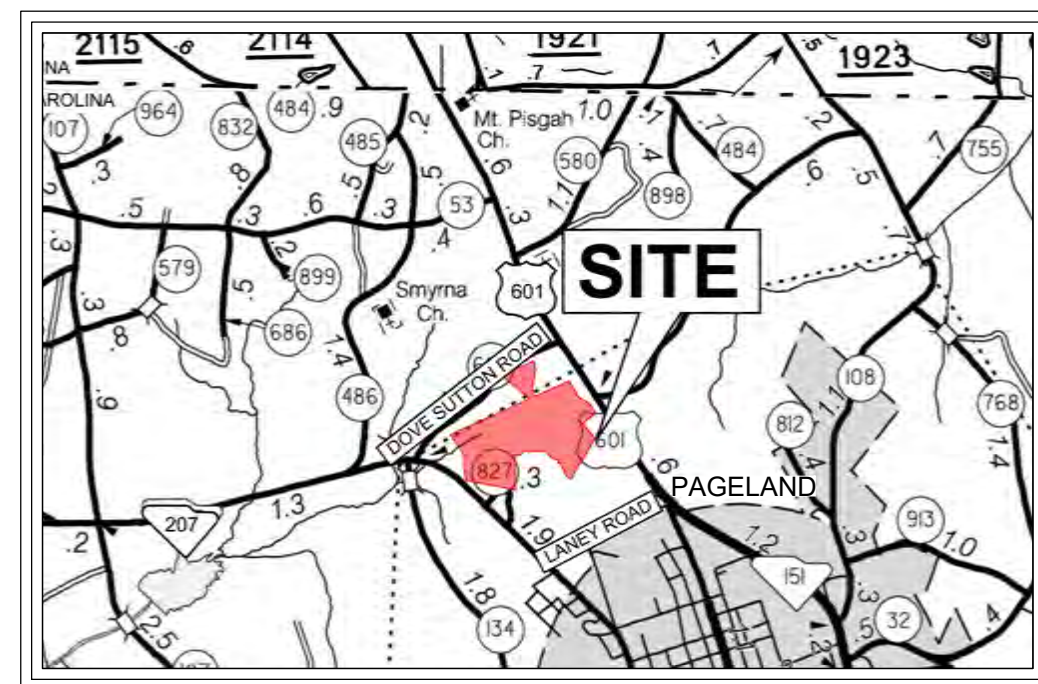




VICINITY MAP  
N.T.S.



SITE LOCATION

# ± 1555-LF EIGHT (8)-INCH PHASE I WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA



## SHEET INDEX

SHEET	SHEET NO
COVER SHEET	C0.0
EXISTING CONDITIONS AND GENERAL NOTES	C1.0
8-INCH WATERMAIN ON INDUSTRIAL PARK LANE PLAN AND PROFILE (STA 0+00 TO 12+00)	C2.0
8-INCH WATERMAIN ON INDUSTRIAL PARK LANE PLAN AND PROFILE (STA 12+00 TO 15+56)	C2.1
EROSION AND SEDIMENT CONTROL PLAN	C3.0
UTILITY DETAIL SHEET (SHEET 1 OF 3)	C4.0
UTILITY DETAIL SHEET (SHEET 2 OF 3)	C4.1
UTILITY DETAIL SHEET (SHEET 3 OF 3)	C4.2
EROSION AND SEDIMENT CONTROL DETAILS	C5.0

### Utility Provider Contacts

#### Water Provider:

Contact: Chesterfield County Rural Water  
13598 South Carolina 9 Bypass; Chesterfield, SC  
Telephone: (843) 623-6090

#### Wastewater Provider:

Contact: Town of Pageland  
126 N. Pearl Street; Pageland, SC  
Telephone: (843) 672-7292

#### Electrical Utility Provider:

Contact: Lynchess River Electric Cooperative, Inc.  
707 S. Arant Street; Pageland, SC  
Telephone: (843) 672-6111

#### Telecommunications Provider:

Contact: Sand Hill Telephone Cooperative  
112 South Main Street  
Jefferson, South Carolina  
Telephone: (843) 658-3434

#### Gas Provider:

Contact: AmeriGas, Inc.  
112 South Main Street  
Jefferson, South Carolina  
Telephone: (844) 330-7620

### DEVELOPER INFORMATION

DEVELOPER: CHESTERFIELD COUNTY ECONOMIC  
DEVELOPMENT  
CONTACT: MS. LIBBY LEAR  
ADDRESS: 700 WEST BOULEVARD  
CITY, STATE: CHESTERFIELD, SC 29709  
TELEPHONE: (843) 623-6500 (CELL)  
EMAIL: LLEAR@CHESTERFIELDCOUNTYSC.COM

### OWNER INFORMATION

OWNER: CHESTERFIELD COUNTY  
CONTACT: MR. TIM EUBANKS  
ADDRESS: 178 MILLS STREET  
CITY, STATE: CHESTERFIELD, SC 29709  
TELEPHONE: (843) 623-2595 (OFFICE)  
(843) 680-2216 (CELL)  
EMAIL: TIMEUBANKS@CHESTERFIELDCOUNTY SC.COM

### ENGINEER INFORMATION

COMPANY: ALLIANCE CONSULTING  
ENGINEERS, INC.  
CONTACT: BENJAMIN S. WHALEY, P.E.  
ADDRESS: P.O. BOX 8147  
CITY, STATE: COLUMBIA, SOUTH CAROLINA  
29202  
TELEPHONE: (803) 779-2078  
FAX: (803) 779-2079  
EMAIL: SWHALEY@ALLIANCECE.COM

### Chesterfield County Development Board Members

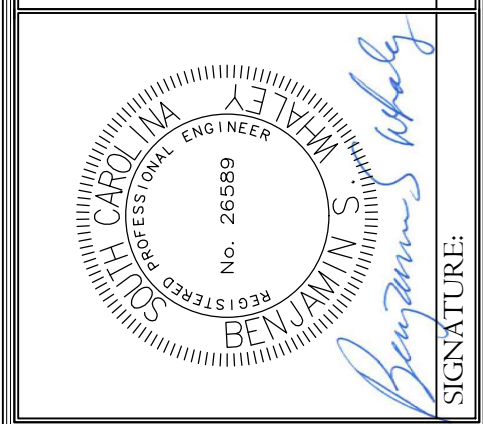
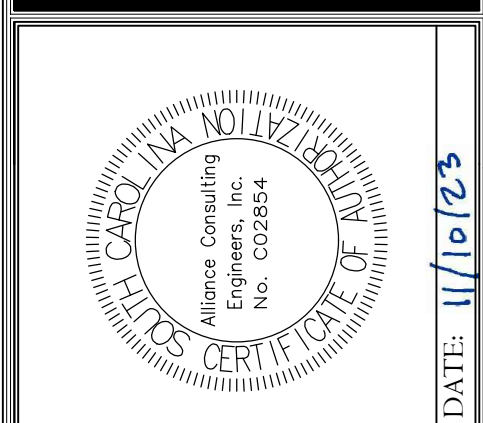
Mr. William Rhett Butler, Chairman  
Ms. Mary D. Anderson Vice Chair  
Ms. Hattie Burns  
Mr. Benjamin Conklin, Jr.  
Mr. Douglas A. Curtis  
Mr. Ethan Thomas Foard  
Mr. Gerald L. Miller  
Mr. Bruce E. Rivers  
Mr. William Todd Smallwood

**NPDES PERMIT INFORMATION - FOR THIS PHASE OF CONSTRUCTION**  
NPDES DISTURBED AREA = ± 0.5 ACRES  
MAXIMUM LENGTH OF DISTURBED AREA = ± 1,555 LINEAR FEET (LF)  
ALONG INDUSTRIAL PARK LANE

"I, Benjamin S. Whaley, have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant of Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000. "



REVISION	DATE



ALLIANCE CONSULTING ENGINEERS, INC.  
POST OFFICE BOX 8147  
COLUMBIA, SOUTH CAROLINA 29202-8147  
PHONE (803) 779-2078  
FAX (803) 779-2079  
WWW.ALLIANCECE.COM

PROJECT: ± 1555-LF EIGHT (8)-INCH PHASE I WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA  
CHESTERFIELD COUNTY SOUTH CAROLINA

NOVEMBER 2023

Project No. 23183-0013

DWG NO. 01.1656-D28

November 07, 2023 - 4:43:48 PM S:\Projects\23183-0013 Ph 1 Watermain Ext Lynchess River Ind Pk South Town of Pageland Chesterfield County\Construction Draw\CI 1.0 Existing Conditions.dwg  
 THE DRAWING IS THE PROPERTY OF ALLIANCE CONSULTING ENGINEERS, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED THEREIN. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN PERMISSION OF ALLIANCE CONSULTING ENGINEERS, INC. IS STRICTLY PROHIBITED. THE USER ASSUMES ALL LIABILITY FOR THE PROPER USE OF THIS DRAWING. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND LICENSES FROM THE APPROPRIATE AGENCIES.

**LEGEND**

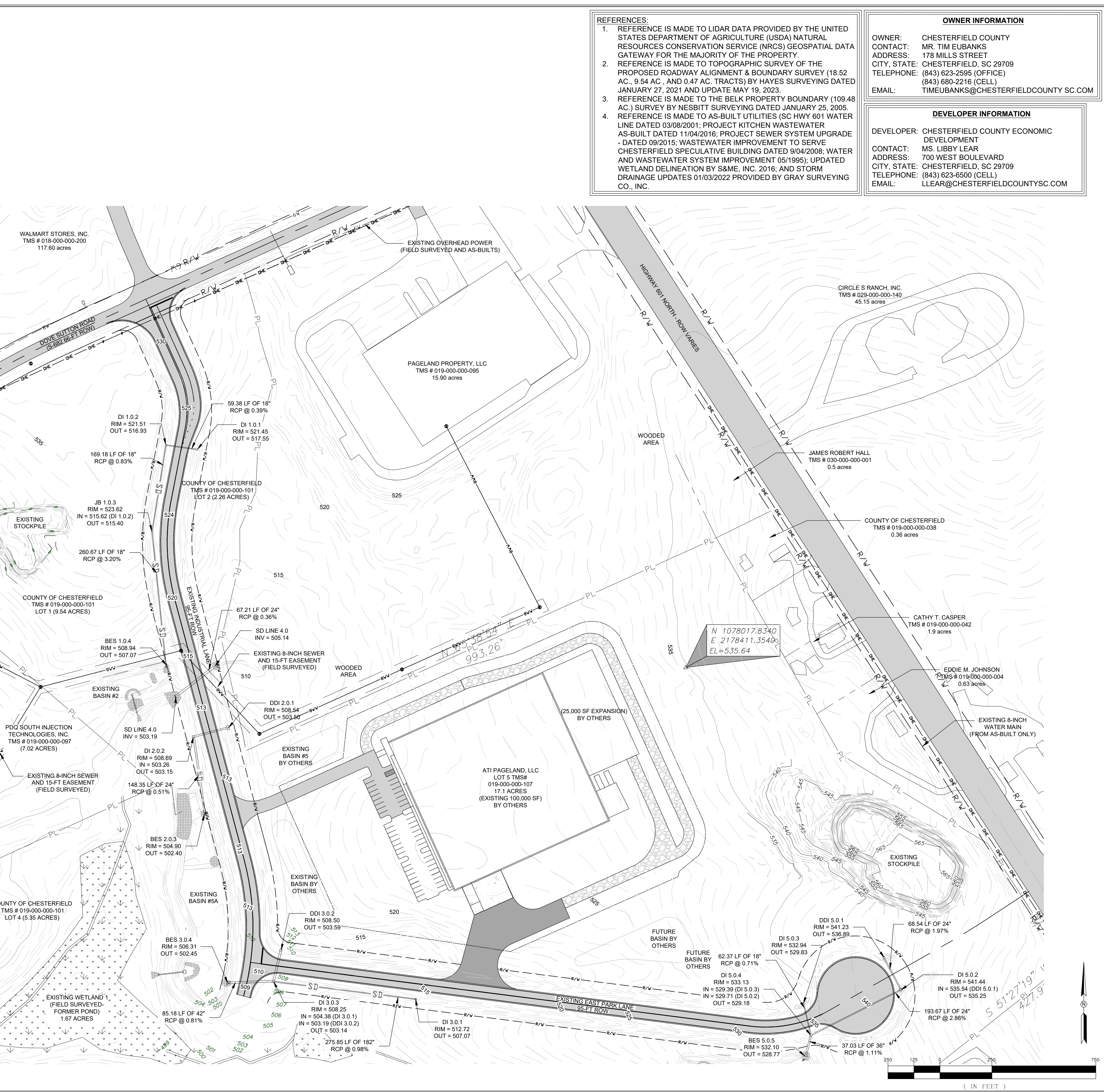
- 550 EXISTING MAJOR CONTOURS
- 540 EXISTING MINOR CONTOURS
- SETBACK LINE
- DRAINAGE & UTILITY EASEMENT
- PL PARCEL BOUNDARY
- 10WW EXISTING 10-INCH GRAVITY WASTEWATER
- 8W EXISTING 8-INCH WATER MAIN
- UGP EXISTING UNDERGROUND ELECTRIC
- UT EXISTING UNDERGROUND TELEPHONE
- UMP EXISTING POWER POLES AND OVERHEAD LINES
- SD EXISTING STORM DRAINAGE
- EXISTING ASPHALT PAVEMENT
- DEMOLITION AREA

TMS# 019-000-000-101 & 038 PROPERTIES

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING
C-1	411.70	1325.63	174°42'40"	410.05 S53°48'21"W

LINE TABLE			LINE TABLE		
LINE	LENGTH	BEARING	LINE	LENGTH	BEARING
L-1	34.39	S14°11'11"E	L-1	10.27	S24°52'54"W
L-2	56.01	S16°22'33"E	L-2	69.60	N67°11'46"W
L-3	47.71	S09°50'43"E	L-3	106.25	N52°02'34"W
L-4	84.19	S16°57'19"E	L-4	84.18	N13°01'52"W
L-5	116.36	S14°25'22"W	L-5	41.81	N55°46'59"W
L-6	100.95	S23°11'11"W	L-6	62.44	N13°22'26"E
L-7	76.96	S23°59'57"W	L-7	43.30	N73°01'14"W
L-8	62.82	S00°17'22"E	L-8	165.78	N24°36'58"W
L-9	153.55	S13°34'17"W	L-9	50.38	S75°23'40"W
L-10	212.74	S12°34'22"E	L-10	60.89	N02°38'52"E
			L-11	42.91	N19°47'17"W
			L-12	61.72	S87°01'37"W
			L-13	137.02	N63°16'46"W
			L-14	151.63	N42°24'41"W
			L-15	18.00	S51°19'44"W

- STANDARD NOTES**
- PERMITS / LICENSES**
- PRIOR TO THE COMMENCEMENT OF ANY WORK WITHIN THE PROJECT SITE, THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS SHALL POSSESS ALL NECESSARY PERMITS AND THE OWNER AND ENGINEER WILL BE GIVEN AT LEAST TWENTY-FOUR (24) HOURS NOTICE BEFORE BEGINNING WORK.
- PROCEDURES / RESPONSIBILITIES**
- ALL WETLANDS SIGNAGE TO BE INSTALLED PER THE APPROVED CONSTRUCTION DRAWINGS PRIOR TO ANY LAND DISTURBING ACTIVITIES.
  - SLOPES WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS. IN ADDITION TO HYDROGENATING, IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
  - STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
    - WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
    - WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THE PORTION OF THE SITE.
  - ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK, WITH NO TIME PERIOD BETWEEN INSPECTIONS EXCEEDING 9 DAYS, AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE. IT IS RECOMMENDED THAT BMP'S BE ASSESSED BY THE CONTRACTOR WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 1.0 INCH OR GREATER AS WELL AS DURING THE FIRST RAIN EVENT AFTER THE INITIATION OF CONSTRUCTION ACTIVITIES, AFTER THE INSTALLATION OF THE BMP'S.
  - PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
  - ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
  - THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ON PAVED ROADWAYS(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
  - RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURES AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C. REG. 72-300 ET SEQ. AND SCRR00000.
  - TEMPORARY DIVERSION BERMS AND/OR DITCHES SHALL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
  - ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN NOT BE MAINTAINED BETWEEN THE DISTURBED AREAS AND ALL WOS. A 30-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
  - LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
  - A COPY OF THE OS-SWPPP, INSPECTION RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THE FINAL STABILIZATION IS REACHED.
  - INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE BEEN PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
  - MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL AND REPLACE WITHIN ALL GRASSED AND LANDSCAPED AREAS TO A MINIMUM DEPTH OF 6". IF ADDITIONAL TOPSOIL IS REQUIRED TO MEET THE SPECIFICATIONS, THE CONTRACTOR MUST PROVIDE FROM AN OFF-SITE SOURCE.
  - MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING. WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL TO PROVIDE EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
  - MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMP'S (SEDIMENT BASIN, FILTER BAG, ETC.)
  - THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
    - WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL.
    - WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS.
    - FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE, AND
    - SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
  - AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK, WITH NO TIME PERIOD BETWEEN INSPECTIONS EXCEEDING 9 DAYS, AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE. IT IS RECOMMENDED THAT BMP'S BE ASSESSED BY THE CONTRACTOR WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 1.0 INCH OR GREATER AS WELL AS DURING THE FIRST RAIN EVENT AFTER THE INITIATION OF CONSTRUCTION ACTIVITIES, AFTER THE INSTALLATION OF THE BMP'S.
  - IF EXISTING BMP'S NEED TO BE MODIFIED OR IF ADDITIONAL BMP'S ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SO'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMP'S MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
  - A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 29.5 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.
  - AN AS-BUILT SURVEY(S), SIGNED AND SEALED BY A S.C. LICENSED LAND SURVEYOR OR PROFESSIONAL ENGINEER, SHOULD BE SUBMITTED TO CHESTERFIELD COUNTY FOR DETENTION STRUCTURE(S) ON THIS SITE. THE SURVEY(S) WILL BE PROVIDED BY THE CONTRACTOR TO ALLIANCE CONSULTING ENGINEERS TO SHOW GRADES, CONTOURS, AND DEPTHS FOR ALL STRUCTURE(S) AND SHOULD INCLUDE THE ELEVATIONS AND DIMENSIONS OF ALL OUTLET STRUCTURES, INCLUDING BUT NOT LIMITED TO PIPES, ORIFICES, RISERS, WEIRS, AND EMERGENCY SPILLWAYS.



- REFERENCES:**
- REFERENCE IS MADE TO LIDAR DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS) GEOSPATIAL DATA GATEWAY FOR THE MAJORITY OF THE PROPERTY.
  - REFERENCE IS MADE TO TOPOGRAPHIC SURVEY OF THE PROPOSED ROADWAY ALIGNMENT & BOUNDARY SURVEY (18.52 AC, 9.54 AC, AND 0.47 AC TRACTS) BY HAYES SURVEYING DATED JANUARY 27, 2021 AND UPDATE MAY 19, 2023.
  - REFERENCE IS MADE TO THE BELK PROPERTY BOUNDARY (109.48 AC.) SURVEY BY NESBITT SURVEYING DATED JANUARY 25, 2005.
  - REFERENCE IS MADE TO AS-BUILT UTILITIES (SC HWY 601 WATER LINE DATED 03/08/2001; PROJECT KITCHEN WASTEWATER AS-BUILT DATED 11/04/2016; PROJECT SEWER SYSTEM UPGRADE - DATED 09/2015; WASTEWATER IMPROVEMENT TO SERVE CHESTERFIELD SPECULATIVE BUILDING DATED 9/04/2008; WATER AND WASTEWATER SYSTEM IMPROVEMENT 05/1995); UPDATED WETLAND DELINEATION BY S&M, INC. 2016; AND STORM DRAINAGE UPDATES 01/03/2022 PROVIDED BY GRAY SURVEYING CO., INC.

**OWNER INFORMATION**

OWNER: CHESTERFIELD COUNTY  
 CONTACT: MR. TIM EUBANKS  
 ADDRESS: 178 MILLS STREET  
 CITY, STATE: CHESTERFIELD, SC 29709  
 TELEPHONE: (843) 623-2595 (OFFICE)  
 (843) 680-2216 (CELL)  
 EMAIL: TIMEUBANKS@CHESTERFIELDCOUNTY SC.COM

**DEVELOPER INFORMATION**

DEVELOPER: CHESTERFIELD COUNTY ECONOMIC DEVELOPMENT  
 CONTACT: MS. LIBBY LEAR  
 ADDRESS: 700 WEBB BOULEVARD  
 CITY, STATE: CHESTERFIELD, SC 29709  
 TELEPHONE: (843) 623-6500 (CELL)  
 EMAIL: LLEAR@CHESTERFIELDCOUNTYSC.COM

**REVISION DATE**


**APPROVALS**

ENGINEER	DESIGNER	TITLE BLOCK	CHECKED BY	APPROVED
BSW	BSW	JAF	BSW	BSW

**ALLIANCE CONSULTING ENGINEERS, INC.**  
 Advance Consulting Engineers, Inc.  
 No. 26589  
 No. C02654

**REGISTERED PROFESSIONAL ENGINEER**  
 No. 26589  
 No. C02654

**SIGNATURE:** *Benjamin Libby*  
 DATE: 11/16/23

**ALLIANCE CONSULTING ENGINEERS**  
 Alliance Consulting Engineers, Inc.  
 Post Office Box 8147, Columbia, South Carolina 29202-8147  
 Phone (803) 779-2078 • Fax (803) 779-2079

**EXISTING CONDITION AND GENERAL NOTES**

PROJECT: SHEET: DATE: NOVEMBER 2023 SCALE: 1" = 250'

**FILE NAME:** CI.Ldwg  
**REFERENCE FILE:** 23183-0013 BASE.dwg  
**PROJECT NO:** 23183-0013

**SHEET** CI.O

**DWG NO. 01.1656-D28**

**EXISTING CONDITION AND GENERAL NOTES**

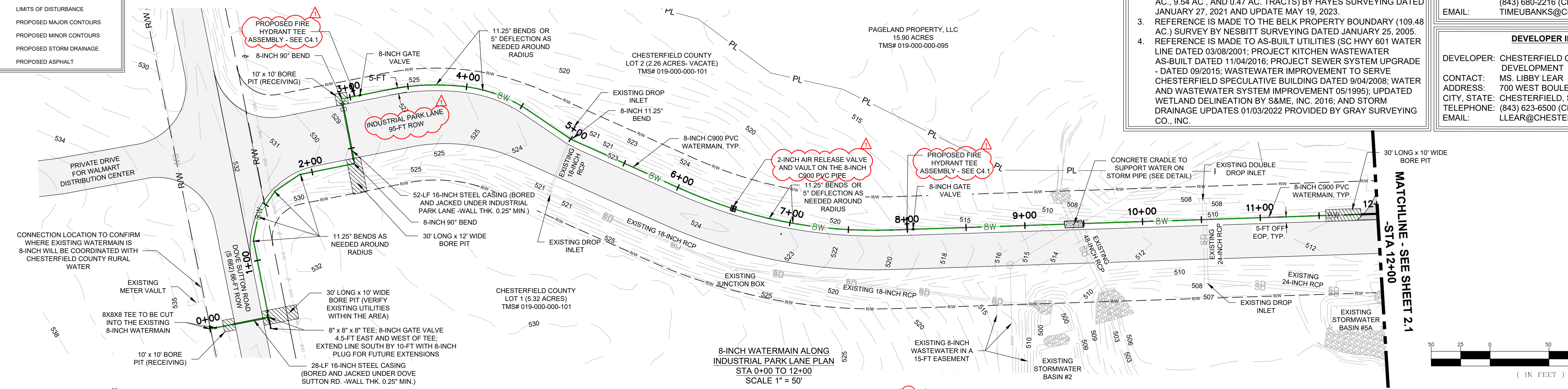
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November 13, 2023 - 11:15:44 AM S:\Projects\23183-0013 P11 Watermain Ext Lynchess River Ind Pk South Town of Pageland Clearfield Coway\Construction Dwg\ C2.0 Entrance Road Plan & Profile.dwg

**LEGEND**

- 450 — EXISTING MAJOR CONTOURS
- 451 — EXISTING MINOR CONTOURS
- RW — PROPERTY LINE
- SD — EXISTING STORM DRAINAGE
- — EXISTING ASPHALT PAVEMENT
- — LIMITS OF DISTURBANCE
- 450 — PROPOSED MAJOR CONTOURS
- 451 — PROPOSED MINOR CONTOURS
- — PROPOSED STORM DRAINAGE
- — PROPOSED ASPHALT

**NOTE:**  
WATERMAIN IN AREAS OF CURVATURE WILL REQUIRE BENDS AND DEFLECTION AS NEEDED TO MAINTAIN HORIZONTAL AND VERTICAL TRANSITION ALONG THE ALIGNMENT. RESTRAINT JOINTS AND/OR CONCRETE BLOCKING WILL ALSO BE NEEDED AT THE JOINTS (SEE DETAILS).



- REFERENCES:**
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**REVISION DATE**

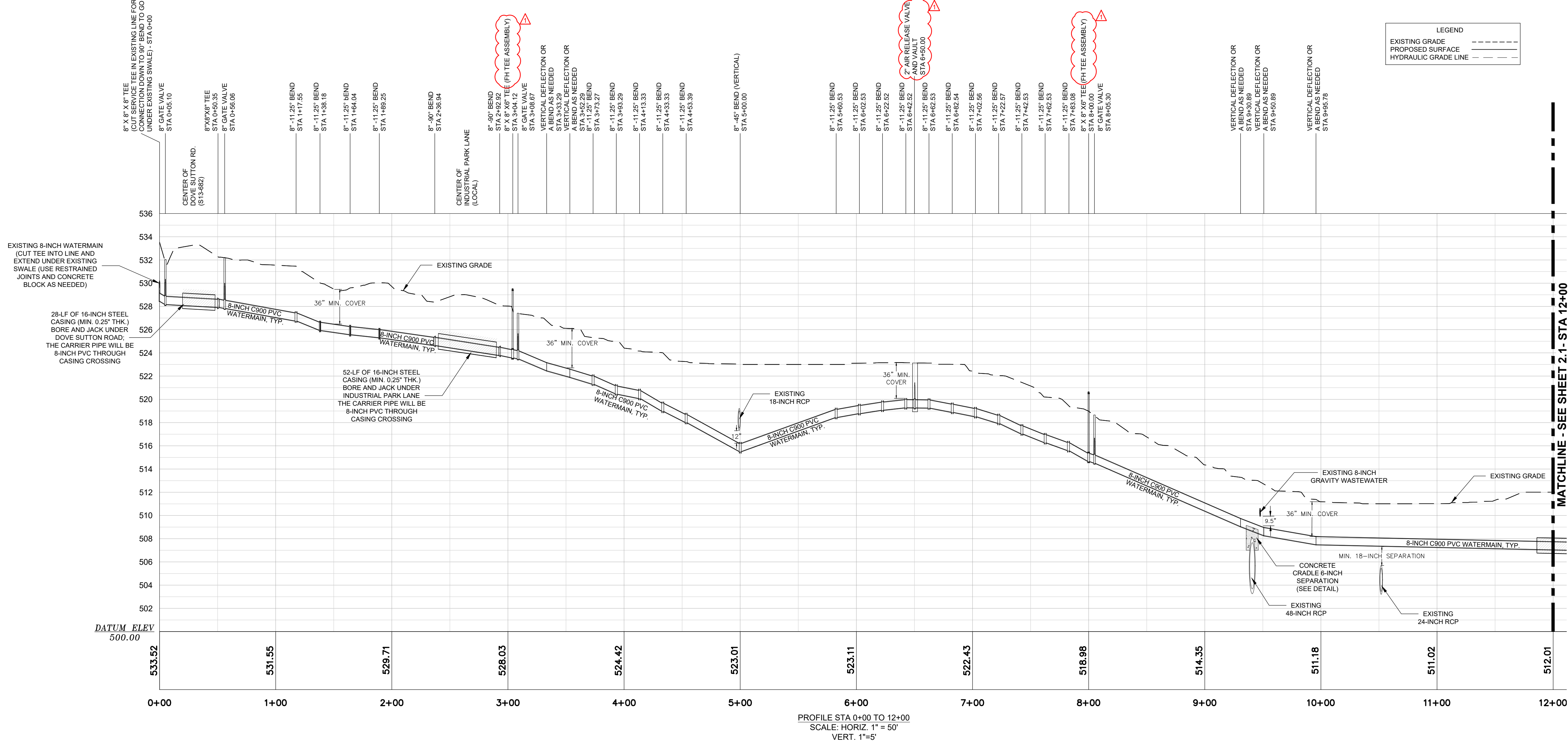
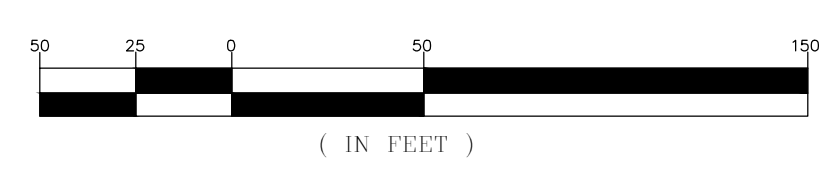
1	CCRWC COMMENTS 11.13.23 - BSW
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**APPROVALS**

ENGINEER	DESIGNER	CHECKED BY	APPROVED
BSW	BSW	BSW	BSW

**ALLIANCE CONSULTING ENGINEERS**

Professional Engineer Seal: No. 26589, State of South Carolina. Signature: Benjamin Libby.



**ALLIANCE CONSULTING ENGINEERS**

Alliance Consulting Engineers, Inc.  
 Post Office Box 8147, Columbia, South Carolina 29202-8147  
 Phone: (803) 779-2078 • Fax: (803) 779-2079

**PROJECT**  
 ± 1.555-LF EIGHT (8)-INCH PHASE I WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA

**FILE NAME:**  
 C2.0.dwg

**REFERENCE FILE:**  
 23183-0013 BASE.dwg

**PROJECT NO.:**  
 23183-0013

**SHEET**  
 C2.0

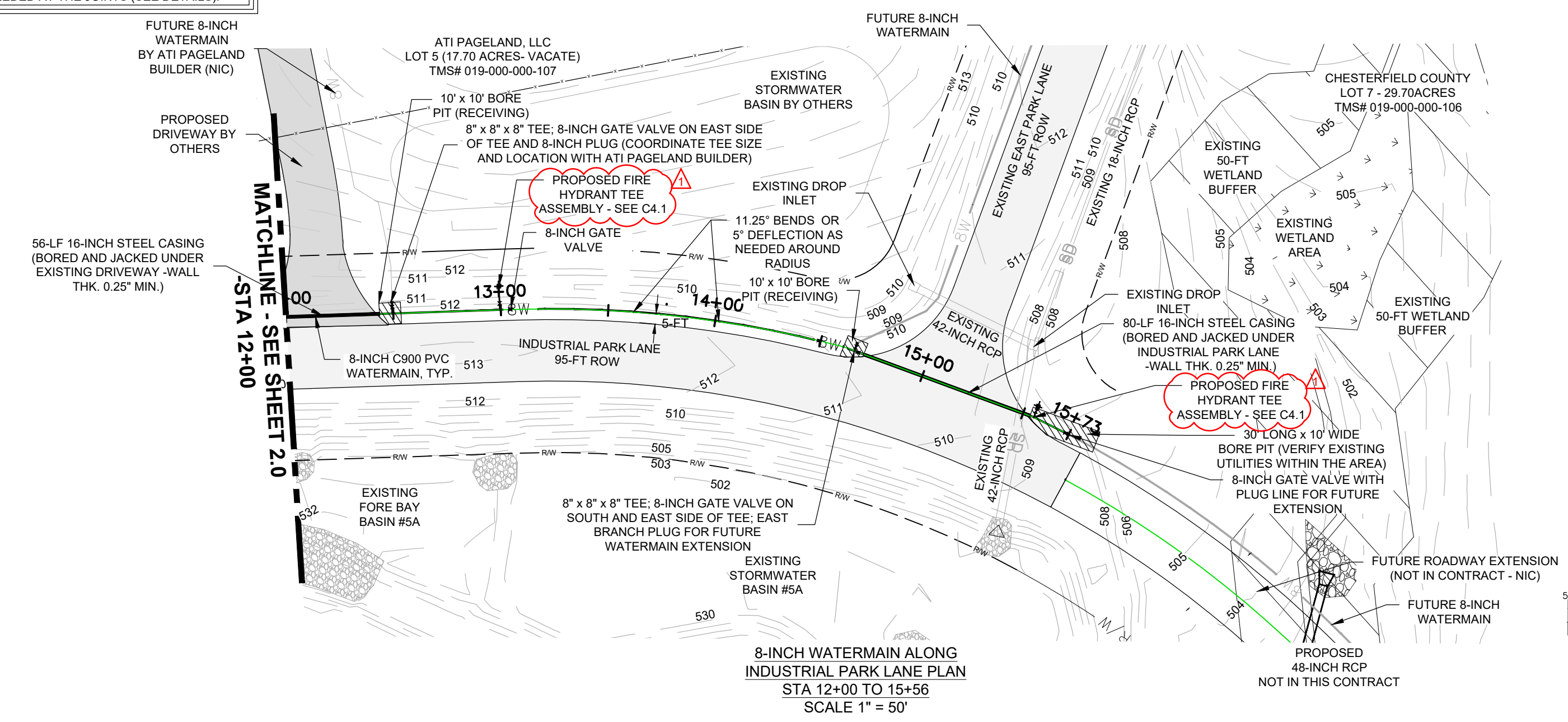
**DWG NO. 01.1656-D28**

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November 13, 2024 - 8:52:10 AM S:\Projects\23183-0013 Ph 1 Watermain Ext Lynchess River Ind Pk South Town of Pageland Chesterfield County\Construction Dwg\2.0 Entrance Road Plan & Profile.dwg

LEGEND	
—450—	EXISTING MAJOR CONTOURS
—451—	EXISTING MINOR CONTOURS
—RW—	PROPERTY LINE
—SD—	EXISTING STORM DRAINAGE
▨	EXISTING ASPHALT PAVEMENT
---	LIMITS OF DISTURBANCE
—450—	PROPOSED MAJOR CONTOURS
—451—	PROPOSED MINOR CONTOURS
○	PROPOSED STORM DRAINAGE
▨	PROPOSED ASPHALT

NOTE: WATERMAIN IN AREAS OF CURVATURE WILL REQUIRE BENDS AND DEFLECTION AS NEEDED TO MAINTAIN HORIZONTAL AND VERTICAL TRANSITION ALONG THE ALIGNMENT. RESTRAINT JOINTS AND/OR CONCRETE BLOCKING WILL ALSO BE NEEDED AT THE JOINTS (SEE DETAILS).



- REFERENCES:
- REFERENCE IS MADE TO LIDAR DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS) GEOSPATIAL DATA GATEWAY FOR THE MAJORITY OF THE PROPERTY.
  - REFERENCE IS MADE TO TOPOGRAPHIC SURVEY OF THE PROPOSED ROADWAY ALIGNMENT & BOUNDARY SURVEY (18.52 AC, 9.54 AC, AND 0.47 AC TRACTS) BY HAYES SURVEYING DATED JANUARY 27, 2021 AND UPDATE MAY 19, 2023.
  - REFERENCE IS MADE TO THE BELK PROPERTY BOUNDARY (109.48 AC.) SURVEY BY NESBITT SURVEYING DATED JANUARY 25, 2005.
  - REFERENCE IS MADE TO AS-BUILT UTILITIES (SC HWY 601 WATER LINE DATED 03/08/2001; PROJECT KITCHEN WASTEWATER AS-BUILT DATED 11/04/2016; PROJECT SEWER SYSTEM UPGRADE - DATED 09/2015; WASTEWATER IMPROVEMENT TO SERVE CHESTERFIELD SPECULATIVE BUILDING DATED 9/04/2008; WATER AND WASTEWATER SYSTEM IMPROVEMENT 05/1995); UPDATED WETLAND DELINEATION BY S&M, INC. 2016; AND STORM DRAINAGE UPDATES 01/03/2022 PROVIDED BY GRAY SURVEYING CO., INC.

OWNER INFORMATION	
OWNER:	CHESTERFIELD COUNTY
CONTACT:	MR. TIM EUBANKS
ADDRESS:	178 MILLS STREET
CITY, STATE:	CHESTERFIELD, SC 29709
TELEPHONE:	(843) 623-2595 (OFFICE) (843) 680-2216 (CELL)
EMAIL:	TIMEUBANKS@CHESTERFIELDCOUNTY SC.COM

DEVELOPER INFORMATION	
DEVELOPER:	CHESTERFIELD COUNTY ECONOMIC DEVELOPMENT
CONTACT:	MS. LIBBY LEAR
ADDRESS:	700 WEST BOULEVARD
CITY, STATE:	CHESTERFIELD, SC 29709
TELEPHONE:	(843) 623-6500 (CELL)
EMAIL:	LLEAR@CHESTERFIELDCOUNTYSC.COM

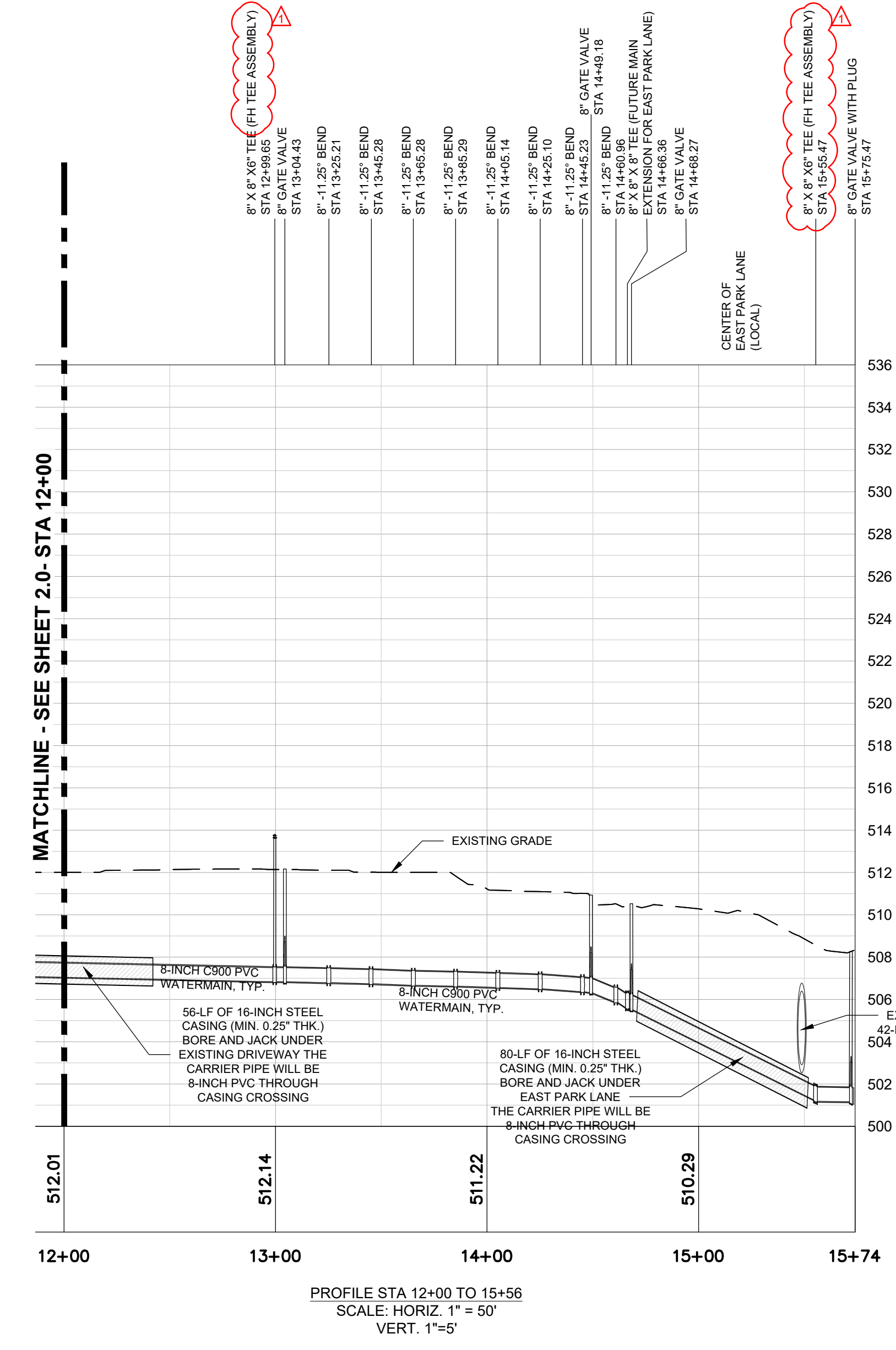
REVISION DATE	
▲	CCRWC COMMENTS 11.13.23 - BSW
▲	
▲	
▲	

APPROVALS	
ENGINEER	BSW
DESIGNER	BSW
TRACER	JAF
CHECKED BY	BSW
APPROVED	BSW

SIGNATURE: *Benjamin Libby* DATE: 11/13/23

**ALLIANCE CONSULTING ENGINEERS**  
Alliance Consulting Engineers, Inc.  
Post Office Box 8147, Columbia, South Carolina 29202-8147  
Phone: (803) 779-2078 • Fax: (803) 779-2079



LEGEND	
---	EXISTING GRADE
---	PROPOSED SURFACE
---	HYDRAULIC GRADE LINE

PROJECT	8-INCH WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ±130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA
DATE	NOVEMBER 2023
SCALE	1" = 50'
FILE NAME:	C2.0.dwg
REFERENCE FILE:	23183-0013
PROJECT NO.:	23183-0013
SHEET	C2.1
DWG NO.	01.1656-D28

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LEGEND	
---RW---	EXISTING RIGHT-OF-WAY (R-O-W)
---	EXISTING CONTOUR MAJOR
---	EXISTING CONTOUR MINOR
---	EXISTING WATER MAIN
---	EXISTING STORM DRAINAGE PIPE
---	EXISTING GAS LINE
---	EXISTING OVERHEAD ELECTRIC
---	EXISTING PAVEMENT
---	EXISTING DIRT ROAD
---	PROPOSED CONTOUR MAJOR
---	PROPOSED CONTOUR MINOR
---	LIMITS OF DISTURBANCE
---	PROPOSED FUTURE R-O-W
---	PROPOSED ASPHALT PAVEMENT
---	PROPOSED GRAVEL DRIVE

LEGEND	
---	PROPOSED SILT FENCE
---	PROPOSED CHECK DAM
---	PROPOSED GRASSING
---	PROPOSED INLET PROTECTION

- ### CONSTRUCTION SEQUENCE - LAND DISTURBANCE
- RECEIVE NPDES LAND DISTURBANCE PERMIT APPROVAL FROM SCDHEC.
  - NOTIFY SCDHEC REGIONAL OFFICE AND CHESTERFIELD COUNTY 48 HOURS PRIOR TO ANY LAND DISTURBING ACTIVITIES FOR A PRE-CON MEETING.
  - FLAGGING OF THE WETLAND BUFFER ZONE MUST BE COMPLETED PRIOR TO ANY LAND DISTURBANCE ACTIVITIES, INCLUDING THE INSTALLATION OF ANY BEST MANAGEMENT PRACTICES (BMP).
  - ALL BMPs DISCHARGING TO WETLAND BUFFER ZONES MUST BE MAINTAINED TO PREVENT THE DISCHARGE OF SEDIMENT-LADEN STORMWATER TO THE BEST EXTENT POSSIBLE.
  - ANY ACCUMULATED SEDIMENT WITHIN A WETLAND BUFFER ZONE IS TO BE REMOVED WITHOUT DAMAGING THE EXISTING VEGETATION TO THE BEST EXTENT POSSIBLE.
  - THE ENTIRETY OF THE WETLAND BUFFER ZONE SHOULD BE MAINTAINED UNTIL FINAL STABILIZATION IS REACHED.
  - CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS AND TEMPORARY SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs). (SILT FENCE, INLET PROTECTION, AND CHECK DAMS, AND PERIMETER SILT FENCE). USE THE EXISTING FARM AND BORING/WASTEWATER EASEMENT PATHS TO AVOID EXTRA LAND DISTURBANCE TO HULL EXCESS SOIL TO TOPSOIL STOCKPILES).
  - AFTER ALL PERIMETER MEASURES ARE INSTALLED, INSTALLATION OF THE WATERMAIN ALONG INDUSTRIAL PARK LANE ALONG THE SHOULDER. MAINTAIN BMP MEASURES AND SEEDING AREAS AND STABILIZING THE SHOULDER BACK EVERY DAY. SWEEP INDUSTRIAL PARK LANE AND DOVE SUTTON DAILY ACCORDINGLY TO ENSURE NO SEDIMENT LEAVES THE SITE.
  - MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES FOR THE EXTENT OF THE PROJECT.
  - ONCE THE WATERMAIN HAS BEEN COMPLETED, RESEED AREAS NOT GERMINATING AND GET FINAL GRASS STABILIZATION ALONG THE SHOULDER AND EACH OF EXISTING SWALES.
  - ONCE THE SITE STABILIZES, REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (SCDHEC RECOMMENDS THAT THE PROJECT OWNER/OPERATOR HAVE THE SWPPP PREPARER (IF APPLICABLE) OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF THE TEMPORARY STRUCTURES AND OUTLET DEVICES AS SHOWN ON FINAL GRADING SHEETS). ONCE THE SITE HAS REACHED 70% STABILIZATION THE NOTICE OF TERMINATION (NOT) FORM WILL BE SUBMITTED TO SCDHEC FOR FINAL RELEASE.

- #### REFERENCES:
- REFERENCE IS MADE TO LIDAR DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE (USDA) NATURAL RESOURCES CONSERVATION SERVICE (NRCS) GEOSPATIAL DATA GATEWAY FOR THE MAJORITY OF THE PROPERTY.
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TELEPHONE:	(843) 623-6500 (CELL)
EMAIL:	LLEAR@CHESTERFIELDCOUNTYSC.COM

REVISION DATE	

APPROVALS	DATE: 11/16/23
ENGINEER: BSW	
DESIGNER: BSW	
TITLE MANAGER: JAF	
CHECKED BY: BSW	
APPROVED: BSW	

## ALLIANCE CONSULTING ENGINEERS

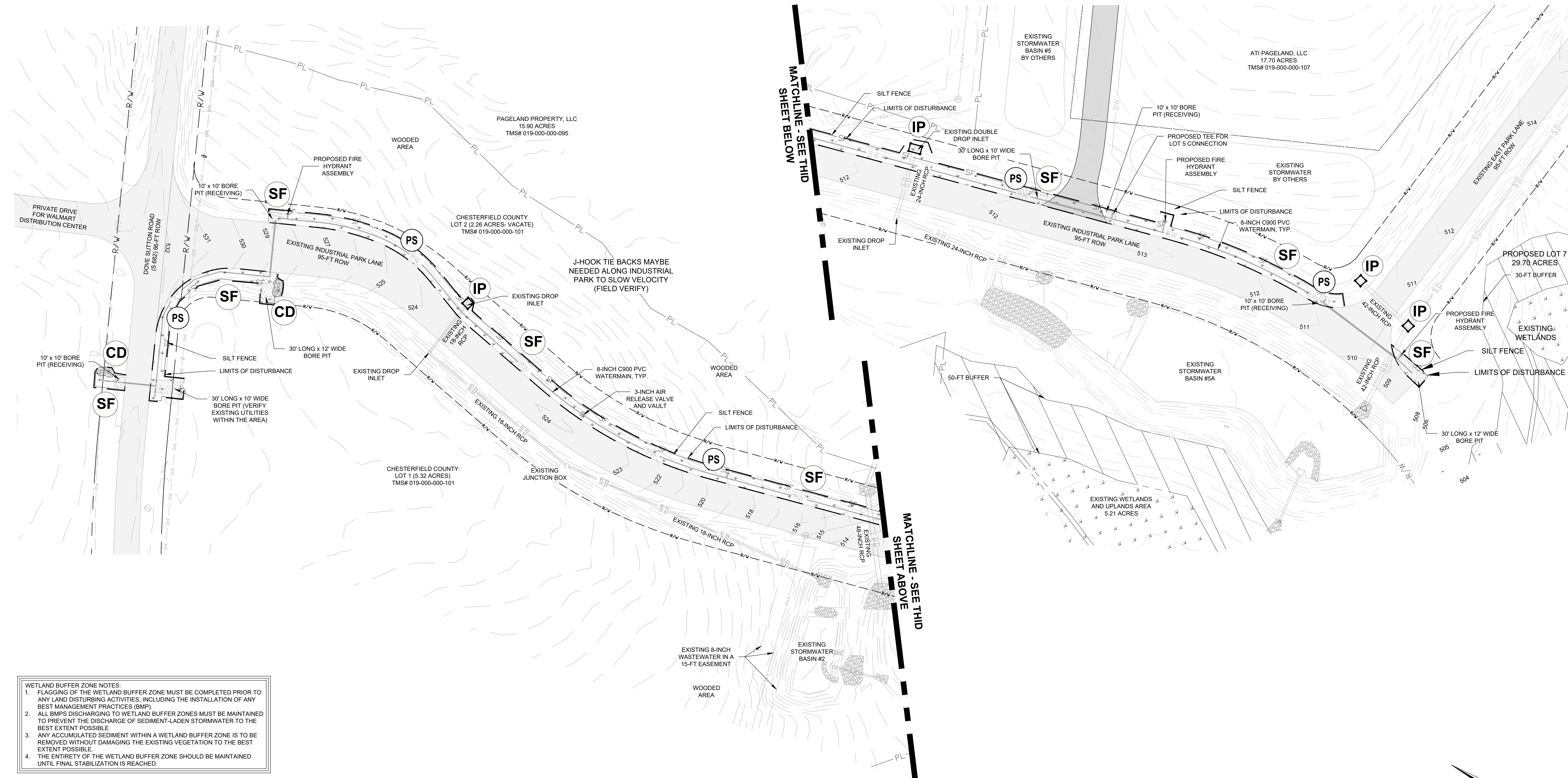
Alliance Consulting Engineers, Inc.  
 Post Office Box 8147, Columbia, South Carolina 29202-8147  
 Phone: (803) 779-2078 • Fax: (803) 779-2079

**EROSION AND SEDIMENT CONTROL PLAN**  
 SCALE: 1" = 40'  
 DATE: NOVEMBER 2023

PROJECT: ± 1.555-LF EIGHT (8)-INCH PHASE I WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA

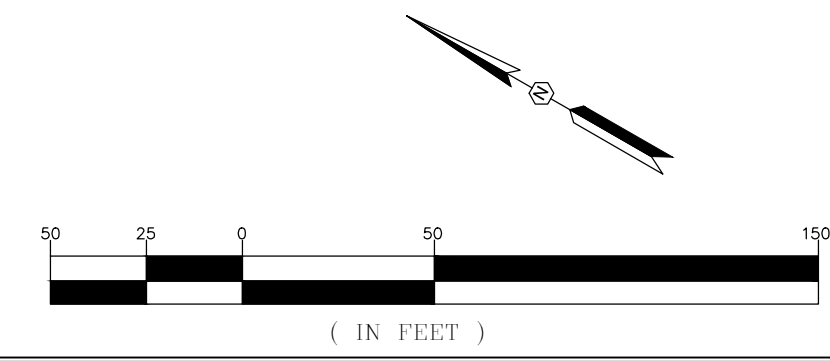
FILE NAME:	C3.0.dwg	SHEET
REFERENCE FILE:	23183-0013	
PROJECT NO.:	23183-0013	

DWG NO. 01.1656-D28



- #### WETLAND BUFFER ZONE NOTES:
- FLAGGING OF THE WETLAND BUFFER ZONE MUST BE COMPLETED PRIOR TO ANY LAND DISTURBING ACTIVITIES, INCLUDING THE INSTALLATION OF ANY BEST MANAGEMENT PRACTICES (BMP).
  - ALL BMPs DISCHARGING TO WETLAND BUFFER ZONES MUST BE MAINTAINED TO PREVENT THE DISCHARGE OF SEDIMENT-LADEN STORMWATER TO THE BEST EXTENT POSSIBLE.
  - ANY ACCUMULATED SEDIMENT WITHIN A WETLAND BUFFER ZONE IS TO BE REMOVED WITHOUT DAMAGING THE EXISTING VEGETATION TO THE BEST EXTENT POSSIBLE.
  - THE ENTIRETY OF THE WETLAND BUFFER ZONE SHOULD BE MAINTAINED UNTIL FINAL STABILIZATION IS REACHED.

**NPDES PERMIT INFORMATION - FOR THIS PHASE OF CONSTRUCTION**  
**NPDES DISTURBED AREA = ± 0.5 ACRES**  
**MAXIMUM LENGTH OF DISTURBED AREA = ± 1,555 LINEAR FEET (LF)**

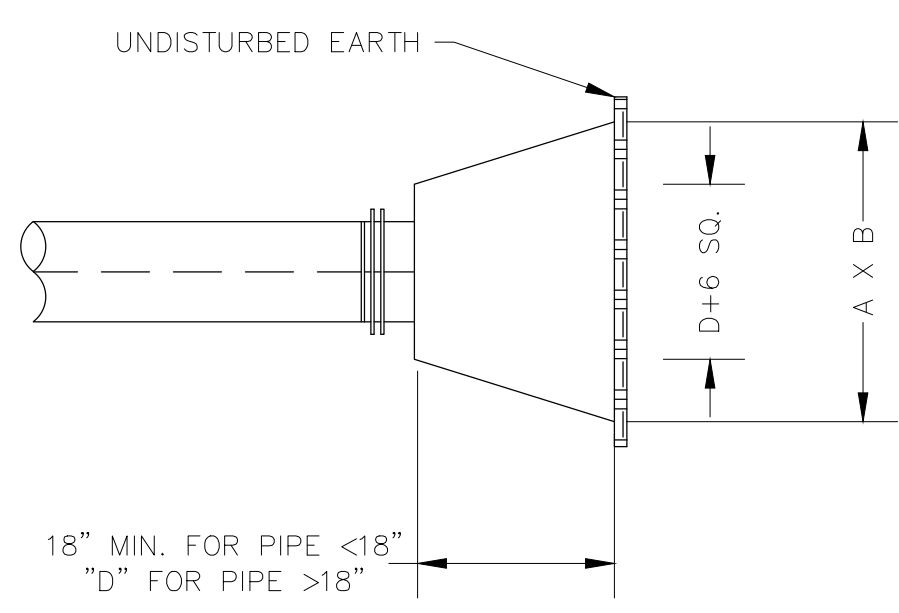


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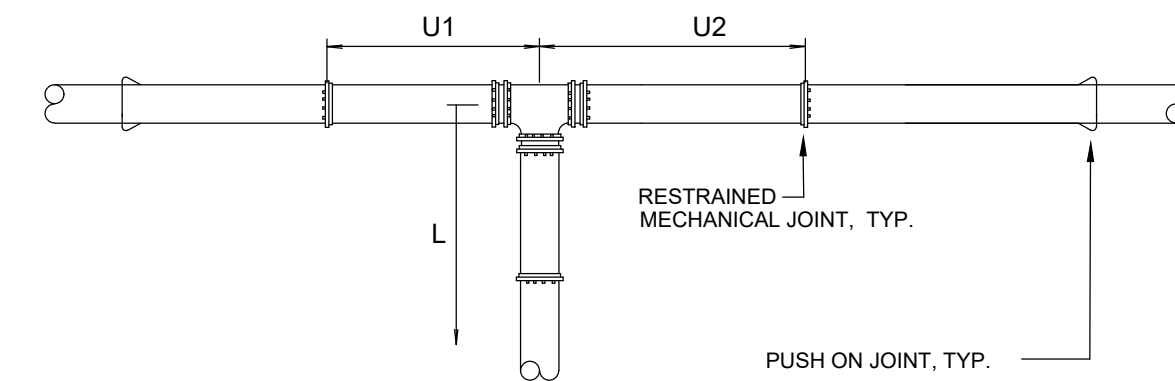
November 08, 2023 - 3:00:10 PM: S:\Projects\23183-0013 Ph1 Watermain Ext Lynchess River Ind Pk South Town of Pageland Chesterfield County\Construction Draw\ C4.0 Utility Details.dwg

MIN. THRUST BLOCK BEARING AREAS  
PLUGS & DEAD END MAINS (SF)

SIZE	A X B
4	0.9
6	2.1
8	3.8
12	8.5
16	15.1
18	19.1
20	23.6
24	33.9
30	53.0
36	76.3
42	103.9
48	135.7
54	171.8



**THRUST BLOCK DETAIL  
PLUG AND DEAD END MAIN**  
(NOT TO SCALE)



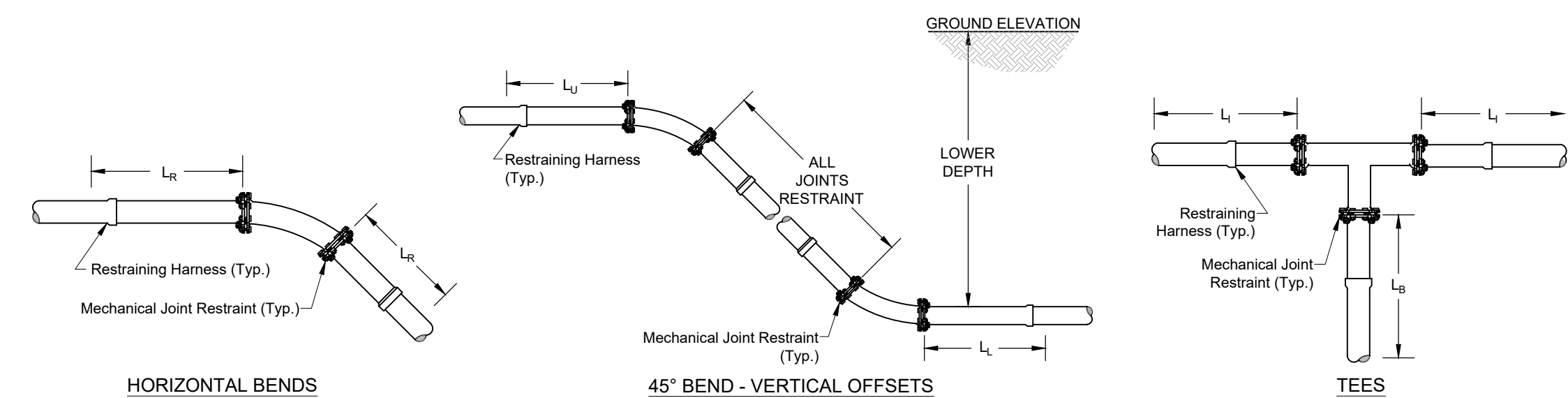
NOTES:  
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.  
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.  
3. U1 AND U2 = UNINTERRUPTED STRAIGHT RUNS OF RESTRAINED JOINT PIPE IN EACH DIRECTION.  
4. Ur = THE SMALLER OF U1 OR U2 (E.G., U1, IN THE ABOVE DIAGRAM)  
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.  
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.

DUCTILE IRON LINE

TEE	Ur	5'-10'	11'-20'	21'-35'	36'-50'	50'-75'	75'-100'
4X4	23	15	2	-	-	-	-
6X4	21	9	-	-	-	-	-
6X6	40	27	14	-	-	-	-
8X4	18	3	-	-	-	-	-
8X6	33	23	5	-	-	-	-
8X8	50	39	26	6	-	-	-
10X4	16	-	-	-	-	-	-
10X6	31	18	-	-	-	-	-
10X8	46	36	19	-	-	-	-
10X10	57	49	36	17	-	-	-
12X4	13	-	-	-	-	-	-
12X6	30	14	-	-	-	-	-
12X8	44	32	13	-	-	-	-
12X10	56	47	31	7	-	-	-
12X12	68	60	47	28	-	-	-

**MINIMUM RESTRAINED LENGTH (L)**  
\* RESTRAIN AT TEE ONLY.

**DUCTILE IRON PIPE (D.I.P.) TEE FITTING  
MECHANICAL JOINT RESTRAINT DETAIL**  
(NTS)



L<sub>R</sub> (MIN LENGTH OF NO UNRESTRAINED JOINTS  
EACH DIRECTION OF THRUST IN LINEAR FEET)

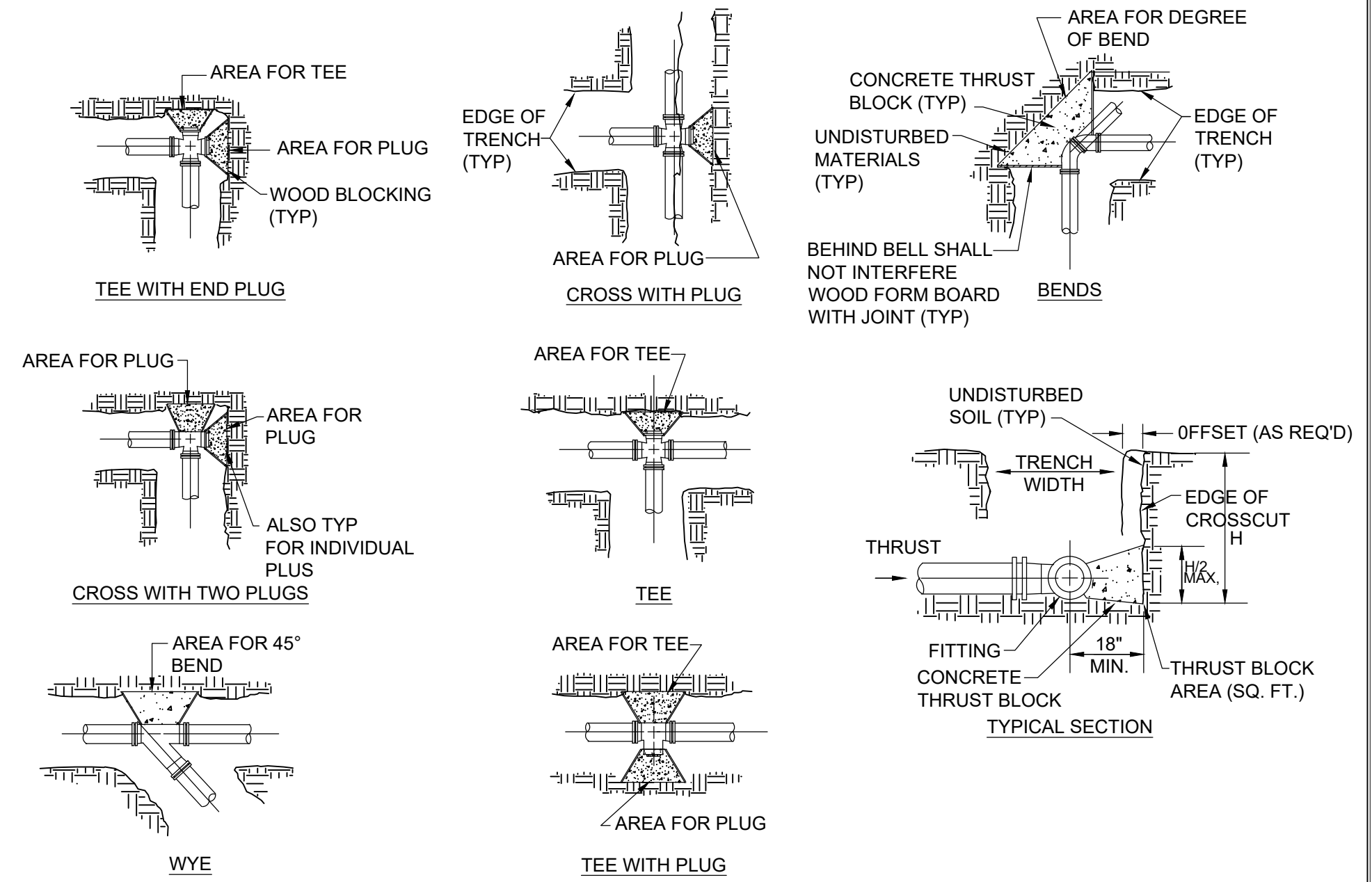
PIPE MATERIAL	NOM. SIZE	HORIZONTAL BENDS				45° BEND - VERTICAL OFFSETS (LOWER DEPTH)					TEES			DEAD END	
		11.25°	22.50°	45°	90°	L <sub>U</sub> (FT)	4 FT	5 FT	6 FT	7-8 FT	9-10 FT	L <sub>L</sub> (FT)	8-IN DIA.		6-IN DIA.
DIP	8-IN	3	6	11	26	20	9	7	6	5	4	8	27	11	47
	6-IN	2	4	9	20	15	7	6	5	4	3	8	-	17	36
PVC	8-IN	4	7	14	33	30	11	9	7	6	5	8	43	16	72
	6-IN	3	5	11	25	23	8	7	6	5	4	8	-	26	55

NOTES:  
1. CHART BASED ON SM SOIL, 1.5 SAFETY FACTOR, TRENCH TYPE 3, 3 FT DEPTH OF BURY, AND 150 PSIG PRESSURE  
2. THRUST RESTRAINT ON DUCTILE IRON PIPE SHALL BE EBAA IRON, INC. SERIES 1100 MECHANICAL JOINT RESTRAINT OR APPROVED EQUAL FOR MECHANICAL JOINT FITTINGS AND APPURTENANCES AND EBAA IRON, INC. SERIES 1700 BELL RESTRAINT HARNESS OR APPROVED EQUAL FOR PIPE BELLS.  
  
THE FOLLOWING JOINTS MUST BE RESTRAINED IN ALL APPLICATIONS:  
1. BEND - INLET AND OUTLET  
2. TEE - ALL BRANCHES  
3. OFFSETS - INLET AND OUTLET  
4. CAPS  
5. PLUGS  
6. DEAD ENDS  
7. HYDRANT RUNOUTS SHALL BE RESTRAINED AS DEAD ENDS

**PIPE RESTRAINT DETAIL**  
NOT TO SCALE

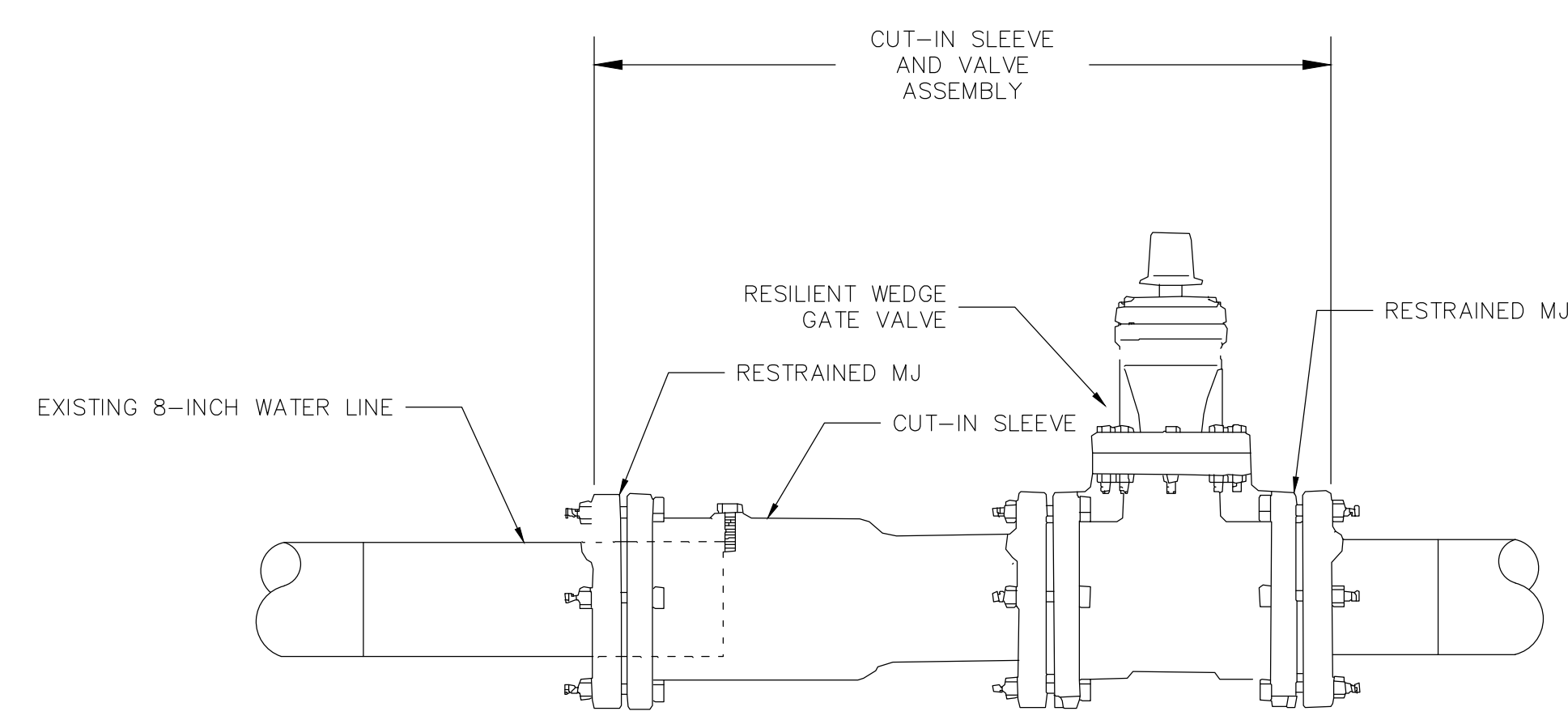
NOTE: ALTHOUGH THRUST BLOCKS ARE ALLOWED, THE USE OF RESTRAINED JOINTS IS ENCOURAGED.

- THRUST BLOCK BEARING AREAS SHALL BE POURED AGAINST UNDISTURBED MATERIALS WHERE TRENCH WALL HAS BEEN DISTURBED. EXCAVATE ALL LOOSE MATERIAL AND EXTEND TO UNDISTURBED MATERIAL.
- EXTEND THRUST BLOCK FULL LENGTH OF FITTINGS. PUT BOARD IN FRONT OF PLUG BEFORE POURING CONCRETE. JOINTS SHALL NOT BE COVERED BY THRUST BLOCK.
- ROUGH BLOCKING FORMS SHALL BE USED ALONG SIDES OF THRUST BLOCK.
- THRUST BLOCKS SHALL BE USED IN COMBINATION, AS REQUIRED, TO SUIT THE SPECIFIC FITTINGS ARRANGEMENT.
- ALTERNATE DESIGN RESTRAINING SYSTEM SHALL BE PROVIDED WHERE STANDARD THRUST BLOCKING IS NOT SUITABLE, AND/OR SOIL BEARING CAPACITY IS LESS THAN 2,000 P.S.F. OR PIPE IS 16 INCHES OR GREATER.
- ALL WOOD BLOCKING SHALL BE PRESSURE TREATED WITH PRESERVATIVES.
- CONCRETE THRUST BLOCKING SHALL HAVE A MIN. COMPRESSION STRENGTH OF 2500 PSI.
- CONCRETE SHALL BE PLACED AGAINST UNDISTURBED MATERIAL AND SHALL NOT COVER JOINTS, BOLTS, OR NUTS OR INTERFERE WITH REMOVAL OF ANY JOINT. WOODEN SIDE FORMS SHALL BE PROVIDED FOR THRUST BLOCKS WHERE TRENCH CONDITIONS REQUIRE.
- THRUST BLOCKS SHALL BE PROPERLY SET AND ADEQUATELY CURED PRIOR TO PRESSURIZING THE PIPE.
- FITTINGS SHALL BE PROTECTED BY POLYETHYLENE FILM, MIN. 8 MIL. THICK, PRIOR TO PLACING CONCRETE THRUST BLOCK.
- FOR BLOCKING SIZE, REFERENCE CHART ON SHEET C9.0.



BEARING CAPACITY BASED UPON GEOTECHNICAL EXPLORATION PERFORMED BY TERRACON, ON NOVEMBER 10, 2021.  
IF CONTRACTOR ENCOUNTERS SUBSURFACE MATERIAL VARYING FROM THAT DESCRIBED IN THE GEOTECHNICAL REPORT, CONTACT ENGINEER AT (803) 779-2078

**THRUST BLOCK DETAILS**  
N.T.S.



**TYPICAL CUT-IN TEE ON EXISTING SERVICE**  
(NOT TO SCALE)

REVISION DATE


APPROVALS

ENGINEER	DESIGNER	TECHNICIAN	CHECKED BY	APPROVED
BSW	BSW	JAH	BSW	BSW

ALLIANCE CONSULTING ENGINEERS, INC. No. 26889  
DATE: 11/10/23

**ALLIANCE CONSULTING ENGINEERS**  
Alliance Consulting Engineers, Inc. No. 26889  
Post Office Box 1000, South Carolina, Chesterfield County, SC 29516  
Phone: (803) 779-2078 • Fax: (803) 779-2079

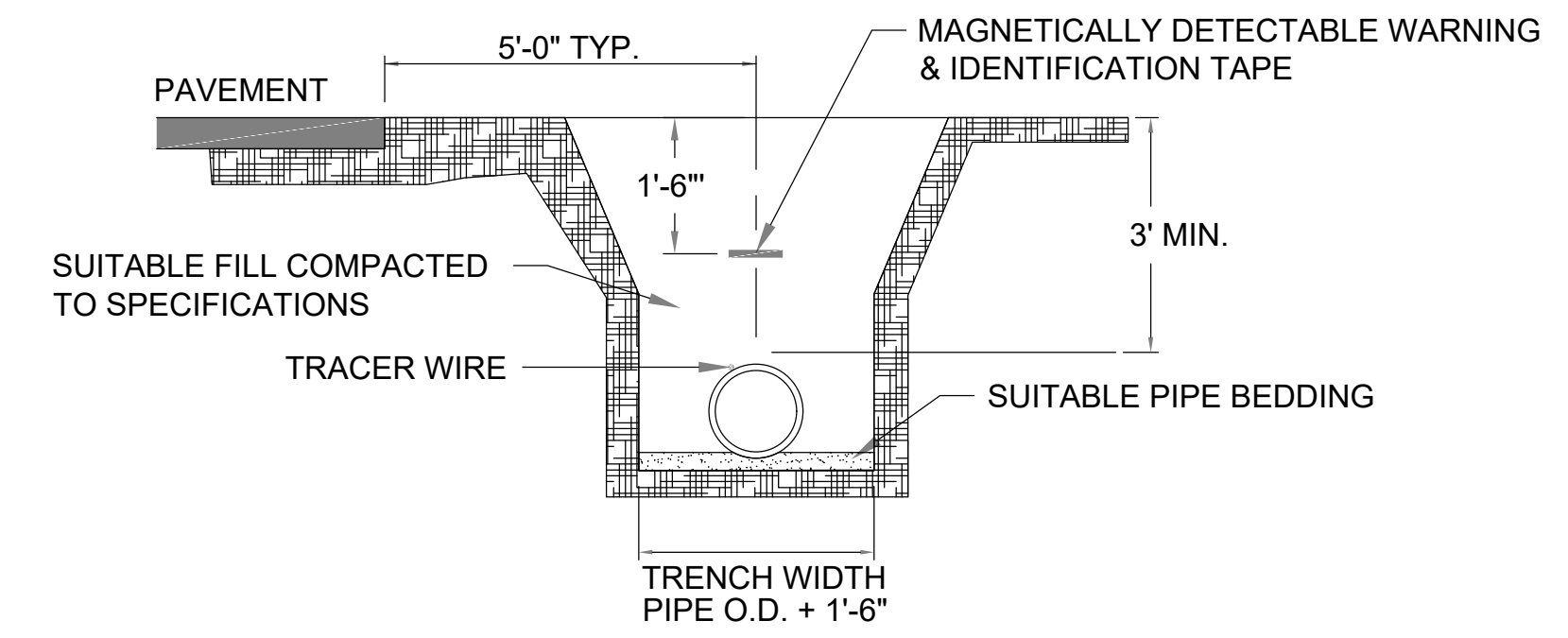
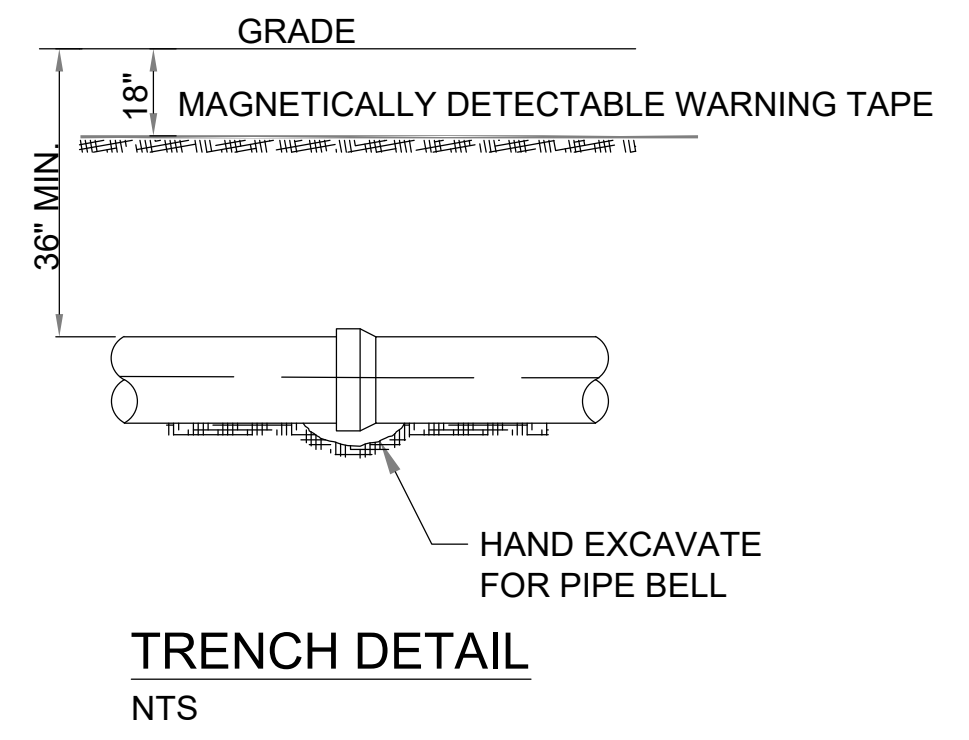
WATER DETAILS (SHEET 1 OF 3)  
SCALE: AS SHOWN  
DATE: NOVEMBER 2023

PROJECT: ± 1.555-LF EIGHT (8)-INCH PHASE 1 WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA  
SOUTH CAROLINA  
CHESTERFIELD COUNTY

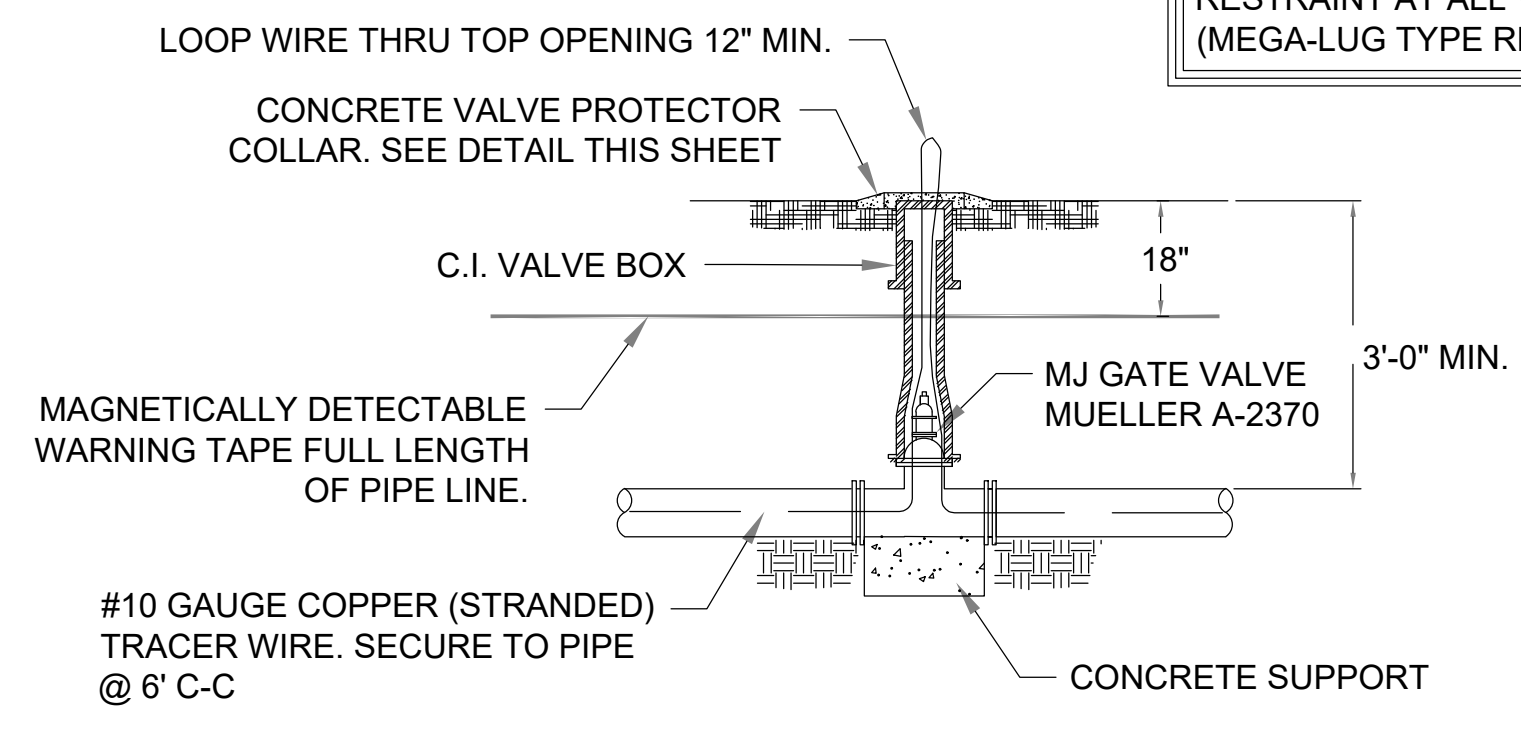
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PROJECT NO. 23183-0013  
SHEET C4.0

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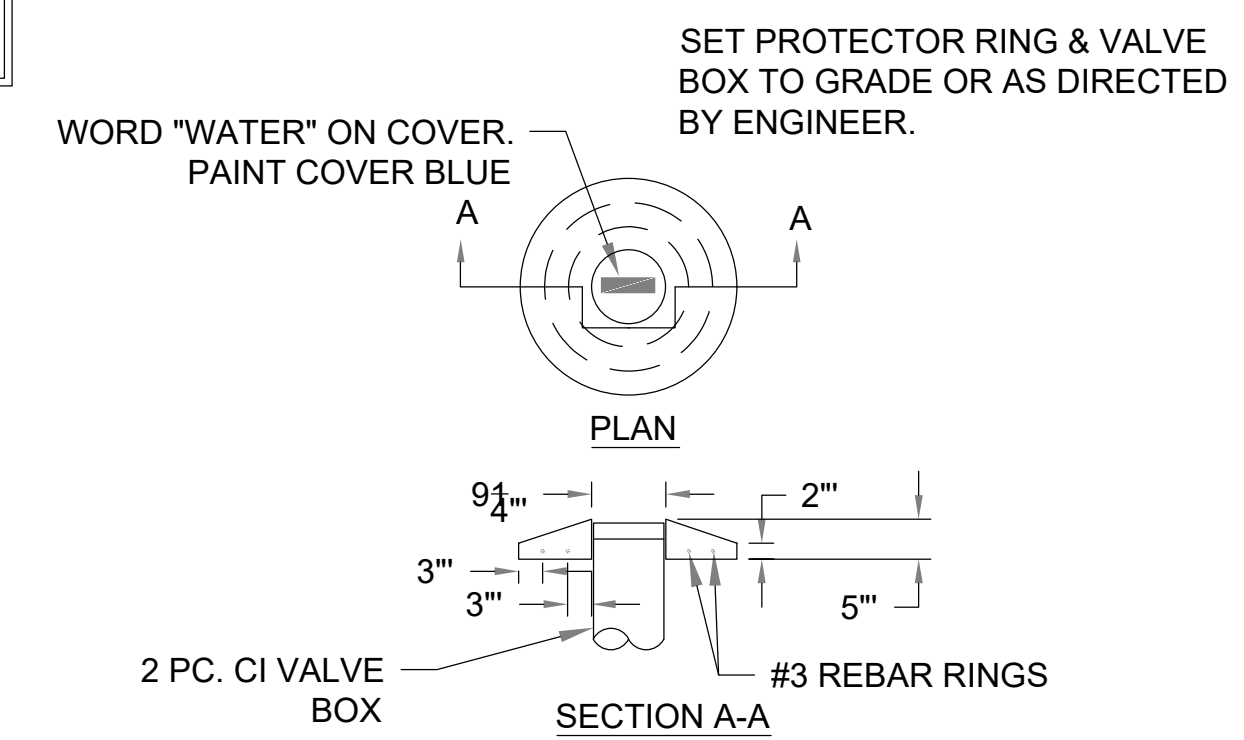
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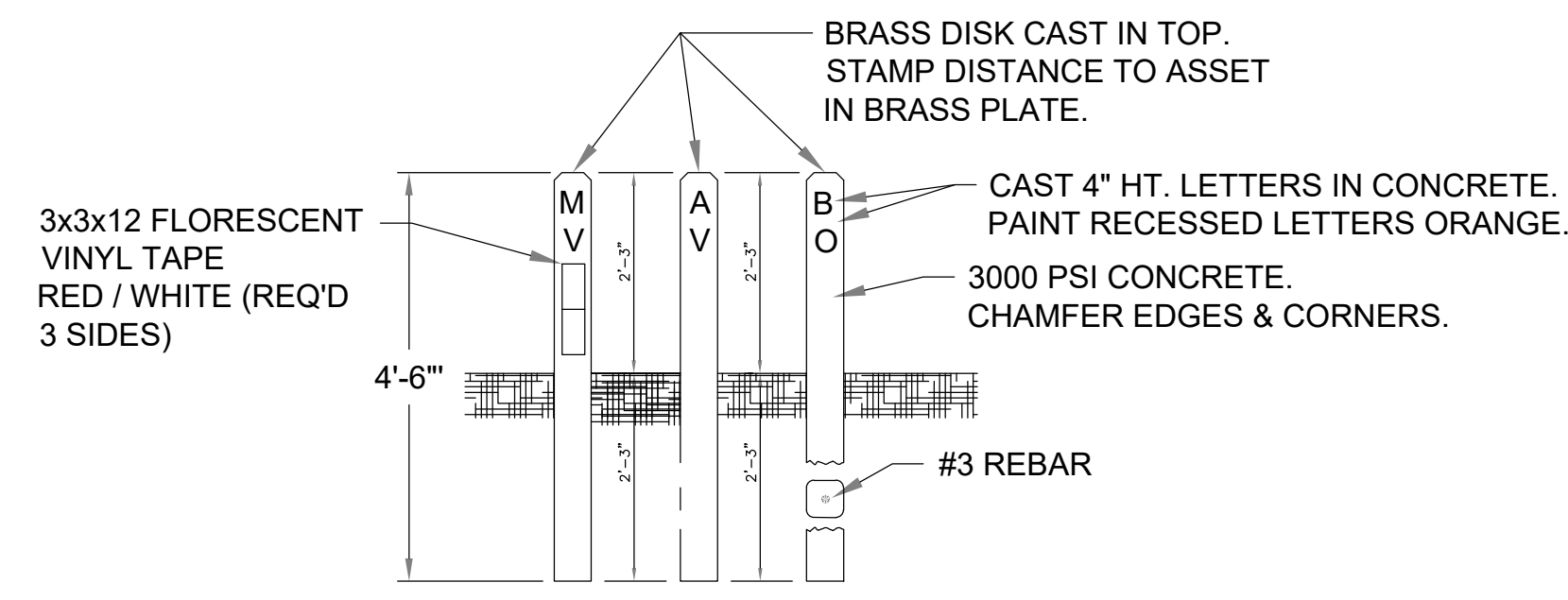
**SECTION THROUGH PIPE DETAIL**  
(NOT TO SCALE)



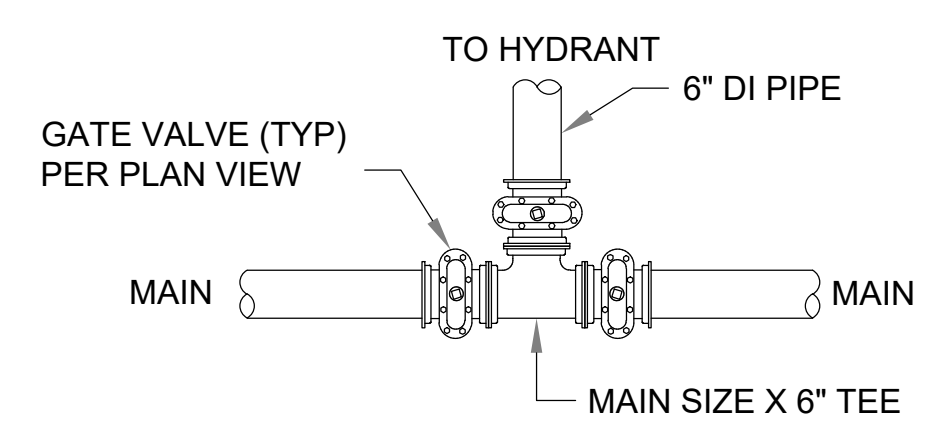
**GATE VALVE & BOX DETAIL**  
(NOT TO SCALE)



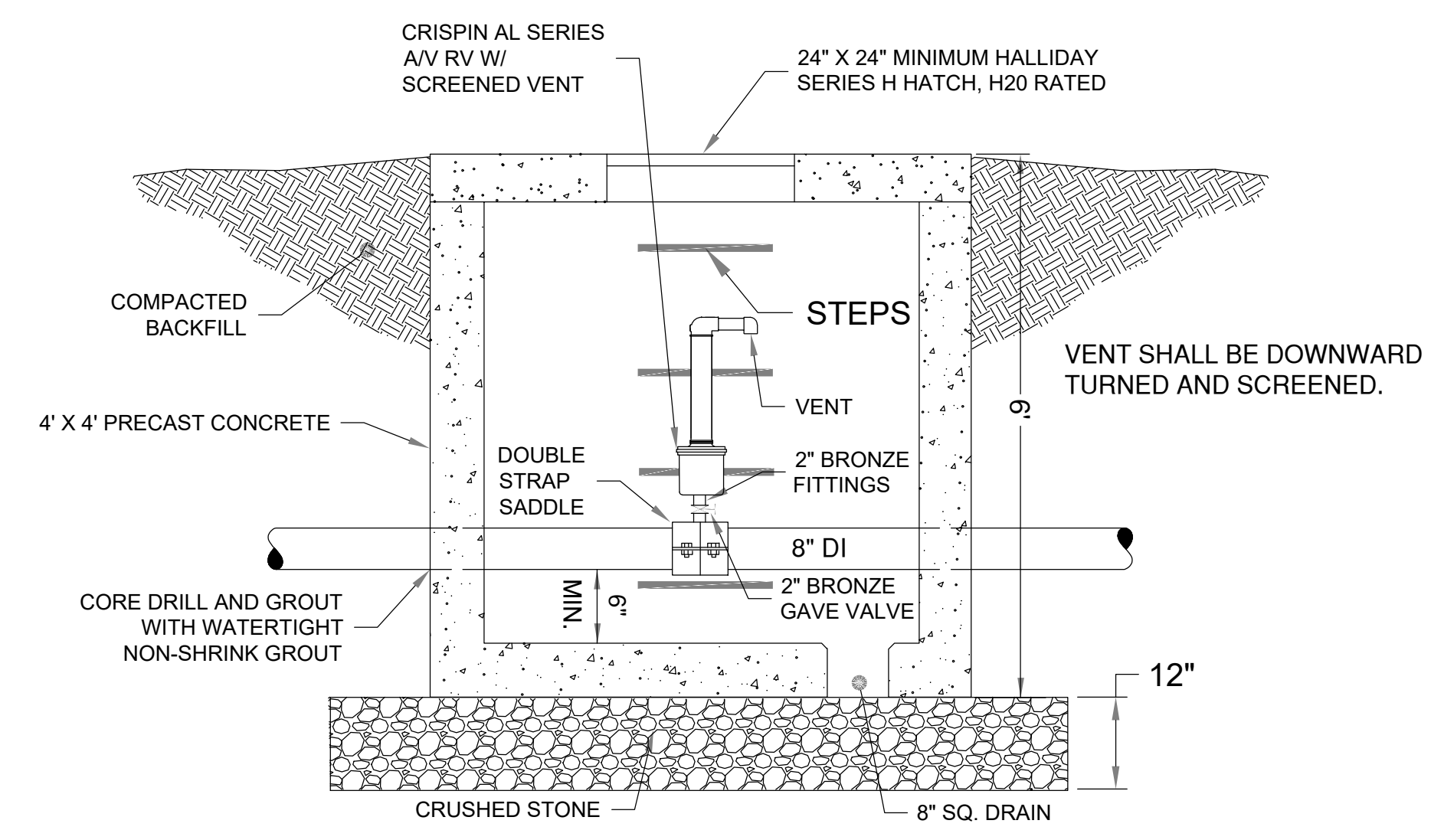
**VALVE PROTECTOR RING DETAIL**  
(NOT TO SCALE)



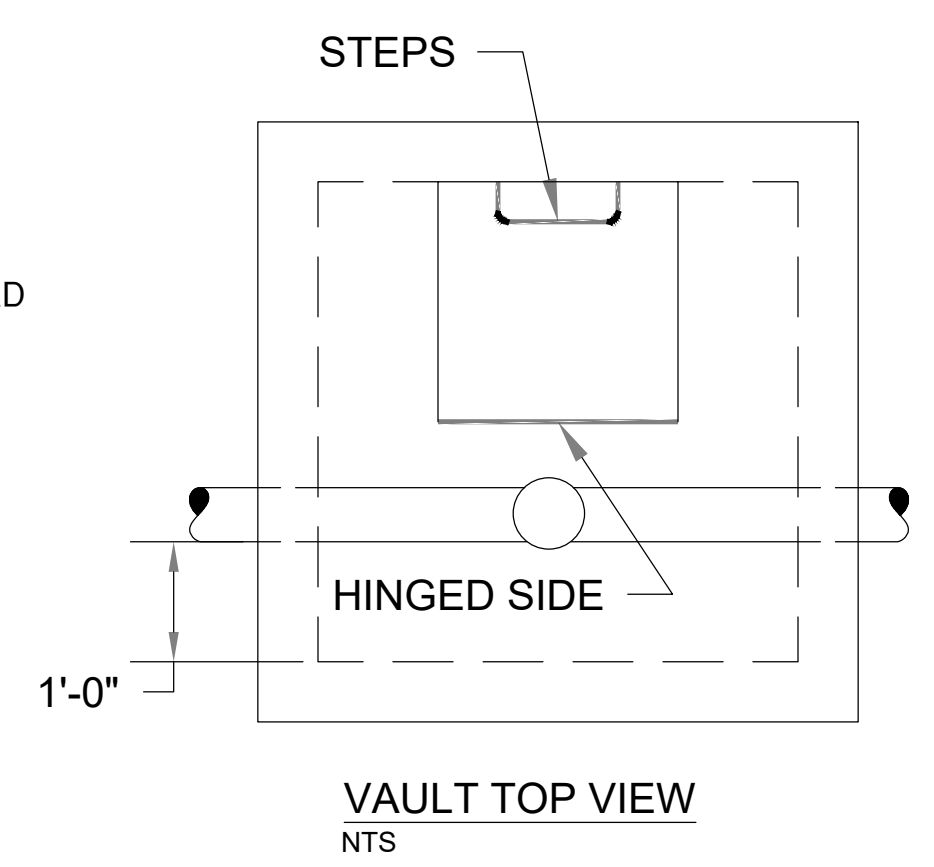
**TYPICAL CONCRETE MARKER DETAIL**  
(NOT TO SCALE)



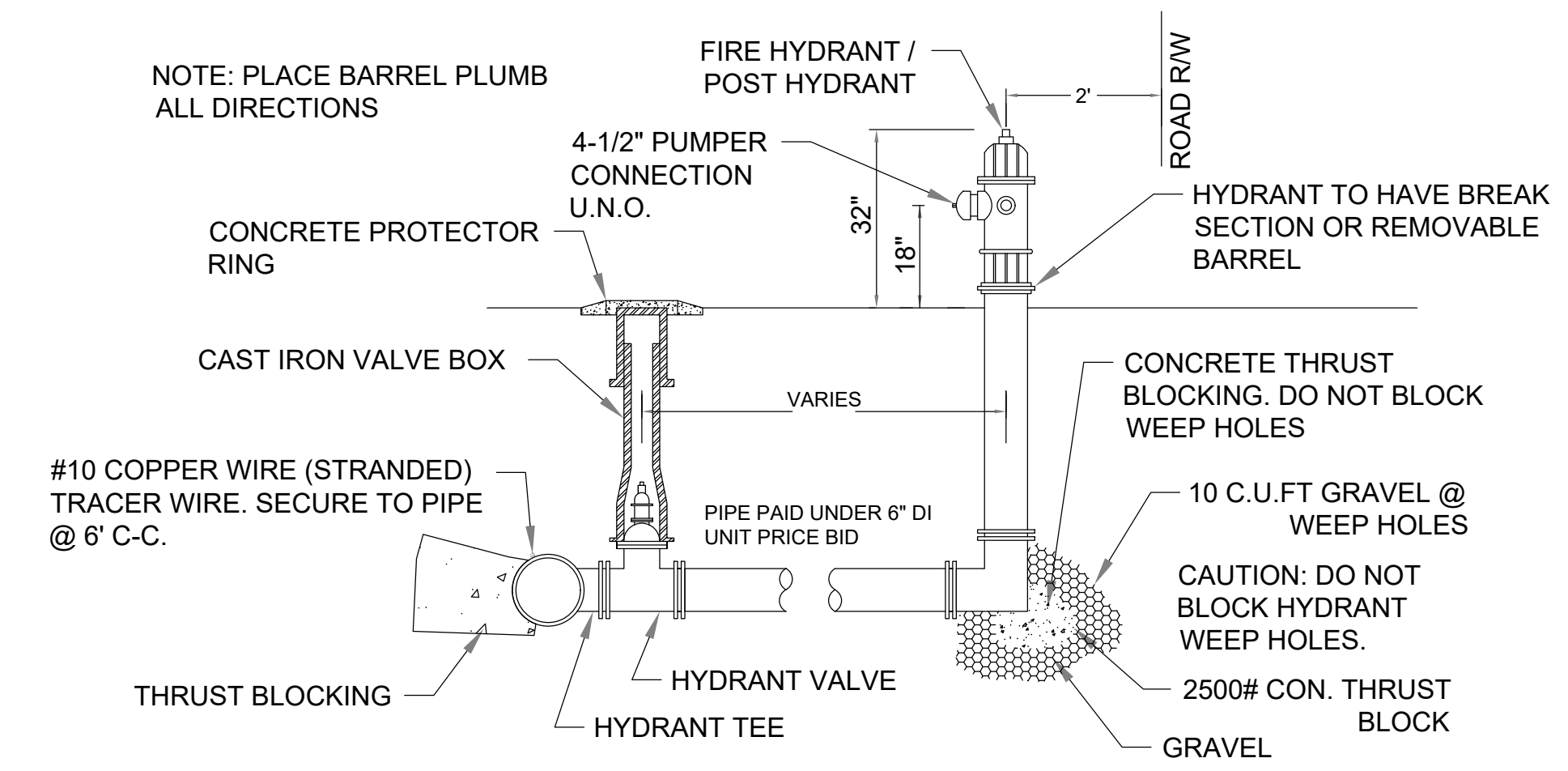
**HYDRANT VALVE TEE**  
(NOT TO SCALE)



**TYPICAL AIR/ VACUUM RELEASE VALVE MANHOLE**  
(NOT TO SCALE)



**VAULT TOP VIEW**  
NTS



**FIRE HYDRANT ASSEMBLY DETAIL**  
(NOT TO SCALE)

REVISION	
NO.	DATE

APPROVALS	ENGINEER	DESIGNER	TECHNICIAN	CHECKED BY	APPROVED
	BSW	BSW	JAH	BSW	BSW

ALLIANCE CONSULTING ENGINEERS, INC. No. 26899  
 DATE: 11/10/23  
 SIGNATURE: *Darwin S. ...*

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 Alliance Consulting Engineers, Inc. No. 26899  
 Post Office Box 1000, South Carolina, USA  
 Phone: (803) 779-2079 • Fax: (803) 779-2079

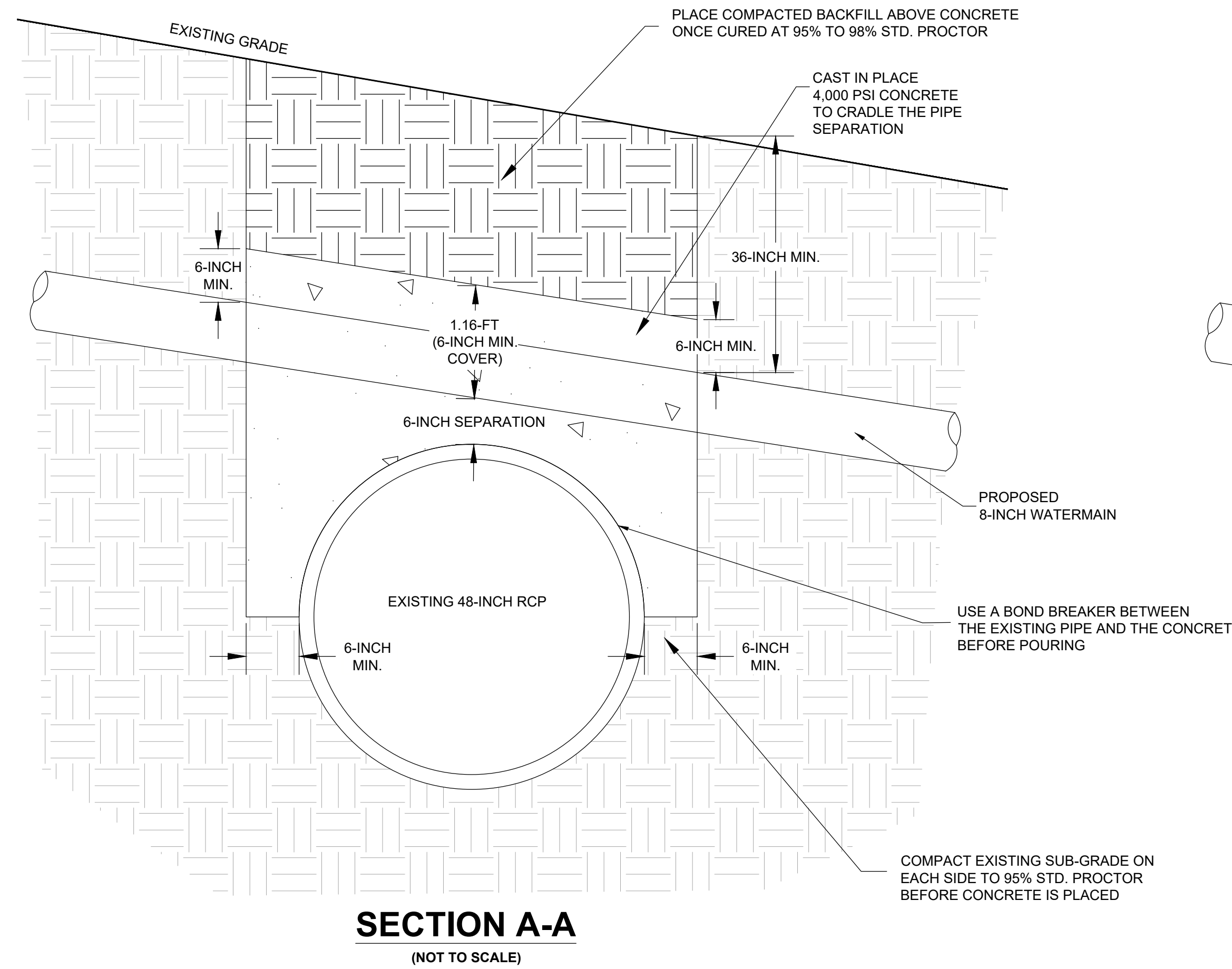
WATER DETAILS  
 SHEET 2 OF 3  
 SCALE: AS SHOWN  
 DATE: NOVEMBER 2023

PROJECT  
 ± 1.555-LF EIGHT (8)-INCH PHASE 1 WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA  
 CHESTERFIELD COUNTY SOUTH CAROLINA

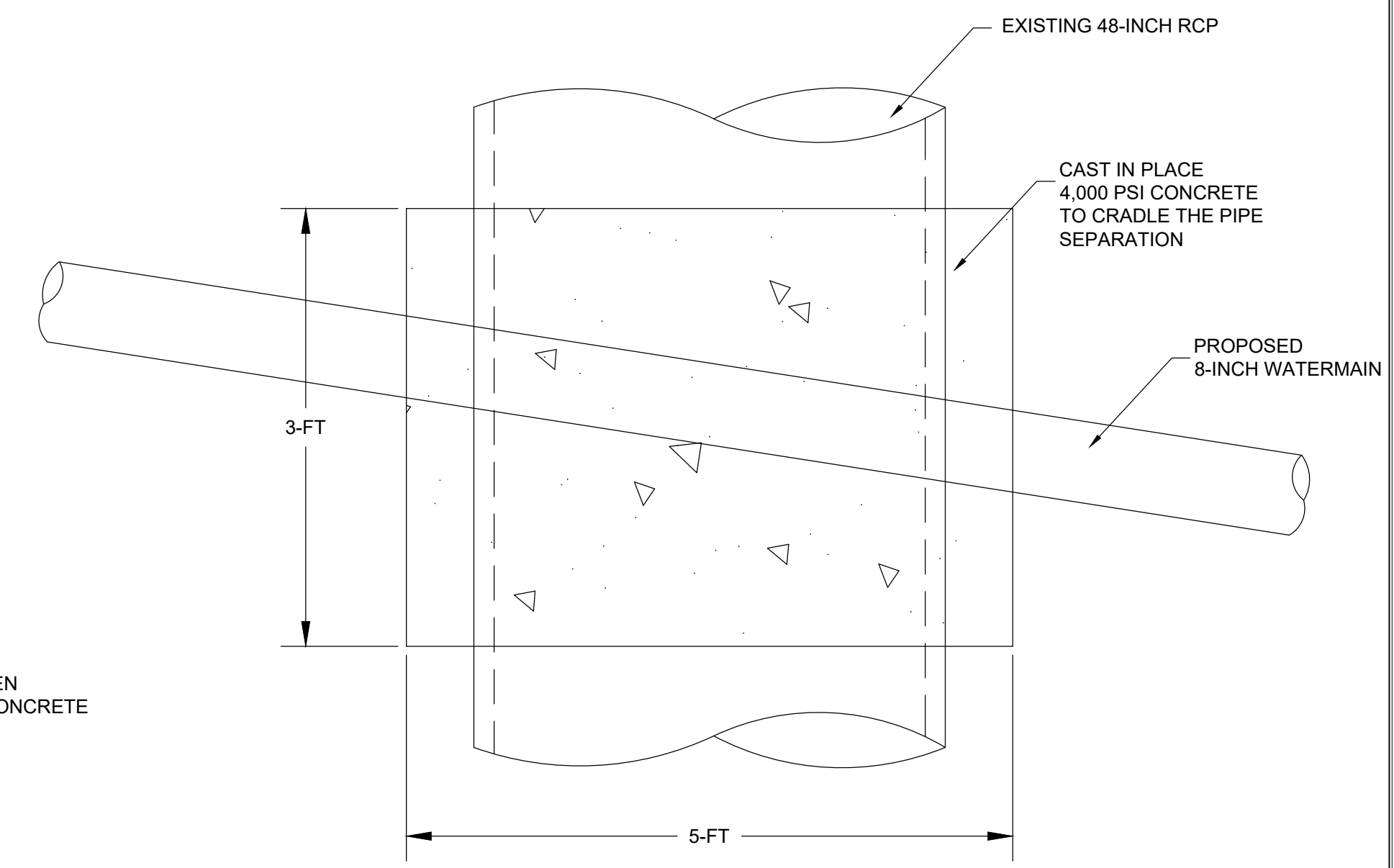
FILE NAME: C4.0.DWG	SHEET C4.1
REFERENCE FILE: 23183-0013 BASE.dwg	
PROJECT NO. 23183-0013	
DWG NO. 01.1656-D28	

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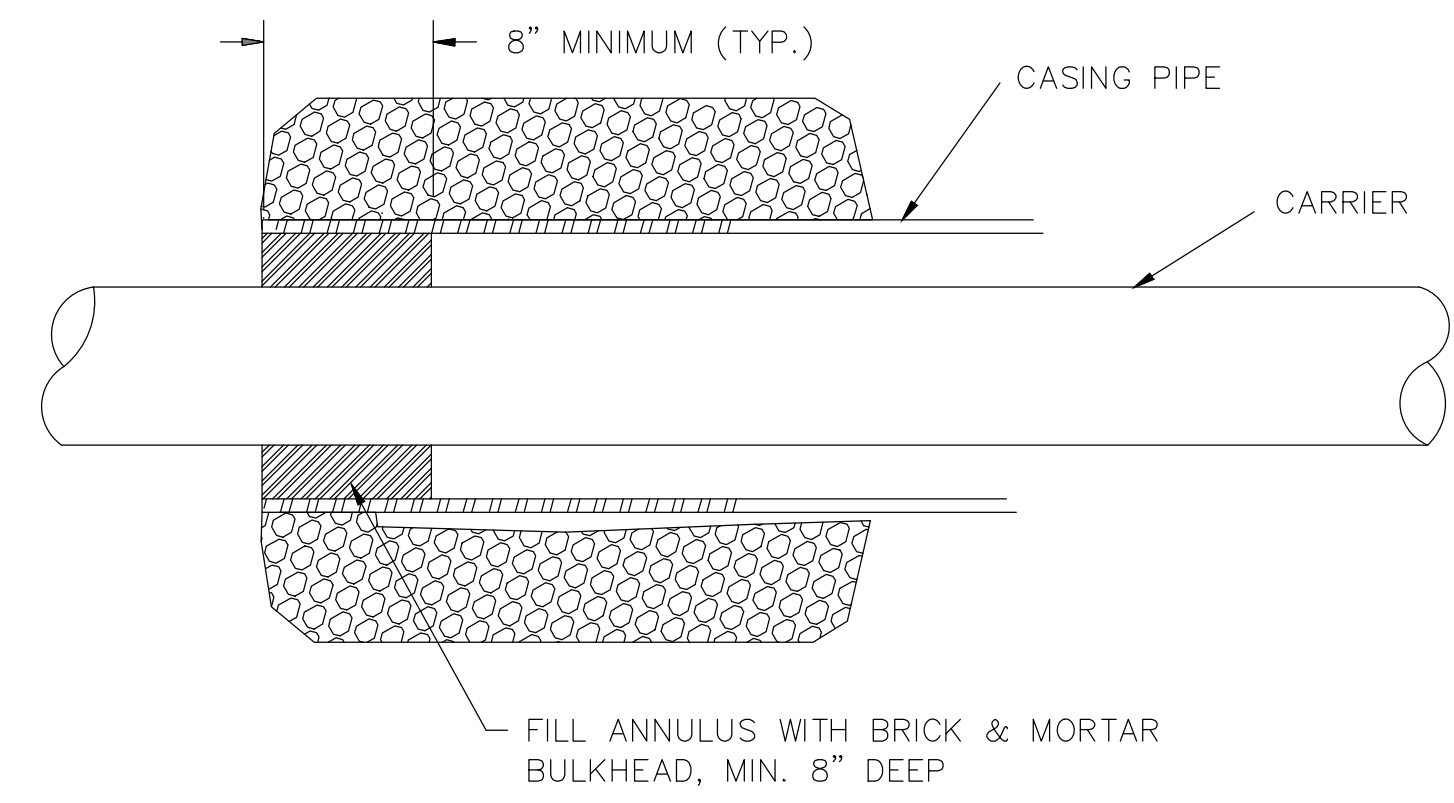


**SECTION A-A**  
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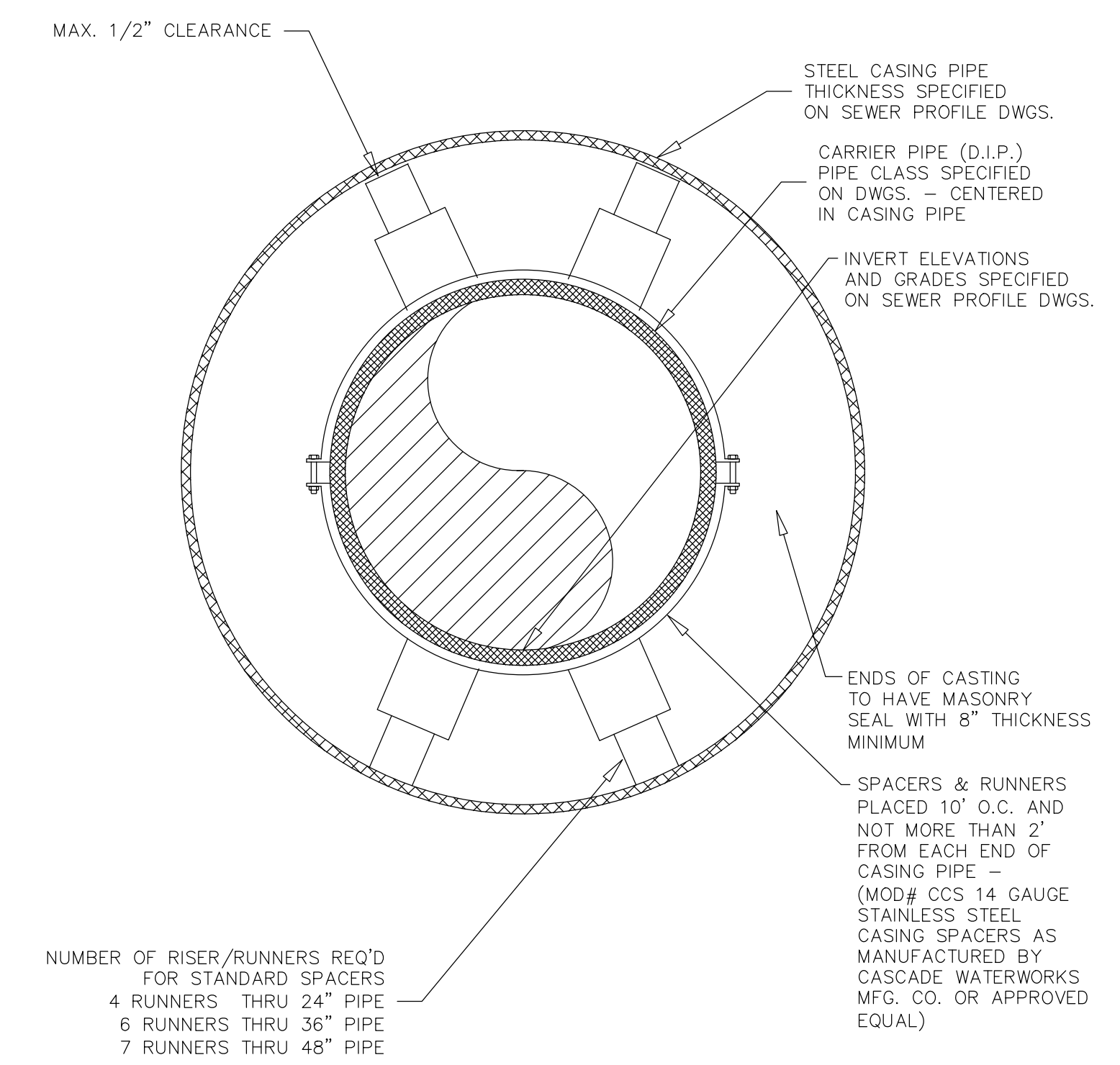


**PLAN VIEW**  
(NOT TO SCALE)

**CONCRETE CRADLE DETAIL**  
(NOT TO SCALE)



**CASING SEALED END DETAIL**  
(NOT TO SCALE)



**CASING SECTION**  
(NOT TO SCALE)

**TYPICAL CASING DETAIL**  
(NOT TO SCALE)

REVISION	DATE

APPROVALS	ENGINEER	DESIGNER	TECHNICIAN	CHECKED BY	APPROVED
	BSW	BSW	JAH	BSW	BSW

ALLIANCE CONSULTING ENGINEERS, INC. No. 26584  
 ALLIANCE CONSULTING ENGINEERS, INC. No. 26584  
 DATE: 11/13/23  
 SIGNATURE: [Signature]

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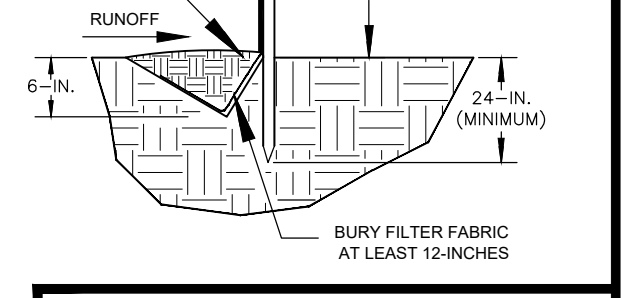
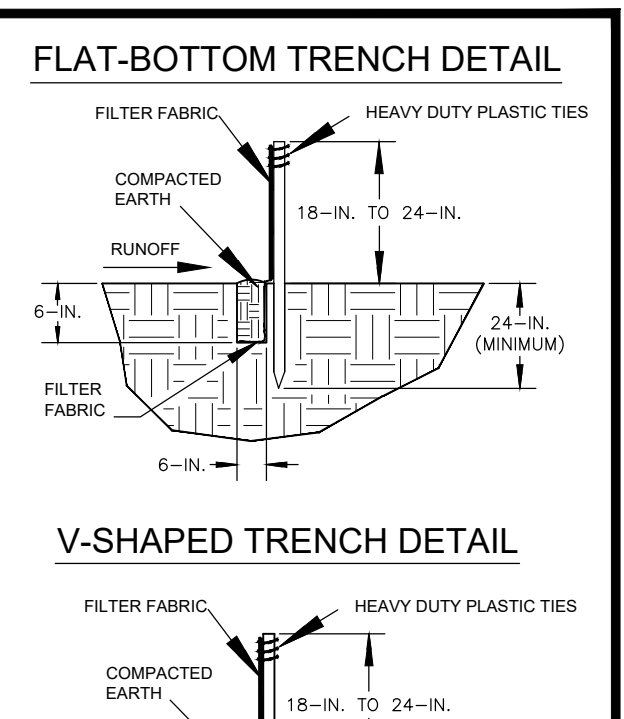
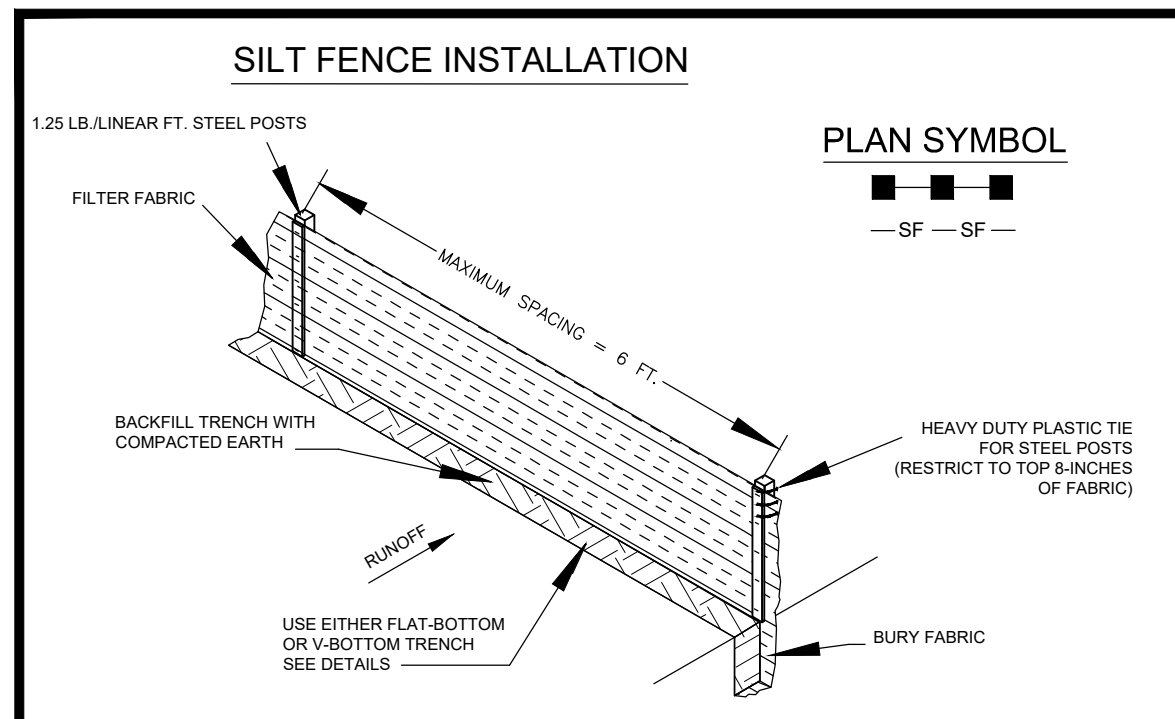
**WATER DETAILS**  
 (SHEET 3 OF 3)  
 SCALE: AS SHOWN  
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**PROJECT**  
 ± 1.555-LF EIGHT (8)-INCH PHASE 1 WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE ± 130-ACRE LYNCHAS RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA  
 CHESTERFIELD COUNTY SOUTH CAROLINA

FILE NAME:	C4.0.DWG	SHEET C4.2
REFERENCE FILE:	23183-0013 BASE.dwg	
PROJECT NO.:	23183-0013	

DWG NO. 01.1656-D28





- SILT FENCE - GENERAL NOTES**
- Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
  - Maximum sheet or overland flow path length to the silt fence shall be 100-feet.
  - Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
  - Silt fence joints, when necessary, shall be completed by one of the following options:
    - Wrap each fabric together at a support post with both ends fastened to the post, with a 1-foot minimum overlap.
    - Overlap silt fence by installing 3-feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy-duty plastic ties, or.
    - Overlap entire width of each silt fence roll from one support post to the next support post.
  - Attach filter fabric to the steel posts using heavy-duty plastic ties that are evenly spaced within the top 8-inches of the fabric.
  - Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
  - Install Silt Fence Checks (Tie-Backs) every 50-100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control

**SILT FENCE**

STANDARD DRAWING NO. SC-03 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

- SILT FENCE - POST REQUIREMENTS**
- Silt fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics:
    - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
    - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
    - Weight 1.25 pounds per foot (± 8%)
  - Posts shall be equipped with projections to aid in fastening of filter fabric.
  - Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17-square inches and be composed of 16 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
  - Install posts to a minimum of 24-inches. A minimum height of 1 to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
  - Post spacing shall be at a maximum of 6-feet on center.

- SILT FENCE - INSPECTION & MAINTENANCE**
- The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
  - Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
  - Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
  - Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
  - Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
  - Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/backs and/or reinstall silt fence, as necessary.
  - Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
  - Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

- SILT FENCE - FABRIC REQUIREMENTS**
- Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
    - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
    - Free of any treatment or coating which might adversely affect its physical properties after installation;
    - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
    - Have a minimum width of 36-inches.
  - Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
  - 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
  - Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
  - Filter Fabric shall be installed at a minimum of 24-inches above the ground.

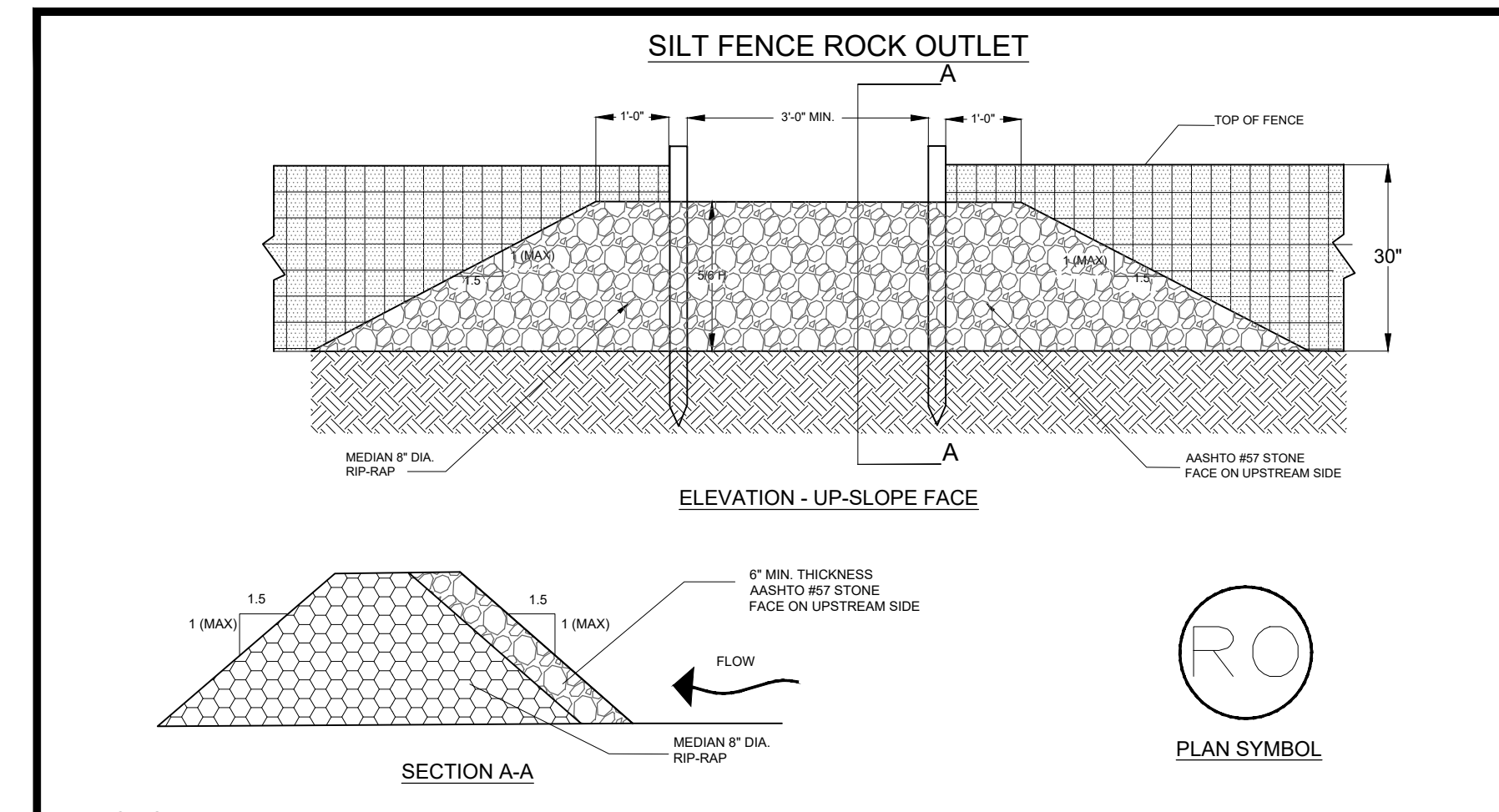
South Carolina Department of Health and Environmental Control

**SILT FENCE**

STANDARD DRAWING NO. SC-03 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

MAINTENANCE SCHEDULE		
CONTROL ITEM	INSPECTION FREQUENCY	MAINTENANCE ACTIVITY
SILT FENCE	-AFTER EACH STORM EVENT -WHEN A FENCE SECTION IS TOPPED OR UNDERMINED -WEEKLY	-REPAIR FENCE TO ORIGINAL SPECIFICATIONS -ANY FENCE TOPPED OR UNDERMINED MUST BE REPLACED WITH A ROCK FILTER OUTLET -ADHERE TO MANUFACTURER'S RECOMMENDATIONS FOR REPLACING FENCE -REMOVE DEPOSITS WHEN ACCUMULATION REACHES 1/2 ABOVE GROUND HEIGHT OF FENCE
STORM DRAIN INLET PROTECTION	-AFTER EACH STORM EVENT -WEEKLY	-REPAIR TRAP TO ORIGINAL DIMENSIONS -REMOVE ALL SEDIMENT FROM TRAP
ROCK CHECK DAMS	-AFTER EACH STORM EVENT -WEEKLY	-REPAIR TRAP TO ORIGINAL DIMENSIONS -REMOVE ALL SEDIMENT FROM FILTER ROCK
TEMPORARY / PERMANENT GRASSING	-AFTER EACH STORM EVENT -WEEKLY	-ENSURE A MIN. UNIFORM RATE OF COVERAGE OF 70% IS PRESENT -REGRADE AND RE-SEED ALL EROSION GULLIES -REMOVE ACCUMULATED SEDIMENT DEPOSITS AND RE-SEED -REPLACE/ADD MULCH WHERE NECESSARY



- NOTES:**
- WASHED STONE (#57) TO BE REMOVED AND REPLACED ONCE IT BECOMES CLOGGED WITH SEDIMENT.
  - SEDIMENT TO BE REMOVED WHEN ACCUMULATIONS REACH 1/3 HEIGHT OF SILT FENCE
  - THE KEY TO FUNCTIONAL ROCK OUTLETS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

South Carolina Department of Health and Environmental Control

**SILT FENCE ROCK OUTLET**

STANDARD DRAWING NO. SC-14 PAGE 1 of 1

NOT TO SCALE FEBRUARY 2014 DATE

**Temporary Seeding - Upstate**

Species	lbs./ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Browstop Millet (Alone)	40												
Browstop Millet (Mix)	10												
Rye Grass (Alone)	56												
Rye Grass (Mix)	10												
Rye Grass (Alone)	50												
Rye Grass (Mix)	8												
Wegway Lovegrass (Alone)	4												
Wegway Lovegrass (Mix)	2												

**For Steep Slopes/Cut Slopes**

- NOTES:**
- J-HOOK OR TIE-BACK SILT FENCE WILL BE ADDED ALONG SECTIONS OF SILT FENCE RUNNING PERPENDICULAR TO CONTOURS AND SPACES NO GREATER THAN 100 FEET APART - SEE PLAN VIEW ON SHEETS C5.0 - PHASE I EROSION AND SEDIMENT CONTROL PLAN SHEET.
  - IN AREAS OF PROTECTION TO THE EXISTING WETLANDS, A DOUBLE ROW OF SILT FENCE WILL BE INSTALLED AT THE EDGE OF THE WETLAND BUFFER AND THE ROWS OF SILT FENCE WILL BE A MINIMUM OF 3- FEET WHERE GRADING IS TIGHT OR 5- FEET IN AREAS WHERE SPACING ALLOWS.

**Sediment and Erosion Control Notes**

**Standard Notes:**

- If necessary, slopes, which exceed eight (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction. Temporary berms may be needed until the slope is brought to grade.
- Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after work has ceased, except as stated below.
  - Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions stabilization measures must be initiated as soon as practicable.
  - Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within fourteen (14) days, temporary stabilization measures must be initiated as soon as practicable.
- All sediment and erosion control devices shall be inspected every seven (7) days. If site inspections identify BMPs that are damaged or are not operating effectively, maintenance must be performed as soon as practical or as reasonably possible and before the next storm event whenever practicable. After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week, with no time period between inspections exceeding 9 days, and must be conducted until final stabilization is reached on all areas of the construction site. It is recommended that BMP's be assessed by the contractor within 24 hours of the end of a storm event of 1.0 inch or greater as well as during the first rain event after the initiation of construction activities, after the installation of the BMP'S.
- Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation. Fill, cover, and temporary seeding at the end of each day are recommended. If water is encountered while trenching, the water should be filtered to remove any sediments before being pumped back into any waters of the State.
- All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction in order to control erosion and/or office sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
- The contractor must take necessary action to minimize the tracking of mud onto paved roadways) from construction areas and the generation of dust. The contractor shall daily remove mud/soil from pavement, as may be required.
- Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during construction or obtain approval of an individual plan in accordance with S.C. Reg. 72-300 et seq. and SCR100000.
- Temporary diversion berms and/or ditches will be provided as needed during construction to protect work areas from upslope runoff and/or to divert sediment-laden water to appropriate traps or stable outlets.
- All waters of the State (WoS), including wetlands, are to be flagged or otherwise clearly marked in the field. A double row of silt fence is to be installed in all areas where a 50-foot buffer can't be maintained between the disturbed area and all WoS. A 10-foot buffer should be maintained between the last row of silt fence and all WoS.
- Litter, construction debris, oils, fuels, and building products with significant potential for impact (such as stockpiles of freshly treated lumber) and construction chemicals that could be exposed to storm water must be prevented from becoming a pollutant source in storm water discharges.

**Additional Notes:**

- Install permanent vegetative cover and the long-term erosion protection measures or structures as soon as practical in the development process.
- Provide for handling the increased runoff caused by changed soil and surface conditions. Use effective means to conserve existing on-site soil including the use of diversion ditches, graded waterways and storm sewers.
- Place silt fence barriers at locations shown on plan. Silt barriers shall be maintained in place and in good condition until ground cover is established.
- All disturbed areas not paved shall be grassed. Use temporary plant cover, mulching, and/or structures to control runoff and protect areas subject to erosion during construction.
- Sediment ponds are to be excavated to original grades upon the accumulation of 1.5' on sediment stake placed at outlet.
- Provide a temporary stone splash pad at all fire hydrants or other points of discharge during testing of the water distribution system.
- Should Permanent Grassing requirements conflict with Landscape Plans, Landscape Plans supercede Permanent Grassing requirements.

**Grassing Specifications:**

- All seed mixtures for the various seeding schedules shall be weighed and mixed to the proper proportions in the presence of the owner or the owner's representative.

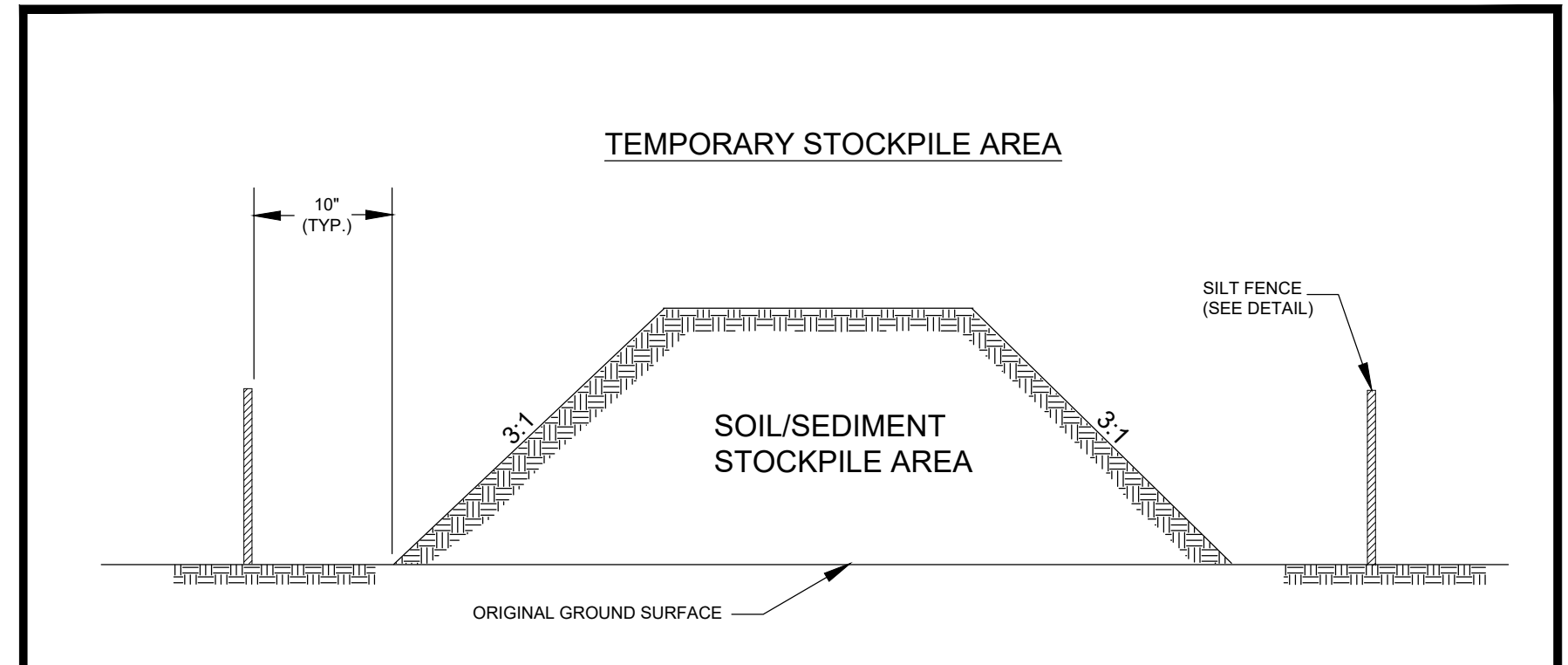
**Permanent Seeding - Upstate**

Species	lbs./ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Birds Grass (Alone)	40												
Birds Grass (Mix)	30												
Perennial Grass (Alone)	6-12												
Perennial Grass (Mix)	4-6												
Fescue Tall (C31) Alone	40												
Fescue Tall (C31) Mix	20												
Sevice Legume (Crested) Alone	40												
Sevice Legume (Crested) Mix	20												
Sevice Legume (Crested) with EL Impatiens	2												
Sevice Legume (Crested) with EL Impatiens and EL Impatiens	2												

**For Steep Slopes/Cut Slopes**

Species	lbs./ac	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Wegway Lovegrass	4												
Wegway Lovegrass (Mix)	2												
Wegway Lovegrass (Mix)	8-10												

**Double seed all grassed areas, water ways, and embankments from top of bank to bottom of bank on all bank slopes less than 3:1.**



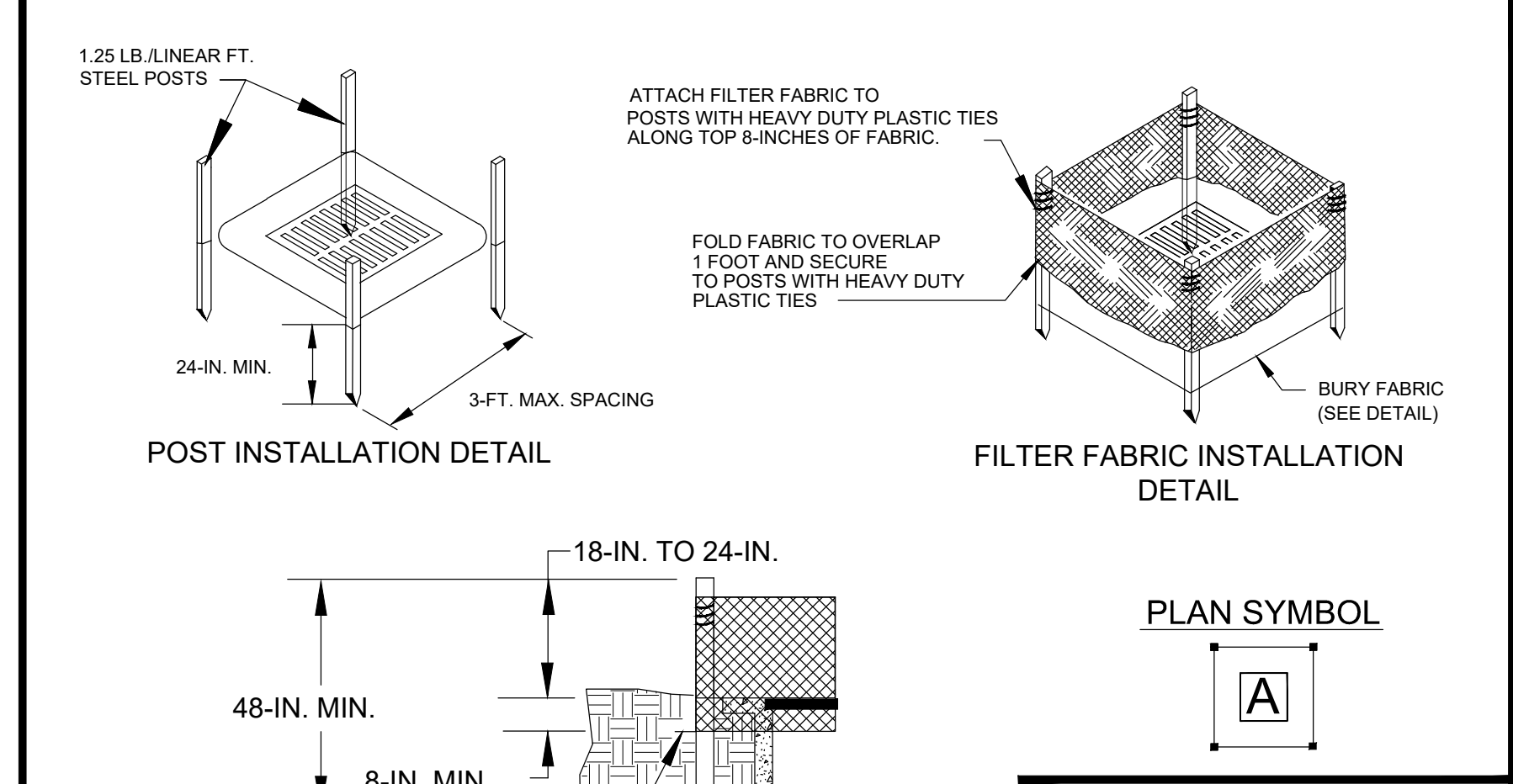
- NOTES:**
- SILT FENCE TO EXTEND AROUND ENTIRE PERIMETER OF STOCKPILE, OR IF STOCKPILE AREA IS LOCATED ON NEAR A SLOPE THE SILT FENCE IS TO EXTEND ALONG CONTOURS OF THE DOWN-GRADIENT AREA.
  - IF STOCKPILE IS TO REMAIN FOR MORE THAN 14 DAYS, TEMPORARY STABILIZATION MEASURES MUST BE IMPLEMENTED.
  - SILT FENCE SHALL BE MAINTAINED UNTIL STOCKPILE AREA HAS EITHER BEEN REMOVED OR PERMANENTLY STABILIZED.
  - THE KEY TO FUNCTIONAL TEMPORARY STOCKPILE AREAS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.

South Carolina Department of Health and Environmental Control

**TEMPORARY STOCKPILE**

STANDARD DRAWING NO. SC-15 PAGE 1 of 1

NOT TO SCALE FEBRUARY 2014 DATE



South Carolina Department of Health and Environmental Control

**Type A FILTER FABRIC INLET PROTECTION**

STANDARD DRAWING NO. SC-07 PAGE 1 of 2

NOT TO SCALE FEBRUARY 2014 DATE

**TYPE A - FILTER FABRIC REQUIREMENTS**

- Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
  - Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
  - Free of any treatment or coating which might adversely affect its physical properties after installation;
  - Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
  - Have a minimum width of 36-inches.
- Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
- 12-inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
- Filter fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
- Filter Fabric shall be installed at a minimum of 24-inches above the ground.

**TYPE A - INSPECTION & MAINTENANCE**

- The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
- Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall event that produces 1/2-inch or more of precipitation.
- Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
- Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
- Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
- Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
- Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
- Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

**TYPE A - POST REQUIREMENTS**

- Silt Fence posts must be 48-inch long steel posts that meet, at a minimum, the following physical characteristics:
  - Composed of a high strength steel with a minimum yield strength of 50,000 psi.
  - Include a standard "T" section with a nominal face width of 1.38-inches and a nominal "T" length of 1.48-inches.
  - Weight 1.25 pounds per foot (± 8%)
- Posts shall be equipped with projections to aid in fastening of filter fabric.
- Install posts to a minimum of 24-inches. A minimum height of 1 to 2-inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
- Post spacing shall be at a maximum of 3-feet on center.

South Carolina Department of Health and Environmental Control

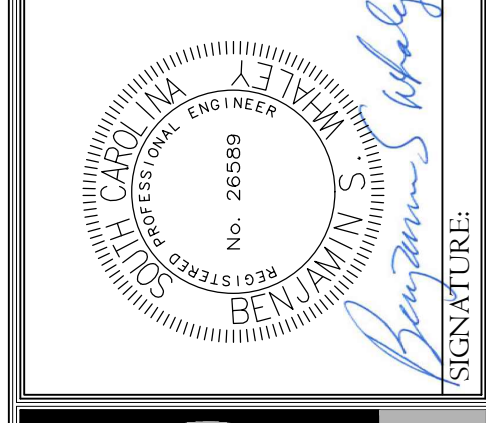
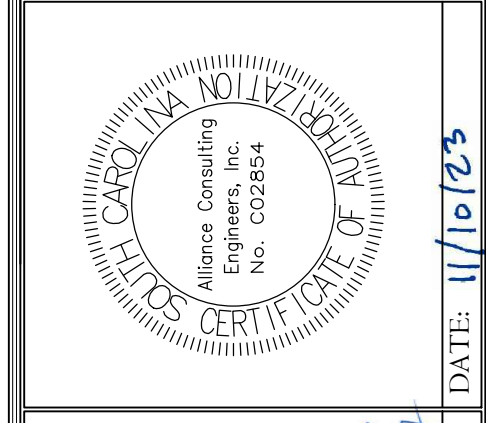
**Type A FILTER FABRIC INLET PROTECTION**

STANDARD DRAWING NO. SC-07 PAGE 2 of 2

GENERAL NOTES FEBRUARY 2014 DATE

REVISION DATE

APPROVALS	ENGINEER	DESIGNER	TELEPHONE	CHECKED BY	APPROVED
BSW	BSW	JAH	BSW	BSW	BSW



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EROSION AND SEDIMENT CONTROL DETAILS

SCALE: AS SHOWN

DATE: NOVEMBER, 2023

PROJECT # 1555-LF EIGHT (8)-INCH PHASE I WATERMAIN EXTENSION ALONG INDUSTRIAL PARK LANE WITHIN THE 4 130-ACRE LYGES RIVER INDUSTRIAL PARK SOUTH NEAR THE TOWN OF PAGELAND IN UNINCORPORATED CHESTERFIELD COUNTY, SOUTH CAROLINA CHESTERFIELD COUNTY SOUTH CAROLINA

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DWG NO. 01,1656-D28

SHEET C5.0

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