SITE IMPROVEMENTS
FOR THE
OAK RIDGE ROWING COURSE
OAK RIDGE, TENNESSEE

INDEX OF DRAWINGS

CIVIL

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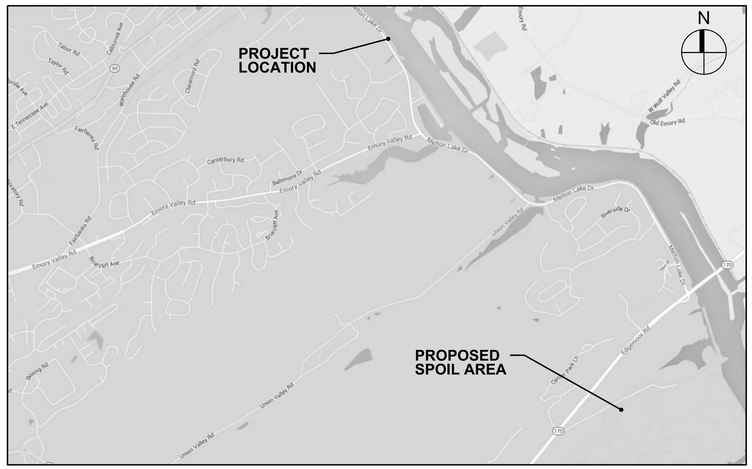
MODULAR BLOCK WALL

Sheet No.	Description	Revision	Date
RW-1	MODULAR BLOCK WALL NOTES & DETAILS	0	07/28/2016
RW-2	MODULAR BLOCK WALL PLAN & PROFILE	0	07/28/2016



LOCATION MAP
NOT TO SCALE

DEVELOPED FOR:

CITY OF OAK RIDGE, TN

CITY MAYOR
Warren L Gooch

CITY MANAGER
Mark S. Watson

CITY COUNCIL
Ellen Smith (Mayor Pro Tem)
Trina Baughn
Kelly Callison
Rick Chinn, Jr.
Charlie Hensley
Chuck Hope

GEOServices LLC Geotechnical and Materials Engineers
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BENJAMIN C. NEELY — REGISTERED LANDSCAPE ARCHITECT — STATE OF TENNESSEE — 7/28/2016

BWSC

JULY 28, 2016

PROJECT No. 3589801

ISSUED FOR USE

SITE IMPROVEMENTS FOR THE OAK RIDGE ROWING COURSE OAK RIDGE, TENNESSEE

G0.01

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SCOPE OF WORK:

THIS SCOPE OF THIS PROJECT CONSISTS OF THE CONSTRUCTION OF A 476± LF SEGMENTAL BLOCK RETAINING WALL FOR THE PURPOSE OF ADDING AN ADDITIONAL ROWING LANE TO THE OAK RIDGE ROWING ASSOCIATION ROWING COURSE ON MELTON HILL LAKE. THIS PROJECT WILL INCLUDE, BUT NOT BE LIMITED TO, THE CONSTRUCTION OF THE SEGMENTAL BLOCK WALL, SLOPE EXCAVATION, RIP-RAP BANK STABILIZATION, PEDESTRIAN GUARDRAIL INSTALLATION, LANDSCAPE RESTORATION, GREENWAY CONSTRUCTION AND ANY REQUIRED DEMOLITION TO COMPLETE THE WORK AS PROPOSED.

GENERAL NOTES:

1. THE TOPOGRAPHIC SURVEY OF THE SUBJECT PROPERTY USED AS THE BASIS FOR DESIGN WAS PREPARED BY BARGE, WAGGONER, SUMNER, AND CANNON, INC.

2. MONUMENTATION SHOWN ON THE PLANS ARE TO BE USED AS THE BASIS FOR LAYOUT CONTROL. THE CONTRACTOR SHALL PROTECT AND MAINTAIN THESE CONTROL POINTS. HORIZONTAL CONTROL IS BASED UPON NAD 83 TENNESSEE GRID COORDINATE SYSTEM. THE DIMENSIONS FROM THE CONTROL POINTS/PROPERTY LINES ARE SHOWN FOR THE CONTRACTOR'S REFERENCE.

3. EXISTING ELEVATIONS, CONTOURS, AND BENCHMARKS (TBM) SHOWN ON THE PLANS ARE BASED ON MEAN SEA LEVEL DATUM. BENCHMARKS HAVE BEEN SET IN THE FIELD BY THE OWNER AS NOTED.

4. THE CONTRACTOR WILL PROVIDE ALL CONSTRUCTION STAKING AND PROVIDE COPIES OF THE SAME, INCLUDING CUT SHEETS, TO THE A/E. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL PROJECT CONTROL AND BENCHMARKS ESTABLISHED IN THE FIELD BY THE OWNER.

5. LOCATION OF EXISTING UTILITIES, PUBLIC OR PRIVATE, ARE APPROXIMATE ONLY. THEIR EXISTENCE AND EXACT LOCATION OR LOCATIONS OF ALL UTILITIES SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL COORDINATE WITH THE OWNERS OF SAID UTILITIES IN THE RELOCATION OF EXISTING FACILITIES, WHERE REQUIRED, AND/OR THE OWNER OR HIS REPRESENTATIVE IN THE ADJUSTMENT OF PROPOSED FACILITIES.

6. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF OAK RIDGE WITH REGARD TO IMPROVEMENTS PROPOSED WITHIN THE PUBLIC RIGHTS-OF-WAY. ALL WORK SHALL BE PERFORMED, AS A MINIMUM, TO THE STANDARDS AND REQUIREMENTS OF THE CITY UNLESS MORE RESTRICTIVE OR DEMANDING REQUIREMENTS ARE SHOWN HEREON IN WHICH CASE THE MORE RESTRICTIVE OR DEMANDING SHALL APPLY. ALL WORK MUST OBTAIN THE APPROVAL OF THE APPROPRIATE DEPARTMENTS AND/OR AGENCIES OF THE CITY OF OAK RIDGE, AND MUST MEET OR EXCEED THE STATE OR FEDERAL REQUIREMENTS, IF IT SO APPLIES.

7. EXTERIOR EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE PLACED PRIOR TO THE START OF ON-SITE GRADING ACTIVITIES. EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED AT ANY BORROW SITE LOCATION. SEE THE GRADING AND DRAINAGE PLAN AND NOTES FOR REQUIREMENTS REGARDING EROSION AND SEDIMENT CONTROL.

8. TRAFFIC CONTROL, IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF OAK RIDGE SHALL BE REQUIRED FOR ALL WORK WITHIN THE PUBLIC RIGHTS-OF-WAY.

9. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND SHALL MAINTAIN A PROGRAM OF SAFETY MEETING ALL REQUIREMENTS OF FEDERAL, STATE, AND LOCAL GOVERNING AGENCIES DURING ALL PHASES OF CONSTRUCTION AND AT ALL TIMES UNTIL FINAL COMPLETION AND ACCEPTANCE BY THE OWNER.

10 ANY AREA THAT IS DISTURBED OUTSIDE THE LIMITS OF CONSTRUCTION DURING THE LIFE OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

TRAFFIC NOTES:

1. UPON NOTICE OF AWARD AND PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN IN COORDINATION WITH THE CITY OF OAK RIDGE ENGINEERING DIVISION AND TDOT, IF REQUIRED.

2. DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN TRAFFIC AND PROVIDE TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE CONTRACTOR SHALL ALSO FURNISH AND INSTALL TRAFFIC SIGNS AND MARKINGS AS REQUIRED BY THE MUTCD AND THE CITY OF OAK RIDGE ENGINEERING DIVISION, WHICHEVER IS APPROPRIATE.

3. PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND COORDINATED WITH THE CITY OF OAK RIDGE ENGINEERING DIVISION AND TENNESSEE DEPARTMENT OF TRANSPORTATION.

4. PRIOR TO CLOSING ANY PUBLIC ROAD TO THROUGH TRAFFIC, THE CONTRACTOR SHALL NOTIFY ALL AFFECTED LOCAL AGENCIES ABOUT THE PROPOSED ROAD CLOSURE. THOSE TO BE CONTACTED SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: FIRE DEPARTMENT, POLICE DEPARTMENT, SHERIFF'S DEPARTMENT, POST OFFICE, THE A/E, CITY ENGINEER, AND OTHERS AS MAY BE DESIGNATED BY A/E.

GRADING NOTES:

1. ALL PROPOSED CONTOURS REPRESENT PROPOSED FINISHED SURFACE GRADE AND ANY PROPOSED PROFILES AND/OR CROSS-SECTIONS REPRESENT THE SAME FINISHED SURFACE. CROSS SLOPES SHOWN IN ALL CROSS-SECTIONS ARE LABELED IN PERCENT (%), AND SIDESLOPES IN ALL CROSS-SECTIONS ARE SHOWN H:V (i.e., 4:1).

2. ALL PROPOSED GRADING SHALL BE CONSIDERED UNCLASSIFIED. IT IS UNDERSTOOD THAT ANY REFERENCE TO ROCK, EARTH, OR OTHER MATERIALS ON THE DRAWINGS IS NOT AN INDICATION OF CLASSIFIED EXCAVATION.

3. THE CONTRACTOR SHALL PERFORM ALL NECESSARY STRIPPING AND STOCKPILING OF EXISTING TOPSOIL ON THE JOB SITE. STRIP AND STOCKPILE ALL TOPSOIL FROM CUT AND FILL AREAS. PROVIDE ADEQUATE EROSION AND SEDIMENT CONTROL FOR ALL STOCKPILES. TAKE CARE TO AVOID MIXING SUBSOIL AND OTHER UNSUITABLE MATERIAL WITH THE TOPSOIL.

4. WHERE ROCK IS ENCOUNTERED REMOVE IT TO A DEPTH OF ONE FOOT BELOW FINAL SUB-GRADE WITH NO POINTS EXTENDING ABOVE THIS ELEVATION. LEAVE ROCK SURFACE SO NO WATER WILL BE POCKETED. NO ON-SITE BLASTING WILL BE PERMITTED, UNLESS APPROVED BY THE A/E.

5. COMPLETE ALL CLEARING AND GRUBBING OPERATIONS FOR EXCAVATION AREAS BEFORE STARTING EXCAVATION AND/OR EMBANKMENT OPERATIONS. DISTURB ONLY THOSE AREAS NECESSARY FOR THE CURRENT PHASE OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL PROTECT ANY AND ALL EXISTING STRUCTURES, PIPES, CULVERTS, CONDUITS, WIRES OR OTHER ITEMS TO REMAIN. HE SHALL, AT HIS OWN EXPENSE, REPAIR OR REPLACE ANY DAMAGE THAT MAY RESULT FROM HIS OPERATIONS.

GRADING NOTES:

6. WHEN SPECIFIED GRADING REQUIREMENTS ARE NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL GRADE TO DRAIN ALL AREAS WITHIN THE LIMITS OF CONSTRUCTION, OR OTHER AREAS DISTURBED BY CONSTRUCTION, AND ALSO TO MATCH THE EXISTING, ADJACENT GROUND.THE CONTRACTOR SHALL AT ALL TIMES MAINTAIN THE AREA SO IT WILL BE WELL DRAINED IN ACCORDANCE WITH THE EROSION ANDSEDIMENT CONTROL REQUIREMENTS.

7. IN SO FAR AS PRACTICAL USE ALL SUITABLE MATERIAL ON-SITE. ROCKS AND BOULDERS MAY BE PLACED IN EMBANKMENTS PROVIDED THE EMBANKMENTS ARE DEEP ENOUGH TO PROVIDE 12" OR MORE SOIL COVER. DO NOT PLACE BOULDERS LARGER THAN 1/2 CUBIC YARD BENEATH STRUCTURE AREAS. MATERIAL MAY BE WASTED OFF-SITE AT NO COST TO THE OWNER WITH APPROVAL OF THE A/E. FURNISH COPIES OF THE PROPERTY OWNER AGREEMENT FOR WASTE SITES ALONG WITH APPROVAL OF UTILITY OWNERS AT THE WASTE SITE AND APPROVAL OF REGULATORY AGENCIES.

8. AFTER REMOVAL OF TOPSOIL CONSTRUCT EMBANKMENTS BY DISTRIBUTING THE MATERIAL IN SUCCESSIVE, UNIFORM HORIZONTAL LAYERS NO MORE THAN 8" THICK. COMPACT EACH LAYER AND PROVIDE FOR DRAINAGE OF SURFACE WATER AT ALL TIMES. MAINTAIN OPTIMUM MOISTURE CONTENT OF THE BACKFILL MATERIAL.

9. COMPACT THE EMBANKMENT AREAS TO A DENSITY OF AT LEAST 95% OF MAXIMUM DENSITY OR , IN STRUCTURE OR PAVING AREAS TO AT LEAST 100% OF MAXIMUM DENSITY FOR TOP TWO FEET AS DETERMINED BY ASTM D698 (STANDARD PROCTOR). SOIL TESTING TO BE PROVIDED BY THE OWNER. REGARDLESS OF THE TEST RESULTS, IT IS THE CONTRACTORS RESPONSIBILITY TO MEET ON-SITE COMPACTION REQUIREMENTS.

10. EXCAVATE AREAS OF YIELDING OR UNSTABLE MATERIAL AND BACKFILL WITH APPROVED MATERIAL AS DIRECTED BY A/E.

11. THE CONTRACTOR IS TO DISPOSE OF, AT HIS OWN EXPENSE, ALL UNSUITABLE AND/OR SURPLUS, EXCAVATED MATERIAL AS DIRECTED BY THE A/E. ALL SUITABLE, EXCAVATED MATERIAL SHALL BE USED AS DIRECTED BY THE A/E. ANY ASPHALT, CONCRETE, AND MINERAL AGGREGATE BASE STONE, NO LARGER THAN 6" MAXIMUM DIMENSION, MAY BE DISPOSED ON-SITE AT THE PROJECT WASTE SITE UPON APPROVAL OF A/E.

12. FINISH GRADE AND SPREAD TOPSOIL FROM STOCKPILES ON ALL DISTURBED AREAS, EXCEPT BUILDING LOCATIONS AND AREAS TO BE PAVED, TO THE FINISHED CONTOUR ELEVATIONS SHOWN ON THE PLANS. SCARIFY SUBGRADE TO A DEPTH OF 3" BEFORE PLACING TOPSOIL. PROVIDE A MINIMUM OF 4" TOPSOIL THICKNESS ON SUBGRADE AND 12" ON ROCK. SLOPE UNIFORMLY WITH NO WATER POCKETS. REMOVE ALL CLODS, ROOTS, STICKS, STONES OVER 2" IN DIAMETER AND OTHER FOREIGN MATERIALS FROM THE SURFACE.

13. ON THE PROJECT, NEWLY GRADED, EARTH AREAS NOT TO BE PAVED, RIP-RAPPED, OR OTHERWISE STABILIZED, SHALL BE SEEDED IN ACCORDANCE WITH THE SPECIFICATIONS. PRIOR TO SEEDING, A FOUR-INCH (4") LAYER OF TOPSOIL SHALL BE PLACED ON THESE AREAS IN ACCORDANCE WITH SAID SPECIFICATIONS. ALL EXISTING ROADS OR RAMPS TO BE ABANDONED WITHIN THE CONSTRUCTION AREA SHALL BE SCARIFIED AND OBLITERATED, PAVEMENT AND BASE REMOVED, THEN HAVE TOPSOIL AND SEED ADDED.

14. EXCAVATION ADJACENT TO EXISTING PAVEMENT SHALL BE MADE TO A NEAT, STRAIGHT LINE CUT THROUGH BOTH PAVEMENT AND BASE.

15. CERTIFICATION FOR ALL BORROW PITS MUST BE OBTAINED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

16. THE CONTRACTOR SHALL NOT DISPOSE OF ANY MATERIAL EITHER ON OR OFF STATE-OWNED R.O.W. IN A REGULATORY FLOOD WAY AS DEFINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY WITHOUT APPROVAL BY SAME. ALL MATERIALS SHALL BE DISPOSED OF IN UPLAND (NON-WETLAND) AREAS AND ABOVE ORDINARY HIGH WATER OF ANY ADJACENT WATERCOURSE. THIS DOES NOT ELIMINATE THE NEED TO OBTAIN ANY OTHER LICENSES OR PERMITS THAT MAY BE REQUIRED BY ANY OTHER FEDERAL, STATE, OR LOCAL AGENCY.

17. PERFORM PERMANENT SEEDING TO MEET THE REQUIREMENTS OF EROSION AND SEDIMENT CONTROL. UPON COMPLETION OF THE FINISH GRADING AND APPROVAL OF THE A/E, SCARIFY, DISK HARROW, RAKE OR OTHERWISE WORK THE AREA TO BE SEEDED UNTIL THE SOIL IS LOOSENED AND PULVERIZED TO A DEPTH OF NOT LESS THAN 2". APPLY FERTILIZER AND AGRICULTURAL LIMESTONE UNIFORMLY AND INCORPORATE THEM INTO THE SOIL FOR A DEPTH OF APPROXIMATELY 1" AT THE FOLLOWING RATES: FERTILIZER , 15 POUNDS/ 1,000 SQUARE FEET AND AGRICULTURAL LIMESTONE, 40 POUNDS/1,000 SQUARE FEET. COVER ALL SEEDED AREAS WITH MULCH IN A UNIFORM LAYER SO APPROXIMATELY 25 % OF THE GROUND IS VISIBLE. DISPOSE OF ALL SURPLUS MATERIALS AND WASTE AS DIRECTED BY THE A/E. ACCEPTABILITY OF THE SEEDING WILL BE DETERMINED BY THE A/E, AS SPECIFIED, AND THE CITY OF OAK RIDGE. A SATISFACTORY OR UNIFORM STAND OF GROWTH IS DEFINED AS A RATE OF 100 ACTIVELY GROWING, VIABLE SEEDLINGS PER SQUARE FOOT. MOW GRASS, CUTTING NO MORE THAN 1/3 OF THE GRASS BLADE, AT REGULAR INTERVALS UNTIL ACCEPTED BY THE OWNER. ACCEPTABLE SEEDING SHALL BE DEFINED AS 100 SPECIFIED SEEDLINGS PER SQ. FT.

UTILITY NOTES:

1. LOCATIONS OF UTILITIES, PUBLIC AND/OR PRIVATE, ARE APPROXIMATE ONLY, AND THE EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD. IT IS POSSIBLE THAT SOME EXISTING FACILITIES ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING ALL UNDERGROUND UTILITY FACILITIES LOCATED AND MARKED PRIOR TO THE BEGINNING OF CONSTRUCTION. CALL TENNESSEE ONE-CALL (1-800-351-1111).

2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONTACTING ALL AFFECTED UTILITY OWNERS PRIOR TO SUBMITTING HIS BID, SO THAT HE MAY DETERMINE THE EXTENT OF DELAYS THAT UTILITY RELOCATIONS AND/OR ADJUSTMENTS MAY HAVE UPON THE SCHEDULING OF WORK FOR THE PROJECT. SOME UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS, WHILE SOME WORK MAY BE REQUIRED AROUND UTILITY FACILITIES THAT SHALL REMAIN IN PLACE. IT IS SPECIFIED AND AGREED THAT THE CONTRACTOR SHALL RECEIVE NO ADDITIONAL COMPENSATION FOR ANY DELAYS OR INCONVENIENCE CAUSED BY UTILITY ADJUSTMENTS.

3. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITY OWNERS PRIOR TO INTERRUPTING ANY GAS, WATER, OR SEWER SERVICES. THE CONTRACTOR SHALL ALSO NOTIFY AFFECTED UTILITY CUSTOMERS AT LEAST 24 HOURS BEFORE INTERRUPTING THE CUSTOMERS' SERVICE. WHERE INDIVIDUAL SERVICES ARE TO BE DISCONTINUED FOR MORE THAN 4 HOURS, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR PROVIDING TEMPORARY SERVICE SATISFACTORY TO THE AFFECTED CUSTOMER. THE REPAIR OR REPLACEMENT OF UTILITY COMPONENTS SHALL CONFORM TO ALL APPLICABLE REQUIREMENTS OF THE UTILITY OWNER. NO SEPARATE PAYMENT SHALL BE MADE FOR THESE ACTIVITIES AND COMPENSATION SHALL BE INCLUDED IN THE CONTRACT PRICES FOR OTHER ITEMS.

4. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. SHOULD SPECIAL EQUIPMENT BE REQUIRED TO WORK OVER AND AROUND THE UTILITIES. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FROM FURNISHING SPECIAL EQUIPMENT SHALL BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF CONSTRUCTION.

5. ANY EXISTING STORM SEWER DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AS RAPIDLY AS POSSIBLE AND THEN BE INSPECTED BY ITS RESPECTIVE OWNER. THE ENGINEER SHALL DETERMINE IF DAMAGE IS THE RESULT OF THE CONTRACTOR'S NEGLIGENCE OR OF AN UNAVOIDABLE CAUSE. IF IT IS DEEMED THAT THE DAMAGE WAS DUE TO CONTRACTOR'S NEGLIGENCE, THE CONTRACTOR SHALL REPAIR THE STRUCTURE AT HIS OWN EXPENSE.

6. IF ANY SANITARY SEWER IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY'S OWNER. REPAIR OF THE SEWER SHALL THEN BE ACCORDING TO THE OWNER'S INSTRUCTIONS. THE ENGINEER SHALL DETERMINE IF DAMAGE IS THE RESULT OF THE CONTRACTOR'S NEGLIGENCE OR OF AN UNAVOIDABLE CAUSE. IF IT IS DEEMED THAT THE DAMAGE WAS DUE TO THE CONTRACTOR'S NEGLIGENCE, THE CONTRACTOR SHALL MAKE REPAIRS AT HIS OWN EXPENSE.

EROSION & SEDIMENT CONTROL NOTES:

1. ALL WORK UNDER THIS SECTION IS TO BE PERFORMED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE CURRENT VERSION OF THE "TENNESSEE EROSION AND SEDIMENT CONTROL HANDBOOK", AND THE ENGINEERING DIVISION OF THE CITY OF OAK RIDGE, TENNESSEE. ANY REQUIRED PERMITS MUST BE DISPLAYED AT ALL TIMES DURING CONSTRUCTION AND IN PLAIN VIEW FROM THE STREET.

2. EXTERIOR EROSION AND SEDIMENT CONTROL FACILITIES SHALL BE PLACED PRIOR TO THE START OF ON-SITE GRADING ACTIVITIES. EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED AT ANY BORROW SITE LOCATION. SEE THE SITE GRADING AND LAYOUT PLANS FOR ADDITIONAL REQUIREMENTS REGARDING EROSION AND SEDIMENT CONTROL.

3. PERMANENT OR TEMPORARY SOIL STABILIZATION MUST BE APPLIED TO ALL DENUDED AREAS WITHIN 7 DAYS OF REACHING FINAL GRADE OR TO OTHER DENUDED AREAS WHICH ARE TO REMAIN DORMANT FOR LONGER THAN 14 DAYS. ALL TOPSOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SILT FENCE SEDIMENT TRAPPING.

4. ALL DISTURBED AREAS NOT TO BE PAVED SHALL BE TOP SOILED, FERTILIZED, SEEDED AND MULCHED. AN ACCEPTABLE GROWTH OF GRASS IS REQUIRED IN ALL AREAS DESIGNATED FOR SEEDING. AN ACCEPTABLE GROWTH IS CONSIDERED 95% COVERED WITH THE PERMANENT SPECIES OF GRASS REPRESENTATIVE OF THE SEED MIXTURE.

5. ALL PROPOSED VEHICULAR ENTRANCE SHALL BE USED AS A TEMPORARY CONSTRUCTION EXITS DURING CONSTRUCTION. NO ACCESS IS TO BE PROVIDED DIRECTLY TO THE PUBLIC RIGHT-OF-WAY WITHOUT AN APPROVED CONSTRUCTION EXIT. PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS WITH 2-3" STONE MAY BE REQUIRED TO PREVENT THE ACCUMULATION OF DUST AND MUD ON THE CITY STREETS.

6. OWNER:
CITY OF OAK RIDGE
200 SOUTH TULANE AVENUE
OAK RIDGE, TENNESSEE 37830
CONTACT: JON HETRICK, DIRECTOR OF RECREATION AND PARKS
PHONE: (865) 425-3450
E&S RESPONSIBLE PARTY: PROJECT CONTRACTOR ON BEHALF OF THE OWNER.
(NAME AND NUMBER TO BE PROVIDED UPON SELECTION)

7. THE PROPERTY OWNER AND, THEREFORE, THE CONTRACTOR IS REQUIRED TO PREVENT ALL RUNOFF AND SEDIMENT FROM DAMAGING ADJACENT PROPERTIES AND STREETS. ANY OFF- SITE SEDIMENT ACCUMULATIONS SHALL BE REMOVED DAILY. OFF- SITE ACCUMULATIONS DEPOSITED ON PRIVATE PROPERTY SHALL BE REMOVED BY METHODS AGREED UPON BY CONTRACTOR AND THE ADJACENT LAND OWNER(S).

8. ON AND OFF-SITE DUST AND MUD TO BE CONTROLLED AT ALL TIMES. THIS MAY REQUIRE PERIODIC ON-SITE WATERING OR OTHER METHODS FOR DUST CONTROL AND PERIODIC WASHING OF THE PUBLIC STREETS AS MAY BE NECESSARY.

9. ANY STOCKPILED SOIL OR FILL MATERIAL SHALL BE LOCATED AND TREATED IN A MANNER TO PREVENT SILT FROM ENTERING STREAMS. NO EXCAVATED MATERIAL SHALL BE DISCHARGED INTO DITCHES. THE CONTRACTOR SHALL DISPOSE/STOCKPILE ALL EXCAVATED MATERIAL IN A LOCATION, APPROVED BY THE ENGINEER, ABOVE THE NORMAL HIGH WATER ELEVATION.

10. SEDIMENT CONTROL DEVICES SHALL BE PERIODICALLY INSPECTED AND CLEANED WHEN THE ACCUMULATION OF SILT IS WITHIN HALF THE HEIGHT OF THE CONTROL DEVICE. THE DEVICES SHALL BE INSPECTED PRIOR TO ANTICIPATED STORM EVENTS (OR SERIES OF STORM EVENTS SUCH AS INTERMITTENT SHOWERS OVER ONE OR MORE DAYS), WITHIN 24 HOURS AFTER THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER, AND AT LEAST TWICE WEEKLY OR 72 HOURS APART. IN THE EVENT OF CONTINUOUS RAINFALL, EROSION CONTROLS SHALL BE CHECKED DAILY. ANY FAILURE OF A CONTROL DEVICE OR ANY EROSION AND SEDIMENT CONTROL MEASURE FOUND TO BE INEFFECTIVE SHALL BE CORRECTED WITHIN 3 DAYS. THE CONTRACTOR WILL KEEP A LOG OF ALL INSPECTIONS AND REPAIR EFFORTS DURING THE CONSTRUCTION PERIOD.

11. IF SEDIMENT ENTERS WATERS OF THE STATE, TDEC-WPC WILL BE NOTIFIED IMMEDIATELY AND CONSULTED WITH CONCERNING REMOVAL OF SAID SEDIMENT.

12. REMOVAL OF STANDING, MUDDY WATER FROM THE SITE SHALL BE ACCOMPLISHED WITH A PUMP/FILTER BAG COMBINATION OR SAID WATER WILL BE DIVERTED INTO EXISTING SEDIMENT CONTROL DEVICES VIA A PUMP.

13. EXPOSED LITTER, DEBRIS, CHEMICALS, ETC., SHALL BE PROPERLY STORED AND/OR DISPOSED OF PRIOR TO ANTICIPATED STORM EVENTS.

14. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF NOTED EROSION CONTROL MEASURES ACCORDING TO TDEC STANDARDS.

15. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A PROACTIVE METHOD TO PREVENT THE OFF-SITE MIGRATION OR DEPOSIT OF SEDIMENT ON ROADWAYS USED BY THE GENERAL PUBLIC.

16. THE CONTRACTOR SHALL TAKE APPROPRIATE STEPS TO ENSURE THAT PETROLEUM PRODUCTS OR OTHER CHEMICAL POLLUTANTS ARE PREVENTED FROM ENTERING WATERS OF THE STATE/U.S. ALL EQUIPMENT REFUELING, SERVICING, AND STAGING AREAS SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS, RULES, REGULATIONS, AND ORDINANCES; INCLUDING THOSE OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). APPROPRIATE CONTAINMENT MEASURES FOR THESE AREAS SHALL BE UTILIZED. ALL SPILLS MUST BE REPORTED TO THE APPROPRIATE AGENCY, AND MEASURES SHALL BE TAKEN IMMEDIATELY TO PREVENT POLLUTION OF WATERS OF THE STATE/U.S. INCLUDING GROUNDWATER, SHOULD A SPILL OCCUR.

17. BORROW AND WASTE DISPOSAL AREAS SHALL BE LOCATED IN NONWETLAND AREAS AND ABOVE THE 100-YEAR, FEDERAL EMERGENCY MANAGEMENT FLOODPLAIN. BORROW AND WASTE DISPOSAL AREAS SHALL NOT AFFECT ANY WATERS OF THE STATE/U.S. UNLESS THESE AREAS ARE SPECIFICALLY COVERED BY THE APPROPRIATE PERMIT, OBTAINED SOLELY BY THE CONTRACTOR.

18. ANY DISAGREEMENT BETWEEN THE PROJECT PLANS, THE PROJECT AS CONSTRUCTED AND THE PERMIT OR PERMITS ISSUED FOR THE PROJECT, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE APPROPRIATE AGENCY SHALL DECIDE WHICH HAS PRECEDENCE AND WHETHER PERMIT OR PLANS REVISIONS ARE NEEDED. IN GENERAL, PERMIT CONDITIONS WILL PREVAIL.

MISCELLANEOUS NOTES:

1. THE ENGINEER SHALL HAVE THE AUTHORITY TO DESIGNATE AND/OR LIMIT AREAS OF CONSTRUCTION.

2. THE OWNER MAKES NO REPRESENTATIONS ABOUT SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED WITHIN THE LIMITS OF THE PROJECT. THEREFORE, THE CONTRACTOR SHOULD SATISFY HIMSELF BY ON-SITE INSPECTIONS, OR OTHER METHODS, OF THE SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED. THE RISK OF ENCOUNTERING AND CORRECTING UNFAVORABLE, SUBSURFACE CONDITIONS SHALL BE BORNE SOLELY BY THE CONTRACTOR. REPORTS OF SUBSURFACE EXPLORATION ARE AVAILABLE FROM CHATTANOOGA BLUEPRINT.

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL FIELD LAYOUTS FOR APPROVAL BY THE ENGINEER.

4. ALL SALVAGEABLE MATERIAL FROM EXISTING PIPING AND STRUCTURES SHALL REMAIN PROPERTY OF THE CITY OF OAK RIDGE. SAID MATERIAL SHALL BE CLEANED AND THEN DELIVERED TO THE OWNER AT A LOCATION DESIGNATED BY THE ENGINEER.

5. ALL UNSUITABLE MATERIAL, AS DETERMINED BY THE ENGINEER OR THROUGH TESTING, IS TO BE REMOVED AND REPLACED WITH SUITABLE MATERIAL. TESTING SERVICES ARE TO BE PROVIDED BY THE OWNER, HOWEVER THE CONTRACTOR IS SOLELY RESPONSIBLE TO ASSURE ALL WORK IS COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

6. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING, AT HIS OWN EXPENSE, ANY AND ALL DAMAGES THAT MAY OCCUR OUTSIDE THE LIMITS OF THIS PROJECT AS A RESULT OF CONSTRUCTION.

7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING COMBINED CURB AND GUTTERS WHERE APPLICABLE.

8. ALL ABANDONED STRUCTURES (E.G., CATCH BASINS, MANHOLES, FOUNDATIONS, ETC.), UTILITY FACILITIES, AND SIMILAR ITEMS WITHIN THE LIMITS OF PAVING SHALL BE REMOVED TO A MINIMUM DEPTH OF TWO FEET BELOW THE TOP OF SUBGRADE, AND REMAINING VOIDS SHALL BE FILLED WITH COMPACTED, CRUSHED STONE TO THE TOP OF SUBGRADE.

9. THE CONTRACTOR SHALL NOT BE ALLOWED TO REMOVE ANY FENCE OTHER THAN THAT NECESSARY FOR THE CONSTRUCTION OF THE PROJECT OR RELATED APPURTENANCES. ANY FENCE REMOVED IS TO BE REPLACED IN KIND BY THE CONTRACTOR. TEMPORARY FENCING IS REQUIRED.

10. THE CONTRACTOR SHALL GIVE THE AFFECTED PROPERTY OWNERS ONE WEEK'S NOTICE PRIOR TO CUTTING FENCES.

11. THE CONTRACTOR SHALL MAINTAIN A RECORD SET OF DRAWINGS IN THE OFFICE TRAILER AND AVAILABLE FOR INSPECTION IN WHICH SITE NOTATIONS, WORK PROGRESS, FIELD FINDINGS AND OTHER PERTINENT JOB SITE DATA WILL BE RECORDED. A COPY OF RECORD DRAWINGS WILL BE PROVIDED TO THE ENGINEER UPON COMPLETION AND ACCEPTANCE OF THE WORK.

12. SHOULD THERE BE A CONFLICT BETWEEN THESE GENERAL NOTES, CONTRACT DRAWINGS, AND/OR SPECIFICATIONS, THE MOST RESTRICTIVE INTERPRETATION SHALL PREVAIL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING FROM THE ENGINEER ANY CLARIFICATION OR INTERPRETATION OF GENERAL NOTES, CONTRACT DRAWINGS AND/OR SPECIFICATIONS IN WRITING AND IN ADVANCE OF THE BEGINNING OF CONSTRUCTION.

13. ALL CONCRETE SHALL BE CLASS "A" (4,000 P.S.I.) UNLESS OTHERWISE NOTED ON A DRAWING. (CLASS "B" CONCRETE SHALL BE 3,000 P.S.I.)

14. ANY ADDITIONAL WATER QUALITY PERMITS REQUIRED BY THE CONTRACTOR'S METHOD OF OPERATION, INCLUDING BUT NOT LIMITED TO STREAM CROSSINGS AND ACCESS ROADS THROUGH WETLANDS, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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PHONE (865) 637-2810 FAX (865) 673-8554

BENJAMIN C. NEMEC — STATE OF TENNESSEE — 7/28/2016

GENERAL NOTES

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
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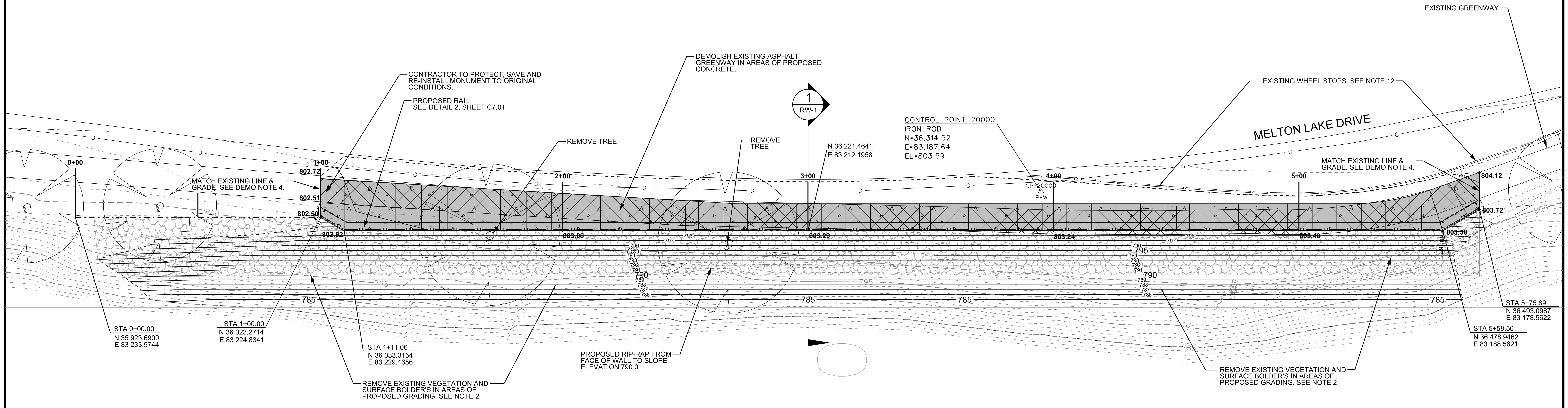
C0.02

FILE NO. 35898-01

DEMOLITION NOTES:

1. FOR GENERAL NOTES SEE SHEET C0.02.
2. CONTRACTOR WILL BE REQUIRED TO REMOVE EXISTING VEGETATION, SURFACE ROCK AND BOLDER'S. OWNER MAY CHOOSE TO HAVE CONTRACTOR STOCK PILE SURFACE BOLDER'S FOR THE OWNERS USE.
3. IT IS THE INTENT TO REMOVE AND DISPOSE OF ALL DESIGNATED SIDEWALKS AS SHOWN ON THE DRAWINGS.
4. SIDEWALKS AND PAVEMENTS TO BE REMOVED ALONG WITH THE BASE STONE. ALL CONCRETE AND PAVEMENT SHALL BE SAWCUT TO A NEAT LINE. SAWCUT SHALL EXTEND THROUGH SURFACE AND BASE STONE.
5. DEMOLITION DEBRIS AND ANY SURPLUS MATERIAL NOT REQUIRED FOR SITE CONSTRUCTION SHALL BE DISPOSED OF BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
6. CONTRACTOR SHALL PROTECT AND RESTORE ALL PROPERTY TO A CONDITION SIMILAR OR EQUAL TO THAT EXISTING AT THE COMMENCEMENT EXCEPT AS NOTED.
7. INITIAL EROSION AND SEDIMENT CONTROL MEASURES TO BE IN PLACE PRIOR TO DEMOLITION ACTIVITIES. SEE SHEET C2.31.
8. INSOFAR AS POSSIBLE, THE CONTRACTOR SHALL PROTECT ALL PROJECT CONTROL AND BENCH MARKS ESTABLISHED IN THE FIELD BY THE OWNER.
9. CONTRACTOR TO VERIFY THAT ALL UTILITIES HAVE BEEN DISCONNECTED AND LINES CLEARED TO ASSURE SAFE DEMOLITION. SEE UTILITY CONTACTS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND COORDINATE WITH THE OWNERS OF THE ON-SITE FACILITIES IN REGARD TO DISCONNECTION OF SERVICES, MAINTENANCE, CONSTRUCTION, PROTECTION REQUIREMENTS REGARDING UTILITIES TO REMAIN, AND APPLICABLE SCHEDULES FOR REMOVAL OF LINES, STRUCTURES, AND OTHER APPURTENANCES.
11. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES TO REMAIN IN SERVICE. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNING AUTHORITY AND A/E PRIOR OR WITHIN 24 HOURS OF ANY IN SERVICE. THE CONTRACTOR SHALL MAKE ANY REPAIRS NECESSARY TO RESTORE SERVICE AT THE CONTRACTOR'S EXPENSE.
12. ALL UTILITY CONSTRUCTION/DEMOLITION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE LOCAL UTILITY COMPANY, THE CITY OF OAK RIDGE, AND THE GOVERNING AGENCIES OF THE STATE AND FEDERAL GOVERNMENTS.
13. EXISTING WHEEL STOPS TO BE PROTECTED OR STORED & REPLACED BY CONTRACTOR.
14. UNLESS SPECIFIED OTHERWISE, ALL TREES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION.
15. ALL DEPRESSIONS/EXCAVATIONS CREATED BY CONTRACTOR'S ACTIVITIES, INCLUDING DEMOLITION SHALL BE FILLED AND COMPACTED AS DETAILED IN PROJECT SPECIFICATIONS TO MATCH PROPOSED OR EXISTING GRADES. IF ANY FILL MATERIAL IS REQUIRED, IT SHALL BE FURNISHED AT THE CONTRACTOR'S EXPENSE. GRADE SITE TO DRAIN, LEAVE NO STANDING WATER AREAS.
16. UPON COMPLETION OF DEMOLITION AND REMOVAL OF EQUIPMENT, MATERIAL, AND DEBRIS, ALL REMAINING HOLES, OPEN PITS AND OTHER HAZARDOUS EXCAVATIONS SHALL BE FILLED TO PROPOSED GRADE WITH SUITABLE FILL APPROVED BY THE ENGINEER.
17. SEE SHEET C5.01 FOR CROSS SECTIONS.



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SCALE: 1 INCH = 20 FEET

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SITE DEMO, LAYOUT AND GRADING PLAN

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REV.	DR.	CHK.	DATE	DESCRIPTION
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C2.01

FILE NO. 35898-01

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SEEDING SCHEDULE & NOTES:

PERMANENT SEED MIXTURE

GROUP	SEEDING DATES	GRASS SEED	PERCENTAGES	RATE/SF	RATE/AC
A	FEBUARY 1 TO JULY 1	KENTUCKY 31 FESCUE	85%	2.5LBS/ 1,000SF	110LBS/ ACRE
		WHITE CLOVER	10%		
		ENGLISH RYE	5%		
B	JUNE 1 TO AUGUST 15	KENTUCKY 31 FESCUE	60%	2.5LBS/ 1,000SF	110LBS/ ACRE
		ENGLISH RYE	2%		
		WHITE CLOVER	10%		
		GERMAN MILLET	10%		
C	AUGUST 1 TO DECEMBER 1	KENTUCKY 31 FESCUE	70%	2.5LBS/ 1,000SF	110LBS/ ACRE
		ENGLISH RYE	20%		
		WHITE CLOVER	10%		

TEMPORARY SEED MIXTURE

	AUGUST 15 TO OCTOBER 31	ANNUAL RYE GRASS	100%	0.9LBS/ 1,000SF	40LBS/ ACRE
	APRIL 15 TO JUNE 15	BROWN TOP MILLET	100%	0.9LBS/ 1,000SF	40LBS/ ACRE
	SEPTEMBER 15 TO NOVEMBER 30	WINTER WHEAT	100%	4.1LBS/ 1,000SF	3BU./ ACRE

A. MAY TO SEPTEMBER 20 LB/AC OF STARR MILLET SHALL BE ADDED WITH SPECIFIED SEED GROUPING LISTED ABOVE.

B. WHEN SEEDING NATIVE GRASSES FROM OCTOBER TO APRIL 32 LB/AC OF OATS SHALL BE ADDED WITH SPECIFIED SEED GROUPS LISTED ABOVE.

C. WHEN SEEDING FESCUE OR BERMUDA GRASSES MIXES FROM OCTOBER TO APRIL 32 LB/AC OF OATS SHALL BE ADDED WITH SPECIFIED SEED GROUPS LISTED ABOVE.

D. OCTOBER TO APRIL ADD 3 LB/1000 SF OF ANNUAL RYE GRASS WITH SPECIFIED SEED GROUPS LISTED.

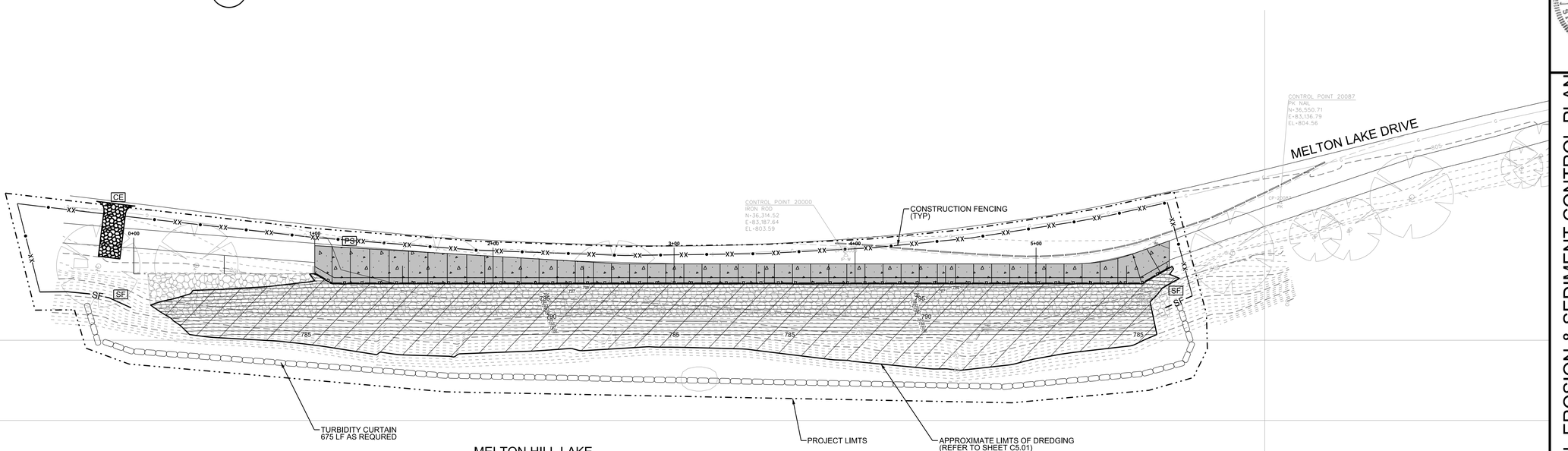
1 C2.31 SEEDING SCHEDULE
NOT TO SCALE

NOTES

1. FOR GENERAL NOTES, SEE SHEET C0.02.
2. CONTRACTOR SHALL ENSURE THAT NO SEDIMENT FROM DREDGED MATERIAL SHALL POLLUTE ANY ROADWAY. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY E&SC MEASURES REQUIRED TO ADEQUATELY DRY DREDGED MATERIAL OR LINE DUMP BEDS BEFORE MATERIAL IS TRANSPORTED OFF-SITE.

LEGEND

- SF — SILT FENCE
- TURBIDITY CURTAIN
- XX — CONSTRUCTION FENCING
- PS — PERMANENT SEEDING
- LIMIT OF DISTURBED AREA
- CE — CONSTRUCTION EXIT



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BENJAMIN C. KLEINER
REGISTERED LANDSCAPE ARCHITECT
STATE OF TENNESSEE
7/28/2016

INITIAL & FINAL EROSION & SEDIMENT CONTROL PLAN

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REV.	DR. BSP	CHK. BCN	REVISION INFORMATION DATE	DESCRIPTION
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SCALE: 1 INCH = 30 FEET

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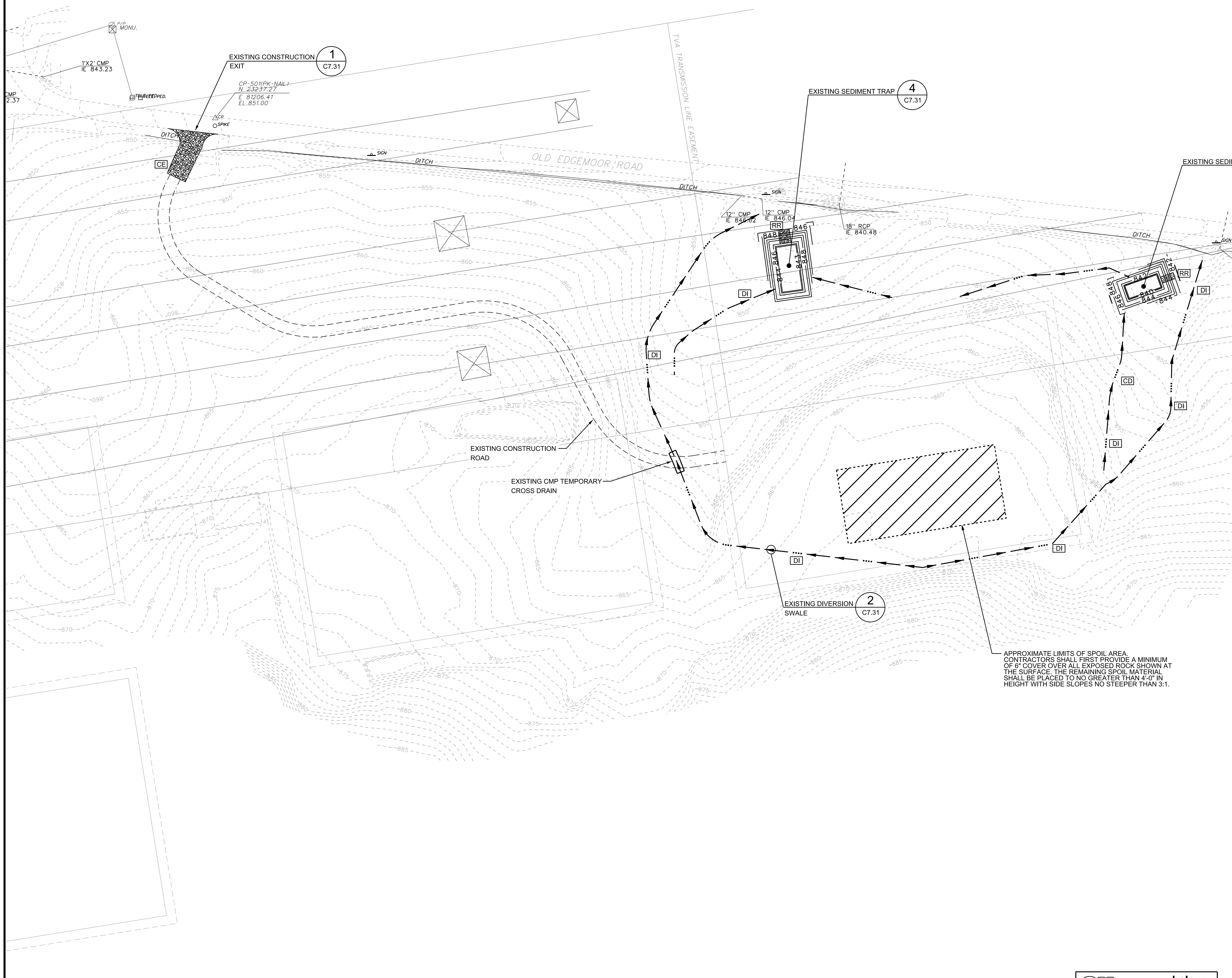

NOTES

1. FOR GENERAL NOTES, SEE SHEET C0.02.
2. CONTRACTOR SHALL CAUSE NO DAMAGE TO EXISTING PROPERTY OUTSIDE OF EXISTING HAUL ROAD AND PREVIOUSLY INSTALLED EROSION CONTROL MEASURES.
3. CONTRACTOR MAY SPOIL EXCAVATED MATERIAL AT AN ALTERNATE LOCATION IF PRIOR APPROVAL IS OBTAINED FROM OWNER AND ENGINEER.

LEGEND

SF	SILT FENCE
DI	DIVERSION SWALE
RR	RIP-RAP
CE	CONSTRUCTION EXIT

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N

50' 25' 0' 50' 100'
SCALE: 1 INCH = 50 FEET

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BENJAMIN C. NEWMAN, STATE OF TENNESSEE, 7/28/2016

SPOIL AREA EROSION & SEDIMENT CONTROL PLAN

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION

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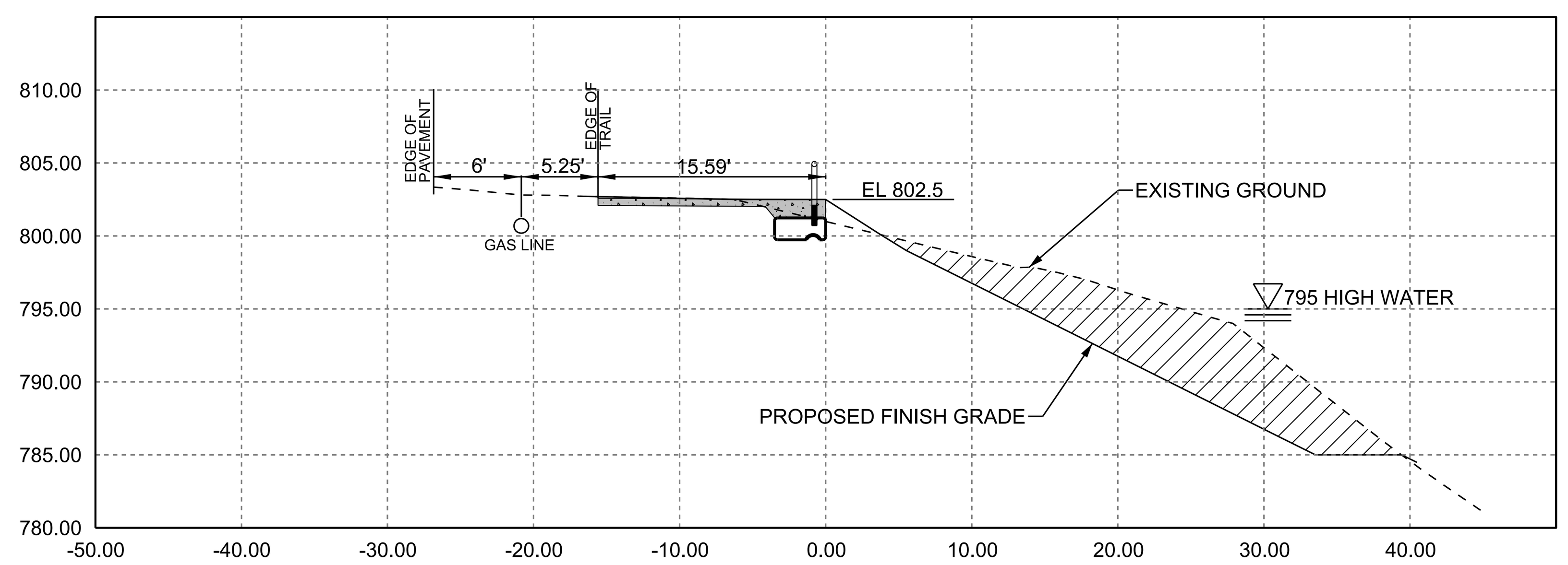
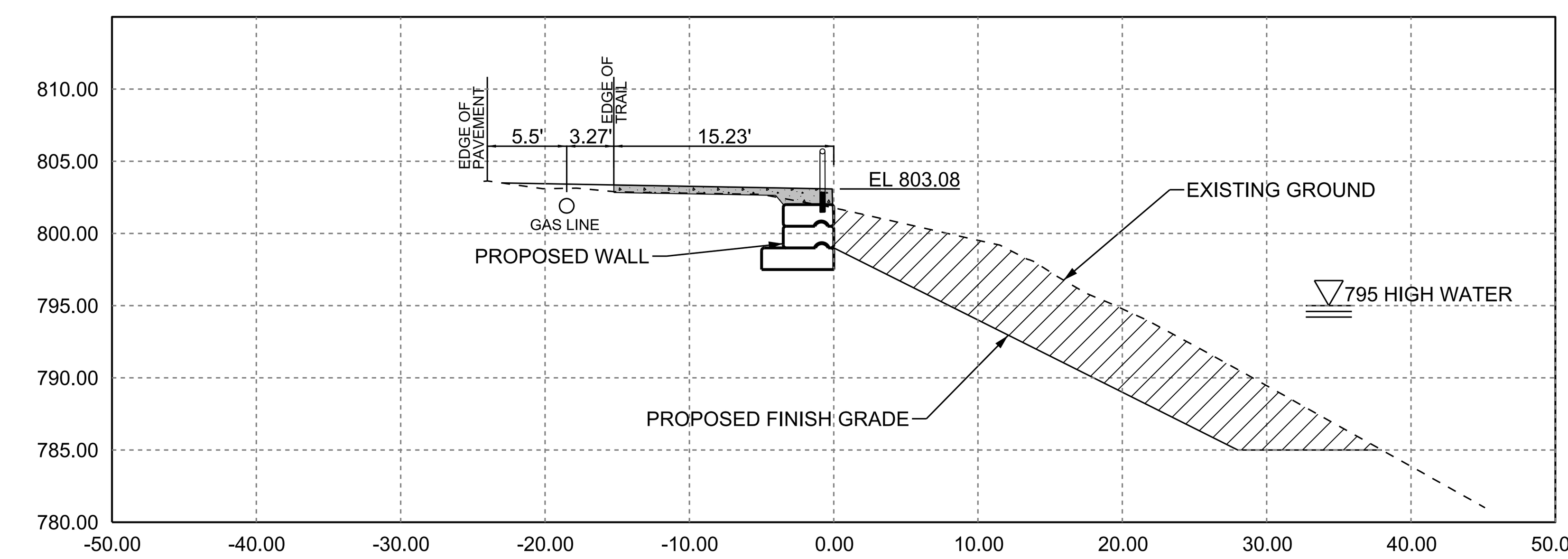
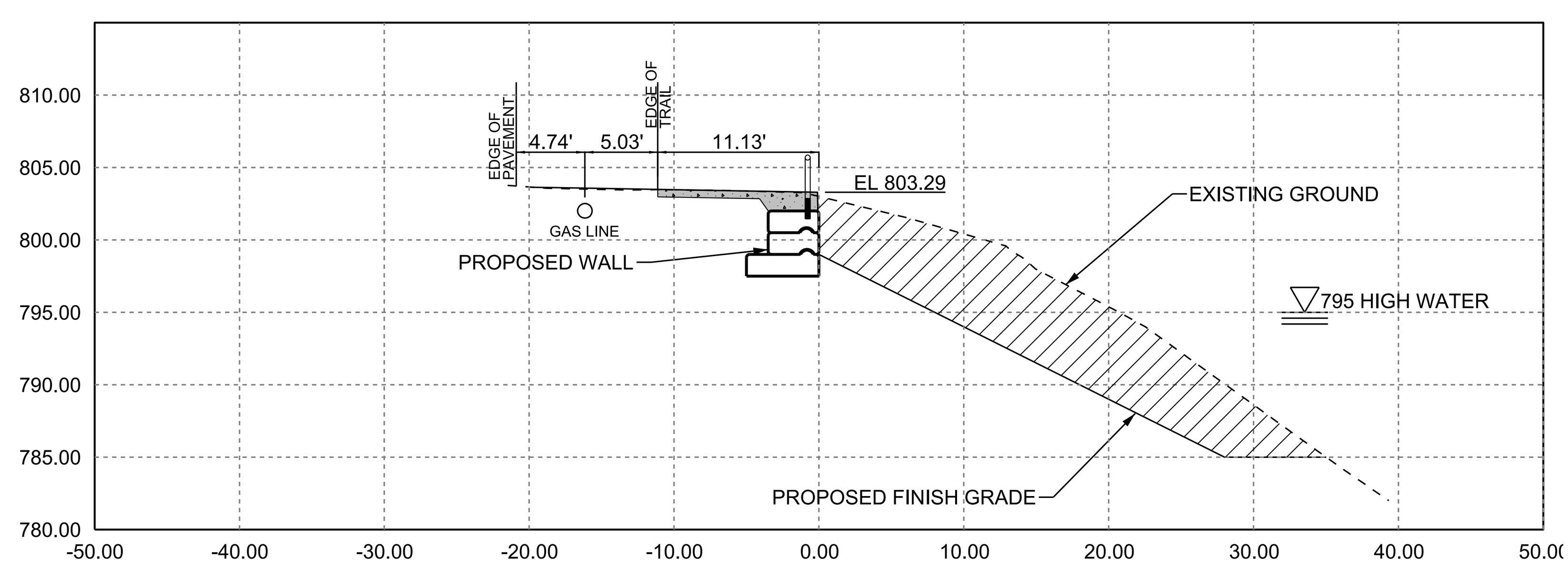
SCALE:
HORIZ: 1" = 10'
VERT: 1" = 10'



SECTION @ STA 1+00



SECTION @ STA 2+00



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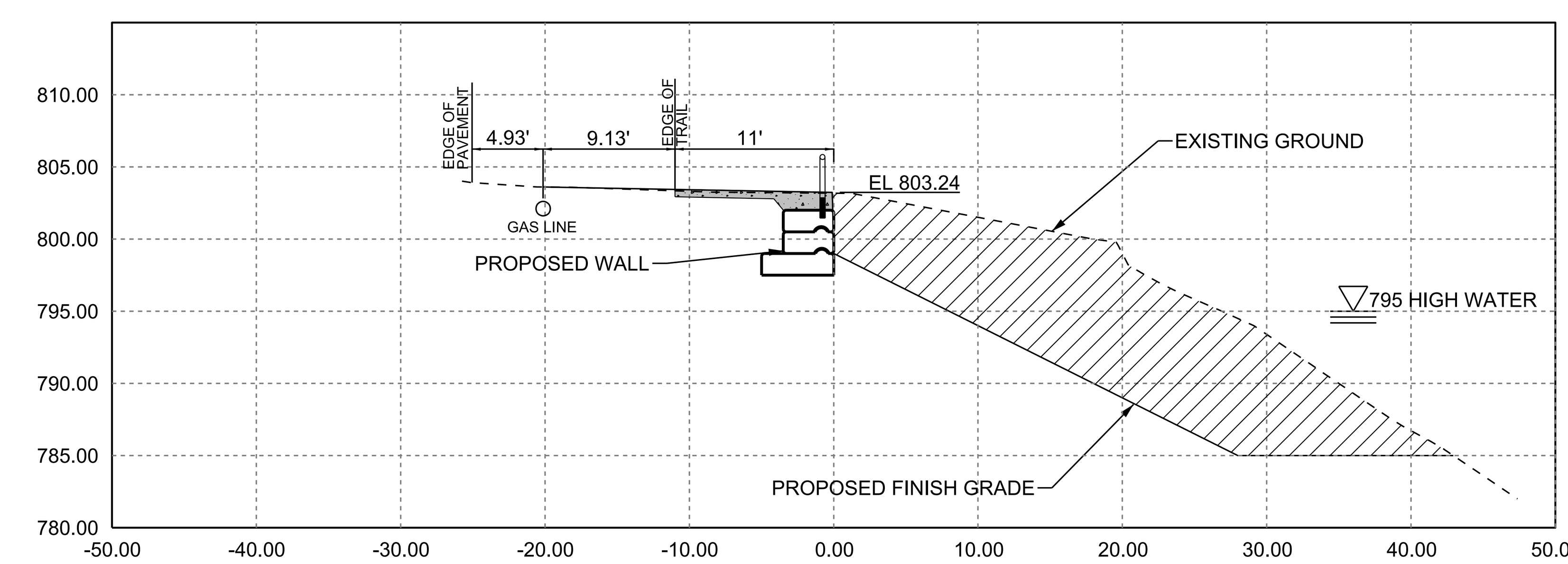
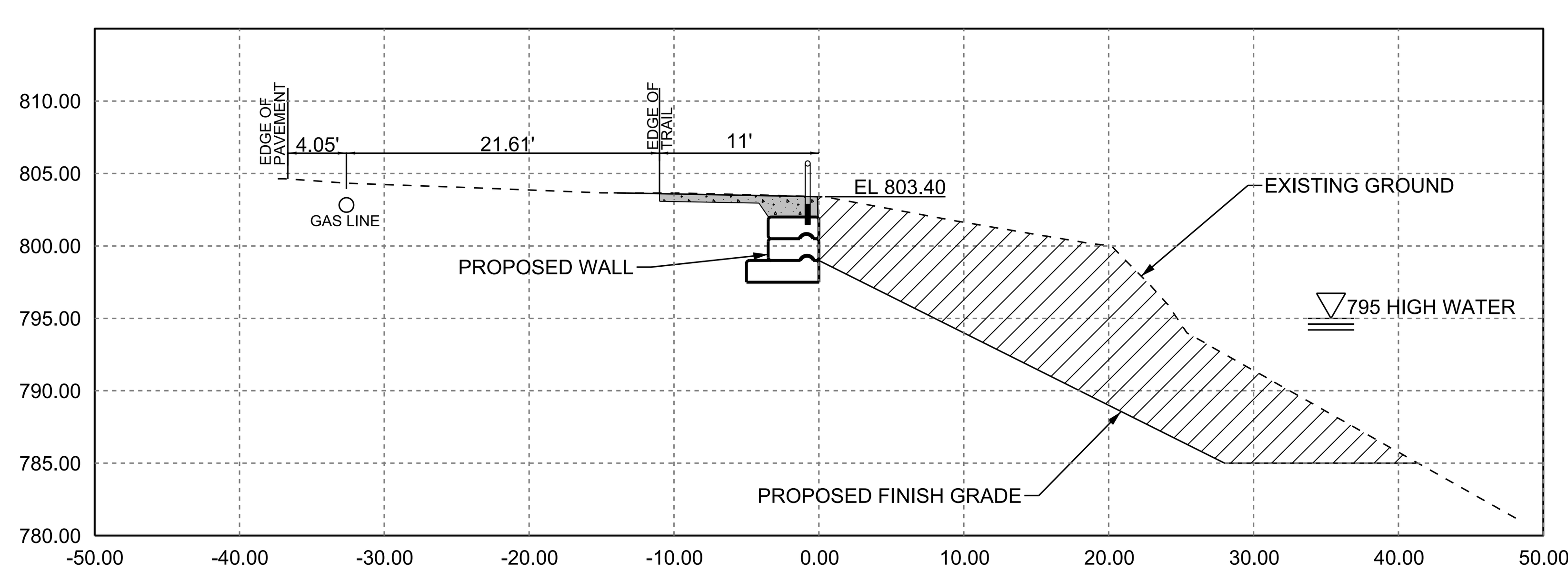
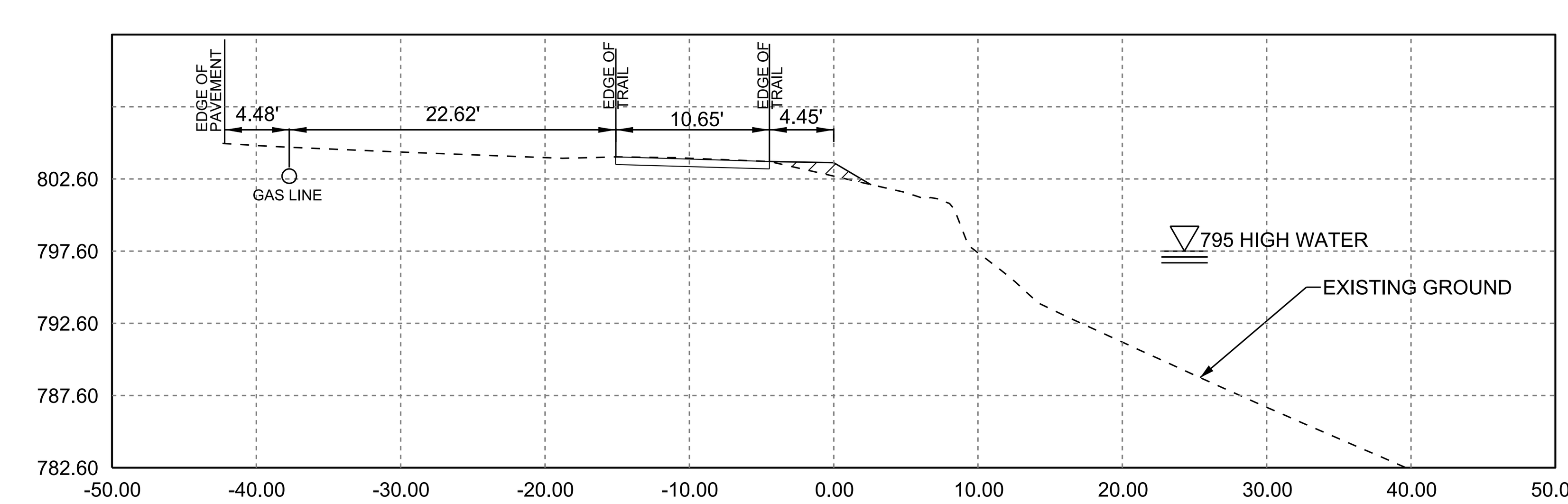


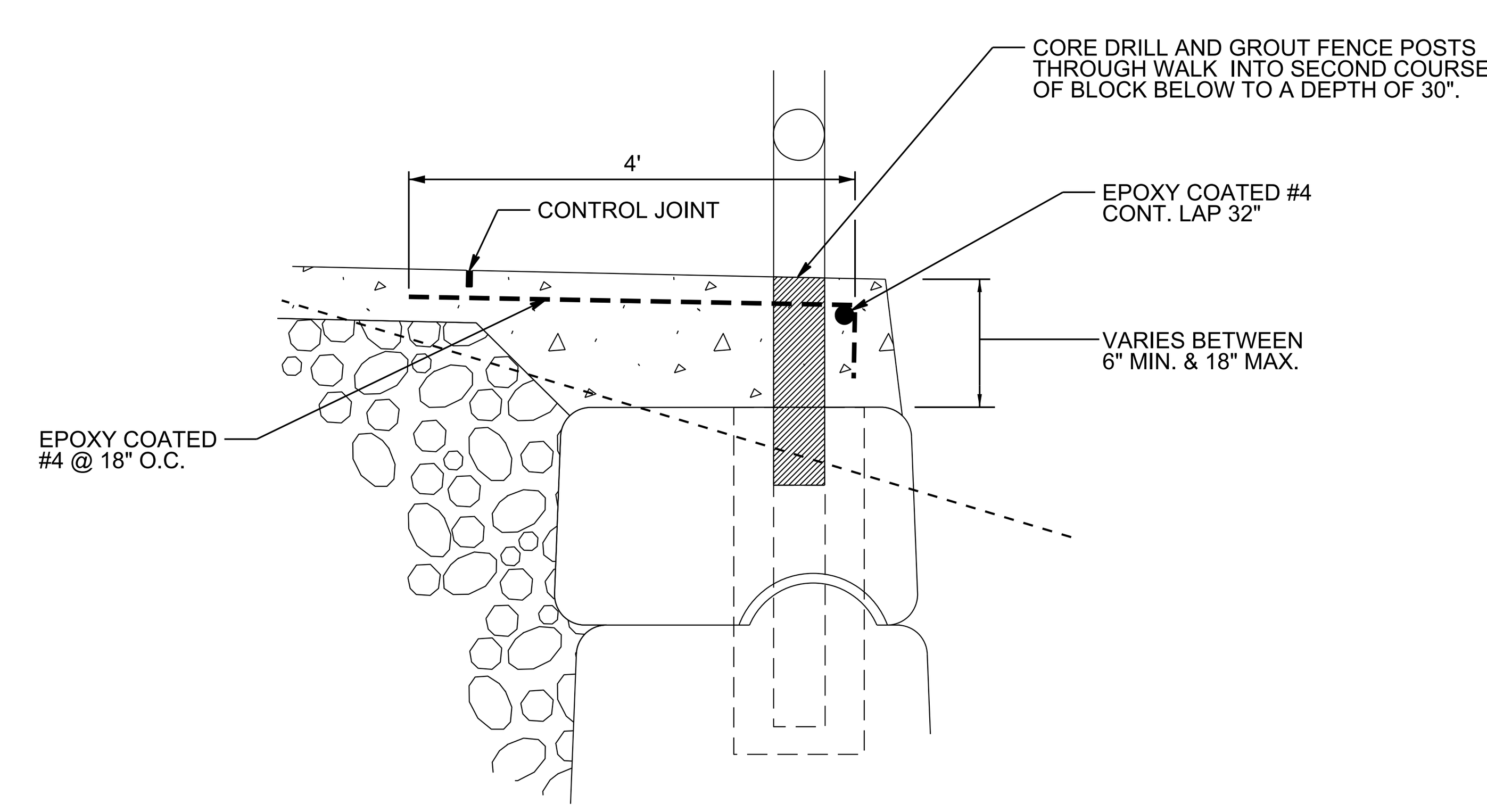
SECTION @ STA 4+00



SECTION @ STA 5+00



SECTION @ STA 5+75.89



1 ENLARGED WALL SECTION DETAIL

C5.01 SCALE: NTS

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PHONE (865) 637-2810 FAX (865) 673-8554

BENJAMIN C. NEWTON — STATE OF TENNESSEE — REGISTERED ENGINEER — NO. 104112 — 7/28/2016

WALL SECTIONS & DETAILS

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION

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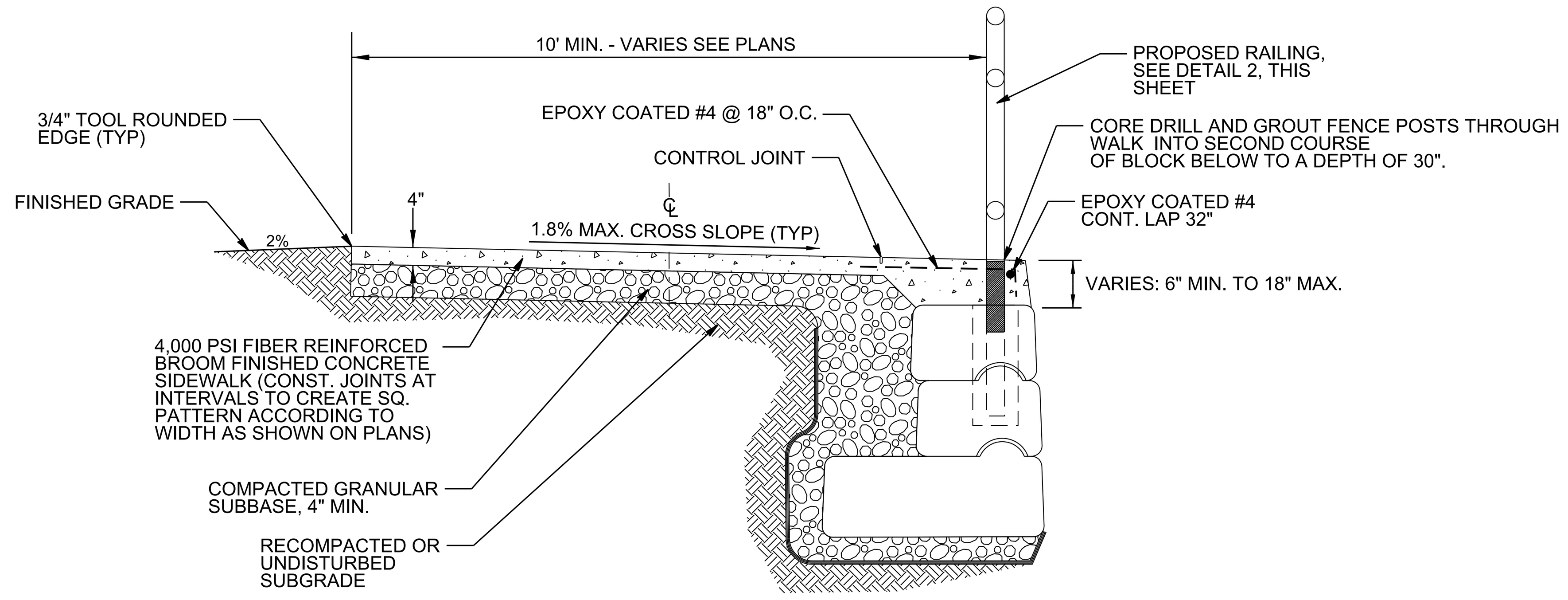
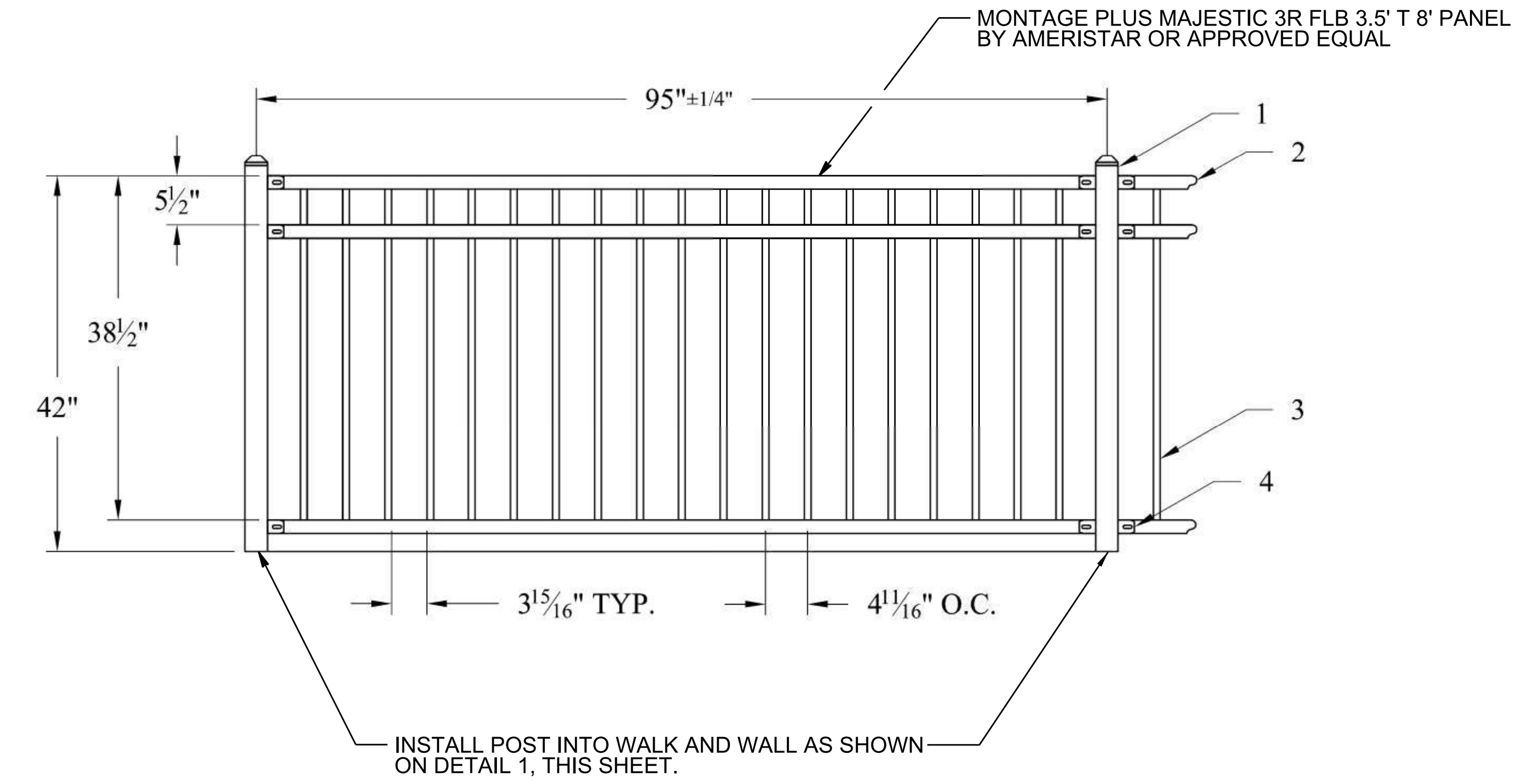


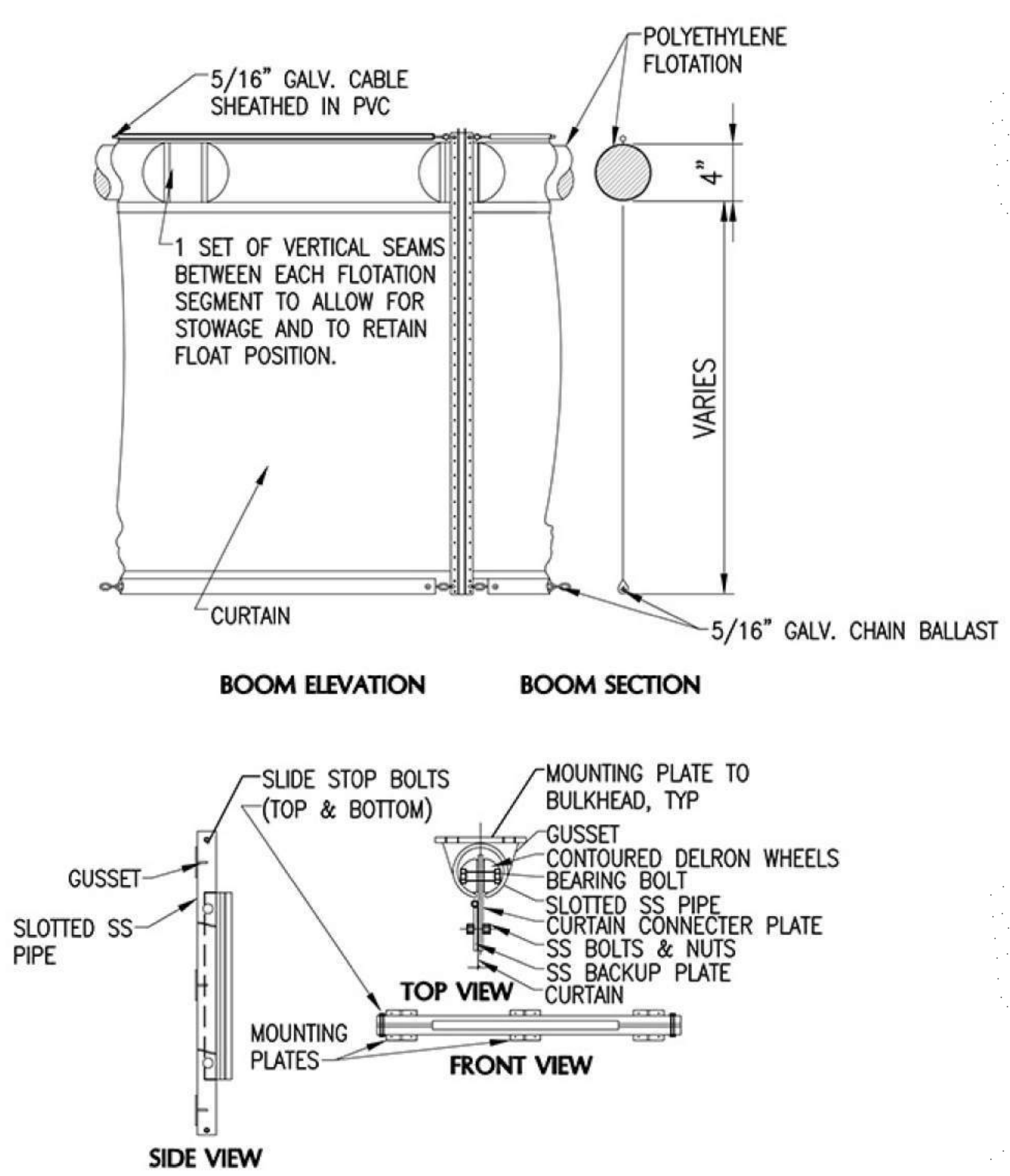
NOTES

1. ALL SIDEWALKS TO BE BROOM FINISHED WITH PICTURE FRAME CONTROL JOINTS.
2. EXPANSION JOINTS TO BE 30' O.C. (TYP.)

1 C7.01 TYPICAL TRAIL SECTION
SCALE: NTS



2 C7.01 SAFETY RAIL DETAIL FOR RETAINING WALL
SCALE: NTS



3 C7.01 TURBIDITY CURTAIN DETAILS
SCALE: NTS

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SITE DETAILS

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

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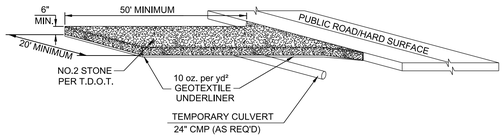
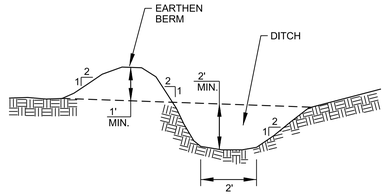


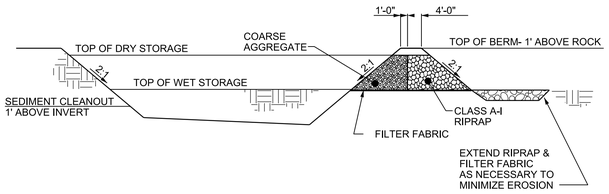
NOTES:
1. NO.2 STONE COARSE AGGREGATE PER T.D.O.T.
2. MINIMUM SIZE 20' WIDE x 50' LONG.
3. MINIMUM PAD THICKNESS - 6"
4. IF NECCESSARY, INCLUDE WHEEL WASHING.
5. MAY REQUIRE PERIODIC TOP DRESSING.
6. MAINTAIN IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MUD ON TO PUBLIC OR PRIVATE ROADS.
7. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAY OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

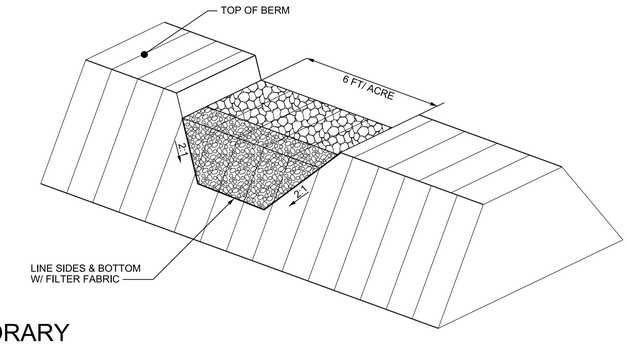
1 CONSTRUCTION EXIT — CE
C7.31 N.T.S.



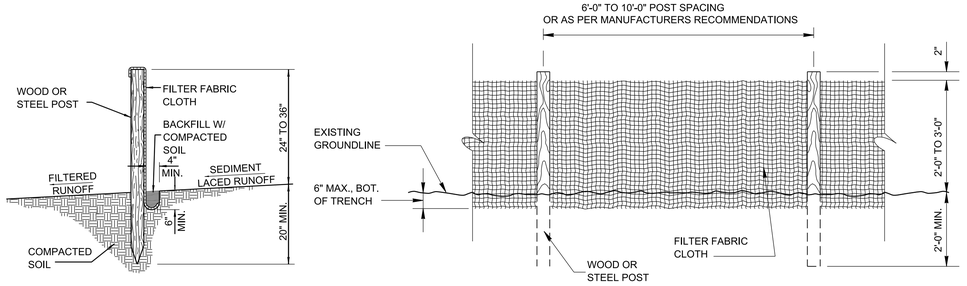
NOTES:
1. LINE CHANNEL WITH NORTH AMERICAN GREEN SC150 OR APPROVED EQUIVALENT. INSTALL PER MANUFACTURER SPECIFICATIONS.

2 EXISTING DIVERSION DETAIL — DI
C7.31 N.T.S.





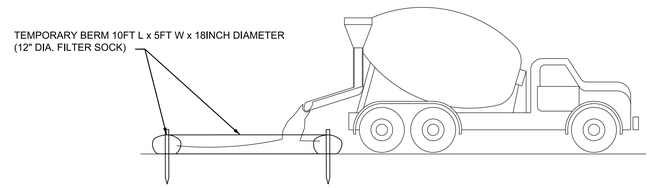
4 EXISTING TEMPORARY SEDIMENT TRAP — ST
C7.31 N.T.S.



NOTES:

1. FILTER CLOTH SHALL HAVE APPROVED BACKING OR A BUILT-INREINFORCED STRUCTURE, AS RECOMMENDED BY THE MANUFACTURER TO SUPPORT THE FILTER CLOTH.
2. FILTER CLOTH SHALL MEET THE REQUIREMENTS OF SECTION 209 OF T.D.O.T. STANDARD SPECIFICATIONS.
3. A PREASSEMBLED SILT FENCE MEETING THE REQUIREMENTS OF THIS DRAWING IS ACCEPTABLE IN LIEU OF A FIELD CONSTRUCTED SILT FENCE.
4. SILT FENCE TO BE REMOVED AFTER CONSTRUCTION AND VEGETATION IS ESTABLISHED.
5. PLACE STRAW BALES ON ALL DOWN STREAM SIDES OF ALL SILT FENCES.
6. STRAW BALES TO BE PLACED END TO END UP AGAINST THE SILT FENCE.
7. MINIMUM 2" (NOMINAL X 2" NOMINAL) - (1.5" ACTUAL X 1.5" ACTUAL) (2.25 SQ. IN.) HARDWOOD POST (OAK OR HICKORY) - LENGTH 48" OR MINIMUM 1.33 LB./FT. STEEL POST (STD. OR U SECTION.
8. WHEN STEEL POSTS ARE USED THEY SHALL HAVE A PROTECTION FOR FASTENING WIRE TO THEM. THE WIRE FASTENERS SHOULD BE EVENLY SPACED WITH AT LEAST FIVE PER POST.

5 SILT FENCE DETAIL — SF
C7.31 N.T.S.



CONCRETE WASHOUT STATION OR AREA SHOULD BE DESIGNATED AND USED TO PREVENT DISCHARGE OF HIGHLY ALKALINE WASH WATER TO THE STORM SEWER OR SURFACE STREAMS.

USE BERMED AREAS CREATED WITH 12" DIAMETER FILTER SOCK

DO NOT DISPOSE OF CONCRETE WASTES IN EXCAVATED HOLES IN AREAS WITH HIGH GROUNDWATER TABLES.

ADVISE CONCRETE TRUCK DRIVERS OF THE DESIGNATED WASH-OUT AREAS BEFORE THEY START THE JOB.

WASHDOWN CHUTE, HOPPER, AND REAR OF VEHICLE ONLY. DO NOT WASH OUT DRUM

ENSURE THAT ALL WASHDOWN WATER STAYS IN PIT.

DISPOSE OF SETTLED, HARDENED CONCRETE IN GARBAGE WITH OTHER CONSTRUCTION DEBRIS.

NEVER DISPOSE OF WASHDOWN WATER IN STREETS, STORM DRAINS, OR STREAMS.

6 CONCRETE WASHOUT AREA
C7.31 N.T.S.

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BENJAMIN C. MCKENZIE — REGISTERED LANDSCAPE ARCHITECT — STATE OF TENNESSEE — 7/28/2016

EROSION CONTROL DETAILS

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION			
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LandRes.pen Workspace: LandRes

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1. <u>General Notes:</u>

(a) The Wall Contractor shall field verify all conditions, grades, and dimensions prior to construction. If the Wall Contractor discovers any errors, omissions, or discrepancies, he shall contact the Engineer (GEOServices, LLC). The Engineer will then issue instructions as to how to proceed.

(b) In the design of the retaining walls, internal and external stability of the retaining system has been satisfied and performed in accordance with NCMA Standards. These calculations were performed using assumed values based on the limited information available at the time of design. The Owner's geotechnical representative shall observe the actual site conditions. If field observations conclude that the assumed parameters are not consistent with the actual site conditions, the Engineer shall be contacted to determine what modifications to the design are required.

(c) The project Materials and Testing contractor shall be retained to observe the construction of the retaining walls to confirm that the actual site conditions are consistent with the assumed design parameters and to confirm that the Wall Contractor's methods are capable of achieving the specified construction criteria. These observations shall include, but are not limited to foundation subgrade observations, verification of geotechnical design parameters, and full time observation of construction for general compliance with design drawings and project specifications.

(d) Topographic information for the retaining wall was interpolated and interpreted from the elevations provided. Wall Contractor shall field verify all topographic information for the retaining wall at the time of construction.

(e) Approximate field locations of existing utilities, foundations, and other structures identified to the Engineer are shown on these drawings. The Engineer is not responsible for field verifying these locations and damage to identified and unidentified utilities and foundations. The Wall Contractor shall field verify locations and elevations of all utilities within 50 feet behind and in front of wall.

(f) Wall heights shown are based on information available at the time of design. If the actual wall heights are more than one foot greater than the wall heights shown on the drawings, the Wall Contractor shall immediately inform the Engineer or his representative who will determine if adjustments to the design are required. Adjustments to the wall heights and/or final grade behind or in front of the wall may be necessary based on actual site conditions and shall be determined by the Engineer on a case–by–case basis.

(g) The Wall Contractor shall be responsible for acquiring permission and all permits for the wall construction areas.

(h) Measures shall be implemented to meet local, state and federal requirements for fall protection, traffic barriers, and all other safety conditions at the wall locations both during and after wall construction. Safety measures and conditions shall be the responsibility of the Owner. Under no circumstances shall the Engineer be responsible for performance or implementation of the safety measures or any other safety conditions at the site both during and after wall construction.

(i) The Wall Contractor is solely responsible for construction site safety and under no circumstances shall the Engineer be assumed to be responsible for construction site safety.

(j) Retaining walls shall be constructed in accordance with local building codes and requirements.

(k) The Wall Contractor shall be solely responsible for the design, adequacy, and safety of erection bracing, shoring, and temporary supports of the structure so that it will be stable during all stages of construction. The retaining wall is designed for completed conditions only and therefore may require additional support to maintain stability before completion.

(l) The Wall Contractor shall assume full responsibility for compliance with the contract documents, for dimensions to be confirmed at the job site, for fabrication processes, for safe conditions at the job site, and for the means, methods, techniques, sequences, and procedures of construction.

(m) These drawings are furnished for application to this specific project only. Any party accepting these documents does so in confidence and agrees that it shall not be duplicated in whole or in part, nor disclosed to others without the consent of GEOServices, LLC.

(n) Reference Standards: Reference Standards: ASTM Standard Specifications for Segmental Retaining Wall Units (ASTM C1372–01a)

2. <u>Description</u>

(a) The Wall Contractor shall provide all labor, equipment, and materials to construct the project in accordance with the lines, elevations, and requirements of these plans and specifications or as directed by the Engineer during the course of the construction. Alternatives to, or changes in, the plans and specifications must be approved by the Engineer prior to commencement of work.

(b) Work shall consist of furnishing and installing concrete retaining wall facing units in accordance with the manufacturer's specifications and these plans and details.

(c) Work shall consist of the excavation of any materials required to achieve the minimum dimensions required for construction of the retaining wall. These materials are expected to consist of fill soils, residual soils, and potentially weathered and unweathered rock.

(d) Work shall consist of excavation of in situ materials, preparing foundation soil, furnishing and installing leveling pad, installing wall facing units, installing geogrid, and placing structural backfill materials to the lines, grades, and specifications shown on these drawings.

(e) Work shall consist of furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated in these plans.

(f) The Wall Contractor shall be responsible for construction of all special provisions required for utility installations located in the areas of the retaining walls, including utilities within the reinforced backfill, utilities that cross the wall alignment, and/or utilities that protrude from the retaining wall facing. These special provisions shall include, but are not limited to, cutting or forming special facing units to accommodate utilities.

(g) The Wall Contractor shall provide the Engineer with a copy of the manufacturer's specification for all materials before construction begins. The retaining wall shall be installed according to the recommendations of the manufacturer except as modified by the construction plans and these specifications.

3. <u>Design Limitations</u>

(a) The retaining walls shall not have a solid fence placed on top of the wall.

(b) The wall was designed with a 100 psf landscaping/pedestrian surcharge. No surcharges including but not limited to traffic, material stockpiles, structures, and heavy equipment shall be allowed above the retaining wall at any time during or after construction of the retaining wall.

(c) The walls shall not have slopes above or below the wall greater than what is shown on the plans. The wall was designed with a 2H:1V toe slope and a flat backslope.

4. <u>Geotechnical Data</u>

(a) The following design parameters were conservatively selected based on The Report of Geotechnical Exploration No. 41–16465 dated July 7, 2016 performed by GEOServices, LLC.:

Backfill Material: #57 Stone
- Unit Weight = 105 pcf
- Internal Frictional Angle = 35 Degrees
- Cohesion = 0 psf

Retained Soils: Alluvium
- Unit Weight = 120 pcf
- Internal Friction Angle = 32 Degrees
- Cohesion = 0 psf

Foundation Bearing Material: Alluvium
- Unit Weight = 120 pcf
- Internal Friction Angle = 32 Degrees
- Cohesion = 0 psf
- Allowable Bearing Pressure = 2500 PSF

(b) All backfill materials, including drainage layers and any additional backfill required, shall be #57 stone limestone aggregate (or approved equal) as shown in the typical wall cross–section. Any changes in the materials shall be approved by the Engineer prior to construction

(c) The Owner shall be responsible for verifying all parameters used in the retaining wall design with their geotechnical representative prior to wall construction. If the materials varies from the parameters listed above, the Wall Contractor shall immediately inform the Engineer who will determine if adjustments to the design are required.

(d) Prior to construction, all unsuitable materials (including surface vegetation, topsoil, organic material, soft existing soil, and other debris) shall be removed. Excavation of materials may be required to achieve the minimum conditions and dimensions required for stability. The Owner's geotechnical representative shall be retained to observe all foundation subgrades and proposed fill areas prior to leveling pad construction and fill placement to verify that the foundation subgrades are consistent with the <u>design bearing pressure specified</u>. Additional excavation may be required as directed by the Owner's representative during construction.

(e) All excavations shall be sloped or shored in accordance with local, state, and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. Excavations shall be designed and performed to avoid influencing the foundations of nearby structures. Excavations shall be suspended immediately if any movement is observed in nearby slopes or structures.

5. <u>Wall Materials</u>

(a) Wall units shall be REDI–ROCK™ Gravity units as produced by a licensed manufacturer. The facing finish and color shall be selected by the Owner.

(b) Wall units shall meet the minimum specifications as provided from the manufacturer and ASTM C–94 and ACI 301–99. All materials used in the wall units shall meet applicable ASTM and local requirements for exterior concrete.

(c) Exterior dimensions shall be uniform and consistent. Maximum deviations shall be 0.75 inch, not including textured face.

(d) Wall units shall have a minimum unit weight of 130 pounds per cubic foot.

(e) Exposed face shall be finished as specified by the owner. Other surfaces to be smooth form type. Dime size bugholes on the block face may be patched and/or shake–on color stain can be used to blend into the remainder of the block face.

6. <u>Base Leveling Pad Material</u>

(a) Leveling pad material shall consist of dense graded limestone aggregate placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6 inches in front of and behind the modular wall unit.

(b) Leveling pad material shall be compacted to a minimum of 98% Standard Proctor density per ASTM D–698 to ensure a level hard surface on which to place the first course of blocks.

(c) Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

7. <u>Drainage</u>

(a) A 4" perforated drainage pipe shall be installed between the drain pipe outlets at the elevations shown on the wall elevation view along the entire length of the wall. Contractor shall be responsible for keeping pipe continuous along the entire length of the wall. The perforated drain pipe shall be sloped to drain at 1% minimum. The perforated drain pipe shall be connected to the drain pipe outlets precast in the facing units. The drain pipe outlets shall extend to the exterior of the wall face at the locations indicated on the wall elevation views. The drain pipes shall be sloped to drain towards the exterior wall face at 1% minimum. The drain pipes shall be solid PVC pipe in accordance with ASTM D–3034 or corrugated HDPE pipe in accordance with ASTM D–1248.

(b) Non–woven geotextile fabric, Synthetic Industries GEOTEX 861 (8 oz fabric) or approved equal, shall be placed between all approved subgrade soils and the backfill and between the reinforced fill and the retained soil. This non–woven geotextile shall extend to the top of the retained soils and wrapped over the top of the reinforced fill.

(c) The Wall Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

(d) The Wall Contractor shall be responsible for measures to prevent surface water from ponding and/or flowing over the wall face.

(e) The Wall Contractor shall be responsible for installing all drainage features necessary to minimize infiltration and excess runoff in the areas of the wall, fill material, retained material, and soils located downslope from the wall both during and after construction. Drainage features include, but are not limited to, surface drains, subsurface drains, and drainage swales.

(f) The ground surface above and below the wall shall be protected against erosion both during and after construction. Erosion control shall divert surface water away from the top of the wall.

8. <u>Modular Unit Installation and Backfill</u>

(a) First course of wall facing units shall be placed on the leveling pad at the approximate line and grade with the aesthetic surface facing out and the front edges tight together. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.

(b) Place the front of units side by side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with the manufacturer's recommendations.

(c) The backfill in front and in back of entire base row shall be placed and compacted to firmly lock them in place. Check all units again for level and alignment. All excess material shall be swept from top of units.

(d) Install next course of wall units on top of base row. Position blocks to be offset from seams of blocks below as shown on the elevation views. Blocks shall be placed fully forward so that knob and groove are fully forward and engaged. Check each block for proper alignment and level.

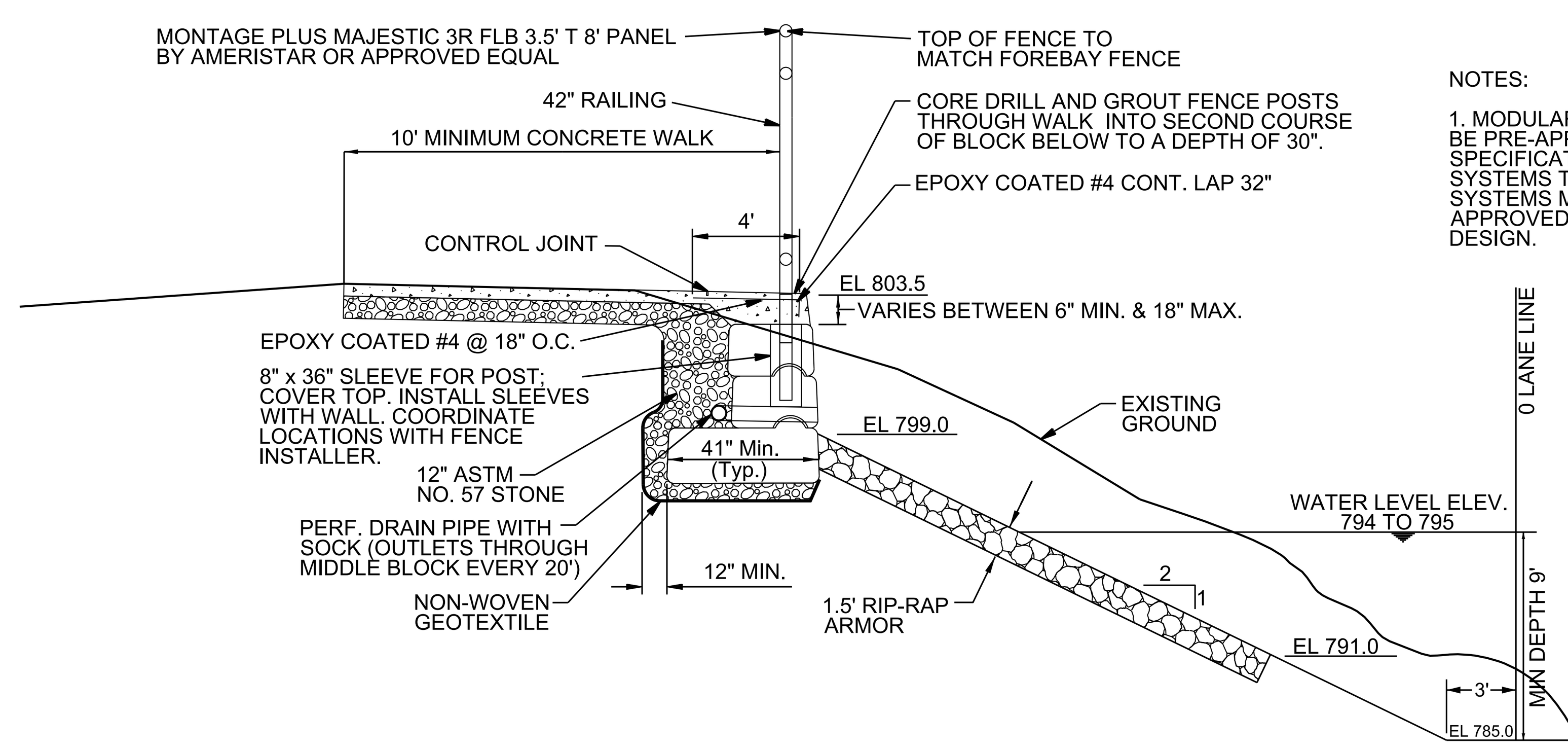
(e) Backfill with dense graded crusher run aggregate as shown in the toe drain detail and described in sections 3a and 6b. Backfill with #57 size limestone aggregate as shown in the typical retaining wall cross–sections. Spread all backfill materials in uniform lifts not exceeding 8 inches. Employ methods using lightweight compaction equipment that will not disrupt the stability or batter of the wall. Only hand–operated plate compaction equipment shall be used within 3 feet of the wall blocks to achieve compaction. Compact crusher run aggregate to a minimum of 95% Standard Proctor density per ASTM D 698 within 2% of its optimum moisture content.

(f) Open–graded backfill shall be compacted by making a minimum of 4 passes with a vibratory plate compactor.

(g) Install each subsequent course in like manner. Repeat procedure to the extent of the wall height.

(h) Allowable construction tolerance at the wall face is 2 degrees vertically and 1 inch in 10 feet horizontally.

(i) All walls shall be installed in accordance with local building codes and requirements.



NOTES:

1. MODULAR CONCRETE RETAINING WALLS TO BE PRE-APPROVED WALL SYSTEMS SPECIFIED IN SPECIFICATIONS. ALTERNATE MODULAR WALL SYSTEMS TO THE PRE-APPROVED WALL SYSTEMS MAY BE ACCEPTABLE IF THEY ARE APPROVED PRIOR TO FINAL CONTRACTOR DESIGN.

1 / RW-1 TYPICAL WALL SECTION DETAIL

SCALE: NTS

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MODULAR BLOCK WALL NOTES & DETAILS

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BSP	BCN	07/28/2016	ISSUED FOR USE

RW-1

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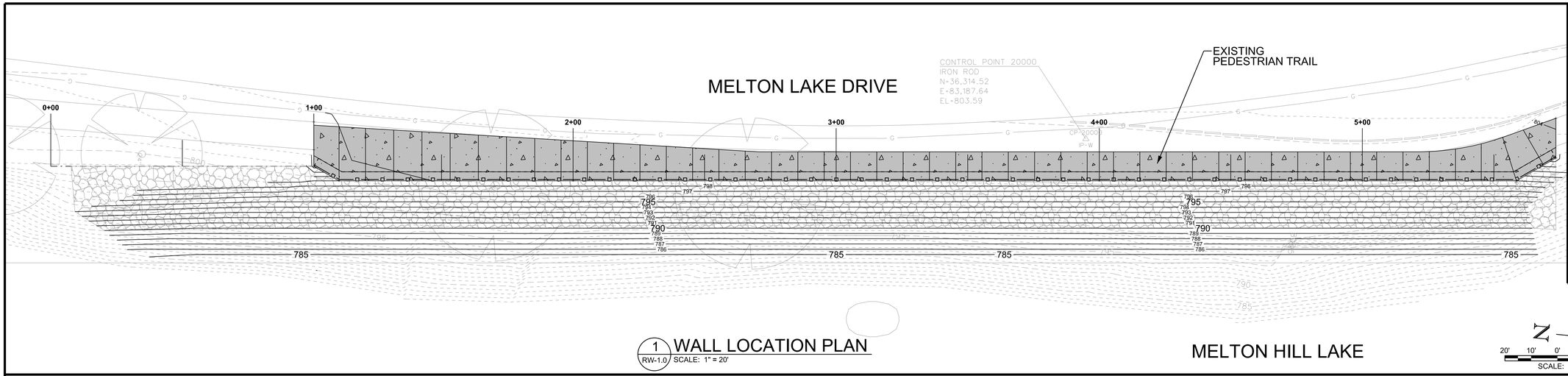
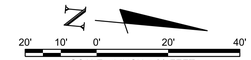
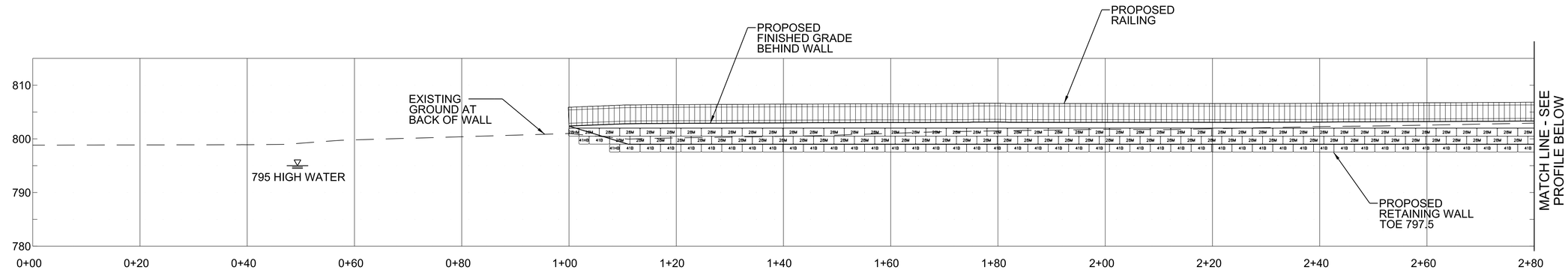


1 RW-1.0 WALL LOCATION PLAN
SCALE: 1" = 20'

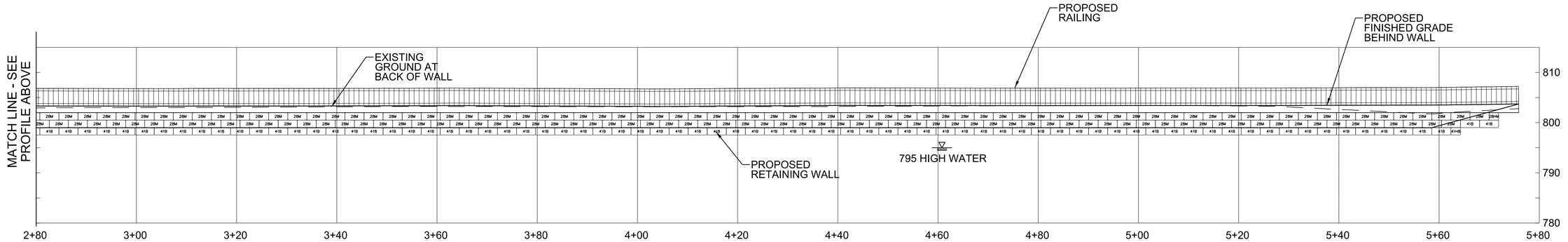


SCALE: 1 INCH = 20 FEET



PROFILE VIEW

SCALE:
HORIZ: 1" = 20'
VERT: 1" = 10'



PROFILE VIEW

SCALE:
HORIZ: 1" = 20'
VERT: 1" = 10'

Estimated Block Quantities
Half Middle Blocks 28" (28HM) = 2
Middle Blocks 28" (28M) = 243
Half Bottom Blocks 41" (41HB) = 3
Bottom Blocks 41" (41B) = 122

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STATE OF TENNESSEE

MODULAR BLOCK WALL PLAN & PROFILE

OAK RIDGE ROWING COURSE
SITE IMPROVEMENTS
OAK RIDGE, TENNESSEE

REVISION INFORMATION			
REV.	DR.	CHK.	DATE
0	BSP	BDM	07/29/2016

ISSUED FOR USE

RW-2

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