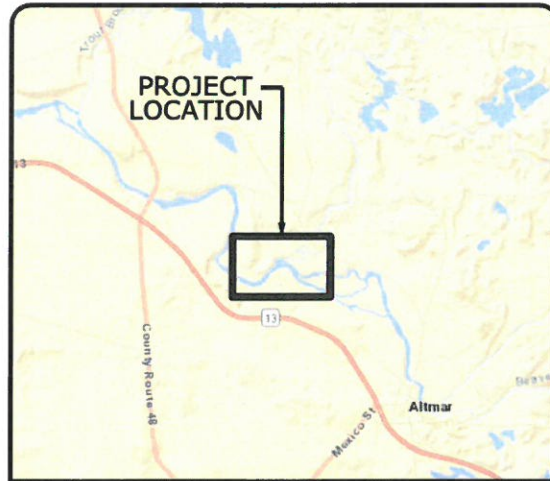


PROJECT: 100% SALMON RIVER DESIGN PLAN



VICINITY MAP

INDEX OF SHEETS

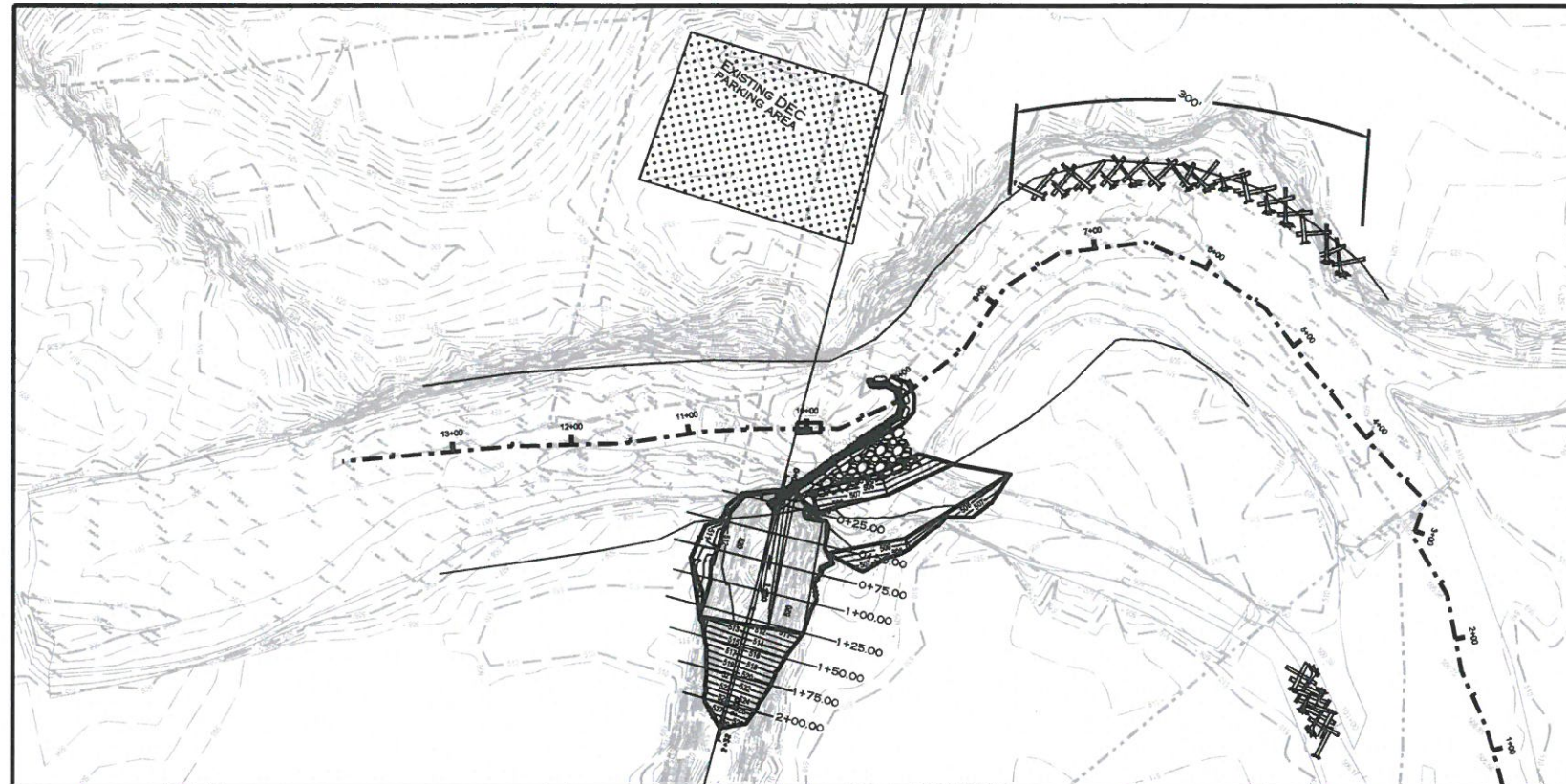
- 1... TITLE SHEET
- 1A... STREAM CONVENTIONAL SYMBOLS
GENERAL NOTES
CONSTRUCTION SEQUENCE
- 2-2D... TYPICAL SECTIONS
- 3-3A... PLANTING DETAILS
PLANTING NOTES
- 4... STRUCTURE TABLE
- 5... DESIGN PLAN
- 5A... RAILROAD EMBANKMENT PROFILE
- 5B-5C... RAILROAD EMBANKMENT CROSS SECTIONS
- 5D... DESIGN PROFILE
- 6... GRADING PLAN
- 7... EROSION CONTROL PLAN
- 8... CROSS SECTION OVERVIEW
- X-1-X-3... CROSS SECTIONS

SALMON RIVER HABITAT ENHANCEMENT PLAN

OSWEGO COUNTY

LOCATION: TOWN OF ALTMAR
TYPE OF WORK: HABITAT ENHANCEMENT

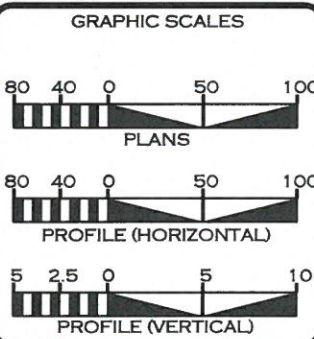
SHEET 5 & 6



STATE NY	PROJECT REFERENCE NO. BAL0054	SHEET NO. 1	TOTAL SHEETS 21
PROJECT LENGTH			
EXISTING STREAM LENGTH =		841 LINEAR FEET	
PROPOSED DESIGN STREAM LENGTH =		841 LINEAR FEET	



GEOGRAPHIC COORDINATE SYSTEM:
EPSG: 102716 - NAD 1983 STATE PLANE
NEW YORK CENTRAL FIPS 3102



REVISIONS				
NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	100% DESIGN PLAN	KLT	KLT	07/07/23



PREPARED FOR:
U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE
3817 LUKER ROAD
CORTLAND, NY 13045

GIAN DODICI
PROJECT MANAGER

PREPARED BY:
ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511
NY LICENSE # = 099293

July 7, 2023
LETTING DATE:
































KEVIN TWEEDY, PE
PROJECT ENGINEER



PROJECT ENGINEER

SIGNATURE: P.E.

STREAM CONVENTIONAL SYMBOLS

	J-HOOK VANE (JH)		SF SAFETY FENCE
	CHANNEL BLOCK (CB)		TP TREE PROTECTION
	TOEWOOD (TW)		III SILT FENCE
	EXISTING MINOR CONTOUR		X EXISTING FENCE
	500 PROPOSED MAJOR CONTOUR		CE CONSERVATION EASEMENT
	502 PROPOSED MINOR CONTOUR		20 EXISTING MAJOR CONTOUR
	LOD LIMITS OF DISTURBANCE		CL ROAD CENTERLINE
	PROPERTY LINE		ACCESS ROAD
	FEMA FLOODWAY		10+00 STREAM THALWEG
	R.O.W. RIGHT-OF-WAY		STREAM TOP OF BANKS
	UPPER BANK		TEMPORARY STREAM CROSSING
	LOWER INNER BERM		TRANSPLANTED VEGETATION
	UPPER INNER BERM		TREE REMOVAL
	TOE OF CHANNEL		GRADE BANK 6:1 OR FLATTER
			CHANNEL FILL
			SOIL LIFT
			EXISTING WETLANDS

**NOTE: ALL ITEMS ABOVE MAY NOT BE USED ON THIS PROJECT

CONSTRUCTION SEQUENCE

PROJECT # BAL0054 SHEET NO. 1A

SYMBOLY / NOTES

- ALL PERMITS ARE IN PLACE FOR THE SALMON RIVER AT TRRESTLE POOL PROJECT.
- CONTACT THE USFWS TO CONDUCT OR CONFIRM SITE LAYOUT AND FLAGGING.
- IDENTIFY AND PREPARE STAGING AREAS AND EQUIPMENT ENTRY AND EXIT AREAS FOR STREAM ACCESS.
- INSTALL SEDIMENT FENCES AS NEEDED TO PROTECT SENSITIVE AREAS AND DIRECT STORMWATER RUN OFF.
- INSTALL E&SC MEASURES AT ANY AREAS USED FOR CONTRACTOR EQUIPMENT STAGING.
- ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES MAY BE REQUIRED BY THE USFWS OR OWNER IF DEEMED NECESSARY.
- WITHIN 6" OF FINAL GRADE, RE-DISTRIBUTE 6" OF TOPSOIL.
- AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES, FINE GRADE DISTURBED AREAS AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
- FINE GRADE, PERMANENTLY SEED AND MULCH ALL LANDSCAPED AREAS.
- REMOVE ALL REMAINING TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES UPON COMPLETION AND STABILIZATION OF PROJECT.

WORKING IN WATER

- WORK SHALL TAKE PLACE IN THE WET WITH EXCAVATOR AND OTHER MACHINERY OPERATIONS IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
 - LIMIT THE NUMBER OF INGRESS AND EGRESS POINTS TO THE RIVER.
 - MOVE MACHINERY ABOVE BANK-FULL, (OR HIGHER AS WEATHER FORECASTS DICTATE) AT THE END OF EACH DAY'S WORK.
 - IN CONSULTATION WITH THE USFWS AND THEIR REPRESENTATIVES, OPERATORS SHALL AT ALL TIMES SEEK TO MINIMIZE DISTURBANCE TO THE SITE.
 - CONTRACTORS, WITH APPROVAL FROM USFWS OR THEIR REPRESENTATIVE MAY USE EXCESS NATURAL MATERIALS TO TEMPORARILY DIVERT FLOWS AWAY FROM CERTAIN ONGOING CONSTRUCTION, (E.G. DURING TOE-WOOD CONSTRUCTION).

GENERAL NOTES

- THE CONTRACTOR WILL COMPLY WITH OSHA AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS GOVERNING WORKER HEALTH AND SAFETY. THE USFWS REPRESENTATIVE SHALL NOT BE RESPONSIBLE FOR ENSURING CONSTRUCTION CONTRACTOR COMPLIANCE OR IDENTIFICATION OF HAZARDS ON SITE. COSTS ASSOCIATED WITH THE CONTRACTOR'S HEALTH AND SAFETY COMPLIANCE, INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS OF THIS NOTE, SHALL BE INCLUDED WITHIN THE CONTRACTOR'S BID.
- THE CONTRACTOR IS REQUIRED TO CALL "DIG SAFE NY" AT LEAST 72 HOURS PRIOR TO WORK. ALL UTILITIES SHALL BE LOCATED PRIOR TO EXCAVATION.
- SHOULD UTILITIES BE ENCOUNTERED DURING CONSTRUCTION WHICH INTERFERE WITH THE WORK AND FOR WHICH PROVISIONS ARE NOT PROVIDED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE USFWS REPRESENTATIVE OF THEIR EXISTENCE AND EXTENT OF CONFLICT WITH THE WORK.
- LOCATION OF UTILITIES, PUBLIC AND/OR PRIVATE, INDICATED AS EXISTING AND/OR TO BE CONSTRUCTED AS SHOWN IN THE DRAWINGS, ARE APPROXIMATE ONLY. THEIR EXACT LOCATION SHALL BE DETERMINED IN THE FIELD. ADDITIONAL UTILITY LINES, WHETHER ABANDONED OR IN SERVICE, MAY EXIST AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT THEIR OPERATIONS AND TAKE THE NECESSARY PRECAUTIONS TO PREVENT INTERFERENCE WITH OR DAMAGE TO THESE OR OTHER FACILITIES DURING THE COURSE OF CONSTRUCTION.
- SPECIAL CARE SHALL BE TAKEN TO AVOID DAMAGING EXISTING UTILITIES. ANY DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE USFWS.
- THESE DRAWINGS INCLUDE THE TECHNICAL REQUIREMENTS FOR THE PROJECT, AND GENERAL CONTRACT REQUIREMENTS TOGETHER WITH THE USFWS CONTRACT DOCUMENTS.
- VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.
- CONSTRUCTION CONTRACTOR IS RESPONSIBLE FOR CONFIRMING DIMENSIONS, ELEVATIONS, QUANTITIES AND EXISTING CONDITIONS.
- THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE TO EXISTING FACILITIES CAUSED BY OPERATIONS WHICH ARE NOT INCLUDED AS PART OF THE INTENDED WORK. ALL DAMAGE TO EXISTING FACILITIES, WHICH IS NOT PART OF THE INTENDED WORK, SHALL BE REPAIRED BY THE CONTRACTOR WITHOUT COST TO THE STATE, AND TO THE SATISFACTION OF THE USFWS REPRESENTATIVE.
- IN-STREAM WORK IS PERMITTED BETWEEN JUNE 15TH TO AUGUST 31ST.
- THE CONTRACTOR SHALL BE SUPPLIED WITH A COPY OF GENERAL PERMIT #GP-7-18-003 ISSUED BY THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC). THE CONTRACTOR SHALL INSURE THAT ALL WORK IS PERFORMED IN COMPLIANCE WITH THE PERMIT. IF THE CONTRACTOR BECOMES AWARE OF ANY WORK REQUIREMENTS NOT IN COMPLIANCE WITH PERMIT CONDITIONS, THE CONTRACTOR SHALL INFORM NRCS SUPERVISOR DANIEL BISHOP IMMEDIATELY.



REVISIONS

NO.	DESCRIPTION	ENGR.	APPROV.	DATE
1	100% DESIGN PLAN	KLT	KLT	07/07/23

PREPARED FOR:



U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

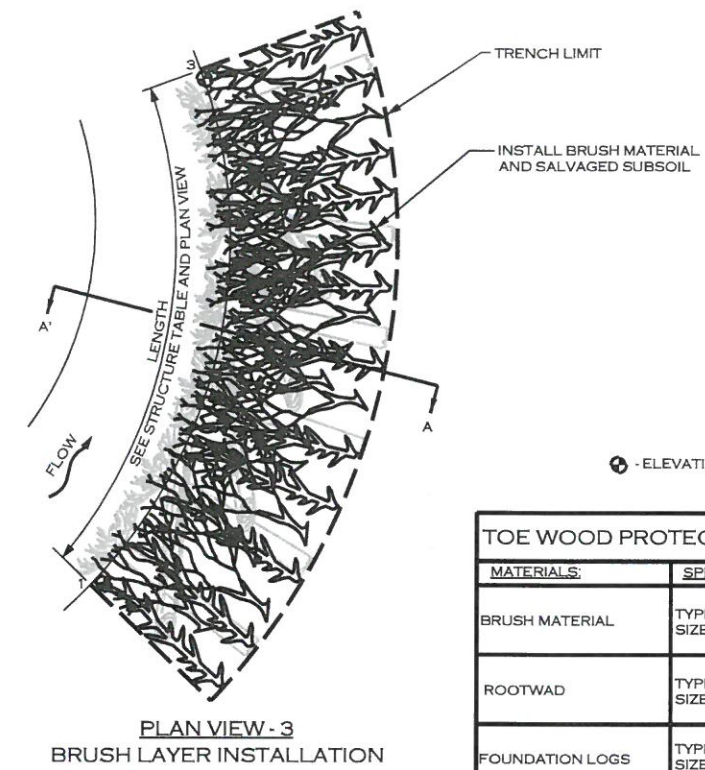
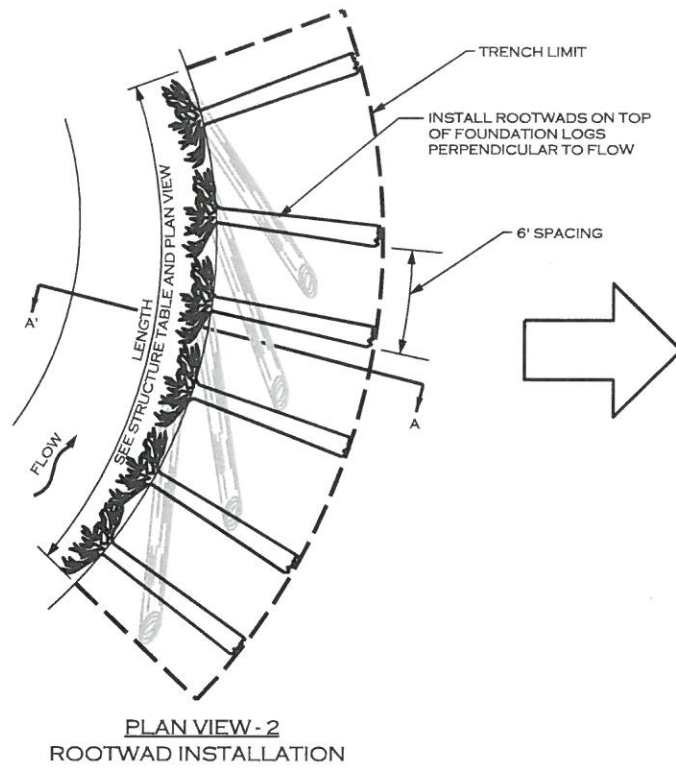
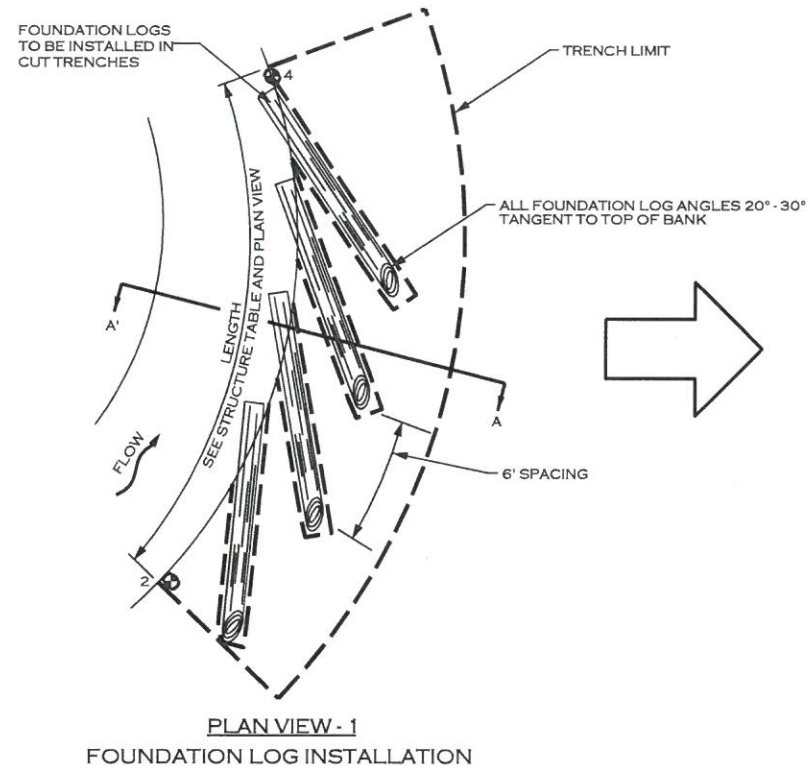
NY LICENSE # = 099293

PROJECT ENGINEER

TOE WOOD PROTECTION STRUCTURE (TW)

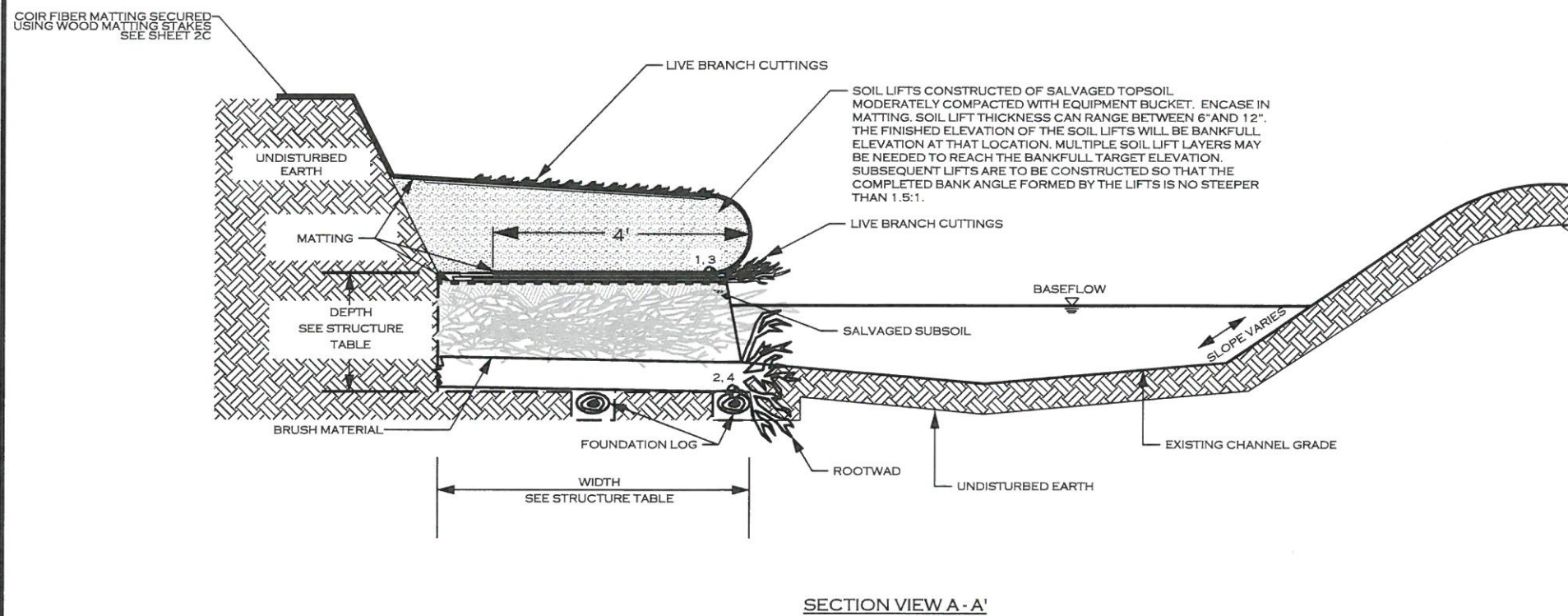
PROJECT # BAL0054 SHEET NO. 2

DETAILS




⊙ - ELEVATION POINT (SEE STRUCTURE TABLES)

TOE WOOD PROTECTION STRUCTURE SPECIFICATIONS	
MATERIALS:	SPECIFICATIONS:
BRUSH MATERIAL	TYPE: LIMBS, BRANCHES AND SMALL LOGS SIZE: 5' - 10' LENGTH, MIN 1" DIAMETER
ROOTWAD	TYPE: HARDWOOD OR SOFTWOOD SIZE: LENGTH = 30"; 18" DIAMETER
FOUNDATION LOGS	TYPE: HARDWOOD OR SOFTWOOD SIZE: LENGTH = 30"; 18" DIAMETER
COIR FIBER MATTING	TYPE: SEE DETAIL
LIVE BRANCH CUTTINGS	TYPE: LIVE STAKE SPECIES IDENTIFIED IN PLANTING NOTES SIZE: 5' - 10' LENGTH, 0.5" - 2.5" DIAMETER



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NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

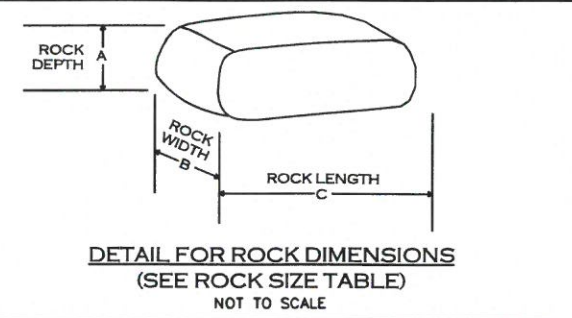
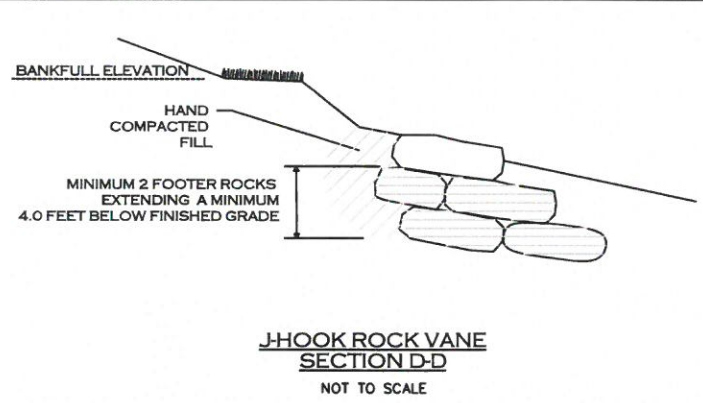
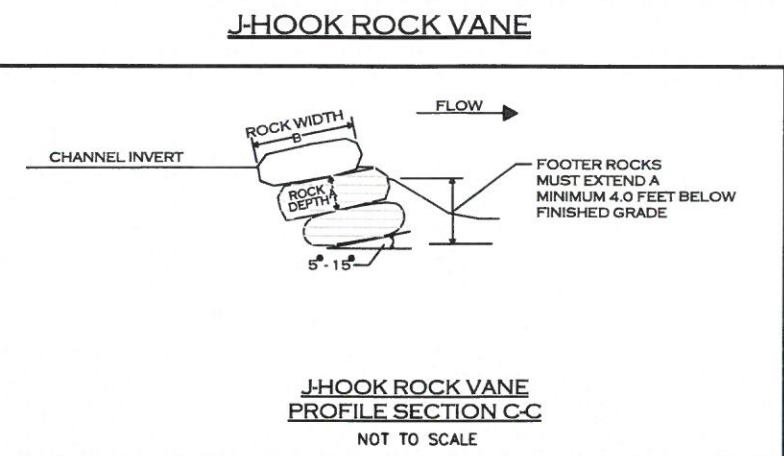
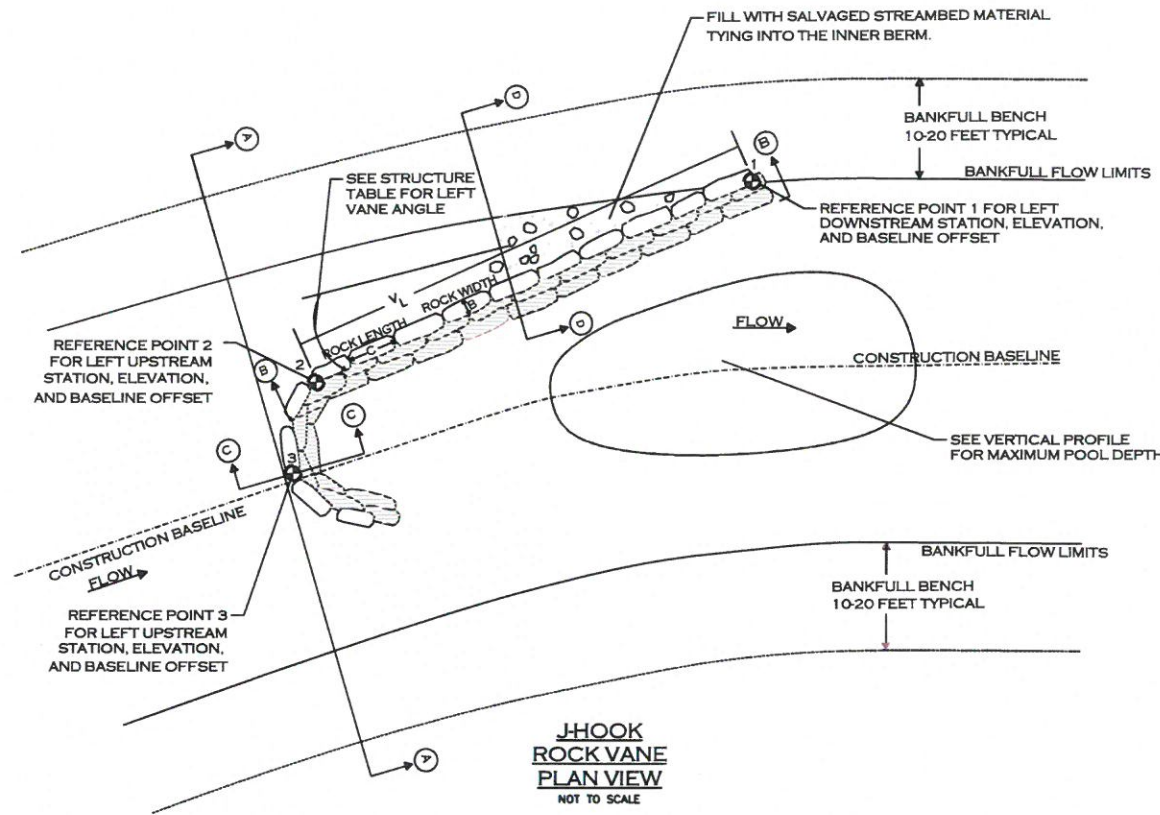
ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

NY LICENSE # = 099293

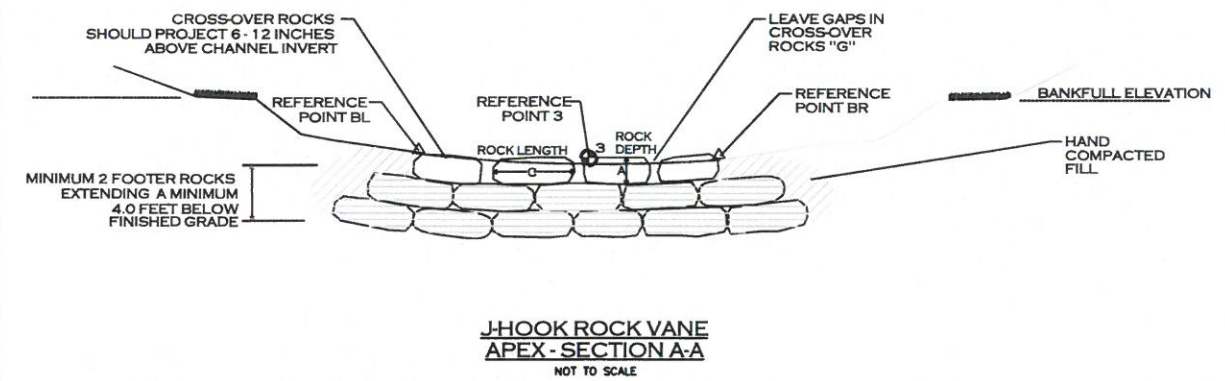
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7/5/2023 BY: PROJECTS\BAL0054_SALMON RIVER\CADD\PLANS\SALMON_PSH_L02.DGN

DETAILS

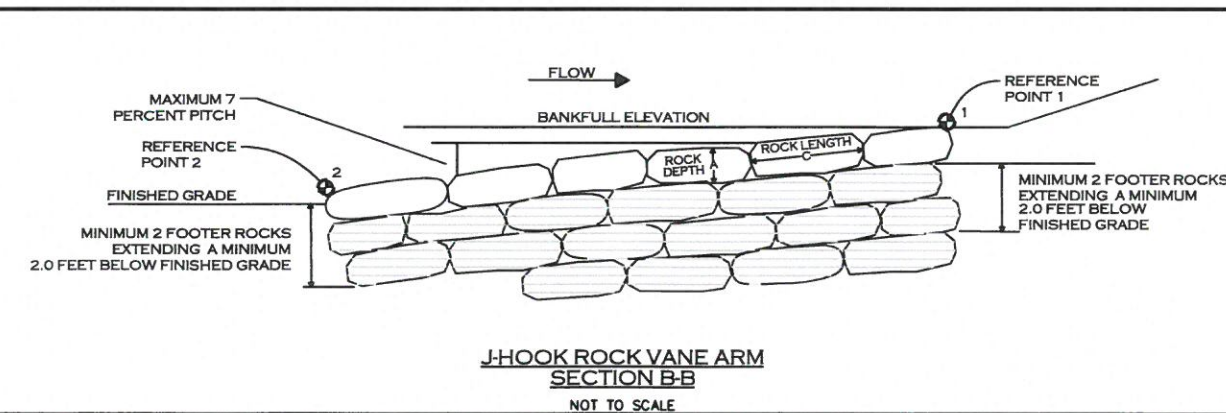


ROCK DIMENSIONS			
A	B	C	G GAP AT APEX
3' (MIN.)	3' (MIN.)	5' (MIN.)	18 INCHES



⊙ - ELEVATION POINT (SEE STRUCTURE TABLES)

- J-HOOK ROCK VANE NOTES:**
1. ALL ROCKS (EXCEPT BOTTOM LAYER OF FOOTER ROCKS) SHALL BE SUPPORTED BY A FOOTER ROCK AND SHINGLED UPSTREAM OR INTO STREAM BANK. ALL ROCKS SHALL BE INTERLOCKED AND SHALL NOT ROCK OR ROTATE IN PLACE.
 2. ALL ROCKS SHALL BE PLACED WITH THE PARALLEL FACES ORIENTED UP AND DOWN WITH THE TOP FACE TILTING UP FROM THE BED AT 5 TO 15 DEGREES TO THE DIRECTION OF FLOW ON THE CROSSOVER AND VANE ARMS.
 3. ALL ROCKS (EXCEPT TOP LAYER OF CROSSOVER) SHALL BE PLACED TO FIRMLY ABUT ADJACENT ROCKS LEAVING NO GAPS BETWEEN ROCKS. GAPS SHALL BE LEFT BETWEEN THE TOP LAYER OF THE CROSSOVER ROCKS AS SHOWN IN PLANS.
 4. STRUCTURE SHALL BE CONSTRUCTED SUCH THAT ROCKS FORM A CONTINUOUS, UNIFORM SLOPE WITH A MINIMUM OF STEEP, HIGH, OR LOW SPOTS ALONG THE TOP FINISHED SURFACE.
 5. CHANNEL STATION AND ELEVATION REFERENCE MAY NOT ALWAYS FALL ON BASELINE OF CONSTRUCTION, THALWEG, OR CHANNEL INVERT.
 6. STREAM BOTTOM AROUND STRUCTURE SHALL BE BACKFILLED WITH SALVAGED STREAMBED MATERIAL TO MEET FINISHED GRADE.
 7. SEE STRUCTURE TABLE, PROFILE, AND GEOMETRY SHEET FOR ALL DIMENSIONS AND ELEVATIONS.



7-7-23
 PROJECT ENGINEER

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PREPARED FOR:

U.S. Fish & Wildlife Service
 New York Field Office

3817 LUKER ROAD
 CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
 OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
 910 GREENWOOD CIRCLE
 CARY, NC 27511

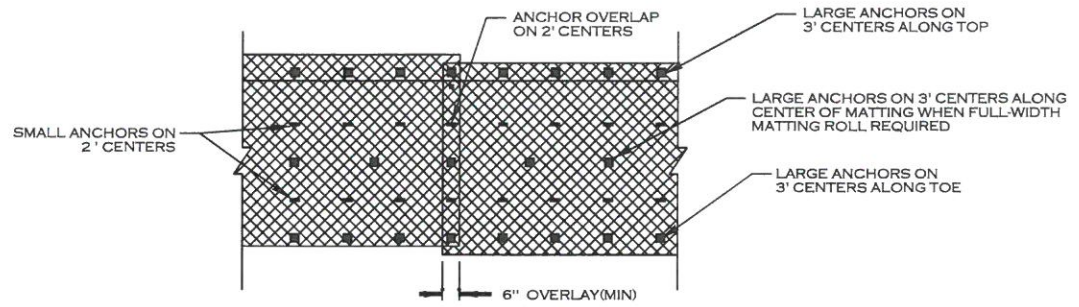
NY LICENSE # = 099293

PROJECT ENGINEER

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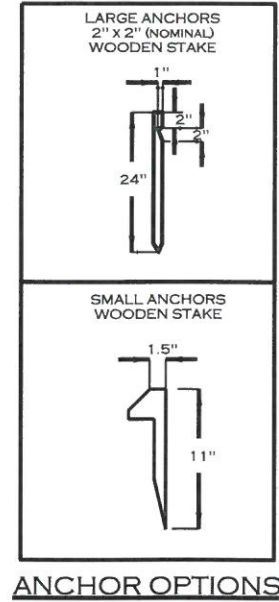
COIR FIBER MATTING

DETAILS

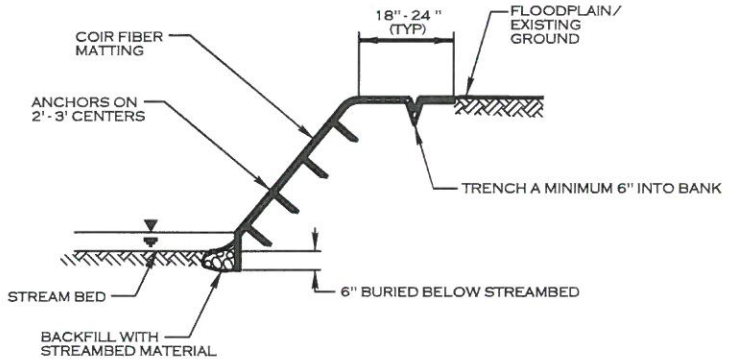


PLAN VIEW

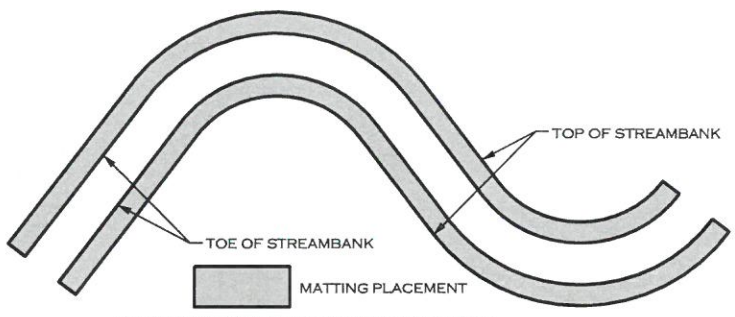
COIR FIBER MATTING SPECIFICATIONS	
MATERIALS:	SPECIFICATIONS:
COIR FIBER MATTING	TYPE: GSM 700
ANCHORS	REFER TO ANCHOR OPTIONS
NOTES:	
1. IN AREAS TO BE MATTED, ALL SEEDING, SOIL AMENDMENTS, AND SOIL PREPARATION MUST BE COMPLETED PRIOR TO PLACEMENT OF COIR FIBER MATTING.	
2. WOODEN STAKES ARE PREFERRED. USE OF STAPLES AS SMALL ANCHORS MUST BE PRE-APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.	



ANCHOR OPTIONS

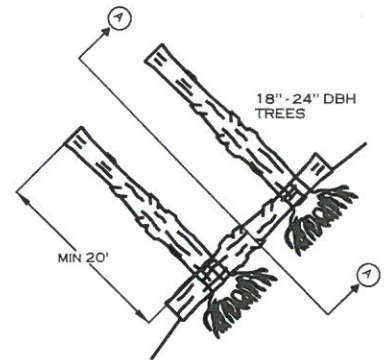


TYPICAL CROSS SECTION

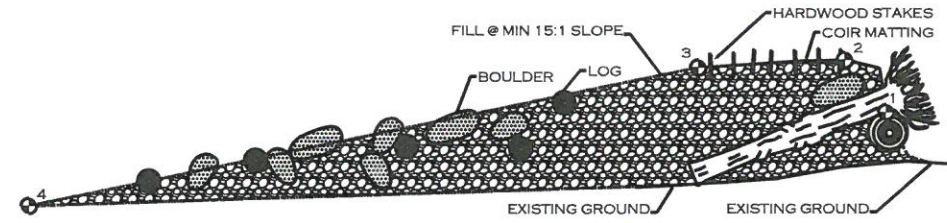


TYPICAL MATTING PLAN VIEW - Bc STREAMS

CHANNEL BLOCK



CHANNEL BLOCK PLAN VIEW
NOT TO SCALE



CHANNEL BLOCK SECTION A-A
NOT TO SCALE

⊕ - ELEVATION POINT (SEE STRUCTURE TABLES)

CHANNEL BLOCK SPECIFICATIONS	
MATERIALS:	SPECIFICATIONS:
LOGS	TYPE: HARDWOOD SIZE: 20-30 FT, 18" - 24" DBH
FILL	EXISTING SITE RIVER ALLUVIUM
BOULDERS	NATIVE MATERIAL 2X2X2 OR BIGGER

NOTES:
1. FINAL CHANNEL BLOCK WIDTH WILL VARY DEPENDING UPON EXISTING CHANNEL WIDTH. TIE IN ELEVATIONS LISTED IN THE STRUCTURE TABLES.

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 3817 LUKER ROAD
 CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
 OSWEGO COUNTY, NY

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 910 GREENWOOD CIRCLE
 CARY, NC 27511
 NY LICENSE # = 099293

7-7-23

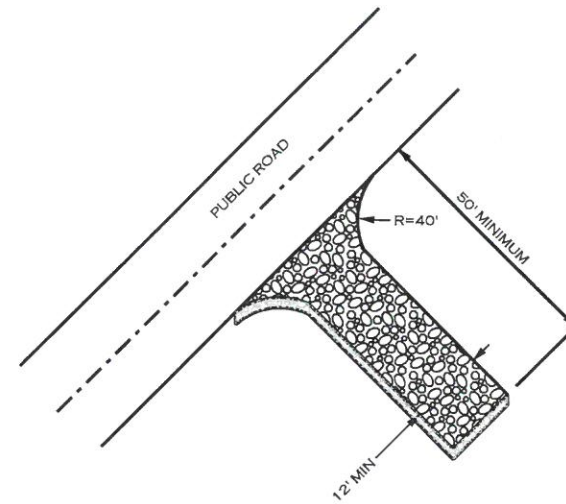
 PROJECT ENGINEER

7/6/2023 B:\PROJECTS\BAL0054_USFWS_SALMON_RIVER\CADD\PLANS\SALMON_PSH_02B.DGN

GRAVEL CONSTRUCTION ENTRANCE

PROJECT # BAL0054 SHEET NO. 2C

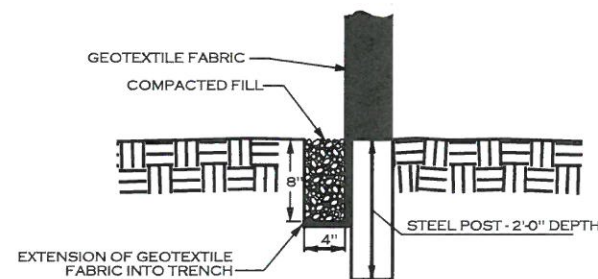
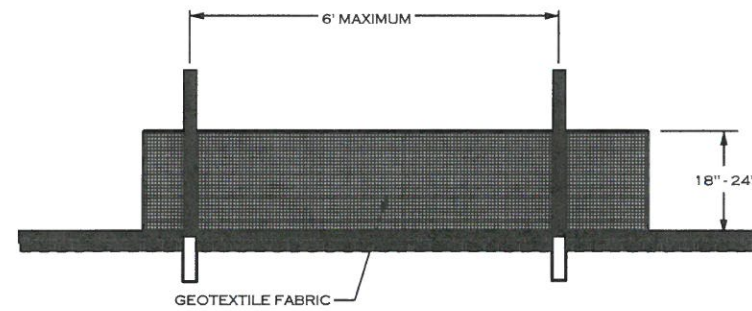
DETAILS



NOTES:

1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE EXPECTED EQUIPMENT.
2. LOCATE ENTRANCES TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. PLACE GEOTEXTILE FABRIC FOR DRAINAGE BENEATH STONE.
4. MUST BE MAINTAINED IN THE CONDITION WHICH WILL PREVENT TRACKING OR DIRECT MUD INTO STREETS.
5. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
6. PROVIDE FREQUENT CHECKS TO THE GRAVEL CONSTRUCTION ENTRANCE AND TIMELY MAINTENANCE.
7. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES AS SHOWN ON PLANS, OR AS DIRECTED BY THE USFWS OR THEIR DESIGNATED REPRESENTATIVE.
8. USE LIGHT STONE FILLING OR OTHER COURSE AGGREGATE APPROVED BY THE USFWS OR THEIR DESIGNATED REPRESENTATIVE.
9. INSTALL CONSTRUCTION ENTRANCES IN A WAY TO PREVENT VEHICLES LEAVING THE PROJECT SITE FROM BYPASSING CONSTRUCTION ENTRANCES.

TEMPORARY SILT FENCE



NOTES:

1. USE GEOTEXTILE FABRIC A MINIMUM OF 36" IN WIDTH AND FASTEN ADEQUATELY TO THE STEEL POSTS.
2. PROVIDE 5" STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.
3. REMOVE ONCE AREA IS STABLE.



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1	100% DESIGN PLAN	KLT	KLT	07/07/23

PREPARED FOR:



U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

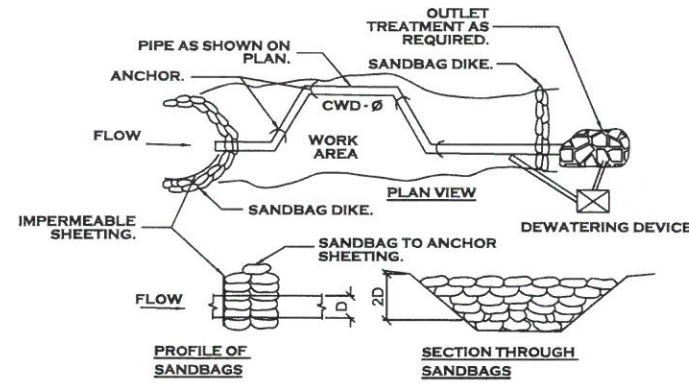
NY LICENSE # = 099293

PROJECT ENGINEER

CLEAR WATER DIVERSION PIPE DETAIL

PROJECT # BAL0054 SHEET NO. 2D

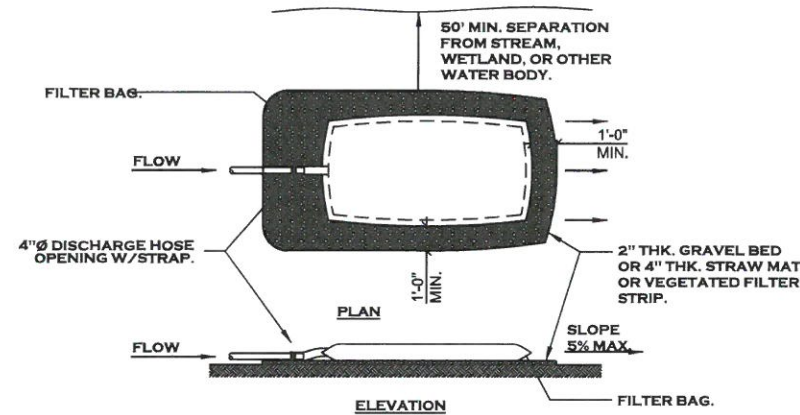
DETAILS



CONSTRUCTION SPECIFICATIONS

1. FLEXIBLE PIPE IS PREFERRED. HOWEVER, CORRUGATED METAL PIPE OR EQUIVALENT PVC PIPE CAN BE USED. MAKE ALL JOINTS WATERTIGHT.
2. FOR SANDBAGS USE MATERIALS THAT ARE RESISTANT TO ULTRA-VIOLET RADIATION, TEARING, AND PUNCTURE AND WOVEN TIGHTLY ENOUGH TO PREVENT LEAKAGE OF FILL MATERIAL.
3. USE 10 MIL. OR THICKER, UV RESISTANT, IMPERMEABLE SHEETING OR OTHER APPROVED MATERIAL THAT IS IMPERMEABLE AND RESISTANT TO PUNCTURING AND TEARING.
4. PLACE IMPERMEABLE SHEETING SUCH THAT UPGRADE PORTION OVERLAPS DOWNGRADE PORTION BY A MINIMUM OF 18 INCHES.
5. SET HEIGHT OF SANDBAG DIKE AT TWICE THE PIPE DIAMETER. MAINTAIN HEIGHT ALONG LENGTH OF SANDBAG DIKE. PLACE DOUBLE ROW OF SANDBAGS.
6. AT A MINIMUM, SECURELY ANCHOR DIVERSION PIPE AT EACH DOWNGRADE JOINT.
7. SET OUTLET END OF DIVERSION PIPE LOWER THAN INLET END.
8. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
9. DEWATER WORK AREA USING AN APPROVED EROSION AND SEDIMENT CONTROL PRACTICE AS SPECIFIED ON APPROVED PLAN.
10. KEEP POINT OF DISCHARGE FREE OF EROSION. MAINTAIN WATER TIGHT CONNECTIONS AND POSITIVE DRAINAGE. REPLACE SANDBAGS AND IMPERMEABLE SHEETING IF TORN.

TYPICAL GEOTEXTILE FILTRATION BAG DETAIL



CONSTRUCTION SPECIFICATIONS

1. TIGHTLY SEAL SLEEVE AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE.
2. PLACE FILTER BAG ON SUITABLE BASE (E.G., GRAVEL, STRAW MAT OR VEGETATED FILTER STRIP) LOCATED ON A LEVEL OR 5% MAXIMUM SLOPING SURFACE. DISCHARGE TO A STABILIZED AREA. EXTEND BASE A MINIMUM OF 12" FROM EDGES OF BAG.
3. CONTROL PUMPING RATE TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTER BAG IN ACCORDANCE WITH THE MANUFACTURER RECOMMENDATION. AS THE BAG FILLS WITH SEDIMENT, REDUCE PUMPING RATE.
4. THE BAG IS CONSIDERED FULL WHEN REMAINING BAG FLOW AREA HAS BEEN REDUCED BY 75%. AT THIS POINT IT SHOULD BE REPLACED WITH A NEW BAG.
5. REMOVE AND PROPERLY DISPOSE OF FILTER BAG UPON COMPLETION OF PUMPING OPERATIONS OR AFTER BAG HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. SPREAD THE DEWATERED SEDIMENT FROM THE BAG IN AN APPROVED UPLAND AREA AND STABILIZE WITH SEED AND MULCH BY THE END OF THE WORK DAY. RESTORE THE SURFACE AREA BENEATH THE BAG TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
6. USE NONWOVEN GEOTEXTILE WITH A DOUBLE NEEDLE MACHINE USING HIGH STRENGTH THREAD, DOUBLE STITCHED "JOE" TYPE CAPABLE OF MINIMUM ROLL STRENGTH OF 100 LBS./INCH (ASTM D4884). SIZE SLEEVE TO ACCOMMODATE A MAXIMUM 4" DIAMETER PUMP DISCHARGE HOSE. THE BAG MUST BE MANUFACTURED FROM A NONWOVEN GEOTEXTILE THAT MEETS OR EXCEEDS MINIMUM AVERAGE ROLL VALUES (MARV) FOR THE FOLLOWING:
 - MIN. GRAB TENSILE 200 LBS.
 - MIN. GRAB TENSILE ELONGATION 50%
 - MIN. TRAPEZOID TEAR STRENGTH 80 LBS.
 - MULLEN BURST STRENGTH 380 PSI
 - MIN. PUNCTURE 130 LBS.
 - APPARENT OPENING SIZE (AOS) 40-80 US SIEVE
 - MIN. UV RESISTANCE 70%
 - MIN. FLOW THRU RATE 70 GPM/FT²
7. REPLACE FILTER BAG IF BAG CLOGS OR HAS RIPS, TEARS, OR PUNCTURES. DURING OPERATION KEEP CONNECTION BETWEEN PUMP HOSE AND FILTER BAG WATER TIGHT. REPLACE BEDDING IF IT BECOMES DISPLACED.



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1	100% DESIGN PLAN	KLT	KLT	07/07/23

PREPARED FOR:



U.S. FISH & WILDLIFE SERVICE
NEW YORK FIELD OFFICE

3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

PREPARED BY:

ECOSYSTEM ENGINEERING
910 GREENWOOD CIRCLE
CARY, NC 27511

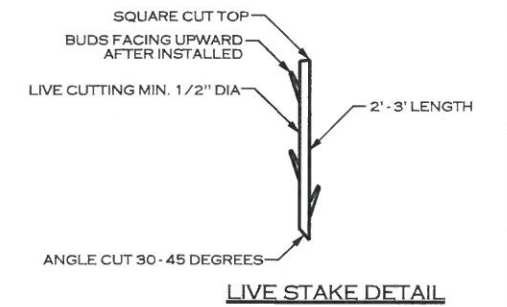
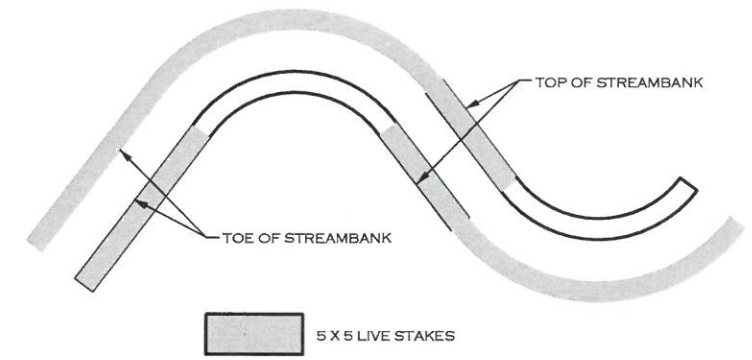
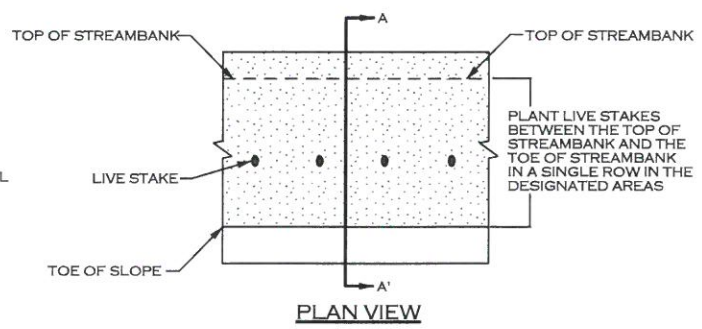
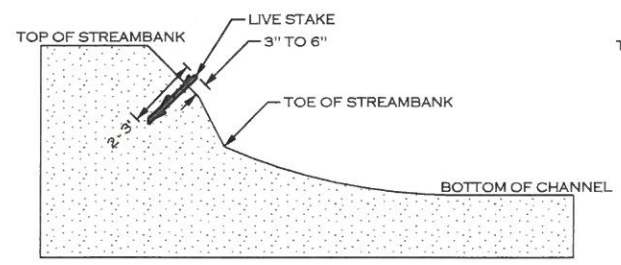
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LIVE STAKING

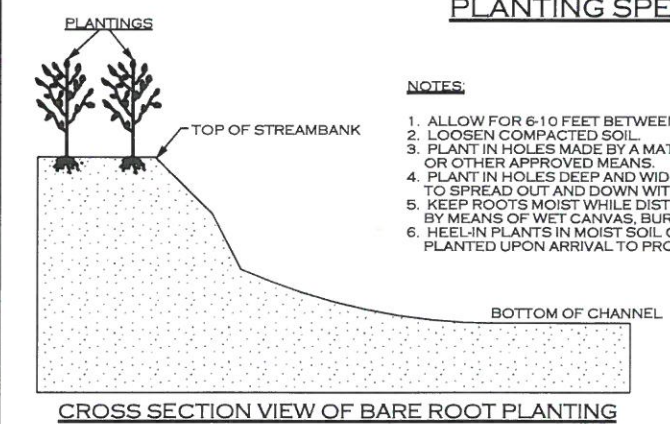
PLANTING DETAILS



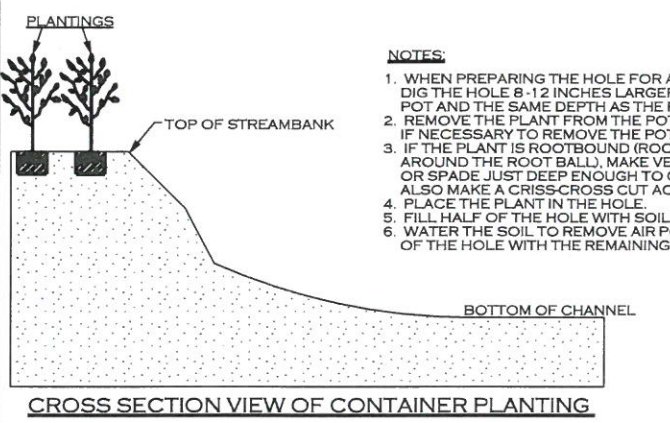
- NOTES:**
- IF STAKES ARE BEING HARVESTED NEAR THE SITE, STAKES SHOULD BE CUT AND INSTALLED ON THE SAME DAY.
 - KEEP STAKES COOL AND MOIST WHILE ON THE JOB SITE AND PRIOR TO INSTALLATION.
 - DO NOT INSTALL STAKES THAT HAVE BEEN SPLIT.
 - STAKES MUST BE INSTALLED WITH BUDS POINTING UPWARDS.
 - STAKES SHALL BE INSTALLED PERPENDICULAR TO BANK.
 - STAKES SHALL BE 1/2 TO 2 INCHES IN DIAMETER AND 2 TO 3 FT LONG.
 - STAKES SHALL BE INSTALLED LEAVING 1/5 OF STAKE ABOVE GROUND.

SEE PLAN VIEW SHEET FOR LIVE STAKING LOCATIONS
TYPICAL LIVE STAKING AREA PLAN VIEW

PLANTING SPECIFICATIONS

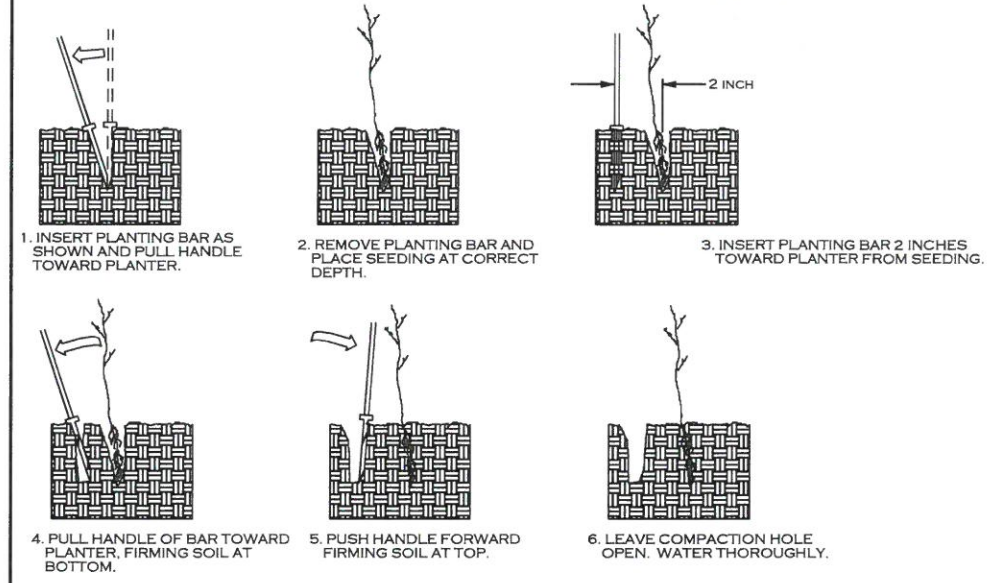


- NOTES:**
- ALLOW FOR 6-10 FEET BETWEEN PLANTINGS, DEPENDING ON SIZE.
 - LOOSEN COMPACTED SOIL.
 - PLANT IN HOLES MADE BY A MATTOCK, DIBBLE, PLANTING BAR, OR OTHER APPROVED MEANS.
 - PLANT IN HOLES DEEP AND WIDE ENOUGH TO ALLOW THE ROOTS TO SPREAD OUT AND DOWN WITHOUT J-ROOTING.
 - KEEP ROOTS MOIST WHILE DISTRIBUTING OR WAITING TO PLANT BY MEANS OF WET CANVAS, BURLAP, OR STRAW.
 - HEEL-IN PLANTS IN MOIST SOIL OR SAWDUST IF NOT PROMPTLY PLANTED UPON ARRIVAL TO PROJECT SITE.



- NOTES:**
- WHEN PREPARING THE HOLE FOR A POTTED PLANT OR SHRUB DIG THE HOLE 8-12 INCHES LARGER THAN THE DIAMETER OF THE POT AND THE SAME DEPTH AS THE POT.
 - REMOVE THE PLANT FROM THE POT. LAY THE PLANT ON ITS SIDE IF NECESSARY TO REMOVE THE POT.
 - IF THE PLANT IS ROOTBOUND (ROOTS GROWING IN A SPIRAL AROUND THE ROOT BALL), MAKE VERTICAL CUTS WITH A KNIFE OR SPADE JUST DEEP ENOUGH TO CUT THE NET OF ROOTS. ALSO MAKE A CRISS-CROSS CUT ACROSS THE BOTTOM OF THE BALL.
 - PLACE THE PLANT IN THE HOLE.
 - FILL HALF OF THE HOLE WITH SOIL (SAME SOIL REMOVED FOR BACKFILL).
 - WATER THE SOIL TO REMOVE AIR POCKETS AND FILL THE REST OF THE HOLE WITH THE REMAINING SOIL.

DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



PLANTING NOTES:

PLANTING BAG
DURING PLANTING, SEEDLINGS SHALL BE KEPT IN A MOIST CANVAS BAG OR SIMILAR CONTAINER TO PREVENT THE ROOT SYSTEMS FROM DRYING.

KBC PLANTING BAR
PLANTING BAR SHALL HAVE A BLADE WITH A TRIANGULAR CROSS SECTION, AND SHALL BE 12 INCHES LONG, 4 INCHES WIDE AND 1 INCH THICK AT CENTER.

ROOT PRUNING
ALL SEEDLINGS SHALL BE ROOT PRUNED, IF NECESSARY, SO THAT NO ROOTS EXTEND MORE THAN 10 INCHES BELOW THE ROOT COLLAR.



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3817 LUKER ROAD
CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

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STRUCTURE TABLE

PROJECT # BAL0054	SHEET NO. 4
----------------------	----------------

**STRUCTURE
TABLE**

Channel Block Structures (Side Channel)

Structure #	Begin Station (ft)	End Station (ft)	Elevation (ft)			
			Pt 1	Pt 2	Pt 3	Pt 4
CB-1	100+91.50	101+71.50	508.00	509.75	509.75	505.88

J-Hook Structures

Structure #	Sill Length (ft)	Arm			Station (ft) At Pt 3	Elevation (ft)		
		Length (ft)	Angle (deg)	Slope (%)		Pt 1	Pt 2	Pt 3
JH-1	0.00	130.00	25	3.1%	9+10.00	506.50	502.50	502.00

Toe-Wood Protection Structures

Structure #	Toe Wood Dimensions						Elevation (ft)					
	STA Length (ft)	Bank Length (ft)	Width (ft)	Depth (ft)	Begin Station (ft)	End Station (ft)	Pt 1	Pt 2	Bench Top	Pt 3	Pt 4	Bench Top
TW-1	216	300	15.0	2.5	5+23.00	7+39.00	507.00	504.50	509.00	505.40	502.90	510.00



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OSWEGO COUNTY, NY

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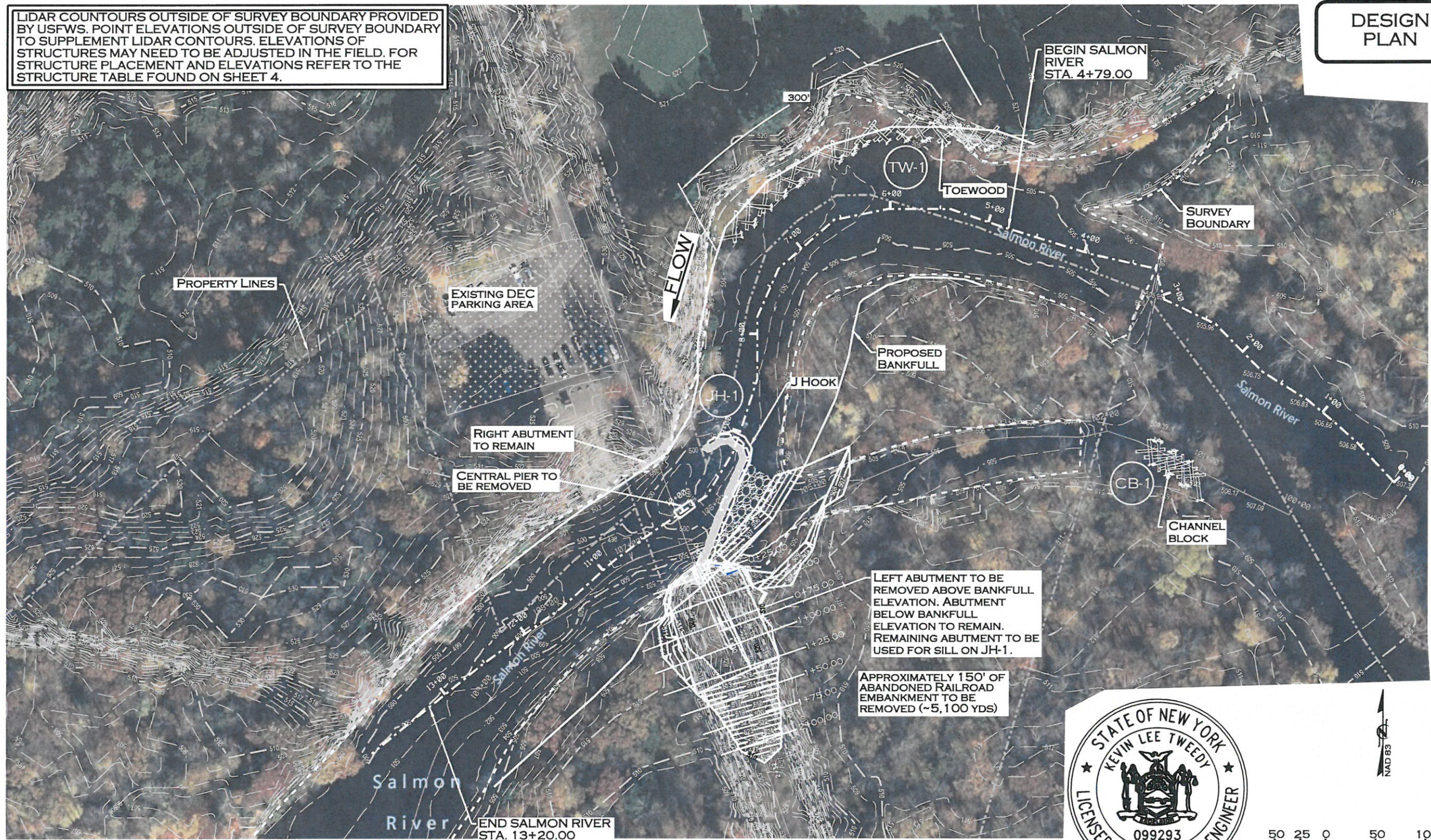
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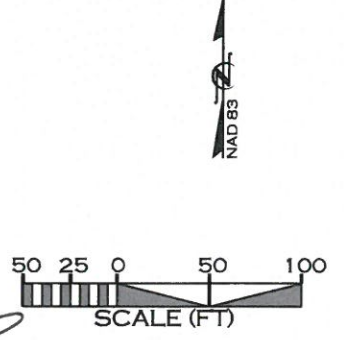
DESIGN PLAN

LIDAR COUNTOURS OUTSIDE OF SURVEY BOUNDARY PROVIDED BY USFWS. POINT ELEVATIONS OUTSIDE OF SURVEY BOUNDARY TO SUPPLEMENT LIDAR CONTOURS. ELEVATIONS OF STRUCTURES MAY NEED TO BE ADJUSTED IN THE FIELD. FOR STRUCTURE PLACEMENT AND ELEVATIONS REFER TO THE STRUCTURE TABLE FOUND ON SHEET 4.



LEFT ABUTMENT TO BE REMOVED ABOVE BANKFULL ELEVATION. ABUTMENT BELOW BANKFULL ELEVATION TO REMAIN. REMAINING ABUTMENT TO BE USED FOR SILL ON JH-1.

APPROXIMATELY 150' OF ABANDONED RAILROAD EMBANKMENT TO BE REMOVED (~5,100 YDS)



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 OSWEGO COUNTY, NY

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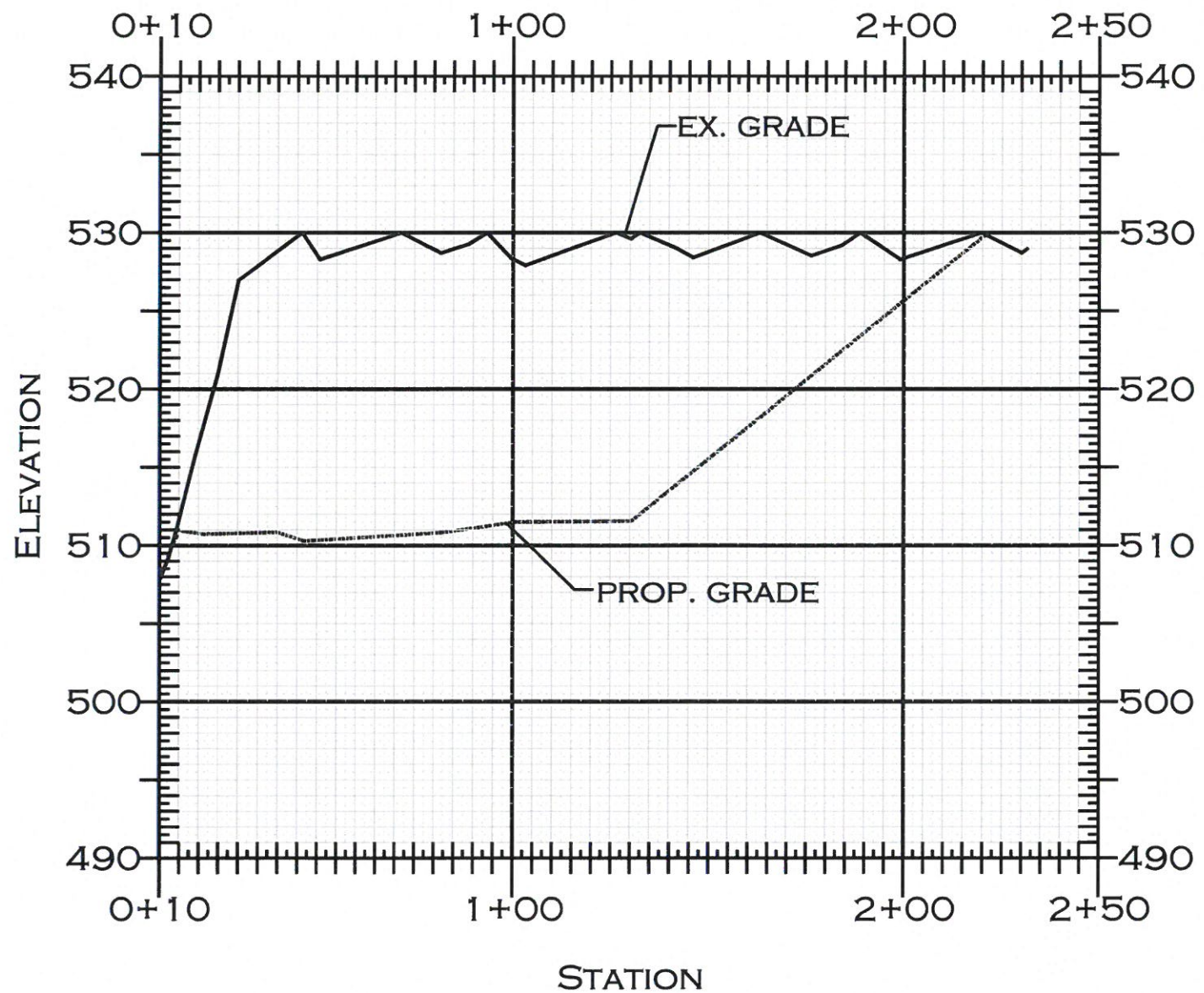
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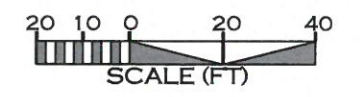
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RAILROAD EMBANKMENT PROFILE

RAILROAD EMBANKMENT PROFILE



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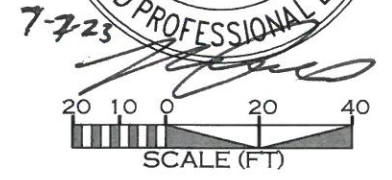
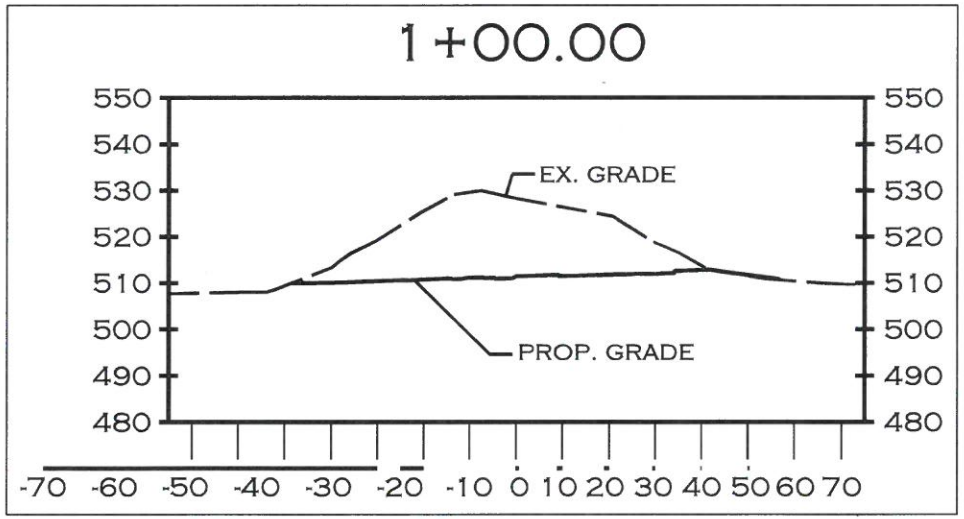
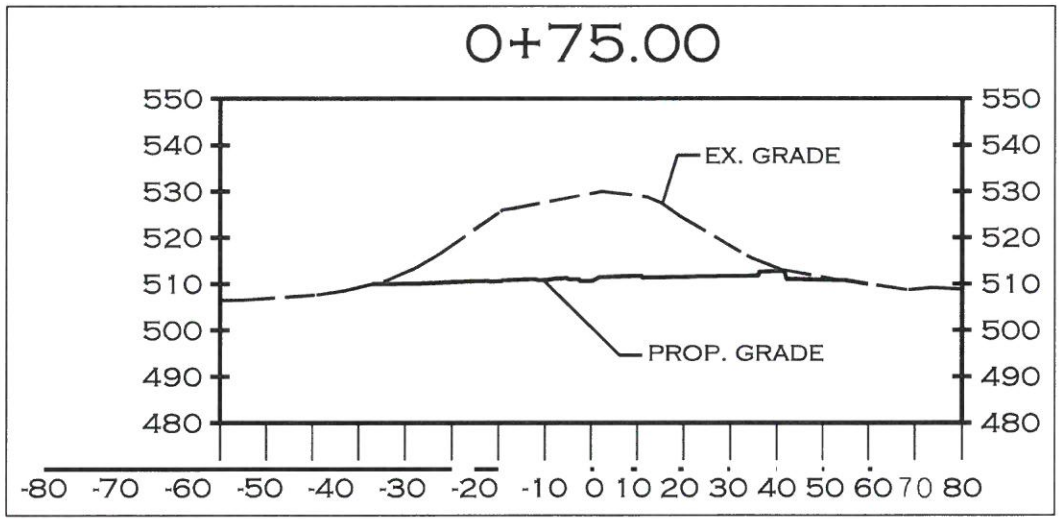
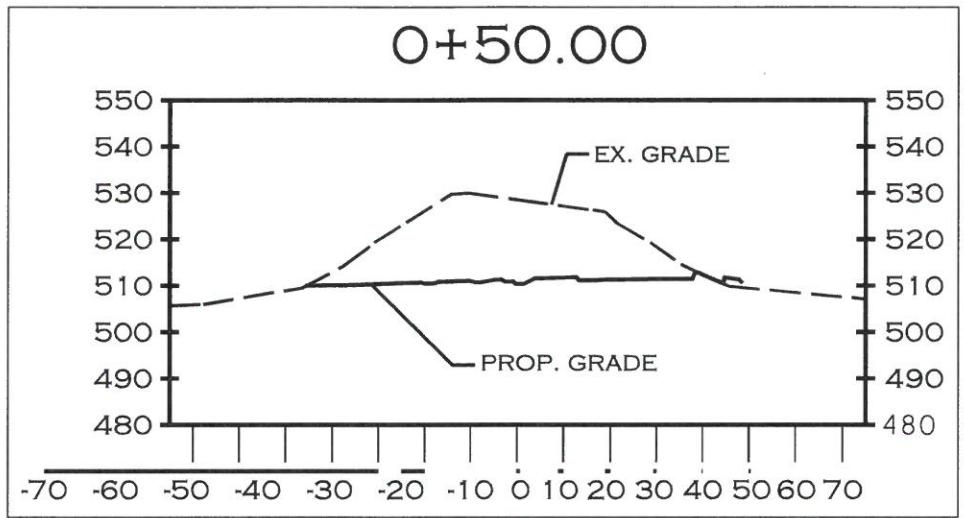
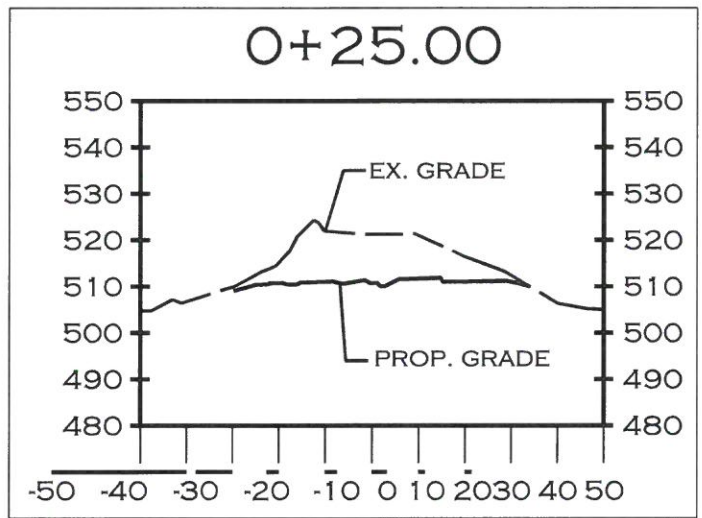
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RAILROAD EMBANKMENT CROSS SECTIONS



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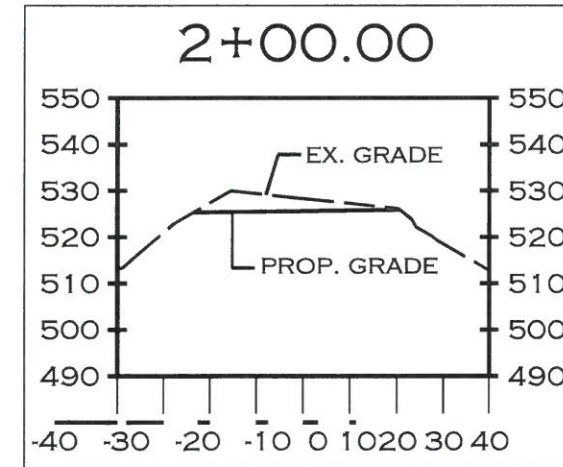
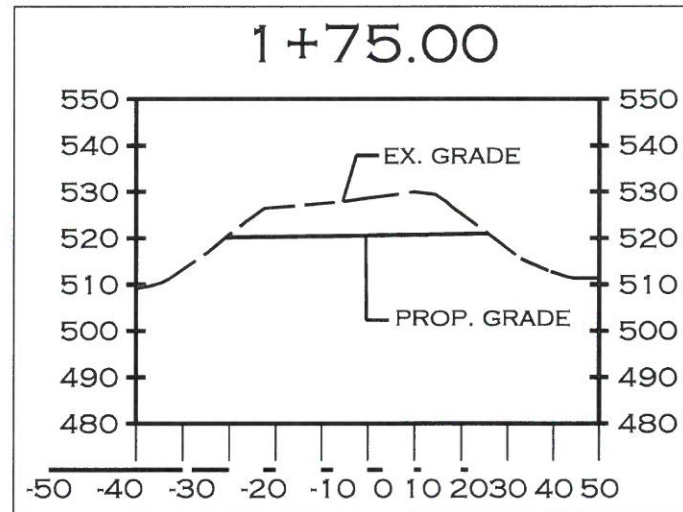
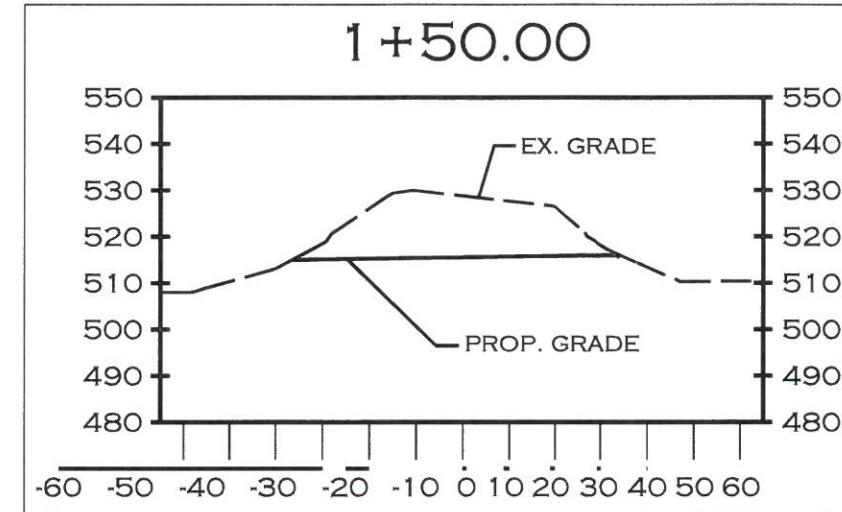
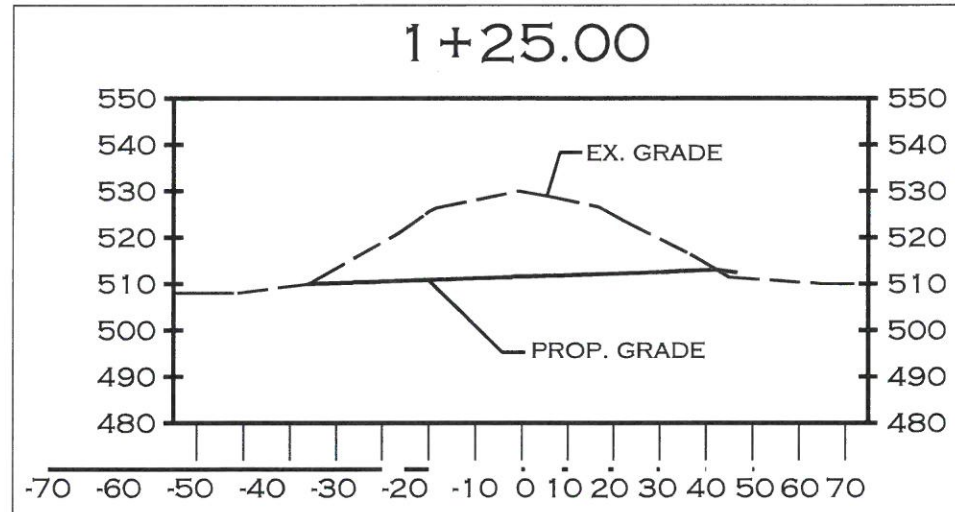
SALMON RIVER HABITAT ENHANCEMENT PLAN
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OSWEGO COUNTY, NY

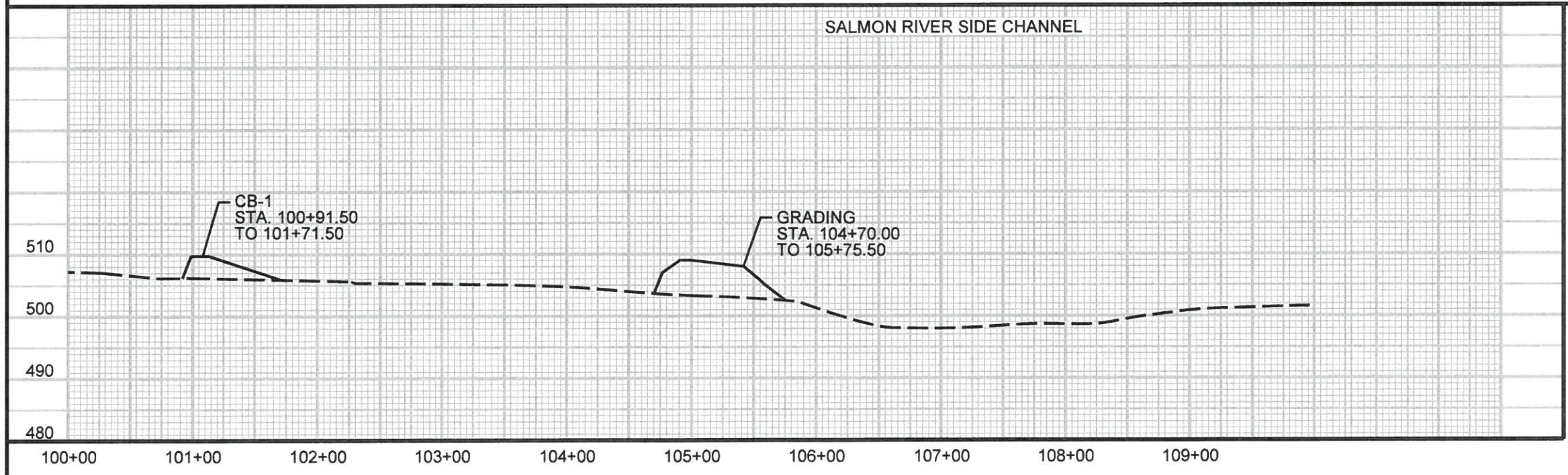
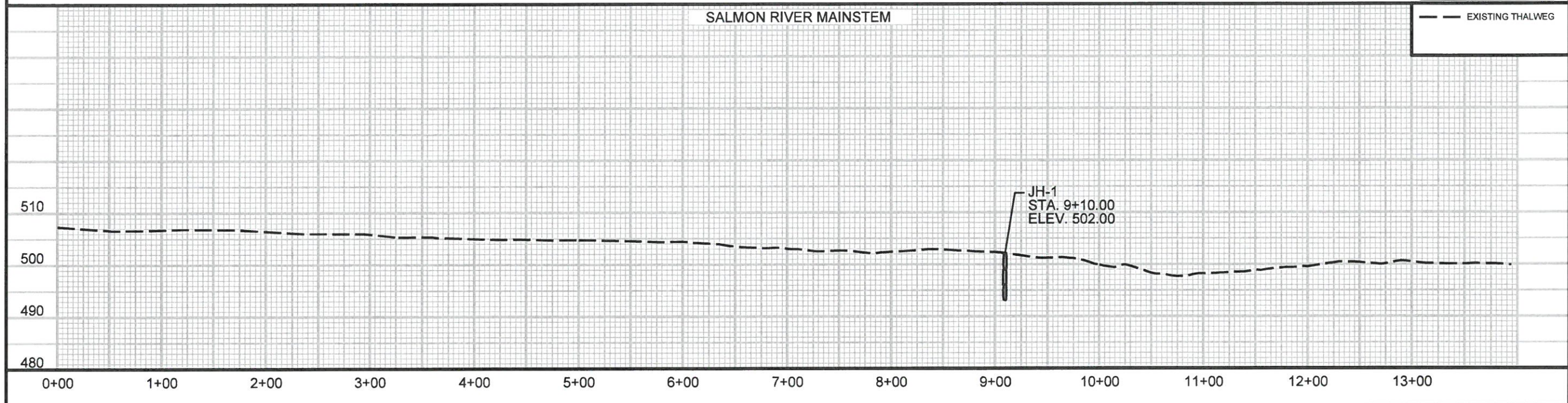
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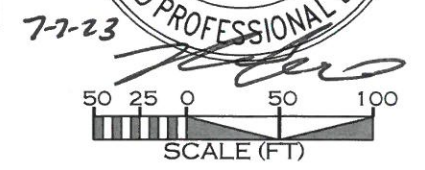
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PROFILE



--- EXISTING THALWEG



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 NEW YORK FIELD OFFICE
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 CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
 OSWEGO COUNTY, NY

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 CARY, NC 27511
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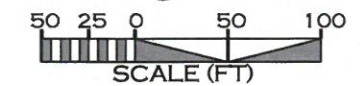
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GRADING PLAN

LIDAR COUNTOURS OUTSIDE OF SURVEY BOUNDARY PROVIDED BY USFWS. POINT ELEVATIONS OUTSIDE OF SURVEY BOUNDARY TO SUPPLEMENT LIDAR CONTOURS. ELEVATIONS OF STRUCTURES MAY NEED TO BE ADJUSTED IN THE FIELD. FOR STRUCTURE PLACEMENT AND ELEVATIONS REFER TO THE STRUCTURE TABLE FOUND ON SHEET 4.




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7/5/2023 BAL0054_USFWS_SALMON_RIVER_CADD_PLANS_SALMON_PSH_06-GRADING.DGN

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CORTLAND, NY 13045

SALMON RIVER HABITAT ENHANCEMENT PLAN
OSWEGO COUNTY, NY

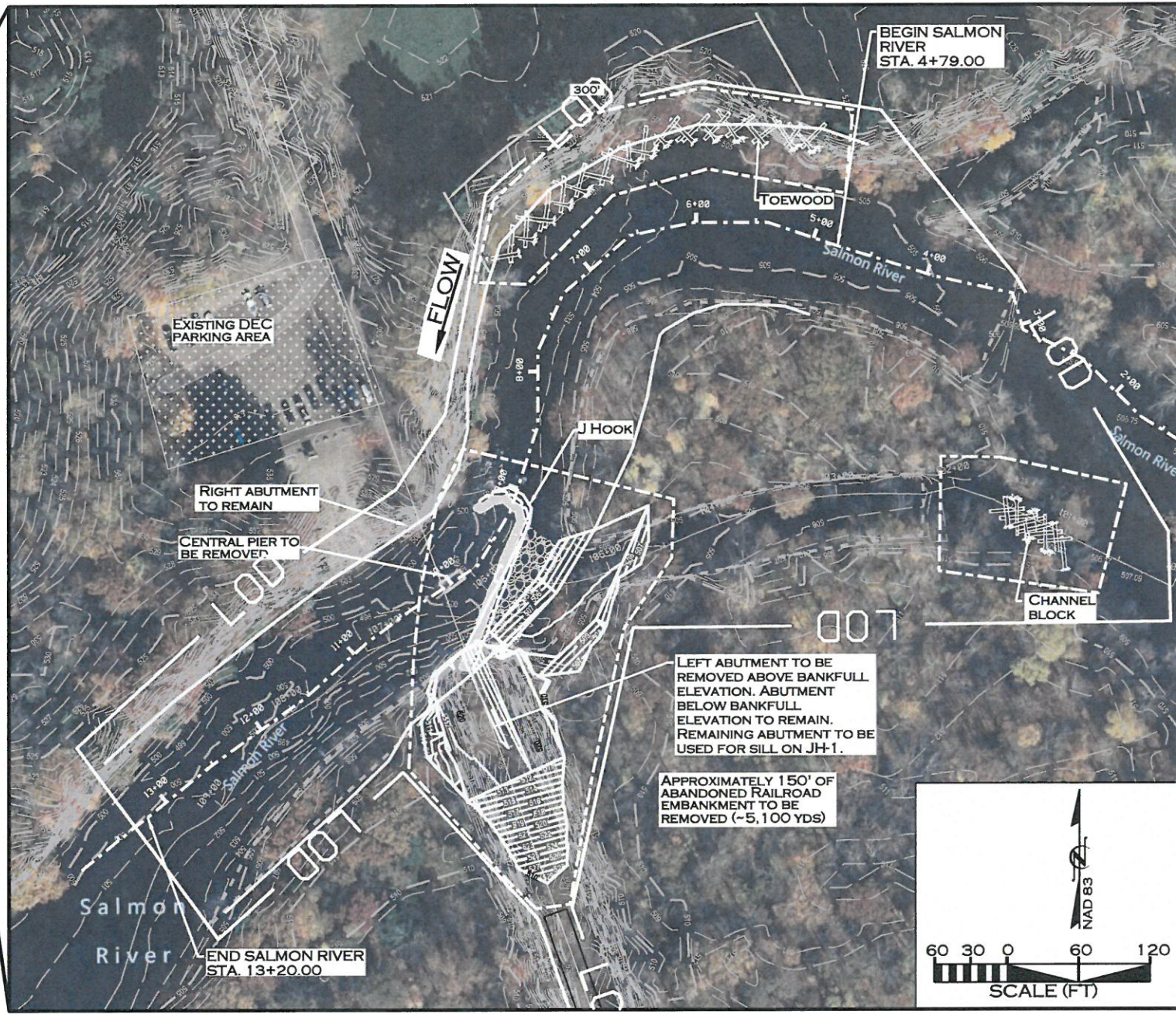
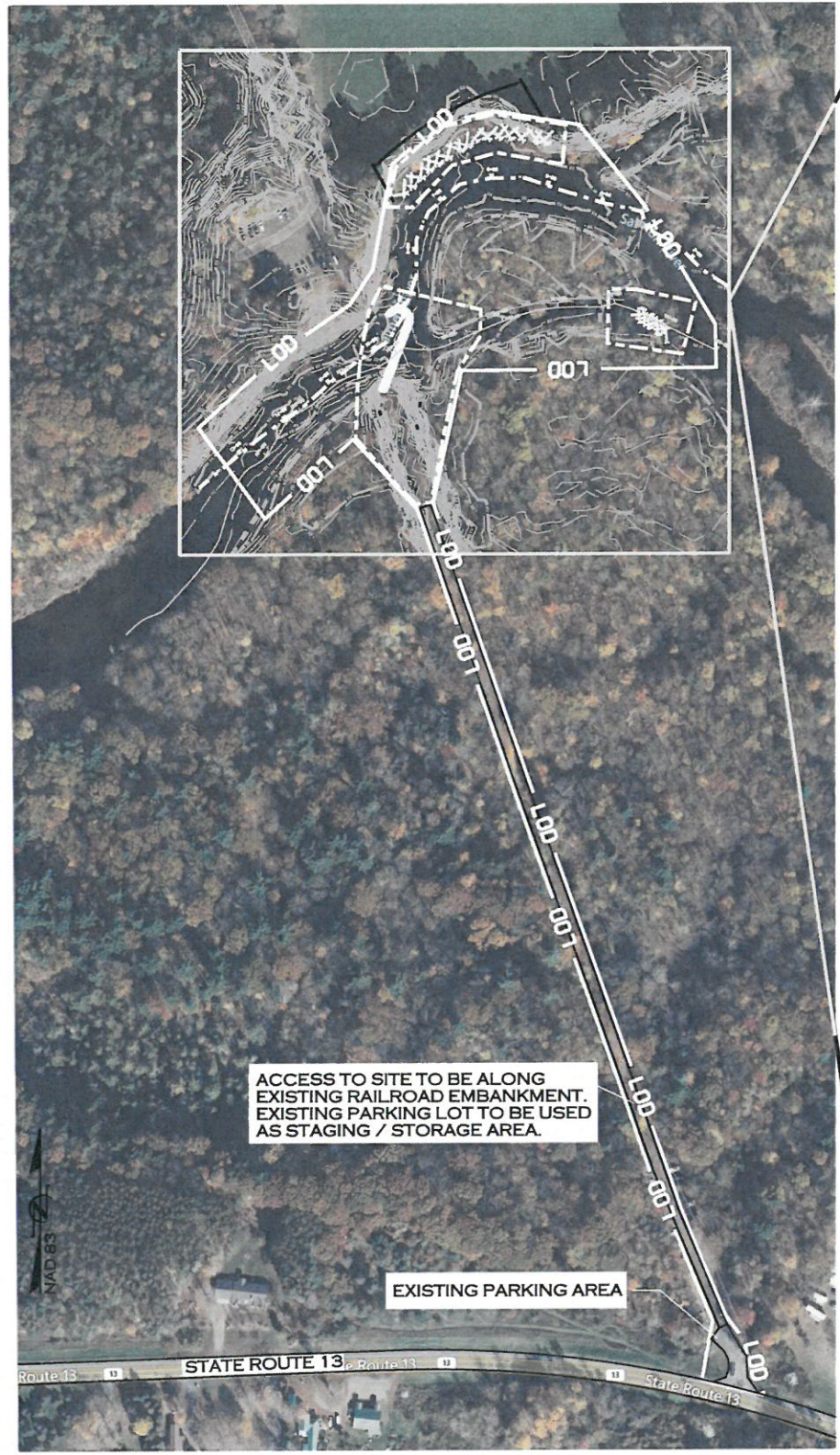
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910 GREENWOOD CIRCLE
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EROSION CONTROL PLAN



EROSION AND SEDIMENT CONTROL LEGEND

— LOD —	LIMITS OF DISTURBANCE
- - - - -	LIMITS OF GRADING



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OSWEGO COUNTY, NY

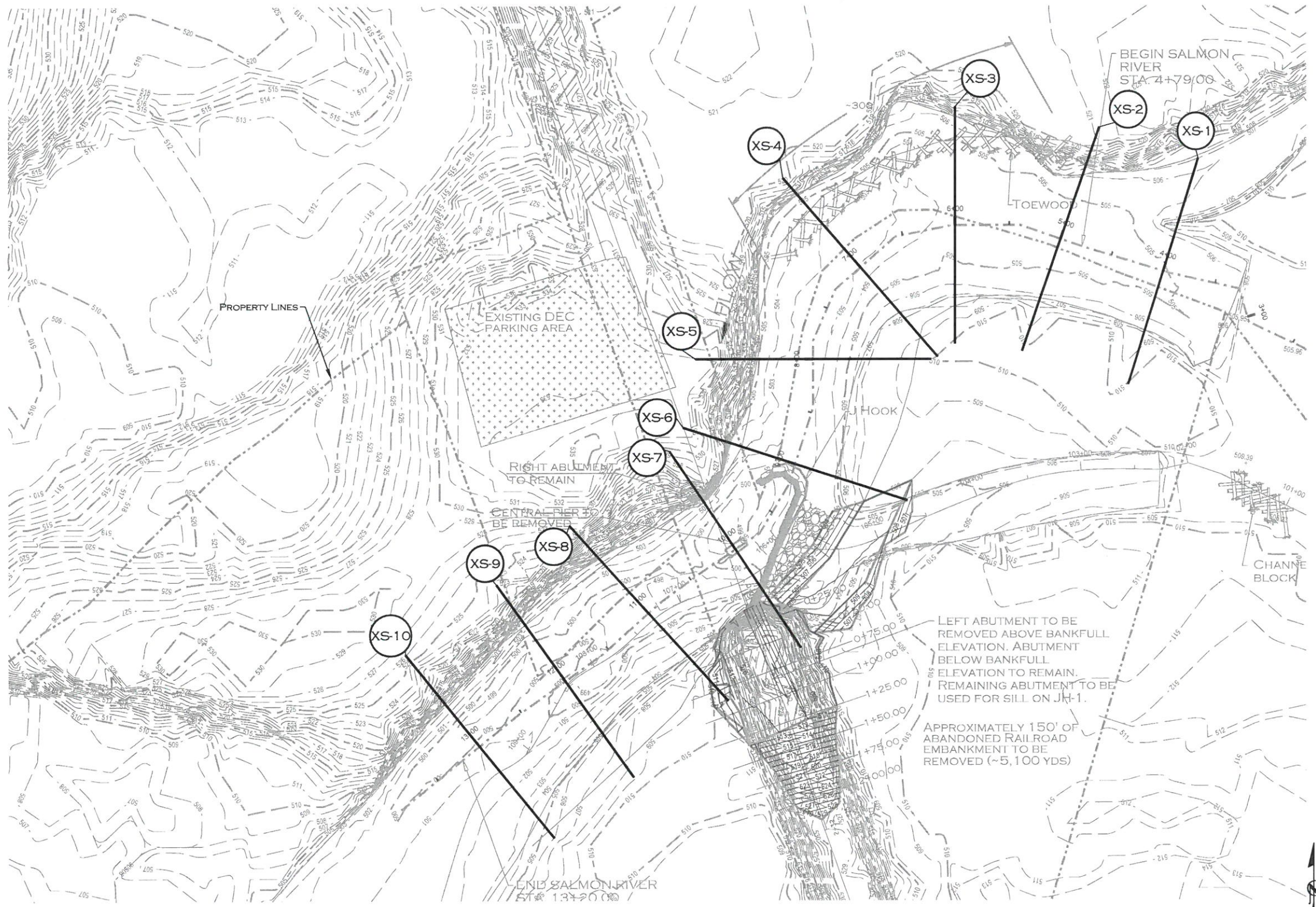
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CARY, NC 27511

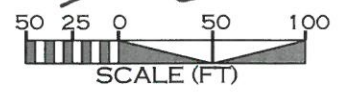
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CROSS SECTION OVERVIEW



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OSWEGO COUNTY, NY

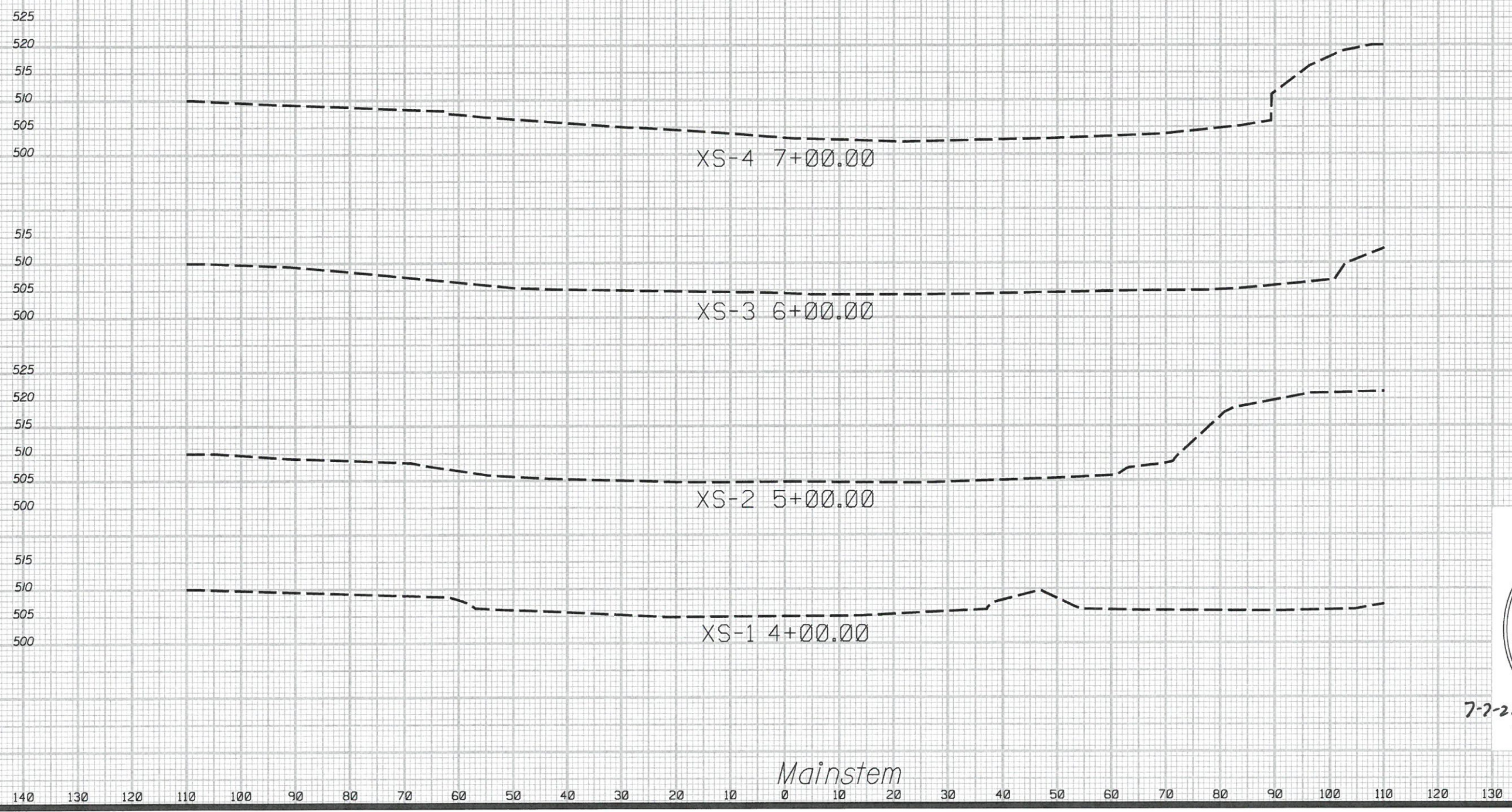
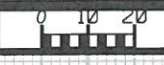
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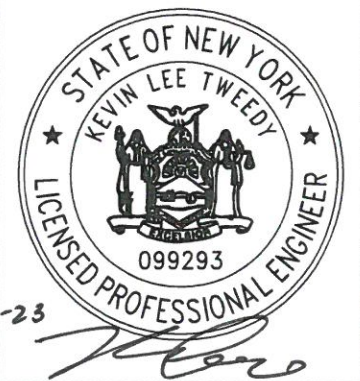
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6/23/16



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Mainstem

6/23/16

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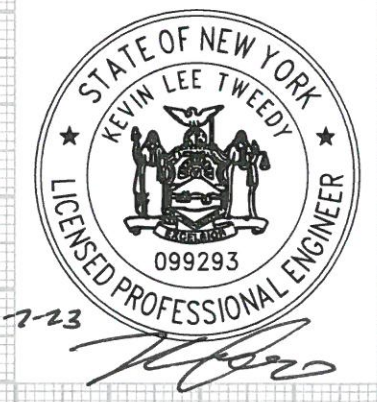
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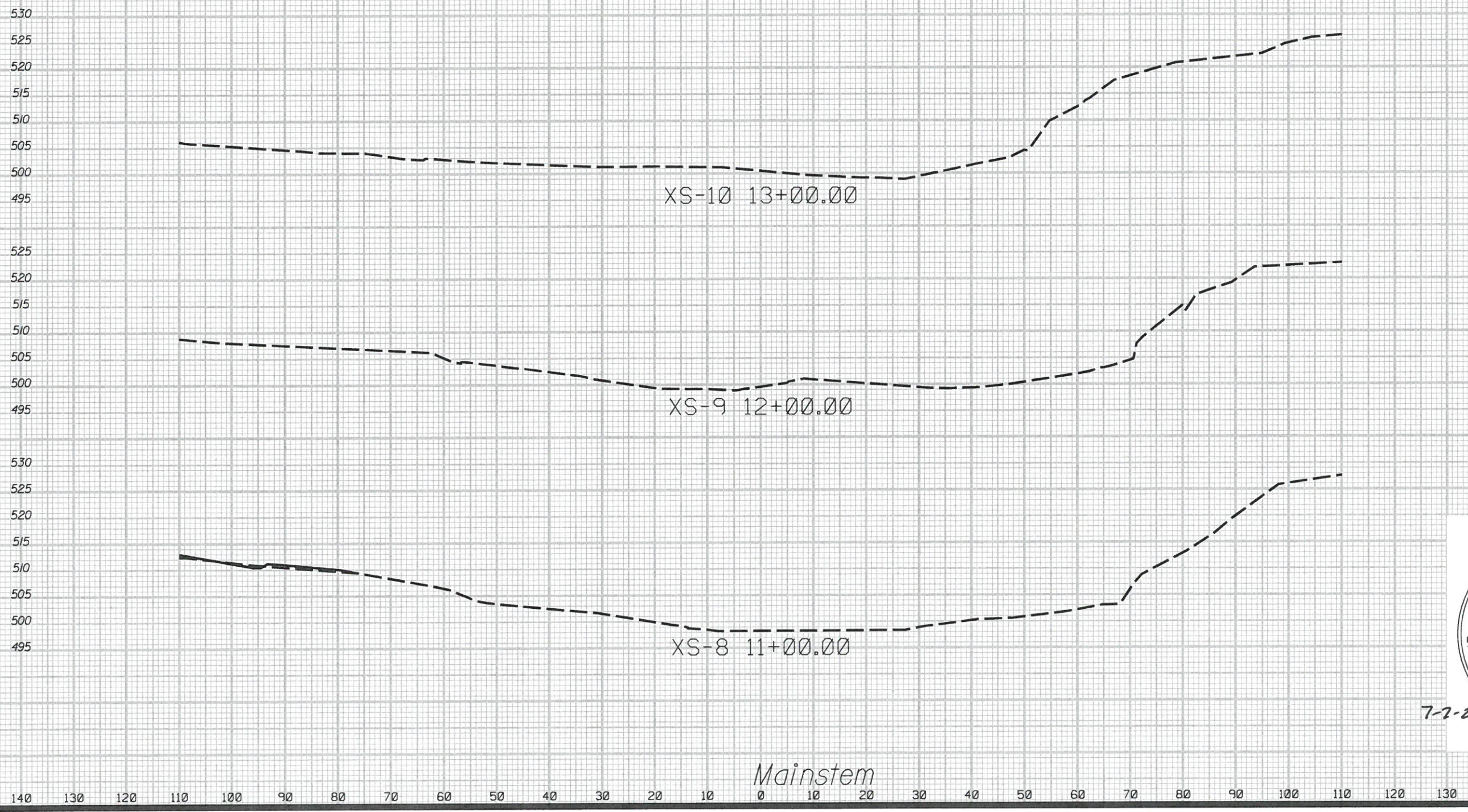
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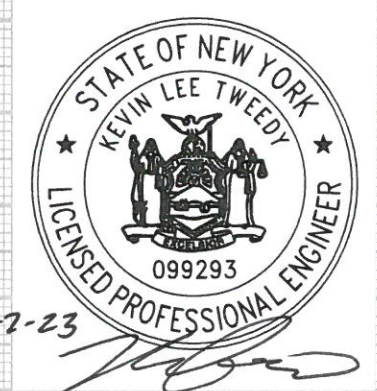
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5/23/16



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Mainstem