# APPENDIX H DESIGN PLANS (PROVIDED SEPARATELY)

## EAST BRANCH CODORUS CREEK MITIGATION BANK DESIGN PLANS

## YORK COUNTY, EAST SPRINGFIELD TOWNSHIP, PENNSYLVANIA

ROJECT-CENTERED RESTORATION EFFORTS WILL FOCUS ON THE CREATION OF A STABLE STREAM AND RIPARIAN SYSTEM. IN ADDITION TO THE REESTABLISHMENT OF APPROPRIATE RIPARIAN BUFFER ZONES ALONG STREAMS, RESTORATION ACTIVITIES WILL RESULT IN RUNOFF MANAGEMENT SOLUTIONS AND CAPTURE AND TREAT IMPACTED WATERS BEFORE THEY ARE DISCHARGED INTO THE WATERSHED OR POINTS DOWNSTREAM IN AN EFFORT TO REDUCE THE ONSLAUGHT OF EXCESS NUTRIENTS THREATENING THE HEALTH OF THE WATERSHED'S RIVERS AND STREAMS.

5.9 KALTREIDER EDWARD S

PARCEL ID: 47000F1006400 5.10 CODORUS CHURCH OF THE BRETHREN

PARCEL ID: 47000F10063C0

### 2. SITE ADDRESS:

1886 DUNKARD VALLEY ROAD YORK, PA 17403

3. SITE COORDINATES: 39°51'26.579" N

### 4. SPONSOR:

76°41'25.276" W

FIRST PENNSYLVANIA RESOURCES, LLC.

ATTN: DENNIS COSTA

33 TERMINAL WAY, SUITE W445A PITTSBURGH, PA 15219

ATTN: DCOSTA@RES.US

PHONE: (412) 249-2440

### 5. <u>LANDOWNERS:</u>

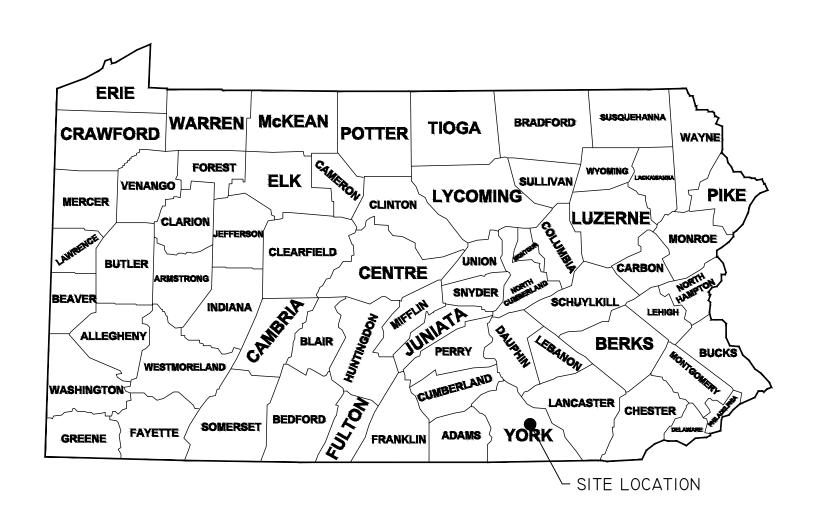
- 5.1 SNOW CHRISTOPHER M & CHRISTINE L PARCEL ID: 47000E1006700
- 5.2 LEWIS JOSEPH F & HEIDI A MILLARD
- PARCEL ID: 47000E10047C0
- 5.3 CUCULIS WILLIAM F & KIMBERLY W PARCEL ID: 47000E1004000
- 5.4 DLK DAVIDSON L P
- PARCEL ID: 47000EI003900
- 5.5 DAVIDSON DAVID M JR & LINDA B
- PARCEL ID: 47000F1005600 5.6 INNERST DANIEL J & BETH A
- PARCEL ID: 47000E1003800
- 5.7 TJ PLOMAS FAMILY LP PARCEL ID: 47000F1005500
- 5.8 KEENEY RANDAL E & DARLENE
  - PARCEL ID: 47000F1005200 PARCEL ID: 47000E1003700

- 6.I TOPOGRAPHICAL SURVEY OF THE PROJECT AREA PERFORMED BY RESOURCE ENVIRONMENTAL SOLUTIONS, LLC FROM DECEMBER 2019 UNTIL MARCH 2020.
- 6.2 BOUNDARY SURVEYS OF KALTREIDER, CHURCH OF THE BRETHERN, AND DAVIDSON PARCELS PERFORMED BY C.S. DAVIDSON IN
- 6.3 ADDITIONAL SPATIAL DATA PRESENTED IN THIS PLAN SET WAS OBTAINED USING THIRD-PARTY PROVIDED AND PUBLICLY AVAILABLE GEOSPATIAL DATA RESOURCES IN 2019 AND 2020.

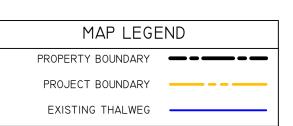
### WETLAND INFORMATION:

WETLAND DELINEATION COMPLETED BETWEEN SEPTEMBER 2018 THROUGH MARCH 2020 BY FIRST PENNSYLVANIA RESOURCE

EASEMENT AREA: 91.26 ACRES PROJECT BOUNDARY: 137.98 ACRES



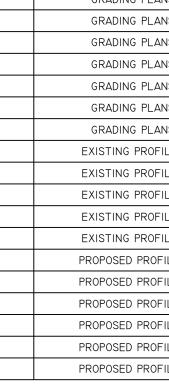


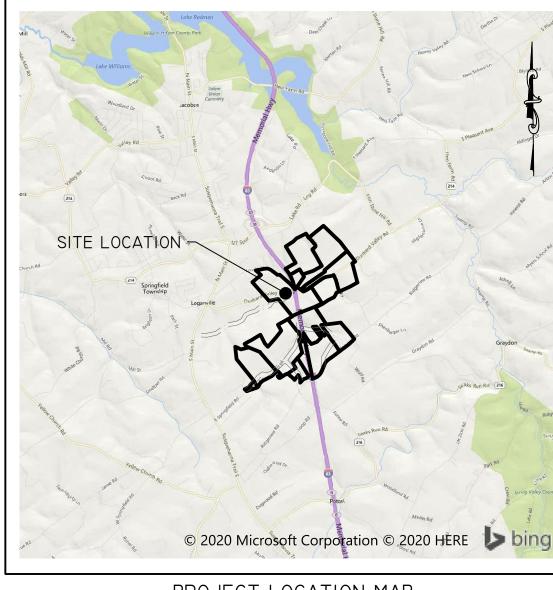


## FIRST PENNSYLVANIA RESOURCE, LLC.

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PHONE: (412) 249-2440





### PROJECT LOCATION MAP

	SHEET INDEX							
SHEET #	SHEET TITLE	SHEET #	SHEET TITLE					
C100	EXISTING SITE OVERVIEW	C6II	PROPOSED PROFILES					
C200	PROPOSED SITE OVERVIEW	C612	PROPOSED PROFILES					
C300	GRADING PLANS	C613	CROSS SECTION PROFILES					
C30I	GRADING PLANS	C614	CROSS SECTION PROFILES					
C302	GRADING PLANS	C800	REHABILITATION DETAILS					
C303	GRADING PLANS	C80I	CONSTRUCTION DETAILS					
C304	GRADING PLANS	C802	CONSTRUCTION DETAILS					
C305	GRADING PLANS	C900	SITE RESTORATION PLAN					
C306	GRADING PLANS	C90I	SITE RESTORATION LIST					
C307	GRADING PLANS	C902	SITE RESTORATION DETAILS					
C309	GRADING PLANS	SI00	UPPER MAINSTEM: 2YR STRESS					
C600	EXISTING PROFILES	SIOI	UPPER MAINSTEM: IOYR STRESS					
C60I	EXISTING PROFILES	SI02	UPPER MAINSTEM: 100YR STRESS					
C602	EXISTING PROFILES	S103	MIDDLE MAINSTEM: 2YR STRESS					
C603	EXISTING PROFILES	S104	MIDDLE MAINSTEM: 10YR STRESS					
C604	EXISTING PROFILES	SI05	MIDDLE MAINSTEM: 100YR STRESS					
C605	PROPOSED PROFILES	SI06	LOWER MAINSTEM: 2YR STRESS					
C606	PROPOSED PROFILES	SI07	LOWER MAINSTEM: IOYR STRESS					
C607	PROPOSED PROFILES	SI08	LOWER MAINSTEM: 100YR STRESS					
C608	PROPOSED PROFILES	S109	UNT 7: 2YR STRESS					
C609	PROPOSED PROFILES	SII0	UNT 7: IOYR STRESS					
C6I0	PROPOSED PROFILES	SIII	UNT 7: IOOYR STRESS					

### ONE CALL SERIAL NO.: 20200140-421, 446, 476, 506



CALL BEFORE YOU DIG! PENNSYLVANIA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 VORKING DAYS IN DESIGN STAGE-STOP CALL PENNSYLVANIA ONE CALL SYSTEM, INC. I-800-242-1776

PENNSYLVANIA ACT 38 (1991) REQUIRES NO LESS THAN 3 WORKING DAYS NOTICE NOR MORE THAN 10 WORKING DAYS NOTICE FROM EXCAVATORS WHO ARE ABOUT TO: DIG, DRILL, BLAST AUGER, BORE, GRADE, TRENCH, OR DEMOLISH WHEN IN THE CONSTRUCTION PHASE. FOR LOCATION REQUESTS IN THE STATE OF PENNSYLVANIA, CALL TOLL FREE I-800-242-1776. UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THE LOCATION MUST BE CONSIDERED APPROXIMATE, OTHER UNDERGROUND UTILITIES MAY EXIST WHICH ARE NOT SHOWN. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN ALL PHYSICAL LOCATIONS OF UTILITY LINES PRIOR TO THE TIME OF CONSTRUCTION. IN NO WAY SHALL THE CONTRACTOR HOLD THE SURVEYOR RESPONSIBLE FOR ANY UTILITY LOCATION SHOWN ON THIS PLAN.

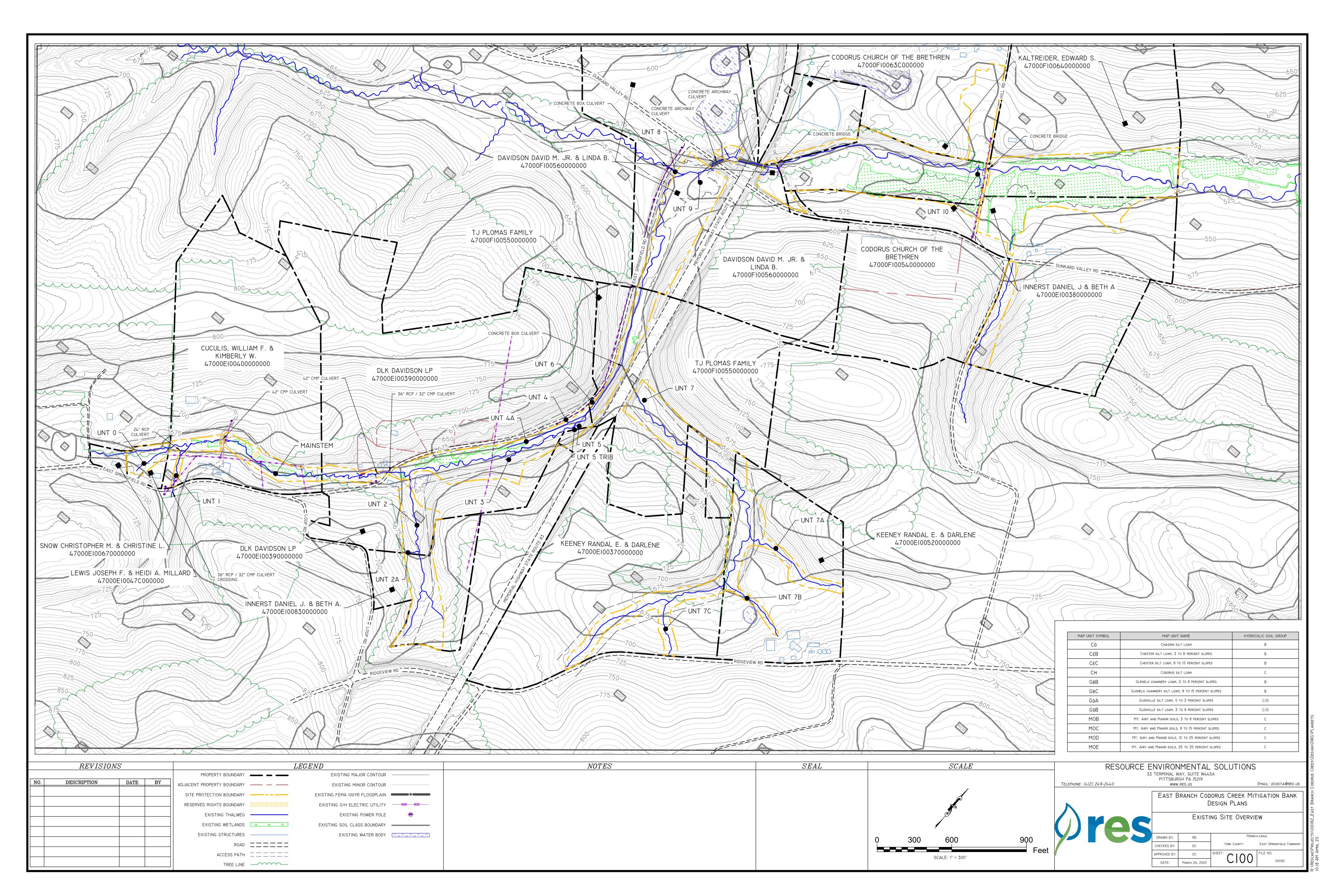
21: SITE IS LOCATED IN THE STREAM BETWEEN EAST SPRINGFIELD ROAD AND I-83 - SOUTH OF DUNKARD VALLEY ROAD ON THE PROPERTY OWNED BY DAVIDSON. SITE CONTINUES NORTH OF DUNKARD VALLEY ROAD ALONG STREAM TO CULVERT THAT GOES. UNDERNEATH 183. WE WILL BE WORKING IN THE STREAM AND FLOODPLAINS - NO WORK TO BE DONE IN ROADS OR TO CULVERTS

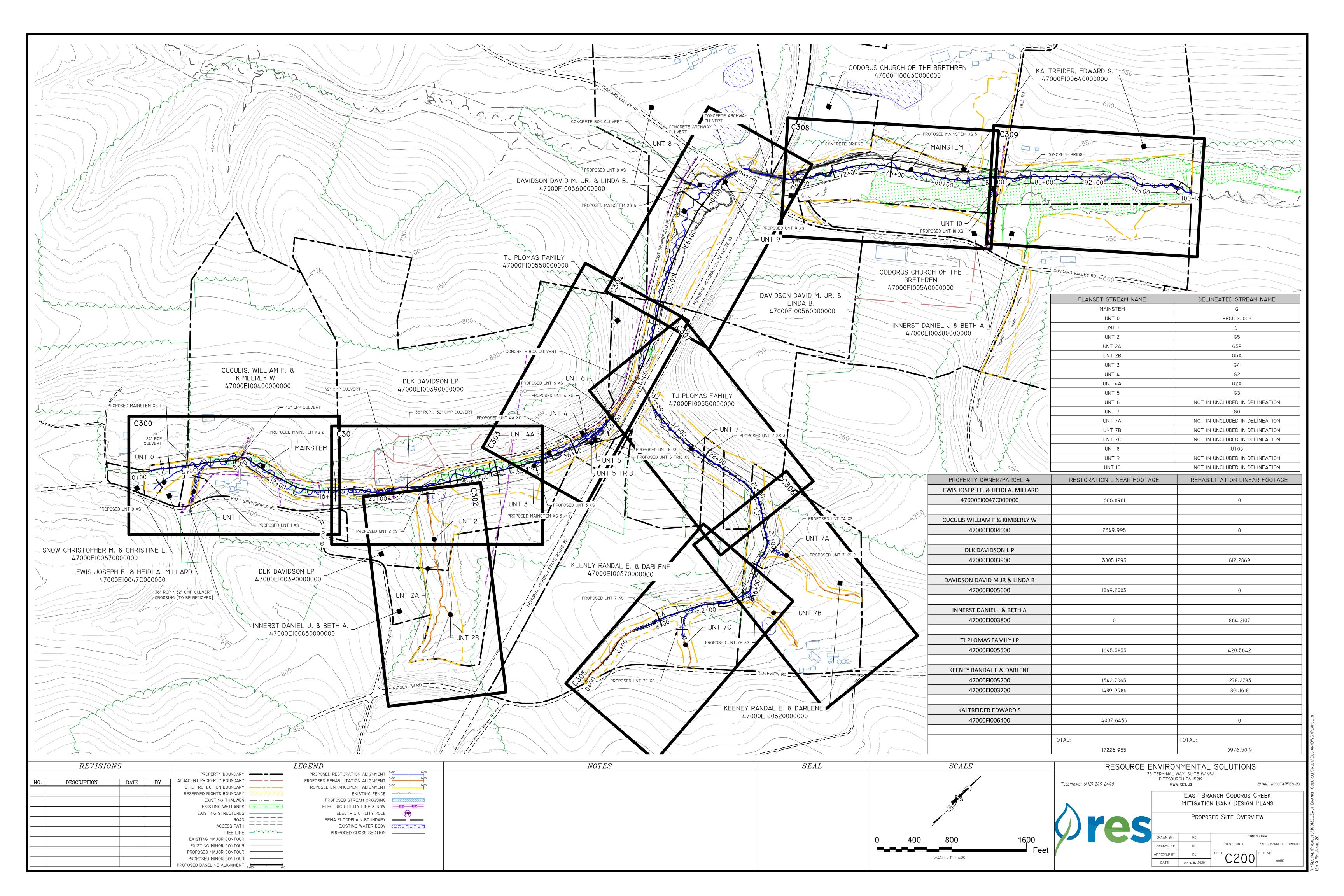
46: SITE IS LOCATED IN THE STREAM THAT RUNS ALONG DUNKARD VALLEY ROAD. SITE BEGINS AT CULVERT HEADING EAST THAT GOES UNDER 183 AND CONTINUES ALONG THE STREAM TO CULVERT AT HILL ROAD. SITE AREA IS AT THE STREAM AND APPROX

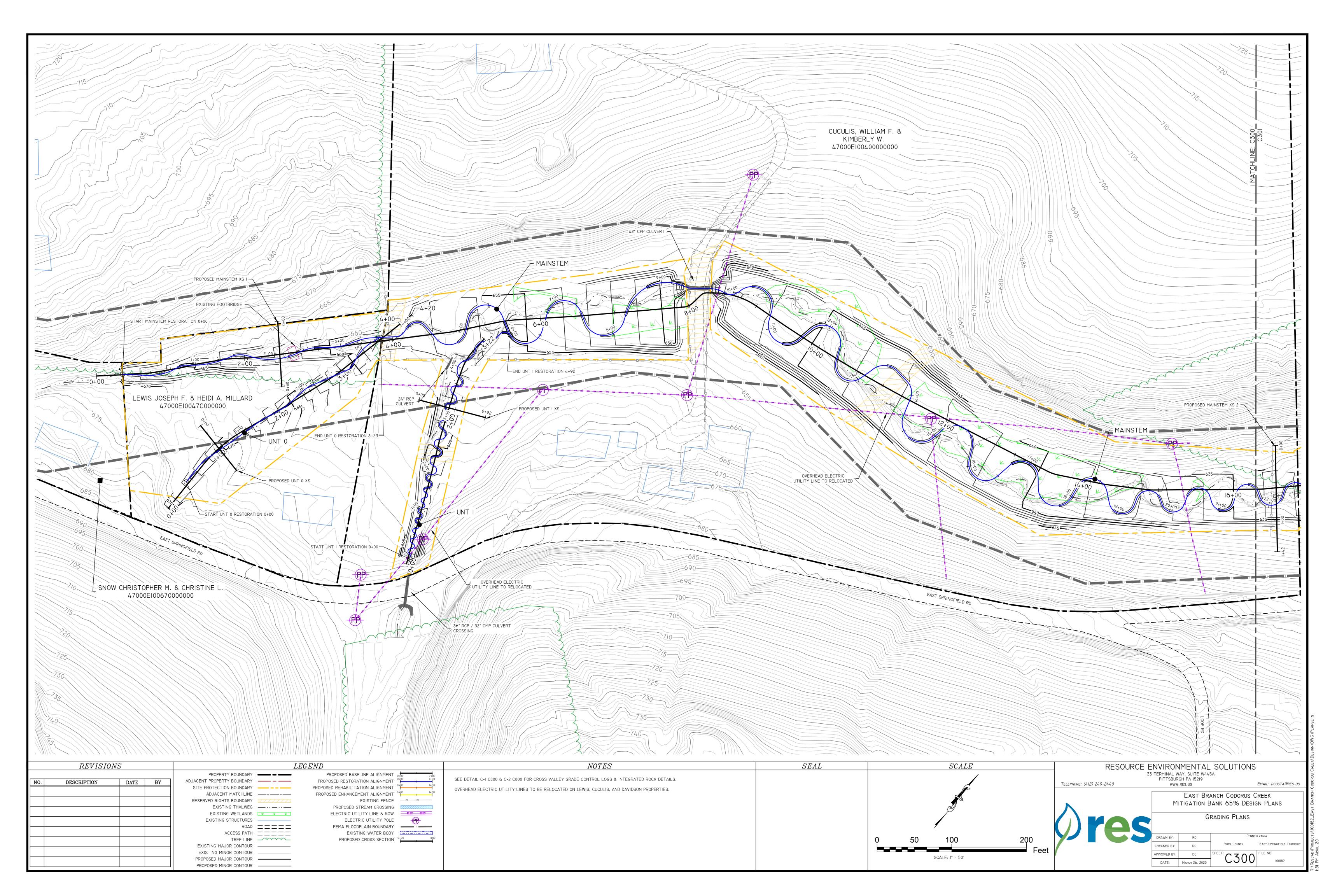
476: SITE IS LOCATED ALONG THE STREAM STARTING AT CULVERT ON HILL ROAD APPROX 300 FT NORTH OF DUNKARD VALLEY

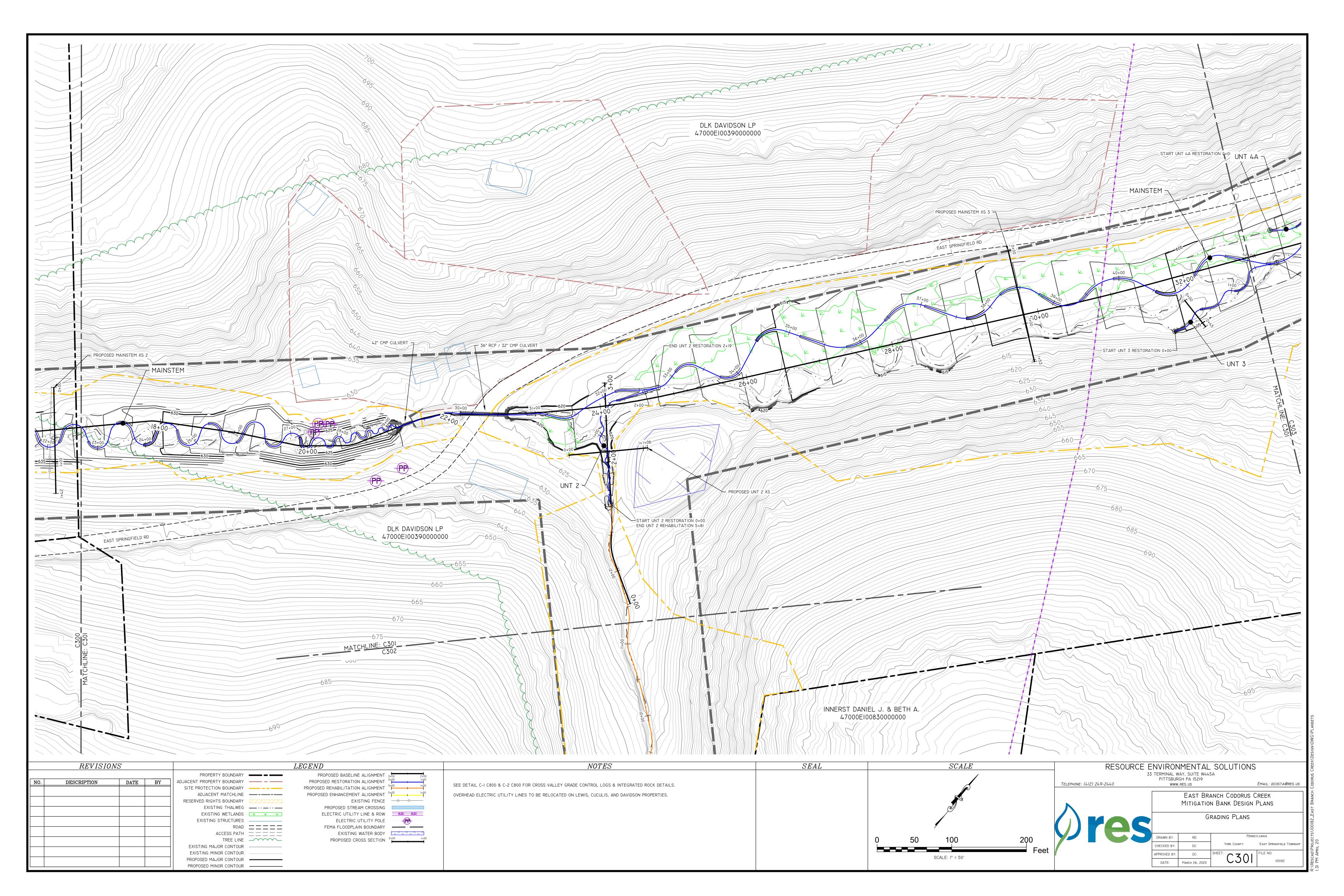
506: SITE IS LOCATED IN THE STREAM LOCATED BETWEEN EAST SPRINGFIELD ROAD AND 183, STARTS APPROX 2000FT S OF UNKARD VALLEY ROAD AND CONTINUES SOUTH TO A LARGE METAL PIPE CULVERT THAT CROSSES EAST SPRINGFIELD ROAD NEAR

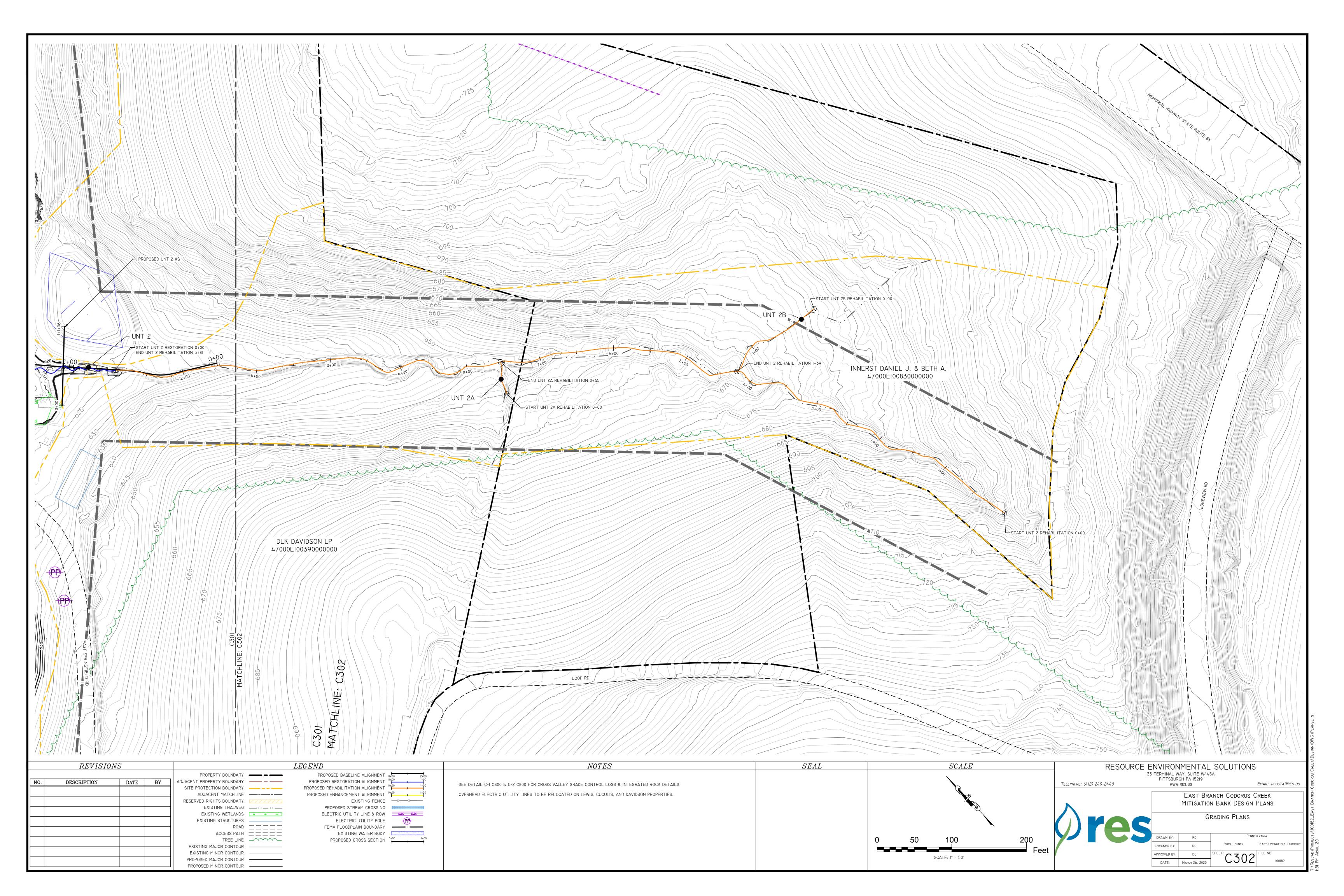
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	EAST DRAINCH CODORUS CREEN	MILIGATION BANK DESIGN PLANS	PENNSYLVANIA	YORK COUNTY	SHEET:	C000	
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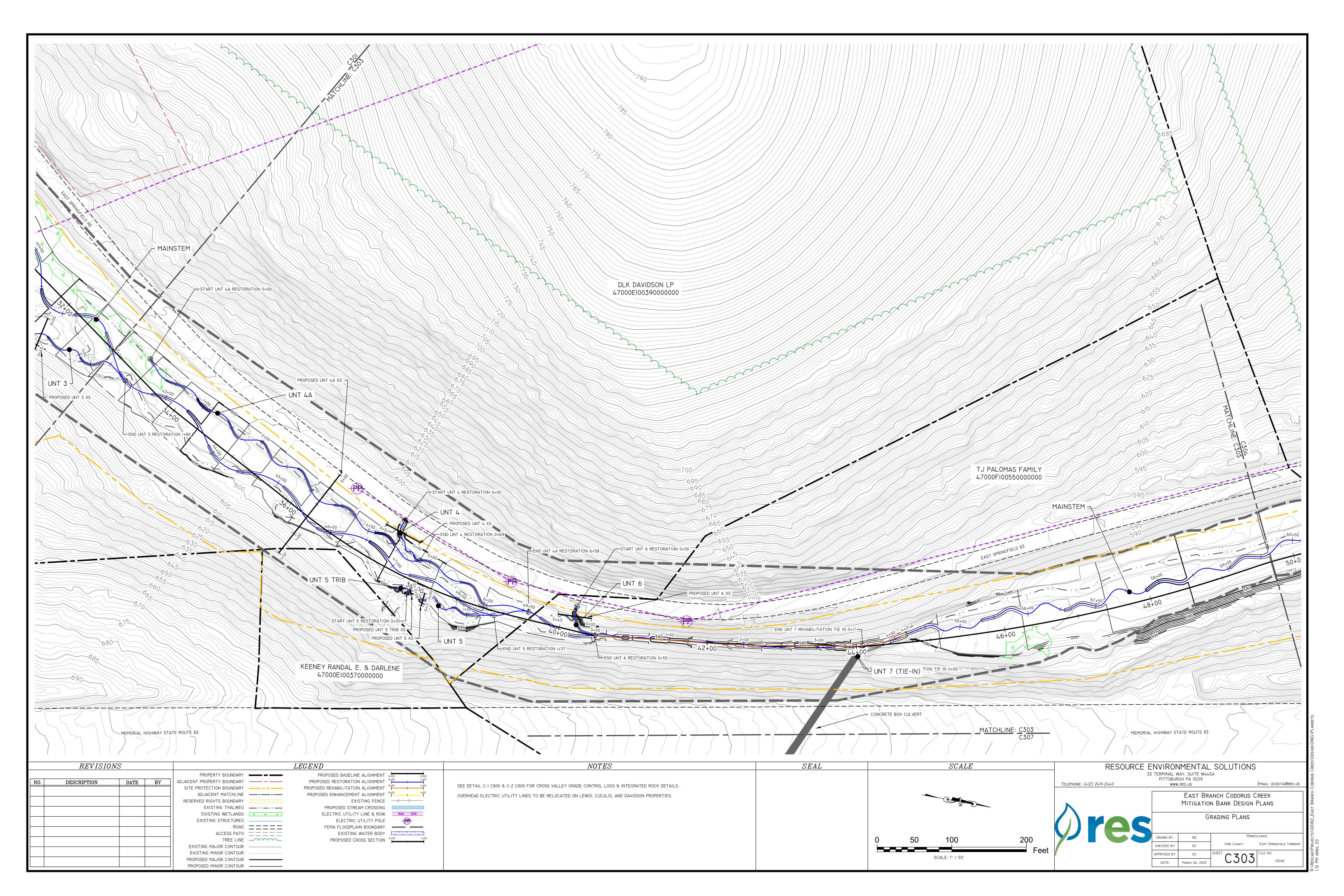


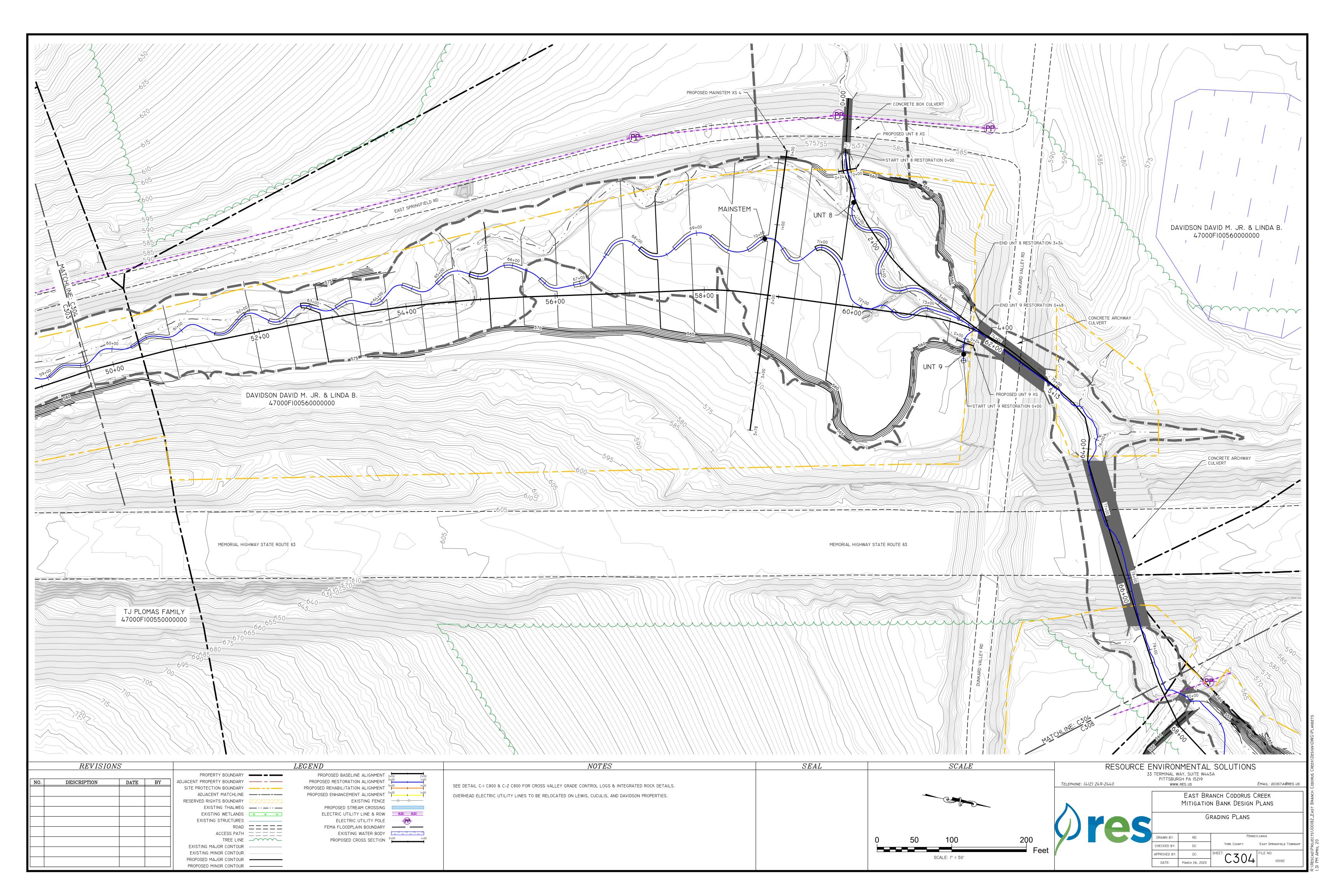


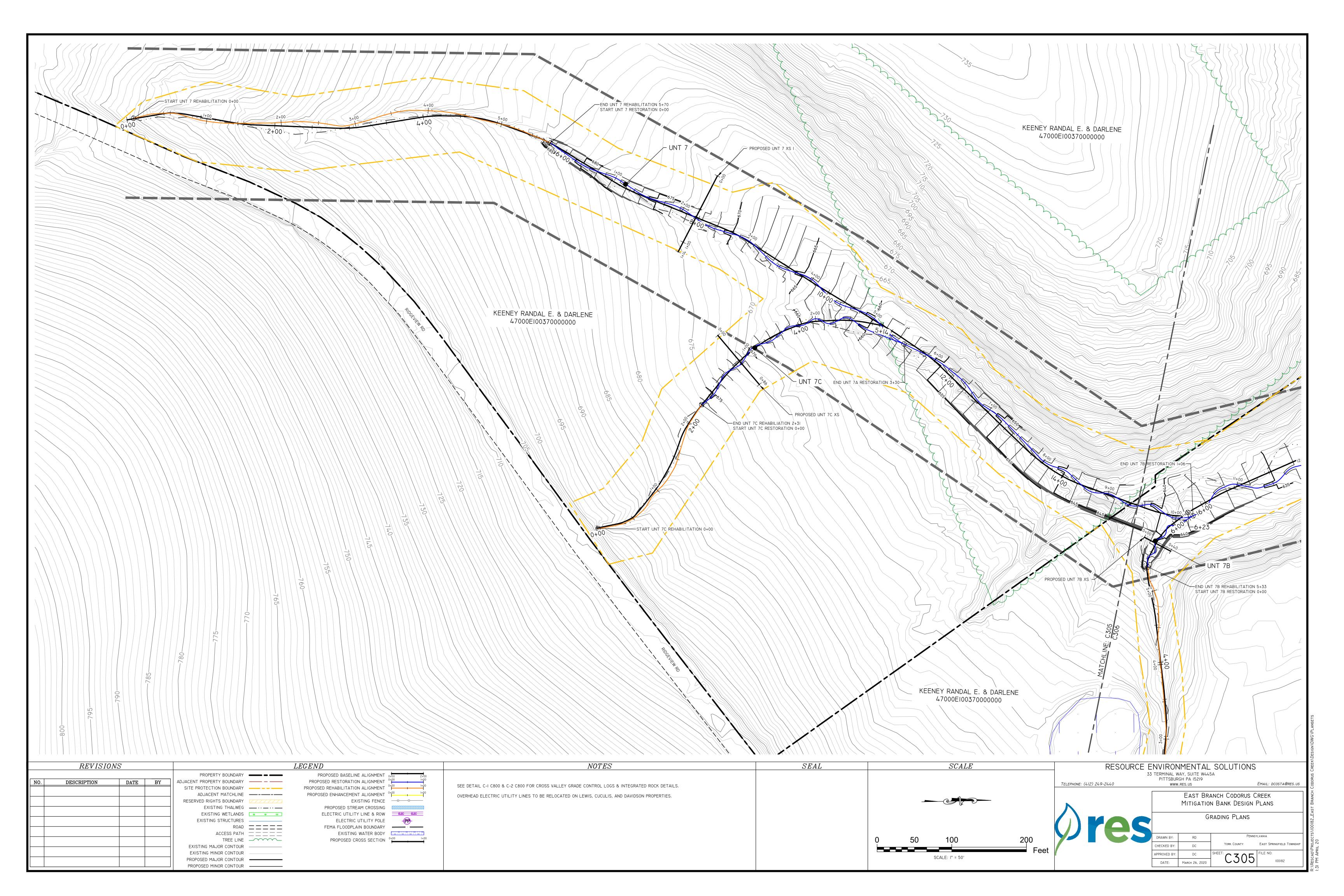


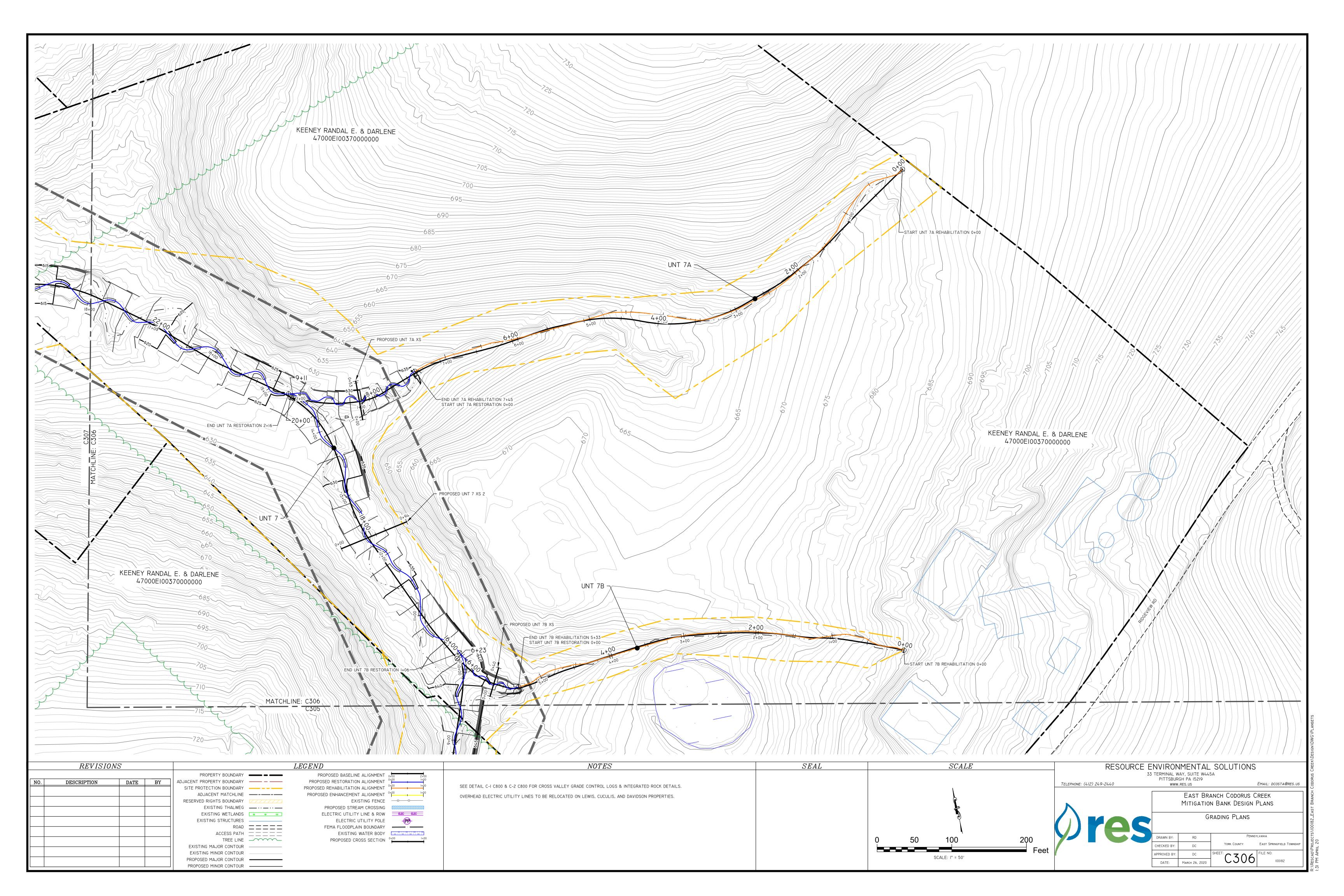


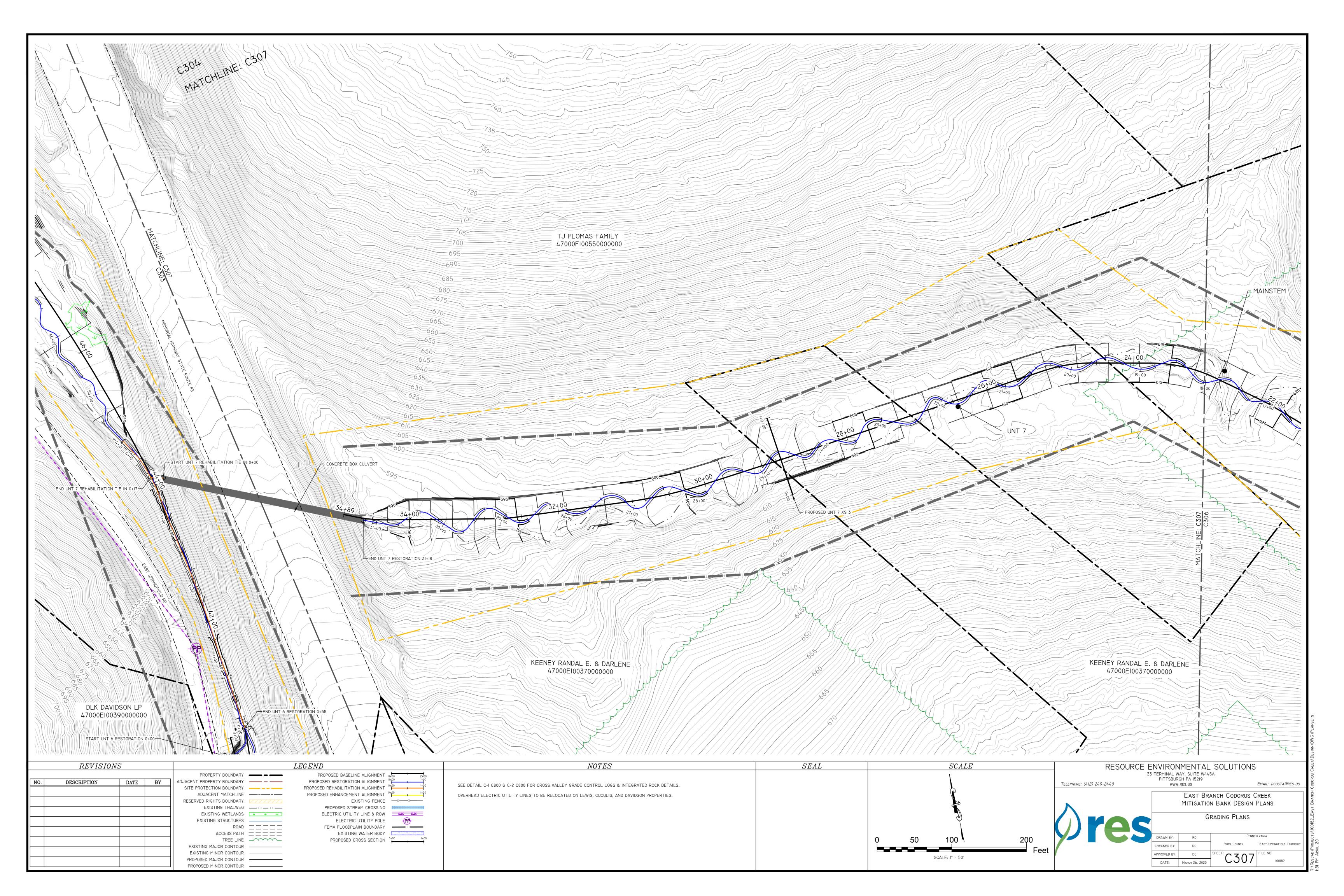


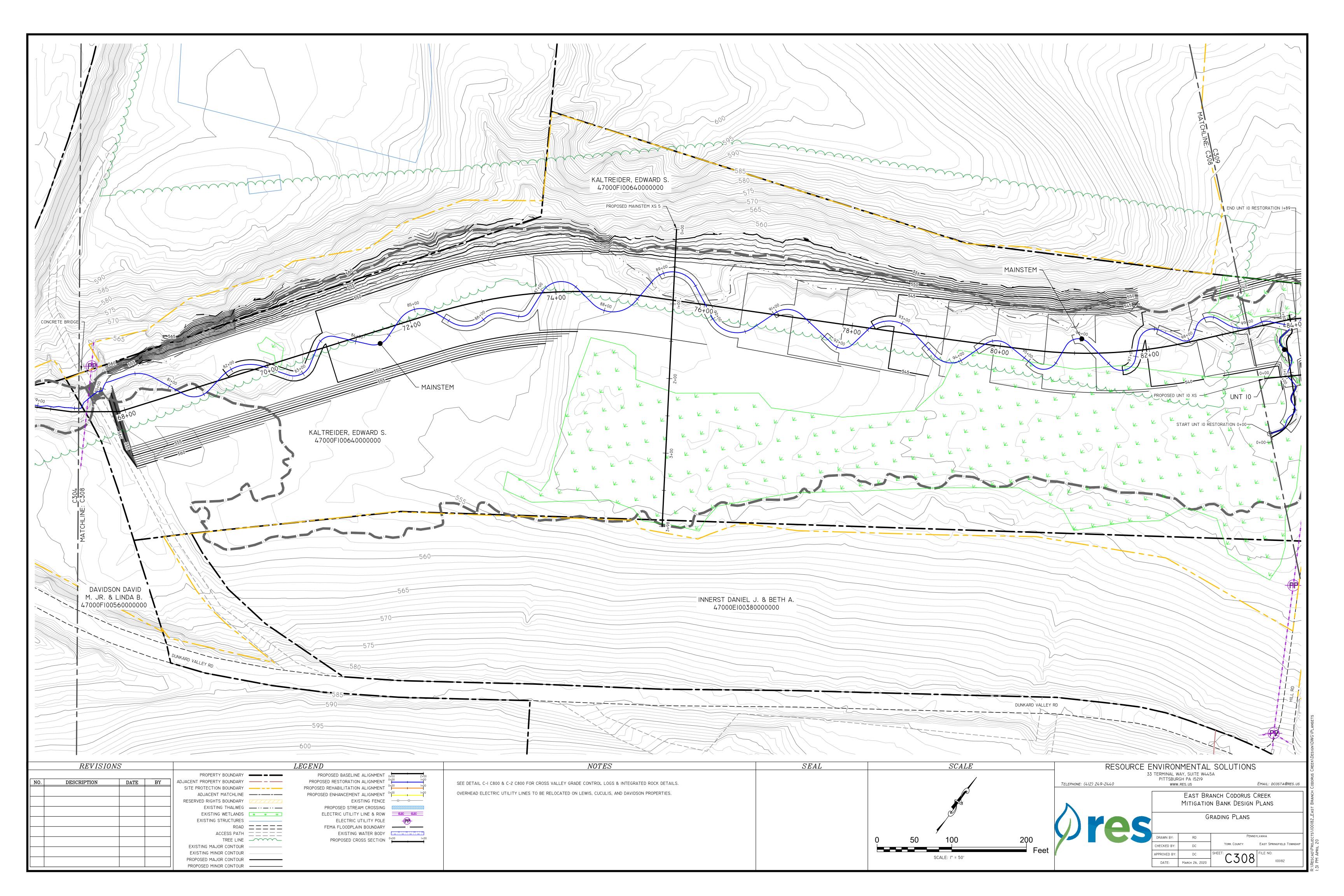


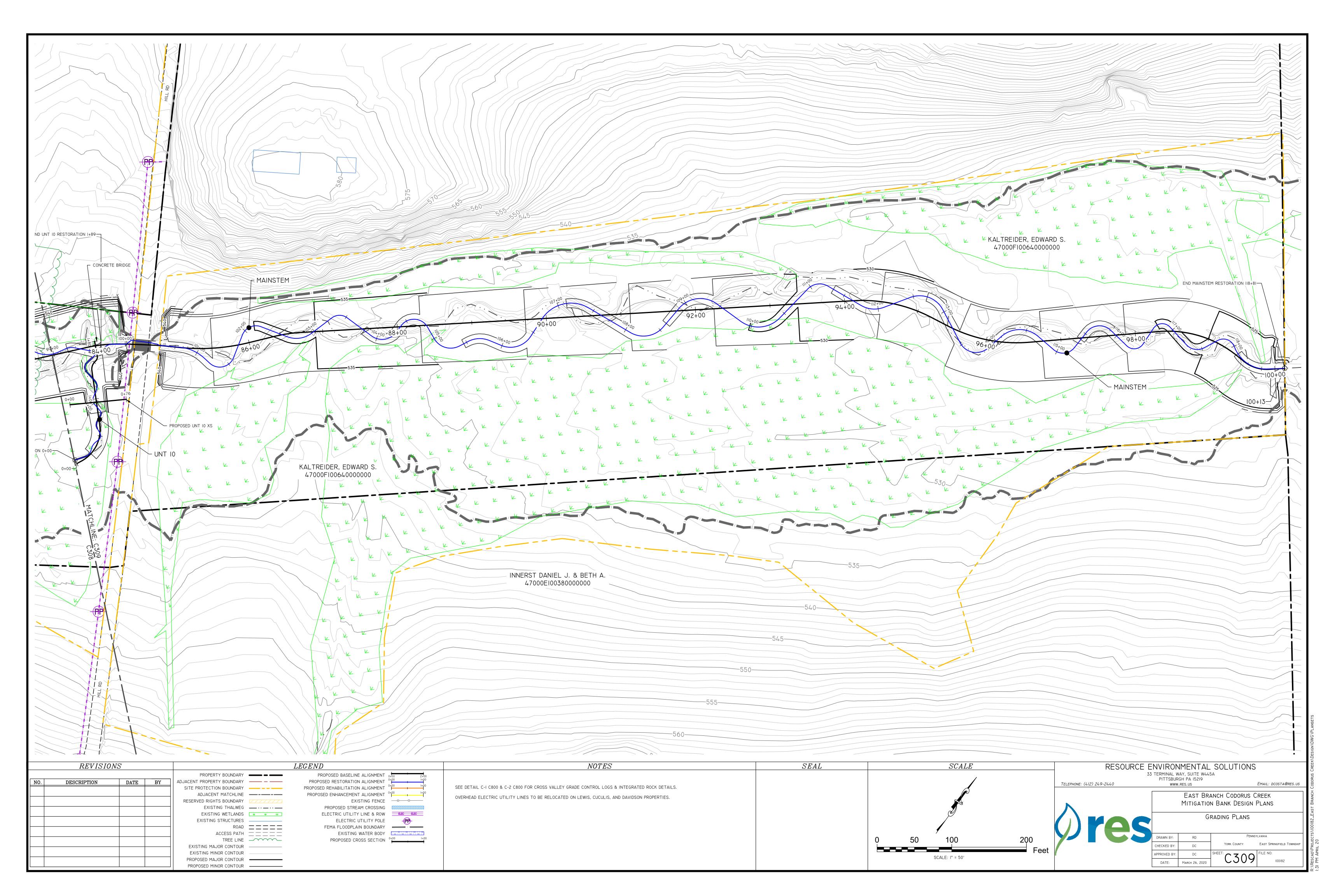


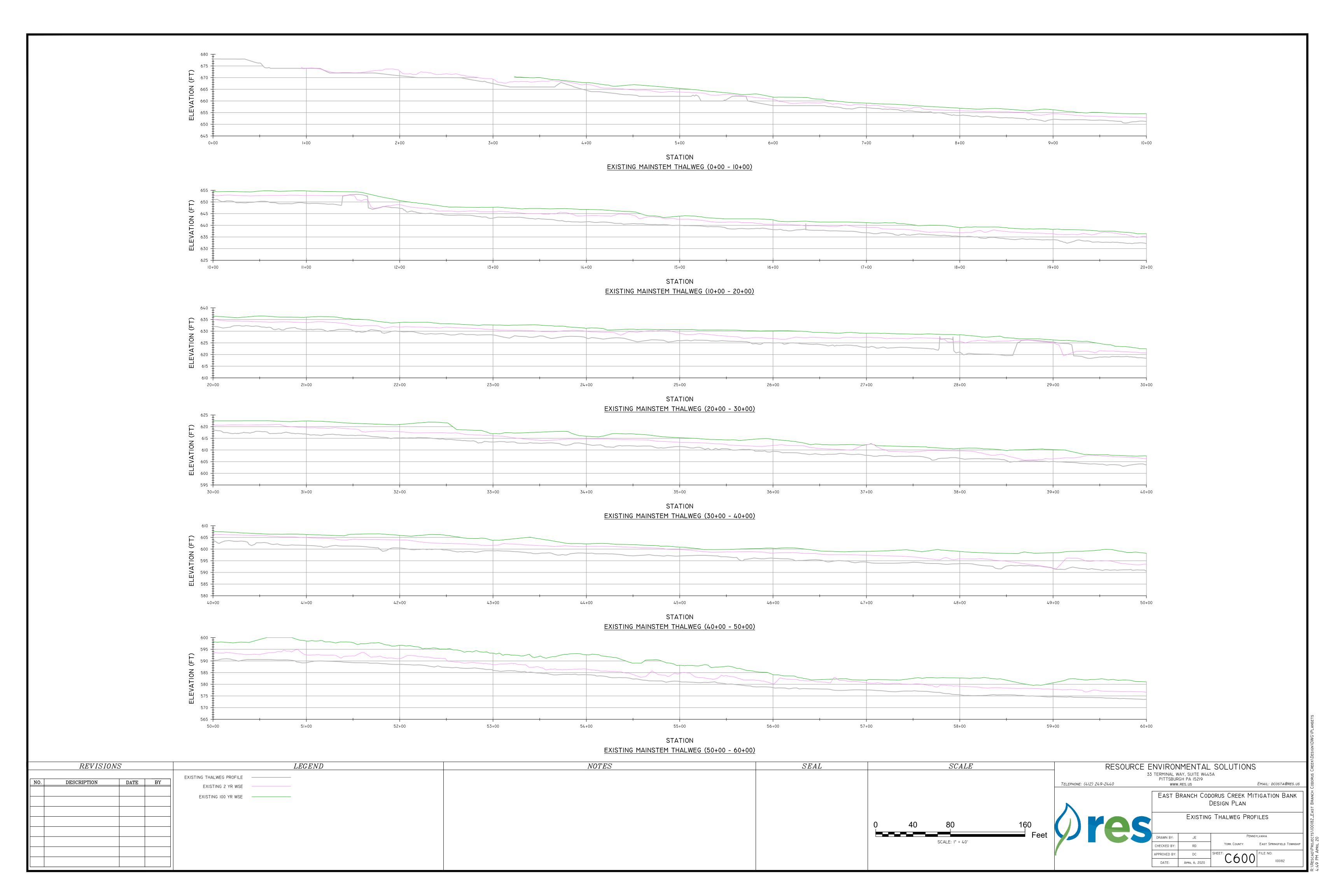


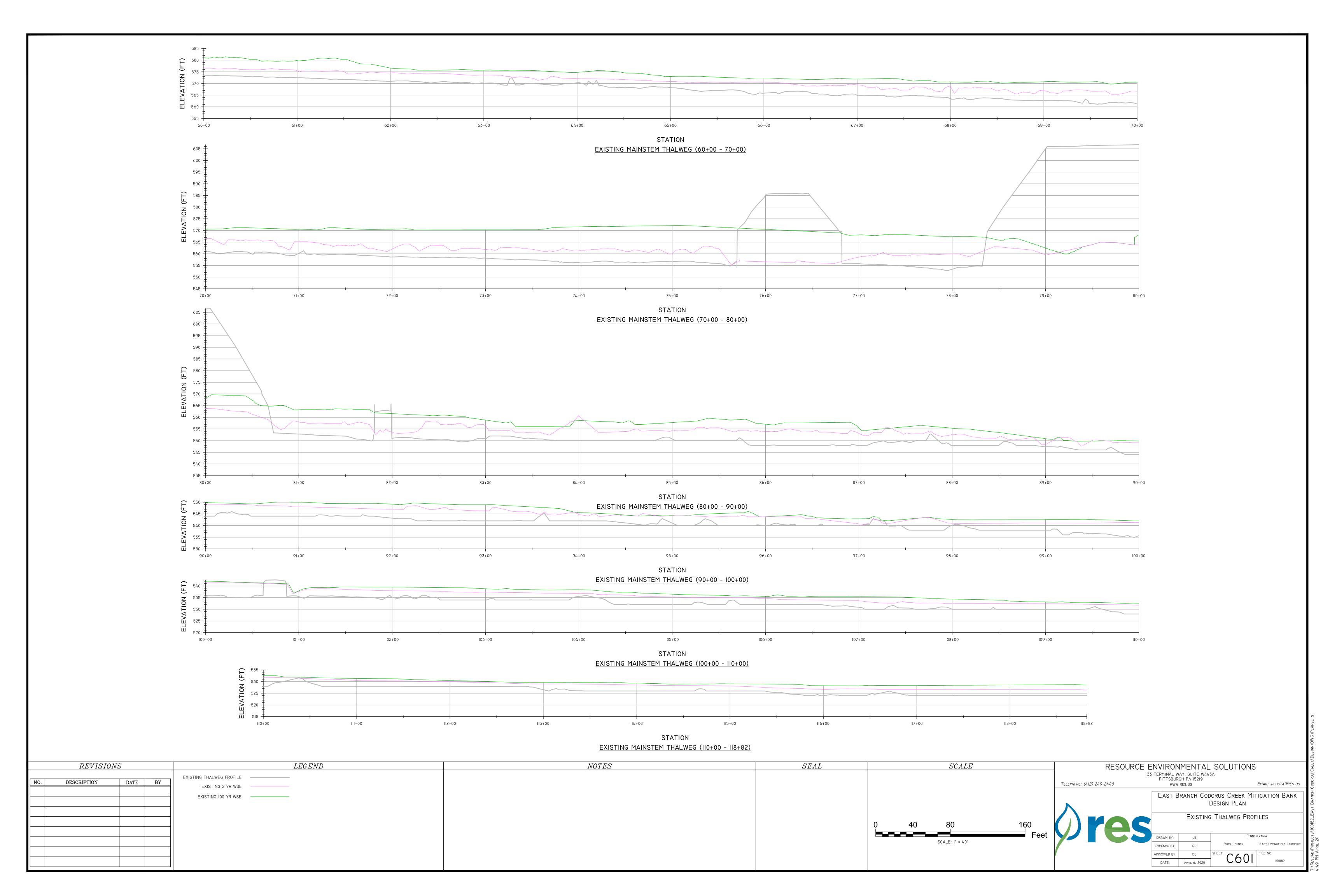


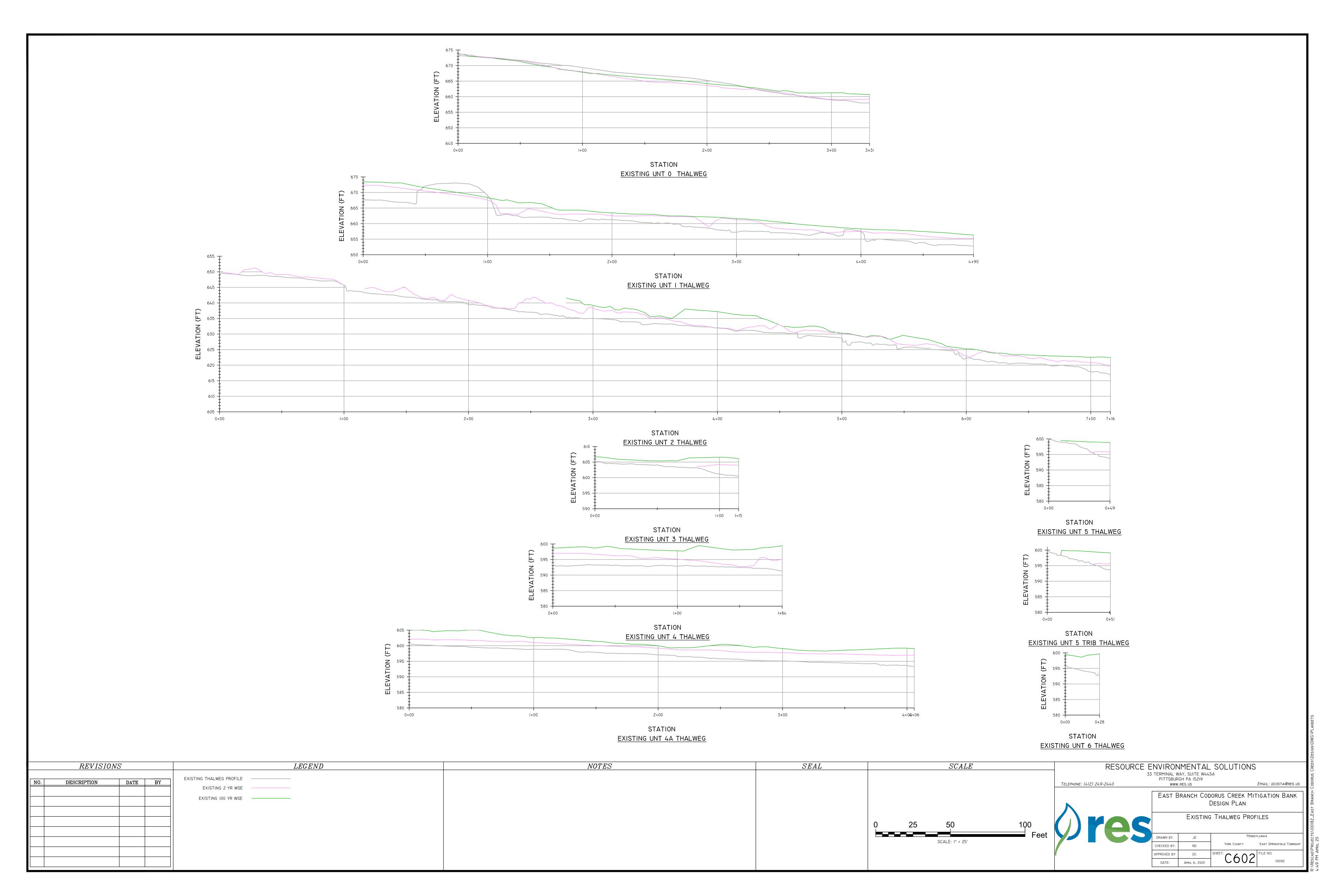


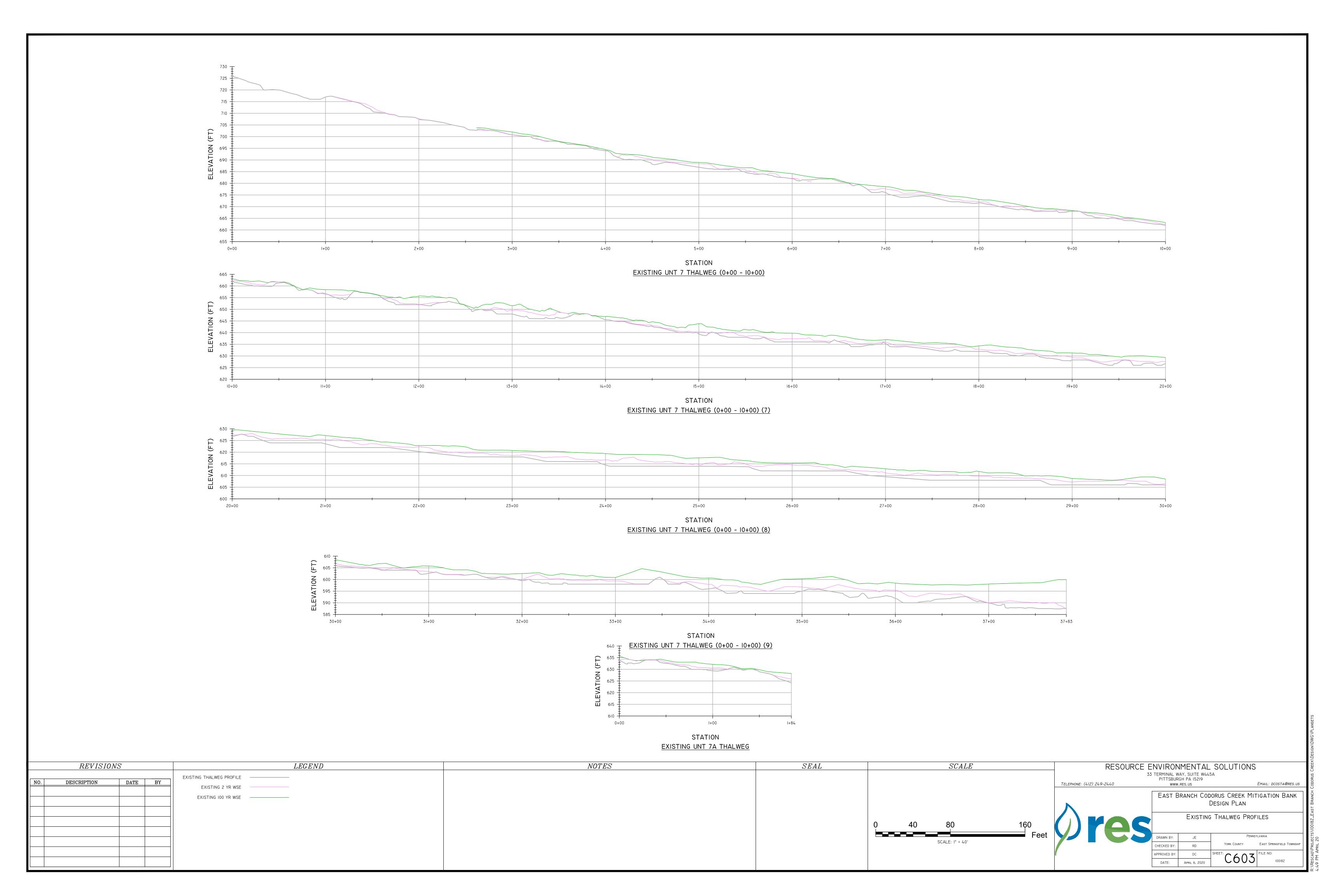


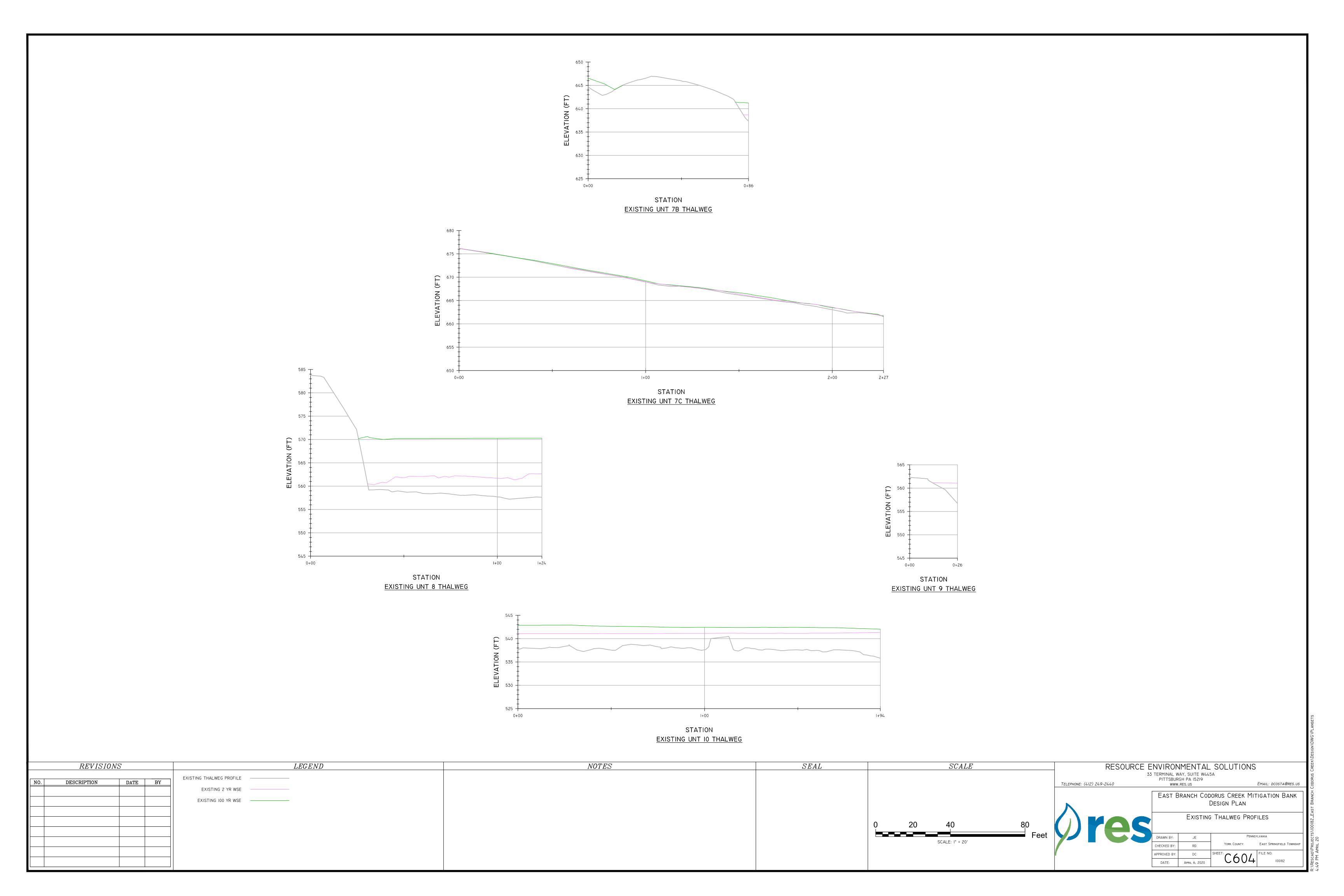


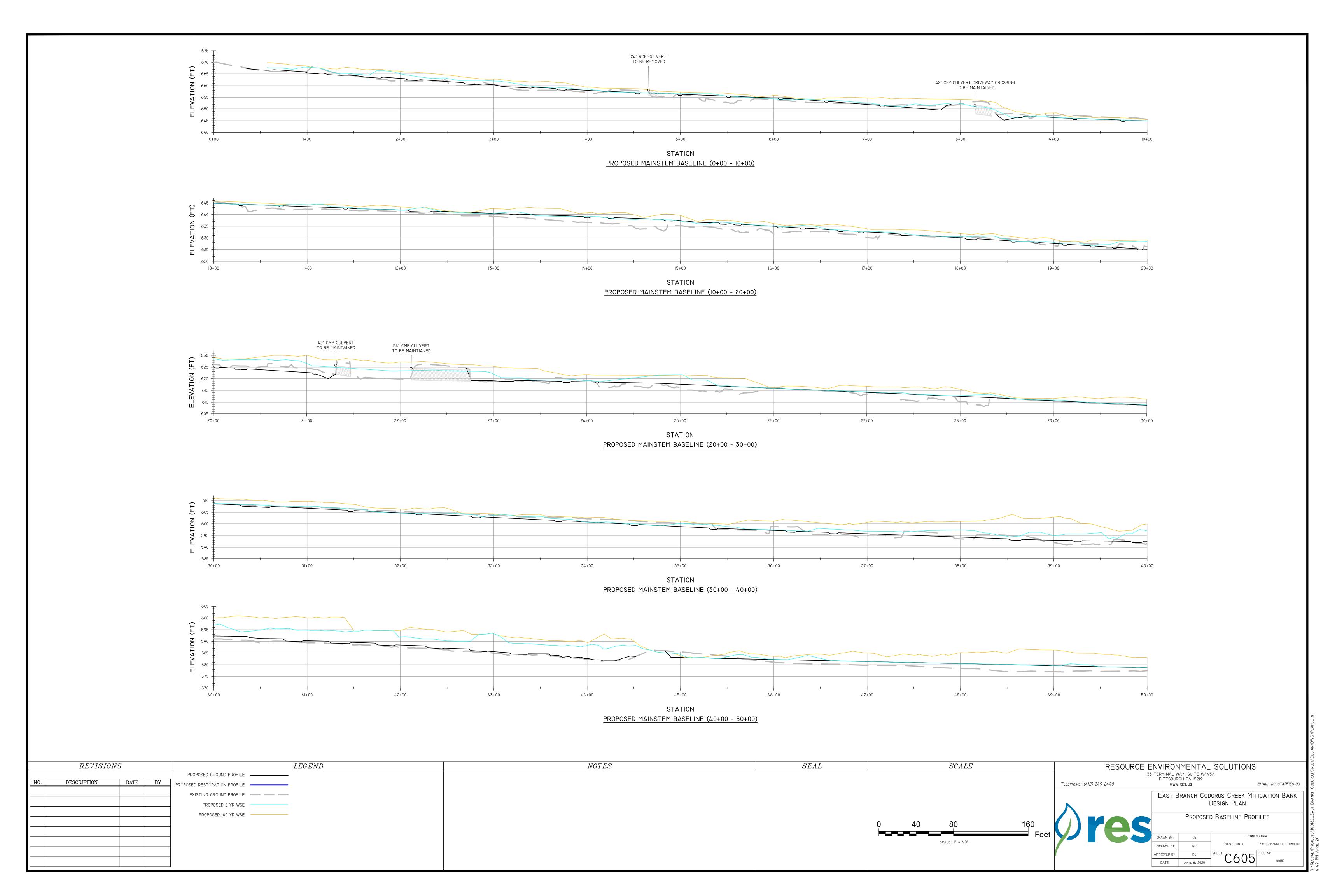


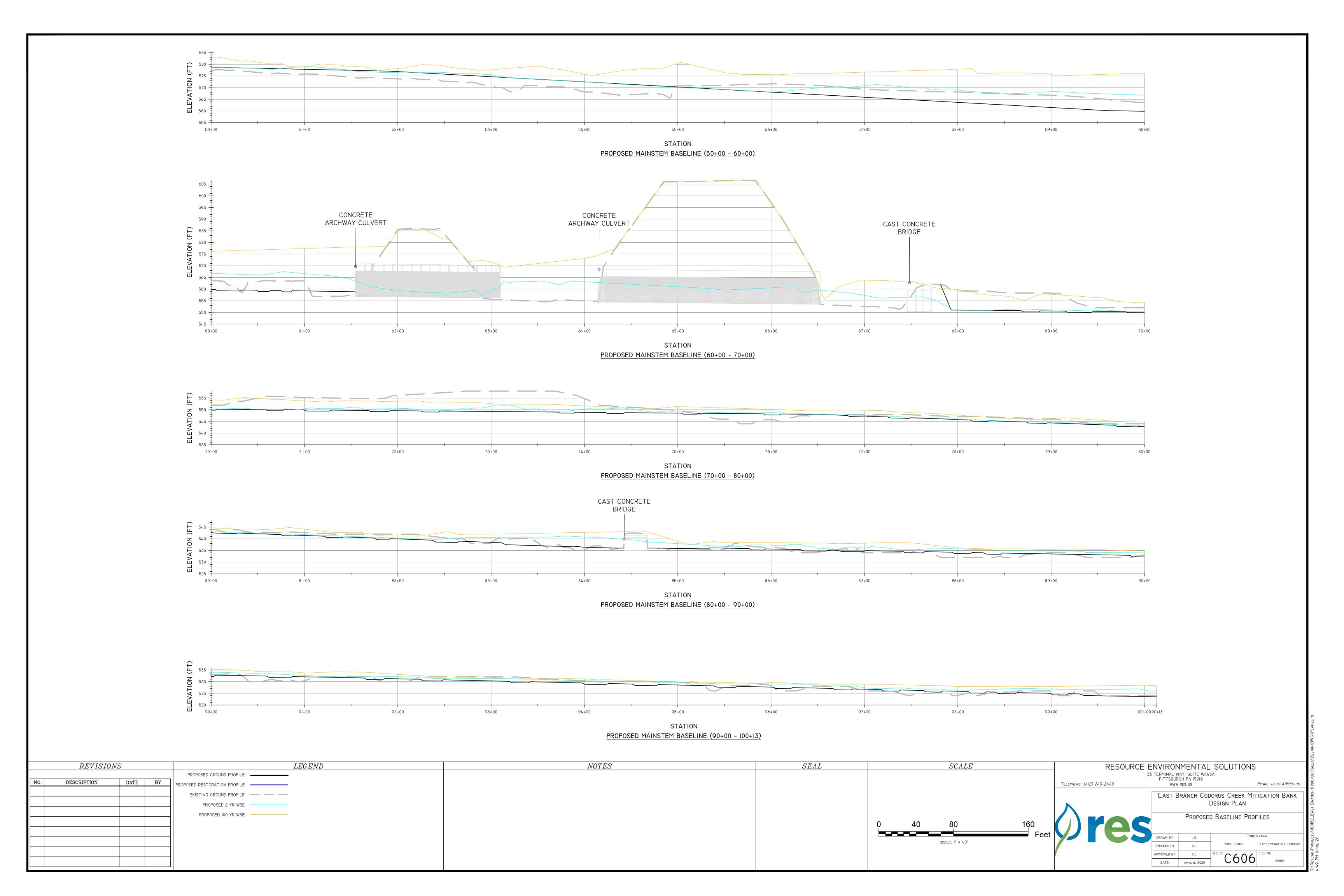


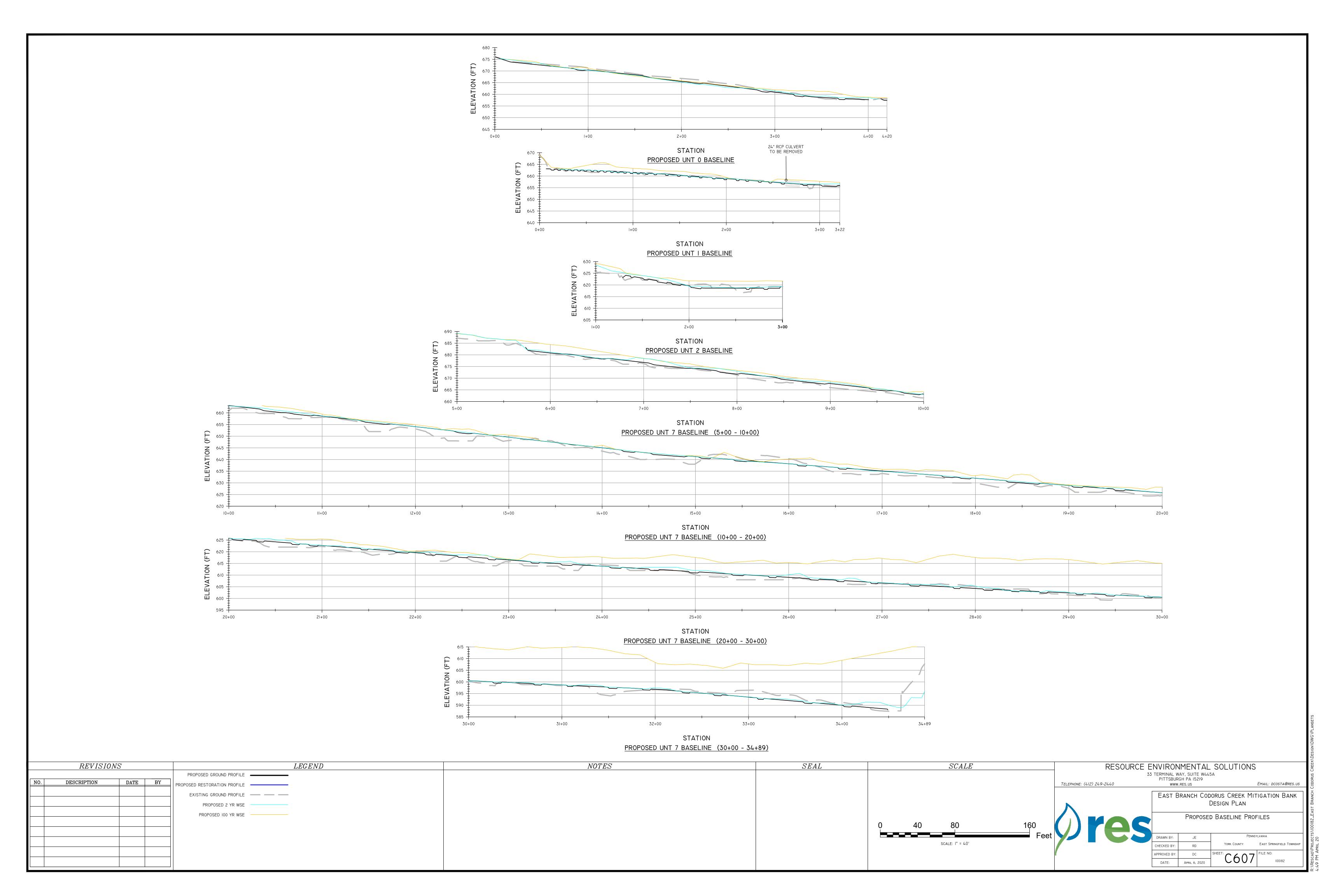


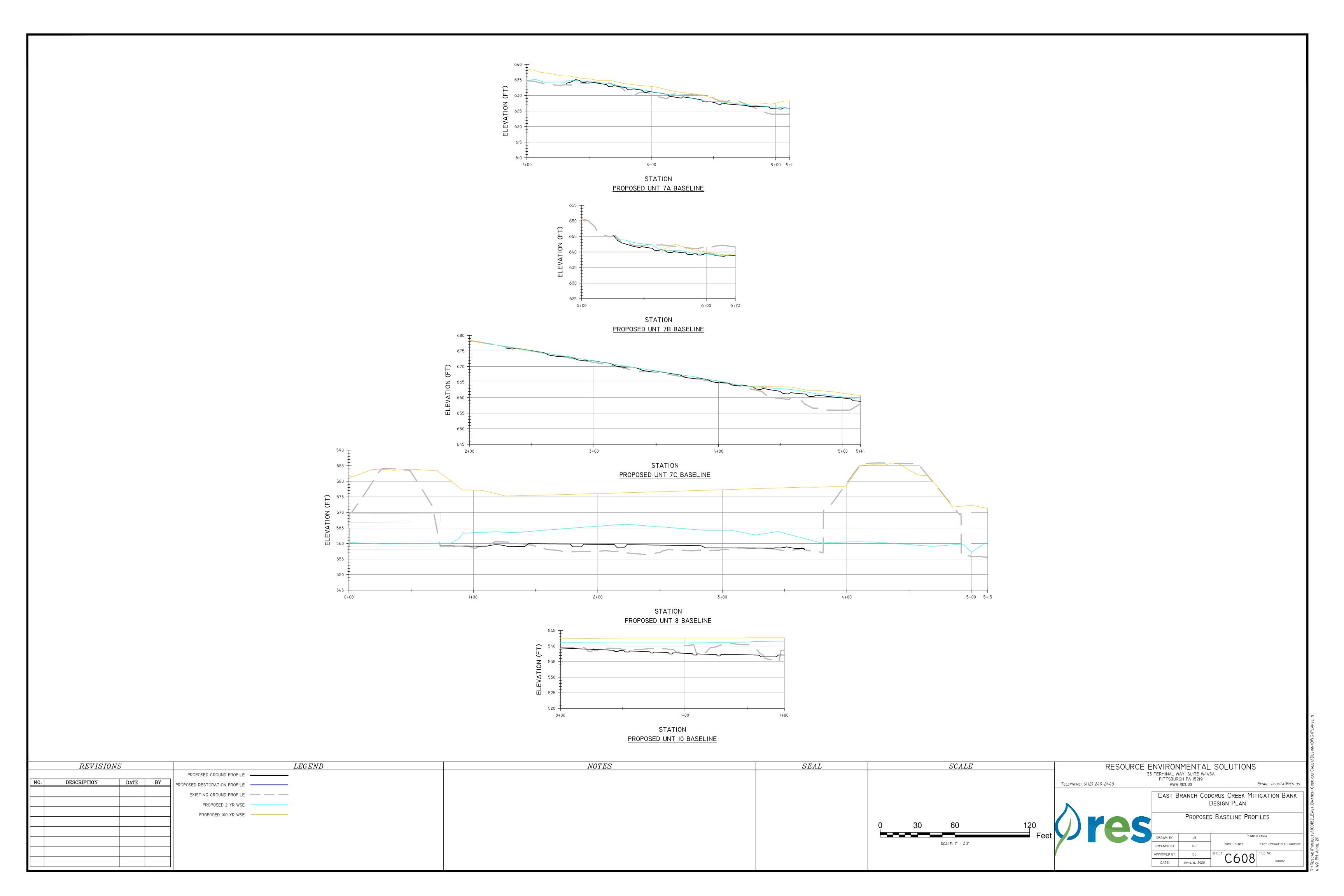


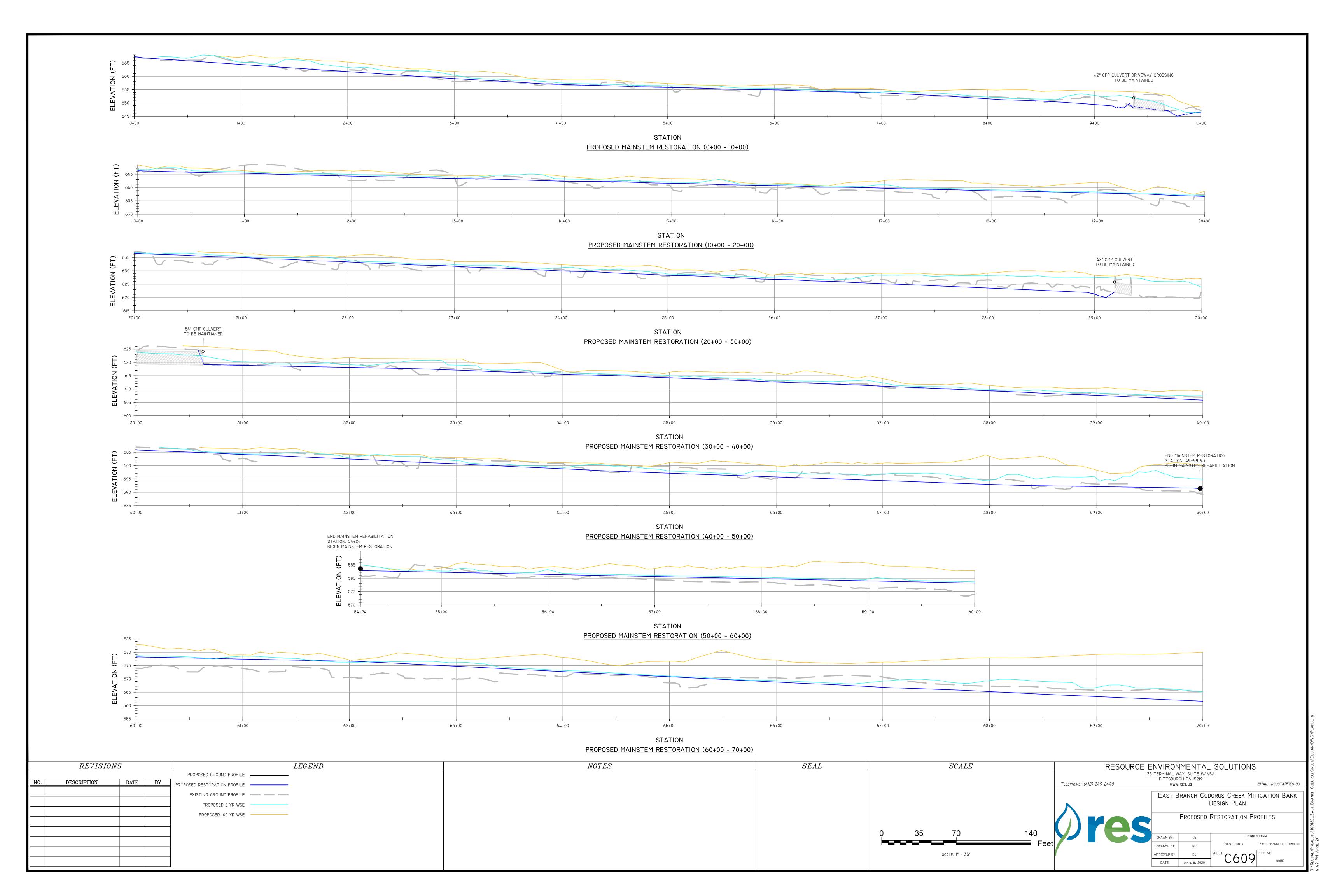


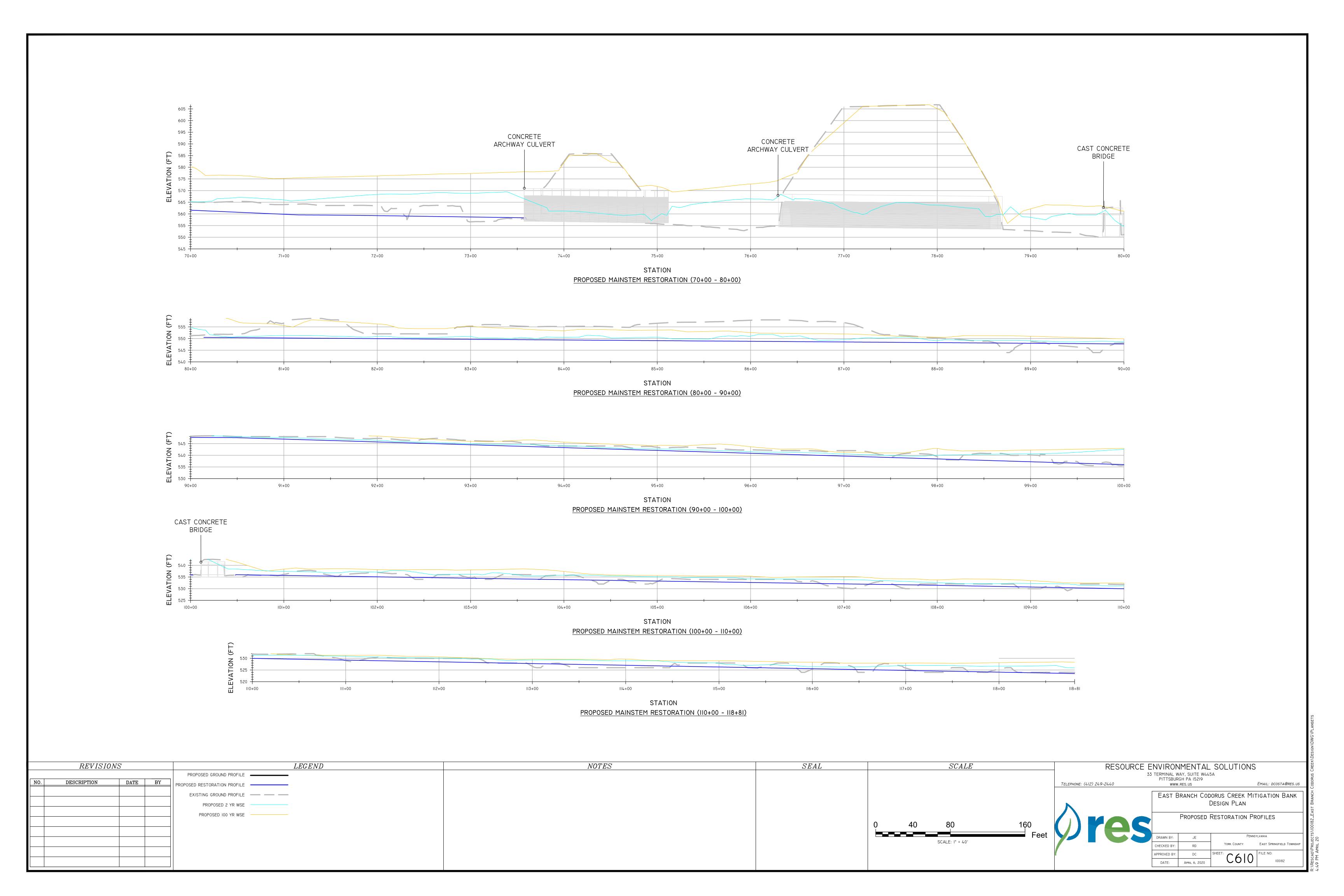


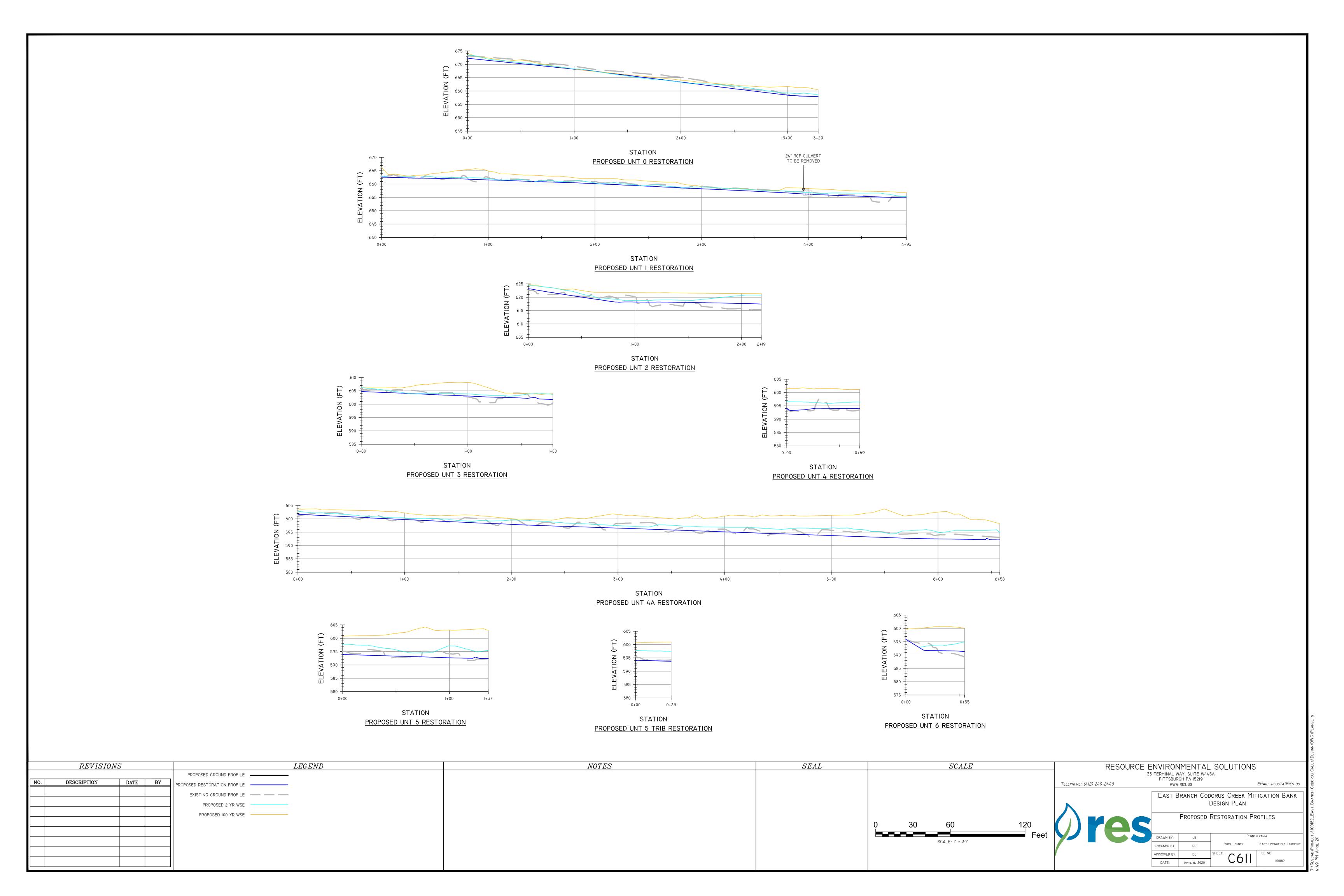


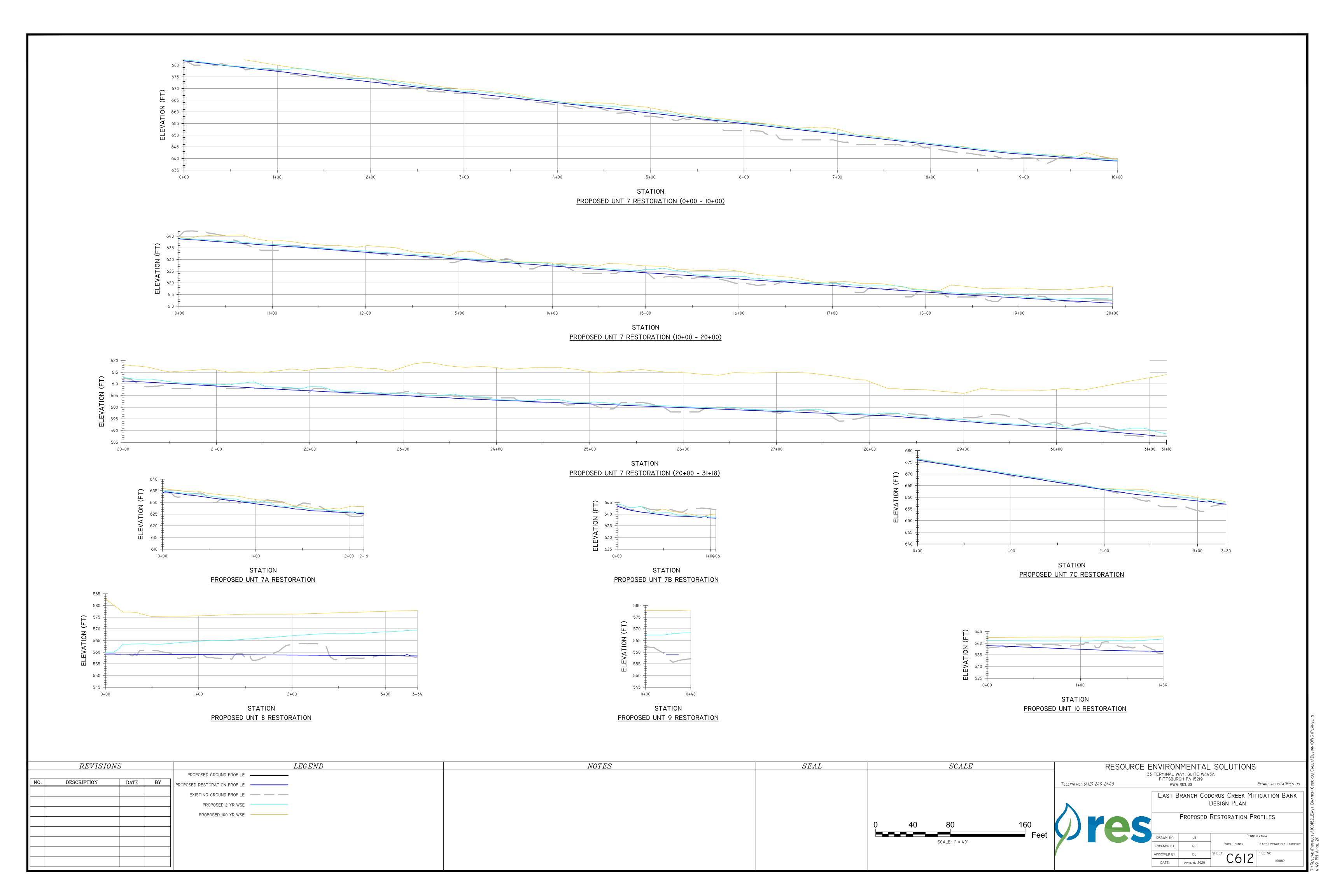


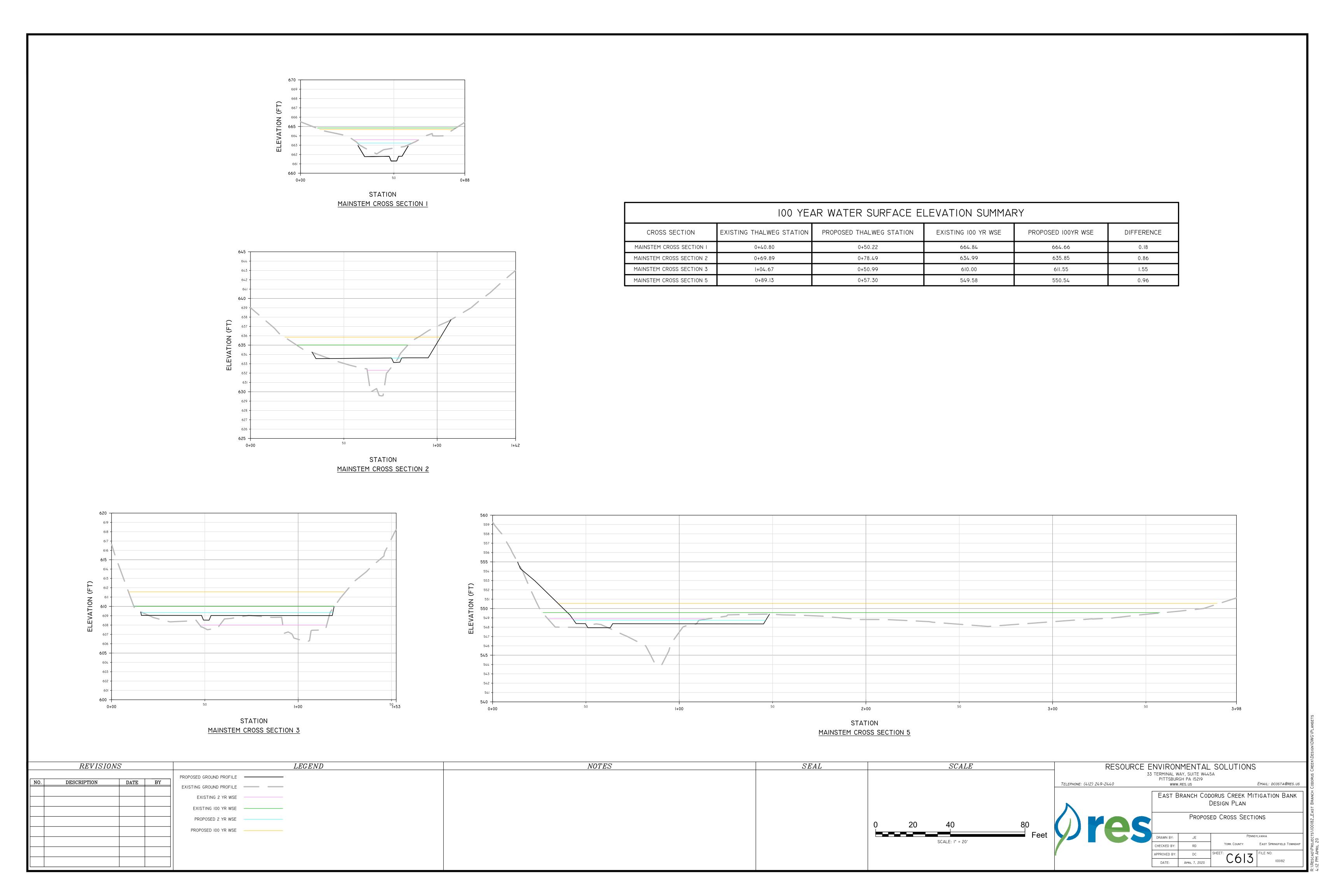


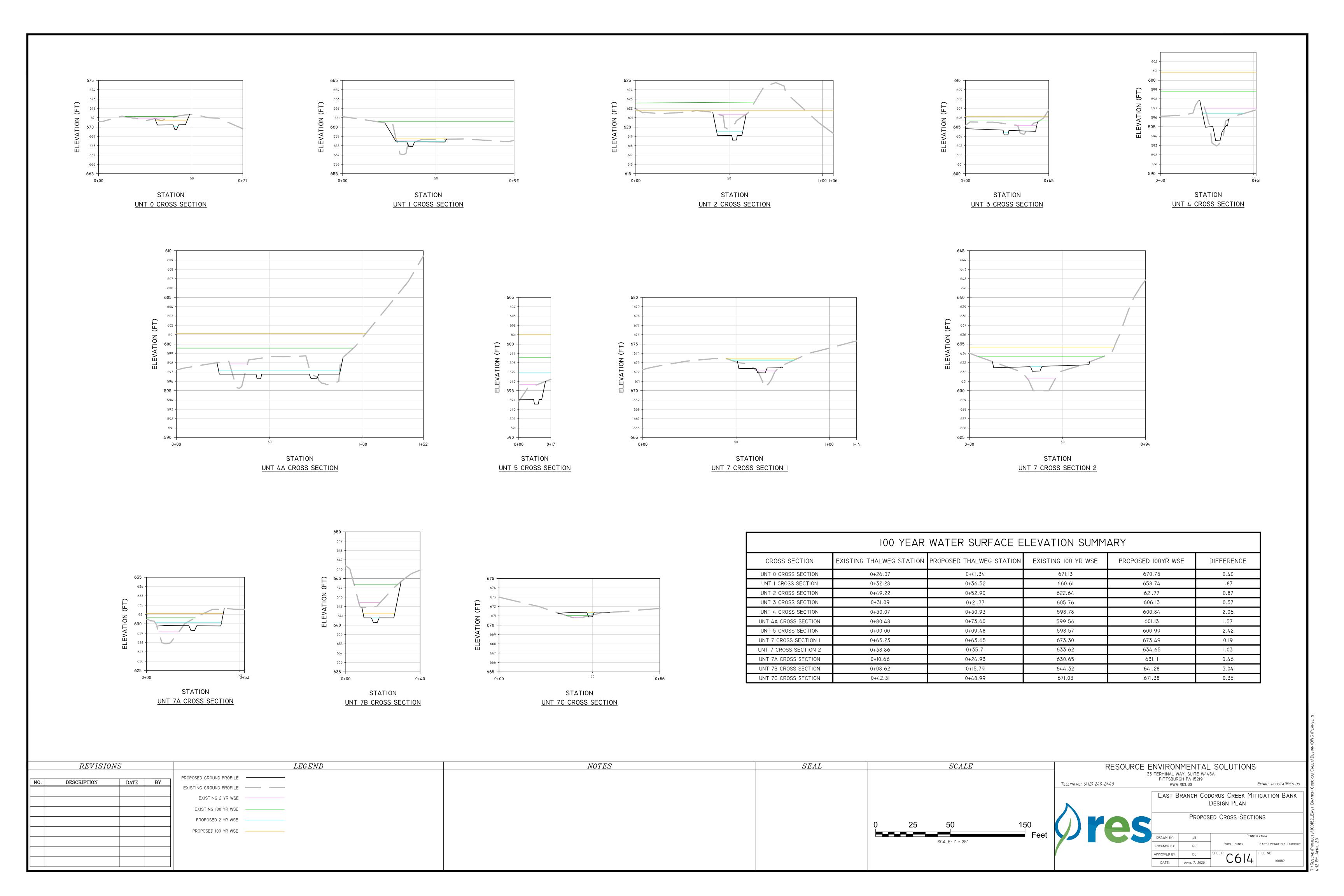


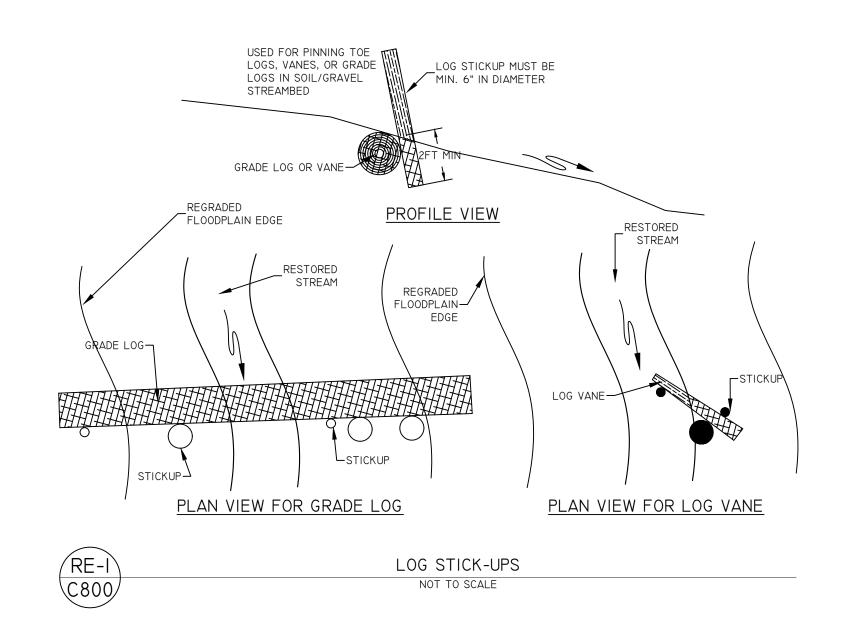


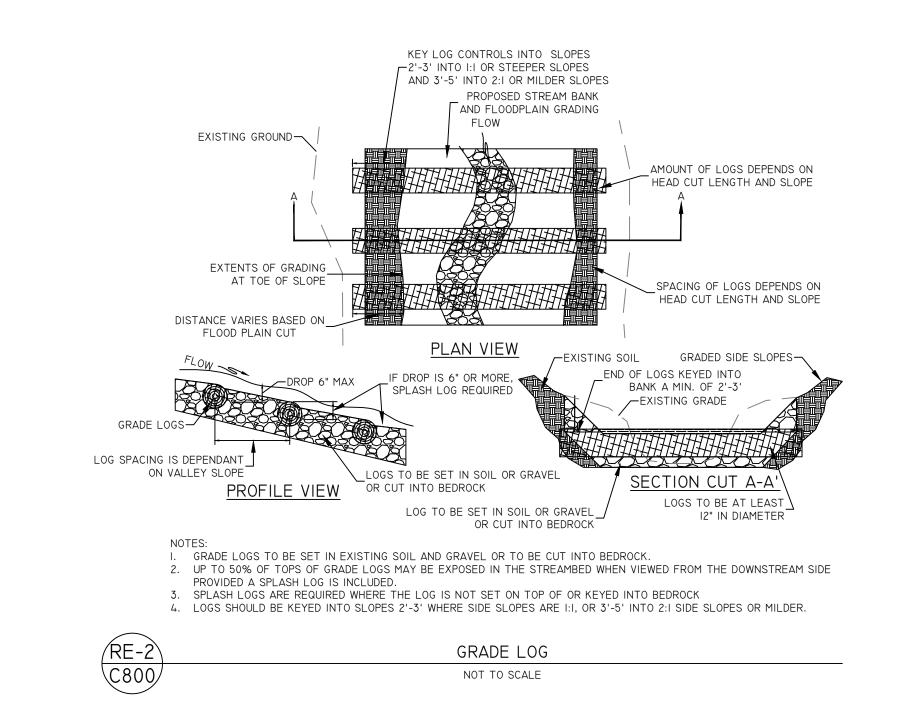


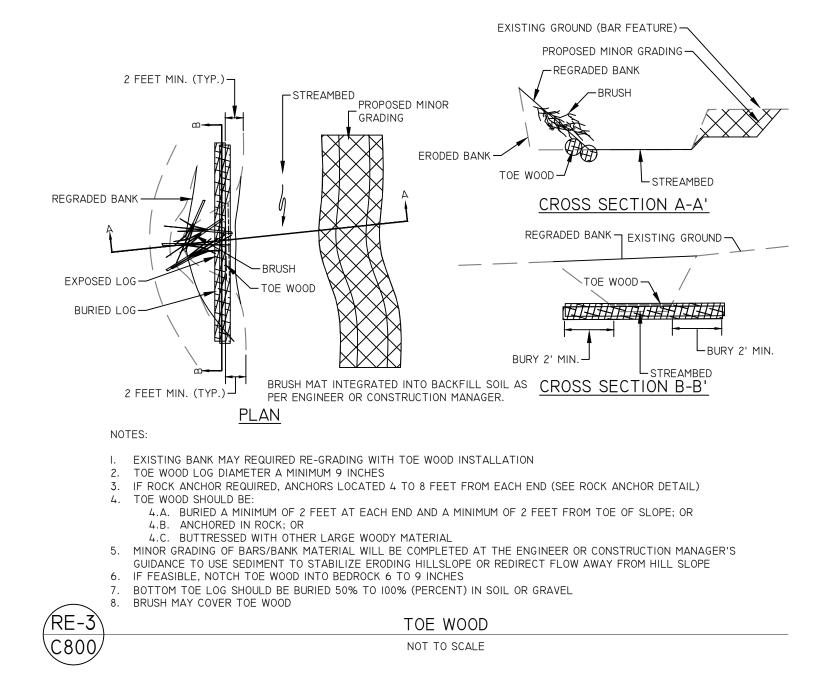


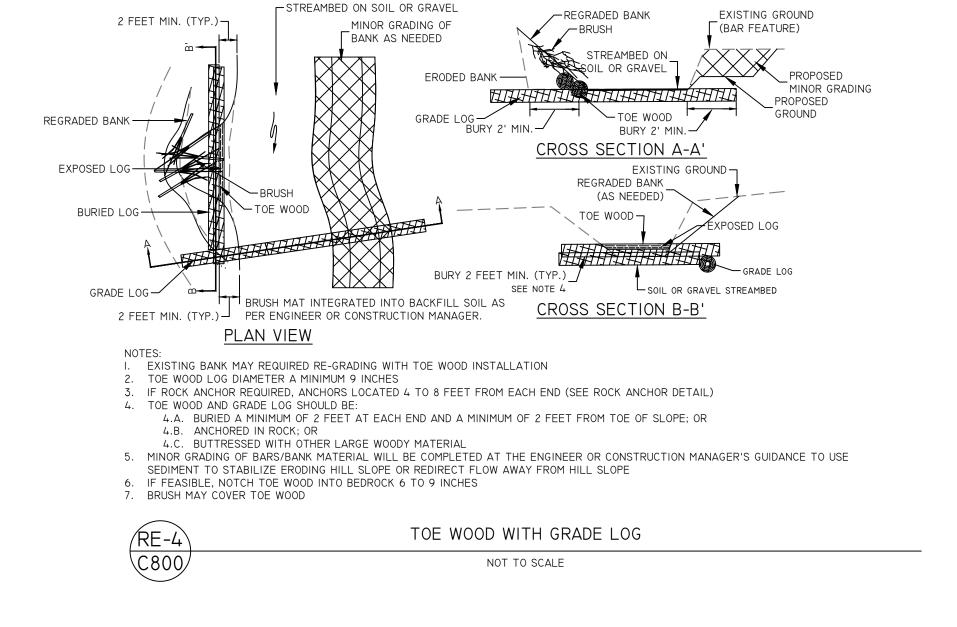


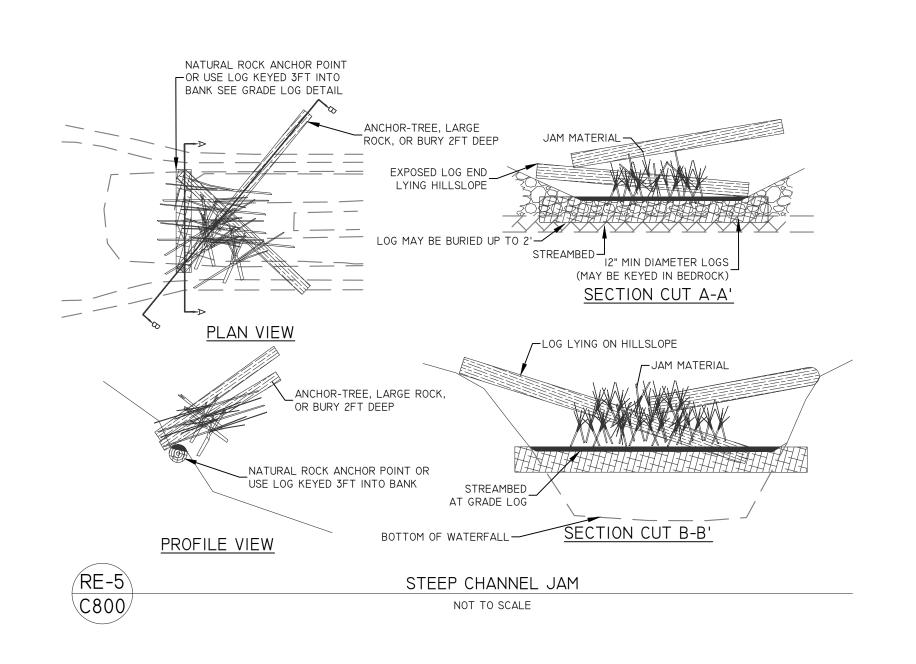




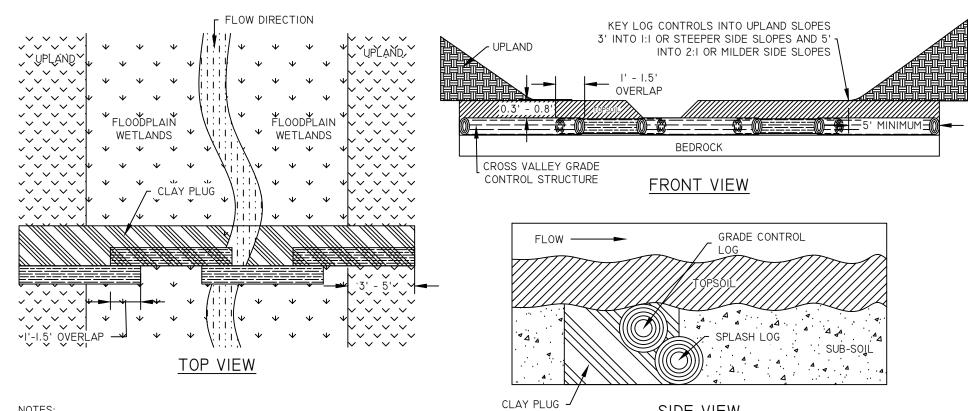








REVISIONS  NO. DESCRIPTION DATE BY	LEGEND	NOTES  GENERAL NOTES THAT SHOULD BE CONSIDERED FOR ALL TYPICAL REHABILITATION DETAILS:  L. ENGINEER OF CONSTRUCTION MANAGER WILL ARRIVED THE LOCATION AND TYPE OF RETAIL TO CHILL OUT CONDITIONS IS NECESSARY.	SEAL	SCALE		E ENVIRONMENTAL SOLUTIONS  33 TERMINAL WAY, SUITE W445A PITTSBURGH PA 15219
		<ol> <li>ENGINEER OR CONSTRUCTION MANAGER WILL ADJUST THE LOCATION AND TYPE OF DETAIL TO SUIT SITE CONDITIONS IF NECESSARY</li> <li>DETAILS WILL BE ADDED OR COMBINED BY THE ENGINEER OR CONSTRUCTION MANAGER TO ADDRESS UNFORESEEN VARIATIONS IN BE SOIL CONDITIONS, AND/OR SUPPLY OF NATURAL MATERIALS OR TO MEET APPLICABLE PASSAGE REQUIREMENTS FOR AQUATIC ORGAN</li> <li>GRADE CONTROL LOGS AND TOE WOOD MAY BE NOTCHED TO OVERLAP LOGS NEAR THE STREAMBANKS.</li> <li>EXISTING LARGE LOGS (6" - 24") FALLEN ACROSS THE CHANNEL WILL BE SAVED AND RECYCLED OVER OR WITHIN THE REHABILITATIC CHANNEL IF POSSIBLE.</li> <li>MINOR LOCAL GRADING MAY BE NECESSARY TO:</li> <li>I. REMOVE HIGH BARS, BANKS AND BENCHES TO REDIRECT LOW OR HIGH FLOWS AWAY FROM HILLSLOPE</li> <li>RESTORE THE BASE OF ERODED HILLSLOPE TOES USING MATERIAL IN 5.1</li> <li>S.3. SHIFT CHANNEL AWAY FROM AN ERODING HILLSIDE</li> <li>MINOR ADJUSTMENTS OF BEDROCK TO INSTALL LARGE LOGS</li> <li>ANY CHANGES MADE UNDER #I OR #2 ABOVE WILL BE SURVEYED IN DURING THE AS-BUILT PROCESS.</li> </ol>	EDROCK, NISMS.		TELEPHONE: (412) 249-2440	EAST BRANCH CODORUS CREEK MITIGATION BANK DESIGN PLANS  REHABILITATION DETAILS  DRAWN BY: MC CHECKED BY: RD APPROVED BY: DC DATE: MARCH 25, 2020  EMAIL: DCOSTA@RES. US  PENNSYLVANIA YORK COUNTY EAST SPRINGFIELD TOWNSHIP  100182



I. STRUCTURES MAY BE CONSTRUCTED OUT OF WOOD OR STONE MATERIAL; ALL MATERIAL IS TO BE APPROVED BY THE DESIGN ENGINEER OR CONSTRUCTION MANAGER PRIOR

2. WOODY MATERIAL IS TO BE BETWEEN 12"-16" AND RELATIVELY STRAIGHT; HIGHLY VARIABLE OR CURVED TRUNKS ARE NOT TO BE USED 3. STONE MATERIAL IS TO BE A MINIMUM OF 12 INCHES MEDIAN DIAMETER, AND MUST BE INSTALLED IN A COLUMN FASHION WHICH IS 2 FEET WIDE, 2 FEET DEEP, AND THE

SPECIFIED WIDTH OF THE STRUCTURE AS SHOWN ON THE PLANS 4. ALL STRUCTURES ARE TO BE PLACED ON BEDROCK OR SIMILAR NON-EROSIVE BASE SUCH AS A DENSE CLAY. IF BEDROCK OR A NON-EROSIVE FOUNDATION IS NOT AVAILABLE

A SPLASH LOG MUST BE INSTALLED DOWNSTREAM OF THE GRADE CONTROL LOGS AS SHOWN ON THE DESIGN PLANS 5. LOGS WITHIN THE FLOODPLAIN ARE TO BE OVERLAPPED BY A MINIMUM OF 1.5 '; WHERE THE LOGS ARE TOED INTO THE VALLEY SIDE SLOPES, ARE TO BE TOED IN A MINIMUM OF 3 - 5'. IF INSUFFICIENT MATERIAL IS AVAILABLE TO TOE IN THE WOODY MATERIAL IT IS TO BE ANCHORED IN PLACE USING MINING LAG BOLTS DRILLED INTO THE

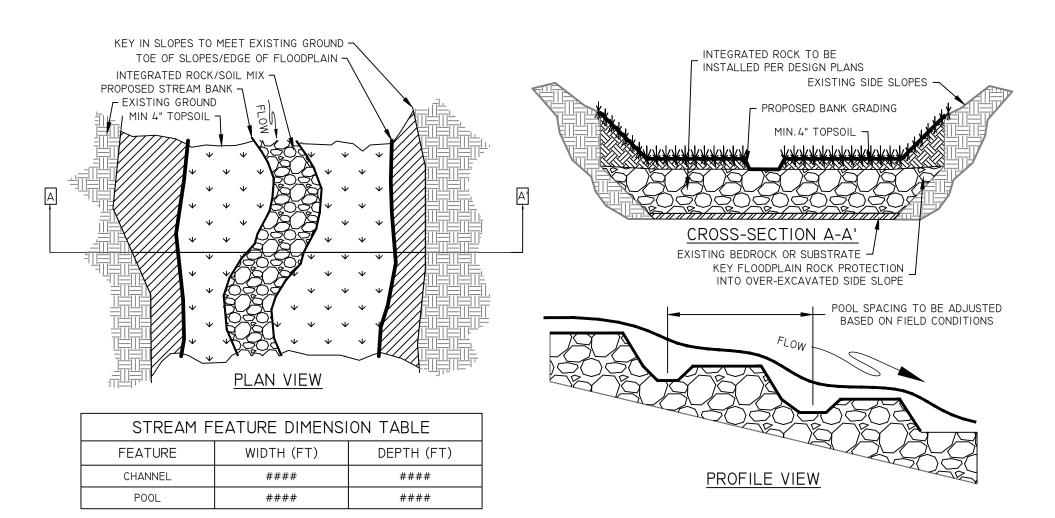
BEDROCK OR LOGS WILL BE KEYED INTO THE BEDROCK A MINIMUM OF 3 INCHES. 6. MATERIAL WITH A HEAVY CLAY OR CLAYEY SILT CONTENT SHALL BE USED TO CONSTRUCT A CLAY PLUG ON THE UPSTREAM SIDE OF THE LOG SILL. THE CLAY PLUG SHALL BE TIED INTO BEDROCK OR OTHER NON-PERMEABLE MATERIAL AT THE BASE OF THE STRUCTURE AND SHALL EXTEND UPWARDS TO WITHIN 2 INCHES OF THE TOP OF THE STRUCTURE. THE CLAY PLUG SHALL HAVE A WIDTH OF 3 FEET UPSTREAM OF THE LOG SILL AND EXTEND ACROSS THE ENTIRE VALLEY BOTTOM IN ORDER TO PREVENT WATER-PIPING THROUGH THE STRUCTURE. MATERIAL EXCAVATED FOR THE LOG SILLS MAY BE USED AT THE DISCRETION OF THE ENGINEER OR CONSTRUCTION MANAGER TO CONSTRUCT THE CLAY PLUG.

7. FINAL STRUCTURE ALIGNMENT AND LOCATION MAY BE ADJUSTED BY DESIGN ENGINEER OR CONSTRUCTION MANAGER IN THE FIELD AS NEEDED



CROSS VALLEY GRADE CONTROL LOGS

NOT TO SCALE



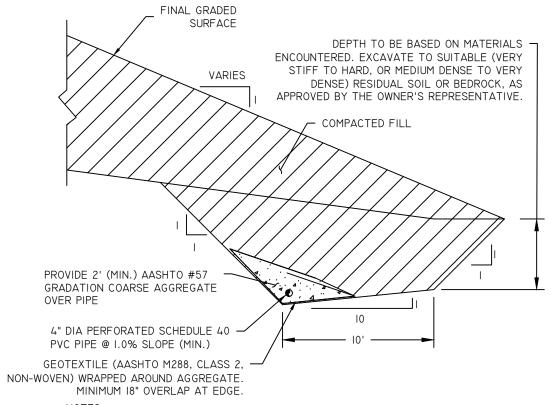
### INTEGRATED ROCK SPECIFICATION:

I. NATIVE BACKFILL MATERIAL AND FILL TO BE COMBINED WITH RIPRAP FOR THE INTEGRATED ROCK COMPACTED LAYER SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL MUST BE APPROVED BY THE CONSTRUCTION MANAGER PRIOR TO PLACEMENT AND SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. COMPACTION - THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT ROLLER, RUBBER TIRED ROLLER, VIBRATORY ROLLER, OR EARTHMOVING EQUIPMENT CAPABLE OF APPLYING SUFFICIENT GROUND PRESSURE. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT. WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/-2% OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE CONSTRUCTION MANAGER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).



INTEGRATED ROCK DETAIL

NOT TO SCALE

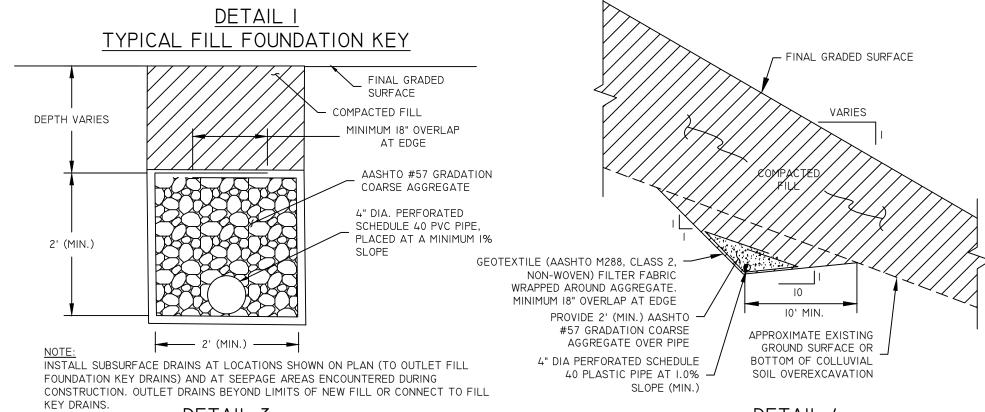


NOTES:

I. OUTLET FILL FOUNDATION KEY DRAIN BEYOND THE LIMITS OF NEW FILL USING SUBSURFACE DRAIN INSTALLED AT LOCATIONS SHOWN ON PLAN.

DEEPER FILL KEYS (IF REQUIRED) SHOULD TRANSITION GRADUALLY INTO SHALLOWER FILL KEYS.

3. KEY DRAINS SHOULD OUTLET BEYOND THE LIMITS OF THE NEW FILL AND TO A STABLE AREA.



- COMPACTED FILL

APPROXIMATE EXISTING -GROUND SURFACE

EXCAVATE A DOZER NOTCH INTO SOIL AS FILL PLACEMENT -

PROGRESSES TO PROVIDE A COMPACTION KEY BETWEEN

MATERIALS. USE FOR ALL FILL PLACED AT THE SITE.

EXISTING RESIDUAL SOIL (BELOW COLLUVIUM

DETAIL 2

TYPICAL COMPACTION KEY

TYPICAL INTERMEDIATE KEY

OVEREXCAVATION, AS NECESSARY) AND NEW FILL

FINAL GRADED

SURFACE

EARTHWORK NOTES: CONSTRUCT FILL FOUNDATION AND INTERMEDIATE KEYS AS NEEDED FOR SIGNIFICANT FILLS AND IN ACCORDANCE WITH DETAIL I & 4. OUTLET FILL FOUNDATION AND INTERMEDIATE KEY DRAIN USING THE SUBSURFACE DRAIN INSTALLED AT LOCATIONS SHOWN ON PLAN AND IN ACCORDANCE WITH DETAIL 3. INSTALL ADDITIONAL SUBSURFACE DRAINS, AS NECESSARY, IN ACCORDANCE WITH DETAIL 3. FINAL KEY AND DRAIN LOCATIONS MAY BE MODIFIED BY THE OWNER'S REPRESENTATIVE BASED ON CONDITIONS ENCOUNTERED.

2. REFER TO EROSION AND SEDIMENTATION CONTROL PLAN CONSTRUCTION SEQUENCE FOR REMOVAL OF TOPSOIL PRIOR TO FILL PLACEMENT.

3. NEW FILL SHALL BE FREE OF TOPSOIL, ROOTS, ROOT BALLS, BRUSH, GRASS, AND OTHER DELETERIOUS MATERIALS.

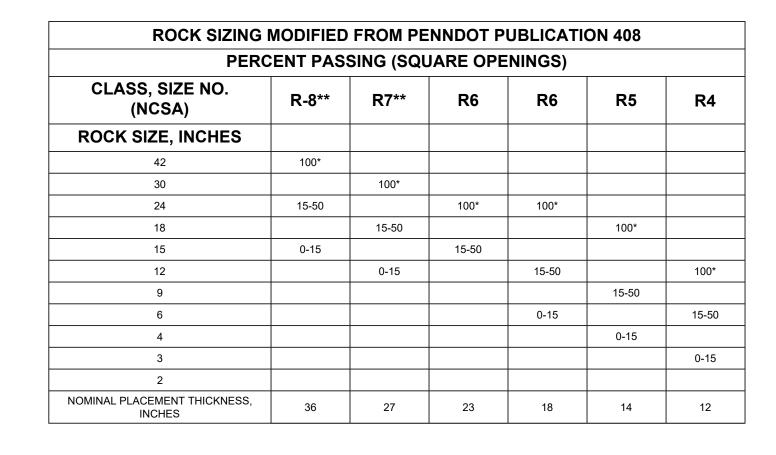
4. SOIL FILL MATERIALS FOR BULK EARTHWORK STOCKPILES AND FILL FOUNDATION KEY CONSTRUCTION AT LOCATIONS SHOWN SHOULD CLASSIFY AS GW, GP, GM, GC, SW, SP, SM, SC, ML, OR CL ACCORDING TO THE UNITED SOILS CLASSIFICATION SYSTEM (USCS). USCS CLASSIFICATION CH (FAT CLAY) SOIL SHALL BE BLENDED WITH ROCK OR AMENDED WITH LIME PRIOR TO PLACING AS NEW FILL. PLACE SOIL FILL IN MAXIMUM 8 INCH LOOSE LIFTS, AND COMPACTED TO VISIBLE NON-MOVEMENT USING A HEAVY SEGMENTED PAD COMPACTION EQUIPMENT. THE FILL THE FILL SHOULD BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY UNIT WEIGHT AND WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT ACCORDING TO THE MODIFIED PROCTOR TEST (ASTM 1557). BLEND SOIL WITH LIME AS NECESSARY TO REDUCE THE MOISTURE CONTENT.

5. FIELD MODIFY FINAL GRADES BASED ON FIELD CONDITIONS TO ACHIEVE A BALANCED SITE AS DIRECTED BY OWNER'S FIELD REPRESENTATIVE.

GEOTECHNICAL DETAILS NOT TO SCALE

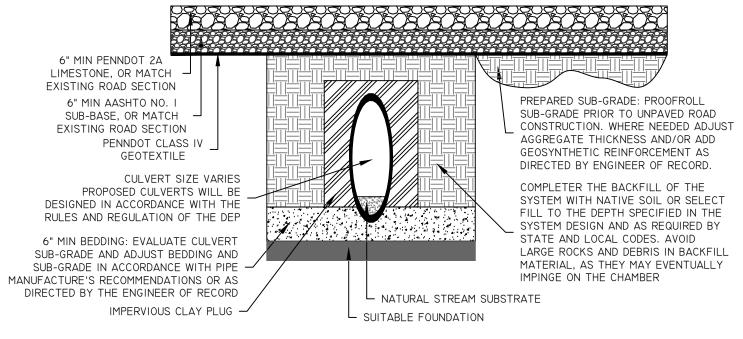
(C80I)

TYPICAL SUBSURFACE DRAIN

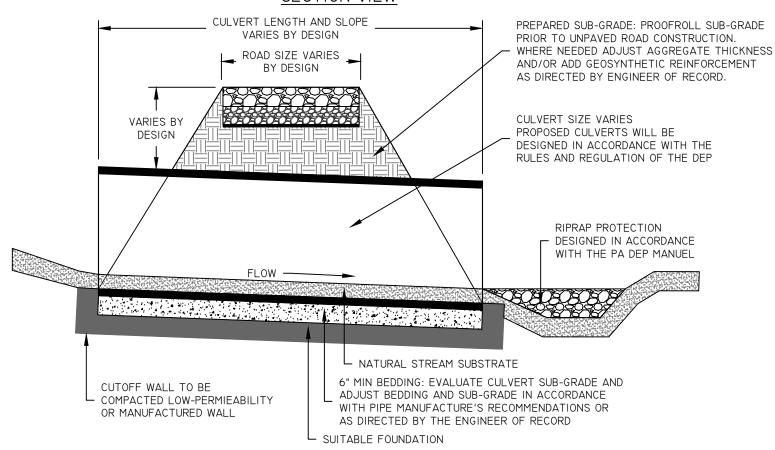


	PENNDOT PUBLICATION			
TAB	LE 8.11 ALLOWABLE SHEAR STRESSES	FOR VARIOUS LII	NINGS	
LINING CATEGORY	LINING TYPE	ALLOWABLE	INIT SHEAR STRESS	
LINING CATEGORY	LINING I TPE	PA	LB/SQ.FT.	
	SILTS, FINE-MEDIUM SANDS	1.4	0.03	
UNLINED - EASILY	COARSE SANDS	1.9	0.04	
ERODID SOILS (1)	VERY COARSE SANDS	2.4	0.05	
	FINE GRAVEL	4.8	0.1	
	CLAY LOAM	12	0.25	
	SILTY CLAY LOAM	8.6	0.18	
	SANDY CLAY LOAM	4.8	0.1	
JNLINED - EROSION	LOAM	3.4	0.07	
RESISTANT SLILS	SILT LOAM	5.7	0.12	
(2)	SANDY LOAM	1	0.02	
	GRAVELY, STONY, CHANNERY LOAM	2.4	0.05	
	STONY OR CHANNERY SILT LOAM	3.4	0.07	
	CLASS A	177.2	3.7	
	CLASS B	100.6	2.1	
NON-REINFORCED	CLASS C	47.9	1	
VEGETATION	CLASS D	28.7	0.6	
	CLASS E	16.8	0.35	
	MULCH CONTROL NETTING (3)			
	NETLESS ROLLED EROSION CONTROL BLANKET (5)	SEE TABLE 8.15		
TEMPORARY	OPEN WEAVE TEXTILE			
RECP'S (3/4)	SINGLE-NET EROSION CONTROL BLANKET			
	DOUBLE-NET EROSION CONTROL BLANKET			
	TURF REINFORCMENT MAT - TYPE 5.A	288	6	
PERMANENT	TURF REINFORCMENT MAT - TYPE 5.B	384	8	
RECP'S (3/4)	TURF REINFORCMENT MAT - TYPE 5.C	480	10	
	R-3	48	1	
-	R-4	96	2	
-	R-5	144	3	
-	R-6	192	4	
	R-7	240	5	
RIPRAP LINIG	R-8	384	8	
THI TO LINIO	GABION - 305 mm (12 in)	225	4.7	
-	GABION - 457 mm (18 in)	249	5.2	
-	GABION - 914 mm (36 in)	397	8.3	
-	RENO MATTRESS - 152 mm (6 in)	206	4.3	
-	RENO MATTRESS - 229 mm (9 in)	220	4.6	
			7.0	
	K FACTOR LESS THAN OR EQUAL TO 0.37			
	WA CLASSIFICATION SYSTEM FOR RECP'S			
	THREE TYPES OF TRM'S IS THE MINIMUM TENSILE STRENGTI	<u> </u>		
FEW, IF ANY, OF THESE ARE APF				
•				

			33 TERMINAL WAY, SUITE W445A PITTSBURGH PA 15219	TIONS
		TELEPHONE: (412) 249-2440	WWW.RES.US	EMAIL: DCOSTA@RES.US
			EAST BRANCH CO	DORUS CREEK
			MITIGATION BANK	DESIGN PLANS
			CONSTRUCTION	N DETAILS
			DRAWN BY: MC	PENNSYLVANIA
			CHECKED BY: RD YORK C	COUNTY EAST SPRINGFIELD TOWNSHIP
			APPROVED BY: DC SHEET:	2801 FILE NO: 100182
			pres	MITIGATION BANK  CONSTRUCTION  DRAWN BY: MC CHECKED BY: RD  YORK



SECTION VIEW



### PROFILE VIEW

- I. THE CONTRACTOR SHALL STRICTLY ADHERE TO THE PREPARED EROSION AND SEDIMENT CONTROL PLAN. 2. EARTHWORK SHALL INCLUDE CLEARING AND GRUBBING, STRIPPING AND STOCKPILING TOPSOIL, MASS GRADING, EXCAVATION, FILLING, UNDER CUT AND REPLACEMENT IF REQUIRED, AND COMPACTION.
- 3. REFILL UNDERCUT AREAS WITH SUITABLE MATERIAL AND COMPACT AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.
- 4. PLACE TOPSOIL OVER THE SUB-GRADE OF UNPAVED, EROSION AND SEDIMENTATION AREAS TO A DEPTH OF 6" MINIMUM.

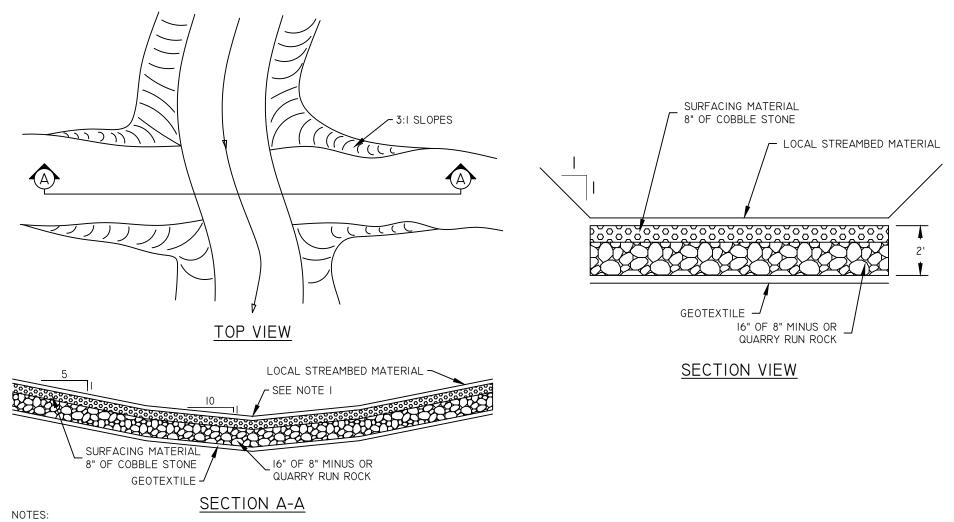
5. ALL SLOPES SHALL BE 2:1 (HORIZONTAL:VERTICAL) MAXIMUM UNLESS NOTED OTHERWISE. 6. ALL AREAS NOT PAVED SHALL BE STABILIZED IN ACCORDANCE WITH THE EROSION AND SEDIMENTATION CONTROL PLAN, UNLESS NOTED OTHERWISE.



CULVERT ROAD CROSSING

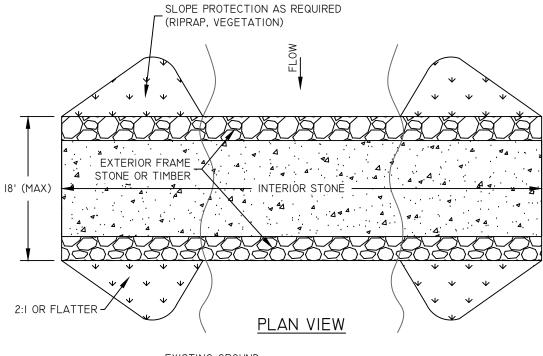
NOT TO SCALE

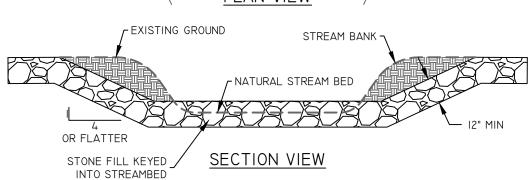
- A. CROSSINGS OR RAMPS SHALL BE COMPLETED WITHIN 30 DAYS FROM THE START OF ITS CONSTRUCTION. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 5 DAYS.
- B. CONSTRUCTION OF THE CROSSING OR RAMP SHALL NOT ALTER THE NORMAL CHANNEL WIDTH. THE CONFIGURATION OF THE STREAM BANK SHALL REMAIN SUBSTANTIALLY THE SAME AND THE WORK SHALL BLEND WITH ADJACENT UPSTREAM AND DOWNSTREAM BANKS.
- c. EACH AGRICULTURAL CROSSING AND RAMP SHALL BE INSTALLED IN SUCH A WAY THAT IT DOES NOT HINDER RECREATIONAL NAVIGATION NOR INTERFERE WITH THE NORMAL MIGRATION OF FISH.
- D. ONLY CLEAN, NON-POLLUTING, GRANULAR MATERIALS SHALL BE USED AS FILL MATERIAL IN ORDER TO MINIMIZE EXCESSIVE TURBIDITY BY LEACHING OF FINES AS WELL AS TO PRECLUDE THE ENTRANCE OF POTENTIALLY POLLUTED MATERIALS TO THE WATERCOURSE BY
- NATURAL RUNOFF. E. SLAG MAY NOT BE USED AS A SUBSTITUTE FOR STONE.
- F. DREDGED OR EXCAVATED MATERIALS MAY NOT BE DEPOSITED IN WETLANDS OR WITHIN THE LIMITS OF THE FLOODWAY OR ANY AREA
- G. CROSSINGS AND RAMPS SHALL BE INSTALLED AT A RIGHT ANGLE TO THE STREAM FLOW. H. CROSSINGS AND RAMPS MUST BE KEYED INTO THE STREAM BANK(S) OR BED WHICH MAY BE ACCOMPLISHED BY TRENCHING OR BY MACHINE
- WEIGHT RUNNING ON THE STONE FILL.
- I. CROSSINGS AND RAMPS SHOULD BE NO STEEPER THAN 4:1. J. SKIDDING OF TIMBER ACROSS RAMPS AND CROSSINGS IS PROHIBITED.
- K. INTERIOR STONE FOR CROSSINGS AND RAMPS SHALL BE OF A DIAMETER TO FILL THE VOIDS THAT WILL ENCOURAGE LIVESTOCK USE.
- L. EXTERIOR FRAME STONE FOR CROSSINGS AND RAMPS SHALL BE OF SUFFICIENT DIAMETER TO RESIST TRANSPORT BY NORMAL HIGH FLOWS AND REQUIRE DEEPER KEYING INTO THE STREAM BANK OR BED.
- M. STONE PLACED FOR AGRICULTURAL CROSSINGS SHALL NOT EXCEED TWELVE (12) INCHES IN HEIGHT ABOVE THE NATURAL STREAMBED. N. AGRICULTURAL CROSSINGS AND RAMPS THAT ARE TO BE UTILIZED BY LIVESTOCK SHALL INCLUDE FENCING OR OTHER BARRIERS TO DIRECT THE LIVESTOCK TO THE CROSSING OR RAMP AND TO CONTROL THE MOVEMENT WITHIN THE CROSSING OR RAMP.



I) THIS STANDARD DRAWING REQUIRES SUPPORTING TECHNICAL DOCUMENTATION PRIOR TO USE AND MUST BE ADAPTED TO THE SPECIFIC SITE.

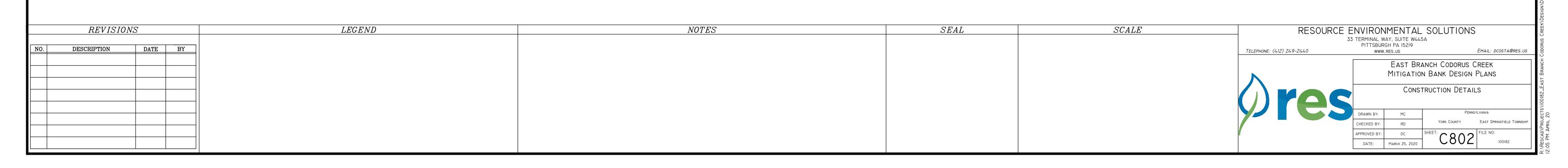
FORD CROSSING C802/ NOT TO SCALE

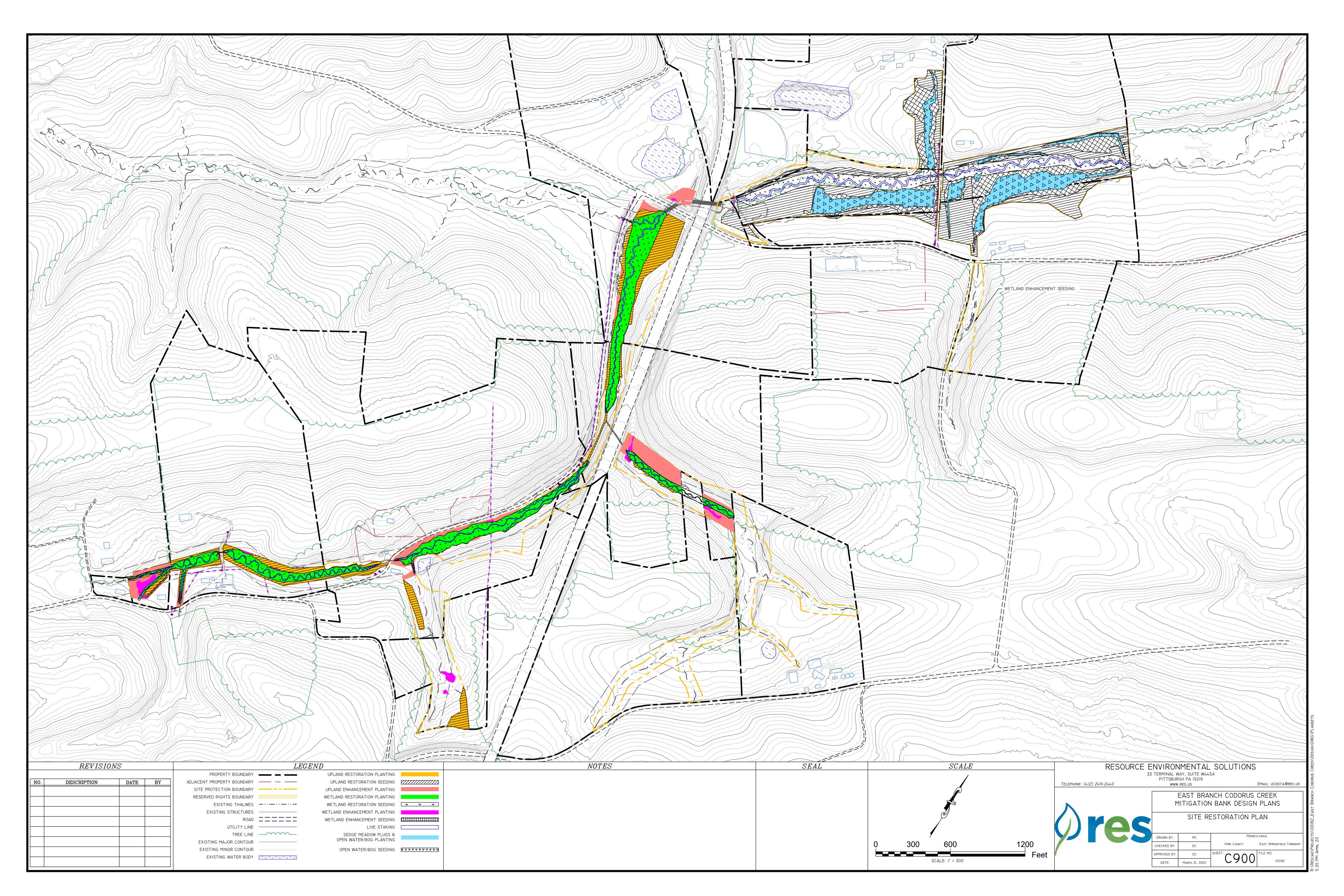




- I. THIS CROSSING IS TO BE USED ON STREAMS WITH A SLOPE OF LESS THAN 1% 2. ALL SPOIL SHALL BE DISPOSED OUTSIDE OF THE FLOODWAY AND WETLANDS (SEE CONDITION 13 (1)).
- 3. DEPTH OF STONE FILL ABOVE NATURAL STREAMBED SHALL NOT EXCEED 12 INCHES (SEE CONDITION 13 (Q)).
- 4. NO.4 OR 5 STONE IS TO BE USED AS THE INTERIOR STONE. 5. NO.2 STONE IS TO USED TO FILL ANY SUBSEQUENT VOIDS.
- 6. STONE SHALL BE KEYED INTO THE STREAM BANK AND BED (SEE CONDITION 12 (L), (O), AND (P)). 7. INSTALL FENCING FOR LIVESTOCK USE (SEE CONDITION 13 (1)

GP-6 AGRICULTURAL STREAM CROSSING AND RAMPS ∕C-5` LOW GRADIENT GRADE CROSSING C802 NOT TO SCALE





ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
	VIBURNUM PRUNIFOLIUM	SMOOTH BLACKHAW	FACU	35	224
	QUERCUS RUBRA	NORTHERN RED OAK	FACU	30	192
	ROBINIA PSEUDOACACIA	BLACK LOCUST	FACU	45	288
	DIOSPYROS VIRGINIANA	Common Persimmon	FAC	30	192
UPLAND RESTORATION	POPULUS GRANDIDENTATA	BIG-TOOTH ASPEN	FACU	45	288
PLANTINGS	AMELANCHIER ARBOREA	Downy Service-Berry	FACU	40	256
	LIRIODENDRON TULIPIFERA	TULIPTREE	FACU	45	288
•	_			45	
	PRUNUS SEROTINA	BLACK CHERRY	FACU		288
	QUERCUS ALBA	Northern White Oak	FACU	35	224
			TOTAL	350	2237
				Г	
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
	QUERCUS BICOLOR	SWAMP WHITE OAK	FACW	70	749
	Platanus occidentalis	American Sycamore	FACW	65	696
	ACER SACCHARINUM	Silver Maple	FACW	55	589
WETLAND	VIBURNUM DENTATUM	SOUTHERN ARROW-WOOD	FAC	60	642
RESTORATION	Physocarpus opulifolius	ATLANTIC NINEBARK	FACW	40	428
PLANTINGS	BETULA NIGRA	RIVER BIRCH	FACW	65	696
	LINDERA BENZOIN	Northern Spicebush	FACW	45	482
	QUERCUS PALUSTRIS	PIN OAK	FACW	45	482
	CEPHALANTHUS OCCIDENTALIS	Common Buttonbush	OBL	55	589
			TOTAL	500	5350
			TOTAL		
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
ZUINL	_	SWAMP WHITE OAK	FACW	NUMBER PER ACRE	3
	QUERCUS BICOLOR			·	
	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	FACW	2	
METI AND	ACER SACCHARINUM	Silver Maple	FACW	2	l
WETLAND ENHANCEMENT	Physocarpus opulifolius	Atlantic Ninebark	FACW	4	3
PLANTINGS	BETULA NIGRA	River Birch	FACW	3	2
	LINDERA BENZOIN	Northern Spicebush	FACW	3	2
	VIBURNUM DENTATUM	SOUTHERN ARROW-WOOD	FAC	4	3
	Ulmus rubra	SLIPPERY ELM	FAC	3	2
			TOTAL	25	18
			•		
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
	HAMAMELIS VIRGINIANA	AMERICAN WITCH-HAZEL	FACU	4	16
UPLAND	QUERCUS RUBRA	NORTHERN RED OAK	FACU	2	8
	QUERCUS MONTANA	CHESTNUT OAK	UPL	4	16
	ACER SACCHARUM	SUGAR MAPLE	FACU	4	16
ENHANCEMENT PLANTINGS	AMELANCHIER ARBOREA	Downy Service-Berry	FACU	2	8
FLANTINGS	LIRIODENDRON TULIPIFERA	TULIPTREE	FACU	3	
	ACER RUBRUM	RED MAPLE	FAC	3	12
	QUERCUS ALBA	NORTHERN WHITE OAK	FACU	3	12
	QUENCOS ALBA	NORTHERN WITTE OAK	TOTAL	25	100
			TOTAL		100
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	SPACING O.C.	TOTAL PLANTS
ZOIVL	CORNUS ALBA		FACW		3481
-		RED OSIER ASH-LEAF MAPLE	FAC	4 4	3481
LIVE STAKES	ACER NEGUNDO				
	SAMBUCUS NIGRA	BLACK ELDER	FACW	4	3481
	SALIX NIGRA	BLACK WILLOW	OBL	4	3481
			TOTAL		13924
			T	T	
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
	Sagittaria latifolia	DUCK-POTATO	OBL	142	998
PEN WATER / BOG	SCHOENOPLECTUS	SOFT-STEM CLUB-RUSH	OBL	142	998
PLANTING	TABERNAEMONTANI				
	SPARGANIUM EURYCARPUM	BROAD-FRUIT BURR-REED	OBL	142	998
			TOTAL	426	2995
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
	ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL	150	1055
	CAREX STRICTA	UPTIGHT SEDGE	OBL	1125	7909
	CAREX LUPULINA	HOP SEDGE	OBL	750	5273
	CAREX STIPATA	STALK-GRAIN SEDGE	OBL	750	5273
SEDGE MEADOW	_	WHITE TURTLEHEAD	OBL	300	2109
	CHELONE GLABRA		I ODI	150	1055
	CHELONE GLABRA  IRIS VERSICOLOR	Harlequin Blueflag	OBL	100	
SEDGE MEADOW PLUG PLANTINGS		HARLEQUIN BLUEFLAG  CARDINAL-FLOWER	OBL	150	1055
	IRIS VERSICOLOR				1055 7909
	IRIS VERSICOLOR  LOBELIA CARDINALIS	CARDINAL-FLOWER	OBL	150	

7015	CCIENTIFIC NAME	SEEDIN	1	MIV DENOITY	CEEDING DATE (LDC)
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/A
	ALISMA SUBCORDATUM SYMPHYOTRICHUM	AMERICAN WATER-PLANTAIN  CROOKED-STEM	OBL	1%	3.34
	PRENANTHOIDES	AMERICAN-ASTER	FAC	1%	3.34
	SYMPHYOTRICHUM PUNICEUM	PURPLE-STEM AMERICAN-ASTER	OBL	1%	3.34
	DOELLINGERIA UMBELLATA	PARASOL WHITE-TOP	FACW	1%	3.34
	BIDENS CERNUA	Nodding Burr-Marigold	OBL	1%	3.34
	BIDENS FRONDOSA	DEVIL'S-PITCHFORK	FACW	1%	3.34
	CAREX COMOSA	BEARDED SEDGE	OBL	2%	6.68
	CAREX CRINITA	FRINGED SEDGE  NORTHERN LONG SEDGE	OBL OBL	2% 2%	6.68
	CAREX FOLLICULATA  CAREX GYNANDRA	NORTHERN LONG SEDGE  NODDING SEDGE	OBL	6%	20.04
	CAREX GINANDRA  CAREX LUPULINA	HOP SEDGE	OBL	6%	20.04
	CAREX LURIDA	SHALLOW SEDGE	OBL	6%	20.04
	CAREX VULPINOIDEA	COMMON FOX SEDGE	OBL	4%	13.36
	CINNA ARUNDINACEA	SWEET WOOD-REED	FACW	1%	3.34
	ELEOCHARIS PALUSTRIS	COMMON SPIKE-RUSH	OBL	2%	6.68
	ELYMUS CANADENSIS	NODDING WILD RYE	FACU	5%	16.70
	ELYMUS RIPARIUS	RIVER-BANK WILD RYE	FACW	5%	16.70
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW	5%	16.70
WETLAND ESTORATION -	EUTROCHIUM FISTULOSUM	TRUMPETWEED	FACW	1%	3.34
	EUTROCHIUM MACULATUM	SPOTTED TRUMPETWEED	OBL	1%	3.34
SEEDING	EUPATORIUM PERFOLIATUM	COMMON BONESET	FACW	1%	3.34
	GLYCERIA CANADENSIS	RATTLESNAKE MANNA GRASS	OBL	2%	6.68
	GLYCERIA STRIATA	FOWL MANNA GRASS	OBL	1%	3.34
-	JUNCUS EFFUSUS	LAMP RUSH	OBL	2%	6.68
	LEERSIA ORYZOIDES	RICE CUT GRASS	OBL	2%	6.68
	LOBELIA SIPHILITICA	GREAT BLUE LOBELIA	FACW	1%	3.34
_	MIMULUS RINGENS	ALLEGHENY MONKEY-FLOWER	OBL	2%	6.68
	ONOCLEA SENSIBILIS	SENSITIVE FERN	FACW	2%	6.68
	PENTHORUM SEDOIDES	DITCH-STONECROP	OBL	1%	3.34
-	POA PALUSTRIS	FOWL BLUE GRASS	FACW	6%	20.04
	SAGITTARIA LATIFOLIA	DUCK-POTATO  DARK-GREEN BULRUSH	OBL OBL	1% 2%	3.34
	SCIRPUS ATROVIRENS SCIRPUS CYPERINUS	COTTONGRASS BULRUSH	OBL	1%	3.34
	SCIRPUS POLYPHYLLUS	LEAFY BULRUSH	OBL	4%	13.36
	SCHOENOPLECTUS				
	TABERNAEMONTANI	SOFT-STEM CLUB-RUSH	OBL	2%	6.68
	SPARGANIUM AMERICANUM	AMERICAN BURR-REED	OBL	4%	13.36
	SPARGANIUM EURYCARPUM	BROAD-FRUIT BURR-REED	OBL	4%	13.36
	VERBENA HASTATA	SIMPLER'S-JOY	FACW	3%	10.02
	VERNONIA GIGANTEA	GIANT IRONWEED	FAC	2%	6.68
	ZIZANIA AQUATICA	INDIAN WILD RICE	OBL Total	3% 100%	334.00
			TOTAL	100 76	354.00
ZONE	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/A
	Andropogon gerardii	BIG BLUESTEM	FACU	16%	67.52
	ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW	10%	42.20
	BOUTELOUA CURTIPENDULA	SIDEOATS GRAMA	NI FACIL	20%	84.40
	SORGHASTRUM NUTANS	YELLOW INDIAN GRASS FOXGLOVE BEARDTONGUE	FACU	20%	84.40
	PENSTEMON DIGITALIS LIATRIS SPICATA	DENSE GAYFEATHER	FAC FAC	7% 3%	29.54
	TRADESCANTIA OHIENSIS	BLUEJACKET	FACU	3%	12.66
	RUDBECKIA HIRTA	BLACK-EYED-SUSAN	FACU	3%	12.66
	PENSTEMON HIRSUTUS	HAIRY BEARDTONGUE	NI	2%	8.44
	SYMPHYOTRICHUM	CROOKED-STEM			
UPLAND	PRENANTHOIDES	AMERICAN-ASTER	FAC	2%	8.44
ESTORATION SEEDING	SYMPHYOTRICHUM NOVAE-ANGLIAE	NEW ENGLAND AMERICAN-ASTER	FACW	2%	8.44
SEEDIIVO		AMERICAN WILD	FACW	2%	8.44
	SENNA HEBECARPA	SENSITIVE-PLANT			
	HELIOPSIS HELIANTHOIDES	SMOOTH OXEYE	FACU	2%	8.44
	AGROSTIS PERENNANS	UPLAND BENT	FACU	2%	8.44
	BAPTISIA AUSTRALIS	BLUE WILD INDIGO	FACU	1%	4.22
	SENNA MARILANDICA	Maryland Wild Sensitive-Plant	FACW	1%	4.22
	SOLIDAGO JUNCEA	EARLY GOLDERNROD	NI	1%	4.22
	MONARDA FISTULOSA	OSWEGO-TEA	FACU	1%	4.22
	RUDBECKIA FULGIDA	ORANGE CONEFLOWER	OBL	1%	4.22
	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	NI	1%	4.22
			TOTAL	100%	422.00

CAREX VULPINOIDEA  SPARGANIUM EURYCARPUM  CAREX LURIDA  CAREX GYNANDRA  SPARGANIUM AMERICANUM  CAREX LUPULINA  CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	COMMON FOX SEDGE  BROAD-FRUIT BURR-REED  SHALLOW SEDGE  NODDING SEDGE  AMERICAN BURR-REED  HOP SEDGE  BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY  HARLEQUIN BLUEFLAG	OBL	24% 10% 8% 7% 7% 5% 3% 3% 3%	33.74 14.06 11.25 9.84 9.84 7.03 4.22 4.22
CAREX LURIDA  CAREX GYNANDRA  SPARGANIUM AMERICANUM  CAREX LUPULINA  CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	SHALLOW SEDGE  NODDING SEDGE  AMERICAN BURR-REED  HOP SEDGE  BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL OBL OBL OBL OBL OBL OBL OBL	8% 7% 7% 5% 3%	9.84 9.84 7.03 4.22
CAREX GYNANDRA  SPARGANIUM AMERICANUM  CAREX LUPULINA  CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	NODDING SEDGE  AMERICAN BURR-REED  HOP SEDGE  BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL OBL OBL OBL OBL OBL OBL	7% 7% 5% 3% 3%	9.84 9.84 7.03 4.22
CAREX LUPULINA  CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	AMERICAN BURR-REED  HOP SEDGE  BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL OBL OBL OBL OBL	7% 5% 3% 3%	9.84 7.03 4.22
CAREX LUPULINA  CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	HOP SEDGE  BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL OBL OBL	5% 3% 3%	7.03 4.22
CAREX COMOSA  ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	BEARDED SEDGE  SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL OBL	3% 3%	4.22
ASCLEPIAS INCARNATA  MIMULUS RINGENS  JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	SWAMP MILKWEED  ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL	3%	
JUNCUS EFFUSUS  CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	ALLEGHENY MONKEY-FLOWER  LAMP RUSH  FRINGED SEDGE  SIMPLER'S-JOY	OBL OBL		
CAREX CRINITA  VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	FRINGED SEDGE SIMPLER'S-JOY			4.22
VERBENA HASTATA  IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	SIMPLER'S-JOY		3%	4.22
IRIS VERSICOLOR  YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS		OBL	2%	2.81
YMPHYOTRICHUM PUNICEUM  SCIRPUS ATROVIRENS	HARI FOLIIN RILIEFI AC	FACW	2%	2.81
SCIRPUS ATROVIRENS	HANLEWUIN DLUEFLAG	OBL	2%	2.81
	PURPLE-STEM AMERICAN-ASTER	OBL	2%	2.81
Colpana ave==::	DARK-GREEN BULRUSH	OBL	2%	2.81
Scirpus cyperinus	COTTONGRASS BULRUSH	OBL	2%	2.81
UPATORIUM PERFOLIATUM	Common Boneset	FACW	2%	2.81
GLYCERIA CANADENSIS	RATTLESNAKE MANNA GRASS	OBL	2%	2.81
CHELONE GLABRA	WHITE TURTLEHEAD	OBL	1%	1.41
CAREX STRICTA	UPTIGHT SEDGE	OBL	1%	1.41
EUTROCHIUM FISTULOSUM	TRUMPETWEED	FACW	1%	1.41
ALISMA SUBCORDATUM	American Water-Plantain	OBL	1%	1.41
SCHOENOPLECTUS TARFRNAFMONTANI	SOFT-STEM CLUB-RUSH	OBL	1%	1.41
BIDENS CERNUA	Nodding Burr-Marigold	OBL	  %	1.41
SCIRPUS POLYPHYLLUS	LEAFY BULRUSH	OBL	1%	1.41
PENTHORUM SEDOIDES	DITCH-STONECROP	OBL	1%	1.41
ERNONIA NOVEBORACENSIS	New York Ironweed	FACW	1%	1.41
SOLIDAGO PATULA	ROUND-LEAF GOLDENROD	OBL	1%	1.41
SCIRPUS PENDULUS	Rufous Bulrush	OBL	  %	1.41
		TOTAL	100%	140.6
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (OZ/ACRE
LAMAGROSTIS CANADENSIS	BLUEJOINT	OBL	18%	4
CAREX HYSTERICINA	PORCUPINE SEDGE	OBL	18%	4
LEERSIA ORYZOIDES	RICE CUT GRASS	OBL	45%	10
ELEOCHARIS PALUSTRIS	COMMON SPIKE-RUSH	OBL		2
ELEOCHARIS ACICULARIS	NEEDLE SPIKE-RUSH			2
		TOTAL	100%	22
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/ACR
CAREX STRICTA	UPTIGHT SEDGE	OBL	3%	4.35
ATTEUCCIA STRUTHIOPTERIS	OSTRICH FERN	FACW	PLUGS	100 PLUGS/ACRE
CALTHA PALUSTRIS	YELLOW MARSH-MARIGOLD	OBL	3%	4.35
Physostegia virginiana	OBEDIENT-PLANT	FACW	30%	43.50
ASCLEPIAS INCARNATA	SWAMP MILKWEED	OBL	34%	49.30
SOLIDAGO GRAMINIFOLIA	GRASSLEAVED GOLDENROD	FACW	30%	43.50
		TOTAL	100%	145.00
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/ACR
TRITICUM AESTIVUM	WINTER WHEAT	FAC	41%	90
SECALE CEREALE	WINTER RYE	FAC	25%	56
AVENA SATIVA L.	SPRING OATS			64
LOLIUM MULTIFLORUM	ANNUAL RYEGRASS			10
		TOTAL	100%	220.0
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/ACR
LOTUS CORNICULATUS	GARDEN BIRD'S-FOOT-TREFOIL	FAC	7%	6
SECALE CEREALE	BIG BLUESTEM	FAC	18%	15
AVENA SATIVA L.	SPRING OATS	FAC	75%	64
		TOTAL	100%	85.0
SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/ACR
FESTUCA SPP.	FINE FESCUE	FAC	58%	35
Poa pratensis	KENTUCKY BLUE GRASS	FAC	42%	25
	I DESCRIPTION		/ •	
		TOTAL	100%	60.0
	SCHOENOPLECTUS TABERNAEMONTANI  BIDENS CERNUA  SCIRPUS POLYPHYLLUS PENTHORUM SEDOIDES ERNONIA NOVEBORACENSIS SOLIDAGO PATULA SCIRPUS PENDULUS  SCIENTIFIC NAME ALAMAGROSTIS CANADENSIS CAREX HYSTERICINA LEERSIA ORYZOIDES ELEOCHARIS PALUSTRIS ELEOCHARIS ACICULARIS  SCIENTIFIC NAME CAREX STRICTA ATTEUCCIA STRUTHIOPTERIS CALTHA PALUSTRIS PHYSOSTEGIA VIRGINIANA ASCLEPIAS INCARNATA SOLIDAGO GRAMINIFOLIA  SCIENTIFIC NAME TRITICUM AESTIVUM SECALE CEREALE AVENA SATIVA L. LOLIUM MULTIFLORUM  SCIENTIFIC NAME LOTUS CORNICULATUS SECALE CEREALE AVENA SATIVA L.  SCIENTIFIC NAME LOTUS CORNICULATUS SECALE CEREALE AVENA SATIVA L.	ALISMA SUBCORDATUM  SCHOENOPLECTUS TABERNAEMONTANI  BIDENS CERNUA  SOFT-STEM CLUB-RUSH  BIDENS CERNUA  NODDING BURR-MARIGOLD  SCIRPUS POLYPHYLLUS  ELEAFY BULRUSH  PENTHORUM SEDOIDES  DITCH-STONECROP  ROUND-LEAF GOLDENROD  SCIRPUS PENDULUS  SCIENTIFIC NAME  LAMAGROSTIS CANADENSIS  ELECCHARIS PALUSTRIS  ELECCHARIS ACICULARIS  SCIENTIFIC NAME  CAREX STRICTA  CALTHA PALUSTRIS  CALTHA PALUSTRIS  COMMON NAME  ASCLEPIAS INCARNATA  SOLIDAGO GRAMINIFOLIA  SCIENTIFIC NAME  CALTHA PALUSTRIS  COMMON NAME  CALTHA PALUSTRIS  SOLIDAGO GRAMINIFOLIA  SCIENTIFIC NAME  COMMON NAME  CALTHA PALUSTRIS  COMMON NAME  CALTHA PALUSTRIS  SOLIDAGO GRAMINIFOLIA  SCIENTIFIC NAME  COMMON NAME  COMMON NAME  CALTHA PALUSTRIS  COMMON NAME  CALTHA PALUSTRIS  SOLIDAGO GRAMINIFOLIA  SCIENTIFIC NAME  COMMON NAME	ALISMA SUBCORDATUM SCHOENOPLECTUS TABERNAEMONTANI SCHOENOPLECTUS TABERNAEMONTANI SCHOENOPLECTUS TABERNAEMONTANI SIDENS CERNUA NODDING BURR-MARIGOLD OBL SCIRPUS POLYPHYLLUS LEAFY BULRUSH OBL PENTHORUM SEDOIDES DITCH-STONECROP OBL SCIRPUS POLYPHYLLUS RUMOND-LEAF GOLDENROD OBL SCIRPUS PENDULUS RUFOUS BULRUSH OBL SCIRPUS PENDULUS RUFOUS BULRUSH OBL SCIENTIFIC NAME COMMON NAME INDICATOR STATUS LAMAGROSTIS CANADENSIS RICE CUT GRASS OBL LEERSIA ORYZOIDES RICE CUT GRASS OBL ELECCHARIS ACICULARIS NEEDLE SPIKE-RUSH OBL SCIENTIFIC NAME COMMON NAME INDICATOR STATUS ACICULARIS SCIENTIFIC NAME COMMON NAME INDICATOR STATUS CAREX STRICTA UPTIGHT SEDGE OBL ACTEUCCIA STRUTHIOPTERIS CALTHA PALUSTRIS YELLOW MARSH-MARIGOLD OBL CASCLEPIAS INCARNATA SOLIDAGO GRAMINIFOLIA GRASSLEAVED GOLDENROD FACW TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS CALTHA PALUSTRIS YELLOW MARSH-MARIGOLD OBL SCIENTIFIC NAME COMMON NAME INDICATOR STATUS CALTHA PALUSTRIS YELLOW MARSH-MARIGOLD OBL SCIENTIFIC NAME COMMON NAME INDICATOR STATUS CALTHA PALUSTRIS YELLOW MARSH-MARIGOLD OBL SCIENTIFIC NAME COMMON NAME INDICATOR STATUS TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS FAC AVENA SATIVA L. SPRING OATS FAC  LOLIUM MULTIFLORUM ANNUAL RYEGRASS FAC TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS FAC AVENA SATIVA L. SPRING OATS FAC TOTAL  SCIENTIFIC NAME COMMON NAME INDICATOR STATUS SCIENTIFIC NAME COMMON NAME INDICATOR STATUS FAC AVENA SATIVA L. SPRING OATS FAC TOTAL	ALISMA SUBCORDATUM

REVISIONS     NO.   DESCRIPTION   DATE   BY	LEGEND	NOTES	SEAL	SCALE	RESOURCE   3	ENVIRONMENTAL SOLUT 3 TERMINAL WAY, SUITE W445A PITTSBURGH PA 15219 WWW.RES.US	TIONS  EMAIL: DCOSTA@RES.US
					Ores	EAST BRANCH COEMITIGATION BANK ESTORA  DRAWN BY: MC CHECKED BY: DC  VORK CO	DORUS CREEK DESIGN PLANS TION LIST PENNSYLVANIA

### PLANTING DETAIL NOTES: A. GENERAL:

I. PLANT DETAILS ARE INCORPORATED INTO THIS SPECIFICATION BY REFERENCE.

2.1. SUPPLIER CERTIFICATION: THE SUPPLIER OF ALL SEEDS AND/OR VEGETATION SHALL CERTIFY THAT ORIGIN OF THE SEEDS FROM WHICH THE PLANTS OR SEEDS WERE PRODUCED IS FROM THE EASTERN OR CENTRAL PORTIONS OF THE U.S. PRIOR TO PLANTING. 2.2. INSTALLER QUALIFICATIONS: ENGAGE AN EXPERIENCED INSTALLER, WHO HAS SUCCESSFULLY COMPLETED RESTORATION PLANTING PROJECTS SIMILAR IN SIZE AND COMPLEXITY TO THIS PROJECT.

2.3. INSTALLER'S FIELD SUPERVISION: INSTALLER TO MAINTAIN AN EXPERIENCED FULL-TIME SUPERVISOR ON THE PROJECT SITE WHEN PLANTING IS IN

3.I. PROVIDE PLANT MATERIALS OF QUANTITY, SIZE, GENUS AND SPECIES INDICATED ON THE CONSTRUCTION DRAWINGS.

4. ALL PLANT MATERIALS AND WORK SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 2004 AMERICAN STANDARD FOR NURSERY STOCK. ALL SEEDS MUST MEET APPLICABLE STATE AND FEDERAL REGULATIONS AND MUST INCLUDE LABELING INDICATING SUPPLIER, FORMULATION, GERMINATION RATES AND SEED DATE. LABELS FROM ALL SEED INSTALLED ARE TO BE KEPT AND SUPPLIED TO OWNER AT COMPLETION OF PROJECT.

DO NOT MAKE SUBSTITUTIONS UNLESS APPROVED BY THE PROJECT MANAGER. REQUESTS FOR SUBSTITUTIONS MUST BE MADE IN WRITING TO THE PROJECT MANAGER AND APPROVED TO INSTALLATION. INCLUDE REASONS WHY THE SUBSTITUTIONS ATE BEING REQUESTED.

6. PROJECT ENGINEER MAY INSPECT PLANT MATERIALS EITHER AT PLACE OF GROWTH OR ON SITE DURING PLANTING ACTIVITIES, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. MATERIAL FOUND TO BE UNACCEPTABLE WILL BE REJECTED AND THE CONTRACTOR WILL BE REQUIRED TO SUPPLY REPLACEMENT MATERIAL WITHIN TIME FRAME (I.E., I WEEK). REJECTED MATERIAL SHALL BE IMMEDIATELY REMOVED FROM PROJECT SITE. UNACCEPTABLE MATERIAL IS DEFINED AS THE FOLLOWING:

- 6.I. PLANTS WITH BENT TRUNKS OR MULTIPLE LEADERS, UNLESS CHARACTERISTIC FOR THE SPECIES;
- 6.2. PLANTS WITH DISEASED TRUNKS, STEMS, OR LEAVES: 6.3. PLANTS WITH PEST-INFESTED TRUNKS, STEMS, OR LEAVES;
- 6.4. PLANTS OF INSUFFICIENT SIZE; 6.5. PLANTS WITH WRONG SPECIES/SUB-SPECIES; AND

TEMPORALLY STORED IT SHOULD BE STORED IN A COOL, DRY PLACE.

### 6.6. PLANTS HAVING ROOT GIRDLING IN THE CONTAINER.

7. DELIVERY, STORAGE, AND HANDLING 7.1. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF PLANTS DURING DELIVERY, DO NOT DROP PLANTS DURING DELIVERY 7.2. DELIVER PLANT MATERIALS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED

MORE THAN 6 HOURS AFTER DELIVERY, FOLLOW STORAGE INSTRUCTIONS AS SHOWN IN TUBELING TREE PLANTING DETAIL. 7.3. DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS UNTIL PLANTING TIME. 7.4. SEED: SEED SHOULD BE CLEAN AND DRY. DO NOT USE SEED THAT HAS BECOME MOIST DURING DELIVERY OR STORAGE. IF SEED NEEDS TO BE

8.I. EXAMINE THE SUB-GRADE AND TOPSOIL, AND VERIFY THE ELEVATIONS PRIOR TO INSTALLING PLANT ON SEED MATERIAL. ALL SOIL AMENDMENTS AND CONDITIONING SHALL BE COMPLETED PRIOR TO SEEDING AND PLANT MATERIAL INSTALLATION. DO NOT PROCEED WITH THE WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN A MANNER ACCEPTABLE TO THE INSTALLER. 8.2. CALL PENNSYLVANIA ONE CALL SYSTEM AT I-800-242-1776, 72 HOURS PRIOR TO ANY EXCAVATION. DETERMINE LOCATION OF UNDERGROUND UTILITIES AND PERFORM WORK IN A MANNER WHICH WILL AVOID POSSIBLE DAMAGE. HAND EXCAVATE AS REQUIRED.

### 9. PLANTING AND SEEDING RESTRICTIONS

9.1. PLANTS SHALL BE PLANTED DURING UNFROZEN SOIL CONDITIONS SEPTEMBER 15TH - MAY 15TH. PLANT INSTALLATION OUTSIDE OF THIS TIME PERIOD SHALL NOT OCCUR UNLESS APPROVED BY THE PROJECT CONSTRUCTION MANAGER AND MAY REQUIRE ADDITIONS TO THE SCOPE OF WORK, SUCH AS WATERING REGIMES, AND ADDITIONAL PLANT QUANTITIES. 9.2. SEEDING SHALL BE COMPLETED DURING SEPTEMBER 15-MAY 15 TO THE GREATEST EXTENT POSSIBLE. DORMANT WINTER SEEDING SHALL NOT BE CONDUCTED WITH MORE THAN 2" OF SNOW ON THE GROUND AT THE TIME OF SEEDING. DUE TO THE SCHEDULE OF THE PROJECT, SOME PERMANENT SEEDING OUTSIDE THIS TIME PERIOD WILL BE NECESSARY. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMEDIAL SEEDING IN UNDER-PERFORMING AREAS DUE TO SEEDING OUTSIDE OF THIS TIME PERIOD. A COVER CROP SHALL BE SOWN AT THE TIME OF PERMANENT SEEDING TO PROVIDE QUICKER GERMINATION AND STABILIZATION PER THE PLAN SHEETS.

9.3. THESE LIMITS MAY NOT BE MODIFIED UNLESS APPROVED BY THE PROJECT ENGINEER IN ADVANCE, WITH THE RISK OF SURVIVAL BORNE SOLELY BY THE CONTRACTOR.

### IO. WARRANTY

10.1. WARRANTY PERIOD IS FOR ONE (I) YEAR AFTER DATE OF FINAL ACCEPTANCE AND COVERS DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM NEGLECT BY OWNER, ABUSE OR DAMAGE BY OTHERS, OR UNUSUAL PHENOMENA OR INCIDENTS WHICH ARE 10.2. CONTRACTOR SHALL GUARANTEE A MINIMUM SURVIVAL RATE FOR THE WARRANTY PERIOD OF 85% FOR BALLED AND BURLAPPED, CONTAINER

GROWN, AND TUBELINGS, AND 75% FOR BARE ROOT AND LIVE STAKES. 10.3. IF SURVIVAL RATES ARE LESS THAN THE ABOVE WARRANTY RATES, THE CONTRACTOR SHALL REPLACE THE QUANTITY OF DEFECTIVE OR DEAD PLANTS UP TO THE ORIGINAL CONSTRUCTION DRAWING SPECIFIED PLANT QUANTITY. WARRANTY PLANTINGS SHALL OCCUR WITHIN THE NEXT PLANTING WINDOW (SEPTEMBER 15TH -JUNE 15TH, EXCLUDING FROZEN SOIL CONDITIONS) FOLLOWING THE END OF THE APPLICABLE WARRANTY PERIOD. 10.4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY DURING THE WARRANTY PERIOD TO PROVIDE WRITTEN NOTICE OF ANY MAINTENANCE PRACTICE TO THE OWNER, WHICH IN THEIR OPINION WILL AFFECT THE GUARANTEE IF NOT REMEDIED PROMPTLY. THE PROJECT ENGINEER WILL RENDER AN OPINION OF ANY CONFLICT IF NECESSARY.

II. MAINTENANCE II.I. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL PLANT MATERIAL THROUGH FINAL ACCEPTANCE AND WARRANTY PERIOD.

INSTALL PLANT MATERIALS IN ACCORDANCE WITH THE SPECIFICATIONS AND DETAILS OF THE CONSTRUCTION DRAWINGS FOLLOWING THE ADDITION OF SOIL AMENDMENTS, SEEDING, AND INSTALLATION OF APPLICABLE EROSION CONTROL FABRIC.

### . CONTAINER GROWTH MATERIA

I.I. PLANTING OF CONTAINER GROWN MATERIAL SHALL OCCUR IN ACCORDANCE WITH LOCATIONS AND/OR PATTERNS SPECIFIC TO THE CONSTRUCTION DRAWINGS. I.2. PLANTING HOLES SHALL BE AT LEAST TWICE THE DIAMETER AND DUG TO THE SAME DEPTH AS THE CONTAINER IN WHICH THEY ARE GROWN. DO NOT REMOVE PLANT MATERIAL FROM CONTAINER UNTIL IMMEDIATELY BEFORE INSTALLATION. EXAMINE THE ROOTS TO SEE IF THEY ARE POT BOUND. CAREFULLY SEPARATE ANY POT BOUND OR CRAMPED ROOTS AND SPREAD THEM OUT WHEN PLACING THE PLANT WITHIN THE HOLE SO THAT THE ROOTS CAN GROW WITHOUT FURTHER CONSTRICTION OF THE ROOT BALL. I.3. SET PLANT MATERIALS PLUMB AND CENTERED WITHIN HOLE, ENSURING THAT THE TOP OF THE ROOT BALL IS SLIGHTLY ELEVATED ABOVE THE SURROUNDING SOIL ELEVATIONS. BACKFILL AROUND ROOT BALL WITH SUITABLE NATIVE SOIL, MAINTAINING PLUMB, AND GENTLY TAMPING BACKFILL LAYERS

TO ELIMINATE VOIDS. WATER IS BACKFILL LAYERS TO THE POINT OF SOIL SATURATION. I.4. FOLLOWING THE BACKFILLING, ADD EXISTING SOIL TO BRING THE FINAL GRADE IN THE PLANTING HOLE TO THE SURROUNDING SOIL SURFACE. RAKE THE UNUSED EXISTING SOIL OUTSIDE THE PLANTING HOUSE, TAKING CARE NOT TO MOUND THE SOIL OR TO SIGNIFICANTLY ALTER THE EXISTING GRADES.

### 2. BAREROOT AND TUBELING MATERIAL

2.1. IT SHOULD BE ANTICIPATED THAT THE SOIL MAY BE COMPACTED MORE THAN OPTIMAL FOR PLANTING AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RIP SOIL TO ASSURE OPTIMAL PLANTING CONDITION. SOIL SHALL BE RIPPED TO A DEPTH OF 9-12". 2.2. BAREROOT MATERIAL SHALL BE TREATED WITH ROOT DIP ACCORDING TO THE MANUFACTURERS RECOMMENDATION PRIOR TO PLANTING. MATERIALS SHALL BE PLANTED IMMEDIATELY OR OTHERWISE STORED PER THE MANUFACTURER'S RECOMMENDATIONS.

3.I. LIVE STAKE MATERIAL SHALL BE KEPT MOIST ACCORDING TO MANUFACTURES RECOMMENDATIONS. DO NOT ALLOW THE LIVE STAKES TO DRY OUT PRIOR TO INSTALLATION. 3.2. MATERIAL SHALL BE PLANTED ACCORDING TO THE DETAIL PROVIDED. THE USE OF A PUNCH/PLANTING BAR, AUGER, REBAR, OR WATER-JET MAY BE USED TO PRE-DRILL HOLE IF NECESSARY. TAMP SOIL AROUND STAKE FOLLOWING INSTALL.

4.I. SEEDING SHALL OCCUR AS SHOWN ON THE PLANTING PLAN. IN ACCORDANCE WITH THE CURRENT VERSION OF THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL SEED SHALL BE APPLIED PRIOR TO INSTALLATION OF ANY EROSION CONTROL FABRIC. AREAS APPLIED WITH HERBICIDE MAY BE SEEDED 7 DAYS AFTER APPLICATION. 4.2. SOW SEED WITH A SPREADER OR A HYDROSEED MACHINE WITH MANUFACTURER RECOMMENDED BINDING AGENT. IN AREAS WITH DENSE EXISTING VEGETATION, INSTALL SEED WITH A NATIVE NO-TILL DRILL SEEDER. DO NOT BROADCAST DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.

### 4.3. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED IN TRANSIT OR STORAGE

### 4.4. SOW SEED PRIOR TO INSTALLATION OF EROSION CONTROL FABRIC WHERE APPLICABLE.

4.5. IF BROADCAST, ROLL SEEDED AREAS LIGHTLY, AND WATER WITH A FINE SPRAY. 4.6. PROTECT SEEDED AREAS AGAINST EROSION BY SPREADING STRAW MULCH IMMEDIATELY FOLLOWING COMPLETION OF SEEING OPERATIONS IF OTHER EROSION CONTROL MEASURES ARE NOT OTHERWISE SPECIFIED. SPREAD UNIFORMLY AT A RATE OF 2 TONS PER ACRE (90 LB. PERI,000 S.F.) TO FORM A CONTINUOUS BLANKET OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT. ANCHOR STRAW MULCH BY CRIMPING INTO TOPSOIL BY SUITABLE MECHANICAL EQUIPMENT.

### 4.7 STRAW EROSION CONTROL BLANKET IS A SUITABLE ALTERNATIVE TO BE USED INSTEAD OF BLOWN OR CRIMPED STRAW.

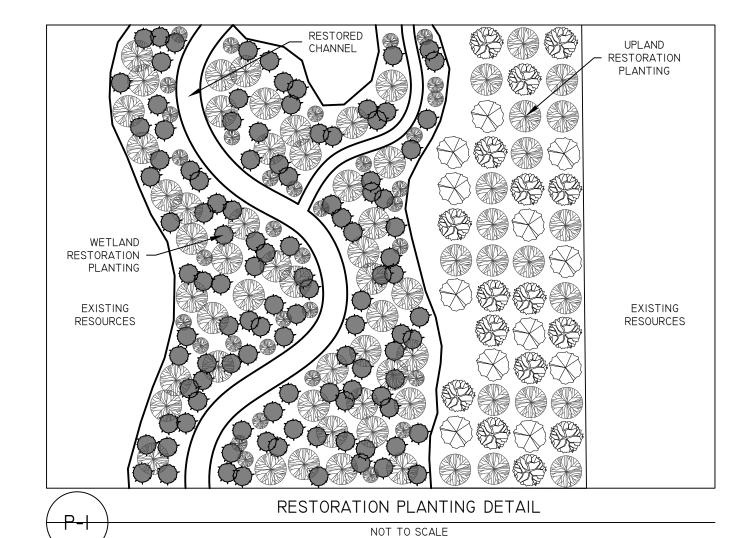
### LOCATION 5.1. ALL PLANT MATERIAL IS TO BE INSTALLED AS SHOWN ON THE PLANTING PLANS FOR THE PROTOTYPE.

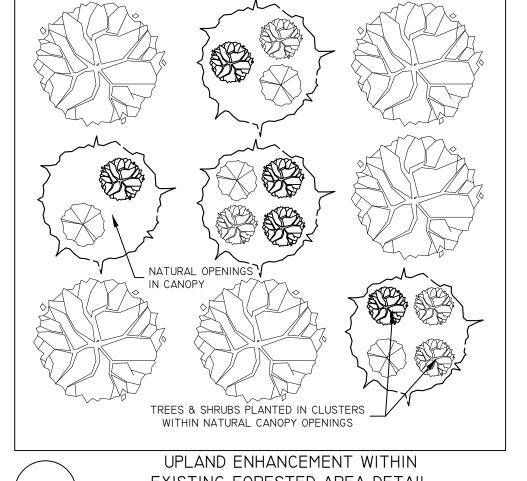
5.2. UPLAND TREE PLANTINGS ARE TO BE INSTALLED IN A 9X9 GRID PATTERN. 5.3. FLOODPLAIN PLANTINGS ARE TO BE INSTALLED IN A CLUMPED FASHION WITH A MINIMUM OF 3' SPACING BETWEEN PLANTS. PLANTS ARE TO BE INSTALLED BASED UPON THE HYDROLOGIC TOLERANCES AND SITE CONDITIONS AFTER CONSTRUCTION IS COMPLETED. 5.4. ALL LIVE STAKES ARE TO BE INSTALLED ALONG STREAM BANKS, POOLS, AND FLOODPLAIN POOLS BASED UPON SPACING INDICATED IN THE PLANTING PLAN SPECIES LIST.

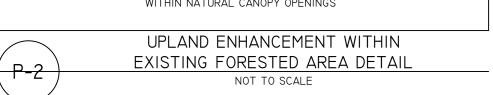
### CARE OF SEEDLING UNTIL PLANTED

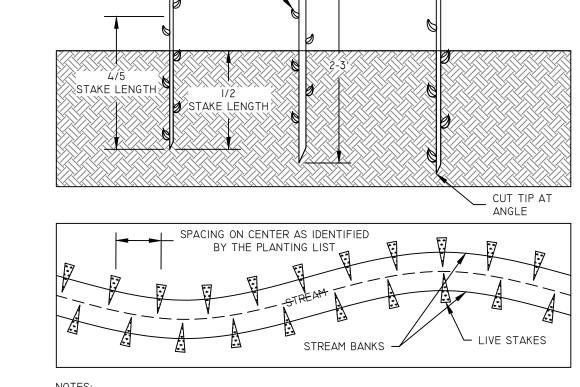
SEEDLINGS SHOULD BE PLANTED IMMEDIATELY. IF IT IS NECESSARY TO STORE MOSS-PACKED SEEDLINGS FOR MORE THAN 2 WEEKS, ONE PINT OF WATER PER PKG. SHOULD BE ADDED. IF CLAY-TREATED, DO NOT ADD WATER TO PKG. PACKAGES MUST BE SEPARATED TO PROVIDE VENTILATION TO PREVENT "HEATING". SEPARATING PACKAGES WITH WOOD STRIPS AND STORE OUT OF THE WIND IN A SHADED, COOL, (NOT FREEZING) LOCATION.

CARE OF SEEDLING DURING PLANTING WHEN PLANTING, ROOTS MUST BE KEPT MOIST UNTIL TREES ARE IN THE GROUND. DO NOT CARRY SEEDLINGS IN YOUR HAND EXPOSED TO THE AIR AND SUN.









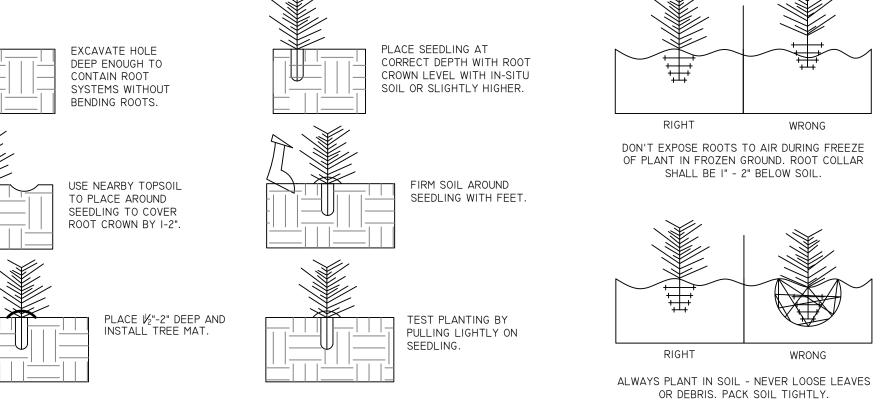
→ 2' ON CENTER →

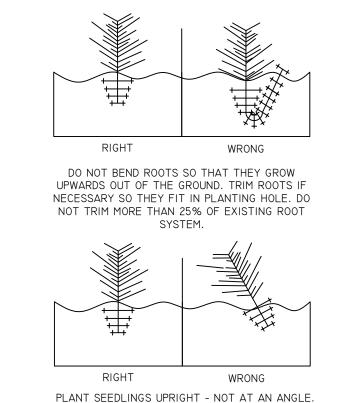
LIVE STAKES MUST BE BETWEEN 1/2" TO 2" IN DIAMETER AND MUST BE 2' TO 3' LONG. CUT THE STAKES WITH AN ANGLE ON THE BOTTOM AND SQUARE ON THE TOP, WITH THE BUDS

3. TRIM ALL SIDE BRANCHES CLEANLY SO THE CUTTING IS ONE STEM. 4. STAKES MUST BE STORED IN A COOL AND MOIST PLACE TO KEEP THEM ALIVE AND DORMANT. 5. DRIVE STAKES PERPENDICULAR TO THE GROUND WITH RUBBER HAMMER AT LEAST ½ TO % OF THE

TOTAL STAKE LENGTH. KEEP AT LEAST 2 BUDS ABOVE GROUND SURFACE. 6. DO NOT USE SPLIT STAKES.

LIVE STAKES NOT TO SCALE



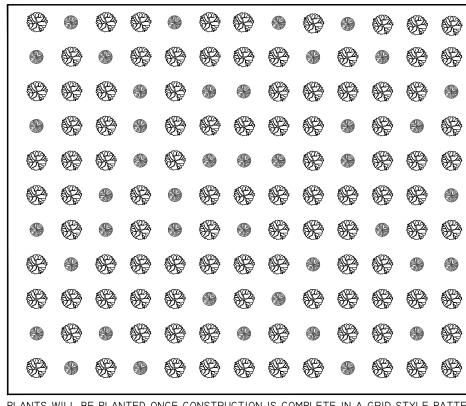


POINTING UPWARD.

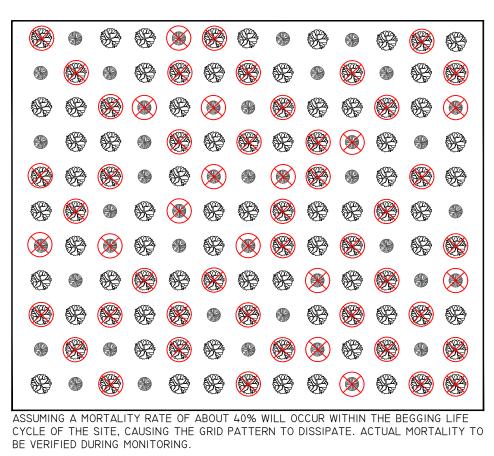
MIN OF 2 BUDS ABOVE GROUND (POINTING

UPWARDS)

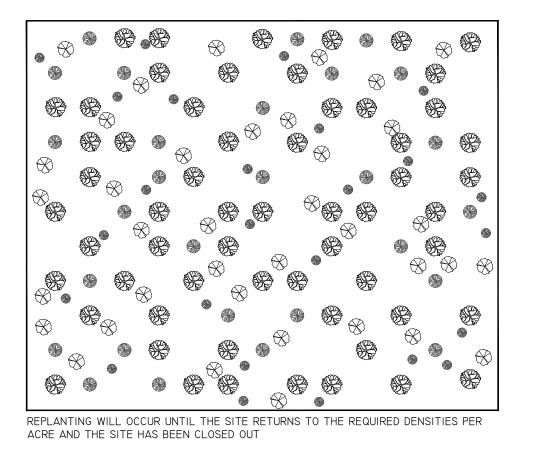




PLANTS WILL BE PLANTED ONCE CONSTRUCTION IS COMPLETE IN A GRID STYLE PATTERN. PLANTING LOCATIONS ARE APPROXIMATE, THE ACTUAL LOCATION OF PLANTS ON THE SITE WILL BE SUBJECT TO SITE CONDITIONS AT THE TIME OF PLANTING.



RE-PLANT SUPPLEMENTAL TREE AND SHRUB SPECIES IN A RANDOM PATTERN TO RETURN THE SITE TO THE REQUIRED DENSITIES PER ACRE.



MATRIX PLANTING PLAN DETAIL

NOT TO SCALE

KEEP MOSS-PACKED SEEDLINGS IN A CONTAINER PACKED WITH WET MOSS OR FILLED WITH THICK MUDDY WATER. COVER CLAY-TREATED SEEDLINGS WITH RESOURCE ENVIRONMENTAL SOLUTIONS REVISIONS LEGENDNOTESSEALSCALE33 TERMINAL WAY, SUITE W445A PITTSBURGH PA 15219 DESCRIPTION DATE BY EMAIL: DCOSTA@RES.US TELEPHONE: (412) 249-2440 TUBELING EAST BRANCH CODORUS CREEK MITIGATION BANK DESIGN PLANS SITE RESTORATION DETAILS TUBELING MC YORK COUNTY EAST SPRINGFIELD TOWNSH HECKED BY: REPLANTED DATE: MARCH 31, 2020

