GENERAL NOTES

1. THE PURPOSE OF THIS PLAN IS TO PROVIDE IMPROVEMENTS TO HELEN TITTER PARK ON LEWIS STREET IN CHESAPEAKE CITY, MD. THE EXISTING PARKING LOT WILL BE RECONFIGURED TO PROVIDE DEDICATED SPACES AND A MODULAR BATH HOUSE WILL BE PLACED ADJACENT TO THE EXISTING PAVILION. THE BATH HOUSE WILL BE CONNECTED TO TOWN WATER AND SEWER ON SITE.
2. GROUND SURFACE ELEVATIONS SHOWN ON THE DRAWINGS ARE CORRECT AS OF THE DATE OF THE ASSOCIATED FIELD SURVEY BY KCI TECHNOLOGIES IN MAY, 2017. VERTICAL DATUM: NAVD88
   HORIZONTAL DATUM: NAD83
3. F.I.R.M # 24015C0193E, EFFECTIVE 5/4/15 SHOWS THE SITE IS LOCATED IN FLOOD ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN).
4. NO WETLANDS ARE PRESENT ON SITE IN THE AREA OF WORK.
5. THE SITE FALLS WITHIN THE CHESAPEAKE BAY CRITICAL AREA, DESIGNATED AS INTENSELY DEVELOPED AREA (IDA).
6. CONTRACTOR WILL BE RESPONSIBLE FOR MONITORING SEDIMENT TRACKING ON PAVED SURFACES. STREET SWEEPING WILL BE REQUIRED IF SEDIMENT IS FOUND ON ROADWAYS.
7. SUBSURFACE UTILITIES SHOWN BASED ON VISUALLY OBSERVED EVIDENCE AT GROUND LEVEL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONFER WITH THE UTILITY COMPANIES INVOLVED IN ORDER TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BE DONE WITHOUT FIRST CALLING "MISS UTILITY" (1-800-257-7777) 72 HOURS PRIOR TO EXCAVATION TO HAVE UNDERGROUND UTILITIES LOCATED AND MARKED.
8. ALL SLOPES 3:1 OR GREATER WILL REQUIRE EROSION CONTROL MATTING.

SITE DATA

OWNER / DEVELOPER	TOWN OF CHESAPEAKE CITY
SITE ADDRESS	LEWIS STREET, CHESAPEAKE CITY, MD 21915
DEED	00464 / 00320
ZONING	TND - TRADITIONAL NEIGHBORHOOD DEVELOPMENT
PARCEL / MAP / GRID	0200 / 0000 / 0466
TOTAL SITE AREA	2.258 AC
AREA TO BE DISTURBED	3,610 SF

STANDARD NOTES FOR UTILITY INSTALLATION

1. CALL MISS UTILITY AT 1-800-257-7777 48 HOURS PRIOR TO THE START OF WORK.
2. ONLY ENOUGH TRENCH SHOULD BE EXCAVATED WHICH CAN BE BACKFILLED DAILY.
3. EXCAVATED TRENCH MATERIALS SHOULD BE PLACED ON THE HIGH SIDE OF THE TRENCH.
4. IMMEDIATELY FOLLOWING UTILITY INSTALLATION, THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED IN THE SAME DAY.
5. FULL TRENCH COMPACTION IS REQUIRED.
6. MULCHING TO CECIL SCD SPECIFICATIONS OF ALL DISTURBED AREAS AND DAILY ON BACKFILL WILL BE REQUIRED.
7. CONTROL PRACTICES WHICH ARE DISTURBED DURING UTILITY CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE END OF EACH WORKING DAY.
8. ANY DITCHES OR DRAINAGE WAYS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION.

SEDIMENT CONTROL NOTES

1. THE CONTRACTOR SHALL ENSURE THAT LAND DISTURBANCE DOES NOT EXCEED 5,000 SQUARE FEET.
2. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO PUBLIC ROADS. ALL MATERIALS DEPOSITED ONTO PUBLIC ROADS SHALL BE REMOVED IMMEDIATELY.
3. ONITE TEMPORARY STOCKPILE AREAS MUST BE PLACED AS SHOWN ON THE PLAN. IF THE CONSTRUCTION SCHEDULE IS TO EXCEED 3 DAYS, THE STOCKPILE AREAS MUST BE STABILIZED. UPON COMPLETION OF THE USE OF THE STOCKPIE AREA, EXISTING GROUND SURFACES MUST BE RESTORED TO THEIR ORIGINAL CONDITIONS AND PERMANENTLY STABILIZED.
4. VARIOUS STEPS IN THE SEQUENCE OF CONSTRUCTION MAY REQUIRE THE CONTRACTOR TO REMOVE EXCESS EXCAVATED MATERIAL TO AN APPROVED LOCATION OR TO IMPORT MATERIAL FROM AN APPROVED LOCATION. FOR PURPOSES OF THIS PLAN, AN APPROVED LOCATION SHALL BE ONE WHICH IS OPERATING UNDER AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND AN ACTIVE GRADING PERMIT AT THE TIME OF CONSTRUCTION.
5. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN AN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED.
6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:

   THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES EQUAL TO OR GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1)

   SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

   THE ABOVE REQUIREMENTS DO NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING USED FOR MATERIAL STORAGE OR FOR THOSE AREAS ON WHICH ACTUAL CONSTRUCTION ACTIVITIES ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT THE STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
7. SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE ENTIRE CONTRIBUTING AREA TO THE PRACTICE HAS BEEN PERMANENTLY STABILIZED.
8. ALL AREAS DISTURBED BY THE REMOVAL OF SEDIMENT CONTROL DEVICES MUST BE IMMEDIATELY STABILIZED.

CONCEPT SITE PLANS
FOR
HELEN TITTER PARK
CHESAPEAKE CITY, MARYLAND

LOCATION MAP SCALE: 1"=600'

INDEX OF SHEETS

C-1	COVER SHEET
C-2	SITE GRADING AND UTILITY PLAN
C-3	UTILITY DETAILS
C-4	EROSION AND SEDIMENT CONTROL PLAN
C-5	EROSION AND SEDIMENT CONTROL NOTES
C-6	LIGHTING AND LANDSCAPING PLAN
C-7	LIGHTING AND LANDSCAPING DETAILS

SEQUENCE OF CONSTRUCTION

1. DELINEATE LOD CLEARLY IN THE FIELD PRIOR TO PRE CONSTRUCTION MEETING. (1 DAY)
2. CONTACT THE OWNER/DEVELOPER AND ENGINEER AT LEAST 48 HOURS PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES TO ARRANGE A PRE-CONSTRUCTION MEETING AT THE PROJECT SITE.
3. CLEAR AND GRUB WITHIN LIMIT OF DISTURBANCE. (1 DAY)
4. PERFORM GRADING AS SHOWN ON PLANS AND STAKE LOCATION OF PROPOSED MODULAR BATH HOUSE. (1 WEEK)
5. COMPACT SOIL IN THE LOCATION OF THE PROPOSED BATH HOUSE TO MINIMUM 1,500 POUNDS PER SQUARE FOOT. PLACE MINIMUM 6" BASE LAYER OF 3/4" GRAVEL FOR SUPPORT, LEVELING, DRAINAGE, AND FROST PROTECTION. COMPACT THE BASE TO MINIMUM 1,500 POUNDS PER SQUARE FOOT. (1 WEEK)
6. PERFORM OPEN CUT INSTALLATION OF WATER AND SEWER LINES AS SHOWN ON PLANS. STOCKPILE SOIL ON THE HIGH SIDE OF THE TRENCH. ALL OPEN CUT TRENCH AREAS MUST BE STABILIZED DAILY USING THE STANDARD UTILITY NOTES. BACKFILL AND COMPACT IN ACCORDANCE WITH CECIL COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS. (2 WEEKS)
7. CONTACT CXT INCORPORATED ONCE SITE IS PREPARED FOR DELIVERY AND INSTALLATION OF THE MODULAR BATH HOUSE.
8. CONNECT WATER AND SEWER TO NEW BATH HOUSE. (2 DAYS)
9. PERFORM FINAL STABILIZATION. (1 DAY)

LEGEND

EXISTING	PROPOSED
MAJOR CONTOURS	MAJOR CONTOURS
MINOR CONTOURS	MINOR CONTOURS
SPOT ELEVATION	WATER LINE / FIRE HYDRANT
WATERLINE/FIRE HYDRANT	STORM DRAIN
WATER METER	ELECTRIC LINE
SANITARY SEWER	EDGE OF PAVEMENT
SANITARY SEWER MANHOLE	CURB
SANITARY SEWER CLEAN OUT	FENCE LINE
STORM DRAIN	TREE LINE
STORM DRAIN MANHOLE	LIMIT OF DISTURBANCE
GAS LINE	SILT FENCE
UNDERGROUND ELECTRIC LINE	STABILIZED CONSTRUCTION ENTRANCE
SOIL LINE	ROCK OUTLET PROTECTION
RIGHT OF WAY	MIRCO-BIORETENTION FOOTPRINT
BOUNDARY LINE	PERFORATED HDPE
PROPERTY LINE	SOLID-WALL HDPE
CURB	SOLID-WALL HDPE (LARGER DIA)
FENCE LINE	PAVEMENT
EASEMENT LINE	GRAVEL
BUILDING FOOTPRINT	
UTILITY POLE	
TREE	
TREE LINE	
SIDEWALK	
PAVEMENT	

OWNER/DEVELOPER

TOWN OF CHESAPEAKE CITY
CONTACT: HONORABLE MAYOR AND COUNCIL
108 BOHEMIA AVENUE
CHESAPEAKE CITY, MD 21915
PH: (410) 885-5298

ENGINEER

KCI TECHNOLOGIES, INC.
CONTACT: BRIAN C. MORGAN, PLA.
1352 MARROWS ROAD
NEWARK, DE 19711
(302) 731-9176

TOWN OF CHESAPEAKE CITY APPROVAL

REVIEWED AND APPROVED:

SIGNATURE DATE

PRINTED NAME TITLE

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

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE DATE

BRIAN C. MORGAN, PLA LICENSE #: 3487 EXP DATE: 7/3/18

REVISION	DATE

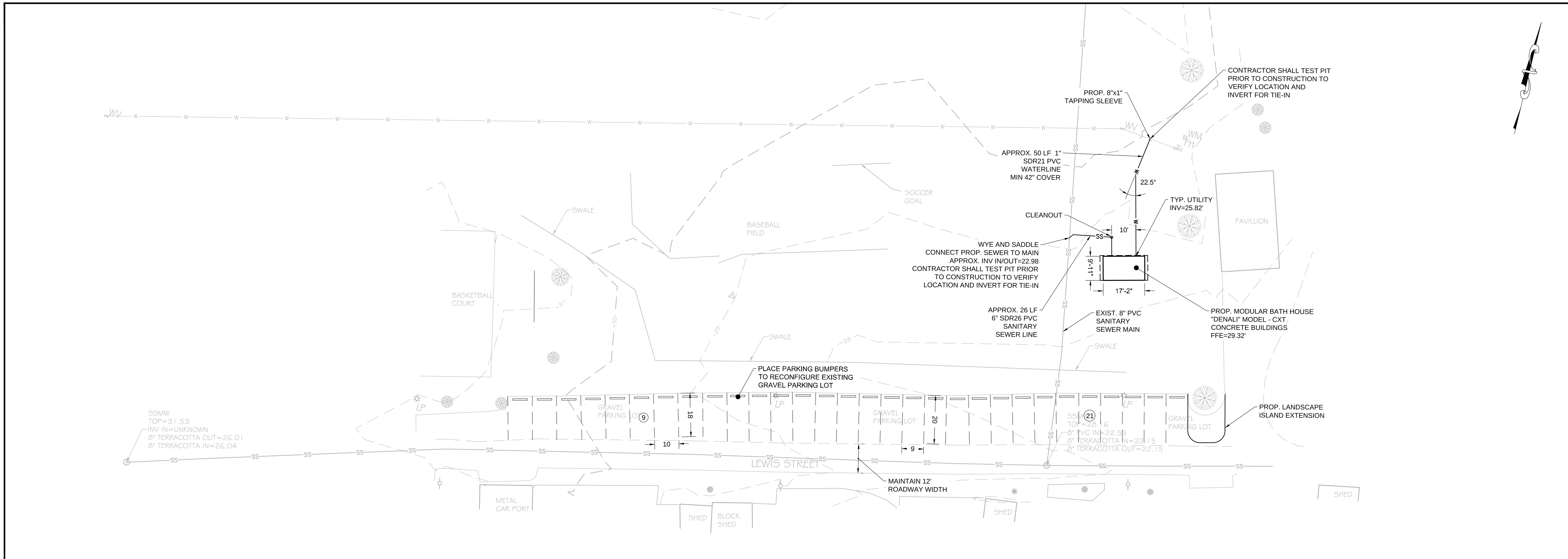
OWNER/DEVELOPER:
TOWN OF CHESAPEAKE CITY
108 BOHEMIA AVENUE
CHESAPEAKE CITY, MD 21915
PH: (410) 885-5298
FAX: (410) 885-2515

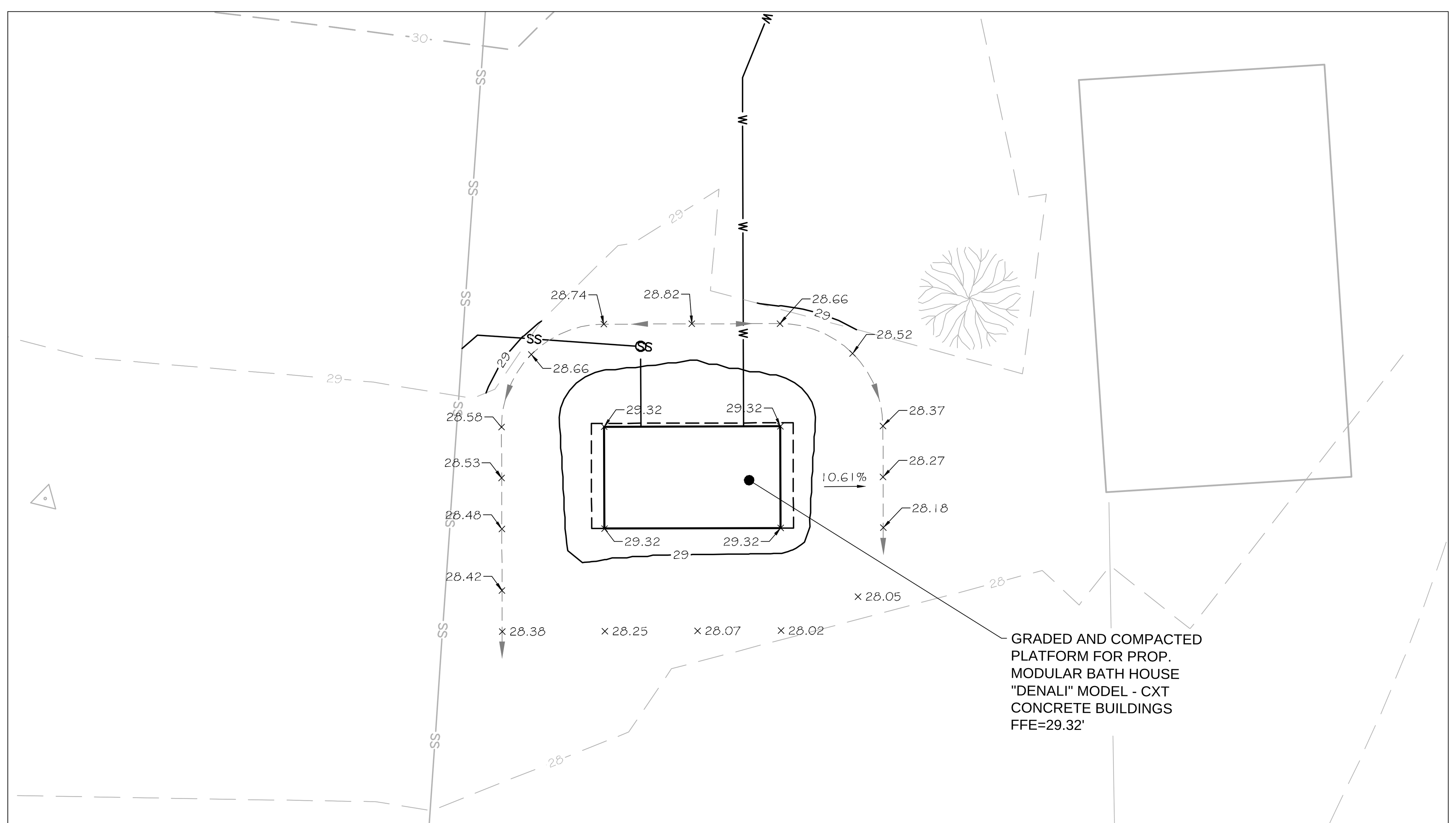
SCALE — PLAN: 1"=20'
20 0 20 40

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
1352 MARROWS RD. - SUITE 100 - NEWARK, DELAWARE 19711
PHONE: (302) 731-9176 FAX: (302) 731-7807 EMAIL: mail@kci.com

COVER SHEET
HELEN TITTER PARK
CECIL COUNTY MARYLAND
CHESAPEAKE CITY

Drafting:	JS	Check:	PG
Design:	JS	Check:	PG
SCALE:	1"=20'		
DATE:	7/18/17		
KCI JOB #:	27134325ES		
SHEET:	C-1		





GRADING EXHIBIT
SCALE: 1"=10'

REVISION | DATE

OWNER/DEVELOPER:
TOWN OF CHESAPEAKE CITY
108 BOHEMIA AVENUE
CHESAPEAKE CITY, MD 21915
PH. (410) 885-5298
FAX. (410) 885-2515

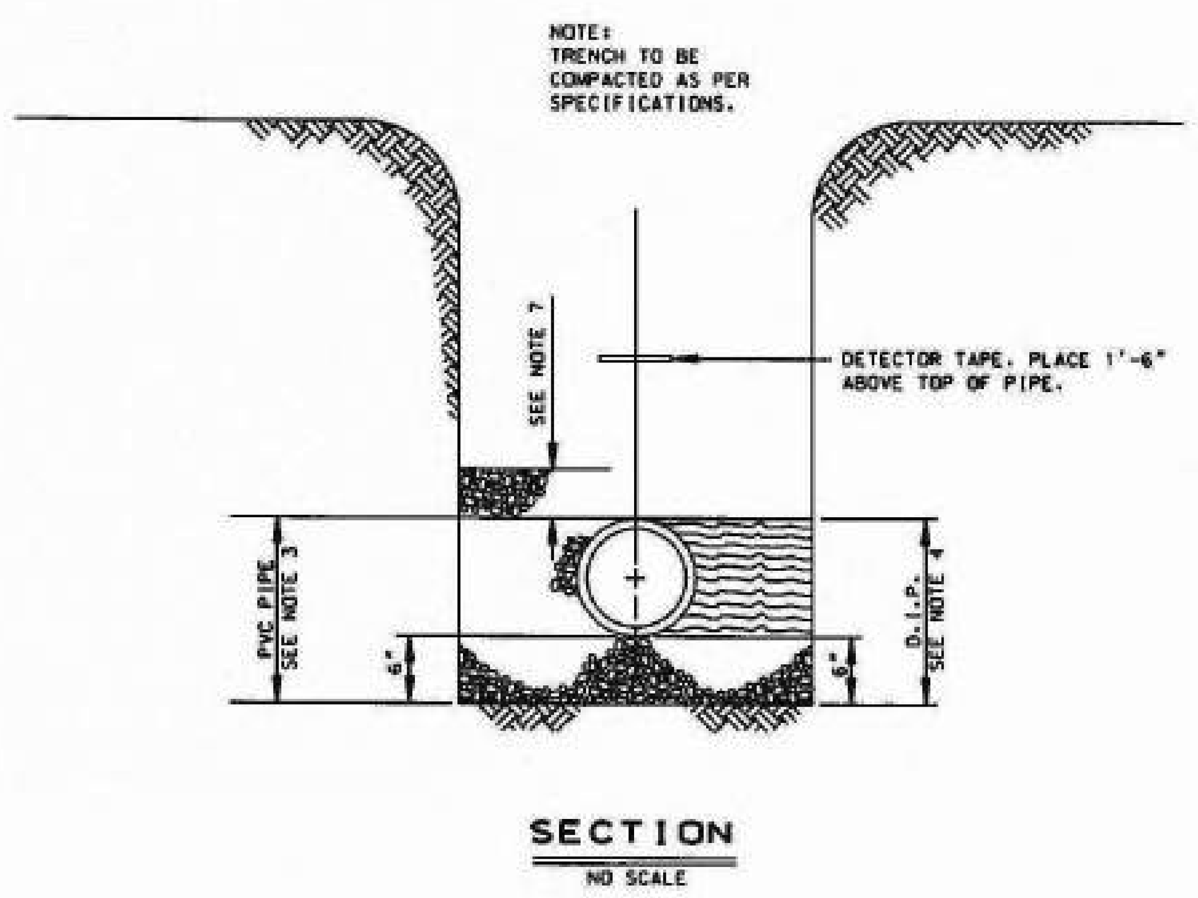
SCALE — PLAN: 1"=20'
20 0 20 40

KCI TECHNOLOGIES, INC.
ENGINEERS - PLANNERS - SURVEYORS
1352 MARROWS RD. - SUITE 100 - NEWARK, DELAWARE 19711
PHONE: (302) 731-9176 FAX: (302) 731-7807 EMAIL: newark@kci.com

SITE GRADING AND UTILITY PLAN
HELEN TITTER PARK

CHESAPEAKE CITY CECIL COUNTY MARYLAND

Drafting:	JS	Check:	PG
Design:	JS	Check:	PG
SCALE:	1"=20'		
DATE:	7/18/17		
KCI JOB #:	27134325ES		
SHEET:	C-2		



SECTION

NO SCALE

NOTES:

1. UNLESS NOTED OTHERWISE, ALL ROAD REPAIR SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISION OF THE CECIL COUNTY OR MARYLAND STATE ROAD CODE.
2. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER AND COUNTY APPROVAL.
3. PVC PIPE: SHALL RECEIVE AASHTO M43, NO.57 AGGREGATE.
4. D.I. PIPE: SHALL BE INSTALLED ON 6" AASHTO M43, NO.57 AGGREGATE AND HAVE APPROVED COMPACTED BACKFILL MATERIAL CONSOLIDATED TO TOP OF PIPE.
5. SANITARY FORCE MAINS SHALL BE INSTALLED AS PER STANDARD DETAIL, W-1.
6. PROVIDE CONTINUOUS BEARING FOR FULL LENGTH OF PIPE.
7. AGGREGATE SHALL CONTINUE TO 6" ABOVE TOP OF PIPE WHEN USING P.V.C. WITH DEPTH OF COVER GREATER THAN 14'.

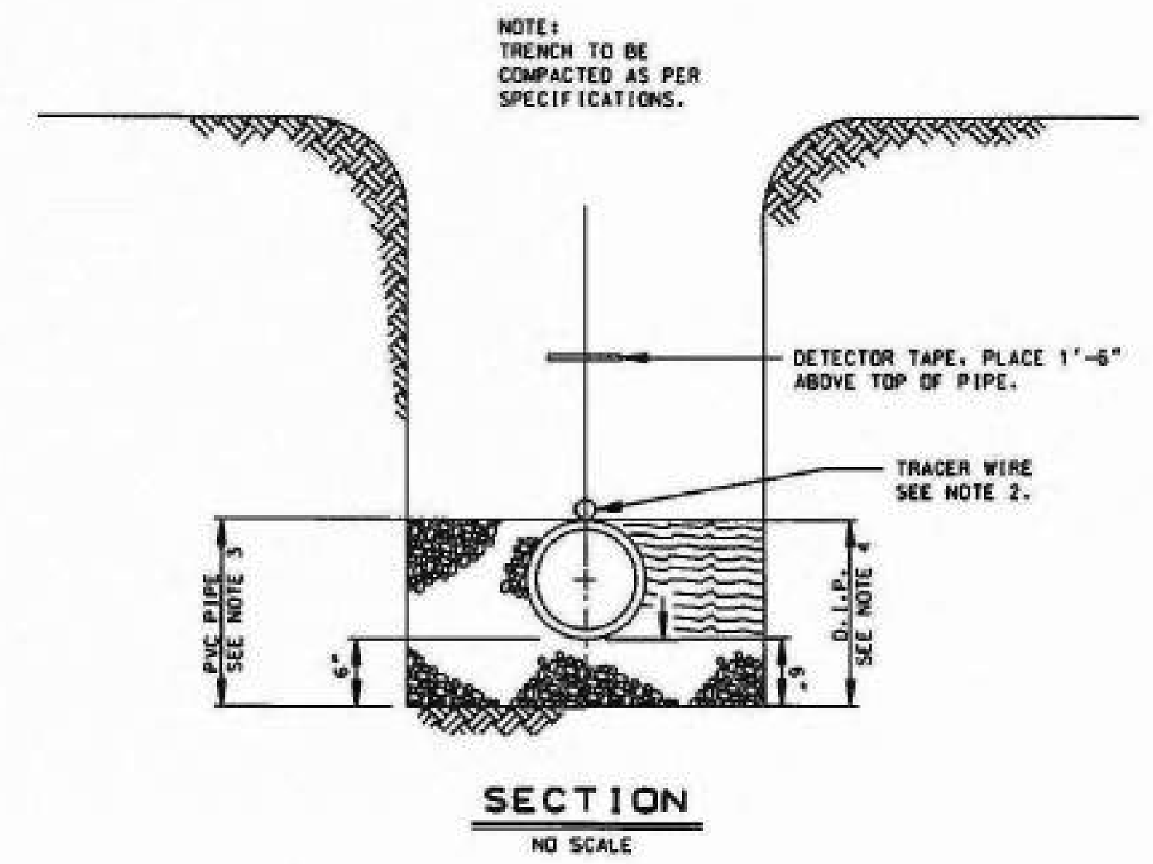
CECIL COUNTY, MD
DEPARTMENT OF
PUBLIC WORKS

STANDARD SEWER DETAILS

PIPE BEDDING

ISSUED 4/1/09
REVISED
REISSUED

PLATE S-1



SECTION

NO SCALE

NOTES:

1. UNLESS NOTED OTHERWISE, ALL ROAD REPAIR SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISION OF THE CECIL COUNTY OR MARYLAND STATE ROAD CODE.
2. PROVIDE TRACER WIRE FOR ALL NON-METALLIC WATER MAINS, SEWER FORCE MAINS, AND SERVICES SEE DETAILS W-2, W-13 AND G-14.
3. PVC PIPE: SHALL RECEIVE AASHTO M43, NO.57 AGGREGATE OR COMPACTED SAND THAT MEETS THE MARYLAND SHA REQUIREMENTS FOR FINE AGGREGATE.
4. D.I. PIPE: SHALL BE INSTALLED ON 6" AASHTO M43, NO.57 AGGREGATE AND HAVE APPROVED COMPACTED BACKFILL MATERIAL CONSOLIDATED TO TOP OF PIPE.
5. ALL PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE PIPE MANUFACTURER AND COUNTY APPROVAL.
6. PROVIDE CONTINUOUS BEARING FOR FULL LENGTH OF PIPE.

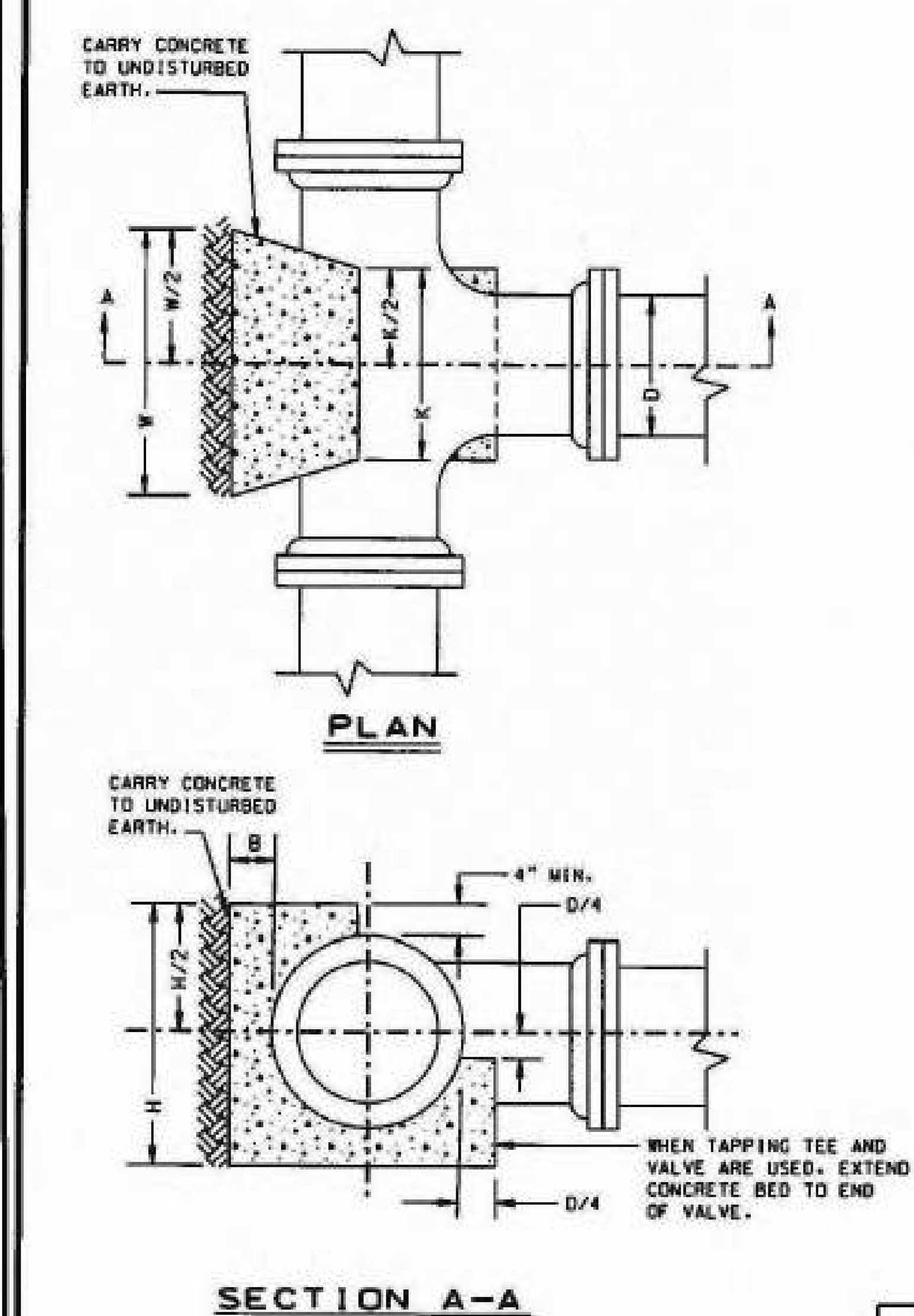
CECIL COUNTY, MD
DEPARTMENT OF
PUBLIC WORKS

STANDARD WATER DETAILS

PIPE BEDDING

ISSUED 4/1/09
REVISED
REISSUED

PLATE W-1



SECTION A–A

NOTES:

1. ALL CONCRETE TO BE MIX NO. 1.
2. BUTTRESS DIMENSIONS SHOWN ARE BASED UPON SOIL BEARING PRESSURE OF 3000 PSF AND STATIC WATER PRESSURE OF 200 PSI. WHERE WATER MAIN PRESSURE EXCEEDS 200 PSI OR WHERE SOIL BEARING PRESSURE IS LESS THAN 3000 PSF SPECIAL BUTTRESS DESIGN IS REQUIRED.
3. MINOR VARIATIONS IN BUTTRESS SHAPE WILL BE PERMITTED, PROVIDED THE MINIMUM BEARING AREA AGAINST SOLID GROUND IS MAINTAINED.
4. A SPECIAL DESIGN WILL BE REQUIRED FOR PIPELINES GREATER THAN 16-INCH IN DIAMETER.

BUTTRESS DIMENSIONS FOR TEES (INCHES)

	SIZE OF BRANCH (D)			
D	6	8	12	16
B	8	9	12	12
H	19	25	38	50
W	15	20	30.5	40
K	12	16	16	20

CECIL COUNTY, MD
DEPARTMENT OF
PUBLIC WORKS

STANDARD WATER DETAILS

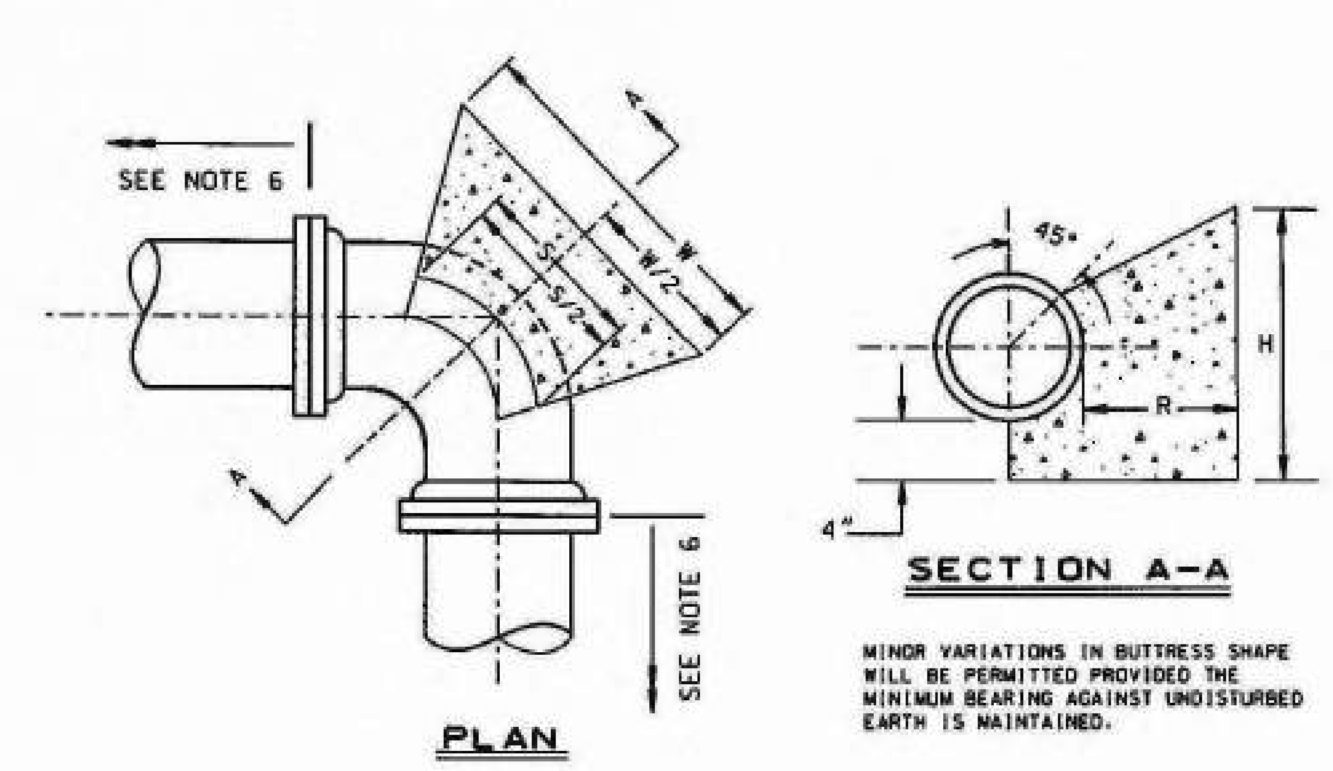
BUTTRESS FOR TEES

ISSUED 4/1/09
REVISED
REISSUED

PLATE W-6

BUTTRESS DIMENSIONS (INCHES)

PIPE DIAMETER	W	H	R	S	DISTANCE FROM BEND THAT ALL JOINTS SHALL BE RESTRAINED, FT.
6	26	21	20	10	40
8	33	27	20	12	50
12	48	39	20	14	72
16	64	51	20	20	92



MINOR VARIATIONS IN BUTTRESS SHAPE WILL BE PERMITTED PROVIDED THE MINIMUM BEARING AGAINST UNDISTURBED EARTH IS MAINTAINED.

NOTES:

1. CARRY ALL BEARING SURFACES TO UNDISTURBED EARTH.
2. THIS DETAIL TO BE USED FOR HORIZONTAL 1/4 BENDS ONLY.
3. ALL CONCRETE TO BE MIX NO. 2.
4. BUTTRESS DIMENSIONS SHOWN ARE BASED UPON SOIL BEARING PRESSURE OF 3000 PSF AND STATIC WATER PRESSURE OF 200 PSI WHERE MAIN PRESSURE EXCEEDS 200 PSI OR WHERE SOIL BEARING PRESSURE IS LESS THAN 3000 PSF SPECIAL BUTTRESS DESIGN IS REQUIRED.
5. A SPECIAL DESIGN WILL BE REQUIRED FOR PIPELINES GREATER THAN 16-INCH DIAMETER.
6. ALL JOINTS SHALL BE RESTRAINED A DISTANCE FROM THE BEND AS SHOWN IN THE ABOVE TABLE.

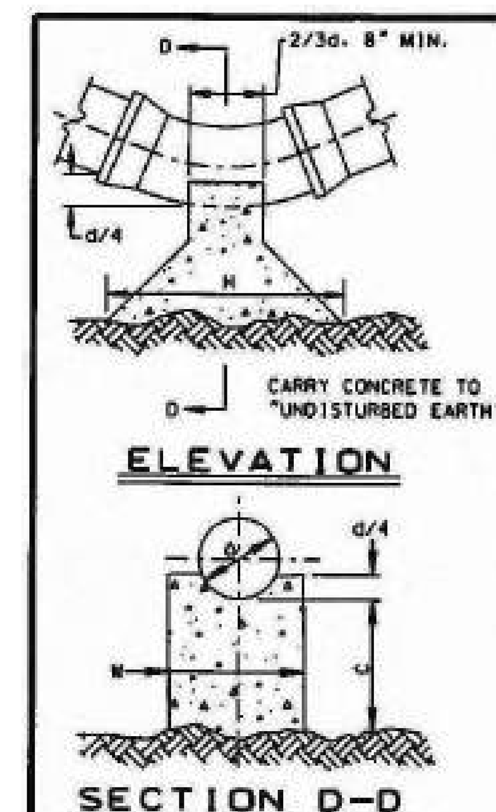
CECIL COUNTY, MD
DEPARTMENT OF
PUBLIC WORKS

STANDARD WATER DETAILS

BUTTRESS FOR HORIZONTAL 1/4 BENDS

ISSUED 4/1/09
REVISED
REISSUED

PLATE W-7



BUTTRESSES FOR VERTICAL BENDS

ANCHORAGES FOR UPPER VERTICAL BENDS (INCHES)

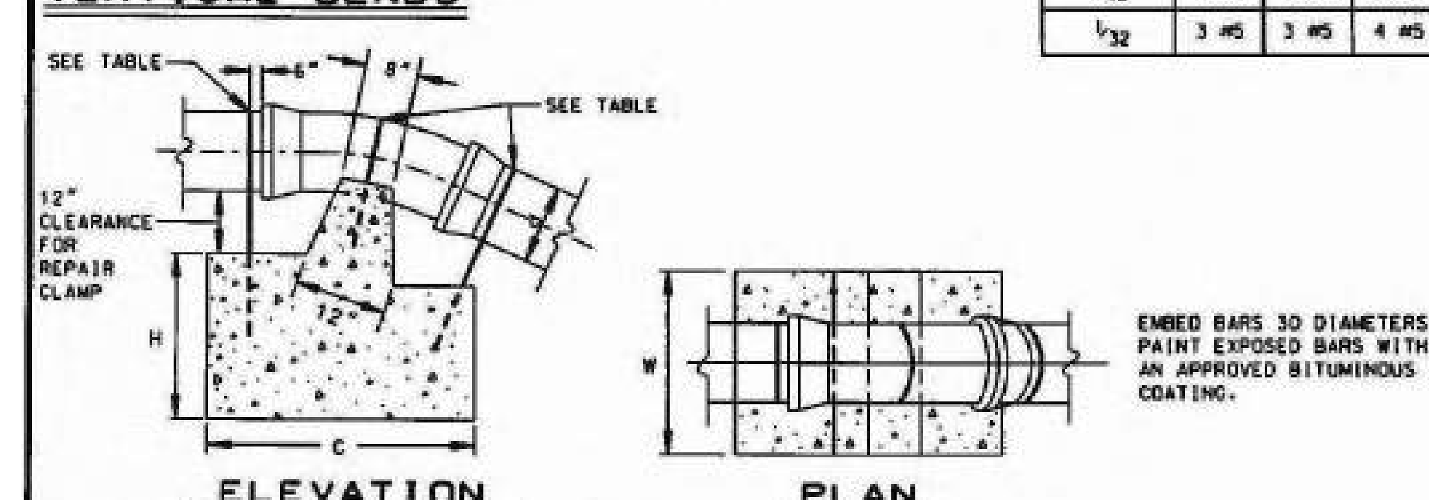
BEND \ SIZE		6	8	12
1/8 (45°)	W	60	72	96
	H	60	66	72
	C	72	96	114
1/16 (22.5°)	W	48	80	96
	H	42	53	60
	C	60	64	96
1/32 (11.25°)	W	36	36	72
	H	30	42	48
	C	48	60	72

BUTTRESS DIMENSIONS FOR LOWER VERTICAL BENDS (INCHES)

BEND \ SIZE		6	8	12	16
1/8 (45°)	W	15	25	36	47
	H	12	20	29	38
	C	8	9	11	14
1/16 (22.5°)	W	13	18	26	33
	H	11	14	21	27
	C	8	9	11	14
1/32 (11.25°)	W	10	13	19	24
	H	8	10	15	19
	C	7	7	8	9

REINFORCING BARS (INCHES)

BEND \ SIZE	6	8	10	12
1/8	3 #5	3 #5	4 #5	4 #5
1/16	3 #5	3 #5	4 #5	4 #5
1/32	3 #5	3 #5	4 #5	4 #5



ANCHORAGE FOR VERTICAL BENDS

NOTES:

1. ALL CONCRETE TO BE MIX NO. 2.
2. BUTTRESS DIMENSIONS ARE BASED UPON A SOIL BEARING PRESSURE OF 3000 PSF AND STATIC PRESSURE OF 200 PSI. WHERE PRESSURE EXCEEDS 200 PSI OR WHERE SOIL BEARING PRESSURE IS LESS THAN 3000 PSF, A SPECIAL BUTTRESS DESIGN IS REQUIRED.
3. MINOR VARIATIONS IN BUTTRESS SHAPE WILL BE PERMITTED, PROVIDED THE MINIMUM BEARING AGAINST UNDISTURBED EARTH IS MAINTAINED.
4. ANCHORING BARS TO CONFORM TO PIPE O.D. PROVIDE A CONTINUOUS BEARING SURFACE FOR ONE HALF THE PIPE PERIMETER.
5. WHEN ANCHORING PVC PIPE, THE STRAPPING IN CONTACT WITH THE PIPE SURFACE SHALL BE 1" WIDE x1/2" THICK STEEL (NOT SHOWN). THE REMAINING PORTION OF THE STRAP SHALL BE A REINFORCING BAR SIZED IN ACCORDANCE WITH THE PERTINENT CHART.
6. A SPECIAL DESIGN WILL BE REQUIRED FOR WATER MAINS 16-INCHES IN DIAMETER AND LARGER

CECIL COUNTY, MD
DEPARTMENT OF
PUBLIC WORKS

STANDARD WATER DETAILS

BUTTRESSES AND ANCHORAGES FOR VERTICAL BENDS

ISSUED 4/1/09
REVISED
REISSUED

PLATE W-8

REVISION | DATE

OWNER/DEVELOPER:
TOWN OF CHESAPEAKE CITY
108 BOHEMIA AVENUE
CHESAPEAKE CITY, MD 21915
PH. (410) 885-5298
FAX. (410) 885-2515

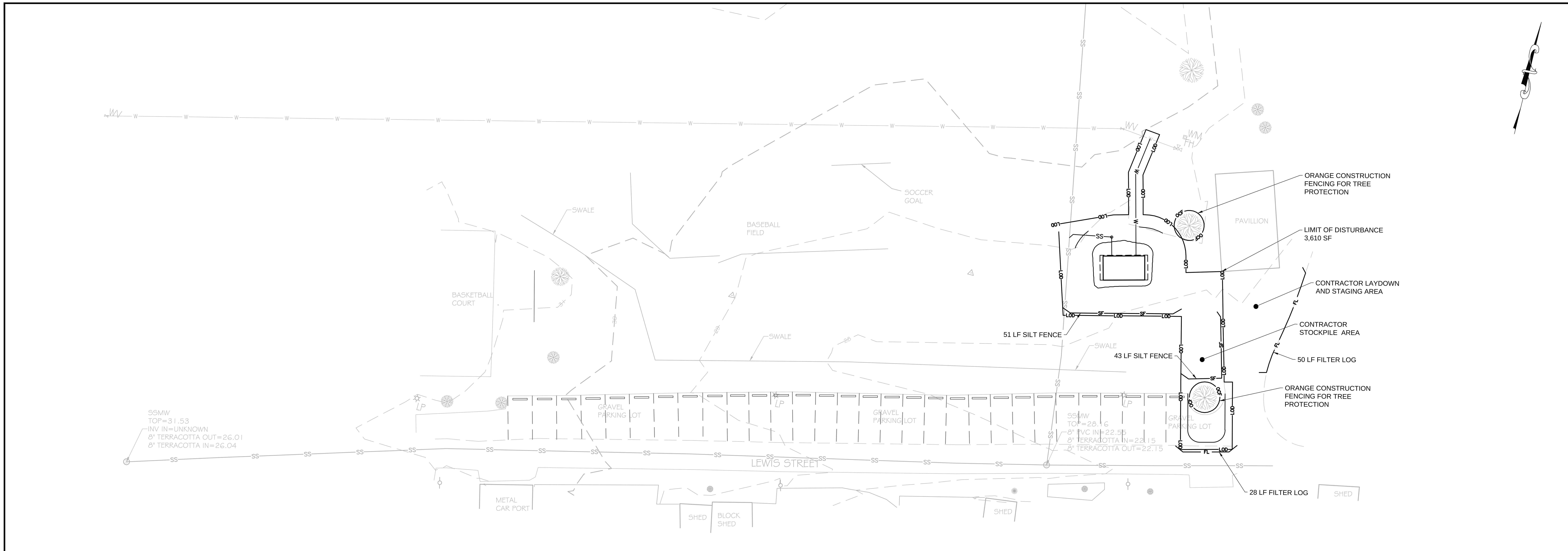
SCALE – PLAN: 1"=20'
0 20 40

KCI TECHNOLOGIES, INC.
ENGINEERS – PLANNERS – SURVEYORS
1352 MARROWS RD. – SUITE 100 – NEWARK, DELAWARE 19711
PHONE: (302) 731-9176 FAX: (302) 731-7807 EMAIL: newark@kci.com

UTILITY DETAILS
HELEN TITTER PARK

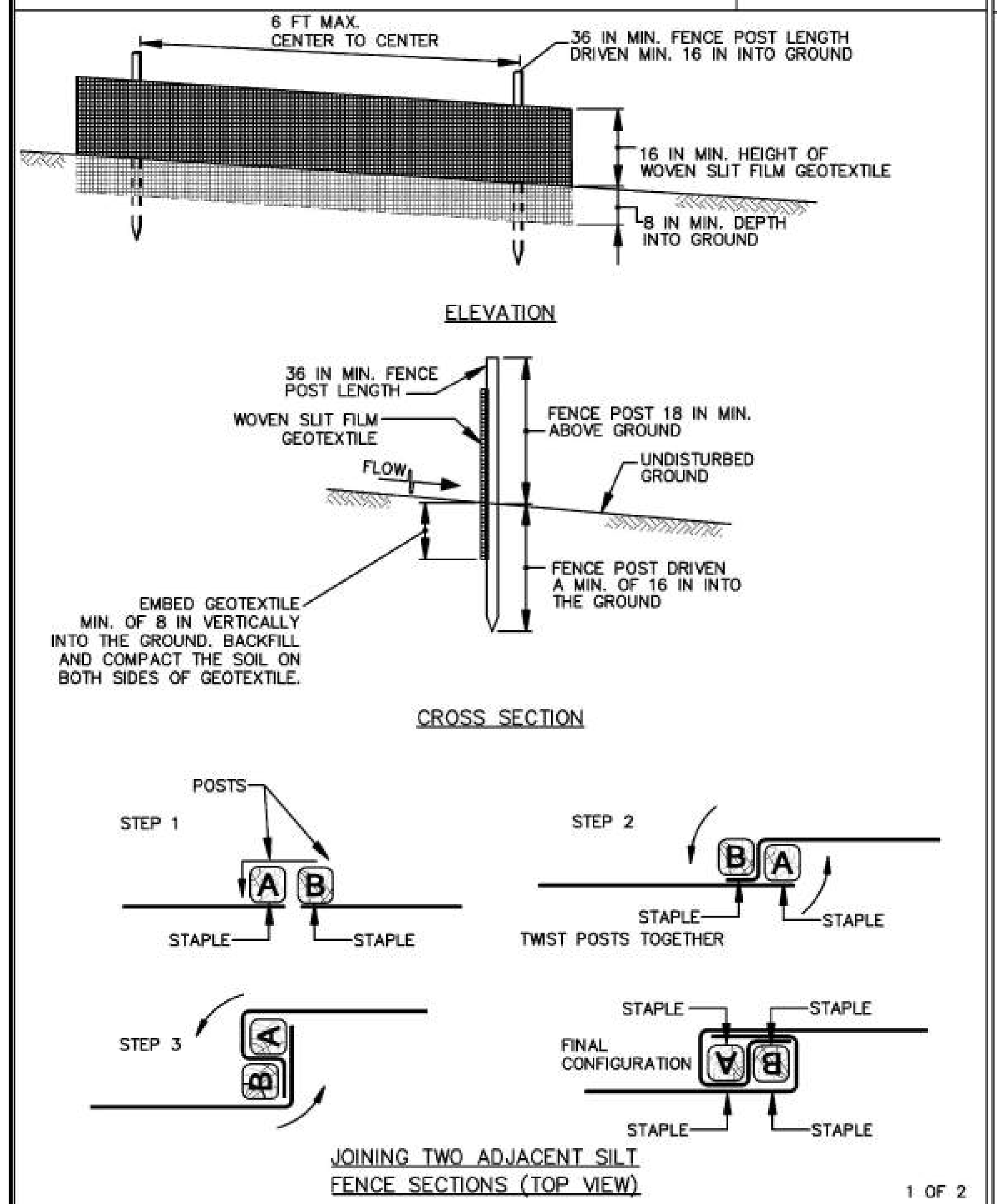
CHESAPEAKE CITY | CECIL COUNTY | MARYLAND

Drafting:	JS	Check:	PG
Design:	JS	Check:	PG
SCALE:	1"=20'		
DATE:	7/18/17		
KCI JOB #:	27134325ES		
SHEET:	C-3		



DETAIL E-1 SILT FENCE

STANDARD SYMBOL
|——SF——|



1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-1 SILT FENCE

STANDARD SYMBOL
|——SF——|

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± 1/16 INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

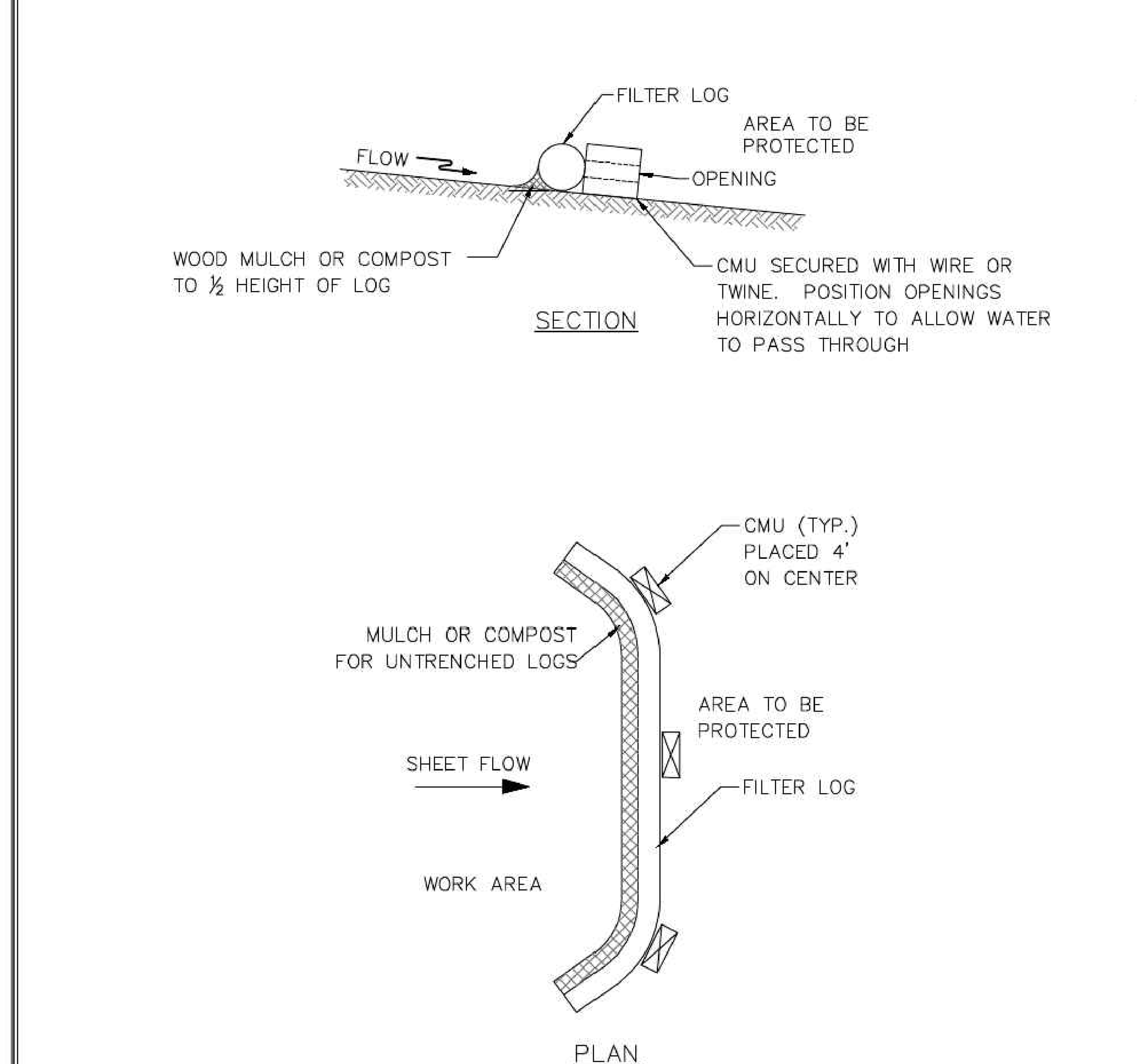
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL
(FL)



1 OF 2

ADAPTED FROM MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

DETAIL E-6 FILTER LOG

STANDARD SYMBOL
(FL)

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H-1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. PLACE CONCRETE MASONRY UNIT (CMU) BEHIND FILTER LOG EVERY 4 FEET AND SECURE TO FILTER LOG USING WIRE OR BAILER'S TWINE. PLACE CMU'S WITH OPENINGS PARALLEL TO THE SURFACE TO ALLOW WATER TO PASS THROUGH.
6. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND SECURE WITH CMU.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

2 OF 2

ADAPTED FROM MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

REVISION | DATE

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SCALE - PLAN: 1"=20'

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EROSION AND SEDIMENT CONTROL PLAN
HELEN TITTER PARK

CHESAPEAKE CITY
CECIL COUNTY
MARYLAND

Drafting: JS	Check: PG
Design: JS	Check: PG
SCALE: 1"=20'	
DATE: 7/18/17	
KCI JOB #: 27134325ES	
SHEET: C-4	

B-4 STANDARDS AND SPECIFICATIONS

FOR

VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization, soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

TEMPORARY SEEDING SUMMARY

HARDINESS ZONE: 6B

SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
ANNUAL RYEGRASS	40	3/1 TO 5/15 8/1 TO 10/15	1/2"	436 LB/AC (10 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
CEREAL RYE	112	3/1 TO 5/15 8/1 TO 10/15	1"		
FOXTAIL MILLET	30	5/16 TO 7/31	1/2"		

PERMANENT SEEDING SUMMARY

HARDINESS ZONE: 6B, SEED MIX: 9

SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
TALL FESCUE	60	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"	N: 45 LB/AC (1 LB/1000 SF) P_2O_5: 90 LB/AC (2 LB/1000 SF) K_2O: 90 LB/AC (2 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
KENTUCKY BLUEGRASS	40	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"		
PERENNIAL RYEGRASS	20	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"		

HARDINESS ZONE: 6B, SEED MIX: 11

SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	FERTILIZER RATE (10-20-20)	LIME RATE
CREEPING RED FESCUE	30	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"	N: 45 LB/AC (1 LB/1000 SF) P_2O_5: 90 LB/AC (2 LB/1000 SF) K_2O: 90 LB/AC (2 LB/1000 SF)	2 TONS/AC (90 LB/1000 SF)
CHEWINGS FESCUE	30	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"		
KENTUCKY BLUEGRASS	20	3/1 TO 5/15 8/1 TO 10/15	1/4"-1/2"		

B-4-1 STANDARDS AND SPECIFICATIONS

FOR

INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes

1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
   a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
   b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
   c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
   d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

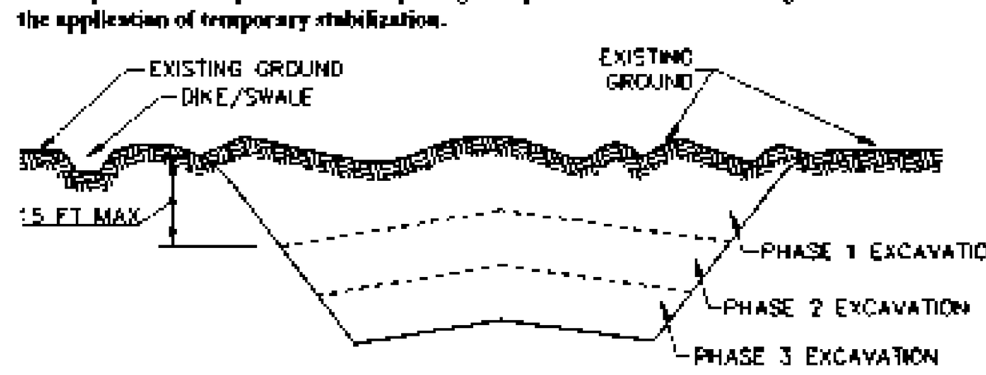

Figure B.1: Incremental Stabilization – Cut

B. Incremental Stabilization - Fill Slopes

1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
   a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
   b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   c. Place Phase 1 fill, prepare seedbed, and stabilize.
   d. Place Phase 2 fill, prepare seedbed, and stabilize.
   e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

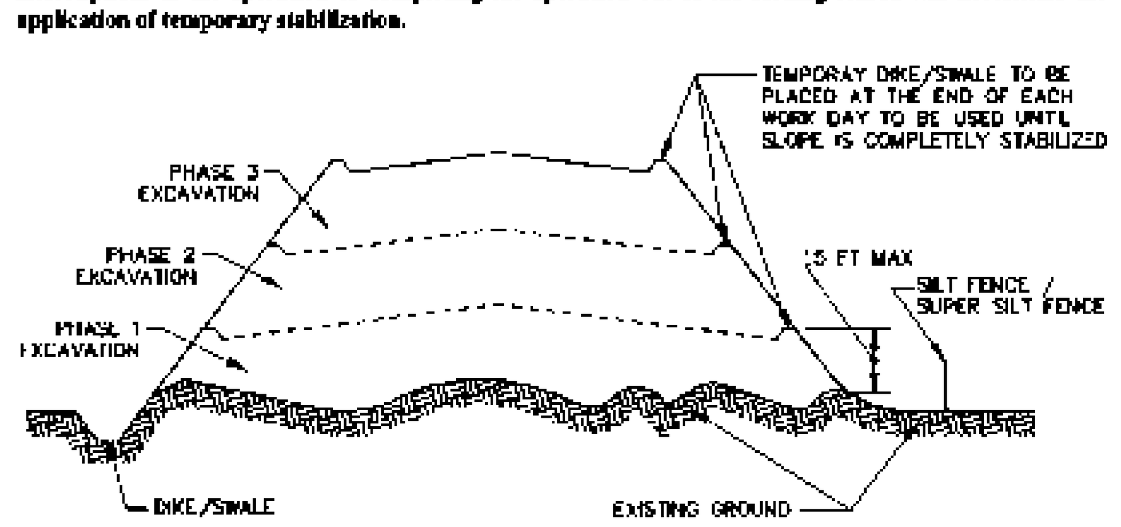

Figure B.2: Incremental Stabilization – Fill

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

1. Temporary Stabilization
   a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
   b. Apply fertilizer and lime as prescribed on the plans.
   c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
   a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      i. Soil pH between 6.0 and 7.0.
      ii. Soluble salts less than 500 parts per million (ppm).
      iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
   d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
   e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
   a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
   b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
   c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
   a. Erosion and sediment control practices must be maintained when applying topsoil.
   b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
   c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

1. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

1. Specifications
   a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
   b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
   c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
   d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P_2O_5 (phosphorous), 200 pounds per acre; K_2O (potassium), 200 pounds per acre.
      ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)
   a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. Note: **Use only sterile straw mulch in areas where one species of grass is desired.**
   b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
      iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
      v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.
2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
   c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
   a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
      i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
      ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. **Use of asphalt binders is strictly prohibited.**
      iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use
   a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
   c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
   d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

      Notes:
      Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

      Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line
   c. Ideal Times of Seeding for Turf Grass Mixtures

      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)
   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications
   a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.
3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than ⅓ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

REVISION | DATE

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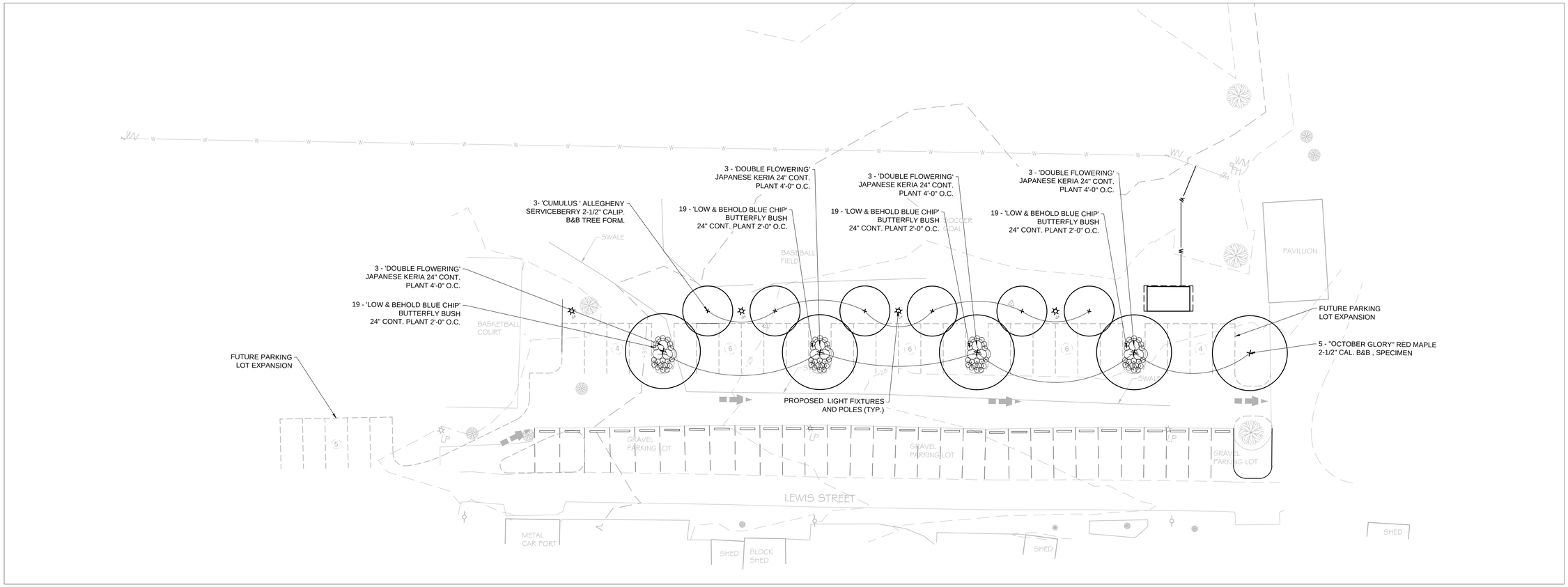
PHONE: (302) 731-9176 FAX: (302) 731-7807 EMAIL: newark@kci.com

SCALE - PLAN: 1"=20'
20 0 20 40

EROSION AND SEDIMENT CONTROL NOTES
HELEN TITTER PARK

CHESAPEAKE CITY | CECIL COUNTY | MARYLAND

Drafting:	JS	Check:	PG
Design:	JS	Check:	PG
SCALE:	1"=20'		
DATE:	7/18/17		
KCI JOB #:	27134325ES		
SHEET:	C-5		



LANDSCAPE SPECIFICATIONS

A. MATERIALS:

1. PLANTS SHALL BE NURSERY GROWN IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICES, AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT. THEY SHALL HAVE BEEN ROOT PRUNED, PREFERABLY WITHIN THE LAST YEAR.

   THEY SHALL BE SOUND, HEALTHY, AND VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE, PEST, EGGS, OR LARVAE, AND SHALL HAVE A HEALTHY DEVELOPED ROOT SYSTEM.

   PLANTS SHALL NOT BE PRUNED BEFORE DELIVERY. TREES WITH A DAMAGED OR CROOKED LEADER OR MULTIPLE LEADERS, ABRASIONS ON THE BARK, SUNSCALD, DISFIGURING KNOTS OR FRESH CUTS OVER 1 1/4 INCH WILL BE REJECTED.

   NO CHANGE IN QUANTITY, SIZE, KIND, OR QUALITY OF PLANT SPECIFIED WILL BE PERMITTED WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT.

2. TOPSOIL SHALL BE FERTILE, FRIABLE AND TYPICAL OF THE LOCALITY, IT SHALL BE FREE OF STONES, LUMPS, PLANTS, ROOTS, STICKS AND SHALL NOT BE DELIVERED IN A FROZEN OR MUDDY CONDITION.

3. PLANTING SOIL (BACKFILL MIX) SHALL BE FIVE PARTS TOPSOIL AND ONE PART WET LOOSE PEATMOSS.

4. STACKING MATERIALS: GUY WIRE SHALL BE PLIABLE 12 GAUGE GALVANIZED TWISTED TWO STRAND WIRE. HOSE SHALL BE A SUITABLE LENGTH OF TWO-PLY RUBBER HOSE 3/4 INCH IN DIAMETER STAKES SHALL CONFORM TO THE DETAIL ON THIS SHEET.

B. APPLICABLE SPECIFICATIONS AND STANDARDS:

1. STANDARD PLANT NAMES, LATEST EDITION, AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE.

2. AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION. AMERICAN ASSOCIATION OF NURSERYMEN.

C. EXCAVATION OF PLANTING AREAS:

   STAKE OUT ON THE GROUND LOCATIONS FOR PLANTS AND OUTLINES OF AREA TO BE PLANTED AND OBTAIN APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE EXCAVATION IS BEGUN. LANDSCAPED AREAS TO BE THOROUGHLY WEEDED PRIOR TO PLANTING OPERATION.

D. PLANTING OPERATIONS:

   SET PLANTS AT SAME RELATIONSHIP TO FINISHED GRADE AS THEY BORE TO THE GROUND FROM WHICH THEY WERE DUG. USE PLANTING SOIL TO BACKFILL APPROXIMATELY 2/3 FULL. WATER THOROUGHLY BEFORE INSTALLING REMAINDER OF THE PLANTING SOIL TO TOP OF PITS. ELIMINATING ALL AIR POCKETS.

   SET PLANTING PLUMB AND BRACE RIGIDLY IN POSITION UNTIL THE PLANTING SOIL HAS BEEN STAMPED SOLIDLY AROUND THE BALL AND ROOTS. CUT ROPES OR STRINGS FROM THE TOP OF BALL AFTER PLANT HAS BEEN SET. LEAVE BURLAP OR CLOTH WRAPPING INTACT AROUND BALLS. TURN UNDER AND BURY PORTIONS OF BURLAP AT TOP OF BALL.

   PROTECT PLANTS AT ALL TIMES FROM SUN OR DRYING WINDS. PLANTS THAT CANNOT BE PLANTED IMMEDIATELY ON DELIVERY SHALL BE KEPT IN THE SHADE. WELL PROTECTED WITH SOIL, WET MOSS OR OTHER ACCEPTABLE MATERIAL AND SHALL BE KEPT WELL WATERED. PLANTS SHALL NOT REMAIN UNPLANTED FOR LONGER THAN THREE DAYS AFTER DELIVERY.

   PLANTS SHALL NOT BE BOUND WITH WIRE OF ROPE AT ANY TIME SO AS TO DAMAGE THE BARK OR BREAK BRANCHES. PLANTS SHALL BE LIFTED AND HANDLED FROM THE BOTTOM OF THE BALL ONLY.

   MULCH ALL PITS AND BEDS WITH A TWO INCH LAYER OF BARK MULCH IMMEDIATELY AFTER PLANTING AND WORK INTO THE TOP THREE INCHES OF THE PLANTING SOIL. FORM A 3' EARTH SAUCER AROUND EACH PLANT. WATER ALL PLANTS IMMEDIATELY AFTER PLANTING. ADD ADDITIONAL MULCH TO MAKE A TOTAL 3" MULCH DEPTH.

E. STAKING, WRAPPING, AND PRUNING:

   STAKING SHALL BE COMPLETED IMMEDIATELY AFTER PLANTING. PLANTS SHALL STAND PLUMB AFTER STAKING. STAKES AND GUY WIRES SHALL BE REMOVED AT THE END OF THE GUARANTEE PERIOD AND DISPOSED OF OFF SITE BY THE CONTRACTOR.

   PRUNE PLANTS AT THE TIME OF PLANTING AS DIRECTED BY THE LANDSCAPE ARCHITECT TO REMOVE A MAXIMUM OF 1/3 OF THE FOLIAGE. REMOVE ALL DEAD WOOD, SUCKERS OR BROKEN BRANCHES AND PRESERVE THE NATURAL CHARACTER OF THE PLANT.

F. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN A HEALTHY AND VIGOROUS CONDITION AT THE BEGINNING OF THE SECOND GROWING SEASON FOLLOWING ACCEPTANCE BY THE LANDSCAPE ARCHITECT.

PLANT LIST

COMMON NAME	BOTANICAL NAME	QUANTITY	SIZE	REMARKS
CANOPY TREES				
Acer rubrum 'October Glory'	'October Glory' Red Maple	4	2-1/2" Caliper	B&B
UNDERSTORY TREES				
Amalanchier laevis "Cumulus"	'Cumulus' Allegheny Serviceberry	6	2-1/2" Caliper	B&B- TREE FORM
SHRUBS				
Kerria japonica 'Pleniflora'	Double Flowering Japanese Kerria	12	36" Container	
Juniperus Chinensis 'Sea Green	'Sea Green' Juniper	76	24" Container	

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REVISION | DATE

SCALE — PLAN: 1"-20'

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LIGHTING AND LANDSCAPING PLAN
HELEN TITTER PARK
CHESAPEAKE CITY — CECIL COUNTY — MARYLAND

Drafting:	PW	Check:	PG
Design:	PW	Check:	PG
SCALE:	1"=20'		
DATE:	7/18/17		
KCI JOB #:	27134325ES		
SHEET:	C-6		

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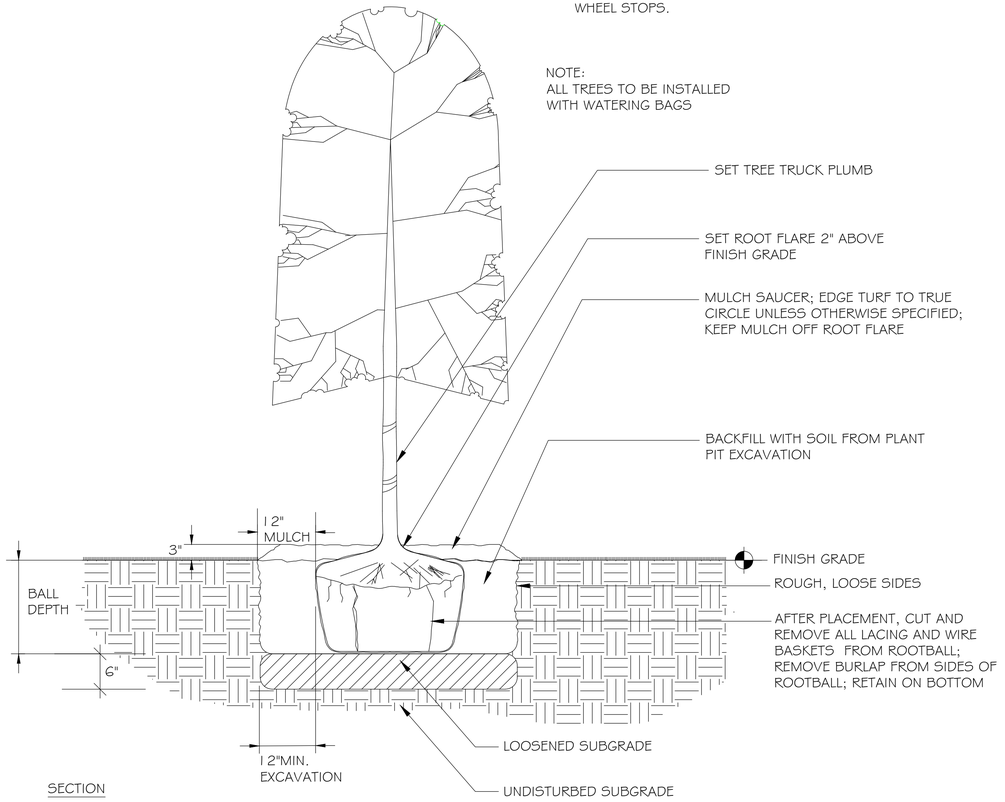
1. ANCHORS SHALL BE #7 REBAR 2'6" LONG DRIVEN 1/2" BELOW TOP OF WHEEL STOPS.

NOTE:
ALL TREES TO BE INSTALLED WITH WATERING BAGS



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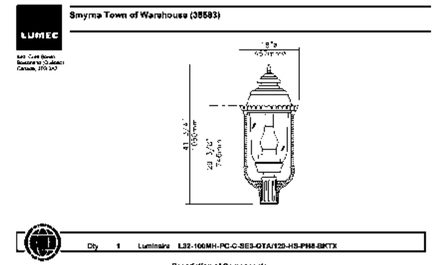
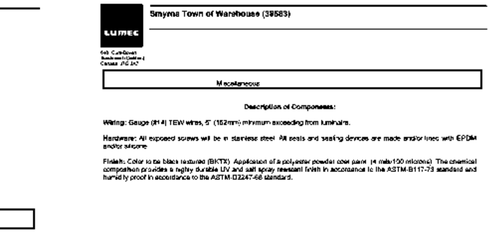
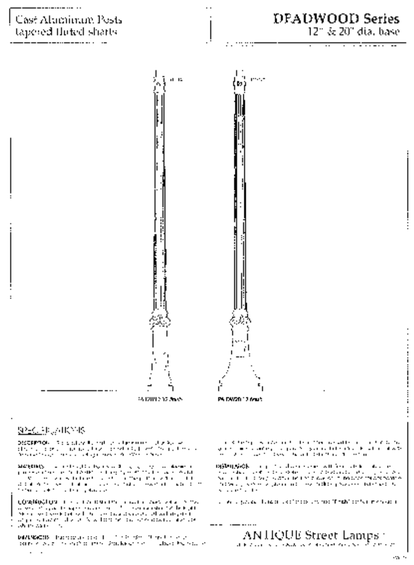
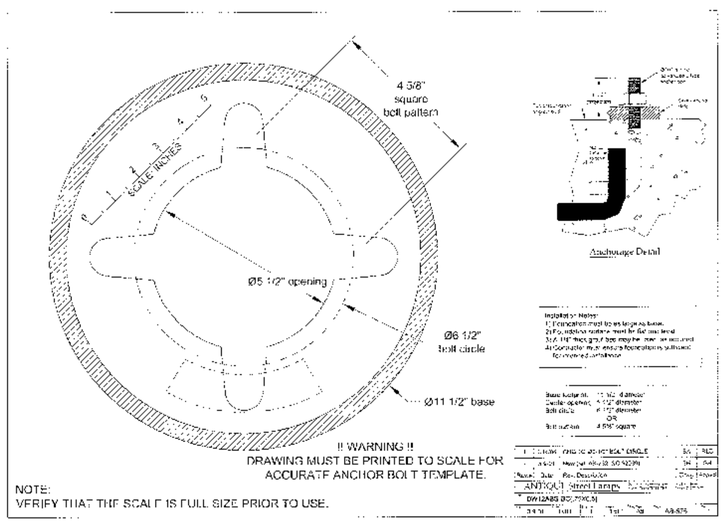
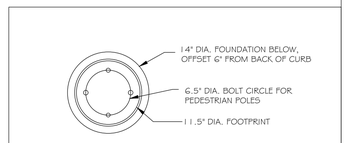




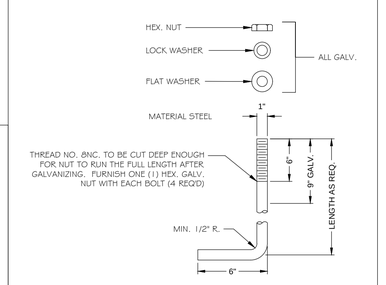




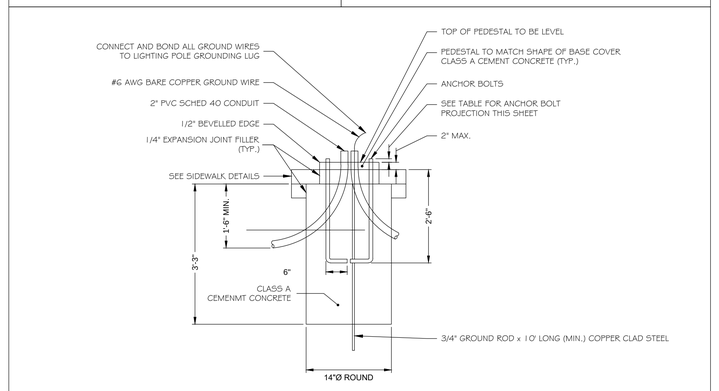
NOTE:
VERIFY THAT THE SCALE IS FULL SIZE PRIOR TO USE.



LIGHT POLE FOUNDATION - PLAN
NTS



ANCHOR BOLT DETAIL
NTS



LIGHT POLE FOUNDATION - SECTION
NTS

OWNER/DEVELOPER:
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