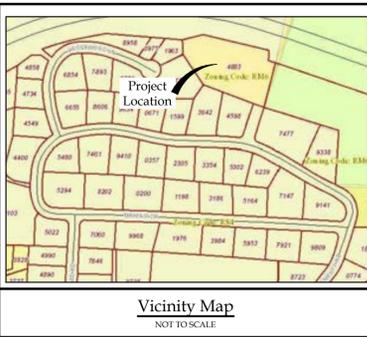
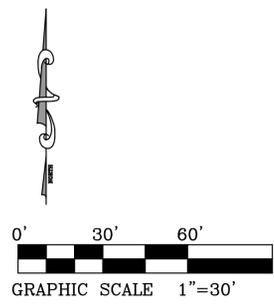


**STORM DRAINAGE STRUCTURE SCHEDULE**

DRAINAGE STRUCTURE	TYPE	TOP ELEVATION	INV. ELEV.
A1	CURB INLET	2108.7	2105.7
A2	CURB INLET	2106.0	2103.0
A3	CURB INLET	2103.5	2099.0
A4	DIVERSION BOX	2103.0	2098.0
A5	DETENTION CONTROL	2102.0	2097.0
A6	OUTLET	----	2096.5

**STORM DRAINAGE PIPE SCHEDULE**

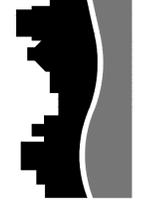
PIPE	MATERIAL	LENGTH (FT)	SIZE (IN)	SLOPE
A1-A2	HDPP	118 LF	15"	0.0229
A2-A3	HDPP	137 LF	15"	0.0329
A3-A4	HDPP	2 LF	15"	0.0500
A5-A6	HDPP	18 LF	15"	0.0278



**DEVELOPMENT DATA BLOCK**

OWNER/DEVELOPER:	SYNERGY SOLAR, INC.
CONTACT:	KENNETH L. CRYDERMAN
PHONE:	828.230.6166
ADDRESS:	4 MAYFAIR DRIVE CANDLER, NC 28715
PIN:	9617-07-1883
PHYSICAL ADDRESS:	19 MAYFAIR DRIVE CANDLER, NC 28715
ZONING:	RM-6
PROPERTY SIZE:	2.73 ACRES
LAND DISTURBANCE:	79,623.43 SF (1.83 AC)
PERVIOUS AREAS:	
PRE DEVELOPMENT:	
IMPERVIOUS AREA =	5662.8 SQ. FT. (0.13 AC)
% SITE IMPERVIOUS =	9%
PERVIOUS AREA =	53256.0 SQ. FT. (2.60 AC)
% SITE PERVIOUS =	95%
POST DEVELOPMENT:	
IMPERVIOUS AREA =	23522.60 SQ. FT. (0.54 AC)
% SITE IMPERVIOUS =	10.78%
PERVIOUS AREA =	95396.40 SQ. FT. (2.19 AC)
% SITE PERVIOUS =	80.22%
INCREASE/DECREASE:	
INCREASE AREAS =	17,859.80 SQ. FT. (0.41 AC)
% INCREASE =	H.78%
SOILS:	CLUC 48.3%, EVD2 51.7%

**Davis Civil Solutions, PA**  
 Site Infrastructure • Engineering / Planning  
 135-A Charlotte Highway Asheville, North Carolina 28803  
 828.299.9449 P1 • www.daviscivilsolutions.com



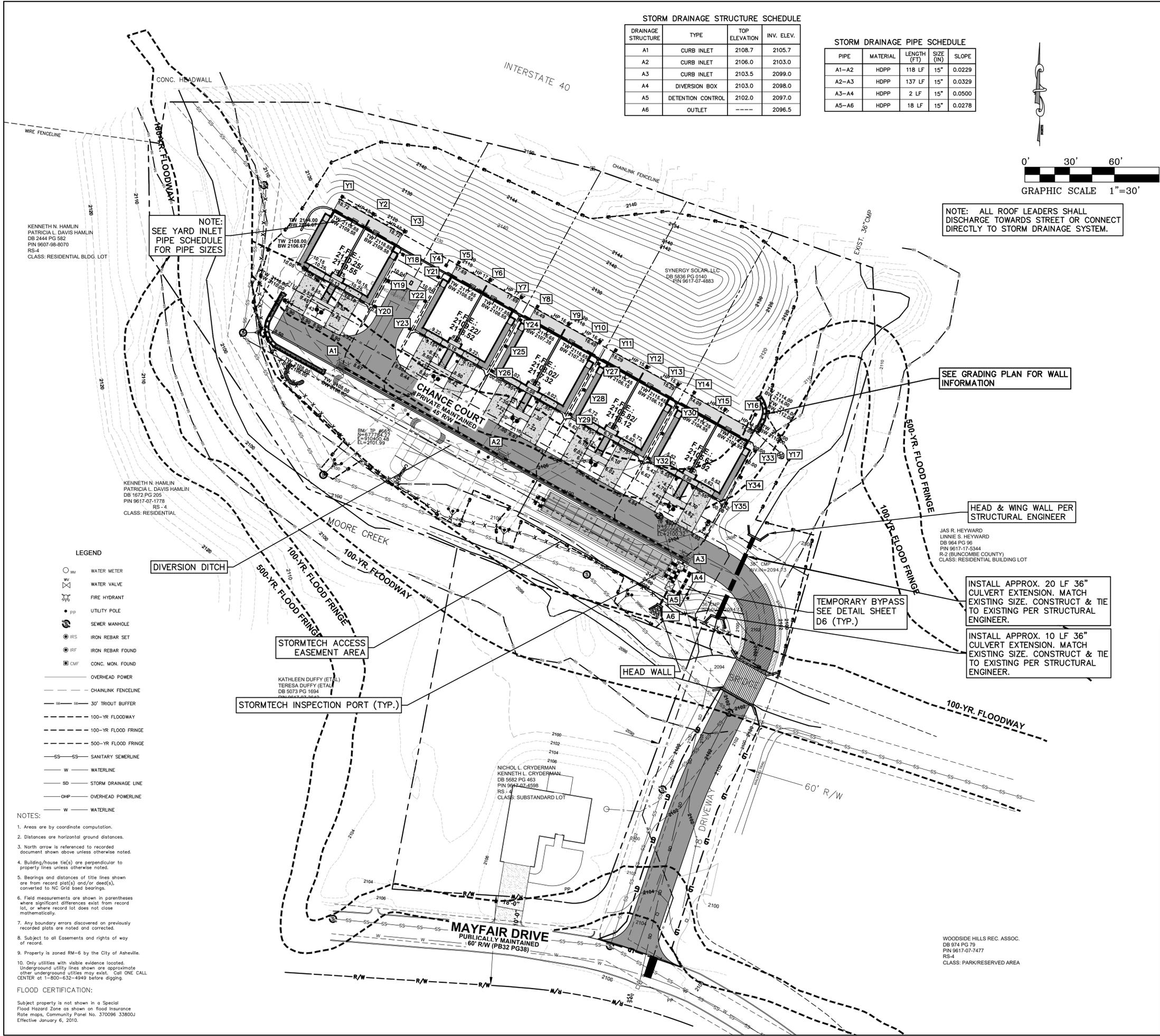
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Site Development Plan for  
**Mayfair Townhomes**  
 ASHEVILLE, NORTH CAROLINA

1/24/2024  
 Date: 1/24/2024  
 Scale: 1"=30'  
 Revision:

Stormwater  
 Sheet C1



NOTE: ALL ROOF LEADERS SHALL DISCHARGE TOWARDS STREET OR CONNECT DIRECTLY TO STORM DRAINAGE SYSTEM.

SEE GRADING PLAN FOR WALL INFORMATION

HEAD & WING WALL PER STRUCTURAL ENGINEER

TEMPORARY BYPASS SEE DETAIL SHEET D6 (TYP.)

INSTALL APPROX. 20 LF 36" CULVERT EXTENSION. MATCH EXISTING SIZE. CONSTRUCT & TIE TO EXISTING PER STRUCTURAL ENGINEER.

INSTALL APPROX. 10 LF 36" CULVERT EXTENSION. MATCH EXISTING SIZE. CONSTRUCT & TIE TO EXISTING PER STRUCTURAL ENGINEER.

NOTE: SEE YARD INLET PIPE SCHEDULE FOR PIPE SIZES

- LEGEND**
- WM WATER METER
  - ⊗ WV WATER VALVE
  - ⊗ FH FIRE HYDRANT
  - UP UTILITY POLE
  - ⊗ SM SEWER MANHOLE
  - ⊗ IR S IRON REBAR SET
  - ⊗ IR F IRON REBAR FOUND
  - ⊗ CM F CONC. MON. FOUND
  - OP OVERHEAD POWER
  - CF CHAINLINK FENCELINE
  - 30' TROUT BUFFER
  - 100-YR FLOODWAY
  - 100-YR FLOOD FRINGE
  - 500-YR FLOOD FRINGE
  - SS SANITARY SEWERLINE
  - W WATERLINE
  - SD STORM DRAINAGE LINE
  - OP OVERHEAD POWERLINE
  - W WATERLINE

- NOTES:**
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  - Distances are horizontal ground distances.
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  - Field measurements are shown in parentheses where significant differences exist from record lot, or where record lot does not close mathematically.
  - Any boundary errors discovered on previously recorded plats are noted and corrected.
  - Subject to all Easements and rights of way of record.
  - Property is zoned RM-6 by the City of Asheville.
  - Only utilities with visible evidence located. Underground utility lines shown are approximate other underground utilities may exist. Call ONE CALL CENTER at 1-800-632-4949 before digging.

**FLOOD CERTIFICATION:**  
 Subject property is not shown in a Special Flood Hazard Zone as shown on Flood Insurance Rate maps, Community Panel No. 370006 33600J Effective January 6, 2010.

WOODSIDE HILLS REC. ASSOC.  
 DB 974 PG 79  
 PIN 9617-07-7477  
 RS-4  
 CLASS: PARK/RESERVED AREA

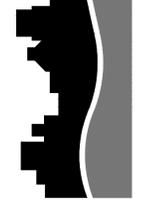
NICHOL L. CRYDERMAN  
 KENNETH L. CRYDERMAN  
 DB 5952 PG 463  
 PIN 9647-07-4588  
 RS-4  
 CLASS: SUBSTANDARD LOT

KATHLEEN DUFFY (ETAL)  
 TERESA DUFFY (ETAL)  
 DB 5073 PG 1694

JAS R. HEYWARD  
 LINNIE S. HEYWARD  
 DB 964 PG 98  
 PIN 9617-17-5344  
 R-2 (BUNCOMBE COUNTY)  
 CLASS: RESIDENTIAL BUILDING LOT

KENNETH N. HAMLIN  
 PATRICIA L. DAVIS HAMLIN  
 DB 2444 PG 582  
 PIN 9607-98-8070  
 RS-4  
 CLASS: RESIDENTIAL BLDG. LOT

KENNETH N. HAMLIN  
 PATRICIA L. DAVIS HAMLIN  
 DB 1672 PG 205  
 PIN 9617-07-1778  
 RS-4  
 CLASS: RESIDENTIAL



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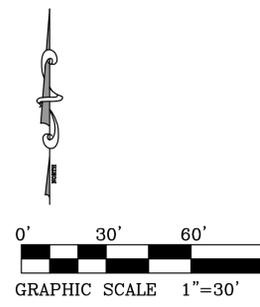
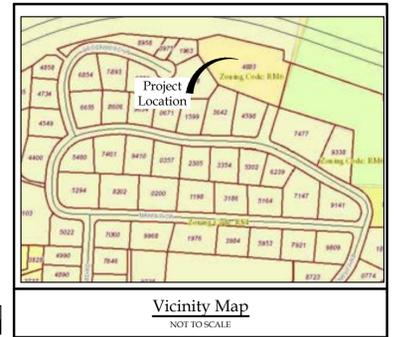


Site Development Plan for  
**Mayfair Townhomes**  
 ASHEVILLE, NORTH CAROLINA

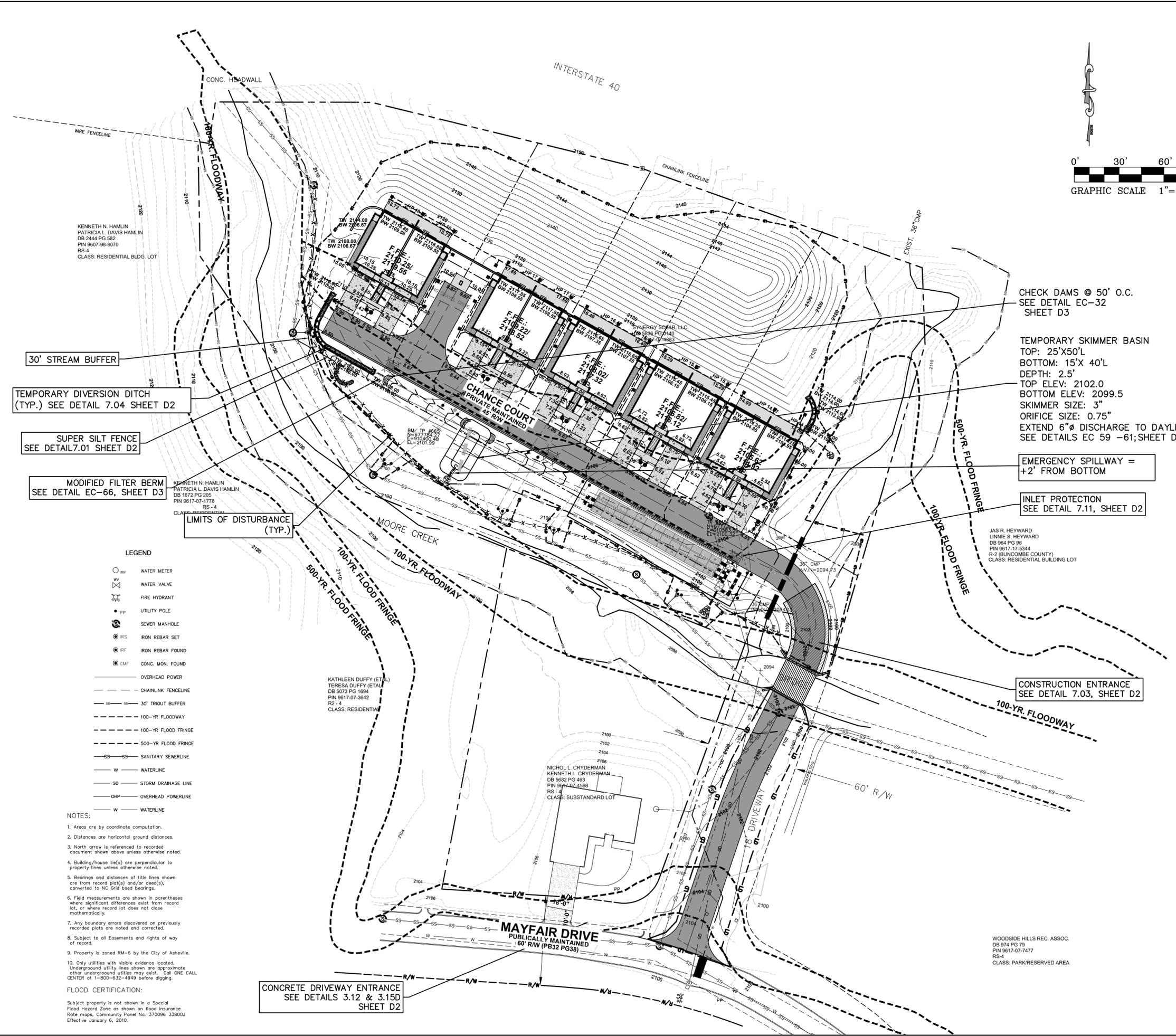
Job No.: 18161  
 Date: 12/15/2021  
 Scale: 1" = 30'  
 Revision:

Erosion Control

Sheet  
**C2**



DEVELOPMENT DATA BLOCK	
OWNER/DEVELOPER:	SYNERGY SOLAR, INC.
CONTACT:	KENNETH L. CRYDERMAN
PHONE:	828.238.6666
ADDRESS:	4 MAYFAIR DRIVE CANDLER, NC 28715
PIN:	9607-07-1883
PHYSICAL ADDRESS:	19 MAYFAIR DRIVE CANDLER, NC 28715
ZONING:	RM-6
PROPERTY SIZE:	2.73 ACRES
LAND DISTURBANCE:	79,623.43 SF. (1.83 AC)
PERVICUS AREAS:	
PRE DEVELOPMENT:	
IMPERVICUS AREA = 5662.8 SQ. FT. (0.13 AC)	
% SITE IMPERVICUS = 9%	
PERVICUS AREA = 13,256.0 SQ. FT. (2.60 AC)	
% SITE PERVICUS = 95%	
POST DEVELOPMENT:	
IMPERVICUS AREA = 23,522.60 SQ. FT. (0.54 AC)	
% SITE IMPERVICUS = 10.78%	
PERVICUS AREA = 95,396.40 SQ. FT. (2.19 AC)	
% SITE PERVICUS = 80.22%	
INCREASE/DECREASE:	
INCREASE AREAS = 17,859.80 SQ. FT. (0.41 AC)	
% INCREASE = 14.78%	
SOILS: CLUC 48.3%, EVD2 51.7%	



KENNETH N. HAMLIN  
 PATRICIA L. DAVIS HAMLIN  
 DB 2444 PG 582  
 PIN 9607-98-8070  
 RS-4  
 CLASS: RESIDENTIAL BLDG. LOT

KENNETH N. HAMLIN  
 PATRICIA L. DAVIS HAMLIN  
 DB 1872 PG 205  
 PIN 9617-07-1778  
 RS-4  
 CLASS: RESIDENTIAL

KATHLEEN DUFFY (ET AL)  
 TERESA DUFFY (ET AL)  
 DB 5073 PG 1694  
 PIN 9617-07-3642  
 R2-4  
 CLASS: RESIDENTIAL

NICHOL L. CRYDERMAN  
 KENNETH L. CRYDERMAN  
 DB 5580 PG 483  
 PIN 9647-07-4598  
 RS-4  
 CLASS: SUBSTANDARD LOT

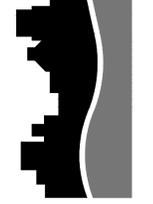
WOODSIDE HILLS REC. ASSOC.  
 DB 974 PG 79  
 PIN 9617-07-7477  
 RS-4  
 CLASS: PARK/RESERVED AREA

- LEGEND
- WM WATER METER
  - ▽ WV WATER VALVE
  - ⊕ FH FIRE HYDRANT
  - UP UTILITY POLE
  - ⊕ SM SEWER MANHOLE
  - ⊕ IR5 IRON REBAR SET
  - ⊕ IRF IRON REBAR FOUND
  - ⊕ CMF CONC. MON. FOUND
  - OP OVERHEAD POWER
  - CF CHAINLINK FENCELINE
  - SB 30' TROUT BUFFER
  - 100-YR FLOODWAY
  - 100-YR FLOOD FRINGE
  - 500-YR FLOOD FRINGE
  - SS SS SANITARY SEWERLINE
  - W WATERLINE
  - SD STORM DRAINAGE LINE
  - OMP OVERHEAD POWERLINE
  - W WATERLINE

- NOTES:
1. Areas are by coordinate computation.
  2. Distances are horizontal ground distances.
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  7. Any boundary errors discovered on previously recorded plots are noted and corrected.
  8. Subject to all Easements and rights of way of record.
  9. Property is zoned RM-6 by the City of Asheville.
  10. Only utilities with visible evidence located. Underground utility lines shown are approximate other underground utilities may exist. Call ONE CALL CENTER at 1-800-632-4949 before digging.

FLOOD CERTIFICATION:  
 Subject property is not shown in a Special Flood Hazard Zone as shown on flood insurance Rate maps, Community Panel No. 370096 33800J Effective January 6, 2010.

CONCRETE DRIVEWAY ENTRANCE  
 SEE DETAILS 3.12 & 3.15D  
 SHEET D2



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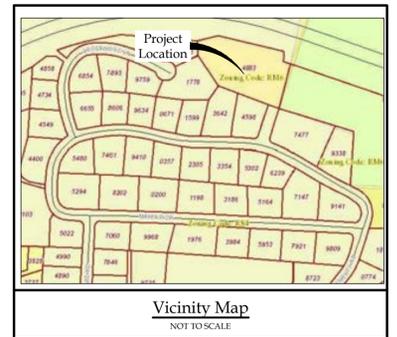
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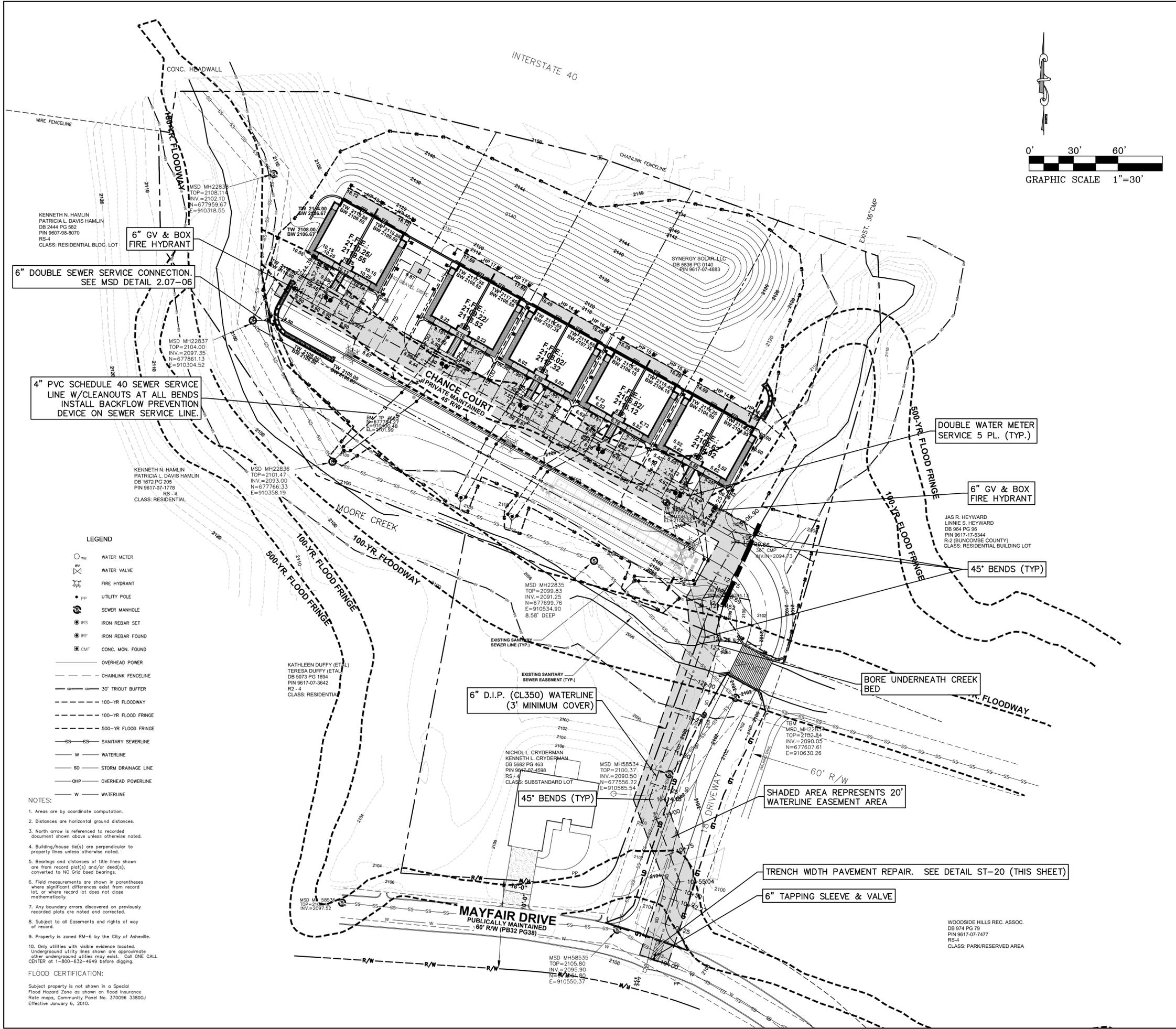
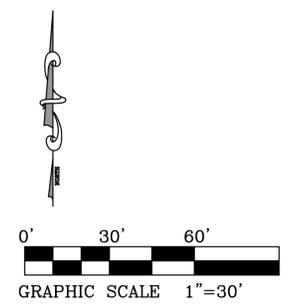
Site Development Plan for  
**Mayfair Townhomes**  
 ASHEVILLE, NORTH CAROLINA

Job No.: 18161  
 Date: 11/16/2021  
 Scale: 1"=30'  
 Revision:

Utilities  
 Plan View



DEVELOPMENT DATA BLOCK	
OWNER/DEVELOPER:	SYNERGY SOLAR, INC.
CONTACT:	KENNETH L. CRYDERMAN
PHONE:	828.231.6666
ADDRESS:	4 MAYFAIR DRIVE CANDLER, NC 28715
PIN:	9607-07-4883
PHYSICAL ADDRESS:	19 MAYFAIR DRIVE CANDLER, NC 28715
LAND DISTURBANCE:	79,623.43 SF (1.83 AC)
ZONING:	RM-6
SOILS:	CLUC 48.3%, EVD2 51.7%
PROPERTY SIZE:	2.73 ACRES



KENNETH N. HAMLIN  
 PATRICIA L. DAVIS HAMLIN  
 DB 2444 PG 582  
 PIN 9607-08-8070  
 RS-4  
 CLASS: RESIDENTIAL BLDG LOT

6" GV & BOX  
 FIRE HYDRANT

6" DOUBLE SEWER SERVICE CONNECTION.  
 SEE MSD DETAIL 2.07-06

4" PVC SCHEDULE 40 SEWER SERVICE  
 LINE W/CLEANOUTS AT ALL BENDS  
 INSTALL BACKFLOW PREVENTION  
 DEVICE ON SEWER SERVICE LINE.

DOUBLE WATER METER  
 SERVICE 5 PL. (TYP.)

6" GV & BOX  
 FIRE HYDRANT

45° BENDS (TYP.)

6" D.I.P. (CL350) WATERLINE  
 (3' MINIMUM COVER)

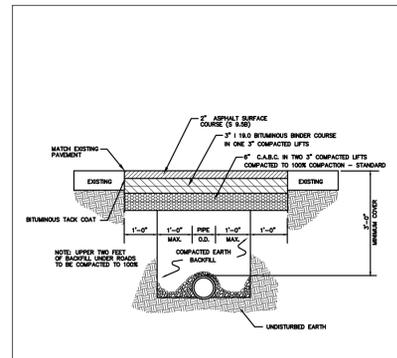
SHADED AREA REPRESENTS 20'  
 WATERLINE EASEMENT AREA

TRENCH WIDTH PAVEMENT REPAIR. SEE DETAIL ST-20 (THIS SHEET)

6" TAPPING SLEEVE & VALVE

WATER LEGEND

	EXISTING WATER LINE
	PROPOSED WATER LINE
	PROPOSED WATER EASEMENT
	FIRE HYDRANT
	VALVE
	DOUBLE METER CONNECTION
	TEE
	45 DEGREE BEND



TYPICAL PAVEMENT REPAIRS  
 NOT TO SCALE

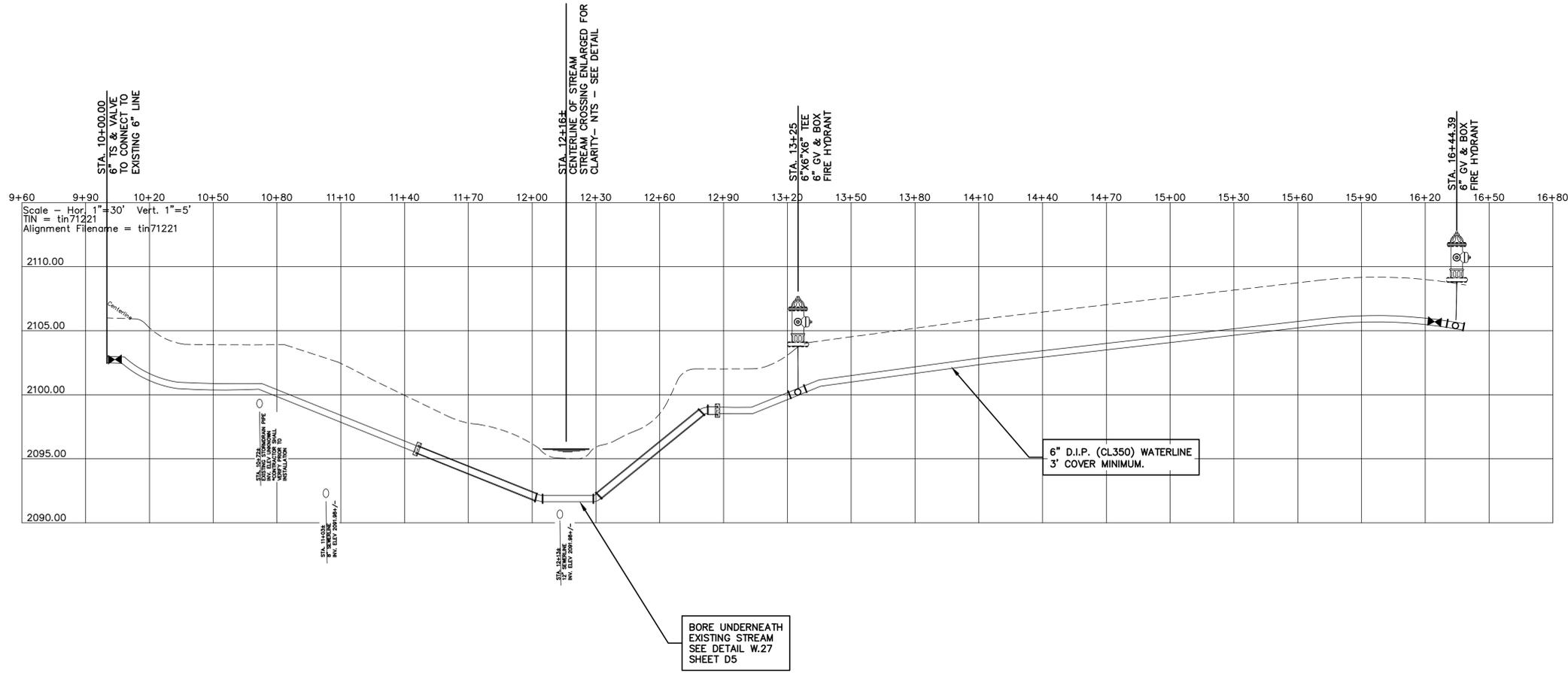
LEGEND

	WATER METER
	WATER VALVE
	FIRE HYDRANT
	UTILITY POLE
	SEWER MANHOLE
	IRON REBAR SET
	IRON REBAR FOUND
	CONC. MON. FOUND
	OVERHEAD POWER
	CHAINLINK FENCELINE
	30' TRIOUT BUFFER
	100-YR FLOODWAY
	100-YR FLOOD FRINGE
	500-YR FLOOD FRINGE
	SANITARY SEWERLINE
	WATERLINE
	STORM DRAINAGE LINE
	OVERHEAD POWERLINE
	WATERLINE

- NOTES:
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  - Only utilities with visible evidence located. Underground utility lines shown are approximate other underground utilities may exist. Call ONE CALL CENTER at 1-800-632-4949 before digging.

FLOOD CERTIFICATION:  
 Subject property is not shown in a Special Flood Hazard Zone as shown on flood insurance Rate maps, Community Panel No. 370096 33800J Effective January 6, 2010.

WOODSIDE HILLS REC. ASSOC.  
 DB 974 PG 79  
 PIN 9617-07-7477  
 RS-4  
 CLASS: PARK/RESERVED AREA



Job No. 18161  
 Date: November, 2021  
 Scale: 1"=50'  
 Revision:

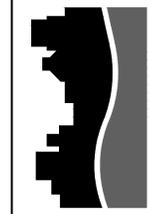
Waterline Profile

Sheet  
**C4**

Site Development Plan for  
**Mayfair Townhomes**  
 ASHEVILLE, NORTH CAROLINA



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 Site/Infrastructure • Engineering/Planning  
 135-A Charlotte Highway Asheville, North Carolina 28803  
 828.299.9449 P1 • www.daviscivilsolutions.com

**GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT**

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

**SECTION E: GROUND STABILIZATION**

Required Ground Stabilization Timeframes		
Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1
		-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

**Note:** After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

**GROUND STABILIZATION SPECIFICATION**

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
<ul style="list-style-type: none"> <li>Temporary grass seed covered with straw or other mulches and tackifiers</li> <li>Hydroseeding</li> <li>Rolled erosion control products with or without temporary grass seed</li> <li>Appropriately applied straw or other mulch</li> <li>Plastic sheeting</li> </ul>	<ul style="list-style-type: none"> <li>Permanent grass seed covered with straw or other mulches and tackifiers</li> <li>Geotextile fabrics such as permanent soil reinforcement matting</li> <li>Hydroseeding</li> <li>Shrubs or other permanent plantings covered with mulch</li> <li>Uniform and evenly distributed ground cover sufficient to restrain erosion</li> <li>Structural methods such as concrete, asphalt or retaining walls</li> <li>Rolled erosion control products with grass seed</li> </ul>

**POLYACRYLAMIDES (PAMS) AND FLOCCULANTS**

- Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
- Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
- Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
- Provide ponding area for containment of treated Stormwater before discharging offsite.
- Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

**EQUIPMENT AND VEHICLE MAINTENANCE**

- Maintain vehicles and equipment to prevent discharge of fluids.
- Provide drip pans under any stored equipment.
- Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
- Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
- Remove leaking vehicles and construction equipment from service until the problem has been corrected.
- Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

**LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE**

- Never bury or burn waste. Place litter and debris in approved waste containers.
- Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
- Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
- Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
- Anchor all lightweight items in waste containers during times of high winds.
- Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
- Dispose waste off-site at an approved disposal facility.
- On business days, clean up and dispose of waste in designated waste containers.

**PAINT AND OTHER LIQUID WASTE**

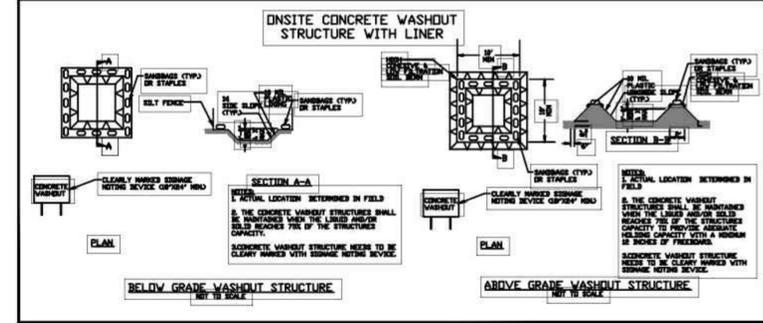
- Do not dump paint and other liquid waste into storm drains, streams or wetlands.
- Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
- Contain liquid wastes in a controlled area.
- Containment must be labeled, sized and placed appropriately for the needs of site.
- Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

**PORTABLE TOILETS**

- Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
- Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
- Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

**EARTHEN STOCKPILE MANAGEMENT**

- Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
- Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
- Provide stable stone access point when feasible.
- Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



**CONCRETE WASHOUTS**

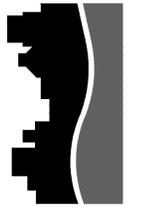
- Do not discharge concrete or cement slurry from the site.
- Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
- Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
- Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
- Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
- Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
- Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
- Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
- Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
- At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

**HERBICIDES, PESTICIDES AND RODENTICIDES**

- Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
- Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
- Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
- Do not stockpile these materials onsite.

**HAZARDOUS AND TOXIC WASTE**

- Create designated hazardous waste collection areas on-site.
- Place hazardous waste containers under cover or in secondary containment.
- Do not store hazardous chemicals, drums or bagged materials directly on the ground.



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**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION A: SELF-INSPECTION**

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those unattended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDCs)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event $\geq$ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

**PART II, SECTION G, ITEM (4)  
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT**

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

- The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
- The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
- Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
- Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
- Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
- Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION B: RECORDKEEPING**

**1. E&SC Plan Documentation**

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

**2. Additional Documentation to be Kept on Site**

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

- This General Permit as well as the Certificate of Coverage, after it is received.
- Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

**3. Documentation to be Retained for Three Years**

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

**PART III  
SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**SECTION C: REPORTING**

**1. Occurrences that Must be Reported**

Permittees shall report the following occurrences:

- Visible sediment deposition in a stream or wetland.
- Oil spills if:
  - They are 25 gallons or more,
  - They are less than 25 gallons but cannot be cleaned up within 24 hours,
  - They cause sheen on surface waters (regardless of volume), or
  - They are within 100 feet of surface waters (regardless of volume).
- Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.
- Anticipated bypasses and unanticipated bypasses.
- Noncompliance with the conditions of this permit that may endanger health or the environment.

**2. Reporting Timeframes and Other Requirements**

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis.</li> <li>If the stream is named on the <a href="#">NC 303(d) list</a> as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.</li> </ul>
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.</li> </ul>
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li><b>A report at least ten days before the date of the bypass, if possible.</b> The report shall include an evaluation of the anticipated quality and effect of the bypass.</li> </ul>
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that includes an evaluation of the quality and effect of the bypass.</li> </ul>
(e) Noncompliance with the conditions of this permit that may endanger health or the environment [40 CFR 122.41(l)(7)]	<ul style="list-style-type: none"> <li><b>Within 24 hours</b>, an oral or electronic notification.</li> <li><b>Within 7 calendar days</b>, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6).</li> <li>Division staff may waive the requirement for a written report on a case-by-case basis.</li> </ul>



**NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING**

**EFFECTIVE: 04/01/19**



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Job No.: 18161  
Date: 11/16/2018  
Scale: NTS  
Revision:

**GENERAL CONSTRUCTION NOTES**

- FINISH GRADE TOLERANCES SHALL BE AS NOTED IN THE SPECIFICATIONS. THE ENGINEER MAY MAKE GRADE CHANGES AS REQUIRED IN THE FIELD WITHOUT EFFECTING THE UNIT BID PRICE FOR UNCLASSIFIED EXCAVATION.
- UNLESS OTHERWISE STATED, ALL FILL AREAS SHALL BE CONSTRUCTED IN LAYERS OF 8" MAXIMUM THICKNESS, WITH WATER ADDED OR SOIL CONDITIONED TO THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE ENGINEER AND COMPACTED WITH A SHEEP'S FOOT ROLLER TO A COMPACTION EQUAL TO OR GREATER THAN 95% (100% IN THE TOP 2' OF THE SUB GRADE BELOW ROADWAYS, PARKING LOTS, AND SLABS) OF THE DENSITY OBTAINED BY COMPACTING A SAMPLE OF THE MATERIAL IN ACCORDANCE WITH THE STANDARD PROCTOR METHOD OF MOISTURE-DENSITY RELATIONSHIP TEST, ASTM D698 OR AASHTO-99 UNLESS SPECIFIED IN OTHER SPECIFICATIONS. COPIES OF COMPACTION REPORTS SHALL BE PROVIDED TO THE LOCAL REGULATORY AGENCY, WHERE REQUIRED.
- ENTIRE AREA TO BE GRADED SHALL BE CLEARED AND GRUBBED. NO FILL SHALL BE PLACED ON ANY AREA NOT CLEARED AND GRUBBED.
- ALL SOIL EROSION CONTROL MEASURES REQUIRED BY THE GRADING PLAN SHALL BE PERFORMED PRIOR TO GRADING, CLEARING OR GRUBBING. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, ETC., SHALL BE MAINTAINED IN WORKABLE CONDITION FOR THE LIFE OF THE PROJECT BY THE CONTRACTOR AT HIS EXPENSE. EROSION CONTROL FACILITIES SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY ON THE ENGINEER'S APPROVAL. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO CLEARING AND GRUBBING UNLESS OTHERWISE SPECIFIED. IF DURING THE LIFE OF THE PROJECT, A STORM CAUSES SOIL EROSION WHICH CHANGES FINISH GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED AT NO ADDITIONAL COST, AND ALL SILT WASHED OFF OF THE PROJECT SITE ONTO ADJACENT PROPERTY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST. THE CONTRACTOR SHALL ADHERE TO ANY APPROVED EROSION CONTROL PLANS WHETHER INDICATED IN THE CONSTRUCTION PLANS OR UNDER SEPARATE COVER.  
  
EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCE, TEMPORARY SEDIMENT BASINS AND OTHER MEASURES MAY NEED TO BE INSTALLED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES INDICATED ON THE DRAWINGS CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF THE SITE.
- DISPOSABLE MATERIAL
  - CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE, UNLESS SPECIFIED OTHERWISE.
  - SOLID WASTES TO BE REMOVED, SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC., MAY BE PLACED IN SPECIFIC DISPOSAL AREAS DELINEATED ON THE PLANS WITH THE PRIOR APPROVAL OF THE ENGINEER OR SHALL BE REMOVED FROM THE SITE AS REQUIRED BY THE SPECIFICATIONS. THIS MATERIAL SHALL HAVE A MINIMUM COVER OF 2'. THE CONTRACTOR SHALL MAINTAIN SPECIFIED COMPACTION REQUIREMENTS IN THESE AREAS. WHEN DISPOSAL SITES ARE NOT PROVIDED, THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT HIS EXPENSE.
  - ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTINGS, PIPE APPURTENANCES, UTILITY POLES, ETC., SHALL BE THE PROPERTY OF THE SPECIFIC UTILITY AGENCY, OR COMPANY HAVING JURISDICTION, BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, REUSE, OR HIS OWN USE ANY ABANDONED UTILITY. HE MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.
  - ON SITE BURNING IS AN ACCEPTABLE METHOD OF DISPOSING OF FLAMMABLE WASTES WHERE ALLOWED BY LOCAL CODES. WHEN BURNING IS ANTICIPATED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND MEETING GOVERNING CODES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR HIS REPRESENTATIVE AS TO THE SPECIFIC LOCATION OF BURNING AND SHALL PROVIDE COPIES OF SECURED PERMITS. AFTER BURNING IS COMPLETED, PURE ASH MAY BE DISPOSED OF BY MIXING WITH FILL DIRT UPON THE APPROVAL OF THE ENGINEER. ALL MATERIAL NOT TOTALLY BURNED SHALL BE DISPOSED OF AS SPECIFIED IN "B" ABOVE. THE CONTRACTOR SHALL NOT HOLD UP WORK PROGRESS FOR THE PURPOSE OF WAITING FOR A "BURNING DAY".
- IN THE EVENT EXCESSIVE GROUNDWATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDER DRAINS AND STONE AS DIRECTED BY THE ENGINEER AND AS APPROVED BY THE LOCAL REGULATORY AGENCIES. ALL WORK SHALL BE PAID BASED UPON UNIT BIDS, UNLESS SPECIFIED OTHERWISE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OR ADJUSTMENT OF ALL UTILITY SURFACE ACCESSSES WHETHER HE PERFORMS THE WORK OR A UTILITY COMPANY PERFORMS THE WORK.
- THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AREA AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE SPECIFICATIONS.

**NOTE-1**

**CITY OF ASHEVILLE  
EROSION CONTROL NOTES**

GENERAL: ALL EROSION CONTROL MEASURES ARE TO BE PERFORMED IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE CITY OF ASHEVILLE. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE COMPLIED WITH FOR ALL WORK.

- SUBMIT PLANS FOR REVIEW
- OBTAIN GRADING PERMIT (MAY INCLUDE PRECONSTRUCTION CONFERENCE)
- SUBMIT FOUR (4) COPIES OF STORMWATER COMPONENT SHOP DRAWINGS AT OR PRIOR TO THE PRECONSTRUCTION MEETING AND RECEIVE APPROVAL BY THE CITY OF ASHEVILLE PRIOR TO ORDERING MATERIALS.
- INSTALL ALL EROSION CONTROL MEASURES SHOWN.
- ON-SITE INSPECTION BY INSPECTOR TO APPROVE PERIMETER EROSION CONTROL DEVICES.
- PROCEED WITH GRADING, CLEARING AND GRUBBING
- CLEAN SEDIMENT BASINS WHEN HALF FULL
- REPAIR OR REPLACE ALL EROSION CONTROL MEASURES AS NEEDED
- SEED AND MULCH DENUDED AREA WITHIN 14 DAYS ON DISTURBED FLAT AREAS AND 7 DAYS ON ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. GROUND COVER SHALL BE REQUIRED AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 (OR 7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. SEED AND SOIL AMENDMENTS SHALL BE PLACED ON A PREPARED SEEDBED AT THE FOLLOWING RATES PER ACRE:
 

<b>SUMMER (PERMANENT) SEEDING (MAY 15 TO AUGUST 15)</b>	
LIME	4,000 LBS
FERTILIZER (10-10-10)	1,000 LBS
KY-31 FESCUE	100 LBS
STRAW MULCH	4,000 LBS. (ANCHORED)
GERMAN MILLET	40 LBS.
(OR SMALL-STEMMED SUDAN GRASS @ 40 LBS.)	
<b>WINTER (TEMPORARY) SEEDING (AUGUST 15 TO MAY 15) MOUNTAINS</b>	
LIME	4,000 LBS
FERTILIZER (10-10-10)	1,000 LBS
KY-31 FESCUE	100 LBS
STRAW MULCH	4,000 LBS. (ANCHORED)
RYE (GRAIN)	120 LBS.
<b>FOR ALL SLOPES 2:1 OR STEEPER ADD TO THE ABOVE:</b>	
SERICEA LESPEDEZA (KOREAN)	50 LBS.
IF HYDROSEEDING, WOOD CELLULOSE MAY BE USED IN ADDITION TO STRAW MULCH AT THE RATE OF 1,000 LBS PER ACRE.	
- ALL SEEDING SHALL BE MAINTAINED, WATERED, ETC., UNTIL A PERMANENT VEGETATIVE GROUND COVER IS ESTABLISHED OVER ALL DISTURBED AREAS.
- ALL SLOPES 2:1 OR STEEPER SHALL BE COVERED BY EROSION CONTROL MATTING.
- MAINTAIN SOIL EROSION CONTROL MEASURES UNTIL PERMANENT GROUND COVER IS ESTABLISHED.
- REQUEST FINAL APPROVAL BY THE CONSTRUCTION INSPECTOR; AND,
- REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND STABILIZE THESE AREAS.
- EROSION CONTROL IS FIELD PERFORMANCE BASED AND ADDITIONAL SILT FENCES, TEMPORARY SEDIMENT BASINS AND ALL OTHER MEASURES MAY NEED TO BE ADDED IN ADDITION TO THE APPROVED PLAN AS NECESSARY. MEASURES SHOWN CAN AND SHOULD BE ADJUSTED TO ASSURE MAXIMUM PROTECTION OF SITE.
- COMPACTION REPORTS SHALL BE PROVIDED TO THE CITY OF ASHEVILLE STORMWATER SERVICES DIVISION INDICATING THAT FILL HAS BEEN COMPACTED TO NOT LESS THAN 95% MAXIMUM DENSITY (STANDARD PROCTOR).

**NOTE-4**

**GENERAL CONSTRUCTION NOTES CONT'D.**

- ALL AREAS WHERE THERE IS EXPOSED DIRT SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES AND GOUGES PRIOR TO SEEDING. THE SURFACE SHALL BE LOOSENEED TO A DEPTH OF 1/4" TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO-SEEDER". HAND SEEDING SHALL BE AUTHORIZED ON AN AREA BY AREA APPROVAL BY THE ENGINEER. ALL FILL AND CUT SLOPES 2:1 HORIZONTAL TO VERTICAL, OR STEEPER, SHALL BE COVERED, AFTER SEEDING, WITH EROSION CONTROL MATTING CONSISTING OF BIODEGRADABLE STRAW WITH NATURAL FIBER OR BIODEGRADABLE NETTING, APPROVED BY THE ENGINEER.
- WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE CORRUGATED METAL PIPE (CMP) CONFORMING TO AASHTO M-36, WITH PREROLLED ENDS TO ACCOMMODATE CORRUGATED COUPLING BANDS. 18" PIPE SHALL BE 16 GAUGE, 24" AND 30" PIPE SHALL BE 14 GAUGE AND 36" PIPE OVER SHALL BE 12 GAUGE AS SPECIFIED ON THE PLANS. PIPE AND COUPLING BANDS SHALL CONFORM TO NCDOT 1032-3 FOR PLAIN PIPE OR 1032-4(A) FOR BITUMINOUS COATED AND PARTIALLY PAVED PIPE. DIMPLE BANDS SHALL NOT BE USED.  
  
WHERE SPECIFIED, STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) CONFORMING TO AASHTO M-170, AS CONTAINED IN NCDOT STANDARD SPECIFICATION 1032-9 FOR WALL "B" TYPE.  
  
WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH SOIL TIGHT JOINTS, BACKFILLED WITH # 57 WASHED STONE UP TO MIN. 6" OVER THE TOP OF THE PIPE, 12" ON EACH SIDE OF THE PIPE, AND 8" BENEATH THE PIPE. HDPE PIPE USED FOR STORM DRAINAGE DETENTION SYSTEMS SHALL BE "HANCOR BLUE SEAL" OR APPROVED EQUAL, WITH WATER TIGHT JOINTS.  
  
WHERE SPECIFIED, ALL STORM DRAIN PIPE SHALL BE DUAL WALL HIGH DENSITY POLYPROPYLENE (HDPP), CORRUGATED EXTERIOR, SMOOTH WALL INTERIOR, WITH GASKETED JOINTS, BACKFILLED WITH #57 WASHED STONE UP TO THE SPRING LINE OF THE PIPE, WITH 12" STONE ON EACH SIDE OF THE PIPE, AND 8" BENEATH THE PIPE. PIPES OF A DIAMETER OF 30" OR GREATER SHALL BE TRIPLE WALL, CORRUGATED STRUCTURAL CORE, SMOOTH EXTERIOR, WITH DOUBLE GASKETED JOINTS.  
  
ALL CORRUGATED METAL STORM DRAIN PIPE (CMP) SHALL BE ALUMINIZED TYPE 2 CORRUGATED STEEL MANUFACTURED IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M-36. THE PIPE SHALL BE MANUFACTURED FROM ALUMINIZED STEEL TYPE 2 MATERIAL CONFORMING TO THE REQUIREMENTS OF AASHTO M-274. ALL PIPE SHALL BE FURNISHED WITH PREROLLED ENDS AND SHALL BE JOINED WITH HUGGER BANDS. THE USE OF DIMPLE BANDS WILL NOT BE ALLOWED. PIPE THROUGH 24" DIAMETER SHALL BE 16 GAUGE, PIPE THROUGH 42" DIAMETER SHALL BE 14 GAUGE, PIPE THROUGH 54" DIAMETER SHALL BE 12 GAUGE.
- CONTRACTOR SHALL VERIFY THE APPROPRIATENESS OF ALL ELEVATIONS BEFORE INSTALLATION OF FACILITIES AND THAT THOSE ELEVATIONS CONTRIBUTE TO THE PROPER INTENDED PERFORMANCE OF THE INSTALLED FACILITIES.
- CATCH BASINS CAST-IN-PLACE SHALL CONFORM TO THE REQUIREMENTS OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES (LATEST EDITION) ARTICLES 840-1 THROUGH 840-3. CURB INLET CATCH BASIN SHALL CONFORM TO NCDOT STANDARD DETAILS 840.02 THROUGH 840.04. DROP INLETS SHALL CONFORM TO STANDARD DETAIL 840.14. JUNCTION BOXES SHALL CONFORM TO STANDARD DETAIL 840.31.
- CURB INLET FRAME, GRATE AND HOOD SHALL BE NEENAH R-3233D, PRODUCTS BY DEWEY BROS., U.S. FOUNDRY OR EQUAL. DROP INLET FRAME AND GRATE SHALL BE NEENAH R-3339A OR EQUAL. FIELD INLET COVER SHALL CONFORM TO NCDOT STANDARD DETAIL 840.04, OPENING FACING UPSTREAM.
- CONCRETE AND MASONRY SHALL MEET THE REQUIREMENTS OF THE APPROPRIATE SECTION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROAD AND STRUCTURES (LATEST EDITION). CONCRETE SHALL BE CLASS A OR B, 4000 PSI MINIMUM, MEETING THE REQUIREMENTS OF SECTION 1000. CONSTRUCTED IN ACCORDANCE WITH SECTION 825. MASONRY SHALL MEET THE REQUIREMENTS OF SECTION 1040, CONSTRUCTED IN ACCORDANCE WITH SECTION 830 AND/OR 834.
- TOPS OF PROPOSED FRAMES AND GRATES SHALL BE FLUSH WITH FINISHED GRADE. ALL STORM DRAIN BOXES AND MANHOLES OVER 4' IN DEPTH SHALL HAVE STEPS DIRECTLY BENEATH THE OPENING.
- TINDALL PRE CAST CONCRETE BOXES ARE ACCEPTABLE ALTERNATIVES FOR PROPOSED CATCH BASINS WHERE APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL PROVIDE THE OWNER AND THE LOCAL REGULATORY AGENCY WITH PROOF OF ACTIVE GRADING PERMITS FOR ANY BORROW OR WASTE SITES TO BE USED, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ASSUME MAINTENANCE OF ALL EROSION CONTROL FACILITIES LEFT ON SITE BY PREVIOUS CONTRACTORS IN THE CASE OF PHASED PROJECTS WHEN SPECIFIED BY THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAINTAIN, ADD TO AND/OR ADJUST ALL FACILITIES TO ASSURE MAXIMUM PROTECTION OF THE SITE.

**NOTE-2**

**SEEDING NOTES**

**PERMANENT SEEDING**

**LAWN SEEDING MIXTURE**

SPECIES	RATE (LB/ACRE)
KENTUCKY BLUEGRASS (20%)	260 LBS.
REBEL FESCUE (80%)	

**SEEDING DATES**

MOUNTAINS	MARCH 15 – MAY 15
	AUGUST 15 – OCTOBER 15

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

RE-FERTILIZE IF GROWTH IN NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**TEMPORARY SEEDING FOR SUMMER**

**SEEDING MIXTURE**

SPECIES	RATE (LB/ACRE)
GERMAN MILLET	40 LBS.

**SEEDING DATES**

MOUNTAINS	MAY 15 – AUGUST 15
PIEDMONT	MAY 1 – AUGUST 15
COASTAL PLAIN	APRIL 15 – AUGUST 15

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

RE-FERTILIZE IF GROWTH IN NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**NOTE-14**

**GENERAL CONSTRUCTION NOTES CONT'D.**

- SEED AND MULCH DENUDED AREA WITHIN 14 DAYS ON DISTURBED FLAT AREAS AND 7 DAYS ON ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL. GROUND COVER SHALL BE REQUIRED AS SOON AS PRACTICABLE BUT IN ANY EVENT WITHIN 14 (OR 7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.
- THE LOCATIONS OF ALL UTILITIES SHOWN ON THESE PLANS ARE BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UTILITIES WITH THE UTILITY OWNERS PRIOR TO CONSTRUCTION.
- ACCESS TO UTILITIES, FIRE HYDRANTS, STREET LIGHTING, ETC., SHALL REMAIN UNDISTURBED, UNLESS COORDINATED WITH RESPECTIVE UTILITY.
- CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL INSIDE OR OUTSIDE THE CONTRACT LIMITS DUE TO CONSTRUCTION OPERATIONS.
- THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT AND AT LEAST ONCE A WEEK DURING CONSTRUCTION.
- DO NOT SCALE THESE DRAWINGS AS THEY ARE REPRODUCTIONS AND SUBJECT TO DISTORTION.
- THE CONTRACTOR SHALL VERIFY ALL LOCATION AND ELEVATION OF ALL UNDERGROUND UTILITIES. THE LOCATION OF ALL EXISTING UTILITIES ARE NOT NECESSARILY SHOWN ON THE PLANS AND WHERE SHOWN ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL ON HIS INITIATIVE AND AT NO EXTRA COST HAVE LOCATED ALL UNDERGROUND LINES AND STRUCTURES AS NECESSARY. NO CLAIMS FOR DAMAGES OR EXTRA COMPENSATION SHALL ACCRUE TO THE CONTRACTOR FROM THE PRESENCE OF SUCH PIPE, OTHER OBSTRUCTION OR FROM ANY DELAY DUE TO REMOVAL OR REARRANGEMENT OF THE SAME. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL NON-SUBSCRIBING UTILITIES. THE CONTRACTOR SHALL CONTACT NC "ONE CALL" AT (800) 632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
- THE CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE OWNER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE ENGINEER.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS AND THE JOB SITE. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER WHO PREPARED THE PLANS OF ANY DISCREPANCIES THAT MAY REQUIRE MODIFICATIONS TO THESE PLANS OR OF ANY FIELD CONFLICTS.
- ALL PERMITS RELATIVE TO THE PROJECT MUST BE OBTAINED, PRIOR TO CONSTRUCTION. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH PERMITS ISSUED AND APPLICABLE STATE, COUNTY AND LOCAL CODES.
- THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL BUILDING DIMENSIONS.
- CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THE REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, ACCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.
- ALL RECOMMENDATIONS/REQUIREMENTS OUTLINED IN THE SOILS REPORT AND ADDENDUMS TO THE SOILS REPORT CONTAINED IN THE CONTRACT DOCUMENTS SHALL BE INCORPORATED INTO THE EARTHWORK AND RELATED SPECIFICATIONS FOR THIS PROJECT.
- IF BORROWED OR WASTE FILL MATERIAL IS GENERATED, AN APPROVED GRADING PERMIT MUST BE SECURED FOR THE BORROW OR WASTE MATERIAL SITE PRIOR TO INITIATION OF ANY LAND DISTURBING ACTIVITY.
- UNLESS A PERMIT FROM NCDQG – DIVISION OF WASTE MANAGEMENT TO OPERATE A LANDFILL IS ON FILE FOR THE OFFICIAL SITE, ACCEPTABLE FILL MATERIAL SHALL BE FREE OF ORGANIC OR OTHER DEGRADABLE MATERIALS, MASONRY, CONCRETE AND BRICK IN SIZES EXCEEDING 12 INCHES, AND ANY MATERIALS WHICH WOULD CAUSE THE SITE TO BE REGULATED AS A LANDFILL BY THE STATE OF NORTH CAROLINA.
- ALL CONSTRUCTED SEVERE SLOPES GREATER THAN 2:1 AND GREATER THAN FIVE (5) FEET IN HEIGHT, AN INSPECTION AND A STABILITY CERTIFICATE ARE REQUIRED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH GEOTECHNICAL EXPERTISE SUFFICIENT TO PERFORM THE INSPECTION AND STABILITY ANALYSIS. FOR ALL CONSTRUCTED SEVERE SLOPES WITHIN PROPOSED OR EXISTING PUBLIC RIGHTS-OF-WAY, PERIODIC INSPECTIONS AND COMPACTION REPORTS ARE REQUIRED BY A NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER WITH GEOTECHNICAL EXPERTISE.

**NOTE-2A**

**SEEDING NOTES**

**TEMPORARY SEEDING FOR FALL**

**SEEDING MIXTURE**

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	260 LBS.

**SEEDING DATES**

MOUNTAINS	AUGUST 15 – DECEMBER 15
PIEDMONT	AUGUST 15 – DECEMBER 15
COASTAL PLAIN	AUGUST 15 – DECEMBER 30

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

REPAIR AND RE-FERTILIZE DAMAGED AREAS IMMEDIATELY. TOPDRESS WITH 50 LB/ACRE NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/ACRE SWITCHGRASS (PANICUM VIRGATUM) IN LATE FEBRUARY OR EARLY MARCH.

**TEMPORARY SEEDING FOR WINTER & EARLY SPRING**

**SEEDING MIXTURE**

SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120 LBS.
SWITCHGRASS (PANICUM VIRGATUM)	50 LBS.

**SEEDING DATES**

MOUNTAINS (ABOVE 2,500')	FEBRUARY 15 – MAY 15
MOUNTAINS (BELOW 2,500')	FEBRUARY 1 – MAY 1
PIEDMONT	JANUARY 1 – MAY 1
COASTAL PLAIN	DECEMBER 1 – APRIL 15

**SOIL AMENDMENTS**

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LB/ACRE 10-10-10 FERTILIZER.

**MULCH**

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

**MAINTENANCE**

RE-FERTILIZE IF GROWTH IN NOT FULLY ADEQUATE. RE-SEED, RE-FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

**NOTE-15**



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Job No. 21661  
Date: 11/15/2021  
Scale: NTS  
Revision:

**DETAILS**

**GENERAL NOTES FOR WATER  
(CITY OF ASHEVILLE)**

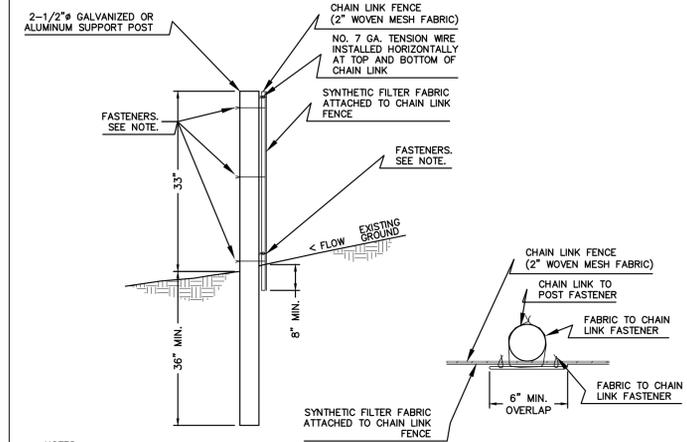
- WATER LINE CONSTRUCTION ON THIS SITE IS AUTHORIZED BY PERMITS ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (NCDENR), AND THE CITY OF ASHEVILLE. THE WORK IS SUBJECT TO INSPECTIONS AT ALL TIMES BY REPRESENTATIVES OF NCDENR, THE OWNER, THE CITY OF ASHEVILLE, OR THE ENGINEER. THE PERMITS REQUIRE CERTIFICATIONS OF COMPLETION OF THE WATER SYSTEMS BY THE CONTRACTOR, THE OWNER, AND THE ENGINEER PRIOR TO ISSUANCE OF FINAL OPERATION APPROVAL BY NCDENR.
- THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND ELEVATION FOR ALL UTILITIES, DRAINAGE AND OTHER UNDERGROUND FACILITIES BOTH EXISTING AND PROPOSED, AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS, PRIOR TO CONSTRUCTION.
- FERROUS PIPING FOR BOTH WATER AND SEWER SHALL BE INSTALLED WITHIN 10 FT. OF A CROSSING IF:
  - A SEWER LINE CROSSES OVER A WATER LINE, OR
  - THE VERTICAL CLEARANCE BETWEEN WATER AND SEWER LINES IS LESS THAN 18 INCHES.
- A HORIZONTAL SEPARATION OF TEN (10) FEET SHALL BE MAINTAINED BETWEEN SEWER AND WATER LINES UNLESS LAID IN SEPARATE TRENCHES WITH THE BOTTOM OF THE WATER LINE AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER LINE, AND FERROUS MATERIAL USED FOR BOTH WATER AND SEWER.
- A VERTICAL SEPARATION OF TWELVE (12) INCHES SHALL BE MAINTAINED BETWEEN STORM DRAIN AND WATER LINES.
- THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF VAULTS, METERS, BACKFLOW PREVENTION DEVICES, AND SERVICE LINES WITH THE DETAILED ARCHITECTURAL, PLUMBING, LANDSCAPING PLANS, AND CIVIL SITE PLANS.
- ALL WATER LINES SHALL HAVE THREE (3) FEET MINIMUM COVER AND SHALL BE CONSTRUCTED OF A FERROUS MATERIAL.
- ALL MATERIALS AND INSTALLATION PROCEDURES FOR WATER LINES AND APPURTENANCES SHALL CONFORM TO CITY OF ASHEVILLE STANDARD SPECIFICATIONS AND WATER RESOURCES DESIGN & CONSTRUCTION MANUAL, UNDER THE INSPECTION OF THE CITY OF ASHEVILLE AND SHALL BE INSTALLED BY A NORTH CAROLINA LICENSED UTILITY CONTRACTOR. UPON COMPLETION AND ACCEPTANCE, WATER LINES SHALL BE MAINTAINED BY THE CITY OF ASHEVILLE WHERE INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION. REPAIRS SHALL BE MADE IN ACCORDANCE WITH APPLICABLE STANDARDS OF APPROPRIATE AGENCIES AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL NOTIFY N.C. ONE-CALL CENTER & APPROPRIATE UTILITY AGENCIES PRIOR TO PERFORMING ANY WORK.
- ALL WATER METERS MUST BE PLACED IN FRONT OF THE DWELLING WHICH THEY SERVE, OUTSIDE DRIVEWAYS AND LOCATED IN RELATIVELY FLAT AREAS, NOT STEEP BANKS OR SLOPES, AT A MAXIMUM OF FIVE (5) FEET OFF OF THE BACK OF CURB OR EDGE OF PAVEMENT. IN AREAS WHERE GRADING MAY PRESENT A CONFLICT WITH THIS REQUIREMENT, ALL WATER METERS MUST BE INSTALLED WITHIN THE ROAD RIGHT-OF-WAY LINE, UPON APPROVAL BY CITY OF ASHEVILLE AND THE ENGINEER. IN CASES WHERE MULTIPLE METERS ARE INSTALLED TO SERVE CONNECTED SINGLE FAMILY HOUSING UNITS, ALL METERS MUST BE TAGGED WITH BRASS PLATES INSIDE THE METER BOX LABELED WITH THE UNIT NUMBER OR ADDRESS CORRESPONDING TO THAT METER.
- A TWO TO THREE FOOT MINIMUM SEPARATION BETWEEN THE BACK OF CURB/EDGE OF PAVEMENT AND THE WATER LINES IS REQUIRED. WATER LINE SHALL BE LOCATED ON A MINIMUM 5-FOOT SHOULDER OR BANK AND AWAY FROM DITCHES OR STEEP SLOPES.
- ALL WATER METER FITTINGS, VALVES, AND OTHER APPURTENANCES SHALL BE LEAD FREE MATERIALS.
- THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES TO CONTROL RUNOFF FROM THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES THAT MAY BE LEVIED DUE TO OFFSITE SEDIMENTATION CREATED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS DURING CONSTRUCTION AND SHALL REPAIR ROADS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF ASHEVILLE AND/OR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (AS APPLICABLE FOR JURISDICTION). OPEN-CUT ON ROADWAYS SHALL BE ALLOWED EXCEPT WHERE INDICATED ON THE DRAWINGS OR WHERE SPECIFIC PERMISSION MUST BE GRANTED BY THE CITY OF ASHEVILLE. SAND OR SIMILAR MATERIAL APPROVED BY THE CITY OF ASHEVILLE SHALL BE PLACED AS A PROTECTIVE BARRIER BETWEEN TRACK EQUIPMENT AND THE ROAD AND CLEANED UP PROPERLY AFTER CONSTRUCTION.
- THE DRAIN FROM THE METER VAULT SHALL DISCHARGE TO DAYLIGHT. THE DISCHARGE END SHALL HAVE A FLAP VALVE AT END OF THE PIPE.
- THE BUILDING SPRINKLER CONTRACTOR SHALL PROVIDE BUILDING SYSTEM CERTIFICATION TO THE CITY OF ASHEVILLE AND GAIN PRIOR APPROVAL FROM THE CITY FOR INSTALLATION OF ANY BACKFLOW PREVENTION DEVICE THAT DIFFERS FROM THOSE FOUND IN THE CITY OF ASHEVILLE TECHNICAL SPECIFICATIONS MANUAL.

**NOTE-9**

**GENERAL NOTES FOR WATER  
(CITY OF ASHEVILLE) CONT'D**

- BACKFLOW PREVENTION ASSEMBLIES (WHERE INDICATED ON PLANS):
  - THE DEDICATED FIRE LINE BACKFLOW PREVENTOR (BFP) SHALL BE SIX (6) INCH REDUCED PRESSURE ZONE (RPZ), WITH BY-PASS DETECTOR ASSEMBLY AND SHALL MEET THE CITY OF ASHEVILLE TECHNICAL SPECIFICATIONS MANUAL FOR APPROVED BFP DEVICES.
  - THE COMBINATION FIRE/DOMESTIC BACKFLOW PREVENTOR (BFP) SHALL BE SIX (6) INCH REDUCED PRESSURE ZONE (RPZ), WITHOUT BY-PASS DETECTOR ASSEMBLY AND SHALL MEET THE CITY OF ASHEVILLE TECHNICAL SPECIFICATIONS MANUAL FOR APPROVED BFP DEVICES.
  - ALL RPZ BACKFLOW PREVENTOR ENCLOSURES SHALL MEET ASSE 1060 STANDARD REQUIREMENTS.
  - ALL DOMESTIC AND/OR SPRINKLER BACKFLOW PREVENTORS (BFP) SHALL BE REDUCED PRESSURE ZONE (RPZ) AND MEET THE CITY OF ASHEVILLE TECHNICAL SPECIFICATIONS MANUAL FOR APPROVED BFP DEVICES.
  - WHERE A BACKFLOW PREVENTION DEVICE IS INSTALLED INSIDE A BUILDING, AND SPECIFICALLY ALLOWED BY THE DRAWINGS, THE BACKFLOW PREVENTION ROOM SHALL HAVE EXTERIOR ENTRY AND KNOX BOX. A FLOOR DRAIN SHALL BE INSTALLED IN THE ROOM WITH DISCHARGE TO DAYLIGHT. THE TOP OF THE DRAIN SHALL BE LOCATED A MINIMUM OF ONE (1) INCH OR TWO (2) TIMES THE SIZE OF THE DISCHARGE RELIEF OUTLET, WHICHEVER IS GREATER, DIRECTLY BELOW THE RELIEF PORT OF THE BACKFLOW PREVENTOR ASSEMBLY. THE DRAIN PIPE SHALL BE A MINIMUM OF TWO (2) TIMES THE SIZE OF THE RELIEF OUTLET, WHICHEVER IS GREATER. DRAINAGE DESIGN SHALL INCLUDE THE BACKFLOW PREVENTOR DISCHARGE.
  - A PRESSURE REDUCING VALVE SHALL BE INSTALLED PRIOR TO THE BACKFLOW PREVENTOR ASSEMBLY FOR PRESSURES EXCEEDING 175 PSI.
  - ALL REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTOR ASSEMBLIES SHALL HAVE A CHECK VALVE IMMEDIATELY BEFORE THE ASSEMBLY. THE FIRE LINE CHECK VALVE SHALL BE UL/FM RATED.
  - THE RPZ SHALL BE INSTALLED ON THE FIRE LINE PRIOR TO ANY BRANCHING OF THE PLUMBING LINES.
  - SUPERVISORY (TAMPER) SWITCHES, AS AN ACCESSORY TO THE BACKFLOW PREVENTOR ASSEMBLY, SHALL BE INSTALLED ON BOTH GATE VALVES OF THE ASSEMBLY, AND CONNECTED TO AN AUDIBLE OR VISUAL ALARM, PROVIDED WITH THE SWITCHES.
  - ALL REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTORS SHALL MEET ASSE 1060 STANDARD REQUIREMENTS, INCLUDING BUT NOT LIMITED TO, WALLS AND STRUCTURES ARE TO BE 10 FEET MINIMUM FROM PROPOSED WATERLINE, GAS, CABLE, AND OTHER UTILITIES ARE TO BE INSTALLED SUCH THAT CLEARANCES FROM THE WATER LINE ARE MAINTAINED OR LOCATED ON THE OPPOSITE SIDE OF THE ROAD.
- THE 20 FOOT WIDE CITY OF ASHEVILLE WATER LINE EASEMENT SHALL BE KEPT CLEAR OF TREES, SHRUBS, OR ANY PERMANENT TYPE STRUCTURE. TREES ARE TO BE 10 FEET MINIMUM FROM THE PROPOSED WATERLINE.
- WATER METERS, FIRE HYDRANTS, VAULTS AND BACKFLOW PREVENTOR ENCLOSURES SHALL BE LOCATED IN A FLAT AREA OUTSIDE OF PAVEMENT OR DRIVEWAYS.
- ALL PRIVATE FIRE HYDRANTS SHALL BE PAINTED "FEDERAL RED".
- SERVICE TAPS ON EXISTING ACTIVE WATER LINES SHALL BE MADE BY THE CITY OF ASHEVILLE WATER RESOURCES DEPARTMENT.
- CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED ON APPENDIX B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL BE LISTED ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVED ASSEMBLIES. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT.
- RESTRAINED JOINTS BY AN APPROVED PIPE MANUFACTURER ARE TO BE USED FOR ALL PUBLIC WATER LINE. THRUST BLOCKS ARE PERMITTED WHERE CONNECTIONS ARE MADE TO EXISTING WATER LINES OR WHERE THE USE OF MECHANICAL RESTRAINT IS NOT FEASIBLE.
- GAS LINES, CABLE, AND OTHER UTILITIES SHALL BE INSTALLED SUCH THAT CLEARANCES FROM THE WATER LINE ARE MAINTAINED, OR THEY SHALL BE LOCATED ON THE OPPOSITE SIDE OF THE ROAD.
- NO UNIONS ARE PERMITTED FOR ANY SERVICE LINE BETWEEN THE MAIN AND THE WATER METER. SERVICE LINES MAY NOT EXCEED 60 FEET, AND IS TO RUN PERPENDICULAR TO THE MAIN.

**NOTE-9A**

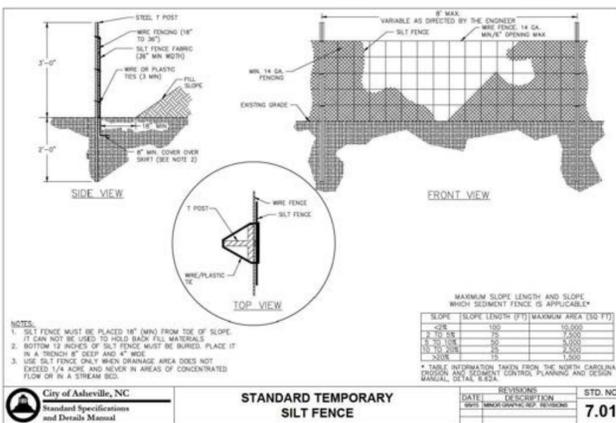


**NOTES:**  
POSTS SHALL BE SPACED AT 10' MAX.  
CHAIN LINK TO POST FASTENER - NO. 6 GA. ALUMINUM OR NO. 9 GA. GALVANIZED STEEL PRE-FORMED CLIPS, AT 14" MAX.  
CHAIN LINK TO TENSION WIRE FASTENERS - NO. 10 GA. GALVANIZED STEEL WIRE, AT 60" MAX.  
FABRIC TO CHAIN LINK FASTENERS - STEEL WIRE TIES, AT 24" C/C.  
FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. REPAIRS SHALL BE MADE AS NECESSARY.  
FABRIC SHALL BE REPLACED PROMPTLY IF FOUND TO BE IN DISREPAIR.  
SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT AND WHEN DEPOSITS REACH APPROX. 1/2 HEIGHT OF BARRIER.  
SUPER SILT FENCE INFORMATION TAKEN FROM PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL, PAGE 82. [www.ehrtary.dep.state.pa.us/eseeb/Gst/Document-88925/363-2134-008.pdf](http://www.ehrtary.dep.state.pa.us/eseeb/Gst/Document-88925/363-2134-008.pdf)  
MAINTENANCE REQUIREMENTS:  
INSPECT SILT FENCE ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF THE SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEBRIS DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

**SUPER SILT FENCE**

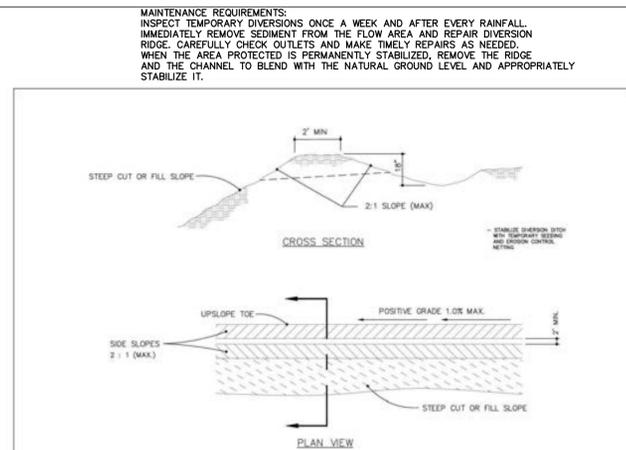
NOT TO SCALE

**EC-36A**



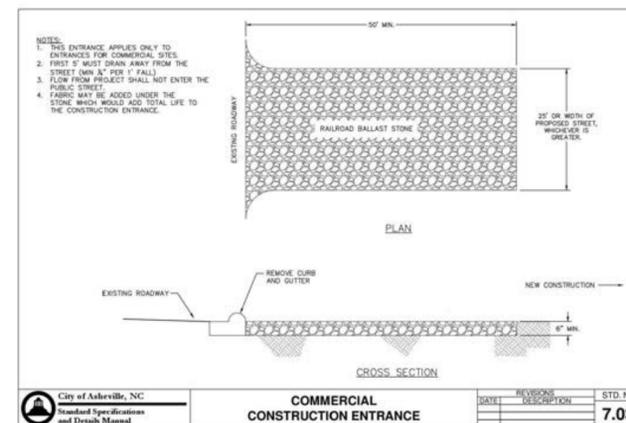
**STANDARD TEMPORARY SILT FENCE**

**7.01**



**DIVERSION DITCH**

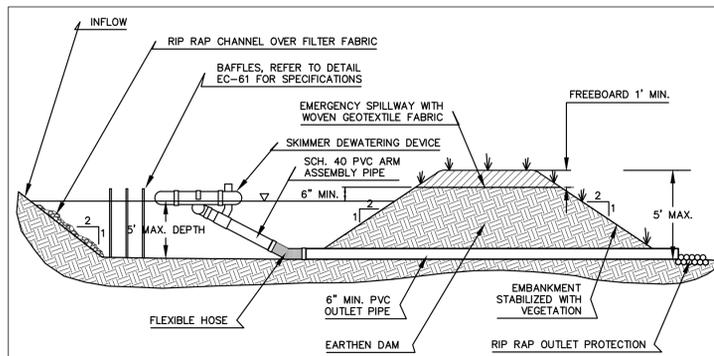
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**COMMERCIAL CONSTRUCTION ENTRANCE**

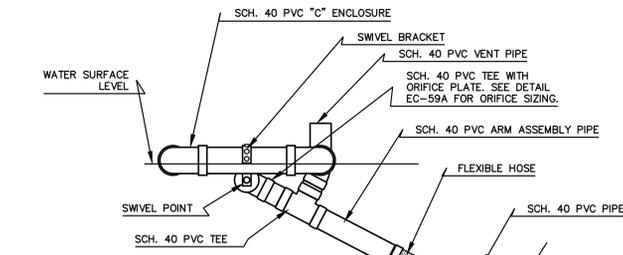
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NOTE: REFER TO EC-59A FOR BASIN SPECIFICATIONS

**BASIN SECTION**



NOTE: SECURE VINYL ROPE TO SKIMMER TO PROVIDE A MEANS OF REMOVING IT FROM EXCESS SILT BUILD UP.

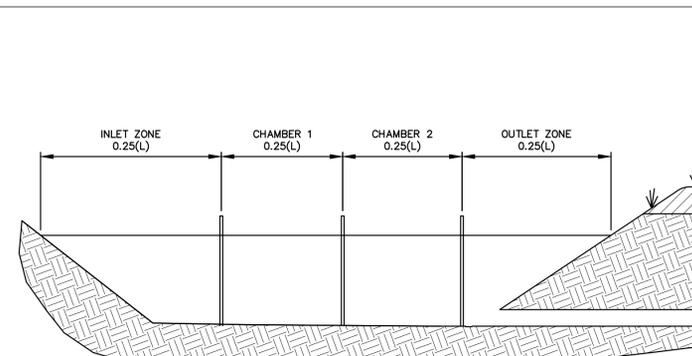
**SKIMMER SIDE ELEVATION**

SKIMMER SHALL BE LOCATED IN OUTLET ZONE. REFER TO DETAIL EC-59A FOR OUTLET ZONE LOCATION.

**TEMPORARY SKIMMER SEDIMENT BASIN 1A**

NOT TO SCALE

**EC-59**



**TEMPORARY SEDIMENT BASIN SCHEDULE**

BASIN NUMBER	DISTURBED AREA (ACRES)	MIN. VOLUME (CU. FT.)	LENGTH (FT.)	WIDTH (FT.)	DEPTH (FT.)	MIN. SURF. AREA (SF.)	INLET ZONE (FT.)	CHAMBER 1 (FT.)	CHAMBER 2 (FT.)	OUTLET ZONE (FT.)	SKIMMER SIZE (IN. DIA.)	ORIFICE SIZE (IN.)
1	1.06	1908	50	25	2.5	1034	12.5	12.5	12.5	12.5	3	0.75

**SPILLWAY DIMENSIONS**

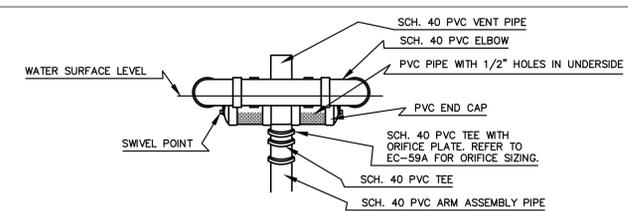
BASIN NUMBER	WIDTH (FT.)	DEPTH (FT.)
1	2	1

**MAINTENANCE REQUIREMENTS:**  
 INSPECT SKIMMER BASIN WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER. REPAIR BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR BAFFLES IF WATER IS FLOWING UNDER OR AROUND THEM. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. CHECK THE ORIFICE INSIDE THE SKIMMER TO ENSURE THAT IT IS NOT CLOGGED, IF SO, REMOVE THE DEBRIS. IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE TO REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER. CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAY, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER POOL AREAS. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM BEING PLUGGED WITH ICE.

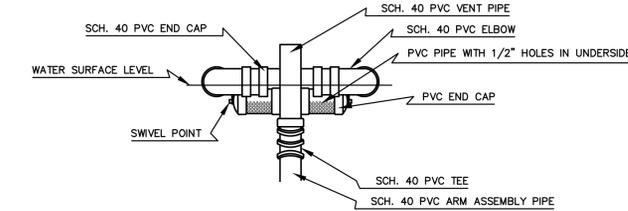
**TEMPORARY SKIMMER SEDIMENT BASIN 2A**

NOT TO SCALE

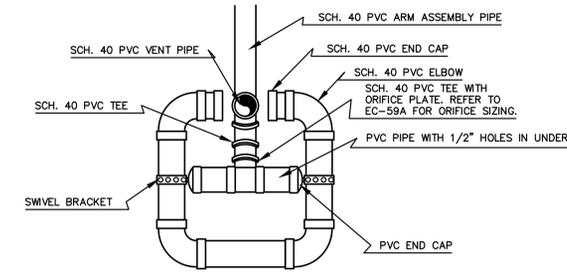
**EC-59A**



**SKIMMER FRONT ELEVATION**



**SKIMMER REAR ELEVATION**

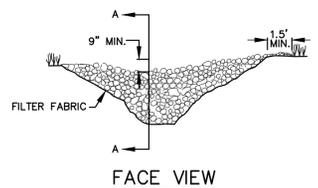


**SKIMMER PLAN VIEW**

**TEMPORARY SKIMMER SEDIMENT BASIN 1B**

NOT TO SCALE

**EC-60**



**FACE VIEW**



**SECTION A-A**

**STONE CHECK DAM:**  
 STONE SHOULD BE PLACED OVER THE CHANNEL BANKS TO KEEP WATER FROM CUTTING AROUND THE DAM. L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.

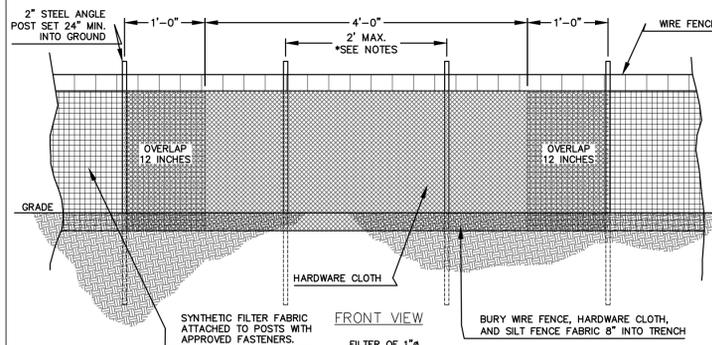
THE FOLLOWING CRITERIA SHOULD BE USED WHEN DESIGNING A CHECK DAM:  
 - ENSURE THAT THE DRAINAGE AREA ABOVE THE CHECK DAM DOES NOT EXCEED 2 ACRES.  
 - KEEP THE MAXIMUM HEIGHT AT 2 FT AT THE CENTER OF THE DAM.  
 - KEEP THE CENTER OF THE CHECK DAM AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES AT NATURAL GROUND ELEVATION.  
 - KEEP THE SIDE SLOPES OF THE DAM AT 2:1 OR FLATTER.  
 - STABILIZE OVERFLOW AREAS ALONG THE CHANNEL TO RESIST EROSION CAUSED BY CHECK DAMS.

**MAINTENANCE REQUIREMENTS:**  
 INSPECT CHECK DAMS AND CHANNELS WEEKLY AND AFTER EACH SIGNIFICANT (ONE-HALF INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED. ANTICIPATE SUBMERGENCE AND DEPOSITION ABOVE THE CHECK DAM AND EROSION FROM HIGH FLOWS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY. IF SIGNIFICANT EROSION OCCURS BETWEEN DAMS, ADDITIONAL MEASURES CAN BE TAKEN, SUCH AS, INSTALLING A PROTECTIVE RIP RAP LINER IN THAT PORTION OF THE CHANNEL. REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO THE CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE STONE CHECK DAM, AND PREVENT LARGE FLOWS FROM CARRYING SEDIMENT OVER THE DAM. ADD STONE TO THE DAMS AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS-SECTION.

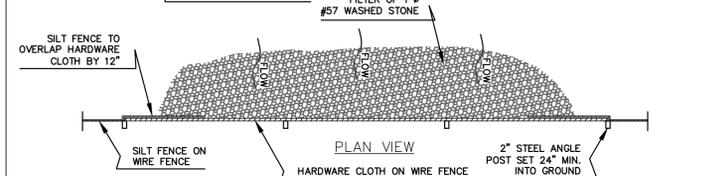
**RIPRAP CHECK DAM**

NOT TO SCALE

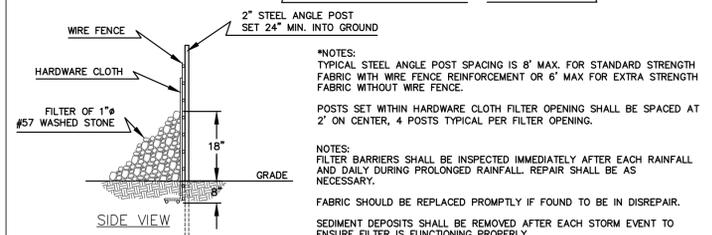
**EC-32**



**FRONT VIEW**



**PLAN VIEW**



**SIDE VIEW**

**NOTES:**  
 TYPICAL STEEL ANGLE POST SPACING IS 8' MAX. FOR STANDARD STRENGTH FABRIC WITH WIRE FENCE REINFORCEMENT OR 6' MAX FOR EXTRA STRENGTH FABRIC WITHOUT WIRE FENCE.  
 POSTS SET WITHIN HARDWARE CLOTH FILTER OPENING SHALL BE SPACED AT 2' ON CENTER, 4 POSTS TYPICAL PER FILTER OPENING.

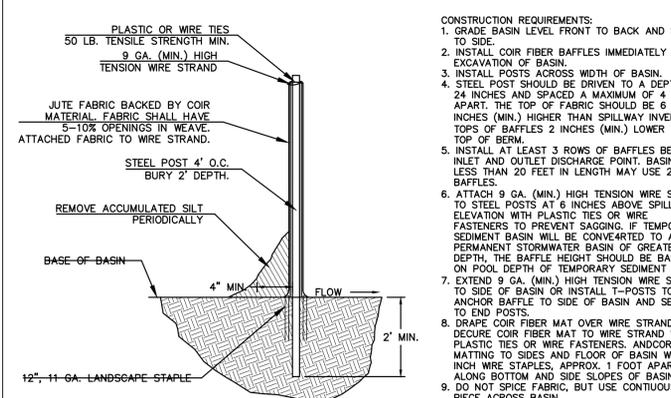
**NOTES:**  
 FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. REPAIR SHALL BE AS NECESSARY.  
 FABRIC SHOULD BE REPLACED PROMPTLY IF FOUND TO BE IN DISREPAIR. SEDIMENT DEPOSITS SHALL BE REMOVED AFTER EACH STORM EVENT TO ENSURE FILTER IS FUNCTIONING PROPERLY.  
 FOR REPAIRS OF FAILURES, USE #57 WASHED STONE.

EXCAVATE 8"x8" TRENCH UPSLOPE ALONG LINE OF POSTS, EXTEND FILTER FABRIC INTO TRENCH, A MINIMUM OF 8" DOWN AND 8" FORWARD ALONG THE TRENCH. BACKFILL TRENCH A MINIMUM OF 8" AND COMPACT SOIL.

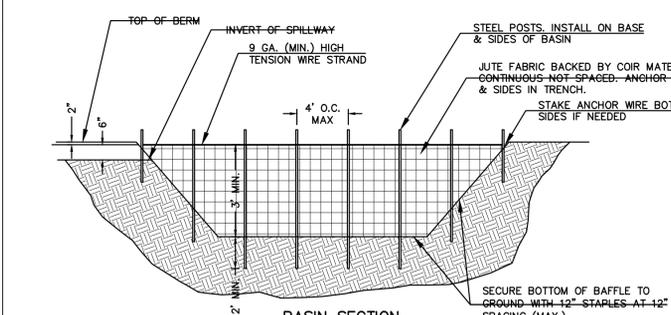
**MODIFIED FILTER BERM**

NOT TO SCALE

**EC-66**



**BAFFLE SECTION**



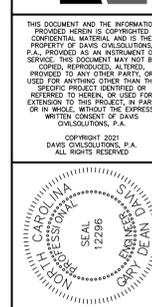
**BASIN SECTION**

**MAINTENANCE REQUIREMENTS:**  
 INSPECT BAFFLES WEEKLY AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF THE BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

**TEMPORARY BAFFLES**

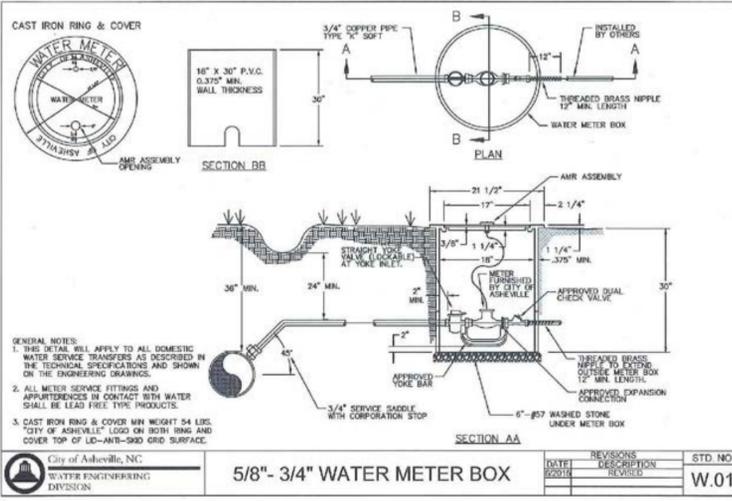
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**EC-61**

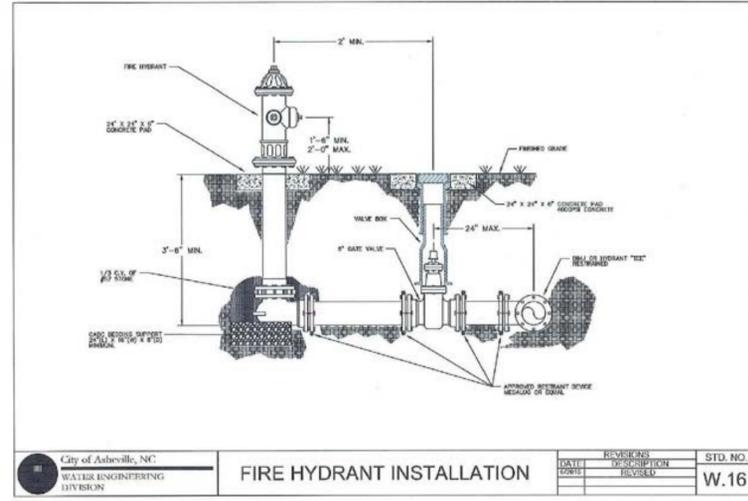


Job No.: 16161  
 Date: September, 2021  
 Scale: NTS  
 Revision:

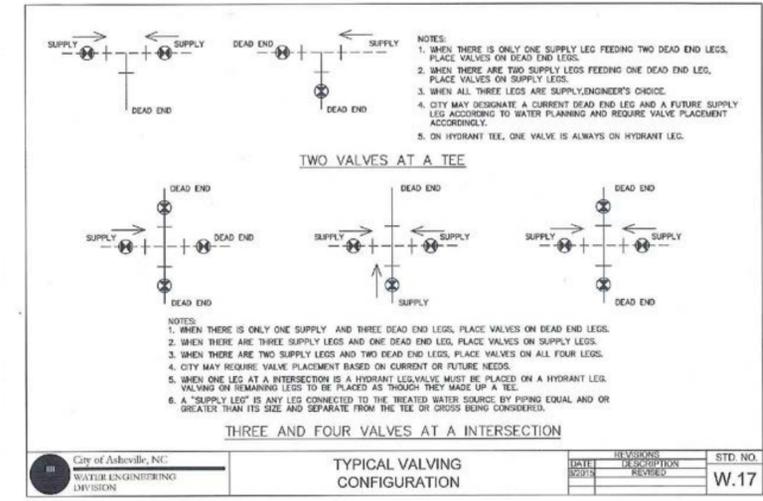
**DETAILS**



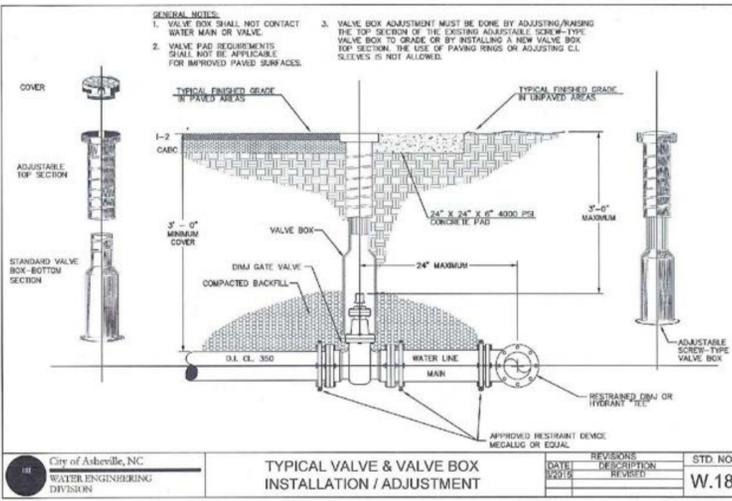
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**5/8" - 3/4" WATER METER BOX**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.01



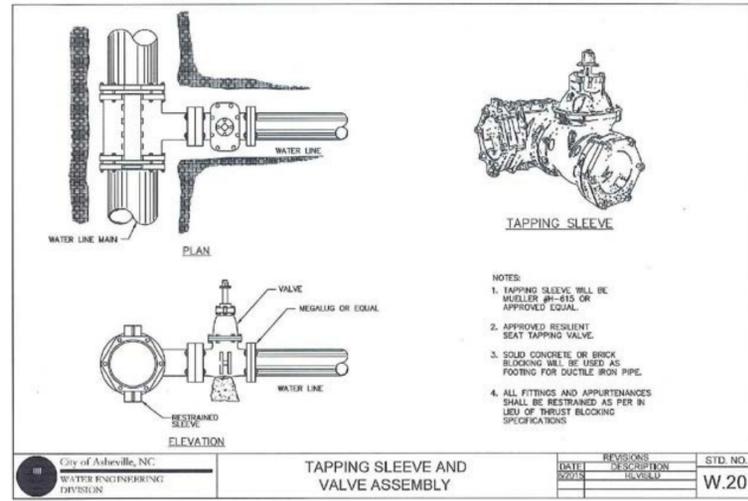
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**FIRE HYDRANT INSTALLATION**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.16



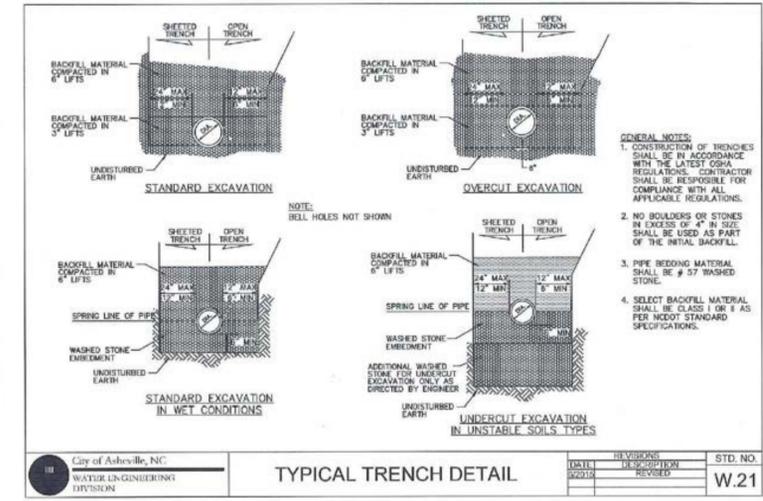
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**TYPICAL VALVING CONFIGURATION**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.17



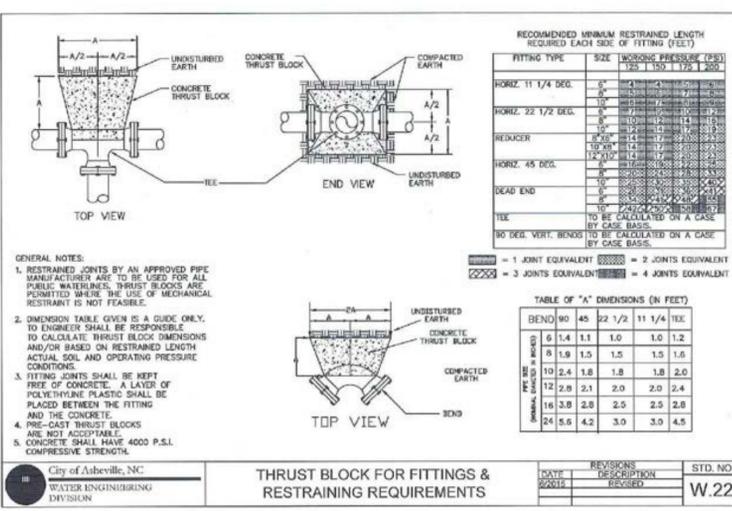
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**TYPICAL VALVE & VALVE BOX INSTALLATION / ADJUSTMENT**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.18



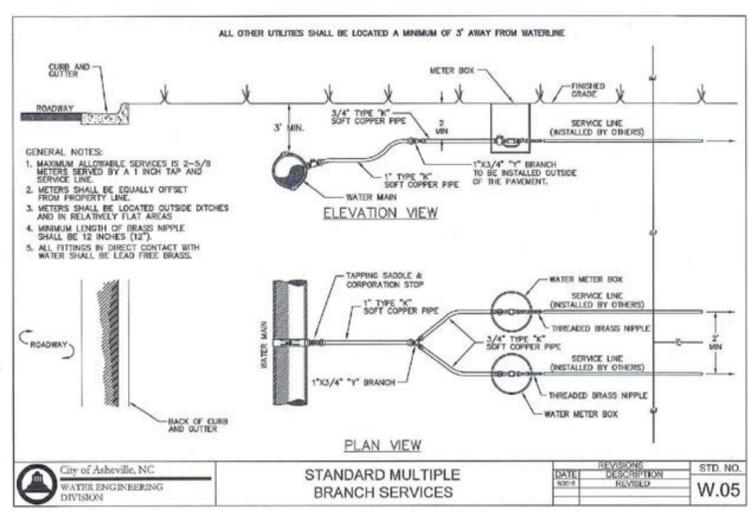
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**TAPPING SLEEVE AND VALVE ASSEMBLY**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.20



City of Asheville, NC  
WATER ENGINEERING DIVISION  
**TYPICAL TRENCH DETAIL**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.21



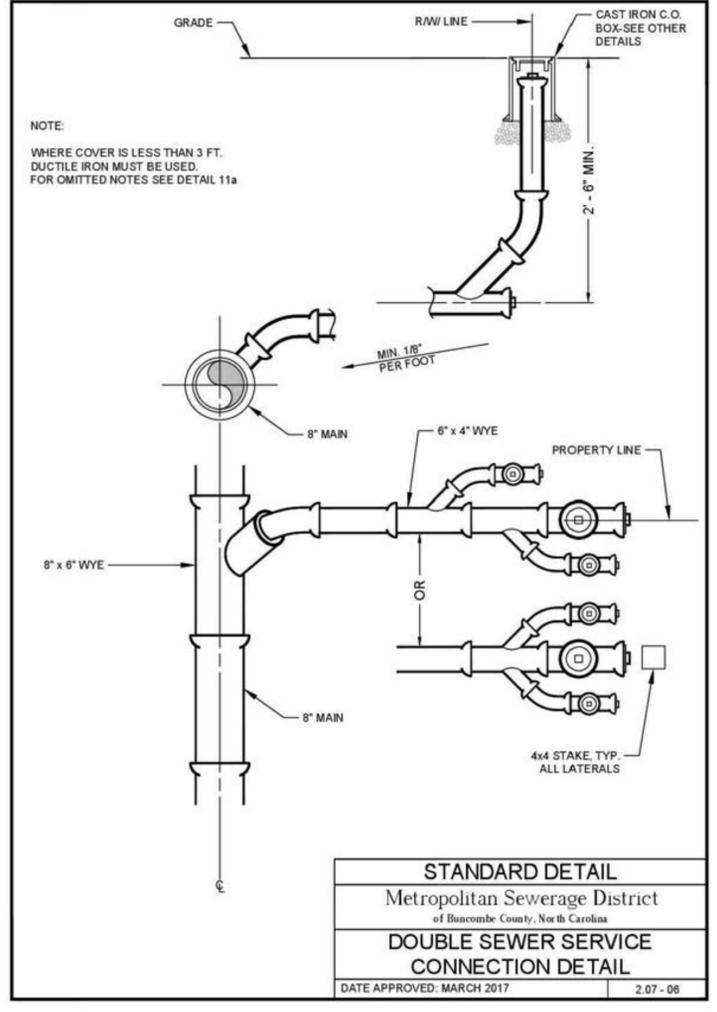
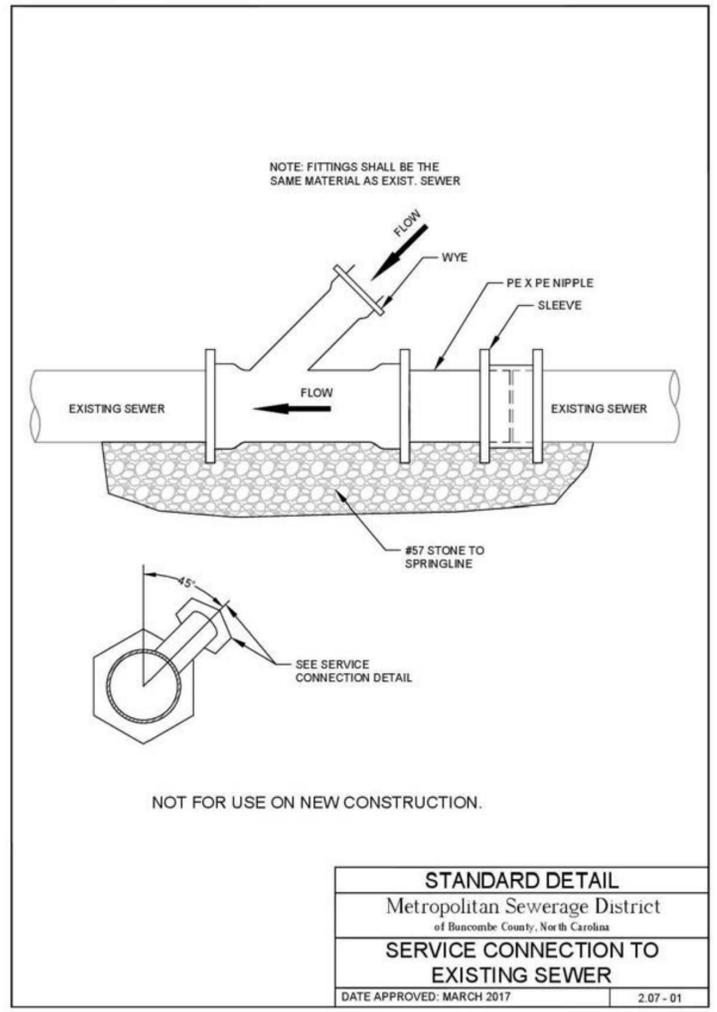
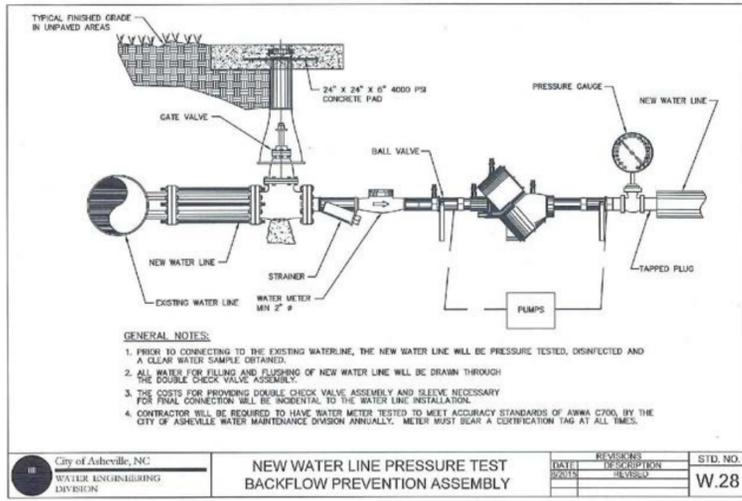
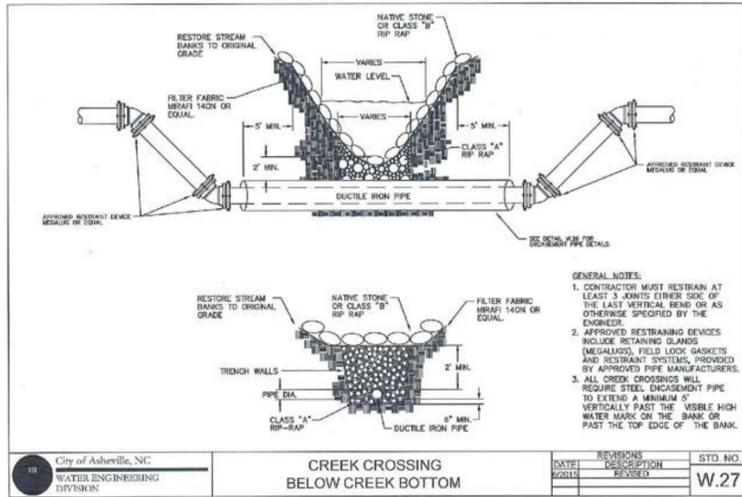
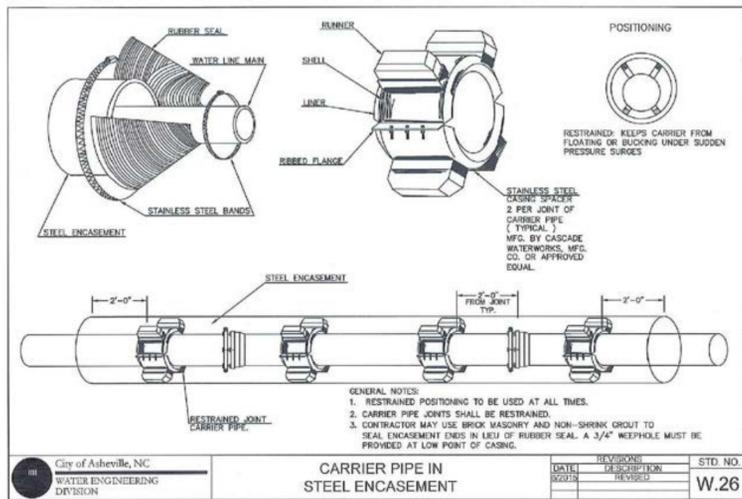
City of Asheville, NC  
WATER ENGINEERING DIVISION  
**THRUST BLOCK FOR FITTINGS & RESTRAINING REQUIREMENTS**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.22



City of Asheville, NC  
WATER ENGINEERING DIVISION  
**STANDARD MULTIPLE BRANCH SERVICES**  
DATE: 02/14/15  
REVISIONS: 1. REVISED  
DESCRIPTION: REVISED  
STD. NO.: W.05



Job No.: 15161  
Date: 15 November, 2021  
Scale: N15  
Revision:



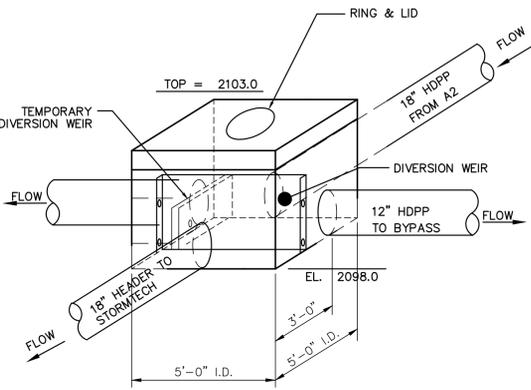
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1st Sub No. 181661  
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DETAILS



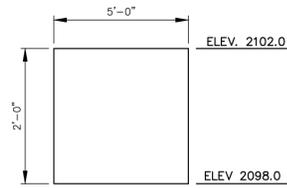
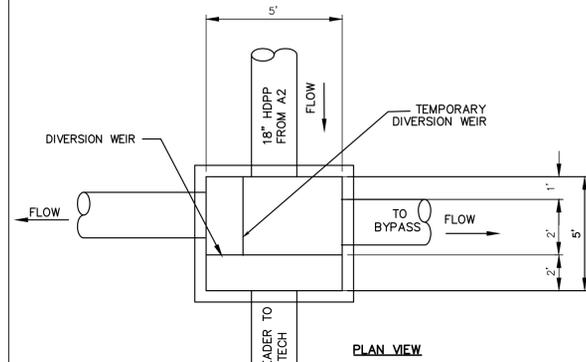
- NOTES:
1. CONCRETE SHALL BE 4000 PSI.
  2. RING AND LID SHALL BE LOCATED OVER INLET SIDE OF WEIR PLATE.
  3. BOX SHALL HAVE MANHOLE STEPS LOCATED DIRECTLY BELOW RING AND LID.
  4. ALL STEPS SHALL PROTRUDE A MIN. OF 5" AND A MAX. OF 7" FROM THE INSIDE FACE.

\*NOTE: CONTRACTOR SHALL INSTALL DIVERSION BOX IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND ANY RECOMMENDATIONS OF A STORMTECH REPRESENTATIVE.

\*NOTE: CONTRACTOR SHALL INSTALL TEMPORARY BYPASS LINES TO PREVENT DISCHARGE INTO THE STORMWATER DETENTION SYSTEM UNTIL THE SITE IS PAVED.

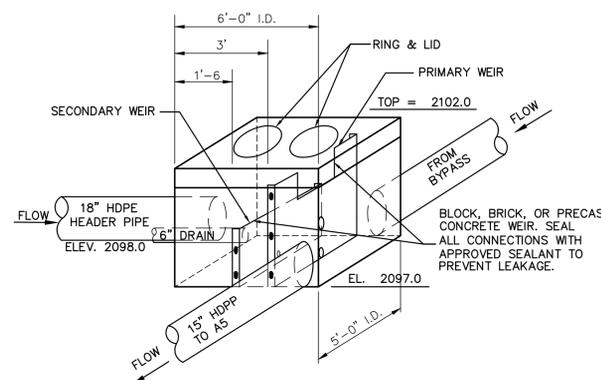
DIVERSION CONTROL STRUCTURE A3  
NOT TO SCALE

SWTR-3



DIVERSION CONTROL STRUCTURE A3  
NOT TO SCALE

SWTR-3

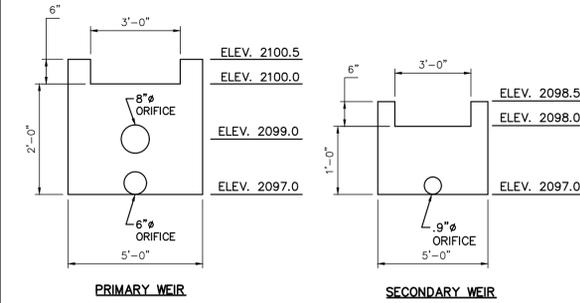
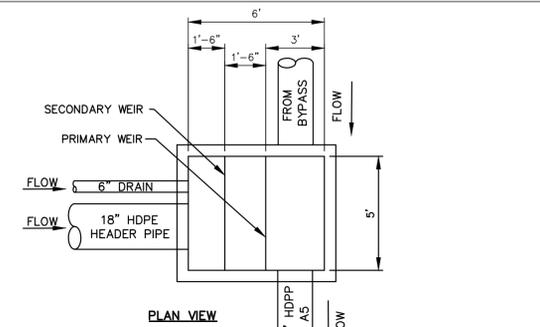


- NOTES:
1. CONCRETE SHALL BE 4000 PSI.
  2. RING AND LID SHALL BE LOCATED OVER INLET SIDE AND OUTLET SIDE OF BOX.
  3. BOX SHALL HAVE MANHOLE STEPS LOCATED DIRECTLY BELOW RING AND LID.
  4. ALL STEPS SHALL PROTRUDE A MIN. OF 5" AND A MAX. OF 7" FROM THE INSIDE FACE.

DETENTION SYSTEM BYPASS NOTE:  
CONTRACTOR SHALL INSTALL TEMPORARY 12" HDPP BYPASS PIPE, WITH FITTINGS, FROM BOX A3 TO BOX A4 UNTIL SITE IS STABILIZED. UPON SITE STABILIZATION, CONTRACTOR SHALL PLUG CONNECTIONS AT BOXES A3 AND A5, AND THE BYPASS LINE SHALL BE ABANDONED IN PLACE.

DETENTION CONTROL BOX A4  
NOT TO SCALE

SWTR-3



DETENTION CONTROL BOX A4  
NOT TO SCALE

SWTR-3

### STORMTECH GENERAL NOTES

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. OUR TECHNICAL SERVICES DEPARTMENT OFFERS CONTRACTORS. CONTACT OUR TECHNICAL SERVICES REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE-INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 1-888-892-2694 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT [WWW.STORMTECH.COM](http://WWW.STORMTECH.COM) TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH'S REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 18 INCHES NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 96 INCHES INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 24 INCHES, MAXIMUM COVER IS 96 INCHES.
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH'S INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH'S INSTALLATION INSTRUCTIONS FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE AT STORMTECH'S WEBSITE: [WWW.STORMTECH.COM](http://WWW.STORMTECH.COM). THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH'S REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. SEE CURRENT PRODUCT WARRANTY FOR DETAILS. TO ACQUIRE A COPY CALL STORMTECH AT 1-888-892-2694 OR VISIT [WWW.STORMTECH.COM](http://WWW.STORMTECH.COM).

\* NOTE: CHAMBER SYSTEM DESIGN MUST BE IN ACCORDANCE WITH STORMTECH DESIGN MANUAL

		20 Beaver Road, Suite 104 Wethersfield, CT 06109 Phone: 888-892-2694 Fax: 866-328-8401 <a href="http://www.stormtech.com">www.stormtech.com</a>
STORMTECH GENERAL NOTES		
SCALE:	NTS	CHECKED
DATE:	ACAD NO.	
DRAWN BY:	SHEET	OF

### STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740, SC-310 OR APPROVED EQUAL.
2. CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418-05, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
4. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
5. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
  - a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM 2418-05 MUST BE USED AS PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
  - b. A CERTIFICATION BY THE MANUFACTURER THAT THE CHAMBERS ARE IN ACCORDANCE WITH ASTM F2418-05.
6. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
7. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
8. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

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STORMWATER CHAMBER SPECIFICATIONS		
SCALE:	NTS	CHECKED
DATE:	ACAD NO.	
DRAWN BY:	SHEET	OF

### STORMTECH PRODUCT SPECIFICATIONS

- 1.0 GENERAL
- 1.1 STORMTECH CHAMBERS ARE DESIGNED TO CONTROL STORMWATER RUNOFF. AS A SUBSURFACE RETENTION SYSTEM, STORMTECH CHAMBERS RETAIN AND ALLOW EFFECTIVE INFILTRATION OF WATER INTO THE SOIL. AS A SUBSURFACE DETENTION SYSTEM, STORMTECH CHAMBERS DETAIN AND ALLOW FOR THE METERED FLOW OF WATER TO AN OUTFALL.
- 2.0 CHAMBER PARAMETERS
- 2.1 THE CHAMBER SHALL BE INJECTION MOLDED OF POLYPROPYLENE RESIN TO BE INHERENTLY RESISTANT TO ENVIRONMENTAL STRESS CRACKING (ESC), AND TO MAINTAIN ADEQUATE STIFFNESS THROUGH HIGHER TEMPERATURES EXPERIENCED DURING INSTALLATION AND SERVICE.
- 2.2 THE NOMINAL CHAMBER DIMENSIONS OF THE STORMTECH SC-740 SHALL BE 90.0 INCHES TALL, 51.0 INCHES WIDE AND 90.7 INCHES LONG. THE NOMINAL CHAMBER DIMENSIONS OF THE STORMTECH SC-310 SHALL BE 16.0 INCHES TALL, 34.0 INCHES WIDE AND 90.7 INCHES LONG. THE INSTALLED LENGTH OF A JOINED CHAMBER SHALL BE 85.4 INCHES.
- 2.3 THE CHAMBER SHALL HAVE A CONTINUOUSLY CURVED SECTION PROFILE.
- 2.4 THE CHAMBER SHALL BE OPEN-BOTTOMED.
- 2.5 THE CHAMBER SHALL INCORPORATE AN OVERLAPPING CORRUGATION JOINT SYSTEM TO ALLOW CHAMBER ROWS OF ALMOST ANY LENGTH TO BE CREATED. THE OVERLAPPING CORRUGATION JOINT SYSTEM SHALL BE EFFECTIVE WHILE ALLOWING A CHAMBER TO BE TRIMMED TO SHORTEN ITS OVERALL LENGTH.
- 2.6 THE NOMINAL STORAGE VOLUME OF A JOINED STORMTECH SC-740 CHAMBER SHALL BE 74.9 CUBIC FEET PER CHAMBER WHEN INSTALLED PER STORMTECH'S TYPICAL DETAILS (INCLUDES THE VOLUME OF CRUSHED ANGULAR STONE WITH AN ASSUMED 40% POROSITY). THIS EQUATES TO 2.2 CUBIC FEET OF STORAGE/SQUARE FOOT OF BED. THE NOMINAL STORAGE VOLUME OF AN INSTALLED STORMTECH SC-310 CHAMBER SHALL BE 31.0 CUBIC FEET PER CHAMBER WHEN INSTALLED PER STORMTECH'S TYPICAL DETAILS (INCLUDES THE VOLUME OF CRUSHED ANGULAR STONE WITH AN ASSUMED 40% POROSITY). THIS EQUATES TO 1.3 CUBIC FEET OF STORAGE/SQUARE FOOT OF BED.
- 2.7 THE CHAMBER SHALL HAVE FORTY-EIGHT ORIFICES PENETRATING THE SIDEWALLS TO ALLOW FOR LATERAL CONVEYANCE OF WATER.
- 2.8 THE CHAMBER SHALL HAVE TWO ORIFICES NEAR ITS TOP TO ALLOW FOR EQUALIZATION OF AIR PRESSURE BETWEEN ITS INTERIOR AND EXTERIOR.
- 2.9 THE CHAMBER SHALL HAVE BOTH OF ITS ENDS OPEN TO ALLOW FOR UNIMPEDED HYDRAULIC FLOWS AND VISUAL INSPECTIONS DOWN A ROW'S ENTIRE LENGTH.
- 2.10 THE CHAMBER SHALL HAVE 14 CORRUGATIONS.
- 2.11 THE CHAMBER SHALL HAVE A CIRCULAR, INDENTED, FLAT SURFACE ON THE TOP OF THE CHAMBER FOR AN OPTIONAL 4-INCH INSPECTION PORT.
- 2.12 THE CHAMBER SHALL BE ANALYZED AND DESIGNED USING AASHTO METHODS FOR THERMOPLASTIC CULVERTS CONTAINED IN THE LRFD BRIDGE DESIGN SPECIFICATIONS, 2ND EDITION, INCLUDING INTERIM SPECIFICATIONS THROUGH 2001. DESIGN LIVE LOAD SHALL BE THE AASHTO HS20 TRUCK. DESIGN SHALL CONSIDER EARTH AND LIVE LOADS AS APPROPRIATE FOR THE MINIMUM TO MAXIMUM SPECIFIED DEPTH OF FILL.
- 2.13 THE CHAMBER SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.
- 3.0 END CAP PARAMETERS
- 3.1 THE END CAP SHALL BE INJECTION MOLDED OF POLYETHYLENE RESIN TO HELP FACILITATE FACTORY MANUFACTURED PIPE FITTINGS.
- 3.2 THE END CAP SHALL BE DESIGNED TO FIT INTO ANY CORRUGATION OF A CHAMBER, WHICH ALLOWS CAPPING A CHAMBER THAT HAS ITS LENGTH TRIMMED, SEGMENTING ROWS INTO STORAGE BASINS OF VARIOUS LENGTHS.
- 3.3 THE END CAP SHALL HAVE SAW GUIDES TO ALLOW EASY CUTTING FOR VARIOUS DIAMETERS OF PIPE THAT MAY BE USED TO INLET THE SYSTEM.
- 3.4 THE END CAP SHALL HAVE EXCESS STRUCTURAL ADEQUACIES TO ALLOW CUTTING AN ORIFICE OF ANY SIZE AT ANY INVERT ELEVATION.
- 3.5 THE PRIMARY FACE OF AN END CAP SHALL BE CURVED OUTWARD TO RESIST HORIZONTAL LOADS GENERATED NEAR THE EDGES OF BEDS.
- 3.6 THE END CAP SHALL BE MANUFACTURED IN AN ISO 9001:2000 CERTIFIED FACILITY.

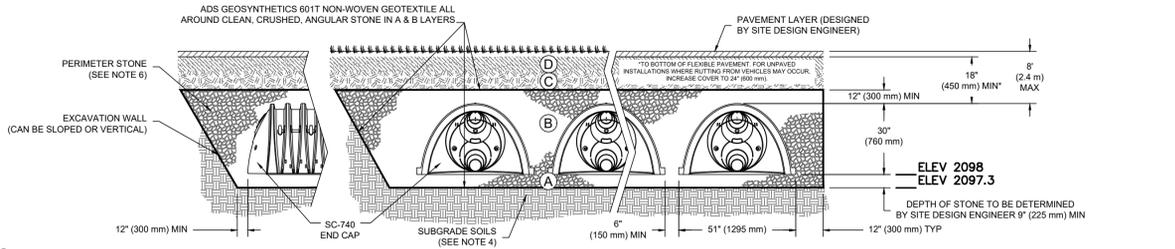
\* NOTE: CHAMBER SYSTEM DESIGN MUST BE IN ACCORDANCE WITH STORMTECH DESIGN MANUAL

		20 Beaver Road, Suite 104 Wethersfield, CT 06109 Phone: 888-892-2694 Fax: 866-328-8401 <a href="http://www.stormtech.com">www.stormtech.com</a>
STORMTECH PRODUCT SPECIFICATIONS		
SCALE:	NTS	CHECKED
DATE:	ACAD NO.	
DRAWN BY:	SHEET	OF

**ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS**

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2.4, A-3 OR AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>2</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2</sup>

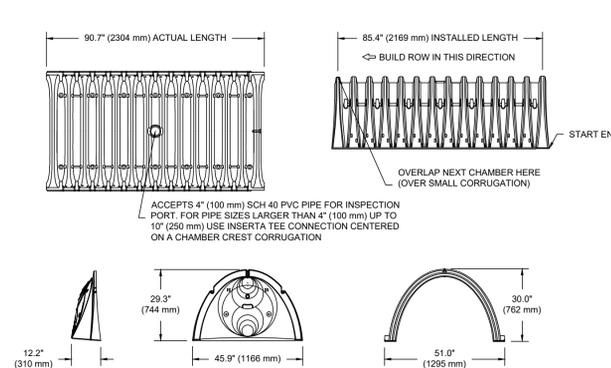
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT CLEANING EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



**NOTES:**

- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

**SC-740 TECHNICAL SPECIFICATION**



**NOMINAL CHAMBER SPECIFICATIONS**

SIZE (W x H x INSTALLED LENGTH): 51.0" x 30.0" x 85.4" (1295 mm x 762 mm x 2169 mm)

CHAMBER STORAGE: 45.9 CUBIC FEET (1.30 m<sup>3</sup>)

MINIMUM INSTALLED STORAGE: 74.9 CUBIC FEET (2.12 m<sup>3</sup>)

WEIGHT: 75.0 lbs. (33.6 kg)

\*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

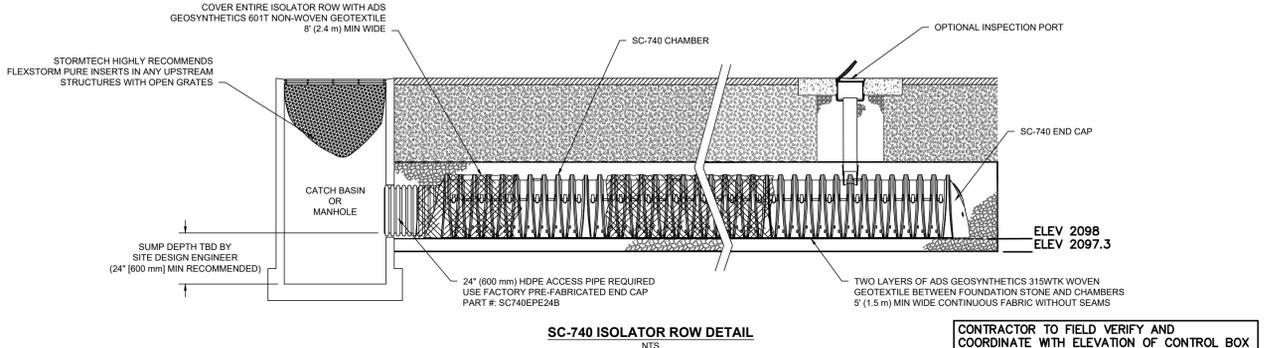


PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE06B / SC740EPE06BPC	6" (150 mm)	10.9" (277 mm)	---	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	---
SC740EPE08B / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	---	0.6" (15 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	---
SC740EPE10B / SC740EPE10BPC	10" (250 mm)	13.4" (340 mm)	---	0.7" (18 mm)
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	---
SC740EPE12B / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	---	1.2" (30 mm)
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	---
SC740EPE15B / SC740EPE15BPC	15" (375 mm)	18.4" (467 mm)	---	1.3" (33 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	---
SC740EPE18B / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	---	1.6" (41 mm)
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

\* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

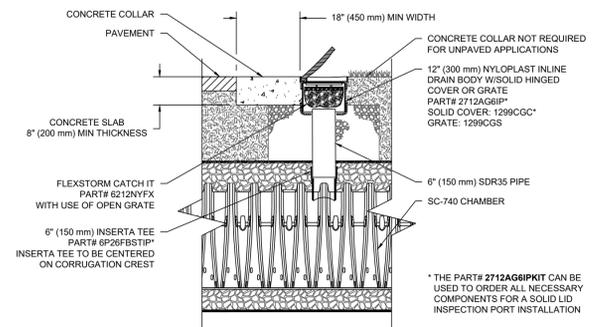


**INSPECTION & MAINTENANCE**

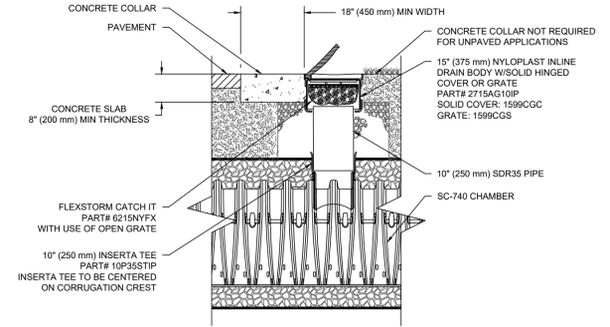
- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
    - REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
    - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
    - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
    - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
    - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
  - ALL ISOLATOR ROWS
    - REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
    - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
      - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
      - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
    - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

**NOTES**

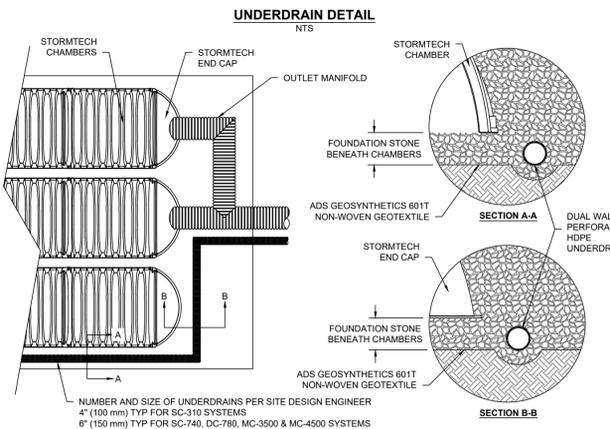
- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



**SC-740 6" INSPECTION PORT DETAIL**



**SC-740 10" INSPECTION PORT DETAIL**



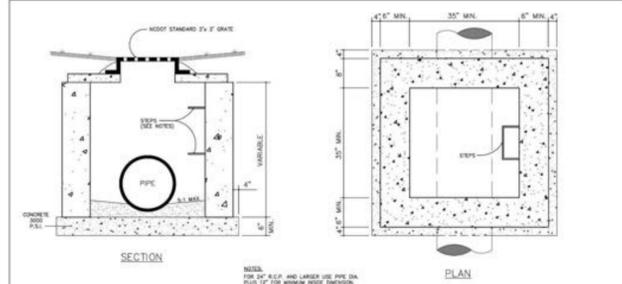
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Revision:

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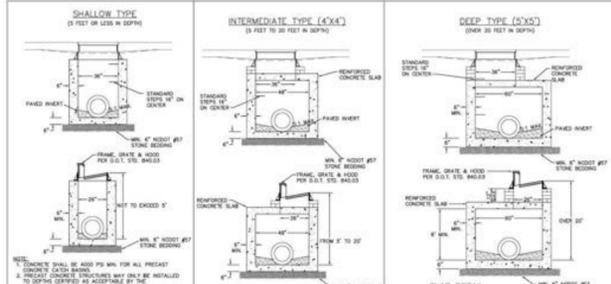


**City of Asheville, NC**  
Standard Specifications  
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**STANDARD YARD INLET WITH  
GRATE AND FRAME**

DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ STD. NO.: **8.02**

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DESCRIPTION  
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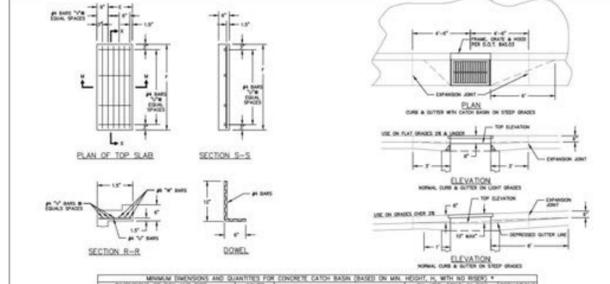


**City of Asheville, NC**  
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and Details Manual

**PRECAST CONCRETE  
CATCH BASIN**

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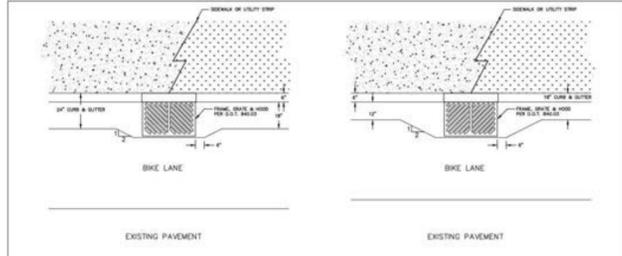


**City of Asheville, NC**  
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**PRECAST CONCRETE  
CATCH BASIN**

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DESCRIPTION  
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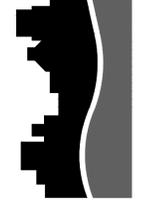


**City of Asheville, NC**  
Standard Specifications  
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**CURB INLETS FOR  
18" & 24" CURB & GUTTER**

DATE: \_\_\_\_\_ REVISIONS: \_\_\_\_\_ STD. NO.: **8.05**

REVISIONS:  
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Site Development Plan for  
**Mayfair Townhomes**  
ASHEVILLE, NORTH CAROLINA

Job No.: 15161  
Date: September, 2021  
Create: NLS  
Revision:

**DETAILS**

Sheet  
**D8**