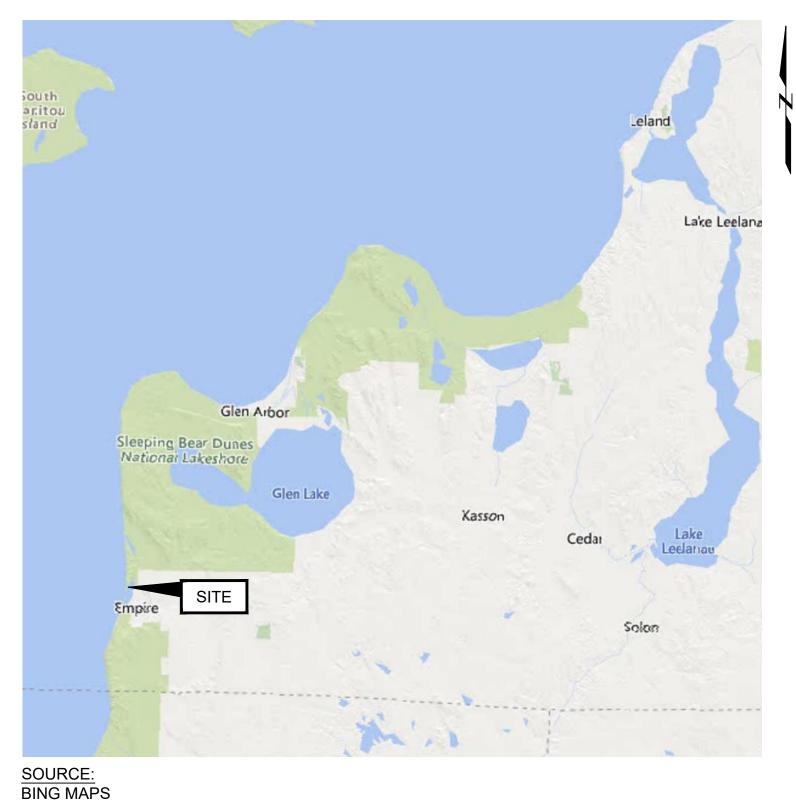
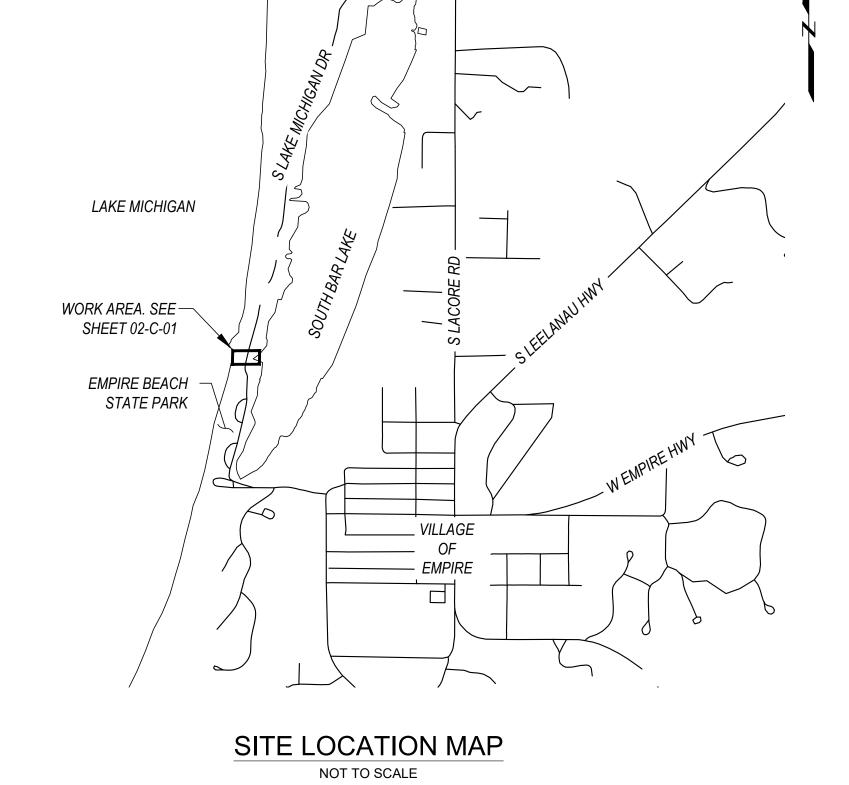
SOUTH BAR LAKE DRAIN DRAINAGE DISTRICT SOUTH BAR LAKE DRAIN

SECTION 24, TOWN 28 NORTH, RANGE 15 WEST, VILLAGE OF EMPIRE, LEELANAU COUNTY, MICHIGAN







COUNTY MAP

NOT TO SCALE

SHEET LIST

REFERENCE NO.	DESCRIPTION
COVER SHEET	01-G-01
GENERAL NOTES & LEGEND	01-G-02
SESC PLAN	01-G-03
TRAFFIC CONTROL & CONSTRUCTION STAGING AREA	01-G-04
PLAN & PROFILE	02-C-01
DETAILS	99-D-1
DETAILS	99-D-02
SESC DETAILS	99-D-03
	COVER SHEET GENERAL NOTES & LEGEND SESC PLAN TRAFFIC CONTROL & CONSTRUCTION STAGING AREA PLAN & PROFILE DETAILS DETAILS

ENGINEER OF RECORD:

BRIAN J. CENCI
ENGINEER
No.
53847

11/21/2023

BRIAN J. CENCI, P.E. #53847

DATE

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OWNER
STEVEN CHRISTENSEN - LEELANAU COUNTY
DRAIN COMMISSIONER
SCHRISTENSEN@LEELANAU.GOV
8527 E. GOVERNMENT CENTER DR., SUITE #205
SUTTONS BAY, MI, 49682
O: (231) 256-8263

ENGINEER

BRIAN CENCI, P.E. - PROJECT MANAGER
BCENCI@GEICONSULTANTS.COM
C: (517) 449-3478

MITCHELL WALTON - PROJECT ENGINEER

MWALTON@GEICONSULTANTS.COM

C: (616) 560-9049

GEI CONSULTANTS OF MICHIGAN, P.C. 401 SOUTH WASHINGTON SQUARE, SUITE 103 LANSING, MI 48933

ROAD COMISSION

CRAIG BROWN, P.E.- ENGINEER
LEELANAU COUNTY ROAD COMMISSION
CBROWN@LEELANAUROADS.ORG
10550 E. ECKERLE RD.
SUTTONS BAY, MI 48843
O: (231) 271-3993

PROJECT & UTILITY CONTACTS

UTILITY CONTACTS
VILLAGE OF EMPIRE - WATERMAIN
JOHN FRIEND - DPW SUPERINTENDENT
11518 S. LACORE ST.
EMPIRE, MI 49630
PHONE: (231) 326-5353
DPW@VILLAGEOFEMPIRE.COM

CHARTER COMMUNICATIONS

BRIANA KEMNITZ - PROJECT SUPERVISOR PHONE: (906) 774-6621
BRIANA.KEMNITZ@CCISYSTEMS.COM

DTE ENERGY - GAS

LARRY BOURKE 2230 US-10 LUDINGTON, MI 49431 PHONE: (231) 349-2364 LAWRENCE.BOURKE@DTEENERGY.COM

CONSUMERS ENERGY - ELECTRIC

BLAKE WILSON
PHONE: (231) 499-9792
BLAKE.WILSON@CMSENERGY.COM

GEI CONSULTANTS OF MICHIGAN, I 401 S. WASHINGTON SQUARE SUITE 103
LANSING, MI 48933
(517)803-4600

ANSING, MI 4893: (517)803-4600

OUNTY DRAIN COMMISS

SOUT A PART OF

OVER SHEET

O Attention: 1"

If this scale bar does not measure 1" then drawing is not original scale.

RELEASE # DATE
DESCRIPTION

DESCRIPTION

1 11/21/2023

BID SET

Designed By: MJW
Checked By: BJC

Drawn By: MJW

Approved By: BJC

GEI PROJECT: 2003339

DWG. NO. 01-G-01

SHEET #1

ARCHIVE #

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

ALL SPRINKLER SYSTEMS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. COST IS TO BE INCLUDED IN OTHER WORK ITEMS OF THE PROJECT.

DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

NO WORK SHALL BE PERFORMED BEFORE 7:00 AM OR AFTER 7:00 PM MONDAY THROUGH FRIDAY. NO WORK SHALL HAPPEN ON SATURDAYS, SUNDAYS, OR LEELANAU COUNTY HOLIDAYS UNLESS AUTHORIZED BY THE ENGINEER WITH AT LEAST 48 HOURS NOTICE PRIOR.

CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO START OF CONSTRUCTION, CONSTRUCTION STAKING AND INSPECTION

CONTRACTOR TO PROVIDE DUST CONTROL AND SWEEP ADJACENT ROADS DAILY, OR SEVERAL TIMES A DAY, SHOULD CONDITIONS REQUIRE.

ALL EXCAVATED MATERIAL NOT DESIGNATED FOR REUSE SHALL BE REMOVED FROM SITE ALL EXCAVATED WATERIAL TO L'ESIGNATED FOR REDSE STALL BE REMOVED IT FROM SITE ATTIME OF DISTURBANCE OR AS APPLICABLE. IF MATERIAL IS UNABLE TO BE REMOVED AT TIME OF DISTURBANCE, THE MATERIAL SHALL BE STOCKPILED ACCORDING TO THE SESC PLAN AND REMOVED PRIOR TO STORM EVENTS. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSING MATERIALS ACCORDING TO LOCAL AND STATE REQUIREMENTS.

ALL WORK SHALL BE WITHIN DRAIN RIGHT-OF-WAY OR PRIVATE ROAD RIGHT-OF-WAY. WORK OUTSIDE RIGHT-OF-WAY MIUST BE AGREED UPON BY LANDOWNER AND ENGINEER WITH A SIGNED LANDOWNER AGREEMENT PRIOR TO WORK ON THAT PROPERTY.

THE CONTRACTOR IS TO RESTORE INCIDENTAL DAMAGES ON THE PROJECT AS DIRECTED BY THE 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

CLEAR AND GRUB TREES AS INDICATED FOR CONSTRUCTION WITHIN DRAIN RIGHT-OF-WAY REMOVE ALL TREES, STUMPS AND DEBRIS FROM SITE.

REMOVE EXISTING FENCES, LANDSCAPING, AND OTHER STRUCTURES IN DRAIN RIGHT-OF-WAY AS INDICATED ON THE PLANS. REMOVAL AND REINSTALLATION COST TO BE INCLUDED IN SITE CLEARING OR OTHER PAY ITEMS, PER CONTRACT DOCUMENTS.

CONTRACTOR SHALL COORDINATE REMOVAL OF ALL TREES WITHIN THE LIMITS OF CONSTRUCTION WITH THE ENGINEER.

DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

PERMANENT SIGNS

ANY PERMANENT SIGNS OR STREET SIGNS REQUIRING RELOCATION DUE TO CONTRACTOR OPERATIONS SHALL BE SALVAGED AND RESET BY THE CONTRACTOR AT LOCATIONS DESIGNATED BY THE ENGINEER. SIGNS AND POSTS DAMAGED DURING THE REMOVAL AND STAGE OPERATIONS SHALL BE REPLACED WITH NEW SIGNS AND POSTS.

PAVEMENT REMOVAL PAVEMENT REMOVAL AS SHOWN ON THE PLANS SHALL BE AT THE DISCRETION OF THE ENGINEER. IF IN HIS/HER JUDGEMENT, AREAS OF PAVEMENT MAY BE LEFT IN PLACE, OR ADDITIONAL AREAS ADDED. TO PROVIDE THE PROPER CROSS-SECTION AND BASE ADJUSTMENTS CAN BE MADE IN THE QUANTITIES.

UTILITIES
FOR THE PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, MINIMUM OF I HEEF DELE WORKING DATS, EXCLUSIVES SATURDATS, SUNDATS, 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 NOTIFIEN UTILITY OWNERS WHO MAY NOT BE A PART OF THE WARD ON THE HEAD TO STATE THE CONTRACTOR.

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

ELECTRIC, GAS, AND COMMUNICATION UTILITIES LOCATED IN THE ROAD AND DRAIN RIGHT-OF-WAYS MUST BE LOCATED PRIOR TO EXCAVATION WORK AND ELEVATIONS MUST BE PROVIDED TO ENGINEER TO CONFIRM NO CONFLICTS EXIST. CONTRACTOR SHALL NOTIFY THE ENGINEER AS TO WHERE POSSIBLE CONFLICTS EXIST.

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.

GRADING AROUND MANHOLES/CATCHBASINS, FLARED END SECTIONS, AND OTHER INLETS DETERMINED BY THE ENGINEER SHALL BE SMOOTH AND SHAPED TO PROVIDE POSITIVE DRAINAGE INTO THE INLETS.

L MANHOLE TO PLASTIC PIPE CONNECTIONS SHALL BE MADE WITH KOR-N-SEAL BOOT OR IGINEER APPROVED EQUAL.

ALL CORRUGATED METAL PIPE SHALL BE TYPE II ALUMINIZED UNLESS OTHERWISE NOTED

ALL STORM SEWER ARE TO BE PREMIUM JOINT UNLESS OTHERWISE SPECIFIED.

ALL FLARED END SECTIONS ARE 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 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 IS TO BE INCLUDED IN UNIT BID PRICE FOR STORM

ALL LITH ITY POLES IMPACTED DURING CONSTRUCTION SHALL BE SUPPORTED IF NECESSARY, PER THE SPECIFICATIONS OF THE INDIVIDUAL UTILITY COMPANY

ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE PROTECTED, PER REQUIREMENTS OF THE INDIVIDUAL UTILITY COMPANY.

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

PROPERTY CORNER MONUMENT VISIBILY OBSERVED ON SITE, WHETHER SHOWN OR NOT, SHALL BE PROTECTED. DAMAGED PROPERTY CORNERS WILL BE RESET AT CONTRACTOR'S EXPENSE.

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

TRAFFIC CONTROL
THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES.

PERMITS
PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR ORTAINING ALL PERMITS REQUIRED BY THE APPROPRIATE AGENCIES ANY REQUIRED PERMITS ARE LISTED IN THE CONTRACT DOCUMENTS, SECTION 01010 - SUMMARY OF WORK.

CONSTRUCTION PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE

MAILBOXES & TRASH PICKUP
THE CONTRACTOR SHALL REMOVE AND TEMPORARILY RELOCATE ALL EXISTING MAIL
BOXES AS NEEDDE FOR CONSTRUCTION.

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

ALL TEMPORARILY RELOCATED MAIL BOXES, STREET AND TRAFFIC SIGNS ARE TO BE REINSTALLED TO ORIGINAL LOCATIONS AS CONSTRUCTION ALLOWS.

CONTRACTOR WILL COORDINATE, MOVE TRASH BINS FROM END OF DRIVEWAYS TO NEAR FOUCH RD. ON DAY OF PICKUP TO CONTINUE TO ALLOW FOR TRASH PICKUP SERVICES.

PAVED SURFACES - ROADS, DRIVEWAYS, PATHS, AND SIDEWALKS COORDINATE DRIVEWAY CLOSURES WITH LANDOWNERS A MINIMUM OF 48 HOURS IN ADVANCE.

ALL JOINTS AT INTERSECTION APPROACHES AND DRIVEWAYS SHALL BE SAW-CLIT WITH BUIT-JOINTS UNLESS OTHERWISE NOTED. THE COST IS TO BE INCLUDED IN UNIT PRICE FOR ROAD AND DRIVEWAY REPAIR.

ALL DRIVING SURFACES ARE TO BE RESTORED TO IN-KIND DEPTH AND MATERIAL UNLESS OTHERWISE SPECIFIED ON THE PLANS.

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

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE AND SHALL BE DISPOSED OF BY THE CONTRACTOR OFF SITE. COST OF WORK CONSIDERED INCIDENTAL TO CONSTRUCTION.

CONTRACTOR SHALL REMOVE ALL STREET AND/OR PRIVATE TRAFFIC SIGNAGE AS IS NEEDED FOR CONSTRUCTION AND SHALL RESTORE AFTER CONSTRUCTION WORK IS COMPLETED. ALL ASSOCIATED COSTS FOR THIS WORK TO BE CONSIDERED INCIDENTAL TO

ALL WORK WITHIN THE ROAD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS OF VILLAGE OF EMPIRE, LEELANAU COUNTY ROAD DEPARTMENT, WHERE APPLICABLE.

AGGREGATE BASE

AGGREGATE BASES SHALL USE MDOT AGGREGATE 21AA, UNLESS OTHERWISE SPECIFIED.

I'THE WUMN NEPRESENTED 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. THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS

LINETYPES

DRAINAGE UTILITIES

PROPOSED EXISTING DESCRIPTION - UNDER DRAIN (DRAIN TILE) ____ CULVERT LINE CULVERT HEAD OR WING WALL --- DRAINAGE BASIN OUTLINE ROADWAY EXISTING - GRAVEL PROPOSED - ASPHALT DESCRIPTION EDGE OF ROADWAY ELECTRICAL POWER EXISTING PROPOSED DESCRIPTION NATURAL GAS FXISTING PROPOSED DESCRIPTION — GAS — GAS UG NATURAL GAS GENERAL/COMMUNICATION EXISTING PROPOSED DESCRIPTION — сомм — — COMM— UG COMCAST MISCELLANEOUS EXISTING PROPOSED DESCRIPTION _____ x ____ x ____ FENCE LINE TREE LINE ~~~

SYMBOLS

DRAINAGE UTILITIES				MISCELLANEO	<u>JS</u>
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
Ф Ф	⊕ ⊡	CATCH BASIN (ROUND) CATCH BASIN (SQUARE)	MBI 	[<u>128]</u> 	MAIL BOX SIGN POST
Ē	Ē	END SECTION INVERT ELEVATION	EXISTING	PROPOSED PROPOSED	<u>ON</u> DESCRIPTION
	VEGETATION	Ī	© Fl	© Fl	CABLE PEDESTAL FIBER PEDESTAL
EXISTING	PROPOSED	DESCRIPTION			TELEPHONE PEDESTAL
0	⊖	BUSH OR SHRUB	F	(F)	MANHOLE FIBER
	A #	STUMP DECIDUOUS TREES	© Ø	① Ø NATURAL GA	MANHOLE TELEPHONE TELEPHONE POLE
	ELECTRICAL PO	<u>WER</u>	EXISTING	PROPOSED	DESCRIPTION
EXISTING	PROPOSED	DESCRIPTION	© •	© ●	NATURAL GAS METER UG NATURAL GAS VALVE
E	E	ELECTICAL PEDESTAL	©	©	NATURAL GAS MANHOLE

DRAWING NUMBER DESIGNATION



DISCIPLINE IDENTIFER

DISCIPLINE	DISCIPLINE IDENTIFIER
GENERAL	G
REMOVAL	R
CIVIL - PLAN PROFILE	С
DETAILS	D

1. STRUCTURE IDENTIFIER SHALL BE 01 FOR

2. STRUCTURE IDENTIFIER SHALL BE 02 FOR

3. STRUCTURE IDENTIFIER SHALL BE 99 FOR STANDARD DETAILS.

ABBREVIATIONS

BACK TO BACK

INVERT ELEVATION

BM	BENCH MARK	IL	INLET
BS	BACKSLOPE	IN	INCH
B/C	BACK OF CURB	INSP	INSPECTION
BIT	BITUMINOUS	INTER	INTERSECTION
BR	BRIDGE	LB	POUND
CL	CENTERLINE	LEVCSE	LEVEL COURSE
C&G	CURB & GUTTER	LFT	LINEAL FEET
СВ	CATCH BASIN	LLV	LONG LEGNTH VERTICAL
CI	CAST IRON PIPE	LSUM	LUMP SUM
со	SANITARY SEWER CLEANOUT	LWL	LOW WATER LEVEL
CSP	CORRUGATED STEEL PIPE	MH	MANHOLE
C-C	CENTER TO CENTER	MAINT	MAINTENANCE
CEN	CENTER	MGD	MILLION GALLONS PER DAY
CIP	COMPACTED IN PLACE	MON	MONUMENT
CMP	CORRUGATED METAL PIPE	NGVD	NATIONAL GEODETIC VERTICAL DATUM
CNTY	COUNTY	ос	ON CENTER
COMB	COMBINED	OF	OVERFLOW
COMP	COMPACTED	ОН	OVERHEAD
CONC	CONCRETE	PL	PROPERTY LINE
CONST	CONSTRUCT	PP	POWER POLE
COR	CORNER	PAVT	PAVEMENT
CORR	CORRUGATED	PROJ	PROJECT
CR	CREEK	PPTY	PROPERTY
CTE	CONNECT TO EXISTING	PROP	PROPOSED
CULV	CULVERT	RB	ROUND BOTTOM
CYD	CUBIC YARDS	RR	RAILROAD
CS&B	CURB STOP AND BOX	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	RDY	ROADWAY
DEFL	DEFLECTION	REINF	REINFORCING OR REINFORCEMENT
DET	DETAIL	ROW	RIGHT OF WAY
DR	DRIVE	SG	SUBGRADE
DWY	DRIVEWAY	SW	SIDEWALK
EG	EARTHGRADE	SALV	SALVAGED
EGL	ENERGY GRADE LINE	SAN	SANITARY SEWER
FI	ELEVATION	SXN	SECTION
FLEC	FLECTRIC	SEC	SECTION (LAND SURVEY)
FIFV	FLEVATION	SFW	SEWER
EMB	EMBANKMENT	SFT	SQUARE FEET
ENC	ENCASED	SHLD	SHOULDER
ENG	ENGINEER	SIG	SIGNAL
EX	EXISTING	SPC	SPECIAL
EXC	EXCAVATION	SPEC	SPECIFICATIONS
EXIST	EXISTING	SPECPROV	SPECIAL PROVISIONS
EXP	EXPANSION	STDSPEC	STANDARD SPECIFICATIONS
FL	FLOW LINE	STM	STORM SEWER
FM	FORCE MAIN	SUB	SUBBASE
F/C	FACE CURB	SURF	SURFACE
F-F	FACE TO FACE OF CURB	SYD	SQUARE YARDS
FL	FLOOR	TCSE	TOP COURSE
FT	FOOT/FEET	TDH	TOTAL DYNAMIC HEAD
FTG	FOOTING	TRANS	TRANSMISSION
GDE	GRADE	TWP	TOWNSHIP
GR	GUARD RAIL	TYP	TYPICAL
GAL	GALLONS	UG	UNDERGROUND
GPD	GALLONS PER DAY	UNIF	UNIFORM
GPM	GALLONS PER MINUTE	VFT	VERTICAL FEET
HDW	HEADWALL	VCP	VITRIFIED CLAY PIPE
HGL	HYDRAULIC GRADE LINE	WM	WATER MAIN
HWL	HIGH WATER LEVEL	ws	WATER SERVICE

CROSS SECTIONS HATCH LEGEND

MATERIAL DESCRIPTION	PROPOSED WORK PATTERN
RIPRAP, PLAN	
CHECK DAMS, SESC PLAN (SHEET 3)	
RIPRAP DIVERSIONS, PLAN	
TOPSOIL SURFACE, FURN, 3 INCH; SEEDING, MIXTURE THM, FERTILIZER, AND MULCH	
HMA, PLAN	
BERM, PLAN	

EXISTING SUBGRADE

401 S. WASHINGTON SQUARE

STEVEN CHRISTENSEN COUNTY DRAIN COMMISSIONE

LAKE BLUFFS DRAIN PART OF SECTION 14, SOLON TWP, R12W, LEELANAU COUNTY, MICHIGAN ELANAU A I T28N, Щ

> ∞ ES E N GENERAL

Attention: If this scale bar does not

measure 1" then drawing is not original scale. RELEASE # DATE DESCRIPTION 6/9/2022

11/18/2022 MODIFIED FOR NOV. 2022 RE-BIL

Designed By: LCM Checked By: MFS Drawn By: BSF

GELPROJECT: 2003322

DWG. NO. 01-G-02

SHFFT #2

SOIL TYPE LEGEND

SOIL TIPE LEGEND				
SYMBOL	SOIL DESCRIPTION			
DkD	DEER PARK SAND, 6 TO 18 PERCENT SLOPES			
EdB	EASTPORT SAND, 0 TO 6 PERCENT SLOPES			
W	WATER			

APPROXIMATE CONSTRUCTION SCHEDULE F	FOF	R SI	ESC)	
		W	EEŁ	< 1	
INSTALL PERIMETER SILT FENCE					
MAINTAIN PERIMETER SILT FENCE					
INSTALL TURBIDITY CURTAIN					
INSTALL SHEETPILING					
DEWATERING & PUMP DISCHARGE TREATMENT					
INSTALL 8" D.I. DISCHARGE LINE					
REMOVE EXISTING AND INSTALL NEW CULVERT		-			
BACKFILL & ROAD RESTORATION					
SEEDING & MULCHING					
REMOVE SHEETPILING					
REMOVE TURBIDITY CURTAIN					
FINAL SITE STABILIZATION					
REMOVE PERIMETER SILT FENCING					

*NOTE: CALENDAR DATES MAY VARY BASED ON CONTRACTOR SCHEDULE

TURBIDITY CURTAIN TOTAL LIMITS OF —— LOD —— DISTURBANCE = 0.08 AC— LOD —

SOIL EROSION & SEDIMENTATION CONTROL TABLE

DESCRIPTION

SEEDING

MULCH BLANKET

SILT FENCE/STRAW WATTLE

SOIL BINDING POLYMERS

RIPRAP

DUST CONTROL

SHEET PILING

DEWATERING

SOIL EROSION AND SEDIMENTATION CONTROL NOTES

SCALE, FEET

- 1. TEMPORARY MEASURES SHALL BE INSTALLED PRIOR TO OR UPON COMMENCEMENT OF EARTH CHANGE ACTIVITY AT EACH SITE.
- 2. THE CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF 1994 AND MUST PROVIDE NOTICE TO THE CEA PRIOR TO THE START OF CONSTRUCTION.
- 3. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT MEASURES ARE INSTALLED IN COMPLIANCE WITH THE MANUFACTURERS RECOMMENDATIONS, AND THE PLANS. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SESC MEASURES ARE MONITORED AND MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED AND TEMPORARY MEASURES ARE REMOVED. THE CONTRACTOR ACKNOWLEDGES THAT SESC MEASURES MAY NEED TO BE ADAPTED, ADJUSTED, OR ADDED BASED ON SITE CONDITIONS IN ORDER TO REMAIN IN COMPLIANCE WITH PART 91 REQUIREMENTS.
- 4. ALL SOIL EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED DAILY BY THE CONTRACTOR. THE CONTRACTOR SHALL INSPECT AFTER EACH RAIN EVENT TO ENSURE PROPER MAINTENANCE OF THE SOIL EROSION CONTROL MEASURES. ANY DEFICIENCIES OR REPAIRS TO SOIL EROSION CONTROL MEASURES ARE TO BE CORRECTED IMMEDIATELY.
- THE CONTRACTOR SHALL INSTALL FINAL SOIL EROSION CONTROL MEASURES WITHIN 72 HOURS OF FINAL GRADE IN ANY AREA (GRADE LISTED ON PLANS) UNLESS SPECIFIED OTHERWISE BY ENGINEER. WEEKLY INSPECTIONS OF SEEDED AREAS SHALL BE COMPLETED TO VERIFY GRASS GROWTH. ANY AREAS NOT ESTABLISHED SHALL BE FERTILIZED, SOILS AMENDED AND RE-SEEDED AS NECESSARY. ALL COST FOR ESTABLISHMENT OF SEEDED AREAS SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE SPECIFIC SEEDING BEING INSTALLED.
- 6. THE CONTRACTOR SHALL REMOVE TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WITHIN 45 DAYS AFTER PERMANENT SOIL EROSION MEASURES ARE IN PLACE AND THE AREA IS STABILIZED ("STABILIZED" MEANS THE ESTABLISHMENT OF VEGETATION OR THE PROPER PLACEMENT, GRADING, OR COVERING OF SOIL TO ENSURE ITS RESISTANCE TO SOIL EROSION, SLIDING, OR OTHER EARTH MOVEMENT).
- 7. REMOVAL OF TEMPORARY MEASURES IS THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR IS RESPONSIBLE FOR CLEANUP & RESTORATION INCLUDING PROGRESS CLEANING. PROGRESS CLEANING INCLUDES BUT IS NOT LIMITED TO REMOVAL OF WASTE MATERIALS. DEBRIS. RUBBISH, AND EXCESS SPOILS, COMPLETE LEVELING AND DAMAGE RESTORATION AT REGULAR INTERVALS DURING CONSTRUCTION.
- SEDIMENTS CAUSED BY ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE IT LEAVES THE SITE OF THE EARTH CHANGE.
- 10. PLACE TURF ESTABLISHMENT ITEMS AS SOON AS POSSIBLE ON POTENTIAL ERODABLE SLOPES AS DIRECTED BY THE ENGINEER. CRITICAL DITCH GRADES SHALL BE PROTECTED WITH SOD OR SEED/MULCH OR MULCH BLANKET AS DIRECTED BY THE ENGINEER.
- 11. IF NECESSARY A TEMPORARY CONTROL MEASURE SHALL BE DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF WATER AROUND, THROUGH OR FROM THE EARTH CHANGE AREA TO LIMIT WATER FLOW TO A NON-EROSIVE VELOCITY.
- 12. MAINTAIN ON SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS. NO SPILLED CHEMICALS OR PETROLEUM OR VEHICULAR FLUIDS ARE TO COME INTO CONTACT WITH DRAINAGE DITCHES, WETLAND OR WATERS OF THE STATE.
- 13. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AND THREE INCHES OF TOPSOIL APPLIED. EXISTING TOPSOIL MAY BE USED FOR RESTORATION OF THIS ACTIVITY. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE THE CONTRACTOR SHALL PROVIDE THE TOPSOIL APPROVED BY THE OWNER AND ENGINEER, AS NEEDED. THE AREA SHALL BE SEEDED, FERTILIZED, WATERED AND MAINTAINED UNTIL VEGETATION IS WELL ESTABLISHED. NOTE: FERTILIZER SHALL NOT BE USED WITHIN 50 FEET OF THE RIVER, LAKE OR STREAM AT THIS SITE. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT WILL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- 14. THE CONTRACTOR WILL WATCH FOR WEATHER CHANGES THAT WILL CREATE EROSION CONDITIONS AND WILL APPLY EROSION CONTROL MEASURES BEFORE A STORM HITS THE SITE.
- 15. STOCKPILES OF MATERIALS SHALL BE COVERED AND PROTECTED IN A MANNER TO PREVENT SILTATION OF SURROUNDING SITE OR EROSION FROM OCCURRING ON THE STOCKPILE.
- NO WORK THAT REQUIRES DEWATERING SHALL COMMENCE WITHOUT APPROVAL FROM THE ENGINEER. WATER DISCHARGED FROM DEWATERING SHALL NOT EXCEED 100 NTU.
- 17. THE CONTRACTOR IS RESPONSIBLE FOR THE SESC PERMIT AT ANY SPOIL DEPOSIT LOCATIONS. LOCATIONS MUST BE APPROVED BEFORE DEPOSITION.
- 18. THE DRAIN COMMISSIONER MAY ASSESS COST FOR SITE RESTORATION, SITE STABILIZATION, AND/OR RESTORE OR REPAIR OFF-SITE DAMAGES IF THE CONTRACTOR DOES NOT COMPLY WITH THEIR
- 19. DETAILED DRAWINGS AND SPECIFICATIONS ARE LOCATED IN THE MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SOILS EROSION AND SEDIMENTATION CONTROL AUTHORIZED PUBLIC AGENCY PROCEDURES MANUAL;
- 20. MEASURES SHALL ONLY BE PAID FOR ONCE.

COMPLIANCE WITH PART 91 OF PA 451

- ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH AN EARTH DISTURBANCE ACTIVITY SHALL BE PROVIDED A COPY OF THIS SOIL EROSION CONTROL PLAN AND STRICTLY ADHERE TO ITS REQUIREMENTS.
- THE CONTRACTOR IS RESPONSIBLE TO INSTALL AND MAINTAIN APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES IN ACCORDANCE WITH THE APPROVED PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION, MASS GRADING, OR STAGING WORK. THE CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT, PART 91 OF ACT 451 OF
- INSPECTION BY A CERTIFIED STORM WATER OPERATOR FOR CONSTRUCTION SITES WILL TAKE PLACE WEEKLY AND AFTER EACH RAINFALL EVENT THAT PRODUCES RUNOFF FROM THE SITE. PROPER DOCUMENTATION OF THE INSPECTIONS WILL BE MAINTAINED AS PER PART 91 OF PA 451 OF
- 4. RESPOND IMMEDIATELY TO STORMWATER OPERATOR AND/OR SOIL EROSION AND SEDIMENTATION CONTROL INSPECTOR CONCERNS. MAKE CORRECTIVE MEASURES AS REQUIRED IMMEDIATELY.
- 5. IF FOR ANY REASON THE OWNER IS FOUND TO BE IN VIOLATION OF PART 91 DUE TO CONTRACTOR'S NONCOMPLIANCE, THE CONTRACTOR AGREES TO PAY ALL FINES AND COSTS INCURRED BY THE OWNER INCLUDING ALL LEGAL COSTS IN THE DEFENSE OF THE OWNER.

PROJECT LEGAL DESCRIPTION

• PART OF SECTION 24, TOWNSHIP 28 NORTH, RANGE 15 WEST, VILLAGE OF EMPIRE, LEELANAU COUNTY, MICHIGAN

MAINTENANCE PROGRAM FOR SESC MEASURES

GENERAL MAINTENANCE

OF ANY EARTH DISTURBANCE.

- TEMPORARY SESC MEASURES SHALL BE INSTALLED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.
- TEMPORARY SESC MEASURES SHALL BE INSTALLED PRIOR TO OR UPON COMMENCEMENT
- TEMPORARY MEASURES MUST BE MAINTAINED AND IN PLACE UNTIL AREAS ARE PERMANENTLY STABILIZED.
- TEMPORARY SESC MEASURES SHALL BE REMOVED AT THE END OF THE PROJECT ONCE. PERMANENT MEASURES ARE IN PLACE AND DISTURBED AREAS ARE STABILIZED.
- PERMANENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR
- UNTIL FINAL PROJECT COMPLETION.
- DAILY MAINTENANCE IS THE CONTRACTORS RESPONSIBILITY.

SEEDING AND MULCHING

- INSPECT NEWLY SEEDED AREAS SUBSEQUENT TO ANTICIPATED GERMINATION DATE AND AFTER EACH SIGNIFICANT RAINFALL EVENT THAT PRODUCES RUNOFF UNTIL AREAS ARE STABILIZED AND TO CHECK FOR MOVEMENT OR EROSION.
- INSPECT RESTORED AREAS ROUTINELY AND AFTER EACH SIGNIFICANT RAINFALL EVENT TO CHECK FOR MOVEMENT OR EROSION UNTIL AREAS ARE STABILIZED. IF WASHOUTS OR EROSION OCCUR, REPAIR THE SURFACE, RE-SEED AND RE-MULCH. CONTINUE INSPECTIONS AS NECESSARY UNTIL VEGETATION IS FIRMLY ESTABLISHED.
- REPAIR ERODED AREAS, APPLYING SUPPLEMENTAL SEED, MULCH BLANKET, AND WATER AS
- IF SEED DOES NOT ESTABLISH, CONDUCT SOIL TESTS, AMEND SOILS AS NEEDED, AND REAPPLY SEED AND/OR MULCH BLANKET DURING THE RECOMMENDED GROWING SEASON
- TO ASSIST IN THE ESTABLISHMENT OF NATIVE SPECIES, REMOVE UNWANTED COMPETING VEGETATION IN THE FIRST YEAR.
- MOWING DURING ESTABLISHMENT CAN BE USED PERIODICALLY TO DISCOURAGE WEEDS.
- WATER AREA FREQUENTLY UNTIL THICK VEGETATION HAS ESTABLISHED. THE CONTRACTOR MUST WATER UNTIL VEGETATION HAS ESTABLISHED.

- INSPECT ROUTINELY, BASED ON FLOW CONDITIONS, UNTIL ALL DISTURBED AREAS ARE STABILIZED.
- INSPECT AFTER MAJOR FLOOD EVENTS AND REMOVE SEDIMENT AND ACCUMULATED AS DESIGNED, MAKING ANY NEEDED ADJUSTMENTS.

SOIL BINDING POLYMERS

- APPLY EVERY TIME SEED IS PLACED
- VISUALLY INSPECT ALL AREAS WHERE THE POLYMER HAS BEEN APPLIED WITHOUT WALKING OR TRAVELING OVER THE AREA FOLLOWING EACH SIGNIFICANT PRECIPITATION OR WIND EVENT AND PRIOR TO EXPECTED EVENTS. REAPPLY IF SOIL AREAS INDICATED DISTURBANCE BY EROSIVE FORCES, OR IF DEEMED NECESSARY, REAPPLY IN CONJUNCTION WITH ADDITIONAL MANAGEMENT PRACTICES.
- REAPPLY IF TREATED AREA IS DISRUPTED OR SHOWS SIGNS OF DISTURBANCE FROM EROSION FORCES.

- IF RIPRAP HAS BEEN DISPLACED AND THE GEOTEXTILE FABRIC IS DAMAGED DURING HIGH FLOW CONDITIONS OR FROM VANDALISM, REMOVE RIPRAP AND REPAIR GEOTEXTILE FABRIC BY ADDING ANOTHER LAYER OVERLAPPING THE DAMAGED AREA BY 2 FEET AND ANCHORING WITH PINS SPACED 3 FEET APART. REPLACE RIPRAP OVER GEOTEXTILE
- INSPECT FOLLOWING EACH PRECIPITATION THAT RESULTS IN RUNOFF AND CONFIRM EFFECTIVENESS, MAKE NECESSARY ADJUSTMENTS. EXPAND RIPRAP AREAS AS NEEDED.

DEWATERING

DISCHARGE BAG DEWATERING (TYP)

- CHECK PUMP DISCHARGE BAG FOR ANY HOLES OR NOTICEABLE DETERIORATION.
- INSPECT DEWATERING DISCHARGE POINTS DAILY FOR SIGNS OF SCOUR AND EROSION.
- DEWATERING DISCHARGE POINT TO BE PLACED AT A LOCATION APPROVED BY ENGINEER.
- DEWATERING DISCHARGE SHOULD BE VISIBLY CLEAR AND FREE OF SEDIMENT.

INLET PROTECTION

- THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT
- THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.

TURBIDITY CURTAIN

• INSPECT CURTAIN DAILY AND MAKE REQUIRED ADJUSTMENTS TO ENSURE THAT ANCHORS, TIE-DOWNS, OR OTHER MECHANISMS ARE SUFFICIENTLY ISOLATING CONSTRUCTION ACTIVITIES FROM THE WATERBODY.

DUST CONTROL

- SWEEP ROADS DAILY OR SEVERAL TIMES A DAY SHOULD CONDITIONS PROVIDE.
- WATER DISTURBED SOILS TO MITIGATE DUST CREATION DAILY OR SEVERAL TIMES A DAY SHOULD CONDITIONS PROVIDE.

CONTINUED MAINTENANCE PLAN

 THE CONTRACTOR SHALL MAINTAIN ALL PERMANENT SESC MEASURES FOR A PERIOD OF 1 YEAR FOLLOWING PROJECT COMPLETION, THIS INCLUDES VEGETATION ESTABLISHMENT.

GEI CONSULTANTS OF MICHIGAN, P.C 401 S. WASHINGTON SQUARE SUITE 103

LANSING, MI 48933

(517)803-4600

USEN COMMISSIONE ZÖ BAR CTIOI ANA 도 의 의

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RELEASE#	DATE
DESCRIPTIO	ON
1	11/21/2023
BID SET	

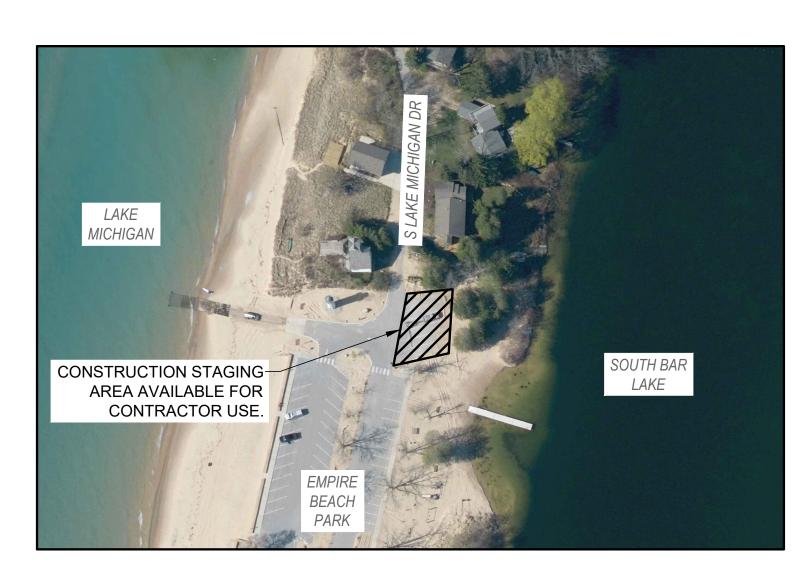
Designed By: MJW Checked By: BJC Drawn By: MJW

GEI PROJECT: 2003339

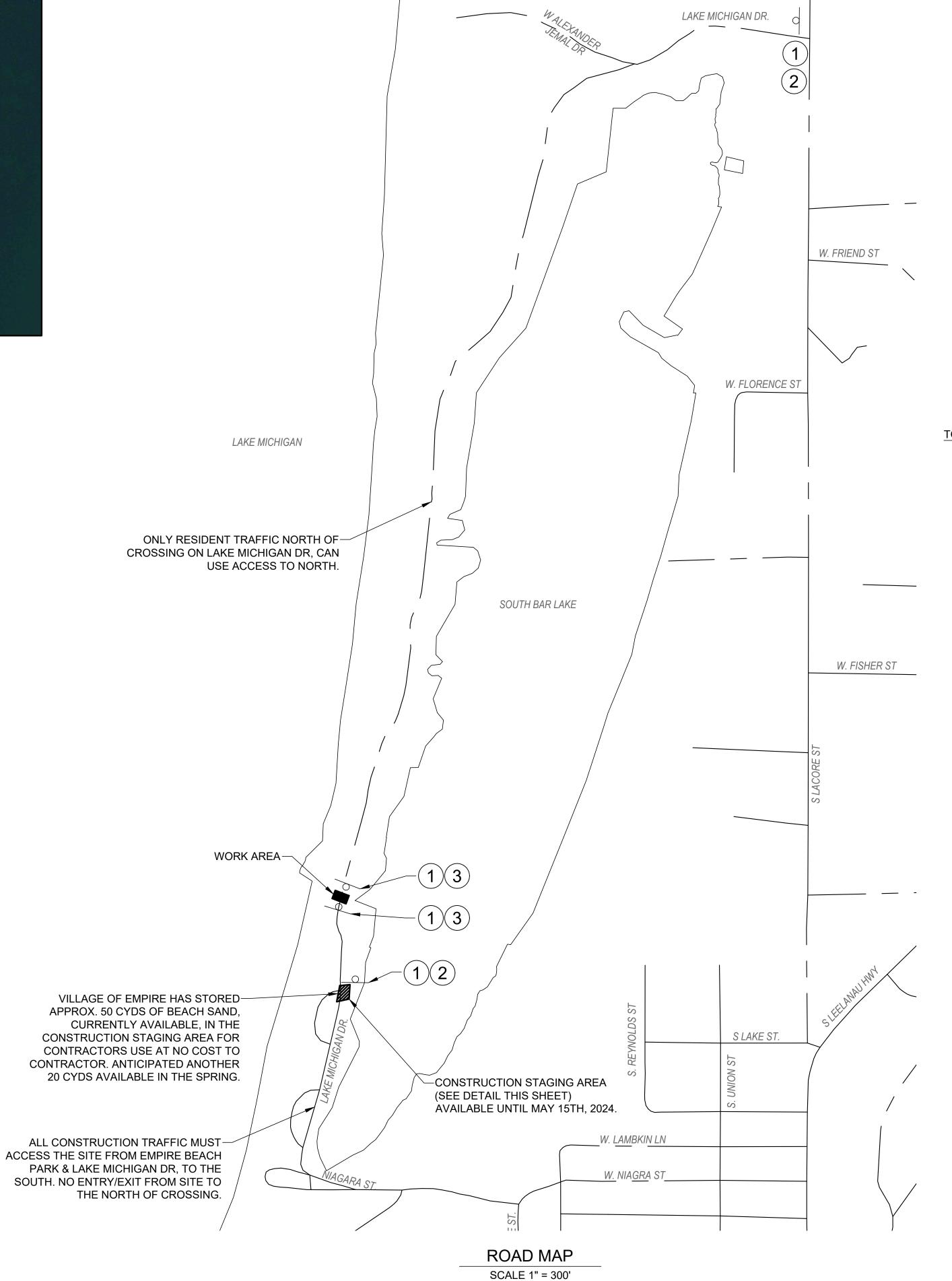
Approved By: BJC

DWG. NO. 01-G-03

SHEET #3 ARCHIVE #



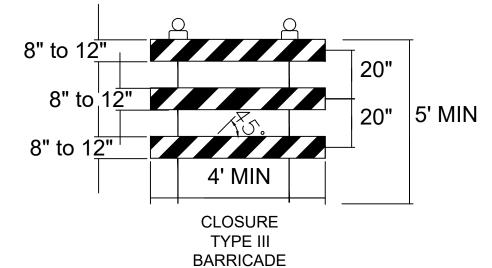
CONSTRUCTION STAGING AREA DETAIL





- 1. TRAFFIC NORTH OF 11399 LAKE MICHIGAN DRIVE IS TO ENTER AND EXIT TO THE NORTH VIA LAKE MICHIGAN DRIVE.
- 2. TRAFFIC SOUTH OF 11443 LAKE MICHIGAN DRIVE IS TO ENTER AND EXIT TO THE SOUTH VIA LAKE MICHIGAN DRIVE.
- 3. CONTRACTOR SHALL NOT OBSTRUCT TRAFFIC IN EMPIRE BEACH STATE PARK AT ANY TIME.

TO BE INSTALLED FOR DURATION OF CONSTRUCTION WORK:



ROAD CLOSED TO THRU TRAFFIC

RII-4 60" x 30" TYPE II B BLACK LEGEND WHITE BACKGROUND

ROAD CLOSED

RII-4 60" x 30" TYPE II B BLACK LEGEND WHITE BACKGROUND GEI CONSULTANTS OF MICHIGAN, P.C. 401 S. WASHINGTON SQUARE SUITE 103
LANSING, MI 48933
(517)803-4600

LEELANAU COUNTY DRAIN COMMISSIONER
SOUTH BAR LAKE DRAIN

RAFFIC CONTRUL & CONSTRUCTION STAGING AREA

Attention: 1"

If this scale bar does not

measure 1" then drawing is not original scale.

RELEASE # DATE

DESCRIPTION

1 11/21/2023

BID SET

Designed By: MJW

Checked By: BJC

Drawn By: MJW

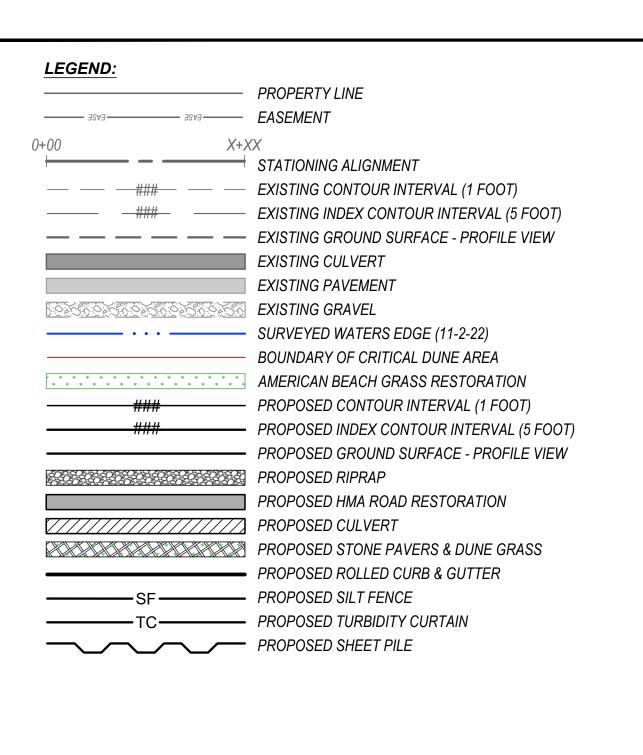
Approved By: BJC

GEI PROJECT: 2003339

DWG. NO. 01-G-04

SHEET #4

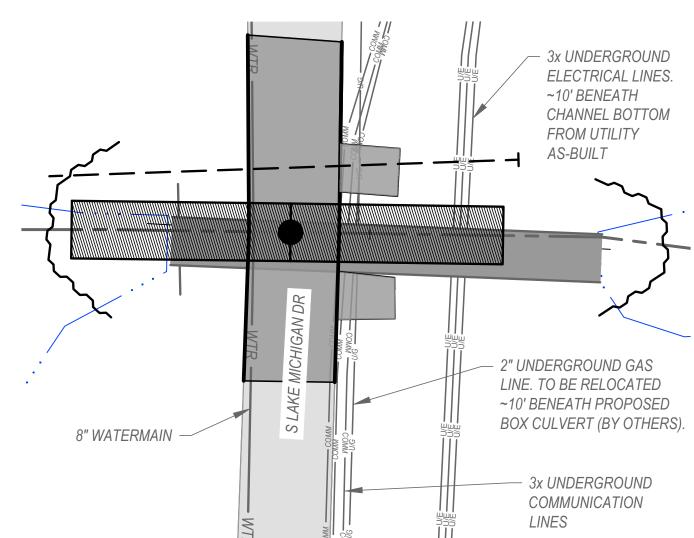
ARCHIVE #



ELEV = 587.86 WESTERLY FLANGE BOLT ON HYDRANT NORTHWEST QUADRANT OF OUTLET AND LAKE MICHIGAN DRIVE

PROPERTY OWNER/EASEMENT INFO:

	PROPERTY OWNER INFO EASEMENT INFO						
ID #	PROP. OWNER	PROP. ADDRESS	PARCEL NUMBER	DOCUMENT NO.	EASEMENT TYPE		
P1	BARBARA LUDLOW	11399 S LAKE MICHIGAN DR	041-824-079-00	2020004386	PERMANENT DRAIN EASEMENT		
P2	CARLA WEINHEIMER & PEGGY DESUTELS	11443 S LAKE MICHIGAN DR	041-824-023-00	2020004388	PERMANENT DRAIN EASEMENT		

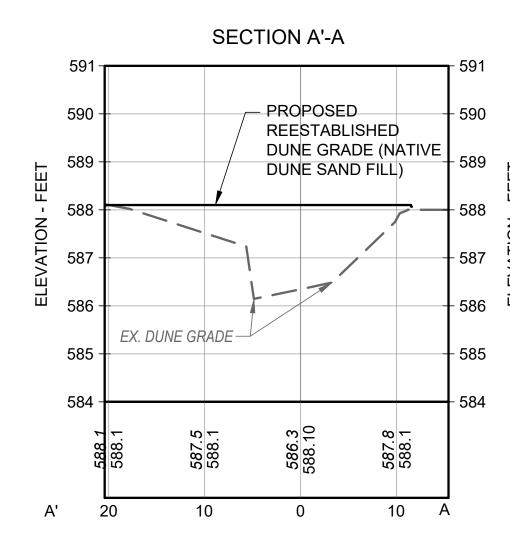


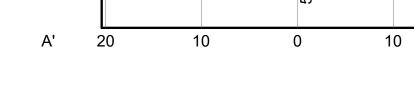
UTILITY LOCATIONS BASED ON MISS DIG FLAGS MARKED ON SEPT. 2023.

EXISTING UTILITY MAP

CONSTRUCTION SEQUENCE:

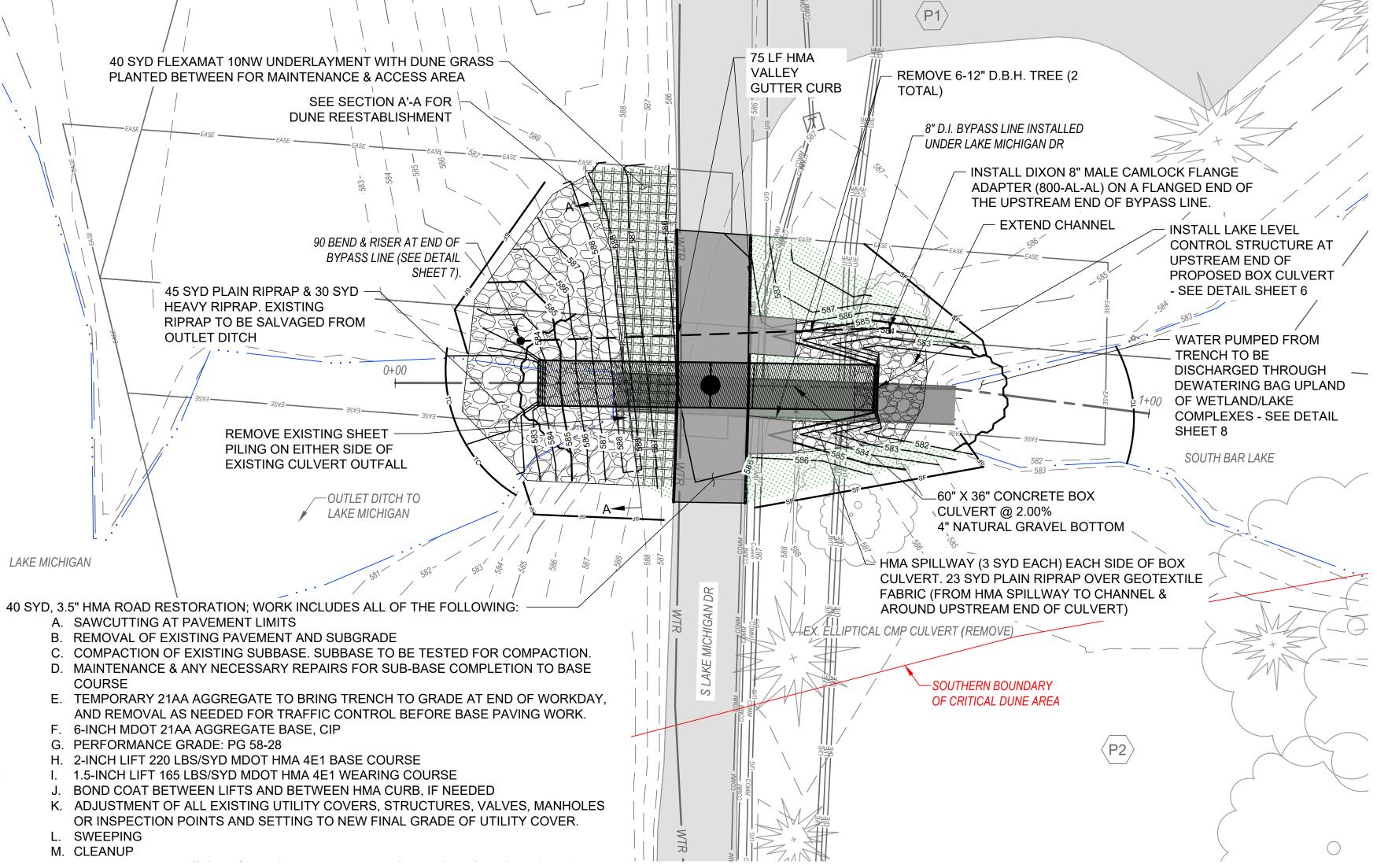
- 1. INSTALL TEMPORARY SESC MEASURES
- 2. INSTALL BYPASS PIPE
- 3. SET UP BYPASS PUMPS AND APPURTENANT ITEMS TO BYPASS PIPE 4. INSTALL WATER BARRIER UPSTREAM & DOWNSTREAM OF CROSSING
- 5. TURN ON BYPASS PUMPS
- 6. CULVERT REPLACEMENT
- 7. TURN OFF BYPASS PUMPS AND REMOVE APPURTENANT ITEMS
- 8. REMOVE WATER BARRIERS
- 9. INSTALL PERMANENET SESC MEASURSES

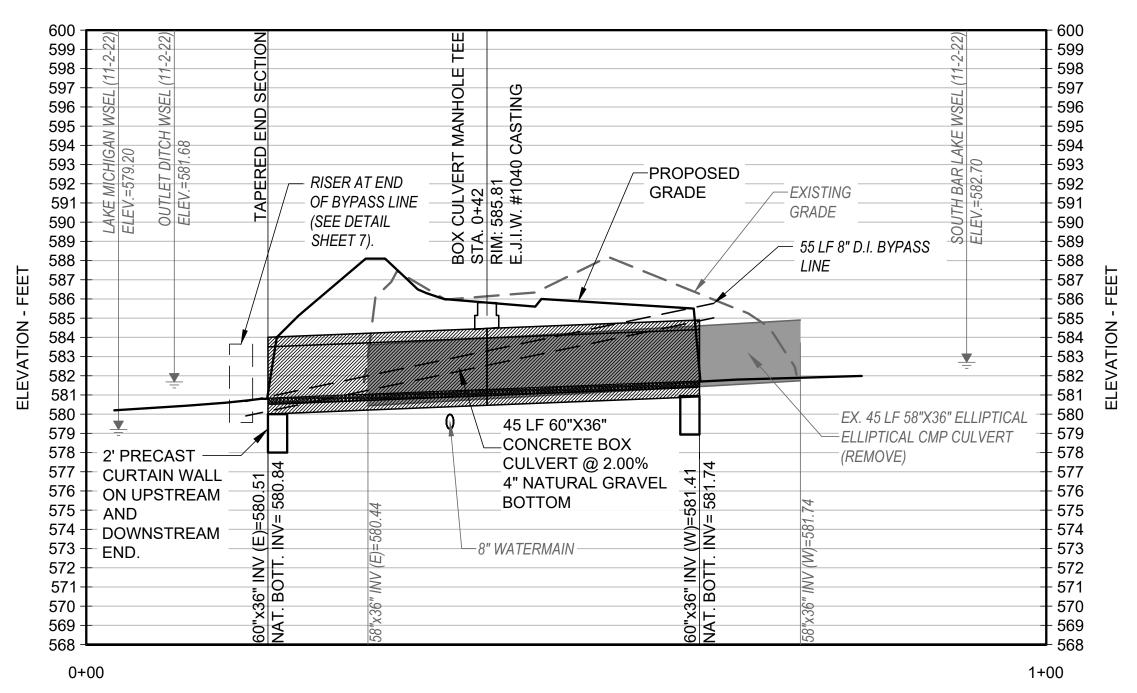




CONTRACTOR MUST DO AL LWORK IN ACCORDANCE W/ EGLE PERMIT NO. WRP038864 WHICH IS INCLUDED IN THE CONTRACT DOCUMENTS.

- CONTRACTOR SHALL INSTALL SESC MEASURES BEFORE EARTH DISTURBANCE. TREE REMOVALS LESS THAN 6" D.B.H. ARE INCIDENTAL TO CONSTRUCTION.
- 4. PROTECT ALL ROADWAY SURFACES NOT BEING RECONSTRUCTED AS PART OF THE PROJECT. CONTRACTOR WILL BE REQUIRED TO REPAIR/REPLACE ANY DAMAGED ROADWAY AT CONTRACTOR'S EXPENSE.
- LOCATE ALL UTILITIES PRIOR TO EXCAVATION. UTILITY LOCATION IS INCIDENTAL TO CONSTRUCTION. PROVIDE UTILITY ELEVATIONS TO ENGINEER TO CHECK FOR UTILITY CONFLICTS.
- MAINTAIN ACCESS FOR ALL HOMEOWNERS AT ALL TIMES.
- CONTRACTOR RESPONSIBLE FOR MAINTAINING MAIL DELIVERY AND GARBAGE DISPOSAL SERVICES.
- AS NECESSARY, REMOVE AND REINSTALL MAILBOXES AFTER CONSTRUCTION TO EXISTING CONDITION OR IN ACCORDANCE WITH LOCAL U.S.PS. STANDARDS. CONTRACTOR IS RESPONSIBLE FOR ALL MAILBOX RESTORATION AFTER CONSTRUCTION.





HORIZONTAL SCALE, FEET VERTICAL SCALE, FEET NOTE: 2x VERTICAL EXAGGERATION

Attention: , If this scale bar does not measure 1" then drawing is not original scale. RELEASE # DATE

DESCRIPTION 11/21/2023 BID SET

GEI CONSULTANTS OF MICHIGAN, P.C

401 S. WASHINGTON SQUARE

SUITE 103

LANSING, MI 48933

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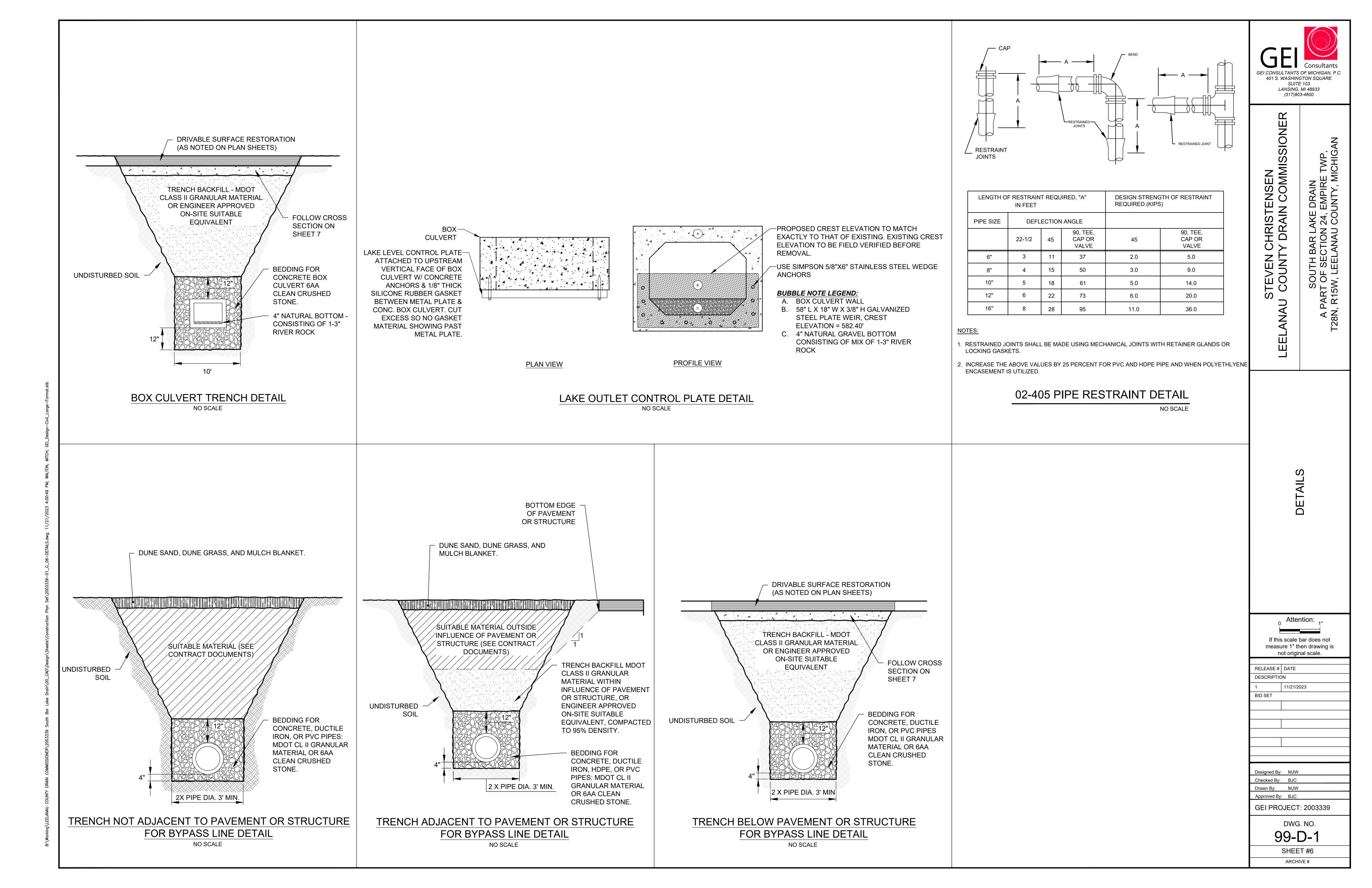
Designed By: MJW Drawn By: MJW Approved By: BJC

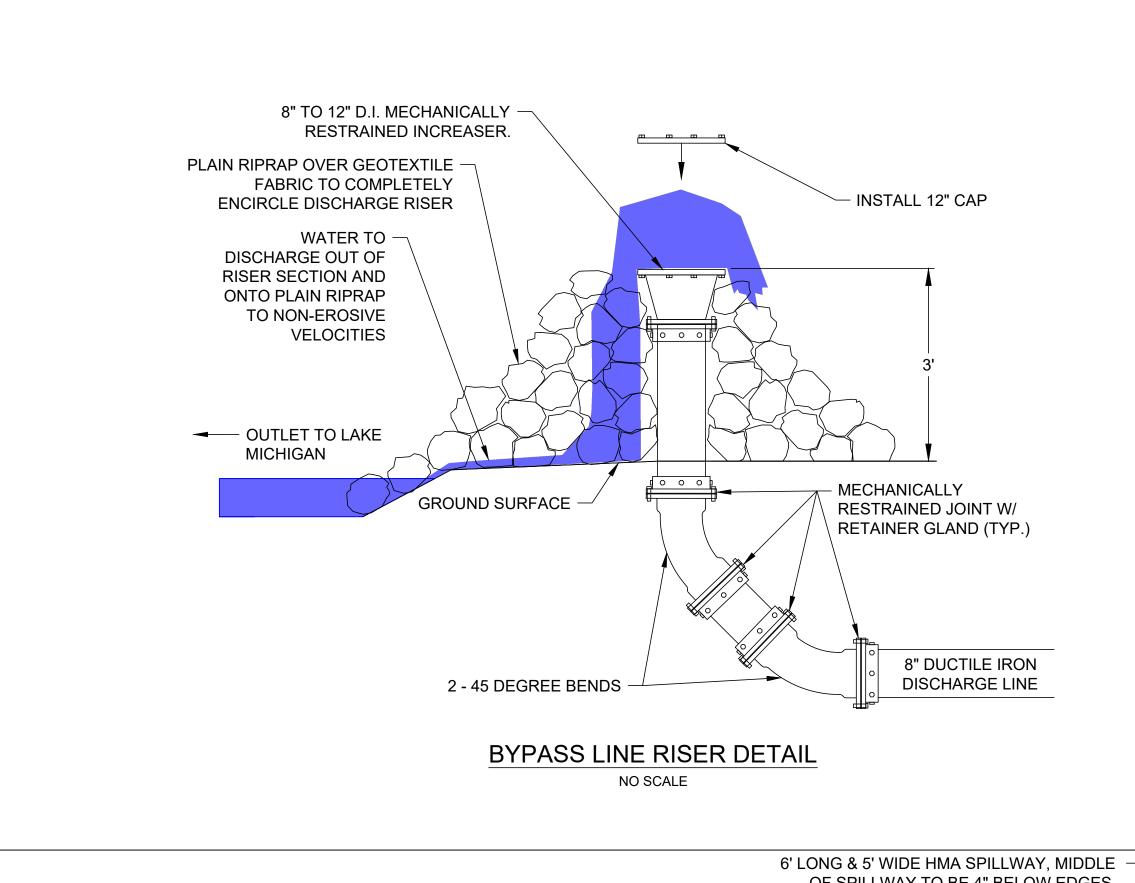
GEI PROJECT: 2003339

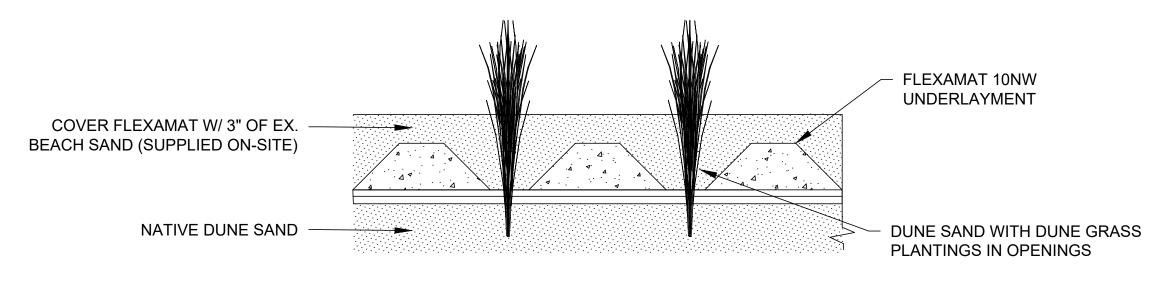
DWG. NO. 02-C-01

ARCHIVE #

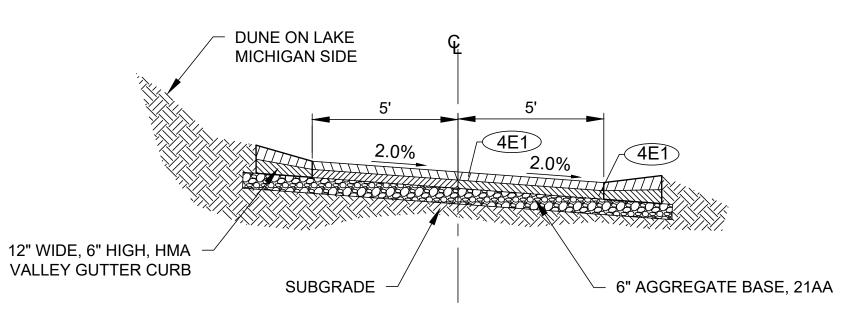
SHEET #5







FLEXAMAT CROSS-SECTION DETAIL NO SCALE



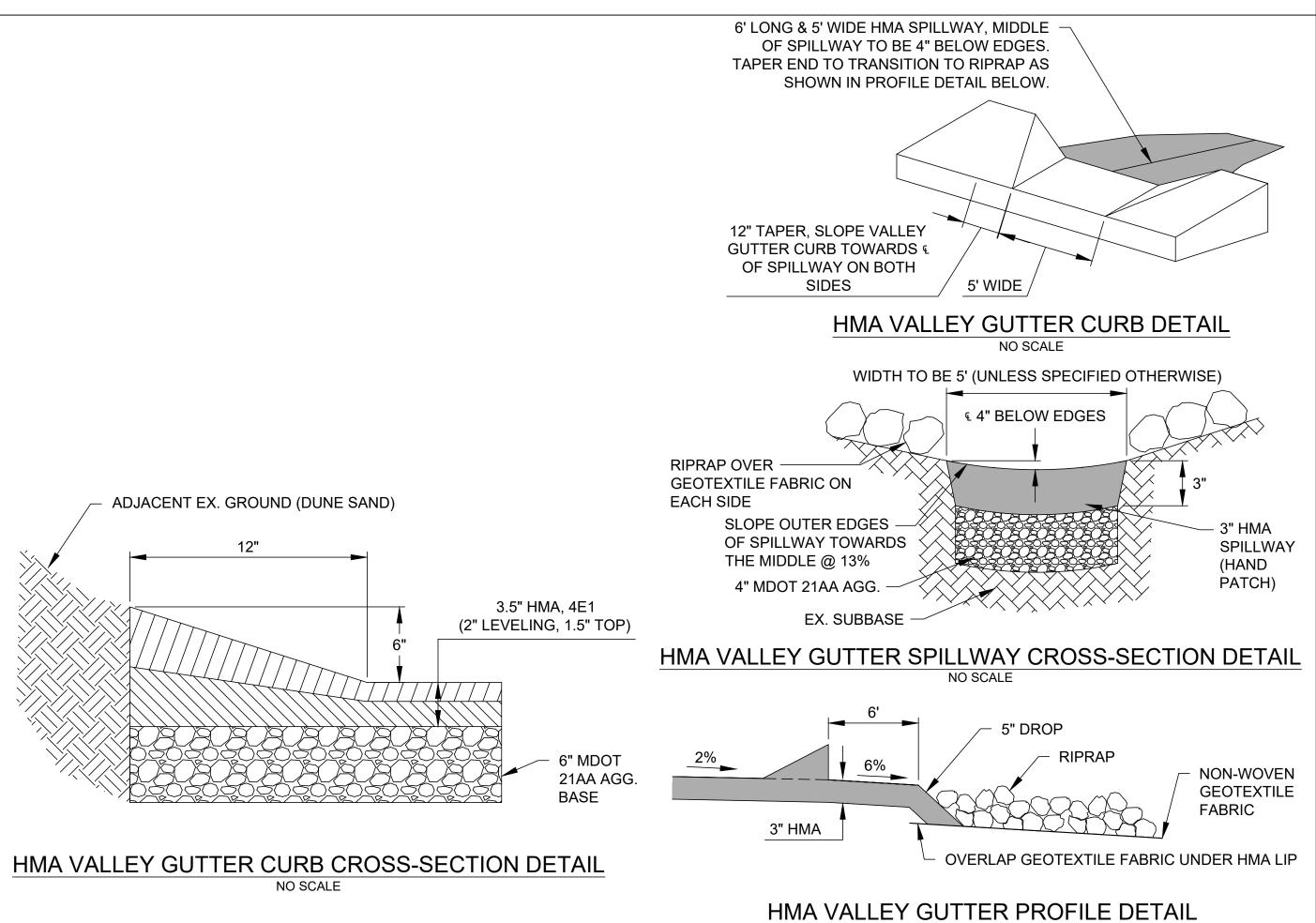
HMA APPLICATION CHART - ALL ROAD RESTORATION

IDENT NO.	ITEM	RATE OF APPL. LBS/SY	PERFORMANCE GRADE	COMMENTS
4E1	HMA, LVSP, 4E1, 1.5"	160	PG 58-28	TOP COURSE
4E1	HMA, LVSP, 4E1, 2"	220	PG 58-28	LEVELING COURSE

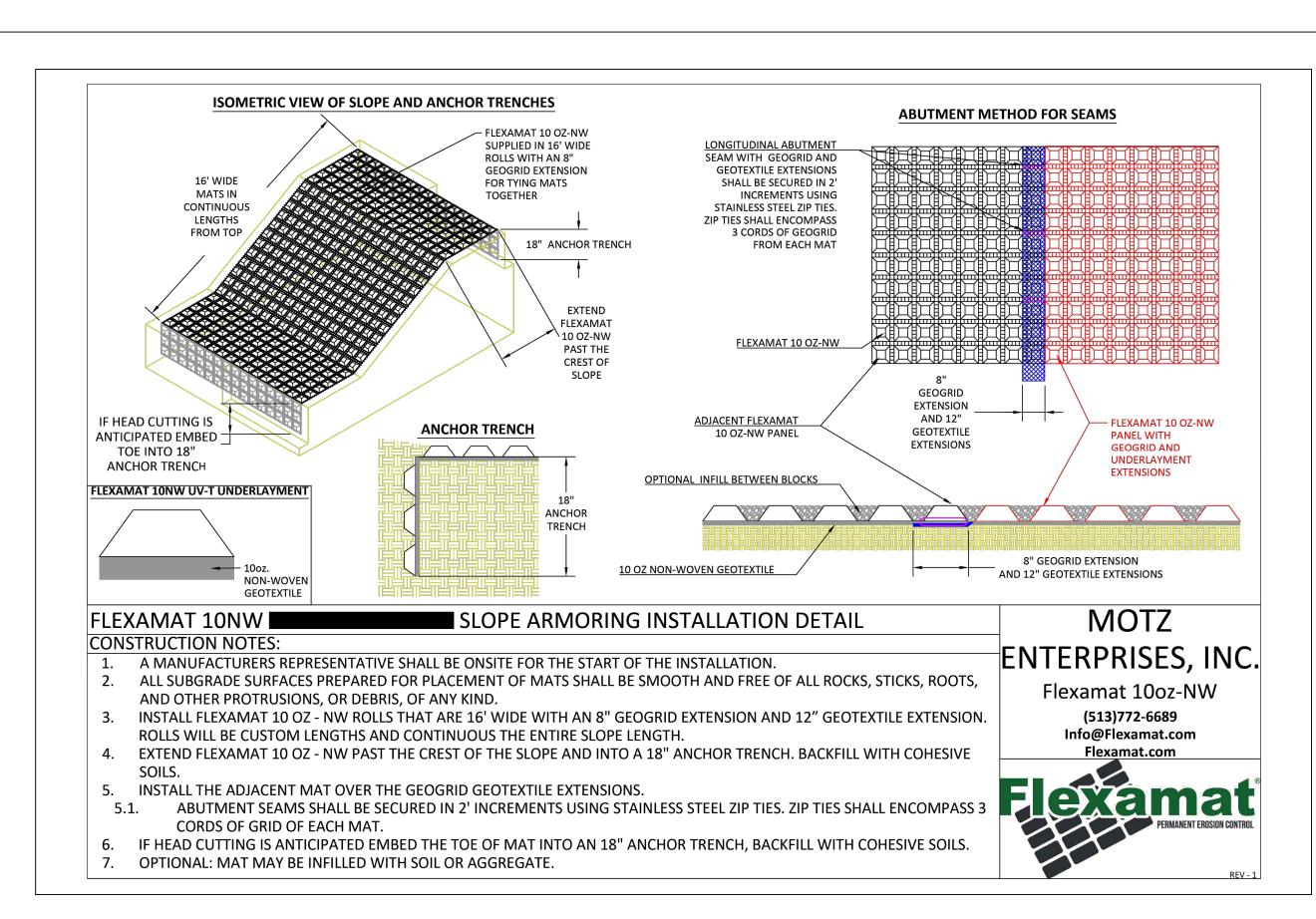
NOT

- 1. BOND COAT SHALL BE SS-1H APPLIED AT A RATE OF 0.1 GAL/SYD.
- 2. PAVEMENT THICKNESS AS SPECIFIED.

LAKE MICHIGAN DRIVE CROSS SECTION DETAIL NO SCALE



NO SCALE



FLEXAMAT INSTALLATION DETAIL

GEI CONSULTANTS OF MICHIGAN, P.C.
401 S. WASHINGTON SQUARE
SUITE 103
LANSING, MI 48933
(517)803-4600

LEELANAU COUNTY DRAIN COMMISSIONER
SOUTH BAR LAKE DRAIN
A PART OF SECTION 24, EMPIRE TWP,
T28N, R15W, LEELANAU COUNTY, MICHIGAN

Attention:

1"

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RELEASE # DATE

DESCRIPTION

1 11/21/2023

BID SET

Designed By: MJW
Checked By: BJC
Drawn By: MJW

Approved By: BJC

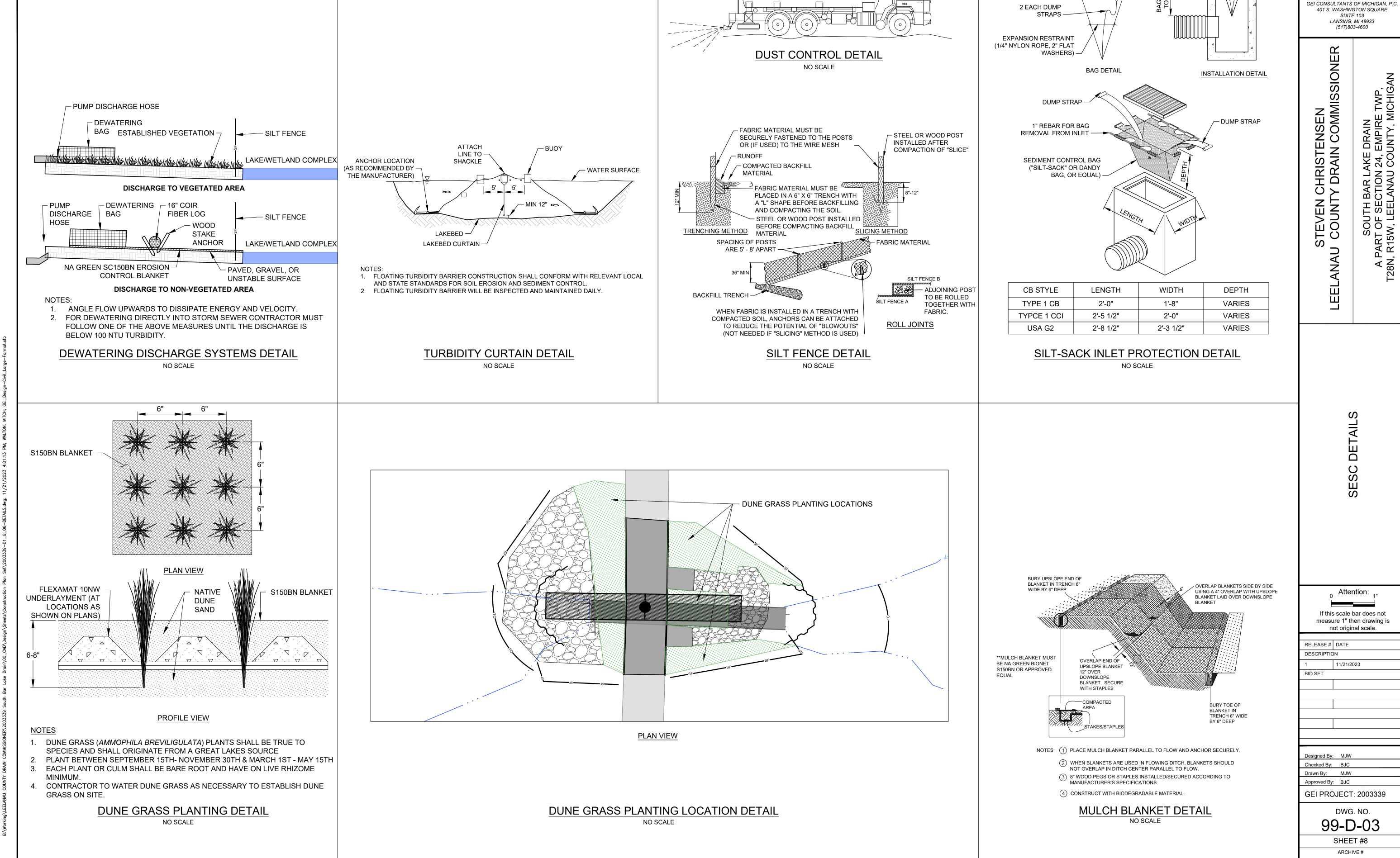
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GEI PROJECT: 2003339

DWG. NO. 99-D-02

SHEET #7

ARCHIVE #



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401 S. WASHINGTON SQUARE
SUITE 103
LANSING, MI 48933
(517)803-4600