

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY WATER RESOURCES DIVISION **PERMIT**

Issued To:		
Traver Lakes Com	nmunity Maintenance Ass	ociation
Attn: Jerry Tarple	у	
2255 Placid Way		
Ann Arbor, Michic	gan 48105	
Permit No:	WRP028549 v.1	
Submission No.:	HNV-C7Y0-9YD91	
Site Name:	81-Traver Lakes-Ann Ar	bor
Issued:	June 3, 2021	
Revised:		
Expires:	June 3, 2026	
(EGLE), Water Re	•	n Department of Environment, Great Lakes, and Energy ne provisions of the Natural Resources and Environmental NREPA); specifically:
⊠ Part 301, Inlan	d Lakes and Streams	Part 323, Shorelands Protection and Management
Part 303, Wetla	ands Protection	☐ Part 325, Great Lakes Submerged Lands
Part 315, Dam	Safety	Part 353, Sand Dunes Protection and Management
Part 31, Water	Resources Protection (FI	oodplain Regulatory Authority)
Permission is her	eby granted, based on pe	rmittee assurance of adherence to State of Michigan

Authorized Activity:

requirements and permit conditions, to:

Install approximately 32 cubic yards of riprap in an unnamed tributary to Traver Creek to create six crossvane structures. Install approximately 407 cubic yards of riprap in the stream to construct 1,110 linear feet of riffle and pool structures. Remove an existing concrete pad from the stream. Install approximately 32 cubic yards of riprap within the stream at multiple storm water outfalls. Remove an existing weir and footbridge from the stream. Install a 36 foot long, 6-foot-wide pedestrian bridge over the stream. Remove an existing wooden retaining wall from the stream bank. Install a manhole drop structure and 24 linear feet of 48-inch diameter culvert as an extension to the existing Tuebingen Parkway stream crossing. Install approximately 25 cubic yards of riprap in the stream at the outlet of the culvert. Install approximately 49 cubic yards of riprap within 0.11 acre of wetland to construct riffle and pool structures. Excavate approximately 15 cubic yards of material from 0.04 acre of wetland to restore a previously existing channel. Install approximately 90 cubic yards of riprap along 535 linear feet of shoreline in the ponds. Remove two existing 24-inch diameter concrete culverts from the eastern pond outlet. Install a 36-inch diameter outlet control structure with a stop log structure at the eastern pond outlet. Perform an annual 6-inch drawdown in the eastern pond. Reline the existing outlet pipes located in the western pond. Install approximately 15 cubic yards of riprap within the stream located at the downstream outlet of the western pond for erosion protection.

All work shall be completed in accordance with the approved plans and specifications of this permitary

Waterbody Affected: Unnamed tributary to Traver Creek, wetland, and ponds

Property Location: Washtenaw County, City of Ann Arbor, Town 02S, Range 06E, Section 15,

Property Tax No. 09-09-15-202-001, 09-09-15-201-001, 09-09-15-101-003,

09-09-15-101-002

Authority granted by this permit is subject to the following limitations:

A. Initiation of any work on the permitted project confirms the permittee's acceptance and agreement to comply with all terms and conditions of this permit.

- B. The permittee, in exercising the authority granted by this permit, shall not cause unlawful pollution as defined by Part 31 of the NREPA.
- C. This permit shall be kept at the site of the work and available for inspection at all times during the duration of the project or until its date of expiration.
- D. All work shall be completed in accordance with the approved plans and specifications submitted with the application and/or plans and specifications attached to this permit.
- E. No attempt shall be made by the permittee to forbid the full and free use by the public of public waters at or adjacent to the structure or work approved.
- F. It is made a requirement of this permit that the permittee give notice to public utilities in accordance with 2013 PA 174 (Act 174) and comply with each of the requirements of Act 174.
- G. This permit does not convey property rights in either real estate or material, nor does it authorize any injury to private property or invasion of public or private rights, nor does it waive the necessity of seeking federal assent, all local permits, or complying with other state statutes.
- H. This permit does not prejudice or limit the right of a riparian owner or other person to institute proceedings in any circuit court of this state when necessary to protect his rights.
- I. Permittee shall notify EGLE within one week after the completion of the activity authorized by this permit by completing and forwarding the attached preaddressed postcard to the office addressed thereon.
- J. This permit shall not be assigned or transferred without the written approval of EGLE.
- K. Failure to comply with conditions of this permit may subject the permittee to revocation of permit and criminal and/or civil action as cited by the specific state act, federal act, and/or rule under which this permit is granted.
- L. All dredged or excavated materials shall be disposed of in an upland site (outside of floodplains, unless exempt under Part 31 of the NREPA, and wetlands).
- M. In issuing this permit, EGLE has relied on the information and data that the permittee has provided in connection with the submitted application for permit. If, subsequent to the issuance of a permit, such information and data prove to be false, incomplete, or inaccurate, EGLE may modify, revoke, or suspend the permit, in whole or in part, in accordance with the new information.
- N. The permittee shall indemnify and hold harmless the State of Michigan and its departments, agencies, officials, employees, agents, and representatives for any and all claims or causes of action arising from acts or omissions of the permittee, or employees, agents, or representative of the permittee, undertaken in connection with this permit. The permittee's obligation to indemnify the State of Michigan applies only if the state: (1) provides the permittee or its designated representative written notice of the claim or cause of action within 30 days after it is received by the state, and (2) consents to the permittee's participation in the proceeding on the claim or cause of action. It does not apply to contested case proceedings under the Administrative Procedures Act, 1969 PA 306, as amended, challenging the permit. This permit shall not be construed as an indemnity by the State of Michigan for the benefit of the permittee or any other person.
- O. Noncompliance with these terms and conditions and/or the initiation of other regulated activities not specifically authorized shall be cause for the modification, suspension, or revocation of this permit, in whole or in part. Further, EGLE may initiate criminal and/or civil proceedings as may be deemed necessary to correct project deficiencies, protect natural resource values, and secure compliance with statutes.
- P. If any change or deviation from the permitted activity becomes necessary, the permittee shall request, in writing, a revision of the permitted activity from EGLE. Such revision request shall include complete documentation supporting the modification and revised plans detailing the proposed modification. Proposed modifications must be approved, in writing, by EGLE prior to being implemented.

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- Q. This permit may be transferred to another person upon written approval of EGLE. The permittee must submit a written request to EGLE to transfer the permit to the new owner. The new owner must also submit a written request to EGLE to accept transfer. The new owner must agree, in writing, to accept all conditions of the permit. A single letter signed by both parties that includes all the above information may be provided to EGLE. EGLE will review the request and, if approved, will provide written notification to the new owner.
- R. Prior to initiating permitted construction, the permittee is required to provide a copy of the permit to the contractor(s) for review. The property owner, contractor(s), and any agent involved in exercising the permit are held responsible to ensure that the project is constructed in accordance with all drawings and specifications. The contractor is required to provide a copy of the permit to all subcontractors doing work authorized by the permit.
- S. Construction must be undertaken and completed during the dry period of the wetland. If the area does not dry out, construction shall be done on equipment mats to prevent compaction of the soil.
- T. Authority granted by this permit does not waive permit requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA, or the need to acquire applicable permits from the County Enforcing Agent (CEA).
- U. Authority granted by this permit does not waive permit requirements under the authority of Part 305, Natural Rivers, of the NREPA. A Natural Rivers Zoning Permit may be required for construction, land alteration, streambank stabilization, or vegetation removal along or near a natural river.
- V. The permittee is cautioned that grade changes resulting in increased runoff onto adjacent property is subject to civil damage litigation.
- W. Unless specifically stated in this permit, construction pads, haul roads, temporary structures, or other structural appurtenances to be placed in a wetland or on bottomland of the water body are not authorized and shall not be constructed unless authorized by a separate permit or permit revision granted in accordance with the applicable law.
- X. For projects with potential impacts to fish spawning or migration, no work shall occur within fish spawning or migration timelines (i.e., windows) unless otherwise approved in writing by the Michigan Department of Natural Resources, Fisheries Division.
- Y. Work to be done under authority of this permit is further subject to the following special instructions and specifications:
 - 1. All raw areas in uplands resulting from the permitted construction activity shall be effectively stabilized with sod and/or seed and mulch (or other technology specified by this permit or project plans) in a sufficient quantity and manner to prevent erosion and any potential siltation to surface waters or wetlands. Temporary stabilization measures shall be installed before or upon commencement of the permitted activity and shall be maintained until permanent measures are in place. Permanent measures shall be in place within five (5) days of achieving final grade.
 - 2. Prior to the initiation of any permitted construction activity, a sedimentation barrier shall be installed along the entire route of the disturbed wetland area and maintained in good working order until permanent stabilization and re-vegetation of all disturbed areas has occurred. The sedimentation barrier shall be removed after re-vegetation.
 - 3. Construction must be undertaken and completed during the dry period of the wetland, or when frozen.
 - 4. If the area does not dry out or freeze, construction shall be done on equipment mats to prevent compaction of the soil.
 - 5. Upon completion of the project, the disturbed wetland areas shall be restored to the original contour elevation, revegetated, and reseeded with species native to Michigan appropriate to the site, and mulched to prevent erosion.

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- 6. During removal or repair of the existing structures or installation of new structures, every precaution shall be taken to prevent debris from entering any watercourse. Any debris reaching the watercourse during the removal and/or reconstruction of the structure shall be immediately retrieved from the water. All material shall be disposed of in an acceptable manner consistent with local, state, and federal regulations.
- 7. Prior to the removal or installation of structures, cofferdams of steel sheet piling, gravel bags, clean stone, coarse aggregate, concrete, or other acceptable barriers shall be installed to isolate all construction activity from the water. The barriers shall be maintained in good working order throughout the duration of the project. Upon project completion, the accumulated materials shall be removed and disposed of at an upland site.
- 8. All cofferdam and temporary steel sheet pile shall then be removed in its entirety, unless specifically shown to be left in place on the approved plans. Cofferdam and sheet pile that is left in place shall be cut off at the elevation shown on the plans and shall be a minimum of one foot below the stream bottom.
- 9. Dredged material, including organic and inorganic sediment, vegetation, and other material removed from bottomlands, shall not be placed in any wetland, floodplain, or critical dune, or below the ordinary high-water mark of any inland lake, Great Lake, or stream. Dredged material placed on upland shall be stabilized in such a manner to prevent erosion of any material into any waterbody, including wetlands, or floodplain.
- 10. All fill/backfill shall consist of clean inert material that will not cause siltation nor contain soluble chemicals, organic matter, pollutants, or contaminants. All fill shall be contained in such a manner so as not to erode into any surface water, floodplain, or wetland. All raw areas associated with the permitted activity shall be stabilized with sod and/or seed and mulch, riprap, or other technically effective methods as necessary to prevent erosion.
- 11. All riprap shall be properly sized and graded based on wave action and velocity and shall consist of natural field stone or rock (free of paint, soil or other fines, asphalt, soluble chemicals, or organic material). Broken concrete is not allowed.
- 12. The placement of the new culvert and the initial placement of fill in the stream shall be done in the dry or in such a manner that all flow is immediately passed through the culvert. The major placement of fill shall be done in the dry or in still water where erosion and siltation will be minimized. The fill material used in this initial placement shall be washed gravel, coarse aggregate, or rock and shall be placed at both ends of the culvert above normal water level before backfill material is placed.
- 13. The culvert shall be installed to align with the center line of the existing stream at both the inlet and outlet ends and must be buried below the stream bed to provide a natural channel substrate through the structure as shown on the approved plans.
- 14. If the project, or any portion of the project, is stopped and lies incomplete for any length of time (other than that encountered in a normal work week) every precaution shall be taken to protect the incomplete work from erosion, including the placement of temporary gravel bag riprap, temporary seed and mulch, or other acceptable temporary protection.

- 15. No work shall be done in the stream during periods of above-normal flows except as necessary to prevent erosion.
- 16. No fill, excess soil, or other material shall be placed in the 100-year floodplain, any wetland or surface water area not specifically authorized by this permit, its plans, and specifications.
- 17. The local unit of government in which this project site is located has a wetland ordinance. Authority granted by this permit does not waive permit requirements or the need to obtain a separate permit from the local unit of government.
- 18. Drawdown of the pond shall occur at a rate not to exceed 0.5 vertical feet of elevation per 24-hour period.
- 19. Drawdown activities shall be completed by October 1st. If the full drawdown is not completed prior to October 1st, further drawdown of the impoundment shall not recommence until after April 1st of the following year, to avoid impacts to dormant reptiles and amphibians.
- 20. During drawdown, the permittee shall monitor the pond for stranded organisms such as fish and mussels. Stranded organisms shall be relocated to an area with adequate depth.
- 21. During drawdown, the permittee shall monitor downstream of the pond for flooding, erosion, sedimentation, and other impairments that would negatively impact habitat or water quality. Adjustments of the drawdown rate, including temporary suspension if necessary, should be made to avoid negative impacts to the stream and downstream habitats.
- 22. **Stream Restoration Performance Standards:** The following performance standards will be used to evaluate the stream restoration project:
 - a. Construction has been completed in accordance with EGLE's approved plans and specifications included in the permit.
 - b. Restoration of the stream channel to a stable pattern, dimension, and profile based on reference stream parameters and the design plans. Maintenance of stable stream parameters for a minimum of two bankfull (or greater) stream flow events.
 - c. Any in-stream structures (i.e., root wads, cross-vanes, constructed riffles, etc.) shall perform as designed. The structures shall stay in place and there shall be no bank erosion, piping, undermining, or other indication of instability associated with the in-stream structures including no buoyancy issues with any large wood installations.
- 23. Stream Restoration Monitoring: The permittee shall monitor the stream restoration project for a minimum of five (5) years following grading, planting, and introduction of flow. A monitoring report, which compiles and summarizes all data collected during the monitoring period, shall be submitted annually by the permittee. Monitoring reports shall cover the period of January 1 through December 31 and be submitted to EGLE prior to January 31 of the following year. The permittee shall conduct the following activities and provide the information collected in the monitoring reports:
 - a. Provide annual photographic documentation of the development of the restored stream channel from permanent photo stations located within the restored stream channel and/or floodplain. At a minimum, photo stations shall be located to show three permanent channel cross-sections, each in-stream structure (i.e., constructed riffle, etc.), and any areas where problems are identified

- (significant erosion or deposition, unvegetated areas, potential headcuts, etc.). Photos should be taken from the same locations annually and must be labeled with the station/location, date photographed, and direction (i.e., facing upstream). Additional photos should be included as needed. A map featuring the locations of the photo stations should be provided.
- b. Document substrate characteristics and any areas of erosion and/or deposition within the stream channel.
- c. Assess the stability and performance of each in-stream structure or large wood installation.
- d. Provide a written summary of data from previous monitoring periods and a discussion of changes or trends based on all monitoring results. This summary shall include identification of all performance standards and whether each standard has been met. A table containing this information shall be included in each report.
- e. Provide a written summary and map of all the problem areas that have been identified. Discuss if corrective measures are needed at each area based on channel stability and describe the corrective measures that will be implemented to address any problem areas where corrective action is needed.
- f. Provide documentation that the channel has experienced two flow events equal to or greater than bankfull flows.
- g. The permittee may request, in writing, EGLE waive years 4 and 5 of the stream restoration requirements provided the stream restoration performance standards are met.
- 24. Authority granted by this permit does not waive permit or program requirements under Part 91, Soil Erosion and Sedimentation Control, of the NREPA or the need to acquire applicable permits from the CEA. To locate the Soil Erosion Program Administrator for your county, visit www.mi.gov/eglestormwater and select "Soil Erosion and Sedimentation Control Program" under "Related Links."
- 25. The authority to conduct the activity as authorized by this permit is granted solely under the provisions of the governing act as identified above. This permit does not convey, provide, or otherwise imply approval of any other governing act, ordinance, or regulation, nor does it waive the permittee's obligation to acquire any local, county, state, or federal approval or authorization necessary to conduct the activity.
- 26. This permit does not authorize or sanction work that has been completed in violation of applicable federal, state, or local statutes.
- 27. The permit placard shall be kept posted at the work site in a prominent location at all times for the duration of the project or until permit expiration.
- 28. This permit is being issued for the maximum time allowed and no extensions of this permit will be granted. Initiation of the construction work authorized by this permit indicates the permittee's acceptance of this condition. The permit, when signed by EGLE, will be for a five-year period beginning on the date of issuance. If the project is not completed by the expiration date, a new permit must be sought.

Upon signing by the permittee named herein, this permit must be returned to EGLE's Water Resources Division, Jackson District Office for final execution. This permit shall become effective on the date of the EGLE representative's signature.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

X Dans D Also 5/25/2)
Permittee Date

David R Steiner VP TLEMA

Issued By:

Melissa Letosky Jackson District Office Water Resources Division 517-416-7001

Melisser Letasay

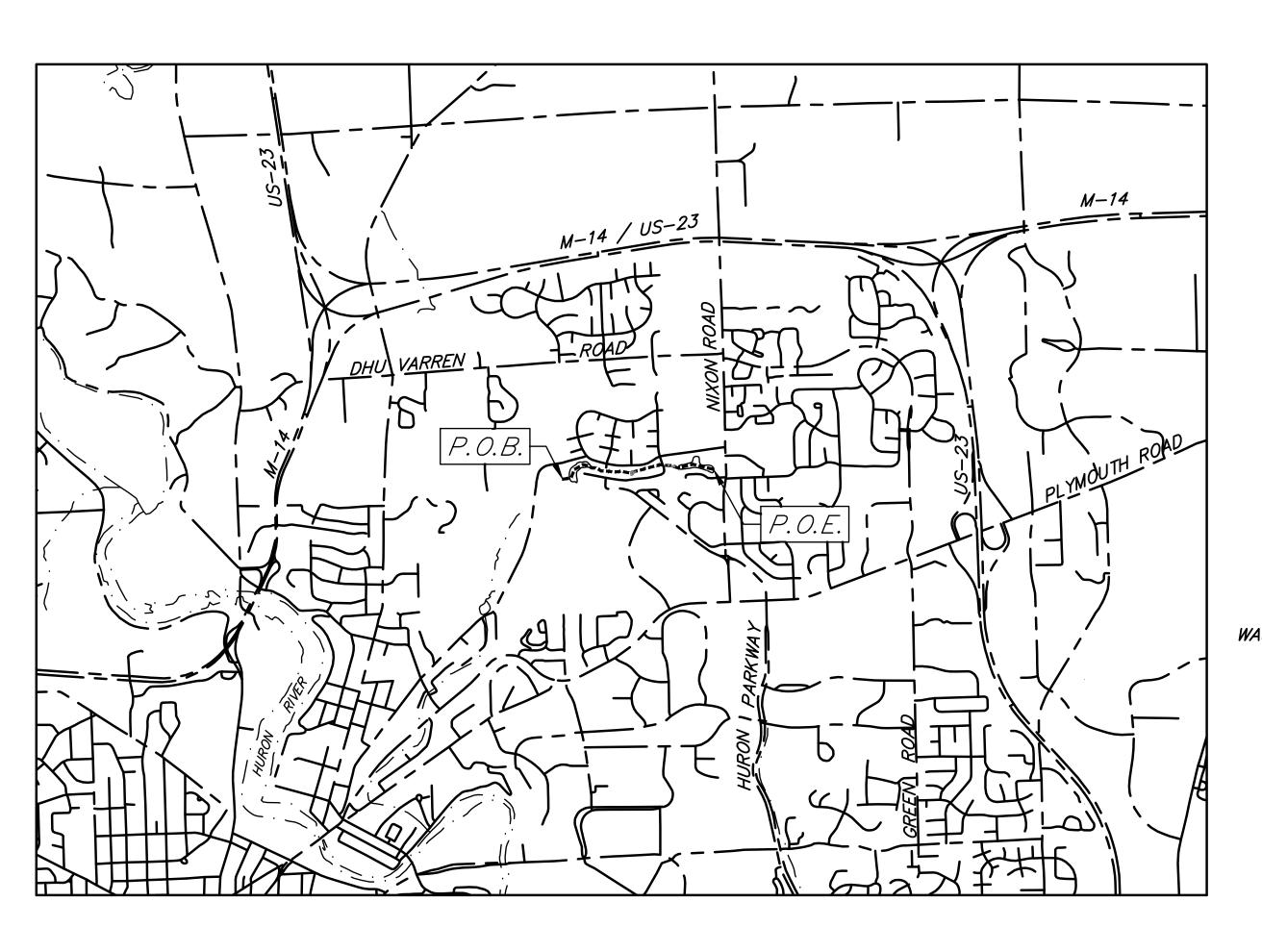
cc: City of Ann Arbor Clerk

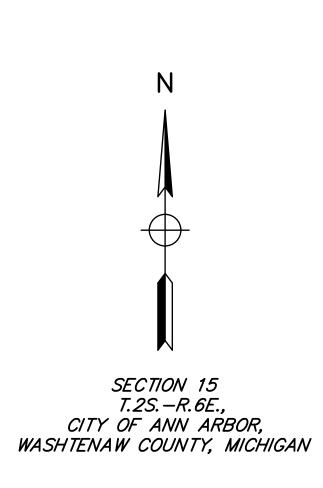
Mr. Ryan Roggie, Spicer Group, Inc. Mr. Steven Roznowski, Spicer Group, Inc.

TRAVER LAKES STABILIZATION

TRAVER LAKES COMMUNITY MAINTENANCE ASSOCIATION







PLAN INDEX **DESCRIPTION** NO. FILE NO. DR-3712-01 COVER SHEET DR-3712-02 STANDARD NOTES DR-3712-03 SOIL EROSION SEDIMENT CONTROL DR-3712-04 SITE LOCATION MAP PLAN & PROFILE STA. 0+00 (P.O.B.) TO STA. 35+33 DR-3712-05 DR-3712-06 OUTLET REHABILITATION DETAIL STA. 1+43 DR-3712-07 DROP STRUCTURE DETAIL 10+00 DR-3712-08 WEIR REMOVAL AND FOOTBRIDGE DETAIL STA. 16+63 DR-3712-09 PLUNGE POOL DETAIL STA. 23+25 DR-3712-10 OUTLET CONTROL STRUCTURE DETAIL STA. 27+75 DR-3712-11 CROSS SECTIONS STA. 7+92 TO STA. 27+39 STANDARD DETAILS DR-3712-12 DR-3712-13 STANDARD DETAILS 13

PRELIMINARY

BY MARK REVISIONS DATE

THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION

COVER SHEET

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DUNDEE OFFICE 125 Helle Blvd, Suite 2 Dundee, MI 48131 Tel. 734—823—3308 www.SpicerGroup.com

LOCATION MAP NOT TO SCALE

GENERAL NOTES

NO WORK SHALL BE PERFORMED BEFORE 7:00 AM OR AFTER 7:00 PM MONDAY THROUGH SATURDAY. NO WORK SHALL HAPPEN ON SUNDAYS OR HOLIDAYS, UNLESS AUTHORIZED BY THE OWNER.

CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO START OF CONSTRUCTION, CONSTRUCTION STAKING REQUEST AND REQUIRED INSPECTION.

CONTRACTOR SHALL MAINTAIN ACCESS FOR MAIL DELIVERY AND GARBAGE PICKUP AT ALL PARCELS. IF THESE SERVICES CANNOT BE PERFORMED, CONTRACTOR IS RESPONSIBLE FOR TAKING THE NECESSARY MEASURES TO CARRY THEM OUT.

COORDINATE DRIVE CLOSURES AND MAIL BOX RELOCATION WITH LANDOWNERS A MINIMUM OF ONE DAY IN ADVANCE.

CONTRACTOR TO PROVIDE DUST CONTROL AND SWEEP PAVED ROADS DAILY.

ALL EXCAVATED MATERIAL NOT TO BE REUSED OR DISPOSED OF ON SITE SHALL BE REMOVED FROM SITE. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF MATERIALS ACCORDING TO LOCAL AND STATE REQUIREMENTS.

UNDERGROUND UTILITIES/MISS DIG

FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 174, 2013, THE CONTRACTOR SHALL DIAL 1-800-482-7171 OR 811 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

THE EXISTING UTILITIES ON THESE DRAWINGS HAVE BEEN SHOWN ACCORDING TO THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD LOCATE ALL UTILITIES PRIOR TO BEGINNING CONSTRUCTION AND SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICT EXISTS.

ALL CONSTRUCTION UNDER EXISTING UTILITIES, INCLUDING HOUSE SERVICES, SHALL BE COMPLETELY BACKFILLED WITH SAND, IN 12" LAYERS, AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DRY UNIT WEIGHT.

ANY UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE SUPPORTED, PER THE SPECIFICATIONS OF THE INDIVIDUAL UTILITY COMPANY CLAIMING OWNERSHIP OF THE UTILITY.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

APPROPRIATE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO EARTH-DISTURBING ACTIVITIES. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODABLE SLOPES, AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH EITHER SOD OR SEED AND MULCH OR MULCH BLANKET, AS DIRECTED BY THE ENGINEER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE AND MAINTAINED UNTIL THE CONTRACT HAS BEEN COMPLETED AND ACCEPTED. MEASURES SHALL ONLY BE PAID FOR ONCE.

ALL CATCHBASINS AND SEDIMENTATION TRAPS/BASINS SHALL BE CLEANED OUT UPON COMPLETION OF THE PROJECT.

CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994.

PROPERTY OWNERS

PROPERTY OWNERS' NAMES, WHERE SHOWN, ARE FOR INFORMATION ONLY, AND THEIR ACCURACY IS NOT GUARANTEED.

ALL GOVERNMENT CORNERS ON THIS PROJECT SHALL BE PRESERVED, WHETHER SHOWN OR NOT. IT MAY BE NECESSARY TO PLACE OR ADJUST MONUMENT BOXES, AS REQUIRED.

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES. SIGNAGE MUST BE IN ACCORDANCE WITH THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL BE COORDINATED WITH THE ENGINEER AND GOVERNING ROAD AGENCY. PERMITS MAY BE REQUIRED.

PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED BY THE APPROPRIATE AGENCIES.

CONSTRUCTION PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE AGENCIES.

CONTACTS

TRAVER LAKES HOA - OWNER ATTN: JERRY TARPLEY - TREASURER 2255 PLACID WAY ANN ARBOR, MI 48105 (734) 675–8943

SPICER GROUP ATTN: KRIS KOKO - DESIGN ENGINEER *125 HELLE BLVD* SUITE 2

EGLE WATER RESOURCE DIVISION ATTN: MELISSA LETOSKY 301 E. LOUIS GLICK HWY. JACKSON, MI 49201

DUNDEE. MI 48131

(989) 798-7251

(517) 416-7001

CITY OF ANN ARBOR ATTN: ANDY GOSSIAUX 301 E. HURON ANN ARBOR, MI 48108 (734) 794–6410

ANN ARBOR TOWNSHIP ATTN: RICH JUDKINS 3792 PONTIAC TRAIL ANN ARBOR, MI 48105 (734) 663–3418

ATTN: DONALD TARHANICH 54 N. MILL ST. 4TH FLOOR PONTIAC, MI 48342 (248) 454-2994

COMCAST ATTN: JUSTIN TAYLOR 27096 OAKMEAD DR. PERRRYSBURG, OH 43551 (419) 874–9262

DETROIT EDISON ATTN: SARA KIPP ONE ENGERY PLAZA 518 SB DETROIT, MI 48226 (313) 235–5632

INTERNATIONAL TRANSMISSION COMPANY ATTN: DWAYNE BARNES 27175 ENERGY WAY NOVI, MI 48377 (248) 946-3322

LEVEL 3 COMM/CENTURY LINK ATTN: JUDY HENRY 1025 ELDORADO BLVD. BROOMFIELD, CO 80021

DTE GAS ATTN: MICHAEL HARRISON ONE ENERGY PLAZA DETROIT, MI 48226 (313) 235-5511

(720) 888–2061

GENERAL NOTES CONT.

ALL WORK SHALL BE WITHIN LIMITS SHOWN ON THE PLANS. WORK OUTSIDE THE LIMITS SHOWN ON THE PLANS MUST BE AGREED UPON BY LANDOWNER AND ENGINEER WITH A SIGNED LANDOWNER AGREEMENT PRIOR TO

RESTORE ALL LAWN AREAS WITH 4" OF TOPSOIL AND SEED AND MULCH.

CONTRACTOR TO RESTORE INCIDENTAL DAMAGES ON THE PROJECT AS DIRECTED BY OWNER AND ENGINEER.

ALL DRAIN SIDE SLOPES SHALL BE 2H: 1V OR FLATTER, UNLESS SPECIFIED OTHERWISE.

THE WORDS "RIGHT SIDE" OR "LEFT SIDE" IMPLY A REFERENCE TO THE DRAIN FACING UPSTREAM.

CLEAR AND GRUB TREES AS INDICATED FOR CONSTRUCTION WITHIN THE CHANNEL. REMOVE ALL TREES. STUMPS AND DEBRIS FROM SITE.

REMOVE EXISTING FENCES. LANDSCAPING. AND OTHER STRUCTURES AS NEEDED FOR CONSTRUCTION. REINSTALLATION OF FENCES MUST BE COORDINATED WITH THE LAND OWNER. COST TO BE INCLUDED IN SITE CLEARING.

CONTRACTOR SHALL COORDINATE RELOCATION/REMOVAL OF ALL TREES WITHIN THE LIMITS OF CONSTRUCTION WITH THE PROPERTY OWNER AND ENGINEER.

TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE AS TOPSOIL SURFACE AS DIRECTED BY THE ENGINEER. ALL SPRINKLER SYSTEMS DAMAGED SHALL BE REPAIRED BY CONTRACTOR. COST TO BE INCLUDED IN OTHER WORK ITEMS OF THE PROJECT.

CONTRACTOR TO CLEAR TREES WITHIN THE CHANNEL. AS NECESSARY FOR CONSTRUCTION AND LEVELING SPOILS AS SHOWN IN DETAILS. COORDINATE REMOVALS WITH THE ENGINEER/LANDOWNER

ROADS. DRIVEWAYS AND SIDEWALKS

ALL JOINTS AT INTERSECTION APPROACHES AND DRIVEWAYS SHALL BE SAW-CUT WITH BUTT-JOINTS. COST TO BE INCLUDED IN UNIT PRICE FOR ROAD AND DRIVEWAY REPAIR.

FOR OPEN CUT PAVEMENT REMOVAL CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT FULL DEPTH PRIOR TO REMOVAL.

ALL DRIVING SURFACES ARE TO BE RESTORED TO IN KIND DEPTH AND MATERIAL UNLESS OTHERWISE SPECIFIED ON THE PLANS. COST TO BE INCLUDED IN THE BID PRICE FOR WORK PERTAINING TO EACH CROSSING.

PROTECT ALL BITUMINOUS ROADS NOT SPECIFIED TO BE REMOVED DURING CONSTRUCTION. REPAIR ANY UNAUTHORIZED DAMAGE AT CONTRACTOR'S EXPENSE.

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE AND SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE. COST SHALL BE INCLUDED IN THE OTHER PAY ITEMS OF THE PROJECT.

MATCH EXISTING TYPE FOR CONCRETE CURB AND GUTTER RESTORATION.

CONTRACTOR SHALL REMOVE AND REPLACE ALL STREET AND TRAFFIC SIGNAGE AS NECESSARY FOR CONSTRUCTION. ALL COSTS TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR SITE CLEARING.

CONTRACTOR SHALL COORDINATE LOCATION OF ANY ACCESS ROADS WITH THE LANDOWNER AND THE ENGINEER. ANY ACCESS ROAD SHALL BE REPAIRED TO THE OWNER'S APPROVAL.

ALL WORK WITHIN THE ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS OF THE AGENCY HAVING JURISDICTION.

CONTRACTOR SHALL REMOVE AND TEMPORARILY RELOCATE ALL EXISTING MAIL BOXES AS NEEDED FOR CONSTRUCTION. COSTS TO BE INCLUDED IN THE UNIT PRICE BID FOR SITE CLEARING.

CONTRACTOR COORDINATE MAIL BOX RELOCATION WITH LANDOWNERS A MINIMUM OF ONE DAY IN ADVANCE.

ALL TEMPORARILY RELOCATED MAIL BOXES, STREET AND TRAFFIC SIGNS TO BE REINSTALLED TO ORIGINAL LOCATIONS AS CONSTRUCTION ALLOWS. COSTS TO BE INCLUDED IN THE UNIT PRICE BID FOR CLEANUP AND RESTORATION.

APPROVED EQUAL.

WHEN RELOCATING UTILITIES AS REQUIRED FOR CONSTRUCTION OF IMPROVEMENTS. A MINIMUM CLEARANCE OF 36" BELOW THE BOTTOM OF PROPOSED CROSSING MUST BE ACHIEVED, UNLESS OTHERWISE APPROVED BY UTILITY COMPANY AND ROAD AGENCY.

ALL WATER VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE. COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED.

ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

ALL MANHOLE RIMS IN ROADWAYS AND DRIVES SHALL BE ADJUSTED PRIOR TO FINAL PAVING TO BE FLUSH WITH FINISHED GRADE.

ENGINEER SHALL BE SMOOTH AND SHAPED TO PROVIDE POSITIVE DRAINAGE INTO THE INLETS. ALL MANHOLE TO PLASTIC PIPE CONNECTIONS SHALL BE MADE WITH KOR—N—SEAL BOOT OR ENGINEER

GRADING AROUND MANHOLES/CATCHBASINS, FLARED END SECTIONS, AND OTHER INLETS DETERMINED BY THE

ALL STORM SEWER TO BE PREMIUM JOINT UNLESS OTHERWISE SPECIFIED.

ALL FLARED END SECTIONS TO HAVE FACTORY SUPPLIED ANIMAL GUARD.

DEMOLISH EXISTING STRUCTURE(S) AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS. COST TO BE INCLUDED WITH THE ITEM BEING INSTALLED AS DIRECTED BY OWNER/ENGINEER.

CONTRACTOR SHALL CONNECT ANY AND ALL FIELD TILE OUTLETS AND OTHER STORM LEADS TO PROPOSED STORM SEWER WITH PREMANUFACTURED TEES, WYES, GASKETS, SEALS, COUPLERS, BOOTS, ETC. COST TO BE INCLUDED IN LIN. FT. PRICE FOR STORM SEWER INSTALLATION.

SOIL EROSION SEDIMENT CONTROL

GROUNDWATER SEEPAGE IS ANTICIPATED TO BE A FACTOR DURING CONSTRUCTION. DEWATERING METHODS MAY BE NECESSARY. ALL DEWATERING REQUIRED IS THE CONTRACTOR'S RESPONSIBILITY AND COST SHALL BE INCLUDED IN THE PAY ITEM BEING INSTALLED. THE METHOD FOR DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.

ALL RIPRAP SHALL BE CRUSHED ANGULAR LIMESTONE TYPE MATERIAL AS APPROVED BY THE ENGINEER UNLESS OTHERWISE DIRECTED. SUBMIT LIMESTONE SAMPLES TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. OWNER AND ENGINEER RESERVES THE RIGHT TO REJECT ANY AND ALL RIPRAP.

CONTRACTORS SHALL FINISH GRADE, SEED, FERTILIZE, AND MULCH DAILY ON ALL DISTURBED AREAS, AS DESCRIBED IN THE SPECIFICATIONS.

HAND SEED, FERTILIZE, AND MULCH BANKS AND SPOILS DAILY.

ALL DISTURBED WETLAND AREA SHALL BE SEEDED WITH NATIVE WETLAND SEED AS SPECIFIED.

ABBREVIATIONS

LINE TYPE LEGEND BC = BACK OF CURB_____ BM = BENCH MARKC/C = CENTER TO CENTER_____ $\dot{C}B = CATCH BASIN$ CL = CENTERLINE__ _ _ _ _ _ _ CJ = CONSTRUCTION JOINT_____ CMP = CORRUGATED METAL PIPE CSP = CORRUGATED STEEL PIPE _____ CONC = CONCRETE_____ DI = DUCTILE IRON PIPEEF = EACH FACEELEC = ELECTRICEL OR ELEV = ELEVATIONEOM = EDGE OF METALEOP = EDGE OF PAVEMENT EQ/SP = EQUALLY SPACED____//____ ESMT = EASEMENTEW = EACH WAYEX OR EXIST = EXISTINGFF = FINISH FLOOR FL = FLOW LINEFS = FINISH SURFACE FG = FINISH GROUNDGALV = GALVANIZEDG = GUTTERHDG = HOT DIP GALVANIZED HDPE = HIGH DENSITY POLYETHYLENE HP = HIGH POINTHMA = HOT MIX ASPHALTHYD = HYDRANTINV = INVERTLP = LOW POINT

MON = MONUMENTNFL = NOT FIELD LOCATED NTS = NOT TO SCALESYMBOL LEGEND PROP = PROPOSEDEXISTING SYMBOLS PVC = POLYVINYL CHLORIDERCP = REINFORCED CONCRETE PIPE

○ − MANHOLE

∅ – CATCH BASIN

□ – CURB CATCH BASIN

رم – BARRIER FREE PARKING

SAN = SANITARYSB = SOIL BORINGSS = STAINLESS STEEL STA = STATIONSTM = STORM

ROW = RIGHT OF WAY

OC = ON CENTER

OH = OVERHEAD

MH = MANHOLE

MIN = MINIMUM

SWR = SEWERT/B = TOP AND BOTTOM TC = TOP OF CURB TOB = TOP OF BANK TOS = TOE OF SLOPE

TELE = TELEPHONE TRW = TOP OF RETAINING WALL TW = TOP OF WALKUNO = UNLESS NOTED OTHERWISE WM = WATER MAINWS = WATER SURFACE ELEVATION

△ – SPRINKLER □□ - RAILROAD SIGNAL

EXISTING ROAD CENTERLINE

- EXISTING SANITARY SEWER OR FORCEMAIN

- EXISTING WATER MAIN

- EXISTING STORM SEWER

- EXISTING GAS MAIN

EXISTING ELECTRIC

- PROPOSED UTILITY

- OVERHEAD UTILITY

- RAILROAD TRACKS

EXISTING CONTOURS

PROPOSED CONTOURS

FENCE LINE

- STATION LINE

EASEMENT

TREE LINE

SILT FENCE

- EXISTING TELEPHONE CABLE

- EXISTING CURB & GUTTER

- LIMITS OF RIGHT OF WAY

- REVERSE PAN CURB & GUTTER

- PROPOSED CURB & GUTTER

⊗ − SATELLITE DISH - AIR CONDITIONING UNIT ⊕ − GAS VALVE → SOIL BORING □ − TELEPHONE PEDESTAL → BENCH MARK ○ − SET 1/2" IRON ROD

● - POWER POLE Ø - TELEPHONE POLE ● - 1/4 SECTION CORNER

 $-\sqrt{-}$ – BREAK IN LINE ← □ − GUY ANCHOR AND POLE - - EXISTING SIGN-1 POST □ − MAIL BOX - - EXISTING SIGN-2 POST ■ – WATER METER ハ – STUMP ¬ TELEPHONE MANHOLE

© - ELECTRIC MANHOLE (C)M.W.— MONITORING WELL • – HAND HOLE · – TREE □ − TRANSFORMER - ELECTRICAL PEDESTAL

PROPOSED SYMBOLS

O – MANHOLE CATCHBASIN **\(\)** - FIRE HYDRANT ■ – WATER VALVE BARRIER FREE PARKING ■ O■ O■ - LIGHT POLES → - DRAINAGE FLOW

> - SPOT ELEVATION LABELS G = GUTTERTW = WALKTC = TOP OF CURB FS = FINISH SURFACE

PRELIMINARY

06/23/2020

REVISIONS BY MARK THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION DESIGN OR PURPOSE.

> CITY OF ANN ARBOR WASHTENAW COUNTY. MICHIGAN

TRAVER LAKES STABILIZATION STANDARD NOTES



AS SHOWN

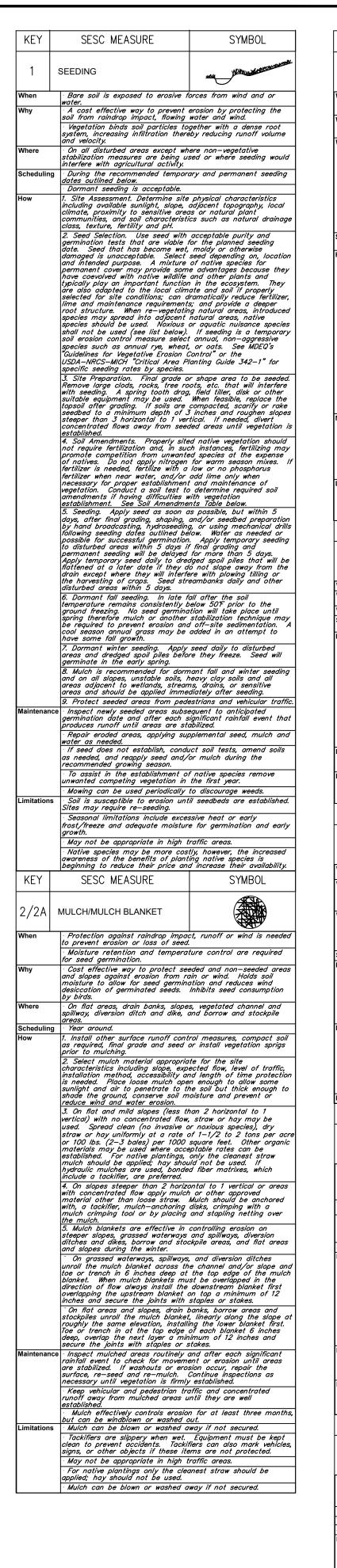
DUNDEE OFFICE 125 Helle Blvd, Suite 2 Dundee, MI 48131 Tel. 734-823-3308 www.SpicerGroup.com

PROJECT NO.

CH. BY: *SKR* APP. BY: *RAV* 126140SG2018 DR. BY: *JCB* SHEET 2 OF 13FILE NO. JUNE 2020

DR-3712-02 WRP028549 v1.0 Issued On:06/03/202

Expires On:06/03/2



KEY	SESC MEASURE	SYMBOL
7	RIPRAP	
When		tastica agginst concentrate
	Raw, erodible areas need pro flows that have the potential or lateral cutting.	
Why	To stabilize and protect stre channel meander, maintain ca attack, and reduce sediment i	pacity, protect against wave
Where	On steep slopes subject to channel liners, inlet and outlet bank protection and to protect	weathering or seepage, for t protection at culverts, drain t shorelines subjected to wo
	action. At culvert outlets can be us and channel, thus reducing th	red to protect the stream be
	non-erosive. At the outlet of storm drain	ns and as channel linings w
	flow velocities and concentrate channel slope is steep. On channel banks where the	
Schedulir	to stabilize erodible slopes. ng During lower flow periods or	
How	required. 1. Riprap must be clean, free correctly based on anticipated	of extruding rebar, sized velocities, and placed to th
	proper thickness. 2. Where high water velocities	are anticipated (greater tha
	ft/sec), the Riprap should be ensure that the size of stone from erosion and off-site sea	imentation.
	3. Over excavate area where in Riprap should be placed on gi from washing out from under geotextile fabric should be over	eotextile fabric to prevent so the riprap The edges of ti
	riprap immediately after instal	ling geotextile tabric. ess in one operation. Do n
	dump through chutes or use segregation of stone sizes. Vidisloaging or damaging underly	any method that causes When placing stone, avoid one geotextile fabric. Tamp
	individual pieces until firmly be 5. Place smaller, 4 inch to 6 dense, uniform and well–grade	inch stones, in voids to for
	dense, uniform and well-grade engineer or representative of placement may be necessary stone sizes.	to obtain an even distributio
Maintena	nce If riprap has been displaced damaged during high flow con remove riprap and repair geot layer overlapping the damaged with pins spaced 3 feet apart.	l and the geotextile fabric is ditions or from vandalism, extile fabric by adding anoth
	fabric.	
	Inspect following each precip runoff and confirm effectivene Expand riprap area as needed	ss, make necessary adjustm
Limitatior		
	· When using large concrete sadequate support to prevent	
KEY	SESC MEASURE	SYMBOL
26	DUST CONTROL	
When	· Unprotected areas are being	eroded by wind
Why	To reduce wind erosion and sedimentation.	
Where Schedulii	On exposed and unstabilized ng Year around, but most con precipitation, low humidity and	
How	Dust control applications of a dust suppressions, gravel or a aggregate cover and haul true	n include watering, chemicai
	used for dust control. 2. Minimize length of time dis	
	unprotected.	
	3. Quickly stabilize exposed so erosion control blankets, polynto minimize areas in need of 4. Follow manufacturer's instany dust palliative. Pay parti	dust control. ructions regarding application
	5. Dust suppressants can be attached to a distributor truc	applied using a pressure hos k.
Maintena	6. Limit vehicular traffic on un per hour. nce Frequent, even daily applicat	
Limitation	effectiveness. Do not over water, as over	watering may cause erosion.
Liiiiitatioi	result in higher runoff rates in erosion. Continued effectiveness may	ncreasing the potential for
KEY	SESC MEASURE	SYMBOL
	CATCH BACIN	
41	CATCH BASIN	
When Why	To provide a stable inlet to drain or stream. On enclosed drains to provide	
vviiy	sediment.	lopes or erodible soils to
Where	On open drains with steep s	
wilete	On open drains with steep s prevent erosion of the inlet a Where surface water accumu Within an enclosed drain sys	lates and needs an outlet.
vviiere	On open drains with steep s prevent erosion of the inlet a Where surface water accumu	lates and needs an outlet. tem to provide a storm dra
Schedulii	On open drains with steep sprevent erosion of the inlet a where surface water accumu. Within an enclosed drain sysinlet and a sump. Where an open drain discharerosive velocities.	lates and needs an outlet. tem to provide a storm dra ges to a stream or drain a
Schedulii	On open drains with steep sprevent erosion of the inlet at where surface water accumu. Within an enclosed drain sysinlet and a sump. Where an open drain discharerosive velocities. 1. Excavate to install catch and a positive discharge to the considerations include inlet sizend outlet elevations, pipe slo	lates and needs an outlet. tem to provide a storm drain ges to a stream or drain as basin with an adequate sum, he storm system. Design he, outlet pipe capacity, inlet pe, and sump depth.
Schedulii	On open drains with steep sprevent erosion of the inlet a where surface water accumu. Within an enclosed drain sysinlet and a sump. Where an open drain discharerosive velocities.	lates and needs an outlet. tem to provide a storm dra. ges to a stream or drain as basin with an adequate sum, the storm system. Design the, outlet pipe capacity, inlet pe, and sump depth. The posoil and seed, fertilize with the if necessary.
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Schedulii How Maintena KEY 48 When	On open drains with steep is prevent erosion of the inlet a where surface water accumulations within an enclosed drain system inlet and a sump. Where an open drain discharters we velocities. If Excavate to install catch and a positive discharge to the considerations include inlet six and outlet elevations, pipe slot 2. Backfill to grade, adding to low or no phosphorus fertilized 3. Install soil erosion and sed protect inlet. Inspect routinely and following results in runoff until disturbed results in runoff until disturbed reconstruction and sed wacuum truck and haul to an Contaminated sediments must landfill. Repair structure as needed. SESC MEASURE Construction activities are lift and a dry work area is required and a dry work area is required. Maintenance activities required.	dates and needs an outlet. tem to provide a storm drain as ges to a stream or drain as ges to make, outlet pipe capacity, inlet pipe, and sump depth. The provide and seed, fertilize with a geach precipitation event to ge each precipitation by hand or with upland site and stabilize. The disposed of at an approved to get the presence of we get get the presence of th
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Schedulii How Maintena Limitation KEY 48 When Why	On open drains with steep is prevent erosion of the inlet a where surface water accumulation within an enclosed drain systemate and a sump. Where an open drain discharters vereites. The end of the inlet and a sump. Where an open drain discharters vereites. The end of the inlet is and a positive discharge to the considerations include inlet six and outlet elevations, pipe slot 2. Backfill to grade, adding to low or no phosphorus fertilized 3. Install soil erosion and sed protect inlet. The inspect routinely and following results in runoff until disturber Remove temporary control in from sump after site is stabil. Routinely remove sediments must landfill. Repair structure as needed. SESC MEASURE DEWATERING Construction activities are lift and a dry work area is required and a dry	dates and needs an outlet. tem to provide a storm drawn as the storm of a stream or drain as the storm system. Design respect to the storm system. Design responds and seed, fertilize with a first fracessary. In the storm system of the storm of the storm system of the storm of
Schedulii How Maintena Limitation KEY 48 When	On open drains with steep is prevent erosion of the inlet at a the inlet and a surface water accumulation within an enclosed drain systematic and a sump. Where an open drain discharge to the inlet of inlet in inlet and a positive discharge to the considerations include inlet size and outlet elevations, pipe slot in include inlet inlet in in in inlet in in in inlet in in in inlet in	dates and needs an outlet. tem to provide a storm drain as ges to a stream or drain. The provided pipe capacity, inlet pipe, and sump depth. The provided for the pipe capacity, inlet pipe, and seed, fertilize with a firm of the pipe capacity, inlet pipe, and sump depth. The provided for the pipe capacity, inlet pipe, and sump depth. The provided for the pipe capacity, inlet pipe, and seed, fertilize with a great control measures to ge each precipitation event to dispose and clean sediment in the pipe capacity, inlet and stabilized. The provided for the pipe capacity, inlet pipe, and severally inlet and stabilized. The provided for the pipe capacity, inlet pipe, and severally inlet great to get a control of the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great to get a control of the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great to get great to get great to get great the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great to great the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great to great the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great the pipe. The provided for the pipe capacity, inlet pipe, and severally inlet great the pipe, and severally inlet great the pipe, and severally inlet great the pipe. The provided for the pipe capacity, inlet great the pipe, and severally inlet grea
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Schedulii How Maintena Limitation KEY 48 When Why Where	On open drains with steep is prevent erosion of the inlet a within an enclosed drain sysinlet and a sump. Where an open drain discharerosive velocities. If Year around. I. Excavate to install catch and a positive discharge to the considerations include inlet sizand outlet elevations, pipe slot 2. Backfill to grade, adding to low or no phosphorus fertilized. J. Install soil erosion and sed protect inlet. Inspect routinely and following results in runoff until disturbed Remove temporary control infrom sump after site is stabiled. Routinely remove sediment of vacuum truck and haul to an Contaminated sediments must landfill. Repair structure as needed. Inspect routinely and following results in runoff until disturbed vacuum truck and haul to an Contaminated sediments must landfill. Repair structure as needed. In Disposal cost. SESC MEASURE DEWATERING Construction activities are lift and a dry work area is required and a dry work area is required. A high groundwater to a street land a dry work area is required and a dry work area is required. In stormwater basins. Year around. 1. Utilize an engineer to designs sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during construction and to provide an adequate sufficient size and capacity to without delays during constru	dates and needs an outlet. tem to provide a storm draw ges to a stream or drain as ges to a stream or drain. The storm system. Design re, outlet pipe capacity, inlet pipe, and sump depth. The storm system of strillize with a gesting and seed, fertillize with a gesting and seed, fertillize with a gesting are stabilized. The stream of the string stream or drain and stream or drain. The string system with a gesting system with a gesting system discharge point or maintenance operative gesting system discharge point of disched watering pump inlet or release this purpose, prior to disched the string pump inlet or release this purpose, prior to disched the string pump inlet or release this purpose, prior to disched the string pump inlet or release this purpose, prior to disched the string pump inlet or release the string pump in the string pu
Schedulii How Maintena Limitation KEY 48 When Why Where	On open drains with steep is prevent erosion of the inlet at a sump. Where surface water accumulation is inlet and a sump. Where an open drain discharge to the considerations include inlet size and outlet elevations, pipe slot 2. Backfill to grade, adding to low or no phosphorus fertilized. 3. Install soil erosion and sed protect inlet. Inspect routinely and following results in runoff until disturbed. Remove temporary control inform sump after site is stability. Routinely remove sediment and contaminated sediments must landfill. Repair structure as needed. SESC MEASURE DEWATERING Construction activities are lift and a dry work area is required. Accumulated stormwater must landfill. Accumulated stormwater must landfill. Accumulated stormwater must landfill. A high groundwater to a street in stormwater basins. A high groundwater to a street in stormwater basins. 1. Utilize an engineer to design sufficient size and capacity to without delays during construction and to provide an adequate so through a stone filter near dethrough a filter, designed for 4. Sediment accumulated with either spread and stabilized dewate prevent scouring of the received stabilized and to for site.	dates and needs an outlet. Item to provide a storm draw ages to a stream or drain as a storm with an adequate summer storm system. Design the storm system depth. The storm sump depth. The storm of the storm
Schedulii How Maintena Limitation KEY 48 When Why Where	On open drains with steep is prevent erosion of the inlet a where surface water accumulations within an enclosed drain systemet and a sump. Where an open drain discharterosive velocities. The enclosed drain discharterosiderations include inlet size and outlet elevations, pipe slot a backfill to grade, adding to low or no phosphorus fertilizerosion and sed protect inlet. The enclosed routinely and following results in runoff until disturberosults in runoff until disturber	dates and needs an outlet. tem to provide a storm drain as ges to a stream or drain. The storm system. Design re, outlet pipe capacity, inlet pipe, and sump depth. The storm system of the necessary. The necessary. The necessary. The necessary of geach precipitation event to dear are stabilized. The geach precipitation event to dear are stabilized. The necessary of geach precipitation event to dear a sediment ized. The storm of an adversarial stabilize. The disposed of at an approved a stabilize. The disposed of at an approved as the disposed of at an approved as the discharged. The storm of discharged water to facilitate as a dewatering system with the maintain a dry condition of the storm or maintenance operative dediment basin when needed. The storm of the store
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Runoff from earth change activities will discharge to a catch basin or storm drain inlet.

A newly constructed catch basin or storm drain inlet needs

To prevent sediment from entering a stormwater system. · Around the entrance to a catch basin or storm drain inlet. · Year around.

1. For catchbasins and storm drain inlets in lawns: install

silt fence around the catch basin or inlet perimeter and overlap fence 1–2 feet; wrap catchbasin cover with geotextil fabric or use a prefabricated inlet protection device sized for

2. For catchbasins in curb lines wrap catchbasin cover with

geotextile fabric or use a prefabricated inlet protection devi-sized for the inlet. A curb silt dam may also be used for

3. Provide for secondary bypass to prevent flooding during

d. Remove temporary sediment controls when project is complete and all areas are stabilized.

:e Inspect routinely and following a precipitation event that results in runoff until sediment filter is removed.

Routinely remove sediment accumulation.

Repair and or replace control measures as neede

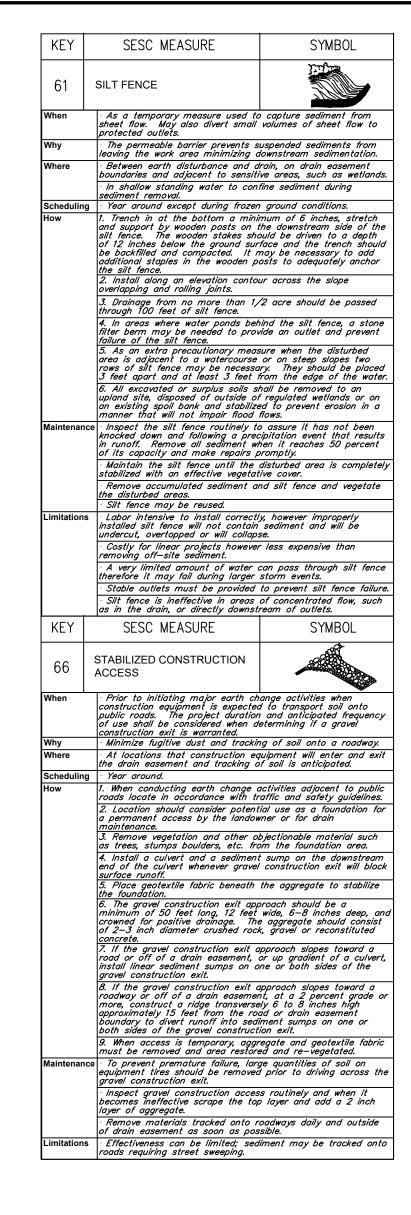
Plug easily and require repeated routine maintenance.

Catch basin covers and silt sacks should not be used during

May cause temporary flooding

rotection until surrounding area is stabilized.

PROTECTION



CONTINUED MAINTENANCE PROGRAM FOR PERMANENT SESC MEASURES

SEEDING: REPAIR BARE AREAS, APPLYING SUPPLEMENTAL SEED, MULCH, AND WATER AS NEEDED. MOWING CAN BE USED PERIODICALLY TO DISCOURAGE WEEDS.

RIPRAP: REPAIR AREAS WHERE ROCK HAS BEEN DISPLACED. EXPAND RIPRAP AREA IF

12' OR AS

REQUIRED TO

MATCH HAUL ROAD

GEOTEXTILE SEPARATOR

TO STABILIZE FOUNDATION

66 NOT TO SCALE

STABILIZED CONSTRUCTION ACCESS DETAIL

PARTY:

25' RADIUS

(OR AS SITE

CONDITIONS

REQUIRED)

6" 21AA OR 3"X1" DENSE GRADED AGGREGATE

6" 21AA

OR 3"X1"

AGGREGATE

DIVERSION RIDGE

(OPTIONAL)

DENSE GRADED

6" TO 8"

PERMANENT

SESC MEASURE

TRAVER LAKES COMMUNITY MAINTENANCE ASSOCIATION

MAINTENANCE PROCEDURE

MAINTENANCE PROGRAM FOR SESC MEASURES

GENERAL MAINTENANCE

- CONTRACTOR SHALL MAINTAIN ALL PERMANENT SESC MEASURES FOR A PERIOD OF 1 YEAR FOLLOWING THEIR INSTALLATION.
- TEMPORARY SESC MEASURES MUST BE INSTALLED, MAINTAINED, AND REMOVED BY THE
- TEMPORARY MEASURES MUST BE MAINTAINED AND IN PLACE UNTIL AREAS ARE PERMANENTLY STABILIZED.
- PERMANENT MEASURES MUST BE INSTALLED AND MAINTAINED BY THE CONTRACTOR UNTIL FINAL
- DAILY MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY.
- TEMPORARY SESC MEASURES MUST BE REMOVED AT THE END OF THE PROJECT ONCE PERMANENT MEASURES ARE ESTABLISHED.
- TEMPORARY SESC MEASURES MUST BE INSTALLED PRIOR TO, OR AT THE TIME OF, EARTH DISTURBANCE.
- INSPECT WEEKLY AND AFTER EACH RAIN EVENT UNTIL VEGETATION HAS BEEN ESTABLISHED.
- IF NECESSARY, REPAIR AND RE—SEED OR REPLANT ERODED AREAS IMMEDIATELY.

<u>SEEDING AND MULCHING</u>

- SEEDING PRACTICES INCLUDE TOPSOIL (AS DIRECTED BY ENGINEER), SEED, POLYMER, AND MULCH OR MULCH MATTING (AS DIRECTED BY ENGINEER OR WHERE SHOWN ON PLANS).
- WHERE NECESSARY, APPROPRIATE MULCH MUST BE APPLIED BASED ON SLOPE AND GROWING CONDITIONS. AS APPROVED BY THE PROJECT ENGINEER.
- ALL SLOPES AND HIGHLY EROSIVE AREAS MUST BE SEEDED, POLYMER APPLIED AND MULCHED AS 8. NEEDED WHEN CONSTRUCTION ACTIVITY IS NOT TAKING PLACE.
- SEED AND MULCH IS TO BE INSPECTED DAILY FOLLOWING EACH RAIN EVENT TO DETERMINE IF CONCENTRATED FLOWS ARE PRESENT.
- IN THE EVENT THAT SEED AND MULCH ARE REMOVED BY EROSIVE RUNOFF, REPAIRS ARE TO BE MADE IMMEDIATELY.
- ALL AREAS DURING CONSTRUCTION MUST BE PERMANENTLY STABILIZED WITHIN 72 HOURS OF FINAL GRADE (GRADE LISTED ON PLAN).

SILT FENCE

- SILT FENCE IS TO BE TRENCHED IN NO LESS THAN 6 INCHES BELOW THE GROUND SURFACE.
- INSPECT SILT FENCE DAILY AND IMMEDIATELY FOLLOWING EACH RAINFALL.
- REPAIR WHEN SILT FENCE IS SAGGING OR HAS BEEN REMOVED/TORN DOWN.
- WHEN SILT COLLECTS TO HALF THE HEIGHT OF THE FENCE ALL SILT IS TO BE REMOVED AND FENCE REPAIRED.
- REMOVE SILT FENCE WHEN PERMANENT SESC MEASURES ARE IN PLACE AND VEGETATION IS

STORM DRAIN INLET PROTECTION

- INSPECT WEEKLY AND AFTER EACH RAINFALL
- REMOVE ACCUMULATED SEDIMENT PER MANUFACTURERS DIRECTIONS.

STABILIZED CONSTRUCTION ACCESS

- INSPECT WEEKLY AND AFTER EACH RAINFALL
- WHEN CONSTRUCTION ACCESS IS NO LONG EFFECTIVE, SCRAPE THE TOP LAYER AND ADD 2" OF AGGREGATE.

COMPLIANCE WITH PART 91 OF PA 451

25' RADIUS

(OR AS SITE

CONDITIONS

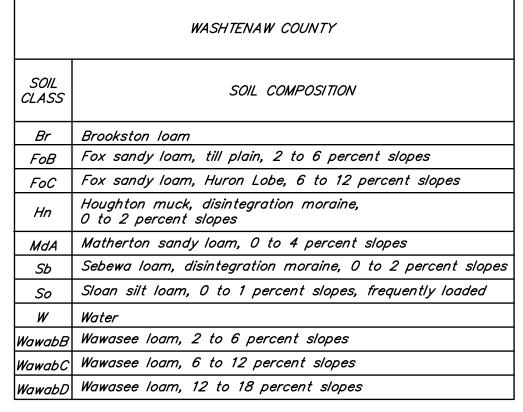
REQUIRED)

PUBLIC ROAD

• RESPOND IMMEDIATELY TO STORMWATER OPERATOR AND/OR SOIL EROSION AND SEDIMENTATION CONTROL INSPECTOR CONCERNS. MAKE CORRECTIVE MEASURES AS REQUIRED IMMEDIATELY AS DETAILED BY THE APPROVED APA MANUAL(S).

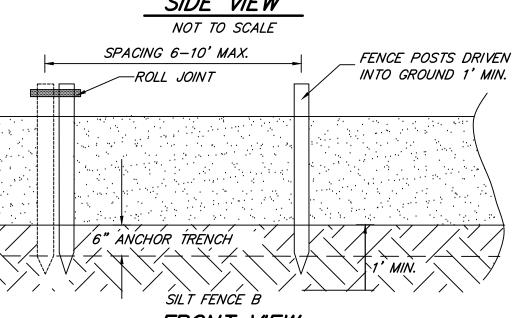
<u>SOIL EROSION AND</u> SEDIMENTATION CONTROL NOTES

- INSTALL AND MAINTAIN ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED PLAN PRIOR TO COMMENCEMENT OF CONSTRUCTION OR MASS GRADING. ALL SESC MEASURES MUST BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE TRAVER LAKES STABILIZATION SESC PLAN AND PROJECT SPECIFICATIONS.
- 2. SOIL EROSION CONTROL MEASURES MUST BE INSPECTED BY A STATE CERTIFIED INSPECTOR AFFILIATED WITH THE CEA OR MEA PRIOR TO COMMENCEMENT OF CONSTRUCTION OR MASS GRADING.
- DAILY INSPECTION AND MAINTENANCE MUST BE MADE TO ENSURE ALL EROSION CONTROL MEASURES ARE FUNCTIONING PROPERLY AND INTACT. NECESSARY REPAIRS MUST BE PERFORMED WITHIN 24 HOURS.
- ADDITIONAL SOIL EROSION CONTROL MEASURES MUST BE PROVIDED THROUGHOUT CONSTRUCTION ACTIVITY AS NEEDED AND DETERMINED BY THE CEA, MEA, OR ENGINEER. THE SOIL EROSION AND SEDIMENTATION CONTROL PLAN IS TO BE AMENDED TO INCLUDE ADDITIONAL EROSION CONTROL MEASURES IMPLEMENTED ON-SITE.
- 5. SEDIMENT FROM WORK ON THIS SITE TO BE CONTAINED ON THE SITE AND NOT TO BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, OR IN WATERWAYS; WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES. STREAMS. STORM DRAINS. LAKES. PONDS. AND WETLANDS.
- 6. ALL VISUAL TRACKING INCLUDING MUD, DIRT, AND DEBRIS TRACKED ONTO EXISTING ROADWAYS MUST BE IMMEDIATELY REMOVED NO LESS THAN ON A DAILY BASIS BY SCRAPING AND SWEEPING AND/OR AS DIRECTED BY THE ENGINEER.
- DUST CONTROL MUST BE EXERCISED AT ALL TIMES DURING THE PROJECT AND AS DIRECTED BY THE ENGINEER, CEA, OR MEA. APPLY DUST SUPPRESSANT TO SURFACES USING A PRESSURE TYPE WATER DISTRIBUTOR TRUCK EQUIPPED WITH A SPRAY SYSTEM.
- ALL PERMANENT SOIL EROSION CONTROL MEASURES MUST BE IN PLACE WITHIN 24 HOURS OF FINAL GRADING (GRADE LISTED ON PLANS). THIS INCLUDES ALL VEGETATIVE STABILIZATION. VEGETATIVE STABILIZATION WILL BE ONGOING. TOPSOIL, FERTILIZER, SEED, POLYMER, SILT STOP (OR EQUAL). MULCH. AND/OR RIPRAP MUST BE IN PLACE BEFORE PROCEEDING TO THE NEXT WORK AREA. ALL TEMPORARY MEASURES SUCH AS SILT FENCE AND INLET PROTECTION BAGS TO BE REMOVED ONCE PERMANENT SESC MEASURES ARE IN PLACE AND VEGETATION IS ESTABLISHED. REMOVAL OF TEMPORARY MEASURES, FOLLOWING ACCEPTANCE OF THE PROJECT ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 9. PRIOR TO WINTER CONSTRUCTION, ALL EXPOSED SOILS MUST BE STABILIZED WITH A COMBINATION UNDISTURBED-OF SILT STOP 705 POLYMER BLEND, NORTH AMERICAN GREEN EROSION CONTROL BLANKETS, MULCH. OR OTHER APPROVED METHOD IF VEGETATION CAN NOT BE ESTABLISHED DURING THE GROWING SEASON AS DETERMINED BY THE CEA, MEA, OR ENGINEER.
- 10. WORK AREAS MUST BE STABILIZED WITH TOPSOIL, SEED, FERTILIZER, AND MULCH WITHIN 24 HOURS FOLLOWING CONSTRUCTION. VEGETATIVE STABILIZATION IS ONGOING THROUGHOUT THE PROJECT.
- 11. ALL SOIL EROSION CONTROL MEASURES MUST BE INSPECTED DAILY. THE STORM WATER OPERATOR SHALL MAKE A WEEKLY INSPECTION OR INSPECT AFTER EACH RAIN EVENT THAT RESULT IN A DISCHARGE TO ENSURE PROPER MAINTENANCE OF THE SOIL EROSION CONTROL MEASURES. ANY DEFICIENCIES OR REPAIRS TO SOIL EROSION CONTROL MEASURES MUST BE CORRECTED IMMEDIATELY. INLET PROTECTION MEASURES, DANDY BAG II (OR EQUAL) — FLEX STORM (OR EQUAL), MUST BE INSTALLED IN CATCHBASINS BEFORE ANY STORMWATER RUNOFF IS ALLOWED TO ENTER THE TOP OF THE STRUCTURES. THE SILT AND SEDIMENT MUST BE REMOVED FROM INLET PROTECTION MEASURES AS NEEDED TO ENSURE PROPER FUNCTION OF THE BAGS.
- 12. THE NEED FOR TEMPORARY MEASURES SUCH AS SILT FENCE AND DANDY BAG II (OR EQUAL) FLEX STORM (OR EQUAL) FOR EXISTING OR NEW CATCHBASINS MUST BE ASSESSED ON A DAILY BASIS. PIPES`TO BE CAPPED AT THE END OF EACH WORKDAY. AT NO TIME SHOULD SEDIMENT COLLECT IN A CATCHBASIN OR AN OFF-SITE AREA. TEMPORARY MEASURES MUST BE REMOVED ONCE PERMANENT MEASURES ARE IN PLACE AND VEGETATION IS ESTABLISHED.
- 13. IF DEWATERING IS NECESSARY. CONTRACTOR TO SUBMIT A DEWATERING PLAN TO THE CEA OR APA FOR APPROVAL.
- 14. THE NOTICE OF COVERAGE, SOIL EROSION AND SEDIMENTATION CONTROL PLAN, AND STORMWATER OPERATOR LOGS MUST BE LOCATED ON SITE AT ALL TIMES.
- 15. ALL RESTORATION TO OCCUR WITHIN 24 HOURS OF FINAL GRADING



LIFT STRAPS -DANDY BAG®II OR **EQUAL** -STANDARD FABRIC IS AN ORANGE WOVEN MONOFILAMENT DUMPING STRAP ALLOWS FOR EASY REMOVAL OF CONTENTS NOTE: SEDIMENTATION CONTROL CONSTRUCTION BEFORE PAVING. WRAP ALL STRUCTURE COVERS IN GEOTEXTILE FILTER FABRIC AND LEAVE SEDIMENTATION CONTROL AFTER PAVING AND UNTIL RESTORATION IS ESTABLISHED DANDY BAG II OR EQUAL 60 CATCH BASIN DANDY BAG II DETAIL

SILT FENCE B GEOTEXTILE FILTER ADJOINING POST FABRIC FASTENED ON ROLLED TOGETHER SILT FENCE A _ UPHILL SIDE. TOWARDS WITH FABRIC. EARTH DISRUPTION ROLL JOINTS RIDGE OF COMPACTED EARTH ON UPHILL SIDE OF FILTER FABRIC SHEET FLOW ANCHOR TRENCH 1' MIN.



FRONT VIEW

INSTALLED SILT FENCE IN LOCATIONS SPECIFIED ON PLANS AND LOCATIONS DETERMINED BY OWNER OR ENGINEER.

61 SILT FENCE DETAIL NOT TO SCALE

GENERAL TIMING & SEQUENCE

INSTALL TEMPORARY CONTROL MEASURES SITE CLEARING OPEN CHANNEL & STORM SEWER CONSTRUCTION RESTORATION INSTALL AND ESTABLISH PERMANENT CONTROL MEASURES REMOVE TEMPORARY CONTROL MEASURES

BY LMARK REVISIONS THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION DESIGN OR PURPOSE.

> CITY OF ANN ARBOR WASHTENAW COUNTY. MICHIGAN

TRAVER LAKES STABILIZATION SOIL EROSION SEDIMENT CONTROL

DUNDEE OFFICE 125 Helle Blvd, Suite 2 Tel. 734-823-3308 www.SpicerGroup.com

PROJECT NO

CH. BY: SKR 126140SG201 APP. BY: *RAV* BY: *JCB* PART 91, SOIL EROSION AND SEDIMENTATION SHEET 3 of 13FILE NO DATE *JUNE 2020* SCALE AS SHOWN

SOIL EROSION & SEDIMENTATION CONTRO PLAN IN COMPLIANCE WITH SECTION 323.1703 OF

06/23/2020

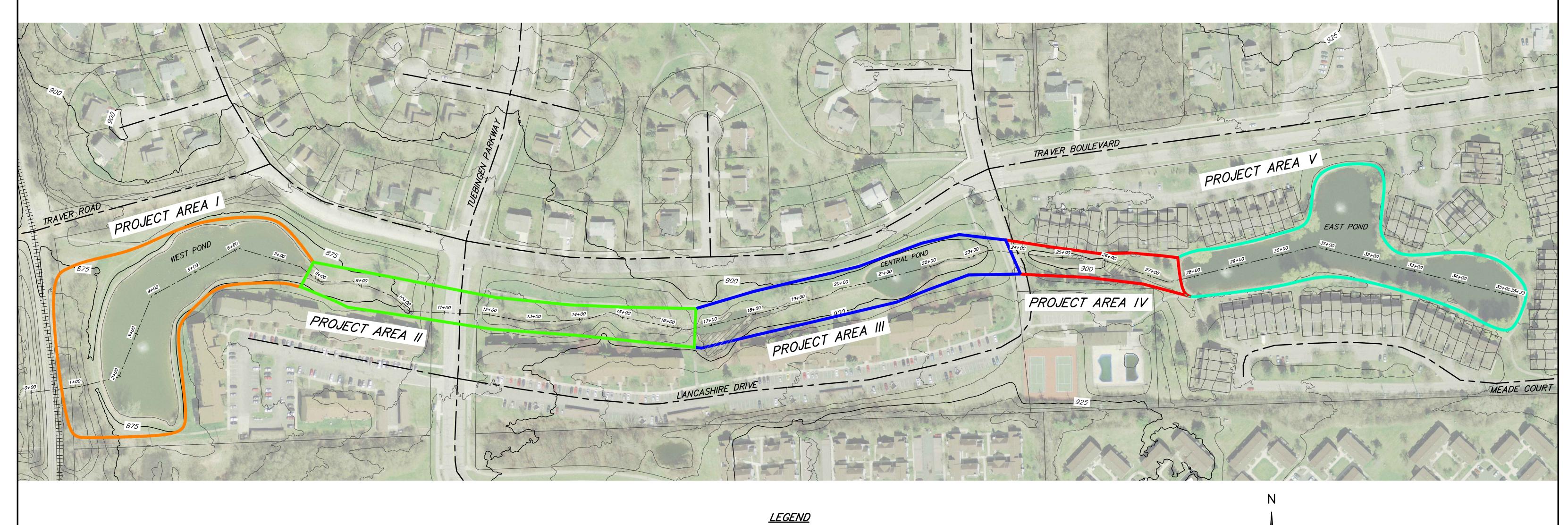
CONTROL, OF THE NATURAL RESOURCES

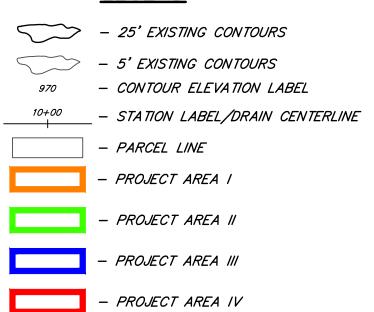
AND ENVIRONMENTAL PROTECTION ACT,

1994 PA 451, AS AMENDED.

PRELIMINARY

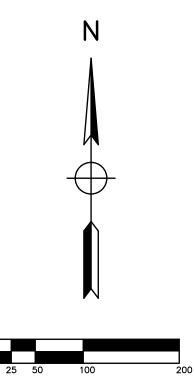
WRP028549 v1. Issued On:06/03/202 Expires On:06/03/2





– PROJECT AREA V

- WETLAND AREAS



PRELIMINARY

BY	MARK	REVISIONS	DATE
SPECIFIC WITH TH DOES NO	: APPLICATI E CONDITIO	ENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER ON AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCOR NS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE TEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, SE.	DANCE ENGINEER

CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

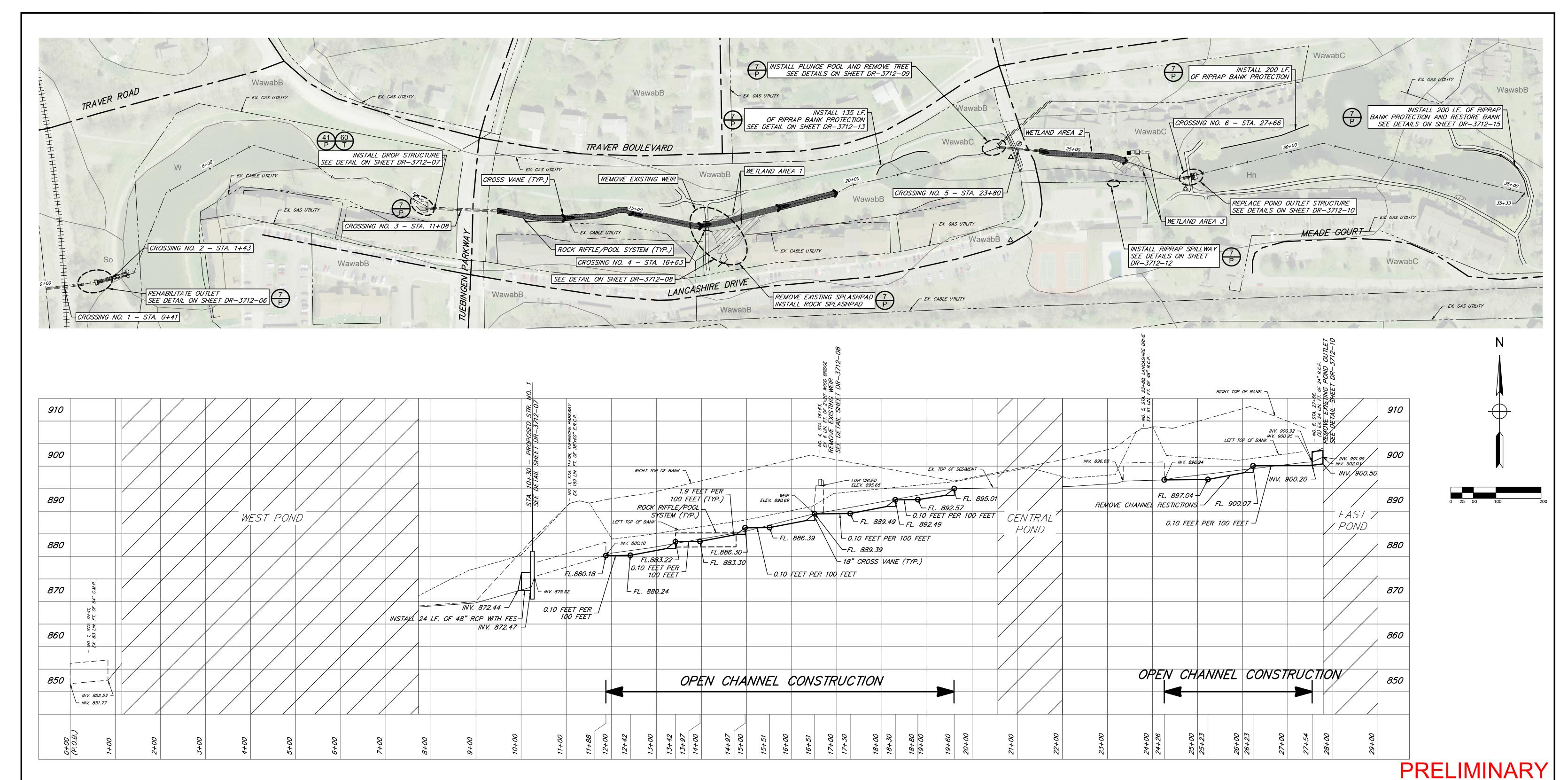
TRAVER LAKES STABILIZATION SITE LOCATION MAP



DUNDEE OFFICE 125 Helle Blvd, Suite 2 Dundee, MI 48131 Tel. 734–823–3308 www.SpicerGroup.com

22. 2,	BY: <i>SKR</i> P. BY: <i>RAV</i>		CT NO. 25G2018
STDS.	SHEET 4	of 13	DR
DATE FEBRUARY 202	FILE NO.	10 01	4

SCALE 1":100' DR-3712-04 4



WETLAND IMPACTS

LOCATION PERMENANT

0.10 AC

0.01 AC

0.04 AC

0.15 AC

AREA 1

AREA 2

AREA 3

TOTAL

CROSSING NOTES

<u> </u>
NO. 1 — STA. 0+41, EX. 83 LIN. FT. OF 54" C.M.P.
NO. 2 — STA. 1+43, (2) EX. 70 LIN. FT. OF 36" C.M.P.
NO. 3 — STA. 11+08, TUEBINGEN PARKWAY EX. 159 LIN. FT. OF 38"x60" E.R.C.P.

NO. 4 - STA. 16+63,
REMOVE EXISTING AND INSTALL 36' WOODEN FOOTBRIDGE

NO. 5 - STA. 23+80, LANCASHIRE DRIVE

EX. 91 LIN. FT. OF 48" R.C.P.

NO. 6 — STA. 27+66, REMOVE EXISTING AND INSTALL 24 LIN. FT. OF 36" R.C.P.

	EROSION CONTROL TABLE								
KEY*	DESCRIPTION	LOCATION							
1 P	SEEDING	ALL GRASS AREAS DISTURBED DURING CONSTRUCTION							
(2) T	MULCH	ALL GRASS AREAS DISTURBED DURING CONSTRUCTION							
7 P	RIPRAP	AS SHOWN							
(26) T	DUST CONTROL	ALL DISTURBED AREAS							
41 P	CATCH BASIN	AS SHOWN							
(60 T	STORM DRAIN INLET PROTECTION	ALL CATCH BASINS AND MANHOLES AFFECTED BY PROJECT, BOTH EXISTING AND PROPOSED							
NOTE	COORDINATE INSTAL	LATION OF FROSION							

NOTE: COORDINATE INSTALLATION OF EROSION CONTROL STRUCTURES WITH OWNER OR ENGINEER PRIOR TO CONSTRUCTION. LOCATIONS, QUANTITIES, OR TYPES MAY VARY BASED ON FIELD DECISIONS.

<u>CONSTRUCTION NOTES</u>

- 1. STATIONING ON PROFILE FOLLOWS DRAIN CENTERLINE.
- 2. CONTRACTOR TO COORDINATE INSTALLATION OF ALL SOIL EROSION CONTROL MEASURES WITH ENGINEER PRIOR TO CONSTRUCTION.
 LOCATION, QUANTITY AND TYPE MAY VARY BASED ON FIELD CONDITIONS.
- 3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- 4. ALL SPOILS, TREES, AND DEBRIS ARE TO BE HAULED OFF SITE BY CONTRACTOR.
- 5. ALL PROPOSED CULVERTS BEING INSTALLED ON THE PROJECT ARE TO BE RECESSED INTO DRAIN BOTTOM AS SHOWN ON DRAIN CROSSING DETAIL.
- 6. OPEN CHANNEL EXCAVATION DOES NOT INCLUDE THE LENGTHS OF CULVERTS. CULVERT INSTALLATION, CLEANOUT AND CLEAN THROUGH TO BE PAID PER UNIT BID PRICE.
- 7. RIFFLE/POOL SYSTEM CONSISTS OF 100' LONG REACH WITH A
 POOL (DETAIL SHEET 12) AT THE DOWNSTREAM END OF A ROCK
 RIFFLE. UPSTREAM END IS AN 18" HEAVY RIPRAP CROSS—VANE
 (DETAIL SHEET 13). REMAINING OPEN CHANNEL CONSTRUCTION TO
 BE PAID AS OPEN CHANNEL EXCAVATION.

BENCH MARKS

BM #101 - N: 295937.9980 E: 13300247.6320' 5/8" CIR ±50 FT. EAST OF NW CORNER OF TENNIS COURT. 3 FT. NORTH OF EDGE OF BIT OF LANCASHIRE DRIVE.

<u>ELEV. 919.96</u>

BM #102 - N: 296122.347 E: 13300248.750
5/8" CIR ±35 FT. SW. OF CATCHBASIN IN
LANCASHIRE DRIVE ±180 FT. S. OF TRAVER
BOULEVARD. 30 FT. WEST OF CENTERLINE OF
LANCASHIRE DRIVE.

ELEV. 907.23

BM #103 - N: 296052.381 E: 13300635.623 5/8" CIR ±30 FT. SW. OF EASTERN POND OUTLET STRUCTURE. 7 FT. N. OF SOUTHERN SIDEWALK.

<u>ELEV. 905.32</u>

RJR EGLE PERMIT SUBMITTAL 8/2020 BY MARK REVISIONS DATE THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION

PLAN & PROFILE STA. 0+00 (P.O.B.) TO STA. 35+33

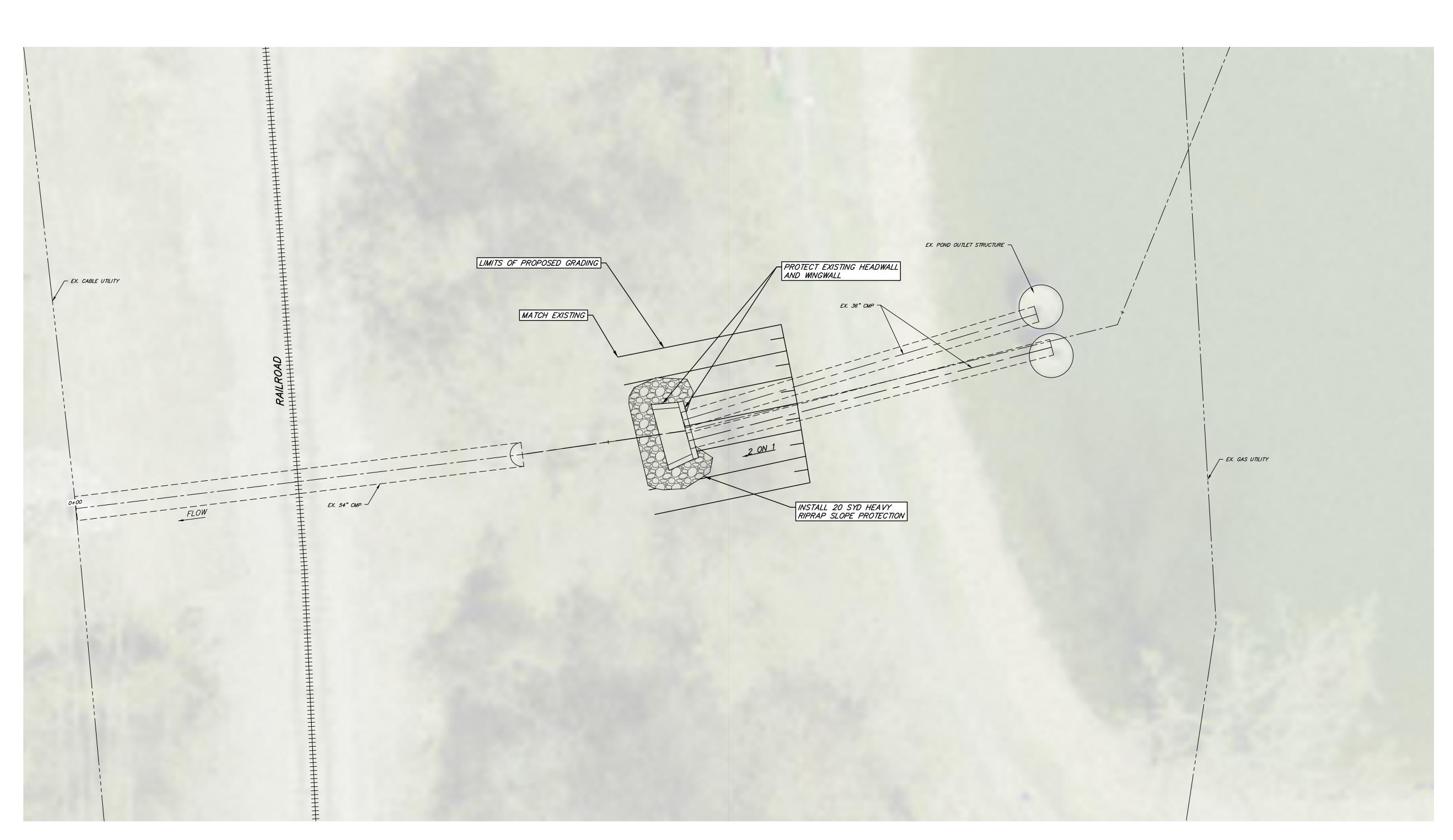


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PROJECT NO.

DR. BY: <i>JCB</i> APP. B	Y: <i>RAV</i>		12	6140	<i>SG</i>
STDS.	SHEET	5	OF	13	
DATE <i>AUGUST 2020</i> SCALE <i>H: 1"=100' V: 1"=10'</i>	FILE NO.	<i>371</i>	<i>'2</i> -	· <i>05</i>	

WRP028549 v1.0 Approved Issued On:06/03/2021 Expires On:06/03/2026

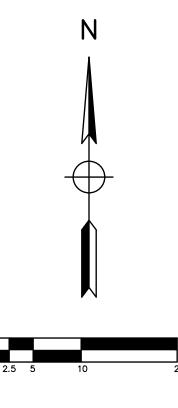


OUTLET REHABILITATION DETAIL

SCALE: 1" = 10'

CONSTRUCTION NOTES

- 1. STATIONING ON PROFILE FOLLOWS DRAIN CENTERLINE.
- 2. CONTRACTOR TO COORDINATE INSTALLATION OF ALL SOIL EROSION CONTROL MEASURES WITH ENGINEER PRIOR TO CONSTRUCTION.
 LOCATION, QUANTITY AND TYPE MAY VARY BASED ON FIELD CONDITIONS.
- 3. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
- 4. ALL SPOILS, TREES, AND DEBRIS ARE TO BE HAULED OFF SITE BY CONTRACTOR.



PRELIMINARY

BY	MARK	REVISIONS	DATE
SPECIFIC WITH TH DOES NO	APPLICATI E CONDITIO	ENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER ON AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCOR NS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE TEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, SE.	DANCE ENGINEER

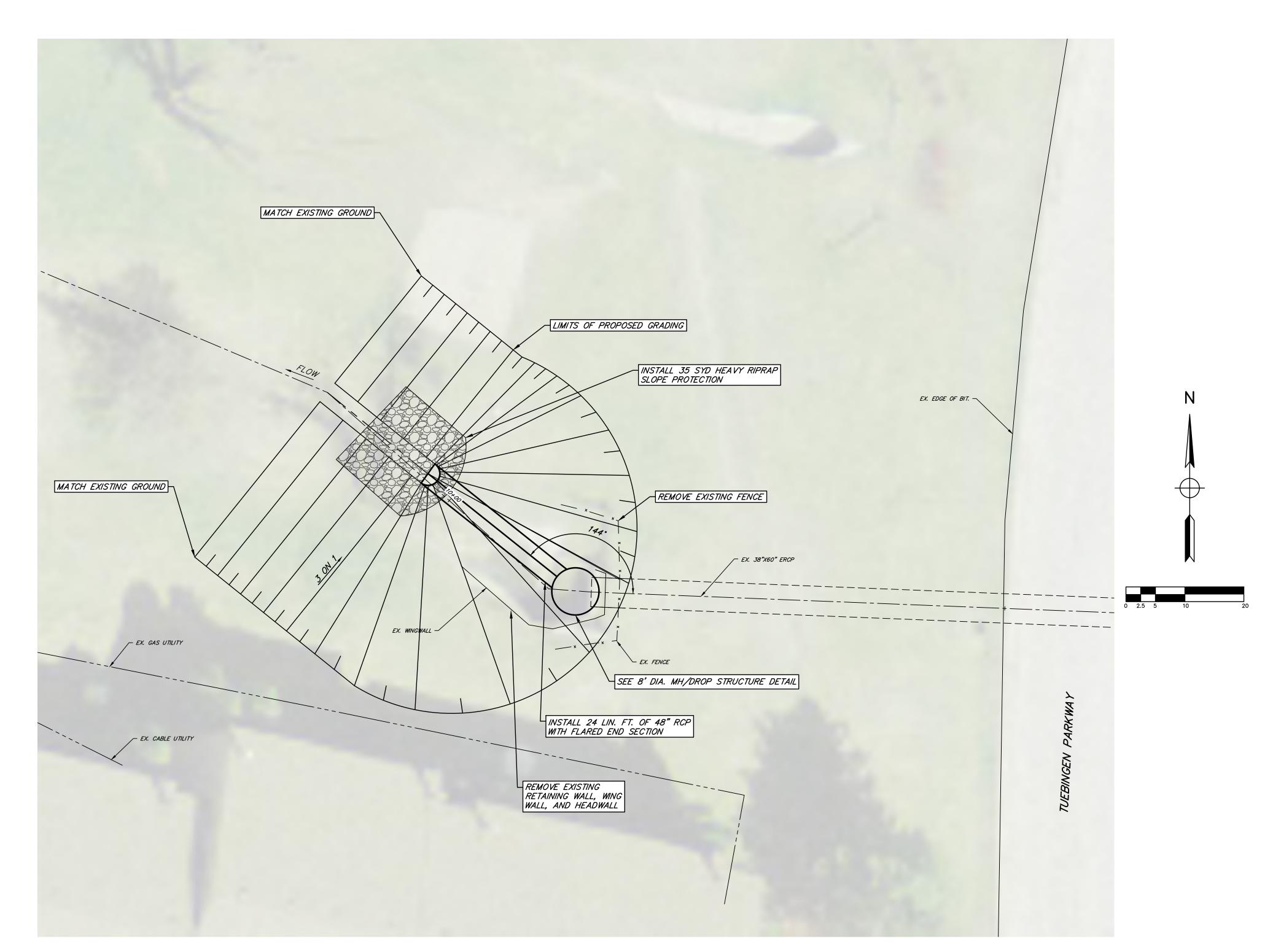
CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

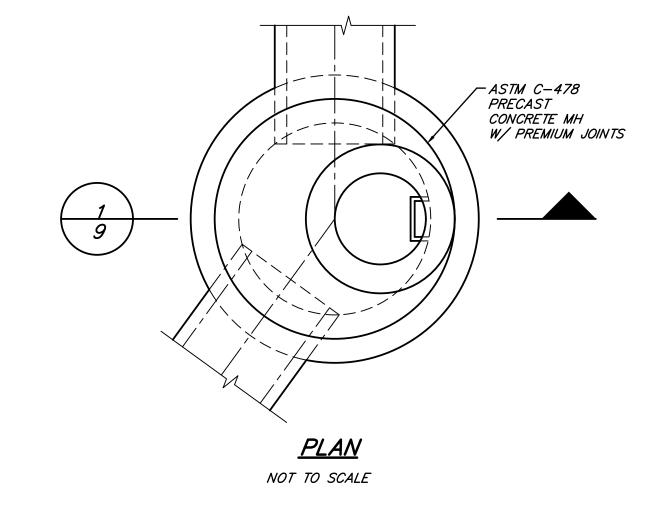
TRAVER LAKES STABILIZATION OUTLET REHABILITATION STA. 1+43

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201						
E. BY: <i>KR</i> R. BY: <i>JC</i>				12	PROJE 6140	CT NO. SG2018
DS.		SHEET	6	OF	13	DR
ن TE د	IUNE 2020	FILE NO.				6

DATE JUNE 2020 FILE NO.
SCALE AS SHOWN DR-3712-06





PLACE E.J.I.W. #1060 FRAME W/ VENTED COVER. (THE TOP OF THE STRUCTURE SHALL BE CLEANED, DAMPENED, AND A MINIMUM OF 1/2" BEAD OF NON-SHRINK MORTAR SHALL BE PLACED BETWEEN THE STRUCTURE, CASTING, AND GRADE RINGS OR CONCRETE BRICK. SEE PLAN SHEETS FOR RIM ELEVATIONS. BOLT CASTING TO MH WITH 4-4" CADMIUM COATED 5/8" THREADED STUDS WITH WASHERS AND NUTS.) -— RIM ELEV. 881.15 - WRAP STRUCTURE WITH GEOTEXTILE FABRIC. - CONNECT EX. 38"x60" E.R.C.P. ASTM C 478 PRECAST CONCRETE MH -FLOW [/] INV. 875.52 8'-0" DIA FLOW PROP. 48" R.C.P. — INV. 872.47 - 6" COMPACTED MDOT 6A COARSE AGGREGATE, CRUSHED 8' DIA. MH/DROP STRUCTURE DETAIL

NOT TO SCALE

PRELIMINARY

06/23/202

BY MARK REVISIONS DATE THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION

DROP STRUCTURE DETAIL STA 10+00

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PROJECT NO.
126140SG2018

DE. BY: KRK CH. BY: SKR PROJECT NO. 126140SG2018

STDS. SHEET 7 OF 15 DR

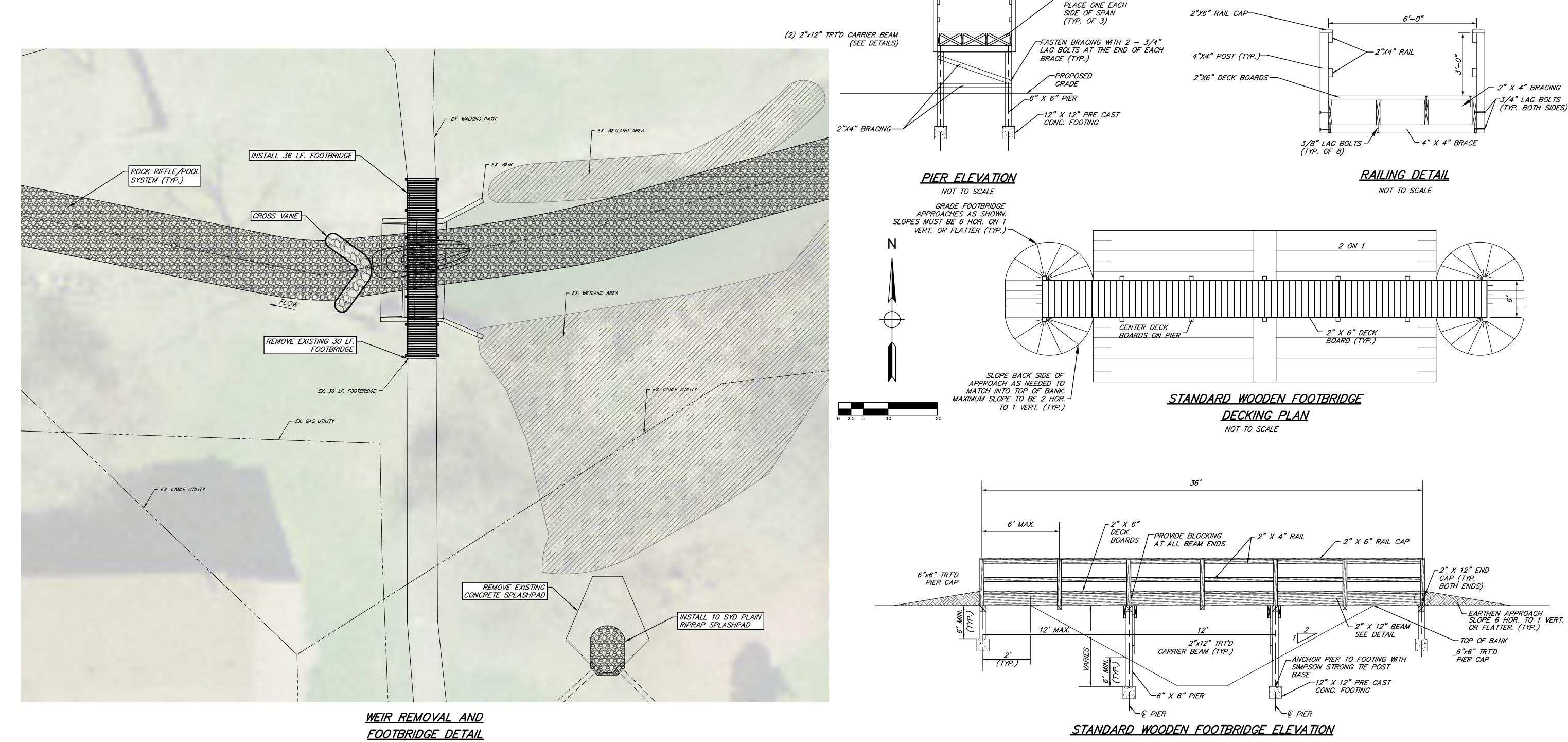
DATE JUNE 2020 FILE NO. DR-3712-07

DROP STRUCTURE DETAIL

SCALE: 1" = 10'

CONSTRUCTION NOTES

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- 5. ALL PROPOSED CULVERTS BEING INSTALLED ON THE PROJECT ARE TO BE RECESSED INTO DRAIN BOTTOM AS SHOWN ON DRAIN CROSSING DETAIL.
- 6. OPEN CHANNEL EXCAVATION AND OPEN CHANNEL CLEANOUT DO NOT INCLUDE THE LENGTHS OF CULVERTS. CULVERT INSTALLATION, CLEANOUT AND CLEAN THROUGH TO BE PAID PER UNIT BID PRICE.



SCALE: 1" = 10'

CONSTRUCTION NOTES

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FOOTBRIDGE CONSTRUCTION NOTES

ALL TIMBER FOR THE FOOT BRIDGE AND HANDRAIL SYSTEM SHALL BE #1 SOUTHERN YELLOW PINE. MOISTURE CONTENT SHALL NOT EXCEED 19 PERCENT. ALL SUBSTRUCTURE 6" X 6" TIMBER SHALL BE PRESSURE TREATED WITH TO A MINIMUM PENETRATION OF 0.60, AND ALL OTHER TIMBER PRESSURE TREATED TO A MINIMUM PENETRATION OF 0.40. ALL TIMBER FOR SHALL BE TREATED IN ACCORDANCE WITH AWPA UI (SPECIFICATIONS A OR F) AREAS OF TIMBER THAT ARE FIELD CUT, DRILLED OR MACHINED SHALL RECEIVE TWO COATS OF APPROVED BRUSH ON PRESERVATIVE. SIX MONTHS AFTER FOOT BRIDGE COMPLETION THE CONTRACTOR SHALL APPLY ONE COAT OF AN APPROVED WOOD SEALER.

PRE DRILL HOLES IN TIMBER FOR LAG SCREWS AS NECESSARY.

- ALL LAG AND TURN BOLTS SHALL BE HOT DIPPED GALVANIZED.
- ALL DECK SCREWS SHALL BE STAINLESS STEEL.
- ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL.

DECK BOARDS SHALL SPAN PERPENDICULAR TO THE DIRECTION OF THE TRAVELED WAY AND BE CONTINUOUS WITH NO SPLICES ALLOWED. DECK BOARDS SHALL BE ATTACHED WITH 3 DECK SCREWS AT EACH POINT OF CONTACT.

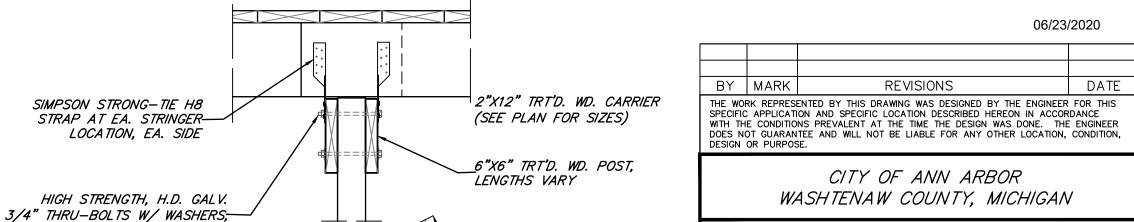
HANDRAIL RAILS SHALL ONLY BE SPLICED AT A VERTICAL POST LOCATION AND SHALL BE STAGGERED. CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS ON BRIDGE SYSTEM TO ENGINEER FOR REVIEW.

CONTRACTOR TO FIELD VERIFY FOOTBRIDGE DIMENSION SCHEDULE WITH ENGINEER PRIOR TO FABRICATION OF FOOTBRIDGES.

FOOTBRIDGE LOW CHORD IS TO MATCH HIGHEST TOP OF BANK. GRADE OPPOSITE BANK AS NEEDED TO MATCH THE HIGH TOP OF BANK ELEVATION.

FOOTBRIDGE HAS BEEN DESIGNED FOR PEDESTRIAN LOADING WITH A UNIFORM LIVE LOAD OF 85 PSF. CONTRACTOR SHALL FIELD VERIFY MINIMUM SOIL BEARING CAPACITY OF 1500 PSF.

PRELIMINARY



FINISH GRADE

ABU66 SIMPSON STRONG-TIE

COLUMN BASE OR EQUAL

VARIES

NOT TO SCALE

2"x6" TRT'D WD. DECKING

2 PER POST

12"x12" PRECAST_

CONC. FOOTING

TYP. POST & BEAM DETAIL AT PIERS

-2" X 4" BRACING

TRAVER LAKES STABILIZATION WEIR REMOVAL AND FOOTBRIDGE DETAIL STA 16+63

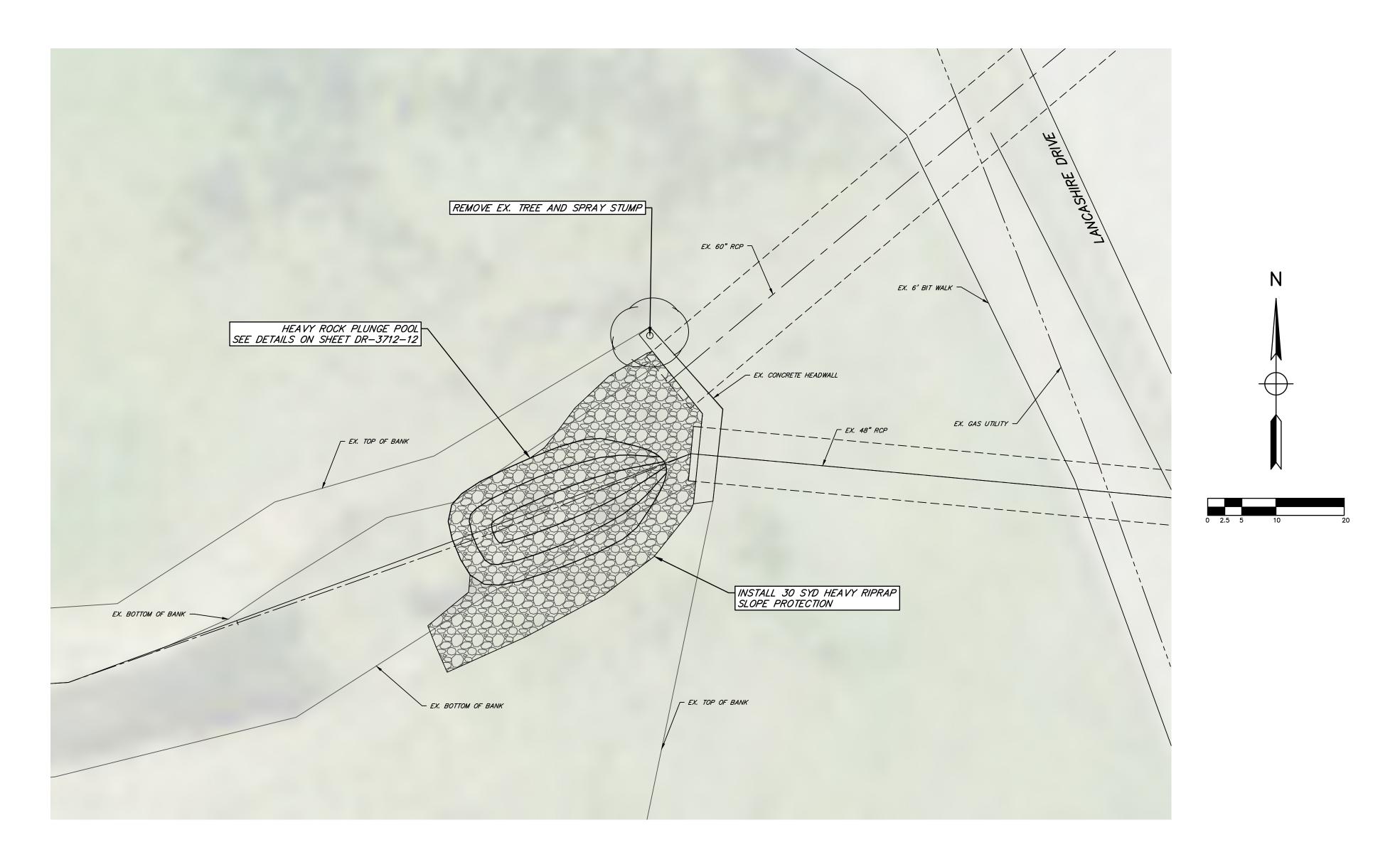
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CH. BY: *SKR* DE. BY: *RJR* DR. BY: *JCB*

126140SG2018 APP. BY: *RAV* SHEET **8** OF **13** JUNE 2020 DR-3712-08 AS SHOWN

www.SpicerGroup.com

PROJECT NO.



PLUNGE POOL DETAIL

SCALE: 1" = 10'

CONSTRUCTION NOTES

- 1. STATIONING ON PROFILE FOLLOWS DRAIN CENTERLINE.
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PRELIMINARY

06/23/2020

BY	MARK	REVISIONS	DATE
SPECIFIC WITH TH DOES NO	APPLICATI E CONDITIO	ENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER ON AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORNS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE TEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, SE.	DANCE ENGINEER

CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION

PLUNGE POOL DETAIL

STA 23+25



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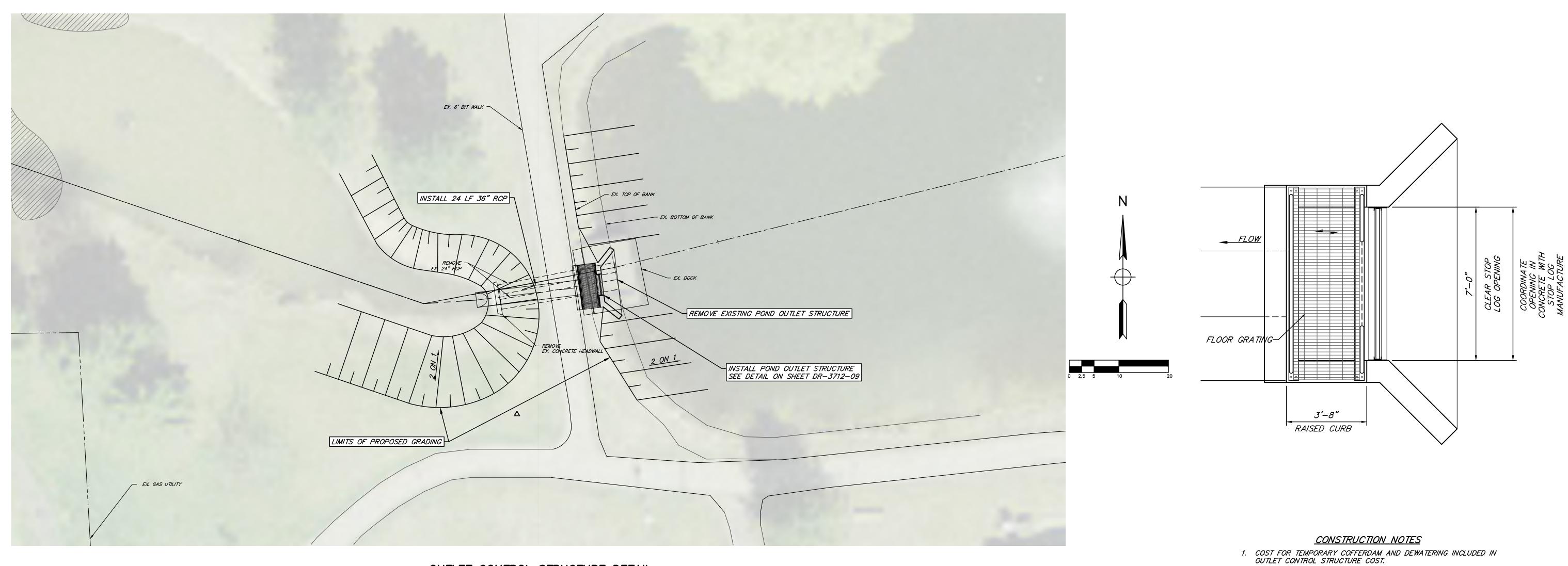
PROJECT NO.

DE. BY: *RJR*DR. BY: *JCB*CH. BY: *SKR*APP. BY: *RAV*

SHEET 9 OF 13 DR

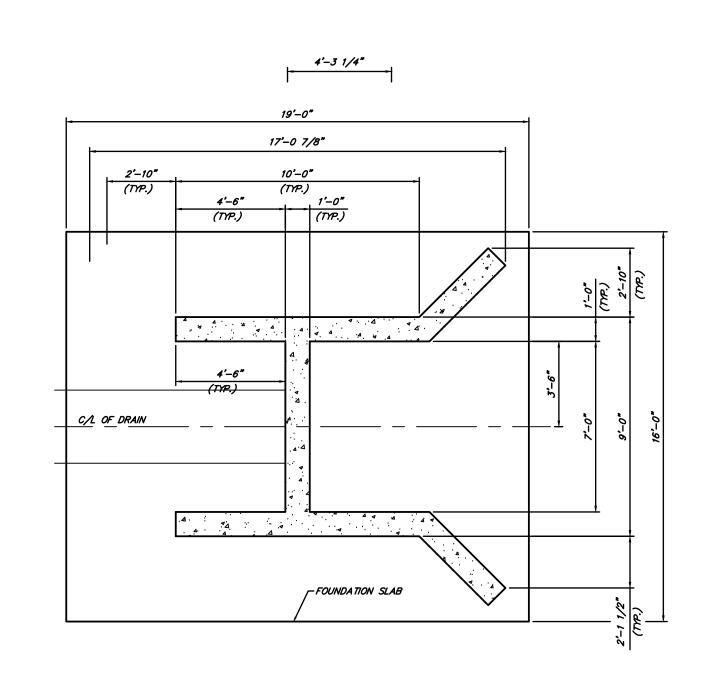
STDS. SHEET 9 OF 13

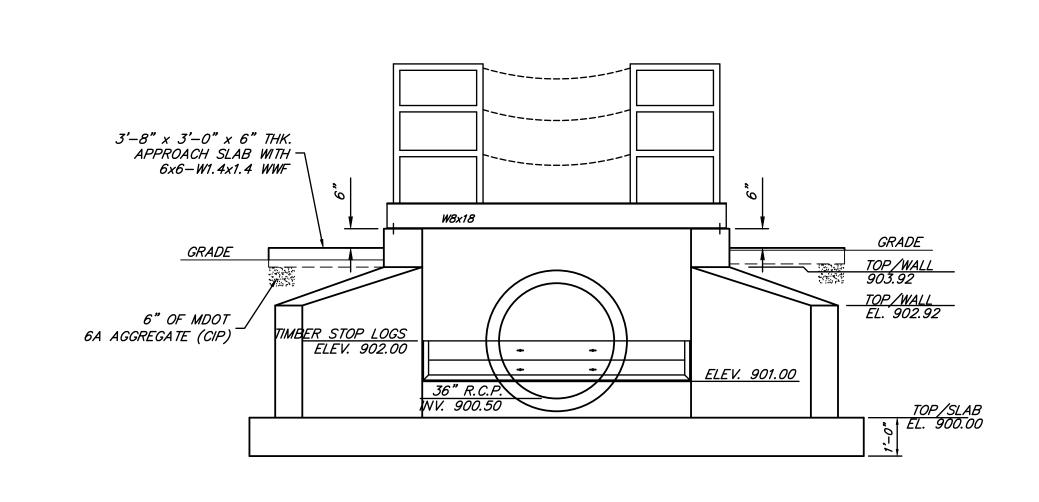
DATE JUNE 2020 FILE NO. DR-3712-09



OUTLET CONTROL STRUCTURE DETAIL

SCALE: 1" = 10'





PRELIMINARY

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> CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

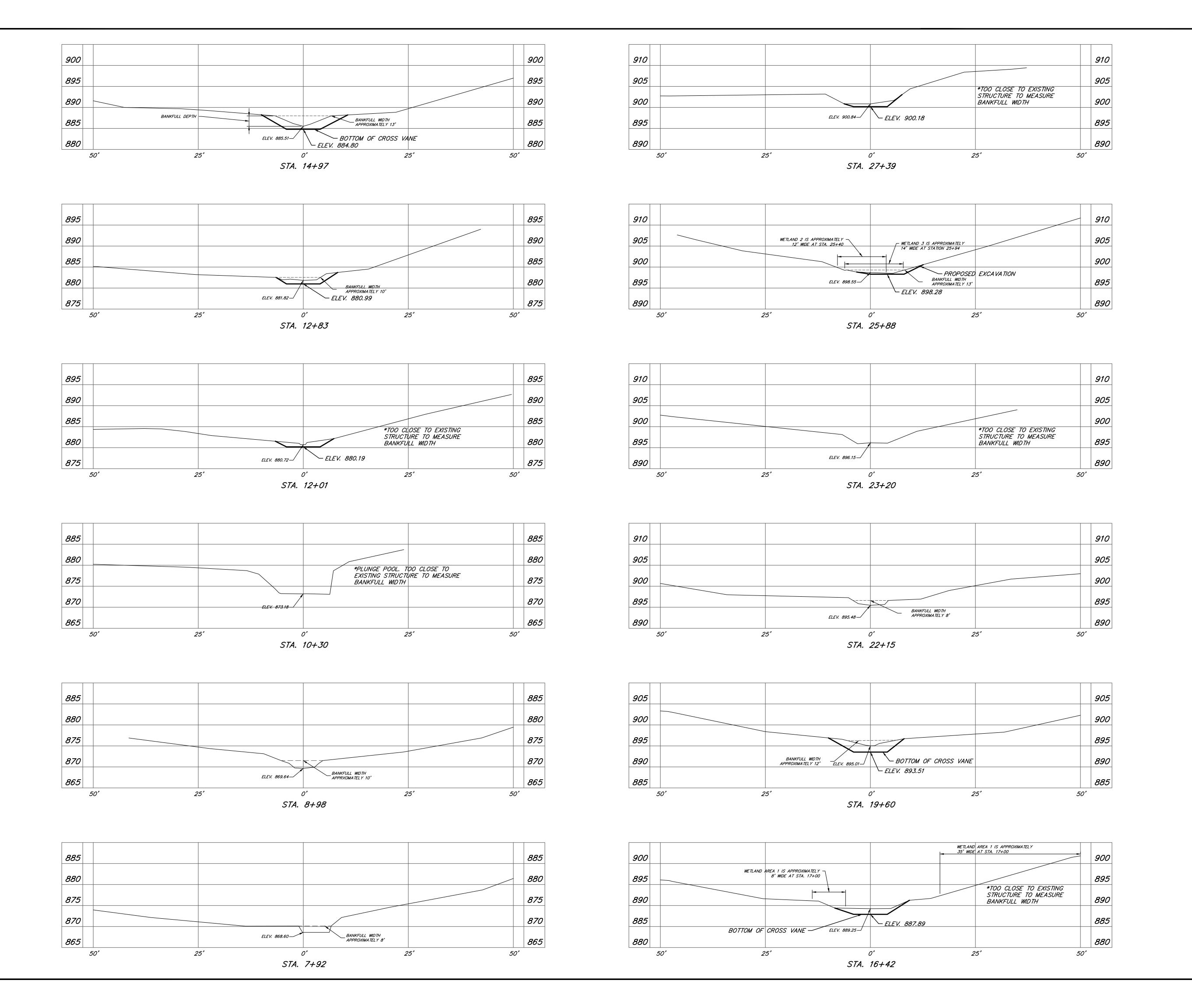
TRAVER LAKES STABILIZATION OUTLET CONTROL STRUCTURE DETAIL

STA 27+75



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PROJECT NO. 126140SG2018 CH. BY: *SKR* APP. BY: *RAV* DE. BY: *KRK* DR. BY: *JCB* SHEET 10 OF 13 DR



BANKFULL CROSS SECTIONAL AREA STA TION EXISTING *7+92* 10.7 SFT 12.0 SFT *8+98* 12+83 5.4 SFT 14+97* 18 SFT 19+60* 12.2 SFT *22+15* 7.2 SFT *25+88* 7.3 SFT

*A CROSS VANE IS PROPOSED AT THIS LOCATION. CROSS VANE DETAIL IS SHOWN ON SHEET 12.

PRELIMINARY

10/5/20

RJR		EGLE PERMIT SUBMITTAL	10/2020			
RJR		EGLE PERMIT SUBMITTAL	8/2020			
BY	MARK	REVISIONS	DATE			
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CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION

CROSS SECTIONS STA. 7+92 TO STA. 27+39



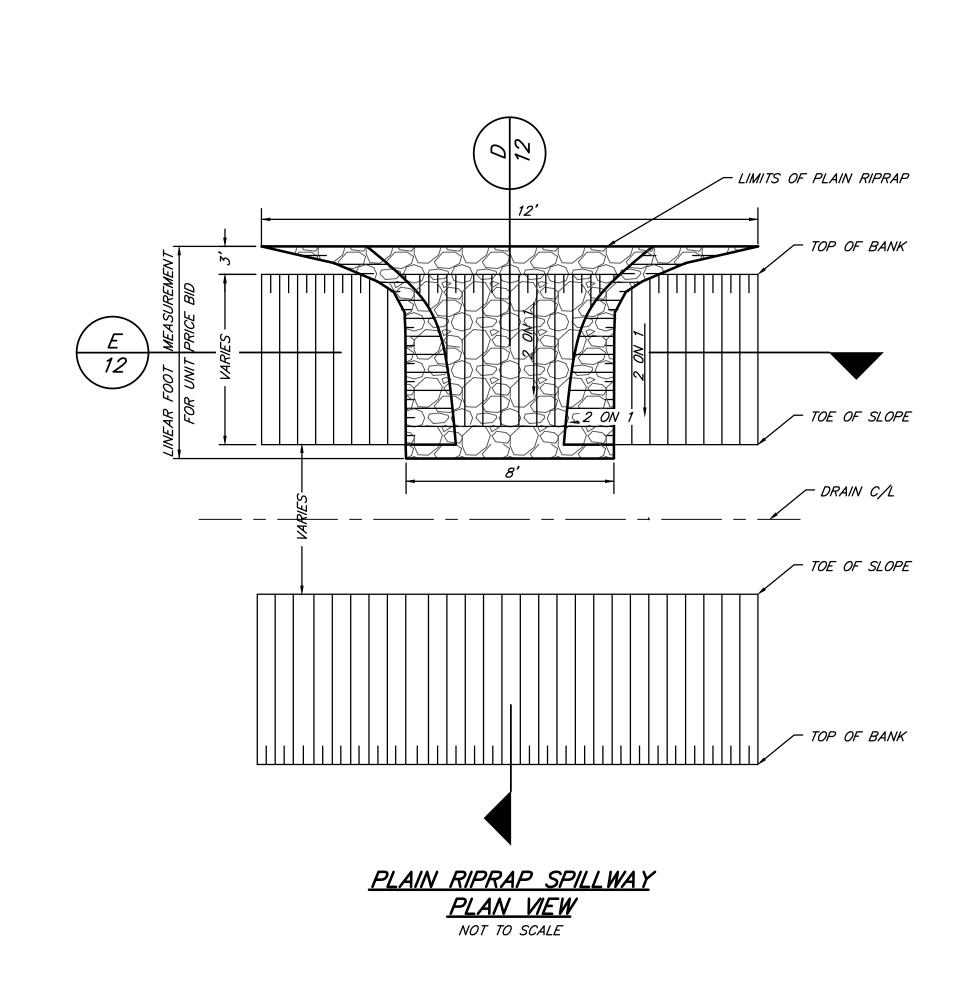
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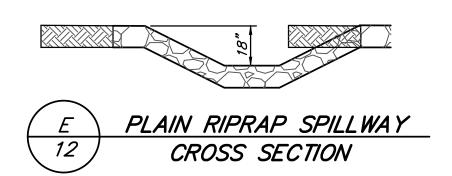
DE. BY: KRK CH. BY: SKR PROJECT NO. 126140SG2018

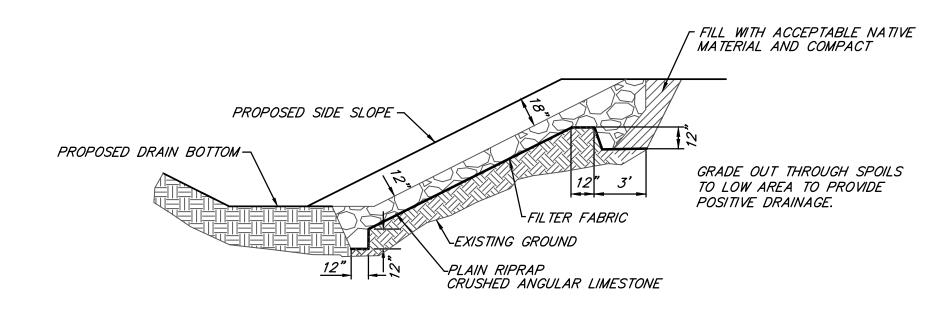
STDS. SHEET 11 OF 13 DR

DATE AUGUST 2020 FILE NO. 11

DATE AUGUST 2020 | FILE NO. | SCALEH: 1"=100' V: 1"=10' | DR-3712-11 | TOTALE | DR-3712-11 | SCALEH: 1"=100' V: 1"=10' | DR-3712-11 | TOTALE | DR-3712-11 | DR

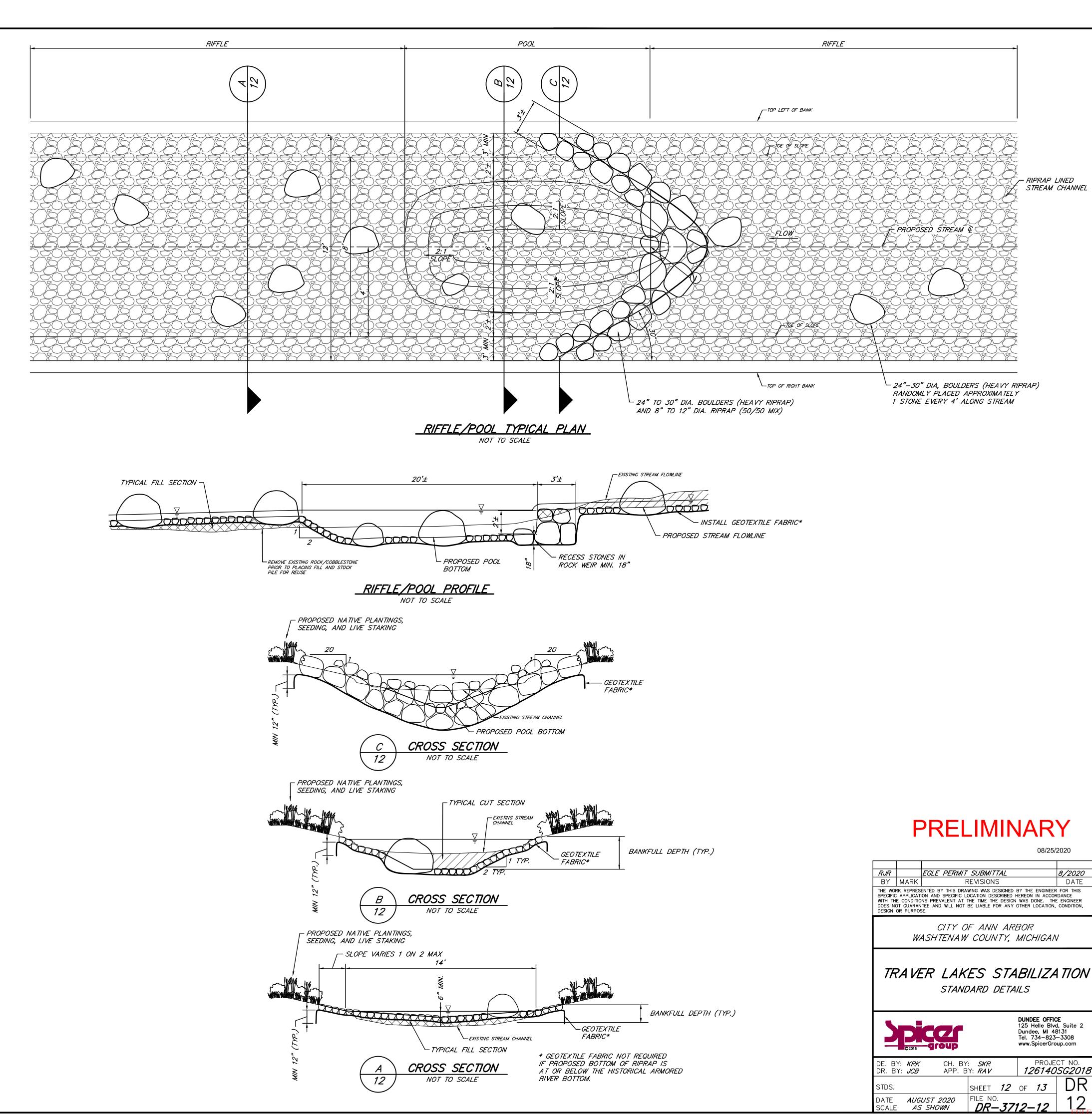


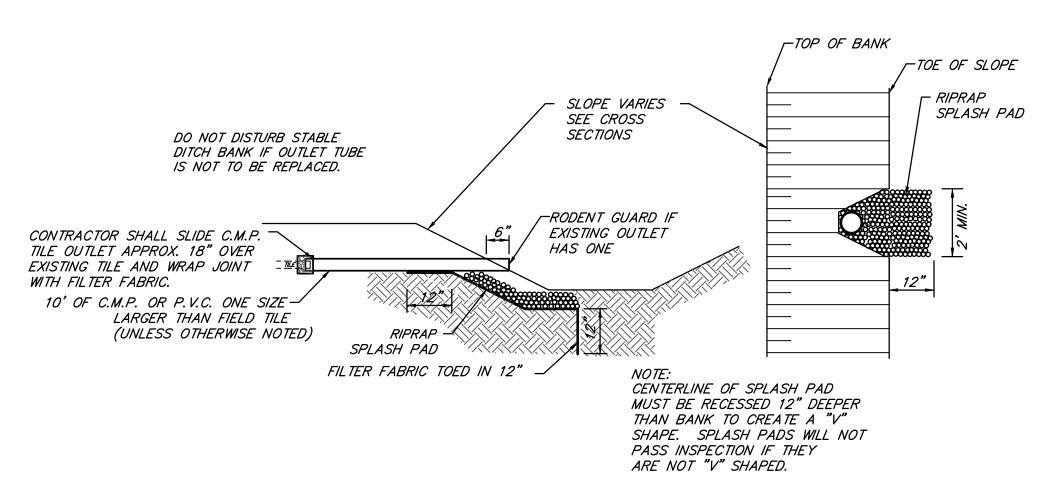




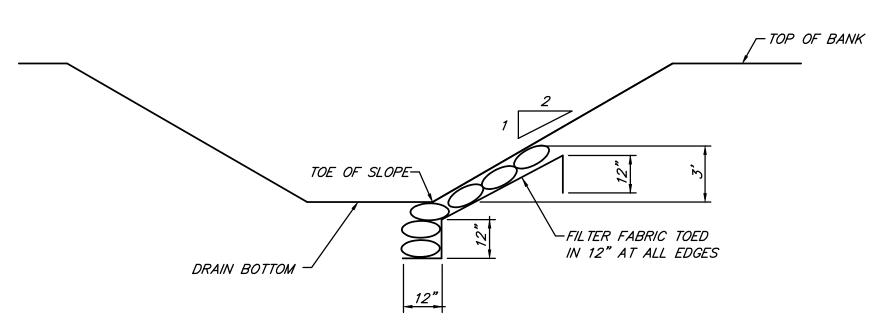
D PLAIN RIPRAP SPILLWAY

12 CROSS SECTION



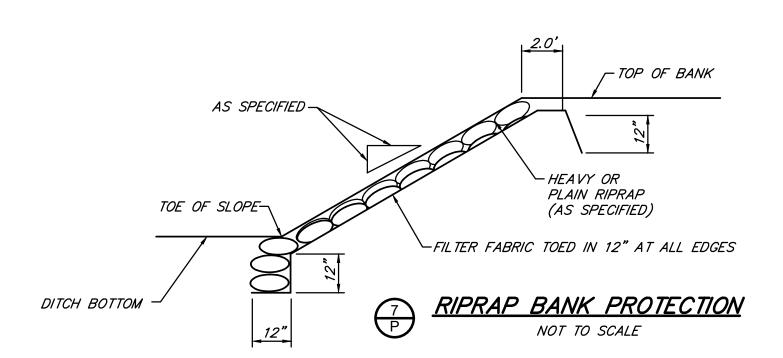


FIELD TILE OUTLET DETAIL & RIPRAP SPLASH PAD DETAIL NOT TO SCALE

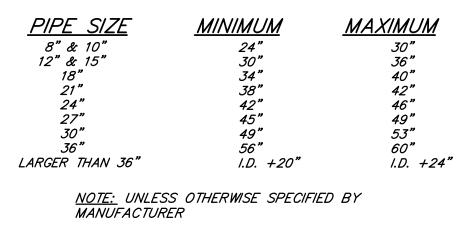


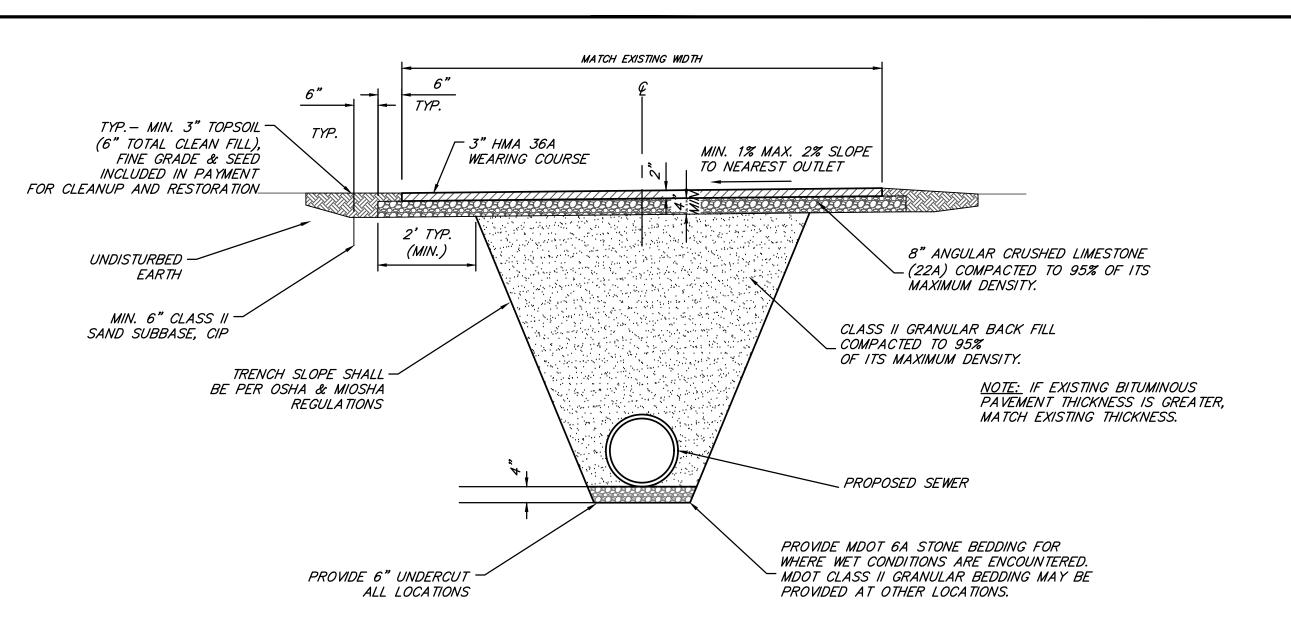
RIPRAP TOE OF SLOPE PROTECTION

NOT TO SCALE



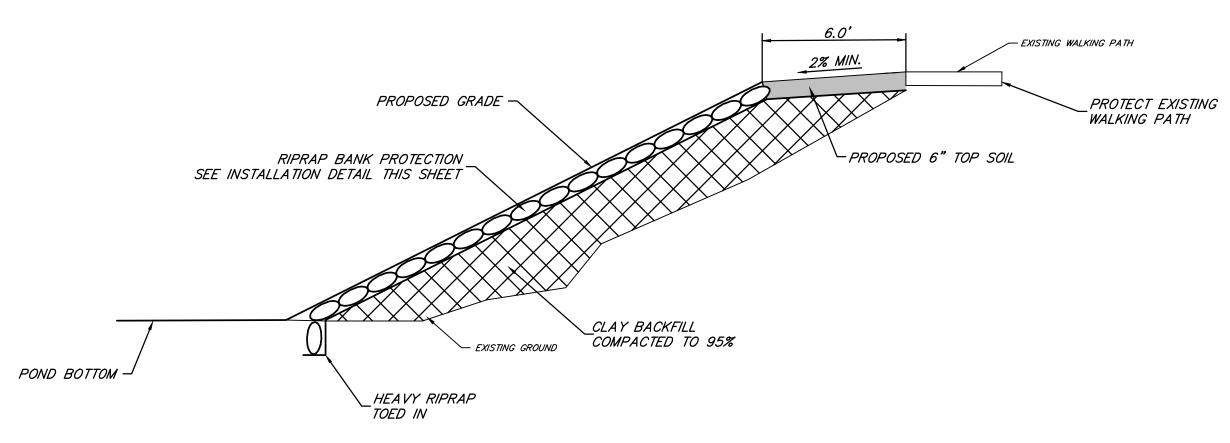
TRENCH WIDTH CHART



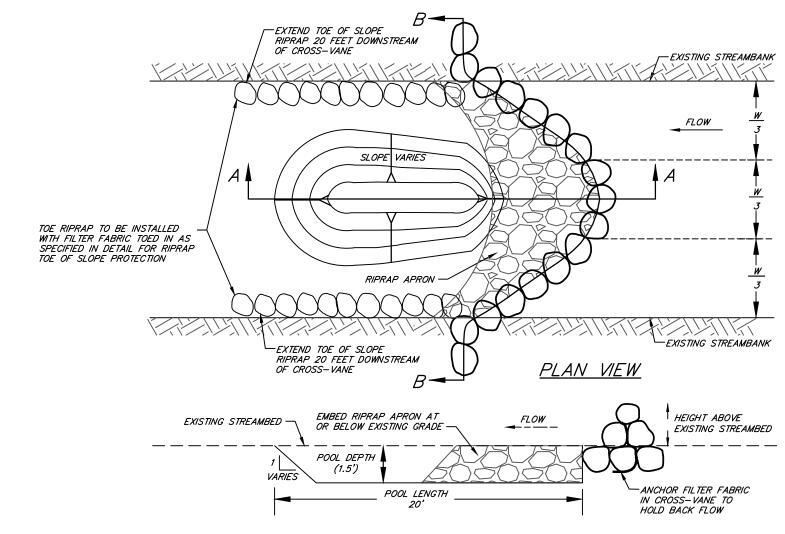


TYP. RESTORED PATH CROSS SECTION

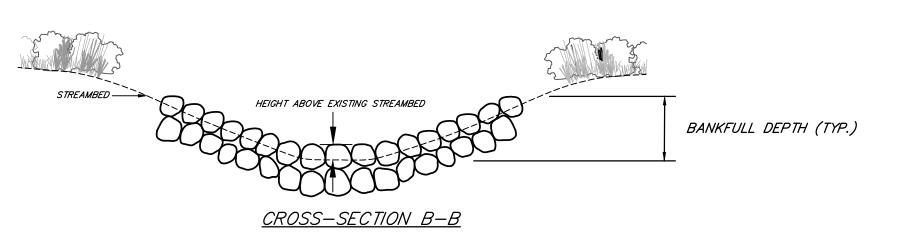
NOT TO SCALE



BANK EROSION REPAIR DETAIL NOT TO SCALE



<u>CROSS-SECTION A-A</u>



Source: Adapted from Rosgen, D. L., J Hook and Cross Vane, ASCE Wetland and Stream Restoration Conference 2001, Reno, NV.

CROSS-VANES STANDARD DETAIL

NOT TO SCALE

PRELIMINARY

08/25/2020

RJR		EGLE PERMIT SUBMITTAL	8/2020	
BY	MARK	REVISIONS	DATE	
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CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN				

TRAVER LAKES STABILIZATION
STANDARD DETAILS

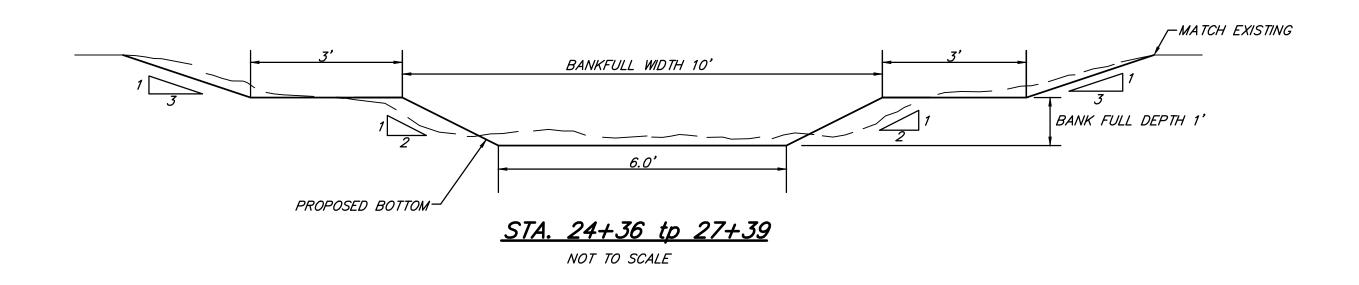


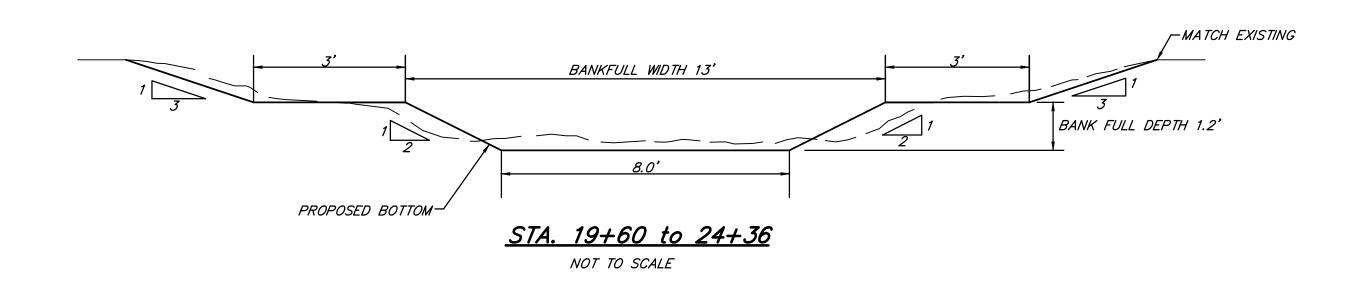
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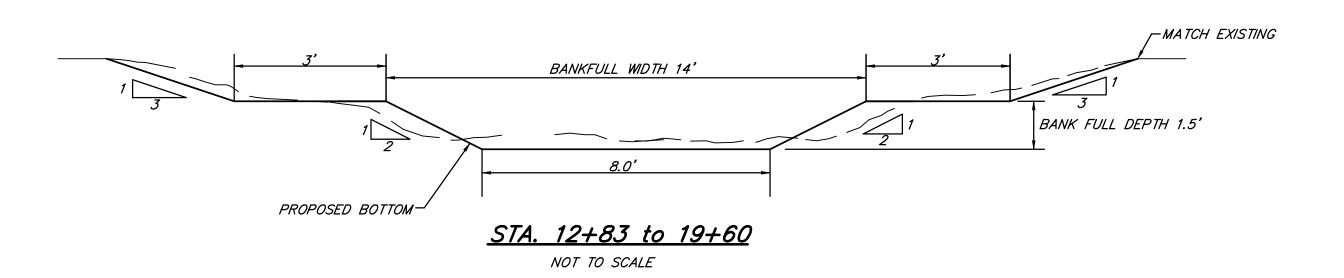
DE. BY: KRK CH. BY: SKR PROJECT NO. 126140SG2018

STDS. SHEET 13 OF 13 DR

DATE AUGUST 2020 FILE NO. DR-3712-13







PRELIMINARY

BY	MARK	REVISIONS	DATE
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CITY OF ANN ARBOR WASHTENAW COUNTY, MICHIGAN

TRAVER LAKES STABILIZATION STANDARD DETAILS



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