DRAWING INDEX

1. COVER SHEET
2. EXISTING CONDITIONS
3. SITE PREPARATION
4. DEMOLITION PLAN
5. DREDGE STAGING AND DEWATERING DETAILS
6. PROPOSED PLAN - OVERVIEW
7. PROPOSED PLAN - JOHNSON CREEK
8. PROPOSED CROSS SECTIONS - JOHNSON CREEK
9. PROPOSED PLAN - POINT BAR GRADING
10. PROPOSED PLAN - POND
11. PROPOSED CROSS SECTIONS - POND
12. PROPOSED DETAILS - POND OUTLET
13. PROPOSED PROFILE - POND OUTLET
14. JOHNSON CREEK PEDESTRIAN BRIDGE
15. SHEET PILE WALL DETAILS
16. DETAILS - SHEET PILE WALL
17. SEDIMENT CAPTURE AREA
18. REVEGETATION PLAN - OVERVIEW
19. REVEGETATION PLAN - JOHNSON CREEK
20. REVEGETATION PLAN - POND
21. DETAILS - REVEGETATION

SUPPLEMENTAL INFORMATION

1. “FIGURE 2 - SITE PLAN”, OHM SEDIMENT THICKNESS DATA, 2015, FOR INFORMATIONAL PURPOSES ONLY
2. “AS-BUILTS”, SME, 2019, FOR INFORMATIONAL PURPOSES ONLY
3. “NORTHVILLE STATION, MICHIGAN, 1941”, HISTORIC PLAN VIEW SKETCH OF FISH HATCHERY PARK

PROJECT DESIGN FUNDED BY THE ENVIRONMENTAL PROTECTION AGENCY THROUGH A GREAT LAKE RESTORATION INITIATIVE GRANT. GLRI EPA AWARD NO. GL-00E02344-0
PROJECT CONSTRUCTION FUNDED BY THE ENVIRONMENTAL PROTECTION AGENCY THROUGH A GREAT LAKE RESTORATION INITIATIVE GRANT. GLRI EPA AWARD NO. GL-00E02478-0
EXISTING SITE CONDITIONS:

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

2. HISTORY OF FISH HATCHERY PARK: FISH HATCHERY PARK FORMED AS A FISH HATCHERY WITH GROUND LEVEL PONDS AND STRUCTURES CONSTRUCTED FOR THE PROPAGATION OF BREEDING AND RAISING FISH. THE PONDS COVERING PORTIONS OF THE PRESENT DAY PARK, PARKING LOT, TERRACE COURTYARDS, AND MICRO HILLS. THE PONDS CONSTRUCTED TO A PREDICTABLE TIME IN THE 1940'S. IT IS SUSPECTED THAT CONCRETE BUILDING MATERIALS AND UNDERGROUND UTILITIES WERE USED IN THE CONSTRUCTION PHASES OF THE SITE. THE CONTRACTOR SHALL UNDERSTAND THAT THIS SITE HAS PHYSICAL FEATS OF THE EXISTING GROUND SURFACE (E.G. CUDDLERS) AND WILL BE USED AS A BASIS TO REQUEST ADDITIONAL FUNDS.

3. THE CONTRACTOR UNDERSTANDS AND ACKNOWLEDGES THAT THE PERFORMANCE OF THE WORK IS REQUIRED FROM THE ROUGE RIVER SYSTEM AND FLOODPLAIN AND THAT THE ENCOUNTERED DEBRIS WILL NOT BE USED AS A BASIS TO REQUEST ADDITIONAL FUNDS.

4. THE CONTRACTOR UNDERSTANDS AND ACKNOWLEDGES THAT THEY HAVE TAKEN INTO ACCOUNT THE POTENTIAL FOR ANY WATER LEVEL CHANGES THAT MIGHT OCCUR IN CONTROLLING, SCHEDULING, AND FEASIBILITY OF THE CONTRACT WORK UNDER THE EXISTING ENVIRONMENTAL CONDITIONS. THEREFORE THE CONTRACTOR ACKNOWLEDGES THAT ANY FLUCTUATION IN WATER LEVELS, FLOODING, OR INUNDATION SATURATING THE WORK SITE IS NOT CONSTITUTIVE OF A CHANGE IN CONDITIONS OR AN INFRACTION OF SITE CONDITION.

5. THE CONTRACTOR SHALL BE FULLY AWARE OF THE ROUGE RIVER HYDROLOGY AND CURRENT PREVALENT CONDITIONS SO THAT WORK CAN BE SECURED AND PROTECTED AT ALL TIMES SO THAT SAFE JOB SITE WORKING CONDITIONS ARE ASSURED AND THAT WORK CAN BE CONTINUED IN Accordance WITH ALL SOILS SATURABLE RIGHTS AND ENVIRONMENTAL LAWS.

6. THE CONTRACTOR ACKNOWLEDGES THAT DELAYS IN THE START OF OR COMPLETION OF WORK TO FLUCTUATIONS IN WATER LEVELS THROUGHOUT THE EXISTENCE OF THE PROJECT SHALL NOT CONSTITUTE A CHANGE IN CONDITIONS AND SHALL BE AS A RESULT OF ANY EXTERNAL TIME OR DAMAGES. IF THE CONTRACTOR WILL BE UNDOKABLE DELAYS AND IF BEGINNING OR FLATTENING THE CONTRACT BY BOUNDARY OF CONSULTING WATER LEVELS, FORMULA AND/OR INUNDATION.

7. THE ENGINEER RESERVES THE RIGHT TO DISMISS WORK ACTIVITIES WHICH ARE NOT IN THE BEST INTEREST OF THE PROJECT OR DO TO DESERT WATER OR WATER LEVEL CONDITIONS. THE DIRECTIVE TO SUSPEND WORK ACTIVITIES IS SUBMITTED TO THE CONTRACTOR FOR APPROVAL AND SUCH SUSPENSION MAY BE BASED UPON THE CONTRACTOR'S REQUEST FOR REASONABLE TIME OR DAMAGE.
TREES TO BE REMOVED:

ONE TREE ACROSS JOHNSON CREEK TO BE REMOVED AS NEEDED FOR PROPOSED GRADING.

PROPOSED WORK FOR INSTALLATION OF REMOVE CONCRETE RUBBLE AND DEBRIS (HORIZONTALLY AND VERTICALLY) OF AT EXISTING POND OUTLET WITHIN 5' REPLACE AT LOCATION TBD REMOVE, STOCKPILE, AND FISH HATCHERY POND EXISTING BOULDER

SCHEDULING NOTES:

SITE CLEARING NOTES:

TREE REMOVAL NOTES

ONE TREE ACROSS JOHNSON CREEK TO BE REMOVED AS NEEDED FOR PROPOSED GRADING

TREES TO BE REMOVED IN THIS AREA TO BE CONFIRMED PRIOR TO CONSTRUCTION.

Legend:

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<tr>
<th>Sheet Title</th>
<th>Plan</th>
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<td>MICHIGAN</td>
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<tr>
<td>Phone: 734.769.3004</td>
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<td></td>
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<tr>
<td>Fax: 734.769.31664</td>
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<tr>
<td>Scale: 1&quot; = 20' @ 22&quot; x 34&quot;</td>
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<tr>
<td>DEMOLITION PLAN</td>
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</table>
GENERAL NOTES:

1. SAFE TO SIGHTS DEWATERING CONTAINMENT, INCLUDING INFRASTRUCTURE, PROCEED TO PERMITS PRIOR TO COMMENCEMENT OF WORK BY CONDUCTING A
   DREDGING SURVEY ASSOCIATED WITH THE SPECIFICATION.

2. FOR DREDGE SURVEYS, CONTRACTOR'S SURVEY PERSONAL AND EQUIPMENT ARE TO BE FURNISHED BY CONTRACTOR AND CONTRACTOR IS
   RESPONSIBLE FOR ALL DEWATERING SURVEYS.

3. CONTRACTOR MAY CHOOSE TO SELL OR TRADE MATERIALS FROM THE ANCHOR POINTS OF HYDRAULIC DREDGING OR VARIOUS DREDGING
   TECHNIQUES OR BOTH.

4. CONTRACTOR TO SUBMIT BIDDOC PLAN AND PROJECT IS RESPONSIBLE FOR THE PROJECT MANAGER FOR APPEARANCE PRIOR TO COMMENCEMENT
   OF WORK.

5. CONTRACTOR MUST SUBMIT THEIR GROUNDWATER DRAINAGE PLAN FOR THE PROJECT MANAGER FOR APPROVAL PRIOR TO COMMENCEMENT
   OF WORK.

6. CONTRACTOR TO PROVIDE THEIR GROUNDWATER DRAINAGE PLAN FOR THE PROJECT MANAGER FOR APPROVAL PRIOR TO COMMENCEMENT
   OF WORK.

7. CONSTRUCTION OF DEWATERING STRUCTURE TO BE CONSTRUCTED TO THE SPECIFICATIONS OF THE CONTRACTOR.

8. CONTRACTOR TO REGISTER THEIR GROUNDWATER DRAINAGE PLAN FOR THE PROJECT MANAGER FOR APPROVAL PRIOR TO COMMENCEMENT
   OF WORK.

9. CONTRACTOR TO PROVIDE THEIR GROUNDWATER DRAINAGE PLAN FOR THE PROJECT MANAGER FOR APPROVAL PRIOR TO COMMENCEMENT
   OF WORK.

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60. CONTRACTOR TO PROVIDE THEIR GROUNDWATER DRAINAGE PLAN FOR THE PROJECT MANAGER FOR APPROVAL PRIOR TO COMMENCEMENT
     OF WORK.
1/4 H: V SLOPE. SEE SHEET 18 FOR REVEGETATION.

PROPOSED FLOODPLAIN BENCH Width VARIES TYP 10' SEE SHEET 18 FOR REVEGETATION.

MATCH EXISTING GRADES ON EXISTING BENCH

NOTE: EXCAVATED SOIL MAY BE USED IN BENCH CONSTRUCTION. SEE SHEET 8.
OUTLET STRUCTURE

PROPOSED STEEL SHEET PILING
PZ-27 GRADE 50 STEEL WITH CHANNEL CAP

SHEET LENGTH: 15' (MIN)
LINEAR FOOTAGE OF WALL: 397'

EXIST. ELEV: 782.5'
EXIST. WATER DEPTH: 4.5'

SCALE: 1" = 10' @ 22" x 34"

PROPOSED FACE OF FLOODPLAIN
PROPOSED FLOODPLAIN BENCH WOOD/ SOIL VMSE

LEGEND

DREDGING NOTES:
1. CONTRACTOR TO VERIFY EXISTING CONDITIONS, INCLUDING BATHYMETRY. PRIOR TO START OF WORK
2. CONTRACTOR TO COMPLETE FLOODPLATE SURVEYS FOR THE PROPOSED AREA OF WORK. PRIOR TO START OF WORK
3. CONTRACTOR TO SUBMIT A DREDGING PLAN AND FLOODPLAIN BENCH TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO DREDGING
4. CONTRACTOR IS RESPONSIBLE FOR STAKING AND DEMARCATING LIMITS OF EXCAVATION AND DREDGING
5. CONTRACTOR TO COMPLETE FLOODPLAIN SEDIMENT ELEVATION SURVEYS FOR THE PROPOSED AREA OF WORK. PRIOR TO DREDGING
6. CONTRACTOR TO SUBMIT A DREDGING PLAN AND FLOODPLAIN BENCH TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO DREDGING
7. CONTRACTOR TO SUBMIT A DREDGING PLAN AND FLOODPLAIN BENCH TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO DREDGING
8. CONTRACTOR TO SUBMIT A DREDGING PLAN AND FLOODPLAIN BENCH TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO DREDGING
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12. CONTRACTOR TO SUBMIT A DREDGING PLAN AND FLOODPLAIN BENCH TO THE PROJECT ENGINEER FOR REVIEW PRIOR TO DREDGING
PROPOSED STEEL SHEET PILING
PZ-27 GRADE 50 STEEL WITH CHANNEL CAP
SHEET LENGTH: 15' (MIN)
LINEAR FOOTAGE OF WALL: 397'

EXISTING CONTOUR
EXISTING FLOODPLAIN BENCH
PROPOSED CONTOUR
PROPOSED FLOODPLAIN BENCH
FACE OF FLOODPLAIN BENCH
POUND OUTLET
PROPOSED SHEET PILE WALL

SECTION M-M' POOL
VERTICAL SCALE: 1" = 2', HORIZONTAL SCALE: 1" = 4'

SECTION N-N' STEP
VERTICAL SCALE: 1" = 2', HORIZONTAL SCALE: 1" = 4'

PLACED 4x6 COBBLE TO A DEPTH OF 6" BELOW FINAL GRADE (FULL UPSTREAM) AND FULLY COMINCLUDING OF PROPOSED POND OUTLET COBBLE TO MANUFACTURED ENDING AT STA 0+80

PLACE 4x6 COBBLE TO A DEPTH OF 6" BELOW FINAL GRADE (FULL UPSTREAM) AND FULLY COMINCLUDING OF PROPOSED POND OUTLET COBBLE TO MANUFACTURED ENDING AT STA 0+80

REMOVE EXISTING COBBLES IN CONJUNCTION WITH CONSTRUCTION OF PROPOSED POND OUTLET

PROPOSED CONTOUR WALL (FULL UPSTREAM) IN CONJUNCTION WITH CONSTRUCTION OF PROPOSED POND OUTLET

MATCH EXISTING GRADE
6'-1' 1V:3H SLOPE OR FLATTER

MATCH EXISTING GRADE
6'-1' 1V:3H SLOPE OR FLATTER

PROPOSED ELEVATION
EXISTING ELEVATION

AGGREGATE SUBBASE:
- WASHED 6AA GRAVEL
- MINIMUM 6" THICKNESS

LIMESTONE RIPRAP:
- 4x6" COBBLE WITH MDOT CLASS II NATURAL SAND FOR INFILL
- MINIMUM DEPTH 12"

LIMESTONE SLAB
APPROX. 3' x 1' x 0.5'

MATCH EXISTING GRADE
PROPOSED SHEET PILING
EX. CONC. PAVILION
SHEET LENGTH 15' (MIN)
LINEAR FOOTAGE OF WALL: 397'
EX. CONC. BRIDGE
W/ RAILINGS
PROPOSED SHEET PILING
PZ-27, GRADE 50 STEEL
PROPOSED HANDRAIL WITH SIMILAR AESTHETICS TO EX. PEDESTRIAN BRIDGE HANDRAIL, OR APPROVED EQUAL.
CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
· TWO-LINE STEEL PIPE RAILING WITH 1/2" SQUARE STEEL BAR PICKETS SPACED NOT TO ALLOW 4" SPHERE TO PASS THROUGH
· SATIN BLACK DUAL COAT POWDER COAT FINISH
· POSTS TO BE WELDED TO PILE CAP (OFFSET IN DWG FOR CLARITY)
LEAVE 3' (MIN) OF EX. CONCRETE WALL IN PLACE
LEAVE 3' (MIN) OF EX. CONCRETE WALL IN PLACE
PLACE RIPRAP IN STREAM AGAINST ABUTMENT WALL
EX. VOID ADJACENT TO CONCRETE WALL TO BE FILLED WITH FLOWABLE FILL AS DIRECTED BY ENGINEER
INSTALL 18" OF 4X8" RIPRAP.
NON-WOVEN GEOTEXTILE PLACED UNDER ALL RIPRAP.
SHEET FILE NOTIFICATION REQUIREMENT:
CONTRACTOR SHALL PROVIDE ENGINEER WITH TENTATIVE DRIVING SCHEDULE AND
CONFIRM SCHEDULE 48 HOURS PRIOR TO INSTALLATION OF SHEET PILES.
CONTRACTOR SHALL PROVIDE ENGINEER WITH WEEKLY UPDATE ON DRIVING
SCHEDULE UNTIL ALL SHEETING HAS BEEN INSTALLED.

EXIST. CONTOUR
EXIST. EDGE OF WATER
PROPOSED CONTOUR
PROPOSED SHEET PILE WALL
FACE OF FLOODPLAIN BENCH
PROPOSED RipRap BENCH
PROPOSED Sheet Pile

SHEET PILING DETAIL A
SCALE: 1" = 5'

SHEET PILING DETAIL B
SCALE: 1" = 10'

PROPOSED SHEET PILE WALL
FACE OF FLOODPLAIN BENCH
PROPOSED RipRap BENCH
PROPOSED Sheet Pile

EXIST. CONTOUR
EXIST. EDGE OF WATER
PROPOSED CONTOUR
PROPOSED SHEET PILE WALL
FACE OF FLOODPLAIN BENCH

EX. GAZEBO NOT TO BE DISTURBED OR DAMAGED.
PR. HANDRAIL TO MEET BRIDGE HANDRAIL WITH GAP OF LESS THAN 4".

PROPOSED HANDRAIL TO HAVE SIMILAR AESTHETICS TO EX. PEDESTRIAN BRIDGE HANDRAIL OR APPROVED EQUIVALENT. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

- TWO-LINE STEEL PIPE RAILING
- 1 1/2" SQUARE STEEL BAR PICKETS SPACED NOT TO ALLOW 4" SPHERE TO PASS THROUGH
- SATIN BLACK DUAL COAT POWDER COAT FINISH
- POSTS TO BE WELDED TO PILE CAP
- LENGTH: 175'

PR. SHEET PILING
PZ-27, GRADE 50 STEEL
SHEET LENGTH: 15' (MIN)

TOP OF PR. SHEET PILING VARIES 790' TO 792'

PR. SHEET PILING PZ-27, GRADE 50 STEEL SHEET LENGTH: 15' (MIN)

TOP OF PR. SHEET PILING VARIES 790' TO 792'

EX. GRADE

TOP OF SHEET PILE WALL SEE DETAIL 6/8

EX. GRADE

TOP OF SHEET PILE WALL SEE DETAIL 6/8

EX. WATER ELEV.

TOP OF SHEET PILE AT 775.0'
**COMPACTED MDOT 21AA AGGREGATE**
6" (MIN.)

**EXISTING SUITABLE SUBGRADE**
**COMPACT TO 95% MAX DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST**

**NOTES:**
1. UNSUITABLE SOILS, SUCH AS MUCK PEAT, TOPSOIL, MARL, SILT OR OTHER UNSTABLE MATERIALS, SHALL BE UNDERCUT AND REPLACED WITH COMPACTED SAND SUBGRADE FILL WHERE INCIDENTAL TO ROUGH GRADING.
2. AREAS OF SUBGRADE FILL SHALL BE CONSTRUCTED USING 12" THICK LIFTS OF COMPACTED SAND, MDOT CLASS II OR EQUIVALENT ON-SITE MATERIAL, AS APPROVED.
3. EXISTING GRAVEL MATERIAL MAY BE RE-USED AND 'SWEETENED' WITH PROPOSED BASE AGGREGATE, IF SUITABLE.

---

**SEDIMENT CAPTURE AREA SEED MIX**

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<th>SCIENTIFIC NAME</th>
<th>COMMON NAME</th>
<th>SEEDS/LB</th>
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<td>ELYMUS CANADENSIS</td>
<td>CANADA WILD RYE</td>
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<td>AVENA SATIVA</td>
<td>SEED OATS</td>
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**TOTAL**
111.00

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**SECTION Q'-Q' TYPICAL SEDIMENT CAPTURE AREA SECTION**

**NOTES:**
1. 6" OF RIVER ROCK AROUND EDGES TO BORDER SEDIMENT CAPTURE AREA
2. PONDING DEPTH OF 12"
REVEGETATION LEGEND

FLOODPLAIN BENCH REVEGETATION:
- Erosion Control Blanket (ECB) Installation:
  - ECB Covering Floodplain Bench (NAG C125BN and GEI Coir Mat 70)
  - Live Brush Layers Between Lifts
  - 2 Rows of Live Stakes at Edge of Bank
  - Same-Species Groups of Live Stakes Min. 10 Stakes Per Group
  - 1 Gal. Containerized Trees
  - Containerized Shrubs
  - 4 In. Topsoil
  - Native Seeding

SLOPE REVEGETATION:
- ECB (NAG C125BN, See ECB Installation Notes)
- 1 Gal. Containerized Trees
- Containerized Shrubs
- 4 In. Topsoil
- Native Seeding

POINT BAR REMOVAL REVEGETATION:
- ECB (NAG S75BN)
- Live Stakes
- 4 In. Topsoil
- Native Seeding

SEDIMENT CAPTURE AREA REVEGETATION:
- ECB (NAG S75BN)
- 6 In. Topsoil
- Native Seeding

POND REVEGETATION:
- Emergent Plantings

ALL OTHER DISTURBED AREA:
- ECB (NAG S75BN), Hydroseeding, or Blown and Crimped Straw
- 4 In. Topsoil
- Turf Seeding

SEE SHEETS 19-21 FOR DETAILS.

EROSION CONTROL BLANKET (ECB) INSTALLATION FOR SLOPE OF FLOODPLAIN BENCH:
- Installation of ECB to Match Manufacturer's Instructions (Shoreline/Stream Bank Applications):
  - Install ECB After Seeding But Prior to Planting
  - Install ECB Perpendicular to Stream Channel
  - Anchor ECB Using a 6 In. Deep x 6 In. Wide Trench Where ECB Exceeds Beyond the Upslope Portion of the Trench Until a 12 In. Gap in the Bottom of the Trench
  - Anchor Eco Blanket on the Upslope Side of the Trench
  - Install ECB After Seeding, But Prior to Planting
  - Fill the Lowermost 12 In. Portion of ECB
  - Secure ECB to Compacted Soil, Secure ECB Over Compacted Soil, With Additional Sealing as Needed
  - Secure ECB Over Compacted Soil With a Row of Staples Across the Width of the ECB
  - All Horizontal and Vertical Seams Must Be Stapled With a 2 In. to 5 In. Overlap
  - Staples Should Be Shingled in the Stream Flow Direction
  - An Adequate Number of Staples Must Be Used to Secure ECB. Staples Pattern Must Match ECB Trench Pattern With Min. staple Density of 3.4 Staples Per Square Yard
ROUGE RIVER AOC
JOHNSON CREEK -
FISH HATCHERY PARK HABITAT RESTORATION PROJECT

ALLIANCE OF ROUGE COMMUNITIES
NORTHLAKE, WAYNE COUNTY, MICHIGAN

REVEGETATION PLAN - JOHNSON CREEK

LEGEND

- REVEGETATION
- LIVE STAKES
- TURF SEEDING
- TURF
- SEED BAG PLANTING
- 25 LIVE STAKES, 24" O.C. SAME SPECIES IN MINIMUM GROUPS OF 10 (TYP.)
- 10 LIVE STAKES AT BANKS OF LIVE STAKES AT B&B
- PROPOSED LIVE STAKES AT BANKS OF LIVE STAKES AT B&B
- EROSION CONTROL, BLURRY ON FLOODPLAIN BENCHES AND CHANNEL SLOPES
- NATIVE SEED AND PLANT EROSION CONTROL BLURRY ON FLOODPLAIN BENCHES AND CHANNEL SLOPES

LIVE STAKES SPECIES LIST (100 TOTAL)
- B&B
- 3 GALL.
- 2 AR
- PROPOSED 15 LIVE STAKES AT BANKS OF LIVE STAKES AT B&B
- 3 GALL.
- 2 AR
- INSTALL, TURF SEED AND PLACE STAKES ECA
- HYDROSEEDING, OR SEASONAL AND PLANT SEED ON CURRENT
- SOIL LIFT ABOVE THE WATER ELEVATION AT THE TIME OF CONSTRUCTION. ADDITIONAL 15 LIVE BRUSH INSTALLATIONS SHOULD BE EARRIED OUT IN THE DORMANT SEASON.

INSTALL TURF SEED AND PLACE STAKES ECA HYDROSEEDING OR SEASONAL AND PLANT SEED ON CURRENT SOIL LIFT ABOVE THE WATER ELEVATION AT THE TIME OF CONSTRUCTION. ADDITIONAL 15 LIVE BRUSH INSTALLATIONS SHOULD BE EARRIED OUT IN THE DORMANT SEASON.

SLOPE RECONSTRUCTION
- SLOPE RECONSTRUCTION
- 25 LIVE STAKES, 24" O.C. SAME SPECIES IN MINIMUM GROUPS OF 10 (TYP.)
- INSTALL NATIVE SEED AND PLACE EROSION CONTROL
- NATIVE SEEDING
- IN VMSE TREATMENT WITH TWO LAYERS

POINT BAR REMOVAL REVEGETATION:
- PROPOSED LIVE STAKES AT BANKS
- LIVE STAKES
- B&B
- 3 GALL.
- 2 AR
- INSTALL NATIVE SEED AND PLACE EROSION CONTROL
- NATIVE SEEDING
- IN VMSE TREATMENT WITH TWO LAYERS

SEGMENT CAPTURE AREA REVEGETATION
- ALL OTHER DISTURBED
- NATIVE SEEDING
- IN VMSE TREATMENT WITH TWO LAYERS
- 25 LIVE STAKES, 24" O.C. SAME SPECIES IN MINIMUM GROUPS OF 10 (TYP.)

AVERAGE BUNDLE SIZE: 11 LB (MINIMUM) PER BUNDLE
34 BRANCHES PER

BANK EROSION SIZE: 11 LB (MINIMUM) FOR BUNDLES
24 BRANCHES PER

AVG. LENGTH 10 FT.
AVG. DIAM. 1 IN.
1/4" TO 1/2"
1/4" TO 1/2"
1/4" TO 1/2"
NOTES:
1. INSTALL IN MUDFLAT/TILL ZONE AS DIRECTED BY LANDSCAPE ECOLOGIST. HAMMER AND PILOT HOLES AS NECESSARY. PUSH INTO THE GROUND BY HAND. DEAD BLOW PINS MAY BE USED FOR SUPPORT.
2. INSTALL LIVE STAKES AT RIGHT ANGLES TO SLOPE, 2-3 FEET APART IN VERTICAL CUTTING, 1/2 INCH TO 1-1/2 INCH IN DIAMETER)
3. BURY FOUR-FIFTHS OF THE STAKE IN THE GROUND, AND FIRMLY PACK SOIL AROUND IT. ORIENT THE BUDS UP.
4. INSTALL STAKES 3 FEET APART IN TRIANGULAR SPACING PATTERN.

PLANT ALL SHRUBS HORIZONTAL.

FRAME TOP 1/2 OF BURLAP OR TREE WRAP FROM BASE TO FIRST BRANCH.

TREE TRUNK SHALL BEAR SAME OR SLIGHTLY HIGHER RELATION TO FINISH GRADE AS TO PRIOR GRADE - NEVER LOWER.

DEAD OR BROKEN BRANCHES; RETAIN NATURAL FORM.

PRUNE ONLY AS DIRECTED EXCEPT FOR REMOVING DEAD OR BROKEN BRANCHES; RETAIN NATURAL FORM.

IF CONTAINER STOCK IS ROOT BOUND, MAKE 4 VERTICAL CUTS IN ROOT BALL WITH SHARP BLADE.

SCARFY BOTTOM AND SIDEWALLS OF PLANTING PIT.

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SCARFY BOTTOM AND SIDEWALLS OF PLANTING PIT.
ALL DIMENSIONS AND QUANTITIES ARE APPROXIMATE
SECTION 1: NEW WALL - AFTER CONSTRUCTION

DETAIL 1: PROPOSED WALL STEEL REINFORCEMENT

#4 BAR 1-1/2" O.C. EACH WAY
#

#4 BAR 1-1/2" O.C. 2 HORIZONTAL ROWS

3,500 PSI MIN. (28-DAY) EXTERIOR AIR = 5% TO 7%

DETAIL 2: PROPOSED WALL AND EXISTING WALL CONNECTION

#4 BAR 1-1/2" O.C. 2 VERTICAL ROWS

PROPOSED CONCRETE RETAINING WALL TO REMAIN (TYP.)

EXISTING CONCRETE RETAINING WALL TO REMAIN (TYP.)

SOL SIDE

DRAIN SIDE

WHERE NEW WALL IS ADJACENT TO EXISTING WALL INSTALL #6 MIN. TO 1000# STEEL & EPOXY (ONE ROW STEEL @ 12" VERTICAL SPACING) PER MANUFACTURER'S RECOMMENDATIONS.

APPROXIMATE LOCATION OF PERFORATED DRAINAGE PIPE (TYP.)

APPROXIMATE LOCATION OF PERFORATED DRAINAGE PIPE (TYP.)

ENGINEERED fill (TYP.)

NATURAL SOILS AND FILL (TYP.)

SECTION 2: TYPICAL EXISTING CONDITION

TYPICAL EXISTING CONDITION

GC2.1

 NTs

GC1.01

 SECTIONS AND DETAILS

CONCRETE RETAINING WALL REPAIR

JOHNSON DRAIN

FISH HATCHERY PARK

NORTHVILLE, MICHIGAN

FOR PROPOSED CONCRETE RETAINING WALL (TYP.)

EXISTING CONCRETE RETAINING WALL TO REMAIN (TYP.)

WHERE NEW WALL IS ADJACENT TO EXISTING WALL INSTALL #6 MIN. TO 1000# STEEL & EPOXY (ONE ROW STEEL @ 12" VERTICAL SPACING) PER MANUFACTURER'S RECOMMENDATIONS.

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