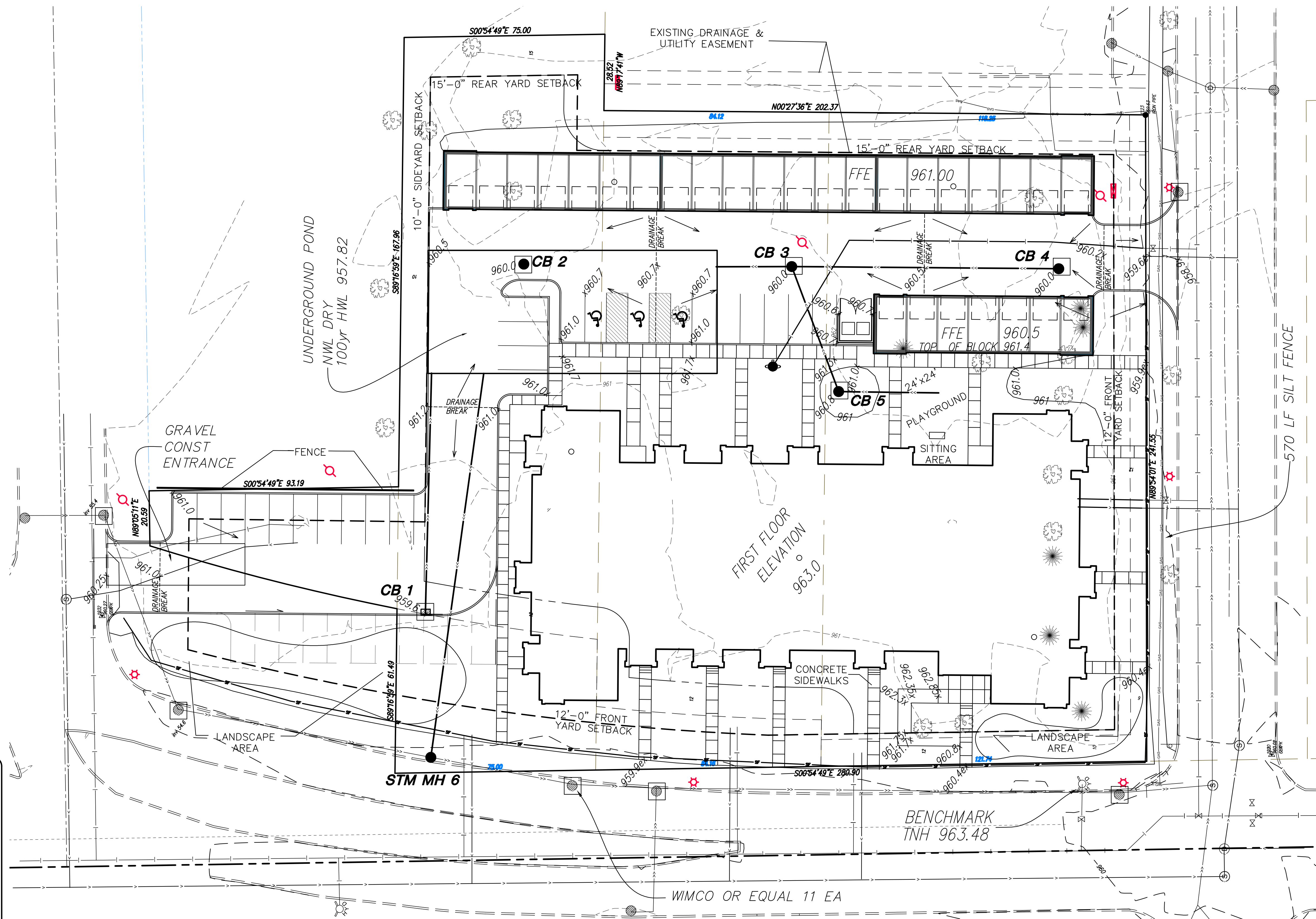


**LEGEND**

- DENOTES FOUND IRON PIPE
- ⊕ DENOTES EXISTING HYDRANT
- ⊕ DENOTES EXISTING LIGHT POLE
- ⊕ DENOTES SANITARY MANHOLE
- ⊕ DENOTES STORM MANHOLE
- ⊕ DENOTES EXISTING STREET SIGN
- DENOTES EXISTING CATCH BASIN
- DENOTES UNDERGROUND CABLE
- DENOTES UNDERGROUND GAS
- ⊕ DENOTES EXISTING WATER VALVE
- ⊕ DENOTES EXISTING POWER POLE
- ⊕ DENOTES EXISTING TREE

**LINE TYPE LEGEND**

- 902 --- EXISTING CONTOUR
- 902 — PROPOSED CONTOUR
- SETBACK
- EASEMENT
- EXISTING LOT LINE
- R/W
- ← SANITARY SEWER
- ← STORM SEWER
- WATERMAIN
- CENTERLINE
- CURB & GUTTER



DATE	REVISIONS	BY

**ROSHELL ENGINEERING, LLC**  
6192 267 TH CT WYOMING, MN 55092  
PHONE: 763.286.0521

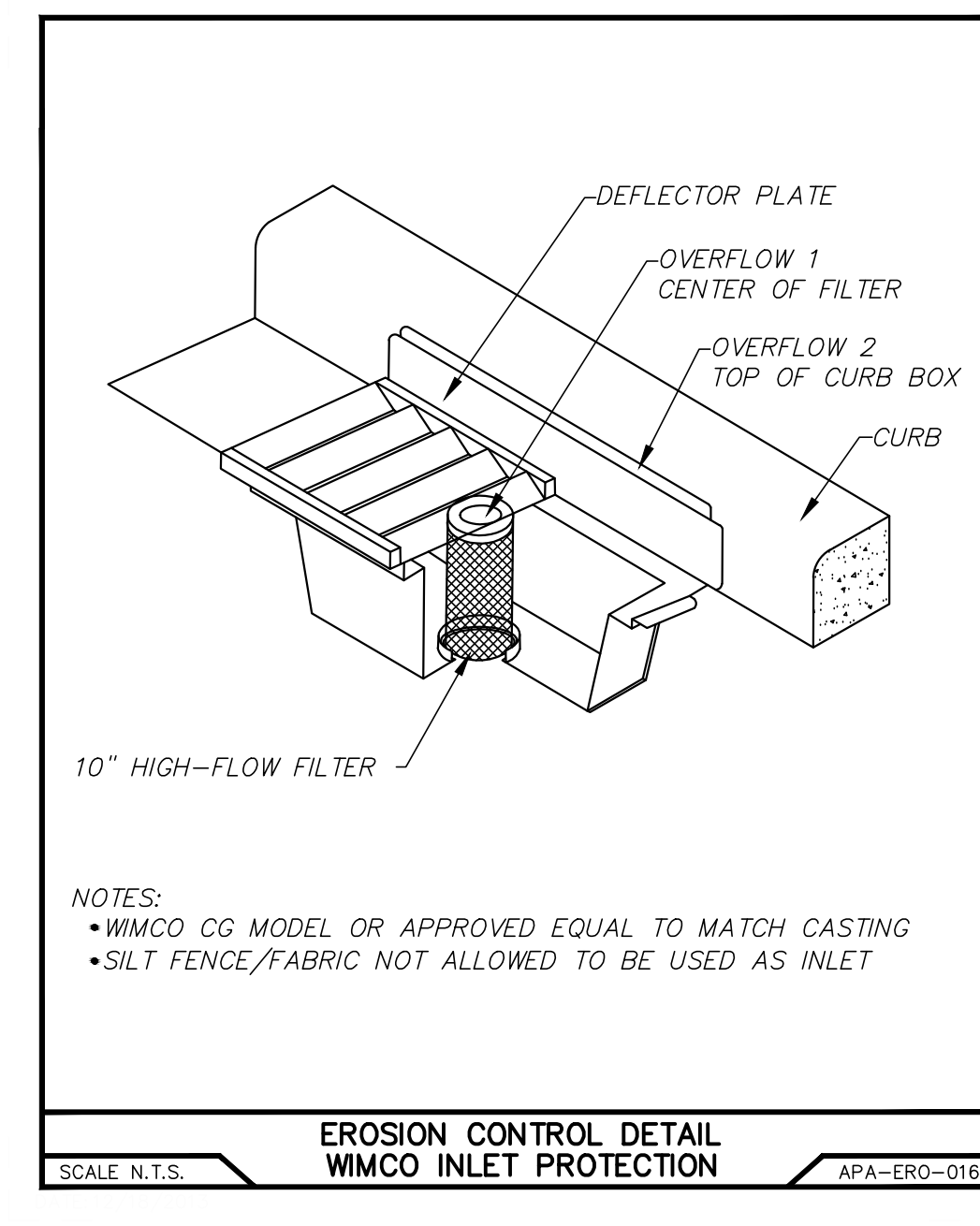
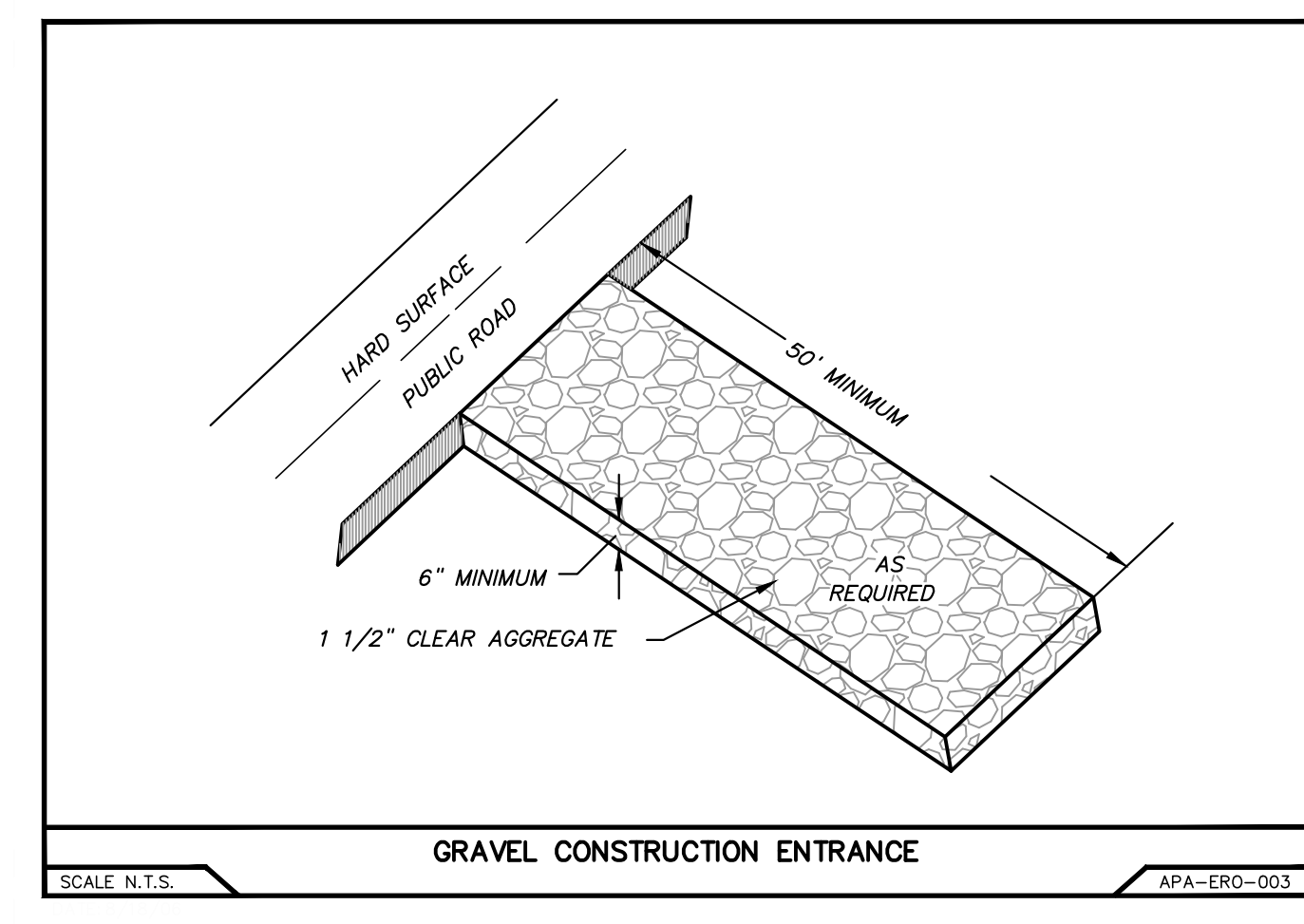
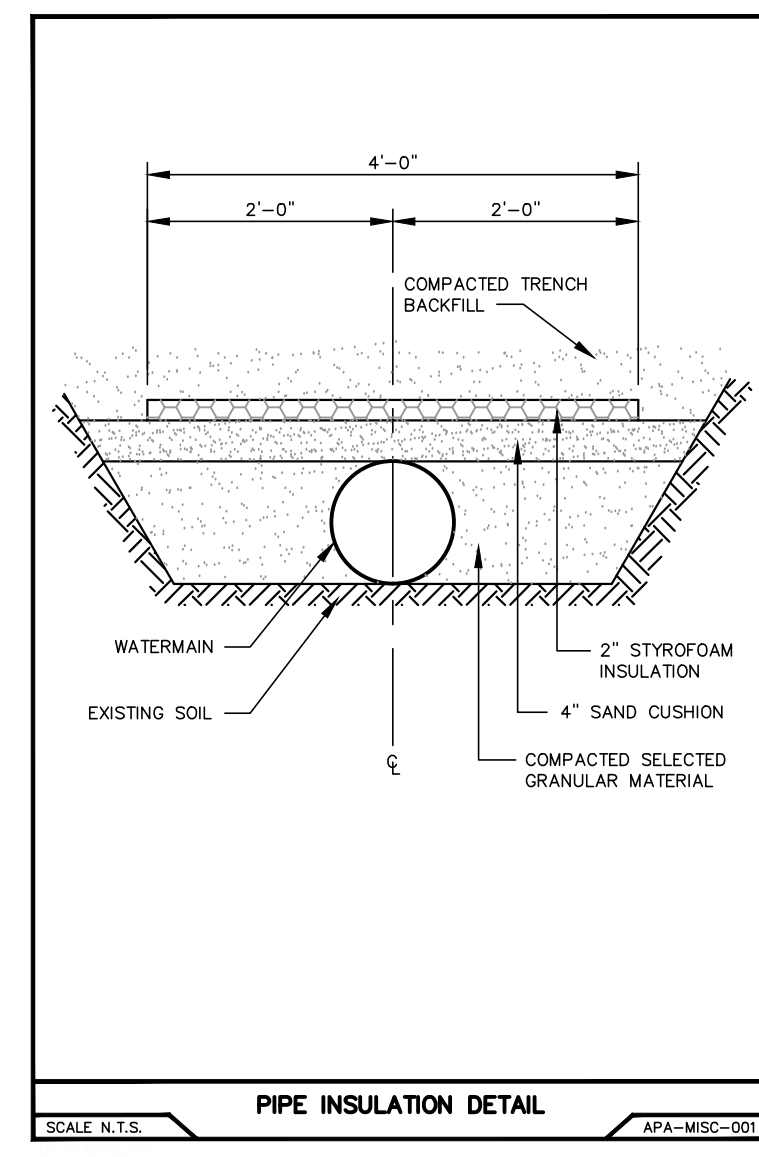
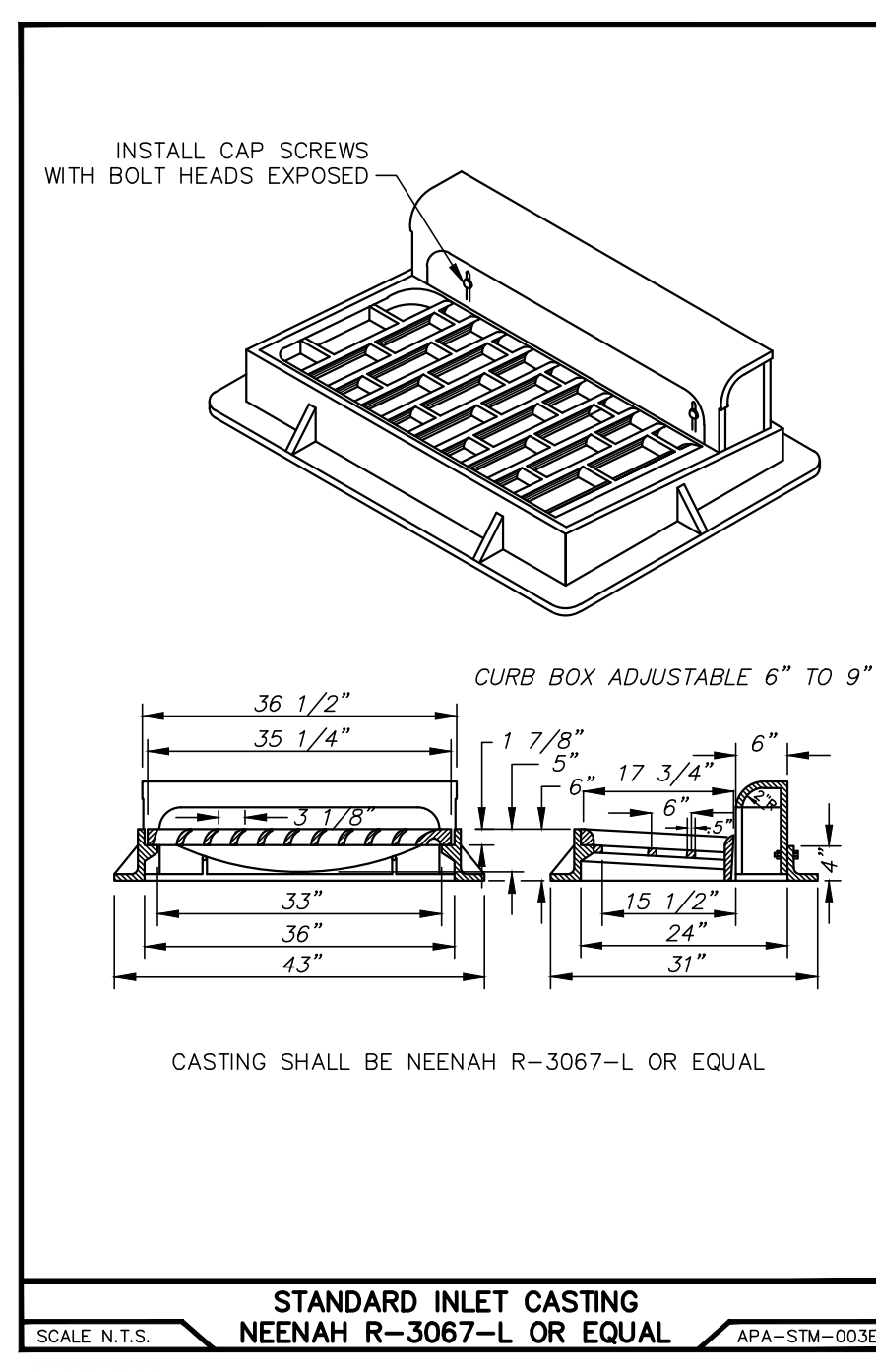
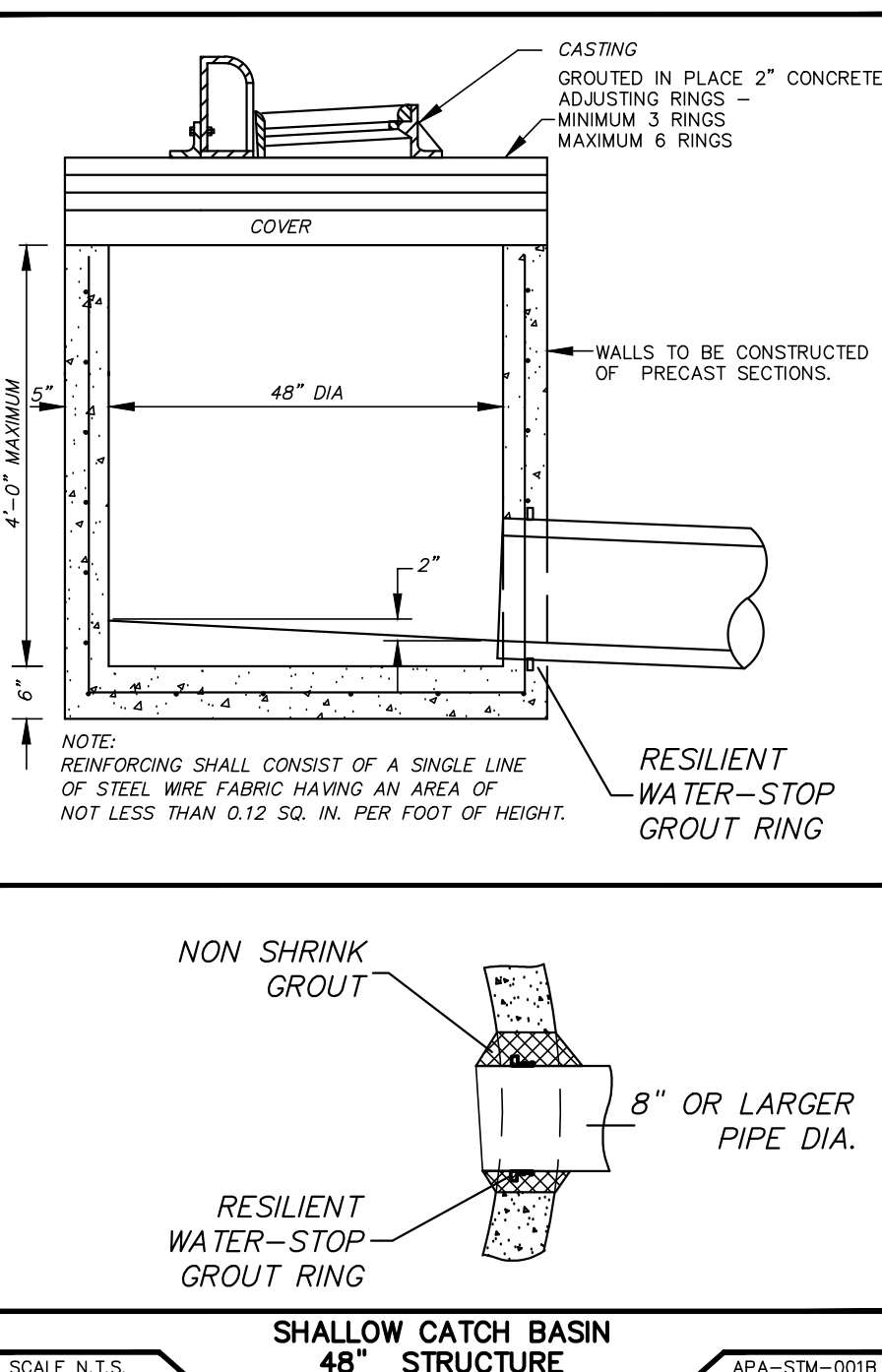
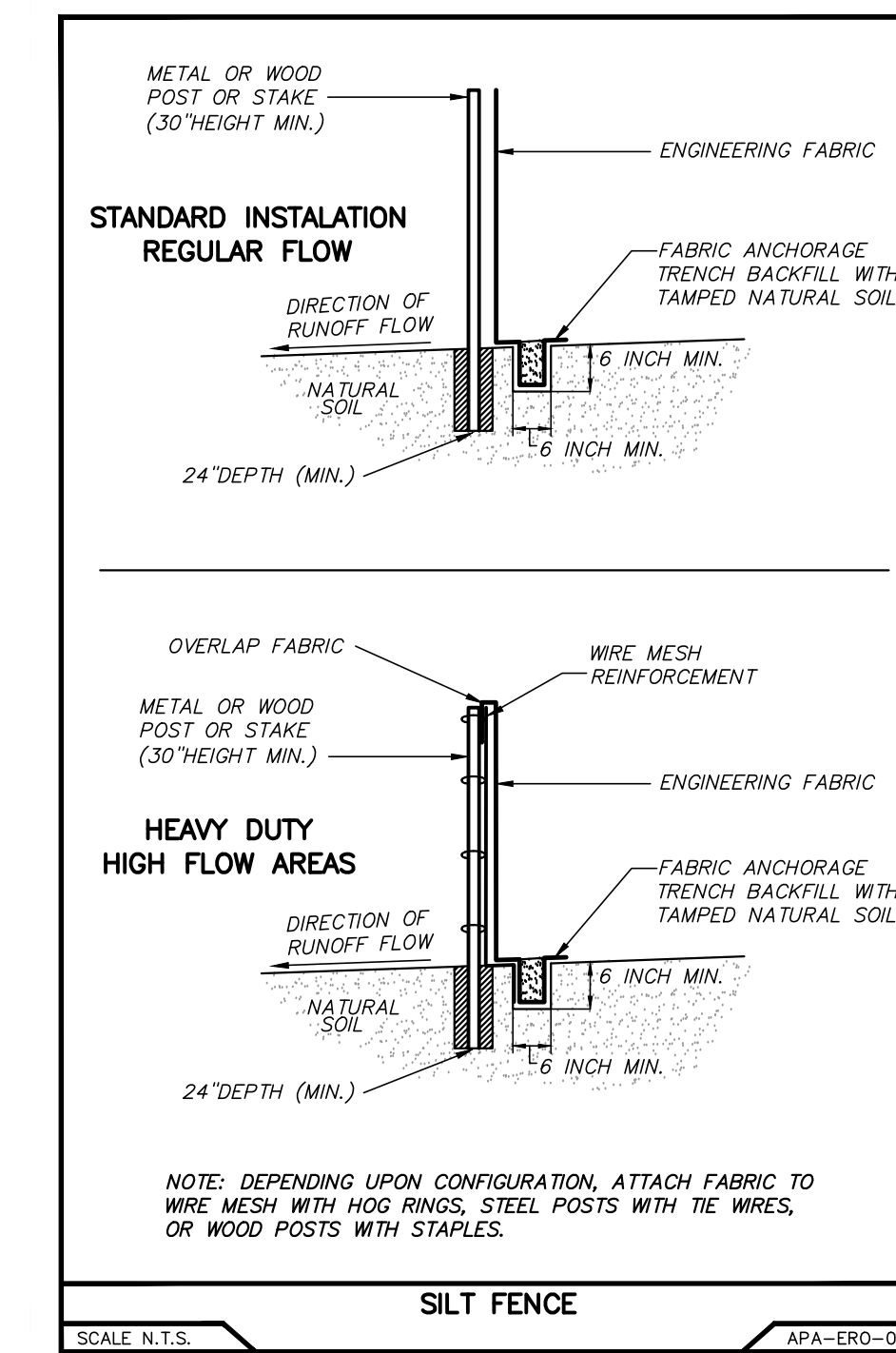
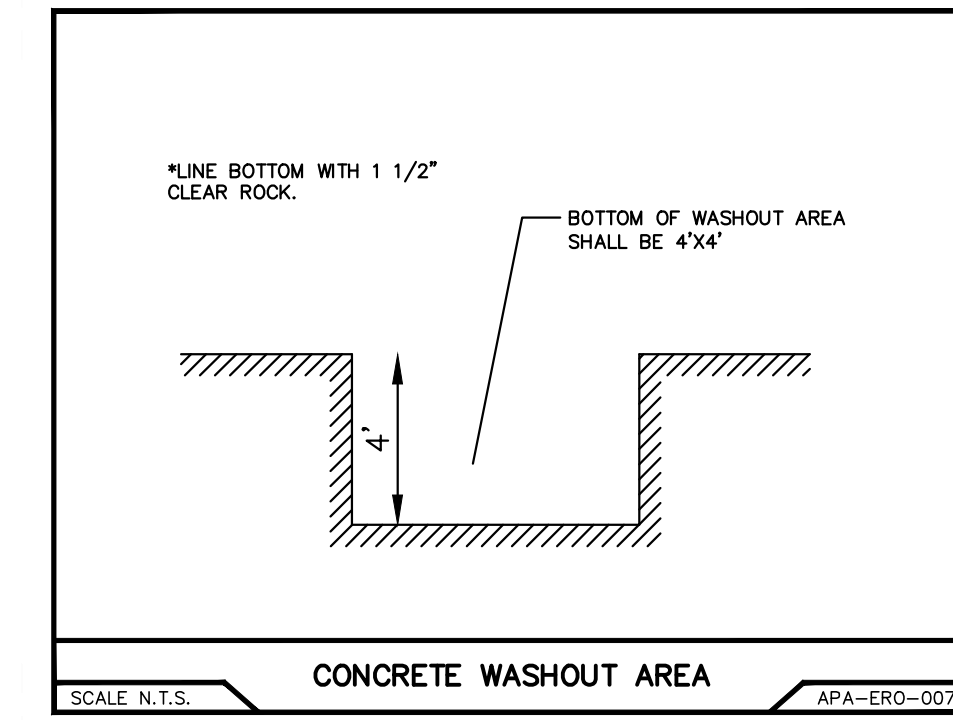
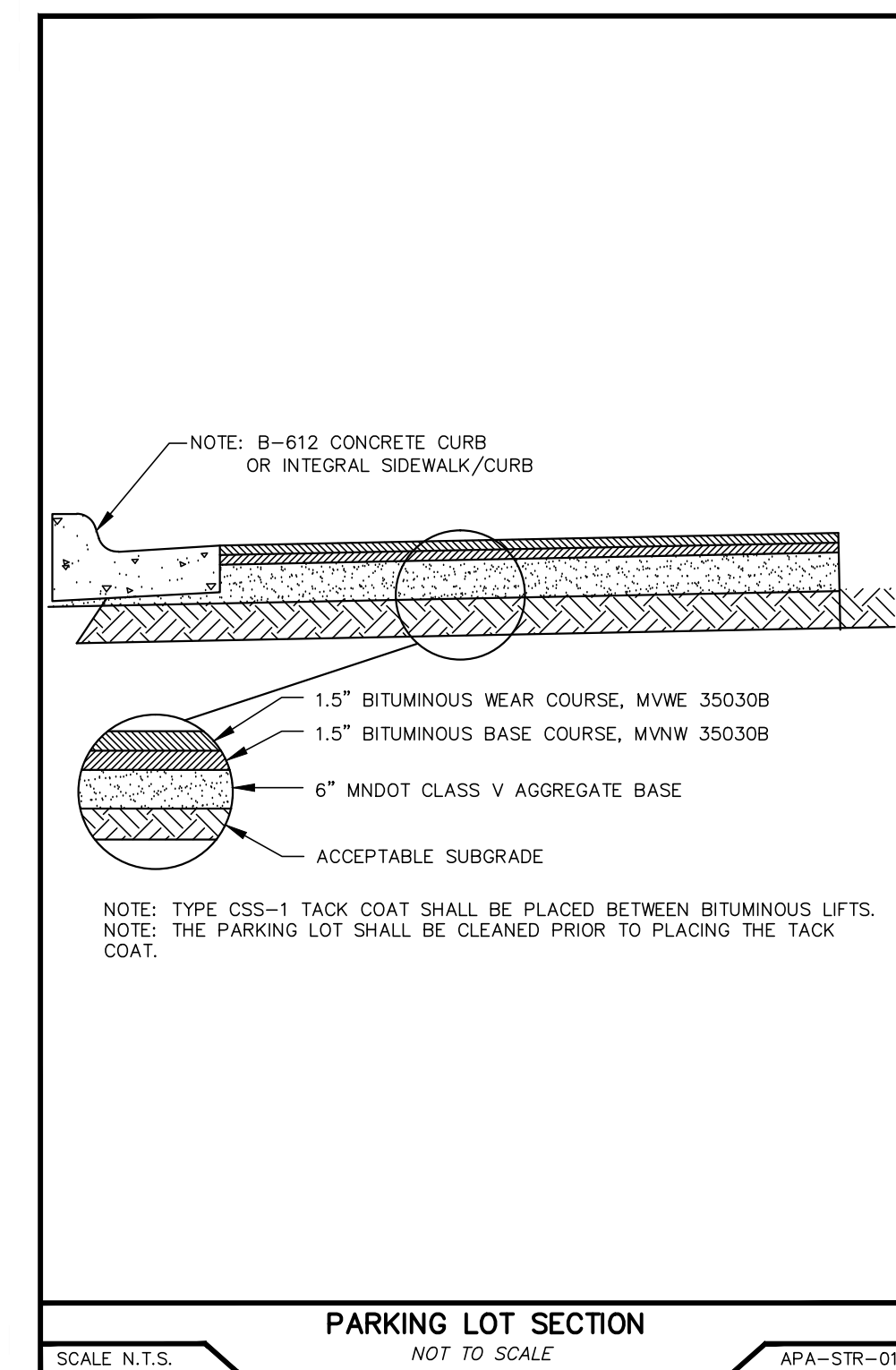
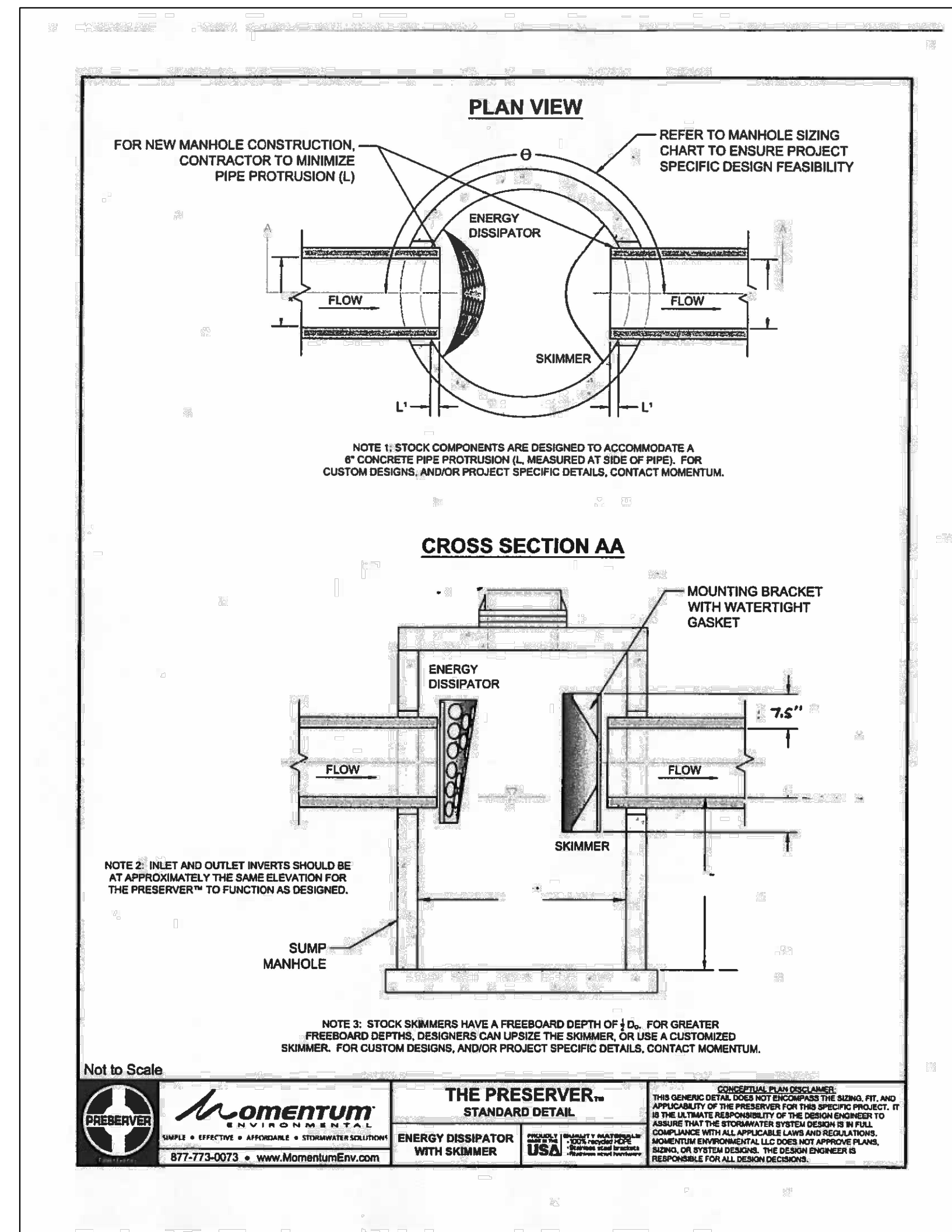
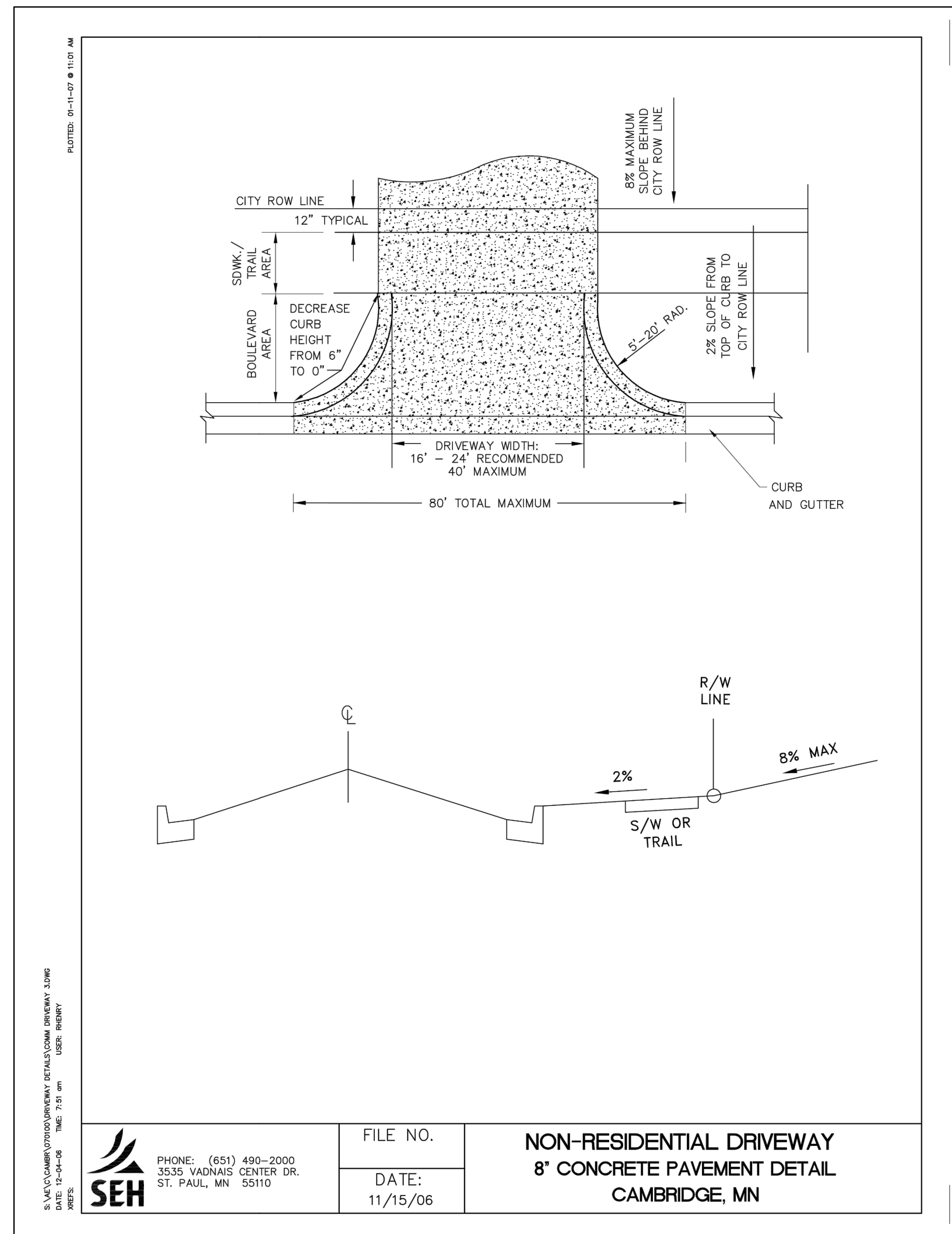
**50% PLAN**  
**MAIN STREET FLATS**  
GRADING & DRAINAGE PLAN  
CAMBRIDGE, MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DATE: 6/29/17 REG. NO. 24019  
Brent Rosshell  
BRENT ROSHELL

**C1**





**ROSELLE ENGINEERING, LLC**  
6192 267 TH CT WYOMING, MN 55092  
PHONE: 763.286.0521

**50% PLAN**  
**MAIN STREET FLATS**  
DETAILS  
CAMBRIDGE, MINNESOTA

NO.	DATE	DESCRIPTION

DATE: 6/29/17  
REC. NO. 24019  
BY: BREY ROSSELL

DRAWN: 6/29/17  
SCALE: AS SHOWN  
PROJECT: RET-17  
CHECKED: [Signature]  
APPROVED: [Signature]

C3



**SEQUENCE OF CONSTRUCTION/TIMING OF BMP INSTALLATION**

NO CONSTRUCTION OPERATIONS, INCLUDING REMOVALS, THAT REQUIRE EROSION & SEDIMENT CONTROL PER THE SWPPP CAN COMMENCE UNTIL THE OPERATOR'S EROSION CONTROL SUPERVISOR CERTIFIES THE PROPER INSTALLATION OF BMP'S AND A CHAIN OF RESPONSIBILITY FOR SWPPP IMPLEMENTATION IS CREATED FOR ALL OPERATORS ON THE SITE. PERIMETER SEDIMENT CONTROLS (SILT FENCE, INLET PROTECTION, CONSTRUCTION ENTRANCES, ETC.) SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED. OPERATOR SHALL IMPLEMENT THE NECESSARY ON SITE BMP'S IN ACCORDANCE WITH THE NPDES PERMIT REQUIREMENTS TO PREVENT NUISANCE CONDITIONS (MN RULES 7050.2010) FROM ANY DISCHARGES UNDER COVERAGE OF THE NPDES PERMIT. IN SOME CASES, MULTIPLE OR REDUNDANT APPLICATIONS OF SOME BMP'S MAY BE NEEDED TO MEET THESE REQUIREMENTS.

**INSPECTION, SWPPP AMENDMENTS, RECORD KEEPING, & TRAINING**

- 1. THE SWPPP CHAIN OF RESPONSIBILITY MUST BE AMENDED BY THE OPERATOR WHEN THE IDENTITY OF RESPONSIBLE SITE OPERATORS (EROSION CONTROL SUPERVISOR, SUB-CONTRACTORS, ETC.) ARE KNOWN.
2. THE OPERATOR MUST INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.
3. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE).
4. THE SWPPP SHALL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMP'S, DESIGNED TO CORRECT IDENTIFIED PROBLEMS OR ADDRESS SITUATIONS (UNDER PART III.B OF THE NPDES PERMIT), PRIOR TO CONDUCTING SPECIFIC STAGES/PHASES OF THE PROJECT, AS REQUIRED BY THE OWNER AND DEFINED IN THIS PROJECT SWPPP.

Table with 3 columns: SUMMARY OF OPERATOR PREPARED SWPPP AMENDMENT NAME, SWPPP AMENDMENTS (REQUIRED BY OWNER), and SUBMITTAL TIMEFRAME. Rows include Operator Chain of Responsibility, BMP Amendments, Methods to Minimize Soil Compaction, Steep Slopes Phasing Plan, Spill Prevention & Response Plan, and Dewatering Plan.

- 1. THE SWPPP (ORIGINAL OR COPIES), ALL CHANGES TO THE SWPPP, PROJECT MANUAL, AND INSPECTIONS/MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE OPERATOR WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE.
2. THE OPERATOR MUST ASSIGN A TRAINED INDIVIDUAL (S) (PURSUANT TO PARTS III.A.3 & III.F.1) TO OVERSEE THE IMPLEMENTATION, MAINTENANCE, AND REPAIR OF BMP'S.

**POLLUTION PREVENTION MANAGEMENT MEASURES**

- POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE:
- SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
- BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, FOUNDATIONS, BRIDGE ABUTMENTS, WET/DRY PAVEMENT CUTTING, MASONRY WASHOUT/CLEANOUT.
- EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING.
- HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING.

OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT. OPERATOR WILL SUBMIT A SPILL PREVENTION AND RESPONSE PLAN (SPRP) TO THE ENGINEER PRIOR TO ANY CONSTRUCTION ACTIVITY. THE SPRP MUST SATISFACTORILY ADDRESS (AT A MINIMUM) THE FOLLOWING NPDES REQUIREMENTS BY THE PROPOSED IMPLEMENTATION AND MAINTENANCE OF APPROPRIATE BMP'S:

NO-EXPOSURE: CONSTRUCTION AND BUILDING PRODUCTS (THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS), PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPING MATERIALS MUST BE UNDER COVER (PLASTIC SHEETING OR TEMPORARY ROOFS) TO MINIMIZE CONTACT WITH STORMWATER AND PRECIPITATION.

SOLID WASTE: (SEDIMENT, ASPHALT, CONCRETE MILLINGS, CONSTRUCTION, AND DEMOLITION DEBRIS) AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND SHALL COMPLY WITH MPCA DISPOSAL REQUIREMENTS (CH. 7035).

HAZARDOUS MATERIALS: (E.G. GAS, DIESEL, OIL, ANTIFREEZE, PAINT SOLVENTS, SOAPS, DETERGENTS, WOOD PRESERVATIVES, CLEANING SOLVENTS, CURING COMPOUNDS, ACIDS, ETC.) MUST BE STORED IN SEALED CONTAINERS (WITH SECONDARY SPILL CONTAINMENT) IN RESTRICTED ACCESS AREAS TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE AND MATERIALS MUST BE IN COMPLIANCE WITH MPCA REGULATIONS (CH. 7045) INCLUDING SECONDARY CONTAINMENT.

PORTABLE TOILETS: MUST BE POSITIONED AND SECURED SO THEY ARE NOT TIPPED OR KNOCKED OVER. WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MPCA GUIDELINES (CH. 7041).

EQUIPMENT/VEHICLE FUELING, EXTERNAL WASHING, AND MAINTENANCE PRACTICES: WHEN VEHICLE FUELING, MAINTENANCE, OR EXTERNAL WASHING MUST OCCUR ON-SITE, THE ACTIVITY IS LIMITED TO A CONTAINED PORTION OF THE STAGING AREA, UNLESS INFEASIBLE THROUGH A SWPPP AMENDMENT. PROCEDURES FOR SPILL RESPONSE AND MATERIALS FOR CONTAINMENT AND CLEAN UP (DRIP PANS, DRY ABSORBENTS, AND SPILL KITS) WILL BE AVAILABLE AT ALL TIMES ON-SITE. ENGINE DEGREASING IS PROHIBITED ON-SITE.

CONCRETE, STUCCO, PAINT, CURING COMPOUNDS, SOLVENTS, AND OTHER WASHOUT WASTES: TEMPORARY OR LONG-TERM STORAGE OF WASHOUT WASTE IS PROHIBITED ON-SITE (SLURRY MUST BE HAULED IMMEDIATELY OFF-SITE). OPERATOR MUST SUBMIT A CONCRETE WASHOUT PLAN TO THE PROJECT ENGINEER FOR APPROVAL OF ALL ON-SITE WASHOUT LOCATIONS. ON-SITE WASHOUT LOCATIONS MUST BE LOCATED 200 FEET FROM AN ENVIRONMENTALLY SENSITIVE AREA AND SURFACE WATERS, HAVE "CONCRETE WASHOUT AREA" SIGNAGE, AND BE CONTAINED IN A LEAK PROOF CONTAINER OR IMPERMEABLE LINER. LIQUID AND SOLID WASTES SHOULD NOT CONTACT THE GROUND (UNLESS PERMITTED IN THE CONCRETE WASHOUT PLAN), BE CONTAINED TO PREVENT RUNOFF FROM THE WASHOUT LOCATION, AND MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS.

CONCRETE, STUCCO, PAINT, CURING COMPOUNDS, SOLVENTS, AND OTHER WASHOUT WASTES: TEMPORARY OR LONG-TERM STORAGE OF WASHOUT WASTE IS PROHIBITED ON-SITE (SLURRY MUST BE HAULED IMMEDIATELY OFF-SITE). OPERATOR MUST SUBMIT A CONCRETE WASHOUT PLAN TO THE PROJECT ENGINEER FOR APPROVAL OF ALL ON-SITE WASHOUT LOCATIONS. ON-SITE WASHOUT LOCATIONS MUST BE LOCATED 200 FEET FROM AN ENVIRONMENTALLY SENSITIVE AREA AND SURFACE WATERS, HAVE "CONCRETE WASHOUT AREA" SIGNAGE, AND BE CONTAINED IN A LEAK PROOF CONTAINER OR IMPERMEABLE LINER. LIQUID AND SOLID WASTES SHOULD NOT CONTACT THE GROUND (UNLESS PERMITTED IN THE CONCRETE WASHOUT PLAN), BE CONTAINED TO PREVENT RUNOFF FROM THE WASHOUT LOCATION, AND MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS.

BURNING: BURNING OF GARBAGE, CONSTRUCTION DEBRIS, TREES, BRUSH, OR OTHER VEGETATIVE MATERIAL IS NOT ALLOWED ON-SITE, UNLESS PRIOR APPROVAL IS GRANTED BY THE OWNER.

EROSION CONTROL PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS
THE OPERATOR IS RESPONSIBLE FOR THE INSTALLATION, OPERATION, AND CONTINUED MAINTENANCE OF ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMP'S, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S, FOR THE DURATION OF THE CONSTRUCTION WORK AT TH SITE, UNTIL FINAL STABILIZATION IS ACHIEVED. ALL BMP'S MUST BE ADEQUATELY LOCATED, DESIGNED, INSTALLED, AND MAINTAINED TO PREVENT EROSION FROM A MINIMUM 0.5 INCH TOTAL RAINFALL EVENT WITHIN 24 HOURS.

ALL NONFUNCTIONAL BMP'S MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMP'S BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS UNLESS ANOTHER TIME FRAME IS SPECIFIED IN THE SWPPP. ALL ERODED MATERIAL THAT LEAVES THE SITE SHALL BE COLLECTED BY THE OPERATOR AND RETURNED TO THE SITE AT THE OPERATOR'S EXPENSE AND INCIDENTAL TO THE PROJECT COST.

TEMPORARY OR PERMANENT STABILIZATION SHALL BE INITIATED AS SOON AS POSSIBLE, BUT NO LATER THAN THE END OF THE NEXT WORK DAY FOLLOWING THE DAY EARTH-DISTURBING ACTIVITIES IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. INITIATED STABILIZATION IS DEFINED AS COMPLETING ONE (OR MORE) OF THE FOLLOWING: SOIL PREPARATION FOR VEGETATION, MULCHING (OR OTHER TEMPORARY NONVEGETATIVE BMP), SEEDING/PLANTING, OR SCHEDULING STABILIZATION MEASURES TO BE FULLY INSTALLED AND COMPLETED WITHIN THE 14 DAY TIMEFRAME.

ALL EXPOSED SOILS WITHIN 200 FEET AND DRAINING TO A DNR PUBLIC WATERS MUST BE STABILIZED WITHIN 24 HOURS OF TEMPORARILY OR PERMANENTLY CEASING WORK, DURING THE FISH SPAWNING PERIOD. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E. G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT, BUT MUST BE IN COMPLIANCE WITH PART IV.C.5.

TEMPORARY STABILIZATION BMP'S SHALL ONLY BE IMPLEMENTED WHEN PERMANENT STABILIZATION BMP'S CANNOT BE IMPLEMENTED WITHIN THE 14 DAY TIMEFRAME FOR EXPOSED SOILS.

TEMPORARY/PERMANENT DRAINAGE DITCHES & SWALES: THE NORMAL WETTED PERIMETER (2-YEAR, 24-HOUR PRECIPITATION EVENT) OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH, CHANNEL, OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN THE LAST 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER WITHIN 24 HOURS OF CONNECTION. STABILIZATION REMAINING OF THE REMAINING PORTIONS OF THE CHANNEL MUST BE STABILIZED WITHIN 14 DAYS. ALL STORMWATER CONVEYANCE CHANNELS MUST USE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES WITHIN AND ALONG THE LENGTH OF THE CHANNEL AND AT ANY OUTLETS. TEMPORARY OR PERMANENT DITCHES OR SWALES THAT ARE BEING USED AS A TEMPORARY SEDIMENT CONTAINMENT SYSTEM (WITH PROPERLY DESIGNED ROCK DITCH CHECKS, BIO ROLLS, SILT DIKES ETC.) DO NOT NEED TO BE STABILIZED. THESE AREAS MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM. MULCH, HYDROMULCH, TACKIFIER, OR POLYACRYLAMIDE BELOW THE WETTED PERIMETER OF A DITCH, SWALE, OR OTHER SURFACE WATER CONVEYANCE IS NOT ACCEPTABLE STABILIZATION.

EROSION CONTROL BLANKETS/MATS: OPERATOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

MULCH: OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS, TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

DUST CONTROL: DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

STORM SEWER OUTLETS: PIPE OUTLETS MUST HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER HYDRAULIC CONNECTION TO A RECEIVING SURFACE WATER.

TEMPORARY & PERMANENT EROSION CONTROL BMP'S
TYPE 1 MULCH: APPLY TO DISTURBED SLOPES LESS THAN 1:3 WITH BLOWER EQUIPMENT OR CONCURRENTLY WITH HYDROMULCH AT 2 TONS/ACRE. IMMEDIATELY OVERSPRAY (IF NOT HYDROMULCHED) WITH TACKIFIER (PER MANUFACTURERS RECOMMENDED RATES) OR DISC-ANCHORED.

RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200 FT OF SURFACE WATERS, TO PREVENT OFF SITE SEDIMENTATION AND/OR TO COMPLY WITH PERMIT REQUIREMENTS. INSTALL PER MNDOT SPECIFICATIONS 2575.3N.

RAPID STABILIZATION METHOD #4: (WOOD FIBER, NATURAL NET ONLY) IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY WINTER COVER: AREAS OF EXPOSED SOILS THAT ARE NOT COMPLETED BEFORE THE WINTER WILL BE STABILIZED WITH TYPE #3 (CERTIFIED AS WEED FREE) ADJACENT TO WETLAND OR STORMWATER PONDS. ALL OTHER DISTURBED AREAS SHALL BE STABILIZED WITH TYPE #1 MULCH, UNLESS ALTERNATIVE MORE PROTECTIVE BMP'S ARE SPECIFIC WITHIN THE SWPPP. ALL EXPOSED SOILS SHALL BE STABILIZED BEFORE CONSTRUCTION IS COMPLETED FOR THE SEASON.

HYDRO-MULCH TYPE #5: HYDRAULIC SOIL STABILIZER IN COMBINATION WITH A TACKIFIER WILL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS TO EXPOSED SOILS AREAS TO PROVIDE TEMPORARY LONG-TERM OR PERMANENT COVER FOR VEGETATION ESTABLISHMENT.

**SEDIMENT CONTROL PRACTICES, PROCEDURES, & MAINTENANCE STANDARDS**

DOWN GRADIENT SYSTEMS: IF THE DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED, ADDITIONAL UP GRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMP'S MUST BE INSTALLED TO ELIMINATE THE OVERLOADING, AND THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES.

PERIMETER CONTROL BMP'S (SILT FENCES, CHIP/SLASH MULCH SACKS, BIOROLLS, FLOATING SILT CURTAIN, ETC.): PERIMETER CONTROL BMP'S SHALL BE INSTALLED ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER AREAS, PRIOR TO INITIATING UPGRADIENT LAND DISTURBANCE ACTIVITIES. UPLAND PERIMETER CONTROLS BMP'S SHALL BE PLACED AS CLOSE AS POSSIBLE TO FOLLOW A SINGLE CONTOUR ELEVATION. ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR MAINTAINED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE. ALL REPAIRS MUST BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. FLOATING SILT CURTAIN SHALL BE INSTALLED AS CLOSE TO THE SHORELINE AS POSSIBLE FOR SHORELAND/IN-WATER SHORT-TERM CONSTRUCTION ACTIVITIES. AFTER THE SHORT-TERM ACTIVITY IS COMPLETE, AN UPLAND PERIMETER CONTROL MUST BE INSTALLED IF EXPOSED SOILS CONTINUE TO DRAIN TO THE SURFACE WATER.

**TEMPORARY & PERMANENT SEDIMENT CONTROL BMP'S**

SEDIMENT CONTROL LOGS

SILT FENCE ALONG PROJECT PERIMETER

TEMPORARY ROCK ENTRANCE FOR CONSTRUCTION OPERATIONS.

WIMCO INLET PROTECTION

STREET SWEEPING - CONTRACTOR TO PROVIDE SCHEDULE & AS DIRECTED BY THE CITY

TEMPORARY STOCKPILES, IF ANY, MUST HAVE SEDIMENT CONTROLS MEASURES IN PLACE

50 FOOT NATURAL BUFFER (S): REFER TO "CONSTRUCTION PHASING/STAGING, BUFFERS, & AREAS NOT TO BE DISTURBED" SECTION OF THIS SWPPP.

TEMPORARY SEDIMENTATION BASINS: WHERE TEN (10) OR MORE ACRES OF DISTURBED SOIL DRAIN TO A COMMON LOCATION, A TEMPORARY SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS. ALL TEMPORARY BASINS SHALL BE CONSTRUCTED AND OPERATIONAL PRIOR TO GRADING TEN (10) OR MORE ACRES. BASINS MUST PROVIDE A LIVE STORAGE VOLUME FROM A TWO YEAR 24-HOUR STORM EVENT FROM EACH ACRE (DISTURBED AND UNDISTURBED) DRAINING TO THE BASIN. AT A MINIMUM, IF CALCULATIONS ARE NOT PERFORMED THE BASIN SHALL PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE FROM EACH ACRE. THE BASIN INTAKE MUST BE DESIGNED TO WITHDRAW WATER FROM THE SURFACE, PREVENT SHORT CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS, INCLUDE AN EMERGENCY OVERFLOW ABOVE THE LIVE STORAGE ELEVATION, AND PROVIDE ENERGY DISSIPATION AT THE BASIN OUTLET. BASINS MUST BE DRAINED AND SEDIMENT REMOVED WHEN THE DEPTH OF COLLECTED SEDIMENT IN THE BASIN REACHES 1/2 THE LIVE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. IF A BASIN IS INFEASIBLE WITHIN THE PROJECT LIMITS, EQUIVALENT SEDIMENT CONTROL BMP'S MUST BE IMPLEMENTED AND DOCUMENTED IN THE SWPPP OR SWPPP AMENDMENT.

SEDIMENT TRAPS: WHERE A TEMPORARY SEDIMENT BASIN MEETING THE REQUIREMENTS OF THIS PART IS INFEASIBLE, EQUIVALENT SEDIMENT CONTROLS SUCH AS SMALLER SEDIMENT BASINS, AND/OR SEDIMENT TRAPS, SILT FENCES, VEGETATIVE BUFFER STRIPS, OR AN APPROPRIATE COMBINATION OF MEASURES ARE REQUIRED FOR ALL DOWN-SLOPE BOUNDARIES OF THE CONSTRUCTION AREA AND FOR SIDE-SLOPE BOUNDARIES AS DICTATED BY INDIVIDUAL SITE CONDITIONS. IN DETERMINING WHETHER INSTALLING A SEDIMENT BASIN IS INFEASIBLE, THE PERMITTEE(S) MUST CONSIDER PUBLIC SAFETY AND MAY CONSIDER FACTORS SUCH AS SITE SOILS, SLOPE, AND AVAILABLE AREA ON SITE. THIS DETERMINATION OF INFEASIBILITY MUST BE DOCUMENTED IN THE SWPPP PER PART III.A.5.m.

TEMPORARY STOCKPILES: ALL STOCKPILES MUST HAVE SILT FENCE OR EQUIVALENT PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.

CONSTRUCTION SITE ENTRANCE/VEHICLE TRACKING: OPERATOR MUST MINIMIZE SEDIMENT FROM LEAVING THE CONSTRUCTION SITE (OR ONTO STREETS WITH THE SITE) BY IMPLEMENTING BMP'S SUCH AS ROCK PADS, SLASH MULCH, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE USED DAILY DURING CONSTRUCTION OPERATIONS IF SUCH BMP'S ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES (ON AND OFF-SITE) WITHIN 24 HOURS OF DISCOVERY, OR SOONER AS DIRECTED BY THE PROJECT OWNER. MULTIPLE STREET SWEEPINGS AT THE OPERATOR'S EXPENSE MAY BE REQUIRED ON ALL ENTRY/EXIT POINTS TO THE SITE AT THE DISCRETION OF THE PROJECT OWNER.

SURFACE WATERS: INCLUDING OFF-SITE AND DOWNSTREAM DRAINAGE DITCHES, CATCH BASINS, AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE REMOVAL AND STABILIZATION OF EXPOSED SOILS MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) CALENDAR DAYS OF OBTAINING ACCESS. THE PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AGENCIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK.

INLET PROTECTION: ALL STORM DRAIN INLETS (INCLUDING DOWN GRADIENT, OFF-SITE) MUST BE PROTECTED BY APPROPRIATE BMP'S DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTRACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER). INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAVE RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY (E.G. CITY/COUNTY/TOWNSHIP/MNDOT ENGINEER) VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP AND AVAILABLE WITHIN 72 HOURS UPON REQUEST. PERMISSION TO REMOVE INLET PROTECTION BASED ON A SPECIFIC SAFETY CONCERN MUST STILL BE OBTAINED FROM THE LOCAL JURISDICTIONAL AUTHORITY WITHIN 30 DAYS OF REMOVAL.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MAY ONLY BE APPLIED IN AREAS WHERE TREATED STORMWATER IS DIRECTED TO A RECEIVING SEDIMENT CONTROL SYSTEM (NOT DIRECTLY DISCHARGED TO NATURAL WATER BODIES). THIS INCLUDES DOCUMENTING THE EXPECTED SOIL TYPES, MANUFACTURER'S RECOMMENDED DOSING, APPLICATION RATES/QUANTITIES, AND MONITORING RESULTS (TURBIDITY, PH).

DEWATERING, STREAM DIVERSION, AND BASIN DRAINING
DEWATERING, STREAM DIVERSION, OR BASIN DRAINING IS ANTICIPATED DURING CONSTRUCTION OF THIS PROJECT. DITCH REALIGNMENT, CULVERT CONSTRUCTION, AND NEW POND GRADING WILL REQUIRE SITE DEWATERING. WHEN DEWATERING OR BASIN DRAINING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP'S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. IF AN APPROVED TMDL WASTE LOAD ALLOCATION IS ESTABLISHED FOR CONSTRUCTION ACTIVITIES ON A RECEIVING WATERBODY, THE OPERATOR MUST IMPLEMENT ALL NECESSARY BMP'S TO MEET THE ASSIGNED WLA. THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP. WATER THAT IS TURBID OR HAS SEDIMENT MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN (AND/OR OTHER APPROPRIATE BMP'S) ON THE PROJECT SITE WHENEVER POSSIBLE. DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASIN MUST BE VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT IS OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. R. 7050.0210, SUBP. 2), IMPACTS TO WETLANDS, AND EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES WILL NOT RESULT FROM THE DISCHARGE. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES AND ADDITIONAL FILTRATION BMP'S ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS, OIL, OR GREASE.

**FINAL STABILIZATION**

FINAL STABILIZATION IS ACHIEVED WHEN THE FOLLOWING FOUR PARAMETERS ARE COMPLETED, PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION TO MPCA. SEE PERMANENT EROSION CONTROL PRACTICES FOR SPECIFIC METHODS AND APPLICATIONS.

- 1. 70% VEGETATIVE COVER: ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL EXPOSED SOILS ARE STABILIZED BY A UNIFORM, LIVE PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE ENTIRE PVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSION CONDITIONS. REFER TO PART IV.G.5 IF THE PROJECT IS ON AGRICULTURAL LAND.
2. FINAL CLEAN OUT OF PERMANENT STORMWATER MANAGEMENT SYSTEMS & CONVEYANCE SYSTEMS: ALL SEDIMENT MUST BE REMOVED FROM PERMANENT STORMWATER MANAGEMENT SYSTEMS, CONVEYANCE SYSTEMS, AND DITCHES MUST BE STABILIZED WITH PERMANENT COVER.
3. REMOVAL OF ALL TEMPORARY SYNTHETIC BMP'S: ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S. (SUCH AS SILT FENCE) MUST BE REMOVED ON THE PORTIONS OF THE SITE FOR WHICH THE PERMITTEE IS RESPONSIBLE. BMP'S DESIGNED TO DECOMPOSE ON SITE (SUCH AS SOME COMPOST LOGS) MAY BE LEFT IN PLACE.
4. OPERATOR PROVIDES THE OWNER ALL INSPECTION AND SWPPP AMENDMENT RECORDS FOR THE PROJECT: OWNER IS RESPONSIBLE FOR KEEPING ALL RECORDS (AS DEFINED IN PART II.E.1-5) ON FILE FOR THREE YEARS AFTER SUBMITTAL OF THE NOTICE OF TERMINATION.

Table with columns: DATE, REVISIONS, BY. Includes a RECORD DRAWING section.

ROSELL ENGINEERING, LLC
6192 267 TH CT WYOMING, MN 55092
PHONE: 763-286.0521

50% PLAN
MAIN STREET FLATS
SWPPP
CAMBRIDGE, MINNESOTA

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY CLOSE PERSONAL SUPERVISION AND I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DATE: 6/29/17 REG. NO. 24019
Brent Roshell
BRENT ROSHELL

Table with columns: DRAWN, DATE, SCALE, PROJECT, CHECKED, APPROVED. Includes a signature line for BRENT ROSHELL.

