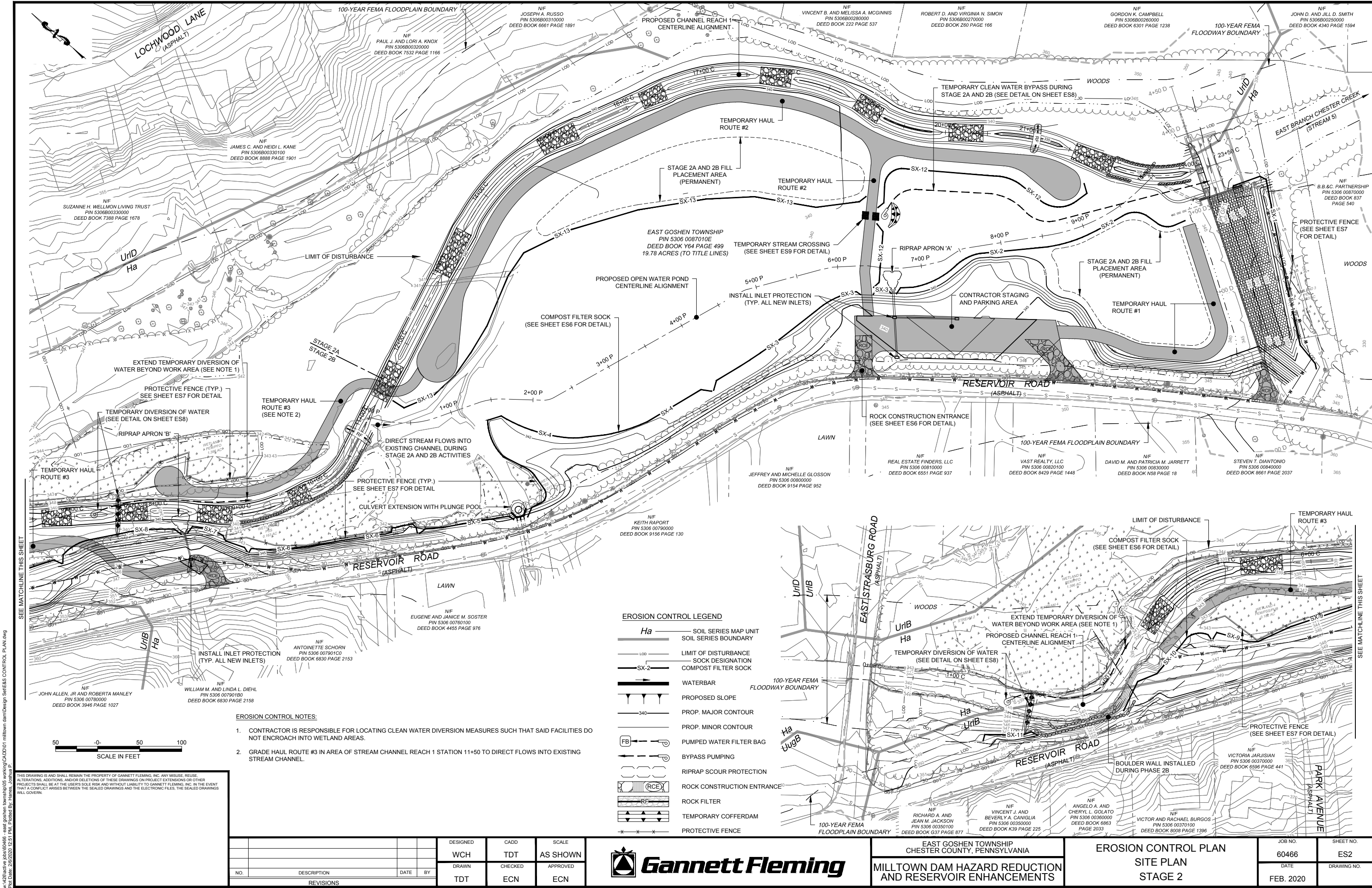


EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

EROSION CONTROL PLAN
SITE PLAN
STAGE 1

JOB NO.	SHEET NO.
60466	ES1
DATE	DRAWING NO.
FEB. 2020	



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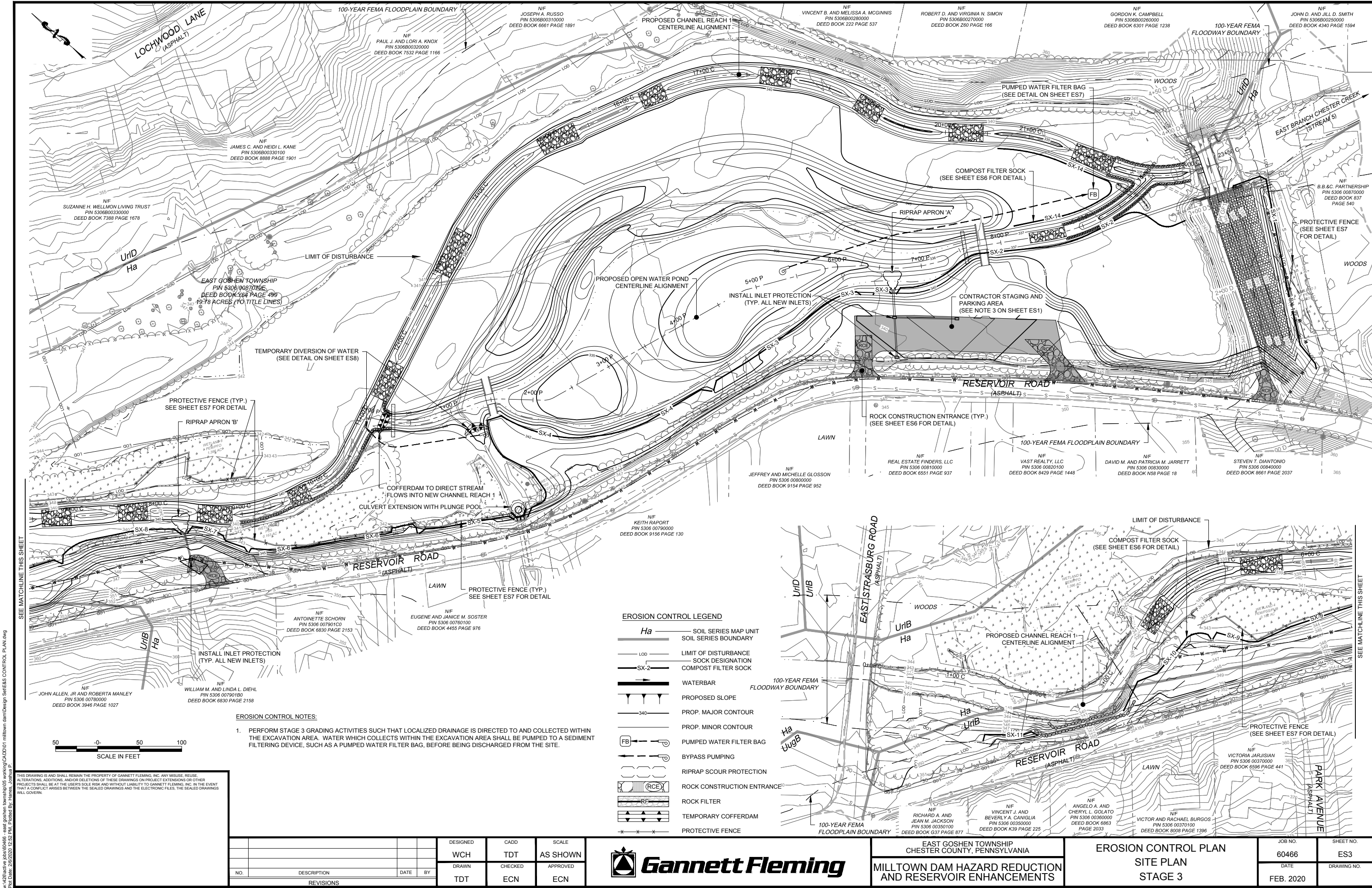
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EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

EROSION CONTROL PLAN		JOB NO.		SHEET NO.	
SITE PLAN		60466		ES2	
STAGE 2		DATE		DRAWING NO.	
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EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

EROSION CONTROL PLAN
SITE PLAN
STAGE 3

JOB NO.	SHEET NO.
60466	ES3
DATE	DRAWING NO.
FEB. 2020	

EROSION AND SEDIMENT POLLUTION CONTROL PLAN NARRATIVE

GENERAL STATEMENT OF THE PROJECT

- A1. ORIGINALLY CONSTRUCTED IN 1923 FOR WATER SUPPLY, MILLTOWN DAM IS CURRENTLY OWNED AND OPERATED BY EAST GOSHEN TOWNSHIP (TOWNSHIP) AS A RECREATIONAL FACILITY. THE DAM IS LOCATED TO THE NORTH OF ROUTE 3 ALONG THE EAST SIDE OF RESERVOIR ROAD IN EAST GOSHEN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA.
- A2. THE TOWNSHIP IS PROPOSING REDUCE THE HAZARD CLASSIFICATION OF MILLTOWN DAM BY REDUCING THE STORAGE CAPACITY OF THE STRUCTURE. THE PROJECT INVOLVES LOWERING THE CREST OF THE PRINCIPAL SPILLWAY, LOWERING THE RIGHT EMBANKMENT AND ARMORING THE DOWNSTREAM FACE OF THE RIGHT EMBANKMENT WITH ARTICULATED CONCRETE BLOCKS (ACB's), AND RECREATIONAL ENHANCEMENTS THROUGHOUT THE DEWATERED RESERVOIR. THE RESERVOIR ENHANCEMENTS INCLUDE, BUT ARE NOT LIMITED TO, STREAM RESTORATION, CREATION OF AN OPEN WATER POND, PARKING AREAS, AND WALKING PATHS.
- A3. THE PRIMARY EROSION CONTROL MEASURES FOR THIS PROJECT INCLUDE, BUT ARE NOT LIMITED TO, COMPOST FILTER SOCK, ROCK CONSTRUCTION ENTRANCE(S), FILTERING OF PUMPED WATER FROM EXCAVATIONS, DIVERTING CLEAN WATER AROUND WORK AREAS, MINIMIZING THE DURATION AND AMOUNT OF DISTURBED AREA, IMMEDIATELY STABILIZING DISTURBED AREAS, AND OTHER MEASURE AS DESCRIBED WITHIN THIS EROSION CONTROL PLAN.
- A4. THE PROJECT IS LOCATED WITHIN THE EAST BRANCH OF CHESTER CREEK WATERSHED WHICH IS TRIBUTARY TO THE DELAWARE RIVER. AT THE PROJECT SITE, THE CREEK IS CLASSIFIED AS TROUT STOCKING (TSF) - MIGRATORY FISHES (MF).

GENERAL EROSION CONTROL NOTES

- B1. IN ALL CASES, THE SMALLEST PRACTICAL AREA OF STABLE LAND SURFACE WILL BE DISTURBED.
- B2. EXCAVATED MATERIAL SHALL BE PLACED UP SLOPE FROM THE EXCAVATION WHENEVER POSSIBLE. SHOULD A SOIL PILE BE CREATED THAT IS NOT LOCATED WITH THE DRAINAGE AREA OF A PERIMETER EROSION CONTROL FACILITY, COMPOST FILTER SOCK SHALL BE INSTALLED ALONG THE DOWN SLOPE AND TOE OF SAID SOIL PILE. OR THE PILE SHALL BE COVERED WITH AN IMPERMEABLE TARP UNTIL SUCH TIME THAT THE PILE IS REMOVED. CONTRACTOR SHALL COORDINATE WITH THE OWNER WITH REGARDS TO SOIL PILE LOCATIONS.
- B3. TEMPORARY SOIL/TOPSOIL STOCKPILES SHALL BE IMMEDIATELY SEEDED (TEMPORARY SEED MIXTURE) AND MULCHED. STOCKPILES ARE TO BE PLACED IN LOCATION WHERE THEY WILL NOT INTERFERE WITH CONSTRUCTION ACTIVITIES AND ARE NOT TO BE LOCATED WITHIN THE FLOW PATH OF A NATURAL OR CONSTRUCTED WATERWAY. STOCKPILES ARE TO HAVE SIDE SLOPES OF 2H:1V OR FLATTER AND SHALL NOT EXCEED 35 FEET IN HEIGHT.
- B4. PERMANENT SPOIL AREAS SHALL RECEIVE PERMANENT STABILIZATION (I.E., TOPSOIL, SEED SOIL SUPPLEMENTS, MULCH OR EROSION CONTROL MATTING (REFER TO THE PERMANENT STABILIZATION NOTES ON THIS SHEET)). FILL SLOPES SHALL RECEIVE PERMANENT STABILIZATION AT REGULAR 10 FOOT INTERVALS AS THE FILL IS BEING CONSTRUCTED.
- B5. UTILITY EXCAVATIONS SHALL BE OPEN ONLY LONG ENOUGH TO PROPERLY INSTALL AND INSPECT ALL UNDERGROUND FACILITIES IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS. BACKFILLED EXCAVATIONS SHALL BE IMMEDIATELY RESTORED TO ORIGINAL OR PROPOSED TYPE OF COVER AND GRADE, AS PER THE DESIGN DRAWINGS AND SPECIFICATIONS.
- B6. ACCELERATED EROSION AND SEDIMENTATION WILL BE LIMITED BY IMMEDIATELY STABILIZING DISTURBED AREAS AND BY KEEPING THE AMOUNT OF DISTURBED AREA TO A MINIMUM. REFER TO THE TEMPORARY AND PERMANENT STABILIZATION NOTES ON THIS SHEET.
- B7. SHOULD UNFORESEEN CIRCUMSTANCE ARISE POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMMEDIATELY IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMP'S) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. STOCKPILES OF WOOD CHIPS, HAYBALES, CRUSHED STONE AND OTHER MULCHES SHALL BE HELD IN READINESS TO DEAL IMMEDIATELY WITH EMERGENCY PROBLEMS OF EROSION. IMMEDIATELY NOTIFY DEP DAM SAFETY AND/OR THE COUNTY CONSERVATION DISTRICT OF THE UNFORESEEN CONDITION AND THE MEASURE IMPLEMENTED TO RESOLVE THE CONDITION.
- B8. CONTRACTOR SHALL CONTROL DUST FROM THE PROJECT AREA BY APPLYING WATER OR IMPLEMENTING OTHER METHODS AS APPROVED BY THE OWNER/ENGINEER.
- B9. ALL PUMPING OF SEDIMENT-LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BEST MANAGEMENT PRACTICE, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY. UNLESS NOTED OTHERWISE, SAID BMP SHALL BE LOCATED ON AND DISCHARGE OVER UNDISTURBED WELL VEGETATED AREAS. DISCHARGE POINTS SHALL BE ESTABLISHED TO PROVIDE FOR MAXIMUM DISTANCE TO ACTIVE WATERWAYS.
- B10. EROSION CONTROL MATTING SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND ON DISTURBED SLOPES THAT ARE STEEPER THAN 3H:1V. SHOULD CONSTRUCTION PROCEDURES AND/OR LOCALIZED SITE CONDITIONS DISTURB AND/OR CREATE DISTURBED SLOPES THAT ARE STEEPER THAN 3H:1V, THESE SLOPES SHALL BE PROTECTED WITH EROSION CONTROL MATTING, SOD OR ROCK RIPRAP, AS APPROVED BY THE ENGINEER. SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER SHALL RECEIVE EROSION CONTROL MATTING.
- B11. SHOULD SITE STABILIZATION OCCUR OUTSIDE OF THE ALLOWABLE SEEDING DATES, ALL DISTURBED AREAS TO BE VEGETATED SHALL BE STABILIZED WITH EROSION CONTROL MATTING OR AN ANCHORED MULCH. TEMPORARY OR PERMANENT STABILIZATION (AS APPROPRIATE) SHALL BE APPLIED TO THESE AREAS ONCE WITHIN THE ALLOWABLE SEEDING DATES.
- B12. SHOULD THE CONTRACTOR CHOOSE TO DEVIATE FROM THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL APPROVALS FOR THE MODIFICATION FROM THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (PADEP), COUNTY CONSERVATION DISTRICT, LOCAL MUNICIPALITY OR OTHER REVIEWING AGENCY AS APPROPRIATE. PRIOR TO INITIATING SAID REVISIONS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SAID APPROVALS (I.E., ENGINEER'S DESIGN COSTS, APPLICATION FEES, REVIEW FEES, ETC.).
- B13. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED PLAN. A COPY OF THE APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) SHALL BE KEPT AVAILABLE FOR INSPECTION ON THE CONSTRUCTION SITE AT ALL TIMES THROUGHOUT THE TERM OF THE PROJECT.
- B14. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED TO MAINTAIN A DRY WORK AREA, PREVENT EROSION AND OFF-SITE SEDIMENTATION. MANAGE SEEPS OR SPRINGS THROUGH THE USE OF SUBSURFACE DRAINS, SPRING BOXES, SUMP PITS OR OTHER MEASURES AS APPROVED BY THE ENGINEER.
- B15. THE CONTRACTOR IS ADVISED THAT PERMANENT WORKS INVOLVE TRAVERSING AND EARTHMOVING ACTIVITIES THROUGHOUT THE BOTTOM OF THE RESERVOIR. SOIL/SEDIMENT THROUGHOUT THE RESERVOIR MAY BE SATURATED AND UNCONSOLIDATED. THE CONTRACTOR SHALL MAKE PROVISIONS FOR TRAVERSING, AND IF NEEDED, DEWATERING THE ONSITE SOIL/SEDIMENT AS NEEDED TO ALLOW FOR THE CONSTRUCTION OF THE PERMANENT WORKS. THESE EFFORTS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BASE BID.
- B16. THE CONTRACTOR IS ADVISED TO BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS OF APPENDIX 64, EROSION CONTROL RULES AND REGULATIONS, TITLE 25, PART 1, DEPARTMENT OF ENVIRONMENTAL PROTECTION, SUBPART C, PROTECTION OF NATURAL RESOURCES, ARTICLE III, WATER RESOURCES, CHAPTER 102, EROSION CONTROL.

GENERAL E&S INSTALLATION PROCEDURES

- C1. ALL MATERIALS NEEDED TO COMPLETELY CONSTRUCT AN EROSION CONTROL FACILITY SHALL BE AVAILABLE ON SITE PRIOR TO THE ANTICIPATED DISTURBANCE OF THE DRAINAGE AREA TO BE CONTROLLED BY SAID FACILITY.
- C2. EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE CONSTRUCTED, STABILIZED, AND FUNCTIONAL BEFORE SITE DISTURBANCE BEGINS, INCLUDING CLEARING AND GRUBBING, WITHIN THE TRIBUTARY AREAS OF THOSE FACILITIES.
- C3. ONLY LIMITED DISTURBANCE WILL BE PERMITTED TO PROVIDE ACCESS FOR CONSTRUCTING EROSION CONTROL FACILITIES AND FOR GRADING AND ACQUIRING BORROW TO CONSTRUCT THOSE FACILITIES.
- C4. EARTH DISTURBANCE ACTIVITIES, INCLUDING MOVEMENT OF CONSTRUCTION VEHICLES, SHALL NOT BE ALLOWED BELOW THE LOCATION OF THE PERIMETER EROSION CONTROL FACILITIES. THE LIMIT OF EARTH DISTURBANCE SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO THE START OF CONSTRUCTION, INCLUDING CLEARING AND GRUBBING OPERATIONS.
- C5. AT NO TIME WILL SEDIMENT OR SEDIMENT-LADEN RUNOFF BE ALLOWED TO LEAVE THE SITE AND ENTER COMMONWEALTH WATERS WITHOUT FIRST PASSING THROUGH A SEDIMENT FILTERING DEVICE. SHOULD SITE CONDITIONS, CONSTRUCTION PROCEDURES, ETC. ALTER THE EROSION CONTROL PLAN TO THE POINT WHERE SEDIMENT AND SEDIMENT-LADEN RUNOFF IS NOT BEING CONTROLLED AND FILTERED BEFORE IT LEAVES THE SITE, ADDITIONAL EROSION CONTROL MEASURES OR MODIFICATIONS TO THE INSTALLED MEASURES ARE TO BE IMPLEMENTED AT NO ADDITIONAL COST TO THE OWNER. ALL MODIFICATIONS TO THE APPROVED EROSION CONTROL PLAN SHALL BE REVIEWED AND APPROVED BY DEP DAM SAFETY AND/OR THE COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTING SAID MEASURES. SEE NOTE B12.
- C6. EROSION AND SEDIMENT CONTROL FACILITIES REQUIRED OR NECESSARY TO PROTECT AREAS FROM EROSION DURING THE STABILIZATION PERIOD SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA IS COMPLETED. UPON COMPLETION OF PERMANENT STABILIZATION AND UPON APPROVAL FROM THE CONSERVATION DISTRICT, ALL TEMPORARY OR UNUSABLE CONTROL MEASURES AND FACILITIES SHALL BE REMOVED, THE DISTURBED AREAS CREATED BY THIS ACTIVITY SHALL BE BROUGHT TO FINAL GRADE AND PERMANENT STABILIZATION SHALL BE IMMEDIATELY APPLIED.

FILL/DISPOSAL OF MATERIAL NOTES

- D1. ALL CLEAN FILL DEMOLITION MATERIAL INCLUDING CLEARING AND GRUBBING DEBRIS ACCUMULATION WILL BE PROPERLY DISPOSED OF IN A LAWFUL MANNER.
- D2. ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE PADEP'S SOLID WASTE MANAGEMENT REGULATIONS AT25 PA CODE SUBSECTION 260.1 ET SEQ., SUBSECTION 271.1 ET SEQ., AND SUBSECTION 287.1 ETSEQ. NO BUILDING MATERIAL OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- D3. OFFSITE BORROW AREAS, STOCKPILE AREAS AND/OR WASTE DISPOSAL AREAS SHALL HAVE AN APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN PRIOR TO THE START OF ANY EARTHMOVING ACTIVITIES IN THOSE OFFSITE AREAS. THE CONTRACTOR, IN HIS PROPOSAL, SHALL MAKE PROVISIONS FOR THESE OFFSITE AREAS AND SHALL BE RESPONSIBLE FOR ENSURING THAT EACH OFFSITE AREA HAS AN APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN BY THE COUNTY CONSERVATION DISTRICT IN WHICH THE OFFSITE AREA IS LOCATED. THE CONTRACTOR SHALL NOTIFY THE COUNTY CONSERVATION DISTRICT OF ALL OFFSITE SPOIL, STOCKPILE AND/OR BORROW AREAS THAT ARE ANTICIPATED TO BE USED.
- D4. IF FILL MATERIAL IS BROUGHT ONTO THE SITE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ENVIRONMENTAL DUE DILIGENCE AND DETERMINING IF SAID MATERIAL IS CLEAN FILL. CLEAN FILL IS DEFINED AS UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL. ENVIRONMENTAL DUE DILIGENCE SHALL INCLUDE INVESTIGATIVE TECHNIQUES, INCLUDING, BUT NOT LIMITED TO, VISUAL PROPERTY INSPECTIONS, ELECTRONIC DATA BASE SEARCHES, REVIEW OF PROPERTY OWNERSHIP, REVIEW OF PROPERTY USE HISTORY, SARBORN MAPS, ENVIRONMENTAL QUESTIONNAIRES, TRANSACTION SCREENS, ANALYTICAL TESTING, ENVIRONMENTAL ASSESSMENTS OR AUDITS. FORM FP-001 SHALL BE RETAINED BY THE PROPERTY OWNER FOR FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
- D5. SEDIMENT REMOVED FROM EROSION CONTROL FACILITIES SHALL BE DISPOSED OF IN LANDSCAPED OR LAWN AREAS LOCATED UPSLOPE OF SAID FACILITIES AND SHALL BE IMMEDIATELY STABILIZED. REMOVED SEDIMENTS SHALL NOT BE PLACED ON STEEP SLOPES, IN WETLANDS, OR DRAINAGE SWALES. REMOVED SEDIMENTS MAY ALSO BE PLACED IN AN APPROVED TOPSOIL STOCKPILE OR DISPOSED OF IN AN APPROVED OFFSITE SPOIL AREA.
- D6. THE CONTRACTOR AND PERMITTEE MUST ATTEMPT, WHENEVER POSSIBLE, TO RECYCLE ALL WASTE GENERATED ONSITE DURING THIS PROJECT. ALL WASTE MATERIAL NOT RECYCLED, MUST BE DISPOSED OF AT AN APPROVED WASTE SITE.
- D7. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL AND ORGANIC MATERIAL, INCLUDING TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
- D8. FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS. FROZEN MATERIAL OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.

TEMPORARY STABILIZATION NOTES

- E1. WHERE IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA IMMEDIATELY AFTER FINAL EARTHMOVING HAS BEEN COMPLETED OR WHERE CONSTRUCTION ACTIVITIES CEASE, TEMPORARY STABILIZATION MEASURES SHALL BE IMPLEMENTED WITHIN FOUR DAYS FROM CESSATION OF EARTHMOVING ACTIVITIES.
- E2. TEMPORARY STABILIZATION, AS REFERRED TO IN THIS NARRATIVE, INVOLVES THE STABILIZATION AND PROTECTION OF THE SOIL SURFACE TO AN EXTENT THAT WILL PREVENT EROSION AND ELIMINATE OFFSITE SEDIMENTATION. TYPICAL TEMPORARY STABILIZATION IS OBTAINED BY ESTABLISHING A VEGETATIVE COVER ACROSS THE DISTURBED AREA. ESTABLISH TEMPORARY VEGETATIVE COVER IN ACCORDANCE WITH THE FOLLOWING:
- A. PREPARE THE SOIL SURFACE IN ACCORDANCE WITH PENNDOT PUB 408, SECTION 804. APPLY SOIL SUPPLEMENTS AS RECOMMENDED BY SOIL TEST RESULTS. IN THE ABSENCE OF SOIL TEST RESULTS, APPLY AGRICULTURAL GRADE LIMESTONE AT A RATE OF ONE (1) TON/ACRE AND APPLY 10-20-20 COMMERCIAL FERTILIZER AT A RATE OF 140 POUNDS PER 1,000 SQUARE YARDS.
- B. SOW ANNUAL RYE GRASS (PENNDOT FORMULA E WITH A MINIMUM PURITY OF 98% AND A MINIMUM GERMINATION OF 90%) AT THE RATE OF 48.4 POUNDS PER ACRE (TEN POUNDS PER 1,000 SQ. YARDS) OR WINTER WHEAT AT THE RATE OF 180 POUNDS PER ACRE (37 POUNDS PER 1,000 SQ. YARDS) BY THE HELICOPTER, HYDRAULIC PLACEMENT, BROADCASTING, DRILLING, OR HAND SEEDING METHODS. COVER GRASS SEED WITH 1/4" OF SOIL USING SUITABLE EQUIPMENT FOR THAT PURPOSE.
- C. IMMEDIATELY AFTER SEEDING, PROVIDE AN ANCHORED STRAW MULCH SPREAD UNIFORMLY IN A CONTINUOUS BLANKET AT A RATE OF 1,240 POUNDS PER 1,000 SQUARE YARDS (3 TONS PER ACRE). REFER TO ITEM F.3 OF THIS NARRATIVE FOR MULCH PLACEMENT AND ANCHORING REQUIREMENTS.
- D. SPREAD SEED BETWEEN MARCH 15 AND OCTOBER 15.
- E3. IF TEMPORARY STABILIZATION ACTIVITIES FALL OUTSIDE OF THE ALLOWABLE SEEDING DATES, AN ANCHORED MULCH OR EROSION CONTROL MATTING IS TO BE PLACED WITHOUT SEEDING. APPLY TEMPORARY OR PERMANENT SEED MIXTURES ONCE WITHIN THE ALLOWABLE SEEDING DATES.

PERMANENT STABILIZATION NOTES

- F1. ALL AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE AND THOSE DISTURBED AREAS THAT WILL NOT BE WORKED WITHIN ONE YEARS TIME, SHALL HAVE PERMANENT STABILIZATION MEASURES APPLIED WITHIN FOUR DAYS OF CESSATION OF EARTHMOVING ACTIVITIES. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED.
- F2. PERMANENT STABILIZATION OF VEGETATED AREAS, AS REFERRED TO IN THIS NARRATIVE, INVOLVES THE STABILIZATION AND PROTECTION OF THE SOIL SURFACE TO AN EXTENT THAT WILL PREVENT EROSION AND ELIMINATE OFFSITE SEDIMENTATION. TYPICAL PERMANENT STABILIZATION IS OBTAINED BY ESTABLISHING A VEGETATIVE COVER ACROSS THE DISTURBED AREA. ESTABLISH PERMANENT VEGETATIVE COVER IN ACCORDANCE WITH THE FOLLOWING:
- A. AREAS TO RECEIVE PERMANENT STABILIZATION SHALL HAVE THE SUBGRADE SURFACE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES (6 TO 12 INCHES ON COMPACTED SOILS) PRIOR TO PLACEMENT OF TOPSOIL.
- B. PREPARE THE SOIL SURFACE AND SPREAD TOPSOIL (SIX-INCH MINIMUM DEPTH) IN ACCORDANCE WITH PENNDOT PUB 408, SECTION 804. APPLY SOIL SUPPLEMENTS AS RECOMMENDED BY SOIL TEST RESULTS. IN THE ABSENCE OF SOIL TEST RESULTS, APPLY AGRICULTURAL GRADE LIMESTONE AT A RATE OF SIX (6) TONS/ACRE AND APPLY 10-20-20 COMMERCIAL FERTILIZER AT A RATE OF 1,000 POUNDS PER ACRE.
- C. SOW THE PERMANENT SEED MIXTURE AT THE RATE INDICATED BELOW BY THE HELICOPTER, HYDRAULIC PLACEMENT, BROADCASTING, DRILLING, OR HAND SEEDING METHODS. COVER SEED WITH 1/4" OF SOIL USING SUITABLE EQUIPMENT FOR THAT PURPOSE. SEED MIXTURE SHALL HAVE A MINIMUM PURITY OF 98% AND A MINIMUM GERMINATION OF 85%.
- D. SPREAD SEED FROM MARCH 15 TO JUNE 1 AND FROM AUGUST 1 TO OCTOBER 15.
- F3. IMMEDIATELY AFTER SEEDING, PROVIDE AN ANCHORED STRAW MULCH SPREAD UNIFORMLY IN A CONTINUOUS BLANKET AT A RATE OF 1,240 POUNDS PER 1,000 SQUARE YARDS (3 TONS PER ACRE).
- A. MULCH MAY BE SPREAD BY HAND OR WITH AN ACCEPTABLE MECHANICAL BLOWER. MACHINES WHICH CUT MULCH INTO SHORT PIECES WILL NOT BE PERMITTED.
- B. MULCH SHALL BE ANCHORED BY USE OF CRIMPING, NETTING, OR A NONASPHALTIC EMULSION MULCH BINDER IMMEDIATELY FOLLOWING MULCH SPREADING. IF A NONASPHALTIC EMULSION MULCH BINDER IS USED, THE NUMBER OF PASSES OVER THE MULCH AS NEEDED TO SECURE IT FIRMLY SHALL NOT EXCEED THREE PASSES WITH MAXIMUM APPLIED BINDER NOT EXCEEDING TEN GALLONS PER 1,000 SQUARE FEET.
- F4. PERMANENT STABILIZATION OF LAWN AREAS IS CONSIDERED TO BE A UNIFORM EROSION RESISTANT PERENNIAL VEGETATION ESTABLISHED TO THE POINT WHERE THE SURFACE SOIL IS CAPABLE OF RESISTING EROSION DURING RUNOFF EVENTS AND SUBSURFACE CHARACTERISTICS ARE SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS. THE STANDARD FOR THIS VEGETATIVE COVER WILL BE A UNIFORM COVERAGE OR DENSITY OF 70% ACROSS THE ENTIRE DISTURBED AREA.
- PROPOSED IMPERVIOUS AREAS WILL BE CONSIDERED PERMANENTLY STABILIZED ONCE THE IMPERVIOUS SURFACE (I.E., GRAVEL FOR DRIVEWAYS, CONCRETE SURFACES) HAS BEEN PLACED.
- F5. SEEDED AREAS SHALL BE WATERED WITHIN TWO DAYS AFTER SEEDING AND MULCHING OPERATION ARE COMPLETED AND SUBSEQUENTLY DURING THE ESTABLISHMENT PERIOD. SEEDED AREAS ON WHICH GROWTH HAS STARTED SHALL BE WATERED TO A MINIMUM DEPTH OF THREE (3) INCHES TO ASSURE CONTINUED GROWTH. WATERING SHALL BE DONE IN A MANNER THAT WILL PROVIDE UNIFORM COVERAGE THAT WILL NOT CAUSE EROSION DUE TO APPLICATION OF EXCESS QUANTITIES, AND WILL NOT DAMAGE FINISHED SURFACES BY THE WATERING EQUIPMENT.
- F6. SEED MIXTURES SHALL BE AS FOLLOWS:

SEED MIXTURE 1: STRUCTURAL COMPONENTS OF THE DAM AND/OR AREAS TO BE MOWED (ALL EMBANKMENT AREAS AND AUXILIARY SPILLWAY DISCHARGE CHANNEL)

SPECIES IN MIX	RATE OF APPLICATION (LBS/AC)
HARD FESCUE MIXTURE, PLUS	63
CREeping RED FESCUE, PLUS	45
ANNUAL RYEGRASS	18
TOTAL APPLICATION RATE OF 126 LBS/AC (26 LBS PER 1,000 SQ YD)	

SEED MIXTURE 2: AREAS NOT CONNECTED TO THE DAM WHICH ARE NOT TO BE MOWED (SOIL PILES, RESTORATION OF AREAS USED FOR EROSION CONTROL)

SPECIES IN MIX	RATE OF APPLICATION (LBS/AC)
INDIANGRASS, PLUS	5
BIG BLUESTEM, PLUS	5
SWITCHGRASS, PLUS	3
VIRGINIA WILD RYE, PLUS	2
AUTUMN BENTGRASS	1
TOTAL APPLICATION RATE OF 16 LBS/AC (3 LBS PER 1,000 SQ YD) (ERNST SEED MIX ERNMx-177)	

CUBIC YARDS OF TOPSOIL REQUIRED FOR APPLICATION TO VARIOUS DEPTHS		
DEPTH (IN)	PER 1,000 SQUARE FEET	PER ACRE
1	3.1	134
2	6.2	268
3	9.3	403
4	12.4	537
5	15.5	672
6	18.6	806
7	21.7	940
8	24.8	1,074

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Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

EROSION AND SEDIMENT EROSION CONTROL PLAN NARRATIVE SHEET 1 OF 2
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JOB NO. 60466	SHEET NO. ES4
DATE FEB. 2020	DRAWING NO.

EROSION AND SEDIMENT POLLUTION CONTROL PLAN NARRATIVE - CONTINUED

STAGING OF EARTHMOVING ACTIVITIES

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

ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE. DEVIATIONS FROM THIS SEQUENCE MUST BE APPROVED IN WRITING FROM DEP DAM SAFETY AND/OR THE COUNTY CONSERVATION DISTRICT PRIOR TO IMPLEMENTATION. UNLESS STATED OTHERWISE, EACH CONSTRUCTION STAGE SHALL BE COMPLETED AND ALL DISTURBED AREAS STABILIZED BEFORE ANY FOLLOWING STAGE IS INITIATED. DEMOLITION, CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL BE LIMITED ONLY TO THOSE AREAS DESCRIBED IN EACH STAGE. EARTH DISTURBANCE MAY NOT COMMENCE IN ANY STAGE OF THE PROJECT UNTIL ALL BMPs SPECIFIED FOR THAT STAGE ARE INSTALLED, STABILIZED AND FUNCTIONAL.

PRE-CONSTRUCTION ACTIVITIES

- AT LEAST SEVEN (7) DAYS BEFORE STARTING EARTHMOVING AND DEMOLITION ACTIVITIES (INCLUDING CLEARING AND GRUBBING), THE CONTRACTOR SHALL INVITE ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES, THE OWNER, DEP DAM SAFETY AND/OR THE COUNTY CONSERVATION DISTRICT, ALL APPROPRIATE MUNICIPAL OFFICIALS AND THE EROSION CONTROL PLAN PREPARER TO AN ONSITE PRE-CONSTRUCTION MEETING.
- AT LEAST THREE (3) DAYS PRIOR TO STARTING EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, ALL CONTRACTORS INVOLVED IN SAID ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM, INC. AT 1-800-242-1776 FOR BURIED UTILITIES LOCATION. THE CONTRACTOR SHALL COORDINATE HIS WORK ACTIVITIES WITH THE UTILITY COMPANIES AND THE OWNER.
- DEVELOP A TRAFFIC SAFETY PLAN TO PROTECT AND PREVENT THE TRAVELING PUBLIC FROM ENTERING THE WORK AREA. SAID PLAN MAY INCLUDE TEMPORARY BARRIERS, FENCING, SIGNAGE, OR OTHER TRAFFIC CONTROL. SAID PLAN SHALL BE APPROVED BY THE TOWNSHIP PRIOR TO THE START OF WORK.
- SCHEDULE CONSTRUCTION SO AS TO MINIMIZE THE EXTENT AND DURATION OF DISTURBED GROUND SURFACES. TO THE GREATEST EXTENT POSSIBLE, SCHEDULE WORK DURING DRY PERIODS OF THE YEAR. CRITICAL INSTREAM ACTIVITIES SHOULD BE SCHEDULED DURING LOW FLOW PERIODS AND WHEN NO RAIN IS PREDICTED IN THE FORECAST. REFER TO PROJECT GENERAL NOTE 8 ON SHEET G2.
- CLEARLY MARK AREAS WHICH ARE NOT TO BE DISTURBED WITH FLAGS, SIGNS, FENCING OR OTHER MARKINGS TO CLEARLY DELINEATE THE LIMIT OF DISTURBANCE.
- INSTALL PROTECTIVE FENCING AT ENVIRONMENTALLY SENSITIVE AREAS AND AROUND ALL TREES AND WETLANDS WHICH ARE TO BE PROTECTED. PROTECTIVE FENCING IS TO BE LOCATED AT THE DRIP LINE OF THE TREE UNLESS OTHERWISE DIRECTED.
- ESTABLISH SITE ACCESS AT THE TWO (2) PROPOSED PARKING AREAS AND AT THE EXISTING PARKING AREA AT THE RIGHT ABUTMENT OF THE DAM. REMOVE THE EXISTING SWING GATE, FENCING AND GUIDERAIL AS SHOWN ON THE PLANS.
- DEWATER THE REMAINING RESERVOIR POOL. DEWATERING MAY BE ACHIEVED BY USE OF THE EXISTING 24" AND/OR 16" LOW LEVEL DEWATERING PIPES LOCATED UPSTREAM OF THE VALVE HOUSE. THESE PIPES ARE CURRENTLY SILTED SHUT AND WOULD REQUIRE CLEANING PRIOR TO USE.
- SOIL/SEDIMENT THROUGHOUT THE RESERVOIR MAY BE SATURATED AND UNCONSOLIDATED. IMPLEMENT DEWATERING MEASURES AS NEEDED TO FACILITATE CONSTRUCTION OF THE PERMANENT WORKS.

STAGE 1: LOWERING OF PRINCIPAL SPILLWAY AND RIGHT EMBANKMENT

- EARTH DISTURBANCE ASSOCIATED WITH THE STAGE 1 ACTIVITIES SHALL BE LIMITED TO ONLY THOSE AREAS ABSOLUTELY NEEDED TO PERFORM THE STAGE 1 WORK ACTIVITIES.
- INSTALL ROCK CONSTRUCTION ENTRANCES AT THE NORTHERN AND SOUTHERN PARKING LOT DRIVEWAY LOCATIONS AND AT THE EXISTING PARKING AREA AT THE RIGHT ABUTMENT OF MILLTOWN DAM.
- INSTALL STAGE 1 COMPOST FILTER SOCK PRIOR TO START OF EARTH DISTURBANCE.
- ESTABLISH THE CONTRACTOR STAGING AND PARKING AREA IN THE AREA OF THE PROPOSED SOUTHERN PARKING LOT. OFFSITE FILL MAY BE USED TO ESTABLISH ACCESS POINTS AND THE STAGING AREA. INSTALL CULVERT EXTENSION BENEATH THE SOUTHERN PARKING LOT AND INSTALL INLET FILTER BAG WITHIN THE PROPOSED INLET(S). OFFSITE MATERIAL USED AS PERMANENT FILL SHALL COMPLY AND BE PLACED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- AFTER RESERVOIR SUFFICIENTLY DEWATERS, ESTABLISH HAUL ROUTE #1 TO ACCESS THE RIGHT EMBANKMENT OF MILLTOWN DAM. INSTALL WATER BARS ALONG HAUL ROUTES TO ENSURE ALL RUNOFF FROM THE HAUL ROUTE(S) IS DIRECTED INTO A PERIMETER COMPOST FILTER SOCK.
- MAINTAIN CLEAN WATER DIVERSION MEASURES IMPLEMENTED UNDER PRE-CONSTRUCTION ACTIVITY STEP 8, OR IMPLEMENT LOCALIZED DIVERSION MEASURES TO BYPASS STREAM FLOWS AROUND THE PRINCIPAL SPILLWAY. LOWER THE CREST OF THE EXISTING PRINCIPAL SPILLWAY AND CONSTRUCT THE CONCRETE CAP TO ESTABLISH THE FINAL SPILLWAY CREST CONFIGURATION. REMOVE THE EXISTING CONCRETE END SILL AND INSTALL THE PERMANENT RIPRAP WITHIN THE EAST BRANCH OF CHESTER CREEK DOWNSTREAM OF THE PRINCIPAL SPILLWAY. MAINTAIN CLEAN WATER DIVERSION MEASURES FOR SEVEN DAYS (MINIMUM) FOLLOWING THE PLACEMENT OF THE CONCRETE CAP AT WHICH TIME THE DIVERSION MEASURES MAY BE REMOVED AND FLOW MAY BE DIRECTED OVER THE RECONSTRUCTED PRINCIPAL SPILLWAY.
- BEGIN LOWERING OF THE RIGHT EMBANKMENT, INCLUDING DEMOLITION OF THE CONCRETE CORE WALL, VALVE HOUSE AND VALVE VAULT. REFER TO SHEET C13 FOR VALVE HOUSE DEMOLITION ACTIVITIES. EXCAVATED EARTH MATERIAL SHALL BE USED AS PERMANENT FILL TO CONSTRUCT THE WALKING PATH AND PARKING AREA ALONG THE EAST SIDE OF RESERVOIR ROAD. TO THE GREATEST EXTENT POSSIBLE, HAULING EQUIPMENT SHALL NOT USE RESERVOIR ROAD.
- BRING THE RIGHT EMBANKMENT TO ROUGH GRADE AND PERFORM PERMANENT IMPROVEMENTS TO THE RIGHT SPILLWAY TRAINING WALL. ADJUST THE COMPOST FILTER SOCK AS NEEDED AT THE DOWNSTREAM END OF THE RIGHT SPILLWAY TRAINING WALL TO PROVIDE CONTINUOUS AND EFFECTIVE FILTERING OF SEDIMENT-LADEN RUNOFF FROM THE RIGHT EMBANKMENT WORK AREA.
- INSTALL THE ARTICULATED CONCRETE BLOCK (ACB) SLOPE PROTECTION SYSTEM AND ADJACENT RIPRAP.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE STAGE 1 WORK ACTIVITIES.

STAGE 2A: CHANNEL RELOCATION (STATION 11+50 TO 23+00)

- STAGE 2A ACTIVITIES MAY NOT OCCUR UNTIL THE PRE-CONSTRUCTION ACTIVITIES ARE COMPLETED AND FLOW IS DIVERTED OVER THE LOWERED PRINCIPAL SPILLWAY (STAGE 1, STEP 6) AND ALL EROSION CONTROL FACILITIES ARE INSTALLED, STABILIZED AND FUNCTIONAL.
- ESTABLISH HAUL ROUTE #2 AND TEMPORARY STREAM CROSSING #1.
- INSTALL STAGE 2 COMPOST FILTER SOCK PRIOR TO START OF EARTH DISTURBANCE. INSTALL ROCK FILTER AT STREAM CHANNEL REACH 1 AT STATION 21+00.
- EXCAVATE AND INSTALL THE STREAM CHANNEL REACH 1, ASSOCIATED STREAM FEATURES, AND STABILIZE THE CHANNEL AND OVER-BANK AREAS FROM STATION 11+50 TO 21+00, WORKING FROM DOWNSTREAM TO UPSTREAM. MAINTAIN FLOW IN EXISTING STREAM CHANNEL AT STATION 11+00. EXCAVATED MATERIAL MAY BE USED TO FORM PERMANENT BERM FOR OFFLINE POND.
- PROVIDE TEMPORARY CLEAN WATER DIVERSION MEASURES TO ALLOW CONSTRUCTION OF THE PROPOSED STREAM CHANNEL FROM STATION 21+00 TO 23+00 TO MAKE CONNECTION TO THE PRINCIPAL SPILLWAY. THIS CLEAN WATER DIVERSION SHALL BE MAINTAINED THROUGHOUT THE REMAINDER OF STAGE 2A ACTIVITIES AND THROUGHOUT THE STAGE 2B ACTIVITIES.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE STAGE 2A WORK ACTIVITIES. DO NOT DIRECT STREAM FLOWS INTO STREAM CHANNEL REACH 1 STATION 11+50 TO 23+00 UNTIL THE STAGE 2B ACTIVITIES ARE COMPLETE.
- AREAS WHERE WORK CEASES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION APPLIED PER NOTES E1 AND F1 ON SHEET ES3.

STAGE 2B: CHANNEL RECONSTRUCTION (STATION 3+76 TO 11+50)

- STAGE 2B ACTIVITIES MAY NOT OCCUR UNTIL THE STAGE 2A ACTIVITIES ARE COMPLETE, ALL EROSION CONTROL FACILITIES ARE INSTALLED, STABILIZED AND FUNCTIONAL.
- INSTALL HAUL ROUTE #3 (TWO LOCATIONS) TO GAIN ACCESS TO THE STAGE 2B WORK AREAS.
- UTILIZE DAILY PUMP-AROUND DIVERSION MEASURES TO COMPLETE THE STAGE 2B ACTIVITIES. CONTRACTOR SHALL DETERMINE NUMBER AND LOCATION OF PUMP-AROUND SETUPS (TWO SETUPS SHOWN HEREIN - STATION 7+50 TO STATION 11+00 AND STATION 2+00 TO STATION 7+50). EACH SETUP SHALL INCLUDE AN UPSTREAM COFFERDAM, CLEAN WATER DIVERSION MEASURES, AND A DOWNSTREAM ROCK FILTER.
- UTILIZE DAILY PUMP-AROUND DIVERSION MEASURES TO CREATE A DRY WORK ENVIRONMENT FOR THE CONSTRUCT THE BOULDER WALL AT STREAM CHANNEL REACH 1 STATION 2+00 TO STATION 3+00.
- AFTER ALL CONSTRUCTED PORTIONS OF STREAM CHANNEL REACH 1 ARE CONSTRUCTED, STABILIZED AND FUNCTIONAL, REMOVE HAUL ROAD 3 AT STREAM CHANNEL REACH 1 STATION 11+50 AND DIRECT STREAM FLOWS INTO STREAM CHANNEL REACH 1.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE STAGE 2B ACTIVITIES AS SOON AS FINAL GRADES ARE ESTABLISHED.

STAGE 3: OPEN POND AND REMAINING POND GRADING ACTIVITIES (REFER TO GRADING SHEET 2 AND 3 FOR A PLAN VIEW OF THE STAGE 4 ACTIVITIES)

- STAGE 3 ACTIVITIES MAY NOT OCCUR UNTIL THE STAGE 2A AND 2B ACTIVITIES ARE COMPLETE AND ALL FLOWS ARE DIVERTED INTO STREAM CHANNEL REACH 1. CONTRACTOR MAY ELECT TO CONSTRUCT STAGE 3 AND STAGE 4 AT THE SAME TIME.
- INSTALL STAGE 3 COMPOST FILTER SOCK.
- INSTALL THE POND OUTLET CHANNEL AND OUTLET WEIR. INSTALL ROCK FILTER WITHIN POND OUTLET CHANNEL AT STATION 9+75. IMMEDIATELY STABILIZE ALL DISTURBED AREAS.
- INSTALL THE OPEN POND FEATURE. WATER WHICH COLLECTS WITHIN THE EXCAVATION SHALL BE PUMPED TO A PUMPED WATER FILTER BAG. DO NOT MAKE UPSTREAM CONNECTION TO CHANNEL REACH NO. 1 UNTIL ALL AREAS ARE BROUGHT TO GRADE AND PERMANENTLY STABILIZED.
- INSTALL UPSTREAM INLET WEIR AND POND INLET CHANNEL BETWEEN POND ALIGNMENT STATION 0+50 AND 1+50
- INSTALL FISHING PIERS, PEDESTRIAN BRIDGES AND WALKING PATHS AS SHOWN ON THE LANDSCAPE PLANS.
- BRING ALL AREAS TO FINAL GRADE AND IMMEDIATELY STABILIZE.
- REMOVE THE TEMPORARY DIVERSION AT STREAM CHANNEL REACH 1 STATION 11+00 TO ACTIVATE THE OPEN WATER POND.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS.

STAGE 4: RESERVOIR ROAD WALKWAYS AND NORTHERN PARKING AREA

- STAGE 4 ACTIVITIES MAY NOT OCCUR UNTIL ALL PREVIOUS STAGE ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- BRING ALL HARDSCAPE AREAS TO SUBGRADE ELEVATION AND IMMEDIATELY INSTALL AGGREGATE SUBBASE. BRING ALL REMAINING LAWN / LANDSCAPE AREAS TO FINAL GRADE AND IMMEDIATELY APPLY PERMANENT STABILIZATION.
- PAVE ALL PARKING AREAS, WALKWAYS, ETC. AS CALLED FOR ON THE LANDSCAPE DRAWINGS.
- IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE STAGE 4 ACTIVITIES.

STAGE 5: CLEANUP ACTIVITIES

- STAGE 5 ACTIVITIES MAY NOT OCCUR UNTIL ALL PREVIOUS STAGE ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- REMOVE ALL SEDIMENT DEPOSITS COLLECTED BEHIND THE CONTROL FILTERING DEVICES (I.E., COMPOST FILTER SOCK, PUMP WATER FILTER BAGS, ROCK FILTER, ETC.). USE THIS MATERIAL FOR ONSITE GRADING AND STABILIZE WITH SEED AND AN EROSION CONTROL BLANKET OR HAUL THIS MATERIAL OFFSITE TO A SPOIL AREA WITH AN APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN. IMMEDIATELY PROVIDE PERMANENT STABILIZATION TO ALL DISTURBED AREAS CREATED BY THIS ACTIVITY.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE CONTRACTOR SHALL CONTACT THE COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL OF THE TEMPORARY EROSION CONTROL DEVICES.
- UPON PERMANENT STABILIZATION OF ALL CONTRIBUTING UPSTREAM AREAS (AS DETERMINED BY THE CONSERVATION DISTRICT), REMOVE ALL TEMPORARY EROSION CONTROL FACILITIES AND REMOVE ALL TEMPORARY FENCING AND OTHER TRAFFIC/PEDESTRIAN CONTROL DEVICES. IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THIS ACTIVITY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVALS ARE TO BE DONE DURING THE GERMINATING SEASON.
- ONCE ALL CONSTRUCTION TRAFFIC ENTERING AND LEAVING THE SITE HAS CEASED, REMOVE ALL REMAINING STAGING/STOCKPILE AREAS AND ROCK CONSTRUCTION ENTRANCE(S) AND IMMEDIATELY APPLY PERMANENT STABILIZATION TO ALL DISTURBED AREAS CREATED BY THIS ACTIVITY.
- UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE CONTRACTOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

MAINTENANCE/CONTRACTOR'S RESPONSIBILITIES

- THE CONTRACTOR SHALL ASSURE THAT THE EROSION AND SEDIMENT POLLUTION CONTROL PLAN IS PROPERLY AND COMPLETELY IMPLEMENTED IN ACCORDANCE WITH THE APPROVED EROSION CONTROL PLAN DRAWINGS AND THE TECHNICAL SPECIFICATIONS. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS.
- MAINTENANCE INSPECTIONS SHALL BE PERFORMED AND DOCUMENTED, ON ALL CONTROLS, AFTER EACH RUNOFF EVENT AND AT A MINIMUM ON A WEEKLY BASIS, USING AN INSPECTION LOG SHEET. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING, OR RENETTING, MUST BE PERFORMED IMMEDIATELY. CONTRACTOR SHALL DOCUMENT IN WRITING ALL INSPECTIONS AND REMEDIAL ACTIONS ASSOCIATED WITH THE EROSION CONTROL FACILITIES. CONTRACTOR SHALL BE PREPARED TO PROVIDE THE INSPECTION LOG SHEETS TO THE OWNER AND/OR THE COUNTY CONSERVATION DISTRICT UPON REQUEST.
- ONCE AN EROSION CONTROL FACILITY BECOMES CLOGGED WITH SEDIMENTS AND CAN NO LONGER PERFORM AS INTENDED, SAID FACILITY SHALL BE CLEANED OF SEDIMENTS OR REPLACED WITH A NEW FACILITY. SEDIMENT COLLECTED FROM THE EROSION CONTROL FACILITIES SHALL BE PLACED UPSTREAM OF THOSE CONTROLS AND IMMEDIATELY STABILIZED WITH SEED AND AN ANCHORED MULCH OR HAULED OFFSITE TO A DISPOSAL AREA WITH AN APPROVED EROSION AND SEDIMENT POLLUTION CONTROL PLAN. SEDIMENT SHALL BE DEPOSITED OUTSIDE OF STEEP SLOPES, WETLANDS, OR DRAINAGE SWALES.
- REFER TO EACH EROSION CONTROL FACILITY DETAIL FOR ADDITIONAL INSTALLATION AND MAINTENANCE REQUIREMENTS ASSOCIATED WITH SAID FACILITY.
- ALL PERMANENTLY SEEDED AREAS THAT BECOME ERODED SHALL IMMEDIATELY HAVE THE TOPSOIL REPLACED, THE EROSION CONTROL MATTING REPLACED (IF APPLICABLE), THE GRASS RESEWN AND MULCH REAPPLIED AND ANCHORED. IF EROSION PERSISTS, THE AREA SHALL BE EITHER LINED WITH SOD OR STABILIZED WITH ROCK RIPRAP AT THE DISCRETION OF THE ENGINEER/OWNER.
- MAINTENANCE OF ALL PERMANENT BEST MANAGEMENT PRACTICES BECOMES THE RESPONSIBILITY OF THE OWNER IN PERPETUITY UPON COMPLETION OF CONSTRUCTION AND ACCEPTANCE BY OWNER, SUBJECT TO THE TERMS OF THE WARRANTY PERIOD SPECIFIED IN THE CONTRACT DOCUMENTS.
- FINES AND RELATED COSTS RESULTING FROM THE CONTRACTOR'S FAILURE TO PROVIDE ADEQUATE PROTECTION AGAINST SOIL EROSION AND FOR ANY VIOLATIONS OF THE CLEAN STREAMS LAW AND THE RULES AND REGULATIONS PROMULGATED THEREUNDER SHALL BE BORNE BY THE CONTRACTOR. FAILURE TO CORRECTLY INSTALL E&S BMP'S, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMP'S 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.
- THE INTENT OF THIS PLAN/NARRATIVE IS TO INDICATE GENERAL MEANS OF COMPLIANCE WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF CHAPTER 102, THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (AS AUTHORIZED UNDER THE CLEAN STREAMS LAW). IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT THESE METHODS, PLUS ADDITIONAL METHODS, AS MAY BE NECESSARY BECAUSE OF CONDITIONS CREATED BY LOCALIZED SITE CONDITIONS AND/OR CONSTRUCTION PROCEDURES IN ORDER TO ASSURE COMPLIANCE WITH APPLICABLE LAW. IT WILL FURTHER BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL FACILITIES SO THAT THEY PERFORM AS REQUIRED BY APPLICABLE LAW.

EROSION CONTROL PLAN PREPARER INFORMATION:

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GANNETT FLEMING, INC.
ADDRESS: _____ P.O. BOX 67100
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QUALIFICATIONS: _____ 10+ YEARS OF EXPERIENCE IN PREPARING EROSION CONTROL PLANS

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NO.	DESCRIPTION	DATE	BY	
REVISIONS				

DESIGNED	CADD	SCALE
WCH	TDT	AS SHOWN
DRAWN	CHECKED	APPROVED
TDT	ECN	ECN



Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

EROSION AND SEDIMENT EROSION CONTROL PLAN NARRATIVE SHEET 2 OF 2
--

JOB NO. 60466	SHEET NO. ES5
DATE FEB. 2020	DRAWING NO.

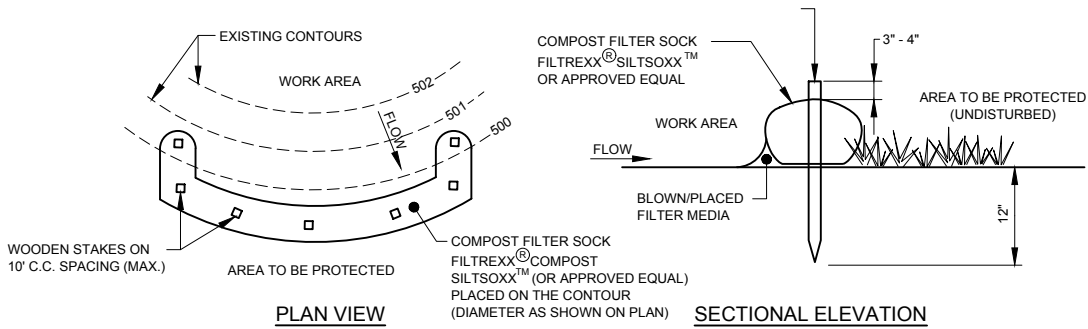
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SOILS LEGEND

SOIL SERIES	MAP SYMBOL	DESCRIPTION	ENGINEERING CLASSIFICATION		SEASONAL HIGH WATER TABLE	ORGANIC MATTER (%)	PLASTICITY INDEX	SOIL REACTION (Ph)	LIQUID LIMIT (%)	AVAILABLE WATER CAPACITY (IN/IN)	SUITABILITY AS A SOURCE OF...			SOIL FEATURES AFFECTING ENGINEERING PRACTICES FOR...				POTENTIAL FROST ACTION	HYDROLOGIC SOIL GROUP	SOIL EROSION FACTOR (Kw)
			UNIFIED	AASHTO							TOPSOIL	SAND & GRAVEL	ROAD FILL	ROADWAYS	SHALLOW EXCAVATIONS	LAWN AREAS	STEEL CORROSION			
HATBORO	Ha	HATBORO SILT LOAM	CL-ML	A-4	8	3.00	7.0	6.0	25.6	0.19	POOR	POOR	POOR	VERY LIMITED	VERY LIMITED	VERY LIMITED	HIGH	HIGH	B/D	.37
	Uro	URBAN LAND-HATBORO COMPLEX	GP	A-1	>200	N/A	N/A	N/A	7.0	0.00	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	N/A	NONE	N/A	N/A
GLADSTONE	UrbB	URBAN LAND-GLADSTONE COMPLEX, 0-8 PERCENT SLOPES	GP	A-1	>200	N/A	N/A	N/A	N/A	0.00	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	N/A	NONE	N/A	N/A
	UrbD	URBAN LAND-GLADSTONE COMPLEX, 8-25 PERCENT SLOPES	GP	A-1	>200	N/A	N/A	N/A	N/A	0.00	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	N/A	NONE	N/A	N/A
UDORTHENTS	UugB	URBAN LAND-UDORTHENTS, SCHIST AND GNEISS COMPLEX, 0 TO 8 PERCENT SLOPES	GP	A-1	>200	N/A	N/A	N/A	N/A	0.00	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	NOT RATED	N/A	¹ NONE	N/A	N/A

SOURCE: NRCS WEB SOIL SURVEY



COMPOST FILTER SOCK DETAIL

NOT TO SCALE

COMPOST FILTER SOCK GENERAL NOTES:

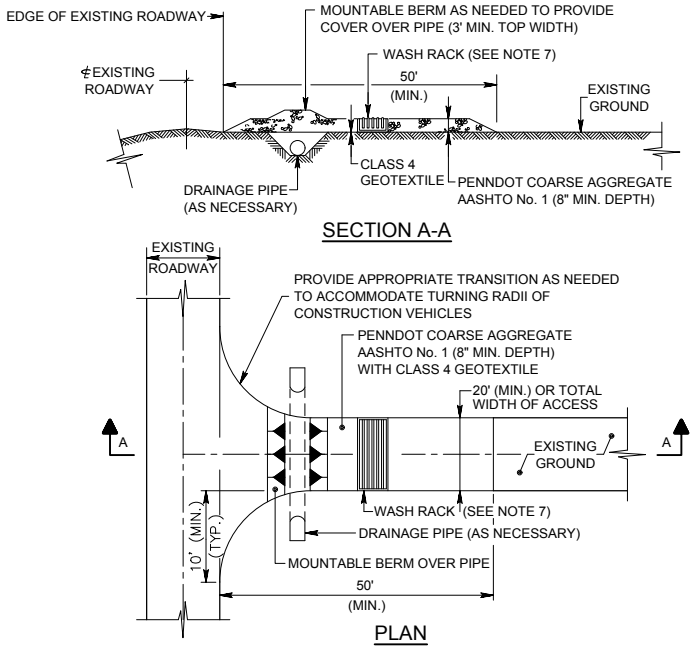
- FILTER SOCK MUST BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED ON LEVEL ALIGNMENTS. BOTH ENDS OF EACH FILTER SOCK SECTION MUST BE EXTENDED AT LEAST EIGHT FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT. STAKES MAY BE INSTALLED IMMEDIATELY DOWNSLOPE OF THE SOCK IF SO SPECIFIED BY THE MANUFACTURER.
- FILTER SOCK SHALL BE PLACED A MINIMUM OF EIGHT FEET FROM THE TOE OF FILL SLOPES. TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.
- FILTER SOCK IS NOT PERMITTED IN ANY AREA OF CONCENTRATED FLOWS SUCH AS DITCHES, SWALES OR CHANNELS.
- INSPECT FILTER SOCK AT LEAST ONCE A WEEK AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR REPLACED WITHIN 24 HOURS OF THE INSPECTION.
- BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER ONE YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- ACCUMULATED SEDIMENTS SHALL BE REMOVED AS REQUIRED TO KEEP THE FILTER SOCK FUNCTIONAL. IN ALL CASES REMOVE DEPOSITS WHERE ACCUMULATIONS REACH 1/2 THE ABOVE-GROUND HEIGHT OF THE FILTER SOCK.
- THE REMOVED SEDIMENT SHALL BE USED FOR ONSITE GRADING AND IMMEDIATELY STABILIZED WITH PERMANENT SEED AND AN ANCHORED MULCH OR HAULED OFFSITE TO A DISPOSAL AREA WITH AN APPROVED EROSION CONTROL PLAN.
- FILTER SOCK SECTIONS WHICH HAVE BEEN UNDERMINED OR OVERTOPPED SHALL BE IMMEDIATELY REPAIRED AND REINFORCED WITH A SECOND FILTER SOCK RUN.
- ADHERE TO MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FILTER SOCK DUE TO WEATHERING.
- AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, REMOVE ALL FILTER SOCK MATERIAL, STAKES AND UNSTABLE SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE AND PERMANENTLY STABILIZE. FILTER SOCK COMPOST MATERIAL MAY BE LEFT IN PLACE IF SO DIRECTED BY THE OWNER. IF COMPOST MATERIAL IS LEFT IN PLACE, REMOVE STAKES AND FILTER SOCK NETTING MATERIAL FROM THE SITE AND SPREAD COMPOST MATERIAL AS DIRECTED BY THE OWNER.

COMPOST FILTER SOCK SUMMARY TABLE

BARRIER NUMBER	APPROX. BARRIER LENGTH (FT)	BARRIER DIAMETER (IN)
1	281	24
2	375	12
3	245	12
4	440	12
5	118	12
6	220	12
7	83	12
8	158	18
9	218	12
10	153	12
11	74	12
12	394	12
13	680	12
14	277	12

TABLE 4.1					
COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS					
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI- FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI- FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS		12"	12"	12"	12"
	12"	18"	18"	18"	18"
	18"	24"	24"	24"	24"
		32"	32"	32"	32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING			HDPE BIAXIAL NET		
			CONTINUOUSLY WOUND		
			FUSION-WELDED JUNCTURES		
			3/4" X 3/4" MAX. APERTURE SIZE		
OUTER FILTRATION MESH			"COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)"		
			3/16" MAX. APERTURE SIZE		
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

TABLE 4.2 COMPOST STANDARDS	
ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
PH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/CM) MAXIMUM

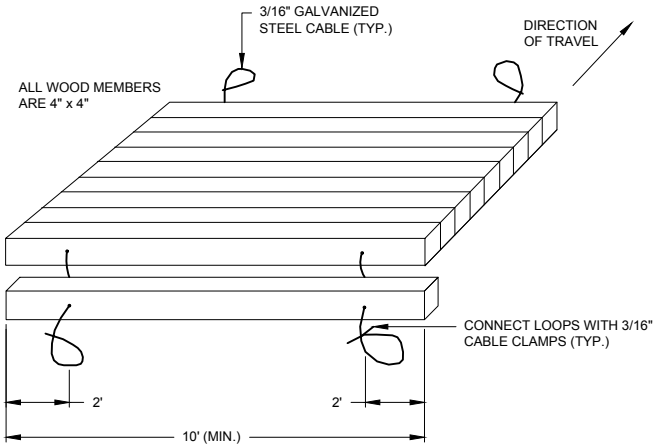


ROCK CONSTRUCTION ENTRANCE WITH WASH RACK

NOT TO SCALE

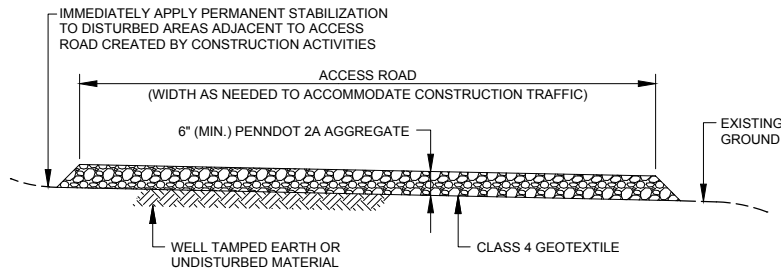
ROCK CONSTRUCTION ENTRANCE NOTES:

- ROCK CONSTRUCTION ENTRANCE(S) SHALL BE PLACED AT THE LOCATIONS SHOWN ON THE PLAN AND CONSTRUCTED TO THE MINIMUM DIMENSIONS AS SHOWN ON THE DETAIL.
- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE. AT LOCATIONS WHERE ROCK CONSTRUCTION ENTRANCES ARE LOCATED OVER EXISTING PAVEMENT, THE PAVEMENT SHALL BE REMOVED UNDER THE FOOTPRINT OF THE FACILITY PRIOR TO INSTALLING SAID CONSTRUCTION ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
- THE ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSION BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL WILL BE MAINTAINED ONSITE FOR THIS PURPOSE. PROVIDE MOUNTABLE BERM AS NEEDED TO PROVIDE ADEQUATE COVER OVER DRAINAGE PIPE.
- AT THE END OF EACH CONSTRUCTION DAY, ALL SEDIMENT DEPOSITED ON PUBLIC ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE. REMOVAL SHALL BE COMPLETED THROUGH THE USE OF MECHANICAL OR HAND TOOLS. WASHING OF THE ROADWAY WITH WATER OR SWEEPING THE DEPOSITS INTO ROADWAY DRAINAGE FACILITIES IS NOT PERMITTED.
- IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON THE PUBLIC ROADWAY, EXTEND THE LENGTH OF THE ROCK CONSTRUCTION ENTRANCE IN 50-FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASH RACK SHALL MATCH THE TOTAL WIDTH OF THE ENTRANCE AND SHALL BE AT LEAST 6-FEET IN LENGTH. WASH RACK SHALL BE CONSTRUCTED OF REINFORCED CONCRETE OR WELDED STEEL PIPE AND DESIGNED TO ACCOMMODATE THE ANTICIPATED TRAFFIC LOADING. WASH RACK SHALL COMPLY WITH STANDARD CONSTRUCTION DETAIL NO. 3-2 OF THE PENNSYLVANIA EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, MARCH 2012.
- STABILIZE ALL DISTURBED AREAS CREATED BY THE REPAIR / REMOVAL OF THE ROCK CONSTRUCTION ENTRANCE(S) WITH SEED AND MULCH, GRAVEL OR WITH PAVEMENT AS INDICATED ON THE DRAWINGS.



NOTE: A CLASS 4 GEOTEXTILE UNDERLAYMENT SHALL BE USED UNDER THE WOOD MAT.

WOOD MAT STABILIZATION OPTION



AGGREGATE STABILIZATION OPTION

TYPICAL ACCESS/HAUL ROAD STABILIZATION

NOT TO SCALE

ACCESS/HAUL ROAD NOTES:

- ALL ACCESS/HAUL ROADS SHALL BE STABILIZED WITH AGGREGATE, WOOD MATS, OR OTHER STABILIZATION MEASURE AS APPROVED BY THE OWNER. WOOD MATS SHALL BE USED AT ALL LOCATIONS WHERE CONSTRUCTION TRAFFIC ENCROACHES INTO WETLAND AREAS.
- CONTRACTOR SHALL PROVIDE A PLAN TO THE OWNER PRIOR TO THE START OF WORK SHOWING THE LOCATION OF ALL ACCESS/HAUL ROADS.
- INSPECT HAUL ROADS ON A DAILY BASIS. IMMEDIATELY REPAIR AREAS OF EROSION, RUTS, AND DEPRESSIONS. MAINTAIN SPECIFIED STONE THICKNESS BY ADDING AGGREGATE. REPAIR WOOD MATS AS NEEDED TO MAINTAIN A CONTINUOUS AND SOLID SURFACE CAPABLE OF SUPPORTING CONSTRUCTION LOADS.
- ALTERNATE ACCESS/HAUL ROAD STABILIZATION MEASURES SUCH AS WOOD MATS (SEE DETAIL THIS SHEET) OR STEEL PLATES WOULD BE CONSIDERED AN EQUIVALENT SUBSTITUTION TO GRAVEL STABILIZATION PENDING APPROVAL FROM THE TOWNSHIP. OTHER STABILIZATION MEASURES MAY REQUIRE APPROVAL FROM THE USACE.

NO.	DESCRIPTION	DATE	BY	
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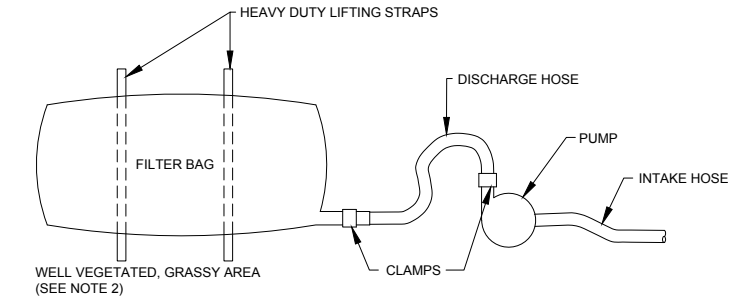
Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

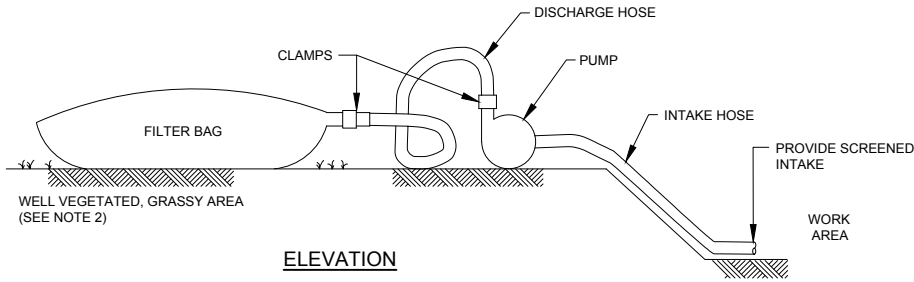
EROSION CONTROL PLAN
DETAILS
SHEET 1 OF 4

JOB NO.	SHEET NO.
60466	ES6
DATE	DRAWING NO.
FEB. 2020	

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PLAN VIEW



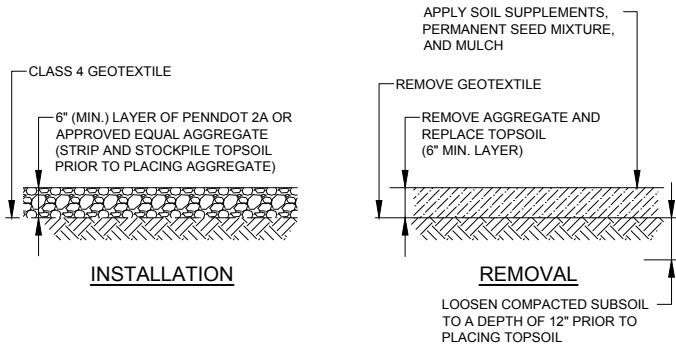
ELEVATION

PUMPED WATER FILTER BAG

NOT TO SCALE

PUMPED WATER FILTER BAG NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING OPERATIONS, INCLUDING THE SELECTION, SIZING, AND OPERATION OF THE FILTERING DEVICE. IF CLAY SOILS ARE PRESENT, THE ADDITION OF A FLOCCULANT MAY BE NECESSARY TO EFFECTIVELY TREAT THE PUMPED WATER AND PREVENT OFFSITE SEDIMENTATION. THE CONTRACTOR SHALL CONSIDER THE ONSITE SOILS AND INCLUDE FILTERING MEASURES IN HIS BASE BID THAT WILL EFFECTIVELY TREAT THE PUMPED WATER. IF A PUMPED WATER FILTER BAG IS UTILIZED, IMPLEMENT SAID DEVICE IN COMBINATION WITH A SUMP PIT AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE INFORMATION PROVIDED WITHIN THE CONTRACT DOCUMENTS.
2. CONTRACTOR SHALL VERIFY LOCATION OF FACILITY WITH ENGINEER PRIOR TO CONSTRUCTION OF SAID FACILITY. FACILITY SHALL BE PLACED AT A LOCATION WHERE THE FILTERED OUTFLOW WILL NOT INTERFERE WITH ONGOING CONSTRUCTION ACTIVITIES OR CAUSE FLOODING OR EROSION PROBLEMS. FILTER BAGS SHALL DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOMEMBRANE-LINED FLOW PATH SHALL BE PROVIDED TO CONVEY FLOW TO A WELL VEGETATED AREA OR NATURAL WATERWAY IN A MANNER THAT WILL NOT RESULT IN EROSION.
3. THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ONE HALF THE MAXIMUM RATE SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMPED INTAKES SHALL BE FLOATING AND SCREENED.
4. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME HALF FULL. A SUPPLY OF SPARE FILTER BAGS SHALL BE KEPT AVAILABLE ONSITE FOR REPLACEMENT OF THOSE BAGS WHICH HAVE BEEN USED OR WHICH HAVE FAILED.
5. SEDIMENT COLLECTED FROM THE DEVICE SHALL BE REMOVED AND USED FOR ONSITE GRADING AND IMMEDIATELY STABILIZED WITH SEED AND AN ANCHORED MULCH.
6. REMOVE FACILITY WHEN NO LONGER NEEDED. REMOVE ALL MATERIALS AND UNSTABLE SEDIMENT AND EITHER SALVAGE OR DISPOSE OF PROPERLY. IMMEDIATELY STABILIZE ALL DISTURBED AREAS CREATED BY THE INSTALLATION, USE, AND REMOVAL OF THIS FACILITY.
7. FILTER BAGS SHALL BE INSPECTED DAILY. IF A PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.
8. 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.
9. THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED SO AS TO PREVENT LEAKAGE FROM THIS CONNECTION POINT.
10. A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES MUST BE PROVIDED.
11. ALL PUMPING OF WATER FROM THE WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER VEGETATED AREAS.

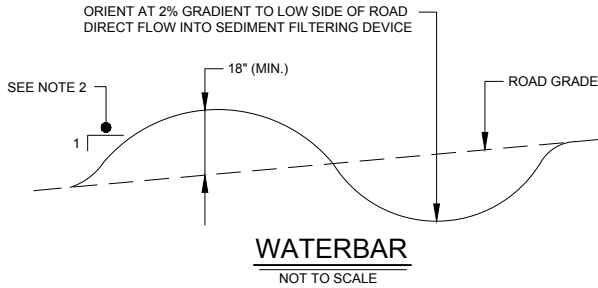


TYPICAL GRAVEL CONTRACTOR STAGING AREA

NOT TO SCALE

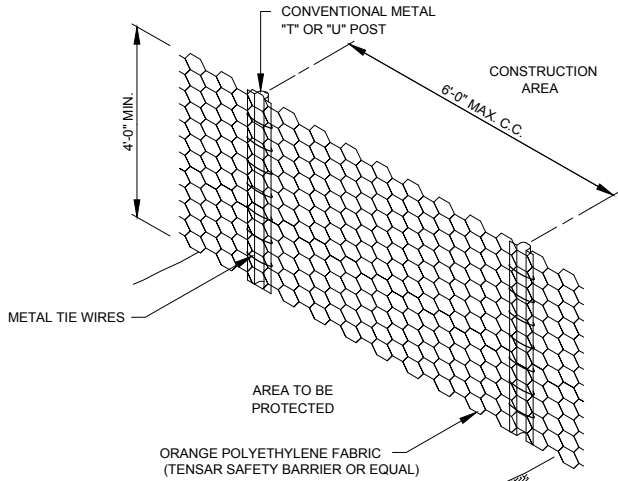
STAGING AREA NOTES:

1. ALL STAGING AREAS LOCATED ON PERVIOUS SURFACES SHALL BE STABILIZED WITH AGGREGATE.
2. INSTALL STAGING/STOCKPILE AREAS DURING DRY WEATHER CONDITIONS. GEOTEXTILE AND AGGREGATE PLACEMENT SHALL OCCUR THE SAME DAY THAT CLEARING, GRUBBING AND TOPSOIL STRIPPING OCCURS. DISTURBED AREAS SHALL NOT BE LEFT EXPOSED OVERNIGHT.
3. MAINTAIN THE STAGING AREA THROUGHOUT THE CONSTRUCTION PERIOD. ADD AGGREGATE AS NEEDED TO MAINTAIN THE SPECIFIED THICKNESS OF THE GRAVEL SURFACE.
4. STAGING AREAS MAY BE USED FOR STOCKPILING OF SOIL, AGGREGATE, CONSTRUCTION MATERIAL, EQUIPMENT, ETC. SOIL AND/OR TOPSOIL STOCKPILES SHALL BE PROTECTED WITH A SEDIMENT BARRIER.
5. AT THE COMPLETION OF THE PROJECT, REMOVE ALL AGGREGATE AND GEOTEXTILE, LOOSEN SUBSOILS, REPLACE TOPSOIL AND IMMEDIATELY SEED AND MULCH ALL DISTURBED AREAS. AGGREGATE REMOVAL, LOOSENING OF SUBSOILS, TOPSOIL PLACEMENT, SEED AND MULCHING ACTIVITIES SHALL OCCUR ON THE SAME DAY DURING DRY WEATHER CONDITIONS. IN THE EVENT THAT SITE STABILIZATION ACTIVITIES DO NOT OCCUR ON THE SAME DAY THAT THE AGGREGATE IS REMOVED, PROVIDE COMPOST FILTER SOCK ALONG THE PERIMETER OF ALL DISTURBED AREAS.



WATERBAR NOTES:

1. WATERBARS SHALL DISCHARGE TO COMPOST FILTER SOCKS AND/OR SEDIMENT TRAPS AS SHOWN ON THE PLAN.
2. WATERBAR SIDE SLOPES MAY BE ADJUSTED AS NEEDED TO FACILITATE VEHICULAR MOVEMENT.
3. WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
4. MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS ACHIEVED PERMANENT STABILIZATION AND CONSTRUCTION TRAFFIC CEASES.
5. WATERBAR SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT.

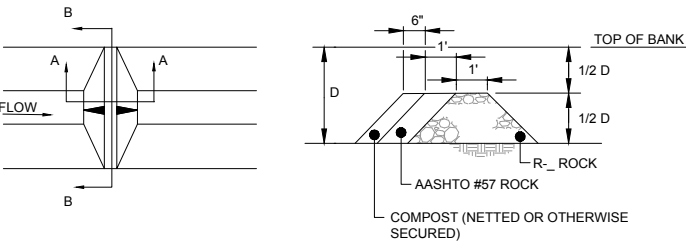


PROTECTIVE FENCE

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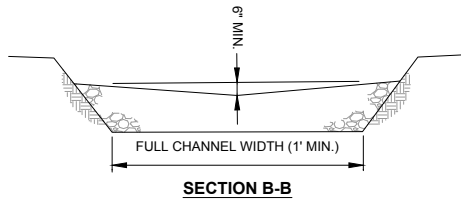
PROTECTIVE FENCE NOTES:

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



PLAN VIEW

SECTION A-A



FOR 3' ≤ D: USE R-4
FOR 2' ≤ D < 3': USE R-3
NOT APPLICABLE FOR D < 2

LOCATION	D (FT)	RIPRAP SIZE
WITHIN CHANNEL REACH 1	3	R-4
WITHIN POND OUTLET CHANNEL	2.5	R-3

ROCK FILTER

NOT TO SCALE

ROCK FILTER NOTES:

1. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/2 THE HEIGHT OF THE FILTER.
2. IMMEDIATELY UPON STABILIZATION OF EACH CHANNEL, CONTRACTOR SHALL REMOVE ACCUMULATED SEDIMENT AND STABILIZE DISTURBED AREAS.

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

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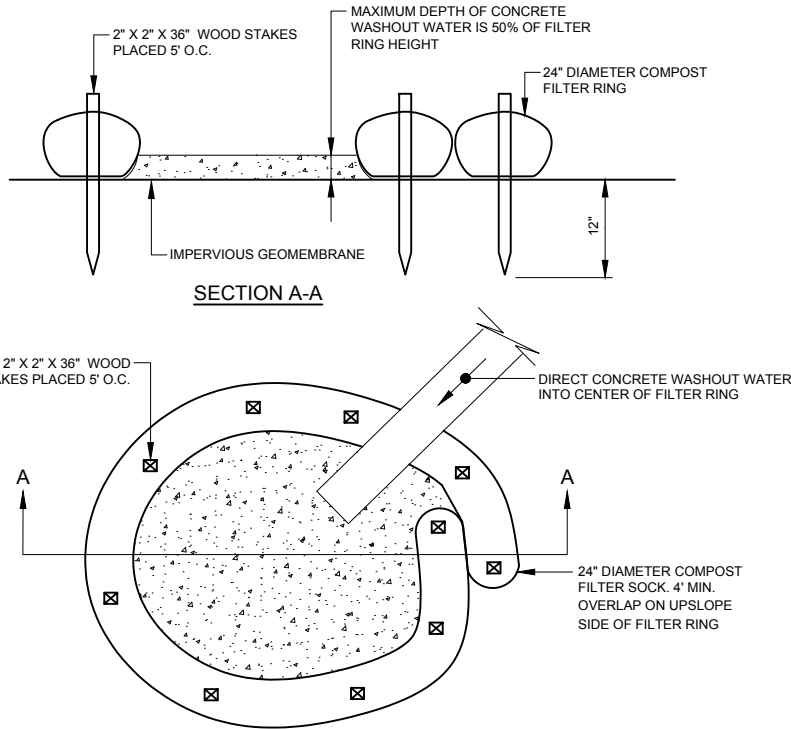
Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

EROSION CONTROL PLAN
DETAILS
SHEET 2 OF 4

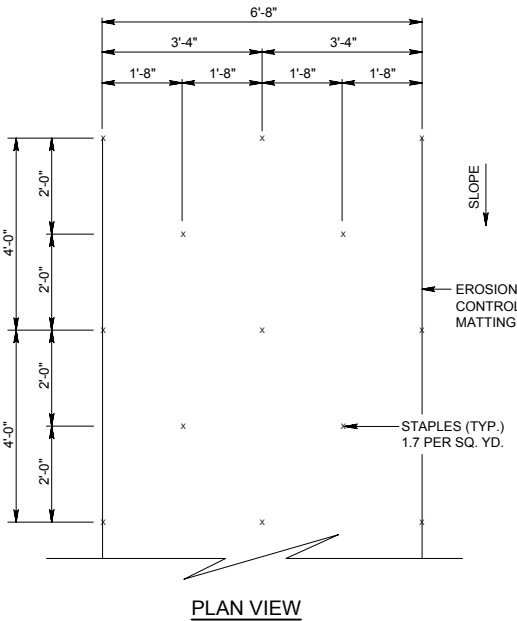
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60466	ES7
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COMPOST SOCK WASHOUT DETAIL
NOT TO SCALE

- NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
 2. 18" DIAMETER COMPOST FILTER SOCK MAY BE STACKED ONTO DOUBLE 24" DIAMETER SOCKS IN PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT.
 3. A SUITABLE IMPERVIOUS GEOMEMBRANE SHALL BE PLACED AT THE LOCATION OF THE WASHOUT PRIOR TO INSTALLING THE COMPOST FILTER SOCKS.

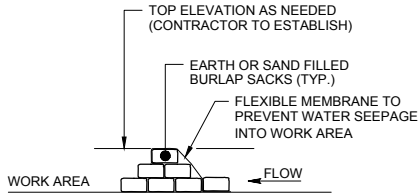


EROSION CONTROL MATTING FOR STEEP SLOPES
NOT TO SCALE

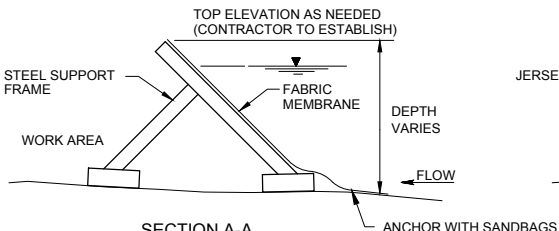
EROSION CONTROL MATTING NOTES:

1. EROSION CONTROL MATTING IS TO BE PLACED AT THE FOLLOWING LOCATIONS:
 - ALL LOCATIONS IDENTIFIED ON THE PLAN DRAWINGS
 - ALL DISTURBED AREAS WITHIN 50 FEET OF A WATERWAY
 - ALL OTHER VEGETATED SLOPES WHICH ARE STEEPER THAN 3H:1V
 - ALL GRASS-LINED WATERWAYS
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED. REMOVE ALL SURFACE IRREGULARITIES INCLUDING STONES, ROCKS, EARTH CLODS, DEBRIS, OR OTHER ITEMS THAT WILL PREVENT THE MATTING FROM COMING IN DIRECT CONTACT WITH THE SOIL SURFACE.
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
4. ROLL THE BLANKETS DOWN THE SLOPE IN DIRECTION OF THE WATER FLOW. MATTING SHALL BE IN DIRECT CONTACT WITH THE UNDERLYING SOILS AT ALL LOCATIONS.
5. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY A 2" OVERLAP.
6. WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
7. USE ADDITIONAL STAPLING AS NECESSARY, TO SECURE CRITICAL POINTS ALONG THE SLOPE.
8. REFERENCE: NORTH AMERICAN GREEN EROSION CONTROL BLANKETS (SC150) EAST COAST EROSION BLANKETS (ECSC-2) OR APPROVED EQUAL
9. PROVIDE EROSION MATTING OVERLAYS AND STAPLING PATTERN AS DIRECTED BY THE MANUFACTURER OR AS SHOWN ON THIS DETAIL, WHICHEVER IS THE MORE STRINGENT.

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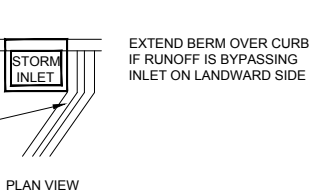
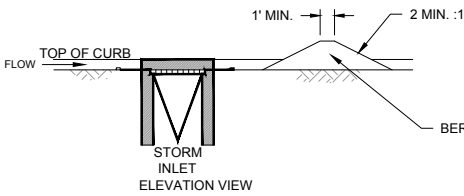
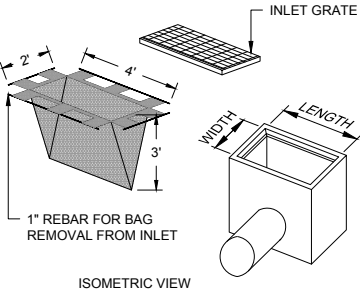
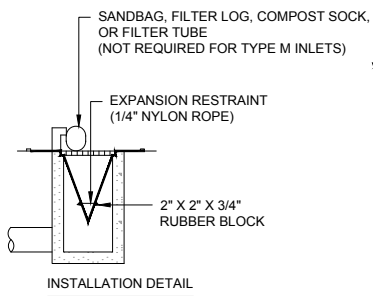


SECTION A-A
SANDBAG COFFERDAM OPTION



SECTION A-A
MANUFACTURED PORTABLE DAM OPTION

TEMPORARY COFFERDAM
NOT TO SCALE



MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

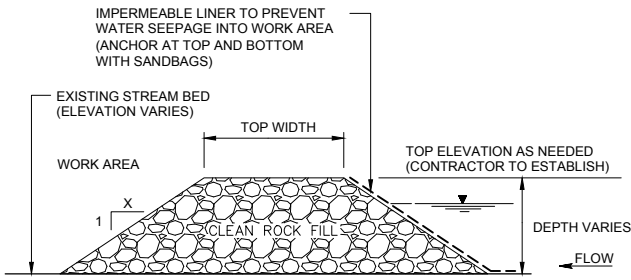
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

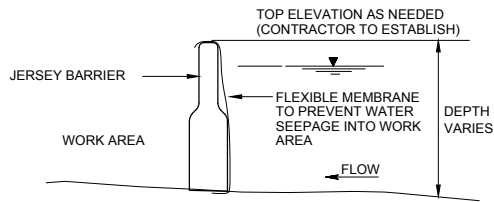
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

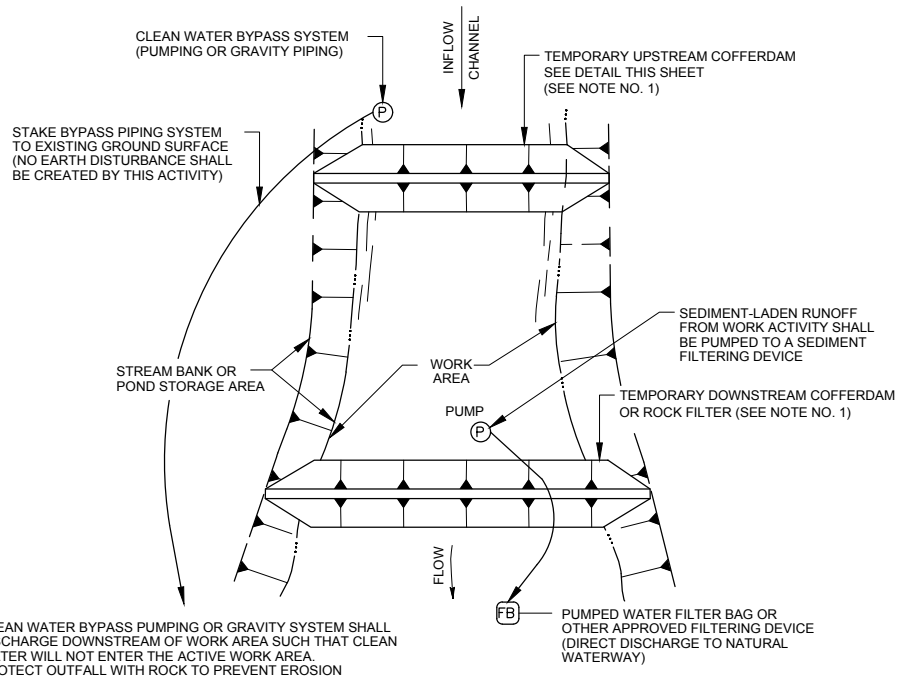
FILTER BAG INLET PROTECTION
NOT TO SCALE



SECTION A-A
ROCK FILL COFFERDAM OPTION



SECTION A-A
JERSEY BARRIER OPTION



SCHEMATIC PLAN VIEW
TEMPORARY DIVERSION OF WATER AND DAILY PUMP-AROUND SYSTEM
NOT TO SCALE

CONSTRUCTION SEQUENCE NOTES FOR TEMPORARY DIVERSION OF WATER SYSTEM

1. CONTRACTOR TO PROVIDE DIVERSION OF WATER PLAN TO THE TOWNSHIP FOR APPROVAL PRIOR TO START OF CONSTRUCTION. PLAN SHALL PROVIDE DETAILS OF COFFERDAM MATERIAL, COFFERDAM LOCATIONS, SIZING DESIGN, SEQUENCING FOR INSTALLATION AND REMOVAL, LOCATION AND TYPE OF DEWATERING FACILITIES AND LOCATION AND TYPE OF EROSION CONTROL FACILITIES. ANY CHANGE FROM THE APPROVED PLAN SHOWN ON THE DRAWINGS SHALL REQUIRE APPROVAL FROM THE REVIEWING AGENCIES PRIOR TO BEGINNING THE PORTION OF THE PROJECT IN QUESTION.
2. THE UPSTREAM COFFERDAM SYSTEM SHALL CONTAIN AN IMPERMEABLE LINER ON THE UPSTREAM FACE TO PREVENT SEEPAGE INTO THE WORK AREA. COFFERDAM SYSTEM MAY INCLUDE SANDBAGS, JERSEY BARRIERS, ROCK FILL OR PORT-A-DAMS. OTHER TYPES OF DIVERSION MEASURES WILL REQUIRE APPROVAL BY THE TOWNSHIP AND USACE.
3. CARE SHALL BE TAKEN TO MINIMIZE DISTURBANCE OF THE STREAM BED AND BANKS DURING THE COFFERDAM INSTALLATION AND REMOVAL OPERATIONS.
4. DIVERT UPSLOPE CLEAN RUNOFF AROUND THE WORK AREA BY USE OF PUMPING OR GRAVITY PIPING. CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING TEMPORARY DIVERSION MEASURES AS NEEDED TO PROTECT THE WORK AREA.
5. CLEAN WATER SHALL BE DIVERTED INTO THE DOWNSTREAM RECEIVING WATERWAY. THE OUTFALL OF THE CLEAN WATER DIVERSION SHALL BE STABILIZED WITH ROCK OF SUFFICIENT SIZE AND COVERAGE TO PROTECT AGAINST EROSION.
6. WATER WHICH COLLECTS WITHIN THE WORK AREA AND INTERFERES WITH THE WORK ACTIVITIES SHALL BE PUMPED TO A SEDIMENT FILTERING DEVICE, SUCH AS A PUMPED WATER FILTER BAG. THE DISCHARGE FROM THIS FACILITY SHALL BE DIRECTED INTO A NATURAL WATERWAY. PROVIDE ADDITIONAL MEASURES AS NEEDED TO PREVENT EROSION FROM THE FILTERED OUTFLOW.
7. AFTER CONSTRUCTION IS COMPLETED, PERMANENTLY STABILIZE ALL DISTURBED AREAS, REMOVE ALL SEDIMENT DEPOSITS FROM THE DEWATERED WORK AREA AND REMOVE THE TEMPORARY COFFERDAM AND PIPING.

RESOLUTIONS FOR SOIL LIMITATIONS

- HIGH WATER TABLE: CONTRACTOR SHALL DEWATER EXCAVATIONS AS SPECIFIED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL PROVIDE SUFFICIENT NUMBER OF PUMPS TO KEEP EXCAVATIONS DRY. WATER WHICH COLLECTS WITHIN THE EXCAVATION(S) SHALL BE REMOVED BY PUMPING TO A SEDIMENT FILTERING DEVICE SUCH AS A PUMPED WATER FILTER BAG OR OTHER APPROVED SEDIMENT FILTERING DEVICE.
- SHALLOW BEDROCK: CONTRACTOR SHALL RIP BEDROCK AS NEEDED TO BRING AREAS TO FINAL GRADE. ALL AREAS TO HAVE PERMANENT VEGETATIVE STABILIZATION SHALL BE OVER-EXCAVATED TO ACCOUNT FOR TOPSOIL PLACEMENT. BLASTING SHALL NOT BE ALLOWED WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER.
- EMBANKMENT STABILITY: STRUCTURAL EMBANKMENTS (TEMPORARY AND PERMANENT) SHALL BE PLACED IN LIFTS AND COMPACTED AS REQUIRED BY THE CONTRACT DOCUMENTS. FILL SLOPES EXCEEDING 10 FEET IN HEIGHT SHALL BE PERMANENTLY STABILIZED AT REGULAR VERTICAL INCREMENTS OF 10 FEET (MAXIMUM) AS EACH FILL AREA IS BEING CONSTRUCTED.
- LOW SOIL PH: IN THE ABSENCE OF SOIL TEST RESULTS, THE CONTRACTOR SHALL PROVIDE LIME AT THE FOLLOWING RATES TO PROMOTE VEGETATIVE GROWTH:
TEMPORARY SEEDING: ONE (1) TON PER ACRE
PERMANENT SEEDING: SIX (6) TONS PER ACRE

NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
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DRAWN	CHECKED	APPROVED
TDI	ECN	ECN



Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

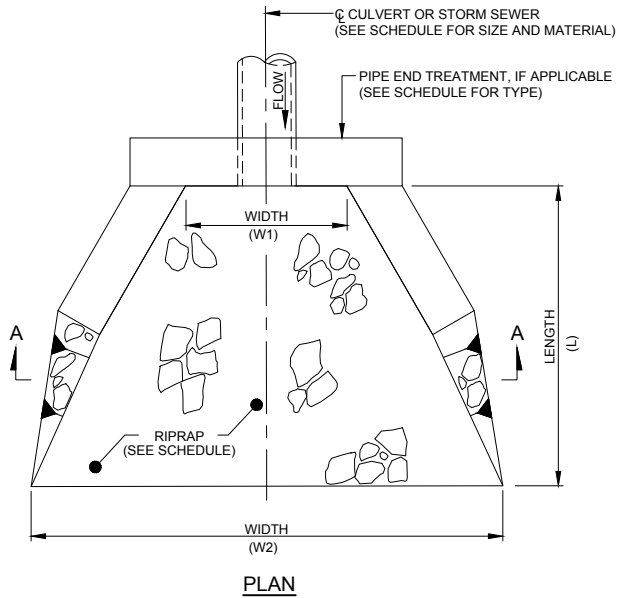
EROSION CONTROL PLAN
DETAILS
SHEET 3 OF 4

JOB NO.	SHEET NO.
60466	ES8
DATE	DRAWING NO.
FEB. 2020	

RIPRAP APRON OUTLET PROTECTION SCHEDULE								
APRON NO.	LOCATION	PIPE DIAMETER (IN)	PIPE MATERIAL	PIPE END TREATMENT	RIPRAP APRON DESIGN INFORMATION			
					LENGTH "L" (FT)	WIDTH "W1" (FT)	WIDTH "W2" (FT)	ROCK SIZE
A	SOUTHERN PARKING AREA	24	HDPE	D-W ENDWALL	20	NOTE 1	20	R-5
B	NORTHERN PARKING AREA	15	HDPE	D-W ENDWALL	20	NOTE 1	20	R-5
C	TWIN 49"x33" CULVERT UNDER RESERVOIR ROAD				SEE PLUNGE POOL DETAIL THIS SHEET			

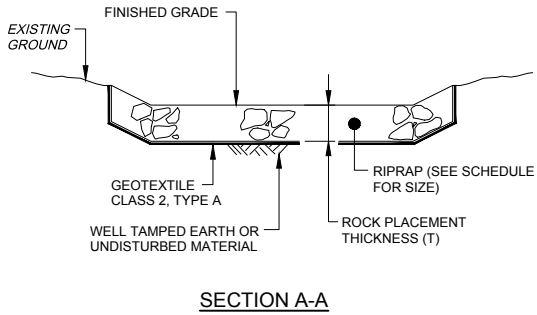
RIPRAP OUTLET PROTECTION NOTES:

1. WIDTH "W1" SHALL MATCH THE DIMENSION OF THE CONCRETE ENDWALL.

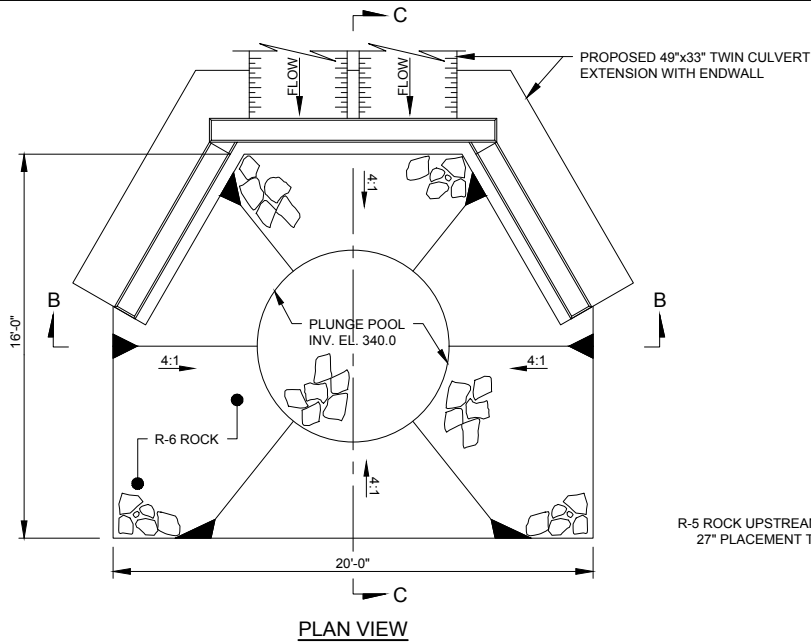


RIPRAP APRON OUTLET PROTECTION
NOT TO SCALE

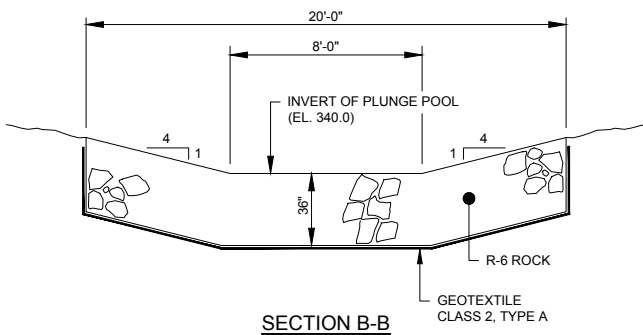
NSA NO.	GRADED ROCK SIZE		
	MAX. (IN)	d ₅₀ (IN)	MIN. (IN)
R-3	6	3	2
R-4	12	6	3
R-5	18	9	5
R-6	24	12	7
R-7	30	15	12



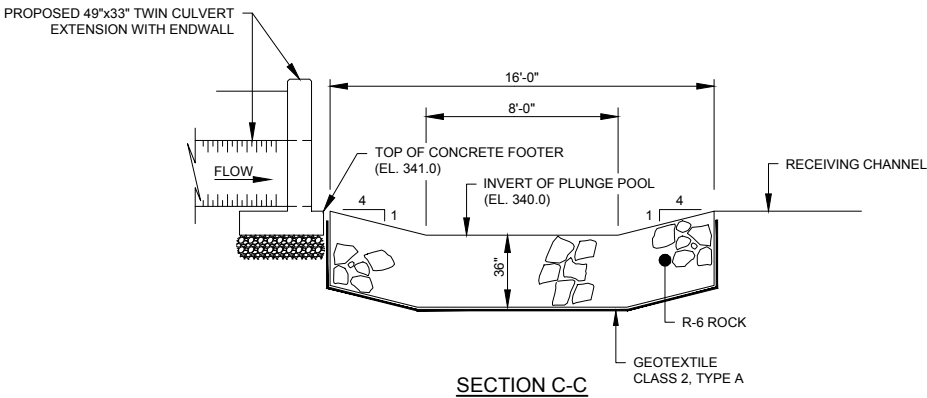
SECTION A-A



PLAN VIEW

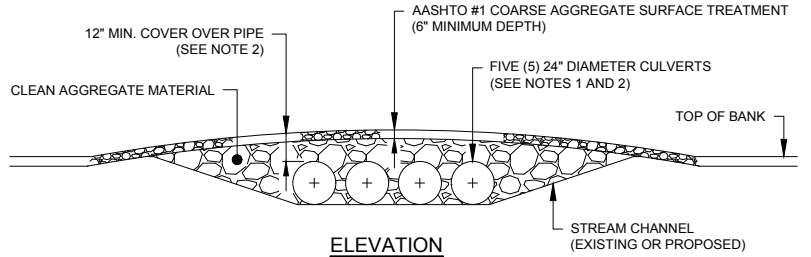


SECTION B-B

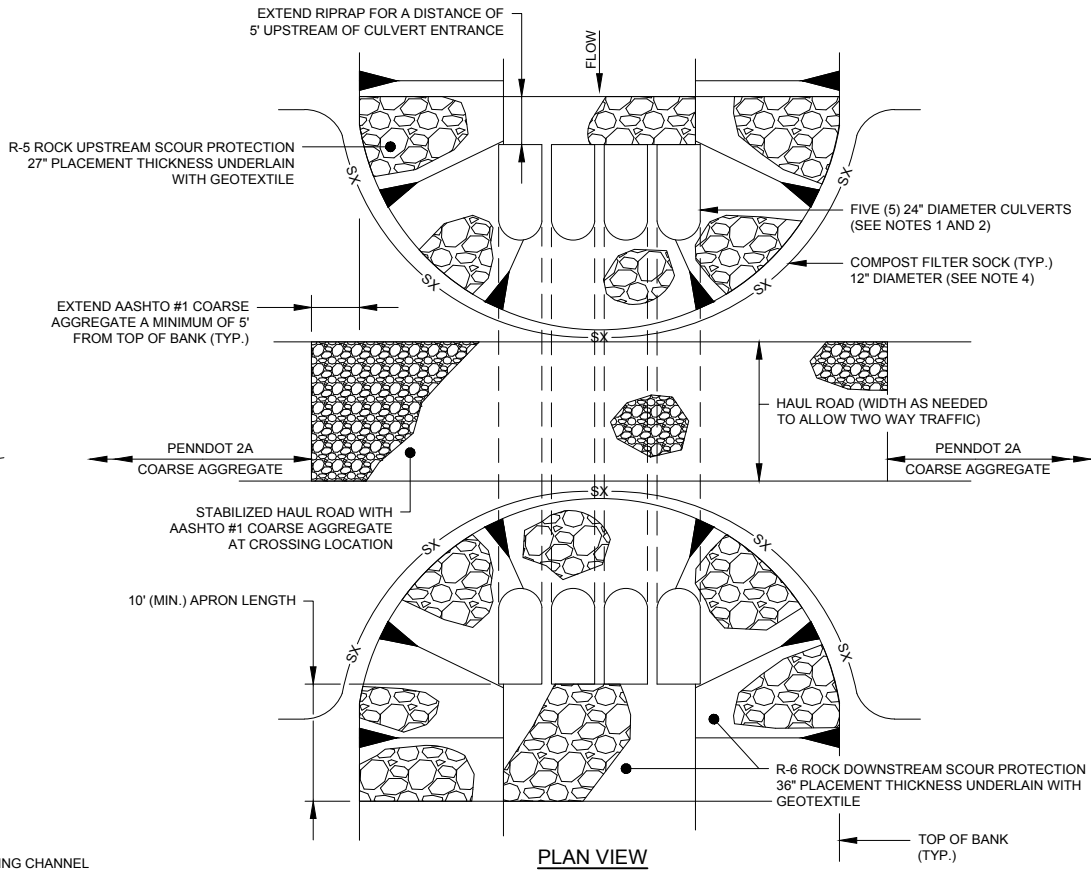


SECTION C-C

RIPRAP PLUNGE POOL OUTLET PROTECTION
NOT TO SCALE



ELEVATION



PLAN VIEW

TEMPORARY STREAM CROSSING
NOT TO SCALE

TEMPORARY STREAM CROSSING NOTES:

- DRAINAGE FACILITIES AS SHOWN ON THE TEMPORARY STREAM CROSSING DETAIL ARE INTENDED TO ACCOMMODATE BASE FLOW FROM THE CONTRIBUTING DRAINAGE AREA. CONTRACTOR MAY CHOOSE TO INCREASE THE SIZE AND/OR NUMBER OF CULVERTS TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION AGAINST FLOODING OF THE WORK AREAS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE CULVERT MATERIAL, CULVERT SPACING, BACKFILL MATERIAL AND COVER REQUIREMENTS AS NEEDED TO SUPPORT THE ANTICIPATED TRAFFIC LOADS. CULVERT MATERIAL SHALL BE EITHER REINFORCED CONCRETE OR STEEL (ALTERNATE MATERIALS WOULD REQUIRE APPROVAL FROM THE TOWNSHIP AND MAY REQUIRE PERMIT MODIFICATIONS).
- ALL RIPRAP SLOPE PROTECTION SHALL BE UNDERLAIN WITH CLASS 4 GEOTEXTILE MEETING THE MINIMUM REQUIREMENTS OF PENNDOT SPECIFICATIONS.
- AT EACH STREAM CROSSING, PREVENT SEDIMENT-LADEN RUNOFF FROM ENTERING THE CHANNEL THROUGH THE USE OF COMPOST FILTER SOCK. EXTEND COMPOST FILTER SOCK AS NEEDED TO ACCOMPLISH THIS TASK.
- ALL HAUL ROADS SHALL BE STABILIZED WITH AASHTO #1 COARSE AGGREGATE AT CULVERT CROSSINGS. ADD ROCK AS NEEDED TO MAINTAIN A CLEAN, DRY SURFACE FOR VEHICULAR TRAFFIC.

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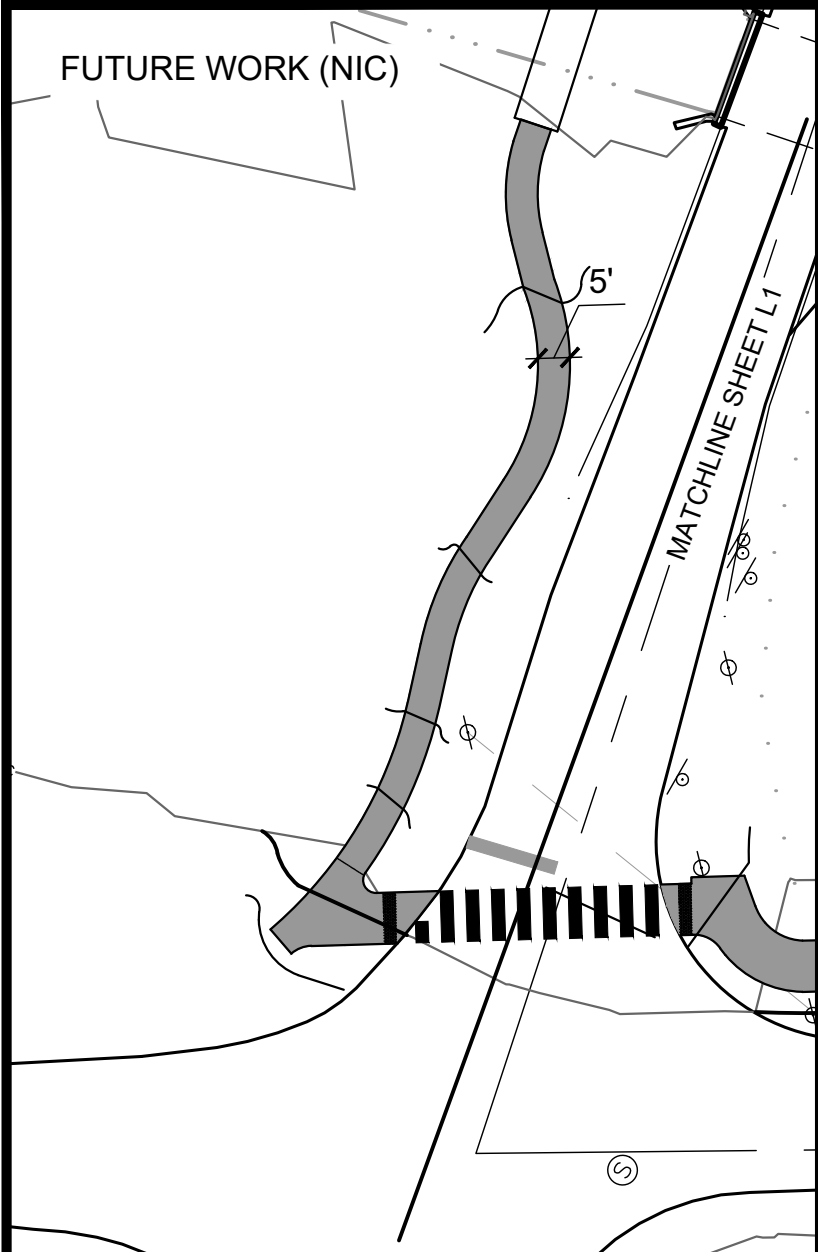
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EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

EROSION CONTROL PLAN DETAILS SHEET 4 OF 4		JOB NO. 60466	SHEET NO. ES9
		DATE FEB. 2020	DRAWING NO.

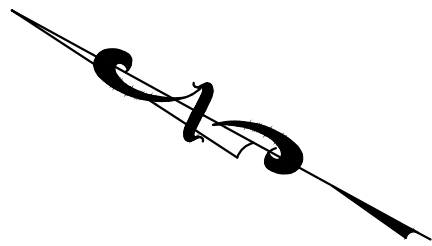
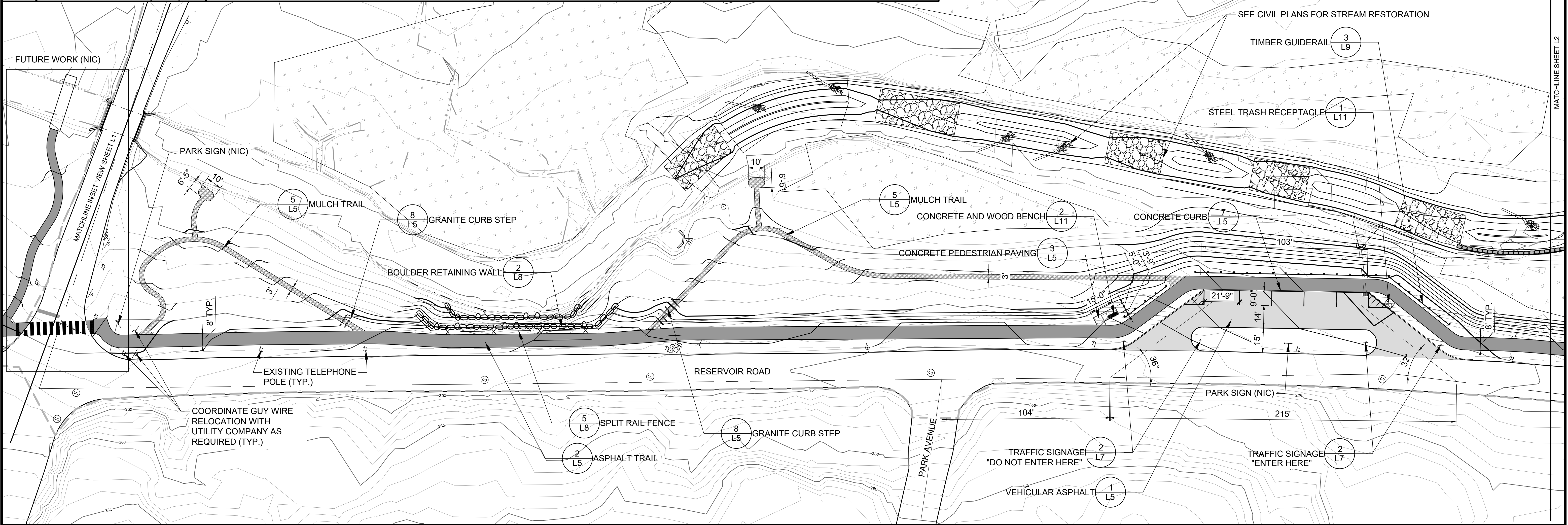


PROPOSED FEATURES LEGEND

- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET
- VEHICULAR ASPHALT
- PEDESTRIAN ASPHALT
- CONCRETE PAVEMENT
- PIER STRUCTURE
- BRIDGE STRUCTURE
- STABILIZED TURF
- MULCH TRAIL SURFACE

GENERAL NOTES:

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- ALL SITE WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL & STATE CODES/REGULATIONS.
- SEE CIVIL PLANS FOR FINISHED GRADES, LOCATION OF DRAIN INLETS, CATCH BASINS, AND UNDERGROUND UTILITY LOCATIONS
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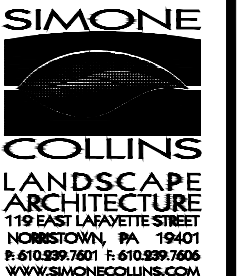


Gannett Fleming

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
SITE LAYOUT PLAN
SHEET 1 OF 3

JOB NO.	SHEET NO.
60466	L1
DATE	DRAWING NO.
FEB. 2020	



GENERAL NOTES:

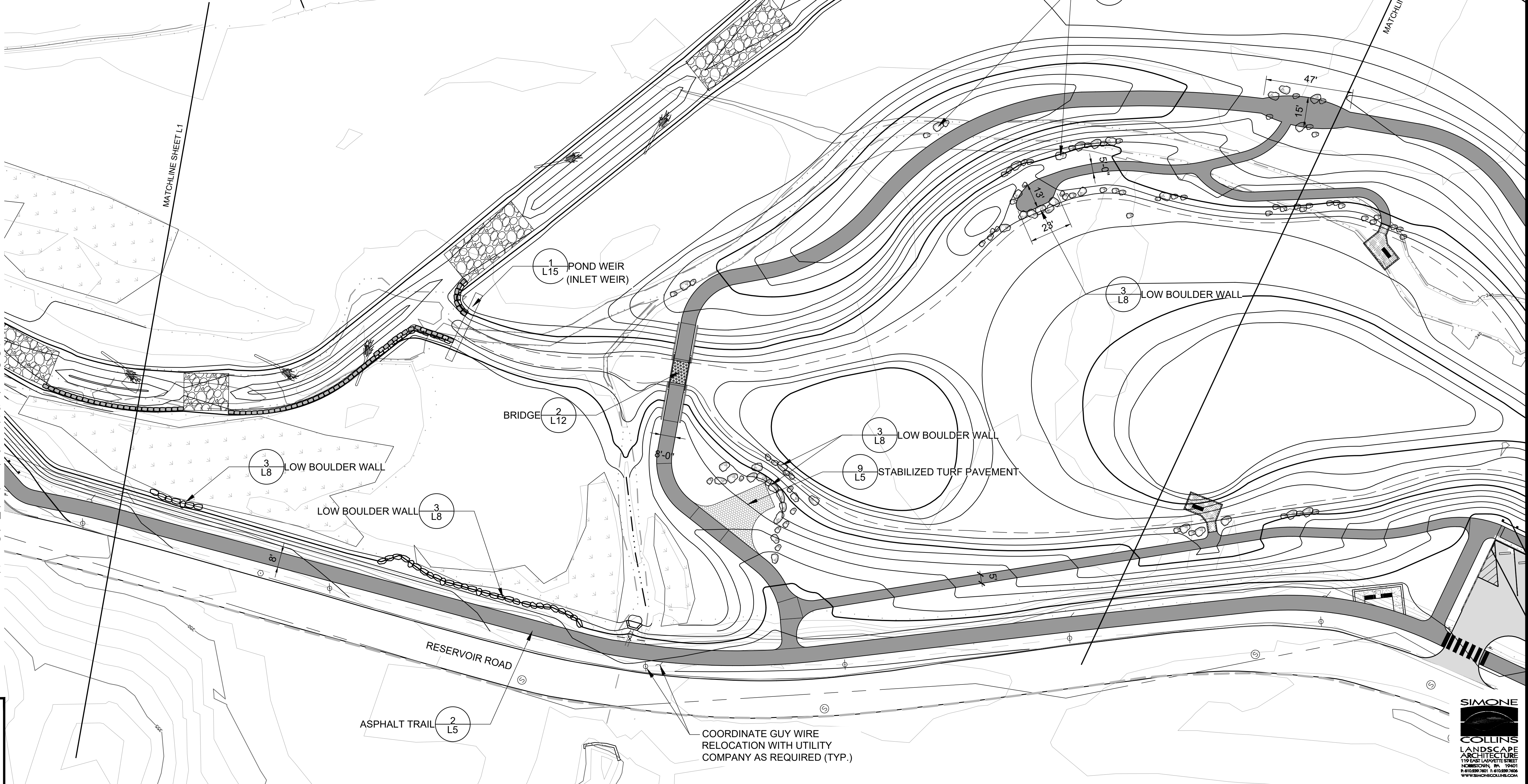
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8. SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.

LAYOUT NOTES:

1. VERIFY LAYOUT OF ALL PROPOSED WORK TO EXISTING CONDITIONS. REPORT ALL DISCREPANCIES TO OWNER'S REPRESENTATIVE / LANDSCAPE ARCHITECT THAT DEViate FROM THE EXISTING CONDITIONS OR SITE PLANS.
2. PROVIDE STAKED LAYOUT OF ALL WORK FOR APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO COMMENCING WORK. LANDSCAPE ARCHITECT TO REVIEW LAYOUT PRIOR TO CONSTRUCTION.
3. PROVIDE SHOP DRAWINGS OR PRODUCT INFORMATION ON ALL MANUFACTURED PRODUCTS TO OWNER'S REPRESENTATIVE / LANDSCAPE ARCHITECTS FOR APPROVAL.
4. PROVIDE SAMPLES FOR APPROVAL OF OWNER'S REPRESENTATIVE/ LANDSCAPE ARCHITECT OF ALL PAVING AND WALL MATERIALS.
5. ALL PROPOSED WALKWAYS SHALL BE A MINIMUM OF TWO FEET FROM EXISTING UTILITY POLES. ALL PROPOSED FENCES, BENCHES, TRASH RECEPTACLES, AND ANY VERTICAL ELEMENTS SHALL BE SET A MINIMUM OF TWO FEET FROM PROPOSED WALKWAYS.
6. ALL PAVING WIDTHS ARE DIMENSIONED FROM THE INSIDE FACE OF THE CURB.

PROPOSED FEATURES LEGEND

- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET
- VEHICULAR ASPHALT
- PEDESTRIAN ASPHALT
- CONCRETE PAVEMENT
- PIER STRUCTURE
- BRIDGE STRUCTURE
- STABILIZED TURF
- MULCH TRAIL SURFACE



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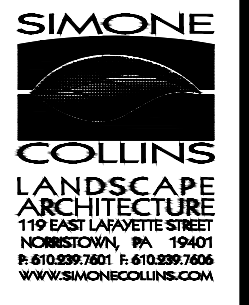
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Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA	
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS	

LANDSCAPE PLAN SITE LAYOUT PLAN SHEET 2 OF 3		JOB NO. 60466	SHEET NO. L2
		DATE FEB. 2020	DRAWING NO.



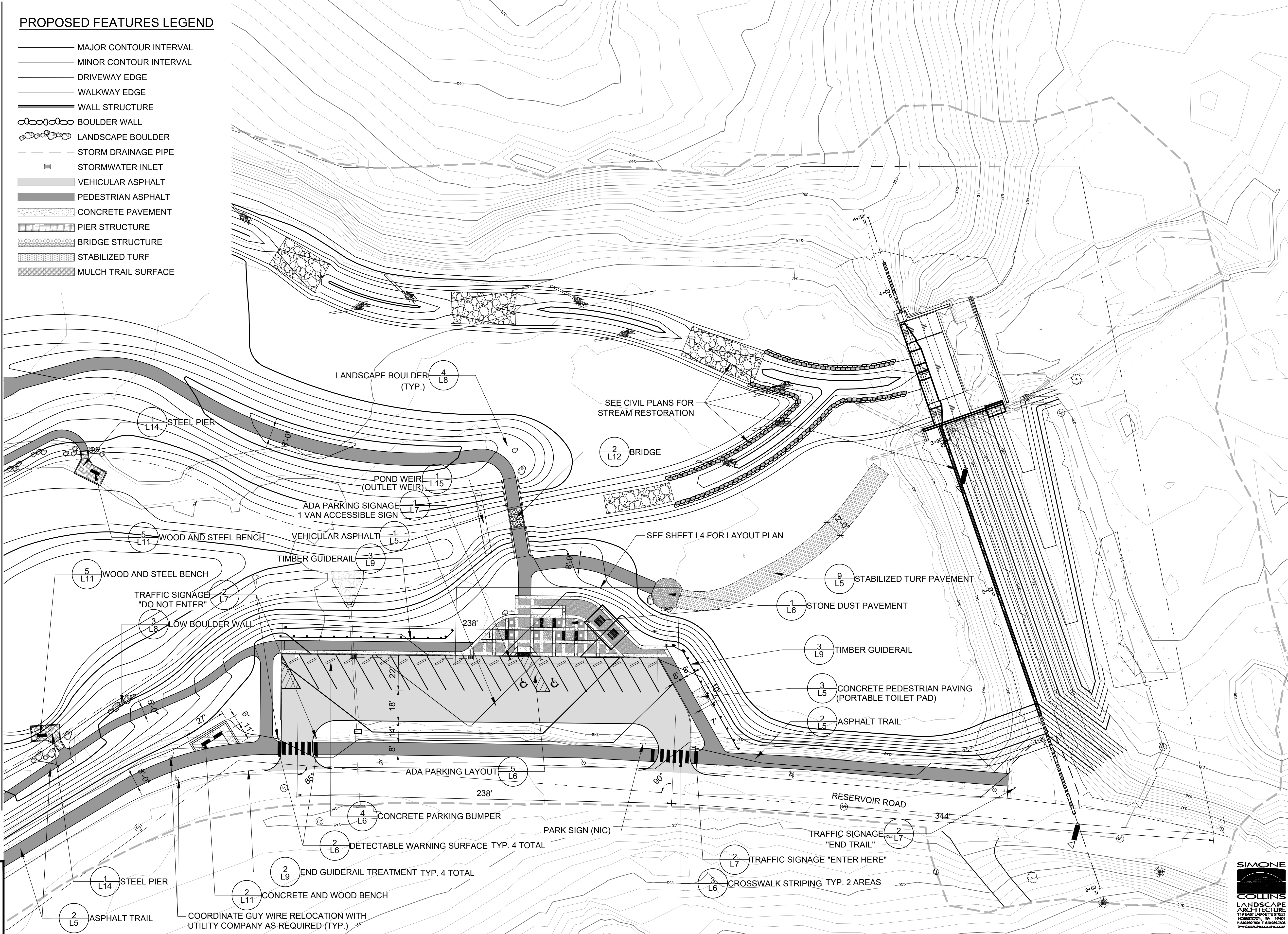
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MATCHLINE SHEET L2

PROPOSED FEATURES LEGEND

- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET
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Gannett Fleming

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN SITE LAYOUT PLAN SHEET 3 OF 3		JOB NO. 60466	SHEET NO. L3
		DATE FEB. 2020	DRAWING NO.

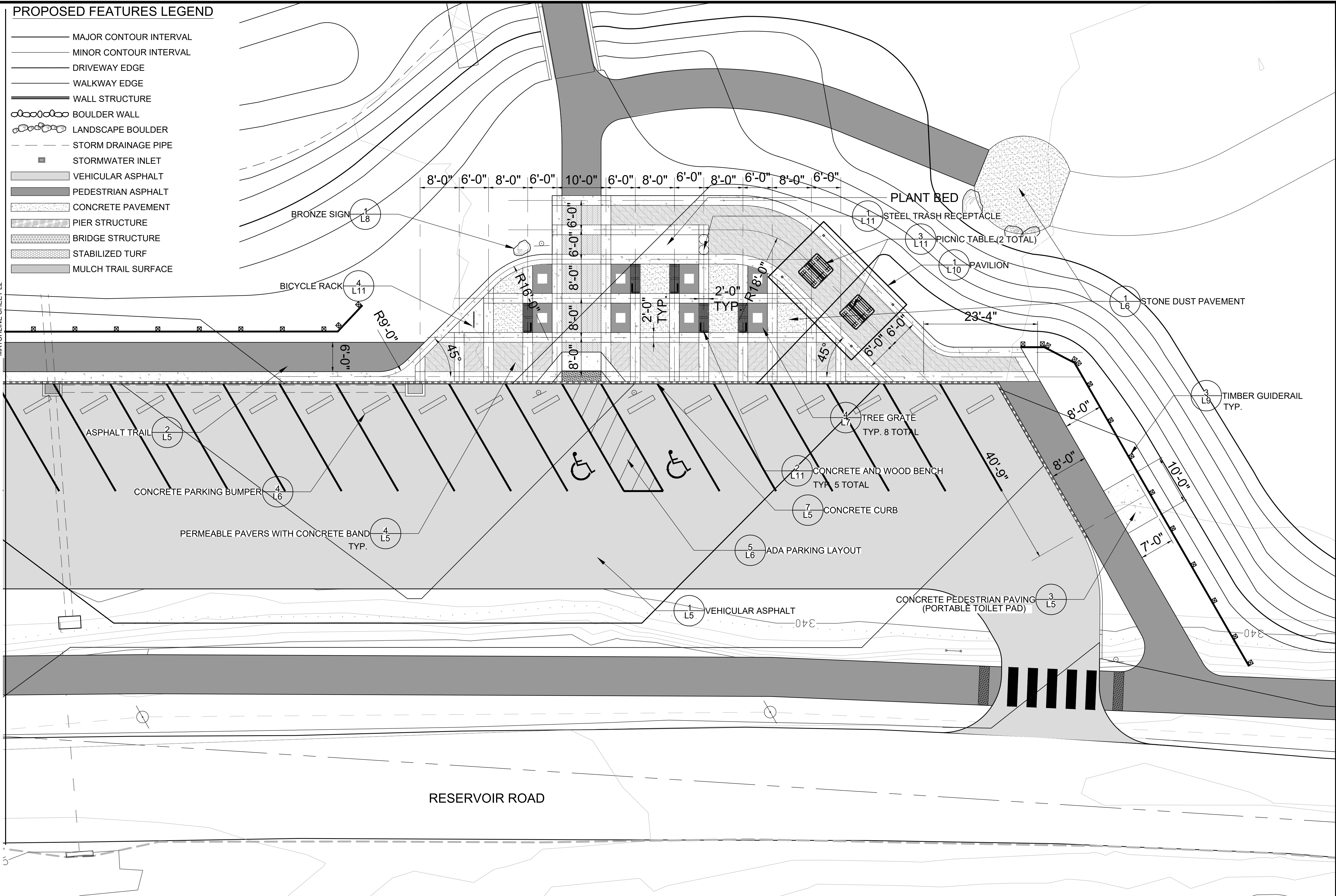
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MATCHLINE SHEET L2



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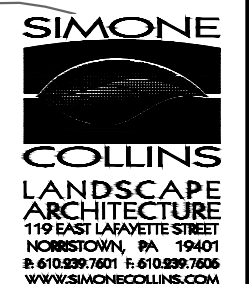


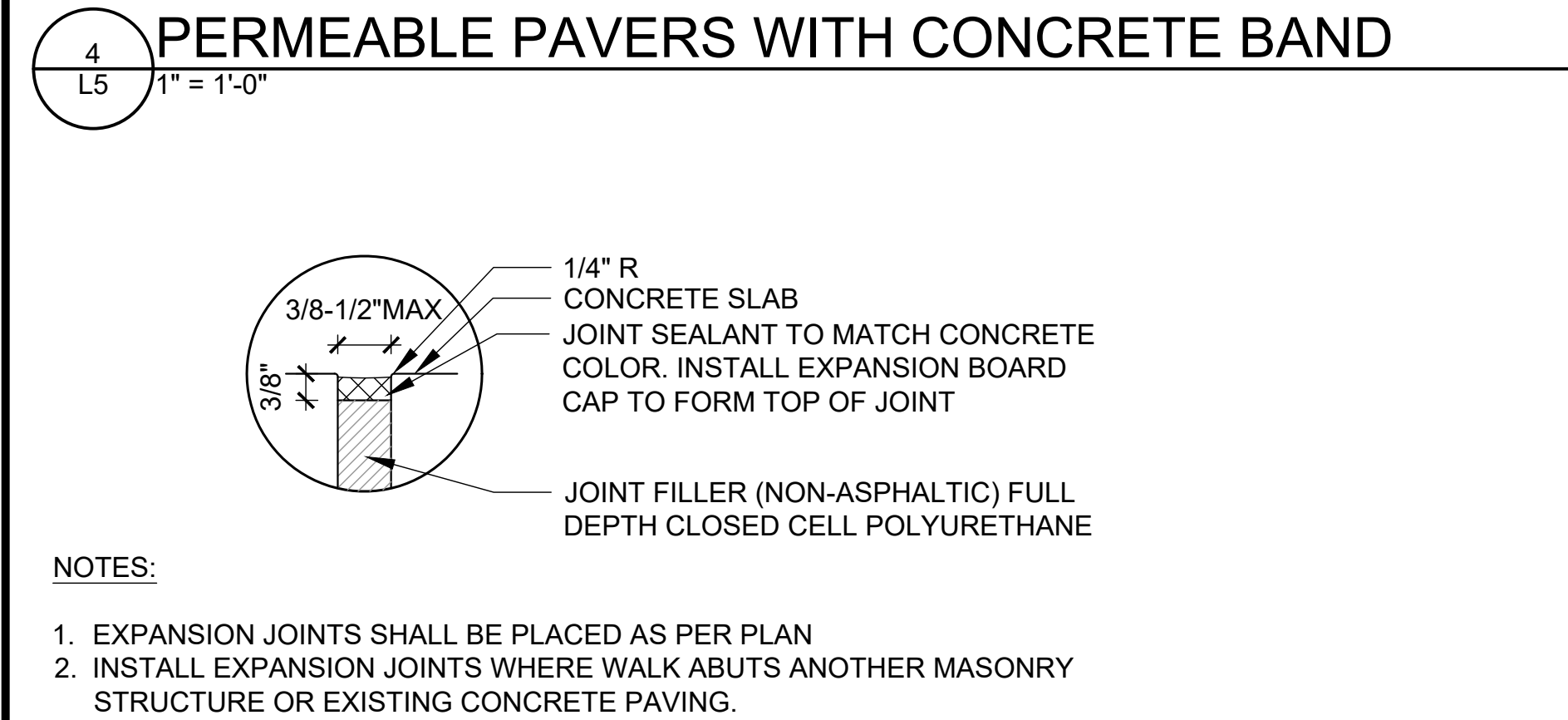
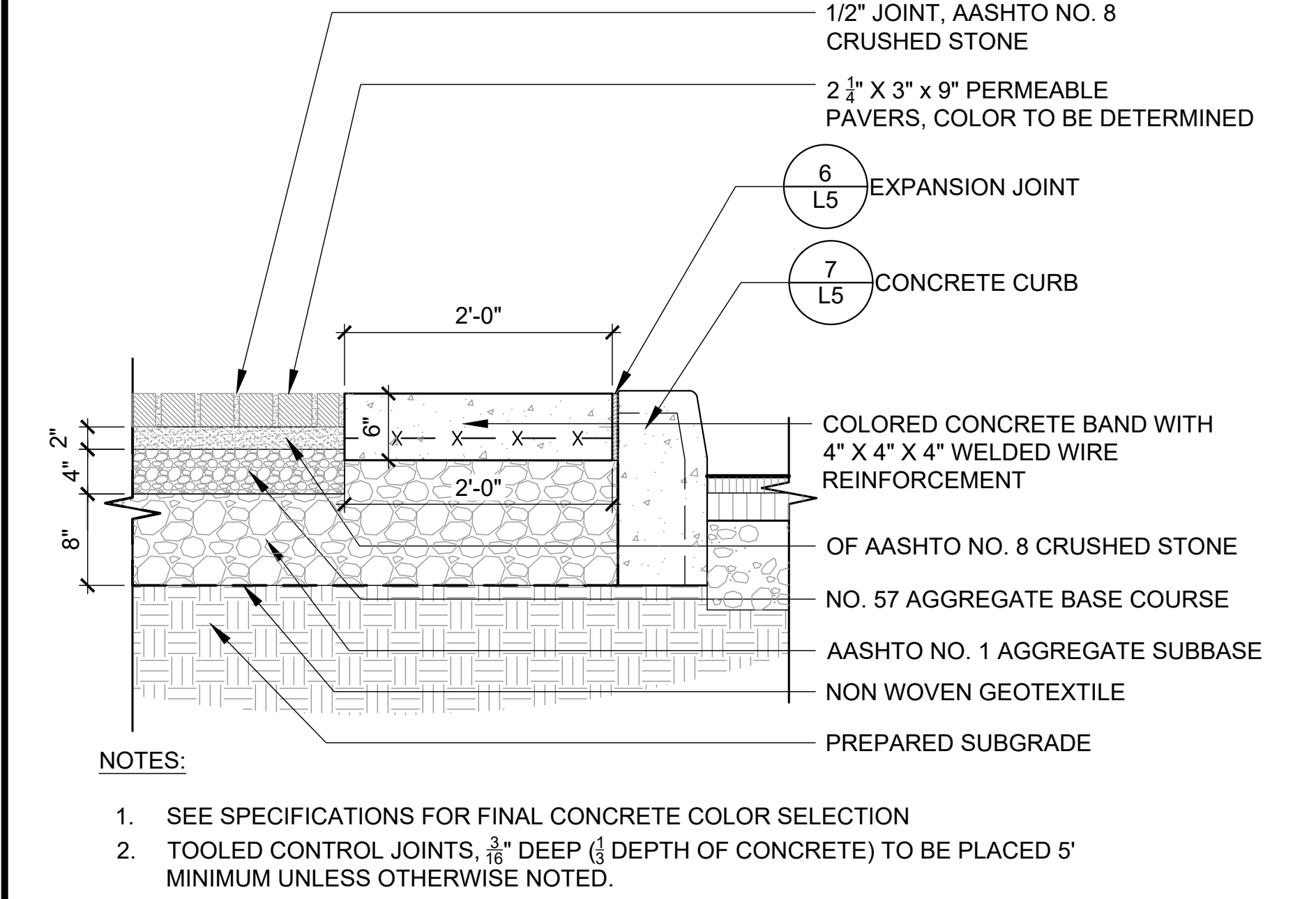
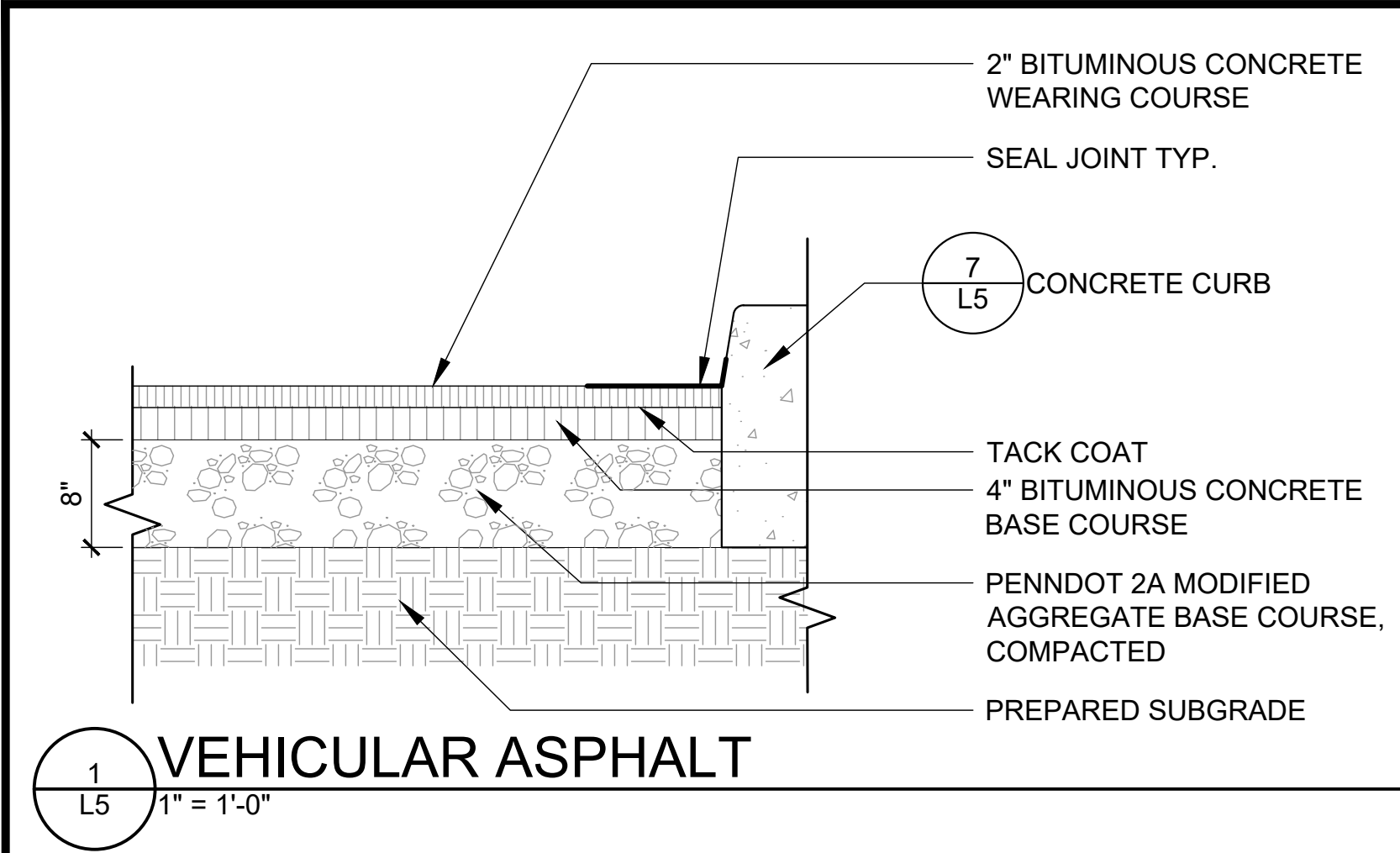
Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
ENLARGED SITE PLAN

JOB NO.	SHEET NO.
60466	L4
DATE	DRAWING NO.
FEB. 2020	





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SIMONE

COLLINS

LANDSCAPE

ARCHITECTURE

179 EAST LAUREL STREET SUITE 200

CHICAGO, IL 60601

P 616.228.7001 F 616.228.7006

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DRAWN	CHECKED	APPROVED
MB	SRL	PS

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LANDSCAPE

ARCHITECTURE

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CHICAGO, IL 60601

P 616.228.7001 F 616.228.7006

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DRAWN	CHECKED	APPROVED
MB	SRL	PS

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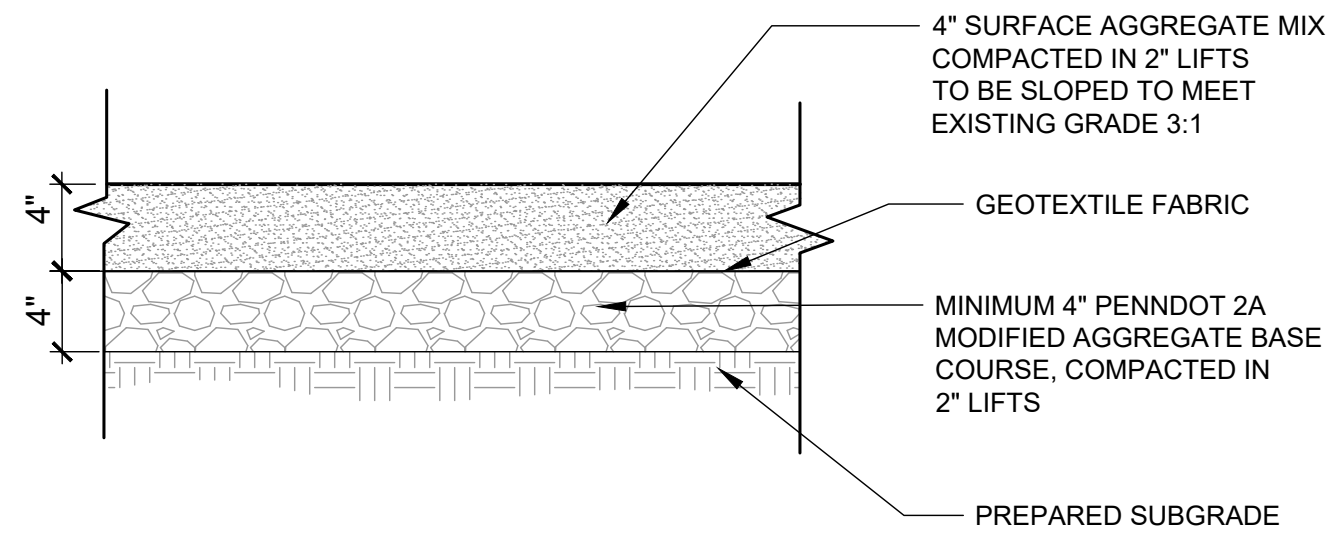
CHICAGO, IL 60601

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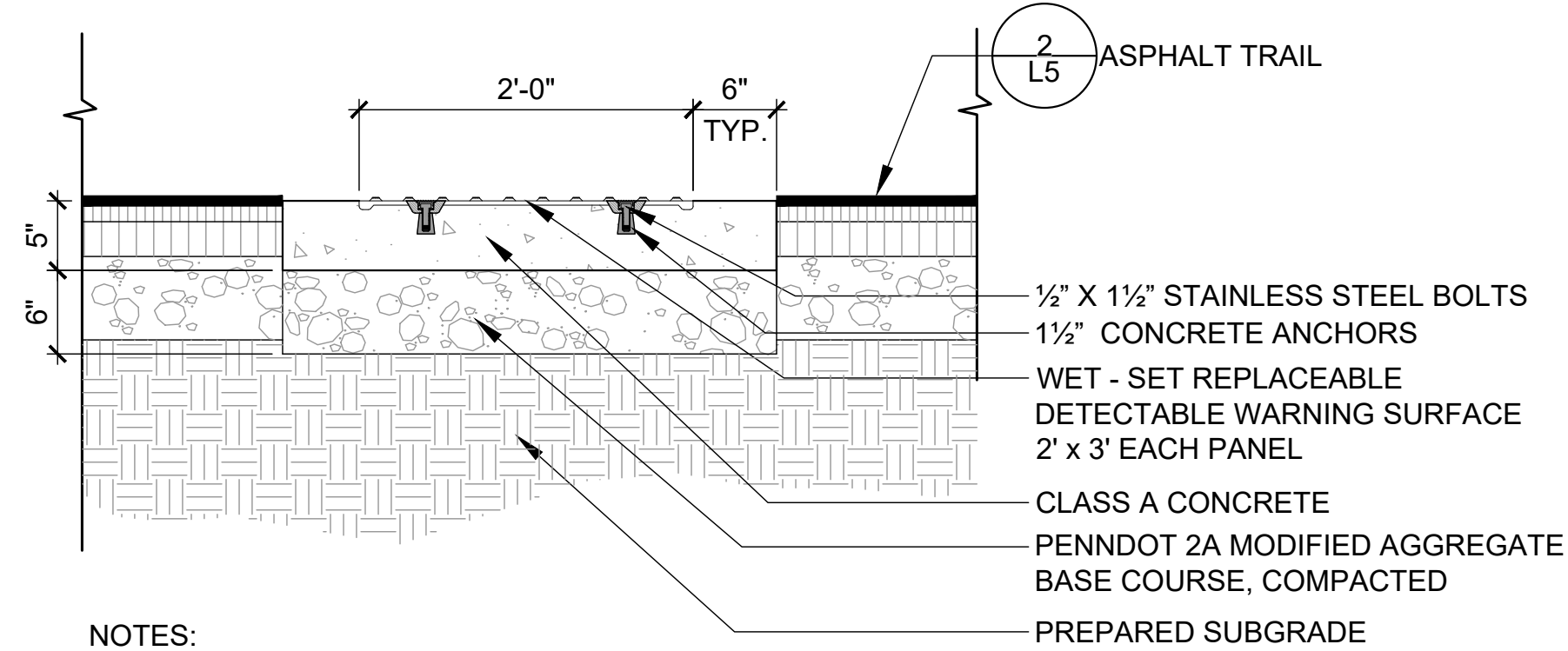
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SRL	MB	AS SHOWN
DRAWN	CHECKED	APPROVED
MB	SRL	PS

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA	LANDSCAPE PLAN SITE DETAILS	JOB NO. 60466	SHEET NO. L5
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS		DATE FEB. 2020	DRAWING NO.



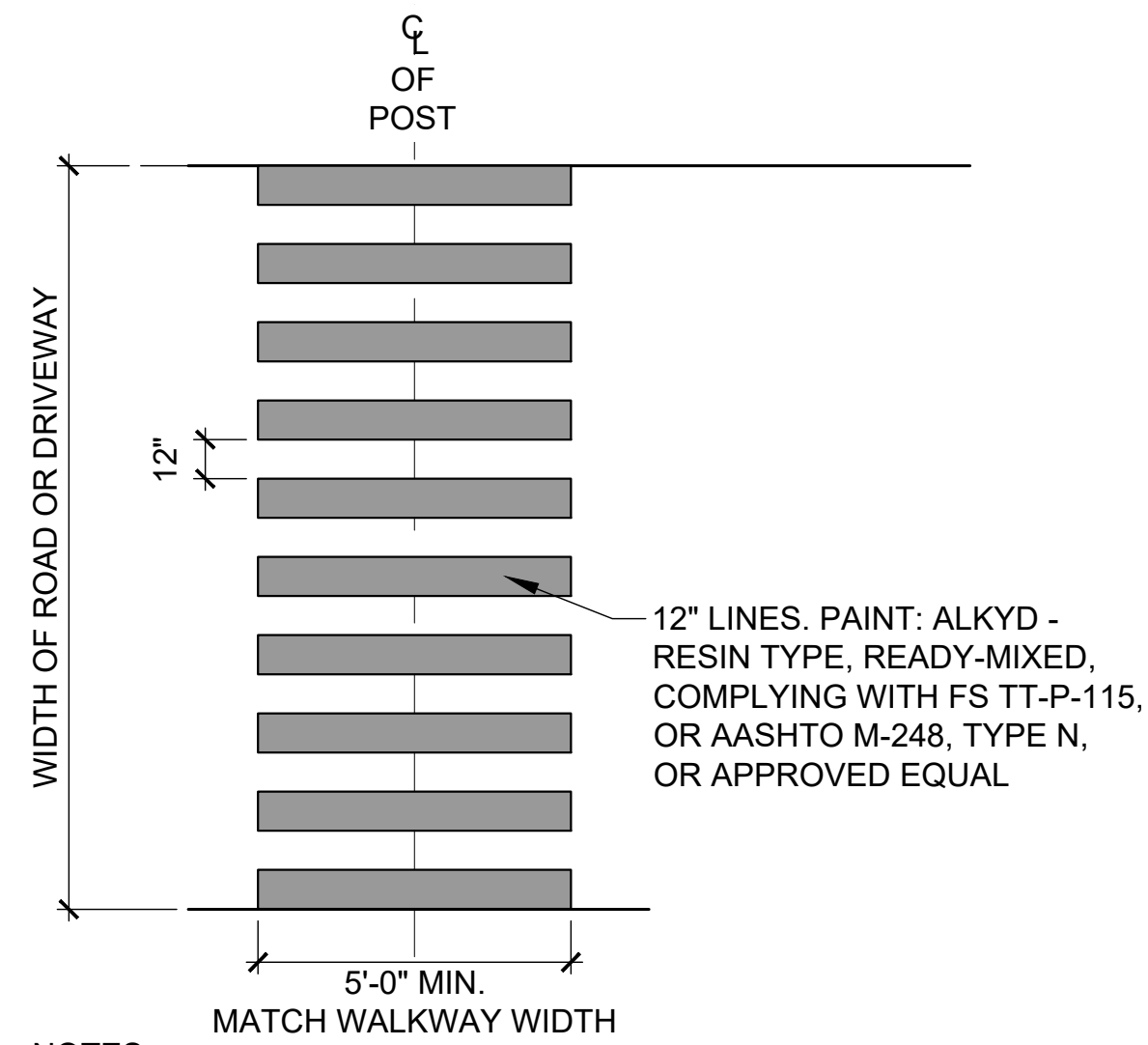
1
L6
STONE DUST PAVEMENT
1" = 1'-0"



NOTES:

1. INSTALL DETECTABLE WARNING DEVICE PER MANUFACTURER'S DIRECTIONS.
2. CONTRACTOR TO SUBMIT COLOR SELECTION FOR APPROVAL BY OWNERS REPRESENTATIVE PRIOR TO ORDERING.

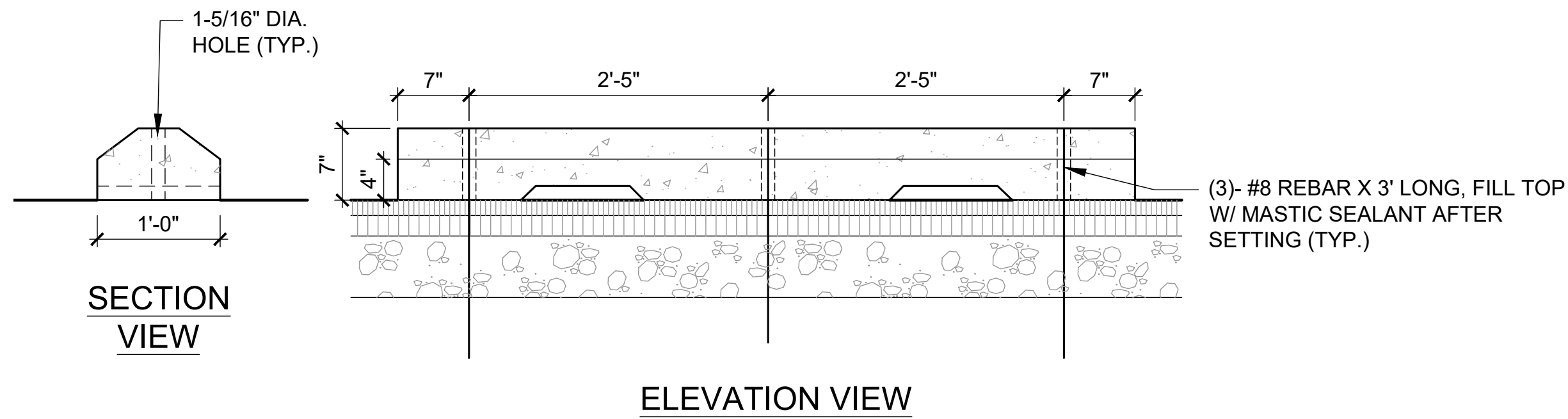
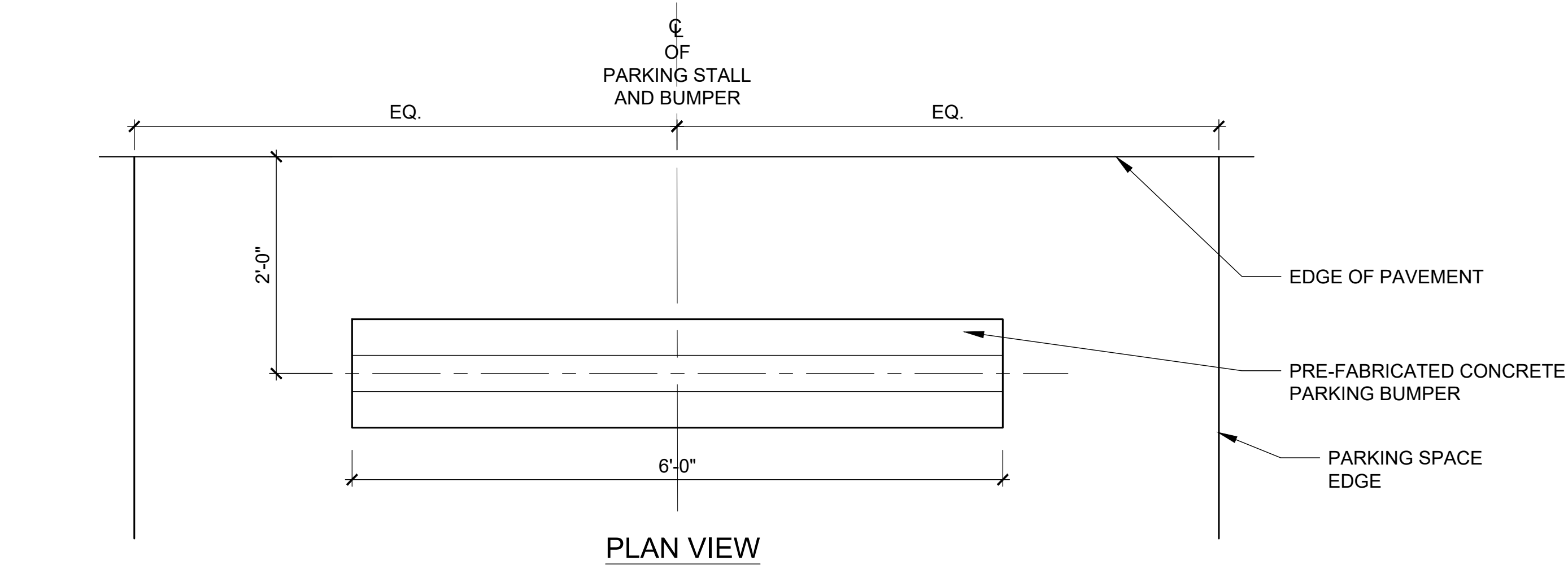
2
L6
DETECTABLE WARNING SURFACE
1" = 1'-0"



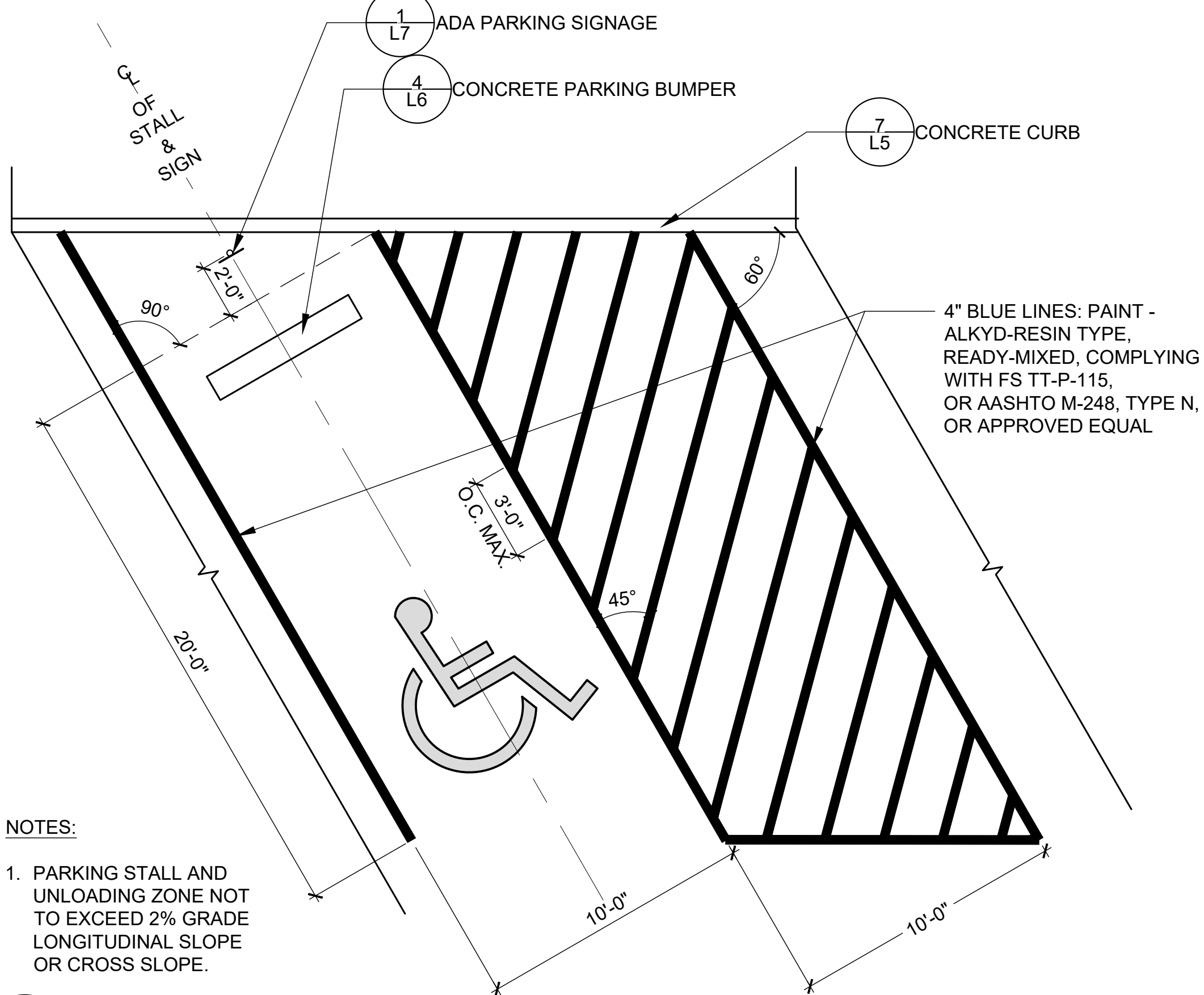
NOTES:

1. CROSSWALK TO CONFORM TO PADOT TYPE C-PERPENDICULAR STANDARD CROSSWALK MARKINGS.
2. GRADE AT DRIVEWAY CROSSWALKS NOT TO EXCEED 2% IN ALL DIRECTIONS.

3
L6
CROSSWALK STRIPING
1" = 1'-0"



4
L6
CONCRETE PARKING BUMPER
1" = 1'-0"



NOTES:

1. PARKING STALL AND UNLOADING ZONE NOT TO EXCEED 2% GRADE LONGITUDINAL SLOPE OR CROSS SLOPE.

5
L6
ADA PARKING LAYOUT
1/4" = 1'-0"

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119 EAST LANCASTER STREET
HARTZTOWN, PA 19041
P: 610.291.1201 F: 610.291.1002
WWW.SIMONECOLLINS.COM

NO.	DESCRIPTION	DATE	BY

DESIGNED	CADD	SCALE
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MB	SRL	PS

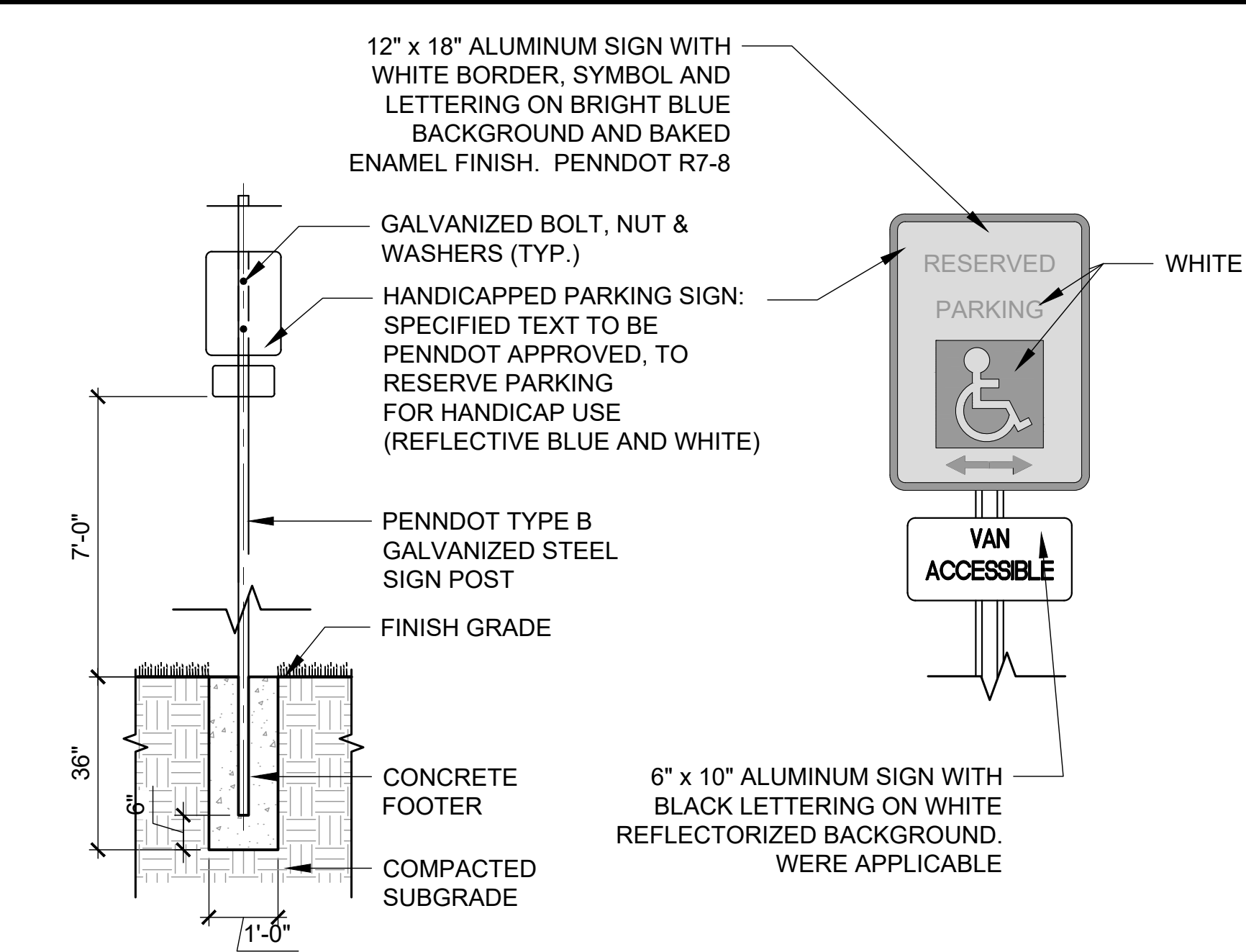


Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

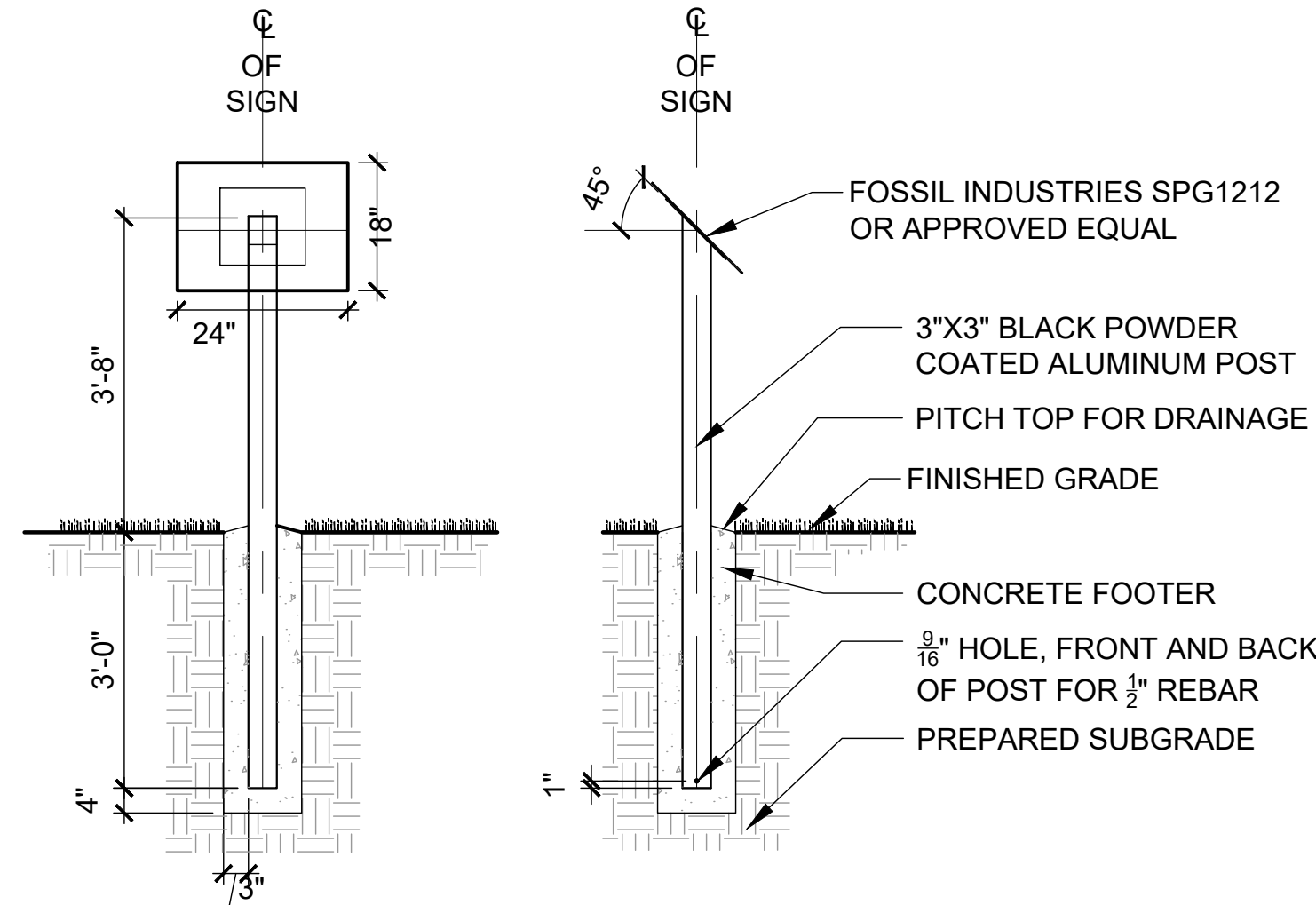
LANDSCAPE PLAN
SITE DETAILS

JOB NO.	SHEET NO.
60466	L6
DATE	DRAWING NO.
FEB. 2020	



- NOTE:
- CENTER SIGN WITH CENTERLINE OF PARKING STALL
 - ONLY PLACE "VAN ACCESSIBLE" SIGN AT NOTED PLAN LOCATIONS.
 - PLACE SIGN A MINIMUM OF 2' FROM BACK OF CURB.

1 ADA PARKING SIGNAGE



ELEVATION

SECTION

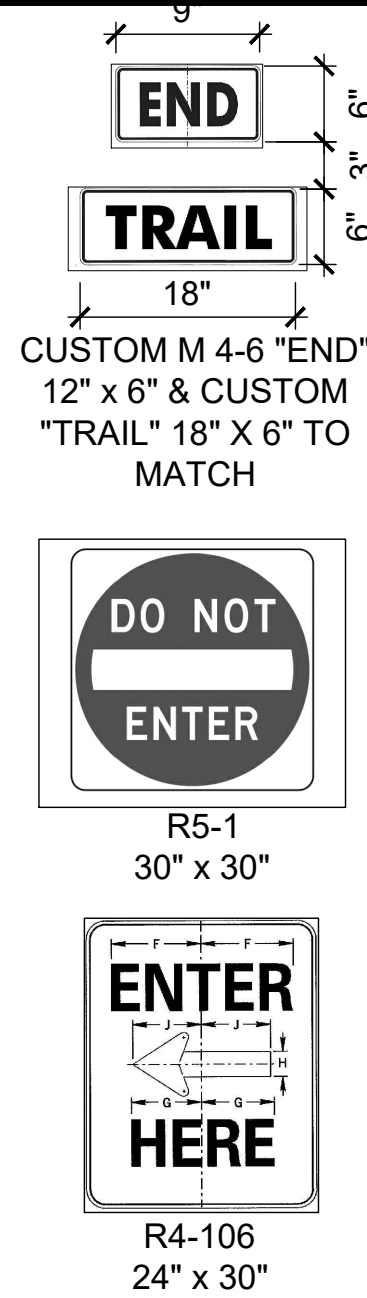
- NOTES:
- SIGN TEXT AND GRAPHICS WILL BE SUPPLIED TO CONTRACTOR.
 - SIGN MANUFACTURER:
FOSSIL INDUSTRIES
44 JEFFRYN BOULEVARD
DEER PARK, NY 11729
P: 631-254-9200
F: 631-254-4172
WWW.FOSSILGRAPHICS.COM
OR APPROVED EQUAL

3 INTERPRETIVE SIGN

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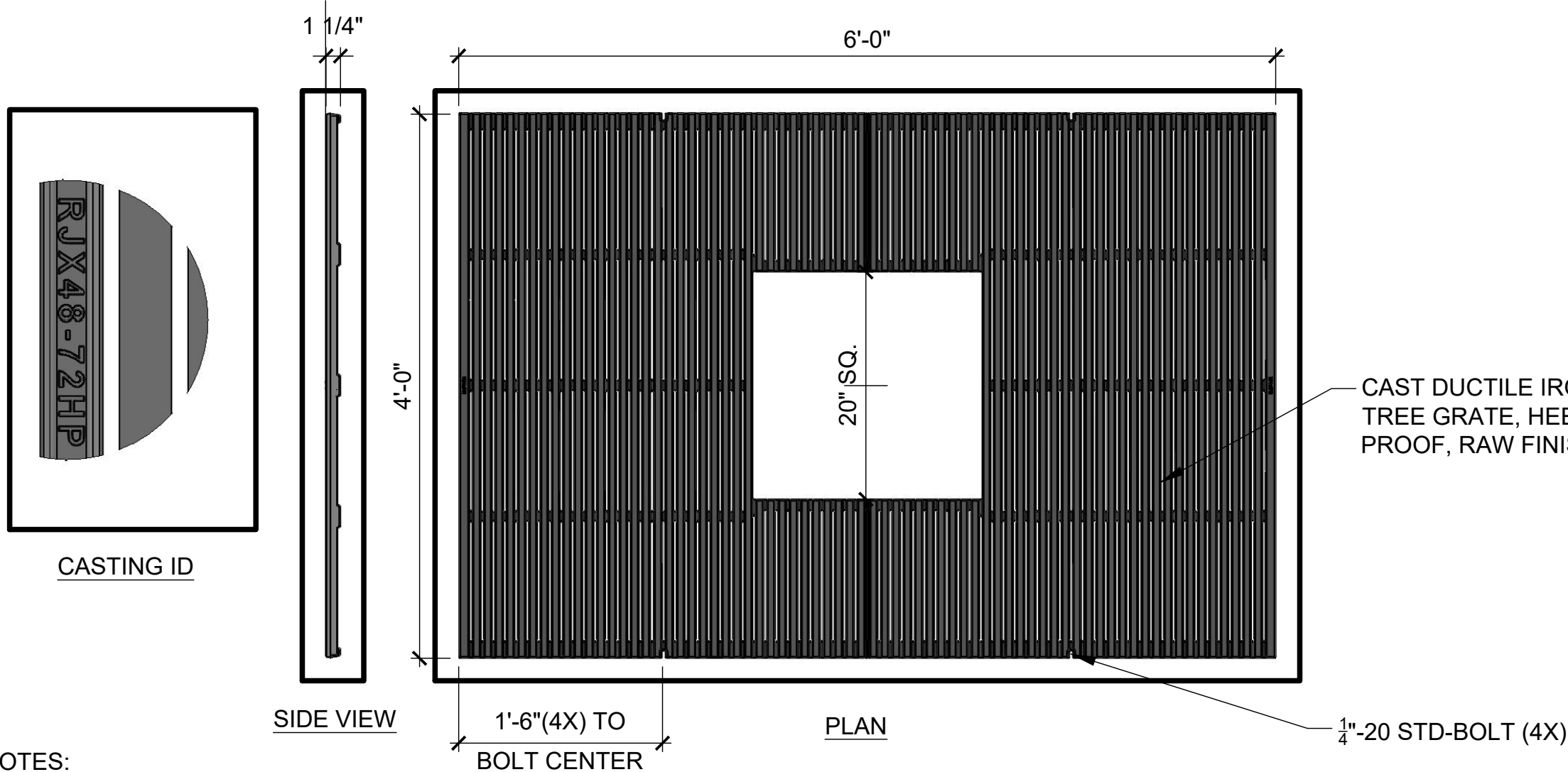


NO.	DESCRIPTION	DATE	BY



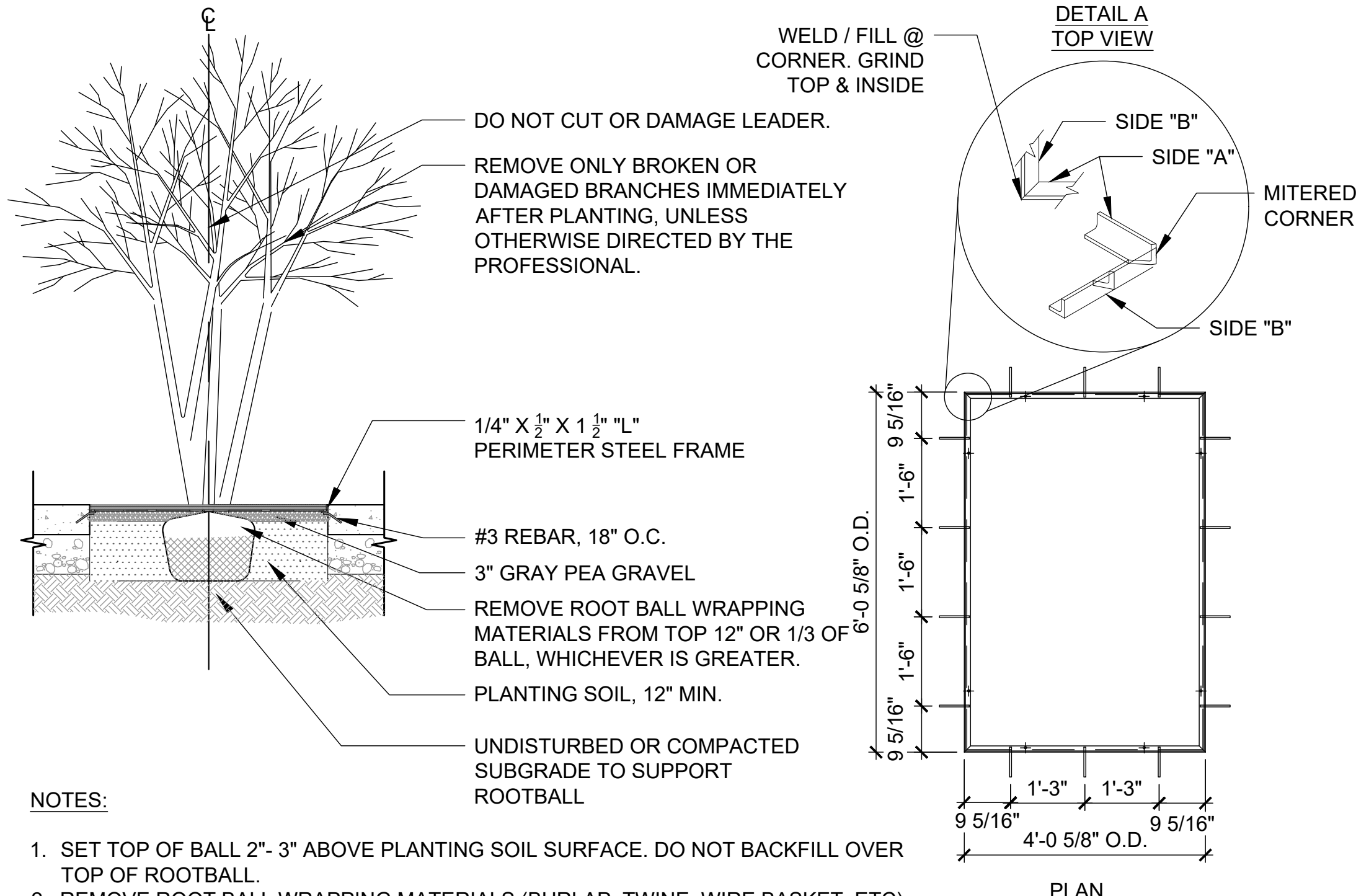
- NOTES:
- SIGNS TO CONFIRM TO PENNDOT PUB 236 STANDARDS
 - SIGNS TO BE INSTALLED ON METAL CHANNEL BAR POST IN ACCORDANCE WITH PENNDOT PUB 408 UNLESS OTHERWISE NOTED. POST SIZE TO MEET REQUIREMENTS FOR SIGN SIZE AND MOUNTING HEIGHT.

2 TRAFFIC SIGNAGE



- NOTES:
- NO THRU OPENINGS GREATER THAN 1/4".
 - PRODUCT SHIPS IN PIECES.
 - PRODUCT ID: RJX48-72199TGHP "REGULAR JOE 4'X6' HEEL PROOF TREE GRATE"
 - PRODUCT FITS IRON AGE CUSTOM FRAME.
 - MANUFACTURER: IRON AGE DESIGNS
2104 SW 152ND STREET, SUITE 4
BURIEN WA, 98166
PHONE: 206-276-0925

4 TREE GRATE



- NOTES:
- SET TOP OF BALL 2"-3" ABOVE PLANTING SOIL SURFACE. DO NOT BACKFILL OVER TOP OF ROOTBALL.
 - REMOVE ROOT BALL WRAPPING MATERIALS (BURLAP, TWINE, WIRE BASKET, ETC) AFTER TREE IS SET IN PLACE. SYNTHETIC WRAPPING MUST BE REMOVED COMPLETELY.
 - ALL WELDS TO BE KEPT OUTSIDE OF TREE GRATE BEARING SURFACES, WELDS ON BEARING SURFACES TO BE GROUND SMOOTH.

5 TREE PLANTING WITH TREE GRATE



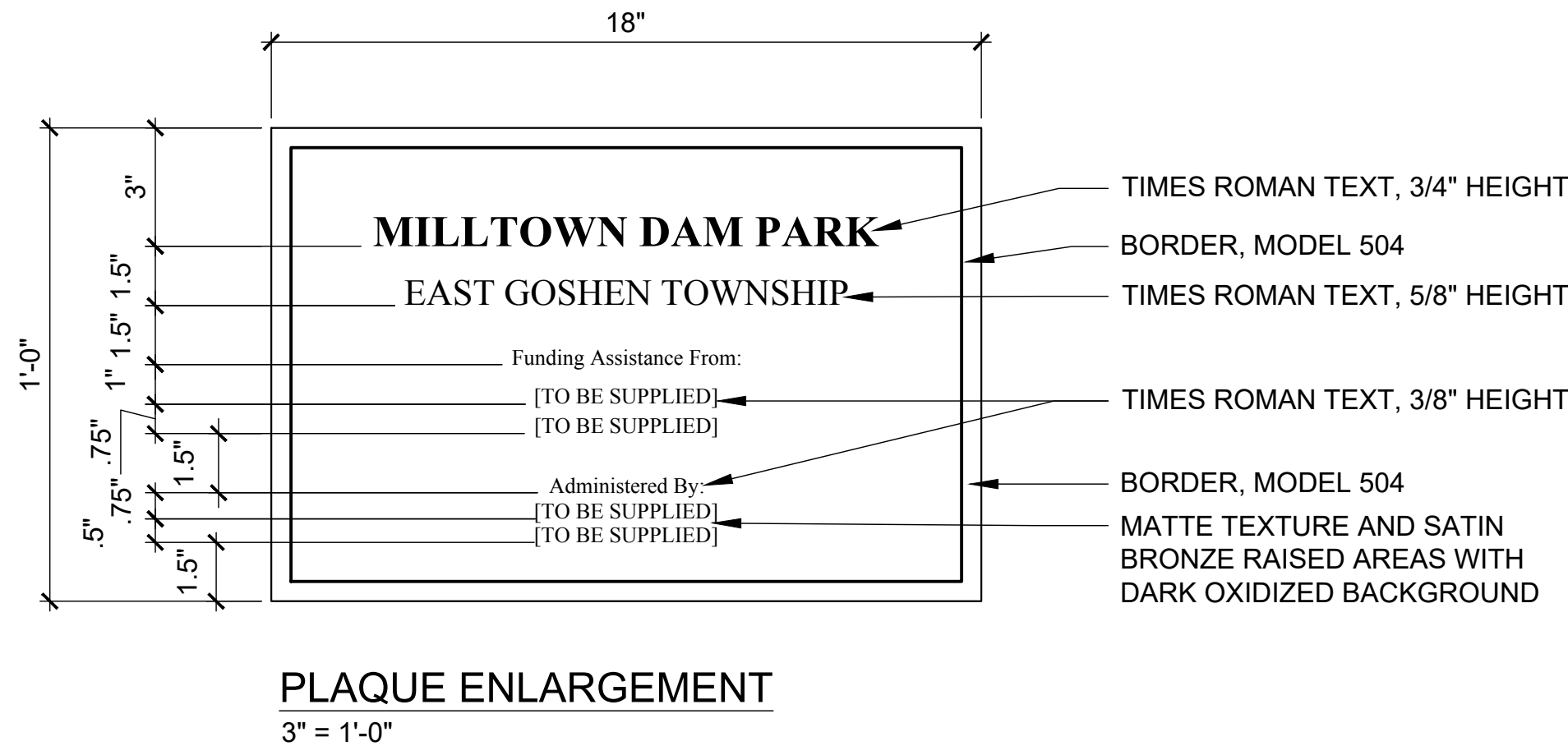
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DRAWN	CHECKED	APPROVED
MB	SRL	PS

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

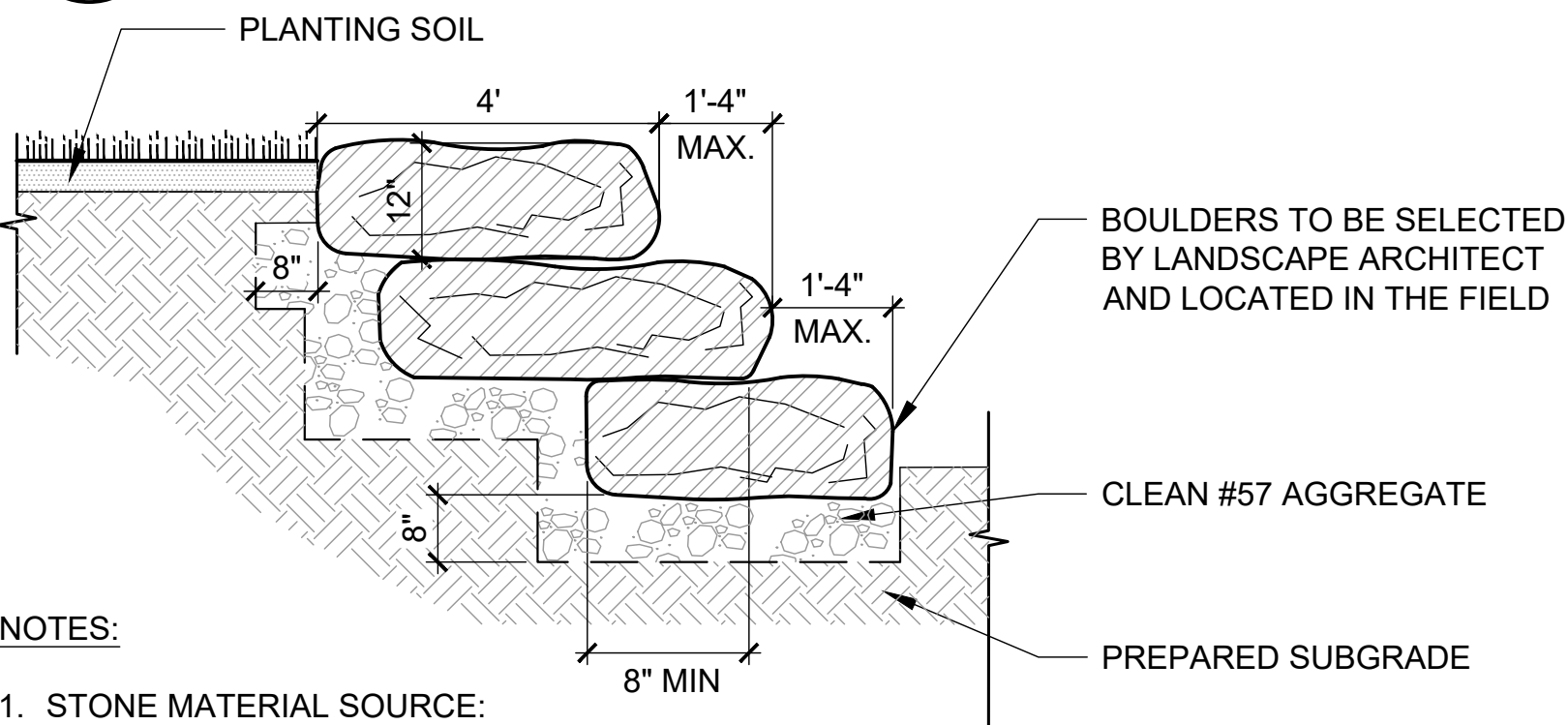
LANDSCAPE PLAN
SITE DETAILS

JOB NO.	SHEET NO.
60466	L7
DATE	DRAWING NO.
FEB. 2020	



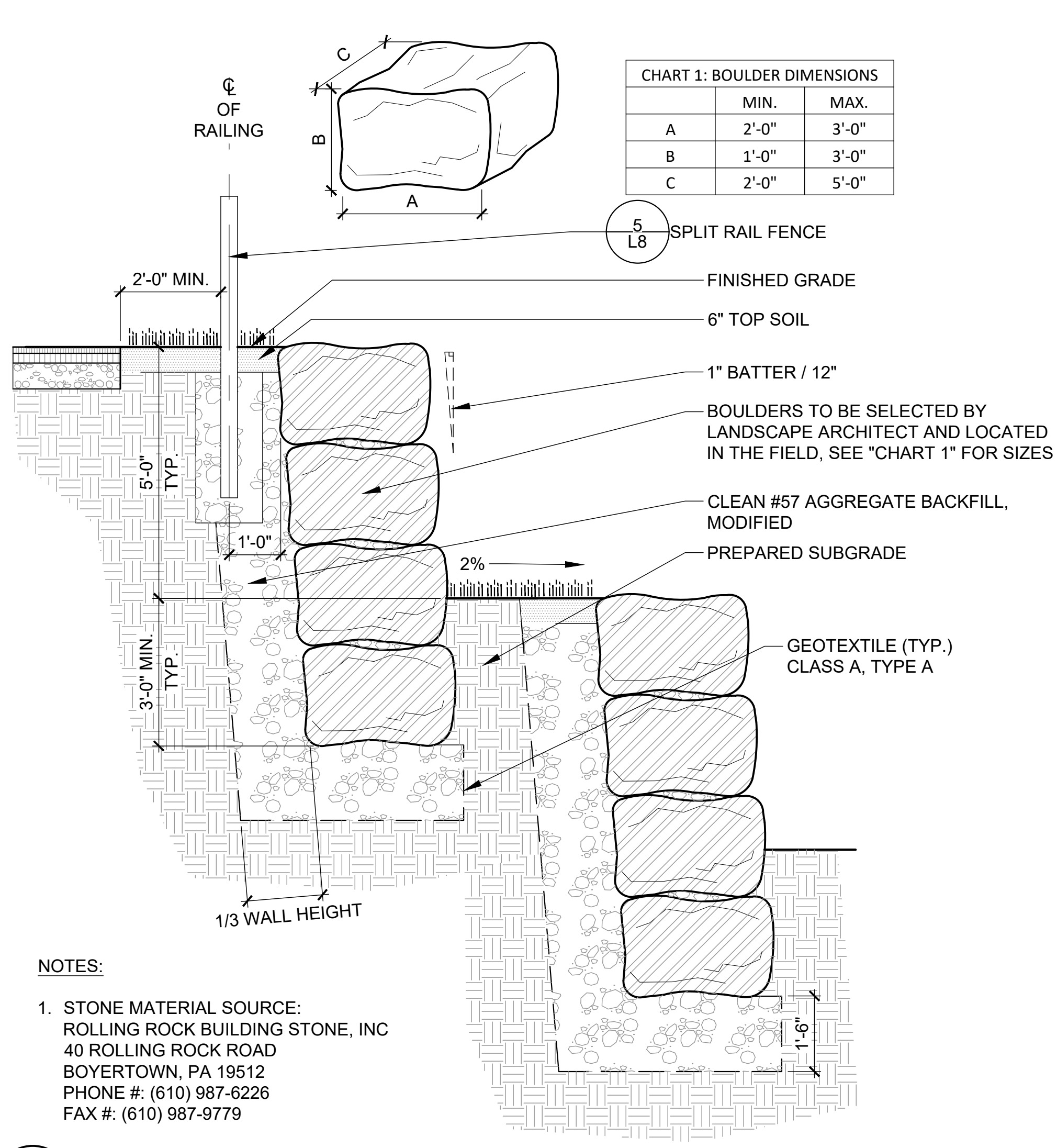
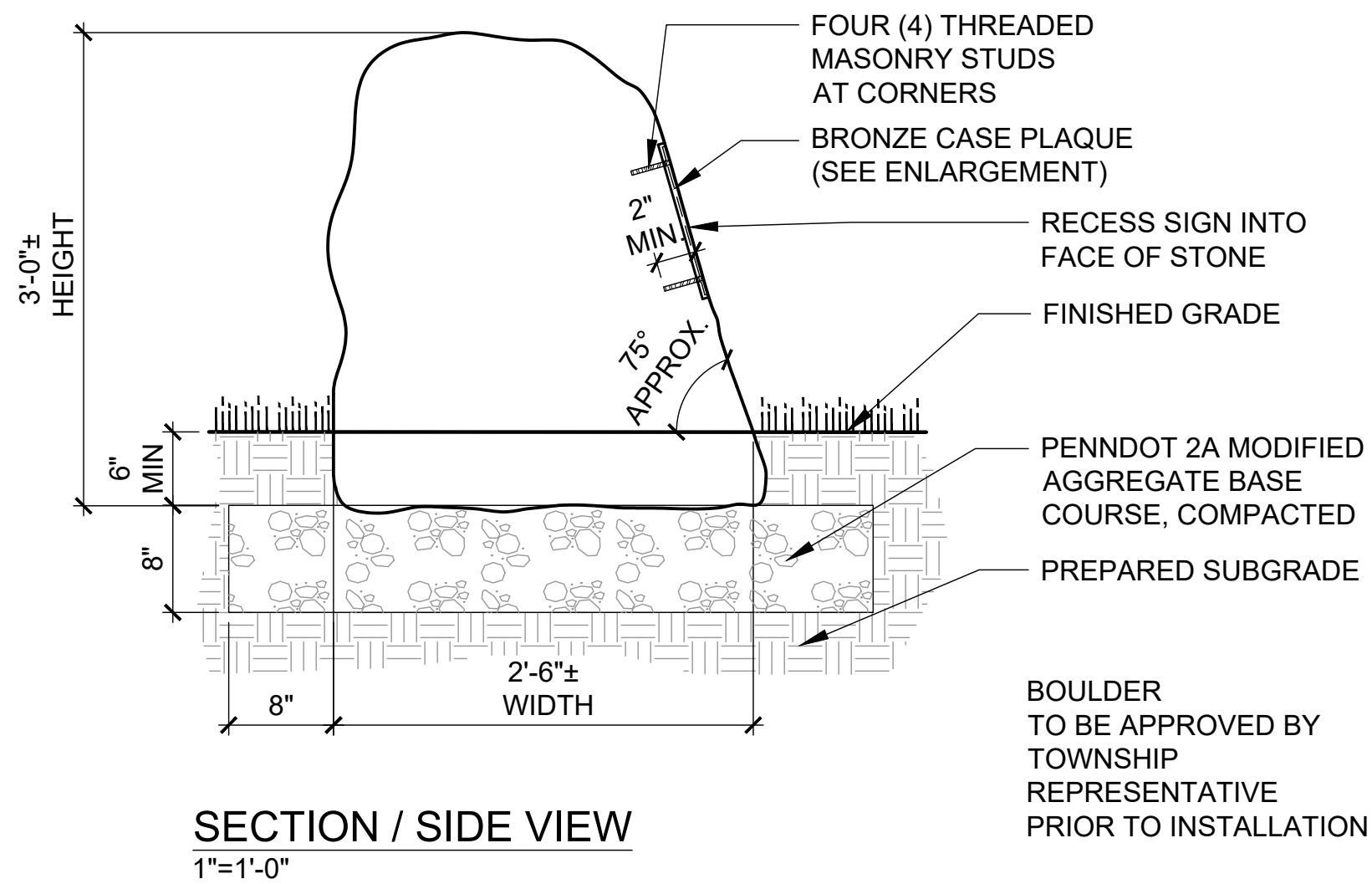
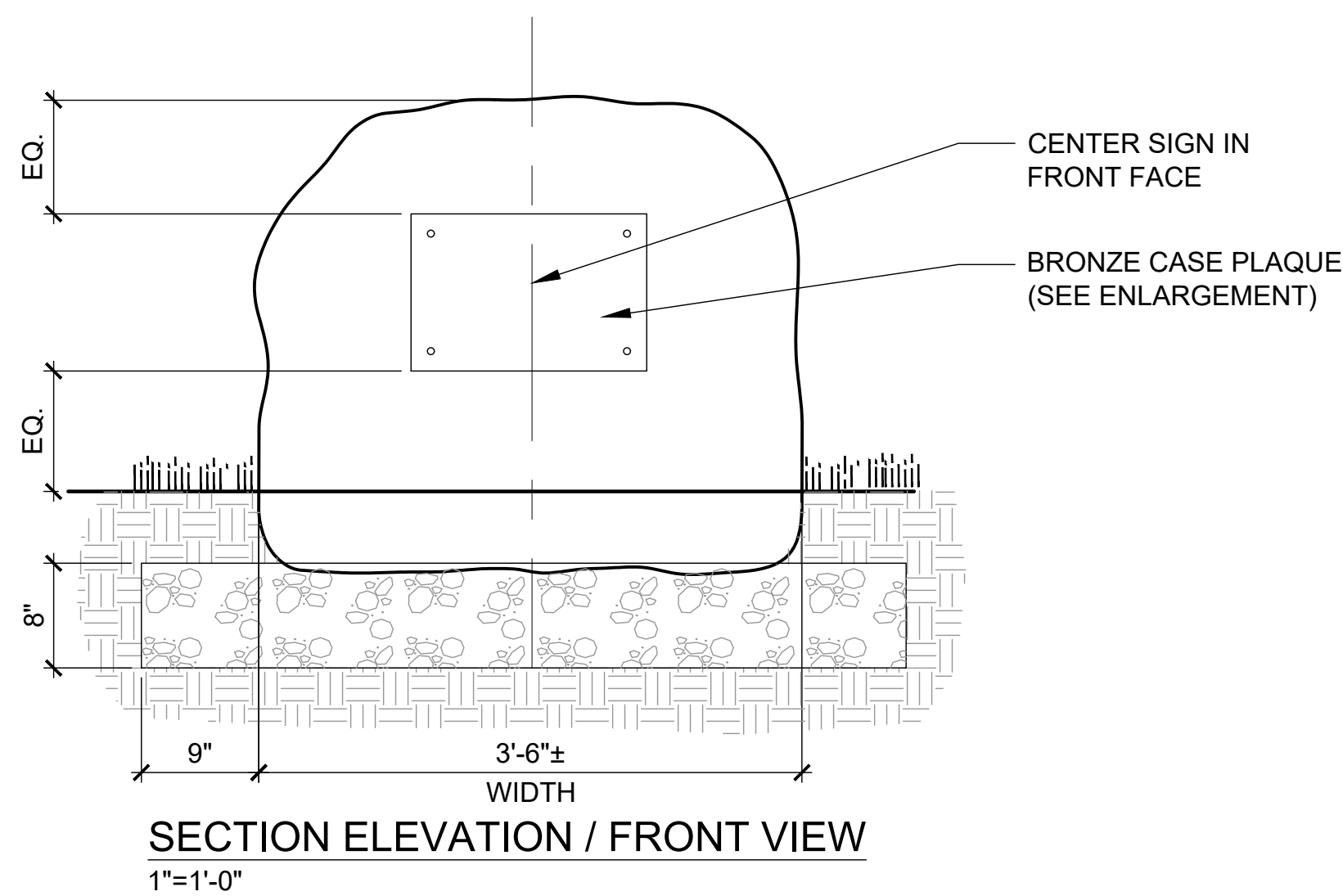
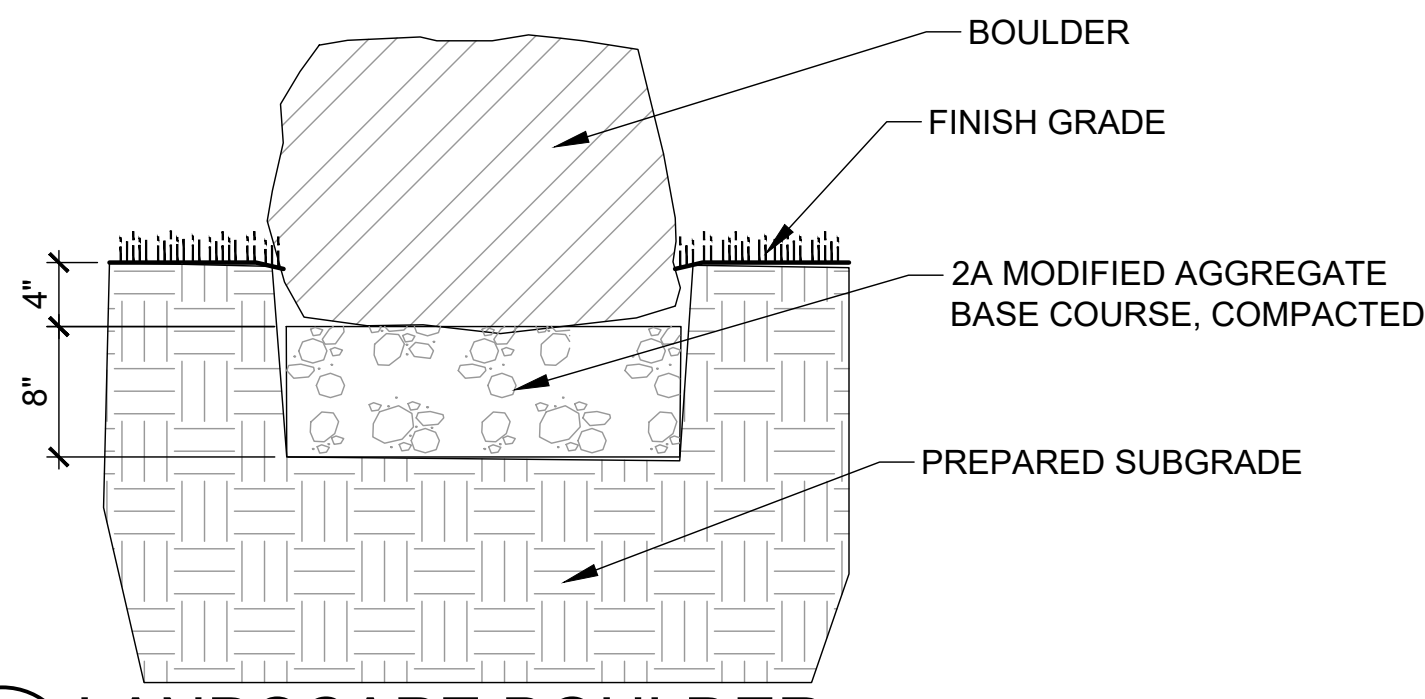
- NOTES:
- ALL TEXT TIMES NEW ROMAN AND RAISED 1/16" HEIGHT.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS & COLOR / FINISH SAMPLES FOR PLAQUE FOR APPROVAL BY TOWNSHIP REPRESENTATIVE PRIOR TO INSTALLATION.
 - MANUFACTURER: ARK RAMOS ARCHITECTURAL SIGNAGE SYSTEMS, OKLAHOMA CITY, OKLAHOMA, 1-800-725-7266, OR APPROVED EQUAL.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS. TOWNSHIP REPRESENTATIVE TO APPROVE SHOP DRAWINGS AND FINISHES PRIOR TO INSTALLATION.
 - ORDER MATERIALS ALLOWING SUFFICIENT LEAD TIME FOR SHIPPING TO AVOID DELAYING WORK. INSPECT UPON ARRIVAL ALL MATERIALS TO VERIFY ITEMS SHIPPED ARE CORRECT AS ORDERED AND INTACT.
 - PROVIDE FULL SIZE PAPER MOUNTING TEMPLATE SHOWING HOLE PLACEMENT LOCATION OF MOUNTING HOLES IN CONCRETE.
 - CONTRACTOR TO PREPARE STONE FACE TO MOUNT PLAQUE FLUSH TO STONE SURFACE WITHIN 1/4" OF STONE FACE.

1 BRONZE SIGN

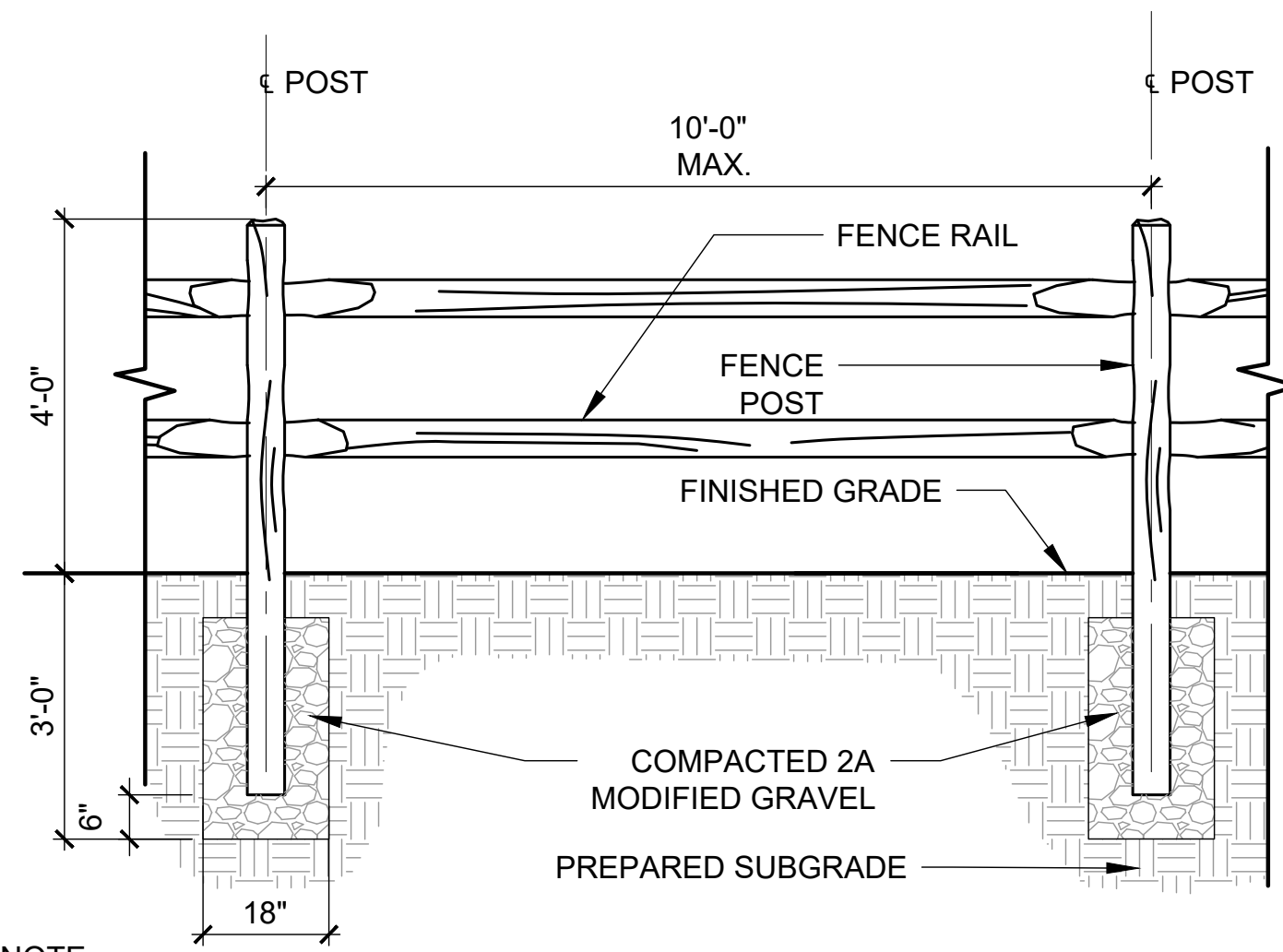


3 LOW BOULDER WALL

4 LANDSCAPE BOULDER



2 BOULDER RETAINING WALL



- NOTE:
- PLACE ODD FENCE POST SPACING AWAY FROM END POSTS. MINIMUM RAIL LENGTH IS 4'.
 - ALL FENCING ALONG PATHS SHOULD BE A MIN. OF 24" FROM EDGE OF WALKWAY.

5 SPLIT RAIL FENCE

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA

MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
SITE DETAILS

JOB NO.
60466

SHEET NO.
L8

DATE
FEB. 2020

DRAWING NO.

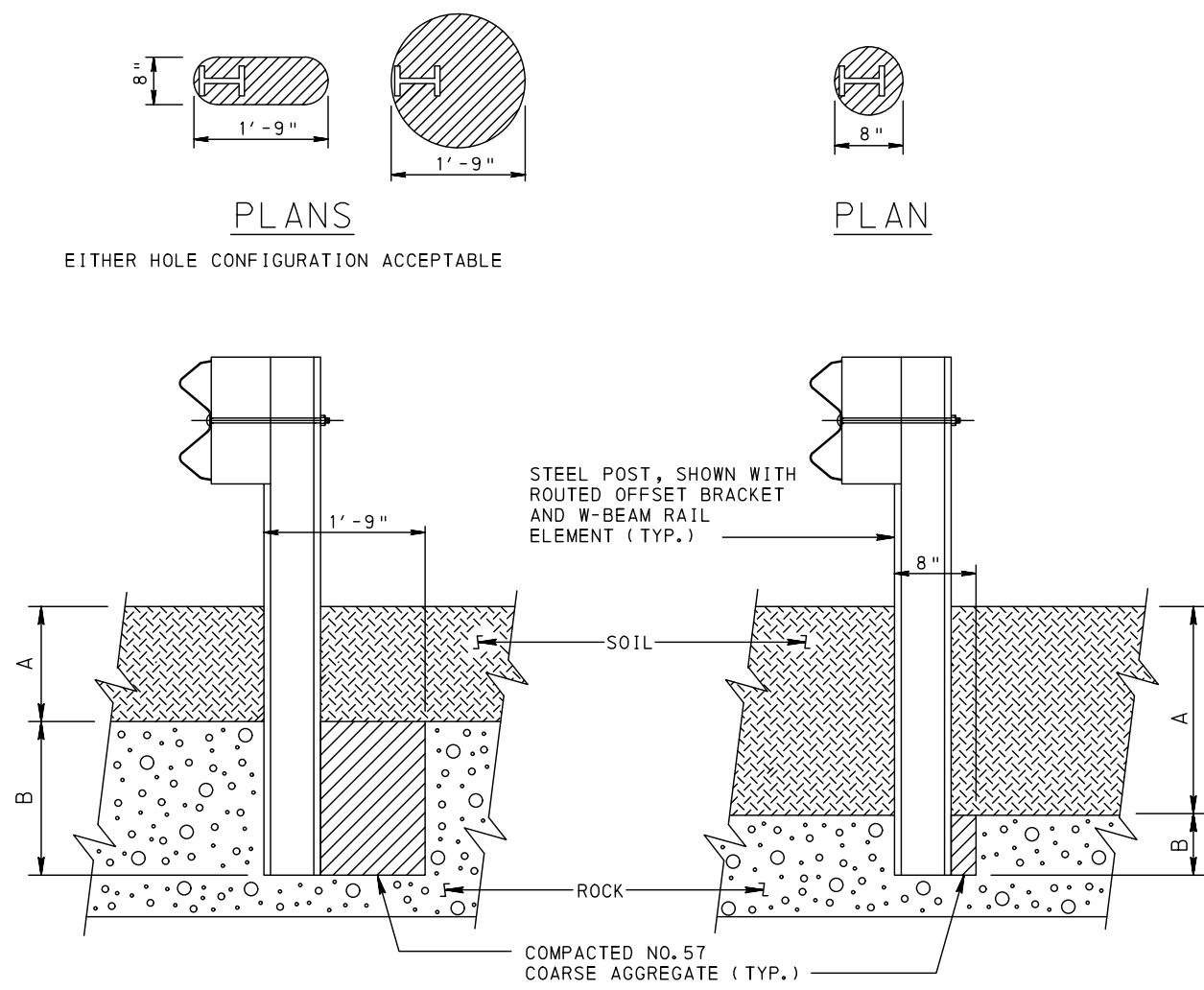
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COLLINS
LANDSCAPE
ARCHITECTURE
1100 LAMAR STREET
HOBOKEN, NJ 07030
P: (201) 981-1800 F: (201) 981-1802
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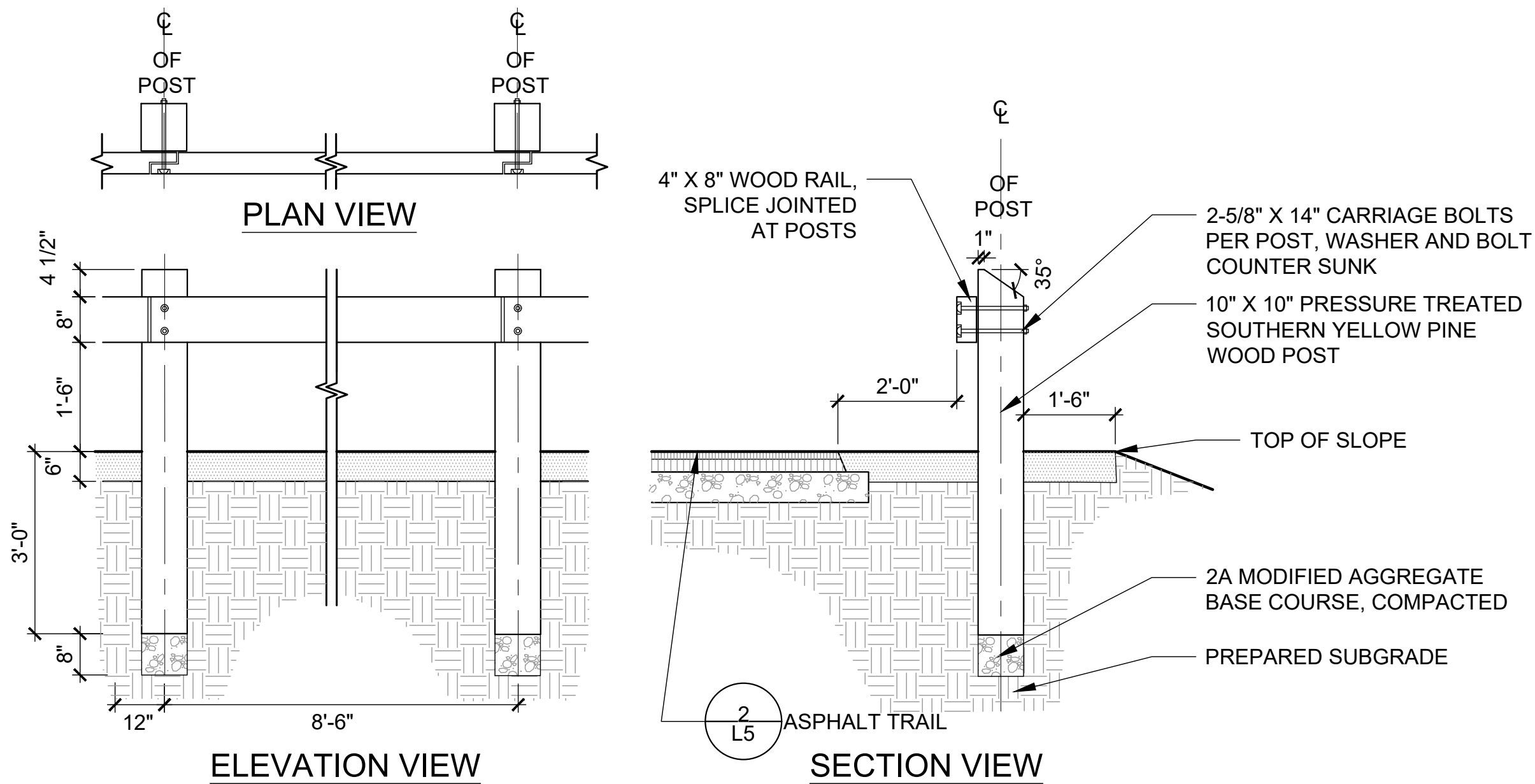


NOTES:

1. INSTALLATION OF GUIDE RAIL TO CONFORM TO PADOT PUB 408

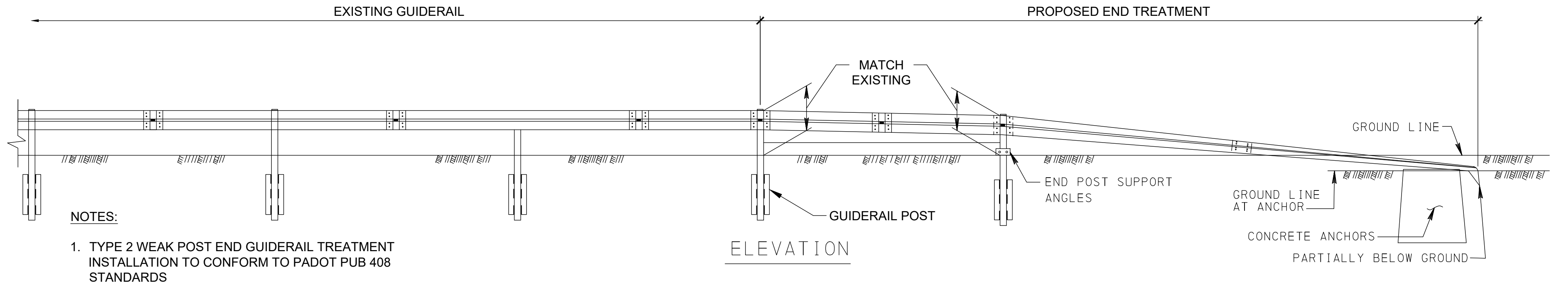
1 L9 1/2" = 1'-0"

STEEL GUIDERAIL TYPE 31 STRONG



3 L9 1/2" = 1'-0"

TIMBER GUIDERAIL



2 L9 1/4" = 1'-0"

END GUIDERAIL TREATMENT

c:\17028.00_milltown_dam_perk_cds\DWG\ACTIVE\sheet_sml\5 SITE DETAILS.dwg
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REVISIONS			

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MB	SRL	PS



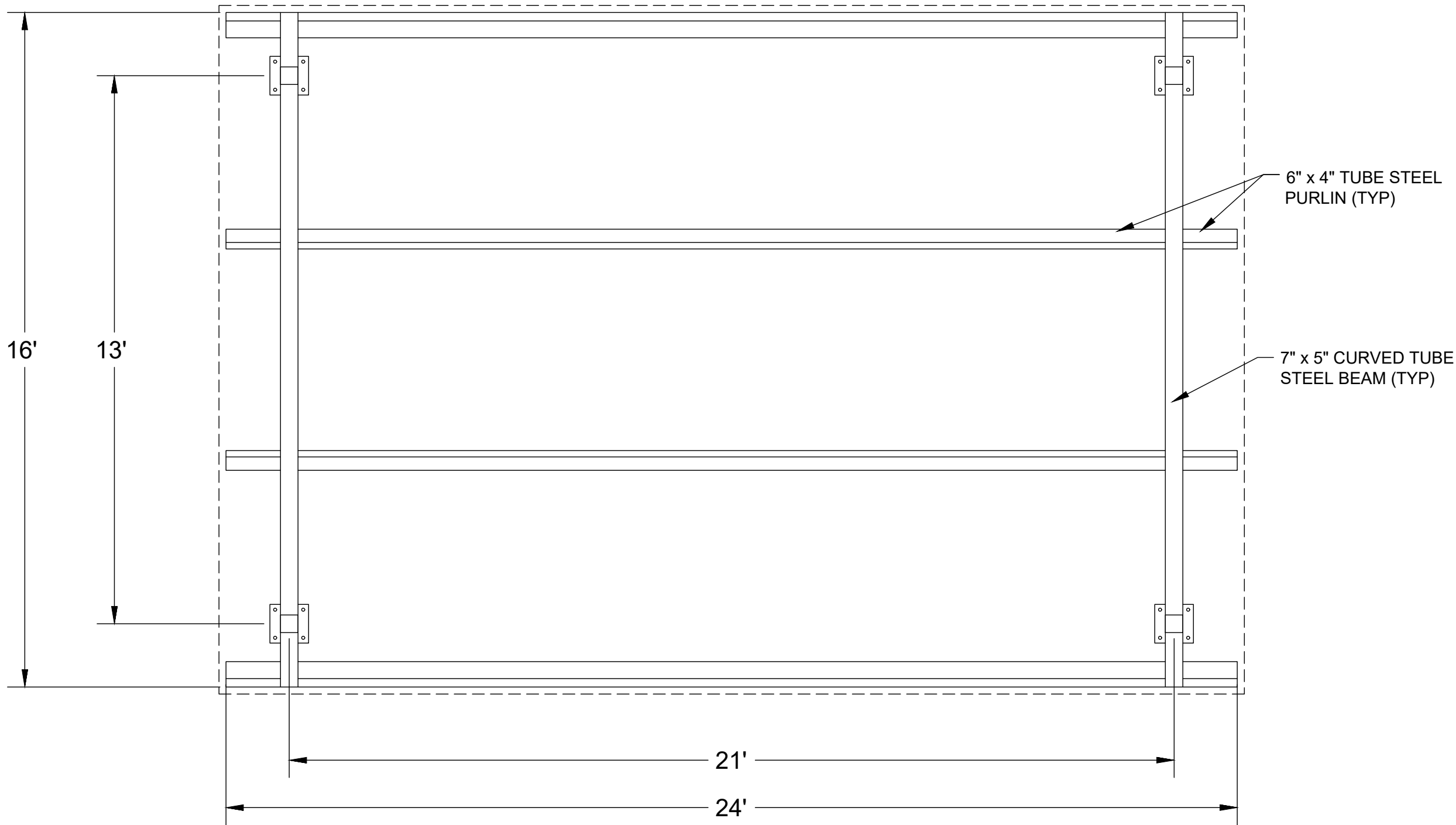
Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

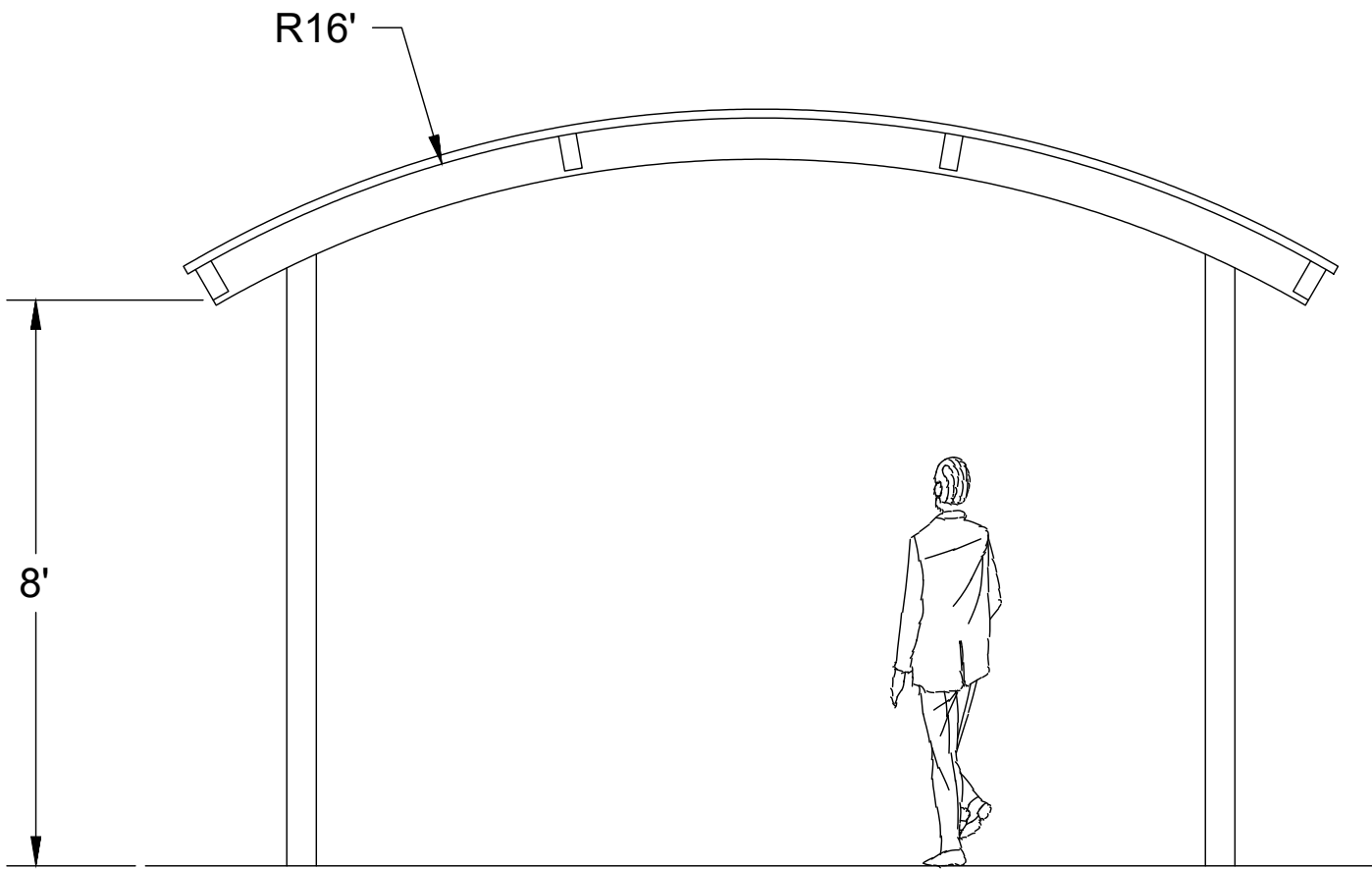
LANDSCAPE PLAN SITE DETAILS	JOB NO. 60466	SHEET NO. L9
	DATE FEB. 2020	DRAWING NO.

NOTES:

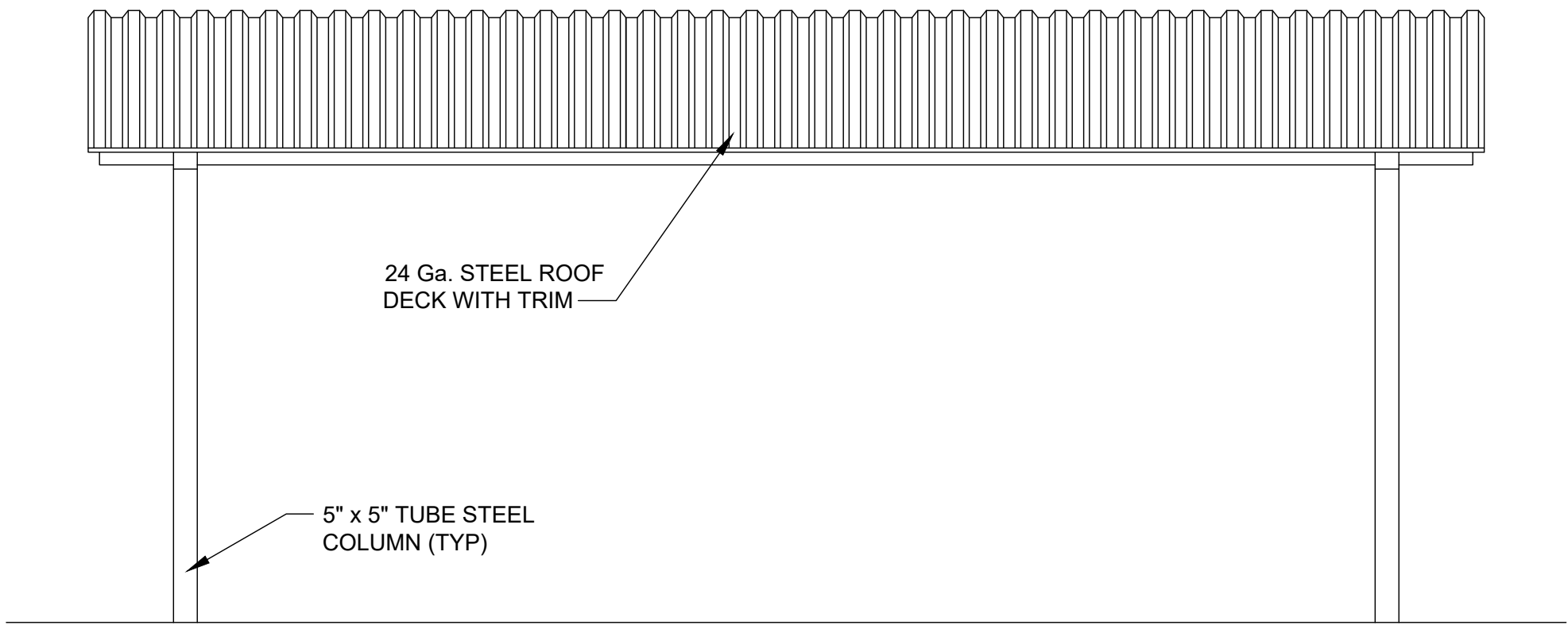
1. MODEL: BARREL VAULT SHELTER - BV1624
2. DESIGN CRITERIA: STRUCTURE SHALL BE DESIGNED TO MEET SITE SPECIFIC SNOW AND WIND LOAD DESIGN CRITERIA USING MOST CURRENT APPLICABLE BUILDING CODES. ALL STRUCTURAL MEMBERS ARE ASTM A-500 U.S. GRADE B STEEL. WELDED CONNECTION PLATES SHALL BE ASTM A-36 HOT ROLLED STEEL. ALL FABRICATION PERFORMED TO LATEST AISC STANDARDS BY AWS CERTIFIED WELDERS. ALL FRAMING CONNECTIONS ARE DONE USING A325 GRADE BOLTS WITHIN CONCEALED ACCESS OPENINGS FROM ABOVE AND WILL LATER BE CONCEALED BY THE ROOFING. ALL ROOF FRAMING SHALL BE FLUSH AGAINST THE ROOF DECKING TO ELIMINATE THE POSSIBILITY OF BIRD NESTING.
3. TUBULAR STEEL COLUMNS AND BEAMS: STANDARD COLUMN DIMENSION SHALL BE 5" X 5" X 3/16" TUBULAR STEEL WELDED TO 5/8" BASE PLATES FOR SURFACE MOUNTING. MAIN SUPPORT BEAMS ARE 7" X 5" X 3/8" AND PURLINS ARE 6" X 4" X 1/8". STEEL SIZES ARE PRELIMINARY AND MAY CHANGE DUE TO ONGOING REVIEW AND FINAL ENGINEERING.
4. ROOFING: 24 GA. PRE-CUT AND PRE-CURVED STEEL MEGA-RIB PANELS WITH KYNAR 500 FINISH IN STANDARD COLOR WITH WHITE UNDERSIDE. STANDARD ROOF RADIUS IS 16'-0" WITH AN EAVE HEIGHT OF 8'-0". ATTACHED TO STRUCTURAL FRAMING WITH EXPOSED SELF TAPPING SCREWS PAINTED TO MATCH ROOF COLOR. MATCHING 24 GA. TRIM INCLUDED.
5. FRAME FINISH: ALL STEEL FRAMEWORK WILL RECEIVE A CORROSION PROTECTIVE TGIC POLYESTER POWDER COAT, ELECTRO-STATICALLY APPLIED AND CURED AT 400°F. COLOR: FROM STANDARD RANGE.
6. FOUNDATION: ALL COLUMNS TO BE ANCHORED TO CONCRETE FOOTINGS (FOOTING DESIGN PROVIDED SEPARATELY). COLUMNS CAN BE SURFACE MOUNTED TO FOOTINGS WITH ANCHOR BOLTS AT OR BELOW FINISH SLAB ELEVATION OR THEY CAN BE EMBEDDED DIRECTLY INTO THE FOOTING WITHOUT BASE PLATES UPON REQUEST. ANCHOR BOLTS AND BRACING TEMPLATES ARE INCLUDED. OPTIONAL BASE PLATE COVERS ARE AVAILABLE AT AN ADDITIONAL COST.
7. HARDWARE: ALL STRUCTURAL HARDWARE AND ROOFING FASTENERS SHALL BE PROVIDED BY THE MANUFACTURER.
8. CONTRACTOR TO SUBMIT FINAL SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE.
9. MANUFACTURER:
CEDAR FOREST PRODUCTS
P.O. BOX 145
WEST OLIVE, MI 49460



PLAN



ELEVATION



ELEVATION

1
L10
PAVILION
NOT TO SCALE

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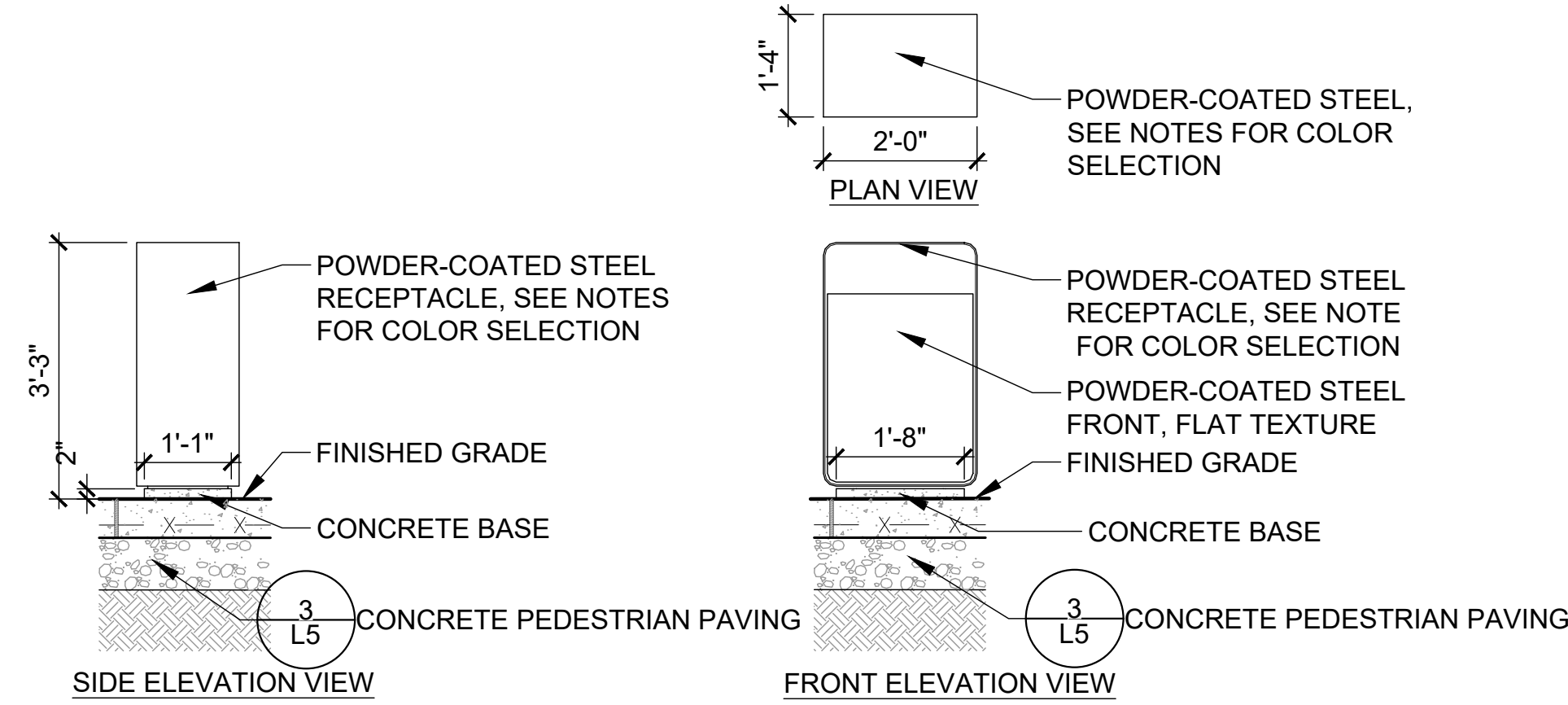
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SRL	MB	AS SHOWN
DRAWN	CHECKED	APPROVED
MB	SRL	PS



Gannett Fleming

EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

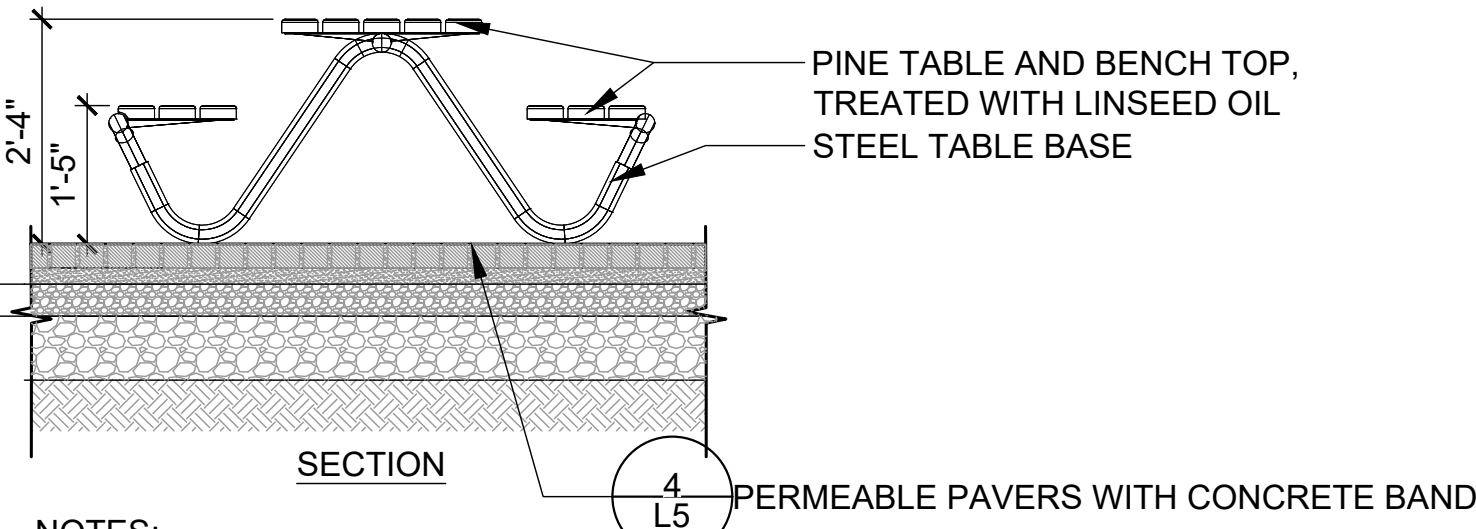
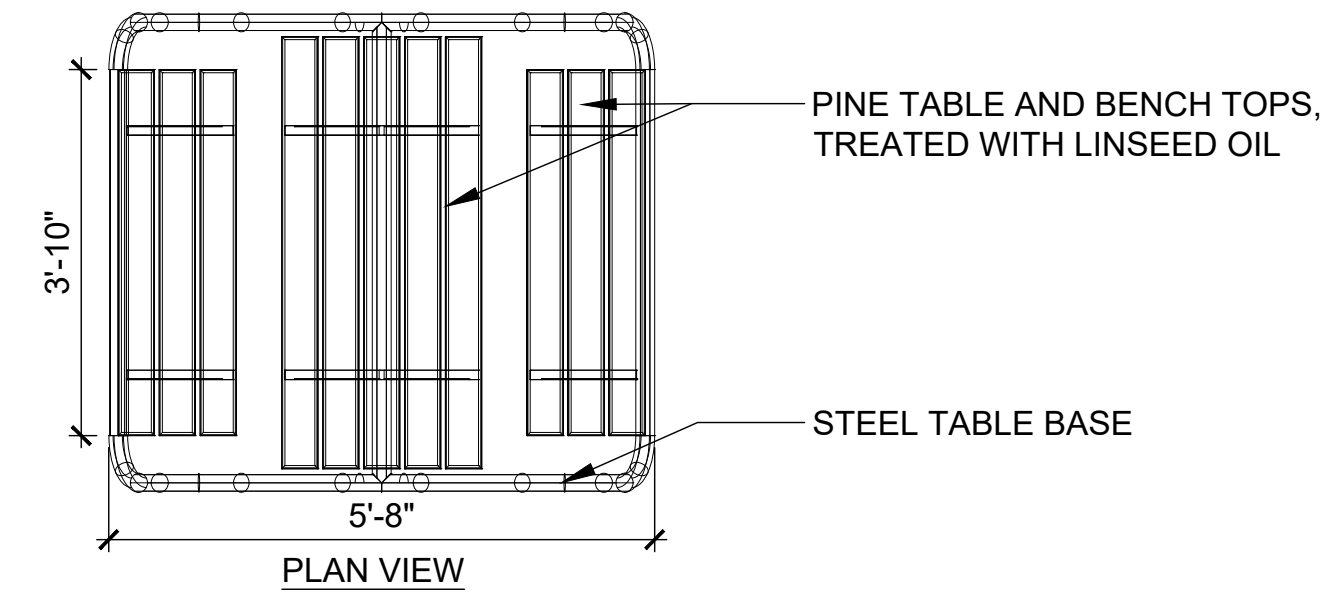
LANDSCAPE PLAN SITE DETAILS	JOB NO. 60466	SHEET NO. L10
	DATE FEB. 2020	DRAWING NO.



- NOTES:
1. MANUFACTURER: VESTRE
 - MODEL: 644 VROOM LITTER BIN, 140 LITERS
 - ALL HARDWARE AND FASTENERS PROVIDED BY MANUFACTURER, AND ARE ACID RESISTANT OR STAINLESS STEEL.
 2. SEE MOUNTING & INSTALLATION INSTRUCTIONS BY MANUFACTURER.
 3. COLOR OF TRASH RECEPTACLE: TO BE SELECTED.
 4. COLOR OF RECYCLING RECEPTACLE: TO BE SELECTED.

1 STEEL TRASH RECEPTACLE

L11 1/2" = 1'-0"

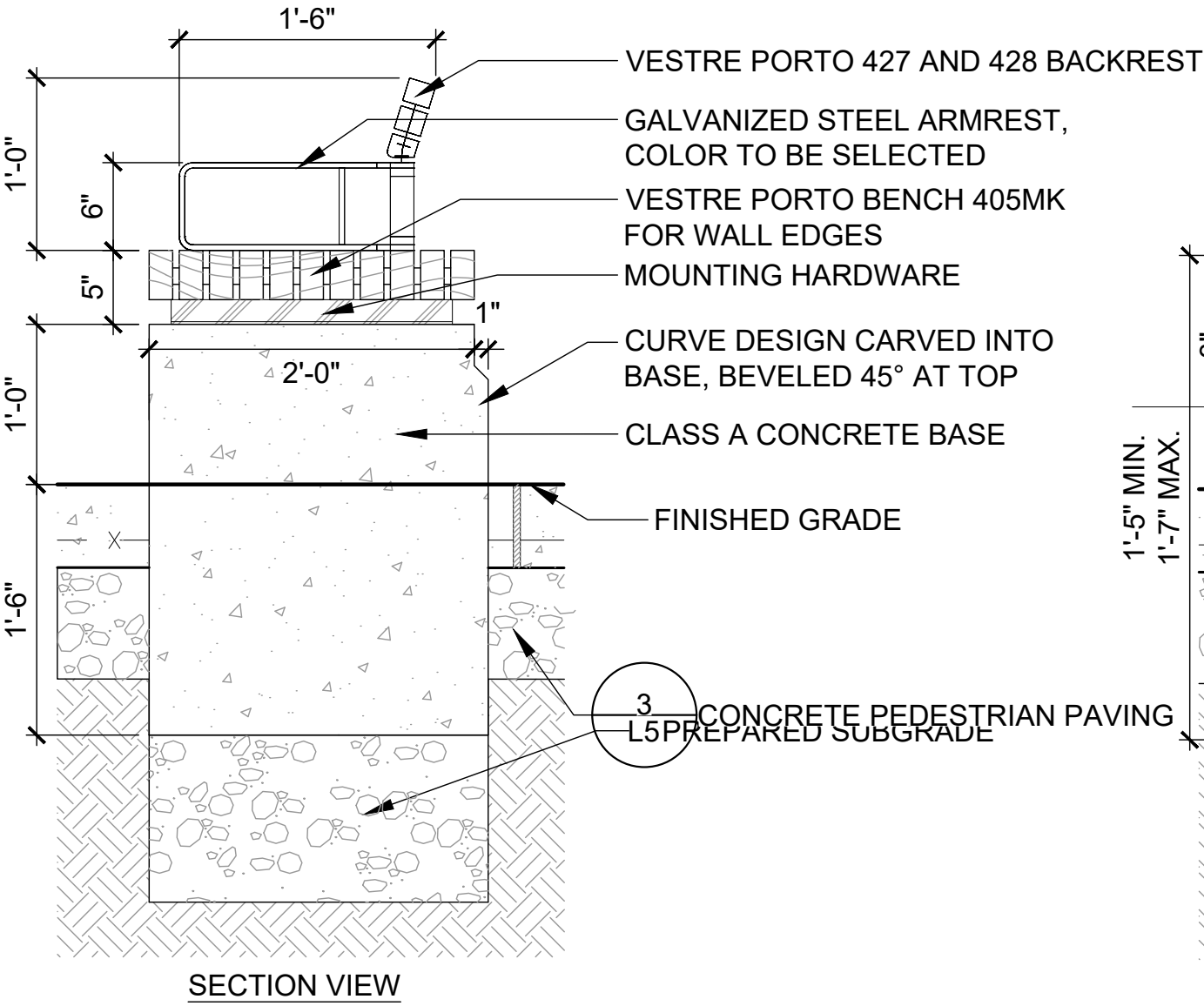


- NOTES:
1. MANUFACTURER: VESTRE
 - MODEL: 122 HVILAN DOUBLE BENCH AND TABLE, FREESTANDING
 - ALL HARDWARE AND FASTENERS PROVIDED BY MANUFACTURER, AND ARE HOT DIP GALVANIZED OR STAINLESS STEEL.
 2. SEE MOUNTING & INSTALLATION INSTRUCTIONS BY MANUFACTURER
 3. COLOR: TO BE SELECTED.

3 PICNIC TABLE

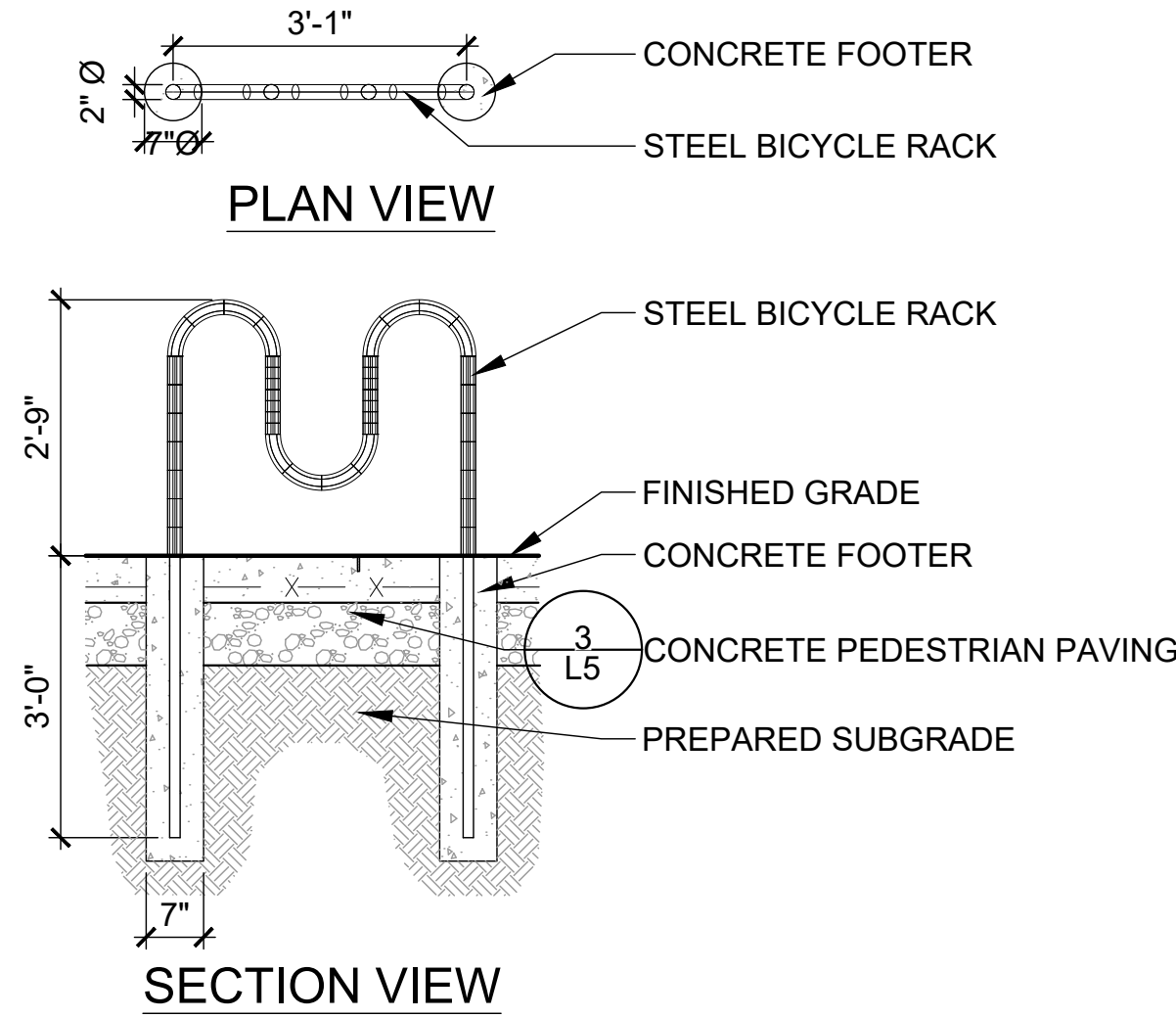
L11 1/2" = 1'-0"

- NOTES:
1. ALL HARDWARE AND FASTENERS ARE GALVANIZED STEEL. HARDWARE AND FASTENERS TO BE PROVIDED BY MANUFACTURER. SEE BENCH MOUNTING & INSTALLATION INSTRUCTIONS BY MANUFACTURER.
 2. CONCRETE BASE NOT INCLUDED FROM MANUFACTURER.



2 CONCRETE AND WOOD BENCH

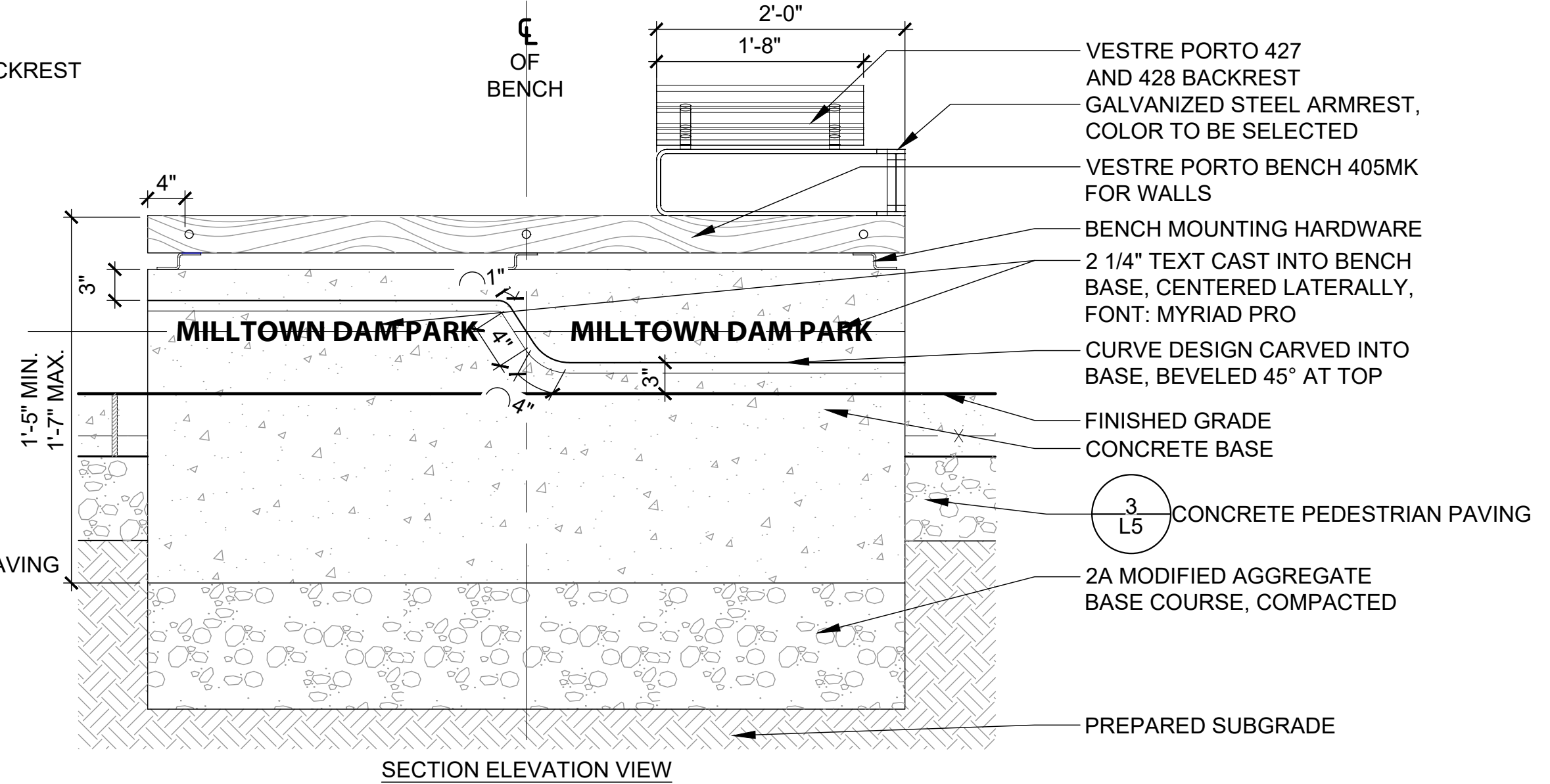
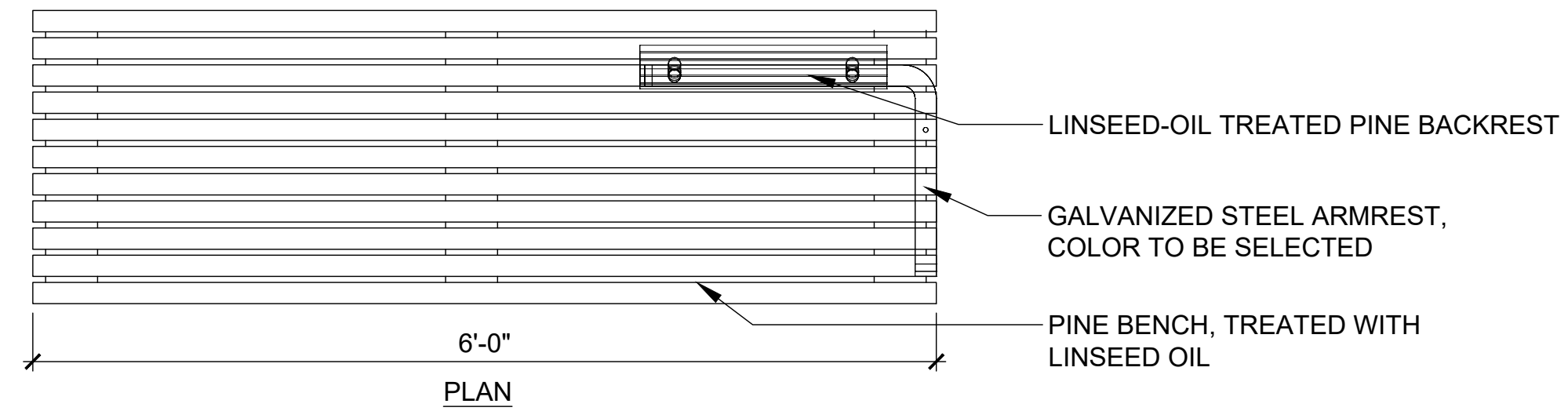
L11 1" = 1'-0"



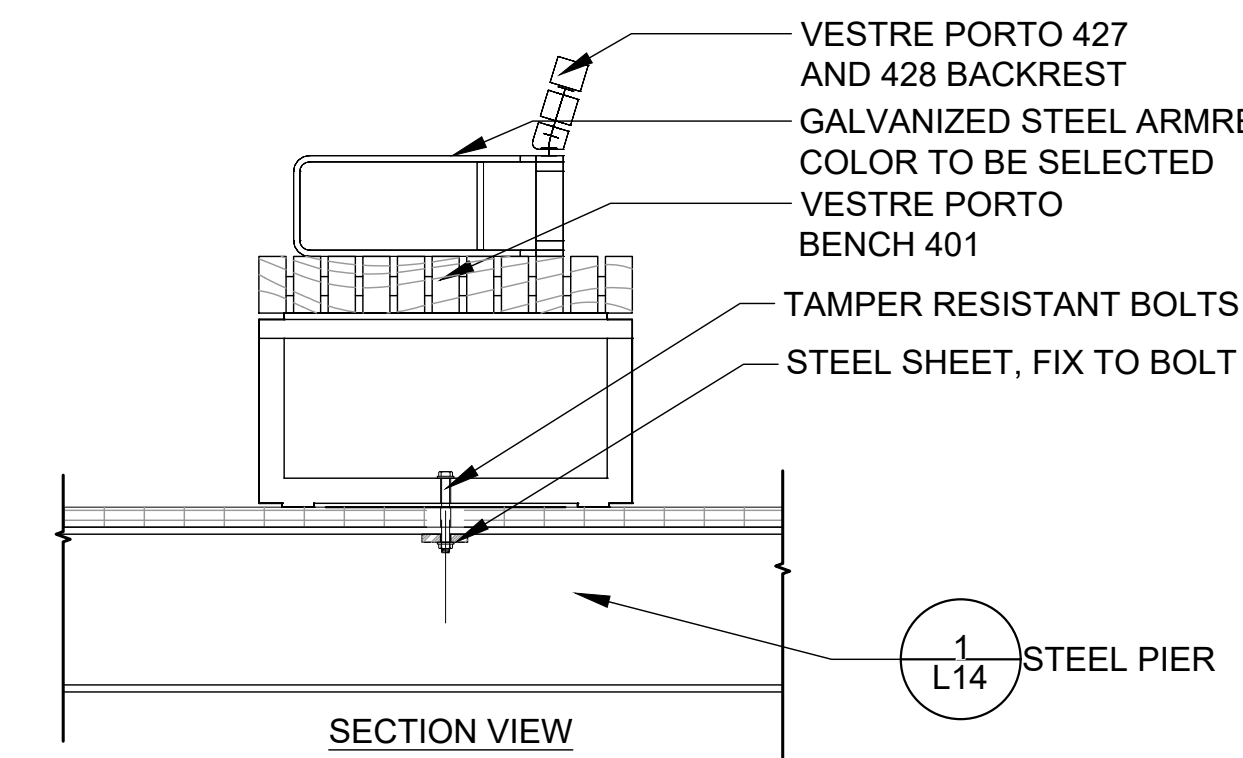
- NOTES:
1. MANUFACTURER: VESTRE
 - MODEL: 381C SINUS BICYCLE RACK FOR 5 BICYCLES, FOR CASTING IN THE GROUND
 - ALL HARDWARE AND FASTENERS PROVIDED BY MANUFACTURER, AND ARE ACID RESISTANT OR STAINLESS STEEL.
 2. SEE MOUNTING & INSTALLATION INSTRUCTIONS BY MANUFACTURER
 3. COLOR: TO BE SELECTED
 4. INSTALL WITH A SAFETY ZONE OF 3'-3"

4 BICYCLE RACK

L11 1/2" = 1'-0"

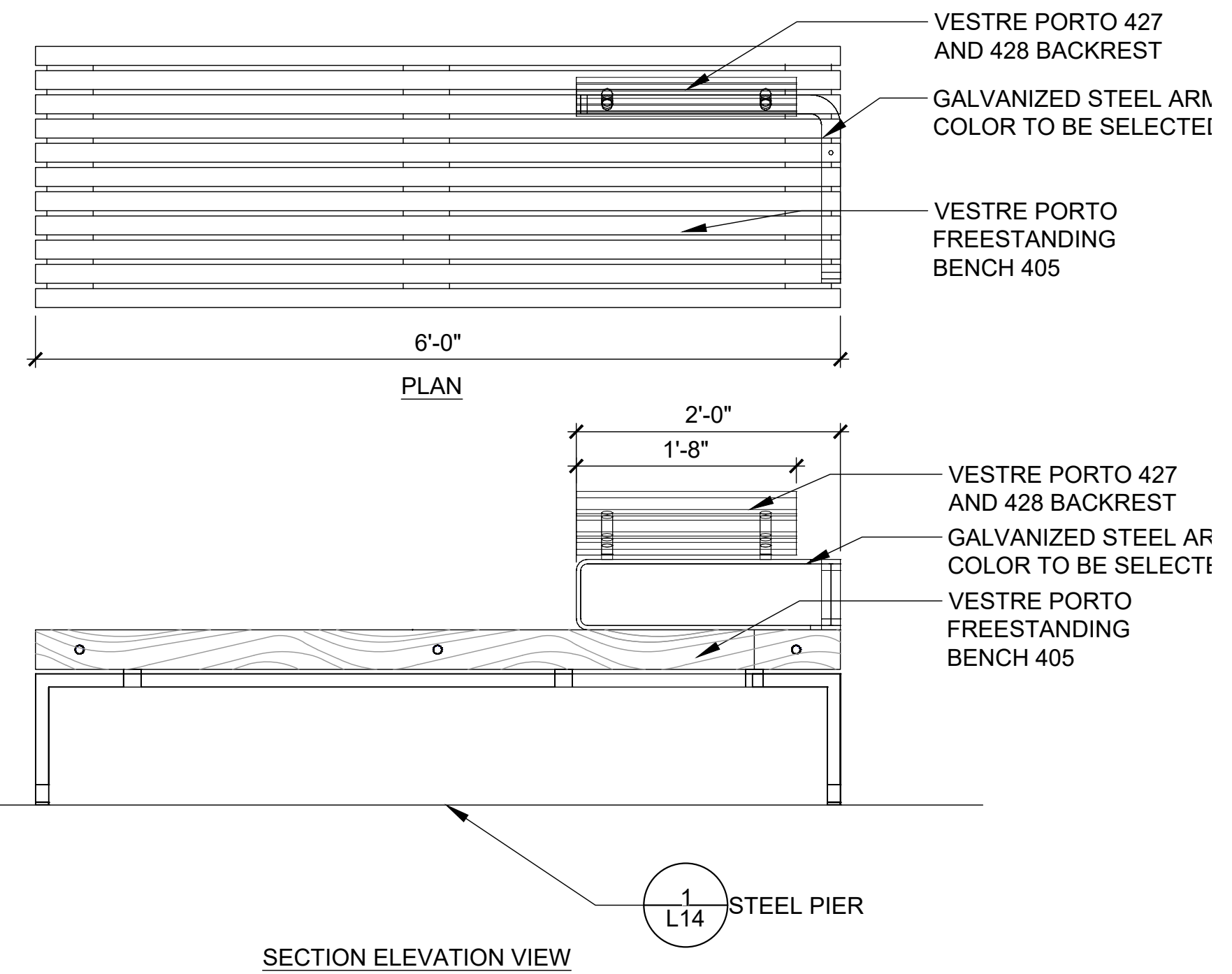


- NOTES:
1. ALL HARDWARE AND FASTENERS ARE GALVANIZED STEEL. HARDWARE AND FASTENERS TO BE PROVIDED BY MANUFACTURER. SEE BENCH MOUNTING & INSTALLATION INSTRUCTIONS BY MANUFACTURER.



5 WOOD AND STEEL BENCH

L11 1" = 1'-0"



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Plot Date: 2/6/2020 2:55 PM, Plotted By: Melissa Barley

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119 EAST LANCASTER STREET
HARRISBURG, PA 17101
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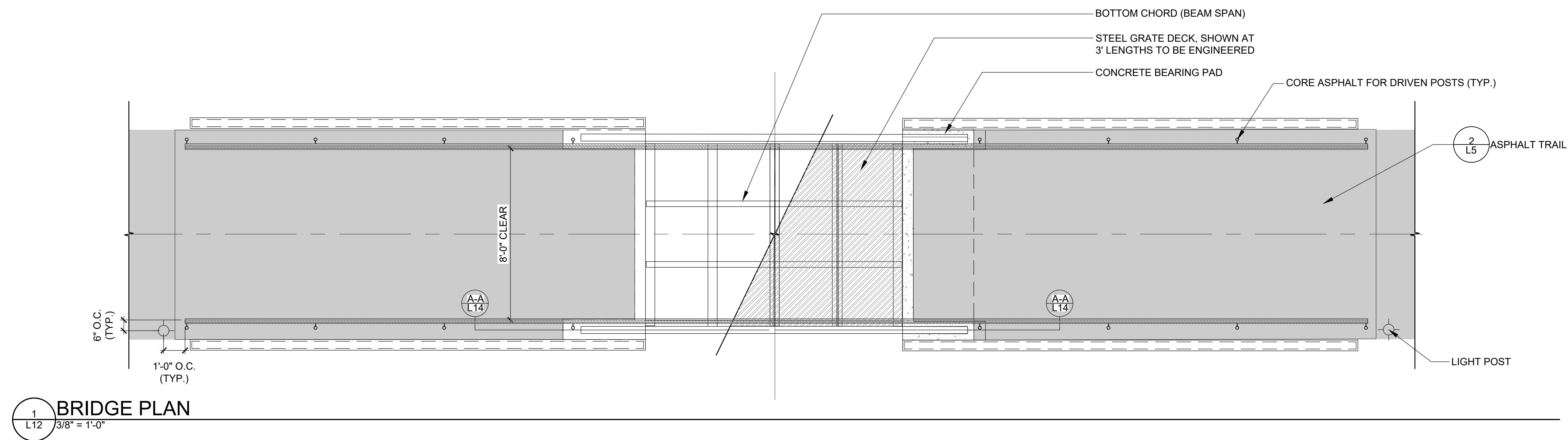
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EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
SITE DETAILS

JOB NO.	SHEET NO.
60466	L11
DATE	DRAWING NO.
FEB. 2020	

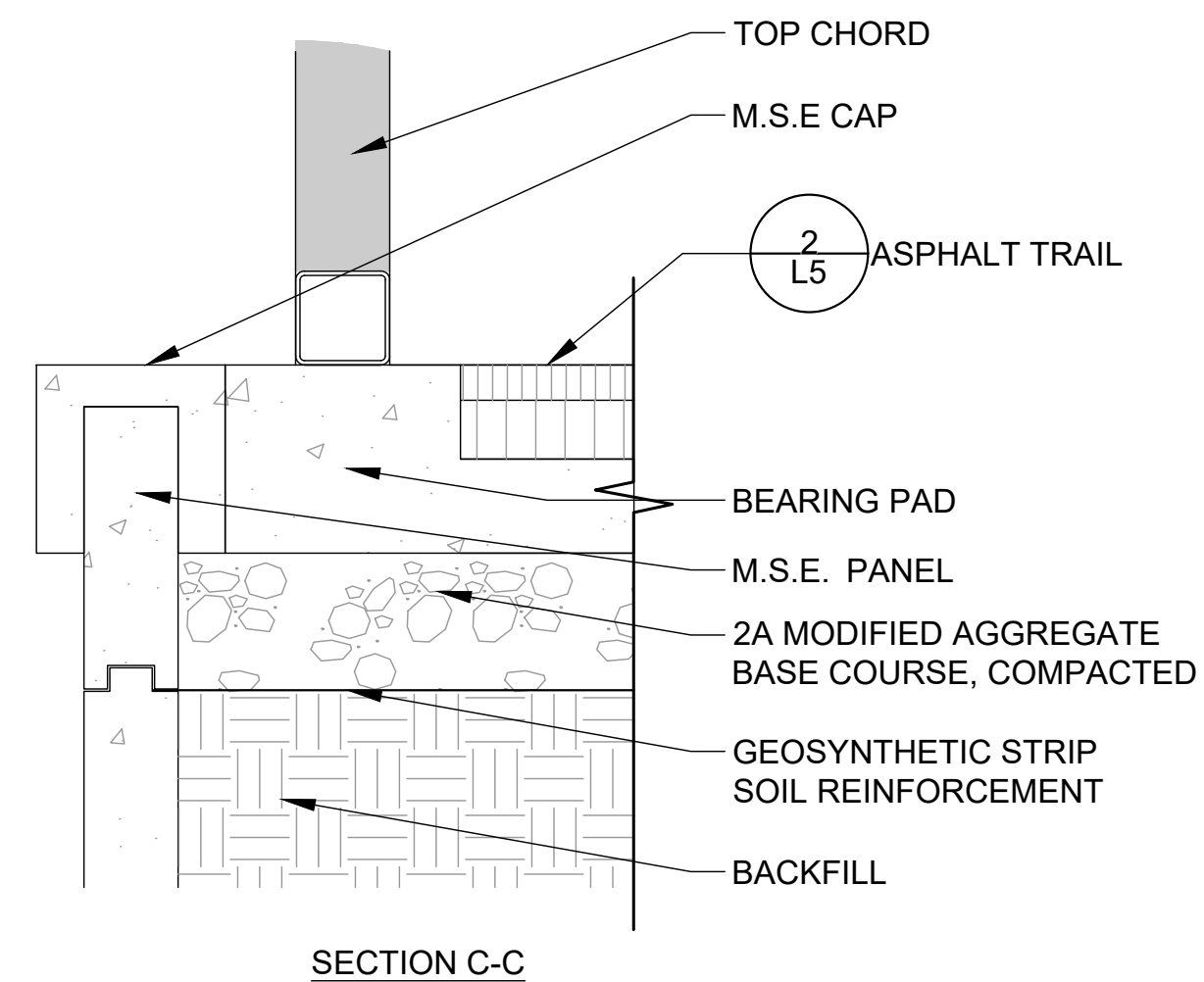
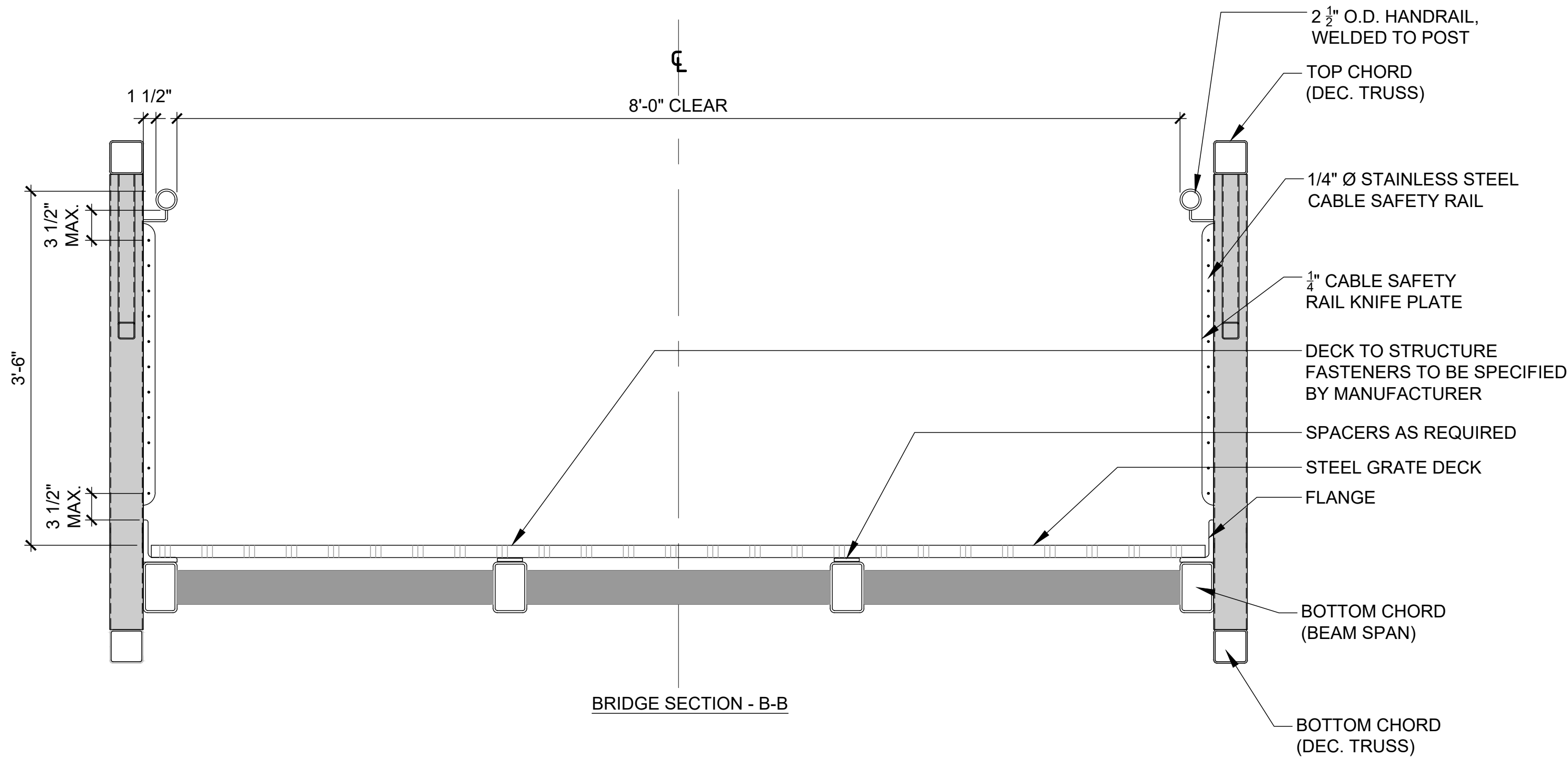
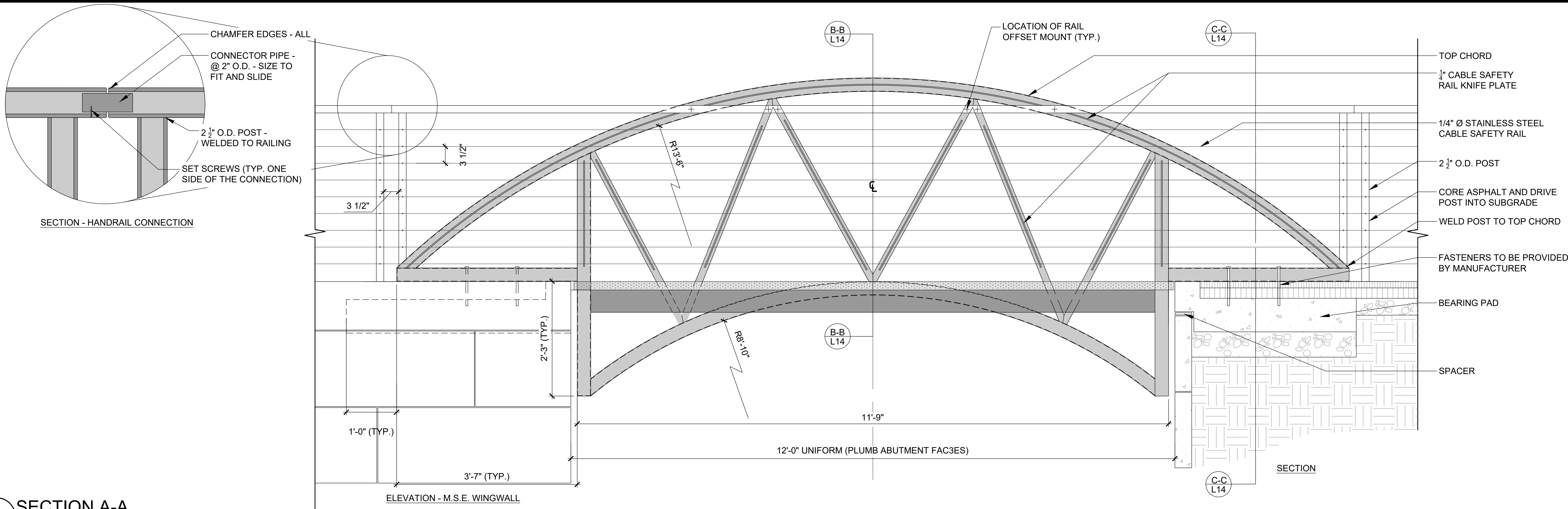


-
- ELEVATION**
- 6'-0" (TYP.)
- 3'-6"
- 3:1
- 12'-0"
- 3'-6" MIN.
- 5'-0"
- 1'-6"
- 3'-0" MIN.
- SECTION**
- MSE ABUTMENT AND WINGWALLS
- STREAM CHANNEL
- BEARING PAD
- ASPHALT TRAIL
- HANDRAIL 2 1/2" O.D.
- RAILING POST 2 1/2" O.D. (TYP.)
- LIGHT COLUMN
- LIGHTING CONDUIT AND WIRE
- GEOGRID ANCHOR
- CONCRETE FOOTER SYSTEM (M.S.E.) TO BE ENGINEERED
- COMPACTED SUBGRADE

BRIDGE

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JOB NO. 60466	SHEET NO. L12
DATE FEB. 2020	DRAWING NO.



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REVISIONS			

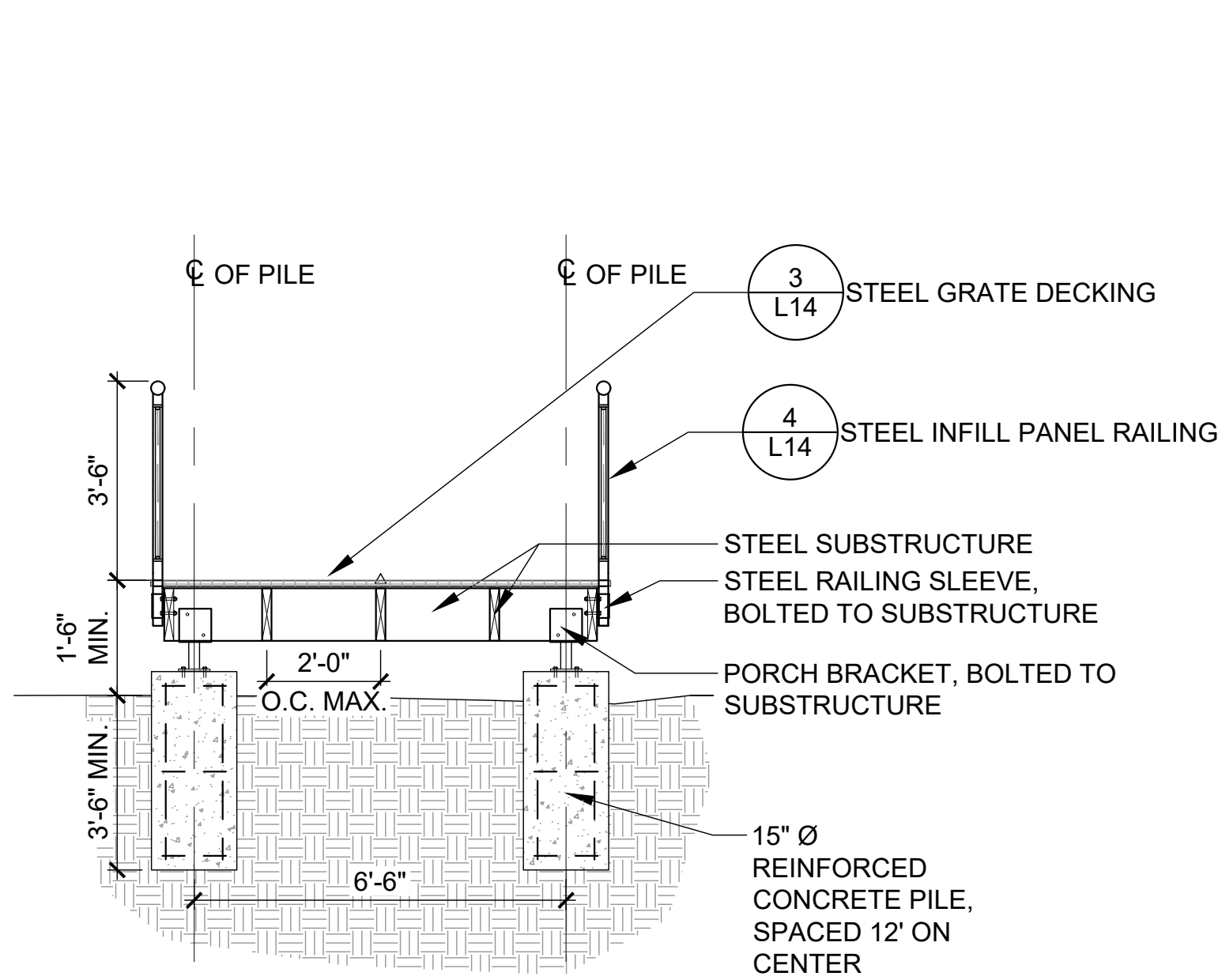
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DRAWN	CHECKED	APPROVED
MB	SRL	PS



Gannett Fleming

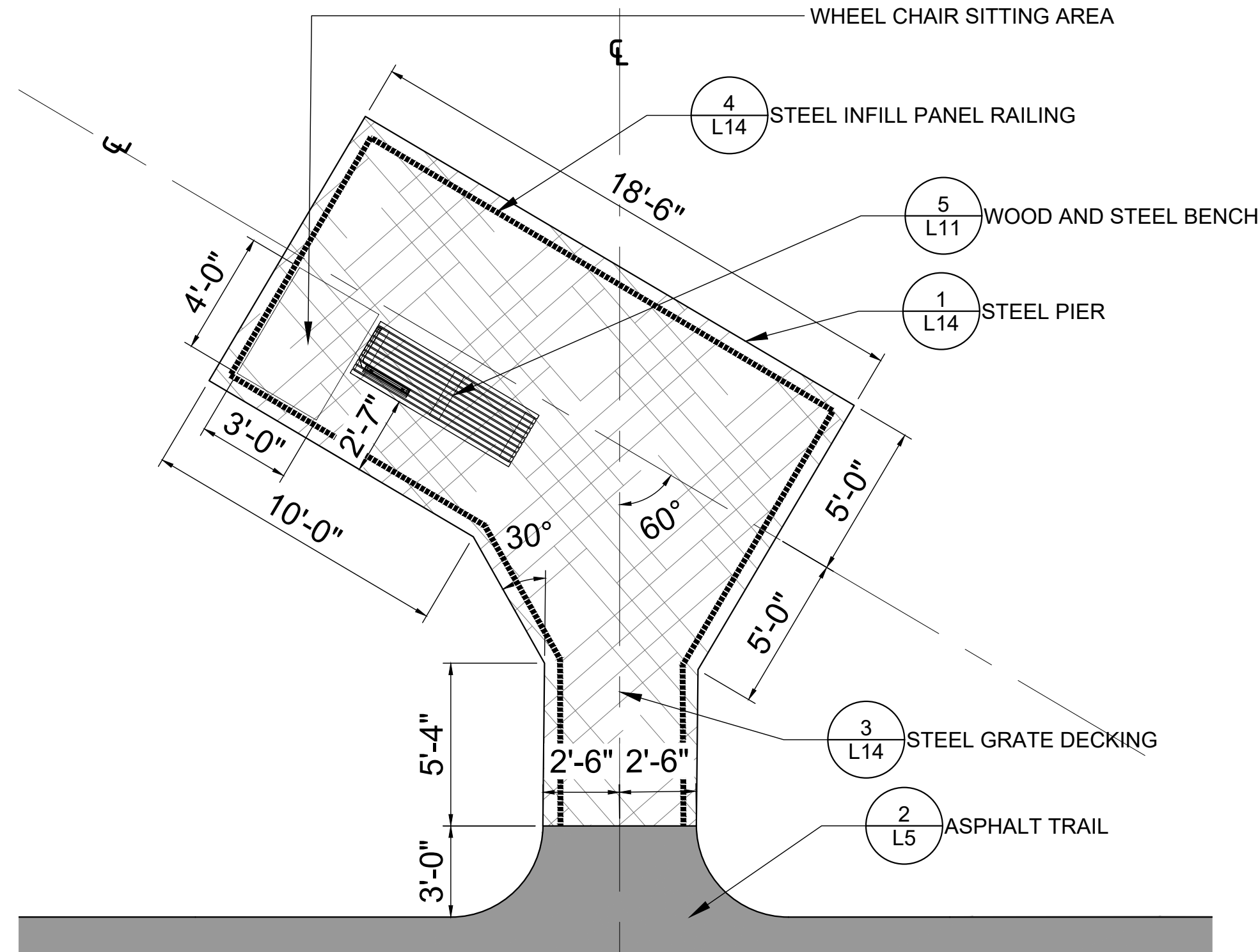
EAST GOSHEN TOWNSHIP CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN SITE DETAILS	JOB NO. 60466	SHEET NO. L13
	DATE FEB. 2020	DRAWING NO.



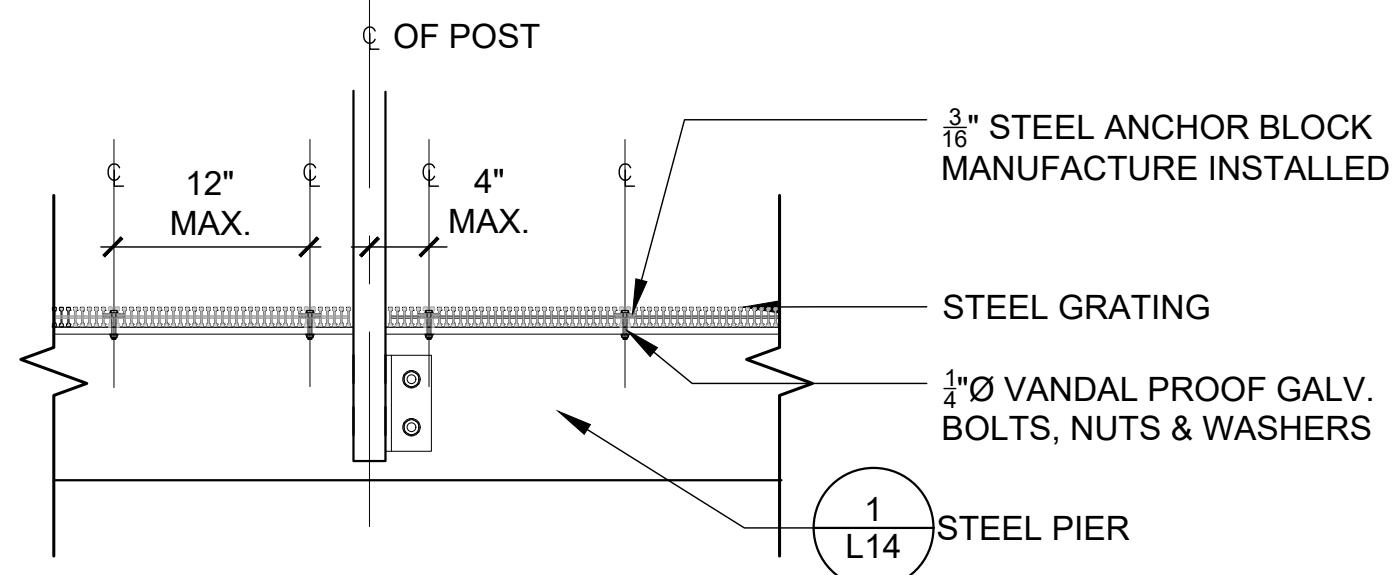
1
L14
3/8" = 1'-0"

STEEL PIER



2
L14
1/4" = 1'-0"

PIER LAYOUT PLAN

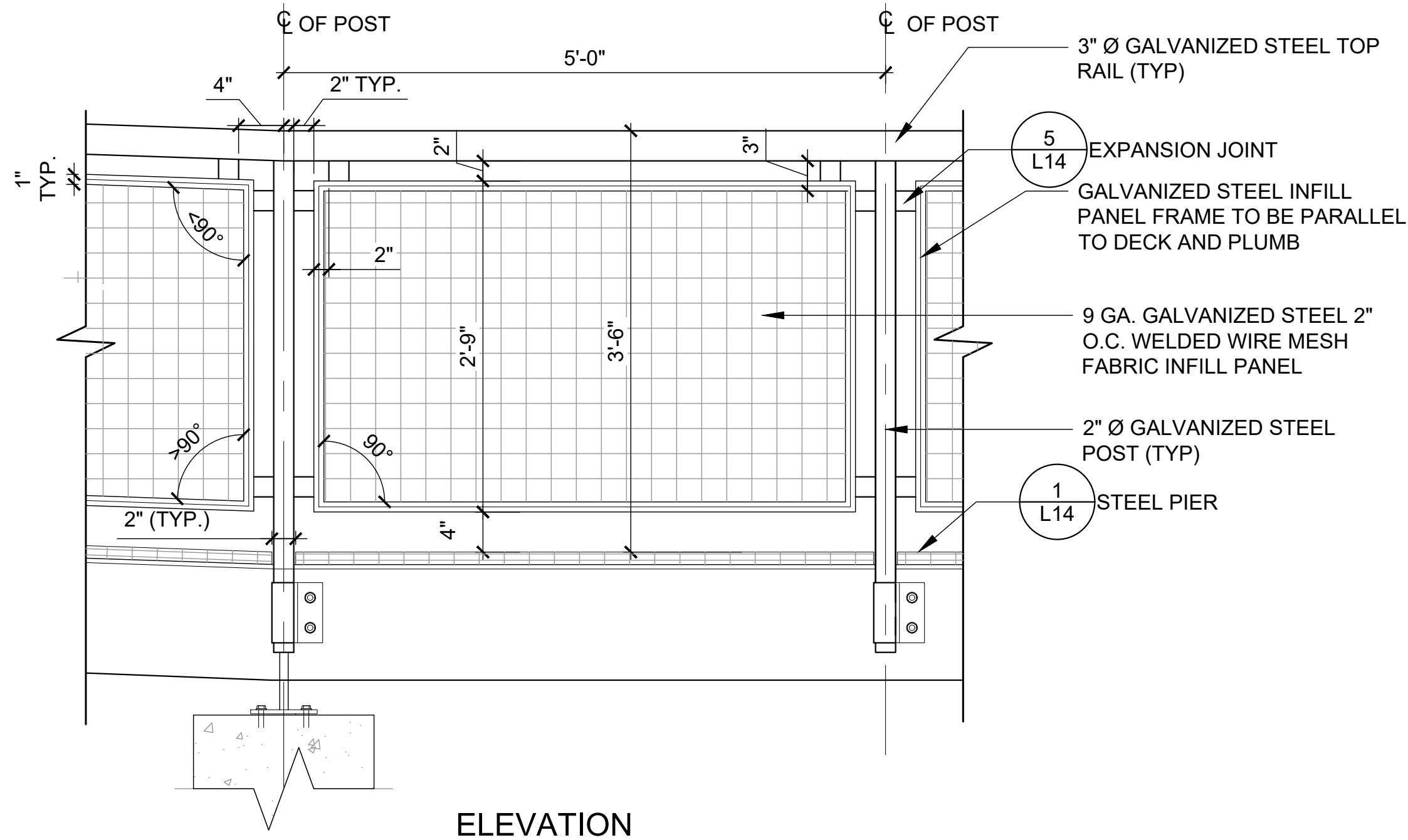


NOTES:

1. PROTECT STEEL GRATING FROM DISSIMILAR MATERIALS ACCORDING TO SPECIFICATION.
2. PROVIDE SHOP DRAWINGS ACCORDING TO SPECIFICATION.

3
L14
1" = 1'-0"

STEEL GRATE DECKING

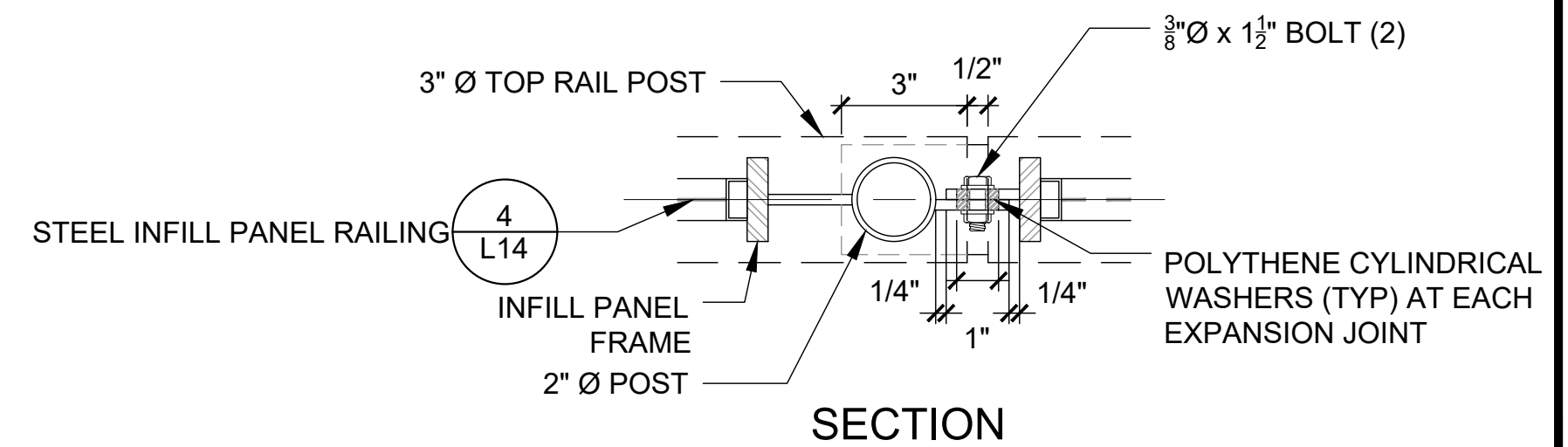
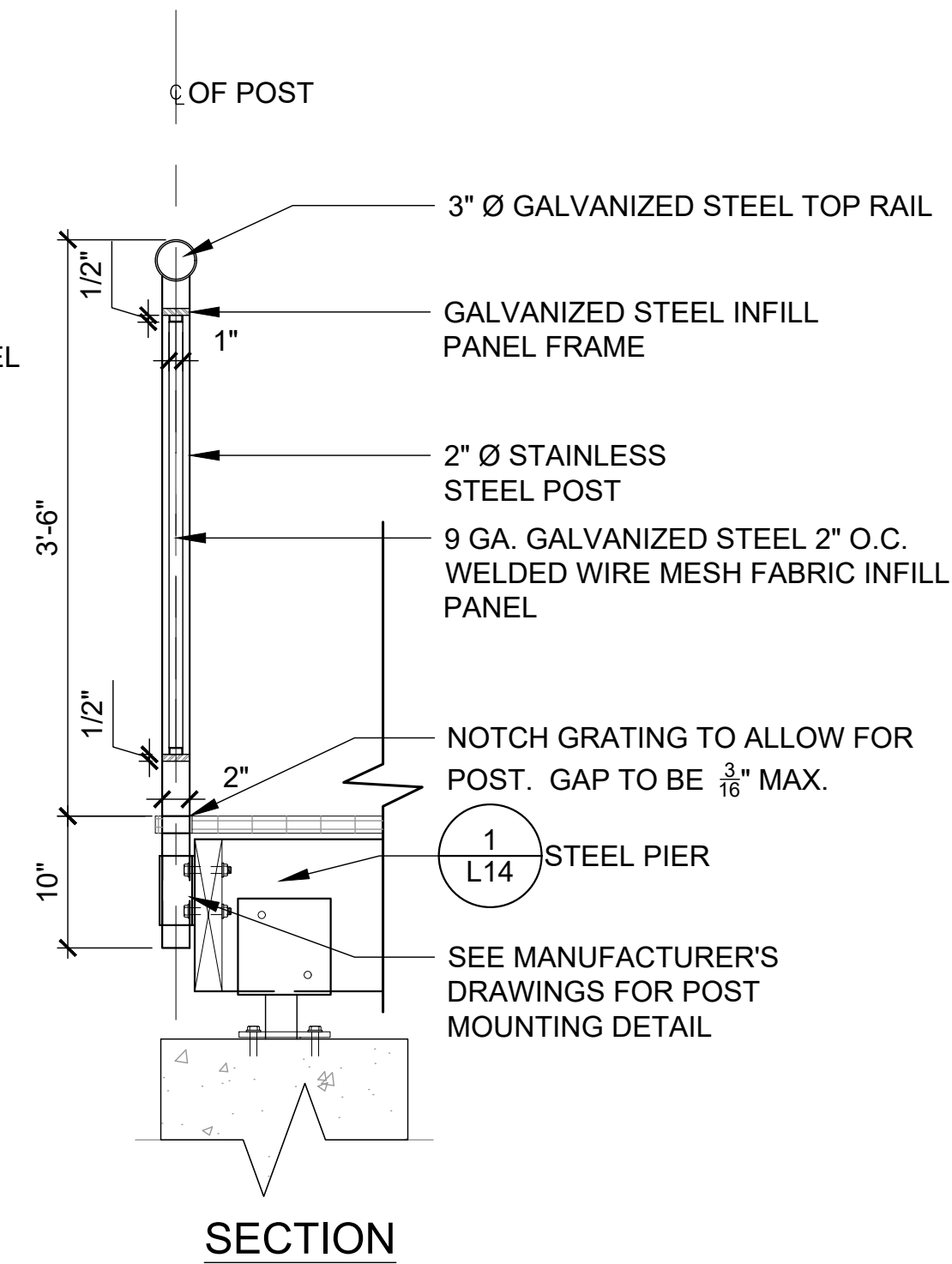


NOTES:

1. SUBMIT SHOP DRAWINGS FOR APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO FABRICATION OF RAILING.
2. ADJUST ANGLES OF INFILL PANELS TO MAINTAIN 2" SPACING FROM TOP RAIL AND POST.

4
L14
1" = 1'-0"

STEEL INFILL PANEL RAILING



5
L14
3" = 1'-0"

EXPANSION JOINT

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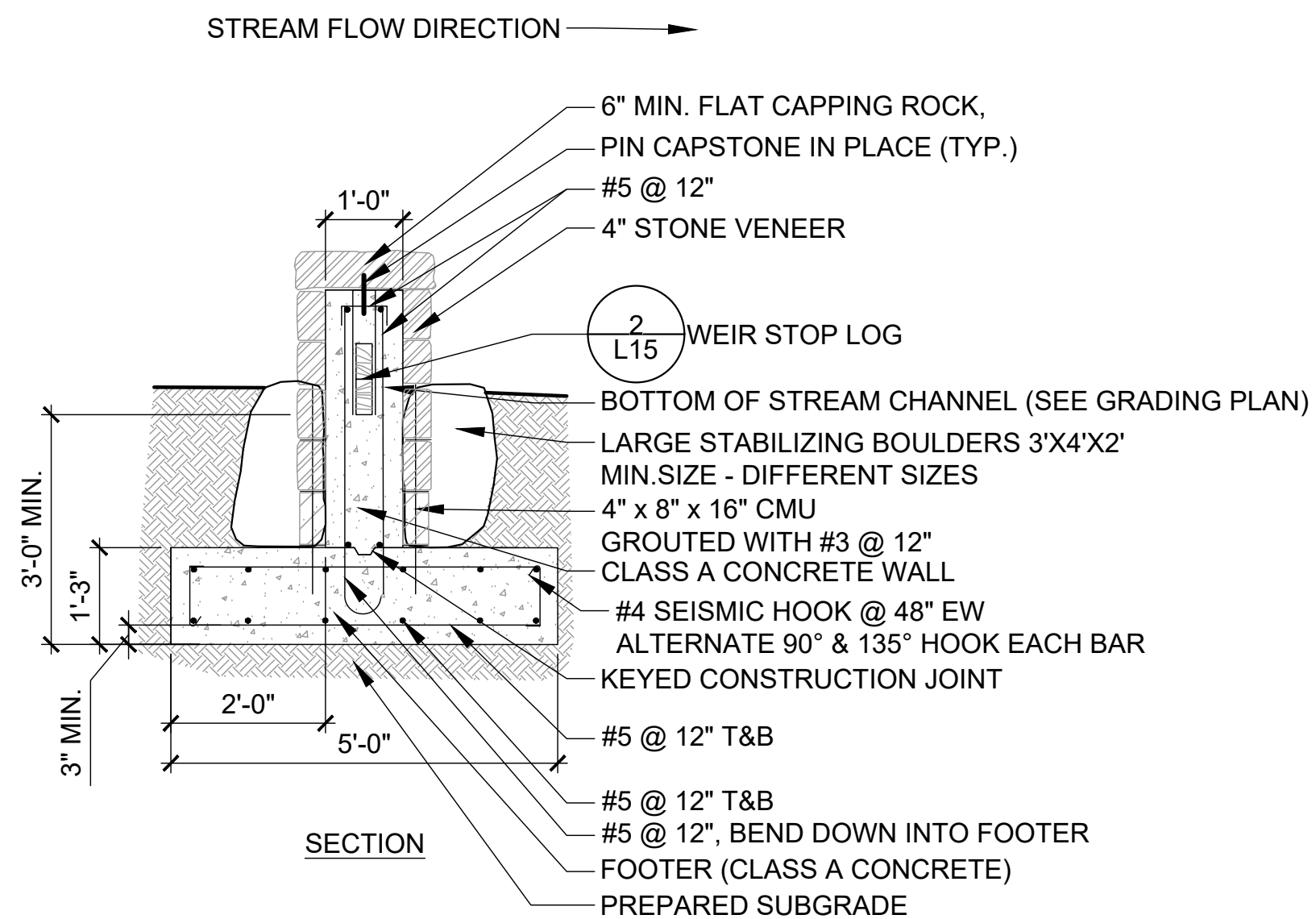
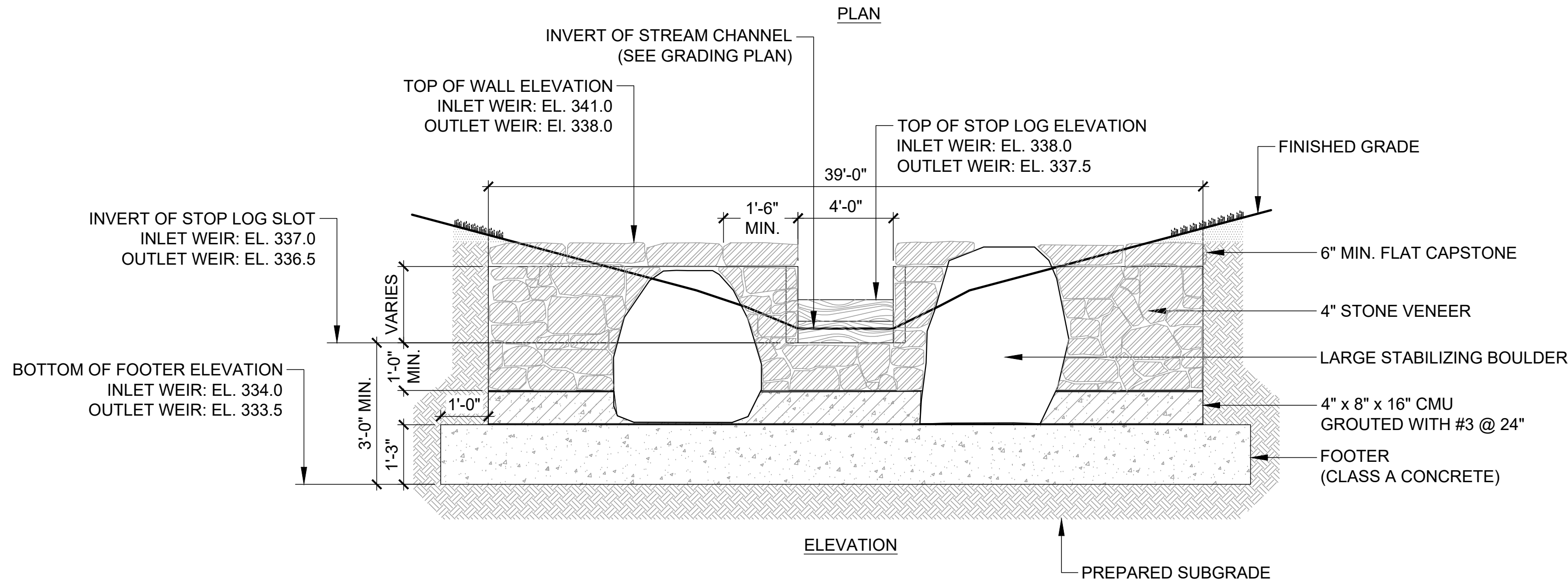
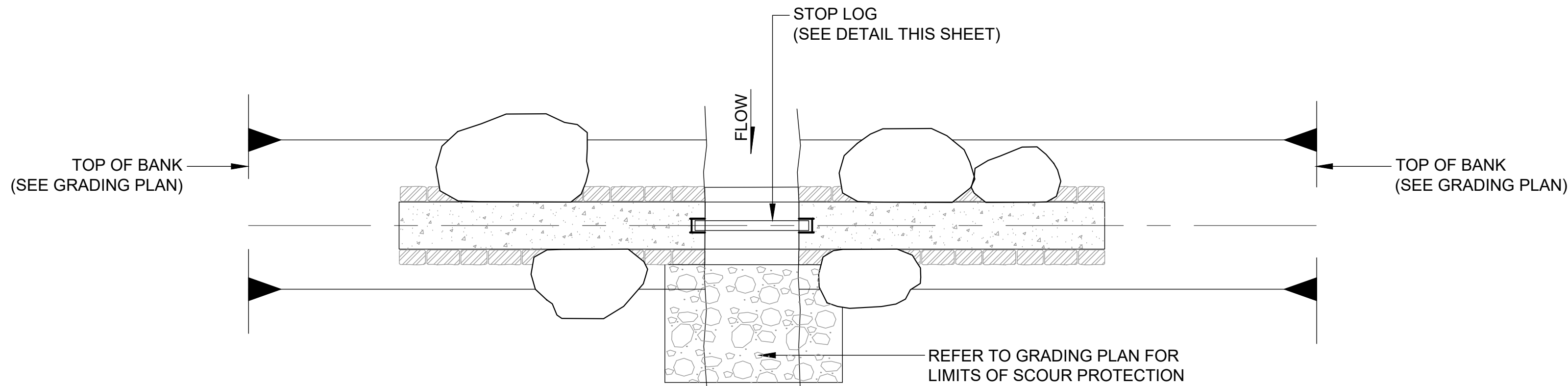
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MB	SRL	PS



Gannett Fleming

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MILLTOWN DAM HAZARD REDUCTION AND RESERVOIR ENHANCEMENTS

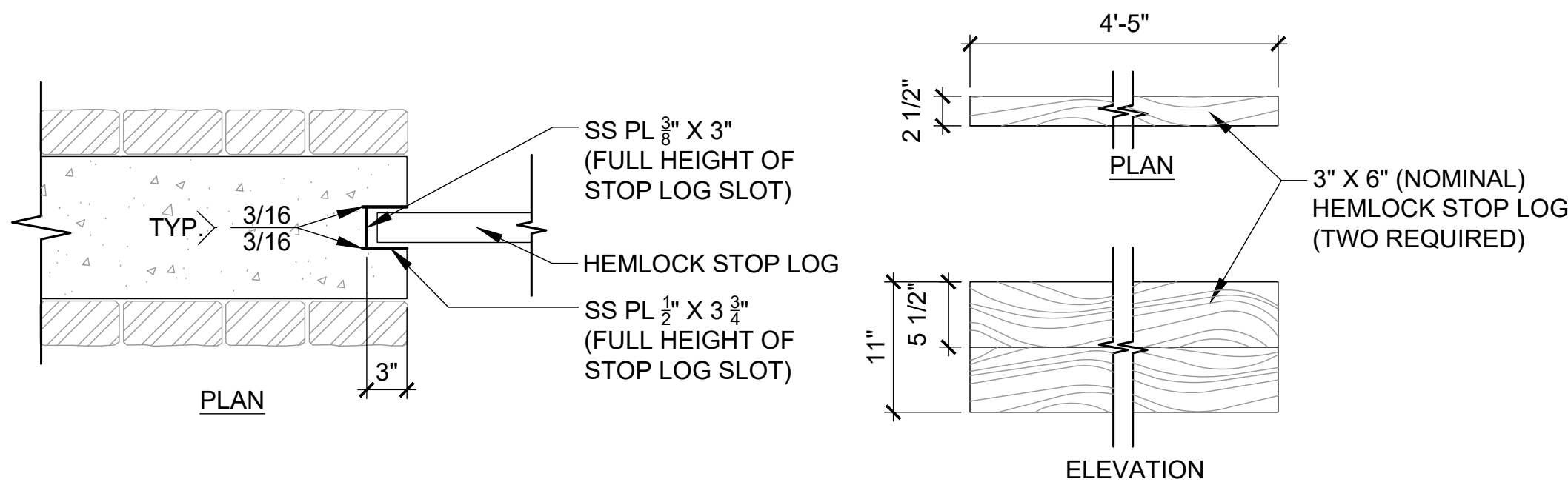
LANDSCAPE PLAN SITE DETAILS	JOB NO. 60466	SHEET NO. L14
	DATE FEB. 2020	DRAWING NO.



- NOTES:
1. REFER TO PLAN SHEETS FOR INLET WEIR AND OUTLET WEIR LOCATIONS AND ORIENTATIONS.
 2. STONE VENEER (SIZES 4"x4" / 4"x6" / 4"x8" / 6"x8" / 6"x 12" / 9"x12") FINISH TO BE APPROVED BY LANDSCAPE ARCHITECT.
 3. INSTALL CMU BLOCKS BEHIND STABILIZING BOULDERS.
 4. FLAT CAPSTONE SHALL BE NOTCHED OR OTHERWISE INSTALLED TO AVOID CONFLICT WITH THE OPERATION OF THE STOP LOG SYSTEM.

1
L15
POND WEIR
NOT TO SCALE

TYPICAL INLET WEIR AND OUTLET WEIR DETAIL FOR OFFLINE POND
NOT TO SCALE



2
L15
WEIR STOP LOG
1" = 1'-0"

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SIMONE
COLLINS
LANDSCAPE
ARCHITECTURE
119 DASH LAUREL STREET
HARRISBURG, PA 17101
P 610.288.7001 F 610.288.7006
WWW.SIMONECOLLINS.COM

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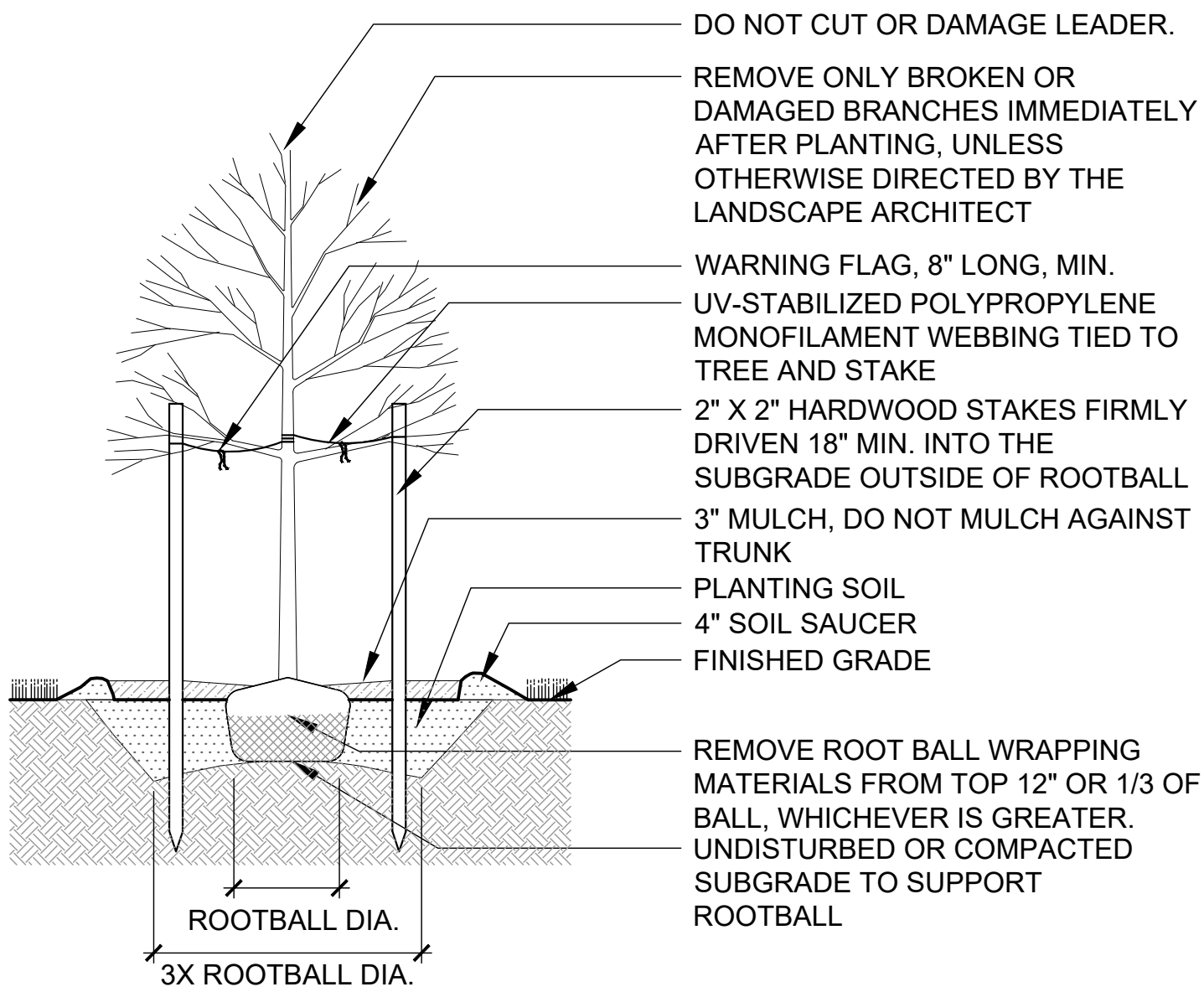


Gannett Fleming

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

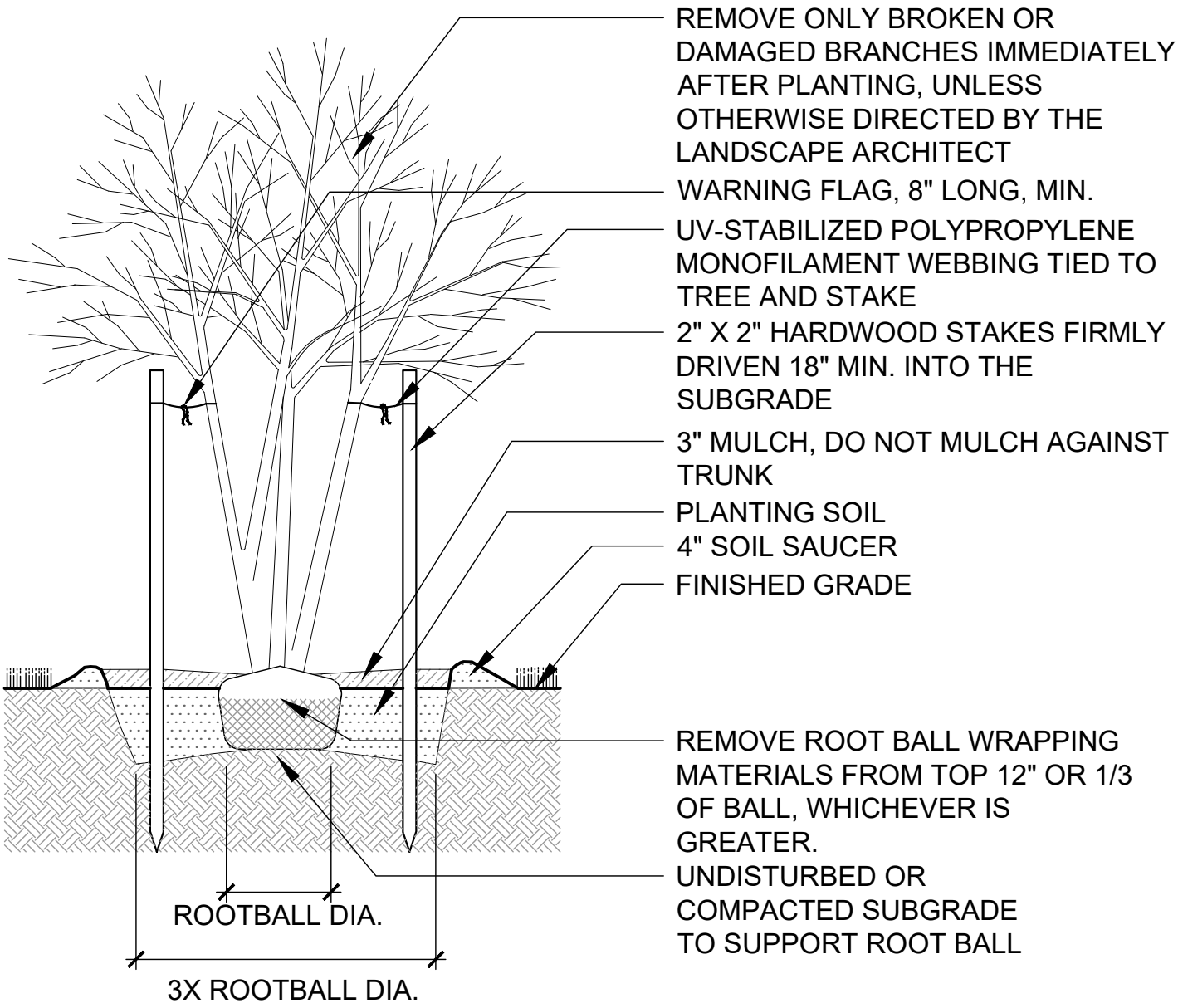
LANDSCAPE PLAN
SITE DETAILS

JOB NO.	SHEET NO.
60466	L15
DATE	DRAWING NO.
FEB. 2020	



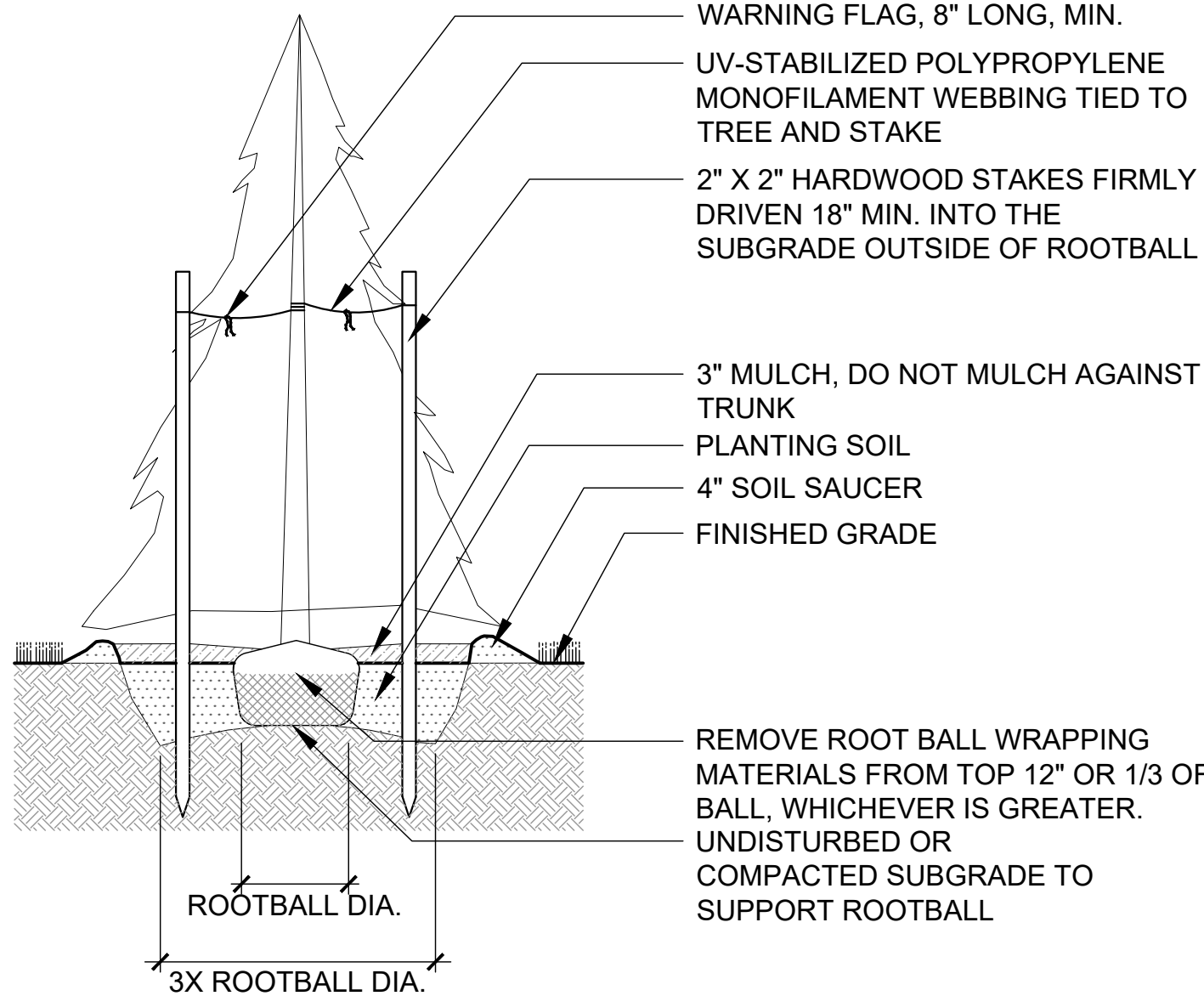
NOTES:

1. STAKE TREES ONLY WHEN CONDITIONS REQUIRE ADDITIONAL STABILIZATION, AS DESCRIBED IN SPECIFICATIONS.
2. SET TOP OF BALL 2"- 3" ABOVE FINISHED GRADE. DO NOT BACKFILL OVER TOP OF ROOTBALL.
3. REMOVE ROOT BALL WRAPPING MATERIALS (BURLAP, TWINE, WIRE BASKET, ETC) AFTER TREE IS SET IN PLACE. SYNTHETIC WRAPPING MUST BE REMOVED COMPLETELY.
4. DO NOT PULL MONOFILAMENT WEBBING TIGHT. LEAVE SLIGHTLY SLACK TO ALLOW TREE TO SWAY IN THE WIND.
5. SCARIFY EDGES OF TREE PIT.



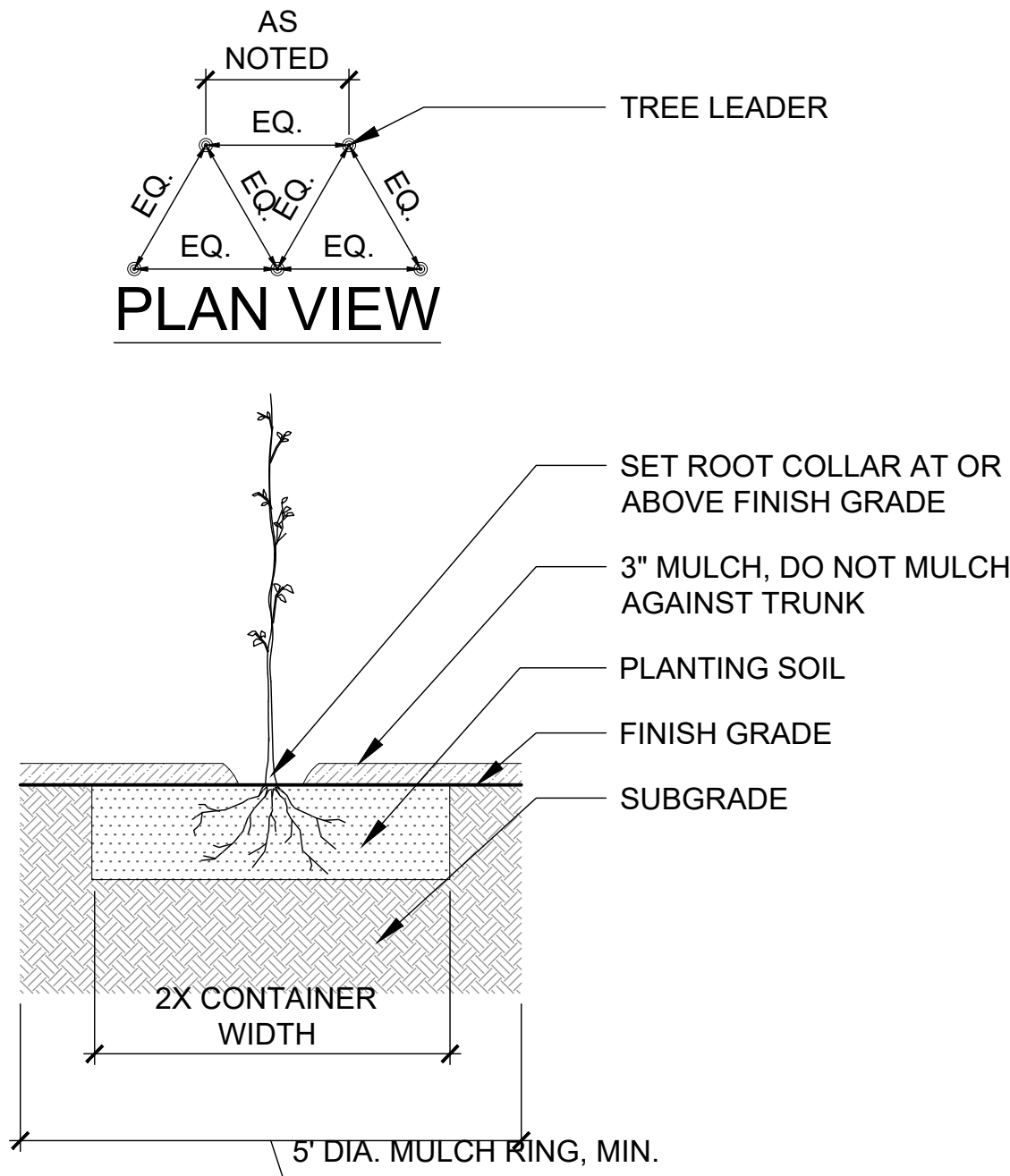
NOTES:

1. SET TOP OF BALL 2" - 3" ABOVE FINISHED GRADE. DO NOT BACKFILL OVER TOP OF BALL.
3. REMOVE ROOT BALL WRAPPING MATERIALS (BURLAP, TWINE, WIRE BASKET, ETC) AFTER TREE IS SET IN PLACE. SYNTHETIC WRAPPING MUST BE REMOVED COMPLETELY.
4. DO NOT PULL MONOFILAMENT WEBBING TIGHT. LEAVE SLIGHTLY SLACK TO ALLOW TREE TO SWAY IN THE WIND.
5. SCARIFY EDGES OF TREE PIT.
6. FOR TREE WITH 3 OR MORE TRUNKS, SET STAKES IN TRIANGULAR CONFIGURATION



NOTES:

1. SET TOP OF ROOT BALL 2 - 3" ABOVE FINISH GRADE. DO NOT BACKFILL OVER TOP OF BALL.
3. REMOVE ROOT BALL WRAPPING MATERIALS (BURLAP, TWINE, WIRE BASKET, ETC) AFTER TREE IS SET IN PLACE. SYNTHETIC WRAPPING MUST BE REMOVED COMPLETELY.
4. DO NOT PULL MONOFILAMENT WEBBING TIGHT. LEAVE SLIGHTLY SLACK TO ALLOW TREE TO SWAY IN THE WIND.
5. SCARIFY EDGES OF TREE PIT.



NOTES:

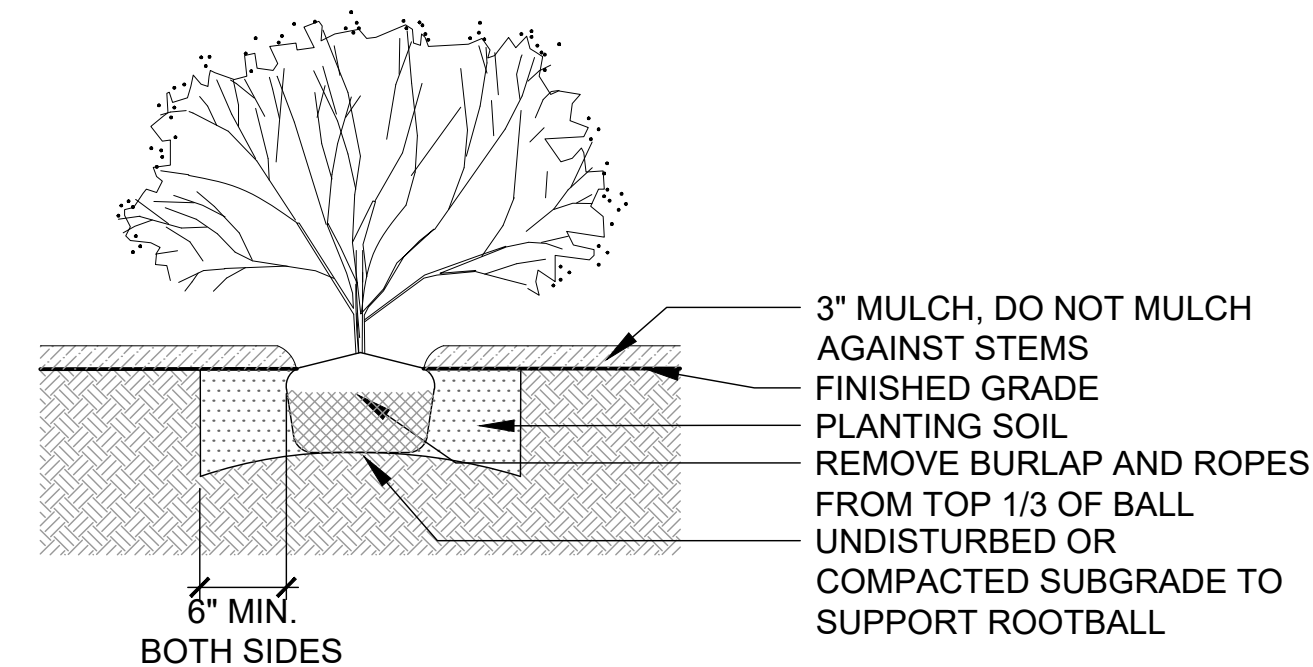
1. REMOVE CONTAINER BEFORE PLANTING
2. REMOVE CONTAINER GROWING MEDIUM FROM TREE ROOTS BEFORE PLANTING
3. SCARIFY EDGES OF TREE PIT.

1 DECIDUOUS TREE PLANTING
1/2" = 1'-0"

2 MULTISTEM TREE PLANTING
1/2" = 1'-0"

3 EVERGREEN TREE PLANTING
1/2" = 1'-0"

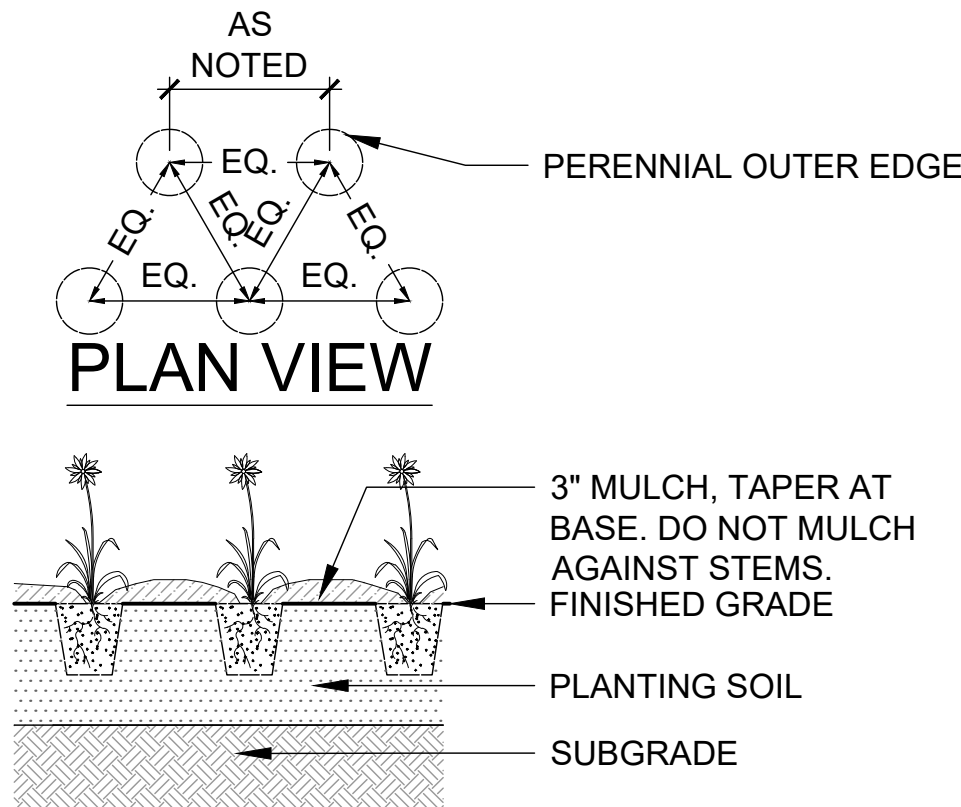
4 BAREROOT TREE PLANTING
1/2" = 1'-0"



NOTES:

1. SET TOP OF BALL 3" ABOVE FINISHED GRADE.
2. SCARIFY EDGES OF PLANTING PIT.

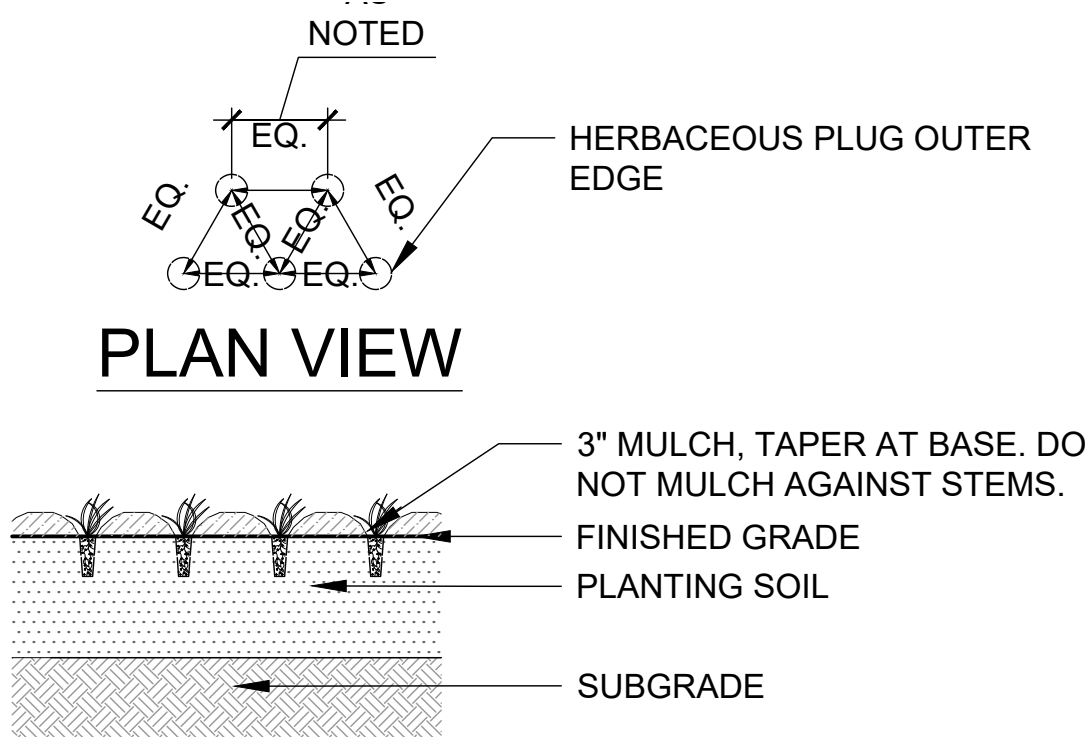
5 SHRUB PLANTING
1/2" = 1'-0"



NOTES:

1. PLANT SPACING AS PER PLANTING PLAN AND PLANT SCHEDULE.
2. REMOVE CONTAINER BEFORE PLANTING.

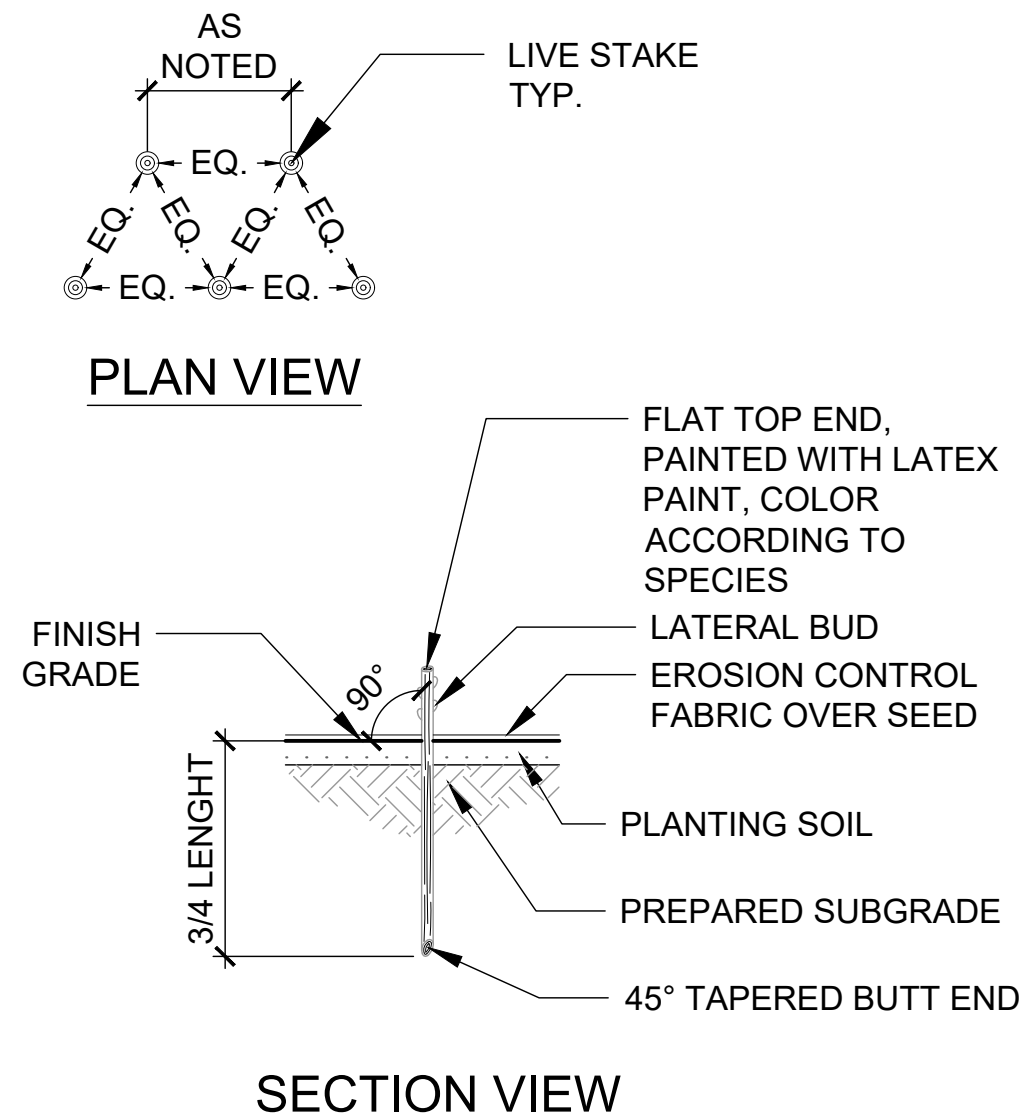
6 PERENNIAL PLANTING
1/2" = 1'-0"



NOTE:

1. PLANT SPACING AS PER PLANTING PLAN AND PLANT SCHEDULE.

7 HERBACEOUS PLUG PLANTING
1/2" = 1'-0"



NOTES:

1. LIVE STAKES ARE TO BE DORMANT LIVE BRANCHES MEASURING 24 TO 36 INCHES, WITH BASAL END DIAMETERS OF 1/2 TO 2 INCHES, WITH NO SIDE BRANCHES.
2. BUTT ENDS OF STAKE SHALL BE ANGLED AT 45 DEGREES.
3. IF FIELD COLLECTED, LIVE STAKES SHALL BE CUT FROM APPROVED SOURCES USING A SHARP TOOL AND AVOIDING DAMAGE TO THE COLLECTION SITE. BRANCHES SHALL BE FLEXIBLE, FREE FROM DISEASE OR EXCESS DEAD TWIGS, AND MUST BE DORMANT.
4. ALL SIDE BRANCHES SHALL BE CLEANLY CUT FROM LIVE STAKES.
5. SOAK LIVE STAKES IN WATER FOR 24 HOURS PRIOR TO PLANTING. DO NOT SUBMERGE PAINTED TOPS. PROTECT STAKES FROM SUN AND WIND EXPOSURE DURING SOAKING.
6. TO PLANT STAKES, DRILL A PILOT HOLE THROUGH THE EROSION CONTROL FABRIC AND INTO THE GROUND USING A STEEL ROD OR REBAR. TAMP STAKES INTO HOLE USING A SAND- OR SHOT-FILLED HAMMER. SPLIT OR DAMAGED STAKES MUST BE REMOVED AND REPLACED. FIRMLY PACK SOIL AROUND STAKES AFTER INSTALLATION.

8 LIVE STAKE PLANTING
1/2" = 1'-0"

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SIMONE COLLINS LANDSCAPE ARCHITECTURE
119 EAST LAWRENCE STREET
HARRISBURG, PA 17101
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WWW.SIMONECOLLINS.COM

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REVISIONS			

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DRAWN	CHECKED	APPROVED
MB	SRL	PS

PROPOSED FEATURES LEGEND

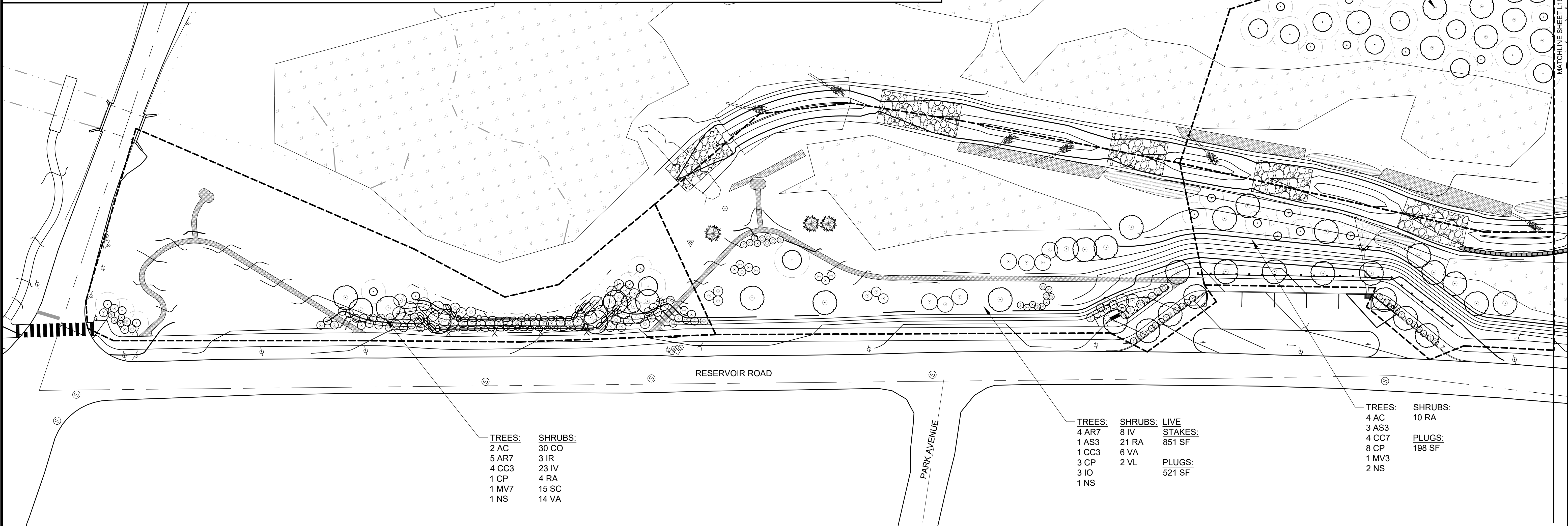
- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET
- VEHICULAR ASPHALT
- PEDESTRIAN ASPHALT
- CONCRETE PAVEMENT
- PIER STRUCTURE
- BRIDGE STRUCTURE
- STABILIZED TURF
- MULCH TRAIL SURFACE

PROPOSED PLANTING LEGEND

- ERNMX-612: ERNST 3' HIGH POLLINATOR SEED MIX
- ERNMX-181: NATIVE STEEP SLOPE SEED MIX
- ERNMX-183: NATIVE DETENTION AREA MIX
- ERNMX-136: THREE-WAY TALL FESCUE MIX
- ERNST-154 FLOODPLAIN MIX
- LIMIT OF LIVE STAKE PLANTING
- LIMIT OF HERBACEOUS MATERIAL / LANDSCAPE PLUGS PLANTING

GENERAL NOTES:

- THE CONTRACTOR IS RESPONSIBLE TO APPLY FOR AND OBTAIN, PRIOR TO CONSTRUCTION, ANY FEDERAL, STATE, COUNTY, OR TOWNSHIP PERMITS THAT MIGHT BE REQUIRED TO COMPLETE THIS PROJECT.
- THE CONTRACTOR SHALL DETERMINE THE EXTENT AND EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHALL REPORT TO THE OWNER'S REPRESENTATIVE / LANDSCAPE ARCHITECT ANY CONDITION NOT CONSISTENT WITH THE DRAWINGS. THE CONTRACTOR SHALL PROTECT ALL SERVICE LINES AND EXISTING SITE AREA FROM DETERIORATION OR DAMAGE. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES THREE (3) DAYS PRIOR TO COMMENCING WORK TO COMPLY WITH PA ACT 287. PA ONE CALL SYSTEM: 1-800-242-1776.
- ALL SITE WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL & STATE CODES/REGULATIONS.
- SEE CIVIL PLANS FOR FINISHED GRADES, LOCATION OF DRAIN INLETS, CATCH BASINS, AND UNDERGROUND UTILITY LOCATIONS
- ALL DEMOLITION DEBRIS SHALL BE DISPOSED OF PROPERLY, LEGALLY AND IN A TIMELY MANNER.
- ALL EXISTING TREES, SHRUBS, AND GROUNDCOVER NOT INDICATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES.
- PROTECT ALL EXISTING BUILT ELEMENTS, INCLUDING BUT NOT LIMITED TO: PAVING, WALLS, COLUMNS, CURBS, AND STEPS. ALL EXISTING BUILT ELEMENTS SHALL BE PROTECTED DURING CONSTRUCTION ACTIVITIES. RESTORE ANY DAMAGED ITEMS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.



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DRAWN	CHECKED	APPROVED
MB	SRL	PS



EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
PLANTING LAYOUT PLAN

JOB NO.	SHEET NO.
60466	L17
DATE	DRAWING NO.
FEB. 2020	



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GENERAL NOTES:

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3. ALL SITE WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL & STATE CODES/ REGULATIONS.
4. SEE CIVIL PLANS FOR FINISHED GRADES, LOCATION OF DRAIN INLETS, CATCH BASINS, AND UNDERGROUND UTILITY LOCATIONS
5. ALL DEMOLITION DEBRIS SHALL BE DISPOSED OF PROPERLY, LEGALLY AND IN A TIMELY MANNER.
6. ALL EXISTING TREES, SHRUBS, AND GROUNDCOVER NOT INDICATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES.
7. PROTECT ALL EXISTING BUILT ELEMENTS, INCLUDING BUT NOT LIMITED TO: PAVING, WALLS, COLUMNS, CURBS, AND STEPS. ALL EXISTING BUILT ELEMENTS SHALL BE PROTECTED DURING CONSTRUCTION ACTIVITIES. RESTORE ANY DAMAGED ITEMS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
8. SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.

PROPOSED PLANTING LEGEND

- ERNMX-612: ERNST 3' HIGH POLLINATOR SEED MIX
- ERNMX-181: NATIVE STEEP SLOPE SEED MIX
- ERNMX-183: NATIVE DETENTION AREA MIX
- ERNMX-136: THREE-WAY TALL FESCUE MIX
- ERNST-154 FLOODPLAIN MIX
- LIMIT OF LIVE STAKE PLANTING
- LIMIT OF HERBACEOUS MATERIAL / LANDSCAPE PLUGS PLANTING

PROPOSED FEATURES LEGEND

- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET

TREES: 3 AC
2 AR
1 CC
2 MV3

SHRUBS: 12 SA
6 SC
12 SN

PLUGS: 410 SF
LIVE
STAKES: 592 SF

TREES: 8 LS
26 AC
38 AR
6 AS7
2 CP

9 QP
17 MV3
11 NS
7 PS
12 QB

PLUGS: 431 SF

TREES: 2 AC
1 QB5

SHRUBS: 30 IV
12 SA
26 SC
18 VA

LIVE STAKES: 845 SF
PLUGS: 205 SF

TREES: 5 AC
5 MV3

SHRUBS: 22 CO
5 CS
1 IA
10 IS

9 IV
16 LB
11 MP
21 SN
21 VA

PLUGS: 138 SF

TREES: 1 AR7
1 CC
3 MV3
1 QB5

SHRUBS: 31 CO
45 CS
45 IV
21 SN

LIVE STAKES: 393 SF

TREES: 1 AC
1 MV3
1 MV5

SHRUBS: 46 CO
11 IR
23 IV
22 SA
49 VA

TREES: 1 AC
1 MV3

SHRUBS: 5 CO
20 IS
2 IA

TREES: 3 AC
3 MV3

TREES: 4 AC
3 CC
1 NS5
1 QB7

SHRUBS: 2 CO
16 IR
53 IV
25 SA

TREES: 1 QB
1 QB7

SHRUBS: 6 IR
7 IV
26 SA

PLUGS: 232 SF

TREES: 4 AC3
2 AR
1 AS3
1 LS
2 MV3

TREES: 2 CC
1 MV5

SHRUBS: 8 SC
7 CA
9 IR
7 IV
77 SA

9 SN
59 VA
PLUGS: 1139 SF

TREES: 2 QB5

SHRUBS: 15 CA
4 CS
19 SA

LIVE STAKES: 111 SF
PLUGS: 685

TREES: 5 AC
2 AR
1 AS3
2 CP
1 MV

SHRUBS: 1 AT
22 IV
35 SA
7 VA

PLUGS: 66 SF

TREES: 3 AC3
2 AR

SHRUBS: 5 IV
22 VA
11 VL

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SCALE IN FEET

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NO.	DESCRIPTION	DATE	BY
REVISIONS			

DESIGNED	CADD	SCALE
SRL	MB	AS SHOWN
DRAWN	CHECKED	APPROVED
MB	SRL	PS



Gannett Fleming

EAST GOSHEN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA
MILLTOWN DAM HAZARD REDUCTION
AND RESERVOIR ENHANCEMENTS

LANDSCAPE PLAN
PLANTING LAYOUT PLAN

JOB NO.	SHEET NO.
60466	L18
DATE	DRAWING NO.
FEB. 2020	



GENERAL NOTES:

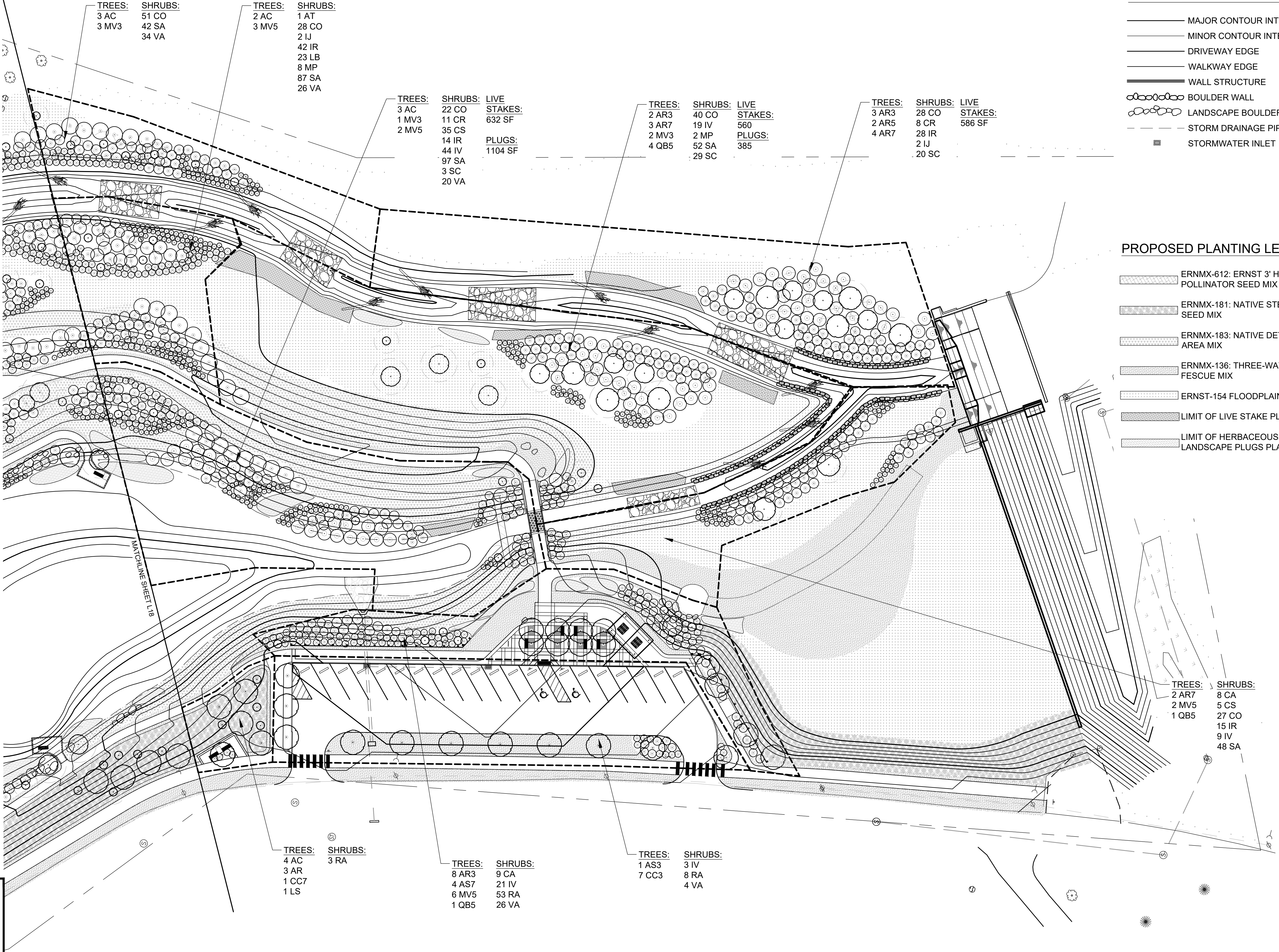
1. THE CONTRACTOR IS RESPONSIBLE TO APPLY FOR AND OBTAIN, PRIOR TO CONSTRUCTION, ANY FEDERAL, STATE, COUNTY, OR TOWNSHIP PERMITS THAT MIGHT BE REQUIRED TO COMPLETE THIS PROJECT.
2. THE CONTRACTOR SHALL DETERMINE THE EXTENT AND EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO COMMENCING WORK. CONTRACTOR SHALL REPORT TO THE OWNER'S REPRESENTATIVE / LANDSCAPE ARCHITECT ANY CONDITION NOT CONSISTENT WITH THE DRAWINGS. THE CONTRACTOR SHALL PROTECT ALL SERVICE LINES AND EXISTING SITE AREA FROM DETERIORATION OR DAMAGE. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES THREE (3) DAYS PRIOR TO COMMENCING WORK TO COMPLY WITH PA ACT 287. PA ONE CALL SYSTEM: 1-800-242-1776.
3. ALL SITE WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LOCAL & STATE CODES/REGULATIONS.
4. SEE CIVIL PLANS FOR FINISHED GRADES, LOCATION OF DRAIN INLETS, CATCH BASINS, AND UNDERGROUND UTILITY LOCATIONS
5. ALL DEMOLITION DEBRIS SHALL BE DISPOSED OF PROPERLY, LEGALLY AND IN A TIMELY MANNER.
6. ALL EXISTING TREES, SHRUBS, AND GROUNDCOVER NOT INDICATED TO BE REMOVED SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES.
7. PROTECT ALL EXISTING BUILT ELEMENTS, INCLUDING BUT NOT LIMITED TO: PAVING, WALLS, COLUMNS, CURBS, AND STEPS. ALL EXISTING BUILT ELEMENTS SHALL BE PROTECTED DURING CONSTRUCTION ACTIVITIES. RESTORE ANY DAMAGED ITEMS TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
8. SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.

PROPOSED FEATURES LEGEND

- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- DRIVEWAY EDGE
- WALKWAY EDGE
- WALL STRUCTURE
- BOULDER WALL
- LANDSCAPE BOULDER
- STORM DRAINAGE PIPE
- STORMWATER INLET

PROPOSED PLANTING LEGEND

- ERNMX-612: ERNST 3' HIGH POLLINATOR SEED MIX
- ERNMX-181: NATIVE STEEP SLOPE SEED MIX
- ERNMX-183: NATIVE DETENTION AREA MIX
- ERNMX-136: THREE-WAY TALL FESCUE MIX
- ERNST-154 FLOODPLAIN MIX
- LIMIT OF LIVE STAKE PLANTING
- LIMIT OF HERBACEOUS MATERIAL / LANDSCAPE PLUGS PLANTING



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PLANT LIST

QTY	KEY	Scientific Name	Common Name	Spacing	Size	Condition	Notes
TREES							
81	AC	Amelanchier canadensis	serviceberry	per plan	2-3'	#3 Container	
59	AR	Acer rubrum	red maple	per plan	2 1/2 -3" cal	B&B	
13	AR3	Acer rubrum	red maple	per plan	2-3'	#3 Container	
2	AR5	Acer rubrum	red maple	per plan	3-4'	#5 Container	
19	AR7	Acer rubrum	red maple	per plan	4-6'	#7 Container	
9	AS3	Acer saccharinum	silver maple	per plan	2-3'	#3 Container	
10	AS7	Acer saccharinum	silver maple	per plan	4-6'	#7 Container	
19	CC3	Cercis canadensis	redbud	per plan	3-4'	#3 Container	
5	CC7	Cercis canadensis	redbud	per plan	3-4'	#7 Container	
17	CP	Carpinus caroliniana	hornbeam	per plan	3-4'	#5 Container	
3	IO7	Ilex opaca	American Holly	per plan	3-4'	#7	
13	LS7	Liquidambar styraciflua	sweetgum	per plan	3-4'	#7 Container	
48	MV3	Magnolia virginiana	sweetbay magnolia	per plan	3-4'	#3 Container	
15	MV5	Magnolia virginiana	sweetbay magnolia	per plan	3-4'	#5 Container	
21	NS	Nyssa sylvatica	black gum	per plan	2-3'	#3 Container	
11	PS	Pinus strobus	white pine	per plan	2-3'	#5 Container	
27	QB5	Quercus bicolor	swamp white oak	per plan	3-4'	#5 Container	
1	QB7	Quercus bicolor	swamp white oak	per plan	4-6'	#7 Container	
16	QP5	Quercus palustris	pin oak	per plan	3-4'	#5 Container	
SHURBS							
2	AT	Asimina triloba	Pawpaw	per plan		Container Seedling	
39	CA	Cornus amomum	Silky Dogwood	per plan		Container Seedling	
334	CO	Cephalanthus occidentalis	buttonbrush	per plan		Container Seedling	
94	CS	Cornus sericea	red osier dogwood	per plan		Container Seedling	
19	CR	Cornus racemosa	Silky Dogwood	per plan		Container Seedling	
3	IA	Ilex verticillata 'Apollo'	winterberry	per plan		Container Seedling	
7	IJ	Ilex verticillata 'Jim Dandy'	winterberry	per plan		Container Seedling	
133	IR	Ilex verticillata 'Nana Red Sprite'	winterberry	per plan		Container Seedling	
30	IS	Ilex verticillata 'Sparkleberry'	winterberry	per plan		Container Seedling	
328	IV	Itea virginica	virginia sweetspire	per plan		Container Seedling	
44	LB	Lindera benzoin	Northern Spicebush	per plan		Container Seedling	
52	MP	Myrica pensylvanica	Northern Bayberry	per plan		#2 Container	
228	RA	Rhus aromatica "gro low"	fragrant sumac "gro low"	per plan	18-24"	#2 Container	
554	SA	Spirea alba	Meadowsweet	per plan		Container Seedling	
29	SC	Sambucus canadensis	elderberry	per plan		Container Seedling	
63	SN	Salix nigra	Black Willow	per plan		Container Seedling	
306	VA	Viburnum acerifolium	Mapleleaf viburnum	per plan		Container Seedling	
13	VL	Viburnum lentago	Nannyberry viburnum	per plan		Container Seedling	
LIVE STAKES							
—	—	Cephalanthus occident.	buttonbush	per plan		Live Stake	quantities based on SF
—	—	Cornus amomum	silky dogwood	per plan		Live Stake	quantities based on SF
—	—	Cornus racemosa	gray dogwood	per plan		Live Stake	quantities based on SF

HERBACEOUS MATERIAL, LANDSCAPE PLUGS							
	—	Anenome virgininana	Thimbleweed	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Asclepias incarnata	Swamp milkweed	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Caltha palustris	Marsh marigold	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Carex vulpinoidea	Fox Sedge	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Dryopteris erythrosora 'Brilliance'	Autumn fern	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Dryopteris marginalis	Eastern woodfern	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Eupatorium purpureum ssp. maculatum 'Gateway'	Joe Pye weed	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Heliopsis helianthoides	False Sunflower	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Iris versicolor	Blueflag	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Juncus effusus	Soft rush	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Juncus tenuis	Poverty rush	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Liatris spicata	Spike gayfeather	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Lobelia cardinalis	Cardinal flower	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Meehania cordata	Meehan's mint	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Nymphaea odorata	American Water Lily	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Onoclea sensibilis	Sensitive fern	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Osmunda regalis var. spectabilis	Royal fern	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Packera obovata	Roundleaf ragwort	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Pachysandra procumbens	Allegheny spurge	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Scirpus cyperinus	Wool grass	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Scirpus validus	Soft-stemmed bulrush	12" o.c		Landscape Plug	Plant in groups of 15 to 30
	—	Peltandra virginica	Arrow Arum	12" o.c.			
SEED MIX							
—	—	ERNMX-181 Native Steep Slope Mix		per plan		Live Seed	
—	—	ERNMX-183 Native Detention Area Mix		per plan		Live Seed	
—	—	ERNMX-612 Northeast Solar Pollinator 3' Mix		per plan		Live Seed	
—	—	ERNMX-136 Three-Way Tall Fescue Mix		per plan		Live Seed	
—	—	ERNMX-154 Floodplain Mix		per plan		Live Seed	
—	—	Low Mow Conservation Seed Mix		per plan		Live Seed	stablized turf area
—	—	Avena sativa	Oats	per plan		Live Seed	Cover Crop, Certified Weed Free

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