

STORM & SANITARY SEWER
SHEPHERDSVILLE SEWER DEPARTMENT
485 OLD FORD ROAD
SHEPHERDSVILLE, KENTUCKY 40165
CONTACT: ARTHUR JONES
PHONE: 502-543-7339
E-MAIL: ajones@shepcity.com

KYTC
KENTUCKY TRANSPORTATION CABINET
8310 WESTPORT ROAD
LOUISVILLE, KENTUCKY 40242
CONTACT: ROBERT ROGERS
PHONE: 502-210-5462
E-MAIL: RobertL.Rogers@ky.gov

NATURAL GAS
LOUISVILLE GAS AND ELECTRIC
220 WEST MAIN STREET
LOUISVILLE, KENTUCKY 40202
CONTACT: ROBERT DAUGHERTY
PHONE: 502-364-8382
E-MAIL: robert.dougherty@ge-ku.com

ELECTRIC
LOUISVILLE GAS AND ELECTRIC
820 WEST BROADWAY STREET
LOUISVILLE, KENTUCKY 40202
CONTACT: KEVIN COATNEY
PHONE: 502-364-8384
E-MAIL: kevin.coatney@ge-ku.com

FIBER OPTIC
AT&T LEGACY
7555 E. PLEASANT VALLEY ROAD
INDEPENDENCE, OHIO 44131
CONTACT: MIKE DIEDERICH
PHONE: 216-750-0135
E-MAIL: md4145@att.com

WATER
LOUISVILLE WATER COMPANY
550 SOUTH 3RD STREET
LOUISVILLE, KENTUCKY 40202
CONTACT: DANIEL TEGENE
PHONE: 502-569-3649
E-MAIL: dtegene@lwcky.com

FOR INFORMATION ONLY



BERNHHEIM INTERCEPTOR

CITY OF SHEPHERDSVILLE

SANITARY SEWER

CONSTRUCTION PLANS

Owner/Developer: City of Shepherdsville

Address: 634 Conestoga Parkway
Shepherdsville, Kentucky 40165

LEGEND

EXISTING

—

PROPERTY LINE

—

ADJACENT PROPERTY LINE

— Z —

Z PROPERTY LINE

⊠

PROPERTY CORNER (R/W MARKER)

●

PROPERTY CORNER (IRON PIN)

●

PROPERTY CORNER (PIPE)

○ P.K. Nail

PROPERTY CORNER (P.K. NAIL)

⊕

BENCHMARK

— -610—

MAJOR CONTOUR

— -611—

MINOR CONTOUR

— — — —

TOP OF BANK

— — — —

TOE OF SLOPE

— — — —

STREAM

— — — —

LAKE

— — — —

ROADWAY CENTERLINE

— — — —

ROAD GRAVEL

== == ==

SANITARY SEWER

— — — —

SANITARY SEWER EASEMENT

⊙

SAN. SEWER MANHOLE

⊕

SAN. SEWER CLEANOUT

⌋

HEADWALL

— — — —

CULVERT

□

STORM CATCH BASIN

— — 8"W —

WATER LINE

⊕

FIRE HYDRANT

⊗

WATER VALVE

— — G —

GAS LINE

⊠

GAS METER

— — FIBER —

FIBER

— — UGF —

UNDERGROUND FIBER

— E —

ELECTRIC LINE

— OHE —

OVERHEAD ELECTRIC LINE

⊙

ELECTRIC UTILITY POLE

⊙

ELECTRIC GUY WIRE ANCHOR

— X — X —

FENCE

— X — X —

FENCE (CHAINLINK)

⊥

SIGN

●

BOLLARD

⊗

SOUNDING TO ROCK OR REFUSAL (PROFILE)

▨

EXISTING WETLAND

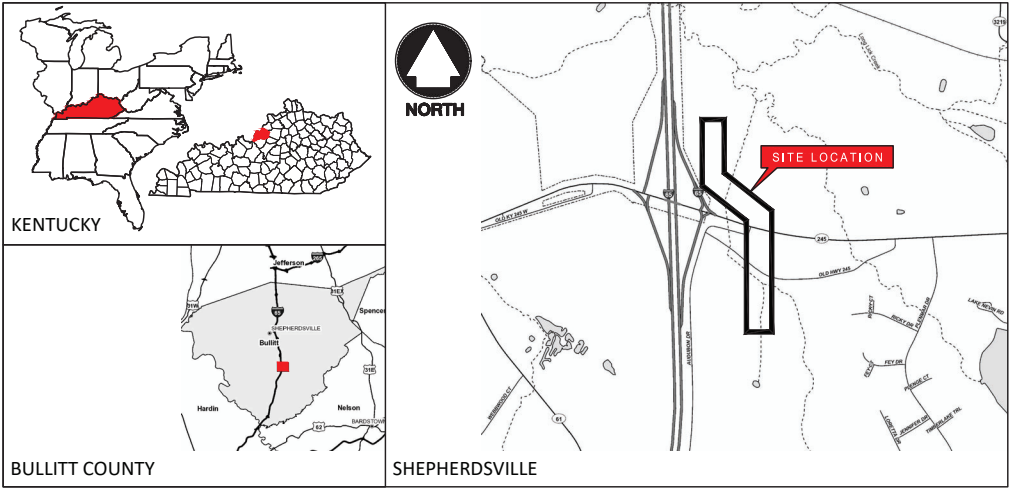
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EXISTING RIPRAP



BEFORE YOU DIG

THE CONTRACTOR IS INSTRUCTED TO CALL 1-800-752-6007 TO REACH KY 811, THE ONE-CALL SYSTEM FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES. THE CALL IS TO BE PLACED A MINIMUM OF TWO (2) AND NO MORE THAN TEN (10) BUSINESS DAYS PRIOR TO EXCAVATION. THE CONTRACTOR SHOULD BE AWARE THAT OWNERS OF UNDERGROUND FACILITIES ARE NOT REQUIRED TO BE MEMBERS OF THE KY 811 ONE-CALL BEFORE-U-DIG (BUD) SERVICE. THE CONTRACTOR MUST COORDINATE EXCAVATION WITH THE UTILITY OWNERS, INCLUDING THOSE WHOM DO NOT SUBSCRIBE TO KY 811. IT MAY BE NECESSARY FOR THE CONTRACTOR TO CONTACT THE COUNTY COURT CLERK TO DETERMINE WHAT UTILITY COMPANIES HAVE FACILITIES IN THE AREA.



LAYOUT MAP
NO SCALE

SHEET INDEX	
SHEET NO.	DESCRIPTION
C0.0	COVER SHEET
C1.0	GENERAL NOTES & SITE INDEX
C2.0 – C2.4	PLAN & PROFILE SHEETS
C3.0	SEPTIC TANK DEMOLITION PLAN
C4.0 – C4.2	STREAM BANK/WETLAND RESTORATION PLAN
C5.0 – C5.1	MISC. DETAILS

Engineering
Planning

Mason
Meredith

Bernheim Interceptor

City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

REV #	DATE	DESCRIPTION
1	08/11/2020	ELIMINATE MH SST1
2	10/10/2020	SANITARY LINE B
3	3/9/2021	MH SSO SHFT

Bid Set

Job No: 20800.000

Date: March 3, 2021

Scale: NONE

Drawn By: RTR

Checked By: MTM

Drawing Title:
Shepherdsville
Bernheim Interceptor

Cover
Sheet

Drawing No:
C0.0

GENERAL NOTES

- A. CONTRACTOR SHALL SUBMIT TO THE OWNER IN WRITING THE WORK SCHEDULE INCLUDING BUT NOT LIMITED TO: CONSTRUCTION PHASING, ACCESS TO FACILITIES, CLOSURE OF ROADWAYS/LANES, AND STAGING.
- B. CONTRACTOR SHALL KEEP ALL SURROUNDING ROADWAYS / DRIVE LANES AND DRAINAGE SYSTEMS FREE FROM DIRT, MUD AND CONSTRUCTION DEBRIS AT ALL TIMES AND SHALL PROVIDE ALL NECESSARY EROSION PREVENTION AND SEDIMENT CONTROL (EPSO) BMP's. ALL BMP'S SHALL BE INSTALLED PER LOCAL AND STATE STANDARDS PRIOR TO ANY SITE CONSTRUCTION ACTIVITY.
- C. CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING ALL PHASES OF CONSTRUCTION.
- D. ANY CONTRACTOR SUBMITTING A BID FOR THIS PROJECT MUST VISIT SITE AND VERIFY EXISTING CONDITIONS PRIOR TO BID SUBMITTAL. ALL DISCOVERED DISCREPANCIES OR OMISSION OF COST-VALUES SCOPE ITEMS ARE TO BE REPORTED TO THE OWNER'S ENGINEER PRIOR TO SUBMITTING BID. SUBMISSION OF BID SHALL INDICATE THAT THE CONTRACTOR ACCEPTS THE ACTUAL SITE CONDITIONS AS MATCHING THE EXISTING CONDITIONS AND DEFINED SCOPE OF WORK AS DEPICTED ON THE CONSTRUCTION PLANS.
- E. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY ITEMS DAMAGED DURING CONSTRUCTION.
- F. CONTRACTOR SHALL PROTECT EXISTING PLANT MATERIAL NOT DESIGNATED FOR REMOVAL OR RELOCATION FROM DAMAGE DURING CONSTRUCTION.
- G. LIMITS OF CONSTRUCTION AND CONTRACTOR STAGING AREAS SHALL BE LIMITED TO AREAS DESIGNATED BY THE OWNER.
- H. CONTRACTOR SHALL MINIMIZE NUMBER OF TEMPORARY LOW WATER CROSSINGS BY PLACING THEM ONLY WHERE NEEDED. SEE DETAIL 4, SHEET C4.2.
- I. DIMENSIONS PROVIDED HEREIN ARE TO FACILITATE THE BIDDING PROCESS AND ARE NOT INTENDED TO BE SUFFICIENT DETAIL FOR CONSTRUCTION LAYOUT. AUTOCAD FILE SHALL BE PROVIDED TO THE SELECTED CONTRACTOR FOR LAYOUT PURPOSES.
- J. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, MATERIAL, EQUIPMENT, TOOLS, AND SERVICES REQUIRED TO COMPLETE CONSTRUCTION AND MATERIAL TESTING FOR THE WORK. ALL WORK SHALL BE PERFORMED IN A SAFE AND REASONABLE WORKING MANNER IN ACCORDANCE WITH THE BEST PRACTICES AND PROCEDURES.
- K. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL ORDINANCES, REGULATIONS AND REQUIREMENTS NECESSARY TO COMPLETE THE WORK; THIS INCLUDES PROVISIONS FOR MAINTENANCE OF TRAFFIC, CONSTRUCTION AND THE OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
- L. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL AND PEDESTRIAN PROTECTION DURING ALL PHASES OF CONSTRUCTION.
- M. CONTRACTOR SHALL COORDINATE ANY NECESSARY INTERRUPTION OF UTILITY SERVICES WITH THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS PRIOR TO THE INTERRUPTION.
- N. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SITE IMPROVEMENTS NOT DESIGNATED FOR REMOVAL AND/OR IMPROVEMENTS. DAMAGED EXISTING UTILITIES AND SITE IMPROVEMENTS SHALL BE RESTORED TO A CONDITION AS GOOD OR BETTER THAN PRECONSTRUCTION CONDITIONS.
- O. CONTRACTOR SHALL ADJUST ALL WATER VALVE COVERS, GAS VALVE COVERS, ELECTRICAL GROUND COVERS, SANITARY SEWER MANHOLES, STORM SEWER MANHOLES, CATCH BASINS, ETC. AS NECESSARY TO FACILITATE PROPOSED PAVEMENT AND FINAL GRADE ELEVATIONS.
- P. CONTRACTOR SHALL THOROUGHLY READ AND FAMILIARIZE HIMSELF WITH THE GEOTECHNICAL REPORT PREPARED BY 7NT PRIOR TO SUBMITTING BIDS. CONTRACTOR SHALL IMPLEMENT ALL RECOMMENDATIONS CONTAINED WITHIN THE REPORT UNLESS DIRECTED OTHERWISE IN WRITING BY THE OWNER OR THE OWNER'S ENGINEER.

PAVEMENT NOTES

1. GENERAL
- A. BITUMINOUS CONCRETE SURFACE SHALL BE IN GENERAL ACCORDANCE WITH KENTUCKY TRANSPORTATION CABINET SPECIFICATIONS.
- B. RESURFACING WILL BE LIMITED TO THE AREAS OUTLINED ON THE PLAN. THE FINAL SURFACE COURSE SHALL BE INSTALLED TO A MINIMUM COMPACTED THICKNESS OF 1-1/2 INCHES.
- C. THE CONTRACTOR SHALL PROVIDE ALL BARRICADES AS NEEDED.
2. REFERENCE STANDARDS
- A. CURRENT ISSUE OF KENTUCKY TRANSPORTATION CABINET (KYTC) STANDARD SPECIFICATIONS OF ROAD AND BRIDGE CONSTRUCTION AND CITY OF SHEPHERDSVILLE STANDARD DRAWINGS AND SPECIFICATIONS
3. TESTING AND INSPECTION
- A. TESTING AND INSPECTION OF ASPHALT PAVEMENT MIX(ES) AND TESTING OF PLACED AGGREGATE BASE COURSE AND ASPHALT PAVEMENT WILL BE PERFORMED BY THE PAVING CONTRACTOR SELECTED AND PAID FOR BY THE GENERAL CONTRACTOR. CONTRACTOR SHALL PROVIDE ALL TEST RESULTS IN ACCORDANCE WITH KYTC SPECIFICATIONS.
4. PLACEMENT OF ASPHALTIC CONCRETE SURFACE
- A. CONTRACTOR SHALL PROOF-ROLL, IN THE PRESENCE OF AN OWNER'S REPRESENTATIVE, ALL AREAS TO BE PAVED PRIOR TO PLACING STONE AND/OR ASPHALT PAVEMENT. ANY SOFT AREAS SHALL BE REPORTED TO THE OWNER OVERSEEING THE PROJECT IMMEDIATELY.
- B. ENSURE EXISTING PAVEMENT IS DRY AND FREE OF LOOSE OR FOREIGN MATERIAL BEFORE PRIMING.
- C. APPLY TACK COAT AS SPECIFIED BY KYTC. APPLY UNIFORMLY AT THE RATE OF 0.10 GALLONS PER SQUARE YARD. 7/3 1/00.
- D. PLACE LEVELING AND WEDGING COURSES AS NECESSARY TO ACHIEVE DESIRED GRADE AND TO PROVIDE A SMOOTH, UNIFORM BASE UPON WHICH THE BITUMINOUS SURFACE WILL BE PLACED. THE BITUMINOUS MIXTURE FOR LEVELING AND WEDGING SHALL BE PLACED WITH A PAVING MACHINE. AFTER SATISFACTORY SPREADING OF THE MIXTURE HAS BEEN COMPLETED, THE MIXTURE SHALL BE THOROUGHLY COMPACTED TO 95% OF THE MARSHALL VALUE BY A PAVING ROLLER. TACK COAT SHALL BE APPLIED TO AREAS, WHICH HAVE RECEIVED WEDGE OR LEVELING COURSE.
- E. EDGE KEYS WILL BE REQUIRED AT THE PAVING LIMITS WHERE NEW BITUMINOUS PAVEMENTS JOIN EXISTING PAVEMENTS AT ENTRANCES AND FLUSH CONCRETE SIDEWALKS AND CATCH BASINS. AN EDGE KEY SHALL CONSIST OF A CUT IN THE EXISTING PAVEMENT 1" WIDE BY 1-1/2" DEEP, AND SHALL EXTEND ACROSS THE COMPLETE WIDTH OF THE ADJOINING SURFACE.
- F. MINIMUM COMPACTION SHALL BE 98% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-D-698) UNDER ALL STRUCTURES, SLABS, STEPS. MINIMUM COMPACTION SHALL BE 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-D-698) UNDER ALL PAVEMENTS.
- G. ASPHALTIC CONCRETE SURFACE SHALL BE INSTALLED AS OUTLINED IN "STANDARD SPECIFICATIONS" AND A MINIMUM COMPACTED THICKNESS OF 1 1/2" ASPHALTIC CONCRETE SURFACE SHALL BE COMPACTED TO 95% OF THE MARSHALL VALUE.
- H. DO NOT ALLOW VEHICULAR TRAFFIC ON NEWLY PAVED AREAS UNTIL SURFACE HAS COOLED TO ATMOSPHERIC TEMPERATURES.
- I. CONTRACTOR SHALL ESTABLISH FINAL GRADES WITHIN PROPOSED PAVEMENT LIMITS SO AS TO MAINTAIN POSITIVE DRAINAGE. AT NO TIME SHALL THE CONTRACTOR INSTALL PAVEMENT THAT CREATES PONDING WITHIN THE PAVEMENT LIMITS.
5. CLEAN UP
- A. AT COMPLETION, REMOVE RUBBISH, DEBRIS, EQUIPMENT, AND EXCESS MATERIAL FROM SITE. CLEAN ADJOINING SURFACES WHICH WERE SOILED BY ASPHALT CONCRETE PAVEMENT WORK.

STORMWATER POLLUTION PREVENTION NOTES

- A. THE STORMWATER POLLUTION PREVENTION BMPs (BEST MANAGEMENT PRACTICES) SHALL BE IMPLEMENTED PRIOR TO ANY LAND-DISTURBING ACTIVITY ON THE CONSTRUCTION SITE. ANY MODIFICATIONS TO THE APPROVED PLAN MUST BE REVIEWED AND APPROVED BY THE CITY OF SHEPHERDSVILLE. BMPs SHALL BE INSTALLED AS INDICATED IN PLAN & PROFILE SHEETS AND IN ACCORDANCE WITH THE CITY OF SHEPHERDSVILLE DESIGN MANUAL.
- B. ACTIONS MUST BE TAKEN TO MINIMIZE THE TRACKING OF MUD AND SOIL FROM CONSTRUCTION AREAS ONTO PUBLIC ROADWAYS. SOIL TRACKED ONTO THE ROADWAY MUST BE REMOVED DAILY.
- C. SOIL STOCKPILES SHALL BE LOCATED AWAY FROM STREAMS, PONDS, SWALES, AND WETLANDS. STOCKPILES SHALL BE SEEDED, MULCHED, AND ADEQUATELY CONTAINED THROUGH THE USE OF SILT FENCE.
- D. ALL STREAM CROSSINGS MUST UTILIZE LOW-WATER CROSSING STRUCTURES IN ACCORDANCE WITH CITY OF SHEPHERDSVILLE DESIGN MANUAL AND STANDARD DRAWINGS.
- E. SEDIMENT-LADEN GROUNDWATER ENCOUNTERED DURING TRENCHING, BORING, OR OTHER EXCAVATION ACTIVITIES SHALL BE PUMPED TO A SEDIMENT TRAPPING DEVICE PRIOR TO BEING DISCHARGED INTO A STREAM, POND, SWALE, OR CATCH BASIN.
- F. WHERE CONSTRUCTION OR LAND DISTURBING ACTIVITY WILL OR HAS TEMPORARILY CEASED ON ANY PORTION OF A SITE, TEMPORARY SITE STABILIZATION MEASURES SHALL BE REQUIRED AS SOON AS PRACTICAL, BUT NO LATER THAN 14 DAYS AFTER ACTIVITY HAS CEASED.

SITE RESTORATION / INCLEMENT WEATHER NOTES

- A. THE CONTRACTOR SHALL WORK WITH THE CITY OF SHEPHERDSVILLE TO STAGE THE TESTING OF THE SEWERS AND THE RESTORATION WORK TO LIMIT THE TOTAL AREA THAT IS DISTURBED AT ANY ONE TIME.
- B. TEMPORARY CONSTRUCTION EASEMENT SHOWN WITHIN THESE PLANS ALSO REPRESENTS THE PROJECT LIMITS OF DISTURBANCE. NO TREE CLEARING SHALL OCCUR OUTSIDE OF THESE LIMITS.
- C. PORTIONS OF THIS SEWER INSTALLATION ARE SITUATED NEARBY EXISTING STREAM BANKS. THE CONTRACTOR MUST TAKE ALL PRECAUTIONS WHEN INSTALLING THE SEWER TO MAINTAIN THE INTEGRITY OF THE STREAM BANK AND VEGETATED BUFFER. IF ANY PORTION OF THE BUFFER IS REMOVED OR THE STREAM BANK IS DAMAGED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE THE BANK AND STABILIZE THE AREA TO PRECONSTRUCTION CONDITIONS.
- D. AS THE CONTRACTOR FINISHES THE INSTALLATION OF A SECTION OF SEWER NO MORE THAN 1500 FEET LONG, THEY MUST REGRADE THE AREA AND TEMPORARILY STABILIZE THE IMPACTS. THE CONTRACTOR MAY MAINTAIN A TEMPORARY ACCESS THAT IS WIDE ENOUGH TO MOVE THE NECESSARY EQUIPMENT. ONCE THE PROPOSED SEWER LINE HAS PASSED THE REQUIRED TESTS TO THE SATISFACTION OF THE CITY OF SHEPHERDSVILLE, THE CONTRACTOR SHALL THEN REMOVE THE TEMPORARY ACCESS AND PERMANENTLY STABILIZE THE AREA.
- E. ALL AREAS SHALL BE RESTORED TO PRECONSTRUCTION CONDITIONS. PONDING AREAS AND TIRE RUTS ARE UNACCEPTABLE. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST PROVIDE THE CITY OF SHEPHERDSVILLE WITH VIDEO OR PHOTOGRAPHIC EVIDENCE OF THE PRECONSTRUCTION CONDITIONS.
- F. THE CONTRACTOR IS ALSO RESPONSIBLE FOR MONITORING THE WEATHER DURING CONSTRUCTION. IF A WET WEATHER EVENT IS FORECASTED, THE CONTRACTOR SHALL STABILIZE THEIR IMPACTS AND SECURE THEIR EQUIPMENT AND MATERIALS. THIS AREA IS PRONE TO FLOODING AND THE CONTRACTOR IS RESPONSIBLE FOR ALL PREVENTATIVE MEASURES TO MINIMIZE ANY EROSION OR LOSS AND DAMAGE TO THEIR MATERIALS AND EQUIPMENT DUE TO FLOODING.

MAINTENANCE OF TRAFFIC (MOT) NOTES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A MAINTENANCE OF TRAFFIC PLAN ADDRESSING ALL REQUIRED LANE AND SIDEWALK CLOSURES. CONTRACTOR SHALL 1) SUBMIT THE MOT PLAN TO OWNER'S ENGINEER AS A SHOP DRAWING SUBMITTAL AND 2) AFTER RECEIVING OWNER'S ENGINEER APPROVAL, SUBMIT THE MOT PLAN TO KYTC AND SHEPHERDSVILLE PUBLIC WORKS FOR APPROVAL.

STORMWATER POLLUTION PREVENTION MAINTENANCE SCHEDULE

ALL BMPs NEED TO BE MAINTAINED EVERY SEVEN (7) DAYS, OR AFTER EVERY STORM EVENT THAT EQUALS OR EXCEEDS 1/2 INCH PRECIPITATION, OR AFTER HEAVY USE.

1. TEMPORARY CONSTRUCTION ENTRANCE
- A. CHECK FOR MUD AND SEDIMENT BUILDUP AND PAD INTEGRITY.
- B. MAKE DAILY INSPECTIONS DURING WET WEATHER. MAINTENANCE IS REQUIRED MORE FREQUENTLY IN WET CONDITIONS.
- C. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
- D. WASH OR REPLACE STONE AS NEEDED AND AS DIRECTED BY THE INSPECTOR. STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE MUD BEING TRACKED OFFSITE BY VEHICLES. FREQUENT WASHING WILL EXTEND THE USEFUL LIFE OF THE STONE.
- E. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROADS BY BRUSHING OR SWEEPING. REPAIR ANY BROKEN PAVEMENT IMMEDIATELY.
- F. REMOVE TEMPORARY CONSTRUCTION ENTRANCES AS SOON AS THEY ARE NO LONGER NEEDED TO PROVIDE ACCESS TO THE SITE.
2. SILT FENCE
- A. REMOVE SEDIMENT FROM THE UP-SLOPE FACE OF THE FENCE BEFORE IT ACCUMULATES TO A HEIGHT EQUAL TO 1/3 THE HEIGHT OF THE FENCE.
- B. IF FENCE FABRIC TEARS, BEGINS TO DECOMPOSE, OR IN ANY WAY BECOMES INEFFECTIVE, REPLACE THE AFFECTED SECTION OF FENCE IMMEDIATELY.
- C. TAKE CARE TO AVOID UNDERMINING OR DAMAGING THE FENCE WHEN CLEANING OUT SEDIMENT.
- D. REMOVE THE FENCE AFTER ITS CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED. REMOVE THE FENCE AND SEDIMENT DEPOSITS, BRING THE DISTURBED AREA TO GRADE, AND STABILIZE IT USING THE APPROPRIATE PERMANENT STABILIZATION METHOD.
3. TEMPORARY STREAM LOW WATER CROSSINGS
- A. CHECK THE STRUCTURE INTEGRITY AND FOR EXCESSIVE SEDIMENT DEPOSITION AND REPLACE FILL STONE AS NEEDED.
- B. CLEAN MUD AND/OR SEDIMENT FROM THE ROADWAY AND DO NOT ALLOW IT TO ENTER THE STREAM.
- C. THE STRUCTURE SHALL BE REMOVED WHEN IT IS NO LONGER REQUIRED TO PROVIDE ACCESS TO THE CONSTRUCTION AREA. DURING REMOVAL, LEAVE STONE AND GEOTEXTILE FABRIC FOR APPROACHES IN PLACE. PLACE FILL OVER THE APPROACHES AS PART OF THE STREAM BANK RESTORATION OPERATION.
- D. A TEMPORARY CULVERT CROSSING SHOULD BE IN PLACE NO LONGER THAN 24 MONTHS.

UTILITY NOTES

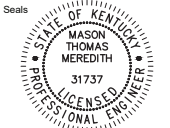
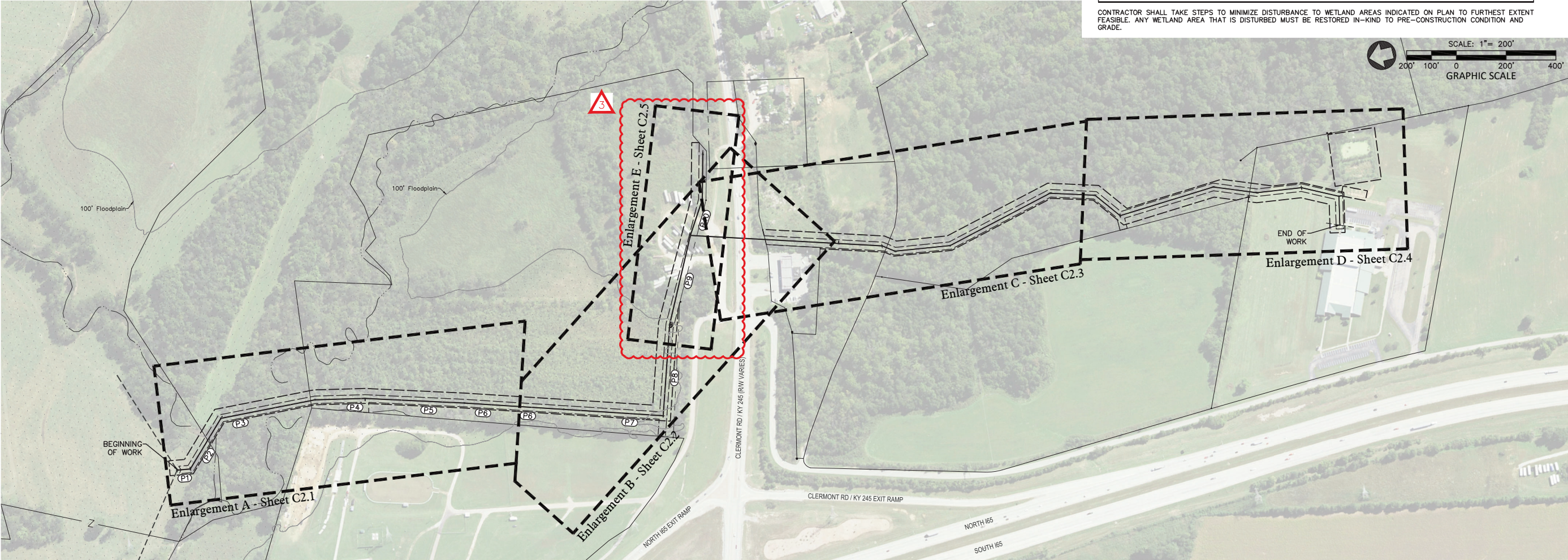
- A. ALL UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. INDIVIDUAL SERVICE LINES ARE NOT SHOWN. PRIOR TO ANY EXCAVATION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY PROTECTION CENTER, BUD PHONE 1-800-752-6007, WHICH WAS ESTABLISHED TO PROVIDE ACCURATE LOCATIONS OF BELOW GROUND UTILITIES, I.E. CABLES, ELECTRIC WIRES, GAS LINES AND WATER LINES. THE CONTRACTOR OR SUBCONTRACTOR SHALL NOTIFY THE UTILITY PROTECTION CENTER 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ON THIS PROJECT.
- B. CONTRACTORS SHALL BE RESPONSIBLE FOR AGENCY COORDINATION AND PAYMENT OF ALL FEES ASSOCIATED WITH THE UTILITY CONNECTIONS INCLUDING; TAP FEES, METERS, FEES, ETC. FOR ALL UTILITIES.
- C. CONTRACTOR SHALL UNCOVER AND VERIFY LOCATION AND ELEVATIONS AT TIE-IN AND CROSSING LOCATIONS PRIOR TO ANY UNDERGROUND PIPE INSTALLATION.
- D. CONTRACTOR SHALL COORDINATE ANY NECESSARY INTERRUPTION OF UTILITY SERVICE (INCLUDING FIRE PROTECTION SERVICE) TO THE EXISTING BUILDING WITH THE OWNER'S REPRESENTATIVE A MINIMUM OF 48 HOURS PRIOR TO THE INTERRUPTION.

FLOODPLAIN NOTE

A PORTION OF THE SUBJECT PROPERTY IS LOCATED IN ZONE AE, WHICH IS AN AREA DETERMINED TO BE INSIDE OF THE 100-YEAR FLOOD PLAIN AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP PANEL 21029C0191F DATED APRIL 5, 2016.

WETLAND DISTURBANCE NOTE

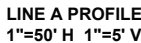
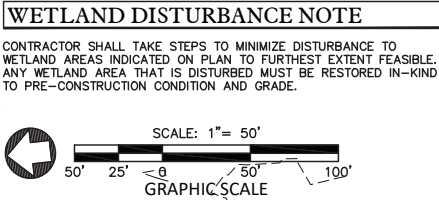
CONTRACTOR SHALL TAKE STEPS TO MINIMIZE DISTURBANCE TO WETLAND AREAS INDICATED ON PLAN TO FURTHEST EXTENT FEASIBLE. ANY WETLAND AREA THAT IS DISTURBED MUST BE RESTORED IN-KIND TO PRE-CONSTRUCTION CONDITION AND GRADE.



Bernheim Interceptor
City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

REV #	DATE	DESCRIPTION
1	08/10/2020	ELIMINATE MH SST1
2	10/10/2020	SANITARY LINE B
3	3/3/2021	MH SSO SHFT
Bid Set		
Job No: 20800.000		
Date: March 3, 2021		
Scale: 1" = 200'		
Drawn By: RTR		
Checked By: MTM		
Drawing Title: Shepherdsville Bernheim Interceptor		
General Notes & Site Index		
Drawing No: C1.0		



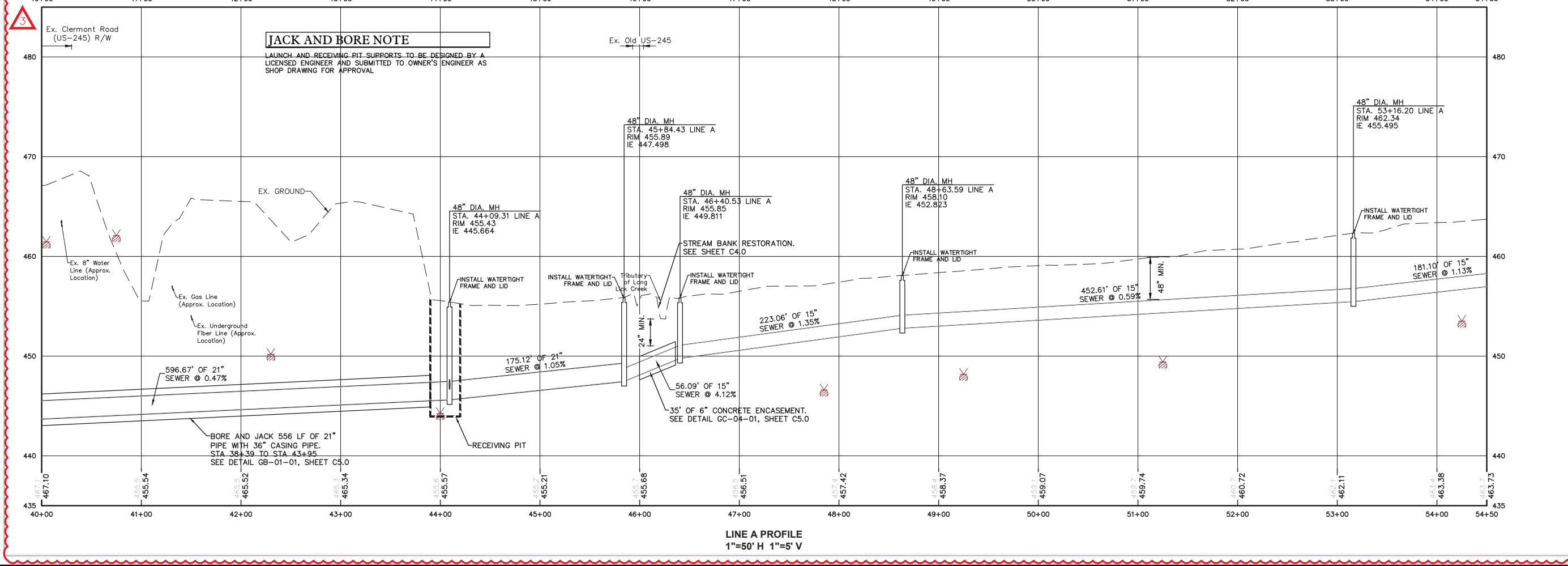
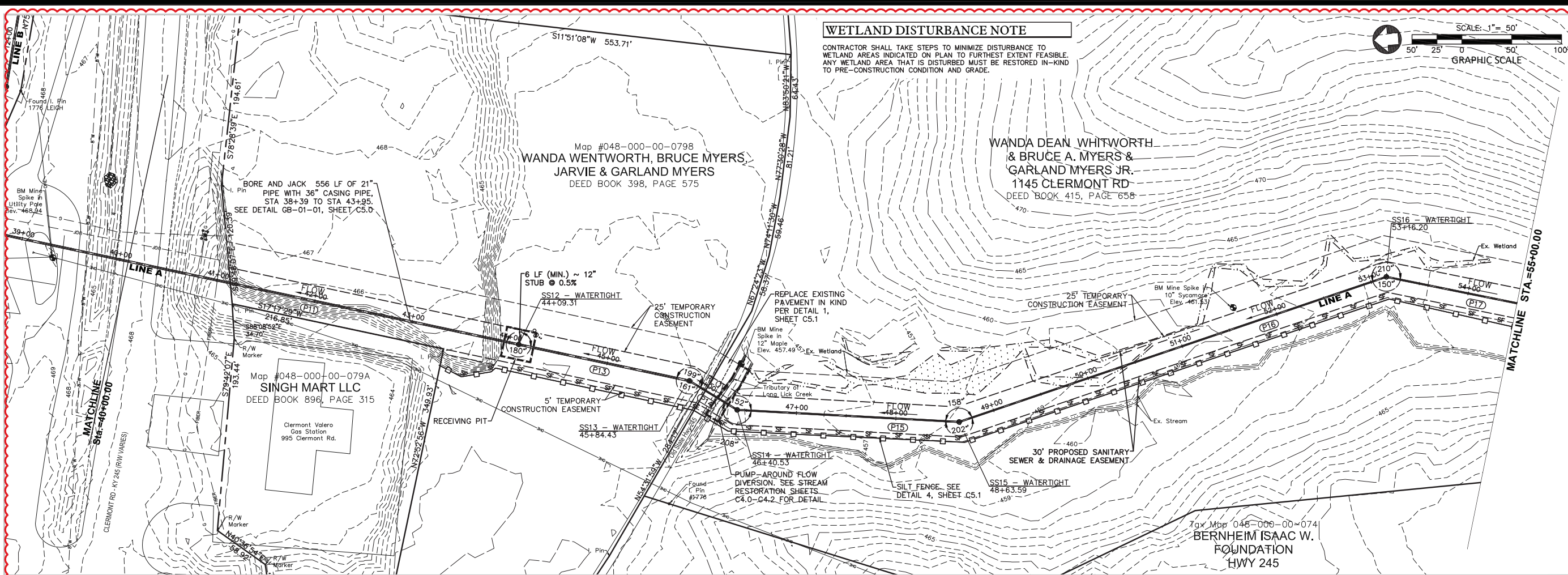
A circular professional engineer seal for the State of Kentucky. The outer ring contains the text "STATE OF KENTUCKY" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two small dots. The inner circle contains the name "MASON THOMAS MEREDITH" and the license number "31737".

REV #	DATE	DESCRIPTION
1	08/14/2020	ELIMINATE MH SS11
2	10/19/2020	SANITARY LINE B

Drawing No:
C2.0

User: mmeredith Plot Date: March 4, 2021 9:46 AM
File Name: U:\20800.000 - Berheim Interceptor\Civil Site\Drawings\CDoc\20800_c20-pp R2.dwg

User: mmeredith Plot Date: March 4, 2021 9:47 AM
File Name: U:\20800.000 - Bernheim Interceptor\Civil Site Drawings\Doc\20800.C20-PP_P2.dwg



Engineering
Planning

Seals
STATE OF KENTUCKY
MASON THOMAS MEREDITH
31737
LICENSED PROFESSIONAL ENGINEER

Bernheim Interceptor
City of Shepherdsville
Sanitary Sewer

REV #	DATE	DESCRIPTION
1	08/10/2020	ELIMINATE MH SS11
2	10/19/2020	SANITARY LINE B
3	3/9/2021	MH SS30 SHIFT

Bid Set

Job No: 20800.000
Date: March 3, 2021
Scale: 1" = 50'
Drawn By: RTR
Checked By: MTM

Drawing Title:
Shepherdsville
Bernheim Interceptor

Plan & Profile
STA 40+00 to 54+50

Drawing No:
C2.2

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

1048 E. Chelmsford Street, Louisville, Kentucky 40204
Phone: 502-585-2222 Fax: 502-581-8000 Email: info@ok-engineering.com
Kentucky • Indiana • Georgia • Tennessee

WETLAND DISTURBANCE NOTE

CONTRACTOR SHALL TAKE STEPS TO MINIMIZE DISTURBANCE TO WETLAND AREAS INDICATED ON PLAN TO FURTHEST EXTENT FEASIBLE. ANY WETLAND AREA THAT IS DISTURBED MUST BE RESTORED IN-KIND TO PRE-CONSTRUCTION CONDITION AND GRADE.

MATCHLINE STA.=55+00.00

SS17 - WATERTIGHT
54+97.30

PUMP-AROUND FLOW
DIVERSION. SEE STREAM
RESTORATION SHEETS
C4.0-C4.2 FOR DETAIL

25' TEMPORARY
CONSTRUCTION EASEMENT

SS18 - WATERTIGHT
56+27.55

30' PROPOSED
SANITARY SEWER &
DRAINAGE EASEMENT

Tax Map 048-000-00-074
BERNHEIM ISAAC W.
FOUNDATION
HWY 245

WANDA DEAN WHITWORTH
& BRUCE A. MYERS &
GARLAND MYERS JR.
1145 CLERMONT RD
DEED BOOK 415, PAGE 658

SS19 - WATERTIGHT
60+19.16

20' TEMPORARY
CONSTRUCTION EASEMENT

25' TEMPORARY
CONSTRUCTION EASEMENT

Map #048-000-00-075A
BOARD OF EDUCATION
OF BULLITT
DEED BOOK 382, PAGE 675

REMOVE EXISTING CHAIN LINK
FENCE AND REMEDIATE LAGOON.
SEE SHEET C3.0

30' PROPOSED
SANITARY SEWER &
DRAINAGE EASEMENT

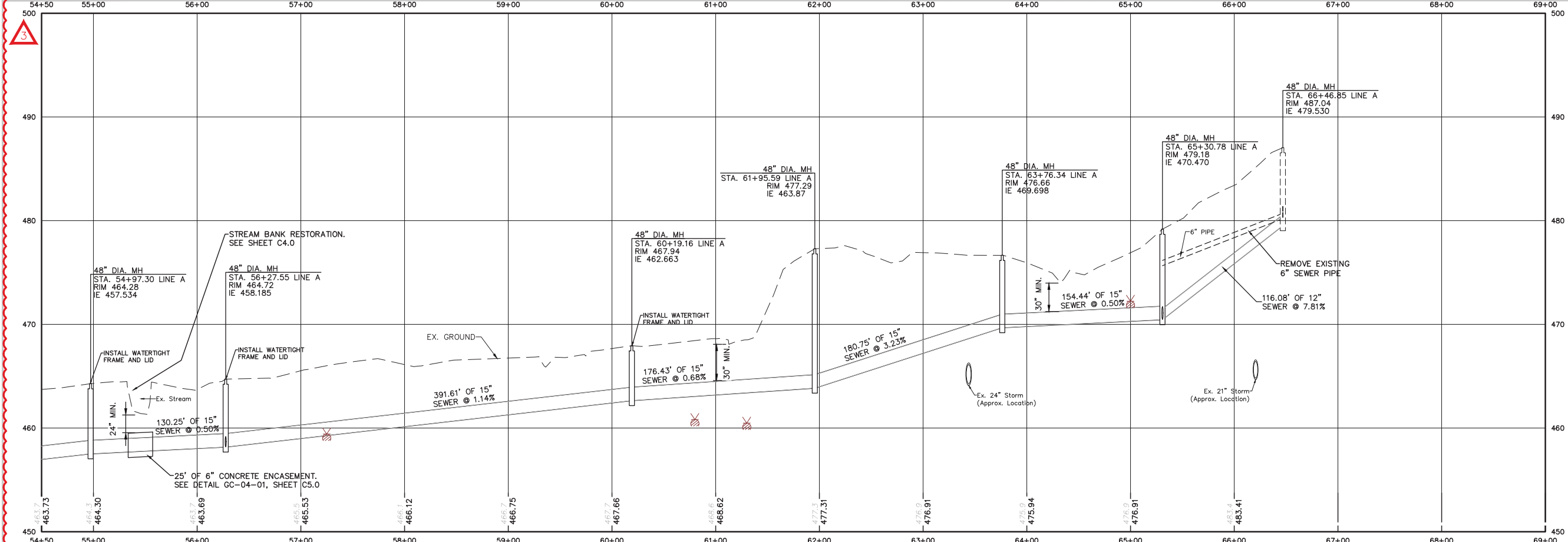
REMOVE EXISTING
SEPTIC TANK. SEE SHEET
C3.0

Ex. Sanitary MH
Rim 486.28
IE 479.85

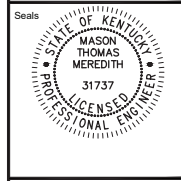
Ex. Sanitary MH
Rim 487.04
IE 479.53

Bernheim
Middle School
700 Audubon Dr.

SCALE: 1"= 50'
GRAPHIC SCALE



LINE A PROFILE
1"=50' H 1"=5' V



Bernheim Interceptor
City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

REV #	DATE	DESCRIPTION
1	08/10/2020	ELIMINATE MH SS11
2	10/19/2020	SANITARY LINE B
3	3/30/2021	MH SSO SHFT

Bid Set

Job No: 20800.000

Date: March 3, 2021

Scale: 1"= 50'

Drawn By: RTR

Checked By: MTM

Drawing Title:
Shepherdsville
Bernheim Interceptor

Plan &
Profile
STA 54+50 to 66+47

Drawing No:
C2.3

SEPTIC SYSTEM DEMOLITION NOTES

1. CONTRACTOR SHALL COORDINATE WITH CITY OF SHEPHERDSVILLE PERSONNEL A MINIMUM OF 2 WEEKS PRIOR TO SEPTIC TANK AND LAGOON DECOMMISSIONING.
2. ALL EXISTING EQUIPMENT, PUMPS, VALVES, ELECTRICAL CONTROLS, ETC SHALL BE SALVAGED AND RETURNED TO THE CITY. CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF REMAINING MATERIALS.
3. THE EXISTING BERHEIM MIDDLE SCHOOL SEPTIC SYSTEM MUST REMAIN IN SERVICE UNTIL DOWNSTREAM SEWER HAS BEEN CONSTRUCTED, TESTED, AND RELEASED FOR SERVICE.
4. APPROPRIATE MEASURES SHALL BE IMPLEMENTED TO PREVENT HUMAN CONTACT WITH ANY CONTAMINATED MATERIAL REMOVED FROM SITE.
5. SITE MUST BE RESTORED IN KIND TO A UNIFORM GRADE.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL FEDERAL, STATE, AND LOCAL PERMITS TO PERFORM WORK RELATED TO SEPTIC SYSTEM REMOVAL.
7. ORIGINAL CONSTRUCTION PLANS FOR SEPTIC SYSTEM ARE ON FILE WITH BULLITT COUNTY PUBLIC SCHOOLS. COORDINATE WITH OWNER'S ENGINEER TO OBTAIN A COPY.

SEPTIC SYSTEM DEMOLITION PHASING & SEQUENCING

1. UNEARTH EXISTING SEPTIC TANK AND REMOVE ALL LIQUIDS FROM TANK AND LAGOON USING A VAC TRUCK. WHERE FEASIBLE, AN ATTEMPT SHALL BE MADE TO REMOVE EXCESS LIQUIDS FROM LATERAL FIELD AS WELL. DISPOSE OF ALL LIQUID WASTE AT LOCAL WASTEWATER TREATMENT FACILITY.
2. REMOVE ALL SOLID WASTE AND CONTAMINATED MATERIALS FROM SEPTIC TANK AND LAGOON AND LOAD INTO DUMP TRUCK. CONTAMINATED MATERIALS INCLUDE DISTRIBUTION MEDIA, SOIL OR SAND WITHIN 3 FEET OF THE SYSTEM BOTTOM, DISTRIBUTION PIPES, AND GEOTEXTILE FABRIC. COORDINATE WITH CITY OF SHEPHERDSVILLE PERSONNEL TO DETERMINE APPROPRIATE DISPOSAL SITE. ANY COSTS ASSOCIATED WITH DISPOSAL WILL BE THE CONTRACTOR'S RESPONSIBILITY.
3. UNEARTH EXISTING 6" CONNECTION PIPE AND DEMO FROM THE EXISTING DISCHARGE MANHOLE TO THE SEPTIC TANK.
4. ONCE ALL WASTE IS REMOVED, DISCONNECT ALL PIPES AND REMOVE OR ABANDON SEPTIC TANK. ABANDONED TANKS OR ANY OTHER UNDERGROUND CAVITIES MUST BE REMOVED OR REMAIN IN PLACE AND CRUSHED WITH THE REMAINING CAVITY FILLED WITH SUITABLE SOIL OR ROCK MATERIAL. IF TANK IS TO BE ABANDONED IN PLACE, PUNCTURE HOLES MUST BE PLACED IN BOTTOM OF TANK TO PREVENT COLLECTION OF WATER.
5. THE EXISTING LATERAL FIELD MAY REMAIN IN PLACE. INSPECTION PIPES ARE TO BE REMOVED, BACKFILLED, AND DISPOSED OF PROPERLY.
6. REMOVE OR ABANDON EXISTING PUMP STATION STRUCTURE. REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, PUMPS, VALVES, ETC. AND RETURN TO CITY IF SALVAGEABLE. IF ABANDONED IN PLACE, MANHOLE STRUCTURE MUST BE FILLED WITH GRAVEL AND ACCESS LID REMOVED. IF REMOVED, REMAINING CAVITY MUST BE FILLED WITH SUITABLE SOIL OR GRAVEL FILL MATERIAL.
7. ONCE ALL DEMOLITION ACTIVITIES HAVE CEASED, ALL REMAINING CAVITIES AND LAGOON MUST BE BACKFILLED WITH SUITABLE FILL MATERIAL AND GRADED TO DRAIN PROPERLY. ALL BACKFILLED AND DISTURBED AREAS ARE TO BE SEEDED AND STRAWED UPON COMPLETION OF FINAL GRADING.



Engineering
Planning

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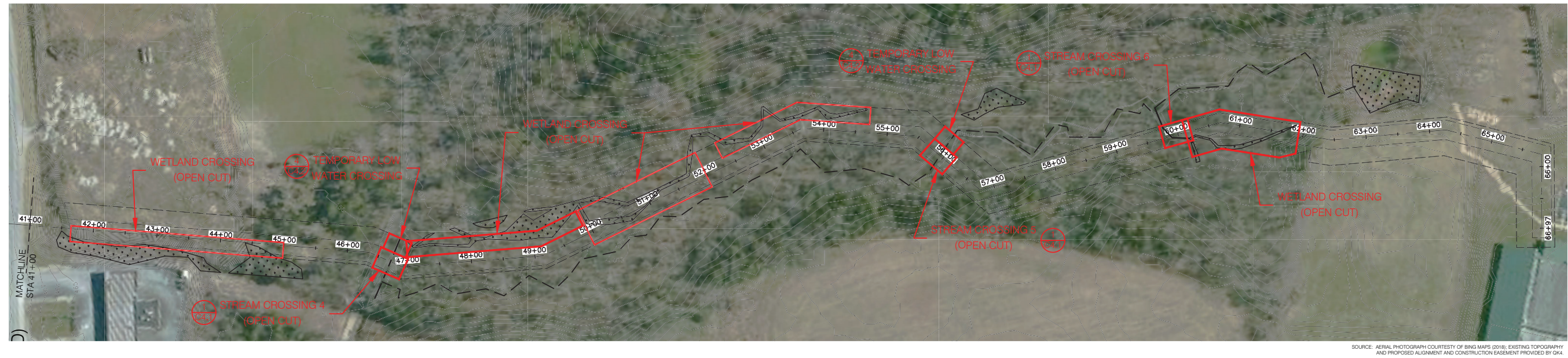
Seals

STATE OF KENTUCKY
MASON THOMAS MEREDITH
31737
LICENSED PROFESSIONAL ENGINEER

Bernheim Interceptor
City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

REV #	DATE	DESCRIPTION
1	08/10/2020	ELIMINATE MH SS11
2	10/10/2020	SANITARY LINE B
Bid Set		
Job No: 20800.000		
Date: March 3, 2021		
Scale:		
Drawn By: RTR		
Checked By: MTM		
Drawing Title:		
Shepherdsville Bernheim Interceptor Septic System Demolition Plan		
Drawing No:		
C3.0		



User: mrich Plot Date: July 2, 2020 1:56 PM
File Name: P:\2019 Projects\19-185-Shepher

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Engineering
Planning

1046 E. Chestnut Street, Louisville, Kentucky 40204
Phone: 502-585-2222 Facsimile: 502-581-0406 Internet: www.qk4.com
Kentucky • Indiana • Georgia • Tennessee



REDWING ECOLOGICAL SERVICES, INC.
1139 SOUTH FOURTH STREET



Bernheim Interceptor
City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

[illegible]

RESTORATION NOTES:

- THE GROUND SURFACES DISTURBED AS PART OF THE SEWER PIPELINE INSTALLATION ACTIVITIES SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROVIDED PLANS AND SPECIFICATIONS.
- EACH OF THE STREAM AND WETLAND CROSSINGS SHALL BE RESTORED TO CONTOURS SIMILAR TO PRE-CONSTRUCTION CONTOURS AND IN ACCORDANCE WITH THE PROVIDED PLANS AND SPECIFICATIONS.
- THE STREAMBANKS FOR EACH OF THE STREAM CROSSINGS AND THE ADJACENT RIPARIAN AREAS SHALL BE RESTORED IN ACCORDANCE WITH THE PLAN AND DETAIL $\frac{1}{4}$. THE STREAMBANKS FROM THE TOE OF SLOPE TO A MINIMUM OF FIVE FEET BEYOND THE TOP OF STREAMBANK WITHIN THE PERMANENT AND TEMPORARY CONSTRUCTION EASEMENT WILL BE SEEDED RIPARIAN RESTORATION NATIVE SEED MIX (TABLE 1) AT A RATE OF 50 POUNDS PER ACRE. AFTER SEEDING IS COMPLETE, THE RESTORED STREAMBANKS AND ADJACENT RIPARIAN AREA SHALL BE COVERED WITH CLEAN STRAW MULCH AT A RATE OF TWO TONS PER ACRE, AND THE STRAW MULCH SHALL BE ANCHORED IN PLACE WITH A STRAW CRIMPER OR OTHER APPROVED EQUIVALENT ANCHORING METHOD. THE SPECIFIED EROSION CONTROL MAT IN THE STREAMBANK RESTORATION DETAIL SHALL BE INSTALLED IN ACCORDANCE WITH DETAIL $\frac{1}{4}$.
- CROSSING OF THE WETLANDS WILL REQUIRE AN OPEN CUT TO ACHIEVE THE REQUIRED GRADE FOR THE SEWERLINE. THE SEWERLINE CROSSING INSTALLATION WILL OCCUR IN DRY OR LOW-FLOW CONDITIONS AND WILL UTILIZE A PUMP AROUND SYSTEM IN ACCORDANCE WITH DETAIL $\frac{1}{4}$. AS NECESSARY, TO BLOCK WATER AND PUMP WATER OUT OF THE CONSTRUCTION AREA TO ISOLATE IT FROM THE WETLAND AND PROVIDE A DRY WORK ZONE. ONCE THE PUMP-AROUND SYSTEM HAS BEEN ESTABLISHED AND PRIOR TO TRENCHING, A MINIMUM OF 3 TO 6 INCHES OF WETLAND TOPSOIL SHALL BE SIDECAST/STOCKPILED AND A MINIMUM OF 18 TO 20 INCHES OF WETLAND SUBSOIL SHALL BE SIDECAST/STOCKPILED IN THE TEMPORARY CONSTRUCTION EASEMENT. THE WETLAND WILL THEN BE EXCAVATED TO THE REQUIRED ELEVATIONS FOR SEWERLINE AND BACKFILL INSTALLATIONS. FOLLOWING SEWERLINE INSTALLATION, THE TRENCH WILL BE BACKFILLED WITH A MINIMUM OF 18 TO 20 INCHES OF WETLAND SOIL MATERIALS THAT HAD BEEN SIDECAST/STOCKPILED FROM THE TRENCH EXCAVATION. WETLAND SOILS SHALL BE PLACED IN LIFTS NO MORE THAN 10 INCHES THICK AND COMPACTED WITH CONSTRUCTION EQUIPMENT PRIOR TO THE PLACEMENT OF THE NEXT LIFT. ONCE THE WETLAND SUBSOIL HAS BEEN PLACED AND COMPACTED, A MINIMUM OF 3 TO 6 INCHES OF WETLAND TOPSOIL THAT HAD BEEN SIDECAST/STOCKPILED SHALL BE PLACED TO ESTABLISH ELEVATIONS TO MATCH GRADES PRIOR TO THE SEWERLINE INSTALLATION. THE TOP 4 TO 6 INCHES OF SOIL SHALL THEN BE LOOSENEED FOR SEEDBED PREPARATION. THE DISTURBED WETLAND GROUND SURFACES WILL BE SEEDED WITH THE WETLAND RESTORATION NATIVE SEED MIX (TABLE 2 ON THIS SHEET) AT A RATE OF 51 POUNDS PER ACRE. CLEAN STRAW WILL THEN BE PLACED AT A RATE OF TWO TONS PER ACRE AND ANCHORED IN PLACE WITH A STRAW CRIMPER OR OTHER APPROVED ANCHORING METHOD.
- ALL OTHER DISTURBED GROUND SURFACES EXCLUDING THE STREAM RIPARIAN AND WETLAND AREAS SHALL BE RESTORED TO PRE-CONSTRUCTION CONTOURS. THE TOP 4 TO 6-INCHES OF SOIL SHALL BE LOOSENEED FOR SEEDBED PREPARATION. THE DISTURBED GROUND SURFACES WITHIN THE TEMPORARY AND PERMANENT CONSTRUCTION EASEMENT WILL BE SEEDED WITH THE UPLAND SEED MIX (TABLE 3) AT A RATE OF 100 POUNDS PER ACRE OR AS INDICATED IN SPECIAL LANDOWNER INSTRUCTIONS AND/OR AS APPROVED BY A QK4 REPRESENTATIVE. AFTER SEEDING IS COMPLETE, THE RESTORED UPLAND AREAS SHALL BE COVERED WITH CLEAN STRAW MULCH AT A RATE OF TWO TONS PER ACRE, AND THE STRAW MULCH SHALL BE ANCHORED IN PLACE WITH A STRAW CRIMPER OR OTHER APPROVED EQUIVALENT ANCHORING METHOD. AN EROSION CONTROL BLANKET SHALL BE INSTALLED PER DETAIL $\frac{1}{4}$ ON ALL SLOPES THAT ARE 3H:1V OR STEEPER.
- WHERE CONSTRUCTION OR LAND-DISTURBING ACTIVITY WILL OR HAS TEMPORARILY CEASED ON ANY PORTION OF A SITE, TEMPORARY SITE STABILIZATION MEASURES PER TABLE 4 SHALL BE REQUIRED AS SOON AS PRACTICABLE, BUT NO LATER THAN 14 CALENDAR DAYS AFTER ACTIVITY HAS CEASED.

Table 1 - Riparian Restoration Native Seed Mix
Shepherdsville Bernheim Interceptor Project
Bullitt County, Kentucky

	Common Name	Planting Rate (lbs/acre)
<i>Chasmanthium latifolium</i>	River Oats	5
<i>Elymus riparius</i>	Riverbank Wild Rye	7.5
<i>Elymus virginicus</i>	Virginia Wild Rye	7.5
<i>Lolium multiflorum</i>	Annual Rye	20
<i>Panicum clandestinum</i>	Deertongue Panic Grass	5
<i>Panicum virgatum</i>	Switchgrass	5
Total =		50

Notes:

- Riparian areas as identified in the Stream Crossings Detail 1/C4.1 on this sheet shall be seeded with this seed mix.
- Seed will be spread using a combination of hand-seeding and use of spreader per nursery specifications.
- Comparable native species may be substituted, as approved by QK4.

Table 3 - Upland Restoration Seed Mix
Shepherdsville Bernheim Interceptor Project
Bullitt County, Kentucky

	Common Name	Planting Rate (lbs/ac)
<i>Festuca rubra</i>	Creeping Red Fescue	30
<i>Lolium multiflorum</i>	Annual Ryegrass	10
<i>Lolium perenne</i>	Perennial Ryegrass	10
<i>Poa pratensis</i> var. <i>Baron</i>	Kentucky Bluegrass "Baron"	25
<i>Poa pratensis</i> var. <i>Cadet</i>	Kentucky Bluegrass "Cadet"	25
Total =		100

Notes:

- All disturbed areas excluding riparian and wetland restoration areas shall be seeded with the seed mixture outlined above.
- Seed will be spread using a combination of hand-seeding and use of spreader per nursery specifications.
- Comparable native species may be substituted, as approved by QK4.

Table 2 - Wetland Restoration Native Seed Mix
Shepherdsville Bernheim Interceptor Project
Bullitt County, Kentucky

Scientific Name	Common Name	Planting Rate (lbs/acre)
<i>Carex frankii</i>	Frank's Sedge	1
<i>Carex vulpinoidea</i>	Fox Sedge	5
<i>Elymus riparius</i>	Riverbank Wild Rye	10
<i>Lolium multiflorum</i>	Annual Rye	25
<i>Poa palustris</i>	Fowl Bluegrass	10
Total =		51

Notes:

- Wetlands temporarily disturbed during the sewer pipeline installation activities will be seeded with the seed mixture outlined above.
- Seed will be spread using a combination of hand-seeding and use of spreader per nursery specifications.
- Comparable native species may be substituted, as approved by QK4.

Table 4 - Temporary Stabilization Seeding List
Shepherdsville Bernheim Interceptor Project
Bullitt County, Kentucky

Date Range	Seed Species Common Name	Planting Rate (lbs/ac)
March 1st - May 1st; August 1st - September 1st	Annual Ryegrass	40
May 1st - July 30th	Sudangrass	35
September 15th - October 30th	Wheat or Rye	150
November 1st - February 28th	Straw Mulch	8,000

*From March 1st through October 30th all disturbed areas that will be temporarily stabilized will be seeded with the seed species and rates identified above and covered with clean straw mulch at a rate of 2 tons per acre.

*From November 1st through February 28th, temporarily stabilization involves covering disturbed areas with clean straw mulch at rate of 4 tons per acre.

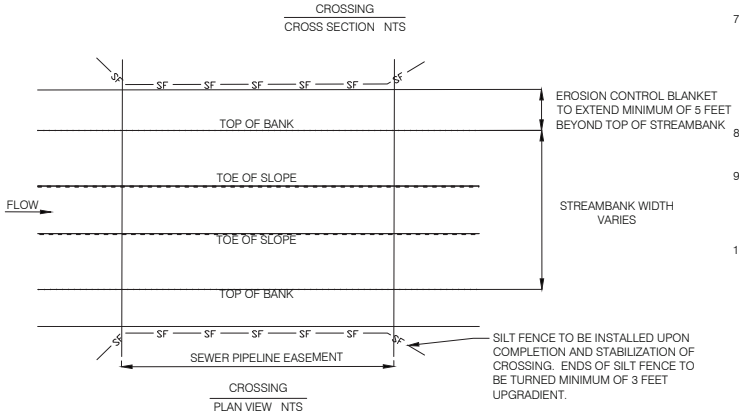
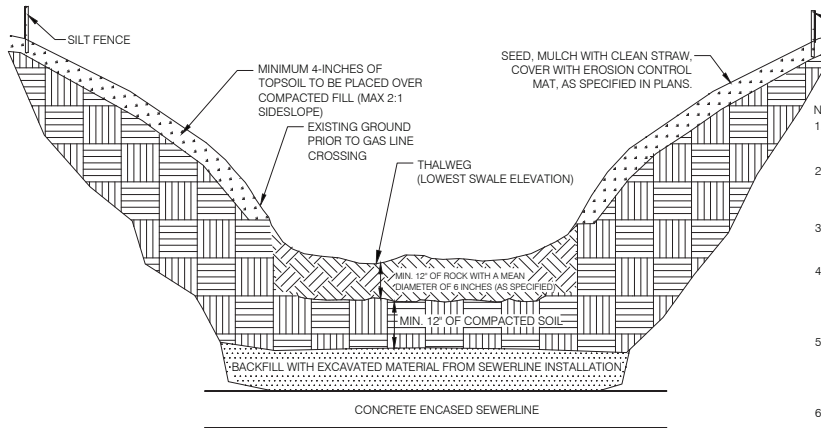
*Straw mulch must then be anchored with acceptable anchoring method.

*Comparable native species may be substituted, as approved by QK4.

1
C4.1

STREAM OPEN TRENCH PIPELINE CROSSING AND FINAL STABILIZATION DETAILS

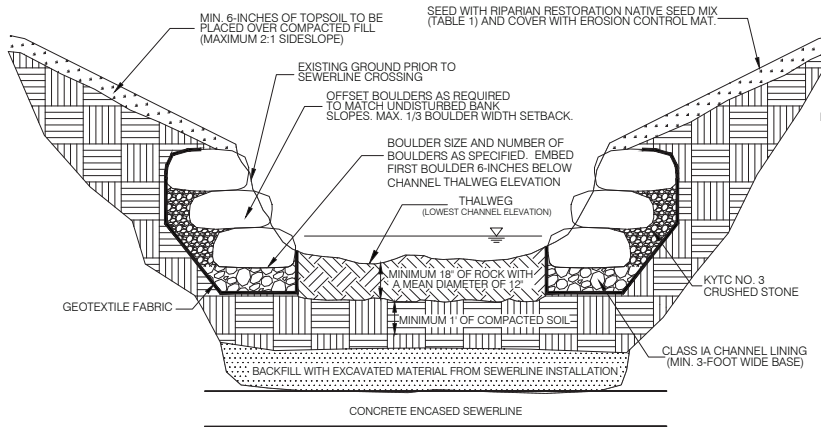
INTERMITTENT AND EPHEMERAL STREAMS



NOTES:

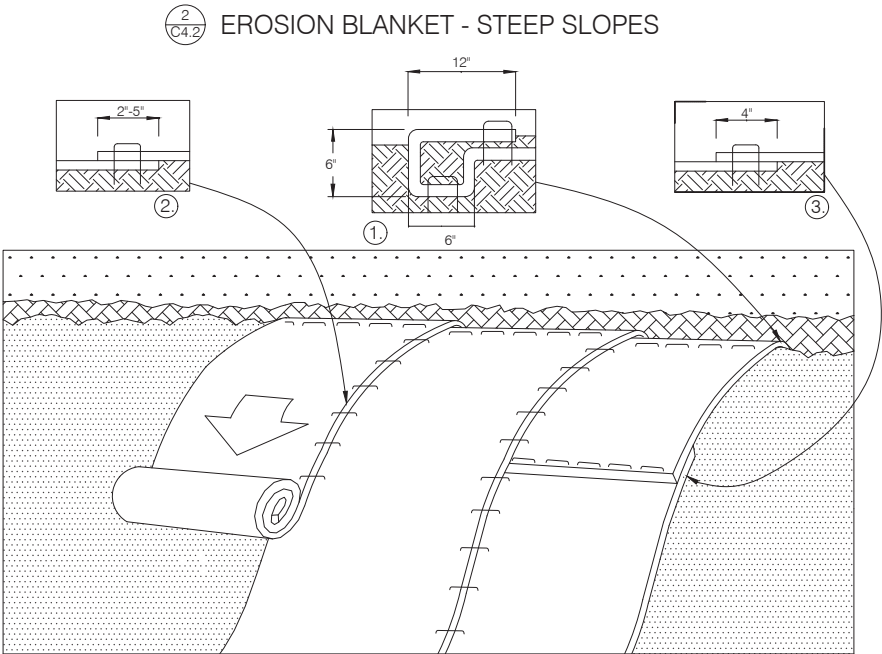
- WORK SHALL BE PERFORMED IN THE DRY OR LOW FLOW CONDITIONS. PUMP AROUND METHOD, AS SHOWN IN DETAIL $\frac{1}{4}$ ON SHEET C4.2, SHALL BE UTILIZED AS NEEDED.
- CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED SO THAT THE STREAM CROSSING CAN BE COMPLETED AND STABILIZED WITHIN ONE WORK DAY. PUMP-AROUND ACTIVITIES MUST BE MAINTAINED CONTINUOUSLY WHILE CHECK DAMS ARE INSTALLED IN STREAM CHANNEL.
- STREAMBANKS TO BE RESTORED TO CONTOURS SIMILAR TO PRE-CONSTRUCTION CONTOURS.
- STREAM BED TO BE RESTORED IN ACCORDANCE WITH PROVIDED DETAIL. A MINIMUM OF 12 INCHES OF EXCAVATED SOIL MATERIALS WILL BE PLACED OVER THE SEWER PIPELINE CONCRETE ENCASEMENT AND COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY.
- A MINIMUM OF 12-INCHES OF ROCK WITH A MEAN DIAMETER OF SIX INCHES IS TO BE PLACED ABOVE THE COMPACTED FILL MATERIAL. EXISTING STREAMBED MATERIAL IS TO THEN BE PLACED ACROSS FACE OF PLACED SIX-INCH STONE TO FILL VOIDS AT FACE OF THE CROSSING.
- A MINIMUM OF FOUR INCHES OF TOP SOIL SHALL BE PLACED ALONG THE RESTORED STREAMBANKS FOR SEEDING PREPARATION.
- SEED SHALL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND SPECIFICATIONS. FOR STREAM CROSSINGS, THE STREAMBANKS SHALL BE SEEDED WITH THE RIPARIAN RESTORATION NATIVE SEED MIX PROVIDED AS TABLE 1 ON THIS SHEET TO A MINIMUM OF FIVE FEET BEYOND THE TOP OF BANK. ALL AREAS BEYOND THE RIPARIAN PLANTING AREA SHALL BE SEEDED WITH THE SEED MIX PROVIDED AS TABLE 3 ON THIS SHEET OR AS INDICATED IN SPECIAL LANDOWNER INSTRUCTIONS PROVIDED IN THE CONSTRUCTION PLANS.
- ONCE THE SPECIFIED SEED MIX HAS BEEN PLACED, CLEAN STRAW MULCH SHALL BE SPREAD ALONG THE STREAMBANKS AT A MINIMUM RATE OF 2 TONS PER ACRE.
- THE STREAMBANKS SHALL THEN BE COVERED WITH AN EROSION CONTROL MATTING IN ACCORDANCE WITH THE PLANS AND DETAIL $\frac{1}{4}$. ROLANKA BIO-D MAT 70, OR APPROVED EQUIVALENT, SHALL BE PLACED FROM THE TOE OF SLOPE WITHIN THE STREAM CHANNEL TO A MINIMUM OF FIVE FEET BEYOND THE TOP OF BANK FOR THE CHANNEL.
- FOLLOWING COMPLETION OF INSTALLATION, ERECT SILT FENCE JUST UPGRADIENT TO THE TERMINUS OF THE INSTALLED EROSION CONTROL MATTING AND PARALLEL TO THE STREAMBANK ACROSS THE ENTIRE PIPELINE EASEMENT AS SHOWN IN THE ADJACENT DETAIL. TURN ENDS OF SILT FENCE UPGRADIENT (AWAY FROM STREAMBANKS) A MINIMUM OF 5 FEET.

PERENNIAL STREAMS



NOTES:

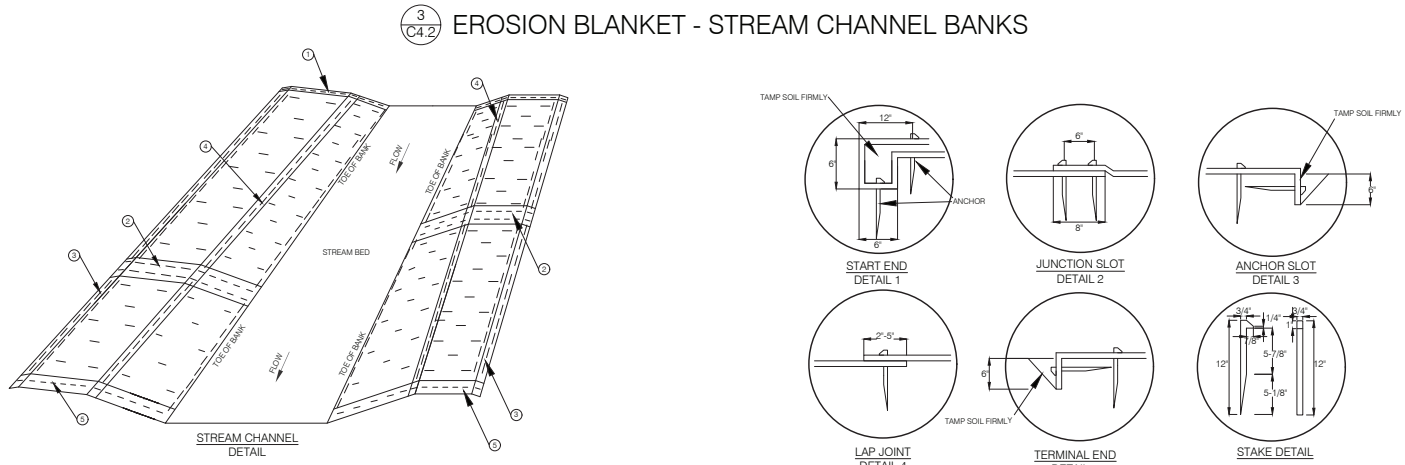
- STREAMBED AND STREAMBANK TO BE RESTORED TO CONTOURS SIMILAR TO PRE-CONSTRUCTION CONTOURS.
- STREAMBED TO BE RESTORED IN ACCORDANCE WITH PROVIDED DETAIL. A MINIMUM OF 18" OF ROCK WITH A MEAN DIAMETER OF 12" SHALL BE PLACED ABOVE A MINIMUM OF 1' OF COMPACTED SOIL MATERIAL. ROCK WITH A MEAN DIAMETER OF 2' TO 4' SHALL BE PLACED ACROSS THE FACE OF THE STREAMBED TO FILL IN VOIDS CREATED BY LARGER ROCK MEDIUM.
- ROCKS FOR BOULDER BANKS SHALL BE DENSE, SOUND AND FREE FROM CRACKS, SEAMS OR OTHER DEFECTS THAT MAY RESULT IN ACCELERATED WEATHERING. ROCKS SHALL BE PLACED SECURELY, MINIMIZING VOIDS.
- FOUNDATION SHALL BE STABLE AND UNIFORM FOR PLACEMENT OF BOULDER. ROCKS SHALL BE INTERLOCKED AND SHALL NOT MOVE OR ROTATE IN PLACE. CHANNEL LINING MAY BE OMITTED IF BOTTOM BOULDER IS PLACED ON BEDROCK.
- BOULDERS TO BE MINIMUM OF 48" X 36" X 24" AND ELEVATION OF TOP BOULDER TO BE SIMILAR TO TOP OF BANK PRE-CONSTRUCTION ELEVATION.
- GEOTEXTILE FABRIC SHALL BE USED TO WRAP NO. 3 STONE AND CLASS 1A CHANNEL LINING PER DETAIL.
- BASE OF BOTTOM LAYER OF BOULDERS SHALL EXTEND A MINIMUM OF 6' BELOW THE CHANNEL THALWEG ELEVATION (LOWEST STREAMBED ELEVATION).
- EROSION CONTROL MATTING PER DETAIL $\frac{1}{4}$ SHALL BE PLACED OVER 6" MIN. TOPSOIL AS PER DETAIL.
- RIPARIAN NATIVE SEED MIX (TABLES 1 ON THIS SHEET) SHALL BE PLANTED IN ACCORDANCE TO PLANTING DETAILS AND SPECIFICATIONS.
- WORK SHALL BE PERFORMED IN THE DRY OR LOW FLOW CONDITIONS AS DETERMINED BY QK4. PUMP AROUND METHOD AS SHOWN IN DETAIL $\frac{1}{4}$ SHALL BE UTILIZED AS NEEDED.
- NO FILL MATERIAL SHALL BE PLACED UNTIL THE BOULDER TOE AND SUBSEQUENT LAYERS OF THE BOULDER WALLS HAVE BEEN PLACED.



NOTES:

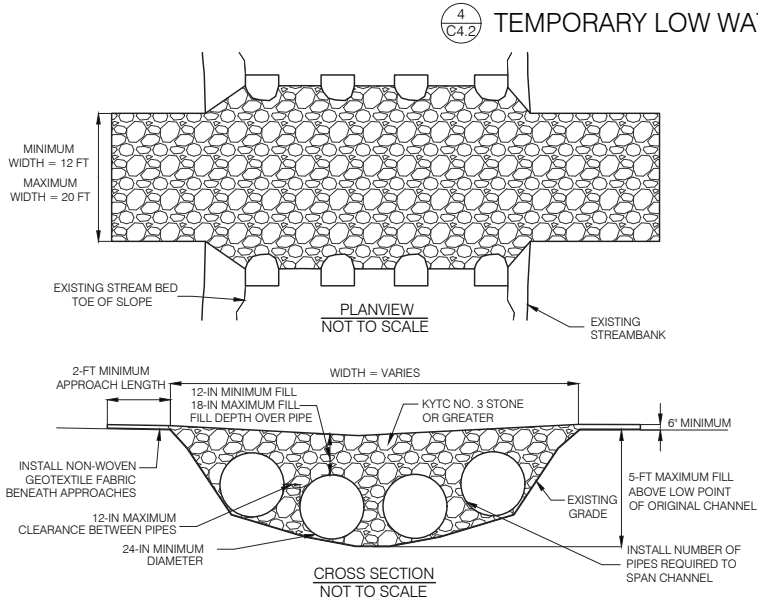
1. BIONET S150BN EROSION CONTROL BLANKET OR EQUIVALENT SHALL BE USED.
2. SEED WITH SPECIFIED SEED MIX BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS)
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH (DETAIL 1). BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECPS BACK OVER SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECPS.
4. ROLL THE RECPS DOWN THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECPS TYPE (DETAIL 2).
6. CONSECUTIVE RECPS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 4" (10 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECPS WIDTH (DETAIL 3).

SOURCE: ORIGINAL PLAN DETAIL PROVIDED BY NORTH AMERICAN GREEN EROSION CONTROL PRODUCTS



NOTES FOR EROSION CONTROL BLANKET INSTALLATION ALONG STREAM CHANNELS:

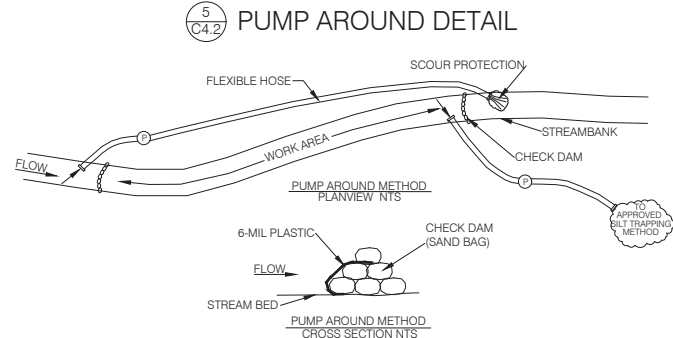
1. ROLANKA BIO-MAT TO EROSION CONTROL BLANKET OR EQUIVALENT SHALL BE USED FOR INSTALLATION ALONG STREAMBANKS.
2. CONTRACTOR MUST FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. PREPARE SOIL AREA BEFORE INSTALLING EROSION CONTROL BLANKET BY LOOSENING THE TOP 2-3" OF SOIL AND APPLYING LIME, FERTILIZER AND SEED.
4. THE APPROVED SEED MIXTURE SHALL BE BROADCAST EVENLY OVER THE DISTURBED AREAS AT THE RATES SPECIFIED IN THE RESTORATION NOTES ON SHEET C4.1. STRAW SHALL THEN BE APPLIED AT A RATE OF TWO TONS PER ACRE.
5. THE EROSION CONTROL MATTING SHALL BE PLACED FROM THE TOE OF SLOPE WITHIN THE CHANNEL TO A MINIMUM OF FIVE FEET BEYOND THE BANKFULL ELEVATION OF THE CHANNEL. ANCHORS SHALL BE 12" WOODEN STAKES OR APPROVED EQUIVALENT. STARTING AT THE UPSTREAM END OF THE CHANNEL, ANCHOR THE EROSION CONTROL BLANKET IN A 6" WIDE X 6" DEEP TRENCH WITH APPROXIMATELY 12" OF EROSION CONTROL BLANKET EXTENDING BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE EROSION CONTROL BLANKET WITH STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH, AND THEN BACKFILL AND COMPACT SOIL IN THE TRENCH. APPLY LIME, FERTILIZER, AND SEED TO THE BACKFILLED SOIL, AND THEN FOLD THE REMAINING 12" OF EROSION CONTROL BLANKET OVER THE BACKFILLED SOIL AND SECURE WITH A ROW OF STAKES APPROXIMATELY 12" APART (DETAIL 1).
6. ROLL THE EROSION CONTROL BLANKET OUT ALONG THE CHANNEL BANKS IN THE DIRECTION OF FLOW. UNROLL THE EROSION CONTROL BLANKET WITH THE APPROPRIATE SIDE AGAINST THE SOIL SURFACE. THE EROSION CONTROL BLANKET SHALL BE SECURED TO THE SOIL SURFACE BY PLACING ONE ROW OF ANCHORS AT 18" INTERVALS. THE MIDDLE OF THE BLANKETS SHOULD BE ANCHORED EVERY 18". PLACE ANCHORS IN A STAGGERED PATTERN. LAY BLANKETS LOOSELY ON THE GROUND, ALLOWING A GOOD CONTACT BETWEEN THE SOIL AND THE BLANKET.
7. THE FULL LENGTH EDGE OF THE EROSION CONTROL BLANKET AT THE TOES OF THE BANK SHALL BE SECURED WITH A ROW OF STAKES SPACED APPROXIMATELY 12" APART.
8. CONSECUTIVE EROSION CONTROL BLANKETS SHALL BE OVERLAPPED 8" WITH THE UPSTREAM BLANKET ON THE TOP AND SHALL BE ANCHORED WITH TWO ROWS OF STAKES SPACED APPROXIMATELY 12" APART IN A STAGGERED PATTERN. ROWS SHALL BE SPACED 6" APART (DETAIL 2).
9. THE FULL LENGTH EDGE OF THE EROSION CONTROL BLANKET ABOVE THE BANKFULL ELEVATION SHALL BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH (DETAIL 3).
10. ADJACENT EROSION CONTROL BLANKETS SHALL OVERLAP APPROXIMATELY 2" - 5" AND SECURED WITH A ROW OF STAKES SPACED APPROXIMATELY 12" APART (DETAIL 4).
11. THE TERMINAL END OF THE EROSION CONTROL BLANKET SHALL BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH AND SECURED WITH A ROW OF STAPLES SPACED APPROXIMATELY 12" APART. THE TRENCH SHALL THEN BE BACKFILLED WITH SOIL AND COMPACTED (DETAIL 5).



NOTES:

1. PUMP-AROUND DIVERSIONS SHALL BE INSTALLED AND MAINTAINED PRIOR TO ANY EXCAVATION AND DURING THE INSTALLATION OF THE TEMPORARY STREAM CROSSING IF ANY FLOW IS PRESENT IN THE STREAM.
2. TEMPORARY STREAM CROSSING SHALL BE AT RIGHT ANGLES TO STREAM. WHERE APPROACH CONDITIONS DICTATE, THE CROSSING MAY VARY 15 DEGREES FROM A LINE DRAWN PERPENDICULAR TO THE CENTERLINE OF THE STREAM.
3. THE MAXIMUM NUMBER OF PIPES POSSIBLE SHALL BE PLACED WITHIN THE STREAMBANKS WITH A MAXIMUM SPACING OF 12 INCHES BETWEEN PIPES. THE PIPE CULVERT SHALL BE 24 INCHES.
4. THE LENGTH OF THE CULVERT SHALL BE ADEQUATE TO EXTEND THE FULL WIDTH OF THE CROSSING, INCLUDING SIDE SLOPES.
5. COARSE AGGREGATE WITH KYTC NO. 3 STONE OR GREATER WILL BE USED TO FORM THE CROSSING. THE DEPTH OF STONE COVER OVER THE CULVERT SHALL BE EQUAL TO 1/2 THE DIAMETER OF THE CULVERT OR 12 INCHES, WHICHEVER IS GREATER BUT NO GREATER THAN 18 INCHES.
6. THE APPROACH TO THE STRUCTURE SHALL CONSIST OF CLEAN STONE ONLY WITH A MAXIMUM THICKNESS OF 6 INCHES. THE MINIMUM APPROACH LENGTH SHALL BE 2 FEET AND THE WIDTH SHALL BE EQUAL TO THE WIDTH OF THE STRUCTURE.
7. INSPECT CROSSINGS EVERY SEVEN CALENDAR DAYS WITHIN 24-HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2 INCH OR MORE OF PRECIPITATION. CHECK THE STRUCTURE INTEGRITY AND FOR EXCESSIVE SEDIMENT DEPOSITION AND REPLACE FILL STONE AS NEEDED.
8. THE STRUCTURE SHALL BE REMOVED UPON PROJECT COMPLETION AND THE STREAM BED AND BANKS SHALL BE RESTORED IN ACCORDANCE WITH PLAN AND DETAIL.

SOURCE: MSD STANDARD DRAWINGS

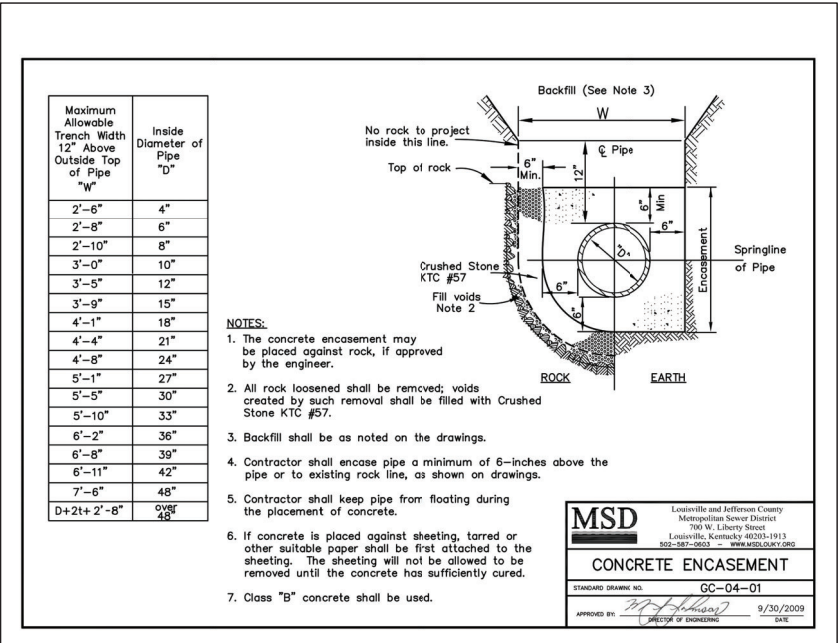
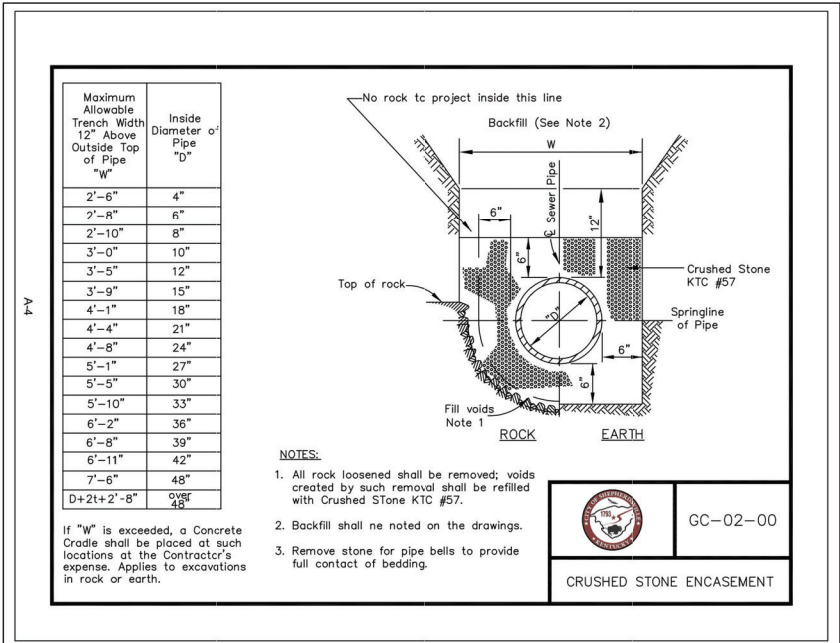
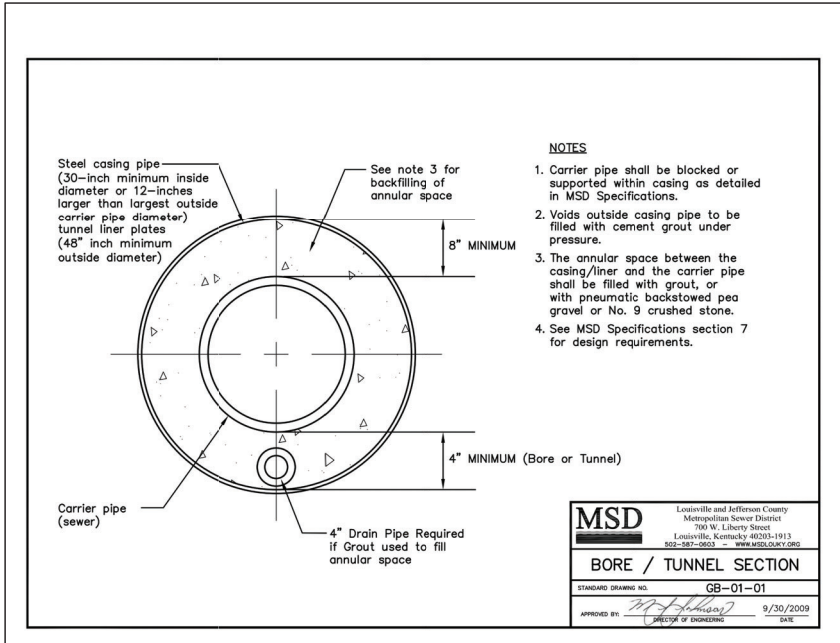
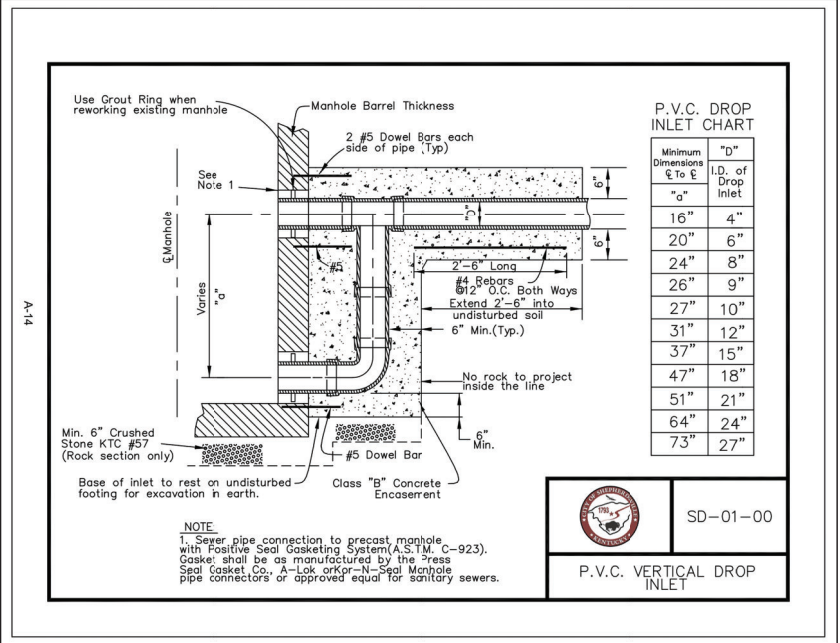
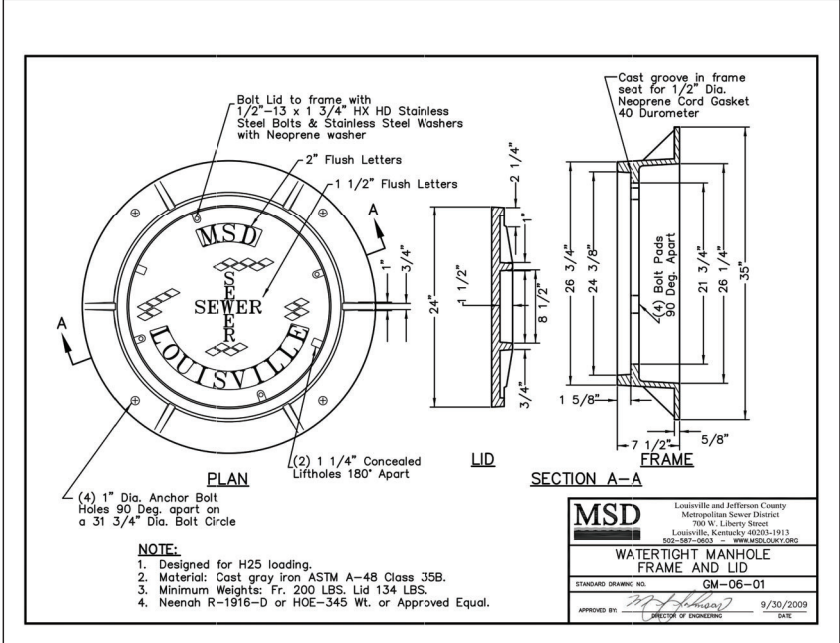
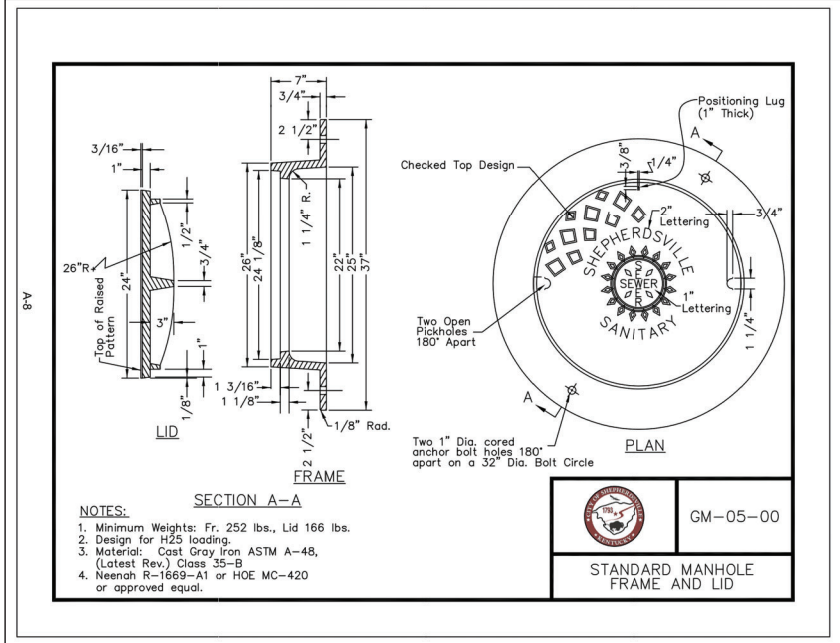
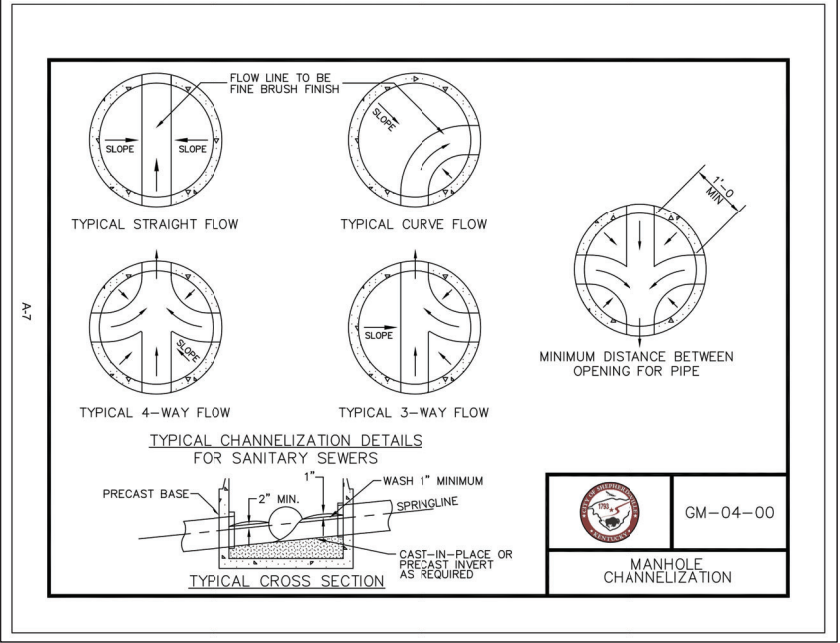
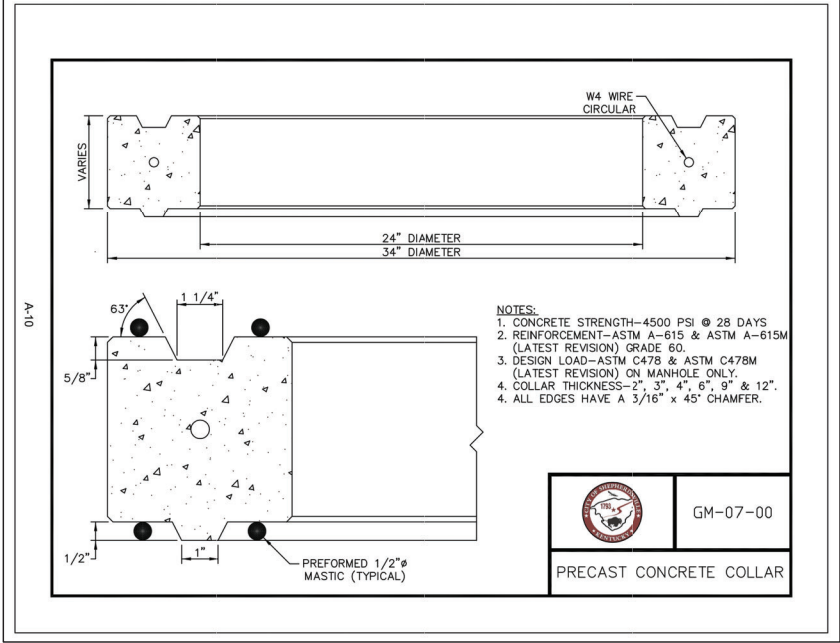
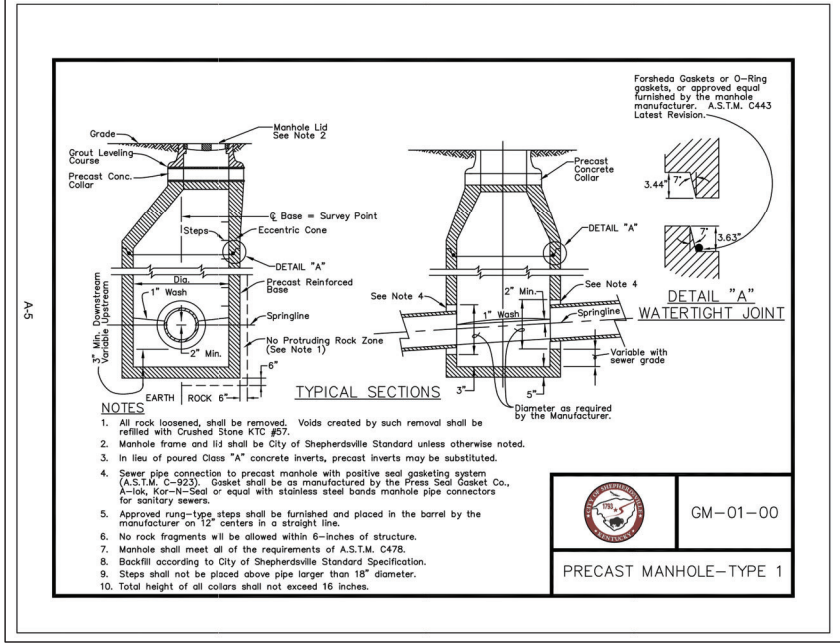


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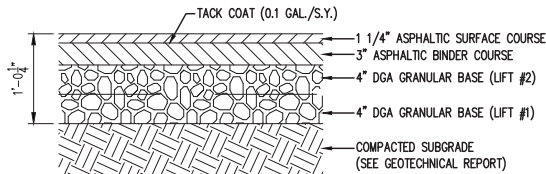
1. CHECK DAMS SHALL BE CONSTRUCTED WITH SAND BAGS AND PLASTIC LINER AS SHOWN IN DETAIL ABOVE. A WATER-INFLATABLE STRUCTURE MAY BE SUBSTITUTED FOR THE SAND BAGS AND PLASTIC LINER IF APPROVED BY THE ENGINEER.
2. PRIOR TO ANY EXCAVATION IN THE STREAM, CHECK DAMS SHALL BE INSTALLED ACROSS THE STREAM AT BOTH THE UPSTREAM AND DOWNSTREAM EXTENTS OF THE PIPELINE INSTALLATION CORRIDOR WITHIN THE TEMPORARY CONSTRUCTION EASEMENT.
3. CHECK DAMS SHALL ONLY BE INSTALLED DURING LOW FLOW CONDITIONS.
4. PUMP STREAM FLOW AROUND THE WORK AREA AS SHOWN IN THE DETAIL ABOVE. PUMPING MUST MAINTAIN A MINIMUM OF 1-FOOT FREEBOARD ON THE CHECK DAMS. STABILIZE THE DISCHARGE END OF THE PUMP AROUND SYSTEM TO PREVENT SCOUR OF THE STREAM BED AND BANKS.
5. PUMP WATER FROM THE WORK AREA LOCATED BETWEEN THE CHECK DAMS TO A FILTER BAG, VEGETATED FILTER STRIP, OR OTHER APPROVED SILT TRAPPING METHOD.
6. PROCEED WITH CONSTRUCTION OF PIPELINE CROSSING.
7. ONCE THE PIPELINE CROSSING IS COMPLETE, STABILIZE THE BANKS WITH SEED, CLEAN STRAW MULCH, AND THE SPECIFIED EROSION CONTROL MAT PRIOR TO REINTRODUCING FLOWS INTO COMPLETED WORK AREA.
8. PUMP WATER FROM THE STREAM INTO THE STABILIZED WORK AREA TO EQUALIZE WATER LEVELS PRIOR TO REMOVING CHECK DAMS.
9. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED SO THAT THE STREAM CROSSING CAN BE COMPLETED AND STABILIZED WITHIN ONE WORK DAY. PUMP AROUND ACTIVITIES MUST BE MAINTAINED CONTINUOUSLY WHILE CHECK DAMS ARE INSTALLED IN THE STREAM.

REV #	DATE	DESCRIPTION

Job No:	20800.000
Date:	July 2, 2020
Scale:	No Scale
Drawn By:	M. Rich
Checked By:	B. Anderson
Drawing Title:	Shepherdsville Bernheim Interceptor Stream/Wetland Restoration Details



User: trottier Plot Date: March 4, 2021 9:47 AM
File Name: I:\20800.000 - Bernheim Interceptor\Civil Sheets\Drawings\Doc\20800_C50-DT_R2.dwg

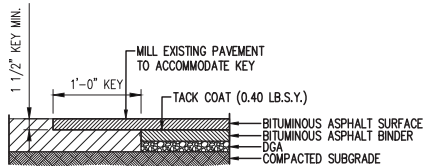


NOTE:
CONTRACTOR SHALL NOTIFY THE OWNER'S INSPECTION COMPANY BEFORE AND DURING THE ASPHALT PLACEMENT SO THAT PROPER INSPECTIONS CAN BE COORDINATED.

MEDIUM DUTY ASPHALT PAVEMENT

DETAIL

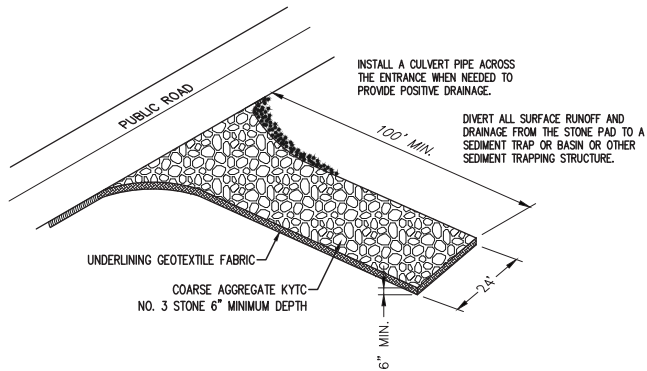
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EDGE KEY

DETAIL

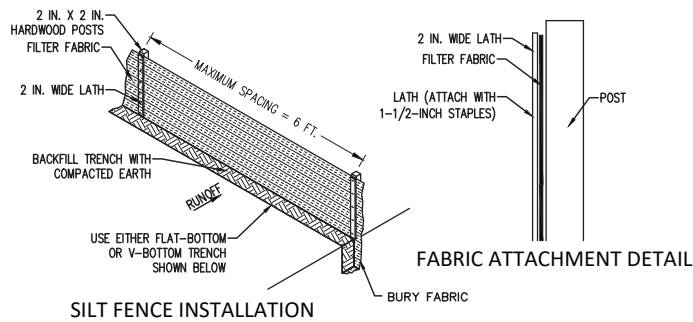
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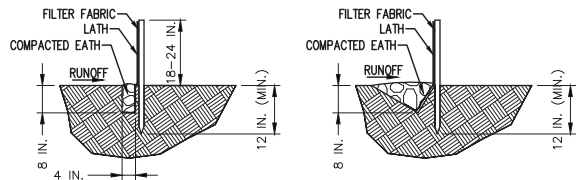
STABILIZED CONSTRUCTION ENTRANCE

DETAIL

SCALE: NONE



SILT FENCE INSTALLATION



FLAT-BOTTOM TRENCH SECTION

V-SHAPED TRENCH SECTION

SILT FENCE

DETAIL

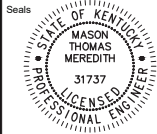
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Engineering
Planning



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Bernheim Interceptor

City of Shepherdsville
Sanitary Sewer

Owner:
City of Shepherdsville
634 Conestoga Parkway
Shepherdsville, Kentucky 40165

REV #	DATE	DESCRIPTION
1	08/11/2020	ELIMINATE MH SST1
2	10/19/2020	SANITARY LINE B
Bid Set		
Job No: 20800.000		
Date: March 3, 2021		
Scale: NONE		
Drawn By: RTR		
Checked By: MTM		
Drawing Title:		
Shepherdsville Bernheim Interceptor		

Misc.
Details

Drawing No:

C5.1