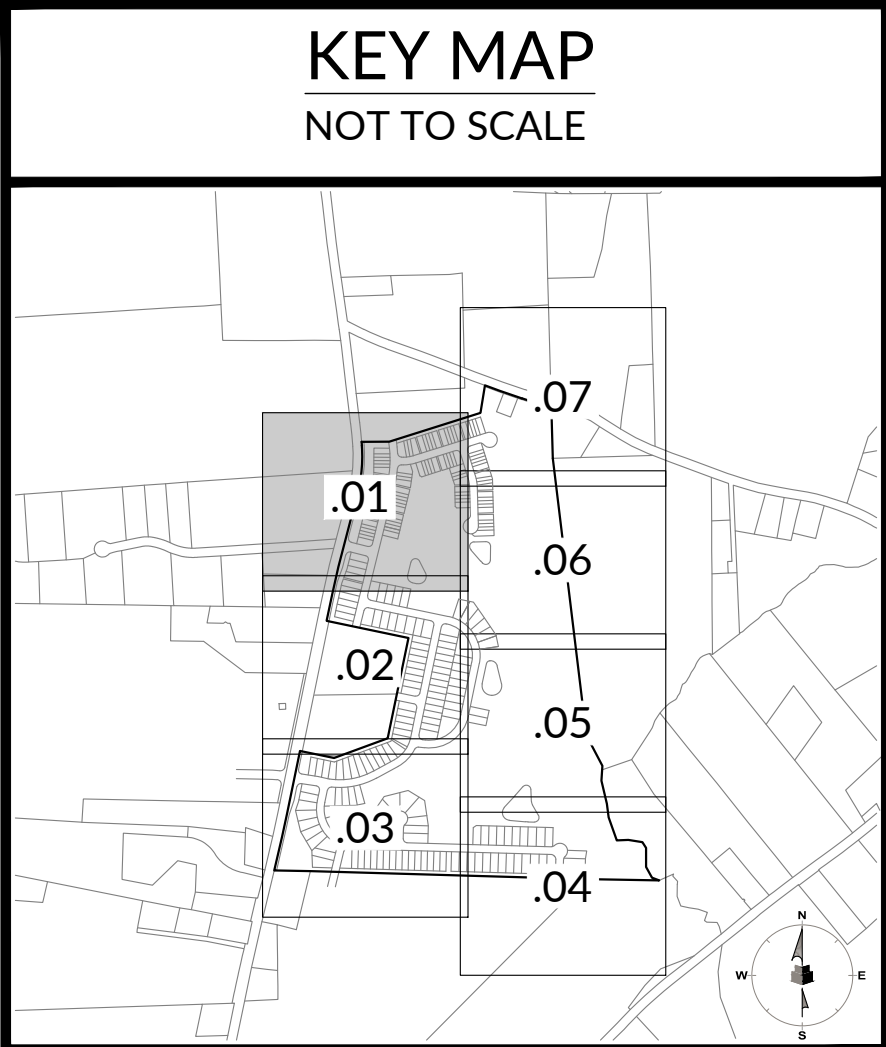
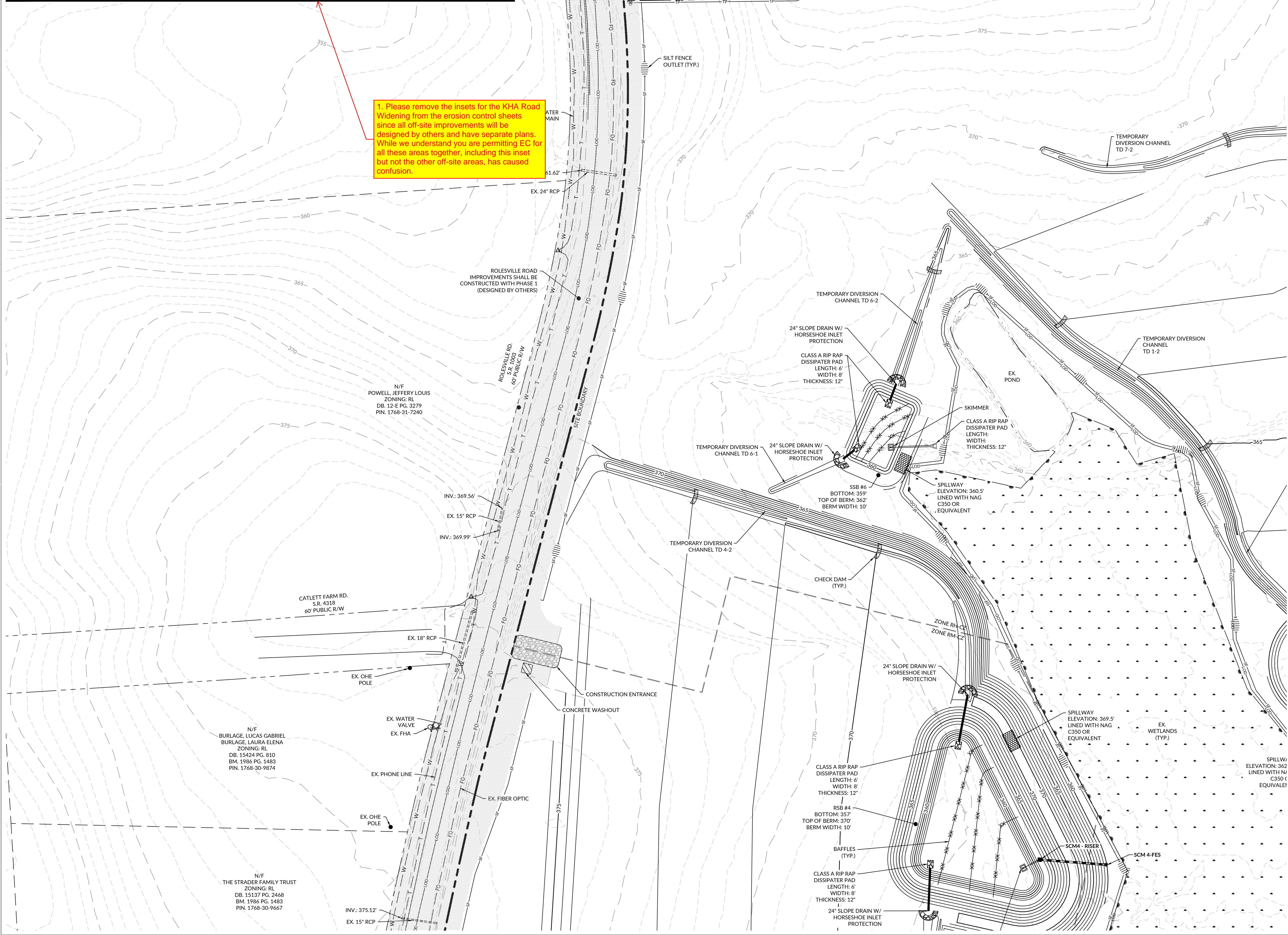
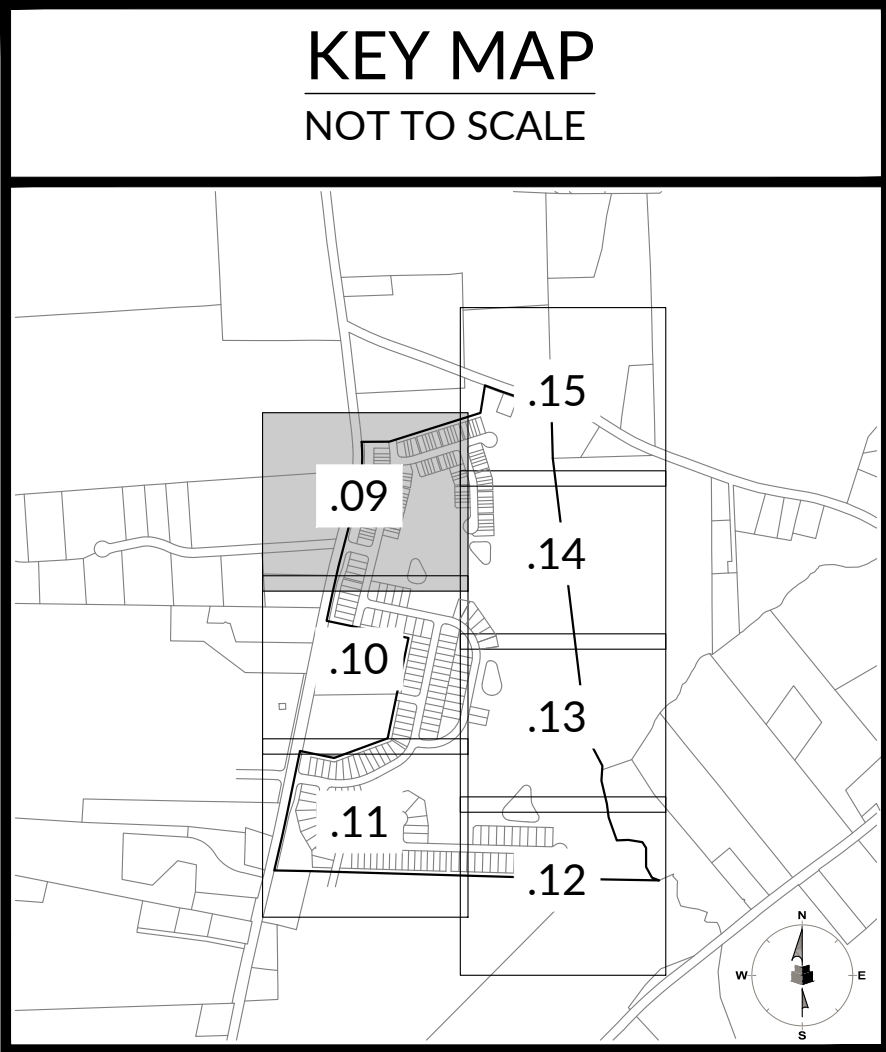
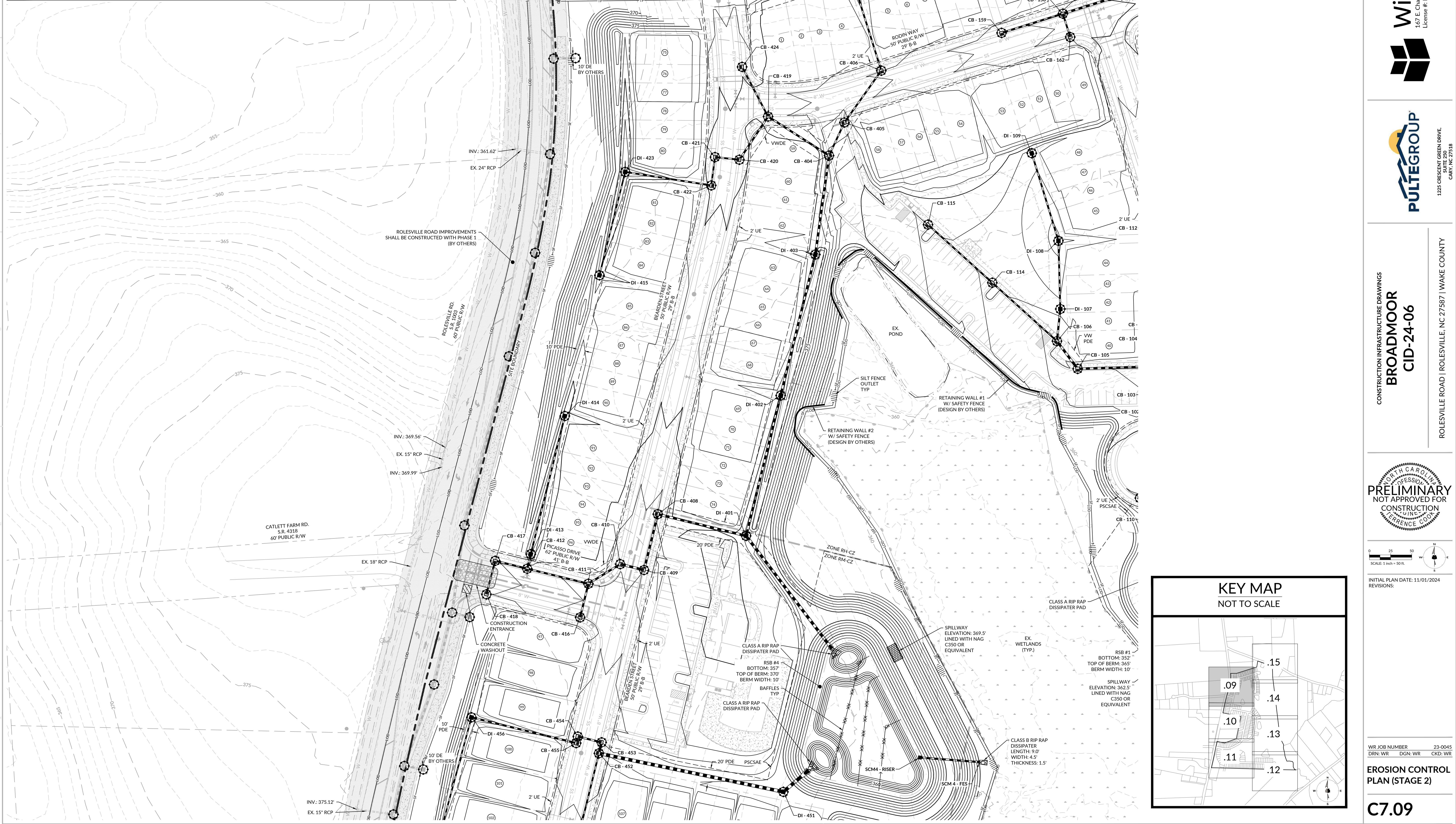
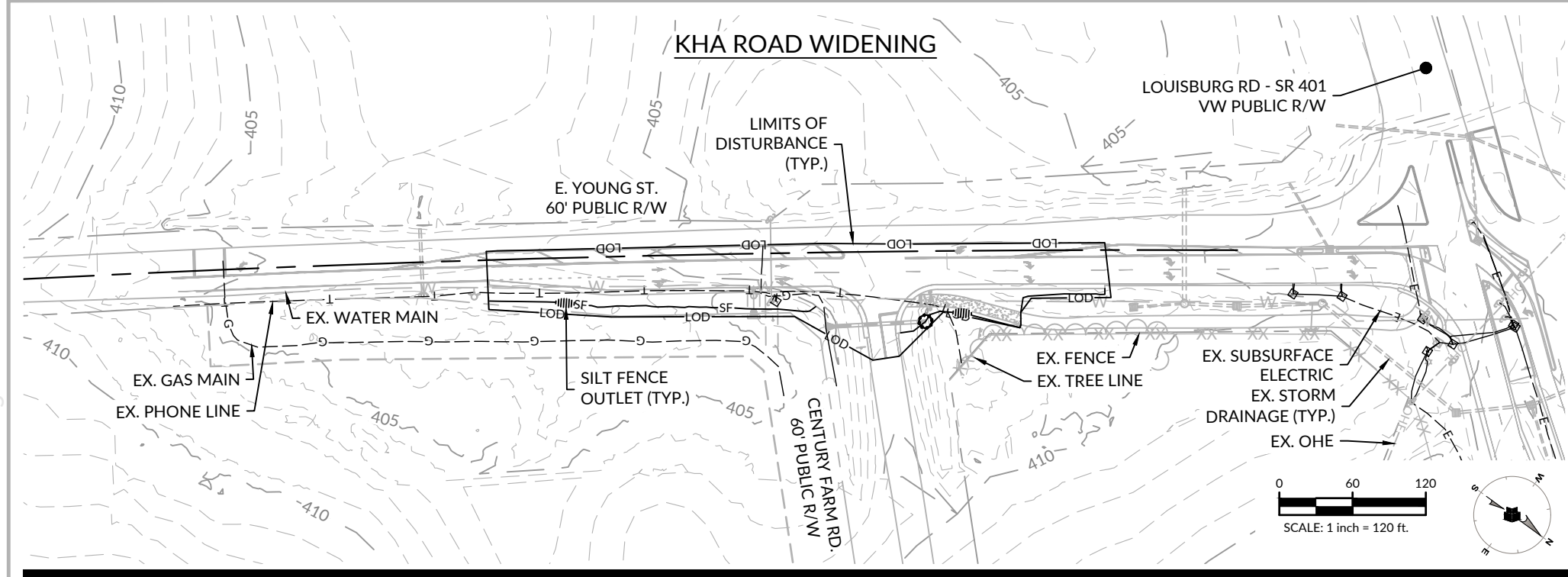


1. Please remove the insets for the KHA Road Widening from the erosion control sheets since all off-site improvements will be designed by others and have separate plans. While we understand you are permitting EC for all these areas together, including this inset but not the other off-site areas, has caused confusion.



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CONSTRUCTION INFRASTRUCTURE DRAWINGS  
**BROADMOOR**  
**CID-24-06**

PRELIMINARY  
 NOT APPROVED FOR  
 CONSTRUCTION

INITIAL PLAN DATE: 11/01/2024  
 REVISIONS:

WR JOB NUMBER: 23-0045  
 DRN: WR DGN: WR CKD: WR

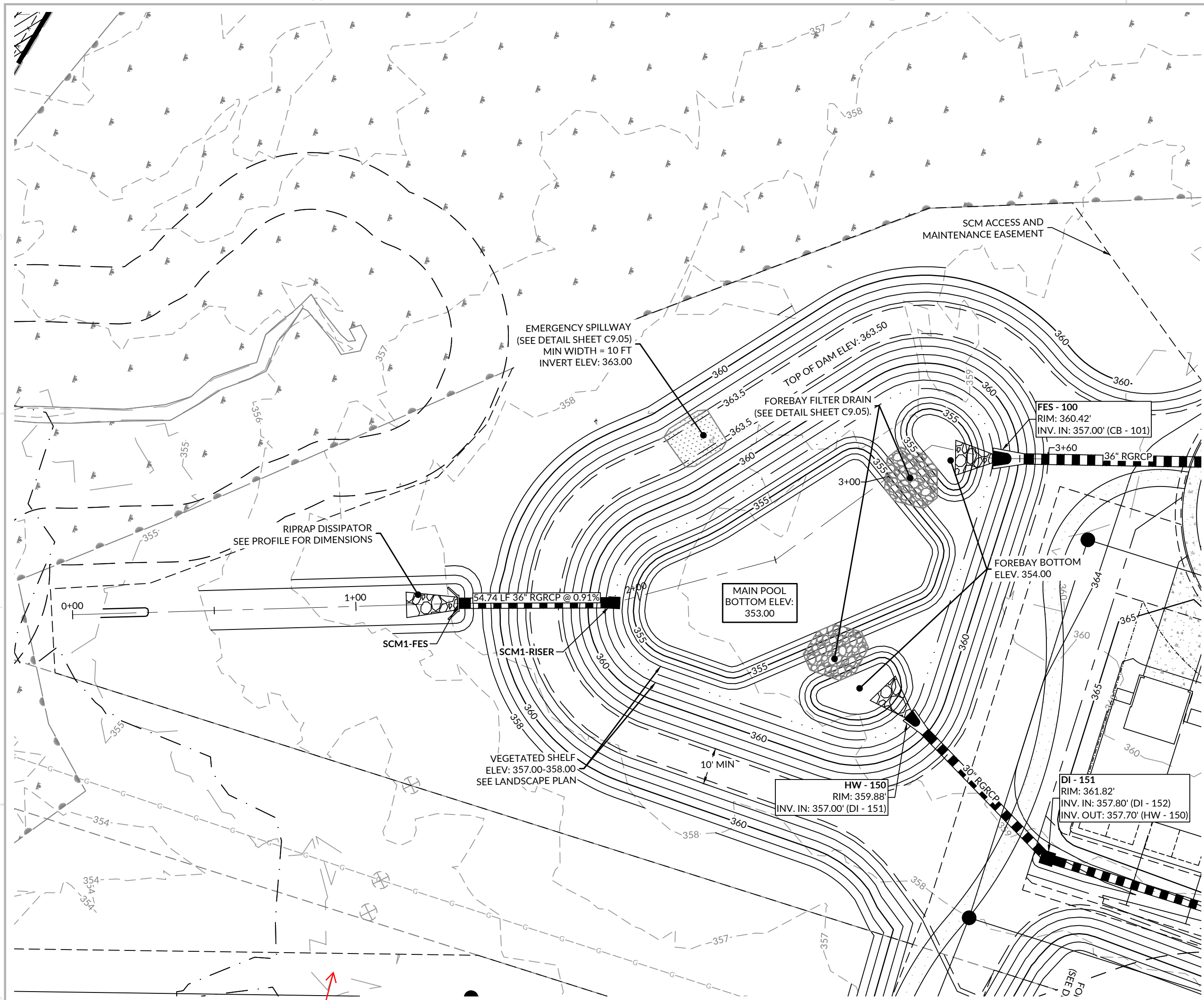
**EROSION CONTROL  
 PLAN (STAGE 2)**

**C7.09**



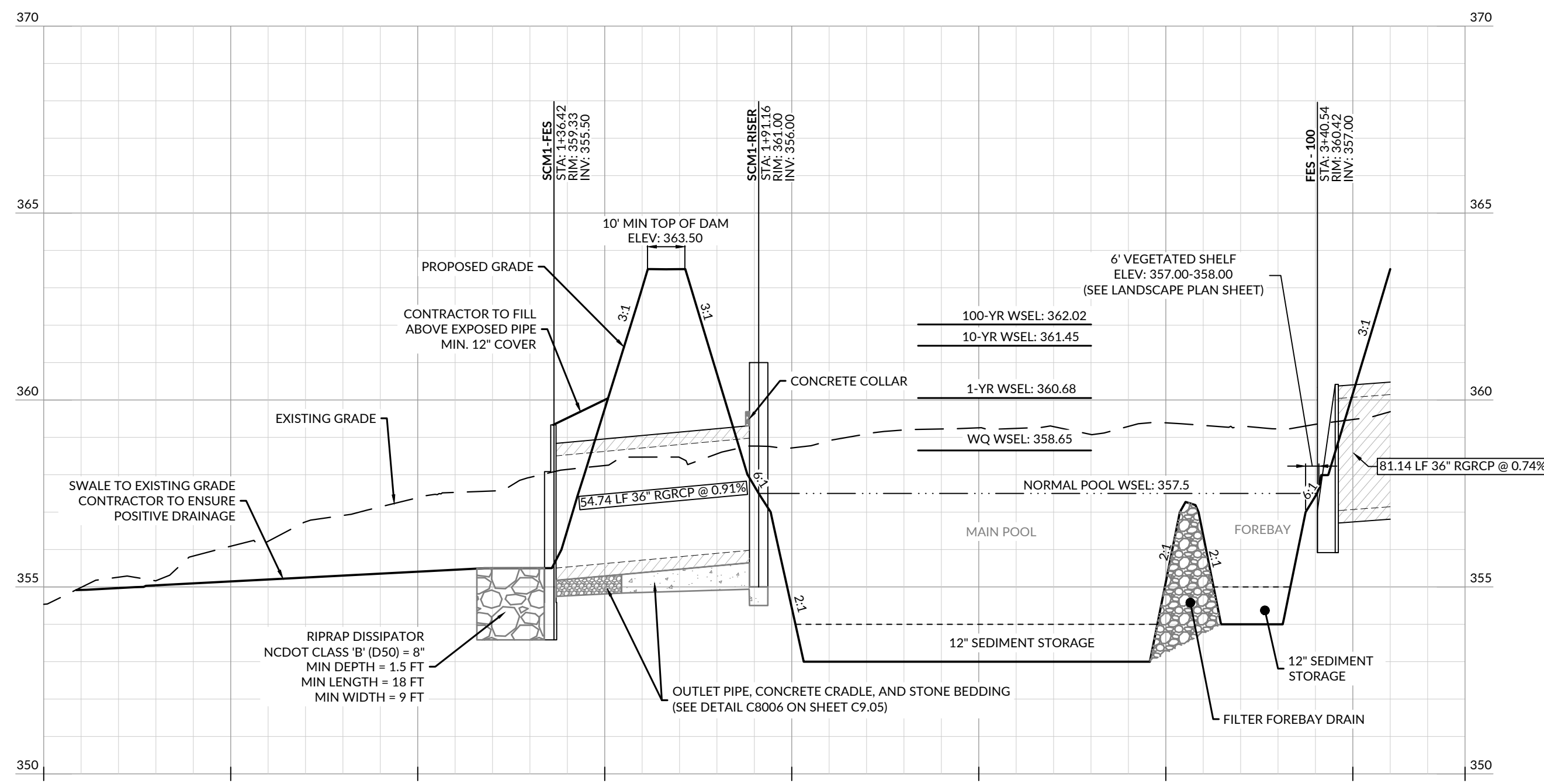
our people • your success

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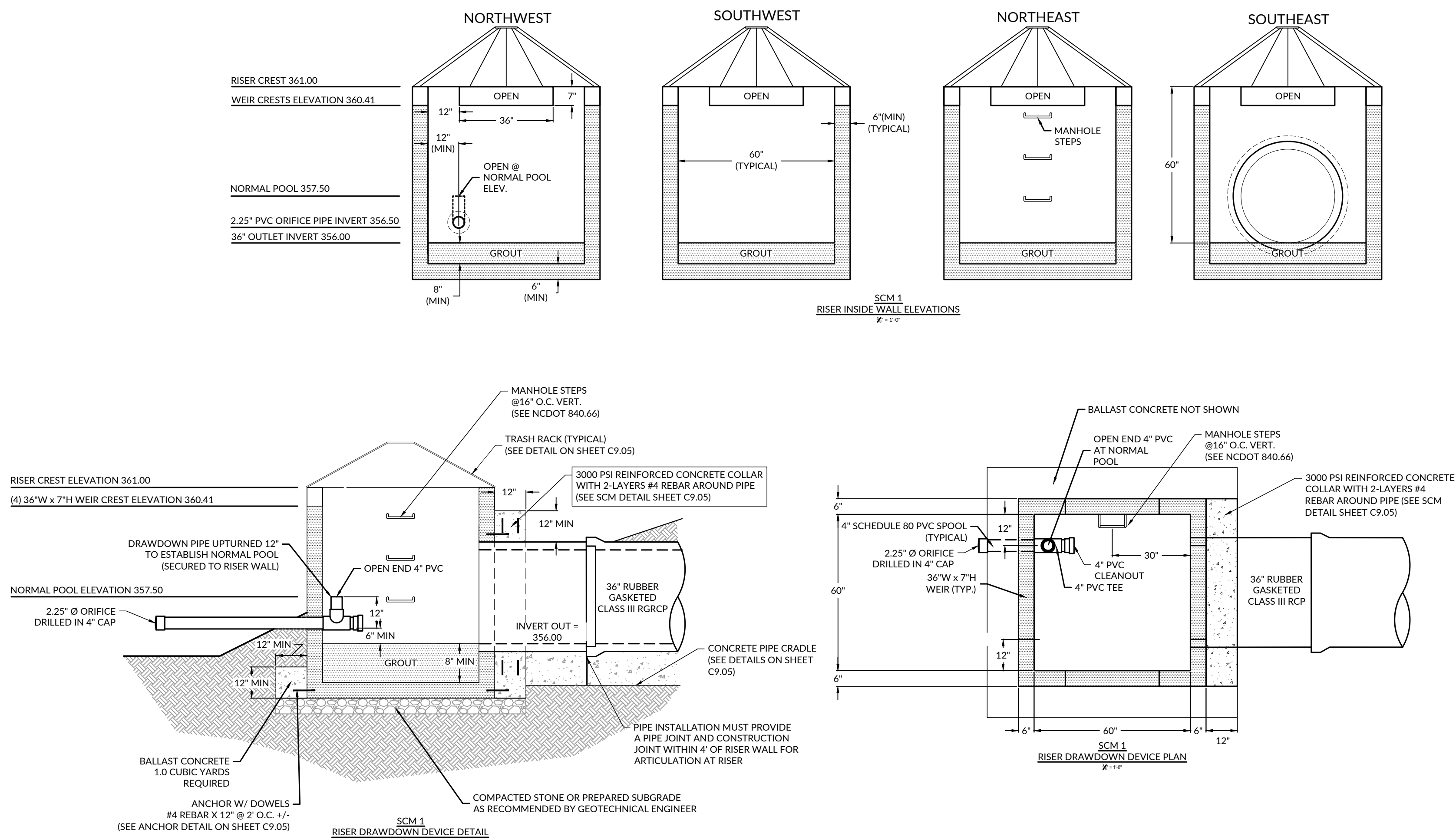


**WET POND SCM #1 PLAN VIEW**  
SCALE: 1" = 30'

2. Add north arrow to plan view, typical.



**WET POND SCM #1 PROFILE VIEW**  
SCALE: 1" = 30' HORIZONTAL, 1" = 3' VERTICAL



**NOTE:**  
RISER AND BALLAST CONCRETE HAVE BEEN SIZED BASED ON BUOYANCY CALCULATIONS. ADJUSTMENTS TO CONCRETE DIMENSIONS ARE NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL. ANY DIMENSIONAL CHANGES TO BALLAST CONCRETE BASE AND RISER MUST BE REQUESTED IN WRITING AND MUST BE ACCOMPANIED BY BUOYANCY CALCULATIONS SIGNED AND SEALED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER.

**WET POND STORMWATER CONTROL MEASURE (SCM) GENERAL NOTES:**

- PRIOR TO OR DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES IN THE PLANS OR SPECIFICATIONS.
- ALL CONSTRUCTION AND MINIMUM DESIGN CRITERIA SHALL BE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS AND SPECIFICATIONS, HEREBY INCORPORATED BY REFERENCE.
- UPON COMPLETION OF CONSTRUCTION, CERTIFICATION OF THE SCM BY THE GEOTECHNICAL ENGINEER WILL BE REQUIRED PRIOR TO FINAL SCM ACCEPTANCE.
- THE GEOTECHNICAL ENGINEER SHALL EVALUATE SOILS FOR SUITABILITY OF DAM CONSTRUCTION AND SLOPE STABILITY.
- PRIOR TO PLACEMENT OF EMBANKMENT FILL, THE GEOTECHNICAL ENGINEER SHALL SUPERVISE THE FOUNDATION PREPARATION AND APPROVE THE DEPTH AND EXTENT OF THE CUTOFF TRENCH. A MINIMUM OF 1 FOOT SHALL BE EXCAVATED.
- THE DAM AND FOREBAY BERMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS UNLESS SUPERCEDED BY THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS:
  - BORROW MATERIALS FOR USE AS EMBANKMENT FILL SHALL BE FREE OF ORGANICS, ROOTS AND OTHER WOODY VEGETATION OR ORGANIC DEBRIS.
  - FILL MATERIALS SHALL CONSIST OF SOILS WHICH CLASSIFY AS SC, SM, CL, CL-CH AND ML IN ACCORDANCE WITH THE UNIFIED CLASSIFICATION SYSTEM OR AS APPROVED BY THE GEOTECHNICAL ENGINEER.
  - FILL MATERIALS SHALL HAVE A MAXIMUM PARTICLE SIZE OF 3 INCHES IN MEAN DIAMETER.
  - FILL SHALL BE PLACED IN 8 INCH (MAXIMUM) LOOSE LIFTS FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT AND IN 4 INCH (MAXIMUM) LOOSE LIFTS FOR MATERIAL COMPACTED BY HAND OPERATED TAMPERS UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE. FILL SHALL BE BROUGHT UP BY BENCHING INTO THE EXISTING SLOPE. A MAXIMUM HEIGHT OF 2 FEET SHALL BE USED FOR EACH BENCH LIFT TAKING CARE TO REMOVE ROOT STRUCTURES AS THE FILL PROCEEDS. THE SURFACE OF EACH LIFT SHALL BE SCARIFIED PRIOR TO PLACEMENT OF THE NEXT LIFT IN ORDER TO EFFECTIVELY TIE THE FILL LIFTS TOGETHER.
  - ALL COMPACTION SHALL BE TESTED BY THE NUCLEAR METHOD (ASTM D-4980) OR SAND CONE METHOD (ASTM D-1556) AT A RATE OF AT LEAST ONE TEST PER 5000 SF PER ONE FOOT OF COMPACTED FILL. THICKNESS IN GENERAL AREA FILLS AND ONE TEST PER 50 LINEAL FEET PER LIFT ALONG THE BARREL.
  - THE MINIMUM COMPACTION SHALL BE A MINIMUM OF 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D-498) AT MOISTURE CONTENTS VARYING FROM 2 PERCENT BELOW TO 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT DETERMINED BY STANDARD PROCTOR TEST.
- SUBGRADE FOR THE RISER STRUCTURE AND OUTLET PIPE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. IF THE GEOTECHNICAL ENGINEER REQUIRES ADDITIONAL SUBGRADE PREPARATION, THE ADDITIONAL COST SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.
- THE OUTLET PIPE SHALL BE BEDDED IN CONCRETE FOR 2/3 OF THE PIPE LENGTH, BEGINNING AT THE RISER, AND IN #78 STONE FOR 1/3 OF PIPE LENGTH TO THE OUTLET. SEE DETAILS ON SHEET C9.05.
- EMBANKMENT AND SIDE SLOPES OF THE BASIN SHALL BE STABILIZED PER SEEDING SCHEDULE ON EROSION CONTROL DETAILS SHEET OR SODDED. SEE LANDSCAPE PLAN ON SHEETS FOR FURTHER PLANTING DETAILS.
- IF, DURING CONSTRUCTION, THE SCM IS TO BE USED AS AN EROSION CONTROL MEASURE, THE FOREBAY BERMS SHALL NOT BE INSTALLED DURING THE INITIAL CONSTRUCTION OR WHILE THE SCM IS USED AS AN EROSION CONTROL MEASURE.
- UNLESS OTHERWISE NOTED, ALL PERMANENT STRUCTURES (E.G. RISER/BARREL, WEIR WALLS, ETC.) ARE TO BE INSTALLED WITH THE INITIAL DAM CONSTRUCTION.
- FOR SITE BUILT FEATURES (E.G. WEIR WALLS, DROP STRUCTURES, BRIDGES, ETC.), THE CONTRACTOR SHALL PROVIDE STRUCTURAL DRAWINGS TO BE SIGNED AND SEALED BY A NC PROFESSIONAL ENGINEER AND TO THE DESIGN ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
- PRIOR TO FINAL GRADING OF THE SCM, THE CONTRACTOR SHALL PROVIDE SUFFICIENT AS-BUILT SURVEY INFORMATION TO CONFIRM THAT THE FINISHED SCM WILL MEET THE SPECIFIC DIMENSIONAL REQUIREMENTS APPLICABLE TO THE SCM. THOSE REQUIREMENTS INCLUDE:
  - POND BOTTOM ELEVATION = 353.00 FT
  - DRAWDOWN OVERFLOW ELEVATION (NORMAL POOL) = 357.50 FT
  - MINIMUM SURFACE AREA AT NORMAL POOL ELEVATION = 10,410 SF
  - MINIMUM VOLUME REQUIRED FOR WATER QUALITY = 13,493 CF
  - PROVIDED VOLUME FOR WATER QUALITY = 37,342 CF
  - WEIR CREST ELEVATION = 360.41 FT
  - RISER CREST ELEVATION = 361.00 FT
  - LOW POINT TOP OF EMBANKMENT (AUXILIARY SPILLWAY) = 362.50 FT
  - AVERAGE TOP OF EMBANKMENT = 363.50 FT
- ELEVATIONS SHALL BE WITHIN 0.1 FEET OF THE ABOVE ELEVATIONS FOR EARTHWORK, AND 0.05 FEET FOR OUTLET STRUCTURE. ALL SURFACE AREAS ARE THE MINIMUM AREAS. REQUEST FOR A REDUCTIONS IN THE MINIMUM VALUES WILL BE CONSIDERED ON A CASE BY CASE BASIS.
- ONCE THE PROJECT SITE HAS BEEN STABILIZED, CONTRACTOR SHALL OBTAIN APPROVAL BY EROSION CONTROL INSPECTOR IN ORDER TO REMOVE TEMPORARY EROSION CONTROL DEVICES.
  - ONCE ALL SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN REMOVED, THE SCM SHALL BE CONVERTED TO A PERMANENT SCM.
  - ALL SEDIMENT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
  - FOREBAY AND VEGETATED SHELF SHALL BE CONSTRUCTED AS SHOWN ON THE PLAN.
  - VEGETATED SHELF SHALL BE PLANTED PER PLANT SCHEDULE ON LANDSCAPE PLAN (SEE LITTLE DIVERSIFIED ARCHITECTS).
- FINAL CERTIFICATION OF THE SCM BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED IS REQUIRED.

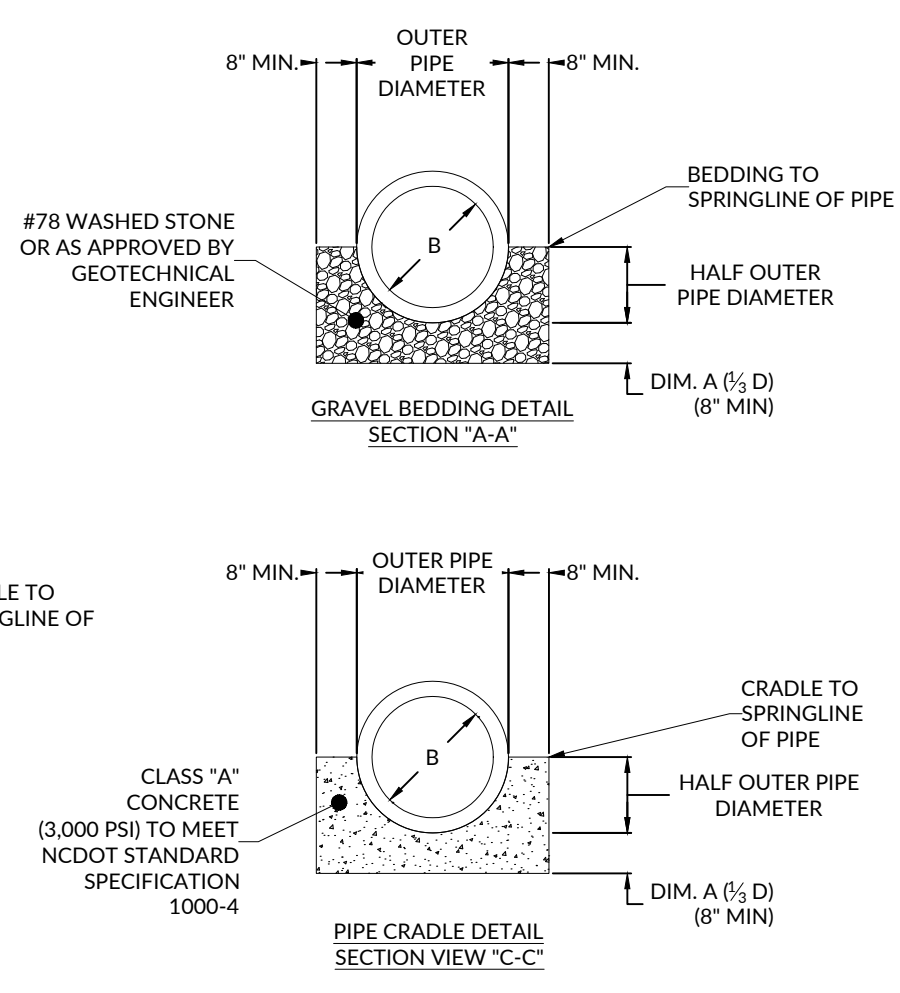
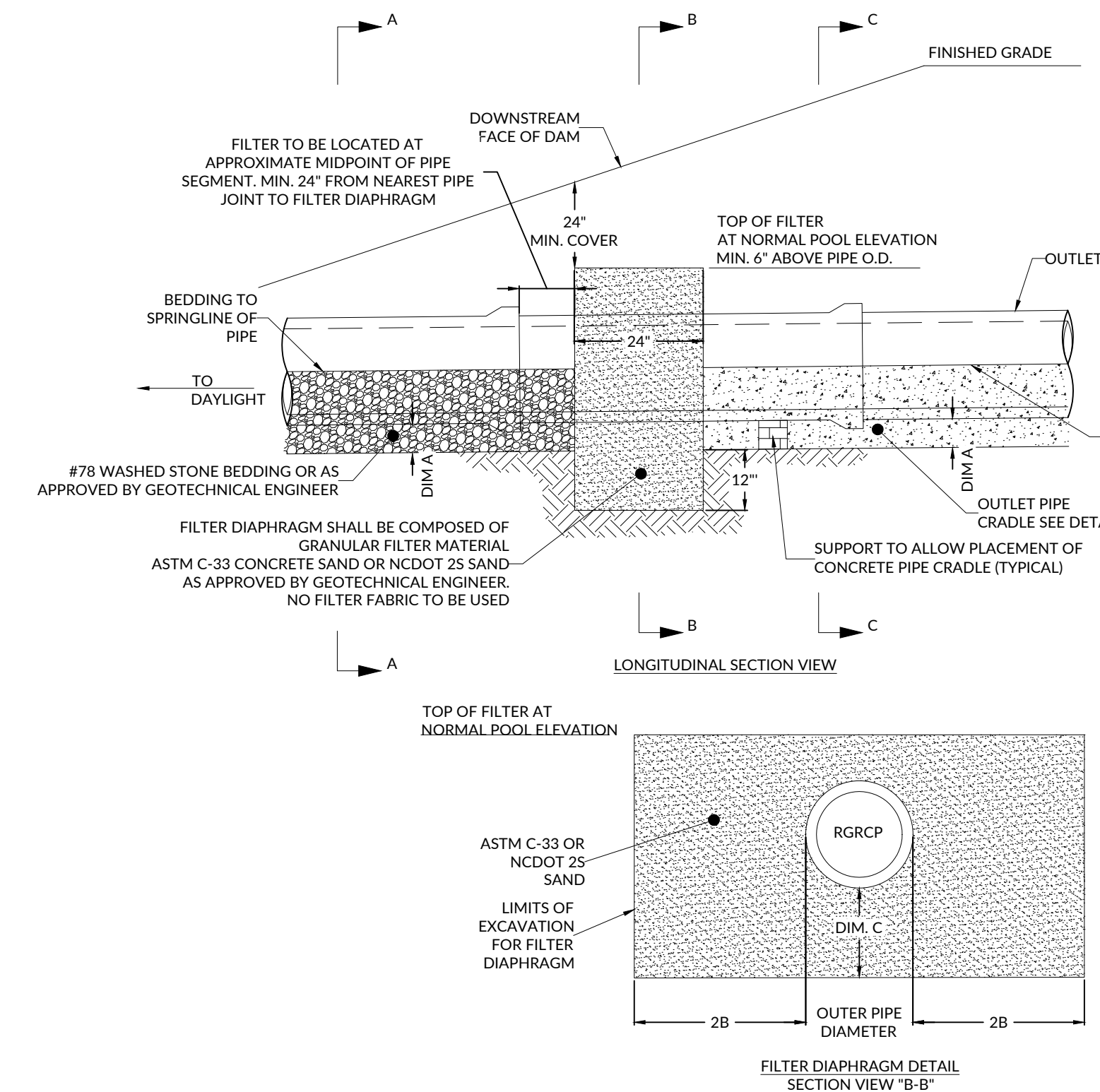
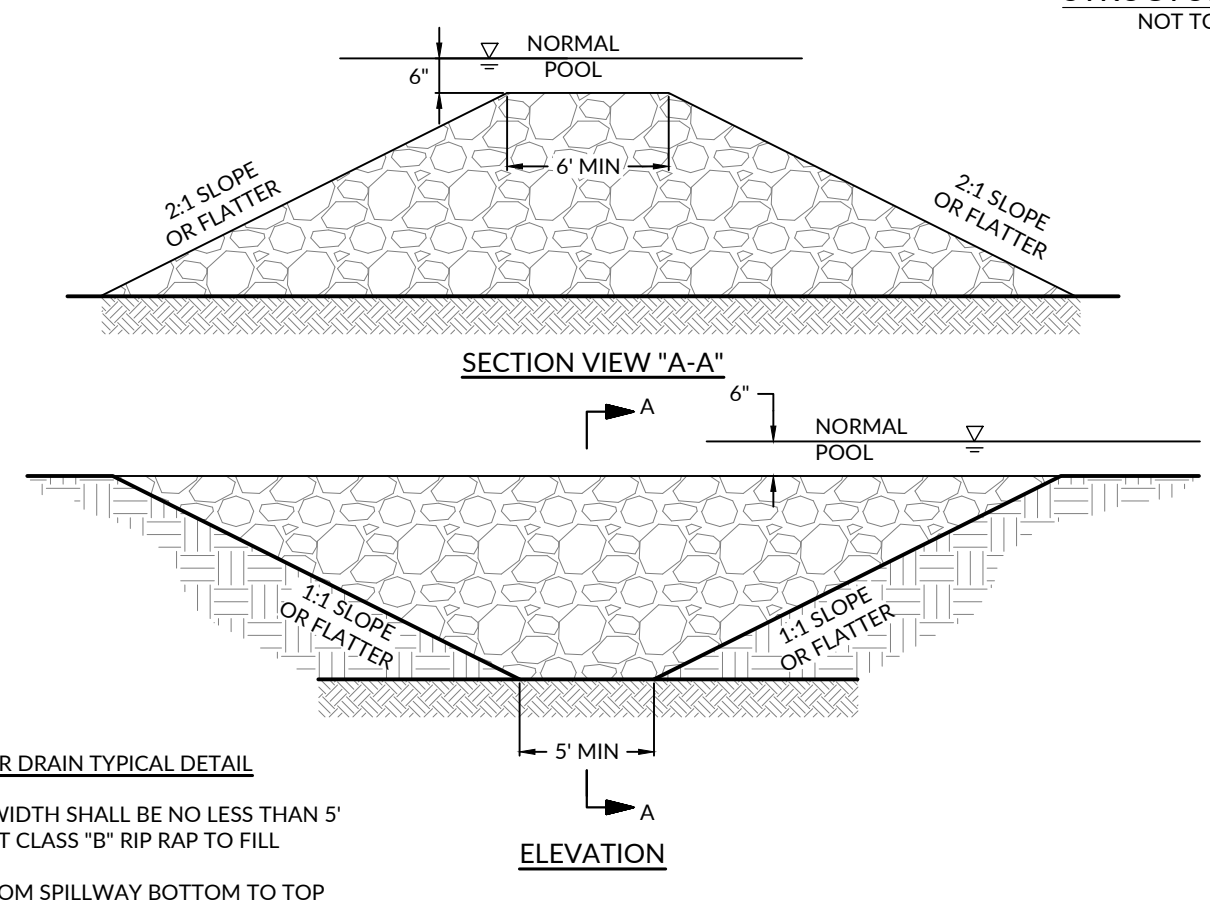
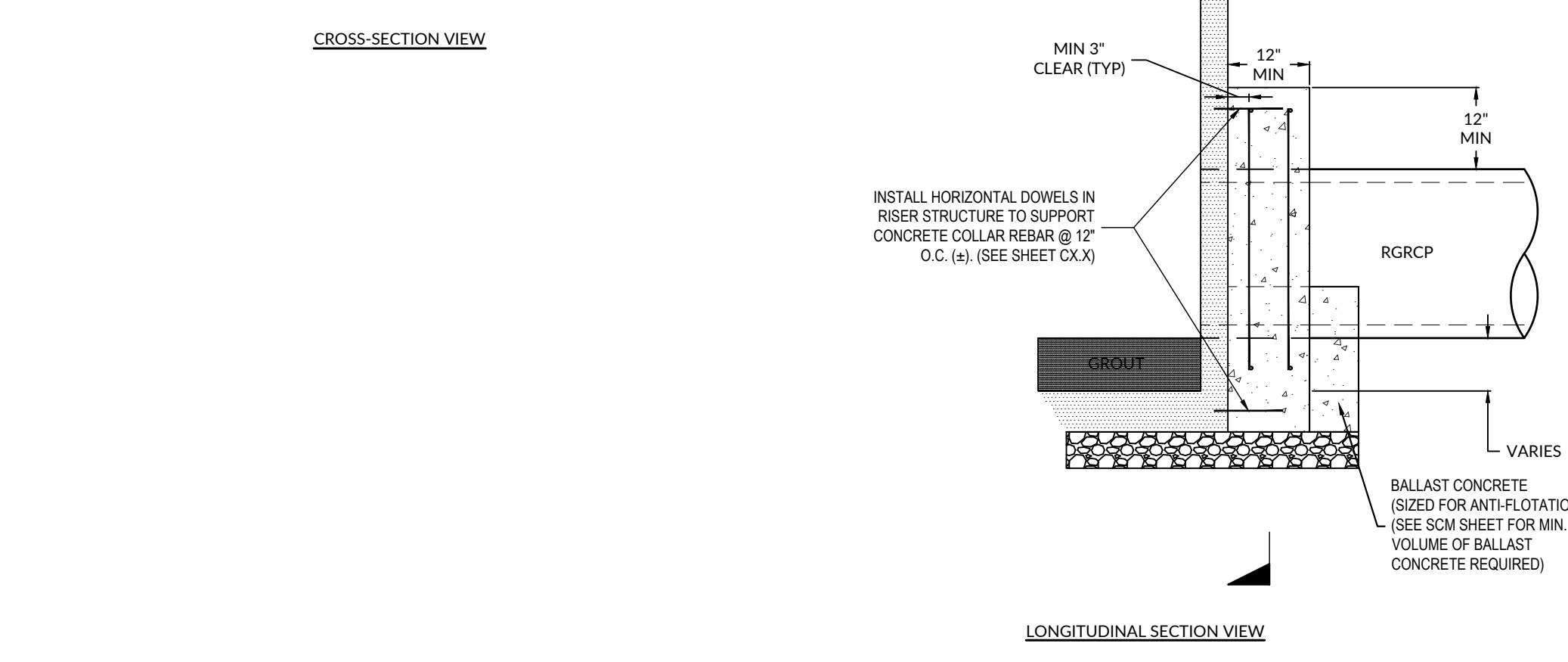
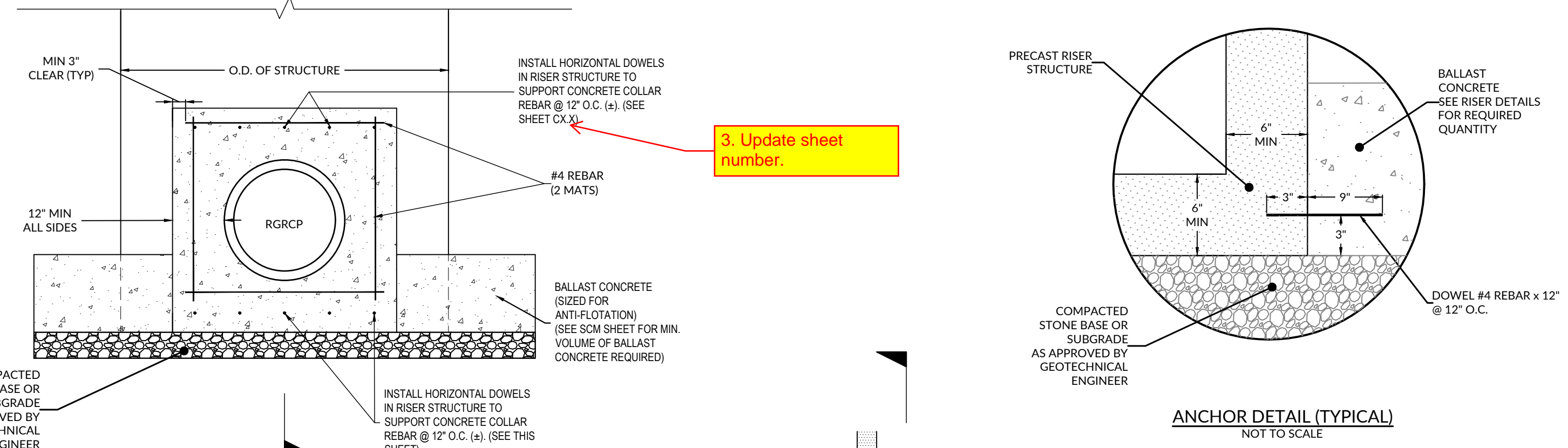
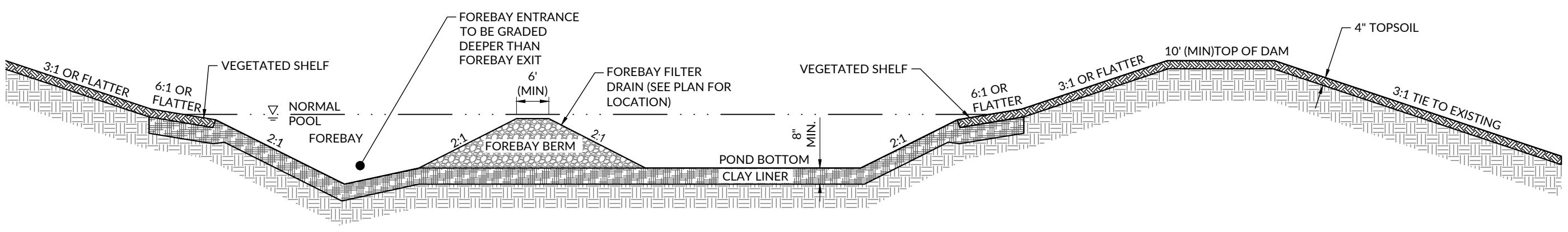
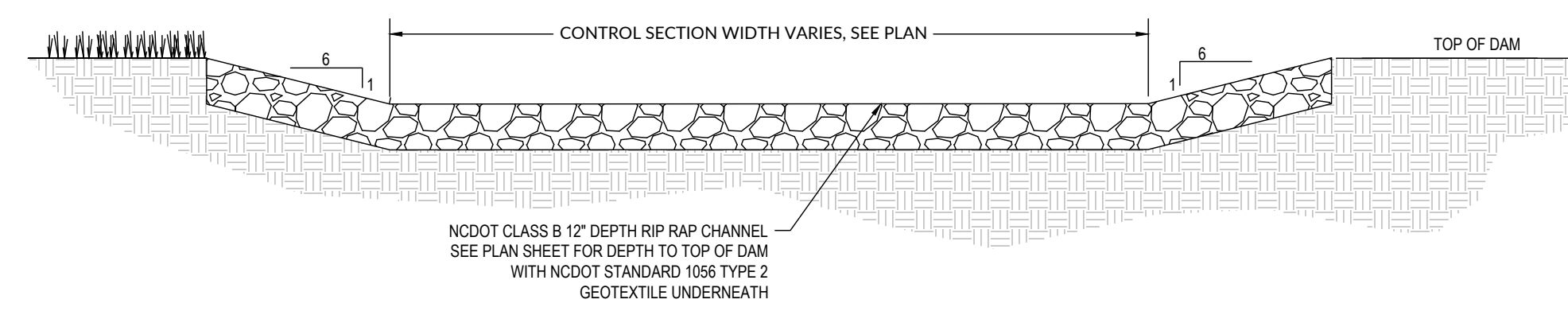
**CLAY LINER SPECIFICATIONS:**

- THE CONTRACTOR SHALL INSTALL A CLAY LINER TO MAINTAIN A PERMANENT POOL AT THE DESIGN ELEVATION. IF THE SITE GEOTECHNICAL ENGINEER DETERMINES THAT THE EXISTING SITE CONDITIONS (SOIL PROPERTIES, EXISTING WATER TABLE, ETC.) INDICATE THAT NORMAL POOL CAN BE MAINTAINED WITHOUT A CLAY LINER, THE GEOTECHNICAL ENGINEER WILL PROVIDE NOTICE IN WRITING TO THE PROJECT ENGINEER THAT THE CLAY LINER IS NOT REQUIRED. IF THE CLAY LINER IS NOT INSTALLED, THE OWNER SHALL RECEIVE A CREDIT FOR THE DELETION OF THE LINER.
- AT A MINIMUM, THE CLAY LINER MATERIAL FOR THE WET POND SHALL MEET THE FOLLOWING SPECIFICATIONS:
- UNIFIED SOIL CLASSIFICATION SYSTEM DESIGNATION OF CL, CH, ML, OR SC
  - MINIMUM OF 40% PASSING #200 SIEVE
  - MINIMUM PLASTICITY INDEX OF 12
  - MAXIMUM PERMEABILITY OF  $1 \times 10^{-3}$  cm/sec
  - A MINIMUM OF 3 TESTS OF EACH ABOVE PARAMETER SHALL BE PROVIDED FROM AN APPROVED LABORATORY ON THE LINER MATERIAL AND PRESENTED TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF THE MATERIAL.
  - COMPACTION TO A MINIMUM OF 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY (ASTM D-698), AND WITHIN 3% OF THE OPTIMUM MOISTURE CONTENT (MINIMUM OF 1 COMPACTION DENSITY TEST PER 2500 SQUARE FEET).

- AN IN-PLACE MAXIMUM INFILTRATION RATE OF 0.01 INCHES PER HOUR.
  - RECOMMENDATIONS OF THE SITE GEOTECHNICAL ENGINEER MAY SUPERCEDE THE ABOVE SPECIFICATIONS.
- THE CLAY LINER SHALL BE PLACED UNDER THE BOTTOM OF THE SCM PERMANENT POOL TO A MINIMUM THICKNESS OF 8 INCHES. A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE PLACED ABOVE THE CLAY LINER TO THE FINISHED GRADE AS SHOWN ON THE DRAWINGS AND/OR DETAILS. CARE SHALL BE TAKEN WHEN PLACING THE TOPSOIL SO AS NOT TO DAMAGE THE CLAY LINER. A CLAY SOIL, NO ORGANICS, MIXTURE MAY BE USED IF THE ABOVE SPECIFICATIONS ARE SATISFIED AND WITH WRITTEN APPROVAL BY THE GEOTECHNICAL ENGINEER.

**PRECAST CONCRETE MATERIALS NOTES:**

- ALL PRECAST CONCRETE STRUCTURES SHALL CONFORM TO ASTM C913 (RECTANGULAR) OR C478 (ROUND).
- ALL REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III (UNLESS OTHERWISE NOTED).
  - O-RING JOINTS (RGRCP) SHALL CONFORM TO ASTM C443 & ASTM C361.
  - NON O-RING JOINTS (RCP) SHALL CONFORM TO ASTM C990

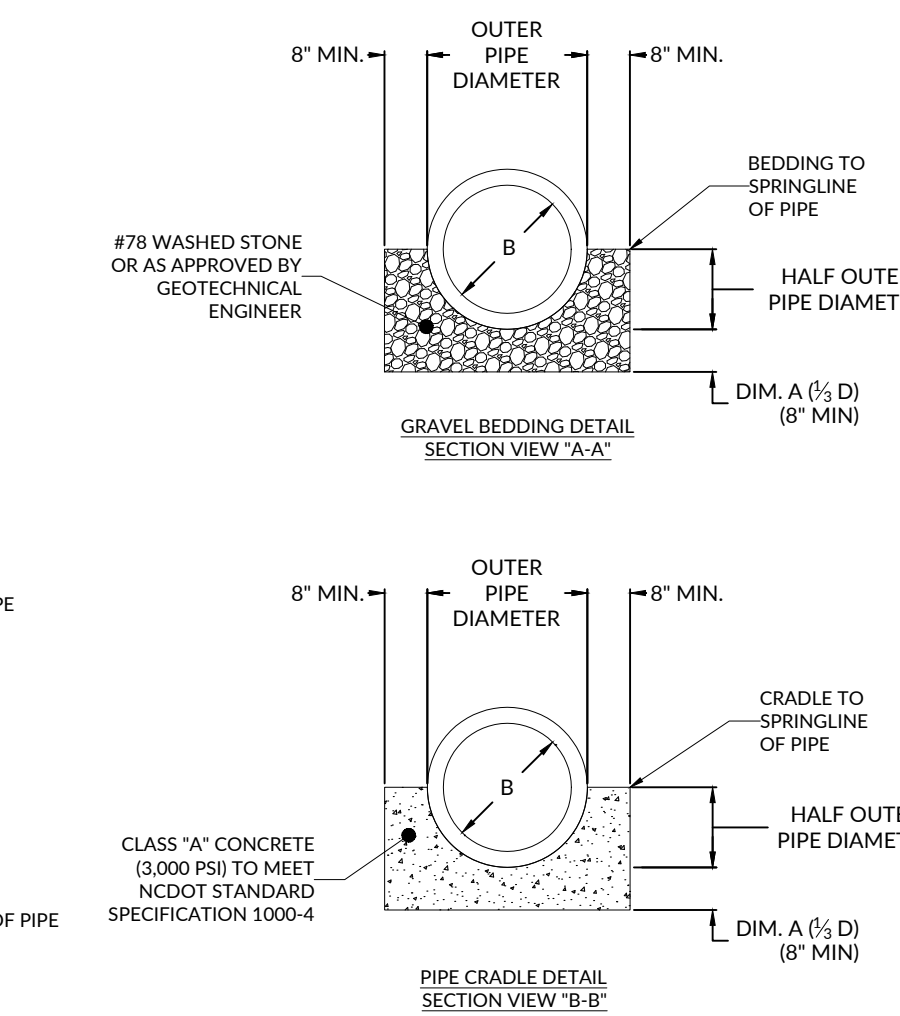
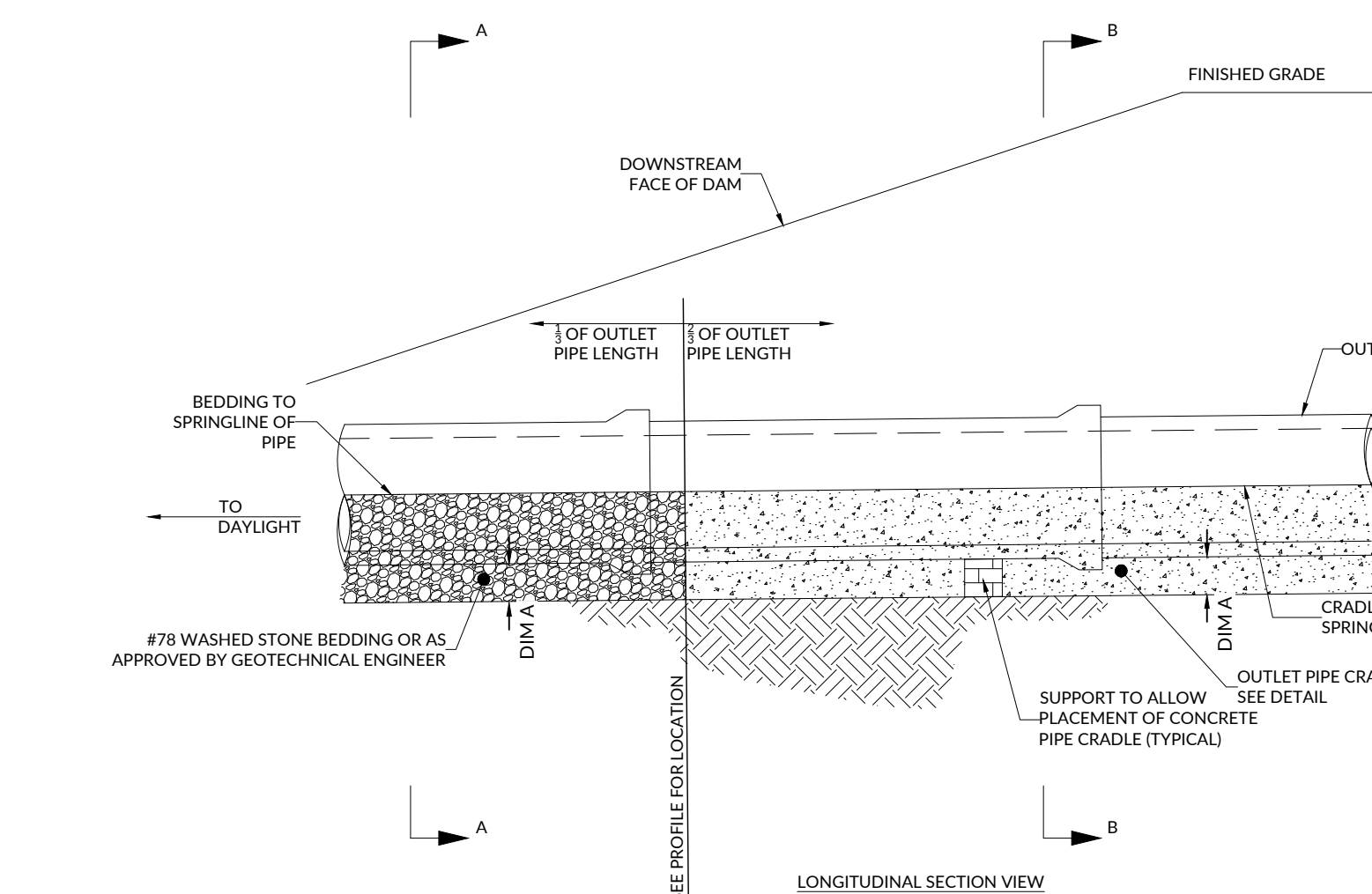


NOTE: IF PIPE IS INSTALLED IN EXCAVATED TRENCH, THEN SIDE WALLS MAY CONFORM TO TRENCH (TRENCH MAY BE USED AS CRADLE FORM)

NOMINAL PIPE SIZE (D)	DIM A* (D)	DIM B (PIPE ID)	DIM C (DIM A + 12")	SCM #
18	8	18	20	4
24	8	24	20	
30	10	30	22	
36	12	36	24	
42	14	42	26	
48	16	48	28	

ALL DIMENSIONS IN INCHES  
DIM A - 8" MINIMUM  
18" MINIMUM PIPE DIAMETER

OUTLET PIPE, FILTER DIAPHRAGM, AND CONCRETE CRADLE  
Scale: NTS  
DRAINAGE MISC C8005



NOTE: IF PIPE IS INSTALLED IN EXCAVATED TRENCH, THEN SIDE WALLS MAY CONFORM TO TRENCH (TRENCH MAY BE USED AS CRADLE FORM)

NOMINAL PIPE SIZE	DIM A* (D)	DIM B (PIPE ID)	DIM C (DIM A + 12")	SCM #
18	8	18	20	
24	8	24	20	
30	10	30	22	2, 3
36	12	36	24	1
42	14	42	26	
48	16	48	28	

ALL DIMENSIONS IN INCHES  
DIM A - 8" MINIMUM  
18" MINIMUM PIPE DIAMETER

OUTLET PIPE, CONCRETE CRADLE, AND STONE BEDDING  
Scale: NTS  
DRAINAGE MISC C8006

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