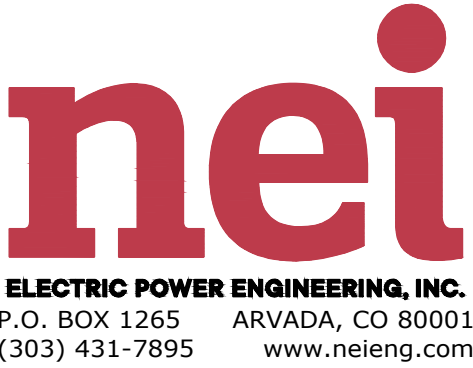
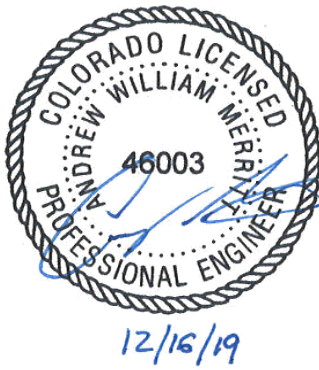
REBAR SCHEDULE (FOUNDATION K)				
BAR	SIZE	QTY PER FND	SHAPE	LENGTH
A	4	24	STR.	5'-8"

REBAR SCHEDULE (FOUNDATION L)				
BAR	SIZE	QTY PER FND	SHAPE	LENGTH
B	4	20	STR.	5'-0"
C	4	12	STR.	9'-1"

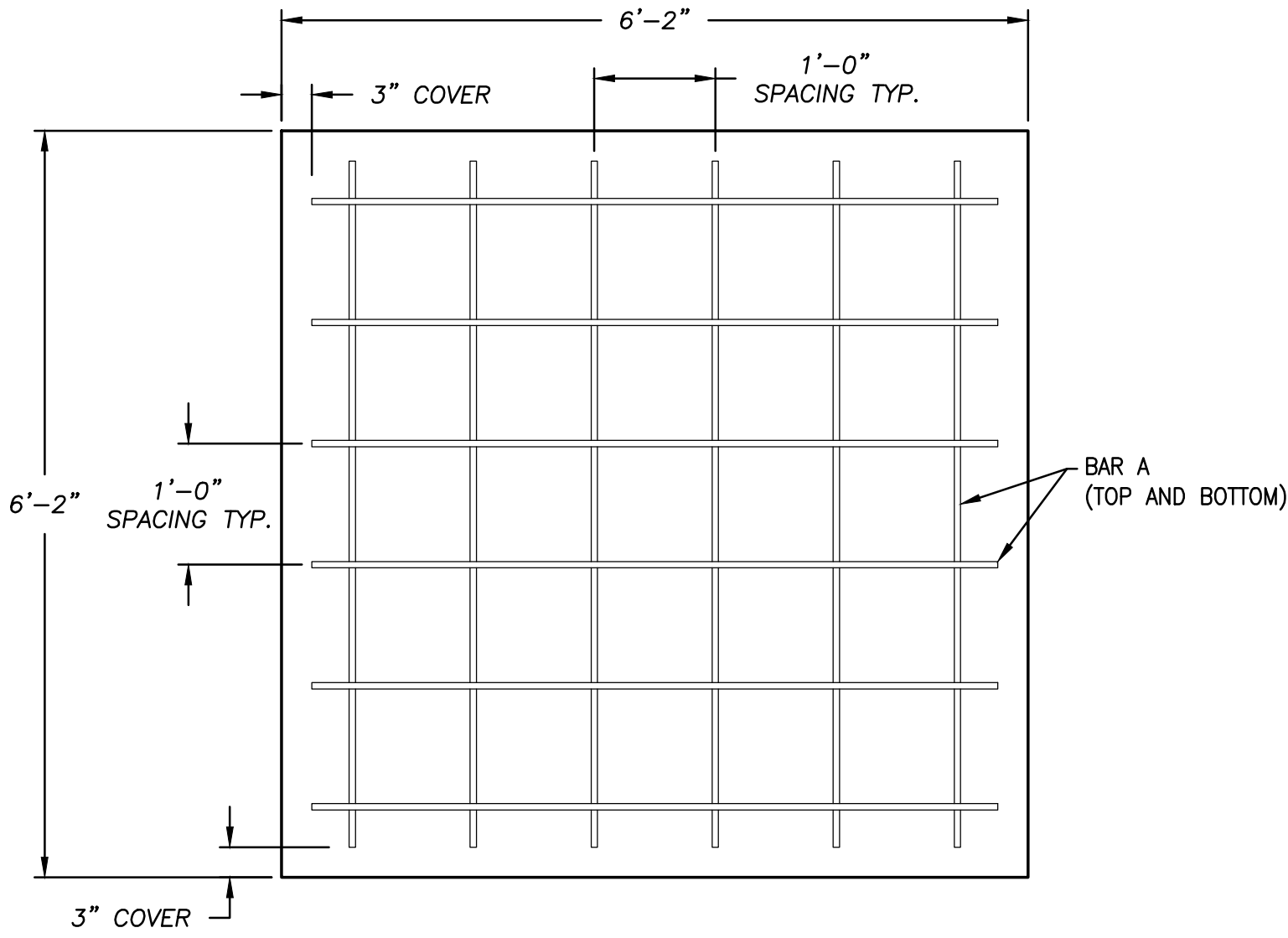
NOTE:  
1) CRITICAL TOP OF CONCRETE FOR BOTH PADS TO BE SET TO MATCH CONTROL BUILDING STRIP FOOTING TOP OF CONCRETE.  
2) USE HILTI - HY 200 + HAS E 1/2", 5" EMBEDMENT FOR ALL STAIR ATTACHMENTS



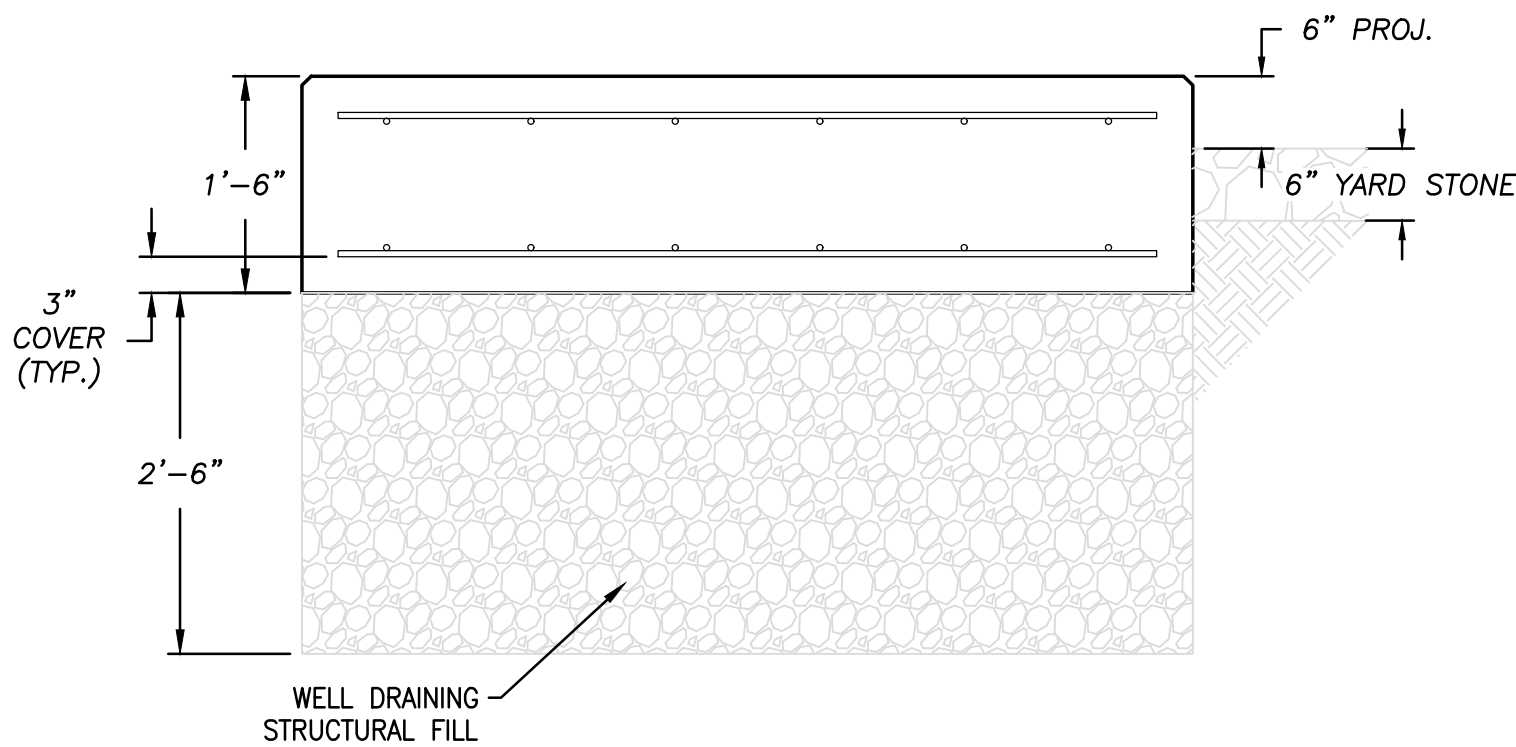
Yoder Substation		69kV - 12.47kV		FOUNDATIONS K & L - CONTROL BUILDING STAIR		MOUNTAIN VIEW ELECTRIC ASSOCIATION, INCORPORATED		11/11/2019 12:08 PM		Contract		UPDATED BY: CMORE		PATR: P:\3200\3225\001 yoder substation\Drawings\NET\CO3-12 FOUNDATIONS K & L - CONTROL BUILDING STAIR PADS.dwg	
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C03-12		C03-12		C03-12		C03-12		C03-12		C03-12		C03-12		C03-12	



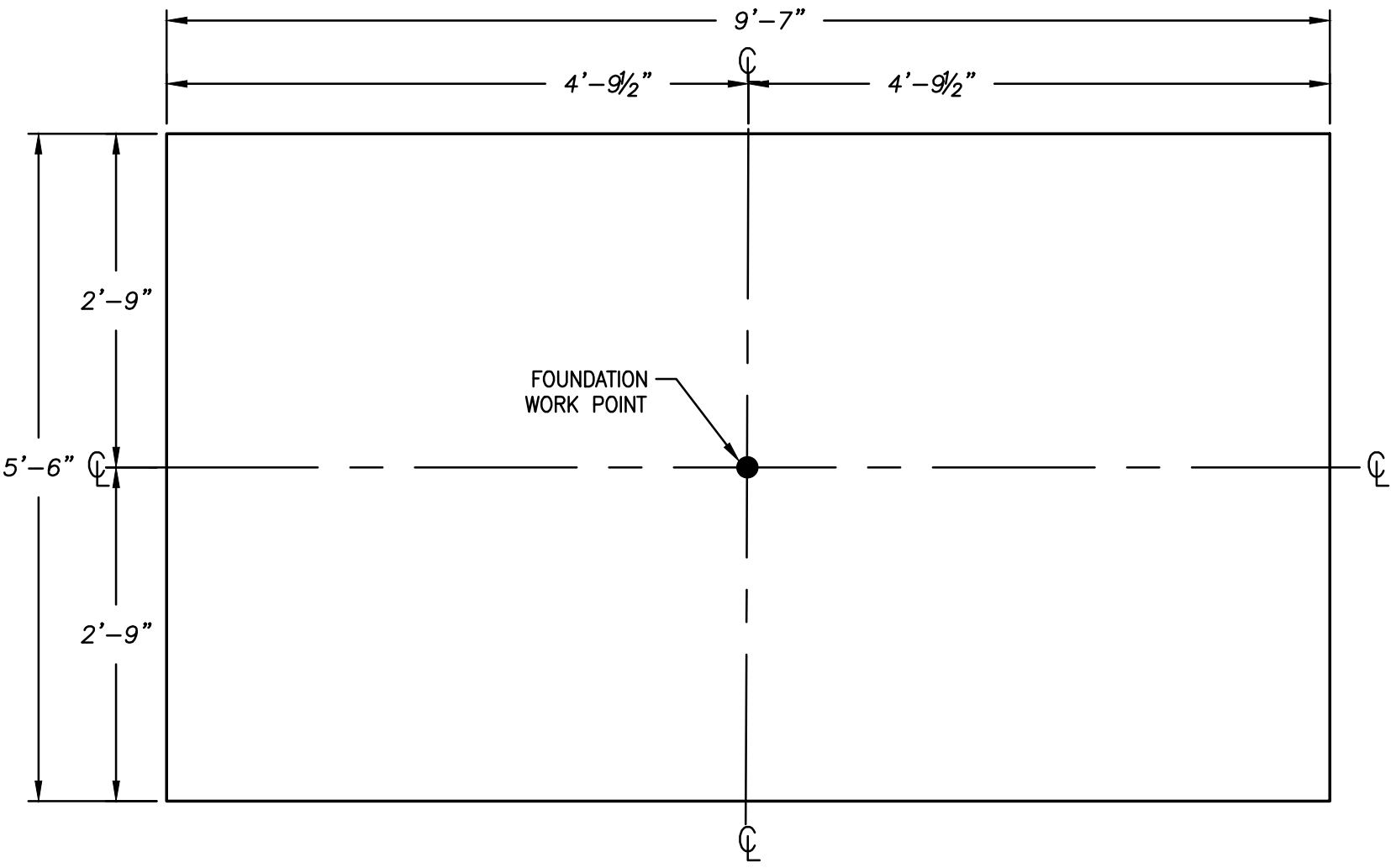
FOUNDATION PLAN



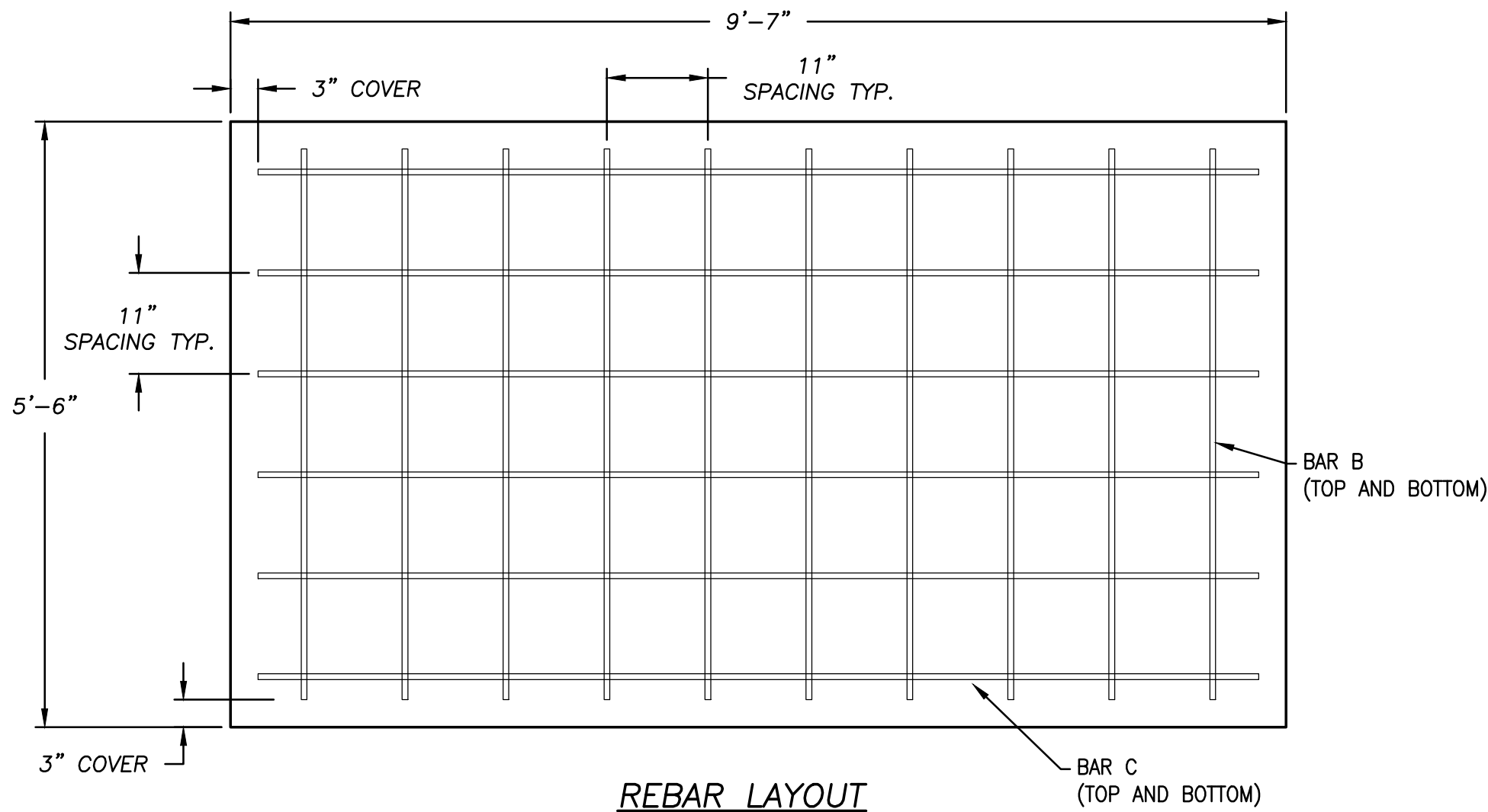
REBAR LAYOUT



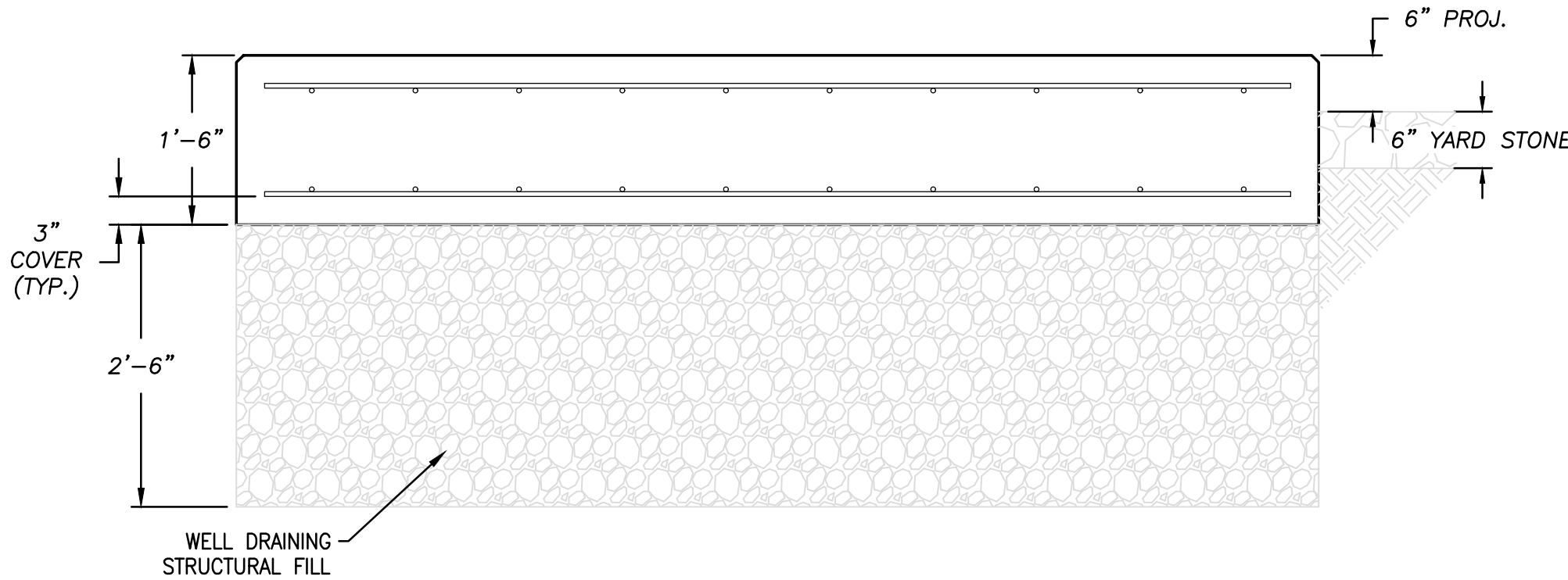
FOUNDATION K  
(1 REQUIRED)



FOUNDATION PLAN



REBAR LAYOUT



FOUNDATION L  
(1 REQUIRED)