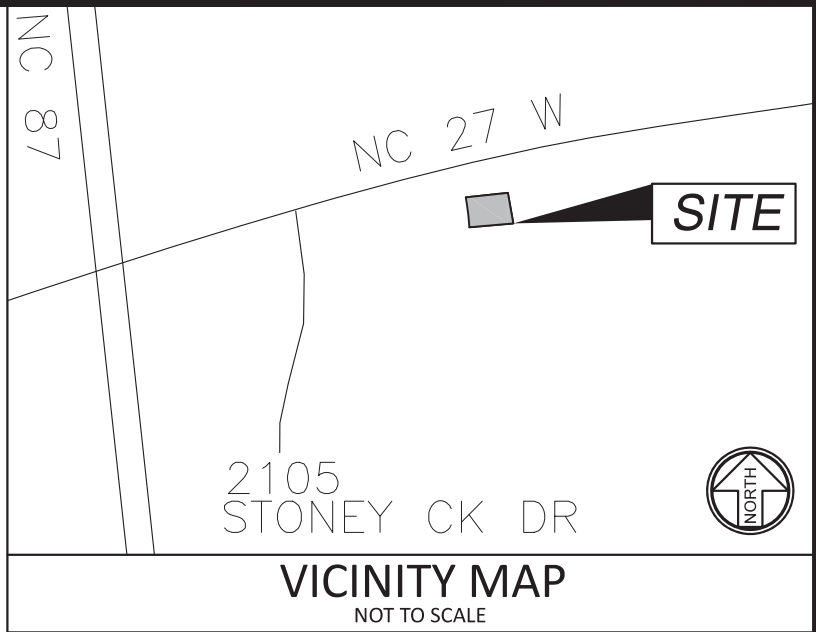


FOOD PANTRY

HARNETT COUNTY, NORTH CAROLINA



GENERAL NOTES:
(REFERENCE THIS SET OF PLANS FOR HRW WATER AND SEWER STANDARD NOTES.)

- ALL WORK SHALL COMPLY WITH HARNETT COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.
- THIS PROJECT IS SERVED BY PUBLIC WATER AND PUBLIC SEWER OWNED, MAINTAINED AND OPERATED BY HARNETT REGIONAL WATER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING UTILITIES AND REPAIRING ANY DAMAGE TO SAME. UTILITY LOCATIONS AS SHOWN ON PLANS ARE APPROXIMATE AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (1-800-632-4949) LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.
- PROVISIONS SHALL BE MADE TO ENSURE POSITIVE DRAINAGE ON THE SITE AT ALL TIMES. NATURAL DRAINAGE FEATURES DISTURBED BY CONSTRUCTION MUST BE RE-ESTABLISHED. NO PONDING DUE TO SPOILS STOCKPILING OR OTHER ACTIVITIES SHALL BE PERMITTED.
- WORK IN PUBLIC RIGHT-OF-WAYS OR PRIVATE EASEMENTS SHALL BE ACCOMPLISHED BY THE CONTRACTOR ACCORDING TO THE REQUIREMENTS OR CONDITIONS OF THE ENCROACHMENT PERMIT OR OTHER LEGAL DOCUMENTS AS THOUGH DOCUMENTS WERE ISSUED IN THE CONTRACTOR NAME. THE CONTRACTOR SHALL MAINTAIN COPIES OF THESE DOCUMENTS ON THE SITES AT ALL TIMES.
- WHEN THE CONTRACTOR IS UNABLE TO COMPLETE HIS WORK AS SHOWN ON THE PLANS BECAUSE OF AN EXISTING UTILITY, CONTRACTOR SHALL STAKE THE LOCATION OF THE UTILITY PRIOR TO PROCEEDING AND CONTACT THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY ALL PUBLIC AGENCIES, THE OWNER, THE ENGINEER AND ALL OTHER CONCERNED PARTIES WHEN CONSTRUCTION IS TO COMMENCE. PRIOR TO ANY CONSTRUCTION A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE MUNICIPALITY / AUTHORITY, THE CONTRACTOR, THE ENGINEER AND ANY OTHER INTERESTED PARTY.
- DATA REQUIRED FOR PREPARATION OF RECORD DRAWINGS SHALL BE OBTAINED BY THE CONTRACTOR AT THE TIME FOR INSTALLATION. DATA SHALL BE ACCUMULATED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD AND PROVIDED TO THE ENGINEER UPON COMPLETION OF THE PROJECT
- INSPECTIONS SHALL BE CONDUCTED IN ACCORDANCE WITH ALL APPLICABLE HARNETT COUNTY, NCDNER AND NCDOT STANDARDS.
- ALL EXCAVATED EXCESS OR WASTE SOILS AND MATERIAL SHALL BE REMOVED FROM THE SITE BY CONTRACTOR EXCEPT AS SPECIFICALLY APPROVED IN WRITING BY BOTH THE ENGINEER AND OWNER.
- WHEN CONCRETE SIDEWALKS, CURB AND GUTTER SECTIONS OR ASPHALT PAVEMENT ARE DAMAGED DUE TO CONSTRUCTION ACTIVITIES, THEY SHALL BE REPLACED IN A TIMELY MANNER BY THE CONTRACTOR TO ASSURE THE CONTINUED USE OF THESE FACILITIES BY ALL CONCERNED.
- CONTRACTOR IS TO COMPLY WITH ALL PROVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES WHEN WORKING ADJACENT TO AN EXISTING PUBLIC HIGHWAY RIGHT OF WAY.
- THE CONTRACTOR WILL MAINTAIN ALL EXISTING ROADS IN A NEAT AND CLEAN CONDITION THROUGHOUT THE COURSE OF THE PROJECT CONSTRUCTION.

WATER/SEWER CAPACITY NOTE:

APPROVAL OF THE PLAT/PLAN DOES NOT GUARANTEE WATER OR SEWER TREATMENT CAPACITY. CURRENT/FUTURE CAPACITY MAY NOT BE AVAILABLE. THIS DEVELOPMENT MAY REQUIRE ADDITIONAL IMPROVEMENTS TO THE EXISTING WATER SYSTEM OR SEWER SYSTEM TO MEET FUTURE WATER AND SEWER DEMANDS PRIOR TO A PRELIMINARY PLAY, CONSTRUCTION PLAN AND/OR FINAL PLAT APPROVAL.

AS THE OWNER OF RECORD, I HEREBY FORMALLY CONSENT TO THE PROPOSED DEVELOPMENT SHOWN ON THIS SITE PLAN AND ALL REGULATIONS AND REQUIREMENTS OF THE HARNETT COUNTY ORDINANCES

HARNETT COUNTY ORDINANCES

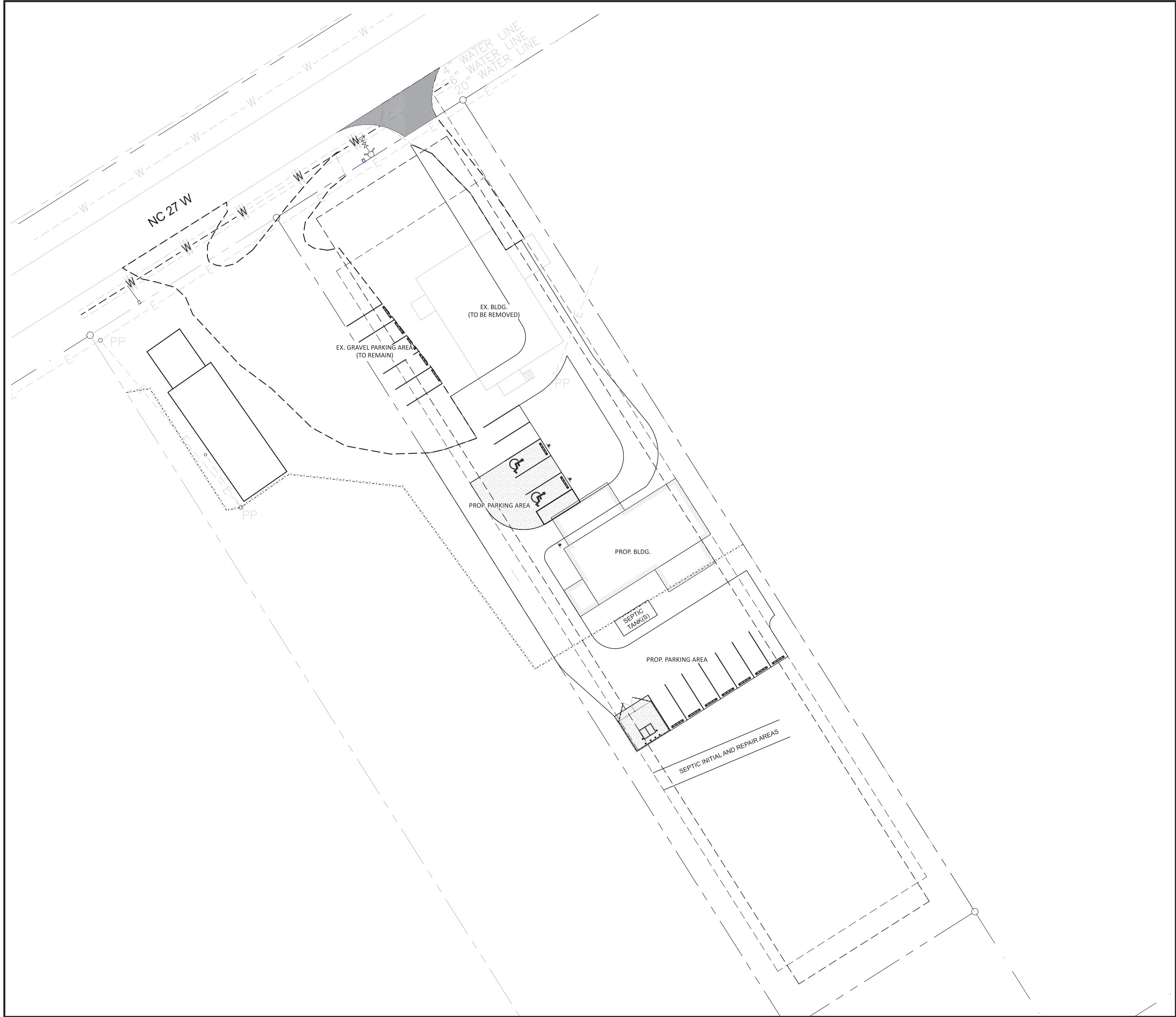
OWNER SIGNATURE

DATE

7/17/25

HARNETT REGIONAL WATER STANDARD NOTES:

- WATERLINE CONSTRUCTION AND TIE-IN WILL NEED TO BE COORDINATED AND INSPECTED BY HRW CONSTRUCTION INSPECTOR CHAD EVERETT.
- NCDOT UTILITIES MANUAL DATED 2022 SECTION 3.4.9.1 REQUIRES FIRE HYDRANTS TO BE LOCATED AT THE BACK OF THE DITCH. WATER METERS WILL ALSO NEED TO BE LOCATED AT THE BACK OF THE DITCH. THE WATER LINE IS LOCATED AT THE FRONT OF THE DITCH.



OVERALL PLAN (NTS)



Jarrold E. Hilliard, PE, CFM



Digitally signed by Jarrold E. Hilliard, PE, CFM
Date: 2025.07.18 12:21:25

DEVELOPER/OWNER

FIVENTWO MINISTRIES
17247 NC 27 W
SANFORD, NC 27332

FINAL
FOR CONSTRUCTION

SITE DATA TABLE

ACREAGE: 1.00 AC (43,560 SF)
NUMBER OF LOTS: N/A
TOWNSHIP: BARBECUE
CURRENT LAND USE CLASSIFICATION: LOW DENSITY RESIDENTIAL
LINEAR STREET LENGTH: N/A

Sheet List Table

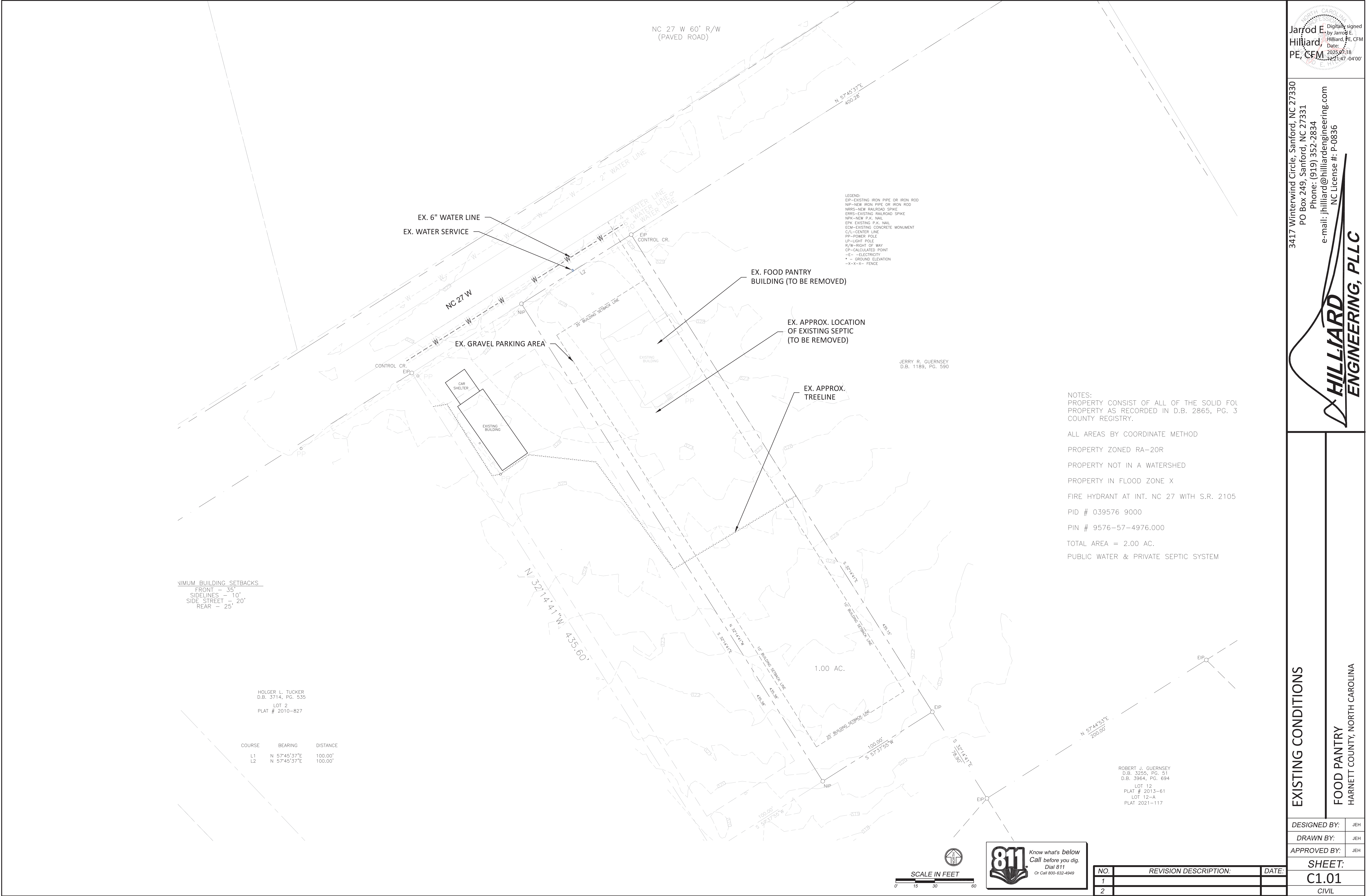
Sheet Title	Sheet Number	Submittal Date	Sheet Revision Date
COVER	G0.01	OCTOBER, 2024	
EXISTING CONDITION	C1.01	OCTOBER, 2024	
SITE LAYOUT	C2.01	OCTOBER, 2024	
EROSION CONTROL - INITIAL PHASE	C3.01	OCTOBER, 2024	
EROSION CONTROL - CONSTRUCTION PHASE	C3.02	OCTOBER, 2024	
EROSION CONTROL - FINAL PHASE	C3.03	OCTOBER, 2024	
EROSION CONTROL DETAIL	C3.04	OCTOBER, 2024	
FIRE HYDRANT INSTALLATION	C4.01	OCTOBER, 2024	
PARKING AREA PLAN	C5.01	OCTOBER, 2024	
GRADING AND DRAINAGE	C6.01	OCTOBER, 2024	
HRW UTILITY NOTES	C7.01	OCTOBER, 2024	
WATER MAIN DETAILS	C7.02	OCTOBER, 2024	

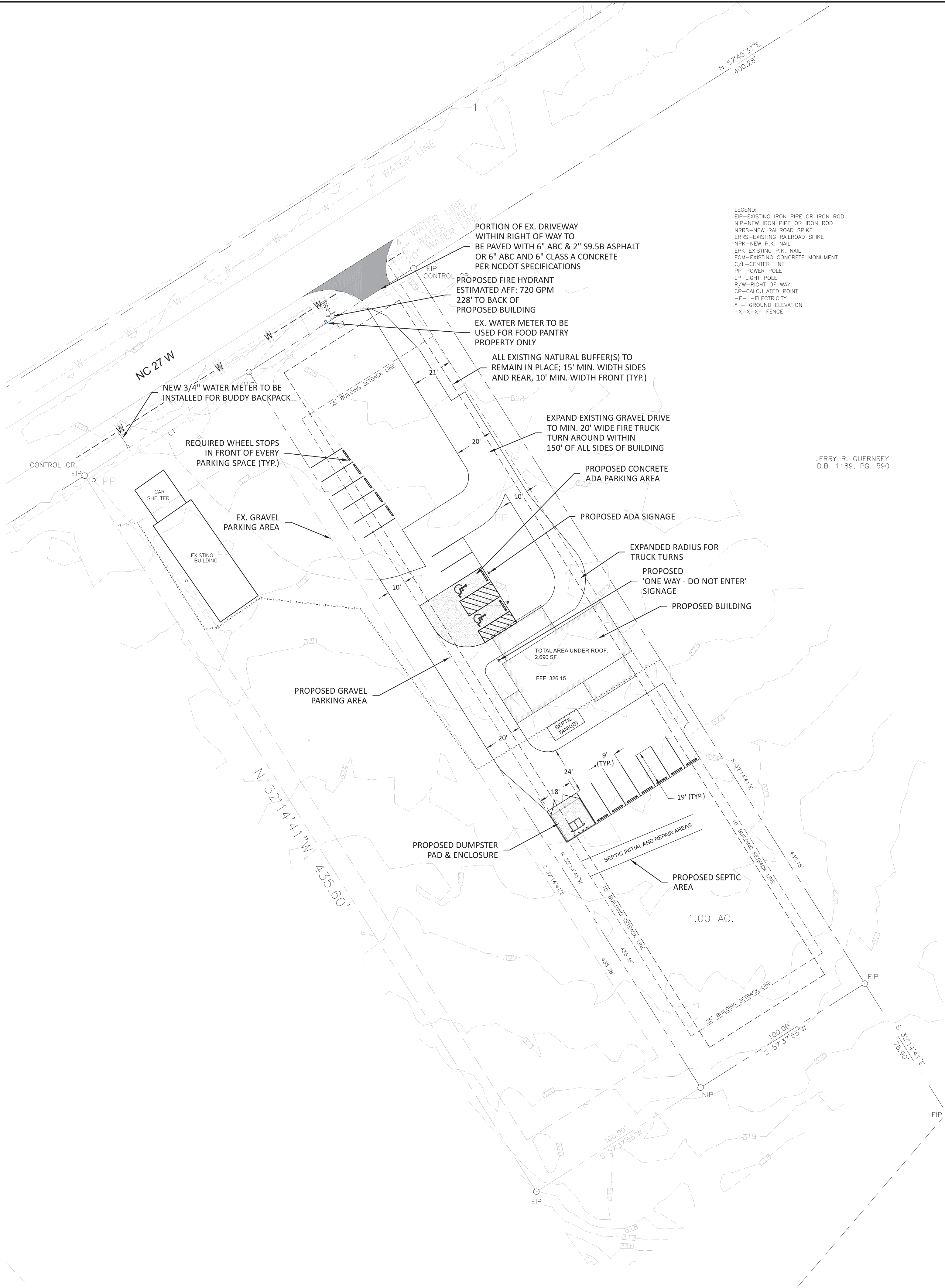
REVISION OCCURRENCE LIST

REVISION NO.	DATE	REVISION DESCRIPTION	BY
1			



3417 Winterwind Circle, Sanford, NC 27330
PO Box 249, Sanford, NC 27331
Phone: (919) 352-2834
e-mail: jhilliard@hilliardengineering.com
NC License #: P-0836





Owner - FIVENTWO MINISTRIES INC
Mailing Address - PO BOX 185 OLIVIA, NC 28368-0185
Physical Address - 17247 NC 27 W SANFORD, NC 27332

PIN - 9576-57-4976.000
PID - 039576 9000

Zoning - RA-20R - 0.98 acres (100.0%)
Zoning Jurisdiction - Harnett County
Plat Book and Page - 2023 : 631
Deed Book and Page - 4228 : 0560

Land Use: Low Density Residential
Within Military Corridor Overlay District
Not in Highway Corridor Overlay District
No wetlands exist on the property per Harnett County GIS

Coordinates: 35.311208, -79.082574
Stream Index: 18-20-13
Stream Name: Barbeque Creek
Description: From source to Upper Little River
Classification: C
Date of Class.: June 30, 1973
River Basin: Cape Fear

Existing Impervious Surfaces:
Existing Gravel Drive/Parking: 3,289 sf
Existing Building: 2,881 sf
Total Existing Impervious: 6,170 sf = 14%

Proposed Impervious Surfaces:
Proposed Building: 2,690 sf
Proposed Concrete Parking: 1,179 sf
Proposed Gravel Drive/Parking: 9,788 sf
Proposed Concrete Dumpster Pad: 342 sf
Total Proposed Impervious: 13,999 sf = 32%

1. PROPOSED SIGNS WILL BE PLACED AT LEAST 20' FROM THE INTERSECTION R/W'S AND A SEPARATE PERMIT WILL BE REQUIRED BEFORE CONSTRUCTION
2. A CERTIFIED FOUNDATION SURVEY, OR SETBACK VERIFICATION SURVEY, IS REQUIRED TO BE SUBMITTED AT THE COMPLETION OF FOUNDATION CONSTRUCTION
3. THIS DEVELOPMENT IS NOT WITHIN ONE MILE OF A VOLUNTARY AGRICULTURAL DISTRICT
4. ALL FIRE HYDRANTS MUST BE WITHIN 400' OF THE BUILDING.
5. ALL PROPOSED LIGHTING WILL MEET THE UNIFIED DEVELOPMENT ORDINANCE.

PROJECT #: SITE2411-0001
CONDITIONAL USE PERMIT #: BA-CU-21-14 APPROVED 10/13/14
BUSINESS OPERATING HOURS SHALL BE 8 AM TO 6 PM EVERY DAY.

EXISTING WATER METER SHALL BE USED FOR FOOD PANTRY ONLY.
ADJACENT PROPERTIES SHALL OBTAIN A SEPARATE WATER SERVICE FOR EACH PROPERTY AS SHOWN.

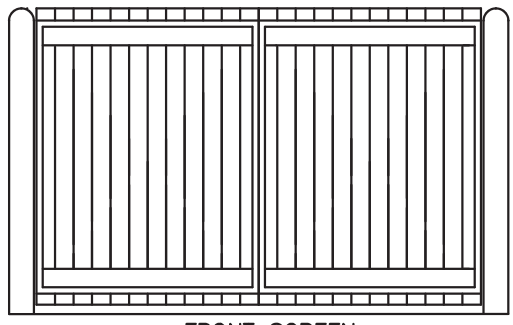
NC 27 IS ON THE HARNETT COUNTY COMPREHENSIVE TRANSPORTATION PLAN

CONTRACTOR SHALL NOTE UTILITY CONSTRUCTION SEQUENCE ON HRW WEBSITE: www.harnettwater.org/important-forms

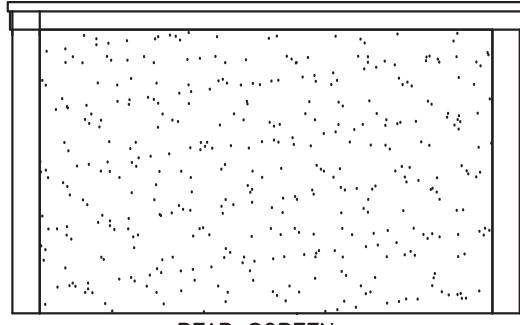
EXTENSION OF EXISTING WATER SERVICE TO THE NEW BUILDING SHALL BE PERFORMED BY A NC LICENSED PLUMBER AND SHALL BE COORDINATED WITH HARNETT COUNTY AS REQUIRED.

FIRE HYDRANT AND WATER METER TO BE INSTALLED BY HRW.

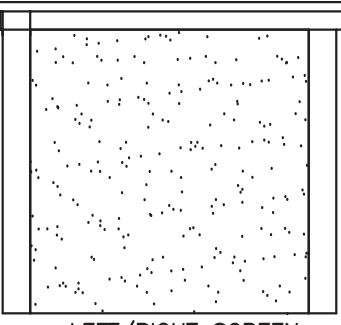
SEWER SERVICE DESIGN FLOW PER SEPTIC DESIGNER:
Wastewater System New .0403 Eng Low Flow No
Wastewater Strength Domestic Effluent Standard DSE
Facility Type Business Water Supply Public Water
Design Wastewater Flow 120 gpd gal/unit 12
Basis for Flow 10 employees max occupancy
Basement No Fixtures in basement? No
Crawl Space No Slab Foundation Yes



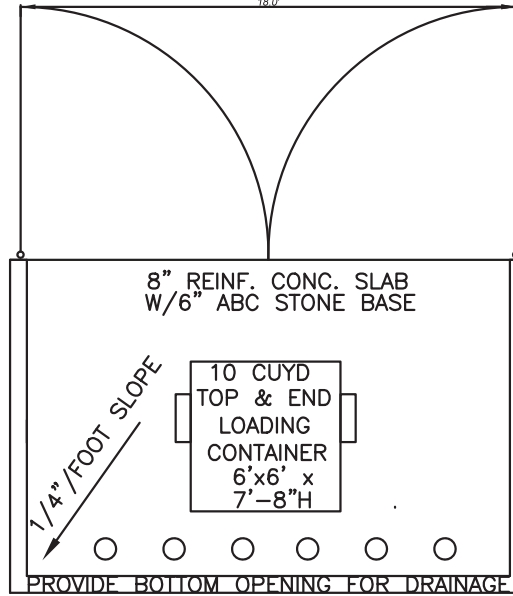
FRONT SCREEN



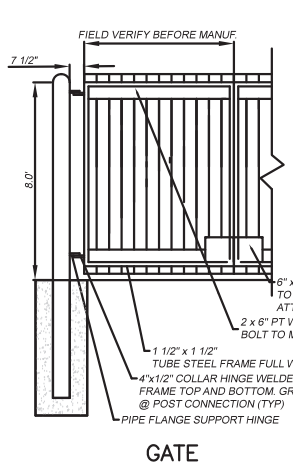
REAR SCREEN



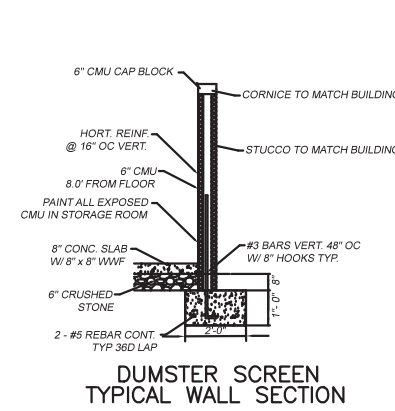
LEFT/RIGHT SCREEN



FLOOR PLAN

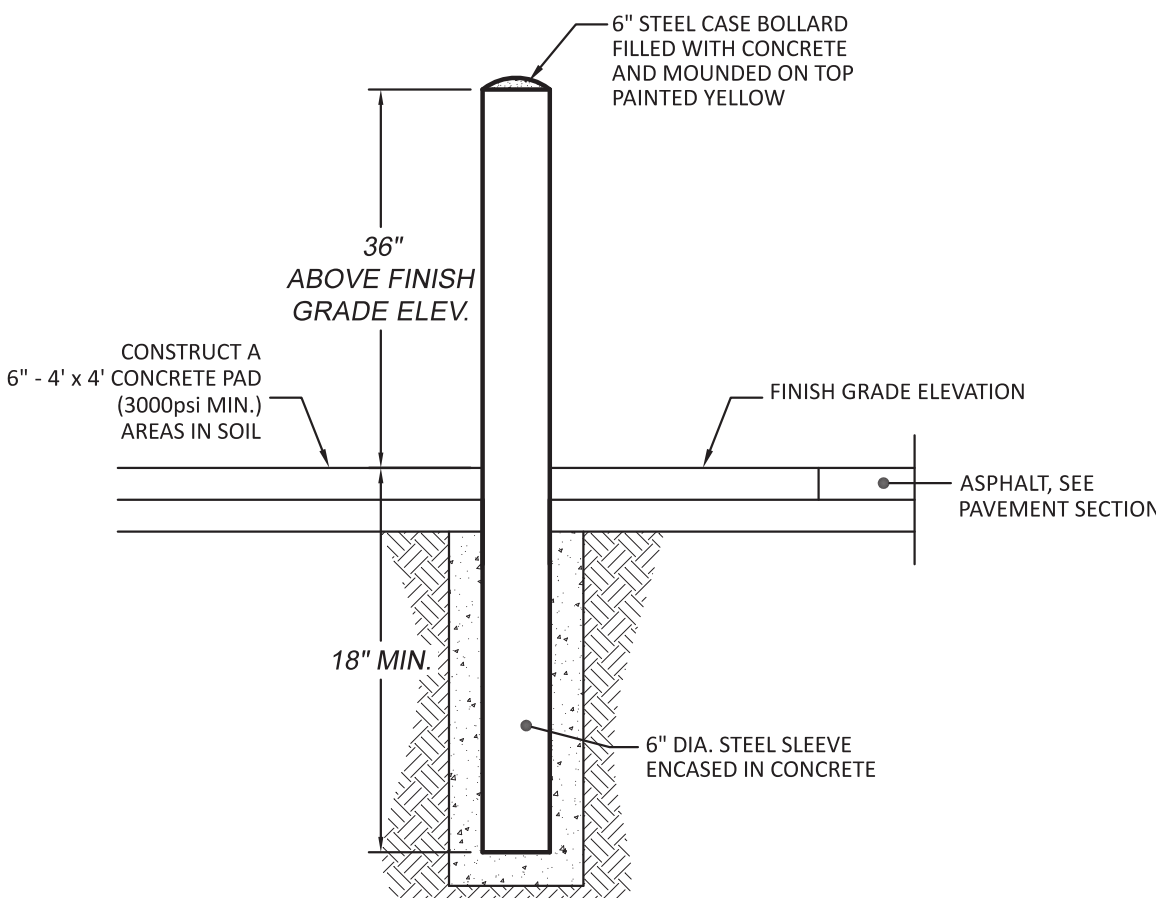


GATE



DUMSTER SCREEN TYPICAL WALL SECTION

DUMSTER PAD DETAIL
NTS



CONCRETE BOLLARD
SCALE: N.T.S.



NO.	REVISION DESCRIPTION:	DATE:
1		
2		

3417 Winterwind Circle, Sanford, NC 27330
PO Box 249, Sanford, NC 27331
Phone: (919) 352-2834
e-mail: jhilliard@hilliardengineering.com
NC License #: P-0836

Digitally signed by Jarrod E. Hilliard, Jr. DN: cn=Jarrod E. Hilliard, o=J.E. Hilliard & Associates, ou=J.E. Hilliard & Associates, email=jhilliard@hilliardengineering.com, c=US, 2025.07.18 12:25:03 -0400

HILLIARDENGINEERING, PLLC

FOOD PANTRY
HARNETT COUNTY, NORTH CAROLINA


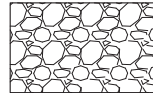

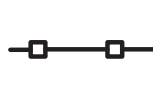







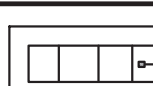








SITE LAYOUT

DESIGNED BY: JEH
DRAWN BY: JEH
APPROVED BY: JEH

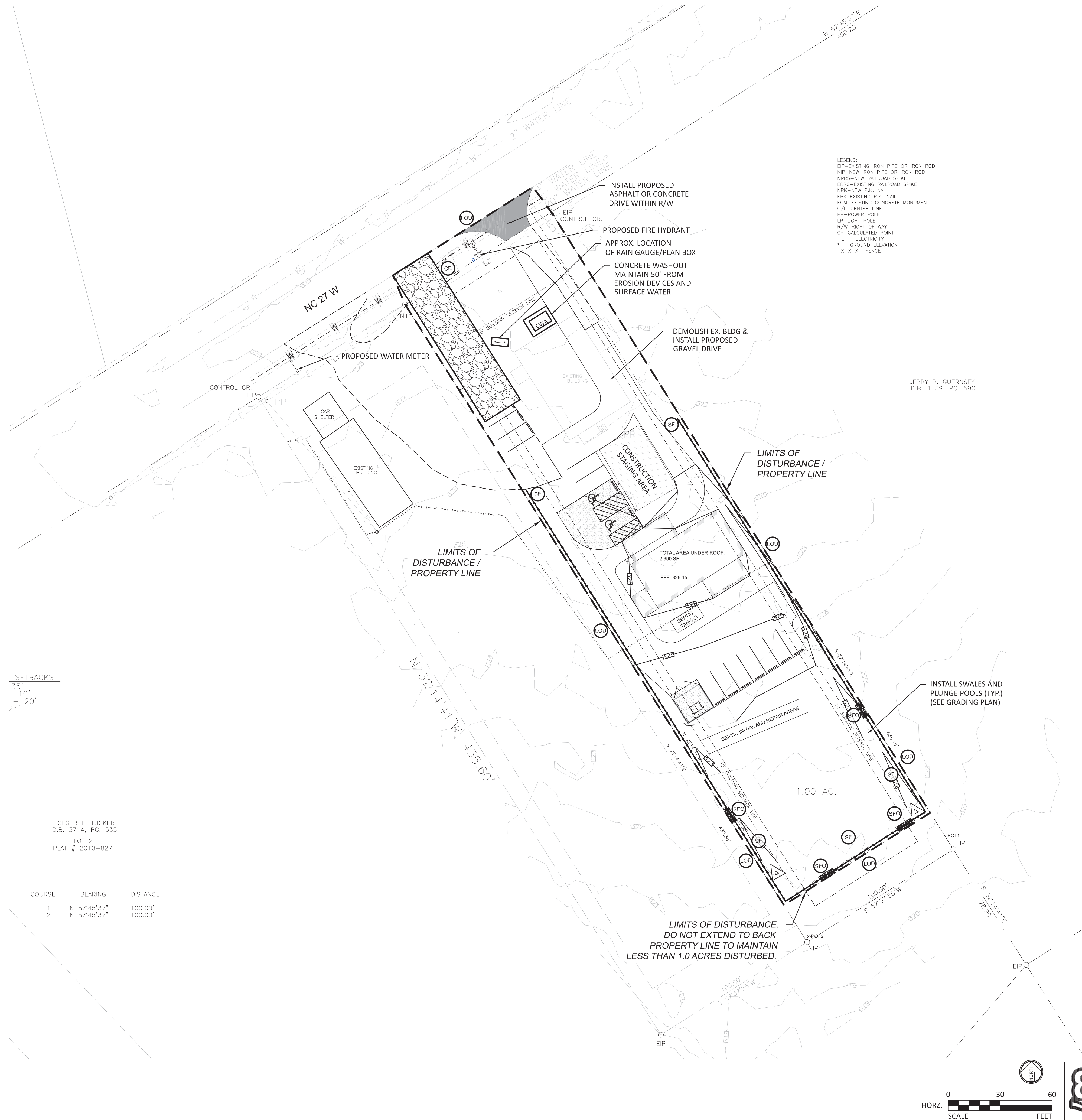
SHEET:
C2.01
CIVIL



1. CHECK ALL SILT FENCE AND REPAIR AS NECESSARY. ASSURE ANY ERODED AREA ARE STABILIZED WITH TEMPORARY SEEDING AND MULCH OR EROSION CONTROL MATTING AS INDICATED ON THE PLANS.
2. ROUGH GRADE PARKING AREAS.
3. INSTALL FIRE HYDRANT AS SHOWN ON THE PLANS.
4. GRADE AND PREPARE SUBGRADE FOR ANY PAVED AREAS.
5. PLACE COMPACTED G.A.B.C AS REQUIRED.
6. INSTALL SEPTIC SYSTEM.
7. FINISH FINE GRADING THE PARKING AREA.
8. IMMEDIATELY STABILIZE ALL DISTURBED GROUND THAT WILL NOT RECEIVED A PAVEMENT COVERING WITH WITH PERMANENT GROUND COVER.

THIS IS A GENERAL LEGEND.
NOT ALL SYMBOLS APPLY TO THIS SPECIFIC PROJECT.

SYMBOL		PRACTICE		DESCRIPTION	
		CONSTRUCTION ENTRANCE	A STONE STABILIZED PAD LOCATED AT ANY POINT THAT TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO A PUBLIC RIGHT-OF-WAY, STREET, ALLEY, SIDEWALK, OR PARKING PLOT WHICH WILL REDUCE OR ELIMINATE THE TRANSPORT OF MUD FROM THE CONSTRUCTION SITE.		
		SILT FENCE	A TEMPORARY STRUCTURE USED TO SLOW THE VELOCITY OF RUN-OFF, CAUSE SEDIMENT DEPOSITION AT THE STRUCTURE, AND FILTER SEDIMENT FROM RUN-OFF.		
		SILT FENCE OUTLET PROTECTION	A TEMPORARY STRUCTURE AS A REINFORCED OUTLET AT LOW POINTS OF THE SILT FENCE. INSTALL #57 WASHED STONE AT UPSTREAM FLOW WITH HARDWARE CLOTH. (SEE DETAIL)		
		TEMPORARY DIVERSION	A TEMPORARY RIDGE OR EXCAVATED CHANNEL OR COMBINATION RIDGE AND CHANNEL CONSTRUCTED ACROSS SLOPING LAND ON A PREDETERMINED GRADE.		
		LIMITS OF DISTURBANCE	A DEFINED AREA THAT ALL LAND DISTURBANCE WILL OCCUR DURING CONSTRUCTION.		
		SKIMMER BASIN	AN EARTHEN EMBANKMENT SUITABLY LOCATED TO CAPTURE RUNOFF, WITH A TRAPEZOIDAL SPILLWAY LINED WITH AN IMPERMEABLE GEOTEXTILE OR LAMINATED PLASTIC MEMBRANE, AND EQUIPPED WITH A FLOATING SKIMMER FOR DEWATERING.		
		POROUS BAFFLE	POROUS BARRIERS INSTALLED INSIDE A TEMPORARY SEDIMENT TRAP SKIMMER BASIN, OR SEDIMENT BASIN TO REDUCE THE VELOCITY AND TURBULENCE OF THE WATER FLOWING THROUGH THE MEASURE, AND TO FACILITATE THE SETTLING OF SEDIMENT FROM THE WATER BEFORE DISCHARGE.		
		WATTLE/ROLLED EROSION CONTROL PRODUCT FOR SLOPES	PROTECTIVE LINING TO PREVENT SOIL EROSIONS DUE TO EXCESSIVE STORMWATER VELOCITIES THAT PROHIBITS VEGETATIVE LININGS.		
		TEMPORARY SLOPE DRAINS	FLEXIBLE TUBING OR CONDUIT EXTENDING TEMPORARILY FROM TOP TO THE BOTTOM OF CUT OR FILL SLOPE.		
	NAG S78BN	EROSION-RESISTANT LININGS DESIGNED FOR CONVEYANCE AND SAFE DISPOSAL OF EXCESS STORMWATER RUNOFF.			
	RIP RAP LINER WITH FILTER FABRIC				

CONTRACTOR SHALL BE REQUIRED TO ESTABLISH GROUND STABILIZATION AS PER FOLLOWING CHART.			
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS	APPLICABLE THIS PROJECT
PERIMETER DIKES, SWALES, DITCHES AND	7 DAYS	NONE	YES
HIGH QUALITY WATER (HOW) ZONES FLATTER THAN 4:1	7 DAYS	NONE	NO
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1 14 DAYS ARE ALLOWED	NO
SLOPES 3:1 OR	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH	YES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETER AND HOW ZONES)	YES
TYPICAL GROUND COVER STABILIZATION TYPES - GRASS AND OR SOD, WHEAT STRAW, MULCH, BIODEGRADABLE STRAW MATTING, SYNTHETIC MATTING, ETC.			



		Jarrod E. Hilliard PE, CFM	
3417 Winterwind Circle, Sanford, NC 27330 PO Box 249, Sanford, NC 27331 Phone: (919) 352-2834 e-mail: jhilliard@hilliardengineering.com NC License #: P-0836			
EROSION CONTROL - CONSTRUCTION PHASE		FOOD PANTRY	
DESIGNED BY:		JEH	
DRAWN BY:		JEH	
APPROVED BY:		JEH	
SHEET:		C3.02	
CIVIL		HARNETT COUNTY, NORTH CAROLINA	

CONSTRUCTION SEQUENCE & EROSION CONTROL MEASURES - FINAL PHASE:

1. CHECK THAT SITE DRAINS PROPERLY.
2. PROVIDE EROSION CONTROL MATTING AND RESEED ALL AREAS THAT HAVE BEEN WASHED OR DO NOT HAVE ESTABLISHED STABILIZED GROUND COVER. I.
3. COMPLETE ALL REMAINING SITE IMPROVEMENTS.
4. PLACE FINAL PAVEMENT LAYERS AND PAVEMENT MARKINGS AS REQUIRED.
5. ONCE ALL AREAS OF THE SITE ARE COMPLETELY STABILIZED, REMOVE ALL EROSION CONTROL DEVICES.

NOTE:

THIS IS A GENERAL LEGEND.
NOT ALL SYMBOLS APPLY TO THIS SPECIFIC PROJECT.

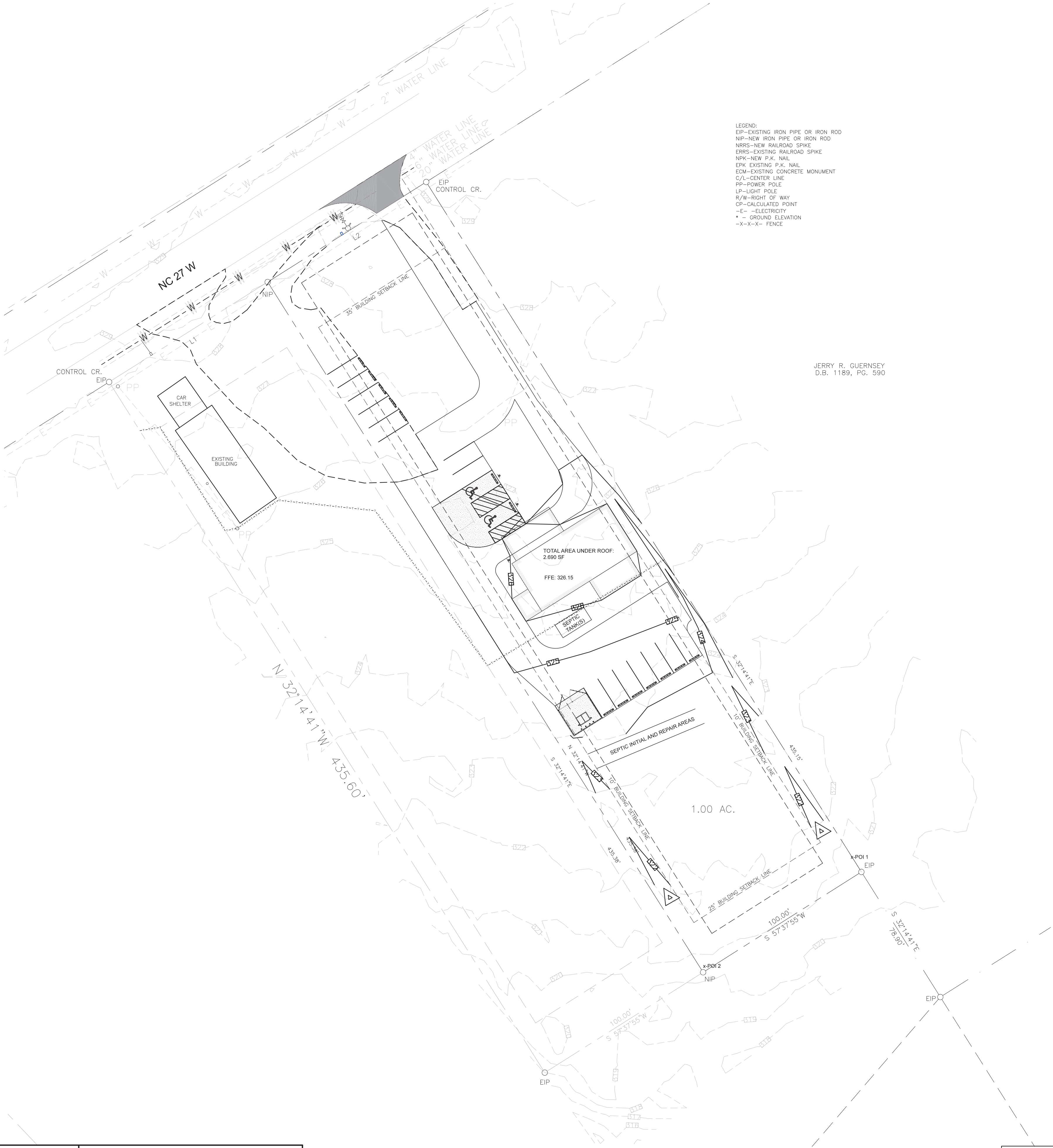
SYMBOL	PRACTICE	DESCRIPTION
<div>CE</div> <div></div>	CONSTRUCTION ENTRANCE	A STONE STABILIZED PAD LOCATED AT ANY POINT THAT TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE TO A PUBLIC RIGHT-OF-WAY STREET, ALLEY, SIDEWALK, OR PARKING LOT WHICH WILL REDUCE OR ELIMINATE THE TRANSPORT OF MUD FROM THE CONSTRUCTION SITE.
<div>SF</div> <div></div>	SILT FENCE	A TEMPORARY STRUCTURE USED TO SLOW THE VELOCITY OF RUN-OFF, CAUSE SEDIMENT DEPOSITION AT THE STRUCTURE, AND FILTER SEDIMENT FROM RUN-OFF.
<div>SFO</div> <div></div>	SILT FENCE OUTLET PROTECTION	A TEMPORARY STRUCTURE AS A REINFORCED OUTLET AT LOW POINTS OF THE SILT FENCE. INSTALL #57 WASHED STONE AT UPSTREAM FLOW WITH HARDWARE CLOTH. (SEE DETAIL)
<div>TD</div> <div></div>	TEMPORARY DIVERSION	A TEMPORARY RIDGE OR EXCAVATED CHANNEL OR COMBINATION RIDGE AND CHANNEL CONSTRUCTED ACROSS SLOPING LAND ON A PREDETERMINED GRADE.
<div>LOD</div> <div></div>	LIMITS OF DISTURBANCE	A DEFINED AREA THAT ALL LAND DISTURBANCE WILL OCCUR DURING CONSTRUCTION.
<div>SK</div> <div></div>	SKIMMER BASIN	AN EARTHEN EMBANKMENT SUITABLY LOCATED TO CAPTURE RUNOFF, WITH A TRAPEZOIDAL SPILLWAY LINED WITH AN IMPERABLE GEOTEXTILE OR LAMINATED PLASTIC MEMBRANE, AND EQUIPPED WITH A FLOATING SKIMMER FOR DEWATERING.
<div>BF</div> <div></div>	POROUS BAFFLE	POROUS BARRIERS INSTALLED INSIDE A TEMPORARY SEDIMENT TRAP, SKIMMER BASIN, OR SEDIMENT BASIN TO REDUCE THE VELOCITY AND TURBULENCE OF THE WATER FLOWING THROUGH THE MEASURE, AND TO FACILITATE THE SETTLING OF SEDIMENT FROM THE WATER BEFORE DISCHARGE.
<div>RECP</div> <div></div>	WATTLEROLLED EROSION CONTROL PRODUCT FOR SLOPES	PROTECTIVE LINING TO PREVENT SOIL EROSIONS DUE TO EXCESSIVE STORMWATER VELOCITIES THAT PROHIBITS VEGETATIVE LININGS.
<div>TSD</div> <div></div>	TEMPORARY SLOPE DRAINS	FLEXIBLE TUBING OR CONDUIT EXTENDING TEMPORARILY FROM TOP TO THE BOTTOM OF CUT OR FILL SLOPE.
<div></div> <div></div>	NAG S75BN RIP RAP LINER WITH FILTER FABRIC	EROSION-RESISTANT LININGS DESIGNED FOR CONVEYANCE AND SAFE DISPOSAL OF EXCESS STORMWATER RUNOFF.

GROUND STABILIZATION REQUIREMENTS

CONTRACTOR SHALL BE REQUIRED TO ESTABLISH GROUND STABILIZATION AS PER FOLLOWING CHART.			
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS	APPLICABLE THIS PROJECT
PERIMETER DIKES, SWALES, DITCHES AND	7 DAYS	NONE	YES
HIGH QUALITY WATER (HQW) ZONES FLATTER THAN 4:1	7 DAYS	NONE	NO
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1 14 DAYS ARE ALLOWED	NO
SLOPES 3:1 OR	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH	YES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETER AND HQW ZONES)	YES
TYPICAL GROUND COVER STABILIZATION TYPES - GRASS AND OR SOD, WHEAT STRAW, MULCH, BIODEGRADABLE STRAW MATTING, SYNTHETIC MATTING, ETC.			

SEEDING SCHEDULE FOR PERMANENT VEGETATION			
SCHEDULE NO.	COMMON NAME OF SEED	RATE PER ACRE (LBS.)	PLANTING DATES
1	COMMON BERMUDA (HULLED)	210	MARCH 16 TO AUG. 31
	TALL FESCUE	140	
2	COMMON BERMUDA (UNHULLED)	175	SEPT. 1 TO MARCH 15

NOTES:
GIANT BERMUDA SEED, INCLUDING NK-37, SHALL NOT BE USED.
THE CONTRACTOR SHALL OBTAIN A SATISFACTORY STAND OF PERENNIAL VEGETATION WHOSE ROOT SYSTEM SHALL BE DEVELOPED SUFFICIENTLY TO SURVIVE DRY PERIODS AND WINTER WEATHER, AND BE CAPABLE OF RE-ESTABLISHMENT IN THE SPRING. THE PERENNIAL VEGETATIVE COVER SHALL HAVE A MINIMUM COVERAGE DENSITY OF 70% FOR THE SEEDED AREAS. CONTRACTOR SHALL DETERMINE ALL RATES OF APPLICATION NECESSARY TO PRODUCE THE REQUIRED STAND OF GRASS, AND SHALL FOLLOW THE APPLICATION PROCEDURES AS SPECIFIED HEREIN.



Jarrold E. Hilliard, PE, CFM
Digital signed by Jarrold E. Hilliard, PE, CFM
Date: 2025.07.18 12:25:53 -04'00'

3417 Winterwind Circle, Sanford, NC 27330
PO Box 249, Sanford, NC 27331
Phone: (919) 352-2834
e-mail: jhilliard@hilliardengineering.com
NC License #: P-0836

HILLIARD ENGINEERING, PLLC

EROSION CONTROL - FINAL PHASE

FOOD PANTRY
HARNETT COUNTY, NORTH CAROLINA

DESIGNED BY: JEH
DRAWN BY: JEH
APPROVED BY: JEH

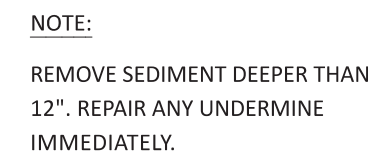
SHEET:
C3.03
CIVIL



NO.	REVISION DESCRIPTION:	DATE:
1		
2		



- ## MAINTENANCE
1. MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.



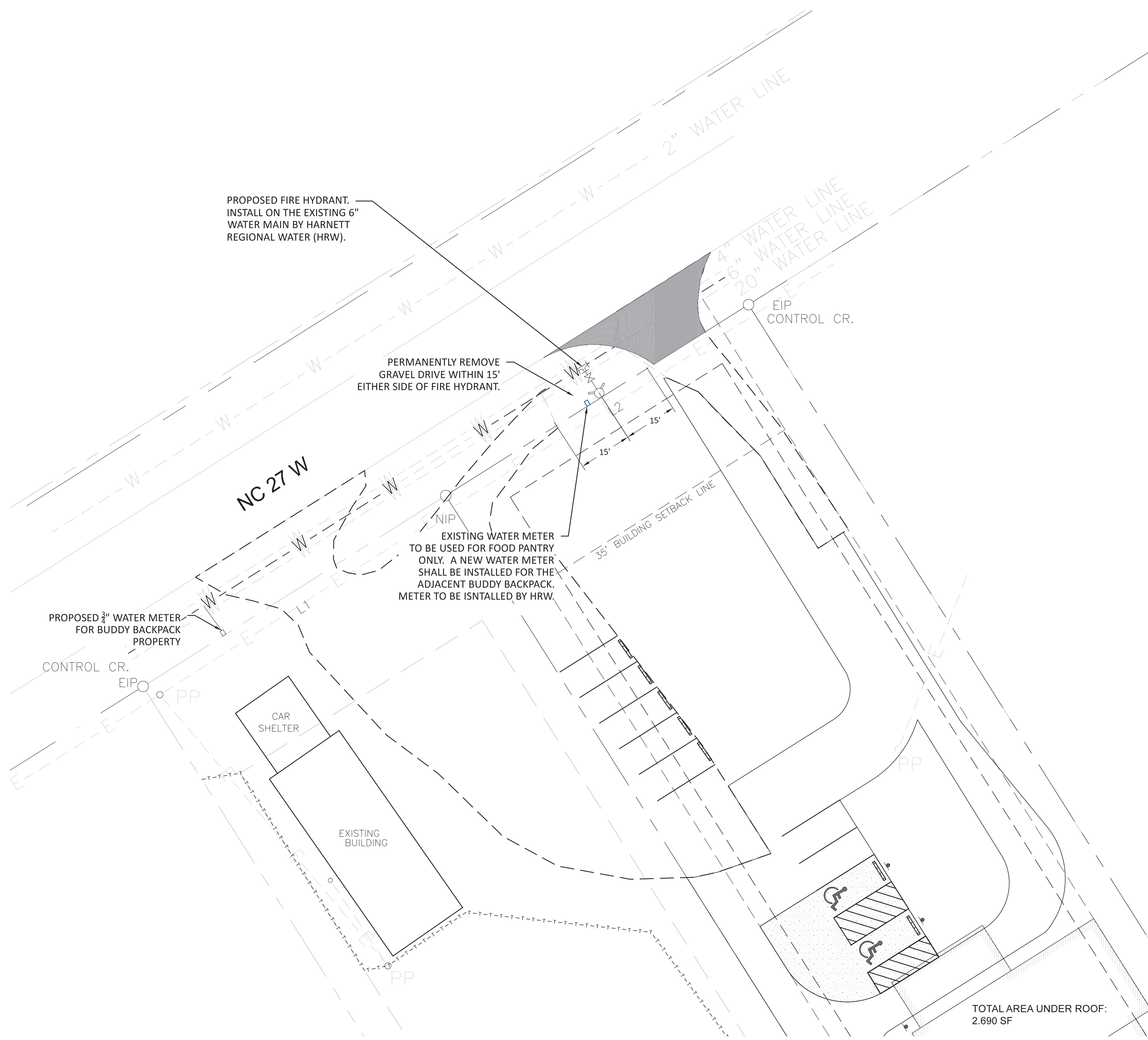
- SF** SILT FENCE DETAIL
SCALE: N.T.S.



- ## MAINTENANCE
- INSPECT DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2) INCH OR GREATER MANUAL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL WHEN NEEDED.
- ANTICIPATE CORROSION AND DEPOSITION AROUND THE DAM AND EROSION FROM HIGH FLOODS AROUND THE EDGES OF THE DAM. CORRECT ALL DAMAGE IMMEDIATELY IF SIGNIFICANT FLOODING OCCURS AROUND DAM. ADDITIONAL MEASURES CAN BE TAKEN SUCH AS INSTALLING A PROTECTIVE RIPRAP LINE IN THAT PORTION OF THE CHANNEL, PRACTICE 8.3, RIPRAP LINE AND PAVED CHANNELS.
- REMOVE SEDIMENT ACCUMULATED BEHIND THE DAMS AS NEEDED TO PREVENT DAMAGE TO CHANNEL VEGETATION. ALLOW THE CHANNEL TO DRAIN THROUGH THE DAM. PREVENT LARGE FLOODS FROM CARRYING SEDIMENT OVER THE DAM.
- ADD STONES TO DAM AS NEEDED TO MAINTAIN DESIGN HEIGHT AND CROSS SECTION.



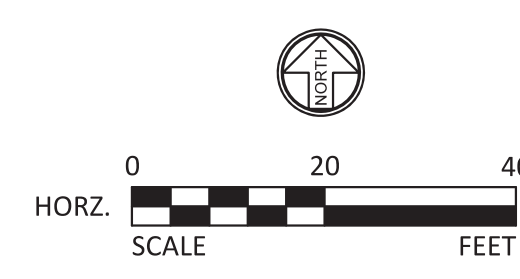
NOTE:
FIRE HYDRANT AND WATER METER TO BE
INSTALLED BY HARNETT REGIONAL WATER



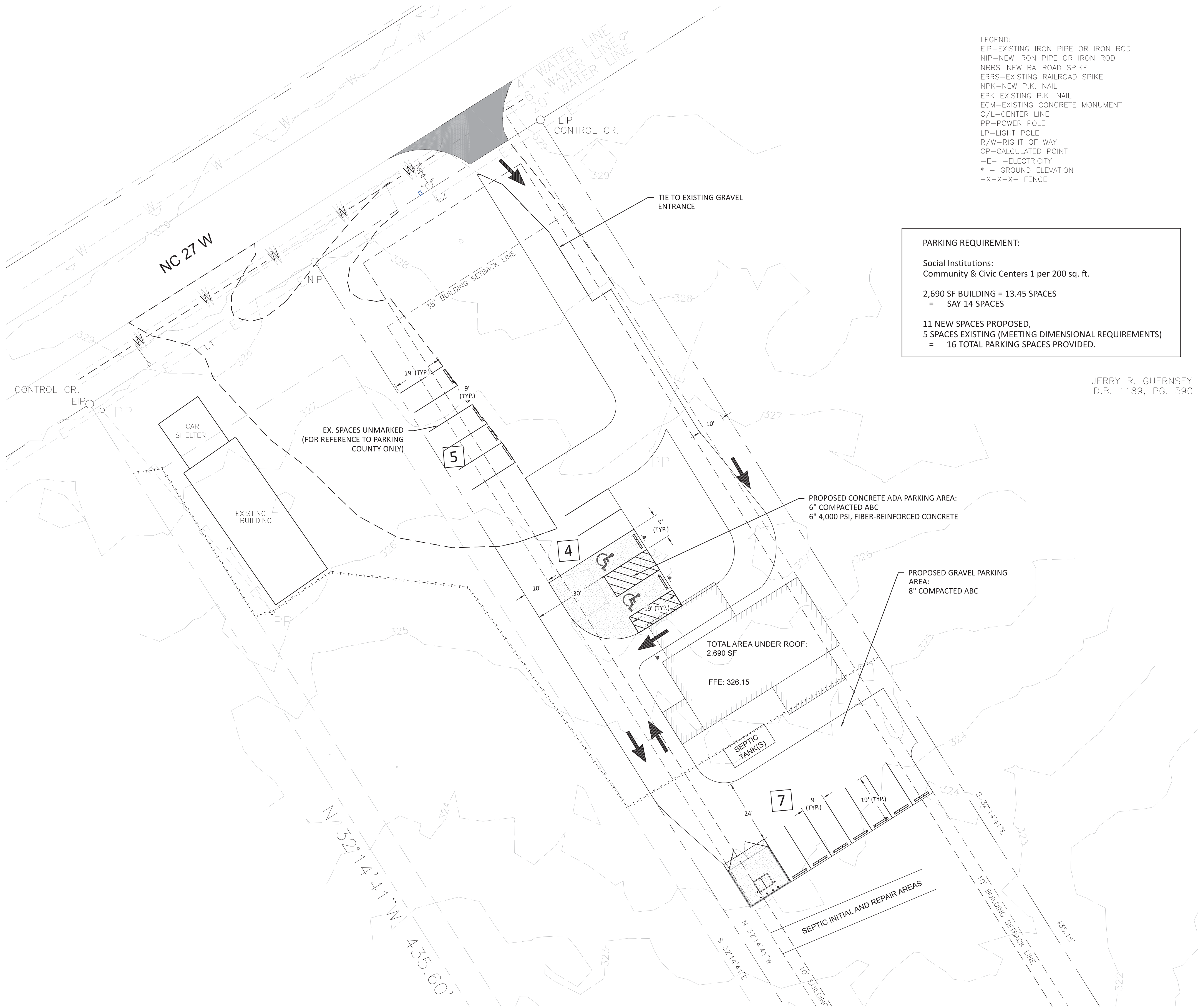
FIRE HYDRANT INSTALLATION PLAN VIEW

- NCDOT STANDARD NOTES:
1. ALL UTILITY STRUCTURES SHALL BE LOAD RATED FOR THE APPROPRIATE DEAD LOAD PLUS HL-93 LIVE LOAD. SUCH STRUCTURES SHALL BE DESIGNATED AND CERTIFIED BY A LICENSED PE OR DESIGNATED AS MEETING NCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
 2. ELECTRICAL POWER AND COMMUNICATIONS FACILITIES SHOULD CONFORM TO THE CURRENTLY APPLICABLE NATIONAL ELECTRICAL SAFETY CODE EXCEPT VERTICAL CLEARANCES SHALL BE NO LESS THAN 18 INCHES IN ANY CASE.
 3. ALL NON-FERROUS PIPELINES SHALL BE INSTALLED WITH A LOCATING TAPE.
 4. PROJECT SIGNAGE SHALL BE LOCATED OUTSIDE OF RIGHT OF WAY.

NOTE:
ALL FIRE HYDRANTS WILL MEET THE UNIFIED
DEVELOPMENT ORDINANCE REGULATION AND
FIRE MARSHALL REQUIREMENTS



NO.	REVISION DESCRIPTION:	DATE:
1		
2		



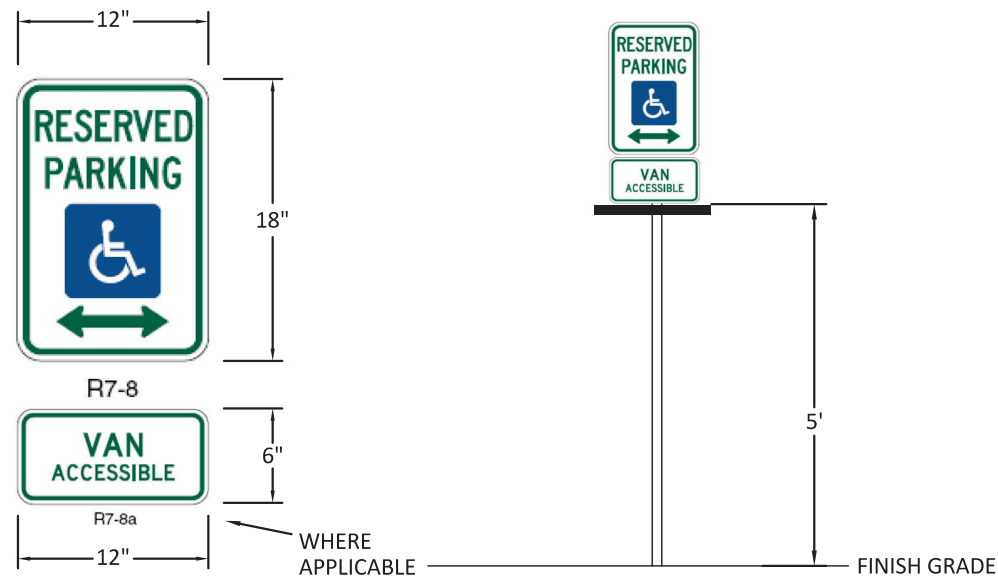
PARKING REQUIREMENT:

Social Institutions:
Community & Civic Centers 1 per 200 sq. ft.

2,690 SF BUILDING = 13.45 SPACES
= SAY 14 SPACES

11 NEW SPACES PROPOSED.
5 SPACES EXISTING (MEETING DIMENSIONAL REQUIREMENTS)
= 16 TOTAL PARKING SPACES PROVIDED.

JERRY R. GUERNSEY
D.B. 1189, PG. 590



NOTE:
HANDICAP SIGN TO CONFORM WITH THE "MANUAL ON
UNIFORM TRAFFIC CONTROL DEVICES" LATEST EDITION

LOCATION: HANDICAPPED PARKING SIGNS SHALL BE
LOCATED 4 FT MIN. OFF OF BACK OF CURB ON
CENTER WITH THE WHEEL STOP.

ADA PARKING SIGN (R7-8 8a)
SCALE: N.T.S.

PARKING AREA PLAN



NO.	REVISION DESCRIPTION:	DATE:
1		
2		

3417 Winterwind Circle, Sanford, NC 27330

PO Box 249, Sanford, NC 27331

Phone: (919) 352-2834

e-mail: jhilliard@hilliardengineering.com

NC License #: P-0836

Digitally signed
by Jarrod E.
Hilliard, PE,
CFM
Date: 2025.07.18
12:25:20 -04'00'

HILLIARD

ENGINEERING, PLLC

PARKING AREA PLAN

FOOD PANTRY
HARNETT COUNTY, NORTH CAROLINA

DESIGNED BY: JEH

DRAWN BY: JEH

APPROVED BY: JEH

SHEET:
C5.01
CIVIL

2022 HRW REQUIRED UTILITY NOTES

(Revision 10- April 19, 2022)

The following utility notes should be added to the coversheet of utility plans for projects located in Harnett County:

WATER

A. The Fire Marshal's Office shall approve all hydrant types and locations in new subdivisions. However, Harnett Regional Water (HRW) prefers the contractors to install one of the following fire hydrants:

1. Mueller - Super Centurion 250 A-423 model with a 5/4" main valve opening three way (two hose nozzles and one pumper nozzle).
2. American Darling - Mark B-84-B model with a 5/4" main valve opening three way (two hose nozzles and one pumper nozzle).
3. Waterous - Pacer B-67-250 model with a 5/4" main valve opening three way (two hose nozzles and one pumper nozzle) or approved equal for standardization.

"All fire hydrants listed above must have "American National Fire Hose Connection Screw Threads" NST/ NH hose threads.

B. Fire hydrants are installed at certain elevations. Any grade change near any fire hydrant, which impedes its operation, shall become the responsibility of the Utility Contractor for correction. Corrections will be monitored by the HRW Utility Construction Inspector and the Harnett County Fire Marshal.

C. The Professional Engineer (PE) shall obtain and provide the NCDCEQ "Authorization to Construct" permit to the Utility Contractor before the construction of the water line shall begin.

The Utility Contractor must post a copy of the NCDCEQ "Authorization to Construct" permit issued by the North Carolina Department of Environmental Quality (NCDCEQ) on site prior to the start of construction. The permit must be maintained on site throughout the entire construction process of the proposed water lines that will serve this project.

D. The Utility Contractor shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Chad Everett, HRW Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HRW for regular inspection visitations and acceptance of the water system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am - 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HRW. The Professional Engineer (PE) shall provide HRW and the Utility Contractor with a set of NCDCEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS) should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility Contractor begins construction of the water line(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading and utility construction.

A. The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any water line extension(s), and associated water services in Harnett County. The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HRW Utility Construction Inspector.

B. The water main(s), fire hydrants, service lines, meter setters and all associated appearances shall be constructed in strict in accordance with the standard specifications of the Harnett Regional Water (HRW). The Utility Contractor shall be responsible to locate the newly installed water main(s), water service lines and all associated meter setters and meter boxes for other utility companies and their contractors until the new water main(s) have been approved by the North Carolina Department of Environmental Quality, Division of Environmental Health, Public Water Supply Section (NCDCEQ, DEH, PWS) and accepted by HRW.

C. Prior to acceptance, all services will be inspected to ensure that they are installed at the proper depth. All meter boxes must be flush with the ground level at finish grade and the meter setters must be a minimum of 8" below the meter box lid. Meter setters shall be centered in the meter box and supported by brick, block or stone.

D. The Utility Contractor shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Chad Everett, HRW Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HRW for regular inspection visitations and acceptance of the water system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am - 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HRW.

E. The Professional Engineer (PE) shall provide HRW and the Utility Contractor with a set of NCDCEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. The Registered Land Surveyor (RLS) should stake out all lot corners and the grade stakes for the proposed finish grade for each street before the Utility Contractor begins construction of the water line(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading and utility construction.

F. Potable water mains crossing other utilities and non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum vertical distance of twenty-four (24") inches between the potable water main and all other utilities. NCDOT requires the new water mains to be installed under the storm water lines. The potable water main shall be installed with twenty-four (24") inches of vertical separation and with ductile iron pipe when designed to be placed under a non-potable water line such as sanitary sewer or storm sewer lines. If these separations cannot be maintained then the water main shall be installed with ductile iron pipe. Both the potable water main and the non-potable water line must be cast iron or ductile iron pipe (DIP) if the state minimum separations cannot be maintained. The ductile iron pipe must be laid so the mechanical joints are at least (10') feet from the point where the potable water main crosses the non-potable water line.

G. Potable water mains installed parallel to non-potable water lines (sanitary sewer, storm sewer, RCP, etc.) shall be laid to provide a minimum horizontal distance of ten (10') feet between the potable water main and sanitary sewer mains, sewer laterals and services. The horizontal separation between the potable water main and any other utility or storm sewer shall not be less than five (5') feet. The potable water main must be ductile iron pipe if this horizontal separation of ten (10') feet cannot be maintained. The ductile iron pipe shall extend at least ten (10') feet beyond the point where the minimum required horizontal separation of ten (10') feet can be re-established.

H. Meter setters shall be installed in pairs on every other lot line where possible to leave adequate space for other utilities to be installed at a later time. The meter setters shall be installed at least one (1') foot inside the right-of-way and at least three (3') to five (5') feet from the property line between the lots.

I. HRW requires that meter boxes for 3/4" services shall be 12" wide x 17" long ABS plastic boxes at least 18" in height with cast iron lids/covers. Meter boxes for 1" services shall be 17" wide x 21" long ABS plastic boxes at least 18" in height with plastic lids and cast iron flip covers in the center of the lids. Meter boxes for 2" services shall be 20" wide x 32" long ABS plastic boxes at least 20" in height with plastic lids and cast iron flip covers in the center of the lids.

J. Master meters must be installed in concrete vaults sized for the meter assembly and associated appurtenances so as to provide at least eighteen (18") inches of clearance between the bottom of

the concrete vault and the bottom of the meter setter. The master meter must be provided test ports if the meter is not equipped with test ports. The Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be assessed to the Developer.

K. The Utility Contractor will install polyethylene SDR-9 water service lines that cross under the pavement inside a schedule 40 PVC conduit to allow for removal and replacement in the future. Two (2) independent 3/4" water service lines may be installed inside one (1) - two (2") inch schedule 40 PVC conduit or two (2) independent 1" water service lines may be installed inside one (1) - three (3") inch schedule 40 PVC conduit, but each water service shall be tapped directly to the water main. Split services are not allowed by HRW. If sidewalks are proposed, the conduit must extend past the sidewalk.

L. The water main(s), fire hydrants, gate valves, service lines, meter setters and associated appurtenances must be rated for 200 psi and hydrostatically pressure tested to 200 psi. The hydrostatic pressure test(s) must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor must notify HRW when they are ready to begin filling in lines and coordinate with Harnett Regional Water to witness all pressure testing.

M. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve(s) prior to making the tap on the existing water main. This pneumatic pressure test must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made in Harnett County. All new water line extensions must begin with a resilient wedge type gate valve sized equal to the diameter of the new water line extension in order to provide a means of isolation between Harnett Regional Water's existing water mains and the new water line extension under construction.

N. All water mains will be constructed with SDR-21 PVC Pipe or Class 50 Ductile Iron Pipe rated for at least 200 psi or greater. All pipes must be protected during loading, transport, unloading, staging, and installation. PVC pipe must be protected from extended exposure to sunlight prior to installation.

O. All water mains will be flushed and disinfected in strict accordance with the standard specifications of the Harnett Regional Water. All water samples collected for bacteria testing will be collected by the HRW Utility Construction Inspector and tested in the HRW Laboratory.

P. All fittings larger than two (2") inches diameter shall be ductile iron. HRW requires that mechanical joints be assembled with grip rings as "Megalu" fittings are not approved by Harnett Regional Water for pipe sizes smaller than twelve inches (12") diameter. PVC pipe used for water mains shall be connected by slip joint or mechanical joint with grip rings. Glued pipe joints are not allowed on PVC pipe used for water mains in Harnett County.

Q. HRW requires that the Utility Contractor install tracer wire in the trench with all water lines. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling.

R. The Utility Contractor will provide Professional Engineer (PE) and the HRW Utility Construction Inspector with a set of red line field drawings to identify the installed locations of the water line(s) and all associated services. All change orders must be pre-approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

S. The Utility Contractor shall spot dig to expose each utility pipe or line which may conflict with construction of proposed water line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the water line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner requirements during water line installation, grading and street construction.

T. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to have a signed NCDOT encroachment agreement posted on site and notify all concerned utility companies in accordance with the NCDOT Right-of-Way Agent. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located or verified by the PE. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.). The Utility Contractor will be responsible to repair any and all damages to the satisfaction of the related utility company.

U. The Utility Contractor shall provide HRW with at least one (1) fire hydrant wrench and one (1) break-away flange kit for every subdivision with fire hydrants developed in Harnett County. These items must be provided to HRW before the final inspection will be scheduled by the HRW Utility Construction Inspector. In addition, the Utility Contractor shall install a 4" x 4" concrete valve marker at the edge of the right-of-way to identify the location of each gate valve installed in the new water system with the exception of the fire hydrant isolation valves. The contractor shall measure the distance from the center of the concrete marker to the center of the valve box. This distance (in linear feet) shall be stamped on the brass plate located on the top of the concrete valve marker. In lieu of installing the concrete valve markers, the Utility Contractor may provide at least two measurements from two independent permanent above ground structures to the Professional Engineer (PE) in the red line drawings to identify the valve locations. The Professional Engineer (PE) must include these measurements in the As-Built Record Drawings submitted to HRW.

V. The Utility Contractor will be responsible for any and all repairs due to leakage damage from poor workmanship during the one (1) year warranty period once the water system improvements have been accepted by Harnett Regional Water. Harnett Regional Water will provide maintenance and repairs when requested and bill the Developer and/or Utility Contractor if necessary due to lack of response within 48 hours of notification of warranty work. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new water lines and associated appurtenances for other utilities and their contractors until the water lines have been approved by NCDCEQ and accepted by HRW. The final inspection of water system improvements cannot be scheduled with HRW until the streets have been paved, the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.

AA. The Engineer of Record is responsible to ensure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HRW. A copy of each engineer's field report is to be submitted to HRW as each such inspection is made on system improvements or infrastructure. The Developer's Engineer of Record and sewer infrastructure must pass all tests required by HRW specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HRW Inspector must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted

during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be assessed to the Developer.

SANITARY SEWER

A. The Professional Engineer (PE) shall obtain and supply a copy of the sewer permit for the construction and operation of the wastewater collection system to the Utility Contractor before the construction of the sanitary sewer line, sewer lift station and associated force main shall begin. The Utility Contractor must post a copy of the sewer permit issued by the North Carolina Department of Environmental Quality (NCDCEQ) on site prior to the start of construction. The permit must be maintained on site during the construction of the sewer system improvements.

B. The Professional Engineer (PE) shall notify Harnett Regional Water (HRW) and the Professional Engineer (PE) at least two days prior to construction commencing. The Utility Contractor must schedule a pre-construction conference with Mr. Chad Everett, HRW Utility Construction Inspector at least two (2) days before construction will begin and the Utility Contractor must coordinate with HRW for regular inspection visitations and acceptance of the wastewater system(s). Construction work shall be performed only during the normal working hours of HRW which is 8:00 am - 5:00 pm Monday through Friday. Holiday and weekend work is not permitted by HRW.

C. The Professional Engineer (PE) shall provide HRW with a set of NCDCEQ approved plans marked "Released for Construction" at least two days prior to construction commencing. HRW will stamp the approved plans as "Released for Construction" and provide copies to the utility contractor. The Registered Land Surveyor (RLS) shall stake out all lot corners and establish the grade stakes for the proposed finish grade for each street and sewer line before the Utility Contractor begins construction or installation of the manholes, sanitary sewer gravity line(s), sewer lift stations and/or sanitary sewer force main(s). The grade stakes should be set with a consistent offset from the street centerline so as not to interfere with the street grading or utility construction.

D. The Utility Contractor shall provide the HRW Utility Construction Inspector with material submittals and shop drawings for all project materials prior to the construction of any gravity sewer line(s), manholes(s), sewer lift station(s) and associated force main(s) in Harnett County. The materials to be used on the project must meet the established specifications of HRW and be approved by the Engineer of Record prior to construction. All substandard materials or materials not approved for use in Harnett County found on the project site must be removed immediately when notified by the HRW Utility Construction Inspector.

E. The sanitary sewer lateral connections should be installed 90° (perpendicular) to the sanitary sewer gravity line(s), manhole(s), sewer lift station(s) and the Utility Contractor to provide the Professional Engineer (PE) with accurate measurements for locating sanitary sewer service lateral and associated each sanitary sewer clean-out. These measurements should be taken from the nearest downstream manhole or clean-out. The Utility Contractor shall use the in-line wye fitting (or tapping saddle) and then another measurement from the in-line wye fitting (or tapping saddle) to the 4" x 4" long sweep combination wye fitting at the bottom of the sewer clean-out stack. These field measurements must be provided to the Professional Engineer (PE) in the red line drawings from the Utility Contractor for proper documentation in the As-Built Record Drawings submitted to HRW.

F. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer gravity line(s), sanitary sewer force main(s), sanitary sewer service lateral(s) and all associated sewer clean-out(s) in the proposed sanitary sewer system for other utility companies and their contractors until the new sanitary sewer line(s) and associated appurtenances have been approved by the North Carolina Department of Environmental Quality (NCDCEQ) and accepted by HRW. All new sanitary sewer lines must have at least three (3') feet of cover and extend under all existing water main and storm water lines with a least 24" of vertical clearance below the bottom of the existing water main and storm water lines. All ductile iron sewer piping must be 401 epoxy coated or approved equal.

G. The sanitary sewer gravity line(s), manhole(s), sanitary sewer service lateral(s) and associated clean-out(s) shall be constructed in strict accordance with the standard specifications of the Harnett Regional Water. The sanitary sewer gravity line(s) must pneumatically pressure tested with compressed air at 5 psi and the sanitary sewer force main(s) must hydrostatically pressure tested with water or air at 200 psi. Sanitary sewer manholes must be vacuum tested to 10 inches of mercury and cannot drop below 9 inches in 60 seconds for 4 ft. diameter manholes, 75 seconds for 5 ft. diameter manholes. The test must be in accordance with the following standards: For ductile iron pipelines test in accordance with the applicable requirements of ASTM C924. For PVC pipelines test in accordance with ASTM F1417-98 and UPPPA UNI-B-6. Vacuum testing shall be performed in accordance with ASTM C1244. The HRW Utility Construction Inspector and Engineer must witness all tests mentioned above.

H. Prior to acceptance, all sewer service laterals will be inspected to ensure that they are installed at the proper depth. All sewer clean-outs must be installed so the 4" x 4" long sweep combination wye is at least three (3') feet but no more than four (4') feet below the finish grade unless otherwise approved in writing by HRW. The sewer cleanouts shall have a four (4") schedule 40 PVC pipe stubbed up from both ends of the 4" x 4" long sweep combination wye to be at least two (2') feet above the finish grade and cover each end with a four (4") inch temporary cap to keep out dirt, sand, rocks, water and construction debris. The vertical stack on each clean-out must be provided with a concrete donut for protection.

I. Once the sanitary sewer gravity line(s) have been installed, pneumatically pressure tested and in place for at least 30 days, the Utility Contractor must contact the HRW Utility Construction Inspector to witness the mandrel test on each PVC sanitary sewer gravity line. The Utility Contractor will notify HRW to schedule the mandrel testing. The mandrel and proving ring must be supplied by the Utility Contractor. Closed circuit video camera inspections (at the Utility Contractor's expense) may be required by the HRW Utility Construction Inspector if the mandrel and mirror tapping test cannot be completed with satisfactory results. The sanitary sewer lines should be flushed clean using a sewer ball of the proper diameter before any mandrel testing can be performed. The Utility Contractor is responsible to remove all dirt, sand, silt, gravel, mud and debris from the newly constructed sewer lines exercising care to keep the Harnett Regional Water's existing sanitary sewer systems clean. Sanitary sewer force main(s) shall be pressure tested to 200 psi for at least 2 hours like water lines.

J. The Utility Contractor shall be responsible to locate the newly installed sanitary sewer system(s) for other utility companies and their contractors until the new sanitary sewer system(s) have been approved by the North Carolina Department of Environmental Quality (NCDCEQ) and accepted by HRW.

K. HRW requires that the Utility Contractor install tracer wire in the trench with all sanitary sewer force mains. The tracer wire shall be 12 ga. insulated, solid copper conductor and it shall be terminated at the top of the valve boxes or manholes. No spliced wire connections shall be made underground on tracer wire installed in Harnett County. The tracer wire may be secured with duct tape to the top of the pipe before backfilling. The tracer wire is not required for the gravity sewer line(s) between manholes.

L. The Utility Contractor shall provide the Professional Engineer (PE) and HRW Utility Construction Inspector with a set of red line drawings identifying the complete sewer system installed for each project. The red line drawings

should identify the materials, pipe sizes and approximate depths of the sewer lines as well as the installed locations of the manhole(s), sanitary sewer gravity line(s), sanitary sewer service laterals, clean-outs, sewer lift station(s) and associated force main(s). The red line drawings should clearly identify any deviations from the NCDCEQ approved plans. All change orders must be approved by HRW and the Professional Engineer (PE) in writing and properly documented in the red line field drawings.

M. Prior to the commencement of any work within established utility easements or NCDOT right-of-ways the Utility Contractor is required to notify all concerned utility companies in accordance with G.S. 87-102. The Utility Contractor must call the NC One Call Center at 811 or (800) 632-4949 to verify the location of existing utilities prior to the beginning of construction. Existing utilities shown in these plans are taken from maps furnished by various utility companies and have not been physically located by the PE. (i.e. TELEPHONE, CABLE, WATER, SEWER, ELECTRICAL POWER, FIBER OPTIC, NATURAL GAS, ETC.).

N. The Utility Contractor shall spot dig to expose each existing utility pipe or line which may conflict with construction of proposed sanitary sewer line extensions well in advance to verify locations of the existing utilities. The Utility Contractor shall provide both horizontal and vertical clearances to the Professional Engineer (PE) to allow the PE to adjust the sanitary sewer line design in order to avoid conflicts with existing underground utilities. The Utility Contractor shall coordinate with the utility owner and be responsible for temporary relocation of existing utilities and/or securing existing utility poles, pipes, wires, cables, signs and/or utilities including services in accordance with the utility owner's requirements during sanitary sewer line installation, grading and street construction.

O. When making a tap on an existing sewer force main, the Utility Contractor must have a permit from the North Carolina Department of Environmental Quality (NCDCEQ) prior to begin the tap work. The Utility Contractor shall conduct a pneumatic pressure test using compressed air or other inert gas on the stainless steel tapping sleeve and gate valve prior to making the tap on an existing sanitary sewer force main. This pneumatic pressure test must be witnessed by the HRW Utility Construction Inspector. The Utility Contractor shall use Romac brand stainless steel tapping sleeve(s) or approved equal for all taps made on sanitary sewer force mains in Harnett County. The Utility Contractor shall use Romac brand Style "CB" sewer saddles with stainless steel bands or approved equal for all taps made on existing sanitary sewer gravity lines in Harnett County.

P. The Utility Contractor shall provide a grease trap for each sanitary sewer service lateral that will be connected to a restaurant, food processing facility and any other commercial or industrial facility as required by the Harnett County Fat, Oil & Grease Ordinance. The grease trap must be rated for a minimum capacity of at least 1,000 gallons and be installed in the sanitary sewer line before the Pre-Treatment Coordinator. Grease disposals should not be installed in homes and businesses that discharge wastewater to the Harnett Regional Water's Sanitary Sewer System as they are not approved by HRW.

Q. Each sewer lift station must be designed to handle three phase power (at least 480 volts) and constructed to meet the minimum requirements of the latest version of the National Electrical Code (NEC) and Harnett Regional Water standard specifications and details. If three phase power is not available from the power company other arrangements must be approved by HRW Engineering prior to the start of construction.

R. Where a new sanitary sewer force main is connected to an existing manhole in the Harnett Regional Water sewer collections system, the Utility Contractor must provide a protective coating (epoxy) for the interior surfaces of the manhole to protect it against corrosion, erosion and deterioration from the release of sewer gases such as methane and hydrogen sulfide.

S. The sewer lift station design and associated equipment must meet or exceed the MINIMUM REQUIREMENTS FOR HARNETT COUNTY SEWER LIFT STATIONS.

Each sanitary sewer lift station must be constructed with an all-weather access road that is at least 20 feet wide. The lift station site must be covered with weed blocking material and at least six (6") inches of soil cover (crush) for three phase power (at least 480 volts) and constructed to meet the minimum requirements of the latest version of the National Electrical Code (NEC) and Harnett Regional Water standard specifications and details. If three phase power is not available from the power company other arrangements must be approved by HRW Engineering prior to the start of construction.

This draw down test must be completed with power supplied from the electrical utility company and with power supplied by the emergency generator with satisfactory results before final inspections are conducted by the HRW Utility Construction Inspector.

U. Once the Utility Contractor completes the installation of a sewer lift station, the Professional Engineer (PE) must install the sewer permit certification and As-Built Record Drawings to the North Carolina Department of Environmental Quality (NCDCEQ) and HRW for final approval. The Utility Contractor must supply HRW Engineering staff with three original Operation & Maintenance (O&M) Manuals along with the associated pump curves and electrical schematics for the associated sewer lift station equipment including all warranty information and manufacturer's literature.

V. Once the Utility Contractor completes the installation of a sewer lift station, the Developer must pay HRW the established System Control and Data Acquisition (SCADA) fees before the SCADA system will be installed at the new sewer lift station. The SCADA system must be installed and operational before the utilities may be accepted by HRW and placed into operation.

W. HRW requires the Utility Contractor to provide all necessary equipment and devices for the testing and inspection of the sanitary sewer system. The equipment and devices may include but not limited to lamping with mirrors, mandrels, sewer balls, plugs, air compressors and associated compressed air lines. If the HRW Utility Construction Inspector deems that a closed circuit video camera inspection of the newly constructed sewer system is necessary, then all costs for the closed circuit camera inspection will be the responsibility of the Utility Contractor. All closed circuit video camera inspections must be recorded on VHS tapes that will be released to HRW for record keeping, review and approval of the sewer system.

X. Any use of sewer plugs to temporarily block Harnett Regional Water's existing sanitary sewer lines must be coordinated with the HRW Collections Supervisor at least two (2) days in advance of installing the plugs. The sewer plugs must be removed as soon

as possible once the new sanitary sewer lines have been inspected, pressure tested, mandrel tested, approved by the North Carolina Department of Environmental Quality (NCDCEQ) and accepted by HRW to allow the sewer to flow as designed in Harnett Regional Water's existing sanitary sewer lines or when so ordered by the HRW Collections Supervisor to limit interruptions to the normal flow of the sanitary sewer collection system(s). The Utility Contractor must provide the pumps hoses and necessary connectors for a temporary pump around setup if required by the HRW Collections Supervisor. Mr. Randolph Clegg, HRW Collections Supervisor may be contacted between 8:00 am and 5:00 pm Monday through Friday at (910) 893-7575 extension 3241.

Y. The Utility Contractor will be responsible for any and all repairs due to leakage or damage resulting from poor workmanship during the one (1) year warranty period once the sewer system improvements have been approved by the North Carolina Department of Environmental Quality (NCDCEQ) and accepted by HRW. The Utility Contractor will be responsible for any and all repairs due to damages resulting from failure to locate the new sanitary sewer lines and associated appurtenances for other utilities and their contractors until the sanitary sewer lines have been approved by NCDCEQ and accepted by HRW. HRW will provide maintenance and warranty repairs if necessary due to lack of response within 48 hours of notification of warranty work. HRW will invoice the Developer and/or Utility Contractor for materials and labor in such cases.

Z. In developments and projects that require utility easements to be established

for future HRW right-of-way, the Registered Land Surveyor (RLS) must provide the HRW Right-of-Way Agent with an official copy of the recorded plat and legal description of the said easement as recorded with the Harnett County Register of Deeds. The recorded documents must be provided to the HRW Right-of-Way Agent before the utility improvements within the said easement can be placed into operation. Any and all easements that must be obtained from adjoining property owners must be provided to HRW by the Developer at no cost to Harnett County. The final inspection of all sanitary sewer system improvements cannot be scheduled with HRW until the streets have been paved, the rights-of-way and utility easements have been seeded and stabilized with an adequate stand of grass in place to prevent erosion issues on site.

AA. The Engineer of Record is responsible to ensure that construction is, at all times, in compliance with accepted sanitary engineering practices and approved plans and specifications. No field changes to the approved plans are allowed without prior written approval by HRW. A copy of each engineer's field report is to be submitted to HRW as each such inspection is made on system improvements or infrastructure must pass all tests required by HRW specifications and those of all applicable regulatory agencies. These tests include, but are not limited to: air test, vacuum test, mandrel test, visual test, pressure test, bacteriological test, etc. A HRW Inspector must be present during testing and all test results shall be submitted to HRW. All tests must be satisfied before the final inspection will be scheduled with the HRW Inspector. The Engineer of Record must request in writing to schedule the final inspection once all construction is complete. The Developer's Engineer of Record and the HRW Utility Construction Inspector shall prepare a written punch list of any defects or deficiencies noted during the final inspection, should any exist. Upon completion of the punch list, the Developer's Engineer of Record will schedule another inspection. In the event the number of inspections performed by the HRW exceeds two, additional fees may be assessed to the Developer.

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HRW UTILITY NOTES

FOOD PANTRY
HARNETT COUNTY, NORTH CAROLINA

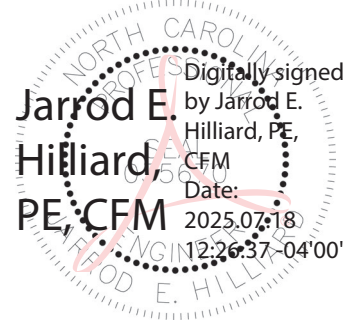
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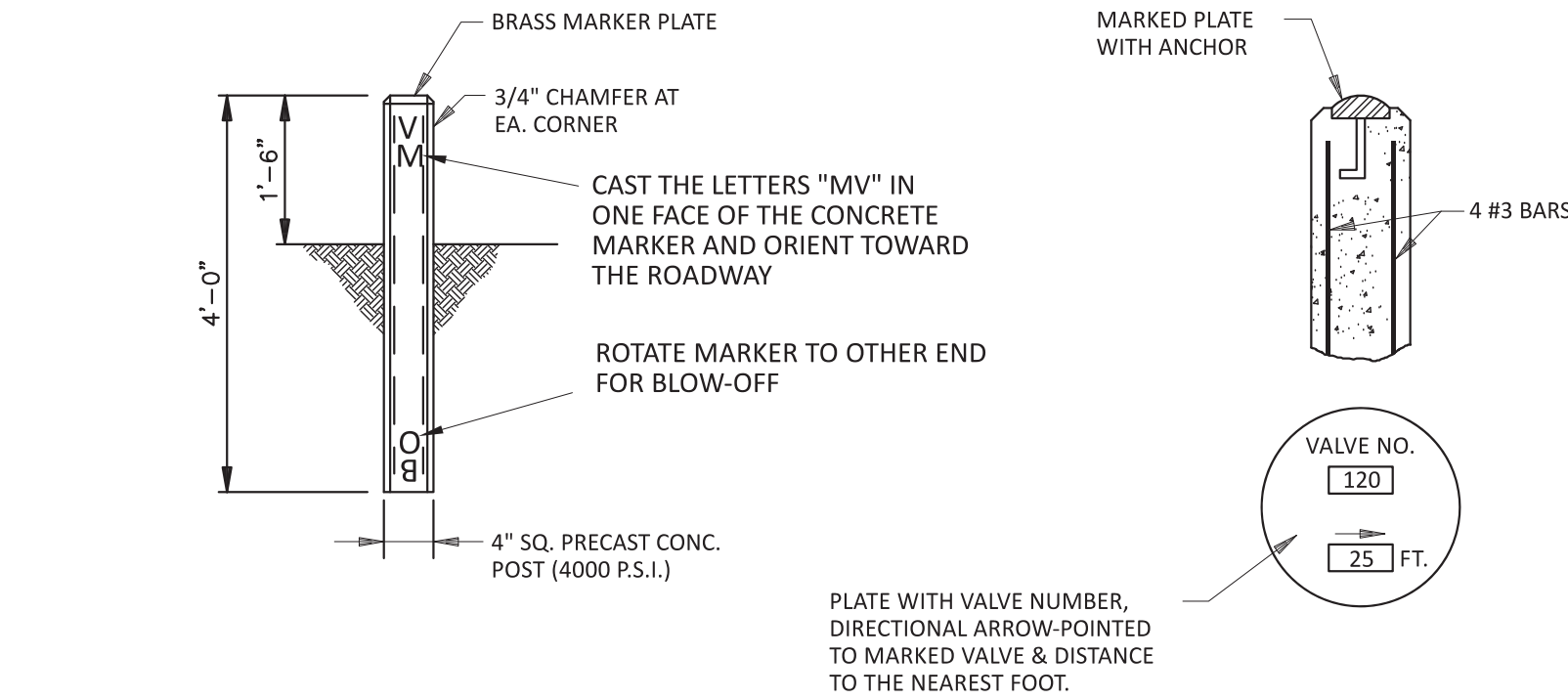
DRAWN BY: JEH

APPROVED BY: JEH

SHEET:
C7.01
CIVIL

NO.	REVISION DESCRIPTION:	DATE:
1		
2		

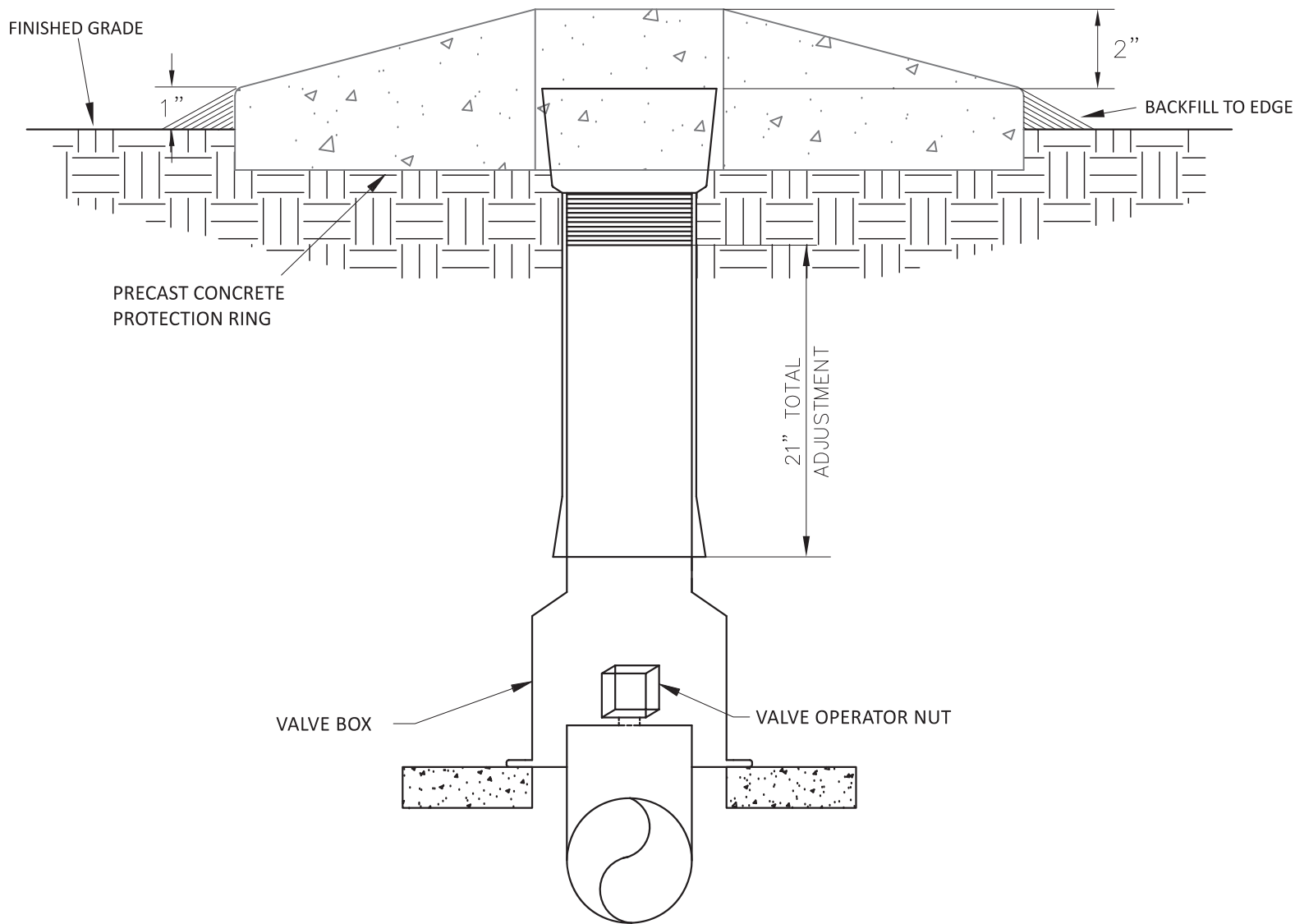




TYPICAL VALVE MARKER DETAIL

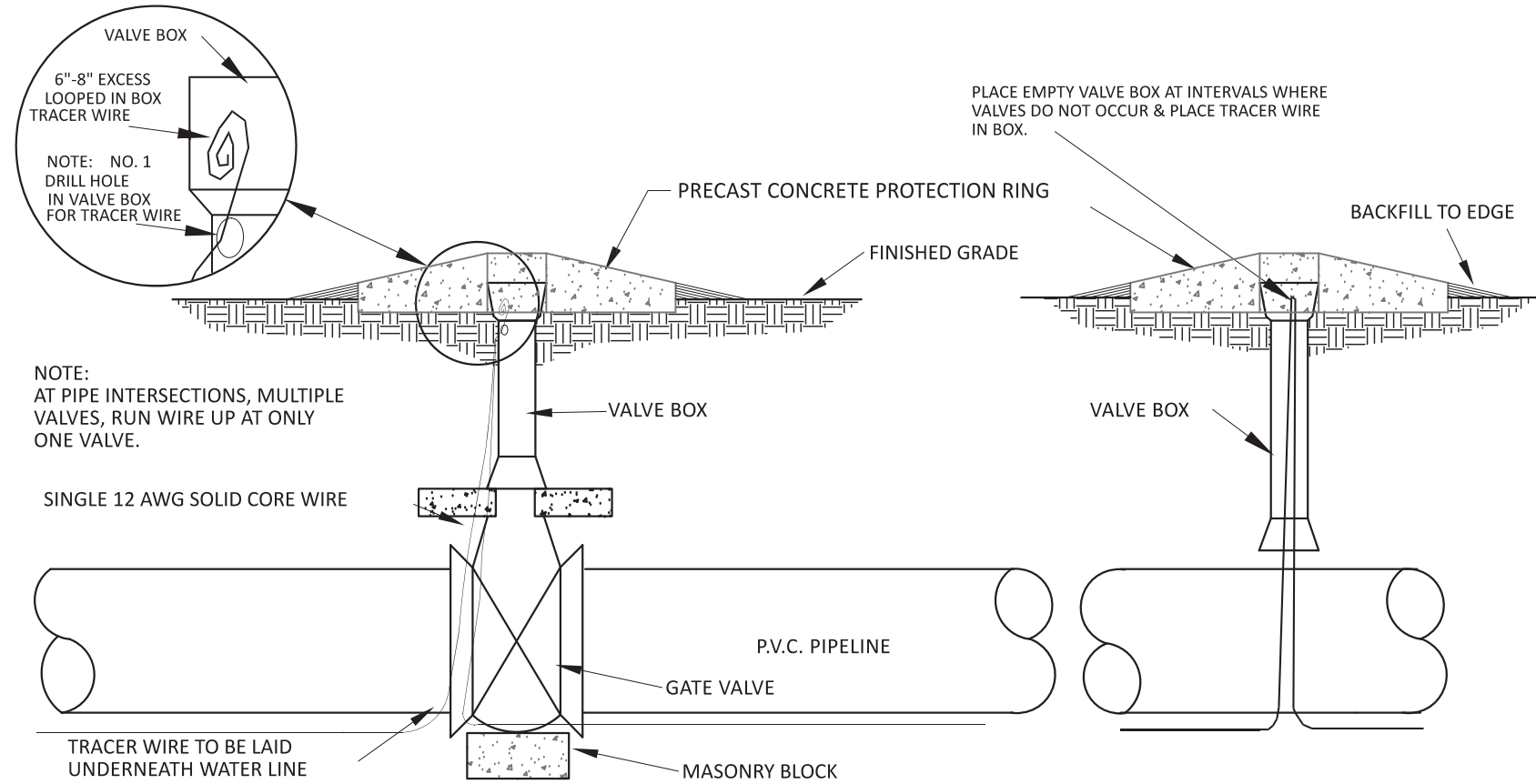
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NOTES:
PAINT MARKER BLUE AFTER INSTALLATION



TYPICAL VALVE BOX DETAIL

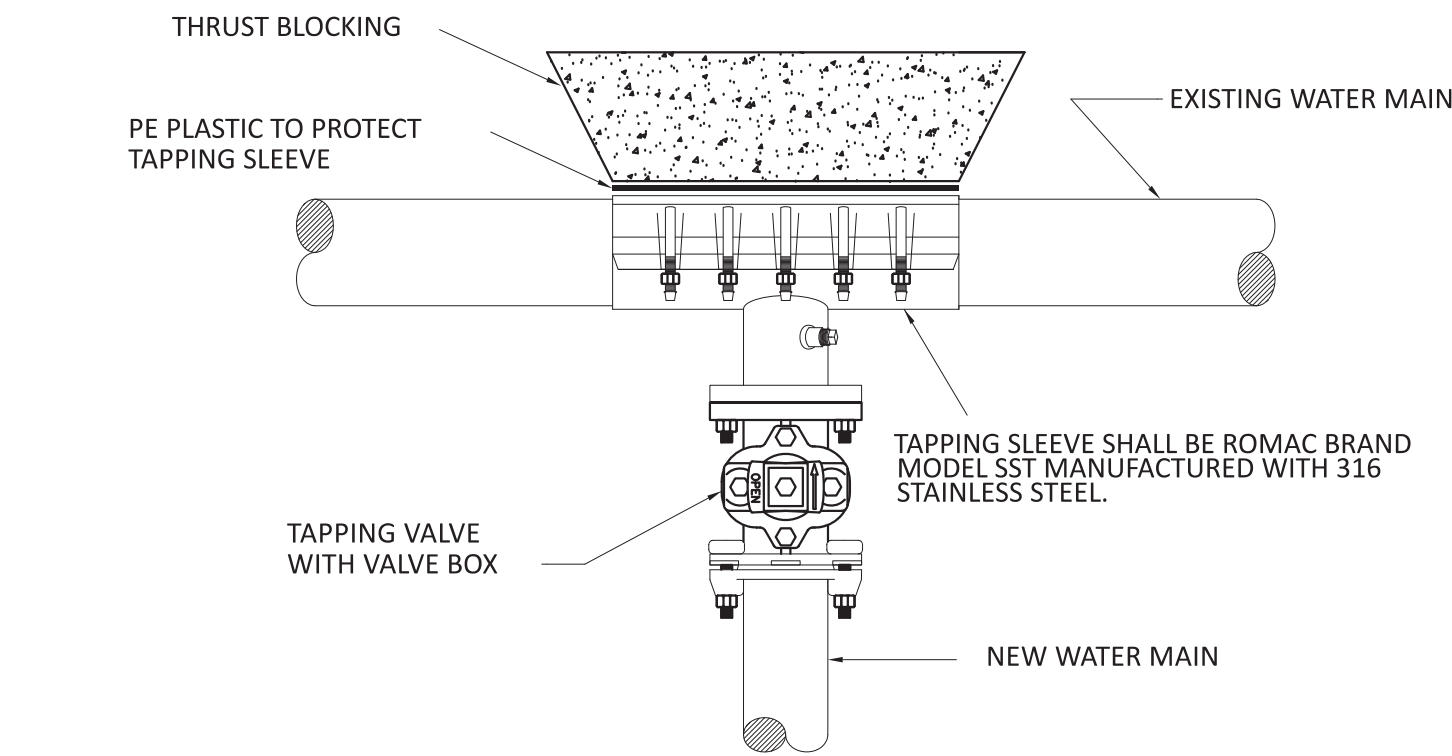
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TYPICAL TRACER WIRE INSTALLATION DETAIL

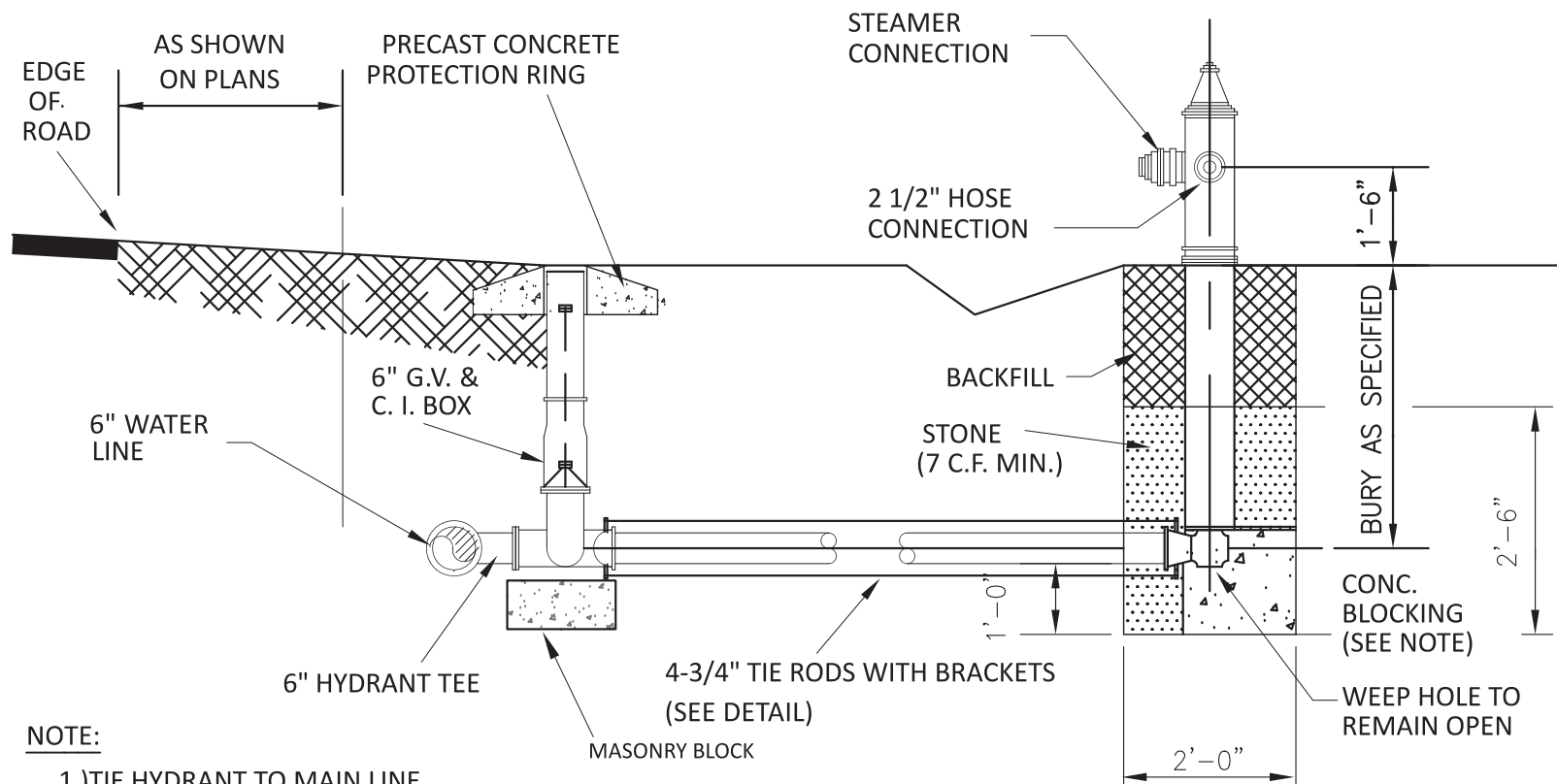
NO SCALE

- NOTES:
1. DRILL HOLE IN VALVE BOX TO INSERT TRACER WIRE,BRING UP TO INSIDE AND ROLL UP AT LEAST 6"-8" EXCESS
 2. PLACE TRACER WIRE IN VALVE BOX AT 1,000 FT INTERVALS OR AS NOTED ON THE PLANS, TYPICAL.
 3. DO NOT SPLICE WIRE WHEN BEGINNING A NEW SPOOL. INSTEAD INSTALL A VALVE BOX AND ATTACH EACH WIRE WITH A BRASS SCREW TO THE VALVE BOX.



TYPICAL TAPPING SLEEVE AND VALVE ASSEMBLY DETAIL

NO SCALE



- NOTE:
- 1.)TIE HYDRANT TO MAIN LINE
W/TIE RODS IN LIEU OF CONC.
BLOCKING IN SANDY SOIL.
 - 2.)MECHANICAL JOINTS USED WITH GRIP RINGS

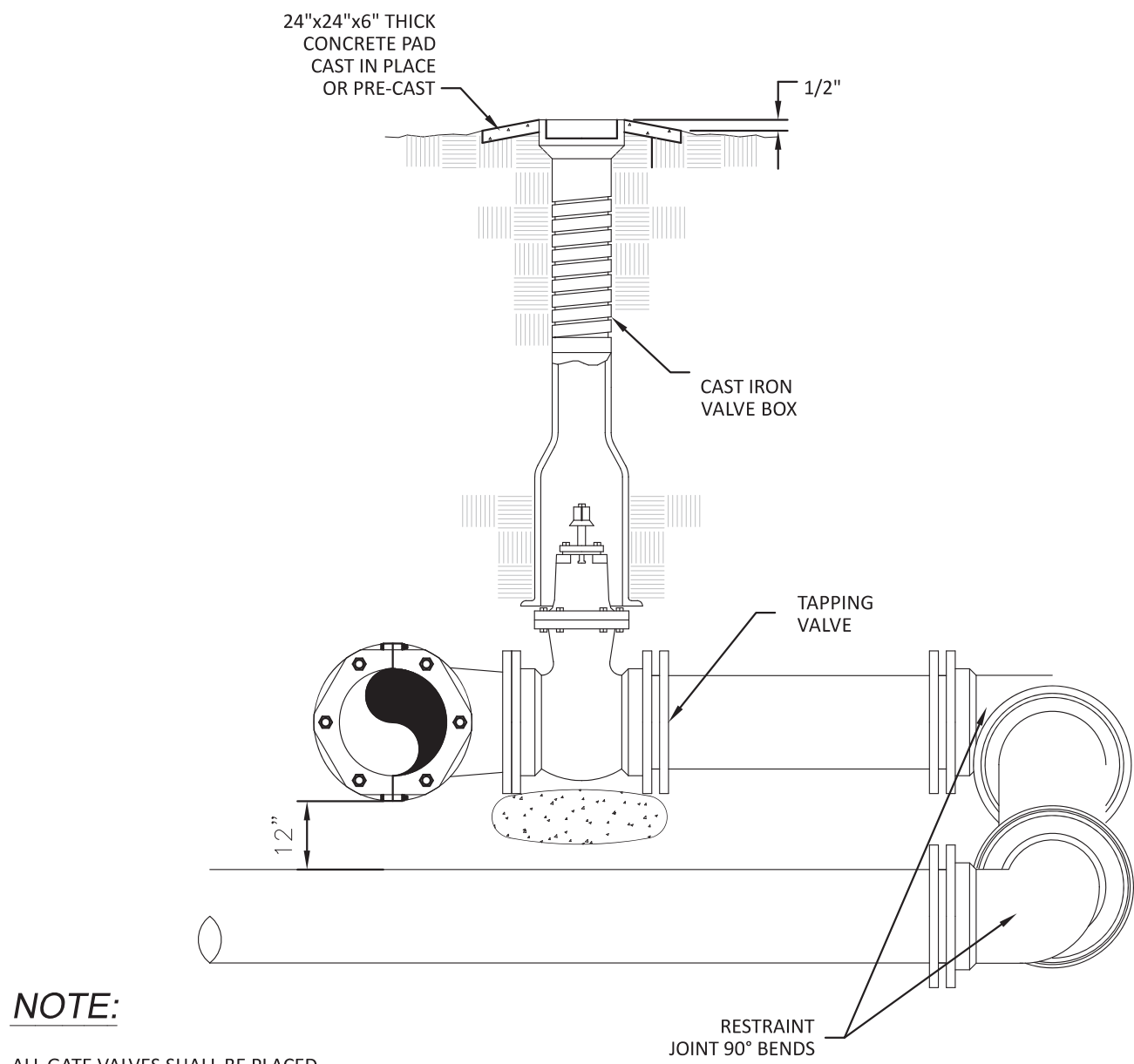
TYPICAL FIRE HYDRANT INSTALLATION DETAIL

NO SCALE

LAYING CONDITIONS	DESCRIPTION	PROJECT USE
	PIPE BEDDED IN 4" MINIMUM JOB EXCAVATED MATERIAL. BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE.	ALL DUCTILE IRON GRAVITY SEWER LINE.
	PIPE BEDDED IN SAND, GRANULAR MATERIAL OR GRADED GRAVEL TO THE DEPTH OF 1/8 PIPE DIAMETER, 4" MIN. JOB EXCAVATED MATERIAL, COMPACTED TO 4" ABOVE TOP OF PIPE. (APPROX. 95% STANDARD PROCTOR, AASHTO T-99)	ALL PVC WATER LINE AND PVC FORCE MAIN.

TYPICAL LAYING CONDITIONS DETAIL

NO SCALE

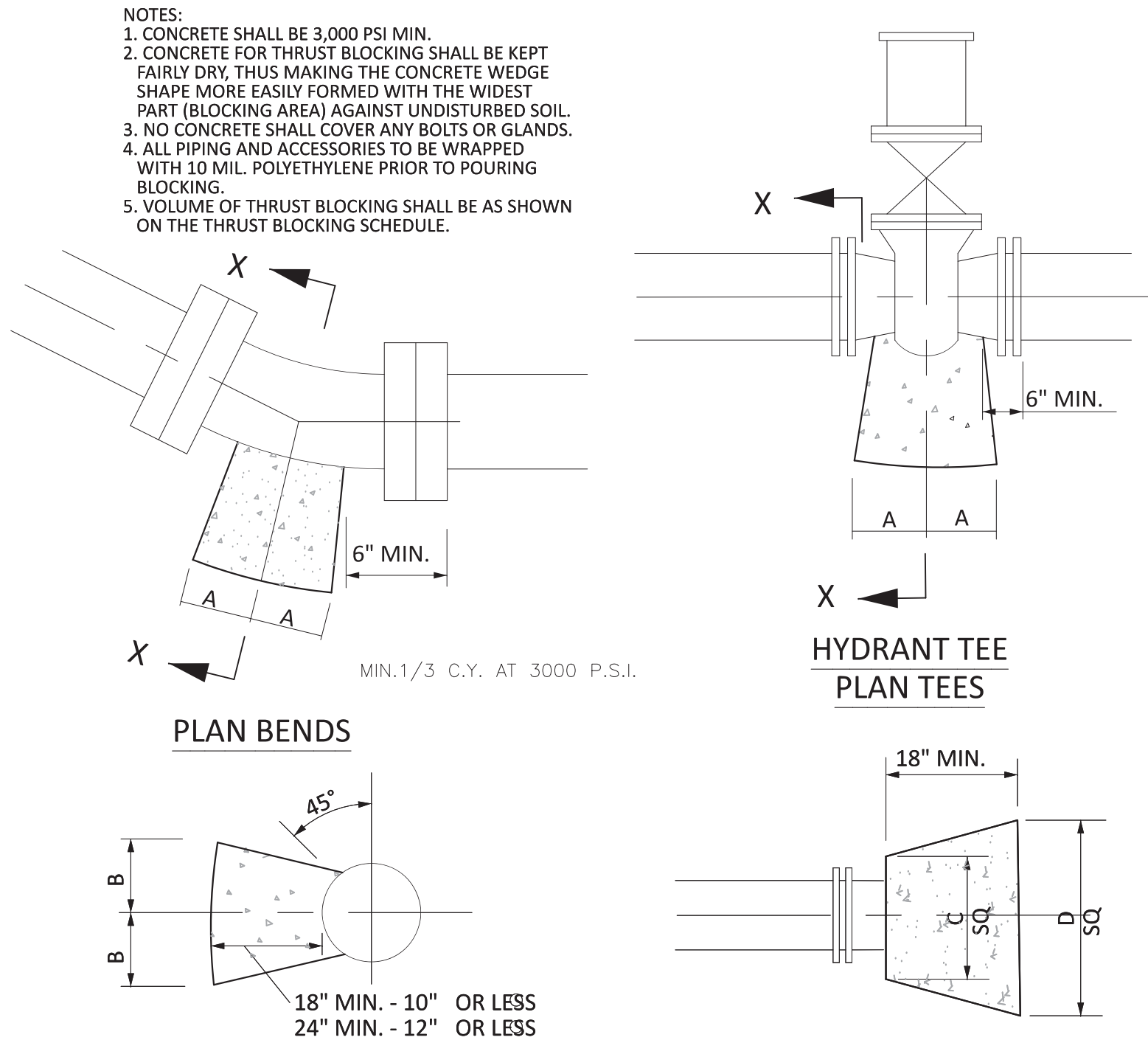


NOTE:

ALL GATE VALVES SHALL BE PLACED ON AN 80 LB. BAG OF SACRETE.

ALTERNATE TAPPING SLEEVE AND VALVE DETAIL

NOT TO SCALE



PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	8"	9"	10"	16"
6"	10"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	16"	14"	10"	12"	6"	10"	6"	10"	11"	14"	14"	25"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
14"	22"	18"	14"	16"	10"	14"	10"	14"	16"	18"	18"	34"
16"	26"	20"	16"	18"	12"	16"	12"	16"	18"	20"	20"	36"

TYPICAL THRUST BLOCK DETAIL

NO SCALE

NO.	REVISION DESCRIPTION:	DATE:
1		
2		