

Public Notice

U.S. Army Corps
of Engineers

Baltimore District

In Reply to Application Number

CENAB-OPR-P-2018-02269-P06 (Sheppard Reservoir Maintenance)

PN- 19-02 Comment Period: 15 January 2019 to 14 February 2019

THE PURPOSE OF THIS PUBLIC NOTICE IS TO SOLICIT COMMENTS FROM THE PUBLIC REGARDING THE WORK DESCRIBED BELOW. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the Clean Water Act (33. U.S.C. 1344) as described below:

APPLICANT:

Peter H. Sheppard
117 Frederick Street
Hanover, Pennsylvania 17331

WATERWAY AND LOCATION OF THE PROPOSED WORK:

Sheppard Reservoir is an impoundment on a perennial unnamed tributary (UNT) to South Branch Conewago Creek. The project is located near the intersection of Westminster Road and Schibert Road in Union Township, Adams County, Pennsylvania (39° 45' 46", -77° 0' 55").

PROPOSED WORK AND PURPOSE:

To mechanically dredge a total of 36,350 cubic yards of accumulated sediment within Sheppard Reservoir to restore the reservoir's holding capacity back to the original design volume of 20-million gallons. The project will involve dewatering the 9.6 acre reservoir resulting in temporary impacts to the reservoir. Once the reservoir is dewatered accumulated sediment will be removed mechanically resulting in a permanent impact of 9.6 acres, however the work will not result in a permanent loss of waters. Additionally, the project will temporarily impact 0.004 acre of Palustrine Emergent Wetlands (PEM) (Wetland 1) for the purpose of installing a timber mat to access the reservoir during construction. Two (2) perennial tributaries (Stream 6 and Tributary to South Branch Conewago Creek) will be temporarily impacted due the placement of temporary cofferdams and the dewatering of the reservoir resulting in 10 linear feet and 25 linear feet of stream impact respectively. Lastly, a temporary diversion channel will temporarily impact 10 linear feet of an intermittent stream (Stream 1) with the placement of rip rap that will be removed once work is completed. The project is proposing temporary and permanent impacts, although the permanent impacts will not result in a loss of waters. No compensatory mitigation is proposed to offset project impacts.

All work is proposed to be completed in accordance with the enclosed plan(s). If you have any questions concerning this matter, please contact (Shawn R. Gill, (570)835-4263, 710 Ives Run Lane, Tioga, Pennsylvania 16946).

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonable may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments provided will become part of the public record for this action. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the District Engineer, U.S. Army Corps of Engineers, Baltimore District, 710 Ives Run Lane, Tioga, Pennsylvania 16946) within the comment period specified above.

ESSENTIAL FISH HABITAT: The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all Federal agencies to consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely effect Essential Fish Habitat (EFH). The Corps has determined this project will not affect any EFH.

WATER QUALITY CERTIFICATION: The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act from the Pennsylvania Department of Environmental Protection. The Section 401 certifying agency has a statutory limit of one year from the date of this public notice to make its decision.

The applicant must obtain any State or local government permits which may be required.

A preliminary review of this application indicates that the proposed work will not affect Federal listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

Review of the latest published version of the National Register of Historic Places indicates that no registered properties listed as eligible for inclusion, therein, are located at the site of the proposed work. Currently unknown archeological, scientific, prehistoric, or historical data may be lost or destroyed by the work to be accomplished under the request permit.

The evaluation of the impact of this project on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 of the Clean Water Act.

Any person who has an interest which may be adversely affected by the issuance of this permit may request a public hearing. The request, which must be in writing, must be received by the District Engineer, U.S. Army Corps of Engineers, Baltimore District, (710 Ives Run Lane, Tioga, Pennsylvania 16946), within the comment period as specified above to receive consideration. Also it must clearly set forth the interest which may be adversely affected by this activity and the manner in which the interest may be adversely affected.

It is requested that you communicate this information concerning the proposed work to any persons known by you to be interested and not being known to this office, who did not receive a copy of this notice.

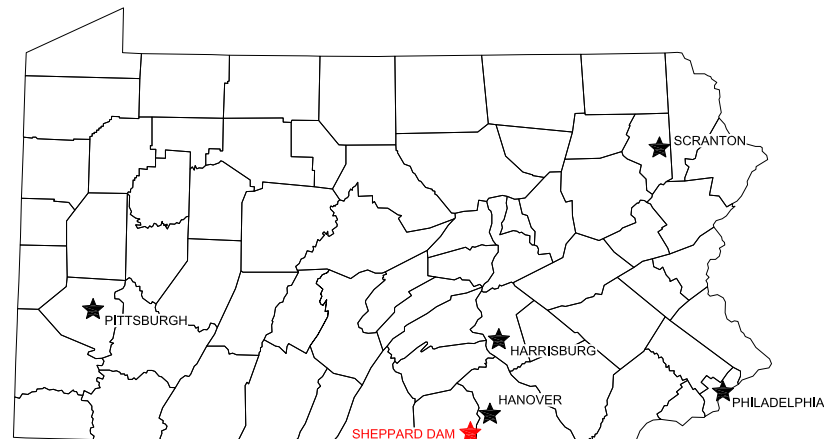
Wade B. Chandler
Chief, Pennsylvania Section
Regulatory Branch

Enclosure

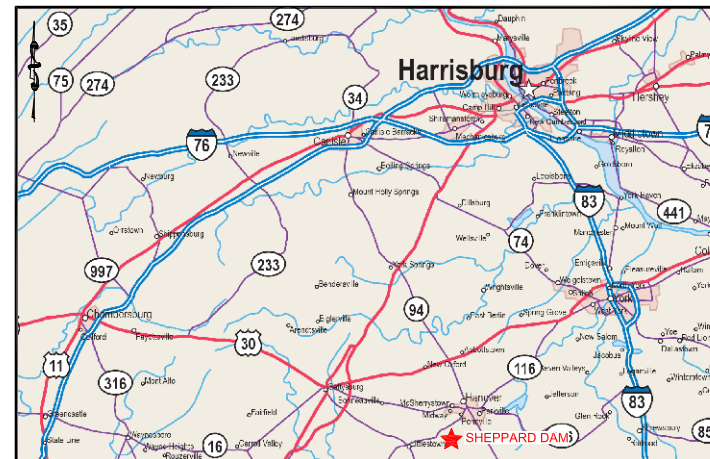
SHEPPARD RESERVOIR RESTORATION PROJECT

UNION TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA

DREDGING OF SHEPPARD RESERVOIR



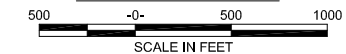
STATE MAP



VICINITY MAP



LOCATION MAP



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SUSQUEHANNA RIVER BASIN
SHEPPARD DAM
PA-00333 / D01-071

CALL BEFORE YOU DIG!

PENNSYLVANIA LAW REQUIRES
3 WORKING DAYS NOTICE FOR
CONSTRUCTION PHASE AND 10 WORKING
DAYS IN DESIGN STAGE - STOP CALL



POCS SERIAL NUMBER

20181960056-000

POCS CALL DATE

07/15/2018

PA ONE CALL NOTE:
GANNETT FLEMING, INC. (GANNETT FLEMING) ADVISES THAT IT HAS COMPLIED WITH THE PROVISIONS OF THE PENNSYLVANIA UNDERGROUND UTILITY LINE PROTECTION LAW, ACT 287 OF 1974 AS AMENDED, IN PREPARING THESE PLANS. ALTHOUGH GANNETT FLEMING MADE THE TELEPHONE CALL(S) LISTED ON THESE PLANS ON THE DATE(S) SHOWN, THE INFORMATION SHOWN MAY BE PRELIMINARY AS OF THE DATE OF BIDDING. THE DATA PERTAINING TO UTILITIES SHOWN ON THE PLANS IS FOR GENERAL INFORMATION AND GUIDANCE ONLY AND GANNETT FLEMING MAKES NO REPRESENTATIONS, WARRANTY, GUARANTEE OR ASSURANCES THAT THE INFORMATION RECEIVED PURSUANT TO SAID CALL(S) AND REFLECTED ON THE PLANS IS COMPLETE, CORRECT OR ACCURATE, BUT IS REFLECTING SAID INFORMATION IN ACCORDANCE WITH THE REQUIREMENTS OF SUCH ACT AS OF THE DATE OF SAID CALL(S). THE AREAS IN WHICH NEW UNDERGROUND FACILITIES AND APPURTENANCES ARE TO BE CONSTRUCTED UNDER THIS CONTRACT MAY CONTAIN EXISTING UNDERGROUND UTILITIES AND STRUCTURES THAT ARE NOT SHOWN ON THE PLANS OR ARE IN LOCATIONS OTHER THAN AS SHOWN. CONTRACTORS ARE ADVISED OF THEIR OBLIGATIONS TO NOTIFY ALL FACILITY OWNERS, NOT LESS THAN 3 OR MORE THAN 10 DAYS PRIOR TO EXCAVATION, VIA ONE CALL(S) IN ACCORDANCE WITH THE REQUIREMENTS OF THE ACT (1-800-242-1776 OR 412-464-7100 (WEST MIFFLIN)), AND TO PRECISELY IDENTIFY THE LOCATION OF, AVOID DAMAGE TO AND REPAIR DAMAGED UNDERGROUND UTILITIES.

CONTACT INFORMATION

MR. PETER H. SHEPPARD (OWNER)	717-521-6673
GANNETT FLEMING, INC. (ATTN: WILLIAM KINGSTON)	717-763-7211
PA DEPARTMENT OF ENVIRONMENTAL PROTECTION, DIVISION OF DAM SAFETY	717-742-5857
PA DEPARTMENT OF ENVIRONMENTAL PROTECTION, SOUTHCENTRAL REGIONAL OFFICE	717-760-4700
ADAMS COUNTY CONSERVATION DISTRICT	717-334-0638
PA FISH AND BOAT COMMISSION, SOUTHCENTRAL REGIONAL OFFICE	717-486-7087
PENNSYLVANIA ONE CALL SYSTEM FOR UNDERGROUND UTILITIES	800-242-1776
U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT	410-962-6085

OCTOBER 2018



Gannett Fleming

207 SENATE AVENUE
CAMP HILL, PA 17011-2316

GF PROJECT NO. 063377

60% DESIGN

ABBREVIATIONS

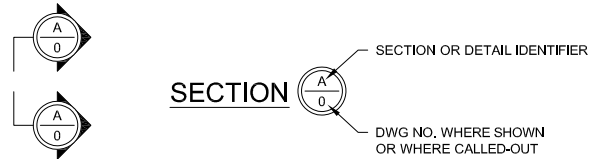
A	AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
	ACI	AMERICAN CONCRETE INSTITUTE
	AC-FT	ACRE-FOOT (FEET)
	ADDL	ADDITIONAL
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
	AL	ALUMINUM
	ALLOW.	ALLOWABLE
	ALT	ALTERATE
B	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
	ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
	APPROX	APPROXIMATE(LY)
	ASW	AUXILIARY SPILLWAY
	AVG	AVERAGE
	AWWA	AMERICAN WATER WORKS ASSOCIATION
	@	AT
	BF	BLIND FLANGE OR BACK FACE
	BFF	BELOW FINISHED FLOOR
	BFG	BELOW FINISHED GRADE
C	BFV	BUTTERFLY VALVE
	ℓ	BASELINE
	BM	BENCHMARK
	BOT	BOTTOM
	B.P.	BEGINNING POINT
	C/C, C.C., C TO C	CENTER TO CENTER
	CCD	COUNTY CONSERVATION DISTRICT
	ℓ	CENTERLINE
	CI	CAST IRON
	CIP	CAST IN PLACE OR CAST IRON PIPE
D	CJ	CONSTRUCTION JOINT
	CLR	CLEARANCE, CLEAR, CLEAR DISTANCE
	CMP	CORRUGATED METAL PIPE
	CONC	CONCRETE
	CONST, CONSTR	CONSTRUCTION
	CONT	CONTINUOUS
	CONTR	CONTRACTION
	CORR	CORRUGATED
	CF	CUBIC FOOT(FEET)
	CFM	CUBIC FEET PER MINUTE
E	CFS	CUBIC FEET PER SECOND
	CRR	CRITICAL ROOT RADIUS
	CY, CU, YDS.	CUBIC YARD(S)
	DBH	DIAMETER AT BREAST HEIGHT (4.5 FEET ABOVE THE GROUND)
	DEP	DEPARTMENT OF ENVIRONMENTAL PROTECTION
	DEPT	DEPARTMENT
	DI	DUCTILE IRON
	DIP	DUCTILE IRON PIPE
	DIA, Ø	DIAMETER
	DWG	DRAWING
F	DCNR	DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
	E	EAST/EASTING COORDINATE
	EA	EACH
	EF	EACH FACE
	EL, EL.	ELEVATION
	EXP	EXPANSION
	EXP JT	EXPANSION JOINT
	EXT	EXTERIOR
	E&SC	EROSION AND SEDIMENT CONTROL
	EQ	EQUAL
G	EW	EACH WAY
	FF	FRONT FACE
	FM	FORCE MAIN
	FTG	FOOTING
	FT, FT/FT	FOOT/FEET, FEET PER FOOT
	GALV.	GALVANIZED
	GIS	GEOGRAPHICAL INFORMATION SYSTEM
	GPD	GALLONS PER DAY
	GPM	GALLONS PER MINUTE
	H	HEXAGONAL
H	HDPE	HIGH DENSITY POLYETHYLENE
	HH	HAND HOLE
	HORIZ	HORIZONTAL
	I	INSIDE DIAMETER
	ID	INCH(ES)
	INTR	INTERIOR
	INV	INVERT
	J	JOINT
	JT	JOINT
	JB	JUNCTION BOX

L	LB	POUND
	LBS	POUNDS
	LF, LIN. FT.	LINEAR FEET
	M	MAXIMUM
	MF	MIGRATORY FISH DESIGNATION
	MH	MANHOLE
	MIN	MINIMUM
	MISC	MISCELLANEOUS
	MJ	MECHANICAL JOINT
	MSE	MECHANICALLY STABILIZED EARTH
N	N	NORTH/NORTHING COORDINATE
	N/A	NOT APPLICABLE
	NAD	NORTH AMERICAN DATUM
	NAVD	NORTH AMERICAN VERTICAL DATUM
	NGVD	NATIONAL GEODETIC VERTICAL DATUM
	NTS	NOT TO SCALE
	No., #	NUMBER
	O	ON CENTER
	OC	OUTSIDE DIAMETER
	OD	OVERHEAD ELECTRIC
P	OE	OPENING
	OPNG	OUNCE
	OZ	
	P.C.	POINT OF CURVATURE
	PCCP	PRE-STRESSED CONCRETE CYLINDER PIPE
	PCF	POUNDS PER CUBIC FOOT
	PE	PLAIN END
	P.I.	POINT OF INFLECTION
	PL	PLATE
	POB	POINT OF BEGINNING
Q	POI	POINT OF INTERSECTION
	PSF	POUNDS PER SQUARE FOOT
	PSI	POUNDS PER SQUARE INCH
	PSW	PRINCIPAL SPILLWAY
	P.T.	POINT OF TANGENCY
	PVC	POLYVINYL CHLORIDE OR POINT VERTICAL CURVATURE
	PVI	POINT VERTICAL INTERSECTION
	PVT	POINT VERTICAL TANGENCY
	QTY	QUANTITY
	R	RADIUS
R	RCP	REINFORCED CONCRETE PIPE
	REIN	REINFORCED
	REQ'D	REQUIRED
	RGS	RIGID GALVANIZED STEEL
	RJ	RESTRAINED JOINT
	ROW	RIGHT OF WAY
	S	SECTION
	SECT	SQUARE FOOT (FEET)
	SF	SHEET
	SHT	SHEET
S	SPA	SPACING
	SQ	SQUARE
	SS	STAINLESS STEEL
	STA	STATION
	STD	STANDARD
	SY	SQUARE YARD
	T	TEMPORARY
	TEMP	TOPOGRAPHY
	TOPO	TYPICAL
	TYP, TYP., (TYP)	
U	UNO	UNLESS OTHERWISE NOTED
	UNT	UNNAMED TRIBUTARY
	USACE	U.S. ARMY CORPS OF ENGINEERS
	USGS	U.S. GEOLOGICAL SURVEY
	US	UPSTREAM
	V	VERTICAL CURVE
	VC	VERTICAL
	VERT	VOLUME
	VOL	
	W	WATERMAIN
W	WM	WITHOUT
	W	WEIGHT
	WO	WARM WATER FISHES DESIGNATION
	WT	
	WWF	
	Y	YARD
	YD	
	Z	
	Z	

LEGEND

	EXISTING MAJOR CONTOUR		TREE > 12" DIA. - DECIDUOUS
	EXISTING MINOR CONTOUR		TREE > 12" DIA.- CONIFEROUS
	PROPOSED MAJOR CONTOUR		TREE < 12" DIA. - DECIDUOUS
	PROPOSED MINOR CONTOUR		SHRUB
	UNDERGROUND ELECTRIC		BORING INSTRUMENTED WITH PIEZOMETER
	OVERHEAD ELECTRIC		BORING
	GAS		TEST PIT
	UNDERGROUND TELECOMMUNICATIONS		IRON PIN
	OVERHEAD TELECOMMUNICATIONS		CONTROL POINT
	UNDERGROUND CABLE TV		BENCHMARK
	OVERHEAD CABLE TV		MARKER POST
	WATERMAIN		RAILROAD SPIKE
	FIBER OPTIC		SURVEY MONUMENT
	FORCE MAIN		PK NAIL
	SANITARY SEWER		POST
	STORM SEWER		WELL
	AIR LINE		WATER VALVE
	RIPRAP OR ROCK FILL		WATER METER
	SWALE / DITCH		WATER CURB BOX
	LIMIT OF FIELD SURVEY		FIRE HYDRANT
	PROPERTY LINE		CLEANOUT
	RIGHT OF WAY		SPIGOT
	EASEMENT LINE		DOWNSPOUT
	CENTERLINE / BASELINE		STORM MANHOLE
	EDGE OF WATER		STORM INLET
	VEGETATION/TREE LINE		SANITARY MANHOLE
	BRUSH LINE		VENT
	HEDGE ROW		GAS VALVE
	FENCE		GAS METER
	GUIDE RAIL		GAS CURB BOX
	HANDRAIL		CABLE TV UTILITY BOX
	RAILROAD		TELECOMMUNICATIONS UTILITY BOX
	PROTECTIVE FENCE		TELECOMMUNICATIONS MANHOLE
	SILT FENCE		ELECTRICAL MANHOLE
	COFFERDAM		ELECTRICAL UTILITY BOX
	SHEETPILE		LIGHT POST
	WETLAND		UTILITY POLE
	GEOTEXTILE		GUY WIRE
	LIMIT OF DISTURBANCE		GUY POLE
	PROJECT AREA		MANHOLE - UNKNOWN UTILITY
	CULTURAL RESOURCES		MAILBOX
	EARTH SLOPE (SLOPING 1)		SIGN
	CONCRETE SURFACE SLOPE (SLOPING 1)		STUMP
	TOP OF ROCK		WEIR
	EARTH SUBGRADE		BOULDER
	WATER LEVEL (FOR SECTIONS AND PROFILES)		
	FLOW ARROW		

SECTION SYMBOLS



NORTH ARROW



PROJECT NOTES:

GENERAL NOTES:

- THE INFORMATION PRESENTED ON THE DRAWINGS IS BASED ON VISUAL FIELD EXAMINATION OF THE SITE AND REVIEW OF EXISTING RECORD DRAWINGS. WHILE THE INFORMATION PROVIDED IS BELIEVED TO BE CORRECT, NO ASSURANCE IS IMPLIED RELATIVE TO ITS TOTAL COMPLETENESS OR ACCURACY. REPORT DISCREPANCIES TO ENGINEER BEFORE DISTURBING EXISTING INSTALLATIONS. NO WORK WILL BE ALLOWED TO BE PERFORMED WHEN WEATHER, SITE OR MATERIAL CONDITIONS WILL PREVENT SATISFACTORY WORK. IN THE OPINION OF THE ENGINEER, SCHEDULE WORK DURING CONSECUTIVE DAYS OF FAVORABLE WEATHER TO ALLOW FOR COMPLETION OF WORK.
- ALL ELEVATIONS ARE IN UNITS OF FEET, UNLESS NOTED OTHERWISE.
- THE RESERVOIR WILL BE DRAINED PRIOR TO THE START OF WORK BY THE OWNER AND WILL REMAIN DRAINED FOR THE DURATION OF THE PROJECT. NO GUARANTEE IS MADE THAT THE RESERVOIR WILL REMAIN DRY DURING WET WEATHER EVENTS. THE DREDGING CONTRACTOR SHALL MAKE PROVISIONS IN HIS BID FOR THE ACCOMMODATION OF WET WEATHER FLOWS AND ADEQUATE DEWATERING AND FILTERING MEASURES SHOULD IT BECOME NECESSARY TO DEWATER THE WORK AREA. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A DRAINED RESERVOIR DURING CONSTRUCTION. EXCAVATED SEDIMENT SHALL BE PROPERLY DEWATERED AND HAULED TO THE DISPOSAL AREA.
- THE OWNER RESERVES THE RIGHT TO ALTER OR MODIFY THE CONTRACTOR'S WORK PLAN. ANY ACTIVITIES THAT COULD ALTER THE CONTRACTOR'S WORK PLAN SHALL BE SCHEDULED IN ADVANCE AND THOROUGHLY COORDINATED WITH THE OWNER AND ENGINEER.
- CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN. ANY REVISION TO THE E&S PLAN MUST BE APPROVED BY THE ENGINEER AND/OR PADEP. USE OF MOTOR OPERATED EQUIPMENT SHALL BE CAREFULLY CONTROLLED TO PREVENT FUEL SPILLS.
- CONTRACTOR'S WORK AREA IS THE LIMITS OF DISTURBANCE AS SHOWN ON THE EROSION AND SEDIMENTATION CONTROL PLANS ON DWG ES1 THRU ES3.
- TIMBER RATTLESNAKES ARE A PROTECTED SPECIES IN PENNSYLVANIA. CONTRACTOR SHALL INSTRUCT WORKERS THAT IF RATTLESNAKES ARE ENCOUNTERED, THEY SHALL NOT BE HARMED AND THE PENNSYLVANIA FISH AND BOAT COMMISSION SHALL BE NOTIFIED (814-358-5237).
- CONTRACTOR SHALL CONTACT PENNSYLVANIA ONE CALL UTILITY INFORMATION SYSTEM (1-800-242-1776) NOT LESS THAN 3-DAYS OR MORE THAN 10-DAYS BEFORE STARTING WORK.
- CONTRACTOR TO VERIFY DIMENSIONS OF FACILITIES TO BE MODIFIED OR REPLACED PRIOR TO SUBMITTING SHOP DRAWINGS AND ORDERING MATERIALS.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING THE PENNDOT OR TOWNSHIP RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ALL STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES NECESSARY TO ENSURE THE ROAD(S) ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
- WHERE EXISTING NATURAL DRAINAGE DITCHES OR STREAMBANKS ARE DISTURBED DURING CONSTRUCTION THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL ALIGNMENT, GRADE AND INVERT.
- WETLANDS DELINEATED AND LOCATED THROUGH GPS METHODS BY D. GRAFF AND S. HOCKENBERRY OF GANNETT FLEMING, INC. ON MAY 23, 2018.
- NO GEOTECHNICAL, SUBSURFACE, FIELD REVIEWS, RESEARCH, AGENCY OR GOVERNMENTAL RECORD REVIEWS, OR OTHER INVESTIGATIONS HAVE BEEN MADE FOR THE PURPOSE OF LOCATING, OR DETERMINING THE EXISTENCE OF WETLANDS (OTHER THAN AS INDICATED IN NOTE 11), HAZARDOUS MATERIALS, OR OTHER ENVIRONMENTAL CONCERNS ON SITE.
- FLOOD ZONE NOTES:** THE PROPERTY SHOWN HEREON IS LOCATED ON THE FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL NO. 421261 0295 (TOWNSHIP OF UNION, PENNSYLVANIA), MAP NO. 42001C0295D, REVISED ON FEBRUARY 18, 2009.
 - A. THE PROPERTY SHOWN HEREON IS IN:
 - FLOOD ZONE "A", SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT (100-YEAR FLOOD). NO BASE FLOOD ELEVATIONS DETERMINED.
 - FLOOD ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN

UTILITIES AND STRUCTURES NOTES:

- CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING UTILITIES OR STRUCTURES TO REMAIN. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED BY THE CONTRACTOR IN A TIMELY MANNER, TO THE SATISFACTION OF THE OWNER, AND AT NO ADDITIONAL COST TO THE OWNER. PERFORM UTILITY COORDINATION AND TEMPORARY RELOCATION AS NECESSARY, AND AS REQUIRED BY THE CONTRACT DOCUMENTS.
- PROTECT ALL EXISTING UNDERGROUND UTILITIES AND FACILITIES TO REMAIN AGAINST DAMAGE FROM HAULING AND CONSTRUCTION OPERATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY SUCH UTILITIES AND FACILITIES. IN NO CASE SHALL THE CONTRACTOR PLACE VEHICLE LOADS EXCEEDING THE LEGAL LOAD LIMIT WITHIN 10 FEET OF THESE UTILITIES AND FACILITIES. IF THE CONTRACTOR ELECTS TO PLACE LOADS EXCEEDING THE LEGAL LIMIT ON THESE OR OTHER UNDERGROUND FACILITIES OR UTILITIES, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE AND ADVISE THE ENGINEER OF THE TYPE, SIZE AND WEIGHT OF ALL VEHICLES HE INTENDS TO USE OVER THESE FACILITIES DURING CONSTRUCTION, TAKING INTO ACCOUNT THE CONDITIONS OF EXISTING FACILITIES. THE ABOVE DETERMINATION SHALL BE MADE BY A PROFESSIONAL ENGINEER ENGAGED AND PAID FOR BY THE CONTRACTOR LICENSED IN THE STATE OF PENNSYLVANIA, AND IS TO BE MADE PRIOR TO THE USE OF ANY FACILITIES WITH ALL RESTRICTIONS ENUMERATED BY THE CONTRACTOR'S PROFESSIONAL ENGINEER BEING STRICTLY ADHERED TO. IN THE EVENT THE CONTRACTOR FAILS TO COMPLY WITH FINDINGS OF THE CONTRACTOR'S PROFESSIONAL ENGINEER, THE WORK SHALL BE IMMEDIATELY CEASED UNTIL CORRECTIVE PROCEDURES, SATISFACTORY TO THE CONTRACTOR'S PROFESSIONAL ENGINEER, THE ENGINEER AND OWNER ARE EMPLOYED. ALL DAMAGE, DIRECT OR INDIRECT, OF WHATEVER NATURE RESULTING FROM THE PERFORMANCE OF THE WORK OR RESULTING TO THE WORK DURING ITS PROGRESS, FROM WHATEVER CAUSE, SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND PROVIDING TEMPORARY UTILITY AND POWER AS NECESSARY FOR ALL PROPOSED WORK.

SURVEY NOTES:

- THE FOLLOWING NOTES PERTAIN TO ALL MAPPING PRESENTED IN THESE DRAWINGS.
 - A. SOURCE OF MAPPING: TOPOGRAPHIC AND BATHYMETRIC SURVEY PERFORMED BY GANNETT FLEMING, INC. ON OCTOBER 27 AND 31, 2017; VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88), COMPUTED USING GEOID12B; HORIZONTAL DATUM: NORTH AMERICAN DATUM 1983, NATIONAL SPATIAL REFERENCE SYSTEM 2011 (NAD83(2011)); COORDINATE SYSTEM: PENNSYLVANIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, US FOOT.
 - B. LIMITS OF THE FIELD SURVEY ARE IDENTIFIED ON DWG G5.
 - C. RESERVOIR EDGE OF WATER, CONTOURS, AND PLANIMETRIC FEATURES SHOWN OUTSIDE OF FIELD SURVEY LIMITS WERE INCORPORATED FROM AERIAL IMAGERY OR LIDAR MAPPING FLOWN IN 2007 BY THE PENNSYLVANIA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (PA DCNR) FOR THE STATEWIDE PAMAP PROGRAM. A 5-FOOT BUFFER WAS APPLIED TO THE LIDAR DATA TO INCORPORATE THE FIELD SURVEY.
 - D. THE CONTRACTOR SHALL FIELD VERIFY ALL FEATURES AND CONDITIONS THAT MAY AFFECT THEIR WORK.

GENERAL DRAFTING NOTES:

- GREY OR LIGHT LINework GENERALLY REPRESENT EXISTING FEATURES, WHEREAS DARKER BLACK LINework IS GENERALLY INTENDED TO DEPICT NEW CONSTRUCTION.
- DIMENSION AND TEXT CALLOUTS
 - A. EXISTING FEATURES TEXT IS SLANTED AS SHOWN HERE.

ABBREVIATIONS AND LEGEND NOTE:

- THIS IS A STANDARD LIST OF ABBREVIATIONS AND LEGEND. NOT ALL ABBREVIATIONS AND SYMBOLS SHOWN ARE USED IN THIS SET OF DRAWINGS.

60% DESIGN

NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
WJK	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
WCH	PGS	PGS

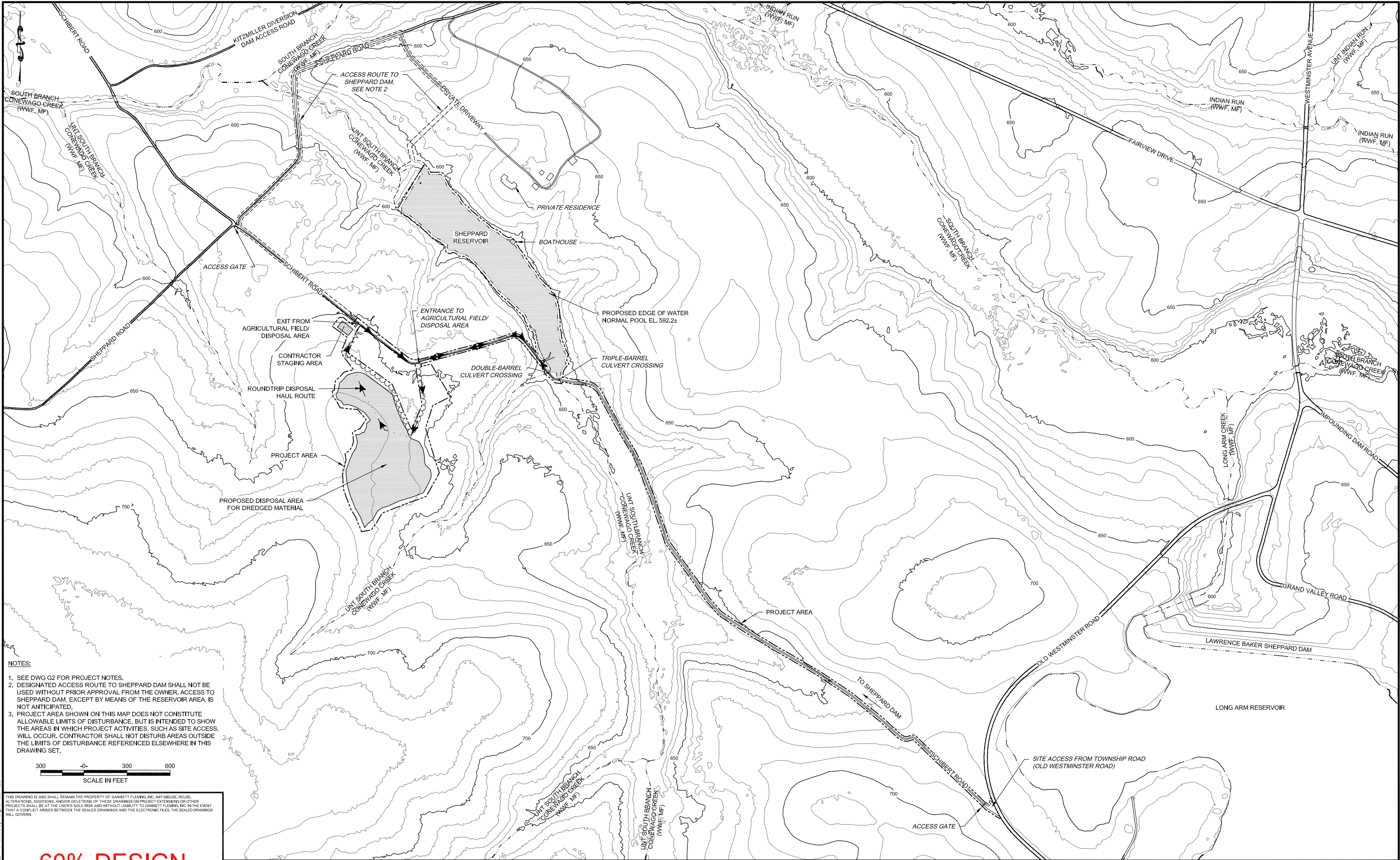


Gannett Fleming

MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR
RESTORATION PROJECT

GENERAL NOTES,
ABBREVIATIONS AND LEGEND

JOB NO.	SHEET NO.
063377	2 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G2



NOTES:

1. SEE DWG G2 FOR PROJECT NOTES.
2. DESIGNATED ACCESS ROUTE TO SHEPPARD DAM SHALL NOT BE USED WITHOUT PRIOR APPROVAL FROM THE OWNER. ACCESS TO SHEPPARD DAM, EXCEPT BY MEANS OF THE RESERVOIR AREA, IS NOT ANTICIPATED.
3. PROJECT AREA SHOWN ON THIS MAP DOES NOT CONSTITUTE ALLOWABLE LIMITS OF DISTURBANCE, BUT IS INTENDED TO SHOW THE AREAS IN WHICH PROJECT ACTIVITIES, SUCH AS SITE ACCESS, WILL OCCUR. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE LIMITS OF DISTURBANCE REFERENCED ELSEWHERE IN THIS DRAWING SET.



THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF GANNETT FLEMING, INC. ANY REUSE, ALTERATION, ADDITION, AND/OR DELETION OF THESE DRAWINGS ON PROJECT EXTENSIONS OR OTHER PROJECTS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO GANNETT FLEMING, INC. IN THE EVENT THAT A CONFLICT ARISES BETWEEN THE SEALED DRAWINGS AND THE ELECTRONIC FILES, THE SEALED DRAWINGS WILL GOVERN.

60% DESIGN

NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
WJK	WJK	AS SHOWN
DRAWN	CHECKED	APPROVED
WJK	ECN	PGS



MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

SITE OVERVIEW PLAN

JOB NO.	SHEET NO.
063377	3 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G3



NOTES:

- SEE DWG G2 FOR PROJECT NOTES.
- SHEPPARD RESERVOIR IS SITUATED ON AND DISCHARGES TO AN UNNAMED TRIBUTARY TO THE SOUTH BRANCH CONEWAGO CREEK. THE CONTRIBUTING DRAINAGE AREA AT THE DAM EMBANKMENT IS APPROXIMATELY 1.74 SQUARE MILES.

60

-0-

60

120

SCALE IN FEET

IMAGERY SOURCE AROUND RESERVOIR: GANNETT FLEMING, INC. DRONE IMAGERY OCT. 2017.
IMAGERY SOURCE BEYOND DRONE IMAGE: © 2017 DIGITALGLOBE © CNES (2017) DISTRIBUTION AIRBUS DS © MICROSOFT CORPORATION

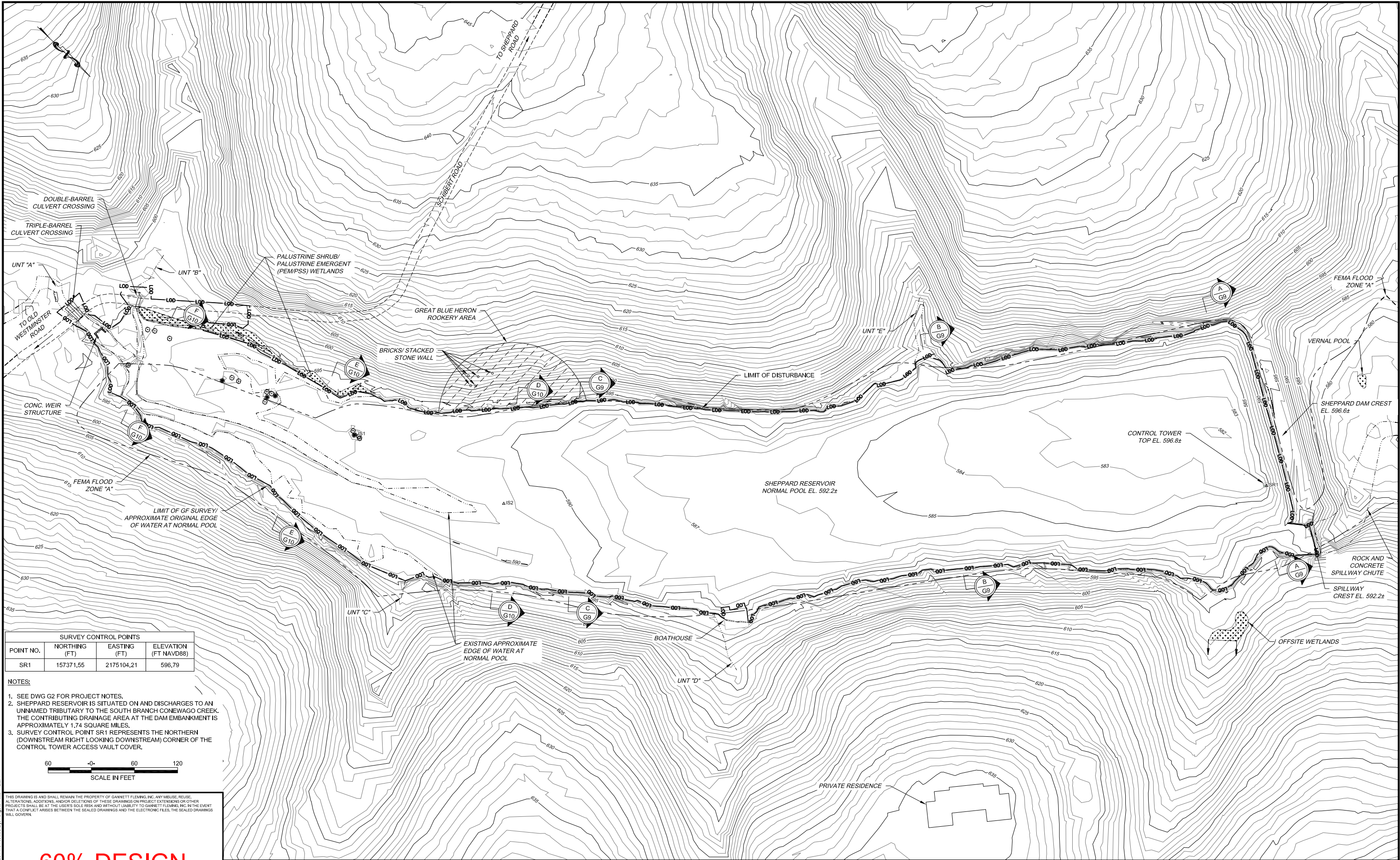
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60% DESIGN

				DESIGNED	CADD	SCALE	<div><div>Gannett Fleming</div></div>	MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA		EXISTING SITE PLAN WITH AERIAL IMAGERY	JOB NO.	SHEET NO.
				WJK	WCH	AS SHOWN					063377	4 OF 20
				DRAWN	CHECKED	APPROVED					DATE	DRAWING NO.
NO. DESCRIPTION DATE BY				WCH	PGS	PGS	SHEPPARD RESERVOIR RESTORATION PROJECT				OCTOBER 2018	G4
REVISIONS												



W:\426\active_jobs\063377 - Sheppard Dam\05 Working\CADD\Design Set\Sheppard Dam Plan.dwg
Plot Date: 11/20/2018 2:37 PM, Plotted By: Christopher M. Williams



SURVEY CONTROL POINTS			
POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT NAVD88)
SR1	157371.55	2175104.21	596.79

- NOTES:
- SEE DWG G2 FOR PROJECT NOTES.
 - SHEPPARD RESERVOIR IS SITUATED ON AND DISCHARGES TO AN UNNAMED TRIBUTARY TO THE SOUTH BRANCH CONEWAGO CREEK. THE CONTRIBUTING DRAINAGE AREA AT THE DAM EMBANKMENT IS APPROXIMATELY 1.74 SQUARE MILES.
 - SURVEY CONTROL POINT SR1 REPRESENTS THE NORTHERN (DOWNSTREAM RIGHT LOOKING DOWNSTREAM) CORNER OF THE CONTROL TOWER ACCESS VAULT COVER.



THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF GANNETT FLEMING, INC. ANY REUSE, ALTERATION, ADDITION, AND/OR DELETION OF THESE DRAWINGS ON PROJECTS EXTENDING OR OTHER PROJECTS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO GANNETT FLEMING, INC. IN THE EVENT THAT A CONFLICT ARISES BETWEEN THE SEALED DRAWINGS AND THE ELECTRONIC FILES, THE SEALED DRAWINGS WILL GOVERN.

60% DESIGN

NO.	DESCRIPTION	DATE	BY
REVISIONS			

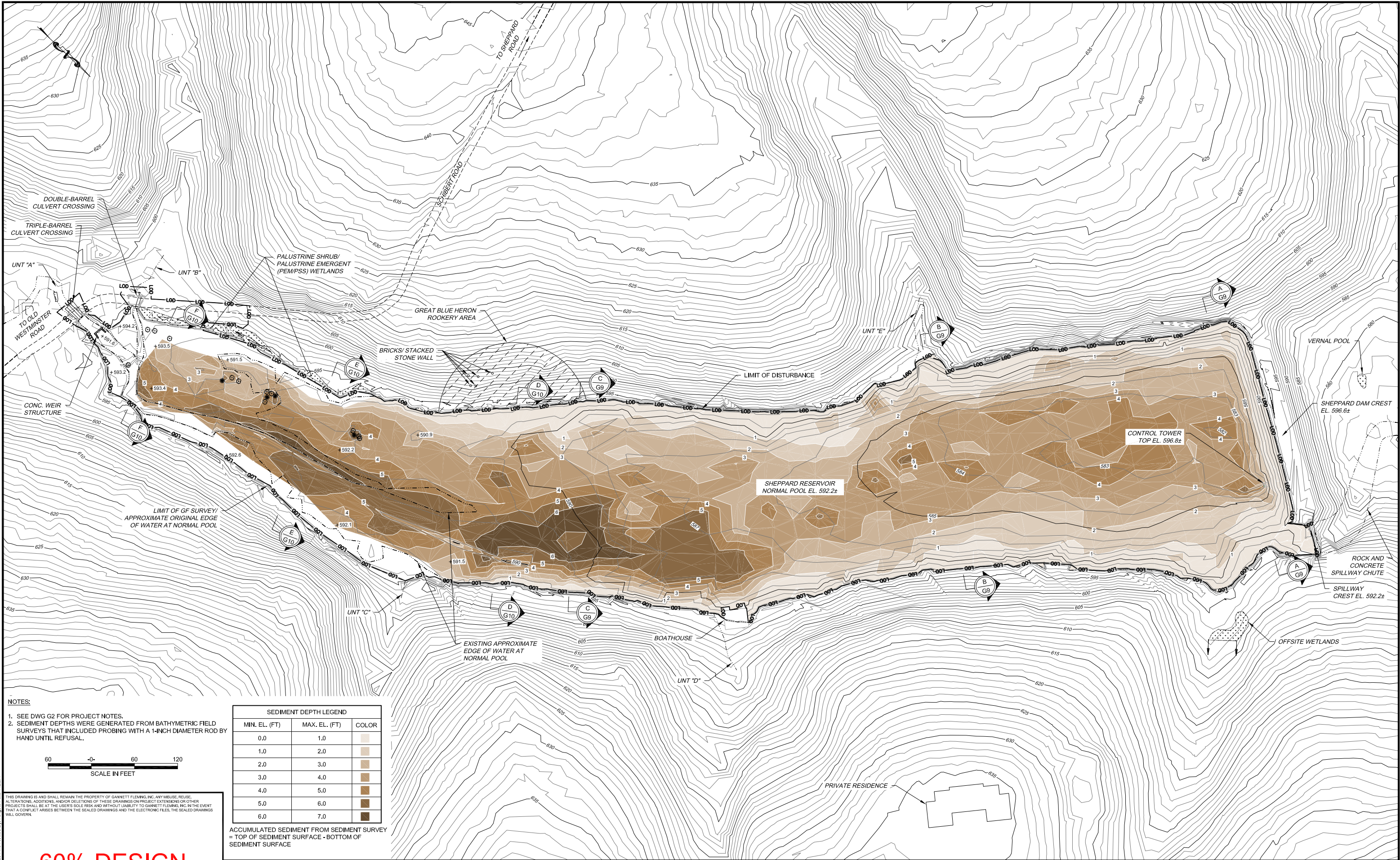
DESIGNED	CADD	SCALE
WJK	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
WCH	PGS	PGS



MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

EXISTING SITE PLAN	
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JOB NO.	SHEET NO.
063377	5 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G5



- NOTES:
1. SEE DWG G2 FOR PROJECT NOTES.
 2. SEDIMENT DEPTHS WERE GENERATED FROM BATHYMETRIC FIELD SURVEYS THAT INCLUDED PROBING WITH A 1-INCH DIAMETER ROD BY HAND UNTIL REFUSAL.



SEDIMENT DEPTH LEGEND		
MIN. EL. (FT)	MAX. EL. (FT)	COLOR
0.0	1.0	
1.0	2.0	
2.0	3.0	
3.0	4.0	
4.0	5.0	
5.0	6.0	
6.0	7.0	

ACCUMULATED SEDIMENT FROM SEDIMENT SURVEY
= TOP OF SEDIMENT SURFACE - BOTTOM OF
SEDIMENT SURFACE

NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
WJK	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
WCH	PGS	PGS



Gannett Fleming

MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA

SHEPPARD RESERVOIR
RESTORATION PROJECT

BATHYMETRIC SURVEY SEDIMENT DEPTH PLAN

JOB NO.	SHEET NO.
063377	6 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G6

60% DESIGN

NOTES:

- SEE DWG G2 FOR PROJECT NOTES.
- EXISTING TREES IN HEALTHY CONDITION SHALL BE PRESERVED ON THE SOUTHERN ISLAND (ISLAND A), IF POSSIBLE. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE TREES TO BE PROTECTED ON ISLAND AND ELSEWHERE AROUND THE PROJECT SITE. EXCAVATION AROUND TREES TO BE PRESERVED SHALL NOT DISTURB THE ROOT ZONE OF SUCH TREES WITHIN CRITICAL ROOT RADIUS (CRR IN FEET = TRUNK DBH IN INCHES X 1.0 FEET).
 - FOR EXAMPLE, IF A TREE'S DBH IS 12 INCHES, THEN ITS CRR IS 12 FEET. THE PROTECTED ROOT ZONE IS THEN THE AREA AROUND THE TREE WITH A DIAMETER OF 24 FEET (2 X CRR).
- DREDGING ACTIVITIES SHALL NOT DISTURB EXISTING CONTROL TOWER OR UPSTREAM SLOPE OF DAM EMBANKMENT, EXCEPT FOR THE REMOVAL OF ACCUMULATED SEDIMENT ABOVE OR AROUND THESE FEATURES, AS INDICATED ON DRAWINGS.
- LOCATION OF BEDROCK WITHIN THE RESERVOIR AREA IS UNKNOWN, AND SO FINAL DREDGE CONFIGURATION MAY DIFFER FROM THAT SHOWN BY PROPOSED SURFACE CONTOURS. CONTRACTOR SHALL ADHERE TO PROPOSED SURFACE CONTOURS, WHERE POSSIBLE. IN THE EVENT THAT BEDROCK IS ENCOUNTERED ABOVE PROPOSED SURFACE, CONTRACTOR SHALL COORDINATE WITH THE OWNER AND/OR THE ENGINEER TO DETERMINE A SUITABLE ALTERNATIVE AREA TO DREDGE DEEPER TO ACHIEVE THE DESIGN CAPACITY OF 20 MILLION GALLONS (61.38 ACRE-Feet) AT NORMAL POOL (EL. 592.2 FT). THE MAXIMUM POST-DREDGING NORMAL POOL CAPACITY SHALL NOT EXCEED 20 MILLION GALLONS.
- PROPOSED RESERVOIR ACCESS ROAD SHALL INCLUDE A TEMPORARY WETLANDS CROSSING. NO PERMANENT IMPACTS SHALL BE MADE TO EXISTING WETLANDS.
- TOTAL EXCAVATION VOLUME (36,650 CY) REPRESENTS THE VOLUME BETWEEN THE EXISTING GROUND (TOP OF SEDIMENT SURFACE FROM BATHYMETRIC SURVEY) AND PROPOSED FINISHED GRADE SURFACE.
- CHANNEL BETWEEN EXISTING TRIPLE-BARREL CULVERT CROSSING AND EXISTING CONCRETE WEIR STRUCTURE AT UPSTREAM EXTENT OF THE RESERVOIR SHALL BE DREDGED TO THE EXTENT POSSIBLE TO AVOID IMPACTING EXISTING TREES ON ADJACENT STREAM BANK. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE TREES TO BE PROTECTED/PRESERVED.
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- CONTRACTOR SHALL NOT CUT EDGE TREES OR DISTURB EDGE VEGETATION UNLESS IT IS WITHIN THE LIMITS OF DISTURBANCE.
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- REFER TO SHEET G11 FOR PROPOSED RESERVOIR CENTERLINE ALIGNMENT DATA TABLE AND ISLAND CENTER CONTROL POINTS.

-
- MATCHLINE SEE SHEET G8
- NOTES:
- SEE DWG G2 FOR PROJECT NOTES.
 - EXISTING TREES IN HEALTHY CONDITION SHALL BE PRESERVED ON THE SOUTHERN ISLAND (ISLAND A), IF POSSIBLE. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE TREES TO BE PROTECTED ON ISLAND AND ELSEWHERE AROUND THE PROJECT SITE. EXCAVATION AROUND TREES TO BE PRESERVED SHALL NOT DISTURB THE ROOT ZONE OF SUCH TREES WITHIN CRITICAL ROOT RADIUS (CRR IN FEET = TRUNK DBH IN INCHES X 1.0 FEET).
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 - REFER TO SHEET G11 FOR PROPOSED RESERVOIR CENTERLINE ALIGNMENT DATA TABLE AND ISLAND CENTER CONTROL POINTS.
- 60% DESIGN
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60% DESIGN

MATCHLINE SEE SHEET G8

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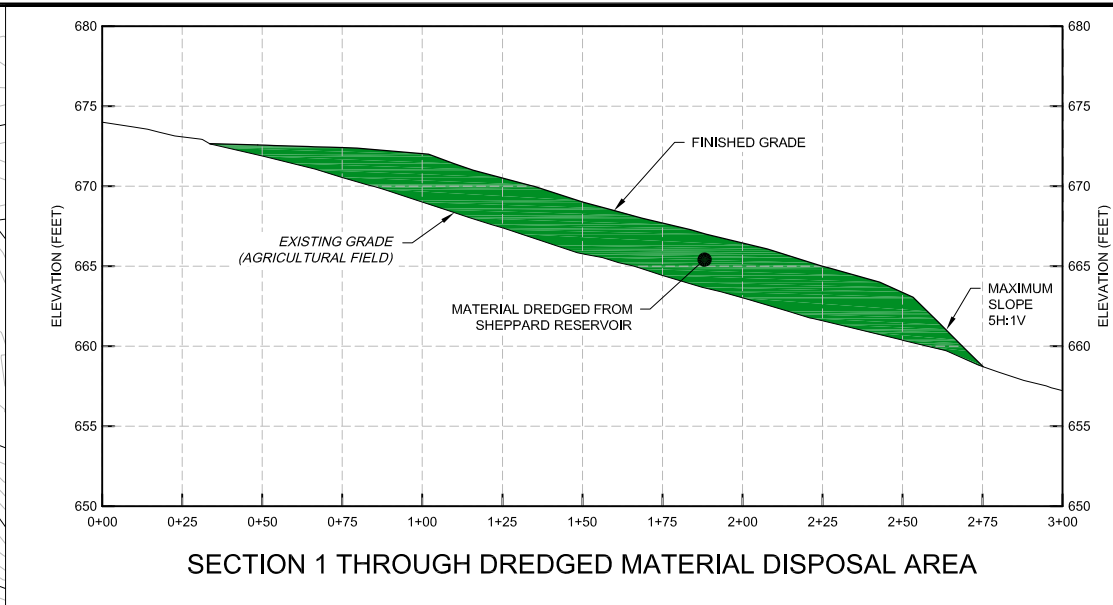
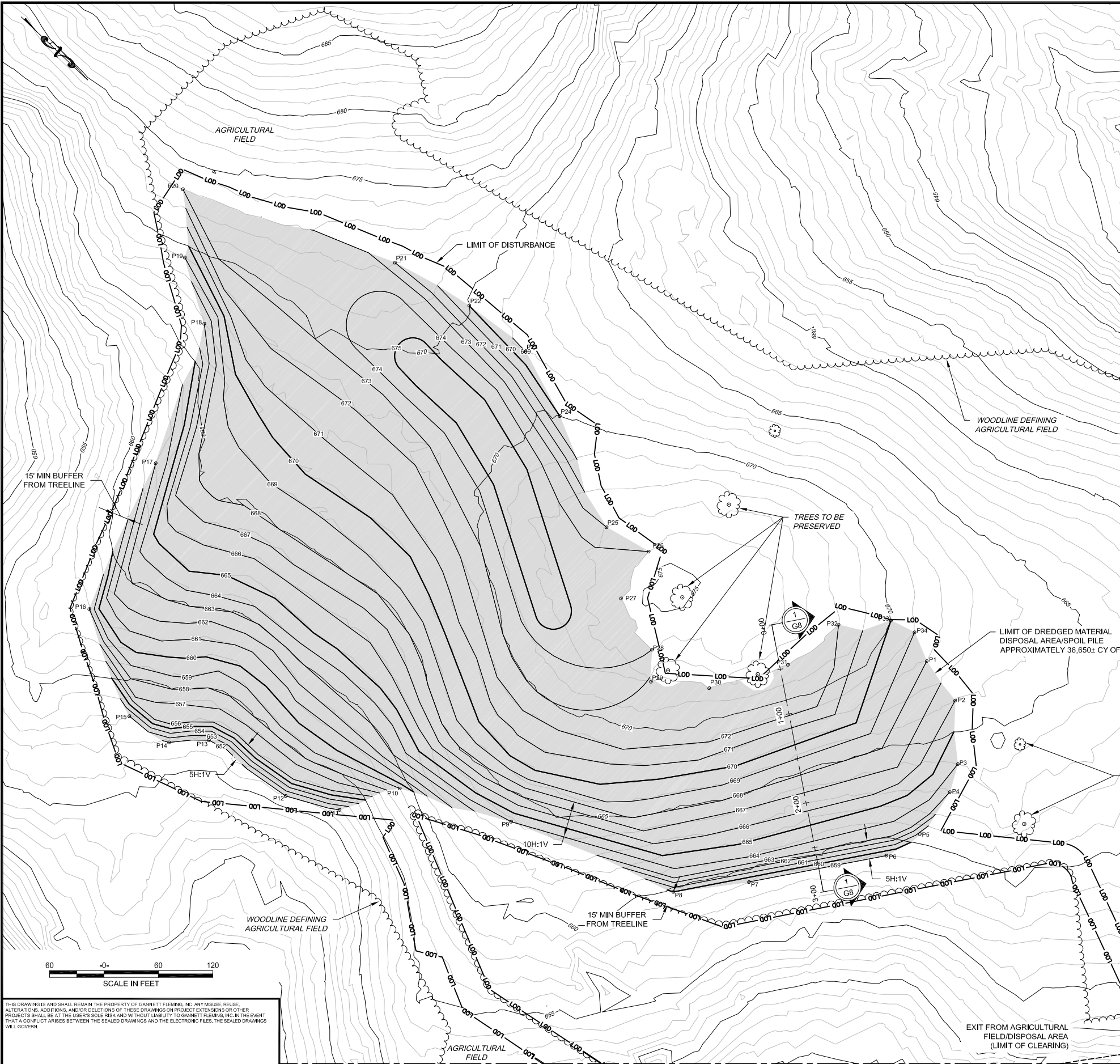
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- REFER TO SHEET G11 FOR PROPOSED RESERVOIR CENTERLINE ALIGNMENT DATA TABLE AND ISLAND CENTER CONTROL POINTS.

SCALE IN FEET

60 0 60 120

W:\1426\Active Jobs\63377 - Sheppard Dam\05 Working\CADD\Design Set\Sheppard Dam Proposed Plan.dwg
Plot Date: 11/20/2018 2:24 PM Plotted By: Knapton, III, William



- NOTES:
1. SEE DWG G2 FOR PROJECT NOTES.
 2. TOTAL EXCAVATION VOLUME (36,650 CY) REPRESENTS THE VOLUME BETWEEN THE EXISTING GROUND IN THE RESERVOIR (TOP OF SEDIMENT SURFACE FROM BATHYMETRIC SURVEY) AND THE PROPOSED FINISHED GRADE SURFACE IN THE RESERVOIR.
 3. TREES AND WOODY VEGETATION REMOVED TO CONSTRUCT TEMPORARY ACCESS/HAUL ROADS SHALL BE DISPOSED OF OUTSIDE OF THE DREDGED MATERIAL DISPOSAL AREA AT A LOCATION TO BE DESIGNATED BY THE OWNER ADJACENT TO THE AGRICULTURAL FIELD.

POINT ID	NORTHING (FT)	EASTING (FT)
P1	155929.3	2174531.1
P2	155982.0	2174541.1
P3	156032.3	2174590.1
P4	156046.8	2174618.6
P5	156054.6	2174674.8
P6	156044.2	2174717.3
P7	155954.3	2174842.7
P8	155901.2	2174907.9
P9	155717.9	2174974.5
P10	155603.5	2175032.3
P11	155571.5	2175095.0
P12	155517.8	2175124.7
P13	155414.1	2175138.1
P14	155383.9	2175170.1
P15	155332.1	2175179.1
P16	155218.8	2175123.9
P17	155161.6	2174956.5
P18	155094.9	2174808.0
P19	155029.1	2174769.7
P20	154975.6	2174716.4
P21	155201.4	2174614.7
P22	155293.3	2174592.6
P23	155373.5	2174586.9
P24	155449.7	2174612.7
P25	155571.2	2174666.4
P26	155623.5	2174653.8
P27	155636.9	2174712.3
P28	155700.5	2174730.1
P29	155723.9	2174756.3
P30	155775.5	2174717.4
P31	155820.8	2174639.0
P32	155831.1	2174568.8
P33	155869.9	2174525.7
P34	155897.7	2174517.2

MATCHLINE SEE SHEET G7

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DRAWN	CHECKED	APPROVED
WCH	PGS	PGS



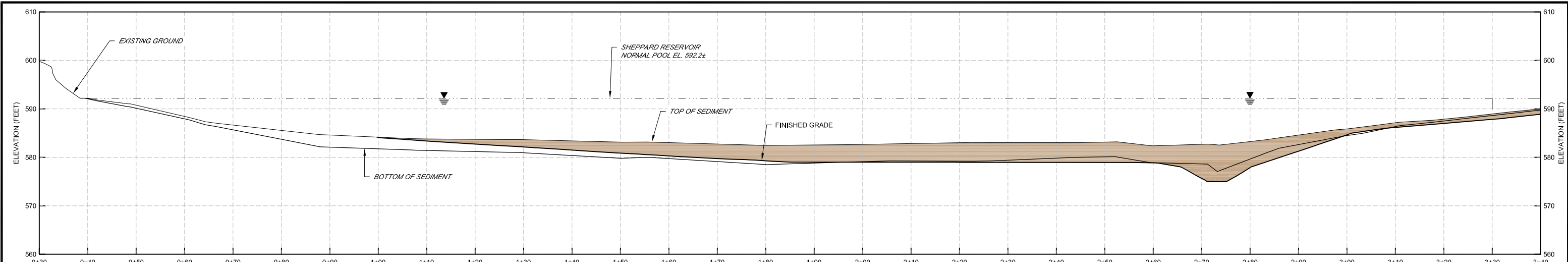
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HANOVER, PENNSYLVANIA

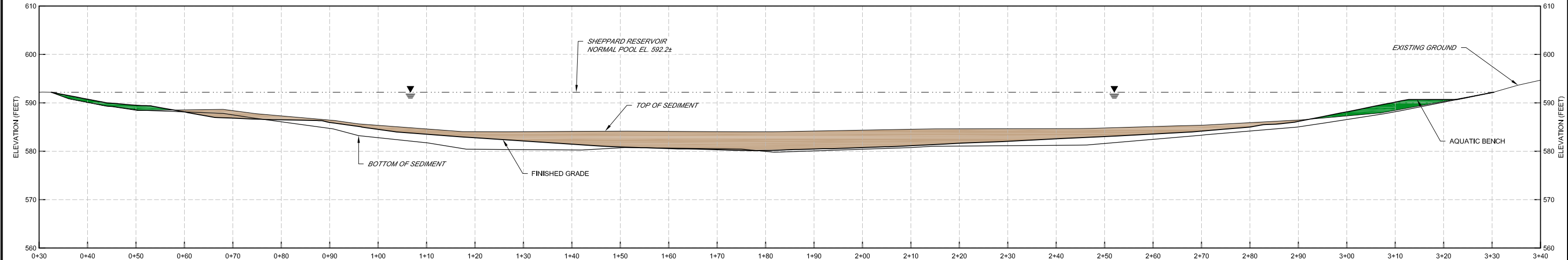
SHEPPARD RESERVOIR
RESTORATION PROJECT

PROPOSED SITE PLAN
SHEET 2 OF 2
DREDGED MATERIAL DISPOSAL AREA

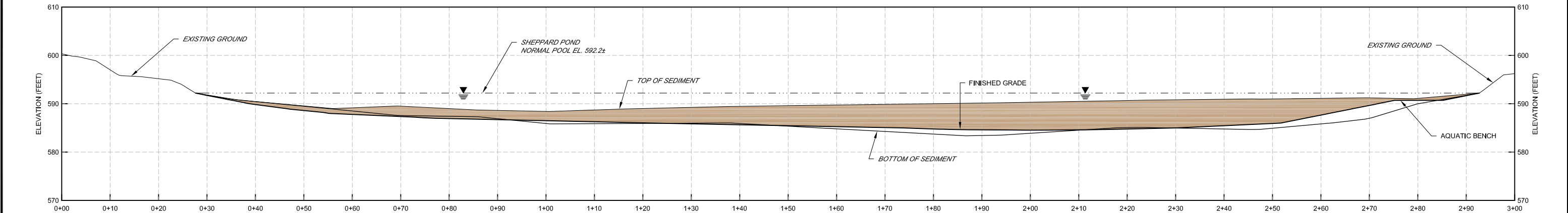
JOB NO.	SHEET NO.
063377	8 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G8



SECTION A
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 17+37
(NEAR SHEPPARD DAM)



SECTION B
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 12+94
(NEAR UNNAMED TRIBUTARY "E")



SECTION C
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 7+69
(NEAR MIDDLE OF RESERVOIR)

NOTES:

1. SEE DWG G2 FOR PROJECT NOTES.
2. BOTTOM OF SEDIMENT SURFACE WAS GENERATED FROM BATHYMETRIC FIELD SURVEYS THAT INCLUDED PROBING WITH A 1-INCH DIAMETER ROD BY HAND UNTIL REFUSAL.
3. BROWN HATCH INDICATES AREAS OF CUT BETWEEN EXISTING TOP OF SEDIMENT SURFACE AND PROPOSED FINISHED GRADE. GREEN HATCH INDICATES AREAS OF FILL BETWEEN EXISTING TOP OF SEDIMENT SURFACE AND PROPOSED FINISHED GRADE.
4. CROSS SECTIONS SHOWN ON PAGES G9 AND G10 ARE NOT PERPENDICULAR TO THE PROPOSED RESERVOIR CENTERLINE ALIGNMENT. REPORTED STATIONS REPRESENT WHERE THE SECTIONS INTERSECT THE PROPOSED RESERVOIR CENTERLINE ALIGNMENT. REFER TO SHEETS G5 AND G7 FOR SECTION LOCATIONS.



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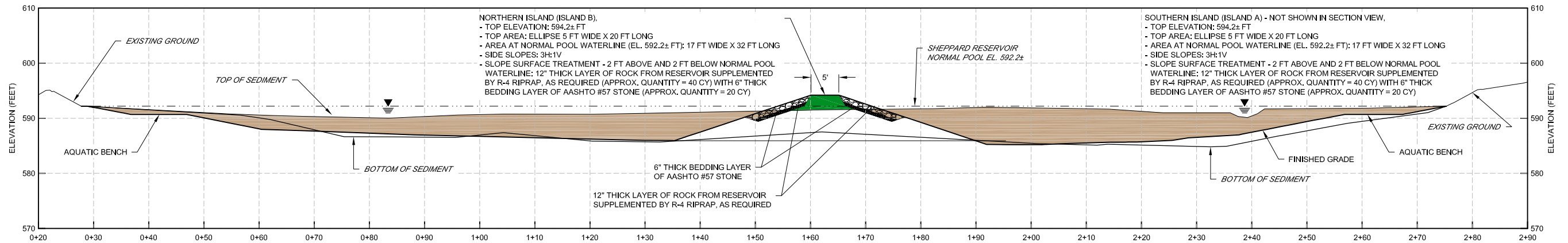


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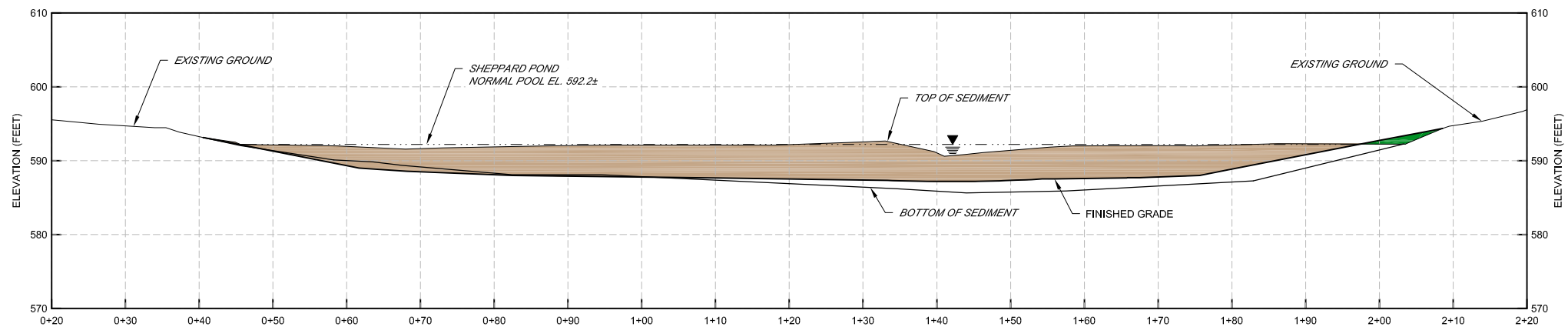
MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

SECTIONS THROUGH SHEPPARD RESERVOIR
SHEET 1 OF 2

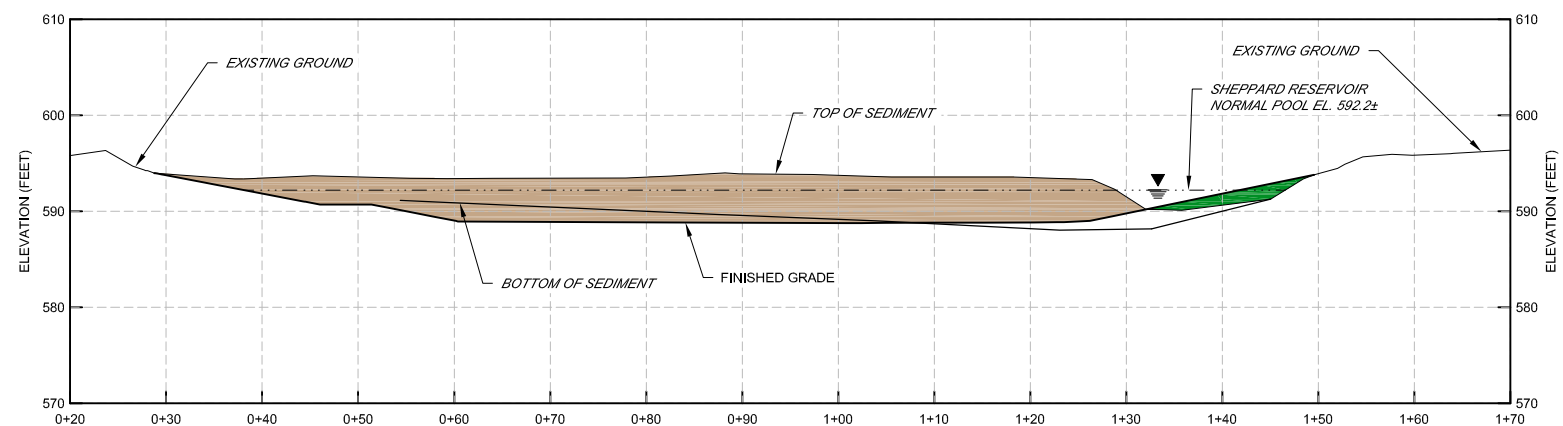
JOB NO.	SHEET NO.
063377	9 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G9



SECTION D
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 6+68
(NEAR NORTHERN ISLAND (ISLAND B))



SECTION E
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 3+63
(NEAR UPSTREAM END OF RESERVOIR)



SECTION F
G5 - PROPOSED RESERVOIR CENTERLINE ALIGNMENT STATION 1+16
(NEAR UPSTREAM END OF RESERVOIR)

NOTES:

- SEE DWG G2 FOR PROJECT NOTES.
- BOTTOM OF SEDIMENT SURFACE WAS GENERATED FROM BATHYMETRIC FIELD SURVEYS THAT INCLUDED PROBING WITH A 1-INCH DIAMETER ROD BY HAND UNTIL REFUSAL.
- BROWN HATCH INDICATES AREAS OF CUT BETWEEN EXISTING TOP OF SEDIMENT SURFACE AND PROPOSED FINISHED GRADE. GREEN HATCH INDICATES AREAS OF FILL BETWEEN EXISTING TOP OF SEDIMENT SURFACE AND PROPOSED FINISHED GRADE.
- CROSS SECTIONS SHOWN ON PAGES G9 AND G10 ARE NOT PERPENDICULAR TO THE PROPOSED RESERVOIR CENTERLINE ALIGNMENT. REPORTED STATIONS REPRESENT WHERE THE SECTIONS INTERSECT THE PROPOSED RESERVOIR CENTERLINE ALIGNMENT. REFER TO SHEETS G5 AND G7 FOR SECTION LOCATIONS.



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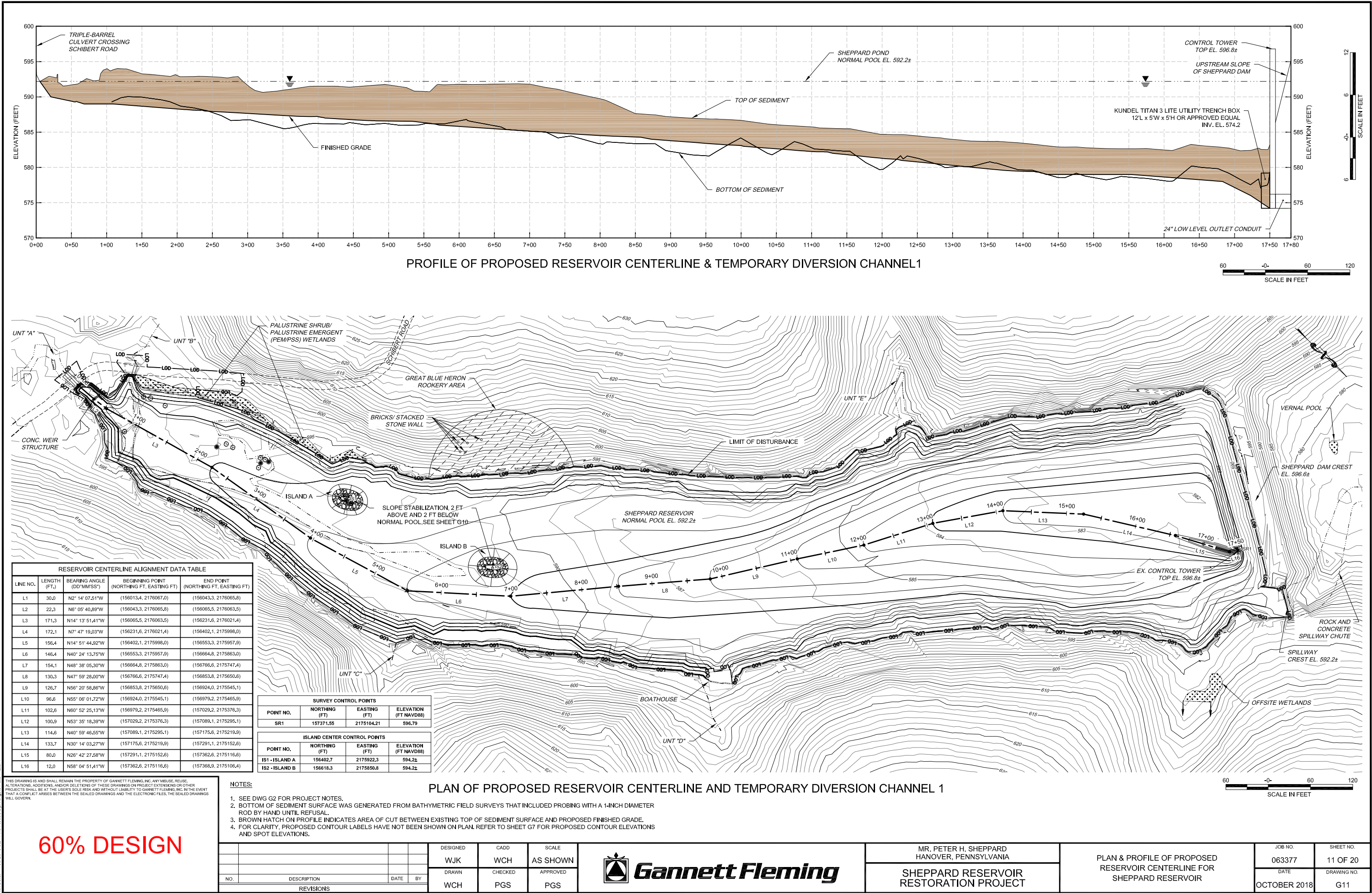
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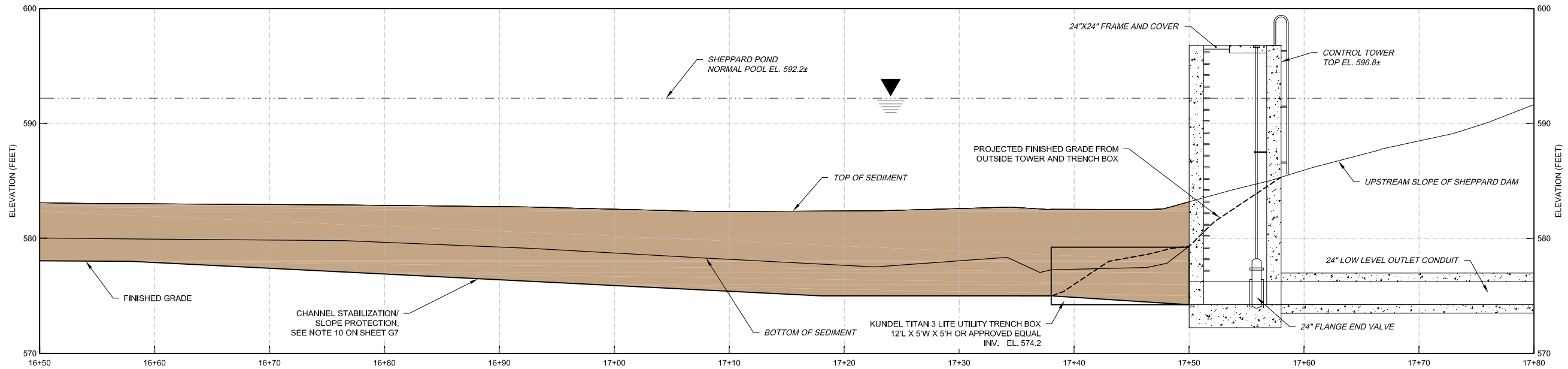
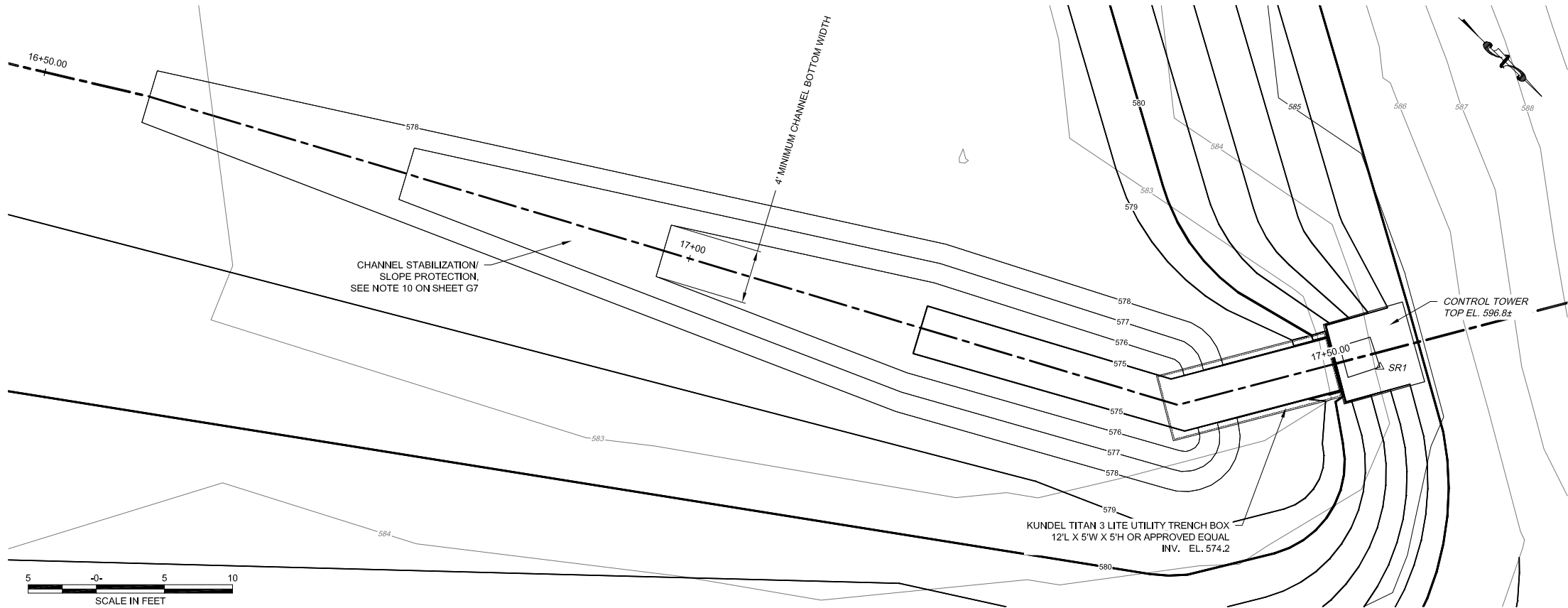
SHEPPARD RESERVOIR
RESTORATION PROJECT

SECTIONS THROUGH SHEPPARD RESERVOIR
SHEET 2 OF 2

JOB NO.	SHEET NO.
063377	10 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G10



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Plot Date: 11/20/2018 2:28 PM Plotted By: Kresner III, William



PROFILE OF PROPOSED RESERVOIR CENTERLINE & TEMPORARY DIVERSION CHANNEL1

NOTES:

1. SEE DWG G2 FOR PROJECT NOTES.
2. BOTTOM OF SEDIMENT SURFACE WAS GENERATED FROM BATHYMETRIC FIELD SURVEYS THAT INCLUDED PROBING WITH A 1-INCH DIAMETER ROD BY HAND UNTIL REFUSAL.
3. BROWN HATCH ON PROFILE INDICATES AREA OF CUT BETWEEN EXISTING TOP OF SEDIMENT SURFACE AND PROPOSED FINISHED GRADE.
4. TRENCH BOX IS INTENDED TO STABILIZE RESERVOIR SEDIMENTS IN THE VICINITY OF THE TOWER TO PREVENT SEDIMENT FROM SLIDING IN FRONT OF AND BLOCKING THE INLET OF THE RESERVOIR OUTLET PIPE. THE ORIGINAL DESIGN DRAWINGS AND CONSTRUCTION PHOTOGRAPHS INDICATE THAT A 6 TO 8 FOOT TRENCH WAS EXCAVATED IN FRONT OF THE TOWER TO CONVEY FLOW TO THE OUTLET AT THE TIME OF CONSTRUCTION.
5. MODIFICATIONS SHALL NOT BE MADE TO THE EXISTING CONTROL TOWER OR OTHER FEATURES OF SHEPPARD DAM WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER AND PADEP DIVISION OF DAM SAFETY. ALL DAMAGE, DIRECT OR INDIRECT, OF WHATEVER NATURE RESULTING FROM THE PERFORMANCE OF THE WORK OR RESULTING TO THE WORK DURING ITS PROGRESS, FROM WHATEVER CAUSE, SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER AND PADEP DIVISION OF DAM SAFETY AT THE CONTRACTOR'S COST.

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NO.	DESCRIPTION	DATE	BY
REVISIONS			

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WJK	PGS	PGS



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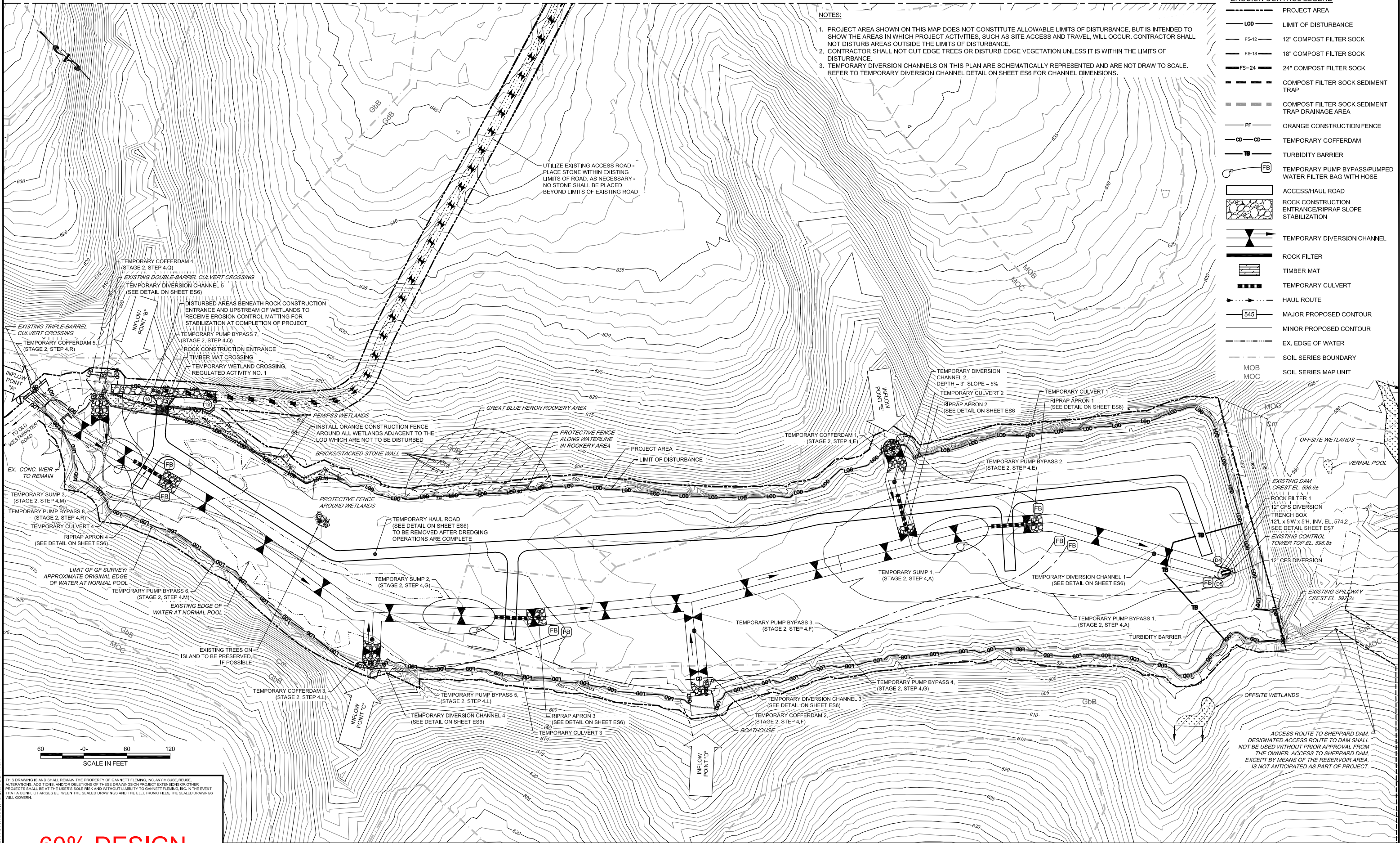
SHEPPARD RESERVOIR
RESTORATION PROJECT

PROJECT DETAILS

JOB NO.	SHEET NO.
063377	12 OF 20
DATE	DRAWING NO.
OCTOBER 2018	G12

- NOTES:
1. PROJECT AREA SHOWN ON THIS MAP DOES NOT CONSTITUTE ALLOWABLE LIMITS OF DISTURBANCE, BUT IS INTENDED TO SHOW THE AREAS IN WHICH PROJECT ACTIVITIES, SUCH AS SITE ACCESS AND TRAVEL, WILL OCCUR. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE LIMITS OF DISTURBANCE.
 2. CONTRACTOR SHALL NOT CUT EDGE TREES OR DISTURB EDGE VEGETATION UNLESS IT IS WITHIN THE LIMITS OF DISTURBANCE.
 3. TEMPORARY DIVERSION CHANNELS ON THIS PLAN ARE SCHEMATICALLY REPRESENTED AND ARE NOT DRAW TO SCALE. REFER TO TEMPORARY DIVERSION CHANNEL DETAIL ON SHEET ES6 FOR CHANNEL DIMENSIONS.

- EROSION CONTROL LEGEND
- PROJECT AREA
 - L00 LIMIT OF DISTURBANCE
 - F5-12 12" COMPOST FILTER SOCK
 - F5-18 18" COMPOST FILTER SOCK
 - F5-24 24" COMPOST FILTER SOCK
 - COMPOST FILTER SOCK SEDIMENT TRAP
 - COMPOST FILTER SOCK SEDIMENT TRAP DRAINAGE AREA
 - PF ORANGE CONSTRUCTION FENCE
 - CD CD TEMPORARY COFFERDAM
 - TB TURBIDITY BARRIER
 - FB TEMPORARY PUMP BYPASS/PUMPED WATER FILTER BAG WITH HOSE
 - ACCESS/HAUL ROAD
 - ROCK CONSTRUCTION ENTRANCE/RIPRAP SLOPE STABILIZATION
 - TEMPORARY DIVERSION CHANNEL
 - ROCK FILTER
 - TIMBER MAT
 - TEMPORARY CULVERT
 - HAUL ROUTE
 - 545 MAJOR PROPOSED CONTOUR
 - MINOR PROPOSED CONTOUR
 - EX. EDGE OF WATER
 - SOIL SERIES BOUNDARY
 - SOIL SERIES MAP UNIT



SCALE IN FEET

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Plot Date: 11/20/2018 2:28 PM Plotted By: Kressner III, William

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NO.	DESCRIPTION	DATE	BY

DESIGNED	CADD	SCALE
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DRAWN	CHECKED	APPROVED
NCC	PGS	PGS

REVISIONS



MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR
RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL PLAN PHASE 1 RESERVOIR AREA	JOB NO. 063377 DATE OCTOBER 2018	SHEET NO. 13 OF 20 DRAWING NO. ES1
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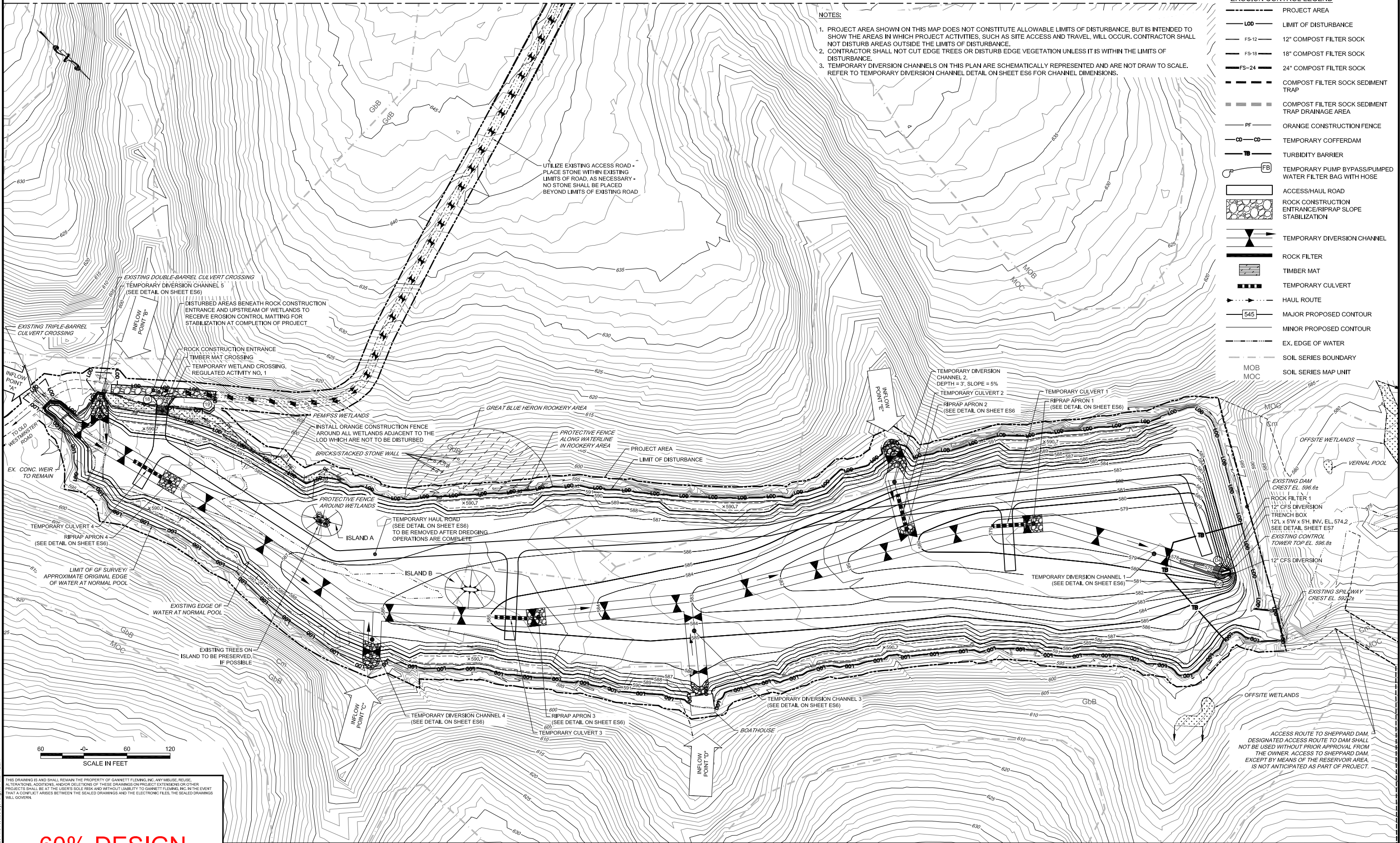
MATCHLINE SEE SHEET ES3

NOTES:

1. PROJECT AREA SHOWN ON THIS MAP DOES NOT CONSTITUTE ALLOWABLE LIMITS OF DISTURBANCE, BUT IS INTENDED TO SHOW THE AREAS IN WHICH PROJECT ACTIVITIES, SUCH AS SITE ACCESS AND TRAVEL, WILL OCCUR. CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE THE LIMITS OF DISTURBANCE.
2. CONTRACTOR SHALL NOT CUT EDGE TREES OR DISTURB EDGE VEGETATION UNLESS IT IS WITHIN THE LIMITS OF DISTURBANCE.
3. TEMPORARY DIVERSION CHANNELS ON THIS PLAN ARE SCHEMATICALLY REPRESENTED AND ARE NOT DRAW TO SCALE. REFER TO TEMPORARY DIVERSION CHANNEL DETAIL ON SHEET ES6 FOR CHANNEL DIMENSIONS.

EROSION CONTROL LEGEND

- PROJECT AREA
- LIMIT OF DISTURBANCE
- FS-12 12" COMPOST FILTER SOCK
- FS-18 18" COMPOST FILTER SOCK
- FS-24 24" COMPOST FILTER SOCK
- COMPOST FILTER SOCK SEDIMENT TRAP
- COMPOST FILTER SOCK SEDIMENT TRAP DRAINAGE AREA
- ORANGE CONSTRUCTION FENCE
- TEMPORARY COFFERDAM
- TURBIDITY BARRIER
- TEMPORARY PUMP BYPASS/PUMPED WATER FILTER BAG WITH HOSE
- ACCESS/HAUL ROAD
- ROCK CONSTRUCTION ENTRANCE/RIPRAP SLOPE STABILIZATION
- TEMPORARY DIVERSION CHANNEL
- ROCK FILTER
- TIMBER MAT
- TEMPORARY CULVERT
- HAUL ROUTE
- MAJOR PROPOSED CONTOUR
- MINOR PROPOSED CONTOUR
- EX. EDGE OF WATER
- SOIL SERIES BOUNDARY
- SOIL SERIES MAP UNIT



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NO.	DESCRIPTION	DATE	BY
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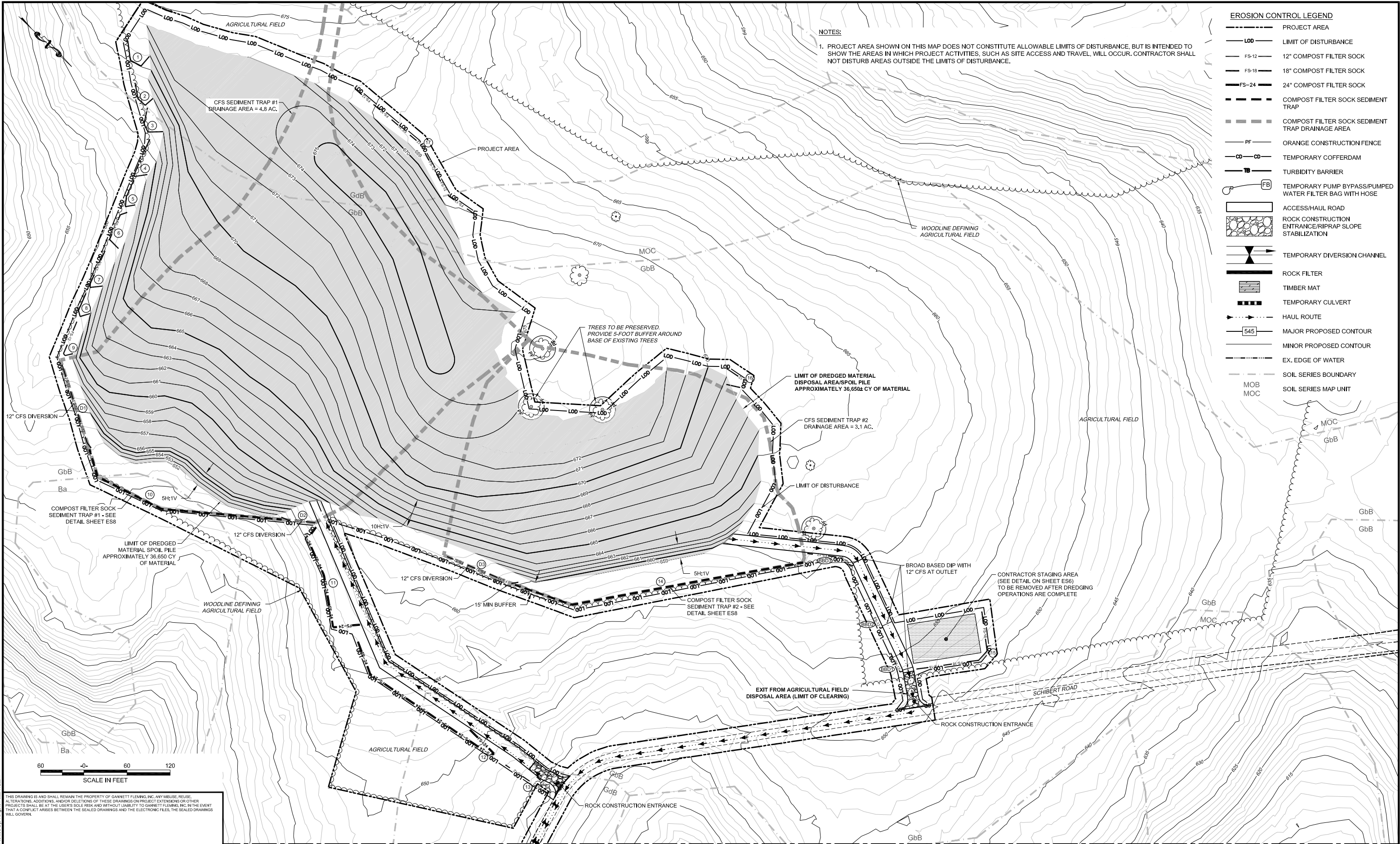
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NCC	PGS	PGS



MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL PLAN PHASE 2 RESERVOIR AREA
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JOB NO. 063377	SHEET NO. 14 OF 20
DATE OCTOBER 2018	DRAWING NO. ES2



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NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	NCC
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CADD	NCC
CHECKED	PGS
APPROVED	PGS

SCALE
AS SHOWN

 **Gannett Fleming**

MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA

**SHEPPARD RESERVOIR
RESTORATION PROJECT**

EROSION AND SEDIMENT CONTROL PLAN
PHASES 1 & 2
DREDGED MATERIAL DISPOSAL AREA

JOB NO.	063377
DATE	OCTOBER 2018
SHEET NO.	15 OF 20
DRAWING NO.	ES3

EROSION AND SEDIMENT POLLUTION CONTROL PLAN NARRATIVE

GENERAL STATEMENT OF THE PROJECT

I. **PROJECT DESCRIPTION**
MR. PETER H. SHEPPARD (LAND OWNER) PROPOSES TO PERFORM MAINTENANCE DREDGING TO RESTORE SHEPPARD RESERVOIR TO ITS ORIGINAL DESIGN CAPACITY OF 20-MILLION GALLONS (61.38 ACRE-FEET), BASED ON A BATHYMETRIC SURVEY OF THE RESERVOIR PERFORMED BY GANNETT FLEMING, INC. IN OCTOBER 2017, THE CURRENT CAPACITY OF THE RESERVOIR IS APPROXIMATELY 12.81-MILLION GALLONS (39.31 ACRE FEET), TO RESTORE THE RESERVOIR TO ITS ORIGINAL CAPACITY, APPROXIMATELY 36,650 CUBIC YARDS (22.71 ACRE-FEET) OF ACCUMULATED SEDIMENT WILL BE REMOVED AND SPOILED ON A NEARBY AGRICULTURAL FIELD TO THE SOUTHWEST OF THE RESERVOIR. SHEPPARD RESERVOIR IS A PRIVATE IMPOUNDMENT ASSOCIATED WITH MR. SHEPPARD'S PROPERTY AND RESIDENCE. THE RESERVOIR IS IMPOUNDED BY SHEPPARD DAM (39.762842° N; -77.015337° W), WHICH WAS CONSTRUCTED IN 1934 AND SPANS AN UNNAMED TRIBUTARY TO THE SOUTH BRANCH CONEWAGO CREEK IN UNION TOWNSHIP, ADAMS COUNTY, PENNSYLVANIA. THE SITE IS LOCATED IN THE CONEWAGO CREEK WATERSHED.

THE PROPOSED PROJECT INVOLVES MECHANICALLY EXCAVATING THE ACCUMULATED SEDIMENT IN THE DRY, AS THE RESERVOIR WILL BE DRAINED AND THE SEDIMENTS LEFT TO DRY FOR SEVERAL MONTHS PRIOR TO THE INITIATION OF DREDGING. NO GUARANTEE IS MADE THAT THE LAKE WILL REMAIN DRY DURING IMMEDIATELY AFTER WET WEATHER EVENTS. THE DREDGING CONTRACTOR SHALL MAKE PROVISIONS IN HIS BID FOR THE ACCOMMODATION OF WET WEATHER FLOWS AND ADEQUATE DEWATERING AND FILTERING MEASURES SHOULD IT BECOME NECESSARY TO DEWATER THE WORK AREA DURING THE CONSTRUCTION PERIOD. A STAGING AREA IS PROPOSED FOR THE CONTRACTOR ALONG THE NORTHERN ACCESS ROAD WITHIN THE DREDGE DISPOSAL AGRICULTURAL FIELD.

EXISTING PIPED CROSSINGS OF TRIBUTARIES ALONG SCHIBERT ROAD, WHICH WILL SERVE AS THE PRIMARY HAUL ROAD BETWEEN THE RESERVOIR AND THE DISPOSAL AREA, WILL BE MAINTAINED DURING CONSTRUCTION. TEMPORARY DIVERSION CHANNELS WILL BE USED TO CONVEY FLOW THROUGH THE RESERVOIR AREA THROUGH THESE INFLOW POINTS TO THE EXISTING LOW-LEVEL OUTLET FOR SHEPPARD DAM, WHICH WILL REMAIN OPEN TO PASS FLOW THROUGH THE DAM DURING THE CONSTRUCTION PERIOD.

THE PROJECT WILL BE AUTHORIZED UNDER A U.S. ARMY CORPS OF ENGINEERS' (USACE) FEDERAL 404 AUTHORIZATION UNDER THE CLEAN WATER ACT, WHICH INCLUDES A STATE 401 WATER QUALITY CERTIFICATION FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP), A STATE DD01 APPLICATION TO DRAW OFF WATER FROM IMPOUNDMENTS (TEMPORARY DRAWDOWN PERMIT), ISSUED BY THE PENNSYLVANIA FISH AND BOAT COMMISSION (PFBC), IS ALSO REQUIRED FOR THE PROJECT. MODIFICATIONS TO SHEPPARD DAM ARE NOT PROPOSED AS PART OF THE PROJECT. ALL WORK ACTIVITIES SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THESE PERMITS.

II. **EXISTING SITE CONDITIONS**
SINCE THE ORIGINAL CONSTRUCTION OF THE 9.7 ACRE SHEPPARD RESERVOIR, THE LAND USE OF THE IMMEDIATE AREA HAS REMAINED RELATIVELY UNCHANGED. THE LAKE IS PRIVATELY OWNED AND IS USED FOR RECREATION. THE PERIMETER OF THE RESERVOIR IS VEGETATED WITH WOODLANDS LOCATED ALONG THE MAJORITY OF THE SHORELINE. AREAS BEYOND THE SHORELINE, INCLUDING THE MAJORITY OF THE 1.74 SQUARE MILES THAT DRAIN TO THE RESERVOIR, CONTAIN AGRICULTURAL FIELDS AND WOODLANDS. THE SOUTH BRANCH CONEWAGO CREEK, WHICH THE PROJECT IS TRIBUTARY TO, IS CLASSIFIED AS WARM WATER FISHES (WWF) AND MIGRATORY FISHES (MF) WITHIN THE PA CODE, TITLE 25, CHAPTER 93 WATER QUALITY STANDARDS.

III. **ADJACENT PROPERTY**
THE AREAS SURROUNDING SHEPPARD RESERVOIR ARE AGRICULTURAL FIELDS AND WOODLANDS. THE PROJECT AREA IS LOCATED ON PRIVATE LAND OWNED BY THE SHEPPARD FAMILY. THE PROJECT AREA DRAINS TO SOUTH BRANCH CONEWAGO CREEK.

IV. **OFF-SITE AREAS**
NO OFFSITE AREAS ARE PROPOSED TO BE DISTURBED AS PART OF THIS PROJECT. ALL DREDGED SEDIMENT WILL BE DISPOSED OF ON-SITE WITHIN THE AGRICULTURAL FIELD, AS INDICATED ON THE DRAWINGS.

V. **CRITICAL AREAS**
THE PROJECT SITE AND SURROUNDING AREA CONTAINS SEVERAL CRITICAL AREAS WHICH POSE THE POTENTIAL FOR ACCELERATED EROSION OR OTHER ENVIRONMENTAL CONCERNS. THESE AREAS ARE AS FOLLOWS:

RESERVOIR BOTTOM: THE RESERVOIR BOTTOM CONTAINS UNCONSOLIDATED SEDIMENTS THAT HAVE A HIGH PROBABILITY OF RESUSPENSION INTO THE WATER COLUMN. THE CONTRACTOR SHALL IMPLEMENT MEASURES TO DIVERT LIVE FLOWS AROUND THE WORK AREA SUCH THAT THE EXCAVATION CAN BE PERFORMED IN THE DRY. DIVERSION MEASURES SHALL BE SIZED AND STABILIZED AS NEEDED TO PREVENT EROSION WITHIN AND AT THE DISCHARGE LOCATION OF THE DIVERSION.

SHORELINE AREAS: STEEP SLOPES, WETLANDS AND WOODED AREAS ARE PRESENT ALONG THE SHORELINE OF SHEPPARD RESERVOIR. OTHER THAN WHERE INDICATED ON THE DRAWINGS, NO VEHICULAR MOVEMENT, STOCKPILING OF MATERIAL, OR EARTH DISTURBANCE SHALL OCCUR IN THESE AREAS. ONE TEMPORARY WETLAND CROSSING IS INCLUDED AS A REGULATED ACTIVITY AS PART OF THE PROJECT. THE TEMPORARY CROSSING WILL BE LOCATED AT THE ACCESS ROAD BETWEEN THE UPPER END OF THE RESERVOIR AND SCHIBERT ROAD. NO PERMANENT WETLAND IMPACTS ARE PROPOSED AS PART OF THE PROJECT.

SHEPPARD DAM: EARTH DISTURBANCE OR OTHER CONSTRUCTION ACTIVITY THAT MAY COMPROMISE THE INTEGRITY OF THE EXISTING DAM OR REDUCE THE CAPACITY OF THE EXISTING SPILLWAY SHALL NOT BE ALLOWED.

VI. **SOIL**
SOIL SERIES ALONG THE PERIMETER OF SHEPPARD RESERVOIR BELONG TO THE BAILE SERIES, CODORUS SERIES, GLENELG SERIES, GLENVILLE SERIES, AND THE MT. AIRY AND MAJOR SERIES. SOIL BOUNDARIES ARE SHOWN ON SHEETS ES1 THROUGH ES3.

VII. **EROSION AND SEDIMENT CONTROL MEASURES**
UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO THE STANDARDS AND SPECIFICATIONS OF THE PENNSYLVANIA EROSION AND SEDIMENT CONTROL MANUAL.

STRUCTURAL PRACTICES

- TEMPORARY STONE CONSTRUCTION ENTRANCE
- COMPOST FILTER SOCK AND COMPOST FILTER SOCK SEDIMENT TRAP
- TEMPORARY FLOW DIVERSION MEASURES, INCLUDING TEMPORARY FLOW DIVERSION CHANNELS WITH EROSION RESISTANT LINING, TEMPORARY CULVERTS, AND RIPRAP APRONS
- TREE AND WETLAND PRESERVATION AND PROTECTION
- TEMPORARY ACCESS HAUL ROADS WITH BROAD-BASED DIPS WITH COMPOST FILTER SOCK AT OUTLETS
- ROCK FILTER
- TEMPORARY COFFERDAMS WITH TEMPORARY PUMP BYPASSES (PUMPED WATER FILTER BAGS)
- TURBIDITY BARRIER

VEGETATIVE PRACTICES

- TEMPORARY SEEDING
- PERMANENT SEEDING
- MINIMIZING THE DURATION AND AMOUNT OF DISTURBED AREA

MANAGEMENT STRATEGIES

- CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
- THE STABILIZED CONSTRUCTION ENTRANCE WILL BE A FIRST STEP IN THE CONSTRUCTION.
- OTHER MEASURES SHALL BE INSTALLED AND INSPECTED PRIOR TO WORK PROGRESSING INTO NEW AND UNPROTECTED AREAS.
- STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING HAS BEEN COMPLETED.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.
- AFTER ACHIEVING ADEQUATE STABILIZATION, THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WILL BE CLEANED AND REMOVED. NO EROSION AND SEDIMENT CONTROL MEASURES CAN BE REMOVED WITHOUT APPROVAL OF THE PLAN PREPARER.

PERMANENT STABILIZATION

- ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT SEEDING, SEEDING, EXCEPT FOR SEEDING IN AREAS WITHIN THE AGRICULTURAL FIELD THAT ARE TO RETURN TO THEIR PRE-CONSTRUCTION CONDITION AS AN AGRICULTURAL FIELD, SHALL BE TACKED AND MULCHED AND PLACED IMMEDIATELY AFTER REACHING FINISHED GRADE.
- AREAS DISTURBED IN THE DREDGED MATERIAL DISPOSAL AREA AGRICULTURAL FIELD THAT ARE INTENDED TO RETURN BACK TO THEIR FUNCTION AS AGRICULTURAL FIELD, INCLUDING THE DREDGED MATERIAL SPOIL PILE, SHALL BE RETURNED TO THEIR PRE-CONSTRUCTION CONDITION. IF ROW OR COVER CROPS ARE NOT PLANTED IMMEDIATELY IN THESE AREAS, THEY SHOULD BE STABILIZED PER THE STABILIZATION SPECIFICATIONS.

VIII. STORMWATER MANAGEMENT

NO PERMANENT BEST MANAGEMENT PRACTICES ARE PROPOSED AS PART OF THIS PROJECT FOR THE CONTROL OF PEAK RATES OR VOLUMES OF RUNOFF.

IX. MAINTENANCE

IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT. THE FOLLOWING WILL BE CHECKED IN PARTICULAR:

- THE CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO EXISTING ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS SHALL BE REMOVED IMMEDIATELY.
- THE SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE ADEQUATE COVER IS MAINTAINED. AREAS SHOULD BE RE-SEEDDED AS NEEDED.

SEQUENCE OF CONSTRUCTION

THE INTENT OF THIS STAGING NARRATIVE IS TO DESCRIBE THE CRITICAL EARTHMOVING/CONSTRUCTION ACTIVITIES WHICH MUST OCCUR IN ORDER TO PROVIDE A COMPREHENSIVE PLAN FOR THE CONTROL OF SEDIMENT-LADEN RUNOFF FROM THE PROJECT AREA. THIS STAGING NARRATIVE IS NOT INTENDED TO DESCRIBE ALL THE WORK ACTIVITIES ASSOCIATED WITH THE PROPOSED CONSTRUCTION PROJECT.

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. UNLESS STATED OTHERWISE, EACH CONSTRUCTION STAGE SHALL BE COMPLETED AND ALL DISTURBED AREAS STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED, CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. ANY DEVIATION FROM THIS SEQUENCE MUST BE APPROVED IN WRITING BY THE E&S PLAN PREPARER OR BY PADEP PRIOR TO IMPLEMENTATION.

INITIAL RESERVOIR DRAWDOWN ACTIVITIES WILL OCCUR SEVERAL MONTHS PRIOR TO THE CONSTRUCTION DREDGING AND EARTH DISTURBANCE ACTIVITIES TO ALLOW TIME FOR THE ACCUMULATED SEDIMENTS TO DRY TO A SUFFICIENT DEGREE AS TO ALLOW FOR REMOVAL BY MEANS OF MECHANICAL EXCAVATION. SHEPPARD RESERVOIR WILL BE DRAINED BY THE OWNER AND WILL REMAIN IN A DRAINED CONDITION FOR THE DURATION OF THE PROJECT. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE RESERVOIR DRAINED DURING CONSTRUCTION.

PRE-CONSTRUCTION ACTIVITIES

- AT LEAST SEVEN (7) DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR E&S PLAN PREPARER SHALL INVITE ALL CONTRACTORS, THE OWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, AND A REPRESENTATIVE FROM THE ADAMS COUNTY CONSERVATION DISTRICT TO AN ONSITE PRE-CONSTRUCTION MEETING.
- AT LEAST THREE (3) DAYS PRIOR TO STARTING EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM, INC. AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES. THE CONTRACTOR SHALL COORDINATE HIS WORK ACTIVITIES WITH THE UTILITY COMPANIES AND THE USING AGENCY, AS REQUIRED.
- SCHEDULE CONSTRUCTION SO AS TO MINIMIZE THE EXTENT AND DURATION OF DISTURBED GROUND SURFACES. TO THE GREATEST EXTENT POSSIBLE, SCHEDULE WORK DURING DRY PERIODS OF THE YEAR.
- CRITICAL IN-STREAM ACTIVITIES SHOULD BE SCHEDULED DURING LOW FLOW PERIODS AND WHEN NO RAIN IS PREDICTED IN THE FORECAST.
- CLEARLY MARK AREAS WHICH ARE NOT TO BE DISTURBED WITH FLAGS, SIGNS, FENCING OR OTHER MARKINGS TO CLEARLY DELINEATE THE LIMITS OF DISTURBANCE.
- INSTALL PROTECTIVE FENCING AROUND ALL WETLANDS AND TREES THAT ARE TO BE PROTECTED. FENCING IS TO BE LOCATED AT THE DRIP LINE OF THE TREE, UNLESS OTHERWISE DIRECTED. WETLAND AREAS TO BE PROTECTED ARE IDENTIFIED ON THE DRAWINGS.

PHASE 1: PROJECT INITIATION AND INITIAL SET-UP

STAGE 1: INSTALLATION OF STAGING AREA AND INITIAL EROSION CONTROL FACILITIES

- EARTH DISTURBANCE ASSOCIATED WITH THE PHASE 1 ACTIVITIES SHALL BE LIMITED TO ONLY THOSE AREAS ABSOLUTELY NEEDED TO INSTALL THE INITIAL EROSION CONTROL FACILITIES AND PREPARE FOR DREDGING ACTIVITIES.
- INSTALL THE TEMPORARY STONE CONSTRUCTION ENTRANCES AT THE LOCATIONS SHOWN ON THE DRAWINGS. SHOULD THE CONTRACTOR CHOOSE TO RELOCATE OR ADD ADDITIONAL INGRESS/EGRESS LOCATIONS TO THE PROJECT AREA, THESE LOCATIONS SHALL ALSO BE EQUIPPED WITH STONE CONSTRUCTION ENTRANCES AND SHALL RECEIVE THE APPROVAL FROM THE E&S PLAN PREPARER AND/OR PADEP.
- INSTALL ALL COMPOST FILTER SOCK RUNS, INCLUDING COMPOST FILTER SOCK DIVERSIONS AND COMPOST FILTER SOCK SEDIMENT TRAPS AS SHOWN ON THE PLAN DRAWINGS.
- CONSTRUCT TEMPORARY ACCESS ROADS TO TRANSPORT MATERIAL FROM SCHIBERT ROAD TO THE DREDGED MATERIAL DISPOSAL AREA. INSTALLATION OF BROAD-BASED DIPS SHOULD BE DONE IN CONJUNCTION WITH THIS STEP.
- CONSTRUCT TEMPORARY ACCESS ROAD BETWEEN SHEPPARD RESERVOIR AND SCHIBERT ROAD. THIS ACCESS ROAD WILL INCLUDE THE INSTALLATION OF A TEMPORARY WETLAND CROSSING.
- STABILIZE THE CONTRACTOR STAGING AREA WITH AGGREGATE AND GEOTEXTILE, AS REQUIRED.
- ALL DISTURBED AREAS CREATED BY THE STAGE 1 ACTIVITIES SHALL BE IMMEDIATELY STABILIZED. OBTAIN PLAN PREPARER'S INSPECTION AND APPROVAL OF THE INSTALLED EROSION CONTROL FACILITIES PRIOR TO PROCEEDING WITH WORK.

STAGE 2: PREPARATION FOR DREDGING ACTIVITIES (USING MECHANICAL EXCAVATION IN THE DRY)

- STAGE 2 ACTIVITIES MAY NOT OCCUR UNTIL THE STAGE 1 ACTIVITIES ARE COMPLETE AND ALL EROSION CONTROL FACILITIES AT THE STAGING AND DREDGED MATERIAL DISPOSAL AREAS ARE INSTALLED, STABILIZED, AND FUNCTIONAL.
- ESTABLISH TEMPORARY HAUL ROADS THROUGHOUT THE RESERVOIR BOTTOM, AS REQUIRED, TO ACCESS THE WORK AREAS. PROVIDE TEMPORARY BRIDGING AS NEEDED.
- INSTALL TURBIDITY BARRIER AT DOWNSTREAM END OF THE RESERVOIR.
- INSTALL TEMPORARY DIVERSION CHANNELS, INCLUDING TEMPORARY CULVERTS AND RIPRAP APRONS, WITHIN THE RESERVOIR BOTTOM TO DIVERT FLOWS AROUND THE ACTIVE WORK AREAS AND ALLOW SEDIMENTS TO DRAIN. NOTE THAT TEMPORARY DIVERSION CHANNEL INVERTS SHALL MATCH THE GRADES SHOWN ON THE PHASE 2 E&S PLAN SHEET FOR THE RESERVOIR AREA, WITH THE EXCEPTION OF TEMPORARY DIVERSION CHANNEL 2.
 - INSTALL TEMPORARY SUMP 1 UPSTREAM OF THE LOCATION OF TEMPORARY CULVERT 1 AND INSTALL TEMPORARY PUMP BYPASS 1 TO CONVEY NORMAL DISCHARGE FROM TEMPORARY SUMP 1 TO RESERVOIR OUTLET AT EXISTING CONTROL TOWER.
 - INSTALL AND STABILIZE TEMPORARY DIVERSION CHANNEL 1 BETWEEN TEMPORARY CULVERT 1 LOCATION AND RESERVOIR OUTLET AT EXISTING CONTROL TOWER.
 - INSTALL TRENCH BOX AND ROCK FILTER 1 UPSTREAM OF THE RESERVOIR OUTLET AT THE EXISTING CONTROL TOWER.
 - UPON DIVERSION CHANNEL STABILIZATION, INSTALL RIPRAP APRON 1 AND TEMPORARY CULVERT 1 TO CONVEY FLOW FROM TEMPORARY SUMP 1 TO RESERVOIR OUTLET AT EXISTING CONTROL TOWER. REMOVE/RELOCATE TEMPORARY PUMP BYPASS 1.
 - INSTALL TEMPORARY COFFERDAM 1 AND TEMPORARY PUMP BYPASS 2 TO CONVEY NORMAL DISCHARGE FROM INFLOW POINT "E" TO THE COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 1.
 - INSTALL TEMPORARY COFFERDAM 2 AND TEMPORARY PUMP BYPASS 3 TO CONVEY NORMAL DISCHARGE FROM INFLOW POINT "D" TO THE COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 1.
 - INSTALL TEMPORARY SUMP 2 UPSTREAM OF THE TEMPORARY CULVERT 3 LOCATION AND INSTALL TEMPORARY PUMP BYPASS 4 TO CONVEY NORMAL DISCHARGE FROM TEMPORARY SUMP 2 TO COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 1.
 - INSTALL AND STABILIZE TEMPORARY DIVERSION CHANNEL 1 BETWEEN THE LOCATION OF TEMPORARY CULVERT 3 AND TEMPORARY CULVERT 1.

- INSTALL AND STABILIZE TEMPORARY DIVERSION CHANNEL 2 FROM TEMPORARY COFFERDAM 1 TO TEMPORARY DIVERSION CHANNEL 1, INCLUDING TEMPORARY CULVERT 2 AND RIPRAP APRON 2. NOTE THAT THIS CHANNEL SHALL NOT BE INSTALLED TO FINAL DREDGED GRADES SHOWN ON THE PLAN SHEETS. CONTRACTOR SHALL INSTALL CHANNEL 3 FEET DEEP AT A SLOPE OF 5% FROM SHORELINE TO TEMPORARY DIVERSION CHANNEL 1.
- INSTALL AND STABILIZE TEMPORARY DIVERSION CHANNEL 3 FROM TEMPORARY COFFERDAM 2 TO TEMPORARY DIVERSION CHANNEL 1.
- UPON TEMPORARY DIVERSION CHANNEL STABILIZATION, INSTALL RIPRAP APRON 3 AND TEMPORARY CULVERT 3 TO CONVEY FLOW FROM TEMPORARY SUMP 2 THROUGH TEMPORARY DIVERSION CHANNEL 1 TO RESERVOIR OUTLET. REMOVE TEMPORARY COFFERDAMS 1 AND 2. REMOVE/RELOCATE TEMPORARY PUMP BYPASSES 2, 3, AND 4.
- INSTALL TEMPORARY COFFERDAM 3 AND TEMPORARY PUMP BYPASS 5 TO CONVEY NORMAL DISCHARGE FROM INFLOW POINT "C" TO THE COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 3.
- INSTALL TEMPORARY SUMP 3 UPSTREAM OF THE LOCATION OF TEMPORARY CULVERT 4 AND INSTALL TEMPORARY PUMP BYPASS 6 TO CONVEY NORMAL DISCHARGE FROM TEMPORARY SUMP 3 TO COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 3.
- INSTALL AND STABILIZE TEMPORARY DIVERSION CHANNEL 1 BETWEEN THE LOCATION OF TEMPORARY CULVERT 4 AND TEMPORARY CULVERT 3.
- INSTALL TEMPORARY DIVERSION CHANNEL 4 FROM TEMPORARY COFFERDAM 3 TO TEMPORARY DIVERSION CHANNEL 1.
- UPON TEMPORARY DIVERSION CHANNEL STABILIZATION, INSTALL RIPRAP APRON 4 AND TEMPORARY CULVERT 4 TO CONVEY FLOW FROM TEMPORARY SUMP 3 THROUGH TEMPORARY DIVERSION CHANNEL 1 TO RESERVOIR OUTLET. REMOVE TEMPORARY COFFERDAM 3. REMOVE/RELOCATE TEMPORARY PUMP BYPASSES 5 AND 6.
- INSTALL TEMPORARY COFFERDAM 4 AND TEMPORARY PUMP BYPASS 7 TO CONVEY NORMAL DISCHARGE FROM INFLOW POINT "B" TO THE COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 4.
- INSTALL TEMPORARY COFFERDAM 5 AND TEMPORARY PUMP BYPASS 8 TO CONVEY NORMAL DISCHARGE FROM INFLOW POINT "A" TO THE COMPLETED SECTION OF TEMPORARY DIVERSION CHANNEL 1 DOWNSTREAM OF TEMPORARY CULVERT 4.
- INSTALL FINAL SECTION OF TEMPORARY DIVERSION CHANNEL 1 FROM TEMPORARY COFFERDAM 5 TO TEMPORARY CULVERT 4.
- INSTALL TEMPORARY DIVERSION CHANNEL 5 FROM TEMPORARY COFFERDAM 4 TO TEMPORARY DIVERSION CHANNEL 1.
- UPON TEMPORARY DIVERSION CHANNEL STABILIZATION, REMOVE TEMPORARY COFFERDAMS 4 AND 5 AND REMOVE TEMPORARY PUMP BYPASSES 7 AND 8.

PHASE 2: DREDGING ACTIVITIES AND CLEAN-UP

STAGE 3: DREDGING ACTIVITIES (USING MECHANICAL EXCAVATION IN THE DRY)

- STAGE 3 ACTIVITIES MAY NOT OCCUR UNTIL THE STAGE 1 AND STAGE 2 ACTIVITIES ARE COMPLETE AND ALL EROSION CONTROL FACILITIES ARE INSTALLED, STABILIZED, AND FUNCTIONAL. NO GRADING, CLEARING OR OTHER WORK SHALL OCCUR UNTIL ALL INSTALLED E&S MEASURES ARE INSTALLED AND APPROVED BY THE PLAN PREPARER.
- BEGIN DREDGING ACTIVITIES, WORKING FROM THE DOWNSTREAM END OF THE RESERVOIR TO THE UPSTREAM END OF THE RESERVOIR. REMOVE FALLEN AND DEAD TREES AND OTHER NATURAL DEBRIS FROM WITHIN THE RESERVOIR AND ALONG THE RESERVOIR RIM, AS REQUIRED. REMOVE DOWNSTREAM PORTIONS OF THE TEMPORARY HAUL ROADS AS DREDGING ACTIVITIES MOVE UPSTREAM.
- HAUL DREDGED SEDIMENT TO DESIGNATED DREDGED MATERIAL DISPOSAL AREA FOR LONG-TERM SPOIL. BEGIN PLACEMENT AT THE SOUTHERN EXTENT OF DESIGNATED DISPOSAL AREA AND WORK NORTH, STABILIZING AREAS IMMEDIATELY AFTER REACHING FINAL GRADE. MATERIAL SHALL BE TRACKED OVER IN LIFTS NOT EXCEEDING 12 INCHES TO ACHIEVE COMPACTION.
- BRING THE RESERVOIR BOTTOM TO FINAL GRADE AS SHOWN ON THE DRAWINGS. REMOVE ALL DEBRIS, CONSTRUCTION MATERIAL, AND EQUIPMENT FROM THE RESERVOIR. FINAL GRADING INCLUDES THE ESTABLISHMENT OF TWO ISLANDS IN THE UPPER END OF THE RESERVOIR AND SEVEN AQUATIC BENCHES AROUND THE RESERVOIR PERIMETER.
- MAINTAIN TEMPORARY DIVERSION CHANNELS. TEMPORARY HAUL ROADS STILL IN USE, AND ACCESS ROADS BETWEEN THE RESERVOIR AND SCHIBERT ROAD AND BETWEEN SCHIBERT ROAD AND THE DREDGED MATERIAL DISPOSAL AREA THROUGHOUT THE DREDGING ACTIVITIES.
- MAINTAIN SCHIBERT ROAD THROUGHOUT THE DREDGING ACTIVITIES BY PLACING STONE WITHIN THE EXISTING LIMITS OF THE ROAD, AS NECESSARY. NO STONE SHALL BE PLACED BEYOND THE LIMITS OF THE EXISTING ROAD. ANY ROAD MAINTENANCE ACTIVITIES SHALL ADHERE TO THE DEFINITION OF ROAD MAINTENANCE IN 25 PA. CODE § 102.1.
- REMOVE THE TEMPORARY DIVERSION FACILITIES. REMOVE ALL TEMPORARY EROSION CONTROL MATTING, RIPRAP/AGGREGATE, AND GEOTEXTILE, AND PROPERLY DISPOSE OF OFFSITE. REGRADE CHANNELS AS NECESSARY. ALL FILL MATERIAL USED TO CREATE THE CHANNEL BERMS SHALL BE REMOVED DOWN TO FINAL GRADE UPON COMPLETION OF THE DREDGING ACTIVITIES.
- PERFORM FINAL VOLUME SURVEY AND OBTAIN ACCEPTANCE BY THE OWNER AND/OR PLAN PREPARER.
- COORDINATE REFILLING THE RESERVOIR WITH THE OWNER.

STAGE 4: CLEAN-UP ACTIVITIES

- STAGE 4 ACTIVITIES MAY NOT OCCUR UNTIL ALL DREDGING ACTIVITIES ARE COMPLETE AND ALL OFFSITE HAULING ACTIVITIES HAVE CEASED.
- RESTORE THE STAGING AREA AND TEMPORARY ACCESS ROADS TO THEIR PRE-CONSTRUCTION CONDITION. REMOVE THE TEMPORARY AGGREGATE AND GEOTEXTILE FROM THE STAGING AREA AND TEMPORARY ACCESS ROADS. LOOSEN COMPACTED SUBSOIL TO A DEPTH OF 12 INCHES AND IMMEDIATELY APPLY PERMANENT STABILIZATION UNLESS THE FIELD IS IMMEDIATELY PLANTED WITH ROW OR COVER CROPS COINCIDENT WITH THE PLANTING OF THE REST OF THE AGRICULTURAL FIELD.
- REMOVE ALL SEDIMENT DEPOSITS COLLECTED BEHIND THE INSTALLED EROSION CONTROL FILTERING DEVICES (I.E., COMPOST FILTER SOCK, STONE CONSTRUCTION ENTRANCES, ETC.) AND EITHER USE FOR ONSITE GRADING AND STABILIZE WITH SEED AND AN ANCHORED MULCH OR SPOIL IN THE DREDGED MATERIAL DISPOSAL AREA. IMMEDIATELY PROVIDE PERMANENT STABILIZATION TO ALL DISTURBED AREAS CREATED BY THIS ACTIVITY.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE CONTRACTOR SHALL NOTIFY THE PLAN PREPARER TO REQUEST A FINAL SITE INSPECTION PRIOR TO THE REMOVAL OF THE E&S BMPS. THE PLAN PREPARER SHALL DETERMINE IF THE SITE IS ADEQUATELY STABILIZED AND IF THE TEMPORARY EROSION CONTROL MEASURES CAN BE REMOVED.
- UPON PERMANENT STABILIZATION OF ALL CONTRIBUTING UPSTREAM AREAS, REMOVE ALL TEMPORARY EROSION CONTROL FACILITIES AND TEMPORARY FENCING. IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THIS ACTIVITY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVALS ARE TO BE DONE DURING THE GERMINATING SEASON.
- ONCE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE HAS CEASED, REMOVE ALL REMAINING ROCK CONSTRUCTION ENTRANCES, IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THIS ACTIVITY, INCLUDING EROSION CONTROL MATTING AT ENTRANCE ADJACENT TO RESERVOIR AND TRIBUTARY TO WETLANDS.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES, REMOVAL OF ALL TEMPORARY BMPS, AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE CONTRACTOR SHALL CONTACT THE E&S PLAN PREPARER FOR A FINAL INSPECTION.

GENERAL E&S INSTALLATION PROCEDURES

- ALL MATERIALS NEEDED TO COMPLETELY CONSTRUCT AN EROSION CONTROL FACILITY SHALL BE AVAILABLE ON SITE PRIOR TO THE ANTICIPATED DISTURBANCE OF THE DRAINAGE AREA TO BE CONTROLLED BY SAID FACILITY.
- EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS, INCLUDING CLEARING AND GRUBBING, WITHIN THE TRIBUTARY AREAS OF THOSE FACILITIES.
- ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS FOR CONSTRUCTING EROSION CONTROL FACILITIES AND FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE FACILITIES.
- EARTH DISTURBANCE ACTIVITIES, INCLUDING MOVEMENT OF CONSTRUCTION VEHICLES, SHALL NOT BE ALLOWED BELOW THE LOCATION OF THE PERIMETER EROSION CONTROL FACILITIES. THE LIMIT OF EARTH DISTURBANCE SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION, INCLUDING CLEARING AND GRUBBING OPERATIONS.
- AT NO TIME WILL SEDIMENT OR SEDIMENT-LADEN RUNOFF BE ALLOWED TO LEAVE THE SITE AND ENTER COMMONWEALTH WATERS WITHOUT FIRST PASSING THROUGH A SEDIMENT FILTERING DEVICE. SHOULD SITE CONDITIONS, CONSTRUCTION PROCEDURES, ETC. ALTER THE EROSION CONTROL PLAN TO THE POINT WHERE SEDIMENT AND SEDIMENT-LADEN RUNOFF IS NOT BEING CONTROLLED AND FILTERED BEFORE IT LEAVES THE SITE, ADDITIONAL EROSION CONTROL MEASURES OR MODIFICATIONS TO THE INSTALLED MEASURES ARE TO BE IMPLEMENTED. ALL MODIFICATIONS TO THE APPROVED EROSION CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY THE YORK COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTING SAID MEASURES.
- EROSION AND SEDIMENT CONTROL FACILITIES REQUIRED OR NECESSARY TO PROTECT AREAS FROM EROSION DURING THE STABILIZATION PERIOD SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA IS COMPLETED. UPON COMPLETION OF PERMANENT STABILIZATION AND UPON APPROVAL FROM THE E&S PLAN PREPARER, ALL TEMPORARY OR UNUSABLE CONTROL MEASURES AND FACILITIES SHALL BE REMOVED, THE DISTURBED AREAS CREATED BY THIS ACTIVITY SHALL BE BROUGHT TO FINAL GRADE AND PERMANENT STABILIZATION SHALL BE IMMEDIATELY APPLIED.
- THE CONTRACTOR MUST ATTEMPT, WHENEVER POSSIBLE, TO RECYCLE ALL WASTE GENERATED ONSITE DURING THIS PROJECT. ALL WASTE MATERIAL NOT RECYCLED, MUST BE DISPOSED OF AT AN APPROVED WASTE SITE.

THIS DRAWING IS AND SHALL REMAIN THE PROPERTY OF GANNETT FLEMING, INC. ANY REUSE, REUSE, ALTERATIONS, ADDITIONS, AND/OR DELETIONS OF THESE DRAWINGS OR PROJECT EXTENSIONS OR OTHER PROJECTS SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO GANNETT FLEMING, INC. IN THE EVENT THAT A CONFLICT ARISES BETWEEN THE SEALED DRAWINGS AND THE ELECTRONIC FILES, THE SEALED DRAWINGS WILL GOVERN.

60% DESIGN

NO.	DESCRIPTION	DATE	BY	
REVISIONS				

DESIGNED	CADD	SCALE
WJK	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
WJK	PGS	PGS



Gannett Fleming

MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA

SHEPPARD RESERVOIR
RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL PLAN
SHEET 1 OF 2

JOB NO.	SHEET NO.
063377	16 OF 20
DATE	DRAWING NO.
OCTOBER 2018	ES4

EROSION AND SEDIMENT POLLUTION CONTROL PLAN NARRATIVE (CON'T.)

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN DRAWINGS AND NARRATIVE REPORT (E&S PLAN) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE PLAN PREPARER SHALL BE NOTIFIED OF ANY CHANGES TO THE E&S PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE PLAN PREPARER WILL REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT THEIR DISCRETION.
2. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN.
3. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION AND NOTIFY THE PLAN PREPARER AND/OR THE REGIONAL OFFICE OF PADEP.
4. ALL PUMPING OF SEDIMENT-LADEN WATER FROM ANY WORK AREA SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
5. FINES AND RELATED COSTS RESULTING FROM THE CONTRACTOR'S FAILURE TO PROVIDE ADEQUATE PROTECTION AGAINST SOIL EROSION AND FOR ANY VIOLATIONS OF THE CLEAN STREAMS LAW AND THE RULES AND REGULATIONS PROMULGATED THEREUNDER SHALL BE BORNE BY THE CONTRACTOR. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE EARTH DISTURBANCE ACTIVITY, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPs MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY PADEP, AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
6. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH PADEP'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
7. ANY OFFSITE SPOIL, STOCKPILE, AND/OR BORROW AREAS SHALL HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR PADEP FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED. THE CONTRACTOR SHALL MAKE PROVISIONS FOR THESE OFFSITE AREAS AND SHALL BE RESPONSIBLE FOR ENSURING THAT EACH OFFSITE AREA HAS AN APPROVED E&S PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS. THE CONTRACTOR SHALL NOTIFY THE LOCAL CONSERVATION DISTRICT OF ALL OFFSITE SPOIL, STOCKPILE, AND/OR BORROW AREAS THAT ARE ANTICIPATED TO BE USED.
8. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING. CLEAN FILL IS DEFINED AS: UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. THE TERM INCLUDES SOIL, ROCK, STONE, DREDGED MATERIAL, USED ASPHALT, AND BRICK, BLOCK OR CONCRETE FROM CONSTRUCTION AND DEMOLITION ACTIVITIES THAT IS SEPARATE FROM OTHER WASTE AND IS RECOGNIZABLE AS SUCH. THE TERM DOES NOT INCLUDE MATERIALS PLACED IN OR ON THE WATERS OF THE COMMONWEALTH UNLESS OTHERWISE AUTHORIZED. (THE TERM "USED ASPHALT" DOES NOT INCLUDE MILLED ASPHALT OR ASPHALT THAT HAS BEEN PROCESSED FOR RE-USE.).
10. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL. ENVIRONMENTAL DUE DILIGENCE IS DEFINED AS: INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SANBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS, ANALYTICAL TESTING IS NOT A REQUIRED PART OF DUE DILIGENCE UNLESS VISUAL INSPECTION AND/OR REVIEW OF THE PAST LAND USE OF THE PROPERTY INDICATES THAT THE FILL MAY HAVE BEEN SUBJECTED TO A SPILL OR RELEASE OF A REGULATED SUBSTANCE. IF THE FILL MAY HAVE BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE, IT MUST BE TESTED TO DETERMINE IF IT QUALIFIES AS CLEAN FILL. TESTING SHOULD BE PERFORMED IN ACCORDANCE WITH APPENDIX A OF PADEP'S POLICY "MANAGEMENT OF CLEAN FILL."
12. IN ALL CASES, THE SMALLEST PRACTICAL AREA OF STABLE LAND SURFACE WILL BE DISTURBED. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL AND ORGANIC MATERIAL, INCLUDING TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
13. EXCAVATED MATERIAL SHALL BE PLACED UP SLOPE FROM THE EXCAVATION WHENEVER POSSIBLE. SHOULD A SOIL PILE BE CREATED FROM THE EXCAVATION THAT IS NOT LOCATED WITHIN THE DRAINAGE AREA OF A PERIMETER EROSION CONTROL FACILITY, COMPOST FILTER SOCKS SHALL BE INSTALLED ALONG THE DOWN SLOPE TOE OF SAID SOIL PILE, OR THE PILE SHALL BE COVERED WITH AN IMPERMEABLE TARP UNTIL SUCH TIME THAT THE PILE IS REMOVED.
14. ACCELERATED EROSION AND SEDIMENTATION WILL BE LIMITED BY IMMEDIATELY STABILIZING DISTURBED AREAS AND BY KEEPING THE AMOUNT OF DISTURBED AREA TO A MINIMUM. REFER TO THE STABILIZATION SPECIFICATION NOTES ON THIS SHEET.
15. CONTRACTOR SHALL CONTROL DUST FROM THE PROJECT AREA BY APPLYING WATER OR IMPLEMENTING OTHER METHODS AS APPROVED BY THE E&S PLAN PREPARER.
16. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.
17. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
18. ANY UNINTENDED DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF WORK ACTIVITIES OR DISCHARGE THROUGH ANY EROSION AND SEDIMENT POLLUTION CONTROL FACILITY SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR IN A PERMANENT MANNER SATISFACTORY TO THE OWNER AND/OR THE E&S PLAN PREPARER.

SOIL LIMITATIONS & RESOLUTIONS

1. ANY AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. DREDGED MATERIAL SHALL BE PLACED DIRECTLY ON EXISTING AGRICULTURAL FIELD.
2. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES, AND CONDUITS, ETC, SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
3. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
4. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAP(S). THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
5. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEEPED INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
6. ALL CLEAN FILL DEMOLITION MATERIAL, INCLUDING CLEARING AND GRUBBING DEBRIS ACCUMULATION, WILL BE PROPERLY DISPOSED OF IN A LAWFUL MANNER.
7. HIGH WATER TABLE: CONTRACTOR SHALL DEWATER EXCAVATIONS AS NECESSARY. CONTRACTOR SHALL PROVIDE SUFFICIENT NUMBER OF PUMPS TO KEEP EXCAVATIONS ADEQUATELY DRY. WATER WHICH COLLECTS WITHIN THE EXCAVATION(S) SHALL BE REMOVED BY PUMPING TO A SEDIMENT FILTERING DEVICE SUCH AS A PUMPED WATER FILTER BAG OR OTHER APPROVED SEDIMENT FILTERING DEVICE.

STABILIZATION SPECIFICATIONS

TEMPORARY STABILIZATION NOTES:

1. WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA IMMEDIATELY AFTER FINAL EARTHMOVING HAS BEEN COMPLETED OR WHERE CONSTRUCTION ACTIVITIES CEASE, TEMPORARY STABILIZATION MEASURES SHALL BE IMMEDIATELY IMPLEMENTED.
2. TEMPORARY STABILIZATION, AS REFERRED TO IN THIS NARRATIVE, INVOLVES THE STABILIZATION AND PROTECTION OF THE SOIL SURFACE TO AN EXTENT THAT WILL PREVENT EROSION AND ELIMINATE OFFSITE SEDIMENTATION. TYPICAL TEMPORARY STABILIZATION IS OBTAINED BY ESTABLISHING A VEGETATIVE COVER ACROSS THE DISTURBED AREA. ESTABLISH TEMPORARY VEGETATIVE COVER IN ACCORDANCE WITH THE FOLLOWING:
 - A. PREPARE THE SOIL SURFACE IN ACCORDANCE WITH PENNDOT PUB 408 - SPECIFICATIONS, SECTION 804 - SEEDING AND SOIL SUPPLEMENTS. NOTE THAT DUE TO THE CLOSE PROXIMITY OF THE EARTHWORK TO THE WATER SUPPLY RESERVOIR, ANY SOIL SUPPLEMENTS THAT COULD POTENTIALLY IMPACT WATER QUALITY SHOULD BE AVOIDED. HOWEVER, IF 70% PERMANENT PERENNIAL VEGETATIVE COVER CANNOT BE ESTABLISHED WITHOUT THE USE OF SOIL SUPPLEMENTS, THE CONTRACTOR SHALL COORDINATE THE ADDITION OF ACCEPTABLE SUPPLEMENTS WITH THE OWNER AND/OR PLAN PREPARER PRIOR TO APPLICATION. NOTE THAT PENNDOT PUB 408 STATES THAT AREAS TO RECEIVE PENNDOT FORMULA E (ANNUAL RYEGRASS) DO NOT REQUIRE THE ADDITION OF SOIL SUPPLEMENTS.
 - B. SOW PENNDOT FORMULA E - ANNUAL RYEGRASS (LOLIUM MULTIFLORUM WITH A MINIMUM PURITY OF 95% AND A MINIMUM GERMINATION OF 90%) AT THE RATE OF 48.4 POUNDS PER ACRE (10.0 POUNDS PER 1,000 SQ. YARDS) OR WINTER WHEAT (TRITICUM AESTIVUM WITH A MINIMUM PURITY OF 95% AND A MINIMUM GERMINATION OF 90%) AT THE RATE OF 180 POUNDS PER ACRE (37.2 POUNDS PER 1,000 SQ. YARDS) BY HYDRAULIC PLACEMENT, BROADCASTING, DRILLING, OR HAND SEEDING METHODS. COVER SEED WITH 1/4" OF SOIL USING SUITABLE EQUIPMENT FOR THAT PURPOSE.
 - C. SPREAD SEED BETWEEN MARCH 15 AND OCTOBER 15.
3. IF TEMPORARY STABILIZATION ACTIVITIES FALL OUTSIDE OF THE ALLOWABLE SEEDING DATES, AN ANCHORED MULCH OR EROSION CONTROL MATTING IS TO BE PLACED WITHOUT SEEDING. APPLY TEMPORARY OR PERMANENT SEED MIXTURES ONCE WITHIN THE ALLOWABLE SEEDING DATES.

PERMANENT STABILIZATION NOTES:

1. ALL AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE AND THOSE DISTURBED AREAS THAT WILL NOT BE WORKED WITHIN ONE YEARS TIME, SHALL HAVE PERMANENT STABILIZATION MEASURES APPLIED IMMEDIATELY.
2. IF EXISTING GROUND SURFACE OR DREDGED MATERIAL IS DETERMINED TO BE INADEQUATE TO SUPPORT THE GROWTH OF VEGETATIVE COVER, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND/OR THE E&S PLAN PREPARER TO DEVELOP A SOIL SUPPLEMENT APPLICATION PLAN.
3. PERMANENT STABILIZATION OF VEGETATED AREAS, AS REFERRED TO IN THIS NARRATIVE, INVOLVES THE STABILIZATION AND PROTECTION OF THE SOIL SURFACE TO AN EXTENT THAT WILL PREVENT EROSION AND ELIMINATE OFFSITE SEDIMENTATION. TYPICAL PERMANENT STABILIZATION IS OBTAINED BY ESTABLISHING A VEGETATIVE COVER ACROSS THE DISTURBED AREA.
4. ESTABLISH PERMANENT VEGETATIVE COVER IN ACCORDANCE WITH THE FOLLOWING:
 - A. AREAS TO RECEIVE PERMANENT STABILIZATION SHALL HAVE THE SUBGRADE SURFACE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS).
 - B. PREPARE THE SOIL SURFACE IN ACCORDANCE WITH PENNDOT PUB 408 - SPECIFICATIONS, SECTION 804 - SEEDING AND SOIL SUPPLEMENTS. IN AREAS ADJACENT TO THE RESERVOIR, SOIL SUPPLEMENTS THAT COULD POTENTIALLY IMPACT WATER QUALITY SHOULD BE AVOIDED. HOWEVER, IF 70% PERMANENT PERENNIAL VEGETATIVE COVER CANNOT BE ESTABLISHED WITHOUT THE USE OF SOIL SUPPLEMENTS, THE CONTRACTOR SHALL COORDINATE THE ADDITION OF ACCEPTABLE SUPPLEMENTS WITH THE OWNER AND/OR E&S PLAN PREPARER PRIOR TO APPLICATION.
 - C. SOW THE PERMANENT SEED MIXTURE AT THE RATE INDICATED BY HYDRAULIC PLACEMENT, BROADCASTING, DRILLING, OR HAND SEEDING METHODS. COVER SEED WITH 1/4" OF SOIL USING SUITABLE EQUIPMENT FOR THAT PURPOSE. SEED MIXTURE SHALL HAVE A MINIMUM PURITY OF 95% AND A MINIMUM GERMINATION OF 85%.
 - D. SPREAD SEED ONLY DURING THE TIMES INDICATED BY SEED SUPPLIER/MANUFACTURER.
- E. RECOMMENDED SEED MIX:
 - I. FOR DISTURBED AREAS OUTSIDE OF AGRICULTURAL FIELD: COMPARABLE TO "FORMULA N CONSERVATION MIX" AS IDENTIFIED IN PENNDOT PUBLICATION 408 SECTION 804. SEED MIXTURE TO BE SPREAD AT THE SEEDING RATE RECOMMENDED BY THE MANUFACTURER. IF HYDRAULICALLY APPLIED, SPRAY MIXTURE TO CONTAIN WATER, SEED, FERTILIZER, MULCH, AND OTHER ADDITIVES, AS REQUIRED.
 - II. FOR DISTURBED AREAS WITHIN THE AGRICULTURAL FIELD, INCLUDING THE DREDGED MATERIAL DISPOSAL AREA: VEGETATION OPTIONS ARE ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), PERENIAL RYEGRASS (LOLIUM PERENNE), WINTER RYE (SECALE CEREAL), OR WINTER WHEAT (TRITICUM AESTIVUM). THE OWNER RESERVES THE RIGHT TO MODIFY THE SEED MIX TO AN AGRICULTURAL COVER CROP WITHIN THE EXISTING EXTENTS OF THE AGRICULTURAL FIELD IF IT IS DETERMINED THAT THE DESIRED COVER CROP MEETS APPLICABLE EROSION AND SEDIMENT POLLUTION CONTROL STABILIZATION REQUIREMENTS.
5. IMMEDIATELY AFTER SEEDING, EXCEPT FOR AREAS WITHIN THE EXISTING AGRICULTURAL FIELD, PROVIDE AN ANCHORED STRAW MULCH SPREAD UNIFORMLY IN A CONTINUOUS BLANKET AT A RATE OF 1,240 POUNDS PER 1,000 SQUARE YARDS (3 TONS PER ACRE) OR EROSION CONTROL MATTING.
 - A. MULCH MAY BE SPREAD BY HAND OR WITH AN ACCEPTABLE MECHANICAL BLOWER. MACHINES WHICH CUT MULCH INTO SHORT PIECES WILL NOT BE PERMITTED.
6. PERMANENT STABILIZATION DEFINED AS A MINIMUM UNIFORM 70% EROSION RESISTANT PERENNIAL VEGETATIVE COVER OR OTHER ESTABLISHED TO THE POINT WHERE THE SURFACE SOIL IS CAPABLE OF RESISTING EROSION DURING RUNOFF EVENTS AND SUBSURFACE CHARACTERISTICS ARE SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. THE STANDARD FOR THIS VEGETATIVE COVER WILL BE A UNIFORM COVERAGE OR DENSITY OF 70% ACROSS THE ENTIRE DISTURBED AREA.
7. SEEDED AREAS SHALL BE WATERED WITHIN TWO DAYS AFTER SEEDING AND MULCHING OPERATION ARE COMPLETED AND SUBSEQUENTLY DURING THE ESTABLISHMENT PERIOD. SEEDED AREAS ON WHICH GROWTH HAS STARTED SHALL BE WATERED TO A MINIMUM DEPTH OF THREE (3) INCHES TO ASSURE CONTINUED GROWTH. WATERING SHALL BE DONE IN A MANNER THAT WILL PROVIDE UNIFORM COVERAGE THAT WILL NOT CAUSE EROSION DUE TO APPLICATION OF EXCESS QUANTITIES, AND WILL NOT DAMAGE FINISHED SURFACES BY THE WATERING EQUIPMENT.

GENERAL STABILIZATION NOTES:

1. ANY TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THE PLAN DRAWING(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. IF REQUIRED, TOPSOIL STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET AND STOCKPILE SIDE SLOPES SHALL BE 2H:1V OR FLATTER.
2. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES - 6 TO 12 INCHES ON COMPACTED SOILS - PRIOR TO PLACEMENT OF TOPSOIL.
3. TOPSOIL SHOULD NOT BE PLACED WHILE THE SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
4. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUB AREA OF THE PROJECT, THE CONTRACTOR SHALL STABILIZE ALL DISTURBED AREAS. SHOULD SITE STABILIZATION OCCUR OUTSIDE OF THE ALLOWABLE SEEDING DATES DURING NON-GERMINATING MONTHS, ALL DISTURBED AREAS TO BE VEGETATED SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR AN ANCHORED MULCH APPLIED AT THE SPECIFIED RATES. PERMANENT STABILIZATION SHALL BE APPLIED TO THESE AREAS ONCE WITHIN THE ALLOWABLE SEEDING DATES.
5. AN EROSION CONTROL MATTING WILL BE INSTALLED ON ALL DISTURBED SLOPES 3H:1V OR STEEPER. ALL AREAS OF CONCENTRATED FLOWS, AND DISTURBED AREAS WITHIN 50' OF A SURFACE WATER, EROSION CONTROL MATTING INSTALLATION IS ANTICIPATED FOR THE PERMANENT STABILIZATION OF THE AREAS BENEATH AND ADJACENT TO THE RESERVOIR CONSTRUCTION ENTRANCE, TRIBUTARY TO THE PEMPS WETLANDS. EROSION CONTROL MATTING IS NOT ANTICIPATED FOR THE PERMANENT STABILIZATION OF THE RESERVOIR SHORELINE, UNLESS CONCENTRATED EROSION IS OBSERVED.
6. E&S BMPs SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE PLAN PREPARER AND/OR PADEP.
7. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPs SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON.
8. DISTURBED AREAS WHICH ARE NOT AT FINISHED GRADE AND WHICH WILL BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WHICH WILL NOT BE RE-DISTURBED WITHIN 1 YEAR MUST BE STABILIZED IN ACCORDANCE WITH THE PERMANENT VEGETATIVE STABILIZATION SPECIFICATIONS.

MAINTENANCE PROGRAM/CONTRACTOR'S RESPONSIBILITIES

1. THE CONTRACTOR SHALL ENSURE THAT THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED IN ACCORDANCE WITH THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN DRAWINGS. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BMPs AFTER EACH RAINFALL EVENT AND ON A WEEKLY BASIS.
2. UNTIL THE SITE IS FULLY STABILIZED, MAINTENANCE INSPECTIONS SHALL BE PERFORMED AND DOCUMENTED, ON ALL CONTROLS, AFTER EACH RAINFALL EVENT AND AT A MINIMUM ON A WEEKLY BASIS, AND SHALL BE KEPT ONSITE AT ALL TIMES. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, OR RENETTING, MUST BE PERFORMED IMMEDIATELY.
3. CONTRACTOR SHALL DOCUMENT IN WRITING ALL INSPECTIONS AND REMEDIAL ACTIONS ASSOCIATED WITH THE EROSION CONTROL FACILITIES. CONTRACTOR SHALL MAINTAIN THE INSPECTION LOG SHEETS ONSITE AND SHALL BE PREPARED TO PROVIDE THE INSPECTION LOG SHEETS TO THE OWNER, PLAN PREPARER, THE ADAMS COUNTY CONSERVATION DISTRICT, AND/OR PADEP UPON REQUEST. THE LOG SHALL INCLUDE THE DATES OF INSPECTIONS, AS WELL AS NOTES ON ANY DEFICIENCIES FOUND AND THE DATES THAT THEY WERE CORRECTED.
4. IF EROSION AND SEDIMENT CONTROL BMPs FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPs OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED IMMEDIATELY.
5. ONCE AN EROSION CONTROL FACILITY BECOMES CLOGGED WITH SEDIMENTS AND CAN NO LONGER PERFORM AS INTENDED, SAID FACILITY SHALL BE CLEANED OF SEDIMENTS OR REPLACED WITH A NEW FACILITY. SEDIMENT COLLECTED FROM THE EROSION CONTROL FACILITIES SHALL BE PLACED UPSTREAM OF THOSE CONTROLS AND IMMEDIATELY STABILIZED WITH SEED AND AN ANCHORED MULCH OR HAULED OFFSITE TO A DISPOSAL AREA WITH AN APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN. SEDIMENT SHALL BE DEPOSITED OUTSIDE OF STEEP SLOPES, WETLANDS, OR DRAINAGE SWALES.
6. REFER TO EACH EROSION CONTROL FACILITY DETAIL FOR ADDITIONAL INSTALLATION AND MAINTENANCE REQUIREMENTS ASSOCIATED WITH SAID FACILITY.
7. ALL PERMANENTLY SEEDED AREAS THAT BECOME ERODED SHALL IMMEDIATELY HAVE THE TOPSOIL REPLACED (IF APPLICABLE), THE EROSION CONTROL MATTING REPLACED (IF APPLICABLE), THE GRASS RESOWN AND MULCH REAPPLIED AND ANCHORED (IF APPLICABLE). IF EROSION PERSISTS, THE AREA SHALL BE EITHER LINED WITH EROSION CONTROL MATTING OR STABILIZED WITH ROCK RIPRAP AT THE DISCRETION OF THE OWNER/E&S PLAN PREPARER.
8. THE INTENT OF THIS PLAN/NARRATIVE IS TO INDICATE GENERAL MEANS OF COMPLIANCE WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF CHAPTER 102, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (AS AUTHORIZED UNDER THE CLEAN STREAMS LAW). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT THESE METHODS, PLUS ADDITIONAL METHODS, AS MAY BE NECESSARY, BECAUSE OF CONDITIONS CREATED BY LOCALIZED SITE CONDITIONS AND/OR CONSTRUCTION PROCEDURES IN ORDER TO ENSURE COMPLIANCE WITH APPLICABLE LAW. IT WILL FURTHER BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL FACILITIES SO THAT THEY PERFORM AS REQUIRED BY APPLICABLE LAW.

TEMPORARY STABILIZATION FORMULA AND SPECIES	% BY WEIGHT	MINIMUM %		MAX % WEED SEED	SEEDING RATE LB/1000 YD²	GERMINATION PERIOD
		PURITY	GERMINATION			
PENNDOT FORMULA E MIX: • ANNUAL RYEGRASS (LOLIUM MULTIFLORUM)	100	95	90	0.10	10.0	MARCH 15 TO OCTOBER 15
WINTER WHEAT (TRITICUM AESTIVUM)	100	95	90	0.10	37.2	MARCH 15 TO OCTOBER 15

PERMANENT STABILIZATION (AREAS OUTSIDE OF AGRICULTURAL FIELD) FORMULA AND SPECIES	% BY WEIGHT	MINIMUM %		MAX % WEED SEED	SEEDING RATE LB/1000 YD²	GERMINATION PERIOD
		PURITY	GERMINATION			
PENNDOT FORMULA N CONSERVATION NATIVE GRASS MIX: • HARD FESCUE MIXTURE (FESTUCA LONGIFOLIA) A COMBINATION OF IMPROVED CERTIFIED VARIETIES WITH NO ONE VARIETY EXCEEDING 50% OF THE TOTAL HARD FESCUE COMPONENT • CREEPING RED FESCUE (FESTUCA RUBRA) (IMPROVED AND CERTIFIED) • LITTLE BLUESTEM (ANDROPOGON SCOPARIUS) • CANADA WILD RYE (ELYMUS CANADESIS) • VIRGINIA WILD RYE (ELYMUS VIRGINICUS) • INDIANGRASS (SORGHASTRUM NUTANS) • ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) • BLACK EYED SUSAN (RUDBECKIA HIRTA) • NEW ENGLAND ASTER (SYMPHYOTRICHUM NOVAE-ANGLIE) • OX-EYE SUNFLOWER (HELIOPSIS HELIANTHOIDES)	30	97	85	0.10	9.0	MARCH 15 TO OCTOBER 15
	30	97	85	0.10	9.0	
	4	80	70	0.20	1.2	
	6	85	70	0.20	1.8	
	4	85	70	0.20	1.2	
	3	85	70	0.20	0.9	
	10	95	90	0.10	3.0	
	5	80	60	0.20	1.5	
	3	80	50	0.20	0.9	
	5	80	60	0.20	1.5	

ESTIMATED FLOOD FLOWS AT SHEPPARD DAM FOR SELECTED RECURRENCE INTERVALS	
RECURRENCE INTERVAL	ESTIMATED PEAK RATE (CFS)
2-YEAR	235
5-YEAR	465
10-YEAR	667
50-YEAR	1,250
100-YEAR	1,570

ESTIMATED PEAK RATES OF RUNOFF ARE APPROXIMATE AND ARE BASED ON USGS STREAMSTATS REGRESSION EQUATIONS (USGS SIR 2008-5102). NO GUARANTEE IS MADE TO THE ACCURACY OF THIS INFORMATION.

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NO.	DESCRIPTION	DATE	BY	
REVISIONS				

DESIGNED	CADD	SCALE
WJK	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
WJK	PGS	PGS



Gannett Fleming

MR. PETER H. SHEPPARD
HANOVER, PENNSYLVANIA

SHEPPARD RESERVOIR
RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL NARRATIVE
SHEET 2 OF 2

JOB NO.	SHEET NO.
063377	17 OF 20
DATE	DRAWING NO.
OCTOBER 2018	ES5

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NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
NCC	WCH	AS SHOWN
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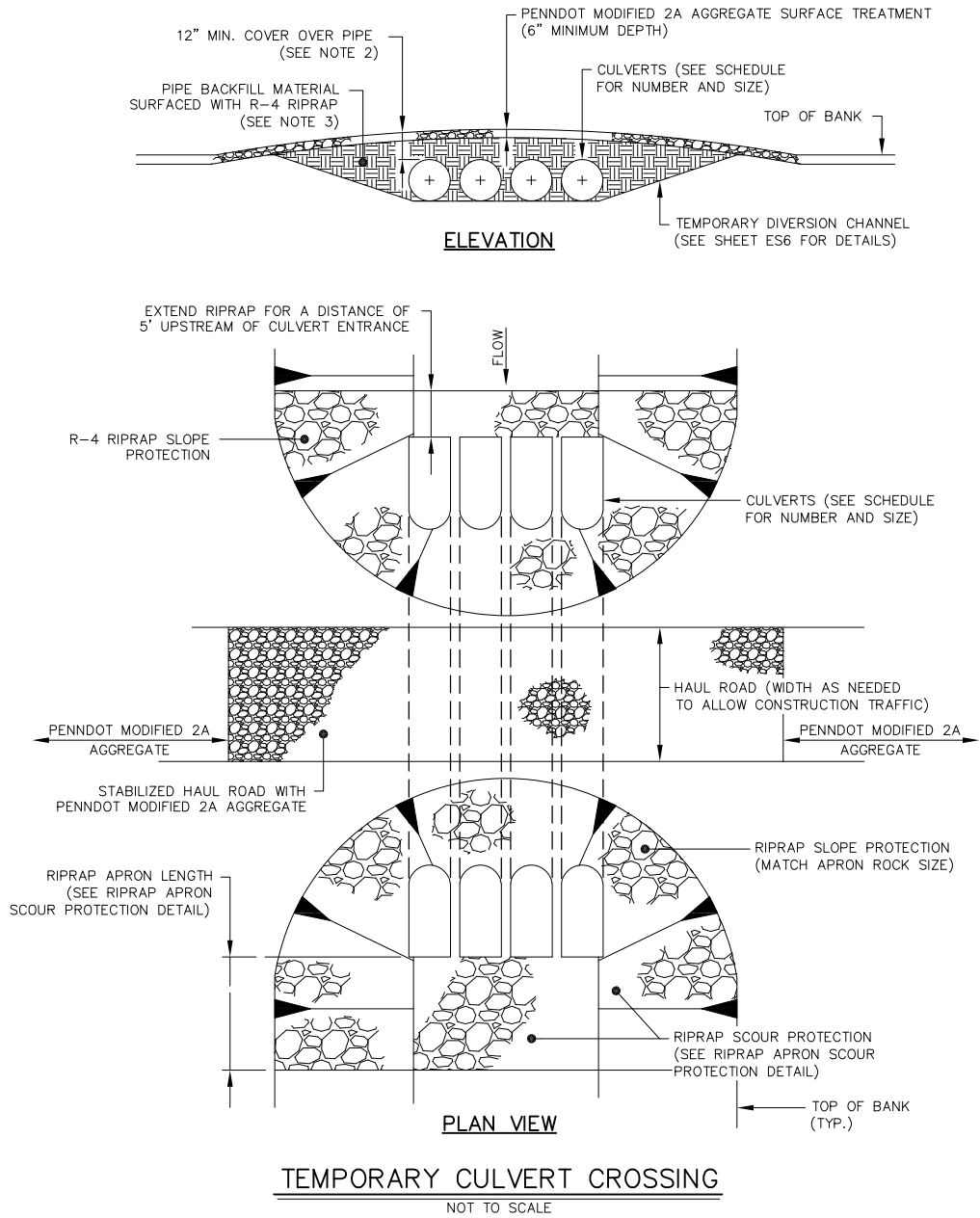


Gannett Fleming

MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL DETAILS
SHEET 2 OF 3

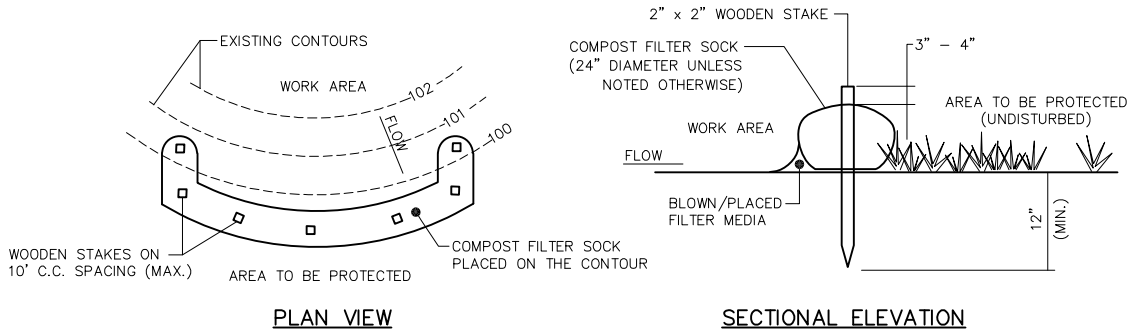
JOB NO.	SHEET NO.
063377	19 OF 20
DATE	DRAWING NO.
OCTOBER 2018	ES7



TEMPORARY CULVERT CROSSING NOTES:

- TEMPORARY DRAINAGE FACILITIES AS SHOWN ON THE DRAWINGS ARE DESIGNED TO CONVEY THE ESTIMATED 2-YEAR, 24-HOUR STORM EVENT. CONTRACTOR MAY CHOOSE TO INCREASE THE SIZE OF THE TEMPORARY DRAINAGE FACILITIES TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION AGAINST FLOODING OF THE WORK AREAS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE CULVERT MATERIAL, CULVERT SPACING, BACKFILL MATERIAL AND COVER REQUIREMENTS AS NEEDED TO SUPPORT THE ANTICIPATED TRAFFIC LOADS.
- ALL RIPRAP SLOPE PROTECTION SHALL BE UNDERLAIN WITH MIRAFI 500X, OR APPROVED EQUAL.
- ALL HAUL ROADS SHALL BE STABILIZED WITH PENNDOT MODIFIED 2A AGGREGATE AT CULVERT CROSSINGS. ADD ROCK AS NEEDED TO MAINTAIN A CLEAN, DRY SURFACE FOR VEHICULAR TRAFFIC.

CULVERT DESIGNATION	CULVERT SIZE	NUMBER OF CULVERTS	UPSTREAM INVERT (FT)	DOWNSLOPE INVERT (FT)	LENGTH (FT)	SLOPE (FT/FT)
1	36"	4	579.0±	578.3±	45	0.0151
2	24"	4	582.0±	579.8±	45	0.0500
3	36"	4	585.0±	584.7±	45	0.0064
4	36"	4	588.5±	584.2±	45	0.0064



COMPOST FILTER SOCK

NOT TO SCALE

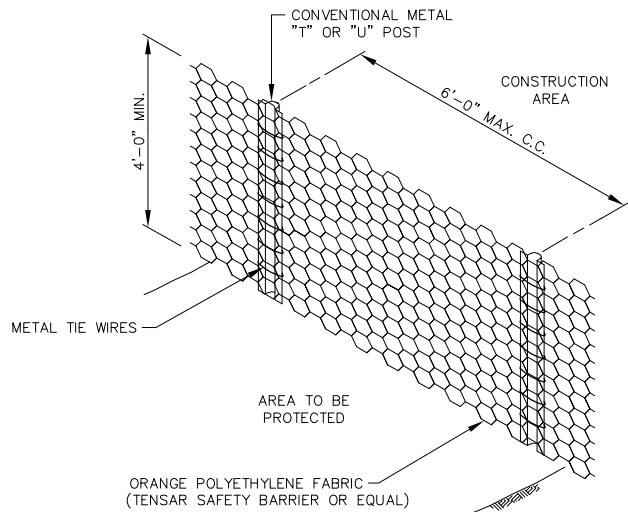
COMPOST FILTER SOCK GENERAL NOTES:

- FILTER SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED ON LEVEL ALIGNMENTS. BOTH ENDS OF EACH FILTER SOCK SECTION MUST BE EXTENDED AT LEAST TEN FEET UPSLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.
- FILTER SOCK SHALL BE PLACED A MINIMUM OF EIGHT FEET FROM THE TOE OF FILL SLOPES.
- FILTER SOCK IS NOT PERMITTED IN ANY AREA OF CONCENTRATED FLOWS SUCH AS DITCHES, SWALES OR CHANNELS. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
- INSPECT FILTER SOCK AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL EVENT. DAMAGED SOCKS SHALL BE REPAIRED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR REPLACED WITHIN 24 HOURS OF THE INSPECTION.
- ACCUMULATED SEDIMENTS SHALL BE REMOVED AS REQUIRED TO KEEP THE FILTER SOCK FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 THE ABOVE-GROUND HEIGHT OF THE FILTER SOCK.
- THE REMOVED SEDIMENT SHALL BE USED FOR ONSITE GRADING AND IMMEDIATELY STABILIZED WITH PERMANENT SEED AND AN ANCHORED MULCH OR HAULED OFFSITE TO A DISPOSAL AREA WITH AN APPROVED EROSION CONTROL PLAN.
- FILTER SOCK SECTIONS WHICH HAVE BEEN UNDERMINED OR OVERTOPPED SHALL BE IMMEDIATELY REPAIRED AND REINFORCED WITH A SECOND FILTER SOCK RUN.
- ADHERE TO MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER SOCK DUE TO WEATHERING.
- AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, REMOVE ALL FILTER SOCK MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND PERMANENTLY STABILIZE. FILTER SOCK COMPOST MATERIAL MAY BE LEFT IN PLACE IF SO DIRECTED BY THE USING AGENCY. IF COMPOST MATERIAL IS LEFT IN PLACE, REMOVE STAKES AND FILTER SOCK NETTING MATERIAL FROM THE SITE AND SPREAD COMPOST MATERIAL AS DIRECTED BY THE USING AGENCY.
- SUPER SILT FENCE MAY BE USED AS AN EQUIVALENT SUBSTITUTE FOR 24" DIAMETER COMPOST FILTER SOCK.
- SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PADEP EROSION CONTROL MANUAL. COMPOST SHALL MEET STANDARDS OF TABLE 4.2 OF THE PADEP EROSION CONTROL MANUAL.

FILTER SOCK LOCATION TABLE			
FILTER SOCK NO.	LOCATION	FILTER SOCK SIZE (IN.)	APPROXIMATE FILTER SOCK LENGTH (FT.)
1	SOUTH OF SPOIL PILE - SEE SHEET ES-3	12	65
2	SOUTH OF SPOIL PILE - SEE SHEET ES-3	24	55
3	SOUTH OF SPOIL PILE - SEE SHEET ES-3	24	60
4	SOUTH OF SPOIL PILE - SEE SHEET ES-3	24	75
5	SOUTH OF SPOIL PILE - SEE SHEET ES-3	24	55
6	SOUTH OF SPOIL PILE - SEE SHEET ES-3	12	70
7	SOUTH OF SPOIL PILE - SEE SHEET ES-3	12	75
8	SOUTH OF SPOIL PILE - SEE SHEET ES-3	12	55
9	SOUTH OF SPOIL PILE - SEE SHEET ES-3	12	65
10	COMPOST FILTER SOCK SEDIMENT TRAP #1	- - -	- - -
11	SOUTHEAST OF ACCESS ROAD - SEE SHEET ES-3	24	190
12	EAST OF ACCESS ROAD INTO AG. FIELD - SEE SHEET ES-3	24	310
13	EAST OF ACCESS ROAD INTO AG. FIELD - SEE SHEET ES-3	12	105
14	COMPOST FILTER SOCK SEDIMENT TRAP #2	- - -	- - -
15	DOWNSLOPE OF THE CONTRACTOR STAGING AREA - SEE SHEET ES-3	18	160
16	NORTHWEST OF SPOIL PILE - SEE SHEET ES-3	12	60
17	WEST OF SPOIL PILE - SEE SHEET ES-3	12	245
18	DOWNSLOPE OF RESERVOIR CONSTRUCTION ENTRANCE - SEE SHEET ES-1	12	80
19	DOWNSLOPE OF RESERVOIR CONSTRUCTION ENTRANCE - SEE SHEET ES-1	12	95

*NOTE THAT EIGHT ADDITIONAL LENGTHS OF 12-INCH COMPOST FILTER SOCK, TOTALING APPROXIMATELY 450 FEET, ARE SPECIFIED AROUND THE PROJECT AREATO SERVE AS FLOW DIVERSIONS (SEE TABLE BELOW) OR AT THE OUTLETS OF THE BROAD-BASED DIPS (BBD) (SEE TABLE BELOW AND SHEET ES-3).

COMPOST FILTER SOCK DIVERSIONS (EXCLUDING CFS AT BROAD-BASED DIPS)		
DIVERSION D1	ADJACENT TO CFS SEDIMENT TRAP #1	12
DIVERSION D2	ADJACENT TO CFS SEDIMENT TRAP #1	12
DIVERSION D3	ADJACENT TO CFS SEDIMENT TRAP #2	12
DIVERSION D4	ADJACENT TO RESERVOIR CONTROL TOWER	12
DIVERSION D5	ADJACENT TO RESERVOIR CONTROL TOWER	12
BBD1	ADJACENT TO NORTHERN BBD	12
BBD2	ADJACENT TO MIDDLE BBD	12
BBD3	ADJACENT TO SOUTHERN BBD	12

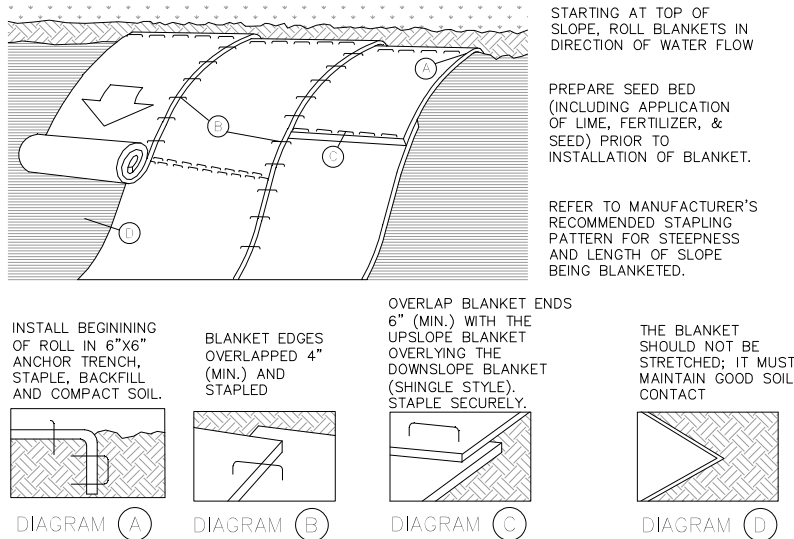


PROTECTIVE FENCE

NOT TO SCALE

PROTECTIVE FENCE NOTES:

- LOCATE PROTECTIVE FENCE AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE OWNER. AT A MINIMUM, THE PROTECTIVE FENCING AROUND EXISTING TREES SHOULD BE LOCATED OUTSIDE OF THE DRIP LINE OF ANY TREE TO BE RETAINED AND, IN NO CASE, CLOSER THAN FIVE (5) FEET TO THE TRUNK OF ANY TREE. NO CLEARING OR GRUBBING ACTIVITIES ARE PERMITTED WITHIN THIS RADIUS.
- FENCING TO BE USED SHALL BE 48-INCH-HIGH "INTERNATIONAL ORANGE" PLASTIC (POLYETHYLENE) WEB FENCING SECURED TO CONVENTIONAL METAL "T" OR "U" POSTS DRIVEN TO A MINIMUM DEPTH OF 18 INCHES ON SIX-FOOT-MAXIMUM CENTERS.
- THE FENCE SHALL HAVE THE FOLLOWING PROPERTIES:
TENSILE YIELD: AVG. 2,000 LBS PER 4-FOOT WIDTH
ULTIMATE TENSILE YIELD: AVG. 2,900 LBS PER 4-FOOT WIDTH
ELONGATION AT BREAK (%): GREATER THAN 1,000%
CHEMICAL RESISTANCE: INERT TO MOST CHEMICALS AND ACIDS
- PROTECTIVE FENCING SHALL BE IN PLACE BEFORE ANY GRADING ACTIVITIES BEGIN AND IS TO BE KEPT IN GOOD REPAIR FOR THE DURATION OF THE CONSTRUCTION ACTIVITIES.
- REMOVE FENCING MATERIALS ONLY AFTER CONSTRUCTION ACTIVITY HAS CEASED ON THE SITE.

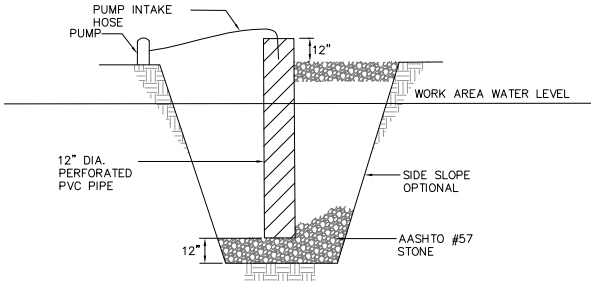


EROSION CONTROL MATTING INSTALLATION

NOT TO SCALE

EROSION CONTROL MATTING INSTALLATION NOTES:

- SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
- PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
- SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
- BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
- THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.



SUMP PIT NOTES:

LOCATE SUMP AT LOW POINT IN WORK AREA AND OUTSIDE OF CONSTRUCTION ACTIVITY. WHEREVER RUNOFF FROM A WORK AREA FLOWS DIRECTLY TO THE SUMP AREA, A FILTER BAG SHALL BE ATTACHED AT THE DISCHARGE POINT UNLESS PUMPING TO A SEDIMENT BASIN OR SEDIMENT TRAP.

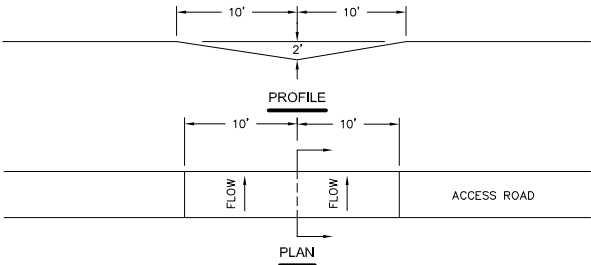
MINIMUM DIAMETER OF PIT BOTTOM SHALL BE 24" LARGER THAN PIPE DIAMETER. MINIMUM DEPTH OF PIT SHALL BE 24" BELOW WATER LEVEL IN WORK AREA (INCLUDING THE AASHTO #57 STONE). 12" TO 24" PERFORATED CMP OR PVC PIPE SHALL BE SET ON 12" OF CLEAN AASHTO # 57 STONE.

VOID SPACE AROUND PIPE SHALL BE FILLED WITH AASHTO #57 STONE. PIPE TO EXTEND 12" MIN. ABOVE TOP OF STONE AND/OR WATER BEING PUMPED FROM WORK AREA.

SET PUMP INTAKE INSIDE STANDPIPE.

DISCHARGE FROM PUMP SHALL BE TO A STABLE AREA BELOW DISTURBANCES FROM THE WORK ZONE.

SUMP MAY BE USED IN CONJUNCTION WITH FILTER BAG WHERE ADDITIONAL FILTERING IS NEEDED.



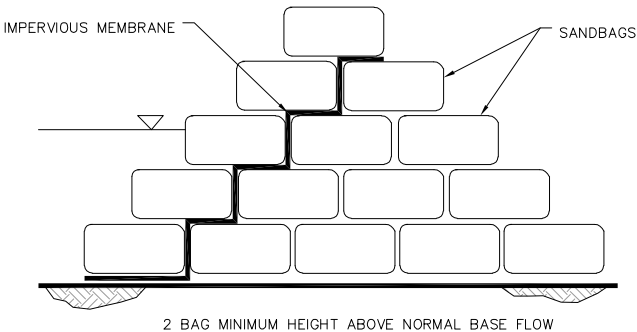
BROAD-BASED DIPS FOR LOW GRADIENT ROADWAYS NOTES:

BROAD-BASED DIPS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN AND AT THE LOCATIONS SHOWN ON THE PLAN DRAWINGS.

DIPS SHALL BE ORIENTED SO AS TO DISCHARGE TO THE LOW SIDE OF THE ROADWAY.

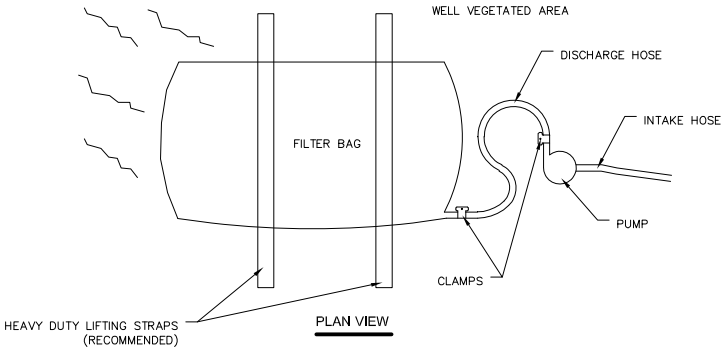
DIPS SHALL BE INSPECTED DAILY. DAMAGED OR NON-FUNCTIONING DIPS SHALL BE REPAIRED BY THE END OF THE WORKDAY.

MAXIMUM SPACING OF BROAD-BASED DIPS SHALL BE AS SHOWN IN TABLE 3.2 FOUND IN PENNSYLVANIA DEP EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL.



SANDBAG DIVERSION DAM OR COFFERDAM

NOT TO SCALE



TEMPORARY PUMP BYPASS/PUMPED WATER FILTER BAG

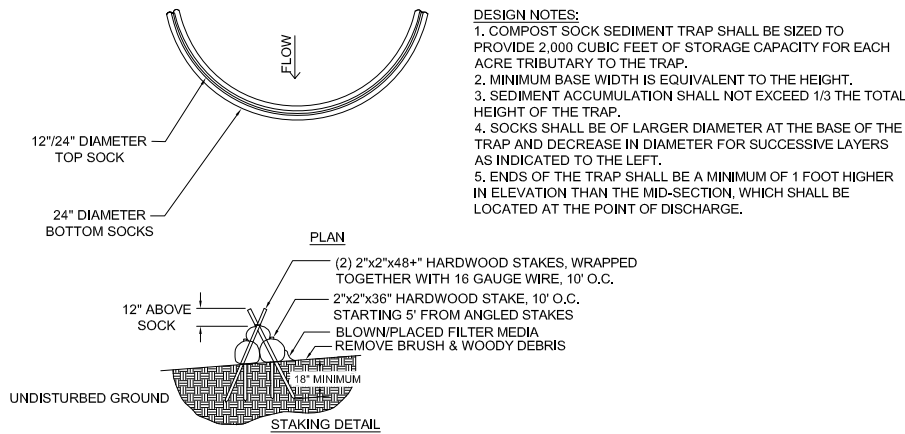
NOT TO SCALE

PUMPED WATER FILTER BAG NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 SIEVE

- A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. A SUPPLY OF SPARE BAGS SHALL BE KEPT AVAILABLE ONSITE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
- NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING OPERATIONS, INCLUDING THE SELECTION, SIZING, AND OPERATION OF THE FILTERING DEVICE. THE CONTRACTOR SHALL CONSIDER THE ONSITE SOILS AND INCLUDE FILTERING MEASURES IN HIS BASE BID THAT WILL EFFECTIVELY TREAT THE PUMPED WATER. IF A PUMPED WATER FILTER BAG IS UTILIZED, IMPLEMENT SAID DEVICE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE INFORMATION PROVIDED WITHIN THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL VERIFY LOCATION OF FACILITY WITH ENGINEER PRIOR TO CONSTRUCTION OF SAID FACILITY. FACILITY SHALL BE PLACED AT A LOCATION WHERE THE FILTERED OUTFLOW WILL NOT INTERFERE WITH ONGOING CONSTRUCTION ACTIVITIES OR CAUSE FLOODING OR EROSION PROBLEMS. FILTER BAGS SHALL BE PLACED IN WELL-VEGETATED GRASSY AREAS AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN FIVE PERCENT. FOR SLOPES EXCEEDING FIVE PERCENT, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
- THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ONE HALF THE MAXIMUM RATE SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMPED INTAKES SHALL BE FLOATING AND SCREENED.
- SEDIMENT COLLECTED FROM THE DEVICE SHALL BE REMOVED AND USED FOR ONSITE GRADING AND IMMEDIATELY STABILIZED WITH SEED AND AN ANCHORED MULCH.
- REMOVE FACILITY WHEN NO LONGER NEEDED. REMOVE ALL MATERIALS AND UNSTABLE SEDIMENT AND EITHER SALVAGE OR DISPOSE OF PROPERLY. IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE INSTALLATION, USE, AND REMOVAL OF THIS FACILITY.
- FILTER BAGS SHALL BE INSPECTED DAILY. IF A PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.
- FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS.
- THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED.



COMPOST FILTER SOCK SEDIMENT TRAP

NOT TO SCALE

MATERIAL DESCRIPTION	BOTTOM SOCKS DIA.	TOP SOCK DIA.
COMPOST SOCK SEDIMENT TRAP #1	24"	24"
COMPOST SOCK SEDIMENT TRAP #2	24"	12"

COMPOST FILTER SOCK SEDIMENT TRAP NOTES:

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PADEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PADEP EROSION CONTROL MANUAL.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

NO.	DESCRIPTION	DATE	BY

DESIGNED	CADD	SCALE
NCC	WCH	AS SHOWN
DRAWN	CHECKED	APPROVED
NCC	PGS	PGS



Gannett Fleming

MR. PETER H. SHEPPARD HANOVER, PENNSYLVANIA
SHEPPARD RESERVOIR RESTORATION PROJECT

EROSION AND SEDIMENT CONTROL DETAILS
SHEET 3 OF 3

JOB NO.	SHEET NO.
063377	20 OF 20
DATE	DRAWING NO.
OCTOBER 2018	ES8