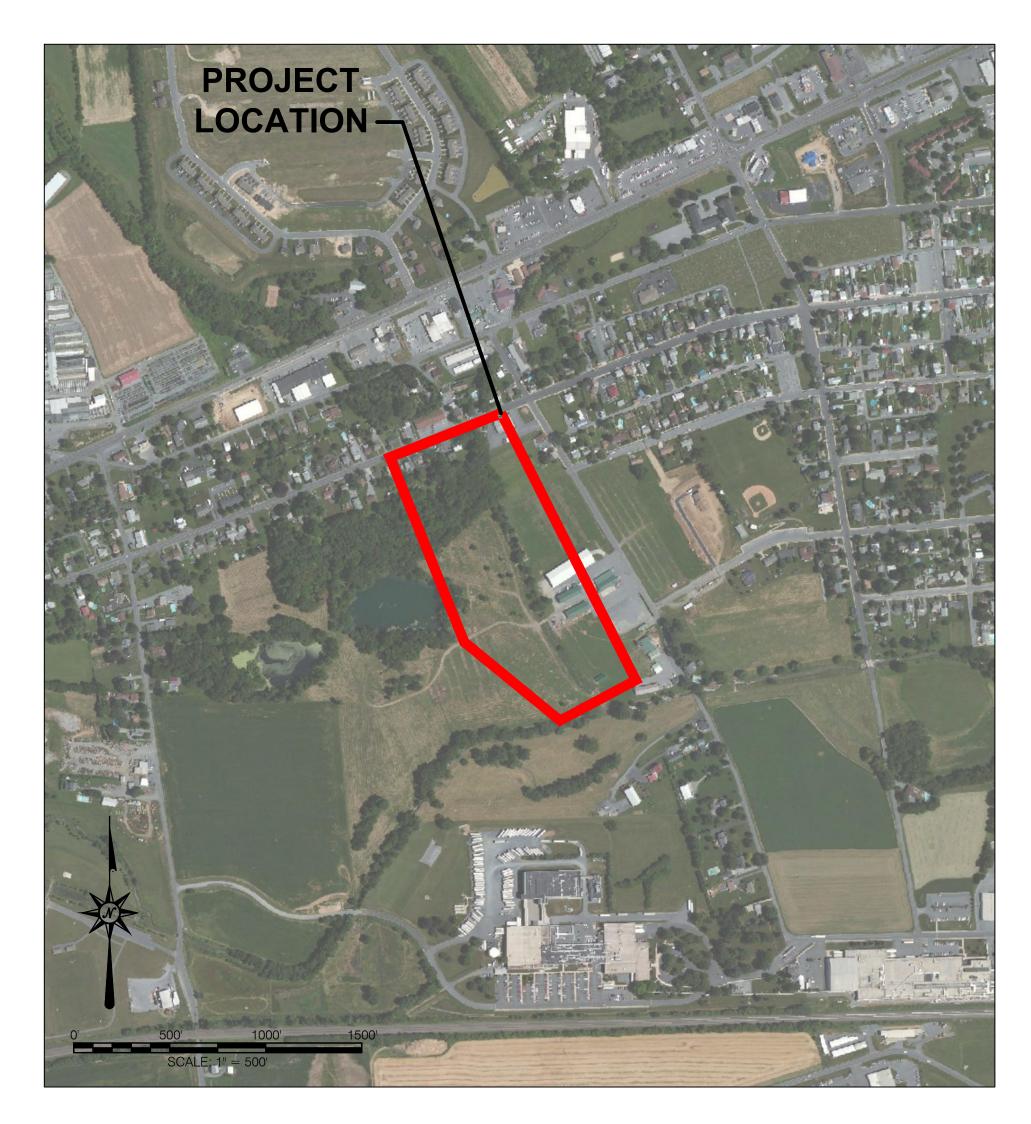
## UNT TO TULPEHOCKEN CREEK BANK STABILIZATION

## JACKSON TOWNSHIP, LEBANON COUNTY, PENNSYLVANIA



# **SITE MAP**1" = 500'



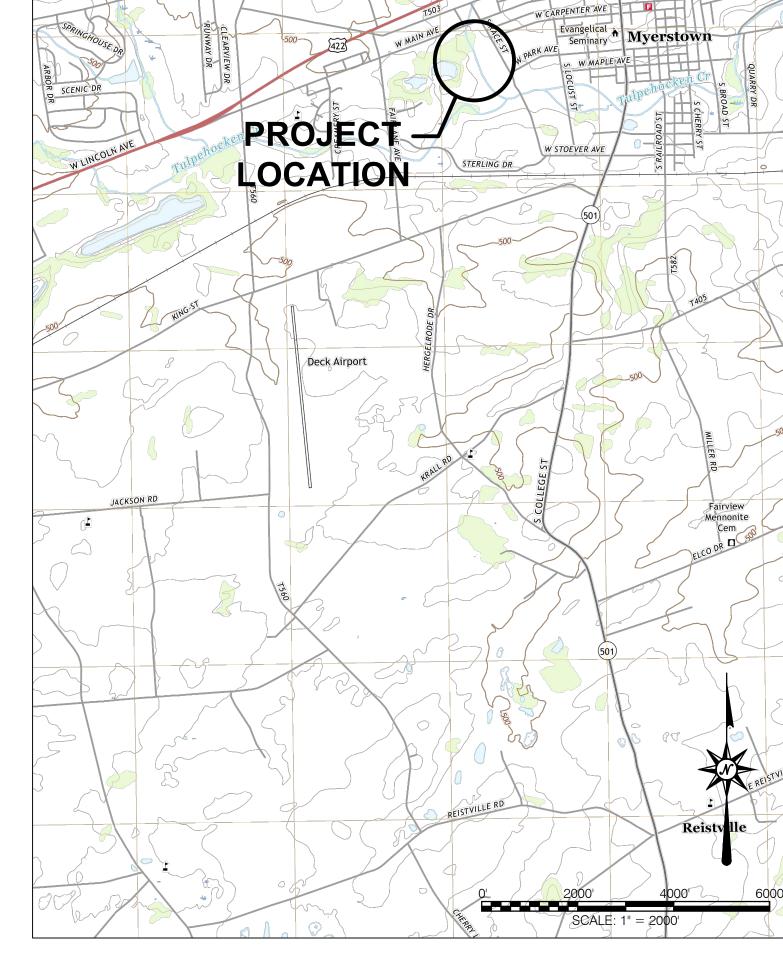
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### SHEET INDEX

- 1 COVER
- 2 GENERAL NOTES
- 3 KEY MAP
- 4 EXISTING CONDITIONS
- 5 EXISTING CONDITIONS
- 6 EXISTING CONDITIONS
- 7 GRADING AND E&S PLAN
- 8 GRADING AND E&S PLAN
- 9 GRADING AND E&S PLAN
- 10 PROFILE
- 11 CROSS SECTIONS & DETAILS
- 12 E&S DETAILS & NOTES
- 13 LANDSCAPE PLAN
- 14 LANDSCAPE PLAN
- 15 LANDSCAPE DETAILS



**LOCATION MAP**1" = 2,000'

### **CLIENT ADDRESS:**

**JACKSON TOWNSHIP** 

60 NORTH RAMONA ROAD MYERSTOWN, PA 17067 PHONE: (717) 866-4771 FAX: (717) 866-2159

### STEVE SHERK, P.E.

STECKBECK ENGINEERING & SURVEYING, INC.

279 NORTH ZINNS MILL ROAD, SUITE A LEBANON, PA 17042 PHONE: (717) 272-7110 SURVEY AND GENERAL PLAN NOTES

- 1. THE PURPOSE OF THIS PLAN IS TO REDUCE BANK EROSION AND IMPROVE BANK STABILITY ALONG A PORTION OF AN UNNAMED TRIBUTARY TO TULPEHOCKEN CREEK.
- 2. LANDSTUDIES, INC. ASSUMES NO LIABILITY FOR USE OR REUSE OF THESE PLANS BY ANY INDIVIDUAL OR ENTITY OTHER THAN LANDSTUDIES' CLIENT.
- 3. REVISIONS MADE TO THIS PLAN SHALL NOT BE THE RESPONSIBILITY OF LANDSTUDIES, INC. REVISIONS, SUBSTITUTION OF MATERIALS, OR OTHER CHANGES REQUIRE WRITTEN PERMISSION FROM LANDSTUDIES AND MAY BE SUBJECT TO GOVERNING BODY APPROVAL. SUCH APPROVAL OF REVISIONS OR FIELD CHANGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- 4. EXISTING CONDITIONS SITE FEATURES AND TOPOGRAPHIC SURVEY HAS BEEN PREPARED BY STECKBECK ENGINEERING AND SURVEYING, INC ON 7/20/2021.
- 5. ALL ELEVATIONS ARE BASED ON NAVD 88 FROM THE FOLLOWING CONTROL SET BY STECKBECK ENGINEERING AND SURVEYING, INC. SEE BENCHMARKS ON SHEET 03.
- a. BM1: MAG NAIL 2.5'± FROM THE FACE OF CURB AT SOUTHEAST CORNER OF THE INTERSECTION OF WEST MAIN AVENUE AND SOUTH RACE STREET.

NORTHING: 382219.69

EASTING: 2367970.53 ELEVATION: 462.96

- b. BM2: MAG NAIL IN NORTH EDGE OF WEST MAIN AVENUE, 5.5'± WEST OF A ROW OF MAILBOXES. NORTHING: 382052.48
- EASTING: 2367434.09
- ELEVATION: 464.71
  6. THE FOLLOWING UTILITIES WERE IDENTIFIED TO EXIST IN THE VICINITY OF THE PROJECT AREA:
- a. OVERHEAD ELECTRIC FIRSTENERGY
- b. UNDERGROUND GAS UGI
  7. UNDERGROUND UTILITIES ARE SHOWN ACCORDING TO INFORMATION PROVIDED BY OTHERS TO STECKBECK ENGINEERING & SURVEYING, INC. AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION, EXCAVATION OR BLASTING. THE ACTUAL LOCATIONS OF THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE LOCATIONS ARE APPROXIMATE. STECKBECK ENGINEERING & SURVEYING, INC. DOES NOT MAKE ANY REPRESENTATION, WARRANTY, ASSURANCE, OR GUARANTEE THAT THE UNDERGROUND UTILITY LOCATION PROVIDED BY OTHERS AND REFLECTED ON THESE DRAWINGS ARE CORRECT AND ACCURATE. STECKBECK ENGINEERING & SURVEYING, INC. ASSUMES NO RESPONSIBILITY FOR ANY DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.
- 8. RIGHT-OF-WAY FOR WEST MAIN AVENUE IS SHOWN IN ACCORDANCE WITH TOWNSHIP RECORDS.
- 9. THE SURVEY/BASEMAPPING HAS BEEN PROVIDED WITHOUT THE BENEFIT OF A PROPERTY TITLE SEARCH, AND THEREFORE DOES NOT GUARANTEE OR IMPLY THE PROPERTY IS NOT AFFECTED BY EASEMENTS, RIGHTS-OF-WAY OR OTHER RESTRICTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD LOCATE ALL UTILITIES AND COORDINATE APPROPRIATE RELOCATION EFFORTS WITH THE RESPECTIVE UTILITY COMPANIES.
- 10. FLUVIAL SYSTEMS ARE DYNAMIC AND CHANGE OVER TIME. THE EXISTING CONDITIONS TOPOGRAPHY REPRESENTS THE CONDITIONS AT THE TIME OF THE FIELD SURVEY. DESIGN MODIFICATIONS MAY BE NECESSARY TO ACCOMMODATE CHANGES IN THE SITE CONDITIONS AT THE TIME OF CONSTRUCTION. PLAN PREPARER SHALL BE CONSULTED TO VERIFY THE EXISTING SITE CONDITIONS AND IDENTIFY CONSTRUCTION MODIFICATIONS THAT MAY BE NECESSARY BASED ON THOSE CONDITIONS.
- 11. EXISTING FLOODPLAIN SHOWN HEREON IS BASED UPON ELEVATION AND IN ACCORDANCE WITH FLOOD MAP 42075C0277E, EFFECTIVE DATE JULY 8, 2020.
- 12. LANDSTUDIES, INC. COMPLETED A WETLAND DELINEATION ON THE SITE, INCLUDING A FIELD INVESTIGATION ON OCTOBER 1<sup>ST</sup>, 2021. THE RESULTS OF THE INVESTIGATION INDICATE THE PRESENCE OF TWO WETLANDS. EXISTING WETLAND BOUNDARIES ARE SHOWN ON THE PLANS AND BASED ON A FIELD SURVEY PERFORMED BY LANDSTUDIES, INC. ON OCTOBER 12<sup>TH</sup> 2021. NO WETLAND SHALL BE DISTURBED WITH THE SCOPE OF THE PROPOSED WORK.
- 13. PER THE REQUIREMENTS OF CHAPTER 102 OF THE ADMINISTRATIVE CODES OF TITLE 25 (PA DEP RULES AND REGULATIONS), A COPY OF THE PROJECT SITE'S EROSION AND SEDIMENT POLLUTION CONTROL PLAN AND ITS ACCOMPANYING NARRATIVE MUST BE AVAILABLE ON-SITE DURING CONSTRUCTION UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED.
- 14. CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER AS NOT TO IMPEDE THEIR DAILY OPERATIONS.
- 15. ANY EXISTING STRUCTURES AND/OR IMPERVIOUS AREAS PROPOSED FOR DEMOLITION SHALL BE REMOVED AND THE APPROPRIATE PERMITS FOR DEMOLITION SHALL BE OBTAINED BY THE OWNER/OWNER'S CONTRACTOR.
- 16. EXISTING FENCES ARE TO REMAIN IN THE CURRENT CONFIGURATION FOLLOWING CONSTRUCTION, HOWEVER IT IS EXPECTED THAT SOME FENCING WILL NEED TO BE REMOVED TO ACCOMMODATE CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING IN KIND ANY FENCING THAT MUST BE TEMPORARILY REMOVED FOR CONSTRUCTION ACCESS.
- 17. PREDOMINANT SOILS WITHIN THE PROJECT AREA ARE:
- a. LINSIDE SILT LOAM (Ls)
- b. QUARRIES (Qu)c. DUFFIELD SILT LOAM (DfB), 3 TO 8 PERCENT SLOPES
- d. HAGERSTOWN SILT LOAM (HaA, HaB), 0 TO 3 AND 3 TO 8% SLOPES, RESPECTIVELY.
- 18. SOILS INFORMATION HAS BEEN TAKEN FROM THE NRCS WEB SOIL SURVEY DATABASE.



PENNSYLVANIA ONE CALL SYSTEM, INC. CALL 3 BUSINESS DAYS BEFORE YOU DIG! 1-800-242-1776 OR 8-1-1

POCS SERIAL #: 20213012821-000 11/1/2021

- STREAM RESTORATION NOTES
- 1. THE CONTRACTOR PERFORMING THE WORK SHALL HAVE RELATIVE EXPERIENCE WITH STREAM AND FLOODPLAIN RESTORATION AND SHALL IMPLEMENT ADAPTIVE MANAGEMENT STRATEGIES TO HANDLE SITE SPECIFIC CONDITIONS ARISING DURING CONSTRUCTION. THE CONTRACTOR SHALL SEGREGATE MATERIALS BASED ON OVERALL SCOPE OF WORK AND UTILIZE MATERIALS BASED ON MOST SUITABLE APPLICATIONS. (I.E. GRAVEL FOR STREAM BED AND STREAM STRUCTURE BACKFILL, COHESIVE SOILS FOR GRADING AND SHAPING, SUITABLE GROWING MEDIUM TO ACHIEVE FINISHED GRADE).
- 2. TO THE EXTENT PRACTICAL, WORK SHALL BE PERFORMED DURING LOW-FLOW CONDITIONS, AVOIDING PERIODS DURING OR IMMEDIATELY FOLLOWING HEAVY PRECIPITATION.
- 3. TO THE EXTENT PRACTICAL, WORK SHALL BE PERFORMED FROM THE STREAMBANK, MINIMIZING BOTH THE DISTURBANCE TIME AND DISTURBANCE AREA OF THE STREAM CHANNEL.
- 4. TO THE EXTENT PRACTICAL, ALL NATIVE VEGETATION (FORBS, GRASSES, TREES AND SHRUBS) SHALL BE PRESERVED. NATIVE TREES AND SHRUBS SHALL BE WORKED AROUND AND/OR TRANSPLANTED IF SITE CONDITIONS PERMIT OR GRADING REVISIONS WILL BE WITHIN AN ACCEPTABLE TOLERANCE. PLAN PREPARER
- 5. WHENEVER POSSIBLE, STREAM & FLOODPLAIN GRADING AND STABILIZATION SHALL BE COMPLETED IN PORTIONS ACCORDING TO A DAILY DISTURBANCE ZONE ESTABLISHED AT THE BEGINNING OF EACH WORK DAY TO MINIMIZE THE AMOUNT OF TOTAL DISTURBANCE.
- 6. STREAM & FLOODPLAIN EXCAVATION SHALL BE SEQUENCED IN A MANNER THAT TIME SPENT IN ACTIVE FLOW SHALL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE. FLOW DIVERSIONS SHALL BE INTRODUCED INTO THE NEWLY CONSTRUCTED CHANNEL AND/OR FLOODPLAIN SLOWLY, AND IN-STREAM WORK SHALL OCCUR ONLY DURING LOW FLOW CONDITIONS.
- 7. ALL GRADED AREAS WITHIN THE PROPOSED FLOODPLAIN SHALL BE SEEDED WITH THE PROPOSED FLOODPLAIN SEED MIX AND STABILIZED AS INDICATED ON PLANS.
- 8. ALL REMAINING DISTURBED AREAS OUTSIDE OF THE PROPOSED FLOODPLAIN SHALL BE STABILIZED WITH THE
- PROPOSED STABILIZATION SEED MIX AND MULCH.

  9. FLUVIAL SYSTEMS ARE DYNAMIC IN NATURE AND, AS SUCH, REQUIRE DYNAMIC IN IMPLEMENTATION
- APPROACHES TO ACHIEVE OPTIMAL RESTORATION CONDITIONS.

  10. SPOIL MATERIAL SHALL BE GRADED TO TIE-IN TO EXISTING CONTOURS PERIODICALLY THROUGHOUT THE PROJECT DURATION. AS FINAL GRADE IS ACHIEVED ALONG PORTIONS OF THE SPOIL AREA, COMPLETED AREAS SHALL BE STABILIZED WITH SEED AND MULCH. UPON FINAL GRADE, ANY SLOPES STEEPER THAN A 3:1 SLOPE SHALL BE STABILIZED WITH SEED AND EROSION CONTROL BLANKET.
- 11. AS FINAL GRADE IS ACHIEVED ALONG PORTIONS OF THE SPOIL AREA, COMPLETED AREAS SHALL BE STABILIZED WITH SEED AND MULCH. UPON FINAL GRADE, ANY SLOPES STEEPER THAN A 3:1 SLOPE SHALL BE STABILIZED WITH SEED AND EROSION CONTROL MATTING.

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TO TULPEHOCKEN CREEK BANK STABILIZATI
JACKSON TOWNSHIP

60 NORTH RAMONA ROAD

ENERAL NOTES

REVISIONS						
NO.	DATE	DESCRIPTION				
SIGNATURE BLOCK						

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D-1664.1-21

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EB/AR

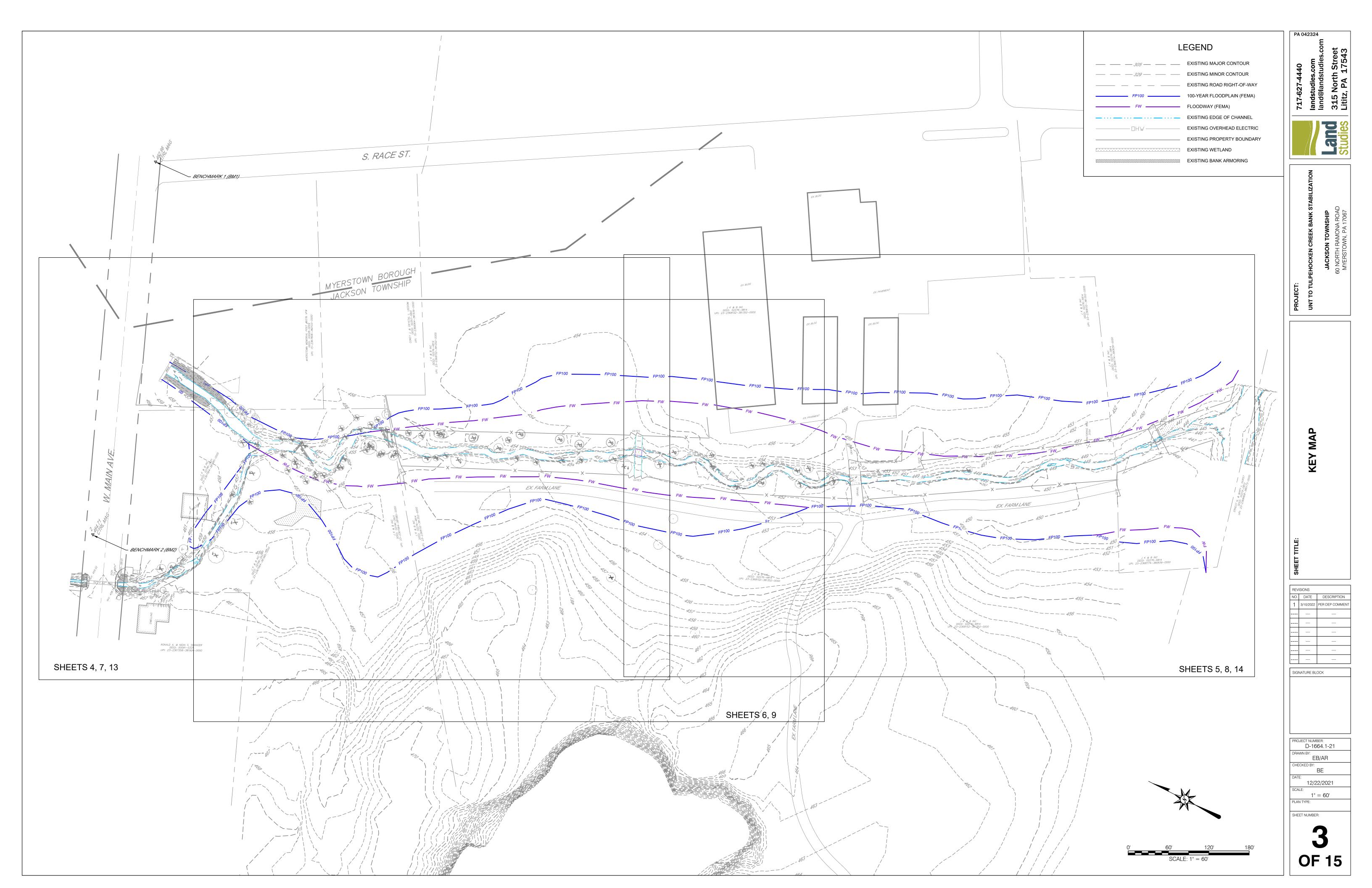
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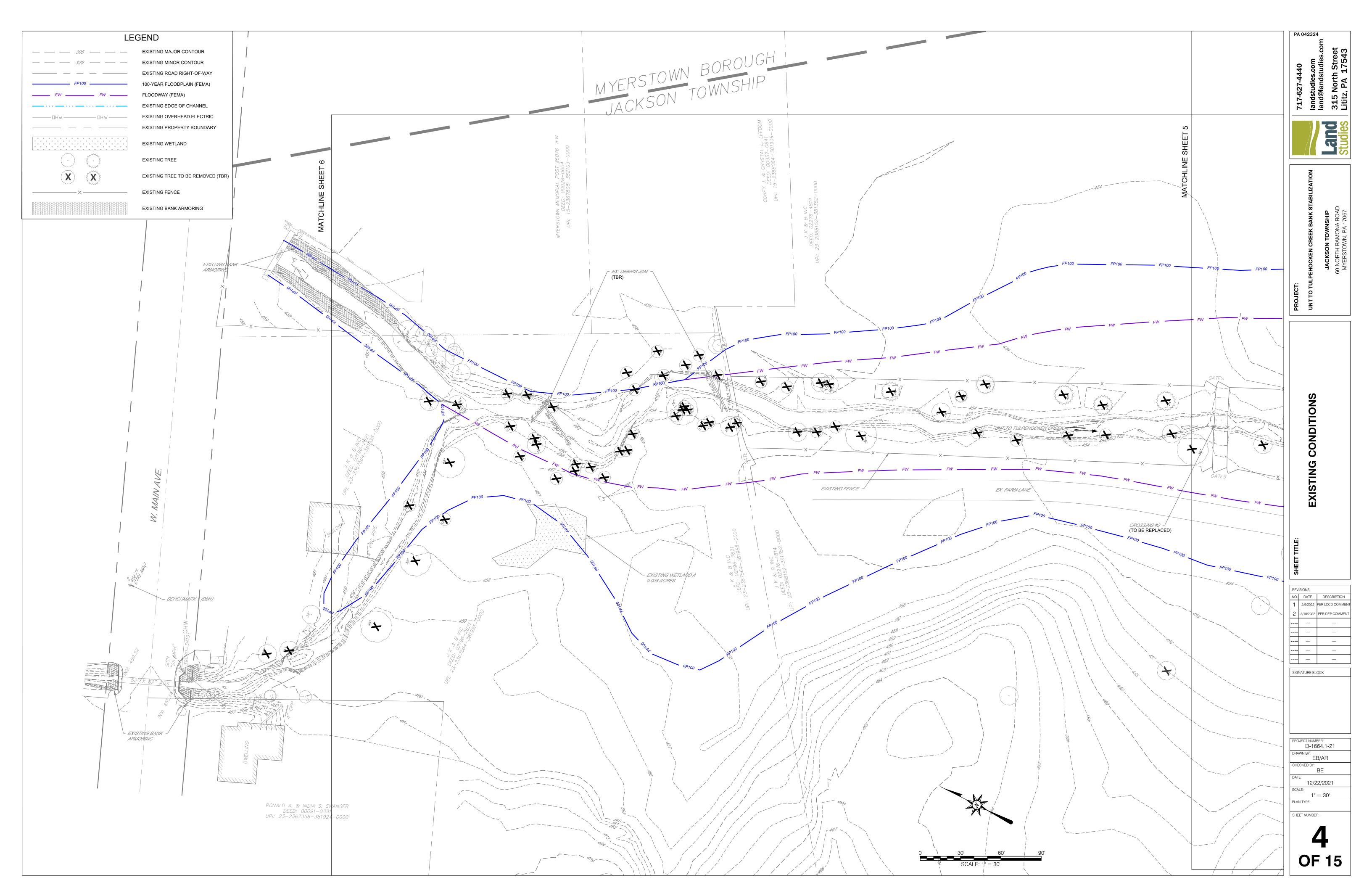
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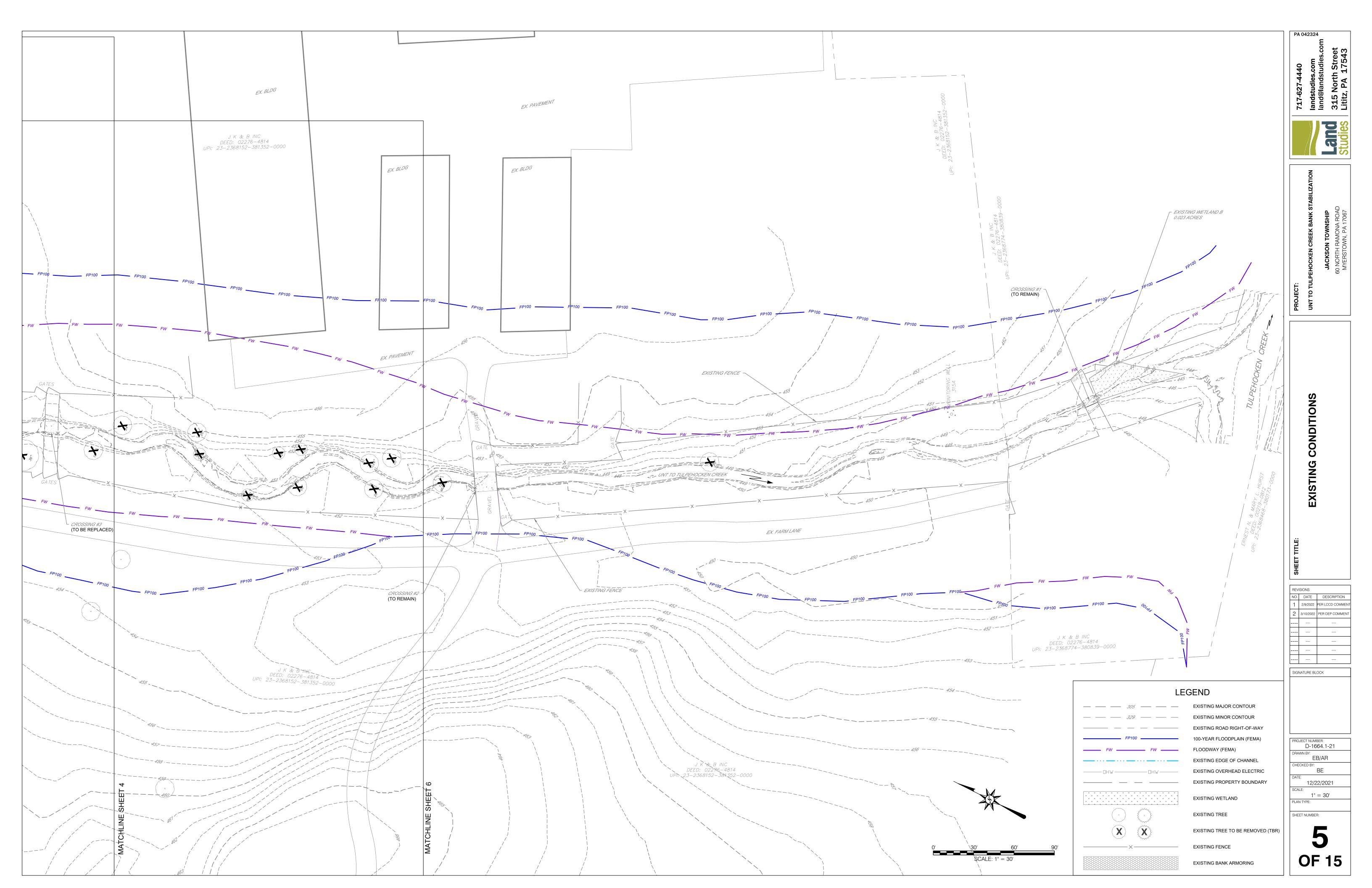
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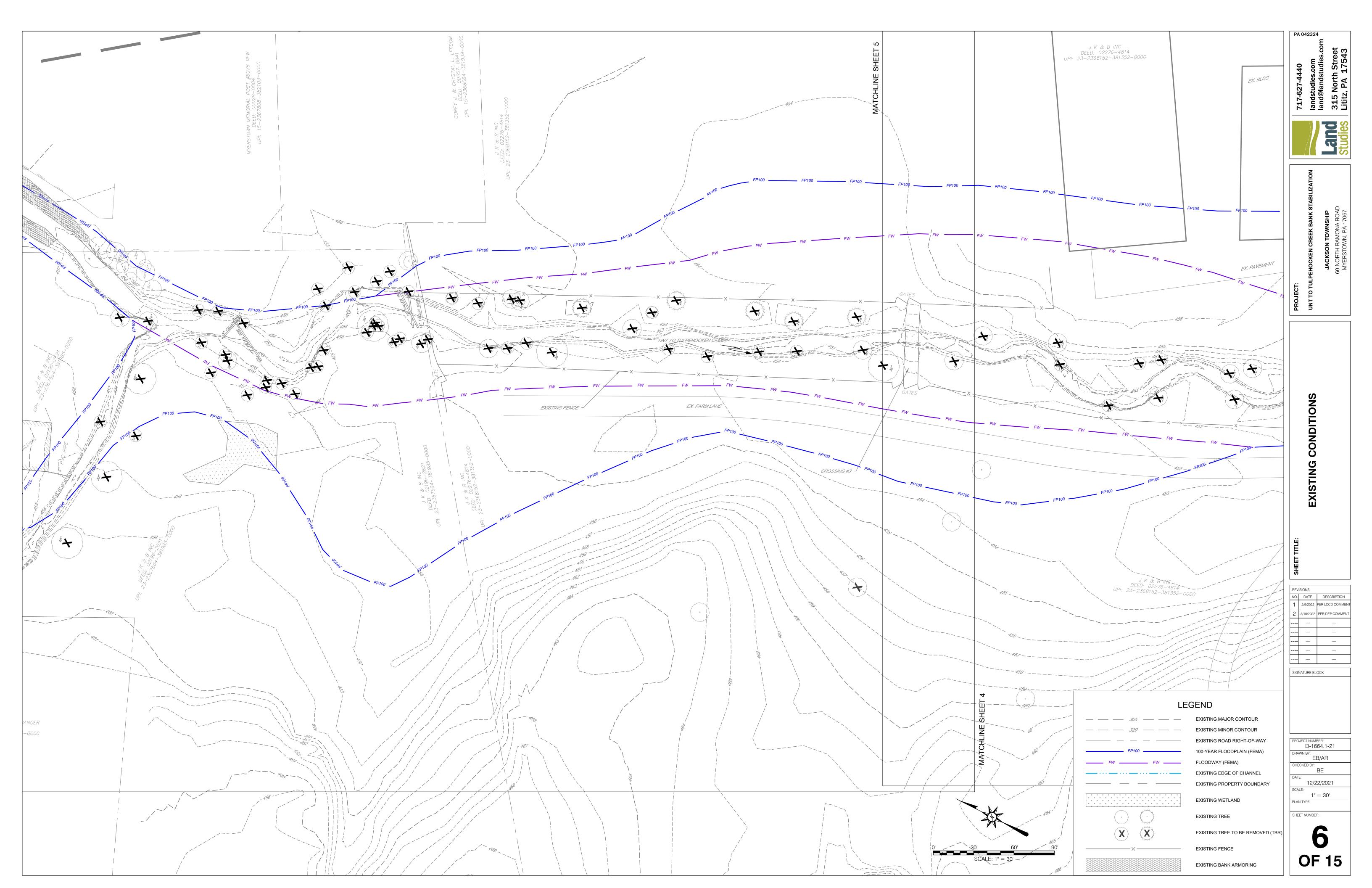
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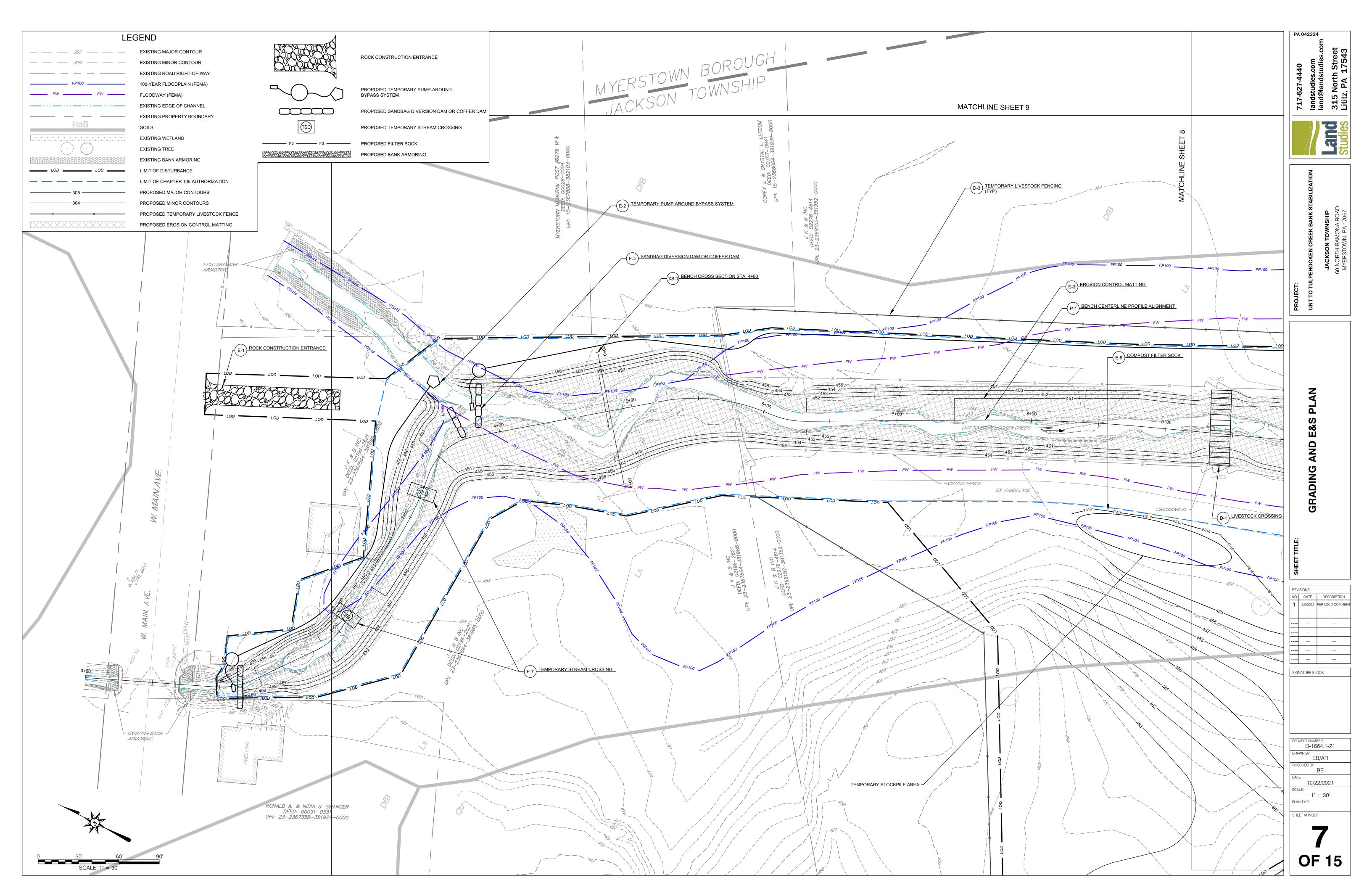
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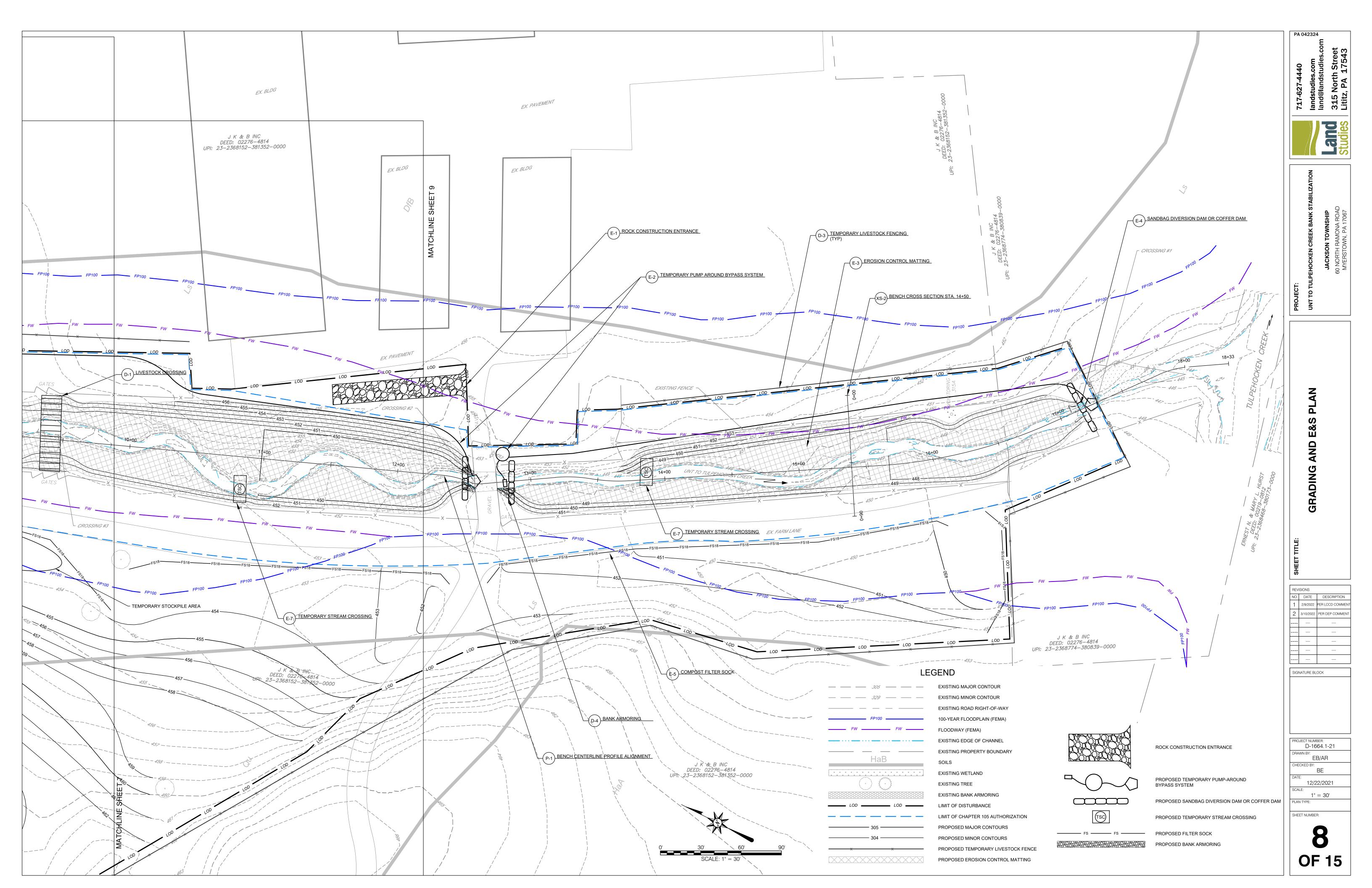


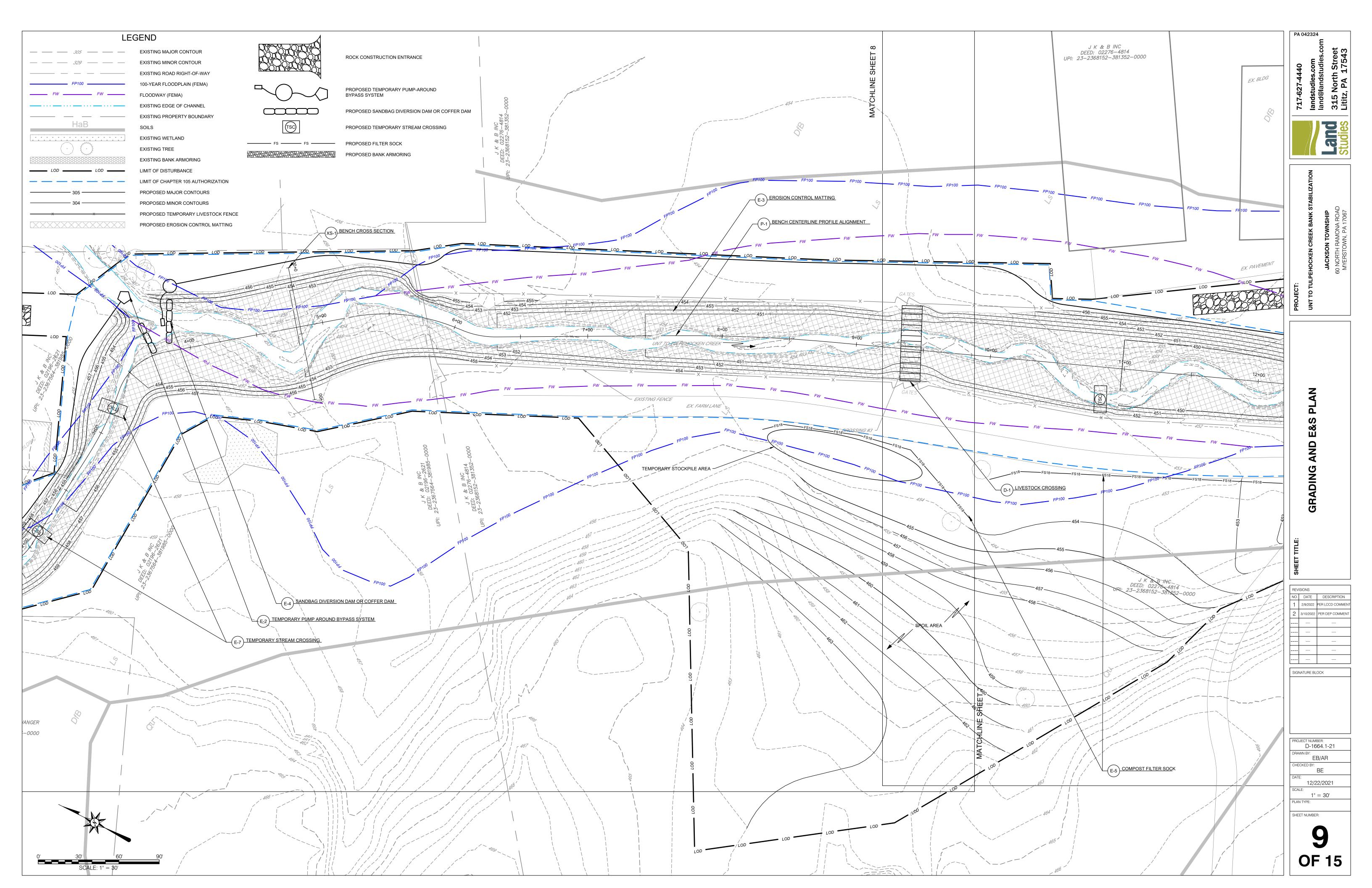


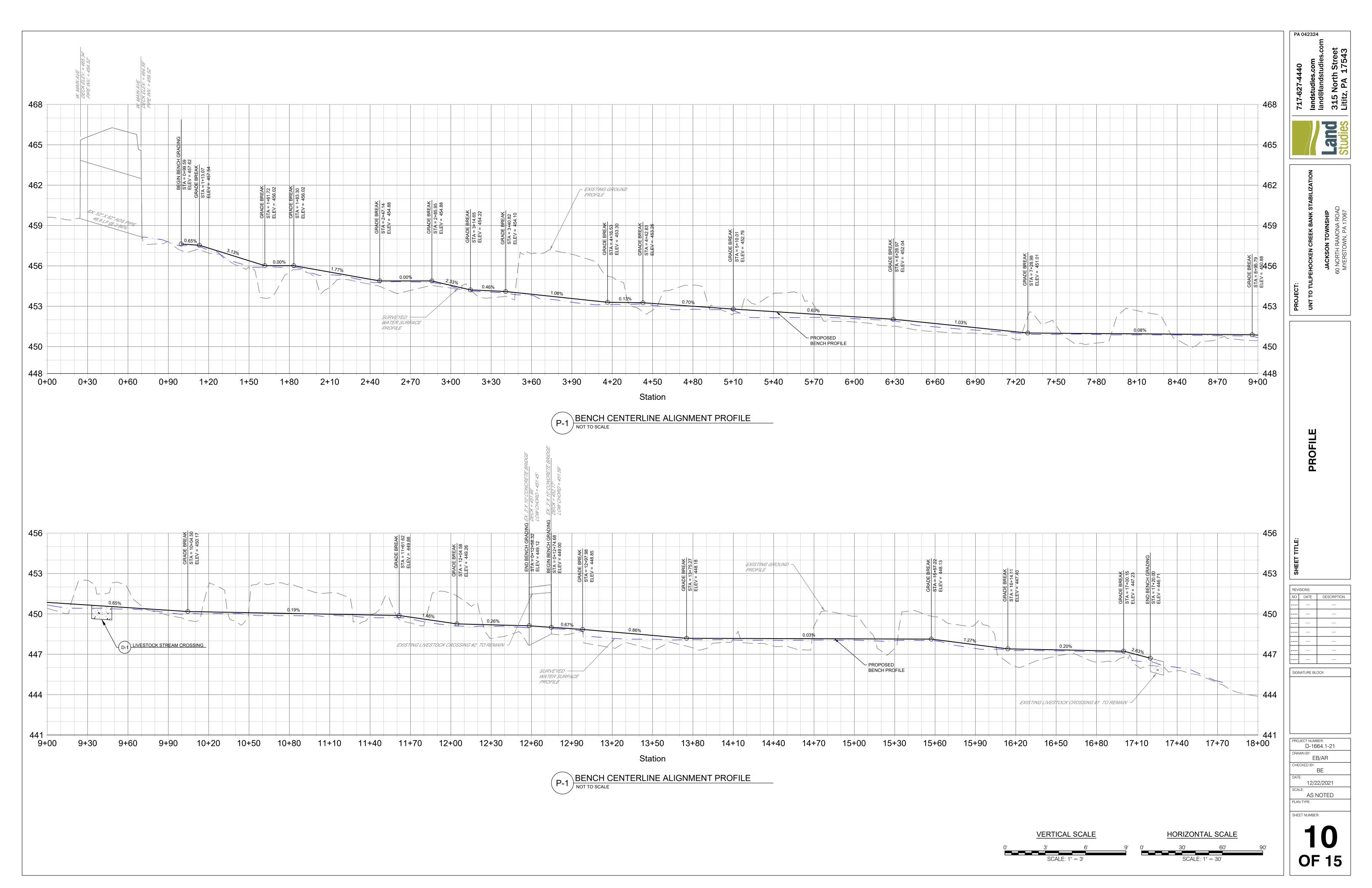


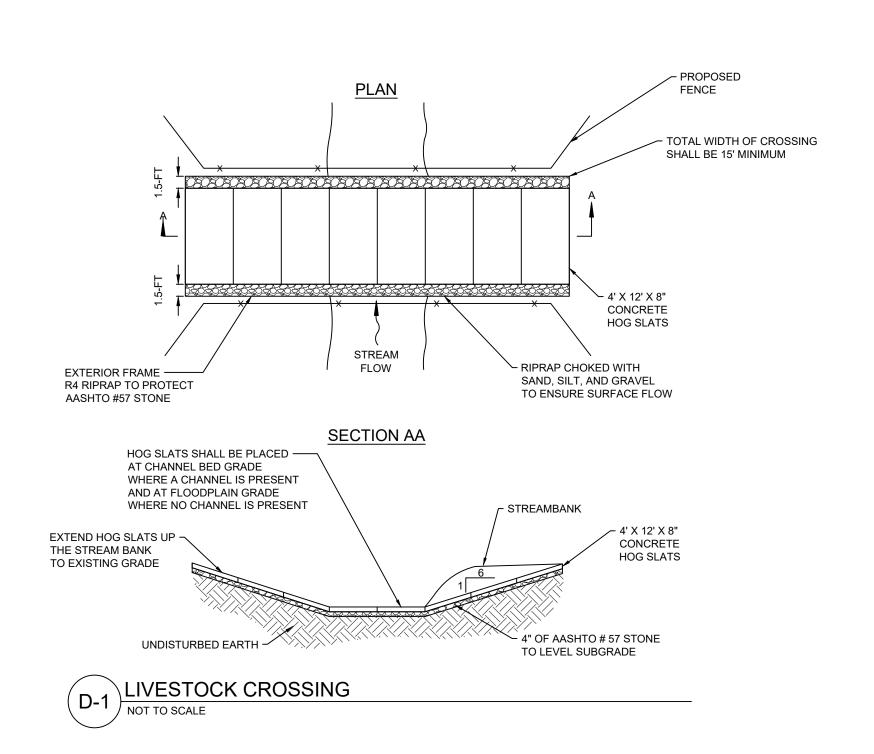


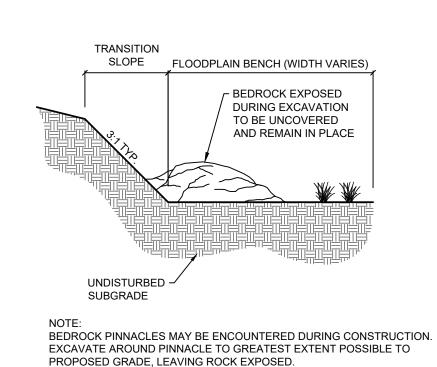






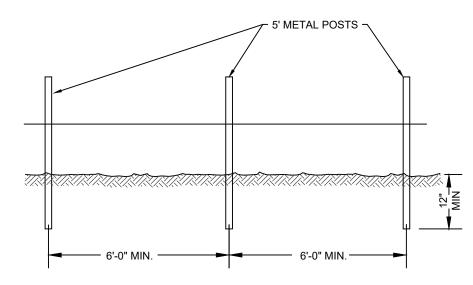






BEDROCK ON FLOODPLAIN BENCH

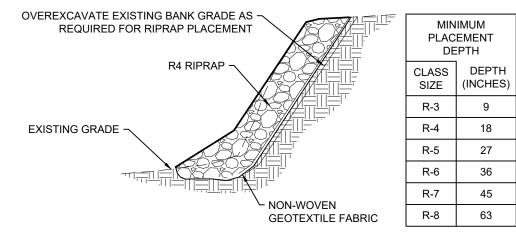
NOT TO SCALE



 TEMPORARY LIVESTOCK FENCING TO BE 5' METAL POSTS INSTALLED 12-18" BELOW GROUND.

 AT A MINIMUM, A SINGLE CHARGE WIRE SHALL BE USED. HOWEVER, IF DETERMINED TO BE NECESSARY BY PROPERTY OWNER, A 2ND STRAND OF CHARGE SHALL BE USED.



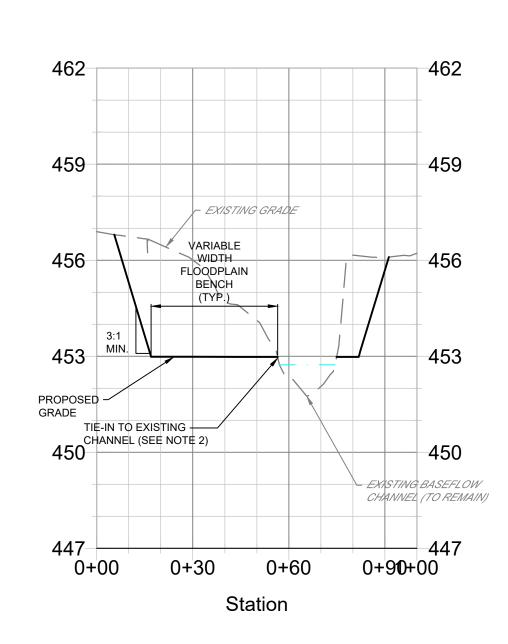


NOTES:

1. MATERIAL SIZE SHOULD CONFORM TO PENNDOT STANDARDS FOR THE RIPRAP SIZE SPECIFIED BY THE PLAN.

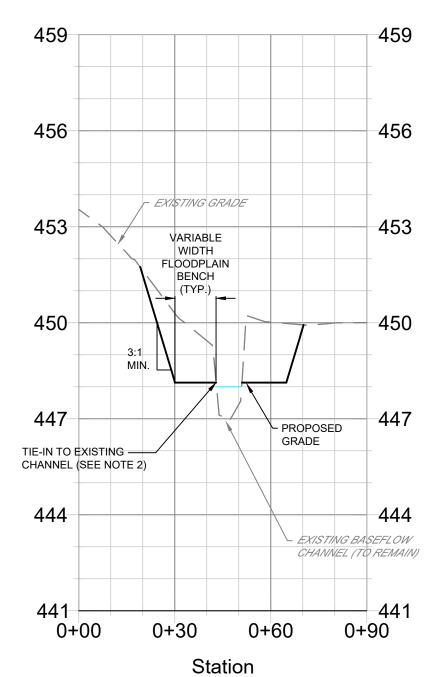
NON-WOVEN GEOTEXTILE FABRIC SHALL BE INSTALLED BETWEEN EXISTING SUBGRADE AND RIPRAP.

BANK ARMORING NOT TO SCALE



BENCH CROSS SECTION STA. 4+80

NOT TO SCALE

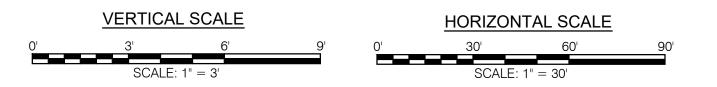


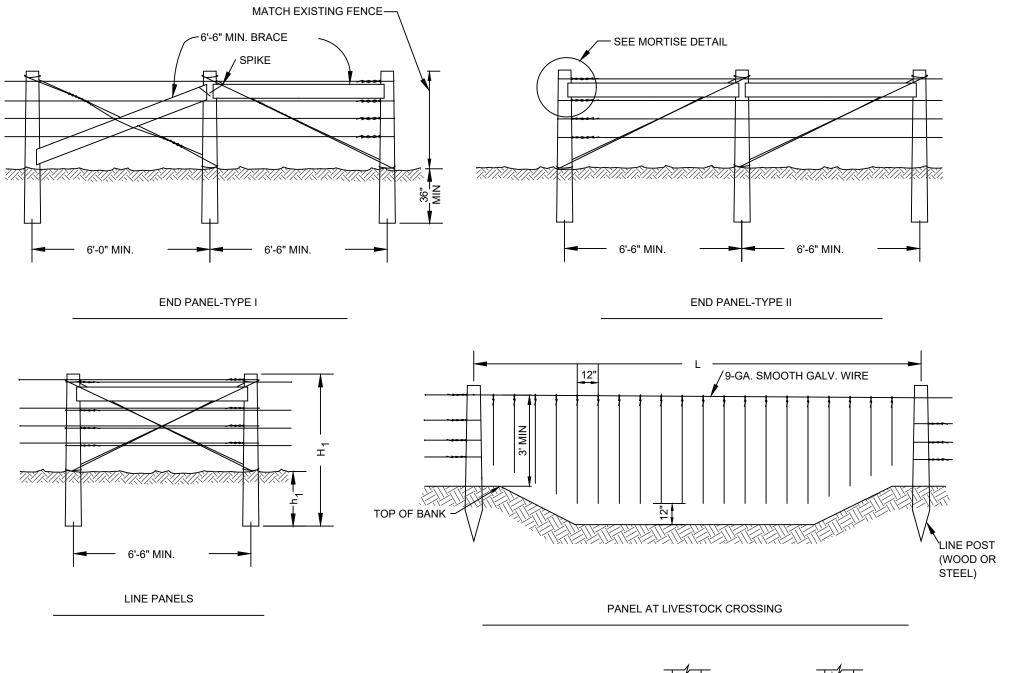
- XS-2 BENCH CROSS SECTION STA. 14+50
- BASEFLOW WATER SURFACE BUT SHOULD FOLLOW THE ESTABLISHED PROFILE. BENCH ELEVATIONS ARE SUBJECT TO VERIFICATION BY THE PLAN PREPARER AT THE TIME OF CONSTRUCTION 2. PROPOSED FLOODPLAIN BENCHES AND SIDE SLOPES SHALL BE SEEDED AND MATTED IN ACCORDANCE WITH THE E&S AND SITE RESTORATION PLAN, THE

1. FLOODPLAIN BENCH ELEVATIONS ARE APPROXIMATELY 0.1' ABOVE THE EXISTING

THE TEMPORARY AND PERMANENT CONTROL MEASURES PRESENTED IN THIS 3. GRADE EXISTING CHANNEL BANKS BELOW PROPOSED FLOODPLAIN BENCH ELEVATION TO 3:1 OR FLATTER.

LANDSCAPE PLAN, THE EROSION CONTROL BLANKET INSTALLATION DETAIL, AND

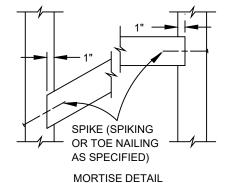




1. THE TOP WIRE ON LIVESTOCK CROSSING PANEL SHALL SIT A MINIMUM OF 3' ABOVE THE TOP OF BANK TO BE ABOVE THE 100-YR WSE.

2. POST HEIGHTS AND WIRE SPACING SHALL BE CONSISTENT WITH EXISTING

ALTERNATIVE FENCE CONSTRUCTION SHALL BE APPROVED BY PLAN PREPARER.
 PERMANENT POSTS SHOULD BE 7FT LONG WITH 3 FT MIN. IN GROUND. CORNER POSTS SHOULD BE 8 FT LONG WITH 4 FT MIN. IN GROUND; THE POST SHALL



WIRE FENCE (4 WIRE) (D-5) NOT TO SCALE

INCLUDE BRACING.

PA 042324



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REVISIONS					
NO.	DATE	DESCRIPTION			

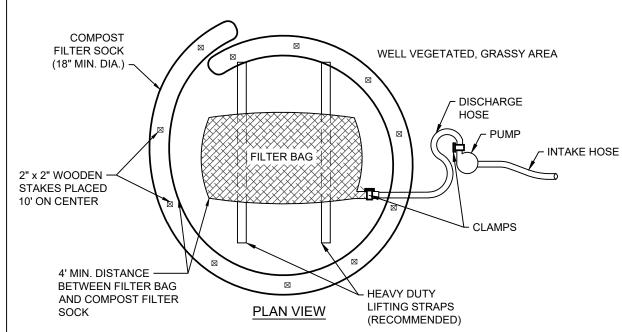
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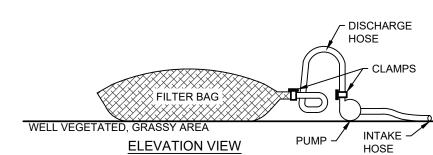
> SHEET NUMBER: **OF 15**

AS NOTED

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED
- APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT

### ROCK CONSTRUCTION ENTRANCE





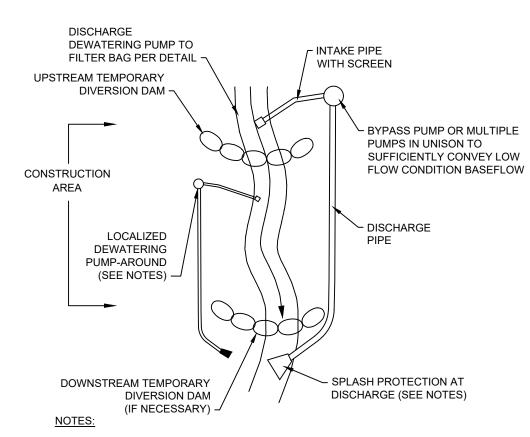
### NOTES:

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

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

- 1. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED
- BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
- NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
- 4. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE 5. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE
- MANUFACTURER, WHICHEVER IS LESS, PUMP INTAKES SHALL BE FLOATING AND SCREENED.
- 6. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE
- IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

### PUMPED WATER FILTER BAG (STD DTL #3-16) NOT TO SCALE



PUMP INTAKE SHALL BE MAINTAINED A SUFFICIENT DISTANCE FROM BOTTOM TO PREVENT SEDIMENT FROM ENTERING THE SYSTEM. DO NOT EXCAVATE A SUMP AREA WITHIN THE STREAM CHANNEL FOR THE PUMP INTAKE.

PUMPED WATER MUST BE DISCHARGED ONTO AN ENERGY DISSIPATING DEVICE SUCH AS PLYWOOD, PLASTIC, ROCK, STANDING WATER POOL, FOUNTAIN OR OTHER DEVICE TO MINIMIZE THE OPPORTUNITY FOR EROSION OR INCREASING TURBIDITY.

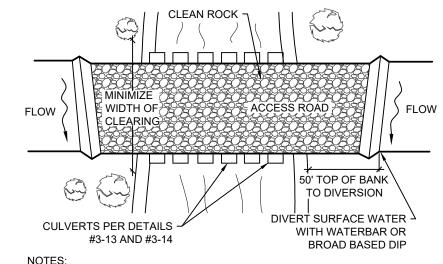
PUMP AROUND BYPASS SHOULD ONLY BE IMPLEMENTED IF THE PUMP CAPACITY CAN EFFECTIVELY MANAGE THE EXISTING BASEFLOW DISCHARGE.

LOCALIZED PUMPS SHALL BE USED TO DEWATER THE IMMEDIATE WORK AREA. SEDIMENT-LADEN WATER SHALL BE DISCHARGED THROUGH A PUMPED WATER FILTER

FOR SPLASH PROTECTION, DISCHARGE OUTLET MAY BE SET UPON PLASTIC SHEETING AND ORIENTED UPWARD TO CREATE FOUNTAIN-EFFECT, WHICH FALLS ON PLASTIC SHEETING BEFORE ENTERING STREAM DOWNSTREAM OF PROJECT SITE. ALTERNATIVE SPLASH PROTECTION SHALL BE APPROVED BY DESIGN ENGINEER.

BAG IN ACCORDANCE WITH DETAIL.

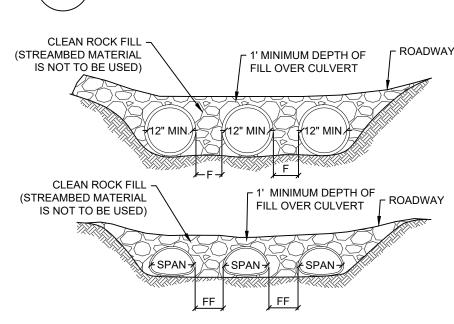
### TEMPORARY PUMP AROUND BYPASS SYSTEM NOT TO SCALE



### WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO SEDIMENT REMOVAL FACILITY

- 2. CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING
- REQUIREMENTS.

### 3. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING TEMPORARY STREAM CROSSING PLAN VIEW (STD DTL #3-12)



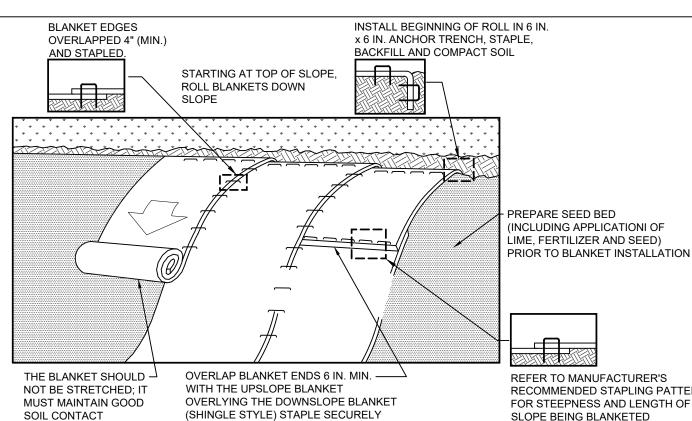
- MULTIPLE PIPES AND MULTIPLE SPAN BRIDGES AND CULVERTS WHICH MAY TEND TO COLLECT DEBRIS, CONTRIBUTE TO THE FORMATION OF ICE JAMS AND INCREASE HEAD LOSSES SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. CROSSINGS OF LESS THAN 15 FEET SHALL BE BY ONE SPAN, FXCFPT WHERE CONDITIONS MAKE IT IMPRACTICAL TO AFFECT THE
- CROSSING WITHOUT MULTIPLE SPANS (SECTION 105.162). SEE TABLE 3.5 OF THE PA DEP EROSION CONTROL MANUAL FOR DISTANCE VALUES 'F' AND 'FF'. FOR ARCH PIPES, USE CLOSEST AVAILABLE STANDARD
- SIZES THAT PROVIDE THE SAME WATERWAY OPENING AREA SHOULD SIZES WITHIN THE TABLE BE UNAVAILABLE. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM
- CHANNEL (SEE STANDARD CONSTRUCTION DETAIL #3-12). PIPES SHALL EXTEND BEYOND THE TOE OF THE ROADWAY 5. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK

### APPROACH TO THE CROSSING. **MAINTENANCE**

- TEMPORARY STREAM CROSSINGS SHALL BE INSPECTED ON A DAILY BASIS. 2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE
- INSPECTION AND BEFORE ANY SUBSEQUENT USE. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE

REMOVED WITHIN 24 HOURS OF THE INSPECTION. AS SOON AS THE TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND DISTURBED

TEMPORARY STREAM CROSSING MULTIPLE PIPES (STD DTL #3-14)



SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.

SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL.

THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTI PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4

### **EROSION CONTROL BLANKET INSTALLATION** NOT TO SCALE

### STANDARD E&S NOTES

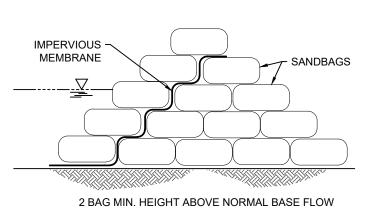
DO NOT STRETCH BLANKET

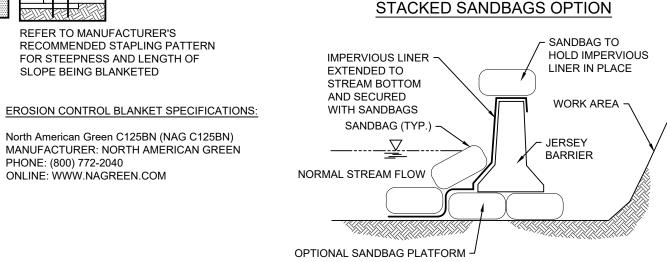
CALENDAR DAYS.

ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.

PHONE: (800) 772-2040

- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, A REPRESENTATIVE FROM PA DEP SOUTHCENTRAL REGIONAL OFFICE, AND A REPRESENTATIVE FROM THE LEBANON COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.
- 3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LEBANON COUNTY CONSERVATION DISTRICT OR BY THE
- DEPARTMENT PRIOR TO IMPLEMENTATION. 5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL
- 6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE
- FUNCTIONING AS DESCRIBED IN THIS E&S PLAN. 7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN. 8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S)
- IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER. 9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR
- SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT 10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE
- DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE. 11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE
- DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED. 12. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER
- 13. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
- 14. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION. 15. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH
- WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER. 16. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS
- 17. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO PLACEMENT OF TOPSOIL. UPLAND AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL
- 18. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES. 19. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
- 20. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
- 21. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS. 22. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES. 23. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND
- SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD. 24. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN
- ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN. 25. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS. DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE PLAN. AREAS NOT AT FINISHED GRADE, WHICH WILL BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR
- SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS. 26. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF
- RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS. 27. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LEBANON COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT.
- 28. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LEBANON COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
- 29. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO \$10,000 PER DAY IN CIVIL PENALTIES, UP TO \$10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO \$25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION





JERSEY BARRIER OPTION

### SANDBAG DIVERSION DAM OR COFFERDAM (STD DTL #3-15) NOT TO SCALE

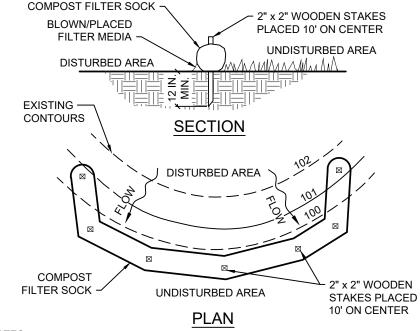
### CONSTRUCTION SEQUENCE

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH TH FOLLOWING SEQUENCE. DEVIATION FROM THIS SEQUENCE MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO IMPLIMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP, EXCEPT WHERE NOTED. CONSTRUCTION MUST BE COMPLETED DURING LOW FLOW CONDITIONS. LEFT AND 1. RIGHT STREAM BANK ORIENTATIONS ARE BASED ON LOOKING DOWNSTREAM.

- AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES (INCLUDING CLEARING AND GRUBBING) THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE REGULATORY OFFICIALS, AND THE PLAN PREPARER TO AN ON-SITE PRE-CONSTRUCTION MEETING
- 2. UPON INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE OWNER SHALL PROVIDE NOTIFICATION TO ANY RELEVANT REGULATORY OFFICIALS
- 3 AT LEAST 3 DAYS PRIOR TO STARTING ANY FARTH DISTURBANCE ACTIVITIES OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- 4. FIELD MARK AND CLEARLY IDENTIFY LIMIT OF DISURBANCE.
- 5. INSTALL ROCK CONSTRUCTION ENTRANCE AS NECESSARY IF SITE CONDITIONS WOULD OTHERWISE RESULT IN SOILS BEING TRACKED OFF SITE. 6 INSTALL TEMPORARY LIVESTOCK FENCING
- REMOVE EXISTING FENCE AS NECESSARY TO COMPLETE RESTORATION WORK
- 9. STRIP TOPSOIL A MINIMUM OF 6" ACROSS FILL AREA FOOTPRINT AND TEMPORARILY STOCKPILE. MATERIAL EXCAVATED FROM THE STREAM WILL BE HAULED TO THE FILL AREA LOCATION SHOWN ON THE PLAN. USE STOCKPILED TOP SOIL TO ACHIEVE FINISHED GRADE
- 10. INSTALL TEMPORARY COFFERDAM AND PUMP-AROUND BYPASS TO DIVERT FLOW DURING CONSTRUCTION. THOUGH IT MAY BE NECESSARY DURING INSTALLATION, CONTRACTOR SHALL MINIMIZE VEHICLE TRAFFIC IN THE STREAM PRIOR TO BYPASS SYSTEM BECOMING OPERATIONAL. ADDITIONAL LOCALIZED PUMPING MAY BE UTILIZED TO DE-WATER IN THE IMMEDIATE VICINITY OF WHERE WORK IS BEING DONE. DE-WATERING AND DISCHARGE SPLASH PROTECTION SHALL TAKE PLACE IN ACCORDANCE WITH PUMP-AROUND BYPASS SYSTEM DETAIL. ALTERNATIVE SOLUTIONS SHALL BE APPROVED BY THE PLAN PREPARER. BYPASS PUMP SHALL PROVIDE CAPACITY TO SUFFICIENTLY CONVEY FLOWS AT THE TIME OF CONSTRUCTION. MULTIPLE PUMPS MAY BE USED IF NECESSARY. FISH WITHIN THE DEWATERED AREA SHALL BE CAPTURED UTILIZING A SEINE OR OTHER NET, PLACED IN 5 GALLON BUCKETS WITH WATER, AND RELOCATED DOWNSTREAM OF THE WORK AREA AS THE AREA IS
- 11. WHEN ALL E&S CONTROLS HAVE BEEN INSTALLED, BEGIN REMAINING CONSTRUCTION IN ACCORDANCE WITH PLANS. CONTRACTOR SHALL TAKE CARE TO MINIMIZE DISTURBED AREAS AND IMPLEMENT STABILIZATION EFFORTS IN ACCORDANCE WITH THE PLAN SET,
- DISTURBING ONLY AS MUCH AREA AS CAN REASONABLY BE STABILIZED THE SAME DAY. 12. INSTALL TEMPORARY STREAM CROSSINGS AS NECESSARY TO PROVIDE ADEQUATE SITE ACCESS. REMOVE CROSSINGS AND GRADE/STABILIZE THE AREA THEY OCCUPIED AS SOON AS THEY ARE NO LONGER REQUIRED FOR ACCESS. THOUGH IT MAY BE NECESSARY DURING INSTALLATION, CONTRACTOR SHALL MINIMIZE VEHICLE TRAFFIC IN THE STREAM. CONTRACTOR SHALL NOT UTILIZE THE EXISTING CONCRETE BRIDGE (LABELED "CROSSING #2") OR THE LIVESTOCK CROSSING THAT IS REMAINING (LABELED "CROSSING #1") AS HEAVY EQUIPMENT CROSSINGS. ANY DAMAGE TO THIS CROSSING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR. IF REPAIR IS NOT POSSIBLE, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REPLACE THE CROSSING IN KIND WITH THE EXISTING.
- 13. CONTRACTOR SHALL BEGIN CONSTRUCTION AT THE DOWNSTREAM EXTENTS, CUTTING MATERIAL TO ACHIEVE PROPOSED BENCH AND BANK GRADE, BENCH WIDTH AND CROSS-SECTIONAL GEOMETRY. CONTRACTOR SHALL COORDINATE WITH PLAN PREPARER FOR ADDITIONAL STAKE-OUT SUPPORT AND ADAPTIVE MANAGEMENT AS NEEDED. THE BENCH SHALL BE CONSTRUCTED EITHER FROM WITHIN THE DE-WATERED CHANNEL OR WORKING FROM THE LEFT OR RIGHT OVERBANK AREA AS THE LIMIT OF DISTURBANCE ALLOWS AND IN A MANNER WHICH MINIMIZES DISTURBANCE.
- 14. STOCKPILING AND SPOIL AREA GRADING SHALL OCCUR IN CONJUNCTION WITH BENCH
- 15. ONCE FINAL GRADE HAS BEEN ACHIEVED, STABILIZATION MUST OCCUR WITHIN 48 HOURS (OR BY THE END OF THE WORKDAY IF RAIN IS FORECASTED). STABILIZE THE FLOODPLAIN BY APPLYING TEMPORARY AND PERMANENT SEED AND MATTING IN ACCORDANCE WITH THE CONTROL MEASURES OUTLINED ON THIS PLAN. STABILIZE FILL SITES AND STOCKPILE AREAS WITH UPLAND AREA SEED MIX.
- 17. END THE PUMP-AROUND BYPASS AND REMOVE COFFERDAMS, STARTING WITH THE DOWNSTREAM COFFERDAM TO ALLOW BACKWATER TO INUNDATE THE SITE, PRIOR TO THE LIPSTREAM COFFERDAM BEING REMOVED.
- 18. REMOVE ANY REMAINING TEMPORARY STREAM CROSSINGS. 19. ALL DISTURBED AREAS SHALL BE SEEDED, PLANTED AND/OR MATTED IN ACCORDANCE WITH THIS PLAN TO ACHIEVE PERMANENT STABILIZATION.
- 20. REPLACE THE EXISTING FENCE IN KIND.

16. INSTALL PROPOSED LIVESTOCK CROSSING.

- 21. UPON COMPLETION OF EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION, THE OWNER AND/OR OPERATOR SHALL SCHEDULE A FINAL INSPECTION WITH PLAN PREPARER PRIOR TO REMOVAL/CONVERSION OF E&S BMPs.
- 22. REMOVE ALL E&S BMPs AFTER A MINIMUM UNIFORM 70% COVERAGE OF PERENNIAL VEGETATIVE COVER IS ACHIEVED.



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

PA DEP EROSION CONTROL MANUAL

- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.
- 3. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
- 4. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.
- 5. COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS PHOTODEGRADABLE SOCKS AFTER 1 YEAR POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- 7. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A



### TEMPORARY CONTROL MEASURES

- 1.1. FILTER SOCK SHALL BE LOCATED AS SHOWN ON THE PLANS AND DOWN SLOPE OF ANY SPOIL AREAS OR DISTURBED AREAS WITH THE POTENTIAL TO RESULT IN SEDIMENT-LADEN RUNOFF LEAVING THE SITE.
- TEMPORARY SEEDING 2.1. TEMPORARY SEEDING SHALL BE APPLIED IN ACCORDANCE WITH THE NURSE
- CROP AS NOTED ON THE LANDSCAPE PLAN OR AS OTHERWISE NECESSARY TO TEMPORARILY STABILIZE DISTURBED AREAS.

3.1. NORTH AMERICAN GREEN (NAG) C125BN OR APPROVED EQUIVALENT MATTING

- SHALL BE APPLIED TO CUT STREAM BANKS AND BENCHES AND SLOPES OF 3:1 OR STEEPER IN ACCORDANCE WITH PLANS AND DETAIL E-3.
- DURING NON-GERMINATING PERIODS, TEMPORARY STABILIZATION ON OVERBANK AREAS SHALL BE ACHIEVED THROUGH MULCHING. SEE THE MULCHING SPECIFICATION BELOW.

PERMANENT TURF SEEDING.

TEMPORARY STABILIZATION MATTING

- 1. PERMANENT VEGETATION COVER
- 1.1. ALL DISTURBED AREAS THAT ARE NOT PROPOSED TO BE ROCK COVER SHALL BE COVERED WITH VEGETATION IN ORDER TO MINIMIZE EROSION 1.2. PERMANENT COVER SHALL BE APPLIED PER THE SEEDING & PLANT SCHEDULES AND IN ACCORDANCE WITH THE LANDSCAPE PLAN.
- 2.1. STRAW MULCH SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE TO DISTURBED OVER-BANK SEEDING AREAS TO HELP ESTABLISH A PERMANENT PLANT COVER AND TO PREVENT EROSION.
- 2.2. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION BY ONE OF THE FOLLOWING MEANS: 2.2.1. A TRACTOR-DRAWN IMPLEMENT DESIGNED TO CRIMP THE STRAW INTO
- THE SOIL (A TRACKED VEHICLE SHOULD NOT BE USED FOR THIS PURPOSE) 2.2.2. SYNTHETIC BINDERS APPLIED PER MANUFACTURER'S RECOMMENDATIONS 2.2.3. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETTING STAPLED OVER MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS
- LIME AND FERTILIZEF 3.1. LIME AND FERTILIZER SHALL BE APPLIED TO UPLAND TURF AREAS AS REQUIRED BY SOIL TESTING TO OBTAIN A UNIFORM EROSION RESISTANCE
- PERENNIAL VEGETATIVE COVERAGE 3.2. IN THE ABSENCE OF SOIL TESTING, 6 TONS OF AGRICULTURAL LIMESTONE PER ACRE AND 1,000 LBS OF 10-10-20 FERTILIZER PER ACRE IS RECOMMENDED FOR
- 3.3. TO AVOID POTENTIAL FOR INTRODUCING EXCESS NUTRIENTS TO THE WATERWAY, IN NO INSTANCE SHALL LIME AND FERTILIZER BE APPLIED WITHIN THE RESTORATION FOOTPRINT INCLUDING THE FLOODPLAIN FLOOR AND SIDE
- 3.4. IN NO INSTANCE SHALL FERTILIZER OR LIME BE APPLIED TO PROPOSED NATIVE

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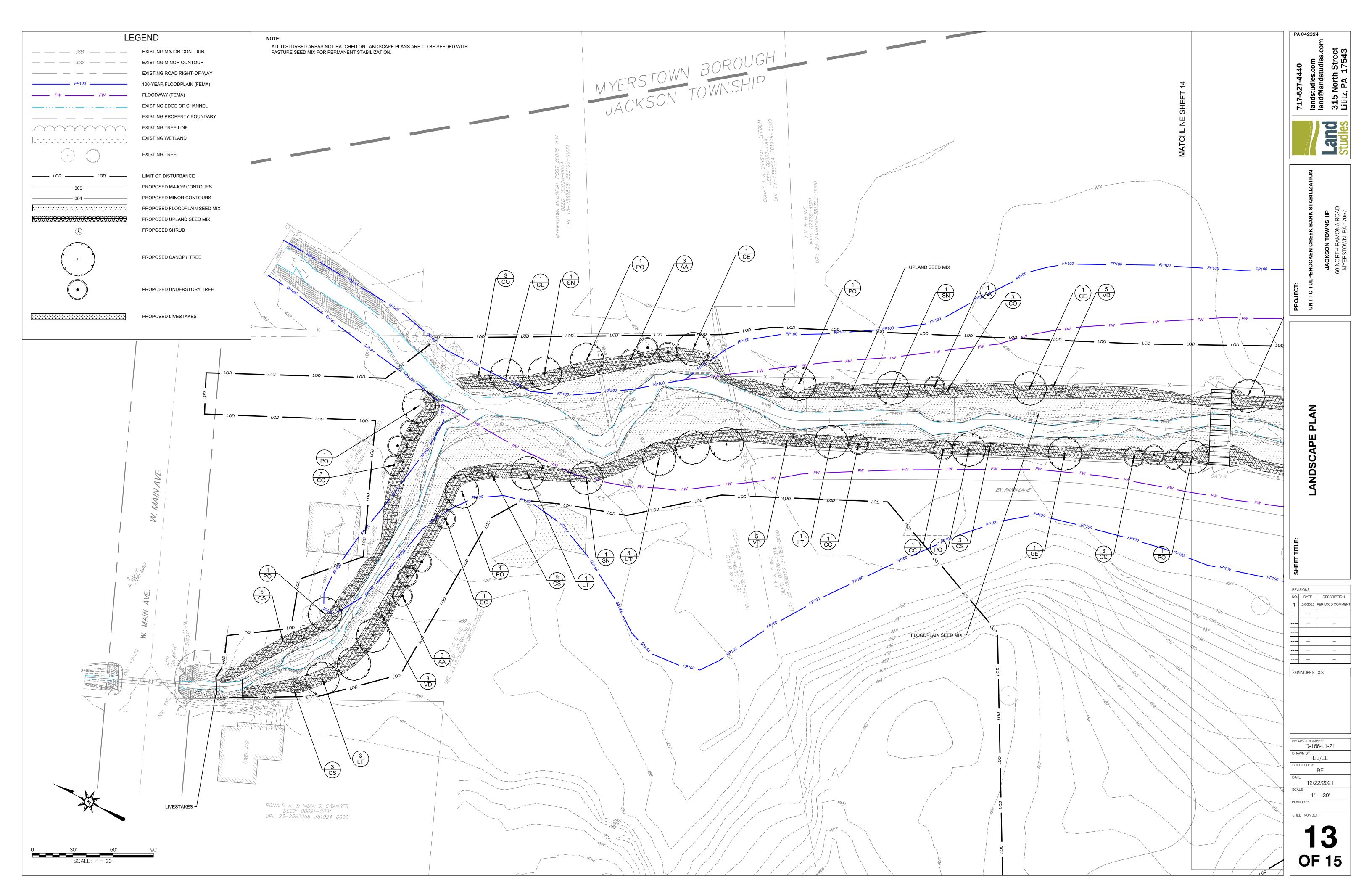
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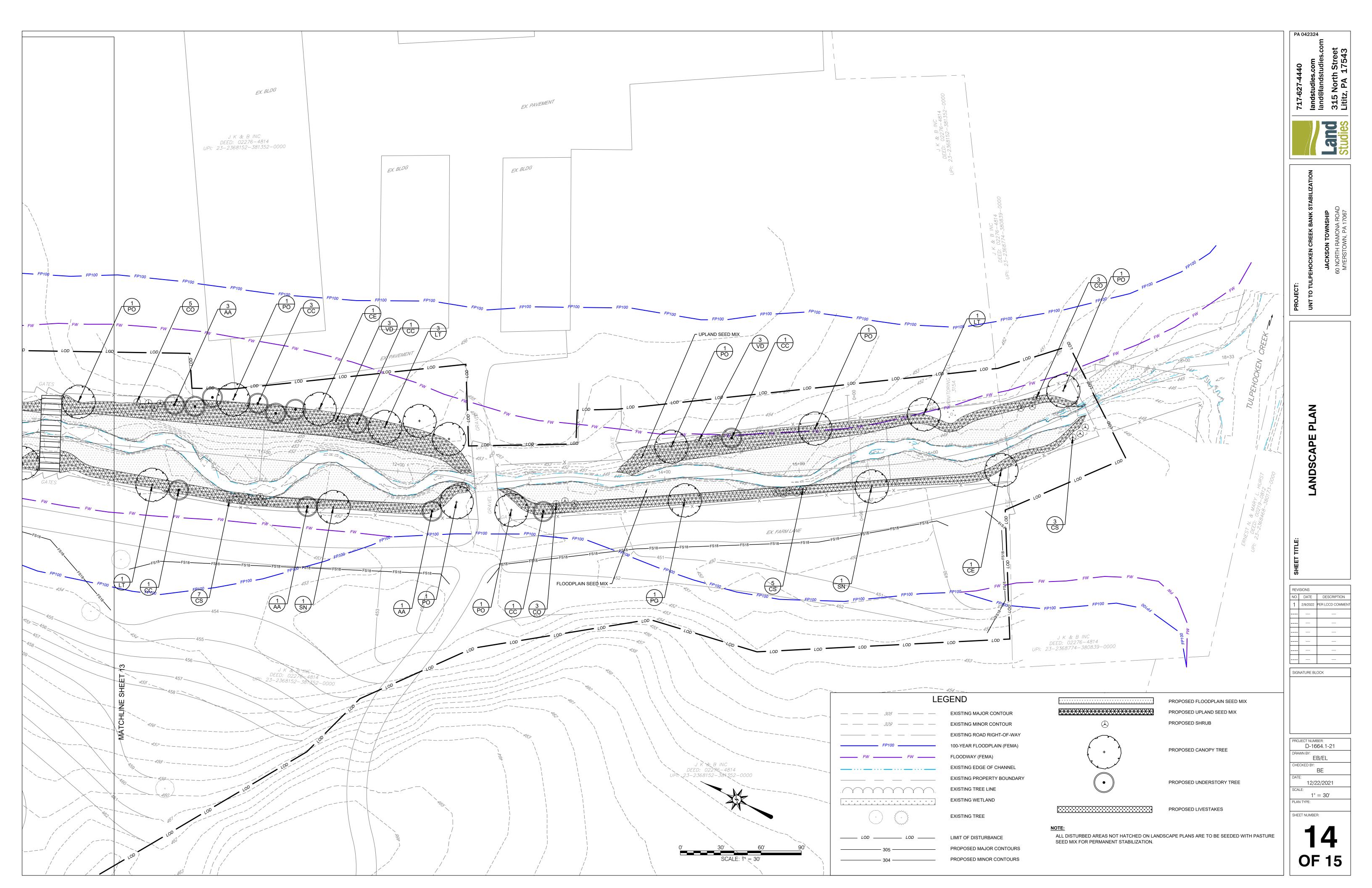
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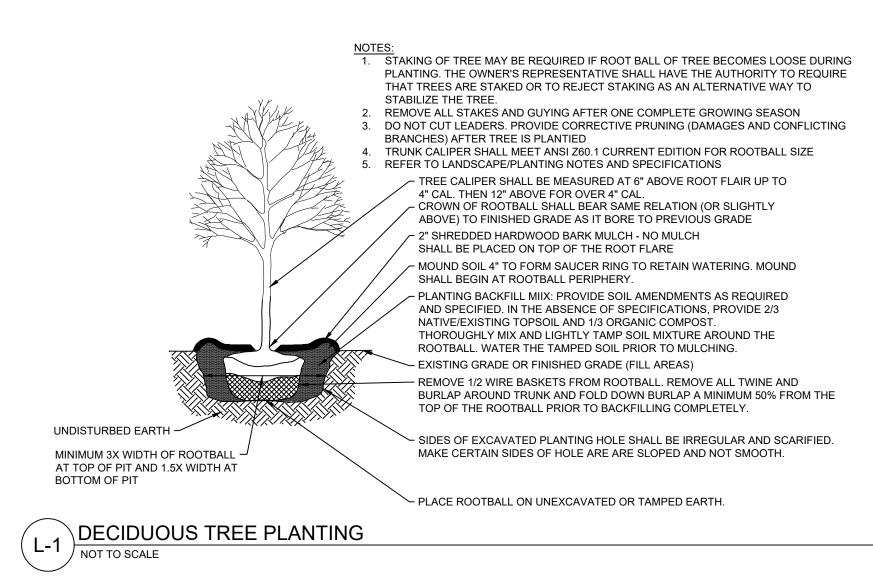
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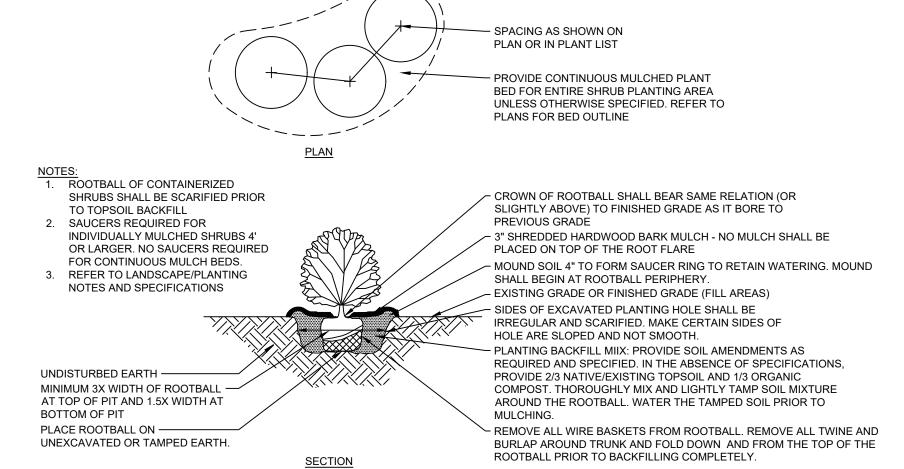
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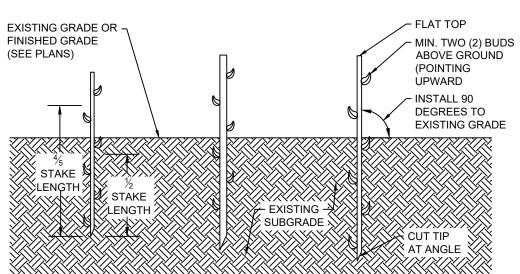
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- LIVE STAKES MUST BE BETWEEN  $lac{1}{2}$ " TO 2" IN DIAMETER AND MUST BE 2' TO 3' LONG. THE BOTTOM ½ OF LIVE STAKES SHALL BE SOAKED IN WATER MIN. 24 HOURS PRIOR TO
- PLANTING AND SHALL BE INSTALLED DURING DORMANCY PERIOD ONLY (LATE FALL TO EARLY
- 3. PRIOR TO PLANTING, WITH THE BUDS POINTING UPWARD, FRESH CUT THE STAKES WITH AN ANGLE CUT (APPROX. 45 DEGREES) ON THE BOTTOM AND SQUARE (90 DEGREES) ON THE TOP. TRIM ALL SIDE BRANCHES CLEANLY SO THE CUTTING IS ONE STEM
- STAKES MUST BE STORED IN A COOL AND MOIST PLACE TO KEEP THEM ALIVE AND DORMANT USING REBAR OR SIMILAR OBJECT WITH SAME DIA. OR SLIGHTLY LESS THAN LIVE STAKE. CREATE A PILOT HOLE AT A 90 DEGREE ANGLE TO THE SOIL SURFACE BY PUSHING IT INTO THE SOIL AND REMOVING IT. INSERT STAKES PERPENDICULAR TO THE GROUND IN PREPARED PILOT HOLE WITH ANGLED END FIRST AND BUDS FACING UPWARD AT LEAST  $\frac{1}{2}$  TO  $\frac{4}{5}$  OF THE TOTAL STAKE LENGTH. KEEP AT LEAST 2 BUDS ABOVE GROUND SURFACE. A RUBBER MALLET MAY BE NECESSARY TO DRIVE STAKES INTO THE GROUND, BUT MAKE A FRESH CUT ON THE EXPOSED END TO REMOVE MALLET DAMAGE.
- 7. DO NOT USE SPLIT STAKES.

SHRUB PLANTING

### LIVE STAKES NOT TO SCALE

- 1. THE LANDSCAPE CONTRACTOR SHALL UTILIZE THE LANDSCAPE PLANS IN THE IMPLEMENTATION OF THE LANDSCAPE WORK FOR THIS
- 2. ALL DISTURBED AREAS SHALL BE SEEDED, SODDED, MULCHED OR LANDSCAPED UNLESS INDICATED OTHERWISE.
- 3. REFER TO LANDSCAPE PLANS AND/OR EROSION AND SEDIMENT CONTROL PLAN FOR SEEDING LIMITS.
- 4. PROTECT STRUCTURES, UTILITIES, PAVED SURFACES AND OTHER EXISTING IMPROVEMENTS INCLUDING LAWNS/VEGETATED AREAS AND PLANT MATERIAL FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR, RESTORE AND REPLACE DAMAGED MATERIALS IN KIND OR AS APPROVED BY THE OWNER.
- 5. PRECAUTIONS SHALL BE TAKEN DURING CONSTRUCTION TO ENSURE THE PROTECTION OF ALL EXISTING TREES TO REMAIN. THESE EFFORTS SHALL ENSURE THAT EQUIPMENT DOES NOT DAMAGE TREE TRUNKS OR BRANCHES, ROOT ZONES ARE NOT COMPACTED BY VEHICLES OR CONSTRUCTION MATERIAL, AND THAT GRADE LEVEL WITHIN THE DRIP LINE OF EXISTING TREES IS NOT CHANGED UNLESS APPROVED
- 6. ALL TREES AND SHRUBS TO BE REMOVED SHALL HAVE ALL STUMPS AND ROOTS REMOVED BY MEANS OF STUMP GRINDING AND/OR MECHANICAL REMOVAL UNLESS INDICATED OTHERWISE. ALL BIODEGRADABLE PLANT MATERIAL FROM THE REMOVAL PROCESS SHALL BE COLLECTED AND REMOVED FROM THE SITE UNLESS INDICATED OTHERWISE.
- 7. REMOVE SURPLUS SOIL, UNDESIRABLE FOREIGN MATERIAL, WASTE MATERIAL INCLUDING EXCESS SUBSOIL, UNSUITABLE SOIL, TRASH AND DEBRIS AND LEGALLY DISPOSE OF THEM AS APPROVED BY THE OWNER.
- 8. CONTRACTOR SHALL VERIFY FINISHED GRADES ARE MET/PROPER DRAINAGE SHALL OCCUR PRIOR TO LAYOUT OF PLANT MATERIAL AND PLANTING. LANDSTUDIES SHALL BE CONTACTED TO APPROVE FINAL GRADES PRIOR TO PLANTING.
- 9. ALL PLANT SUBSTITUTIONS SHALL BE APPROVED BY LANDSTUDIES, INC. AND THE OWNER SHOULD LANDSTUDIES DEEM APPROPRIATE. PLANT SUBSTITUTIONS MAY BE SUBJECT TO MUNICIPAL APPROVAL AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY REQUIRED APPROVAL. THE INTENT OF LANDSCAPE DESIGN IS TO PRIMARILY USE PLANTS NATIVE TO THE RIDGE AND VALLEY OF THE CHESAPEAKE BAY WATERSHED.
- 10. BOTANICAL NAMES SHALL TAKE PRECEDENCE OVER COMMON NAMES FOR ANY AND ALL PLANT MATERIAL.
- 11. REQUIREMENTS FOR PLANT MATERIAL INCLUDING BUT NOT LIMITED TO MEASUREMENT, BRANCHING, GRADING, QUALITY, BALLING AND BURLAPPING, SHALL CONFORM TO THE STANDARDS RECOMMENDATIONS AND STANDARDS LISTED IN THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1, CURRENT EDITION AS AMENDED, PUBLISHED BY AMERICANHORT (FORMALLY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION OR ANLA.)
- 12. ALL PLANTINGS AND PLANTING PROCEDURES INCLUDING STAKING AND GUYING OF TREES SHALL CONFORM TO GOOD NURSERY AND LANDSCAPE PRACTICE AND THE STANDARDS SET FORTH BY THE AMERICAN ASSOCIATION OF NURSERYMAN.
- 13. UNLESS OTHERWISE SPECIFIED, ALL PLANT MATERIAL SHALL BE TYPICAL OF THEIR OF THEIR SPECIES AND VARIETY, HAVE NORMAL GROWTH HABITS, HAVE WELL DEVELOPED BRANCHES, BE DENSELY FOLIATED, VIGOROUS IN GROWTH, AND POSSESS HEALTHY ROOT SYSTEMS. ALL PLANT MATERIAL SHALL BE FREE OF DISEASE, INSECTS, INSECT EGGS AND LARVAE. PROVIDE SINGLE TRUNK STANDARD TREES UNLESS
- 14. ALL PLANT MATERIAL SHALL BE LIFTED/HANDLED BY THE CONTAINER OR ROOT BALL ONLY. DO NOT HANDLE USING THE TRUNK OR BRANCHES AND DO NOT USE TRUNK OR BRANCHES AS A LEVER WHEN PLACING OF LIFTING PLANT MATERIAL.
- 15. ALL CONTAINER GROWN NURSERY STOCK SHALL BE HEALTHY, VIGOROUS, WELL ROOTED, AND ESTABLISHED IN THE CONTAINER IN WHICH IT IS GROWING. CONTAINER GROWN NURSERY STOCK SHALL HAVE A WELL-ESTABLISHED ROOT SYSTEM REACHING THE SIDES OF THE CONTAINER TO MAINTAIN A FIRM BALL WHEN THE CONTAINER IS REMOVED, BUT SHALL NOT HAVE EXCESSIVE ROOT GROWTH ENCIRCLING THE
- 16. ALL PLANTS TO BE NURSERY GROWN IN A CLIMATE SIMILAR TO THAT OF THE PROJECT WITHIN A 250 MILE RADIUS OF THE PROJECT SITE.
- 17. CONTRACTOR SHALL VERIFY ALL PLANT COUNTS AND LOCATIONS PRIOR TO ORDERING MATERIALS. LANDSTUDIES AND THE OWNER ACCEPT NO RESPONSIBILITY FOR TYPOGRAPHICAL ERRORS OR QUANTITY MISCOUNTS. THE CONTRACTOR IS RESPONSIBLE TO INSTALL ALL PLANTINGS AS INDICATED/REQUIRED, AND SHALL NOTIFY LANDSTUDIES OF ANY DISCREPANCIES PRIOR TO THE START OF WORK.
- 18. TREES AND SHRUBS SHALL BE PLANTED DURING APPROVED TIMES OF THE YEAR. CONTRACTOR SHALL BE RESPONSIBLE TO IDENTIFY ANY SPECIES ON THE PLANT LIST THAT REQUIRE PLANTING DURING SPECIFIC TIMES OF THE YEAR AND OBTAINING APPROVAL BY THE OWNER AND LANDSTUDIES PRIOR TO PLANTING. PLANT DURING PERIODS NORMAL FOR OPTIMUM GROWTH, AS DETERMINED BY SEASON, WEATHER CONDITIONS, AND ACCEPTED PRACTICE. DO NOT PERFORM PLANTING WHEN GROUND IS FROZEN, SNOW COVERED, OR IN AN UNSATISFACTORY CONDITION.
- 19. TREES AND SHRUBS PLANTED ON SLOPES SHALL BE PLACED SO THAT THE ELEVATION OF THE ROOT CROWN IS EQUAL TO OR SLIGHTLY ABOVE THE GRADE OF THE SLOPE PARALLEL TO THE ROOT CROWN.
- 20. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED SUCH RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, POOR SOILS OR OBSTRUCTIONS, NOTIFY LANDSTUDIES BEFORE PLANTING.
- 21. ALL PLANTING AREAS AND PLANTING PITS SHALL BE MULCHED (AS MAY BE SPECIFIED OR DETAILED) TO FILL THE ENTIRE PLANTING BED AREA OR PIT UNLESS INDICATED OTHERWISE. INDIVIDUAL PLANTS NOT LOCATED WITHIN A BED SHALL HAVE A MULCHED CIRCLE. THE SIZE OF THE MULCHED CIRCLE SHALL BE DETERMINED ACCORDING TO THE OVERALL PLANT SIZE OR CALIPER. CONSULT LANDSTUDIES FOR CLARIFICATION IF REQUIRED. NO MULCH SHALL BE APPLIED AGAINST THE FOLIAGE, STEM, OR TRUNK OF ANY PLANT. MULCH SHALL BE ORGANIC, NATURAL, SHREDDED HARDWOOD BARK, UNLESS APPROVED OTHERWISE. MULCH DEPTH SHALL BE BETWEEN 2-3 INCHES.
- 22. ALL TREES OR SHRUBS LOCATED WITHIN THE FLOODPLAIN SEEDING AREA SHALL NOT BE MULCHED.
- 23. WATER ALL PLANTING INDIVIDUALLY WITH AN OPEN-ENDED GARDEN HOSE UPON COMPLETION OF PLANTING OPERATIONS. DO NOT USE MECHANICAL SPRINKLERS TO WATER INDIVIDUAL PLANTS. MAINTAIN PROPER IRRIGATION TO ENSURE PLANT ESTABLISHMENT.

1. DISTURBED AREAS WITHIN THE LIVESTOCK EXCLUSION AREAS SHALL BE SEEDED WITH THE UPLAND SLOPE SEED MIX. DISTURBED AREAS OUTSIDE OF THE LIVESTOCK EXCLUSION FENCING AREAS AND ACCESSIBLE TO LIVESTOCK SHALL RECEIVE THE PASTURE SEED MIX.

### FLOODPLAIN SEED MIX

% Mix by Weight	Во
5.59%	Carex bicknellii
1 200/	Caray arinita

Botanical Name	Common Name
	Ochinon Hank
Carex bicknellii	Prairie Sedge
Carex crinita	Fringed Sedge
Carex normalis	Spreading Oval Sedge
Carex stricta	Tussock Sedge
Carex vulpinoidea	Fox Sedge
Elymus riparius	River Bank Wild Rye
Elymus virginicus	Virginia Rye
Juncus effusus	Common Rush
Tridens flavus	Purpletop
Asclepias incarnata	Swamp Milkweed
Chelone glabra	White Turtlehead
Eupatorium coelestinum (Conoclinium)	Mistflower
Eupatorium purpureum (Eupatoriadelphus)	Purple Joe-Pye weed
Euthamia caroliniana (Solidago tenuifolia)	Slender Goldentop
Hypericum punctatum	Dotted St. John's Wort
Lobelia siphilitica	Great Blue Lobelia
Penstemon digitalis	White Beardtongue
Pycnanthemum muticum	Big Leaf Mountain Mint
Pycnanthemum virginianum	Mountain Mint
Verbena hastata	Blue Vervain
Zizia aurea	Golden Alexander
	Carex crinita Carex normalis Carex stricta Carex vulpinoidea Elymus riparius Elymus virginicus Juncus effusus Tridens flavus Asclepias incarnata Chelone glabra Eupatorium coelestinum (Conoclinium) Eupatorium purpureum (Eupatoriadelphus) Euthamia caroliniana (Solidago tenuifolia) Hypericum punctatum Lobelia siphilitica Penstemon digitalis Pycnanthemum muticum Pycnanthemum virginianum Verbena hastata

### Application Rate: 26 lbs per acre

NOTES:

1. FLOODPLAIN SEED MIX TO BE SEEDED WITH A NURSE CROP PER TABLE BELOW.

NURSE CROP SEED MIX					
% Botanical Name Common Name Seeding window Application Rate					
Secale cereale	Cereal Rye	July - October	30 lbs./Acre		
OR					
Avena sativa	Oats	April - June	20 lbs./Acre		
	Botanical Name Secale cereale	Botanical Name	Botanical Name Common Name Seeding window Secale cereale Cereal Rye July - October  OR		

### UPLAND SLOPE SEED MIX

Weight	Botanical Name	Common Name
34.00%	Festuca arundinacea, 'Firecracker SLS'	Tall Fescue, 'Firecracker SLS'
33.00%	Festuca arundinacea, 'Valkyrie LS'	Tall Fescue, 'Valkyrie LS'
33.00%	Festuca arundinacea, 'Cochise III'	Tall Fescue, 'Cochise III'

### Application Rate: 300 lbs/acre

### PASTURE SEED MIX

### % Mix by

Weight	Botanical Name	Common Name
25.00%	Phleum pratense, Climax	Timothy, Climax
15.00%	Festuca arundinacea, 'Teton'	Tall Fescue, 'Teton'
15.00%	Trifolium hybridum	Alsike Clover
13.00%	Agrosis alba	Redtop
12.00%	Lolium perenne, 'Crave', Tetraploid	Perennial Ryegrass, 'Crave', Tetraploid
10.00%	Festuca elatior x Lolium perenne 'Duo'	Festulolium, 'Duo'
10.00%	Trifolium repens, Dutch	White Clover, Dutch

### Application Rate: 30 lbs/acre

ALL DISTURBED AREAS NOT HATCHED ON LANDSCAPE PLANS ARE TO BE SEEDED WITH PASTURE SEED MIX FOR PERMANENT STABILIZATION.

### TREES AND SHRUBS PLANT LIST

Key	Botanical Name	Common Name	Qty	Size	Spacing	Notes
AA	Amelanchier arborea	Serviceberry	12	6-8'	See Plans	Multistem
CC	Cercis canadensis	Eastern Redbud	14	6-8'	See Plans	Multistem
CE	Celtis occidentalis	Hackberry	6	#15	See Plans	
CO	Cephalanthus occidentalis	Buttonbush	17	#2	See Plans	
CS	Cornus sericea	Red Osier Dogwood	31	#2	See Plans	
LT	Liriodendron tulipifera	Tulip Poplar	13	#15	See Plans	
PO	Plantanus occidentalis	American Sycamore	15	#15	See Plans	
SN	Salix nigra	Black Willow	5	#15	See Plans	
VD	Viburnum dentatum	Arrowwood Viburnum	19	#2	See Plans	

### LIVE STAKES

Botanical Name	Common Name	Qty	Length	Spacing
Cephalanthus occidentalis	Buttonbush	25	3'	3' O.C.
Cornus sericea	Red Osier Dogwood	25	3'	3' O.C.

PA 042324



REVISIONS NO. DATE DESCRIPTION

SIGNATURE BLOCK

D-1664.1-21 EB/EL

1" = 30'

12/22/2021

PLAN TYPE:

SHEET NUMBER: