PENNSYLVANIA

XREFS:

IMAGES: PROJECTNAME: ---Long MD SIGNED_09222017.jpg MD_Hancock_256415_1996_24000_(

LOCATION MAP





PROJECT EXPANSION PANHANDLE

WASHINGTON COUNTY, MARYLAND

EASTERN PANHANDLE

EXPANSION

PROJECT

EROSION AND SEDIMENT CONTRO

MARCH 2017

REVISED SEPTEMBER 2017

COLUMBIA GAS TRANSMISSION, LLC., A TRANSCANADA COMPANY HOUSTON, TEXAS



ARCADIS U.S., INC



37.36

INDEX TO DRAWINGS

ENGINEERING FIRM:
ARCADIS U.S., INC.
6041 WALLACE ROAD EXTENSION, S
WEXFORD, PA 15090
TELEPHONE: 724.934.9562
CONTACT: ALLEN LONG, P.E.

SUITE 300

WARYLAND ONE-CALL TELEPHONE: 811 OR 1.800.257.7777

OWNER:
COLUMBIA GAS TRANSMISSION, L
5151 SAN FELIPE, SUITE 2400
HOUSTON, TX 77056
TELEPHONE, 713,386,3302
CONTACT: CLIFFORD ABBOTT

ררכי,

TRANSCANADA

COMPANY

KEY CONTACTS:

GENERAL NOTES AND LEGEND

OVERALL SITE PLAN (STA, 0+00 TO 59+00)

OVERALL SITE PLAN (STA, 0+00 TO 128+00)

OVERALL SITE PLAN (STA, 126+00 TO 1777-74)

OVERALL SITE PLAN (STA, 0+00 TO 64-50)

SITE PLAN (16+00 TO 18+00)

SITE PLAN (16+00 TO 34-50)

SITE PLAN (16+00 TO 78+00)

SITE PLAN (16+00 TO 78+00)

SITE PLAN (169+00 TO 78+00)

SITE PLAN (169+00 TO 108+00)

SITE PLAN (161+00 TO 108+00)

SITE PLAN (STA, 150+00 TO 136-60)

SITE PLAN (STA, 150+00 TO 136-60)

SITE PLAN (STA, 150+00 TO 136-00)

SITE PLAN (STA, 150+00 TO 1777-74)

SITE PLAN (CATHODIC PROTECTION ANODE GROUNDBED AT STA, 136+00)

SITE PLAN (STA, 150+00 TO 136-00)

SITE PLAN (STA, 150+00 TO 1777-74)

SITE PLAN (CATHODIC PROTECTION ANODE GROUNDBED AT STA, 136+00)

SITE PLAN (STA, 150+00 TO 1777-74)

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SITE PLAN (CATHODIC PROTECTION ANODE GROUNDBED AT STA, 136+00)

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SITE PLAN (CATHODIC PROTECTION ANODE GROUNDBED AT STA, 136+00)

SITE PLAN (STA, 150+00 TO 1777-74)

SITE PLAN (CONTRACTOR STAGING AREA AND TEMPORARY ACCESS ROAD

TAR-1)
SITE PLAN (TEMPORARY ACCESS ROAD TAR-1)
SITE PLAN (TEMPORARY ACCESS ROAD TAR-1)
SITE PLAN (TEMPORARY ACCESS ROAD TAR-1)
SITE PLAN (TEMPORARY ACCESS ROAD TAR-1)
PROPOSED STREAMS S1, S1E, AND S88 CULVERT REPLACEMENTS PLANS)

88 22 28

31.

PROPOSED STREAM CROSSINGS S6 AND S13 PLANS AND PROFILES PROPOSED STREAM CROSSING S4 AND WETLAND CROSSING W6 PLANS AND PROFILES MISCELLANEOUS DETAILS MISCELLANEOUS DETAILS MISCELLANEOUS DETAILS MISCELLANEOUS DETAILS MISCELLANEOUS DETAILS

THE PURPOSE OF THIS EROSSON AND SERVICITS CONTROL PLAN (ESSY) IS TO INSURE COMPUNICES WITH THE RULES AND RECOUNTING OF THE MEMBERGING COMPUT SOME CONTROL PURPOSED TO COMPUTE OF THE DIVIDORMENT OF THE DIV

CONSTRUCTION SEQUENCE:

CONSTRUCTION PREPARATION ACTIVITIES:

SCHEDULE CROSSINGS DURBNG LOW FLOW PERIODS IF POSSIBLE.

- AT LEAST 5 DATS PRIOR TO COMMENCING ARY WORK IN COMMINCTION WITH THE APPROVED FINAL ESCP. THE WSCO SHALL BE NOTHED.

- RETALL 90-FROT LONG ROCK CONSTRUCTION ENTRANCES WHERE LOCATED ON THE ESCY DRAININGS. THE MUST ROCKS WILL BE NEXTALED IF REQUIRED TO CONTROL THE TRACKING OF SEDIMENT ONTO PARED ROADWAYS.
- NOTIFY THE WISCO FOLLOWING INSTALLATION OF EROSION AND SEDIMENT CONTROLS.

- PERFORM GRADING AS NECESSARY TO PROVIDE A LEVEL WORK SUBSIGE AND LEAVE ROOTSTOCK IN PLACE IN AREAS WHERE THE GROUND IS RELATIVELY FLAT AND DOES NOT REQUIRE CRUING.
- SCOREGAIE THE TOPSOL, WHOSE REQUIRED, FROM THE SUBSOL WHOSE POSSELE DURBHE LEFELME AND GRAUNAE OF THE ROW AND/OR PROCE TO TRENCH EXCAVATION TO FACULTATE SITE RESIDEATION.

PIPELINE INSTALLATION - UPLAND LOCATIONS:

- VENTY BROSON AND SEDIMENT CONTROLS HAVE BEEN HISTALLED IN ACCORDANCE WITH THESE DRAWNGS AND TO THE SATISFACTION OF THE ENERGONEDITAL INSPECTOR.
- EXCAVATE THE PEPELME TRENCH TO A DEPTH THAT WILL ALLOW FOR THE REGURED MINIMUM COVER TO BE PLACED OVER THE PEPELME AFTER BACKFILLING. STRING THE PIPE SECTION ALONG THE OPEN TRENCH IN A CONTINUOUS LINE.
- bdio ppe sections where necessary to shape the ppe to the contours of the terrain, weld the pipe Join'ts Tocthes and Loke Strings and place the Strings on Temporaty Supports, and Lower the Welded Pipelme into the Treviol
- INSTALL TIRDICH PLUCS AT THE REQUIRED SPACING AS THE PIPELINE IS INSTALLED AS DIDICATED ON THE ESCP DRAWNICS.
- BACKFILL THE TRENCH USING EXISTING SUBSOIL MATERIAL AND ROUGH GRADE THE CONSTRUCTION ROW TO PRE-CONSTRUCTION CONTIQUES MANUS THE DEPTH OF THE TOPSOIL.
- REPLACE THE SEGREGATED TOPSOIL OVER THE CONSTRUCTION ROW.
- APPLY PERMANENT SEED, FERTILIZER, AND MULCH OR SOIL STABILIZATION MATTING (WHERE REQUIRED).
- REMOVE ROCK CONSTRUCTION ENTRANCES AND VEGETATE ENTRANCE AREAS.
- IO. INSTALL ASPHALT PAVING OR GRAVEL WHERE PREVIOUSLY REMOVED.
- IMMEDIATELY STABIUZE AREAS (IF ANY) DISTURBED DURING REMOVAL OF TEMPORARY EROSION AND SEDNIENT CONTROL MEASURES. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ONCE THE SITE HAS BEEN STABILIZED BY A MANIMUM, UNIFORM, PERCHANAL BOX VEGETATIVE COVER.
- PIPEUNE INSTALLATION WETLAND CROSSINGS: HSTALL TEMPORARY TIMBER MATS FOR CONSTRUCTION EQUIPMENT CROSSING OF THE WETLAND AS NONCATED ON THE ESCP DRAWNINGS.
- NSTALL SILT FENCHIC AND WEIGHTED SEDMENT FILTER TUBES AT THE ENDS OF THE TUBER MATS AS BROICATED ON THE ESCP DRAWNICS.
- SCREEGARE THE TOP 1 FOOT OF TOPSCH, AND VEGETATIVE ROOT MASS FROM THE AREA TO BE OSTRIBED BY TREMOMBINE DECOT IN AREAS WHERE STANDING WATER IS PRESENT ON SOILS ARE SATURATED OR PROZEN.

MDE COMMENT RESPO

MD 34862 ALLEN LONG

Date Signed

- NSTALL THE PAPELINE WITHIN THE TRENCH AND INSTALL TRENCH PLUCS AT ETHER AND SHOT ON THE ESCY DRAWNICS.
- REMOVE DEWATERING STRUCTURES FROM THE PIPE TRENCH.
- BACKFILL THE TRENCH USING THE SECREGATED SUBSOIL MATERIAL AND SECREGATED TOPSOIL AND VECTATIVE ROOT MASS.
- SOIL DISTURBANCE (E.G., GRUBBING, AND TOPSOIL STRIPPING) SHALL BE INHIMIZED PRICE TO NETALLING EROSION AND SEDARENT CONTROLS IN ACCORDANCE WITH THIS PLAN. SEMPLICANT EXPLANDER FOR THE FOLDWING SECRENCE MUST BE APPROVED IN WRITING (E.G., MA E-MAL) BY THE INSID. THE EASTERN PAMHANDLE ELPAMSON (EPE) PROJECT CONSTRUCTION ACTIVITÉS ARE MATICHATED TO BEGIN IN 2018. THE FOLLOWING DESCRIBES THE TYPICAL SEQUENCE OF CONSTRUCTION ACTIVITÉS. MHEDIATELY STABILIZE AREAS (IF ANY) DISTURBED DURNO REMOVAL OF TEMPORARY PROSION AND SEDMEDIT CONTROL MEASURES. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES ONCE THE SITE HAS BEEN STABILIZED BY A MANIMUM, UNFORM, PERENNAL BUS VECETATIVE COVER, APPLY SEED WHERE NEEDED, IN ACCORDANCE WITH THE SEEDING RESTORATION TABLES ON THIS SHEET.

- AT LEAST 3 DATS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITÉS, OR ECHANGRIG NITO AM AREA PREVIOUSLY UMAJARED, ALL COMPINACIONS BAYOLVID THOSE ACTIVITÉS SYALLAL HOTHEY THE MARTUAND ONE CLUL SYSTELLA, INC. AT 1-800-257-7777 FOR THE LOCATION OF ENSTRUG UNDERGROUND UTILITIES.
- PRIOR TO THE START OF CONSTRUCTION, A REQUEST FOR A PRE-CONSTRUCTION MEETING MUST BE MADE TO THE WSCD.

INSTALL SLIT FENCING AND WEIGHTED SEDIMENT FILTER TUBES AT THE ENDS OF THE TEMPORRARY BROOK CHOSSINGS AS INDICATED ON THE ESCH DRAWNINGS. NSTALL THE TELEPORARY BROCE STREAM CROSSING FOR CONSTRUCTION EQUIPMENT TRAVEL OVER THE STREAMS AS INDICATED ON THE ESCP DRAWINGS. MOBILIZE ALL EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE THE CROSSING

CONSTRUCT THE UPSTREAM AND DOMESTREAM SAMPRIAD DIVERSION DIAMS (OR ACUA BLADECES) WINNA THE STREAM ON DITHER SEC OF THE PROPOSED PPELHE TRENCH ALIGNMENT AS BROCKATED ON THE ESSP DRAIMMES.

- SIRVEY AND STAKEOUT THE APPROVED LIMITS OF DISTINGUARCE (LE, EDISTING PEPLINE CONTRIBUTE, CONSTRUCTION RIGHT-OF-WAY (ROIN) BOUNDAMES, AND TEMPORARY WORKSACK AREAS, AND FLAG THE LOCATIONS OF APPROVED ACCESS ROADS AND FORDON UTILITIES, AS APPLICABLE.
- MARK OR FENCE FOR PROTECTION WETLAND BOUNDARIES AND OTHER ENVIRONMENTALLY SENSITIVE LAREAS. NOBILIZE CREW, FACILITIES, EQUIPMENT, AND MATERIALS REQUIRED TO COMPLETE THE MORK.
- RETALL BLIT FIRE AND INTEREPTOR DIVERSIONS AT THE LOCATIONS SHOWN ON THE ESCY DRAINNOS AND DOWNGRADIENT OF EARTH DISTURBANCE ACTIVITIES WEDE MCDESSART/APPROPRIATE.
- - DEWATER THE PROPOSED TREACH ALCONDERT THROUGH THE STREAM BY PLACENG THE WATER TO A PLACE PLATE BAILLOCATED A MERICAN OF SO TEXT FROM THE TOP OF THE STREAM BONK HA IN THE THEORY THE STREAM BONK HA IN THE THEORY THE STREAM BONK HA IN THE THEORY THEO

BYPASS STREAM FLOW AROUND THE PROPOSED PPELINE TRENCH BY NESTALLING THE BYPASS SHAP BITWAT AND DESCHARGE HOSES (AND DESCHARGE HOSE DETRO' DISSPANDED), AND PHINPS AS ABOULTIED ON THE ESCY DEALWARKS, SIZE PLANPS FOR DIVERSION OF CHITRE STREAM AROUND THE PRIENT. RESPONSE HALL PLANPS FOR DIVERSION OF CHITRE STREAM AROUND THE PREJION. RESPIRATE LIPLIES BYPASS THE BYPASS FOR THE STREAM AROUND THE STREAMS. SCREEN THE STREAM AROUND THE STREAMS THE STREAM STREAMS THE STREAMS AROUND THE STREAMS BYPASS THE BYPASS FOR THE STREAMS BY BYPASS FOR THE STREAMS BYPASS FOR THE STREAMS BYPASS FOR THE STREAMS B

- EXCAVATE THE PPRIME TRENCH TO A DEPTH THAT WILL ALLOW FOR THE REGULED MARKHLANG OVER TO BE PLACED OVER THE PEPELHE AFTER BACKFILING.
- PLACE TRENCH SPOILS A BRANDA OF 10 FEET FROM THE TOP OF THE STREAM BLANCS WITHIN THE CONSTRUCTION ROW AND INSTALL A SEDIMENT BARRIER (LE, SILT FEACE) DOMINICALIZED OF ANY SPOIL PLES.
- INSTALL THE PIPELINE WITHIN THE TRENCH AND INSTALL TRENCH PLUCS AT ETHER SIDE OF THE STREAM CHANNEL AS INDICATED ON THE ESCY DRAWNOS.
- 12 BACKFILL THE TWENCH WITH SPOIL MATERIAL AND RETURN ALL STREAMBANKS TO PRE-CONSTRUCTION CONTIOURS.
- REMOVE THE UPSTREAM AND DOWNSTREAM SANDBAG DIVERSION DAMS AND BYPASS PUMP INTACES, PUMP, AND DIRECT DISSIPATER.
- APPLY PENAMENT SEEDING TO DISTURBED RIPARIAN AREAS IN ACCORDANCE WITH THE SEEDING RESTORATION TABLES ON THIS SHEET.
- ÿ REMOVE TEMPORARY BRIDGE STREAM CROSSING AS SOOM AS PRACTICABLE FOLLOWING COMPLETION OF WORK ACTIVITIES REQUIRENG THE CROSSING.
- 6 MMEDIATELY STABUZE AREAS (F ANY) DISTURBED DURING REMOVAL OF TEMPORARY EROSION AND SEDMENT CONTROL MEASURES. REMOVE TEMPORARY EROSION AND SECUMENT CONTROL MEASURES ONCE THE SITE HAS BEEN STABILIZED BY A MINIMUM, UNIFORM, PERDANAL 95% VEGETATIVE COVER
- PIPELINE INSTALLATION HORIZONTAL DIRECTION DRILL LOCATIONS: WERFY EROSION AND SEDMENT CONTROLS HAVE BEEN HISTALLED IN ACCORDANCE WITH TREES DRAWNES AND TO THE SATISFACTION OF THE ENVIRONMENTAL MISPECTOR.
- ATTACH A BACK REAMER TO THE STEEL DRILL ROD WHEN THE BORE HEAD AND ROD EMERGE ON THE OPPOSITE SDE OF THE CROSSING. PERFORM EXCAVATION WHERE NECESSARY TO DRILL THE PILOT HOLE ALONG THE PRE-DETERMINED ALIGNMENT WITH A CONTINUOUS STRING STEEL ORLL ROO.
- PULL BACK THE REJAIST THROUGH THE PUOT HOLE TO ENLANCE THE DRUL HOLE TO THE DESNED THROUGH THE DROUGH THE PUBLISH THROUGH THE HOLE.
- NJECT DRELING MUD (E.G., FLUID BENTONITE CLAY) INTO THE BORE DURING CUTTING AND REMONG TO STABILIZE THE HOLE AND REMONE SOIL CUTTINGS.
- BACKFILL THE EXCAVATION USING DOSTING SUBSIGE MATERIAL AND ROUGH GRADE THE COMMITTICTION ROW TO PRE-CONSTRUCTION CONTOURS MINUS THE DEPTH OF THE TOPSOIL PUIL THE ENTRE PIPELINE LENGTH IN ONE SEGMENT BACK THROUGH THE DRILLING MUD ALONG THE REAMED—HOLE PATHWAY.
- REPLACE THE SEGREGATED TOPSOIL OVER THE CONSTRUCTION ROW.
- APRLY PERMANENT SEED, FERTIJZER, AND WILCH OR SOIL STABILIZATION WATTING (WHENE REQUIRED).
- REMOVE TEMPORARY EROSION AND SEDMEDIT CONTROL MEASURES ONCE THE SITE HAS BEEN STABILIZED BY A MEMILIAL INBIGIN, PERDMAL 95% VEGETATIVE COVER.
- HARDIATELY STABILIZE AREAS (IF ANY) DISTURBED DURING REMOVAL OF TEMPORARY EROSION AND SEDMENT CONTROL MEASURES.

- Notify the MDE computance division 5 days prior to the start of construction.
- PERFORM MISTREAM CONSTRUCTION DURING A PERIOD OF EXPECTED CLEAR WEATHER.
- 3. IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES (E.G., SILT FENCE).
- MPLEMENT DIVERSION AND DEWATERING MEASURES (I.E., DAM AND PUMP BYPASS, PLITER BAG).
- REMOVE EXISTING CULVERT AND WISTALL NEW CULVERT AND ROCK OUTLET PROTECTION AS SHOWN ON THE ESCP DRAWNING.
- REMOVE DIVERSION AND DEWATERING MEASURES
- REMOVE TEMPORARY EROSION AND SEDMENT CONTROL MEASURES ONCE THE STE HAS BEEN STABILIZED BY A MEMBUM, UNIFORM, PERDANAL 95% VECETATIVE COVER. APPLY SEED AND MAJOH TO DISTURBED AREAS IN ACCORDANCE WITH THE SEEDING RESTORATION TABLES ON THIS SHEET.
- BAREDIATELY STABILIZE AREAS (IF ANY) DISTURBED DURING REMOVAL OF TEMPORARY ERCISION AND SEDBENT CONTROL BEASIRES.
- DEMOBILIZATION AND SITE CLEANUP:
- UPAN COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT ALL BYLNEED AREAS). THE OWNER MAD/OR OPERATOR SHALL DEFLAN APPROVAL FROM THE 1950.
- REMOVAL TEMPORARY EROSION AND SEDMENT CONTROL MEASURES UPON APPROVAL OF MSCO.
- PENIAMENTLY STABLIZE ANY AREAS THAT ARE DISTURBED DURING REMOVAL OF THE TEMPORARY EXOSION AND SEZUMENT CONTROL NEASURES.
- DEMOBILIZE CINEW, FACILITIES, EQUIPMENT, AND MATERIALS FROM THE SITE.

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

- PROJECT REPRESENTATIVES SHALL CONTACT THE WSCO AT THE FOLLOWING STAGES OF THE PROJECT, UNLESS OTHERWISE UNRECTED BY WSCO REPRESENTATIVES
- PRIOR TO THE START OF EARTH DESIREMATE:

 PRIOR TO THE RESIDENT PRIOR PROCEDURE WITH ANY OTHER EARTH

 DESTRUCTURES BUT BUT ONE PROCEDURE WITH ANY OTHER EARTH

 DESTRUCTURE OR BUT-DRING TO MOTHER PRIOR OF CONSTRUCTION OR OPENING OF

 PRIOR TO THE RESIDENT OF MOTHER PRIOR OF CONSTRUCTION OR OPENING OF

 PRIOR TO THE RESIDENT AND SECURETY CONTROL PRACTICES.
- PRICE TO CONSTRUCTION, CONSTRUCTION PERSONNEL RESPONSEILE FOR EROSON AND SIDUALITH CONTROL SMALL HAME GRITANDE A CONTROLLE OF TRANSMIC FROM AN MEE APPROVED TRANSMIC PROGRAM FOR EROSON AND SIDUALITH CONTROL
- CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THIS ESCP. INCLUDING THE INSPECTION AND MANTENANCE OF ALL CONTROLS. MDE AND OTHER RECULATIONY ACCIDENCES SHALL BE PROVIDED ROSIT OF ENTRY TO THE STRE FOR PERIODIC ON-SITE EVALUATION OF THE CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH THE ESCP.
- ADDITIONAL AND/OR MODIFICATIONS TO THE PROPOSED EROSEM AND SEDMENT!
 CONTROLS MAY BE RECURED BASED ON ACTUAL FEED CONDITIONS ENCONHERDED AT
 THE THAC OF CONSTRUCTION, HE RENERMON ACENTY (MSCD) SHALL BE MOTIFIED OF
 ANY SUBSTIMITINE CHANGES TO THE APPROVED ESSY PRIOR TO MAPLEMENTATION OF
 THOSE CHANGES THE RENERMON ACRICY (MSCD) MAY REQUERE A WRITTEN SUBMITLY
 OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DECRETION.
- ACCUMULATED SOL MATERIALS REMOYED FROM EROSON AND SEDMENT CONTROLS SALL BE SPREAD WITHIN THE CONSTRUCTION ROW AND STABLIZED. ALL BRILLONG MATERIALS AND MEXITS SALL BE REMOYED FROM THE SITE. AND RECYCLED ON DISPOSED OF IN ACCORDANCE WITH THE APPLICABLE RECULATIONS.
- CEMERAL SITE CLEMENC, CAMBRING, AND TOPSOIL STREPPING MAY HOT COMMERCE IN ANY STACE OR PHASE OF THE PROJECT WITH THE EROSION AND SEDMENT CONTROLS FOR THAT STACE OR PHASE HAVE BEEN RISTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS ESCP.
- 10°SCH, SHALL BE STOCKPILED SEPARATELY FROM SUBSOL AT THE WORK AREA EXCANATIONS FOR REUSE WITHEN ACTIVAL FROM SUBSOL AT THE LANDOWNER'S OR LAND MANAGING ACCHOL'S REQUEST.
- ALL DISTURBED GRAVEL AND PAYED AREAS SHALL BE REPLACED IN-KIND IN COORDMATION WITH THE LANDOWNER.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
- 3 CALENDAR DAYS AS TO THE SURFACE OF ALL PERMETER DIKES, SWALES, DITCHES, PERMETER SLOPES, AND ALL SLOPES STEEDER THAN 34:11Y, AND 7 CALENDAR DAYS, AS TO ALL DIKER DESTREED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

TOPOGRAPHIC INFORMATION OBTAINED FROM ENSITE USA DATED 1/25/2017.

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- Franke data within the project area is based upon GPS survey provided by distre usa on 1/23/2017 and distreed information obtaned from google earth acrial blagery.
- EXISTING CONTOURS ARE SHOWN AT A 2-FOOT CONTOUR INTERVAL
- AERIAL IMAGERY OBTAINED FROM ENSITE USA ON 1/25/2017.
- PRELIMINARY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOODPLAIN BOUNDARY INFORMATION DATED 8/14/2013 WAS OBTAINED FROM MARYLAND !



ARCADIS U.S., INC

SEQUENCE OF CONSTRUCTION FOR CULVERIS AND UTILITY CROSSINGS:

PERMANENT STABLUZATION NOTES:

B. SOIL PH BETWEEN 6.0 AND 7.0.

SQUIRBLE SALTS LESS THAN 300 PARTS PER MILLION (PPM).

SQUIRBLE SALTS LESS THAN 300 PARTS PER MILLION (PPM).

C. SOIL CONTINES LESS THAN 400 CLAY BUT ENOUGH FINE CEMACITY TO HOUD A MODERNET HAN 30% SLIT PLUS CLAY) TO PROVINCE THE CUPACHASS WILL BE PLANTED, THEN A SAMOY SOIL (LESS THAN 30% SLIT PLUS CLAY).

A. WOLLD BE ACCEPTABLE.

G. SQL CONTINES 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

B. SQL CONTINES 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.

PENTENATION.

APPUCATION OF AMERICADITY OR TOPSOL IS REQUIRED IF ON-SITE SOLS MEET THE ABOVE CONDITIONS. DO NOT

graded areas must be maintained in a true and even grade as specified on the approved esco. Then scarified on otherwise loosured to a depth of 3 to 3 mones.

APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESILTS OF A SOIL TEST.

CR OTHER PERMIT TRACKED TRACKED OR OTHER A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VECETATIVE ESTABLE ARE: MORE, THE

WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATION OF ATTENDANCE AT A MARYLAND DEPARTMENT OF ENVIRONMENT AND ERSONN THEORY OF STEMENT AND ERSONN THE CONTROL OF SEDMENT AND ERSONN SEFORE THE BEGINNING PROGRAM FOR THE CONTROL OF SEDMENT AND ERSONN BEFORE THE BEGINNING OF THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-STITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

OWNER'S / DEVELOPER'S CERTIFICATION

08/21/2017 PHONE NUMBER 716-386-3302

OWNER/DEVELOPER SIGNATURE

5151 SAN FELIPE, SUITE 2400, HOUSTON, TX 77056

PRINTED NAME AND TITLE CLIFFORD ABBOTT, US ENVIRONMENTAL PLANNING & PERMITTING PRINCIPAL

DESIGN CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN OF EROSION & SEDIMENT CONTROL AND/OR POND DESIGNS (ASPARE IN ACCORDANCE WITH THE 2011 STANDARDS AND SPECIFICATIONS AND DAY OTHER LOCAL OR STATE REQUIREMENTS. ANY STORMWATER STRUCTURES ARE DESIGNED IN ACCORDANCE WITH THE WASHINGTON COUNTY STORMWATER MANAGEMENT ORDINANCE AND ACCEPTED STANDARDS OF ENGINEERING PRACTICE.

DESIGNER'S SIGNATURE 8/21/2017 PHONE NUMBER ALLEN LONG 724-934-9562

MD REGISTRATION NUMBER

PRINTED NAME

(P.E. PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL BIGHER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 42518, EXPIRATION DATE: 06-24-2018. R.L.S. R.L.A. (CIRCLE)

SIGNATURE

DATE

SEED MIXTURE: CAPPLICATION RATE (LBS/ACRE) TEMPORARY SEEDING,
ARDINESS ZONE: 6A
E: COOL SEASON GRASS MIXES ORARY SEEDING/WETLAND SEED MIX FERTILIZER RATE* (10-20-20) (LBS/ACRE) UME RATE* (TONS/ ACRE) N STRAW MULCH RATE (TONS/ ACRE) 2.5

_	_						MADOU 4 TO BAIL 15.	100			
	ļ .		Š	N P.O K.O	z	SEEDING DEPTHS (IN)		E) OPTIM	APPLICATION RATE (LBS/ACRE) OPTIMAL SEEDING DATES		SPECIES
RATE (TONS/	•	ACRE)	Õ.	(LBS/ACRE)	(G		SEED MIXTURE: COOL SEASON GRASS MIXES	: COOL SE/	SEED MIXTURI		
LIME RATE STRAW MULCH	RATE STR	3ML	<u> </u>	FERTILIZER TYPE	FERTI		NE: 6A	HARDINESS ZONE: 6A	Ж		
						AREAS	RESIDENTIAL AREAS				
	_						ā		8	BIRDSFOOT TREFOIL	BIRDSFO
2.5		N	8	90	45	¥-%	AUGUST 15 TO OCTOBER		25	PERENNIAL RYEGRASS	ERENNIA
							MARCH 1 TO JUNE 15:		40	TALL FESCUE	TALL
	.		~ 0	P,0	z	APPLICATION RATE (LBS/ACRE) OPTIMAL SEEDING DATES SEEDING DEPTHS (IN) N P.O K.O	OPTIMAL SEEDING DATE	(LBS/ACRE)	APPLICATION RATE	SPECIES	SP
ACRE)	RA.	ACRE)	Ē.	(LBS/ACRE)	(E)		SEED MIXTURE: COOL SEASON GRASS MIXES	E COOL SE	SEED MIXTUR		
(10-20-20) LIME RATE STRAW MULCH	RATE STR	LIME	<u> </u>	FERTILIZER TYPE	FERTIL (10-		NE: 6A	HARDINESS ZONE: 6A	н		
						OF-WAY	UTILITY RIGHTS-OF-WAY				
					-						

Date MARCH 2017 ARCADIS Project No CPGL00EP.0001.0008A

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L NOTES

GENERA

EASTERN PANHANOL

NSCANADA COMPANY . HOUSTON, TEXAS EXPANSION PROJECT

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MAL SEEDING DATES
RCH 1 TO JUNE 15;
ST 15 TO OCTOBER 15

X-X

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90

8

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ACRE) 2.5

CADIS 11 Wellace Road Extension to 300

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8	Date	Revisions	ş	Ckd	1			. 4
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		TATAL DE LES TEXTS COCCA CT STORE						

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	PERMANENT SEEDING (UTILITY RIGHT-OF-WAY)	PERMANENT SEEDING (RESIDENTIAL AREAS)	PERMANENT SEEDING (WETLAND SEED MIX)	TEMPORARY SEEDING (SOIL STOCKPILES)	HORIZONTAL DIRECTION DRILLING ENTRY/EXIT	MOUNTABLE BERMS	RIPRAP BASIN ENERGY DISSIPATOR	DAM AND PUMP BYPASS STREAM CROSSING	WEIGHTED SEDIMENT FILTER TUBE	TIMBER MATS FOR WETLAND CROSSING	TEMPORARY ACCESS BRIDGE
	51.4	1.7	0.1	2.6	2	7	45	6	17	60	4
***	ACRES	ACRES	ACRES	ACRES	EACH	EACH	CUBIC YARDS	EACH	LOCATIONS	LINEAR FEET	EACH

STABILIZED CONSTRUCTION ENTRANCE (SCE) PLASTIC MESH TREE PROTECTION FENCE GEOTEXTILE UNDERLAYMENT PER SCE SOIL STABILIZATION MATTING PROJECT/DISTURBED AREA INTERCEPTOR DIVERSIONS SCE WITH WASH RACK SUPER SILT FENCE STONE PER SCE PIPELINE LENGTH TRENCH PLUGS DESCRIPTION SUMMARY OF QUANTITIES AS REQUIRED 25,000 16,542 QUANTITY 125,000 8,840 9,250 53.2 750 12 55 15 6 FOR SEDIMENT REMOVAL SQUARE FEET SQUARE FEET CUBIC YARDS LINEAR FEET LINEAR FEET LINEAR FEET LINEAR FEET EACH ACRES EACH TINU

> ----980----18 2 ₽ 📵 PROPOSED 8" FEE GAS
> TRANSMISSION LINE
> MILEPOST MARKER EXISTING L10240, L1804, AND L138 GAS TRANSMISSION LINES EXISTING STREAM EXISTING GRAVEL ROAD EXISTING ELEVATION CONTOUR APPROXIMATE PROPERTY BOUNDARY INTERCEPTOR DIVERSION (34) EXISTING TREELINE EXISTING RAILROAD EXISTING OVERHEAD ELECTRIC LINE EXISTING WETLAND AQUATIC RESOURCE (I.E., STREAM OR WETLAND) ID EXISTING ROAD EXISTING FENCE LINE EXISTING BUILDING ADDITIONAL TEMPORARY WORK SPACE EXISTING CULVERT EXISTING UNDERGROUND CABLE LINE 25-FOOT NON-TIDAL WETLAND BUFFER STREAM FLOW DIRECTION LIMIT OF DISTURBANCE FEMA FLOODPLAIN BOUNDARY PROPOSED 8"# EPE GAS TRENCH PLUG 2 TEMPORARY EXISTING GUY WIRE ANCHOR EXISTING POWER POLE EXISTING WATER WELL HDD ENTRY/EXIT E STATE WORK SPACE

INTERCEPTOR DIVERSIONS / MOUNTABLE BERMS

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

FILTER BAG

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

REPLACE CLOSGED FILTER BAGS, REPLACE THE FILTER BAG IF THE BAG IS RIPPED, TORN, AND/OR PUNCTURED. KEEP THE CONNECTION BETWEEN THE PUMP HOSE AND FILTER BAG WATER TIGHT DURING OPERATION. REPLACE BEDDING THAT BECOMES DISPLACED.

REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN THE SILT FENCE OR WHEN REDMEINT REACHES 25% OF THE FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, REINSTALL FENCE IF UNDERMINING OCCURS.

ESTABLISH AND MAINTAIN VEGETATIVE STABILIZATION SO THAT ADEQUATE VEGETATIVE STABILIZATION (95% GROUNDCOVER) IS CONTINUOUSLY MET.

ADEQUATE VEGETATIVE STABILIZATION REQUIRES 95% GROUNDCOVER. IF AN AREA HAS LESS THAN 40% GROUNDCOVER, RESTABILIZE FOLLOWING THE ORIGINAL RECOMMENDATIONS FOR LIME, FERTILIZER, SEEDBED PREPARATION, AND SEEDING. IF AN AREA HAS BETWEEN 40% AND 94% GROUNDCOVER, OVER—SEED AND FERTILIZE USING HALF OF THE RATES ORIGINALLY SPECIFIED.

TRENCH PLUGS

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

REMOVE WATER THAT ACCUMULATES BEHIND TRENCH PLUGS WITH DEWATERING PUMPS DISCHARGING THROUGH PUMPED WATER FILTER BAGS. MANITAIN THE LINE, GRADE, AND CROSS-SECTION OF THE INTERCEPTOR DIVERSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS AND MAINTAIN POSITIVE DRAINAGE. KEEP INTERCEPTOR DIVERSION FREE OF EROSION WITH VEGETATIVE STABILIZATION.

STABILIZE THE APPROACH TO THE BRIDGE AND KEEP FREE OF EROSION, CLEAN DECKING AND CURBS OF SEDWENT DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING, MAINTAIN THE DECKING AND CURBS TIGHTLY BUTTED WITHOUT GAPS, REMOVE DEBRIS TRAPPED BY THE BRIDGE, MAINTAIN AREAS ADJACENT TO THE CROSSING TO MEET THE REQUIREMENTS OF ADEQUATE VEGETATIVE STABILIZATION.

REPLACE DAMAGED TUBES WITHIN 24 HOURS OF INSPECTION, REMOVE SEDIMENT WHEN ACCUMULATION REACHES ½ ABOVE GROUND HEIGHT OF TUBE AND UPON REMOVAL FOR EQUIPMENT CROSSING.

EMPORARY ACCESS BRIDGE

DAILY AND THE NEXT DAY AFTER EACH RAIN EVENT

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

IMMEDIATELY REPAIR OR REPLACE ANY FAILED PUMP OR LEAKS IN PIPING AND/OR IMPROPER CONNECTION TO THE PUMP, REPAIR AND EROSION AT THE DISCHARGE POINT AND INSTALL MEASURES TO PREVENT FURTHER EROSION. IMMEDIATELY REPAIR LEAKS OR DAMAGES TO THE IMPERVIOUS DAM.

REPAIR DAMAGES WITHIN 24 HOURS OF INSPECTION AND PRIOR TO ANY SUBSEQUENT USE. REMOVE SEDIMENT DEPOSITS ON CROSSING OR APPROACHES TO CROSSING WITHIN 24 HOURS OF INSPECTION.

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT SOIL STABILIZATION MATTING

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

ADEQUATE VEGETATIVE STABILIZATION

WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT

STABILIZED CONSTRUCTION ENTRANCE

CONTINUOUSLY DURING WORK DAY AND THE NEXT DAY AFTER EACH RAIN EVENT

CONSTANTLY MAINTAIN IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT BY ADDING STONE OR MAKING OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN A CLEAN SURFACE, THE MOUNTABLE BERM, AND THE SPECIFIED DIMENSIONS. ALL STONE OR SEDIMENT SPILED, DROPPED, OR TRACKED ONTO THE ADJACENT ROADWAY MUST BE REMOVED IMMEDIATELY BY VACULUMING, SCRAPPING, AND/OR SWEEPING, WASHING THE ROADWAY TO REMOVE SEDIMENT TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE. INSTALL WITH WASHING THE ROADWAY TO REMOVE SEDIMENT TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE. INSTALL WITH WASHING THE ROCKS AS NEEDED.

MAINTENANCE/REPAIR REQUIREMENT

(0)

DAM AND PUMP BYPASS $\begin{pmatrix} 4\\35 \end{pmatrix}$

E&S CONTROL MEASURE

INSPECTION REQUIREMENT

MAINTENANCE SCHEDULE

SILT FENCE $\begin{pmatrix} 3\\ 33 \end{pmatrix}$ SUPER SILT FENCE $\begin{pmatrix} 4\\ 33 \end{pmatrix}$

GAS TRANSMISSION, LLC., A TRANSMISSION, LLC. ANSCANADA COMPANY . HOUSTON, TEXAS E EXPANSION PROJECT

GENERAL NOTES AND LEGEND

ARCADIS 6041 Welsice Road Extension Suite 300 Wexford, PA 15060 Tel. 724.742.9180 Date MARCH 2017

ARCADIS Project No. CPGL00EP 0001 0008A

RIRPAP BASIN 4 STEELERGY DISSIPATION 37 STABILIZED CONSTRUCTION

ENTRANCE (WITH WASH

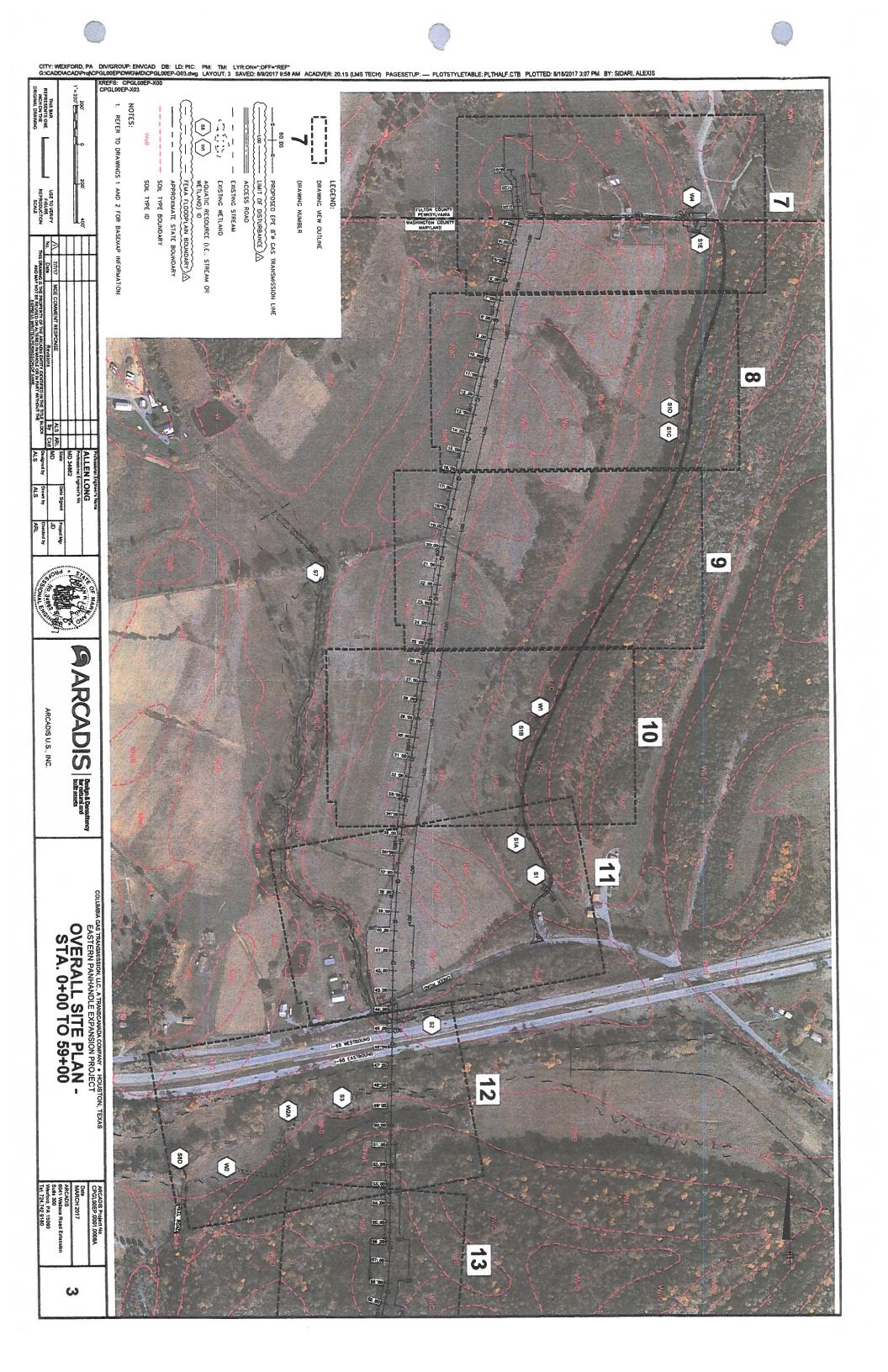
RACK AS REQUIRED)

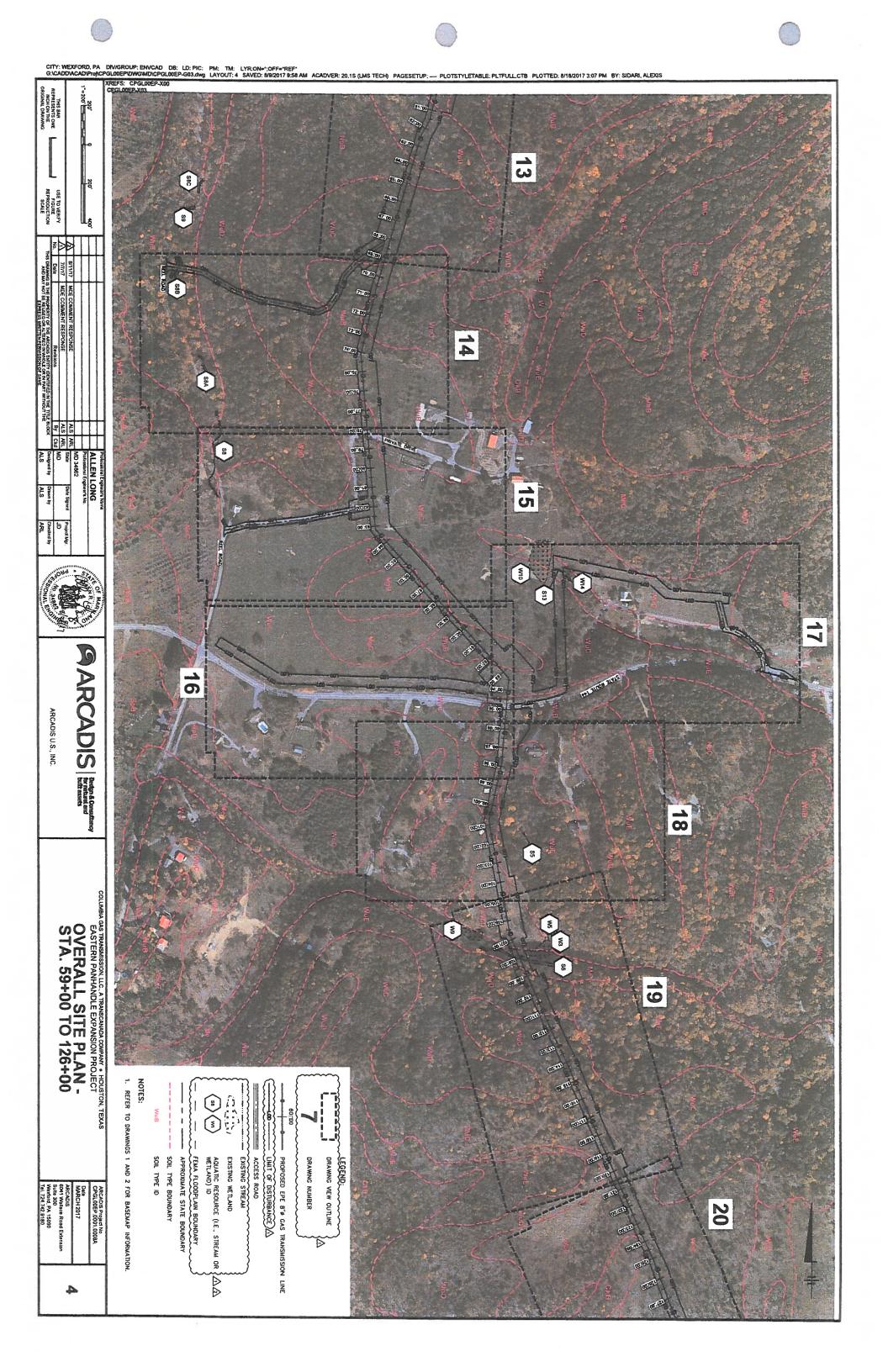
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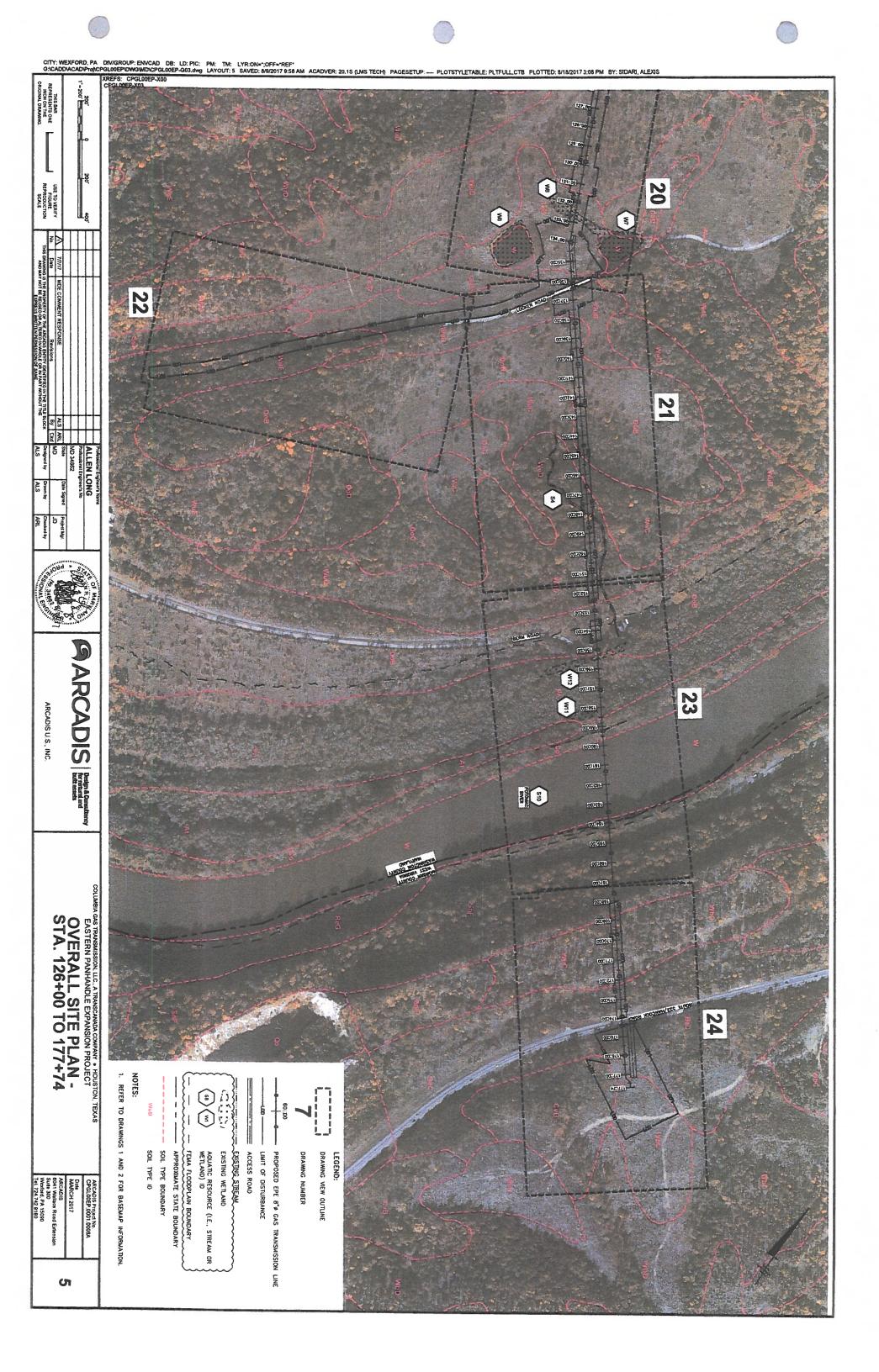
33 TEMPORARY ACCESS (2)
BRIDGE 35 FB FILTER BAG $\left(\frac{3}{34}\right)$ PLASTIC MESH
TREE PROTECTION 37
FENCE WETLAND CROSSING (36) MOUNTABLE BERM $\left(\begin{array}{c}4\\36\end{array}\right)$ SOIL STABILIZATION (15) DRAWING REFERENCE NUMBER DETAIL REFERENCE NUMBER WEIGHTED SEDIMENT FILTER 2
TUBE) (A)

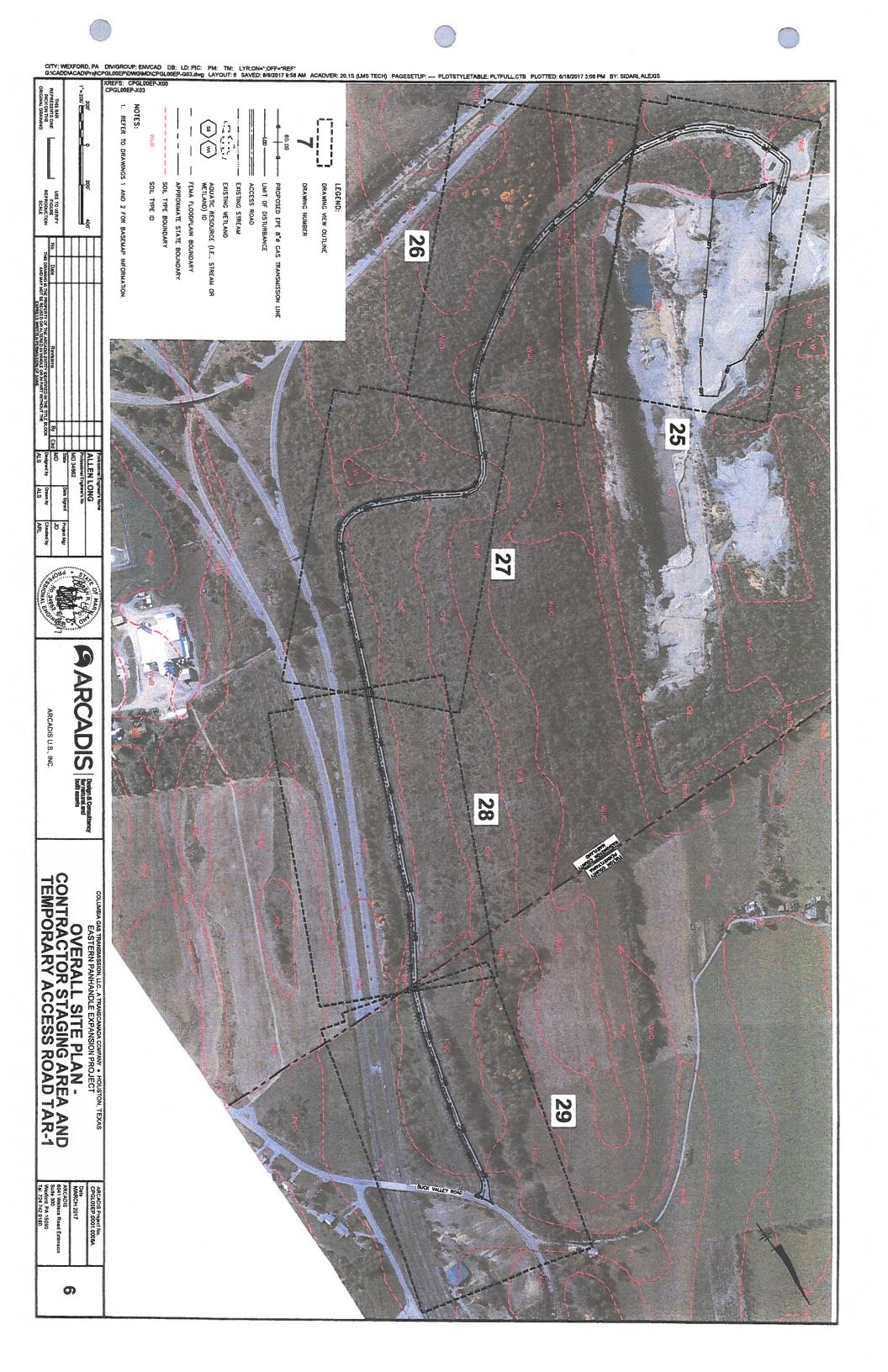
ARCADIS | Design & Consultancy for natural and built assets

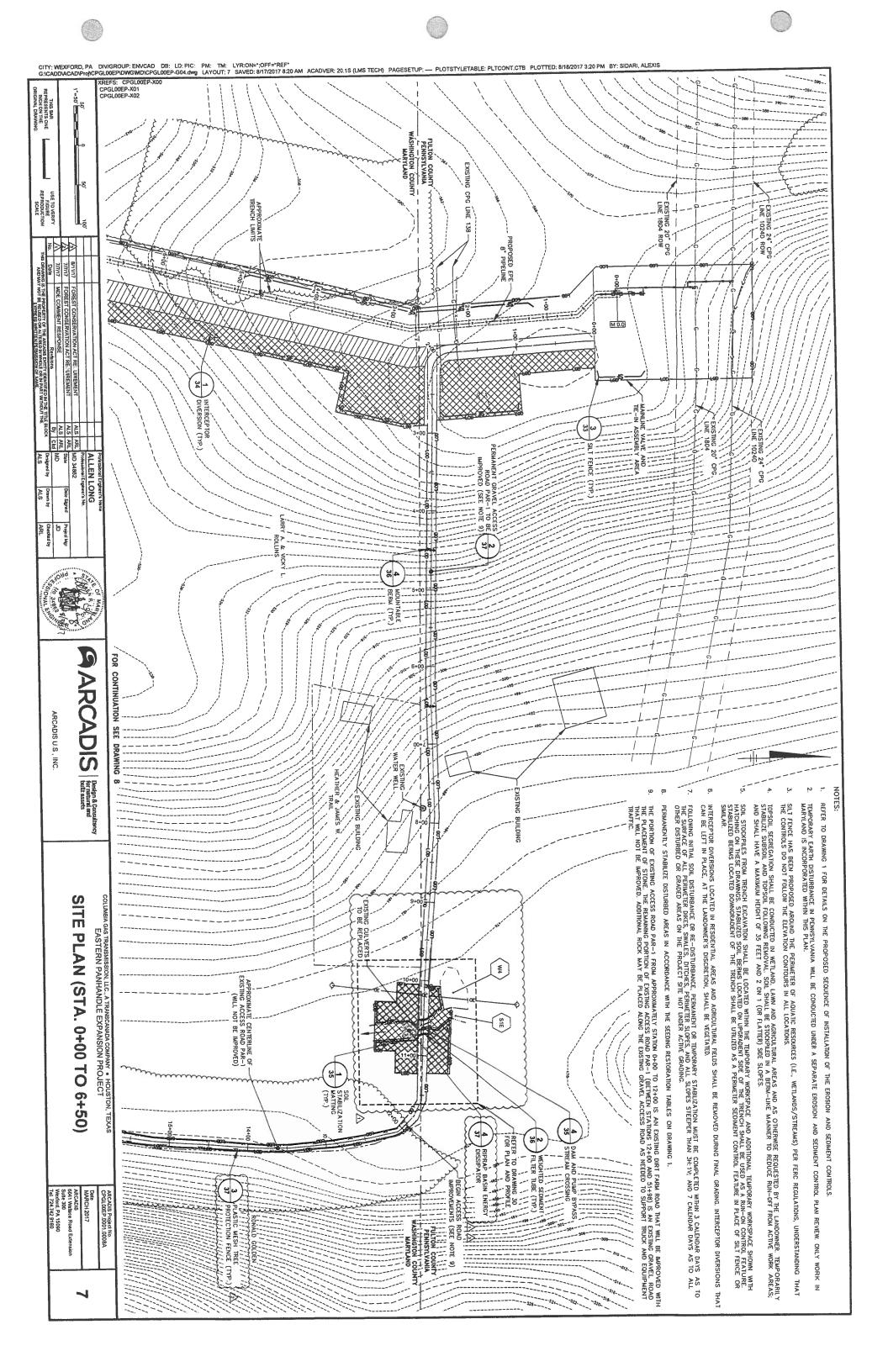
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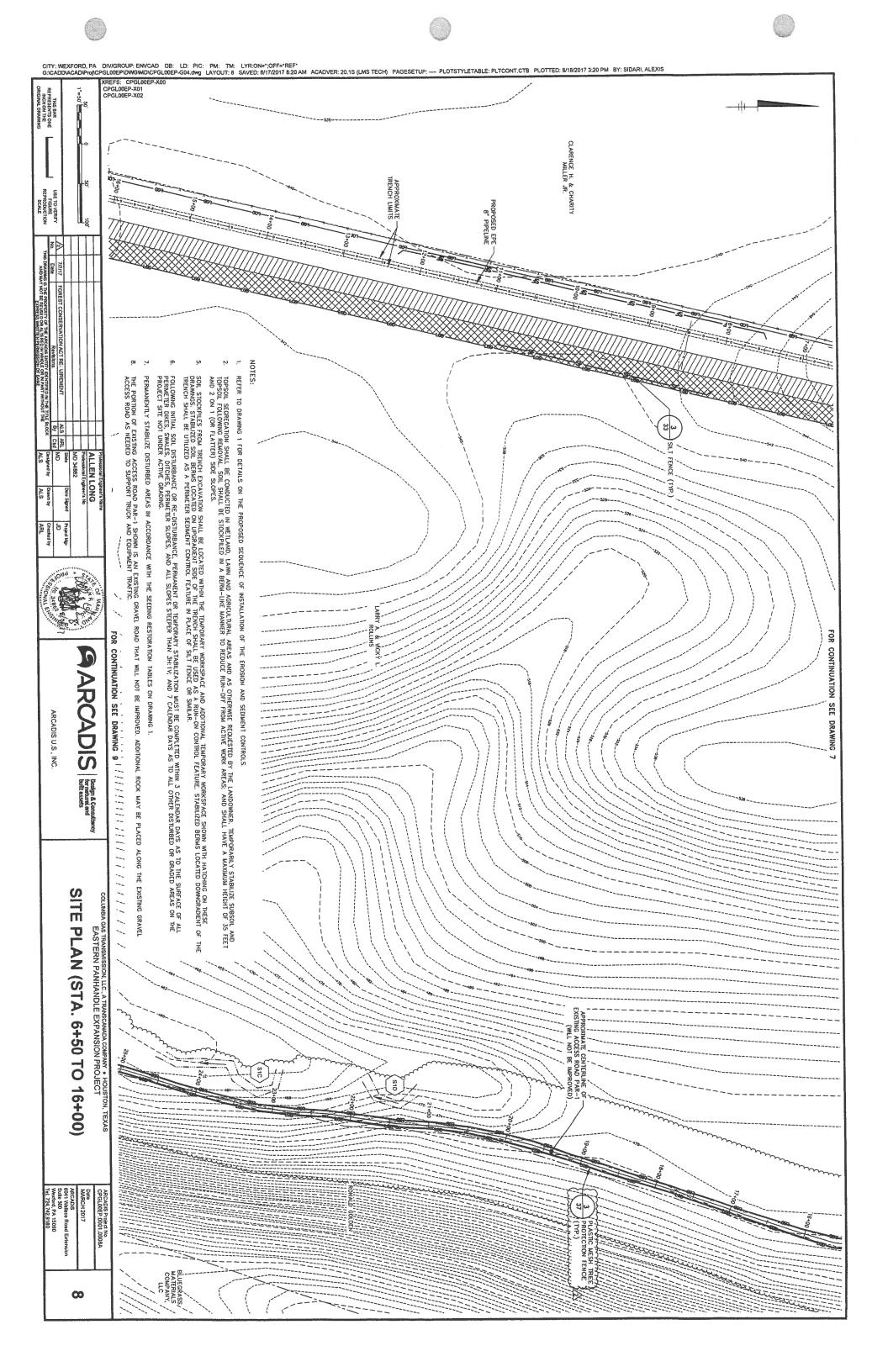


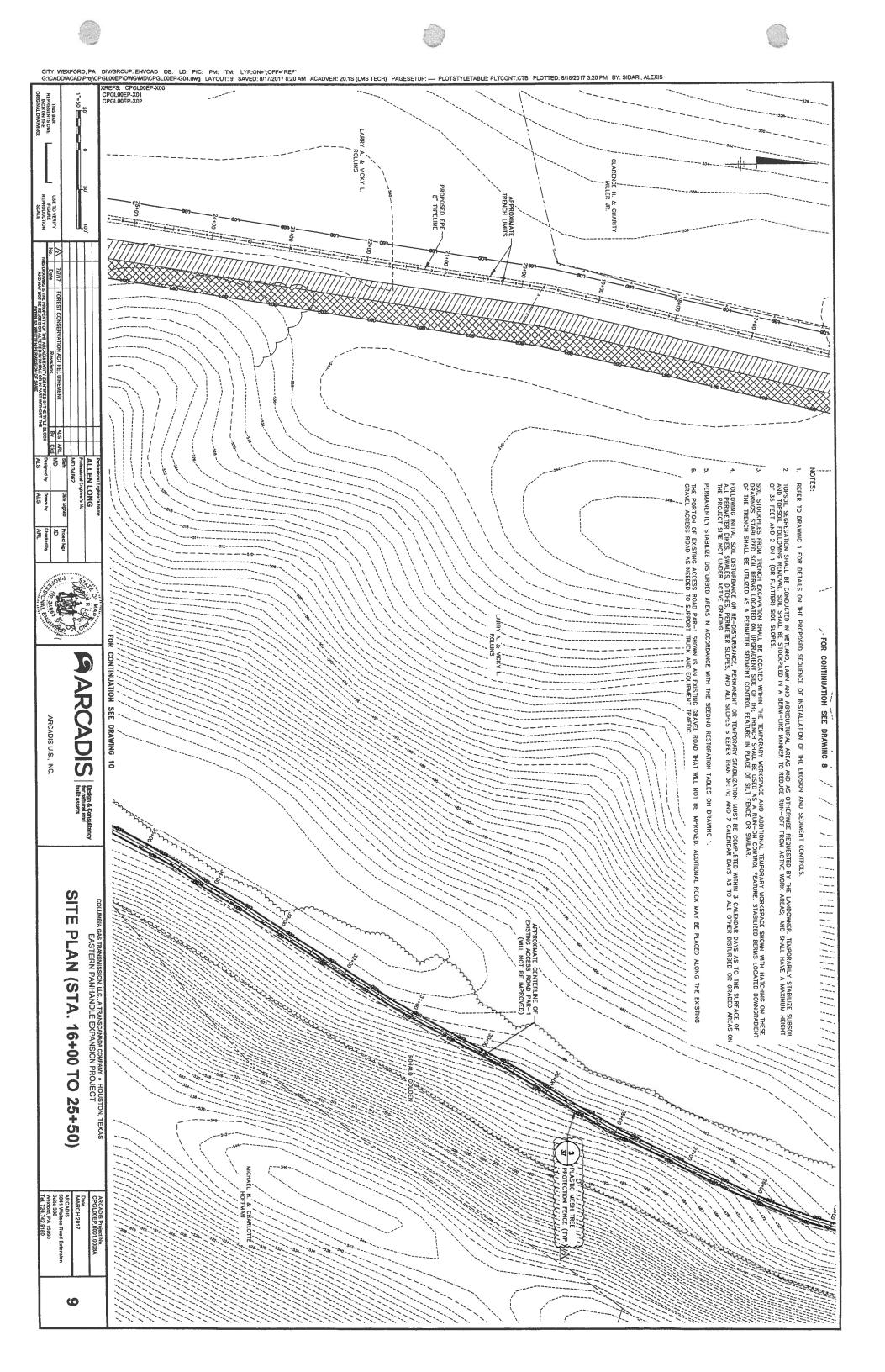


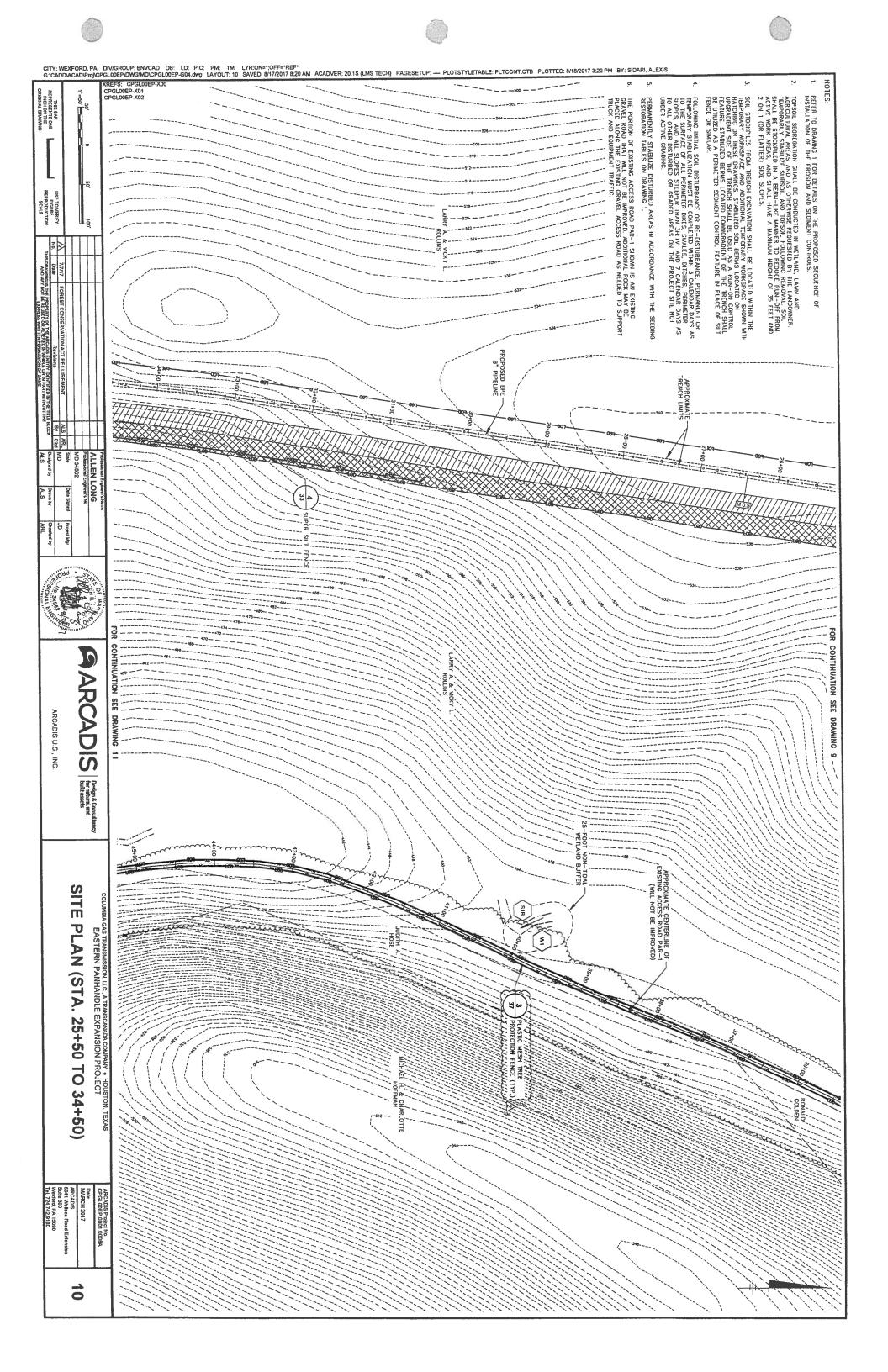


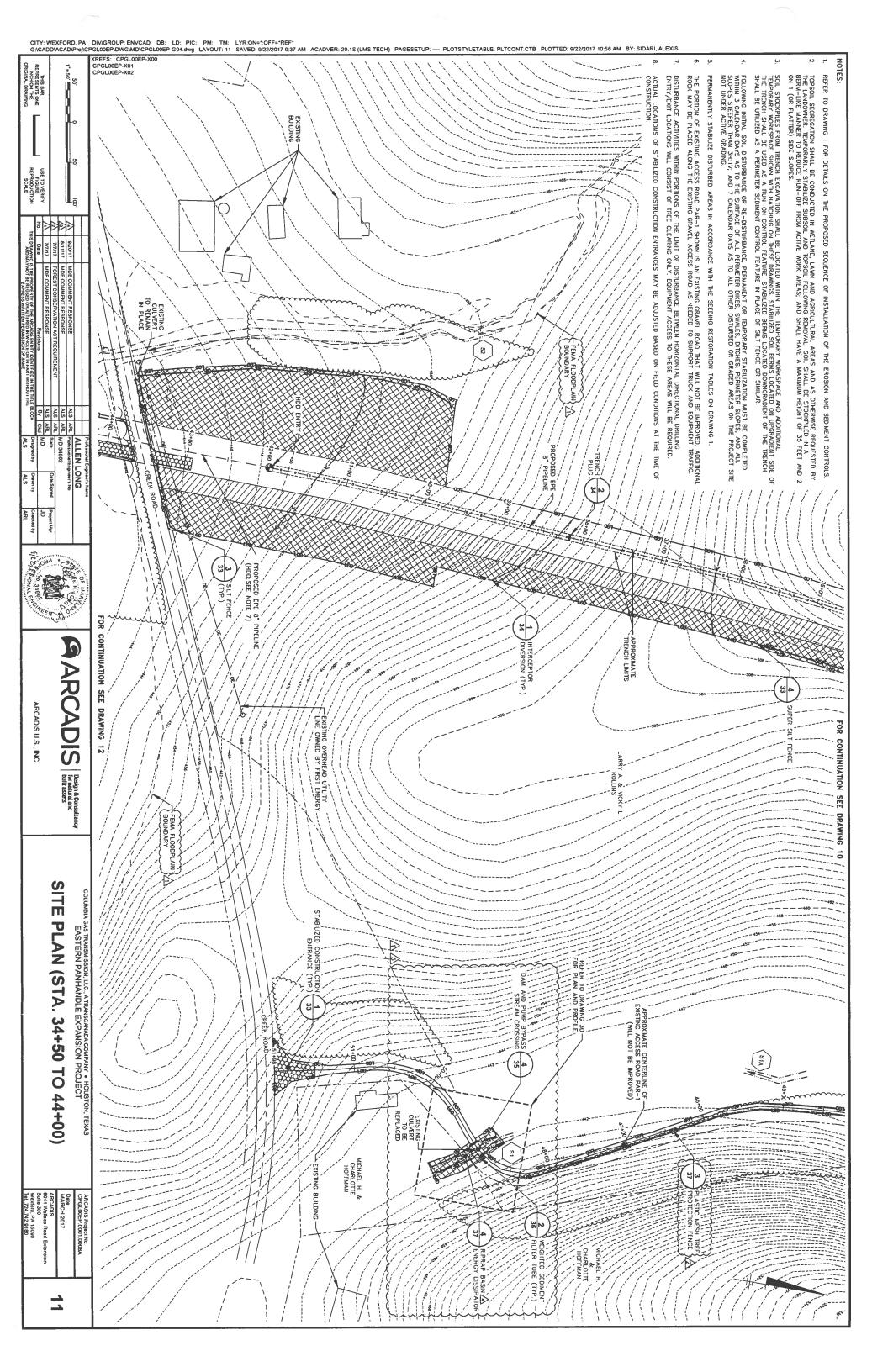


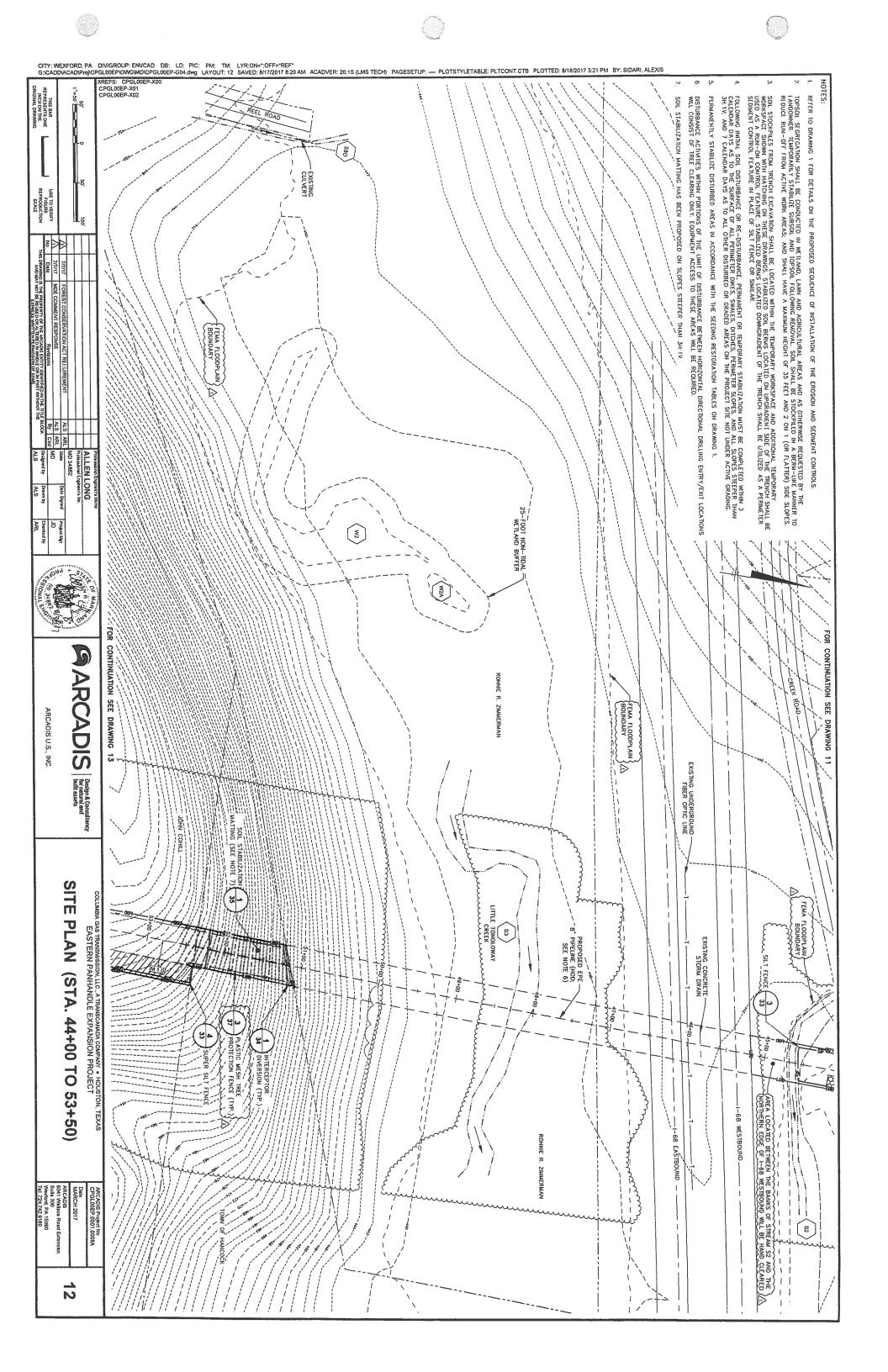




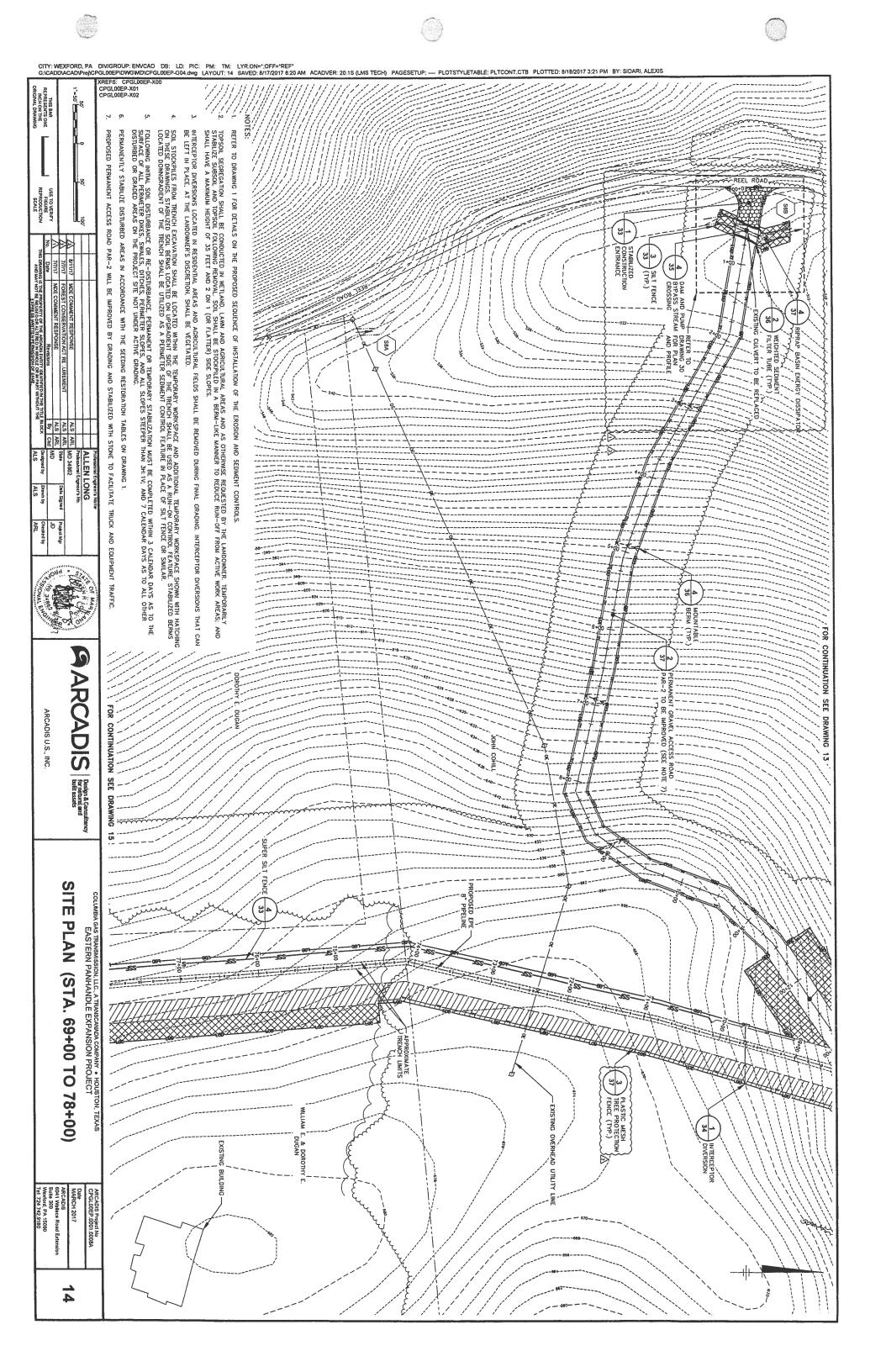


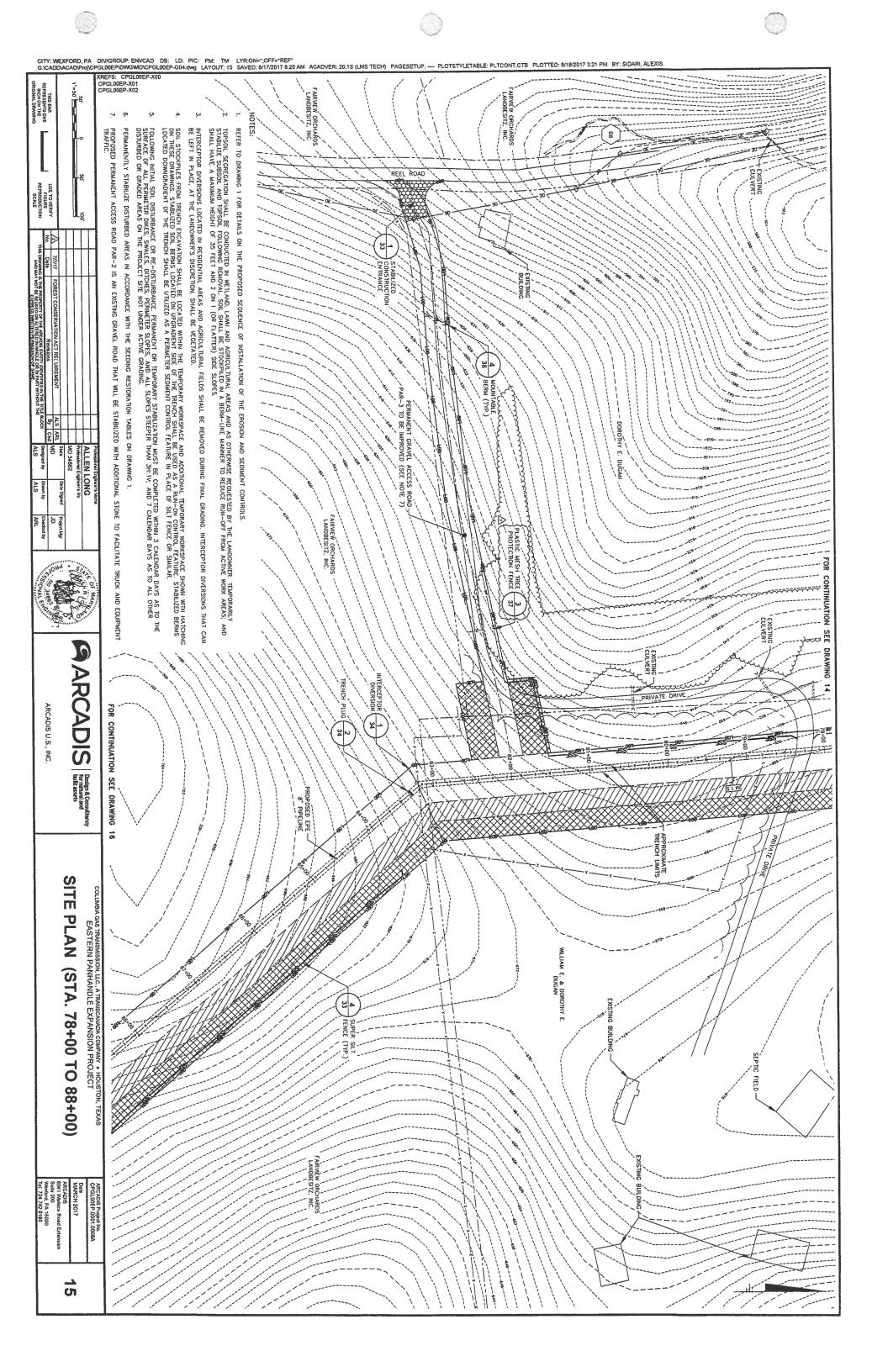


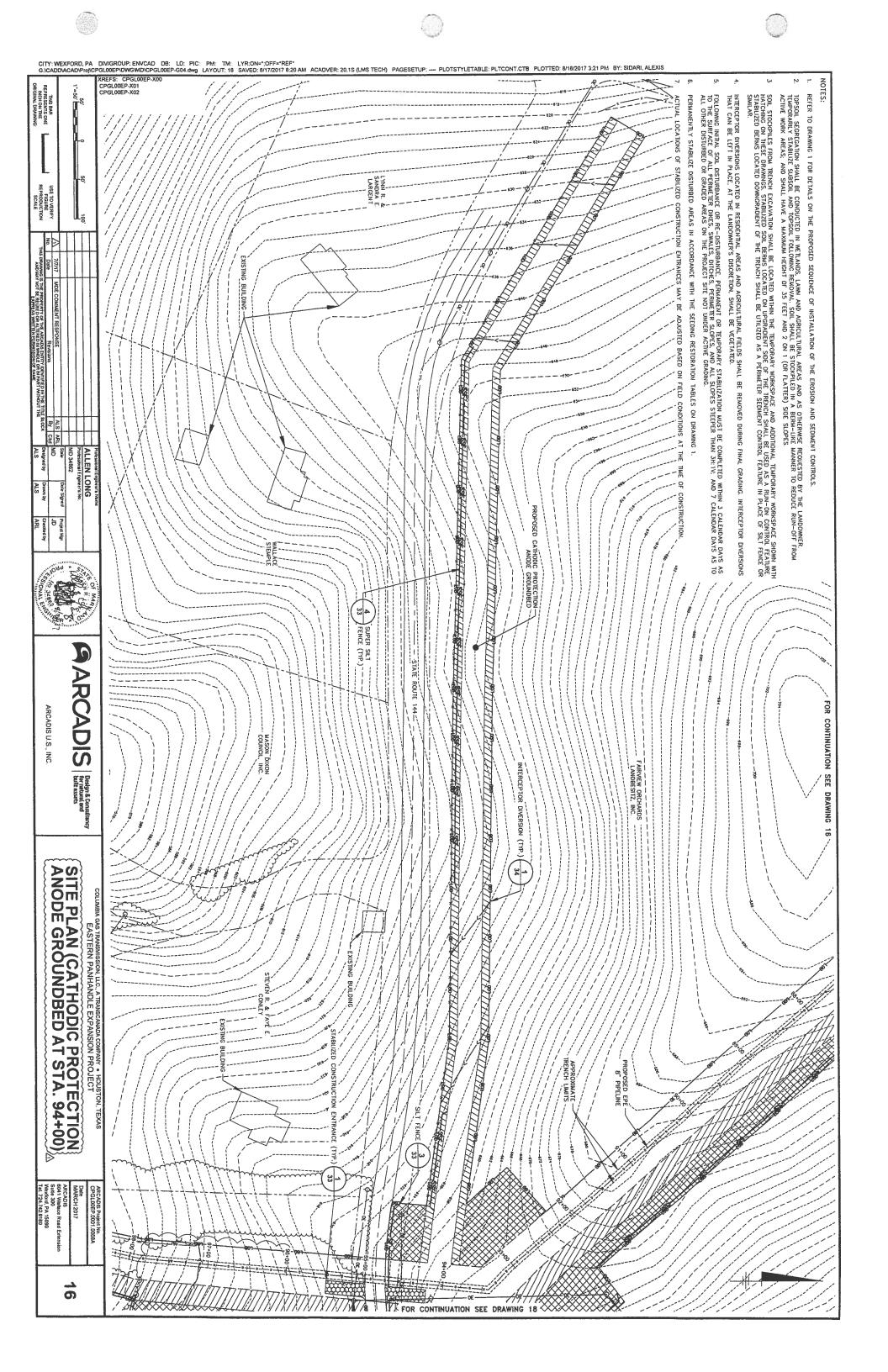


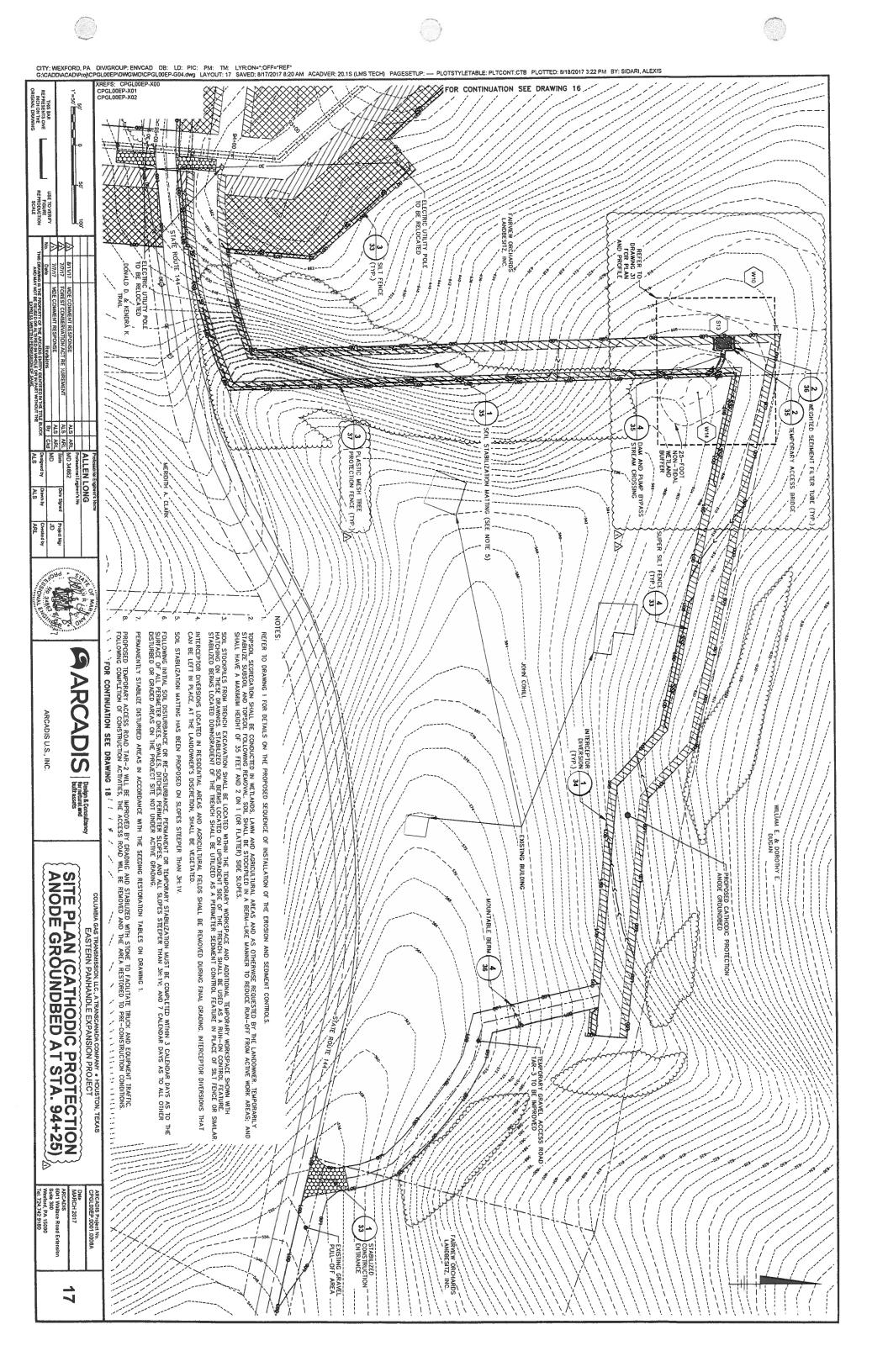


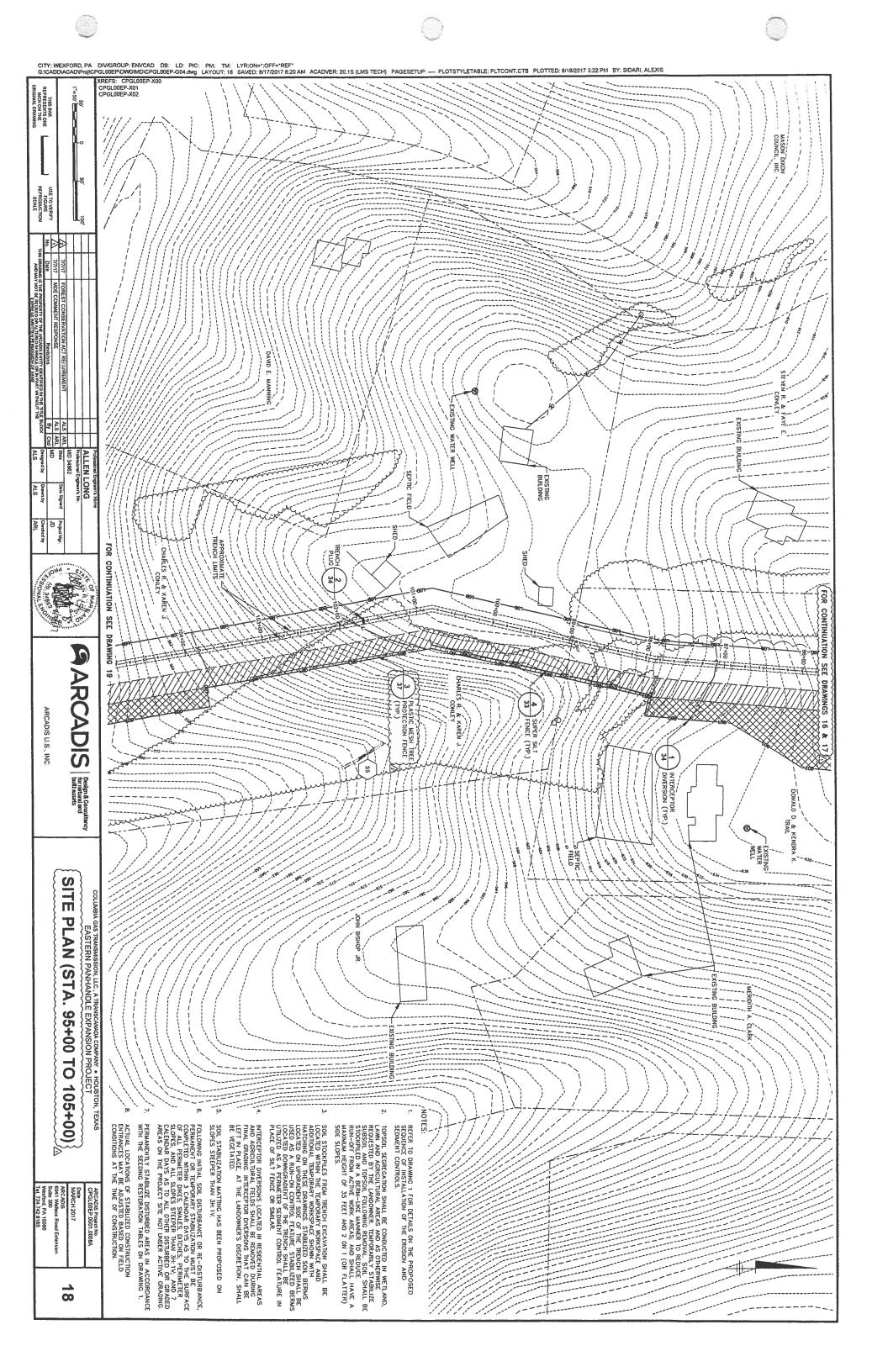
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PGL00EPIDWGWDICPGL00EP-G04.dwg LAYOUT: 13 SAVED: 8/17/2017 8:20 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: — PLOTSTYLETABLE: PLTCONT.CTB PLOTTED: 8/18/2017 3:21 KREFS: CPGL00EP-X0 CPGL00EP-X01 CPGL00EP-X02 FOR CONTINUATION SEE DRAWING SOIL STOCKPILES FROM TRENCH EXCAVATION SHALL BE LOCATED WITHIN THE TEMPORARY WORKSPACE AND ADDITIONAL TEMPORARY WORKSPACE SHOWN WITH HATCHING ON THESE DRAWNOS. STABILIZED SOIL BERNS LOCATED ON UPGRADIENT SIDE OF THE TRENCH SHALL BE UTILIZED AS A RUN-ON CONTROL FEATURE. STABILIZED BERNS LOCATED DOWNGRADIENT OF THE TRENCH SHALL BE UTILIZED AS A PERIMETER SEDIMENT CONTROL FEATURE IN PLACE OF SILT FENCE OR SIMILAR. TOPSOIL SEGREGATION SHALL BE CONDUCTED IN WETLAND, LAWN AND AGRICULTURAL AREAS AND AS OTHERWISE REQUESTED BY THE LANDOWNER. TEMPORARILY STABILIZE SUBSOIL AND TOPSOIL FOLLOWING REMOVAL. SOIL SHALL BE STOCKPILED IN A BERM-LIKE MANNER TO REDUCE RUN-OFF FROM ACTIVE WORK AREAS; AND SHALL HAVE A MAXIMUM HEIGHT OF 35 FEET AND 2 ON 1 (OR FLATTER) SIDE SLOPES. REFER TO DRAWING 1 FOR DETAILS ON THE PROPOSED SEQUENCE OF INSTALLATION OF THE EROSION AND SEDIMENT CONTROLS. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN 3 CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 34:19, AND 7 CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING. PROPOSED PERMANENT ACCESS ROAD PAR-2 IS AN EXISTING FARM ROAD THAT WILL BE STABILIZED WITH STONE TO FACILITATE TRUCK AND EQUIPMENT TRAFFIC SOIL STABILIZATION MATTING HAS BEEN PROPOSED ON SLOPES STEEPER THAN 3H: IV. DISTURBANCE ACTIVITIES WITHIN PORTIONS OF THE LIMIT OF DISTURBANCE BETWEEN HORIZONTAL DIRECTIONAL DRILLING ENTRY/EXIT LOCATIONS WILL CONSIST OF TREE CLEARING ONLY. EQUIPMENT ACCESS TO THESE AREAS WILL BE REQUIRED. SITE PLAN (STA SCANADA COMPANY • HOUSTON, TEXAS EXPANSION PROJECT 53+50 TO 69+00) ်ည္တယ ည FOR CONTINUATION SEE DRAWING 14

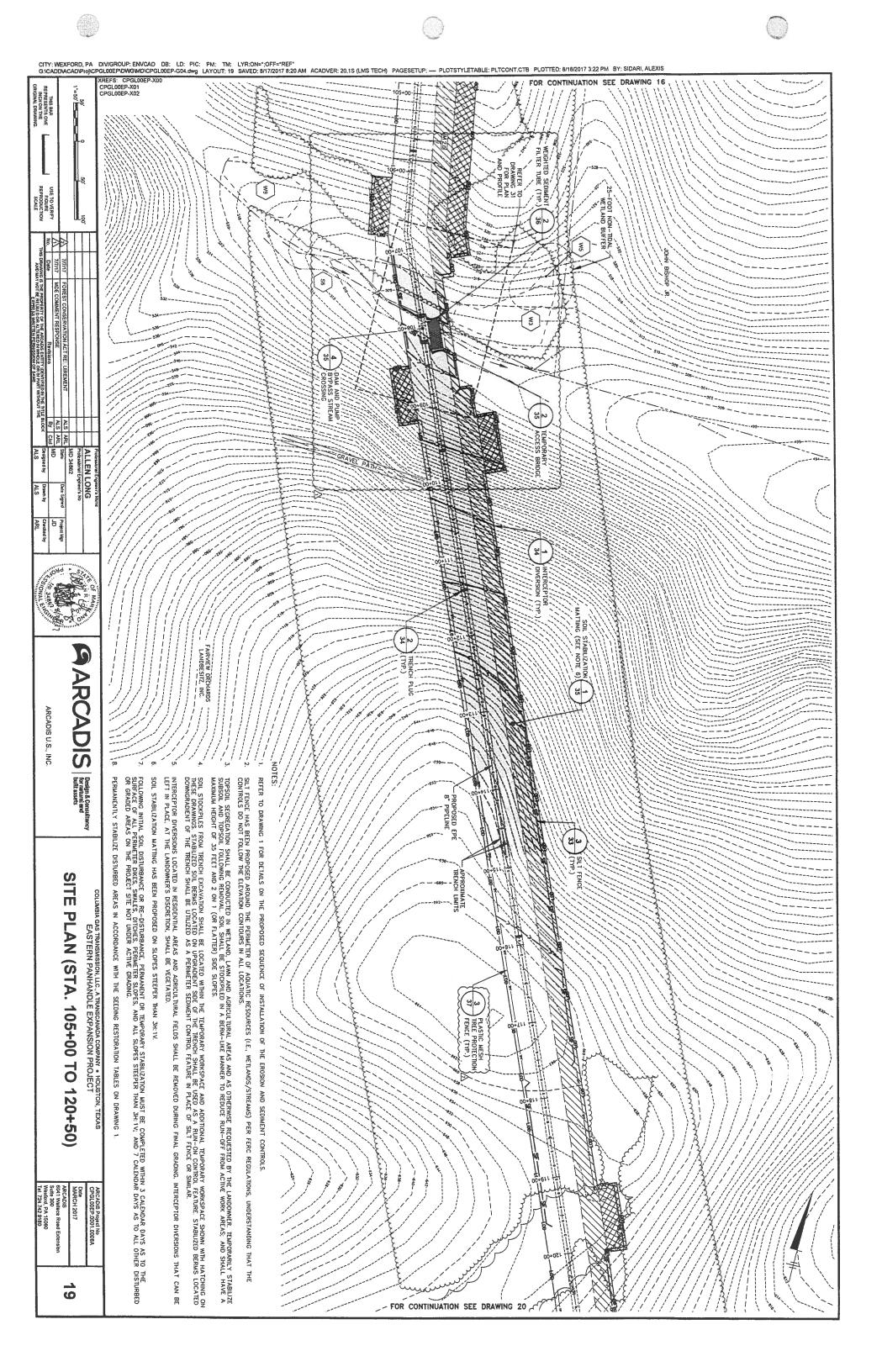


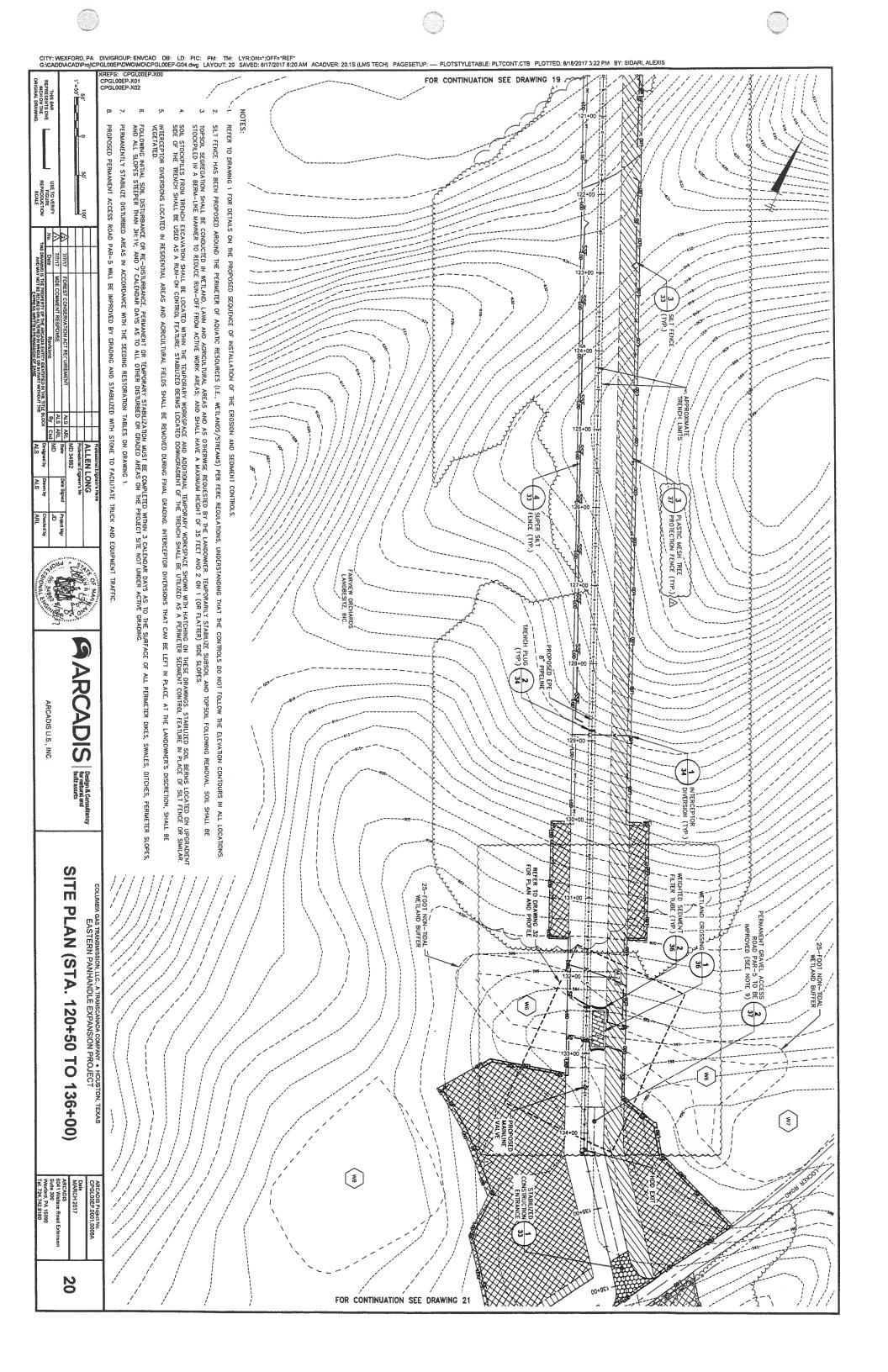


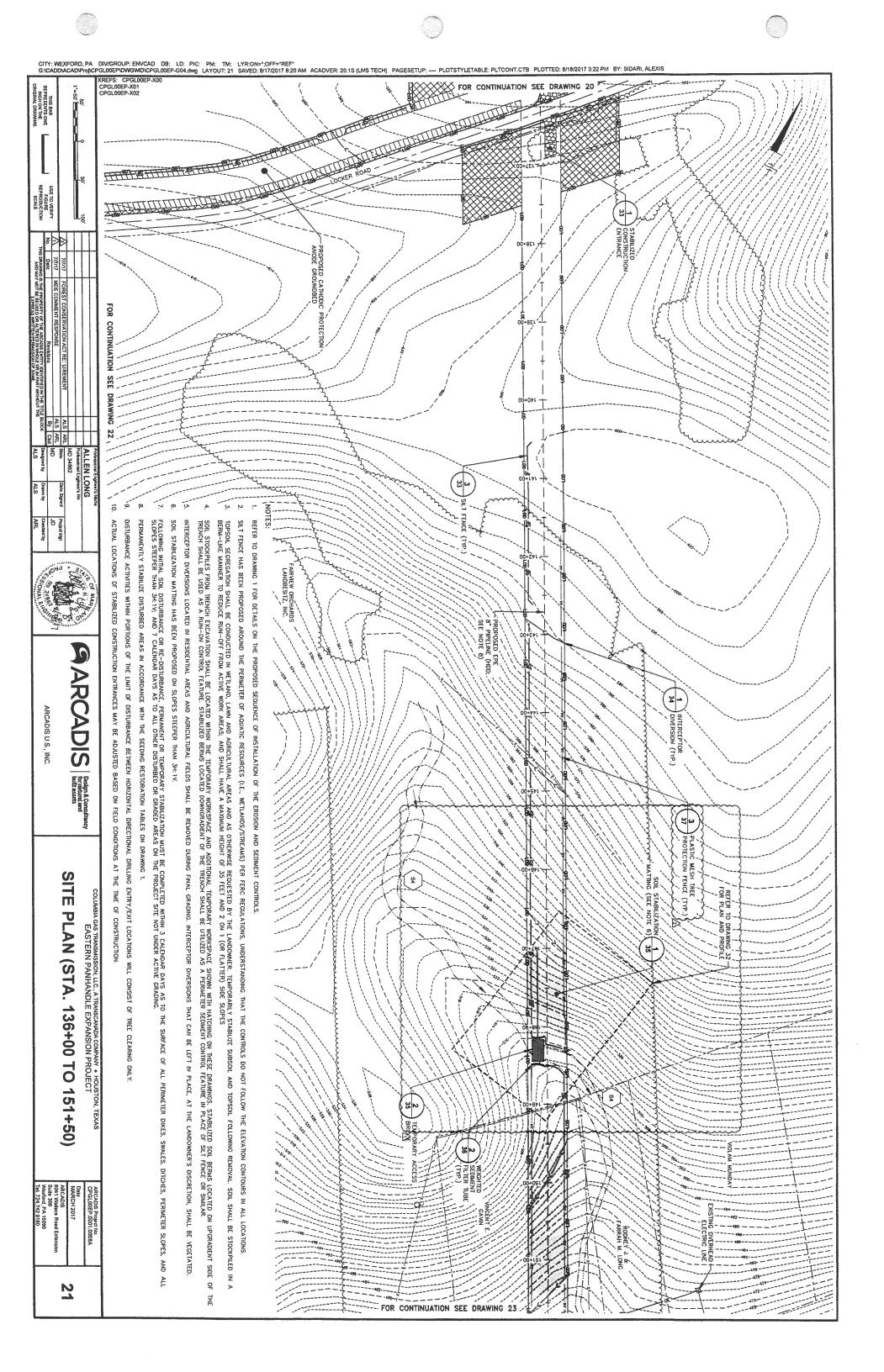


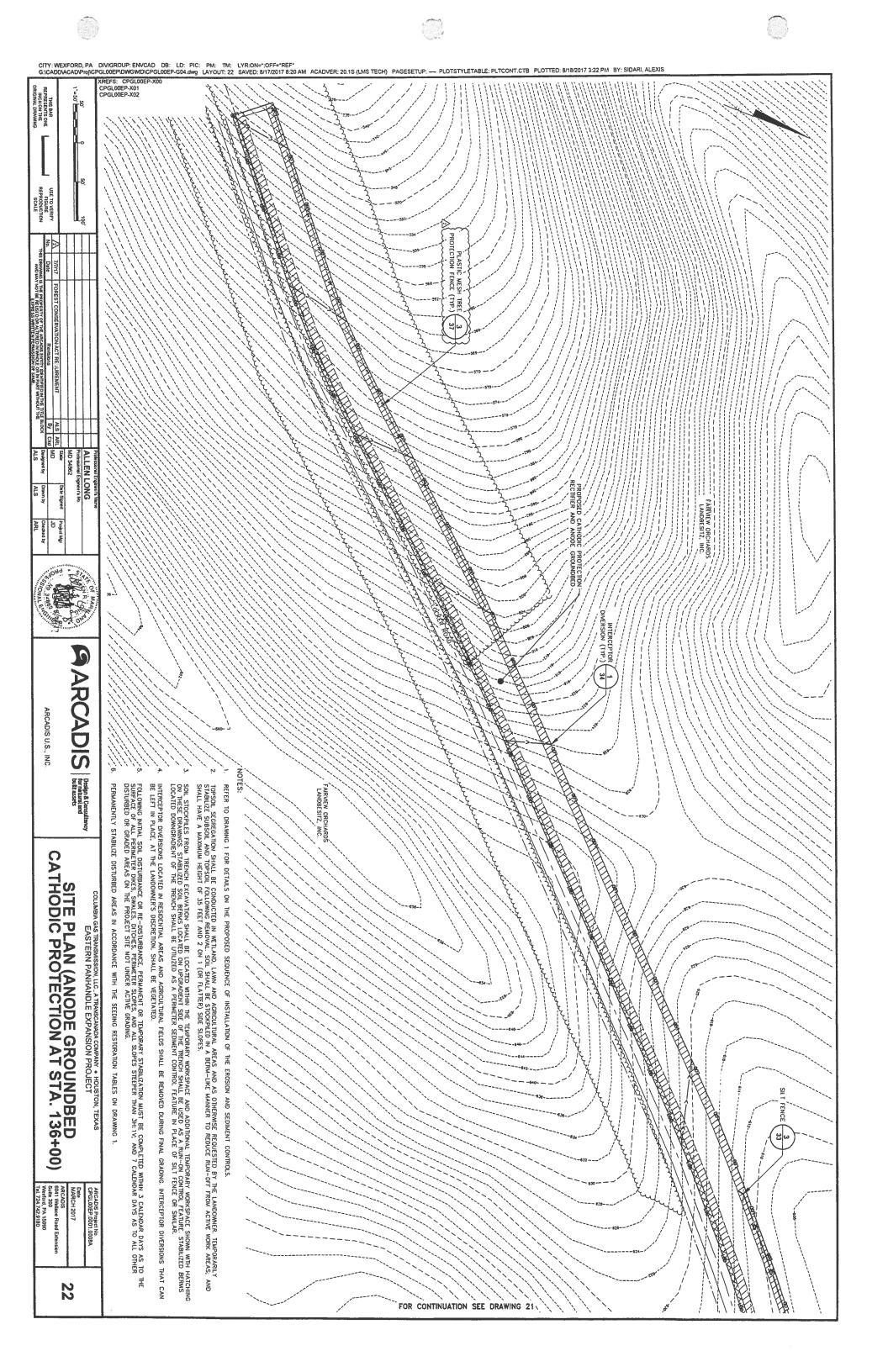








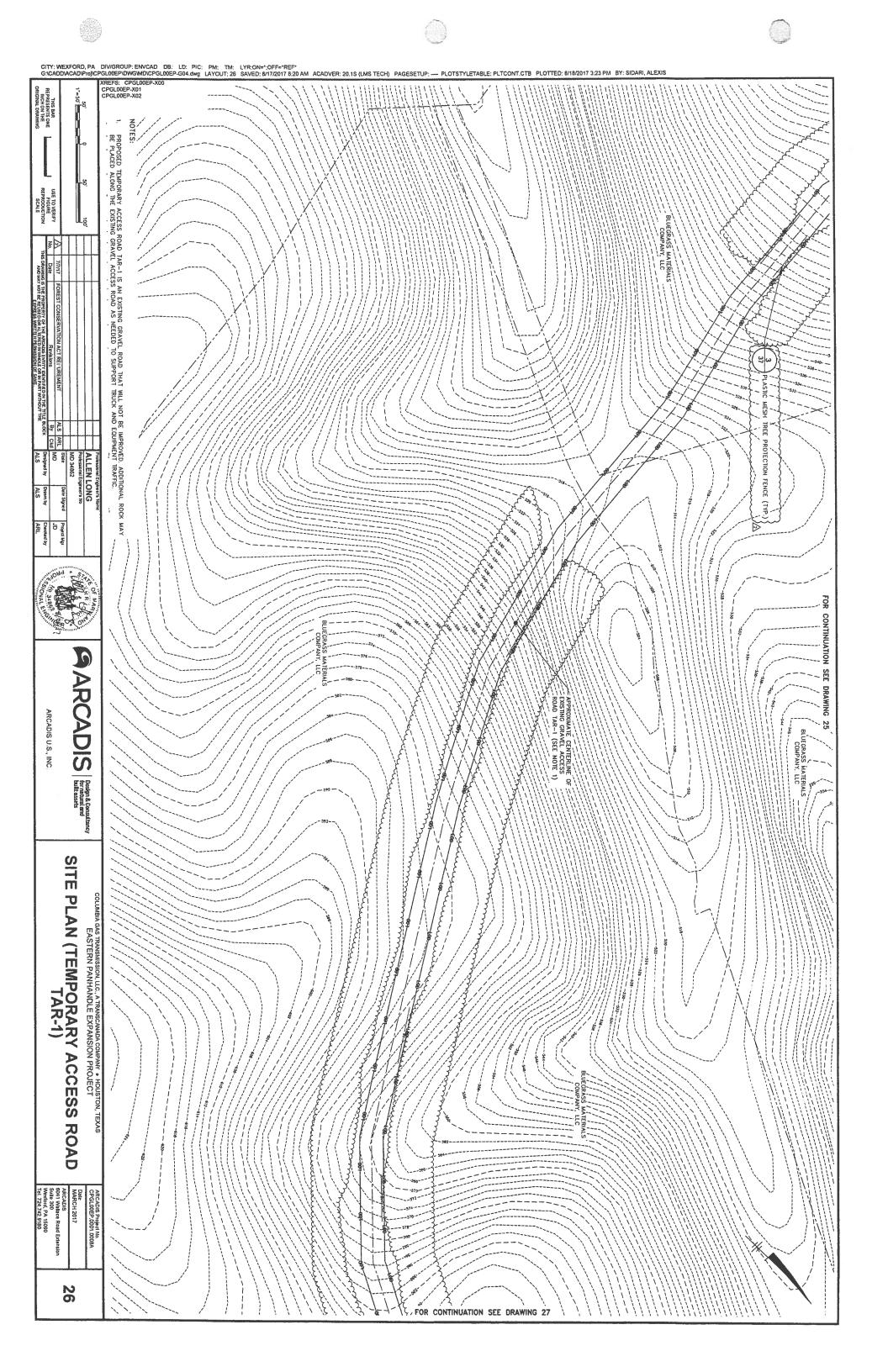


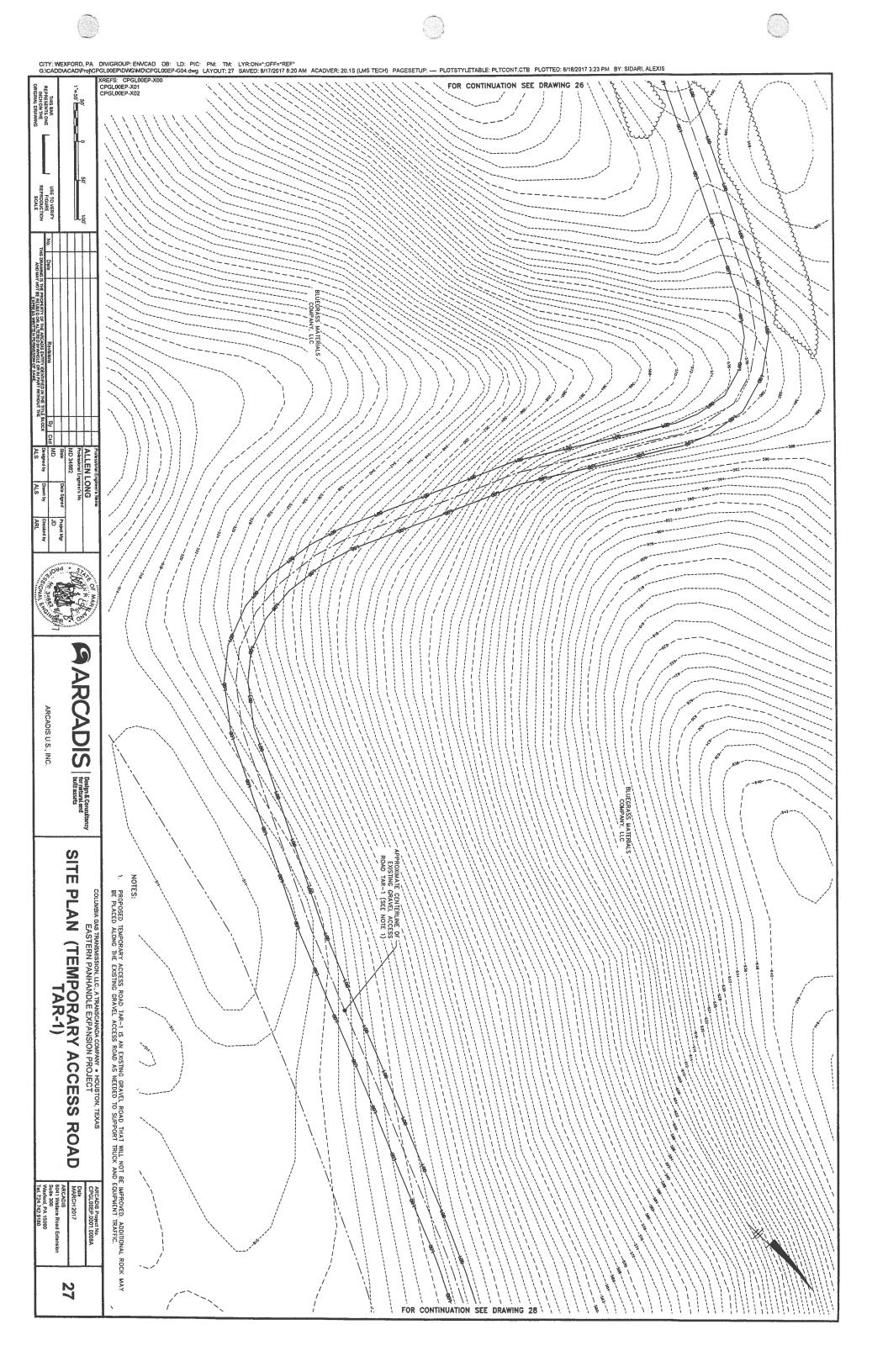


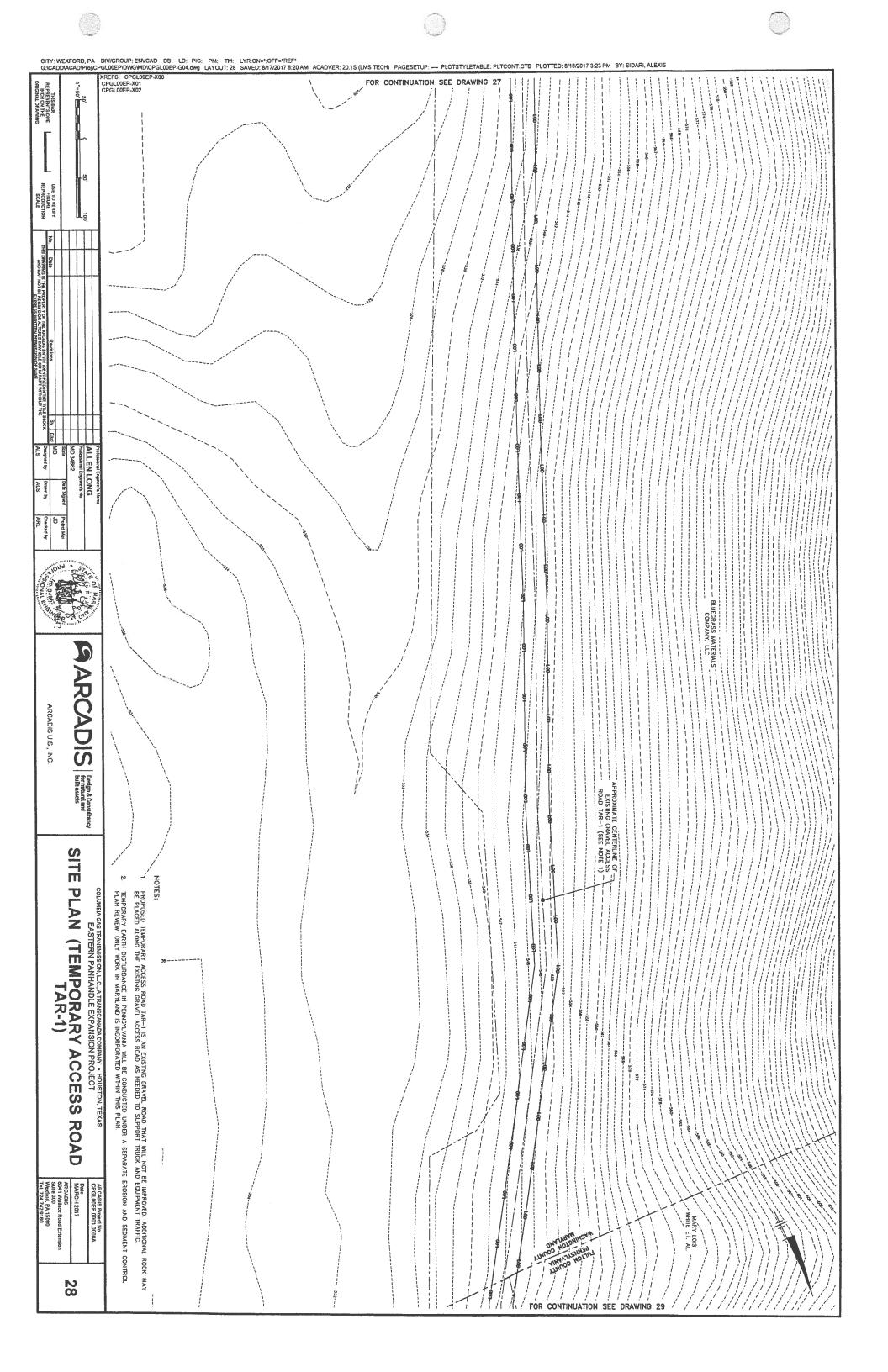
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XREFS: CPGL00E CPGL00EP-X01 CPGL00EP-X02 THIS BAR PRESENTS ONE INCH ON THE IGINAL DRAWING APPROXIMATE CENTERLINE OF EXISTING GRAVEL ACCESS.
ROAD TAR-1 (SEE NOTE 2) USE TO VERIFY
FIGURE
REPRODUCTION
SCALE EXISTING OVERHEAD EXISTING -ALS ARL ALLEN LONG
Professional Engineer's No. PLASTIC MESH TREE PROTECTION PROPOSED CONTRACTOR STAGING --90 FOR CONTINUATION SEE DRAWING ARCADIS ARCADIS U.S., INC. NOTES: SITE PLAN (CONTRACTOR STAGING AREA AND TEMPORARY ACCESS ROAD TAR-1) PROPOSED TEMPORARY ACCESS ROAD TAR-1 IS AN EXISTING GRAVEL ROAD THAT WILL NOT BE IMPROVED. ADDITIONAL ROCK MAY BE PLACED ALONG THE EXISTING GRAVEL ACCESS ROAD AS NEEDED TO SUPPORT TRUCK AND EQUIPMENT TRAFFIC. THE PROPOSED CONTRACTOR STAGING AREA IS LOCATED ON EXISTING GRAVEL SURFACES. IT IS NOT ANTICIPATED THAT USE OF THE STAGING AREA WILL RESULT IN SOIL DISTURBANCE IF EXCESSIVE RUTTING OCCURS, THE AREA WILL BE STABILIZED WITH GEOTEXTILE AND GRAVEL FOR THE REMAINDER OF WORK. THIS AREA WILL REMAIN A GRAVEL SURFACE FOLLOWING COMPLETION OF CONSTRUCTION ACTIVITIES. COLUMBIA GAS TRANSMISSION, LLC., A TRAN EASTERN PANHANDLE NSCANADA COMPANY • HOUSTON, TEXAS EXPANSION PROJECT Date
MARCH 2017

ARCADIS
6041 Walace Road Extension
Suite 300
Waxford PA 15090
Waxford 7A 15090 ARCADIS Project No. CPGL00EP 0001.0008A 25







XREFS: CPGL00 CPGL00EP-X01 CPGL00EP-X02 NOTES: PROPOSED TEMPORARY ACCESS ROAD TAR-1 IS AN EXISTING GRAVEL ROAD THAT WILL NOT BE IMPROVED. ADDITIONAL ROCK MAY BE PLACED ALONG THE EXISTING GRAVEL ACCESS ROAD AS NEEDED TO SUPPORT TRUCK AND EQUIPMENT TRAFFIC. TEMPORARY EARTH DISTURBANCE IN PENNSYLVANIA WILL BE CONDUCTED UNDER A SEPARATE EROSION AND SEDIMENT CONTROL PLAN REVIEW. ONLY WORK IN MARYLAND IS INCORPORATED WITHIN THIS PLAN. APPROXIMATE CENTERLINE OF TEXTSTING GRAVEL ACCESS
ROAD TAR-1 (SEE NOTE 1) LAFARCE MID-ATLANTIC, LLC ARCADIS | Design & Consultantly for matural and built asserts ARCADIS U.S., INC. SITE PLAN (TEMPORARY ACCESS ROAD TAR-1) COLUMBIA GAS TRANSMISSION, LLC., A TRAN
EASTERN PANHANDLE STABILIZED CONSTRUCTION ----NSCANADA COMPANY . HOUSTON, TEXAS EXPANSION PROJECT Date
MARCH 2017
ARCADIS
BQ41 Wellace Road Extension
Suria 309
Wexford, PA 15050
Tel 724/742 9180 ARCADIS Project No CPGL00EP.0001.0008A 29

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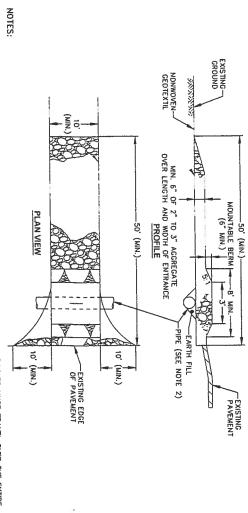
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MARCH 2017

ARCADIS 6041 Wellace Road Extension Suite 300 Wexford, PA 15000 Tel 724 742 9180

DIVIGROUP: ENVCAD DB: LD: PIC: PM: TM: LYR:ON=";OFF="REF"
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REPRESENTS ONE
INCH ON THE
ORIGINAL DRAWING. 131+75 590 600 610 620 580 25-FOOT NON-TIDAL WETLAND BUFFER 132+00 34 DIVERSION DWENT 2 USE TO VERIFY
FIGURE
REPRODUCTION
SCALE EDGE OF WETLAND WE RESOURCE WETLAND W6 PIPELINE PROFILE S4 (M6) ₩6 STATION PLAN EDICE OF WETLAND W 132+79 148+06 STATION 4 SILT NINIMUM 3' ELEVATION DIFFERENCE JF AQUATIC
JRCE ON SITE (SF)
2,600
599 203 (F) B' GAS PIPELINE ALS ARL ALS ARL By Ckd TEMPORARY MD 34862 State MD ALLEN LONG
Professional Engineer's No STREAM IMPACT STREAM WIDTH BANK TO TOP OF BANK (FT) EDGSTING SURFACE E (SEE HOTE 134+00 RESOURCE CROSSINGS -570 580 590 600 610 620 TEMPORARY CENTER LINE Y STREAM IMPACT E OF STREAM (LF) N/A 550 540-520 530 500 510-490 **ARCADIS** TEMPORA (MPACT EXISTING GROUND SURFACE (SEE HOTE 13) RARY STREAM T AREA (SF) N/A N/A ARCADIS U.S., INC IMPACT AREA (SF)
2,600
N/A Design & Consult for natural and built assets STREAM S4 PIPELINE PROFILE ROPOSED TEMPORARY RAMP GRADE (TYP.) STEEL CABLE ATTACHED TO DRIVEN STEEL ANCHOR BUFFER IMPACT (SF)
6,797 BRIDGE ABUTMENT PROPOSED STREA AND WETLAND (PLANS AND EDGE OF STREAM SE \$4 EDGE OF STREAM S ANTICIPATED FLOW DEPTH (35 (SEE NOTE DECKING MEMBERS EAM CROSSING S4 D CROSSING W6 D PROFILES E (MESH 37) FLOOD STORM 149+00 -480 520 540 560 HOUSTON, TEXAS NOTES: 13. 12. õ TOPSOIL SEGREGATION SHALL BE CONDUCTED IN WETLAND, LAWN AND AGRICULTURAL AREAS AND AS OTHERWES REQUESTED BY THE LANDOWNER, TEMPORARLY STABILZE SUBSOIL AND TOPSOIL FOLLOWING REMOVAL. SOIL SHALL BE STOCKPILED IN A BERM—LIKE MANURER TO REDUCE RUN-OFF FROM ACTIVE WORK AREAS, AND SHALL HAVE A MAXIMUM HEIGHT OF 35 FEET AND 2 ON 1 (OR FLATTER) SIDE SLOPES. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED MITHIN 3 CALENDAR DAYS AS TO THE SURFACE OF ALL PERMATER SUPES, AND ALL SUPES STEATES, PERMATER SUPES, AND 7 CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SIE NOT UNDER ACTIVE GRADING. SOIL STOCKPILES FROM TRENCH EXCAVATION SHALL BE LOCATED WITHIN THE ADDITIONAL TEMPORARY WORKSPACE SHOWN WITH HATCHING ON THESE DRAWNICS, STABILIZED SOIL BERMS LOCATED ON UPGRADIENT SIDE OF THE TRENCH SHALL BE USED AS A RUN-ON CONTROL FEATURE. STABILIZED BERMS LOCATED DOWNGRADIEN OF THE TRENCH SHALL BE UTILIZED AS A PERIMETER SEDIMENT CONTROL FEATURE IN PLACE OF SILT FENCE OR SIMILAR. PROPOSED EPE 8-INCH DIAMETER PIPELINE IS NOTE SHOWN ON THE PROFILE FOR STREAM S4 CROSSING, AS THE PIPELINE MILL BE INSTALLED WA HORIZONTAL DIRECTIONAL DRILLING TO BE LOCATED APPROXIMATELY 200 FEET BELOW GROUND SURFACE AT THIS STREAM CROSSING. EXISTING 2-FOOT CONTOUR ELEVATIONS SHOWN ON THE PLAN VIEWS ARE BASED ON TOPOGRAPHIC CONTOURS PROVIDED BY ENSITE USA, INC. ON 1/25/2017. EXISTING GRADES DEPICTED ON THIS PROFILE ARE BASED ON SURVEY SPOT ELEVATIONS PROVIDED BY ENSITE USA, INC. ON 8/10/2017. SILT FENCE HAS BEEN PROPOSED AROUND THE PERMETER OF AQUATIC RESOURCES (I.E., WETLANDS/STREAMS) PER FERC REGULATIONS, UNDERSTANDING THAT THE CONTROLS DO NOT FOLLOW THE ELEVATION CONTOURS IN ALL LOCATIONS. DISTURBANCE ACTIVITIES WITHIN PORTIONS
THE LIMIT OF DISTURBANCE BETWEEN
HORIZONTAL DIRECTIONAL DRILLING
ENTRY/EXIT LOCATIONS WILL CONSIST OF
TREE CLEARING ONLY. PROPOSED PERMANENT ACCESS ROAD PAR-5 MILL BE MIPROYED BY GRADING AND STABILIZED WITH STONE TO FACILITATE TRUCK AND EQUIPMENT TRAFFIC. REFER TO DRAWING 1 FOR DETAILS ON PROPOSED SEQUENCE OF INSTALLATION THE EROSION AND SEDIMENT CONTROLS. TEMPORARY ACCESS BRIDGE WILL BE PLACED FROM ONE SIDE OF THE STREAM TO THE AVOID IMPACTS TO THE STREAM BED AND BANKS. MITRCEPTOR DIVERSIONS LOCATED IN RESIDENTIAL AREAS AND AGRICULTURAL FIELDS SHALL BE REDOVED DURNG FINAL GRADING. INTERCEPTOR DIVERSIONS THAT CAN BE LEFT IN PLACE, AT THE LANDOWNER'S DISCRETION, SHALL BE VEGETATED. PERMANENTLY STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE SEEDING RESTORATION TABLES ON DRAWING 1. SOIL STABILIZATION MATTING HAS BEEN PROPOSED ON SLOPES STEEPER THAN 3H:1V. MARCH 2017 ARCADIS 6041 Wallace Road E 5uite 300 Wexford, PA 15090 Tel. 724.742 9180 CPGL00EP.0001.0008A RCADIS 141 Wallace Road Extension the 300 유류 32



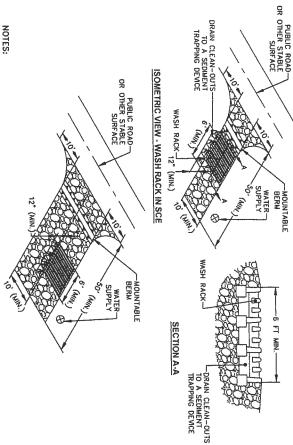
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET. USE MINIMUM WIDTH OF 10 FEET. FLARE STABILIZED CONSTRUCTION ENTRANCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.

PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 54:17 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN, WHEN THE STABILIZED CONSTRUCTION ENTRANCE IS LOCATED AT A HIGH SPOT AND HAS NO BRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN STABILIZED CONSTRUCTION ENTRANCE IS NOT LOCATED AT A HIGH SPOT.

PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

MAINTAIN ENTRANCE IN A CONDITION THAT MINMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING, WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

STABILIZED CONSTRUCTION ENTRANCE _



TO A SEDIMENT
TRAPPING DEVICE

- USE WODD POSTS 1 3/4" BY 1 3/4" ± 1/16" (MINIMUH) SQUARE CUT OF SQUIND CUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
- 2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
- FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS OF THIS DETAIL
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEDTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALLCHMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.

USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET BY 10 FEET. ORIENT DIRECTION OF RIBS AS SHOWN ON THE DETAIL.

INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE STABILIZED CONSTRUCTION ENTRANCE.

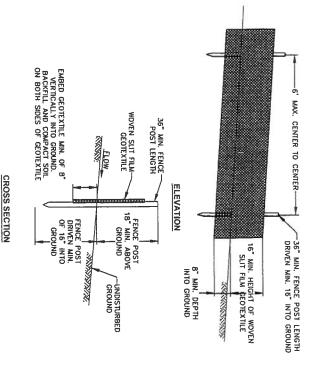
DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.

KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

WASH RACK OPTION (2)

ALLEN LONG

SILT FENCE (3)



PERMITTIVITY
ULTRAVIOLET RESISTANCE
RETAINED AT 500 HOURS

ASTM 0-4355

70% STRENGTH

70% STRENGTH

70% STRENGTH

ASTM D-4491

GROUND-URFACE

10' MAX.

2%" DIAMETER-GALVANIZED STEEL OR ALUMINUM POSTS

WOVEN SLIT FILM GEOTEXTILE-

MOT

CHAIN LINK FENCING-

ELEVATION

GALVANIZED CHAIN LINK FENCE WITH WOVEN SLIT FILM GEOTEXTILE

EMBED GEOTEXTILE AND CHAIN LINK FENCE 8"

CROSS SECTION

APPARENT OPENING SIZE PUNCTURE STRENGTH

ASTM D-4751 ASTM D-6241 GRAB TENSILE
ELONGATION
RAPEZOIDAL TEAR

ASTM D-4533

75 LBS 75 LBS 450 LBS U.S. SIEVE 30 (0.59 MM)

100 LBS | 60 LBS | 900 LBS U.S. SIEVE 70 (0.21 MM)

> S81 08 50%

U.S. SIEVE 70 (0.21 MM)

450 LBS 80 LBS 50%

ASTM D-4632

15%

201

15%

15%

ASTM D-4632 200 LBS 200 LBS 370 LBS 250 LBS 200 LBS 200 LBS

MINIMUM AVERAGE I

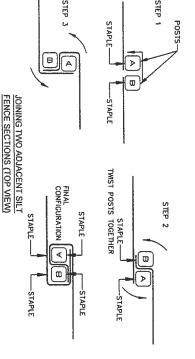
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PROPERTY

TEST METHOD

WOVEN SLIT FILM GEOTEXTILE



NOTES:

- INSTALL 2 3/8" DIAMETER GALVANIZED STEEL POSTS OF 0.095" WALL THICKNESS AND SIX FOOT LENGTH SPACED ND FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVER GALVANIZED CHAIN LINK FENCE (2 3/8" MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. FASTEN WOVEN SLIT FILM GEOTEXTILE SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- Ĉι EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS OF THIS DETAIL.
- REMOVE ACCUMILATED SEDMENT AND DEBRIS WHEN BUIGES DEVELOP IN FENCE OR WHEN SEDMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

SUPER SILT FENCE 4

MISCELLANEOUS

COLUMBIA GAS TRANSMISSION, LLC., A TRAI EASTERN PANHANDLE

NSCANADA COMPANY . HOUSTON, TEXAS

		CITIAILU	フィートニー
Suite 300 Wexford, PA 15090	6041 Wallace Road E	ARCADIS	MANAGE ZOLL

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ARCADIS Project No. CPGL00EP.0001.0008A

ARCADIS U.S., INC.

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NOT TO SCALE

CITY: WEXFORD, PA DIVIGROUP: ENVCAD DB: LD: PIC: PM: TM: LYR:ON=";OFF="REF"
G:CADDIACADIP:ojiCPGL00EPIDWGWDICPGL00EP-G06.dwg LAYOUT: 34 SAVED: 8/16/2017 3:31 PM BY: SIDARI, ALEXIS WELL VEGETATED AREA INTERCEPTOR DIVERSION (TYP.)-SPACING OF INTERCEPTOR DIVERSIONS — (SEE TABLE) NOTES: 2. INTERCEPTOR DIVERSIONS SHALL DISCHARGE TO A WELL VEGETATED, STABLE AREA. 1. MINIMUM SPACING SPECIFIED FOR BOTH TEMPORARY AND PERMANENT INTERCEPTOR DIVERSIONS. INTERCEPTOR DIVERSIONS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION. DIVERSION OUTLETS WILL ALTERNATE FROM SIDE TO SIDE WHENEVER POSSIBLE. MAINTENANCE OF INTERCEPTOR DIVERSIONS SHALL BE PROVIDED UNTIL RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION. INTERCEPTOR DIVERSIONS IN AGRICULTURAL AND RESIDENTIAL AREAS SHALL BE REMOVED DURING FINAL RESTORATION. SILT FENCE SHALL BE INSTALLED AT THE OUTLETS OF THE INTERCEPTOR DIVERSIONS, WHERE A WELL VEGETATED AREA IS NOT AVAILABLE AND/OR ADJACENT TO SURFACE WATERS. INTERCEPTOR DIVERSIONS MUST BE INSTALLED WITHIN ALL CLEARED AREAS AT THE LOCATIONS IDENTIFIED ON THESE DRAWINGS BY THE END OF THE WORK DAY. NOT TO SCALE EDGES OF CLEARED/-GRADED AREAS INTERCEPTOR DIVERSION (1) PERCENT SLOPE MINIMUM SPACING FOR INTERCEPTOR DIVERSIONS
(SEE NOTE 1) SILT FENCE— AS NECESSARY (SEE NOTE 6) NOT TO SCALE PLAN 18" MIN. AFTER-COMPACTION 100 200 NONE 36" MIN. AFTER— COMPACTION SECTION A-A ALLEN LONG
Professional Engineer's No NOTES: 1. PROMPTLY INSTALL TRENCH PLUG AT EVERY SECOND INTERCEPTOR DIVERSION AS TRENCH IS COMPLETED. INSTALL SAND BAGS OR EARTH FILLED SACKS TO TOP OF TRENCH ON STEEP SLOPES GREATER THAN 3H:1V IN NON-AGRICULTURAL AREAS. PRIOR TO LOWERING PIPELINE INTO THE TRENCH, REMOVE ALL DECOMPOSED MATERIAL AND ROCKS FROM THE TRENCH BOTTOM. TOP OF TRENCH PLUG SHALL BE A MINIMUM OF 2 FEET BELOW THE CONSTRUCTION GRADE IN AGRICULTURAL AREAS TO PROVIDE CLEARANCE FOR PLOWING. BEFORE PIPELINE INSTALLATION INISHED GRADE SAND BAGS OR EARTH FILLED SACKS TRENCH PLUG 2 TRENCH BOTTOM-(SEE NOTE 2) SIDE VIEW ARCADIS | Design & Consultancy for notwers and built assets ARCADIS U.S., INC. AFTER PIPELINE INSTALLATION -TRENCH BOTTOM PIPELINE 2' MIN. (SEE NOTES 3 & 4) COLUMBIA GAS TRANSMISSION, LLC., A TRA
EASTERN PANHANDLE MISCELLANEOUS DETAILS PUMP DISCHARGE— HOSE FLOW PLACE FILTER BAG ON SUITABLE BASE (E.G., MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12 INCHES FROM EDGES OF BAG. NOTES: 1. TIGHTLY SEAL GRAB TENSILE
PUNCTURE
FLOW RATE
PERMITIWITY (SEC-1/)
UV RESISTANCE
APPARENT OPENING SIZE
SEAM STRENGTH REPLACE FILTER E
CONNECTION BETY
DISPLACED. SLEEVE TO ACCOUNTS OF THE STATE REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDMENT FROM THE BAG (IN AN APPROVED UP AND SAND STRABLZE WITH SEED AND MUCH BY THE END OF THE WORK DAY, RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATIONS. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE. VALUES (MARV) FLOW ING SIZE (AOS) LEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE. NSCANADA COMPANY . HOUSTON, TEXAS EXPANSION PROJECT GEOTIXTILE WITH DOUBLE STIGHED SEAMS USING HIGH STRENGTH THREAD. SIZE MANDDATE A MAXIMUM 4 INCH DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL FOR THE FOLLOWING: BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP WEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES -STRAP FILTER BAG (3) 250 LB 150 LB 70 CAL/MIN/FT³ 1.2 SEC-1/ 70% STRENGTH © 500 HOURS 0.15-0.18 MM 90% NOT TO SCALE PROFILE PLAN VIEW

FILTER BAG

-12" MIN.

12" M

-MULCH, LEAF/WOOD COMPOST, WOODCHIPS, SAND, OR STRAW BALES

SLOPE 5% MAX.

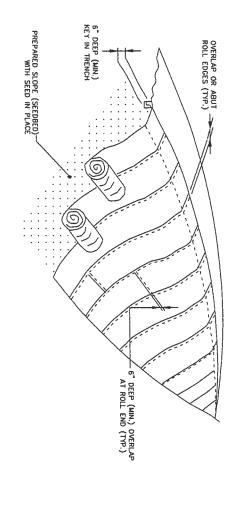
6041 Wellace Road Extension Suite 300 Wexford, PA 15090 Tel. 724,742.9180

MARCH 2017

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ARCADIS Project No. CPGL00EP.0001.0008A

ASTM D-4632 ASTM D-4833 ASTM D-4491 ASTM D-4491 ASTM D-4355 ASTM D-4751 ASTM D-4632





- 1. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN, IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2X2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
- SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL MRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "O" SHAPED STAPLES MUST AVERAGE 1 TO 1 1/2 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM B INCH MAIN LEG A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM A INCH HEAD, WOOD STARES MUST BE ROUGH—SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1 BY 3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
- PERFORM FINAL GRADNG, TOPSOIL APPLICATION, SEEDIED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS, PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION SPECIFIED ON THE APPROVED EROSION & SEDIMENT CONTROL PLAN.
- UNROLL MATTING DOWNSLOPE. LAY MAT SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
- OVERLAP OR ABUT ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSLOPE MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
- KEY IN THE UPSLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
- STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FODT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
- ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION 8-4 VEGETATIVE STABILIZATION OF THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

SOIL STABILIZATION MATTING (1)



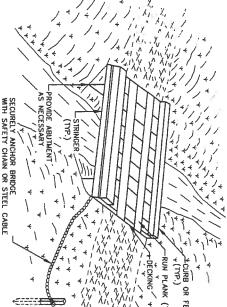








Design & Consultancy for natural and built assets



NOTES:

- 2. PLACE ABUTMENTS PARALLEL TO, AND ON, STABLE BANKS.
- CONSTRUCT BRIDGE TO SPAN ENTIRE CHANNEL UNLESS OTHERWISE INDICATED ON APPROVED PLAN.
- USE STRINGERS CONSISTING OF LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.

TRENCH PLUG

SANDBAG DAM-

INTAKE-

TOP OF-

FLOW

STREAM

ENERGY DISSIPATER-

NIM OF

- SELECT DECKING MATERIALS TO PROVIDE SUFFICIENT STRENGTH TO SUPPORT THE ANTIQUATED LOAD, PLACE ALL DECKING MEMBERS PERPENDICULAR TO THE STRINGERS, BUTT TIGHTLY, AND SECURELY FASTER, DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY BELOW.

SPOIL FROM CROSSING

DISCHARGE

- INSTALL CURBS THE ENTIRE LENGTH OF THE OUTER SIDES OF THE DECK TO PREVENT SEDIMENT FROM ENTERING THE STREAM CHANNEL.

SECURELY ANCHOR BRIDGE WITH SAFETY CHAIN OR STEEL CABLE -RUN PLANK (TYP.) LCURB OR FENDER +

ယ

- CONSTRUCT TEMPORARY BRIDGE STRUCTURE AT OR ABOVE THE BANK ELEVATION TO PREVENT IMPACTS FROM FLOATING MATERIALS AND DEBRIS.

- SECURELY FASTEN OPTIONAL RUN PLANKING FOR THE LENGTH OF THE SPAN. PROVIDE A RUN PLANK FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
- ANCHOR BRIDGE SECURELY AT ONLY ONE END USING STEEL CABLE OR CHAIN ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWAITERS FLOAT THE BRIDGE ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL POSTS. ANCHOR MUST BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM.
- AREAS DISTURBED DURING BRIDGE INSTALLATION AND/OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDMENT CONTROL DEVICE.
- 10. STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SMEEPING, AND/OR VACUUMING, ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOYE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTUNIQUISLY MEET REQUIREMENTS FOR ADEQUATE VECETATIVE ESTABLISHMENT.
- 11. AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE EMD OF CLOSURE PERIOD, PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS MITH EROSING CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEANUP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.
- TEMPORARY CROSSINGS SHALL BE MADE FROM SUITABLE MATERIALS (i.e., STEEL PLATE, TIMBER MATTING).

EMPORARY ACCESS BRIDGE

(2)

NOT TO SCALE

1. TWO NOTES: A TEMPORARY COFFERDAM, AS MUNUFACTURED BY AQUA-BARRIER® OR SIMILAR, MAY BE USED IN PLACE OF SANDBAG DIVERSION DAM. SANDBAG DIVERSION DAM BAG MINIMUM HEIGHT ABOVE NORMAL BASE FLOW

SANDBAGS-

-IMPERVIOUS MEMBRANE

NOTES:

- GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF THE TOP-OF-BANK UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION.
- BYPASS PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM THE BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS.
- Trench plugs shall be installed within the trench on both sides of the stream channel (see trench plug detail).
- WATER ACCUMULATING WITHIN THE WORK AREA SHALL BE PUMPED TO A FILTER BAG PRIOR TO DISCHARGING INTO ANY RECEIVING SURFACE WATER.

 HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE TOP OF STREAM BANK.
- ALL EXCESS EXCAVATED MATERIAL SHALL BE IMMEDIATELY REMOVED FORM THE STREAM CROSSING AREA.

Ģ Ċν 4.

APPROPRIATE STREAMBANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.

DAM AN ID PUMP BYPASS STREAM CROSSING (4) NOT TO SCALE

MISCELLANEOUS DETAILS

GAS TRANSMISSION, LLC., A TRANSMISSION, LLC.

NSCANADA COMPANY • HOUSTON, TEXAS EXPANSION PROJECT

		_
ARCADIS 6041 Wallace Road Extension Suite 300	Date MARCH 2017	G1 G1.0001.00007.

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NOTES: 1. STAGING AREAS SHALL BE LOCATED AT LEAST 50 FEET FROM THE EDGE OF THE WETLAND. 2. SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE PLAN DRAWINGS. EXCAVATED UPPER MOST 1 FOOT OF TOPSOIL (WITH THE VEGETATIVE ROOT MASS) WILL BE CAREFULLY REMOVED AND STOCKPILED SEPARATELY FROM THE SUBSOIL, UNLESS THERE IS STANDING WATER OR THE SOIL IS TOO SATURATED TO SEGREGATE. THE MOVEMENT OF VEHICLES ACROSS THE WETLAND WILL BE MINIMIZED IF SOFT SOILS ARE ENCOUNTERED IN THE WETLAND AREA. THE USE OF TIMBER PADS/MATS WILL BE USED TO SUPPORT THE MOVEMENT OF EQUIPMENT AND/OR VEHICLES. DISTURBANCE FOR WE'TLAND CROSSINGS WILL BE LIMITED TO THE MINIMUM IMPACT NEEDED FOR PIPELINE INSTALLATION. UPSLOPE RUNOFF WILL BE DIVERTED AROUND THE WORK AREA BY THE USE OF INTERCEPTOR DIVERSIONS, WHERE INDICATED. TRENCH PLUGS WILL BE INSTALLED WHERE SHOWN TO PREVENT THE PIPELINE TRENCH FROM DRAINING THE WETLANDS OR CHANGING ITS HYDROLOGY. NOT TO SCALE WETLAND CROSSING TYPICAL WETLAND CROSSING NOT TO SCALE TIMBER MAT DIRECTION OF TRAVEL -CONNECT LOOPS WITH 3/16" CABLE CLAMPS -4" X 4" WOOD (TYPICAL)



- 1. A SEDIMENT TUBE PLACEMENT AREA SHALL BE PREPARED SO THAT IT IS FREE OF ALL DEBRIS, INCLUDING ROCKS, STICKS, ROOTS, ETC. A 2" LAYER OF ASHIO #57 STONE SHALL BE PLACED WHERE THE LOGS COME TOGETHER. ENDS OF TUBES MAY BE OVERLAPPED ACCORDING TO MANUFACTURER'S SPECIFICATIONS INSTEAD OF THE AASHTO #57 STONE.
- SEDIMENT TUBES SHALL BE PLACED AT EXISTING LEVEL GRADE. ENDS SHALL BE EXTENDED UPSLOPE AT 45 DEGREES TO THE MAIN FILTER LOG ALIGNMENT FOR A MINIMUM OF 8 FEET.
- SEDIMENT TUBES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
- SEDIMENT DEPOSITS SHALL BE CLEANED FROM THE LOG WHEN IT REACHES HALF THE HEIGHT OF THE TUBE.
- DAMAGED TUBES SHALL BE REPLACED WITHIN 24 HOURS OF INSPECTION. A SUPPLY OF TUBES SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE.

WEIGHTED SEDIMENT FILTER TUBE N



ARCADIS U.S., INC

RENTIFIED IN THE TITLE BLOCK

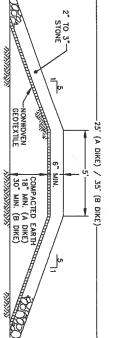
Professional Engineer's Nam
ALLEN LONG
Professional Engineer's No MD 34862

EASTERN PANHANDLE

MISCELLANEOUS DETAILS

WEIGHTED SEDIMENT-FILTER TUBE OPTIONAL COMPACTED-BACKFILL MATERIAL SHEET FLOW FREE OF DEBRIS FLAT, LEVEL AREA-FREE OF DEBRIS 0 1 (OR SECTION VIEW FRONT VIEW PLAN VIEW #88 A88 18" MIN. -- AASHTO NO. 57 STONE -WEIGHTED SEDIMENT FILTER TUBE METAL T-POST -AASHTO NO. 57 STONE GROUND -5/6 H

> ROADWAY 10. MA



SOMETRIC VIEW

-EARTH DIKE

ROADWAY

TO 3" STONE

ARTH DIKE

SECTION A-A

1. USE MINIMUM WIDTH OF 10 FEET TO ALLOW FOR VEHICULAR PASSAGE. NOTES:

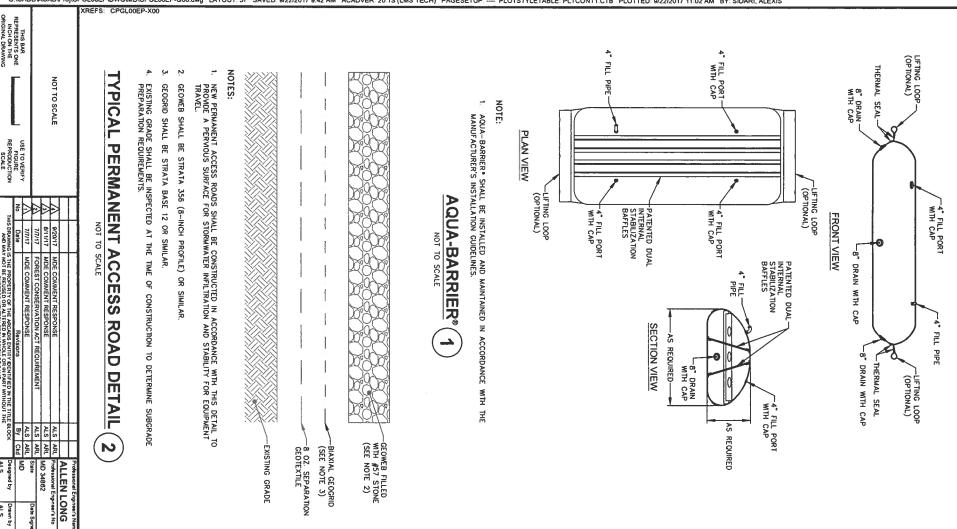
- 2. PLACE NONWOVEN GEOTEXTILE OVER THE EARTH MOUND PRIOR TO PLACING STONE.
- PLACE 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE MOUNTABLE BERM.

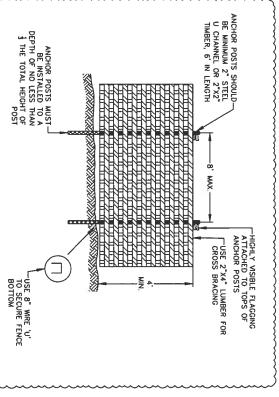
4. MAINTAIN LINE, GRADE, AND CROSS SECTION. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN SPECIFIED DIMENSIONS, REMOVE ACCUMULATED SEDIMENT AND DEBRIS, MAINTAIN POSITIVE DRAINAGE.

MOUNTABLE BERM 4

OUS DE AILS		E EXPANSION PROJECT	ANSCANADA COMPANY . HOUSTON, TEXAS
ARCADIS 5041 Wallace Road Extension Suite 300	Date MARCH 2017	CPGL00EP.0001.0008A	ARCADIS Project No.

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SEE NOTE

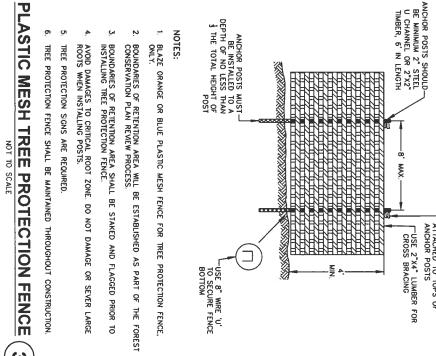
HALF PLAN

SECTION A-A'

SECTION B-B'

EXCAVATE TO THIS LINE, BACKFILL WITH RIPRAP

-NATURAL CHANNEL



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SECTION C-C'

-EXCAVATE TO THIS LINE, BACKFILL MTH RIPRAP

SECTION D-D'

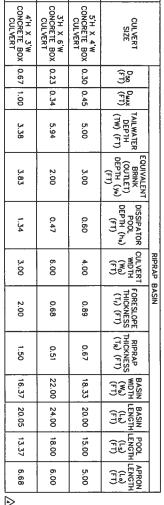
LBERM AS
REQUIRED
TO SUPPORT
RIPRAP

NOTES:

WARP BASIN TO CONFORM TO NATURAL STREAM CHANNEL. TOP OF RIPRAP IN FLOOR OF BASIN SHOULD BE AT LEAST THE SAME ELEVATION OR LOWER THAN THE NATURAL CHANNEL BOTTOM AT SECTION A-A'.

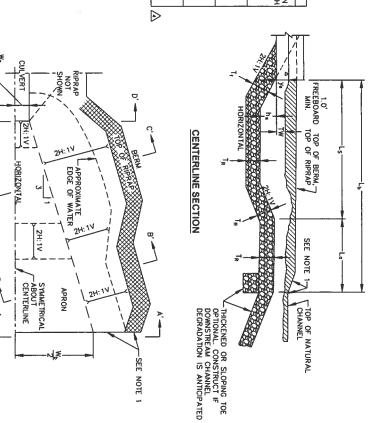
RIPRAP BASIN ENERGY DISSIPATOR

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STREAM CROSSING ID

S



ARCADIS Design & Consultancy for natural and built assets

ARCADIS U.S., INC

MISCELLANEOUS DETAILS

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GAS TRANSMISSION, LLC, A TRANSCANADA COMPANY • HOUSTON, TEXAS EASTERN PANHANDLE EXPANSION PROJECT GLOOEP.0001.0008A

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