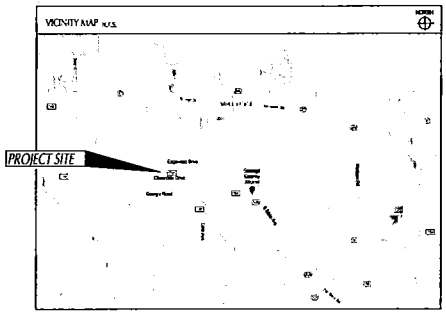
IMPROVEMENT PLANS

CLOVERDALE ESTATES DRAINAGE IMPROVEMENTS

GEAUGA COUNTY

MIDDLEFIELD, OHIO

VICINITY MAP N.T.S.



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PROJECT DESCRIPTION:

DURING HEAVY RAIN EVENTS, OFFSITE RUNOFF FROM THE SOUTHWEST FLOWS THROUGH THE SITE. THE RUNOFF CONCENTRATES INTO AN OPEN CHANNEL WHICH PASSES BETWEEN UNITS 1,4,7 AND 1,3,5 TOWARD CLOVERDALE DRIVE, REACHING CLOVERDALE DRIVE. THE RUNOFF FLOWS EAST ALONG THE ROAD FOR ABOUT 1000 FEET BEFORE FLOWING SOUTH TOWARD GEORGIA ROAD (TOWNSHIP HIGHWAY 124).

ON OCCASION, THE UNITS AT THE EAST END OF THE SITE HAVE BEEN FLOODED. THE INTENT OF THE PROJECT IS TO GRADE A SWALE ALONG THE SOUTH SIDE OF THE DEVELOPMENT WHICH WILL CAPTURE THE OFFSITE WATER AND DIVERT IT AWAY FROM THE HOUSING UNITS.

OHIO SPECIFICATION:

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING CHANGES AND SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

OWNER:
GEAUGA METROPOLITAN HOUSING AUTHORITY
365 CENTER STREET
CHARDON, OHIO 44024
PHONE: 440-285-7112 FAX: 440-286-7166

GPD GROUP

REV.	DATE	DESCRIPTION

STATE OF OHIO
RICHARD A. BERNA
E-71848
PROFESSIONAL ENGINEER
08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
365 CENTER STREET, CHARDON, OHIO 44024

TITLE SHEET

ISSUED FOR:	
PERMIT	8/30/18
BID	8/30/18
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
RCM	TRS

JOB NO.
2018359.02

TS-001

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GENERAL PLAN NOTES

1. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.
3. THE LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THE PLAN ARE BASED ON FIELD SURVEYS AND AVAILABLE RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE.
4. ALL DIMENSIONS, GRADES, AND UTILITY LOCATIONS SHOWN ON THESE PLANS WERE BASED ON A FIELD TOPOGRAPHIC SURVEY. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CONSTRUCTION/PROJECT MANAGER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO INFORMATION SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
5. ALL WORK WITHIN THE RIGHTS OF WAY SHALL BE IN ACCORDANCE WITH THE GOVERNING JURISDICTION AND SPECIFICATIONS.
6. CONTRACTOR SHALL COORDINATE ANY MAINTENANCE OF TRAFFIC WITH THE OWNER'S REPRESENTATIVE AND THE LOCAL JURISDICTION PRIOR TO CONSTRUCTION.
7. CONTRACTOR SHALL AT ALL TIMES ENSURE THAT SWPP MEASURES PROTECTING EXISTING DRAINAGE FACILITIES BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY PHASE OF THE SITE CONSTRUCTION OR LAND ALTERATION. (SEE SWPP SHEETS)
8. UPON COMPLETION OF PROJECT, CONTRACTOR SHALL CLEAN THE PAVED AREAS PRIOR TO REMOVAL OF TEMPORARY SEDIMENT CONTROLS, AS DIRECTED BY THE CITY AND/OR CONSTRUCTION/PROJECT MANAGER. IF POWER WASHING IS USED, NO SEDIMENT LADEN WATER SHALL BE WASHED INTO THE STORM SYSTEM. ALL SEDIMENT LADEN MATERIAL ON PAVEMENT OR WITHIN THE STORM SYSTEM SHALL BE COLLECTED AND REMOVED FROM THE SITE AT CONTRACTOR'S EXPENSE.
9. THE CONTRACTOR WILL, UPON BECOMING AWARE OF SUBSURFACE OR LATENT PHYSICAL CONDITIONS DIFFERING FROM THOSE DISCLOSED BY THE CONTRACT DOCUMENTS, PROMPTLY NOTIFY THE OWNER VERBALLY TO PERMIT VERIFICATION OF THE CONDITIONS AND IN WRITING, AS TO THE NATURE OF THE DIFFERING CONDITIONS. NO CLAIM BY THE CONTRACTOR FOR ANY CONDITIONS DIFFERING FROM THOSE ANTICIPATED IN THE PLAN AND SPECIFICATIONS AND DISCLOSED BY THE SOIL STUDIES WILL BE ALLOWED UNLESS THE CONTRACTOR HAS SO NOTIFIED THE OWNER, VERBALLY AND IN WRITING AS REQUIRED ABOVE, OF SUCH DIFFERING CONDITIONS.
10. THESE PROJECT CONSTRUCTION DOCUMENTS SHALL NOT CONSTITUTE A CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR THE ENGINEER AND THE SUBCONTRACTOR.
11. THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION OR SAFETY MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES UTILIZED IN CONSTRUCTION BY THE CONTRACTOR OR SUBCONTRACTORS.
12. THE CONTRACTOR SHALL RUN AN INDEPENDENT VERTICAL CONTROL TRAVERSE TO CHECK BENCHMARKS AND A HORIZONTAL CONTROL TRAVERSE THROUGH THE REFERENCED PROJECT CONTROL DATUM TO CONFIRM GEOMETRIC DATA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION.

GRADING PLAN NOTES

1. BEFORE STARTING GRADING OPERATIONS, SEE SHEETS SWP-1 THRU SWP-4, STORMWATER POLLUTION PREVENTION PLAN, NOTES, AND DETAILS (SWPP).
2. PRIOR TO SITE CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL INSTALL ALL SWPP MEASURES TO PROTECT EXISTING DRAINAGE FACILITIES. CONTRACTOR SHALL PREVENT SILTATION FROM LEAVING THE SITE AT ALL TIMES.
3. STRIP GRADING AREAS OF ALL ORGANIC TOPSOILS. STOCKPILE SUITABLE TOPSOILS FOR RESPREADING ONTO LANDSCAPE AREAS. EXCESS EXCAVATED MATERIALS MAY BE SPOILED ON-SITE WITH THE OWNER'S PERMISSION. ALL WASTE, DEBRIS, AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE.
4. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIFICATIONS. THE SITE GRADING, EXCAVATION, AND EMBANKMENT SHALL BE IN ACCORDANCE WITH THE STATE DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.
5. AT A MINIMUM ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY PER A.S.T.M. TEST D-698. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 2% BELOW OPTIMUM. NOTIFY PROJECT ENGINEER IF ANY UNSUITABLE SOILS ARE FOUND.
6. FOLLOWING GRADING OF SUBSOIL TO SUBGRADE ELEVATIONS THE CONTRACTOR SHALL PLACE TOPSOIL TO A 5" DEPTH IN ALL DISTURBED AREAS WHICH ARE NOT TO BE PAVED. SMOOTHLY FINISH GRADE TO MEET SURROUNDING LAWN AREAS AND ENSURE POSITIVE DRAINAGE. TOPSOIL SHALL BE FREE OF SUBSOIL, DEBRIS, BRUSH AND STONES LARGER THAN 1" IN ANY DIMENSION. EXCESS TOPSOIL MAY BE SPOILED ON-SITE WITH THE OWNER'S PERMISSION.
7. ELEVATIONS GIVEN ARE AT FINISHED GRADE UNLESS OTHERWISE SPECIFIED ON GRADING PLAN. ALL GRADING SHALL BE STRAIGHT, EVEN, AND UNIFORM WITH A MINIMUM OF 1% SLOPE TOWARD THE COLLECTION POINTS UNLESS OTHERWISE SPECIFIED ON THE GRADING PLAN. DO NOT ALLOW NEGATIVE GRADES OR PONDING OF WATER.

PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON ANSI D (22"x34") SHEETS, REFER TO GRAPHIC SCALE.

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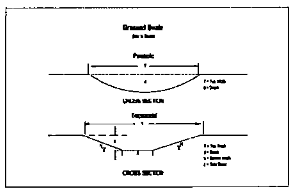
Specifications
for
Grassed Swale



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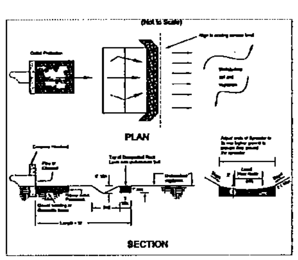
Specifications
for
Rigid Lip Level Spreader



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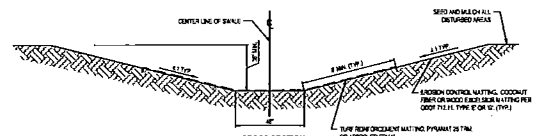
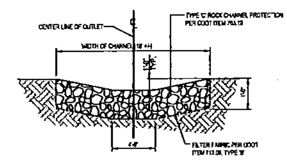


CROSS SECTION

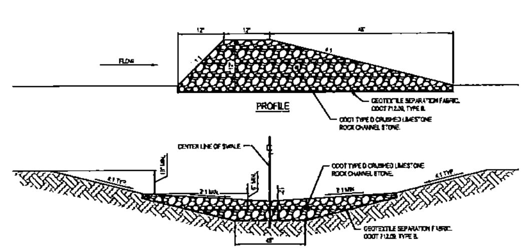
GENERAL NOTES
1. SEE SHEET C-111 FOR GRADING AND ALIGNMENT INFORMATION.
2. MINIMUM CHANNEL DEPTH = 36", MINIMUM SLOPE = 2.0%.

(C4) VEGETATED SWALE SECTION
N.T.S.



NOTE: SEE SITE PLAN FOR LENGTH

(B4) ROCK CHANNEL PROTECTION
N.T.S.



CROSS SECTION

GENERAL NOTES
1. THE MIDPOINT OF THE ROCK CHECK DAM SHALL BE A MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT FLOW ACROSS THE CENTER AND AWAY FROM THE SIDES OF THE CHANNEL.
2. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 3 INCHES.
3. STONE MATERIAL SHALL BE CRUSHED STONE. NO RECYCLED CONCRETE OR SLAG.

(A4) ROCK CHECK DAM
N.T.S.

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2102

REV.	DATE	DESCRIPTION

STATE OF OHIO — LEONARDO A. SFERRA — E-71842 — REGISTERED PROFESSIONAL ENGINEER
08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44042

GENERAL NOTES AND DETAILS

ISSUED FOR	
PERMIT	8/30/18
BID	8/30/18
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
RDW	TRS

JOB NO.
2018359.02

C-001

N

1" = 40'
Horizontal Scale in Feet

BENCHMARK:

BENCHMARK 1
"X" IN MANHOLE ON ROADWAY
NORTHING [illegible]
EASTING [illegible]
ELEVATION [illegible]

Utility Notes

2 Working Days
Before You Dig
Call 800-362-2764 (Toll Free)
Ohio Utilities Protection Service

Non-members
Must Be Called Directly

Call 800-925-0988 (Toll Free)
Oil & Gas Producers Utility Protection Service

LEGEND:

- EXISTING ELECTRIC METER
- EXISTING FIRE HYDRANT
- EXISTING GAS METER
- EXISTING CLEANOUT
- EXISTING CONCRETE PAVEMENT/SIDEWALK
- EXISTING WOOD BARRIER
- EXISTING TREE LINE
- EXISTING STREET
- ROCK
- BUSH/SHRUB
- DECIDUOUS TREE
- DEMOLITION KEYNOTE

GENERAL SHEET NOTES

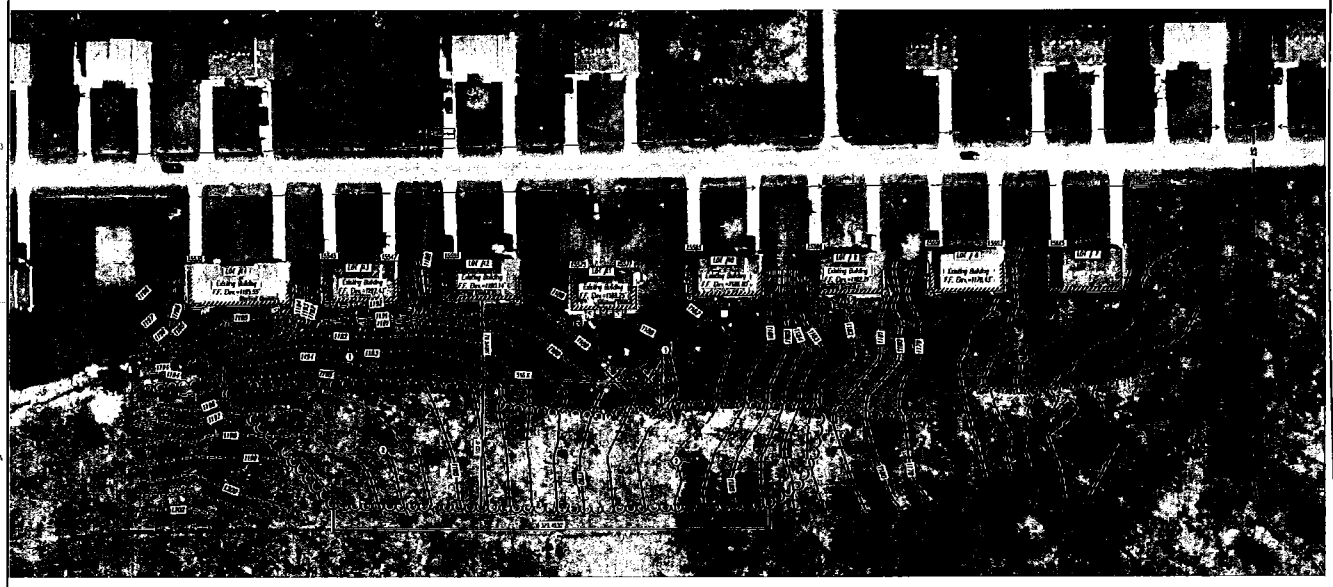
1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND INFORMATION.
2. INSTALL SILT FENCE AND PERIMETER CONTROLS PRIOR TO REMOVING VEGETATION AND STRIPPING TOPSOIL.
3. SALVAGE AND STOCKPILE TOPSOIL FOR RE-SPREADING ON DISTURBED AREAS.

PLAN KEYNOTES (#)

1. TREE/SHRUB TO BE REMOVED.
2. CLEAR BRUSH AND SCRUB VEGETATION.

DEMOLITION NOTE:

ALL EXISTING PAVEMENT AND SURROUNDING FEATURES SUCH AS UTILITIES, FIRE HYDRANT, CURB, LANDSCAPING, ETC. SHALL REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION UNLESS NOTED OTHERWISE, OR ARE REQUIRED TO BE MODIFIED OR REMOVED FOR THE INSTALLATION OF PROPOSED IMPROVEMENTS. ALL DISTURBED FEATURES SHALL BE RESTORED OR RELOCATED AS REQUIRED TO THE SATISFACTION OF THE OWNER. CONTRACTOR SHALL REPAIR/REPLACE ANY SURROUNDING FEATURES DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.



A1 EXISTING CONDITIONS AND DEMOLITION PLAN
1"=40'

GPD GROUP
Gbud, Pyle, Schwarz, Burns & Deshaun, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101
Cleveland, Akron, Toledo, Columbus, Dayton, Cincinnati, Pittsburgh

REV.	DATE	DESCRIPTION

STATE OF OHIO
BRENDAN D. A. BERNAL
E-71443
REGISTERED PROFESSIONAL ENGINEER

08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44024

EXISTING CONDITIONS AND DEMOLITION PLAN

ISSUED FOR	
PERMIT	8/30/18
BID	8/30/18
CONSTRUCTION	–
RECORD	–

PROJECT MANAGER	DESIGNER
PDM	TMS

JOB NO.
2018359.02

C-101

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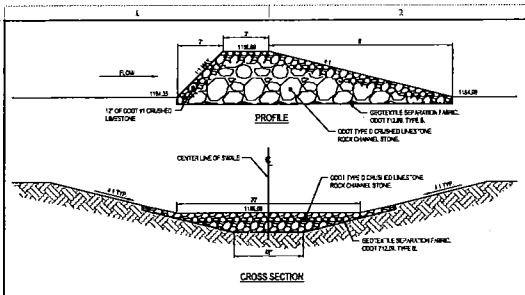

GENERAL NOTES

1. THE HEIGHT OF THE ROCK CHECK DAM SHALL BE 1 MINIMUM OF 6 INCHES LOWER THAN THE SIDES IN ORDER TO DIRECT FLOW ACROSS THE CENTER AND AWAY FROM THE SIDES OF THE CHANNEL.
2. THE BASE OF THE CHECK DAM SHALL BE ENTRENCHED APPROXIMATELY 6 INCHES.
3. STONE MATERIAL SHALL BE CRUSHED STONE, NO RECYCLED CONCRETE OR SLAG.

B1 WATER QUALITY CHECK DAM
N.T.S.

N

Horizontal Scale in Feet

BENCHMARK:

BENCHMARK 1
"X" IN MANHOLE ON HYDRANT
ELEVATION 1115.51
EASTING 1333413.741
NORTHING 1002.19
ELEVATION 1002.19

Utility Notice

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Ohio Utilities Protection Service

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LEGEND:

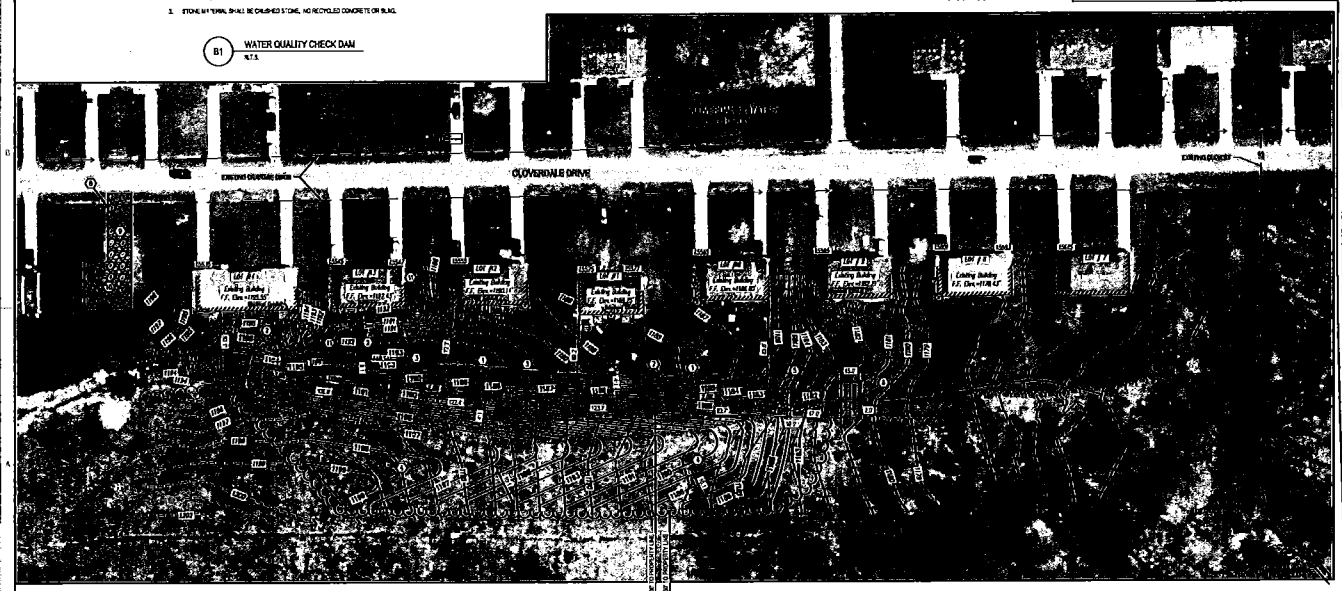
- EXISTING ELECTRIC METER
- EXISTING FIRE HYDRANT
- EXISTING GAS METER
- EXISTING CLEANOUT
- EXISTING CONCRETE PAVEMENT/SIDEWALK
- EXISTING WOOD BRIDGE
- EXISTING TREE LINE
- EXISTING STREAM
- ROCK
- RUBBLE/SHALE
- DECIDUOUS TREE
- CONSTRUCTION KEYNOTE
- PROPOSED SWALE
- EROSION CONTROL MATTING, REFER TO DETAIL ON SHEET C-001 FOR ADDITIONAL INFORMATION.

GENERAL SHEET NOTES

1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND INFORMATION.
2. INSTALL SILT FENCE AND PERIMETER CONTROLS PRIOR TO REMOVING VEGETATION AND STRIPPING TOPSOIL.
3. SALVAGE AND STOCKPILE TOPSOIL FOR RE-SPREADING ON DISTURBED AREAS.
4. COVER ALL SLOPED AREAS WITH EROSION CONTROL MATTING. REFER TO SECTION DETAIL ON SHEET C-001 FOR TYPE AND LIMITS.
5. SEED AND MULCH ALL DISTURBED AREAS UPON COMPLETION OF FINISH GRADING AND SPREADING OF TOPSOIL.
6. BASE 30 SHALL INCLUDE A RETURN TRIP & DIE SPINNING OF 20'S TO REPAIR ERODED AREAS, FERTILIZE, AND OVERSEED THE PROJECT AREA.

PLAN KEYNOTES (#)

1. PROPOSED DRAINAGE SWALE. SEE SHEET C-001 FOR SECTION DETAIL.
2. DIVERSION BERM.
3. PROPOSED ROCK CHECK DAM. SEE SHEET C-001 FOR DETAIL.
4. MASS EXCAVATION AREA. GRADE TO ALLOW FOR MOWING AND MAINTENANCE. SEED AND MULCH ALL DISTURBED AREAS.
5. ODOT TYPE C ROCK CHANNEL PROTECTION OVER FILTER FABRIC ACROSS WIDTH OF CHANNEL. SHAPE ROCK TO DIRECT WATER FLOW INTO THE CENTER OF THE CHANNEL. LENGTH = 15 FT. SEE SHEET C-001 FOR DETAIL.
6. LEVEL SPREADER. LEVEL WITH SWALE. SEE SHEET C-001 FOR DETAIL.
7. WATER QUALITY CHECK DAM PER DETAIL B1, THIS SHEET.
8. 12" HDPE TEMPORARY CULVERT. REMOVE UPON COMPLETION OF PROJECT AND RESTORE TO EXISTING OR BETTER CONDITION.
9. TEMPORARY CONSTRUCTION ENTRANCE. REMOVE UPON COMPLETION OF THE PROJECT AND RESTORE TO EXISTING OR BETTER CONDITION. REFER TO SWPP PLANS FOR DETAILS AND ADDITIONAL INFORMATION.
10. TEMPORARY STAGING AREA. REMOVE UPON COMPLETION OF THE PROJECT AND RESTORE TO EXISTING OR BETTER CONDITION. REFER TO SWPP PLANS FOR DETAILS AND ADDITIONAL INFORMATION.
11. EXISTING DRAINAGE DITCH TO REMAIN.



A1 SITE AND GRADING PLAN
1" = 40'

GPD GROUP.

REV.	DATE	DESCRIPTION

08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44024

SITE AND GRADING PLAN

ISSUED FOR	
PERMIT	8-30-18
BID	8-30-18
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
RDM	TKS

JOB NO. 2018359.02

C-111

1 | 2 | 3 | 4 | 5

STORM WATER POLLUTION PREVENTION NOTES

1. ALL WORK SPECIFIED AS AN DEPARTMENT OF TRANSPORTATION ITEM SHALL BE GOVERNED BY THE CURRENT STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS AS WELL AS THE CURRENT EDITION OF THE LOCAL JURISDICTION STORM WATER MANAGEMENT MANUAL. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POSSESS AND TO BE FAMILIAR WITH APPLICABLE SECTIONS.
2. THESE CONTRACT DRAWING SHALL BE MADE AVAILABLE ON SITE AT ALL TIMES AND PRESENTED UPON REQUEST. IF UNFORESEEN STORM WATER POLLUTION IS ENCOUNTERED, ADDITIONAL STORM WATER POLLUTION PREVENTION (SWPP) MEASURES SHALL BE IMPLEMENTED TO MANAGE THE CURRENT SITE CONDITIONS WHICH MAY BE REQUESTED BY THE OWNER, COUNTY ENGINEER, PROJECT ENGINEER OR SOIL AND WATER CONSERVATION SERVICE REPRESENTATIVE AT ANYTIME. SUCH REQUESTS AND CHANGE IN SITE CONDITIONS SHALL BE IMPLEMENTED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
3. ALL STORM WATER POLLUTION PREVENTION PRACTICES WILL BE INSTALLED BEFORE ANY OTHER EARTH MOVING OCCURS.
4. ALL STORM WATER POLLUTION PREVENTION ITEMS SHALL BE INSTALLED AS SHOWN OR NOTED IN THESE PLANS.
5. PLANT TEMPORARY SEEDING AND MULCHING IN ALL AREAS THAT SHALL BE INACTIVE FOR 14 DAYS OR MORE. ALL DISTURBED AND ERODED EARTH SHALL BE REGRADED AND SEEDED WITHIN 7 DAYS WITH SEEDING, AS DEFINED ON THE TEMPORARY SEEDING TABLE WITHIN THESE PLANS, TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL. WHERE POSSIBLE, TEMPORARY SEEDING GROWTH SHALL NOT BE MOWED UNTIL IT HAS GONE TO SEED FOR 1 YEAR.
6. PERMANENT VEGETATION SHALL BE INSTALLED WITHIN 7 DAYS AT THE COMPLETION OF ANY GRADED AREAS, WEATHER PERMITTING.
7. PRIOR TO THE TIME THAT DRAINAGE DIVERTS TO INLETS, INLET SEDIMENT FILTERS SHALL BE INSTALLED AT ALL INLET STRUCTURES TO KEEP PIPING SYSTEMS FREE OF SILTATION.
8. SILT BARRIERS SHALL BE INSTALLED AROUND ALL EXISTING AND NEW STORM INLETS, CATCH BASINS, YARD DRAINS. INSTALL ROCK CHECK DAMS FOR HEADWALL INLETS FOR STORM WATER POLLUTION PREVENTION.
9. STORM WATER POLLUTION PREVENTION MEASURES SHALL BE INSTALLED AROUND ALL DIRT OR TOPSOIL STOCKPILES AND OTHER TEMPORARILY DISTURBED AREAS AS SHOWN ON THESE PLANS AND AS DIRECTED BY THE ENGINEER.
10. CONTRACTOR SHALL INSPECT ALL SWPP MEASURES DAILY AND LOGGED BY THE CONTRACTOR FOR INSPECTION. LOGGING SHALL BE WEEKLY AND AFTER EVERY ½" RAINFALL EVENT. REPAIR AS NECESSARY TO PREVENT EROSION. SILTATION SHALL BE REMOVED FROM AREAS WHERE FAILURES HAVE OCCURRED AND CORRECTIVE ACTION TAKEN WITHIN 24 HOURS TO MAINTAIN ALL SWPP.
11. SILT BARRIERS, CONSTRUCTION ENTRANCES, AND SILT PERIMETER CONTROLS SHALL REMAIN IN PLACE UNTIL A GOOD STAND OF GRASS HAS BEEN OBTAINED AND/OR PAVING OPERATIONS ARE COMPLETE. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM. ONCE SITE HAS BEEN COMPLETELY STABILIZED, ANY SILT IN PIPES AND DRAINAGE SWALES SHALL BE REMOVED WITHIN 10 DAYS.
12. TEMPORARY SEDIMENTATION AND STORM WATER POLLUTION PREVENTION MEASURES MUST BE INSPECTED AND AFTER ½" RAIN EVENTS.
13. UTILITY COMPANIES MUST COMPLY WITH ALL STORM WATER POLLUTION PREVENTION MEASURES AS DEFINED ON THE STORM WATER POLLUTION PREVENTION PLANS, DETAILS AND NOTES.
14. ALL EXISTING WATER COURSES WITHIN THE PROJECT LIMITS SHALL BE TEMPORARILY PROTECTED DURING LAND CLEARING AND GRADING OPERATIONS. SOILS WITHIN 50 FEET OF SAID WATER COURSES SHALL BE STABILIZED WITHIN 2 DAYS OF THE INITIAL CLEARING / GRADING OPERATION AS SHOWN ON PLANS.
15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.
16. DUST CONTROL SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. IF POSSIBLE GRADING SHALL BE DONE BY PHASING. IF PHASING IS NOT AN OPTION, DUST SHALL BE CONTROLLED WITH WATER DURING EARTHWORK. AFTER EARTHWORK OPERATIONS, THE EXPOSED SOILS SHALL BE COVERED WITH STRAW OR MULCH UNTIL SEEDED. SEE DETAIL WITHIN THESE PLANS. OIL IS NOT TO BE USED AS A DUST SUPPRESSANT.
17. ANY DISCHARGE OF PETROLEUM OR PETROLEUM PRODUCTS OF LESS THAN 25 GALLONS ONTO A PERVIOUS SURFACE SHALL BE LEGALLY REMOVED AND PROPERLY TREATED OR PROPERLY DISPOSED OF, OR OTHERWISE REMEDIATED, SO THAT NO CONTAMINATION FROM THE DISCHARGE REMAINS ON-SITE.
18. IN THE EVENT OF A LARGE PETROLEUM SPILL (25 OR MORE GALLONS) CONTRACTOR MUST CONTACT THE OHIO EPA, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE (LEPC) WITHIN 30 MINUTES OF A SPILL OF 25 OR MORE GALLONS.
19. CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT FACILITY SHALL BE UTILIZED, IF CONDITIONS ARE SUCH THAT MUD IS COLLECTING ON VEHICLE TIRES, THE TIRES MUST BE CLEANED BEFORE THE VEHICLES ENTER THE PUBLIC ROADWAY. THE SITE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOW OF MUD ONTO THE PUBLIC RIGHT-OF-WAY. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE ROADWAY MUST BE REMOVED PROMPTLY.
20. IF NECESSARY, THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
21. IF NECESSARY, ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.
22. CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING CONSTRUCTION FENCE, SIGNS, ETC. TO MARK AND KEEP PEOPLE OFF SITE FOR THE DURATION OF THE PROJECT.
23. IF ENCOUNTERED DURING SITE REDEVELOPMENT, ANY OIL/GAS WELLS OR MINE SHAFTS MUST BE PROPERLY ABANDONED, VAULTED AND VENTED IN ACCORDANCE WITH CURRENT REGULATIONS AND SPECIFICATIONS OF ALL GOVERNING AUTHORITIES.
24. IF, FOR ANY REASON, THE PROJECT IS SUSPENDED, THE CONTRACTOR SHALL INSURE THAT ALL INSTALLED EROSION MEASURES ARE FUNCTIONING AND PROPERLY MAINTAINED DURING THIS PERIOD, AND THAT ALL BARE SOILS ARE SEEDED AND MULCHED WITH TEMPORARY SEED MIXTURE.
25. THE FOLLOWING STORM WATER POLLUTION PREVENTION AND SEDIMENT CONTROL MEASURES WHICH WILL BE USED ON THIS SITE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
    a. SILT FENCE
    b. CONSTRUCTION ENTRANCE

ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS

1. 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.
    a) PREVENT SPILLS
    b) USE PRODUCTS UP
    c) FOLLOW LABEL DIRECTIONS FOR DISPOSAL
    d) REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
    e) RECYCLE WASTES WHENEVER POSSIBLE
    f) DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
    g) DON'T POUR DOWN THE SINK, DOOR DRAIN OR SEPTIC TANKS
    h) DON'T BURY CHEMICALS OR CONTAINERS
    i) DON'T BURN CHEMICALS OR CONTAINERS
    j) DON'T MIX CHEMICALS TOGETHER
2. 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 LAND FILL.
3. 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 ENCROACH UPON NATURAL WETLANDS, STREAMS OR PLAINS OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.
4. 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.
5. 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 OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE 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 660 GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM 8.
6. 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 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER CONVEYANCES.
7. SPILL REPORTING REQUIREMENTS : SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LAND FILL. 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. SPILLS OF 25 GALLONS OR MORE OF PETROLEUM PRODUCTS SHALL BE REPORTED TO THE OHIO EPA, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE DISCOVERY OF THE RELEASE. ALL SPILLS WHICH CONTACT WATERS OF THE STATE MUST BE REPORTED TO THE OHIO EPA.
8. CONTAMINATED SOILS : IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, ETC. ARE SPILLED, LEAKED OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LAND FILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY (NOT A CONSTRUCTION/DEMOLITION DEBRIS LAND FILL). NOTE THOSE STORM WATER RUNOFFS ASSOCIATED WITH CONTAMINATED SOILS ARE NOT BE AUTHORIZED UNDER THE OHIO EPA GENERAL STORM WATER PERMIT ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
9. OPEN BURNING : NO OPEN BURNING.
10. 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.
11. OTHER AIR PERMITTING REQUIREMENTS : CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BUT 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 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.
12. PROCESS WASTE WATER/LEACHATE MANAGEMENT : EPA'S 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 SEPTAGE IS DISCHARGED; IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL AND CORRECTIVE ACTIONS TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
13. 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 LINES. PLANS MUST BE SUBMITTED AND APPROVED BY THE OHIO EPA. ISSUANCE OF THE 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.
14. PLEASE REFER TO THE LOCAL JURISDICTION STORM WATER MANAGEMENT MANUAL, CURRENT EDITION, FOR ADDITIONAL INFORMATION.
15. WASTES GENERATED BY CONSTRUCTION ACTIVITIES (I.E. CONSTRUCTION MATERIALS SUCH AS PAINTS, SOLVENTS, FUELS, CONCRETE, WOOD, ETC) MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL REGULATIONS. HAZARDOUS AND TOXIC SUBSTANCES ARE USED ON VIRTUALLY ALL CONSTRUCTION SITES. GOOD MANAGEMENT OF THESE SUBSTANCES IS ALWAYS NEEDED.

CONSTRUCTION SEQUENCE

DURING PRECONSTRUCTION MEETING ALL EROSION & SEDIMENT CONTROL FACILITIES & PROCEDURES SHALL BE DISCUSSED.

1. INSTALL CONSTRUCTION ENTRANCE AS DETAILED ON PLANS.
2. STAKE AND/OR FLAG LIMITS OF CLEARING.
3. CLEARING & GRUBBING, AS NECESSARY, FOR INSTALLATION OF PERIMETER CONTROLS. INSTALL SILT PERIMETER CONTROLS AS SHOWN ON PLANS. SILT PERIMETER CONTROLS SHALL BE INSTALLED LEVEL ALONG THE CONTOURS, WITH ENDS TURNED UPSLOPE TO PREVENT CONCENTRATED FLOW AT THE SILT PERIMETER CONTROLS.
4. CLEARING & GRUBBING THE REMAINING SITE AS NECESSARY. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR REUSE.
5. BEGIN FILLING & GRADING AS REQUIRED TO REACH SUBGRADE.
6. UTILIZE DUST CONTROL MEASURES AS REQUIRED TO MINIMIZE AIR-BORNE POLLUTION BY METHODS APPROVED BY THE AUTHORIZING EPA OFFICE.
7. SPREAD TOPSOIL OVER ALL DISTURBED AREAS. SEED AND MULCH ALL DISTURBED AREAS.
8. COMPLETE SITEWORK AND FINAL CLEAN-UP. RESEED ANY AREAS THAT MAY REQUIRE ATTENTION IMMEDIATELY. NOTE THAT LAWN AREAS WILL NOT BE DEEMED STABLE UNTIL A MINIMUM 80% VEGETATIVE DENSITY HAS BEEN ACHIEVED.
9. MAINTAIN EROSION & SEDIMENTATION CONTROL MEASURES UNTIL THE SITE HAS BEEN COMPLETELY STABILIZED. ALL AREAS OF VEGETATIVE SURFACE, WHETHER PERMANENT OR TEMPORARY, SHALL BE CONSIDERED TO BE IN PLACE AND FUNCTIONAL WHEN THE REQUIRED UNIFORM RATE OF COVERAGE (80%) IS OBTAINED.
10. REMOVE SEDIMENT CONTROLS.

* YEARLY INSPECTIONS, COMPLETED BY MAY 31ST OF EACH YEAR, MUST BE DOCUMENTED. COPIES SHOULD BE SENT TO THE LOCAL CITY AS WELL AS THE THE LOCAL COUNTY SOIL AND WATER CONSERVATION DISTRICT.

ONLY APPROVED SIGNED PLANS BY THE LOCAL SWCD ARE TO BE USED FOR CONSTRUCTION.

CONTRACTORS INSPECTOR SHALL BE A QUALIFIED INDIVIDUAL. SITE INSPECTIONS SHALL BE DONE WEEKLY AND WITHIN 24 HRS AFTER EVERY RAINFALL EVENT EXCEEDING 1/2" OF RAINFALL. ALL NECESSARY REPAIRS SHOULD BE IMPLEMENTED IMMEDIATELY AFTER SUCH INSPECTIONS.

CONTRACTOR'S INSPECTOR SHALL BE RESPONSIBLE FOR PREPARING AND SIGNING WEEKLY AND ALL INTERMEDIATE EROSION CONTROL INSPECTION REPORTS AFTER EVERY INSPECTION. SUCH REPORTS SHALL BE MADE AVAILABLE TO OWNER, ENGINEER AND CITY / STATE OFFICIALS UPON THEIR REQUEST.

REPORTS SHALL BE KEPT FOR 3 YEARS AFTER TERMINATION OF THE CONSTRUCTION ACTIVITIES.

CONTRACTOR MAY SUBMIT A WAIVER REQUEST TO THE STATE EPA FOR A REDUCTION TO MONTHLY INSPECTIONS IF THE SITE WILL BE STABILIZED DORMANT SITE FOR A LONG PERIOD.

ONLY A QUALIFIED INSPECTION PERSONNEL IS TO PERFORM THE INSPECTIONS.

FOR BMPS THAT REQUIRE REPAIR OR MAINTENANCE - NON SEDIMENT POND BMPS ARE TO BE REPAIRED WITHIN 3 DAYS OF INSPECTION AND SEDIMENT PONDS ARE TO BE REPAIRED OR CLEANED OUT WITHIN 10 DAYS OF INSPECTION.

FOR BMPS THAT DO NOT MEET THE INTENDED FUNCTION, A NEW BMP SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

FOR MISSING BMPS REQUIRED, THE MISSING BMPS SHALL BE INSTALLED WITHIN 10 DAYS OF THE INSPECTION.

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE

PROJECT DESCRIPTION

DURING HEAVY RAIN EVENTS, OFFSITE RUNOFF FROM THE SOUTHWEST FLOWS THROUGH THE SITE. THE RUNOFF CONCENTRATES INTO AN OPEN CHANNEL WHICH PASSES BETWEEN UNITS 1547 AND 1555 TOWARD CLOVERDALE DRIVE. REACHING CLOVERDALE DRIVE, THE RUNOFF FLOWS EAST ALONG THE ROAD FOR ABOUT 100-FEET BEFORE FLOWING SOUTH TOWARD GEORGIA ROAD (TOWNSHIP HIGHWAY 134).

ON OCCASION THE UNITS AT THE EAST END OF THE SITE HAVE BEEN FLOODED. THE INTENT OF THE PROJECT IS TO GRADE A SWALE ALONG THE SOUTH SIDE OF THE DEVELOPMENT WHICH WILL CAPTURE THE OFFSITE WATER AND DIVERT IT AWAY FROM THE HOUSING UNITS.

PROJECT COMPLETION STATISTICS

TYPE OF SITE:	MULTI-FAMILY RESIDENTIAL
PROJECT AREA	3.73 ACRES
TOTAL DISTURBED AREA	APPROX. 3.75 ACRES

EXISTING LAND USE FOR THE SITE IS RESIDENTIAL LOW INCOME HOUSING.

ESTIMATED PRE-CONSTRUCTION PERVIOUS AREA	3.75 ACRES
ESTIMATED PRE-CONSTRUCTION PERVIOUS PERCENT	100%
PRE-CONSTRUCTION RUN-OFF COEFFICIENT:	0.35

PROPOSED LAND USE AND IMPERVIOUS AREA WILL NOT CHANGE. SCOPE WILL BE LIMITED TO RE-GRADING THE LAWN AREAS TO RESOLVE DRAINAGE ISSUES.

ESTIMATED POST-CONSTRUCTION PERVIOUS AREA:	3.75 ACRES
ESTIMATED POST-CONSTRUCTION PERVIOUS PERCENT	100%
POST-CONSTRUCTION RUN-OFF COEFFICIENT	0.35

PROJECT LOCATION:

LATITUDE	LONGITUDE
41.451772°	-81.08[illegible]°

EXISTING SITE SOIL TYPES:

WaB: WADSWORTH SILT LOAM, 2 TO 6 PERCENT SLOPES. HYDROLOGIC SOIL GROUP D.

REFERENCE: USDA NATIONAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY.

WETLAND INFORMATION:

A POTENTIAL EMERGENT WETLAND HAS BEEN IDENTIFIED NEAR THE START OF THE SWALE AT THE WEST END OF THE PROJECT. FENCING WILL BE INSTALLED TO PROTECT THE AREA.

FIRST AND SUBSEQUENT RECEIVING STREAM:

INITIAL RECEIVING WATER IS AN UNNAMED TRIBUTARY AND THE SUBSEQUENT RECEIVING WATER IS THE EAST BRANCH CUYAHOGA RIVER.

WATERSHED: CUYAHOGA

CONTROL RATIONAL AND DESCRIPTION

THE GENERAL SCOPE OF THE PROJECT IS TO RE-GRADE THE LAWN AREA AT THE REAR OF THE HOUSING UNITS TO RESOLVE DRAINAGE ISSUES. THE PROPOSED PROJECT WILL NOT CHANGE THE SITE IMPERVIOUS AREA OR RUNOFF CHARACTERISTICS. A SWALE WILL BE CONSTRUCTED ALONG THE BACK SIDE OF THE DEVELOPMENT TO KEEP OFFSITE WATER FROM FLOODING THE UNITS DURING HEAVY STORM EVENTS. THE SWALE WILL BE VEGETATED AND WILL INCLUDE ROCK CHECK DAMS TO CONTROL VELOCITY, MINIMIZE EROSION, AND IMPROVE WATER QUALITY.

OWNER CONTACT:

OWNER:
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET
CHARDON, OHIO 44024

PHONE: 440-286-7413 FAX: 440-286-7495

ANTICIPATED TIMING:

CONSTRUCTION BEGIN: October 1, 2018
CONSTRUCTION COMPLETE: December 31, 2018

CONTRACTOR: T.B.D. ____________
CONTACT: ____________
PHONE NUMBER: ____________

CONTRACTOR SHALL MAINTAIN A CONSTRUCTION LOG DOCUMENTING ALL GRADING AND STABILIZATION ACTIVITIES.

GPD GROUP.
Glaus, Pyle, Schomer, Burns & Dehaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101
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REV.	DATE	DESCRIPTION

STATE OF OHIO
LEONARDO A. SFERRA
E-71842
REGISTERED PROFESSIONAL ENGINEER

08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44042

STORMWATER POLLUTION PREVENTION
GENERAL NOTES

ISSUED FOR	
PERMIT	8/30/18
BID	8/30/18
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
RCM	TRS

JOB NO.
2018359.02

SWP-1

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N

1" = 40'
Horizontal Scale in Feet

BENCHMARK:

BENCHMARK 1
"X" IN SQUARE ON HYDRANT
NORTHING [illegible]
EASTING [illegible]
ELEVATION [illegible]
DATUM NGVD [illegible]

Underground Utilities

2 Working Days
Before You Dig
Call 800-362-2764 (Toll Free)
Ohio Utilities Protection Service

Non-members
Must Be Called Directly

Call 800-925-0988 (Toll Free)
Oil & Gas Producers Utility Protection Service

LEGEND:

- EXISTING ELECTRIC METER
- EXISTING FIRE HYDRANT
- EXISTING GAS METER
- EXISTING ELEMENT
- EXISTING CONCRETE PAD/AREA/SIDEWALK
- EXISTING WOOD FENCE
- EXISTING TREE LINE
- EXISTING SWALE
- ROCK
- BUSH/SHRUB
- DECIDUOUS TREE
- CONSTRUCTION KEYNOTE
- PROPOSED SWALE
- EROSION CONTROL MATTING

GENERAL SHEET NOTES

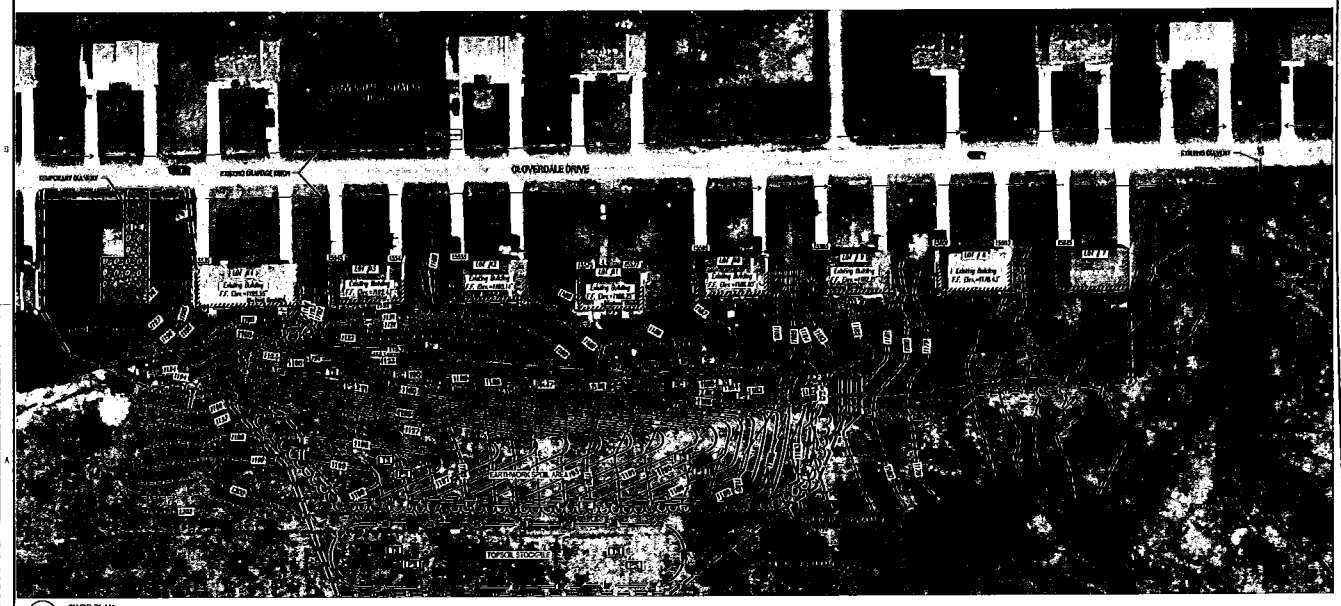
1. REFER TO SHEET C-001 FOR GENERAL NOTES AND LEGEND INFORMATION.
2. INSTALL SILT FENCE AND PERIMETER CONTROLS PRIOR TO REMOVING VEGETATION AND STRIPPING TOPSOIL.
3. SALVAGE AND STOCKPILE TOPSOIL FOR RE-SPREADING ON DISTURBED AREAS.

SWPP KEYNOTES

- CE CONSTRUCTION ENTRANCE
- CA CONSTRUCTION STAGING AREA
- SF SILT FENCE
- CF COMPOST FILTER SOCK
- RC ROCK CHECK DAM
- TS TEMPORARY SEEDING
- PS PERMANENT SEEDING

LEGEND
(SEE SHEET C-001 FOR GENERAL LEGEND)

- SF — PROPOSED SILT FENCE. SEE DETAIL A5, SHEET SWP-4 FOR ADDITIONAL INFORMATION.
- CF — COMPOST FILTER SOCK. SEE DETAIL A4, SHEET SWP-4 FOR ADDITIONAL INFORMATION.
- SOLID PROTECTIVE FENCING. 6-FT. HIGH ORANGE, PLASTIC CONSTRUCTION FENCING WITH POSTS AT 6' ON 8' O.C.
- STONE CONSTRUCTION ENTRANCE. SEE DETAIL A2, SHEET SWP-4 FOR ADDITIONAL INFORMATION.



A1 SWPP PLAN
1" = 40'

GPD GROUP
Street, Hale, Scrivener, Burns & Dettmann, Inc.
520 South Main Street, Suite 2573
Akron, OH 44311-1051
330.375.1505 Fax 330.375.1202
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REV.	DATE	DESCRIPTION

STATE OF OHIO
LEONARDO A. BRIONES
E-71940
PROFESSIONAL ENGINEER
08/30/18

CLOVERDALE ESTATES DRAINAGE
GENAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44024

STORMWATER POLLUTION PREVENTION PLAN

ISSUED FOR:	
PERMIT	8/30/18
BID	8/30/18
CONSTRUCTION	--
RECORD	--

PROJECT MANAGER	DESIGNER
RDM	TRB

JOB NO.
2018359.02

SWP-2

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August 30, 2018 4:58 PM | bsamer

MULCHING

1) MULCH AND OTHER APPROPRIATE VEGETATIVE PRACTICES SHALL BE APPLIED TO DISTURBED AREAS WITHIN 7 DAYS OF GRADING IF THE AREA IS TO REMAIN DORMANT (UNDISTURBED) FOR MORE THAN 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:

-STRAW SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF 2 TONS/AC. OR 90 LBS./1,000 SQ. FT. (TWO TO THREE BALES) THE STRAW 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 1,000 SQ. FT. SECTIONS AND PLACE TWO 45-LB BALES OF STRAW IN EACH SECTION.

-WOOD CELLULOSE FIBER SHOULD BE USED AT 2,000 LB./AC. OR 46 LBS/1,000 SQ. FT.

-ACCEPTABLE MULCHES INCLUDE MULCH MATTINGS AND ROLLED EROSION CONTROL PRODUCTS APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS OR WOOD MULCH/CHIPS APPLIED AT 10-20 TONS/AC.

3) MULCH SHALL BE ANCHORED IMMEDIATELY TO MINIMIZE LOSS BY WIND OR RUNOFF. THE FOLLOWING ARE ACCEPTABLE METHODS FOR ANCHORING MULCH.

-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 6 INCHES.

-USE MULCH NETTINGS 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.

-FOR STRAW MULCH, SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRI-TAC), DCA-70, PETROSET, TERRA TACK OR 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.

-WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 LB/AC. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS/100 GAL. OF WOOD CELLULOSE FIBER.

DUST CONTROL

NOTES:

CONSTRUCTION SEQUENCING AND DISTURBING ONLY SMALL AREAS AT A TIME CAN GREATLY REDUCE PROBLEMATIC DUST FROM THE SITE. IF LAND MUST BE DISTURBED, ADDITIONAL TEMPORARY STABILIZATION MEASURES SHOULD BE CONSIDERED PRIOR TO DISTURBANCES.

1) APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS.

2) 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) 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 A PERMANENT COVER TO PROVIDE CONTROL OF SOIL EMISSIONS.

4) 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 15 TIMES THE BARRIER HEIGHTS TO CONTROL AIR CURRENTS AND BLOWING SOIL.

5) CALCIUM CHLORIDE 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.

6) WHEN TEMPORARY DUST CONTROL MEASURES ARE USED, REPETITIVE TREATMENT SHOULD BE APPLIED AS NEED TO ACCOMPLISH CONTROL.

7) PAVED AREAS THAT HAVE ACCUMULATED SEDIMENT FROM CONSTRUCTION SHOULD BE CLEANED DAILY, OR AS NEEDED, UTILIZING A STREET SWEEPER OR BUCKET-TYPE ENDLOADER OR SCRAPER.

TEMPORARY SEEDING

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 SEEDING / STABILIZATION SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 14 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.

3) THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.

4) TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.

5) SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, 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.

NOTE:

APPLICATIONS OF TEMPORARY SEEDING SHALL INCLUDE MULCH, WHICH SHALL BE APPLIED DURING OR IMMEDIATELY AFTER SEEDING. SEEDINGS MADE DURING OPTIMUM SEEDING DATES ON FAVORABLE, VERY FLAT SOIL CONDITIONS MAY NOT NEED MULCH TO ACHIEVE ADEQUATE STABILIZATION. IF MULCH SHALL BE USED, FOLLOW THE REQUIREMENTS AND INSTRUCTIONS IN THE MULCH APPLICATION.

ANY DISTURBED AREAS THAT ARE NOT GOING TO BE WORKED FOR 14 DAYS DURING WINTER MUST BE SEEDED AND MULCHED BY NOVEMBER 1.

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREA WITHIN 50 FEET OF A WATERCOURSE AND NOT AT FINAL GRADE	WITHIN 2 DAYS OF THE MOST RECENT DISTURBANCE, IF THAT AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREA, INCLUDING SOIL STOCKPILES, THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A WATERCOURSE	WITHIN 7 DAYS IF THE MOST RECENT DISTURBANCE WITHIN THE AREA
DISTURBED AREAS THAT WILL BE IDLE OVER THE WINTER	PRIOR TO NOVEMBER 1.

TEMPORARY SEEDING

SEEDING DATES	SPECIES	SEEDING RATE LB./1,000 SQ FT	SEEDING RATE LB./AC.
MARCH 1 TO AUGUST 15	OATS	3	128 (4 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREEPING RED FESCUE	0.4	17
	KENTUCKY BLUEGRASS	0.4	17
	OATS	3	128 (3 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
AUGUST 16 TO OCTOBER 31	RYE	3	112 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120 (2 BUSHEL)
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	40
	PERENNIAL RYEGRASS	3.25	40
	CREEPING RED FESCUE	0.4	40
	KENTUCKY BLUEGRASS	0.4	
NOVEMBER 1 TO FEBRUARY 29	USE MULCH ONLY OR DORMANT SEEDING		
NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED			

PERMANENT SEEDING

NOTES:

1) SUBSOILER, PLOW, OR OTHER IMPLEMENT SHALL BE USED TO REDUCE SOIL COMPACTION AND ALLOW MAXIMUM INFILTRATION. (MAXIMUM 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.

2) THE SITE SHALL BE GRADED AS NEEDED TO PERMIT THE USE OF CONVENTIONAL EQUIPMENT FOR SEEDBED PREPARATION AND SEEDING.

3) TOPSOIL SHALL BE APPLIED WHERE NEEDED TO ESTABLISH VEGETATION.

4) 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 100 POUNDS PER 1,000 SQ. FT. OR 2 TONS PER ACRE.

5) FERTILIZER SHALL BE APPLIED AS RECOMMENDED BY A SOIL TEST. IN PLACE OF A SOIL TEST, FERTILIZER SHALL BE APPLIED AT A RATE OF 25 POUNDS PER 1,000 SQ. FT. OR 1,000 POUNDS PER ACRE OF A 10-10-10 OR 12-12-12 ANALYSES.

6) THE LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL WITH A DISK HARROW, SPRING-TOOTH HARROW, OR OTHER SUITABLE FIELD IMPLEMENT TO A DEPTH OF 3 INCHES. ON SLOPING LAND, THE SOIL SHALL BE WORKED ON THE CONTOUR.

7) SEEDING SHOULD BE DONE MARCH 1 TO MAY 31 OR AUGUST 1 TO SEPTEMBER 30. IF SEEDING OCCURS OUTSIDE OF THE ABOVE-SPECIFIED DATES, ADDITIONAL MULCH AND IRRIGATION MAY BE REQUIRED TO ENSURE A MINIMUM OF 80% GERMINATION. TILLAGE 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.

8) SEEDING SHOULD NOT BE MADE FROM OCTOBER 1 THROUGH NOVEMBER 20. DURING THIS PERIOD, THE SEEDS ARE LIKELY TO GERMINATE BUT PROBABLY WILL NOT BE ABLE TO SURVIVE THE WINTER.

9) THE FOLLOWING METHODS MAY BE USED FOR "DORMANT SEEDING":

- FROM OCTOBER 1 THROUGH NOVEMBER 20, PREPARE THE SEEDBED, ADD THE REQUIRED AMOUNTS OF LIME AND FERTILIZER, THEN MULCH AND ANCHOR. AFTER NOVEMBER 20, AND BEFORE MARCH 15, BROADCAST THE SELECTED SEED MIXTURE. INCREASE THE SEEDING RATES BY 50% FOR THIS TYPE OF SEEDING.
- FROM NOVEMBER 20 THROUGH MARCH 15, WHEN SOIL CONDITIONS PERMIT, PREPARE THE SEEDBED, LIME AND FERTILIZE, APPLY THE SELECTED SEED MIXTURE, MULCH AND ANCHOR. INCREASE THE SEEDING RATES BY 50% 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.

10) PERMANENT SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY WEATHER OR ON ADVERSE SITE CONDITIONS, WHICH REQUIRE ADEQUATE MOISTURE FOR SEED GERMINATION AND PLANT GROWTH. IRRIGATION SHALL BE MONITORED TO PREVENT EROSION AND DAMAGE TO SEEDED AREAS FROM EXCESSIVE RUNOFF.

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREA THAT WILL LIE DORMANT FOR ONE YEAR OR MORE.	WITHIN 7 DAYS OF THE MOST RECENT DISTURBANCE.
ANY AREA WITHIN 50 FEET OF A WATERCOURSE AND AT FINAL GRADE.	WITHIN 2 DAYS OF REACHING FINAL GRADE.
ANY AREA AT FINAL GRADE.	WITHIN 7 DAYS OF REACHING FINAL GRADE WITHIN THAT AREA.

PERMANENT SEEDING

SEED MIX	SEEDING RATE LB./AC.	SEEDING RATE LB./1,000 SQ FT	NOTES
GENERAL USE			
CREEPING RED FESCUE DOMESTIC RYEGRASS KENTUCKY BLUEGRASS	20-40 10-20 10-20	1/2 - 1 1/4 - 1/2 1/2-1	FOR CLOSE MOWING & FOR WATERWAYS WITH < 2.0 FT/SEC VELOCITY
TALL FESCUE	40-50	1-1 1/4	
DWARF FESCUE	90	2 1/4	
STEEP BANKS OR CUT SLOPES			
TALL FESCUE	40-50	1 1/4	
CROWN VETCH TALL FESCUE	10-20 20-30	1/4-1/2 1/2-3/4	DO NOT SEED LATER THAN AUGUST
FLAT PEA TALL FESCUE	20-25 20-30	1/2-3/4 1/2-3/4	DO NOT SEED LATER THAN AUGUST
ROAD DITCHES AND SWALES			
TALL FESCUE	40-50	1-1 1/4	
DWARF FESCUE KENTUCKY BLUEGRASS	90 5	2 1/4 0.1	
LAWNS			
KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	100-120	2 2	
KENTUCKY BLUEGRASS CREEPING RED FESCUE	100-120	2 1-1/2	FOR SHADED AREAS
NOTE: OTHER APPROVED SEED SPECIES MAY BE SUBSTITUTED			

SITE INSPECTIONS SHALL BE DONE WEEKLY AND AFTER EVERY RAINFALL EVENT EXCEEDING 1/2" OF RAINFALL. ALL NECESSARY REPAIRS SHOULD BE IMPLEMENTED IMMEDIATELY AFTER SUCH INSPECTIONS.

CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING WEEKLY EROSION CONTROL INSPECTION REPORTS. SUCH REPORTS SHALL BE MADE AVAILABLE TO OWNER, ENGINEER AND CITY / STATE OFFICIALS UPON THEIR REQUEST.

SWPPP AMENDMENT LOG

PROJECT NAME: ____________

SWPPP CONTACT: ____________

AMENDMENT No.	DATE OF AMENDMENT	AMENDMENT PREPARED BY (NAME(S) AND TITLE)	DESCRIPTION OF THE AMENDMENT
1			
2			
3			
4			
5			
6			

GRADING AND STABILIZATION LOG

PROJECT NAME: ____________

SWPPP CONTACT: ____________

DATE GRADING ACTIVITY INITIATED	TEMPORARY OR PERMANENT ACTIVITY	LOCATION AND DESCRIPTION OF THE GRADING ACTIVITY	DATE GRADING ACTIVITY CEASED	DATE OF STABILIZATION MEASURES INITIATED	DESCRIPTION OF THE STABILIZATION MEASURE AND LOCATION

GPD GROUP.

REV.	DATE	DESCRIPTION

STATE OF OHIO — LEONARDO A. SFERRA — E-71842 — REGISTERED PROFESSIONAL ENGINEER

08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44042

STORMWATER POLLUTION PREVENTION NOTES AND SETAILS

ISSUED FOR	
PERMIT	[illegible]
BID	[illegible]
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
RDM	TPS

JOB NO. 2018359.02

SWP-3

NOTES
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 IT'S 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 SILT FENCE SHALL BE A MINIMUM OF 16 IN. ABOVE THE ORIGINAL GROUND SURFACE.

7) THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND SECURELY SEALED.

8) POSTS SHALL BE A MINIMUM OF 5 FEET LONG, 2 INCHES IN DIAMETER AND SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND. WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.

9) THE SILT FENCE SHALL BE PLACED IN A TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE WHICH WILL ENSURE AN ADEQUATELY UNIFORM TRENCH DEPTH.

10) THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE AND SO THAT 8 IN. OF CLOTH ARE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6 IN. DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED.

11) WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS.

12) THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8 INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.

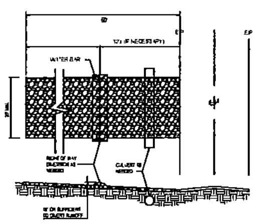
13) SEAMS BETWEEN SECTION OF SILT FENCE SHALL BE OVERLAPPED WITH THE END STAKES OF EACH SECTION WRAPPED TOGETHER BEFORE DRIVING INTO THE GROUND.

14) SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVERTOPS THE SILT FENCE, FLOWS UNDER OR AROUND THE ENDS, OR IN ANY OTHER WAY BECOMES A CONCENTRATED FLOW, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: A) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, B) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR C) OTHER PRACTICES SHALL BE INSTALLED.

MAINTENANCE:
SILT FENCE SHOULD BE INSPECTED REGULARLY AND FREQUENTLY AS WELL AS AFTER EACH RAINFALL EVENT TO INSURE THAT THEY ARE INTACT AND THERE ARE NO GAPS AT THE FENCE-GROUND INTERFACE OR TEARS ALONG THE LENGTH OF THE FENCE. IF GAPS OR TEARS ARE FOUND, THEY SHOULD BE REPAIRED OR THE FABRIC REPLACED IMMEDIATELY. ACCUMULATED SEDIMENTS SHOULD BE REMOVED FROM THE FENCE BASE WHEN THE SEDIMENT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE. SEDIMENT REMOVAL SHOULD OCCUR MORE FREQUENTLY IF ACCUMULATED SEDIMENT IS CREATING NOTICEABLE STRAIN ON THE FABRIC AND THERE IS THE POSSIBILITY OF THE FENCE FAILING FROM A SUDDEN STORM EVENT. WHEN THE SILT FENCE IS REMOVED, THE ACCUMULATED SEDIMENT SHOULD BE REMOVED.

NOTES

1. STONE SIZE - NO. 2 STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. THE CONSTRUCTION ENTRANCE SHALL COINCIDE WITH THE PROPOSED DRIVE AS SHOWN ON THE PLAN.
3. PAVEMENT THICKNESS - STONE LAYER SHALL BE 6" THICK FOR STANDARD DUTY ACTIVITY AND 10" THICK FOR HEAVY DUTY ACTIVITY.
4. DRIVEWAY WIDTH - THE ENTRANCE SHALL BE AT LEAST 20' WIDE. CONTRACTOR SHALL ENSURE ALL VEHICLES UTILIZE THE CONSTRUCTION ENTRANCE UNTIL PAVEMENT IS IN PLACE.
5. BEDDING-A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE SPECIFICATIONS SHOWN BELOW.
6. CULVERT-A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF 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 SPILLED, DROPPED, WASHED OR TRACKED ONTO 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 SHALL BE RESTRICTED FROM MUDDY AREAS.
10. THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.



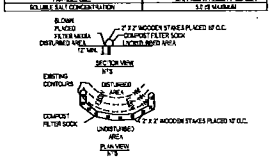
(A3) TEMPORARY STABILIZED CONSTRUCTION ENTRANCE
N.T.S.

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS

MATERIAL TYPE	3 mil HDPE	5 mil HDPE	5 mil HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (MFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	5% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING	HDPE BIAXIAL NET				
	CONTINUOUSLY WOUND				
	FUSION-WELDED JUNCTURES				
	3/4" X 3/4" MAX. APERTURE SIZE				
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER & NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)				
	3/16" MAX. APERTURE SIZE				
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

COMPOST SHALL MEET THE FOLLOWING STANDARDS.

ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS MAXIMUM



ADAPTED FROM FILTREXX

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.

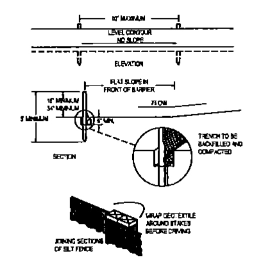
ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ⅓ THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH ½ INCH STORM RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS, PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

(A4) COMPOST FILTER SOCK
N.T.S.



CRITERIA FOR GEOTEXTILE FABRIC SILT FENCE, PER CURRENT STATE'S DOT SPECIFICATIONS.

FABRIC PROPERTIES	VALUES	TEST METHOD
MINIMUM TENSILE STRENGTH	120 LB. MINIMUM	ASTM D 4632
MINIMUM BURST STRENGTH	200 PSI MINIMUM	
MINIMUM PERMITTIVITY	1x10-2sec-1	ASTM D 4491
APPARENT OPENING SIZE	AOS < 0.84 mm	ASTM D 4751
UV EXPOSURE STRENGTH RETENTION	70%	ASTM G 4355
MAXIMUM ELONGATION AT 60 LBS.	50%	ASTM D 4632
MINIMUM PUNCTURE STRENGTH	50 LBS (220N)	ASTM D 4833
MINIMUM TEAR STRENGTH	40 LBS (180N)	ASTM D 4533

(A5) SILT FENCE
N.T.S.

GPD GROUP.
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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REV.	DATE	DESCRIPTION

STATE OF OHIO
LEONARDO A. SFERRA
E-71842
REGISTERED PROFESSIONAL ENGINEER

08/30/18

CLOVERDALE ESTATES DRAINAGE
GEAUGA METROPOLITAN HOUSING AUTHORITY
385 CENTER STREET, CHARDON, OHIO 44024

STORMWATER POLLUTION PREVENTION
NOTES AND DETAILS

ISSUED FOR	
PERMIT	[illegible]
BID	[illegible]
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
[illegible]	[illegible]

JOB NO.
2018359.02

SWP-4

Drawing Name: O:\2018\2018359\02 - Cloverdale Drainage Study\Dwg\Construction Documents\2018359.02 Drainage Ditch
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