

DETROIT RIVER AOC- STONY ISLAND HABITAT RESTORATION PROJECT THE DETROIT RIVER, WAYNE COUNTY, MICHIGAN





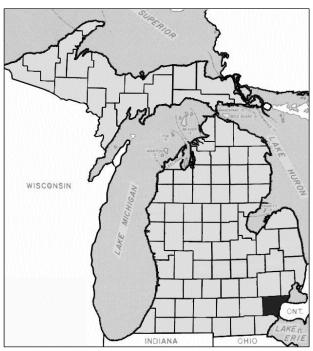


WITH:





SMITHGROUP JJR

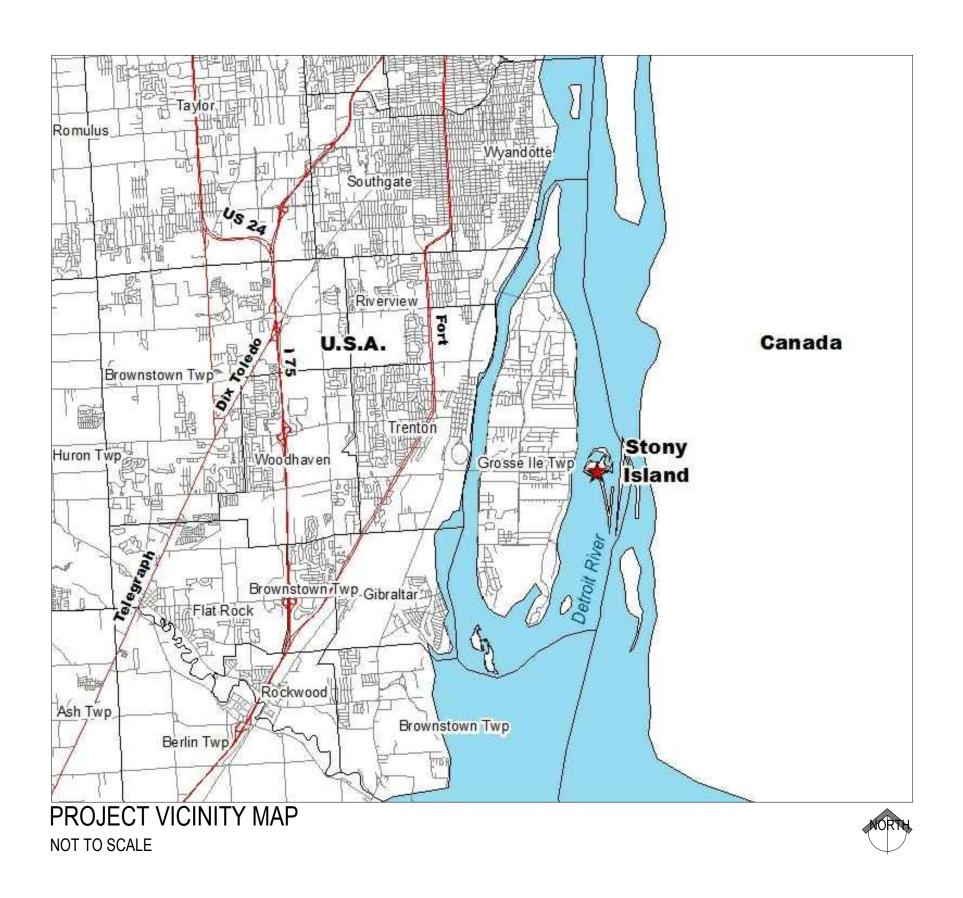


DETROIT RIVER WAYNE COUNTY, MI NOT TO SCALE



GREAT LAKES RESTORATION INITIATIVE (GLRI) PROJECT # NA15NMF4630293

FOR INFORMATION - JANUARY, 2016



DRAWING INDEX

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EXISTIN
SITE PL
NORTH
SOUTH
SHOAL
TYPICA
SHOAL
SHOAL
HABITA
HABITA
PROJE



SHEET NG CONDITIONS LAN OVERVIEW BAY SITE PLAN **BAY SITE PLAN PROFILES** AL SECTIONS **DETAILS - PROPOSED WEST SHOAL DETAILS - PROPOSED SOUTH SHOAL RESTORATION** AT STRUCTURE DETAILS AT STRUCTURE DETAILS CONTINUED ECT NOTES

EXISTING CONDITIONS NOTES:

- 1. THE CONTRACT DOCUMENTS REFLECT SURVEYS AND ELEVATIONS AT THE WORK AREA AS FOUND IN CONDITIONS SURVEYS MADE AS STATED ON THE DRAWINGS. THE CONDITIONS SHOWN ARE INDICATIVE OF THOSE THAT PREVAILED AT THE TIME OF THE SITE INVESTIGATIONS AND MAY BE DIFFERENT THAT THOSE AT THE TIME CONSTRUCTION. GENERAL LOCATIONS OF APPLICABLE EXISTING UTILITIES, VEGETATION, STRUCTURES, EQUIPMENT AND IMPROVEMENTS, BASED UPON LATEST INFORMATION AVAILABLE HAVE BEEN SHOWN ON THE DRAWINGS.
- 2. UTILITY LINES, VEGETATION, STRUCTURES, EQUIPMENT OR IMPROVEMENTS SHALL BE PROTECTED FROM DAMAGE, AND IF DAMAGED, SHALL BE REPAIRED BY THE CONTRACTOR AT ITS OWN EXPENSE.
- 3. THE WATER SURFACE ELEVATION AT THE TIME OF THE SURVEY IS SHOWN ON THE PROJECT DRAWINGS. WATER LEVELS HAVE FLUCTUATED SINCE THE SURVEY WAS CONDUCTED. CONTRACTOR TO USE BEST AVAILABLE INFORMATION TO UNDERSTAND THE CONDITIONS OF THE WATER LEVELS.



AERIAL PHOTO OF STONY ISLAND VIEW LOOKING NORTHEAST

SURVEY PROVIDED BY SMITHGROUP JJR, JANUARY 2014

SURVEY NOTES:

- 1. HORIZONTAL DATUM IS ACCORDING TO MICHIGAN STATE PLANE COORDINATES, SOUTH ZONE (2113). INTERNATIONAL FEET AS LINEAR UNIT OF MEASURE.
- 2. VERTICAL DATUM IS ACCORDING TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), WITH PRIMARY BENCHMARKS AND DATUM CONVERSIONS LISTED HEREON.
- 3. THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR. ALL INFORMATION REGARDING LAND BOUNDARY, EASEMENTS, AND OTHER INFORMATION THAT MAY AFFECT TITLE WAS GAINED FROM A CLIENT PROVIDED ALTA SURVEY, PROPERTY INFORMATION REFERENCE.
- 4. NO UNDERGROUND UTILITIES WERE RESEARCHED AS PART OF THIS EFFORT. NO EXCAVATIONS WERE MADE AS PART OF THIS SURVEY TO LOCATE BURIED STRUCTURES AND OR UTILITIES.
- 5. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED AND ARE NOT CONSIDERED A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE AND OR DEVELOPMENT OF THIS SITE.
- 6. SMITHGROUPJJR PERFORMED A BATHYMETRIC SURVEY OF A PORTION OF THE DETROIT RIVER, ADJACENT TO STONY ISLAND, AS ILLUSTRATED HEREON. THE RESULTANT ONE-FOOT CONTOURS ARE BASED ON SOUNDINGS, COMBINED WITH SHORE TOPOGRAPHY COLLECTED USING GLOBAL POSITIONING RECEIVERS REFERENCING THE MICHIGAN CONTINUOUSLY OPERATING REFERENCE SYSTEM (CORS) FOR PROJECT SITE CONTROL.

BENCHMARKS:

PRIMARY BENCHMARK NO. 82624 (NGS):

NATIONAL GEODETIC SURVEY PRIMARY BENCHMARK (NGS PID# DI6435); HEIGHT MODERNIZATION STATION ALUMINUM DISC, SET FLUSH ON A 16" DIAMETER CONC. CYLINDER, FLUSH WITH THE GROUND.

NORTHING= 223952.3878EASTING= 13446899.6702ELEVATION= 579.25 FEET (NAVD88)

PRIMARY BENCHMARK NO. H 115 X (NGS):

NATIONAL GEODETIC SURVEY PRIMARY BENCHMARK (NGS PID# NE0516); HEIGHT MODERNIZATION STATION ALUMINUM DISC, SET FLUSH ON A 16" DIAMETER CONC. CYLINDER, FLUSH WITH THE GROUND.

 NORTHING
 = 219063.3065

 EASTING
 = 13442499.9723

 ELEVATION
 = 581.68 FEET (NAVD88)

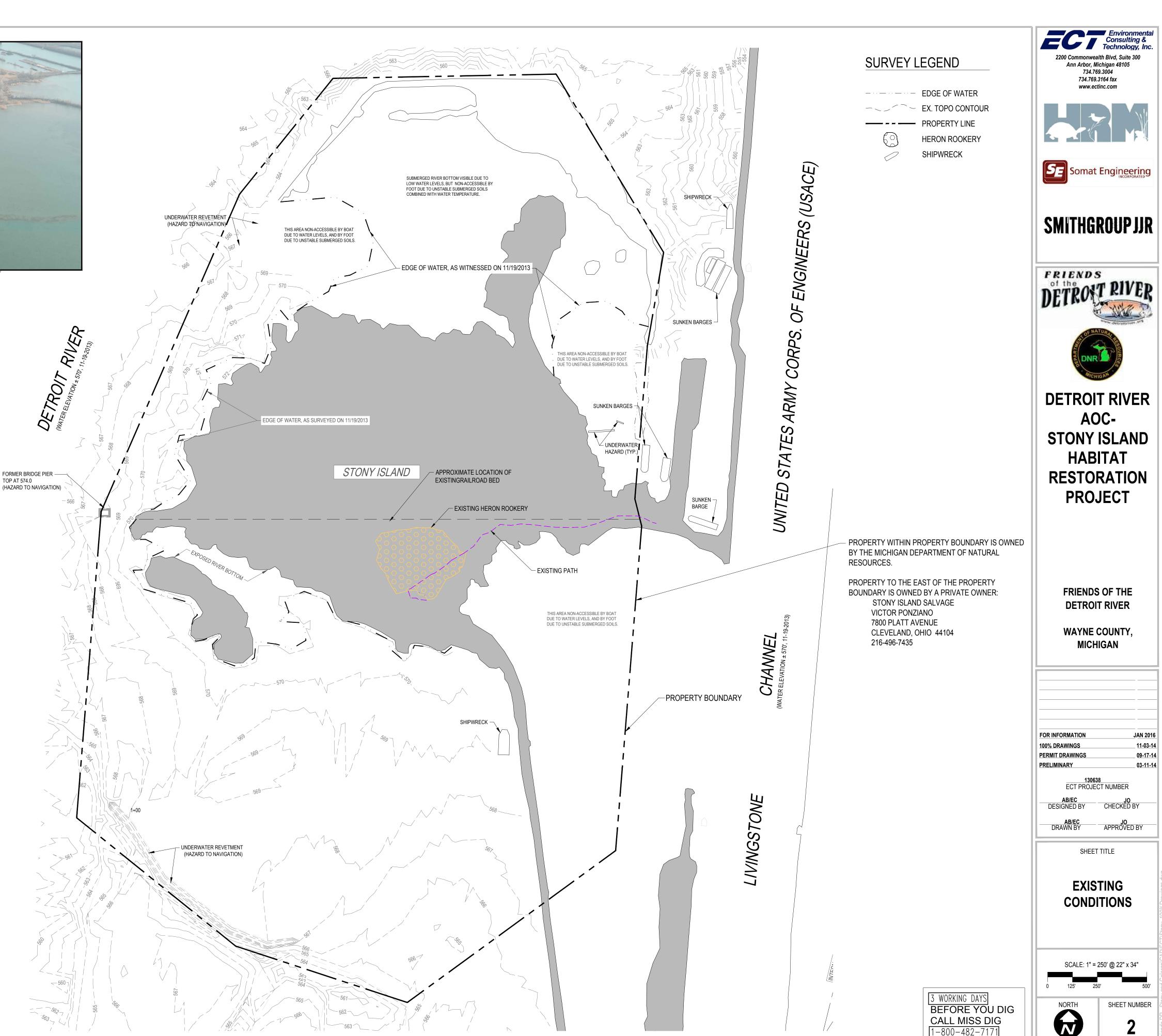
DATUM CONVERSIONS:

NAVD88 = IGLD85 + 0.27 FEET NAVD88 = NGVD29 - 0.56 FEET

FLOODPLAIN NOTES:

THE ENTIRETY OF STONY ISLAND LIES WITHIN FEMA FIRM ZONE AE, ACCORDING TO FEMA FIRM MAPS 26163C0535E AND 26163C0420E. COMMUNITY 260227, PANELS NO. 420 & 535 OF 575, MAP(S) REVISED FEBRUARY 2, 2012. THE FOLLOWING STATEMENTS APPLY:

- ZONE AE IS DEFINED AS "BASE FLOOD ELEVATIONS DETERMINED."
- FLOODWAY AREAS IN ZONE AE MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.



GENERAL NOTES

1. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH THE MDEQ AND USACE PERMITS, AND ALL OTHER PERMITS ISSUED FOR THIS PROJECT.

STAGING AND ACCESS NOTES 1. CONTRACTOR TO COORDINATE WITH OWNER AND ENGINEER ON LOCATION OF STAGING AREAS.

2. CONTRACTOR TO COORDINATE WITH OWNER AND ENGINEER ON ACCESS TO WORK AREA.

3. THE CONTRACTOR MAY ACCESS THE WORK AREAS HE CHOOSES AS LONG AS HE ABIDES BY RESTRICTIONS AND REQUIREMENTS PRESENTED IN THESE CONTRACT DOCUMENTS.

4. THE CONTRACTOR SHALL NOTE THAT A PORTION OF THE EAST SIDE OF THE ISLAND IS OWNED BY A PRIVATE ENTITY. CONTACT INFORMATION IS AS FOLLOWS: STONY ISLAND SALVAGE C/O VICTOR PONZIANO, 7800 PLATT AVE. CLEVELAND, OH 44104, (216) 496-7435.

5. THE OWNER, PROPERTY OWNER, AND ENGINEER WILL FREQUENTLY VISIT THE PROJECT VIA THEIR OWN BOATS. THERE MAY BE OCCURRENCES WHEN A MEMBER OR MEMBERS OF THE PROJECT TEAM WILL NOT BE ABLE TO PROVIDE THEIR OWN TRANSPORTATION TO THE PROJECT WORK. THE CONTRACTOR SHALL BE PREPARED TO PROVIDE TRAVEL TO THE WORK FOR THE OWNER, PROPERTY OWNER, AND OWNER'S REPRESENTATIVES AT A REASONABLE FREQUENCY THROUGHOUT THE DURATION OF THE PROJECT WORK.

TURBIDITY CONTROL NOTES

1. NO WORK OR DREDGING WITHIN THE WATER IS ALLOWED FROM MAY 1 THROUGH JULY 30 WITHOUT THE USE OF A TURBIDITY CURTAIN/ CONTAINMENT. THIS RESTRICTION DOES NOT APPLY TO THE PLACEMENT OF CLEAN ROCK AND GRAVEL.

2. WHEN REQUIRED, TURBIDITY CURTAIN TO ENCLOSE THE WORK AREA ENTIRELY. CURTAIN TO BE INSTALLED TO EXTEND FROM THE BED OF THE WATERBODY TO A POINT ABOVE THE EXISTING WATER'S SURFACE.

3. WHEN USED, TURBIDITY CERTAIN TO BE MAINTAINED FOR THE DURATION OF THE PROJECT AND LEFT IN PLACE AFTER COMPLETION OF DREDGING UNTIL ALL DISTURBED SEDIMENTS HAVE SETTLED.

PROTECTION OF SPECIFIC SPECIES

HERON ROOKERY: THE HERON ROOKERY IS DELINEATED ON THE PROJECT DRAWINGS. THE ROOKERY IS PROTECTED UNDER THE MIGRATORY BIRD TREATY ACT. PROJECT WORK INVOLVING HEAVY MACHINERY WILL BE RESTRICTED WITHIN 660' OF THE ROOKERY FROM MARCH 15TH THROUGH SEPTEMBER 1ST. CONTRACTOR TO COORDINATE WITH ENGINEER ON PROTECTIVE MEASURES.

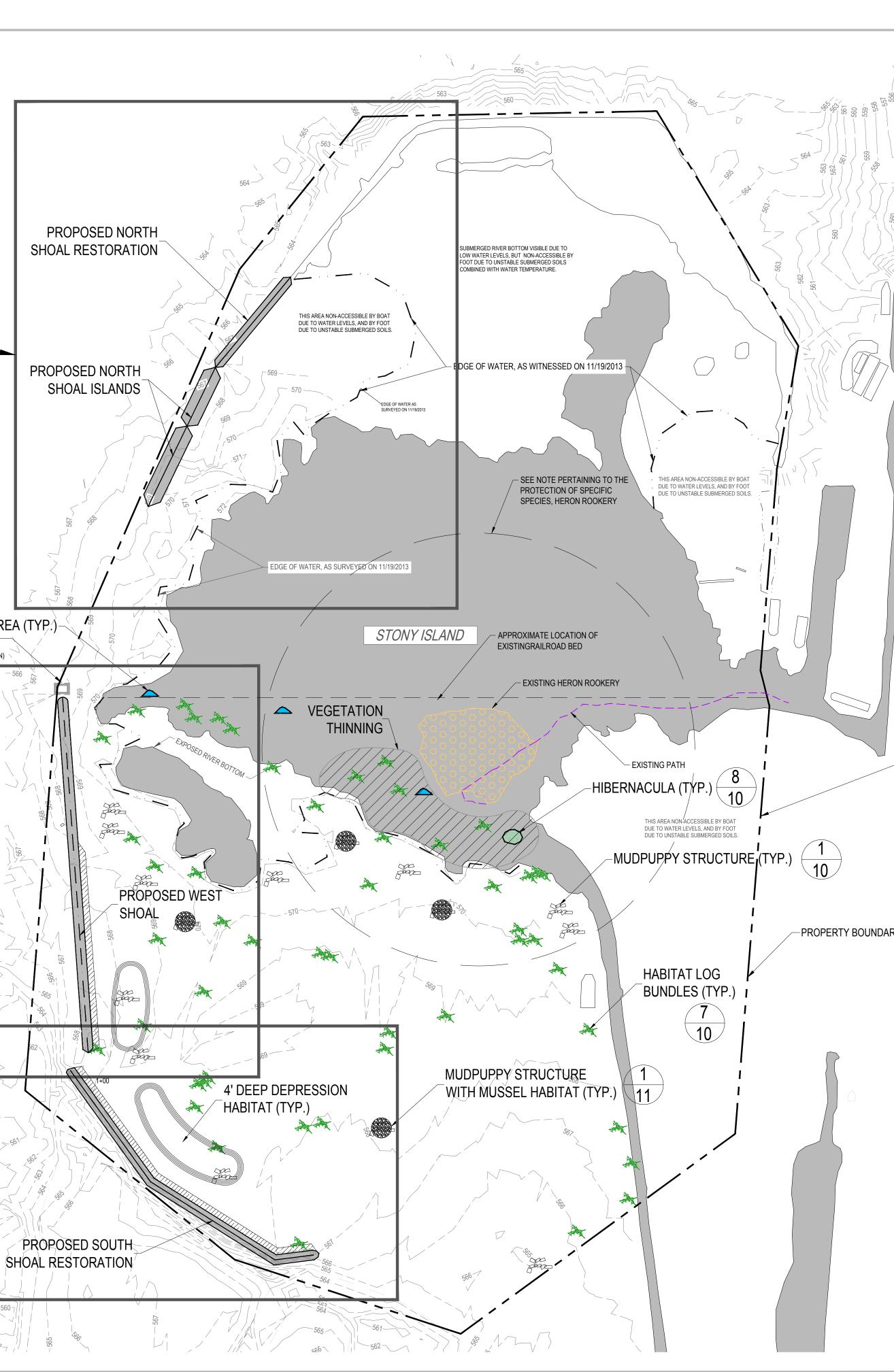
TRAILING WILD BEAN: THIS PLANT SPECIES IS CONSIDERED OF "SPECIAL CONCERN" AND WAS OBSERVED IN MULTIPLE CLUSTERS ON STONY ISLAND ON THE EASTERN SIDE OF THE OLD RAILROAD GRADE. SPECIAL CONCERN SPECIES DO NOT HAVE STATUTORY LEGAL PROTECTION REQUIREMENTS. HOWEVER, IF ON-ISLAND CONSTRUCTION ACTIVITIES THAT INVOLVE HEAVY EQUIPMENT IS TO OCCUR BETWEEN MAY 1ST AND NOVEMBER 1ST, THE CONTRACTOR TO NOTIFY THE ENGINEER. A PLAN TO PROTECT THE SPECIES WILL BE DEVELOPED BY THE ENGINEER, IF DEEMED NECESSARY.

EASTERN FOX SNAKE: EASTERN FOX SNAKE IS A STATE THREATENED SPECIES KNOWN TO OCCUR ON THE ISLAND. NO ISLAND WORK WILL BE ALLOWED DURING THE SNAKE'S ACTIVE PERIOD, FROM APRIL 1ST THROUGH NOVEMBER 1ST WITHOUT PROTECTION MEASURES IN PLACE. THIS ALSO APPLIES TO THE STORAGE OF CONSTRUCTION MATERIALS ON-ISLAND DURING THE SNAKE'S ACTIVE PERIOD, SO AS NOT TO CREATE TEMPORARY HIBERNACULA THAT MAY RESULT IN SPECIES DISTURBANCE AT A LATER DATE. CONTRACTOR TO WORK WITH ENGINEER ON PROTECTIVE MEASURES.

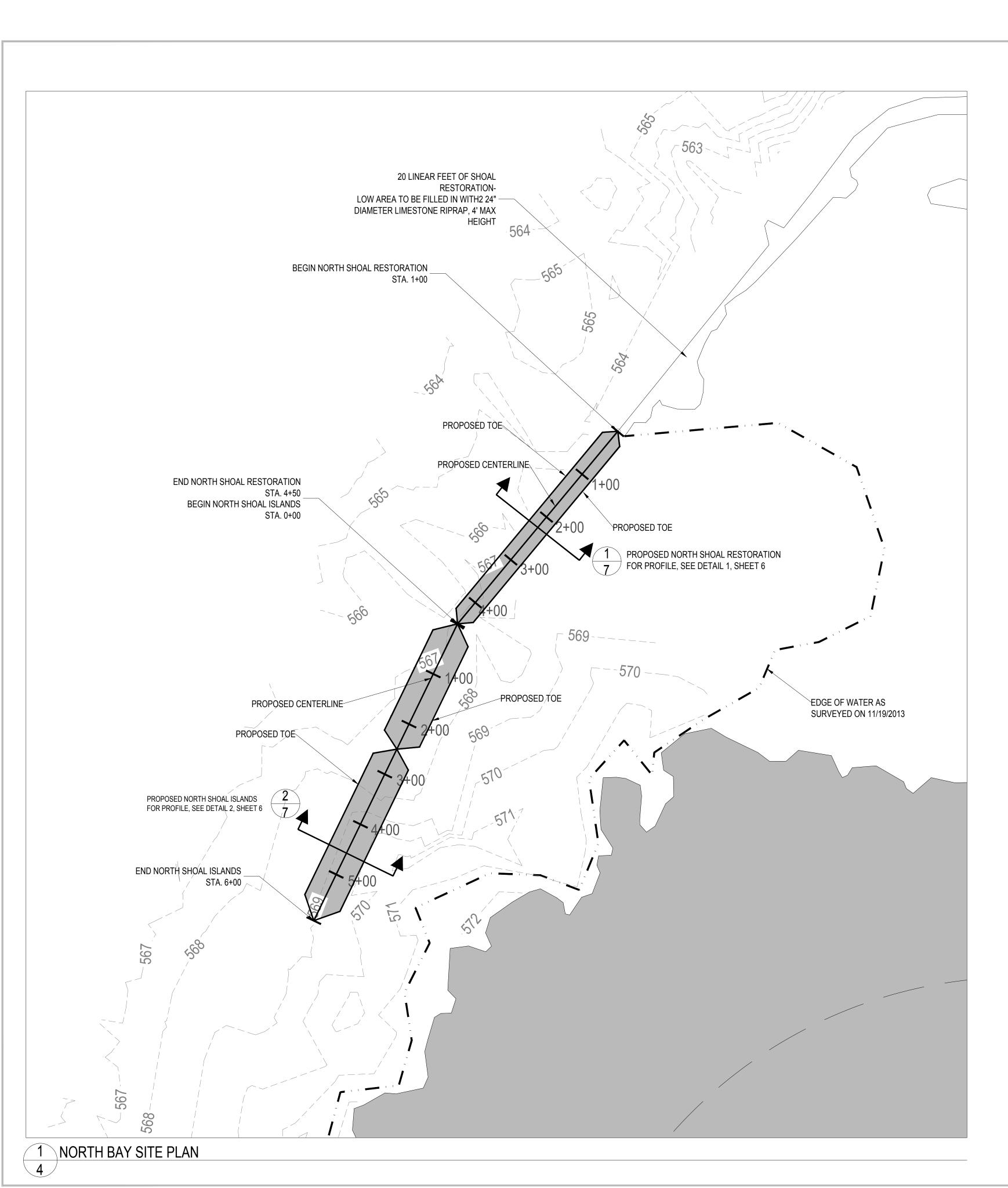
INDIANA BAT AND NORTHERN LONG-EARED BAT: INDIANA BAT IS A FEDERAL AND STATE LISTED ENDANGERED SPECIES, AND NORTHERN LONG-EARED BAT IS A FEDERAL PROPOSED ENDANGERED SPECIES. TREE CLEARING SHALL NOT OCCUR BETWEEN APRIL 1ST AND OCTOBER 15TH WITHOUT PROTECTION MEASURES. CONTRACTOR TO WORK WITH ENGINEER ON PROTECTIVE MEASURES.

GROSSE ILE WAYNE COUNTY, MICHIGAN 9 NESTING AREA (TYP.) 10 / FORMER BRIDGE PIER -TOP AT 574.0 (HAZARD TO NAVIGATION) \sim \sim , SOUTH BAY SITE PLAN - 1 PROPOSED WEST SHOAL 5

SOUTH BAY SITE PLAN -PROPOSED SOUTH SHOAL 2 RESTORATION 5



2922 2554	LEGEND EDGE OF WATER EX. TOPO CONTOUR PROPERTY LINE PROPOSED SHOAL PROPOSED SHOAL PROPOSED SHOAL WESTING AREA WUDPUPPY STRUCTURE WUDPUPPY STRUCTURE WITH MUSSEL HABITAT WUSSEL HABITAT HABITAT LOG BUNDLES VEGETATION THINNING WEGETATION THINNING SHIPWRECK	<text><text><text><text></text></text></text></text>
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	 PROPERTY WITHIN PROPERTY BOUNDARY IS OWNED BY THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES. PROPERTY TO THE EAST OF THE PROPERTY BOUNDARY IS OWNED BY A PRIVATE OWNER: STONY ISLAND SALVAGE VICTOR PONZIANO 7800 PLATT AVENUE CLEVELAND, OHIO 44104 216-496-7435 	FRIENDS OF THE DETROIT RIVER WAYNE COUNTY, MICHIGAN
Ϋ́		FOR INFORMATION JAN 2016 100% DRAWINGS 11-03-14 PERMIT DRAWINGS 09-17-14 PRELIMINARY 03-11-14 <u>130638</u> ECT PROJECT NUMBER <u>AB/EC JO</u> DESIGNED BY CHECKED BY <u>AB/EC JO</u> DRAWN BY APPROVED BY SHEET TITLE SHEET TITLE
	SURVEY PROVIDED BY SMITHGROUP JJR, JANUARY 2014 3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG 1-800-482-7171	SCALE: 1" = 250' @ 22" x 34" 0 125' 250' 500' NORTH SHEET NUMBER 3



LEGEND

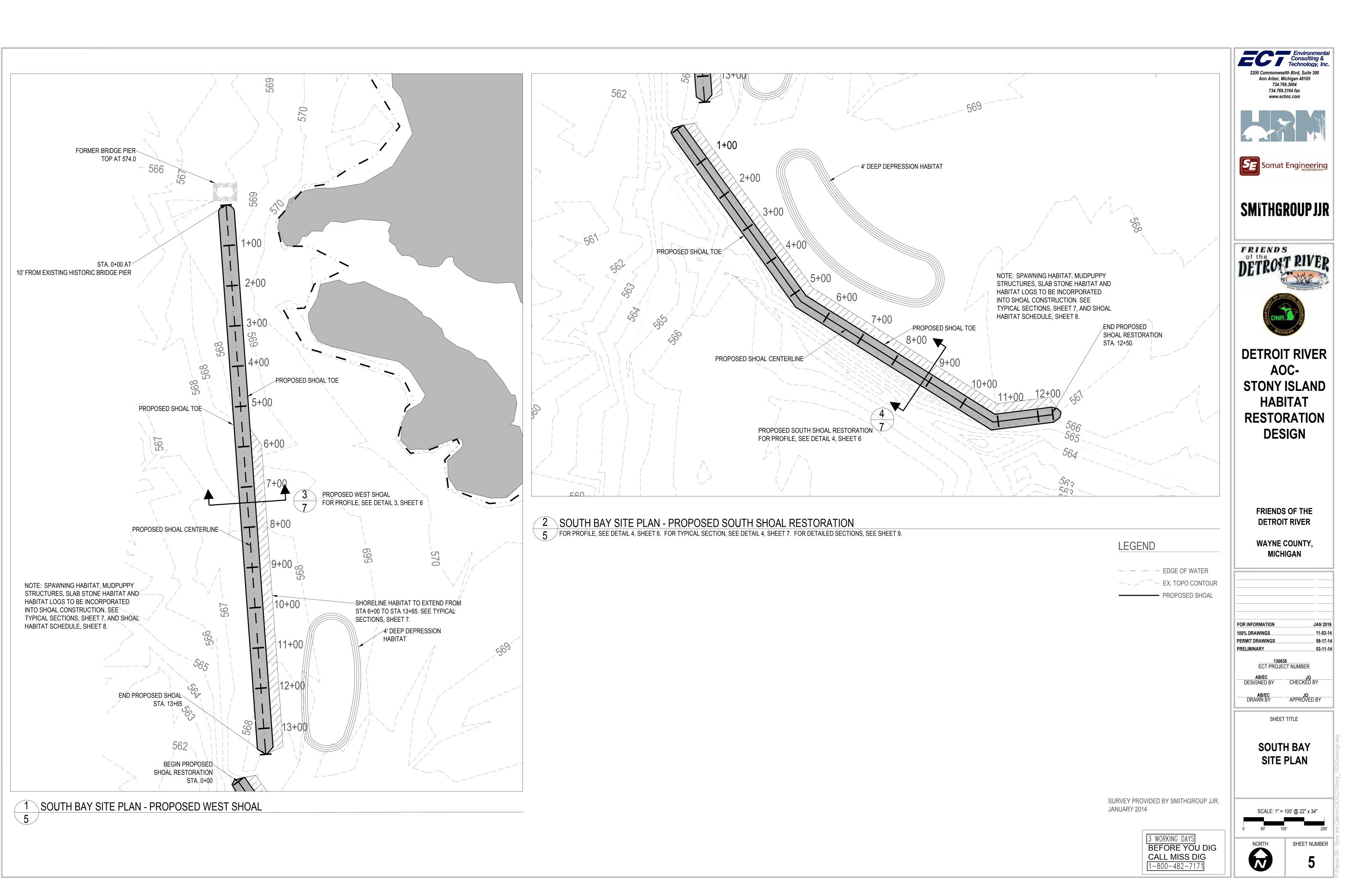
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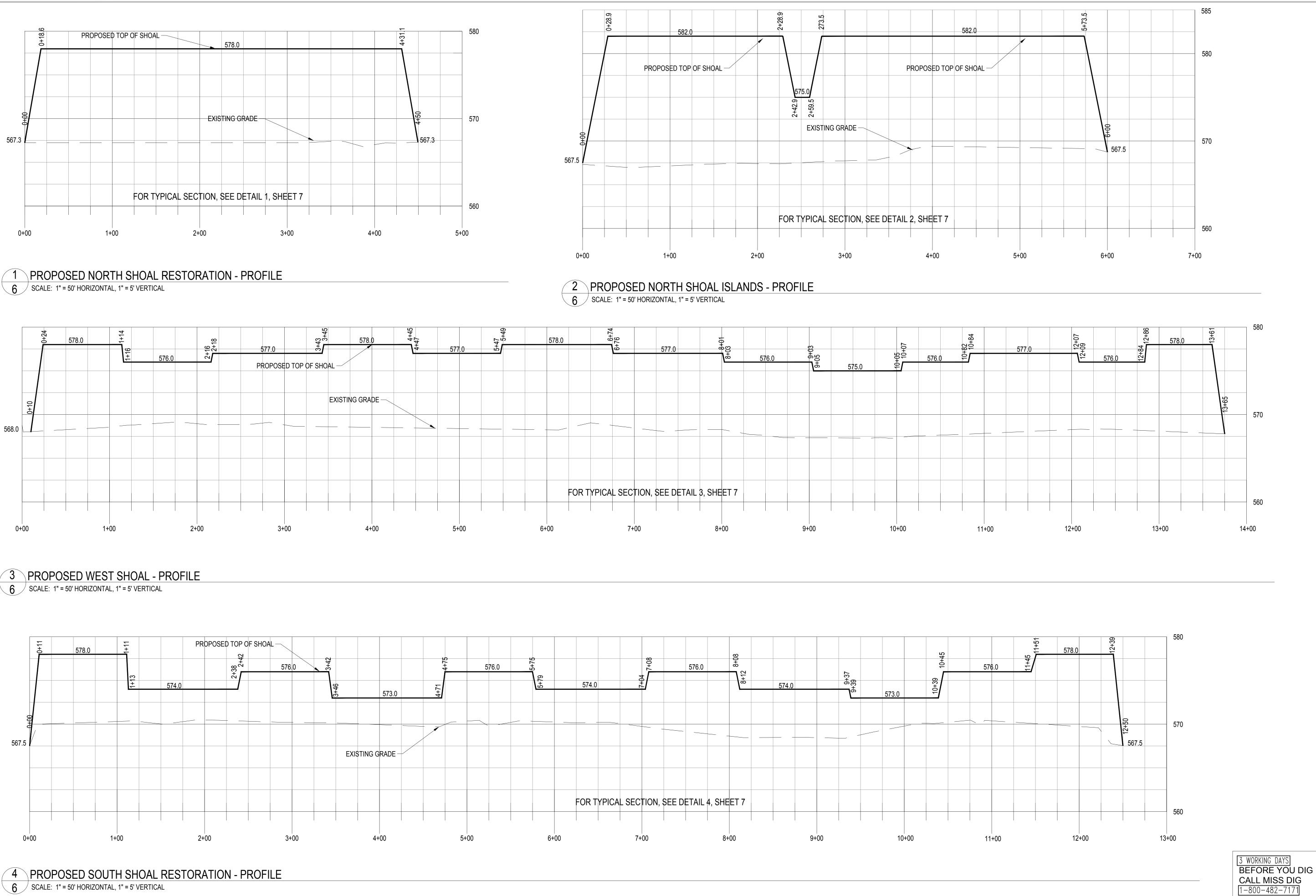
EX. TOPO CONTOUR PROPOSED SHOAL



SURVEY PROVIDED BY SMITHGROUP JJR, JANUARY 2014

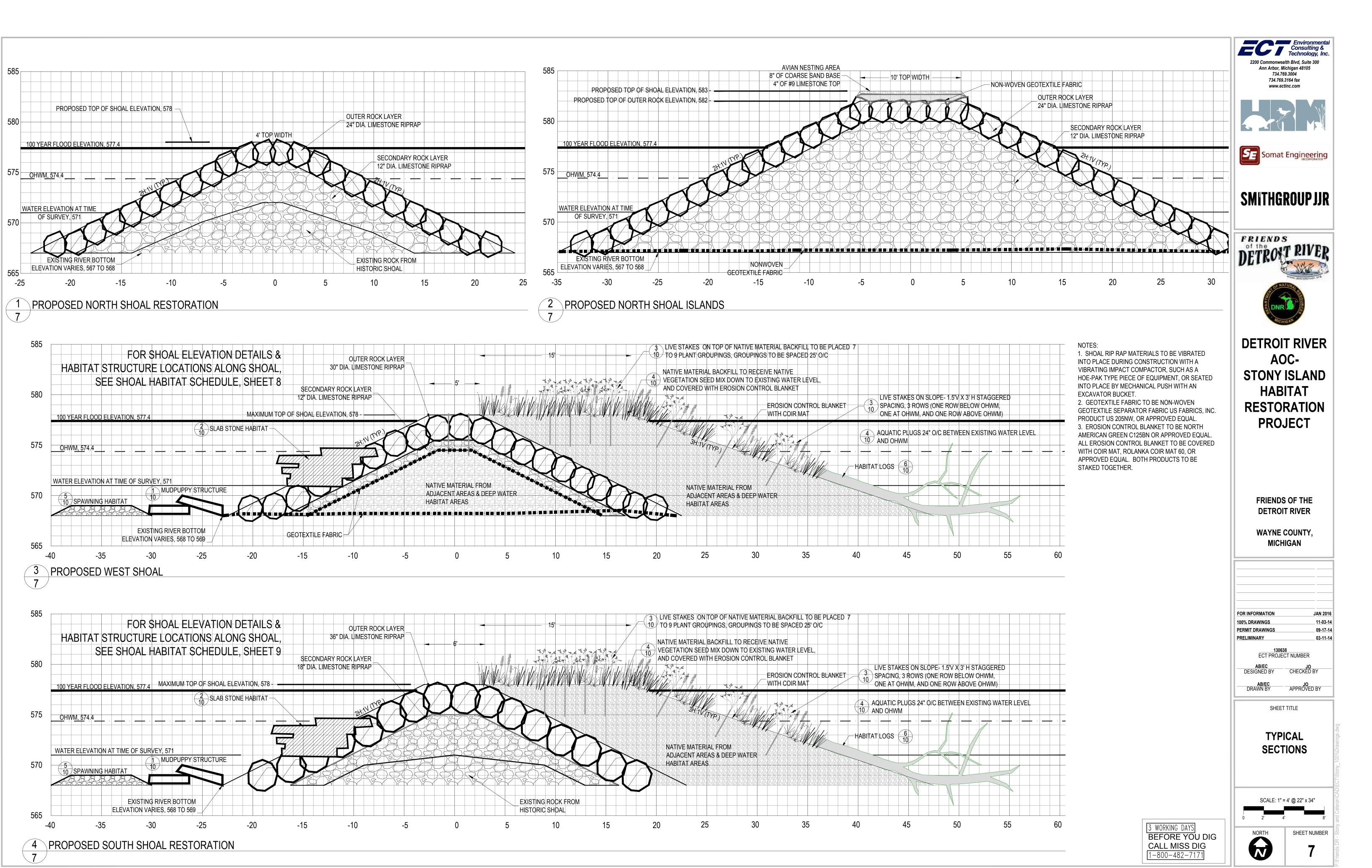
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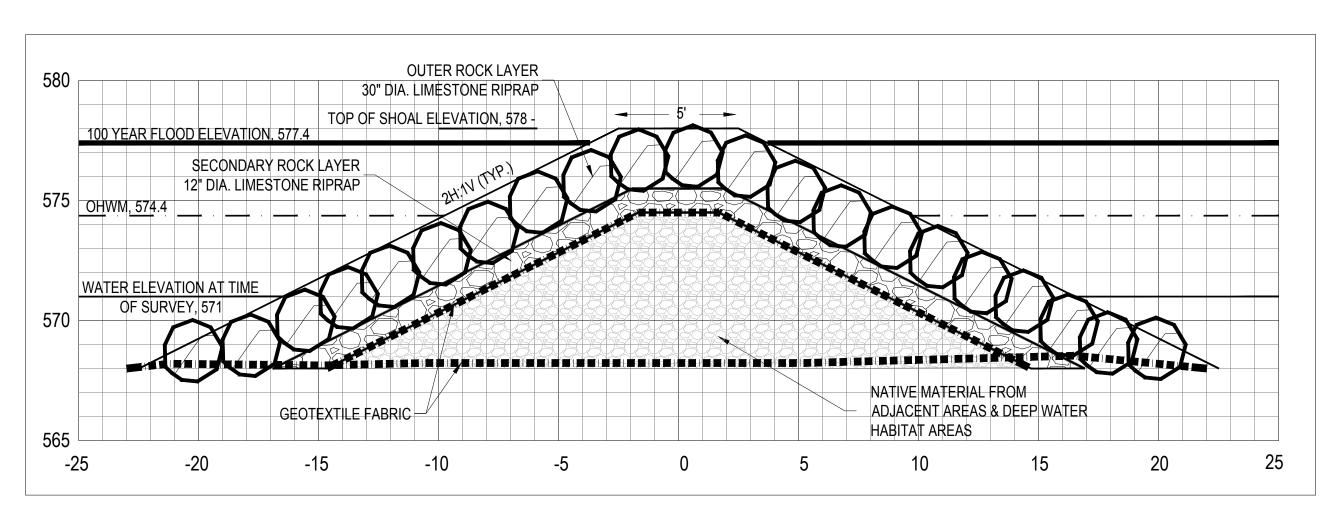




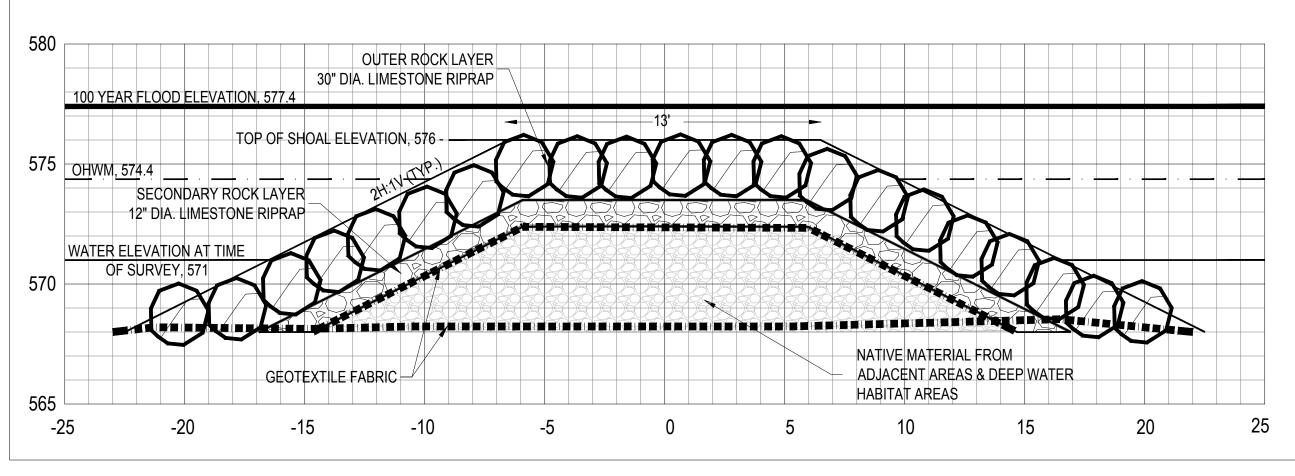
6 SCALE: 1" = 50' HORIZONTAL, 1" = 5' VERTICAL



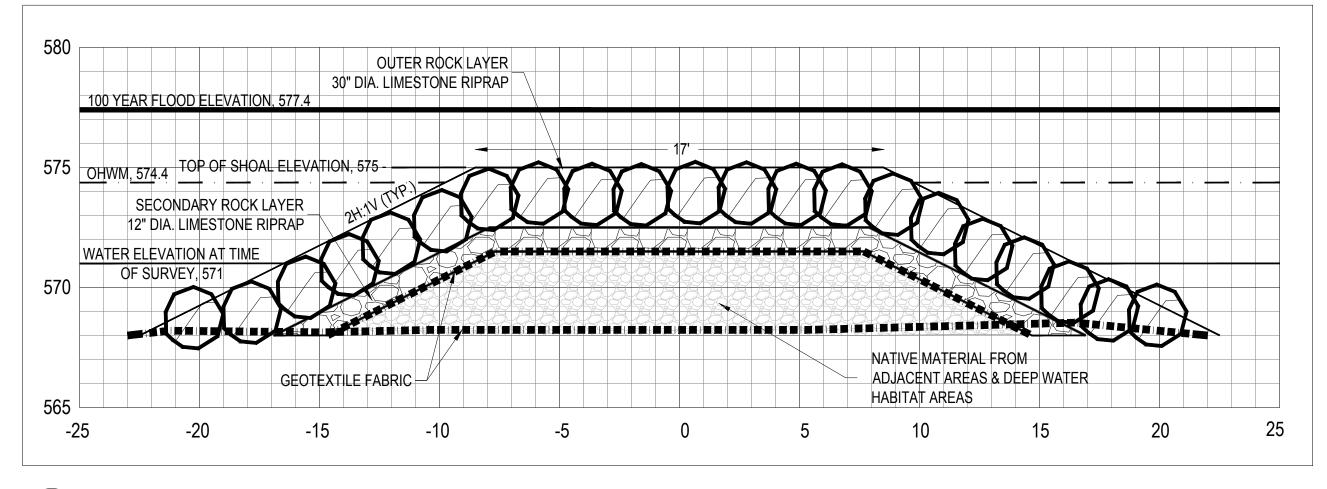




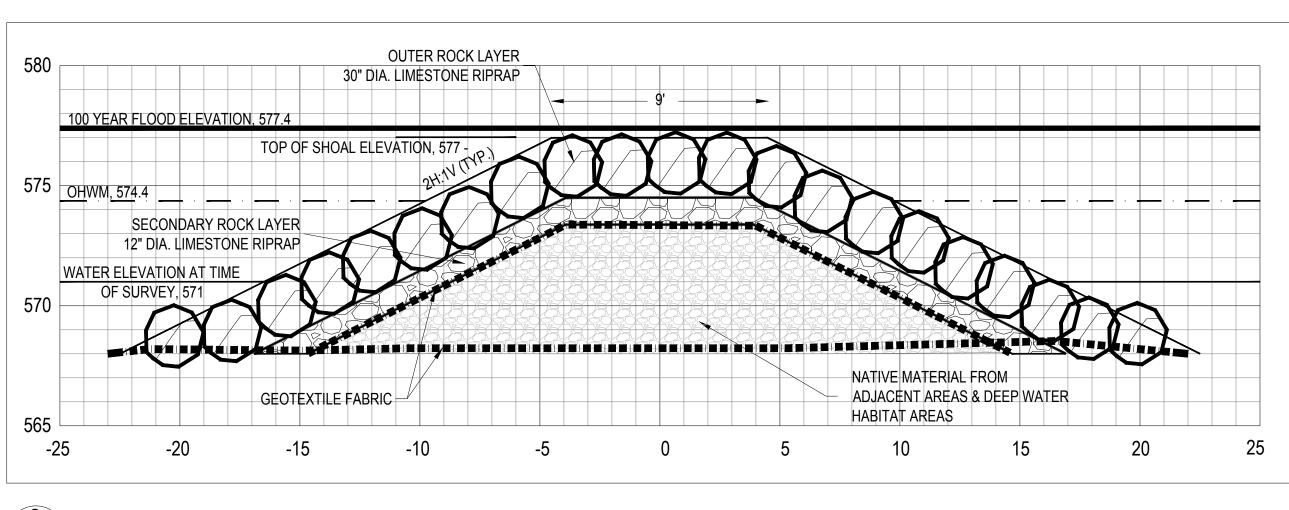
1 PROPOSED WEST SHOAL - SHOAL ELEVATION 578' 8







4 PROPOSED WEST SHOAL - SHOAL ELEVATION 575' 8



2 PROPOSED WEST SHOAL - SHOAL ELEVATION 577' 8

NOTES:

 SHOAL RIP RAP MATERIALS TO BE VIBRATED INTO PLACE DURING CONSTRUCTION WITH A VIBRATING IMPACT COMPACTOR, SUCH AS A HOE-PAK TYPE PIECE OF EQUIPMENT, OR SEATED INTO PLACE BY MECHANICAL PUSH WITH AN EXCAVATOR BUCKET.
 GEOTEXTILE FABRIC TO BE NON-WOVEN GEOTEXTILE SEPARATOR FABRIC US FABRICS, INC. PRODUCT US 205NW, OR APPROVED EQUAL.

3. EROSION CONTROL BLANKET TO BE NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL.

SHOAL HABITAT SCHEDULE

	SPAWNING HABITAT	MUDPUPPY STRUCTURE AT	SLAB STONE HABITAT	HABITAT LOGS AT SHOALS
	6+00	6+10	6+15	6+25
	6+60	6+60	6+35	6+75
	7+20	7+10	6+55	7+25
	7+80	7+60	6+75	7+75
	8+40	8+10	6+95	8+25
	9+00	8+60	7+15	8+75
	9+60	9+10	7+35	9+25
	10+20	9+60	7+55	9+75
	10+80	10+10	7+75	10+25
	11+40	10+60	7+95	10+75
	12+00	11+10	8+15	11+25
	12+60	11+60	8+35	11+75
	13+20	12+10	8+55	12+25
		12+60	8+75	12+75
		13+10	8+95	13+25
F		13+60	9+15	13+75
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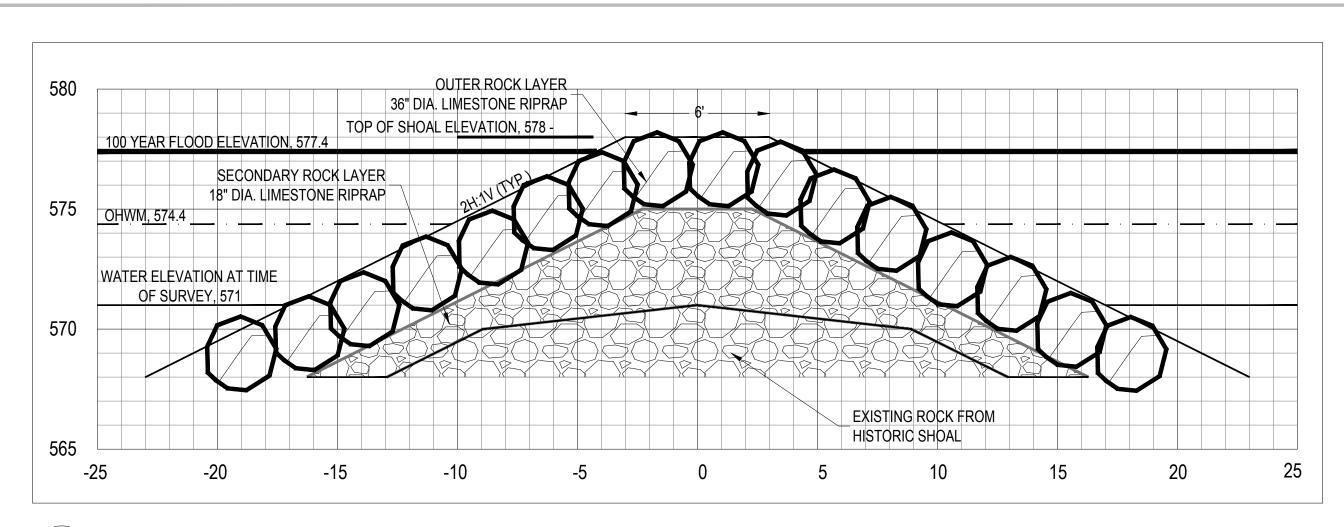


3 WORKING DAYS

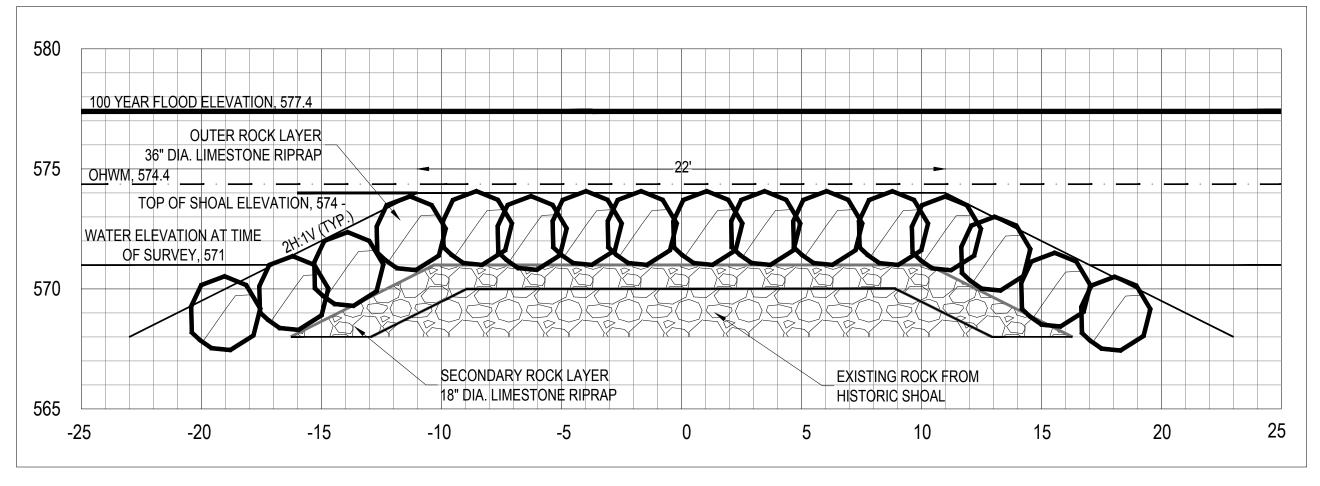
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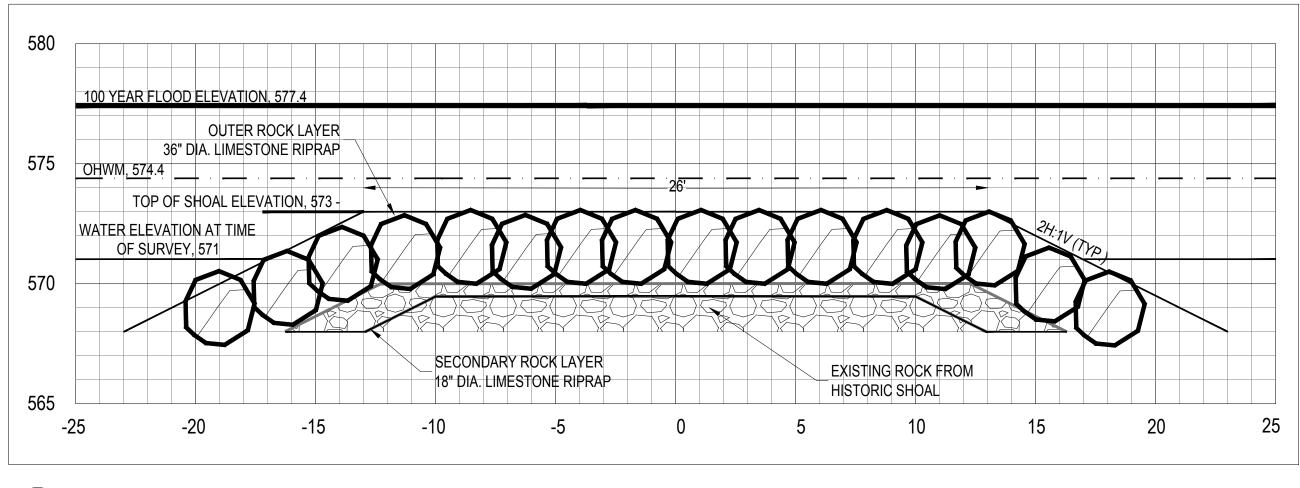
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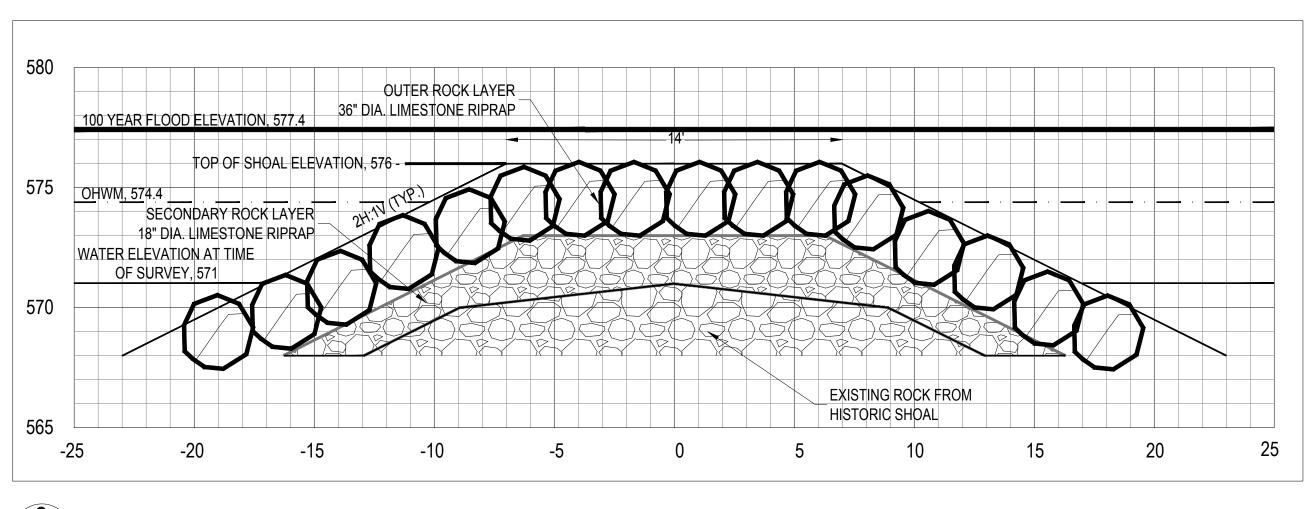








4 PROPOSED SOUTH SHOAL RESTORATION - SHOAL ELEVATION 573' 9



2 PROPOSED SOUTH SHOAL RESTORATION - SHOAL ELEVATION 576' 9

SHOAL HABITAT SCHEDULE

	SPAWNING HABITAT	MUDPUPPY STRUCTURE	SLAB STONE HABITAT	BASKING LOGS
	0+00	0+10	0+15	0+25
	0+60	0+60	0+35	0+75
	1+20	1+10	0+55	1+25
	1+80	1+60	0+75	1+75
	2+40	2+10	0+95	2+25
	3+00	2+60	1+15	2+75
	3+60	3+10	1+35	3+25
	4+20	3+60	1+55	3+75
	4+80	4+10	1+75	4+25
	5+40	4+60	1+95	4+75
	6+00	5+10	2+15	5+25
	6+60	5+60	2+35	5+75
z	7+20	6+10	2+55	6+25
SHOAL RESTORATION	7+80	6+60	2+75	6+75
RA.	8+40	7+10	2+95	7+25
TO	9+00	7+60	3+15	7+75
RES	9+60	8+10	3+35	8+25
AL F	10+20	8+60	3+55	8+75
10t	10+80	9+10	3+75	9+25
	11+40	9+60	3+95	9+75
Ę	12+00	10+10	4+15	10+25
iol.		10+60	4+35	10+75
0		11+10	4+55	11+25
OSE		11+60	4+75	11+75
PROPOSED SOUTH	L	12+10	4+95	12+25
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	SPAWNING HABITAT	MUDPUPPY STRUCTURE	SLAB STONE HABITAT	BASKING LOGS
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			12+15	
			12+35	

NOTES:

1. SHOAL RIP RAP MATERIALS TO BE VIBRATED INTO PLACE DURING CONSTRUCTION WITH A VIBRATING IMPACT COMPACTOR, SUCH AS A HOE-PAK TYPE PIECE OF EQUIPMENT, OR SEATED INTO PLACE BY MECHANICAL PUSH WITH AN EXCAVATOR BUCKET.

 2. GEOTEXTILE FABRIC TO BE NON-WOVEN GEOTEXTILE SEPARATOR FABRIC US FABRICS, INC. PRODUCT US 205NW, OR APPROVED EQUAL.
 3. EROSION CONTROL BLANKET TO BE NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL.

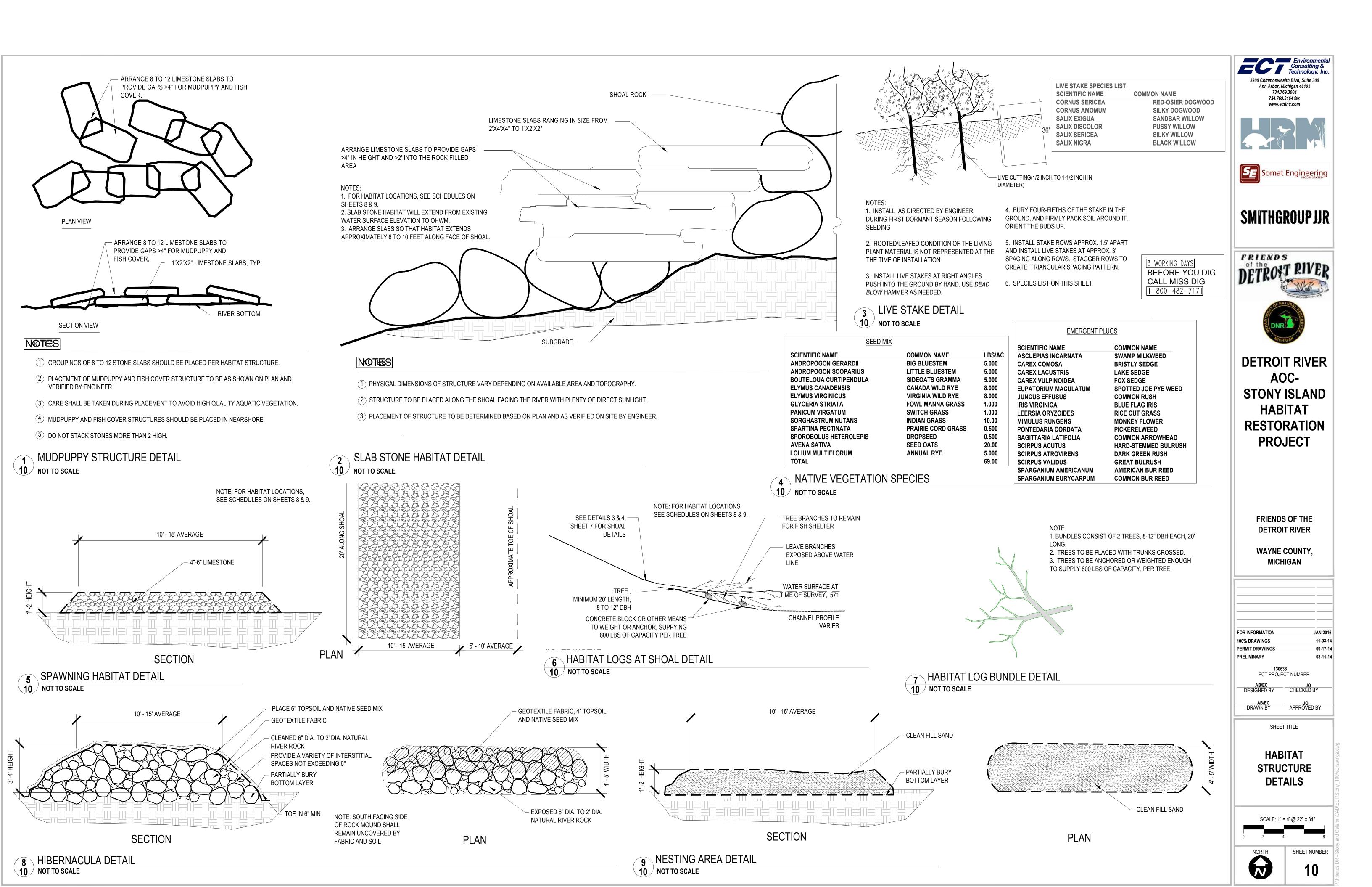
3 WORKING DAYS

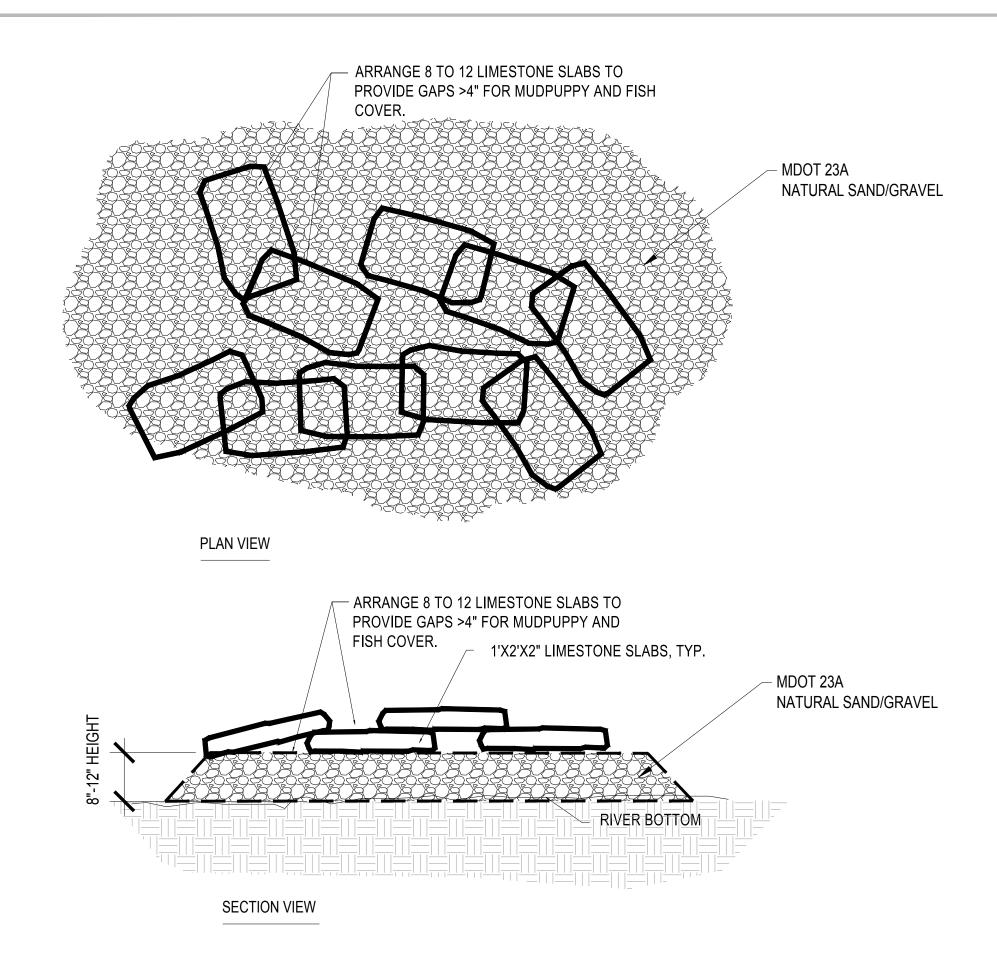
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NOTES

(1) GROUPINGS OF 8 TO 12 STONE SLABS SHOULD BE PLACED.

- (2) PLACEMENT OF MUDPUPPY AND FISH COVER STRUCTURE TO BE DETERMINED ON SITE BY WILDLIFE BIOLOGIST.
- ③ CARE SHALL BE TAKEN DURING PLACEMENT TO AVOID HIGH QUALITY AQUATIC VEGETATION.
- 4 MUDPUPPY AND FISH COVER STRUCTURES SHOULD BE PLACED IN NEARSHORE.
- 5 DO NOT STACK STONES MORE THAN 2 HIGH.

1 MUDPUPPY STRUCTURE WITH MUSSEL HABITAT DETAIL 11 NOT TO SCALE

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		Consulting & Technology, Inc.
	2200 Commonwealt Ann Arbor, Mic 734.769.	higan 48105 3004
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3 WORKING DAYS
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1-800-482-7171

GENERAL NOTES:

1. UNDERGROUND UTILITIES: FOR 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 AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THUS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

2. SURVEY DATA PRESENTED IN THESE DRAWINGS WAS PROVIDED BY:

SMITHGROUP JJR 201 DEPOT STREET, SECOND FLOOR ANN ARBOR, MICHIGAN 48104 (734) 662-4457 (PH)

(734) 662-7520 (FX)

DATE OF SURVEY: NOVEMBER, 2013

SURVEY DATUM: NAVD 88

3. STORAGE OF EQUIPMENT AND CONSTRUCTION MATERIALS SHALL BE RESTRICTED TO DESIGNATED STAGING AREAS AS INDICATED ON THE PLANS, UNLESS OTHERWISE APPROVED BY ENGINEER.

4. ALL UTILITIES, CULVERTS AND BENCHMARKS SHALL BE PRESERVED DURING CONSTRUCTION ACTIVITIES UNLESS OTHERWISE SHOWN ON THE DRAWINGS. CONTRACTOR TO REPLACE DAMAGED UTILITIES, CULVERTS OR BENCHMARKS AT OWN EXPENSE

5. ALL CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO LOCATIONS SHOWN ON THE DRAWINGS. WORK BEYOND THESE LIMITS SHALL BE AS DIRECTED BY ENGINEER

6. TRANSPORTATION OF EQUIPMENT AND MATERIALS TO/FROM THE SITE ON STATE HIGHWAYS AND TRUNK LINES SHALL CONFORM TO ALL LOCAL AND STATE TRAFFIC LAWS. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PERTAINING TO DELIVERY OF EQUIPMENT AND MATERIALS TO/FROM THE SITE. COSTS OF OBTAINING NECESSARY PERMITS IS INCIDENTAL TO THE WORK.

7. ALL WORK SHALL BE COMPLETED BETWEEN THE HOURS OF 7:00AM AND 7:00PM. ALL WORK SHALL BE COMPLETED MONDAY THROUGH SATURDAY.

8. CONSTRUCTION ACCESS TO THE SITES FOR ALL ACTIVITIES WILL BE AS INDICATED ON THE SITE PREPARATION PLAN. NO OTHER ACCESS IS ALLOWED WITHOUT WRITTEN PERMISSION FROM THE OWNER.

9. ALL MATERIALS REMOVED, EXCEPT WHERE OTHERWISE INDICATED ON THE PLANS, SHALL BE LEGALLY DISPOSED OF OFF SITE. 10. ALL WORK SHALL BE DONE TO MEET THE REQUIRMENTS OF THE MDEQ AND USACE PERMITS ISSUED FOR THIS PROJECT.

EXISTING SITE CONDITIONS:

1. CONTRACTOR SHALL BECOME FAMILIAR WITH ALL EXISTING SITE CONDITIONS PRIOR TO STARTING WORK.

2. THE CONTRACTOR UNDERSTANDS AND ACKNOWLEDGES THAT THE PERFORMANCE OF THE WORK IS REQUIRED WITHIN A RIVER SYSTEM AND FLOODPLAIN.

3. THE CONTRACTOR SHALL BE FULLY AWARE OF THE DETROIT RIVER HYDROLOGY AND CURRENT WEATHER CONDITIONS SO THAT WORK IN PROGRESS CAN BE SECURED AND PROTECTED, SO THAT SAFE JOB SITE WORKING CONDITIONS ARE MAINTAINED, AND SO THAT SOIL EROSION IS MINIMIZED DURING AND FOLLOWING A RAIN EVENT.

4. THE CONTRACTOR ACKNOWLEDGES THAT DELAYS IN THE START OF OR COMPLETION OF WORK DUE TO TYPICAL SEASONAL RAINFALL AND DUE TO TYPICAL PERIODIC HIGH FLOWS IN THE RIVER SHALL NOT CONSTITUTE A BASIS FOR ANY EXTENSION OF TIME OR DAMAGES. IF THE CONTRACTOR SHALL BE UNAVOIDABLY DELAYED IN BEGINNING OR FULFILLING THIS CONTRACT BY REASONS OF EXCESSIVE STORM OR FLOODS THE CONTRACTOR SHALL HAVE NO VALID CLAIM FOR DAMAGES, BUT HE SHALL IN SUCH CASE BE ENTITLED TO AN EXTENSION OF TIME AS THE ENGINEER SHALL ADJUDGE TO BE JUST AND REASONABLE: PROVIDED THAT FORMAL CLAIM FOR AN EXTENSION OF TIME IS MADE IN WRITING BY THE CONTRACTOR WITHIN ONE WEEK OF THE ALLEGED DELAY.

MAINTENANCE AND GUARANTEE PERIOD:

1. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FOLLOWING THE APPROVAL OF CONSTRUCTION INSPECTION AT SUBSTANTIAL COMPLETION. THE CONTRACTOR SHALL RESPOND WITHIN TWO WEEKS OF WRITTEN REQUESTS BY THE OWNER FOR REPLACEMENT/REPAIR. IF THE CONTRACTOR FAILS TO RESPOND WITHIN THIS TIME, THE OWNER MAY PROCEED WITH REPLACEMENT WORK AND BILL THE CONTRACTOR.

2. NOTIFY THE OWNER PRIOR TO AND FOLLOWING ANY MAINTENANCE ACTIVITY.

3. FINAL ACCEPTANCE OF WORK WILL BE SUBJECT TO ACCEPTANCE BY ENGINEER AND OWNER AT THE END OF GUARANTEE PERIOD.

MATERIAL NOTES:

ALL MATERIALS SHALL CONFORM TO DETAILS AND SPECIFICATIONS IN THE DRAWINGS.

SUBMITTALS

1. SUBMITTALS FOR APPROVAL BY ENGINEER ARE REQUIRED FOR ALL MATERIALS PRIOR TO MOBILIZATION. ALL EXPENSES INCURRED BY CONTRACTOR PRIOR TO ENGINEER'S APPROVAL SHALL NOT BE PAID BY OWNER.

AS-BUILT DOCUMENTS:

 CONTRACTOR IS RESPONSIBLE FOR PROVIDING AS BUILT DOCUMENTS AT THE COMPLETION OF THE WORK. AS-BUILT DRAWINGS SHALL INCLUDE 1 COPY OF MARKED UP FIELD PLANS AND 3 COPIES OF CERTIFIED AS-BUILT DRAWINGS AND 1 DIGITAL FILE CONTAINING AUTOCAD AS-BUILT INFORMATION. THE BASE SURVEY DRAWING WILL BE PROVIDED TO THE CONTRACTOR.

SITE RESTORATION AND CLEAN-UP:

1. IMMEDIATELY CLEAN UP EXCESS SOIL, MULCH, OR OTHER DEBRIS AND PROPERLY DISPOSE OF DELETERIOUS MATERIALS LEGALLY OFF-SITE IN A MANNER CONSISTENT WITH LOCAL LAWS. TAKE NECESSARY PRECAUTIONS TO PREVENT CONTAMINATION OF CLEAN AREAS AS A RESULT OF CLEANING OPERATIONS.

PROMPTLY REMOVE EQUIPMENT AND UNUSED MATERIALS AT COMPLETION OF ACTIVITIES.

3. RETURN STOCKPILE AND STORAGE AREAS TO THEIR ORIGINAL GRADE AND RESTORE GROUND SURFACES AFTER STORED MATERIAL HAS BEEN REMOVED.

4. CONTRACTOR SHALL REPAIR DAMAGED VEGETATION AND AERATE SOIL OVER ROOT ZONE OF NEGATIVELY IMPACTED VEGETATION. RE-SEED ALL DISTURBED AREAS TO PRE-EXISTING CONDITIONS OR AS SPECIFIED.

LANDSCAPE MAINTENANCE & GUARANTEE

1. PRELIMINARY INSPECTION: UPON COMPLETION OF ALL PLANTING AND ALL CLEANUP WORK, THE CONTRACTOR SHALL REQUEST A PRELIMINARY INSPECTION. COMPLETION OF ALL CORRECTIVE WORK AND INSPECTION AND APPROVAL OF IT SHALL ESTABLISH THE BEGINNING OF THE GUARANTEE/MAINTENANCE PERIOD. NO PARTIAL APPROVALS SHALL BE GIVEN. OWNER/ENGINEER SHALL FURNISH THE WRITTEN NOTICE OF ITEMS TO BE ADJUSTED, REPAIRED, REPLACED, ETC. WITHIN 3 BUSINESS DAYS OF THE PRELIMINARY INSPECTION.

2. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPING SPECIFIED HEREIN FOR ONE (1) GROWING SEASON (MAY THROUGH NOVEMBER) FOLLOWING APPROVAL OF PRELIMINARY INSPECTION. THE CONTRACTOR SHALL RESPOND WITHIN TWO (2) WEEKS OF WRITTEN REQUESTS BY THE OWNER FOR REPLACEMENT/REPAIR. IF THE CONTRACTOR FAILS TO RESPOND WITHIN THIS TIME, THE OWNER MAY PROCEED WITH REPLACEMENT WORK AND BILL THE CONTRACTOR.

3. REPLACE DEAD OR UNHEALTHY PLANTS WITH PLANTS OF SAME SIZE AND SPECIES AS SPECIFIED AND PLANT THEM IN NEXT GROWING SEASON AND SUBJECT THEM TO MAINTENANCE EFFORTS TO ASSURE THEIR SURVIVAL AT NO ADDITIONAL COST TO OWNER. PATCHY OR BARE AREAS (IN EXCESS OF 4 SQUARE FEET) WHERE SEED MIX FAILED TO CREATE SUFFICIENT DENSITY OF COVER SHALL BE RESEEDED BY HAND AT THE RECOMMENDED APPLICATION RATE AT NO ADDITIONAL COST TO OWNER. 4. MAINTENANCE DURING THE GUARANTEE PERIOD SHALL INCLUDE BUT NOT BE LIMITED TO:

1. WATERING OF ALL WOODY AND HERBACEOUS PLANT MATERIALS AND SEEDED AREAS. FOR OPTIMUM PLANT GROWTH, PLANT STOCK SHOULD BE KEPT MOIST (1" OF TOTAL WATER PER WEEK, INCLUDING RAINFALL) DURING THE ESTABLISHMENT PERIOD. 2. WEEDING.

3. CONTROL OF UNDESIRABLE PLANTS BY APPROVED METHODS, INCLUDING BUT NOT LIMITED TO: COMMON BUCKTHORN (RHAMNUS CARTHATICA), GLOSSY BUCKTHORN (RHAMNUS FRANGULA), POISON IVY (TOXICODENDRON RADICANS), TATARIAN HONEYSUCKLE (LONICERA TATARICA). PURPLE LOOSESTRIFE (LYTHRUM SALICARIA), AND PHRAGMITES. 4. CONTROL OF UNDESIRABLE INSECTS, AND PLANT DISEASE.

5. REMOVAL OF ANY STAKING, GUYING, AND TREE TAGS/LABELS AT END OF GUARANTEE PERIOD. ALL DEBRIS SHALL BE LEGALLY DISPOSED OF OFF-SITE.

5. NOTIFY THE OWNER PRIOR TO AND FOLLOWING ANY MAINTENANCE ACTIVITY.

6. FINAL ACCEPTANCE OF WORK WILL BE SUBJECT TO ACCEPTANCE BY PROJECT MANAGER AND OWNER AT THE END OF THE GUARANTEE PERIOD.

NORTH CENTRAL STATES ONLY (IL, IN, IA, MI, OH), AND FROM A RECOGNIZED NURSERY OF THIS REGION. MICHIGAN SOURCES FOR TREE, SHRUBS, AND PLUGS SHALL BE LOCATED BEFORE BRANCHING OUT TO OTHER NORTH CENTRAL STATES. 2. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES. PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. PLANTS SHALL BE FREE OF DISEASE, INSECT PESTS, EGGS, OR LARVAE. PLANTS SHALL BE FREE OF KINKED, CIRCLING OR GIRDLING TRUNK SURFACE AND CENTER ROOTS, AND SHALL NOT BE ROOT-BOUND. RESPECT MAXIMUM STORAGE TIMES FOR PLANT STOCK. 3. NATIVE PLANTING AREAS SHALL BE INSTALLED AFTER MAY 15 (WHEN SOIL IS FREE OF FROST AND IN WORKABLE CONDITION), BUT BEFORE JUNE 30 OR AFTER SEPT. 1 BUT BEFORE OCTOBER 30 OR AS APPROVED BY THE ENGINEER. 4. FURNISH PLANT SPECIES AND SIZES AS INDICATED ON THE PLANS. PLANT STOCK SHALL BE TRUE TO THEIR NAME (GENUS AND SPECIES), AS SPECIFIED. CULTIVARS AND SPECIMENS SHALL NOT BE USED WITHOUT PRIOR APPROVAL BY CONSULTANT. 5. NATIVE PLANTINGS TO BE INSTALLED PER DETAILS. 6. PLUGS, CONTAINERIZED PLANTS, AND ROOTSTOCK WHICH ARE TO BE PLACED IN SATURATED OR FLOODED SOIL CONDITIONS SHALL BE PRE-CONDITIONED FOR THIS PLACEMENT BY BEING HELD UNDER SIMILAR CONDITIONS IN A WET ENVIRONMENT AT THE NURSERY PRIOR TO SHIPMENT TO THE SITE. 7. REMOVE ALL CONTAINERS AND PACKAGING MATERIAL AND DISPOSE OF LEGALLY OFF-SITE. 8. WATER PLANT STOCK IMMEDIATELY AFTER PLANTING SUCH THAT ROOT ZONE IS THOROUGHLY SOAKED. CONTRACTOR SHALL BE RESPONSIBLE TO KEEP PLUGS ADEQUATELY WATERED, IF NECESSARY, TO ENSURE THEIR SURVIVAL 9. IF EROSION CONTROL BLANKET IS NEEDED IN AREAS OF NATIVE PLANTINGS, INSTALL EROSION CONTROL BLANKET AFTER SEEDING, BUT PRIOR TO PLANTING. EROSION CONTROL BLANKET SHALL BE INSTALLED WHERE THE CONTRACTOR FEELS IT NECESSARY TO STABILIZE THE SITE AT NO ADDITIONAL

COST TO THE OWNER. TO THE ENGINEER UPON COMPLETION. ONE YEAR AND UNIFORM IN COLOR AND TEXTURE.

AQUATIC PLANTING:

NATIVE PLANTINGS:

HOURS PRIOR TO INSTALLATION. IN BUNDLES.

3. IF DELAYS BEYOND THE CONTRACTOR'S CONTROL OCCUR AFTER DELIVERY, PLANTS SHALL BE STORED TO ENSURE VIABILITY. STORAGE PROCEDURES MAY INCLUDE OPENING OF PLANT CONTAINERS, STORAGE OF TUBERS AND ROOTSTOCK IN WATER AND/OR REFRIGERATION. REFRIGERATION SHALL NOT BE PERMITTED AFTER MAY 15TH. ALL PLANTS SHALL BE HEALTHY AND FREE FROM FUNGAL AND BACTERIAL DISCOLORATION, DEFORMITIES AND ROTTING. PLANTS APPEARING OTHERWISE WILL BE SUBJECT TO REJECTION BY THE ENGINEER.

5. PLUGS, CONTAINERIZED PLANTS AND ROOTSTOCK WHICH ARE TO BE PLACED IN SATURATED OR FLOODED SOIL CONDITIONS SHALL BE PRE-CONDITIONED FOR THIS PLACEMENT BY BEING HELD UNDER SIMILAR CONDITIONS IN A WET ENVIRONMENT AT THE NURSERY PRIOR TO SHIPMENT TO THE SITE 6. PRIOR TO LAYOUT AND INSTALLATION OF AQUATIC PLANTINGS, THE SOIL CONDITIONS MUST BE SATURATED AT THE SURFACE TO SUPPORT AQUATIC PLANTING SURVIVAL. 7. PRIOR TO PLANTING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO ASSIST IN THE LAYOUT OF ALL AQUATIC PLANTS. NOTIFY THE ENGINEER OF THE EXPECTED DATE OF AQUATIC PLANT DELIVERY AT LEAST SEVEN DAYS PRIOR TO THAT DATE. 8. COMPLETE ALL AQUATIC PLANTINGS BETWEEN MAY 15 AND JUNE 30. 9. AQUATIC PLANTINGS SHALL BE INSTALLED IN WATER IN THE FOLLOWING MANNER:

FOR EACH SPECIES.

B. TUBERS SHALL BE WEIGHTED AND INSTALLED FIRMLY IN THE UPPER 3 INCHES OF SOIL. C. REPLANT ANY AQUATIC TUBERS AND ROOTSTOCK THAT BECOME DISLODGED OR FLOAT AFTER PLANTING. THE CONTRACTOR SHALL INSPECT THE PLANTING AT LEAST ONCE EVERY OTHER DAY DURING THE FIRST 10 DAYS AFTER AQUATIC PLANTING INSTALLATION.

SEEDING:

1. SEED SHALL BE FRESH, CLEAN, NEW SEED OF NATIVE PLANT MATERIAL OF GENOTYPES FROM THE NORTH CENTRAL STATES ONLY (IL, IN, IA, MI, OH), AND FROM A RECOGNIZED NURSERY OF THIS REGION. 2. NATIVE SEED AREAS SHALL BE SEEDED AFTER MAY 1, (WHEN SOIL IS FREE OF FROST AND IN WORKABLE CONDITION), BUT BEFORE JUNE 30 OR AFTER OCTOBER 1, BUT BEFORE NOVEMBER 30 (OR PRIOR TO FREEZE-UP) OR AS APPROVED BY THE ENGINEER. 3. SEED BED PREPARATION: CUT ANY EXISTING VEGETATION TO A MAXIMUM 3" HEIGHT. ROOTS, LITTER, AND ANY FOREIGN MATTER SHOULD BE RAKED AND REMOVED. SOILS SHALL NOT BE COMPACTED. 4. SOW NATIVE SEED USING A SEED DRILL CALIBRATED FOR NATIVE SEED AT A SPECIES RATE PER ACRE AS INDICATED ON THE DRAWING. LIGHTLY RAKE TO PROVIDE ADEQUATE SEED SOIL CONTACT. DO NOT COVER SEED MORE THAN 1/4" DEEP WITH SOIL. 5. AREAS THAT ARE NOT ADEQUATELY COVERED WITH EXISTING VEGETATION/THATCH SHALL BE MULCHED WITH A 1" MAXIMUM THICK STRAW MULCH LAYER OR WILL HAVE EROSION CONTROL MAT INSTALLED ON SLOPES 3:1 OR STEEPER. 6. SEEDING METHOD SHALL ENSURE COMPLETE COVERAGE OF DESIGNATED AREA. RE-SEED AREAS WITH GAPS IN SEEDING AT NO ADDITIONAL COST TO OWNER. 7. DO NOT SOW SEED WHERE STANDING WATER IS PRESENT. 8. CONTRACTOR SHALL REPAIR DAMAGED VEGETATION AND AERATE SOIL OVER ROOT ZONE OF NEGATIVELY IMPACTED VEGETATION. RE-SEED ALL DISTURBED AREAS TO PRE-EXISTING CONDITIONS. 9. SUBSTITUTIONS ARE ALLOWED WITH PRIOR APPROVAL, BUT ONLY NATIVE SPECIES WILL BE ALLOWED.

INSPECTIONS

1. ALL PLANT MATERIALS SHALL BE INSPECTED AND APPROVED BY OWNER/ENGINEER PRIOR TO INSTALLATION ON-SITE. THE OWNER/ENGINEER SHALL RESERVE THE RIGHT TO REFUSE ANY PLANT MATERIAL THAT IS UNACCEPTABLE UPON DELIVERY TO SITE.

SUBSTITUTIONS:

1. ALL SUBSTITUTIONS, MATERIALS OR EXECUTION, SHALL BE APPROVED BY THE OWNER/ENGINEER, IN WRITING, A MINIMUM OF 1 MONTH PRIOR TO CONSTRUCTION. THE OWNER/ENGINEER RESERVES THE RIGHT TO REQUIRE A SAMPLE OF SUBSTITUTED MATERIAL(S) PRIOR TO APPROVAL FOR CONSTRUCTION.

1. TREES, SHRUBS, AND PLUGS SHALL BE OF NATIVE PLANT MATERIAL OF GENOTYPES FROM THE

10. FIELD ADJUST PLANTINGS TO DIVERSIFY SPECIES ACROSS THE PLANTING AREAS AND TO MEET PLANTING REQUIREMENTS. ANY ADJUSTMENTS WILL BE SHOWN ON AN AS-BUILT PLAN AND SUBMITTED

11. MULCH FOR TREES AND SHRUBS SHALL BE COARSE GRADE OAK OR MAPLE BARK AGED AT LEAST

1. STOCK SHALL NOT BE SHIPPED UNTIL THE PLANTING PREPARATIONS HAVE BEEN COMPLETED. SHIPPING SHALL BE SCHEDULED TO RESULT IN A DELIVERY AND STORAGE TIME OF NO MORE THAN 24

2. TUBERS, ROOTSTOCK, OR HERBACEOUS SEEDLINGS SHALL BE INDIVIDUALLY LABELED OR LABELED

A. INSTALL ALL AQUATIC PLANTS FIRMLY INTO THE MUD AT THE APPROPRIATE WATER DEPTH

SUBMITTALS:

1. SUBMITTALS FOR APPROVAL BY ENGINEER ARE REQUIRED FOR ALL MATERIALS PRIOR TO MOBILIZATION. ALL EXPENSES INCURRED BY CONTRACTOR PRIOR TO ENGINEER'S APPROVAL SHALL NOT BE PAID BY OWNER.

2. PLANT STOCK SUPPLIERS: SUBMIT PLANT STOCK CERTIFICATES FROM WOODY AND HERBACEOUS PLANT STOCK SUPPLIERS FOR INSPECTION BY OWNER/ENGINEER A MINIMUM OF 1 WEEK PRIOR TO TIME OF PLANTING.

- 1. PLANT STOCK CERTIFICATES FROM SUPPLIERS SHALL INCLUDE: A. BOTANICAL NAME, INCLUDING CULTIVAR, AND COMMON NAME.
 - B. QUANTITY.
 - C. SIZE.
 - D. TYPE (B&B, CONTAINER, BARE ROOT...ETC.)
 - E. ORIGIN (LOCATION GROWN).
 - F. NAME, ADDRESS, AND PHONE NUMBER OF SUPPLIER.

3. SEED STOCK: SUBMIT SEED CERTIFICATES FOR INSPECTION BY OWNER/ENGINEER A MINIMUM OF 1 WEEK PRIOR TO INITIATION OF WORK.

1. SEED MIXTURE CERTIFICATES FROM SEED SUPPLIERS SHALL INCLUDE:

- A. BOTANICAL NAMES AND COMMON NAMES. B. NET WEIGHT.
- C. PERCENTAGE OF SEEDS BY WEIGHT.
- D. PURITY OF SEED.
- E. GERMINATION PERCENTAGE.
- F. AMOUNT OF UNDESIRABLE PLANT SEEDS PRESENT IN MIXTURE.
- G. DATE OF PRODUCTION.
- H. DATE OF PACKAGING.
- I. LOCATION OF PACKAGING. J. NAME, ADDRESS, AND PHONE NUMBER OF SUPPLIER.

4. EROSION CONTROL BLANKET: SUBMIT FOR APPROVAL A CERTIFICATE STATING THE NAME OF THE MANUFACTURER, PRODUCT NAME, STYLE NUMBER, AND OTHER PERTINENT INFORMATION TO FULLY DESCRIBE EACH TYPE OF EROSION CONTROL BLANKET. THE CERTIFICATION SHALL BE ATTESTED TO BY A PERSON HAVING LEGAL AUTHORITY TO BIND THE MANUFACTURER.

5. MULCH: SUBMIT FOR APPROVAL THE NAME AND ADDRESS OF MULCH SUPPLIER(S) AND A SMALL PHYSICAL SAMPLE OF THE MATERIAL TO BE USED, MINIMUM 1 MONTH PRIOR TO BEGINNING INSTALLATION. THIS INCLUDES MULCH TO BE USED FOR SEEDING, AND TREE, SHRUB AND HERBACEOUS PLANTING.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A SOIL EROSION AND SEDIMENT CONTROL PERMIT. 2. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL SESC MEASURES NECESSARY TO COMPLY WITH SESC RULES AND THE MDEQ AND USACE PERMITS.

3. ALL ASPECTS OF THE SOIL EROSION AND SEDIMENT CONTROL PERMIT SHALL BE ADHERED TO THROUGHOUT THE DURATION OF THE PROJECT. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE ENGINEER PRIOR TO THE BEGINNING OF EARTHWORK.

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

5. 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, INCLUDING FLOW WITHIN THE DETROIT RIVER AS NECESSARY. 6. REMOVE SEDIMENT CAUSED BY ACCELERATED SOIL EROSION FROM RUNOFF WATER BEFORE IT LEAVES THE SITE OF THE EARTH CHANGE OR ENTERS A WATERBODY OR WETLAND.

7. INSTALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES BEFORE 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.)

8. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SITE DRAINAGE INCLUDING FLOW IN THE DETROIT RIVER. 9. CONTRACTOR IS RESPONSIBLE TO PROTECT ADJACENT WATER COURSES FROM THE DISCHARGE OF SEDIMENT DURING CONSTRUCTION.

10. INSTALL PERMANENT EROSION CONTROL MEASURES WITHIN 5 DAYS OF COMPLETING FINAL GRADING OR MAINTAIN TEMPORARY MEASURES UNTIL PERMANENT MEASURES ARE INSTALLED.

11. INSTALL TEMPORARY INLET FILTERS AT ALL ADJACENT AND DOWN-GRADIENT STORM WATER INLETS, CATCH BASINS AND MANHOLES AS NEEDED BASED ON SITE CONDITIONS. CATCH BASIN INLET FILTERS SHALL BE MAINTAINED CLEAN AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF A FILTER HAS HOLES OR IS INUNDATED WITH SEDIMENT, THE FILTER WILL REQUIRE REPLACEMENT.

12. THE USE OF HEAVY EQUIPMENT WILL BE MINIMAL TO CONTROL SEDIMENT TRACK-OUT. ANY MUD/SILT TRACKED ONTO PAVED SURFACES SHALL BE IMMEDIATELY REMOVED.

13. TEMPORARY SESC MEASURES SUCH AS STRAW WATTLES. COIR LOGS. STRAW BALES OR SILT FENCE SHALL BE INSTALLED ALONG SENSITIVE AREAS AS NECESSARY. MEASURES WILL BE MAINTAINED AT ALL TIMES THROUGHOUT THE CONSTRUCTION PERIOD. IF REPAIR OR REPLACEMENT IS NECESSARY, IT SHALL BE PERFORMED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. MAINTENANCE INCLUDES THE REMOVING OF BUILT-UP SEDIMENT THAT ACCUMULATES TO ½ THE HEIGHT OF WATTLES OR SILT FENCE. CONTRACTOR SHALL REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL WATTLES OR FENCE IF IT FAILS. ADDITIONALLY, THE CONTRACTOR SHALL REINSTALL ANY PORTION OF THE WATTLES OR FENCING DAMAGED BY CONSTRUCTION MACHINERY. 14. PLACE STOCKPILES AND OTHER SPOIL PILES AWAY FROM THE DRAINAGE SYSTEM TO MINIMIZE SEDIMENT TRANSPORT. IF THE STOCKPILE AND/OR SPOIL PILE MUST REMAIN ON-SITE OVERNIGHT, OR IF THE WEATHER CONDITIONS INDICATE THE CHANCE FOR PRECIPITATION, A) COVER THE PILE WITH WATER REPELLENT MATERIAL TO PREVENT EROSION AND/OR B) INSTALL SILT FENCING AROUND THE BASE OF THE PILE TO PREVENT TRANSPORT OF SEDIMENT TO THE STORM WATER SYSTEM, OR APPLY OTHER CONTROL METHODS APPROPRIATE TO THE SITE. CONTROL MEASURES TO GUARD AGAINST WIND EROSION MUST ALSO BE EMPLOYED, SUCH AS WETTING OR COVERING THE STOCKPILES. KEEP AS FEW STOCKPILES AS POSSIBLE DURING THE COURSE OF THE PROJECT. 15. SEEDING OR OTHER STABILIZATION SHALL BE REQUIRED IMMEDIATELY TO AREAS WHICH HAVE BEEN DAMAGED BY RUNOFF. 16. CONTRACTOR SHALL MAINTAIN DUST CONTROL ON THE SITE THROUGHOUT THE DURATION OF THE CONSTRUCTION PROCESS. 17 VEGETATED BUFFERS WILL BE USED IN THE PREDOMINANTLY UPLAND AREAS, AS APPROPRIATE. 18. SILT FENCE SHALL BE 3' HIGH PRE-ASSEMBLED FILTER FENCE. FABRIC SHALL ALLOW WATER TO PASS THROUGH WHILE RETAINING SEDIMENT AND DEBRIS. STAKES SHALL BE HARDWOOD AND SHALL BE ON 8'4" CENTERS. FABRIC SHALL BE DOUBLE STAPLED TO TOP OF STAKE TO ENSURE DURABILITY.

19. IN THE EVENT OF CONSTRUCTION RELATED DEBRIS ON LOCAL ROADS, CONTRACTOR SHALL CLEAN AND MAINTAIN THE ROAD. 20. CONTROL OF SEDIMENTATION DURING RIVER OPERATIONS IS REQUIRED (USING SILT CURTAIN OR OTHER CONTROL MEASURES). 21. CONTRACTOR SHALL CONTROL ALL SURFACE WATER IN A MANNER THAT PREVENTS THE EROSION AND TRANSPORT OF SEDIMENT / SOIL DISTURBED DURING CONSTRUCTION. SURFACE WATER INCLUDES FLOW WITHIN THE RIVER RAISIN CHANNEL.



3 WORKING DAYS

BEFORE YOU DIG

CALL MISS DIG

1-800-482-717