SPECIFICATIONS

SOILS REPORT: THE SOILS REPORT FORMS PART OF THIS FOUNDATION PLAN; READ IT CAREFULLY. ASK THE ENGINEER ABOUT ANY PART YOU DO NOT UNDERSTAND. CALL THE ATTENTION OF THE ENGINEER TO ANY CHANGES IN SOIL CONDITIONS FROM THAT WHICH ARE DISCUSSED IN THE SOILS REPORT. GENERALLY, AN EXAMINATION OF THE FOUNDATION EXCAVATION BY THE ENGINEER IS REQUIRED PRIOR TO BEGINNING CONSTRUCTION.

SITE DEVELOPMENT: ROUGH GRADE TO LEAVE GOOD DRAINAGE DURING AND AFTER CONSTRUCTION. FINAL GRADE AFTER CONSTRUCTION SHALL BE SIX INCHES OF DROP AWAY FROM BUILDING IN THE FIRST TEN FEET. REMOVE TOPSOIL AND ORGANIC MATERIAL FROM WHERE COMPONENTS OF YOUR FOUNDATION AND SLABS WILL GO. IF YOU DISCOVER GROUND WATER, NOTIFY THE ENGINEER. **DO NOT** BUILD ON FROZEN SOIL OR MUD.

SOILS: SOILS ARE A CONSTRUCTION MATERIAL; HOWEVER, WITHOUT PROPER USE, THEY CAN BEHAVE IN UNPREDICTABLE FASHIONS. HERE'S WHAT WE CONSIDER PROPER USE:

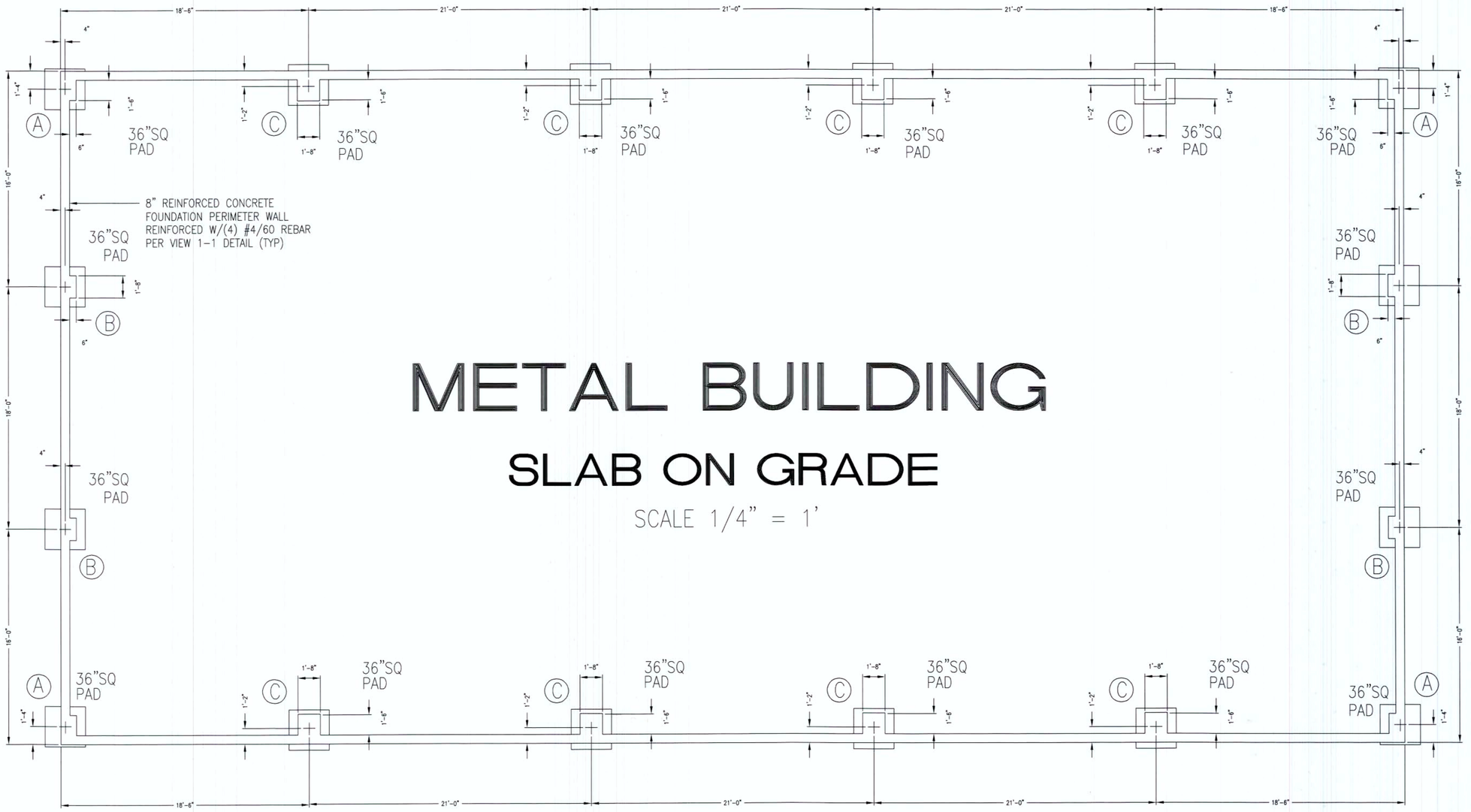
– FILL AND COMPACT SOFT SPOTS TO THE DENSITY REQUIRED FOR THAT AREA OF THE FOUNDATION.
– SOIL UNDER LOAD BEARING COMPONENTS OF THE STRUCTURE, SUCH AS WALLS AND PADS, SHALL BE COMPACTED TO 95% MODIFIED PROCTOR DENSITY. BACKFILL AGAINST FOUNDATION WALLS SHALL BE COMPACTED TO 80% MODIFIED PROCTOR DENSITY.
– BACKFILL SHOULD BE MADE IN 6" LAYERS, CALLED LIFTS, WITH EACH LIFT PROPERLY COMPACTED TO THE REQUIRED DENSITY, USING THE PROPER COMPACTING EQUIPMENT. FOUNDATION WALLS DESIGNED TO HAVE BACKFILL ON BOTH SIDES SHALL HAVE FILL BROUGHT UP EQUALLY ON BOTH SIDES, RATHER THAN BACKFILLING ONE SIDE PRIOR TO BACKFILLING THE OTHER. GENERALLY, USE OF A "JUMPING JACK" FOR COHESIVE SOILS (i.e., CLAYEY OR SILTY) OR A VIBRATORY PLATE COMPACTOR FOR GRANULAR SOILS (i.e., SANDY) WILL PROVIDE GOOD RESULTS. THE SOIL SHOULD BE AT THE RIGHT MOISTURE CONTENT; IF IT SEEMS WET OR DRY, NOTIFY THE SOILS ENGINEER FOR ADVICE. **CAUTION** USING BOOM MOUNTED COMPACTING EQUIPMENT, SUCH AS A SHAKER HEAD OR "STINGER", OR POUNDING THE SOIL WITH A BACKHOE BUCKET EXERTS A TREMENDOUS FORCE; IF USED TO COMPACT BACKFILL AROUND FOUNDATIONS, WALL FAILURE IS LIKELY. LIKEWISE, AUTOS, TRUCKS, FRONT END LOADERS, ETC., ARE NOT COMPACTING EQUIPMENT, AND IF THEY ARE DRIVEN CLOSE (WITHIN TEN FEET) TO A FOUNDATION WALL, IT IS LIKELY THE WALL WILL BOW AND CRACK.
– COMPACTION SHALL BE ACCOMPLISHED SO AS TO FORM A BERM OF DENSE SOIL AGAINST THE SIDE OF THE STRUCTURE TO PROVIDE ADEQUATE LATERAL SUPPORT. EACH LIFT IN THE PROCESS SHALL BE FINISHED ALONG THE ENTIRE LENGTH OF THE WALL BEFORE STARTING ON THE NEXT LIFT. DO NOT COMPACT TOO TIGHTLY OR IN SUCH A FASHION THAT WEDGING OCCURS AGAINST THE FOUNDATION WALL OR BOWING AND CRACKING OF THE WALL CAN OCCUR. GENERALLY, FLOOR JOISTS AND SLABS MUST BE IN PLACE PRIOR TO BACKFILLING AGAINST THE FOUNDATION; THE FOUNDATION DESIGN WILL LIST SPECIFIC EXCEPTIONS. BLOCK BETWEEN THE FOUNDATION WALL AND PARALLEL FLOOR JOISTS AT FOUR FOOT CENTERS ALONG FULL HEIGHT FOUNDATION WALLS.
– DO NOT ALLOW THE BACKFILL TO BECOME SATURATED WITH WATER AT ANY TIME, DURING OR AFTER CONSTRUCTION. THIS PLACES EXCESSIVE PRESSURE AGAINST THE WALL AND CAN CAUSE CRACKING OR BOWING.
– SILL PLATES SHALL BE ANCHORED WITH 1/2" DIAMETER ANCHOR BOLTS AT A MAXIMUM SPACING OF 48 INCHES AND WITHIN 12 INCHES OF PLATE ENDS, UNLESS OTHERWISE NOTED.

CONCRETE: CONCRETE SHALL BE A MINIMUM OF 3,000 PSI WITH A MAXIMUM SLUMP OF 4 INCHES FOR WALLS, PADS AND SHALLOW PIERS AND A MINIMUM OF 3,500 PSI WITH A MAXIMUM 4 INCH SLUMP FOR DEEP DRILLED PIERS UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS. SLUMP MAY BE INCREASED TO 6 INCHES WITH POZZOLAN ADDITIVES IF NO ADDITIONAL WATER IS USED IN THE MIX. BEWARE OF CONCRETE TRUCK OPERATORS WHO WISH TO ADD WATER TO THE CONCRETE AT THE SITE TO MAKE IT MORE WORKABLE. ADDITIONAL WATER WILL DECREASE THE STRENGTH OF THE CONCRETE. THE CONCRETE MUST STAY IN THE FORMS FOR A MINIMUM OF 72 HOURS TO CURE OR BE COVERED WITH CURING SHEETS OR SPRAYED WITH A CURING COMPOUND. THE WATER IN THE CONCRETE IS REQUIRED TO COMPLETE THE CHEMICAL REACTION, AND IF THE CONCRETE IS UNCOVERED TOO SOON AFTER PLACEMENT, IT WILL DRY OUT TO THE DETRIMENT OF THE CONCRETE'S STRENGTH AND APPEARANCE. FOUNDATIONS WHICH HAVE FORMS STRIPPED EARLY END UP WITH AS LITTLE AS HALF THE STRENGTH OF FOUNDATION WALLS WHICH ARE PROPERLY CURED. SIMILARLY, DO NOT ALLOW THE CONCRETE TO FREEZE DURING THE FIRST SEVEN DAYS. THE WATER WITHIN THE CONCRETE FREEZES AND BECOMES UNAVAILABLE FOR THE CHEMICAL REACTION, POSSIBLY CAUSING A DETRIMENT TO THE CONCRETE'S STRENGTH AND APPEARANCE. EXCEPT IN VERY MASSIVE STRUCTURES, THE HEAT OF HYDRATION OF CONCRETE IS GENERALLY NOT SUFFICIENT TO PREVENT FREEZING DURING A TYPICAL COLORADO WINTER NIGHT.

DO NOT LET THE CONCRETE DROP FARTHER THAN TEN FEET WHEN PLACING IT. AVOID DROPPING CONCRETE ON REINFORCING STEEL AS MUCH AS POSSIBLE, AS THIS WILL TEND TO DISPLACE THE STEEL. AFTER PLACEMENT, ROD OR VIBRATE THE CONCRETE TO ELIMINATE JOINTS AND AIR POCKETS, BUT DO NOT CAUSE THE INGREDIENTS TO SEPARATE OR WATER TO POOL AT THE TOP. EXCESSIVE VIBRATION CAN CAUSE DAMAGE TO THE FORMS. **DO NOT** PLACE STRESS AGAINST CONCRETE FOR AT LEAST SEVEN DAYS AFTER PLACEMENT. USE FORMS WHICH ARE PROPERLY OILED AND BRACED. LEAVE THEM IN PLACE UNTIL THE CONCRETE HAS CURED TO THE POINT WHERE IT CAN SUPPORT ITS OWN WEIGHT. REMOVE FORMS CAREFULLY SO AS NOT TO DAMAGE THE CONCRETE; PATCH ANY VOIDS WITH A GROUT USING THE SAME MIXTURE AS THE ORIGINAL CONCRETE, BUT WITHOUT THE COARSE AGGREGATE. PUT CONTROL JOINTS IN SLABS AT NO MORE THAN 12 FEET EACH DIRECTION. USE OF POLY FIBER MESH IN SLABS LESS THAN 6" THICK AND WELDED WIRE FABRIC IN SLABS 6" THICK OR GREATER IS RECOMMENDED TO REDUCE SHRINKAGE CRACKING. IF DEEP DRILLED PIERS (CAISSONS) ARE USED IN THE FOUNDATION, A MAXIMUM OF FOUR HOURS BETWEEN THE DRILLING OF THE HOLE AND THE PLACEMENT OF THE CONCRETE IS ALLOWED, WITH LESS THAN ONE HOUR BEING DESIRED. IF GROUNDWATER IS ENCOUNTERED, IMMEDIATE FILLING IS REQUIRED. UP TO ONE INCH OF WATER IS AUTHORIZED IN CAISSON HOLES PRIOR TO CONCRETE PLACEMENT; DEEPER WATER MUST BE PUMPED OR OTHERWISE FORCED OUT.

STEEL: REINFORCING STEEL IS GRADE 60, UNLESS OTHERWISE CALLED OUT ON THE PLANS. STEEL SHALL BE FREE OF RUST, DIRT, OIL, SCALE, OR ANYTHING ELSE WHICH WILL IMPAIR ITS ABILITY TO ADHERE TO CONCRETE. ALL REINFORCING STEEL SHALL BE SECURELY TIED AT ALL INTERSECTIONS AND SUPPORTED TO PREVENT DISPLACEMENT DURING CONCRETE PLACING OPERATIONS. STEEL MUST NOT BE ANY CLOSER THAN THREE INCHES TO SURFACES WHICH WILL BE EXPOSED TO EARTH AND 2 INCHES FROM OTHER SURFACES. SEE THE REINFORCEMENT DETAILS FOR ADDITIONAL PLACEMENT REQUIREMENTS. OVERLAP AND TIE SPLICES 18 INCHES. BEND AND TIE CORNER 24 INCHES. PLACEMENT OF REINFORCING STEEL ACCORDING TO THE DESIGN IS IMPORTANT IN ORDER TO ALLOW THE STEEL AND CONCRETE TO WORK TOGETHER TO DEVELOP MAXIMUM STRENGTH.

LIABILITY: ALL DESIGN AND CONSTRUCTION REPRESENTS COMPROMISE. THIS FOUNDATION DESIGN HAS BEEN ACCOMPLISHED WITH ECONOMY, CONSTRUCTIBILITY, AND RELIABILITY AS PRIMARY CONSIDERATIONS AND REFLECTS THE CURRENT STANDARDS OF PRACTICE IN THE FRONT RANGE AREA. IT HAS NOT BEEN DESIGNED TO WITHSTAND EVERY CONCEIVABLE EVENT WHICH MIGHT OCCUR, AS THAT WOULD RENDER THE FOUNDATION EXCEPTIONALLY DIFFICULT TO BUILD AND EXCEEDINGLY EXPENSIVE. LIKEWISE, THE DETAILS ARE NOT INTENDED TO PROVIDE STEP-BY-STEP INSTALLATION INSTRUCTIONS; THE IRC/IBC BUILDING CODE PROVIDES OTHER INFORMATION NEEDED FOR FOUNDATION CONSTRUCTION. A WORKING KNOWLEDGE OF THE CODE AS WELL AS PRACTICAL EXPERIENCE IN LOCAL FOUNDATION CONSTRUCTION PRACTICES (IN THE SPECIFIC TYPE OF FOUNDATION BEING BUILT) IS REQUIRED TO COMPLETE THE FOUNDATION. IF YOU OR ANY MEMBER OF THE CONSTRUCTION TEAM HAS **ANY** QUESTION ABOUT ANY PORTION OF THIS FOUNDATION DESIGN, YOU **MUST** CONTACT THIS OFFICE TO RESOLVE THE SITUATION PRIOR TO PROCEEDING WITH CONSTRUCTION. WHILE THE DESIGN OF THIS FOUNDATION SHOULD PROVIDE A STRUCTURE WHICH WILL FUNCTION WELL FOR THE LIFE OF THE BUILDING UNDER NORMAL CIRCUMSTANCES, UNFORESEEN EVENTS, SUCH AS FLOODING, EXCEPTIONAL LOADS, OR EVEN IMPROPER CONSTRUCTION NOT NOTICED DURING BUILDING CAN CAUSE PROBLEMS. THEREFORE, THE LIMITS OF LIABILITY EXTEND TO THE FEE RENDERED FOR THE PROFESSIONAL SERVICES PROVIDED.



METAL BUILDING

SLAB ON GRADE

SCALE 1/4" = 1'

General Notes

1. THE SPECIFICATIONS, SOILS REPORT AND OPEN HOLE LETTER ARE PART OF THIS DESIGN.
2. VERIFY LOCATION OF PADS.
3. LOAD BEARING COMPONENTS SUSCEPTIBLE TO WEATHER SHALL BE FINISHED TO A MINIMUM OF 30" BELOW AND 6" ABOVE FINISHED GRADE.
4. PAD SIZES SHOWN ON THIS DESIGN ARE MINIMUM AND MAY BE UP SIZED.
5. PADS 30" TO 66" SQ ARE 11.5" THICK
   W/ #4/60 REBAR AT 6" O.C. EACH WAY
   PADS 72" TO 90" SQ ARE 13.5" THICK
   W/ #4/60 REBAR AT 6" O.C. EACH WAY
   PADS 96" TO 102" SQ ARE 15.5" THICK (2 GRIDS)
   W/ #4/60 REBAR AT 6" O.C. EACH WAY
   --TWO GRIDS; ONE AT 4" AND ONE AT 10" DEPTH

FOUNDATION DESIGN: 5,000 PSF (GEOQUEST #20-1294)
OPEN HOLE REQUIRED; MUST BE 5,000 PSF OR HIGHER FOR THIS DESIGN TO BE VALID

ROOF DESIGN LOADS: ROOF SNOW LIVE 40 PSF; DEAD COLLATERAL 3 PSF
WIND SPEED 130 MPH, EXPOSURE C

ANCHOR BOLT DIAMETERS AND PROJECTIONS ARE CALLED OUT BY STEEL BUILDING MFG. LENGTH OF ANCHOR BOLTS SHALL BE 18" LONG WITH A MIN 3" HOOK
ANCHOR BOLTS FOR GARAGE AND PERSONNEL DOORS MAY BE 6" LONG WEDGE BOLTS.

+ IS CENTER OF PAD AND BUILDING BOLT PATTERN – SEE METAL BUILDING BOLT PATTERN DETAILS

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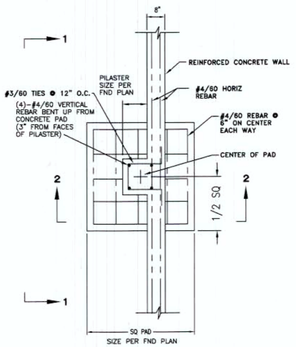
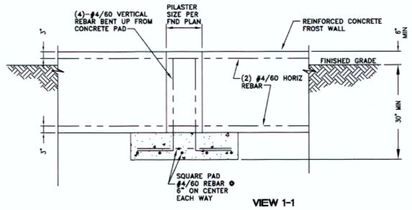
02/11/2021 11:22 AM
COUNTY
REVIEWED
NOT FOR
CONSTRUCTION

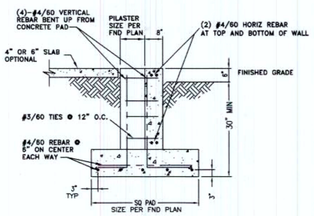


PILASTER TOP VIEW



VIEW 1-1

CONCRETE WALLS TO 4 FT HIGH
STANDARD REINFORCEMENT DETAILS



VIEW 2-2

COLORADO LICENSED
WOLLY S. FITZ
4/6/2021
43835
PROFESSIONAL ENGINEER

REVISED
DRAWN MST
CHECKED NBW
DATE 1/6/2021

BUILDER: SARA RIDLEY

PROJECT NAME
20390 BEACON LITE ROAD
EL PASO COUNTY, COLORADO

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PROJECT NO.
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