Multiple Blocks

REPAIR EAST PEDESTRIAN BRIDGE

U of M Project Number: P00020217

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North Campus University Of Michigan Ann Arbor , MI

Project Overview

REPAIR OF THE EAST PEDESTRIAN BRIDGE, STREAMBANK, AND STRUCTURAL EMBANKMENT ON THE UNIVERSITY OF MICHIGAN NORTH CAMPUS OVER MILLER CREEK

Applicable Codes And Standards

MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION	2020
MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES	2011
UNIVERSITY OF MICHIGAN DESIGN GUIDELINES AND STANDARD DETAILS	2022
CITY OF ANN ARBOR STANDARD SPECIFICATIONS FOR CONSTRUCTION	1992 AND ALL SUBSEQUENT UPDATES

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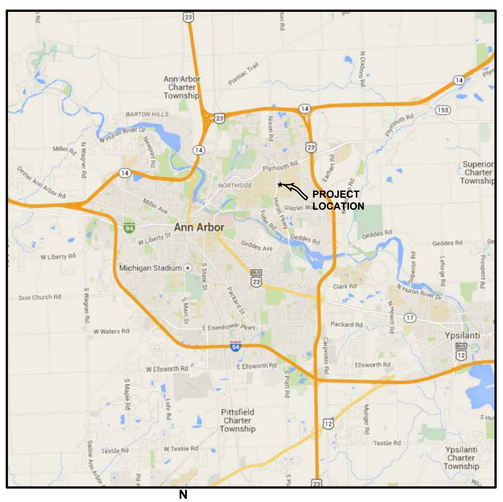

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LOCATION MAP
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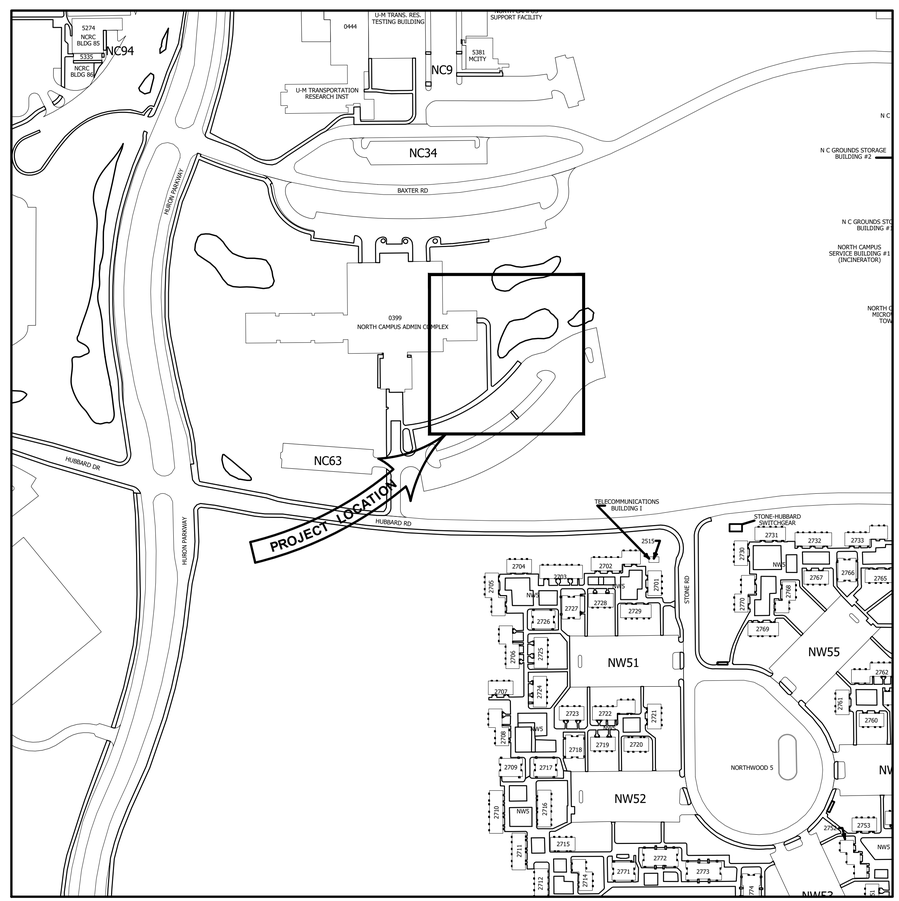

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PATRICK DROZE
CIVIL ENGINEER

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WATER & SEWER UTILITY SYMBOLS

EXISTING

- ST — STORM MANHOLE
- SQUARE CATCH BASIN
- ROUND CATCH BASIN
- CULVERT
- CULVERT W/O END SECTION
- CULVERT W/END SECTION
- S — SANITARY MANHOLE
- CO — CLEAN OUT
- GW — GATE VALVE & WELL
- GATE VALVE & BOX
- WV — WATER STOP BOX
- FIRE HYDRANT
- MP — METER PIT
- WATER METER
- SH — SPRINKLER HEAD
- IV — IRRIGATION VALVE

PROPOSED

- STORM MANHOLE
- SQUARE INLET/CATCH BASIN
- ROUND INLET/CATCH BASIN
- CULVERT END SECTION
- SANITARY MANHOLE
- CO — CLEAN OUT
- GATE VALVE
- GV&W — GATE VALVE & WELL
- GV&B — GATE VALVE & BOX
- TSV&W — TAPPING SLEEVE VALVE & WELL
- TSV&B — TAPPING SLEEVE VALVE & BOX
- FIRE HYDRANT

REAL ESTATE SYMBOLS

- CONTIGUOUS PROPERTY SYMBOL
- XXXX — PARCEL NUMBER BOX
- XXXX — NO ROW IMPACTS

MISCELLANEOUS UTILITY SYMBOLS

EXISTING

- GUY WIRE
- GP — GUY POLE
- U — UTILITY POLE
- U — UTILITY POLE W/LIGHT
- LIGHT/DECOR LAMP POLE
- GAS VALVE
- G — GAS METER
- G — GAS RISER
- E — TRANSFORMER PAD
- U — PRIVATE UTILITY MANHOLE
- E — ELECTRIC METER
- TS — TRAFFIC SIGNAL CONTROLLER
- HAND HOLE
- E — ELECTRIC RISER
- W — MONITORING WELL
- PEDESTRIAN SIGNAL

REMOVAL LEGEND

- SIDEWALK REMOVAL
- HMA SURFACE REMOVAL
- CONCRETE REMOVAL
- CLEARING AND GRUBBING
- CURB AND GUTTER, REM
- TREE, REM
- SIGN, REM
- S — SALVAGE
- B — BULKHEAD
- A — ABANDON
- C — CLEARING
- R — REMOVE
- REL — RELOCATE
- REC — RECONSTRUCT
- REL B/O — RELOCATE BY OTHERS
- ADJ B/O — ADJUST BY OTHERS

MISCELLANEOUS SYMBOLS

EXISTING

- RIPRAP
- SIGN
- FLOW DIRECTION
- STUMP
- CONIFEROUS TREE
- DECIDUOUS TREE

  CL 1 1" TO 5"
  CL 2 6" TO 17"
  CL 3 18" TO 35"
  CL 4 36" AND UP
- CONIFEROUS SHRUB
- DECIDUOUS SHRUB
- SB# — SOIL BORING
- SECTION CORNER
- IRON ROD/PIPE
- PK — PK NAIL
- BM XXXX — SURVEY BENCHMARK
- TP # — SURVEY TRAVERSE POINT
- CONCRETE
- GRAVEL

PROPOSED

- RIPRAP
- SIGN
- FLOW DIRECTION
- XX XX XXX — STRUCTURE NUMBER WM SAN STM
- BOULDER TOE
- BANK STABILIZATION
- ASPHALT, HEAVY
- ASPHALT
- CONCRETE
- SILT FENCE
- INLET FILTER
- CHECK DAM, STONE

GRADING

- FLOW DIRECTION
- 753.68 — EXISTING SPOT GRADE
- 749.25 FG — PROPOSED SPOT GRADE
- 665 / 664 — EXISTING CONTOUR
- 840 / 839 — PROPOSED CONTOUR

UTILITY PATTERN

EXISTING

- ELEC — ELECTRICAL *
- GAS — GAS\OIL
- CABLE/TEL — CABLE/TELEPHONE *
- 12" WM — WATER MAIN/SERVICE
- 12" SAN — SANITARY SEWER
- 12" STM — STORM SEWER

*OH = OVERHEAD , UG = UNDERGROUND

PROPOSED

- 12" WM — WATER MAIN/SERVICE
- 12" SAN — SANITARY SEWER
- 12" STM — STORM SEWER
- 4" UD — UNDERDRAIN
- SITE ELEC / LIGHTING

ROW PATTERN

EXISTING

- ROW — ROW
- SECTION
- PROPERTY/PARCEL

TOPO PATTERN

EXISTING

- HEDGE/TREE
- FENCE
- GUARDRAIL
- CENTERLINE OF DITCH
- WETLAND/EDGE OF WATER

PROPOSED

- CENTERLINE OF DITCH
- FENCE

SITE LAYOUT

- 10 — EX AND PROP PARKING SPACE COUNT
- EX AND PROP BARRIER FREE PARKING SPACE

ABBREVIATION KEY

AC	ACRE
ADJ	ADJUST
ASPH	ASPHALT
BC	BACK OF CURB
BF	BARRIER FREE
C+G	CURB AND GUTTER
CB	CATCH BASIN (STORM)
CF	CUBIC FEET
CL	CENTERLINE
COMM	COMMUNICATION UTILITY (PHONE, CABLE, DATA, ETC)
CONC	CONCRETE
CPE	CORRUGATED POLYETHYLENE (PIPE)
CY	CUBIC YARD
DI	DUCTILE IRON
DIA	DIAMETER
ELEC	ELECTRICAL
EX	EXISTING
FC	FACE OF CURB
FL	FLOWLINE
FG	FINISH GRADE / SURFACE (NON-PAVED AREA)
FM	FORCEMAIN
FT	FEET
GV	GATE VALVE
GV+B	GATE VALVE AND BOX
GV+W	GATE VALVE AND WELL
IN	INCHES
MH	MANHOLE STRUCTURE
OHM	OHM ADVISORS
PAVT	PAVEMENT
PROP	PROPOSED
RCP	REINFORCED CONCRETE PIPE
REM	REMOVE (AND DISPOSE)
RIM	TOP OF STRUCTURE CASTING
SAN	SANITARY SEWER / SERVICE
SF	SQUARE FEET
STM	STORM SEWER
SVC	SERVICE (WATER/SANITARY)
SY	SQUARE YARD
T/	TOP OF _____
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALK
WM	WATER MAIN / SERVICE

LANDSCAPE HATCHES AND SYMBOLS

- LAWN
- SPECIALTY SEED
- SPECIALTY SEED
- SPECIALTY SEED

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DATE 10/31/2022 | PROJ NUMBER 0610-22-0110 | ENGINEER PD | PROJ MGR PD | CADD AGM | COUNTY WASHTENAW | MUNICIPALITY ANN ARBOR

UNIVERSITY OF MICHIGAN
REPAIR EAST PEDESTRIAN BRIDGE
LEGEND

SHEET C-010

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GENERAL NOTES

1. THE CONTRACTORS SHALL VERIFY LOCATIONS OF ALL U/G UTILITY LINES AND NOTIFY "MISS DIG" 811 PRIOR TO EXCAVATING. THE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY UTILITY LINE DAMAGED BY CONSTRUCTION ACTIVITIES.

2. IF PLAN INFORMATION INDICATES AN EXISTING UNDERGROUND UTILITY IS OR WILL BE OUT OF SERVICE WITHIN THE LIMITS OF THIS CONTRACT, THE CONTRACTOR IS CAUTIONED TO TREAT SUCH A LINE AS IF IT WERE STILL IN SERVICE AND NOTIFY "MISS DIG" WHEN WORKING IN THE AREA OF THE OUT OF SERVICE FACILITY.

3. ALL MATERIALS, EQUIPMENT AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CURRENT UNIVERSITY OF MICHIGAN STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.

4. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTORS OF THEIR OBLIGATION TO CONSTRUCT ITEMS IN COMPLETE ACCORDANCE WITH U-M AND CITY OF ANN ARBOR STANDARD SPECIFICATIONS, AS WELL AS FOLLOW CURRENT MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

5. WORK AND/OR STAGING WITHIN CITY OF ANN ARBOR RIGHT-OF-WAY (ROW) SHOULD NOT BE NECESSARY WITHIN THIS PROJECT AND IS TO BE AVOIDED. IF ROW WORK AND/OR STAGING IS ANTICIPATED, CONTRACTOR SHALL NOTIFY U-M PRIOR TO COMMENCEMENT OF WORK TO DISCUSS POTENTIAL ALTERNATIVES.

6. ALL BARRICADES AND TRAFFIC CONTROL REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AND MEET MMUTCD REQUIREMENTS. ALL PEDESTRIAN BARRICADES SHALL MEET MDOT ADA PEDESTRIAN RAIL REQUIREMENTS.

7. CONTRACTOR SHALL PROVIDE A PEDESTRIAN DETOUR IN ALL INSTANCES WHERE A SIDEWALK WIDTH IS CLOSED OR REDUCED TO LESS THAN 5 FEET IN WIDTH. THIS INCLUDES BUT NOT LIMITED TO BARRICADES, SIDEWALK CLOSED, DETOUR ARROWS AS OUTLINED IN THE MMUTCD.

8. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS & FEES - ALLOW ADEQUATE TIME FOR OBTAINING PERMITS. CITY OF ANN ARBOR BARRICADE PERMIT IS REQUIRED IF CONTRACTOR IS INSTALLING BARRICADED IN THE ROW TO ACCESS WORK NOT IN ROW. A CITY OF ANN ARBOR ROW PERMIT IS REQUIRED TO PERFORM WORK IN THE CITY OF ANN ARBOR ROW, INCLUDING SIDEWALK RESTORATION. A CITY OF ANN ARBOR TRAFFIC CONTROL PERMIT IS REQUIRED TO IMPACT A LANE OF TRAFFIC IN THE CITY OF ANN ARBOR ROW, INCLUDING VEHICULAR DETOURS OR LANE CLOSURES.

9. WALKS WITHIN THE CITY ROW SHALL BE INSPECTED BY THE CITY OF ANN ARBOR ACCORDING TO THE CITY STANDARDS.

10. MATERIAL TESTING WILL BE PROVIDED BY A 3RD PARTY HIRED BY OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ALL MATERIAL TESTING.

11. ALL DISTURBED U-M LANDSCAPE GRASS AREAS SHALL BE RESTORED AND GRADED BY THE CONTRACTOR BY INSTALLING A MINIMUM OF 6" OF TOPSOIL, SEED, AND MULCH OR HYDROSEED UNLESS NOTED OTHERWISE. DISTURBANCE SHALL BE LIMITED TO AREA REQUIRED TO COMPLETE WORK AS WELL AS EQUIPMENT STAGING AREA.

12. PARKING LOT LIGHTING WORK WILL BE CARRIED OUT BY U-M PLANT POWER AND LIGHTING SHOP. CONTRACTOR SHALL COORDINATE GRADING & U/G WORK WITH DAVE LAMMERS AT 734-647-2049. COORDINATE SITE LIGHTING WORK AND PANEL ACCESS FOR SHUTDOWNS WITH U-M POWER AND LIGHTING, DAVE LAMMERS AT 734-647-2049.

13. CONTRACTOR SHALL CONTACT REPUBLIC PARKING (734-761-7235) TO COORDINATE ANY NECESSARY CLOSURE OF CITY OF ANN ARBOR ON-STREET PARKING AND SHALL PAY ANY ASSOCIATED FEES. TEMPORARY RESTRICTION OF ON-STREET PARKING (NON-METERED) IS ARRANGED THROUGH CITY OF ANN ARBOR ENGINEERING AFTER PAYMENT OF FEES.

14. IT IS THE CONTRACTOR'S RESPONSIBILITY FOR INSTALLATION OF SESC CONTROL MATERIALS. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN INLET FILTER BAGS ON ALL STORM WATER INLETS IN THE VICINITY OF THE PROJECT SITE WHICH MAY RECEIVE STORM WATER RUNOFF FROM THE SITE. THE CONTRACTOR SHALL REMOVE THE INLET FILTER BAGS AT THE CONCLUSION OF THE PROJECT WORK AT THE DIRECTION OF U-M ENVIRONMENT, HEALTH & SAFETY (EHS).

15. CONTRACTORS SHALL AVOID NOISE GENERATING WORK AROUND CAMPUS BUILDINGS DURING UNIVERSITY SEMESTER EXAM PERIODS.

16. NO EQUIPMENT OR VEHICLES MAY BE PARKED IN LAWN OR LANDSCAPED AREAS WITHOUT PRIOR APPROVAL BY U-M PROJECT MANAGER.

17. NO STORAGE OF MATERIALS, PARKING, OR DRIVING IS ALLOWED WITHIN THE LIMITS OF TREE CANOPIES.

18. EMERGENCY VEHICLE ACCESS LANES AND EGRESS FROM BUILDINGS SHALL BE MAINTAINED OPEN AT ALL TIMES - WORK WITH U-M PROJECT MANAGER TO COORDINATE ANY LOCATIONS WHERE WORK WILL CUT OFF BUILDING ACCESS.

19. MAINTAIN VISIBILITY AND ACCESSIBILITY TO FIRE HYDRANTS AND BUILDING FIRE DEPARTMENT CONNECTION LOCATIONS.

20. GOOD HOUSEKEEPING PRACTICES MUST BE EMPLOYED AT THE JOB SITE. MINIMIZE DUST.

21. ALL BROKEN ASPHALT, CONCRETE, & DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY REMOVED FROM THE SITE PRIOR TO THE COMPLETION OF THE CONTRACT. NO STOCK PILING WILL BE ALLOWED ON SITE.

22. SEQUENCING OF WORK IS TO BE APPROVED BY PROJECT MANAGER PRIOR TO STARTING CONSTRUCTION.

23. WHEN WORKING IN PROXIMITY TO BUILDINGS, CONTRACTOR SHALL PERFORM WORK FROM THE FURTHEST MANHOLE FROM BUILDING WHERE POSSIBLE AND VENT SEWER GASES AND/OR EPOXY PRODUCT FUMES AWAY FROM BUILDING.

24. CONTRACTOR IS RESPONSIBLE FOR ALL PREPARATORY WORK AND OPERATIONS INCLUDING, BUT NOT LIMITED TO THE MOVEMENT OF PERSONNEL, EQUIPMENT, SUPPLIES, AND INCIDENTALS TO THE PROJECT SITE.

25. CONTRACTOR SHALL SUBMIT AS-BUILT DIMENSIONED SKETCHES OF ALL AREAS TO THE U-M PROJECT MANAGER. FINAL AS-BUILT SKETCHES WILL BE PROVIDED ON A SINGLE FULL SIZE PLAN SET UPON COMPLETION OF ALL WORK.

26. CONTRACTOR IS RESPONSIBLE FOR PRE-MOBILIZATION VIDEO AND PHOTO DOCUMENTATION OF THE WORK AND STAGING AREAS, AS WELL AS THE AREAS ADJACENT TO SUCH.

CONCRETE NOTES

1. ALL CONCRETE SHALL BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS AND CONSIST OF AIR ENTRAINED PORTLAND CEMENT WITH A TOTAL AIR CONTENT OF NOT LESS THAN 5% AND NOT MORE THAN 8%. CEMENT CONTENT SHALL BE MINIMUM OF SIX BAGS PER CUBIC YARD. THE SLUMP SHALL NOT BE MORE THAN 4 INCHES NOR LESS THAN 1- 1/2" AS DETERMINED BY THE SLUMP CONE TEST ASTM-143. SLUMP GREATER THAN 5" WITH USE OF AN ADMIXTURE REQUIRES ENGINEER AND U-M PROJECT MANAGER APPROVAL. CONC. WALKS AND PAVEMENT SHALL INCLUDE POLYPROPYLENE FIBRILLATED FIBERS WITH A VOLUME OF 1.5 LBS/CY. ALL MATERIALS, EQUIPMENT AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH MICHIGAN DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR CONSTRUCTION.

2. CONCRETE CURING COMPOUND SHALL BE CLEAR MEMBRANE CONFORMING TO ASTM C-309, TYPE I OR ID, CLASS A AND B AND APPLIED AT A RATE OF NOT LESS THAN ONE GALLON PER 200 SQ. FT. OF CONCRETE SURFACE IMMEDIATELY AFTER FINISHING OPERATIONS ARE COMPLETE. CURING COMPOUND USED WITHIN CLOSE PROXIMITY OF BUILDING DOORS, WINDOWS OR AIR INTAKES SHALL BE WATER BASED.

3. GRANULAR MATERIAL SHALL BE A MINIMUM OF MDOT CLASS II COMPACTED TO 98% ASTM 1557 VALUE. GRANULAR MATERIAL WITHIN THE ROW SHALL MEET CITY OF ANN ARBOR CLASS II REQUIREMENTS. COMPACTED GRANULAR MATERIAL SHALL EXTEND HORIZONTALLY FOR MINIMUM DISTANCE OF 6" BEYOND THE EDGES OF NEW CONCRETE.

4. ALL PREPARED GRANULAR FILL BASE SHALL MEET COMPACTION REQUIREMENTS PRIOR TO THE SCHEDULING OF CONCRETE/PAVING MATERIAL DELIVERY. CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF REQUIRED MATERIAL TESTING.

5. PLACE CONCRETE ON A MOIST COMPACT BASE.

6. PROVIDE 1/2" THICK SEALED EXPANSION JOINTS AT ALL POINTS OF CONTACT WITH FIXED OBJECTS SUCH AS BUILDING, CURBS, PAVING, POLES, SIGNS AND HYDRANTS. EXPANSION JOINTS SHALL BE INCIDENTAL TO CONCRETE INSTALLATION.

7. PROVIDE HAND TOOLED CONTROL JOINTS IN CONCRETE WALKS TO FORM PANELS OF SIZES INDICATED OR MATCH EXISTING PATTERN. HAND TOOL ½" WIDE CONTROL JOINTS TO A MINIMUM DEPTH OF ONE (1) INCH. TOTAL DEPTH OF CONTROL JOINT SHALL BE ¼ OF SLAB THICKNESS. FOR SLAB THICKNESS GREATER THAN 8", SAWCUTTING, IN ADDITION TO AND AFTER HAND TOOLING JOINTS, IS REQUIRED TO MEET A FINAL DEPTH OF ¼ THICKNESS OF THE SLAB. SAWCUTTING SHALL OCCUR AS SOON AS POSSIBLE AND WITHIN 24 HOURS OF CONCRETE INSTALLATION. INITIAL SURFACE SAWCUT CONTROL JOINTS (SAWCUT ONLY) ARE PROHIBITED UNLESS APPROVED BY OWNER.

8. SAWCUT & GRINDING TOOLS MUST BE ATTACHED TO A WATER SOURCE OR A VACUUM DEVICE TO MINIMIZE DUST EXPOSURE.

9. SAWCUTTING FOR REMOVALS SHALL BE INCIDENTAL TO REMOVAL.

SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE

IN ACCORDANCE WITH RULE 1709 PROMULGATED UNDER THE AUTHORITY OF PART 91, SOIL EROSION AND SEDIMENTATION CONTROL, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994PA 451, AS AMENDED, AND IN ADDITION TO THE INFORMATION IN THE PROJECT PLANS AND SPECIFICATIONS,THE FOLLOWING GENERAL CONDITIONS APPLY TO THE EARTH CHANGE AUTHORIZED BY THIS DOCUMENT:

1. DESIGN, CONSTRUCT, AND COMPLETE THE EARTH CHANGE IN A MANNER THAT LIMITS THE EXPOSED AREA OF DISTURBED LAND FOR THE SHORTEST PERIOD OF TIME.

2. REMOVE SEDIMENT CAUSED BY ACCELERATED SOIL EROSION FROM RUNOFF WATER BEFORE IT LEAVES THE SITE OF THE EARTH CHANGE.

3. TEMPORARY OR PERMANENT CONTROL MEASURES SHALL BE DESIGNED AND INSTALLED TO CONVEY WATER AROUND, THROUGH OR FROM THE EARTH CHANGE AT A NON-EROSIVE VELOCITY.

4. INSTALL TEMPORARY SOIL AND SEDIMENTATION CONTROL MEASURES BEFORE OR UPON COMMENCEMENT OF THE EARTH CHANGE ACTIVITY AND MAINTAIN THE MEASURES ON A DAILY BASIS. REMOVE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED. (STABILIZED MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING OR COVERING OF SOIL TO ENSURE RESISTANCE TO SOIL EROSION, SLIDING OR OTHER EARTH MOVEMENT.)

5. COMPLETE PERMANENT SOIL EROSION CONTROL MEASURES FOR THE EARTH CHANGE WITHIN FIVE (5) CALENDAR DAYS AFTER FINAL GRADING OR UPON COMPLETION OF FINAL EARTH CHANGE. IF IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE THE EARTH CHANGE, THEN MAINTAIN TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IN PLACE AND STABILIZED.

6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING LANDSCAPING DURING THE WARRANTY PERIOD. AFTER THE WARRANTY HAS EXPIRED, THE PERMANENT SESC MEASURES WILL BE MAINTAINED BY UNIVERSITY OF MICHIGAN PLANT OPERATIONS GROUNDS AND WASTE DEPARTMENT AND THE PLUMBING SHOP AS APPROPRIATE. THE GROUNDS MANAGER WILL BE RESPONSIBLE FOR MAINTENANCE OF ANY PERMANENT LANDSCAPING SESC MEASURES. THE PLUMBING SHOP FOREMAN WILL BE RESPONIBLE FOR THE MAINTENANCE OF ANY SESC MEASURES THAT ARE PART OF THE WATER DRAINAGE SYSTEM.

SOIL EROSION AND SEDIMENTATION CONTROL MAINTENANCE NOTES

1. INSTALL TEMPORARY INLET FILTERS AT ALL ADJACENT AND DOWN-GRADIENT STORM WATER INLETS, CATCH BASINS AND MANHOLES THAT MAY BE IMPACTED. CATCH BASIN INLET FILTERS SHALL BE MAINTAINED CLEAN AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF A FILTER HAS HOLES OR IS INUNDATED WITH SEDIMENT, THE FILTER WILL REQUIRE REPLACEMENT.

2. INSTALL AN ANTI-TRACKING PAD AT THE SITE ENTRY AND EXIT(S). THE ANTI-TRACKING PAD SHOULD BE CONSTRUCTED OF GEOTEXTILE FABRIC WITH LIMESTONE OVER IT.

3. SILT FENCE SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF REPAIR OR REPLACEMENT IS NECESSARY, IT SHALL BE PERFORMED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. MAINTENANCE INCLUDES THE REMOVING OF BUILT-UP SEDIMENT ACCUMULATES TO ½ THE HEIGHT OF THE FENCE. CONTRACTOR SHALL REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. ADDITIONALLY, THE CONTRACTOR SHALL REINSTALL ANY PORTION OF THE FENCING DAMAGED BY CONSTRUCTION MACHINERY.

4. PLACE STOCKPILES AND OTHER SPOIL PILES AWAY FROM THE DRAINAGE SYSTEM TO MINIMIZE SEDIMENT TRANSPORT. IF THE STOCKPILE AND/OR SPOIL PILE MUST REMAIN ON-SITE OVERNIGHT, OR IF THE WEATHER CONDITIONS INDICATE THE CHANCE FOR PRECIPITATION, A) COVER THE PILE WITH WATER REPELLENT MATERIAL TO PREVENT EROSION AND/OR B) INSTALL SILT FENCING AROUND THE BASE OF THE PILE TO PREVENT TRANSPORT OF SEDIMENT TO THE STORM WATER SYSTEM, OR APPLY OTHER CONTROL METHODS APPROPRIATE TO THE SIDE. CONTROL MEASURES TO GUARD AGAINST WIND EROSION MUST ALSO BE EMPLOYED, SUCH AS WETTING OR COVERING THE STOCKPILES. KEEP AS FEW STOCKPILES AS POSSIBLE DURING THE COURSE OF THE PROJECT.

5. THROUGHOUT THE CONSTRUCTION PERIOD, ALL MUD/SILT TRACKED ONTO EXISTING ROADS FROM THE SITE DUE TO CONSTRUCTION SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR.

6. SEEDING OR OTHER STABILIZATION SHALL BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF.

7. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL ON THE SITE THROUGHOUT THE DURATION OF THE CONSTRUCTION PROCESS.

8. WEEKLY INSPECTIONS BY A UNIVERSITY SESC TRAINED CERTIFIED STORM WATER MANAGEMENT OPERATOR AS WELL AS PERIODIC INSPECTIONS WITHIN 24 HOURS OF A SIGNIFICANT RAIN EVENT WILL BE REQUIRED. THESE INSPECTIONS MAY RESULT IN RECOMMENDATIONS FOR ROUTINE MAINTENANCE OF THE SOIL EROSION CONTROL DEVICES, AS WELL AS ADDITIONAL CONTROLS.

ENVIRONMENT, HEALTH & SAFETY NOTES

1. KNOWN CONTAMINATION:

SOIL CHARACTERIZATION ACTIVITIES IDENTIFIED THE PRESENCE OF METALS EXCEEDING MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA, INCLUDING DRINKING WATER PROTECTION CRITERIA AND GROUNDWATER SURFACE WATER INTERFACE CRITERIA IN PORTIONS OF THE SANITARY AND STORM SEWER SYSTEMS MAINTENANCE REPAIR PROJECT. SPECIFICALLY, ARSENIC AND MERCURY WERE IDENTIFIED IN EXISTING SOILS AT CONCENTRATIONS ABOVE PART 201 CRITERIA IN THE FOLLOWING AREAS: 1/C-140, 6/C-141, 8/C-142, 7/C-142, 9/C-142, 14/C-143. THE EXISTING SOILS HAVE BEEN CHARACTERIZED AS CONTAMINATED, NON-HAZARDOUS SOIL. THESE SOILS ARE NOT CLASSIFIED AS HAZARDOUS WASTE OR HAZARDOUS MATERIALS. THEREFORE, HAZARDOUS MATERIAL REQUIREMENTS CONTAINED IN 49 CFR 172.101 ARE NOT APPLICABLE FOR THESE SOILS, NOR ARE ANY OTHER FEDERAL OR STATE REGULATIONS PERTAINING TO HAZARDOUS MATERIALS OR HAZARDOUS WASTE. SOIL WITHIN AREA 1/C-140 MAY NOT BE REUSED. SOIL FROM ALL OTHER PROJECT AREAS MAY BE REUSED IN PLACE. IF SOIL CANNOT BE REUSED IN PLACE (OR IS EXCAVATED FROM AREA 1/C-140) IT WILL NEED TO BE DISPOSED OF AT THE GFL - ARBOR HILLS LANDFILL IN NORTHVILLE, MICHIGAN. THE OWNER SHALL OBTAIN LANDFILL APPROVAL AND PAY THE GFL LANDFILL TIPPING FEES FOR THE CONTAMINATED SOIL. HANDLING, TRANSPORTATION, AND DISPOSAL OF THE CONTAMINATED SOILS SHALL BE IN ACCORDANCE WITH ALL REGULATORY REQUIREMENTS. THE UNIVERSITY OF MICHIGAN ENVIRONMENT HEALTH & SAFETY DEPARTMENT (EHS), OR EHS'S REPRESENTATIVE SHALL PROVIDE THE SPECIAL WASTE MANIFESTS REQUIRED TO TRANSPORT THE EXISTING CONTAMINATED SOILS TO GFL LANDFILL. NO CONTAMINATED SOIL SHALL LEAVE THE SITE WITHOUT A SPECIAL WASTE MANIFEST SIGNED BY EHS OR ITS REPRESENTATIVE. PROJECT MANIFESTS SHALL ONLY BE USED FOR PROJECT SOILS AND ARE NOT TRANSFERABLE.

CONTRACTORS STOCKPILING CONTAMINATED SOILS SHALL PLACE THE MATERIAL ON PLASTIC SHEETING. STOCKPILES SHALL ALSO BE COVERED WITH PLASTIC SHEETING AT THE END OF EACH DAY OR WHEN NOT IN USE.

CONTRACTORS WORKING ON THE SITE SHALL BE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE (HAZWOPER) REQUIREMENTS (29 CFR 1910.120) INCLUDING BUT NOT LIMITED TO TRAINING, MEDICAL SURVEILLANCE, AND SITE-SPECIFIC HEALTH AND SAFETY PLAN THAT THE CONTRACTOR SHALL PREPARE BASED ON AVAILABLE SITE DATA, AS APPROPRIATE.

IF GROUNDWATER AND/OR SURFACE WATER IS ENCOUNTERED IN QUANTITIES THAT REQUIRE DEWATERING, CONTACT THE UM PROJECT MANAGER AND UM EHS-EP3 (734-763-6973) FOR INSPECTION OF THE WATER AND DETERMINATION OF DISPOSAL REQUIREMENTS. IF SOIL EXHIBITING CHEMICAL OR UNUSUAL ODORS, STAINING, UNUSUAL COLORING, AND/OR MAN MADE DEBRIS, CONTACT THE UM PROJECT MANAGER AND UM EHS-EP3 (734-763-6973) FOR INSPECTION OF THE SOIL AND DETERMINATION OF DISPOSAL REQUIREMENTS. OWNER WILL PAY FOR ANALYTICAL TESTING AND DISPOSAL FEES ASSOCIATED WITH THE DISPOSAL OF THE CONTAMINATED WATER/SOIL.

THERE IS NO KNOWN SOIL CONTAMINATION ASSOCIATED WITH 16/C-144 OR 17/C-145. THERE ARE NO ENVIRONMENTAL RESTRICTIONS ON SOIL REUSE AND DISPOSAL FOR THESE PROJECT AREAS.

2. MANAGEMENT AND DISPOSAL OF REGULATED WASTE MATERIALS. CONTRACTOR SHALL COORDINATE WITH EHS HAZARDOUS MATERIALS MANAGEMENT (HMM) PROGRAM AT (734-753-4568) FOR THE REMOVAL OF ALL REGULATED WASTE MATERIALS. REGULATED WASTE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO: USED CHEMICAL PRODUCTS, PAINTS, SOLVENTS, ADHESIVES, OILS, GREASES, CLEANERS, DEGREASERS, CONTAMINATED OR OILY RAGS, GLYCOLS, HEAT TRANSFER FLUIDS, AND BOILER CHEMICALS. A REPRESENTATIVE FROM THE EHS-HMM PROGRAM SHALL SIGN ALL WASTE DISPOSAL MANIFESTS FOR REGULATED WASTES. WASTE MATERIALS SHALL BE STAGED FOR PICK UP IN AREAS THAT ARE EASILY ACCESSIBLE TO EHS-HMM STAFF. WASTE CONTAINERS SHALL BE STORED ON A HARD SURFACE SUCH AS ASPHALT, CONCRETE, OR TILED FLOORING. ALL WASTE. CONTAINERS SHALL BE LABELED WITH EITHER A HAZARDOUS WASTE LABEL, OR A NON RCRA REGULATED WASTE LABEL AS APPROPRIATE. LABELS SHALL REMAIN VISIBLE, AND SHALL BE COMPLETED LEGIBLY. LABELS MAY BE OBTAINED BY CALLING EHS-HMM PROGRAM OFFICE. ALL CONTAINERS SHALL BE TIGHTLY CLOSED WHEN NOT ACTIVELY BEING FILLED. CONTAINERS SHALL BE INSPECTED DAILY FOR LEAKS, CLOSURE, LABELING AND CONTAINER INTEGRITY. CONTRACTOR SHALL PROVIDE U OF M EHS WITH SAFETY DATA SHEETS FOR ALL CHEMICALS USED IN THE PROJECT. CONTRACTOR SHALL CLEAN UP ALL SPILLS IMMEDIATELY.

3. CONCRETE, ASPHALT & SAWCUTTING WORK

UM PROJECTS SHALL NOT DISCHARGE TO THE SURFACE WATERS OF THE STATE ANY WASTEWATER GENERATED FROM CUTTING, GRINDING, DRILLING, OR HYDRODEMOLITION OF CONCRETE, INCLUDING ASPHALT WITHOUT AUTHORIZATION UNDER AN NPDES WASTEWATER DISCHARGE PERMIT.

THE FOLLOWING REQUIREMENTS APPLY:

- DISCHARGE OF WATER, DUST, OR DEBRIS FROM CONCRETE AND ASPHALT WORK TO STORM OR SANITARY SYSTEMS IS PROHIBITED.
- STORM DRAINS MUST BE PROTECTED FROM DUST AND DEBRIS.
- ANY WATER USED DURING CONCRETE AND ASPHALT WORK (INCLUDING SWEEPING AND SAW-CUTTING) MUST BE CONTAINED AND COLLECTED FOR PROPER DISPOSAL. SUGGESTED CONTROLS INCLUDE WET VACUUM, OR ABSORBENTS.
- GOOD HOUSEKEEPING PRACTICES MUST BE EMPLOYED AT THE JOBSITE. MINIMIZE DUST.
- PROJECTS SHALL NOT DISCHARGE TO THE SURFACE WATERS OF THE STATE ANY WASTEWATER GENERATED FROM CUTTING, GRINDING, DRILLING, HYDRO-DEMOLITION OF CONCRETE WITHOUT AUTHORIZATION UNDER A NPDES WASTEWATER DISCHARGE PERMIT.

4. CONCRETE AND GROUT WASHOUT

A. DO NOT DISCHARGE CONCRETE/GROUT WASHOUT INTO STORM DRAINS, CATCH BASINS, THE SANITARY SEWER SYSTEM, DITCHES, OR SURFACE WATERS. PERFORM WASHING OF CONCRETE TRUCKS AND MATERIALS CLEAN-UP IN DESIGNATED AREAS OR AN APPROVED OFFSITE LOCATION. USE AS LITTLE WATER AS NECESSARY.

B. DESIGNATED AREAS SHOULD BE CLEARLY POSTED. ALL PITS SHOULD BE LINED TO PREVENT SEEPAGE. IF NOT LINED, THE BOTTOM OF THE PIT SHOULD BE AT LEAST 5 FEET ABOVE THE WATER TABLE. LOCATE DESIGNATED AREAS A MINIMUM OF 50 FEET FROM STORM DRAINS, BODIES OF WATER AND DITCHES.

C. ALTERNATIVE TO A DESIGNATED PIT AREA: PROVIDE AN APPROPRIATE WASHOUT CONTAINER. INSPECTION OF THESE WASHOUT CONTAINERS SHOULD OCCUR REGULARLY TO ENSURE NO LIQUIDS ARE DRAINING FROM THE CONTAINER TO STORM DRAINS, CATCH BASINS, SANITARY SEWER SYSTEM, DITCHES, OR SURFACE WATERS. BE AWARE OF FORECASTED RAIN EVENTS AND PLAN TO EMPTY CONTAINMENT SYSTEMS AHEAD OF TIME TO PROVIDE ENOUGH STORAGE OR COVER TO PREVENT OVERFLOW.

D. ONCE CONCRETE WASHOUT HAS HARDENED, DISPOSE OF PROPERLY. DISPOSAL OF HARDENED CONCRETE/GROUT SHOULD OCCUR ON A REGULAR BASIS.

E. WASHOUT FACILITIES MUST BE CLEANED WHEN 75% FULL. PROVIDE ADDITIONAL LOCATIONS AS NEEDED.

F. FOR ADDITIONAL INFORMATION, REVIEW THE CONCRETE WASHOUT WATER GUIDANCE (https://ehs.umich.edu/wp-content/uploads/2021/02/concrete-washout-water-and-slurry.pdf) OR CONTACT EHS - EPPP AT 734-647-1143.

5. DURING WORK ACTIVITIES IF SUSPECT CONTAMINATED SOIL, GROUNDWATER, OR OTHER UNKOWN MATERIAL IS ENCOUNTERED CONTACT YOUR UNIVERSITY OF MICHIGAN CONSTRUCTION MANAGEMENT REPRESENTATIVE AND THE U-M OCCUPATIONAL SAFETY & ENVIRONMENTAL HEALTH DEPARTMENT (763-6973) IMMEDIATELY. SUSPECT CONTAMINATED SOIL MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, STAINING, UNUSUAL COLORING, AND/OR CONTAIN MAN-MADE DEBRIS. SUSPECT CONTAMINATED GROUNDWATER MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, UNUSUAL COLORING, AND/OR SHEEN. IMMEDIATELY CEASE ALL EXCAVATION, DEWATERING, TRANSPORT, OR DISTURBANCE OF THE SUSPECT MATERIAL UNTIL GIVEN DIRECTION BY THE U-M CONSTRUCTION MANAGEMENT REPRESENTATIVE.

6.MANAGEMENT AND DISPOSAL OF REGULATED WASTE MATERIALS. CONTRACTOR SHALL COORDINATE WITH EHS-HAZARDOUS MATERIALS MANAGEMENT (HMM) PROGRAM AT (753-4568) FOR THE REMOVAL OF ALL REGULATED WASTE MATERIALS. REGULATED WASTE MATERIALS INCLUDE, BUT ARE NOT LIMITED TO: USED CHEMICAL PRODUCTS, PAINTS, SOLVENTS, ADHESIVES, OILS, GREASES, CLEANERS, DEGREASERS, CONTAMINATED OR OILY RAGS, GLYCOLS, HEAT TRANSFER FLUIDS, AND BOILER CHEMICALS. A REPRESENTATIVE FROM THE EHS-HMM PROGRAM SHALL SIGN ALL WASTE DISPOSAL MANIFESTS FOR REGULATED WASTES. WASTE MATERIALS SHALL BE STAGED FOR PICK UP IN AREAS THAT ARE EASILY ACCESSIBLE TO EHS-HMM STAFF. WASTE CONTAINERS SHALL BE STORED ON A HARD SURFACE SUCH AS ASPHALT, CONCRETE, OR TILED FLOORING. ALL WASTE CONTAINERS SHALL BE LABELED WITH EITHER A HAZARDOUS WASTE LABEL, OR A NON RCRA REGULATED WASTE LABEL AS APPROPRIATE. LABELS SHALL REMAIN VISIBLE, AND SHALL BE COMPLETED LEGIBLY. LABELS MAY BE OBTAINED BY CALLING EHS-HMM PROGRAM OFFICE. ALL CONTAINERS SHALL BE TIGHTLY CLOSED WHEN NOT ACTIVELY BEING FILLED. CONTAINERS SHALL BE INSPECTED DAILY FOR LEAKS, CLOSURE, LABELING AND CONTAINER INTEGRITY. CONTRACTOR SHALL PROVIDE U OF M EHS WITH MATERIALS SAFETY DATA SHEETS FOR ALL CHEMICALS USED IN THE PROJECT. CONTRACTOR SHALL CLEAN UP ALL SPILLS IMMEDIATELY.

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- •• DESIGNATED AREAS SHOULD BE CLEARLY LABELED. THEY SHOULD BE IN A PIT TO PREVENT RUN-OFF OF WASTE WATER. PLACE DESIGNATED AREAS A MINIMUM OF 50 FEET FROM STORM DRAINS, BODIES OF WATER AND DITCHES. ALL DESIGNATED AREAS SHOULD BE LINED TO PREVENT SEEPAGE AND SHOULD HAVE A BARRIER.
- •• ALTERNATIVE TO A DESIGNATED AREA: PROVIDE A CONCRETE BOX. IF ONLY A SMALL OF CONCRETE WASHINGS IS TO OCCUR, ONE OPTION IS TO LINE A ROLL-OFF BOX. FOR VERY SMALL PROJECTS THIS COULD BE DONE WITH A DRUM.

B. ONCE CONCRETE WASHOUT HAS HARDENED, BREAK UP AND DISPOSE OF PROPERLY. DISPOSAL OF HARDENED CONCRETE/GROUT SHOULD OCCUR ON A REGULAR BASIS.

C. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES PROVIDED ONCE THE WASHOUT AREA IS 75% FULL.

9. FERTILIZER

USE ONLY PHOSPHORUS-FREE FERTILIZERS ON TURFGRASS. PHOSPHORUS MAY BE ADDED TO TURFGRASS ONLY IF SOILS ARE TESTED (A MINIMUM OF ONCE EVERY FOUR (4) YEARS) AND A NEED FOR PHOSPHORUS IS DEMONSTRATED. PHOSPHORUS FERTILIZERS SHALL BE APPLIED TO LANDS THAT PERMITTEE OWNS OR OPERATES ONLY AS PRESCRIBED IN THE SOIL TEST RESULTS. PROVIDE EHS EP3 WITH SOIL TESTING RESULTS IF PHOSPHORUS IS PROPOSED FOR USE ON TURFGRASS. SEEDING OR OTHER STABILIZATION SHALL BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF.

10. DEWATERING

UNCONTAMINATED GROUNDWATER AND SURFACE WATER WHICH IS FREE OF SEDIMENT MAY BE DISCHARGED TO A STORM DRAIN. ALL DEWATERING OPERATIONS MUST USE A FILTER (DEWATERING) BAG CONNECTED TO THE END OF THE DISCHARGE PIPE. THE FINAL DISCHARGE MUST BE CLEAR (NO TURBIDITY) AND ON A CLEAN SURFACE (NOT ON EXPOSED SOILS) TO PREVENT THE DISCHARGE FROM PICKING UP SEDIMENT. THE STORM DRAIN INLET SHALL BE PROTECTED WITH FILTER FABRIC OR FILTER BAG. THE CONTRACTOR SHALL ENSURE ROUTINE INSPECTION AND MAINTENANCE OF THE PUMP HOSES & FILTER BAGS DAILY, REPLACE EQUIPMENT WHEN SIGNS OF DETERIORATION ARE EVIDENT AND/OR IF INSTRUCTED BY THE CONSTRUCTION SITE STORM OPERATOR. IF THERE ARE INDICATIONS OF POSSIBLE CONTAMINATION, OR IF THE WATER IS TURBID, IMMEDIATELY CEASE DISCHARGE AND CONTACT YOUR UNIVERSITY OF MICHIGAN CONSTRUCTION MANAGEMENT REPRESENTATIVE AND U-M OCCUPATIONAL SAFETY & ENVIRONMENTAL HEALTH DEPARTMENT (763-6973) FOR INSPECTION OF THE WATER AND DISPOSAL OPTIONS. POTENTIALLY CONTAMINATED GROUNDWATER MAY EXHIBIT CHEMICAL OR UNUSUAL ODORS, HAVE AN UNUSUAL COLOR, OR SHEEN.

11. CRUSHED CONCRETE

DUE TO THE POTENTIAL FOR LEACHATE FROM CRUSHED CONCRETE TO IMPACT SURFACE WATERS, AVOID WHERE FEASIBLE AND PRACTICAL THE USE OF CRUSHED CONCRETE ON SITE LOCATIONS WHERE THERE IS A POTENTIAL FOR RUNOFF TO ENTER STORM DRAINS AND WATERS OF THE STATE. EHS RECOMMENDS THE PROJECT UTILIZES CLEAN LIMESTONE (NO FINES) WHERE SURFACE WATERS MAY BE IMPACTED BY RUNOFF.

12. ASPHALT SEALANTS

U-M'S STORMWATER PERMIT REQUIRES THAT ALL U-M PROJECTS COMPLY WITH THE FOLLOWING: THE USE OF COAL TAR EMULSIONS TO SEAL ASPHALT SURFACES IS PROHIBITED.

OHM®
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Livonia, MI 48150
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OHM-ADVISORS.COM

ISSUE: 90% REVIEW SET - NOT FOR CONSTRUCTION
REVIEW: REVISIONS:
###

DATE	PROJ NUMBER	ENG/ARCH	PROJ MGR	CADD	COUNTY	MUNICIPALITY
10/31/2022	0910-22-0010	PD	PD	AGM	WASHTENAW	ANN ARBOUR

UNIVERSITY OF MICHIGAN
REPAIR EAST PEDESTRIAN BRIDGE

GENERAL NOTES

SHEET C-011

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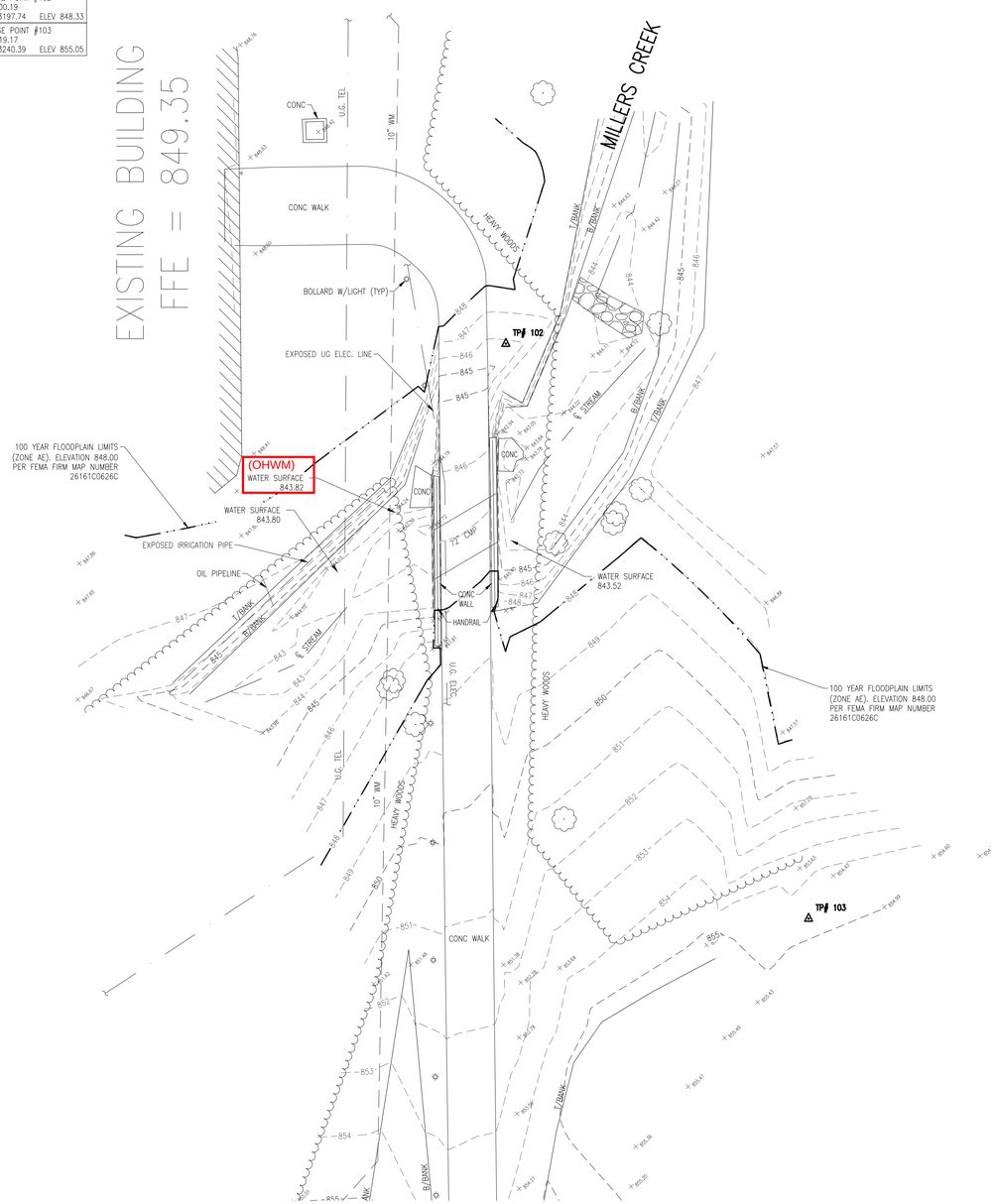
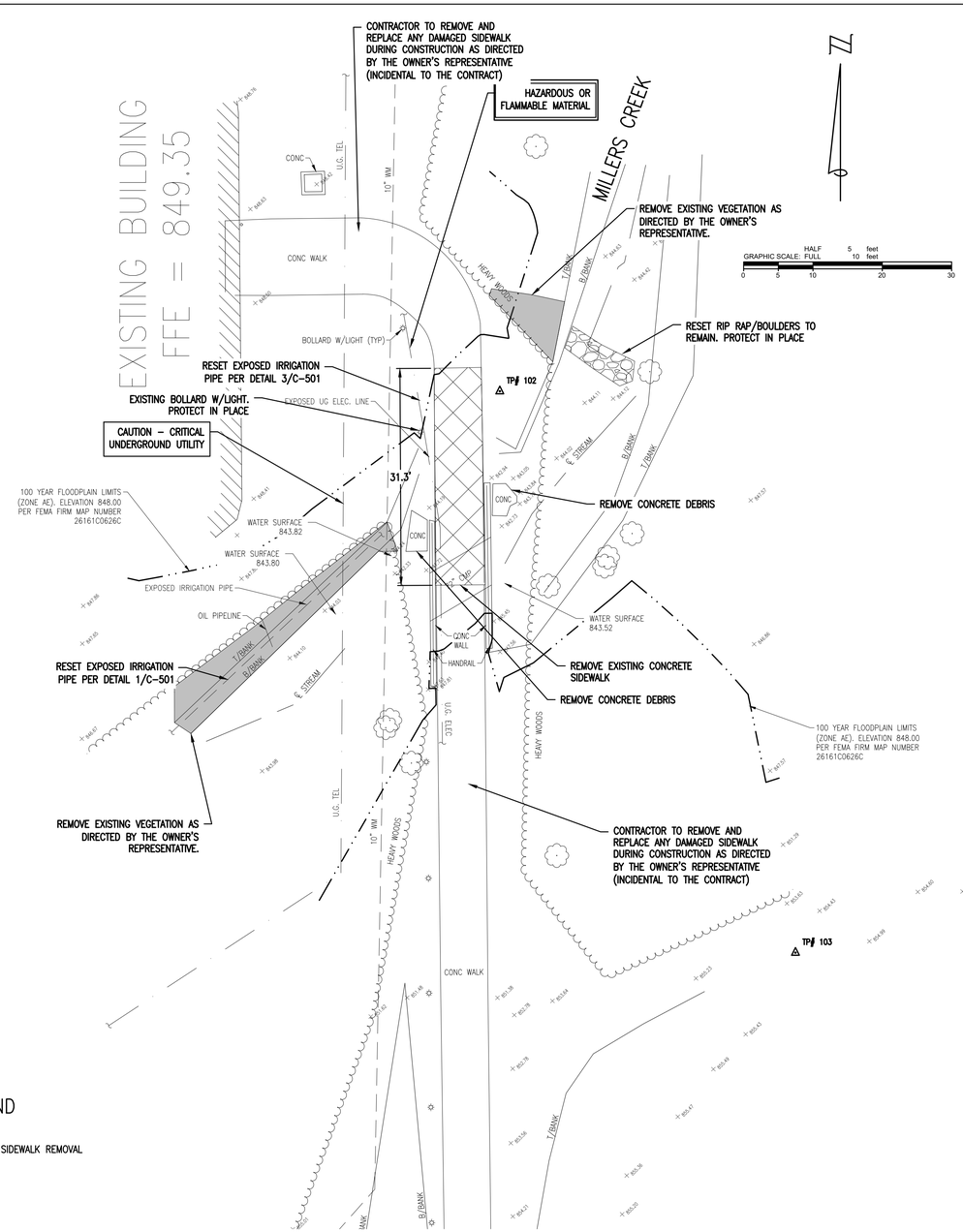
EGLE
WRP036547 v1.0
Approved
Issued On:02/24/2023
Expires On:02/24/2028

TRAVERSE POINT #100 N 290756.15 E 13303196.54	ELEV 854.94
TRAVERSE POINT #102 N 290900.19 E 13303197.74	ELEV 848.33
TRAVERSE POINT #103 N 290819.17 E 13303240.39	ELEV 855.05



EXISTING CONDITIONS



DEMOLITION DETAIL

DEMOLITION LEGEND

CONCRETE SIDEWALK REMOVAL

NOTES:

1. EXISTING CONDITIONS ARE PRESENTED BASED ON TOPOGRAPHIC SURVEY BY OHM ADVISORS. ALL EXISTING INFORMATION PRESENTED IN THESE PLAN SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR, ANY DISCREPANCIES IN THE PLAN SHALL BE MADE AWARE TO THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
2. ONE–CALL UTILITY LOCATING: MISSDIG – 811 OR 800–482–7171. CONTRACTOR SHALL OPEN AN EXCAVATION TICKET A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY EXCAVATION. WHEN MARKINGS AND FLAGS ARE DISRUPTED OR DESTROYED – CALL FOR REMARKING.
3. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATIONS AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND LIMITED MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION SHALL NOT BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION AND NOTIFY THE OWNER OR ENGINEER OF DISCREPANCIES IN THE PLANS.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED IN THE PLANS OR DIRECTED BY THE OWNER'S REPRESENTATIVE. THE ENGINEER AND OWNER ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF THE LOCATION OR DEPTH OF ANY EXISTING UTILITY SHOWN OR NOT SHOWN ON THE PROJECT DRAWINGS.

Know what's **below.**
Call before you dig.

OHM
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10/31/2022	0010-220010	PD	PD	AGM	WASHTENAW	ANN ARBOR

UNIVERSITY OF MICHIGAN
REPAIR EAST PEDESTRIAN BRIDGE
EXISTING CONDITIONS AND DEMOLITION PLAN

SHEET C-110

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Issued On:02/24/2023
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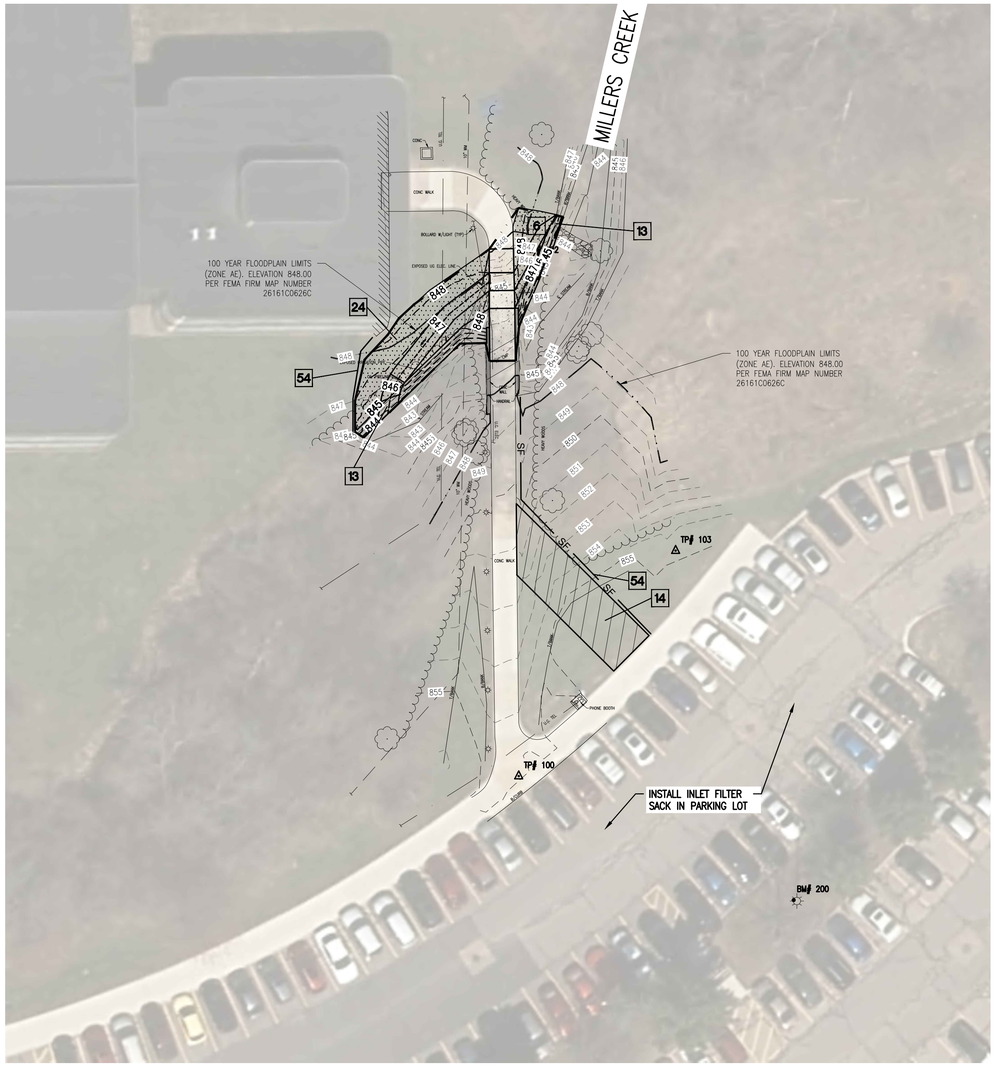


AREA OF DISTURBANCE: ±0.45 ACRES

THE NEAREST WATER OF STATE IS WITHIN THE PROJECT LIMITS

PARCEL NUMBER: 09-09-23-201-001

SEE SHEETS C-010 AND C-011 FOR ADDITIONAL SESC NOTES

FLOODPLAIN NOTE:
THE FLOODPLAIN IS NOT REGULATED BY EGLE, AS PER THE PER FIS 26161CV002A, DATED 4/3/12, THE DRAINAGE AREA TO THE PROJECT IS < 2 SQ/MI

LEGAL DESCRIPTION:
PRT OF NW 1/4 & SW 1/4 SEC 23, NE 1/4 SEC 22, & SE 1/4 SEC 22, T2S, R6E, THAT PROPERTY DESC AS BOUNDED ON N BY BAXTER RD, S BY HUBBARD RD, E BY DEAN RD, & W BY HURON PKWY

OWNER:
UNIVERSITY OF MICHIGAN
TREASURER'S OFFICE/10TH FLO
3003 S STATE ST 10090
ANN ARBOR, MI 48109-1283

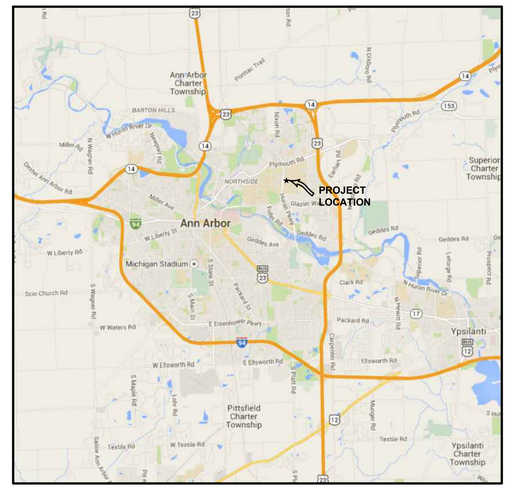
DO NOT DISCHARGE CONCRETE/GROUT WASHOUT INTO STORM DRAINS, CATCH BASINS OR TO THE SANITARY SEWER SYSTEM. PERFORM WASHING OF CONCRETE TRUCKS IN AN APPROVED OFFSITE LOCATION.

SOIL EROSION AND SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

CONSTRUCTION SEQUENCE	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
TEMPORARY EROSION CONTROL MEASURES												
CLEARING												
STRIP & STOCKPILE TOPSOIL / GRADING												
PERMANENT EROSION CONTROL MEASURES												
AGGREGATE BASE & SIDEWALK												
FINISH GRADING, LANDSCAPING & RESTORATION												
SOIL STABILIZATION AND CLEAN UP												

SOIL EROSION AND SEDIMENTATION CONTROL MAINTENANCE SCHEDULE

TASK	FREQUENCY	TRACKING MAT	SILT FENCE	INLET FILTERS	STORM SEWER	CB SUMPS	VEGETATION	SEDIMENT TRAP
INSPECT FOR SEDIMENT ACCUMULATION	WEEKLY	X	X	X	X	X		X
REMOVE ACCUMULATED SEDIMENT	AS NEEDED		X	X	X	X		X
INSPECT FOR FLOATABLES AND DEBRIS	WEEKLY				X	X		X
REMOVE FLOATABLES AND DEBRIS	AS NEEDED				X	X		X
INSPECT FOR PERMIT CONFORMANCE	AFTER RAIN	X	X	X				X
RESTORE TO PERMIT CONFORMANCE	AS NEEDED	X	X	X				X
INSPECT FOR SOIL EROSION	AFTER RAIN						X	X
RESTORE TO PREVENT EROSION	AS NEEDED						X	X
SCRAPE STREET/DRIVES	AS NEEDED							
SWEEP STREET/DRIVES	AS NEEDED							



N
VICINITY MAP
NO SCALE

RESTORATION NOTE:

1. RESTORATION OF UNPAVED DISTURBED AREAS SHALL BE WITH A MINIMUM OF 6" OF TOPSOIL, SEED AND MULCH OR HYDROSEED AT THE CONCLUSION OF THE WORK. RESTORED SLOPES GREATER THAN 1V:6H SHALL BE STABILIZED WITH SEED AND STAKED MULCH BLANKETS. REFER TO SHEET C-502 FOR MULCH BLANKET PRODUCT SELECTION. MATCH EXISTING GRADES OUTSIDE OF THE GRADING LIMITS.
2. SALVAGED TOPSOIL THAT HAS BEEN CONTAMINATED OR INTERMIXED WITH OTHER MATERIALS, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, SHALL BE REMOVED FROM THE SITE AND REPLACED WITH SCREENED, SUITABLE TOPSOIL, ACCEPTABLE TO THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.

N

GRAPHIC SCALE: HALF 40 feet; FULL 20 feet
0 10 20 40 60

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED BOULDER TOE PROTECTION
- PROPOSED VEGETATED TURF REINFORCED MAT
- CONSTRUCTION ENTRANCE.
- CONSTRUCTION ACCESS
- SF — SILT FENCE
- LIMIT OF DISTURBANCE
- 835 / 834 — EXISTING CONTOUR
- 840 / 839 — PROPOSED CONTOUR

6	Seeding with Mulch and/or Matting	Facilitates establishments of vegetative cover. Effective for drainageways with low velocity. Easily placed in small quantities by inexperinced personnel. Shall include prepared topsoil be and straw mulch. Shall use a Mulch Blanket when slopes are 6H:1V or steeper. — PERMANENT MEASURE
13	Riprap, Rubble, Gabions	Used where vegetation is not easily established. Effective for high velocities or high concentrations. Permits runoff to infiltrate soil. Dissipates energy flow at system outlets. — PERMANENT MEASURE
14	Aggregate Cover	Tracking Mat – replenish stone as required due to rutting. 1"–3" crushed concrete 8" thick on geo-fabric. Min 25' wide by 50' long. Temporary measure, remove after completion of construction. — TEMPORARY MEASURE
24	Grassed Waterway	Much more stable form of drainageway than bare channel. Grass tends to slow runoff and filter out sediment. Used where bare channel would be eroded. Use a turf reinforced mat to reduce erosion and protect seeding — PERMANENT MEASURE
36	Catch Basin, Drain Inlet	Collects high velocity concentrated runoff. Use Inlet Filter Sack as TEMPORARY MEASURE — PERMANENT MEASURE
54	Silt Fence	Filters and detains runoff. Shown on plan as —— SF —— — TEMPORARY MEASURE

USGS SOIL ABBREVIATION	SOIL DESCRIPTION
WawqbC	WAWASEE LOAM, 6 TO 12 PERCENT SLOPES

Know what's **below.**
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UNIVERSITY OF MICHIGAN
REPAIR EAST PEDESTRIAN BRIDGE
SITE LAYOUT & GRADING PLAN

SHEET C-130

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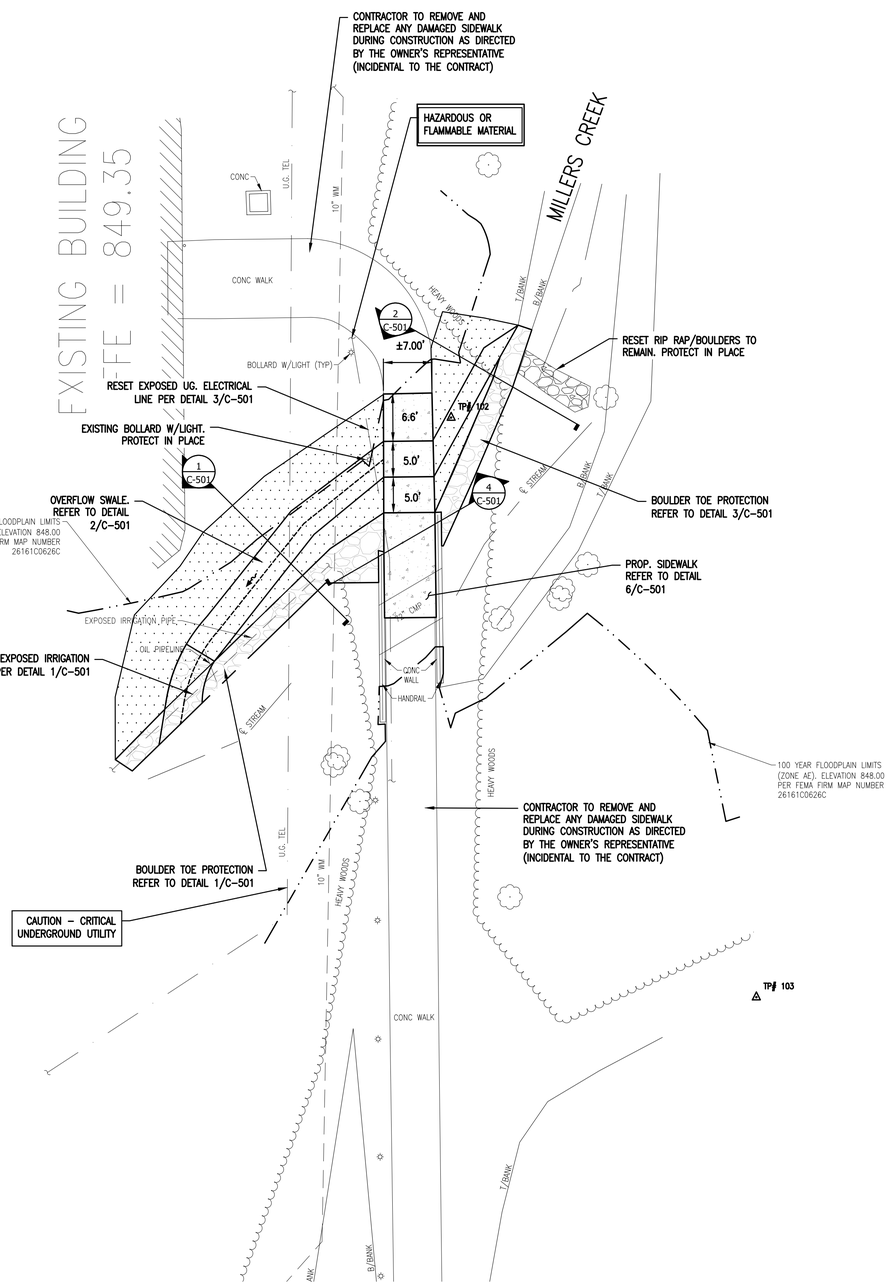
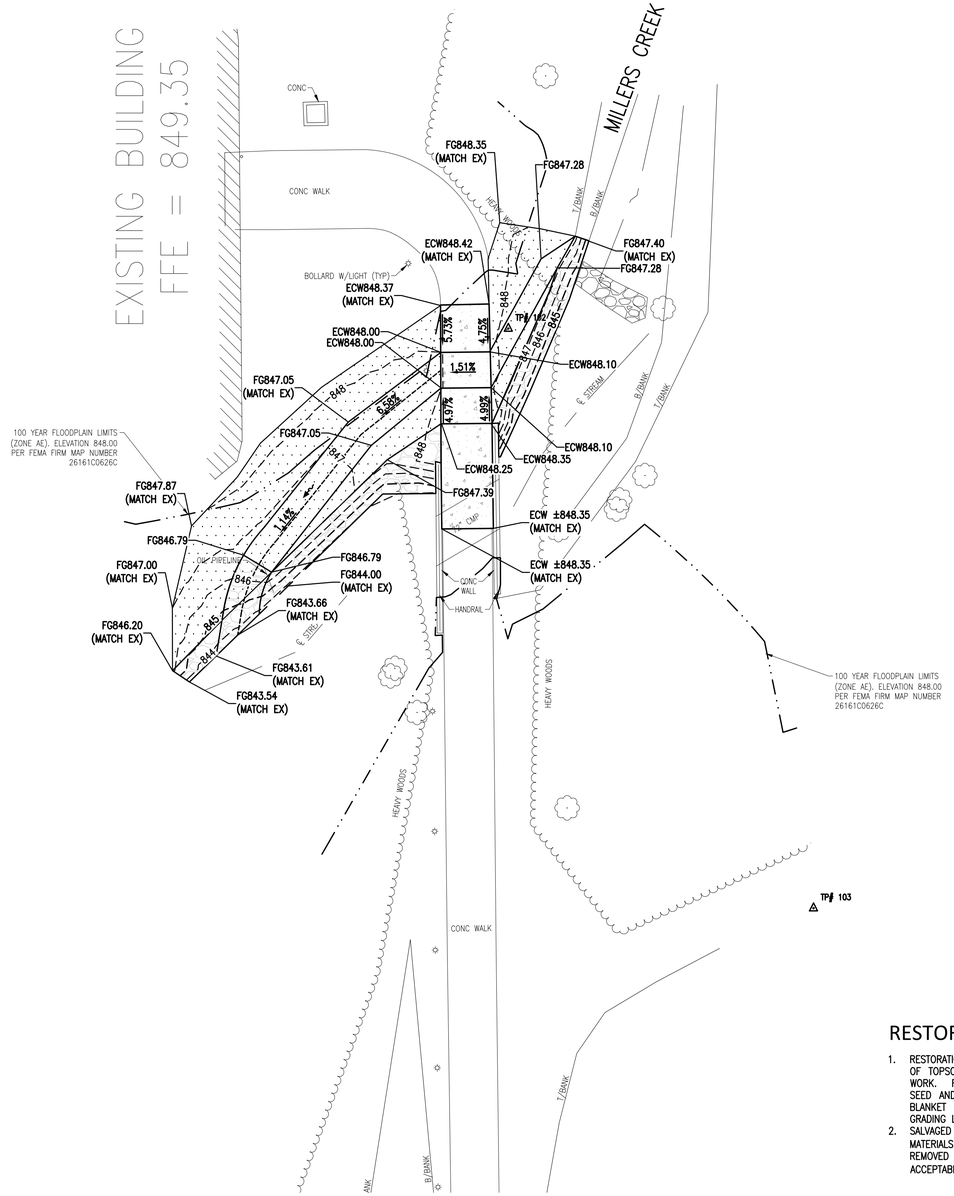
TRAVERSE POINT #102 N 290900.19 E 13303197.74	ELEV 848.33
TRAVERSE POINT #103 N 290819.17 E 13303240.39	ELEV 855.05



SITE LAYOUT DETAIL



SITE LAYOUT DETAIL

GRAPHIC SCALE: HALF 5 feet, FULL 10 feet
0 5 10 20 30

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED BOULDER TOE PROTECTION
- PROPOSED VEGETATED TURF REINFORCED MAT

RESTORATION NOTE:

1. RESTORATION OF UNPAVED DISTURBED AREAS SHALL BE WITH A MINIMUM OF 6" OF TOPSOIL, SEED AND MULCH OR HYDROSEED AT THE CONCLUSION OF THE WORK. RESTORED SLOPES GREATER THAN 1V:6H SHALL BE STABILIZED WITH SEED AND STAKED MULCH BLANKETS. REFER TO SHEET C-502 FOR MULCH BLANKET PRODUCT SELECTION. MATCH EXISTING GRADES OUTSIDE OF THE GRADING LIMITS.
2. SALVAGED TOPSOIL THAT HAS BEEN CONTAMINATED OR INTERMIXED WITH OTHER MATERIALS, AS DETERMINED BY THE OWNER'S REPRESENTATIVE, SHALL BE REMOVED FROM THE SITE AND REPLACED WITH SCREENED, SUITABLE TOPSOIL, ACCEPTABLE TO THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.

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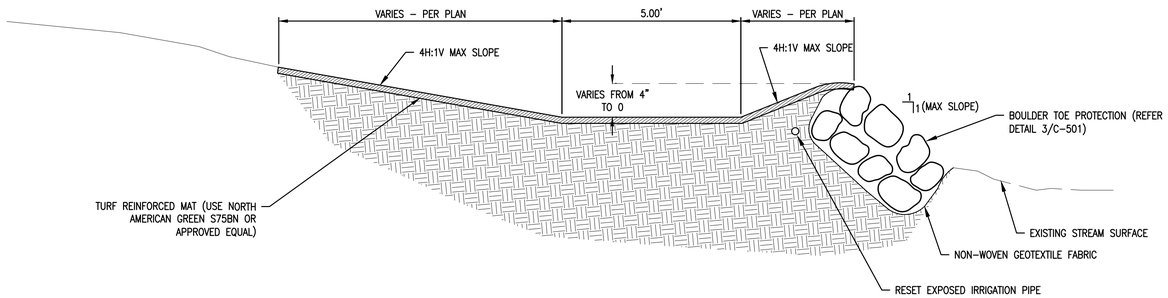
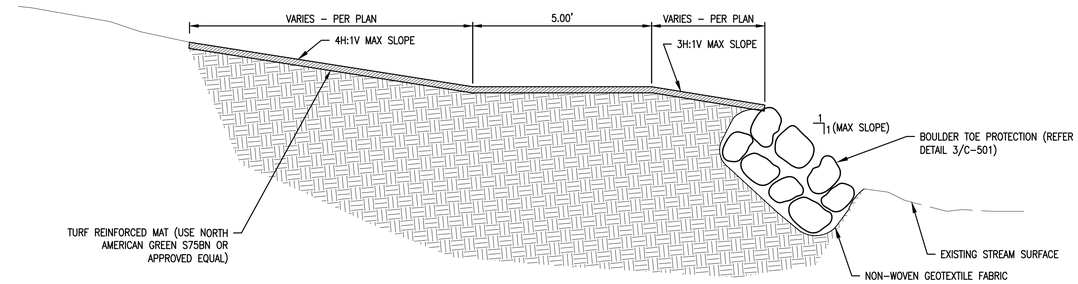
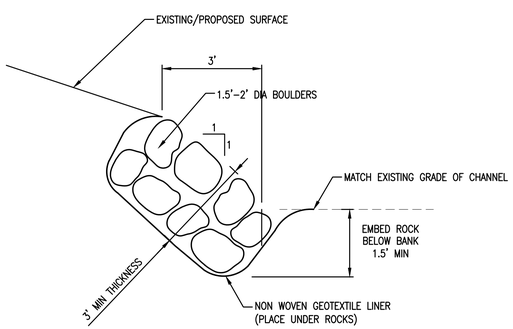


1 TYPITCL SECTION A (OVERFLOW SWALE DETAIL)
NOT TO SCALE

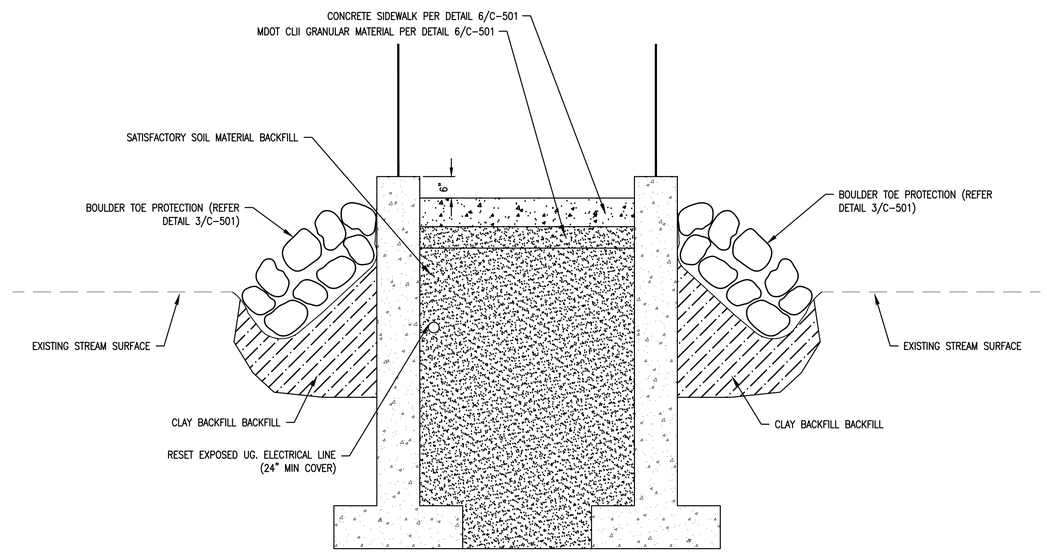


2 TYPICAL SECTION A
NOT TO SCALE



DETAIL A – BOULDER TOE PROTECTION
NOT TO SCALE

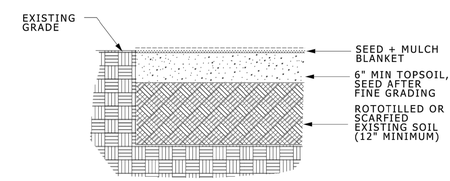
3 BOULDER TOE PROTECTION
NOT TO SCALE



NOTES:

1. SATISFACTORY SOIL MATERIALS ARE DEFINED AS GRANULAR MATERIALS CLASSIFIED AS GW, GP, GM, SW, SP, SW–SM, SP–SM OR SM BY THE UNIFIED SOILS CLASSIFICATION SYSTEM, ASTM D2487. LIMIT AMOUNT OF FINE MATERIAL PASSING NO. 200 SIEVE TO LESS THAN 5% MAXIMUM.
2. UNSATISFACTORY SOIL MATERIALS ARE DEFINED AS SOILS CLASSIFIED AS GC, SW–SC, SP–SC, SC, ML, MH, CL, CH, OL, OH, AND PT BY THE UNIFIED SOIL CLASSIFICATION SYSTEM, OR ANY ORGANIC MATERIAL. "MARL" IS AN UNSATISFACTORY SOIL MATERIAL.
3. BACKFILL ALL STRUCTURAL WORK WITH SATISFACTORY SOIL MATERIALS AND ENGINEERED FILL AS SHOWN ON PLANS. DO NOT BACKFILL WITH FROZEN MATERIALS. DO NOT PLACE ROCKS LARGER THAN 3" DIAMETER IN BACKFILL.
4. COMPACT BACKFILL IN LAYERS TO MINIMUM 95% MAXIMUM DENSITY AS DETERMINED BY MODIFIED PROCTOR, OR MICHIGAN CONE TEST.

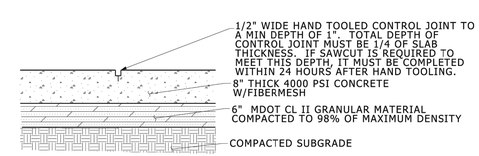
4 CULVERT BACKFILL TYPICAL SECTION
NOT TO SCALE



SHADY MIX
35% CINDY LOU CREEPING RED FESCUE
20% JAMESTOWN IV CHEWINGS RED FESCUE
25% CRUISER PERENNIAL RYEGRASS
10% BLUE SAPPHIRE KENTUCKY BLUEGRASS
10% BORDEAUX KENTUCKY BLUEGRASS

SUNNY MIX PREMIUM
25% BORDEAUX KENTUCKY BLUEGRASS
20% BLUE SAPPHIRE KENTUCKY BLUEGRASS
20% CRUISER PERENNIAL RYEGRASS
20% YANKEE KENTUCKY BLUEGRASS
15% STALLION SUPREME PERENNIAL RYEGRASS

5 NEW SEED AREA DETAIL
NOT TO SCALE



SIDEWALK - 8" THICKNESS
NO SCALE

NOTES: EXPANSION JOINTS SHALL BE INSTALLED SUCH THAT NO SINGLE DIMENSION EXCEEDS 50 FT. AREA BETWEEN EXPANSION JOINTS NOT TO EXCEED 320 SQ.FT.

1/2" EXPANSION PAPER SHALL BE PLACED AT ALL LOCATIONS WHERE NEW SIDEWALK ABUTS CONCRETE CURB, EXISTING SIDEWALK, LIGHT POLE BASES AND RETAINING WALLS.

SNAP-CAP EXPANSION JOINT STRIPS CAN BE USED ON ALL EXPANSION JOINTS.

ALL EXPANSION JOINTS SHALL BE SEALED.

BROOM FINISH PARALLEL TO JOINTS AND PERPENDICULAR TO TRAFFIC (IF BROOMING PATTERN NOT SHOWN).

6 SIDEWALK DETAIL
NOT TO SCALE

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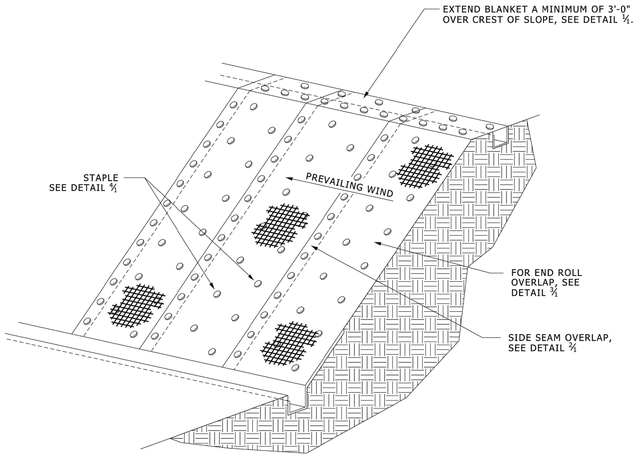


PERSPECTIVE

FIGURE 1: OVERVIEW OF EROSION CONTROL BLANKET

NOTES:
1. PREPARE SUBGRADE TO PROPER GRADE AND COMPACTION REQUIREMENTS.
2. REMOVE RUTS, ROOTS, SOIL CLODS, OR OTHER DEBRIS FROM SURFACE SUBJECT TO MULCH BLANKET INSTALLATION.
3. SPREAD OR DRILL SEED.
4. INSTALL BLANKET AT TOP OF SLOPE, FIRST ANCHORING TOE IN TRENCH 6" WIDE X 6" DEEP, PROGRESSING DOWN-SLOPE OR DOWN-GRADIENT WITH APPROXIMATELY 36" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH.
5. ANCHOR THE BLANKET WITH STAPLES/STAKES PLACED APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER SECURING.
6. APPLY SEED TO COMPACTED SOIL AND FOLD 12" PORTION OF THE BLANKET OVER COMPACTED AREA AND SECURE WITH A ROW OF STAPLES/STAKES PLACED 12" APART ACROSS THE WIDTH OF THE BLANKET.
7. UNROLL THE BLANKETS DOWN OR HORIZONTALLY ACROSS THE SLOPE.

PRODUCT SELECTION:
FOR SLOPES OF 3:1 + 4:1 AND FLOW RATES OF LESS THEN 1.52 FT/SEC (12 MONTH OR LESS DEVIATION) USE NORTH AMERICAN GREEN S75BN OR APPROVED EQUAL.

FOR SLOPES OF 3:1 + 2:1 AND FLOW RATES OF LESS THEN 1.85 FT/SEC (12 MONTH OR LESS DEVIATION) USE NORTH AMERICAN GREEN S150BN OR APPROVED EQUAL.

FOR SLOPES OF 2:1 + 1:1 AND FLOW RATES OF LESS THEN 2.44 FT/SEC (18 MONTH OR LESS DEVIATION) USE NORTH AMERICAN GREEN SC150BN OR APPROVED EQUAL.

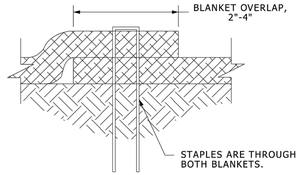
FOR SLOPES OF 1:1 OR GREATER AND FLOW RATES OF LESS THEN 3.05 FT/SEC (24 MONTH OR LESS DEVIATION) USE NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL.

SLOPE CREST ANCHOR METHOD "A" (NO TRENCH)

1/1

NO SCALE

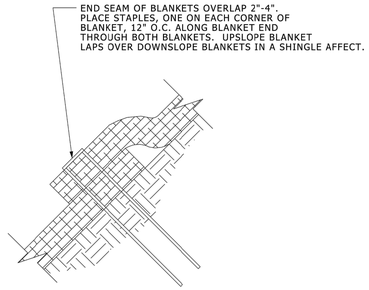
DO NOT NEED TO TRENCH BLANKET IN IF IT CAN BE EXTENDED A MINIMUM OF 3'-0" OVER THE CREST OF THE SLOPE.



SIDE SEAM OVERLAP STAPLE DETAIL

2/1

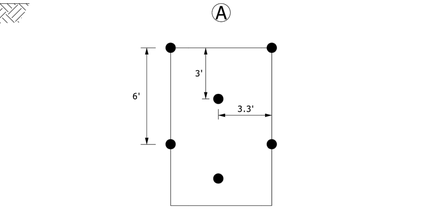
NO SCALE



END ROLL OVERLAP

3/1

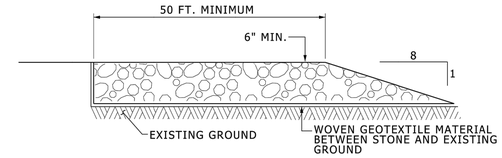
NO SCALE



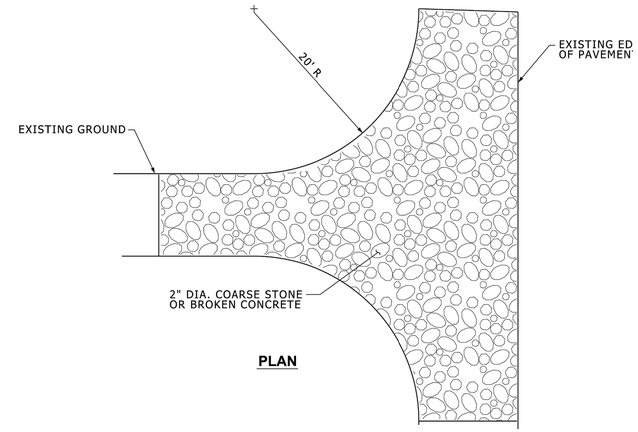
STAPLE PATTERN GUIDE 6.67' WIDE ROLLS

4/1

NO SCALE



SECTION



PLAN

NOTE:
CONTRACTOR TO INSTALL & MAINTAIN ANTI-TRACKING PAD.

WHEN AGGREGATE BECOMES SATURATED WITH FINES, CONTRACTOR TO SCARIFY AND RELAY AGGREGATE.

ANTI-TRACKING PAD DOES NOT RELIEVE CONTRACTOR FROM SWEEPING AND CLEANING ADJACENT WALKS AND ROADS.

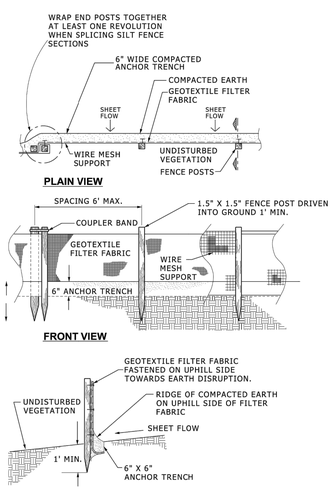
CRUSHED/BROKEN CONCRETE IS TO BE REMOVED AND LEGALLY DISPOSED OF OFF U-M PROPERTY UPON PROJECT COMPLETION.

2 ANTI-TRACKING PAD

NOT TO SCALE

1 MULCH BLANKET INSTALLATION

NOT TO SCALE

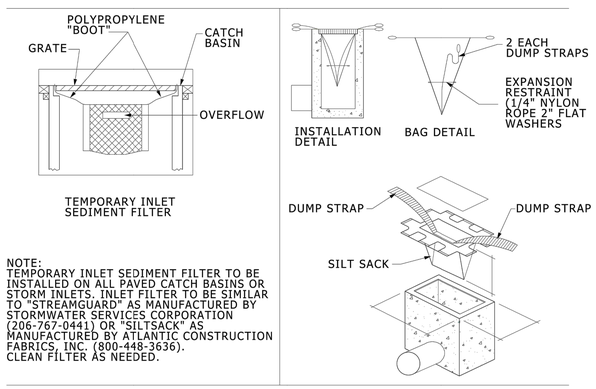


MATERIAL REQUIREMENTS

WOVEN GEOTEXTILE FABRIC WIDTH (IN)	MIN. HARDWOOD POST LENGTH (IN)	MIN. GRAB TENSILE (LBS) (ASTM D 4632)	MIN. TRAPEZOIDAL TEAR STRENGTH (LBS) (ASTM D 4533)	MIN. PERMITTIVITY (SEC⁻¹) (ASTM D 4491)	MAX. APPARENT OPENING SIZE (MM) (ASTM D 4751)
24	36	100	45	0.1	0.6

3 SILT FENCE DETAIL

NOT TO SCALE



NOTE:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC. (800-448-3636). CLEAN FILTER AS NEEDED.

4 INLET FILTER SACK

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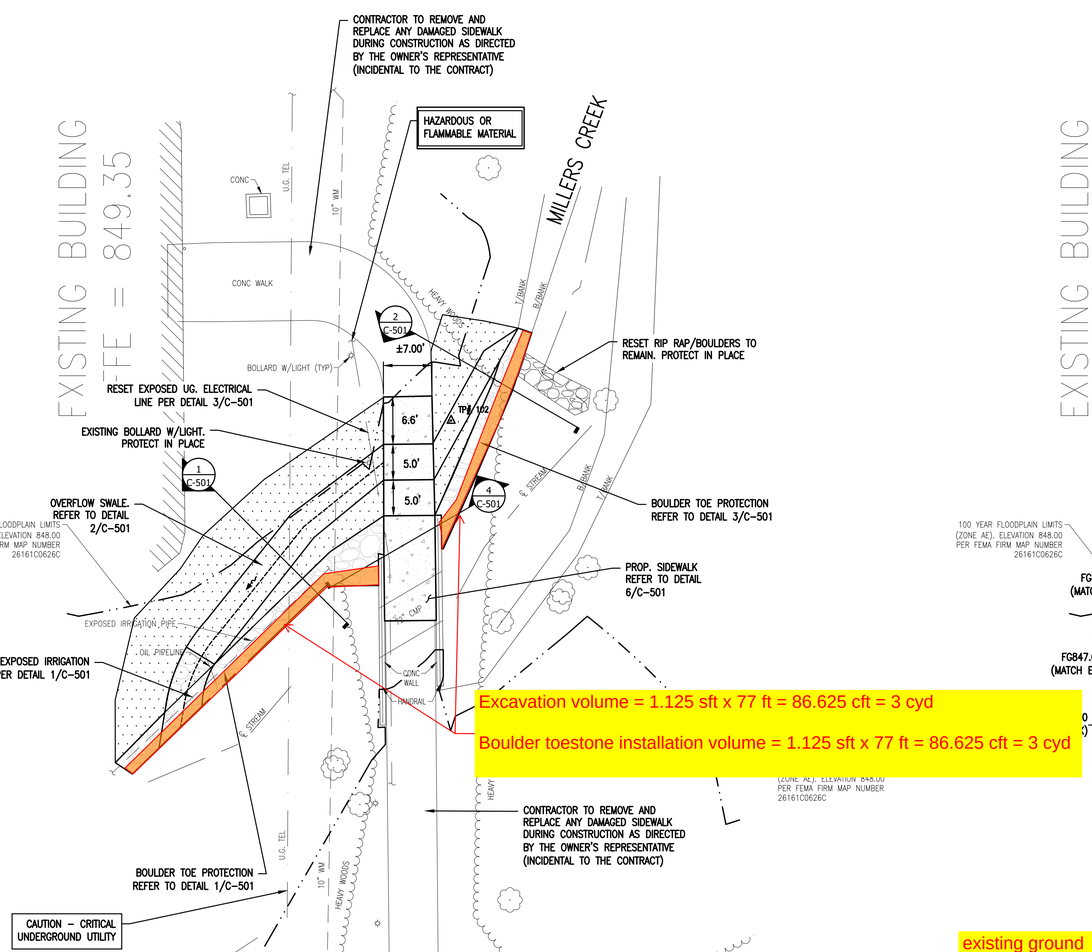
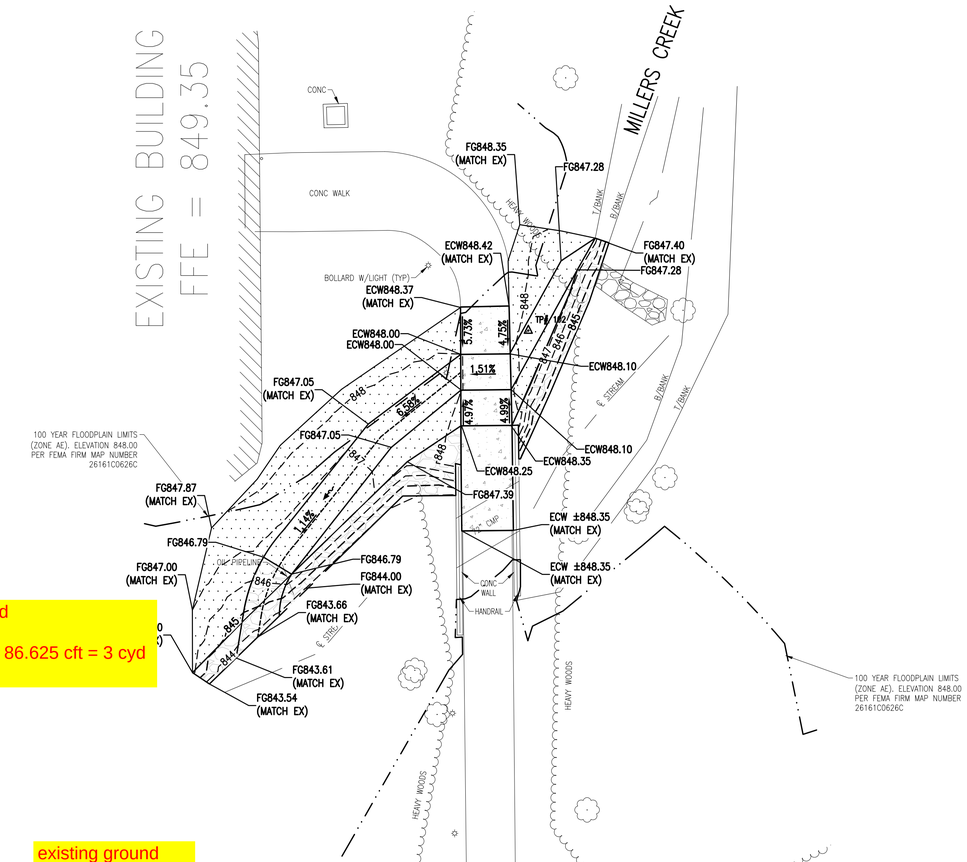


Excavation volume = 1.125 sft x 77 ft = 86.625 cft = 3 cyd

Boulder toestone installation volume = 1.125 sft x 77 ft = 86.625 cft = 3 cyd

SITE LAYOUT DETAIL



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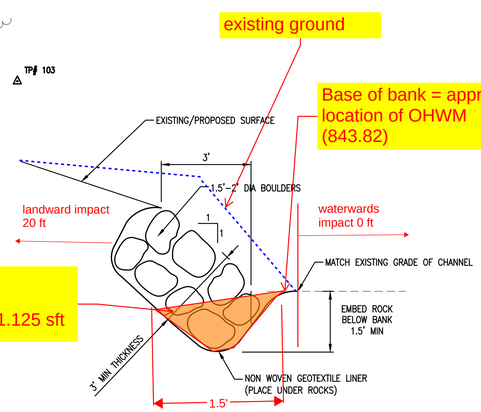
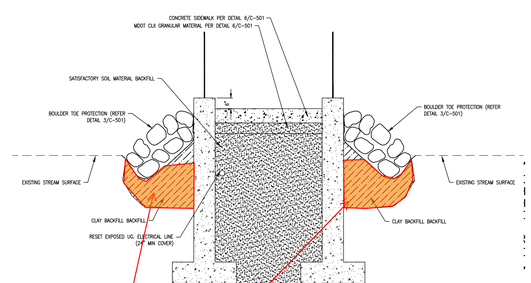


excavation section = 1.5 ft x 1.5 ft/2 = 1.125 sft

Boulder toestone installation section = 1.5 ft x 1.5 ft/2 = 1.125 sft

DETAIL A – BOULDER TOE PROTECTION
NOT TO SCALE

3 BOULDER TOE PROTECTION
NOT TO SCALE



4 CULVERT BACKFILL TYPICAL SECTION
NOT TO SCALE

Excavation volume (Sinkhole excavation for pedestrian bridge restoration) = 18 x 7.5 ft x 1.5 ft = 200 cft = 8 cyd

Backfill volume = 18 x 7.5 ft x 1.5 ft = 200 cft = 8 cyd

Know what's **below.** **Call** before you dig.

N

GRAPHIC SCALE: HALF 5 feet; FULL 10 feet
0 5 10 20 30

LEGEND

- PROPOSED CONCRETE SIDEWALK
- PROPOSED BOULDER TOE PROTECTION
- PROPOSED VEGETATED TURF REINFORCED MAT

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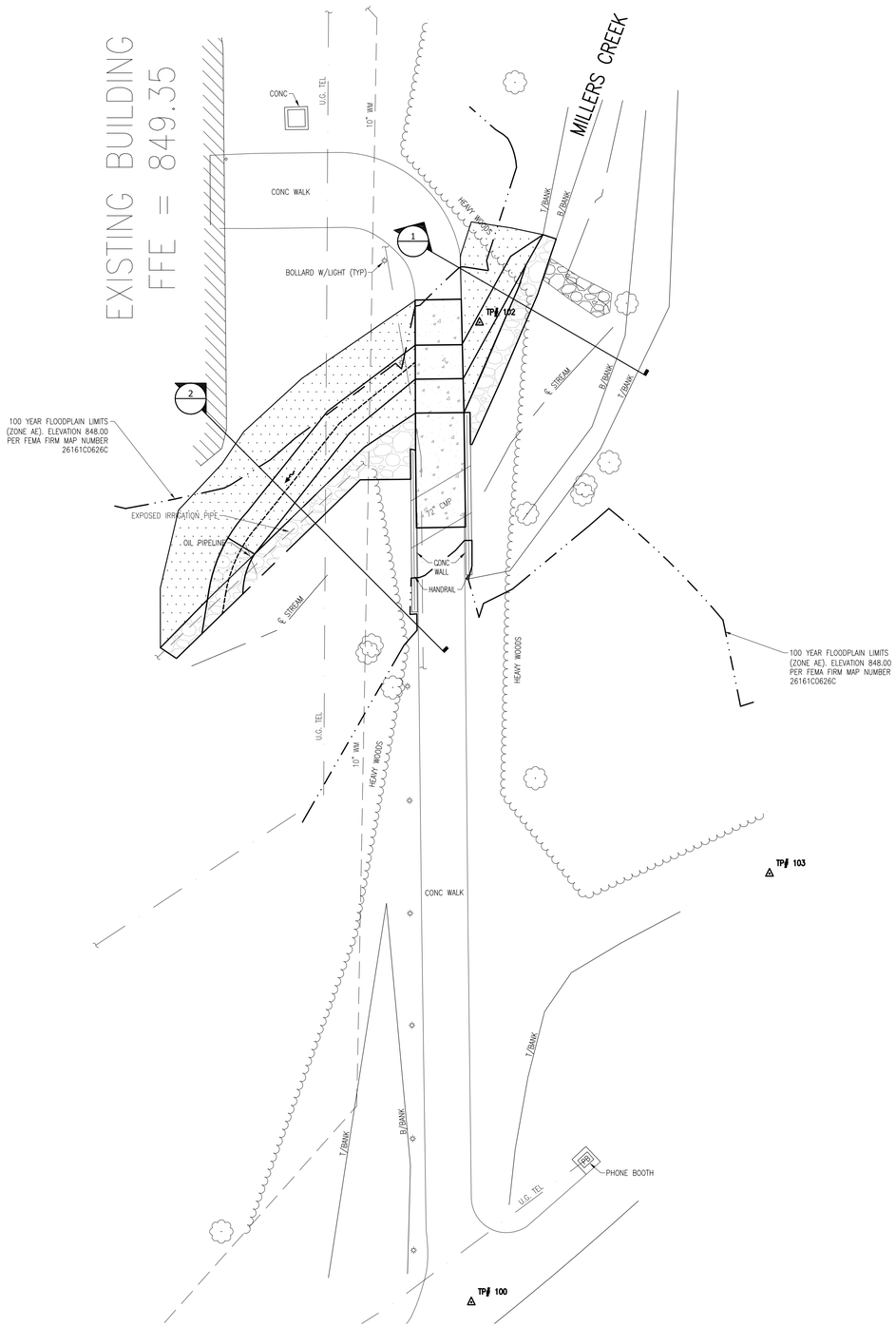
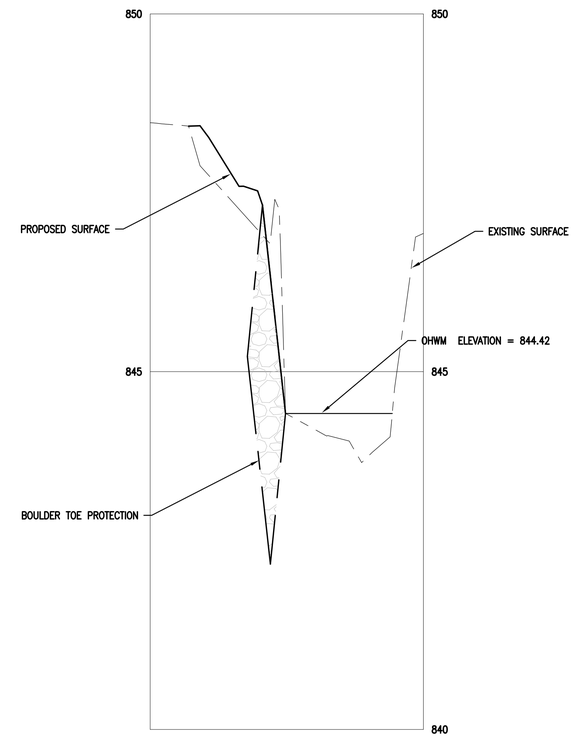
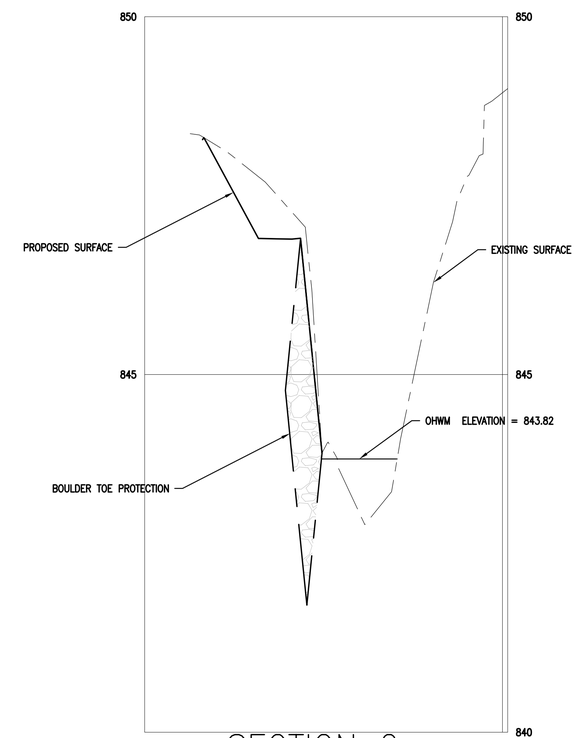


PLAN VIEW



SECTION 1

HORIZONTAL SCALE : 1" = 10'
VERTICAL SCALE: 1" = 1'



SECTION 2

HORIZONTAL SCALE : 1" = 10'
VERTICAL SCALE: 1" = 1'

N

GRAPHIC SCALE: HALF 5 feet, FULL 10 feet
0 5 10 20 30

Know what's **below.**
Call before you dig.

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ARCHITECTS ENGINEERS PLANNERS
34000 Plymouth Road
Livonia, MI 48150
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DATE	PROJ NUMBER	ENGINEER	PROJ MGR	CADD	COUNTY	MUNICIPALITY
12/29/2022	0916-22-0010	AGM	PG	AGM	WASHTENAW	ANN ARBOR

UNIVERSITY OF MICHIGAN
REPAIR EAST PEDESTRIAN BRIDGE

CROSS SECTION

SHEET C-130A

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DRAWING PATH: P:\0601_0999\0916\0220010_NCAC_Pedestrian_Bridge\Drawings\Civil\Plans_Const\220010_pa_Section.dwg Dec 29, 2022 - 2:22pm

EGLE
WRP032547 v1.0
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Expires On:02/24/2028