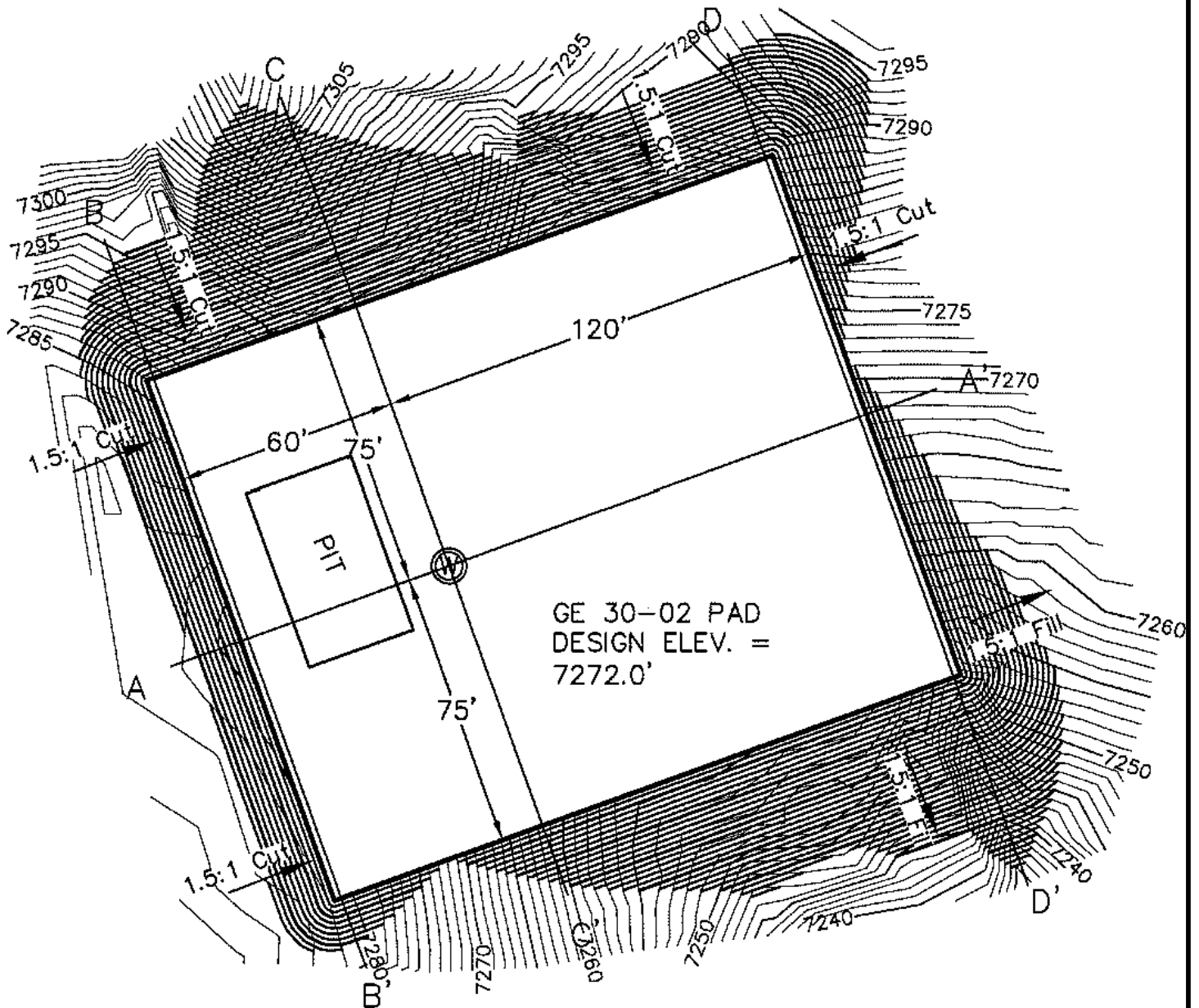


# ELEVATIONS OF WELL PAD



## SITE MAP



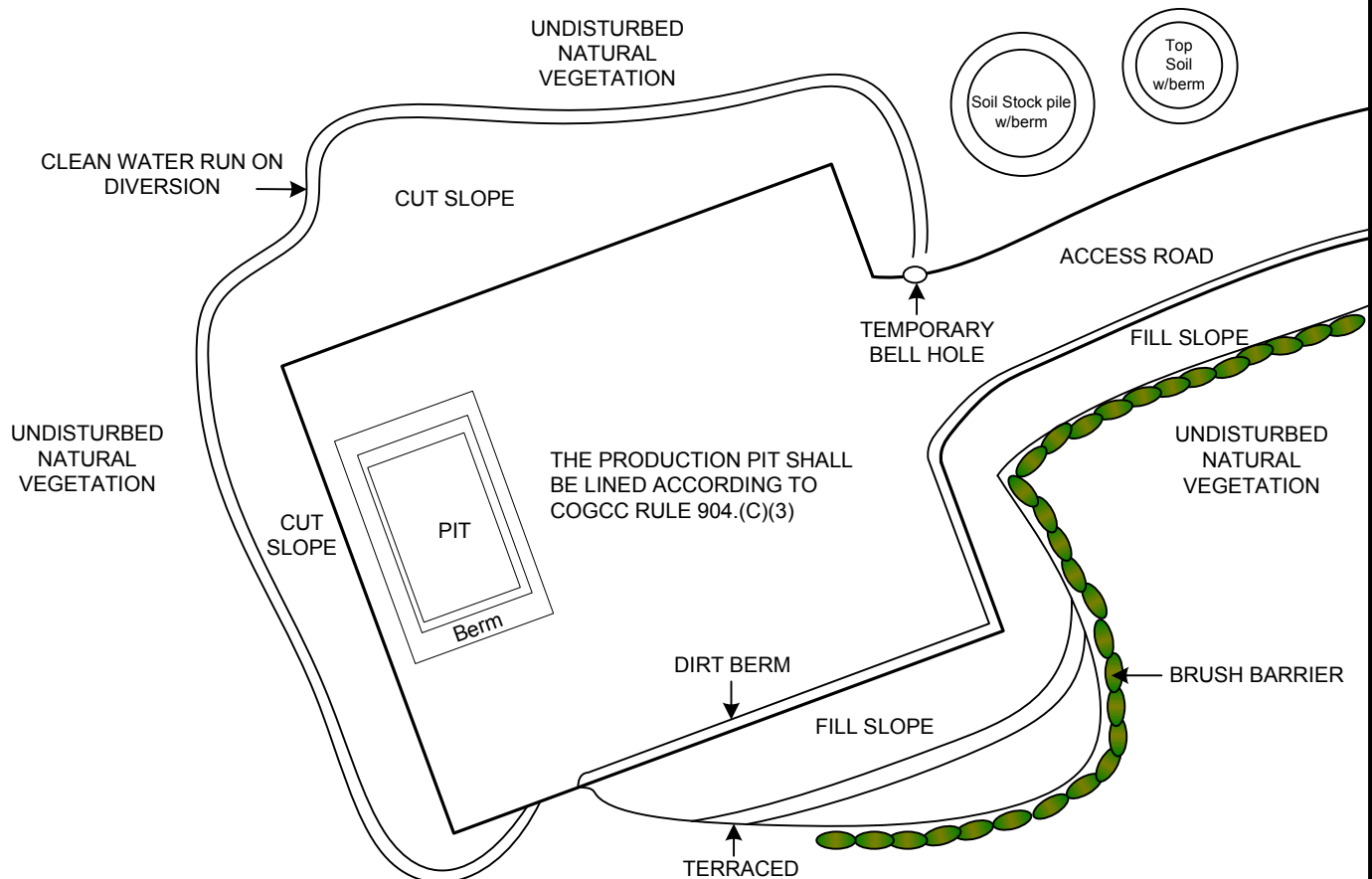
# B.M.P. IMPLEMENTATION DURING CLEARING AND WELL PAD/ACCESS ROAD DEVELOPMENT



UNDISTURBED NATURAL VEGETATION SHALL BE PRESERVED OUTSIDE OF THE BOUNDARY OF DISTURBANCE, REDUCING SEDIMENT AND EROSION PROBLEMS.

DURING THE CLEARING OPERATION ALL TREE STUMPS WILL BE BURIED IN FILL SLOPE AWAY FROM PIPELINE (ROW). A BRUSH BARRIER WILL BE PLACED DOWN GRADIENT OF THE DISTURBED AREAS TO INTERCEPT AND RETAIN SEDIMENT.

DURING THE ACCESS ROAD DEVELOPMENT SOIL SHALL BE SEPARATED FROM SOLID ROCK. SOME OF THE ROCK WILL BE STORED FOR STABILIZATION PURPOSES AS NEEDED. THE SOIL WILL BE USED TO CREATE A TEMPORARY DIRT BERM UP GRADIENT OF THE FILL SLOPE TO PREVENT EROSION OF THE FILL SLOPE.



TEMPORARY BELL HOLES SHALL BE PLACED BELOW THE CUT SLOPE ADJACENT TO THE ACCESS ROAD TO INTERCEPT AND RETAIN SEDIMENT UNTIL THE PERMANENT BMP'S ARE IMPLEMENTED.

A CLEAN WATER RUN ON DIVERSION SHALL BE CREATED ABOVE THE NORTH CUT SLOPE DURING WELL PAD DEVELOPMENT TO PREVENT UPLAND WATER SHED FROM ENTERING THE PROJECT.

THE SOUTH FILL SLOPE WILL UTILIZE A TERRACE TO BREAK UP THE LENGTH OF THE FILL SLOPE REDUCING EROSION PROBLEMS.

ONCE THE WELL PAD FILL SLOPES HAVE BEEN CONSTRUCTED, A DIRT BERM SHALL BE UTILIZED UP GRADIENT TO PREVENT EROSION OF THE FILL SLOPE AND DIRECT RUN OFF TO A DESIRED LOCATION.

THE TOP SOIL AND SOIL STOCK PILE SHALL UTILIZE A DIRT BERM AROUND THE BASE TO PREVENT OFF SITE SEDIMENT TRANSPORT.



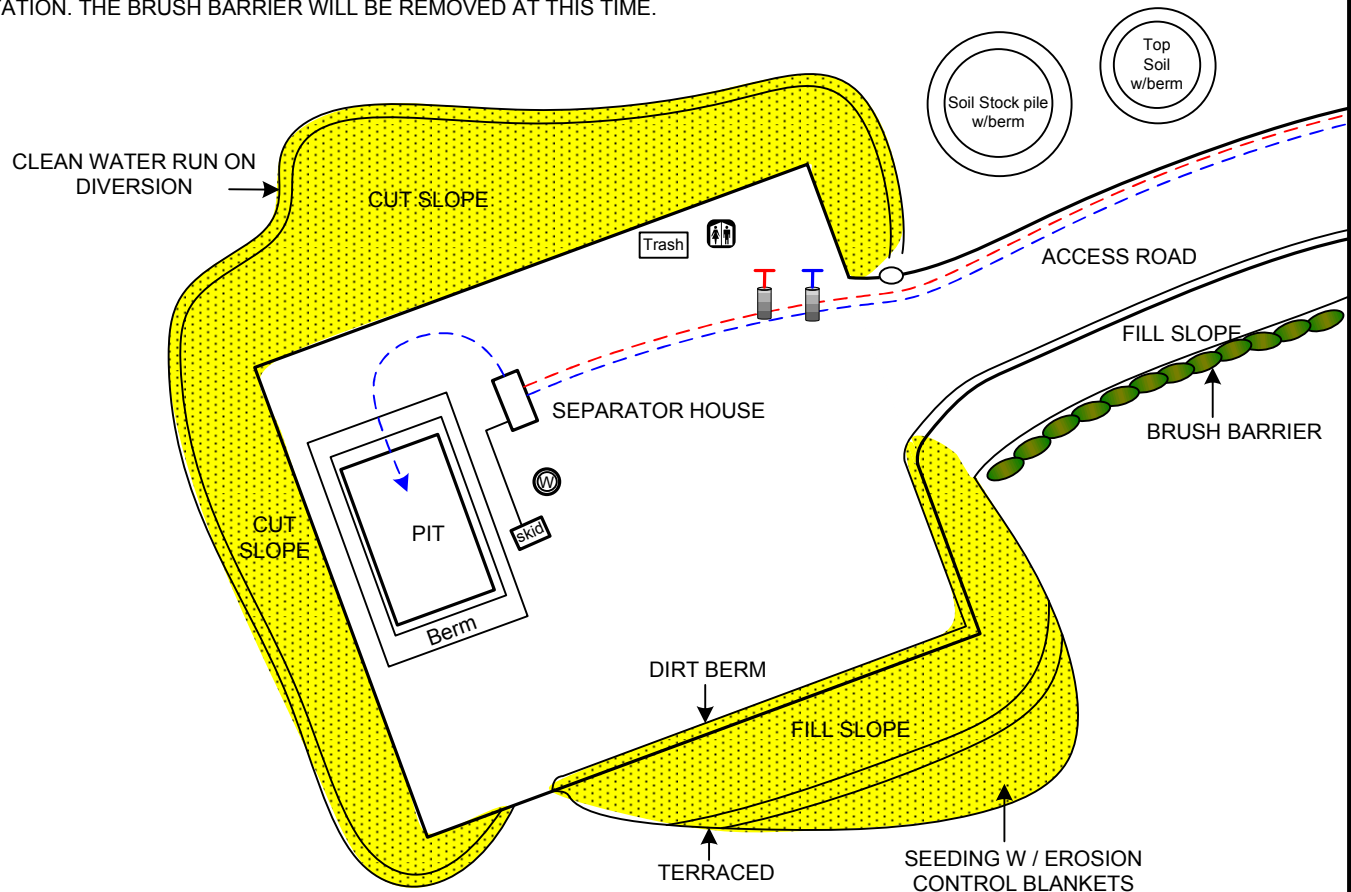
# B.M.P. IMPLEMENTATION DURING UTILITY INSTALLATION. BEGIN FINAL GRADE/STABILIZATION



PORTABLE TOILETS SHALL BE SECURED TO TRAILERS AND PLACED AWAY FROM DRAINAGE AREAS, TRAFFIC FLOW AND FILL SLOPES.

BEAR PROOF TRASH CONTAINERS SHALL BE PROVIDED DURING THE DRILLING OPERATION ONLY. THEY WILL BE PLACED AWAY FROM DRAINAGE AREAS, TRAFFIC FLOW AND FILL SLOPES.

ONCE THE WELL PAD CUT AND FILL SLOPES HAVE ACHIEVED FINAL GRADE, DEPENDING ON SOIL CONTENT, SEEDING WITH EROSION CONTROL BLANKETS SHALL BE INSTALLED. THIS WILL CONTROL EROSION AND PROMOTE THE ESTABLISHMENT OF VEGETATION. THE BRUSH BARRIER WILL BE REMOVED AT THIS TIME.



FOR SLOPES THAT CONSIST PRIMARILY OF ROCK, SEEDING WITH A MULCH TACKIFIER WILL BE UTILIZED WHICH WILL OCCUR AFTER ACCESS ROAD FINAL GRADE. USED TO ADHERE THE SEED TO THE SOIL AND PROMOTE THE ESTABLISHMENT OF VEGETATION.

THE PIPELINE WILL BE INSTALLED IN SMALL INCREMENTS TO LIMIT THE TIME OF THE DISTURBED SOIL EXPOSURE TO THE ELEMENTS. SPOILS SHALL BE PLACED UP GRADIENT OF THE TRENCH, UTILIZING THE TRENCH AND THE DIRT BERM OF THE ACCESS ROAD TO PREVENT OFF SITE SEDIMENT TRANSPORT.

THE TOP SOIL AND SOIL STOCK PILE SHALL BE SEEDDED WITH A MULCH TACKIFIER DURING THE ACCESS ROAD FINAL GRADE AFTER UTILITY INSTALLATION. THIS WILL STABILIZE THE SOIL AND PROMOTE THE ESTABLISHMENT OF VEGETATION.

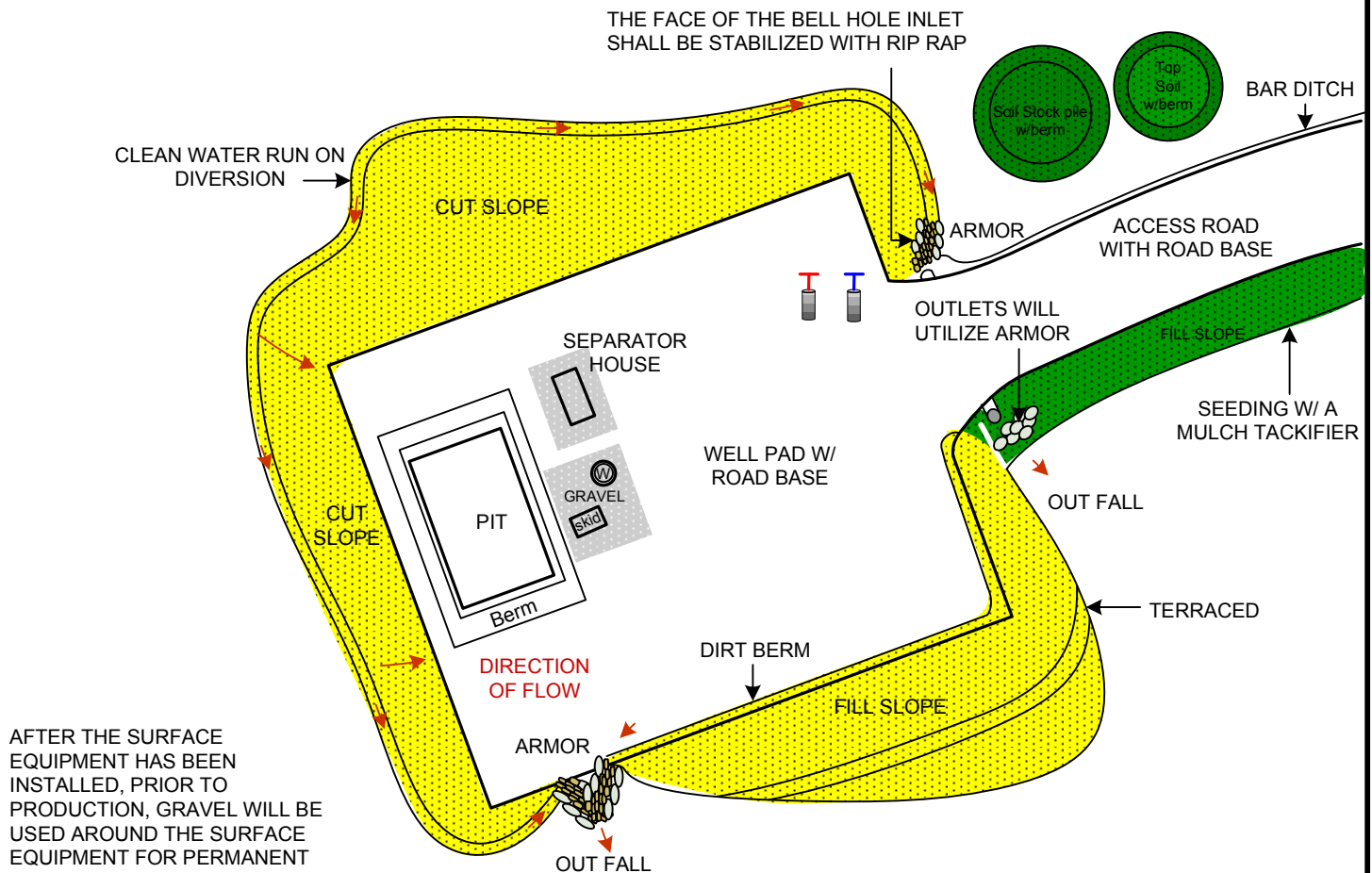
- GAS LINE
- WATER LINE
- FUEL LINE
- PORTABLE TOILET
- BEAR PROOF TRASH CONTAINER



# B.M.P. IMPLEMENTATION DURING FINAL STABILIZATION



PIPELINE WILL BE LEFT EXPOSED IN LOCATIONS MARKED FOR CULVERT INSTALL BY XTO PERSONEL. AFTER THE PIPELINE HAS BEEN INSTALLED, PADDED AND BACK FILLED, FINAL GRADE AND STABILIZATION WILL BEGIN ALONG THE ACCESS ROAD. WHERE POSSIBLE CUT AND FILL SLOPES SHALL BE SLOPED TO A MINIMUM OF 2.5:1 GRADE. ACCESS ROADS WILL BE LIMITED TO (20) FEET WIDE EXCEPT ON TURNS, CURVES, OR TERRAIN WHERE ENGINEERING REQUIREMENTS REQUIRE SOMETHING GREATER. THE BRUSH BARRIER WILL BE REMOVED FROM THE FILL SLOPE AND DEPENDING ON SOIL CONTENT GRADING TECHNIQUES MAY BE UTILIZED TO PREPARE THE OUT SLOPE FOR SEEDING. THE ACCESS ROAD SURFACE WILL BE CROWNED. A BAR DITCH WILL BE ESTABLISHED AT THE TOE OF THE CUT SLOPE TO DIRECT RUN OFF TO A DESIRED LOCATION WHERE CULVERTS WILL BE INSTALLED. CULVERT INLETS WILL UTILIZE BELL HOLES THAT ARE LINED WITH RIP RAP ON THE FACE TO STABILIZE THE INLET. CULVERT OUTLETS WILL UTILIZE ARMOR TO DISSIPATE ENERGY, TRAP SEDIMENT AND PREVENT SCOURING OF THE FILL SLOPE. AS A OPTION IN AREAS DETERMINED BY XTO CONSTRUCTION SUPERVISOR, GABION BASKETS WILL BE INSTALLED AS A SEDIMENT TRAP.



ALL CULVERTS WILL BE INSTALLED WITH A MINIMUM COVER OF (1) FOOT WITH PADDING MATERIAL. AFTER THE CULVERTS HAVE BEEN INSTALLED, ROAD BASE WILL BE UTILIZED ON THE ACCESS ROAD AT A WIDTH OF (14) FEET WIDE AT (4) INCHES THICK AFTER COMPACTION. IN AREAS WHERE THE ROAD IS WIDER THAN (20) FEET GRAVEL WILL BE PLACED TO MATCH THE TRAFFIC PATTERN TO STABILIZE THE ROAD SURFACE AND REDUCE OFF SITE VEHICLE TRACKING. THE WELL PAD WILL UTILIZE ROAD BASE INSIDE THE DEAD MAN ANCHORS MATCHING THE ABOVE CRITERIA.

A DIRT BERM SHALL BE UTILIZED ON THE WELL PAD PERIMETER TO DIRECT RUN OFF TO A DESIRED LOCATION. THESE LOCATIONS WILL BE ARMORED TO DISSIPATE ENERGY, TRAP SEDIMENT AND PREVENT EROSION AS RUN OFF EXITS THE SITE.

THE TOP SOIL AND SOIL STOCK PILE SHALL BE SEEDED WITH A MULCH TACKIFIER TO FACILITATE PLANT ESTABLISHMENT AND MINIMIZE SOIL EROSION.

THE CUT AND FILL SLOPES OF THE ACCESS ROAD SHALL BE SEEDED WITH A MULCH TACKIFIER TO STABILIZE THE DISTURBANCE, ADHERE SEED TO THE SOIL AND PROMOTE THE ESTABLISHMENT OF VEGETATION.

