SAFETY REGULATIONS

ALL EXCAVATION AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MARYLAND OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (MOSHA) STANDARDS AS SET FORTH IN THE LATEST VERSION OF THE CODE OF MARYLAND REGULATIONS

CONSTRUCTION NOTIFICATION

The Contractor/Owner is to notify the ____County_____ SOIL CONSERVATION DISTRICT at least 72 hours prior to construction to facilitate any scheduling, layout, or preliminary mobilization necessary to ensure proper construction inspection to enable appropriate certification of the project.

It is the Landowner's responsibility to obtain all County, State, and Federal permits that may be needed, and to maintain this structure and related regulations.

THERE WILL BE NO CHANGES IN SPECIFICATION, DIMENSIONS, OR MATERIALS UNLESS APPROVED BY THE ENGINEER RESPONSIBLE FOR THIS DRAWING. THE DRAWINGS ARE PREPARED COOPERATIVELY BY THE NATURAL RESOURCE CONSERVATION SERVICE FOR THE NAMED LANDOWNER.

CONSTRUCTION FOUND NOT IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS SHALL VIOLATE THE COOPERATIVE AGREEMENT AND ALL DRAWINGS, SPECIFICATIONS, AND QUANTITIES ESTIMATE SHALL IMMEDIATELY BE RETURNED TO THE LOCAL NRCS OFFICE.

LANDOWNER - SITE NAME

313 WASTE STORAGE FACILITY

GENERAL NOTES:

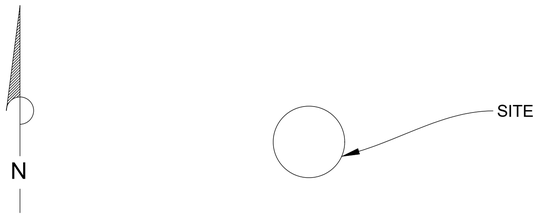
- PLEASE CONTACT THE SOIL CONSERVATION DISTRICT AT PHONE # AT LEAST 3 DAYS PRIOR TO CONSTRUCTION TO ARRANGE A PRE-CONSTRUCTION MEETING
- A CONSERVATION TECHNICIAN SHALL SET CUT/GRADE STAKES AT THE CONTRACTORS REQUEST
- A CONSERVATION TECHNICIAN MUST BE PRESENT AT THE TIME OF PIPE INSTALLATION, IF REQUIRED

CRITICAL INSPECTION ITEMS
(Unroofed Concrete Waste Storage Facility and/or Feeding Area)

3/20/15

1. The landowner will arrange for a pre-construction meeting between the contractor, NRCS and landowner to review the plans, standards and specifications prior to the start of construction.
2. There will be no changes in specifications, dimensions, or materials unless approved by the engineer responsible for this drawing.
3. The drawings are prepared cooperatively by the Natural Resources Conservation Service for named owner/operator. Construction found not in accordance with these drawings and specifications shall violate the cooperative agreement and all drawings, specifications, and Quantities Estimate shall immediately be returned to the local NRCS office.
4. The following is a list of items that must be inspected by the Technician-in-Charge. If cost share is involved, payment may be forfeited if the Technician-in-Charge does not inspect all of the below:

- Preconstruction Meeting Date: _____ Initials: _____
- Verify layouts: Date: _____ Initials: _____
- Verify all subgrades: Date: _____ Initials: _____
- Verify all subgrade materials CR-6 etc: Date: _____ Initials: _____
- Verify reinforcing steel grade, size and placement:
  - Footings: Date: _____ Initials: _____
  - Walls and/or curbs: Date: _____ Initials: _____
  - Floor: Date: _____ Initials: _____
- Inspect all concrete in accordance with specifications:
  - Footings: Date: _____ Initials: _____
  - Walls and/or curbs: Date: _____ Initials: _____
  - Full dimension wall ties: Date: _____ Initials: _____
  - Floor: Date: _____ Initials: _____
- Proper curing of concrete: Date: _____ Initials: _____
- Patching wall ties, holes and honeycombing: Date: _____ Initials: _____
- Subsurface Drainage (if applicable)
  - Trench grade: Date: _____ Initials: _____
  - Drain tubing material: Date: _____ Initials: _____
  - Stone envelope: Date: _____ Initials: _____
  - Backfill placement: Date: _____ Initials: _____
  - Proper outlet and rodent guard: Date: _____ Initials: _____
- Backfill placement and compaction Date: _____ Initials: _____
- Safety fence and push-off guard: Date: _____ Initials: _____
- Signs in Place (Made of all-weather material): Date: _____ Initials: _____
- All disturbed areas seeded and mulched: Date: _____ Initials: _____
- Other items shown on the plans: Date: _____ Initials: _____



REVISED 7/1/2021

LOCATION MAP

USER TO INSERT SHEET LIST TABLE

AS-BUILT STATEMENT

THE CONSERVATION PRACTICE(S) MEETS OR EXCEEDS NRCS STANDARDS AND SPECIFICATIONS

INSPECTED BY _____ SIGNATURE _____ DATE

CONSTRUCTION APPROVAL _____ SIGNATURE _____ DATE

VERIFIED DISTRICT CONSERVATIONIST _____ SIGNATURE _____ DATE

AS BUILT CONTRACT ITEMS:

PRACTICE	Reportable Amount	Contract Amount

USER TO ENTER PRACTICES

OWNER/CONTRACTOR STATEMENT

I CERTIFY THAT THIS DESIGN HAS BEEN EXPLAINED TO ME BY A REPRESENTATIVE OF THE COUNTY SOIL CONSERVATION DISTRICT, AND I UNDERSTAND THE CONTENTS, ALL CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS AND SPECIFICATIONS, I FURTHER UNDERSTAND THAT ALL CONSTRUCTION WILL BE UNDER THE INSPECTION OF THIS OFFICE.

_____
OWNER/OPERATOR SIGNATURE DATE

_____
CONTRACTOR'S SIGNATURE DATE

811 Know what's below. Call before you dig.

"The Soil Conservation District makes no representation as to the existence or Non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities"

MATERIALS LIST

* For bidding purposes only

All disturbed areas to be stabilized within 7 days of completion, using the following recommendations.

Seeding Recommendations

Tall Fescue	65 lb/ac
Perennial Ryegrass or	5 lb/ac
Redtop (tolerates moist sites)	2 lb/ac
White Clover	5 lb/ac
20-40-40 Fertilizer	500 lb/ac
Ground lime 50% oxides	3 tons /ac
Straw Mulch	2 tons/ac

Dates listed are for plant hardiness Zone 6B, dates will need to be changed for other zones.

Seeding Dates
March 1 thru May 15
August 1 thru October 1

It is the landowner responsibility to obtain All County, State, and Federal permits that may be needed, and to maintain this structure and those regulations.

USER TO ENTER SEEDING INFO

USER TO ENTER CONSTRUCTION SEQUENCE

AG. WASTE FACILITY CONSTRUCTION SEQUENCE

1. A PRE-CONSTRUCTION MEETING WITH THE LANDOWNER, CONTRACTOR, AND SCD TECHNICIANS IS REQUIRED. CONTACT THE SOIL CONSERVATION OFFICE AT LEAST 3 DAYS PRIOR TO ARRANGE THE PRECONSTRUCTION MEETING. PHONE #
2. A CONSERVATION TECHNICIAN SHALL VERIFY CUT/GRADE STAKES AT THE CONTRACTORS REQUEST.
3. INSTALL SEDIMENT CONTROLS BY DIRECTION OF TECHNICIAN/ENGINEER OR AS SHOWN ON PLAN (INCLUDING ALL STOCKPILES).
4. STRIP TOPSOIL'S AND SAFELY STOCKPILE OUT OF IMMEDIATE SITE.
5. EXCAVATE SITE TO STAKED ELEVATIONS, WITH MINIMUM FIVE-FOOT OFFSET.
6. EXCAVATE FOR FOOTERS, PLACE CRUSHED STONE FOR FLOOR
7. SET FOOTER FORMS, INSTALL FOOTER STEEL WITH "L" BARS, AND SET FLOOR REINFORCEMENT WIRE/STEEL POUR FOOTERS AND FLOOR.
8. SET WALL FORMS & INSTALL WALL STEEL. POUR WALLS
9. INSTALL FOOTER DRAIN/STONE, OUTLET AS DIRECTED BY TECHNICIAN/ENGINEER.
10. PLACE CRUSHED STONE, SET REINFORCEMENT WIRE & POUR SLAB WORK ON FLOORS, SLOPES, RAMPS, PADS, ETC.
11. INSTALL FOOTER DRAIN/STONE, OUTLET AS DIRECTED BY TECHNICIAN/ENGINEER.
12. AFTER 7 DAYS BACKFILL AND REGRADE, ESTABLISH SEEDBED.
13. INSTALL SAFETY FENCE, RAILS AND SIGNS
14. RESEED ALL DISTURBED AREAS TO ESTABLISH VEGETATIVE COVER (PER SEEDING RECOMMENDATION).

Date ---- ---- ---- ----
Designed ---- Drawn ---- Checked ---- Approved ----

LANDOWNER - SITE NAME
----, Maryland
COUNTY Soil Conservation District
JOB CLASS #
TRACT #

United States Department of Agriculture
Natural Resources Conservation Service

File Name
MD_0008_CircularWSF.dwg

Drawing No.
MD_0008

Sheet 1 of 6

N

USER TO INSERT TOPO SURVEY/PLAN MAP

PLAN VIEW

20 0 20 40

Scale in Feet

BENCH MARK DESCRIPTIONS

TBM #1 (IP): Elev = ???.??
Top of 1" X 2" wooden hub, marked by witness lath.

TBM #2: Elev = ???.??
Top of 1" X 2" wooden hub, marked by witness lath, near NW corner of building.

TBM #3: Elev = ???.??
Top of bolt in NW corner of concrete.

Open Air Manure Storage Safety

3/20/15

Injuries and fatalities occur in confined space manure storages that are enclosed, such as beneath animal quarters, or below-ground reception and pump out pads, and in non-enclosed storages, such as earthen, lined and concrete manure pits and ponds. Non-enclosed manure storages are open to the atmosphere but still meet the definition of a confined space in terms of occupational safety and health. Because of the potential danger of gases around manure storage facilities, ponds, or lagoons; first aid equipment should be supplied nearby. An identified, easily accessible area should be provided for storing safety equipment. The area should be inspected periodically to ensure that all equipment is available and in proper working condition. An emergency action plan should be posted near the safety equipment and near all telephones.

In the case of open air manure storage pits and ponds, some hazards can include:

- A thick liquid and floating crust that make swimming, buoyancy or even moving around very difficult.
- Steep and slippery slopes that can make getting out of manure storages difficult or impossible.
- Localized layers of hazardous gases existing above manure surfaces, especially on hot, humid days with little to no breeze.
- A speeding up of manure gas release from movement, agitation, removal or additional of manure to a storage pond.
- Not having sufficient oxygen to breath if a person is "treading" in manure because of an inability to get out.
- Not being able to see into depths of manure like you can with water.
- A slow response time for adequate emergency actions because of site isolation and remoteness.

Safety guidelines to follow:

1. Make sure everyone that needs to be near manure storage structures understand the hazards that exist, including the effects that the various gases has on them.
2. Make sure the open air manure storage has a fence installed around the perimeter and access gates are locked to keep unauthorized personnel from entering the area.
3. The open air storage should have manure/drowning hazard signs and dangerous gases signs on all sides of the storage at locations that easily visible and made of all-weather material. Where only stackable manure is being stored use signs reading Danger Manure Storage may be used.
4. If you must go into the fenced area of the open manure storage, consider wearing a safety harness with life line attached to a safely located solid object or anchor.
5. Never work alone. The second person's role is to summon help in an emergency and assist with rescue without entering the storage.
6. Safety equipment can include air packs and face masks, nylon line with snap buckles, safety harness, first-aid kits, flotation devices, safety signs, and hazardous atmosphere testing kits or monitors.
7. Move slowly around manure storages as the ground can sometimes be uneven and may cause a person to trip or stumble.
8. Bystanders and non essential workers should stay away from pump out or other accessible areas.
9. There should be no horseplay near the open manure pit or pumping equipment.
10. If equipment malfunctions during agitating or pumping of the manure, shut all equipment off and remove it from the storage before servicing or repairing.
11. If you feel unsure or uncomfortable with what you are getting ready to do near the open manure pit, step back, contact someone and review the situation before proceeding.
12. Toxic gas, and oxygen deficiency gas monitors can be used to determine if unsafe conditions exist.
13. Be prepared to call 911 if an emergency happens. Being prepared means accurately describing the incident, number of victims, and giving specific directions to the site of the emergency.

SIGN REQUIRED FOR ALL MANURE STORAGE STRUCTURES.
PLACE ONE SIGN AT EACH ENTRANCE/ACCESS POINT.
SIGN TO BE MADE OF DURABLE MATERIAL (PLASTIC/ALUMINUM OR EQUAL)
MINIMUM SIZE 10"W X 14"H

Compaction Requirements

Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller.

The minimum required density is 95% of maximum dry density with moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by a Geotechnical Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor). The landowner is responsible for the required compaction testing and shall make all necessary arrangements to have a private geotechnical engineer, or agent, on-site to perform the test as needed during construction. The compaction test results are to be supplied to the field office.

Date ---
Designed ---
Drawn ---
Checked ---
Approved ---

LANDOWNER - SITE NAME

#####

COUNTY Soil Conservation District

TRACT #

JOB CLASS #

----, Maryland

United States Department of Agriculture

Natural Resources Conservation Service

File Name
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Drawing No.
MD_0008

Sheet 2 of 6

SECTION A - A'

USER TO INSERT AS NEEDED THE REQUIRED PROFILE AND CROSS SECTIONS

SECTION B - B'

SECTION C - C'

Date	
Designed	----
Drawn	----
Checked	----
Approved	----

LANDOWNER - SITE NAME

#####

COUNTY Soil Conservation District

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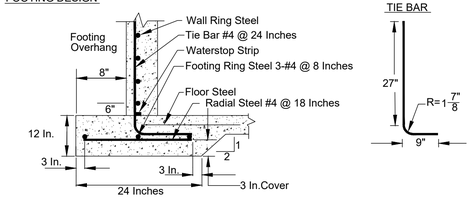
MD_0008

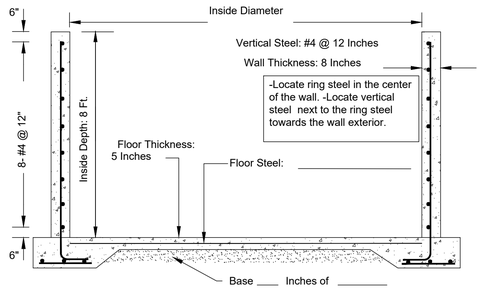
FOOTING DESIGN



TIE BAR

NOTE: Subsurface Drainage must be provided around the storage facility.

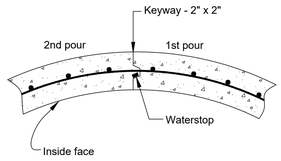
WALL DESIGN



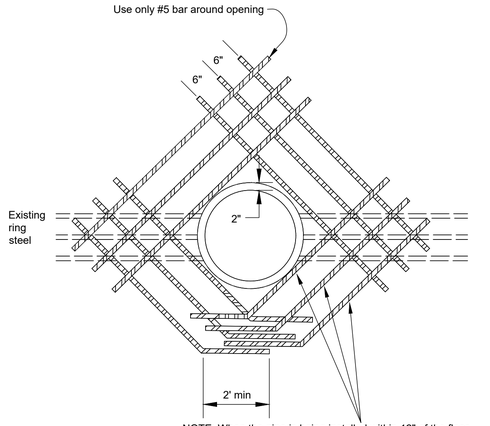
CIRCULAR CONCRETE STORAGE FACILITY
8' DEEP 75' OR LESS IN DIAMETER

*USER TO MODIFY PER DESIGN
SEE TANK SIZE LAYOUT SHEET.*

SPLICING DETAIL FOR WALL AND FOOTING RING STEEL



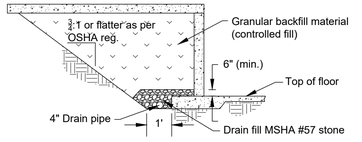
VERTICAL WALL JOINT
Not to scale



NOTE: When the pipe is being installed within 12" of the floor, remove the bottom rebar. When the pipe is greater than 3' above floor, bottom bars do not need to be bent.

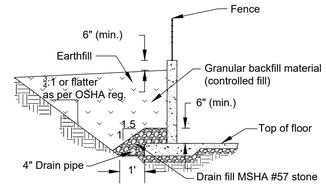
NOTES:
1. Cut all vertical and ring steel 2 inches from opening.
2. For each ring steel bar interrupted by the opening, install one #5 bar around each side of the opening. A minimum of 2 - #5 bars are to be used along each side.

CIRCULAR CONCRETE STORAGE FACILITY
DETAIL OF PIPE PROTRUDING THROUGH WALL
Not to scale



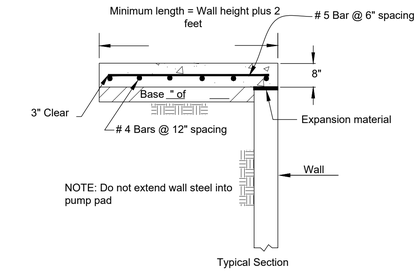
Granular backfill is required under slab and shall be compacted in uniform 8-inch lifts by traversing of the entire surface with not less than one track of the equipment or by four complete passes with a manually directed vibratory roller or plate vibrator.

WALL BACKFILL DETAIL - CONTROLLED FILL
Not to scale

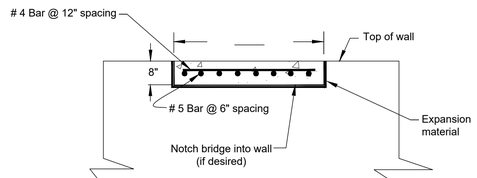


Provide a minimum 4-inch diameter perforated drain tubing for drainage behind wall. Outlet the pipe as shown on the plan view. Place earthfill in uniform lifts. When placing uncompacted fill provide additional fill for settlement.

WALL BACKFILL DETAIL - TYPICAL
Not to scale



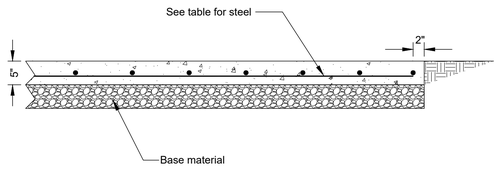
Typical Section



Typical Section

BRIDGE DETAIL FOR CIRCULAR TANKS
(LOADING AND UNLOADING PADS)
Not to scale

USER TO MODIFY FOR SITE DESIGN



NOTES:
1) 4000 PSI Concrete
2) Grade 60 steel

CONCRETE FLOOR DETAIL
Not to scale

USER TO MODIFY FOR SITE DESIGN

CONCRETE STORAGE FACILITIES		
MAXIMUM FLOOR DIMENSION	*REQUIRED STEEL FOR 5" THICK FLOOR W/ GRAVEL SUBGRADE*	
	A_s	*EXAMPLE*
≤ 60'	*0.058*	*6x6-#6 gage, or 6x6-W2.9xW2.9, or #3 bar @ 18 inch*
>60' ≤ 100'	*0.126*	*4x4-#4 gage,4x4-W4xW4, or #4 @ 18"*
>100' ≤ 160'	*0.190*	*#4 @ 12"*
>160' ≤ 200'	*0.230*	*#4 @ 10" or #5 bar @ 16"*

USER TO MODIFY FOR SITE DESIGN

CONCRETE CONSTRUCTION SPECIFICATIONS

Formed Concrete
Revised 7/21

1. All materials and construction shall be in accordance with applicable NRCS Practice Standards and ACI-318.
2. Any changes in the plans or specifications must be approved by the design approver prior to being made. Changes are to be reviewed by the landowner for concurrence.
3. Concrete shall have Type IA or IIA cement, 28-day compressive strength of 4,000 psi, 5% air entrainment and a slump of 3 to 5 inches. Air entrainment admixtures shall conform to ASTM C260.
4. Reinforcing steel shall conform to ASTM A615, Grade 60 steel. All reinforcing material shall be free of dirt, loose rust, scale, oil, paint or other coatings. The steel shall be accurately placed into position, as shown on the plans, and securely restrained and blocked into position prior to placement of concrete. Insertion of steel into fresh concrete is not permitted. Reinforcement steel shall have a minimum of 2 inches of concrete cover against all forms and 3 inches against soil, unless otherwise shown on the plans. Ring steel shall have a minimum overlap of 24 inches. All other reinforcement steel splices shall overlap a minimum of 18 inches. Welded wire mesh shall conform to ASTM A1064 and overlap a minimum of 6 inches. The welding of reinforcing steel is not permitted.
5. Waterstop will be used as shown on the plans and at all cold and construction joints. The type of waterstop will be approved by the field technician prior to use.
6. Plasticizing or plasticizing and retarding admixtures may be used and shall conform to ASTM C1017 or ASTM C494 Types F or G.
7. Concrete forms shall have sufficient strength and rigidity to hold the concrete to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wet before concrete is placed. Forms may be removed 24 hours after the placement of concrete.
8. Metal ties or anchorages shall be full dimension. Nominal size wall ties are not permitted. Wall tie ends must be broken off and patched with a concrete epoxy or polymer cement. Patching is required on both the inside and outside of concrete structures.
9. Concrete shall be delivered to the site and discharged completely into the forms within 90 minutes after the truck leaves the plant. This time shall be reduced to 45 minutes when the atmospheric temperature is over 90° F. The concrete shall be maintained at a temperature below 90° F during mixing, conveying and placement. Set retarding admixtures may be used to increase mixing time. Water reducing and/or retarding admixtures shall conform to ASTM C494 Types A, B, D, F or G.
10. All concrete for walls shall be consolidated with internal type mechanical vibrators or by rodding. Concrete shall be placed in horizontal lifts not greater than 2 feet. Concrete shall not have a vertical drop greater than 5 feet. An elephant trunk, chute, or similar means shall be used when applicable to minimize the vertical drop. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.
11. Concrete shall not be placed when the daily minimum atmospheric temperature is less than 40 degrees Fahrenheit unless facilities are provided to prevent the concrete from freezing. The concrete shall be protected from freezing for a minimum of 7 days or the concrete shall be kept at a temperature of 55 degrees Fahrenheit for a minimum of 3 days. Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM C494, Types C and E. Cold weather concreting procedures shall conform to ACI-306.
12. Concrete shall be kept continuously moist for the curing period after the placement of the concrete. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may be used in lieu of the application of moisture. Curing compounds shall conform to ASTM C309, type 2.
13. Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with quickset, non-shrink hydraulic cement, concrete epoxy or polymer cement. Voids left by wall ties shall be patched with a concrete epoxy or polymer modified cement.
14. Concrete top surfaces shall be screeded, troweled and broom finished unless otherwise approved.
15. Walls may be backfilled 7 days after the placement of concrete, unless otherwise approved.
16. Fill material under concrete shall be accomplished by placing maximum 8-inch lifts (before compaction). The lifts shall be compacted by the traversing of the entire surface by not less than one track of the equipment or by a minimum of four complete passes with a sheepsfoot, vibratory, or rubber tire roller.

    Compaction around structures (i.e. around pipes, adjacent to walls, etc.) shall be accomplished by placing fill in maximum 4-inch lifts and compacting by means of hand tampers or other manually directed compaction equipment.

    The technician shall determine if the moisture content is suitable for fill placement. The contractor shall make adjustments as directed by the technician. The method of compaction shall be approved prior to placement of fill material.
17. The backfill behind walls shall conform to the grades shown on the plans. When placing uncompacted fill provide an additional foot of fill to allow for settlement.
18. Subsurface drainage must be provided as shown on the plans. Drain tubing must meet the requirements of ASTM F677 Heavy Duty.

Date ---- ---- ---- ----
Designed ---- Drawn ---- Checked ---- Approved ----

LANDOWNER - SITE NAME
#####
COUNTY Soil Conservation District
JOB CLASS #
TRACT #

United States Department of Agriculture
Natural Resources Conservation Service
----, Maryland

File Name
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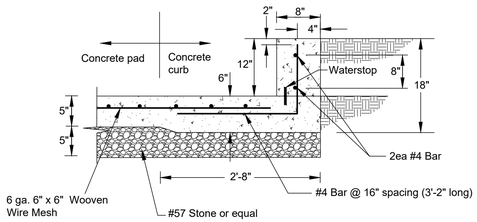
Drawing No.
MD_0008

Sheet 4 of 6

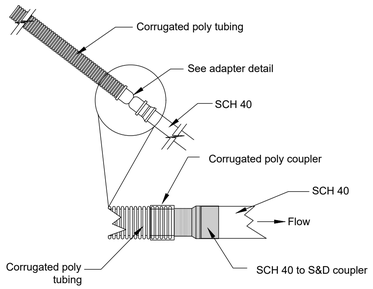


Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill to top of curb
4) Minimum backfill to top of floor

NOTE: If concrete pad is poured first and concrete curb poured on top of pad, waterstop is to be used. If concrete pad and concrete curb is poured as one continuous pour, the waterstop may be omitted.

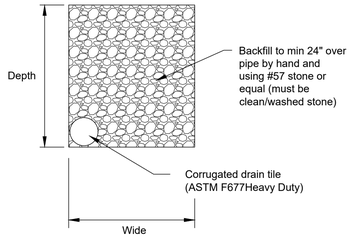
12" CONCRETE CURB
Not to scale

USER TO MODIFY PER DESIGN



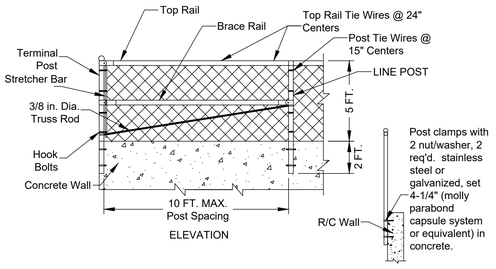
ADAPTER DETAIL
Not to scale

USER TO CLICK ON BLOCK AND ENTER INFORMATION



Perimeter Drain Detail
Not to scale

USER TO CLICK ON BLOCK AND ENTER INFORMATION



NOT TO SCALE

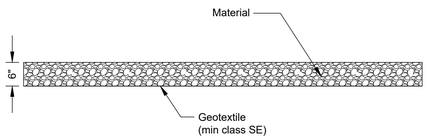
SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FENCE POSTS AND RAILS			
Item	Shape	Outside dimensions inches	Weight lbs./lin. ft.
**Terminal posts	Round	2.375	3.65
	*Round	2.375	3.12
Line posts	Round	1.90	2.72
	*Round	1.90	2.28
Top & brace rails	Round	1.66	2.27
	*Round	1.66	1.84
* Grade B High Strength Steel			
** Includes End, Corner, Angle, Intersection and Intermediate Braced Posts			

GATE FRAME MEMBERS SIZE AND WEIGHT		
Gate Frame	Outside Dimensions (inches)	Weight lbs./lin. ft.
Round	1.66	2.27
*Round	1.66	1.84
* Grade B High Strength Steel		

GATE POST SIZE AND WEIGHT		
Gate Leaf Width of 6 ft. or Less	Outside Dimensions (inches)	Weight lbs./lin. ft.
Round	2.875	5.79
*Round	2.875	4.64
* Grade B High Strength Steel		

CONSTRUCTION NOTES:
1. Materials and workmanship not shown on this drawing shall conform to the manufacturer's specifications.
2. All posts shall be installed vertically. Where posts are installed on an inclined surface, the angle of the post shall be adjusted so that the post will be vertical.
3. The fencing shall be #9 gauge fence fabric, standard 2-inch chain link diamond mesh.
4. Install signs around the structure as required on the plan.

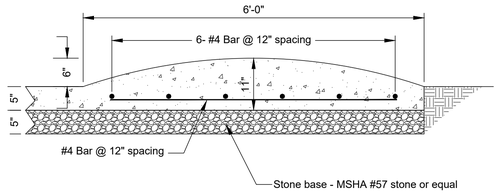
CHAIN LINK FENCE DETAILS
Not to scale



GENERAL NOTES:

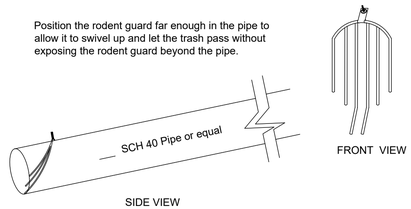
- Remove topsoil prior to grading and stockpile outside limits of access lane construction.
- Overlap all filter fabric at least 2 feet.
- Topsoil shall be used to facilitate revegetation.
- Seed all disturbed areas according to the seeding specifications.

ACCESS LANE
Not to scale



DETAIL OF ROLLED CURB
Not to scale

Position the rodent guard far enough in the pipe to allow it to swivel up and let the trash pass without exposing the rodent guard beyond the pipe.



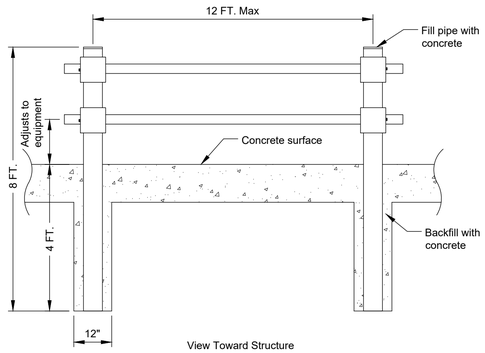
SIDE VIEW

FRONT VIEW

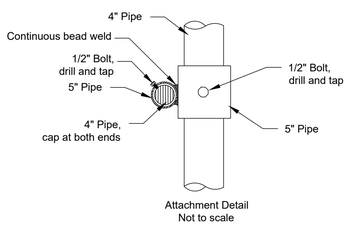
NOTE: A hole must be drilled in the top of the pipe in order to attach the rodent guard within.

OUTLET DETAIL
Not to scale

USER TO MODIFY PER DESIGN



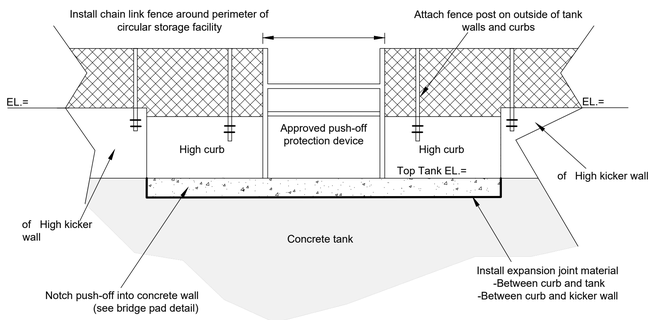
View Toward Structure



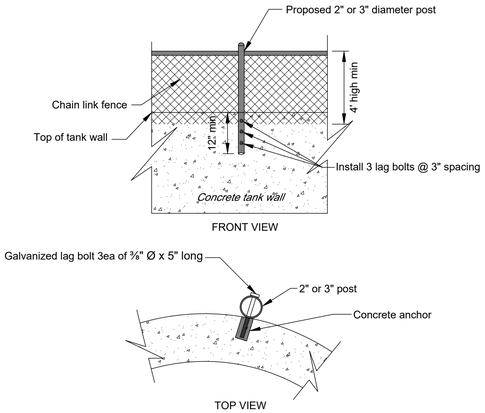
Attachment Detail
Not to scale

PUSH-OFF DEVICE DETAIL
Not to scale

USER TO MODIFY PER DESIGN



PUSH-OFF AND KICKER WALL DETAIL
Not to scale



NOTES:
- Use 3" posts @ gate corners - all other posts use 2"
- Post are not to be poured inside of tank walls

POST ATTACHMENT TO CONCRETE WALLS
Not to scale

Date ----
Designed ----
Drawn ----
Checked ----
Approved ----

LANDOWNER - SITE NAME
#####
COUNTY Soil Conservation District
JOB CLASS #
----, Maryland
TRACT #

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Natural Resources Conservation Service

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Drawing No.
MD_0008

Sheet 5 of 6

OUTLET PIPE PROFILE

USER TO MODIFY PER DESIGN

DETAIL E-1 SILT FENCE

STANDARD SYMBOL

SF

ELEVATION

CROSS SECTION

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL

SF

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1½ X 1½ ± 1/8 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

	Date
Designed	----
Drawn	----
Checked	----
Approved	----

LANDOWNER - SITE NAME

#####

COUNTY Soil Conservation District

JOB CLASS #

TRACT #

United States Department of Agriculture

Natural Resources Conservation Service

----, Maryland

File Name

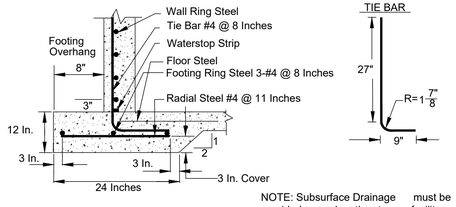
MD_0008_CircularWSF.dwg

Drawing No.

MD_0008

Sheet 6 of 6

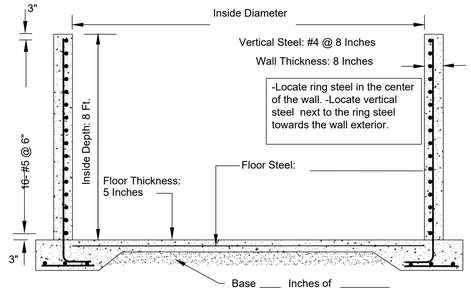
FOOTING DESIGN



TIE BAR

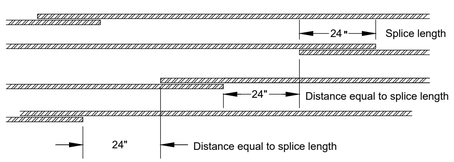
NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

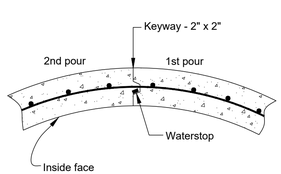


CIRCULAR CONCRETE STORAGE FACILITY
FOR USE WITH NOTCHED WALL & RAMP
8' DEEP 120' OR LESS IN DIAMETER

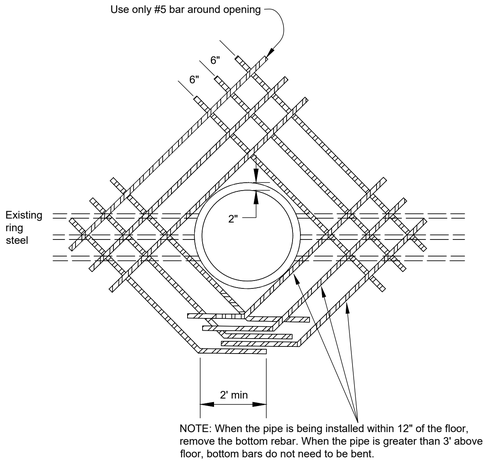
*USER TO MODIFY PER DESIGN
SEE TANK SIZE LAYOUT SHEET.*



SPLICING DETAIL FOR WALL AND FOOTING RING STEEL



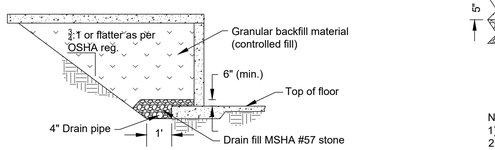
VERTICAL WALL JOINT
Not to scale



NOTE: When the pipe is being installed within 12" of the floor, remove the bottom rebar. When the pipe is greater than 3' above floor, bottom bars do not need to be bent.

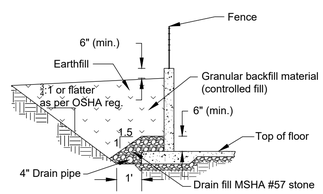
NOTES:
1. Cut all vertical and ring steel 2 inches from opening.
2. For each ring steel bar interrupted by the opening, install one #5 bar around each side of the opening. A minimum of 2 - #5 bars are to be used along each side.

CIRCULAR CONCRETE STORAGE FACILITY
DETAIL OF PIPE PROTRUDING THROUGH WALL
Not to scale



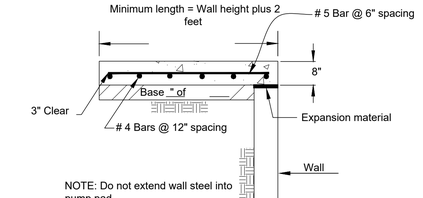
Granular backfill is required under slab and shall be compacted in uniform 8-inch lifts by traversing of the entire surface with not less than one track of the equipment or by four complete passes with a manually directed vibratory roller or plate vibrator.

WALL BACKFILL DETAIL - CONTROLLED FILL
Not to scale

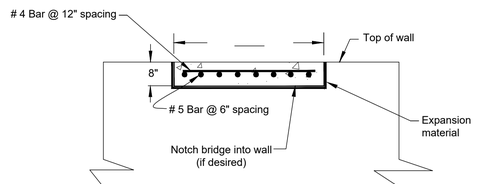


Provide a minimum 4-inch diameter perforated drain tubing for drainage behind wall. Outlet the pipe as shown on the plan view. Place earthfill in uniform lifts. When placing uncompacted fill provide additional fill for settlement.

WALL BACKFILL DETAIL - TYPICAL
Not to scale



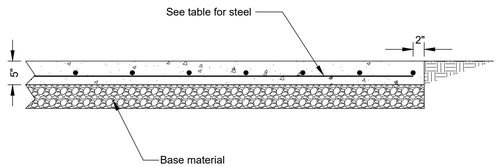
Typical Section



Typical Section

BRIDGE DETAIL FOR CIRCULAR TANKS
(LOADING AND UNLOADING PADS)
Not to scale

USER TO MODIFY FOR SITE DESIGN



NOTES:
1) 4000 PSI Concrete
2) Grade 60 steel

CONCRETE FLOOR DETAIL
Not to scale

USER TO MODIFY FOR SITE DESIGN

CONCRETE STORAGE FACILITIES		
MAXIMUM FLOOR DIMENSION	*REQUIRED STEEL FOR 5" THICK FLOOR W/ GRAVEL SUBGRADE*	
	A_s	*EXAMPLE*
≤ 60'	*0.058*	*6x6-#6 gage, or 6x6-W2.9xW2.9, or #3 bar @ 18 inch*
>60' ≤ 100'	*0.126*	*4x4-#4 gage,4x4-W4xW4, or #4 @ 18"*
>100' ≤ 160'	*0.190*	*#4 @ 12"*
>160' ≤ 200'	*0.230*	*#4 @ 10" or #5 bar @ 16"*

USER TO MODIFY FOR SITE DESIGN

CONCRETE CONSTRUCTION SPECIFICATIONS

Formed Concrete
Revised 4/14

1. All materials and construction shall be in accordance with applicable NRCS Practice Standards and ACI-318.
2. Any changes in the plans or specifications must be approved by the design approver prior to being made. Changes are to be reviewed by the landowner for concurrence.
3. Concrete shall have Type IA or IIA cement, 28-day compressive strength of 4,000 psi, 5% air entrainment and a slump of 3 to 5 inches. Air entrainment admixtures shall conform to ASTM C260.
4. Reinforcing steel shall conform to ASTM A615, Grade 60 steel. All reinforcing material shall be free of dirt, loose rust, scale, oil, paint or other coatings. The steel shall be accurately placed into position, as shown on the plans, and securely restrained and blocked into position prior to placement of concrete. Insertion of steel into fresh concrete is not permitted. Reinforcement steel shall have a minimum of 2 inches of concrete cover against all forms and 3 inches against soil, unless otherwise shown on the plans. Ring steel shall have a minimum overlap of 24 inches. All other reinforcement steel splices shall overlap a minimum of 18 inches. Welded wire mesh shall conform to ASTM A1064 and overlap a minimum of 6 inches. The welding of reinforcing steel is not permitted.
5. Waterstop will be used as shown on the plans and at all cold and construction joints. The type of waterstop will be approved by the field technician prior to use.
6. Plasticizing or plasticizing and retarding admixtures may be used and shall conform to ASTM C1017 or ASTM C494 Types F or G.
7. Concrete forms shall have sufficient strength and rigidity to hold the concrete to withstand the necessary pressure, tamping and vibration without deflection from the prescribed lines. They shall be mortar-tight and constructed so that they can be removed without hammering or prying against the concrete. The inside of the forms shall be oiled with a non-staining mineral oil or thoroughly wet before concrete is placed. Forms may be removed 24 hours after the placement of concrete.
8. Metal ties or anchorages shall be full dimension. Nominal size wall ties are not permitted. Wall tie ends must be broken off and patched with a concrete epoxy or polymer cement. Patching is required on both the inside and outside of concrete structures.
9. Concrete shall be delivered to the site and discharged completely into the forms within 90 minutes after the truck leaves the plant. This time shall be reduced to 45 minutes when the atmospheric temperature is over 90^0 F. The concrete shall be maintained at a temperature below 90^0 F during mixing, conveying and placement. Set retarding admixtures may be used to increase mixing time. Water reducing and/or retarding admixtures shall conform to ASTM C494 Types A, B, D, F or G.
10. All concrete for walls shall be consolidated with internal type mechanical vibrators or by rodding. Concrete shall be placed in horizontal lifts not greater than 2 feet. Concrete shall not have a vertical drop greater than 5 feet. An elephant trunk, chute, or similar means shall be used when applicable to minimize the vertical drop. Vibration shall be supplemented by spading and hand tamping as necessary to insure smooth and dense concrete along form surfaces, in corners, and around embedded items.
11. Concrete shall not be placed when the daily minimum atmospheric temperature is less than 40^0 F unless facilities are provided to prevent the concrete from freezing. The concrete shall be protected from freezing for a minimum of 7 days or the concrete shall be kept at a temperature of 55^0 F for a minimum of 3 days. Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM C494, Types C and E. Cold weather concreting procedures shall conform to ACI-306.
12. Concrete shall be kept continuously moist for the curing period after the placement of the concrete. Moisture may be applied by spraying or sprinkling as necessary to prevent the concrete from drying. Concrete shall not be exposed to freezing during the curing period. Curing compounds may be used in lieu of the application of moisture. Curing compounds shall conform to ASTM C309, type 2.
13. Defective concrete, honeycombed areas, voids left by the removal of tie rods, ridges on all concrete surfaces permanently exposed to view or exposed to water, shall be repaired immediately after the removal of forms. All voids shall be reamed and completely filled with quickset, non-shrink hydraulic cement, concrete epoxy or polymer cement. Voids left by wall ties shall be patched with a concrete epoxy or polymer modified cement.
14. Concrete top surfaces shall be screeded, troweled and broom finished unless otherwise approved.
15. Walls may be backfilled 7 days after the placement of concrete, unless otherwise approved.
16. Fill material under concrete shall be accomplished by placing maximum 8-inch lifts (before compaction). The lifts shall be compacted by the traversing of the entire surface by not less than one track of the equipment or by a minimum of four complete passes with a sheepsfoot, vibratory, or rubber tire roller.

    Compaction around structures (i.e. around pipes, adjacent to walls, etc.) shall be accomplished by placing fill in maximum 4-inch lifts and compacting by means of hand tampers or other manually directed compaction equipment.

    The technician shall determine if the moisture content is suitable for fill placement. The contractor shall make adjustments as directed by the technician. The method of compaction shall be approved prior to placement of fill material.
17. The backfill behind walls shall conform to the grades shown on the plans. When placing uncompacted fill provide an additional foot of fill to allow for settlement.
18. Subsurface drainage must be provided as shown on the plans. Drain tubing must meet the requirements of ASTM F405 Heavy Duty.

Date ----
Designed ----
Drawn ----
Checked ----
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LANDOWNER - SITE NAME
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Drawing No.
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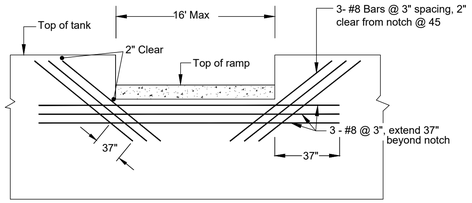
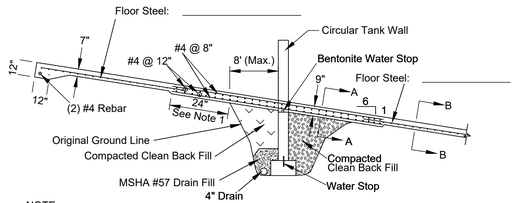
Sheet 4 of 6

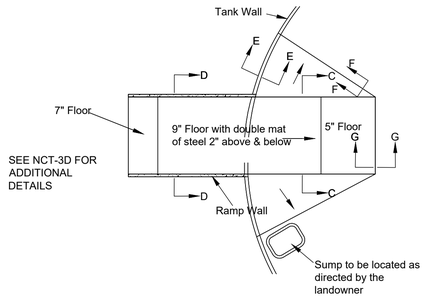


STEEL REINFORCEMENT AROUND NOTCH
Not to scale



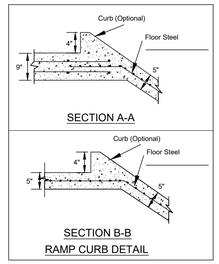
NOTE:
Extend 9" thick ramp bridge 24" onto undisturbed original ground.

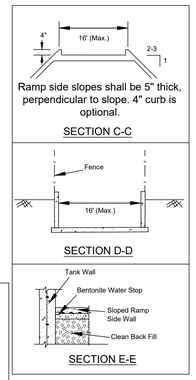
ACCESS RAMP PROFILE
Not to scale

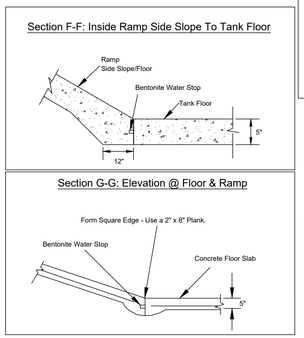


RAMP PLAN AND PROFILE
Not to scale

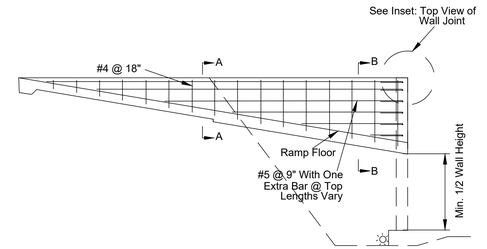
USER TO MODIFY FOR SITE DESIGN



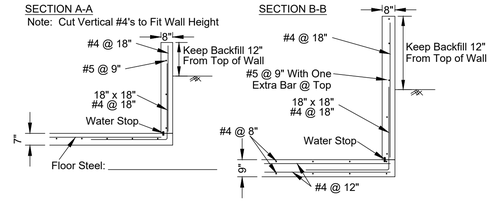


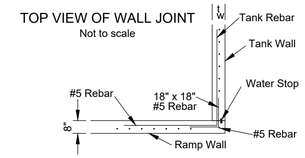


RAMP WALL - SECTIONS AND DETAILS
Not to scale



ACCESS RAMP THROUGH NOTCHED TANK - ELEVATION VIEW OF RAMP
Not to scale





RAMP ELEVATIONS VIEW AND DETAILS
Not to scale

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Date ----
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Approved ----

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COUNTY Soil Conservation District
JOB CLASS #
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Natural Resources Conservation Service

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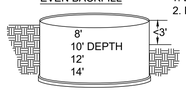
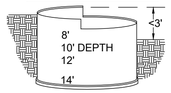
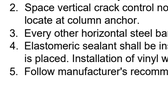
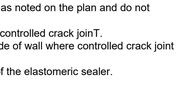
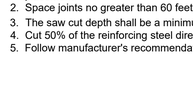
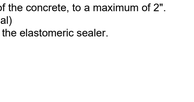
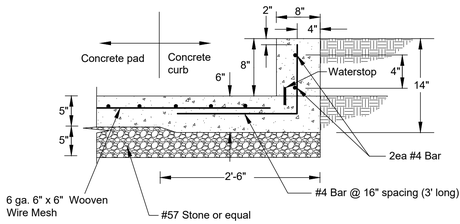
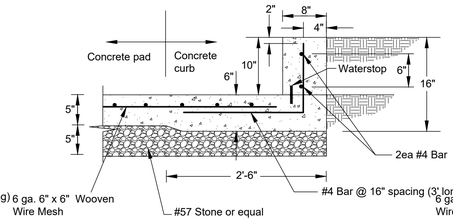
EVEN BACKFILL Appropriate designs 1. Design guide MD#2 2. Prequalified drawings 	TANK WITH KICKER WALL APPROPRIATE DESIGNS 1. Design guide MD#2 2. Prequalified drawings with kicker wall 
UNEVEN BACKFILL APPROPRIATE DESIGNS 1. Prequalified drawings with specifications by pe 	TANK WITH KICKER WALL AND UNEVEN BACKFILL APPROPRIATE DESIGNS None 
TANK WITH RAMP APPROPRIATE DESIGNS 1. DESIGN GUIDE MD #2 	TANK WITH RAMP AND KICKER WALL APPROPRIATE DESIGNS None 
TANK WITH RAMP APPROPRIATE DESIGNS None 	NOTE: See all referenced designs for details and allowable dimensions 1) Prequalified drawings- most up to 16' see drawings for allowable dimensions



Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill to top of curb
4) Minimum backfill to top of floor

NOTE: If concrete pad is poured first and concrete curb poured on top of pad, waterstop is to be used. If concrete pad and concrete curb is poured as one continuous pour, the waterstop may be omitted.

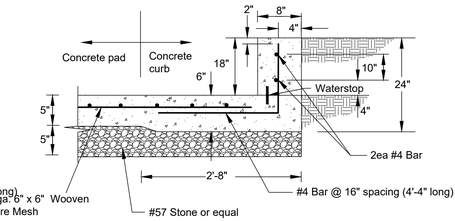
8" CONCRETE CURB
Not to scale



Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill to top of curb
4) Minimum backfill to top of floor

NOTE: If concrete pad is poured first and concrete curb poured on top of pad, waterstop is to be used. If concrete pad and concrete curb is poured as one continuous pour, the waterstop may be omitted.

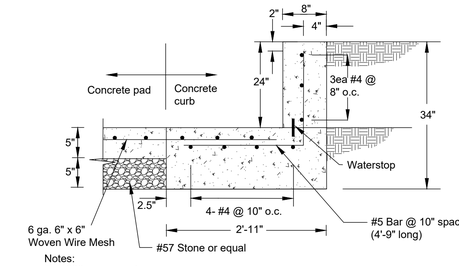
10" CONCRETE CURB
Not to scale



Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill to top of curb
4) Minimum backfill to top of floor

NOTE: If concrete pad is poured first and concrete curb poured on top of pad, waterstop is to be used. If concrete pad and concrete curb is poured as one continuous pour, the waterstop may be omitted.

18" CONCRETE CURB
Not to scale

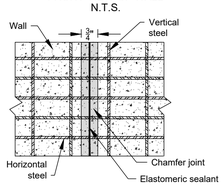


Notes:
1) 4000 psi concrete
2) Grade 60 steel
3) Maximum backfill top of wall
4) Minimum backfill to top of floor
5) Concrete slab must be placed before wall is backfilled
6) Maximum surcharge 100 PSF

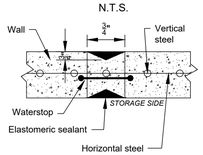
NOTE: If concrete pad is poured first and concrete curb poured on top of pad, waterstop is to be used. If concrete pad and concrete curb is poured as one continuous pour, the waterstop may be omitted.

24" CONCRETE CURB
Not to scale

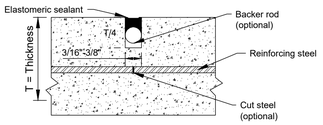
FRONT VIEW OF WALL
N.T.S.



TOP VIEW OF WALL
N.T.S.



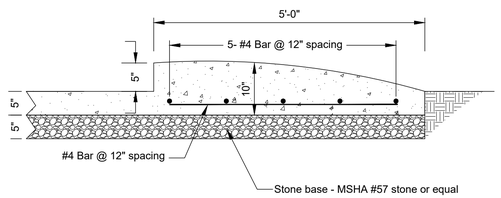
VERTICAL WALL SAW CUT DETAIL
Not to scale



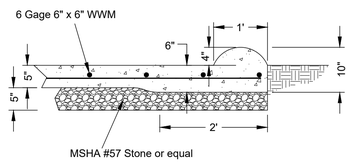
FLOOR SLAB SAW CUT DETAIL
Not to scale

JOINT PLACEMENT REQUIREMENTS:(VERTICAL)
1. Must be used on any wall 2ft and over in height.
2. Space vertical crack control no greater than 60ft apart or as noted on the plan and do not locate at column anchor.
3. Every other horizontal steel bar (50%) shall be cut at the controlled crack joinT.
4. Elastomeric sealant shall be installed on inside and outside of wall where controlled crack joint is placed. Installation of vinyl waterstop is recommended.
5. Follow manufacturer's recommendations for installation of the elastomeric sealer.

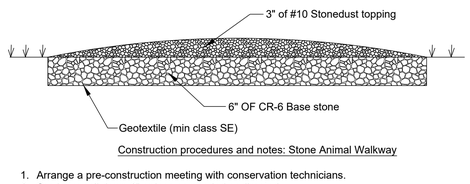
JOINT PLACEMENT REQUIREMENTS:(SLAB)
1. Joints shall be cut as soon as aggregate is set, but no later than 24 hours after the concrete placement.
2. Space joints no greater than 60 feet or as shown on design.
3. The saw cut depth shall be a minimum of $\frac{1}{4}$ the thickness of the concrete, to a maximum of 2".
4. Cut 50% of the reinforcing steel directly at the joint.(optional)
5. Follow manufacturer's recommendations for installation of the elastomeric sealer.



DETAIL OF ROLLED CURB WITH SCRAPE EDGE
Not to scale



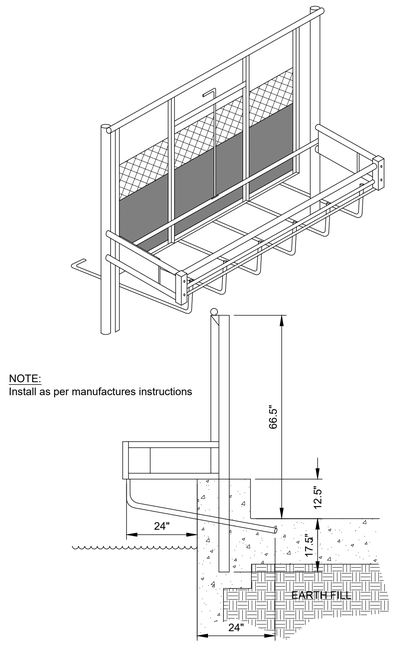
DETAIL OF ROLLED CURB - SMALL
Not to scale



Construction procedures and notes: Stone Animal Walkway

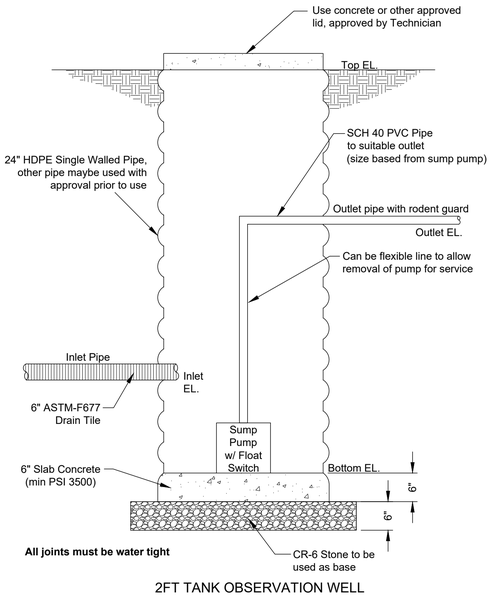
1. Arrange a pre-construction meeting with conservation technicians.
2. Grade topsoil down 6" or less as needed or directed.
3. Place filter fabric on cut grade making sure to straighten out wrinkles etc. overlap all joints between fabric sheets at least 2 feet.
4. Place 6" of CR-6 base stone on top of geotextile and pack as firmly as possible.
5. Place 3" of stone dust #10 on the base stone layers with the top surface slightly rounded and packed firmly.
6. Seed and mulch any disturbed areas according to conservation recommendations.
7. The landowner and the soil conservation office must approve any changes.

ANIMAL WALKWAY
Not to scale

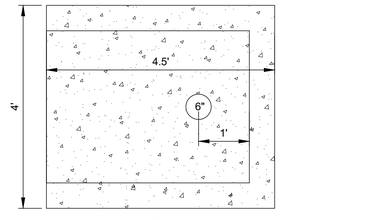


MANUFACTURED PUSH-OFF DEVICE DETAIL
Not to scale

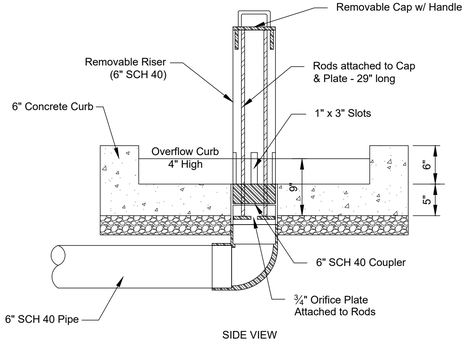
NOTE:
Install as per manufactures instructions



2FT TANK OBSERVATION WELL
Not to scale

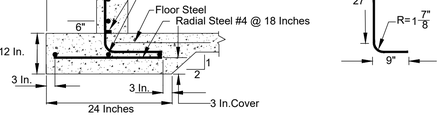


TOP VIEW



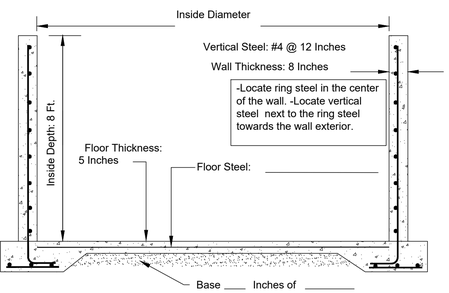
SIDE VIEW

CONCRETE SUMP INLET
Not to scale



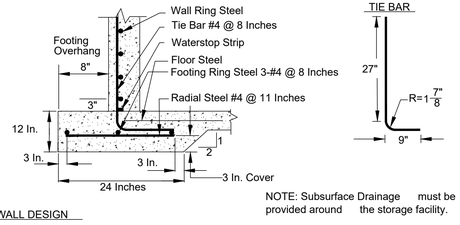
NOTE: Subsurface Drainage must be provided around the storage facility.

L DESIGN



CIRCULAR CONCRETE STORAGE FACILITY
8' DEEP 75' OR LESS IN DIAMETER

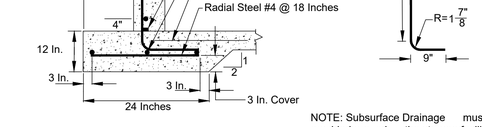
TING DESIGN



NOTE: Subsurface Drainage must be provided around the storage facility.

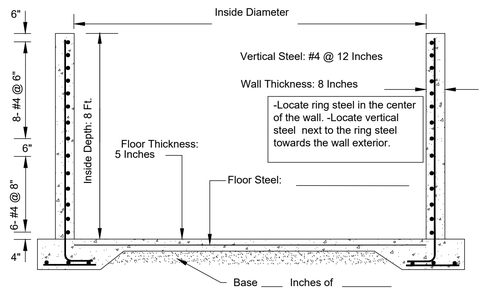
WALL DESIGN

CIRCULAR CONCRETE STORAGE FACILITY
12' DEEP 91' TO 120' IN DIAMETER



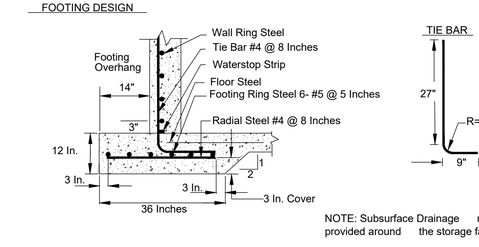
NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN



CIRCULAR CONCRETE STORAGE FACILITY
8' DEEP 76' TO 120' IN DIAMETER

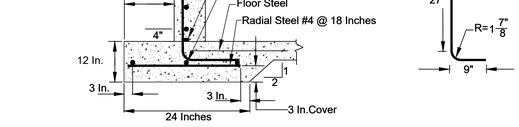
FOOTING DESIGN



NOTE: Subsurface Drainage must be provided around the storage facility.

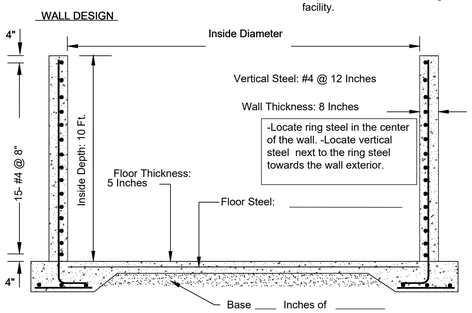
WALL DESIGN

CIRCULAR CONCRETE STORAGE FACILITY
14' DEEP 90' OR LESS IN DIAMETER



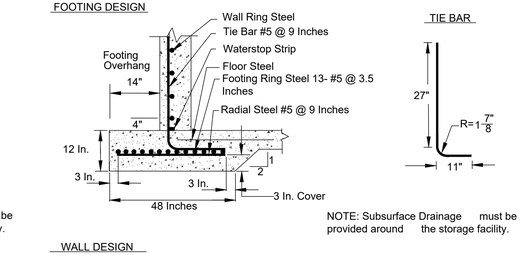
NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN



CIRCULAR CONCRETE STORAGE FACILITY
10' DEEP 75' OR LESS IN DIAMETER

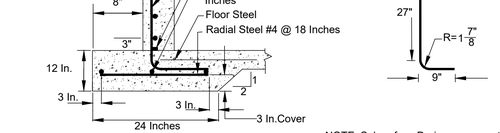
FOOTING DESIGN



NOTE: Subsurface Drainage must be provided around the storage facility.

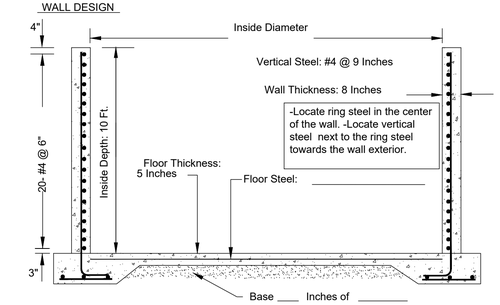
WALL DESIGN

CIRCULAR CONCRETE STORAGE FACILITY
14' DEEP 91' TO 120' IN DIAMETER

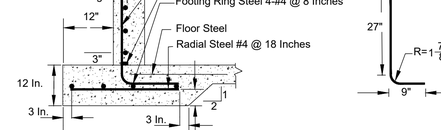


NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

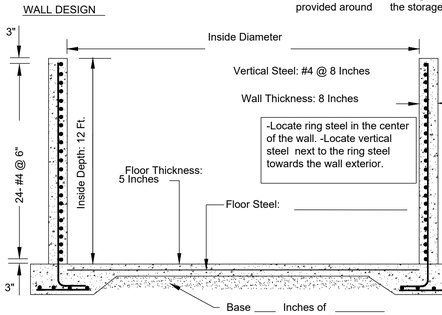


CIRCULAR CONCRETE STORAGE FACILITY
10' DEEP 76' TO 120' IN DIAMETER



NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN



CIRCULAR CONCRETE STORAGE FACILITY
12' DEEP 90' OR LESS IN DIAMETER

STANDARD RAMPED TANK SIZES
USER TO INSERT AS NEEDED

FOOTING DESIGN

NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

FOOTING DESIGN

NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

FOOTING DESIGN

NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

FOOTING DESIGN

NOTE: Subsurface Drainage must be provided around the storage facility.

WALL DESIGN

Horizontal Steel = #5 rebar		
Bar #	Spacing (in)	Distance from finished floor (ft-in)
1	3	0' 3"
2	12	1' 3"
3	12	2' 3"
4	10	3' 1"
5	8	3' 9"