# FOR PERMIT DRAWINGS FOR: **PORTAGE PUBLIC SCHOOLS** Portage Northern High School East Athletic Field Parking Lots CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN PROJECT NUMBER: 210282 ISSUE DATE: 26 JUL 2022







Sheet List Table			
Sheet Number	Sheet Title		
G-001	Title Sheet		
C-100	SESC Plan		
C-101	Existing Site Conditions and Demolition Plan		
C-102	Site Geometrics and Improvements Plan		
C-103	Site Grading and Drainage		
C-104	Drainage Map		
L-100	Landscape Plan		
L-500	Landscape Notes and Details		
C-500	SESC Notes & Details		
C-501	SESC Notes		
C-502	Civil Details		



TITLE SHEET PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS

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SOIL EROSION CONTROL MEASURES KEY				
KEY	DETAIL	NOTES		
(ET)	TEMPORARY SEEDING	AS REQUIRED TO REDUCE SOIL EROSION AND DUST		
E8	PERMANENT SEEDING	REFER TO PLAN AND LEGEND FOR LIMITS. SEE SESC NOTES THIS SHEET FOR SEEDING REQUIREMENTS.		
<b>(</b> \$7 <b>)</b>	RIP RAP			
\$28	MULCH BLANKET			
<b>S51</b>	SILT FENCE	CONTRACTOR SHALL REMOVE ONCE TURF IS ESTABLISHED		
(\$58)	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., OR APPROVED EQUAL		
SESC DETAILS UTILIZE STATE OF MICHIGAN, DEPARTMENT OF MANAGEMENT AND BUDGET, INFRASTRUCTURE SERVICES, DESIGN AND CONSTRUCTION DIVISION "SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK".				





# SESC LEGEND

2.0%	PROPOSED SURFACE SLOPE
$\Rightarrow$	PROVIDE POSITIVE DRAINAGE
	EXISTING CONTOUR
	PROPOSED CONTOUR
	CONSTRUCTION LIMITS
SF	SILT FENCE
$\begin{array}{ccc} \psi & \psi \\ & \psi & \psi \end{array}$	PERMANENT SEEDING

# SESC NOTES

- 1. CONTRACTOR SHALL PLACE PERMANENT SEEDING IN ACCORDANCE WITH THE SEEDING WINDOW ON SHEET C-501. COORDINATE PERMANENT SEEDING WITH LANDSCAPE PLANTINGS ON L-500.
- 2. ALL AREAS DISTURBED BY CONSTRUCTION NOT BUILT, PAVED OR OTHERWISE COVERED SHALL BE HYDROMULCH SEEDED AT THE FOLLOWING RATE AND MIXTURE;

  - RATE=8 LBS/1000 SFT 25% PARK KENTUCKY BLUEGRASS

  - 15% PENNLAWN CREEPING RED FESCUE 15% PENNFINE PERENNIAL RYE GRASS 20% RUGBY KENTUCKY BLUEGRASS 25% BANFF OR BRONCO KENTUCKY BLUEGRASS WEED SEED SHALL NOT EXCEED 0.35% BY WEIGHT IN THE TOTAL
  - AMOUNT SUPPLIED.
- 3. CONTRACTOR SHALL COORDINATE AND/OR MAINTAIN EXISTING SESC MEASURES ALREADY IN PLACE WITHIN THE PROJECT LIMITS.
- 4. SEE SHEET C-501 FOR SOIL EROSION NOTES.
- 5. SEE SHEET C-500 FOR SOIL EROSION DETAILS.

PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS	CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN
SESC PLAN	
REVISIONS	
REV DESCRIPTION	DATE
PROJ #	210282

26 JUL 202

SHEET

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# DEMOLITION LEGEND

---- CONSTRUCTION LIMITS

- <del>x</del> <del>x</del> - <del>x</del> - <del>x</del>	FENCE TO BE REMOVED
<del>       </del>	REMOVE EXISTING CONCRETE CURB AND GUTTER
	REMOVE EXISTING CONCRETE SURFACE, SAWCUT AT REMOVAL LIMITS
	REMOVE EXISTING HMA SURFACE, SAWCUT AT REMOVAL LIMITS

# SITE PROTECTION KEY

1 PROTECT EX. HMA PATH	to remain.
2 PROTECT EX. OVERHEAD U	UTILITY TO REMAIN.
3 PROTECT EX. TREE TO RE	EMAIN.
4 PROTECT EX. CONCRETE	to remain.
5 PROTECT EX. SERVICE DR	IVE TO REMAIN.
6 PROTECT EX. BUILDING TO	D REMAIN.
7 PROTECT EX. FENCE TO F	REMAIN.
8 PROTECT EX. CATCH BASI	N TO REMAIN.
9 PROTECT EX. WALL	
10 PROTECT EX. STRUCTURE	

# SITE REMOVAL KEY

- (1) ADJUST RIM ELEVATION AND PROTECT 2 REMOVE FENCE (3) REMOVE AND SALVAGE EX FENCE TO COMPLETE CONSTRUCTION OF PROPOSED SWALE. FENCE WILL BE
- REPLACED IN SAME LOCATION.

# DEMOLITION NOTES

- 1. THE INFORMATION CONTAINED ON THESE DRAWINGS PERTAINING TO EXISTING CONDITIONS, SUCH AS BUT NOT LIMITED TO, UTILITIES, AND TOPOGRAPHY IS FURNISHED SOLELY AS THE BEST INFORMATION AVAILABLE AND ITS ACCURACY IS NOT GUARANTEED. THE USE OF THIS INFORMATION DOES NOT PROVIDE THE CONTRACTOR RELIEF FROM ANY RESPONSIBILITY FOR DAMAGES DUE TO ANY INACCURACIES.
- CONTRACTOR SHALL CONTACT MISS DIG AT 811 OR (800)-482-7171 AT LEAST 3 WORKING DAYS PRIOR TO ANY EXCAVATION TO CONFIRM THE LOCATIONS OF EXISTING BURIED UTILITIES. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF EXISTING UTILITIES, IF REQUIRED, WITH THE UTILITY OWNER AND BE RESPONSIBLE FOR PROTECTING EXISTING UTILITIES AND REPAIRING DAMAGE TO EXISTING UTILITIES RESULTING FROM THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COSTS OF REPAIRING OR REPLACING ANY DAMAGED UTILITIES AT NO EXPENSE TO THE OWNER. THE CONTRACTOR SHALL LOCATE ANY PRIVATE UTILITIES (I.E. LIGHTING, ETC.) INCIDENTAL TO THE WORK.
- 3. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING HORIZONTAL AND VERTICAL CONTROL POINTS, BENCHMARKS, ETC. CONTRACTOR IS RESPONSIBLE FOR PROVIDING CONSTRUCTION STAKING AND FIELD LAYOUT. IT IS RECOMMENDED THAT TWO (2) BENCHMARKS BE USED FOR VERIFICATION OF ALL CONSTRUCTION ELEVATIONS. SET ADDITIONAL BENCHMARKS, AS NEEDED, TO COMPLY WITH THIS REQUIREMENT.
- 4. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING NECESSARY TO COMPLETE THE WORK NOTED ON THESE PLANS. WATER REMOVED BY DEWATERING EQUIPMENT SHALL NOT BE DISPOSED OF INTO EXISTING SANITARY SEWERS.
- 6. CONTRACTOR SHALL CONDUCT ALL EXCAVATION, FILLING, GRADING, AND CLEAN-UP OPERATIONS IN A MANNER SUCH THAT SEDIMENT GENERATED BY WIND OR WATER IS NOT DISCHARGED OFF SITE INTO THE AIR, ANY STORM SEWER OR UNDERGROUND UTILITY SYSTEM, DRAINAGE DITCH, RIVER, OR LAKE. STAGE THE WORK TO MINIMIZE THE AREA OF EXPOSED SOIL, THEREBY REDUCING THE OPPORTUNITY FOR SOIL EROSION.
- 7. CONCRETE PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING CONTROL JOINT OR ISOLATION JOINT BEYOND AREA INDICATED ON THE PLANS TO BE REMOVED. CONCRETE AND BITUMINOUS PAVEMENT SHALL BE SAWCUT FULL DEPTH AND SQUARE TO EX. CURB WHEN PRESENT. REMOVALS WILL BE MADE TO PROVIDE FOR PROPER GRADE TRANSITIONS AND CONNECTIONS.
- 8. ALL AREAS DISTURBED OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION AND TO THE SATISFACTION OF THOSE HAVING JURISDICTION, UNLESS NOTED OTHERWISE ON THE PLANS.
- 9. ALL ESTABLISHED LAWN AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE SEEDED AND MULCHED. SEEDING AND MULCHING SHALL BE DONE IN ACCORDANCE WITH THE GENERAL SPECIFICATIONS.
- 10. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS REQUIRED FOR CONSTRUCTION.





PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS CITY OF PORTAGE, KALAMAZOD COUNTY, MICHIGAN	
EXISTING SITE CONDITIONS AND DEMOLITION PLAN	
REVISIONS	
PROJ. #: 21028 DATE: 26 JUL 2021 SHEET C-101	2



### <u>GENERAL NOTES</u>

## 1. BENCH MARKS

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

## 2. EXISTING SITE IMPROVEMENTS

UNLESS SPECIFICALLY NOTED FOR REMOVAL ON THE PLANS, ALL SIDEWALKS, DRIVES, CULVERTS, DRAINAGE STRUCTURES, FENCES, AND ABOVE GROUND AND BURIED UTILITIES SHALL BE PROTECTED. ALL SUCH EXISTING UTILITIES AND IMPROVEMENTS DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR WITH LIKE MATERIAL EQUAL TO OR BETTER THAN EXISTING AT NO ADDITIONAL EXPENSE TO THE OWNER.

#### 3. LAWN RESTORATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE HYDROMULCH SEEDED AT THE FOLLOWING RATE AND MIXTURE:

- RATE=8 LBS/1000 SFT
- 25% PARK KENTUCKY BLUEGRASS 15% PENNLAWN CREEPING RED FESCUE
- 15% PENNFINE PERENNIAL RYE GRASS
- 20% RUGBY KENTUCKY BLUEGRASS 25% BANFF OR BRONCO KENTUCKY BLUEGRASS

WEED SEED SHALL NOT EXCEED 0.35% BY WEIGHT IN THE TOTAL AMOUNT SUPPLIED. TOPSOIL DEPTH: 4" MINIMUM

#### 4. UNDERGROUND UTILITIES

FOR LOCATION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF 72 HOURS PRIOR TO EXCAVATING IN THE VICINITY OF UTILITY LINES. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.

#### 5. EROSION CONTROL

ALL SOIL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. EXISTING AND PROPOSED CATCH BASINS WITHIN CONTRACT LIMITS SHALL BE PROTECTED FROM INTRUSION OF SEDIMENT WITH A FILTER FABRIC SILT SACK. THE TOE OF SLOPES SHALL BE PROTECTED BY MEANS OF A SILT FENCE. ADDITIONAL ITEMS ARE NOTED ON THE CONSTRUCTION DRAWINGS.

6. SAWCUTTING PAVEMENT EXISTING BITUMINOUS AND CONCRETE SURFACES SHALL BE SAWCUT TO THE LIMITS OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER. IF THE EDGE IS DAMAGED AFTER SAWCUTTING, THE EDGE SHALL BE RECUT AS DIRECTED BY THE ENGINEER.

#### 7. CONSTRUCTION STAKING

THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION STAKING REQUIRED FOR THE CONSTRUCTION. OWNER WILL PROVIDE ELECTRONIC FILE WITH DESIGN INFORMATION, IF REQUESTED.

#### 8. SOIL BORINGS

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME OTHER THAN AT THE EXACT LOCATION OF THE BORINGS. THE GEOTECHNICAL REPORT IS INCLUDED IN THE APPENDIX OF THE SPECIFICATIONS

#### 9. RECORD DRAWINGS

CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING AND FURNISHING TO THE OWNER AS-BUILT LOCATIONS AND ELEVATIONS OF ALL UTILITY CONSTRUCTION PRIOR TO THE CONTRACTOR'S FINAL PAYMENT APPLICATION.

## 10. EXISTING UNDERGROUND UTILITIES

THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE PLANS ARE BASED ON FIELD OBSERVATIONS AND AVAILABLE SITE DESIGN DRAWINGS. NO RECORD OR "AS-BUILT DRAWINGS ARE AVAILABLE. LOCATIONS OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE. STORM AND SANITARY SEWER LOCATIONS ARE BASED ON STRAIGHT LINE GRADES AND ALIGNMENT BETWEEN STRUCTURES. THE CONTRACTOR IS REQUIRED TO LOCATE AND PROTECT THE EXISTING UTILITIES.







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# GRADING LEGEND

<sup>873.04</sup> X	PROPOSED SPOT ELEVATION
1.3%	PROPOSED SURFACE SLOPE
	EXISTING CONTOUR
	PROPOSED CONTOUR
	CONSTRUCTION LIMITS

NOTE: SPOT GRADES REFLECT FINISHED SURFACES FOR PAVEMENT AND WALK.

# **GRADING & DRAINAGE NOTES**

- 1. ALL AREAS DISTURBED OUTSIDE OF THE PROJECT LIMITS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- 2. ALL SPOT GRADES AND GRADE LINES SHOWN ON THE PLANS ARE FINISHED GRADES OF THE PROPOSED SURFACE UNLESS NOTED OTHERWISE.
- 3. PROPOSED GRADES AND SLOPES SHALL MATCH EXISTING GRADES AND SLOPES AT CONSTRUCTION LIMITS OR AS SHOWN ON DRAWINGS. WHERE INTERSECTING SLOPE ELEVATIONS VARY, PROVIDE SMOOTH TRANSITIONAL EDGE.
- 4. TRANSITIONS FROM PROPOSED SIDEWALKS AND PAVEMENTS SHALL BE UNIFORM AND SMOOTH WITHOUT ABRUPT CHANGES IN GRADE OR ALIGNMENT.
- 5. PROPOSED FINISHED GRADES SHALL PROVIDE FOR POSITIVE DRAINAGE AWAY FROM THE BUILDING AND TO A DRAINAGE STRUCTURE, IF PRESENT, OR MATCH EXISTING GRADES. INFORM ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- 6. CONTRACTOR MAY ADJUST PLAN GRADES AS NEEDED TO FACILITATE MATCHING EXISTING PAVEMENT AND LAWN GRADES, TO PROVIDE SURFACE DRAINAGE, AND TO PREVENT PONDING OF STORM WATER.
- 7. CONTRACTOR SHALL FILL LOW/DEPRESSIONAL AREAS WHICH MAY OCCUR AS A RESULT OF CONSTRUCTION, SO AS TO PROVIDE CONSTANT UNIFORM SLOPES.
- 8. GRADE ALL WALKS AND WALKING SURFACES AS SHOWN ON THE PLANS. MAXIMUM LONGITUDINAL SLOPE OR RUNNING SLOPE WILL NOT EXCEED 5% (1v:20h). CROSS SLOPES WILL NOT EXCEED 2% (1v:50h). CONSTRUCTION TOLERANCE IS ACCOUNTED FOR IN MINIMUM AND MAXIMUM ALLOWABLE SLOPES.

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	SITE GRADING AND DRAINAGE	
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PROJ. #:		210282
DATE:	26	JUL 2022
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# DRAINAGE AREA LEGEND

\_\_\_\_\_ PROPOSED DRAINAGE



PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS	CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN
DRAINAGE MAP	
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	LEGEND	CONSTRUCTION LIMITS EXISTING TOPOGRAPHY PROPOSED FENCE ALUMINUM LANDSCAPE EDGING WITH 12" STAKES. PERMALOC CLEANLINE OR EQUAL. TURF GRASS DOUBLE SHREDDED HARDWOOD MULCH, NATURAL DECIDUOUS SHRUB EVERGREEN SHRUB DECIDUOUS TREE CALCULATIONS HEDGE 3' HT, 1 TREE/30'	INTERIOR: 1 TR AR SOUTH PARKING REQUIRED PROVIDED REQUIRED PROVIDED REQUIRED PROVIDED REQUIRED PROVIDED	EE AND 15 SF LANDS EE AND 15 SF LANDS EA (LESS 20' PERIMI CONTERNING OF ANTICIPATION CONTENTIAL STREED FOR THE STREES CONTENTIAL STREES CO	SCAPED AREA/15 SF PARKING LOT TERP SS 20' PERIMETER 3,406 SF)	PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN
						LANDSCAPE PLAN
CODE TREES	SCIENTIFIC NAME	COMMON NAME	<i>QTY</i>	SIZE	COMMENTS	
Aa Ar	Amelanchier arborea Acer rubrum	SERVICEBERRY       RED MMAPLE	4 7	2.5" CAL.	PLANT AS PER PLAN PLANT AS PER PLAN	REVISIONS
Gt Ns	Gleditsia tricanthos var inermis 'Skyline' Nyssa sylvatica	SKYLINE HONEYLOCUST BLACK GUM	7	2.5" CAL. 2.5" CAI	PLANT AS PER PLAN PLANT AS PER PLAN	REV DESCRIPTION DATE
SHRUBS and PER	ENNIALS		<b>~</b>			
	Astilbe chinensis var. pumila		12 •	#1 CONT.	PLANT 2' O.C.	<u> </u>
Ac		INOQUOIS BLAUTT BLAUK UNUKEBEKKT	ð	#5 CUNT.	PLAINT 5 U.C.	
Ac Am Hp	Hypericum prolificum	SHRUBBY ST JOHN'S WORT	12	#3 CONT.	PLANT 3' O.C.	· · · · · · · · · · · · · · · · · · ·
Ac Am Hp Ig	Hypericum prolificum Ilex glabra 'Shamrock'	SHRUBBY ST JOHN'S WORT SHAMROCK INKBERRY	12 16	#3 CONT. #3 CONT.	PLANT 3' O.C. PLANT 3' O.C.	· · · · · · · · · · · · · · · · · · ·

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PROJ. #:

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THE BAR BELOW SHOWS GRAYSCALE FROM WHITE TO SOLID BLACK WHITE BLACK	
PLOTTED BY: MAKAREWICZ, KEVIN 7727/2022 7:42 AM K:12021/210282 PPS INAEF_EASTLOTIDRAWINGSIDS_210282 PPS_INAEF_EASTLOTISHEETSI210282_LANDSCAPE.DWG-LANDSCAPE DETAILS C2AE.STANDARD.STB DESIGNED BY: CHECKED BY: APPROVED BY:	

<ul> <li>LANDSCAPE NOTES</li> <li>THE CONTRACTOR SHALL FIELD STAKE LOCATIONS OF ALL PROPOSED LANDSCAPE MATERIAL FOR REVIEW BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO ADJUST LOCATIONS OF PLANT MATERIAL PRIOR TO INSTALLATION.</li> <li>REFER TO PLANT SCHEDULE, THIS SHEET FOR PLANT IDENTIFICATION AND PLANTING REQUIREMENTS. REFER TO SPECIFICATIONS FOR INSTALLATION OF PLANTS WITH OTHER TRADES, INCLUDING CONCRETE, AND ANY OTHERS.</li> <li>CONTRACTOR SHALL COORDINATE INSTALLATION OF PLANTS WITH OTHER TRADES, INCLUDING CONCRETE, AND ANY OTHERS.</li> <li>ALL PLANTING AREAS TO BE COVERED IN 4" OF DOUBLE SHREDDED HARDWOOD MULCH AT TIME OF PLANTINGS UNLESS OTHERWISE SPECIFIED.</li> <li>ALL AREAS DISTURBED BY CONSTRUCTION NOT BUILT, PAVED OR OTHERWISE COVERED SHALL BE HYDROMULCH SEEDED AT THE FOLLOWING RATE AND MIXTURE; RATE=6 LBS/1000 SFT 20% ROCKSTAR KENTUCKY BLUEGRASS 20% CATEWAY KENTUCKY BLUEGRASS 20% AMBROSE CHEWING REPORTAL ATO A PROVED EQUAL) AT THE FOLLOWING MIXTURE; REFERENTING THE FORTAGE, SHALL BE SEEDED WITH DERT RESISTANT SEED MIX (PRARE MOON NURSERY OR APPROVED EQUAL) AT THE FOLLOWING MIXTURE; RATE = 11.48 BLUEGRAMA 2% PLAINS OVAL SEDGE 20% CATEWAY APPROVED EQUAL) AT THE FOLLOWING MIXTURE; 1% SWIT</li></ul>
PERMALOC OLEANLINE ALUMINUM LANDSCAPE EDOING OR APPROVED UNLESS OTHERWISE SPECIFIED UNLESS OTHERWISE SPECIFIED UNDER THE ADVISOR OF THE ADVISOR
LOOPS ON THE EDGING $-4^{-6^{\circ}}$ DOUBLE GROUND HARDWOOD MULCH SURFACE NOTES: 1. 16'-0" SECTIONS TO INCLUDE (5) 12" ALUMINUM STAKES 2. COMPACT GRADES ADJACENT TO EDGING TO AVOID SETTLING 3. CORNERS - CUT BASE OF EDGING UP HALF WAY AND FORM A CONTINUOUS CORNER 4. IN ADDITION TO THE MAINTENANCE STRIPS, EDGING DETAIL AND INSTALLATION SHALL APPLY TO ALL SITE PLANTING BEDS AS SHOWN ON THE PLANS 





VICINITY MAP





<u>NOTES</u>

- 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.

(\$51) SILT FENCE



#### NOTES:

- 1. PLACE SILT FENCE ON SLOPE CONTOURS TO MAXIMIZE EFFICIENCY. 2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE
- SEDIMENT WHEN NECESSARY. MAXIMUM STORAGE HEIGHT: 9" 3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT
- CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED. 4. 10' MAX. SPACING WITH WIRE SUPPORTED FENCE, 6' MAX SPACING WITHOUT WIRE SUPPORTED FENCE.

# MAINTENANCE

- INSPECT FREQUENTLY AND IMMEDIATELY AFTER EACH STORM EVENT. CHECK SEVERAL TIMES DURING PROLONGED STORM EVENTS. IF NECESSARY, REPAIR IMMEDIATELY.
- IF THE SEDIMENT HAS REACHED 1/3 THE HEIGHT OF THE FENCE, THE SOIL SHOULD BE REMOVED AND DISPOSED OF IN A STABLE UPLAND SITE.
- THE FENCE SHOULD BE RE-INSTALLED IF WATER IS SEEPING UNDERNEATH IT OR IF THE FENCE HAS BECOME INEFFECTIVE.
- SILT FENCE SHOULD BE REMOVED ONCE VEGETATION IS ESTABLISHED AND UP-SLOPE AREA HAS STABILIZED.

# CONSTRUCTION SCHEDULE

YEAR:						20	23					
SESC SCHEDULE AND SEQUENCING	NAL	FEB	MARCH	APRIL	МАҮ	JUNE	JULY	AUG	SEPT	ост	NOV	DEC
PLACE AND MAINTAIN TEMPORARY EROSION CONTROL MEASURES												
PARKING LOT GRADING												
STORM NETWORK IMPROVEMENTS												
INSTALL PAVEMENT AND SIDEWALKS						-		-				
FINAL SITE GRADING AND SITE RESTORATION												
INSTALL PERMANENT CONTROL MEASURES												
REMOVE TEMPORARY EROSION CONTROL MEASURES												

 $\frac{PROJECT DESCRIPTION}{RE-GRADING AND RESTORATION OF APPROXIMATELY 1.8\pm ACRES OF THE SITE FOR THE PURPOSE OF TWO$ PARKING LOTS, AND SIDEWALKS.

<u>SOIL TYPES</u> UkB — URBAN LAND-KALAMAZOO COMPLEX, 0 TO 6 PERCENT

DISTANCE TO NEAREST WATER BODY PROJECT IS APPROXIMATELY 1,700 FT SOUTH OF WEST FORK PORTAGE CREEK.



ISOMETRIC VIEW



INSTALLATION DETAIL

#### <u>MAINTENANCE</u>

- DROP INLET FILTERS SHOULD BE INSPECTED ROUTINELY AND AFTER EACH 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 INLET PROTECTION WHEN AREAS ARE STABILIZED AND STREETS HAVE BEEN SWEPT.

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VORTHERN HIGH SCHOOL ETIC FIELD PARKING LOTS	AO COUNTY, MICHIGAN

PORTAGE NORTHERN HIGH SCHOOL EAST ATHLETIC FIELD PARKING LOTS	CITY OF PORTAGE, KALAMAZOO COUNTY, MICHIGAN
SESC NOTES & DETAILS	
REVISIONS REV DESCRIPTION	DATE
PROJ. #: 2 DATE: 26 JUL	10282 2022
sheet C-500	

## (E5) DUST CONTROL

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

• TO REDUCE DUST AND SEDIMENTATION FROM WIND AND CONSTRUCTION ACTIVITIES.

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

- 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.

#### (E6) MULCHING

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

• 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

# <u>WHERE</u>

SEEDS. INHIBITS SEED CONSUMPTION BY BIRDS.

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

- 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: g. 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 MIN OF 2 TONS/ACRE OR APPROX. 50 LBS/1000 SFT TO COVER THE SURFACE. INCREASE APPLICATION RATES 50% FOR DORMANT SEEDING.
- b. ROCK CRUSHED STONE AND GRAVEL MAINTAIN EFFECTIVENESS INDEFINITELY IF MAINTAINED TO REPAIR COMPACTION. COVER 2-3" IN DEPTH (APPROX. 2.27 TONS/1000 SQ. FT.). c. 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 STANDING 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: a. 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. b. <u>RECYCLED NEWSPRINT</u>. MIX 1850 LBS. OF NEWSPRINT WITH 3700 GALLONS OF WATER. c. WOOD FIBER. MIX 1850 LBS. OF WOOD FIBER WITH 3700 GALLONS OF WATER.
- d. GUAR GUM. MIX 120 LBS. OF DRY ADHESIVE AND A MINIMUM OF 620 LBS. RECYCLED NEWSPRINT
- AS A TRACER WITH 3225 GALLONS OF WATER. e. OTHER TACKIFIERS. MIX 240 LBS. OF DRY ADHESIVE OR THE MANUFACTURER'S RECOMMENDED RATE AND A MIN OF 620 LBS. OF RECYCLED NEWSPRINT AS A TRACER WITH 3,225 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.

# (E7) TEMPORARY SEEDING SPECIFICATIONS

#### <u>WHEN</u> • WHEN AN AREA NEEDS STABILIZATION DURING A BREAK IN CONSTRUCTION. THIS WILL STABILIZE SOIL PREVENTS EROSION/SEDIMENTATION PROBLEMS FROM DEVELOPING. ALLOWS RUNOFF TO INFILTRATE SOIL.

#### <u>WHERE</u>

• USED ON CONSTRUCTION AND EARTH CHANGE SITES WHERE EARTH CHANGE HAS BEEN INITIATED BUT WILL NOT BE COMPLETED WITHIN TWO NORMAL WORK WEEKS. • A TEMPORARY MEASURE WHEN AN AREA NEEDS STABILIZATION DURING A BREAK IN CONSTRUCTION.

HOW

- REQUIRING TEMPORARY SEEDING. 2. SELECT ANNUAL GRASS SEED FOR TEMPORARY COVER AREAS.
- 3. SEED MIXES MAY VARY, SHOULD ONLY CONTAIN ANNUAL, NON-AGGRESSIVE SPECIES, AND
- GENERALLY INCLUDE RYE, WHEAT, OR OAT SPECIES. 4. SEED MIXES SHOULD BE OBTAINED FROM A SEED SUPPLIER AS SEED MIXES ARE
- DEPENDENT ON SOIL TYPE, LIGHT, MOISTURE, AND USE APPLICATION.
- 5. PREPARE SEEDBED BY REMOVAL OF CONSTRUCTION/WOODY DEBRIS. 6. THEN SCARIFY OR RAKE SEEDBED.
- 7. SLOPES STEEPER THAN 1:3 SHOULD BE ROUGHENED.
- 8. APPLY SEED AS SOON AS POSSIBLE AFTER SEEDBED PREPARATION.
- 9. MULCH IMMEDIATELY AFTER SEEDING ALL SLOPES, UNSTABLE SOILS, HEAVY CLAY SOILS, AND ALL AREAS ADJACENT TO WETLANDS, WATERCOURSES, OR SENSITIVE AREAS.
- 10. THE TIME TO SEED IS DEPENDENT ON THE CLIMATE OF THE AREA. MICHIGAN HAS THREE CLIMATIC ZONES.
- 11. PROTECT SEEDED AREAS FROM PEDESTRIAN/VEHICULAR TRAFFIC.
- 13. INSPECT TEMPORARY SEEDED AREAS WEEKLY AND FOLLOWING EACH RAIN EVENT UNTIL FINAL
- GRADING AND STABILIZATION ACTIVITIES ARE COMPLETED. 14. MUST BE FOLLOWED BY PERMANENT SEEDING.
- SEEDS NEED ADEQUATE TIME TO ESTABLISH.

 MAY NOT BE APPROPRIATE IN AREAS WITH FREQUENT TRAFFIC. • SEEDED AREA MAY REQUIRE IRRIGATION IN DRY PERIODS.

## TEMPORARY SEEDING DATES

	Zone 1	<u>Zone 2</u>	Zone 3	Amo	unt
Seed Type	Lower Peninsula (South of U.S. 10)	Lower Peninsula (North of U.S. 10)	Upper Peninsula	per 1,000 Sft	per Acre
Oats, barley Annual Rye Wheat Buckwheat Perennial Ryearass	4/1 - 9/15 8/1 - 10/15 9/20 - 10/15 6/1 - 7/15 8/1 - 10/15	4/15 - 8/1 8/1 - 10/10 9/10 - 10/10 6/1 - 7/15 6/1 - 8/1	5/1 -8/1 8/1 - 11/1 9/10 - 10/1 6/15 - 7/15 8/1 - 10/1	2 lbs. 3 lbs. 3 lbs. 2 lbs. 1 lbs.	96 lbs. 120 lbs. 120 lbs. 75 lbs. 20 lbs.

e #J+2 (1999)

# (E8) PERMANENT SEEDING

- <u>WHEN</u>
- 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.
- TO STABILIZE SOIL AND PREVENT OR REDUCE SOIL EROSION/SEDIMENTATION PROBLEMS FROM DEVELOPING.

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

- 1. REVIEW SESC PLAN AND CONSTRUCTION PHASING TO IDENTIFY AREAS IN NEED OF PERMANENT VEGETATIVE STABILIZATION.
- . 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.

#### SEEDING WINDOW

		Planting Zones	
Type of Seeding	<u>Zone 1</u> Lower Peninsula (South of U.S. 10)	<u>Zone 2</u> Lower Peninsula (North of U.S. 10)	<u>Zone 3</u> Upper Peninsula
Permanent Seeding Dormant Seeding*	4/15 – 10/15 11/15 – Freeze	5/1 – 10/1 11/01 – Freeze	5/1 - 9/20 11/1 - Freeze
SOURCE: ADAPTED FROM	I MDOT 2012 STANDA	rd specifications fo	OR CONSTRUCTION

SEEDING DATE

		Planting Zones	
Description	<u>Zone 1</u> Lower Peninsula (South of U.S. 10)	<u>Zone 2</u> Lower Peninsula (North of U.S. 10)	<u>Zone 3</u> Upper Peninsula
With Irrigation or Mulch	4/1 - 8/1	5/1 - 9/20	5/1 - 9/10
<u>Spring</u> Without Irrigation or Mulch	4/1 - 5/20	5/1 - 6/10	5/1 - 6/15
<u>Fall</u> Without Irrigation or Mulch	8/10 - 10/1	8/1 - 9/20	8/1 - 9/20
Dormant Seeding*	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, AND 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.

1. REVIEW CONSTRUCTION PHASING AND SOIL EROSION CONTROL PLAN TO IDENTIFY AREAS

12. DIVERT CONCENTRATED FLOWS AWAY FROM SEEDED AREA UNTIL VEGETATION IS ESTABLISHED.

# (S7) RIPRAP

 WHEN CONCENTRATED WATER FLOWS HAVE THE POTENTIAL TO CREATE SCOUR, DOWN-CUTTING, OR LATERAL CUTTING.

• TO PREVENT LOSS OF LAND OR DAMAGE TO UTILITIES OR STRUCTURES. IN AQUATIC APPLICATIONS, RIPRAP IS USED TO CONTROL CHANNEL MEANDER AND MAINTAIN CAPACITY, PROTECT AGAINST WAVE ATTACK, AND REDUCE SEDIMENT LOAD.

• IN NATURAL OR CONSTRUCTED CHANNELS WITH AREAS SUSCEPTIBLE TO EROSION FROM THE ACTION OF WATER, ICE, OR DEBRIS, OR TO DAMAGE BY LIVESTOCK OR VEHICULAR TRAFFIC. • IN SHORELINE AREAS WHERE THE EROSION PROBLEM MAY BE SOLVED THROUGH SIMPLE STRUCTURAL MFASURFS • ON SLOPES WITH PROFILES MEASURING 1:1.5 OR LESS.

- REVIEW SUBJECT SITE TO IDENTIFY AREAS SUBJECT TO CONCENTRATED FLOWS OR WAVE/CURRENT
- 2. THE APPROPRIATENESS AND EXTENT OF RIPRAP PLACEMENT IS SITE SPECIFIC AND SHOULD BE DETERMINED IN THE FIELD.
- 3. THE AREA UNDER REVIEW FOR RIPRAP PLACEMENT MUST BE SHAPED AND CONTOURED APPROPRIATELY BY GRADING PRIOR TO MATERIAL PLACEMENT.
- 4. NON-WOVEN GEOTEXTILE FABRIC SHOULD BE INSTALLED PRIOR TO RIPRAP PLACEMENT, WITH UPPER END AND TOE END OF FABRIC BURIED OR ANCHORED TO PREVENT MOVEMENT.
- 5. RIPRAP PLACEMENT SHOULD BE STARTED AT A STABILIZED LOCATION AND ENDED AT A STABILIZED OR CONTOURED POINT
- 6. MATERIAL SELECTED FOR RIPRAP SHOULD BE HARD, ANGULAR, AND RESISTANT TO WEATHERING. APPROPRIATE MATERIAL SIZE DEPENDS ON EXPECTED WATER ENERGY AND INTENDED FUNCTION OF THE MATERIAL.
- 7. RIPRAP MIXTURE SHOULD BE AN EVEN MIXTURE OF STONE SIZES BASED ON THE AVERAGE D50. THIS MEANS 50% OF THE STONE, BY SIZE, WILL BE LARGER THAN THE DIAMETER SPECIFIED, AND 50% WILL BE SMALLER THAN THE SIZE SPECIFIED. THE DIAMETER OF THE LARGEST STONE SHOULD NOT BE MORE THAN 1.5 TIMES THE D50 STONE SIZE. 8. SEE TABLE FOR TYPICAL RIPRAP SIZE.

9. ROCK SHALL BE PLACED SO THAT LARGER ROCKS ARE UNIFORMLY DISTRIBUTED AND IN CONTACT WITH ONE ANOTHER. SMALLER ROCKS SHOULD FILL THE VOIDS. MAINTENANC

• ALL INSTALLATIONS SHOULD BE INSPECTED IMMEDIATELY AFTER THE FIRST RAINFALL TO CONFIRM THE STABILITY OF THE PLACED MATERIAL. FOLLOW-UP INSPECTIONS SHOULD OCCUR REGULARLY AND PROVISIONS MADE FOR PROMPT REPAIR IF NEEDED.

• AREA IS CLEARED PRIOR TO THE ADDITION OF RIPRAP, THEREFORE NO AREAS ARE PRESERVED WITH NATIVE VEGETATION.

SIZE	OF	TYPICAL	RIPRAP	STONES	

Watahk	Approximate	Typical Rectangular Shap		
(lbs.)	Diameter D <sup>50</sup>	Length	Width/Height	
50	10"	18"	6"	
100	13"	21"	7"	
150	14"	24"	8"	
300	18"	30 <b>"</b>	10"	
500	22"	36"	12"	
1,000	27"	<b>45</b> "	15"	
1,500	31"	52 <b>"</b>	17"	
2,000	34"	57 <b>"</b>	19"	
4,000	43"	72"	24"	
6,000	49"	83"	28"	
8,000	54"	90"	30"	

Source: Adapted from USDA NRCS





OUTLET DETAIL

<u>SOIL E</u>	ROSION CONTROL MEASU	RES KEY
KEY	DETAIL	NOTES
E7	TEMPORARY SEEDING	AS REQUIRED TO REDUCE SOIL EROSION AND DUST
E8	PERMANENT SEEDING	REFER TO PLAN AND LEGEND FOR LIMITS. SEE LANDSCAPE PLANS FOR SEEDING REQUIREMENTS.
<b>S</b> 7	RIP RAP	
\$28	MULCH BLANKET	
<b>S51</b>	SILT FENCE	CONTRACTOR SHALL REMOVE ONCE TURF IS ESTABLISHED
\$58	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., OR APPROVED EQUAL
SESC DETAILS UTILIZE STATE OF MICHIGAN, DEPARTMENT OF MANAGEMENT AND BUDGET, INFRASTRUCTURE SERVICES, DESIGN AND CONSTRUCTION DIVISION "SOIL EROSION AND SEDIMENTATION CONTROL GUIDEBOOK".		

OPFRATIONS

# **GENERAL NOTES**

1. IF THE PROPERTY SUBJECT TO THIS SOIL EROSION AND SEDIMENTATION CONTROL PERMIT IS TRANSFERRED, THE PERMIT, INCLUDING ALL PERMIT OBLIGATIONS. ARE TRANSFERRED WITH THE PROPERTY ALONG WITH THE RESPONSIBILITY FOR ANY VIOLATIONS OF THE PERMIT THAT EXIST ON THE DATE OF THE TRANSFER OF THE PROPERTY. IF A PARCEL OF THE PROPERTY, BUT NOT THE ENTIRE PROPERTY IS TRANSFERRED. THE PERMIT OBLIGATIONS AND CONDITIONS WITH RESPECT TO THAT PARCEL ARE TRANSFERRED. BUT NOT THE PERMIT: ALONG WITH THE RESPONSIBILITY FOR ANY VIOLATIONS OF THE PERMIT WITH RESPECT TO THAT PARCEL THAT EXIST ON THE DATE OF THE TRANSFER OF THE PARCEL. NOTICE OF PROPERTY OR PARCEL TRANSFERS SHALL BE SUBMITTED TO THE CITY OF PORTAGE PRIOR TO TRANSFER AND SHALL OTHERWISE BE IN COMPLIANCE WITH MCL 324.9112. MAINTENANCE RESPONSIBILITIES SHALL BECOME PART OF ANY SALES AGREEMENTS FOR THE LAND ON WHICH THE PERMANENT SESC MEASURES ARE LOCATED. RESUBMISSION SHALL ADDRESS THESE ISSUES.

2. THE LANDOWNER (PERMITTEE), CONTRACTOR(S), AND ANY AGENT INVOLVED IN OBTAINING OR EXERCISING AND PERFORMING THE EARTH DISTURBANCE WORK AUTHORIZED BY A SOIL EROSION PERMIT, ARE ALL HELD RESPONSIBLE TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH ALL APPROVED PLANS, SPECIFICATIONS, AND CONDITIONS CONTAINED AND PERMITTED THEREIN. PRIOR TO INITIATING EARTH DISTURBANCE AUTHORIZED THEREIN, THE PERMITTEE IS REQUIRED TO PROVIDE A COPY OF THE PERMIT AND APPROVED SESC PLAN TO ANY CONTRACTOR(S) AND AGENTS INVOLVED WITH EARTH DISTURBANCE WORK. THE CONTRACTOR(S) AND AGENTS ARE REQUIRED TO PROVIDE A COPY OF THE PERMIT AND APPROVED SESC PLAN TO CALL SUBCONTRACTORS INVOLVED WITH EARTH DISTURBANCE WORK.

APPROVAL OF THIS SOIL EROSION PERMIT DOES NOT AUTHORIZE ANY EARTH DISTURBANCE ACTIVITY OFF-SITE, INCLUDING BUT NOT LIMITED TO REMOVAL OF EXCAVATED MATERIAL. SHOULD IT BECOME NECESSARY THAT EXCAVATED MATERIAL FROM THIS SITE NEEDS TO BE DEPOSITED OFF-SITE, THAT MATERIAL SHALL NOT BE REMOVED UNTIL THE DEPOSIT LOCATION AND RESULTING EARTH DISTURBANCE IS EVALUATED BY THE CITY OF PORTAGE FOR A SOIL EROSION PERMIT, AND, IF NECESSARY, THOSE SOIL EROSION PERMITS HAVE BEEN ISSUED. THE PERMITTEE IS TO INFORM THE CITY OF PORTAGE OF THE NEED TO REMOVE SOILS FROM THE SITE IN A TIMELY MANNER SO THAT OTHER PERMITS, IF NEEDED, CAN BE ISSUED.

4. IN ACCORDANCE WITH RULE 1709 PROMULGATED UNDER THE AUTHORITY OF PART 91, SOIL EROSION AND SEDIMENTATION CONTROL, OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED, AND IN ADDITION TO THE INFORMATION ON THE ATTACHED PLAN(S) AND SPECIAL CONDITIONS. THE FOLLOWING GENERAL CONDITIONS APPLY TO THE EARTH CHANGED AUTHORIZED BY THIS PERMIT:

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

• REMOVE SEDIMENT CAUSED BY ACCELERATED SOIL EROSION FROM RUNOFF WATER BEFORE IT LEAVES THE SITE OF THE EARTH CHANGE. • TEMPORARY OR PERMANENT CONTROL MEASURES SHALL BE DESIGNED AND INSTALLED TO CONVEY WATER AROUND, THROUGH, OR FROM THE EARTH CHANGE AT A NON-EROSIVE VELOCITY.

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

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

• THE CONTRACTOR SHALL VERIFY PROPER INSTALLATION OF THE SESC MEASURES PRIOR TO COMMENCEMENT OF EARTH DISTURBANCE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE SPECIFICATIONS. • POST THE ENCLOSED SOIL EROSION AND SEDIMENTATION POLLUTION CONTROL PERMIT ON SITE SO THAT IT IS CLEARLY VISIBLE FROM A PUBLIC ROAD UNTIL THE LAND IS PERMANENTLY STABILIZED AND THE PERMIT IS CLOSED.

• THE CITY OF PORTAGE SHALL BE COPIED THE NPDES WEEKLY LOG REPORTS BY THE SECOND AND FOURTH FRIDAY EACH MONTH UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE PERMIT IS CLOSED. • THE PRIME CONTRACTOR SHALL PROVIDE CONTACT INFORMATION OF ALL CONTRACTORS WHO WILL BE DISTURBING THE EARTH WITHIN THE PROJECT LIMITS. • THE CONTRACTOR SHALL PROVIDE THE ON-SITE CONTACT PERSON, OFFICE LOCATION, MOBILE PHONE NUMBER AND EMAIL ADDRESS TO

THE CITY OF PORTAGE, PRIOR TO COMMENCEMENT OF ANY EARTH DISTURBANCE AUTHORIZED BY THE SESC PERMIT.

5. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE CITY OF PORTAGE REQUIREMENTS AND PROJECT SPECIFICATIONS.

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.

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. THE PERMIT WILL NOT BE CLOSED UNTIL THE TEMPORARY MEASURES HAVE BEEN REMOVED.

8. IF DEWATERING IS NECESSARY, CONTRACTOR SHALL SUBMIT A DEWATERING PLAN TO THE CITY OF PORTAGE FOR APPROVAL. 9. THE CONTRACTOR SHALL PLACE THE TEMPORARY SILT FENCE AND CATCH BASIN SILT TRAPS PRIOR TO COMMENCING GRADING

10. INSTALL FABRIC DROP 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.

11. 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

12. EXCAVATE FOR PROPOSED SITE AND UTILITY CONSTRUCTION AS NECESSARY. DO NOT EXPOSE AREAS FAR IN ADVANCE OF THE PROPOSED CONSTRUCTION FOR THAT AREA. ROUGHEN AND SCARIFY EXPOSED SURFACES TO REDUCE RUNOFF VELOCITY AND SEDIMENTATION. MAINTAIN VEGETATION WHENEVER POSSIBLE TO PROVIDE A NATURAL BUFFER.

13. AFTER COMPLETION OF PROPOSED DRAINAGE STRUCTURES, INSTALL TEMPORARY SEDIMENT BARRIERS WITH DEBRIS BAG. DEBRIS BAGS SHALL BE "SILTSACK" BY ACF OR "BASIN BAG" BY CONSTRUCTION SUPPLY INC., OR EQUAL.

14. TOPSOIL, SEED, FERTILIZE & MULCH EXPOSED AREAS WITHIN 5 CALENDAR DAYS OF ACHIEVING FINAL GRADE TO PROTECT AND RESTORE PERMANENT VEGETATION.

15. 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 STABALIZE THE AREA WITH APPLIED POLYMER SYSTEMS, INC., "SILT STOP" OR APPROVED EQUAL.

16. THE CONTRACTOR SHALL WATER EXPOSED GROUND, AS REQUIRED, TO CONTROL AIRBORNE PARTICULATE MATTER.

17. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS AND UNTIL PERMANENT VEGETATION IS ESTABLISHED. REMOVE ACCUMULATED SEDIMENT FROM ALL DRAINAGE AND UTILITY STRUCTURES.

18. THE SITE WILL BE PERIODICALLY INSPECTED BY THE STAFF OF THE CITY OF PORTAGE. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE RULES AND REGULATIONS OF THAT OFFICE.

19. 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.

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

21. 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.

22. 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.

23. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES UPON FINAL APPROVAL OF ALL REVIEWING AGENCIES AND THE OWNER.

24. 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:

• DRIVES, CURB AND GUTTER, AND OTHER HARD SURFACES ON SITE DITCHES AND SWALES

THE OWNER SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE PROGRAM. THE MAINTENANCE PROGRAM SHALL CONSIST OF, BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS:

• 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. • ON SITE DITCHES AND SWALES - PERIODIC INSPECTION, REPAIR OF ERODED AREAS IF ANY, AND RE-ESTABLISHMENT OF TURF

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