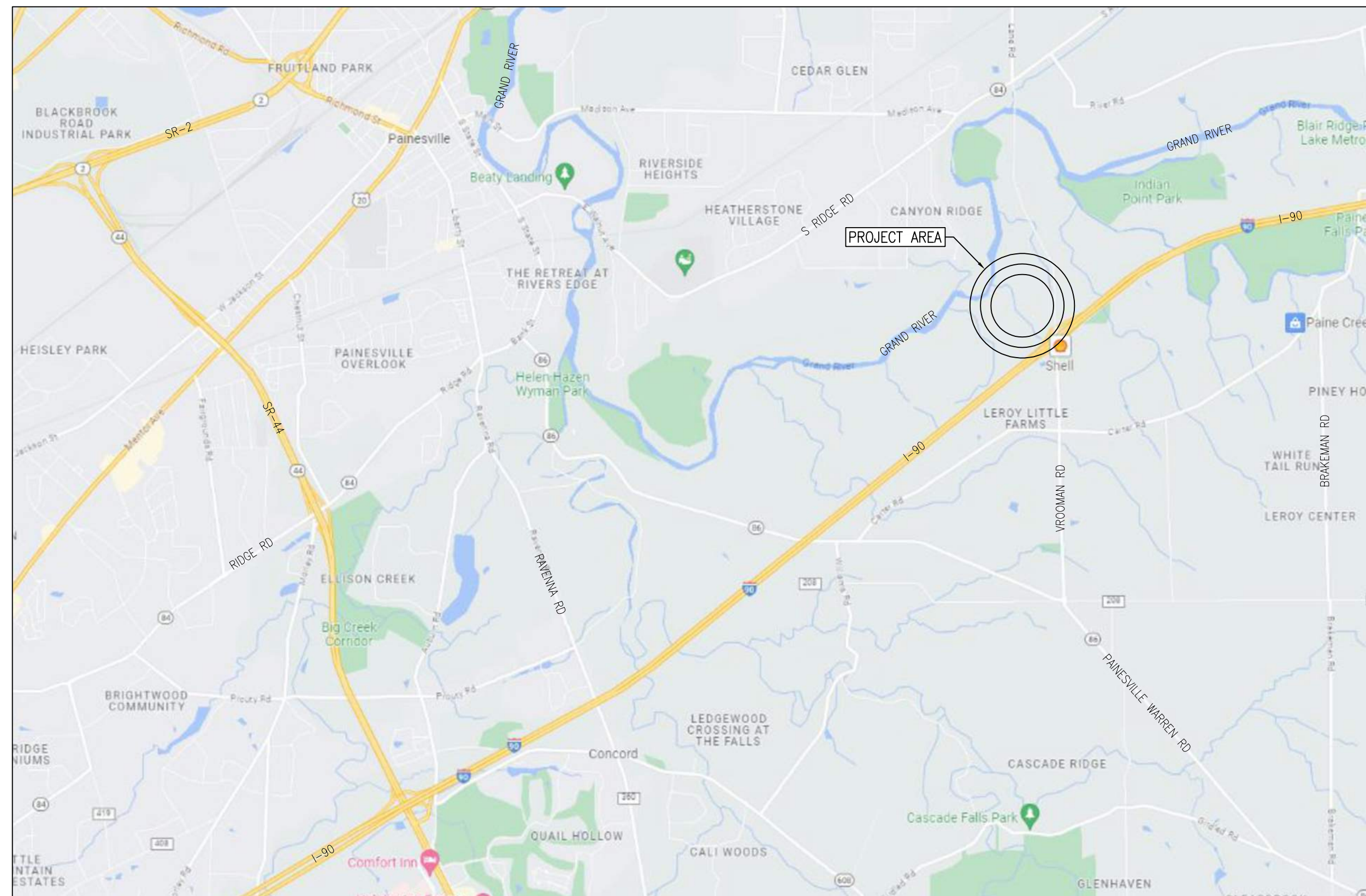


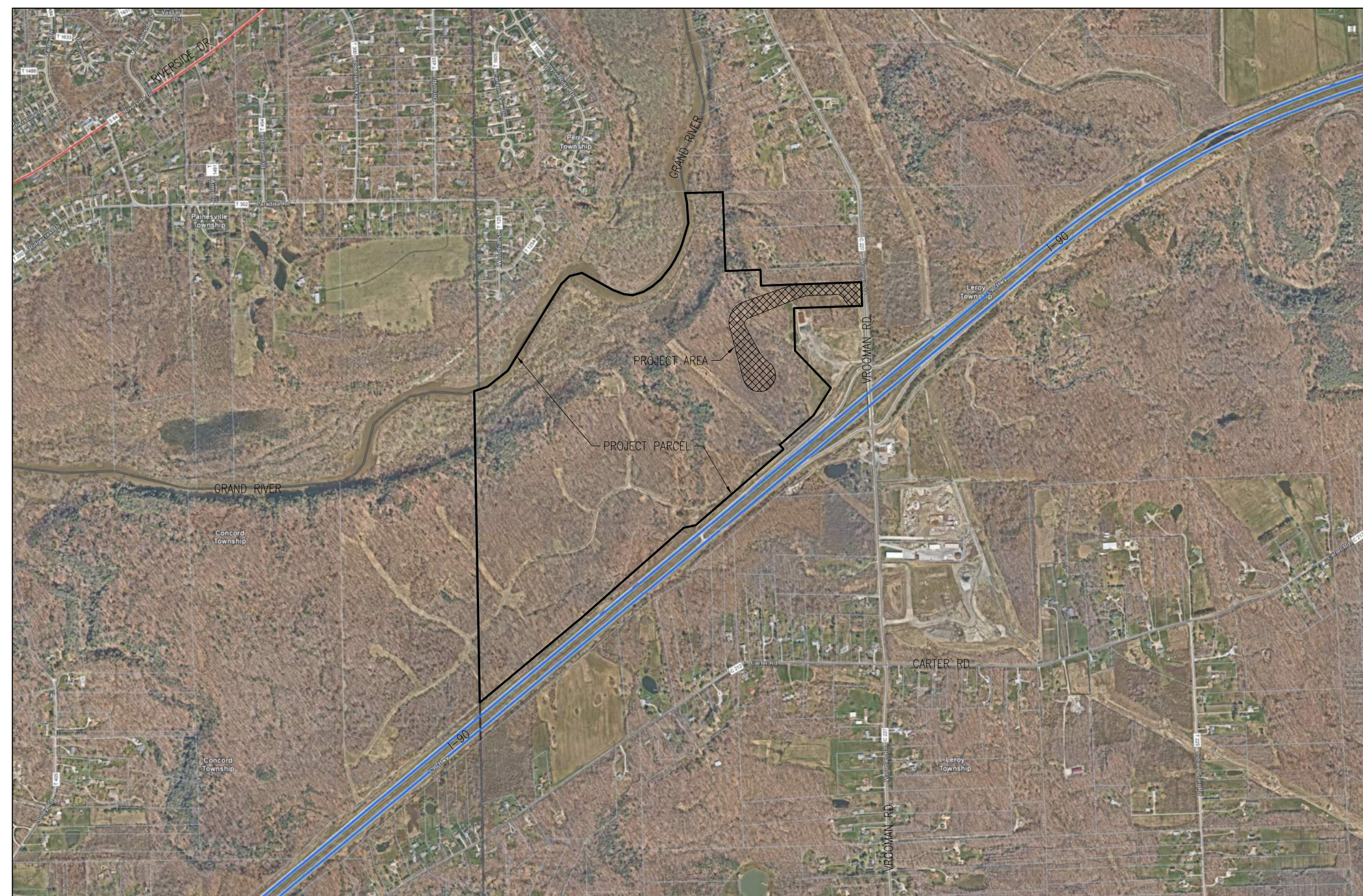
# HEMLOCK RIDGE PARK IMPROVEMENTS

## LAKE METROPARKS

5900 VROOMAN ROAD  
LEROY TOWNSHIP, OH 44077



VICINITY MAP  
NOT TO SCALE



PARCEL MAP  
NOT TO SCALE

### PROJECT PARCEL DATA

ADDRESS 5900 VROOMAN ROAD  
LEROY TOWNSHIP, OH 44077  
PARCEL # 07A-027-009  
PARCEL AREA 224.820 ACRES  
DISTURBED AREA 4.0 ACRES

### LAND SURVEY NOTES

LAND SURVEY DATA SHOWN ON THE CIVIL PLAN SHEETS HAS BEEN REFERENCED FROM A BOUNDARY AND TOPOGRAPHIC FIELD SURVEY PERFORMED BY WILLIAM C. VONDRA OF LAND DESIGN CONSULTANTS.  
CONTRACT #: LAKEP1-2303  
DATE: 10/17/23

### CIVIL ENGINEER

ROCKAWAY CIVIL LLC  
10191 SPERRY ROAD  
KIRTLAND, OHIO 44094  
JOHN URBANICK, PE 66506  
440.655.8182  
JURBANICK@ROCKAWAYCIVIL.COM

### CIVIL SHEET INDEX

- C100 COVER SHEET & OVERALL DRIVEWAY CONTEXT MAP
- C101 DRIVEWAY PLAN & PROFILE 57A 0+00 TO 10+00
- C102 DRIVEWAY PLAN & PROFILE 57A 10+00 TO 17+90
- C103 GRADING DETAILS
- C104 TYPICAL SECTIONS
- C105 CULVERT CROSSING SECTIONS
- C200 SMP-1
- C201 SMP-2
- C300 DETAILS

### MAINTENANCE OF TRAFFIC

INTERFERENCE WITH TRAFFIC: THE CONTRACTOR SHALL MAINTAIN SAFE TRAFFIC CONDITIONS IN ACCORDANCE WITH THE MANUAL OF TRAFFIC CONTROL DEVICES. COORDINATE ALL LANE / ROAD CLOSURES WITH THE LOCAL MUNICIPAL ENGINEER(S).

TRAFFIC DIVERSION: WHENEVER IT IS NECESSARY TO DIVERT TRAFFIC FROM ITS NORMAL CHANNEL INTO ANOTHER CHANNEL, SUCH DIVERSIONS SHALL BE CLEARLY MARKED BY CONES, DRUMS, BARRICADES OR TEMPORARY GUARDRAIL. IF THE MARKERS ARE LEFT IN PLACE AT NIGHT, SUITABLE LIGHTS SHALL BE PROVIDED AND MAINTAINED.

ONE-WAY TRAFFIC: WHENEVER ONE-WAY TRAFFIC IS ESTABLISHED, AT LEAST TWO FLAGGERS SHALL BE USED.

STREET CLOSING: THE CONTRACTOR MAY NOT CLOSE THE STREET TO THROUGH TRAFFIC.

MAINTENANCE: IF PROPER MAINTENANCE OF TRAFFIC FACILITIES AND/OR PROPER PROVISION FOR TRAFFIC CONTROL IS NOT BEING PROVIDED, THE MUNICIPALITY MAY TAKE NECESSARY STEPS TO CORRECT TRAFFIC MAINTENANCE. THE COST OF SUCH SERVICE WILL BE CHARGED TO THE CONTRACTOR.

### PROJECT GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS INCLUDED ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE LATEST STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIALS SPECIFICATIONS.
2. ANY DEFECTS IN THE CONSTRUCTION WITHIN THE RIGHT OF WAY INCLUDING MATERIALS OR WORKMANSHIP SHALL BE REPLACED OR CORRECTED BY REMOVAL AND REPLACEMENT BY THE CONTRACTOR OR OTHER APPROVED METHOD PRIOR TO ACCEPTANCE BY THE MUNICIPAL ENGINEER AT NO ADDITIONAL COST.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO ROAD SURFACES, SIGNS, GUARDRAILS, MAIL/PAPER BOXES, CULVERTS, EASEMENTS OR RIGHT OF WAYS DISTURBED BY CONSTRUCTION OF ANY PART OF THIS IMPROVEMENT. ALL DAMAGES SHALL BE RESTORED TO NO COST TO THE MUNICIPALITY TO THE ORIGINAL CONDITION. THE MUNICIPAL ENGINEER IN WRITING SHALL ACCEPT APPROVAL OF RESTORATION.
4. THE CONTRACTOR SHALL NOT COMMENCE WITH ANY FORM OF CONSTRUCTION WITHOUT NOTIFYING THE OFFICE OF THE MUNICIPAL ENGINEER AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO STARTING CONSTRUCTION.
5. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
6. THE CONTRACTOR SHALL PROVIDE A TWENTY-FOUR (24) HOUR, SEVEN DAYS A WEEK EMERGENCY CONTACT LIST. THE CONTACT LIST SHALL INCLUDE CONTACT NAMES AND PHONE NUMBERS OF INDIVIDUALS WHO CAN BE REACHED AT ANY TIME. NO CONSTRUCTION SHALL OCCUR BEFORE CONTACT LIST IS PROVIDED TO THE MUNICIPALITY.
7. ALL LAWN AREAS REMOVED OR DISTURBED SHALL BE REPLACED BY SEEDING AND MULCHING IN ACCORDANCE WITH ITEM 659 OF ODOT SPECIFICATIONS AND SHALL BE RESEEDED AND MULCHED WHEN REQUESTED IF SATISFACTORY RE-ESTABLISHMENT OF LAWN DOES NOT OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING PUBLIC WATER, STORM AND SANITARY SYSTEM RESULTING FROM NON-COMFORMANCE WITH THE APPLICABLE STANDARDS OR THROUGH GENERAL NEGLIGENCE.
8. ALL HOLES CREATED FROM BORING OF UTILITY LINES SHALL BE BACKFILLED WITH SAND OR GROUT THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AT ALL TIMES AND SHALL BACKFILL AND GRADE EXCAVATED AREAS TO ELIMINATE PONDING ON THE SITE.
9. DUST CONTROL: THE CONTRACTOR SHALL SUPPLY ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY INCLUDING A DUST-FREE STREET SWEEPING DEVICE OR AS DIRECTED BY THE MUNICIPAL ENGINEER TO MAINTAIN ALL ROADWAYS BEING USED FOR ACCESS TO THE CONSTRUCTION SITE.
10. EROSION CONTROL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY EROSION CONTROL METHODS IN ACCORDANCE WITH CURRENT COUNTY AND STATE REQUIREMENTS AND AS REQUIRED BY THE MUNICIPAL ENGINEER. EROSION CONTROL MEASURES MUST BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CLEAN ALL EXISTING STREETS OF MUD AND DIRT DURING THE CONSTRUCTION PHASE AS NEEDED OR DIRECTED BY THE MUNICIPAL ENGINEER.
11. GENERAL SEWER: THE CONTRACTOR SHALL CLEAN ALL EXISTING STREETS OF MUD AND DIRT DURING THE CONSTRUCTION PHASE AS NEEDED OR DIRECTED BY THE MUNICIPAL ENGINEER.
12. LINE AND GRADE CONTROL: THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY EROSION CONTROL METHODS IN ACCORDANCE WITH CURRENT COUNTY AND STATE REQUIREMENTS AND AS REQUIRED BY THE MUNICIPAL ENGINEER. EROSION CONTROL MEASURES MUST BE IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL CLEAN ALL EXISTING STREETS OF MUD AND DIRT DURING THE CONSTRUCTION PHASE AS NEEDED OR DIRECTED BY THE MUNICIPAL ENGINEER.
13. EARTHWORK: WHENEVER UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED THAT ARE NOT INDICATED ON THE PLANS, THE WORK SHALL BE DISCONTINUED UNTIL THE GEOTECHNICAL ENGINEER APPROVES THE METHOD AND MATERIAL TO BE INCORPORATED INTO THE WORK.
14. ALL UNPROCESSED UNDERGROUND OR ABOVE GROUND UTILITIES OR CONDITIONS THAT ARE DISCOVERED IN THE PROJECT AREA DURING CONSTRUCTION SHALL BE REPORTED BY THE CONTRACTOR TO THE DESIGN ENGINEER IMMEDIATELY FOR EVALUATION / POSSIBLE REDESIGN. THE FIELD DATA SHALL INCLUDE MATERIAL TYPE, SIZE, CONDITION, LOCATION, DEPTH / ELEVATION, ETC.

### EXISTING TOP SOIL TEST PIT NOTES

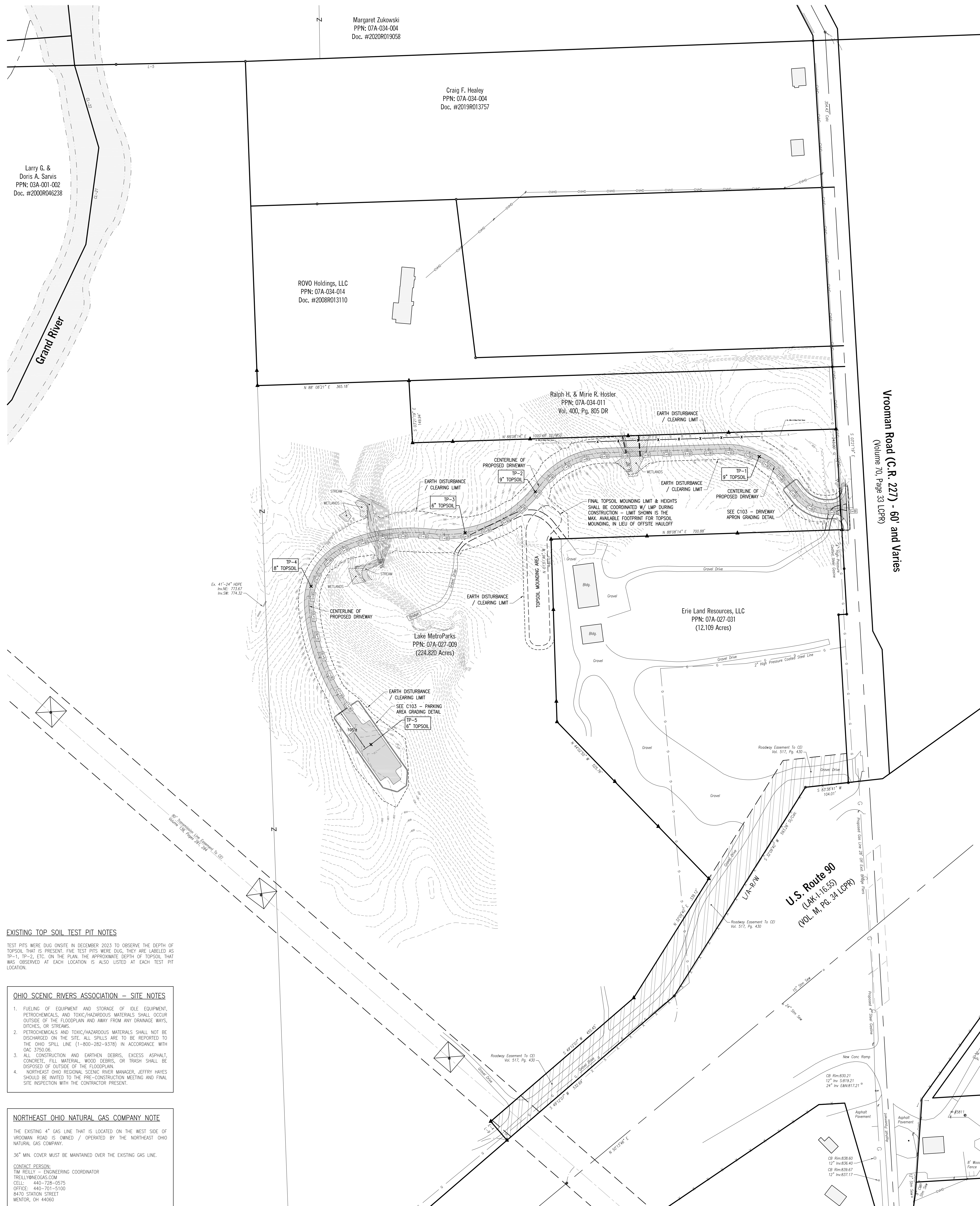
TEST PITS WERE DUG ON-SITE IN DECEMBER 2023 TO OBSERVE THE DEPTH OF TOPSOIL THAT IS PRESENT. THE TEST PITS WERE DUG, THEY ARE LABELED AS TP-1, TP-2, ETC. ON THE PLAN. THE APPROXIMATE DEPTH OF TOPSOIL THAT WAS OBSERVED AT EACH LOCATION IS ALSO LISTED AT EACH TEST PIT LOCATION.

### OHIO SCENIC RIVERS ASSOCIATION - SITE NOTES

1. FUELING OF EQUIPMENT AND STORAGE OF FUEL EQUIPMENT, PETROCHEMICALS, AND TOXIC/HAZARDOUS MATERIALS SHALL OCCUR OUTSIDE OF THE FLOODPLAIN AND AWAY FROM ANY DRAINAGE WAYS, DITCHES, OR STREAMS.
2. PETROCHEMICALS AND TOXIC/HAZARDOUS MATERIALS SHALL NOT BE DISCHARGED ON THE SITE. ALL SPILLS ARE TO BE REPORTED TO THE OHIO SPILL LINE (1-800-282-9378) IN ACCORDANCE WITH OAC 3750.06.
3. ALL CONSTRUCTION AND EARTHEN DEBRIS, EXCESS ASPHALT, CONCRETE, FILL MATERIAL, WOOD DEBRIS, OR TRASH SHALL BE DISPOSED OF OUTSIDE OF THE FLOODPLAIN.
4. NORTHWEST OHIO REGIONAL SCENIC RIVER MANAGER, JEFFREY HAYES SHOULD BE INVITED TO THE PRE-CONSTRUCTION MEETING AND FINAL SITE INSPECTION WITH THE CONTRACTOR PRESENT.

### NORTHEAST OHIO NATURAL GAS COMPANY NOTE

THE EXISTING 4" GAS LINE THAT IS LOCATED ON THE WEST SIDE OF VROOMAN ROAD IS OWNED / OPERATED BY THE NORTHEAST OHIO NATURAL GAS COMPANY.  
36" MIN. COVER MUST BE MAINTAINED OVER THE EXISTING GAS LINE.  
CONTACT PERSON:  
TIM REILLY - ENGINEERING COORDINATOR  
TIRELLV@NEO.COM  
CELL# 440-728-0575  
OFFICE# 440-703-5100  
8470 STATION STREET  
MENTOR, OH 44060



ROCKAWAY CIVIL  
Rockaway Civil LLC  
10191 Sperry Road Kirtland Ohio 44094  
440.655.8182 www.rockawaycivil.com

0 100'  
SCALE: 1"=100'

Project Name

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Sheet Revision

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Project Issue

2 BID 5-31-2024

1 PERMIT 1-22-2024

**COVER SHEET & OVERALL DRIVEWAY CONTEXT MAP**

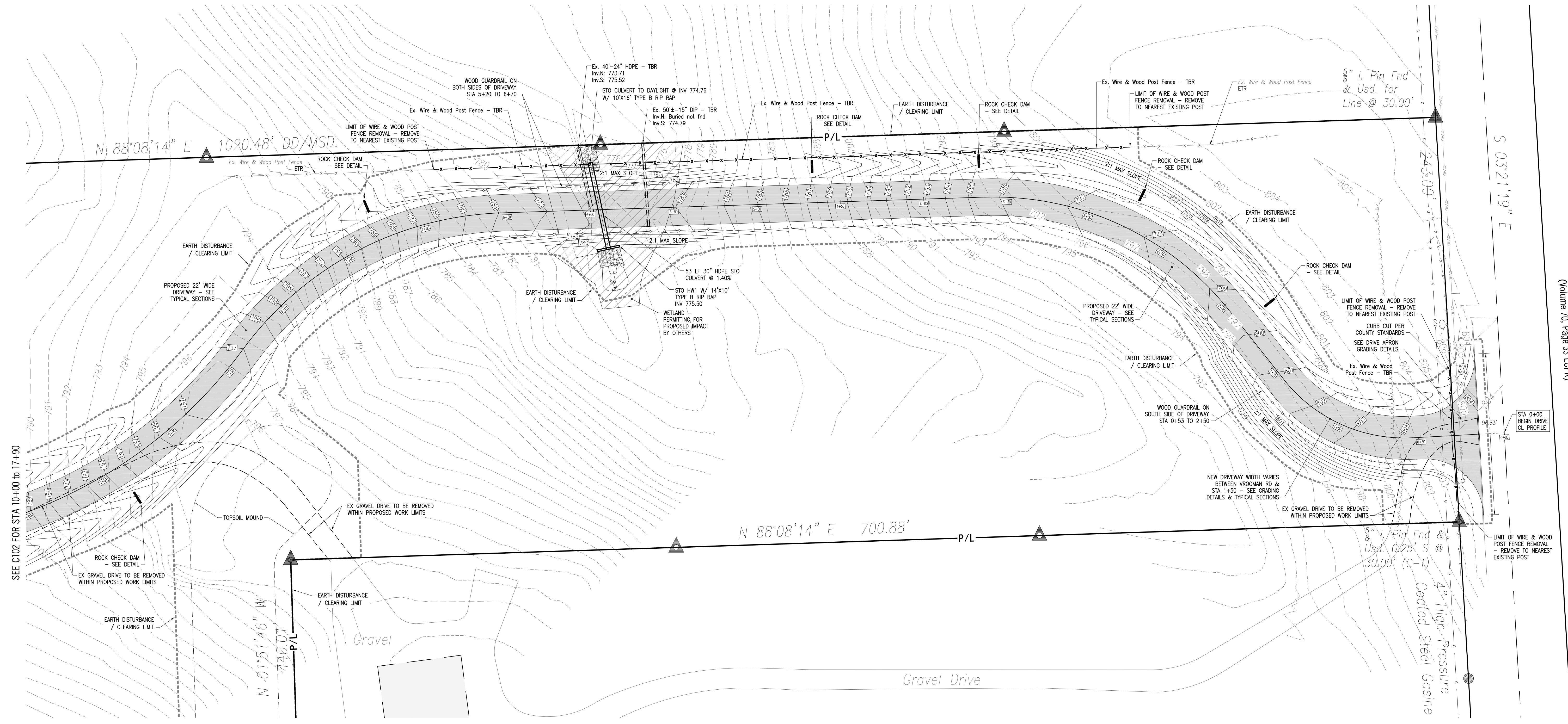
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**C100**

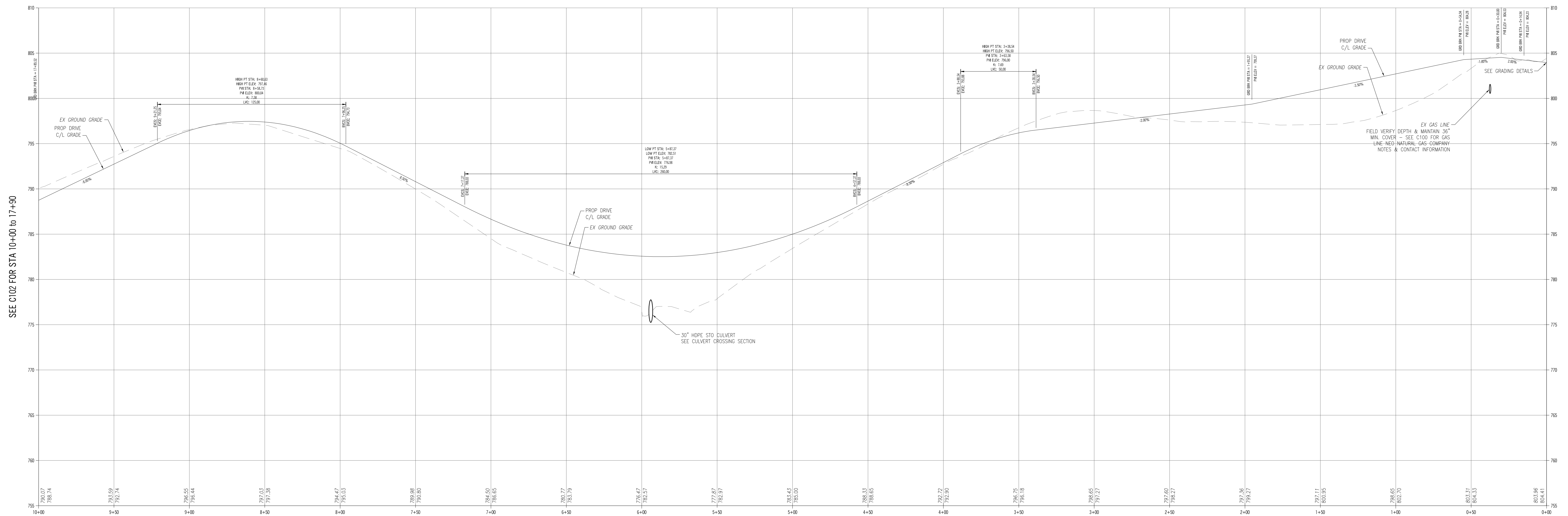
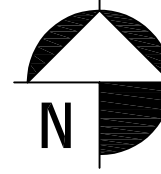
Sheet #

RC Project # 23-017





**DRIVEWAY PLAN - STA 0+00 to 10+00**  
SCALE: 1" = 30'



**DRIVEWAY PROFILE - STA 0+00 to 10+00**  
HORIZONTAL SCALE: 1" = 30'  
VERTICAL SCALE: 1" = 5'

Vrooman Road (C.R. 227) - 60' and Varies  
(Volume 70, Page 33 LCR)

**STATE OF OHIO ENGINEERS**  
JOHN URBANICK E-8856  
PROFESSIONAL

**ROCKAWAY CIVIL**  
Rockaway Civil LLC  
10191 Sperry Road Kirtland Ohio 44094  
440 655 8182 www.rockawaycivil.com

**LAKE METROPARKS**

**Ohio.com**  
Before You Dig

**HEMLOCK RIDGE PARK IMPROVEMENTS**  
**LAKE METROPARKS**  
5900 VROOMAN ROAD  
LEROY TOWNSHIP, OH 44077

Project Name	
Sheet Revision	
2 BID	5-31-2024
1 PERMIT	1-22-2024
Project Issue	

**DRIVEWAY PLAN & PROFILE**  
STA 0+00 to 10+00

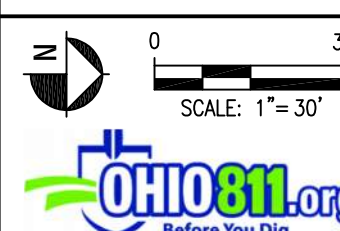
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Sheet #  
RC Project # 23-017

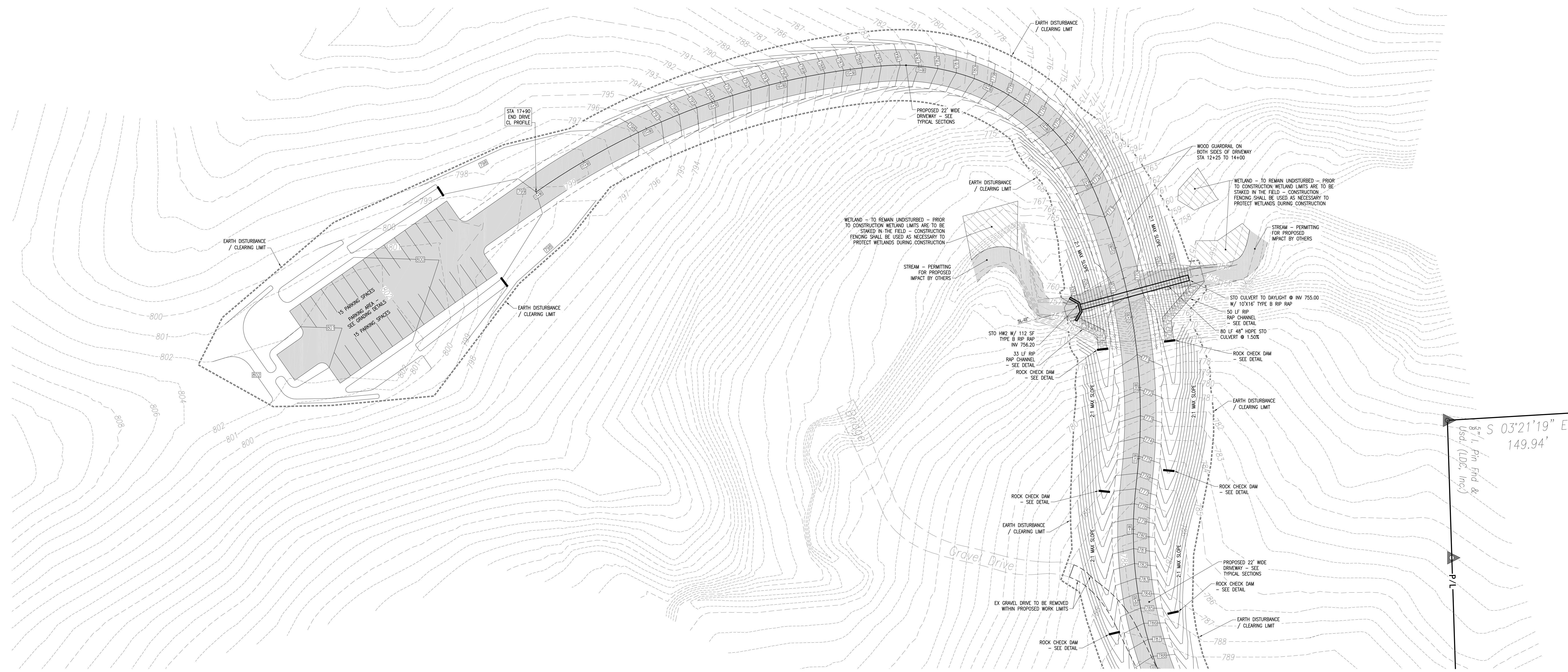




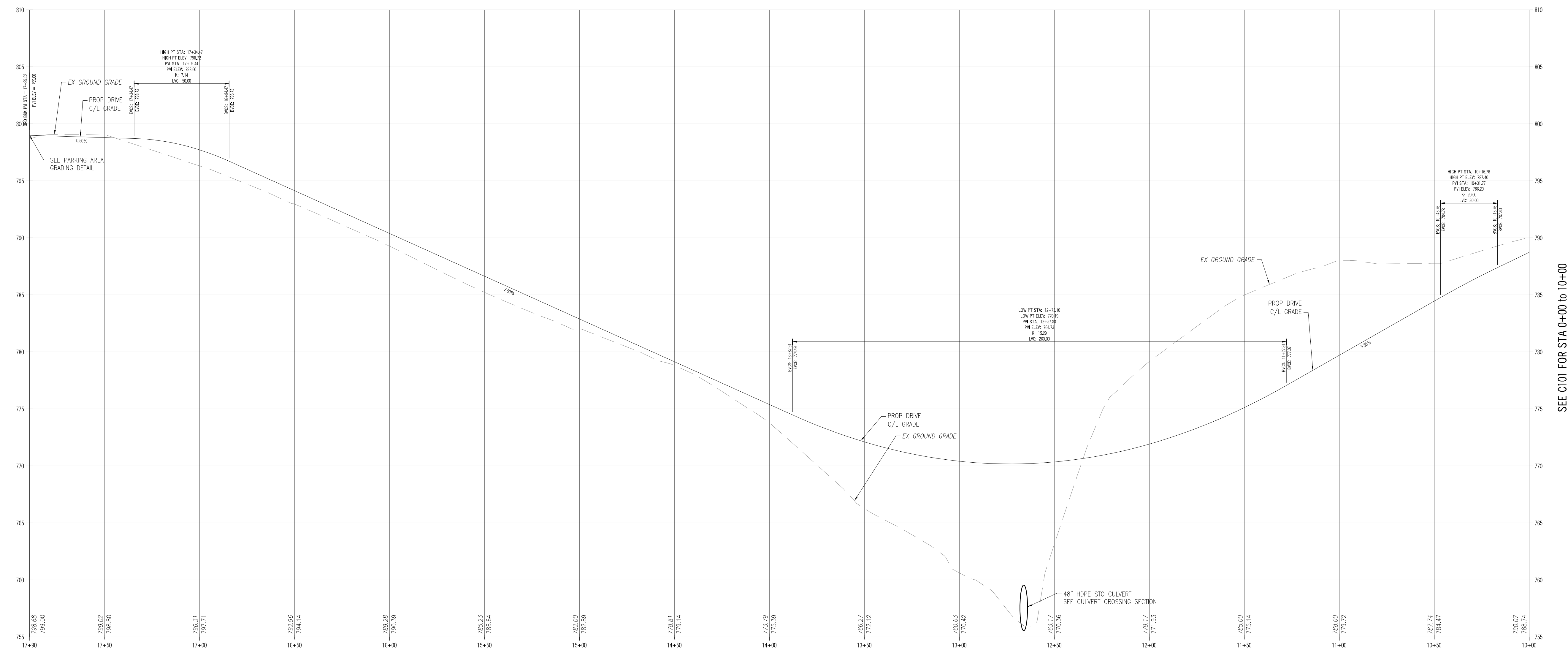
**ROCKAWAY CIVIL**  
Rockaway Civil LLC  
10191 Sperry Road Kirtland Ohio 44094  
440 655 8182 www.rockawaycivil.com



**HEMLOCK RIDGE PARK IMPROVEMENTS**  
**LAKE METROPARKS**  
5900 VROOMAN ROAD  
LEROY TOWNSHIP, OH 44077



**DRIVEWAY PLAN - STA 10+00 to 17+90**  
SCALE: 1" = 30'



**DRIVEWAY PROFILE - STA 10+00 to 17+90**  
HORIZONTAL SCALE: 1" = 30'  
VERTICAL SCALE: 1" = 5'

Project Name	
Sheet Revision	
2 BID	5-31-2024
1 PERMIT	1-22-2024
Project Issue	

**DRIVEWAY PLAN & PROFILE**  
STA 10+00 to 17+90

Sheet #  
**C102**  
RC Project # 23-017

SEE C101 FOR STA 0+00 TO 10+00

SEE C101 FOR STA 0+00 TO 10+00

94.1' L, Pin Find & Used (UDC, Inc)  
S 03°21'19" E  
149.94'





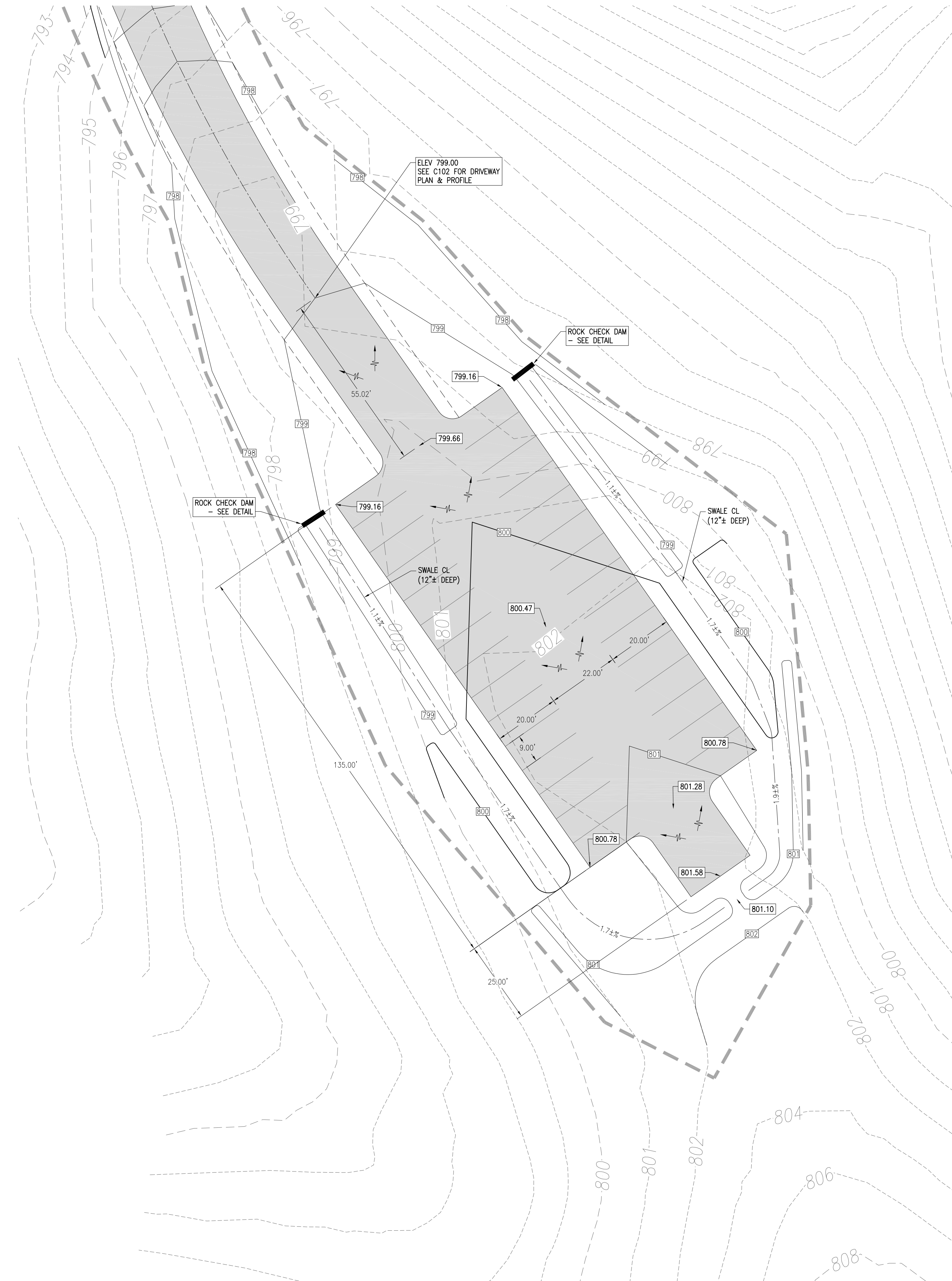
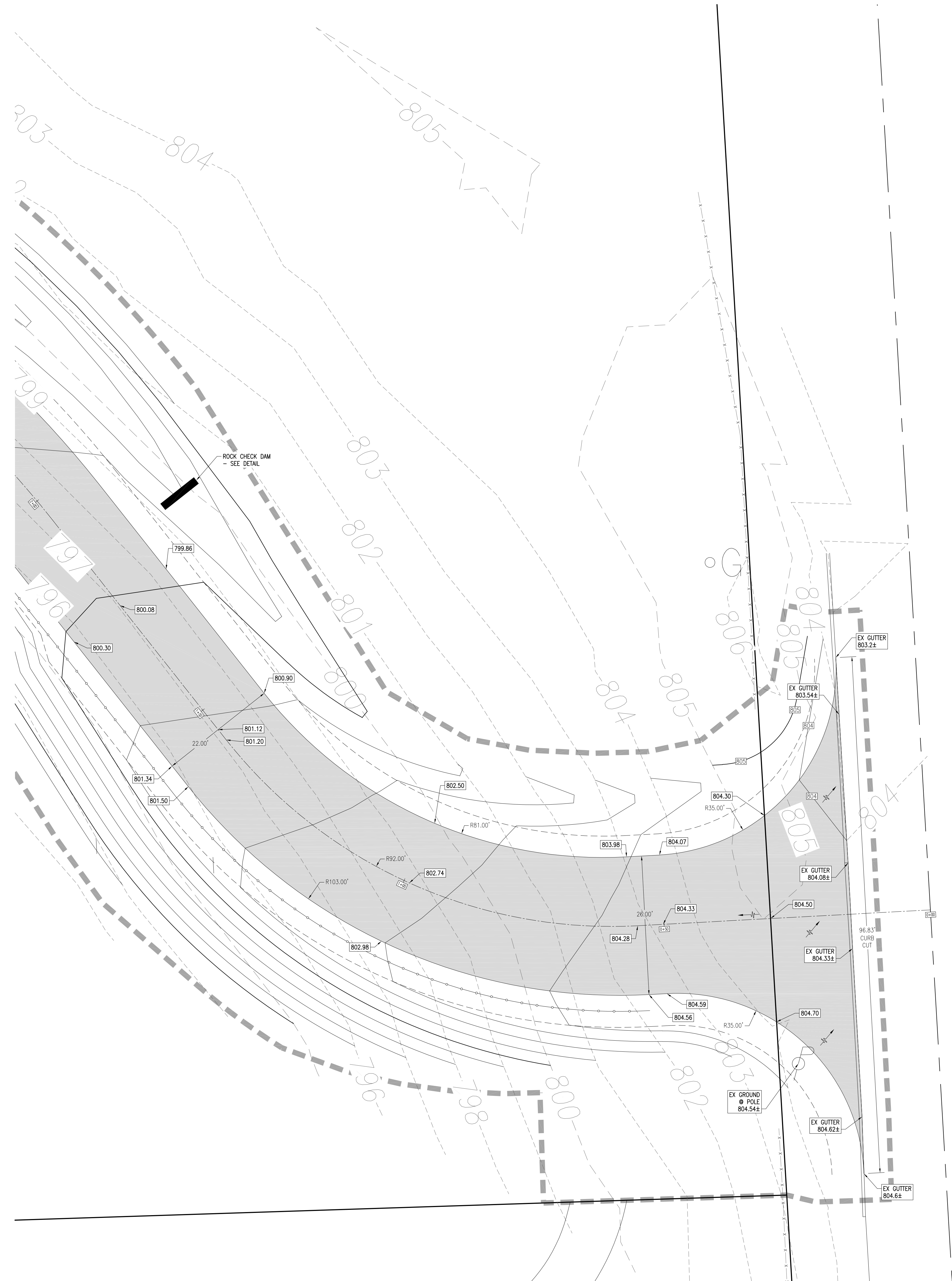
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 Rockaway Civil LLC  
 10191 Sperry Road Kirtland Ohio 44094  
 440 655 8182 www.rockawaycivil.com



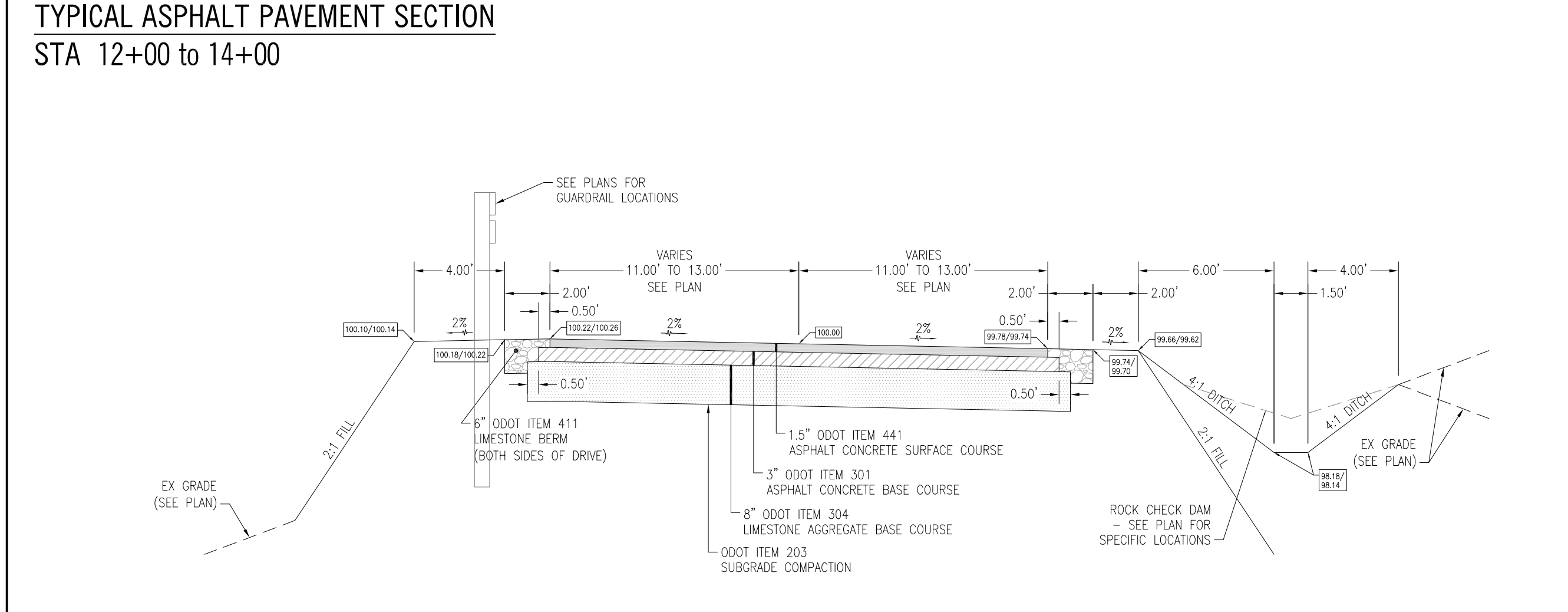
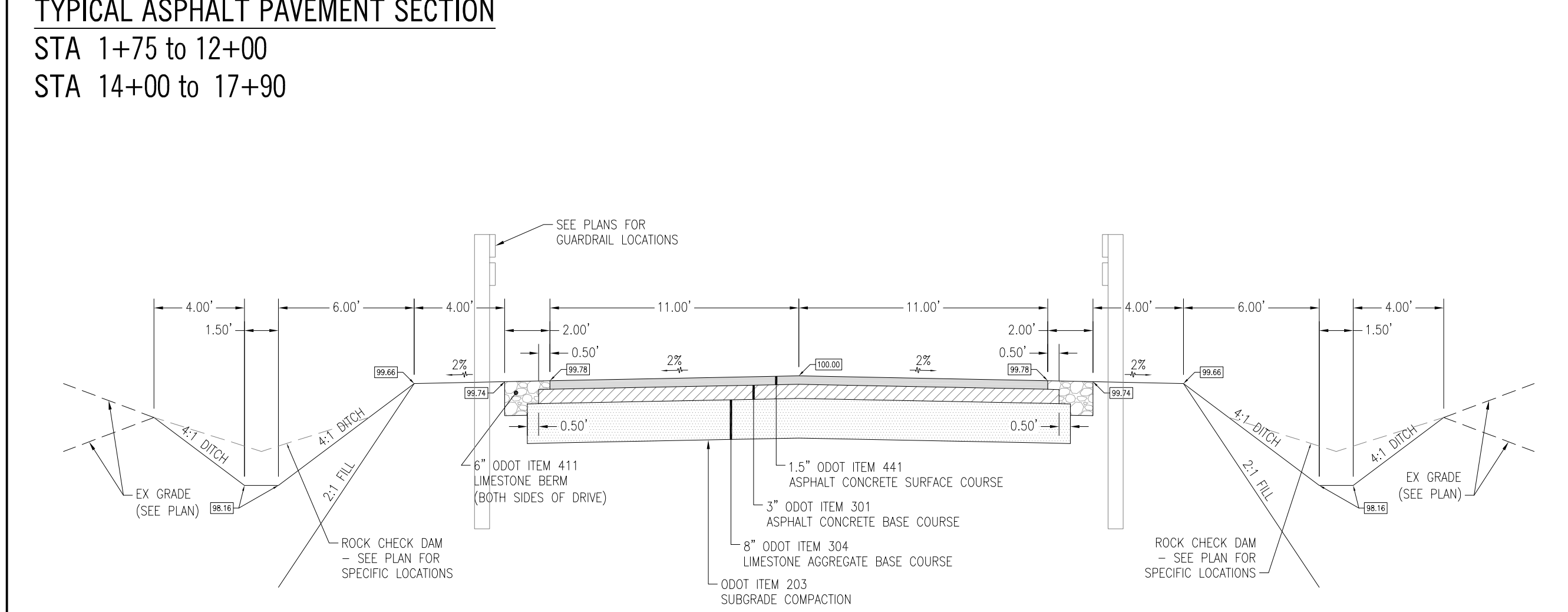
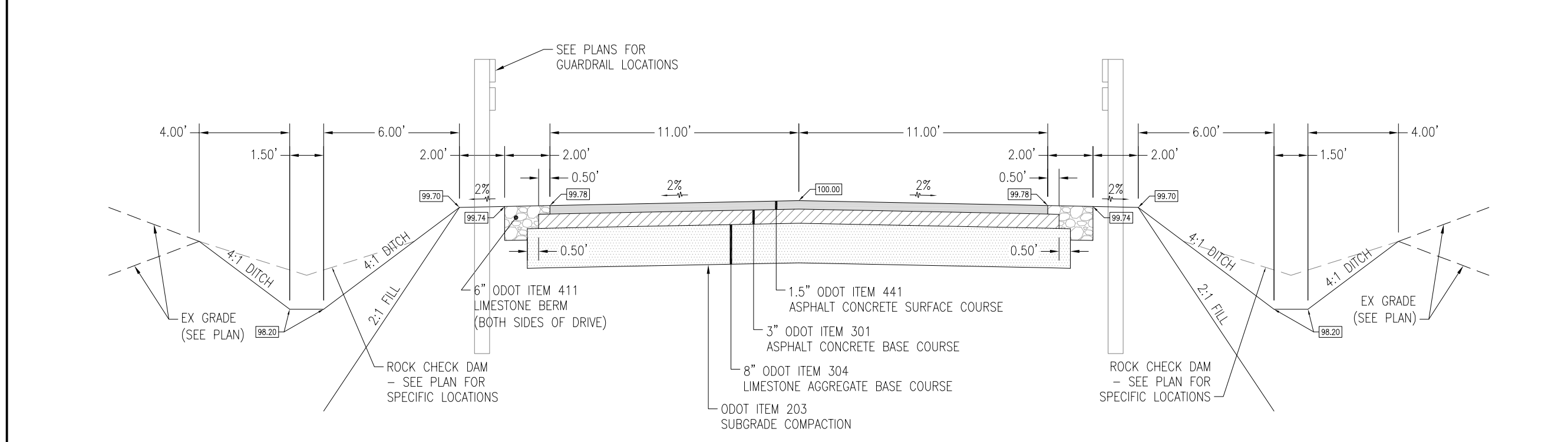
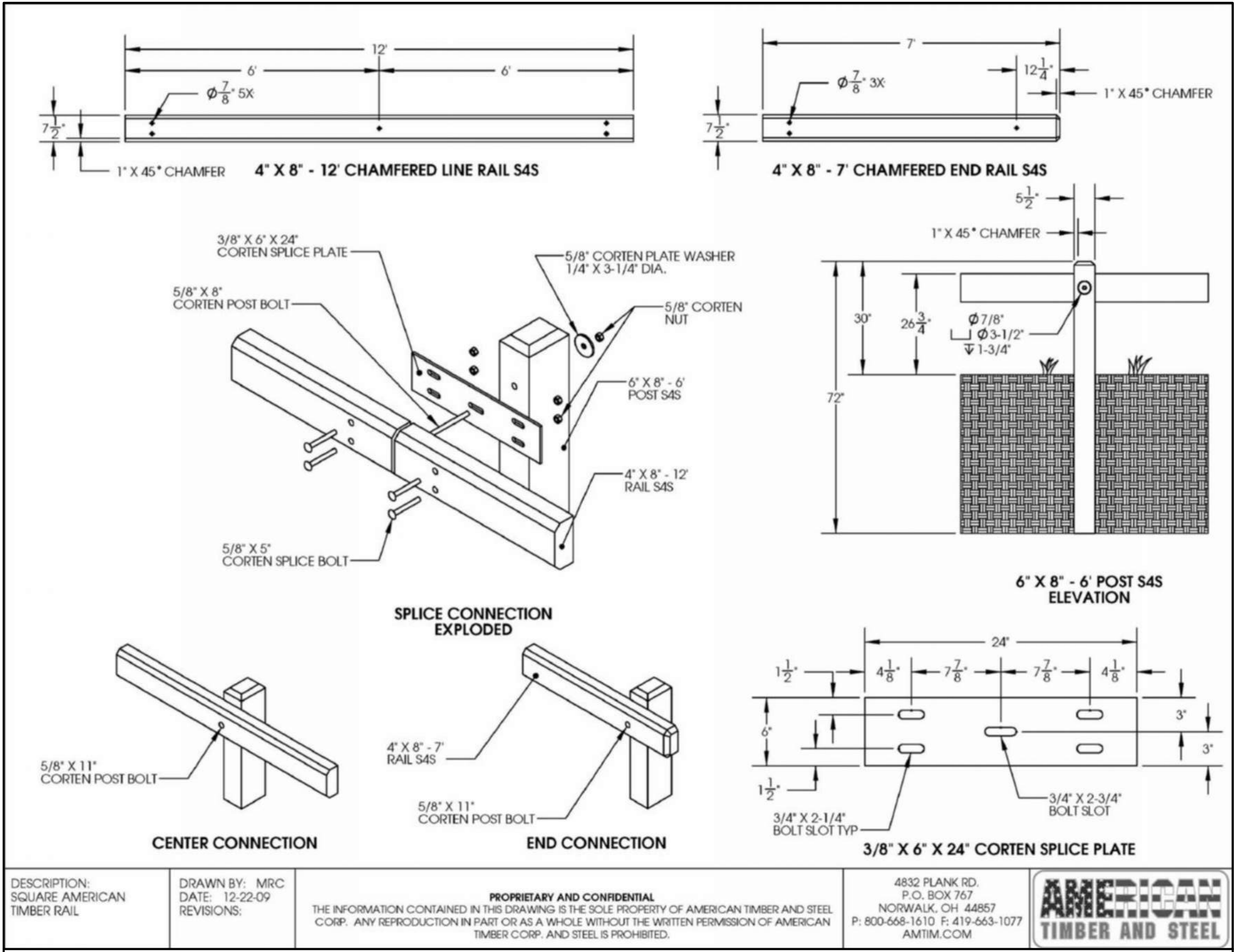
**HEMLOCK RIDGE PARK IMPROVEMENTS**  
**LAKE METROPARKS**  
 5900 VROOMAN ROAD  
 LEROY TOWNSHIP, OH 44077

Project Name	
Sheet Revision	
2 BID	5-31-2024
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Project Issue	

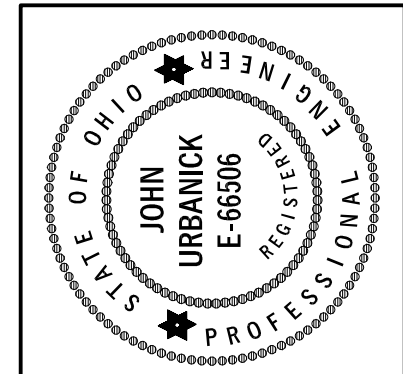
**GRADING DETAILS**  
 Sheet Name  
**C103**  
 Sheet #  
 RC Project # 23-017







**DRIVEWAY SECTIONS**



**ROCKAWAY CIVIL**  
 Rockaway Civil LLC  
 10191 Sperry Road Kirtland Ohio 44094  
 440 655 8182 www.rockawaycivil.com



**HEMLOCK RIDGE PARK IMPROVEMENTS**  
**LAKE METROPARKS**  
 5900 WOODMAN ROAD  
 LEROY TOWNSHIP, OH 44077

Project Name	
Sheet Revision	
2 BID	5-31-2024
1 PERMIT	1-22-2024
Project Issue	

**TYPICAL SECTIONS**  
 Sheet Name  
**C104**  
 Sheet #  
 RC Project # 23-017





**SWP3-1 KEY NOTE LEGEND**

- DA = EARTH DISTURBANCE AREA / CLEARING LIMIT
CE = CONSTRUCTION ENTRANCE
SA = STAGING AREA
WC = WASTE CONTAINER AREA
CW = CONCRETE WASHOUT AREA
MS = MATERIAL STOCKPILE AREA, PROVIDE FILTER SOCK AT LIMITS
FS = FILTER SOCK
EB = EROSION CONTROL BLENKETS
ML = WETLAND - TO REMAIN UNDISTURBED
PRIOR TO CONSTRUCTION WETLAND LIMITS ARE TO BE STAKED IN THE FIELD
CONSTRUCTION FENCING SHALL BE USED AS NECESSARY TO PROTECT WETLANDS DURING CONSTRUCTION

**SWP3-1 NOTES**  
OHIO EPA NPDES FACILITY PERMIT NUMBER - NOT APPLICABLE

- 1. THIS PROJECT WILL CONSIST OF DEMOLITION OF EXISTING STORM PIPING & GRAVEL DRIVES. CONSTRUCTION WILL INCLUDE A NEW PAVED DRIVEWAY & PARKING AREA INCLUDING TWO CULVERT CROSSINGS.
2. THE TOTAL SITE AREA IS 224.82 ACRES AND THE EXPECTED AREA TO BE DISTURBED WITHIN THAT SITE IS 4.0 ACRES. AS PER THE USGA SOIL SURVEY, THE SOIL TYPES FOR MOST OF THE SITE ARE:
GoF - Gosport Silty Clay Loam
PcC2 - Pierpoint Silt Loam
PsB - Plateau Silt Loam
UdD - Udorthents

**CONTRACT INFORMATION**

- 11. THE OPERATOR RESPONSIBLE FOR IMPLEMENTATION OF STORM WATER POLLUTION PREVENTION PLAN, NOT KNOWN AT THIS TIME.
12. THE CERTIFIED PROFESSIONAL WHO PREPARED THE COMPREHENSIVE STORM WATER MANAGEMENT PLAN AND IS AUTHORIZED TO AMEND SAID PLAN.
13. THE SITE OWNER:
SETH OULSHAW - LAKE METROPARKS
11211 SPEAR ROAD
CONCORD TOWNSHIP, OH 44077
14. SEE APPENDIX 1 - GRADING AND STABILIZATION ACTIVITIES LOG
15. SEE SWP3-1 - GRADING AND STABILIZATION ACTIVITIES LOG
16. OTHER COMMENTS:
IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL).
SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER, OR OTHER ABSORBENT MATERIAL & DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL.
HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING.
LARGE PETROLEUM SPILLS (25 GALLONS) MUST BE REPORTED TO THE OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE.

**STORM WATER POLLUTION PREVENTION PLAN IMPLEMENTATION SCHEDULE:**

ITEMS LISTED IN THIS IMPLEMENTATION SCHEDULE ARE TO BE ADDRESSED CHRONOLOGICALLY IN THE ORDER THEY ARE LISTED. THIS IMPLEMENTATION SCHEDULE IS TO BE USED AS A GENERAL GUIDE FOR STORM WATER POLLUTION PREVENTION ITEMS. AT A MINIMUM, ALL EROSION AND SEDIMENT CONTROLS ARE TO BE INSPECTED AT LEAST EVERY 7 DAYS AND WITHIN 24 HOURS OF ANY STORM EVENT GREATER THAN 0.5 INCH PER 24 HOUR PERIOD. EROSION AND SEDIMENT CONTROLS THAT ARE FOUND TO BE IN NEED OF REPAIR DURING THE INSPECTION ARE TO BE REPAIRED WITHIN 3 DAYS OF THE INSPECTION.

- 1. CONTRACTOR IS TO REVIEW THIS PLAN PRIOR TO INVITING ANY WORK ON SITE. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REVIEWING AND OBTAINING AN NOTES FROM THE OHIO EPA PRIOR TO INITIATION OF WORK ON THE SITE.
2. CONSTRUCTION ACCESS DRIVE SHALL BE LIMITED AS SHOWN ON PLANS. ALL VEHICLES ENTERING THE SITE DURING CONSTRUCTION ARE TO USE THIS DRIVE FOR INGRESS AND EGRESS. THIS IS THE ONLY POINT OF INGRESS AND EGRESS TO BE USED DURING THE ENTIRE CONSTRUCTION PROCESS. IN ORDER TO REDUCE CONSTRUCTION MATERIALS FROM BEING MOVED ONTO PUBLIC ROADSWAYS, THE DRIVE IS TO BE INSPECTED FOR INTEGRITY AT THE END OF EACH DAY. REPAIRS ARE TO BE MADE AND THE DRIVE SHALL BE CLEANED AS NECESSARY.
3. THE LIMITS OF DISTURBANCE TO BE MAINTAINED SHALL BE IDENTIFIED TO THE START OF CONSTRUCTION ACTIVITIES. THE STAGING AREA IS TO BE INSTALLED AT THE LOCATION DEPICTED ON THIS SWPPP. ALL VEHICLES THAT ARE NOT IN USE OR ARE TO REMAIN OVERNIGHT ARE TO BE KEPT IN THE STAGING AREA AND SHALL NOT LIE IDLE IN ANY OTHER AREAS ON SITE.
4. INSTALL THE CONCRETE WASHOUT PIT AND BRING WASTE CONTAINERS TO THE SITE IMMEDIATELY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT WASTE CONTROL PROCEDURES ARE BEING PERFORMED TO PREVENT POLLUTION INTO THE STORM WATER SYSTEM DURING CONSTRUCTION.
5. CONTRACTOR IS TO INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO THE START OF DEMOLITION, EROSION AND SEDIMENT CONTROLS ARE TO BE INSTALLED WITHIN 7 DAYS OF GRUBBING. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO, FILTER SOCKS, SILT FENCE, SANDY BAGS AND INLET PROTECTION. SILT FENCE POSTS ARE TO BE SET A MAXIMUM OF 4' FROM EACH OTHER AND THE ENDS OF THE GEOTEXTILE FABRIC OF THE SILT FENCE ARE TO BE SLOPED TOWARD THE UP SLOPE OF THE AREA IT IS SERVING TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE. SILT FENCE IS TO BE INSPECTED AT THE BEGINNING OF EACH DAY AND REPAIRS ARE TO BE MADE IMMEDIATELY. REPAIRS MAY INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING: TEARS IN THE GEOTEXTILE FABRIC, COLLAPSED POSTS FROM TOO MUCH RUNOFF OF SILT / SOIL, MISDIRECTION OF SEDIMENT DUE TO IMPROPER INSTALLATION OF EROSION, WASHOUT, ETC.
6. THE CONTRACTOR MUST INSTALL EROSION CONTROLS AND SEDIMENT CONTROLS INCLUDING, BUT NOT LIMITED TO, FILTER SOCKS, SILT FENCE, DIVERSION BEAMS, SEDIMENT TRAPS AS MORE AREAS BECOME DISTURBED THROUGHOUT CONSTRUCTION. THIS SHALL BE DONE PRIOR TO DISTURBING PREVIOUSLY UNDISTURBED LANDS.
7. ALL TRENCH AND GROUND WATER COLLECTED IS TO BE PUMPED INTO THE SEDIMENT TRAP TO BE TREATED FOR WATER QUALITY AND DEWATERING DURING CONSTRUCTION.
8. THE SOIL IS TO BE STRIPPED OF ITS TOP ORGANIC LAYER AS NECESSARY AFTER ALL SEDIMENT AND EROSION CONTROLS HAVE BEEN INSTALLED AND INSPECTED FOR PROPER OPERATION.
9. CLEARING OF THE SITE AND STRIPPING OF EXISTING TOPSOIL WILL BE PERFORMED IN A MANNER THAT DOES NOT DISTURB NEIGHBORING LAND OR PUBLIC ROADSWAYS FROM THEIR NORMAL CONDITION. DURING AND AT THE END OF EACH DAY OF TOPSOIL STRIPPING, THE DISTURBED SOIL IS TO BE TREATED WITH EPA RECOMMENDED DUST SUPPRESSANTS SO THAT DUST DOES NOT ACCUMULATE NOR HAVE THE ABILITY TO SPREAD ONTO NEIGHBORING PROPERTIES, PUBLIC ROADSWAYS, OR INTO STORM SEWER STRUCTURES DURING NORMAL WORKING HOURS.
10. ALL REUSABLE EXCAVATED EARTH IS TO BE PLACED AT A SEPARATE STOCKPILE LOCATION AS SHOWN ON THIS SWPPP, WHICH IS TO BE SURROUNDED BY SILT FENCE OR FILTER SOCK AT THE END OF THE FIRST DAY OF BUILDING OF THE STOCKPILES. IF THE STOCKPILES TO BE REMAIN UNDISTURBED FOR LONGER THAN A PERIOD OF 7 DAYS, THEN TEMPORARY SEEDING MUST BE PERFORMED ON THE STOCKPILE AS PER SPECIFICATIONS OF THE SWPPP. SILT FENCE OR FILTER SOCKS MUST BE PLACED AROUND THE PERIMETER OF THE SOIL STOCKPILE ONCE IT HAS BEEN ESTABLISHED.
11. TEMPORARY SEEDING IS TO TAKE PLACE AS PER THE SPECIFICATIONS DESCRIBED ON THE PLANS. TEMPORARY SEEDING IS TO BE PLACED IN AREAS THAT WILL REMAIN IDLE FOR LONGER THAN 7 DAYS.
12. CONSTRUCTION VEHICLES USED IN CONCRETE RELATED WORK ARE TO BE CLEANED OFF AT THE CONCRETE WASH OUT AREA AS DEPICTED ON THIS SWPPP. THIS IS TO BE PERFORMED AT THE END OF EACH DAY OF CONCRETE DEMOLITION AND AT THE END OF ENTIRE CONCRETE DEMOLITION PORTION OF PROJECT. IF THE PRIMARY CONCRETE WASH OUT AREA BECOMES TOO WASH AND DOES NOT ALLOW THE CONCRETE WASH OFF TO PROPERLY WASH OUT, THEN A NEW WASH OUT AREA SHALL BE CREATED AND USED FOR CLEANING WHILE THE OTHER WASH OUT AREA IS REPAIRED.
13. ALL EXCAVATED UTILITY TRENCHES MUST BE STABILIZED AT THE END OF EACH DAY WITH GRAVEL BACKFILL FROM THE BOTTOM OF THE TRENCH TO THE SURFACE TO PREVENT EROSION OF THE TRENCH OVERNIGHT.
14. ALL SPARE AND WASTE CONSTRUCTION MATERIALS ARE TO BE DISPOSED OF IN WASTE CONTAINERS, WHICH ARE TO BE EMPTIED PRIOR TO REACHING THEIR MAXIMUM CAPACITY. SPARE CONSTRUCTION MATERIALS MAY ALSO BE TRANSPORTED OFFSITE TO AN APPROPRIATE LOCATION DETERMINED BY THE CONTRACTOR (I.E. THE CONTRACTOR'S STORAGE YARDS/AREAS). OTHERWISE MATERIALS ARE TO BE DISPOSED OF AT AN OFFSITE CONSTRUCTION AND DEMOLITION LANDFILL AS PER OHC 3714.
15. WHEN TOXIC MATERIALS (I.E. FUELS) ARE USED TO CLEAN THE MACHINERY, THE CLEANING MUST TAKE PLACE ON THE STAGING AREA. THE STAGING AREA MUST BE EMERGENCY/BERMED AS TO ALLOW RUNOFF FROM THE STAGING AREA INTO PERMEABLE AREAS. THE TOXIC RUNOFF FROM CLEANING OF MACHINERY IS TO BE COLLECTED VIA VACUUM AND PLACED INTO BARRELS WHICH ARE TO BE DISPOSED OF OFF SITE AT A CONSTRUCTION AND DEMOLITION LANDFILL AS PER OHC 3714.

**SWP3 INSPECTIONS**

- 1. TEMPORARY BMPs ARE TO BE INSPECTED WEEKLY AND AFTER EVERY RAIN EVENT OF 0.5 INCHES WITHIN A 24 HOUR PERIOD.
2. AN INSPECTION WATER REQUEST IS TO BE SUBMITTED TO THE OEPA TO REDUCE THE AMOUNT OF MONTHLY INSPECTION IF THE SITE IS TO BE DORMANT FOR AN EXTENDED PERIOD OF TIME.
3. INSPECTIONS ARE TO BE PERFORMED BY "QUALIFIED INSPECTION PERSONNEL." INSPECTION RECORDS ARE TO BE KEPT FOR A MINIMUM 3 YEARS AFTER THE TERMINATION OF CONSTRUCTION ACTIVITIES.
4. AN INSPECTION CHECKLIST WILL BE COMPLETED AND SIGNED BY THE INSPECTOR AFTER EVERY INSPECTION.
5. NON-SEDIMENT BMPs ARE TO BE REPAIRED WITHIN 3 DAYS OF INSPECTION AND SEDIMENT PONDS ARE TO BE REPAIRED AND CLEANOUT WITHIN 10 DAYS OF INSPECTION. BMPs THAT ARE NOT MEETING THE INTENDED FUNCTION OR HAVE NOT BEEN INSTALLED ARE TO BE REINSTALLED/INSTALLED WITHIN 10 DAYS OF INSPECTION.

**ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS (PER ODNR RAINWATER & LAND DEVELOPMENT MANUAL)**

DESCRIPTION: ALTHOUGH SEDIMENT IS THE PRIMARY POLLUTANT OF CONCERN RESULTING FROM CONSTRUCTION ACTIVITY, OTHER POLLUTANTS NEED TO BE CONSIDERED AS WELL. THESE INCLUDE: PETROCHEMICALS, FUEL, OIL AND ASPHALT, AND CONSTRUCTION CHEMICALS AND MATERIALS, PAINTS, SOLVENTS, FERTILIZERS, AND PESTICIDES. THESE SUBSTANCES FROM POLLUTING RUNOFF CAN BE ACCUMULATED TO A LARGE EXTENT THROUGH "GOOD HOUSEKEEPING AND FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS FOR THEIR USE AND DISPOSAL."

CONDITION WHERE PRACTICE APPLIES: WASTES GENERATED BY CONSTRUCTION ACTIVITIES (I.E. CONSTRUCTION MATERIALS SUCH AS PAINTS, SOLVENTS, FUELS, CONCRETE, WOOD, ETC.) MUST BE STORED OR IN ACCORDANCE WITH OHC 3714 AND OHC 3714. HAZARDOUS AND TOXIC SUBSTANCES ARE USED ON VIRTUALLY ALL CONSTRUCTION-SITES. GOOD MANAGEMENT OF THESE SUBSTANCES IS ALWAYS NEEDED.

PLANNING CONSIDERATIONS: GOOD EROSION AND SEDIMENT CONTROL WILL PREVENT SOME POLLUTANTS IN ADDITION TO SEDIMENT FROM LEAVING THE SITE. HOWEVER, POLLUTANTS CARRIED IN SOLUTION OR AS SURFACE FILMS ON RUNOFF WATER WILL BE CARRIED THROUGH MOST EROSION AND SEDIMENT CONTROL PRACTICES. THESE POLLUTANTS BECOME NEARLY IMPOSSIBLE TO CONTROL ONCE CARRIED OFFSITE IN RUNOFF. ADDING TO THE PROBLEM IS THE FACT THAT CONSTRUCTION WASTES, MANY OF WHICH ARE TOXIC CHEMICALS, ARE ROUTINELY BURIED ON-SITE, DUMPED ON THE GROUND, POURED DOWN A STORM DRAIN, OR DISPOSED OF WITH CONSTRUCTION MATERIALS. SO WHILE EROSION AND SEDIMENT CONTROL PRACTICES ARE IMPORTANT FOR CONTROLLING OTHER POLLUTANTS, ADDITIONAL PREVENTATIVE MEASURES ARE NEEDED.

REDUCING POLLUTANTS OTHER THAN SEDIMENTS DEPENDS HEAVILY ON CONSTRUCTION PERSONNEL AND HOW THEY CARRY OUT THEIR OPERATIONS. TO HELP FACILITATE THIS, PLANS SHOULD CONTAIN STANDARD NOTES CLEARLY STATING REQUIREMENTS TO CONTRACTORS. IT MAY BE APPROPRIATE TO INCLUDE REQUIREMENTS FOR SPECIFIC PREPARATION FOR HAZARDOUS MATERIALS STORAGE, HANDLING AND DISPOSAL.

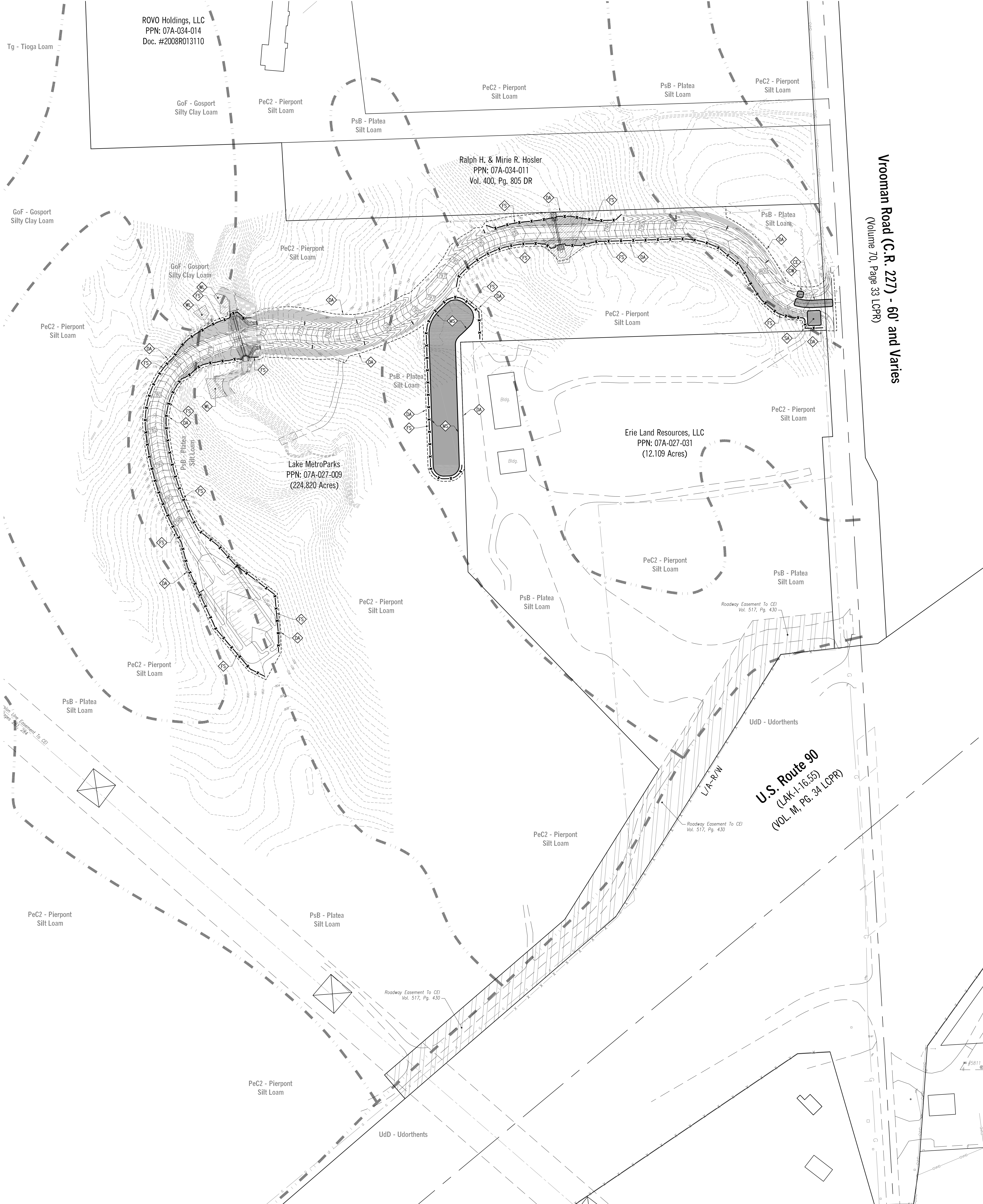
REQUIREMENTS: EDUCATE CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, ABOUT THEM AND OF THE FOLLOWING GENERAL GUIDELINES: DISPOSAL AND HANDLING OF HAZARDOUS AND OTHER CONSTRUCTION WASTE

- DO:
- PREVENT SPILLS
- USE PRODUCTS UP
- FOLLOW LABEL DIRECTIONS FOR DISPOSAL
- REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
- RECYCLE WASTES WHENEVER POSSIBLE

- DO NOT:
- DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
- DON'T POUR DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
- DON'T BURY CHEMICALS OR CONTAINERS
- DON'T BURN CHEMICALS OR CONTAINERS
- DON'T MIX CHEMICALS TOGETHER

- 2. WASTE DISPOSAL CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, SANITARY GARBAGE, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS TO BE USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIALS SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH OHC 3714 AT AN APPROVED OHIO EPA CD&D LANDFILL.
3. NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE. BY EXCEPTION, CLEAN FILL (BRICKS, HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY THAT DOES NOT ENDORSE UPON NATURAL WETLANDS, STREAMS OR OTHER FLOODPLAINS. FILLING OF STREAM SIDE AREAS IS FILL MAY NOT RESULT IN THE CONTAMINATION OF WATERS OF THE STATE, UNLESS PROHIBITED BY LOCAL ORDINANCE OR ZONING.
4. CONSTRUCTION AND DEMOLITION DEBRIS (CD&D) DISPOSAL: CD&D WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH OHC 3714 AT AN APPROVED OHIO EPA CD&D LANDFILL. CD&D WASTE IS DEFINED AS ALL MATERIALS ATTACHED TO A STRUCTURE, WHICH IS BEING DEMOLISHED (FOR MATERIALS CONTAINING ASBESTOS SEE ITEM 12).
5. HANDLING CONSTRUCTION CHEMICALS: MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION MATERIALS MUST BE MADE UNDER THE FOLLOWING PREVENTION CONTROL AND CONTINGENCIES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVEGROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVEGROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. SOILS THAT HAVE BEEN CONTAMINATED MUST BE DISPOSED OF ACCORDANCE WITH ITEM 8. CONTAMINATED SOILS.
6. HAZARDOUS MATERIALS SHALL BE STORED IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND CONTINGENCIES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVEGROUND TANK OF 660 GALLONS OR MORE, ACCUMULATIVE ABOVEGROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. SOILS THAT HAVE BEEN CONTAMINATED MUST BE DISPOSED OF ACCORDANCE WITH ITEM 8. CONTAMINATED SOILS.
7. CONCRETE WASH WATER/WASH OUTS: CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED ON THE LOT AWAY FROM ANY WATER CONVEYANCES.
8. CONTAMINATED SOILS: IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LANDFILL). PLEASE AWARE THAT STORM WATER RUNOFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES. IN THE EVENT THERE ARE LARGE EXTENSIVE AREAS OF CONTAMINATED SOILS ADDITIONAL MEASURES ABOVE AND BEYOND THE CONDITIONS OF OHIO EPA'S GENERAL CONSTRUCTION STORM WATER PERMIT WILL BE REQUIRED. DEPENDING ON THE EXTENT OF CONTAMINATION, ADDITIONAL TREATMENT AND/OR COLLECTION AND DISPOSAL MAY BE REQUIRED. ALL STORM WATER DISCHARGES ASSOCIATED WITH THE CONTAMINATED SOILS MUST BE AUTHORIZED UNDER AN ALTERNATE NPDES NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT.
9. SPILL REPORTING REQUIREMENTS: SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST, KITTY LITTER OR OTHER ABSORBENT MATERIAL AND DISPOSED WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378). SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO OHIO EPA (1-800-282-9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE. ALL SPILLS, WHICH RESULT IN CONTACT WITH WATERS OF THE STATE, MUST BE REPORTED TO OHIO EPA'S HOTLINE.
10. OPEN BURNING: NO MATERIALS MAY BE BURNED WHICH CONTAIN RUBBER, GRASS, ASPHALT OR PETROLEUM PRODUCTS SUCH AS TIRES, CARS, AUTO PARTS, PLASTICS OR PLASTIC COATED WIRE. (SEE OAC 3745-19) OPEN BURNING IS NOT ALLOWED IN RESTRICTED AREAS. RESTRICTED AREAS ARE DEFINED AS: 1) WITHIN CORPORATION LIMITS; 2) WITHIN 1000 FEET OUTSIDE A MUNICIPAL CORPORATION HAVING A POPULATION OF 1000 TO 10,000; AND 3) A ONE MILE ZONE OUTSIDE OF A CORPORATION OF 10,000 OR MORE. OUTSIDE A RESTRICTED AREA, NO OPEN BURNING CAN TAKE PLACE WITHIN A 1000 FEET OF AN INHABITED BUILDING LOCATED OFF THE PROPERTY WHERE THE FIRE IS SET. OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR THE FOLLOWING ACTIVITIES: HEATING, BAR, WELDING AND ACETYLENE TORCHES, SMUDGE PITS AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING FOR WARMTH OR OUTDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR LANDSCAPE WASTES (PLANT MATERIAL), LAND-CLEARING WASTES (PLANT MATERIAL, WITH PRIOR WRITTEN PERMISSION FROM OHIO EPA), AND AGRICULTURE WASTES (WASTES GENERATED BY CROP, HORTICULTURAL, OR LIVESTOCK PRODUCTION PRACTICES. THIS INCLUDES FENCE POSTS AND SAWY LUMBER, BUT NOT BUILDINGS).

11. DUST CONTROL/SUPPRESSANTS: DUST CONTROL IS REQUIRED TO PREVENT NUISANCE CONDITIONS. DUST CONTROLS MUST BE USED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND NOT BE APPLIED IN A MANNER WHICH WOULD RESULT IN A DISCHARGE TO WATERS OF THE STATE. ISOLATION DISTANCES FROM BROOKS, CATCH BASINS, AND OTHER DRAINAGEWAYS MUST BE OBSERVED. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN PRECIPITATION IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.
12. OTHER AIR PERMITTING REQUIREMENTS: ALL CONTRACTORS AND SUB CONTRACTORS MUST BE MADE AWARE THAT CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS. ACTIVITIES INCLUDING, BUT NOT LIMITED TO MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. WILL REQUIRE SPECIFIC OHIO EPA AIR PERMITS FOR INSTALLATION AND OPERATION. THESE ACTIVITIES MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF OHIO EPA. NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED TO OHIO EPA FOR ALL COMMERCIAL SITES TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED.
13. PROCESS WASTE/LEACHATE MANAGEMENT: ALL CONTRACTORS SHALL BE MADE AWARE THAT OHIO EPA'S CONSTRUCTION GENERAL PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER. OTHER WASTE STREAMS/DISCHARGES INCLUDING BUT NOT LIMITED TO VEHICLE AND/OR EQUIPMENT WASHING, LEACHATE ASSOCIATED WITH ON-SITE WASTE DISPOSAL, CONCRETE WASH OUTS, ETC. ARE A PROCESS WASTEWATER. THEY ARE NOT AUTHORIZED FOR DISCHARGE UNDER THE GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT THERE ARE LEACHATE OUTBREAKS ASSOCIATED WITH ON-SITE DISPOSAL, MEASURES MUST BE TAKEN TO ISOLATE THIS DISCHARGE FOR COLLECTION AND PROPER DISPOSAL. INVESTIGATIVE MEASURES AND CORRECTIVE ACTIONS MUST BE IMPLEMENTED TO IDENTIFY AND ELIMINATE THE SOURCE OF ALL LEACHATE OUTBREAKS.
14. TRENCH AND GROUND WATER CONTROLS: NO SEDIMENT LADEN OR TURBID DISCHARGES FROM ARE PERMITTED TO DISCHARGE TO WATER RESOURCES OR WETLANDS. TRENCH OR GROUND WATER CONTAINING SEDIMENT MUST PASS THROUGH A SEDIMENT SETTLING POND OR OTHER EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE PRIOR TO DISCHARGE. ALTERNATIVELY, SEDIMENT MAY BE REMOVED BY SETTLING IN PLACE OR BY DEWATERING INTO FILTER BAG, SUMP PIT OR EQUALLY EFFECTIVE PRACTICE. GROUND WATER DEWATERING THAT DOES NOT CONTAIN SEDIMENT OR OTHER POLLUTANTS IS NOT REQUIRED TO BE TREATED PRIOR TO DISCHARGE. ENSURE THAT THE NON-SEDIMENT LADEN GROUND WATER DOES NOT BECOME POLLUTANT LADEN BY FLOWING OVER DISTURBED SOIL OR POLLUTANT SOURCES. PERMIT TO INSTALL (PTI) REQUIREMENTS: ALL CONTRACTORS AND SUB CONTRACTORS MUST BE MADE AWARE THAT A PTI MUST BE SUBMITTED AND APPROVED BY OHIO EPA PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER LINES. THE ISSUANCE OF AN OHIO EPA CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE OHIO EPA HAS NOT APPROVED A PTI.



Professional Engineer Seal for John Urbaniak, E-8806, State of Ohio. Includes Rockaway Civil logo and Lakemetroparks logo.

Scale: 1" = 80'. North arrow pointing up. Logo for Ohio.com before you dig.

**HEMLOCK RIDGE PARK IMPROVEMENTS**  
**LAKE METROPARKS**  
5900 VROOMAN ROAD  
LEROY TOWNSHIP, OH 44077

Table with Project Name, Sheet Revision, and Project Issue columns. Includes bid and permit dates.







**DEMOLITION NOTES**

1. TBR = TO BE REMOVED
2. ETR = EXISTING TO REMAIN
3. OUPS SHALL BE CONTACTED 2 DAYS PRIOR TO ANY ON SITE EXCAVATION PERFORMED AS PART OF THIS PROJECT 1-800-362-2764.
4. THE MOST CURRENT VERSION OF OHIO'S RAINWATER AND LAND DEVELOPMENT MANUAL SHALL BE APPLICABLE TO THIS PROJECT.
5. THE CONTRACTOR SHALL CONDUCT OPERATIONS WITH A MINIMUM INTERFERENCE TO PUBLIC OR PRIVATE THROUGHFARES, MAINFAN EGRESS AND ACCESS AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ROADWAYS AND SIDEWALKS WITHOUT APPROPRIATE PERMITS.
6. CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL OF ALL STRUCTURES, PAVES, WALLS, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., IN A LOCATION APPROVED BY ALL GOVERNING AGENCIES. ALL ITEMS REMOVED SHALL BE UNDERGO TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL.
7. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL DEMOLITION RELATED PERMITS, INCLUDING AN EPA NOTICE OF INTENT, IF NECESSARY.
8. THE CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES OR DEPARTMENTS PRIOR TO REMOVAL OR SHUTOFF OR INSTALLATION OF ANY UTILITIES. THE CONTRACTOR SHALL COORDINATE WORK WITH THE UTILITY COMPANIES AS TO WHICH PORTIONS ARE TO BE PERFORMED BY THE UTILITY COMPANY.
9. CONTRACTOR IS CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS IN ADVANCE OF ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF THE UTILITIES.
10. EXISTING UTILITIES OR STRUCTURES NOT DESIGNATED FOR REMOVAL ARE TO REMAIN.
11. ALL WASTE OR DEBRIS GENERATED AS PART OF SITE DEMOLITION SHALL BE DISPOSED OF OFF SITE AS PER CURRENT GOVERNMENT REGULATIONS.
12. ALL PROJECT AREAS DESIGNATED TO BE PAVED OR BUILT UPON SHALL BE CLEARED AND GRUBBED AS PER PROJECT SPECIFICATIONS.
13. ANY FILL MATERIAL SALVAGED FROM GRADING OPERATIONS THAT CAN BE DETERMINED BY AN INDEPENDENT TESTING AGENCY TO BE SUITABLE SHALL BE USED FOR FILL MATERIAL AS APPROPRIATE.
14. ALL EXISTING LANDSCAPING WITHIN THE PROJECT LIMITS SHALL BE REMOVED, EXCEPT AS SHOWN TO REMAIN. TREES BEING REMOVED SHALL HAVE THEIR STUMPS GROUNDED.
15. CONTRACTOR SHALL MAKE PROVISIONS FOR STORM WATER DURING DEMOLITION PROCESS.
16. ALL STRUCTURES, UTILITIES, ETC. NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED BY THE CONTRACTOR DURING CONSTRUCTION.
17. DEMOLITION SHALL BE PERFORMED WITH CARE AND DUE DILIGENCE AS TO NOT DISRUPT THE OPERATION OF EXISTING UTILITY SERVICES TO REMAIN. ANY UTILITY DISCOVERED DURING DEMOLITION OR CONSTRUCTION, WHICH IS NOT SHOWN ON THE PLANS, SHALL BE REPORTED TO THE DESIGN ENGINEER FOR EVALUATION.
18. CONTRACTOR SHALL PROTECT ALL TREES AND LANDSCAPING NOT TO REMAIN.
19. ALL ITEMS NOTED TO BE SALVAGED ARE TO BE PACKAGED BY THE CONTRACTOR AND TURNED OVER TO THE OWNER FOR REUSE. COORDINATE TURNOVER WITH OWNER.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION, RELOCATION, AND MAINTENANCE OF ALL EROSION CONTROL AND SEEDMENT PRACTICES.
21. OWNER SHALL PROVIDE ABATEMENT RELATED TO ASBESTOS, LEAD CONTAINING MATERIALS, MERCURY, ETC., AS NEEDED PRIOR TO DEMOLITION.
22. EXISTING PAVEMENT TYPES SHOW ARE SURFACE CONDITIONS. DIFFERENT PAVEMENT TYPES MAY EXIST BELOW THE SURFACE. THE COST TO COMPLETELY REMOVE UP TO 12 INCHES OF ALL EXISTING PAVEMENT SECTIONS SHALL BE INCLUDED AS PART OF THE BID.
23. ALL LAWN AREAS REMOVED OR DISTURBED SHALL BE REPLACED BY SEEDING AND MULCHING IN ACCORDANCE WITH TEN 658 (DOT) SPECIFICATIONS AND SHALL BE RESEEDING AND MULCHED WHEN REQUESTED IF SATISFACTORY RE-ESTABLISHMENT OF LAWN DOES NOT OCCUR.

**ASPHALT PAVEMENT CONSTRUCTION REQUIREMENTS**

GENERAL REQUIREMENTS:  
THE FOLLOWING REQUIREMENTS APPLY TO ALL PAVEMENT IMPROVEMENTS PLACED IN THE MUNICIPALITY.

- COLD WEATHER:**
1. NO ASPHALTIC PAVEMENT COURSE AND/OR CONCRETE PAVEMENT OR CURBING SHALL BE LAID ON FROZEN PAVEMENT, BASE OR SUBBASE.
  2. SURFACE TEMPERATURES FOR ASPHALT PAVEMENT PLACEMENT SHALL BE 40 DEGREES FAHRENHEIT FOR THICKNESS GREATER THAN 1.5 INCHES AND 50 DEGREES FAHRENHEIT FOR SURFACE COURSES LESS THAN 1.5 INCHES. THE AIR TEMPERATURE SHOULD NOT BE LESS THAN 40 DEGREES FAHRENHEIT FOR ASPHALT PLACEMENT.
  3. AMBIENT TEMPERATURE SHALL BE 35 DEGREE FAHRENHEIT AND RISING FOR CONCRETE PLACEMENT. WINTER PROTECTION SHALL BE IN EFFECT WHEN TEMPERATURES FALL BELOW 40 DEGREES FAHRENHEIT FOR A PERIOD OF 3 SUCCESSIVE DAYS. PROTECTION CONSISTS OF INSULATION AND BLANKETS.

- EARTHWORK:**
4. ALL FILLED AREAS, EXCLUDING TRENCHES WITHIN RIGHT-OF-WAY AREAS, SHALL BE COMPACTED IN ACCORDANCE WITH ODOT ITEM 203. IN ADDITION, FOR ANY FILL IN EXCESS OF TWO (2) FEET, AN APPROVED TESTING COMPANY IN ACCORDANCE WITH ODOT ITEM 203 SHALL PERFORM NUCLEAR COMPACTION TESTS.

- ASPHALT PAVEMENT:**
5. ALL MATERIAL MUST BE OBTAINED FROM A SOURCE APPROVED BY THE OHIO DEPARTMENT OF TRANSPORTATION. ASPHALT PAVING SHALL BE AS SHOWN ON THE TYPICAL SECTION.

- MATERIALS:**
6. AGGREGATE BASE - AGGREGATE BASE SHALL BE THE REQUIRED THICKNESS ACCORDING TO THE ATTACHED DETAILS AND IN ACCORDANCE TO ODOT ITEM 304. AGGREGATE BASE SHALL BE COMPACTED TO 95% MAXIMUM DENSITY.
  7. SURFACE ASPHALT CONCRETE - SURFACE ASPHALT CONCRETE SHALL BE AS PER THE ATTACHED DETAILS. THE SURFACE COURSE SHALL BE FINISHED 1/4 INCH ABOVE THE GUTTER AND ALL CASTINGS IN ROADWAY.
  8. INTERMEDIATE ASPHALT CONCRETE - INTERMEDIATE ASPHALT CONCRETE SHALL BE AS PER THE ATTACHED DETAILS.
  9. BITUMINOUS AGGREGATE BASE - BITUMINOUS AGGREGATE BASE SHALL BE THE REQUIRED THICKNESS ACCORDING TO THE ATTACHED DETAILS AND IN ACCORDANCE TO ODOT ITEM 301.
  10. JOINT SEALER - THE JOINT BETWEEN THE CONCRETE CURBS AND PAVEMENT SURFACE SHALL BE SEALED WITH A FOUR (4) INCH WIDE APPLICATION OF RUBBERIZED JOINT SEALER OVERLAPPING THE CURB 1/2 INCH. THE SEAL SHALL BE LIGHTLY APPLIED IN A STRAIGHT LINE, SQUEEGEE AND LIGHTLY COVERED WITH SAND. THIS IS ALSO TO BE APPLIED TO THE PERIMETER OF UTILITY STRUCTURES IN PAVEMENT AREAS AS WELL AS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT. THESE AREAS SHALL BE SEALED WITH A FOUR (4) INCH WIDE APPLICATION OF RUBBERIZED JOINT SEALER OVERLAPPING THE UTILITY CASTING/EXISTING PAVEMENT SURFACE BY 1/2 INCH.

- ASPHALT PAVEMENT REPAIR:**
11. ASPHALT PAVEMENT REPAIR SHALL CONFORM TO ALL ODOT REQUIREMENTS AND SPECIFICATIONS HEREIN. IN ADDITION ASPHALT PAVEMENT REPAIRS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
    - (A) SUBBASE REPAIR SHALL INCLUDE REMOVAL AND DISPOSAL OF DAMAGED AGGREGATE AND REPLACEMENT WITH COMPACTED ODOT ITEM 304 LIMESTONE. AREAS FOR REPAIR SHALL BE DETERMINED AS DIRECTED BY THE ENGINEER.
    - (B) COLD WEATHER REPAIRS: DURING ADVERSE WEATHER CONDITIONS, LOW STRENGTH MORTAR (LSM) SHALL BE USED TO FILL THE TRENCH AND A 6" CONCRETE CAP TEMPORARILY INSTALLED USING A VISQUELON BOND BREAKER.

- ABUTTING ASPHALT CONTACT:**
12. AT ANY POINT WHERE THE PROPOSED PAVEMENT MEETS EXISTING PAVEMENT, THE EXISTING PAVEMENT SHALL BE FULL DEPTH SAW CUT SHALL BE PERPENDICULAR TO CENTERLINE REMOVING APPROXIMATELY ONE (1) FOOT OR ALL DAMAGED PAVEMENT AS DIRECTED BY THE ENGINEER. AN ADDITIONAL 18" OF ADDING ASPHALT SHALL BE MILLED 1/2" PRIOR TO APPLYING THE SURFACE COURSE. ASPHALT SURFACE CONCRETE PER DETAIL SHALL BE USED TO FEATHER THE TRANSITION AND MAINTAIN POSITIVE DRAINAGE BETWEEN THE EXISTING AND PROPOSED PAVEMENT.

**TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING**

GENERAL REQUIREMENTS:  
ALL REQUIREMENTS FOR TRENCH EXCAVATION, BOTTOM PREPARATION AND BACKFILLING SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND DETAILS. NO BACKFILL MATERIAL SHALL BE FROZEN.

1. IF MATERIAL OTHER THAN ODOT ITEM 304 MATERIAL IS PROPOSED FOR USE AS TRENCH FILL WITHIN THE RIGHT-OF-WAY, A WRITTEN REQUEST MUST BE SUBMITTED TO THE MUNICIPAL ENGINEER. THE MATERIAL IS SUBJECT TO THE FOLLOWING REQUIREMENTS:
  - (A) PROCEDURES MUST BE CONDUCTED BY ALL FILL MATERIALS AND PLANNED COMPACTON METHODS SUBMITTED TO THIS OFFICE PRIOR TO ANY FILLING OPERATIONS BEING PERMITTED.
  - (B) NEW PROCEDURES MUST BE OBTAINED AS OTER AS THE SOIL MATERIALS CHANGE.
  - (C) NO PROCTOR'S FROM PREVIOUS YEAR'S PARTICULATE WILL BE ACCEPTED.
  - (D) SLAG IS NOT PERMITTED.
2. ALL CONDITIONS SHALL BE INSTALLED ON A FIRM BED FOR ITS FULL LENGTH UNLESS OTHERWISE SPECIFIED.

- TRENCH BACKFILLING:**
3. WHERE BACKFILLING IS BEING PERFORMED, THE FOLLOWING SHALL CONFORM TO THE FOLLOWING LIMITS:
    - (A) INSTALLATION UNDER PAVEMENT AND/OR WITHIN 45' ZONE OF INFLUENCE LINE OF PAVEMENT EDGE SHALL BE INSTALLED IN ACCORDANCE WITH ODOT ITEM 304 BACKFILL. THE ENTIRE TRENCH SHALL BE FILLED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES IN THICKNESS AND COMPACTED WITH MECHANICAL TAMPERS AT THE SPECIFIED MOISTURE CONTENT UNTIL DRY DENSITY IS NOT LESS THAN 98% OF THE STANDARD PROCTOR. SLAG MATERIAL IS NOT ACCEPTABLE.
    - (B) WITHIN RIGHT-OF-WAY (ROW) BUT NOT UNDER PAVEMENT, SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR. ALL SPECIFIED MOISTURE CONTENT. THE ENTIRE TRENCH SHALL BE FILLED IN LAYERS NOT TO EXCEED EIGHT (8) INCHES WITH A MECHANICAL TAMPER.

- TRENCH WIDTH:**
4. WIDTHS OF TRENCHES SHALL BE HELD TO A MINIMUM TO ACCOMMODATE THE PIPE AND APPURTENANCES. NO SLAG IS ACCEPTABLE. THE TRENCH WIDTH SHALL BE MEASURED AT THE TOP OF THE PIPE BARREL AND SHALL CONFORM TO THE FOLLOWING LIMITS:
    - (A) ALL PIPE HAVING A DIAMETER LESS THAN TWENTY-FOUR (24) INCHES SHALL HAVE A MINIMUM WIDTH OF NINE (9) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.
    - (B) ALL PIPE HAVING A DIAMETER GREATER THAN TWENTY-FOUR (24) INCHES BUT LESS THAN SIXTY-SIX (66) INCHES SHALL HAVE A MINIMUM WIDTH OF TWELVE (12) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.
    - (C) ALL PIPE HAVING A DIAMETER GREATER THAN SIXTY-SIX (66) INCHES SHALL HAVE A MINIMUM WIDTH OF FIFTEEN (15) INCHES MEASURED FROM OUTSIDE OF PIPE BARREL TO TRENCH WALL.

- TRENCH PROTECTION:**
5. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO PREVENT ANY COLLAPSE OR SETTLING OF EXCAVATION OR TRENCH WALLS THROUGHOUT THE SAFETY OF ANY PERSON ENGAGED IN THE WORK OR IN ANY WAY DAMAGE THE UNDERGROUND INSTALLATIONS OF ADJACENT UTILITIES OR PROPERTY; OR DIMINISH THE TRENCH WIDTH NECESSARY FOR THE PROPER CONSTRUCTION OF THE UNDERGROUND INSTALLATION OR OTHERWISE INURE OR DELAY THE WORK. THE TYPE AND AMOUNT OF SUCH PROTECTION, SUCH AS FRENCH BOXES, SHEETING, SHORING, OR BRACING SHALL BE CONSISTENT WITH THE DEPTH AND WIDTH OF THE EXCAVATION, THE COMPOSITION AND WATER CONTENT OF THE SOIL, THE PROXIMITY OF STRUCTURES OR OTHER UTILITIES, THE VIBRATION FROM EQUIPMENT AND THE SPOIL PLACEMENT SHALL BE IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.

- DEWATERING:**
6. IN ORDER TO REDUCE GROUND WATER SEEPAGE AND PROVIDE A STABLE TRENCH BOTTOM IT MAY BE NECESSARY TO DEWATER PRIOR TO EXCAVATION OF THE SEWER TRENCH AND/OR ABOVE TEMPORARY SUMPS.

- FOUNDATION BOTTOM:**
7. FOUNDATION MATERIAL BELOW THE PIPE AND SIX (6) INCHES OF SUBDRAINAGE SHALL BE SUITABLE MATERIAL THAT PREVENTS PIPE FROM DEFLECTION DUE TO SETTLEMENT. IF, IN THE ENGINEER'S OPINION, THE MATERIAL FORMING THE TRENCH BOTTOM IS NOT SUITABLE FOR A SOLID FOUNDATION, FURTHER DEPTH SHALL BE EXCAVATED AND THE SAME FILLED WITH MATERIAL AND THICKNESS SPECIFIED BY THE ENGINEER.

- SUBDRAINAGE MATERIAL:**
8. AFTER PREPARATION OF THE TRENCH BOTTOM, BEDDING MATERIAL SHALL BE PLACED BELOW PIPE. BEDDING MATERIAL SHALL BE #20 LIMESTONE WITH A MINIMUM THICKNESS OF SIX (6) INCHES AND SPREAD THE FULL WIDTH OF THE TRENCH BOTTOM. BEDDING MATERIAL SHALL NOT HAVE STANDING WATER AND BE FREE OF DEBRIS. ALL CONDITIONS SHALL BE INSTALLED ON A FIRM BED FOR ITS FULL LENGTH.

- PIPE PROTECTION:**
9. ALL TRENCH EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER PIPE IS PLACED. AGGREGATE MATERIAL, #57 LIMESTONE, THOROUGHLY COMPACTED AND INSTALLED AS PER ASTM D-2321 SHALL PROTECT PIPE ACCORDING TO SPECIFICATIONS HEREIN. FLEXIBLE PIPE SHALL HAVE A MINIMUM COVERAGE OF TWELVE (12) INCHES OVER OUTSIDE PIPE BARREL. RIGID PIPE SHALL HAVE A MINIMUM COVERAGE OF SIX (6) INCHES OVER OUTSIDE PIPE BARREL.

**STORM SEWER UTILITY NOTES**

- GENERAL:**
1. CONTRACTOR SHALL VERIFY ALL UTILITY CROSSING DEPTHS, SIZES, TYPES, CONDITIONS, ETC., PRIOR TO CONSTRUCTION AND SHALL NOTIFY DESIGN ENGINEER WITH ANY CONFLICTS.
  2. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING ITEMS AND MATERIALS ENCOUNTERED DURING CONSTRUCTION. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL AND STATE CODES AND REGULATIONS.
  3. CONTRACTOR SHALL COORDINATE WORK WITH ALL UTILITY AGENCIES AS NECESSARY TO INSURE PROPER INSTALLATION OF SITE UTILITIES.
  4. COORDINATE UTILITY CONNECTIONS AT THE BUILDING(S) WITH THE ARCHITECTURAL / MEP PLANS.
  5. ANY EXISTING UTILITY CONNECTIONS BEING ABANDONED SHALL BE DISCONNECTED AND/OR CAPPED PER JURISDICTION OF THE RESPECTIVE UTILITY AGENCY.
  6. ALL NEW FLEXIBLE PUBLIC SEWER PIPE 8" AND LARGER WILL HAVE TO UNDERGO DEFLECTION TESTING AS PER THE REQUIREMENTS OF THE LCOW.
  7. ALL NEW STORM SEWER AND SANITARY SEWER IMPROVEMENTS SHALL BE INSTALLED, INSPECTED, AND TESTED AS PER THE CURRENT REQUIREMENTS OF THE LCOW.
  8. CONTRACTOR IS REQUIRED TO FIELD VERIFY THE EXISTING CONDITIONS (SIZE, CONDITION, PIPE MATERIAL, INVERT ELEVATION) OF ALL SANITARY SEWER AND STORM SEWER CONNECTION POINT(S). THESE FIELD VERIFICATIONS SHALL BE PERFORMED AS EARLY AS POSSIBLE DURING THE PROJECT CONSTRUCTION PERIOD. PRIOR TO FABRICATION OF ALL PRECAST STRUCTURES, THE CONTRACTOR SHALL CONFIRM WITH THE ARCHITECT/ENGINEER THAT THE FIELD VERIFIED CONDITIONS ARE SUITABLE FOR THE DESIGN. ALL ADDITIONAL PRECAST STRUCTURE RELATED WORK DUE TO THE LACK OF VERIFICATION OF EXISTING CONDITIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
  9. ALL UNFORESEEN UNDERGROUND OR ABOVE GROUND UTILITIES OR CONDITIONS THAT ARE DISCOVERED IN THE PROJECT AREA DURING CONSTRUCTION SHALL BE REPORTED BY THE CONTRACTOR TO THE DESIGN ENGINEER IMMEDIATELY FOR EVALUATION / POSSIBLE REDESIGN. THE FIELD DATA SHALL INCLUDE MATERIAL TYPE, SIZE, CONDITION, LOCATION, DEPTH / ELEVATION, ETC.
  10. PREMIUM BACKFILL SHALL BE USED FOR STORM SEWER AND SANITARY SEWERS UNDER PAVEMENT ON PRIVATE PROPERTY.

- SIDING:**
11. ALL NEW STRUCTURES ARE TO HAVE OPEN GRATE TOPS UNLESS NOTED AS "SOLID".
  12. CONNECTIONS TO EXISTING STRUCTURES OR PIPES SHALL BE CORE DRILLED AND SHALL BE WATERTIGHT. CONTRACTOR SHALL CONFIRM INVERT ELEVATION, CONDITION, EXISTING PIPE SIZES, ETC., OF EX STRUCTURE OR PIPE PRIOR TO CORE DRILLING / MAKING CONNECTION.
  13. ALL EXISTING STORM SEWERS BEING REUSED OR CONNECTED TO SHALL BE LETTED, CLEANED, AND HAVE CCTV INSPECTION PERFORMED PRIOR TO REUSE. ALL VIDEOS FROM INSPECTION SHALL BE PROVIDED TO THE ENGINEER.
  14. CLEANOUTS SHALL BE INSTALLED AT THE UPSTREAM END OF ALL BLDG STORM CONNECTIONS 5' OUTSIDE THE FACE OF THE BLDG OR AS SHOWN. PROVIDE TRAFFIC BEARING CAPS WHEN IN PAVED AREAS INTENDED FOR VEHICULAR USE.

**STORM PIPE MATERIAL DATA**

1. PP = DUAL WALLED POLYPROPYLENE PIPE PER ASTM F2764 (12-60 INCH) AND WATERFIT JOINTS PER ASTM 3212. USE A25 SDR SMOOTH INTERIOR AND APPROVED EQUAL.
2. HDPE = HIGH DENSITY POLYETHYLENE SEWER PIPE, WATER TIGHT BELL AND SPIGOT TYPE WITH RUBBER GASKETS AND SMOOTH INTERIOR. PER THE LATEST AASHTO M-294 SPECIFICATION.
3. PVC = SDR 35 POLYVINYL CHLORIDE PIPE PER ASTM D3034 WITH PREMIUM JOINTS PER ASTM F 477 ASTM D 3212.

**SITE PREPARATION AND EARTHWORK NOTES**

- EARTHWORK NOTES:**
1. THE RECOMMENDATIONS INCLUDED IN THIS REPORT ARE NOT BASED ON TEST BORINGS OR ANY KNOWN KNOWLEDGE OF SUBSURFACE CONDITIONS AT THE SITE. ANY FUTURE PROJECT DEVELOPMENT'S EXTENT AND DESIGN ARE UNKNOWN. THE INCLUDED RECOMMENDATIONS MUST BE CONSIDERED PRELIMINARY IN NATURE. ALL RECOMMENDATIONS HAVE BEEN MAINTAINED ON A HIGHLY GENERALIZED PLAN AND ARE NOT TO BE CONSIDERED AS SPECIFIC AND/OR FINALIZED. A DETAILED SITE INVESTIGATION INCLUDING TEST BORINGS, LABORATORY TESTS AND ANALYSIS WILL BE REQUIRED PRIOR TO ANY FINAL DESIGN FOR FUTURE IMPROVEMENTS.

- SITE PREPARATION:**
2. PRECAUTIONS SHOULD BE EXERCISED DURING THE REMOVAL OF EXISTING BUILDING STRUCTURES AT THE PROPOSED SITE. ALL EXISTING FOUNDATIONS, FLOOR SLABS, BASEMENTS, ETC., SHOULD BE COMPLETELY REMOVED FROM THE SITE.
  3. EXCAVATIONS SHOULD BE CLEANED OF ALL FOREIGN DEBRIS AND THEN BACKFILLED WITH COMPACTED ENGINEERED FILL MATERIALS TO LESSEN POTENTIAL SETTLEMENT THAT MAY OCCUR.
  4. FOLLOWING THE SITE CLEARING, STRIPPING AND UNDERCUTTING, AND PRIOR TO PLACING SUITABLE FILL, THE EXPOSED SUBSURFACES SHOULD BE PROPELLOLED WITH A LOADED 20-TON TO 30-TON TAMPER-ALEX DUMP TRUCK UNTIL THE EXPOSED AREAS OF A RELATIVELY UNDYING SURFACE. AREAS OF EXCESSIVE YIELDING SHOULD BE EXCAVATED AND BACKFILLED WITH COMPACTED SUITABLE FILL AND/OR THE UNSTABLE SOILS CAN BE STABILIZED BY CORKING THE EXPOSED BEARING SURFACE WITH CRUSHED LIMESTONE OR SIMILAR COURSE AGGREGATE. AFTER THE EXISTING SUBGRADE MATERIALS ARE EXCAVATED PROPER CONTROL OF SUBGRADE COMPACTION AND THE PLACEMENT AND COMPACTION OF NEW FILL MATERIALS SHOULD BE PERFORMED.
  5. IF IT IS RECOMMENDED THAT THE SITE PREPARATION, PROPELLOLING AND EARTHWORK ACTIVITIES SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER, WHICH CAN SIGNIFICANTLY REDUCE THE REQUIRED EXTENT OF SOIL STABILIZATION, DRAGGING AND SURFACE REPAIRS.
  6. DURING SITE PREPARATION, BURN PITS, TRASH PITS OR OTHER UNSUITABLE DISPOSAL AREAS MAY BE ENCOUNTERED. IF SUCH MATERIALS ENCOUNTERED DURING SITE WORK OR CONSTRUCTION SHOULD BE COMPLETELY EXCAVATED AND REMOVED FROM THE SITE.

- SUITABLE FILL:**
7. SUITABLE FILL MATERIALS SHOULD CONSIST OF NON-EXPANSIVE MATERIALS, POTENTIALLY EXPANSIVE MATERIALS SHOULD NOT BE USED AS SUITABLE FILL MATERIAL. MATERIALS SELECTED FOR USE AS SUITABLE FILL SHOULD NOT CONTAIN ORGANIC MATTER, WASTE CONSTRUCTION DEBRIS, OR OTHER DELETERIOUS MATERIALS. FILL MATERIALS SHOULD GENERALLY HAVE A STANDARD PROCTOR MAXIMUM DRY DENSITY GREATER THAN 110 POUNDS PER CUBIC FOOT (PCF), AN ATTERBURG LIQUID LIMIT LESS THAN 40, A PLASTICITY INDEX OF LESS THAN 20, AND A MAXIMUM PARTICLE SIZE OF 2 INCHES OR LESS.
  8. REPRESENTATIVE SAMPLES OF THE PROPOSED FILL MATERIAL SHOULD BE COLLECTED AT LEAST ONE WEEK PRIOR TO THE START OF THE FILLING OPERATIONS. THE SAMPLES SHOULD BE TESTED TO DETERMINE THE MAXIMUM DRY DENSITY, MOISTURE CONTENT, PARTICLE SIZE DISTRIBUTION AND PLASTICITY CHARACTERISTICS. THESE TESTS ARE NEEDED TO DETERMINE IF THE MATERIAL IS ACCEPTABLE AS SUITABLE FILL AND FOR QUALITY CONTROL DURING THE COMPACTION PROCESS.
  9. THE FILL SHOULD BE PLACED IN LAYERS OF NOT MORE THAN 8 INCHES IN THICKNESS, WITH EACH LAYER BEING COMPACTED TO A MINIMUM DENSITY OF 98 PERCENT OF THE MAXIMUM DRY DENSITY AND WITH +/- 2% OF THE OPTIMUM MOISTURE CONTENT, AS DETERMINED BY THE STANDARD PROCTOR METHOD ASTM D-1557. MOISTURE CONTENT OF THE SUITABLE FILL MATERIALS MAY BE NECESSARY FOR COMPACTION.
  10. SUITABLE FILL OPERATIONS WILL REQUIRE MONITORING/TESTING BY A GEOTECHNICAL CONSULTANT TO ENSURE PROPER COMPACTION REQUIREMENTS ARE MET.

- GROUNDWATER CONTROL AND DRAINAGE:**
11. WATER SEEPAGE MAY BE ENCOUNTERED DURING FOUNDATION EXCAVATION AND DEMOLITION. ACCORDINGLY, A GRAVITY DRAINAGE SYSTEM, SUMP PUMP OR OTHER CONVENTIONAL DRAINAGE PROCEDURE AS DEEMED NECESSARY BY THE FIELD CONDITIONS MAY BE NECESSARY. EVERY EFFORT SHOULD BE MADE TO KEEP THE EXCAVATIONS DRY. IF WATER IS ENCOUNTERED.
  12. POSITIVE SITE DRAINAGE SHOULD BE PROVIDED TO REDUCE INFILTRATION OF SURFACE WATER AROUND THE PERIMETER OF THE FILL AREA. OVERLAP, SITE AREA DRAINAGE, IS TO BE ARRANGED IN A MANNER SUCH THAT THE POSSIBILITY OF WATER INFILTRATING OVER THE STRUCTURAL FILL IS PREVENTED.

- EXCAVATIONS:**
13. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND CONSTRUCTING STABLE, TEMPORARY EXCAVATIONS AND SHOULD SHORE, SLOPE, OR BENCH THE SIDES OF THE EXCAVATIONS AS REQUIRED TO MAINTAIN STABILITY OF BOTH THE EXCAVATION SIDES AND BOTTOM. THE CONTRACTOR SHOULD EVALUATE THE SOIL EXPOSED IN THE EXCAVATIONS AS PART OF THE CONTRACTOR'S SAFETY PROCEDURES. IN NO CASE SHOULD SOIL TYPE, HEIGHT, SLOPE, INCLINATION, OR EXCAVATION DEPTH INCLUDING UTILITY TRENCH EXCAVATION DEPTH, BE SPECIFIED IN LOCAL, STATE AND FEDERAL SAFETY REGULATIONS. MATERIALS REMOVED FROM THE EXCAVATION SHOULD NOT BE STOCKPILED IMMEDIATELY ADJACENT TO THE EXCAVATION, INASMUCH AS THIS LOAD MAY CAUSE A SUDDEN COLLAPSE OF THE EXCAVATION.

- WEATHER CONSIDERATIONS:**
14. THE SOILS COULD BE SENSITIVE TO DISTURBANCES CAUSED BY CONSTRUCTION TRAFFIC AND TO CHANGES IN MOISTURE CONTENT DURING WET WEATHER PERIODS. INCREASES IN THE MOISTURE CONTENT OF THE SOIL CAN CAUSE SIGNIFICANT REDUCTION IN THE SOIL STRENGTH AND SUPPORT CAPABILITIES. CARE SHOULD BE EXERCISED DURING THE GRADING OPERATIONS AT THE SITE. TRAFFIC OF HEAVY EQUIPMENT, INCLUDING HEAVY COMPACTION EQUIPMENT, MAY VERY WELL CREATE PUMPING AND A GENERAL DETERIORATION OF THE SOILS IN THE PRESENCE OF WATER. THEREFORE, THE GRADING SHOULD, IF AT ALL POSSIBLE, BE PERFORMED DURING A DRY SEASON. A LAYER OF CRUSHED STONE MAY BE REQUIRED TO ALLOW FOR PUMPING OF WATER DURING CONSTRUCTION TRAFFIC OVER THE SITE DURING THE RAINY SEASON. THE CONTRACTOR SHOULD MAINTAIN POSITIVE SITE DRAINAGE AND, IF WET PUMPING CONDITIONS OCCUR, THE CONTRACTOR WILL BE RESPONSIBLE TO OVER EXCAVATE THE WET SOILS AND REPLACE THEM WITH A PROPERLY COMPACTED ENGINEERED FILL.

**NOTES**

APPLICABLE: Provide Full Height Headwalls for skewed and non-skewed culverts having a diameter of pipe of 42" to 84" inclusive. Use Type "A" when the skew angle is 10 degrees or less and Type "B" when the skew angle is over 10 degrees.

DESIGN DATA: The following design data is assumed:  
 Internal depth of friction of Backfill Soil,  $\mu = 30^\circ$   
 Total unit weight of Backfill Soil = 120 pcf  
 Internal angle of friction (Backfill, Foundation Soil),  $\phi = 28^\circ$   
 Un-saturated Shear Strength (Cohesive), Foundation Soil,  $c_u = 800$  pcf  
 Unit Weight of Concrete = 150 pcf  
 Slope of Backfill = 2:1  
 Concrete Class GC1 - Compressive Strength = 4000 psi  
 Reinforcing Steel = Grade 60 Minimum Yield Strength  
 60,000 psi (All Reinforcing Steel be Epoxy Coated.)

Based on the assumed design data, the headwalls for the standard design achieve factored bearing resistances that are greater than their respective factored design pressures. If a backfill material with a higher internal angle of friction or a lighter total unit weight is used or if a foundation soil with a higher graded internal angle of friction or a higher undrained shear strength is encountered, then the stability of the wall is satisfactory.

DETAILS AND QUANTITIES: Are shown for circular sections only. When used with reinforced elliptical concrete pipe or corrugated metal pipe grades, adjust dimensions and quantities to conform to those listed for the nearest size circular pipe. Apply the dimensions established by vertical diameter to span. Round all calculated dimensions established by horizontal diameter to the nearest 1/4".

HEADWALL LOCATION: Determine by intersection of the embankment slope of the back of the headwall at point "X", provide a slope adjacent to the headwall.

PAVEMENT: Item 602 Concrete Masonry includes reinforcement.

DIMENSIONS		QUANTITIES ONE HEADWALL		
DIAMETER	"H"	"L"	CONCRETE CU. YDS.	REINFORCING STEEL LBS.
12"	4'-11"	5'-8"	1.2	30
15"	5'-2"	7'-0"	1.7	41
18"	5'-5"	8'-4"	2.2	57
21"	5'-8"	9'-8"	2.8	62
24"	5'-11"	11'-0"	3.3	69
30"	6'-5"	13'-8"	4.7	92
36"	7'-0"	16'-4"	6.5	105

**FULL CONCRETE HEADWALL DETAIL**

CHAMFER ALL EXPOSED CORNERS 3/4" OF AN INCH.

NOTE: WHERE SOIL BEARING CAPACITY IS LESS THAN 2800 P.S.F., INCREASE WIDTH OF BASE.

**LOCATION AND GRADING PLAN FOR SKEWED PIPE CULVERT - TYPE B**

PIPE DIA. D	8' x 0"					8' x 15'					8' x 45'					PIPE DIA. D										
	H	a	b	a	t <sub>8</sub>	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	h <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>		h <sub>1</sub>	h <sub>2</sub>								
42"	5'-4"	3'-3"	7'-6"	2'-6"	1'-6"	#5	3'-7"	3'-6"	7.2	7.1	6.8	9'-0"	4'-6"	4'-7"	3'-7"	7.6	7.5	6.6	7'-10"	5'-0"	3'-7"	3'-6"	8.0	8.9	7.9	42"
48"	5'-10"	3'-6"	7'-6"	2'-9"	1'-6"	#5	4'-4"	3'-8"	8.4	8.6	8.6	10'-0"	5'-4"	4'-8"	3'-10"	8.4	8.2	8.3	8'-0"	5'-0"	3'-10"	4'-0"	10.0	10.8	9.0	48"
54"	6'-5"	3'-9"	7'-6"	3'-0"	1'-6"	#5	5'-2"	4'-2"	10.8	10.5	10.0	11'-4"	6'-3"	5'-0"	4'-2"	11.3	11.0	9.7	9'-0"	7'-0"	4'-2"	4'-2"	11.2	12.0	11.6	54"
60"	7'-0"	4'-0"	7'-6"	3'-3"	1'-6"	#5	6'-0"	4'-5"	12.1	12.1	11.0	12'-0"	7'-0"	5'-4"	4'-6"	12.4	12.1	11.0	10'-0"	8'-0"	4'-6"	4'-6"	12.2	13.1	13.0	60"
72"	8'-2"	4'-6"	7'-6"	3'-9"	1'-6"	#7	7'-5"	5'-1"	17.5	17.1	14.0	18'-0"	8'-0"	6'-0"	5'-1"	18.6	18.0	14.0	13'-0"	10'-0"	5'-1"	5'-1"	18.6	20.6	20.0	72"
84"	9'-4"	5'-0"	7'-6"	4'-3"	1'-6"	#8	9'-0"	5'-4"	24.6	24.0	21.0	21'-0"	10'-0"	7'-0"	5'-9"	25.7	25.1	21.0	14'-0"	11'-0"	5'-9"	5'-9"	25.1	28.0	28.3	84"

STATE OF OHIO  
 JOHN URBANICK  
 E-8506  
 PROFESSIONAL ENGINEER

**ROCKAWAY CIVIL**  
 Rockaway Civil LLC  
 10391 Sperry Road Kirtland Ohio 44024  
 440.635.8182 www.rockawaycivil.com

**LAKE METROPARKS**

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5900 VROOMAN ROAD  
 LEROY TOWNSHIP, OH 44077

Project Name

Sheet Revision

2 BID 5-31-2024  
 1 PERMIT 1-22-2024

Project Issue

**DETAILS**  
 Sheet Name

**C300**  
 RC Project # 23-017