

Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit has been issued to **EQT Production Company**, and is for the approved commercial and/or industrial development project associated with this permit that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. This permit must be posted at the site of work as to be clearly visible, and must remain posted during entirety of development.

Permit: #15-341 OXF 164 Well Pad

Date Approved: 04/10/2015

Expires: N/A

Issued to: EQT Production Company

**POC: Loco Corder
304-848-0066**

**Company Address: 115 Professional Place
Bridgeport, WV 26330**

Project Address: Southwest District

Lat/Long: 39.17842N/80.83631W

Purpose of development: Well pad construction project. Project does not impact floodplain.

Issued by: Edwin L. "Bo" Wriston, Doddridge County FPM (or designee)

Date: 04/10/2015

For additional information regarding this permit, please contact
Doddridge County Floodplain Manager at 304.873.2631, or via email at
doddridgecountyfpm@gmail.com
118 East Court Street; West Union, WV 26456



15-341

PROFESSIONAL ENERGY CONSULTANTS

FILED A DIVISION OF SMITH LAND SURVEYING, INC.

March 20, 2015

2015 MAR 26 AM 11:45

Mr. Bo Wriston
Floodplain Coordinator
Doddridge County Commission
118 East Court Street
West Union, WV 26456

JEFF A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

Re: EQT Production Company, OXF 164 Well Site
Doddridge County, WV, SLS Project No. 8328

Mr. Wriston,

On behalf of EQT Production Company, Smith Land Surveying, Inc. would like to notify you that the attached OXF 164 Marcellus Shale Well Site has been submitted to the WVDEP. The proposed site will consist of an access road, flow back pit, completion pit, and well pad to aid in the development of multiple Marcellus Shale gas wells. The site entrance is located in Doddridge County, approximately 2.7 miles southeast of the junction of Co. Rt. 19/11 and Co. Rt. 19. The entrance to the site is located at Latitude 39.17842, Longitude -80.83631 (NAD 83).

Based on the information presented on the site FIRM, this project is not located within FEMA Flood Zone. No fill shall be placed within the floodplain limits for this project. No other permitting is necessary for this project.

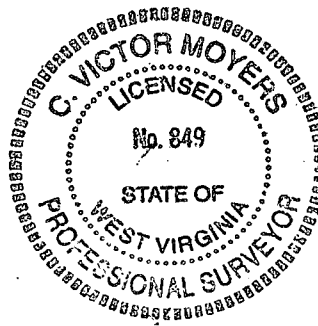
Included in the attachments are the following: cover letter, FEMA map with the site location, vicinity map, and site plans dated 12/5/14.

If you have any questions please feel free to contact me at (304) 462-5634 or Wes Wayne (Design Coordinator) with SLS at 304-904-9184 or wwayne@slssurveys.com, should you have any questions or comments.

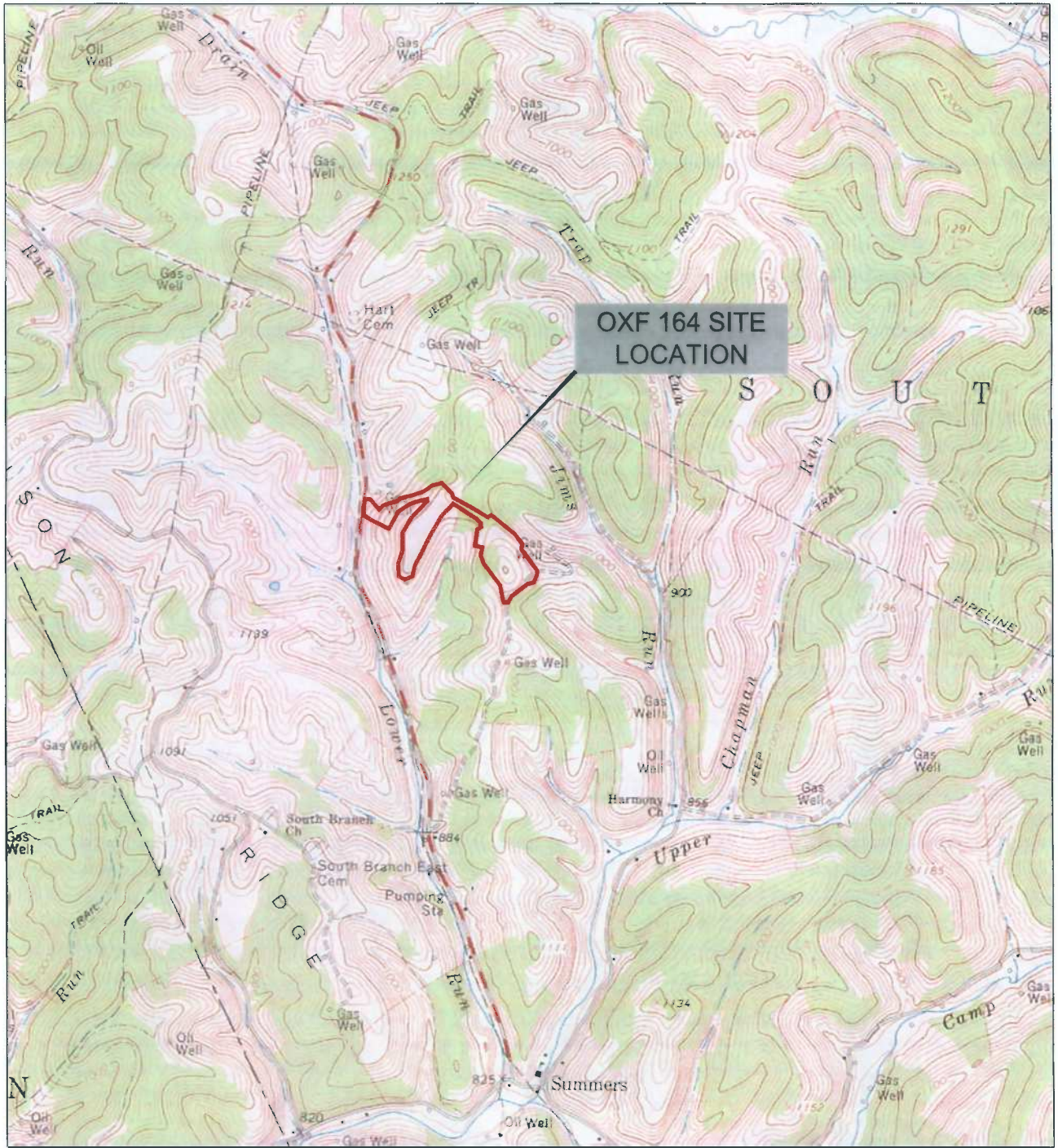
Respectfully submitted,

C. Victor Moyers, P.S.

cc: Lacoa L. Corder, EQT Environmental Coordinator.



OXF 164 VICINITY MAP



**OXF 164 SITE
LOCATION**

NOTES
USGS OXFORD TOPO
QUADRANGLE

SCALE
1 INCH = 2000-FEET

0' 2000' 4000' 6000'



JOB #: 8328
DRAWN BY: WAW
DATE: 3-18-15
SCALE: 1" = 2000'

OXF 164

THIS DOCUMENT WAS PREPARED BY:
SMITH LAND SURVEYING, INC.
FOR: EQT

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.



SLS
(304) 462-5634

SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.
WWW.SLSSURVEYS.COM



EQT
Where energy meets innovation.

OXF 164 FEMA MAP



NOTES
FEMA FIRM

MAP # 54017C0225C

SCALE

1 INCH = 1000-FEET

0' 2000' 4000' 6000'



JOB #: 8328.
DRAWN BY: WAW
DATE: 3-18-15
SCALE: 1" = 2000'

OXF 164 FEMA

THIS DOCUMENT WAS PREPARED BY:
SMITH LAND SURVEYING, INC.
FOR: EQT



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.



**SURVEYORS
ENGINEERS
ENVIRONMENTAL
PROJECT MGMT.**
WWW.SLSURVEYS.COM



Where energy meets innovation.

The Doddridge Independent

The Doddridge Independent PUBLISHER'S CERTIFICATE

I, Michael D. Zorn, Publisher of The Doddridge Independent, A newspaper of general circulation published in the town of West Union, Doddridge County, West Virginia, do hereby certify that:

EQT Production Company

filed an application for a Floodplain Permit to develop land located at or about:

Southwest District

39.17842N/80.83631W

Permit #15-341 OXF 164 Well Pad

(Note: This project is not within the floodplain)

was published in The Doddridge Independent 2 times commencing on Friday, April 17, 2015 and Ending on Friday, April 24, 2015 at the request of:

Edwin Wriston, Doddridge County Floodplain Manager & Doddridge County Commission

Given under my hand this Friday, April 24, 2015

The publisher's fee for said publication is:

\$ 25.27 1st Run/\$ 18.95 Subsequent Runs

This Legal Ad Total: \$ 44.22


Michael D. Zorn

Publisher of The Doddridge Independent

Subscribed to and sworn to before me on

this date: 4/22/15


Notary Public in and for Doddridge County

My Commission expires on

The 17th day of May 2019

Legal Advertisement:
Doddridge County
Floodplain Permit Application

4/13 - 4/20

Please take notice that on the 26th day of March, 2015
EQT Production Company
filed an application for a Floodplain Permit to develop land located at or about:

Southwest District

39.17842N/80.83631W

Permit #15-341 OXF 164 Well Pad

(Note: This project is not within the floodplain)

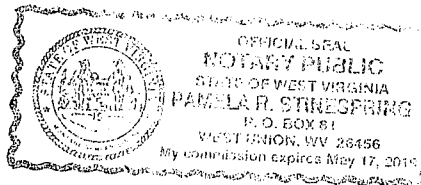
The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. As this project is outside the FEMA identified floodplain of Doddridge County, Doddridge County Floodplain Management has no regulatory authority. Any interested persons who desire to comment shall present the same in writing by April 27, 2015, delivered to:

Clerk of the County Court

118 E. Court Street, West Union, WV 26456

Beth A Rogers, Doddridge County Clerk

Edwin L. "Bo" Wriston, Doddridge County Flood Plain Manager



STATE OF WEST VIRGINIA,
COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE
HERALD RECORD, a weekly newspaper
published regularly, in Doddridge County,
West Virginia, Do Hereby Certify
That the Accompanying Legal Notice
entitled:

Floodplain Permit
15-341

was published in said paper for *2*

successive weeks beginning with the issue
of *April 7th* 2015 and

ending with the issue of
April 14th 2015 and

that said notice contains *210*

WORD SPACE at *115* cents a word

amounts to the sum of \$ *24.15*

FOR FIRST PUBLICATION, SECOND
PUBLICATION IS 75% OF THE FIRST
PUBLICATION

\$ *18.12*
and each publication thereafter

\$ *42.27* TOTAL

EDITOR

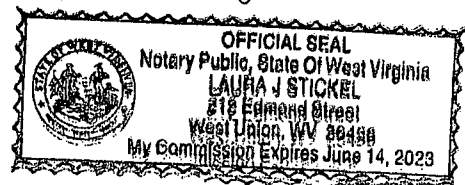
Virginia Nicholson

SWORN TO AND SUBSCRIBED

BEFORE ME THIS THE *14th* DAY
OF *April* 2015

NOTARY PUBLIC

Laura J Stichel



LEGAL ADVERTISEMENT:
Doddridge County
Floodplain Permit Application

Please take notice that on the 26th day of March, 2015 EQT Production Company filed an application for a Floodplain Permit to develop land located at or about: Southwest District 39.17842N/80.83631W Permit #15-341 OXF 164 Well Pad. (Note: This project is not within the floodplain.) The Application is on file with the Clerk of the County Court and may be inspected or copied during regular business hours. As this project is outside the FEMA identified floodplain of Doddridge County, Doddridge County Floodplain Management has no regulatory authority. Any interested persons who desire to comment shall present the same in writing by April 27, 2015.

Delivered to the:
Clerk of the County Court
118 E. Court Street, West Union, WV 26456
Beth A. Rogers, Doddridge County Clerk
Edwin L. "Bo" Wriston, Doddridge County Flood Plain
Manager

4-7-2xb

CONSTRUCTION NOTES

1. THE CONTRACTOR IS TO VERIFY FIELD CONDITIONS PRIOR TO AND DURING CONSTRUCTION AND WILL NOTIFY STANTEC AT (304) 367-9401 OR SMITH LAND SURVEYING AT (304) 462-5634 IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLAN. ANY WORK PERFORMED BY THE CONTRACTOR AFTER THE FINDING OF SUCH DISCREPANCIES, SHALL BE DONE AT THE CONTRACTOR'S RISK.
2. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS HEREIN SHALL CONFORM TO THE CURRENT COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR CURRENT WVDEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL STANDARDS AND SPECIFICATIONS. SHOULD A CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, AND PLANS OCCUR, THE MOST STRINGENT REQUIREMENT WILL APPLY. THE APPROVAL OF THESE PLANS IN NO WAY RELIEVES THE DEVELOPER OR HIS AGENT OF THE RESPONSIBILITIES CONTAINED IN THE WVDEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL.
3. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE. ALSO, A REPRESENTATIVE OF THE DEVELOPER MUST BE AVAILABLE AT ALL TIMES.
4. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO ENSURE THAT THE STREETS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
5. THE LOCATION OF EXISTING UTILITIES SHOWN IN THESE PLANS ARE FROM FIELD LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES AS NEEDED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ENGINEER OF ANY CONFLICTS ARISING FROM HIS EXISTING UTILITY VERIFICATION AND THE PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION OF WATER AND/OR GAS PIPE LINES. INFORMATION SHOULD ALSO BE OBTAINED FROM THE APPROPRIATE AUTHORITY CONCERNING PERMITS, CUT SHEETS, AND CONNECTIONS TO EXISTING LINES.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES TO THE EXISTING STREETS AND UTILITIES WHICH OCCURS AS A RESULT OF HIS CONSTRUCTION PROJECT WITHIN OR CONTIGUOUS TO THE EXISTING RIGHT-OF-WAY.
8. WHEN GRADING IS PROPOSED WITHIN EASEMENTS OF UTILITIES, LETTERS OF PERMISSION FROM ALL INVOLVED COMPANIES MUST BE OBTAINED PRIOR TO GRADING AND/OR SITE DEVELOPMENT.
9. THE DEVELOPER WILL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITIES WHICH IS REQUIRED AS A RESULT OF HIS PROJECT. THE RELOCATION SHOULD BE DONE PRIOR TO CONSTRUCTION.
10. THESE PLANS IDENTIFY THE LOCATION OF ALL KNOWN GRAVE SITES. GRAVE SITES SHOWN ON THIS PLAN WILL BE PROTECTED IN ACCORDANCE WITH STATE LAW. IN THE EVENT GRAVE SITES ARE DISCOVERED DURING CONSTRUCTION, THE OWNER AND ENGINEER MUST BE NOTIFIED IMMEDIATELY.
11. THE CONTRACTOR(S) SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATING OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NOT MORE THAN TEN (10) WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATING OR DEMOLITION.
12. THE CONTRACTOR IS TO CONTACT THE OPERATOR AND ENGINEER IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION. THE ENGINEER OR SURVEYOR IS NOT RESPONSIBLE FOR ANY BURIED WATER WELLS, SPRINGS OR ANY OTHER FEATURES UNCOVERED DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE EROSION AND SEDIMENT CONTROL INSPECTOR TWO DAYS PRIOR TO THE START OF CONSTRUCTION.
14. EQT PRODUCTION COMPANY IS RESPONSIBLE FOR ALL FILL MATERIAL TESTING REQUIRED DURING THE CONSTRUCTION OF THIS PROJECT. ALL MATERIAL TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND A CERTIFICATION OF THE MATERIALS TESTED SHALL BE PROVIDED BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER CERTIFYING THE CONSTRUCTED FACILITY. FAILURE TO CONDUCT THE DENSITY TEST SHALL BE CAUSE FOR NON-ACCEPTANCE OF THE CONSTRUCTED FACILITY.
15. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SITE IN ACCORDANCE WITH THE DESIGN PLANS AND CONSTRUCTION DOCUMENTS AND THE SCOPE OF WORK SHALL CONFORM WITH THE GRADES, BERMS, DEPTHS, DIMENSIONS, ETC. SHOWN HEREON.

MAINTENANCE PROGRAM

1. BMPS WILL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT.
2. ALL REVEGETATED ACCESS ROADS AND FACILITIES ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.
3. CULVERTS, ROAD DITCHES, BROAD-BASED DIPS, DIVERSION DITCHES, AND ROCK CHECK DAMS MUST BE MAINTAINED IN PROPER WORKING ORDER AND WILL BE CLEANED OUT, REPAIRED, OR REPLACED AS NECESSARY.
4. SEDIMENT SHOULD BE REMOVED FROM COMPOST FILTER SOCK WHERE ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FILTER SOCK. REPLACE SECTIONS OF FAILED FILTER SOCK IMMEDIATELY. REMOVE ENTIRE FILTER SOCK UPON COMPLETION OF PROJECT AND ESTABLISHMENT OF VEGETATIVE GROWTH.
5. ALL AREAS OF EARTH DISTURBANCE WILL BE REPAIRED WHERE SIGNS OF ACCELERATED EROSION ARE DETECTED.
6. SEEDING AND MULCHING WILL BE REPEATED IN THOSE AREAS THAT APPEAR TO BE FAILING OR HAVE FAILED.

CONSTRUCTION SEQUENCE

- THE DEVELOPMENT OF THE SITE SHALL BE CONSISTENT WITH THE FOLLOWING GENERAL SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL IMPLEMENT, MAINTAIN, AND OPERATE ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES TO EFFECTIVELY MITIGATE THE HAZARD OF ACCELERATED EROSION AND SEDIMENTATION TO ACCEPTABLE LEVELS. MINOR DEVIATIONS FROM THIS SEQUENCE SHALL BE EXECUTED BY THE PROJECT'S SUPERINTENDENT AS NEEDED TO ELIMINATE ANY POTENTIAL EROSION CONDITION THAT MAY ARISE FOR THE DURATION OF THE PROJECT. THE WVDEP OFFICE OF OIL AND GAS SHALL BE NOTIFIED OF ANY AND ALL SUCH DEVIATIONS FROM THE APPROVED PLANS.
1. HOLD A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR AND THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK TO REVIEW THE CONSTRUCTION DRAWING AND PROVIDE ANY REQUESTED GUIDANCE.
 2. STAKE THE LIMITS OF CONSTRUCTION.
 3. INSTALL THE ROCK CONSTRUCTION ENTRANCE AS SHOWN ON THE PLANS.
 4. INSTALL ALL BMPS NECESSARY TO BEGIN CLEARING AND GRUBBING OF THE SITE AS SHOWN ON THE PLANS AND DETAILS.
 5. CLEAR AND GRUB THE ACCESS ROAD, WELL PAD, COMPLETION PIT, AND FLOW BACK PIT AREAS. ALL WOODY MATERIAL, BRUSH, TREES, STUMPS, LARGE ROOTS, BOULDERS, AND DEBRIS SHALL BE CLEARED FROM THE SITE AREA AND KEPT TO THE MINIMUM NECESSARY FOR PROPER CONSTRUCTION, INCLUDING THE INSTALLATION OF ANY NECESSARY SEDIMENT CONTROL S. TREES SIX INCHES IN DIAMETER AND LARGER SHALL BE CUT AND LOGS STACKED. SMALLER TREES, BRUSH, AND STUMPS SHALL BE CUT AND/OR GRUBBED AND WINDROWED IN APPROPRIATE AREAS FOR USE AS SEDIMENT BARRIERS AT WATER DRAINAGE OUTLETS. WINDROWED BELOW THE WELL SITE, USED FOR WILDLIFE HABITAT, BURNED (AS PER WV FOREST FIRE LAWS), REMOVED FROM THE SITE, OR DISPOSED OF BY OTHER METHODS APPROVED BY DEP.
 6. STRIP THE TOPSOIL FROM THE ACCESS ROAD, WELL PAD, COMPLETION PIT, AND PIT AREAS. ALL STRIPPED TOPSOIL SHALL BE STOCKPILED ON AREAS SHOWN ON THE PLANS AND IMMEDIATELY STABILIZED. ADDITIONAL BMP MEASURES SHALL BE CONSTRUCTED AROUND TOPSOIL STOCKPILES, IF NECESSARY.
 7. CONSTRUCT THE ACCESS ROAD, PROPOSED CROSS CULVERTS AND ROAD SIDE DITCHES. AS ACCESS ROAD CONSTRUCTION PROGRESSES, BEGIN WELL PAD CONSTRUCTION. AS FILL SLOPES ARE CONSTRUCTED, INSTALL SLOPE INTERRUPTION COMPOST FILTER SOCK AS LABELED ON THE PLANS AND SHOWN ON THE DETAILS.
 8. INSTALL DITCH RELIEF CULVERTS AT A MINIMUM SLOPE OF 1% AND APPROXIMATELY 30 DEGREES DOWNGRADE TO THE CENTERLINE OF THE DITCH. INSTALL OUTLET PROTECTION AS SHOWN ON PLANS AND DETAILS AS CROSS CULVERTS ARE INSTALLED AND IMMEDIATELY STABILIZE ROAD SIDE DITCHES WITH ROCK. STABILIZE THE ROAD WITH GEOTEXTILE FABRIC AND STONE AND SIDE SLOPES AS SPECIFIED WITH PERMANENT SEEDING. STOCKPILE AND STABILIZE EXCESS MATERIAL ALONG THE ACCESS ROAD, AS NEEDED.
 9. ALL DITCH LINES SHALL BE CLEANED PRIOR TO INSTALLATION OF LINED PROTECTION. ALL DITCHES SHALL BE ROCK LINED WITH D50 = 6" MIN. SIZED RIPRAP UNLESS SPECIFIED OTHERWISE.
 10. FINALIZE GRADING OF THE WELL PAD, FLOW BACK PIT, AND COMPLETION PIT PAD AREAS. IMMEDIATELY STABILIZE THE OUTER AREAS OF THE WELL PAD, FLOW BACK PIT, AND COMPLETION PIT PAD. THE PAD'S TURNAROUND AREA(S) SHALL BE STABILIZED WITH GEOTEXTILE FABRIC AND STONE. STABILIZE ALL SIDE SLOPES WITH COCONUT EROSION CONTROL BLANKETS. APPLY SEED AND MULCH TO ALL DISTURBED AREAS. THIS SHALL BE INCLUDED IN ALL AREAS THAT WILL NOT BE SUBJECT TO REGULAR TRAFFIC ACTIVITY (TO BE STABILIZED WITH STONE), OR ANY DISTURBED AREA THAT WILL NOT BE RE-DISTURBED BEFORE SITE RECLAMATION BEGINS.
 11. PRIOR TO THE INSTALLATION OF THE COMPLETION PIT AND PIT LINER SYSTEM, THE CONTRACTOR SHALL CONTACT THE ENGINEER/SURVEYOR TO COMPLETE AN AS-BUILT SURVEY OF THE CONSTRUCTED PAD/BERM TO ENSURE CONFORMANCE WITH THE DESIGN DRAWINGS. THE AS-BUILT WILL BE REVIEWED BY THE ENGINEER AND THE CONTRACTOR IS RESPONSIBLE FOR ANY CORRECTIVE ACTION DEEMED NECESSARY BY THE ENGINEER FOR ANY DEVIATION(S) FROM THE DESIGN DRAWINGS.
 12. PREVIOUSLY DISTURBED AREAS AND IMMEDIATE DOWN SLOPE AREAS SHALL BE INSPECTED AFTER EACH RAINFALL STORM EVENT AND MONITORED WEEKLY FOR SIGNS OF ACCELERATED EROSION. IMPLEMENT ADDITIONAL BMPS AS DEEMED NECESSARY. THESE INSPECTIONS SHALL CONTINUE DURING THE DURATION OF THE PROJECT AND SUBSEQUENT SITE RECLAMATION.
 13. ONCE THE COMPLETION PIT AND PIT HAVE BEEN CONSTRUCTED AND LINER SYSTEMS COMPLETED, SUBMIT THE AS-BUILT CERTIFICATION FOR THE FACILITIES TO THE WVDEP OFFICE OF OIL AND GAS PRIOR TO PLACING FLUIDS IN EITHER STRUCTURE.
 14. COMMENCE THE DRILLING ACTIVITY.
 15. ONCE DISTURBED AREAS HAVE BEEN RE-VEGETATED AND STABILIZED FOLLOWING RECLAMATION, THE TEMPORARY BMPS IN THOSE AREAS MAY BE REMOVED. CONTINUE TO MONITOR THESE AREAS TO ENSURE A UNIFORM RATE OF 70% VEGETATIVE COVERAGE IS MAINTAINED. ANY AREAS FOUND TO BE DEFICIENT SHALL BE RE-SEEDING AND MULCHED.

WELL PAD CONSTRUCTION STANDARDS

- THE DESIGN, CONSTRUCTION, AND REMOVAL OF EMBANKMENTS ASSOCIATED WITH THE WELL PAD MUST BE ACCOMPLISHED IN SUCH A MANNER AS TO PROTECT THE HEALTH AND SAFETY OF THE PEOPLE, THE NATURAL RESOURCES, AND ENVIRONMENT OF THE STATE. THE EMBANKMENTS SHALL BE DESIGNED, CONSTRUCTED, AND MAINTAINED TO BE STRUCTURALLY SOUND AND REASONABLY PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.
1. THE FOUNDATION FOR THE WELL PAD MUST BE STRIPPED AND GRUBBED TO A MINIMUM DEPTH OF 2 FEET PRIOR TO PLACEMENT AND COMPACTION OF EARTHEN FILL MATERIAL. NO EMBANKMENT FILL SHALL BE PLACED ON FROZEN MATERIAL. REMOVE ROCK PIECES GREATER THAN 3 INCHES IN ANY DIMENSION. BACKFILL VOIDS CREATED BY REMOVAL OF ROCK.
 2. ANY SPRINGS ENCOUNTERED WITHIN THE FOUNDATION AREA SHALL BE DRAINED TO OUTSIDE/DOWNSTREAM TOE OF EMBANKMENT. CONSTRUCTED DRAIN SECTION SHALL BE AN EXCAVATED 2' X 2' TRENCH AND BACK FILLED WITH TYPE A SAND, COMPACTED BY HAND TAMPER. NO GEOTEXTILES SHALL BE USED TO LINE TRENCH. THE LAST 3 FEET OF DRAIN AT THE DOWNSTREAM END SHALL BE CONSTRUCTED WITH AASHTO #8 MATERIAL.
 3. SOILS FOR EARTHEN EMBANKMENT CONSTRUCTION SHALL BE LIMITED TO TYPES GC, GM, SC, SM, CL, OR ML (ASTM-2487 - UNIFIED SOILS CLASSIFICATION). SOILS MUST CONTAIN A MINIMUM OF 20% PF PLUS NO. 200 SIEVE AND BE "WELL GRADED" MATERIAL WITH NO COBBLES OR BOULDER SIZE MATERIAL MIXED WITH CLAY. A MINIMUM OF THREE SAMPLES SHALL BE CLASSIFIED.
 4. THE EARTHEN EMBANKMENT SHALL BE COMPACTED BY A VIBRATING SHEEPSFOOT ROLLER. THE LIFTS MUST BE IN HORIZONTAL LAYERS WITH A MAXIMUM LOOSE LIFT THICKNESS OF 12" AND MAXIMUM PARTICLE SIZE LESS THAN 6". ALL FILL SHALL BE COMPACTED TO 95% PER THE STANDARD PROCTOR TEST (ASTM-698).
 5. THE PLACEMENT OF ALL FILL MATERIAL SHALL BE FREE OF WOOD, STUMPS AND ROOTS, LARGE ROCKS AND BOULDERS, AND ANY OTHER NONCOMPACTABLE SOIL MATERIAL. THE EMBANKMENT SHALL BE COMPACTED TO A MINIMUM OF VISIBLE NON-MOVEMENT, HOWEVER, THE COMPACTION EFFORT SHALL NOT EXCEED THE OPTIMUM MOISTURE LIMITS.
 6. THE MINIMUM INSIDE AND OUTSIDE SIDESLOPES SHALL BE 2H:1V, UNLESS OTHERWISE SPECIFIED.
 7. ALL EXPOSED EMBANKMENT SLOPES, NOT COVERED BY COMPACTED ROCKFILL OR RIPRAP SHALL BE LIMED, FERTILIZED, SEEDED AND MULCHED. PERMANENT VEGETATIVE GROUND COVER IN COMPLIANCE WITH THE WVDEP EROSION AND SEDIMENT CONTROL FIELD MANUAL MUST BE ESTABLISHED UPON THE COMPLETION OF THE PAD CONSTRUCTION. EMBANKMENTS SHALL BE MAINTAINED WITH A GRASSY VEGETATIVE COVER AND FREE OF BRUSH AND/OR TREES. USE 10-20-20 FERTILIZER FOR PERMANENT VEGETATION. SEE THE REVEGETATION INFORMATION PROVIDED IN THIS PLAN FOR FURTHER INFORMATION.
 8. ALL EMBANKMENT CONSTRUCTION AND COMPACTION TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



111 ELUNA STREET
FARMINGTON, WV 26034
PHONE: 304-367-9401

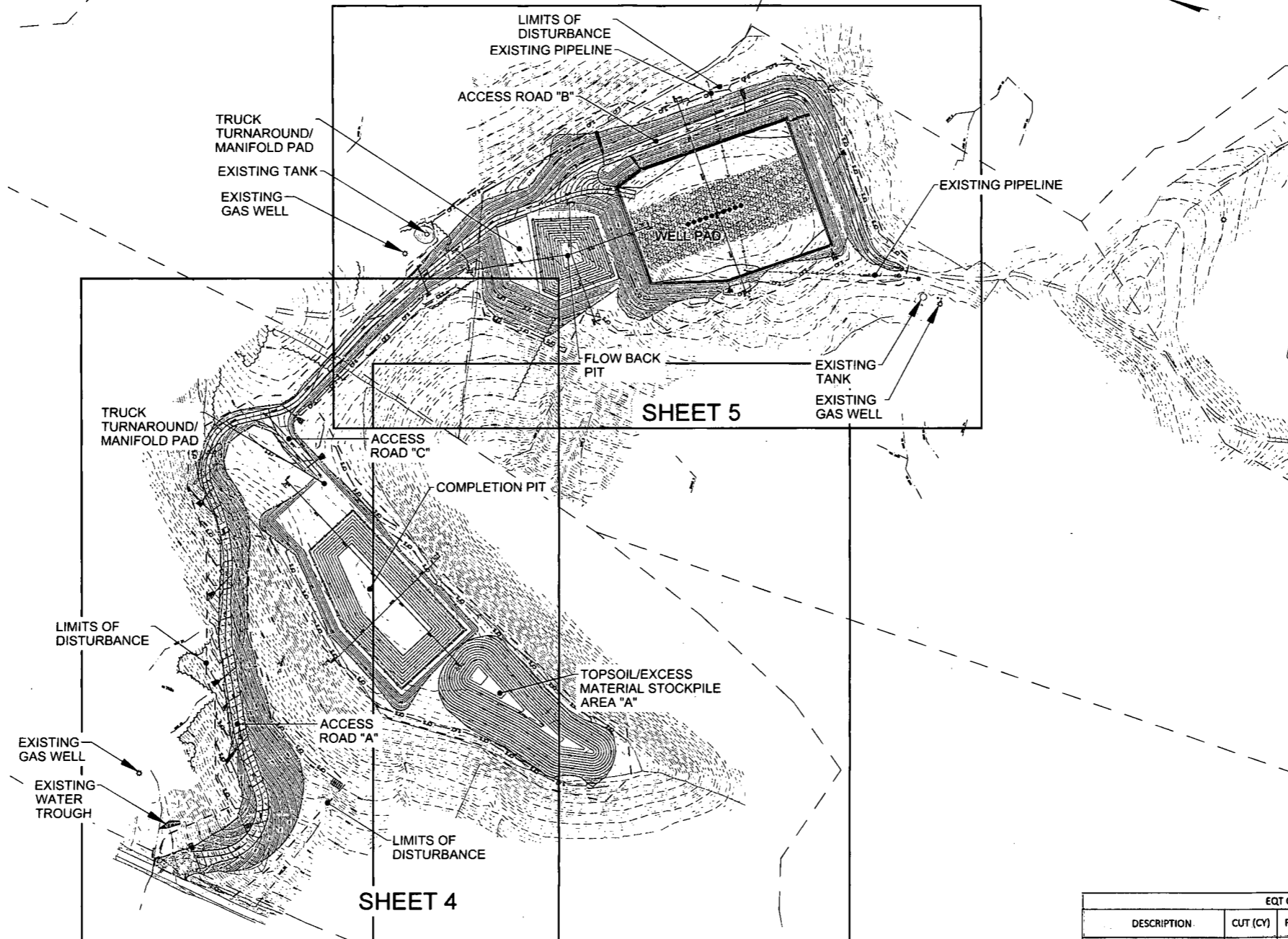


THIS DOCUMENT WAS
PREPARED BY:
STANTEC, INC.
FOR EQT PRODUCTION
COMPANY

GENERAL NOTES
EQT OXF 164
SOUTH WEST DISTRICT
DODDRIIDGE COUNTY, WV

DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 2 OF 20
REV:

EQT OXF 164 SITE PLAN
 (PROPOSED WELL NO. WV 514179, WV 514180, WV 514181,
 WV 514182, WV 514183, WV 514184, WV 514185, WV 514186,
 WV 514187, WV 514188)



ELEVATION	CUMULATIVE GALLONS	CUMULATIVE BARRELS	CUMULATIVE ACRE-FEET
1090.00	0	0	0
1092.00	394,380	9,390	1.21031
1094.00	857,799	20,424	2.63248
1096.00	1,394,436	33,201	4.27936
1098.00	2,008,474	47,821	6.16377
1100.00	2,704,088	64,383	8.29853
1102.00	3,485,458	82,987	10.69646
1104.00	4,356,766	103,733	13.37041
1106.00	5,322,195	126,719	16.33319
1108.00	6,385,925	152,046	19.59766

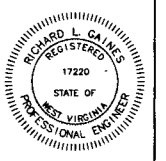
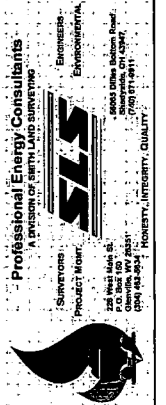
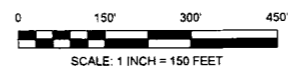
ELEVATION	CUMULATIVE GALLONS	CUMULATIVE BARRELS	CUMULATIVE ACRE-FEET
1121.00	0	0	0
1122.00	16,420	391	0.05039
1124.00	63,697	1,517	0.19548
1126.00	133,452	3,177	0.40955
1128.00	230,063	5,478	0.70604
1130.00	357,905	8,522	1.09837
1132.00	521,280	12,411	1.59975
1134.00	720,860	17,163	2.21224
1136.00	963,977	22,952	2.95833
1138.00	1,258,523	29,965	3.86226
1140.00	1,605,357	38,223	4.92665

DESCRIPTION	CUT (CY)	FILL (CY)	BORROW (CY)	SPOIL (CY)	MAX SLOPE (%)	LENGTH OF SLOPE (FT)
WELL PAD	43,479	40,240	0	3,239		
FLOW BACK PIT	8,070	34,870	26,800	0		
COMPLETION PIT	26,918	12,789	0	14,129		
ACCESS ROAD	35,660	12,807	0	22,853	15.0	455
STRIPPED TOPSOIL (6")	14,340	-	0	14,340		
TOTALS	128,467	100,706	26,800	54,561		
TOTAL REQUIRED STOCKPILE VOLUME*				27,761		
TOTAL AVAILABLE STOCKPILE VOLUME*				29,500		

TOPSOIL STOCKPILE		EXCESS MATERIAL STOCKPILE		LIMITS OF DISTURBANCE	
DESCRIPTION	VOLUME (CY)	DESCRIPTION	VOLUME (CY)	TOTAL AREA: 24.73 AC.	
STOCKPILE A	17,000	STOCKPILE A	12,500	THE EARTHWORK QUANTITIES PROVIDED ARE AN ESTIMATE FOR CONSIDERATION. THE QUANTITIES SHOWN ARE CALCULATED USING A 1:1 CUT/SWELL FACTOR AND A 1:1 FILL/SWELL FACTOR. THE TOPSOIL QUANTITY HAS 20% SWELL FACTOR. THE QUANTITIES SHOWN MAY BE GREATER OR LESSER THAN ACTUALLY EXCAVATED. THE ENGINEER IS NOT RESPONSIBLE FOR VARIANCES FROM THE ESTIMATED QUANTITIES AND DOES NOT CERTIFY TO THEIR ACCURACY.	
TOTALS	17,000	TOTALS	12,500		

STREAM IMPACT		WETLAND IMPACT	
DESCRIPTION	LENGTH (FT)	DESCRIPTION	AREA (AC)
STREAM	0	WETLAND	0
TOTALS	0	TOTALS	0

- NOTES:
- AERIAL TOPOGRAPHIC MAPPING WAS PERFORMED BY SLS IN 2014.
 - GRID NORTH AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED BY SURVEY GRADE GPS.
 - ALL PROPOSED CULVERTS SHALL HAVE ADEQUATE INLET AND OUTLET PROTECTION AS INDICATED ON THIS PLAN.
 - INSTALL ROLLED EROSION CONTROL PRODUCTS (COCONUT MATTING) ON ALL EXPOSED CUT AND FILL SLOPES. INSTALL ROCK (D50-6" MIN) IN ALL DRAINAGE CHANNELS UNLESS OTHERWISE NOTED.
 - ALL FILL AREAS SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR.



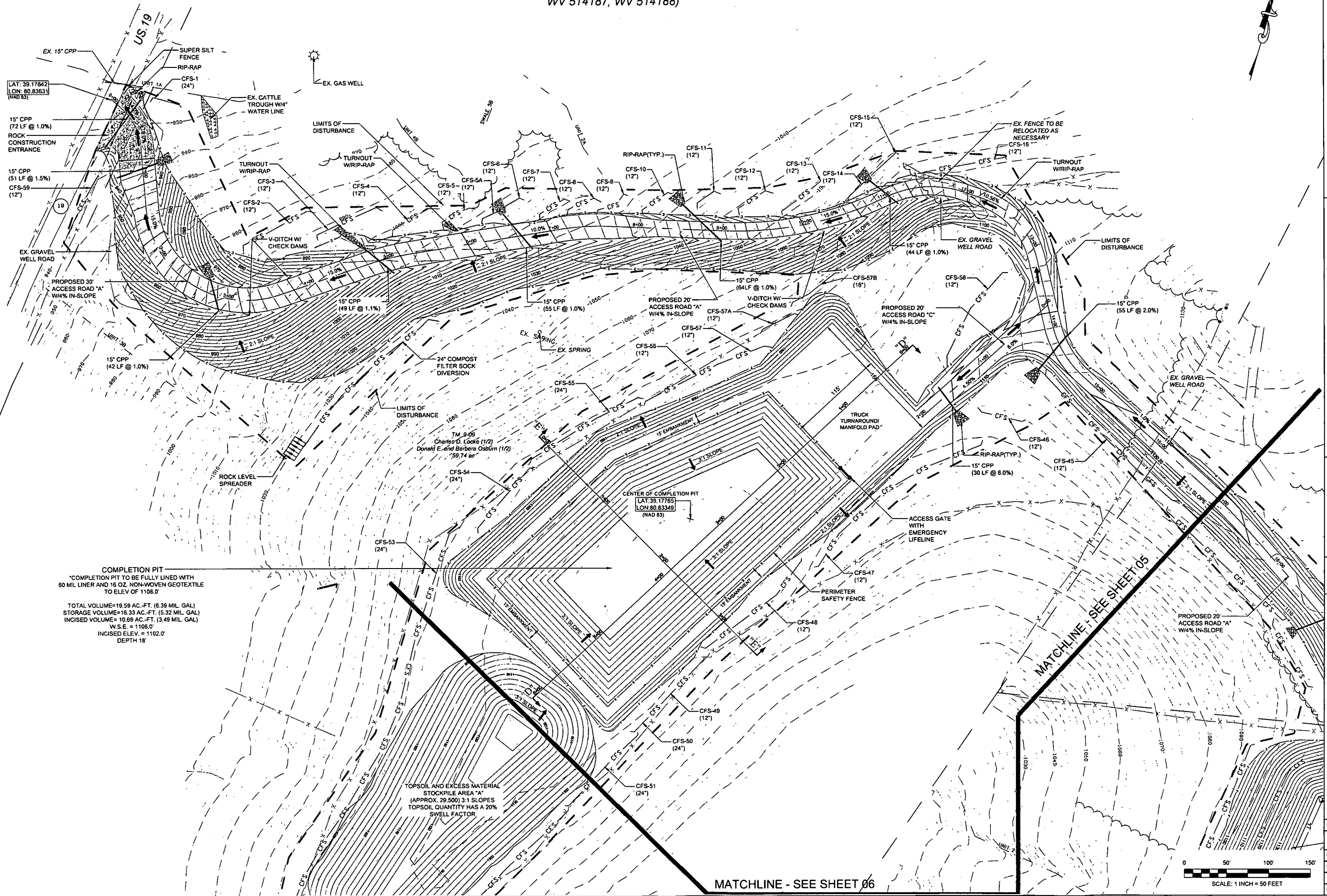
THIS DOCUMENT WAS PREPARED BY STANTEC, INC. FOR: EQT PRODUCTION COMPANY

OVERALL PLAN SHEET INDEX
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7696
 SHEET 3 OF 20
 REV:

U:\2012\1517\2\Fig\eqt_oxf_164\eqt_oxf_164_sheets\eqt_oxf_164_sheets.dwg, 12/5/2014 1:20:55 AM

EQT OXF 164 SITE PLAN
 (PROPOSED WELL NO. WV 514179, WV 514180, WV 514181,
 WV 514182, WV 514183, WV 514184, WV 514185, WV 514186,
 WV 514187, WV 514188)

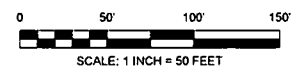


COMPLETION PIT
 *COMPLETION PIT TO BE FULLY LINED WITH
 60 MIL LINER AND 16 OZ. NON-WOVEN GEOTEXTILE
 TO ELEV OF 1108.0'
 TOTAL VOLUME=19.59 AC.-FT. (6.39 MIL. GAL.)
 STORAGE VOLUME=16.33 AC.-FT. (5.32 MIL. GAL.)
 INCISED VOLUME= 10.69 AC.-FT. (3.49 MIL. GAL.)
 W.S.E. = 1106.0'
 INCISED ELEV. = 1102.0'
 DEPTH 18'

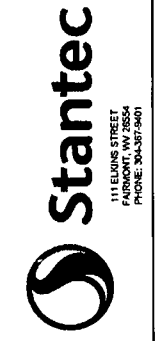
**TOPSOIL AND EXCESS MATERIAL
 STOCKPILE AREA "A"**
 (APPROX. 29,500) 3:1 SLOPES
 TOPSOIL QUANTITY HAS A 20%
 SWELL FACTOR

LAT: 39.17842
 LON: 80.83631
 (NAD 83)

CENTER OF COMPLETION PIT
 (LAT: 39.17765
 LON: 80.83348
 (NAD 83))



D:\2021\15172\15172.dwg 12/5/2014 1:29:49 AM



Professional Energy Consultants
 SLS
 2200 West 100th Street
 Suite 100
 Odessa, TX 79761
 Phone: 361-387-9600



THIS DOCUMENT WAS
 PREPARED BY:
 STANTEC, INC.
 FOR: EQT PRODUCTION
 COMPANY

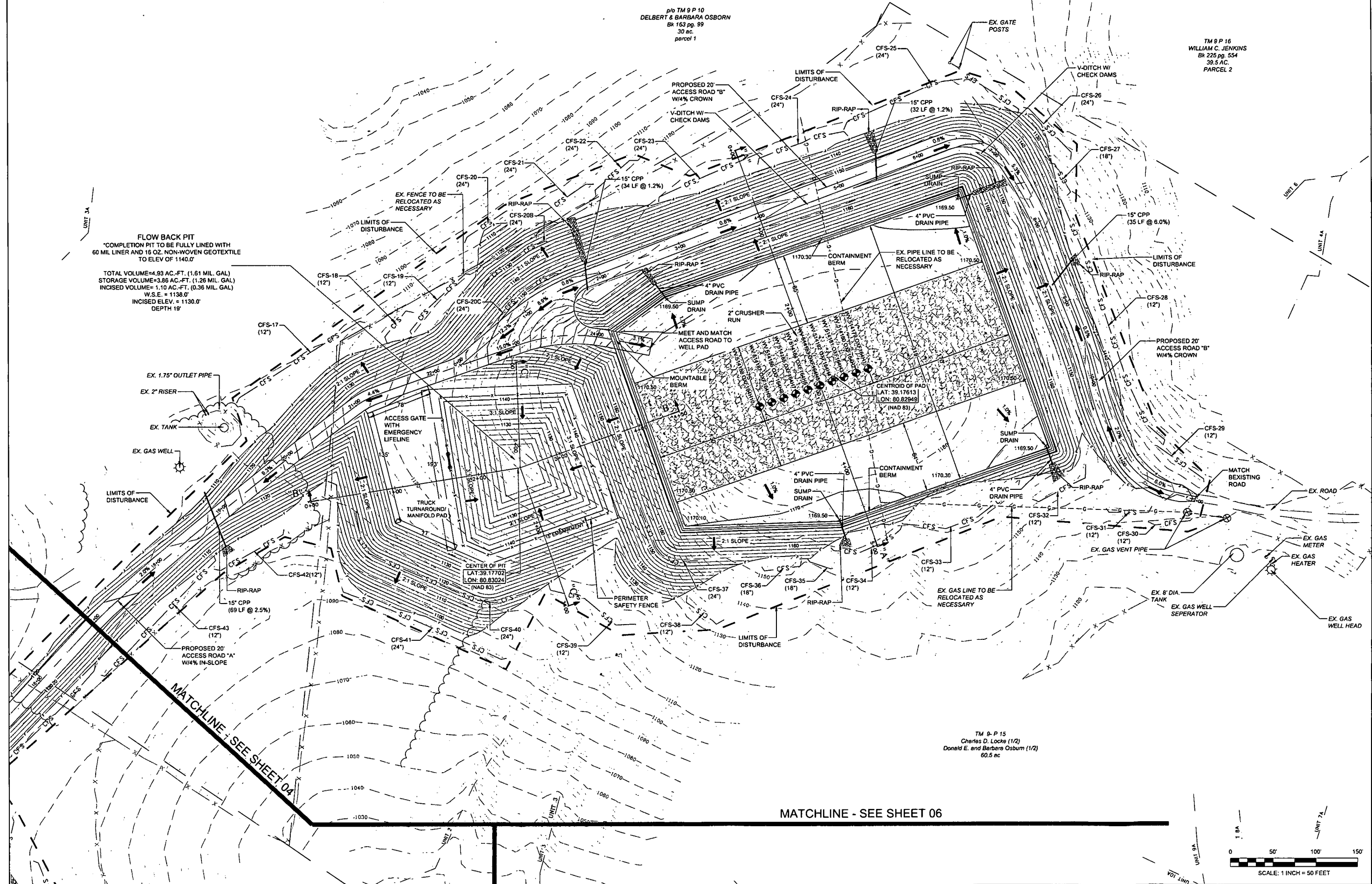
**ACCESS ROAD &
 COMPLETION PIT LAYOUT
 EQT OXF 164**
 SOUTH WEST DISTRICT
 DODDRIEGE COUNTY, WV

DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 4 OF 20
 REV.

EQT OXF 164 SITE PLAN
 (PROPOSED WELL NO. WV 514179, WV 514180, WV 514181,
 WV 514182, WV 514183, WV 514184, WV 514185, WV 514186,
 WV 514187, WV 514188)

pl's TM 9 P 10
 DELBERT & BARBARA OSBORN
 Bk 163 pg. 99
 30 ac.
 parcel 1

TM 9 P 16
 WILLIAM C. JENKINS
 Bk 225 pg. 554
 39.5 AC.
 PARCEL 2



FLOW BACK PIT
 *COMPLETION PIT TO BE FULLY LINED WITH
 60 MIL LINER AND 16 OZ. NON-WOVEN GEOTEXTILE
 TO ELEV OF 1140.0'
 TOTAL VOLUME=4.93 AC.-FT. (1.61 MIL. GAL.)
 STORAGE VOLUME=3.86 AC.-FT. (1.26 MIL. GAL.)
 INCISED VOLUME=1.10 AC.-FT. (0.36 MIL. GAL.)
 W.S.E. = 1138.0'
 INCISED ELEV. = 1130.0'
 DEPTH 19'

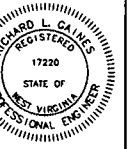
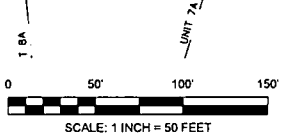
EX. 1.75" OUTLET PIPE
 EX. 2" RISER
 EX. TANK
 EX. GAS WELL

EX. 1.75" OUTLET PIPE
 EX. 2" RISER
 EX. TANK
 EX. GAS WELL

EX. 1.75" OUTLET PIPE
 EX. 2" RISER
 EX. TANK
 EX. GAS WELL

MATCHLINE - SEE SHEET 06

TM 9-P 15
 Charles D. Locke (1/2)
 Donald E. and Barbara Osburn (1/2)
 60.5 ac



THIS DOCUMENT WAS
 PREPARED BY:
 STANTEC, INC.
 FOR: EQT PRODUCTION
 COMPANY

FLOW BACK PIT & WELL PAD LAYOUT
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 5 OF 20
REV:

U:\0210\1472\1472.dwg 1472.dwg 12/5/2014 1:20:55 AM

D:\2014\12\17\14-001\14-001.dwg 12/17/2014 1:20:56 AM

US 19

EQT OXF 164 SITE PLAN

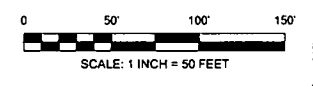
(PROPOSED WELL NO. WV 514179, WV 514180, WV 514181, WV 514182, WV 514183, WV 514184, WV 514185, WV 514186, WV 514187, WV 514188)



MATCHLINE - SEE SHEET 05

MATCHLINE - SEE SHEET 04

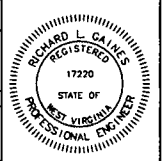
MATCHLINE - SEE SHEET 05



ACCESS ROAD &
COMPLETION PIT LAYOUT
EQT OXF 164
SOUTH WEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7689
SHEET 6 OF 20
REV:

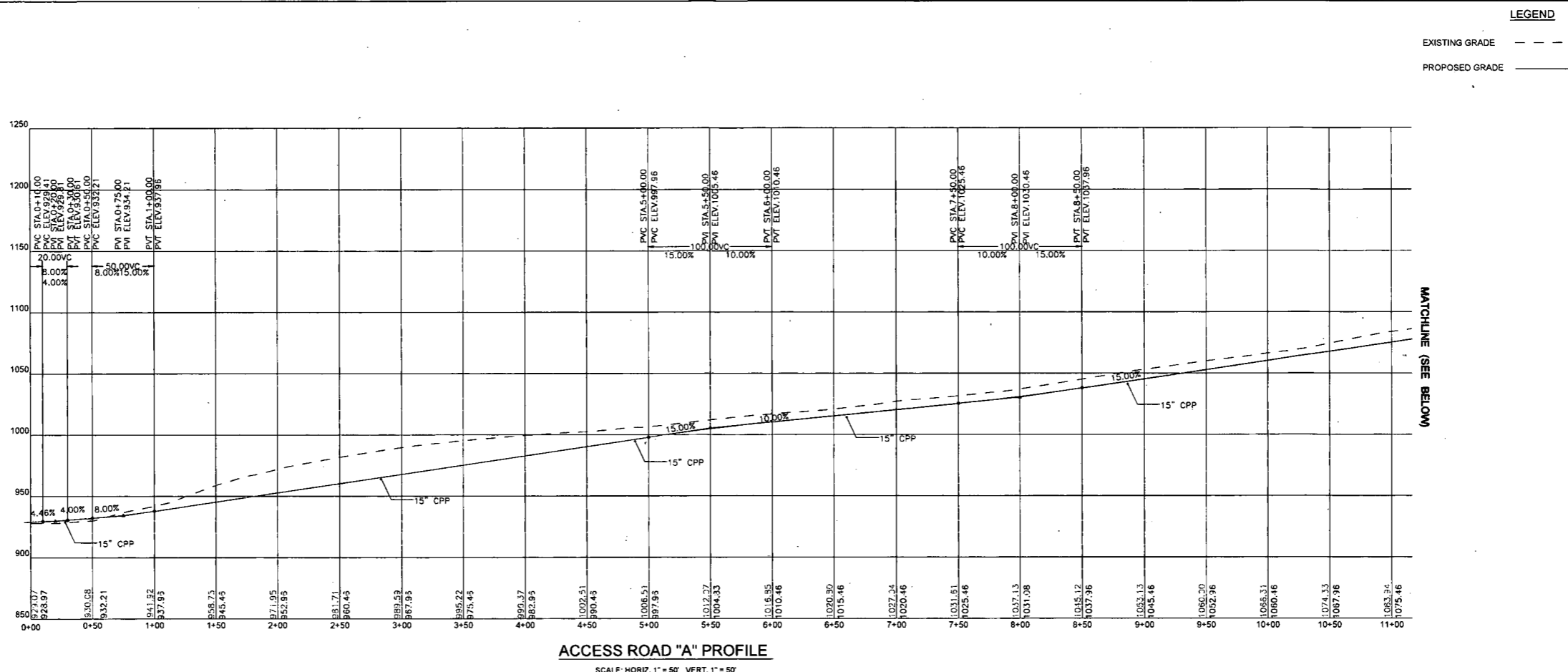
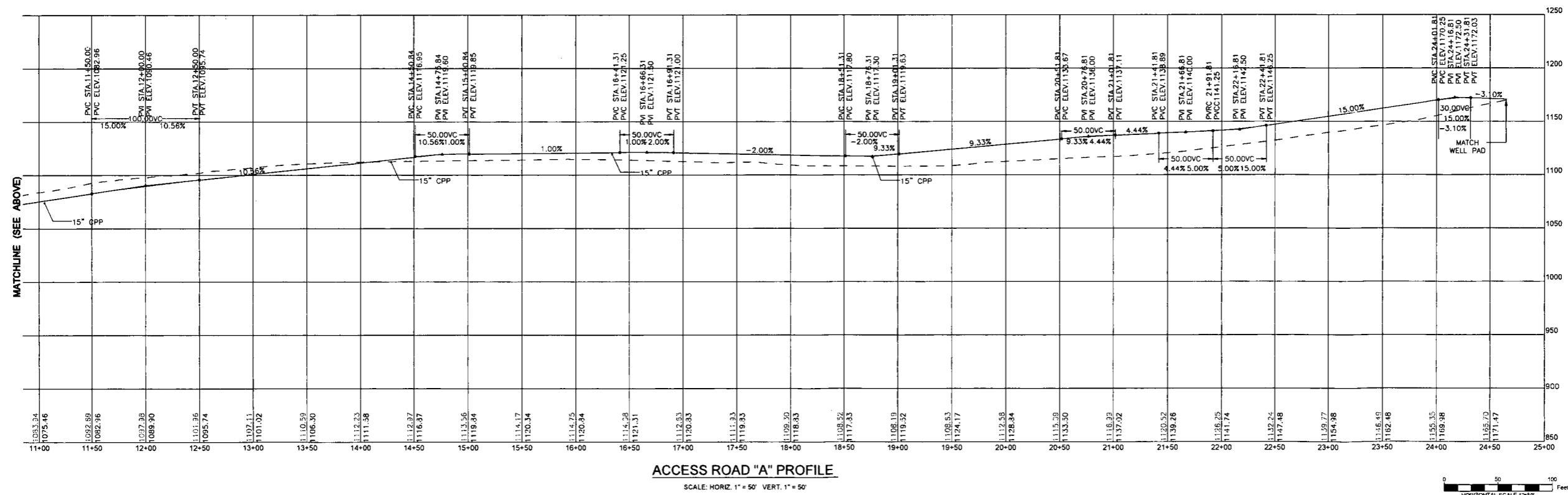
THIS DOCUMENT WAS
PREPARED BY:
STANTEC, INC.
FOR: EQT PRODUCTION
COMPANY



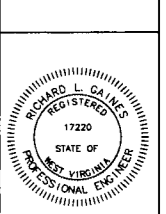
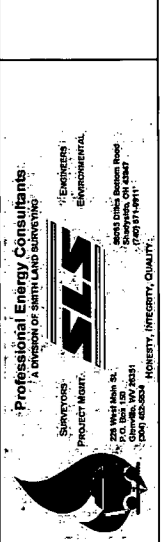
Professional Energy Consultants
A Division of Smith Land Surveying
SLS
Surveyors
Project Mgr.
P.O. Box 100
Martinsburg, WV 26158
(304) 271-8811
Integrity, Integrity, Quality



U:\2012\12\15\2\Final\Sheet\166\166.dwg, 2/2/2014 11:21:05 AM



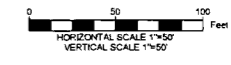
LEGEND
 EXISTING GRADE - - - - -
 PROPOSED GRADE - - - - -



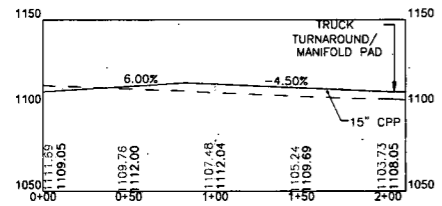
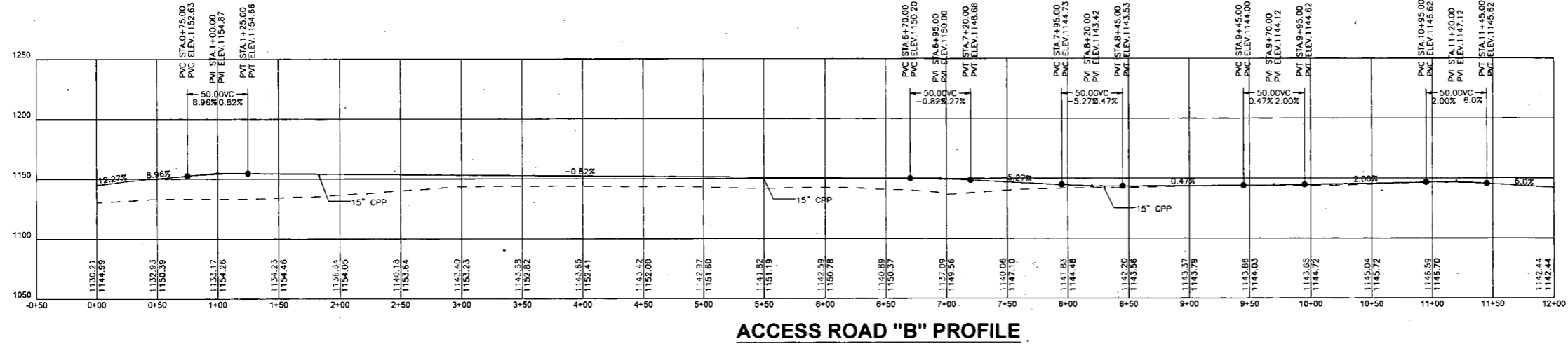
THIS DOCUMENT WAS PREPARED BY STANTEC INC. FOR EOT PRODUCTION COMPANY

ACCESS ROAD "A" PROFILE
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

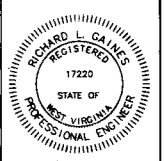
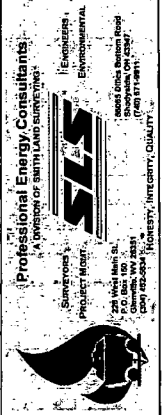
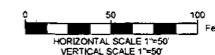
DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 7 OF 20
REV:



U:\2012\0513\2\Projects\164\164.dwg 15/05/2014 11:21:05 AM



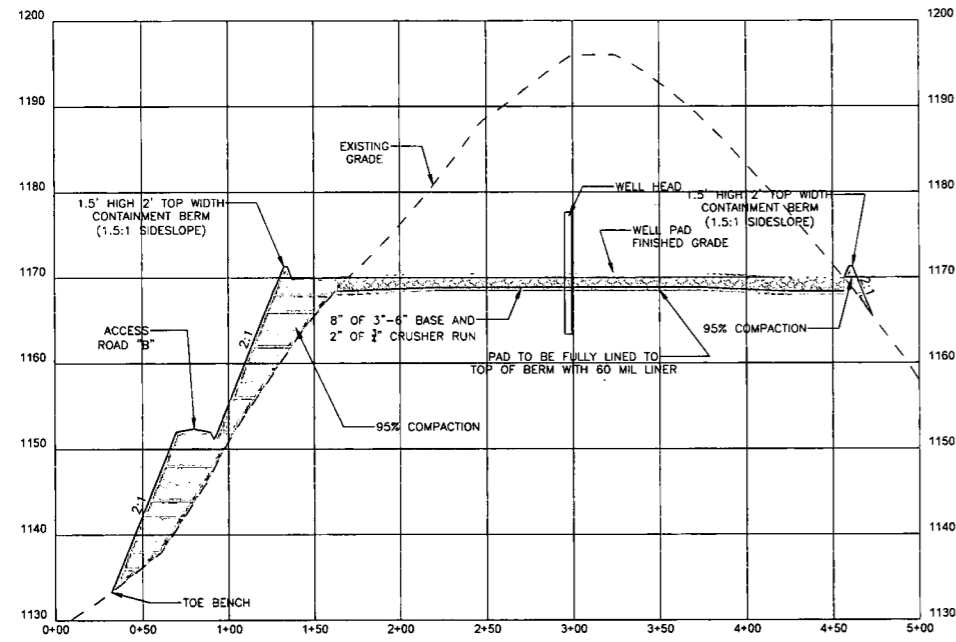
LEGEND
 EXISTING GRADE - - - - -
 PROPOSED GRADE _____



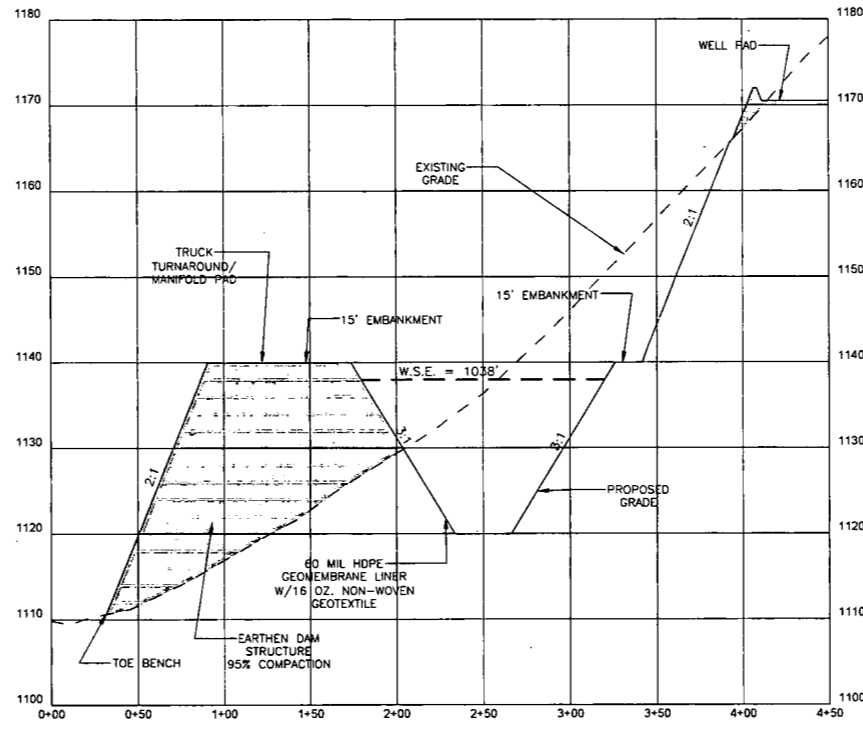
THIS DOCUMENT WAS PREPARED BY STANTEC, INC. FOR: EQT PRODUCTION COMPANY

ACCESS ROAD "B" & "C" PROFILE
 EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

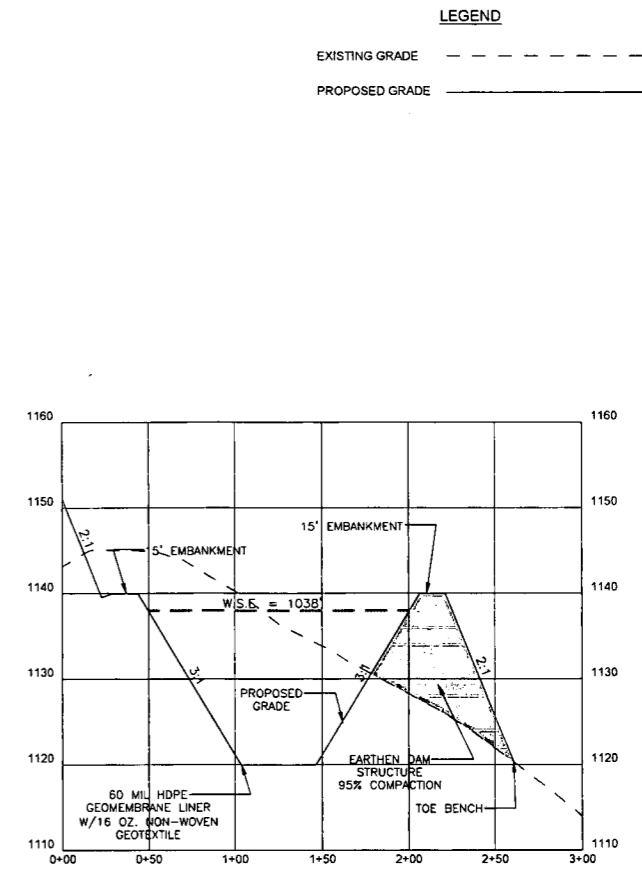
DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 8 OF 20
 REV:



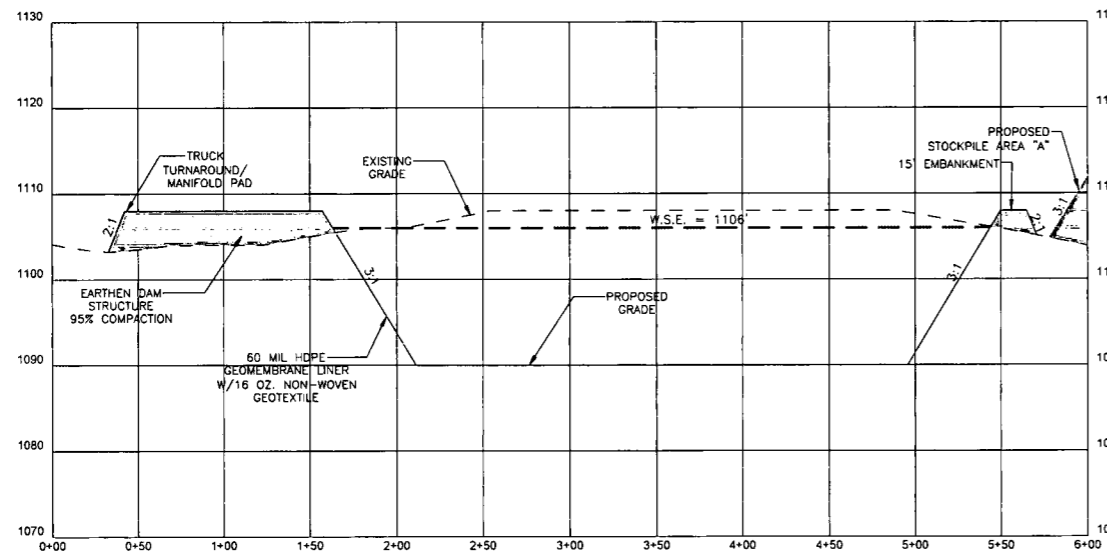
WELL PAD CROSS-SECTION "A-A"



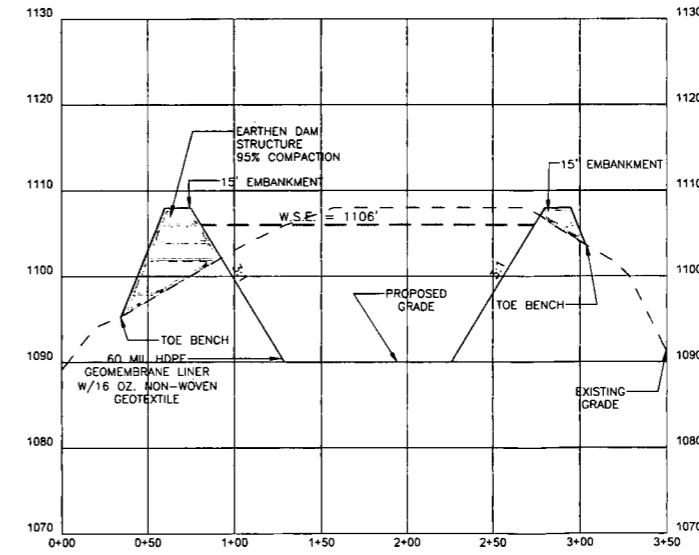
FLOW BACK PIT CROSS-SECTION "B-B"



FLOW BACK PIT CROSS-SECTION "C-C"

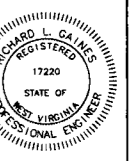


COMPLETION PIT CROSS-SECTION "D-D"



COMPLETION PIT CROSS-SECTION "E-E"

NOTE:
 1. ALL FILL AREAS WILL UTILIZE A TOE BENCH AND WILL BE "KEYED IN". FILL WILL BE PLACED IN 12" MAXIMUM LOOSE LIFTS, MAXIMUM PARTICLE SIZE OF 6", COMPACTED TO 95% PER STANDARD PROCTOR (ASTM D-698) WITH A VIBRATING SHEEPSFOOT ROLLER, AND ON A LEVEL SURFACE. SEE TOE BENCH DETAIL.



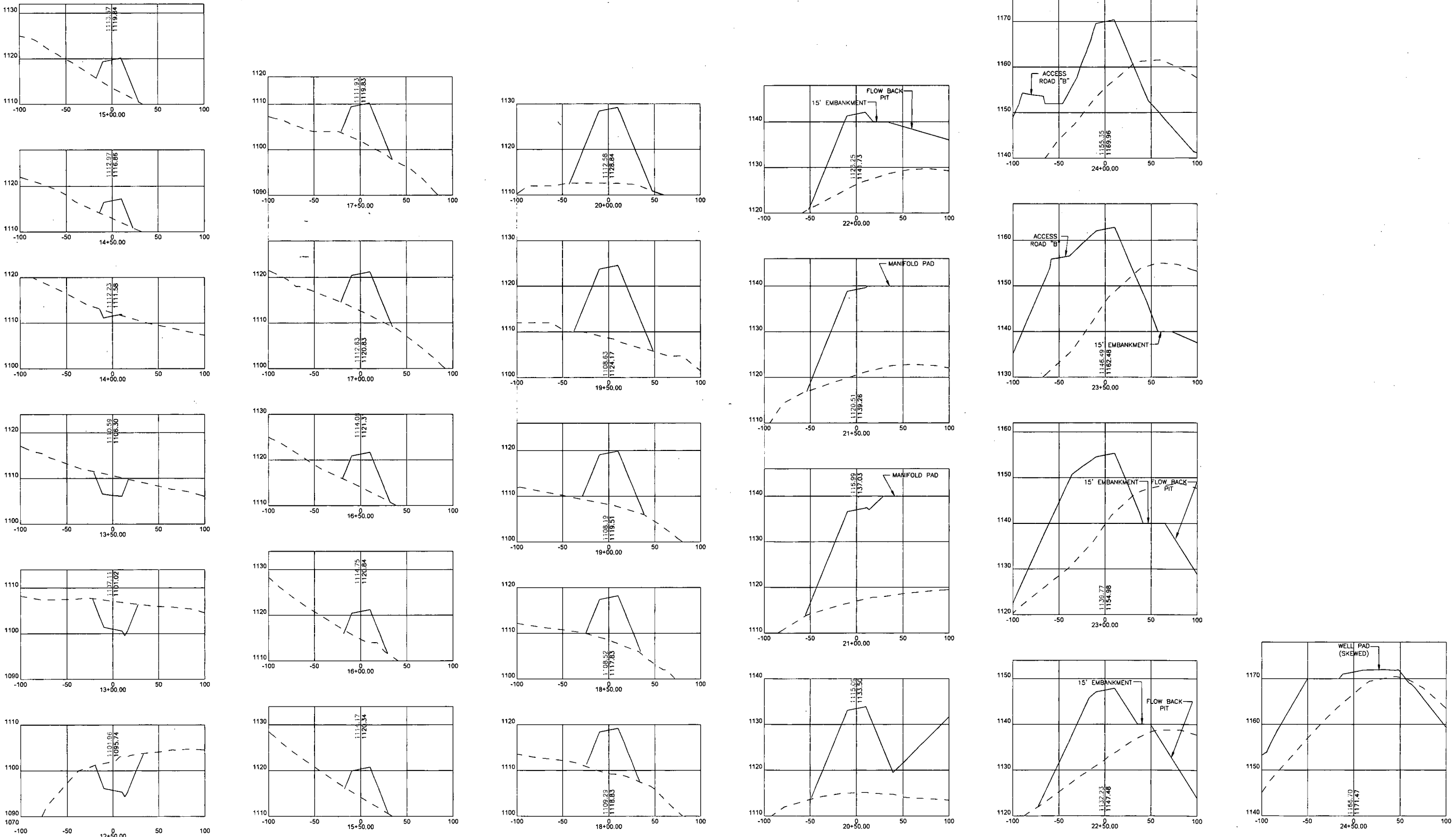
THIS DOCUMENT WAS
 PREPARED BY
 STANTEC, INC.
 FOR: EQT PRODUCTION
 COMPANY

CROSS-SECTIONS
 EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

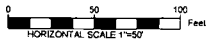
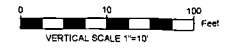
DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 9 OF 20
 REV:

U:\2012\12\13\2\1\Project\Task #31 EOI 10X 167\Civil\Sheets\OXF 164\pvt\asect.dwg, 2/3/2014 11:21:01 AM

D:\2014\21\2\proj\sect\164\164\sect.dwg, 2/3/2014 11:21:11 AM



NOTE:
 1. ALL FILL AREAS WILL UTILIZE A TOE BENCH AND WILL BE "KEYED IN". FILL WILL BE PLACED IN 12" MAXIMUM LOOSE LIFTS, MAXIMUM PARTICLE SIZE OF 6", COMPACTED TO 95% PER STANDARD PROCTOR (ASTM D-698) WITH A VIBRATING SHEEPSFOOT ROLLER, AND ON A LEVEL SURFACE. SEE TOE BENCH DETAIL.



ACCESS ROAD "A" CROSS-SECTIONS

LEGEND

EXISTING GRADE - - - - -
 PROPOSED GRADE ————



SLS
 PROFESSIONAL ENERGY CONSULTANTS
 A DIVISION OF STANTEC INCORPORATED
 225 West Main St.
 Glen Dale, WV 26031
 800-885-3282
 FAX 304-283-8811



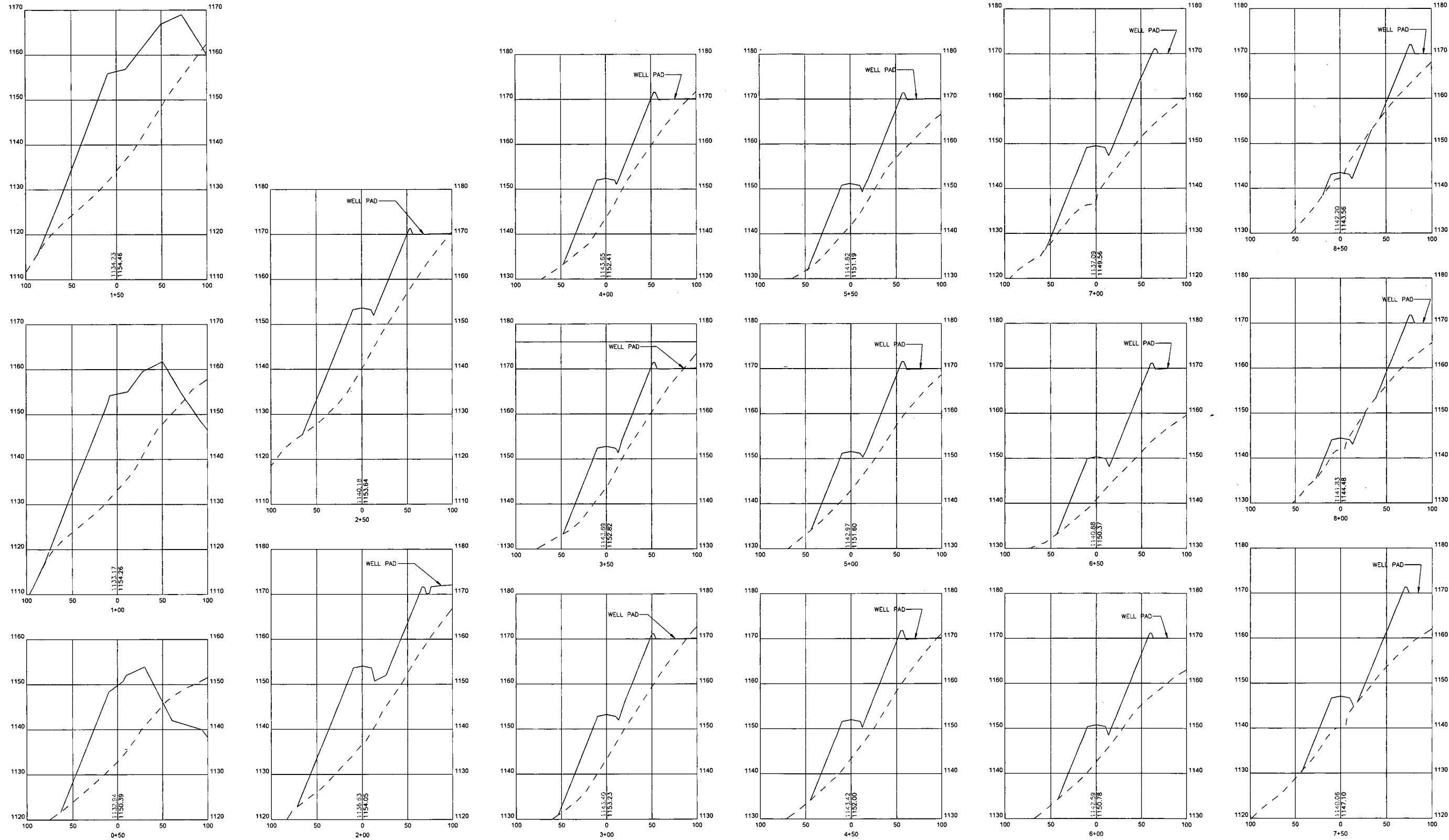
THIS DOCUMENT WAS PREPARED BY: STANTEC, INC. FOR: EQT PRODUCTION COMPANY

ACCESS ROAD "A" CROSS-SECTIONS
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

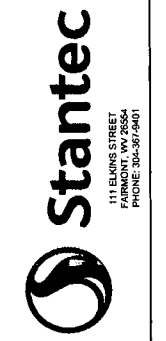
DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 11 OF 20
 REV:

ACCESS ROAD "B" CROSS-SECTIONS

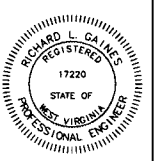
LEGEND
 EXISTING GRADE - - - - -
 PROPOSED GRADE - - - - -



NOTE:
 1. ALL FILL AREAS WILL UTILIZE A TOE BENCH AND WILL BE "KEYED IN". FILL WILL BE PLACED IN 12" MAXIMUM LOOSE LIFTS, MAXIMUM PARTICLE SIZE OF 6", COMPACTED TO 95% PER STANDARD PROCTOR (ASTM D-698) WITH A VIBRATING SHEEPSFOOT ROLLER, AND ON A LEVEL SURFACE. SEE TOE BENCH DETAIL.



Professional Energy Consultants
 A Division of Stantec Limited
SLS
 225 West Main St.
 P.O. Box 100
 South West District
 Doddridge, WV 26038
 Phone: 304-867-5401



THIS DOCUMENT WAS PREPARED BY STANTEC, INC. FOR: EQT PRODUCTION COMPANY

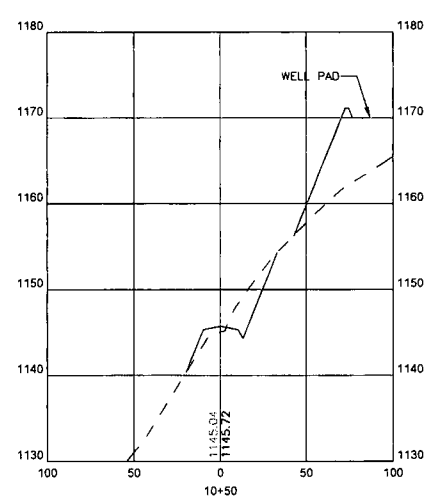
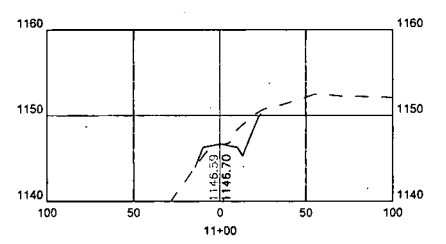
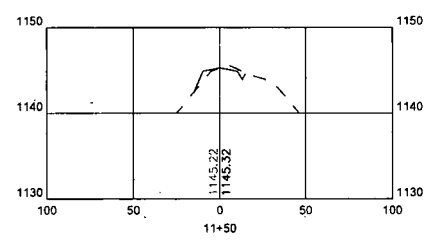
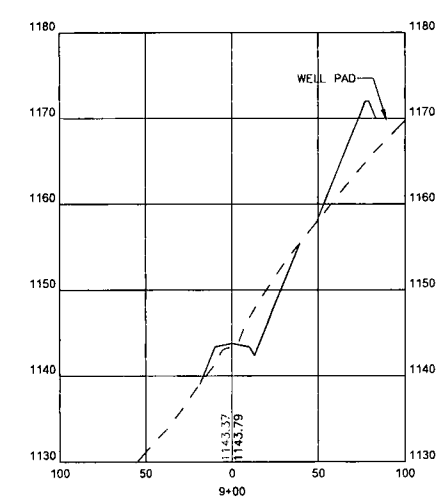
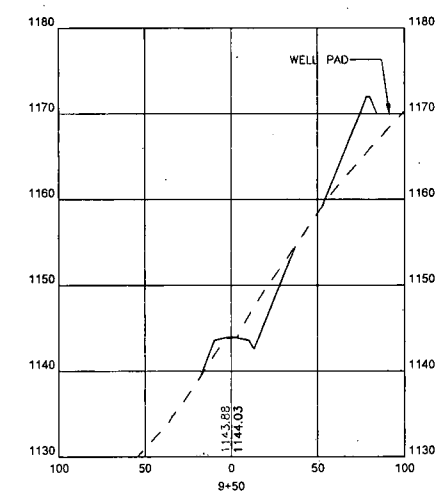
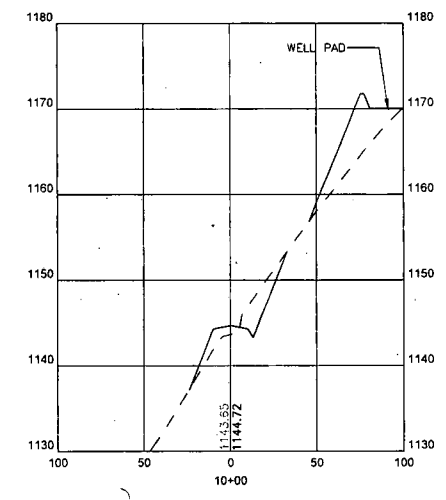
ACCESS ROAD "B" CROSS-SECTIONS
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 12 OF 20
 REV:

U:\2012\151515\Final\151515.dwg #31 EDI 03: 16:00:00\151515\Sheets\151515.dwg 2/2/2014 11:21:13 AM

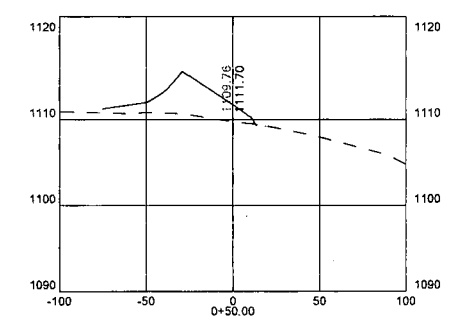
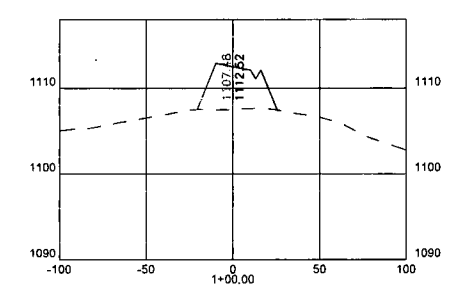
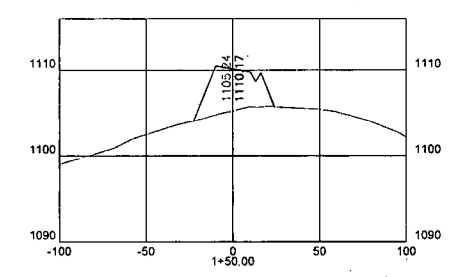
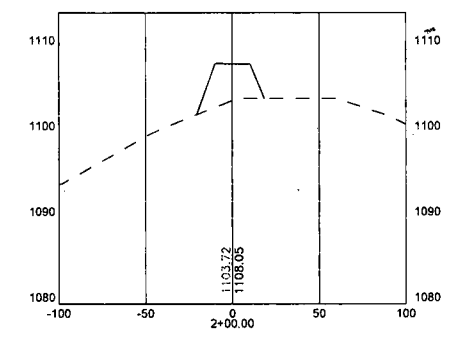
D:\2012\051512\F-01.ec\work #51 E01.dwg 1P\AC\m\Sheets\A.d' 664 pvt' ssec.dwg. 2/2/2014 11:21:15 AM

ACCESS ROAD "B" CROSS-SECTIONS

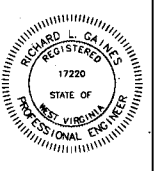
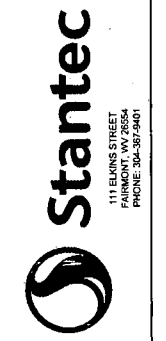


NOTE:
 1. ALL FILL AREAS WILL UTILIZE A TOE BENCH AND WILL BE "KEYED IN". FILL WILL BE PLACED IN 12" MAXIMUM LOOSE LIFTS, MAXIMUM PARTICLE SIZE OF 6", COMPACTED TO 95% PER STANDARD PROCTOR (ASTM D-698) WITH A VIBRATING SHEEPSFOOT ROLLER, AND ON A LEVEL SURFACE. SEE TOE BENCH DETAIL.

ACCESS ROAD "C" CROSS-SECTIONS



LEGEND
 EXISTING GRADE - - - - -
 PROPOSED GRADE - - - - -



THIS DOCUMENT WAS PREPARED BY: STANTEC, INC. FOR: EQT PRODUCTION COMPANY

ACCESS ROAD "B" & "C" CROSS-SECTIONS
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO. SLS-7699
 SHEET 13 OF 20
 REV:

SITE RECLAMATION NARRATIVE:

WITHIN SIX MONTHS OF THE EXPIRATION OF APPROVAL OF THE WELL PAD, THIS SITE SHALL BE CLOSED AND RESTORED TO A PRE-CONSTRUCTION CONDITION. THE AST PAD AND ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES, AND ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMPs SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE REGRADED AS INDICATED ON THE PLAN TO PRE-CONSTRUCTION GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDED AND MULCHED PER THE REVEGETATION DETAILS ON SHEET 20.

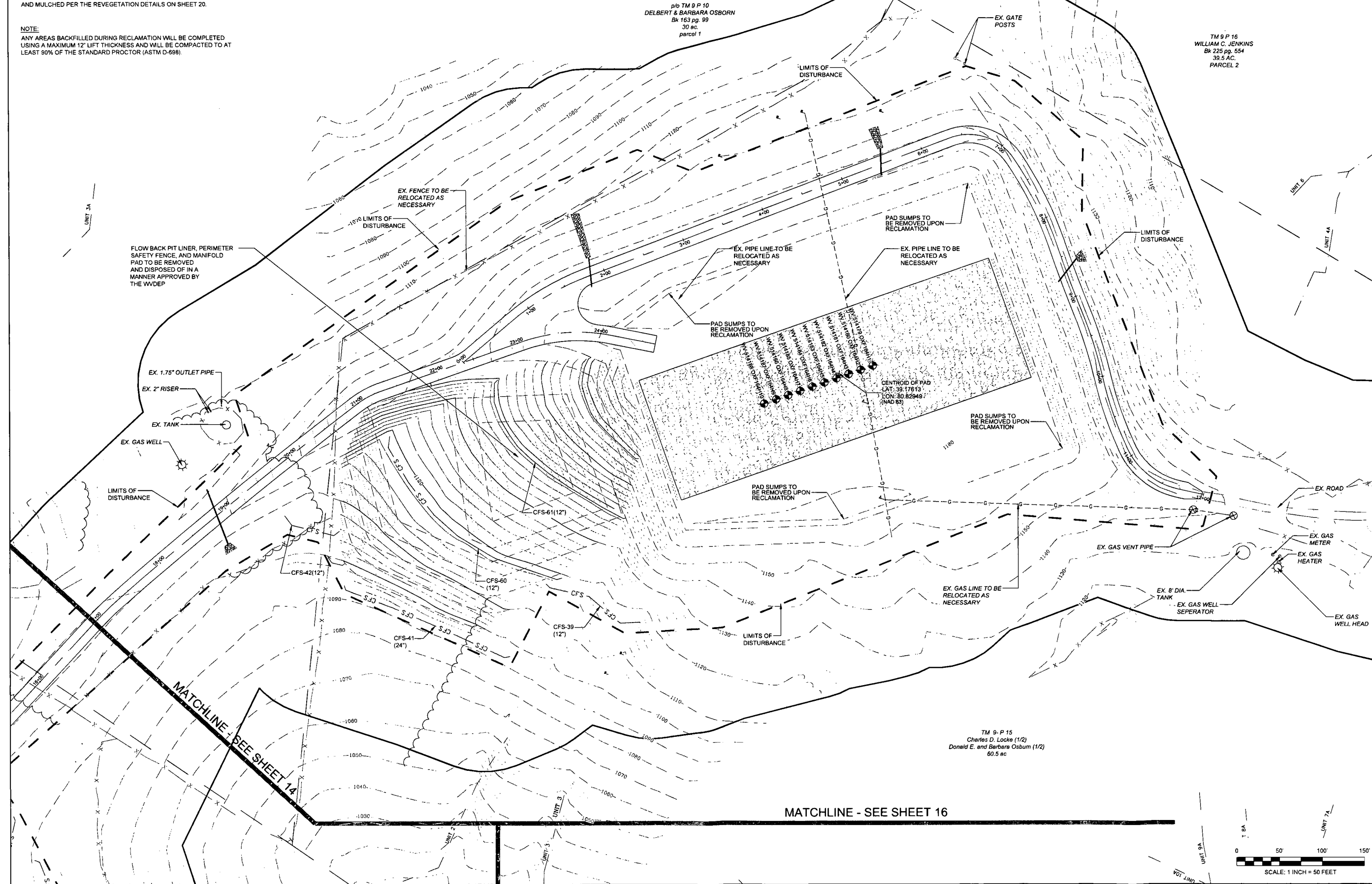
NOTE:

ANY AREAS BACKFILLED DURING RECLAMATION WILL BE COMPLETED USING A MAXIMUM 12" LIFT THICKNESS AND WILL BE COMPACTED TO AT LEAST 90% OF THE STANDARD PROCTOR (ASTM D-698).

EQT OXF 164 RECLAMATION SITE PLAN
 (PROPOSED WELL NO. WV 514179, WV 514180, WV 514181, WV 514182, WV 514183, WV 514184, WV 514185, WV 514186, WV 514187, WV 514188)

p/o TM 9 P 10
 DELBERT & BARBARA OSBORN
 Bk 163 pg. 99
 30 ac.
 parcel 1

TM 9 P 16
 WILLIAM C. JENKINS
 Bk 225 pg. 554
 39.5 AC.
 PARCEL 2



FLOWBACK PIT LINER, PERIMETER SAFETY FENCE, AND MANIFOLD PAD TO BE REMOVED AND DISPOSED OF IN A MANNER APPROVED BY THE WDEP

EX. 1.75" OUTLET PIPE
 EX. 2" RISER
 EX. TANK
 EX. GAS WELL

LIMITS OF DISTURBANCE

CFS-61 (12')

CFS-42 (12')

CFS-60 (12')

CFS-39 (12')

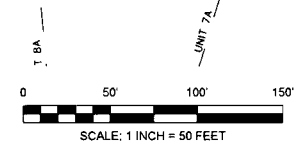
CFS-41 (24')

LIMITS OF DISTURBANCE

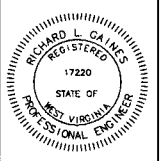
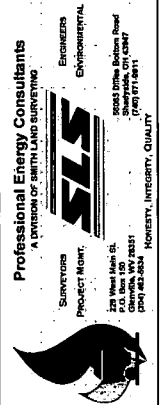
TM 9-P 15
 Charles D. Locke (1/2)
 Donald E. and Barbara Osburn (1/2)
 60.5 ac

MATCHLINE - SEE SHEET 16

MATCHLINE - SEE SHEET 14



D:\2014\1512 Project\Book #31 L01 03 16\CD\at\chase\Book 31.dwg 12/17/2014 11:21:22 AM



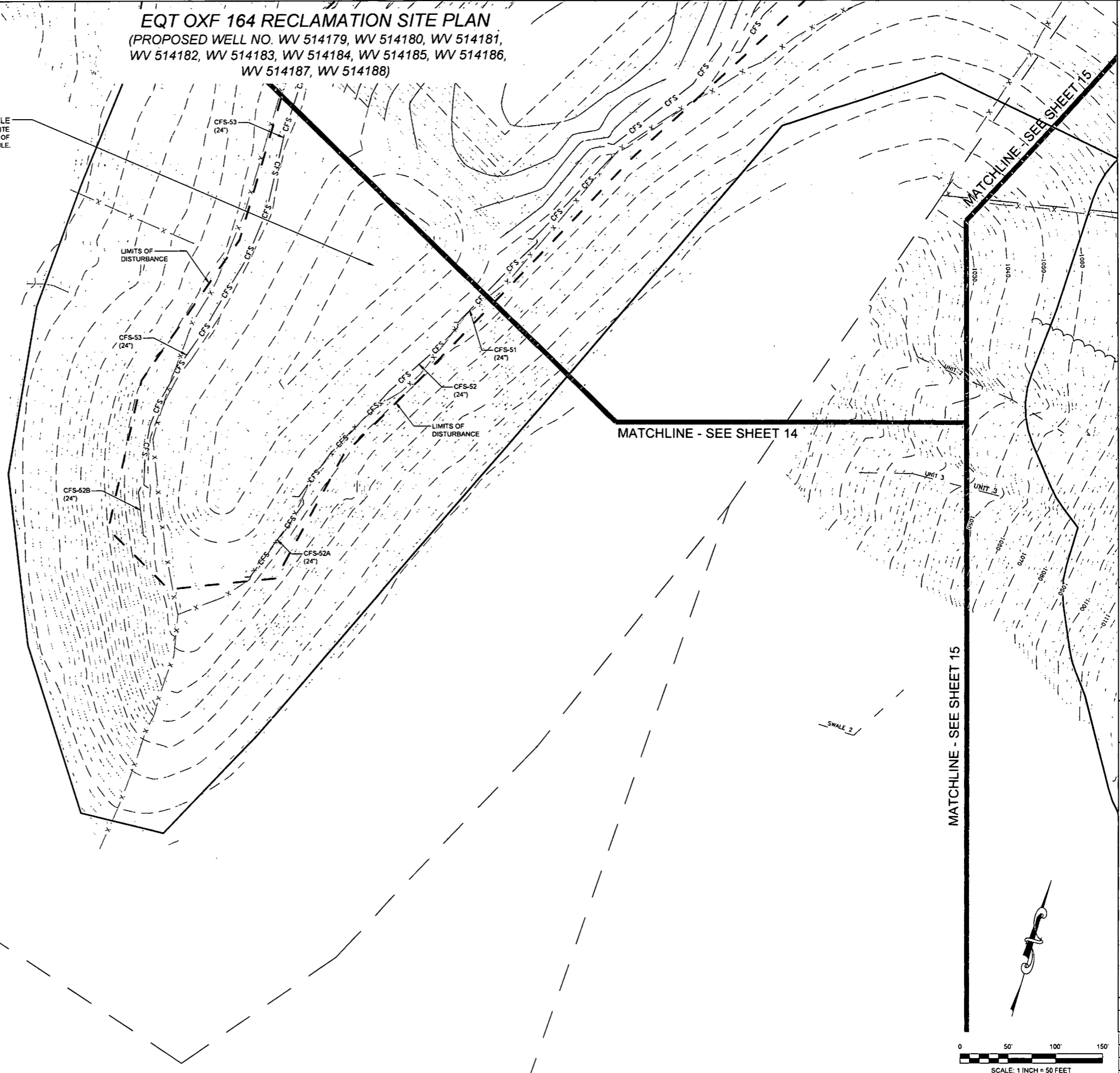
THIS DOCUMENT WAS PREPARED BY STANTEC, INC. FOR: EOT PRODUCTION COMPANY

FLOWBACK PIT & WELL PAD RECLAMATION PLAN
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIEGE COUNTY, WV

DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 15 OF 20
REV:

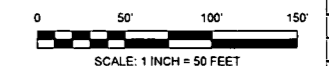
EQT OXF 164 RECLAMATION SITE PLAN
 (PROPOSED WELL NO. WV 514179, WV 514180, WV 514181,
 WV 514182, WV 514183, WV 514184, WV 514185, WV 514186,
 WV 514187, WV 514188)


TOPSOIL/ EXCESS MATERIAL STOCKPILE
 DURING THE RECLAMATION PROCESS, THE SITE
 MATERIAL WILL BALANCE WITHOUT THE NEED OF
 USING THIS STOCKPILE.



SITE RECLAMATION NARRATIVE:
 WITHIN SIX MONTHS OF THE EXPIRATION OF APPROVAL OF THE WELL
 PAD, THIS SITE SHALL BE CLOSED AND RESTORED TO A
 PRE-CONSTRUCTION CONDITION. THE AST PAD AND ALL PIPING FOR
 THE GROUNDWATER DEWATERING SYSTEM, WATER LINES, AND
 ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMPs
 SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS
 NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE
 REGRADED AS INDICATED ON THE PLAN TO PRE-CONSTRUCTION
 GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDED
 AND MULCHED PER THE REVEGETATION DETAILS ON SHEET 20.

NOTE:
 ANY AREAS BACKFILLED DURING RECLAMATION WILL BE COMPLETED
 USING A MAXIMUM 12" LIFT THICKNESS AND WILL BE COMPACTED TO AT
 LEAST 90% OF THE STANDARD PROCTOR (ASTM D-698).






1111 LINDSEY STREET
 PHOENIX, AZ 85016
 PHONE: 303-957-2900



Professional Energy Consultants
 A Division of Earth Land Services
 11111 LINDSEY STREET
 PHOENIX, AZ 85016
 PHONE: 303-957-2900



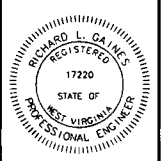
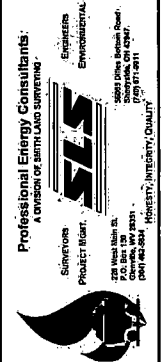
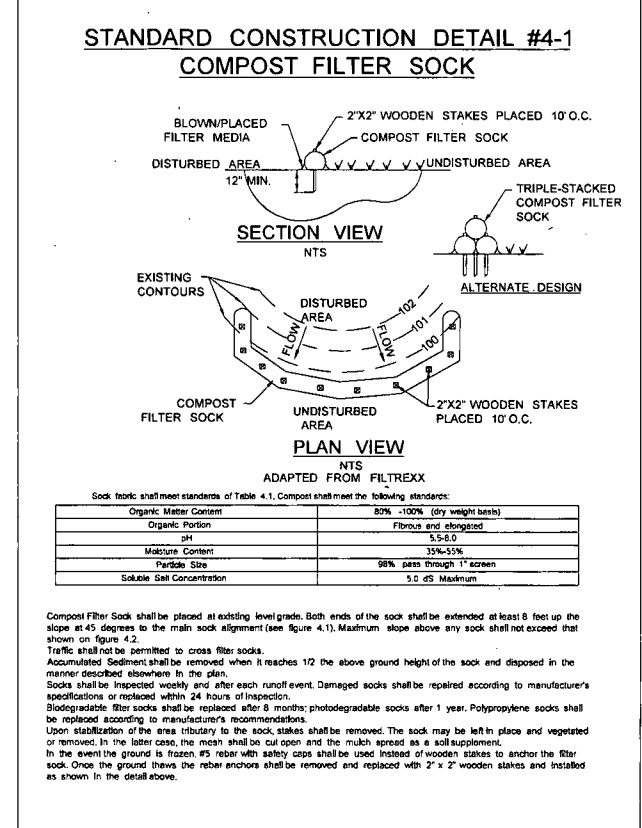
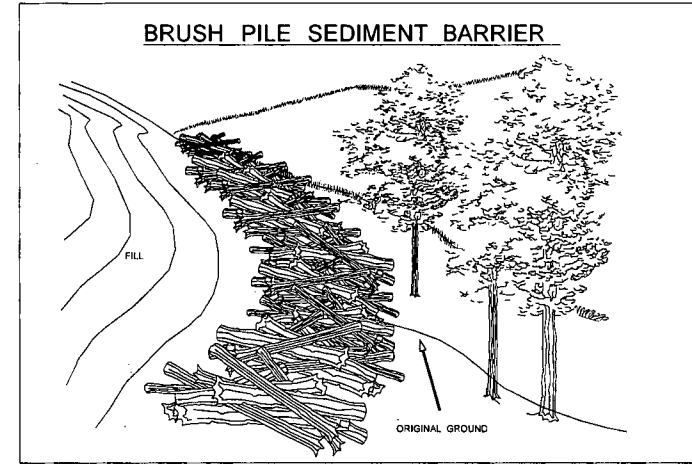
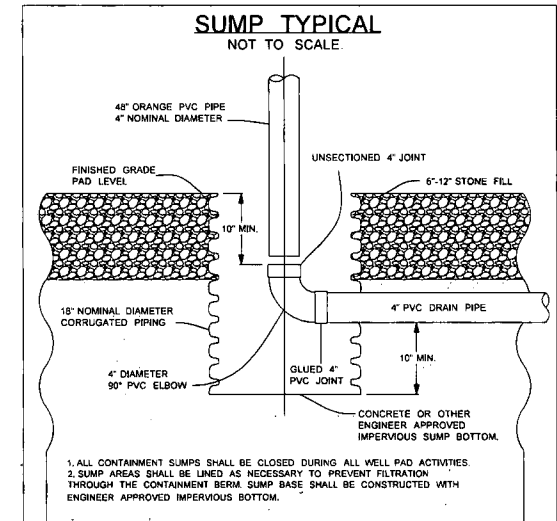
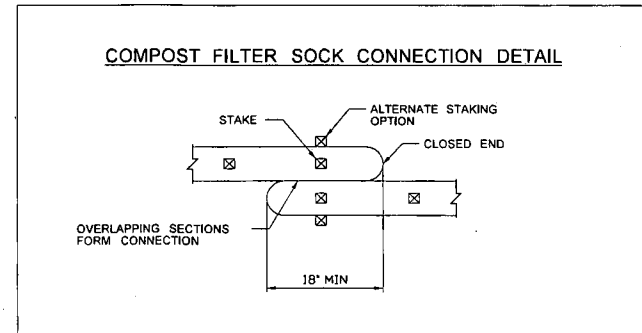
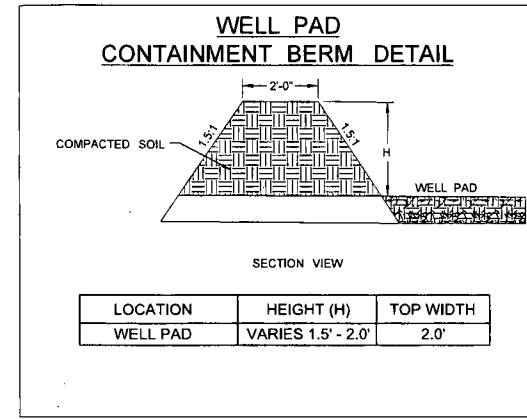
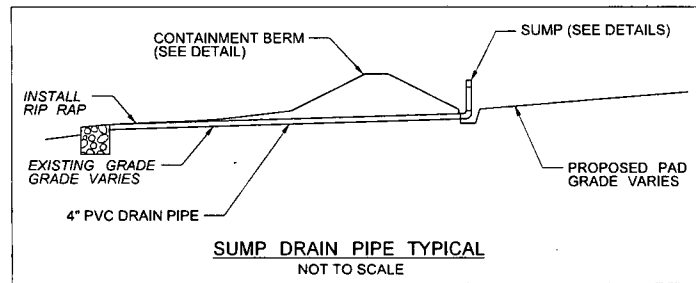
RICHARD L. CALLES
 REGISTERED
 17220
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL ENGINEER

THIS DOCUMENT WAS
 PREPARED BY
 STANTEC, INC.
 FOR: EQT PRODUCTION
 COMPANY

ACCESS ROAD &
 COMPLETION PIT RECLAMATION PLAN
EQT OXF 164
 SOUTH WEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 12/5/2014
 SCALE: AS SHOWN
 DESIGNED BY: RLG
 FILE NO.: SLS-7699
 SHEET 16 OF 20
 REV:

U:\2014\12\17\2014-12-17\12\17\2014 11:21:36 AM

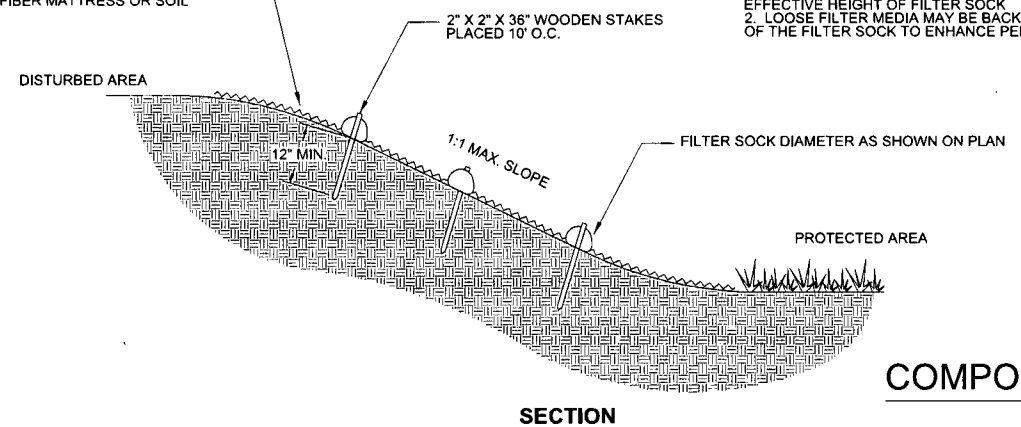


THIS DOCUMENT WAS PREPARED BY: STANTEC, INC. FOR: EQT PRODUCTION COMPANY

CONSTRUCTION DETAILS
EQT OXF 164
UNION DISTRICT DISTRICT
DODDRIDGE COUNTY, WV

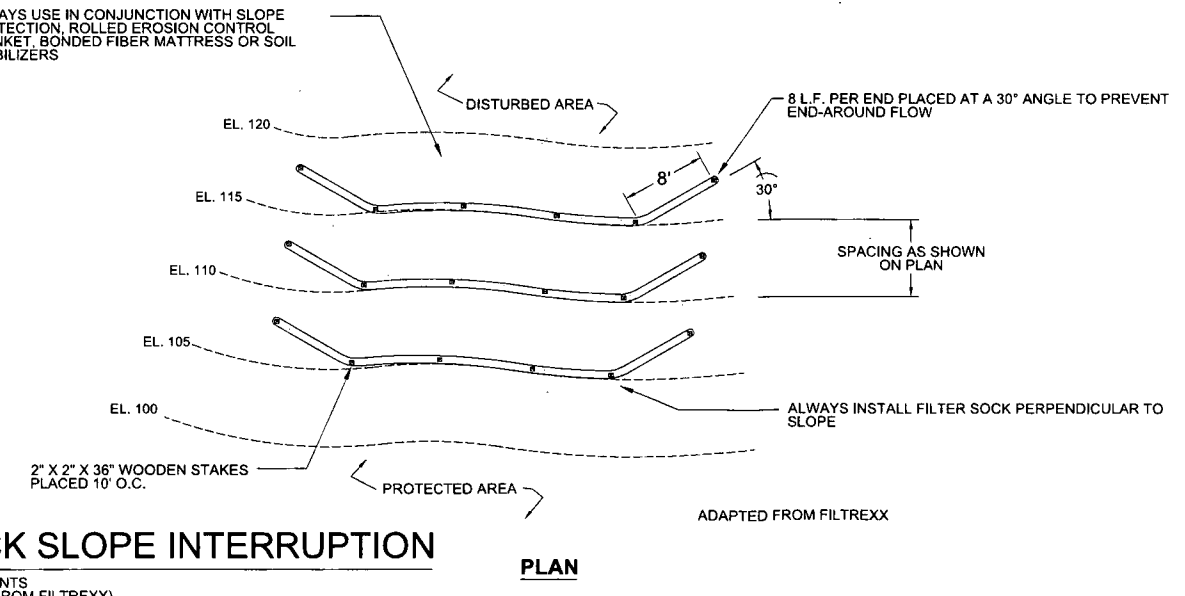
DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 17 OF 20
REV:

ALWAYS USE IN CONJUNCTION WITH SLOPE PROTECTION, ROLLED EROSION CONTROL BLANKET, BONDED FIBER MATTRESS OR SOIL STABILIZERS



- NOTES:
1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE FILTER SOCK WHEN ACCUMULATION HAS REACHED 1/2 OF EFFECTIVE HEIGHT OF FILTER SOCK
 2. LOOSE FILTER MEDIA MAY BE BACKFILLED ON THE UPSLOPE SIDE OF THE FILTER SOCK TO ENHANCE PERFORMANCE

ALWAYS USE IN CONJUNCTION WITH SLOPE PROTECTION, ROLLED EROSION CONTROL BLANKET, BONDED FIBER MATTRESS OR SOIL STABILIZERS

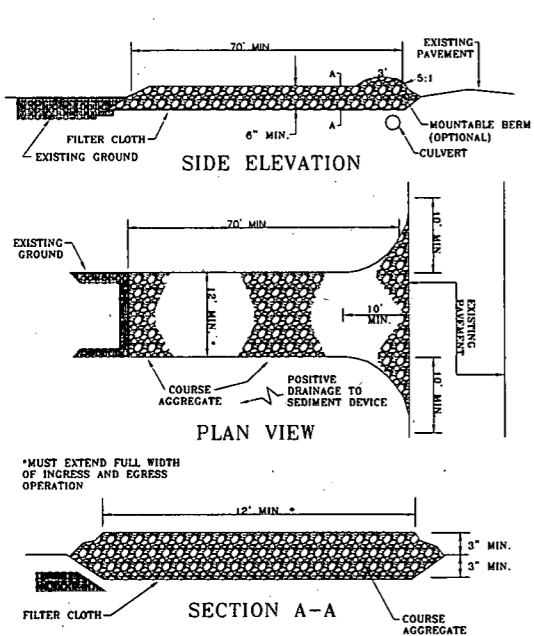


COMPOST FILTER SOCK SLOPE INTERRUPTION
NTS
(ADAPTED FROM FILTREXX)

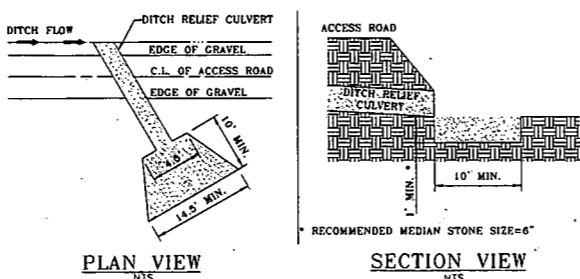
ADAPTED FROM FILTREXX

APPROPRIATE PRESENTS PL. DRIVERS

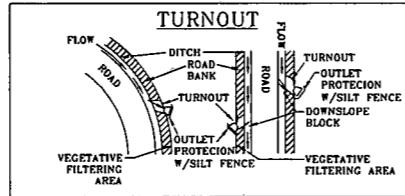
STONE CONSTRUCTION ENTRANCE



**TYPICAL DITCH RELIEF CULVERT
OUTLET TREATMENT**



NOTE: ALL DITCH LINE PROTECTION SHALL BE INSTALLED AS RECOMMENDED IN THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL, DITCH LINE PROTECTION SHALL BE ROCK LINED. IF HIGH EROSION SOILS ARE ENCOUNTERED DURING CONSTRUCTION, THE ENGINEER SHOULD BE CONTACTED FOR FURTHER EVALUATION.

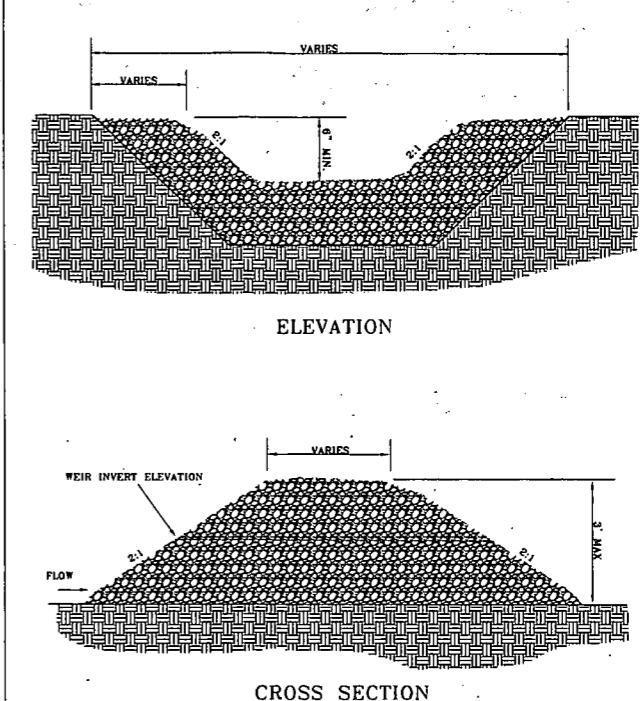


This section contains two diagrams and two tables. The top diagram shows a ditch relief culvert with labels for 'Original Ground', 'Proposed Grade', '1/2 d or 12" min', 'd', 'd', 'd', 'd', 'Culvert', '1" per foot slope', 'Sump', and 'Outlet Protection'. The middle diagram shows 'Hillside culverts at 30% across road' with labels for 'Drainage Ditch', 'Roadway', and 'Outlet Protection'. The bottom part contains two tables: Table 11-5 'Pipe Sizes for Culverts Across Roads' and Table 11-6 'Spacing of Culverts'.

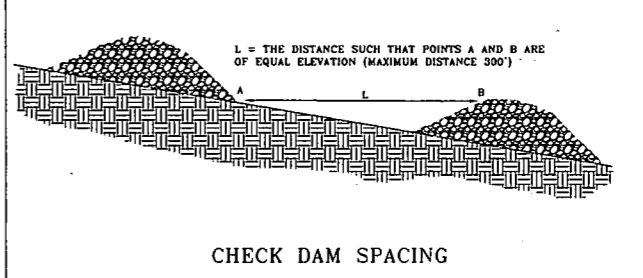
Drainage Area (Ac)	Pipe Diameter (in)	Pipe Capacity (Cfs)
10'	16	5
20'	18	9
30'	21	12
50'	24	18
80'	27	24
100'	30	29
300'	36	60
500'	42	85

Road Grade (%)	Distance (Ft)
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100

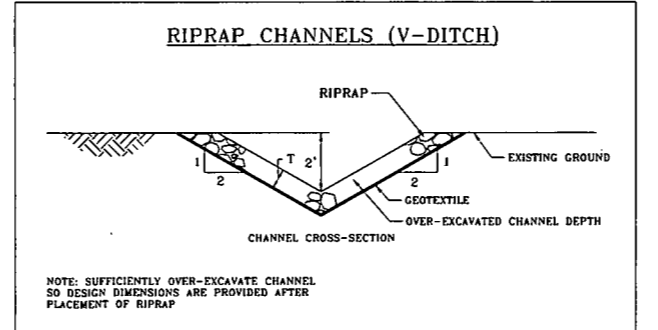
ROCK CHECK DAM



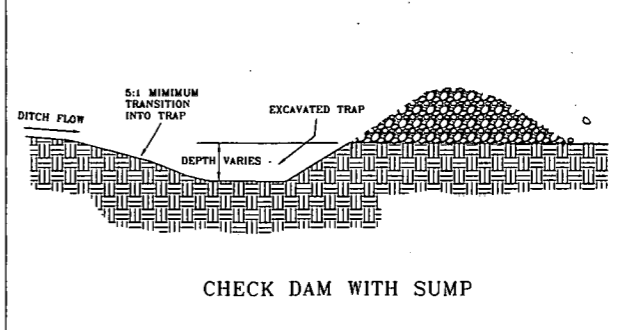
ROCK CHECK DAM



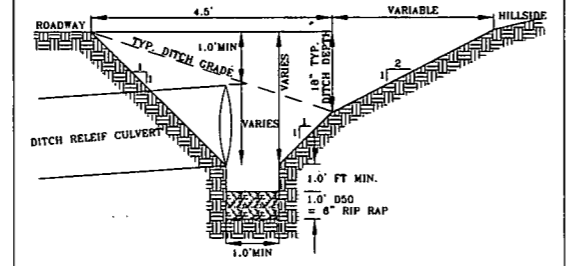
RIPRAP CHANNELS (V-DITCH)



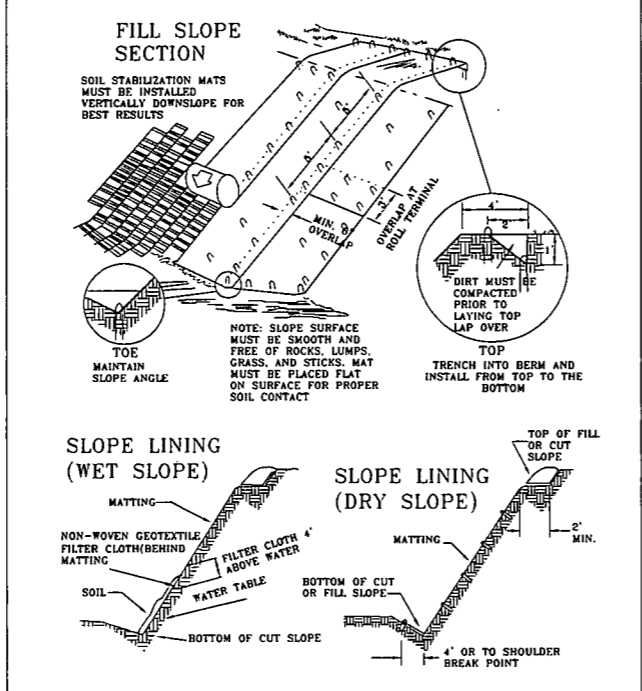
CHECK DAM SPACING



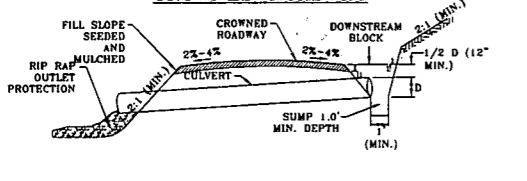
**TYPICAL ROADSIDE DITCH SECTION
SUMP AT DITCH RELIEF CULVERT**



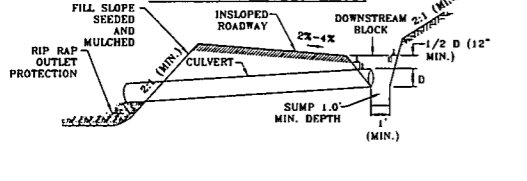
ROLLED EROSION CONTROL PRODUCTS



CROWNED ROADWAY



INSLOPED ROADWAY



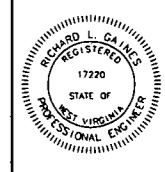
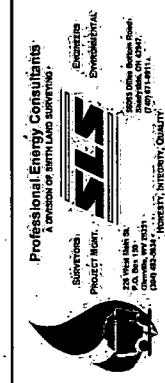
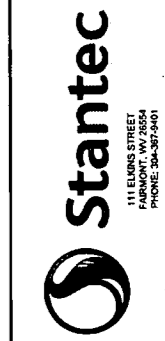
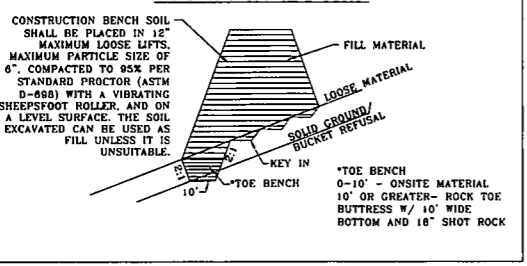
CUT AND FILL SLOPES SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF ROADWAY GRADING. THESE AREA SHALL BE BLANKETED WHEREVER THEY ARE LOCATED WITHIN 50 FEET OF A SURFACE WATER OR WITHIN 100 FEET OF SURFACE WATER WHERE A SUITABLE VEGETATIVE FILTER STRIP DOES NOT EXIST.

A DURABLE TOP DRESSING SHALL BE PROVIDED FOR SOILS HAVING LOW STRENGTH.

ROADSIDE DITCHES SHALL BE PROVIDED WITH ADEQUATE PROTECTIVE LINING.

ROADWAY SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED ROADWAYS, DITCHES OR CROSS DRAINS SHALL BE REPAIRED IMMEDIATELY.

TOE BENCH DETAIL



THIS DOCUMENT WAS PREPARED BY: STANTEC, INC. FOR: EGT PRODUCTION COMPANY

CONSTRUCTION DETAILS
EQT OXF 164
UNION DISTRICT
DOODRIDGE COUNTY, WV

DATE: 12/5/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 18 OF 20
REV:

DATE: 04/26/14
SCALE: 1"=20'
FILE: 04/26/14

Table 2
Acceptable Fertilization Recommendation

Species	N (lbs/ac)	P205 (lbs/ac)	Example Rec. (per acre)
Cool Season Grass	40	80	400 lbs. 10-20-20
CS Grass & Legume	30	80	300 lbs. 10-20-20
Temporary Cover	40	40	200 lbs. 10-10-19

Table 3
Temporary Cover

Species	Seeding Rate (lbs/acre)	Optimum Seeding Dates	Drainage	pH Range
Annual Ryegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Poorly	5.5 - 7.5
Field Bromegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Mod. Well	6.0 - 7.0
Spring Oats	98	3/1 - 6/15	Well - Poorly	5.5 - 7.0
Sundagrass	40	5/15 - 8/15	Well - Poorly	5.5 - 7.5
Winter Rye	188	8/15 - 10/15	Well - Poorly	5.5 - 7.5
Winter Wheat	180	8/15 - 11/15	Well - Mod. Well	5.5 - 7.0
Japanese Millet	30	6/15 - 8/15	Well	4.5 - 7.0
Redtop	5	3/1 - 6/15	Well	4.0 - 7.5
Annual Ryegrass	28	3/1 - 6/15	Well - Poorly	5.5 - 7.5
Spring Oats	64	3/1 - 6/15	Well - Poorly	5.5 - 7.5

NOTE: These rates should be increased 50% if planted April 16 - August 1 and October 1 - March 1.

Table IV-5
Lime and Fertilizer Table

pH of Soil	Lime in Tons per Acre	Fertilizer, Lbs., per Acre (10-20-20 or Equivalent)
Above 6.0	2	500
5.0 to 6.0	3	500
Below 5.0	4	500

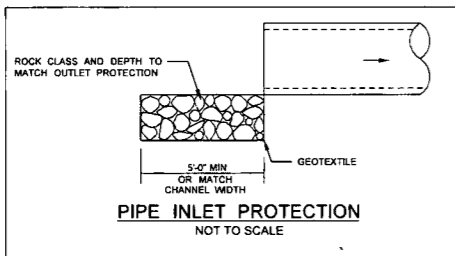
Table IV-6
Mulch Materials Is Rates and Used

Material	Minimum Rates per acre	Coverage	Remarks
Hay or straw	2 to 3 Tons	Cover 75% to 90% of Surface	Subject to wind blowing or washing unless tied down
Wood Fiber	1000 to 1500 lbs	Cover all	For hydroseeding
Pulp Fiber		Disturbed Areas	
Wood - Cellulose Recirculated Paper			

Tables IV 1-4 taken from Natural Resources Conservation Service Manual 'Critical Area Planting'

Table IV-1
Recommended Seeding Dates

Planting Dates	Suitability
March 1 - April 15 and August 1 - October 1	Best Seeding Periods
April 15 - August 1	HIGH RISK - moisture stress likely
October 1 - December 1	HIGH RISK - freeze damage to young seedlings
December 1 - March 1	Good seeding period. Dormant seeding



CORRUGATED PLASTIC PIPE DESIGN TABLE

PIPE LOCATION (STA)	PIPE DIAMETER (IN)	PIPE LENGTH (FT)	OUTLET PROTECTION			
			MIN D50 (IN)	ROCK DEPTH (IN)	LENGTH (FT)	WIDTH (FT)
ROAD "A" 0+28	15	72	6	14	8	9.25
ROAD "A" 0+95	15	51	6	14	8	9.25
ROAD "A" 2+83	15	42	6	14	8	9.25
ROAD "A" 4+89	15	49	6	14	8	9.25
ROAD "A" 6+60	15	55	6	14	8	9.25
ROAD "A" 11+05	15	64	6	14	8	9.25
ROAD "A" 14+26	15	55	6	14	8	9.25
ROAD "A" 18+41	15	69	6	14	8	9.25
ROAD "B" 1+83	15	34	6	14	8	9.25
ROAD "B" 5+48	15	32	6	14	8	9.25
ROAD "B" 8+68	15	35	6	14	8	9.25
ROAD "C" 1+65	15	36	6	14	8	9.25

Table 4a
Permanent Seeding Mixture

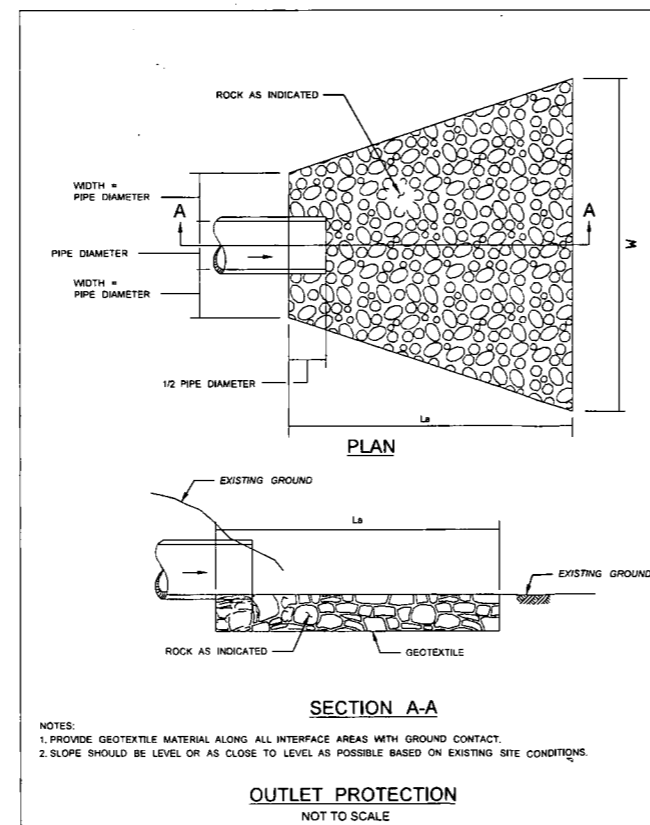
Species/Mixtures	Seeding Rate (lbs/acre)	Drainage	pH Range
Crownvetch/ Tall Fescue/ Perennial Ryegrass	10 - 15 30 20	Well - Mod. Well	5.0 - 7.5
Ladino Clover/ Sericea Lespedeza/ Tall Fescue/	30 25 2	Well - Mod. Well	4.5 - 7.5
Ladino Clover/ Redtop	3	Well - Mod. Well	5.0 - 7.5
Crownvetch/ Tall Fescue/ Redtop	10 20 3	Well - Mod. Well	5.0 - 7.5
Tall Fescue/ Birdfoot Trefoil/ Redtop	40 10 3	Well - Mod. Well	5.0 - 7.5
Sericea Lespedeza/ Tall Fescue/ Redtop	25 30 3	Well - Mod. Well	4.5 - 7.5
Redtop/ Tall Fescue/ Creeping Red	30 50 3	Well - Mod. Well	5.0 - 7.5
Tall Fescue	50	Well - Poorly	4.5 - 7.5

* 'Lathco' Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate. Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

Table 4b
Wildlife and Farm Friendly Seed Mixtures

Species/Mixtures	Seeding Rate (lbs/acre)	Drainage	pH Range
KY Bluegrass/ Redtop/ Ladino or Birdfoot Trefoil	20 3 2/10	Well - Mod. Well	5.5 - 7.5
Timothy/ Alfalfa	5 12	Well - Mod. Well	6.5 - 8.0
Timothy/ Birdfoot Trefoil	5 6	Well - Poorly	5.5 - 7.5
Orchardgrass/ Ladino Clover/ Redtop	10 2 3	Well - Mod. Well	5.5 - 7.5
Orchardgrass/ Ladino Clover	10 2	Well - Mod. Well	5.5 - 7.5
Orchardgrass/ Perennial Ryegrass	20 10	Well - Mod. Well	5.5 - 7.5
Creeping Red Fescue/ Perennial Ryegrass	30 10	Well - Mod. Well	5.5 - 7.5
Orchardgrass or KY Bluegrass	20	Well - Mod. Well	6.0 - 7.5
Birdfoot Trefoil/ Redtop/ Orchardgrass	10 5 20	Well - Mod. Well	5.5 - 7.5
Lathco Flatpea*/ Perennial Ryegrass	30 20	Well - Mod. Well	5.5 - 7.5
Lathco Flatpea*/ Orchardgrass	30 20	Well - Mod. Well	5.5 - 7.5

* 'Lathco' Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate. Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips. NTS



REVEGETATION

Taken from the
West Virginia Erosion and Sediment Control Field Manual
West Virginia Division of Environmental Protection Office of Oil and Gas
Charleston, W.Va.
Section IV

Temporary Seeding

A. General Conditions Where Practice Applies

Where exposed soil surfaces are not to be fine-graded or worked for periods longer than 21 days. Temporary vegetative cover with sediment controls must be established where runoff will go directly into a stream. Immediately upon construction of the site (site includes road and location), vegetation must be established on road bank and location slopes. A permanent vegetative cover shall be applied to areas that will be left un-worked for a period of more than six months.

B. Seed Mixtures and Planting Dates

Refer to Tables 2 through 4 for recommended dates to establish vegetative cover and the approved lists of temporary and permanent plant species, and planting rates. Table 3 gives recommended types of temporary vegetation, rates of application, and optimum seeding dates. In situations where another cover is desired, contact the local soil conservation district for seeding recommendations.

C. Seed Application

Apply seed by broadcasting, drilling, or by hydroseed according to the rates indicates in Table IV-3. Perform a 11 planting operations at right angles to the slope. Necessary site preparation and roughening of the soil surface should be done just prior to seeding. Seedbed preparation may not be required on newly disturbed areas.

Permanent Seeding

A. General

Permanent vegetative cover will be established where no further soil disturbance is anticipated or needed. Soil fertility and pH level should be tested and adjusted according to seed species planted. Planting of permanent vegetative covers must be performed on a 11 disturbed areas after completion of the drilling process. Any site that contains significant amounts of topsoil shall have the topsoil removed and stockpiled when feasible. Topsoil should not be added to slopes steeper than 2:1 unless a good bonding to the sub-layer can be achieved. After proper grading and seedbed preparation, the vegetation will reestablish ground cover for the control of surface water runoff erosion. All required seedbed preparation and loosening of soil by disking or dozer tracking should be performed just prior to seeding. If seedbed preparation is not feasible, 50% more seed shall be added to the recommended rates shown in Tables IV-3 and IV-4. When hydroseeding, seedbed preparation may not be necessary if adequate site preparation was performed. Incorporate the appropriate amount of lime and/or fertilizer in the slurry mix when hydroseeding.

When hydroseeding, first mix the lime, fertilizer, and hydro-mulch in the recommended amount of water. Mix the seed and inoculants together within one hour prior to planting, and add to the slurry just before seeding. Apply the slurry uniformly over the prepared site. Assure that agitation is continuous throughout the seeding operation and the mix is applied within one hour of initial mixing.

B. Lime and Fertilizer

- Lime shall be applied to a 11 permanent seedings. The pH of the soil is to be determined and lime applied accordingly. Once the pH is known, select the amount of lime to be applied from Table IV-5.
- Fertilizer shall be applied in all permanent seedings. Apply the equivalent for 500 lbs. minimum 10-20-20 fertilizer per acre or use the amount of fertilizer and lime recommended by a certified soil test.
- Application: For best results and maximum benefits, the lime and fertilizer are to be applied at the time of seedbed preparation.

C. Permanent Seed Mixtures

Planners should take into consideration the species makeup of the existing pasture and the landowner's future pasture management plans when recommending seed mixtures. Selection: From Tables IV 4a and b, Permanent Seeding Mixtures Suitable for Establishment In West Virginia.

Notes:

- All legumes must be planted with the proper inoculants prior to seeding.
- 'Lathco' Flatpea is potentially poisonous to some livestock.
- Only endophyte free varieties of Tall Fescue should be used. Tall Fescue and Crownvetch are also very invasive species, non-native to WV.
- For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate. Mixtures in Table 4b are more wildlife and farm friendly; those listed in bold are suitable for use in shaded woodland settings. Mixtures in *italics* are suitable for use in filter strips.

D. Seeding for Wildlife Habitat

Consider the use of the native plants or locally adapted plants when selecting cover types and species for wildlife habitat. Wildlife friendly species or mixes that have multiple values should be considered. See wildlife friendly species/mixtures in Table IV-4b. Consider selecting no or low maintenance long-lived plants adaptable to sites which may be difficult to maintain with equipment.

Mulching

A. General Organic Mulches

The application of straw, hay or other suitable materials to the soil surface to prevent erosion. Straw made from wheat or oats is the preferred mulch, the use of hay is permissible, but not encouraged due to the risk of spreading invasive species. Mulch must be applied to all temporary and permanent seeding on all disturbed areas. Depending on site conditions, in critical areas such as waterways or steep slopes, additional or substitute soil protective measures may be used if deemed necessary. Examples include jute mesh and soil stabilization blankets or erosion control matting.

Areas that have been temporarily or permanently seeded should be mulched immediately following seeding. Mulches conserve desirable soil properties, reduce soil moisture loss, prevent crusting and sealing of the soil surface and provide a suitable microclimate for seed germination.

Areas that cannot be seeded because of the season should be mulched to provide some protection to the soil surface. An organic mulch, straw or hay should be used and the area then seeded as soon as weather or seasonal conditions permit. Do not use fiber mulch (cellulose-hydroseeded) alone for this practice; at normal application rates it will not give the soil protection of other types of mulch.

Wood cellulose fiber mulch is used in hydroseeding operations and applied as part of the slurry. It creates the best seed-soil contact when applied over the top of (as a separate operation) newly seeded areas. Fiber mulch does not alone provide sufficient protection on highly erodible soils, or during less than favorable growing conditions. Fiber mulch should not be used alone during the dry summer months or when used for late fall mulch cover. Use straw mulch during these periods and fiber mulch may be used to tack (anchor) the straw mulch. Fiber mulch is well suited for steep slopes, critical areas and areas susceptible to wind.

B. Chemical Mulches, Soil Binders and Tackifiers

A wide range of synthetic spray on materials are marketed to stabilize and protect the soil surface. These are mixed with water and sprayed over the mulch and to the soil. They may be used alone in some cases as temporary stabilizers, or in conjunction with fiber mulch, straw or hay.

When used alone most chemical mulches do not have the capability to insulate the soil or retain soil moisture that organic mulches have.

C. Specifications

From Table IV-6 select the type of mulch and rate of application that will best suit the conditions at the site.

D. Anchoring

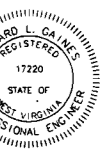
Depending on the field situation, mulch may not stay in place because of wind action or rapid water runoff. In such cases, mulch is to be anchored mechanically or with mulch netting.

1. Mechanical Anchoring

Apply mulch and pull mulch anchoring tool over the mulch. When a disk is used set the disk straight and pull across slope. Mulch material should be tugged into the soil about three inches.

2. Mulch netting

Follow manufacturer's recommendation when positioning and stapling the mulch netting in the soil.



THIS DOCUMENT WAS
PREPARED BY:
STANTEC, INC.
FOR: EDT PRODUCTION
COMPANY

CONSTRUCTION DETAILS
EQT OXF 164
UNION DISTRICT DISTRICT
DODDRIDGE COUNTY, WV

DATE: 12/9/2014
SCALE: AS SHOWN
DESIGNED BY: RLG
FILE NO.: SLS-7699
SHEET 19 OF 20
REV:

