



Planning Commission  
97 North Broad Street  
Hillsdale, Michigan 49242-1695  
(517) 437-6440 Fax: (517) 437-6450

**Planning Commission Agenda**  
**August 16, 2023**

- I. Call to Order 5:30 pm**
  - A. Pledge of Allegiance
  - B. Roll Call
  
- II. Public Comment**
  - Any agenda item – 3 min. limit
  
- III. Consent Items**
  - A. Approval of agenda
  - B. Approval of Planning Commission 7/19/2023 minutes
  
- IV. Site Plan Reviews**
  - A. 440 Hidden Meadows Housing Development
  
- V. Old Business**
  - A. No Old Business
  
- VI. New Business**
  - A. No New Business
  
- VII. Zoning Administrator Report**
  
- VIII. Commissioners' Comments**
  
- IX. Public Comment**
  - Any Commission related item – 3 min. limit
  
- X. Adjournment**
  - Next meeting: **Wednesday, September 20, 2023 at 5:30 pm**

**Planning Commission Meeting Minutes**  
**Hillsdale City Hall**  
**Conference Room**  
**July 19, 2023**  
**5:30 pm**

**I. Call to Order**

Meeting opened at 5:30 pm followed by the Pledge of Allegiance, and Roll Call.

**II. Members Present**

- A. Members Present: Chairman Eric Moore, Commissioner Roma Rogers, Commissioner Ron Scholl, Vice Chair Kerry Laycock, Commissioner William Morrissey, Commissioner Penny Swan, Secretary Elias McConnell
- B. Public Present: Zoning Administrator Alan Beeker, Bruce Olmstead, Donna Olmstead
- C. Members Absent:

**III. Public Comment**

No public comment.

**IV. Consent Agenda and Minutes**

Motion to approve the Consent items as presented made by Commissioner Swan, seconded by Commissioner Rogers, motion approved unanimously.

**V. Communications**

Keefer Hotel project quarterly update

**VI. Site Plan Review:**

- A. 3883 W Carleton – Silos Fun Park Laser Tag Addition
  - Silos Fun Park/Cottage Inn Pizza is proposing an addition to the existing metal building. The building and addition will become a laser tag venue for the growing fun park. The plans were submitted on July 5, 2023. City Department Heads reviewed the plans and a revised set was submitted for final review on July 11, 2023.
  - Commissioner Swan moved to approve, Commissioner Laycock seconded. Motion approved.

**VII. Old Business**

- A. Sec. 36-6 Definitions Review.
  - At the June regular meeting, the Commission discussed the review of the definitions in the zoning ordinance in order to update content and language. The Commission voted to review the definitions during the time between the June and July meetings. The Commission will discuss their comments during the July regular meeting. The section is submitted as a reference for discussion.
  - The Commissioners had no definition revisions.

**VIII. New Business**

- A. One-way Traffic conversion

- One of the goals in the City Master Plan is to convert the one-way traffic flows on Manning and West Streets back to two-way traffic flows. The goal is to request Council approve the Traffic Control Order to change the one-way streets back to two-way streets.
- Secretary McConnell asked that the Department of Public Services (DPS) consider changing the N. West St. parking btw Bacon and Westwood from the east side to the west side of the street.

**IX. Zoning Administrator Report**

- Projects currently in process and projected for next year, public and private, will total nearly \$100 million.

**X. Commissioners' Comments**

- Commissioner Laycock asked about the trees being removed on Union St. as part of the Sajak Center project. He also asked if the State had ever passed the short term rental amendments to the PZEA.

**XI. Public Comment**

No public comment.

**XII. Adjournment**

Commissioner Swan moved to adjourn the meeting, Commissioner Morrisey seconded. Motion passed unanimously. Meeting adjourned at 6:15 pm.

**XIII. Next meeting: August 16, 2023 at 5:30 pm.**



**TO: Planning Commission**

**FROM: Zoning Administrator**

**DATE: August 16, 2023**

**RE: Hidden Meadows Residential Development**

**Background: Green Development Ventures LLC is proposing a new residential development on Hidden Meadows Drive. The project would entail up to 6 semi-detached units. Each unit will consist of a two, two-story, 1600 + s.f. units with a two-car garages. The City Department heads reviewed the project with the developer on August 8, 2023. The response is included in the packet.**

August 8, 2023

Plans for the proposed Hidden Meadows Residential Development located at 440 Hidden Meadows Drive were reviewed by the City Dept. Heads on August 8, 2023. Their comments are as follows:

Present: Kristin Bauer (City Engineer), Jason Blake (Dept. of Public Services), Alan Beeker (Planning & Zoning), Jake Hammel (Board of Public Utilities), Jeff Geir (Board of Public Utilities), Baylee Girdham, Ethan Spahr, Sam Fry (Econ. Dev.).

City Engineer

- Existing retention pond part of county drain system, developer required to contact County Drain Commissioner
  - Due to recent breach issues, county approval of additional storm water volumes required.
- The new drive/street must meet city engineering specifications including curb and gutter.

Public Services

- All drives must have MDOT “L” style drive approaches
- Sidewalks must be contiguous, ADA compliant through project.

Public Safety

- No issues.

Board of Public Utilities

- Electrical:
  - No issues.
- Water
  - No meter pits permitted.
- Sanitary
  - No issues.

Planning/Zoning

- No issues.

Final drawings with all department approved revisions must be received by the Planning Dept. no later than August 15, 2023. The Planning Commission will review the drawings for final approval at the regular meeting which will be held on August 16, 2023 at 5:30 pm. The location will be at City Hall, 97 N. Broad St. in the 3<sup>rd</sup> Floor Council Chambers.



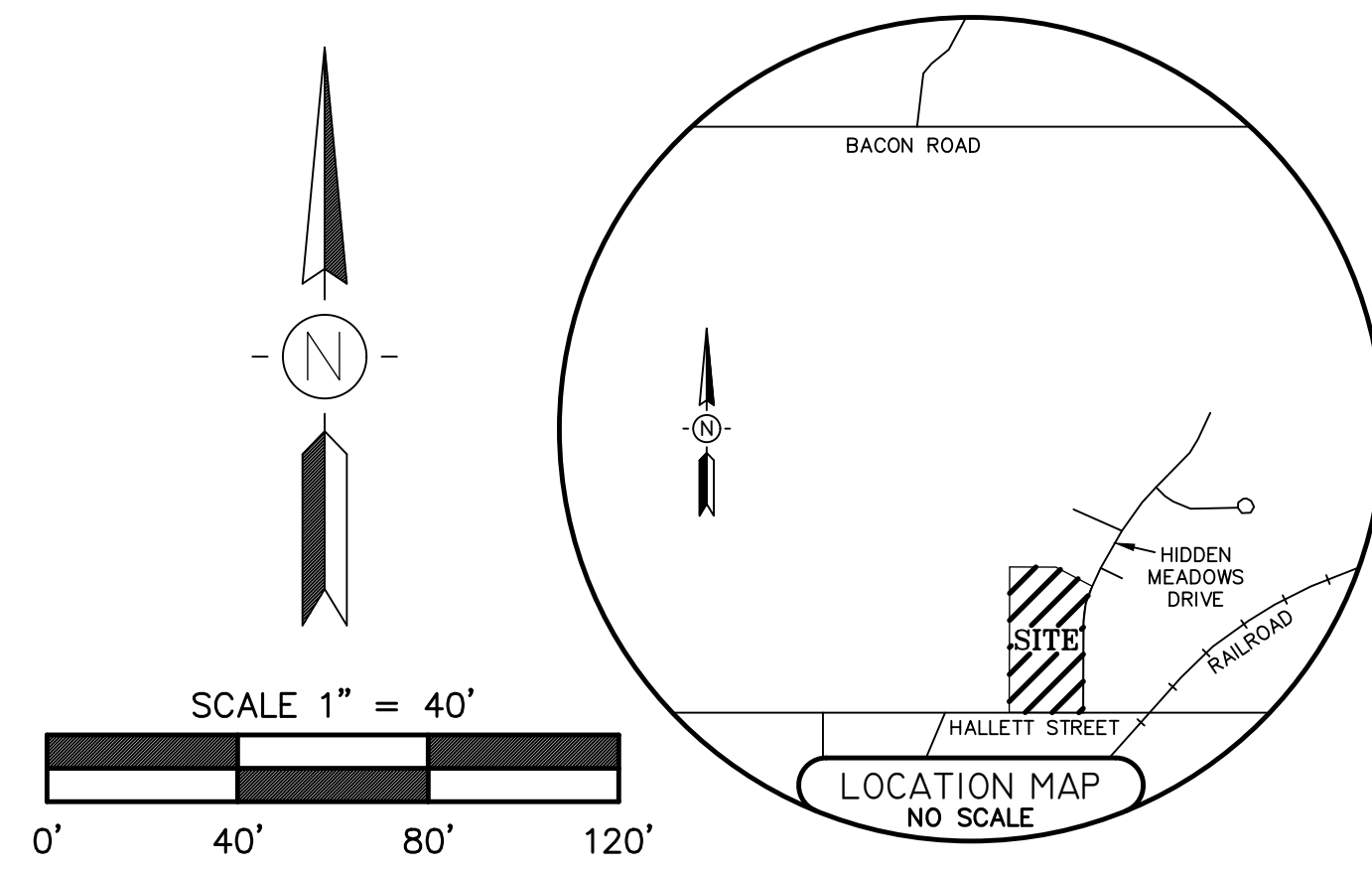


**SURVEYOR'S NOTES:**

- This plan was made at the direction of the parties named hereon and is intended solely for their immediate use. Survey prepared from fieldwork performed in June 2023.
- All bearings are Michigan State Plane South Zone grid bearings obtained from GPS observations using corrections obtained from the nearest National Geodetic Survey C.O.R.S. station.
- All dimensions shown are as-measured unless otherwise noted.
- All elevations are North American Vertical Datum of 1988 (NAVD88).
- All dimensions are in feet and decimals thereof.
- No building tie dimensions are to be used for establishing the property lines.
- All plottable easements which cross the subject property are shown per First American Title Insurance Company, Commitment No. 30-23871038-HIL, dated March 29, 2023.
- By scaled map location and graphic plotting only, this property lies entirely within Flood Zone "X", areas outside the 0.2% annual chance floodplain, according to the National Flood Insurance Program, Flood Insurance Rate Map for the City of Hillsdale, Hillsdale County, Michigan, Community Panel No. 260086 0167 D, dated February 19, 2014.
- Utilities are shown based on visible field evidence only and all underground utilities on site are subject to verification in the field by the appropriate authorities prior to use for construction. No asbuilt plans were obtained, and no MISS DIG ticket was submitted for the site.
- Wetlands, if any, not shown hereon.

# HIDDEN MEADOWS

CITY OF HILLSDALE, HILLSDALE COUNTY, MICHIGAN



**SEWER INVENTORIES**

- CATCH BASIN #100**  
RIM - 1137.14  
6" NW - 1134.38  
12" EAST - 1133.99
- CATCH BASIN #101**  
RIM - 1137.08  
12" WEST - 1133.73  
12" NE - 1133.73
- STORM MANHOLE #102**  
RIM - 1137.65  
24" NORTH - 1132.45  
36" EAST - 1130.53  
12" SW - 1133.65  
18" NW - 1130.53
- CATCH BASIN #103**  
RIM - 1149.37  
12" EAST - 1145.32
- CATCH BASIN #104**  
RIM - 1149.32  
12" WEST - 1145.92  
12" EAST - 1145.91
- STORM MANHOLE #105**  
RIM - 1149.82  
24" NORTH - 1139.01  
24" SOUTH - 1139.01  
12" WEST - 1145.22
- STORM MANHOLE #106**  
RIM - 1145.11  
18" SE - 1133.40  
18" NORTH - 1138.52
- CATCH BASIN #107**  
RIM - 1143.16  
12" NW - 1138.76  
18" SOUTH - 1138.76
- SANITARY MANHOLE #200**  
RIM - 1137.82  
8" NORTH - 1130.67  
8" SOUTH - 1130.65
- SANITARY MANHOLE #201**  
RIM - 1143.90  
8" NORTH - 1131.79  
8" SOUTH - 1131.79  
8" EAST - 1131.79  
8" WEST - 1131.79
- SANITARY MANHOLE #202**  
RIM - 1152.89  
8" NORTH - 1132.68  
8" SOUTH - 1132.68

**PROP. SAN INVENTORY**

- SAN #1**  
RIM - 1148.48  
EX. 8" S ±1132.23  
EX. 8" N ±1132.23  
8" W IE 1140.59  
8" W IE 1133.59 (DROP)
- SAN #2**  
RIM - 1149.46  
8" E IE - 1142.46

**BENCHMARKS:**

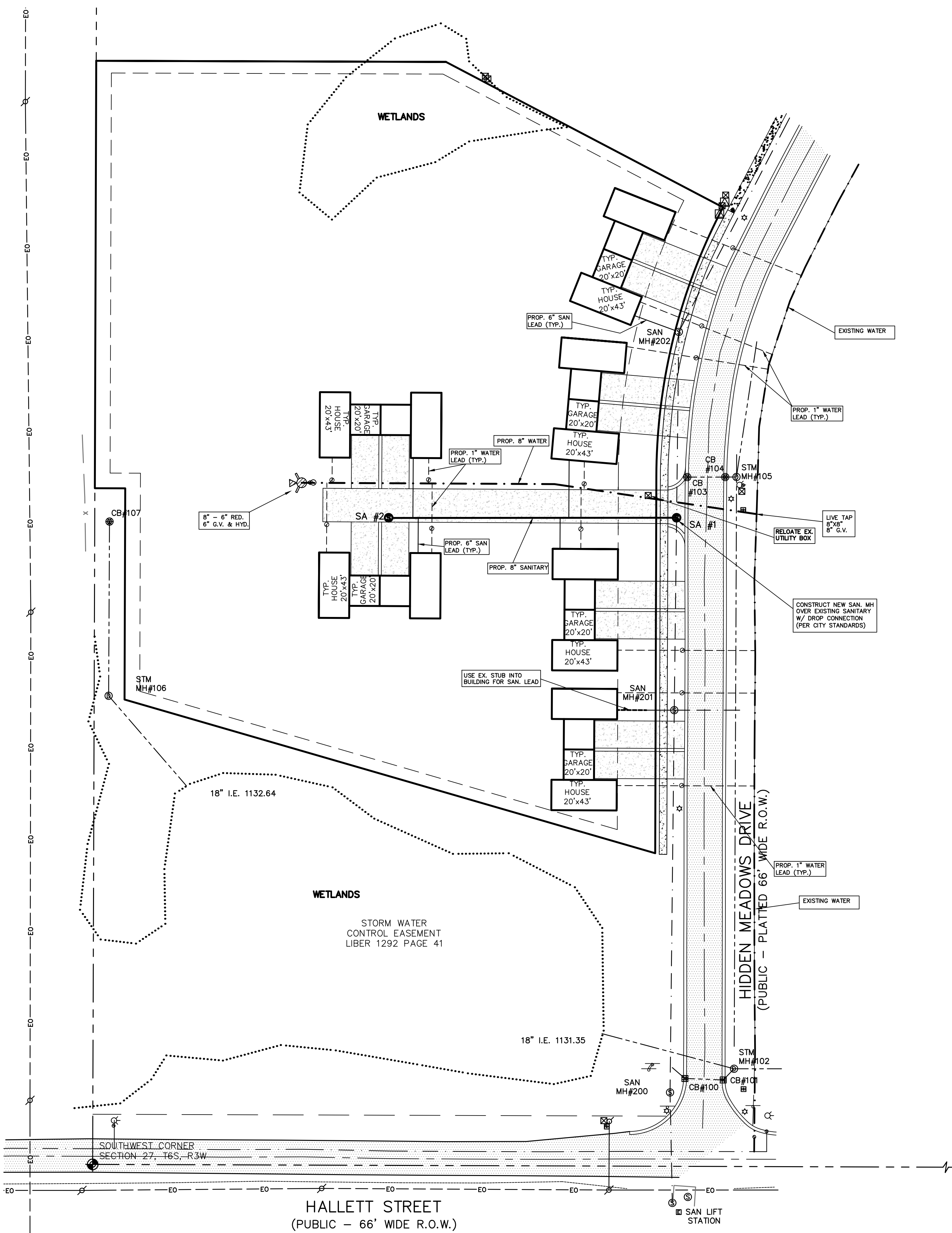
- BM#1** - ELEVATION 1150.61 (N.A.V.D.88)  
NORTHEAST FLANGE BOLT ON FIRE HYDRANT ON EAST SIDE OF HIDDEN MEADOWS DRIVE, 450'± NORTH OF HALLETT STREET
- BM#2** - ELEVATION 1139.53 (N.A.V.D.88)  
NORTHEAST CORNER OF STEEL DOOR ON LIFT STATION ON SOUTH SIDE OF HALLETT STREET NEAR SOUTHEAST CORNER OF PROPERTY

**EX. LEGEND**

- = SET 1/2" BAR WITH CAP
- = FOUND IRON AS NOTED
- = DEED LINE
- = DISTANCE NOT TO SCALE
- = FENCE
- = ASPHALT
- = CONCRETE
- = GRAVEL
- = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = SANITARY SEWER
- = STORM SEWER
- = WATER LINE
- = GAS LINE
- = UNDERGROUND TELEPHONE
- = UNDERGROUND TELEVISION
- = UNDERGROUND ELECTRIC
- = OVERHEAD WIRES
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- ⊙ = SANITARY MANHOLE
- ⊙ = DRAINAGE MANHOLE
- ⊙ = ELECTRIC MANHOLE
- ⊙ = TELEPHONE MANHOLE
- ⊙ = CATCHBASIN
- ⊙ = SANITARY CLEANOUT
- ⊙ = FIRE HYDRANT
- ⊙ = VALVE
- ⊙ = UTILITY POLE
- ⊙ = LIGHT POLE
- ⊙ = GUY POLE
- ⊙ = GUY WIRE
- ⊙ = UTILITY PEDESTAL
- ⊙ = TRANSFORMER
- ⊙ = HANDHOLE
- ⊙ = ELECTRIC METER
- ⊙ = GAS METER
- ⊙ = WATER METER
- ⊙ = SOIL BORING
- ⊙ = SIGN
- ⊙ = POST
- ⊙ = AIR CONDITIONING UNIT

**LEGEND**

- = PROPOSED WATER MAIN
- = PROPOSED SANITARY SEWER
- = PROPOSED STORM SEWER
- ⊙ = PROPOSED HYDRANT
- ⊙ = PROPOSED GATE VALVE
- ⊙ = PROPOSED SAN. M.H.
- ⊙ = PROPOSED STORM M.H.
- ⊙ = PROPOSED C.B.
- ⊙ = PROPOSED GRADES
- ⊙ = PROPOSED FIRST FLOOR ELEV.
- ▲ = PROPOSED TOP OF CURB ELEV.
- ▲ = PROPOSED TOP OF GROUND ELEV.
- ▲ = PROPOSED TOP OF PAVT ELEV.
- ▲ = PROPOSED TOP OF WALK ELEV.
- ⊙ = DENOTES S.E.S.C. KEYING SYSTEM



**LEGAL DESCRIPTION:**

Commencing at the Southwest corner of Section 27, Town 6 South, Range 3 West, City of Hillsdale, Hillsdale County, Michigan; thence North 00°06'38" West, along the West line of said Section 27, a distance of 445.00 feet to the Point of Beginning; thence North 00°06'38" West, continuing along said West line 281.31 feet; thence North 89°53'24" East, parallel with the South line of said Section 27, a distance of 230.23 feet; thence South 62°36'16" East, along the Southerly lines of Lot 1 and 2 of Three Meadows No. 1, according to the recorded plat thereof, as recorded in Liber 11 of Plats, Page 5, Hillsdale County Records, a distance of 205.93 feet (179.07 feet per record plat) to the Southeast corner of Lot 1 of said Three Meadows No. 1; thence Southwesterly along the Westerly line of Hidden Meadows Drive of said Three Meadows No. 1 on a curve to the left 183.95 feet (Radius 383 feet, Central Angle 27°31'08", Chord Bearing South 13°38'11" West 182.19 feet); thence South 00°07'22" East, continuing along said Westerly line, 248.23 feet; thence North 74°08'57" West, 363.66 feet; thence North 00°06'38" West 139.00 feet; thence South 89°53'24" West, parallel with said South section line, 20.00 feet to the Point of Beginning.



<b>REVISIONS</b> 7-17-23 PRELIMINARY SITE PLAN		<b>KEBS, INC.</b> KYES ENGINEERING BRYAN LAND SURVEYS 2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX: 517-339-8047 Marshall Office Ph. 269-781-9800	
<b>Hidden Meadows Development</b> UTILITY PLAN			
SCALE: 1" = 40' DATE: 7/17/23 AUTHORIZED BY: CHRIS KOHANE	DESIGNER: GAP PROJECT MGR. GAP	APPROVED BY: GAP SHEET 2 OF 4 JOB #: E-101300	



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CONSTRUCTION SCHEDULE & SEQUENCING:	2023												2024											
	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	
PLACE AND MAINTAIN TEMPORARY EROSION CONTROLS																								
TOPSOIL STRIPPING & STOCKPILING																								
ON-SITE UTILITIES CONSTRUCTION																								
SITE GRADING & EARTHWORK																								
ROAD CONSTRUCTION																								
TOPSOIL SPREADING																								
PERMANENT SEEDING																								
FINAL INSPECTIONS & REMOVE TEMPORARY EROSION CONTROLS																								

**SOIL TYPE:**  
10B - Hillsdale-Riddles complex, 2-6% slopes  
50B - Coloma sand, 0-2% slopes  
51 - Glendora mucky loamy sand, frequently flooded

**STREET SWEEPING NOTES:**  
HALLETT STREET AND HIDDEN MEADOWS DRIVE SHALL BE KEPT CLEAN AND FREE OF TRACKED SEDIMENT. A STREET SWEEPER OR A BOBCAT WITH A BROOM ATTACHMENT SHOULD BE KEPT ON SITE TO DEAL WITH ANY OFF-SITE TRACKING AS IT OCCURS.

**PROP. SAN INVENTORY**

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EX. 8" S ±1132.23  
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TOTAL ACRES = ±6.11 ACRES  
AREA DISTURBED = ±2.75 ACRES

DENOTES EXISTING DRAINAGE FLOW →

DENOTES PROPOSED DRAINAGE FLOW →

SILT FENCE (TYP.)

LIMITS OF EARTH DISTURBANCE (TYP.)

MICHIGAN DEPARTMENT OF MANAGEMENT AND BUDGET

**S-E-S-C KEYING SYSTEM**

KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
EB	PERMANENT SEEDING		Stabilization method utilized on sites where earth change has been completed (final grading attained).
S51	SILT FENCE		Use adjacent to critical areas, to prevent sediment laden sheet flow from entering these areas.
S53	STABILIZED CONSTRUCTION ACCESS		Used at every point where construction traffic enters or leaves a construction site.
S58	INLET PROTECTION FABRIC DROP		Use at stormwater inlets, especially at construction sites.

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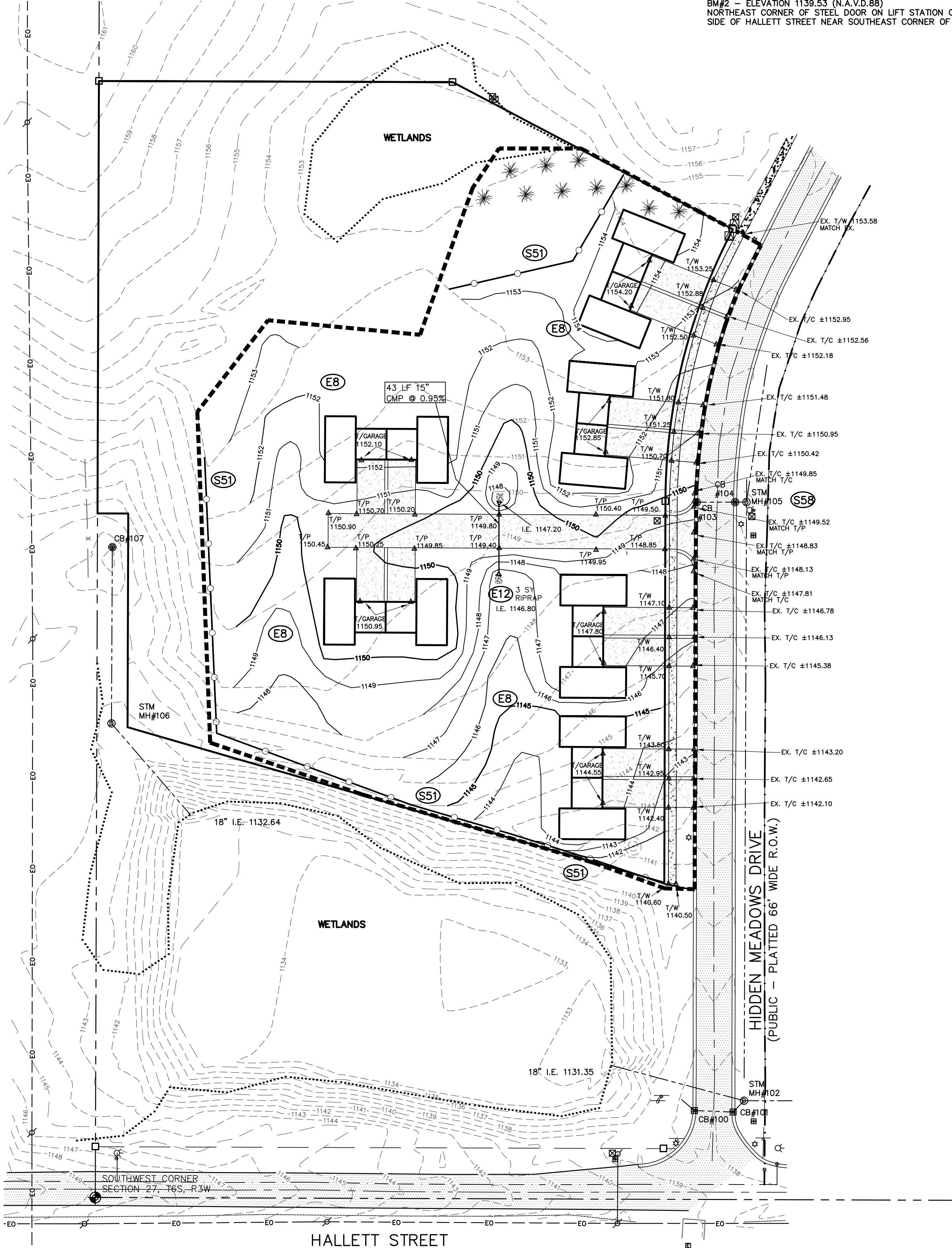
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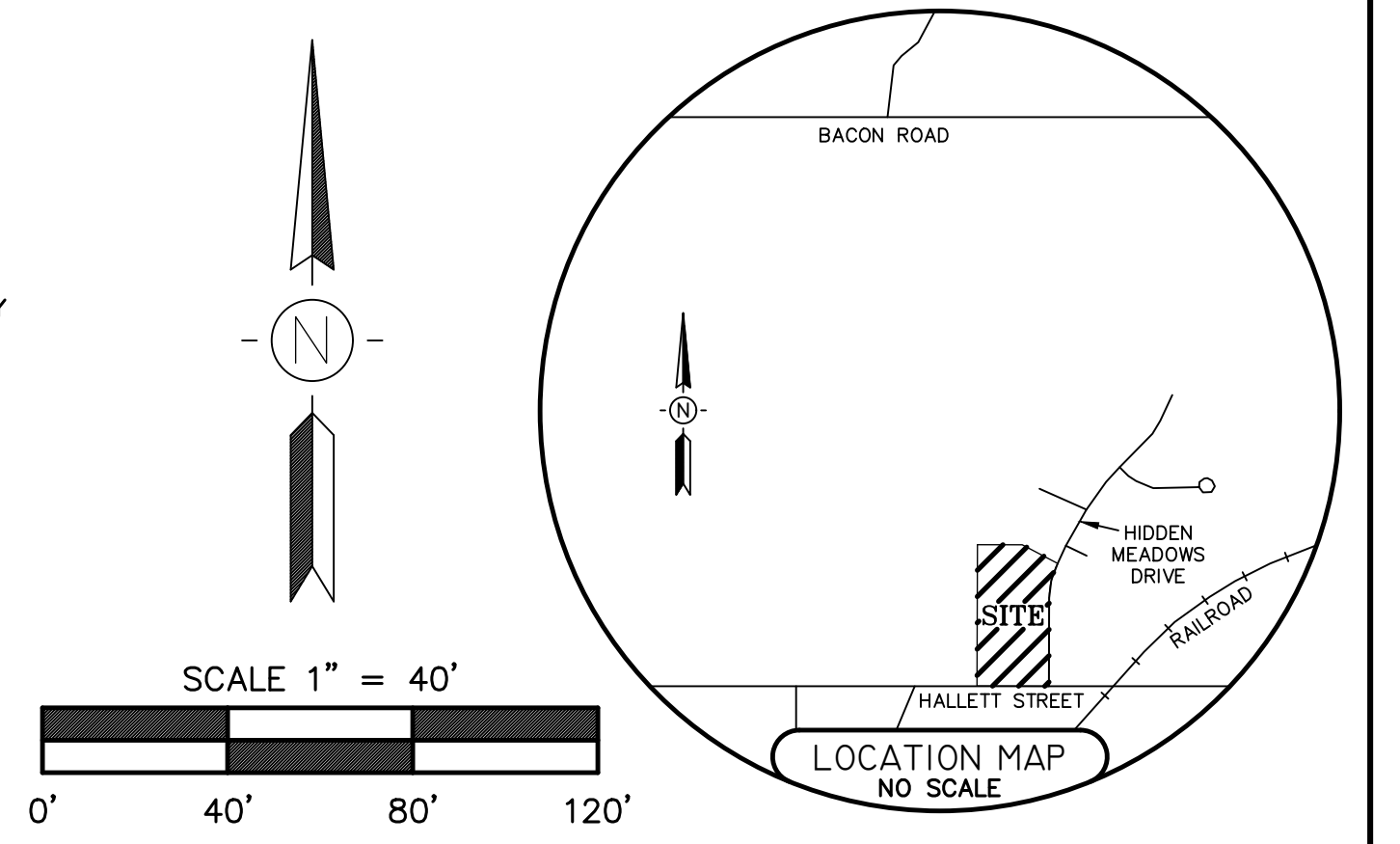
# HIDDEN MEADOWS

## CITY OF HILLSDALE, HILLSDALE COUNTY, MICHIGAN



**BENCHMARKS:**  
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- SEQUENCE OF CONSTRUCTION**
- INSTALL ALL TEMPORARY SILT FENCE PER PLAN AND AS SHOWN ON THE DETAIL SHEET.
  - CONSTRUCT THE TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT PER DETAIL.
  - INSTALL ALL INLET PROTECTION FABRIC DROP IN ALL EXISTING YARD BASINS OR INLETS WHICH MAY BE SUSCEPTIBLE TO SEDIMENT EROSION FROM THE PROPOSED CONSTRUCTION AS SHOWN IN THESE PLANS.
  - WHILE MAINTAINING A VEGETATIVE BUFFER WHENEVER POSSIBLE STRIP AND STOCKPILE TOPSOIL ABOVE AREAS OF PROPOSED EXCAVATION OR GRADING FOR LATER USE ON SITE. PLACE STOCKPILED TOPSOIL IN AREAS WHICH ARE NEITHER SUBJECT TO HIGH RUNOFF NOR ALONG STEEP SLOPES. SEED AND MULCH STOCKPILES IMMEDIATELY TO PREVENT WIND-BLOWN SEDIMENT POLLUTION AND EXCESSIVE DUST.
  - EXCAVATE FOR PROPOSED ROAD AND UTILITY CONSTRUCTION AS NECESSARY. DO NOT EXPOSE AREAS FAR IN ADVANCE OF THE PROPOSED CONSTRUCTION FOR THAT AREA. ROUGHEN AND SCABRY EXPOSED SURFACES TO REDUCE RUNOFF VELOCITY AND SEDIMENTATION. MAINTAIN VEGETATION WHENEVER POSSIBLE TO PROVIDE A NATURAL BUFFER.
  - AFTER COMPLETION OF THE PROPOSED UTILITIES, INSTALL INLET PROTECTION FABRIC DROPS IN, IN ALL INLETS. PLACE INLET PROTECTION FENCE AROUND ALL INLETS.
  - INSTALL TEMPORARY STONE FILTER BERMS PERPENDICULAR TO EXPOSED STEEP SLOPES AS NECESSARY ALONG THE PROPOSED STREETS TO REDUCE RUNOFF VELOCITY AND SEDIMENTATION. USE TEMPORARY STRAW BALE CHECK DAMS TO SLOW DOWN AND/OR DIVERT HEAVY RUNOFF WHERE NECESSARY.
  - TOPSOIL, SEED, FERTILIZE AND MULCH ALL EXPOSED AREAS AS SOON AS FEASIBLE TO PROTECT AND RESTORE PERMANENT VEGETATION.
  - WATER EXPOSED GROUND REGULARLY TO CONTROL AIRBORNE PARTICULATE MATTER.
  - THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS AND UNTIL PERMANENT VEGETATION IS REESTABLISHED IN ALL EXPOSED AREAS. REMOVE ACCUMULATED SEDIMENT FROM ALL STRUCTURES.
  - THE SITE WILL BE PERIODICALLY INSPECTED BY THE HILLSDALE COUNTY DRAIN OFFICE AND/OR THE CITY OF HILLSDALE. CONTRACTOR SHALL BECOME FAMILIAR WITH THE RULES AND REGULATIONS OF THOSE AGENCIES.
  - AFTER FINAL APPROVED INSPECTION OF THE COMPLETED CONSTRUCTION BY ALL REVIEWING AGENCIES, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES.
- SOIL EROSION CONTROL NOTES:**
- ALL SOIL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE HILLSDALE COUNTY DRAIN COMMISSION AND THE CITY AND PROJECT SPECIFICATIONS.
  - DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
  - ANY EROSION OR SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS, OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
  - CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND AS DIRECTED ON THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER EARTH CHANGES HAVE BEEN ESTABLISHED.
  - A MINIMUM 50' LONG BY 20' WIDE, 6" DEEP CLEAN STONE EXIT SHALL BE PROVIDED AT ALL CONSTRUCTION ENTRANCES. SHOULD THE STONE BECOME LESS EFFICIENT IT SHALL BE REPLACED. ALL CONSTRUCTION TRAFFIC WILL USE THE CLEAN STONE EXITS.
  - DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTOR. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.

REVISIONS	DATE	BY	DESCRIPTION
7-17-23 PRELIMINARY SITE PLAN			

**KEBS, INC.** KYES ENGINEERING  
BRYAN LAND SURVEYS  
2116 HASLETT ROAD, HASLETT, MI 48840  
PH. 517-339-1014 FAX. 517-339-8047

Marshall Office  
Ph. 269-781-9800

**Hidden Meadows**  
GRADING AND SESC

SCALE: 1" = 40'

DATE: 7/17/23

AUTHORIZED BY: CHRIS KOHANE

DESIGNER: GAB

PROJECT MGR. GAB

APPROVED BY: GAB

SHEET 3 OF 4

JOB # E-101300



**E8 PERMANENT SEEDING SPECIFICATIONS**

**When**

- To finalize stabilization of temporary seeding areas or when an area needs permanent stabilization following completion of construction.
- Also used when vegetative establishment can correct existing soil erosion or sedimentation problem.
- Within 5 days of final grade.

**Why**

- To stabilize soil and prevent or reduce soil erosion/sedimentation problems from developing.

**Where**

- Used on construction and earth change sites which require permanent vegetative stabilization.

**How**

- Review SECS plan and construction phasing to identify areas in need of permanent vegetative stabilization.
- Select perennial grass and ground cover for permanent cover.
- Seed mixes vary. However, they should contain native species.
- Seed mixes should be selected through consultation with a certified seed provider and with consideration of soil type, light, moisture, use applications, and native species content.
- Soil tests should be performed to determine the nutrient and pH levels in the soil. The pH may need to be adjusted to between 6.5 and 7.0.
- Prepare a 3-5" deep seedbed, with the top 3-4" consisting of topsoil.
- Slopes steeper than 1:3 should be roughened.
- Apply seed as soon as possible after seedbed preparation. Seed may be broadcast by hand, hydroseeding, or by using mechanical drills.
- Mulch immediately after seeding.
- Dormant seed mixes are for use after the growing season, using seed which lies dormant in the winter and begins growing as soon as site conditions become favorable.



**E8 PERMANENT SEEDING SPECIFICATIONS (cont.)**

**How (cont.)**

- Protect seeded areas from pedestrian or vehicular traffic.
- Divert concentrated flows away from the seeded area until vegetation is established.

**Maintenance**

- Inspect weekly and within 24 hours following each rain event in the first few months following installation to be sure seed has germinated and permanent vegetative cover is being established.
- Add supplemental seed as necessary.

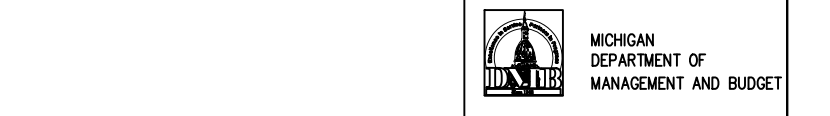
**Limitations**

- Seeds need adequate time to establish.
- May not be appropriate in areas with frequent traffic.
- Seeded areas may require irrigation during dry periods.
- Seeding success is site specific, consider mulching or sodding when necessary.

**PERMANENT SEEDING SPECIFICATION**

SEED ALL DISTURBED AREAS WITH THE FOLLOWING SEED MIXTURE OR APPROVED EQUAL. MICHIGAN GREEN - 15% BLUEGRASS, 40% FESCUE, 45% RYEGRASS. APPLY AT A RATE OF 5 LBS./1000 SF.

**APPLY SILT STOP OR APPROVED TACKIFIER TO SEED MIX.**



**E8 PERMANENT SEEDING**

Planting Zones:	Lower Peninsula (South of 120N) Zone 1	Lower Peninsula (North of 120N) Zone 2	Upper Peninsula Zone 3
Seeding Window (Permanent Seeding)	4/15 - 10/10	5/1 - 10/1	5/1 - 9/20
Seeding Window (Dormant Seeding)	11/15 - Freeze	11/01 - Freeze	11/01 - Freeze

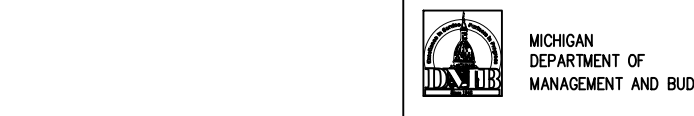
Source: Adapted from MDT Interim 2003 Standard Specifications for Construction

Seeding Dates (with Irrigation or Mule)	Zone 1 (South of U.S. 10)	Zone 2 (North of U.S. 10)	Zone 3 (Upper Peninsula)
4/1 - 8/1	5/1 - 9/20	5/1 - 9/10	
8/10 - 10/1	8/1 - 9/20	8/1 - 9/20	

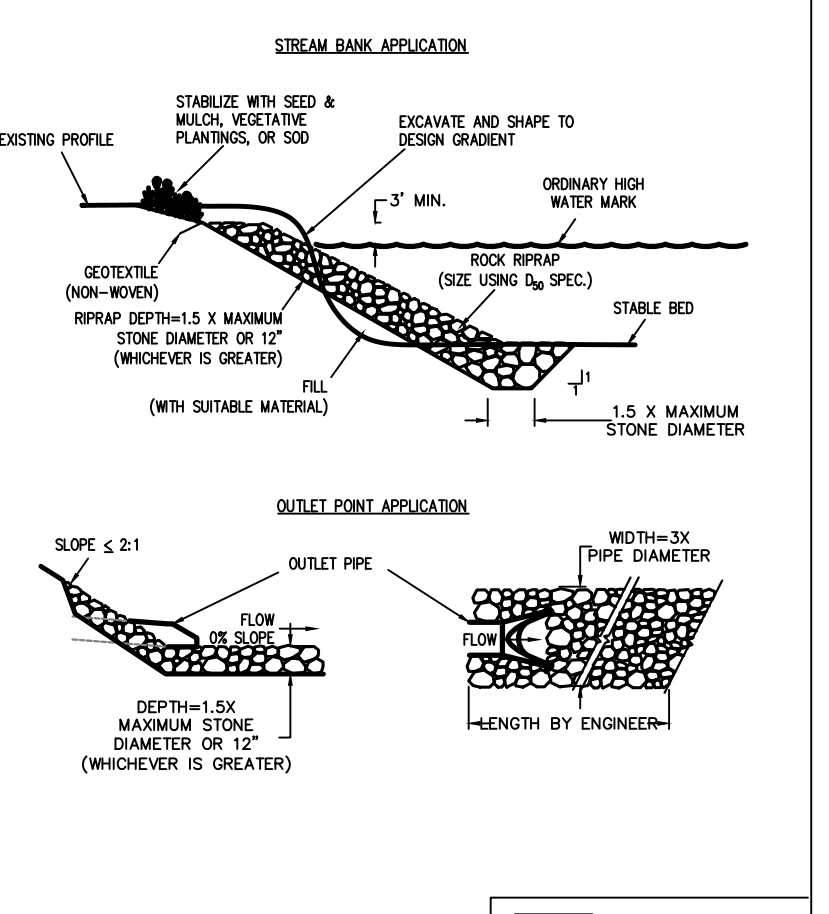
Source: Adapted from USDA NRCS Technical Guide #342 (1999)

\* Dormant seeding is for use in the late fall after the soil temperature remains consistently below 50°F, prior to the ground freezing. This practice is appropriate if construction on a site is completed in the fall but the seed was not planted prior to recommended seeding dates. No seed germination will take place until spring. A cool season annual grass may be added in an attempt to have some fall growth.

- Mulch must be used with dormant seed.
- Do not seed when the ground is frozen or snow covered.
- Do not use a dormant seed mix on grassed waterways.



**E12 RIPRAP**



**E12 RIPRAP SPECIFICATIONS**

**When**

- When concentrated water flows have the potential to create scour, down-cutting, or lateral cutting.

**Why**

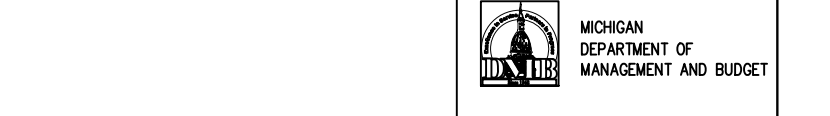
- To prevent loss of land or damage to utilities or structures. In aquatic applications, riprap is used to control channel meander and maintain capacity, protect against wave attack, and reduce sediment load.

**Where**

- In natural or constructed channels with areas susceptible to erosion from the action of water, ice, or debris, or to damage by livestock or vehicular traffic.
- In shoreline areas where the erosion problem may be solved through simple structural measures.
- On slopes with profiles measuring 1:1.5 or less.

**How**

- Review subject site to identify areas subject to concentrated flows or wave/current attack.
- The appropriateness and extent of riprap placement is site specific and should be determined in the field.
- The area under review for riprap placement must be shaped and contoured appropriately by grading prior to material placement.
- Non-woven geotextile fabric should be installed prior to riprap placement, with upper end and toe end of fabric buried or anchored to prevent movement.
- Riprap placement should be started at a stabilized location and ended at a stabilized or contoured point.
- Material selected for riprap should be hard, angular, and resistant to weathering. Appropriate material size depends on expected water energy and intended function of the material.



**E12 RIPRAP SPECIFICATIONS (cont.)**

**How (cont.)**

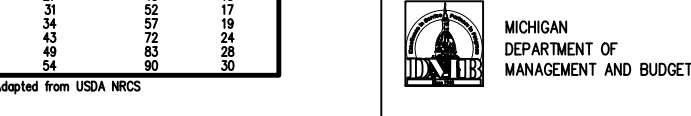
- Riprap mixture should be an even mixture of stone sizes based on the average, or  $D_{50}$ . This means 50% of the stones, by size, will be larger than the diameter specified, and 50% will be smaller than the size specified. The diameter of the largest stone should not be more than 1.5 times the  $D_{50}$  stone size.
- See table on the following page for typical riprap stone sizes.
- Rock shall be placed so that larger rocks are uniformly distributed and in contact with one another. Smaller rocks should fill the voids.
- When in contact with moving water, riprap will tie into a stable bank at the downstream end and will be keyed into the bank at the upstream end. Riprap should extend 3 ft. above the ordinary high water mark or to the top of the bank on short slopes. Extend riprap a minimum 10 ft. beyond active erosion area.

**Maintenance**

- All installations should be inspected immediately after the first rainfall to confirm the stability of the placed material. Follow-up inspections should occur regularly and provisions made for prompt repair if needed.

**Limitations**

- Area is cleared prior to the addition of riprap, therefore no areas are preserved with native vegetation.



**SIZE OF TYPICAL RIPRAP STONES**

Weight (lbs)	Average Spherical Diameter (in)	Typical Rectangular Shape Length (in)	Typical Rectangular Shape Width (in)
50	10	12	8
100	15	18	12
200	20	24	16
300	25	30	20
400	30	36	24
500	35	42	28
600	40	48	32
700	45	54	36
800	50	60	40
900	55	66	44
1000	60	72	48

Source: Adapted from USDA NRCS

**S51 SILT FENCE SPECIFICATIONS**

**When**

- A temporary measure for preventing sediment movement.

**Why**

- Used to prevent sediment suspended in runoff from leaving an earth change area.

**Where**

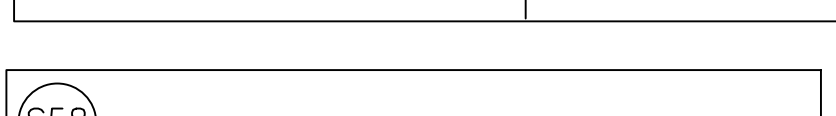
- Use adjacent to critical areas, wetlands, base of slopes, and watercourses.

**How**

- Install parallel to a contour.
- The silt fence should be made of woven geotextile fabric.
- Silt fence should accommodate no more than 1/2 to 1 acre of drainage per 100' of fence and on slopes less than 1:2 (v:h).
- Dig a 6" trench along the area where the fence is to be installed.
- Place 6" of the silt fence bottom flap into the trench.
- Backfill the trench with soil and compact the soil on both sides. Create a small ridge on the up-slope side of the fence.
- Install wooden stakes 6 - 10' apart and drive into the ground a minimum of 12".
- Staple the geotextile fabric to the wooden stakes.
- Join sections of silt fence by wrapping ends together (See drawing).

**Maintenance**

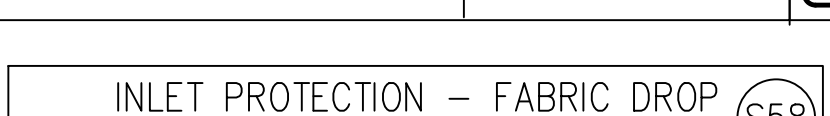
- Inspect frequently and immediately after each storm event. Check several times during prolonged storm events. If necessary, repair immediately.
- If the sediment has reached 1/3 the height of the fence, the silt should be removed and disposed of in a stable upland site.
- The fence should be re-installed if water is seeping underneath it or if the fence has become ineffective.
- Silt fence should be removed once vegetation is established and up-slope area has stabilized.



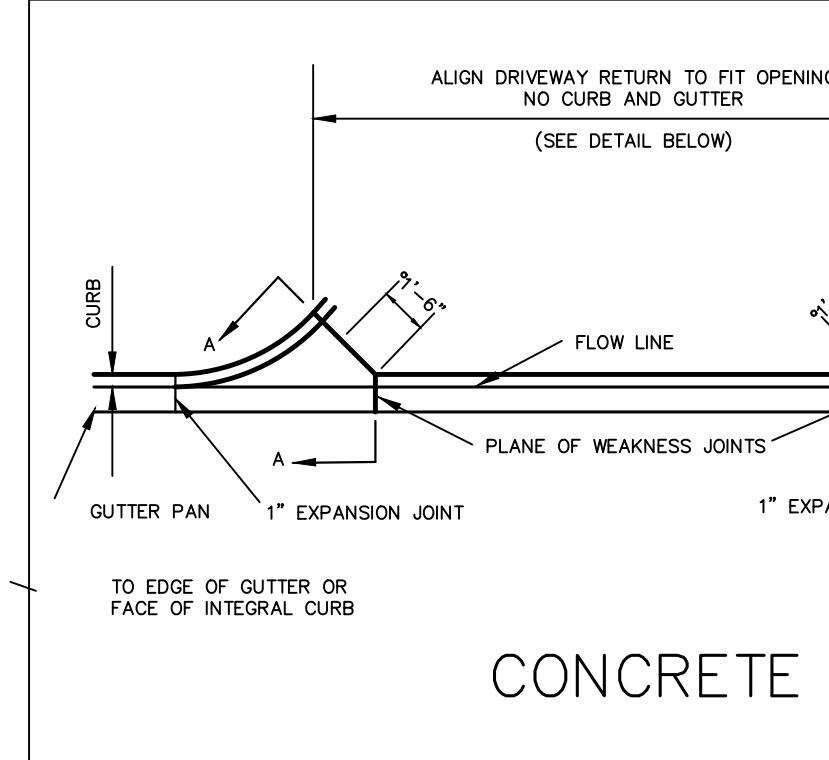
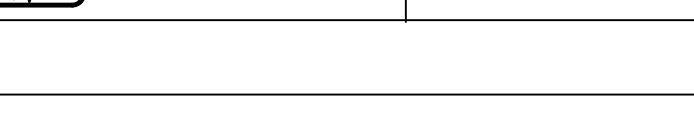
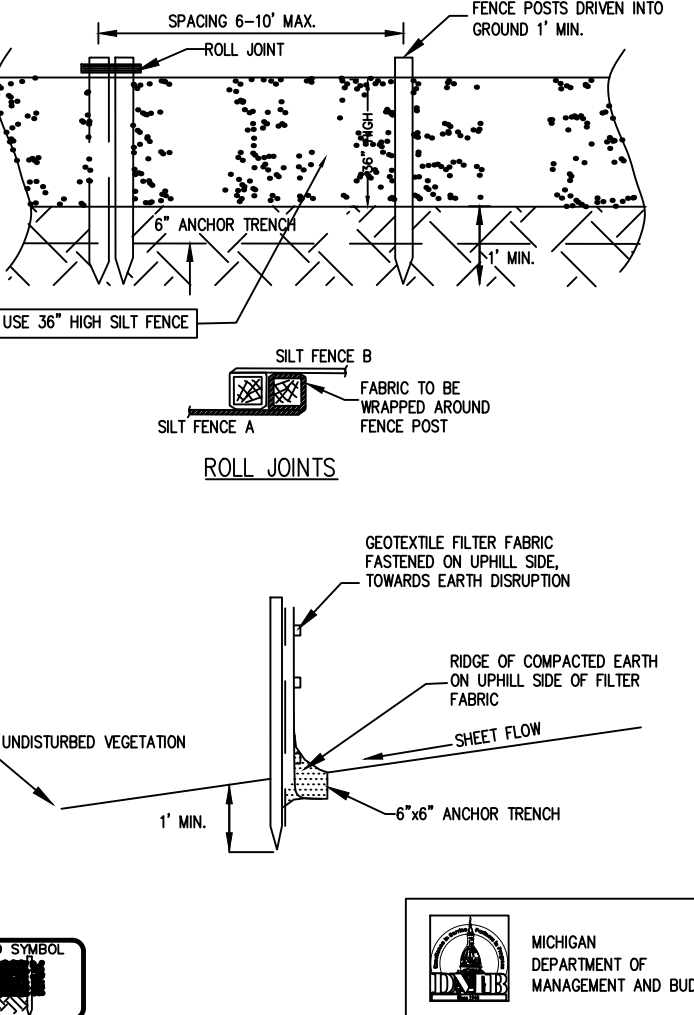
**S51 SILT FENCE SPECIFICATIONS**

**Limitations**

- Silt fence may cause temporary ponding and could fail if too much water flows through the area.
- Do not use in areas with concentrated flows.
- Chance of failure increases if fence is installed incorrectly or if sediment accumulation is not removed.

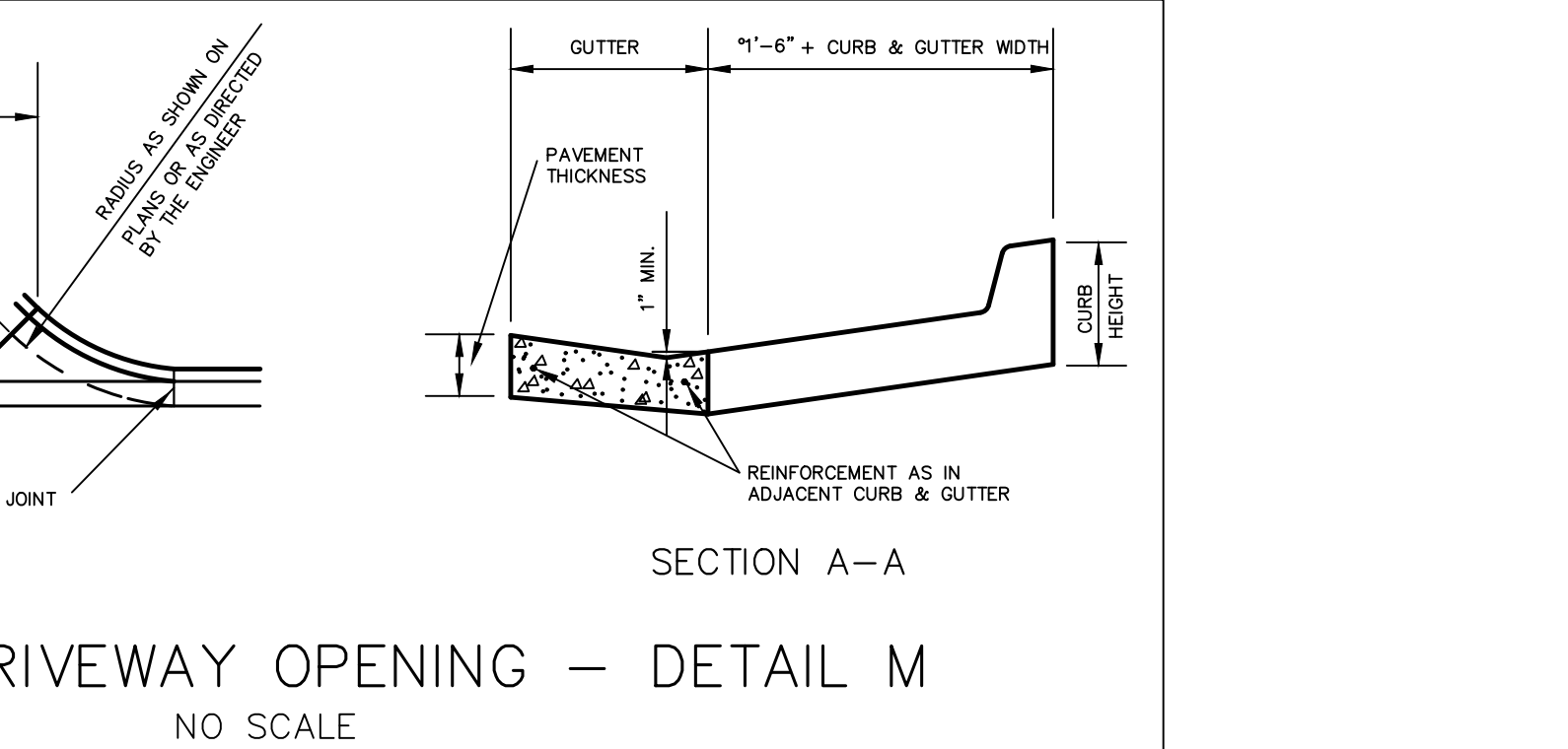


**S51 SILT FENCE**



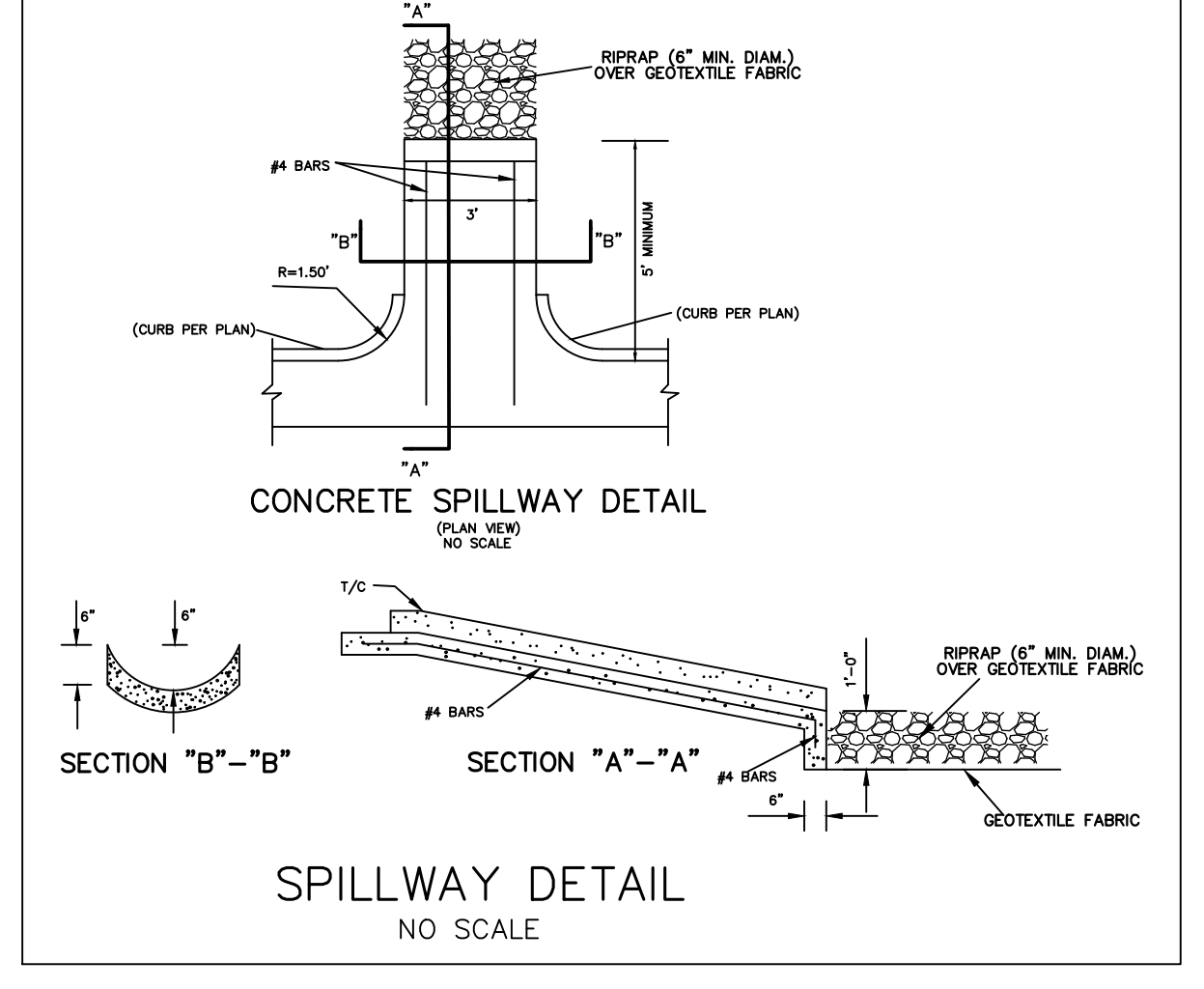
**CONCRETE DRIVEWAY OPENING - DETAIL M**  
NO SCALE

NOTE:  
FOR 8" DIA. SEWERS WITH DROP CONNECTION, THE DROP PIPE SHALL BE 8" DIA. FOR SEWERS 10" AND LARGER, THE DROP PIPE SHALL BE ONE SIZE SMALLER THAN THE MAIN LINE.

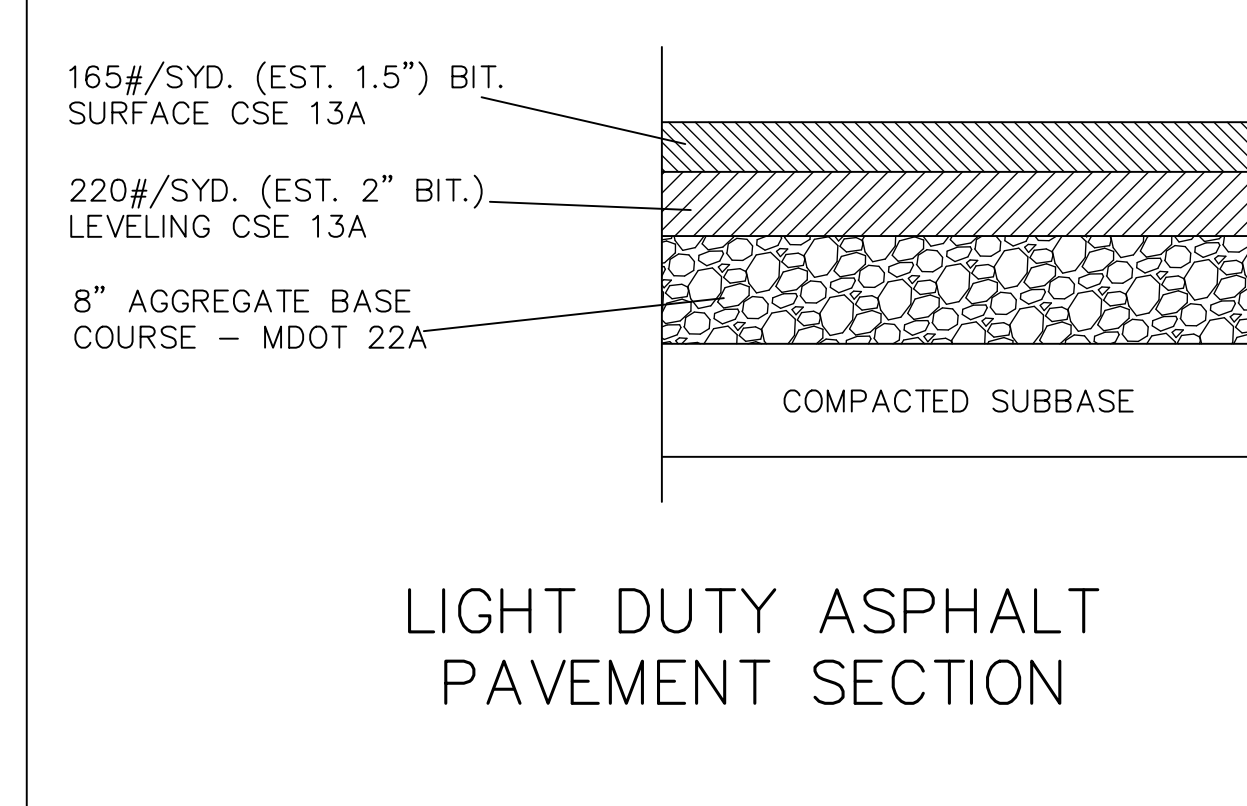


**SECTION A-A**  
NO SCALE

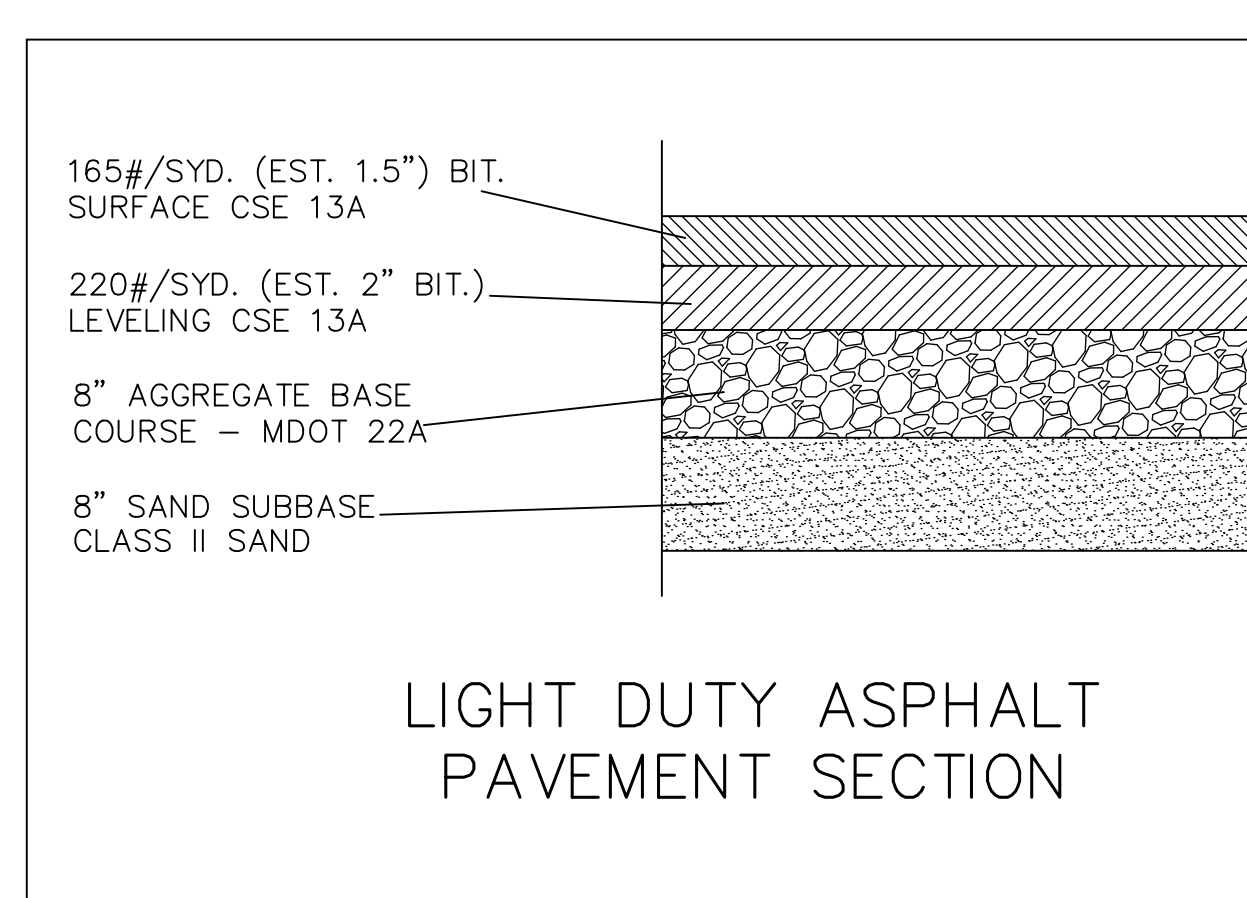
NOTE:  
FOR 8" DIA. SEWERS WITH DROP CONNECTION, THE DROP PIPE SHALL BE 8" DIA. FOR SEWERS 10" AND LARGER, THE DROP PIPE SHALL BE ONE SIZE SMALLER THAN THE MAIN LINE.



**CONCRETE SPILLWAY DETAIL**  
NO SCALE

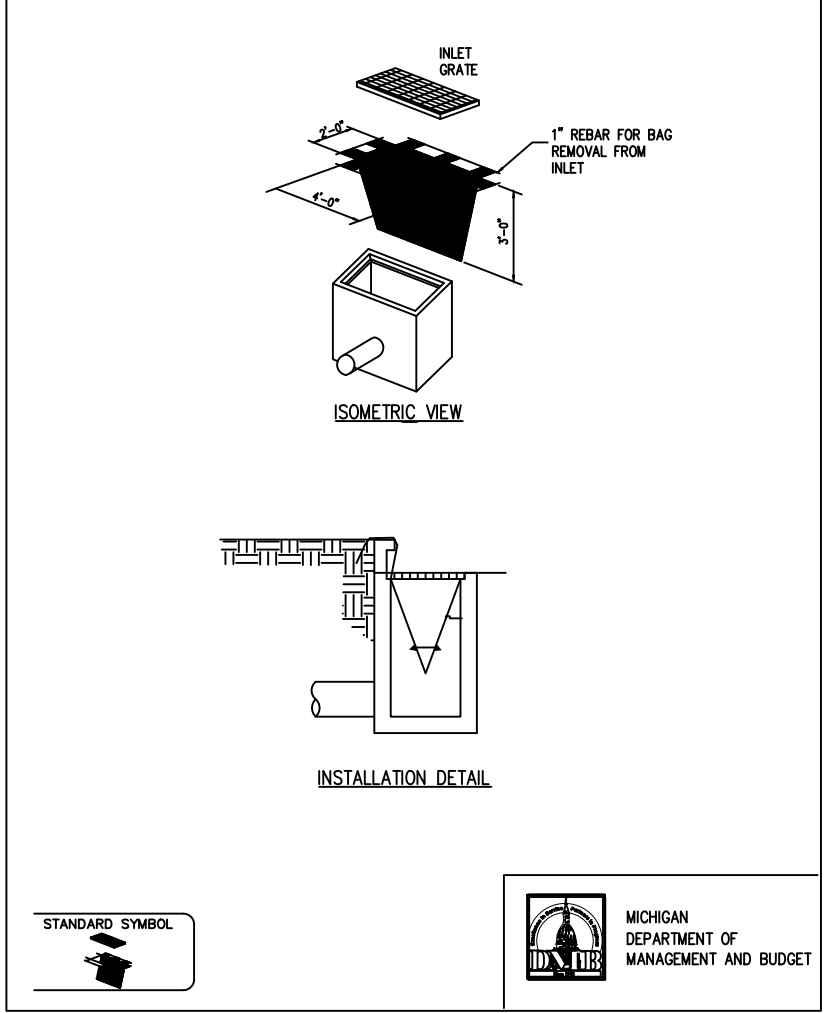


**LIGHT DUTY ASPHALT PAVEMENT SECTION**



**LIGHT DUTY ASPHALT PAVEMENT SECTION**

**S58 INLET PROTECTION - FABRIC DROP**



**INSTALLATION DETAIL**



**S58 INLET PROTECTION - FABRIC DROP SPECIFICATIONS**

**When**

- When sediment laden stormwater requires treatment before entering a stormwater drainage system.

**Why**

- To prevent sediment from entering stormwater systems.

**Where**

- Use in or at stormwater inlets, especially at construction sites or in streets.

**How**

- A filter fabric bag is hung inside the inlet, beneath the grate.
- Replace grate, which will hold bag in place.
- Anchor filter bag with 1" rebar for removal from inlet.
- Flaps of bag that extend beyond the bag can be buried in soil in earth areas.

**Maintenance**

- Drop inlet filters should be inspected routinely and after each major rain event.
- Damaged filter bags should be replaced.
- Clean and/or replace filter bag when 1/2 full.
- Replace clogged fabric immediately.
- If needed, initiate repairs immediately upon inspection.
- Remove entire protective mechanism when upgradient areas are stabilized and streets have been swept.

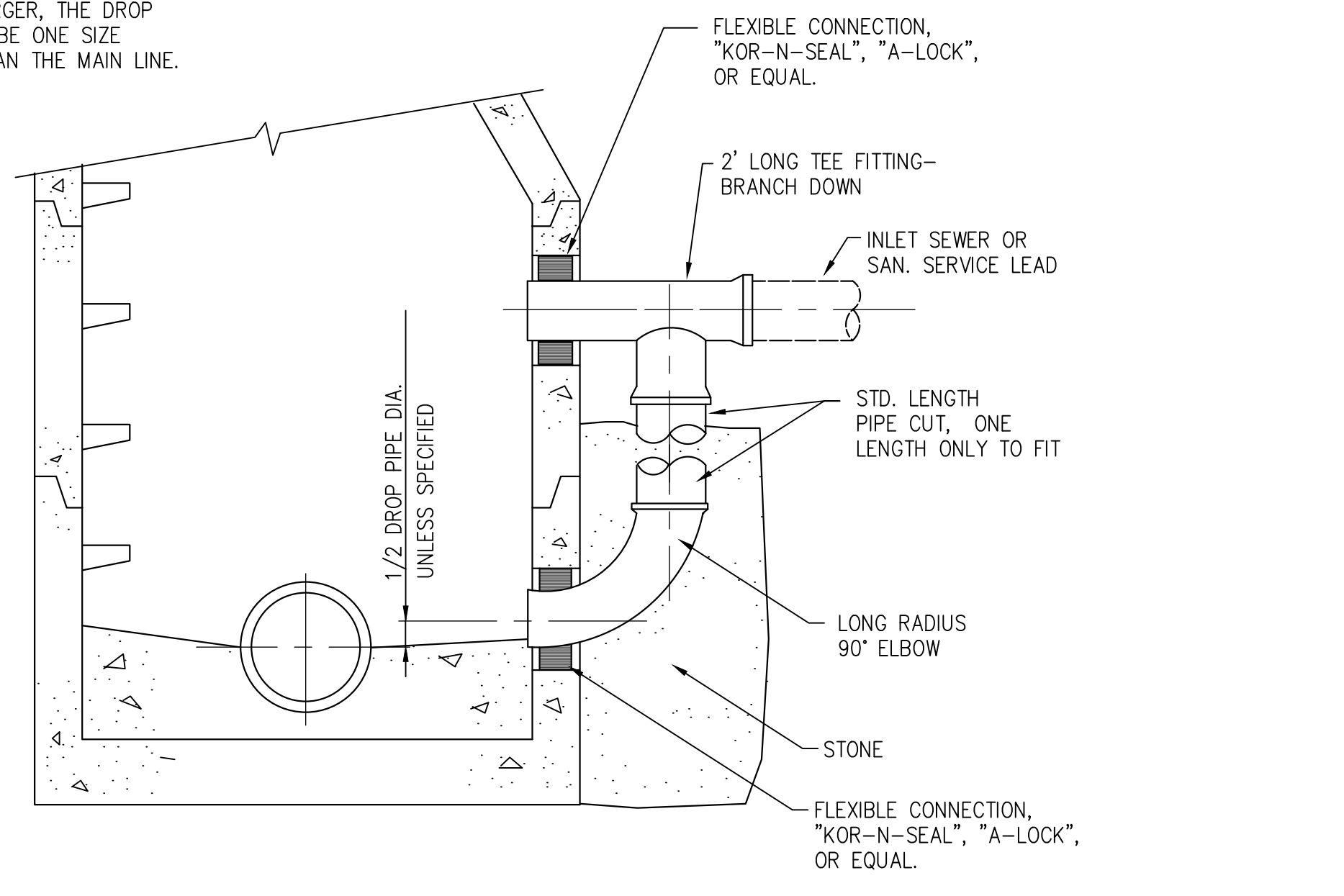
**Limitations**

- Can only accommodate small flow quantities.
- Requires frequent maintenance.
- Ponding may occur around storm drains if filter is clogged.



**LANDSCAPE NOTES**

- INSTALL 3" X 12 GA. EDGING TO SEPARATE LAWN FROM PLANTING BED. (AROUND SHRUBS ONLY)
- INSTALL 1" DEEP SHREDDED BARK MULCH TO ALL PLANTING AREAS/BEDS AND TREE SAUCERS (NO POLY-FILM)
- INSTALL A GRASS NATIVE TO THE MIDWEST (SUN/SHADE VARIETY). PROVIDE SOD OR SEED, APPLY AT A RATE OF 2-3 LBS. PER 1,000 SF. (HYDROSEEDING IS THE RECOMMENDED APPLICATION FOR SEED)
- CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES, AS WELL AS THE LOCATION OF EXISTING TREES AND VEGETATION. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE/REMOVAL OF SAID ELEMENTS.
- ANY DISCREPANCIES BETWEEN PLANS, NOTES, DETAILS AND EXISTING CONDITIONS SHALL BE IMMEDIATELY REPORTED TO THE OWNER'S AUTHORIZED REPRESENTATIVE FOR REVIEW AND DECISION. CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING MATERIALS/IMPROVEMENTS, DAMAGED DURING CONSTRUCTION.
- SITE BOUNDARY, TOPOGRAPHY, UTILITIES AND OTHER BASE INFORMATION PROVIDED BY OTHERS.
- CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT SCHEDULES AND THOSE INDICATED ON PLANS. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF QUANTITIES DRAWN.
- CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO PLANT MATERIAL LOCATIONS IN FIELD, AS NECESSARY. THE LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE OWNER'S AUTHORIZED REPRESENTATIVE.
- ALL PLANT MATERIAL SHALL BE OF THE SIZES CALLED FOR IN THE PLANT SCHEDULES. ANY PLANT MATERIAL NOT MEETING THE SIZED AND/OR QUALITY AS CALLED FOR SHALL BE REMOVED FROM SITE. ALL TREES SHALL BE INSPECTED AND APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE. NO SUBSTITUTIONS OF PLANT MATERIAL SHALL BE MADE WITHOUT APPROVAL FROM THE OWNER'S AUTHORIZED REPRESENTATIVE.
- ALL PROPOSED TREES OVER 2" CAL. SHALL BY GUIDED/STAKED SECURE. SEE EVERGREEN TREE PLANTING/GUYING DETAIL, OR DECIDUOUS TREES PLANTING/STAKING DETAIL WHERE APPLICABLE.
- ALL PLANTING BEDS TO BE TREATED WITH PRE-EMERGENT HERBICIDE. CONTRACTOR SHALL INSURE THAT PROPOSED PLANT MATERIAL IS RESISTANT TO THE HERBICIDE PROPERTIES AND THAT HERBICIDE APPLICATION FOLLOWS THE MANUFACTURER'S SPECIFICATIONS AND IS APPLIED IN ACCORDANCE WITH SOUND HORTICULTURAL PRACTICES.
- CONTRACTOR SHALL DETERMINE APPROPRIATE PLANTING BACKFILL MIXES (BASED ON SOIL/SUBSURFACE CONDITIONS) AND REVIEW ALTERNATIVES WITH OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION.



**STANDARD DROP PIPE DETAIL**  
NO SCALE

<p>REVISIONS</p> <p>7-17-23 PRELIMINARY SITE PLAN</p>	<p><b>KEBS, INC.</b> KYES ENGINEERING BRYAN LAND SURVEYS</p> <p>2116 HASLETT ROAD, HASLETT, MI 48840 PH. 517-339-1014 FAX. 517-339-8047</p> <p>Marshall Office Ph. 269-781-9800</p>
<p>Hidden Meadows Development</p> <p>DETAILS</p>	
<p>SCALE: 1"= 50'</p> <p>DATE: 7/17/23</p> <p>AUTHORIZED BY: CHRIS KOHANE</p>	<p>DESIGNER: GAP</p> <p>PROJECT MGR. GAP</p> <p>APPROVED BY: GAP</p> <p>SHEET 4 OF 4</p> <p>JOB #: E-101300</p>