Public Notice

U.S. Army Corps of Engineers

In Reply to Application Number NAB-2023-00151-P12 (York Haven Nature Like FishWay)

Baltimore District
PN-23-34

Comment Period: August 23, 2023 to September 22, 2023

THE PURPOSE OF THIS PUBLIC NOTICE IS TO INFORM INTERESTED PARTIES OF THE PROPOSED ACTIVITY AND TO SOLICIT COMMENTS. 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 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344),as described below:

APPLICANT:

Ms. Jody Smet
York Haven Power Company, LLC
100 Hydro Park Drive
York Haven, Pennsylvania 17370

WATERWAY AND LOCATION OF THE PROPOSED WORK:

The proposed project is located on the east side of the Susquehanna River, at the southwest corner of Three Mile Island (TMI), around the north abutment of the main York Haven dam, in Londonderry Township, Dauphin County, Pennsylvania. (Latitude 40.134155/Longitude -76.724671)

OVERALL PROJECT PURPOSE: To improve fish passage and connectivity of aquatic habitats in the Susquehanna River at the York Haven Dam.

PROJECT DESCRIPTION:

York Haven Power Company, LLC (YHPC) is the owner, operator, and licensee of the York Haven Hydroelectric Project. YHPC began the Federal Energy Regulatory Commission (FERC) relicensing process of the project in June 2009. As part of the relicensing agreement, a Settlement Agreement was executed by YHPC, United States Fish and Wildlife Service, Pennsylvania Fish and Boat Commission, Maryland Department of Natural Resources and the Susquehanna River Basin Commission and was filed with FERC on January 30, 2014. The main issues associated with the relicensing of the project included: (1) upstream passage of American shad and other anadromous species; (2) upstream passage of American eels; (3) downstream passage

of post-spawning American Shad; (4) downstream passage of juvenile American Shad; (5) downstream passage of juvenile silver stage American Eel; (6) resident fish passage; (7) flow management; (8) water quality and debris management; and (9) endangered species and species of special concern. The construction of a nature-like fishway (NLF) was the main component of the Settlement Agreement.

On September 24, 2021, YHPC notified FERC that it had entered a FERC-mediated dispute resolution with the resource agencies to address the construction of the NLF at the project. After a successful utilization of the process, an inland bypass NLF at the north end of the Project's Main Dam, located on Three Mile Island was agreed to in an amended Settlement Agreement signed by YHPC and the Resource Agencies and filed with FERC for amending the license on January 26, 2023.

The primary purpose of this NLF is to improve fish passage and connectivity in the Susquehanna River, as supported by the Resource Agencies. The NLF is designed to improve fish passage and connectivity by simulating the geomorphology, hydraulics, and functions of natural river channels. At the suggestion of the resource agencies during relicensing, YHPC investigated the feasibility of an NLF concept at the Main Dam apex. Through evaluations with experts in the NLF field, YHPC concluded that the area was well-suited for an NLF. During the design review process and the review of various alternatives, YHPC and the Resource Agencies considered two options, an In-river NLF (as agreed to in the original Settlement Agreement) and an Inland NLF (agreed to in the amended Settlement Agreement). The Inland NLF was determined to be the preferred alternative of YHPC and the Resource Agencies because it reduced the overall aquatic impacts of the NLF, maintains dam safety, and still meets the objective of providing suitable anadromous and resident fish passage.

The fishway entrance will be located approximately 90 feet downstream of the Main Dam north abutment, and the exit will be located approximately 150 feet upstream of the Main Dam north abutment. Fish that enter the fishway will swim up the Inland NLF, around the north abutment of the Main Dam, and will exit to the upstream impoundment (Lake Fredrick) and continue their upstream migration. To provide additional attraction, to the fishway entrance, during the migratory fish passage season, a portion of the crest of the Main Dam will be modified to accommodate a supplemental attraction water feature (SAWF). The feature will permanently lower a 90-foot-long section of the Main Dam and will include a manually adjustable crest that will be optimized over the first years of fishway operation (based on visual observations and fishway effectiveness testing).The manually adjustable crest will allow for future adaptive management of the SAWF, but adjustment will be limited to periods when staff can access the dam safely.

The Inland NLF will be approximately 120 feet wide and approximately 700 feet long, including rock riffle at the NLF entrance. The Inland NLF will consist of a rock riffle with staggered boulders and two defined channels where fish enter the Inland NLF after they migrate from the powerhouse tailrace along the steeper natural gradient river channel (Conewago Falls) to the fishway entrance. Upstream from the rock riffle in the Inland

NLF, fish will enter the approximately 50-foot-long resting pool downstream of weir 12 of 12. The downstream weirs (Weirs 2-12) will be parabolic in shape, with the opening facing downstream. The 12 weirs will be constructed of large weir boulders set on a stone bedding on bedrock, with face and footer boulders, and riprap surrounding these weir boulders to form the weirs. The leading weir (Weir 1, most upstream) is proposed to be constructed with concrete core wall to limit seepage from the reservoir area above the pond, in combination with the sheet pile subsurface flow cutoff wall extending from the Main Dam to Wier 1 and continuing upstream. The side slopes of the fishway will be protected with riprap designed to resist the reasonably anticipated hydraulic forces expected in the fishway. The boulders being used will be sourced from a local quarry and will contribute to the natural character of the fishway by simulating the conditions found in the area just downstream in the Susquehanna River.

To stabilize the existing banks of TMI. Riprap will be placed approximately 40 feet upstream and downstream of the Inland NLF. A permanent access road will be established along the east side of the Inland NLF to allow for access for monitoring and future maintenance. This access road would terminate near Weir 1 at an elevation of approximately 280', providing access to the upstream end of the fishway during moderate and low flows.

Construction of the NLF is planned to occur over approximately 15 months.

The inland NLF would permanently impact Wetlands identified as Wetlands A, B, C, I, J and K, and the Susquehanna River to create the fish passage and stabilize the shoreline. No temporary wetland impacts are anticipated.

All work is proposed in accordance with the attached plans prepared by Kleinschmidt Group, dated May 22, 2023.

EFFECTS ON AQUATIC RESOURCES:

To summarize the tables below, the project is proposed to permanently impact 1.23 acres of impacts below the ordinary high water mark (OHWM) to the Susquehanna River, 0.56 acre of wetlands above the OHWM and 0.12 acre of wetlands below the OHWM. 1.37 acres of temporary impacts will occur in the Susquehanna River below the OHWM, as a result of a cofferdam. The 1.37 acres encompasses the permanent impact area of 1.23 acres and an additional 0.14 acre to be restored to preconstruction contours upon installation of the Inland NLF. There are no proposed temporary impacts to wetlands proposed.

Joint Permit Application: Aquatic Resource Impact Table													
Project/Site Name: York Haven Power Company, LLC , York Haven Nature-Like Inland Fishway												Updated: 3/15/2023	
DEP USE ONLY	Project Information						PA DEP / 105						
PADEP Permit Number	Structure/Activity unique identifier	Aquatic Resource Type	Latitude dd NAD83	Longitude dd NAD83	Waters Name	PA Code Chapter 93 Designation	Work Proposed	DEP Impact Type temp/perm	ACOE Impact Type temp/perm	Watercourse Impact Top of Bank to Top of Bank Length and Width in feet	Floodway Impact Top of Bank Landward Length and Width in feet	Wetland Impact Dimensions Area SF	
	Wetland A	PFO1Cx	40.134155°	-76.724671°	wetland on TMI	other	Fill	perm	perm	0 / 0	350 / 95	17,300	
	Wetland A	PEM2Cx	40.133585°	-76.724277°	wetland on TMI	other	Fill	perm	perm	0 / 0	180 / 40	3,600	
	Wetland B	PFO1Cx	40.133403°	-76.724022°	wetland on TMI	other	Fill	perm	perm	0 / 0	20 / 11	210	
	Wetland C	PFO1Cx	40.133359°	-76.723817°	wetland on TMI	other	Fill	perm	perm	0 / 0	35 / 20	430	
	Wetland F	PEM2	40.131591°	-76.720547°	wetland on TMI	other	Fill	perm	perm	0 / 0	110 / 45	2,700	
	Wetland H (below OHWL)	PFO1C	40.132564°	-76.723847°	wetland below OHWL of Susq. River	other		perm	perm	75 / 15	0 / 0	820	
	Wetland I (below OHWL)	PFO1C	40.133040°	-76.724554°	wetland below OHWL of Susq. River	other		perm	perm	205 / 18	0 / 0	2,200	
	Wetland J (below OHWL)	PEM1C	40.133672°	-76.725021°	wetland below OHWL of Susq. River	other		perm	perm	95 / 15	0 / 0	910	
	Wetland K (below OHWL)	PFO1C	40.134237°	-76.725392°	wetland below OHWL of Susq. River	other		perm	perm	100 / 15	0 / 0	1,300	
	Susquehanna River - NLF	R2USC	40.133375°	-76.724773°	Susquehanna River, below Main Dam	WWF, MF		perm	perm	770 / 175	770 / 260	0	
	Susquehanna River - Staging Area	R2USC	40.131886°	-76.721364°	Susquehanna River, below Main Dam	WWF, MF		perm	perm	0 / 0	1,400 / 640	0	
	Susquehanna River - NLF & Staging Areas	R2USC	40.133375°	-76.724773°	Susquehanna River, below Main Dam	WWF, MF		temp	temp	950 / 240	2,300 / 700	0	
	Lake Frederic/Susquehanna River	R2UBH	40.133375°	-76.724773°	Susquehanna River, upstream of Main Dam	WWF, MF		perm	perm	Noted as part of Susq. River impacts	Noted as part of Susq. River impacts	0	
	Lake Frederic/Susquehanna River	R2UBH	40.133375°	-76.724773°	Susquehanna River, upstream of Main Dam	WWF, MF		temp	temp	Noted as part of Susq. River impacts	Noted as part of Susq. River impacts	0	
	Waters of USA Ditch A/ Stormwater Ditch A	Stream	40.132076°	-76.722288°	unnamed ditch					90 / 7	N/A (impacts already captured within larger Susq. Fwy)	0	

PA Code Ch 93 Other wetlands. This category includes wetlands not categorized as exceptional value wetlands.
WWF: Warm Water Fishes
MF: Migratory Fishes

TABLE 2. YORK HAVEN INLAND NLF SUB-FACILITY DETAILS TABLE

York Haven Inland NLF: Subfacility Details Updated: 3/17/2023

Project Identification	Sub-Facility Code	Resource Identification	Latitude and Longitude	Proposed Impacts	Area of Impacts (square feet)	Approximate Net Fill (cubic feet) / Fill Material
Cofferdam	NJD	Lake Frederic/ Susquehanna River	40.133256°, -76.724805°	Temporary Direct	60,000	425,000 / Rock-fill & Water-filled Cofferdam
		Wetland K	40.134335° , -76.725468°	Temporary Direct	450	
		Wetland J	40.133799° , -76.725063°	Temporary Direct	160	
	STENC	Wetland H	40.132461° , -76.723757°	Permanent Direct	820	
		Wetland I	40.133347° , -76.724663°	Temporary Direct	2,200	
Inland Nature-Like Fishway	STRS	Wetland A (PFO)	40.134109° , -76.724843°	Permanent Direct	17,300	NA* / Soil
		Wetland A (PEM)	40.133802° , -76.724359°	Permanent Direct	3,600	
		Wetland B	40.133403° , -76.724022°	Permanent Direct	210	
		Floodway	40.134317°, -76.725425°	Permanent Direct	124,870	
	SBP	Lake Frederic/ Susquehanna River	40.134318°, -76.725428°	Permanent Direct	52,700	
		Wetland K	40.134317° , -76.725429°	Permanent Direct	1,300	
		Wetland J	40.133799° , -76.725063°	Permanent Direct	910	
		Wetland I	40.133347° , -76.724663°	Permanent Direct	2,200	
Supplemental Attraction Water Facility	NJD	Lake Frederic/ Susquehanna River	40.132936°, -76.724919°	Permanent Direct	940	NA** / concrete
Fill Placement Area (includes both areas)	OTHER	Floodway	40.131886°, -76.721364°	Permanent Direct	464,660***	1530000*** / soil & rock
	WTDIM	Wetland F	40.131591° , -76.720547°	Permanent Direct	2,700	12,200 / soil & rock
Staging Area	FLACT	Floodway	40.133423°, -76.724359°	Temporary Direct	80,220	3,500 / soil & rock
	WTDIM	Wetland C	40.133359° , -76.723817°	Permanent Direct	430	110 / soil

**Net cut (Net Fill < 0), but soil/stone will be placed within NLF to prevent erosion.*
*** Net cut (Net Fill < 0), but concete will be placed to create SAWF structure.*
**** includes Wetland F impact area/volume*

Title 25, Chapter 93 of the Pennsylvania Code classifies the main stem of the Susquehanna River as a warm water fishery and migratory fishery.

LEAD FEDERAL AGENCY:

The Federal Energy Regulatory Commission, as the lead federal agency, is responsible for all coordination pursuant to applicable federal authorities.

APPLICANT'S PROPOSED AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION:

In order to fulfill the projects' purpose, the Susquehanna River needed to be directly impacted. The no-action alternative was not feasible, and the lack of fish passage would continue.

The applicant evaluated modifying the existing East Channel fishway, but it was determined even if the existing fishway were to be upgraded the American Shad passage efficiency would only be about 30 %. The project is being designed for an efficiency of at least 80%. Thus, the modification alone would not meet the project requirements.

Trap and truck fish passage was determined to be not feasible, as York Haven would be the only dam, in the series of four major dams (Conowingo, Holtwood, Safe Harbor and York Haven) on the lower Susquehanna, to have no upstream passage constructed as a part of the dam.

Fish lifts are currently employed at the three lower dams but have met with limited success. So, the use of a fish lift would still not fully satisfy the project purpose and need.

Once it was determined that the only proposal that would satisfy all the needs for the project would be a new fish passage design on site, various locations along the dam were investigated and it was determined that the location and design of the proposed inland NLF best met the project need and purpose while still minimizing impacts to the aquatic environment.

During the design process the width of the NLF was reduced from 300 feet to 120 feet wide, thus reducing the amount of permanent palustrine forested wetland impacts and wetlands below the OHWM by over 0.5 acres.

In addition, during design, the limit of disturbance for the Inland NLF was adjusted to avoid 0.02 acres of impact to Wetland E.

There were concerns of the potential for secondary impacts to the unimpacted portion of Wetland A. However, the applicant will limit the potential for secondary impacts (draining) and thus preserve the northern portion of Wetland A by installing low-permeability soils in the permanent access road at the south end of this wetland, where the fishway will need to be excavated. By maintaining the ability to pond water in the remaining portions of Wetland A even post-construction, no permanent indirect impacts are anticipated.

Construction-related temporary impacts to the river will be reduced by compliance with any in-water work windows and the application of an approved erosion and sedimentation control plan.

The proposed Inland NLF design includes an approximately 120-foot-wide inland bypass fishway with approximately 1.3 acres of in-river excavation related impacts, 0.56 pf permanent wetland impacts above the OHWM, and 0.12 of permanent wetland impacts below the OHWM. Mitigation for the 0.56 acres of permanent wetlands impacts above the OHWM will occur at the Codorus Creek Mitigation Bank. The benefits provided by the Inland NLF will out way the need to mitigate for the 1.3 acres of permanent river impacts and the 0.12 acres of permanent wetland impacts below the OHWM.

CORPS EVALUATION REQUIREMENTS:

This project will be evaluated pursuant to Corps Regulatory Program Regulations (33 CFR Parts 320-332). 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 evaluation of the impact of this project will also include application of the Clean Water Act Section 404(b)(1) Guidelines promulgated by the Administrator, United States Environmental Protection Agency.

ENDANGERED SPECIES:

As the Lead Federal Agency FERC will be required to ensure compliance with Section 7 of the Endangered Species Act.

A preliminary review of this application indicates that the proposed work is not likely to adversely affect federally listed threatened or endangered species or their critical habitat, pursuant to Section 7 of the Endangered Species Act, as amended. The proposed inland NLF and staging area is located within the range of the federally listed Indiana and Northern long-eared bat. Thus, all tree-cutting activities will occur between October 1 and March 31 during any given year. Additional information may become available which could modify this preliminary determination.

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 on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH), including species of concern, life cycle habitat, or Habitat Areas of Particular Concern. The project site does not lie in or adjacent to EFH as described under MSFCMA for managed species under the MSFCMA. The Baltimore District has made a preliminary determination that the project will have no effect on EFH.

HISTORIC RESOURCES:

As the Lead Federal Agency FERC will be required to ensure compliance with Section 106 of the National Historic Preservation Act.

Pursuant to Section 106 of the National Historic Preservation Act of 1966 and applicable guidance, the Corps has reviewed the latest published version of the National Register of Historic Places and initially determined that registered properties listed as eligible for inclusion, therein, maybe located at the site of the proposed work.

TRIBAL RESOURCES:

As the Lead Federal Agency FERC will be required to ensure compliance of Section 106 of the National Historic Preservation Act.

The act requires federal agencies to consult with federally recognized American Indian tribes that attach religious and cultural significance to historic properties that may be affected by the agency’s undertaking.

MODIFICATION OF CIVIL WORKS PROJECTS: 33 USC 408 (SECTION 408):

All Section 408 proposals will be coordinated internally at the United States Army Corps of Engineers. The Section 408 decision will be issued along with the Section 404 and/or Section 10 decision. Please see the following link for more information regarding Section 408: https://www.nab.usace.army.mil/Missions/Regulatory/Section-408-Requests/.

WATER QUALITY CERTIFICATION:

The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act.

COASTAL ZONE MANAGEMENT PROGRAMS:

Where applicable, the applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the approved Coastal Zone Management Program.

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

SUBMISSION OF COMMENTS:

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 and are subject to release to the public through the Freedom of Information Act. 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 United States Army Corps of Engineers, Baltimore District within the comment period specified above through postal mail at the address below or electronic submission to the project manager email address below. Written comments should reference the Application Number NAB-2023-00151.

PUBLIC HEARING REQUESTS:

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 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. The public hearing request may be submitted by electronic mail or mailed to the following address:

Michael Dombroskie
Mike.dombroskie@usace.army.mil
U.S. Army Corps of Engineers, Baltimore District
Regulatory Branch
State College Field Office
1631 South Atherton Street, Suite 101
State College, Pennsylvania 16801

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

General information regarding the Corps permitting process can be found on our website at https://www.nab.usace.army.mil/Missions/Regulatory.aspx. This public notice has been prepared in accordance with Corps implementing regulations at 33 CFR 325.3. If you have any questions concerning this specific project or would like to request a paper copy of this public notice, please contact Michael Dombroskie at (814)235-0571 or at mike.dombroskie@usace.army.mil.. This public notice is issued by the Chief, Regulatory Branch.

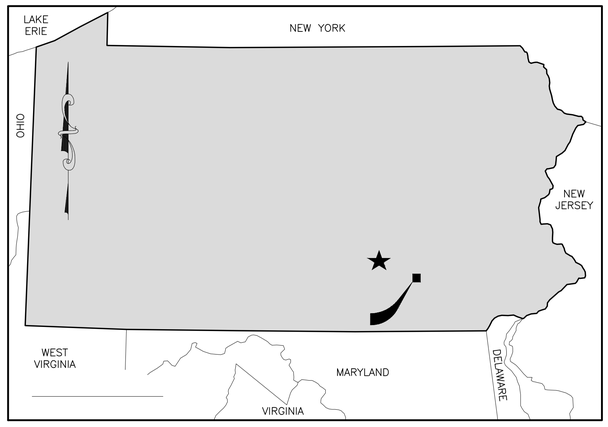
YORK HAVEN POWER COMPANY, LLC.

YORK HAVEN, PA

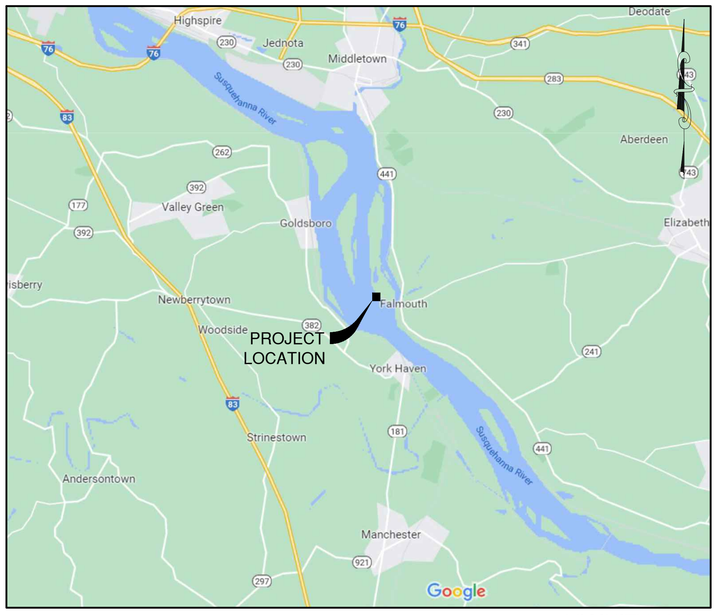
YORK HAVEN HYDROELECTRIC PROJECT

FERC PROJECT NO. 1888

INLAND BYPASS NATURE-LIKE FISHWAY



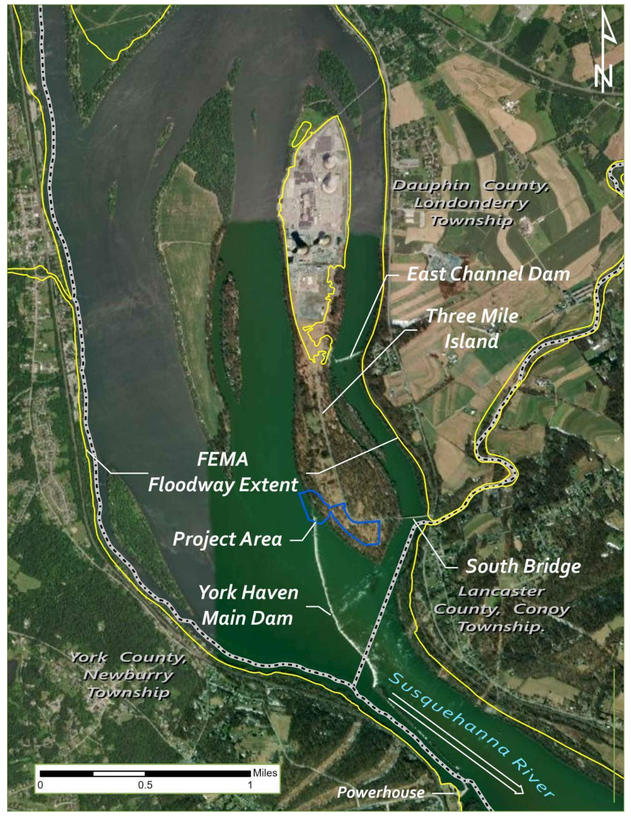
STATE MAP



VICINITY MAP

PROPERTY OWNER: CONSTELLATION GENERATION LLC, PERMANENT AND TEMPORARY EASEMENTS TO YORK HAVEN

ATTENTION ALL CONTRACTORS: LOCATIONS OF ALL EXISTING UTILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM UTILITY COMPANY RECORDS AND/OR ABOVE-GROUND INSPECTION OF THE SITE COMPLETENESS OR ACCURACY OF TYPE, SIZE, DEPTH OR HORIZONTAL LOCATION OF UNDERGROUND FACILITIES OR STRUCTURES CANNOT BE GUARANTEED. PURSUANT TO REQUIREMENTS OF PENNSYLVANIA LEGISLATIVE ACT NUMBER 287 OF 1974 AS AMENDED BY ACT 121 OF 2008, CONTRACTORS MUST VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES PRIOR TO START OF WORK.
SERIAL NO. 3332799



LOCATION MAP

HUC 12: LAUREL RUN - SUSQUEHANNA RIVER - 020503051011

YHPC, LLC
York Haven Power Company
Water Power for the Future

DRAFT
90% DESIGN
MAY 22, 2023

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/19/23

Kleinschmidt

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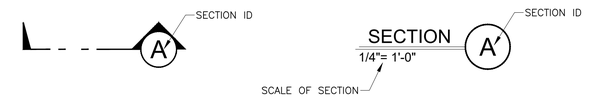

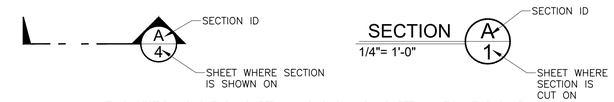

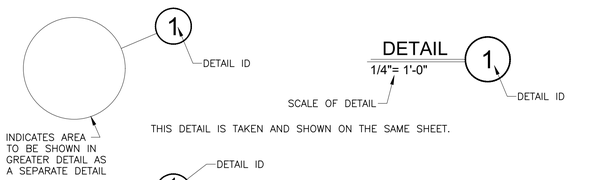

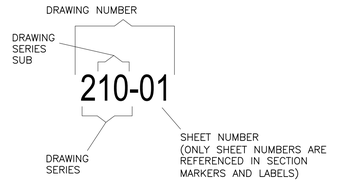

		DATE	REVISION	STATUS
		05/22/2023	B	90% DESIGN
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ABBREVIATIONS

APPROX.	APPROXIMATE
B.M.	BENCHMARK
BOTT.	BOTTOM
CFS	COMPOST FILTER SOCK
CLR.	CLEAR
CONC.	CONCRETE
C.J.	CONSTRUCTION JOINT
CTLJ.	CONTROL JOINT
DIA.	DIAMETER
EL.	ELEVATION
EMBED.	EMBEDMENT
EXIST.	EXISTING
GALV.	GALVANIZE
HORZ.	HORIZONTAL
I.D.	INSIDE DIAMETER
MAX.	MAXIMUM
MFR.	MANUFACTURER
MIN.	MINIMUM
No.	NUMBER
NLF	NATURE–LIKE FISHWAY
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
P.C.	POINT OF CURVE
P.S.I.	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
R	RADIUS
REINF.	REINFORCEMENT
REQD.	REQUIRED
SAWF	SUPPLEMENTAL ATTRACTION WATER FEATURE
SCHED.	SCHEDULE
SQ.FT.	SQUARE FOOT/FEET
S.S.	STAINLESS STEEL
T&B	TOP & BOTTOM
T.O.C.	TOP OF CONCRETE
T.O.S.	TOP OF STEEL
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
W/	WITH
ZOP	ZONE OF PASSAGE

SECTION, DETAIL AND VIEW IDENTIFICATION SYMBOLS

THIS SECTION IS CUT AND SHOWN ON THE SAME SHEET.

THIS SECTION IS CUT ON SHEET 1 AND SHOWN ON SHEET 4 WITHIN THE SAME DRAWING SERIES, SEE DRAWING AND SHEET NUMBER IDENTIFICATION THIS SHEET.

THIS DETAIL IS TAKEN AND SHOWN ON THE SAME SHEET.

THIS DETAIL IS TAKEN ON SHEET 1 AND SHOWN ON SHEET 4 WITHIN THE SAME DRAWING SERIES, SEE DRAWING AND SHEET NUMBER IDENTIFICATION THIS SHEET.

THIS VIEW IS TAKEN AND SHOWN ON THE SAME SHEET.

THIS VIEW IS TAKEN ON SHEET 1 AND SHOWN ON SHEET 4 WITHIN THE SAME DRAWING SERIES, SEE DRAWING AND SHEET NUMBER IDENTIFICATION THIS SHEET.

SECTION, DETAIL AND VIEW IDENTIFICATION SYMBOLS NOTES:

1. SECTIONS ARE ALPHABETICAL.
2. DETAILS ARE NUMERICAL.
3. VIEWS ARE DOUBLE ALPHABETICAL.
4. SHEET REFERENCE NUMBER FOR SECTIONS AND DETAILS OCCUR WITHIN THE SAME DRAWING SERIES.

DRAWING AND SHEET NUMBER IDENTIFICATION*

*REFERS TO DRAWING NUMBER IN LOWER RIGHT HAND CORNER OF TITLE BLOCK.

LEGEND

— ### —	EXISTING MAJOR CONTOUR
– – ### – –	EXISTING MINOR CONTOUR
—— ### ——	NEW MAJOR CONTOUR
—— ### ——	NEW MINOR CONTOUR
— OHWL — OHWL —	ORDINARY HIGH WATER LINE
— X — X —	FENCE LINE
— UE — UE —	EXISTING UNDERGROUND ELECTRICAL LINE
— OE — OE —	EXISTING OVERHEAD ELECTRICAL LINE
— UE — UE —	PROPOSED UNDERGROUND ELECTRICAL LINE
— OE — OE —	PROPOSED OVERHEAD ELECTRICAL LINE
—— – – ——	PROPERTY BOUNDARY
— LOD — LOD —	LIMIT OF DISTURBANCE
— CFS — CFS —	COMPOST FILTER SOCK
— SC — SC —	SILT CURTAIN
—— – – ——	TEMPORARY EASEMENT
—— - - - ——	PERMANENT EASEMENT
	UTILITY POLE
～～～	EXISTING EDGE OF TREES/SHRUBS
～～～	PROPOSED EDGE OF TREES/SHRUBS
— X — X —	EXISTING FENCE
— X — X —	PROPOSED FENCE
###.# ×	SPOT ELEVATION
△	CONTROL POINT
⊗	BORING
▨	SENSITIVE RESOURCE AREA
▨	EXISTING RIP RAP
▨	PROPOSED RIP RAP
▨	PROPOSED SCOUR RIPRAP
▨	EXISTING GRAVEL SURFACE
▨	PROPOSED GRAVEL SURFACE
▨	EXISTING CONCRETE STRUCTURE
▨	PROPOSED CONCRETE STRUCTURE
▨	WETLAND AREA
⬠	WEIR BOULDER (4 FOOT DIA TYP)
⬠	WEIR FOOTER / FACE BOULDER (2 FOOT DIA MIN)
⬠	ROCK RIFFLE BOULDER

PROFILE/SECTION LEGEND

— — — —	EXISTING GRADE LINE
—— – – ——	INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
—— · · · ——	POTENTIAL LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
━━━━	NEW FINAL GRADE
━ ━ ━ ━	ELEVATION OF TOP OF FACE AND FOOTER BOULDERS
— 5% — 5% —	5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
— 50% — 50% —	50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
— 95% — 95% —	95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
— 100YR — 100YR —	100-YEAR FLOOD RECURRENCE INTERVAL FLOW (725,000 CFS)

TYLER A. KREIDER
No. PE084968
5/30/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

DRAWING LIST & LEGEND

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	100-01

PRINTED:

3"
2"
1"
0
24x36 = FULL SCALE

GENERAL NOTES

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE DRAWINGS, SPECIFICATIONS, AND REFERENCED DOCUMENTS PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF WORK AS DEFINED BY THE DRAWINGS AND IN FULL COMPLIANCE WITH NATIONAL, STATE, AND LOCAL REGULATIONS, CODES, AND PERMITS.
2. THE REQUIREMENTS OF THE ADVERTISEMENT TO BID AND ALL ATTACHMENTS INCLUDING BUT NOT LIMITED TO GENERAL CONDITIONS, SPECIAL CONDITIONS, TECHNICAL SPECIFICATIONS, AND ASSOCIATED ADDENDA (AS APPLICABLE) ARE INCORPORATED BY REFERENCE.
3. THESE ARE STANDARD NOTES APPLYING TO ALL WORK. SPECIFIC NOTES SHOWN ON OTHER DRAWINGS OR STATED IN THE TECHNICAL SPECIFICATIONS WILL TAKE PRECEDENCE. ALL MATERIALS SHALL BE PROVIDED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION (PENNDOT) PUBLICATION 408, (CURRENT VERSION) UNLESS NOTED OTHERWISE.
4. ALL MATERIALS SHALL BE PROVIDED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENT EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL (CURRENT VERSION), UNLESS NOTED OTHERWISE.
5. ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND THE MANUFACTURER'S RECOMMENDATIONS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING, MAINTAINING, AND SUBMITTING TO THE OWNER ALL REQUIRED DOCUMENTS, INCLUDING, BUT NOT LIMITED TO, A WORK PLAN, WATER CONTROL PLAN, SPILL PREVENTION AND CONTROL PLAN, CONSTRUCTION SCHEDULE, AND SAFETY PLAN.
7. THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS CONTAINED IN RELEVANT PERMITS.
8. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS AND ANY PROJECT PERMITS, UNLESS WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER OR OWNER.
9. SURVEY BASED ON RETTEW ASSOCIATES, INC. SURVEY PERFORMED IN 2012, 2013, 2014, 2016, 2019, AND 2022. THESE DRAWINGS HAVE BEEN PREPARED BASED ON SURVEY INFORMATION PROVIDED BY OTHERS. THE DESIGN PROFESSIONAL HAS NOT VERIFIED THE ACCURACY AND/OR COMPLETENESS OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY BE INCORPORATED AS A RESULT OF ERRONEOUS INFORMATION PROVIDED BY OTHERS. THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND REPORT ANY DEVIATIONS FROM THESE DRAWINGS TO THE OWNER PRIOR TO COMMENCING ANY WORK.
10. HORIZONTAL COORDINATES ARE EXPRESSED IN U.S. FEET AND REFERENCED TO THE PENNSYLVANIA STATE PLANE, SOUTH ZONE, NORTH AMERICAN DATUM 1983, (NAD83).
11. VERTICAL ELEVATIONS ARE SHOWN IN NAVD88.
12. PROJECT BENCHMARK ELEVATIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCING WORK. EXISTING BENCHMARK ELEVATIONS ARE PROVIDED ON SHEET 200-01.
13. WETLAND BOUNDARIES WERE DELINEATED BY KLEINSCHMIDT ASSOCIATES IN 2022.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL CONSTRUCTION STAKEOUT AND SURVEY WORK. INFORMATION SHOWN ON THESE DRAWINGS IS BASED ON THE 2007 YORK HAVEN MAIN DAM AND HEADRACE WALL CROSS-SECTION PROFILES DRAWINGS, FIELD SURVEY BY RETTEW ASSOCIATES, AND LIMITED FIELD MEASUREMENTS. WHERE DIMENSIONS ARE NOT SHOWN, CONTACT ENGINEER FOR CLARIFICATION. CONTRACTOR SHALL VERIFY DIMENSIONS PRIOR TO START OF WORK. ANY DISCREPANCIES FOUND DURING THE COURSE OF THE SURVEY WORK SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER AND ENGINEER.
15. THE CONTRACTOR SHALL USE EXTREME CAUTION TO MINIMIZE RELEASE OF SEDIMENT DURING CONSTRUCTION NEAR THE SUSQUEHANNA RIVER. ALL PERMITS FOR ANY TEMPORARY FACILITIES NOT INCLUDED IN PROJECT PERMITS MUST BE OBTAINED BY THE CONTRACTOR. THE TEMPORARY FACILITIES MUST BE REMOVED UPON COMPLETION OF WORK.
16. ALL WORK FOR THE NEW FISHWAY SHALL BE DONE SUBSTANTIALLY "IN THE DRY" FROM WEIR 1 DOWN THROUGH THE POOL BELOW WEIR 12, AT A MINIMUM. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN, INSTALLATION, AND MAINTENANCE OF WATER CONTROL AND DESIGN OF THE PHASE 2 EROSION AND SEDIMENTATION CONTROL PLAN.
17. CONTRACTOR SHALL LOCATE AND MAINTAIN A VISUAL MARKER AT THE LIMIT OF DISTURBANCE FOR THIS PROJECT. NO DISTURBANCE SHALL OCCUR BEYOND THIS LIMIT WITHOUT APPROVAL BY THE OWNER AND APPROPRIATE PERMITS, AS THERE ARE SEVERAL SENSITIVE RESOURCES LOCATED JUST BEYOND THE PERMITTED LIMIT OF DISTURBANCE. CONTRACTOR SHALL SUBMIT ANY VARIANCES TO THE LIMIT OF DISTURBANCE FOR APPROVAL TO THE OWNER.
18. CONTRACTOR SHALL REPAIR ANY PORTIONS OF THE SITE AND ACCESS ROUTE (FROM RIVER ROAD) THAT ARE DAMAGED DURING CONSTRUCTION AND PERFORM LANDSCAPING AND SITE RESTORATION AS NECESSARY TO LEAVE THE WORK AREA AS CLOSE TO ORIGINAL CONDITION AS POSSIBLE.
19. THE CONTRACTOR SHALL INSTALL ALL REQUIRED EROSION AND TURBIDITY CONTROL DEVICES PRIOR TO CONSTRUCTION ACTIVITY AND SHALL BE RESPONSIBLE FOR THEIR MAINTENANCE, REPOSITIONING, AND REMOVAL UPON COMPLETION OF THE WORK.
20. CONTRACTOR IS RESPONSIBLE TO, REMOVE, AND PROPERLY DISPOSE OF WASTE MATERIAL OFF SITE IN ACCORDANCE WITH ALL TOWN, COUNTY, STATE AND FEDERAL LAWS AND APPLICABLE CODES. CONTRACTOR SHALL PROPERLY REMOVE & DISPOSE OF HAZARDOUS/UNSUITABLE MATERIAL OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES & LAWS.
21. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONDUCTING UNDERGROUND UTILITY CHECKS, IN ACCORDANCE WITH STATE REGULATIONS. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH PENNSYLVANIA ONE CALL AT 811 A MINIMUM OF THREE FULL WORKING DAYS IN ADVANCE OF ANY DIGGING ACTIVITY. IF UTILITIES ARE ENCOUNTERED OR DETERMINED TO OCCUR IN THE PROJECT WORK AREA, THE CONTRACTOR SHALL REPORT SUCH FINDINGS IMMEDIATELY IN WRITING TO THE ENGINEER.
22. THE LOCATION OF ALL EXISTING UTILITIES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OF EXCAVATION. ALL DISCREPANCIES SHALL BE REPORTED IMMEDIATELY IN WRITING TO THE ENGINEER. CONTRACTOR SHALL MAKE EXPLORATION EXCAVATIONS TO LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO MEET EXISTING CONDITIONS. CONTRACTOR TO LOCATE PRIVATE LINES WHICH MAY NOT BE LOCATED BY MARKING SERVICE.
23. DEFINE AND LOCATE VERTICALLY AND HORIZONTALLY ALL ACTIVE UTILITY SYSTEMS. THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN ALL ACTIVE SYSTEMS DURING SITE ACTIVITY, UNLESS APPROVED IN WRITING BY THE OWNER.
24. ALL TEMPORARY FACILITIES FOR THEIR WORKERS ARE AT CONTRACTOR'S OPTION, EXCEPT SANITATION FACILITIES (MINIMUM OF ONE) ARE TO BE PROVIDED BY CONTRACTOR AS REQUIRED BY LAW.
25. CONTRACTOR SHALL PROVIDE SECURITY FOR EQUIPMENT AND MATERIALS. THE OWNER SHALL NOT BE RESPONSIBLE FOR THEFT OR VANDALISM OF CONTRACTOR'S PROPERTY.
26. ESTABLISH AND MAINTAIN AREAS FOR TEMPORARY PARKING AND CONTRACTOR EQUIPMENT AND MATERIALS LAYDOWN, WHERE DESIGNATED BY OWNER, TO ACCOMMODATE USE OF CONSTRUCTION PERSONNEL.
27. COMPLY WITH REQUIREMENTS OF THE ANSI-AIO SERIES STANDARDS FOR "SAFETY REQUIREMENTS FOR CONSTRUCTION AND DEMOLITION", AND THE NECA NATIONAL JOINT GUIDELINE FOR "TEMPORARY JOB UTILITIES AND SERVICES."
28. CARE SHALL BE TAKEN TO ASSURE NO CONTAMINATION OF THE SITE WITH INVASIVE PLANT MATERIAL FROM ANY SOURCE (RIP-RAP, IMPORTED SOILS, MATTING, EQUIPMENT, ETC.), WHICH REQUIRES THAT ALL EQUIPMENT BE FREE OF SOIL (CLEAN) PRIOR TO DELIVERY TO THE SITE.
29. CONTRACTOR SHALL READ, UNDERSTAND, IMPLEMENT, AND ABIDE BY INDUSTRY STANDARD EROSION AND SEDIMENT CONTROLS (AS APPLICABLE), IN ADDITION TO ANY PERMITS FOR THIS PROJECT.
30. THIS SITE IS WITHIN ZONE AE, AREA OF 100-YEAR INUNDATION AS SHOWN ON FEMA MAP 42043C0463D IN DAUPHIN COUNTY, EFFECTIVE DATE AUGUST 2, 2012.
31. THE CONTRACTOR SHALL BE ADVISED THAT THE PROJECT IS LOCATED IN AN AREA PRONE TO FLOODING AND SEVERE WEATHER IS KNOWN TO OCCUR AT THIS LOCATION. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT THE PROJECT WHILE UNDER CONSTRUCTION, WHICH MAY INCLUDE SEQUENCING THE PROJECT TO PROTECT TEMPORARY AND PERMANENT STRUCTURES. THIS INCLUDES, BUT IS NOT LIMITED TO, PROTECTION FROM STORMS, FLOODS, AND RECREATIONAL USERS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE PROTECTION OF THE PROJECT SITE, TEMPORARY FACILITIES, FALSEWORK, TURBIDITY CURTAIN, EQUIPMENT, PERSONNEL, WORK, MATERIALS, AND OTHER PROPERTIES, THE PUBLIC, OR INDUSTRY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR THE WEATHER AND INFORM THE OWNER OF ANY ANTICIPATED WEATHER THAT MAY COMPROMISE THE PROJECT SITE OR TEMPORARY FACILITIES AS SOON AS THE CONTRACTOR BECOMES AWARE OF SUCH CONDITIONS. ANY MATERIALS CAPABLE OF BEING DISLODGED SHALL BE ADEQUATELY SECURED OR REMOVED FROM THE RIVER, IF THREATENED BY INCLEMENT WEATHER.
32. WATER SURFACE ELEVATIONS ARE CALCULATED AVERAGES AND SLIGHT VARIATIONS SHOULD BE ANTICIPATED BASED ON YHPC GENERATION STATUS, WIND DIRECTION, AND OTHER IMPACTS OUTSIDE THE OWNER'S CONTROL. THE CONTRACTOR MUST MAKE ALLOWANCES FOR WATER SURFACE ELEVATIONS THAT VARY FROM THOSE SHOWN ON THE DRAWINGS. NO ADDITIONAL PAYMENT WILL BE MADE FOR MORE DIFFICULT ACCESS TO SITE DUE TO CHANGING WATER SURFACE ELEVATIONS. NO ADDITIONAL PAYMENT WILL BE MADE FOR INCREASED POLLUTION PREVENTION, FALSEWORK, OR TEMPORARY FACILITIES REQUIRED DUE TO FLUCTUATIONS IN THE WATER SURFACE ELEVATION.
33. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CONSTRUCTION SAFETY RULES, INCLUDING OSHA TITLE 29 CFR PART 1926, LATEST EDITION. THE WORK AREA SHALL BE ADEQUATELY ISOLATED FROM ACCESS TO THE GENERAL PUBLIC.
34. SEE SHEET 300-03 FOR THE CONSTRUCTION SEQUENCE.

RIPRAP AND BOULDER NOTES:

1. STONES SHALL CONSIST OF SOUND, DURABLE ROCK, RESISTANT TO THE ACTION OF WATER OR WEATHER, WITH A STONE DENSITY OF AT LEAST 165 LBS PER CUBIC FOOT.
2. WEIR BOULDERS SHALL BE DIRECTLY ABUTTING, OTHER THAN AT DEFINED GAPS/ZOPS. THE BOULDERS SHALL BE SET TO FORM A HYDRAULICALLY SIMILAR PROFILE TO THE FINAL GRADE (E.G., TOPS OF BOULDERS ABOVE FINAL GRADE, NOTCHES BETWEEN BOULDERS BELOW FINAL GRADE), PER FIELD DIRECTION OF THE ENGINEER.
3. ZONE OF PASSAGE NOTCH INVERT FOR WEIRS 2-12. AVERAGE INVERT ACROSS ZOP SHALL BE +/-0.1 FOOT.

DEMOLITION NOTES:

1. UNLESS OTHERWISE INDICATED, DEMOLISH EXISTING CONCRETE AT SURFACES TO THE MINIMUM DEPTH NOTED ON THE DRAWINGS OR TO SOUND CONCRETE (WHERE STRUCTURE IS TO BE PRESERVED). REMOVAL OF CONCRETE TO DEPTHS GREATER THAN NOTED ON THE DRAWINGS SHALL BE APPROVED BY THE ENGINEER OR OWNER. ADDITIONAL CONCRETE REMOVED WITHOUT DIRECTION WILL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
   a. SOUND CONCRETE IS DEFINED AS WHEN THE SURFACE IS STRUCK WITH A GEOLOGIST HAMMER, THE AGGREGATE OF THE CONCRETE FRACTURES BEFORE THE CEMENT PASTE IS BROKEN.
2. REMOVE EXISTING CONCRETE TO EXTENT SHOWN ON THE DRAWINGS. DO NOT DAMAGE REMAINING CONCRETE. INFORM ENGINEER OF ANY FIELD CONDITIONS THAT ARE NOT AS ANTICIPATED.
3. MAINTAIN EXISTING REINFORCEMENT AND EXTEND INTO THE NEW CONCRETE WHERE POSSIBLE.
4. REMOVE ALL UNSOUND CONCRETE AND LOOSE ROCK IN THE AREAS WHERE ENCOUNTERED UNDER AREAS WHERE NEW CONCRETE IS PROPOSED. THE OWNER SHALL EXAMINE THESE AREAS BEFORE NEW CONCRETE IS PLACED.
5. SHORE AND SUPPORT EXISTING CONSTRUCTION, WHICH IS NOT REMOVED, AS REQUIRED.

EXCAVATION, SUBGRADE PREPARATION, FILL/BACKFILL MATERIALS, AND FILL PLACEMENT AND COMPACTION NOTES:

1. EXCAVATION WILL BE REQUIRED FOR THE CONSTRUCTION OF TEMPORARY AND PERMANENT ACCESS ROADS, WEIRS, POOLS, FISHWAY ENTRANCES, UTILITIES, AND OTHER MISCELLANEOUS SITE IMPROVEMENTS INDICATED HEREIN.
2. EXCAVATION MATERIALS SHALL BE DISPOSED OF IN A LEGAL MANNER. CONTRACTOR SHALL PLACE ALL EXCESS EXCAVATED SOIL AND/OR BEDROCK IN THE DESIGNATED FILL PLACEMENT AREAS (LOCATED IN THE STAGING AREA OR IN AN APPROVED OFF-SITE LOCATION). CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM THE OWNER AND ENGINEER PRIOR TO TRANSPORTING ANY EXCAVATED SOIL OR BEDROCK OFF-SITE.
3. EXCAVATION BOTTOM SHALL BE FREE OF WATER (OR APPROVED FOR FILL PLACEMENT IN THE WET BY THE ENGINEER IN WRITING) PRIOR TO PLACING FILL.
4. THE INFERRED TOP OF ROCK SHOWN IN THE DRAWINGS IS BASED ON THE 7,000 FOOT PER SECOND SEISMIC VELOCITY PROFILE FROM THE 2019 AND 2022 GEOPHYSICAL INVESTIGATIONS. ACTUAL TOP OF ROCK MAY VARY AND RIPRAP EXTENT WILL NEED TO BE ADJUSTED IF IT VARIES, SO THAT THERE IS ADEQUATE SCOUR PROTECTION, AS DIRECTED BY THE ENGINEER BASED ON ACTUAL FIELD CONDITIONS.
5. SEE TECHNICAL SPECIFICATION SECTION 31 00 00, "EARTHWORK", FOR ADDITIONAL INFORMATION.

GENERAL DESIGN CRITERIA NOTES:

1. SITE FLOWS AND WATER SURFACE ELEVATIONS
   a. STATION HYDRAULIC CAPACITY: 17,000 CFS +/-
   b. EXISTING HEADPOND OPERATING LEVELS (NAVD88)
      - MINIMUM: 276.2' (MAINTENANCE CONDITION)
      - NORMAL (AT NLF): ~277.4' UP TO 17,000 CFS (PER HYDRAULIC MODELING); >17,000 CFS: NATURAL FLUCTUATIONS
      - 100-YEAR FLOOD (FEMA): 725,000 CFS, EXISTING HEADPOND (SOUTH OF NLF): 294.6' (YORK COUNTY FEMA FIS, PLATE 346P, CROSS SECTION ES)
      - TAILWATER OPERATING LEVELS (UNCONTROLLED)
   c. THE NORMAL POND ELEVATION VARIES FROM NEAR TMI DOWN TO THE POWERHOUSE AND IS ANTICIPATED TO BE BETWEEN 277.1' AND 277.4' (NAVD88) ALONG THE MAIN DAM. WIND, GENERATION STATUS, AND OTHER FACTORS INFLUENCE THIS WATER SURFACE ELEVATION; HOWEVER, THE TYPICAL 'NORMAL POND' ELEVATION IS CONSIDERED 277.2', WHICH IS BASED ON THE WATER SURFACE ELEVATION AT THE POWERHOUSE (WHERE HEADPOND MEASUREMENTS ARE RECORDED) WITHOUT SUBSTANTIAL SPILL OVER THE MAIN DAM. PER THE HYDRAULIC MODEL FOR THE INLAND NLF, THE CORRELATING WATER SURFACE ELEVATION AT NORMAL POND AT THE NLF EXIT IS 277.4' (NAVD88), DUE TO OVER A MILE OF DISTANCE FROM THE NLF TO THE POWERHOUSE.
2. RIPRAP DESIGNED TO BE STABLE UP TO 100-YEAR RETURN PERIOD EVENT.
3. SAWF DESIGN
   a. ADJUSTMENTS TO PRECAST BLOCKS CAN ONLY BE MADE WHEN SAFE ACCESS FOR PLANT STAFF IS AVAILABLE (GENERALLY <17,000 CFS RIVER FLOW).
   b. PRECAST BLOCKS ARE DESIGNED TO BE SET AND ADJUSTED DURING THE INITIAL CALIBRATION OF THE FISHWAY IN THE FEW YEARS IMMEDIATELY AFTER THE FISHWAY IS CONSTRUCTED, AND THEN LEFT IN PLACE PERMANENTLY.

UPSTREAM FISH PASSAGE DESIGN CRITERIA

1. TARGET SPECIES - AMERICAN SHAD, ALEWIFE, AND BLUE HERRING.
2. DESIGN POPULATION: 2,000,000 AMERICAN SHAD (INCLUDING EAST CHANNEL FISHWAY).
3. FISHWAY OPERATING RANGE: 95% -5% EXCEEDANCE RIVER FLOW DURING UPSTREAM AMERICAN SHAD PASSAGE SEASON (12,400 CFS- 119,800 CFS)
4. TARGET WATER VELOCITY THROUGH ZONE OF PASSAGE DURING THE FISHWAY OPERATING RANGE:
   a. AMERICAN SHAD: <8.25 FPS
   b. RIVER HERRING: <6.0 FPS
5. TOTAL NLF HYDRAULIC CAPACITY (NLF + SAWF FLOWS): THE COMBINED FLOWS (WITHIN THE SAWF AND NLF) SHALL TARGET PASSAGE OF THE FOLLOWING FLOWS DURING THE FOLLOWING TIMES OF THE YEAR:
   a. UPSTREAM AMERICAN SHAD PASSAGE SEASON:
      - AT NORMAL POND (POND EL. 277.2', RIVER CONDITION AT 95% EXCEEDANCE FLOW OF 12,400 CFS DURING UPSTREAM PASSAGE SEASON): MINIMUM OF 525 CFS
      - 50% EXCEEDANCE FLOW (35,200 CFS) DURING UPSTREAM AMERICAN SHAD PASSAGE SEASON: MINIMUM OF 5% OF RIVER FLOW (1,760 CFS)
      - 5% EXCEEDANCE FLOW (119,800 CFS) DURING UPSTREAM AMERICAN SHAD PASSAGE SEASON: MINIMUM OF 5% OF RIVER FLOW (5,990 CFS)
   b. OUTSIDE THE UPSTREAM AMERICAN SHAD PASSAGE SEASON:
      - >200 CFS IN THE FISHWAY WHEN THE RIVER ELEVATION IS AT THE ELEVATION OF THE MAIN DAM (EL. 277.2'; EXCEPT DURING PERIODS OF HEADPOND DRAWDOWN OR FISHWAY MAINTENANCE)
      - SAWF IS NOT REQUIRED TO BE OPEN, BUT SHALL BE READY TO PROVIDE FLOW AT THE START OF THE UPSTREAM AMERICAN SHAD PASSAGE SEASON.
6. FISH PASSAGE SEASON NLF AND ATTRACTION WATER FLOWS ARE DESIGNED AS FOLLOWS (FLOWS/WSEL FROM HEC-RAS):

FLOWS (CFS)			ANTICIPATED ELEVATIONS (FEET; NAVD88) POST-NLF CONSTRUCTION	
RIVER	NLF (WEIR1)	SAWF	HEADPOND	TAILWATER
12400	320	205	277.4	270.5
35200	1000	810	278.4	272.8
119800	2800	3600	280.4	277.6

7. FOR RIVER FLOW CONDITIONS GREATER THAN 119,800 CFS, THE FISHWAY WILL NOT BE CONSIDERED OPERATIONAL.

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COMMONWEALTH OF PENNSYLVANIA — TYLER A. KREIDER — ENGINEER — No. PE084968 — 5/24/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	100-02

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

GENERAL NOTES I

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WHERE DIMENSIONS ARE NOT SHOWN, DIMENSIONS FOR SIMILAR DETAILS ON THE DRAWING SHALL APPLY.

ALL LOOSE ROCK, CONCRETE, AND SOIL SHALL BE REMOVED PRIOR TO CONSTRUCTION. REMOVE ANY GREASE, OIL, OR

WHEN CONCRETE IS PLACED DIRECTLY AGAINST ROCK SURFACES, THE SURFACE SHALL BE CLEANED WITH HIGH-PRESSURE

SURFACE PREPARATION OF EXISTING CONCRETE AND MASONRY SURFACES SHALL REMOVE ALL LOOSE OR DETERIORATED MATERIAL AND VEGETATION. ACCEPTABLE METHODS INCLUDE SANDBLASTING, MECHANICAL CHIPPING, OR HIGH-PRESSURE

ALL WORK SHALL CONFOM TO ACI 318, ACI 301 AND ACI 347, LATEST EDITIONS.

AIR CONTENT PROVIDED BY AIR ENTRAINMENT ADMIXTURE 5% TO 7% AS MEASURED BY ASTM C231. EXCEPT FOR CONCRETE CLASS 4N AROUND THE POWERSTATION SCROLL CASE AS DESIGNATED ON THE DRAWINGS.

WATER REDUCING ADMIXTURE SHALL BE USED AT THE OPTION OF THE CONTRACTOR.

FLYASH SHALL BE USED. ADMIXUTRES CONTAINING CALCIUM CHLORIDE SHALL NOT BE USED.

DO NOT PACE CONCRETE AGAINST ACTIVE LEAKS OR SEAMS WITH FLOWING WATER. STOP FLOW OR INSTALL DRAINAGE TO

CURE CONCRETE FOR 7 DAYS MINIMUM. DO NOT APPLY LOADS TO NEW CONCRETE FOR AT LEAST 7 DAYS UNLESS APPROVED

CONSTRUCT FORMS TRUE TO LINE AND GRADE, ADEQUATELY BRACED TO MAINTAIN POSITION DURING PLACEMENT OF CONCRETE. WELDING OF FORM TIES TO STRUCTURAL DOWELS IS NOT PERMITTED, THOUGH ADDITIONAL DOWELS MAY BE

PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES UNLESS NOTED OTHERWISE.

REPAIR ALL AIR HOLES AND VOIDS LARGER THAN 1/4" AND FILL ALL TIE HOLES. REMOVE FINS AND PROJECTIONS.

CONSTRUCTION JOINTS SHOWN SHALL BE LOCATED AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER. ADDITIONAL JOINTS MAY BE USED, WHERE THE STRENGTH AND DURABILITY OF THE STRUCTURE IS NOT AFFECTED AND ARE SUBJECT TO THE REVIEW OF THE ENGINEER. IF CONTRACTOR PROPOSES CONSTRUCTION JOINT LOCATIONS DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS, CONTRACTOR SHALL SUBMIT LOCATION OF ANY PROPOSED CONSTRUCTION JOINT

REINFORCEMENT SHALL BE CONTINUOUS THRU JOINT, UNLESS NOTED OTHERWISE.

CLEAN ALL JOINTS TO REMOVE LAITANCE WITH MINIMUM 1500 PSI WATER BLAST OR SANDBLASTING PRIOR TO NEXT CONCRETE PLACEMENT. MECHANICAL ROUGHENING IS AN ACCEPTABLE ALTERNATE TO LAITANCE REMOVAL. ACID

SATURATE JOINT IMMEDIATELY PRECEDING AND 12 HOURS PRIOR TO NEXT CONCRETE PLACEMENT. REMOVE ALL STANDING

PROVIDE 9" PVC CENTER BULB TYPE WATER STOP AT CONSTRUCTION JOINTS AS INDICATED N THE DRAWINGS AND WHERE FROM EXPOSED FINISHED CONCRETE SURFACE. PVC WATERSTOPS SHALL BE WATERSTOPS WITH INTEGRAL WIRE TIE SYSTEM AND APPROVED BY THE OWNER. WATERSTOPS SHALL BE CONTINUOUS AROUND CORNERS AND EXTEND THE ENTIRE LENGTH OF THE JOINT. SPLICE TO ADJOINING WATERSTOPS AT CORNERS AND INTERSECTIONS WITH THERMAL SPLICING. SUPPORT WATERSTOP FROM REINFORCEMENT OR FORMWORK AT MAXIMUM SPACING OF 12" ON CENTER ON EACH EDGE. PROVIDE THOROUGH CONSOLIDATION OF CONCRETE AROUND WATERSTOP AND PREVENT FORMATION OF AIR

PROVIDE ADHESIVE WATERSTOPS OF WATER SWELLING ELASTIC SEALING MATERIAL BETWEEN CONCRETE AND NEW CONCRETE FROM EXPOSED FINISHED CONCRETE SURFACE. IF DAMAGED BY EXPOSURE TO WATER PRIOR TO CONCRETE PLACEMENT REMOVE AND REPLACE. ADHESIVE WATERSTOPS SHALL BE CONTINUOUS AROUND CORNERS AND EXTEND THE ENTIRE LENGTH OF THE JOINT. AT SPLICE LOCATIONS, TIGHTLY BUTT THE ENDS TOGETHER TO FORM A CONTINUOUS WATERSTOP (DO NOT OVERLAP ENDS). ACCEPTABLE PRODUCTS:

REBAR NOTES

1. DIMENSIONS ARE TO THE CENTERLINE OF THE BARS UNLESS OTHERWISE SHOWN. CLEAR COVER DIMENSIONS ARE MARKED "CLR".
2. DOWELS INDICATED ON THE DRAWINGS SHALL BE EMBEDDED A LENGTH SHOWN ON THE DRAWING OR EQUAL TO L AND SHALL HAVE A PROJECTION EQUAL TO THAT REQUIRED FOR TOP SPLICING TO A BAR OF THE SAME DIAMETER.
3. BAR SUPPORTS, SPACERS, AND OTHER ACCESSORIES ARE NOT SHOWN ON THE DRAWINGS. THE RECOMMENDATIONS OF THE ACI DETAILING MANUAL - CURRENT EDITION, OR OTHER APPROVED SUPPORTING SYSTEM MAY BE USED
4. UNLESS OTHERWISE SHOWN FOLLOW THE RECOMMENDATIONS ESTABLISHED BY THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTES "DETAILING MANUAL, ACI SP-66".
5. THE MINIMUM LENGTH OF LAP FOR SPLICING PARALLEL BARS SHALL BE GIVEN THE REINFORCEMENT REQUIREMENTS TABLE ON THIS SHEET. SPLICES SHALL BE STAGGERED TO GIVE 12 INCHES CLEAR BETWEEN ENDS OF ADJACENT SPLICES. BARS SPLICED BY NONCONTACT LAP SPLICES SHALL NOT BE SPACED TRANSVERSELY FARTHER APART THAN ONE-FIFTH THE REQUIRED LAP SPLICE LENGTH. WHEN REINFORCING BARS OF DIFFERENT SIZE ARE TO BE SPLICED, THE LENGTHS OF LAP SHALL BE GOVERNED BY THE SMALLER DIAMETER BAR. SPLICES ARE TO BE MADE SO THAT THE REQUIRED CLEAR DISTANCES TO FACE OF CONCRETE WILL BE MAINTAINED.
6. REINFORCEMENT AT SMALL OPENINGS (MAX. 1'-5") IN WALLS AND SLABS MAY BE SPREAD APART NOT MORE THAN 1.5 TIMES THE BAR SPACING. REINFORCEMENT MAY BE ADJUSTED LATERALLY TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1" BETWEEN THE REINFORCEMENT AND KEYS, WATERSTOPS, ANCHOR BOLTS, FORM TIES, CONDUITS AND OTHER EMBEDDED MATERIALS. IN HEAVILY REINFORCED AREAS, RELOCATION OF THE EMBEDDED MATERIAL MUST BE CONSIDERED. WHEN BARS ARE BENT DUE TO OFFSETS LESS THAN 3" DEEP, THE SLOPE OF THE INCLINED PORTION MUST NOT EXCEED 6 TO 1. REINFORCEMENT PARALLEL TO ANCHOR BOLTS OR OTHER EMBEDDED MATERIAL SHALL BE PLACED TO MAINTAIN A CLEAR DISTANCE OF AT LEAST 1.33 TIMES THE MAXIMUM SIZE AGGREGATES.
7. THE FIRST AND LAST BARS IN WALLS AND SLABS, STIRRUPS IN BEAMS, AND TIES IN COLUMNS ARE TO START AND END AT A MAXIMUM OF ONE HALF OF THE ADJACENT BAR SPACING. A MINIMUM OF 2.5 D CLEAR FROM THE EDGE IS REQUIRED FOR #9, #10, AND #11 BARS IF SPLICE LENGTHS OR REDUCED DEVELOPMENT LENGTHS GIVEN IN THE REINFORCEMENT REQUIREMENTS TABLE ON THIS SHEET ARE TO BE USED.
8. HOOKS SHALL HAVE 180° BENDS AND EXTENSIONS OF 4-BAR DIAMETERS BUT NOT LESS THAN 2½" PARALLEL TO THE MAIN LEG OF THE BAR, OR 90° BENDS AND EXTENSIONS OF AT LEAST 12-BAR DIAMETERS. HOOKS FOR STIRRUP AND THE ANCHORAGE ONLY SHALL HAVE EITHER A 90° OR 135° BEND PLUS AN EXTENSION OF AT LEAST 6-BAR DIAMETERS BUT NOT LESS THAN 2½" AT THE FREE END OF THE BAR.

ABBREVIATIONS

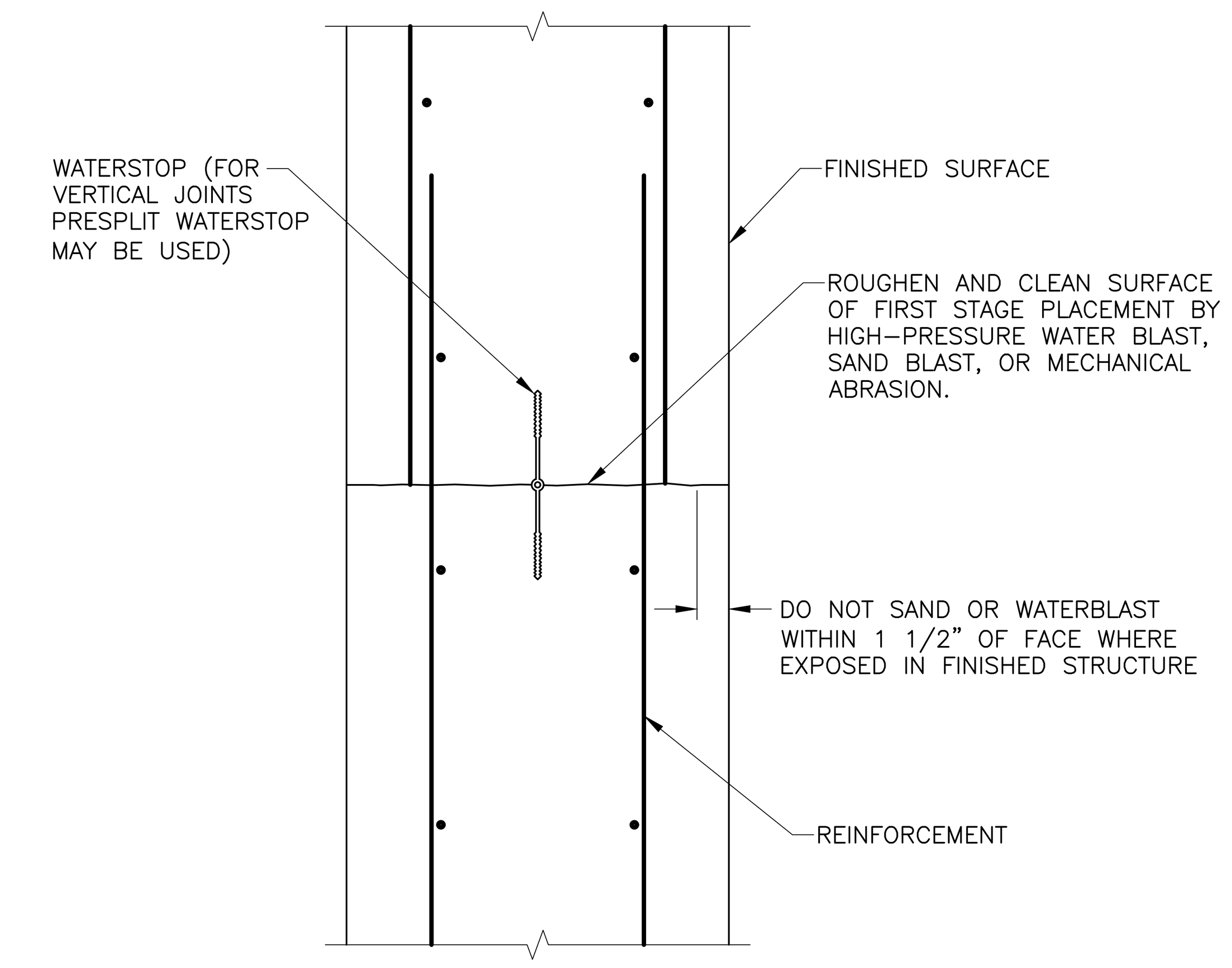
BF = BOTTOM FACE
TF = TOP FACE
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
IF = INSIDE FACE
OF = OUTSIDE FACE
CJ = CONSTRUCTION JOINT
OCJ = OPTIONAL CONSTRUCTION JOINT
CTJ = CONTROL JOINT
HP = HIGH POINT
OC = ON CENTER
CRJ = CONTRACTION JOINT
EJ= EXPANSION JOINT
BR = BOTTOM ROW
TR = TOP ROW
NR = NEAR ROW
FR = FAR ROW
ER= EACH ROW
IR = INSIDE ROW
OR= OUTSIDE ROW
MR = MIDDLE ROW
SST = STAINLESS STEEL
TOC = TOP OF CONCRETE
BL = BOTTOM LAYER
TL = TOP LAYER
ML = MIDDLE LAYER
NS = NEAR SIDE
FS = FAR SIDE
ES = EACH SIDE
EW = EACH WAY
EC = EACH CORNER
Ld = DEVELOPMENT LENGTH
Db = NOMINAL DIAMETER OF REINFORCING BAR
SPC = SPACE OR SPACES
EQ SPC = EQUALLY SPACED, EQUAL SPACES
UV = UNIFORMLY VARYING LENGTHS OF BARS BETWEEN LENGTHS SHOWN
CLR = CLEAR
CTR = CENTER OR CENTERS
WS = PVC WATERSTOP
CL = CENTERLINE

REINFORCEMENT REQUIREMENTS

BAR SIZE #	MINIMUM CLEAR BAR SPACING (INCHES)	DEVELOPMENT LENGTH, L_D		CLASS B SPLICE LENGTH	
		OTHER BARS (INCHES)	TOP BAR (INCHES)	OTHER BARS (INCHES)	TOP BAR (INCHES)
3	3	12	12	16	16
4	3	12	15	16	20
5	3	15	19	19	24
6	3	18	23	23	29
7	3	25	33	33	43
8	3	29	37	37	49
9	3	36	46	46	60
10	3	44	57	57	74
11	3	53	68	68	89

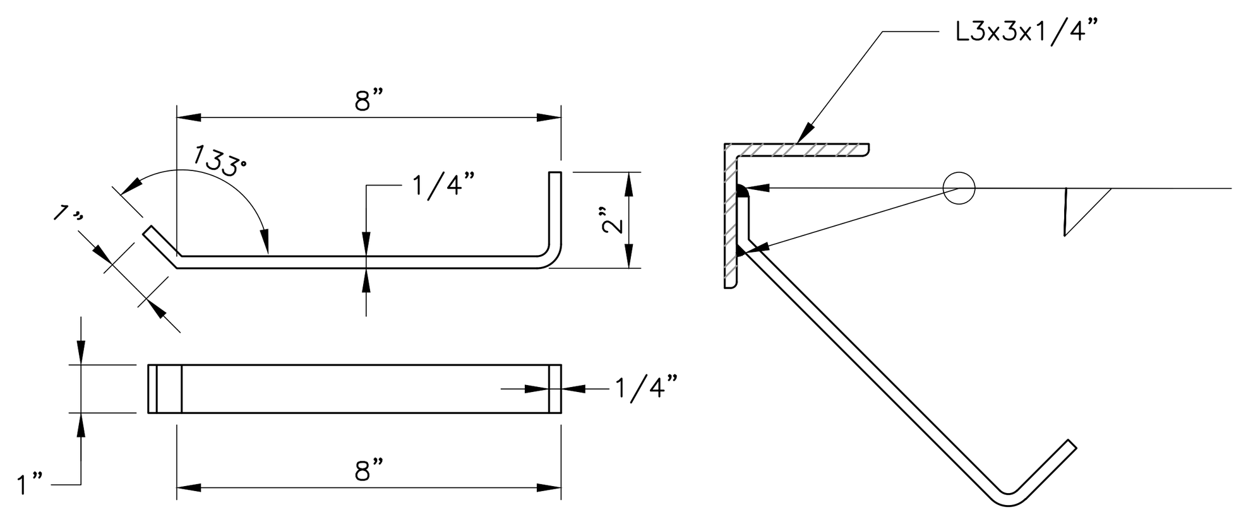
NOTES:

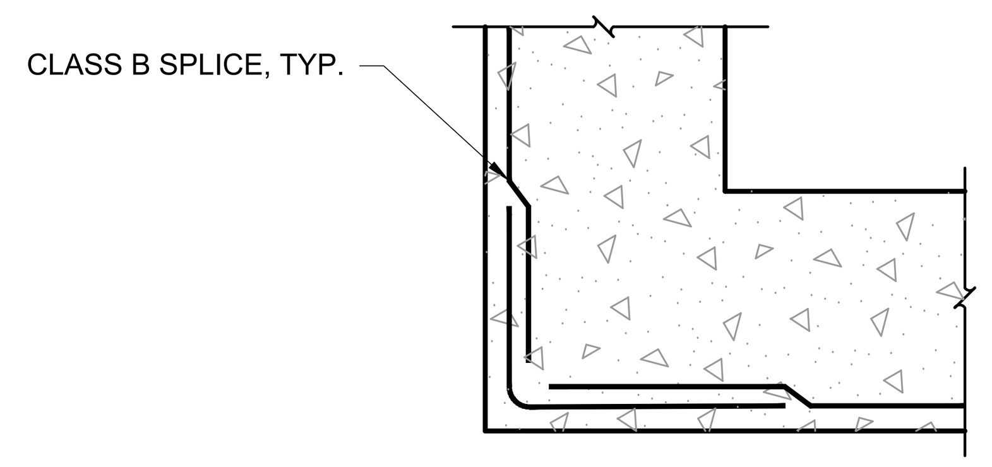
1. THESE LENGTHS ARE BASED ON THE PROVISIONS OF ACI 318-14, SECTIONS 25.4.2.3 AND 25.5.2.1 ASSUMING UNCOATED REINFORCEMENT, NORMAL WEIGHT CONCRETE, CONCRETE COVER CONSISTENT WITH THE REQUIREMENTS OF THIS DRAWING, AND A MINIMUM CENTER-TO-CENTER SPACING OF 6 INCHES. CONDITIONS THAT ARE DIFFERENT FROM THOSE ASSUMED REQUIRE LONGER LAP LENGTHS CONSISTENT WITH ACI 318-14, SECTIONS 25.4.2.2 AND 25.5.2.1.
2. SPLICE LENGTHS SHOWN IN THE TABLES ON THIS DRAWING ARE FOR CLASS B SPLICES IN ACCORDANCE WITH ACI 318-14. SPLICES OR DEVELOPMENT LENGTHS OTHER THAN THOSE SHOWN IN THE TABLES MUST BE DETAILED ON THE REINFORCEMENT DESIGN DRAWINGS.



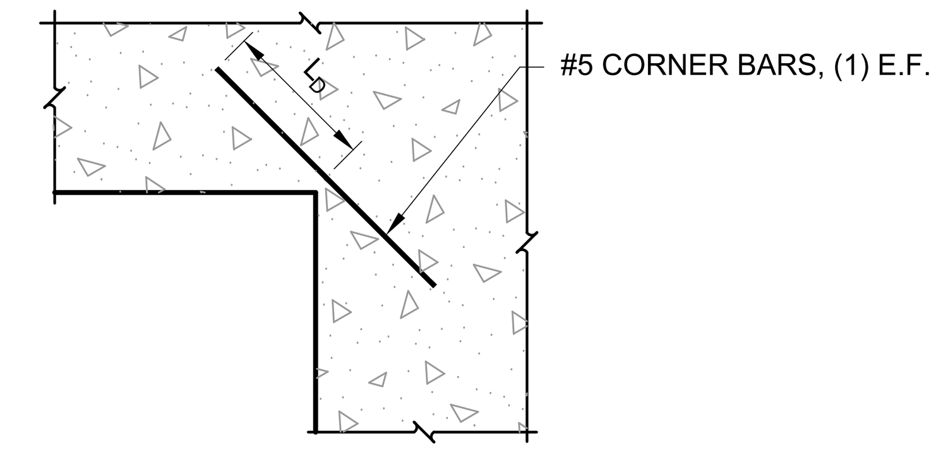
NOTE:
LOCATE CONSTRUCTION JOINTS AS SHOWN ON DRAWINGS.

TYPICAL CONSTRUCTION JOINT
NOT TO SCALE





TYPICAL EXTERIOR CORNER
- PLAN VIEW -



TYPICAL INTERIOR CORNER
- PLAN VIEW -

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	100-03

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

GENERAL NOTES II

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ENTRANCE TO PROJECT SITE VIA SOUTH BRIDGE TO THREE-MILE ISLAND

EXISTING PAVED ACCESS ROAD

PARCEL 34-030-102-000-0000
N/F CONSTELLATION ENERGY GENERATION, LLC

EXISTING OSPREY POLE

WETLAND F

WETLAND D

EXISTING ABANDONED WATER LEVEL GAGE STRUCTURE

WETLAND G

EXISTING CHAIN LINK FENCE

EXISTING GRAVEL ACCESS ROAD

EXISTING STORMWATER DITCH A

CONTROL POINT
CAPPED REBAR TR-12
N: 293298.873
E: 2255432.597
EL 284.21

CONTROL POINT
CAPPED REBAR TR-11
N: 293893.746
E: 2255643.656
EL 284.56

CONTROL POINT
CAPPED REBAR TR-5
N: 293208.230
E: 2255230.944
EL 287.12
(SET 8/25/14,
RECOVERED 11/28/22)

WETLAND A

WETLAND E

WETLAND C

WETLAND B

CONTROL POINT
CAPPED REBAR TR-13
N:293600.789
E:2254950.535
EL. 289.21
(SET 11/28/22)

CONTROL POINT
CAPPED REBAR TR-6
N:293340.416
E:2255116.127
EL. 284.54
(SET 8/25/14,
RECOVERED 11/28/22)

CONTROL POINT
CAPPED REBAR TR-7
N: 292957.646
E: 2255408.439
EL 286.5
(SET 8/25/14)

WETLAND H

"STAGING AREA" VIEW EXTENT FOR THIS DRAWING PACKAGE (PER SHEET NAMES). EXISTING CONDITIONS FOR THE STAGING AREA ARE FOUND ON SHEET 200-03

WETLAND K

WETLAND J

WETLAND I

CONTROL POINT
MAG NAIL TR-10
N: 293143.498
E: 2255146.935
EL 281.56

CONTROL POINT
MAG NAIL TR-1375
N: 293069.287
E: 2255147.898
EL 276.62

"NLF" VIEW EXTENT FOR THIS DRAWING PACKAGE (PER SHEET NAMES). EXISTING CONDITIONS FOR THE NLF AREA ARE FOUND ON SHEET 200-02

CONTROL POINT
MAG NAIL TR-2
N: 292603.783
E: 2255145.129
EL 274.48

EXISTING MAIN DAM

FLOW

FLOW

80 0 80 160
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EXISTING CONDITIONS PLAN

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Project No.	Date Revised	Drawing No.
4214-017	05/22/23	200-01

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YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EXISTING CONDITIONS PLAN - NLF

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

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GSM	SFG	TAK	4214-017	05/22/23	200-02

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

PRINTED:

50 0 50 100
SCALE IN FEET

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EXISTING CONDITIONS PLAN - STAGING AREA

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	200-03

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

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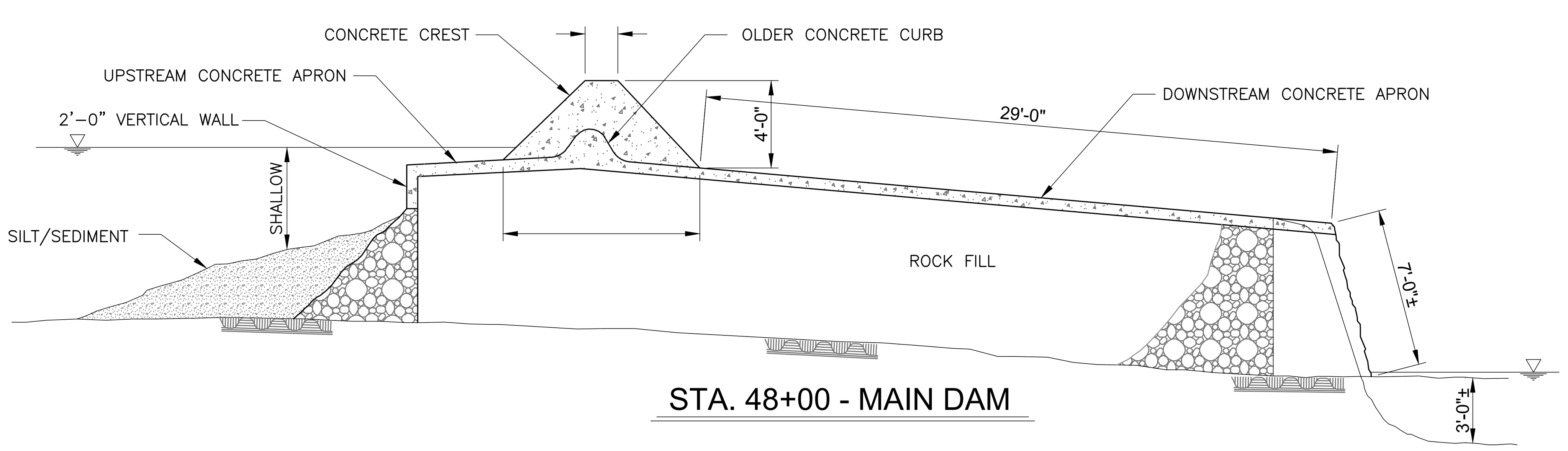
PLAN OF MAIN DAM

1"= 200'

200 0 200 400

SCALE IN FEET



STA. 48+00 - MAIN DAM

4 0 4 8 12

SCALE IN FEET

1. PROFILE MEASUREMENTS RECORDED BY KLEINSCHMIDT 10–15–07.
2. UPSTREAM FACE DATA COLLECTED DURING UNDERWATER INSPECTION 10–16–07 THRU 10–18–07.
3. STATIONING FROM 2007 FIELD EFFORT DOES NOT CORRESPOND TO STATIONING FOR THIS PROJECT. SECTION AT STATION 48+00 IS GENERAL REPRESENTATION OF MAIN DAM IN THE VICINITY OF THE SAWF, BUT SECTION, DIMENSIONS, AND DEPTH OF FILL VARY ALONG RAISED PORTION OF MAIN DAM.

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EXISTING CONDITIONS - MAIN DAM SECTION

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Project No.	Date Revised	Drawing No.
4214-017	05/22/23	200-04

PRINTED:

WETLAND A
PEM: PERMANENT IMPACT: 3,600 SF

WETLAND A
PFO: PERMANENT IMPACT: 17,300 SF

PARCEL 34-030-102-000-0000
N/F CONSTELLATION ENERGY GENERATION, LLC

WETLAND B
PERMANENT IMPACT: 210 SF

WETLAND C
PERMANENT IMPACT: 430 SF

WETLAND K

WETLAND K
PERMANENT IMPACT: 1,300 SF

WETLAND J
PERMANENT IMPACT: 910 SF

WETLAND I
PERMANENT IMPACT: 2,200 SF

WETLAND H
PERMANENT IMPACT: 820 SF

LOD
OHWL
OE
UE
270
265
275

THE ENTIRE PROJECT AREA IS WITHIN THE 100-YEAR FLOODWAY FOR THE SUSQUEHANNA RIVER, WITH A BASE FLOOD ELEVATION (DURING A 100-YEAR EVENT) RANGING FROM APPROXIMATELY 293-296' IN ELEVATION ACROSS THE PROJECT SITE (DAUPHIN COUNTY FIRM PANEL 0463D, MAP #42043C0463D, AUGUST 2, 2012).

30 0 30 60
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084960
5/16/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised	Drawing No.
4214-017	05/22/23	210-01

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PERMIT IMPACTS - NLF

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LOD
OHWL

ENTRANCE TO PROJECT SITE VIA SOUTH BRIDGE TO THREE-MILE ISLAND

EXISTING PAVED ACCESS ROAD

PARCEL 34-030-102-000-0000
N/F CONSTELLATION ENERGY GENERATION, LLC

EXISTING OSPREY POLE

WETLAND F
PERMANENT IMPACT: 2,700 SF

EXISTING STORMWATER DITCH A

WETLAND D

EXISTING STORMWATER DITCH
TEMPORARY IMPACT: 630 SF

WETLAND E

THE ENTIRE PROJECT AREA IS WITHIN THE 100-YEAR FLOODWAY FOR THE SUSQUEHANNA RIVER, WITH A BASE FLOOD ELEVATION (DURING A 100-YEAR EVENT) RANGING FROM APPROXIMATELY 293-296' IN ELEVATION ACROSS THE PROJECT SITE (DAUPHIN COUNTY FIRM PANEL 0463D, MAP #42043C0463D, AUGUST 2, 2012).

50 0 50 100
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/22/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PERMIT IMPACTS - STAGING AREA

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Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised	Drawing No.
4214-017	05/22/23	210-02

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ENTRANCE TO PROJECT SITE VIA SOUTH BRIDGE TO THREE-MILE ISLAND
SUSQUEHANNA RIVER FLOODWAY PERMANENT IMPACT: 464,660 SF (INCLUDES WETLAND F PERMANENT IMPACT OF 2,700 SF)
NPDES/CHAPTER 102 PERMIT AREA: 579,720 SF
PARCEL 34-030-102-000-0000 N/F CONSTELLATION ENERGY GENERATION, LLC
EXISTING PAVED ACCESS ROAD
EXISTING GRAVEL ACCESS ROAD
EXISTING STORMWATER DITCH A
SUSQUEHANNA RIVER PERMANENT IMPACT: 940 SF
SUSQUEHANNA RIVER PERMANENT IMPACT: 52,700 SF
SUSQUEHANNA RIVER TEMPORARY IMPACT: 144,230 SF
LEGEND
LIMIT OF DISTURBANCE
TEMPORARY EASEMENT
PERMANENT EASEMENT
ORDINARY HIGH WATER LINE
WETLAND AREA
PERMANENT SUSQ. RIVER IMPACT (PART OF SUSQ. RIVER FLOODWAY)
TEMPORARY SUSQ. RIVER IMPACT (PART OF SUSQ. RIVER FLOODWAY)
PERMANENT SUSQ. RIVER FLOODWAY IMPACT (ABOVE OHWL)
TEMPORARY SUSQ. RIVER FLOODWAY IMPACT (ABOVE OHWL)
NPDES/CHAPTER 102 PERMIT AREA

THE ENTIRE PROJECT AREA IS WITHIN THE 100-YEAR FLOODWAY FOR THE SUSQUEHANNA RIVER, WITH A BASE FLOOD ELEVATION (DURING A 100-YEAR EVENT) RANGING FROM APPROXIMATELY 293-296' IN ELEVATION ACROSS THE PROJECT SITE (DAUPHIN COUNTY FIRM PANEL 0463D, MAP #42043C0463D, AUGUST 2, 2012).

80 0 80 160
SCALE IN FEET

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PERMIT IMPACTS - FLOODWAY

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	210-03

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COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

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PHASE 2 E&S AREA: CONCEPTUAL BMPS SHOWN, BUT CONTRACTOR SHALL PREPARE, SUBMIT FOR REVIEW, AND GET APPROVAL FROM THE ENGINEER AND PADEP FOR THEIR PHASE 2 E&S PLAN PRIOR TO PROCEEDING WITH WORK IN THIS AREA. IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE ON SHEET 300-03

TEMPORARY POWER LOCATION

PARCEL 34-030-102-000-0000
N/F CONSTELLATION ENERGY GENERATION, LLC

CFS #1

CFS #2

CFS #3

CFS #11

CFS #12

INTERIOR PORTIONS OF THE FISHWAY MAY BE EXCAVATED PRIOR TO COFFERDAM INSTALLATION, PROVIDED UPSTREAM AND DOWNSTREAM EARTHEN EMBANKMENTS (I.E. EXISTING OVERBURDEN SOIL AT/ALONG THE RIVER) ARE LEFT IN-PLACE/UNDISTURBED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE BYPASS CHANNEL EXCAVATION, IN ACCORDANCE WITH DETAILS SHOWN ON SHEET 320-01.

SECURE SILT CURTAIN TO SHORE ON ANCHOR

SECURE SILT CURTAIN TO SHORE ON ANCHOR

SHIFT SHORELINE ANCHOR POSITION AS NECESSARY TO FULLY ENCLOSE WORK AREA AND AVOID CONFLICTS BASED ON CONSTRUCTION SEQUENCING.

2H:1V SLOPE

1.75H:1V SLOPE

TEMPORARY BULK BAGS TOP EL. ~284.5' (INSTALL IF ADDITIONAL PROTECTION IS REQUIRED WHEN SAWF COFFERDAM IS NOT IN PLACE)

DOWNSTREAM ROCKFILL COFFERDAM WITH SHEET PILE CUT-OFF WALL (W/ SHEET PILE STICK-UP TO EL. 282' MIN) SEE TYPICAL DETAIL ON SHEET 300-06

1.75H:1V SLOPE

TEMPORARY SAWF COFFERDAM; AQUADAM, OR EQUAL. TOP EL. 284.5' (MIN).
BULK BAGS MAY ALSO BE INSTALLED ON MAIN DAM TO PROTECT DOWNSTREAM AREAS AS NEEDED IN CONSTRUCTION SEQUENCE.

TEMPORARY BULK BAGS TOP EL. 284.5' (MIN)

SILT CURTAIN PER DETAIL ON SHEET 300-04.

SILT CURTAIN

APPROXIMATE LIMITS OF DISTURBANCE

DO NOT INSTALL SHEET PILE CUTOFF WITHIN 20' OF DAM.
REPLACE SHEET PILE STICK-UP WITH BUIK BAGS OR EQUAL

1. COFFERDAM(S) TYPE(S), ALIGNMENT, AND SEQUENCING ARE CONCEPTUAL AND SHOWN FOR REFERENCE ONLY. CONTRACTOR TO PREPARE FINAL COFFERDAM DESIGN(S) AND SUBMIT FOR OWNER REVIEW.
2. FINAL COFFERDAM ALIGNMENT/FOOTPRINT SHALL NOT EXTEND BEYOND PERMITTED LOD, AS SHOWN.

30 0 30 60
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968
5/24/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	300-01

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

TEMPORARY CONDITIONS - NLF

Kleinschmidt
888-224-5942
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PRINTED:

TEMPORARY ACCESS ROAD LAYOUT MAY VARY, BUT CROSSING OF STORMWATER DITCH MUST OCCUR AT SPECIFIED LOCATION. CONTRACTOR TO ESTABLISH, MAINTAIN, REMOVE, AND RESTORE ANY TEMPORARY

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SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	300-02

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TEMPORARY CONDITIONS - STAGING AREA

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CONSTRUCTION SEQUENCE GENERAL NOTES

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH–DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ONSITE PRE–CONSTRUCTION MEETING.
2. UPON INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITEE OR CO–PERMITEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OR AUTHORIZED CONSERVATION DISTRICT.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH–DISTURBANCE ACTIVITY, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE CONTRACTOR(S) INVOLVED IN THESE ACTIVITIES SHALL NOTIFY PENNSYLVANIA ONE CALL SYSTEMS, INC. AT 1–800–242–1776 BEFORE STARTING CONSTRUCTION ACTIVITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED BY THE DAUPHIN COUNTY CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP, EXCEPT WHERE NOTED.

GENERAL CONSTRUCTION SEQUENCE

1. THE CONTRACTOR SHALL PREPARE AN ACCEPTABLE PHASE 2 E&S PLAN FOR ALL IN IN–WATER WORK, INCLUDING COFFERDAM DESIGN AND DEWATERING PLAN. THIS PHASE 2 E&S PLAN SHALL BE SUBMITTED TO THE OWNER/ENGINEER AND PADEP FOR REVIEW AND APPROVAL, IN THAT SEQUENCE. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK IN THE PHASE 2 AREA UNTIL THE PHASE 2 E&S PLAN IS APPROVED.
2. INSTALL BMPS TO MINIMIZE POTENTIAL ACCELERATED EROSION AND SEDIMENTATION FROM THE FOLLOWING AREAS: ENTRANCES TO THE PROJECT SITE (INSTALL ROCK CONSTRUCTION ENTRANCE[S]), TEMPORARY CONSTRUCTION ACCESS ROADS, AND AREAS DESIGNATED FOR EQUIPMENT OR OTHER USE AT THE SITE INCLUDING PARKING AND CONSTRUCTION STAGING AREAS. MATERIAL STOCKPILES AND EQUIPMENT STORAGE & REFUELING SHALL BE IN THE AREAS SPECIFIED ON THE E&S PLAN DRAWINGS.
3. CONSTRUCT ROCK CONSTRUCTION ENTRANCES AS SHOWN ON THE E&S PLAN DRAWINGS.
4. INSTALL PERIMETER BMPS (E.G., COMPOST FILTER SOCKS) IN ACCORDANCE WITH INSTALLATION METHODS SPECIFIED ON PLAN AND DETAIL SHEETS AFTER THE CONSTRUCTION SITE IS ACCESSED, KEEPING ASSOCIATED CLEARING AND GRUBBING LIMITED TO ONLY THAT AMOUNT REQUIRED FOR INSTALLING PERIMETER BMPS.
5. IMPLEMENT LAND CLEARING AND GRADING ON THREE–MILE ISLAND ONLY FOR PHASE 1 E&S PLAN AFTER ALL DOWNSLOPE EROSION AND SEDIMENT BMPS (E.G., COMPOST FILTER SOCKS) HAVE BEEN CONSTRUCTED AND STABILIZED. CONTRACTOR SHALL MAKE ALLOWANCES FOR THE OWNER AND/OR THEIR REPRESENTATIVE TO OBSERVE EXCAVATIONS IN ALL SENSITIVE RESOURCE AREAS.
6. REMOVE AND STORE OSPREY POLE FOR SUBSEQUENT REUSE AND RELOCATION, AS APPROVED BY OWNER.
7. CLEAR AND GRUB, THEN STRIP EXISTING TOPSOIL MATERIAL AND STOCKPILE IN FILL PLACEMENT AREAS. INSTALL PERIMETER BMPS AROUND THE STOCKPILES AND STABILIZE WITH TEMPORARY MULCH AND SEEDING.
8. RELOCATE DAM HAZARD SIGNAGE AND LIGHTING.
9. DEMOLISH WATER LEVEL GAGE STRUCTURE AND DECOMMISSION ELECTRICAL EQUIPMENT, INCLUDING ELECTRICAL POLE MODIFICATION AFTER COORDINATING POWER SHUTOFF AND TEMPORARY POWER WITH THE UTILITY.
10. INSTALL SILT CURTAIN UPSTREAM OF SAWF COFFERDAM LOCATED ALONG THE UPSTREAM FACE OF THE MAIN DAM. CONSTRUCT SAWF COFFERDAM AND ISOLATE THE WORK AREA. SILT CURTAIN CAN BE REMOVED ONCE THE ACTIVE WORK AREAS ARE CONTAINED WITHIN THE SAWF COFFERDAM.
11. COMPLETE SELECTIVE DEMOLITION OF MAIN DAM. CONSTRUCT SAWF MODIFICATIONS TO THE MAIN DAM. MODIFY SAWF COFFERDAM TO SUPPORT DOWNSTREAM COFFERDAM, AS REQUIRED.
12. INSTALL SUBSURFACE FLOW CUTOFF WALL, ISOLATING INSTALLATION AT MAIN DAM WITH SILT CURTAIN WHEN WORKING IN THAT AREA.
13. INSTALL SILT CURTAIN DOWNSTREAM OF THE DOWNSTREAM COFFERDAM LOCATION. CONSTRUCT DOWNSTREAM COFFERDAM, AS REQUIRED. SILT CURTAIN CAN BE REMOVED ONCE THE ACTIVE WORK AREAS ARE CONTAINED WITHIN THE DOWNSTREAM COFFERDAM.
14. CONSTRUCT FISHWAY ENTRANCE ZONES OF PASSAGE, ROCK RIFFLE, SAWF SCOUR PROTECTION, SAWF & NLF FLOW SEPERATION BERM, AND RESTING POOL LOCATED WITHIN THE DOWNSTREAM COFFERDAM. PLACE EXCAVATED MATERIAL IN THE FILL PLACEMENT AREAS. INSTALL COMPOST FILTER SOCK TO CONTAIN FILL PLACEMENT AREAS.
15. EXCAVATE AS NECESSARY TO CONSTRUCT WEIRS 4 THROUGH 12 AND ADJACENT RIPRAP AND PERMANENT ACCESS ROAD.
16. INSTALL SILT CURTAIN AROUND UPSTREAM COFFERDAM LOCATION. CONSTRUCT UPSTREAM COFFERDAM. SILT CURTAIN CAN BE REMOVED ONCE ACTIVE WORK AREAS ARE CONTAINED WITHIN THE UPSTREAM COFFERDAM.
17. EXCAVATE AS NECESSARY TO CONSTRUCT WEIRS 1 THROUGH 3, INCLUDING ADJACENT RIPRAP AND ACCESSIBLE PORTIONS OF THE PERMANENT ACCESS ROAD (INCLUDING LOWER PERMEABILITY FILL AT WETLAND A), THE FISHWAY EXIT GRADING, AND RIPRAP BETWEEN WEIR 1 AND THE MAIN DAM. PLACE EXCAVATED MATERIAL IN THE FILL PLACEMENT AREA. ISOLATE WORK AREAS OUTSIDE THE UPSTREAM COFFERDAM WITH SILT CURTAIN PRIOR TO WORKING IN THOSE AREAS (E.G., RIPRAP BETWEEN WEIR 1 AND MAIN DAM) AND REMOVE SILT CURTAIN ONCE WATER CLARITY INSIDE AND OUTSIDE THE SILT CURTAIN ARE VISIBLY SIMILAR.
18. INSTALL DOWNSTREAM COFFERDAM SILT CURTAIN (OR SIMILAR TURBIDITY CONTAINMENT DEVICE) TO CONTAIN ANY ACTIVE WORK AREAS AT THE FISHWAY ENTRANCE. REMOVE DOWNSTREAM COFFERDAM AND CONSTRUCT ANY REMAINING PORTIONS OF THE FISHWAY ENTRANCE ZONES OF PASSAGE, ROCK RIFFLE, SAWF SCOUR PROTECTION, AND SAWF & NLF FLOW SEPARATION BERM.
19. REMOVE DOWNSTREAM TURBIDITY CONTAINMENT ONCE VISIBLY SIMILAR WATER CLARITY EXISTS INSIDE AND OUTSIDE THE SILT CURTAIN. PLACE EXCAVATED MATERIAL IN THE FILL PLACEMENT AREA
20. INSTALL SAWF COFFERDAM SILT CURTAIN. REMOVE SAWF COFFERDAM AND SILT CURTAIN (CAN BE COMPLETED AT ANYTIME ONCE THIS PROTECTION IS NO LONGER REQUIRED).
21. PERFORM AS–BUILT SURVEY OF FISHWAY. OBTAIN ENGINEER APPROVAL OF AS–BUILT SURVEY PROIR TO REMOVING UPSTREAM COFFERDAM. PERFORM ADJUSTMENTS OF NLF WEIR BOULDERS AND FINAL GRADES, PER ENGINEER DIRECTION, TO MEET HYDRAULIC PERFORMANCE OBJECTIVES.
22. INSTALL UPSTREAM COFFERDAM SILT CURTAIN AND THEN GRADUALLY REMOVE UPSTREAM COFFERDAM WHEN THE HEADPOND IS AT NORMAL POND OR LOWER (AFTER INSTALLING THE FLASHBOARDS ON WEIR 1), SLOWLY ALLOWING THE AREA UPSTREAM OF WEIR 1 TO WATER UP. MOVE UPSTREAM COFFERDAM SILT CURTAIN TO ISOLATE ACTIVE WORK AREAS AS COFFERDAM IS REMOVED. REMOVE FLASHBOARDS FROM WEIR 1 TO ALLOW FLOW INTO THE FISHWAY.
23. PERFORM GRADING AND SURFACE TREATMENT OF PERMANENT GRAVEL ACCESS ROADS.
24. COMPLETE FINE GRADING OF FILL PLACEMENT AREA AND ANY TEMPORARILY UTILIZED PORTIONS OF THE STAGING AREA. CONSULT ENGINEER PRIOR TO FINE GRADING AND INSTALLING TOPSOIL ON FILL PLACEMENT AREA, AS THE DESIRE IS TO NATURALIZE THE SHAPE OF THIS AREA AS MUCH AS POSSIBLE, ONCE ALL FILL IS EXCAVATED AND FINAL QUANTITIES ARE KNOWN – ALLOW FOR ADDITIONAL GRADING, PER DIRECTION OF THE ENGINEER. PERFORM RESTORATION OF THIS AREA, INCLUDING SEEDING AND REPLANTING PER PROJECT REQUIREMENTS. REINSTALL OPSREY POLE AT LOCATION SPECIFIED BY ENGINEER.
25. REMOVE AND RESTORE TEMPORARY ACCESS ROADS, AND TEMPORARY CULVERTS. STABILIZE EXISTING CHANNELS PER E&S PLAN. FOLLOW RESTORATION REQUIREMENTS IN THIS E&S PLAN FOR RESTORATION OF THE DISTURBED AREAS.
26. PERFORM SITE RESTORATION PER PROJECT DRAWINGS AND SPECIFICATIONS. INSTALL FENCE AND GATE AND CONVERT ANY TEMPORARY POWER INTO FINAL ELECTRICAL CONDITIONS WITHIN THE FENCE.

EROSION & SEDIMENTATION CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL WILL BE DONE IN ACCORDANCE WITH THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MARCH 2012, AS CURRENTLY REVISED.
2. NOTE THAT THE CONTRACTOR IS RESPONSIBLE FOR DESIGN OF THE PRIMARY UPSTREAM, DOWNSTREAM, AND SAWF COFFERDAMS, SECONDARY/LOCALIZED COFFERDAMS AS APPLICABLE, SEEPAGE CONTROLS (E.G., CURTAIN GROUTING) AS APPLICABLE, AND ASSOCIATED DEWATERING SYSTEMS, WITH REVIEW AND APPROVAL BY THE OWNER, ENGINEER, FERC, AND PA DEP AS REQUIRED BY THEIR REGULATIONS OR THE CONTRACT DOCUMENTS. ADDITIONALLY, A COURTESY COPY SHALL BE SUBMITTED TO THE DAUPHIN COUNTY CONSERVATION DISTRICT.
3. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED, AND DATED) MUST BE AVAILABLE AT THE NLF PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
4. PRIOR TO COMMENCEMENT OF ANY EARTH–DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, CLEARLY DELINEATE THE LIMITS OF DISTURBANCE, SENSITIVE RESOURCE AREAS, THE LIMITS OF CLEARING, AND ANY TREES THAT ARE TO BE CONSERVED WITHIN THE NLF PROJECT SITE. INSTALL APPROPRIATE BARRIERS/SIGNAGE WHERE EQUIPMENT MAY NOT BE PARKED, STAGED, OPERATED, OR LOCATED FOR ANY PURPOSE.
5. ALL EARTH–DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE E&S PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED BY THE DCCD OR BY THE PADEP PRIOR TO IMPLEMENTATION. GENERALLY, THE CONTRACTOR SHALL COMPLETE EACH STEP OF THE SEQUENCE BEFORE PROCEEDING TO THE NEXT STEP WHERE FUTURE STEPS HAVE THE POTENTIAL FOR EROSION THAT IS MITIGATED BY BMPS REQUIRED BY EARLIER STEPS.
6. CONTRACTOR SHALL MAINTAIN ALL E&S BMPS IN ACCORDANCE WITH THE APPROVED E&S PLAN FOR THE DURATION OF CONSTRUCTION.
7. FOR ALL EXISTING GRAVEL ACCESS ROADS ON TMI TO BE USED AS PART OF THE NLF PROJECT, MEASURES SHALL BE TAKEN TO MAINTAIN COVER ON EXISTING SURFACES.
8. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL.
9. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
10. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY DELINEATED BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
11. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. TOPSOIL STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER.
12. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
13. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'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.
14. ALL OFF–SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
15. 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.
16. ALL PUMPING OF TURBID WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTRIBUTED VEGETATED AREAS.
17. ALL EQUIPMENT FUELING AND LUBRICATION SHALL BE PERFORMED WITHIN THE REFUELING AREA IDENTIFIED ON THE PLANS, AWAY FROM THE RIVER, AND WITHIN THE SECONDARY CONTAINMENT AREA. NO ON–SITE STORAGE OF FUEL (OTHER THAN IN FUEL TANKS OF EQUIPMENT) IS ALLOWED.
18. ALL EQUIPMENT SHALL BE STORED, WHEN NOT IN USE, WITHIN A SECONDARY CONTAINMENT SYSTEM OR AREA TO PREVENT SPILLS FROM ENTERING SURFACE WATERS (RIVER, STREAM, OR WETLANDS) OR SEEPING INTO THE EXISTING UNDERLYING SOIL. THE SECONDARY CONTAINMENT SYSTEM AND AREA SHALL BE A MINIMUM OF 100 FEET AWAY FROM ANY SURFACE WATERS.
19. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE E&S PLAN DRAWING USING COMPOST SOCK WASHOUT RINGS. IN NO CASE WILL UNFILTERED WASH WATER BE ALLOWED TO ENTER ANY SURFACE WATERS OR GROUNDWATER SYSTEMS.
20. DUST CONTROL SHALL BE PROVIDED TO PREVENT THE BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES AND REDUCE THE PRESENCE OF DUST. WATER SHALL BE USED TO CONTROL DUSTING BY PRESERVING THE MOISTURE LEVEL IN THE ROAD SURFACE MATERIALS.
21. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
22. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
23. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORKDAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
24. ALL SEDIMENT REMOVED FROM BMPS SHALL BE REMOVED, STORED AND STABILIZED IN ACCORDANCE WITH THESE PLANS. IF NOT REUSED ON SITE, MATERIALS SHALL BE DISPOSED AT A PADEP APPROVED LOCATION.
25. 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. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
26. TEMPORARY OR PERMANENT STABILIZATION MEASURES, INCLUDING EROSION CONTROL BLANKETS (NAG SC150BN IN AREAS WHERE SLOPES ARE 3:1 OR STEEPER AND NAG 75BN IN AREAS WITHIN 50 FEET OF A SURFACE WATER WHERE SLOPES ARE SHALLOWER THAN 3:1) SHALL BE APPLIED IMMEDIATELY TO ANY DISTURBED AREAS WHERE WORK HAS REACHED FINAL GRADE, HAS BEEN DELAYED, OR OTHERWISE TEMPORARILY SUSPENDED FOR 14 OR MORE DAYS.
27. TEMPORARY STABILIZATION IS REQUIRED WHEN DISTURBED AREAS ARE LEFT EXPOSED FOR MORE THAN 4 DAYS. TEMPORARY STABILIZATION WILL BE PERFORMED BY APPLYING TOPSOIL, GRADING AND ROUGHENING/TRACKING THE DISTURBED SURFACE, LIMING USING AGRICULTURAL LIME AT A RATE INDICATED BY SOIL TEST OR 1 TON PER ACRE, FERTILIZING WITH 10–10–10 AT A RATE AS INDICATED BY SOIL TEST OR 500 POUNDS PER ACRE, MIXING THE SOIL AMENDMENTS INTO THE TOPSOIL, SEEDING, AND MULCHING WITH STRAW W/ TACKIFER AT A RATE OF THREE TONS PER ACRE. GRAIN OATS SHALL BE USED FOR A SEEDING WINDOW OF JANUARY 1 THROUGH JULY 31 AND BE APPLIED AT A RATE OF 64 POUNDS PER ACRE. FOR A SEEDING WINDOW OF AUGUST 1 THROUGH DECEMBER 31, GRAIN RYE (WINTER RYE) SHALL BE USED AND SEEDED AT A RATE OF 56 POUNDS PER ACRE. IF TEMPORARY STABILIZATION IS NEEDED FOR MORE THAN ONE YEAR, THE USE OF ERNST SEED MIX ERNMX–104, QUICK EROSION CONTROL COVER MIX (A MIX OF ANNUAL AND PERENNIAL RYEGRASS), IS RECOMMENDED AT A RATE OF 50 POUNDS PER ACRE.
28. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
29. 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.
30. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
31. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
32. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
33. ANY WASTE OR EXCESS MATERIAL NOT SUITABLE FOR ON–SITE USAGE SHALL BE PROPERLY DISPOSED OF AT A PADEP–APPROVED SITE. MATERIAL WILL BE REUSED OR RECYCLED IF POSSIBLE, INCLUDING TOPSOIL AND OTHER STRUCTURAL FILL MATERIALS.
34. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH INDUSTRY STANDARDS FOR SUBSURFACE DRAINS OR OTHER APPROVED METHOD, AS APPROVED IN WRITING BY THE PROJECT ENGINEER.
35. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
36. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUB–AREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON–GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETS SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
37. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON–VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
38. 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 LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
39. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
40. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED. 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.
41. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
42. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, 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 THE DEPARTMENT 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.

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER A. KREIDER
ENGINEER
No. PE084968
5/30/23

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

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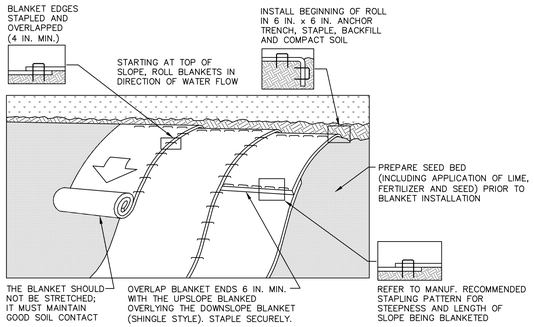


NOTES:

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.

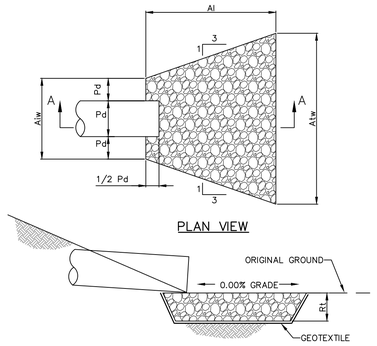
SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.

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.

NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP		APRON		
		SIZE R—_	THICK. Rt (IN)	LENGTH Al (FT)	INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH Atw (FT)
1	36(TWIN)	4	24	13	13	19

NOTES:

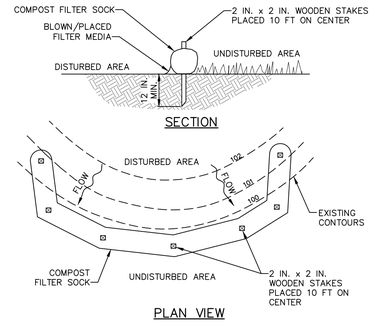
ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

STANDARD CONSTRUCTION DETAIL #9-2
RIPRAP APRON AT PIPE OUTLET
NO FLARED ENDWALL

NOT TO SCALE



NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

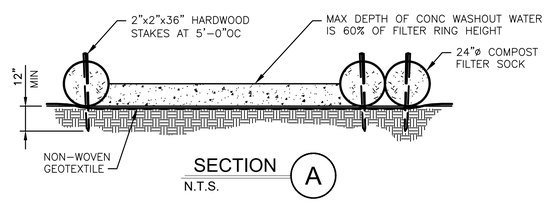
BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

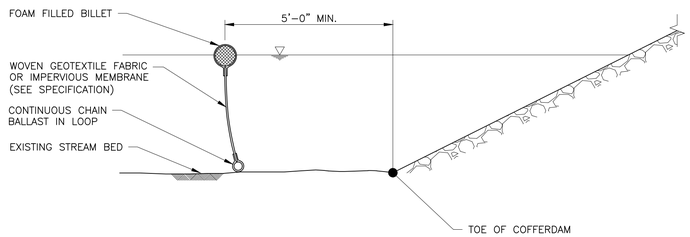
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

STANDARD CONSTRUCTION DETAIL #4-1
COMPOST FILTER SOCK

NOT TO SCALE

COMPOST FILTER SOCK SIZE TABLE	
SOCK NO.	SOCK DIA. (IN.)
1	12
2	8
3	8
4	24
5	32
6	8
7	32
8	8
9	8
10	8
11	8
12	8

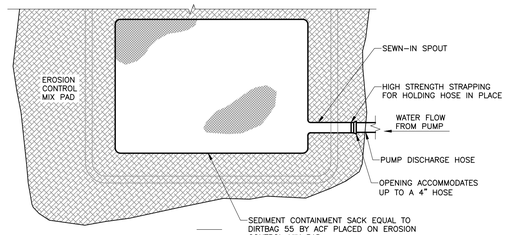




SILT CURTAIN DETAIL

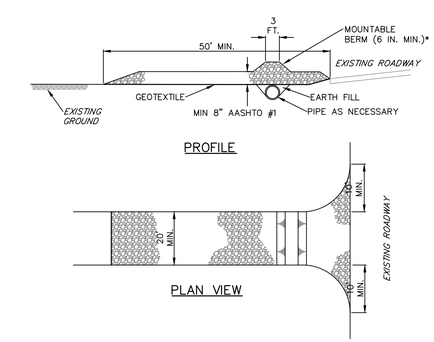
N.T.S.

NOTES:
1. THE CONTRACTOR SHALL DESIGN, INSTALL, AND MAINTAIN THE TURBIDITY CURTAIN IN GENERAL ACCORDANCE WITH INDUSTRY STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
2. THE DEPTH OF THE TURBIDITY CURTAIN SHALL BE 20% GREATER THAN THE ANTICIPATED MAXIMUM WATER DEPTH DURING USE TO ALLOW FOR WAVES AND WATER LEVEL FLUCTUATIONS.
3. ANCHORS WILL BE REQUIRED DUE TO CURVED ALIGNMENT.
4. SILT CURTAIN TO BE USED DURING COFFERDAM DEPLOYMENT AND REMOVAL, OR FOR WORK OCCURRING IN THE WET. SILT CURTAIN CAN BE REMOVED ONCE COFFERDAM IS IN PLACE AND NO WORK IS OCCURRING OUTSIDE THE COFFERDAM.



NOTES:

1. WATER PUMPED FROM EXCAVATIONS SHALL BE DISCHARGED INTO SEDIMENT CONTAINMENT BAGS.
2. CONSTRUCT PADS FOR SEDIMENT CONTAINMENT BAGS SHALL BE CONSTRUCTED OF #57 STONE OR WOODCHIPS WHERE THE BAG IS LOCATED ON CONCRETE, OR WHERE LOCATED ON SOIL, OF EROSION CONTROL MIX AS SPECIFIED IN THE EROSION CONTROL MIX SEDIMENT BARRIER DETAIL.
3. GRADE THE EROSION CONTROL MIX PAD SO THE SURFACE IS SLOPED SLIGHTLY (1%–2%) AWAY FROM THE HOSE OPENING.
4. PLACE LIFTING STRAPS OR ROPES OVER THE EROSION CONTROL MIX PAD PRIOR TO SETTLING THE BAG IN PLACE TO FACILITATE REMOVAL OF THE FULL BAG.
5. SET BAG IN PLACE AND CONNECT HOSE FROM DEWATERING PUMP. TIE OFF THE NECK OF THE BAG TO THE HOSE TIGHT ENOUGH TO PREVENT WATER FROM FLOWING OUT AROUND THE HOSE UNFILTERED.
6. INSPECT THE BAG PERIODICALLY AND REPLACE WHEN NO LONGER EFFECTIVE.
7. ACCUMULATED SEDIMENT MAY BE USED TO BACKFILL EXCAVATIONS EXCEPT WHERE SPECIFIC MATERIALS OTHER THAN NATIVE SOILS ARE SPECIFIED.
8. PROPERLY DISPOSE OF SPENT BAGS.
9. SEDIMENT CONTAINMENT BAG SHALL BE REMOVED PRIOR TO ANY FORECASTED HIGH FLOW EVENT THAT IS ANTICIPATED TO FLOOD THE LOCATION OF THE BAG.



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

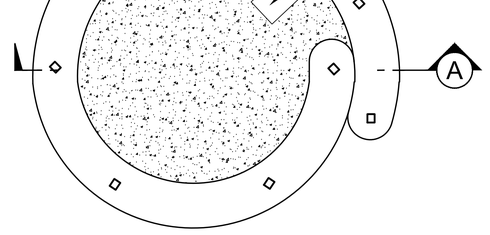
RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE



TYPICAL COMPOST SOCK CONCRETE WASHOUT RING PADEP DETAIL #3-18

NOT TO SCALE

NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
2. NON—WOVEN GEOTEXTILE SHALL MEET THE FOLLOWING EQUIVALENT REQUIREMENTS:
   PHYSICAL PROPERTY (TEST METHOD) WITH MINIMUM PERMISSIBLE VALUE
   GRAB TENSILE STRENGTH (ASTM D 4632) — 120 POUNDS
   GRAB TENSILE ELONGATION (ASTM D 4632) — 50%
   TRAPEZOID TEAR STRENGTH (ASTM D 4533) — 50 POUNDS
   CBR PUNCTURE STRENGTH (ASTM D 6241) — 310 POUNDS
   APPARENT OPENING SIZE (ASTM D 4751) — 0.212 MM (US #70 SIEVE)
   UV RESISTANCE (500 HOURS) (ASTM D 4355) —70% STRENGTH RETENTION
3. 18"ø FILTER SOCK MAY BE STACKED ONTO DOUBLE 24"ø SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.

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No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EROSION CONTROL DETAILS
SHEET 1 OF 2

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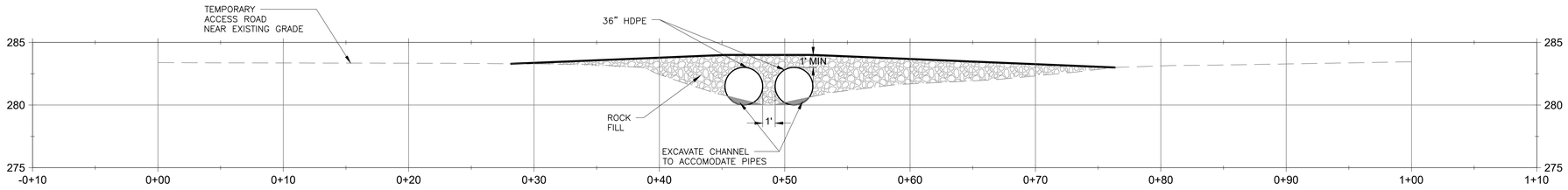
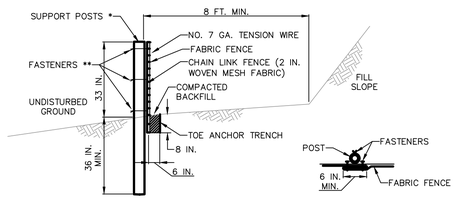
Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	300-04

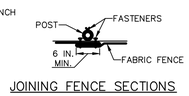


TEMPORARY DITCH CROSSING SECTION A/03

1" = 5'



SECTION VIEW



JOINING FENCE SECTIONS

* POSTS SPACED AT 10 FT. MAX. USE 2–1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

** CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO SHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42 IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2–1/4 IN. OPENING, NO. 11 GA. ALUMINUM COATED STEEL WIRE IN ACCORDANCE WITH ASTM–A–491, OR GALVANIZED NO. 9 GA. STEEL WIRE TOP AND BOTTOM WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES. NO. 7 GAGE TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN–LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.

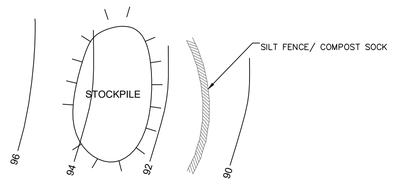
SILT FENCE SHALL BE PLACED AT LEVEL EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

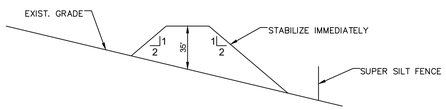
FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-10
SUPER SILT FENCE

NOT TO SCALE



PLAN



ELEVATION

NOTES:

1. INSTALL SEDIMENT BARRIER DOWNSLOPE OF AREA OF STOCKPILE.
2. PLACE STOCKPILE IN STAGING AND FILL PLACEMENT AREAS SHOWN ON EROSION CONTROL PLAN WITHOUT BLOCKING NATURAL DRAINAGE PATTERNS.
3. FOLLOW DIMENSIONS SHOWN ABOVE. HEIGHT SHOULD NOT EXCEED 35 FT. SIDE SLOPES SHOULD NOT BE STEEPER THAN 2(H):1(V).
4. STABILIZE IMMEDIATELY PER THE EROSION & SEDIMENTATION CONTROL NOTES.
5. LOCATION(S) AND SIZE(S) OF SOIL STOCKPILES SHALL BE DETERMINED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER FOR APPROVAL.
6. TEMPORARY STAGING AND SOIL STOCKPILES SHALL BE LOCATED IN THE LIMIT OF DISTURBANCE IDENTIFIED FOR THIS PROJECT.
7. AREAS TO REMAIN VEGETATED THAT ARE COMPACTED OR DISTURBED DURING CONSTRUCTION SHALL BE RESTORED PER THE POST CONSTRUCTION STORMWATER MANAGEMENT SEQUENCE.

TEMPORARY SOIL STOCKPILE AND MAINTENANCE

NOT TO SCALE

5 0 5 10

SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968
5/30/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised	Drawing No.
4214-017	05/22/23	300-05

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

EROSION CONTROL DETAILS
SHEET 2 OF 2

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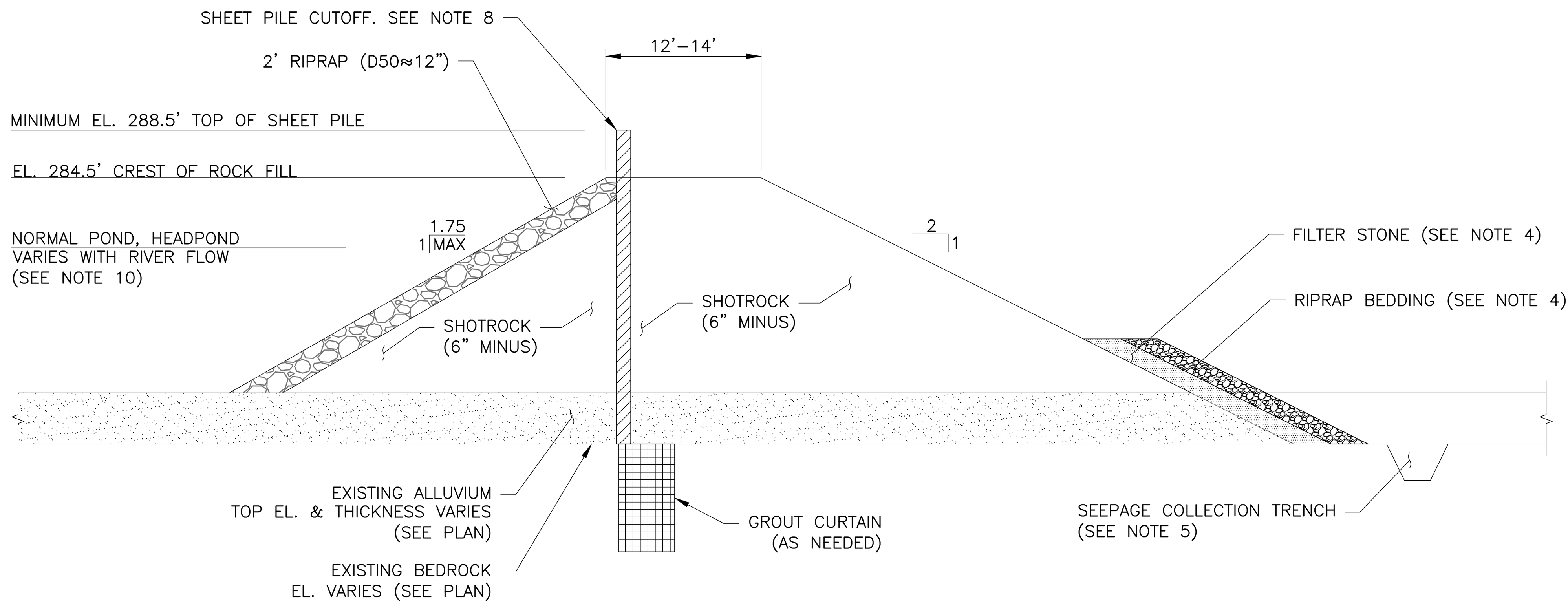
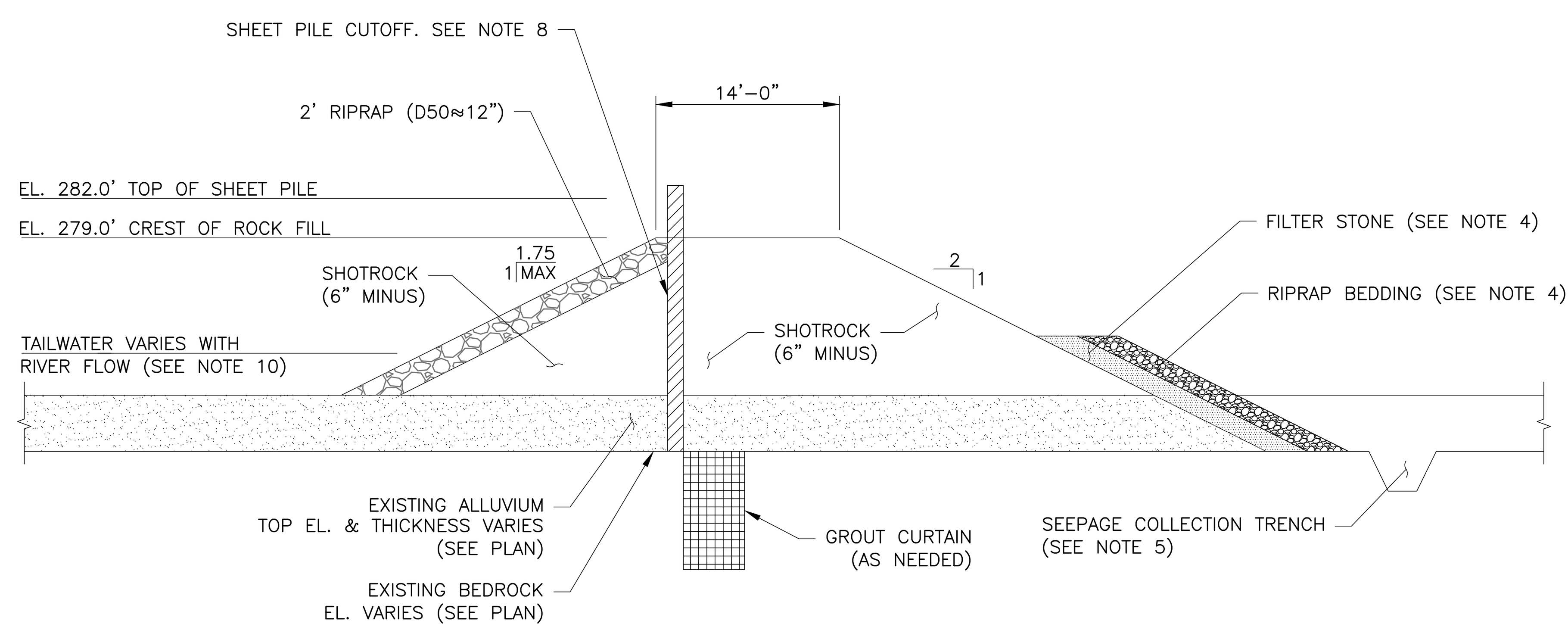


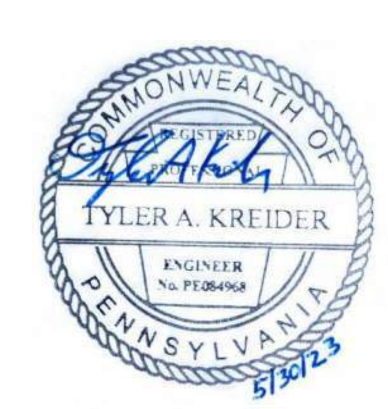
TYPICAL UPSTREAM ROCKFILL COFFERDAM



TYPICAL DOWNSTREAM ROCKFILL COFFERDAM

NOTES:

1. ROCKFILL COFFERDAM WITH SHEET PILE CUTOFF AND POSSIBLE GROUT CURTAIN SHOWN FOR REFERENCE ONLY. CONTRACTOR TO DESIGN ACTUAL COFFERDAM, INCLUDING SEEPAGE CONTROL(S) AND DEWATERING SYSTEM(S).
2. ROCKFILL SHALL CONSIST OF 6-INCH MINUS WELL-GRADED MATERIAL PRODUCED VIA ROCK BLASTING (I.E., SHOTROCK) OR CRUSHING OPERATIONS.
3. ALIGN SHEET PILE CUTOFF WITH OUTBOARD CREST GRADE BREAK. DRIVE SHEETS TO PRACTICAL REFUSAL WITHIN/ATOP WEATHERED/FRACTURED BEDROCK.
4. PROTECT INBOARD TOE WITH FILTER STONE AND RIPRAP BEDDING, AS REQUIRED TO MINIMIZE SLOUGHING AND LOSS OF FINES.
5. INSTALL CONTINUOUS SEEPAGE COLLECTION TRENCH ALONG INBOARD TOE.
6. INSTALL GROUT CURTAIN BENEATH THE COFFERDAM WHERE NEEDED TO REDUCE SEEPAGE THROUGH WEATHERED/FRACTURED BEDROCK.
7. PROVIDE SECONDARY CONTAINMENT (E.G., BULK BAGS) AND LOCALIZED SEEPAGE COLLECTION TRENCHES, SUMPS, AND/OR DEWATERING FEATURES AS NEEDED TO PREPARE WEIR FOUNDATION SUBGRADES AND FORM/POUR CONCRETE FOUNDATIONS IN THE DRY.
8. A GEOMEMBRANE BARRIER (WITH APPROPRIATE PROTECTION) MAY BE CONSIDERED (BENEATH THE RIPRAP) IN LIEU OF SHEET PILE CUTOFF.
9. COFFERDAM DEPICTION IS CONCEPTUAL ONLY. FINAL DESIGN TO BE COMPLETED BY CONTRACTOR AND APPROVED BY OWNER AND REGULATORY AGENCIES.
10. HEADPOND AND TAILWATER WATER SURFACE ELEVATIONS VARY WITH RIVER FLOW. SEE DESIGN REPORT FOR DETAILS OF HISTORIC WATER LEVEL FLUCTUATIONS



No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	300-06

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

TEMPORARY COFFERDAM DETAILS

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ENTRANCE TO PROJECT SITE VIA SOUTH BRIDGE TO THREE-MILE ISLAND

EXISTING PAVED ACCESS ROAD

PARCEL 34-030-102-000-0000
N/F CONSTELLATION ENERGY GENERATION, LLC

REMOVE AND STORE OSPREY POLE (SEE NOTE 3)

REMOVE ELECTRICAL COMPONENTS WITHIN THIS AREA IN COORDINATION WITH THE UTILITY OWNER

EXISTING GRAVEL ACCESS ROAD

REMOVE CHAIN LINK FENCE ENCLOSURE

REMOVE ACCESS ROADS LOCATED WITHIN THE MINIMUM EXCAVATION EXTENT. SEE SHEET 320-01

REMOVE AND STORE SIGN AND PICNIC TABLE

CLEAR AND GRUB WITHIN EXTENTS OF FILL PLACEMENT AREAS AND ONLY AS NECESSARY FOR ESTABLISHMENT OF ACCESS ROADS (PRESERVE TREES IDENTIFIED BY ENGINEER)

REMOVE CONCRETE BARRIERS

MAIN DAM SELECTIVE DEMOLITION ONLY AS REQUIRED TO INSTALL SAWF. SEE DRAWING SERIES 410

SHADED AREA REPRESENTS APPROXIMATE EXTENT OF GRADING

80 0 80 160
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968
5/24/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised
4214-017	05/22/23

Drawing No. 310-01

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

DEMOLITION PLAN

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CONTRACTOR IS RESPONSIBLE FOR DESIGN, INSTALL, MAINTENANCE, AND REMOVAL OF ANY SHORING, SLOPE BENCHING, AND/OR ADDITIONAL STABILIZATION AS REQUIRED FOR COMPLETION OF THIS WORK.

CONTRACTOR SHALL MAKE NECESSARY TRANSITIONS BETWEEN MINIMUM EXCAVATION EXTENTS SHOWN. FULL EXTENT OF EXCAVATION FOR PROJECT SHOWN, BUT SEQUENCING OF EXCAVATION SHALL BE PER

SHOULD FLOODING THREATEN TO OVERTOP THE SOIL WEDGE AT THE UPSTREAM AND/OR DOWNSTREAM END OF THE EXCAVATION PRIOR TO COMPLETING THE EXCAVATION TO THE RIVER, FLOOD THE EXCAVATION PRIOR TO OVERTOPPING. REQUIREMENTS FOR FLOODING THE EXCAVATION ONCE THE COFFERDAM IS

30 0 30 60
SCALE IN FEET

TYLER A. KREIDER
ENGINEER
COMMONWEALTH OF PENNSYLVANIA
5/30/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

TEMPORARY EXCAVATION PLAN
(RELATIVE TO EXISTING GRADES)

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	320-01

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ENTRANCE TO PROJECT SITE VIA SOUTH BRIDGE TO THREE MILE ISLAND
EXISTING PAVED ACCESS ROAD
PARCEL 34-030-102-000-0000 N/F CONSTELLATION ENERGY GENERATION, LLC
EXISTING OSPREY POLE (RELOCATE PER SHEET 430-01)
NEW SOUTH FILL PLACEMENT AREA (SEE DETAILS ON SHEET 430-01)
EXISTING GRAVEL ACCESS ROAD
REPLANT VEGETATION IN DISTURBED AREAS OF STAGING AREA PER SERIES DRAWINGS 600
NEW NLF WEIRS 2-12 DETAILS ON SHEETS 400-08 TO 400-14
NEW NORTH FILL PLACEMENT AREA (SEE DETAILS ON SHEET 430-01)
"STAGING AREA" VIEW EXTENT FOR THIS DRAWING PACKAGE (PER SHEET NAMES). EXISTING CONDITIONS FOR THE STAGING AREA ARE FOUND ON SHEET 200-03
NEW SUBSURFACE FLOW
"NLF" VIEW EXTENT FOR THIS DRAWING PACKAGE (PER SHEET NAMES). EXISTING CONDITIONS FOR THE NLF AREA ARE FOUND ON SHEET 200-02
NEW SAWF AND NLF FLOW SEPARATION BERM BOULDER CONSTRUCTION DETAILED ON SHEET 410-03
NEW ROCK RIFFLE BOULDERS & RIPRAP DETAILED ON SHEET 400-14
NEW SAWF (SEE DETAILS ON DRAWING SERIES 410)
EXISTING MAIN DAM
285
280
275
270
OE
80 0 80 160
SCALE IN FEET

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

OVERALL PROPOSED CONDITIONS PLAN

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-01

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

PRINTED:

WEIR 1
WEIR 2
WEIR 3
WEIR 4
WEIR 5
WEIR 6
UTILITY POLE
NEW POLE MOUNTED SERVICE (SEE DETAIL ON 440-01)
PROVIDE FILL TO ELEVATE FINISH GRADE ABOVE EL. 886.0' AROUND SERVICE POLE
WEIR 7
WEIR 8
WEIR 9
WEIR 10
WEIR 11
WEIR 12
NEW PERMANENT ACCESS ROAD EXTENSION
EXISTING ACCESS ROAD
NEW CHAIN LINK FENCE GATES
NEW CHAIN LINK FENCE
RESTING POOL
9" D50 (TYP 3 AREAS)
132'-9 1/2"
NEW SUBSURFACE FLOW CUTOFF WALL SEE DETAIL ON SHEET 420-01
NEW BOAT TIE-OFF (6"X6"X8' PT WOOD, 5' MIN EMBED) TYP 2, FIELD LOCATE PER ENGINEER
NEW RIPRAP (FROM EL. 275.5' UP TO TOP OF SLOPE)
INTERIOR ZONE OF PASSAGE
CENTER ZONE OF PASSAGE PROFILE SHEET 400-06
FLOW
NEW CHANNEL ROUGHNESS BOULDERS ON ROCK RIFFLE
EXISTING MAIN DAM CREST EL ~279.4'
NEW SAWF & NLF FLOW SEPARATION BERM
EAST FISHWAY ENTRANCE ZONE OF PASSAGE
NEW SCOUR RIPRAP
WEST FISHWAY ENTRANCE ZONE OF PASSAGE
SUSQUEHANNA RIVER/ LAKE FREDERIC
FLOW
NEW SUPPLEMENTAL ATTRACTION WATER FEATURE (SAWF), SEE DETAILS ON SERIES 410 DRAWINGS
EXISTING MAIN DAM CREST EL ~277.1'-277.6'
0+00
1+00
2+00
3+00
4+00
5+00
6+00
6+31

RIPRAP SHOWN NEAR THE FISHWAY WEIRS, BUT ADDITIONAL RIPRAP MAY BE REQUIRED OR SOME
RIPRAP MAY BE OMITTED IN AREAS WHERE THE ASSUMED BEDROCK ELEVATION DIFFERS FROM THE

30 0 30 60
SCALE IN FEET

TYLER A. KREIDER, ENGINEER, COMMONWEALTH OF PENNSYLVANIA

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-02

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS PLAN - NLF

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RESTING POOL

SEE DRAWING 400-10 FOR DETAILS OF EXTERIOR AND INTERIOR ZONE OF PASSAGE CONSTRUCTION TO FACILITATE FLOW PARALLEL TO SHORELINE (TYP WEIRS 2-12)

TOE OF CHANNEL

CENTER ZONE OF PASSAGE

INTERIOR ZONE OF PASSAGE

FLOW

WEIR 1

WEIR 2

WEIR 3

WEIR 4

WEIR 5

WEIR 6

NEW SUBSURFACE FLOW CUTOFF WALL

94'

33.8%

34.3%

276.2

277.2

1/14

A 07

B 08

C 11

D 11

E 11

F 12

SCALE IN FEET: 10 0 10 20

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No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

COMMONWEALTH OF PENNSYLVANIA — TYLER A. KREIDER — ENGINEER — No. PE084960 — 5/19/23

Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised
4214-017	05/22/23

Drawing No. 400-03

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

NEW CONDITIONS PLAN - WEIRS 1-6

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COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-04

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS PLAN - WEIRS 7-12

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PRINTED:

RESTING POOL

NEW ROCK RIFFLE BOULDERS ON EXCAVATED ENTRANCE RIFFLE SEE SHEET 400-15 FOR DETAIL. (TYP)

NEW SCOUR RIPRAP

WEST FISHWAY ENTRANCE ZONE OF PASSAGE

EAST FISHWAY ENTRANCE ZONE OF PASSAGE

1+00

2+00

SCALE IN FEET
10 0 10 20

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/22/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS PLAN - ENTRANCE RIFFLE

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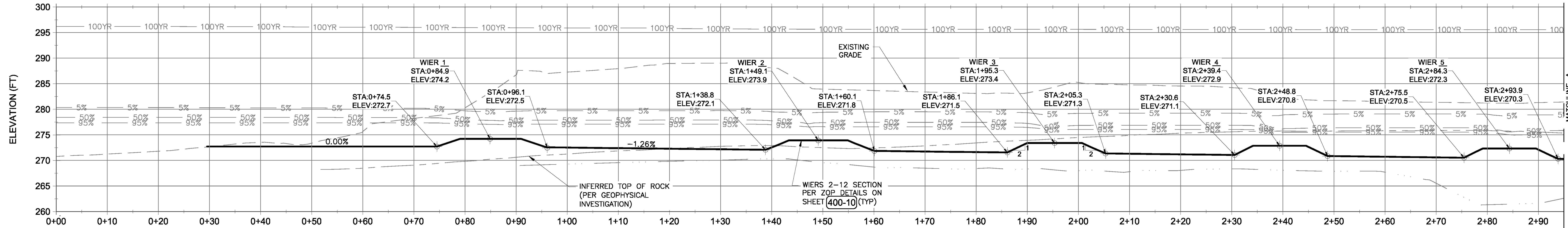
Project No.	Date Revised	Drawing No.
4214-017	05/22/23	400-05

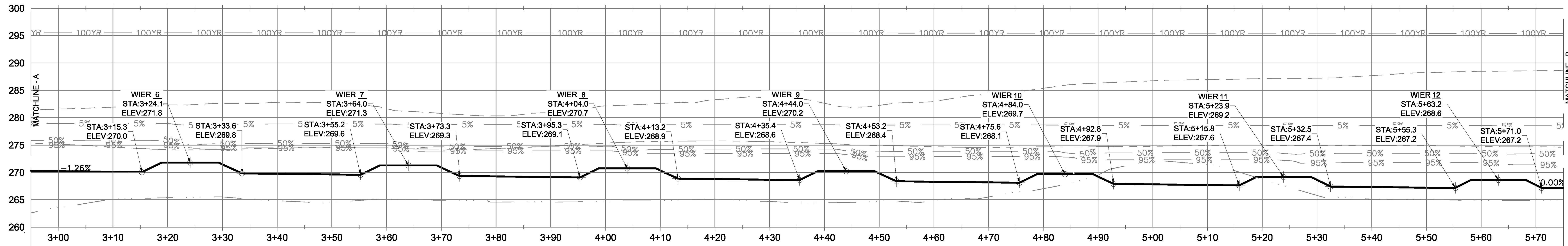
PRINTED:

24x36 = FULL SCALE



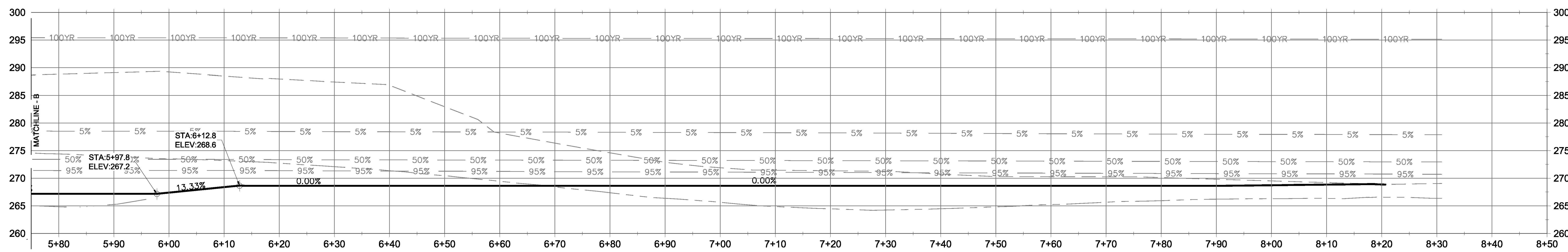
CENTER ZONE OF PASSAGE PROFILE

1" = 10'



CENTER ZONE OF PASSAGE PROFILE

1" = 10'



CENTER ZONE OF PASSAGE PROFILE

1" = 10'

NOTES:

1. PROFILE IS SHOWN THROUGH THE CENTER ZONE OF PASSAGE NOTCH, SO NO BOULDERS ARE SHOWN ON THE WEIRS.
2. PROFILE THROUGH ZONE OF PASSAGE NOTCHES SHALL BE MODIFIED PER DETAILS ON SHEET 400-10, INCLUDING SLOPING CREST OF FILL UNDER BOULDERS TO FACILITATE WEIR FOOTER BOULDERS.
3. GENERAL PROFILE SHALL BE IN CONFORMANCE WITH THIS PROFILE, BUT ENGINEER MAY FIELD ADJUST BASED ON BEDROCK ELEVATIONS FOUND DURING CONSTRUCTION.

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
- ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS
- 5% — 5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 50% — 50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 95% — 95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 100YR — 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

10 0 10 20
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-06

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS SECTIONS
CENTER ZONE OF PASSAGE PROFILE

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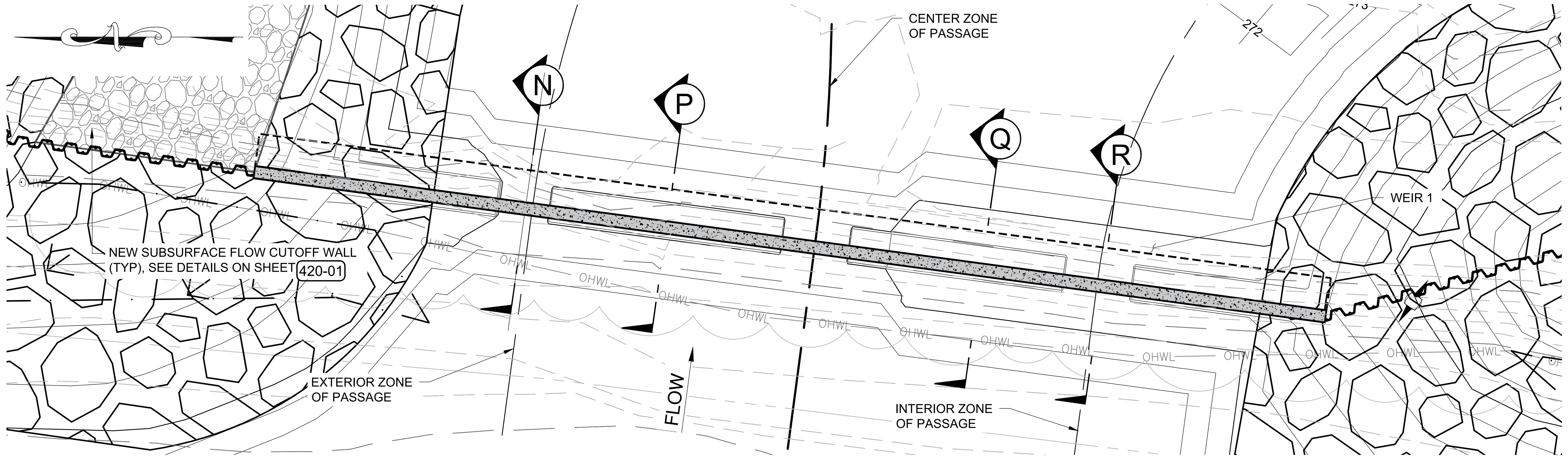
24x36 = FULL SCALE

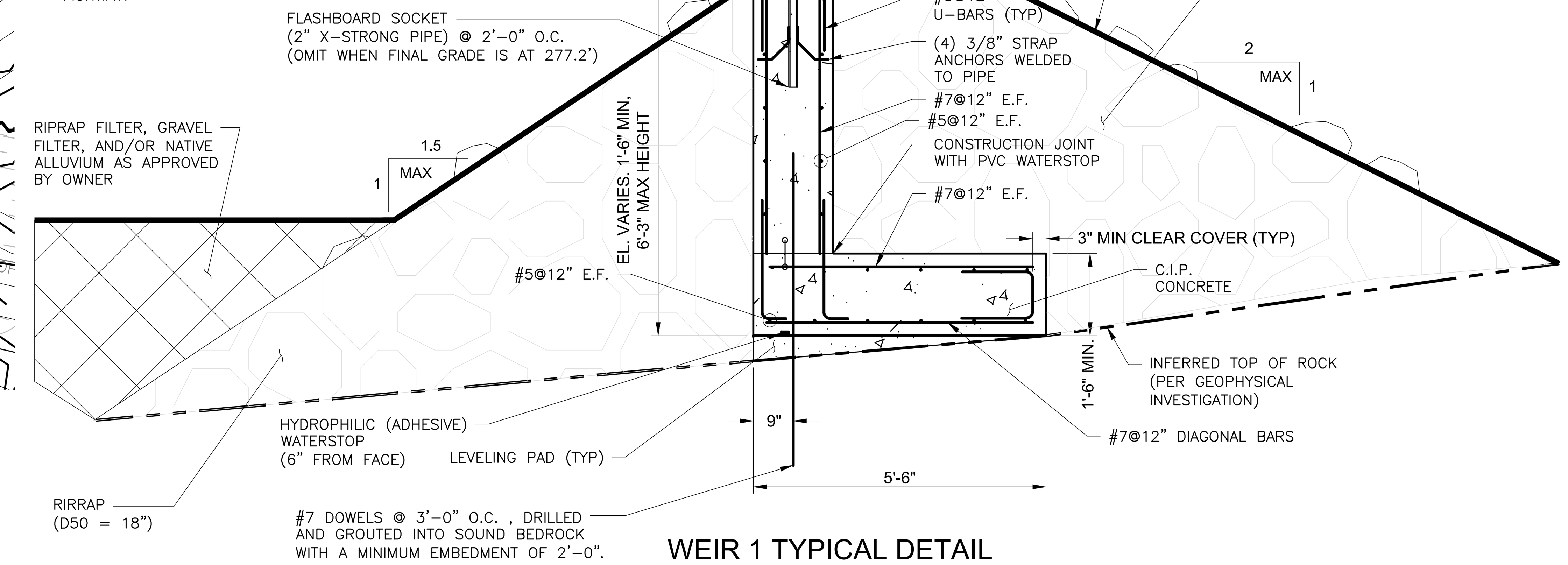


PLAN
1" = 10'

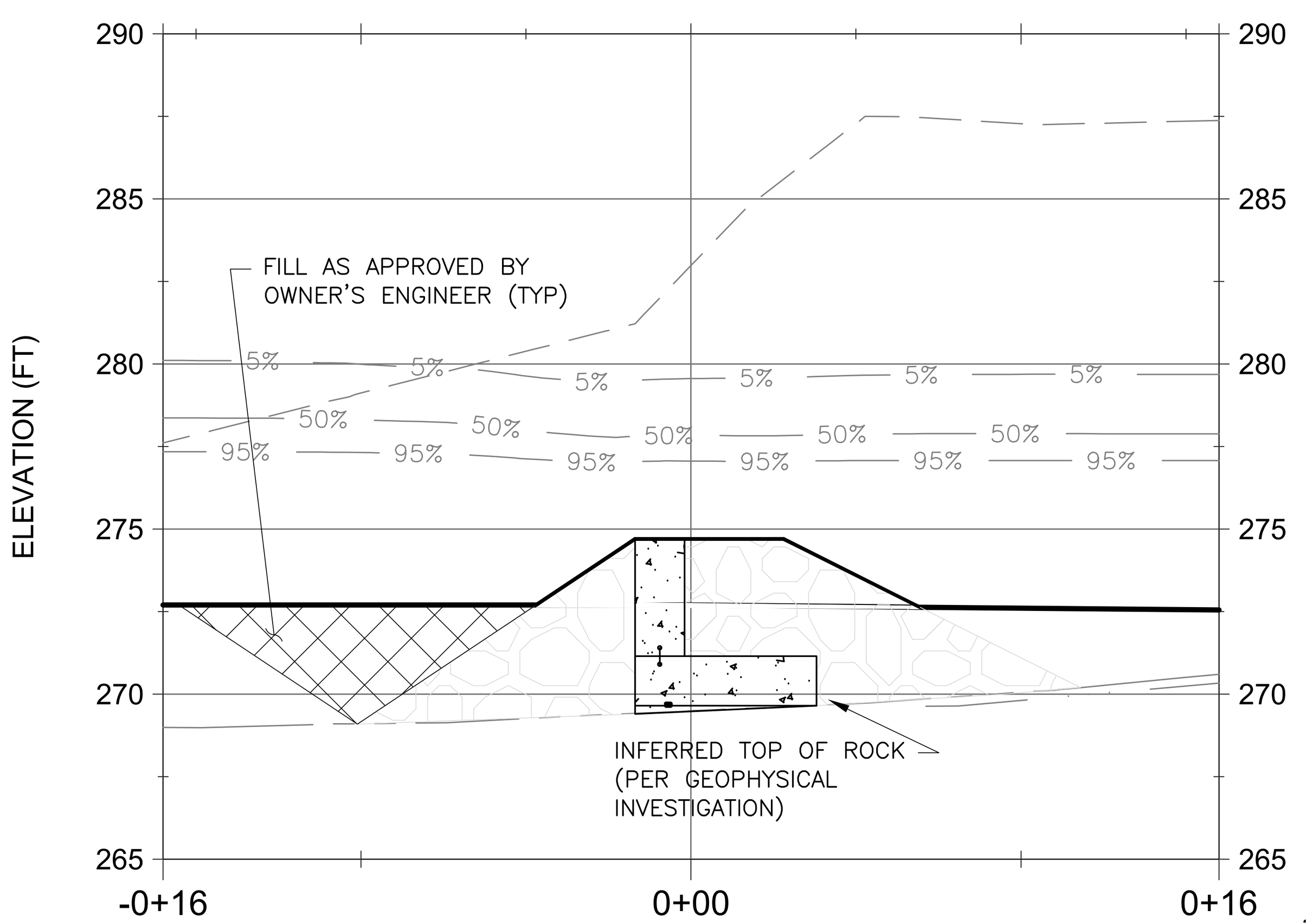
10 0 10 20
SCALE IN FEET

NOTE: RIPRAP ON WEIR 1 OMITTED FOR CLARITY OF OTHER ITEMS

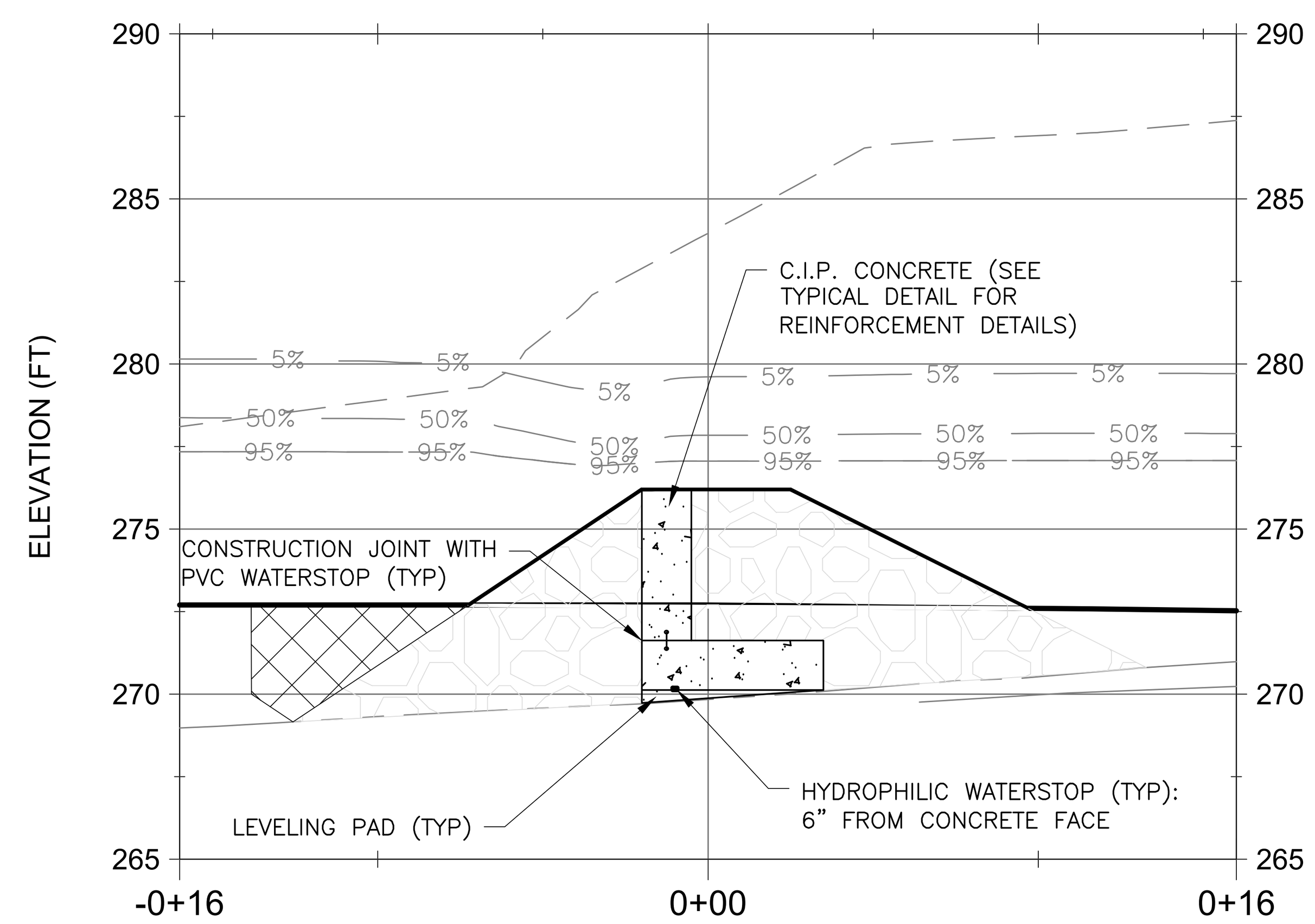
WEIR 1 TYPICAL DETAIL NOTES:
1. CONFIRM BEDROCK FOUNDATION IS ACCEPTABLE TO ENGINEER PRIOR TO DOWELING OR SETTING FORMS. BEDROCK IS ANTICIPATED TO SLOPE ALONG SLAB. SLAB THICKNESS SHOWN IS MINIMUM ACCEPTABLE ALONG BASE OF WEIR; INSTALL LEVELING PAD AS REQUIRED TO MEET DESIGN REQUIREMENTS AFTER PREPARING BEDROCK SURFACE TO ENGINEER SATISFACTION.
2. FLASHBOARD PINS TO BE SUPPLIED BY OWNER FOR FUTURE USE (DO NOT INSTALL DURING CONSTRUCTION). FLASHBOARD PINS DESIGNED TO BE A36 1.5" DIAMETER STEEL PINS WITH MAXIMUM ELEVATION OF 277.2' AND ARE ONLY FOR USE DURING MAINTENANCE DRAWDOWN OF HEADPOND FOR PERIODIC MAINTENANCE OF THE FISHWAY.



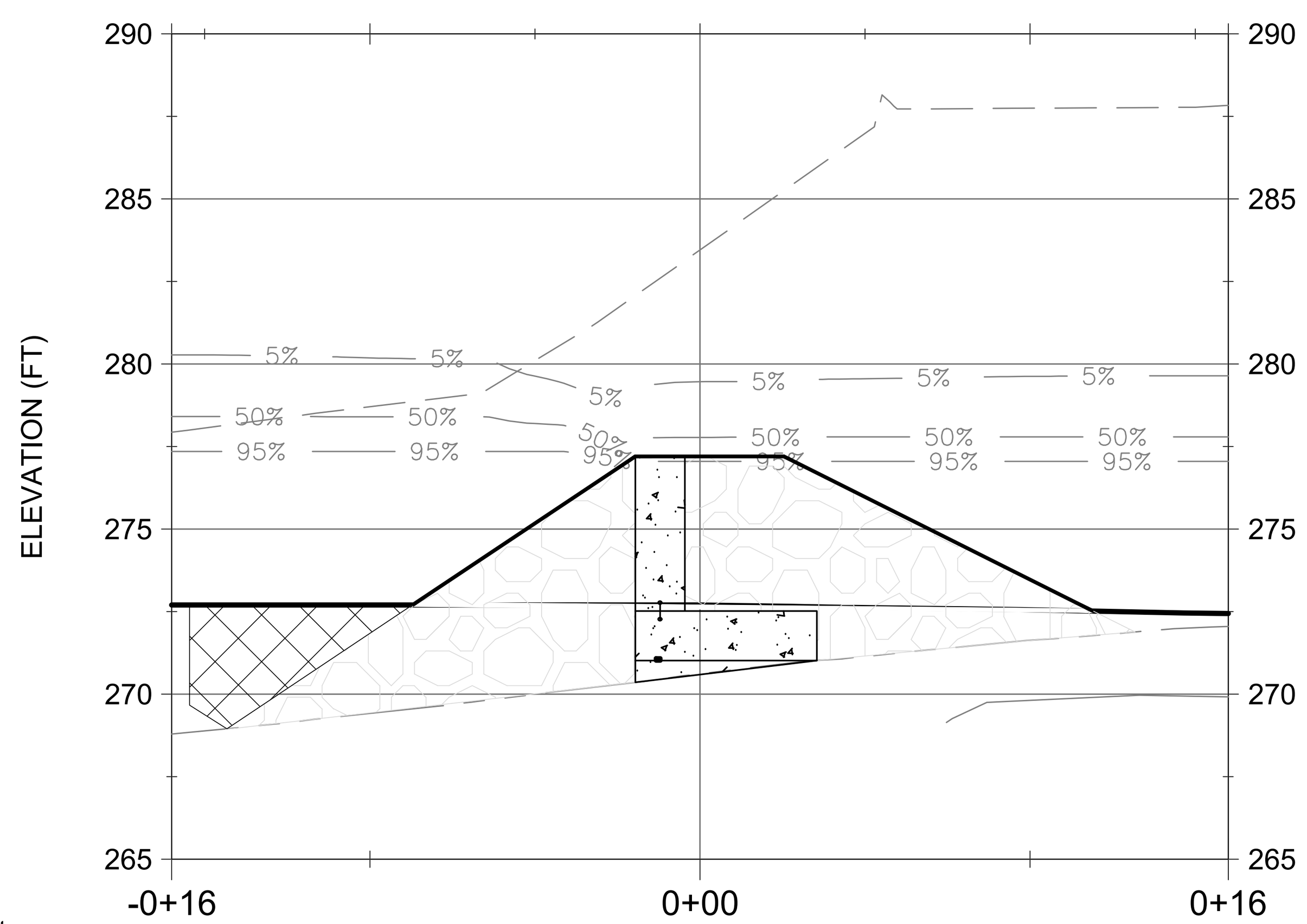
WEIR 1 TYPICAL DETAIL
1" = 2'



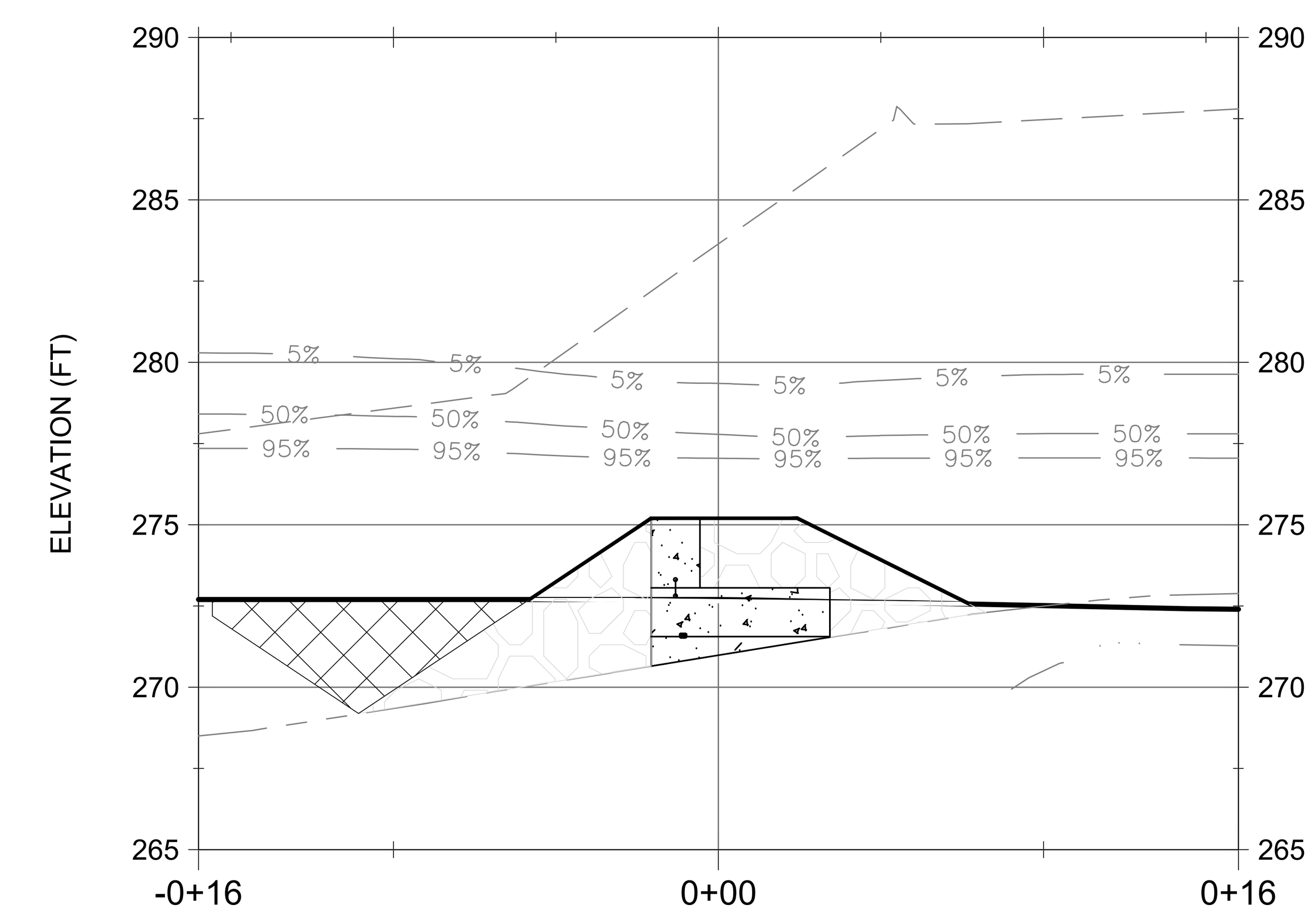
SECTION N
1" = 5'



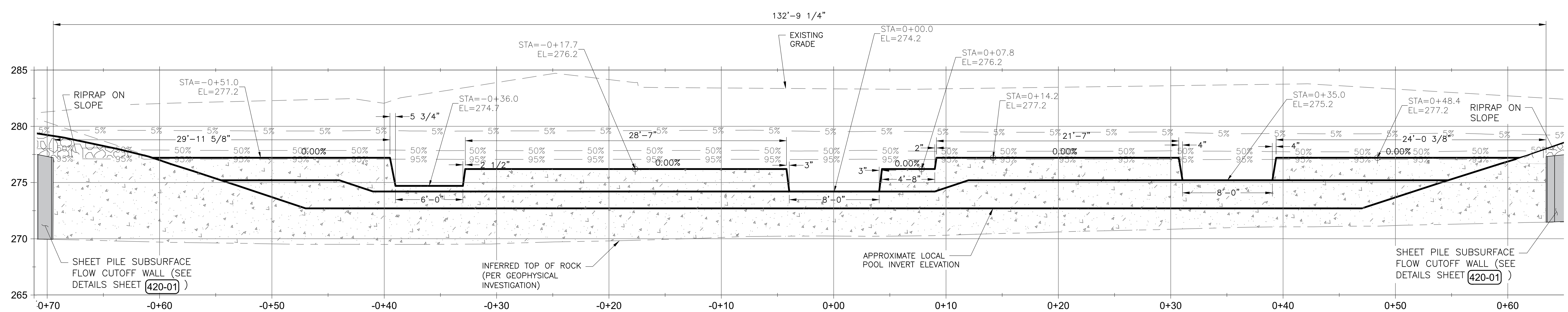
SECTION P
1" = 5'



SECTION Q
1" = 5'



SECTION R
1" = 5'



WEIR 1 SECTION A / 03
1" = 5'

5 0 5 10
SCALE IN FEET

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
- ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS
- 5% 5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 50% 50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 95% 95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 100YR 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

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COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS SECTIONS - WEIR 1

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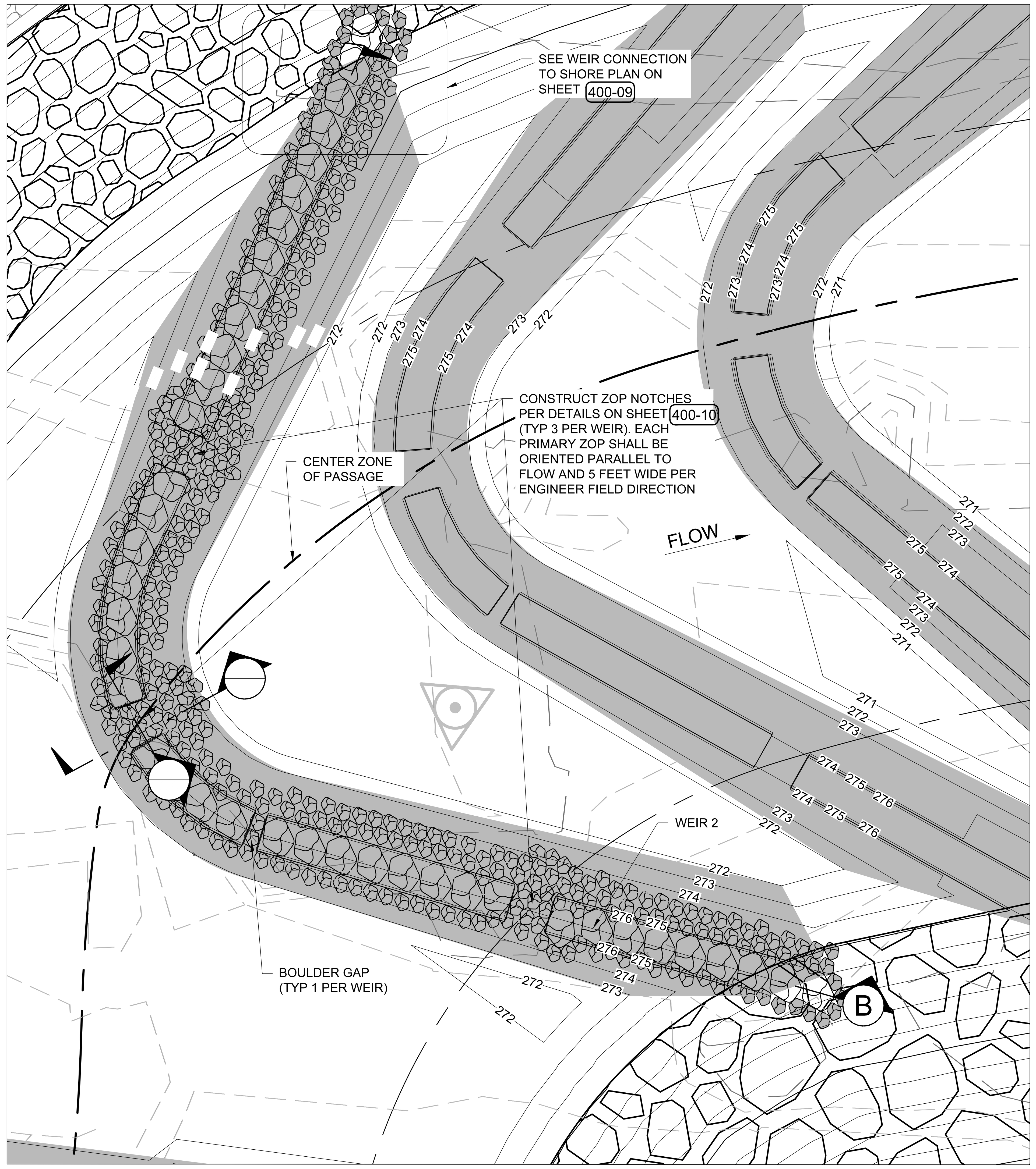
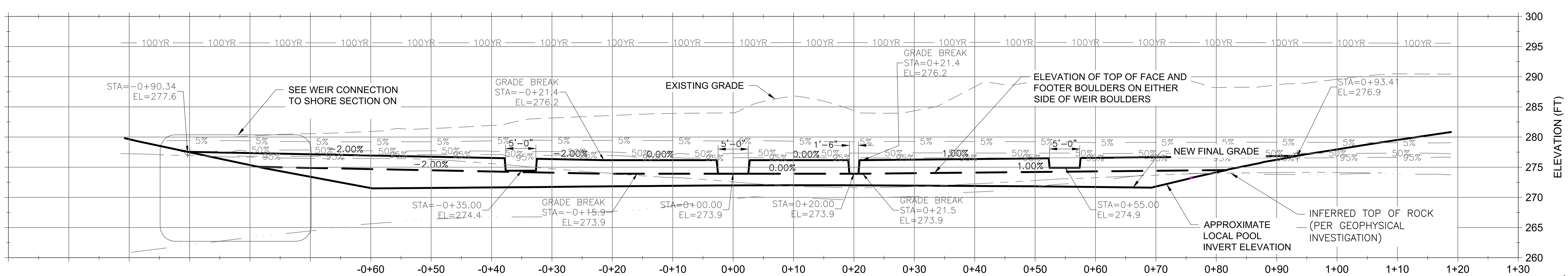
Project No.	Date Revised	Drawing No.
4214-017	05/22/23	400-07

WEIR 2 NOTES:
1. BOULDERS OMITTED ON WEIRS OTHER THAN WEIR 2 FOR CLARITY
2. BOULDER SHOWN TO GRAPHICALLY INDICATE GENERAL ARRANGEMENT OF FACE, WEIR, AND FOOTER BOULDERS, BUT INSTALLATION SHALL REQUIRE ALL BOULDERS TO BE CLOSELY ABUTTING (E.G., FLAT FACES OF BOULDER RESTING AGAINST ABUTTING BOULDER), SO THAT EACH BOULDER HELPS STABILIZE THOSE AROUND IT, PER ENGINEER FIELD DIRECTION.



PLAN

1" = 10'



WEIR 2 SECTION B/03

1" = 10'

POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)

ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS

5% / 50% / 95% / 100YR

100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

10 0 10 20
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-08

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - WEIR 2
(TYP WEIR 2-12)

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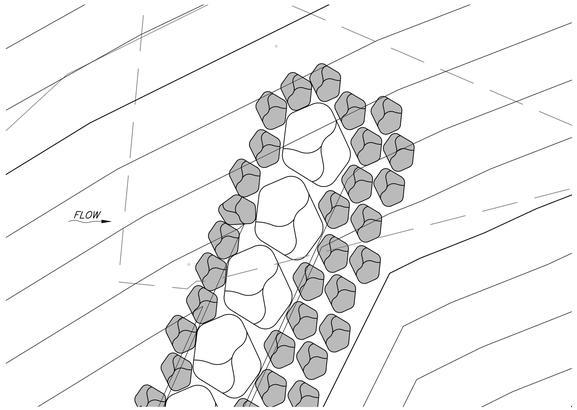
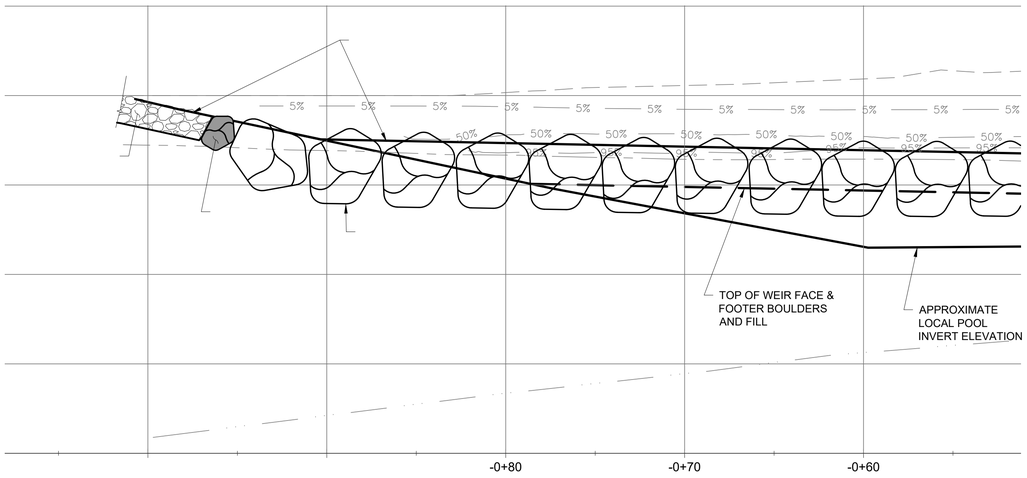


TYPICAL WEIR CONNECTION TO SHORE PLAN

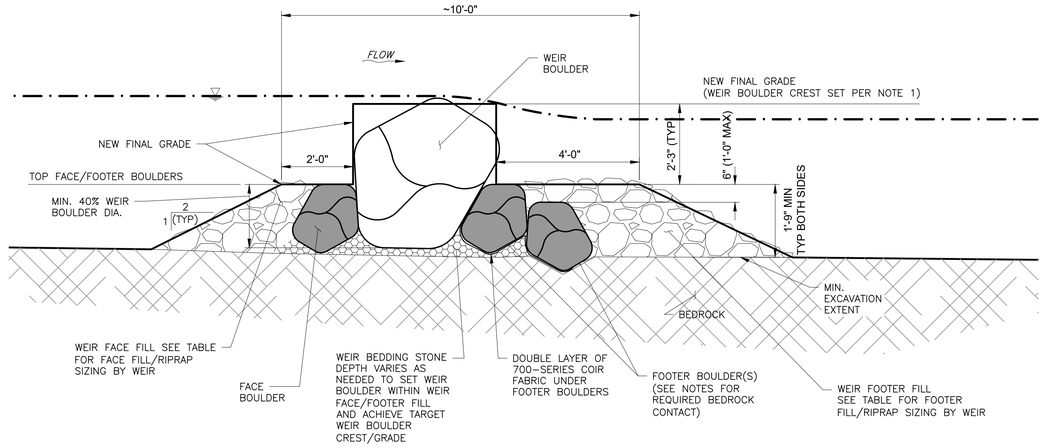
NOTE: RIPRAP OMITTED FOR CLARITY OF OTHER ITEMS.



TYPICAL WEIR CONNECTION TO SHORE SECTION

TOPS OF WEIR BOULDERS SHALL BE LOCATED ABOVE THE NEW FINAL GRADE TO ENSURE A HYDRAULICALLY EFFECTIVE WEIR ELEVATION EQUIVALENT TO THAT OF THE NEW FINAL GRADE (E.G., LENGTH OF BOULDER ABOVE NEW FINAL GRADE SHALL BE SIMILAR IN CROSS SECTION TO THAT OF THE GAP BETWEEN BOULDERS

BEDROCK, BEDDING STONE AND RIPRAP OMITTED FROM DETAILS FOR CLARITY OF OTHER ITEMS.
STATIONING SHOWN FOR WEIR 2. STATIONING OF OTHER WEIRS WILL VARY.
ONE SINGLE WEIR BOULDER SHALL BE LOCATED ON SIDE SLOPE OF NLF TO HELP PREVENT DISPLACEMENT OF RIPRAP IN THIS AREA. THAT WEIR BOULDER SHALL BE SURROUNDED BY FACE BOULDERS.



TYPICAL WEIR SECTION (WEIRS 2 THROUGH 12)

1" = 2'-0"

TYPICAL WEIR SECTION NOTES:

1. TOP OF WEIR BOULDERS SHALL BE LOCATED ABOVE THE NEW FINAL GRADE TO ENSURE A HYDRAULICALLY EFFECTIVE WEIR ELEVATION EQUIVALENT TO THAT OF THE NEW FINAL GRADE (E.G., LENGTH OF BOULDER ABOVE NEW FINAL GRADE SHALL BE SIMILAR IN CROSS SECTION TO THAT OF THE GAP BETWEEN BOULDERS BELOW THE NEW FINAL GRADE).
2. SECOND FOOTER BOULDER CAN BE ELIMINATED IF CLOSER FOOTER BOULDER IS LARGE ENOUGH TO PROVIDE MINIMUM EMBEDMENT FOR THE WEIR BOULDER AND FIRM CONTACT WITH THE BEDROCK UNDER THE WEIR (E.G., SET IN NOTCH OR GOOVE IN BEDROCK). WHERE FIRM CONTACT WITH BEDROCK CAN NOT BE MADE WITH ONE FOOTER BOULDER, TWO FOOTER BOULDERS SHALL BE USED, WITH THE SECOND FIRMLY IN CONTACT WITH BEDROCK. IN EITHER CASE, THE OVERALL WEIR DIMENSIONS SHALL REMAIN THE SAME.

WEIR FACE FILL / FOOTER FILL SIZING		
WEIR NO.	WEIR FACE FILL SIZE	WEIR FOOTER FILL SIZE
2	D50 = 15"	D50 = 15"
3-12	D50 = 12"	D50 = 12"

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
- ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS
- 5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

4 0 4 8
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968
5/10/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
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Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised
4214-017	05/22/23

Drawing No. 400-09

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - WEIR 2
(TYP WEIR 2-12)

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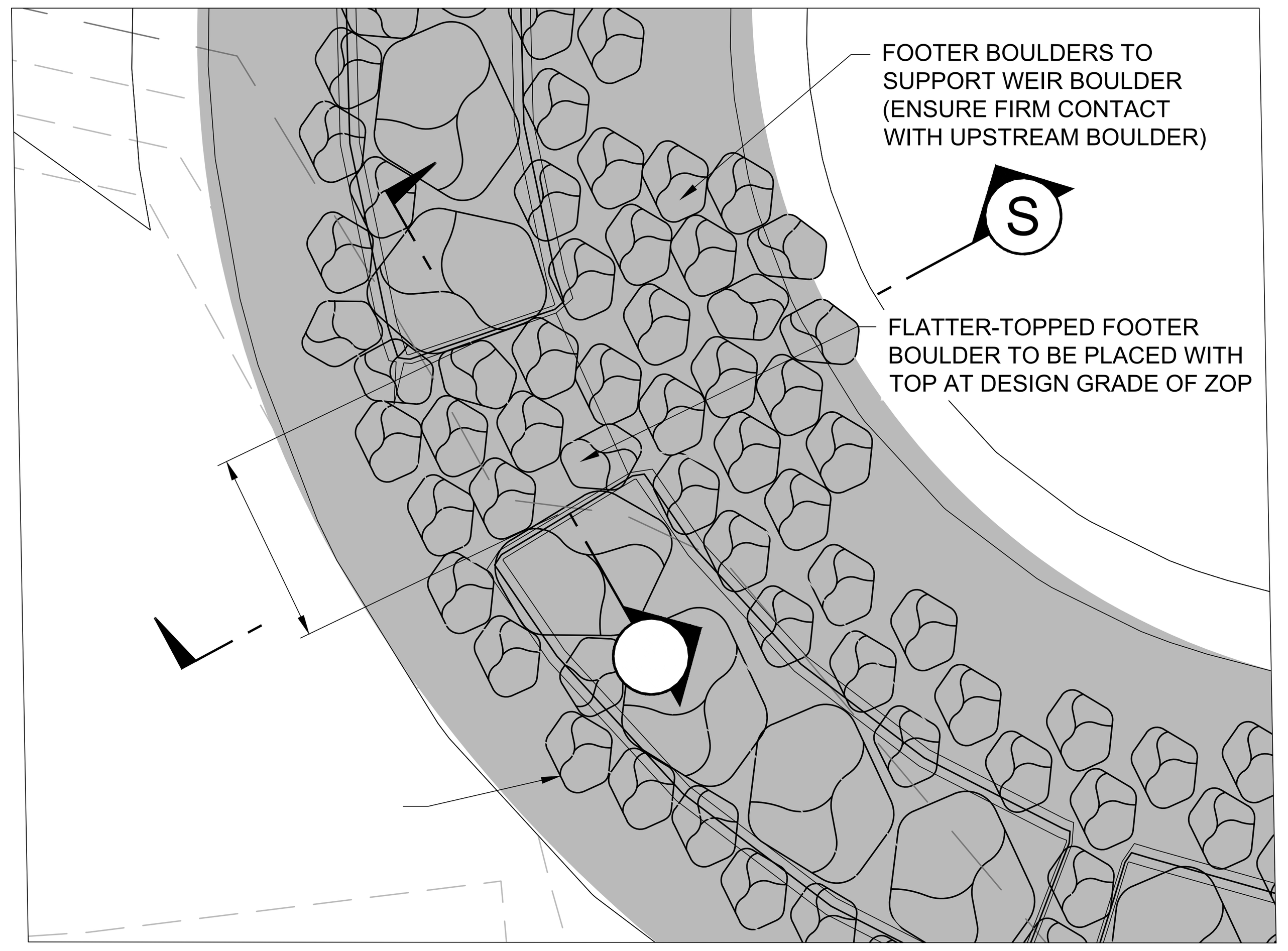
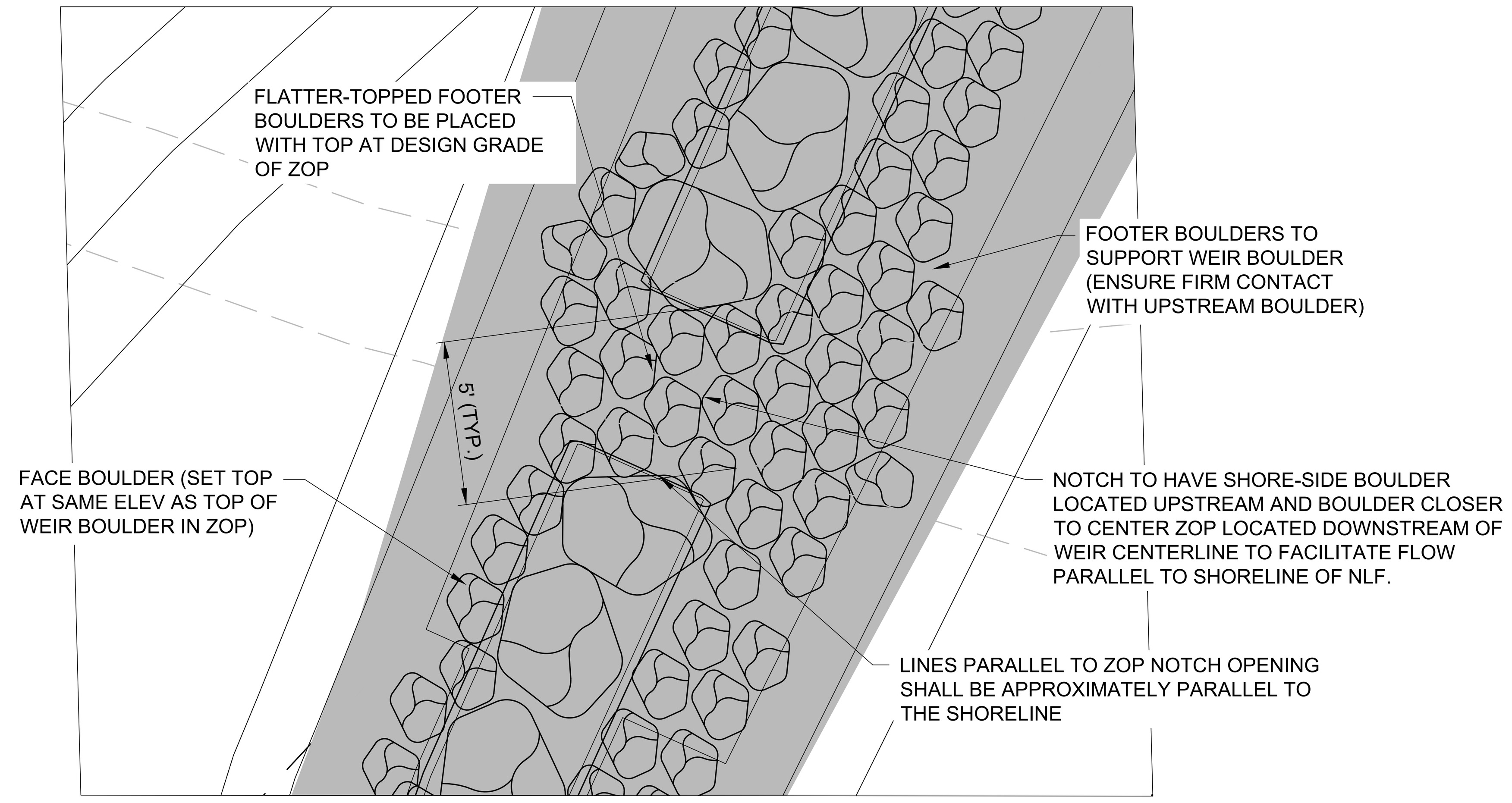
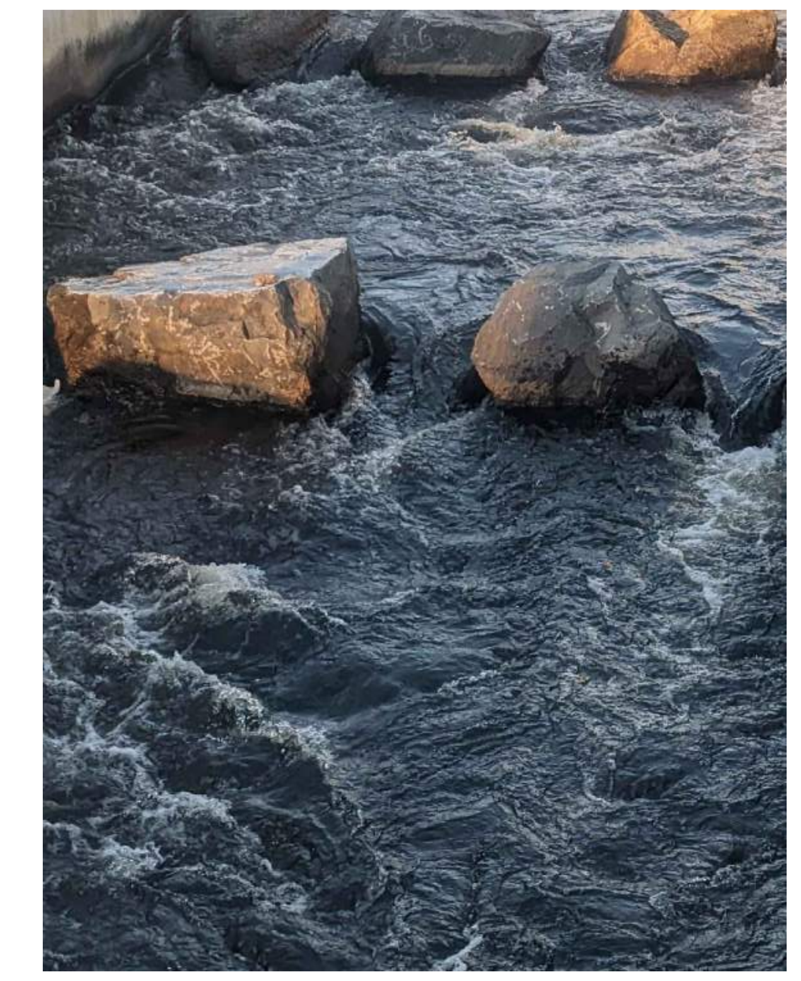


CENTER ZOP PLAN VIEW TYPICAL DETAIL



EXTERIOR ZOP PLAN VIEW TYPICAL DETAIL

1" = 4'



DESIRED ZOP CONDITIONS PHOTO

1" = 4'

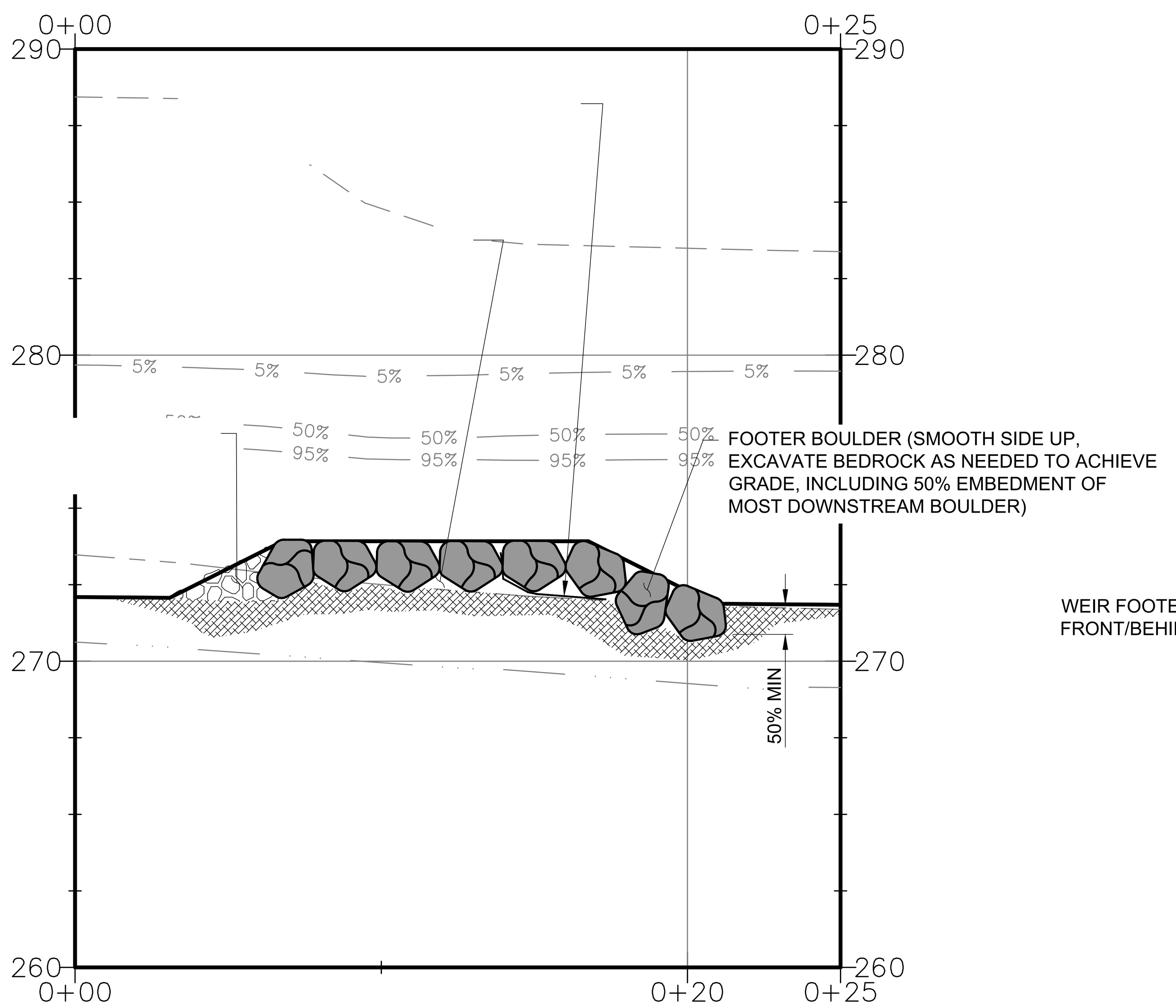
ZOP OPENING SHALL BE ORIENTED PARALLEL TO SHORELINE OF NLF AND ORIENTED TO DIRECT WATER TO NEXT DOWNSTREAM ZOP PER ENGINEER

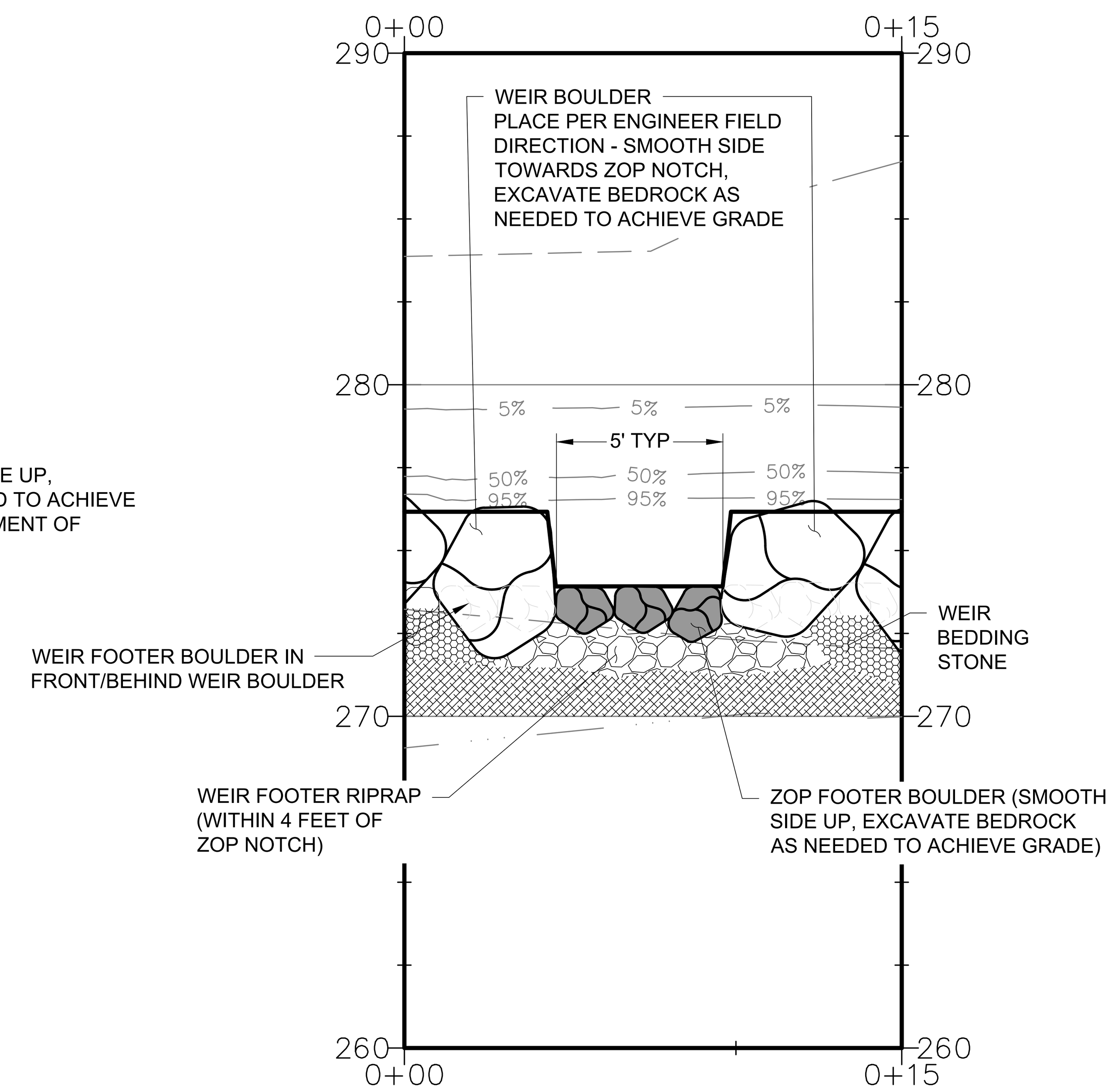
MINIMIZE USE OF BOULDERS WITH ANGULAR PROTRUSIONS INTO THE ZOP ON BOULDERS THAT FORM THE SIDES OF THE ZOP NOTCH. GOAL IS A SMOOTH TRANSITION OF WATER THROUGH THE NOTCH TO MAINTAIN

FOR BOULDERS USED AT ZONE OF PASSAGE NOTCHES, ORIENT BOULDERS TO BE GENERALLY WIDER AT THE UPSTREAM END OF THE ZONE OF PASSAGE AND NARROWER AT THE DOWNSTREAM END OF THE ZONE OF PASSAGE, ESSENTIALLY FUNNELING WATER INTO THE ZONE OF PASSAGE WHILE STILL MEETING THE AVERAGE NOTCH WIDTHS REQUIRED BY THE PROJECT.

NOTES:
1. INTERIOR ZOP TO BE SIMILAR, BUT MIRRORED, WITH OFFSET BOULDERS PLACED TO CREATE NOTCH OPENING PARALLEL TO PRIMARY DIRECTION OF FLOW (PARALLEL TO SHORES OF NLF)
2. FOR BOULDERS USED AT EXTERIOR AND INTERIOR ZONE OF PASSAGE NOTCHES, ORIENT BOULDERS TO BE GENERALLY WIDER AT THE UPSTREAM END OF THE ZONE OF PASSAGE AND NARROWER AT THE DOWNSTREAM END OF THE ZONE OF PASSAGE, ESSENTIALLY FUNNELING WATER INTO THE ZONE OF PASSAGE WHILE STILL MEETING THE AVERAGE NOTCH WIDTHS REQUIRED BY THE PROJECT.

NOTES:
1. STREAMING FLOW CONDITIONS ARE DESIRED ONCE THE FISHWAY HAS WATER FLOWING THROUGH IT.
2. FOR BOULDERS USED AT ZONE OF PASSAGE NOTCHES, ORIENT BOULDERS TO BE GENERALLY WIDER AT THE UPSTREAM END OF THE ZONE OF PASSAGE AND NARROWER AT THE DOWNSTREAM END OF THE ZONE OF PASSAGE, ESSENTIALLY FUNNELING WATER INTO THE ZONE OF PASSAGE WHILE STILL MEETING THE AVERAGE NOTCH WIDTHS REQUIRED BY THE PROJECT AND NOTCH ORIENTATION RELATIVE TO THE SHORELINE.





SECTION T 08

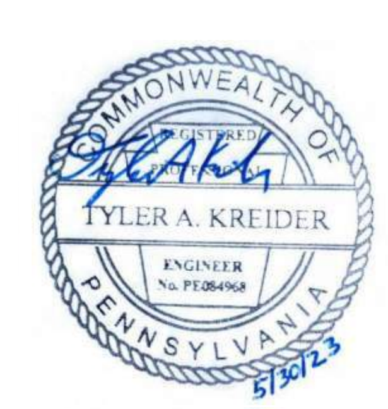
1" = 4'-0"

PROFILE LEGEND

Symbol	Description
— — —	EXISTING GRADE
— - —	INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- - -	POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
———	NEW FINAL GRADE
— — —	ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS
5% 5%	5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
50%	50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
95%	95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
100YR	100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

4 0 4 8

SCALE IN FEET



No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - WEIR 2
(TYP WEIR 2-12)

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-10

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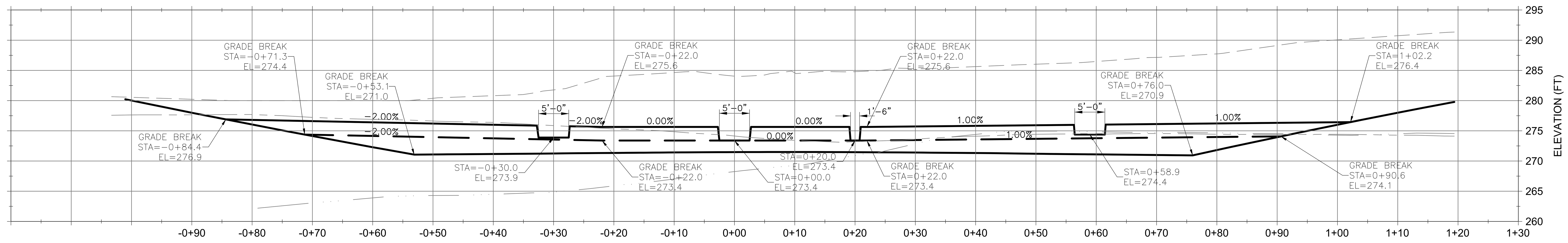
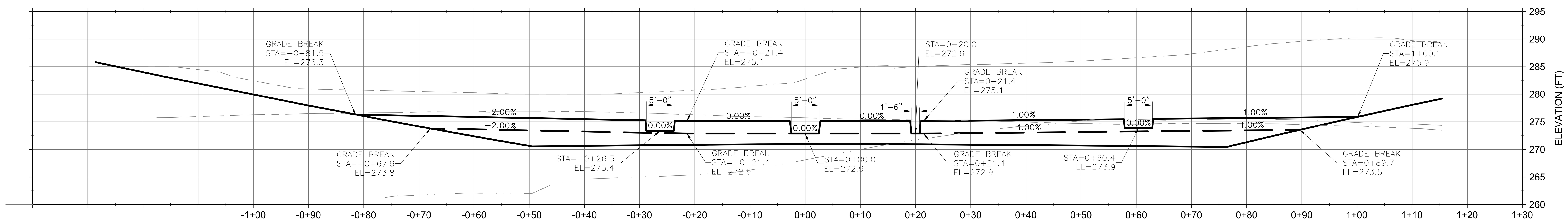


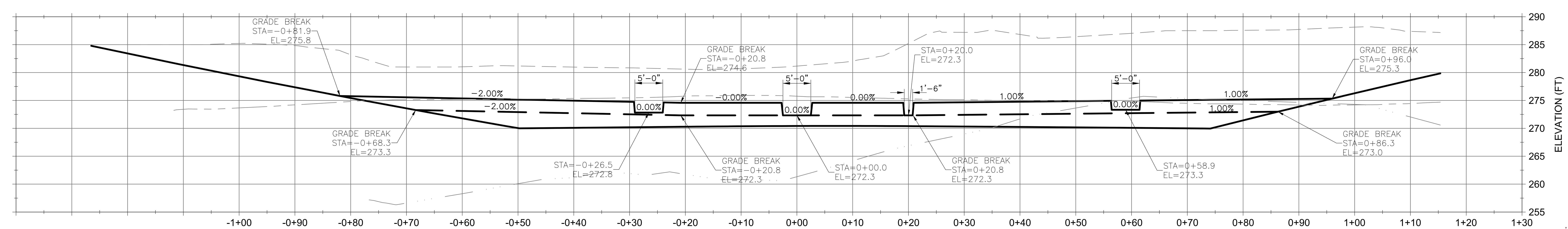
WEIR 3 SECTION C 03

1" = 10'



WEIR 4 SECTION D 03

1" = 10'



WEIR 5 SECTION E 03

1" = 10'

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
- ELEVATION OF TOP OF FACE AND FOOTER BOULDERS ON EITHER SIDE OF WEIR BOULDERS
- 5% — 5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 50% — 50% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 95% — 95% EXCD. FLOW (DURING FISH PASSAGE SEASON)
- 100YR — 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

10 0 10 20

SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA — TYLER A. KREIDER — ENGINEER

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
WEIRS 3, 4, AND 5

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

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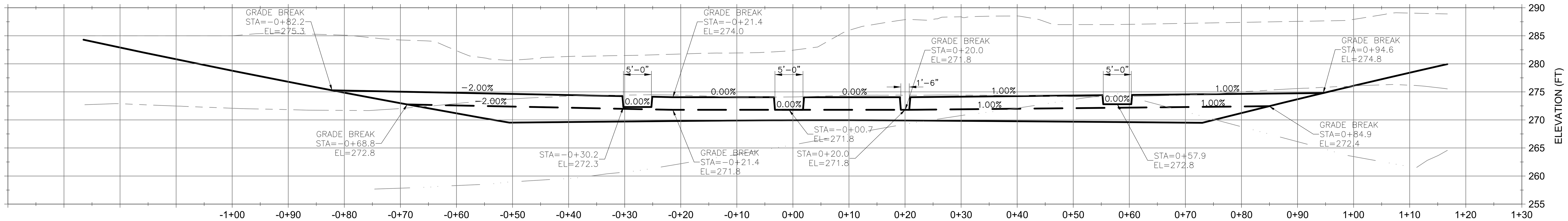
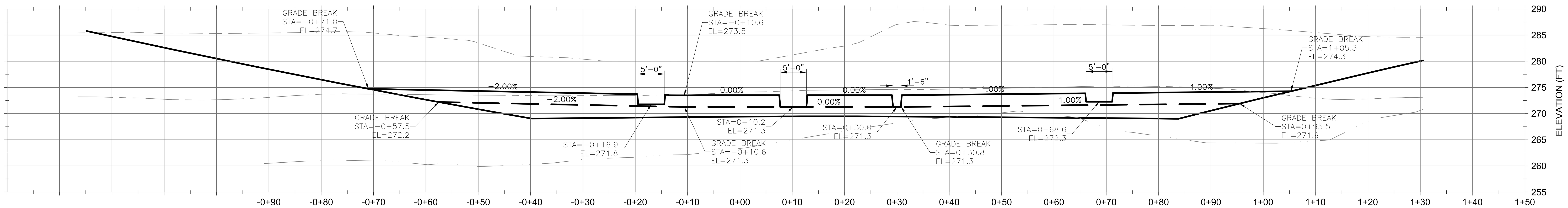
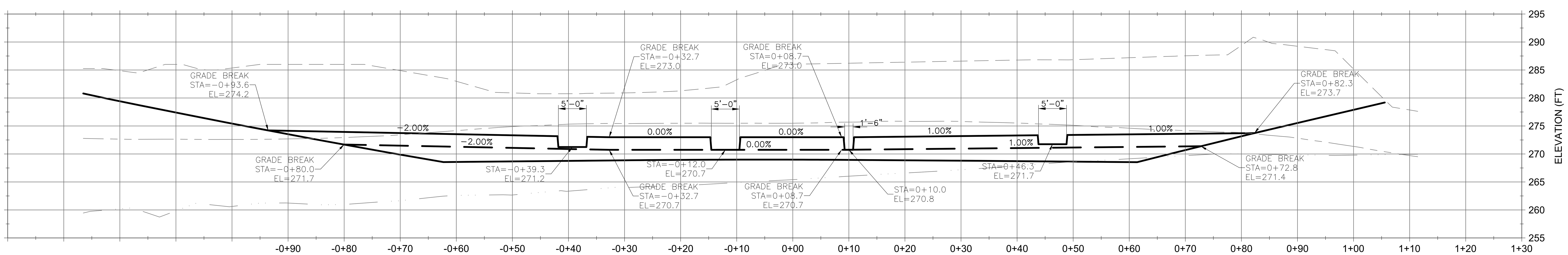
Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-11



WEIR 6 SECTION F 03
1" = 10'



WEIR 7 SECTION G 04
1" = 10'



WEIR 8 SECTION H 04
1" = 10'

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
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- 100YR — 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

10 0 10 20
SCALE IN FEET

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
WEIRS 6, 7, AND 8

No.	Revision	Date	Drawn	Checked
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A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/22/23

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GSM	SFG	TAK	4214-017	05/22/23	400-12

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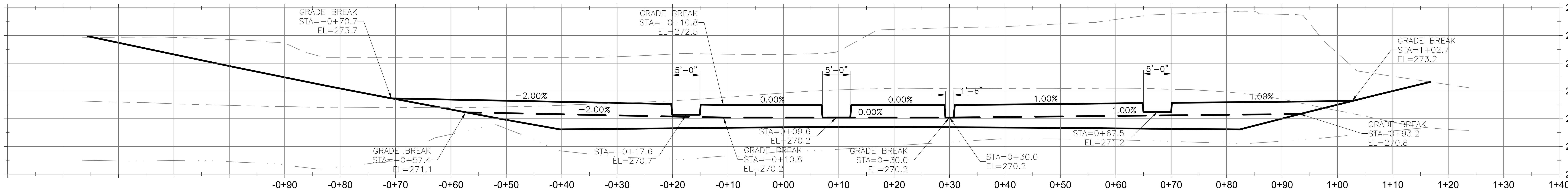
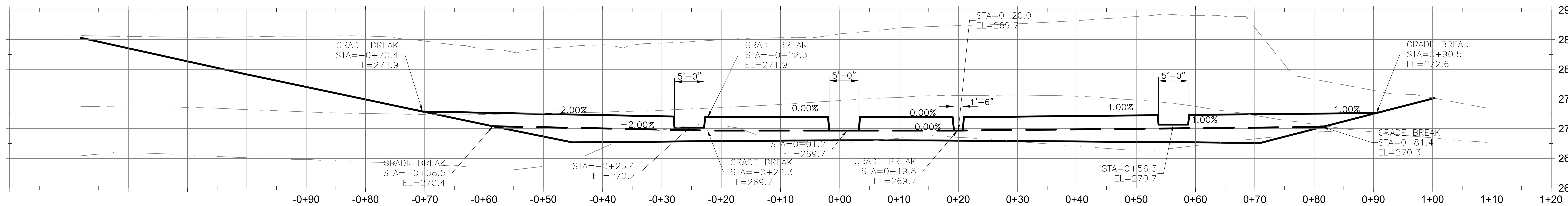
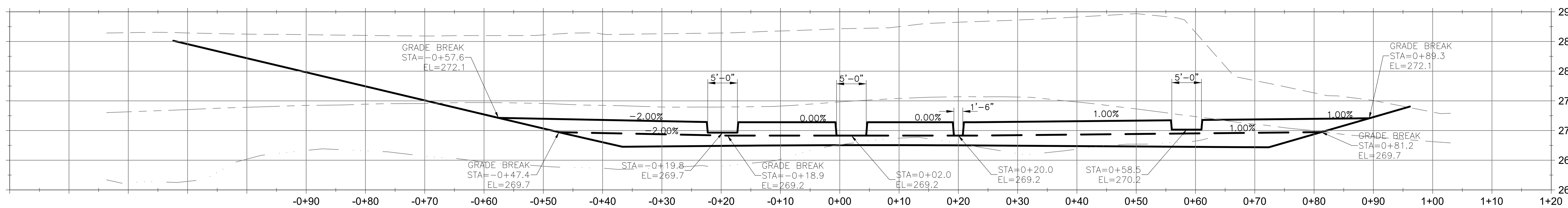


WEIR 9 SECTION (J / 04)
1" = 10'



WEIR 10 SECTION (K / 04)
1" = 10'



WEIR 11 SECTION (L / 04)
1" = 10'

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
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- 5% — 5% — 5% EXCD. FLOW (DURING FISH PASSAGE SEASON)
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- 100YR — 100-YEAR FLOOD REOCCURRENCE INTERVAL FLOW (725,000 CFS)

10 0 10 20
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	400-13

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
WEIRS 9, 10, AND 11

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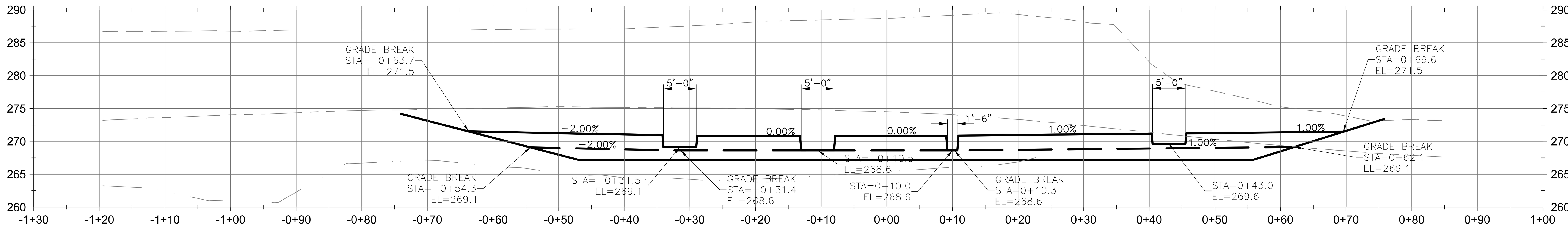
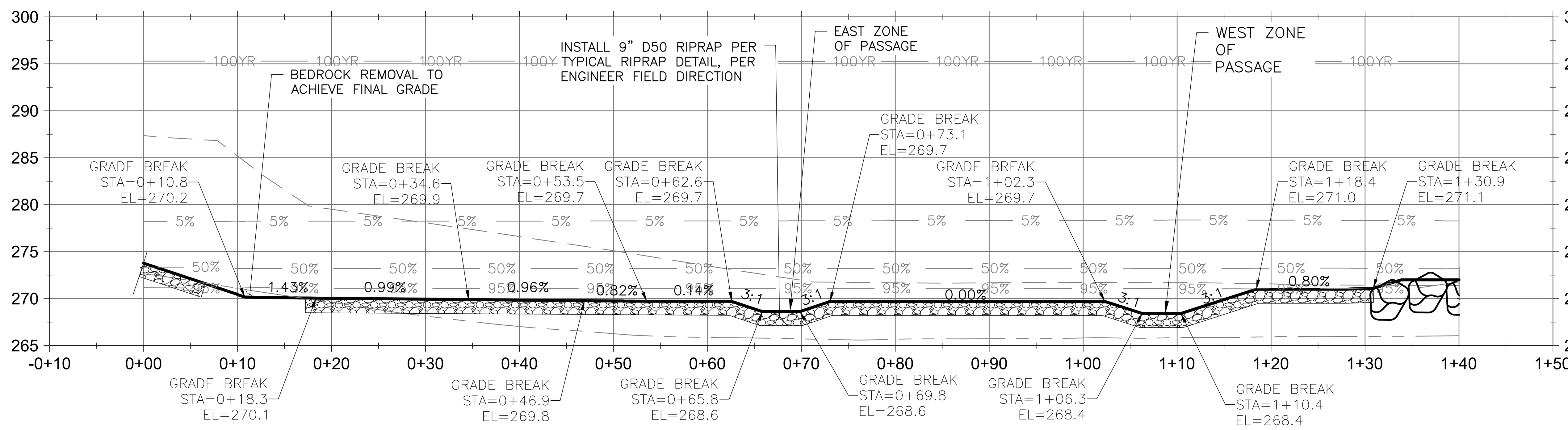
24x36 = FULL SCALE

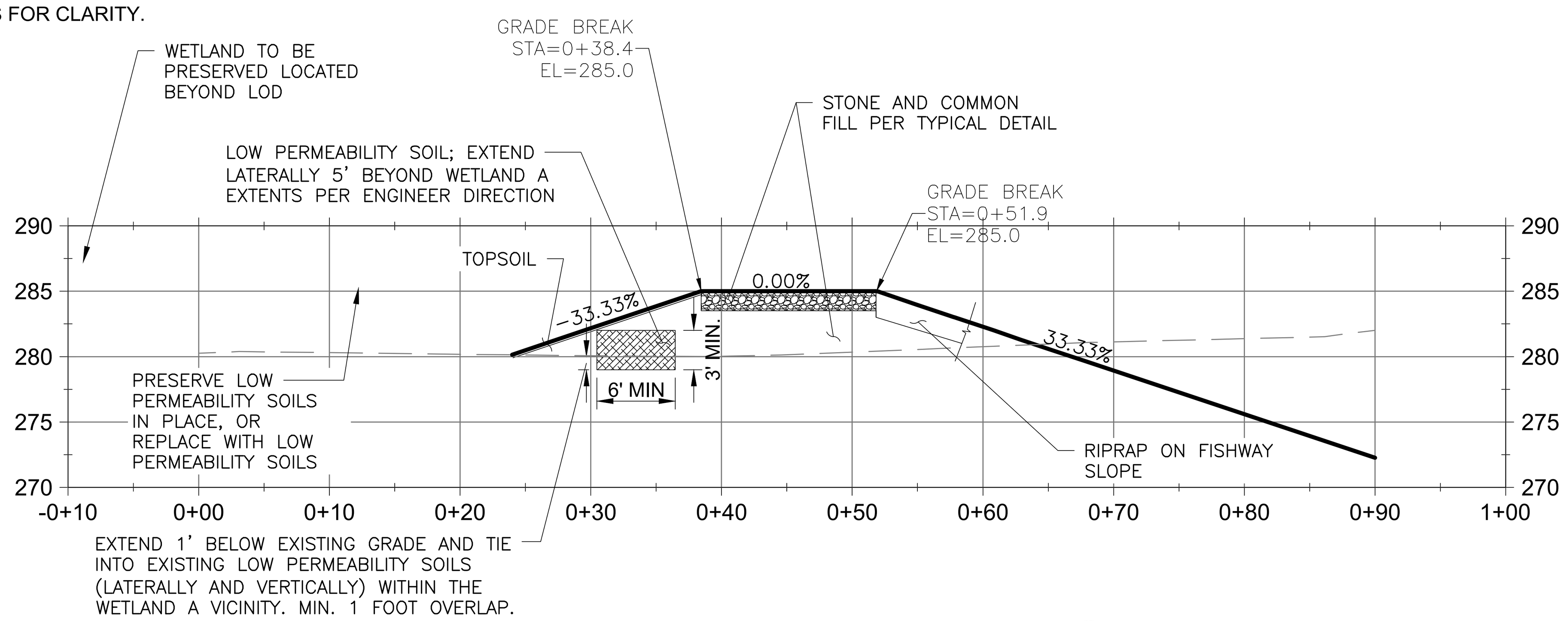


WEIR 12 SECTION (M/04)
1" = 10'

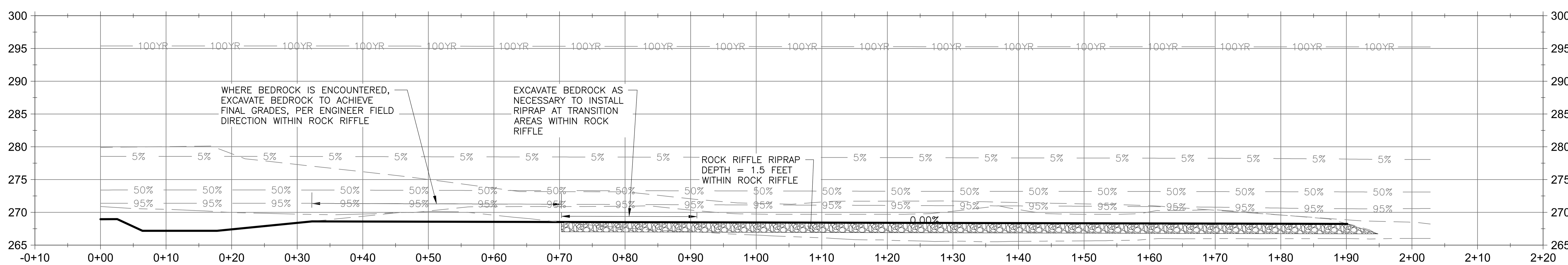
NOTES:
1. BOULDERS AND RIPRAP OMITTED ON WEIRS FOR CLARITY.



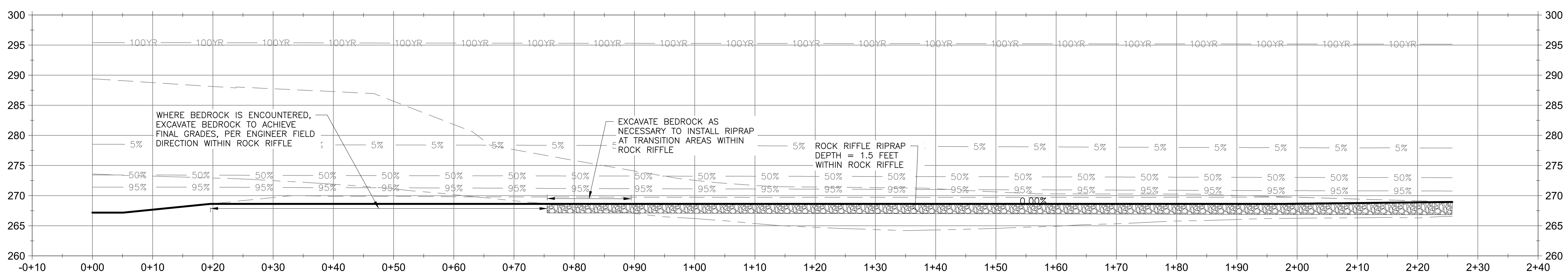
FISH PASSAGE ENTRY SECTION (2/05)
1" = 10'



ACCESS ROAD SECTION (1/03)
1" = 10'



WEST ZONE OF PASSAGE SECTION (3/05)
1" = 10'



EAST ZONE OF PASSAGE SECTION (4/05)
1" = 10'

PROFILE LEGEND

- EXISTING GRADE
- INFERRED TOP OF ROCK (PER GEOPHYSICAL INVESTIGATION)
- POTENTIAL BOTTOM LIMIT OF RIPPABLE ROCK (PER GEOPHYSICAL INVESTIGATION)
- NEW FINAL GRADE
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10 0 10 20
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

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YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - WEIR 12, ENTRANCE RIFFLE AND ACCESS ROAD BERM

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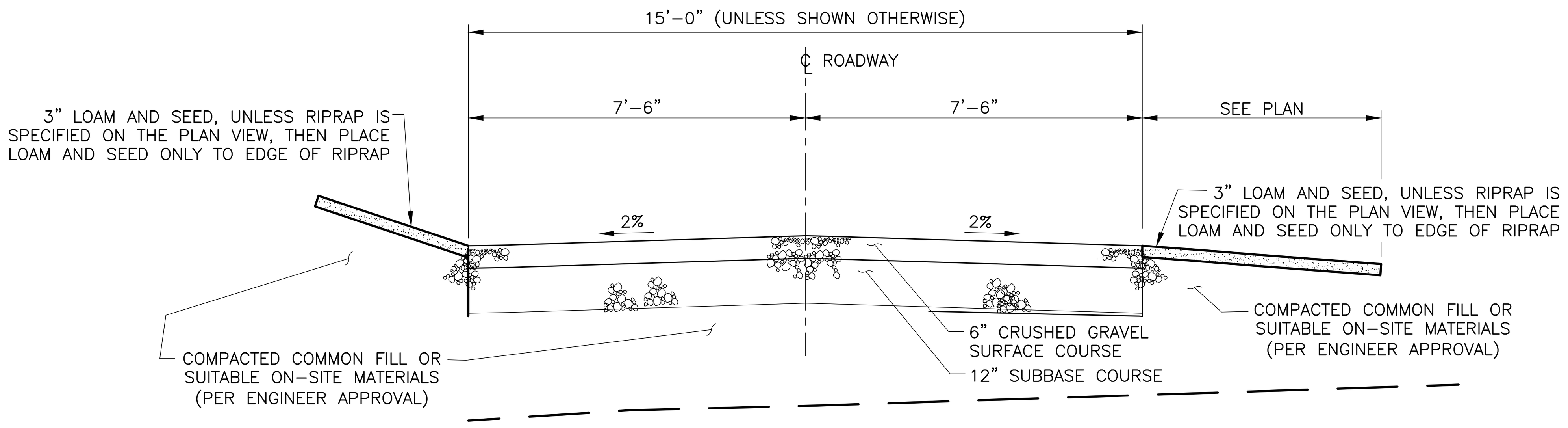
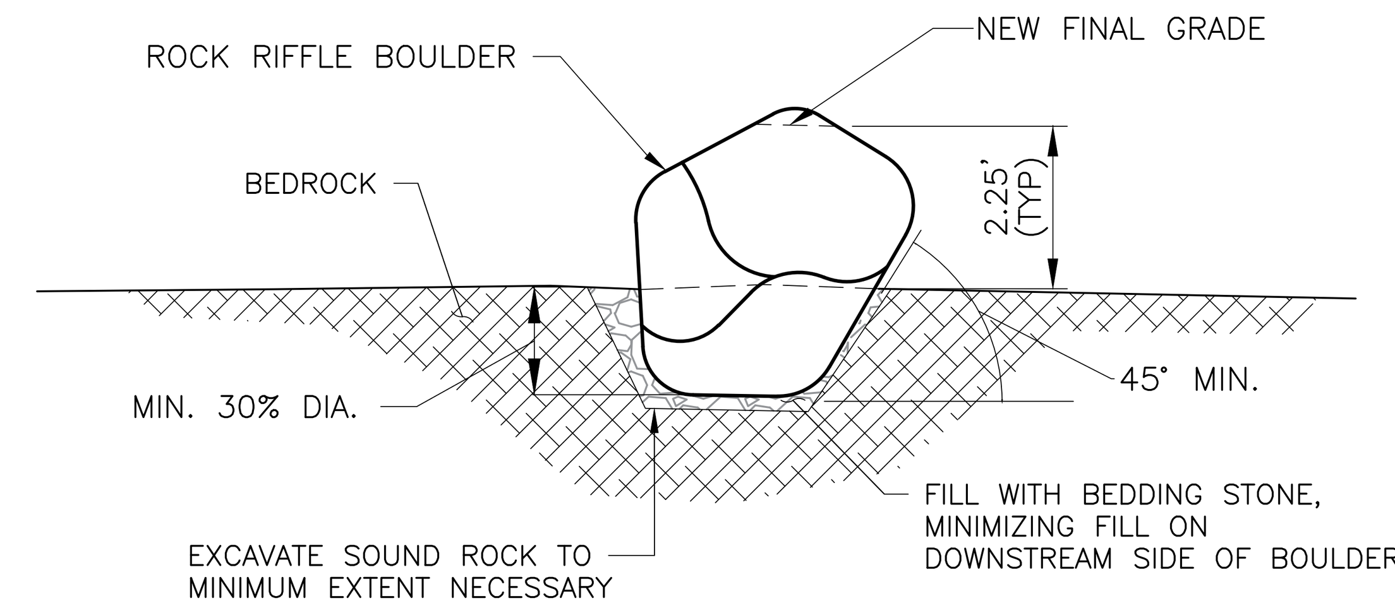
GSM	SFG	TAK	4214-017	05/22/23	400-14

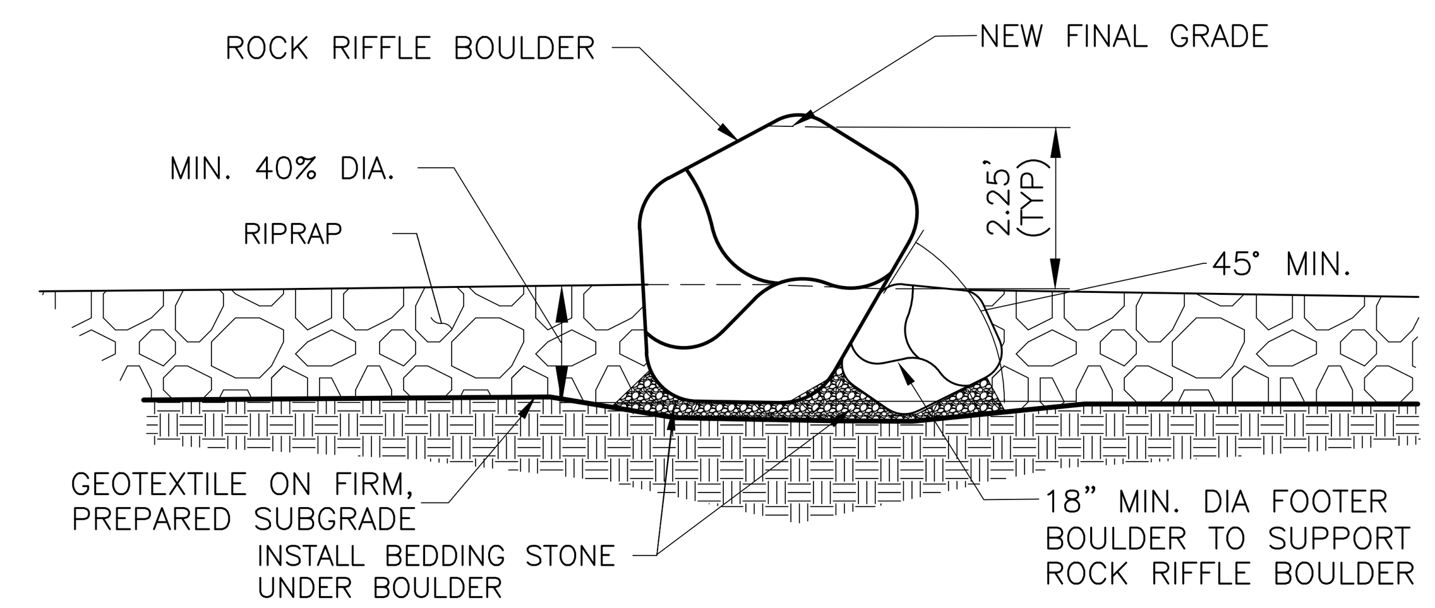
PRINTED May. 31, 2023 - 10:13 AM J:\4214\017\Drawings\CAD\4214017_400_14.dwg



TYPICAL PERMANENT GRAVEL ACCESS ROAD
3/8"= 1'-0"

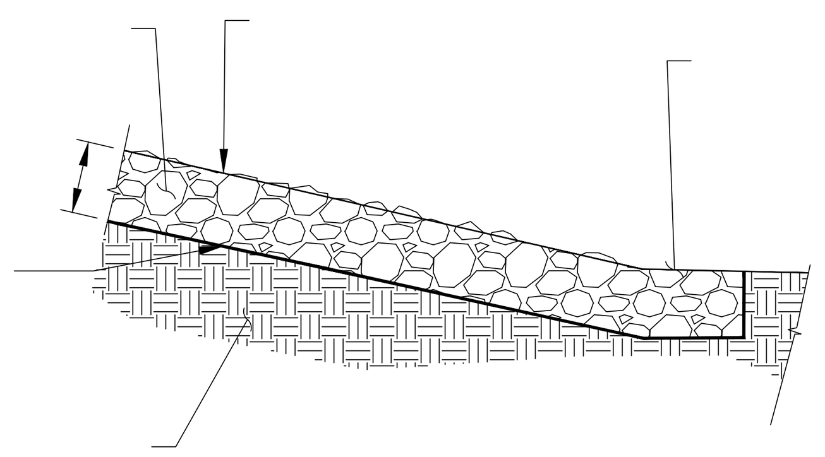


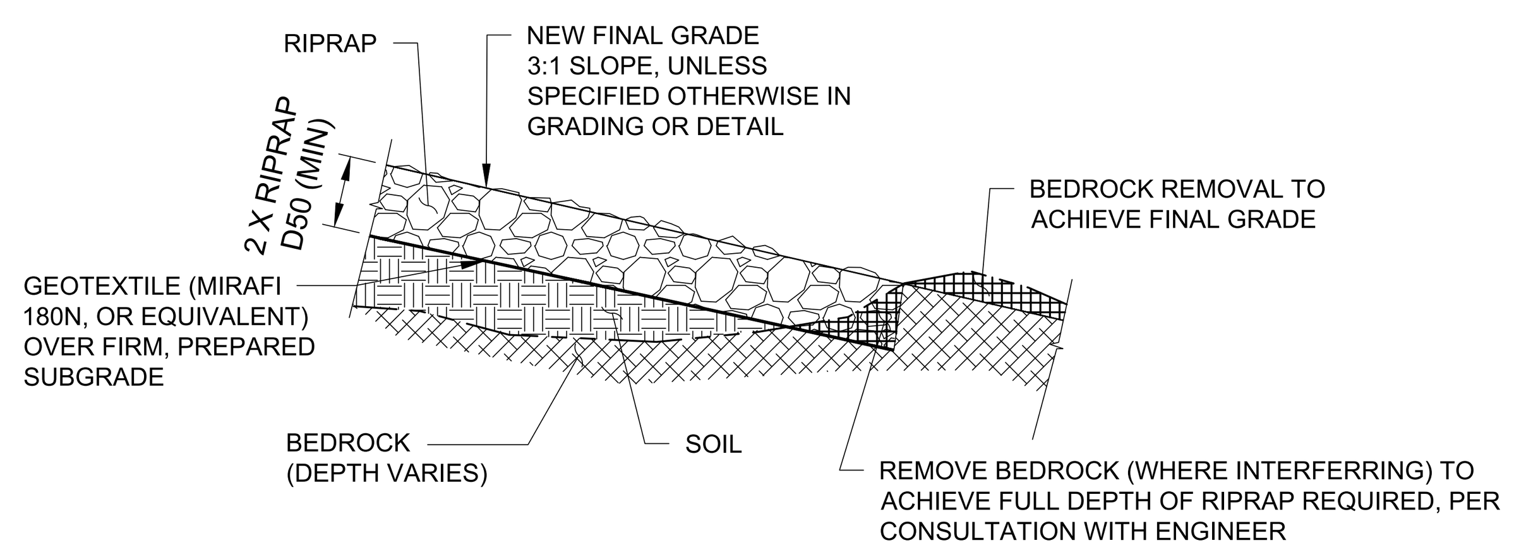
ROCK RIFFLE BOULDER IN BEDROCK DETAIL
3/8"= 1'-0"



ROCK RIFFLE BOULDER IN RIPRAP DETAIL
3/8"= 1'-0"

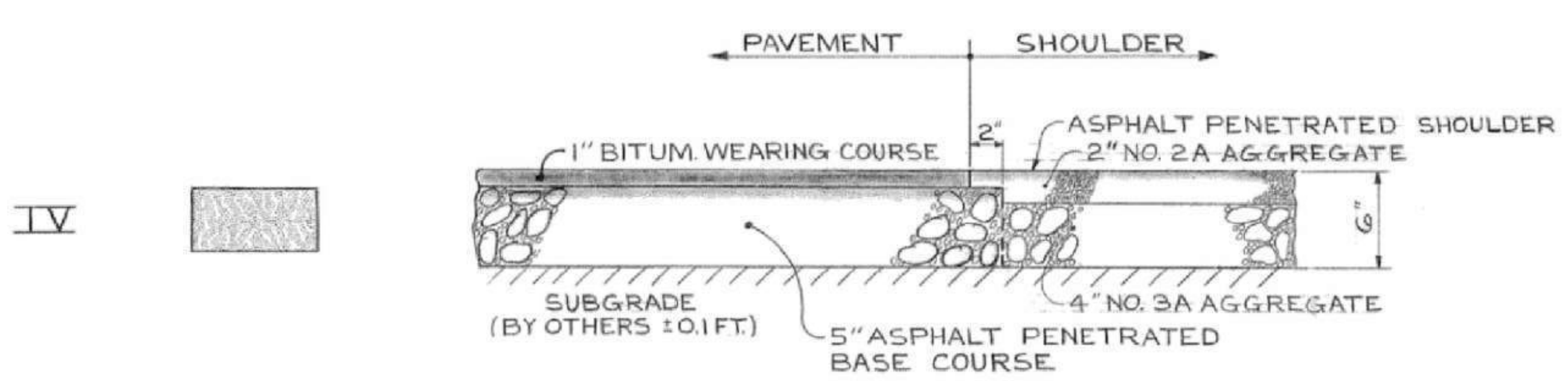
ROCK RIFFLE BOULDER NOTES:
1. TOP OF WEIR BOULDERS SHALL BE LOCATED ABOVE THE NEW FINAL GRADE TO ENSURE A HYDRAULICALLY EFFECTIVE BOULDER ELEVATION EQUIVALENT TO THAT OF RECTANGULAR BOULDER WITH CREST AT THE ELEVATION OF THE NEW FINAL GRADE (E.G., AMOUNT OF BOULDER ABOVE NEW FINAL GRADE SHALL BE SIMILAR IN CROSS SECTION TO THAT OF THE ROUNDED "SHOULDER" OF THE BOULDER BELOW THE NEW FINAL GRADE).
2. TYPE OF INSTALLATION SHALL DEPEND ON OWNER'S ENGINEER REVIEW OF SITE AFTER EXCAVATION TO NEAR FINAL GRADE AND WILL DEPEND ON FOUND ELEVATION OF BEDROCK. IF BEDROCK IS NOT PRESENT AT BOULDER LOCATION, PLACE ROCK RIFFLE BOULDER IN ACCORDANCE WITH "ROCK RIFFLE BOULDER IN RIPRAP DETAIL", OTHERWISE USE THE "ROCK RIFFLE BOULDER IN BEDROCK DETAIL".
3. EXCAVATE AS NECESSARY TO ACHIEVE FINAL GRADE AND MAINTAIN MINIMUM BOULDER SIZE.
4. BOULDERS SHALL BE STABLE AND BEDROCK OR A FOOTER BOULDER SHALL SUPPORT THE ROCK RIFFLE BOULDER ALONG THE MAJORITY OF THE BOULDER'S DOWNSTREAM FACE.



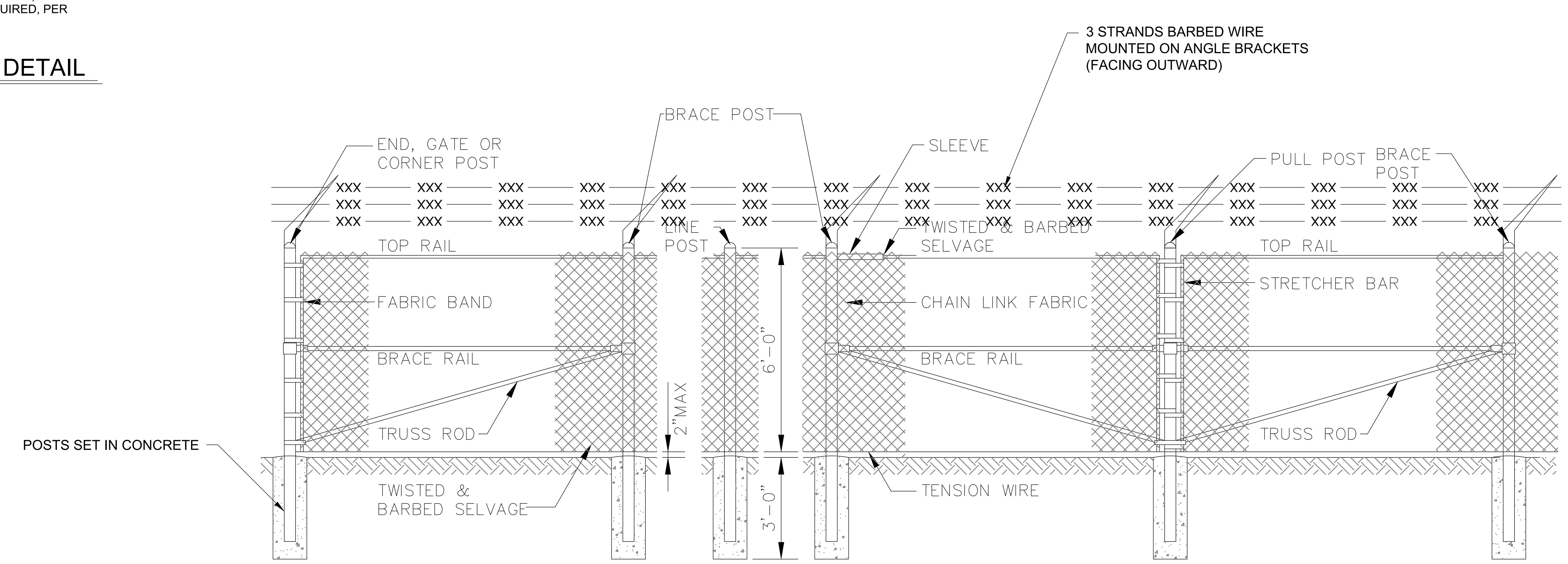


TYPICAL RIPRAP SLOPE ENDING IN BEDROCK DETAIL
N.T.S.

RIPRAP NOTES:
1. INSTALL 3 INCHES OF BEDDING STONE ON TOP OF GEOTEXTILE PRIOR TO PLACING RIPRAP.
2. CONSULT ENGINEER FOR DIRECTION WHERE BEDROCK AND RIPRAP MEET.
3. TIPS OF RIPRAP SHOULD PROTRUDE ABOVE THE NEW FINAL GRADE BY 0–4 INCHES.



TYPICAL TYPE IV PAVED ROAD SECTION



TYPICAL CHAIN LINK FENCE DETAIL

FENCING AND GATE NOTES:
1. FENCE SHALL HAVE TOP RAIL, BOTTOM TENSION WIRE, POSTS SET IN CONCRETE, AND TWISTED & BARBED SELVAGE ON TOP AND BOTTOM OF CHAINLINK FENCE; OTHERWISE, INSTALL FENCE PER MANUFACTURER'S RECOMMENDATIONS REGARDING POST SPACING, BRACING OF POST, POST SIZE, TENSION, ETC.
2. ALL CHAINLINK FENCING SHALL BE GALVANIZED, WITH COMPATIBLE MATERIALS USED IN OTHER COMPONENTS THAT HAVE SIMILAR DURABILITY.
3. INSTALL SECURITY GATE WITH 6–FEET TALL CHAINLINK FENCE WITH BARBED WIRE ON TOP, SIMILAR TO FENCING WITH THE FOLLOWING REQUIREMENTS:
   – MINIMUM CLEAR OPENING OF 18 FEET
   – LOCKABLE WITH STANDARD PADLOCK
   – MAXIMUM 3" CLEARANCE UNDER GATE WHEN CLOSED

2 0 2 4 6
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
DETAILS

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Project No.	Date Revised	Drawing No.
4214-017	05/22/23	400-15


CONFIRM STATION 0+00 LOCATION WITH ENGINEER PRIOR TO COMMENCING DEMOLITION
SCOUR RIPRAP
SAWF & NLF FLOW SEPARATION BERM
NEW CAST-IN-PLACE CONCRETE ABUTMENT
A 02
B 03
C 03
EXISTING MAIN DAM CREST EL. ~279.4'
NEW CAST-IN-PLACE CONCRETE APRON AND PRECAST BLOCKS. SEE DETAILS ON DRAWING 410-04
SLOPE
NEW CAST-IN-PLACE CONCRETE ABUTMENT
SEDIMENT ACCUMULATED UPSTREAM OF DAM, SEE GEOPHYSICAL REPORT FOR ESTIMATED DEPTH
90' SAWF
SUSQUEHANNA RIVER
NEW BOAT TIE-OFF POINT (TYP 4 NEAR SAWF) 18" HEAVY DUTY GALVANIZED CLEAT WITH (2) 3/4" DIAMETER HILTI KWIK GALVANIZED WEDGE BOLTS (MINIMUM EMBEDMENT OF 12")
40'
EXISTING MAIN DAM CREST EL. ~277'
0+00
0+10
0+20
0+30
0+40
0+50
0+60
0+70
0+80
0+90
1+00
1+10
1+20
1+30
1+40
279.3
276.4
279.0
10 0 10 20
SCALE IN FEET

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - SAWF

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No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	410-01

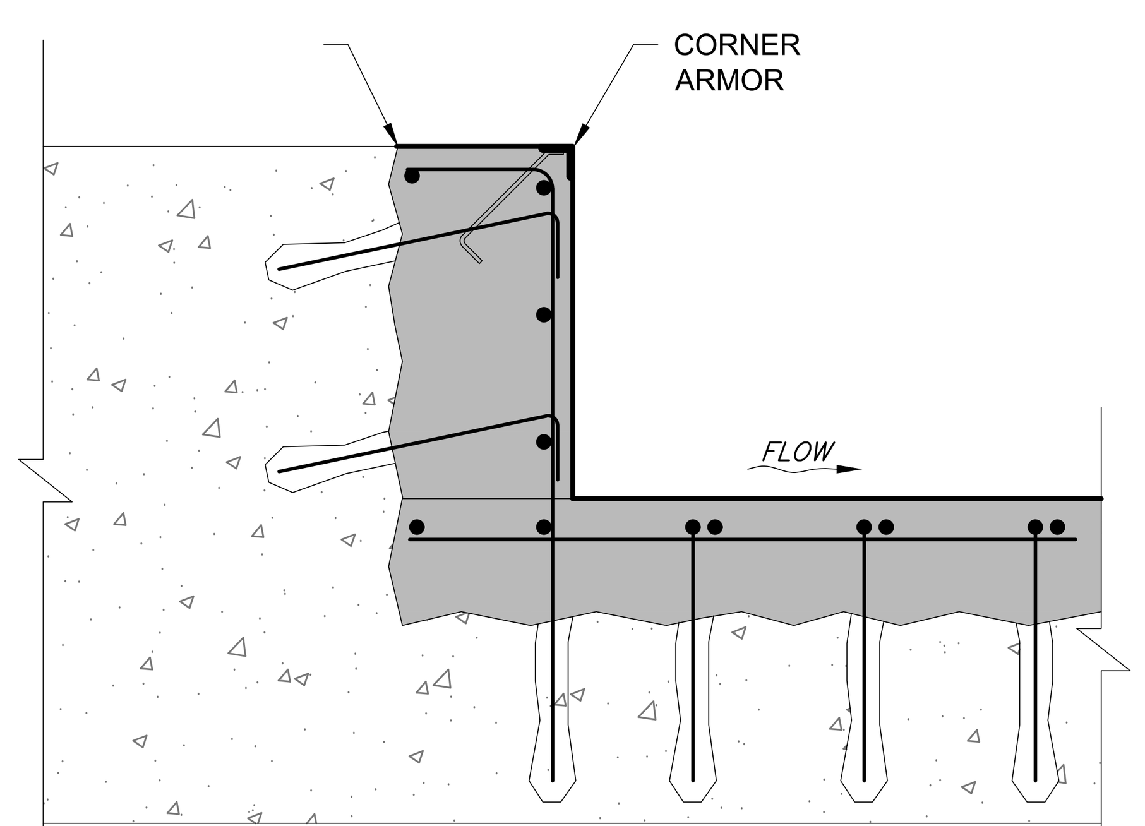
COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

SAWF OVERALL PLAN VIEW

1" = 3'

SAWF PROFILE A/01

1" = 3'



SAWCUT DETAIL A/01

No.	Revision	Date	Drawn	Checked
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YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
SAWF PLAN AND ELEVATION

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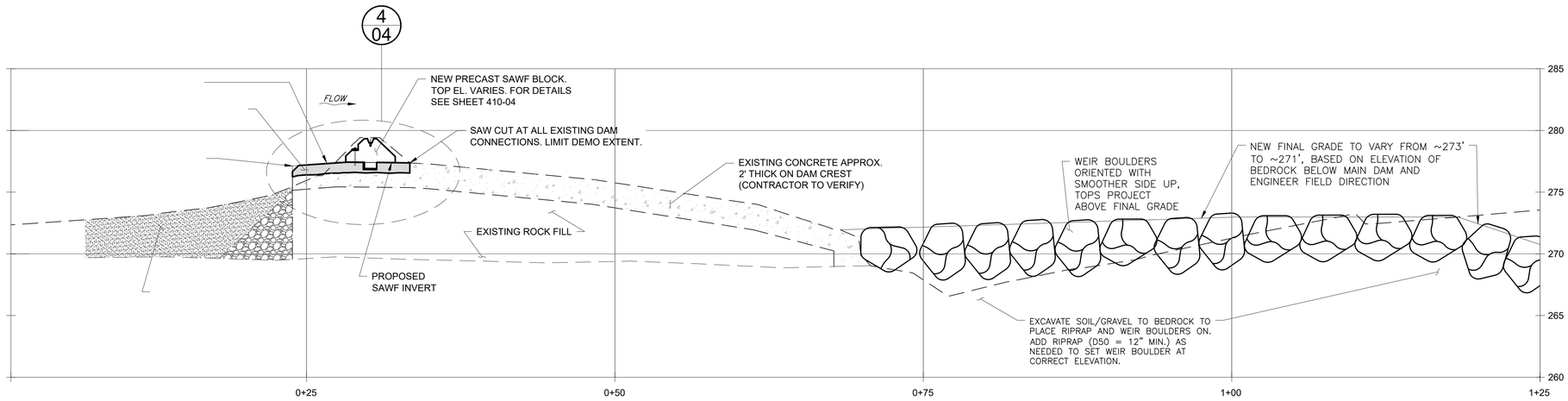
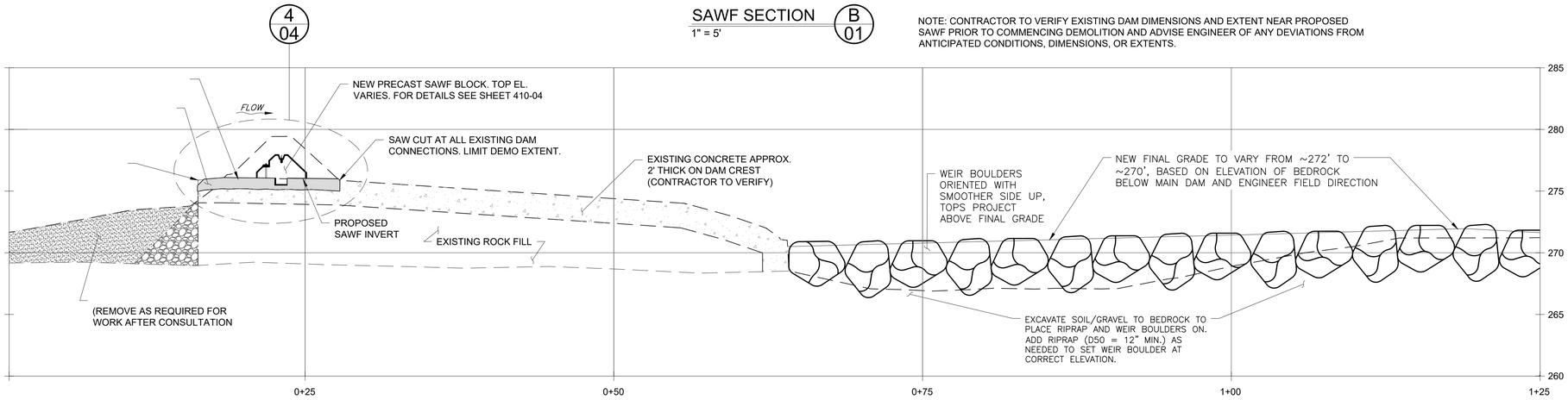
Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	410-02



SAWF SECTION B/01
1" = 5'

NOTE: CONTRACTOR TO VERIFY EXISTING DAM DIMENSIONS AND EXTENT NEAR PROPOSED SAWF PRIOR TO COMMENCING DEMOLITION AND ADVISE ENGINEER OF ANY DEVIATIONS FROM ANTICIPATED CONDITIONS, DIMENSIONS, OR EXTENTS.



SAWF SECTION C/01
1" = 5'

NOTE: CONTRACTOR TO VERIFY EXISTING DAM DIMENSIONS AND EXTENT NEAR PROPOSED SAWF PRIOR TO COMMENCING DEMOLITION AND ADVISE ENGINEER OF ANY DEVIATIONS FROM ANTICIPATED CONDITIONS, DIMENSIONS, OR EXTENTS.

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
No. PE084968
5/24/23

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A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

Project No.	Date Revised	Drawing No.
4214-017	05/22/23	410-03

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS - SAWF SECTIONS

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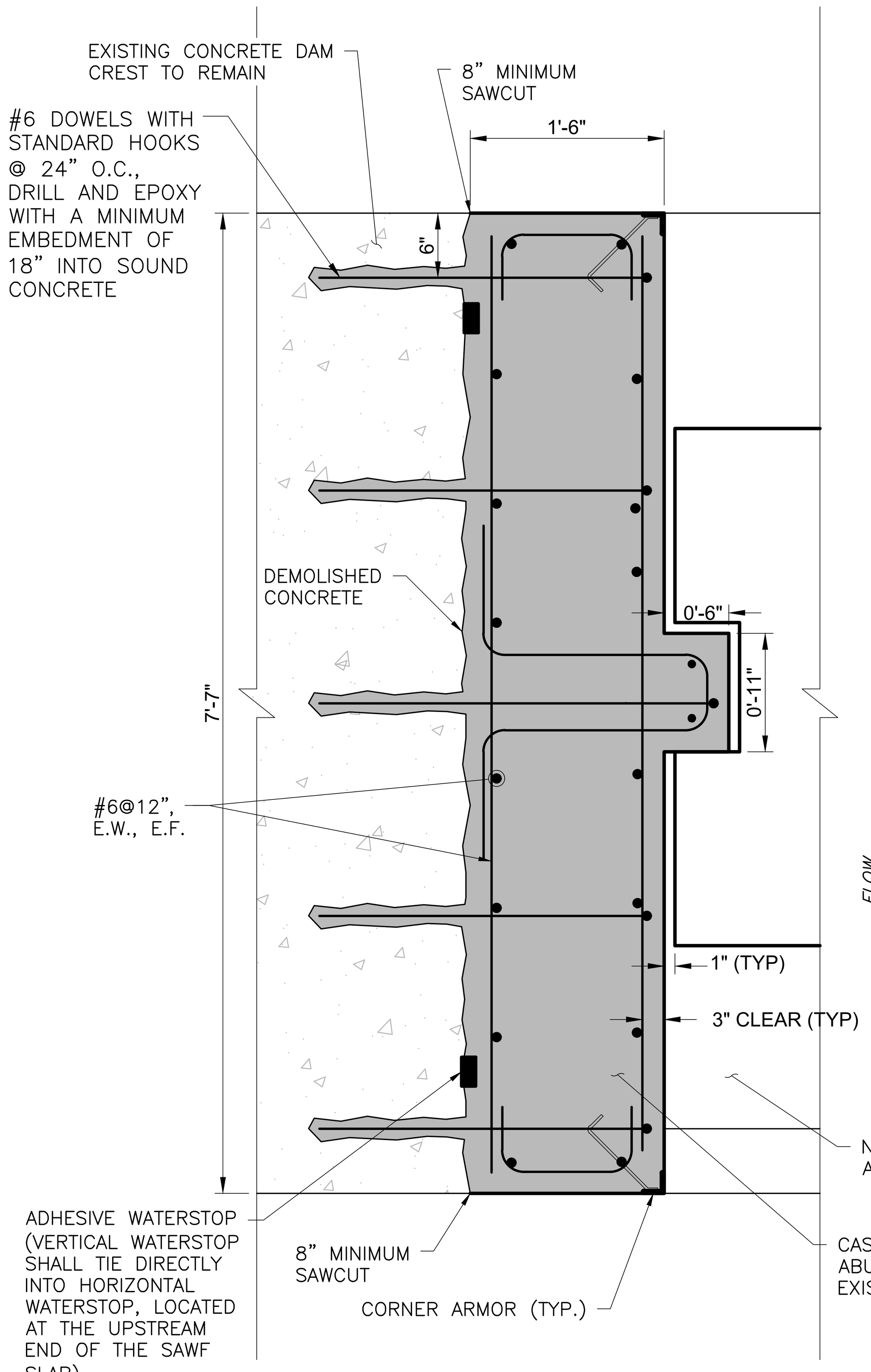
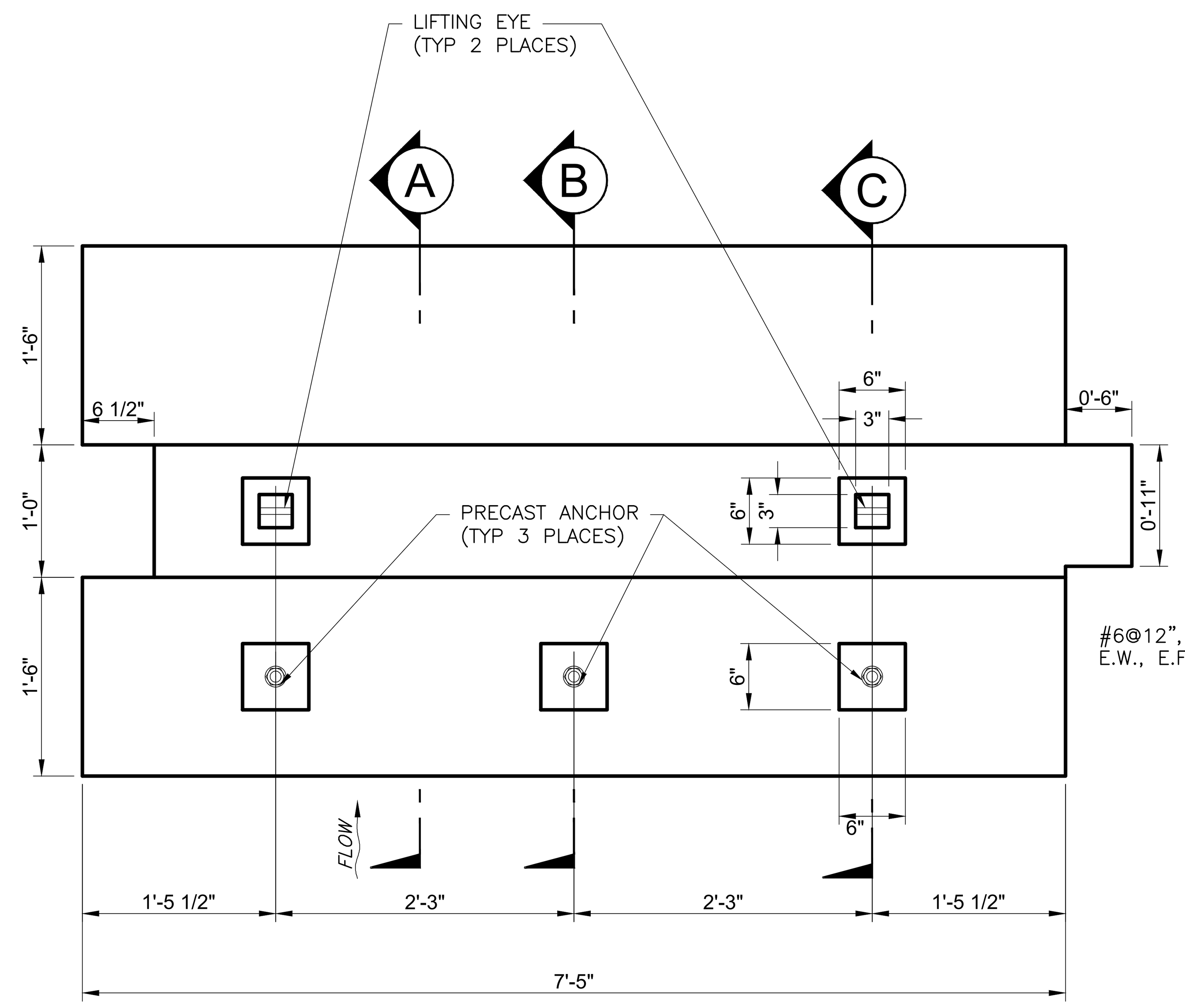
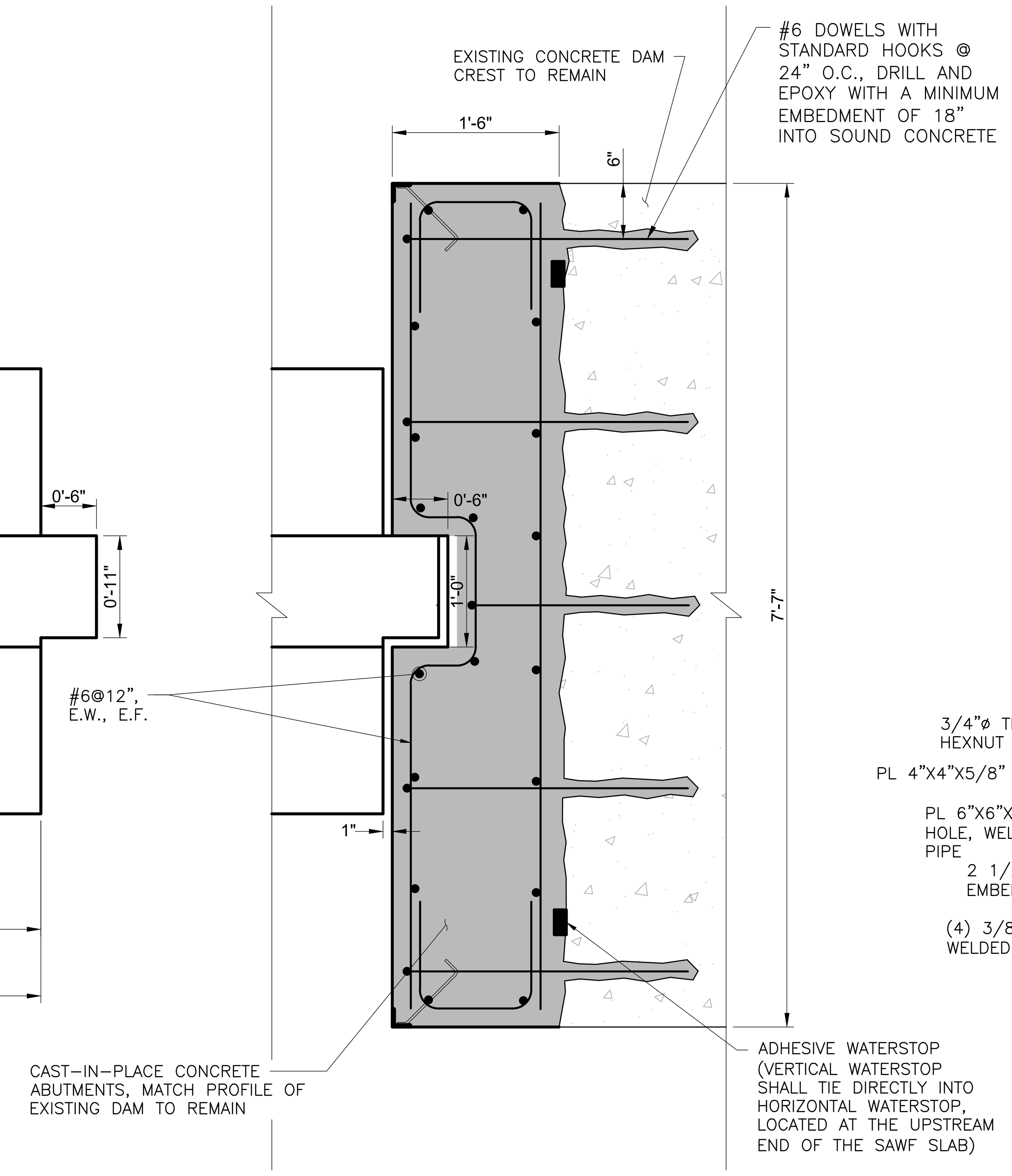
24x36 = FULL SCALE



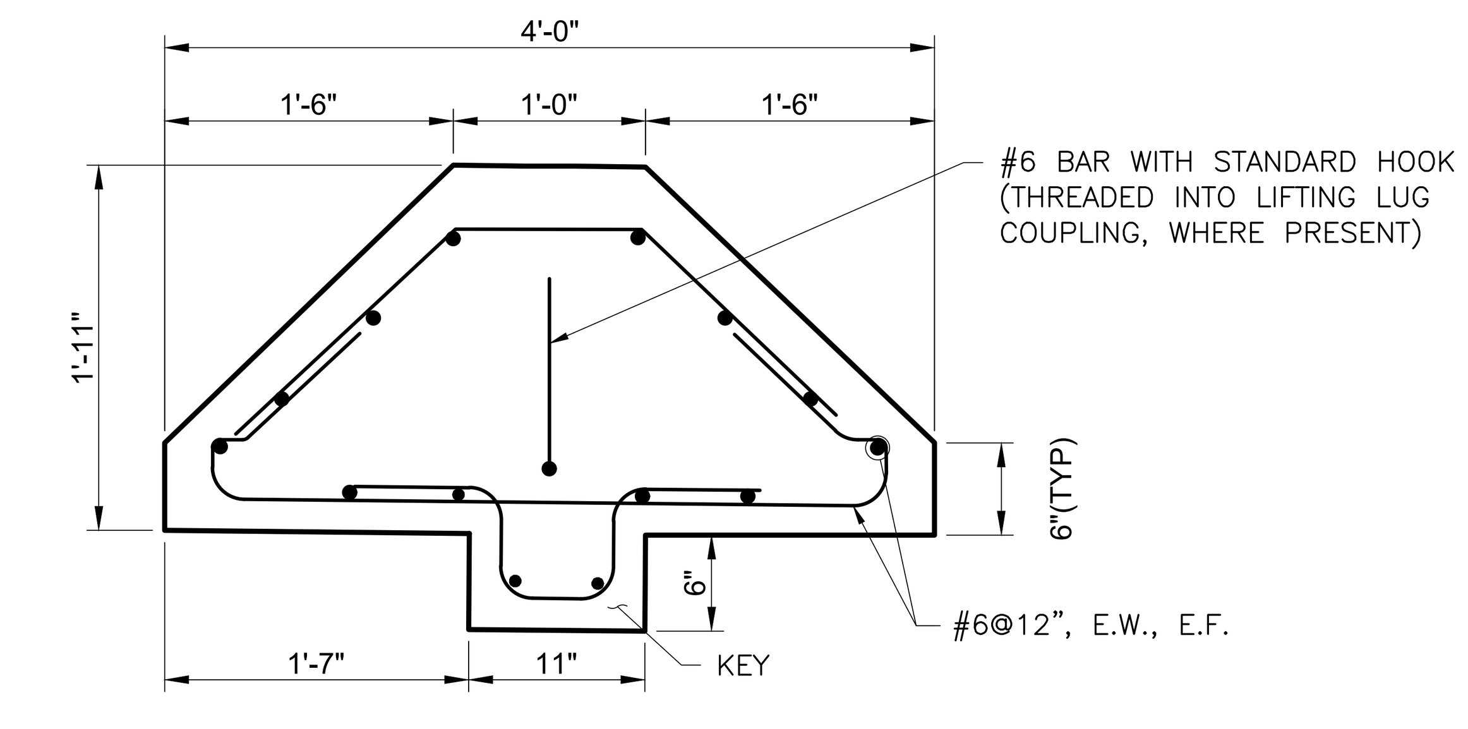
SAWF ABUTMENT "A" ENLARGED PLAN 1 -
1" = 1'



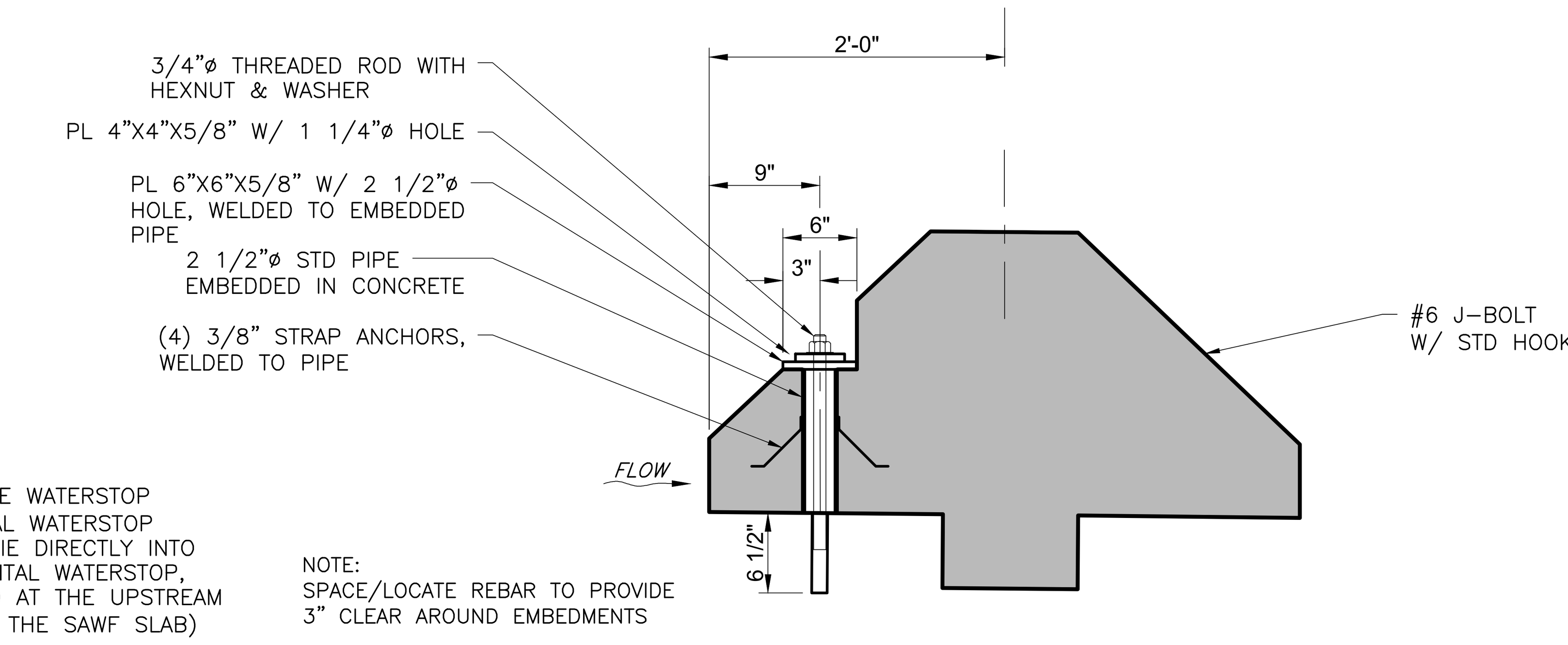
SAWF BLOCK PLAN VIEW 3 -
1" = 1'



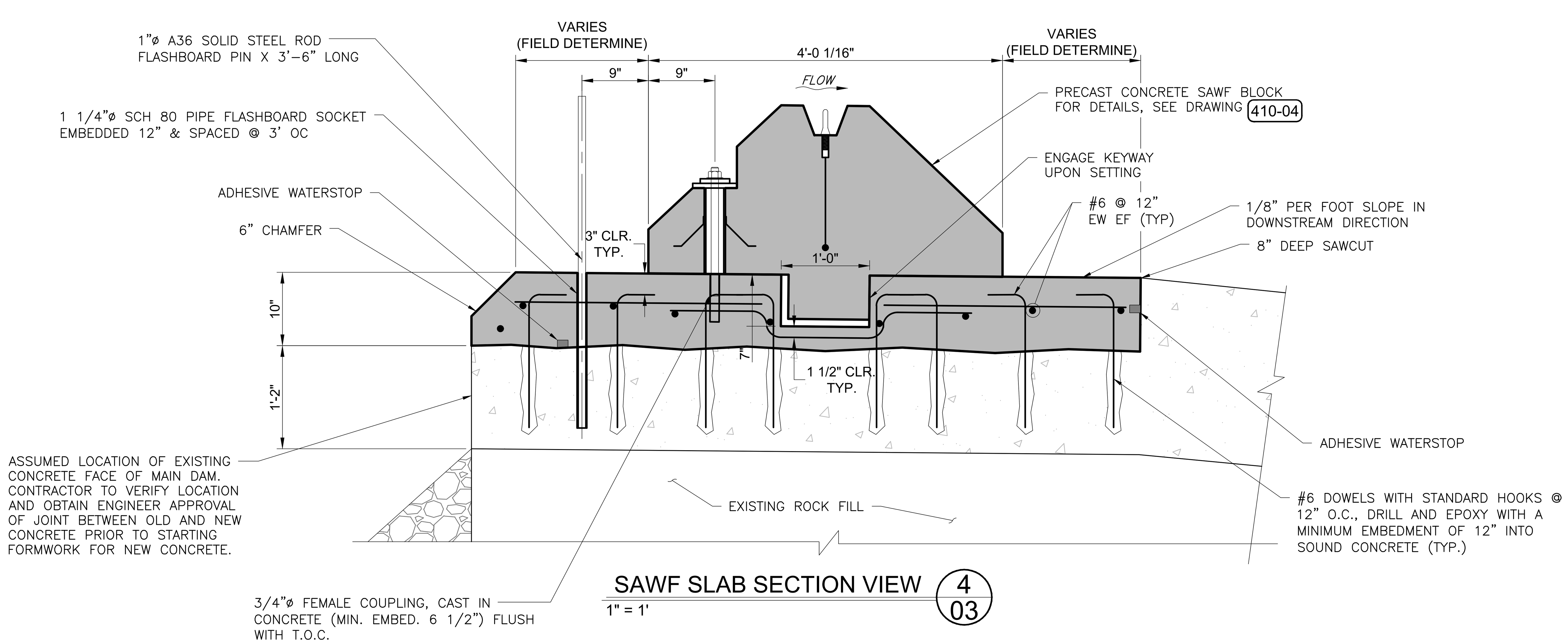
SAWF ABUTMENT "B" ENLARGED PLAN 2 -
1" = 1'



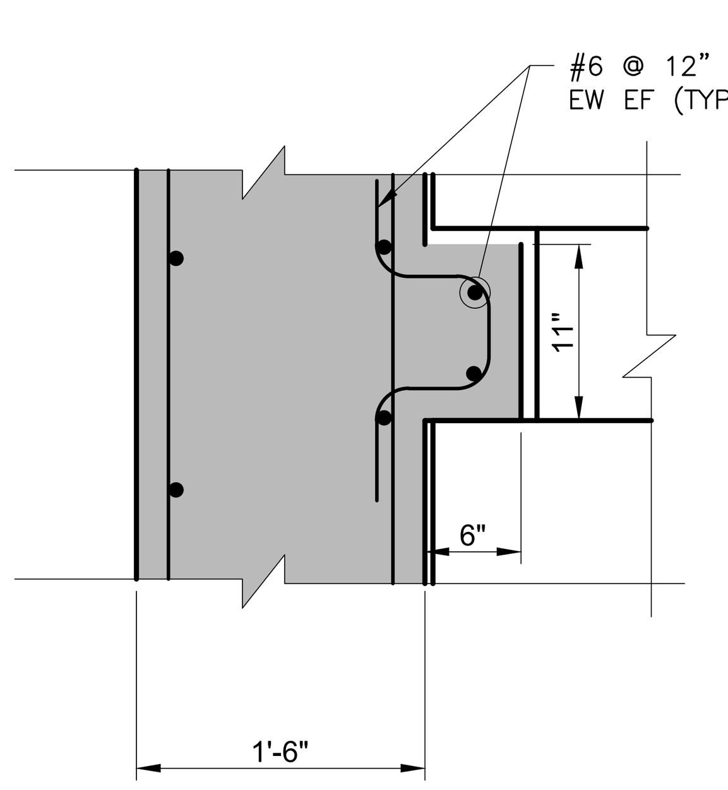
SAWF BLOCK SECTION VIEW A -
1" = 1'



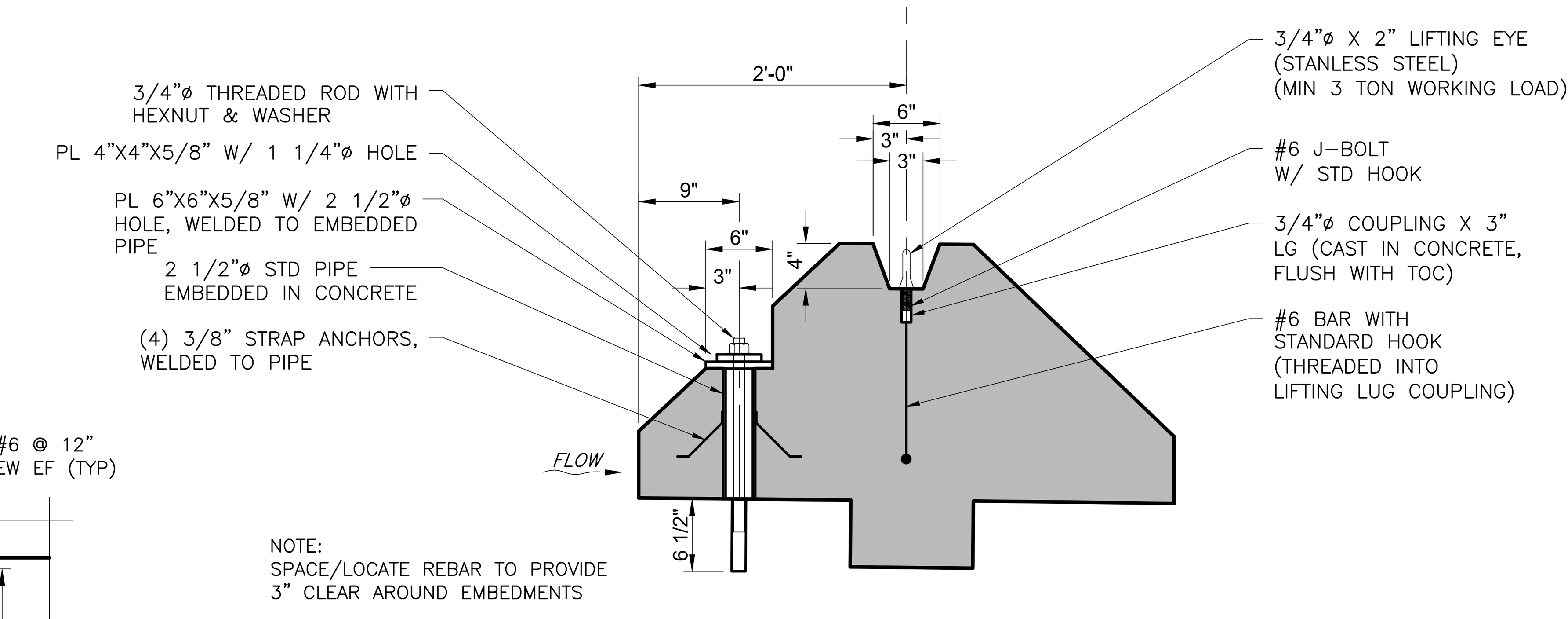
SAWF BLOCK SECTION VIEW B -
1" = 1'



SAWF SLAB SECTION VIEW 4 03
1" = 1'

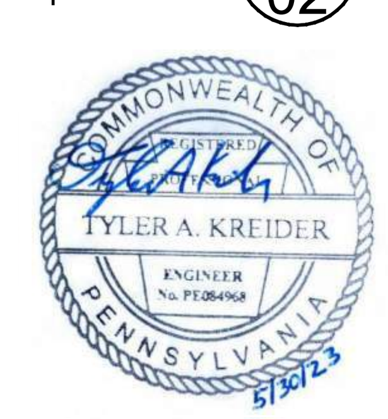


SECTION D 02
1" = 1'



SAWF BLOCK SECTION VIEW C -
1" = 1'

1 0 1 2
SCALE IN FEET



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B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
SAWF BLOCK PLAN & SECTION

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Project No.	Date Revised	Drawing No.
4214-017	05/22/23	410-04

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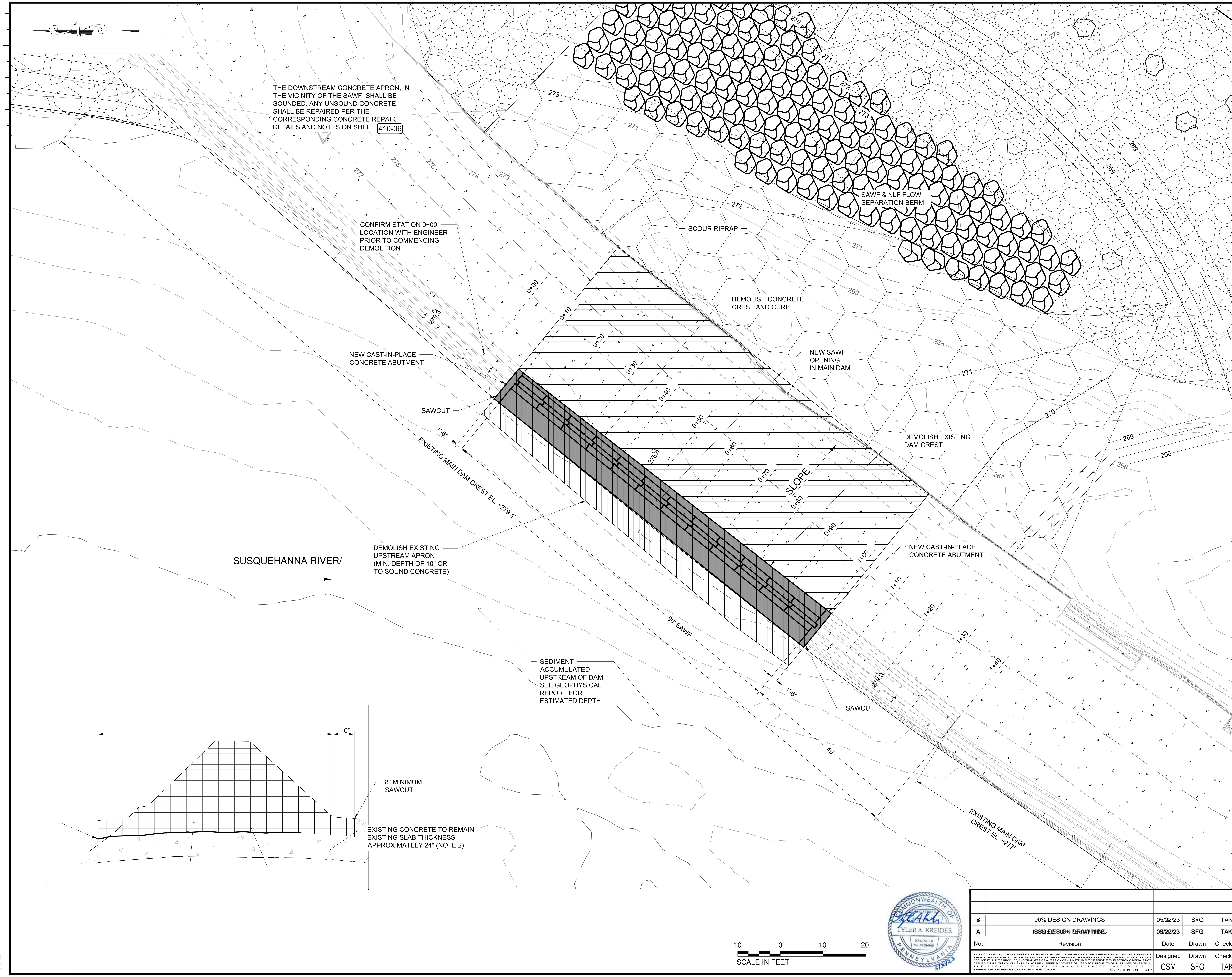

NOTES

1. DEMOLITION SHALL BE DONE IN A CONTROLLED MANNER WITH LIMITED VIBRATION TO PREVENT DAMAGE TO THE ROCK-FILLED TIMBER CRIB. ANY DAMAGE TO THE EXISTING DAM STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
2. ON THE UPSTREAM APRON, THE CONTRACTOR SHALL PERFORM A MINIMUM OF THREE (3) CONCRETE CORES TO DETERMINE THE CONDITION AND THICKNESS OF THE EXISTING SLAB. IF THE CONCRETE CONDITIONS IS VARIED, POOR, OR NOT AS THICK, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
3. UNLESS OTHERWISE INDICATED, DEMOLISH EXISTING CONCRETE SLAB TO A MINIMUM DEPTH OF 8" OR TO SOUND CONCRETE. REMOVAL OF CONCRETE TO DEPTHS GREATER THAN 10" SHALL BE APPROVED BY THE ENGINEER OR OWNER. ADDITIONAL CONCRETE REMOVED WITHOUT DIRECTION WILL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
4. SOUND CONCRETE IS DEFINED AS WHEN THE SURFACE IS STRUCK WITH A GEOLOGIST HAMMER, THE AGGREGATE OF THE CONCRETE FRACTURES BEFORE THE CEMENT PASTE IS BROKEN.

YORK HAVEN POWER COMPANY, LLC.
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YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

MAIN DAM DEMOLITION DETAILS

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

COMMONWEALTH OF PENNSYLVANIA — TYLER A. KREIDER — ENGINEER

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GSM	SFG	TAK	4214-017	05/22/23	410-05

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REPAIR AREAS PROVIDED ARE APPROXIMATE. ACTUAL REPAIR AREAS TO BE FIELD DETERMINED BY CONSTRUCTION

REMOVE DETERIORATED SURFACE MATERIAL IN DESIGNATED AREAS DOWN TO SOUND CONCRETE. SOUND CONCRETE IS DEFINED AS WHEN THE SURFACE IS STRUCK WITH A GEOLOGISTS HAMMER, THE AGGREGATE OF THE CONCRETE

PERFORM REMOVAL WITH POINTED TOOLS THAT DO NOT DAMAGE OR FRACTURE THE UNDERLYING SOUND CONCRETE

IF REINFORCEMENT STEEL IS ENCOUNTERED, THE CONCRETE SHALL BE REMOVED TO A MINIMUM OF 1" CLEARANCE BEHIND THE BARDS. LOOSE RUST SHALL BE REMOVED, AND THE STEEL SHALL BE COATED WITH A PRIMER, SIKA ARMATEC 111 OR FOSROC NITROPRIME ZINRICH, APPLIED PER MANUFACTURER'S INSTRUCTIONS.

ROUGHEN ALL SURFACES TO A MINIMUM OF 1/8" AMPLITUDE. CLEAN SURFACE TO REMOVE ALL DELETERIOUS MATERIAL, INCLUDING DIRT, GREASE, ETC. WASH WITH HIGH PRESSURE WASH (AT LEAST 2,000 PSI PRESSURE).

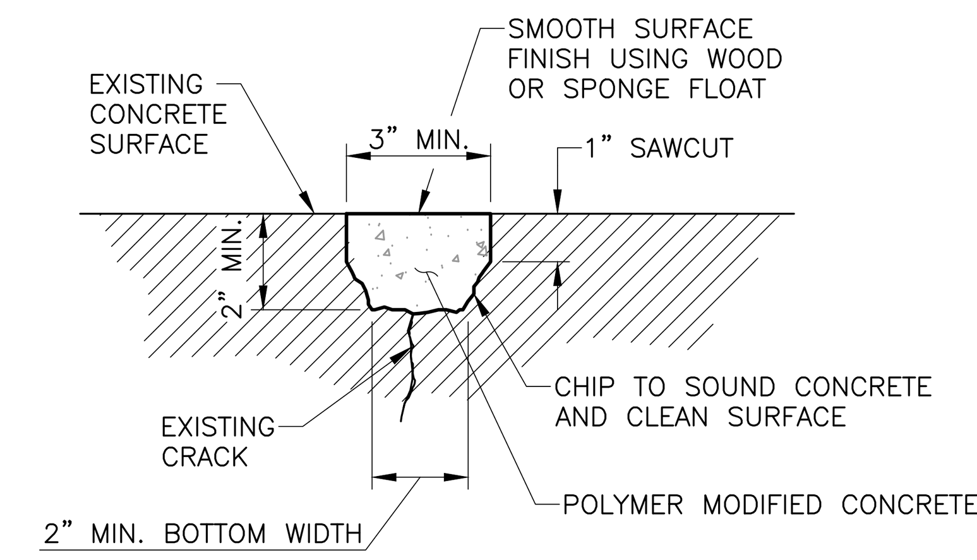
VERTICAL OR OVERHEAD SURFACES SIKATOP 123 OR FOSROC RENDERDOC HB.

FOR PATCHES GRATER THAN 1" DEEP, THE POLYMER MODIFIED MORTAR MATERIAL MAY BE EXTENDED USING 3/8" PEA

PREPARE SURFACE AS SHOWN IN DETAILS AND AS DESCRIBED IN NOTES ABOVE.

SCRUB A COAT OF POLYMER CONCRETE MORTAR INTO SURFACE TO FILL ALL VOIDS AND PORES FOR PATCHES WITH POLYMER CONCRETE. VERTICAL AND OVERHEAD, OR PATCHES ON SLOPING SURFACES, GREATER THAN 1" DEEP, SHALL BE

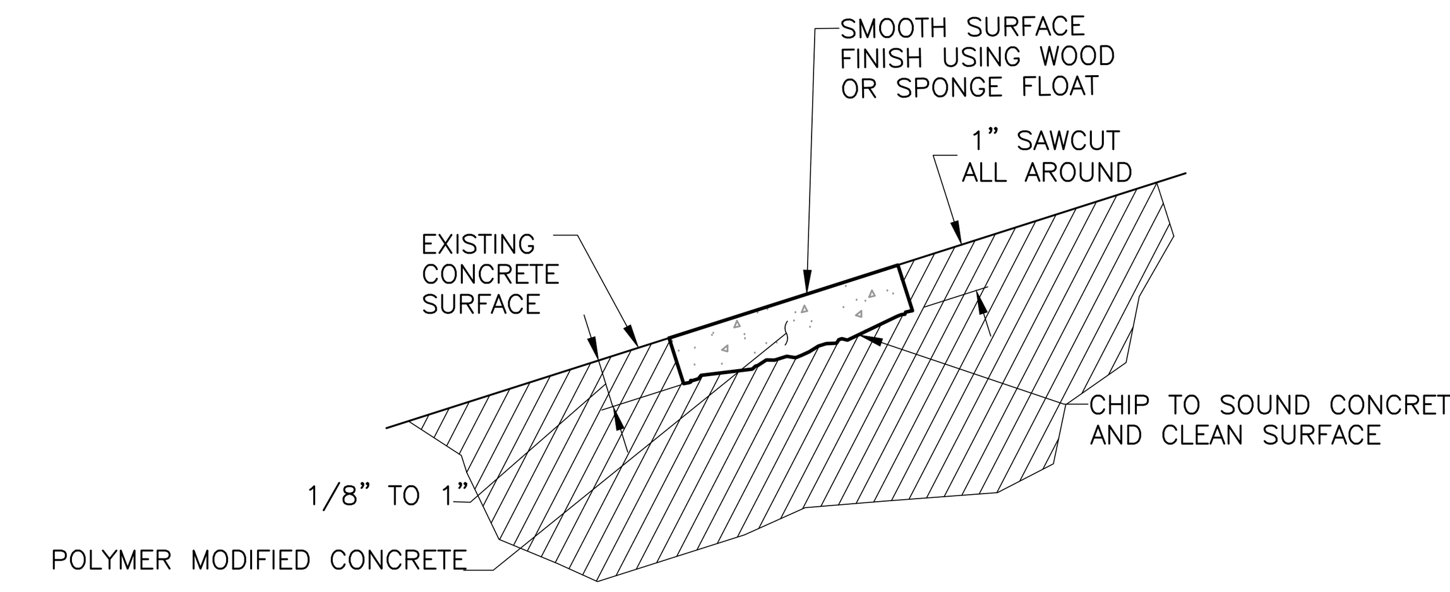
M FOLLOW MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF REPAIR MATERIALS.



NOTE:
AT TIME OF CONCRETE PLACEMENT, SURFACE TO BE SATURATED WITH WATER, BUT NO STANDING WATER.

TYPICAL LARGE CRACK NON-STRUCTURAL REPAIR DETAIL

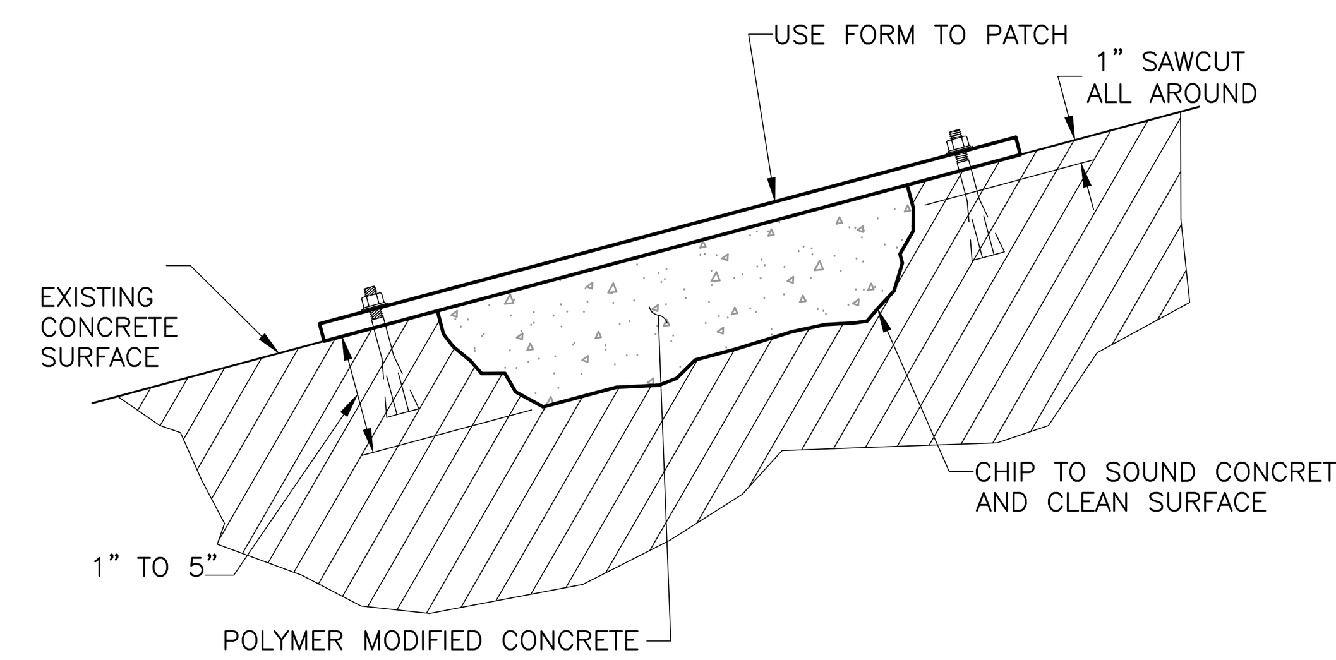
NOT TO SCALE



NOTE:
AT TIME OF CONCRETE PLACEMENT, SURFACE TO BE SATURATED WITH WATER, BUT NO STANDING WATER.

1/8" UP TO 1" DEEP PATCH REPAIR DETAIL

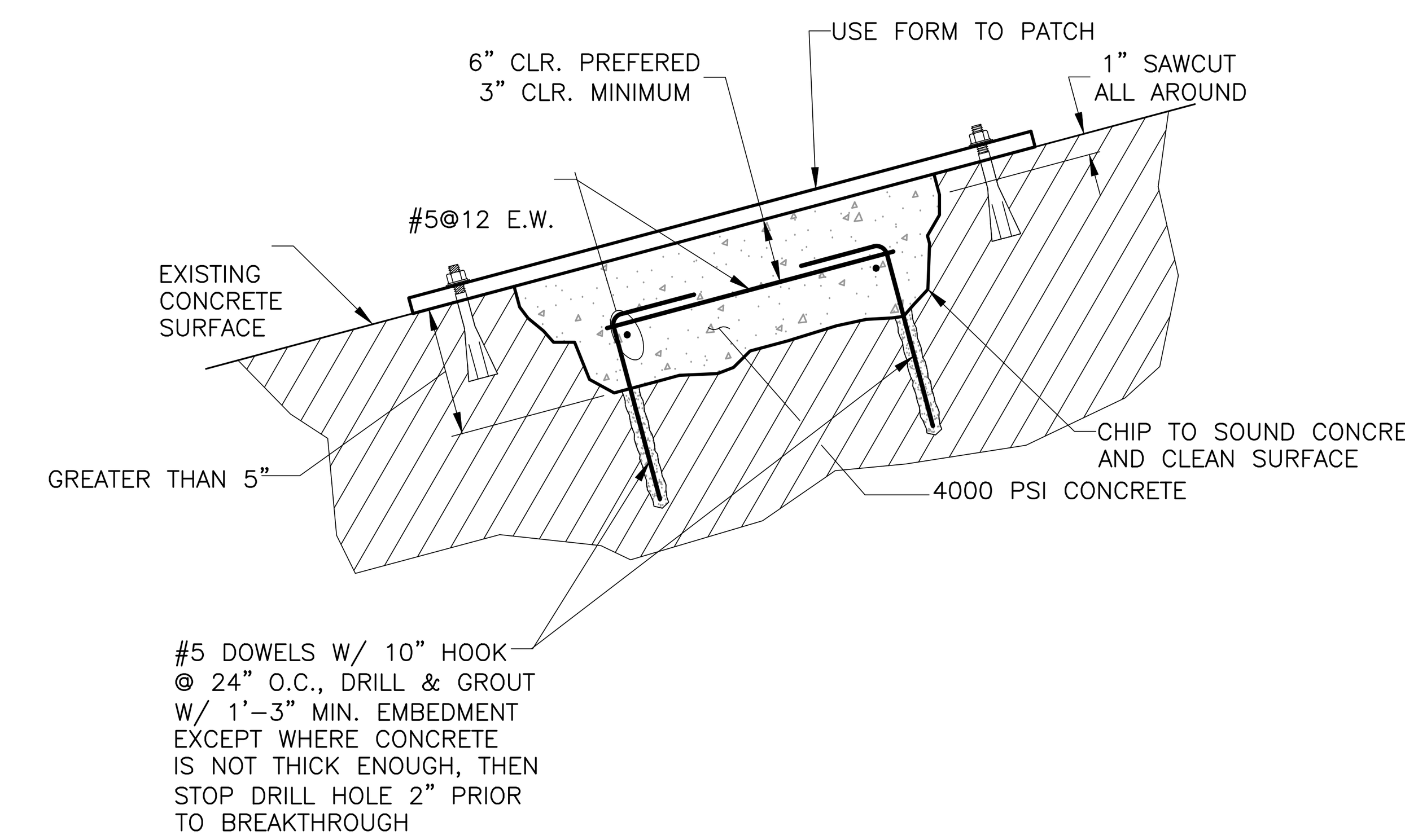
NOT TO SCALE



NOTE:
AT TIME OF CONCRETE PLACEMENT, SURFACE TO BE SATURATED WITH WATER, BUT NO STANDING WATER.

1" UP TO 5" DEEP PATCH REPAIR DETAIL

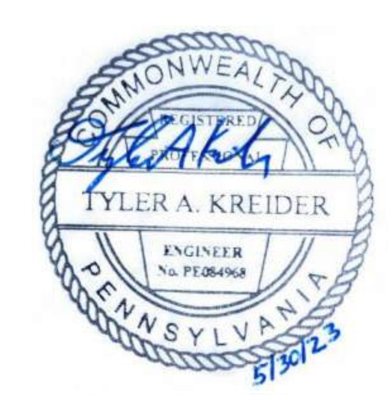
NOT TO SCALE



NOTE:
AT TIME OF CONCRETE PLACEMENT, SURFACE TO BE SATURATED WITH WATER, BUT NO STANDING WATER.

DEEPER THAN 5" PATCH REPAIR DETAIL

NOT TO SCALE



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B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	410-06

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

CONCRETE RESURFACING & REPAIR NOTES & DETAILS

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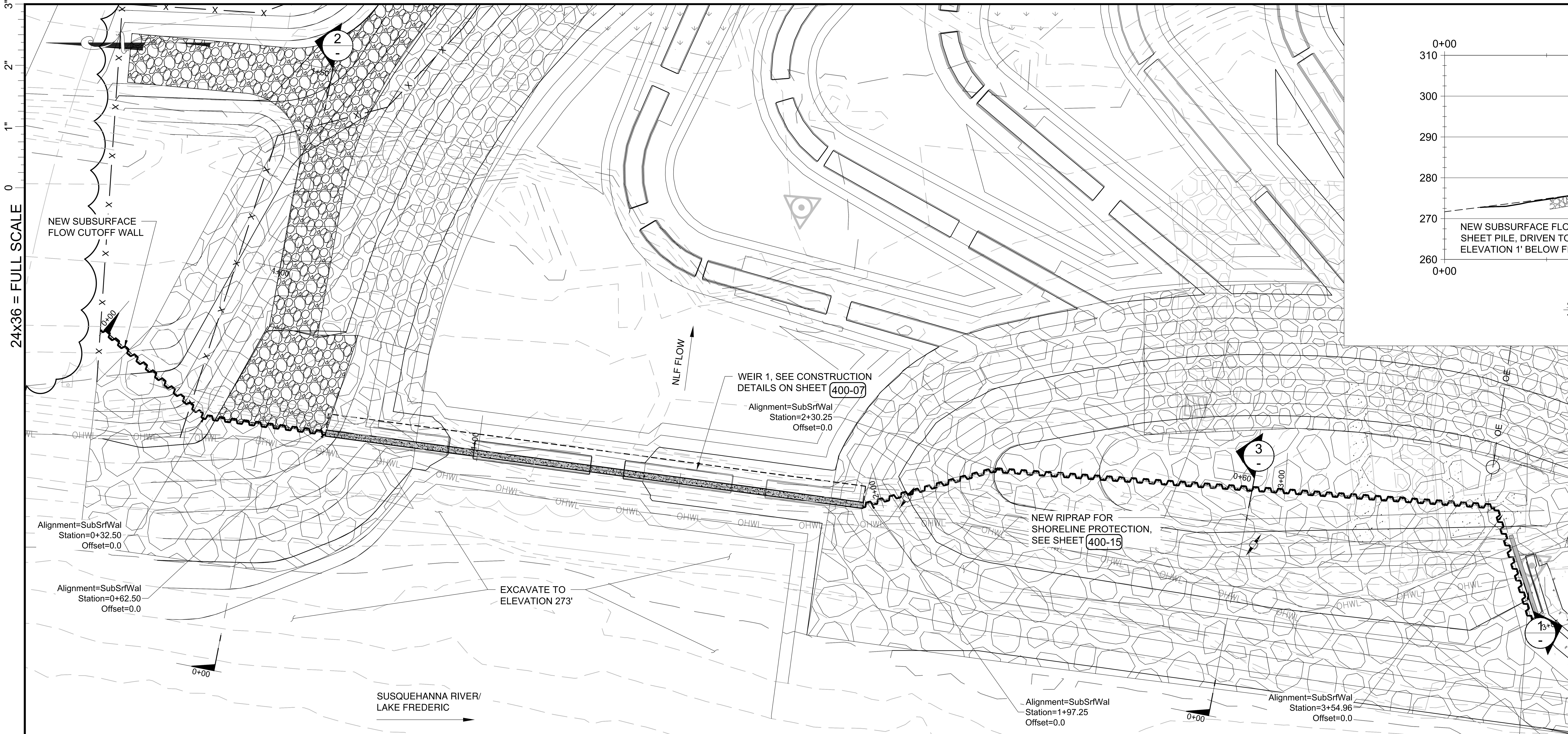
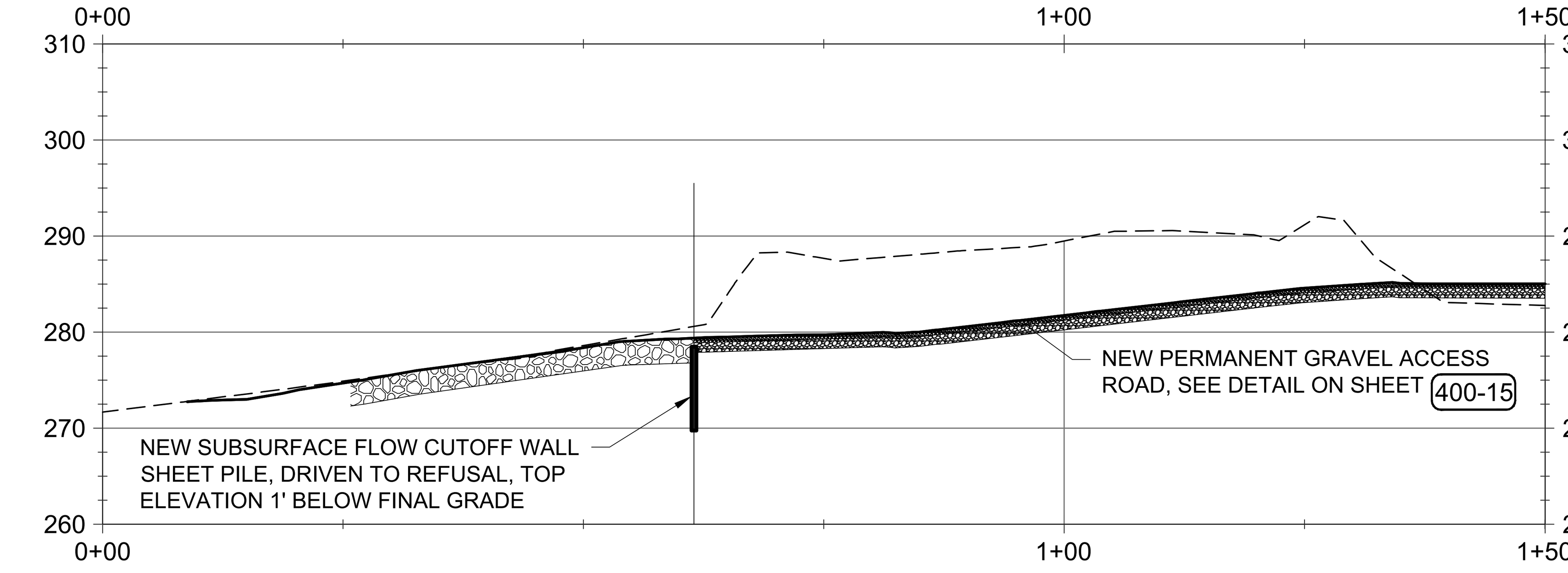
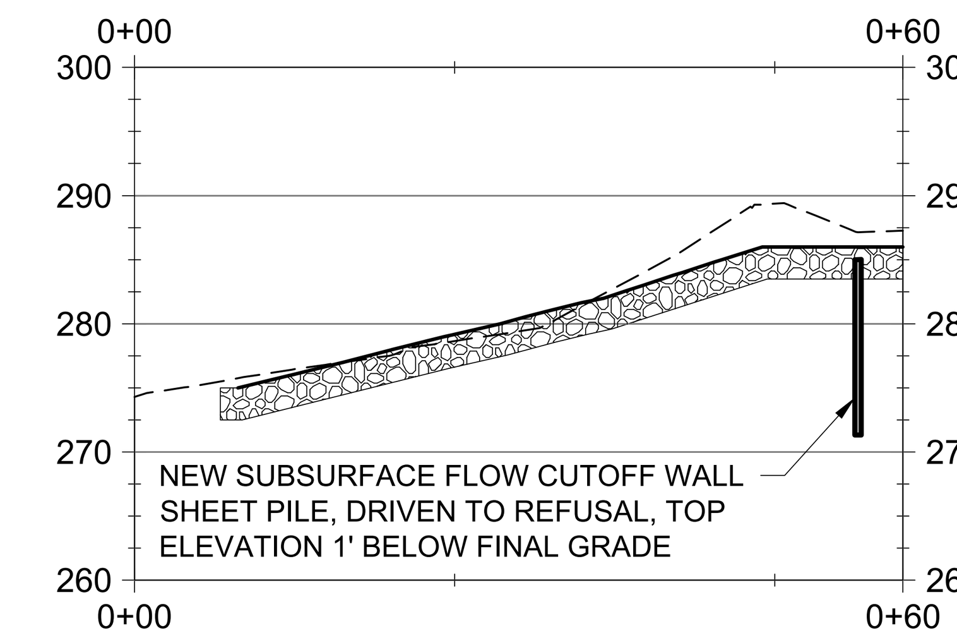


PLAN
1" = 15'

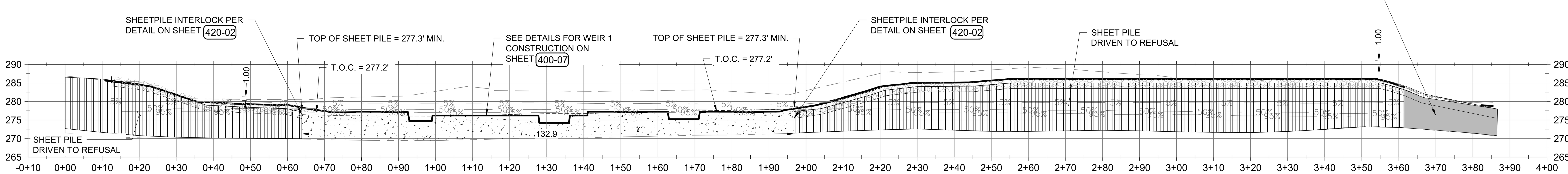


ACCESS ROAD AND BOAT RAMP PROFILE (2)
1" = 15'



EMBANKMENT (3)
1" = 15'

NEW SUBSURFACE FLOW CUTOFF WALL DRILL/GROUT ~25LF AT CONNECTION OF MAIN DAM EXISTING ABUTMENT AND SHEET PILE PER ENGINEER FIELD DIRECTION.



SUBSURFACE FLOW CUTOFF WALL - PROFILE (1)
1" = 15'

SUBSURFACE FLOW CUTOFF WALL NOTES:

1. CONTRACTOR SHALL INFORM ENGINEER OF FOUND BEDROCK ELEVATIONS PRIOR TO PERFORMING ANY WORK ON CONCRETE PORTION OF WEIR 1/SUBSURFACE FLOW CUTOFF WALL.
2. ELEVATION OF BEDROCK MAY VARY FROM THAT SHOWN, CONSULT ENGINEER IF MAXIMUM WALL HEIGHT FOR CONCRETE STEM WALL IS ANTICIAPTED TO BE EXCEEDED BASED ON OBSERVED BEDROCK DEPTH.
3. TOP OF SHEET PILE SHALL EXTEND TO 1 FOOT BELOW FINAL GRADE, EXCEPT AT JUNCTION WITH CONCRETE FOR WEIR 1.
4. BOULDERS AND RIPRAP ON WEIRS OMITTED FOR CLARITY OF OTHER ITEMS.

24x36 = FULL SCALE

SCALE IN FEET: 15 0 15 30

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Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	420-01

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YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
SUBSURFACE FLOW CUTOFF WALL

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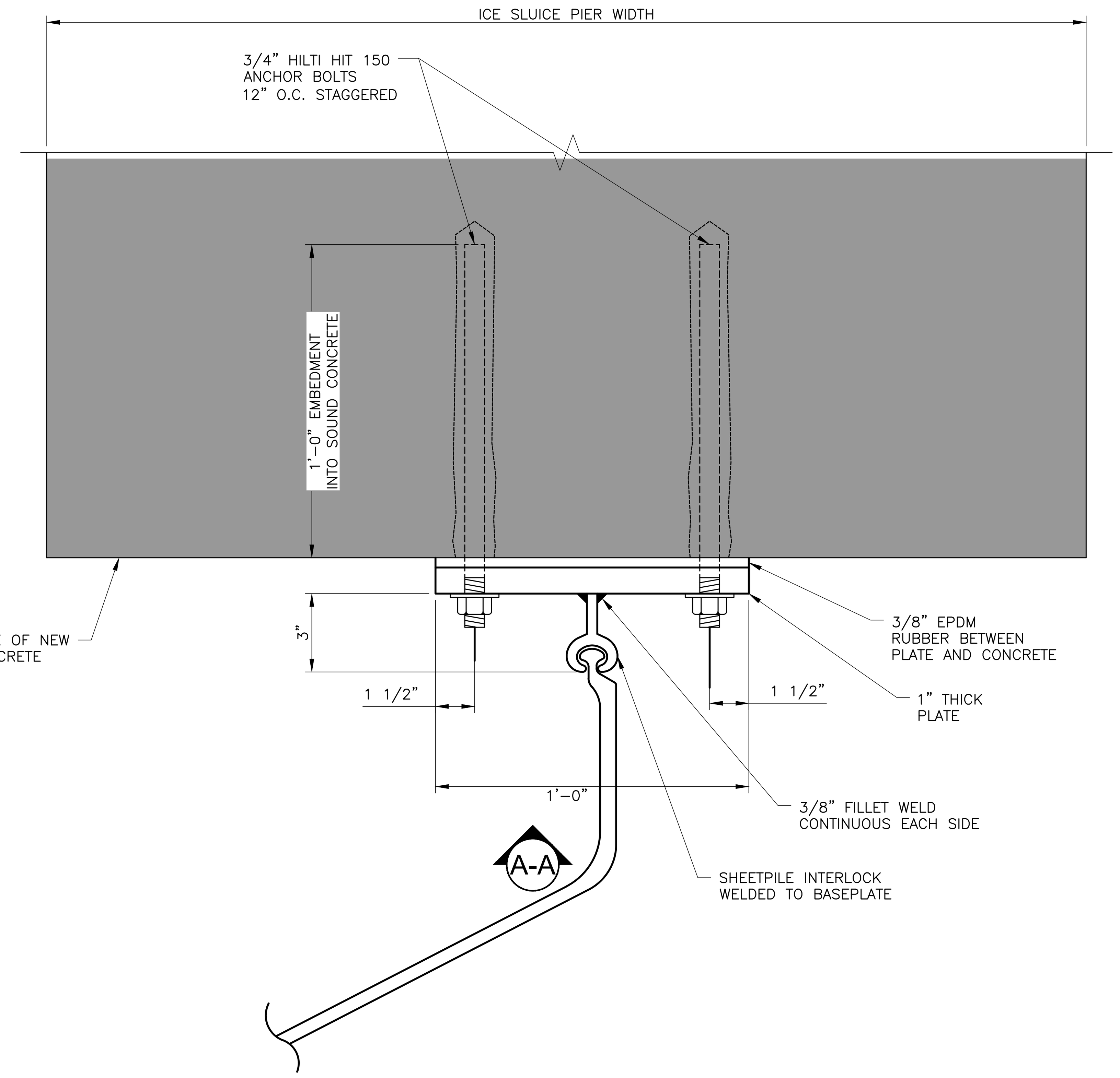
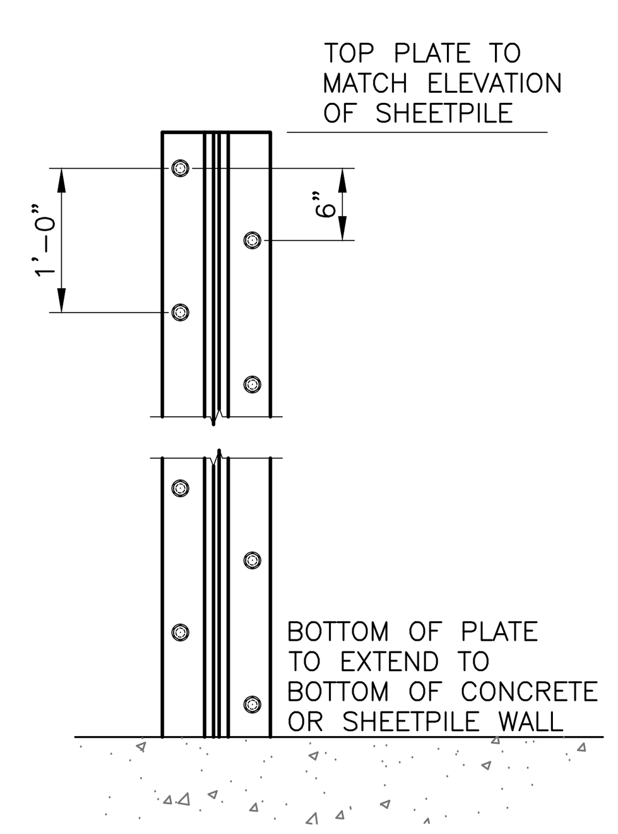


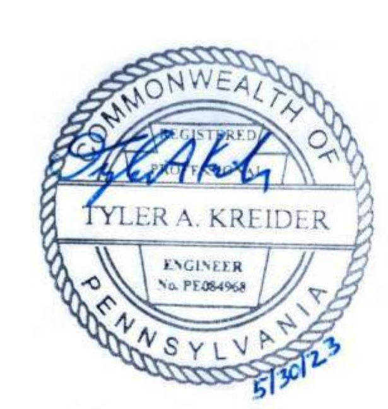
SHEETPILE INTERLOCK DETAIL 1/1
3"= 1'-0"

3 0 3 6 9
SCALE IN INCHES



VIEW A-A
3/4"= 1'-0"

1 0 1 2 3
SCALE IN FEET



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B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	420-02

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS
CUTOFF WALL DETAILS

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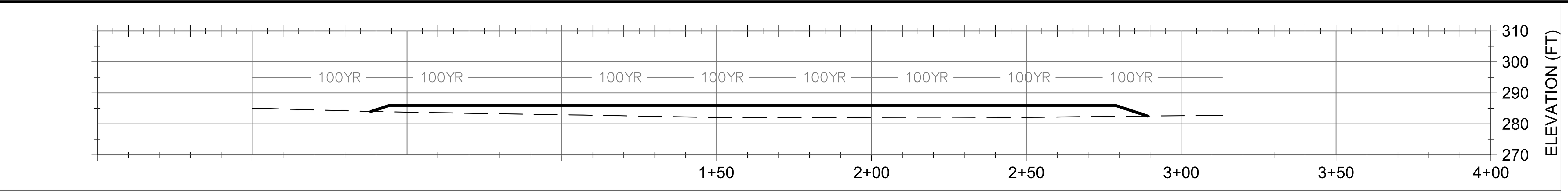

TYPICAL FILL AREA SECTION VIEW (1)

FILL PLACEMENT ELEVATIONS IN THE STAGING AREA MAY BE LESS THAN THAT SHOWN ON THIS DRAWING, AS FINAL GRADES IN THE STAGING AREA WILL BE DEPENDANT ON AMOUNT OF FILL EXCAVATED/ACTUAL TOP OF BEDROCK SURFACE FOUND WITHIN THE FISHWAY. GRADES SHOWN ARE MAXIMUM ELEVATIONS

THE GENERAL INTENT OF THE FILL PLACEMENT IS TO PROVIDE A RESTORED NATURAL AREA, WHILE STILL MAINTAINING DRAINAGE AWAY FROM THE PAVED ROADWAY. FIELD ADJUSTMENTS TO THIS PROPOSED TOPOGRAPHY MAY BE MADE AFTER WRITTEN APPROVAL BY THE ENGINEER.
FILL PLACED IN THE FILL PLACEMENT AREA WILL CONSIST OF A COMBINATION OF SOIL AND ROCK MATERIALS OBTAINED FROM EXCAVATION/CONSTRUCTION OF THE NEW INLAND NLF. CONTRACTOR SHALL SUBMIT FILL PLACEMENT PLAN FOR ENGINEER APPROVAL BASED ON THEIR PROPOSED SEQUENCE AND MEANS/METHODS OF WORK AND THE ANTICIPATED FILL VOLUMES, BUT WORK IN THE FILL PLACEMENT AREA SHALL CONFORM TO THESE CONSTRAINTS AT A

CLEAR AND GRUB AREA, PRESERVING UP TO EIGHT (8) TREES IDENTIFIED BY THE ENGINEER.
STRIP (WITH A SMOOTH-EDGED BUCKET OR GRADER) AND STOCKPILE TOPSOIL/ORGANIC SOILS FOR SUBSEQUENT RE-USE, AS APPROVED BY OWNER.

BLEND SOIL AND ROCK MATERIALS AND/OR PLACE COMPATIBLE MATERIALS TO MINIMIZE FUTURE SETTLEMENT OF MATERIALS.
PLACE SOIL/ROCK MATERIALS IN LIFTS OF UP TO 12 INCHES (PENDING ENGINEER APPROVAL, BASED ON SOIL TYPE) AND COMPACT VIA 3 PASSES (MINIMUM) OF A LARGE SMOOTH-DRUM ROLLER, STATIC AND/OR VIBRATORY COMPACTION TBD AT TIME OF PLACEMENT, AS APPROVED BY ENGINEER.

CONTRACTOR SHALL PLACE FILL IN FILL PLACEMENT AREAS TO MAXIMUM EXTENT SHOWN (POTENTIAL FILL VOLUME OF APPROXIMATELY 56,500 CY).
ANY ADDITIONAL FILL SHALL BE DISPOSED OF AT AN ALTERNATE, PERMITTED DISPOSAL LOCATION AS APPROVED BY THE OWNER.

EXISTING OSPREY NESTING POLE TO BE REMOVED AND RELOCATED. EXISTING NESTING POLE CONSISTS OF APPROXIMATELY 30-FOOT TALL (ABOVE GRADE) WOODEN MONOPOLE WITH WHAT IS UNDERSTOOD TO BE A WOODEN/FIBERGLASS NESTING PLATFORM. NEW LOCATION (IN/NEAR THE STAGING AREA) TO BE DETERMINED BY THE OWNER AND ENGINEER. REUSE EXISTING POLE AND NESTING PLATFORM AND/OR REPLACE/RECONSTRUCT IN KIND, AS APPROVED BY

50 0 50 100
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA — TYLER A. KREIDER — ENGINEER

No.	Revision	Date	Drawn	Checked
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YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED CONDITIONS PLAN
STAGING AREA

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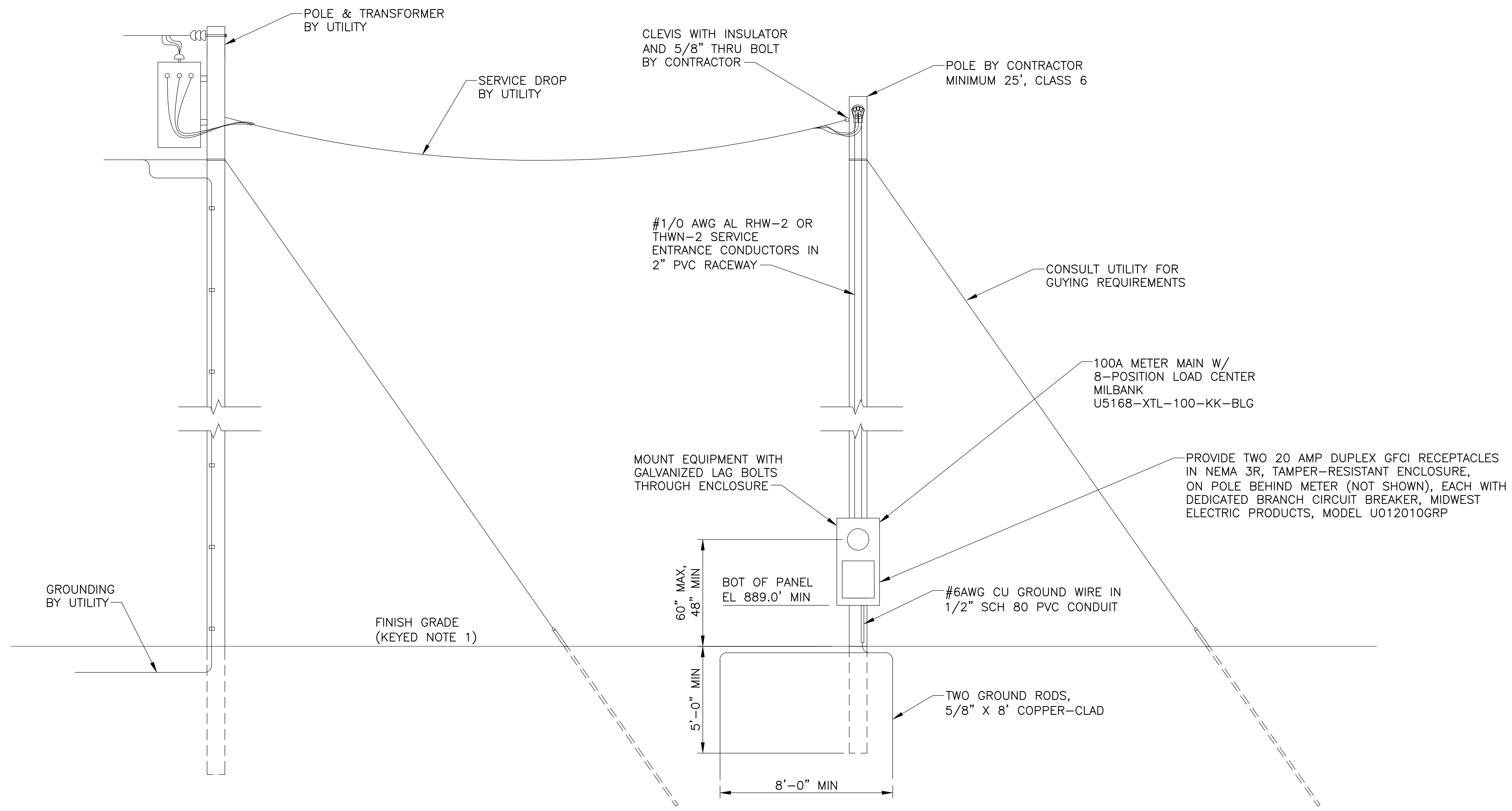
GSM	SFG	TAK	4214-017	05/22/23	430-01

24x36 = FULL SCALE



ELEVATION VIEW

1/4" = 1'-0"

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL INSTALLATIONS SHALL COMPLY WITH NFPA 70 2020, THE NATIONAL ELECTRICAL CODE (NEC).
2. FOR ADDITIONAL REQUIREMENTS AND DETAILS FOR FIRST ENERGY (MET ED) ELECTRICAL SERVICE, REFER TO THEIR CUSTOMER GUIDE FOR ELECTRIC SERVICE - PA, SPECIFICALLY EXHIBIT 13.
3. ALL EQUIPMENT AND MATERIAL SHALL BE NEW AND SHALL CONFORM TO APPLICABLE CODES AND STANDARDS FOR THAT CLASS OF EQUIPMENT OR MATERIAL.
4. WHERE BRANDS, MODELS, OR PART NUMBERS ARE SPECIFIED WITHOUT QUALIFICATION, THERE SHALL BE NO SUBSTITUTIONS EXCEPT WITH WRITTEN APPROVAL OF THE OWNER. ALTERNATE MATERIALS MAY BE SUBMITTED WITH THE PROPOSAL AND LISTED AS AN OPTION FOR CONSIDERATION BY THE OWNER.
5. EQUIPMENT AND MATERIALS SHALL BE UTILITY OR INDUSTRIAL TYPE. COMMERCIAL OR RESIDENTIAL GRADE EQUIPMENT IS NOT ALLOWED.
6. CONDUIT, WHERE EXPOSED, SHALL BE GALVANIZED STEEL RIGID METAL CONDUIT (RMC) UNLESS OTHERWISE NOTED. COUPLINGS, CLAMPS, ELBOWS, AND OTHER FITTINGS SHALL BE OF GALVANIZED STEEL. WHERE CONDUIT SIZES ARE NOT SHOWN, PROVIDE CONDUITS AS REQUIRED BY THE NEC. CONDUIT FITTINGS SHALL BE CAST WITH SOLID GASKET AND COVERS. EXPOSED CONDUIT AND RACEWAYS SHALL BE RUN PARALLEL AND PERPENDICULAR TO STRUCTURAL MEMBERS AND GROUPED TOGETHER WHERE POSSIBLE. ALL CONDUIT AND ENCLOSURES SHALL BE MOUNTED ON STRUT UNLESS NOTED OTHERWISE.
7. CONDUIT, WHERE BURIED OR EMBEDDED, SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE NOTED. ENTRY TO HAND-HOLES SHALL BE TERMINATED IN BELL-ENDS.
8. ALL CONDUCTORS SHALL BE STRANDED COPPER UNLESS NOTED OTHERWISE. SINGLE CONDUCTOR (BUILDING WIRE) INSULATION SHALL BE 600 VOLT, TYPE XHHW-2, 90 DEGREE C. MULTI-CONDUCTOR CABLE SHALL CONSIST OF COLOR CODED, FIRE-RETARDANT XLP INSULATED, 600 VOLT STRANDED CONDUCTORS IN A FLAME RESISTANT, SUNLIGHT RESISTANT, PVC OR CPE JACKET. WHERE CONDUCTOR SIZES ARE NOT SHOWN, PROVIDE CABLE AS REQUIRED BY THE NEC. ALL CONDUCTOR SPLICES/TERMINATIONS SHALL BE MADE BY TINNED COPPER COMPRESSION LUGS. NYLON SLEEVED COMPRESSION TYPE RING LUGS SHALL BE USED FOR SCREW TERMINALS EXCEPT CONDUCTORS MAY BE TERMINATED DIRECTLY IN SCREW-COMPRESSION TERMINALS. WIRE NUTS ARE NOT PERMITTED.

KEYED NOTES:

1. PROVIDE FILL AS NEEDED TO PROVIDE A FINISHED GRADE ELEVATION TO SATISFY METER MOUNTING HEIGHT REQUIREMENT AND A MINIMUM ELEVATION FOR BOTTOM OF EQUIPMENT OF 889.0', WHICH IS 1.0' ABOVE THE 10-YEAR FLOOD ELEVATION.

PANEL SCHEDULE

REV.	LOAD DESCRIPTION	DWG. NO.	CABLE SIZE AWG	CABLE. NO.	LOAD DATA CONN. A	LOAD DATA CONT. A	SEE NOTE	CKT. NO.	BREAKER RATING	120/240 VOLT BUS L1	120/240 VOLT BUS L2	BREAKER RATING	CKT. NO.	SEE NOTE	LOAD DATA CONT. A	LOAD DATA CONN. A	CABLE. NO.	CABLE SIZE AWG	DWG. NO.	LOAD DESCRIPTION	REV.
									MAIN	DRAW BREAKER HERE		100									
	POLE RECEPTACLE #1		12	1	1.5			1	20	-			2							SPACE	
	POLE RECEPTACLE #2		12	3	1.5			3	20		-		4							SPACE	
	SPACE							5		-			6							SPACE	
	SPACE							7			-		8							SPACE	

	L1		L2	NOTE
TOTAL CONNECTED (NON-CONTINUOUS) LOAD (AMPS)	1.5		1.5	1
TOTAL CONTINUOUS LOAD (AMPS)	0.0		0.0	2
				3

120/240V 1 PH. 3W.
TMI SERVICE

GENERAL NOTES:

MANUFACTURER INFORMATION:

MFG: MILBANK

MODEL: U5168

BUS RATING: 100 AMPS

S.C. RATING: 22 KAIC

MAIN BKR. TYPE: Q2100H

BRANCH BKR. TYPE: MULTI-MFR PLUG-ON STYLE

NEUTRAL BUS: YES

NEUTRAL BONDING JUMPER: YES

REFERENCE DRAWING:

PLAN: 400-02

COMMONWEALTH OF PENNSYLVANIA PROFESSIONAL ENGINEER LUCAS J. DELONG No PE083230

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

PROPOSED ELECTRICAL SERVICE

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
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GSD	SFG	TAK	4214-017	05/22/23	440-01

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PLANTING NOTES:
1. RIPRAP AND BOULDERS ON WEIRS NOT SHOWN TO ALLOW OTHER DETAILS TO BE SHOWN.
2. PLANTING IS ONLY REQUIRED IN EXISTING VEGETATED AREA THAT ARE DISTURBED DURING CONSTRUCTION.
3. NO TREES SHALL BE PLANTED WITHIN 20 FEET OF ANY OVERHEAD POWER LINES OR WITHIN 10 FEET OF ANY PERMANENT GRAVEL OR PAVED ROADWAY.

30 0 30 60
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
5/30/23

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

RESTORATION PLAN - NLF

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
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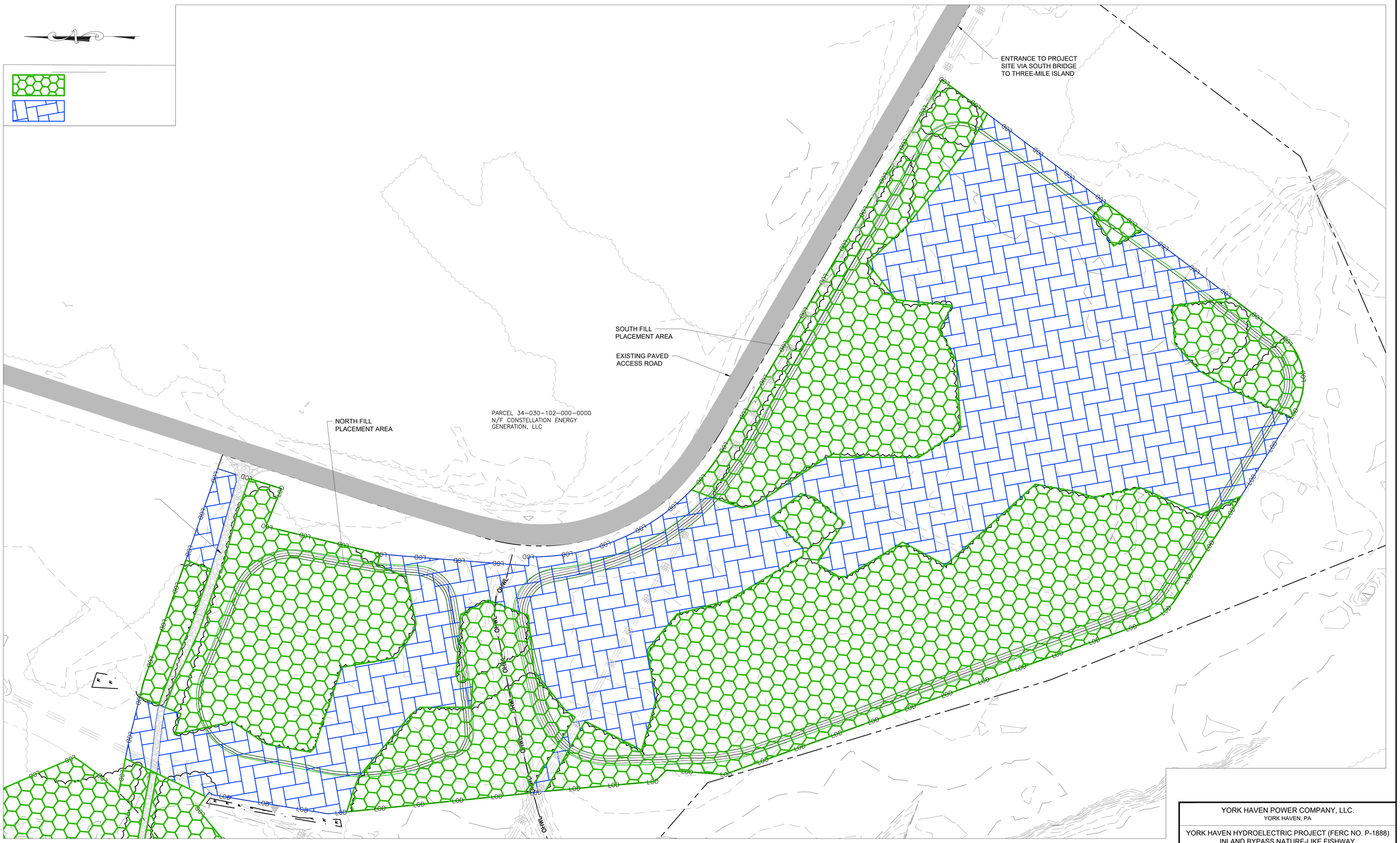
GSM	SFG	TAK	4214-017	05/22/23	600-01



PLANTING NOTES:
1. PLANTING IS ONLY REQUIRED IN EXISTING VEGETATED AREA THAT ARE DISTURBED DURING CONSTRUCTION.
2. NO TREES SHALL BE PLANTED WITHIN 20 FEET OF ANY OVERHEAD POWER LINES OR WITHIN 10 FEET OF ANY PERMANENT GRAVEL OR PAVED ROADWAY.

50 0 50 100
SCALE IN FEET

COMMONWEALTH OF PENNSYLVANIA
TYLER A. KREIDER
ENGINEER
05/22/23

No.	Revision	Date	Drawn	Checked
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A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked
GSM	SFG	TAK

YORK HAVEN POWER COMPANY, LLC.
YORK HAVEN, PA

YORK HAVEN HYDROELECTRIC PROJECT (FERC NO. P-1888)
INLAND BYPASS NATURE-LIKE FISHWAY

RESTORATION PLAN
STAGING AREA

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Project No.	Date Revised	Drawing No.
4214-017	05/22/23	600-02

PRINTED:

PERMANENT PLANTING TABLE FOR YORK HAVEN INLAND NLF									
TREES (PLANT OCTOBER TO MARCH)			SHRUBS (PLANT OCTOBER TO MARCH)						
(~20% OF EACH SPECIES, ALTERNATES MAY BE APPROVED	SIZE	SPACING (FT. O.C.)	TYPE (~25% OF EACH SPECIES, ALTERNATES MAY BE APPROVED IN WRITING)	SIZE	SPACING (FT. O.C.)	SEED MIX (APPLICATION RATE)*	TIMING FOR SEED PLANTING	EROSION CONTROL MATTING	LIVE STAKES (15' O.C).
	-	-	-	-	-	Ernst TMI No Maintenance Upland Meadow Mix (20 lbs/acre planted with 30 lbs/acre of cover crop**)	OCT 1 - MAY 15	SLOPES < 3:1 WITHIN 50 FT OF SURFACE WATER: NAG S75BN, OR EQUIVALENT SLOPES ≥ 3:1: NAG SC150BN, OR EQUIVALENT	-
AMERICAN SYCAMORE (PLATANUS OCCIDENTALIS, FACW),	SP5/ Container Seedling	15 ***	NORTHERN SPICEBUSH (LINDERA BENZOIN, FAC) SOUTHERN ARROWWOOD (VIBURNUM DENTATUM, FAC) SILKY DOGWOOD (CORNUS AMOMUM FACW), WITCHHAZEL (HAMAMELIS VIRGINIANA, FACU)	SP5/ Container Seedling	15 ***	Ernst Riparian Forest Floor Mix (32 lbs/acre; the cover crop is part of the mix)	OCT 1 - MAY 15	SLOPES < 3:1 WITHIN 50 FT OF SURFACE WATER: NAG S75BN, OR EQUIVALENT SLOPES ≥ 3:1: NAG SC150BN, OR EQUIVALENT	-
	-	-	-	-	-	N/A	N/A	N/A	RED OSIER DOGWOOD, NATIVE WILLOWS (SP.)

* For areas with slope of 3:1 OR STEEPER: Double the seeding rate of the mix, but keep the cover crop rate the same (where called out separately).

*** INSTALL ALL TREES AND SHRUBS INSIDE TREE TUBE WITH WOOD STAKE ON UPSTREAM SIDE OF PLANTING.

POST-CONSTRUCTION STORMWATER MANAGEMENT SEQUENCE

1. DEEP-TILL THE COMPACTED AREAS TO A DEPTH OF 8 TO 12 INCHES AFTER ADDING COMPOST MATERIAL AS A SOIL AMENDMENT. COMPOST SHALL BE APPLIED AT A MINIMUM RATE OF 4 INCHES OF COMPOST

2. REMOVE REMAINING ROCK AND STONE MATERIAL (LARGER THAN ~3 INCHES) ON THE SURFACE OF THE FILL PLACED IN THE FILL PLACEMENT OR STAGING AREAS, AS REQUIRED BY THE ENGINEER.

3. FOLLOWING TILLING AND COMPOSTING, THE TOPSOILS SHALL BE REGRADED ACROSS DISTURBED AREAS AND SEEDED AND MULCHED. SOIL TESTING SHALL BE PERFORMED ON THE TOPSOIL PRIOR TO SEEDING TO DETERMINE THE PROPER SOIL AMENDMENTS AND APPLICATION RATES FOR THE PROPOSED SEED MIXTURES. SOIL TEST KITS ARE AVAILABLE FROM THE DCCD OR COUNTY COOPERATIVE EXTENSION SERVICE OFFICES. UNLESS OTHERWISE PRESCRIBED BY THE SOIL TEST, 10-10-20 FERTILIZER SHALL BE APPLIED AT A RATE OF 1,000 LBS./ACRE AND LIME SHALL BE APPLIED AT A RATE OF 6 TONS/ACRES.

4. SEED MIX FOR THE SITE SHALL BE FROM ERNST CONSERVATION SEEDS, INC, OF MEADVILLE, PA, OR EQUIVALENT.

5. ALL AREAS SEEDED SHALL BE STABILIZED WITH ECBS OR MULCHED WITH CLEAN STRAW MULCH AT A RATE OF THREE TONS PER ACRE WITH TACKIFIER AND SHALL BE COMPRISED OF EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, AND NOT CHOPPED OR FINELY BROKEN. "CONTACK AT TACKIFIER" (OR EQUIVALENT) SHALL BE APPLIED AT THE MANUFACTURER'S RECOMMENDED RATE TO THE STRAW MULCH.

6. REMOVAL OF EROSION AND SEDIMENTATION BMP'S SHALL ONLY BE PERFORMED UPON ACHIEVEMENT OF A UNIFORM 70 PERCENT PERENNIAL VEGETATIVE COVER, AS DETERMINED BY THE DCCD, WITH A DENSITY CAPABLE OF RESISTING ACCELERATED EROSION FOR ALL AREAS WHICH WOULD CONTRIBUTE RUNOFF TO THE BMP'S. STABILIZE ANY DISTURBANCES ASSOCIATED WITH THE REMOVAL OF THE BMP'S.

POST-CONSTRUCTION STORMWATER MANAGEMENT OPERATION AND MAINTENANCE NOTES:

1. THE SEEDED AREAS AND NON-STRUCTURAL BMP'S STILL IN-PLACE SHALL BE INSPECTED WEEKLY AND AFTER EACH STORMWATER EVENT. THE CONTRACTOR SHALL PREPARE A WRITTEN REPORT DOCUMENTING EACH INSPECTION AND ALL BMP REPAIR OR REPLACEMENT AND MAINTENANCE ACTIVITIES UNTIL THE REVEGETATION REACHES A UNIFORM 70 PERCENT PERENNIAL COVER OVER THE ENTIRE SEEDED AREA AND THE PROJECT IS ACCEPTED BY THE OWNER AS COMPLETE.

2. EROSION AND SEDIMENTATION BMP'S MAY BE REMOVED WHEN SEEDED AREAS OBTAIN A VEGETATION OF GREATER THAN A UNIFORM 70 PERCENT PERENNIAL COVER OVER THE ENTIRE SEEDED AREA, COMPLETING THE FIELD REQUIREMENTS OF THE PCSM.

3. THE CONTRACTOR SHALL SUBMIT AN EXAMPLE INSPECTION FORM FOR REVIEW AND APPROVAL BY THE ENGINEER AND THE DAUPHIN COUNTY CONSERVATION DISTRICT.

4. THE E&S PLAN, INSPECTION REPORTS AND MONITORING RECORDS SHALL BE AVAILABLE FOR REVIEW AND INSPECTION BY THE OWNER, ENGINEER, PADEP OR THE DAUPHIN COUNTY CONSERVATION DISTRICT.

5. THE CONTRACTOR SHALL PREPARE AND SUBMIT AS-BUILT DRAWINGS TO THE ENGINEER TO PREPARE THE RECORD DRAWINGS.

6. THE OWNER WILL INCLUDE WITH THE NOTICE OF TERMINATION A SET OF RECORD DRAWINGS AND A FINAL CERTIFICATION STATEMENT FROM A LICENSED PROFESSIONAL, WHICH READS AS FOLLOWS: "I (NAME) DO HEREBY CERTIFY PURSUANT TO THE PENALTIES OF 18 PA.C.S.A. § 4904 TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE ACCOMPANYING RECORD DRAWINGS ACCURATELY REFLECT THE AS-BUILT CONDITIONS, ARE TRUE AND CORRECT, AND ARE IN CONFORMANCE WITH CHAPTER 102 OF THE RULES AND REGULATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE PROJECT SITE WAS CONSTRUCTED IN ACCORDANCE WITH THE APPROVED E&S PLAN, ALL APPROVED PLAN CHANGES AND ACCEPTED CONSTRUCTION PRACTICES."

THREE MILE ISLAND NO MAINTENANCE UPLAND MEADOW MIX

% of mix by weight	Latin Name	Common Name	Ecotype	Height (ft)
1.0	Asclepias syriaca	Common Milkweed	PA	6.5
2.0	Aster pilosus	Heath Aster	PA	4.9
4.0	Chamaecrista fasciculata	Partridge Pea	PA	3.3
1.0	Desmodium canadense	Showy Ticktrefoil	PA	4.9
20.0	Elymus virginicus	Virginia Wildrye	PA or Madison	4.2
4.0	Heliopsis helianthoides	Ox-Eye Sunflower	PA	4.9
1.0	Monarda fistulosa	Wild Bergamot	PA (FIG)	4.0
20.5	Panicum anceps	Beaked Panicgrass	MD	3.8
37.4	Panicum clandestinum	Deertongue	Tioga	4.2
2.0	Penstemon digitalis	Tall White Beardtongue	PA	4.9
0.6	Pycnanthemum tenuifolium	Narrow Leaved Mountain Mint	PA	3.0
3.0	Rudbeckia hirta	Black Eyed Susan	Any	3.3
0.5	Rudbeckia triloba	Brown Eyed Susan	WV	4.5
1.5	Senna hebecarpa	Wild Senna	WV/VA	6.1
0.5	Solidago canadensis	Canada Goldenrod	PA	6.5
1.0	Vernonia noveboracensis	New York Ironweed	PA	6.9
100.0	Total			

51.5 % Grass-like Species by seed count

48.5 % Wildflower by seed count

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TYLER A. KREIDER
ENGINEER
No. PE084968
5/30/23

No.	Revision	Date	Drawn	Checked
B	90% DESIGN DRAWINGS	05/22/23	SFG	TAK
A	ISSUED FOR PERMITTING	03/20/23	SFG	TAK

Designed	Drawn	Checked	Project No.	Date Revised	Drawing No.
GSM	SFG	TAK	4214-017	05/22/23	600-03

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POST-CONSTRUCTION STORMWATER DETAILS

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