

MASSILLON MINING AND STOCKPILE SITE STORM WATER POLLUTION PREVENTION PLAN

CITY OF MASSILLON, COUNTY OF STARK, STATE OF OHIO

SITE INFORMATION

PREDEVELOPMENT:

TOTAL PROJECT AREA 92.98 Ac.
EXISTING OPEN SPACE
PRE-DEV. RUNOFF COEF. 82.0

POST DEVELOPMENT:

TOTAL AREA DISTURBED 92.98 Ac.
IMPERVIOUS AREA (PERCENT) 0.00 Ac. (0.00%)
PROPOSED ASPHALT PLANT
POST DEV. RUNOFF COEFF. 82.0

SOIL TYPES:

CpA - Chili Silt Loam, 0 to 2 percent slopes
CpB - Chili Silt Loam, 2 to 6 percent slopes
CpC - Chili Silt Loam, 6 to 12 percent slopes
CvF2 - Chili and Conotton Gravelly Loams
CwA - Conotton Loam, 0 to 2 percent slopes
CyD2 - Conotton Gravelly Loam, 12 to 18 percent slopes
Wd - Wayland Silt Loam
WmA - Wheeling Loam, 0 to 2 percent slopes

SITE LOCATION INFORMATION

SITE INFORMATION

CITY OF MASSILLON STARK COUNTY, OHIO
Name of Watershed/Immediate Receiving Water(s)
UNNAMED TRIBUTARY OF THE TUSCARAWAS RIVER
WARMINGTON STREET, WEST OF S.R. 21
Site Address

DEVELOPER

THE SHELLEY GROUP
8920 CANYON FALLS BLVD., SUITE 120
TWINSBURG, OHIO 44087
(330) 425-5197

SWP3 AUTHORIZATION AGENT CONTACT INFORMATION:

CLARENCE D. WATKINS, P.E., CPESC
BRAMHALL ENGINEERING AND SURVEYING COMPANY, INC.
801 MOORE ROAD
AVON, OHIO 44011
(440) 934-7878

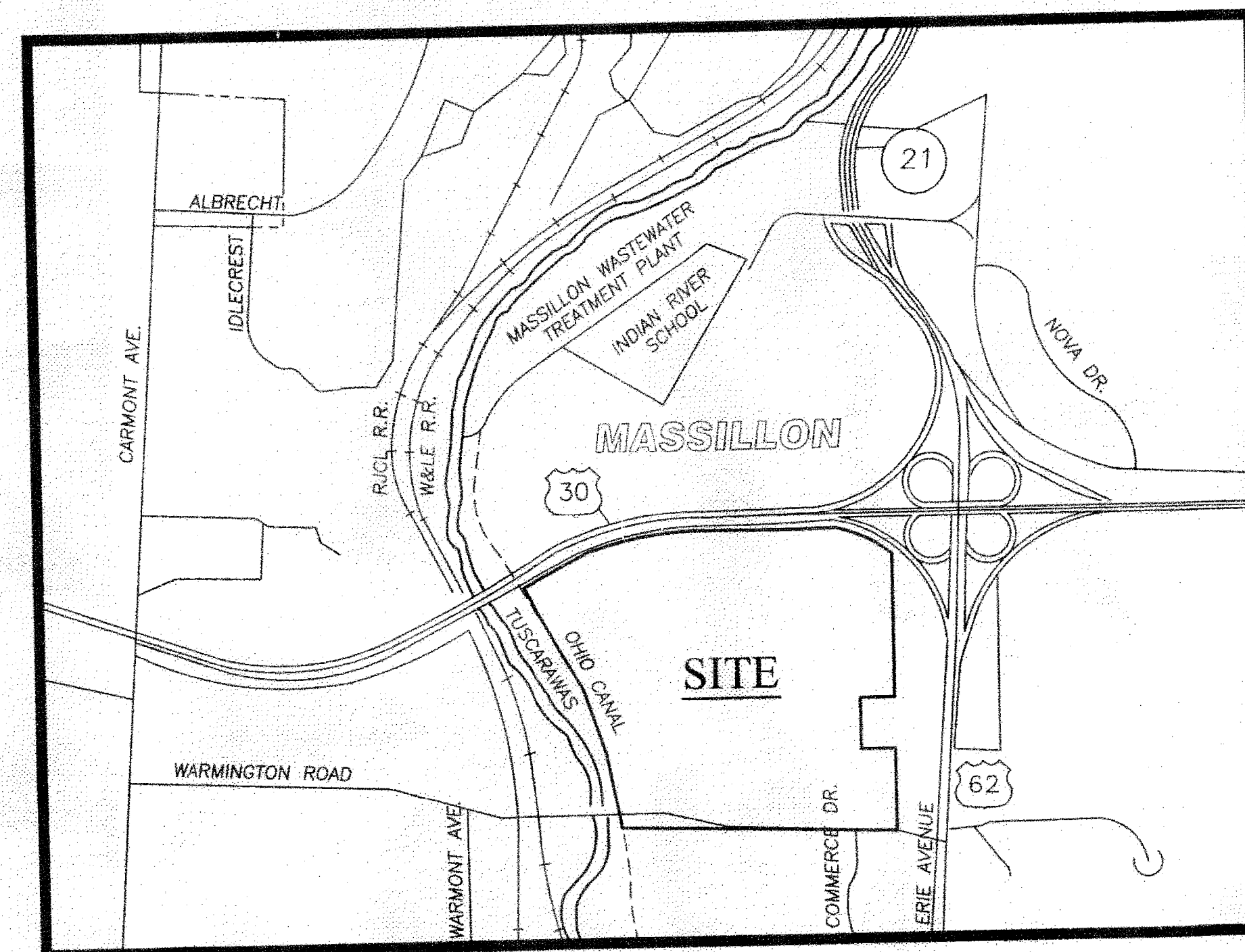
SITE/ OPERATOR CONTACT INFORMATION:

CONTACT: TIM BYRD
THE SHELLEY COMPANY
8920 CANYON FALLS BLVD., SUITE 120
TWINSBURG, OHIO 44087
(330) 833-8527

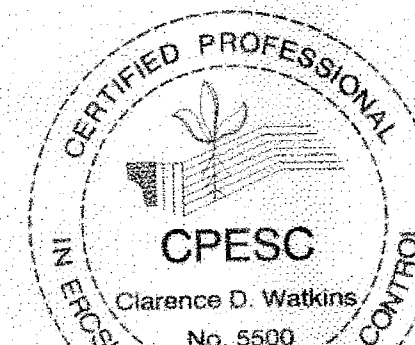
OHIO EPA NOI PERMIT NO.:

SURVEY NOTE:

THE TOPOGRAPHIC SURVEY INFORMATION UTILIZED WITHIN IN THIS
STORM WATER POLLUTION PREVENTION PLAN WAS TAKEN WAS
COLLECTED BETWEEN NOVEMBER 2008 AND JANUARY 2009 BY
BRAMHALL ENGINEERING AND SURVEYING COMPANY. SAID
INFORMATION MAY NOT REFLECT THE CURRENT TOPOGRAPHIC
CONDITIONS.



SITE LOCATION MAP

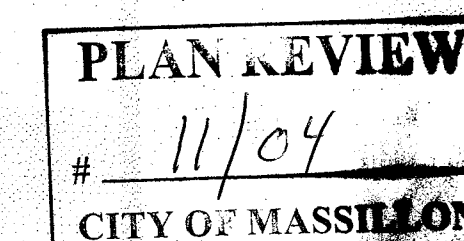
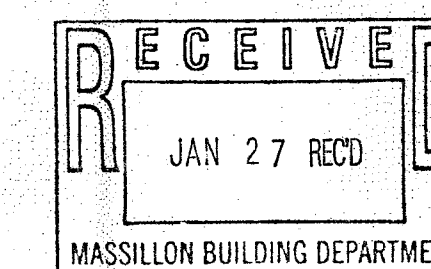


Clarence D. Watkins
1/18/2011

SIGNATURE LIST

SIGNATURE LIST OF ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED IN TEMPORARY SEDIMENT
AND EROSION CONTROL PRACTICES PER APPENDIX B OF SUPPLEMENTAL SPECIFICATION 832 -
TEMPORARY SEDIMENT AND EROSION CONTROL

| SIGNATURE | PRINTED NAME | TITLE | COMPANY | DATE |
|-----------|--------------|-------|---------|------|
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STANDARD CONSTRUCTION NOTES:

- ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE TEMPORARILY SEEDED AND MULCHED (ITEM 832) PER ODOT'S "HANDBOOK OF SEDIMENT AND EROSION CONTROL."
- ALL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
- ANY SPOIL FROM THE PROJECT SHALL BE PLACED WITHIN THE AREAS COVERED BY THIS SITE PLAN.
- ALL BEST MANAGEMENT PRACTICES SHALL BE FURNISHED, INSTALLED, AND MAINTAINED PER ODOT'S "HANDBOOK OF SEDIMENT AND EROSION CONTROL."
- CONSTRUCTION ENTRANCES SHALL BE COORDINATED WITH THE MAINTENANCE OF TRAFFIC SECTION OF THE PROPOSED PLAN SET.
- ALL BEST MANAGEMENT PRACTICES SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 832 AND 833.
- MAINTAIN POSITIVE DRAINAGE AT ALL TIMES.
- THE ESTIMATED START DATE OF CONSTRUCTION IS FEBRUARY 1, 2011 AND THE ESTIMATED COMPLETION DATE IS MAY 31, 2011.
- CLARENCE D. WATKINS OF BRAMHALL ENGINEERING AND SURVEYING COMPANY WILL BE THE AUTHORIZING AGENT FOR ALL AMENDMENTS TO THE STORM WATER POLLUTION PREVENTION PLAN.
- SITE CONTACT: TIM BYRD, (330) 833-8527

ACCEPTABLE EROSION CONTROL TIMETABLE

| | J | F | M | A | M | J | J | A | S | O | N | D |
|---------------|---|---|---|---|---|---|---|---|---|---|---|---|
| TEMP. SEEDING | | X | X | X | X | | | | | | | |
| PERM. SEEDING | | | | | X | | | | | | | |
| LANDSCAPING | | | | | X | | | | | | | |
| MULCHING | | | | | X | | | | | | | |
| MAINTENANCE | | X | X | X | X | | | | | | | |

SCHEDULE OF MAJOR CONSTRUCTION OPERATIONS

| | J | F | M | A | M | J | J | A | S | O | N | D |
|--------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| CLEARING | | X | | | | | | | | | | |
| ROUGH GRADING | | X | | | | | | | | | | |
| TEMP. EROSION CONTROL | | X | X | X | X | | | | | | | |
| FINE GRADING | | | | | X | X | | | | | | |
| TOPSOIL + SEEDING | | | | | X | X | | | | | | |
| LANDSCAPE | | | | | X | X | | | | | | |
| TEMP. EROSION CONTROL MAINTENANCE | | X | X | X | X | | | | | | | |

FILE NUMBER: DRAWINGS/DWG/FILENAME

| DATE | BY | DESCRIPTION |
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| 12-07-2010 | CDW | ISSUED TO CLIENT FOR REVIEW AND APPROVAL |
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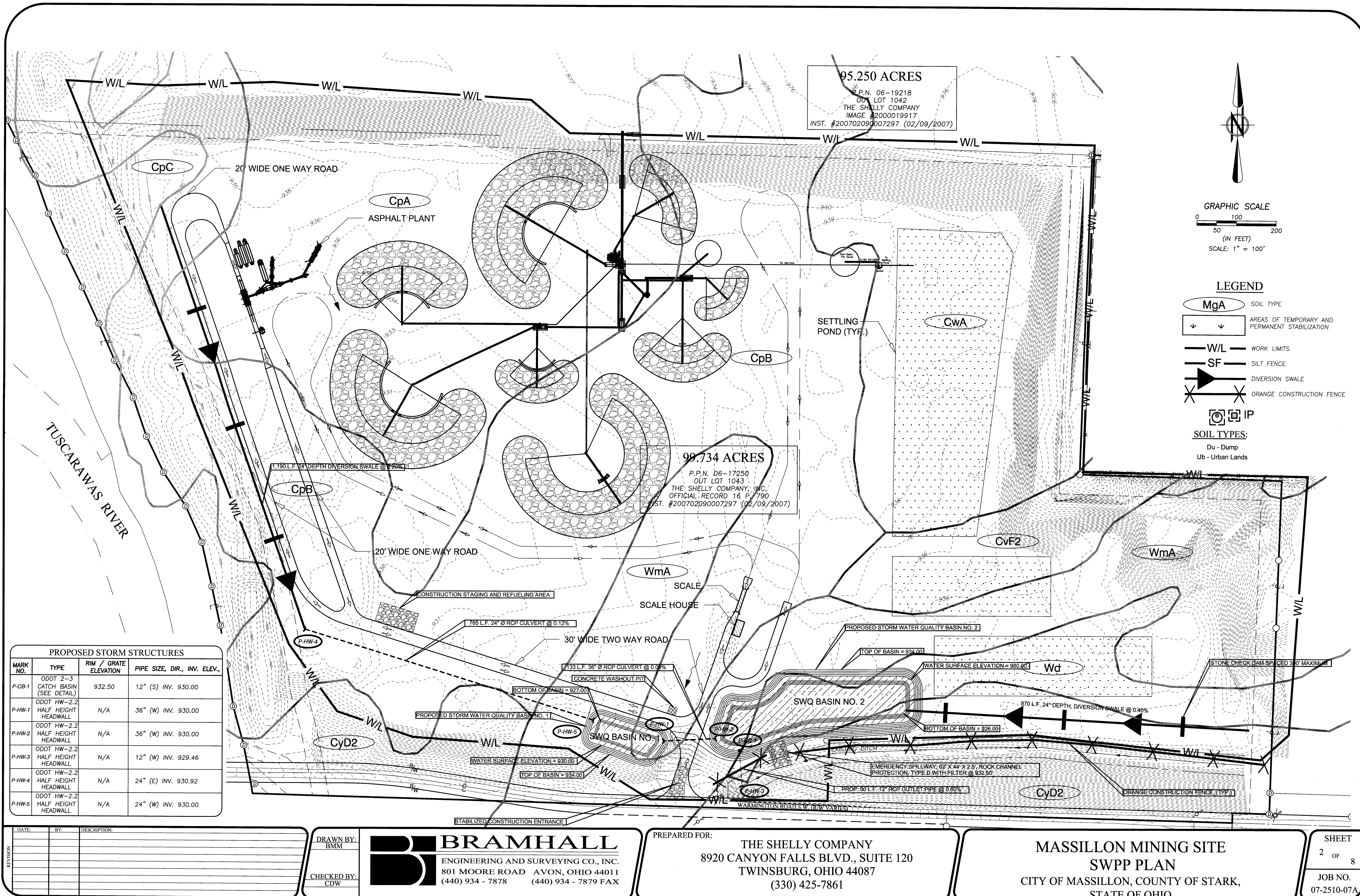
BRAMHALL
ENGINEERING AND SURVEYING CO., INC.
801 MOORE ROAD AVON, OHIO 44011
(440) 934-7878 (440) 934-7879 FAX

PREPARED FOR:

THE SHELLEY COMPANY
8920 CANYON FALLS BLVD., SUITE 120
TWINSBURG, OHIO 44087
(330) 425-7861

MASSILLON MINING SITE
SWP3 - TITLE SHEET
CITY OF MASSILLON, COUNTY OF STARK,
STATE OF OHIO

SHEET
1 OF 8
JOB NO.
07-2510-07A

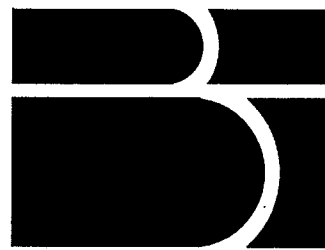


| PROPOSED STORM STRUCTURES | | | | |
|---------------------------|-----------------------------------|-----------------------|------------------------------|--|
| MARK NO. | TYPE | RIM / GRATE ELEVATION | PIPE SIZE, DIR., INV. ELEV., | |
| P-CB-1 | ODOT 2-3 CATCH BASIN (SEE DETAIL) | 932.50 | 12" (S) INV. 930.00 | |
| P-HW-1 | ODOT HW-2.2 HALF HEIGHT HEADWALL | N/A | 36" (W) INV. 930.00 | |
| P-HW-2 | ODOT HW-2.2 HALF HEIGHT HEADWALL | N/A | 36" (W) INV. 930.00 | |
| P-HW-3 | ODOT HW-2.2 HALF HEIGHT HEADWALL | N/A | 12" (W) INV. 929.46 | |
| P-HW-4 | ODOT HW-2.2 HALF HEIGHT HEADWALL | N/A | 24" (E) INV. 930.92 | |
| P-HW-5 | ODOT HW-2.2 HALF HEIGHT HEADWALL | N/A | 24" (W) INV. 930.00 | |

| REVISION | DATE | BY | DESCRIPTION |
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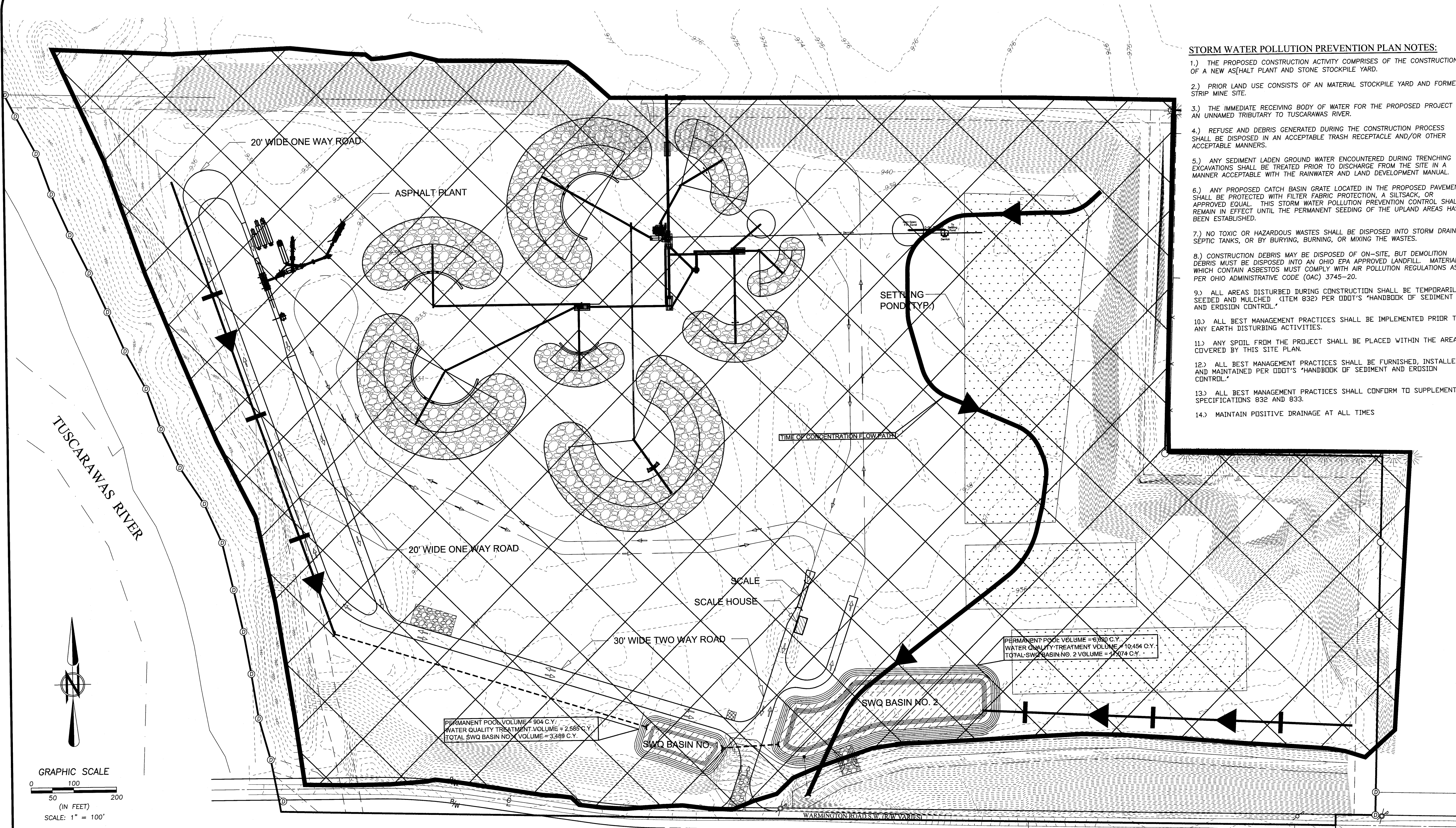


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MASSILLON MINING SITE
SWPP PLAN
CITY OF MASSILLON, COUNTY OF STARK,
STATE OF OHIO

SHEET
2 OF 8
JOB NO.
07-2510-07A



STORM WATER POLLUTION PREVENTION PLAN NOTES:

- 1.) THE PROPOSED CONSTRUCTION ACTIVITY COMPRISES OF THE CONSTRUCTION OF A NEW AS[HALT PLANT AND STONE STOCKPILE YARD.
- 2.) PRIOR LAND USE CONSISTS OF AN MATERIAL STOCKPILE YARD AND FORMER STRIP MINE SITE.
- 3.) THE IMMEDIATE RECEIVING BODY OF WATER FOR THE PROPOSED PROJECT IS AN UNNAMED TRIBUTARY TO TUSCARAWAS RIVER.
- 4.) REFUSE AND DEBRIS GENERATED DURING THE CONSTRUCTION PROCESS SHALL BE DISPOSED IN AN ACCEPTABLE TRASH RECEPTACLE AND/OR OTHER ACCEPTABLE MANNERS.
- 5.) ANY SEDIMENT LADEN GROUND WATER ENCOUNTERED DURING TRENCHING EXCAVATIONS SHALL BE TREATED PRIOR TO DISCHARGE FROM THE SITE IN A MANNER ACCEPTABLE WITH THE RAINWATER AND LAND DEVELOPMENT MANUAL.
- 6.) ANY PROPOSED CATCH BASIN GRATE LOCATED IN THE PROPOSED PAVEMENT SHALL BE PROTECTED WITH FILTER FABRIC PROTECTION, A SILTSACK, OR APPROVED EQUAL. THIS STORM WATER POLLUTION PREVENTION CONTROL SHALL REMAIN IN EFFECT UNTIL THE PERMANENT SEEDING OF THE UPLAND AREAS HAS BEEN ESTABLISHED.
- 7.) NO TOXIC OR HAZARDOUS WASTES SHALL BE DISPOSED INTO STORM DRAINS, SEPTIC TANKS, OR BY BURYING, BURNING, OR MIXING THE WASTES.
- 8.) CONSTRUCTION DEBRIS MAY BE DISPOSED OF ON-SITE, BUT DEMOLITION DEBRIS MUST BE DISPOSED INTO AN OHIO EPA APPROVED LANDFILL. MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS AS PER OHIO ADMINISTRATIVE CODE (OAC) 3745-20.
- 9.) ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE TEMPORARILY SEEDED AND MULCHED (ITEM 832) PER IDOT'S "HANDBOOK OF SEDIMENT AND EROSION CONTROL."
- 10.) ALL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED PRIOR TO ANY EARTH DISTURBING ACTIVITIES.
- 11.) ANY SPOIL FROM THE PROJECT SHALL BE PLACED WITHIN THE AREAS COVERED BY THIS SITE PLAN.
- 12.) ALL BEST MANAGEMENT PRACTICES SHALL BE FURNISHED, INSTALLED, AND MAINTAINED PER IDOT'S "HANDBOOK OF SEDIMENT AND EROSION CONTROL."
- 13.) ALL BEST MANAGEMENT PRACTICES SHALL CONFORM TO SUPPLEMENTAL SPECIFICATIONS 832 AND 833.
- 14.) MAINTAIN POSITIVE DRAINAGE AT ALL TIMES

PERMANENT POOL VOLUME = 904 C.Y.
 WATER QUALITY TREATMENT VOLUME = 2,588 C.Y.
 TOTAL SWQ BASIN NO. 1 VOLUME = 3,492 C.Y.

PERMANENT POOL VOLUME = 6,000 C.Y.
 WATER QUALITY TREATMENT VOLUME = 10,454 C.Y.
 TOTAL SWQ BASIN NO. 2 VOLUME = 16,454 C.Y.

GRAPHIC SCALE
 0 50 100 200
 (IN FEET)
 SCALE: 1" = 100'

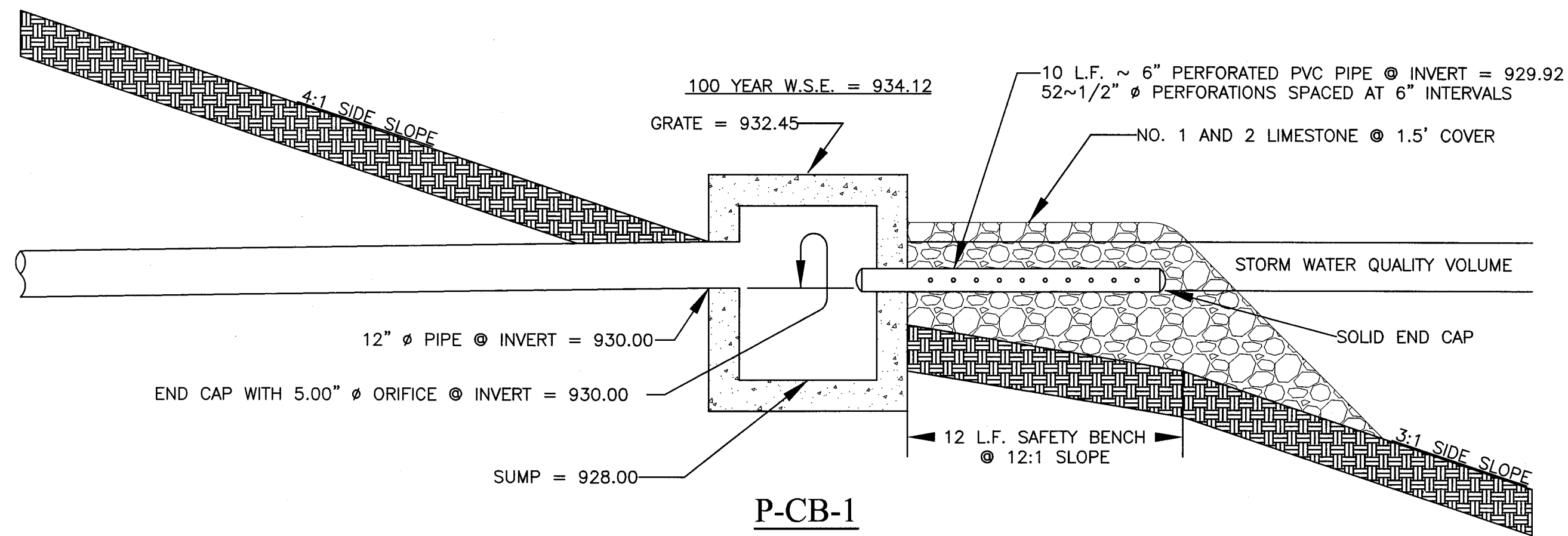
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DRAWN BY: BMM
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MASSILLON MINING SITE
 SWPP PLAN - DRAINAGE AREA MAP
 CITY OF MASSILLON, COUNTY OF STARK,
 STATE OF OHIO



POST CONSTRUCTION OUTLET STRUCTURE DETAIL
ODOT 2-3 CATCH BASIN MODIFIED AS SHOWN

N.T.S.

PERMANENT STORM WATER QUALITY BASIN DESIGN CRITERIA:

WET BOTTOM WATER QUALITY DESIGN CRITERIA:

WATER QUALITY VOLUME REQUIRED = $(92.98 \text{ Ac.}) \cdot (0.75 \text{ inches}) \cdot (0.80) \cdot (1 \text{ ft}) / (12 \text{ inches}) = 4,649 \text{ Ac.-ft. (202,511 C.F.)}$

EXTENDED DETENTION WATER QUALITY VOLUME PROVIDED @ ELEVATION OF 932.45 FEET = 202,904 C.F. > 202,511 C.F.

PERMANENT POOL VOLUME REQUIRED = $(\text{WATER QUALITY VOLUME}) \cdot (0.75) = 3,487 \text{ Ac.-ft. (151,884 C.F.)}$

SEDIMENTATION VOLUME REQUIRED = $(\text{WATER QUALITY VOLUME}) \cdot (0.20) = 0,930 \text{ Ac.-ft. (40,503 C.F.)}$

TOTAL PERMANENT POOL VOLUME PROVIDED = 205,969 C.F. > 192,387 C.F.

DRAW DOWN TIME REQUIRED = 24 HOURS

DRAW DOWN TIME PROVIDED = 54.85 HOURS > 24 HOURS W/ 5.00" Ø ORIFICE @ ELEVATION 930.00 FEET

JUSTIFICATION FOR BMP SELECTION:

A WET BOTTOM STORM WATER QUALITY BASIN WAS SELECTED DUE TO THE LARGE AMOUNT OF DRAINAGE AREA (92.98 ACRES) THAT REQUIRES WATER QUALITY TREATMENT. THE DRAW DOWN TIME WAS EXTENDED TO A MINIMUM OF FORTY-EIGHT (48) HOURS IN ORDER TO INCREASE THE AMOUNT OF SETTLING TIME FOR THE STORM WATER RUNOFF. THE POND WAS LOCATED AT THE LOWEST ELEVATION ON THE PROPOSED PROJECT SITE AND WILL DISCHARGE INTO AN EXISTING DRAINAGE DITCH.

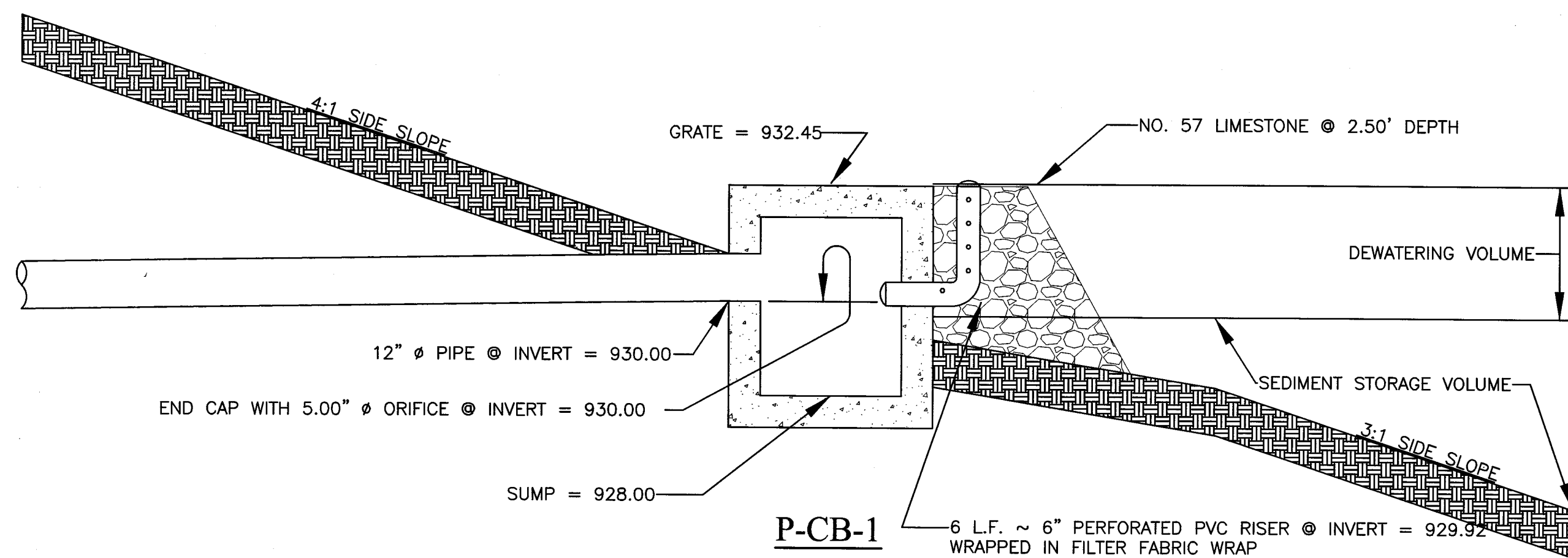
STORM WATER QUALITY BASIN MAINTENANCE SCHEDULE

IT SHALL BE THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S DESIGNATED REPRESENTATIVE TO PERFORM THE NECESSARY MAINTENANCE AND REPAIR TO THE STORM WATER MANAGEMENT FACILITY TO INSURE IT IS PROPERLY FUNCTIONING.

- 1) THE PROPOSED EMBANKMENTS SHALL BE MOWED AND THE OUTLET STRUCTURE SHALL BE CLEARED OF ANY TRASH AND/OR DEBRIS ON A MONTHLY BASIS.
- 2) THE EMBANKMENT AND OUTLET STRUCTURE SHALL BE INSPECTED FOR DAMAGE AND INSURE PROPER FLOW. REMOVE WOODY VEGETATION AND FIX ANY ERODING AREAS. MONITOR SEDIMENT ACCUMULATIONS IN THE FOREBAY AND MICROPOOL AREAS. THESE TASKS SHALL BE PERFORMED ON AN ANNUAL BASIS.
- 3) SEDIMENT WITHIN THE FOREBAY AND MICROPOOL AREAS SHALL BE REMOVED EVERY THREE (3) TO SEVEN (7) YEARS OR AS OFTEN AS DEEMED NECESSARY BY THE OWNER.
- 4) WRITTEN RECORDS SHALL BE KEPT OF ALL ANNUAL INSPECTIONS INCLUDING, BUT NOT LIMITED TO THE FOLLOWING INFORMATION:
 - A) NAME OF THE PERSON OR PERSONS PERFORMING THE INSPECTION.
 - B) DATE AND THE WEATHER CONDITIONS OF THE INSPECTION.
 - C) CONDITION OF THE EMBANKMENT AND OUTLET STRUCTURE.
 - D) NOTE ANY REPAIRS THAT ARE MADE.
- 5) A COPY OF THE MAINTENANCE AND INSPECTION REPORTS SHALL BE SUBMITTED TO THE STARK COUNTY SOIL AND WATER CONSERVATION DISTRICT ON AN ANNUAL BASIS BY MAY 1ST OF THE FOLLOWING YEAR.

STORM WATER QUALITY BASIN CONSTRUCTION NOTES:

- 1.) CONTRACTOR MAY NEED TO INSTALL ONE OF THE FOLLOWING POND LINERS AS DIRECTED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE PROVIDED BY PS CONSTRUCTION FABRIC, INC. (330 335 3635) OR APPROVED EQUIVALENT:
 - BENTONITE CLAY LINER
 - BENTOFIX GEOSYNTHETIC CLAY LINER
 - GEOMEMBRANETHE OWNER AND GEOTECHNICAL ENGINEER MUST APPROVE POND LINER APPLICATION PRIOR TO CONSTRUCTION. CONTRACTOR TO INSTALL POND LINER PER MANUFACTURERS REQUIREMENTS.
- 2.) TYPE "C" ROCK CHANNEL PROTECTION SHALL CONSIST OF SIZES SUCH THAT AT LEAST 85% OF THE TOTAL MATERIAL BY WEIGHT SHALL BE LARGER THAN 6 INCHES BUT LESS THAN 18 INCHES, WITH AT LEAST 50% OF THE MATERIAL BY WEIGHT BEING LARGER THAN 12 INCHES. THE MATERIAL SMALLER THAN 6 INCHES SHALL CONSIST PREDOMINANTLY OF THE ROCK SPALLS AND ROCK FINES AND SHALL BE FREE OF SOIL.
- 3.) NATIVE WETLAND PLANTS SHOULD BE USED TO STABILIZE THE SAFETY BENCH WITHIN THE PROPOSED STORM WATER MANAGEMENT BASIN. EXAMPLES OF SUCH WETLAND PLANTS SHOULD BE AS FOLLOWS BUT NOT LIMITED TO THE FOLLOWING: TICKSEED, SOFT RUSH, SWITCHGRASS, PICKERELWEED.



SEDIMENT BASIN CONTROL DETAIL (DURING CONSTRUCTION)
ODOT 2-3 CATCH BASIN (MODIFIED AS SHOWN)

N.T.S.

TEMPORARY SEDIMENTATION BASIN DESIGN INFORMATION:

DESIGN CRITERIA:

DEWATERING VOLUME REQUIRED = $(92.98 \text{ Ac.}) \cdot (67 \text{ C.Y./Ac.}) \cdot (27 \text{ C.F./C.Y.}) = 168,200 \text{ C.F.}$

DEWATERING VOLUME PROVIDED = 207,478 C.F. > 168,200 C.F.

SEDIMENTATION VOLUME REQUIRED = $(92.98 \text{ Ac.}) \cdot (37 \text{ C.Y./Ac.}) \cdot (27 \text{ C.F./C.Y.}) = 92,887 \text{ C.F.}$

SEDIMENT VOLUME PROVIDED = 205,969 C.F. > 92,887 C.F.

DRAW DOWN TIME REQUIRED = 48 HOURS (2 DAYS) < PROVIDED < 168 HOURS (7 DAYS)

DRAW DOWN TIME PROVIDED = 54.85 HOURS (2.29 DAYS)

MAINTENANCE NOTES:

SEDIMENT SHALL BE REMOVED FROM TEMPORARY SEDIMENT BASIN ONCE THE TEMPORARY SEDIMENT VOLUME HAS BEEN REDUCED TO 64,343 C.F. AT AN ELEVATION OF 929.00 FEET. THE SEDIMENT SHALL BE DISPOSED OF IN A MANNER DEEMED ACCEPTABLE BY THE LATEST EDITION OF THE DEPARTMENT OF NATURAL RESOURCES "RAINWATER AND LAND DEVELOPMENT MANUAL."

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| DATE: | BY: | DESCRIPTION: |
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DRAWN BY:
BAJ

CHECKED BY:
ASW

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PREPARED FOR:

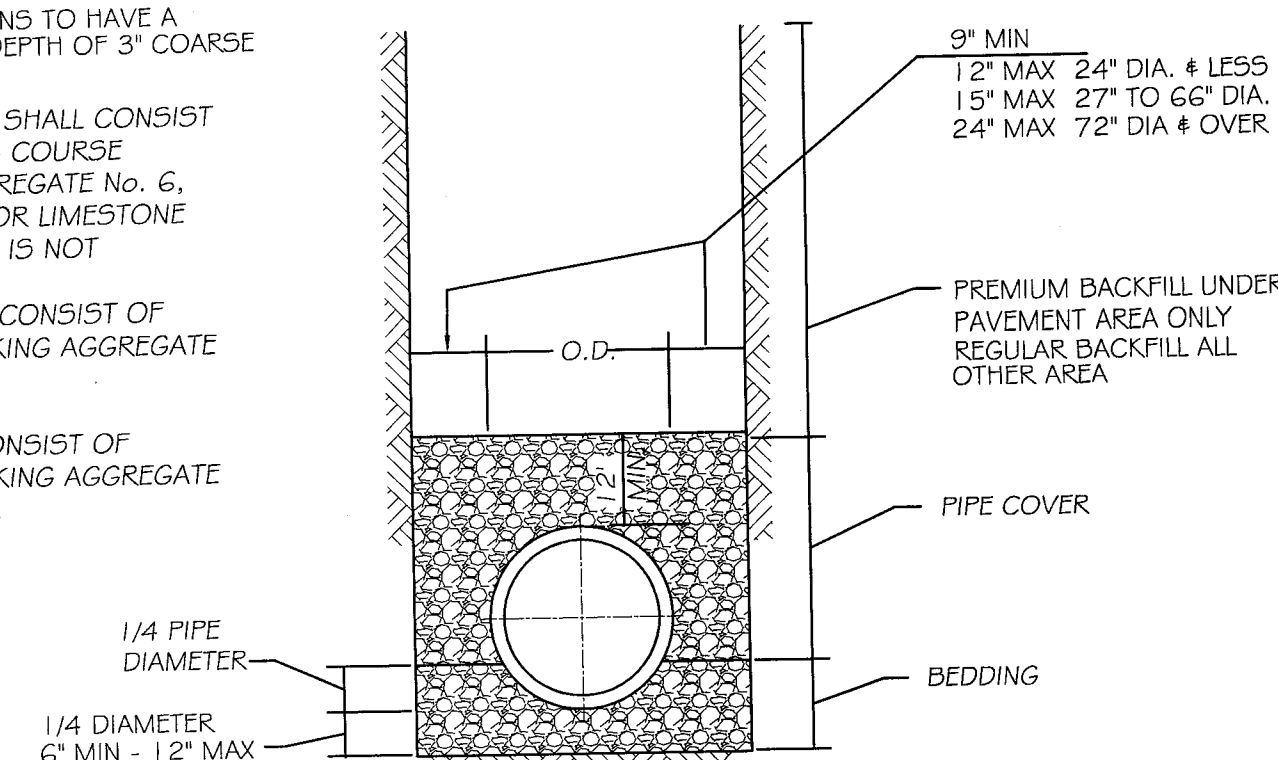
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MASSILLON MINING SITE
SWP3 DETAILS AND NOTES
CITY OF MASSILLON COUNTY OF STARK
STATE OF OHIO

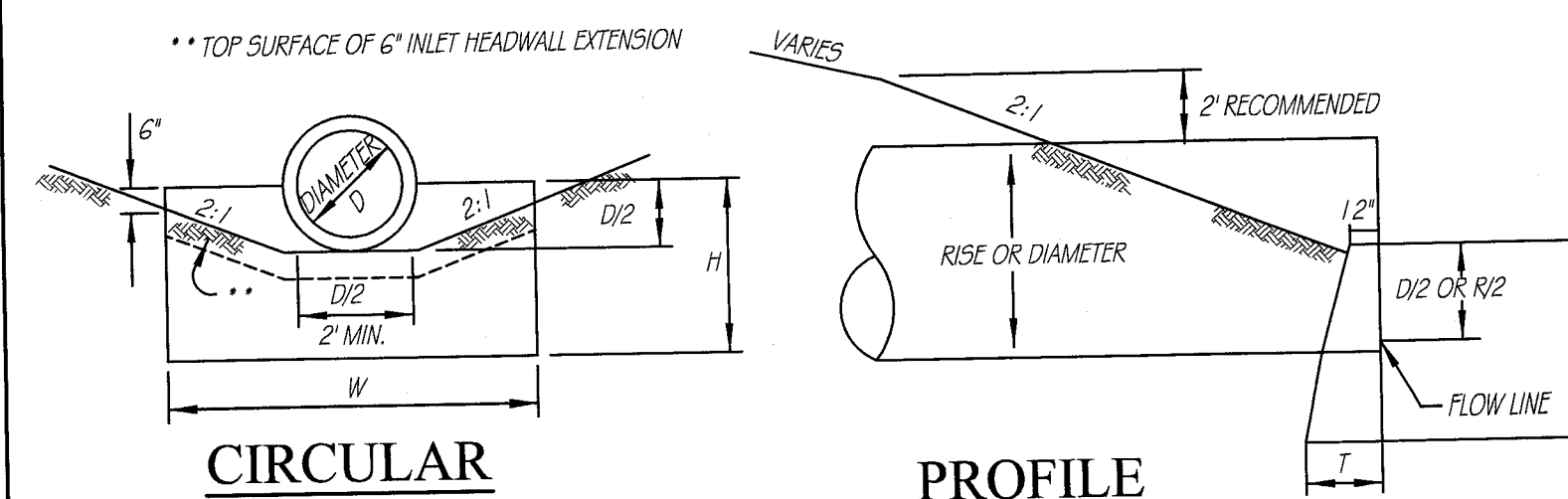
SHEET
4 OF 8

JOB NO.
07-2510-07A

BEDDING SHALL CONSIST OF
COURSE INTERLOCKING AGGREGATE
NO. 57 LIMESTONE.



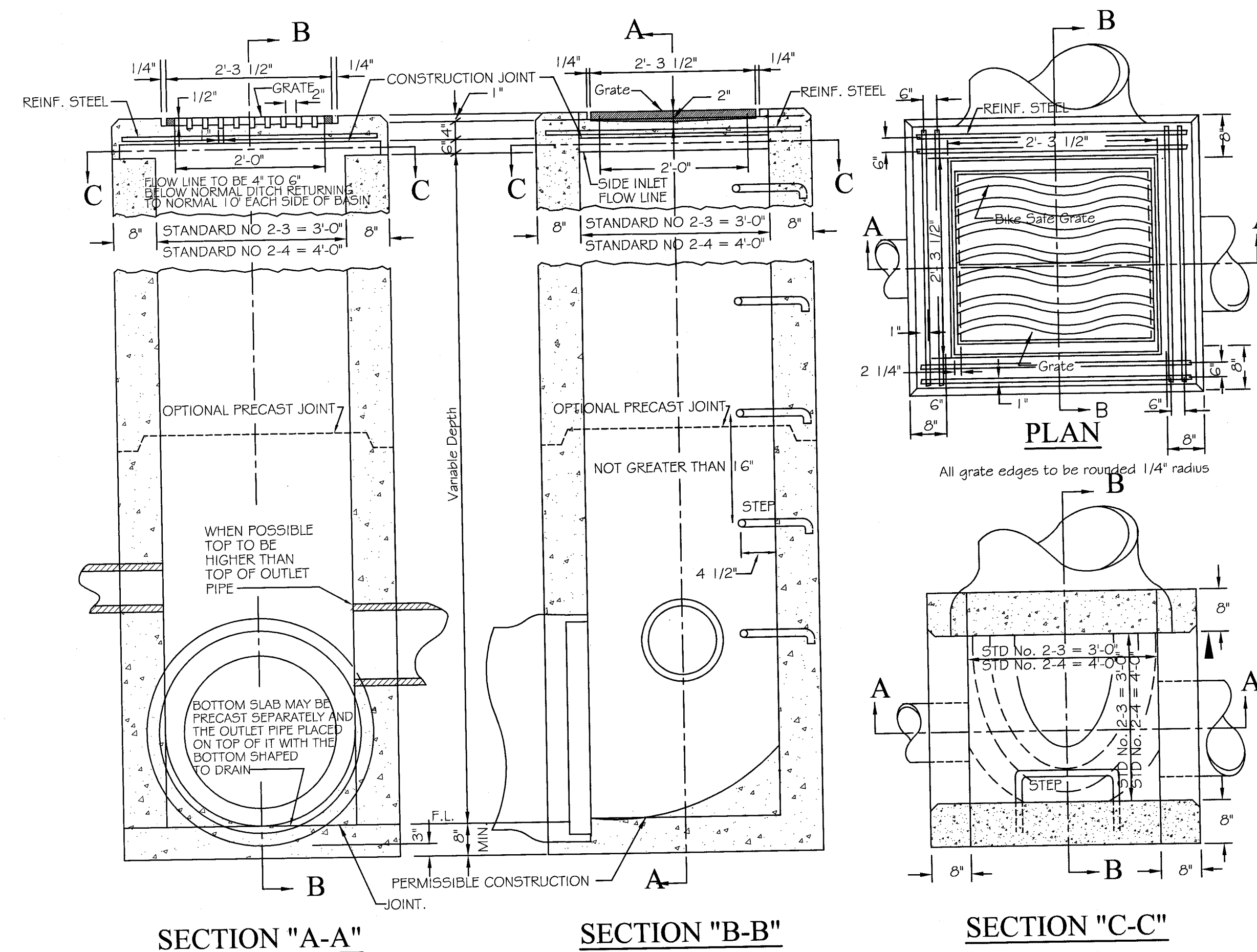
RCP STORM SEWER TRENCH



CONCRETE FOR HEADWALLS SHALL BE CLASS C.
CONCRETE QUANTITIES ARE BASED ON HEADWALL WITHOUT
THE 6" EXTENSION UNDER THE INLET CHANNEL PROTECTION

| HEADWALL FOR CONCRETE PIPE | | | | |
|-------------------------------|-------|-------|-----|----------------------|
| CIRCULAR | | | | |
| D | W | H | T | CONCRETE CU. YDS. |
| 12" | 2'-0" | 3'-0" | 12" | 0.20 |
| 24" | 6'-0" | 2'-0" | 12" | 0.69 |

HALF HEIGHT HEADWALL HW-2.2



STEPS shall be provided where the depth exceeds 72" and shall meet the requirements of MH-1.

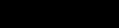
| CATCH BASIN SIZE | OUTLET PIPE SIZE |
|------------------|------------------|
| 2-3 | 12" TO 33" |
| 3-4 | 36" TO 42" |

INLETS OVER 12 FEET IN DEPTH shall be precast or cast-in-place concrete; reinforced with No.4 bars on 12" centers both vertically and horizontally with 2" clearance from inside wall face.

| DATE: | BY: | DESCRIPTION |
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DRAWN BY:
BAJ

CHECKED BY:
ASW



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PREPARED FOR:

ED FOR: THE SHELLY GROUP
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**MASSILLON MINING SITE
SWP3 DETAILS AND NOTES
CITY OF MASSILLON COUNTY OF STARK
STATE OF OHIO**

SHEET
5 OF 8

JOB NO.
07-2510-07A

STORM WATER POLLUTION PREVENTION GENERAL NOTES:

- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE IMPLEMENTED AS A FIRST STEP OF GRADING AND WITHIN SEVEN (7) DAYS FROM THE START OF CLEARING AND GRUBBING. THESE MEASURES AND PROCEDURES SHALL CONTINUE TO FUNCTION UNTIL THE ENTIRE PROJECT SITE IS STABILIZED.
- DISTURBED AREAS WHICH WILL REMAIN UNWORKED FOR A PERIOD OF TWENTY-ONE (21) DAYS OR MORE, SHALL BE STABILIZED WITH TEMPORARY AND/OR PERMANENT SEEDING AND MULCHING OR OTHER APPROVED MEANS WITHIN SEVEN (7) DAYS.
- DITCHES WITH GRADES GREATER THAN 1.5% SHALL HAVE EROSION CONTROL BLANKETS/MATting INSTALLED AS PART OF STABILIZATION MEASURES.
- REGULAR INSPECTION AND MAINTENANCE SHALL BE PROVIDED FOR ALL EROSION AND SEDIMENT CONTROL PRACTICES. PERMANENT RECORDS OF MAINTENANCE AND INSPECTIONS MUST BE KEPT THROUGHOUT THE CONSTRUCTION PERIOD. INSPECTIONS MUST BE MADE A MINIMUM OF ONCE EVERY 7 DAYS AND IMMEDIATELY AFTER STORM EVENTS GREATER THAT 0.5 INCHES OF RAIN IN A 24 HOUR PERIOD. PROVIDED WILL BE: NAME OF INSPECTOR, MAJOR OBSERVATIONS, DATE OF INSPECTION AND CORRECTIVE MEASURE TAKEN.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST CONFORM TO THE LATEST EDITION OF RAINWATER AND LAND DEVELOPMENT, OHIO'S STANDARDS FOR STORM WATER MANAGEMENT, LAND DEVELOPMENT AND URBAN STREAM PROTECTION.
- CONTRACTOR TO COORDINATE THE EXCAVATION AND EMBANKMENT WITH CLIENT & ENGINEER PRIOR TO CONSTRUCTION TO INSURE ADEQUATE STORM WATER POLLUTION PREVENTION MEASURES ARE INCORPORATED WITH THE CONSTRUCTION PROCESS.
- ANY REQUIRED MODIFICATIONS AS DETERMINED BY THE OWNER/DEVELOPER, CONTRACTOR, OHIO EPA, OR SWPPP ENGINEER SHALL BE APPROVED BY THE SWP3 ENGINEER.
- ANY APPROVED REVISIONS SHALL BE MADE IMMEDIATELY BY THE SWP3 ENGINEER AND IMPLEMENTED BY THE OWNER, DEVELOPER, AND/OR CONTRACTOR.

CONSTRUCTION SITE POLLUTION CONTROLS:

- CONSTRUCTION PERSONNEL, INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:
 - PREVENT SPILLS
 - USE PRODUCTS UP
 - FOLLOW LABEL DIRECTIONS OF DISPOSAL
 - REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
 - RECYCLE WASTES WHENEVER POSSIBLE
 - DO NOT POUR INTO WATERWAYS, STORM DRAINS, OR ONTO THE GROUND.
 - DO NOT POUR DOWN THE SINK, FLOOR DRAIN, OR SEPTIC TANKS.
 - DO NOT BURY CHEMICALS OR CONTAINERS
 - DO NOT BURN CHEMICALS OR CONTAINERS
 - DO NOT MIX CHEMICALS TOGETHER
- CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL. CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF AT AN OHIO EPA APPROVED CD&D LANDFILL.
- NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE. BY EXCEPTION, CLEAN FILL (BRICKS, HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY WHICH DOES NOT ENCR OACH UPON NATURAL WETLANDS, STREAMS, OR FLOODPLAINS, OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.
- HANDLING CONSTRUCTION CHEMICALS. MIXING, PUMPING, TRANSFERRING, OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH, OR STORM DRAIN.
- EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC.. SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES, OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL AND OIL STORAGE TANKS. THESE AREA MUST BE INSPECTED EVERY SEVEN (7) DATES AND WITHIN TWENTY-FOUR (24) HOURS OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THAT THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER. SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVE GROUND TANK OF SIX HUNDRED SIXTY (660) GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF ONE THOUSAND THREE HUNDRED THIRTY (1,330) GALLONS OR MORE, OR FORTY-TWO THOUSAND (42,000) GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM NO. 8.
- CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN TEN (10) FEET OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
- SPILL REPORTING REQUIREMENTS: SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING. SPILLS SHALL BE REPORTED TO THE OHIO EPA (1-800-282-9378). SPILLS OF TWENTY-FIVE (25) GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO THE OHIO EPA, LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN THIRTY (30) MINUTES OF THE DISCOVERY OF THE RELEASE. ALL SPILLS WHICH CONTACT WATERS OF THE STATE MUST BE REPORTED TO THE OHIO EPA.

CONSTRUCTION SITE POLLUTION CONTROLS CONTINUED:

- CONTAMINATED SOILS: IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC.. ARE SPILLED, LEAKED, O RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT A LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOLID REMEDIATION FACILITY, NOT A CONSTRUCTION OR DEMOLITION DEBRIS LANDFILL. NOTE THAT STORM WATER RUNOFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT AUTHORIZED UNDER THE OHIO EPA'S GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- OPEN BURNING: NO MATERIALS CONTAINING RUBBER, GREASE, ASPHALT, OR PETROLEUM PRODUCTS, SUCH AS TIRES, AUTOPARTS, PLASTICS OR PLASTIC COATED WIRE MAY BE BURNED (OAC 3745-19). OPEN BURNING IS NOT ALLOWED IN RESTRICTED AREAS, WHICH ARE DEFINED AS: 1) WITHIN CORPORATION LIMITS; 2) WITHIN ONE THOUSAND (1,000) FEET OUTSIDE A MUNICIPAL CORPORATION HAVING A PO PULATION OF ONE THOUSAND (1,000) TO TEN THOUSAND (10,000)); AND 3) A ONE (1) MILE ZONE OUTSIDE A COPORATION OF TEN THOUSAND (10,000) OR MORE. OUTSIDE OF RESTRICTED AREAS, NO OPEN BURNING IS ALLOWED WITHIN A ONE THOUSAND (1,000) FEET OF AN INHABITED BUILDING ON ANOTHER PROPERTY. OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR: HEATING TAR, WELDING, SMUDGE POTS, AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING FOR WARMTH OR OUTDOOR BARBECUES. OUTSIDE O RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR LANDSCAPE OR LAND-CLEARING WASTES (PLANT MATERIAL, WITH PRIO WRITTEN PERMISSION FROM THE OHIO EPA), AND AGRICULTURAL WASTES, EXCLUDING BUILDINGS.
- DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE CONDITIONS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND IN A MANNER, WHICH PREVENT A DISCHARGE TO WATERS OF THE STATE. SUFFICIENT DISTANCE MUST BE PROVIDED BETWEEN APPLICATIONS AND NEARBY BRIDGES, CATCH BASINS, AND OTHER WATERWAYS. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN RAIN IS IMMINENT AS NOTED IN THE SHORT TERM FORECAST. USED OIL MAY NOT BE APPLIED FOR DUST CONTROL.
- OTHER AIR PERMITTING PEROUIREMENTS" CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BY NOT LIMITED TO: MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. THESE ACTIVITIES WILL REQUIRE SPECIFIC OHIO EPA AIR PERMITS FOR INSTALLATION AND OPERATION. OPERATORS MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF THE OHIO EPA. FOR DEMOLITION OF ALL COMMERCIAL SITES, A NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE SUBMITTED TO THE OHIO EPA TO DETERMINE IF ASBESTOS CORRECTIVE ACTIONS ARE REQUIRED.
- PROCESS WASTE WATER/LEACHATE MANAGEMENT. THE OHIO EPA CONSTRUCTION GENERAL PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER AND DOES NOT INCLUDE OTHER WASTE STREAMS/DISCHARGES SUCH AS VEHICLE AND/OR EQUIPMENT WASHING, ON-SITE SEPTIC LEACHATE, CONCRETE WASH OUTS, WHICH ARE CONSIDERED PROCESS WASTEWATERS. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT, LEACHATE OR SEEPAGE IS DISCHARGE, IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL. CORRECTIVE ACTIONS SHALL BE TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
- A PERMIT TO INSTALL (PTI) IS REQUIRED PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER SYSTEMS. PLANS MUST BE SUBMITTED AND APPROVED BY THE OHIO EPA. ISSUANCE OF AN OHIO EPA CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE THE OHIO EPA HAS NOT APPROVED A PTI.

PERMANENT SEEDING AND MULCHING NOTES:

SITE PREPARATION

- A SUBSOILER, PLOW OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMIZING INFILTRATION WILL HELP CONTROL BOTH RUNOFF RATE AND WATER QUALITY.) SUBSOILING SHOULD BE DONE WHEN THE SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING SHALL NOT BE DONE ON SLIP-PRONE AREAS WHERE SOIL PREPARATION SHOULD BE LIMITED TO WHAT IS NECESSARY FOR ESTABLISHING VEGETATION.
- THE SITE PLAN SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.
- TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

SEEDBED PREPARATION

- LIME - AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO ACID SOIL AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, LIME SHALL BE APPLIED AT THE RATE OF ONE HUNDRED (100) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET OR TWO (2) TONS PER ONE (1) ACRE.
- FERTILIZER - FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF TWELVE (12) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET OR FIVE HUNDRED (500) POUNDSPER ONE (1) ACRE OF 10-10-10 OR 12-12-12 ANALYSIS.
- THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPROVEMENT TO A DEPTH OF THREE (3) INCHES. ON SLOPING LAND THE SOIL SHALL BE WORKED ON THE CONTOUR.

SEEDING DATES AND SOIL CONDITIONS

SEEDING SHOULD BE DONE FROM MARCH 1ST THOUGH MAY 31ST OR FROM AUGUST 1ST THROUGH SEPTEMBER 30TH. IF SEEDING OCCURS OUTSIDE OF THE ABOVE SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF EIGHTY (80) PERCENT GERMINATION. TILAGE FOR SEEDBED PREPARATION SHOULD BE DONE WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. FOR WINTER SEEDING, SEE THE FOLLOWING SECTION ON DORMANT SEEDING.

DORMANT SEEDINGS

- SEEDINGS SHALL NOT BE PLANTED FROM OCTOBER 1ST THROUGH NOVEMBER 20TH. DURING THIS PERIOD THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.
- THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING:"

FROM OCTOBER 1ST THROUGH NOVEMBER 20TH, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20TH, AND BEFORE MARCH 15TH, BROADCAST THE SELECTED MIXTURE, INCREASE THE SEEDING RATES BY FIFTY (50%) PERCENT FOR THIS TYPE OF SEEDING.

FROM NOVEMBER 20TH THROUGH MARCH 15TH, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY FIFTY (50%) PERCENT FOR THIS TYPE OF SEEDING.

APPLY SEED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRO-SEEDER (SLURRY MAY INCLUDE SEED AND FERTILIZER) ON A FIRM, MOIST SEEDBED.

WHERE FEASIBLE, EXCEPT WHEN A CULTIPACKER TYPE SEEDER IS USED, THE SEEDBED SHOULD BE FIRMED FOLLOWING SEEDING OPERATIONS WITH A CULTIPACKER, ROLLER, OR LIGHT DRAG. ON SLOPING LAND, SEEDING OPERATIONS SHOULD BE ON THE CONTOUR WHERE FEASIBLE.

MULCHING

- MULCH MATERIAL SHALL BE APPLIED IMMEDIATELY AFTER SEEDING. DORMANT SEEDING SHALL BE MULCHED. ONE HUNDRED (100) PERCENT OF THE GROUND SURFACE SHALL BE COVERED WITH AN APPROVED MATERIAL.

PERMANENT SEEDING AND MULCHING NOTES CONTINUED:

2. MATERIALS:

STRAW - IF STRAW IS USED IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ONE (1) ACRE OR NINETY (90) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET (TWO (2) TO THREE (3) BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY ONE THOUSAND (1,000) SQUARE FEET SECTIONS AND SPREAD TWO (2) FORTY-FIVE (45) POUND BALES OF STRAW IN EACH SECTION.

HYDROSEEDERS - IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT TWO THOUSAND (2,000) POUNDS PER ONE (1) ACRE OR FORTY-SIX (46) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET.

OTHER - OTHER ACCEPTABLE MULCHES INCLUDE MULCHES INCLUDE ROLLED EROSION CONTROL MATTINGS OR BLANKETS APPLIED ACCORDING TO MANUFACTURE'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT SIX (6) TONS PER ACRES.

3. STRAW MULCH ANCHORING METHODS:

MECHANICAL - A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN SIX (6) INCHES.

MULCH NETTINGS - NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATED RUNOFF AND ON CRITICAL SLOPES.

ASPHALT EMULSION - ASPHALT SHALL BE APPLIED AS RECOMMENDED BY THE MANUFACTURER OR AT THE RATE OF ONE HUNDRED SIXTY (160) GALLONS PER ONE (1) ACRE.

SYNTHETIC BINDERS - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMEND BY THE MANUFACTURER.

WOOD CELLULOSE FIBER - WOOD CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF SEVEN HUNDRED FIFTY (750) POUNDS PER ONE (1) ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF FIFTY (50) POUNDS PER ONE HUNDRED (100) GALLONS OF WOOD CELLULOSE FIBER.

IRRIGATION

IRRIGATION RATES SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF.

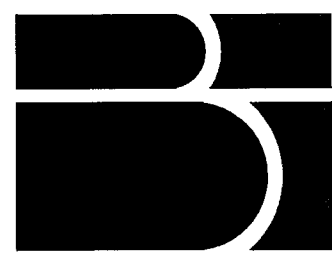
PERMANENT SEEDING APPLICATION RATE TABLE:

| PERMANENT SEEDING | | | |
|---|--------------|----------------|--|
| SEED MIX | SEEDING RATE | | NOTES: |
| | LB./AC. | LB./1,000 S.F. | |
| GENERAL USE | | | |
| CREEPING RED FESCUE | 20 – 40 | 1/2 – 1 | FOR CLOSE MOWING AND FOR WATERWAYS WITH VELOCITIES LESS THAN TWO (2) FEET PER SECOND |
| DOMESTIC RYEGRASS | 10 – 20 | 1/4 – 1/2 | |
| KENTUCKY BLUEGRASS | 20 – 40 | 1/2 – 1 | |
| TALL FESCUE | 40–50 | 1 – 1 1/4 | |
| TURF TYPE (DWARF) FESCUE | 90 | 2 1/4 | |
| STEEP BANKS OR CUT SLOPES | | | |
| TALL FESCUE | 40 – 50 | 1 – 1 1/4 | DO NOT SEED LATER THAN AUGUST |
| CROWN VETCH | 10 – 20 | 1/4 – 1/2 | |
| TALL FESCUE | 20 – 30 | 1/2 – 3/4 | |
| FLAT PEA | 20 – 25 | 1/2 – 3/4 | DO NOT SEED LATER THAN AUGUST |
| TALL FESCUE | 20 – 30 | 1/2 – 3/4 | |
| STEEP BANKS OR CUT SLOPES | | | |
| TALL FESCUE | 40 – 50 | 1 – 1 1/4 | |
| TURF TYPE (DWARF) FESCUE | 90 | 2–1/4 | |
| TURF TYPE KENTUCKY BLUEGRASS | 5 | 0.1 | |
| LAWNS | | | |
| KENTUCKY BLUEGRASS | 100 – 120 | 2 | FOR SHADED AREAS |
| PERENNIAL RYEGRASS | 100 – 120 | 2 | |
| KENTUCKY BLUEGRASS | 100 – 120 | 2 | |
| CREEPING RED FESCUE | 100 – 120 | 1–1/2 | |
| NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED. | | | |

| REVISION | DATE: | BY: | DISCRPTION: |
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MASSILLON MINING SITE
SWP3 DETAILS AND NOTES
CITY OF MASSILLON COUNTY OF STARK
STATE OF OHIO

SHEET
6 OF 8
JOB NO.
07-2510-07A

MAINTENANCE OF PERMANENT SEEDING:

1. PERMANENT SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST ONE (1) FULL YEAR FROM THE TIME OF PLANTING. SEEDED AREAS SHALL BE INSPECTED FOR FAILURE AND VEGETATION RE-ESTABLISHED AS NEEDED. DEPENDING ON-SITE CONDITIONS, IT MAY BE NECESSARY TO IRRIGATE, FERTILIZE, OVERSEED, OR RE-ESTABLISH PLANTINGS IN ORDER TO PROVIDE PERMANENT VEGETATION FOR ADEQUATE EROSION CONTROL.
2. MAINTENANCE FERTILIZATION RATES SHALL BE ESTABLISHED BY SOIL TEST RECOMMENDATIONS OR BY USING THE RATES SHOWN IN THE FOLLOWING TABLE

| MAINTENANCE OF PERMANENT SEEDINGS, FERTILIZATION, AND MOWING | | | | | |
|--|----------|---------|----------------|--|--|
| MIXTURE | FORMULA | LB./AC. | LB./1,000 S.F. | TIME | MOWING |
| CREEPING RED FESCUE RYEGRASS KENTUCKY BLUE GRASS | 10-10-10 | 500 | 12 | FALL, YEARLY OR AS NEEDED. | NOT CLOSER THAN THREE (3) INCHES |
| TALL FESCUE | 10-10-10 | 500 | 12 | | NOT CLOSER THAN FOUR (4) INCHES |
| DWARF FESCUE | 10-10-10 | 500 | 12 | | NOT CLOSER THAN TWO (2) INCHES |
| CROWN VETCH FESCUE | 0-20-20 | 400 | 10 | SPRING, YEARLY FOLLOWING ESTABLISH- MENT AND EVERY 4-7 YEAR, THEREAFTER | DO NOT MOW |
| FLAT PEA FESCUE | 0-20-20 | 400 | 10 | | DO NOT MOW |

TEMPORARY SEEDING SPECIFICATIONS:

| TEMPORARY SEEDING SPECIES SELECTION | | | |
|-------------------------------------|-----------------------------------|----------------|---------------|
| SEEDING DATES | SPECIES | LB./1,000 S.F. | UNIT PER ACRE |
| MARCH 1 TO AUGUST 15 | OATS | 3 | 128 LBS. |
| | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | PERENNIAL RYEGRASS | 1 | 40 LBS. |
| | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1.25 | 55 LBS. |
| | PERENNIAL RYEGRASS | 3.25 | 142 LBS. |
| | CREEPING RED FESCUE | 0.4 | 17 LBS. |
| | KENTUCKY BLUEGRASS | 0.4 | 17 LBS. |
| | OATS | 3 | 128 LBS. |
| | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | RYE | 3 | 112 LBS. |
| AUGUST 16 TO NOVEMBER 1 | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | WHEAT | 3 | 120 LBS. |
| | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | PERENNIAL RYEGRASS | 1 | 40 LBS. |
| | TALL FESCUE | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1 | 40 LBS. |
| | ANNUAL RYEGRASS | 1.25 | 40 LBS. |
| | PERENNIAL RYEGRASS | 3.25 | 40 LBS. |
| | CREEPING RED FESCUE | 0.4 | 40 LBS. |
| | KENTUCKY BLUEGRASS | 0.4 | 40 LBS. |
| NOVEMBER 1 TO FEBRUARY 29 | USE MULCH ONLY OR DORMANT SEEDING | | |

TEMPORARY SEEDING SPECIFICATIONS CONTINUED:

GENERAL TEMPORARY SEEDING NOTES:

1. STRUCTURAL EROSION - AND SEDIMENT-CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
2. TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR TWENTY-ONE (21) DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN SEVEN (7) DAYS AFTER GRADING.
3. THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHED VEGETATION. HOWEVER, TEMPORARY SEEDING SHALL NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
4. SOIL AMENDMENTS - TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
5. SEEDING METHOD - SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON-SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.

MULCHING TEMPORARY SEEDING:

1. APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH WHICH, SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINESS MADE DURING OPTIMUM SEEDING DATES AND WITH FAVORABLE SOIL CONDITIONS AND ON VERY FLAT AREAS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION.
2. MATERIALS;
- STRAW - IF STRAW IS USED, IT SHALL BE UNROTTED SMALL-GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ONE (1) ACRE OR NINETY (90) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET (TWO (2) TO THREE (3) BALES). THE MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF HAND-SPREAD MULCH, DIVIDE AREA INTO APPROXIMATELY ONE THOUSAND (1,000) SQUARE FEET SECTION AND SPREAD TWO FORTY-FIVE (45) POUND BALES OF STRAW IN EACH SECTION.
- HYDROSEEDERS - IF WOOD CELLULOSE FIBER IS USED, IT SHALL BE USED AT TWO THOUSAND (2,000) POUNDS PER ONE (1) ACRE OR FORTY-SIX (46) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET.
- OTHER - OTHER ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD CHIPS APPLIED AT SIX (6) TONS PER ONE (1) ACRE.
3. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR WATER. ANCHORING METHODS:
- MECHANICAL - A DISK, CRIMPER, OR SIMILAR TYPE TOOL SHALL BE SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT, GENERALLY, BE LEFT LONGER THAN SIX (6) INCHES.
- MULCH NETTINGS - NETTINGS SHALL BE USED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. NETTING MAY BE NECESSARY TO HOLD MULCH IN PLACE IN AREAS OF CONCENTRATION RUNOFF AND ON CRITICAL SLOPES.
- SYNTHETIC BINDERS - SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER.
- WOOD-CELLULOSE FIBER - WOOD-CELLULOSE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF SEVEN HUNDRED FIFTY (750) POUNDS PER ONE (1) ACRE. THE WOOD-CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF FIFTY (50) POUNDS PER ONE HUNDRED (100) GALLONS.

TEMPORARY STABILIZATION REQUIREMENTS:

1. ANY AREA WITHIN FIFTY (50) FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE SHALL BE STABILIZED WITHIN TWO (2) DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN FOURTEEN (14) DAYS.
2. FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN ONE (1) YEAR, AND NOT WITHIN FIFTY (50) FEET OF A STREAM SHALL BE STABILIZED WITHIN SEVEN (7) DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA.
3. DISTURBED AREAS THAT WILL BE IDLE OVER WINTER SHALL BE STABILIZED PRIOR TO THE ONSET OF WINTER WEATHER (NOVEMBER 1ST) WITH STRAW MULCH AT AN APPLICATION RATE OF TWO (2) TO THREE (3) BALES PER ONE THOUSAND (1,000) SQUARE FEET AND/OR TWO (2) TONS PER ACRE.

TOPSOIL SPECIFICATIONS:

SALVAGING AND STOCKPILING

1. DETERMINE THE DEPTH AND SUITABILITY OF THE TOPSOIL AT THE SITE. FOR HELP, CONTACT YOUR LOCAL SOIL AND WATER CONSERVATION DISTRICT OFFICE TO OBTAIN A COUNTY SOIL SURVEY REPORT.
2. PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND BASINS.
3. REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS "SURFACE SOIL." (I.E. "A" OR "Ap" HORIZON.
4. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF THE STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOTE EXCEED A RATIO OF 2:1.
5. IF THE TOPSOIL IS STORED FOR MORE THAN TWENTY-ONE (21) DAYS, THEN IT SHALL BE TEMPORARY SEEDED OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

1. PRIOR TO APPLYING TOPSOIL, THE TOPSOIL SHALL BE PULVERIZED.
2. TO ENSURE BONDING, GRADE THE SUBSOIL AND ROUGHEN THE TOP THREE (3) TO FOUR (4) INCHES DEEP BY DISKING.
3. DO NOT APPLY WHEN THE SITE IS WET, MUDDY, OR FROZEN BECAUSE IT WILL MAKE SPREADING DIFFICULT, CAUSE COMPACTION PROBLEMS, AND INHIBITS BONDING TO THE SUBSOIL.
4. APPLY TOPSOIL EVENLY TO A DEPTH OF AT LEAST FOUR (4) INCHES AND COMPACT SLIGHTLY TO IMPROVE CONTACT WITH SUBSOIL.
5. AFTER SPREADING, GRADE AND STABILIZE WITH SEEDING OR APPROPRIATE VEGETATION.

MULCHING SPECIFICATIONS:

GENERAL TEMPORARY SEEDING NOTES:

1. MULCH AND OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO ALL DISTURBER AREAS WITHIN SEVEN (7) DATES OF GRADING IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN TWENTY-ONE (21) DAYS OR ON AREAS AND PORTIONS OF THE SITE WHICH CAN BE BROUGHT TO FINAL GRADE.
2. MULCH SHALL CONSIST OF ONE OF THE FOLLOWING:
- A. STRAW - STRAW SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ACRE OR NINETY (90) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET (TWO (2) TO THREE (3) BALES). THE STRAW MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICALLY SO THE SOIL SURFACE IS COVERED. FOR UNIFORM DISTRIBUTION OF AND SPREAD MUCH, DIVIDE THE AREA INTO APPROXIMATELY ONE THOUSAND (1,000) SQUARE FOOT SECTIONS AND PLACE TWO (2) FORTY-FIVE (45) POUND BALES OF STRAW PER EACH SECTION.
- B. HYDROSEEDERS - WOOD CELLULOSE FIBER SHOULD BE USED AT TWO THOUSAND (2,000) POUNDS PER ACRE OR FORTY-SIX (46) POUNDS PER ONE THOUSAND (1,000) SQUARE FEET.
- C. OTHER - ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS AND ROLLED EROSION CONTROL PRODUCTS APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS OR WOOD MULCH/CHIPS APPLIED AT TEN (10) TO TWENTY (2) TONS PER ACRE.
3. MULCH ANCHORING - MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH.
- A. MECHANICAL - USE A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT BE LEFT GENERALLY LONGER THAN SIX (6) INCHES.
- B. MULCH NETTINGS - USE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, FOLLOWING ALL PLACEMENT AND ANCHORING REQUIREMENTS. USE IN AREAS OF WATER CONCENTRATION AND STEEP SLOPES TO HOLD MULCH IN PLACE.
- C. SYNTHETIC BINDERS - FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETOSET, TERRA TACK , OR APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER. ALL APPLICATIONS OF SYNTHETIC BINDERS MUST BE CONDUCTED IN SUCH A MANNER WHERE THERE IS NO CONTACT WITH WATERS OF THE STATE.
- D. WOOD CELLULOSE FIBER - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF SEVEN HUNDRED FIFTY (750) POUNDS PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF FIFTY POUNDS PER ONE HUNDRED (100) GALLONS OF WOOD CELLULOSE FIBER.

DUST CONTROL

1. VEGATATIVE COVER AND MULCH - APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER TWENTY-ONE (21) DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MUCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING - SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS' INSTRUCTIONS.
3. SPRAY-ON ADHESIVES - APPLY ADHESIVE ACCORDING TO THE FLOOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.
- | ADHESIVE | WATER DILUTION (ADHESIVE: WATER) | NOZZLE TYPE | APPLICATION FATE GAL./AC. |
|--|----------------------------------|-------------|---------------------------|
| LATEX EMULATION | 12.5:1 | FINE | 235 |
| RESIN IN WATER ACRYLIC EMULSION (NO TRAFFIC) | 4:1 | FINE | 300 |
| ACRYLIC EMULSION (NO TRAFFIC) | 7:1 | COARSE | 450 |
| ACRYLIC EMULSION (TRAFFIC) | 3.5:1 | COARSE | 350 |
4. STONE - GRADED ROADWAYS AND OTHER SUITABLE AREAS WILL BE STABILIZED USING CRUSHED STONE OR COARSE GRAVEL AS SOON AS PRACTICABLE AFTER REACHING AN INTERIM OR FINAL GRADE. CRUSHED STONE OR COARSE GRAVEL CAN BE USED AS PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.
5. BARRIERS - EXISTING WINDBREAK VEGETATION SHALL BE MARKED AND PRESERVED. SNOW FENCING OR OTHER SUITABLE BARRIER MAY BE PLACED PERPENDICULAR TO PREVAILING AIR CURRENTS AT INTERVALS OF ABOUT FIFTEEN (15) TIMES THE BARRIER HEIGHT TO CONTROL AIR CURRENTS AND BLOWING SOIL.
6. CALCIUM CHLORIDE - THIS CHEMICAL MAY BE APPLIED BY MECHANICAL SPREADER AS LOOSE, DRY GRANULES OR FLAKES AT A RATE THAT KEEPS THE SURFACE MOIST BUT NOT SO HIGH AS TO CAUSE WATER POLLUTION OR PLANT DAMAGE. APPLICATION RATES SHOULD BE STRICTLY IN ACCORDANCE WITH SUPPLIERS' SPECIFIED RATES.
7. OPERATION AND MAINTENANCE - WHEN TEMPORARY DUST CONTROL MEASURES ARE USED; REPETITIVE TREATMENT SHOULD BE APPLIED AS NEEDED TO ACCOMPLISH CONTROL.
8. STREET CLEANING - PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET-TYPE ENLOADER OR SCRAPER.

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BRAMHALL

ENGINEERING AND SURVEYING CO., INC.

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PREPARED FOR:

THE SHELLY GROUP

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MASSILLON MINING SITE

SWP3 DETAILS AND NOTES

CITY OF MASSILLON COUNTY OF STARK

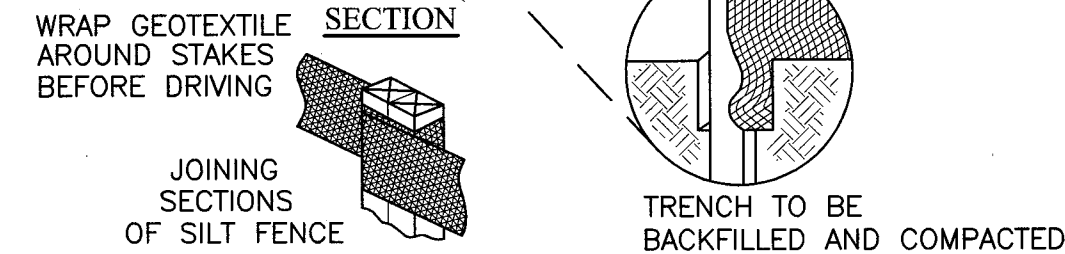
STATE OF OHIO

SHEET

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1. SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS.
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS WHICH MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
3. TO PREVENT WATER PONDED BY THE SILT FENCE FROM FLOWING AROUND THE ENDS, EACH END SHALL BE CONSTRUCTED UPSLOPE SO THAT THE ENDS ARE AT A HIGHER ELEVATION.
4. WHERE POSSIBLE, SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE.
5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FT. (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
6. THE HEIGHT OF THE FENCE SHALL BE A MINIMUM OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.
7. THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 IN. DEEP.
8. SILT FENCE FABRIC:

| FABRIC PROPERTY | VALUE | TEST METHOD |
|---------------------------------|---------------------------|-----------------------|
| GRAB TENSILE STRENGTH | 90 LB MINIMUM | ASTM D 1682 |
| MULLEN BURST STRENGTH | 190 PSI MINIMUM | ASTM D 3786 |
| SLURRY FLOW RATE | 0.3 GAL./MIN./FT. MAXIMUM | |
| EQUIVALENT OPENING SIZE | 40-80 | US STD SIEVE CW-02215 |
| ULTRAVIOLET RADIATION STABILITY | 90% MINIMUM | ASTM G-26 |

- SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING
2. STAKEOUT LIMITS OF DISTURBANCE.
3. INSTALL SILT FENCE, SEDIMENT BASIN, DIVERSION SWALES, AND STONE CHECK DAMS WHERE INDICATED ON THE PLANS.
4. BEGIN EARTH MOVING OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE COUNTY CONSERVATION DISTRICT OF THE LOCATION OF ANY AND ALL EROSION AND SEDIMENTATION CONTROL MEASURES IMPLEMENTED AT ANY BORROW OR SPOIL SITE OF IMPORT/EXPORT MATERIAL.
5. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEED AND MULCHING OR CROWNVELTCH SEEDING IMMEDIATELY UPON REACHING FINAL GRADE.
6. RESEED AND REDRESS ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE UNTIL A UNIFORM SEVENTY (70%) PERCENT SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF COVERAGE (70%) IS OBTAINED.
7. ONCE ALL UPLAND AREAS HAVE BEEN STABILIZED, THE TEMPORARY SEDIMENT RISER SHALL BE REMOVED AND THE PERMANENT STORM WATER QUALITY CONTROL DEVICE SHALL BE INSTALLED.
7. IF FOR ANY REASON THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL INSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THE PERIOD. ALL BARE SOILS ARE TO BE SEEDDED AND MULCHED WITH THE TEMPORARY SEED MIXTURE.

1. STONE SIZE - TWO INCH STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 50 FT. (EXCEPT ON SINGLE RESIDENCE LOT WHERE A 30-FT. MINIMUM LENGTH APPLIES).
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 IN. THICK
4. WIDTH - THE ENTRANCE SHALL BE AT LEAST 10 FT. WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INVADES OR EGRESS OCCURS
5. BEDDING - A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL HAVE A GRAB TENSILE STRENGTH OF AT LEAST 200 LBS. AND A MULLEN BURST STRENGTH OF AT LEAST 190 LBS.
6. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE FROM BEING DIRECTED OUT ONTO PAVED SURFACES
7. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES
8. MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLS OR DROPPED, WASHED OR TRACKED OUT PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING
9. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS

DIVERSION SLOPES SHALL NOT BE STEEPER THAN 1:1

SEED AND MULCH ENTIRE DIVERSION

24" FOR DRAINAGE AREA > 5 ACRES
STABILIZE ALL DIVERSION SWALES

COMPACTED EARTH FILL

NTS

| TEMPORARY DIVERSION STABILIZATION TREATMENT | | | |
|---|---------|-----------|------------|
| DIVERSION SLOPE | < 2 AC. | 2 - 5 AC. | 5 - 10 AC. |

| TEMPORARY DIVERSION STABILIZATION TREATMENT | | | |
|---|----------------|----------------|----------------|
| DIVERSION SLOPE | < 2 AC. | 2 - 5 AC. | 5 - 10 AC. |
| 0-3% | SEED AND STRAW | SEED AND STRAW | SEED AND STRAW |
| 3-5% | SEED AND STRAW | SEED AND STRAW | MATTING |
| 5-8% | SEED AND STRAW | MATTING | MATTING |
| 8-20% | SEED AND STRAW | MATTING | ENGINEERED |

DIVERSIONS WITH STEEPER SLOPES OR GREATER DRAINAGE AREAS ARE BEYOND THE SCOPE OF THIS STANDARD AND MUST BE DESIGNED FOR STABILITY. SEED, STRAW AND MATTING USE SHALL MEET THE SPECIFICATIONS FOR TEMPORARY SEEDING, MULCHING AND MATTING.

| CHECK DAM SPACING | | | | |
|---------------------|---------------|--------|--------|--------|
| DAM HEIGHT (FT.) | CHANNEL SLOPE | | | |
| | <5% | 5-10% | 10-15% | 15-20% |
| 1 | 65 FT | 30 FT | 20 FT | 15 FT |
| 2 | 130 FT | 65 FT | 40 FT | 30 FT |
| 3 | 200 FT | 100 FT | 65 FT | 50 FT |

CHECK DAM MAINTENANCE NOTES:

INSPECT AND MAINTAIN THE CHECK DAM WEEKLY AND AFTER EACH RAIN AND PROMPTLY MAKE REPAIRS WHEN STONE DAM LINES ARE SHARP AND NEARBY SEDIMENTS BUILD UP. SEDIMENT SHALL BE REMOVED AFTER EACH SIGNIFICANT STORM (1/2" IN 24 HOURS) TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. THE REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA PREVIOUSLY APPROVED BY THE LOCAL AUTHORITIES AND OWNER. AT NO TIME SHALL SEDIMENT BE PLACED IN AN AREA THAT WILL CONTRIBUTE SEDIMENT OFF-SITE AND IS NOT PERMANENTLY STABILIZED. REMOVE STONE DAM AND REPLACE WITH NEW STONE DAM WHEN THE DAM STRUCTURE BECOMES PLUGGED OR SILT LADEN.

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The logo features a large, stylized letter 'B' on the left. The right vertical stroke of the 'B' is a thick black bar. To the right of this bar, the word 'BRAMHALL' is written in a large, bold, serif font. Below 'BRAMHALL', the words 'ENGINEERING AND SURVEYING CO., INC.' are written in a smaller, all-caps, sans-serif font. Below this, the address '801 MOORE ROAD AVON, OHIO 44011' is written in the same sans-serif font. At the bottom, the phone number '(440) 934 - 7878' and fax number '(440) 934 - 7879 FAX' are listed, separated by a vertical line.

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MASSILLON MINING SITE
SWP3 DETAILS AND NOTES
CITY OF MASSILLON COUNTY OF STARK
STATE OF OHIO

JOB NO.
W-2510-07A