CONSTRUCTION DRAWINGS FOR:

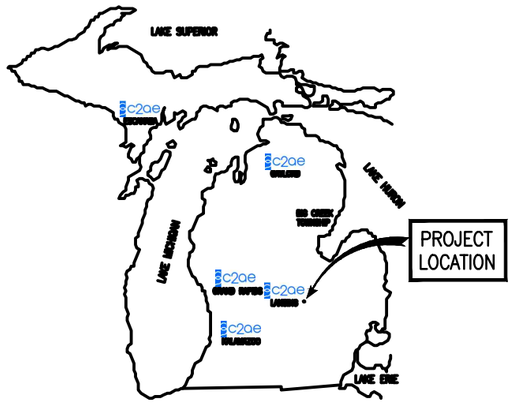
MICHIGAN STATE UNIVERSITY

INFRASTRUCTURE PLANNING AND FACILITIES

SEWER DISTRIBUTION - AKERS GOLF COURSE-GROUNDS

PROJECT NUMBER: CP19065

ISSUE DATE: AUGUST 2024



N W E S

LOCATION MAP

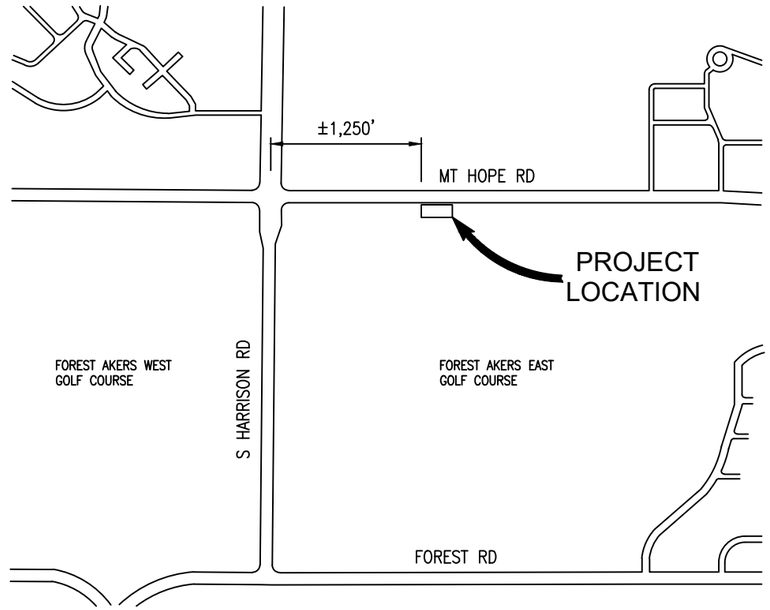
NO SCALE

811

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

IT IS UNDERSTOOD THAT THE CONTRACTOR SHALL PERFORM ALL WORK UNDER THIS CONTRACT IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS, POLICIES, RULES AND STANDARDS OF THE MICHIGAN OCCUPATIONAL SAFETY AND HEALTH ACT (MDSHA), BEING ACT 154 OF THE PUBLIC ACTS OF 1974 AND AS AMENDED.

EXCEPT WHERE OTHERWISE INDICATED ON THE PLANS OR IN THE PROPOSAL SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2012 EDITION, AND THE CURRENT SUPPLEMENTAL SPECIFICATIONS. (AVAILABLE AT https://mdotjboss.state.mi.us/SpecProv/specBookHome.htm)



PROJECT MAP

SCALE: NTS

N W E S

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C2AE JN : 22-0108

Infrastructure Planning and Facilities

MICHIGAN STATE UNIVERSITY

MICHIGAN STATE UNIVERSITY
SEWER DISTRIBUTION - AKERS GOLF COURSE-GROUNDS
EAST COURSE - REPAIR EXISTING STORM SEWER MAINS

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GENERAL PLAN NOTES

1. BENCH MARKS
USE TWO BENCH MARKS FOR VERIFICATION OF ALL CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING ADDITIONAL BENCH MARKS TO MEET THIS REQUIREMENT.

2. REMOVAL ITEMS
UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE PLANS, ALL SIDEWALKS, DRIVES, CULVERTS, DRAINAGE STRUCTURES AND ABOVE GRADE UTILITIES SHALL BE PROTECTED. ALL SUCH ITEMS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH NEW BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

3. UNDERGROUND UTILITIES
FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL CONTACT MISS DIG (1-800-482-7171, https://www.missdig.org/) 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. MISS DIG 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.

4. MAINTAIN ACCESS TO COMMERCIAL ENTRANCES
ACCESS TO ALL COMMERCIAL ENTRANCES SHALL BE MAINTAINED BY THE CONTRACTOR WITH THE USE OF SALVAGED GRAVEL, IMPORTED GRAVEL, OR MILLED TAILINGS. ALL COSTS ASSOCIATED WITH THE MAINTENANCE OF COMMERCIAL ENTRANCES SHALL BE INCLUDED WITH THE LUMP SUM BID.

5. PROTECT EXISTING UTILITIES
THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING WATER MAIN, STORM, AND SANITARY SEWER DURING THE CONSTRUCTION OF THE PROPOSED STORM SEWER, PROPOSED WATER MAIN, AND RELATED IMPROVEMENTS.

6. EXPLORATORY TRENCHING
IT IS BROUGHT TO THE CONTRACTOR'S ATTENTION THAT THE EXACT LOCATION AND ELEVATION OF THE VARIOUS UTILITIES ARE NOT KNOWN. THE CONTRACTOR MAY BE REQUIRED TO DO SOME EXPLORATORY EXCAVATION TO VERIFY THE LOCATION AND ELEVATION. THIS WORK SHALL BE INCLUDED WITH THE LUMP SUM BID.

7. DRIVEWAYS
EXISTING DRIVEWAYS BEYOND THE CONSTRUCTION LIMITS SHALL BE PROTECTED. ANY DAMAGE FROM CONSTRUCTION OPERATIONS SHALL BE RESTORED AT CONTRACTORS EXPENSE.

8. DISPOSAL OF EXCESS MATERIAL
ALL EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT A LOCATION PROVIDED BY THE CONTRACTOR.

9. SAWCUTTING PAVEMENT
SAWCUTTING EXISTING HMA OR CONCRETE SURFACES TO THE LIMITS OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN THE LUMP SUM BID. THIS ALSO INCLUDES SAWCUTTING DRIVES AT THE REPLACEMENT LIMITS. IF THE EDGE IS DAMAGED SUBSEQUENT TO SAWCUTTING, THE EDGE SHALL BE RECUT AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

10. PROTECTIVE FENCE
PROTECTIVE FENCE SHALL BE PLACED AROUND ALL TRENCH EXCAVATIONS THAT ARE LEFT OPEN OVERNIGHT. PAYMENT FOR THE PROTECTIVE FENCE SHALL BE INCLUDED AS PART OF THE LUMP SUM BID.

11. SLOPE RESTORATION
THE PAY ITEM FOR SLOPE RESTORATION OUTSIDE OF THE ROADWAY SHALL CONSIST OF FURNISHING ALL LABOR, EQUIPMENT, AND MATERIALS, TO RESTORE LAWN AND SLOPES TO ORIGINAL CONDITIONS. PAYMENT SHALL BE INCLUDED IN AS PART OF THE LUMP SUM BID. CLASS A SLOPES WILL BE REQUIRED WITHIN THE ROAD R.O.W. FOR THIS PROJECT.

12. SOIL EROSION 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.

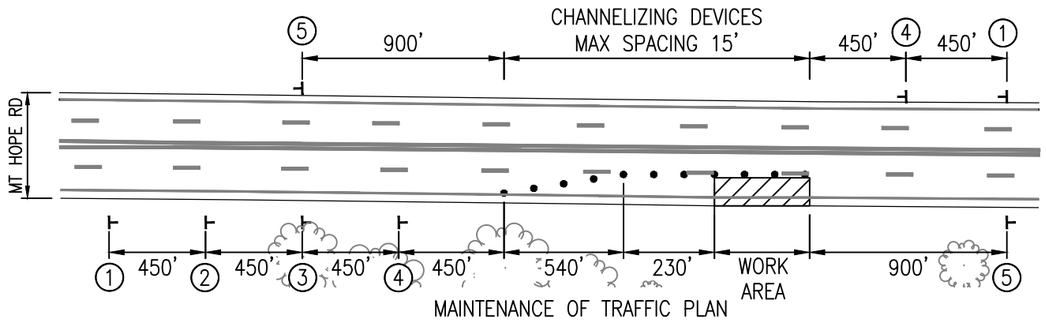
13. TREE REMOVAL
TREES DESIGNATED FOR REMOVAL ON THE CONSTRUCTION DRAWINGS SHALL BE REMOVED BY THE CONTRACTOR FROM THE PROJECT SITE. TREE REMOVAL SHALL INCLUDE REMOVAL OF THE STUMP. BURNING OF TREES, BRANCHES, BRUSH AND OTHER RELATED DEBRIS ON THE SITE WILL NOT BE ALLOWED. TREES NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED THROUGHOUT THE COURSE OF THE PROJECT.

14. ADJUSTING MONUMENT BOXES
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.

17. PAVEMENT MARKINGS AND SIGNS
ALL PERMANENT PAVEMENT MARKINGS, SHAPES, AND DIMENSIONS SHALL CONFORM WITH MDOT PAVEMENT MARKING TYPICALS PAVE-900 THROUGH 990 SERIES UNLESS SPECIFIED BY SPECIAL PROVISION.

18. PERMANENT SIGNS
ANY PERMANENT SIGNS REQUIRING RELOCATION DUE TO CONTRACTOR OPERATIONS SHALL BE SALVAGED AND RESET BY THE CONTRACTOR AT LOCATIONS DESIGNATED BY THE ENGINEER. THE COST OF THIS WORK SHALL BE BORNE BY THE CONTRACTOR.

19. AGGREGATE BASE
AGGREGATE BASE FOR THIS PROJECT SHALL BE MDOT 21AA.



MAINTENANCE OF TRAFFIC PLAN

NO SCALE

ROAD WORK AHEAD	RIGHT LANE CLOSED AHEAD		SPEED LIMIT 45	END ROAD WORK
W20-1	W20-5	W4-2	R2-1	G20-2
36" X 36"	36" X 36"	36" X 36"	24" X 30"	36" X 18"
1	2	3	4	5

PUBLIC UTILITIES

THE EXISTING UTILITIES LISTED BELOW AND SHOWN ON THESE PLANS REPRESENT THE BEST INFORMATION AVAILABLE AS OBTAINED FROM THE REPECTIVE UTILITIES. THIS INFORMATION DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO BE SATISIFIED AS TO ITS ACCURACY AND THE LOCATION OF EXISTING UTILITIES.

UTILITY OWNER	UTILITY
AT&T 337 ABBOTT RD. EAST LANSING, MI 48823 ATTN: JOSEPH BONACCI TELEPHONE: 517-488-3985	TELEPHONE
LANSING BOARD OF WATER AND LIGHT 730 E. HAZEL BLDG. B - 2ND FLOOR LANSING, MI 48910-1650 ATTN: MARK HINKLE TELEPHONE: 517-702-6006	COMMUNICATIONS
CONSUMERS ENERGY 1945 WEST PARNALL RD, P24-114 JACKSON, MI 49201 ATTN: PETE MULHEARN, PE TELEPHONE: 517-945-1541	ELECTRIC
CONSUMERS ENERGY 530 W WILLOW ST. LANSING, MI 48906 ATTN: ADAM BERTRAM TELEPHONE: 517-614-8570	GAS
US SIGNAL 7020 SOUTHBELT DR. CALEDONIA, MI 49316 ATTN: CHAD WINKLER TELEPHONE: 616-295-6455	COMMUNICATIONS
MICHIGAN STATE UNIVERSITY 1147 CHESTNUT RD. EAST LANSING, MI 48824 ATTN: JEFF WEST TELEPHONE: 517-432-0110	WATER AND SEWER
INGHAM COUNTY DRAIN COMMISSION 707 BUHL AVENUE MASON, MI 48854 ATTN: ANGIE COSMAN TELEPHONE: (517) 719-5431	GORITZ DRAIN

LEGEND

- = Right-of-way
- = Property Line
- = Tree line
- = Wetland
- = Fence line
- SF = Silt Fence line
- = Existing Overhead Electric
- E = Existing Underground Electric
- G = Existing Gas line
- SAN = Existing Sanitary Sewer
- ST = Existing Storm Sewer
- T = Existing Underground Telephone
- W = Existing Water Main
- E = Proposed U.G. Electric
- FO = Proposed Fiber Optic
- G = Proposed Gas
- SAN = Proposed Sanitary Sewer
- ST = Proposed Storm Sewer
- T = Proposed Telephone
- TV = Proposed Cable TV
- W = Proposed Water Main
- = Benchmark
- = Catchbasin
- = Storm Manhole
- = Flattop Catchbasin
- = Sanitary Manhole
- = Sanitary Cleanout
- = Hydrant
- = Water Valve
- = Water Meter
- = Water Manhole
- = Well
- = Gas Valve
- = Gas Meter
- = Sign
- = Mailbox
- = Soil Boring
- = Electric Meter
- = Electric Manhole
- = Transformer
- = Utility Pole
- = Guy Pole
- = Guy Wire
- = Light Pole
- = Telephone Manhole
- = Telephone Pedestal
- = AC Unit
- = Post
- = Monitoring Well
- = Deciduous Tree
- = Coniferous Tree
- = Shrub/Bush
- = Stump
- = Existing Culvert End Section
- = Proposed Culvert End Section
- = Tracer Box
- = Water Casing Pipe Vent
- = Gas Casing Pipe Vent
- REL = Relocate
- REL-B/O = Relocate by others
- R = Remove
- P = Protect
- C = Clearing
- ADJ = Indicates Adjust Drainage Structure
- ADJ- = Indicates Adjust Drainage Structure and replace Drainage Structure Cover with MDOT Cover Type _
- T-L = Indicates Temporary Lowering of Drainage Structure

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DUST CONTROL (E5)

WHEN
- ON CONSTRUCTION SITES DURING PERIODS OF LOW PRECIPITATION, LOW HUMIDITY, AND HIGH TEMPERATURE OR HIGH WINDS.

WHY
- TO REDUCE DUST AND SEDIMENTATION FROM WIND AND CONSTRUCTION ACTIVITIES.

WHERE
- USE ON UNPAVED ROADWAYS, CONSTRUCTION SITES WITH VEHICLE TRAFFIC, SOIL STOCKPILE AREAS, AND GENERAL AREAS WITH UNSTABILIZED, OR FINE SOILS.

HOW
1. DUST CONTROL APPLICATIONS CAN INCLUDE WATERING, CHEMICAL DUST SUPPRESSION, GRAVEL OR ASPHALT SURFACING, TEMPORARY AGGREGATE COVER, AND HAUL TRUCK COVERS.
2. MINIMIZE LENGTH OF TIME VULNERABLE AREAS ARE EXPOSED ON CONSTRUCTION SITE.
3. IDENTIFY AND STABILIZE KEY ACCESS POINTS PRIOR TO INITIATING CONSTRUCTION.
4. QUICKLY STABILIZE EXPOSED SOIL BY VEGETATION, MULCH, SOIL EROSION CONTROL BLANKETS, SPRAY-ON ADHESIVES, SPRINKLING, OR STONE LAYERING TO MINIMIZE AREAS IN NEED OF DUST CONTROL.
5. FOLLOW MANUFACTURERS INSTRUCTIONS REGARDING APPLICATION OF ANY DUST PALLIATIVE. PAY PARTICULAR ATTENTION TO MIXING DETAILS.
6. APPLY DUST SUPPRESSANT TO SURFACES USING A PRESSURE TYPE WATER DISTRIBUTOR TRUCK EQUIPPED WITH A SPRAY SYSTEM.
7. THE NUMBER OF APPLICATIONS TO BE DETERMINED BY SITE ENGINEER.
8. IMMEDIATELY CLEAN-UP SEDIMENT TRACKED ONTO PAVED ROADS.
9. LIMIT VEHICLE TRAFFIC TO 15 MILES PER HOUR.
10. UTILIZE AGGREGATE COVER ON ACCESS, PARKING, AND PAVED ROADS.
11. KEEP CONSTRUCTION TRAFFIC DIRECTED TO STABILIZED SITE ROADWAYS WHEN POSSIBLE.

MAINTENANCE
- FREQUENT, EVEN DAILY APPLICATION MAY BE REQUIRED TO INCREASE EFFECTIVENESS.
- DO NOT OVERWATER, AS OVERWATERING MAY CAUSE EROSION.
- OIL SHOULD NOT BE USED FOR DUST CONTROL, AS IT MAY ENTER A DRAINAGEWAY THROUGH RUNOFF OR SEEPING INTO THE SOIL.

LIMITATIONS
- TO CONTINUE ITS EFFECTIVENESS, DUST CONTROL APPLICATION NEEDS TO BE APPLIED ON A REGULAR SCHEDULE.
- APPLYING TOO MUCH WATER TO SURFACE MAY CAUSE EROSION.
- SOME TYPES OF DUST SUPPRESSANTS MAY MAKE SOIL WATER REPELLANT, INCREASING RUNOFF.

MULCHING (E6)

WHEN
- WHEN AREAS ARE SUBJECT TO EROSIVE SURFACE SHEET FLOWS OR SEVERE WIND.

WHY
- TEMPORARILY PROTECTS SEEDED AREAS AND SLOPES AGAINST EROSION FROM RAIN OR WIND. HOLDS SOIL MOISTURE TO ALLOW FOR SEED GERMINATION AND REDUCES WIND DESICCATION OF GERMINATED SEEDS. INHIBITS SEED CONSUMPTION BY BIRDS.

WHERE
- USE ON EXPOSED SLOPES, NEWLY SEEDED AREAS AND OTHER AREAS SUBJECT TO EROSION.

HOW
1. OTHER SURFACE RUNOFF CONTROL MEASURES SHOULD BE INSTALLED PRIOR TO MULCHING.
2. PREPARE SURFACE TO PROPER GRADE AND COMPACTION REQUIREMENTS.
3. IF TREATMENT AREA IS TO BE REVEGETATED IMMEDIATELY, SPREAD OR DRILL SEED, OR INSTALL VEGETATIVE SPRIGS INTO PLANTING SURFACE.
4. SELECT MULCH MATERIAL APPROPRIATE FOR SITE CHARACTERISTICS, INCLUDING GRADE, LEVEL OF TRAFFIC, INSTALLATION METHOD, AND ACCESSIBILITY.
- STRAW – MOST COMMON AND WIDELY USED MATERIAL. PROVIDES ORGANIC MATTER AS IT BREAKS DOWN. EFFECTIVENESS OF SEDIMENT REDUCTION HIGH FOR AT LEAST 3 MONTHS. SUBJECT TO WINDBLOW AND WASHOUT. FOR STRAW, APPLY A MINIMUM OF 2 TONS/ACRE OR APPROXIMATE 50 LBS./1000 SQ.FT. TO COVER THE SURFACE. INCREASE APPLICATION RATES 50% FOR DORMANT SEEDING.
- ROCK – CRUSHED STONE AND GRAVEL MAINTAIN EFFECTIVENESS INDEFINITELY IF MAINTAINED TO REPAIR COMPACTION. COVER 2-3" IN DEPTH (APPROXIMATE 2.27 TONS/1000 SQ. FT.).
- WOOD CHIPS/BARK – CHIPS DECOMPOSE SLOWLY BUT MAY REQUIRE NITROGEN FERTILIZER APPLICATION TO AVOID NUTRIENT DEFICIENCY. TEND TO WASH DOWN SLOPES OVER 6% AND MAY CLOG INLET GRATES. COVER 2-3" IN DEPTH.
5. MULCHES SHOULD NOT BE APPLIED IF FREE SURFACE WATER IS PRESENT BUT MAY BE APPLIED TO WET SOIL.
6. MULCHES (PARTICULARLY STRAW) MAY NEED ANCHORING. COMMON METHODS INCLUDE CRIMPING, DISKING, OR PUNCHING INTO SOIL; COVERING WITH NETTING; SPRAYING WITH A BINDER/TACKIFIER, OR KEEPING MOIST.
7. IF USING A TACKIFIER TO ANCHOR MULCH IN PLACE, APPLY IMMEDIATELY AFTER MULCH HAS BEEN PLACED. TACKIFIERS INCLUDE:
- LATEX-BASE. MIX 37 GALLONS OF ADHESIVE OR THE MANUFACTURER'S RECOMMENDED RATE WITH A MINIMUM OF 620 LBS. OF RECYCLED NEWSPRINT AS A TRACER WITH 925 GALLONS OF WATER.
- RECYCLED NEWSPRINT. MIX 1850 LBS. OF NEWSPRINT WITH 3700 GALLONS OF WATER.
- WOOD FIBER. MIX 1850 LBS. OF WOOD FIBER WITH 3700 GALLONS OF WATER.
- GUAR GUM. MIX 120 LBS. OF DRY ADHESIVE AND A MINIMUM OF 620 LBS. RECYCLED NEWSPRINT AS A TRACER WITH 3225 GALLONS OF WATER.
- OTHER TACKIFIERS. MIX 240 LBS. OF DRY ADHESIVE OR THE MANUFACTURER'S RECOMMENDED RATE AND A MINIMUM OF 620 LBS. OF RECYCLED NEWSPRINT AS A TRACER WITH 3225 GALLONS OF WATER.

MAINTENANCE
- INSPECT MULCHED AREAS PERIODICALLY AND AFTER ANY STORM EVENT. REPAIR DAMAGED AREAS, RESEED OR REPLACE VEGETATION (IF NECESSARY), AND REPLACE LOST MULCH IMMEDIATELY.
- KEEP ERODED SOIL, VEHICULAR AND PEDESTRIAN TRAFFIC, AND CONCENTRATED RUNOFF AWAY FROM THE MULCHED AREA.

LIMITATIONS
- MULCH CAN BE BLOWN OR WASHED AWAY IF NOT SECURED.
- ORGANIC MULCHES, PARTICULARLY THICK APPLICATIONS OF WOOD CHIPS, CAN REDUCE NITROGEN AVAILABILITY TO DESIRED PLANTS, MAY INHIBIT GOOD SURFACE COVERAGE BY VEGETATION, AND SHOULD BE SUPPLEMENTED WITH FERTILIZER.
- TACKIFIERS ARE SLIPPERY WHEN WET. EQUIPMENT MUST BE KEPT CLEAN TO PREVENT ACCIDENTS.
- TACKIFIERS CAN MARK VEHICLES, SIGNS, OR OTHER OBJECTS IF THESE ITEMS ARE NOT PROTECTED.
- HAY MULCH SHOULD NOT BE USED, AS IT CAN CONTAIN NOXIOUS WEEDS.

PERMANENT SEEDING (E8)

WHEN
- TO FINALIZE STABILIZATION OF TEMPORARY SEEDING AREAS OR WHEN AN AREA NEEDS PERMANENT STABILIZATION FOLLOWING COMPLETION OF CONSTRUCTION. ALSO USED WHEN VEGETATIVE ESTABLISHMENT CAN CORRECT EXISTING SOIL EROSION OR SEDIMENTATION PROBLEM.
- WITHIN 5 DAYS OF FINAL GRADE.

WHY
- TO STABILIZE SOIL AND PREVENT OR REDUCE SOIL EROSION/SEDIMENTATION PROBLEMS FROM DEVELOPING.

WHERE
- USED ON CONSTRUCTION AND EARTH CHANGE SITES WHICH REQUIRE PERMANENT VEGETATIVE STABILIZATION.

HOW
1. REVIEW SESC PLAN AND CONSTRUCTION PHASING TO IDENTIFY AREAS IN NEED OF PERMANENT VEGETATIVE STABILIZATION.
2. SELECT PERENNIAL GRASS AND GROUND COVER FOR PERMANENT COVER.
3. SEED MIXES VARY. HOWEVER, THEY SHOULD CONTAIN NATIVE SPECIES.
4. SEED MIXES SHOULD BE SELECTED THROUGH CONSULTATION WITH A CERTIFIED SEED PROVIDER AND WITH CONSIDERATION OF SOIL TYPE, LIGHT, MOISTURE, USE APPLICATIONS, AND NATIVE SPECIES CONTENT.
5. SOIL TESTS SHOULD BE PERFORMED TO DETERMINE THE NUTRIENT AND PH LEVELS IN THE SOIL. THE PH MAY NEED TO BE ADJUSTED TO BETWEEN 6.5 AND 7.0.
6. PREPARE A 3-5" DEEP SEEDBED, WITH THE TOP 3-4" CONSISTING OF TOPSOIL.
7. SLOPES STEEPER THAN 1:3 SHOULD BE ROUGHENED.
8. APPLY SEED AS SOON AS POSSIBLE AFTER SEEDBED PREPARATION. SEED MAY BE BROADCAST BY HAND, HYDROSEEDING, OR BY USING MECHANICAL DRILLS.
9. MULCH IMMEDIATELY AFTER SEEDING.
10. DORMANT SEED MIXES ARE FOR USE AFTER THE GROWING SEASON, USING SEED WHICH LIES DORMANT IN THE WINTER AND BEGINS GROWING AS SOON AS SITE CONDITIONS BECOME FAVORABLE.
11. PROTECT SEEDED AREAS FROM PEDESTRIAN OR VEHICULAR TRAFFIC.
12. DIVERT CONCENTRATED FLOWS AWAY FROM THE SEEDED AREA UNTIL VEGETATION IS ESTABLISHED.

MAINTENANCE
- INSPECT WEEKLY AND WITHIN 24 HOURS FOLLOWING EACH RAIN EVENT IN THE FIRST FEW MONTHS FOLLOWING INSTALLATION TO BE SURE SEED HAS GERMINATED AND PERMANENT VEGETATIVE COVER IS BEING ESTABLISHED.
- ADD SUPPLEMENTAL SEED AS NECESSARY.

LIMITATIONS
- SEEDS NEED ADEQUATE TIME TO ESTABLISH.
- MAY NOT BE APPROPRIATE IN AREAS WITH FREQUENT TRAFFIC.
- SEEDED AREAS MAY REQUIRE IRRIGATION DURING DRY PERIODS.
- SEEDING SUCCESS IS SITE SPECIFIC, CONSIDER MULCHING OR SODDING WHEN NECESSARY.

Planting Zones:	Lower Peninsula (South of T20N) Zone 1	Lower Peninsula (North of T20N) Zone 2	Upper Peninsula Zone 3
Seeding Window Permanent Seeding	4/15 – 10/10	5/1 – 10/1	5/1 – 9/20
Seeding Window Dormant Seeding*	11/15 – Freeze	11/01 – Freeze	11/01 – Freeze

Source: Adapted from MDOT Interim 2003 Standard Specifications for Construction

	Zone 1 Lower Peninsula (South of U.S. 10)	Zone 2 Lower Peninsula (North of U.S. 10)	Zone 3 Upper Peninsula
Seeding Dates (with Irrigation or Mulch)	4/1 – 8/1	5/1 – 9/20	5/1 – 9/10
Seeding Dates (w/o Irrigation or Mulch)	4/1 – 5/20 or 8/10 – 10/1	5/1 – 6/10 or 8/1 – 9/20	5/1 – 6/15 or 8/1 – 9/20
Dormant Seeding Dates*	11/1 – Freeze	10/25 – Freeze	10/25 – Freeze

Source: Adapted from USDA NRCS Technical Guide #342 (1999)

* DORMANT SEEDING IS FOR USE IN THE LATE FALL AFTER THE SOIL TEMPERATURE REMAINS CONSISTENTLY BELOW 50° F, PRIOR TO THE GROUND FREEZING. THIS PRACTICE IS APPROPRIATE IF CONSTRUCTION ON A SITE IS COMPLETED IN THE FALL BUT THE SEED WAS NOT PLANTED PRIOR TO RECOMMENDED SEEDING DATES. NO SEED GERMINATION WILL TAKE PLACE UNTIL SPRING. A COOL SEASON ANNUAL GRASS MAY BE ADDED IN AN ATTEMPT TO HAVE SOME FALL GROWTH.
- * MULCH MUST BE USED WITH DORMANT SEED.
- * DO NOT SEED WHEN THE GROUND IS FROZEN OR SNOW COVERED.
- * DO NOT USE A DORMANT SEED MIX ON GRASSED WATERWAYS.

GENERAL REQUIREMENTS:

1. THE CONTRACTOR SHALL OBTAIN THE SOIL EROSION CONTROL PERMIT AND ANY CONDITIONS OF CONSTRUCTION FROM THE INGHAM COUNTY DRAIN COMMISSIONER OFFICE.

2. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE INGHAM COUNTY DRAIN COMMISSIONER REQUIREMENTS AND PROJECT SPECIFICATIONS.

3. ANY EROSION OR SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF SITE AREAS OR IN WATERWAYS: WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.

4. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER EARTH CHANGES HAVE BEEN ESTABLISHED.

SEQUENCE OF CONSTRUCTION:

1. INSTALL GEOTEXTILE FILTER FABRIC WRAPS BETWEEN THE FRAME AND COVER OF ALL EXISTING YARD BASINS OR INLETS WHICH MAY BE SUSCEPTIBLE TO SEDIMENT EROSION FROM THE PROPOSED CONSTRUCTION AS SHOWN IN THESE PLANS.

2. WHILE MAINTAINING A VEGETATIVE BUFFER WHENEVER POSSIBLE, STRIP AND STOCKPILE TOPSOIL ABOVE AREAS OF PROPOSED EXCAVATION OR GRADING FOR LATER USE ON SITE. PLACE STOCKPILED TOPSOIL IN AREAS WHICH ARE NEITHER SUBJECT TO HIGH RUNOFF NOR ALONG STEEP SLOPES. SEED AND MULCH STOCKPILES IMMEDIATELY TO PREVENT WIND BLOWN SEDIMENT POLLUTION AND EXCESSIVE DUST.

3. RESTORATION OF THE SLOPES ALONG PROPOSED ROADS, AND SIDESLOPES OF THE EXCAVATION AREAS SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS OF COMPLETION OF THE PLACEMENT OF THE TOPSOIL – FINAL GRADING. PLACE STRAW MULCH BLANKETS ALONG ALL SUCH SEEDED SURFACES. TEMPORARY SEEDING OF THE TOPSOIL STOCKPILES, INCLUDING PLACEMENT OF STRAW MULCH SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS OF COMPLETION OF TOPSOIL STRIPPING OPERATIONS.

4. PLACEMENT OF TOPSOIL SHALL PROGRESS WITH THE SITE GRADING/EXCAVATION OPERATIONS. PLACEMENT OF TOPSOIL IN AREAS TO BE SEEDED SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS OF COMPLETION OF THE SITE GRADING OPERATIONS.

5. WATER EXPOSED GROUND REGULARLY TO CONTROL AIRBORNE PARTICULATE MATTER.

6. IN NON-TRAFFIC AREAS WHERE THE ROUGH GRADING OPERATIONS HAVE BEEN STOPPED BY THE CONTRACTOR FOR A PERIOD LONGER THAN 3 WORKING DAYS, THE CONTRACTOR SHALL STABILIZE THE AREA WITH APS SILT STOP OR APPROVED EQUAL.

7. UPON FINAL APPROVED INSPECTION OF THE COMPLETED CONSTRUCTION BY ALL REVIEWING AGENCIES, AND THE ESTABLISHMENT OF PERMANENT SOIL EROSION CONTROL MEASURES, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.

SOIL EROSION CONTROL INSTALLATION & MAINTENANCE PROGRAM:

1. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS AND UNTIL PERMANENT VEGETATION IS REESTABLISHED IN ALL EXPOSED AREAS. REMOVE ACCUMULATED SEDIMENT FROM ALL STRUCTURES.

2. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.

3. AFTER EACH RAINFALL EVENT, CONTRACTOR SHALL INSPECT AND MAINTAIN ALL SOIL EROSION CONTROL MEASURES AND CLEAN AND REPLACE CATCH BASIN FILTERS.

4. DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTORS. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.

5 ALL MUD, DIRT AND DEBRIS TRACKED ONTO EXISTING ROADS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR NO LESS THAN ON A DAILY BASIS. ALL MUD, DIRT AND DEBRIS TRACKED OR SPILLED ONTO PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.

6. THE SITE WILL BE PERIODICALLY INSPECTED BY THE STAFF OF MICHIGAN STATE UNIVERSITY. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE RULES AND REGULATIONS OF THAT OFFICE.

PERMANENT SOIL EROSION CONTROL DEVICE MAINTENANCE

UPON COMPLETION OF THE CONSTRUCTION PROJECT AND REMOVAL OF THE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL DEVICES, THE OWNER WILL OPERATE AND MAINTAIN THE PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL DEVICES, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING ITEMS:
- STORM SEWER AND APPURTENANCES
- LAWN AREAS
- DRIVES, CURB AND GUTTER, AND OTHER HARD SURFACES

THE MAINTENANCE PROGRAM SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:
- STORM SEWER SYSTEMS – PERIODIC CLEANING AND MAINTENANCE OF CATCH BASINS AND MAINLINE STORM SEWERS.
- LAWN AREAS – MOWING OF LAWNS AND PERIODIC WEED CONTROL AND FERTILIZING.
- DRIVES, CURB AND GUTTER, AND OTHER HARD SURFACES – PERIODIC INSPECTION AND REPAIR OF DAMAGED SURFACES.

RESTORATION REQUIREMENTS:
SEED SHALL BE MDOT TUF SEED MIXTURE APPLIED AT 220# PER ACRE.
FERTILIZER SHALL BE MDOT CLASS A APPLIED AT 228 POUNDS OF CHEMICAL FERTILIZER NUTRIENT PER ACRE.
STRAW MULCH SHALL BE APPLIED AT 2 TONS PER ACRE.
MULCH BLANKETS SHALL BE STRAW MULCH BLANKETS AS MANUFACTURED BY NORTH AMERICAN GREEN OR APPROVED EQUAL. BLANKETS IN DITCH LINES OR ON SIDESLOPES SHALL BE S150BN – 10 OUNCES PER SQUARE YARD. BLANKETS IN ALL OTHER AREAS SHALL BE S75BN – 9 OUNCES PER SQUARE YARD. MINIMUM END OVERLAP SHALL BE 6 INCHES AND MINIMUM SIDE EDGE OVERLAP SHALL BE 2 INCHES.

(E5) (E6) AND (S6B) TYPICAL FOR ALL STREET LOCATIONS INDICATED

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EAST COURSE - REPAIR EXISTING STORM SEWER MAINS

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CP19065

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MECH.	-
ELEC.	-
CIVIL	SHELLY LAUGHLIN
L.A.	-
INT. DES.	-
REP.	KRISTI CRUZ
APPR.	-
DATE	AUGUST 2024
SCALE	—

ISSUED
AUGUST 2024 - FOR BIDS

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SOIL EROSION CONTROL MEASURES KEY

KEY	DETAIL	NOTES
E5	DUST CONTROL	USE OF AN APPROVED TACKIFIER WITH DUST CONTROL IS REQUIRED.
E6	MULCH	
E8	PERMANENT SEEDING	SHALL BE DORMANT SEEDING, PLACED PER SCHEDULE ON PAGE 3.
E9	MULCH BLANKET	
S58	INLET PROTECTION – FABRIC DROP	CATCH BASIN SILT GUARD SHALL BE "SILT SACK" AS MANUFACTURED BY ACF OR "BASIN BAG" AS SUPPLIED BY CONSTRUCTION SUPPLY INC

SESC DETAILS UTILIZE STATE OF MICHIGAN, DEPARTMENT OF MANAGEMENT AND BUDGET, INFRASTRUCTURE SERVICES, DESIGN AND CONSTRUCTION DIVISION "SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK".

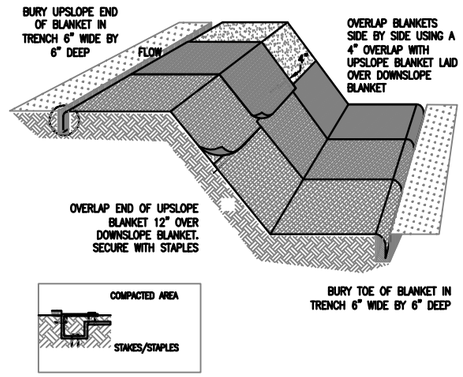
EARTH DISTURBANCE AREA

THE EARTH DISTURBANCE AREA FOR THIS PROJECT IS APPROXIMATELY 0.12 ACRES.

DISTANCE TO NEAREST WATER COURSE

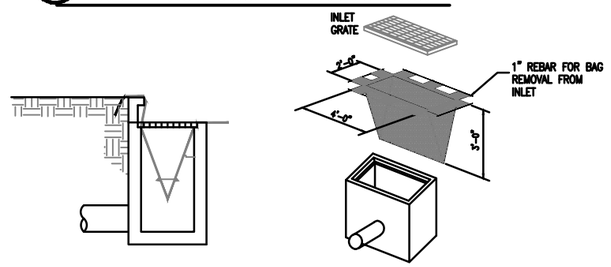
PROJECT SITE IS APPROXIMATELY 1.57 MILES FROM RED CEDAR RIVER.

E9 MULCH BLANKETS



NOTES:
1. PLACE MULCH BLANKET PARALLEL TO FLOW AND ANCHOR SECURELY.
2. WHEN BLANKETS ARE USED IN FLOWING DITCH, BLANKETS SHOULD NOT OVERLAP IN DITCH CENTER PARALLEL TO FLOW.
3. STAPLES INSTALLED/SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
4. WHERE POSSIBLE, CONSTRUCT WITH BIODEGRADABLE MATERIAL.
5. APPLY MULCH BLANKETS ON SLOPES OF 1V:3H OR GREATER.

S58 INLET PROTECTION – FABRIC DROP



INSTALLATION DETAIL

ISOMETRIC VIEW

MAINTENANCE
- DROP INLET FILTERS SHOULD BE INSPECTED ROUTINELY AND AFTER EACH MAJOR RAIN EVENT.
- DAMAGED FILTER BAGS SHOULD BE REPLACED.
- CLEAN AND/OR REPLACE FILTER BAG WHEN 1/2 FULL.
- REPLACE CLOGGED FABRIC IMMEDIATELY.
- IF NEEDED, INITIATE REPAIRS IMMEDIATELY UPON INSPECTION.
- REMOVE ENTIRE PROTECTIVE MECHANISM WHEN UPGRADIENT AREAS ARE STABILIZED AND STREETS HAVE BEEN SWEPT.

SESC SCHEDULE (2023)	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
GORITZ DRAIN, MT HOPE ROAD, PIPE REPLACEMENT										
PLACE & MAINTAIN EROSION CONTROLS									→	
ROADWAY REMOVALS									→	
STORM SEWER REMOVALS AND CONSTRUCTION									→	
ROADWAY REPLACEMENT									→	
SITE RESTORATION – TOPSOIL, MULCHING, PERMANENT SEEDING									→	
FINAL INSPECTION									→	
REMOVE TEMPORARY EROSION CONTROLS									→	

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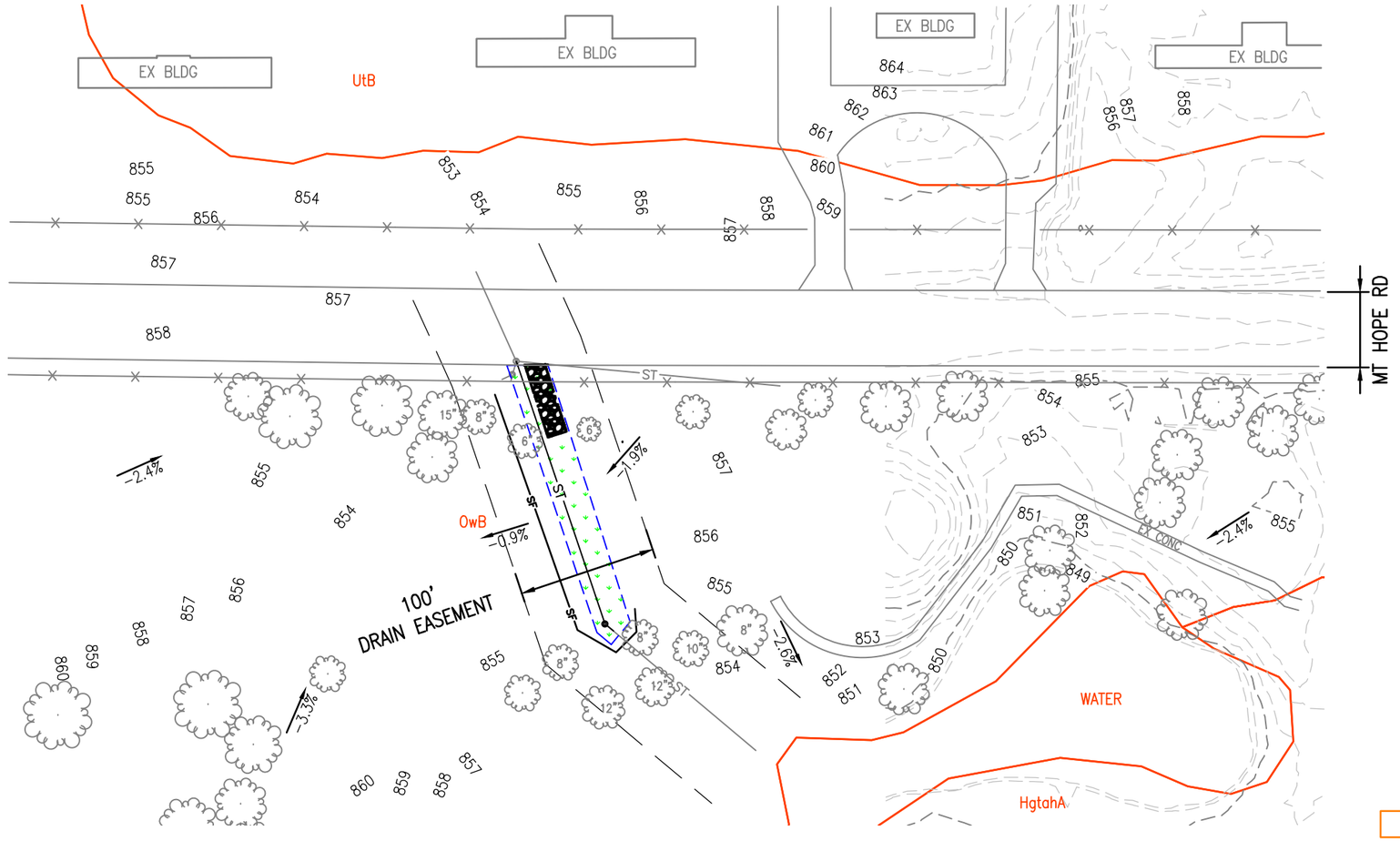
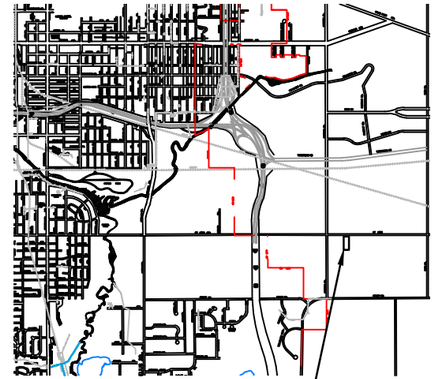


SESC SITE PLAN

0 100 200 Feet



LEGEND

- SOILS
- SEED AND MULCH FOR PERMANENT STABILIZATION WITHIN LIMITS OF DISTURBANCE
- SILT FENCE

LAND OWNER INFORMATION

NAME: BOARD OF TRUSTEES OF MSU

CONTACT: SCOTT GARDNER, PE

ADDRESS: 1027 CHESTNUT RD, ROOM 102M
EAST LANSING, MI 48824

PHONE: (517) 432-0782

EMAIL: GARDNE21@MSU.EDU

SITE INFORMATION

PARCEL ID: 33-20-01-25-200-001

SOIL(S): UtB, OwB, HgtahA

LEGAL DESCRIPTION
NE 1/4 160 ALSO N 1/2 OF SE 1/4 80 AC SEC 25 T4NR2W

PROJECT DETAILS

PROJECT DESCRIPTION
REMOVE/REPLACE EXISTING 24" STORM SEWER

TIMING AND SEQUENCE

PLACE & MAINTAIN EROSION CONTROL	– 11/1/23
ROADWAY REMOVALS	– 11/2/23
STORM SEWER REMOVALS AND CONSTRUCTION	– 11/2/23–11/8/23
ROADWAY REPLACEMENT	– 11/8/23
SITE RESTORATION	– 11/9/23
FINAL INSPECTION	– 11/10/23
REMOVE TEMPORARY EROSION CONTROLS	– 11/10/23
CONTINUED MAINTENANCE	– MONTHLY INSPECTIONS UNTIL END OF GROWING SEASON AND BARE AREAS WILL BE RESTORED. PERFORMED BY MICHIGAN STATE UNIVERSITY UNDER THE DIRECTION AND/OR SUPERVISION OF SCOTT GARDNER, PE.

SESC NOTES

1. THE NEAREST BODY OF WATER IS THE RED CEDAR RIVER WHICH IS LOCATED APPROXIMATELY 1.57 MILES NORTHWEST OF THE PROJECT SITE.
2. SILT FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION STARTING AND REMOVED ONCE IT HAS BEEN COMPLETED.
3. PROJECT LOCATION IS APPROXIMATELY 1000 FEET TO THE WEST OF A REGULATED WETLAND AREA.

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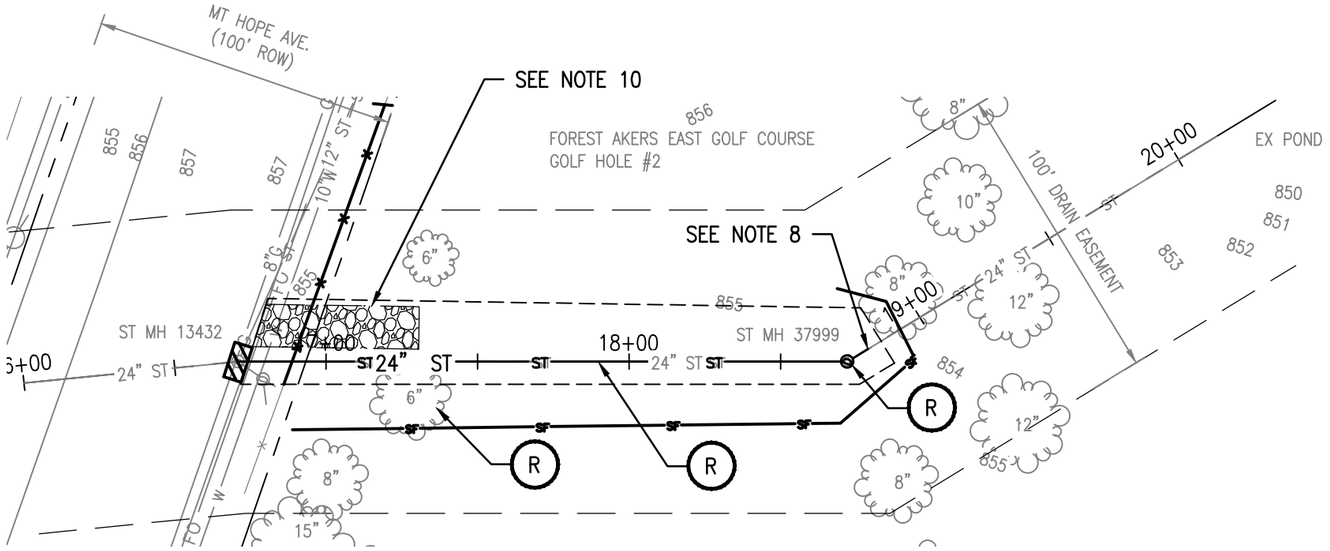
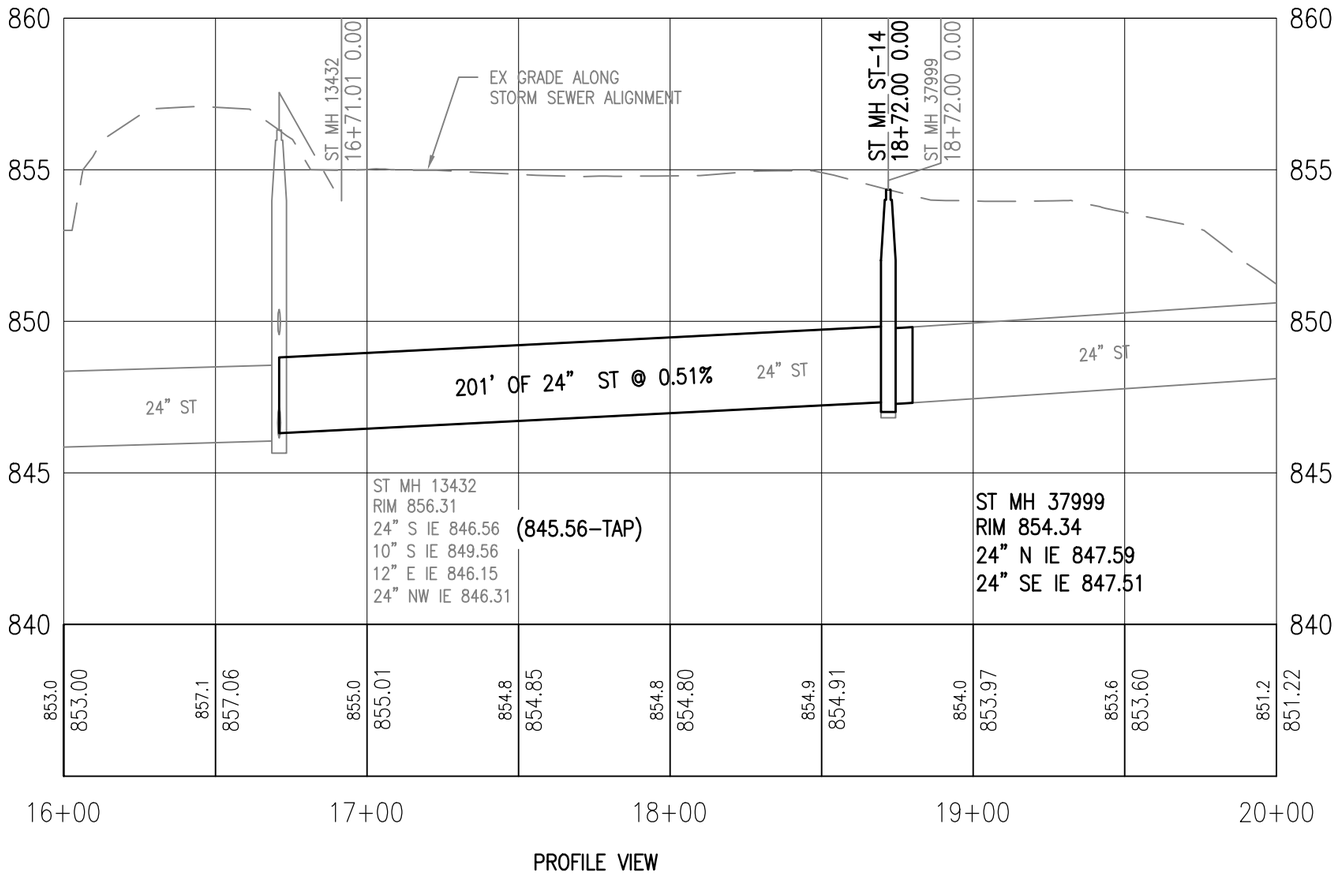
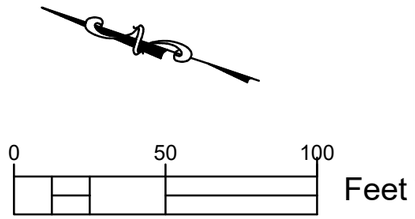


PLAN VIEW



PROFILE VIEW



LEGEND

REMOVE AND REPLACE PAVEMENT

CONSTRUCTION LIMITS

GENERAL PLAN NOTES

1) INSTALL SILT FENCE PRIOR TO STARTING CONSTRUCTION AND REMOVE AFTER CONSTRUCTION HAS COMPLETED.

2) SALVAGE AND REINSTALL CHAIN LINK FENCE WITHIN CONSTRUCTION LIMITS.

3) LIMIT EQUIPMENT ONSITE TO THE AREA WITHIN THE GRADING LIMITS.

4) DRAIN EASEMENT IS 100', CENTERED ON THE PIPE ALIGNMENT.

5) DEWATER AS NECESSARY TO KEEP THE TRENCH CLEAR OF WATER DURING CONSTRUCTION.

6) THE PAVEMENT REPLACEMENT FOR MT HOPE AVE SHALL MATCH THE EXISTING THICKNESS OF HMA. THE ASSUMED THICKNESS IS 6" OF HMA OVER 8" OF AGG BASE.

7) PAVEMENT REMOVAL AND REPLACEMENT SHALL NOT GO INTO THE TRAVEL LANE. PAVEMENT SHALL BE REPLACED AS HMA 13A.

8) NEW STORM SEWER SHALL BE CL III REINFORCED CONCRETE PIPE (RCP) AND INSTALLED TO BE SUFFICIENT TO RESIST FLOATING AND UPHEAVE.

9) REMOVE AND REPLACE CONCRETE PIPE TO THE NEAREST JOINT. IF UNABLE TO CONNECT NEW STORM SEWER INTO EXISTING JOINT, CONNECT USING A FERNCO COUPLING INSTEAD.

10) ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "RULES FOR THE INGHAM COUNTY DRAIN COMMISSIONER, 2005 EDITION, AS AMENDED."

11) CONSTRUCT 14 FT WIDE BY 50 FT LONG CONSTRUCTION ACCESS DRIVE PROTECTED WITH CRUSHED STONE OR CONCRETE (1 INCH TO 2 INCHES IN DIAMETER).

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