



**PROJECT INFORMATION:**  
 PROP. REF # : 27-2N-31-3400-000-000

OWNER/DEVELOPER: ELANDRAS LLC  
 3158 GATEWAY LANE  
 CANTONMENT, FL 32533  
 (850)-479-9327

SITE ADDRESS: OFF QUINTETTE ROAD

DEVELOPMENT OF 82 SINGLE FAMILY RESIDENTIAL LOTS

PREVIOUS ESCAMBIA COUNTY PROJECT NUMBER: 2005-315 CP06092792.  
 ALL LOT DIMENSIONS, RIGHT OF WAYS, ROADWAY DESIGN FROM THE PREVIOUS APPROVAL REMAIN.

**PHASE II CONSTRUCTION PLANS**

**Carrington**

**OVERALL AND DIMENSION PLAN**  
 FROM ORIGINAL PRELIMINARY PLAT

ENGINEER-OF-RECORD  
**DAVID W. FITZPATRICK**  
 PROFESSIONAL ENGINEER, PA  
 10250 N. PALAFOX HWY.  
 PENSACOLA, FL 32534  
 (850) 476-8677

SURVEYOR  
**KJM LAND SURVEYING**  
 FORMERLY  
 KENNETH J. MONIE, PROFESSIONAL SURVEYOR AND MAPPER  
 1616 WEST AVERY STREET  
 PENSACOLA, FL 32501  
 (850) 438-0202

INDEX OF DRAWINGS	
SHEET	DESCRIPTION
1	OVERALL AND DIMENSION PLAN
2	SITE/UTILITY PLAN
3	DRAINAGE PLAN
4	PLAN/PROFILE - STA 21+80 TO 35+10
5	PLAN/PROFILE - STA 35+10 TO 45+69
6	DETAILS - ROAD
7	DETAILS - POTABLE WATER

**ECUA Engineering Manual Reference Note\***  
 \*Note shall be inserted in the upper right corner of this sheet

\*Applicable only to ECUA infrastructure to be constructed in public ROW or in utility easement; not to be applied to private water/sewer facilities on private property (see Building Code)

**A. ECUA Engineering Manual Incorporated by Reference**

The ECUA Engineering Manual, dated December 18, 2014, along with Update # 1 dated September 1, 2016 (hereinafter "Manual"), located at [www.ecua.com](http://www.ecua.com), is hereby incorporated by reference into this Project's official contract documents as if fully set forth therein. It is the Contractor's responsibility to be knowledgeable of the Manual's contents and to construct the Project in accordance with the Manual. The Contractor shall provide its employees access to the Manual at all times, via Project site or office, via digital or paper format. In the event of a conflict between the Manual and Plans, Contractor shall consult Engineer of Record for proper resolution.

**B. Additional Documents to be completed by the Engineer of Record**

Does this Project have additional technical specifications or construction details that supplement and/or supersede the Manual listed above?  YES  NO. If yes, Contractor shall construct Project in accordance with said documents as listed and located below:

Document Name	Document Type	Location
	Specification	Detail
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

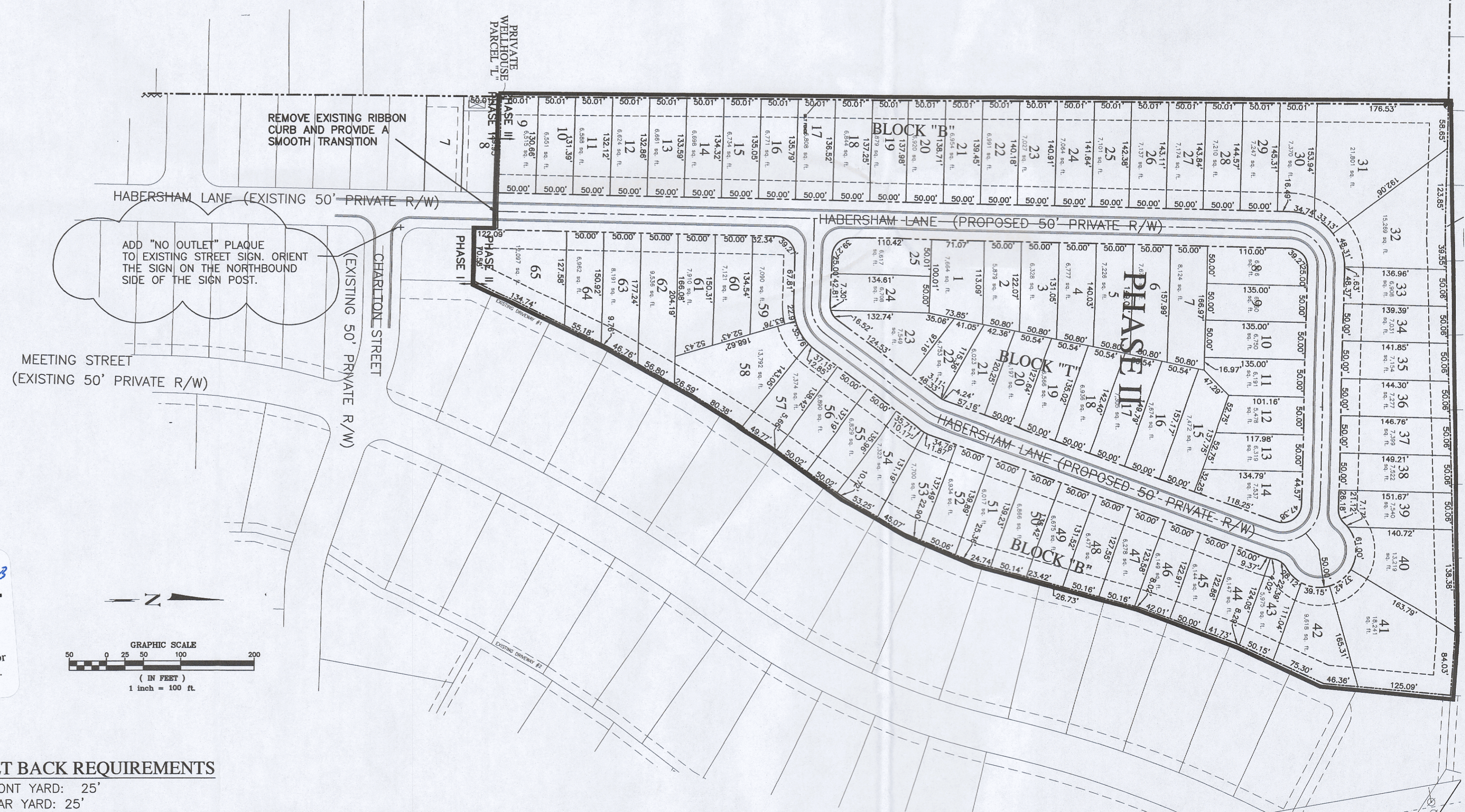
\*Project Manuals used only with ECUA CIP Projects

**C. Engineer of Record Responsibilities**

The Engineers of Record (EORs) that have affixed their seals and signatures on these plans warrant their portions of the plans have been designed in accordance with the Manual (unless otherwise directed by the ECUA Project Engineer). The EORs shall be knowledgeable of the Manual's contents and shall assume responsibility for its use on this Project.

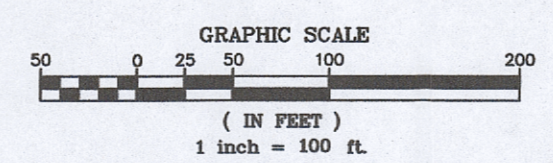
**VICINITY SKETCH NTS**

- CONTRACTOR SHALL NOTIFY ESCAMBIA COUNTY ENGINEER 48 HOURS PRIOR TO COMMENCEMENT OF THIS PROJECT.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO WIPE OUT OR ADJUST THE CROWN WHERE SO NOTED BY THE ENGINEER AND/OR REQUIRED FOR POSITIVE DRAINAGE.
- PROPERTY OBSTRUCTIONS WHICH ARE TO REMAIN IN PLACE, SUCH AS BUILDINGS, SEWERS, DRAINS, WATER, OR GAS PIPES, CONDUITS, RAILROAD TRACK, POLES, WALLS, POSTS, BRIDGES, ETC., ARE TO BE CAREFULLY PROTECTED AND ARE NOT TO BE DISPLACED, UNLESS NOTED.
- THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENTS OF THE WATER, GAS, SEWER, TELEPHONE, AND POWER COMPANIES 10 DAYS IN ADVANCE THAT HE INTENDS TO START WORK IN A SPECIFIC AREA. THE OWNER DISCLAIMS ANY RESPONSIBILITY FOR THE SUPPORT AND PROTECTION OF SEWERS, DRAINS, WATER PIPES, GAS PIPES, CONDUITS OF ANY KIND, UTILITIES OR OTHER STRUCTURES OWNED BY THE CITY, COUNTY, STATE OR BY PRIVATE OR PUBLIC UTILITIES LEGALLY OCCUPYING ANY STREET, ALLEY, PUBLIC PLACE, OR RIGHT-OF-WAY.
- LOCATION OF EXISTING UTILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION BEFORE CONSTRUCTION. FAILURE OF THE PLANS TO SHOW THE EXISTENCE OF ANY UNDERGROUND UTILITIES, STRUCTURES, ETC., SHALL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PRESERVING AND PROTECTING SAID UTILITY OR STRUCTURES.
- CONTRACTOR SHALL DISPOSE OF BY HAULING AWAY ALL EXCESS MATERIAL.
- CONTROL OF SEDIMENTATION AND EROSION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. AREAS OF CONTROL AND TYPICAL SECTION OF BARRIER ARE SUGGESTIONS ONLY AND DOES NOT RELIEVE THE CONTRACTOR OF ANY OF HIS RESPONSIBILITY.
- WHERE UNSUITABLE MATERIALS ARE ENCOUNTERED IN THE PAVED AREAS, THE UNSUITABLE MATERIAL SHALL BE EXCAVATED AND THE AREA BACKFILLED WITH GOOD SAND AND SAND/CLAY MATERIALS. THE SAME SHALL APPLY WHERE THE SUB-BASE IS SUBJECT TO RISING WATER TABLE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE SEEDING AND MULCHING OF STREET AND ROAD SHOULDERS IN ACCORDANCE WITH REQUIREMENTS OF ESCAMBIA COUNTY SPECIFICATIONS AND F.D.O.T. SPECIFICATIONS, UNLESS OTHERWISE SHOWN TO BE SODDED.
- WATER SUPPLY FACILITIES, INCLUDING MAINS, SHALL BE INSTALLED, CLEANED, DISINFECTED, AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH THE LATEST APPLICABLE ANSWA STANDARDS AND COORDINATED WITH LOCAL UTILITY ENGINEER/INSPECTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR AND COMPLY WITH ANY TESTING REQUIRED BY THE LOCAL GOVERNING AGENCY IN ADDITION TO THE TESTING REQUIREMENTS OUTLINED IN THE SPECIFICATION.
- GRADING AROUND TREES WHICH ARE TO REMAIN SHALL BE AWAY FROM THE TREE IN A MANNER TO CAUSE NO DAMAGE TO THE TREE.
- SOD SHALL BE PLACED IN ACCORDANCE WITH SEC. 575 F.D.O.T. SPECIFICATIONS.
- PIPELINE CONTRACTOR SHALL BE RESPONSIBLE FOR INLET TOPS AND THROATS.
- NOTIFY COUNTY ENGINEER 24 HOURS BEFORE BEGINNING EVERY PHASE OF CONSTRUCTION.
- DEVELOPER SHALL CLEAN OUT ACCUMULATED SILT IN RETENTION /DETENTION POND AT THE END OF CONSTRUCTION WHEN ALL DISTURBED AREAS HAVE BEEN STABILIZED.
- ROUGH GRADE OF RIGHT OF WAY MUST BE ESTABLISHED PRIOR TO COMMON TRENCH UTILITY INSTALLATION TO ENSURE UTILITIES ARE INSTALLED AT MINIMUM AND MAXIMUM DEPTHS.
- CONTRACTOR MUST FOLLOW PROCEDURES SET OUT BY ECUA PRIOR TO ORDERING SANITARY SEWER MATERIALS.
- CONTRACTOR MUST COORDINATE A PRE CONSTRUCTION CONFERENCE WITH ECUA PRIOR TO INITIATING SEWER CONSTRUCTION.
- THE INSPECTOR OR AUTHORIZED ECUA REPRESENTATIVE MUST OBSERVE THE CONNECTIONS TO ECUA'S EXISTING SEWER SYSTEM.
- CONTRACTOR MUST PROVIDE 72 HOURS (3 WORKING DAYS) WRITTEN NOTICE TO THE COTTAGE HILL WATER INSPECTOR PRIOR TO BEGINNING UTILITY CONSTRUCTION.
- THE INSPECTOR OR AUTHORIZED COTTAGE HILL WATER REPRESENTATIVE MUST OBSERVE THE CONNECTIONS TO COTTAGE HILL WATER'S EXISTING WATER SYSTEM.
- CENTERLINE RADIUS FOR ALL HORIZONTAL CURVES. A MINIMUM OF 50' RADIUS IS REQUIRED TO PROVIDE A 15 MPH DESIGN SPEED.
- MINIMUM PAVING RADI AT INTERSECTIONS IS 25'.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AT LEAST TWO WEEKS PRIOR TO PLACEMENT OF BASE MATERIAL TO ASSIST IN THE COORDINATION OF ALL OTHER UNDERGROUND UTILITIES.
- R/W SHOULDER STABILIZATION IS TO BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION.
- ALL DISTURBED AREAS WHICH ARE NOT SODDED OR PAVED SHALL BE STABILIZED WITH SEEDING, FERTILIZER AND MULCH AND/OR HYDROSEED. SEED AND MULCH SHALL BE IN ACCORDANCE WITH FDOT SECTION 570 AND STANDARD INDEX 105.
- CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW "AS-BUILT" CONDITIONS OF ALL WORK INCLUDING PIPING, DRAINAGE STRUCTURES, TORSO OF POND(S), OUTLET STRUCTURES, DIMENSIONS, ELEVATIONS, GRADING ETC. RECORD DRAWINGS SHALL BE PROVIDED TO THE ENGINEER OF RECORD PRIOR TO REQUESTING FINAL INSPECTION.
- NOTIFY SUNSHINE 811 IN ADVANCE PRIOR TO DIGGING WITHIN R/W.
- ALL ASPECTS OF THE STORMWATER/DRAINAGE COMPONENTS AND/OR TRANSPORTATION COMPONENTS SHALL BE COMPLETED PRIOR TO REQUESTING FINAL INSPECTION.
- NO DEVIATIONS OR REVISIONS FROM THESE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL FROM BOTH THE DESIGN ENGINEER AND THE ESCAMBIA COUNTY. ANY DEVIATIONS MAY RESULT IN DELAYS IN COUNTY ACCEPTANCE OF IMPROVEMENTS.
- ON SITES > 1 ACRES, IF > 1 CONTIGUOUS ACRE IS CLEARED, A GROUND COVER SUFFICIENT TO PREVENT EROSION SHOULD BE PLANTED OR OTHERWISE STABILIZED WITHIN 10 WORKING DAYS ON THAT PORTION OF THE SITE UPON WHICH FURTHER ACTIVE CONSTRUCTION WILL NOT BE UNDERTAKEN WITHIN 90 DAYS.
- TO COMPLY WITH NPDES REQUIREMENTS, ALL EROSION CONTROL MEASURES SHALL BE INSPECTED AFTER EACH 1/4" RAINFALL EVENT OR AT LEAST WEEKLY. THE CONTRACTOR SHALL DOCUMENT SUCH INSPECTIONS AND EROSION CONTROL MAINTENANCE EFFORTS; INSPECTION RECORDS SHALL BE PROVIDED TO THE NEPDES PERMIT APPLICANT FOR PROPER REPORTING TO USEP.
- ELECTRIC/PHONE/CABLE/GAS STRUCTURES INSTALLED WITHIN DRAINAGE ACCESS EASEMENTS SHALL BE LOCATED ALONG THE BOUNDARY OF THE EASEMENT TO MAXIMIZE CLEAR ACCESS FOR MAINTENANCE EQUIPMENT.
- CONTRACTOR SHALL NOTIFY THE EOR OF ANY ISSUES DURING CONSTRUCTION THAT MAY RESULT FROM OBSERVATION OF FIELD CONDITIONS.
- ALL LOTS WILL NOT BE ABLE TO ACCOMMODATE A SLAB FOUNDATION. OTHER FOUNDATIONS MAY NEED TO BE CONSIDERED. THE HOMEOWNER WILL BE RESPONSIBLE FOR RETAINING WALLS WHERE NEEDED.
- THE SUBJECT PROPERTY AS SHOWN HEREON IS LOCATED IN FLOOD ZONE X. (MINIMAL RISK AREAS OUTSIDE THE 1-PERCENT AND 2-PERCENT ANNUAL-CHANCE FLOODPLANS. NO BEF OR BASE FLOOD DEPTHS ARE SHOWN WITHIN THESE ZONES), AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP OF ESCAMBIA COUNTY FLORIDA, COMMUNITY 120080, FIRM MAP PANEL NUMBERS 1203302040G, MAP REVISION DATED SEPTEMBER 29, 2006.
- PRELIM MAPS JANUARY 27, 2017, MAP PANEL NUMBER 1203302090J LOCATED IN FLOOD ZONE X.
- NO HERITAGE TREES ON SITE.



Approved: *David W. Fitzpatrick* Date: 7-19-23

This document has been reviewed in accordance with requirements of applicable Escambia County Regulations and Ordinances and does not in any way relieve the submitting Architect, Engineer, Surveyor, or other signatory from responsibility of details as drawn.



- SET BACK REQUIREMENTS**  
 FRONT YARD: 25'  
 REAR YARD: 25'  
 SIDE YARD: THE MINIMUM SIDE YARD ON EACH SIDE SHALL BE TEN PERCENT OF THE LOT WIDTH MEASURED AT THE FRONT BUILDING LINE, HOWEVER, SIDE YARDS NEED NOT EXCEED 15 FEET ON EACH SIDE.
- SETBACKS NOTE:**  
 SIDE BUILDING SETBACKS ARE NOT TO OVERLAP DRAINAGE/ACCESS EASEMENTS TO PREVENT FUTURE BUILDING ON EASEMENTS.
- FLOOD NOTE:**  
 ADJACENT LOTS TO THE PROPOSED DEVELOPMENT SHOULD NOT FLOOD DURING 100-YEAR STORM AS A RESULT OF THIS PROJECT.
- DRIVEWAY NOTE:**  
 ALL DRIVEWAYS TO BE TYPE-I UNLESS NOTED OTHERWISE ON THE LOT.



PLOT DATE: 7-10-23

NOTE: PHASE II SHOWN SURROUNDED IN BOLD

**UTILITY CONTACTS**

CONTRACTOR SHALL NOTIFY SUNSHINE 1 48 HOURS PRIOR TO COMMENCING CONSTRUCTION 1-800-432-4770

FPL CO. PENSACOLA ENERGY  
 ALLEN THOMPSON DIANE MOORE  
 850-429-2603 850-474-5319

AT&T COX COMMUNICATIONS  
 STEPHEN KENNINGTON TROY YOUNG  
 850-512-4848 850-232-5044

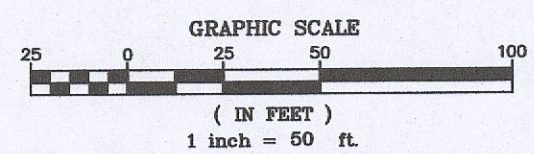
ECUA COTTAGE HILL WATER  
 PETER KUMMER RANDY WEAVER  
 850-969-6643 850-968-5485

PROJECT NAME: CARRINGTON		DRAWN BY: ADB
DATE: 07/06/23	DRAINAGE PLAN	PROJECT NO. 04-104

**DAVID W. FITZPATRICK**  
 PROFESSIONAL ENGINEER, P.A.  
 BOARD OF PROFESSIONAL REGULATION #00008423  
 10250 NORTH PALAFOX STREET  
 PENSACOLA, FL 32534  
 (850) 476-8677  
 FAX (850) 476-7708

WATER MAIN INSTALLATION NOTE:  
ALL WATER MAINS TO BE INSTALLED  
PER FDEP SEPARATION REQUIREMENTS

ALL SANITARY SEWER WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT EDITION OF ECUA'S ENGINEERING MANUAL.  
ALL POTABLE WATER WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH COTTAGE HILL WATER SPECIFICATIONS.

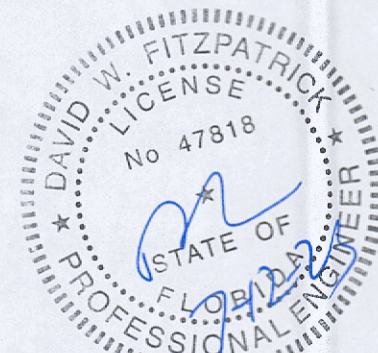


LEGEND:

	SANITARY SEWER PIPE
	POTABLE WATER PIPE
	STORM WATER PIPE
	LOT LINES
	OVERHEAD UTILITY LINE
	UTILITY POLE

REVISIONS

07-06-23	ECUA-1	ADDED MANHOLE, B12, MOVED MANHOLE B8
----------	--------	--------------------------------------



PROJECT NAME: CARRINGTON

DATE: 07/06/23

PLOT DATE: 7-6-23

DRAINAGE PLAN

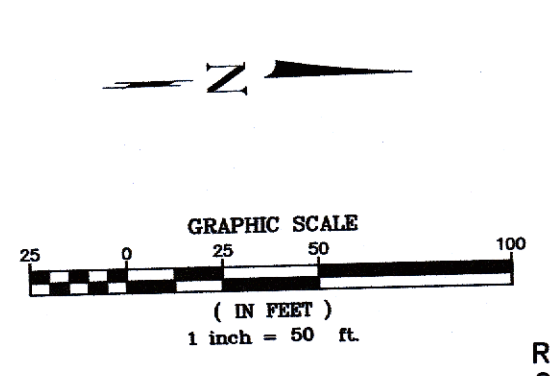
DRAWN BY: ADB

PROJECT NO.: 04-104

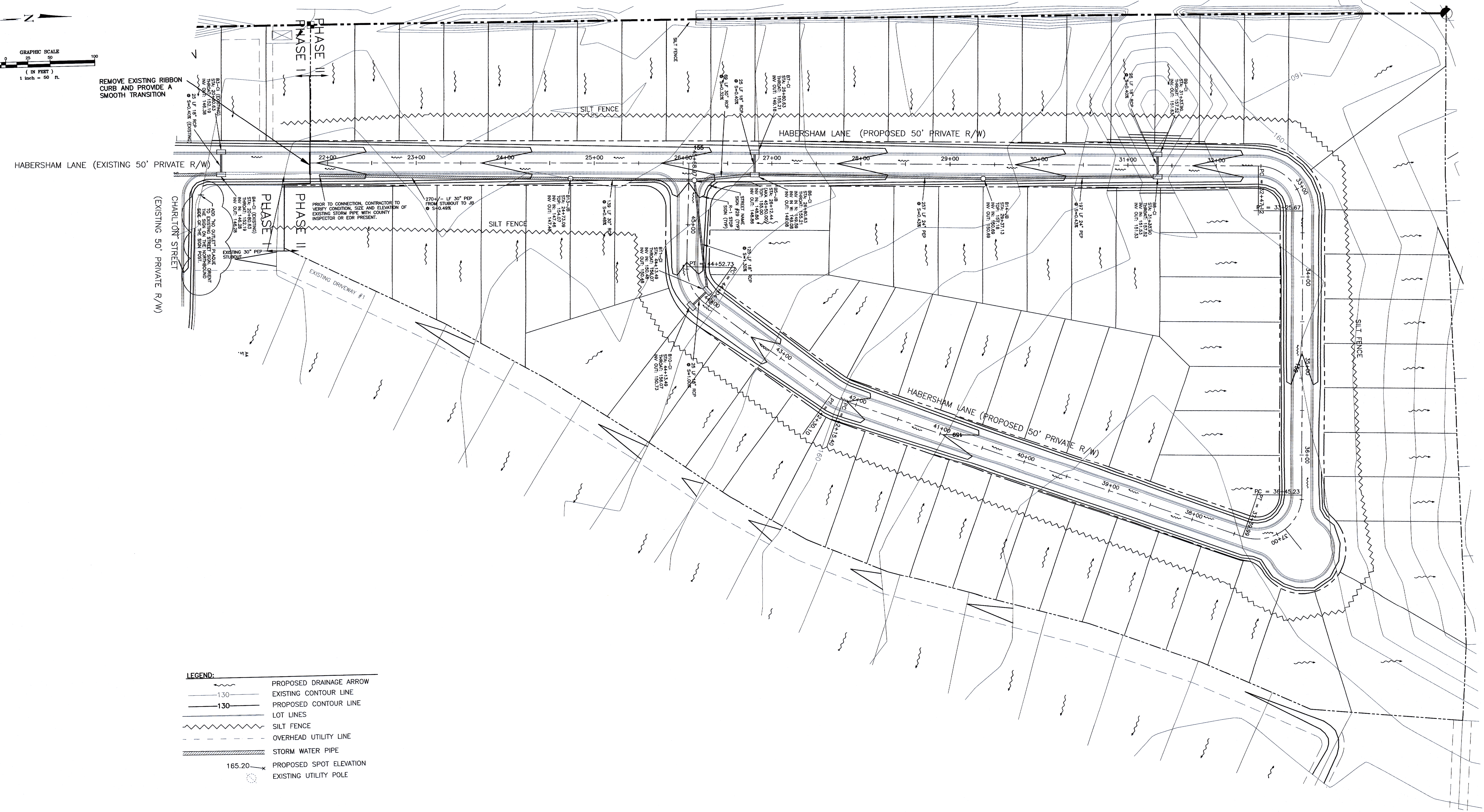
**DAVID W. FITZPATRICK**  
PROFESSIONAL ENGINEER, P.A.  
BOARD OF PROFESSIONAL REGULATION #00008423  
10250 NORTH PALMCOX STREET  
PENSACOLA, FL 32534  
(850) 478-8677  
FAX (850) 478-7708

Sheet 2 of 7

ALL SANITARY SEWER WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MOST RECENT EDITION OF ECUA'S ENGINEERING MANUAL.  
ALL POTABLE WATER WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH COTTAGE HILL WATER SPECIFICATIONS.



REMOVE EXISTING RIBBON CURB AND PROVIDE A SMOOTH TRANSITION



- LEGEND:**
- PROPOSED DRAINAGE ARROW
  - EXISTING CONTOUR LINE
  - PROPOSED CONTOUR LINE
  - LOT LINES
  - SILT FENCE
  - OVERHEAD UTILITY LINE
  - STORM WATER PIPE
  - 165.20 PROPOSED SPOT ELEVATION
  - EXISTING UTILITY POLE



PLOT DATE: 7-6-23

REVISIONS

07-06-23	ECUA-1	ADDED MANHOLE, B12, MOVED MANHOLE B8
----------	--------	--------------------------------------

PROJECT NAME: CARRINGTON

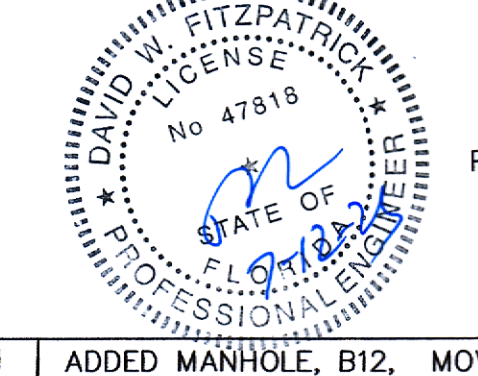
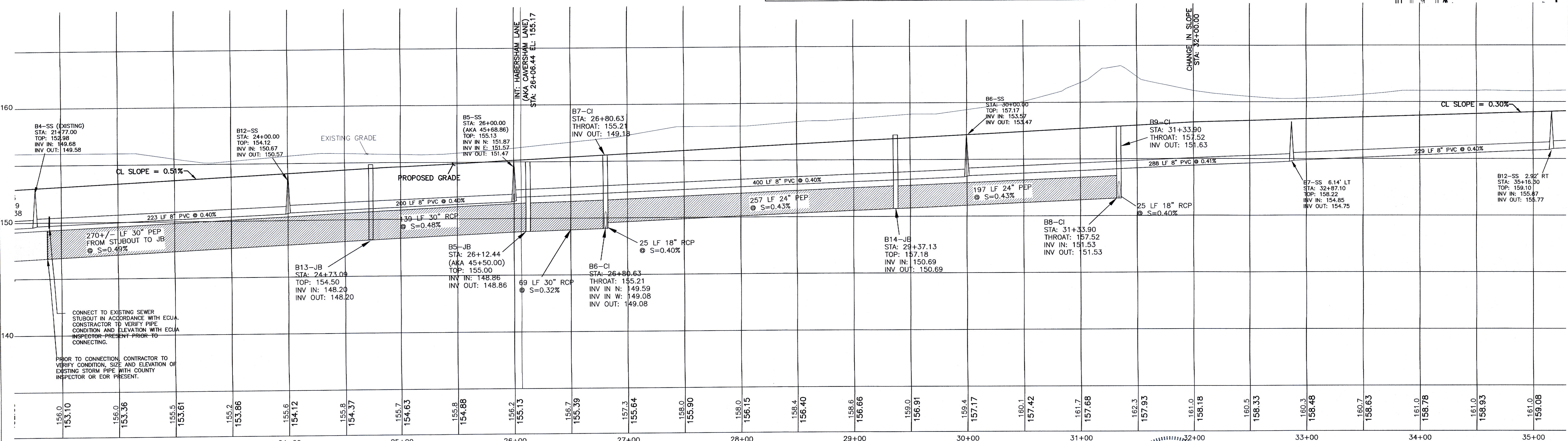
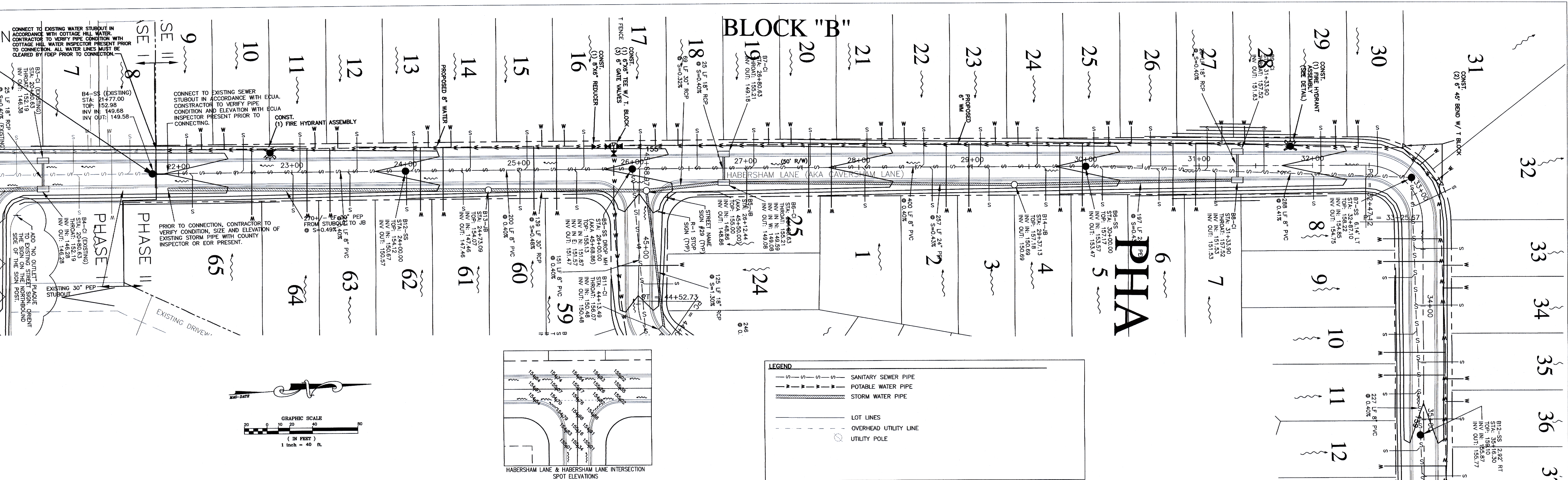
DATE: 07/06/23

DRAWN BY: ADB

PROJECT NO: 04-104

**DAVID W. FITZPATRICK**  
PROFESSIONAL ENGINEER, P.A.  
BOARD OF PROFESSIONAL REGULATION #00008423  
10250 NORTH PALMFOX STREET  
PENSACOLA, FL 32534  
(850) 476-8677  
FAX (850) 476-7708

Sheet 3 of 7



NO.	DATE	DESCRIPTION
07-06-23	ECUA-1	ADDED MANHOLE, B12, MOVED MANHOLE B8

PROJECT NAME: CARRINGTON

DRAINAGE PLAN

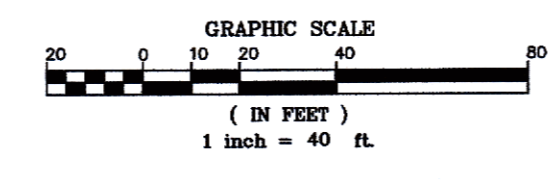
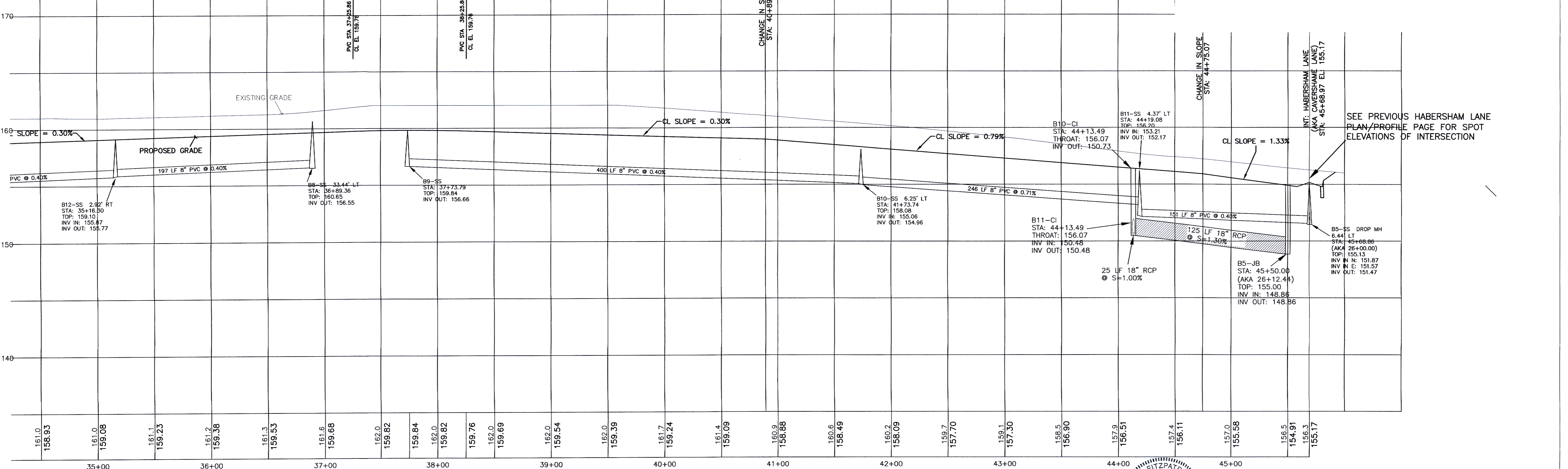
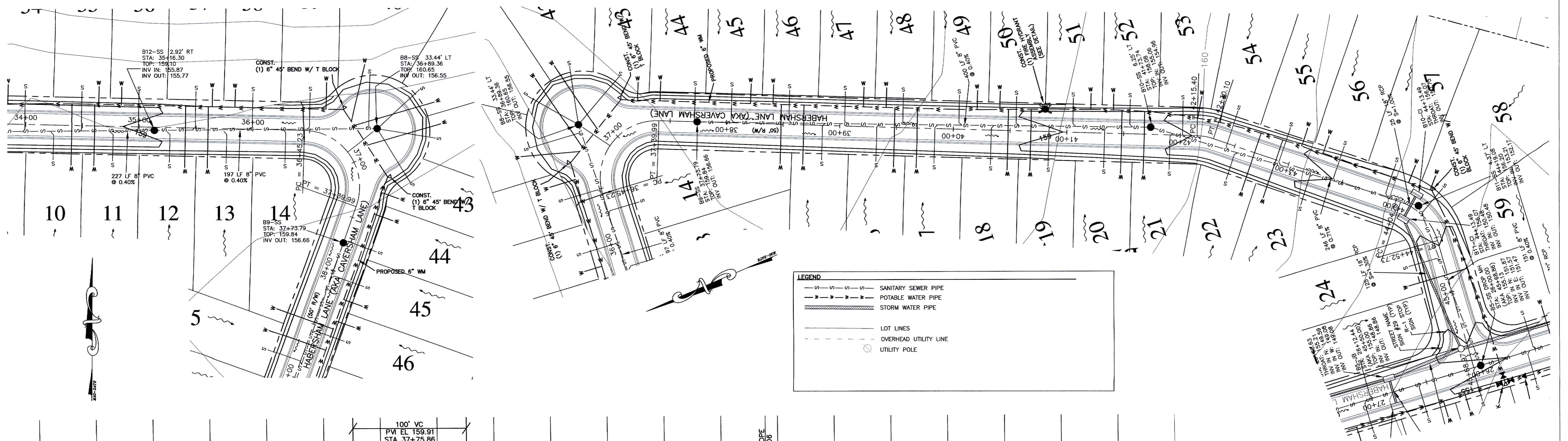
DATE: 07/06/23

PLOT DATE: 7-6-23

DAVID W. FITZPATRICK  
 PROFESSIONAL ENGINEER, P.A.  
 BOARD OF PROFESSIONAL REGULATION #00008423  
 10256 NORTH PALMFOX STREET  
 PENSACOLA, FL 32534  
 (850) 476-8677  
 FAX (850) 476-7708

DRAWN BY: ADB  
 PROJECT NO.: 04-104

Sheet 4 of 7



PROFESSIONAL ENGINEER  
 STATE OF FLORIDA  
 LICENSE No. 47918  
 DAVID W. FITZPATRICK

REVISIONS  
 07-06-23 ECUA-1 ADDED MANHOLE, B12, MOVED MANHOLE B8

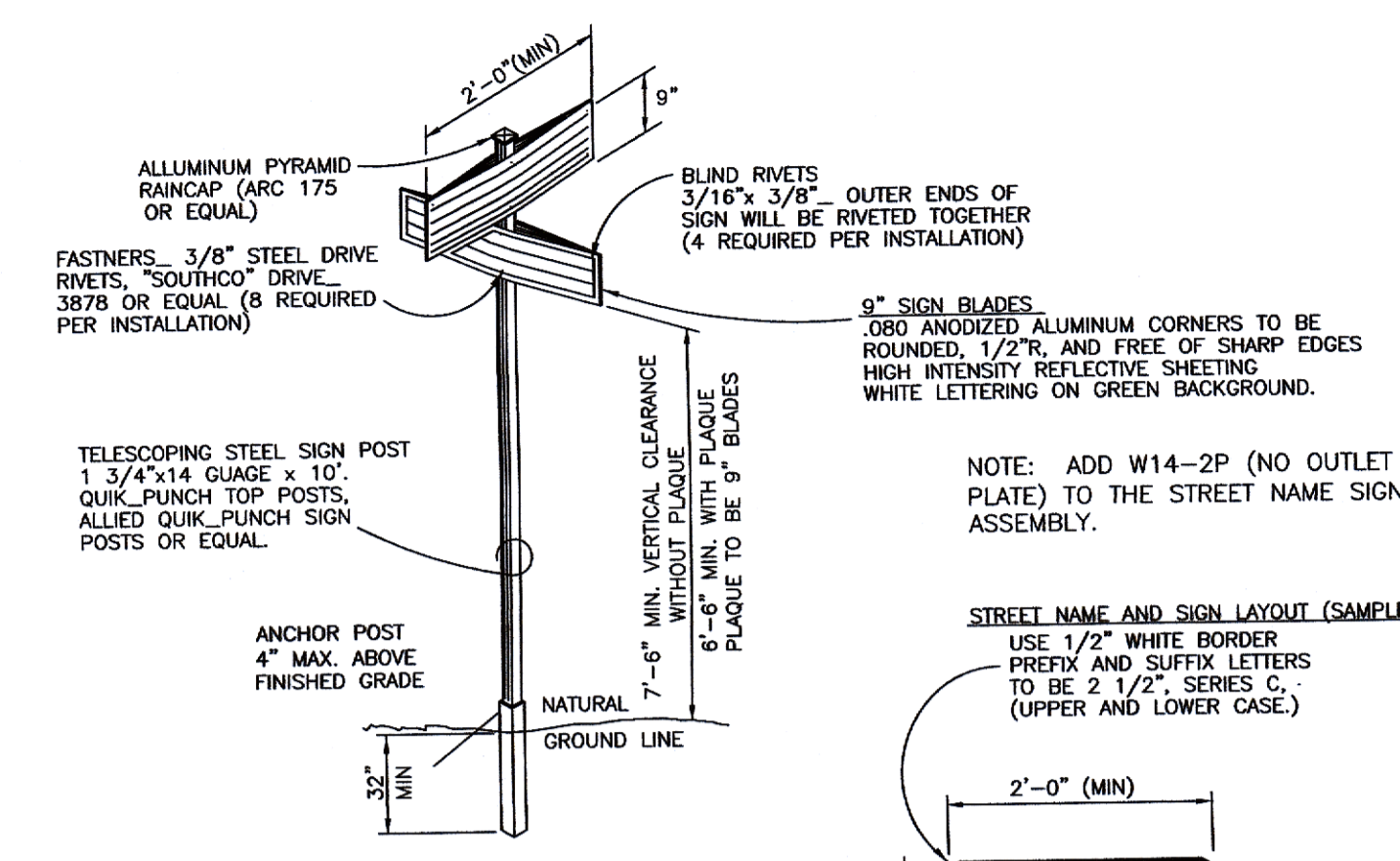
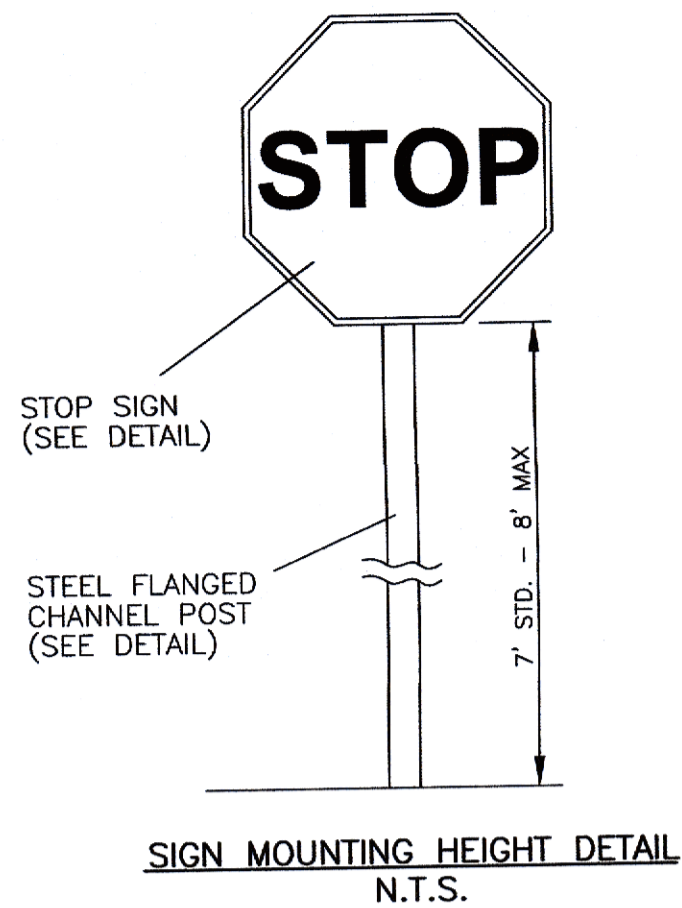
PLOT DATE: 7-6-23

PROJECT NAME: CARRINGTON

DATE: 07/06/23	DRAWN BY: ADB
	PROJECT NO: 04-104

**DAVID W. FITZPATRICK**  
 PROFESSIONAL ENGINEER, P.A.  
 BOARD OF PROFESSIONAL REGULATION #00008423  
 10250 NORTH PALMFOX STREET  
 PENSACOLA, FL 32514  
 (850) 478-8677  
 FAX (850) 478-7708

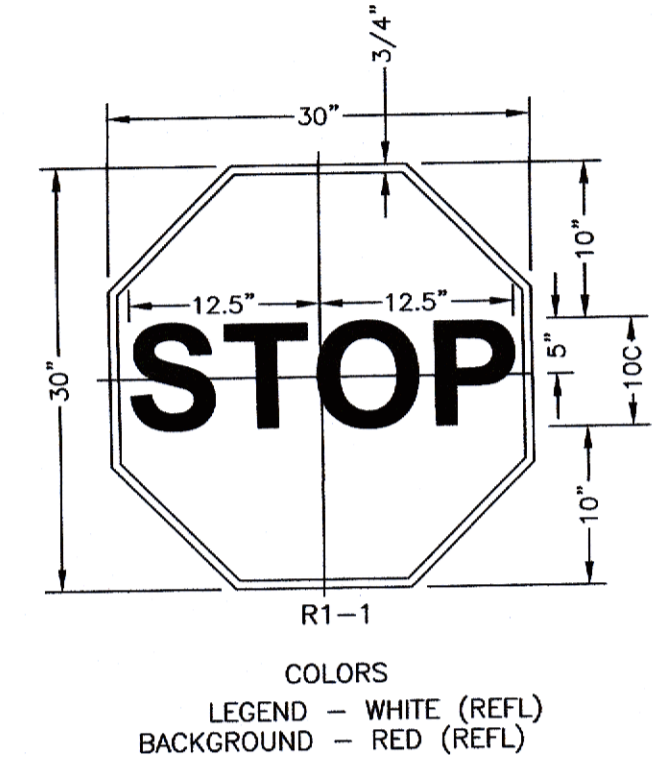
Sheet 5 of 7



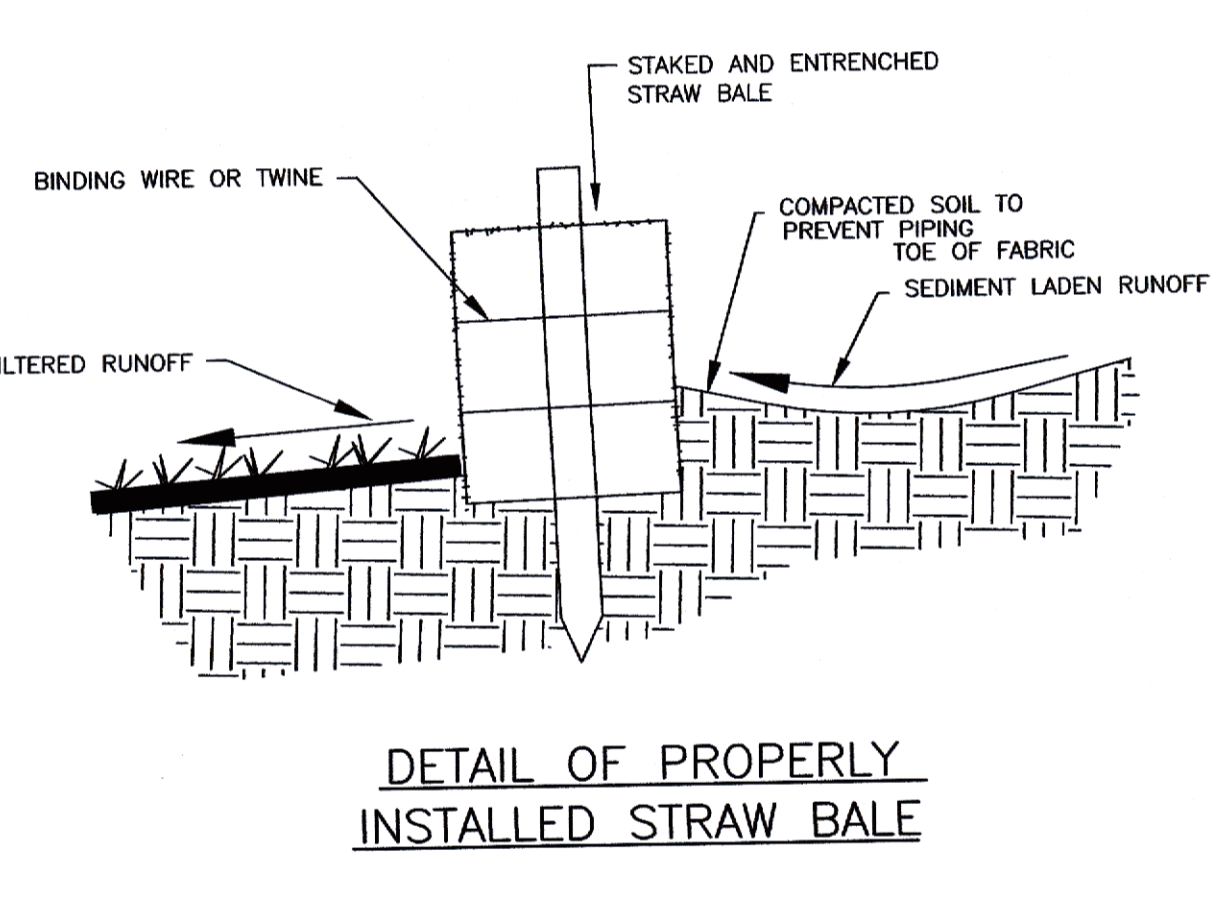
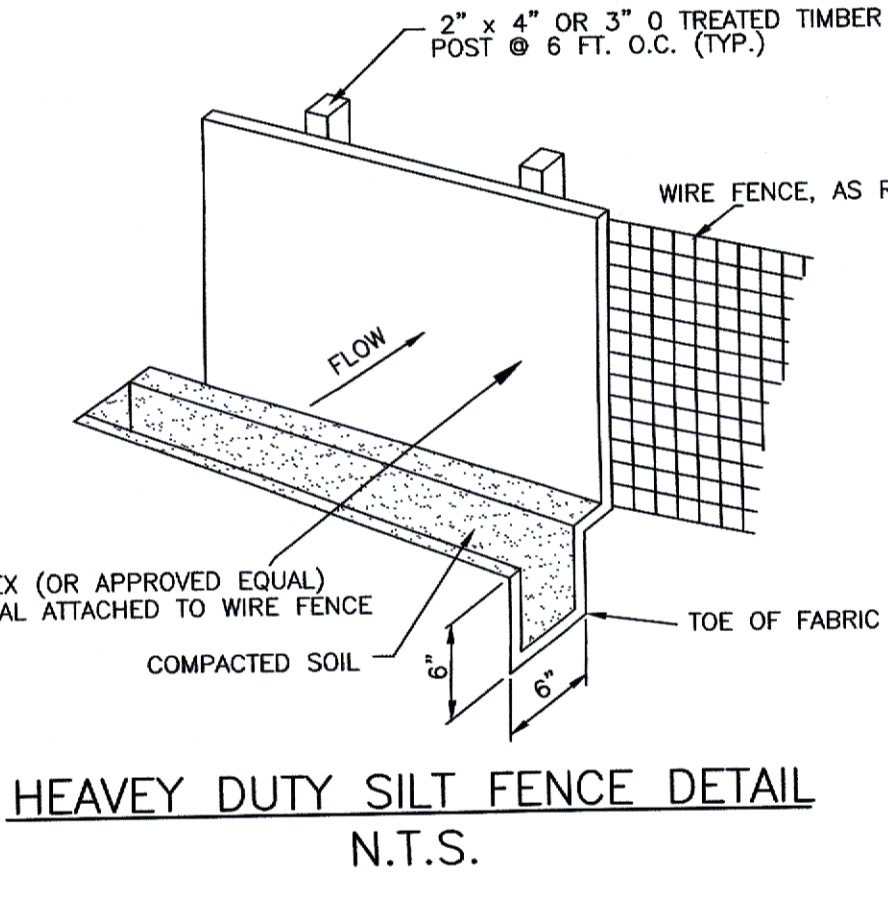
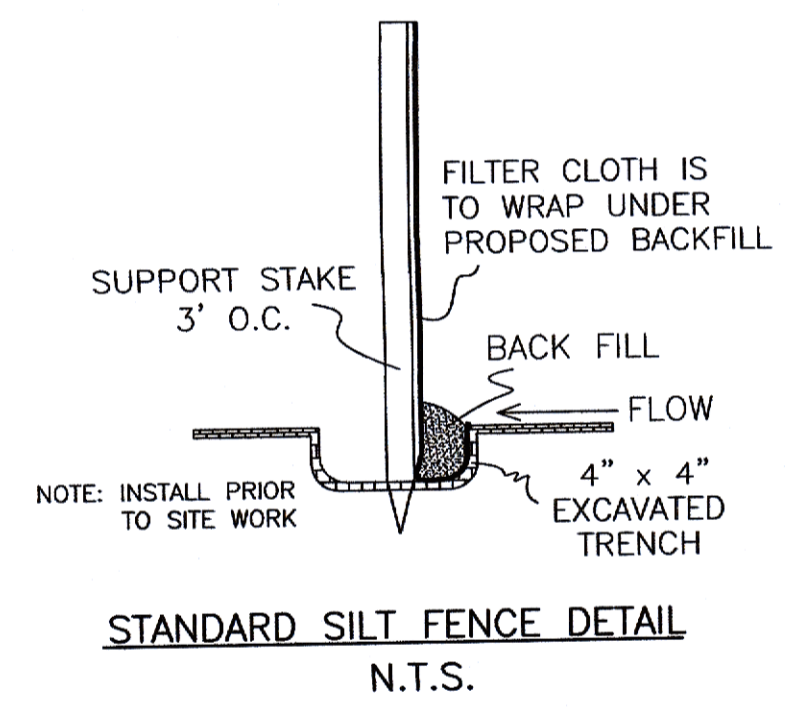
NOTE: STREET NAME SIGNS WILL BE LOCATED MID-WAY THROUGH THE RADIUS, AND APPROXIMATELY 10 FEET FROM THE EDGE OF PAVEMENT.

**STREET SIGN DETAILS**  
N.T.S.

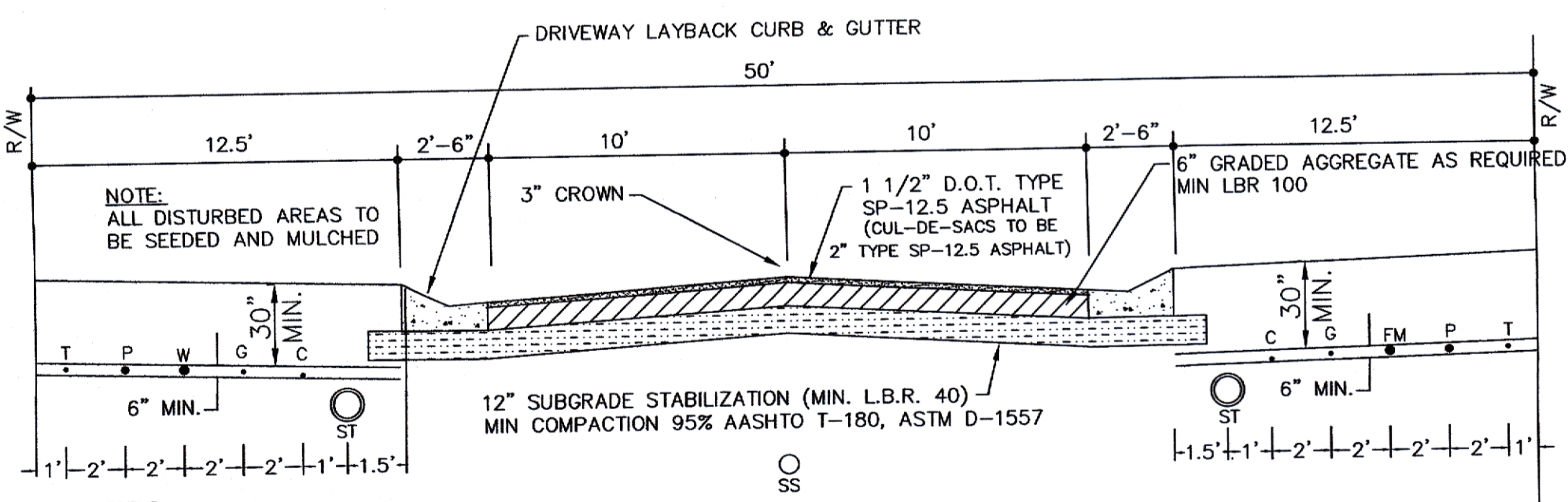
NOTE: SEE ESCAMBIA COUNTY STANDARD DETAILS FOR STREET NAME SIGNS FOR FURTHER DETAILS. THIS SHEET IS INCLUDED IN THE SPECIFICATIONS FOR THIS PROJECT.



**STOP SIGN DETAIL**  
N.T.S.

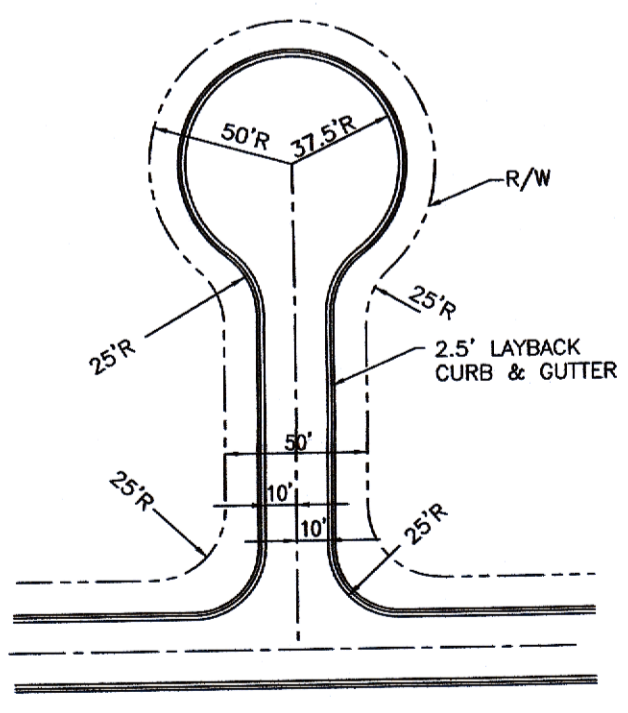


**DETAIL OF PROPERLY INSTALLED STRAW BALE**

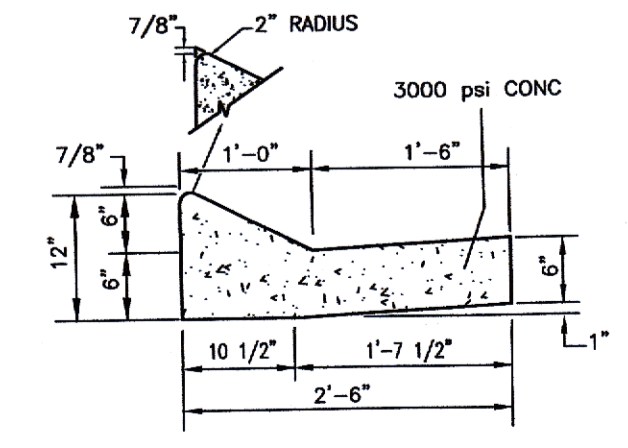


NOTE: 1. THIS IS A TYPICAL LOCATION PLAN. SEE CONSTRUCTION PLANS TO DETERMINE WHICH SIDE OF THE R/W ACTUALLY RECEIVES UTILITIES. SOME UTILITIES MAY ONLY BE ON ONE SIDE OF THE ROAD (I.E. WATER & FORCE MAIN). 2. ALL PROPOSED UNDERGROUND UTILITIES WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED PRIOR TO PAVING. NO STREETS UNDER THE TWO YEAR COMPLIANCE PERIOD WILL BE ALLOWED TO BE OPEN-CUT OR JACK AND BORED UNLESS SPECIFICALLY APPROVED BY THE COUNTY ENGINEER. TO ACCOMPLISH THIS REQUIREMENT, COMMON TRENCHING IS REQUIRED. COMMON TRENCHING SHALL NOT TAKE PLACE UNTIL ALL R/W ROUGH GRADES HAVE BEEN ESTABLISHED TO ENSURE PROPER UTILITY DEPTHS. 3. CONTRACTOR SHALL ROUGH GRADE RIGHT-OF-WAY AREAS TO MATCH INTENT OF THE LOT GRADING PLAN. 4. PROVIDE A MINIMUM 30\"/>

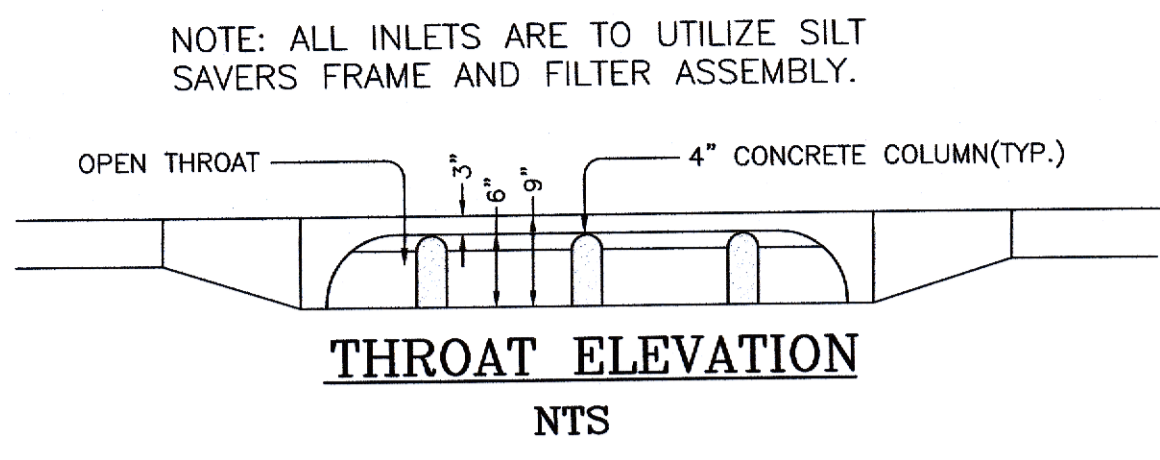
**COMMON TRENCH DETAIL/ROAD CROSS SECTION**  
NOT TO SCALE



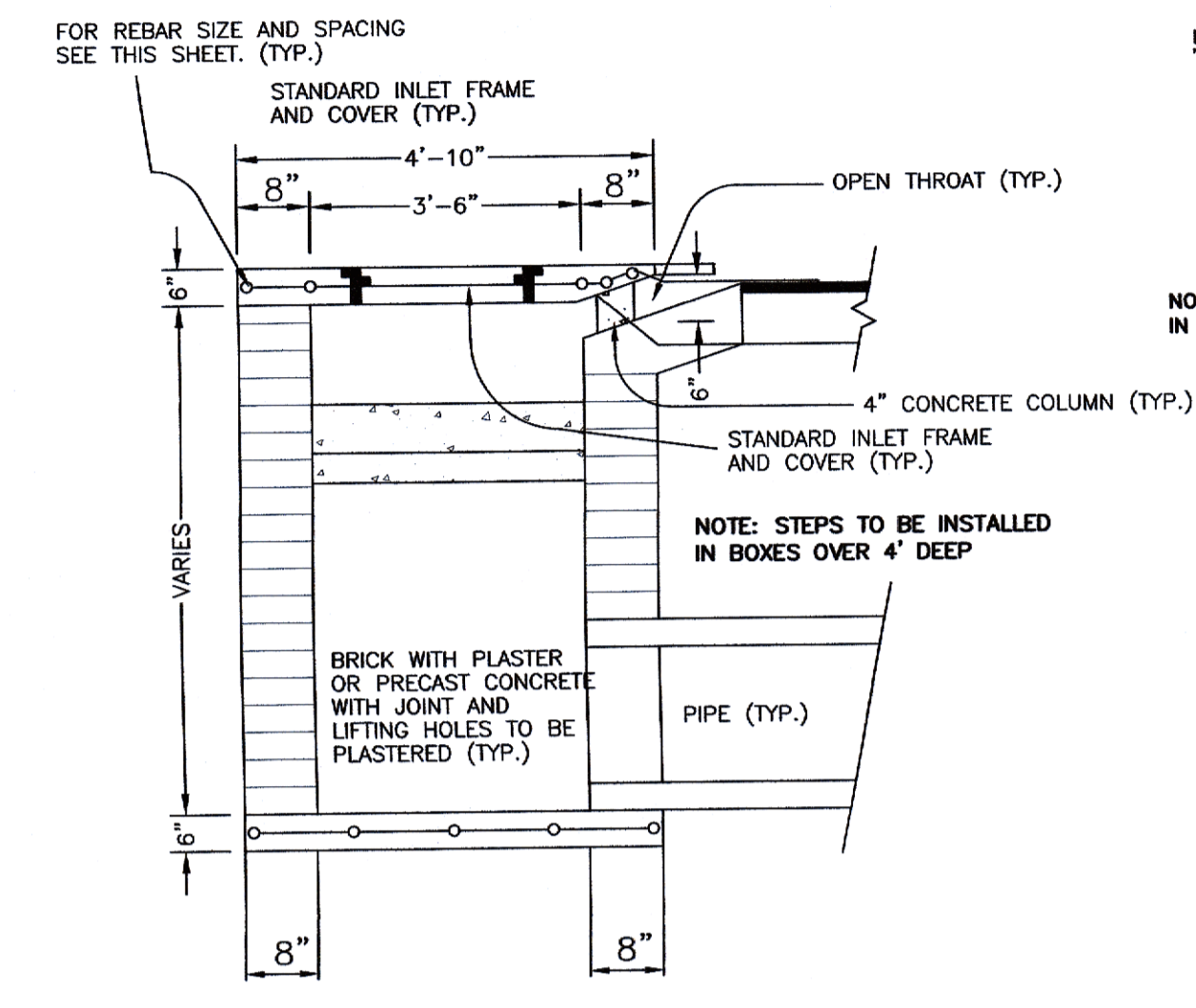
**CUL-DE-SAC DETAIL**  
N.T.S.



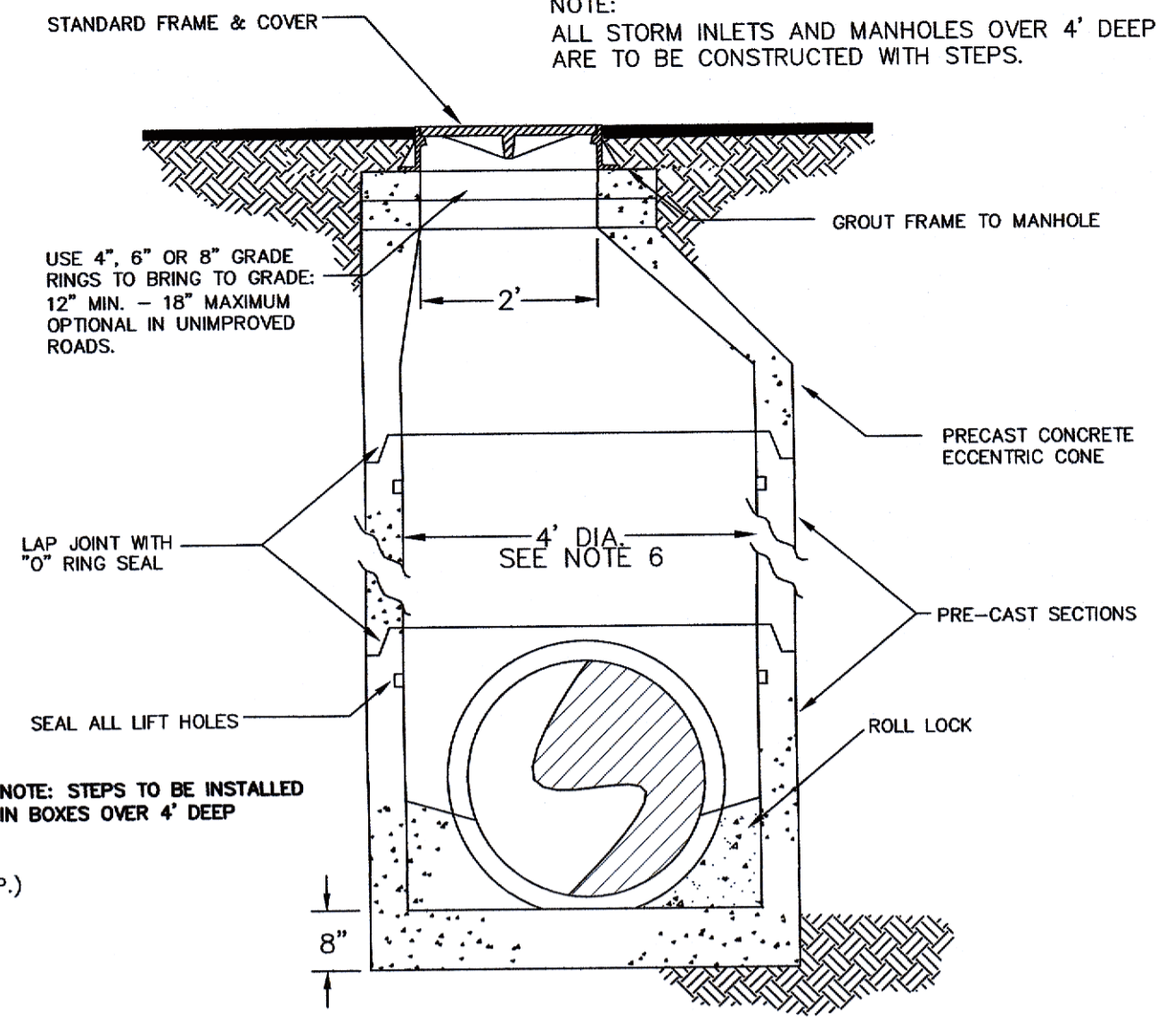
**LAYBACK CURB & GUTTER**



**THROAT ELEVATION**  
N.T.S.

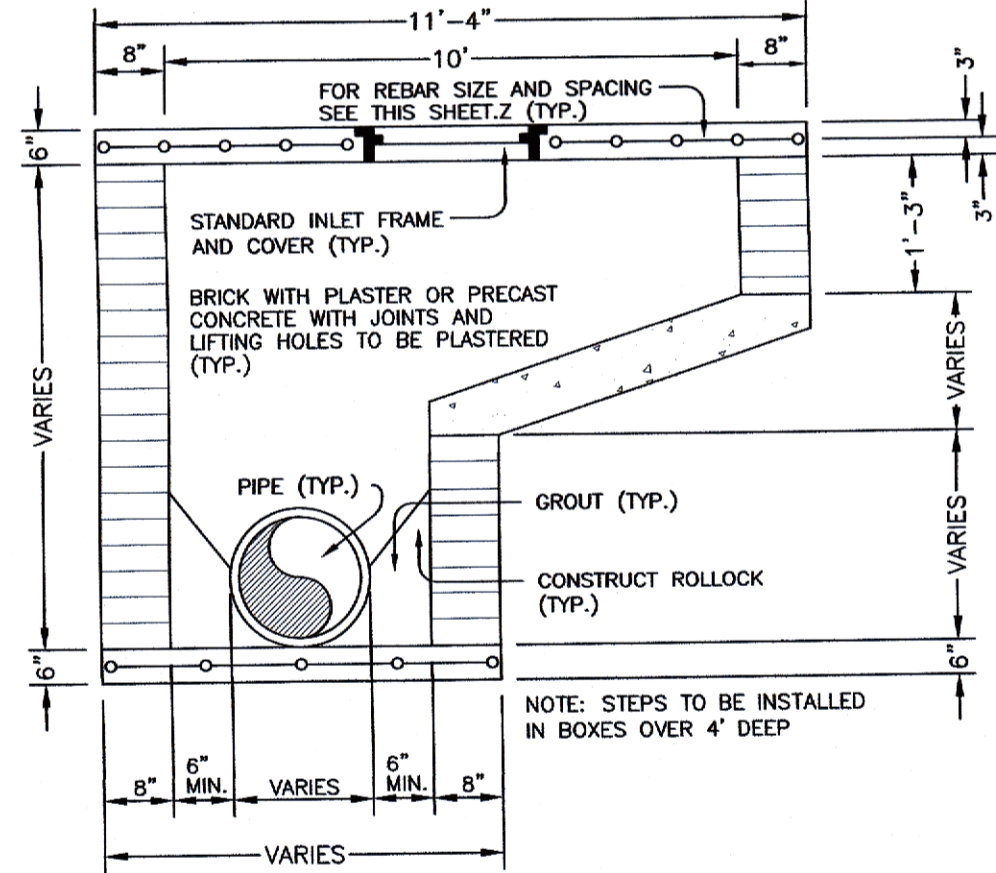


**SECTION 'B-B'**  
N.T.S.

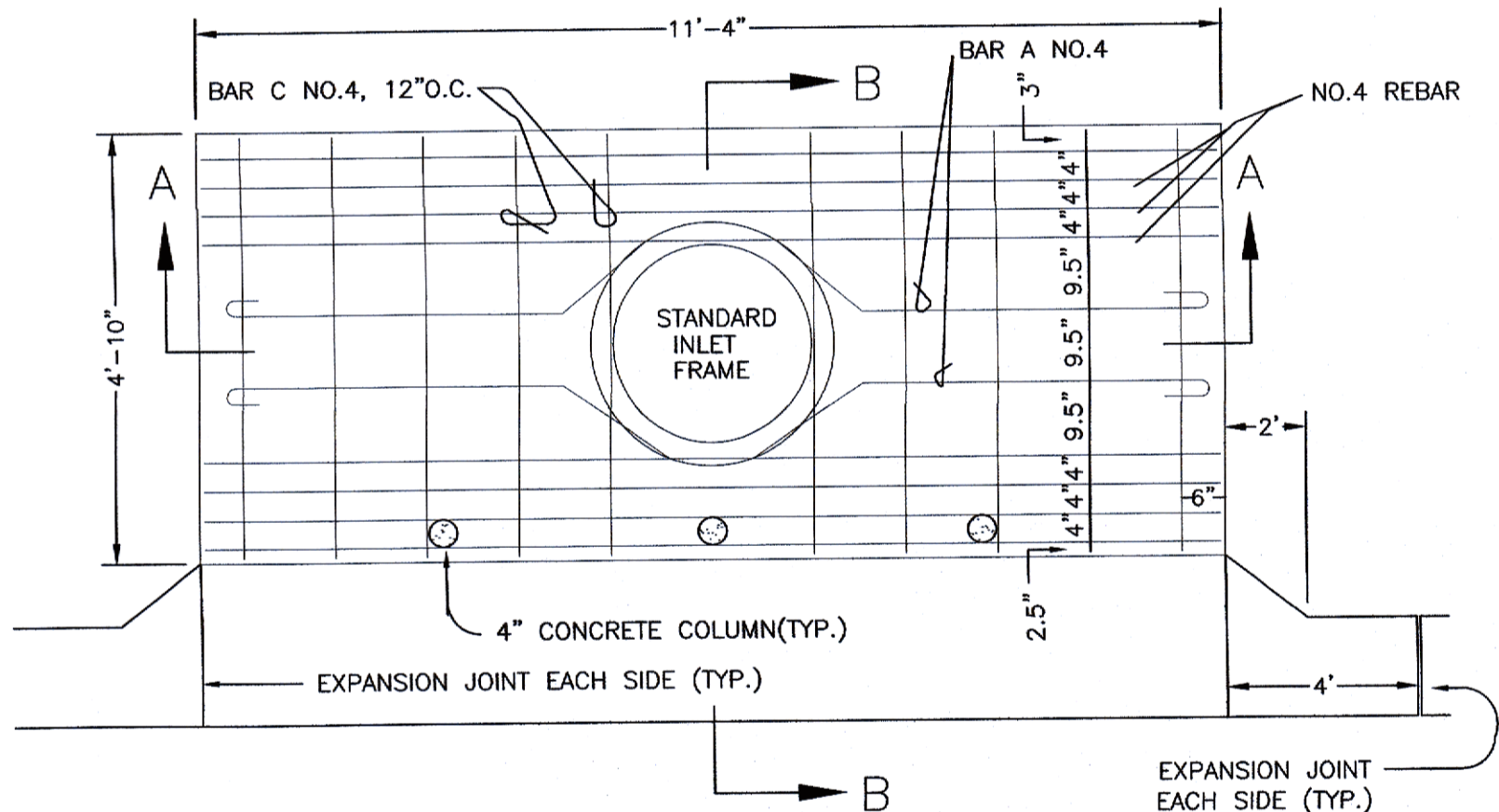


**STANDARD JUNCTION BOX**  
N.T.S.

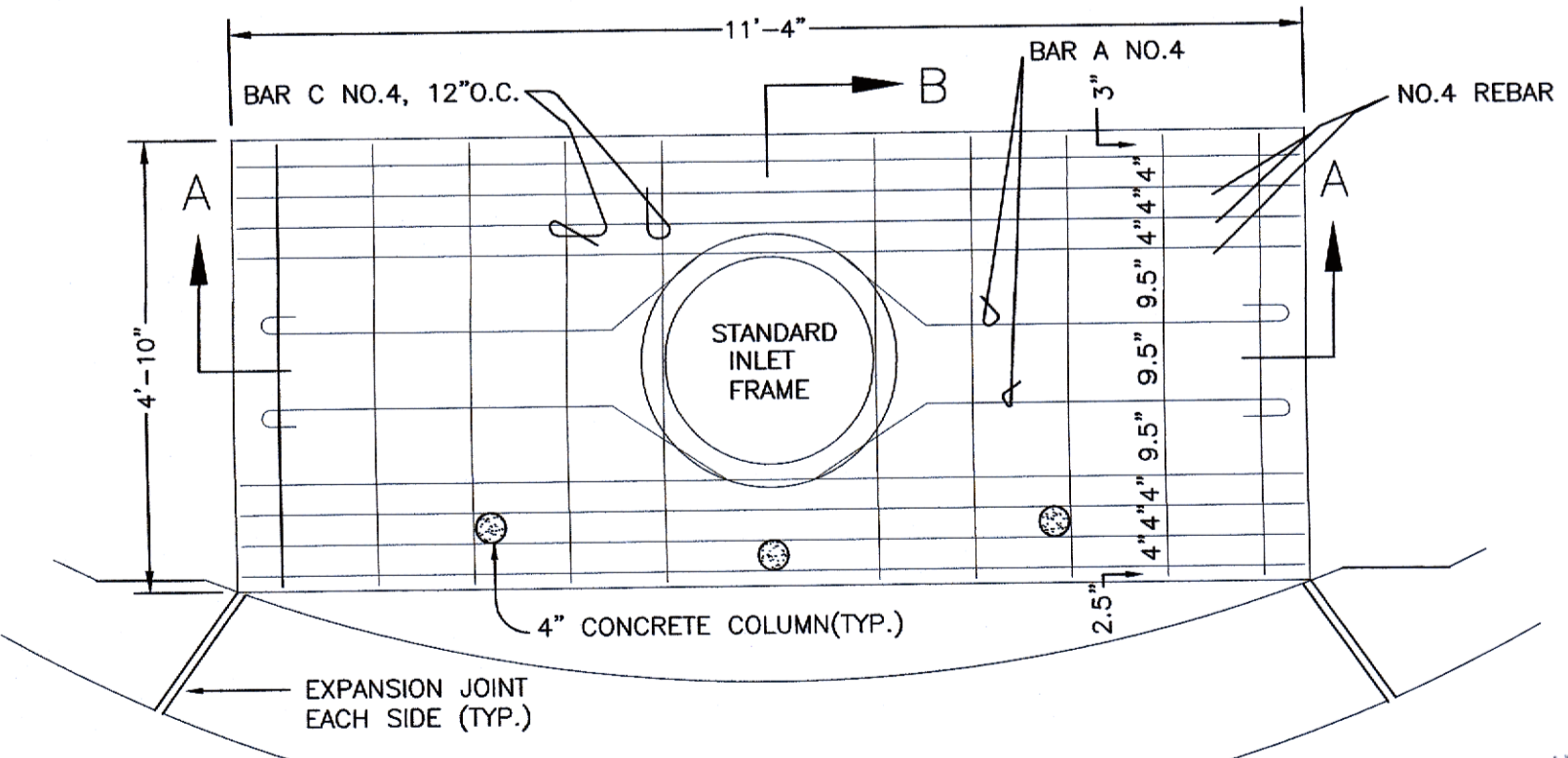
JUNCTION BOX NOTES:  
1. MANHOLE SHALL CONFORM TO A.S.T.M. C 478 SPECIFICATIONS.  
2. DIAMETER OF OPENING FOR PIPE SHALL BE 1\"/>



**SECTION 'A-A'**  
N.T.S.

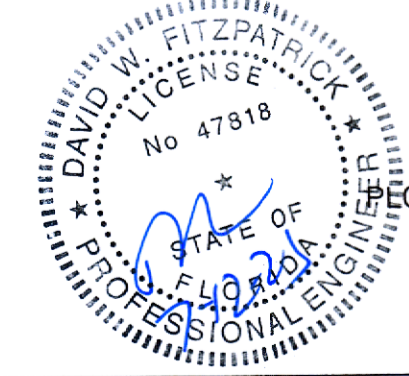


**TYPE-A CURB INLET DETAIL**  
N.T.S.



**TYPE 'A-1' DROP INLET DETAIL**  
N.T.S.

REVISIONS		
07-06-23	ECUA-1	ADDED MANHOLE, B12, MOVED MANHOLE BB



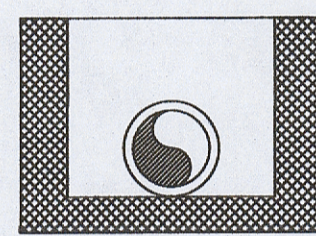
PROJECT NAME: CARRINGTON		DATE: 07/06/23	PROJECT NO.: 04-104
DRAWN BY: ADB		DRAINAGE PLAN	
<b>DAVID W. FITZPATRICK</b> PROFESSIONAL ENGINEER, P.A. BOARD OF PROFESSIONAL REGULATION #00008423 10250 NORTH PALAFOX STREET PENSACOLA, FL 32534 (850) 476-8677 FAX (850) 476-7708			

**CHLORINE REQUIRED FOR STERILIZATION**

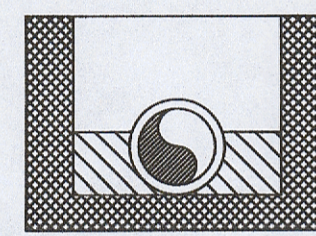
PIPE SIZE	SPECIFICATION	I.D. INCHES	GALLS/100'	CHLORINE REQUIRED PER 100' FOR 25ppm	CHLORINE REQUIRED PER 100' FOR 50ppm
2"	D2241 DR26	2.193	20	0.10 oz.	0.20 oz.
3"	D2241 DR26	3.230	43	0.22 oz.	0.44 oz.
4"	C-900 DR18	4.230	73	0.37 oz.	0.75 oz.
4"	C-900 DR25	4.390	79	0.40 oz.	0.81 oz.
6"	C-900 DR18	6.090	151	0.78 oz.	1.55 oz.
6"	C-900 DR25	6.300	162	0.83 oz.	1.66 oz.
8"	C-900 DR18	7.980	260	1.33 oz.	2.67 oz.
8"	C-900 DR25	8.280	280	1.44 oz.	2.87 oz.
12"	C-900 DR18	11.650	554	2.84 oz.	5.69 oz.
12"	C-900 DR25	12.080	595	3.06 oz.	6.12 oz.
16"	C-905 DR18	15.470	977	5.01 oz.	10.03 oz.
16"	C-905 DR25	16.010	1,046	5.37 oz.	10.74 oz.
20"	C-905 DR18	19.200	1,504	7.72 oz.	15.45 oz.
20"	C-905 DR25	19.870	1,611	8.27 oz.	16.55 oz.
24"	C-905 DR18	N/A	N/A	N/A	N/A
24"	C-905 DR25	23.742	2,300	11.81 oz.	23.62 oz.

NOTE :  
 - 16", 20" and 24" PIPE SIZES ARE C.I.O.D.  
 - FOR HTH WITH 65% AVAILABLE CHLORINE  
 - 1 US GALLON WEIGHS 8.345 #  
 - APPROX. 1 oz./100 gal FOR 50 ppm  
 - APPROX. 0.5 oz./100 gal FOR 25 ppm

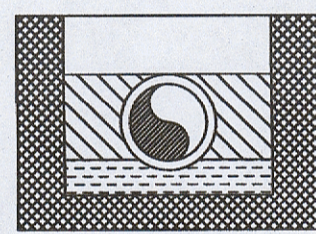
**CHLORINE REQUIRED FOR STERILIZATION**  
N.T.S.



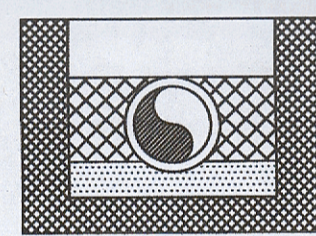
TYPE 1  
FLAT-BOTTOM TRENCH, LOOSE EMBEDMENT  
E = 50 psi (340 kPa), K = 0.110



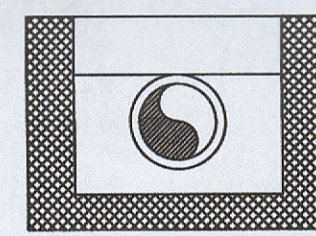
TYPE 2  
FLAT-BOTTOM TRENCH, EMBEDMENT LIGHTLY CONSOLIDATED TO CENTERLINE OF PIPE  
E = 200 psi (1,380 kPa), K = 0.110



TYPE 3  
PIPE BEDDED ON 1/4" (100 mm) MINIMUM OF LOOSE SOIL EMBEDMENT LIGHTLY CONSOLIDATED TO TOP OF PIPE.  
E = 400 psi (2,760 kPa), K = 0.102



TYPE 4  
PIPE BEDDED ON SAND, GRAVEL OR CRUSHED STONE TO DEPTH OF 1/8 PIPE DIAMETER. 4 (100 mm) MINIMUM EMBEDMENT LIGHTLY CONSOLIDATED TO TOP OF PIPE (APPROXIMATELY BOX STANDARD PROCTOR, ASTM 1-99 OR ASTM D 698)  
E = 1,000 psi (6,900 kPa), K = 0.099



TYPE 5  
PIPE EMBEDDED IN COMPACTED GRANULAR MATERIAL TO CENTERLINE OF PIPE. COMPACTED GRANULAR OR SELECT MATERIAL TO TOP OF PIPE (APPROXIMATELY BOX STANDARD PROCTOR, ASTM 1-99 OR ASTM D 698)  
E = 2,000 psi (13,900 kPa), K = 0.083

NOTE: REQUIRED EMBEDMENT TYPE WILL DEPEND ON THE PIPE'S EMISSION RATIO, INTERNAL OPERATING PRESSURE, AND EXTERNAL LOAD, AND SHALL BE SPECIFIED BY THE PURCHASER (SEE SEC. 3.3)

\*"FLAT-BOTTOM" IS DEFINED AS UNDISTURBED EARTH TO CENTERLINE OF PIPE. "LOOSE SOIL" OR "SELECT MATERIAL" IS DEFINED AS NATIVE SOIL EXCAVATED FROM THE TRENCH, FREE OF ROCKS, FOREIGN MATERIAL, AND FOREIGN EARTH. A SIFT LOOSE SOIL BEDDING WILL CONTAIN TO THE PIPE BOTTOM. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.

From AWWA C.805 UNDERGROUND INSTALLATION OF PVC PIPE

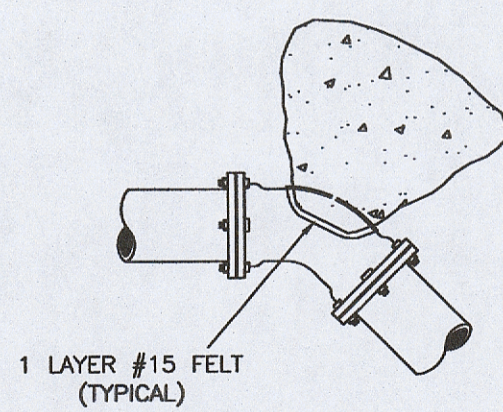
**PIPE ENVELOPE REQUIREMENTS**  
N.T.S.

**MINIMUM THRUST BLOCK DIMENSIONS: SURFACE AREA AGAINST UNDISTURBED SOIL**

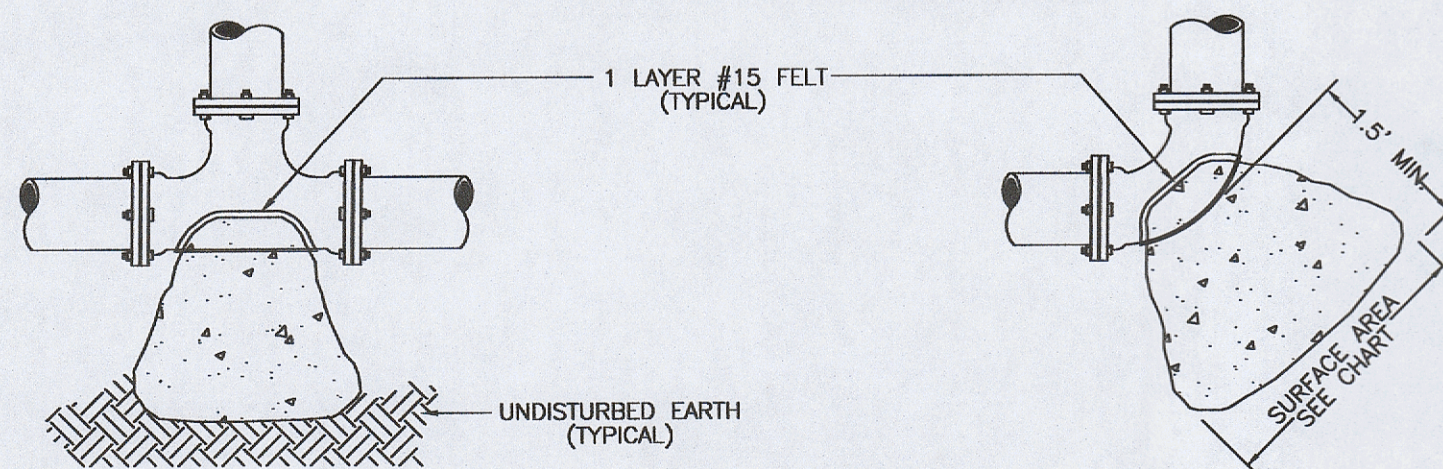
FITTING	PIPE SIZE			
	DEAD END OR TEE	90° BEND	45° BEND	22.5° BEND
4"	1' x 2'	1.5' x 1.5'	1' x 1.5'	1' x 1'
6"	2' x 2'	2.5' x 2.5'	2' x 1.5'	1' x 1.5'
8"	2.25' x 3'	3' x 3'	2' x 2.5'	1.5' x 1.5'
10"	3.5' x 3'	4' x 3.75'	2.75' x 3'	2' x 2'
12"	4' x 4'	4' x 5'	3' x 4'	2' x 3'
16"	5' x 5.5'	6' x 6.5'	4' x 5'	3' x 3.5'

NOTES:

- ONE LAYER OF #15 FELT TO BE USED TO PREVENT ADHESION OF CONCRETE TO FITTING.
- ALL THRUST BLOCKS TO BE BACKED BY UNDISTURBED SOIL.
- THRUST BLOCK DIMENSIONS BASED ON SM SOIL CLASSIFICATION. CONCRETE MIN. 2,500 PSI.
- JOINT RESTRAINTS ARE TO BE USED ON ALL FITTINGS, TRUST BLOCKS REQUIRED ON 90° BENDS, 45° BENDS, TEES, TAPPING SLEEVES, AND DEAD ENDS.



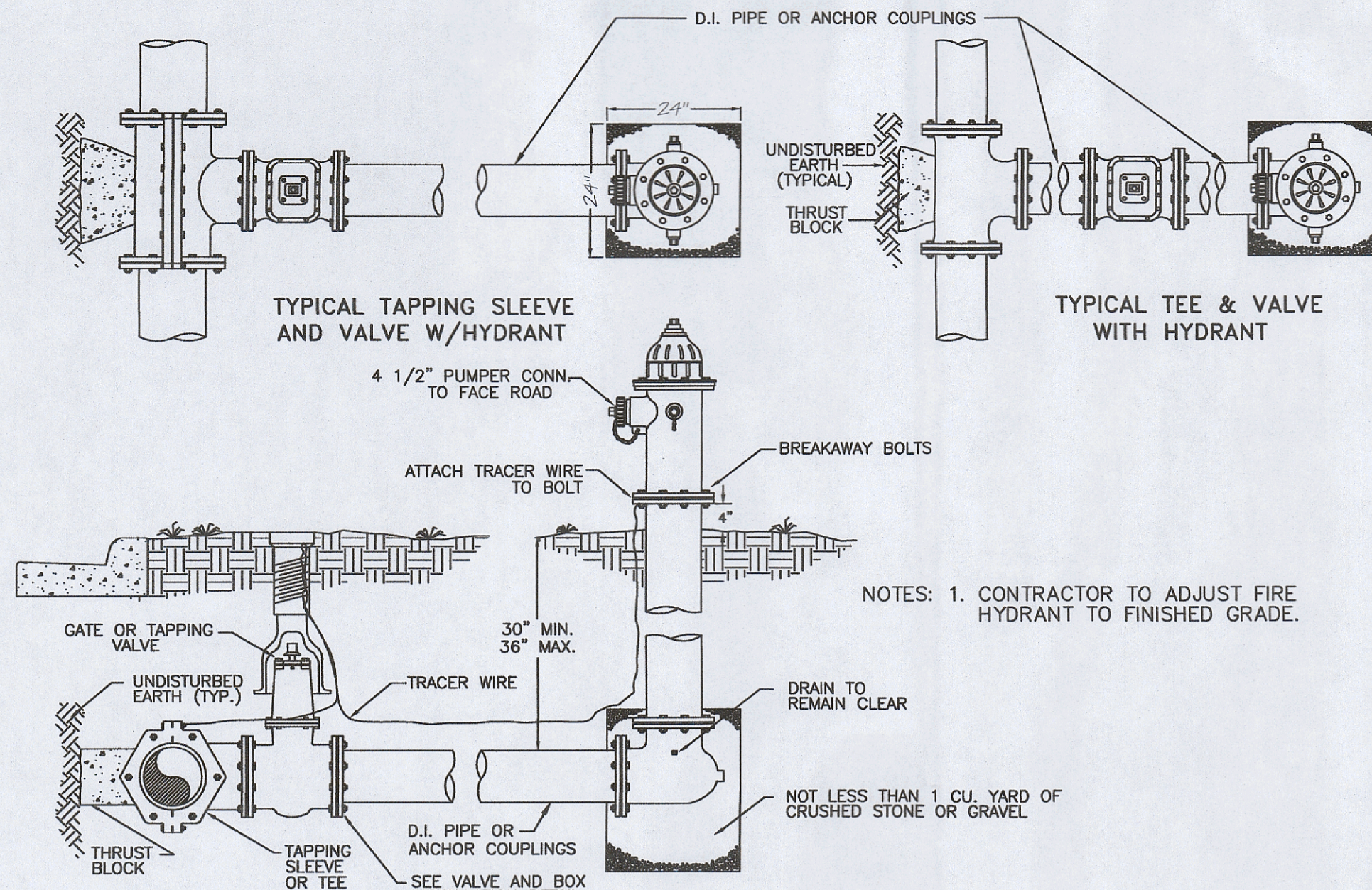
45° BEND - M.J.



TEE - M.J.

90° BEND - M.J.

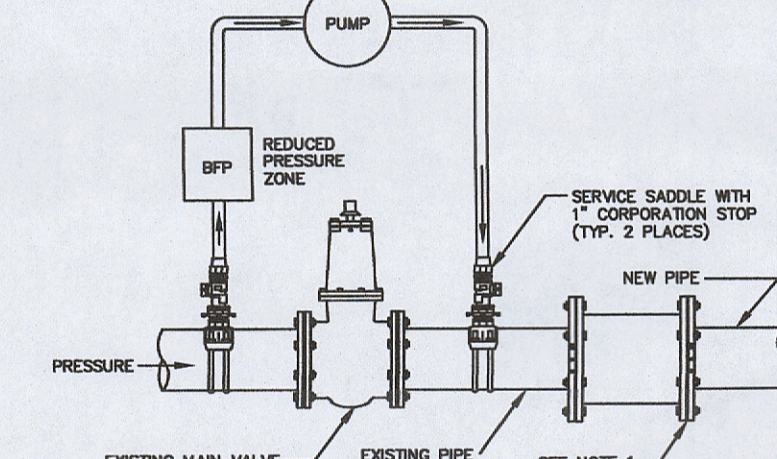
**TYPICAL THRUST BLOCK INSTALLATIONS**  
N.T.S.



**TYPICAL FIRE HYDRANT INSTALLATION: TAPPING SLEEVE & VALVE and TEE CONNECTION**  
N.T.S.

NOTES:

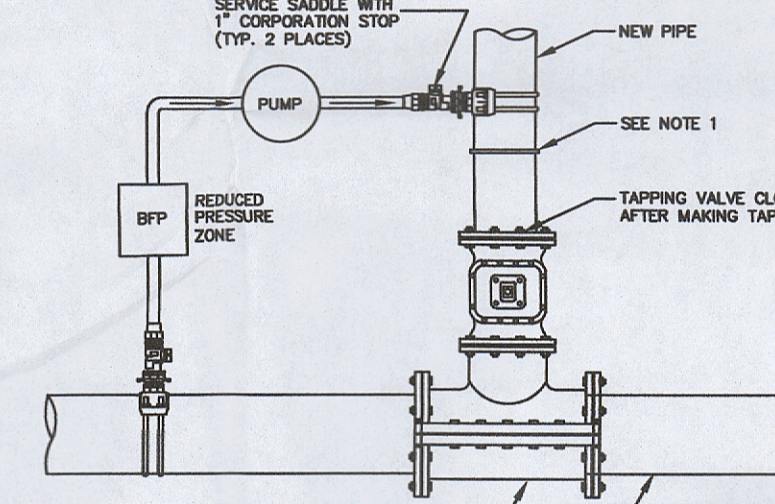
- NEW PIPE SHALL BE CAPPED OR PLUGGED FOR PRESSURE TEST. ONCE TEST IS SATISFACTORILY COMPLETED NEW MAIN IS TO BE CONNECTED TO EXISTING MAIN IN A MANNER ACCEPTABLE TO SSRU.
- THE CONTRACTOR SHALL FLUSH LINE PRIOR TO STARTING THE CHLORINATION PROCEDURE. ALL FLUSHING SHALL BE DONE THROUGH THE EXISTING VALVE WITH ALL HYDRANTS AND SERVICE LINES OPEN. SSRU INSPECTOR SHALL BE THE ONLY PERSON ALLOWED TO OPERATE THE VALVE AND SHALL BE PRESENT DURING FLUSHING OPERATION. ONCE FLUSHING IS COMPLETE THE INSPECTOR SHALL CLOSE THE VALVE. CLOSE BOTH CORPORATION STOPS AND REMOVE SERVICE TUBING, PUMP AND BACKFLOW PREVENTER. CAP CORPORATIONS STOPS WITH BRASS CAPS.
- ONCE SATISFACTORY BACTERIOLOGICAL SAMPLES ARE OBTAINED THE CONTRACTOR SHALL CLOSE BOTH CORPORATIONS STOPS AND REMOVE SERVICE TUBING, PUMP AND BACKFLOW PREVENTER. CAP CORPORATIONS STOPS WITH BRASS CAPS.
- CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR FILING, CHLORINATING AND TESTING PROCEDURES. CONTRACTOR SHALL PROVIDE SAMPLING TAPS AT THOSE LOCATIONS APPROVED BY THE SSRU INSPECTOR. SSRU SHALL COLLECT TEST SAMPLES.
- IF 20' STUBOUT IS NOT PRESENT SPECIAL ARRANGEMENTS WILL HAVE TO BE MADE TO DEPRESSURE THE EXISTING MAIN TO MAKE CONNECTION TO THE EXISTING VALVE.



TYPICAL CONNECTION FOR NEW LINE FILLING, PRESSURE TESTING, FLUSHING AND CHLORINATION. (EXISTING STUBOUT)

NOTES:

- NEW PIPE SHALL BE CAPPED OR PLUGGED FOR PRESSURE TEST. ONCE TEST IS SATISFACTORILY COMPLETED NEW MAIN IS TO BE CONNECTED TO TAPPING VALVE. TAPPING VALVE IS TO REMAIN CLOSED.
- THE CONTRACTOR SHALL FLUSH LINE PRIOR TO STARTING THE CHLORINATION PROCEDURE. ALL FLUSHING SHALL BE DONE THROUGH THE TAPPING VALVE WITH ALL HYDRANTS AND SERVICE LINES OPEN. SSRU INSPECTOR SHALL BE THE ONLY PERSON ALLOWED TO OPERATE THE VALVE AND SHALL BE PRESENT DURING FLUSHING OPERATION. ONCE FLUSHING IS COMPLETE THE INSPECTOR SHALL CLOSE THE VALVE.
- ONCE SATISFACTORY BACTERIOLOGICAL SAMPLES ARE OBTAINED THE CONTRACTOR SHALL CLOSE BOTH CORPORATIONS STOPS AND REMOVE SERVICE TUBING, PUMP AND BACKFLOW PREVENTER. CAP CORPORATIONS STOPS WITH BRASS CAPS.
- CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT AND LABOR NECESSARY FOR FILING, CHLORINATING AND TESTING PROCEDURES. CONTRACTOR SHALL PROVIDE SAMPLING TAPS AT THOSE LOCATIONS APPROVED BY THE SSRU INSPECTOR. SSRU SHALL COLLECT TEST SAMPLES.



TYPICAL CONNECTION FOR NEW LINE FILLING, PRESSURE TESTING, FLUSHING AND CHLORINATION. (TAPPING SLEEVE AND VALVE)

**TYPICAL DISINFECTION & CHLORINATION**  
N.T.S.

**PIPE JOINT RESTRAINT TABULATION**

SHOWING DISTANCES IN FEET FROM THE FITTING TO BE RESTRAINED TO THE LAST RESTRAINING GLAND REQUIRED

PIPE SIZE AND TYPE	HORIZONTAL BENDS				DEAD ENDS	TEES (LENGTH ALONG BRANCH)
	90 Deg.	45 Deg.	22.5 Deg.	11.25 Deg.		
3" DI	18	8	4	2	33	20
4" DI	22	9	4	2	39	25
6" DI	31	13	6	3	55	37
8" DI	40	17	8	4	72	49
10" DI	48	20	9	5	86	60
12" DI	56	23	11	5	101	71
16" DI	70	29	14	7	129	92
20" DI	84	35	17	8	156	112
24" DI	96	40	19	9	181	131
4" PVC	28	12	6	3	62	39
6" PVC	39	16	8	4	87	58
8" PVC	50	21	10	5	114	78
10" PVC	60	25	12	6	136	94
12" PVC	70	29	14	7	160	112
16" PVC	88	36	17	9	205	146
20" PVC	105	43	21	10	247	177
24" PVC	120	50	24	12	287	207

NOTES:

- VALVES ARE BASED ON TEST PRESSURE = 150 PSI, SOIL = SM, TRENCH TYPE = 3, DEPTH = 2.5', SAFETY FACTOR = 2.0 (1.5 FOR TEES WITH LR = 2).
- AS A MINIMUM ALL FITTINGS SHALL BE RESTRAINED TO THE NEXT JOINT.
- FOR OVERLAPPING JOINT RESTRAINTS, THE MOST RESTRICTIVE WILL APPLY. THE FARM HILL UTILITIES ENGINEER OR INSPECTOR MAY MAKE AN EXCEPTION IF THE DISTANCE TO BE RESTRAINED REQUIRES TEARING UP AN EXISTING ROADWAY.
- AN UNEQUAL TEE IS A TEE WHERE ONE OF THE DIAMETERS IS UNEQUAL (I.E. 6X4). RESTRAINED LENGTH FOR AN UNEQUAL TEE IS BASED ON DISTANCES FOR THE LARGER DIAMETER SHOWN IN THE TABLE. THE DESIGN ENGINEER MAY PROVIDE CALCULATIONS TO JUSTIFY A REVISED RESTRAINT DISTANCE.
- IF A DEAD-END IS WITHIN A FEW FEET OF A REDUCER, THEN RESTRAIN THE REDUCER AS A DEAD-END BASED ON THE LARGER DIAMETER PIPE. OTHERWISE RESTRAIN THE REDUCER AT THE NEAREST JOINT OR A MINIMUM OF 20 FEET (WHICHEVER IS GREATER).
- RESTRAINED LENGTHS FOR A VERTICAL OFFSETS MUST BE INDIVIDUALLY CALCULATED.

ALL SANITARY SEWER WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE ECUA SPECIFICATION MANUAL.  
 ALL WATER LINE WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE COTTAGE HILL WATER SPECIFICATION MANUAL.

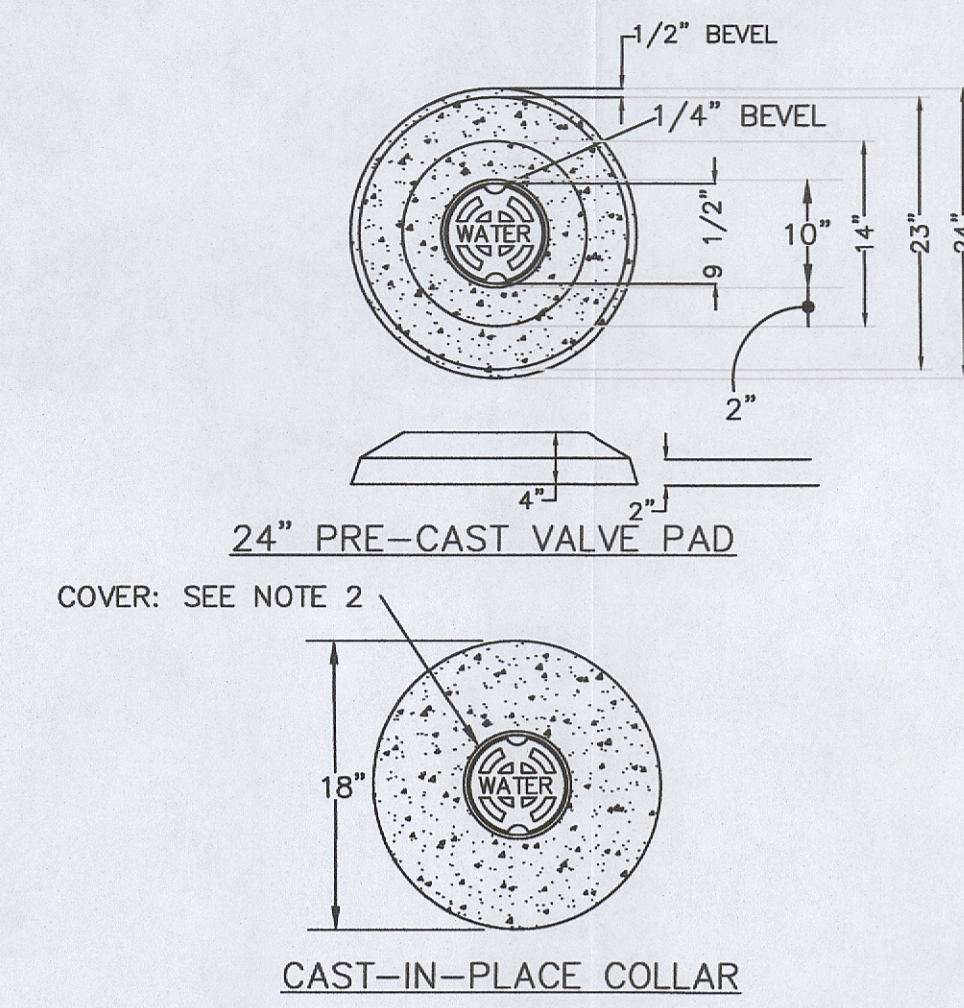
**LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH RULE 62-555.314, F.A.C.**

The following table summarizes the required separation distances from public water mains to other pipes as provided in Rule 62-555.314, F.A.C. Exceptions to these required distances are addressed on the second page.

Other Pipe	Horizontal Separation (X)		Joint Spacing (Z) @ Crossings (Full Joint Centered)
	Water Main	Sanitary Sewer	
• Storm Sewers • Stormwater Force Mains • Reclaimed Water Pipelines regulated under Part III of Chapter 62-610, F.A.C.	3 ft. minimum	For water main installed above other pipe (preferred), 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred. 12 inches minimum if water main is below other pipe.	Alternate 3 ft. minimum
• Vacuum Sanitary Sewer	10 ft. preferred 3 ft. minimum	For water main installed above other pipe, 12 inches preferred and 6 inches minimum. 12 inches minimum if water main is below other pipe.	Alternate 3 ft. minimum
• Gravity or Pressure Sanitary Sewer • Sanitary Sewer Force Main • Reclaimed Water Pipelines not regulated under Part III of Chapter 62-610, F.A.C.	10 ft. preferred 6 ft. minimum (note - 3 ft. minimum for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer)	For water main installed above other pipe (preferred), 12 inches is the minimum, then 6 inches is the minimum and 12 inches is preferred. 12 inches minimum if water main is below other pipe.	Alternate 6 ft. minimum
• On-Site Sewage Treatment & Disposal System	10 ft. minimum	NA	NA

Refer to the next page for exceptions to the minimum separation requirements provided above.

Disclaimer - This document is provided for your convenience only. Please refer to Rule 62-555.314, F.A.C., for additional construction requirements.

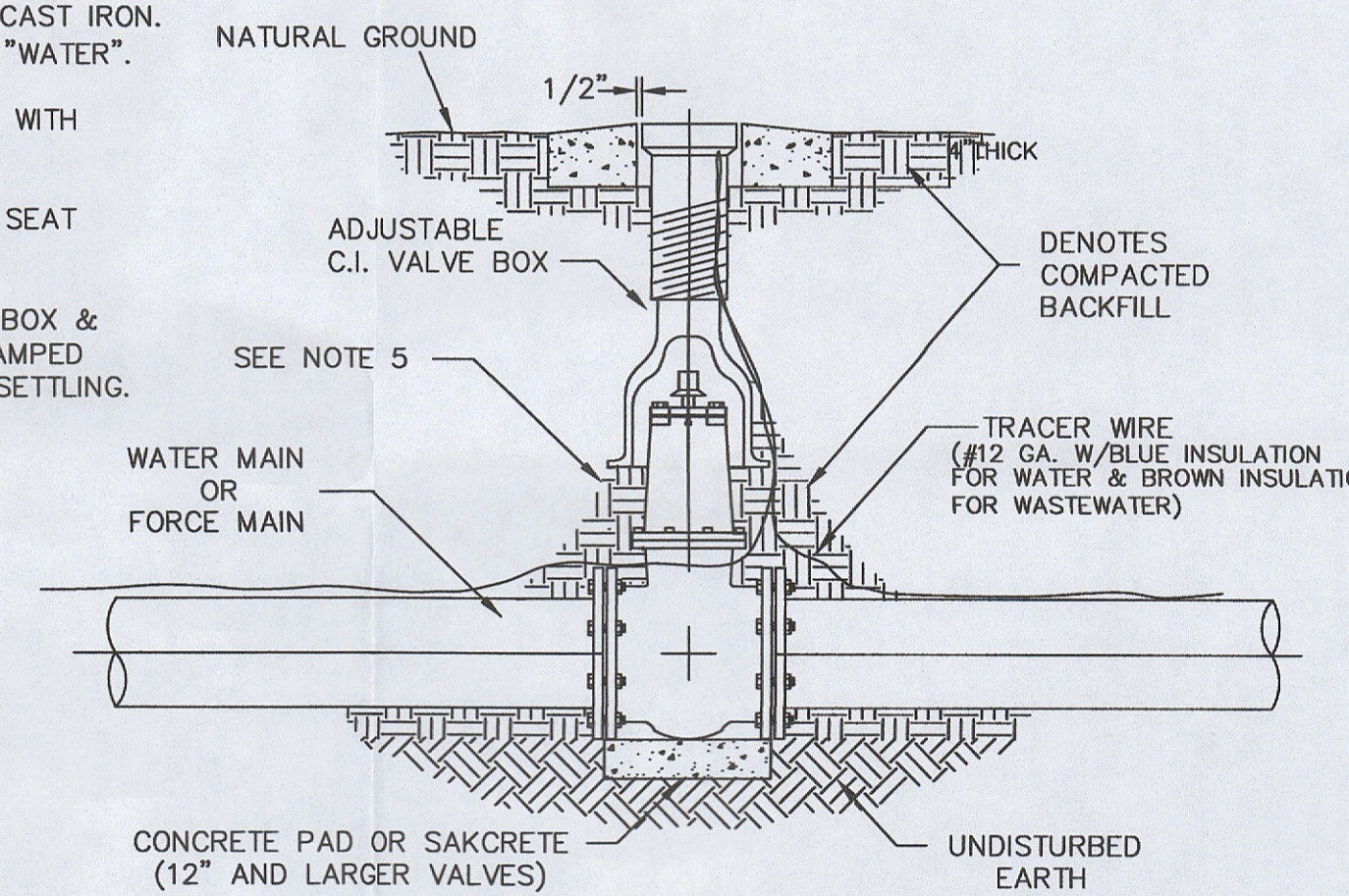


COVER: SEE NOTE 2

CAST-IN-PLACE COLLAR

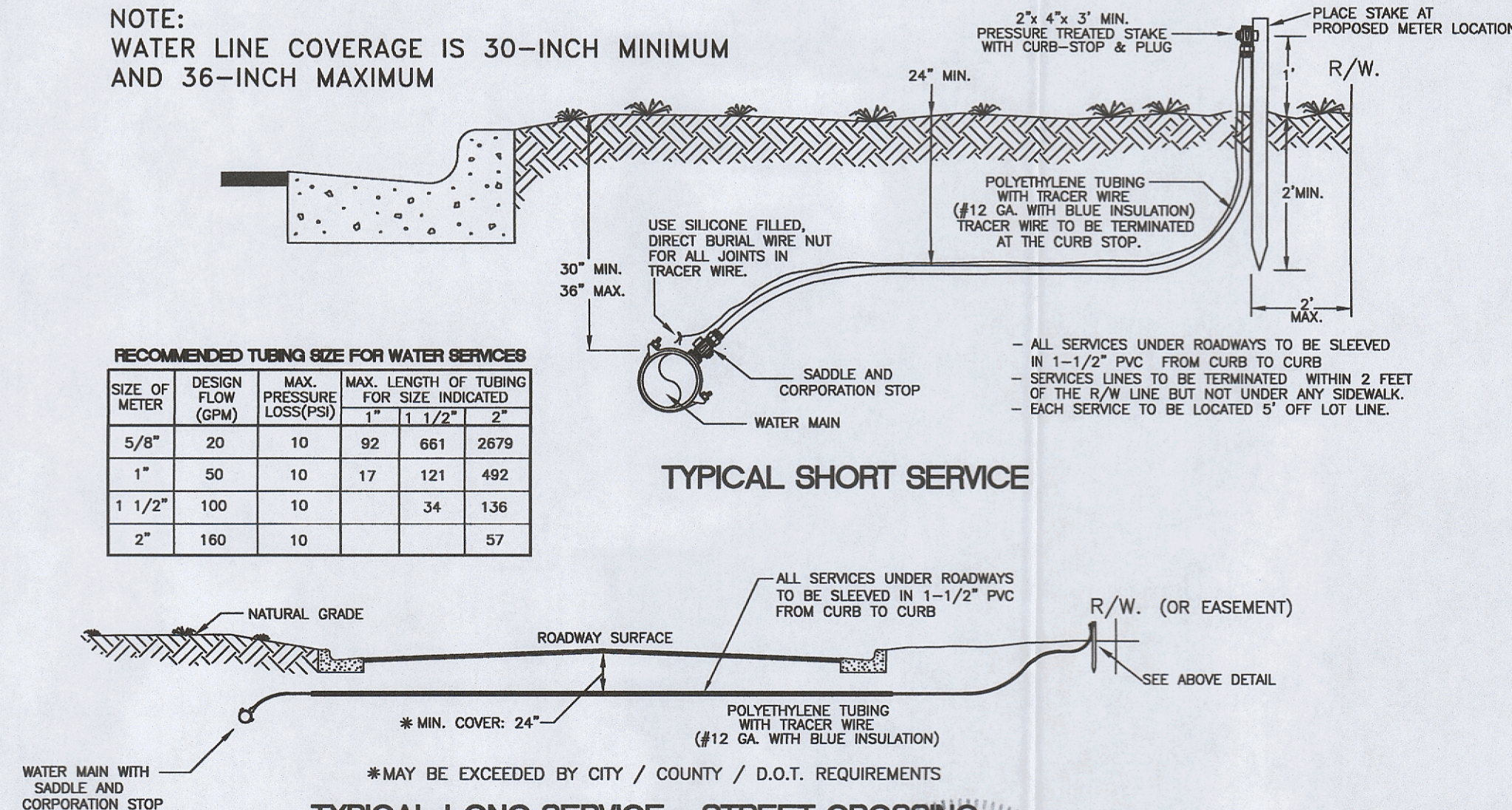
NOTES:

- VALVE BOX AND BOOT SHALL BE CAST IRON.
- VALVE COVER SHALL BE MARKED "WATER" OR "SEWER" AS APPLICABLE.
- VALVE BOX TOP SHALL BE FLUSH WITH FINISHED GRADE OR 1/2" ABOVE NATURAL GROUND LEVEL.
- GATE VALVE SHALL BE RESILIENT SEAT WITH MECHANICAL JOINT ENDS OR APPROVED EQUIVALENT.
- EARTH UNDER FLANGE OF VALVE BOX & COLLAR TO BE FIRM AND WELL TAMPED TO ENSURE AGAINST VALVE BOX SETTLING.



**TYPICAL VALVE & BOX INSTALLATION**  
N.T.S.

NOTE: WATER LINE COVERAGE IS 30-INCH MINIMUM AND 36-INCH MAXIMUM



TYPICAL SHORT SERVICE

TYPICAL LONG SERVICE - STREET CROSSING

**TYPICAL WATER SERVICE INSTALLATION**  
N.T.S.

REVISIONS

07-06-23	ECUA-1	ADDED MANHOLE, B12, MOVED MANHOLE B8
----------	--------	--------------------------------------

PROJECT NAME: CARRINGTON  
 DRAWN BY: ADB  
 DATE: 07/06/23  
 DRAINAGE PLAN  
 PROJECT NO. 04-104  
**DAVID W. FITZPATRICK**  
 PROFESSIONAL ENGINEER, P.A.  
 BOARD OF PROFESSIONAL REGULATION #00008423  
 10250 NORTH PALAFOX STREET  
 PENSACOLA, FL 32534  
 (850) 476-8677  
 FAX (850) 476-7708  
 SHEET 7 of 7