

CITY OF WILSON UPPER BLOOMERY SWAMP INTERCEPTOR - PHASE II-A WILSON COUNTY, NORTH CAROLINA MAY 2023

CITY OF WILSON

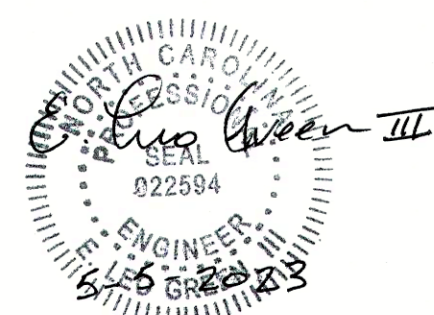
MAYOR: CARLTON L. STEVENS

COUNCIL MEMBERS: GILLETTIA MORGAN
MICHAEL S. BELL
WILLIAM THOMAS FYLE
JAMES M. JOHNSON, III
DONALD I. EVANS
LOGAN T. LILES
DERRICK D. CREECH

CITY MANAGER: GRANT GOINGS

DIRECTOR OF PUBLIC WORKS: WILLIAM T. BASS, IV

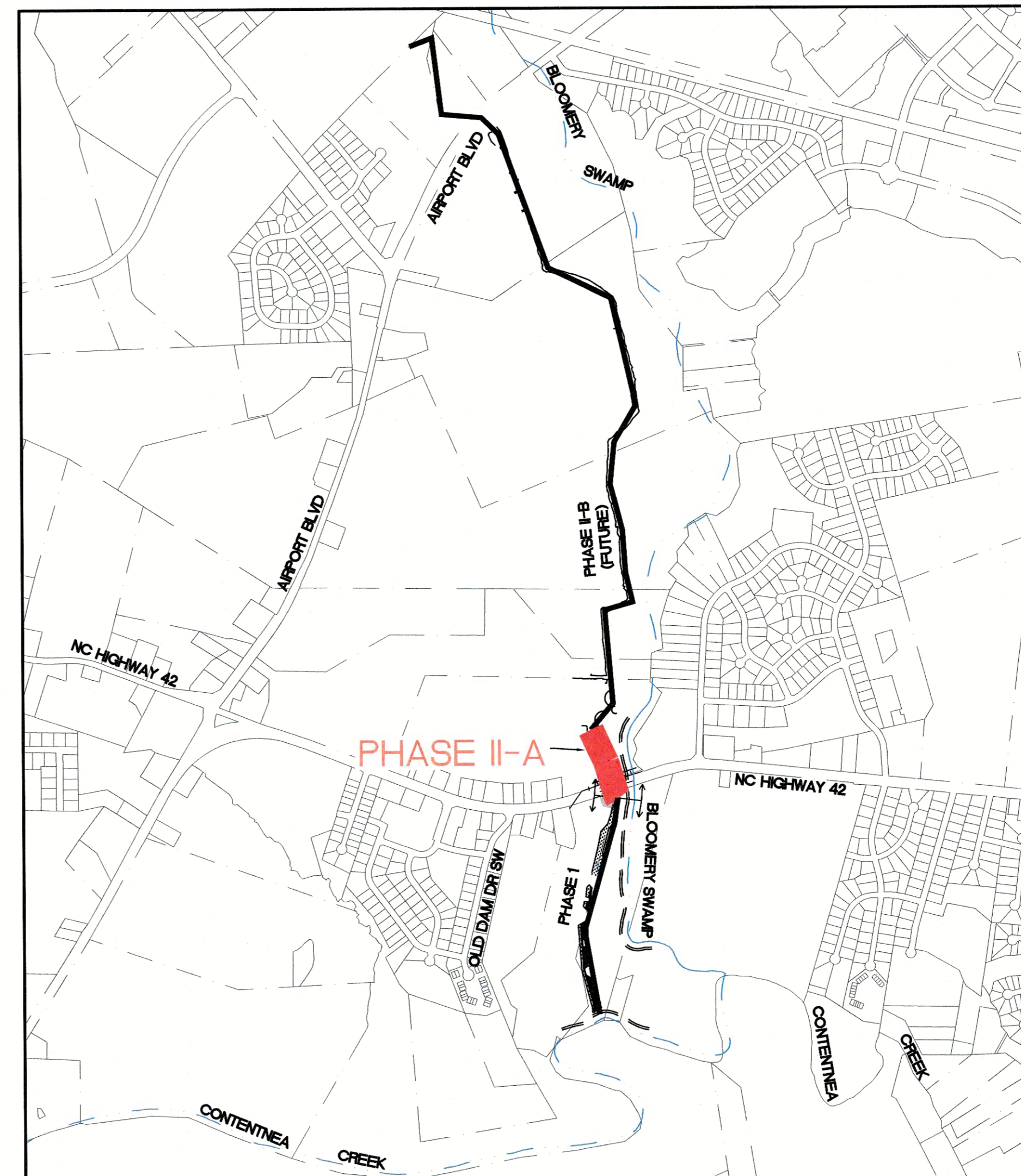
CITY ENGINEER: KYLE F. MANNING



GREEN ENGINEERING

WATER, WASTEWATER, SURVEYING, PLANNING, PROJECT MANAGEMENT

NC FIRM LICENSE: P-0115
303 GOLDSBORO ST. E. P.O. BOX 609 WILSON, N.C. 27893
TEL (252) 237-5365 FAX (252) 243-7489 OFFICE @ GREENENG.COM



LOCATION MAP

SCALE 1" = 1000



GENERAL

SHT SHEET TITLE

1. COVER SHEET

GRAVITY SEWER PROFILE WITH EROSION CONTROL MEASURES

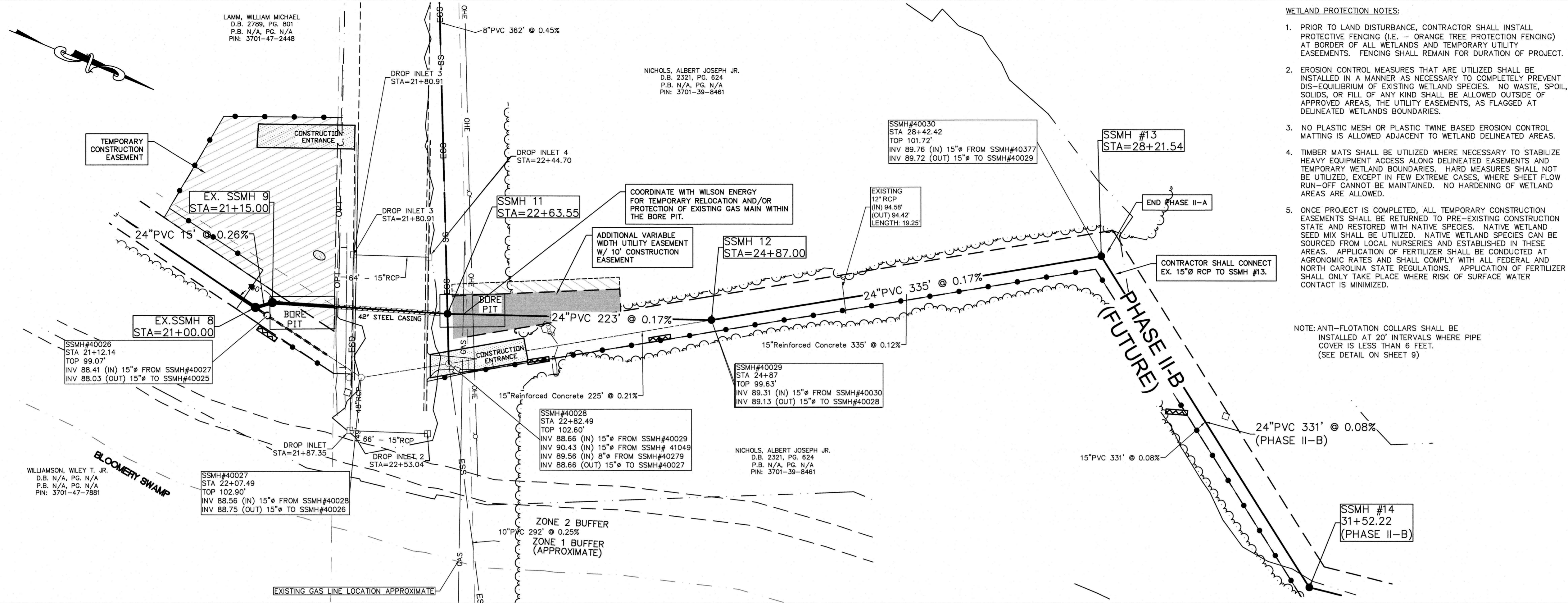
SH	SHEET TITLE	STATIONING
2.	BLOOMERY SWAMP PLAN & PROFILE	PH 1 (21+15 TO 28+21.54)
3.	LATERAL HIGHWAY 42	

DETAILS

SHT SHEET TITLE

4. DETAIL
5. DETAIL
6. DETAIL
7. DETAIL
8. DETAIL
9. DETAIL

GRAND TOTAL: 9 SHEETS



WETLAND PROTECTION NOTES:

- PRIOR TO LAND DISTURBANCE, CONTRACTOR SHALL INSTALL PROTECTIVE FENCING (I.E. - ORANGE TREE PROTECTION FENCING) AT BORDER OF ALL WETLANDS AND TEMPORARY UTILITY EASEMENTS. FENCING SHALL REMAIN FOR DURATION OF PROJECT.
- EROSION CONTROL MEASURES THAT ARE UTILIZED SHALL BE INSTALLED IN A MANNER AS NECESSARY TO COMPLETELY PREVENT DIS-EQUILIBRIUM OF EXISTING WETLAND SPECIES. NO WASTE, SPOIL, SOLIDS, OR FILL OF ANY KIND SHALL BE ALLOWED OUTSIDE OF APPROVED AREAS, THE UTILITY EASEMENTS, AS FLAGGED AT DELINEATED WETLANDS BOUNDARIES.
- NO PLASTIC MESH OR PLASTIC TWINE BASED EROSION CONTROL MATTING IS ALLOWED ADJACENT TO WETLAND DELINEATED AREAS.
- TIMBER MATS SHALL BE UTILIZED WHERE NECESSARY TO STABILIZE HEAVY EQUIPMENT ACCESS ALONG DELINEATED EASEMENTS AND TEMPORARY WETLAND BOUNDARIES. HARD MEASURES SHALL NOT BE UTILIZED EXCEPT IN FEW EXTREME CASES, WHERE SHEET FLOW RUN-OFF CANNOT BE MAINTAINED. NO HARDENING OF WETLAND AREAS ARE ALLOWED.
- ONCE PROJECT IS COMPLETED, ALL TEMPORARY CONSTRUCTION EASEMENTS SHALL BE RETURNED TO PRE-EXISTING CONSTRUCTION STATE AND RESTORED WITH NATIVE SPECIES. NATIVE WETLAND SEED MIX SHALL BE UTILIZED. NATIVE WETLAND SPECIES CAN BE SOURCED FROM LOCAL NURSERIES AND ESTABLISHED IN THESE AREAS. APPLICATION OF FERTILIZER SHALL BE CONDUCTED AT AGRONOMIC RATES AND SHALL COMPLY WITH ALL FEDERAL AND NORTH CAROLINA STATE REGULATIONS. APPLICATION OF FERTILIZER SHALL ONLY TAKE PLACE WHERE RISK OF SURFACE WATER CONTACT IS MINIMIZED.

NOTE: ANTI-FLOTATION COLLARS SHALL BE INSTALLED AT 20' INTERVALS WHERE PIPE COVER IS LESS THAN 6 FEET. (SEE DETAIL ON SHEET 9)

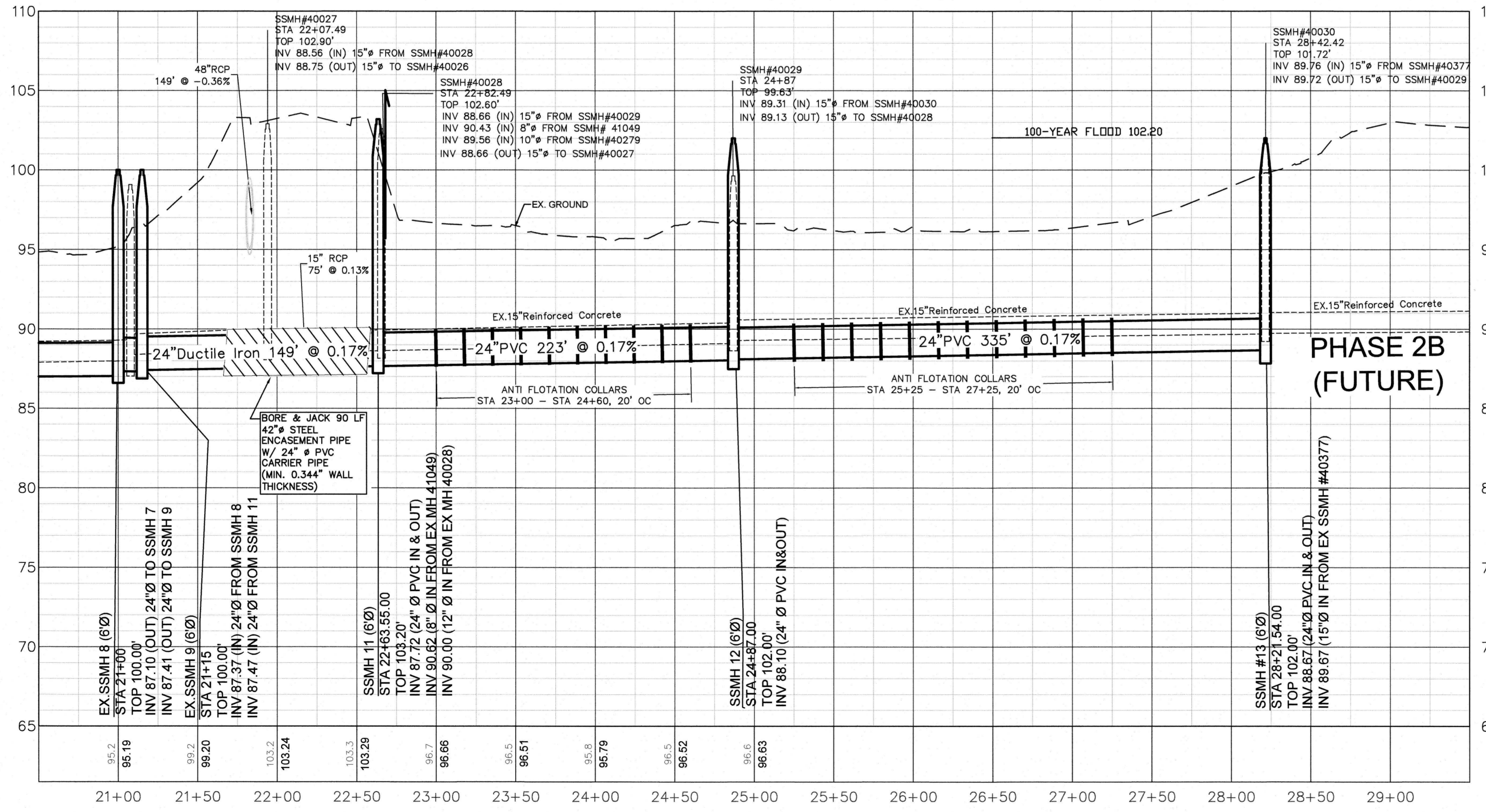
LEGEND

- 100 --- EXISTING MAJOR CONTOUR
- 101 --- EXISTING MINOR CONTOUR
- EXISTING PROPERTY LINE
- EXISTING RIGHT-OF-WAY
- EXISTING CENTERLINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING BUFFER
- 1% ANNUAL CHANCE FLOOD
- EXISTING EDGE OF PAVEMENT LIMITS OF DISTURBANCE
- TEMPORARY BENCH MARK
- PROP. AIR RELEASE VALVE
- PROPOSED SEWER LINE
- PROPOSED BORE & JACK
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING SEWER LINE PLUG END
- EXISTING STORM DRAIN LINE
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- EXISTING GRAVEL
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- EXISTING VALVE
- EXISTING GAS VALVE
- EXISTING RAILROAD TRACKS
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- SILT FENCE
- SILT FENCE OUTLET
- ROCK CHECK DAM
- DISSIPATER PAD
- FLARED END SECTION
- DITCH LINER
- CONSTRUCTION ENTRANCE

WILSON, WILEY T. JR.
D.B. N/A, PG. N/A
P.B. N/A, PG. N/A
PIN: 3701-47-7881

NICHOLS, ALBERT JOSEPH JR.
D.B. 2321, PG. 624
P.B. N/A, PG. N/A
PIN: 3701-39-8461

NICHOLS, ALBERT JOSEPH JR.
D.B. 2321, PG. 624
P.B. N/A, PG. N/A
PIN: 3701-39-8461



ADDITIONAL NOTES:

- CONTRACTOR TO PROVIDE BYPASS. 8" HDPE BYPASS PIPE INSTALLED BY CITY MAY BE USED BY CONTRACTOR UPON REQUEST. CONTRACTOR ASSUMES ALL LIABILITY WITH USE OF EXISTING BYPASS PIPE AND SHOULD SELF-INSPECT PRIOR TO USE.
- CONTRACTOR TO PROVIDE A BYPASS PLAN AND SANITARY SEWER OVERFLOW RESPONSE PLAN TO THE ENGINEER AND CITY OF WILSON FOR REVIEW AND APPROVAL PRIOR TO BEGINNING WORK.
- CITY OF WILSON TO PROVIDE ALL 24" PVC PIPE AND 24" DUCTILE IRON PIPE. SEE BID FORM FOR ADDITIONAL INFORMATION. CITY SHALL NOT SUPPLY ANY FITTINGS FOR THE WORK.
- FLOWABLE FILL TO BE USED FOR THE ABANDONMENT OF THE EXISTING 15" PIPE BETWEEN EXISTING SSMH #40026 AND EXISTING SSMH #40029. WHERE REPLACING EXISTING 15" PIPE WITH PROPOSED 24" PIPE LINE EXISTING CONCRETE PIPE MAY BE CRUSHED AND LEFT IN PLACE.

SEWER NOTES

- ALL DESIGN & CONSTRUCTION SHALL CONFORM TO THE CITY OF WILSON SPECIFICATIONS, LATEST REVISION.
- GRAVITY SEWER MUST HAVE A MINIMUM COVER OF FIVE (5) FT IN TRAFFIC AREAS AND THREE (3) FT IN NON-TRAFFIC AREAS PER MANUAL SPECIFICATIONS STANDARDS AND DESIGN.
- ALL MANHOLES SHALL BE 6' DIA. ECCENTRIC FLAT TOP PRECAST MANHOLE UNLESS OTHERWISE NOTED ON PLANS.
- PHASE II-A SHALL END AT SANITARY SEWER MANHOLE No. 13.

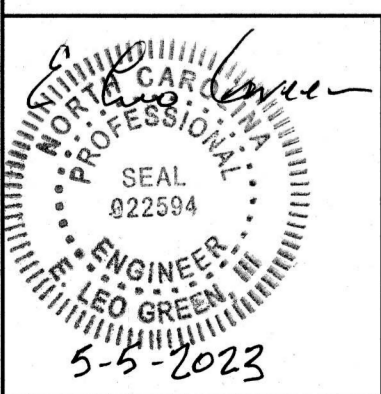
GENERAL NOTES

- THE LIMITS OF DISTURBANCE WILL INCLUDE THE AREAS CONFINED BY THE PUBLIC ROAD RIGHT-OF-WAYS, AND THE TEMPORARY AND PERMANENT EASEMENTS.
- CONTRACTOR TO BE RESPONSIBLE FOR REMOVAL & REPLACEMENT OF THESE FACILITIES IF DAMAGED.

FLOOD NOTES

- REFERENCE FLOOD INSURANCE RATE MAPS PANEL 3701, MAP NUMBER 3703701000 AND PANEL 3711, MAP NUMBER 37103711000, BOTH DATED APRIL 16, 2013.
- FLOOD PLAIN ELEVATION (1% ANNUAL CHANCE) RANGES FROM 100.50' TO 102.00'.
- THE FLOOD PLAIN ELEVATION (1% ANNUAL CHANCE) IS IDENTIFIED AT EACH MANHOLE LOCATION.
- FLOOD ELEVATIONS REFERENCED ON THIS MAP ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVE 88)

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GREEN ENGINEERING
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NORTH CAROLINA FIRM LICENSE: P-0115
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CITY OF WILSON
UPPER BLOOMERY SWAMP INTERCEPTOR PHASE II-A
WILSON COUNTY NORTH CAROLINA

STATION 21+15.00 TO STATION 28+21.54

REVISION	DATE	BY	DATE: MAY 4, 2023

GRAPHIC SCALES

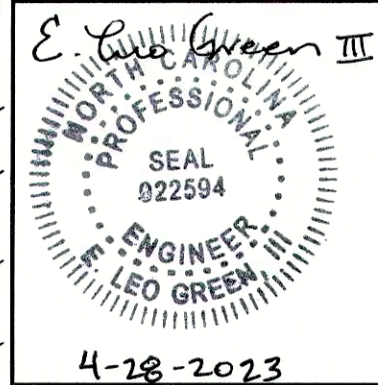
0 25 50 100
PLAN & PROFILE (HORIZONTAL)

0 5 10
PROFILE (VERTICAL)

CLIENT CODE: WILSO
JOB NUMBER: 23-074
FIELD BOOK: XXX
CAD FILE: 23074-BM_PH2A_reco
ASCII FILE:
MODIFIED: 4-May-23
MODIFIED BY: GLB

SHEET NO. 2 OF 9

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GREEN ENGINEERING
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 NORTH CAROLINA FIRM LICENSE: P-0115
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 UPPER BLOOMERY SWAMP INTERCEPTOR PHASE II-A
 WILSON COUNTY NORTH CAROLINA

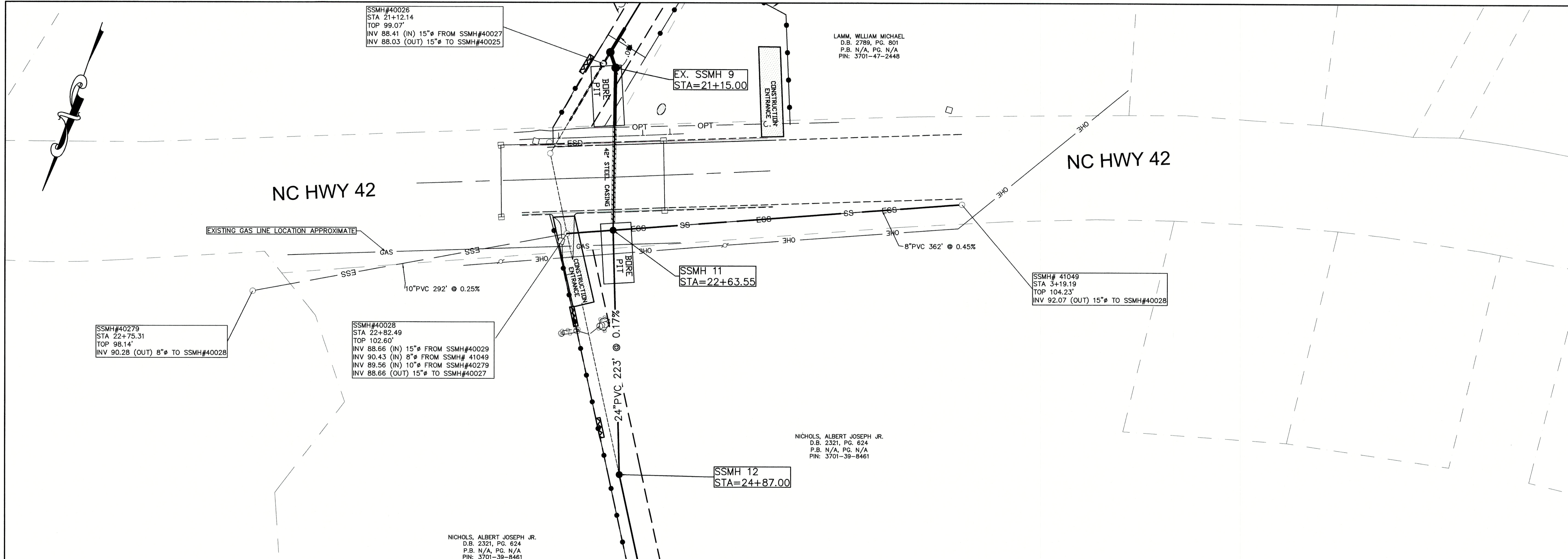
PLAN AND PROFILE
 HWY 42 LATERAL

REVISION	DATE	BY

DATE: APRIL 27, 2023

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ASCII FILE:	LAST MODIFIED: 28-Apr-23
	MODIFIED BY: GLB

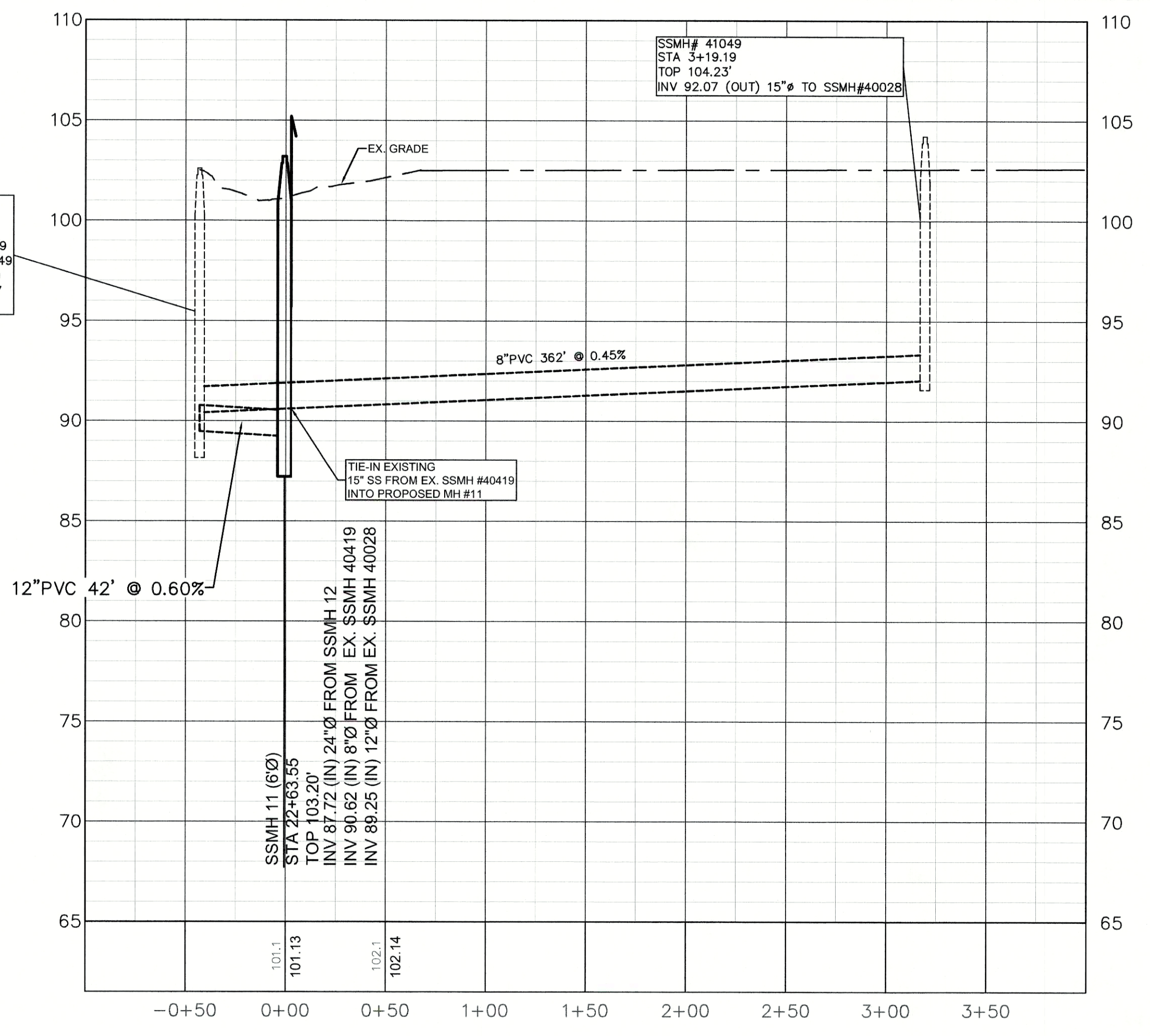
SHEET NO. 3 OF 9



LEGEND

- 100 --- EXISTING MAJOR CONTOUR
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- - - - - LIMITS OF DISTURBANCE
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 - PHASE I SHALL END AT SANITARY SEWER MANHOLE No. 8.
- GENERAL NOTES**
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NOTE: CONTRACTOR TO CORE DRILL EX. SSMH #40028 FOR 12" Ø TO SSMH #11.

SSMH#40028
 STA 22+92.49
 TOP 102.60'
 INV 88.66 (IN) 15" Ø FROM SSMH#40029
 INV 90.43 (IN) 15" Ø FROM SSMH# 41049
 INV 89.56 (IN) 8" Ø FROM SSMH#40279
 INV 88.66 (OUT) 15" Ø TO SSMH#40027
 INV 89.50 (OUT) 12" Ø TO SSMH#11

SSMH# 41049
 STA 3+19.19
 TOP 104.23'
 INV 92.07 (OUT) 15" Ø TO SSMH#40028

SSMH 11 (6'Ø)
 STA 22+63.55
 TOP 103.20'
 INV 87.72 (IN) 24" Ø FROM SSMH 12
 INV 90.62 (IN) 8" Ø FROM EX. SSMH 40419
 INV 88.25 (IN) 12" Ø FROM EX. SSMH 40028

SSMH#40028
 STA 22+92.49
 TOP 102.60'
 INV 88.66 (IN) 15" Ø FROM SSMH#40029
 INV 90.43 (IN) 8" Ø FROM SSMH# 41049
 INV 89.56 (IN) 10" Ø FROM SSMH#40279
 INV 88.66 (OUT) 15" Ø TO SSMH#40027

SSMH#40279
 STA 22+75.31
 TOP 98.14'
 INV 90.28 (OUT) 8" Ø TO SSMH#40028

SSMH#40026
 STA 21+12.14
 TOP 99.07'
 INV 88.41 (IN) 15" Ø FROM SSMH#40027
 INV 88.03 (OUT) 15" Ø TO SSMH#40025

LAMM, WILLIAM MICHAEL
 D.B. 2789, PG. 801
 P.B. N/A, PG. N/A
 PIN: 3701-47-2448

NICHOLS, ALBERT JOSEPH JR.
 D.B. 2321, PG. 624
 P.B. N/A, PG. N/A
 PIN: 3701-39-8461

NICHOLS, ALBERT JOSEPH JR.
 D.B. 2321, PG. 624
 P.B. N/A, PG. N/A
 PIN: 3701-39-8461

SEEDBED PREPARATION:

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3" DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.

RIP ENTIRE AREA 6" DEEP.

REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.

APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY AND MIX WITH SOIL.

CONTINUE TILLAGE UNTIL A WELL PULVERIZED, REASONABLY UNIFORM SEEDBED IS PREPARED 4" TO 6" DEEP.

SPREAD SEED ON FRESHLY PREPARED SEEDBED AND COVER LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACKER AFTER SEEDING.

MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH BY TACKING WITH ASPHALT OR TACK RACK.

HYDROSEEDING

SURFACE ROUGHENING IS PARTICULARLY IMPORTANT WHEN HYDROSEEDING, AS A ROUGHENED SLOPE WILL PROVIDE SOME NATURAL COVERAGE FOR LIME, FERTILIZER, AND SEED. THE SURFACE SHOULD NOT BE COMPACTED OR SMOOTH. FINE SEEDBED PREPARATION IS NOT NECESSARY FOR HYDROSEEDING OPERATIONS: LARGE CLODS, STONES, AND IRREGULARITIES PROVIDE CAVITIES IN WHICH SEEDS CAN LODGE.

RATE OF WOOD FIBER (CELLULOSE) APPLICATION SHOULD BE AT LEAST 2,000 LB/ACRE.

APPLY LEGUME INOCULANTS AT FOUR TIMES THE RECOMMENDED RATE WHEN ADDING INOCULANT TO A HYDROSEEDER SLURRY.

IF A MACHINERY BREAKDOWN OF 1/2 TO 2 HOURS OCCURS, ADD 50% MORE SEED TO THE TASK, BASED ON THE PROPORTION OF THE SLURRY REMAINING. THIS SHOULD COMPENSATE FOR DAMAGE TO SEED. BEYOND 2 HOURS, FULL RATE OF NEW SEED MAY BE NECESSARY.

LIME IS NOT NORMALLY APPLIED WITH A HYDRAULIC SEEDER BECAUSE IT IS ABRASIVE. IT CAN BE BLOWN ONTO STEEP SLOPES IN DRY FORM.

CRIMPING STRAW MULCH

IF CRIMPING IS TO BE USED, APPLY 1/2 THE MULCH, THEN CRIMP, AND INSTALL THE OTHER HALF. CRIMPING CAN BE APPLIED TO AREAS ADJACENT TO ANY SECTION OF THE ROADWAY WHERE TRAFFIC IS TO BE MAINTAINED OR ALLOWED DURING CONSTRUCTION. IN AREAS WITHIN SIX FEET OF THE EDGE OF PAVEMENT, STRAW IS TO BE APPLIED AND THEN CRIMPED. AFTER THE CRIMPING OPERATION IS COMPLETE, AN ADDITIONAL APPLICATION OF STRAW SHALL BE APPLIED AND IMMEDIATELY TACKED WITH A SUFFICIENT AMOUNT OF UNDILUTED EMULSIFIED ASPHALT.

STRAW MULCH SHALL BE OF SUFFICIENT LENGTH AND QUALITY TO WITHSTAND THE CRIMPING OPERATION.

CRIMPING EQUIPMENT INCLUDING POWER SOURCE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER PROVIDING THAT MAXIMUM SPACING OF CRIMPER BLADES SHALL NOT EXCEED 8".

* REVERT TO SEEDBED PREPARATION FOR WETLAND REPAIR AREAS ON SHEET 2 OF 2 WETLAND IMPACTS FOR SEEDING REQUIREMENTS SPECIFIC TO WETLAND AREAS OF THIS PROJECT.

SEEDING MAINTENANCE:

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

PERMANENT SEEDING

Summer - March 1 - August 31

Lime	4,000 lbs/ac
Fertilizer	500 lbs/ac
Bermudagrass (hulled)	35 lbs/ac
Centipede	10 lbs/ac
German/Brown Top Millet Grain	10 lbs/ac
Annual Ryegrass	2 tons/ac
* Straw Mulch	400 GALLON/ACRE
EMULSIFIED ASPHALT TACK	

Winter - September 1 - February 28

Lime	4,000 lbs/ac
Fertilizer	500 lbs/ac
Bermudagrass (unhulled)	35 lbs/ac
Tall Fescue	50 lbs/ac
Annual Ryegrass	10 lbs/ac
* Straw Mulch	2 tons/ac
EMULSIFIED ASPHALT TACK	400 GALLON/ACRE

LIME RATE IS PER SANDY SOILS. FOR CLAY SOIL TYPES, ADJUST LIME APPLICATION RATE TO 3 TONS PER ACRE, OR PER SOILS REPORT.

TEMPORARY SEEDING

Summer - March 1 - August 31

Lime	2 tons/ac
Fertilizer	700 lbs/ac
Brown Top Millet	40 lbs/ac
* Straw Mulch	2 tons/ac
EMULSIFIED ASPHALT TACK	

Winter - September 1 - February 28

Lime	2 tons/ac
Fertilizer	700 lbs/ac
Oats	50 lbs/ac
Rye Grain	20 lbs/ac
* Straw Mulch	2 tons/ac
EMULSIFIED ASPHALT TACK	

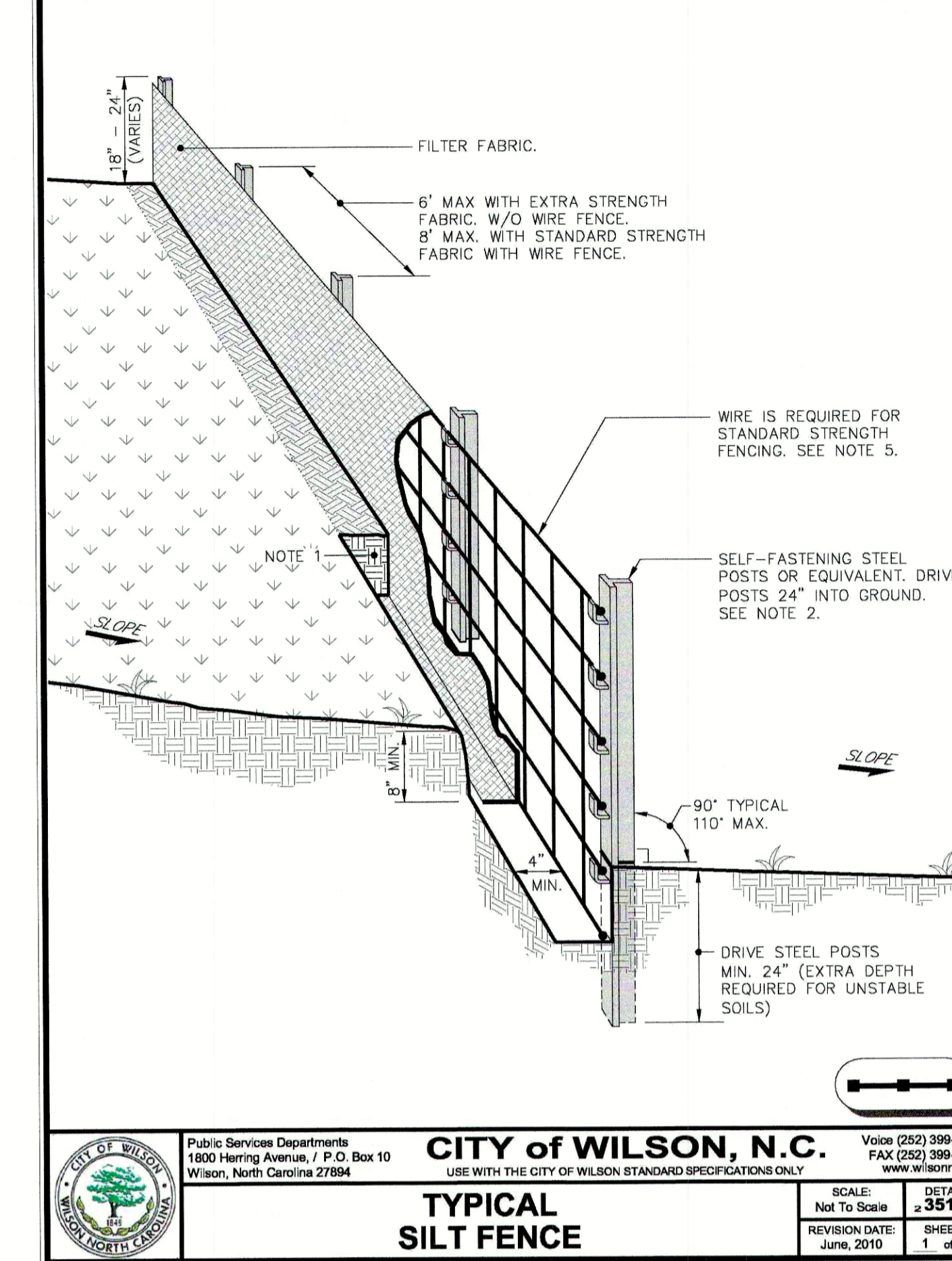
LIME RATE IS PER SANDY SOILS. FOR CLAY SOIL TYPES, ADJUST LIME APPLICATION RATE TO 3 TONS PER ACRE, OR PER SOILS REPORT.

NOTES:

- * Mulch will be doubled if crimping is the method used.
- Any variation from these specs must have approval of the Stormwater Program Manager or his/her duly authorized agent.

CITY OF WILSON, N.C.
Public Services Department
1800 Herring Avenue, / P.O. Box 10
Wilson, North Carolina 27894
Voice (252) 399-2465
FAX (252) 399-2453
www.wilsonnc.org

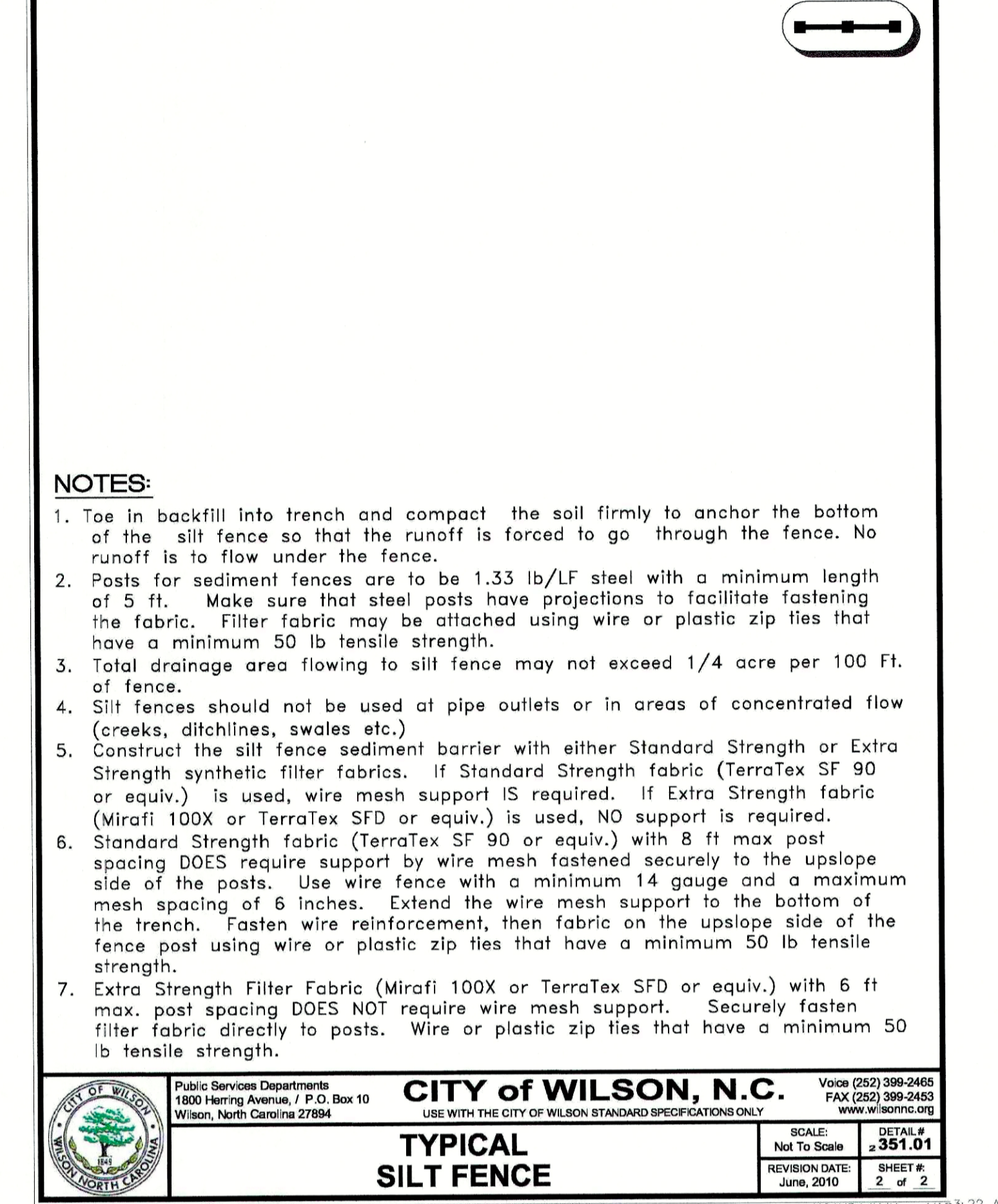
SCALE: Not To Scale
REVISION DATE: June, 2010
SHEET # 1 of 1



CITY OF WILSON, N.C.
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Wilson, North Carolina 27894
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TYPICAL SILT FENCE

SCALE: Not To Scale
REVISION DATE: June, 2010
SHEET # 2 of 2



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SILT FENCE OUTLET RELIEF POINT

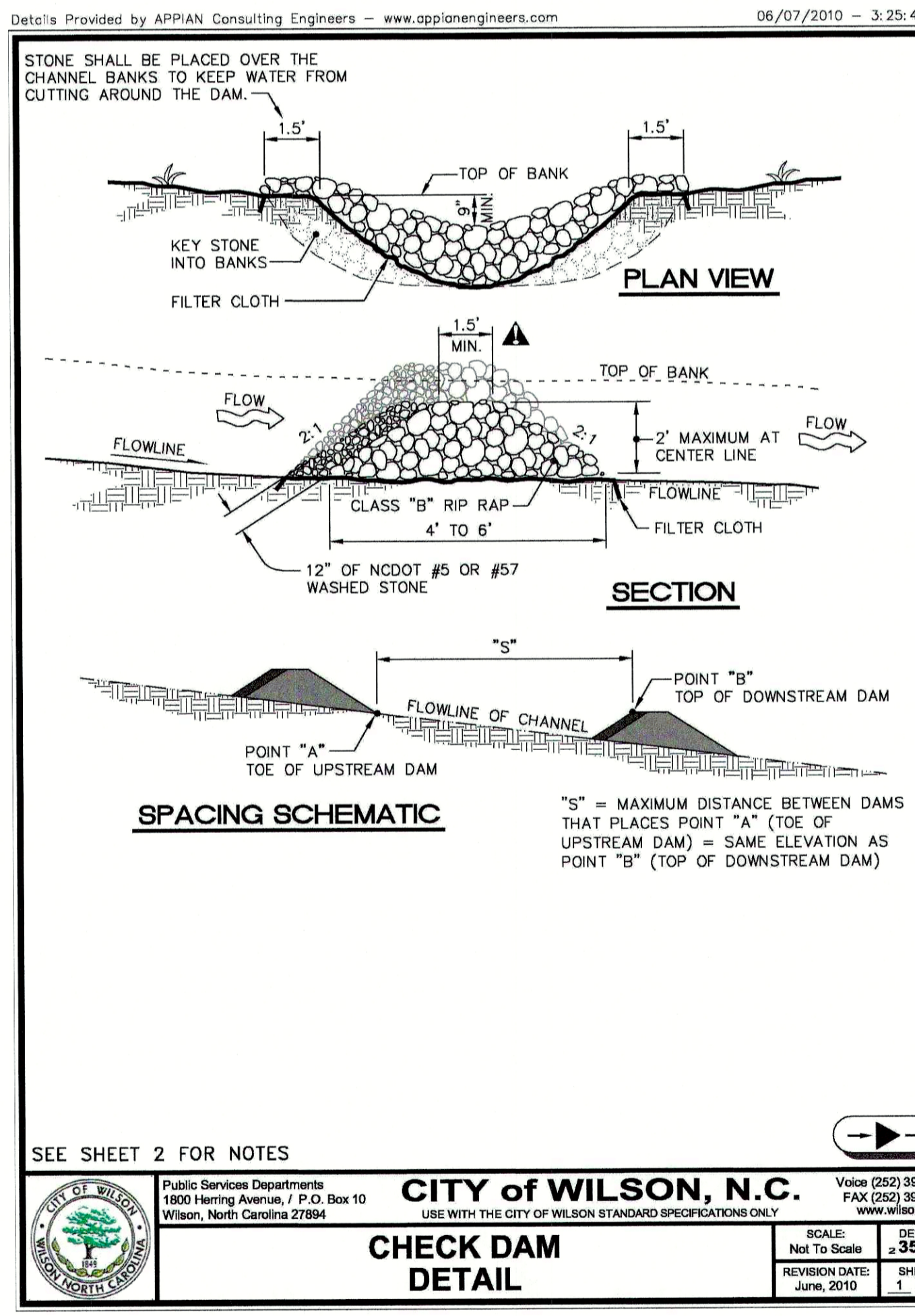
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REVISION DATE: June, 2010
SHEET # 2 of 2

Table 6.14a Mulching Materials and Application Rates

Material	Rate Per Acre	Quality	Notes
Organic Mulches			
Straw (ANCHOR STRAW BY TACKING WITH ASPHALT OR NETTING)	1-2 tons	Dry, unchopped, unweathered; avoid weeds.	Should come from wheat or oats; spread by hand or machine; must be tacked down.
Wood chips	5-6 tons	Air dry	Treat with 12 lbs nitrogen/ton. Apply with mulch blower, chip handler, or by hand. Not for use in fine turf. Also referred to as wood cellulose. May be hydroseeded. Do not use in hot, dry weather.
Wood fiber	0.5-1 tons		
Bark	35 cubic yards	Air dry, shredded or hammer-milled, or chips.	Apply with mulch blower, chip handler, or by hand. Do not use asphalt tack.
Corn stalks	4-6 tons	Cut or shredded in 4-6 in. lengths.	Apply with mulch blower or by hand. Not for use in fine turf.
Sericea lespedeza seed-bearing stems	1-3 tons	Green or dry; should contain mature seed.	
Nets and Mats			
Jute net	Cover area	Heavy, uniform; woven of single jute yarn.	Withstands waterflow. Best when used with organic mulch.
Fiberglass net	Cover area		Withstands waterflow. Best when used with organic mulch.
Excelsior (wood fiber) mat	Cover area		Withstands waterflow.
Fiberglass roving	0.5-1 tons	Continuous fibers of drawn glass bound together with a non-toxic agent.	Apply with a compressed air ejector. Tack with emulsified asphalt at a rate of 25-35 gal/1,000 sq ft.
Chemical Stabilizers			
Aquatain	follow manufacturer's specifications		Not beneficial to plant growth.
Aerospray			
Curasol AK			
Petrosert SB			
Terra Tack			
Crust 500			
Genaqua 743 M-145			

¹Refer to Practice No. 6.30, Grass Lined Channels.
²Use of trade names does not imply endorsement of product.

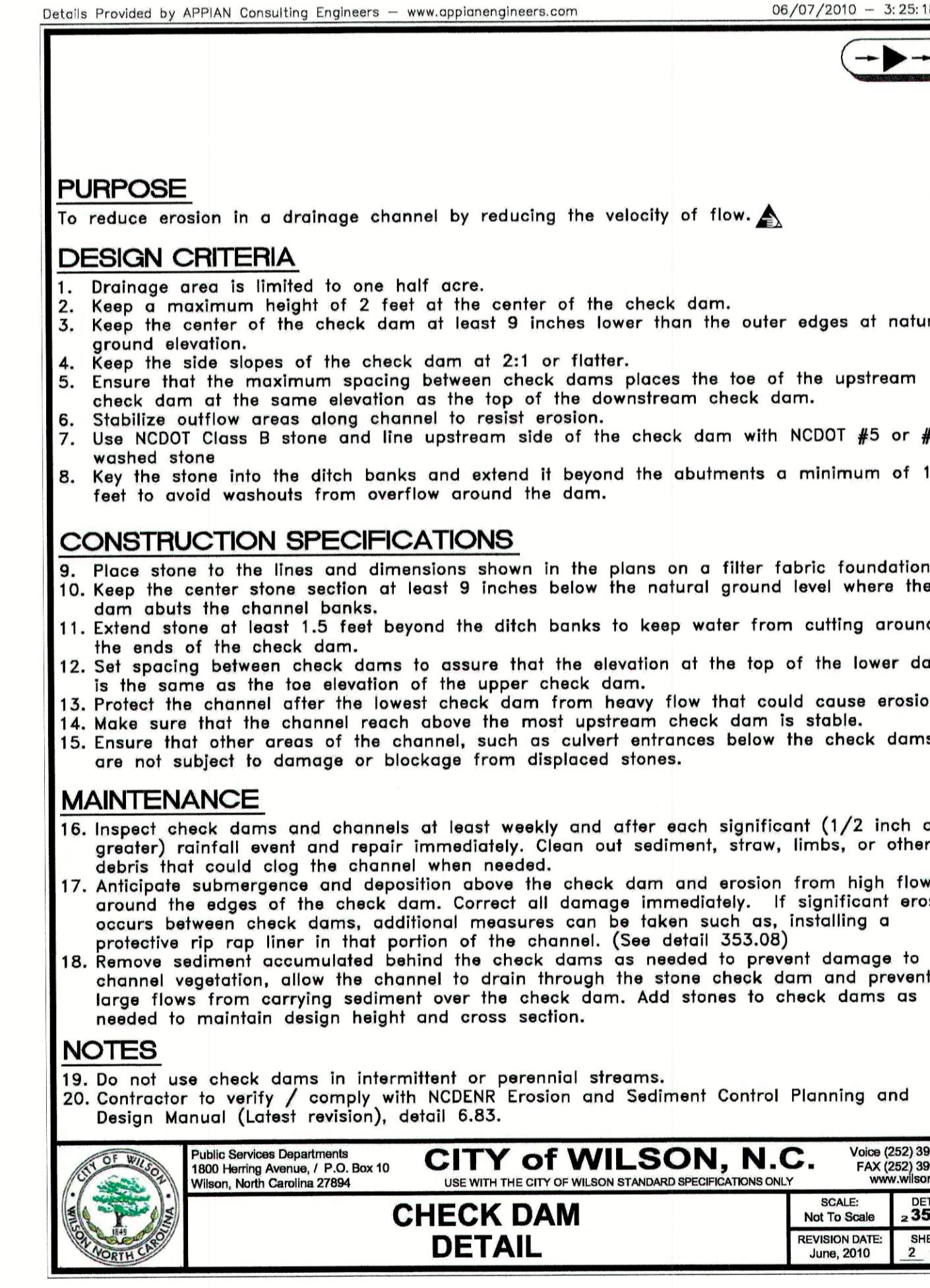
Maintenance Inspect all mulches periodically, and after rainstorms to check for rill erosion, dislocation or failure. Where erosion is observed, apply additional mulch. If washout occurs, repair the slope grade, reseed and reinstall mulch. Continue inspections until vegetation is firmly established.



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www.wilsonnc.org

CHECK DAM DETAIL

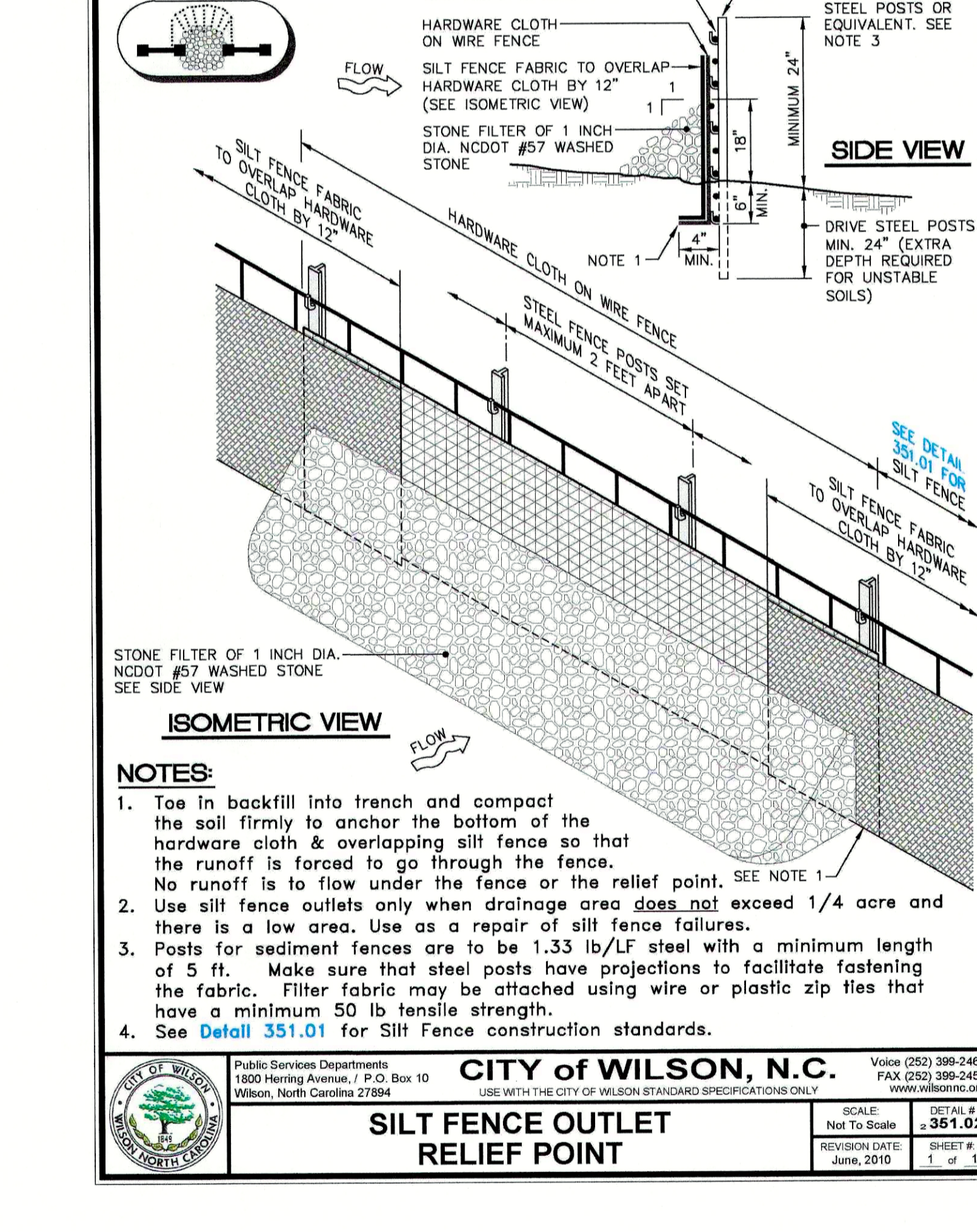
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REVISION DATE: June, 2010
SHEET # 1 of 2



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CHECK DAM DETAIL

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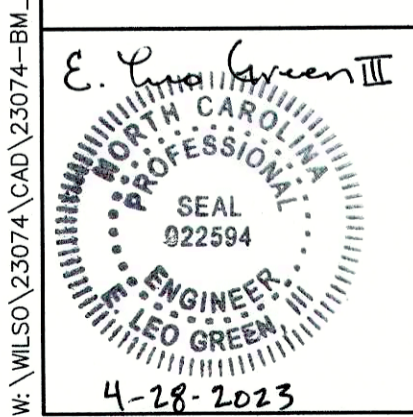


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SILT FENCE OUTLET RELIEF POINT

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SHEET # 2 of 2

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TEL (252) 237-5365 FAX (252) 243-7489 OFFICE@GREENENG.COM

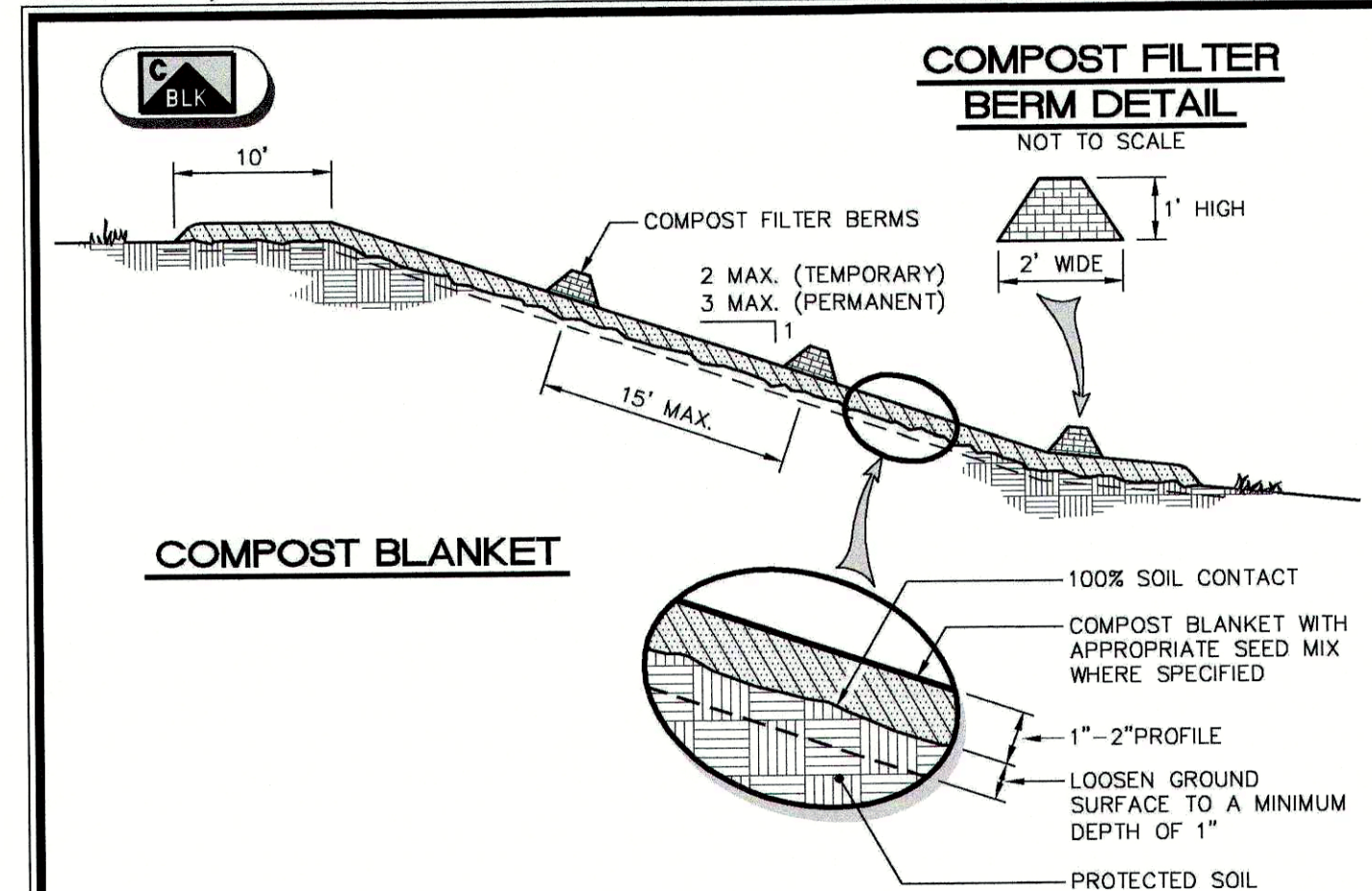
CITY OF WILSON
UPPER BLOOMERY SWAMP INTERCEPTOR PHASE II-A
WILSON COUNTY
NORTH CAROLINA

DETAILS

REVISION	DATE	BY	DATE: APRIL 27, 2023

CLIENT CODE: WILSO
JOB NUMBER: 23-074
FIELD BOOK: XXX
CADFILE: 23074-BM_PH2A.dwg
ASCI FILE:
LAST MODIFIED: 28-Apr-23
MODIFIED BY: GLB

SHEET NO. 4 of 9



Compost Blanket Notes:

- See plan view for area of compost blanket.
- May be used in place of straw mulch or erosion control blanket in areas where access is difficult due to landscaping or other objects or in areas where a smooth turf grass finish is desired.
- Compost blankets shall only be utilized in areas where sheet flow conditions prevail; shall be prohibited in areas of possible concentrated flow.
- Soil preparation shall be complete per the specifications outlined in the Narrative covering the applicable project.
- When turf grass finish is not desired, surface roughening on slopes shall take place prior to application.
- Compost blanket shall be evenly applied to a depth of specified; generally 1 1/2 to 2 inches thick for vegetated compost surface mulch and 2 to 4 inches thick for unvegetated compost surface mulch.
- Compost blankets may be applied utilizing pneumatic blower or by hand.
- Seeding shall be drilled prior to the application of compost or seed may be combined and blown with the pneumatic blower.
- Where compost filter berms are required or indicated, filter berms shall run parallel to the contour.
- Compost filter berms shall be applied on slopes spaced at no more than a maximum of 15 feet on centers or as shown on the Erosion Control Plan.
- Compost filter berms shall be comprised of the same compost material as utilized for the development of the compost blanket.
- Inspect compost blankets weekly, during and after any rainstorm event.
- Compost used in the application of the compost blanket shall be compost as defined by the following physical, chemical and biological parameters:

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COMPOST BLANKET DETAIL & NOTES
 SCALE: Not To Scale
 DETAIL # 353.07
 REVISION DATE: June, 2013
 SHEET # 1 of 3

Parameters	Compost for Compost Blanket
pH	5.0 to 8.5
Soluble salts	Maximum 5 mmhos/cm
Moisture Content	30-60%, wet weight basis
Organic Matter Content	25-65%, dry weight basis
Particle Size	3" (75mm), 100% passing, dry weight basis
	1" (25mm), 90-100% passing, dry weight basis
	3/4" (19mm), 65-100% passing, dry weight basis
	1/4" (6.4mm), 0-75% passing, dry weight basis
	Maximum particle length of 6" (152mm)
Stability	8 mg CO ₂ -C per g OM per day
Maturity	100%
Percent Emergence Relative Seeding Vigor	100%
Physical Contaminants (man-made inerts)	<1%, dry weight basis
Certification of Products (recommended)	US Composting Council's Seal of Testing (STA) Program

Construction Specifications

The following steps shall be taken for the installation of compost blankets for erosion/sediment control. The information shall also be included in the construction sequence on the approved erosion and sediment control plan.

Prepare the soil by removing large clods, rocks, stumps, roots as described in Chapter 6 of the N.C. Erosion and Sedimentation Control Planning and Design Manual.

Apply the compost blanket to 100% of the area as required on the approved plan.

- The blanket shall cover 100% of the bare or disturbed soil area, whereas, no native soil shall be visible in or through the compost blanket. It shall be applied at the application rates, as specified in Table A. Seed shall be thoroughly mixed with the compost prior to application or surface applied to the compost blanket at time of application at the appropriate rates as prescribed by the approved plan.
- Compost blankets shall be installed at least 10 ft over and beyond the shoulder of the slope and/or into the edge of existing vegetation to ensure runoff does not undercut the blanket. When installing into the edge of existing vegetation, care must be taken not to disturb the existing root mat.
- Compost blanket application rates should be designed and specified based on specific site (e.g., soil characteristics, existing vegetation) and climatic conditions, as well as particular project related requirements and calculated storm water runoff.
- Compost blankets installed on slopes greater than or equal to 4:1 shall be tracked. Blankets on 3:1 slopes shall be tracked and secured with an adequate rolled erosion control product. (See *North Carolina Erosion and Sediment Control Planning and Design Manual*, Practice Standard 6.17 *Roller Erosion Control Products (RECP)* for installation procedure.) Where high winds and wind erosion are expected, RECPs shall be installed over the compost blanket, regardless of slope. All other installation procedures and specifications will be as shown on the approved plan and described in the approved construction sequence. Compost shall be uniformly applied as described in the approved construction sequence with the appropriate equipment. If required, thorough watering may be used to improve settling of the blanket.

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COMPOST BLANKET DETAIL & NOTES
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 DETAIL # 353.07
 REVISION DATE: June, 2013
 SHEET # 2 of 3

Annual Rainfall/Flow Rate	Total Precipitation & Rainfall Erosivity Index	Application Rate For Vegetated ^a Compost Surface Mulch	Application Rate For Unvegetated Compost Surface Mulch
Low	1"-25", 20-90	1"-1 1/2" (25 mm - 37.5mm)	1"-1 1/2" (25 mm - 37.5mm)
Average	26"-50", 91-200	1"-1 1/2" (25 mm - 37.5mm)	1 1/2"-2" (37 mm - 50 mm)
High	51" and above, 201 and above	1"-2" (25 mm - 50 mm)	2"-4" (50mm - 100mm)

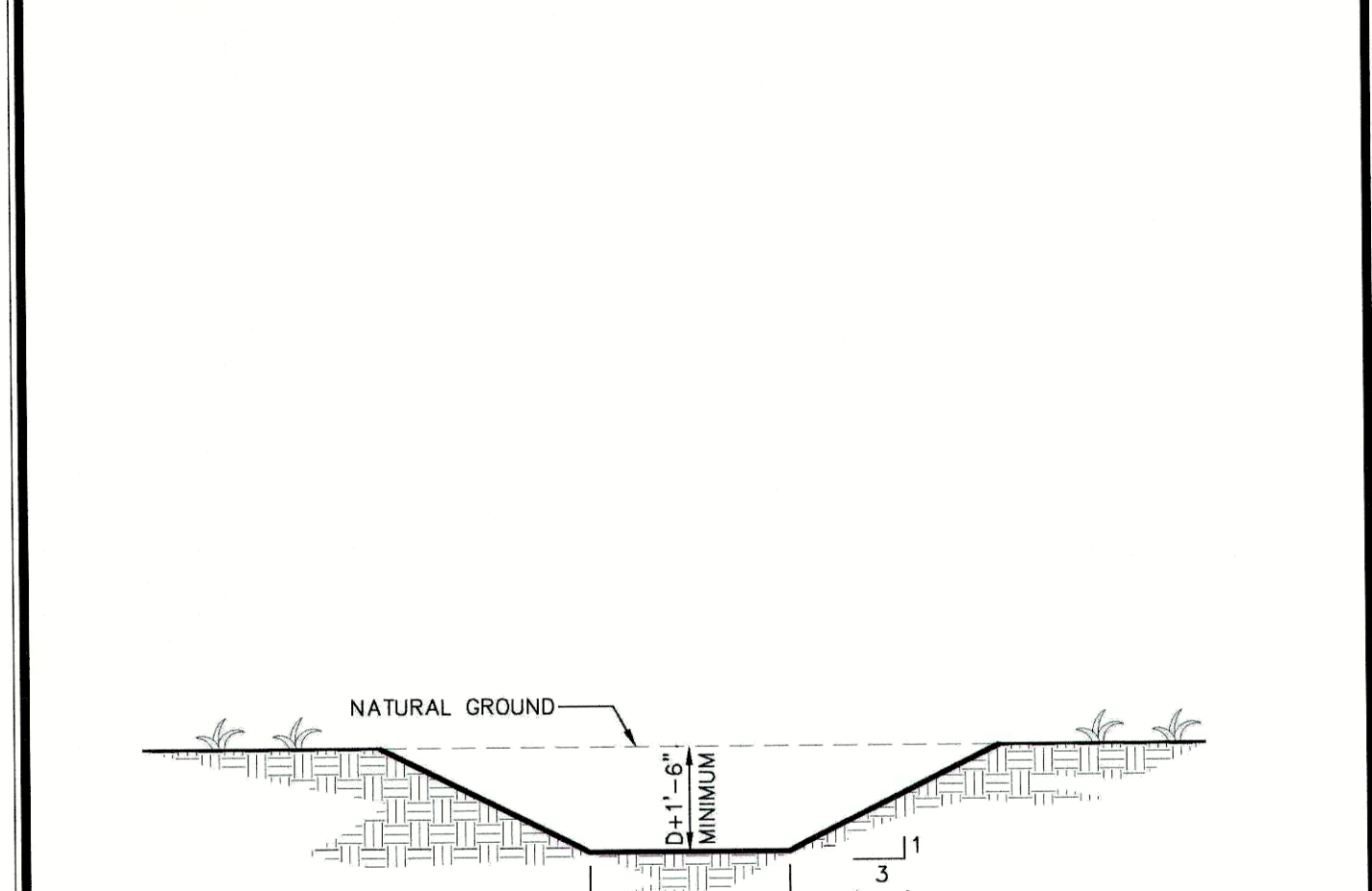
^a These lower application rates should only be used in conjunction with seeding, and for compost blankets applied during the prescribed planting season for the particular region.

Maintenance

Inspect compost blankets weekly and within 24 hours of a rainfall event of 1/2 inch or greater. If failure or damage to the blanket occurs or if vegetation does not establish within the expected germination time of the selected seed type, reapply compost and seed to the affected area to return it to the original condition. Take additional measures as necessary to establish permanent ground cover. Compost blankets shall be inspected until permanent vegetation is established. Rolled Erosion Control Products (RECP) placed over the compost blanket should be repaired if it has been moved or damaged by wind or storm runoff and/or if part of or the whole blanket is not in contact with the soil surface.

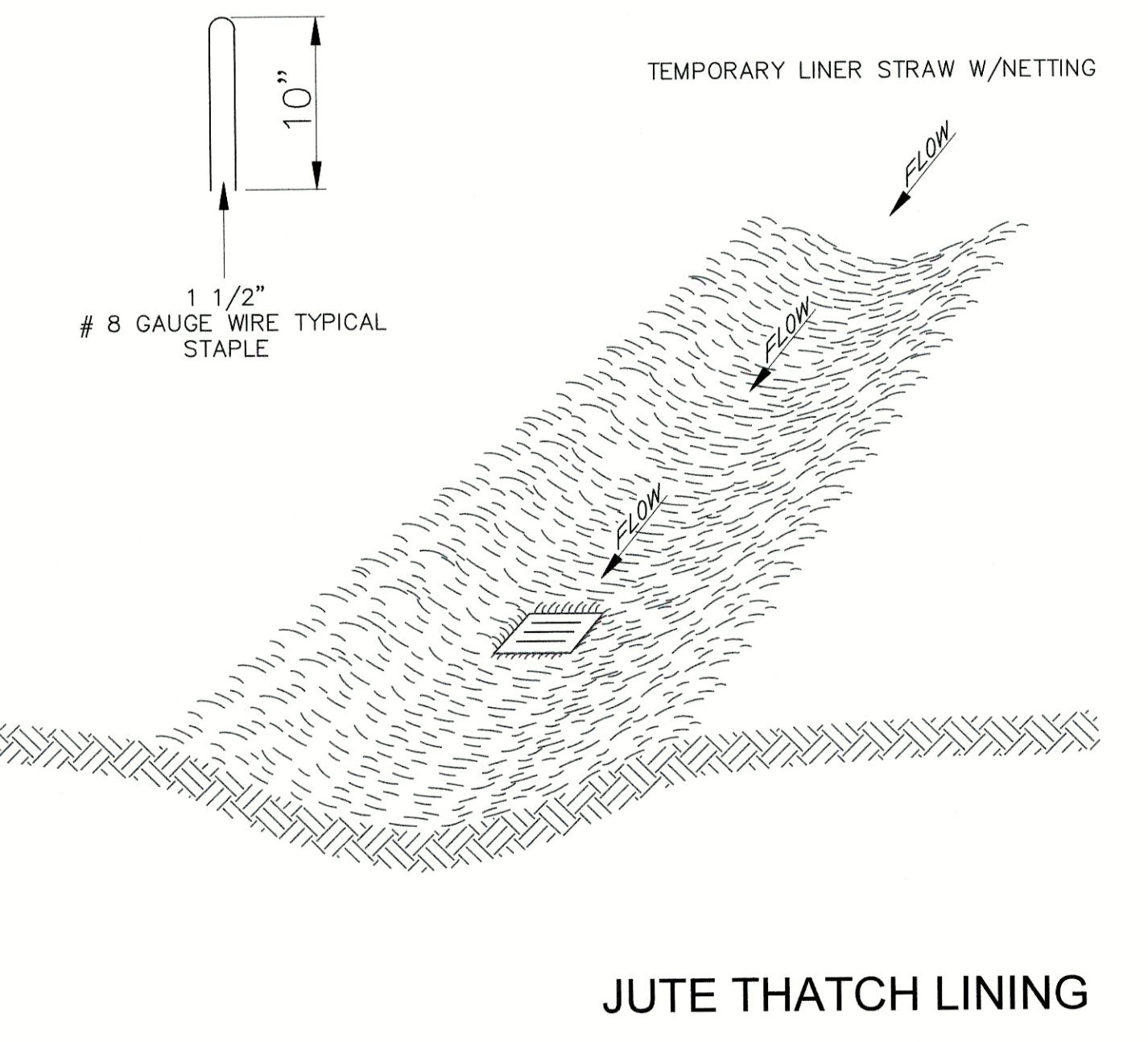
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COMPOST BLANKET DETAIL & NOTES
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 DETAIL # 353.07
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 SHEET # 3 of 3

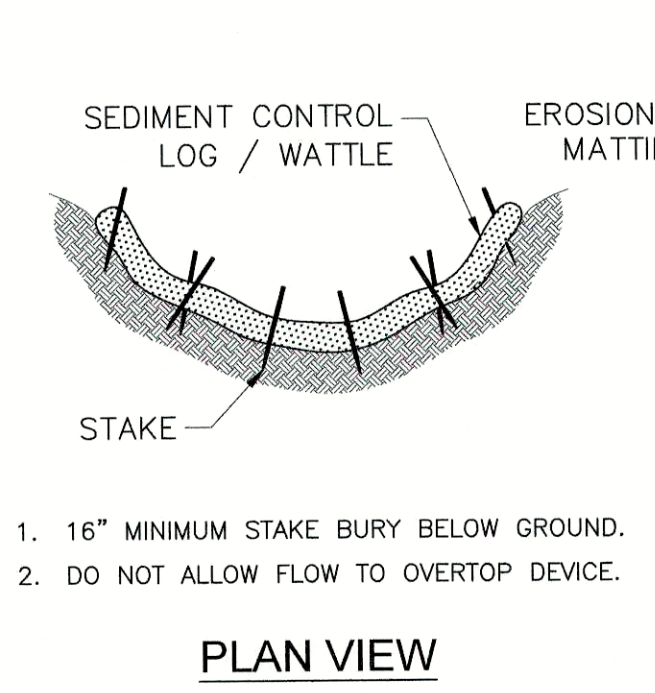


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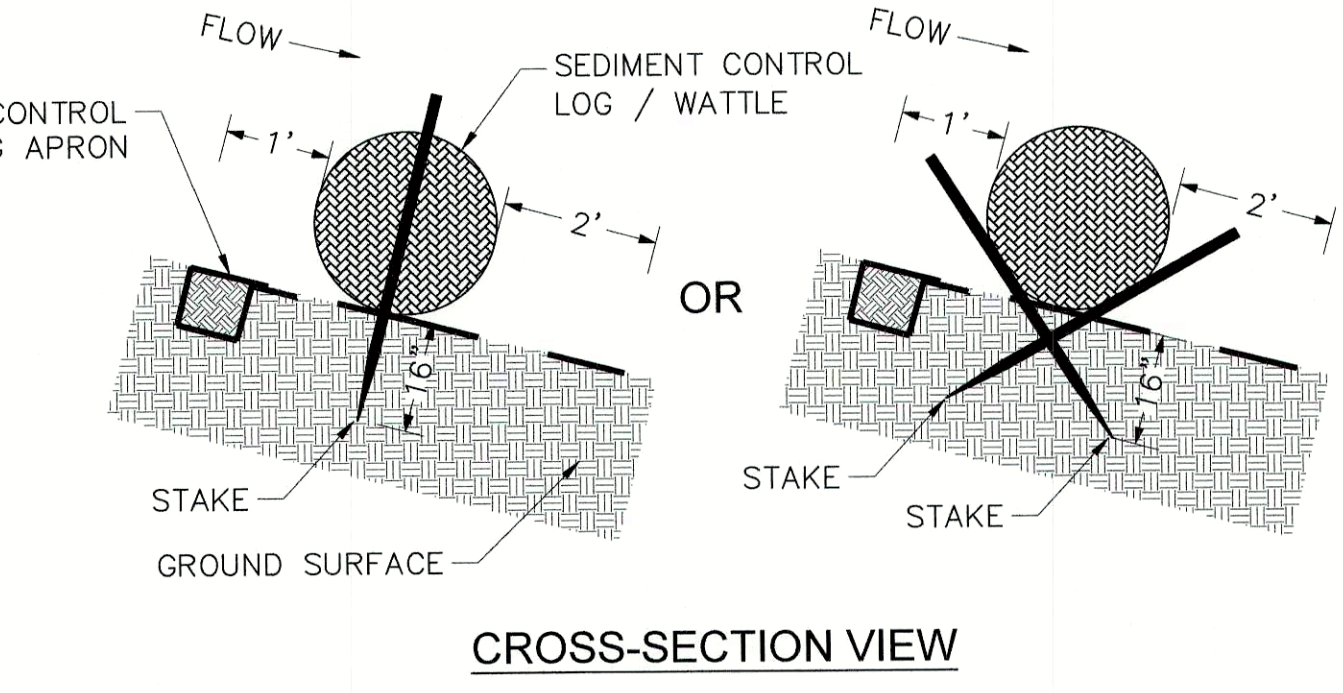
TYPICAL DRAINAGE CHANNELS
 SCALE: Not To Scale
 DETAIL # 631.02
 REVISION DATE: June, 2010
 SHEET # 1 of 1



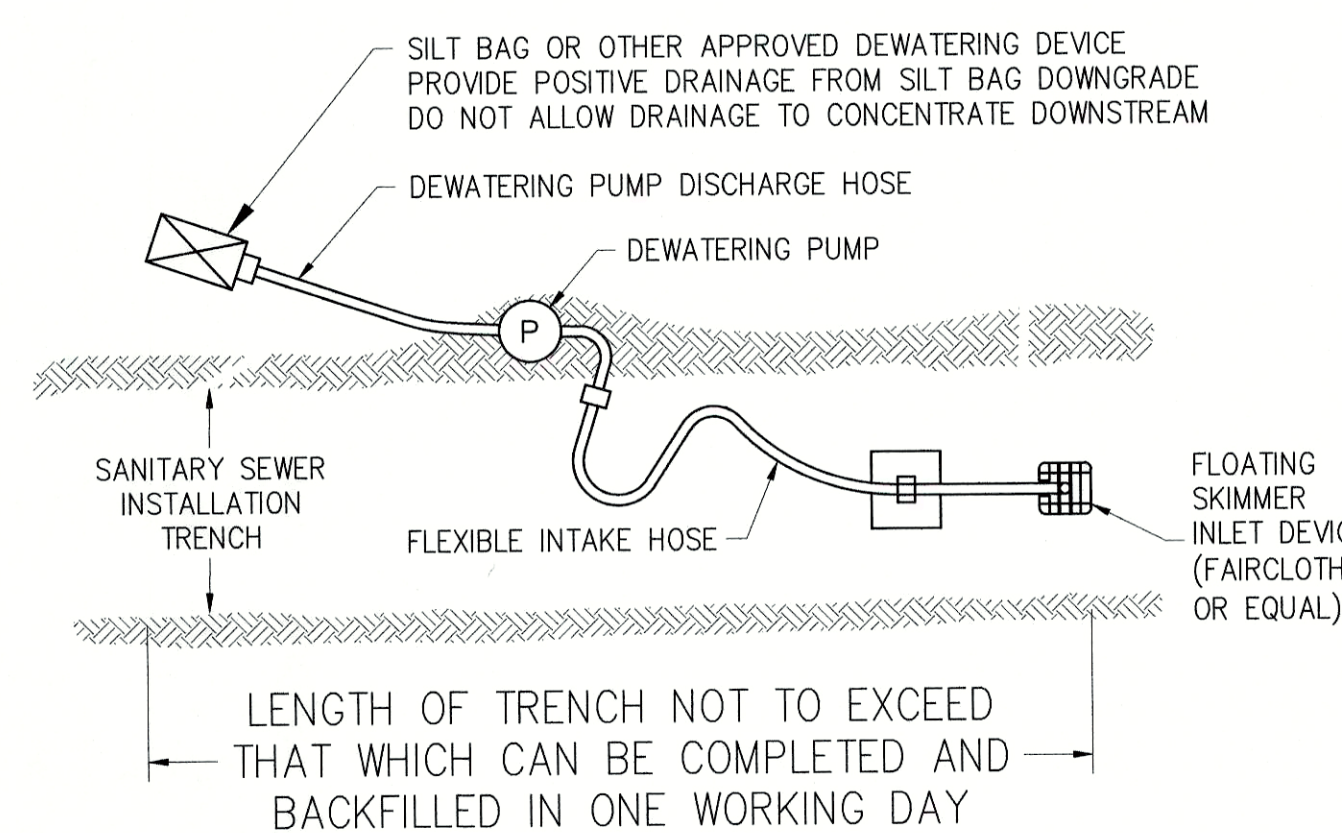
- BURY THE TOP OF THE JUTE STRIPS IN A TRENCH 4 INCHES OR MORE IN DEPTH.
- TAMP THE TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES, 10 INCH SPACING, 4 INCH DOWN FROM TRENCH.
- OVERLAP -- BURY UPPER END OF LOWER STRIP OVERLAP END OF TOP STRIP 4 INCHES AND STAPLE.
- EROSION STOP -- FOLD OF JUTE BURIED IN SLIT TRENCH AND TAMPED, DOUBLE ROW OF STAPLES.
- PLACE STAPLES 1 1/2 TO 6.0 FEET APART AS REQUIRED TO KEEP THE JUTE FIRMLY PRESSED INTO THE SOIL.
- PRESS ENDS OF JUTE 4 INCHES INTO THE SOIL AROUND STRUCTURES AND STAPLE SECURELY.
- INSTALL LINER TO Q10 DEPTH OF FLOW MINIMUM.



- DESIGN CRITERIA**
- TO BE UTILIZED AS A "GREEN" SUBSTITUTE FOR ROCK CHECK DAMS IN DITCHES AND OTHER CHANNELS. NCDENR AND/OR NCDOT APPROVAL REQUIRED.
 - THE DRAINAGE AREA IS LIMITED TO ONE HALF ACRE PER DEVICE. DRAINAGE AREAS MUST BE FREE FROM DEBRIS, ROCKS, CLODS, ETC.
 - GROUND SURFACE SHOULD BE SMOOTH PRIOR TO INSTALLATION TO ENSURE LOG / WATTLE REMAINS IN CONTACT WITH SIDE SLOPES AND CHANNEL.
 - STABILIZE ANY OUTFLOW AREAS ALONG THE CHANNEL TO RESIST EROSION.
 - AT A MINIMUM, UTILIZE 1" x 1" x 24" STAKES TO SECURE THE LOG / WATTLE TO THE GROUND SURFACE.
 - INSTALLATION IN ROCKY, SANDY OR OTHERWISE LOOSE SOIL SHALL REQUIRE LONGER STAKES (GREATER THAN 24") TO BE UTILIZED.
 - PLACE FIBER REINFORCED EROSION CONTROL MATTING AS AN APRON UPSTREAM OF LOG / WATTLE WHEN UTILIZING FOR SLOPE PROTECTION. SECURE MATTING BY ANCHORING TO SLOPE. SECURE LOG / WATTLE TO BLANKET TO ENSURE CONTACT OVER THE LENGTH OF THE INSTALLATION. A MINIMUM OF 1 FT. UPSTREAM APRON AND 2 FT. DOWNSTREAM APRON ARE REQUIRED FOR INSTALLATION FOR SLOPE PROTECTION.
 - SUBSEQUENT DOWNSLOPE LOGS / WATTLES SHOULD BE APPROPRIATELY SPACED TO MINIMIZE VELOCITIES. SEAMS BETWEEN LOGS / WATTLES SHOULD BE OFFSET TO ENSURE MAXIMUM FILTRATION BETWEEN DEVICES. FIGURE A REPRESENTS A PROFILE VIEW FOR SLOPE INSTALLATION.
 - REFERENCE NCDENR EROSION & SEDIMENTATION CONTROL DESIGN MANUAL FOR DESIGN STANDARDS & SPECIFICATIONS REGARDING MAINTENANCE CRITERIA.

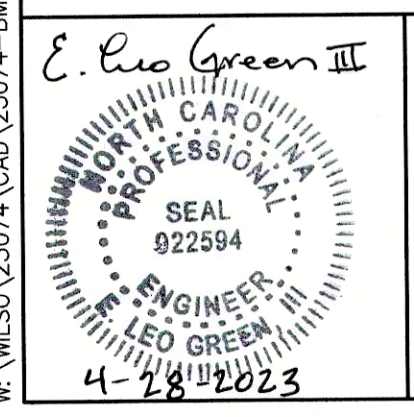


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PLAN VIEW

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CITY OF WILSON
 UPPER BLOOMERY SWAMP INTERCEPTOR PHASE II-A
 WILSON COUNTY
 NORTH CAROLINA

DETAILS

REVISION	DATE	BY	DATE: APRIL 27, 2023

AS SHOWN

CLIENT CODE: WILSO
 JOB NUMBER: 23-074
 FIELD BOOK: XXX
 CADFILE: 23074-BM_PH2A.dwg
 ASCIID FILE:
 LAST MODIFIED: 28-Apr-23
 MODIFIED BY: GLB

SHEET NO. 5 OF 9

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WATERTIGHT DETAIL

(4) 1/2" - 13 x 2" STAINLESS STEEL HEX HEAD BOLTS WITH STAINLESS STEEL WASHERS

1/8" FLAT GASKET

3 3/4" 3"

2 1/4" 1 1/8"

(2) TYPE TWO NON-PENETRATING PICKHOLES

THERE ARE TO BE NO VENT HOLES IN COVER.

"WORDING"

CITY OF WILSON SANITARY SEWER CONFINED SPACE

29" 23 3/4" 20 1/2" 1 1/8" 24 1/4" 33" 1/2" 7 1/2"

PICKHOLE DETAIL

COVER FACE

23 1/2"

COVER SECTION

2 7/8" 1/2"

ISOMETRIC

(4) 1/2" - 13 BOLT HOLES DRILLED & TAPPED

(4) 1" DIA ANCHOR HOLES

ASTM A48 CLASS 35B

FRAME TOP VIEW

COVER BACK

23 1/2"

NOTES:

- Frame & Cover weight may not deviate by more than -5.0%.
- EJW = East Jordan Iron Works (shown) / CF = Capital Foundry.

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DETAIL # 732.03

REVISION DATE: June, 2010

SHEET # 1 of 1

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LONGITUDINAL SECTION

TRANSVERSE SECTION

O.D. of PIPE + 2'-0"

ENCASEMENT

3000 PSI CONCRETE ENCASEMENT

O.D. of PIPE + 2'-0"

O.D. of PIPE + 2'-0"

RIPRAP TO BE PLACED ON STREAM BANK, QUANTITY AND SIZE AS APPROVED BY ENGINEER

5' MIN. FROM TOP OF BANK

TOP OF BANK

WATER ELEVATION

ISOMETRIC PROFILE

STEEL ENCASEMENT PIPE SEE DETAIL C07.03

CLEARANCE FROM STREAM BED TO TOP OF ENCASEMENT SHALL BE:
A MINIMUM OF 2'-0" FOR WATER COURSES WIDER THAN 15'. THE MIN. CLEARANCE FOR WATERLINE IS 5'.

5' MIN. FROM TOP OF BANK

NOTES:

- Concrete to be 3,000 psi.
- Pipe shall be ductile iron pipe.
- Filter fabric to be placed under rip-rap and keyed into embankment.
- City Engineer or Water Resources may require full concrete encasement of casing on sewer lines.
- City Engineer or Director of Water Resources may require concrete encasement to be reinforced on a case-by-case basis.
- All stream crossings shall require steel casing. See Detail C07.03. When possible, valves shall be a minimum of 20 ft from end of casing if valves are in line with casing.

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DETAIL # C07.04

REVISION DATE: June, 2013

SHEET # 1 of 1

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RIGHT OF WAY - NOTE 2

SHOULDER

PAVED ROAD WIDTH

ASPHALT

ROAD BED

SHOULDER

5' MIN.

VENT PIPE (SEWER MAINS ONLY)

2' MIN. COVER

18" JT DIP PIPE - TYPICAL

STEEL CASING PIPE SEE CHART BELOW

5' MIN. COVER

8" BRICK & MORTAR END SEAL WITH 1" DIA. PVC WEEP HOLE AT BOTTOM OF END SEAL (ON BOTH ENDS OF ENCASEMENT)

CARRIER PIPE MECHANICAL JOINT DIP

PIPE SUPPORT ASSEMBLY, MINIMUM 3 SPIDER ASSEMBLIES PER STD. PIPE LENGTH, 3RD SPIDER TO BE CENTERED BETWEEN

5' MIN. BEYOND F/L OF DITCH

36" MIN.

LENGTH PER PLANS

NOMINAL DIAMETER	OUTSIDE DIAMETER	RAILROAD		HIGHWAY	
		OUTSIDE DIAMETER	WALL THICKNESS	OUTSIDE DIAMETER	WALL THICKNESS
6" & UNDER	6.90"	12 3/4"	0.188"	12 3/4"	0.188"
8"	9.05"	16"	0.250"	16"	0.188"
10"	11.10"	20"	0.281"	20"	0.188"
12"	13.20"	24"	0.344"	24"	0.188"
14"	15.30"	28"	0.406"	28"	0.219"
16"	17.40"	30"	0.406"	30"	0.250"
20"	21.60"	42"	0.563"	42"	0.281"
24"	25.80"	42"	0.563"	42"	0.344"

*DIMENSIONS ARE WITHOUT COATINGS

NOTES:

- Installation by dry bore & jacking.
- Bore to run from Right-of-Way to Right-of-Way unless approved otherwise by the City.
- Grease encasement pipe as required for ease of installation.
- Steel pipe to be 35,000 psi min. yield strength, grade B.

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TURN DOWN ELBOW WITH SS INSECT SCREEN (LOCATE PER DRAWINGS)

FIN. GRADE

ENCASEMENT PIPE

2" GALV. VENT PIPE (1 PER CASING) AT HIGH END (SEWER MAINS ONLY)

8" BRICK WITH TYPE M OR S MORTAR END SEAL WITH 1" DIA. PVC WEEP HOLE AT BOTTOM OF END SEAL (ON BOTH ENDS OF ENCASEMENT)

TYPICAL 18" JOINT CARRIER PIPE

PLACE NON-WOVEN FILTER FABRIC OVER WEEP HOLE

VENT PIPE (SEWER MAINS ONLY)

WALL THICKNESS PER PLANS

3/4" DIAMETER STAINLESS STEEL BOLTS

WEEP HOLE

END SEAL DETAIL

SECTION A-A

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FIELD + WOODS APPLICATION

MANHOLE COVER & RING SEE DETAILS C06.01 & 735.01

FRAME SHALL BE MORTARED TO CONE SECTION

SEE DETAIL C06.03 FOR MANHOLE RING AND COVER GRADE ADJUSTMENT, MAXIMUM 24" FROM TOP OF CASTING TO FIRST STEP

USE AN APPROVED BUTYL RUBBER (MASTIC) SEALANT APPLIED TO TOP OF CONE SECTION

USE ECCENTRIC CONE

1" THRU 4" RISER SECTIONS(S)

PRECAST MANHOLE (MEET REQUIREMENTS OF ASTM C478, AASHTO M-199)

SLOPE OF CHANNEL THRU MANHOLE = 0.10' FALL UNLESS SHOWN OTHERWISE ON PLANS. SEE DETAIL 732.01 FOR INVERT & BOOT DETAIL

2" THRU 4" BASE SECTION

USE 5" DIA. MANHOLE W/6" MINIMUM EXTENDED BASE WHEN MANHOLE DEPTH EXCEEDS 12". SEE DESIGN SECTION PARAGRAPH 3.1.5 FOR OTHER REQUIREMENTS

CONCRETE INVERT AND PIPE ENTRY PER DETAIL 732.01

ALL JOINTS TO BE T&G AND WILL HAVE MASTIC SEALER. SEAL INSIDE & OUTSIDE OF JOINTS WITH HYDRAULIC CEMENT

REINFORCING PER PRECAST MANUFACTURER TO MEET ASTM C-478

EXTERNAL JOINT WRAP ON ALL BURIED JOINTS PER DETAIL 732.11

PRECAST OPENING OR CORE & BOOT REQUIRED FOR ALL PIPES. SEE PLANS FOR PIPE SIZES. SEE DETAIL 732.01

SET MANHOLE ON 12" NO. 57 STONE

SEE SPECS FOR FOUNDATION IMPROVEMENT WHEN NEEDED

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FLEXIBLE RUBBER BOOT ASTM C923 W/STAINLESS STEEL COMPRESSION BAND AND CLAMPS. SEE DETAIL 732.01

PLACE GROUT AROUND ALL OPENINGS

PLACE COMPACTED NO. 57 STONE AROUND ALL BOOTS

SHelf

1/2"/FT SLOPE

USE 5" DIA. MANHOLE W/6" MINIMUM EXTENDED BASE WHEN MANHOLE DEPTH EXCEEDS 12". SEE DESIGN SECTION PARAGRAPH 3.1.5 FOR OTHER REQUIREMENTS

NOTES:

- Concrete strength to be 4,000 PSI minimum.
- Pipes will be grouted inside and out.
- Flexible sleeve boots cast in place or installed with stainless steel expander rings. Boots to meet ASTM C-923 standards.
- See detail 732.01 for typical invert shaping.
- Service laterals into existing manholes to be core drilled and booted.
- Maximum depth 4' diameter manhole = 12' (see sewer design section for other requirements / limitations).
- If height above grade exceeds 24", use eccentric flat top.
- For watertight applications, place butyl rubber between frame and cone.
- All banded connections shall be double banded. For pipe connections 12" and larger, 2 sets of bands shall be required.
- Lubricate the following: Pipe exterior, boot interior, boot exterior, S.S. bands (Top & bottom)
- Place manhole opening over the effluent line.
- Manholes subject to flooding shall have the top of the manhole rim a minimum of 24" above the 100 Yr. BFE unless approved otherwise by the City Engineer or Director of Water Resources. When vents are permitted, vent every 3rd manhole, not exceeding 1,000 LF between vents. Vents shall be placed a minimum of 24" above the 100 Yr. BFE. See detail 732.10.
- Outfall manholes, regardless of manhole top elevation, shall be vented.

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To calculate the closest possible distance between two holes (openings) on the same horizontal centerline, use the following formula:

A = Distance between holes (in degrees)
B = Angle between centerline of pipes
C = Degrees for hole number one from chart below
D = Degrees for hole number two from chart below

$A = B - 1/2(C+D)$

If A < 0, the openings are overlapping
If A > 0, A = the distance between holes (in degrees)

4' DIA:
A = 90 - 1/2(95+95) = 90 - 95 = -5, *Holes too close*

5' DIA:
A = 90 - 1/2(75+75) = 90 - 75 = 15, *O.K. for 5' dia.*

There are 15° of angle between holes which is 7 7/8".

4' Dia. MH		8' Dia. MH	
Hole Dia.	Degrees	Hole Dia.	Degrees
12"	28"	12"	15"
12"	28"	18"	22"
18"	45"	24"	28"
24"	60"	36"	44"
30"	76"	40"	48"
36"	95"	42"	52"

5' Dia. MH		10' Dia. MH	
Hole Dia.	Degrees	Hole Dia.	Degrees
12"	22"	12"	12"
18"	35"	18"	18"
24"	48"	24"	24"
30"	62.6"	36"	36"
36"	75"	40"	38"
40"	82"	48"	48"
48"	108"	78"	80"

6' Dia. MH	
Hole Dia.	Degrees
12"	20"
16"	25"
20"	32"
24"	38"
36"	60"
40"	65"
43"	70"
48"	84"
55"	98"
63"	125"

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DETAIL # 639.02

REVISION DATE: June, 2010

SHEET # 1 of 1

Details Provided by APPIAN Consulting Engineers - www.applanengineers.com 05/06/2010 - 12:09:14 PM

MAX. PAYMENT LIMIT (W) = O.D. + 4'-0"

RESTORE GRADE TO ORIGINAL GROUND SURFACE ELEVATION

EXISTING SURFACE

VARIES

12" PIPE O.D. TYP.

CARRIER PIPE

NON-WOVEN GEOTEXTILE FABRIC FILTER

UNDISTURBED EARTH

SEE NOTE 3 (VARIES WITH PIPE BEDDING CLASS, SEE PARAGRAPH 2.1.2A OF SPEC. 02275)

SEE NOTE 2

SEE NOTE 1

NOTES:

- 8" deep No. 57 stone or equal wrapped in non-woven geotextile filter fabric lightly compacted. Overlap fabric by minimum one pipe O.D.
- 4" deep No. 57 stone or equal lightly compacted pipe bedding.
- General backfill compacted to 90% Standard Proctor density in 6" maximum lifts.

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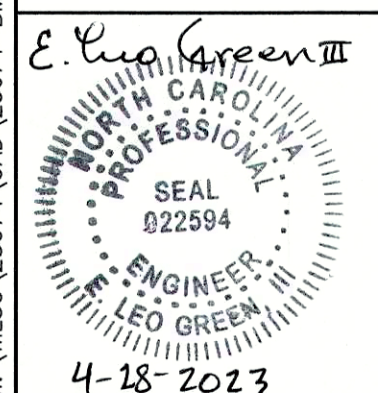
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DETAIL # C01.02

REVISION DATE: June, 2010

SHEET # 1 of 1

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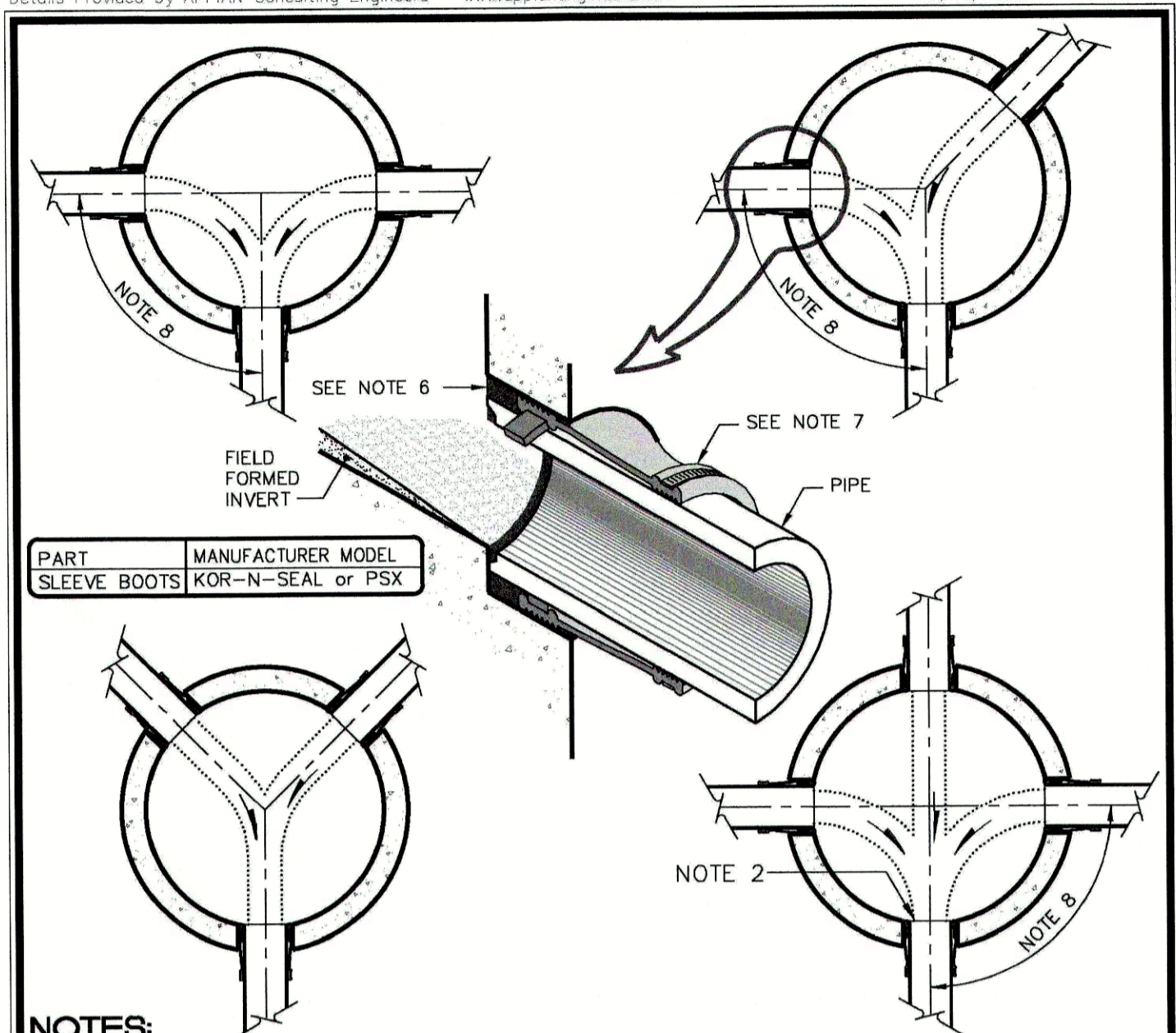
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REVISION	DATE	BY	DATE: APRIL 27, 2023

CLIENT CODE: WILSO
JOB NUMBER: 23-074
FIELD BOOK: XXX
CADFILE: 23074-BM_PH2A.dwg
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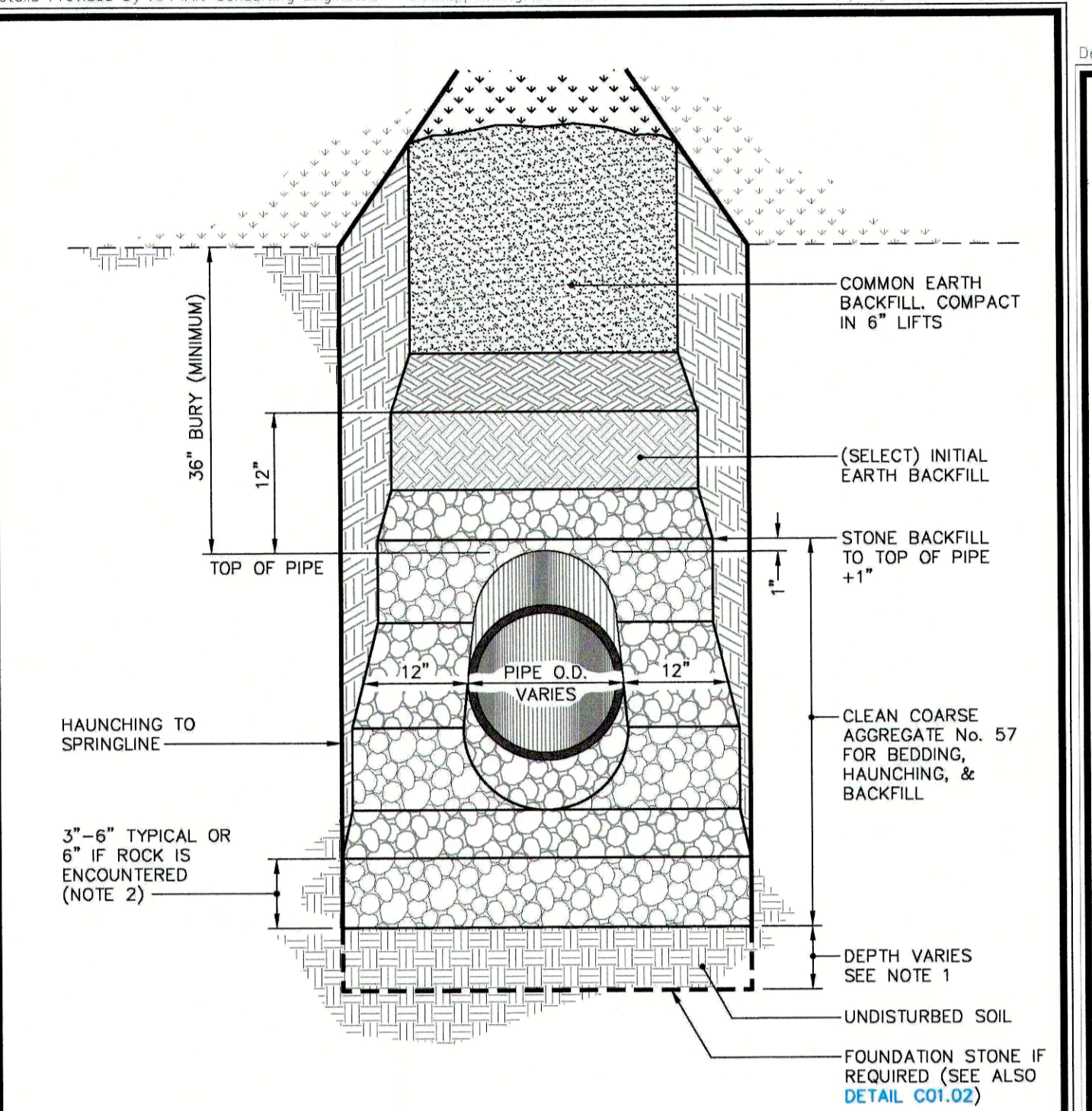
SHEET NO. 7 OF 9



- NOTES:**
1. Concrete shelf should be no lower than the pipe spring line elevation at manhole wall.
 2. Service line entries to have cast in place troughs.
 3. Radius of invert must have enough room to be able to insert air plugs and TV equipment.
 4. Concrete strength to be 4,000 PSI minimum.
 5. Concrete formed invert shall be precast wherever possible. Moorbases are permitted.
 6. Pipes will be grouted inside and out.
 7. Flexible sleeve boots cast in place or installed with stainless steel expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands.
 8. Flow shall not be allowed to restrict other lines. Influent lines shall not enter manholes at less than 90° from effluent line unless otherwise approved by City Engineer or Director of Water Resources.

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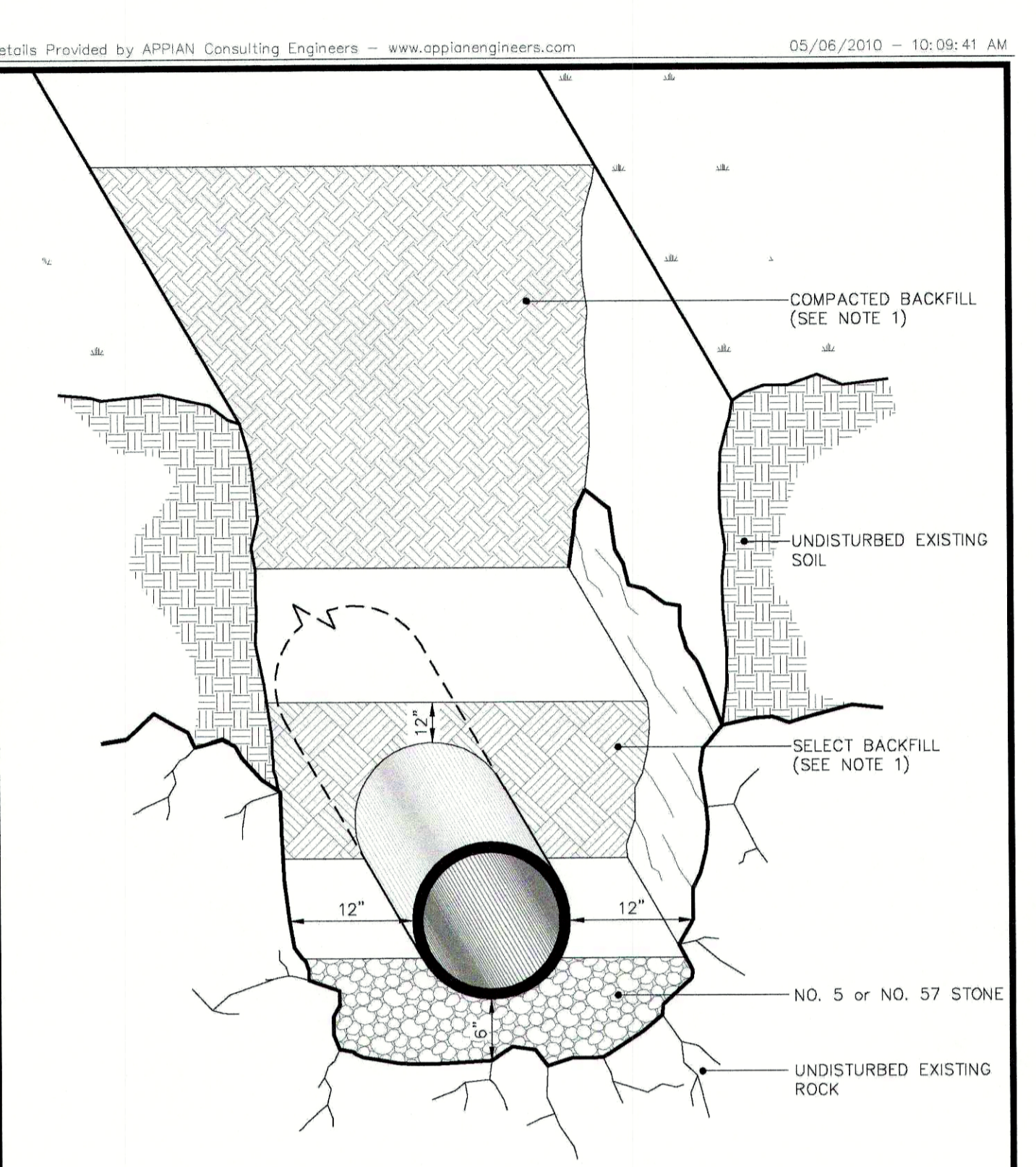
TYPICAL SEWER INVERT PLANS FOR MANHOLES
SCALE: Not To Scale
DETAIL # 732.01
REVISION DATE: June, 2013
SHEET # 1 of 1



- NOTES:**
1. Foundation stone shall be required when soil conditions are unsuitable.
 2. An additional 1 inch depth of bedding material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12 inches.

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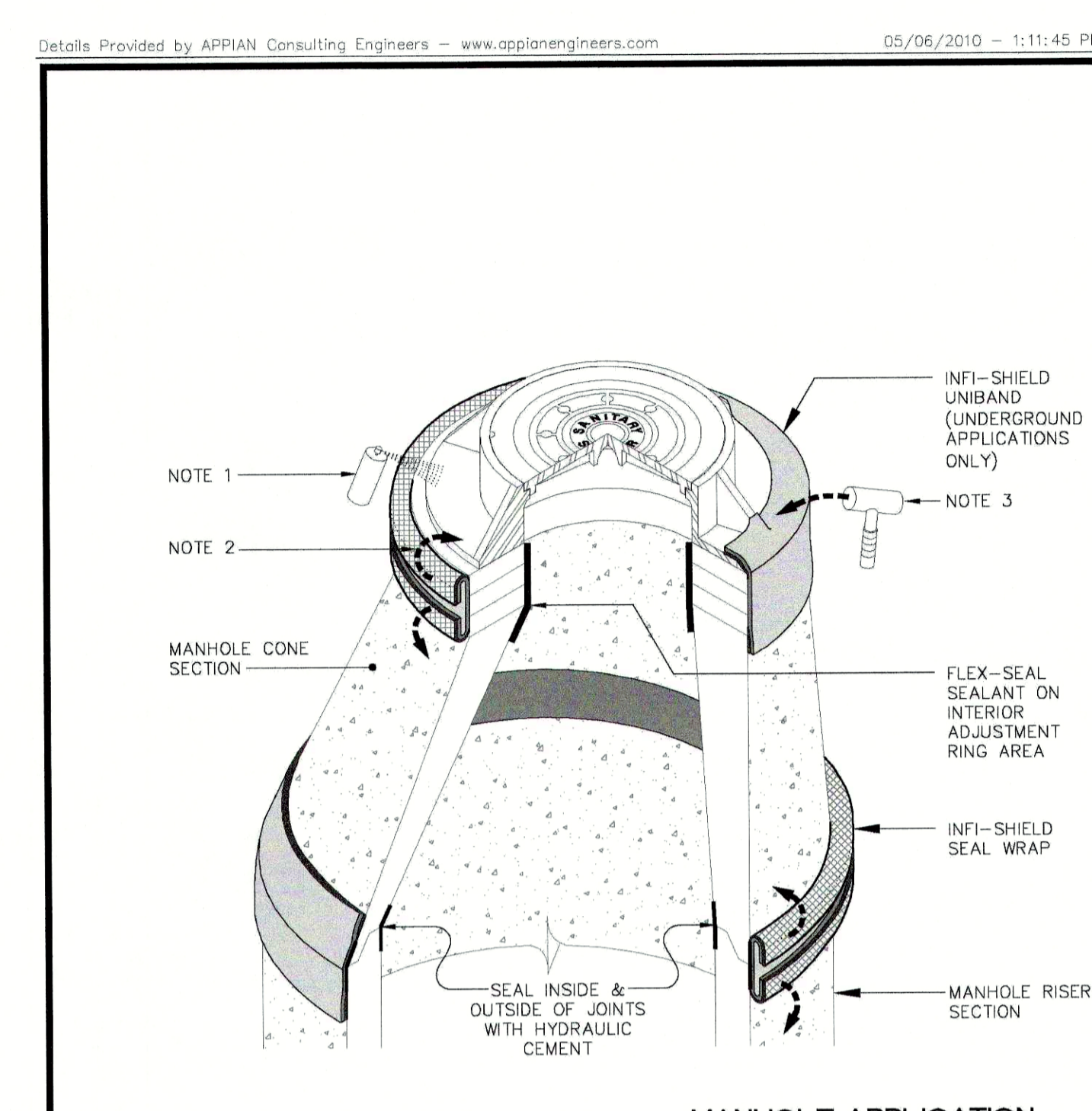
SANITARY SEWER LINE TRENCH (NON-TRAFFIC AREAS)
SCALE: Not To Scale
DETAIL # 731.01
REVISION DATE: June, 2010
SHEET # 1 of 1



- NOTES:**
1. See specification section 02275 Trenching, Backfilling, and Compaction of Utilities for backfill and compaction requirements.

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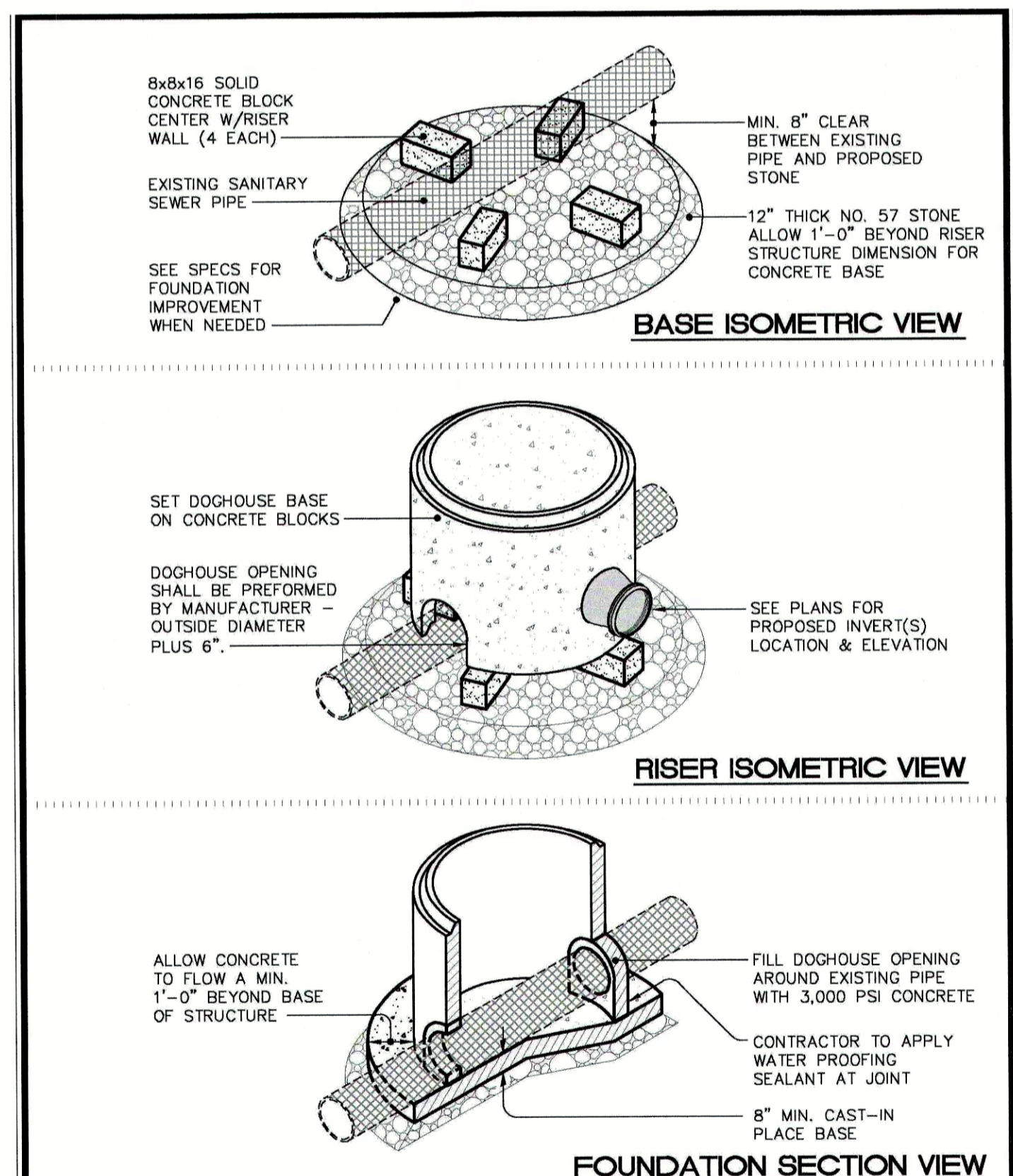
DETAIL of ROCK EXCAVATION
SCALE: Not To Scale
DETAIL # 732.04
REVISION DATE: June, 2010
SHEET # 1 of 1



- INSTALLATION NOTES:**
1. Clean casting frame, riser rings and cone section. Spray primer to areas where attaching non-hardening butyl mastic.
 2. Install the Infi-shield External Seal on the outside surface of the adjustment ring area covering all grade rings. Remove protective tape and fold back on to the structure.
 3. Using a rubber hammer, tap the sealing surface areas.
 4. Ensure lid and casting is clean. Attach inspection tab to manhole lid and backfill.
 5. Contact Sealing Systems Inc. for additional installation instructions @ 800-478-2054.

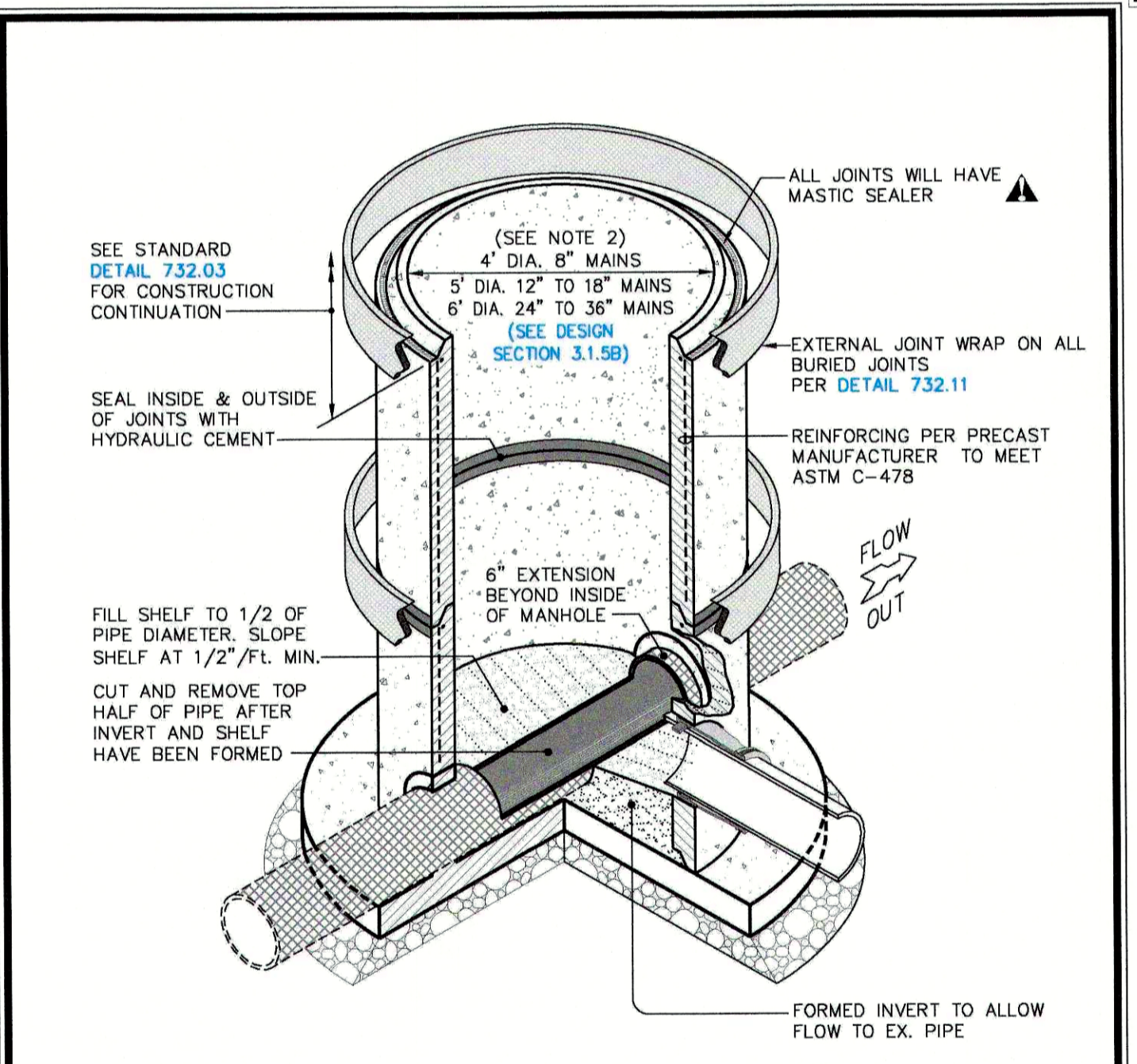
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INFI-SHIELD EXTERNAL SEALING DETAIL
SCALE: Not To Scale
DETAIL # 732.11
REVISION DATE: June, 2010
SHEET # 1 of 1



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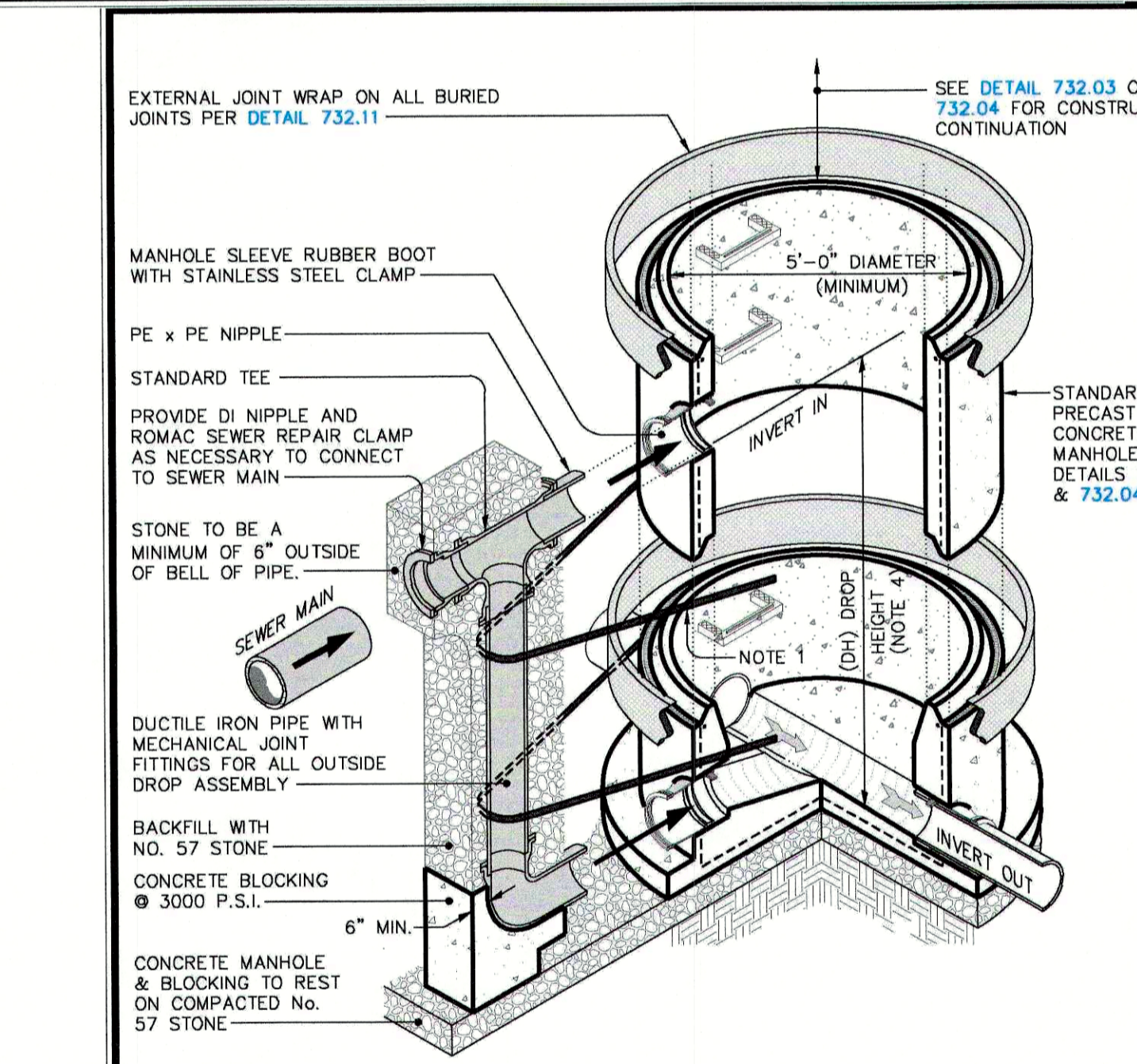
DOGHOUSE MANHOLE INSTALLATION OVER EXISTING SEWER MAIN
SCALE: Not To Scale
DETAIL # 732.02
REVISION DATE: June, 2010
SHEET # 1 of 2



- NOTES:**
1. All service laterals into manhole to be core drilled and booted.
 2. Maximum depth 4' dia. manhole = 12' (see specifications). Use 5' dia. manhole for depth greater than 12'.
 3. Flow of existing main shall be maintained during construction.
 4. This detail to be used when an 8" or larger lateral main necessitates construction of a new manhole.

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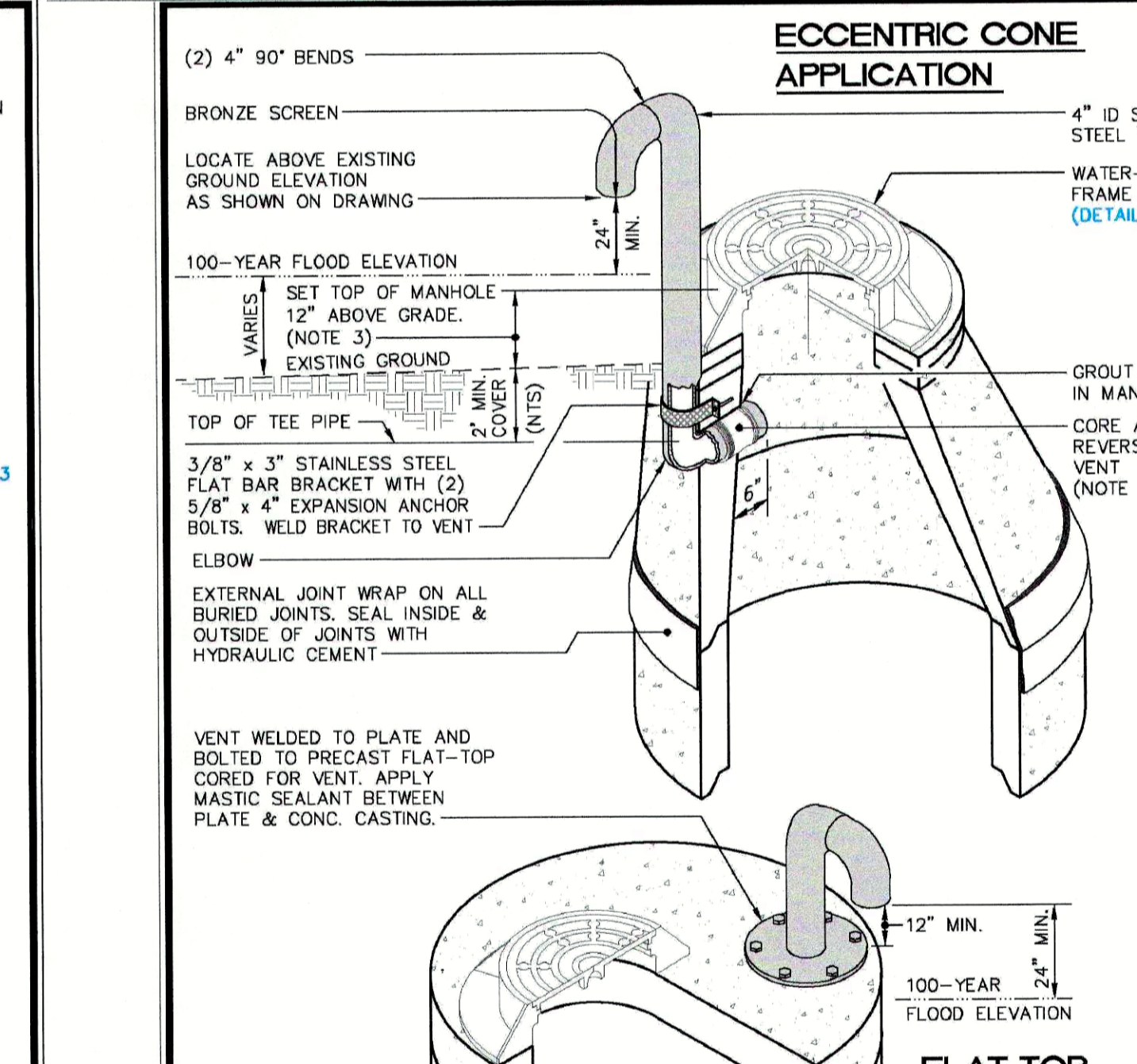
DOGHOUSE MANHOLE INSTALLATION OVER EXISTING SEWER MAIN
SCALE: Not To Scale
DETAIL # 732.02
REVISION DATE: April, 2012
SHEET # 2 of 2



- NOTES:**
1. 1" Stainless steel strapping anchor and stainless steel bolts required every 5 foot section.
 2. Do not cover any bolts or strapping with concrete brick support.
 3. No inside drops allowed unless approved by City Engineer or Director of Water Resources.
 4. An outside drop is required when influent invert is greater than 30" above the invert of effluent line.
 5. For new construction an inside drop is allowed only with approval of City Engineer.

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STANDARD EXTERIOR DROP MANHOLE
SCALE: Not To Scale
DETAIL # 732.06
REVISION DATE: July, 2018
SHEET # 1 of 1



- NOTES:**
1. Locate vent pipe as shown or as directed by City Engineer.
 2. Connect 4" steel vent pipe to manhole with flexible boot.
 3. If height above grade exceeds 24", use eccentric flat top.

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STANDARD MANHOLE VENTING DETAIL
SCALE: Not To Scale
DETAIL # 732.10
REVISION DATE: April, 2012
SHEET # 1 of 1

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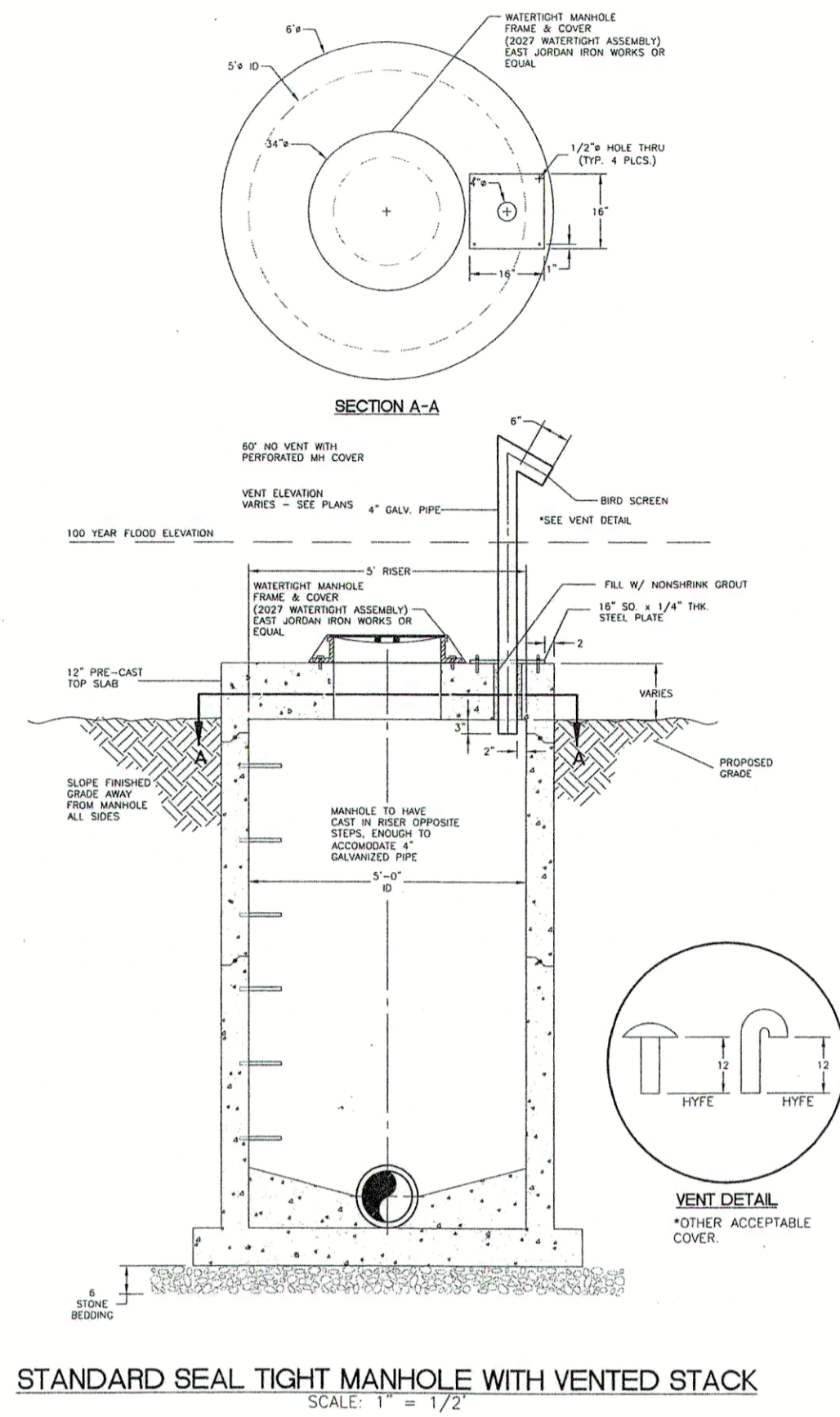
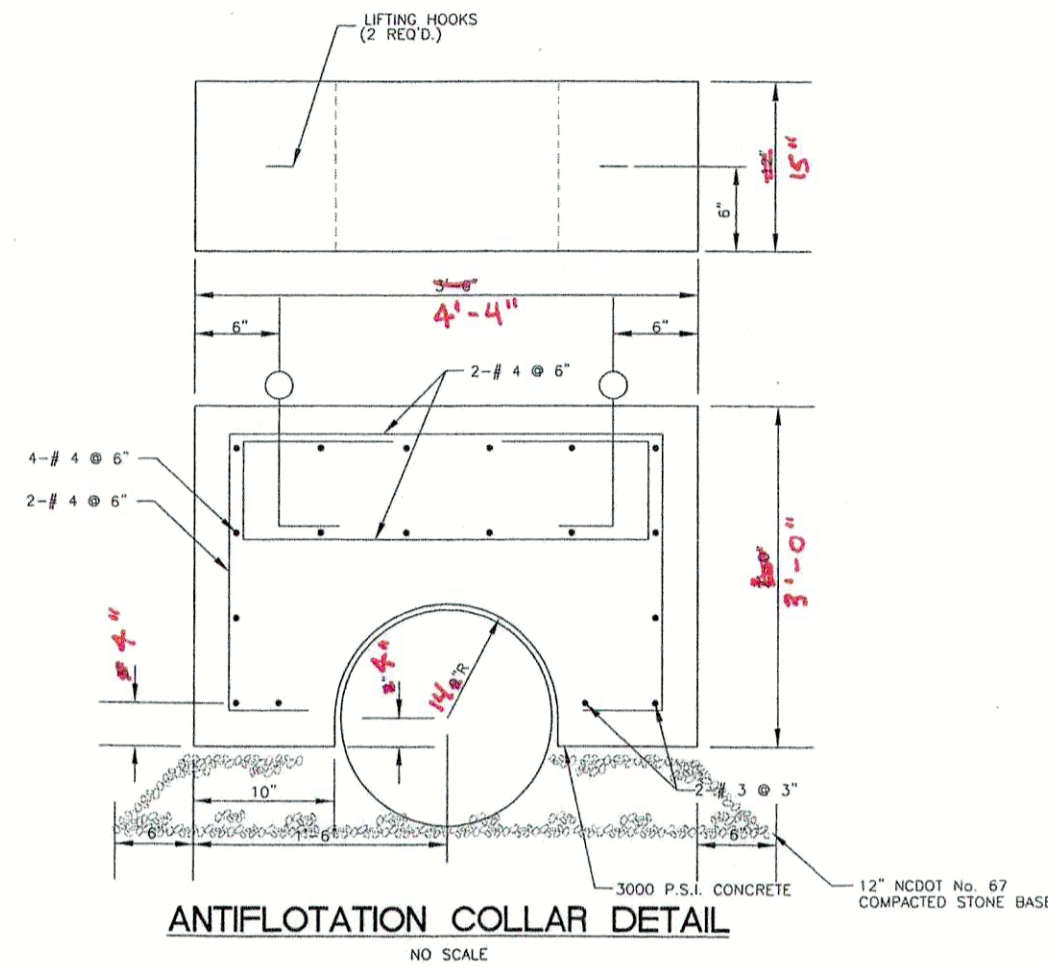
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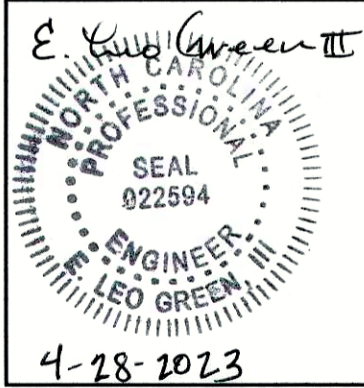
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SHEET NO. 8 OF 9

TEMPORARY BENCHMARK TABLE			
TBM	TYPE	LOCATION	ELEVATION
1	SPIKE IN 15" PINE	STA 0+00 @ 45' RT	121.87
2	SPIKE IN 12" GUM	STA 10+83 @ 30' RT	120.12
3	SPIKE IN 12" GUM	STA 21+00 @ 60' RT	120.19
4	SPIKE IN POWER POLE	PEBBLE BEACH PUMP STA.	126.06
5	SPIKE IN 18" GUM	STA 34+00 @ 75' LT	121.42
6	SPIKE IN 24" GUM	STA 44+90 @ 90' RT	120.00
7	SPIKE IN 18" POPLAR	STA 64+00 @ 70' LT	134.60
8	SPIKE IN POWER POLE	STA 75+50 @ 130' LT	146.96
9	SPIKE IN 18" GUM	STA 87+00 @ 47' LT	140.99
10	SPIKE IN 18" POPLAR	STA 96+37 @ 25 LT	139.39
11	SQUARE IN HEADWALL	STA 103+73 @ 60 RT	138.82



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