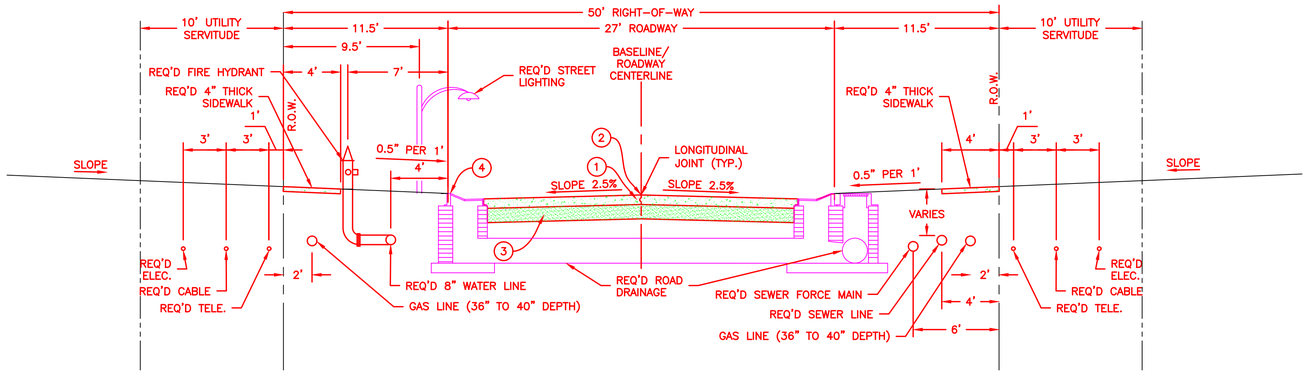
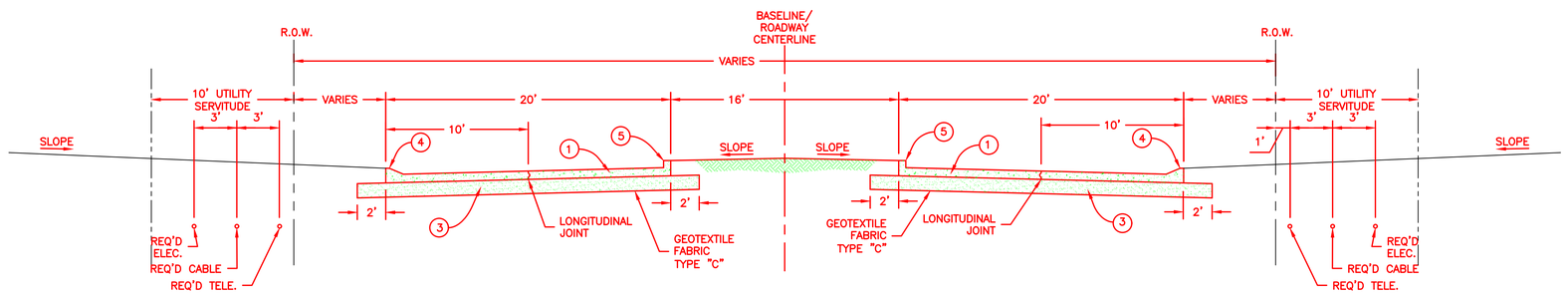


NOTE: GEOTEXTILE FABRIC IS TO BE PLACED BENEATH A-4 MATERIAL WITH A MIN. LAP LENGTH OF 2 FEET AT BOTTOM OF EXCAVATION AND WRAP ABOVE THE TOP OF CLASS II BASE COURSE AT A DISTANCE APPROVED BY PROJECT ENGINEER.

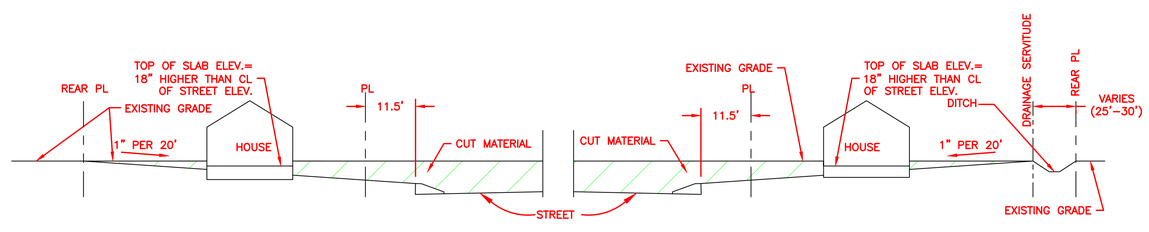
1 TYPICAL 27' ROADWAY SECTION

3 1" = 5'



2 TYPICAL ROADWAY SECTION ALONG ENTRANCE

3 1" = 5'



3 TYPICAL LOT GRADING PLAN

3 N.T.S.

LEGEND

1. 8" MIN. NON-REINFORCED CONCRETE
2. FINISHED GRADE SHOWN ON PLAN/PROFILE
3. 12"(MIN.) A-3 MATERIAL OR BETTER SOILS COMPACTED TO 97% DENSITY (STANDARD PROCTOR)
4. 5" X 15" ROLL OVER CURBS ALONG LOT FRONTAGES (6" BARRIER CURB SHALL BE USED AT INTERSECTION)
5. REQUIRED 6" BARRIER CURB AT ISLAND MEDIAN AT ENTRANCE AND AT ALL CORNERS OF STREET INTERSECTIONS. (5' TRANSITION FROM BARRIER CURB TO ROLLOVER CURB)

STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME ALLISON B. FROEBA
NUMBER 32492

REV NO.	DESCRIPTION	SIGN	DATE

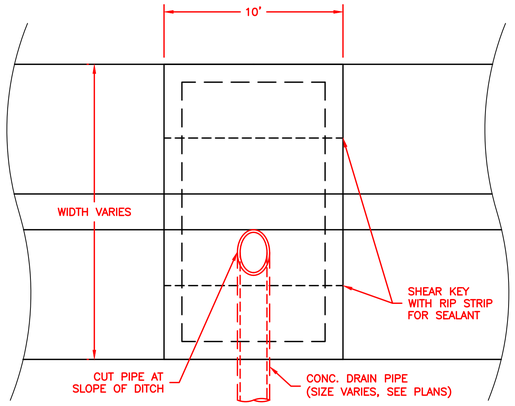
ALMEDIA GARDENS SUBDIVISION
TYPICAL SECTION

ST. CHARLES PARISH

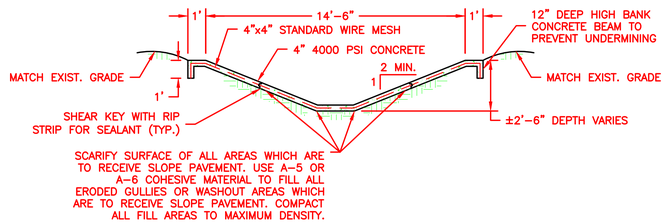
CADD NO.: FDN. DWG
DRAWING NO. C 0 03
ISSUE NO. A

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNTIL DATED AND SIGNED AS CHECKED AND APPROVED
DRAWN BY: KJB
SCALE AS NOTED
DATE 06/17/2024

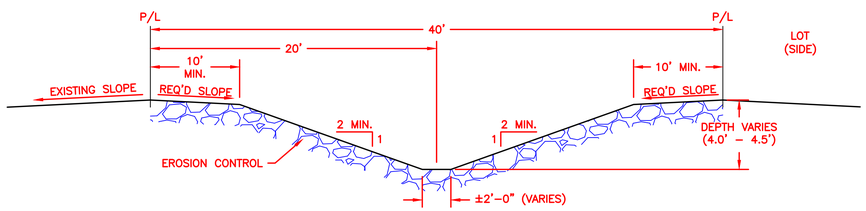
LA COA: 5809



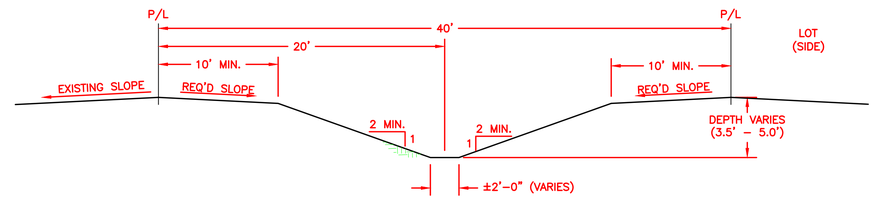
1 3A **CONCRETE SLOPE PAVEMENT - PLAN** 1" = 5'



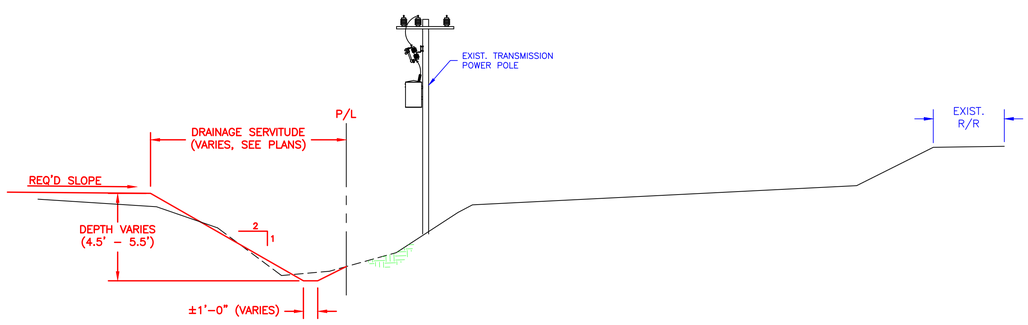
2 3A **CONCRETE SLOPE PAVEMENT - SECTION AT EACH PIPE OUTFALL** 1" = 5'



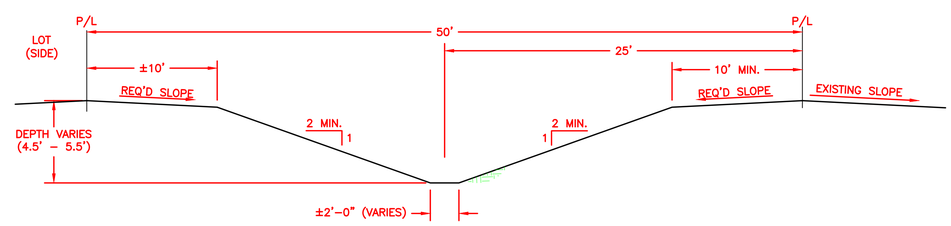
3 3A **EARTHEN DITCH SECTION - SECTION A-A** 1" = 5'



4 3A **EARTHEN DITCH SECTION - SECTION B-B** 1" = 5'



5 3A **EARTHEN DITCH SECTION - SECTION C-C** 1" = 5'



6 3A **EARTHEN DITCH SECTION - SECTION D-D** 1" = 5'

STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME ALLISON B. FROEBA
NUMBER 32492

SIGN	DATE

ALMEDIA GARDENS SUBDIVISION
TYPICAL SECTION

ST. CHARLES PARISH

ISSUE NO.	REV NO.	DESCRIPTION
A		

CADD NO.: FDN. DWG
DRAWING NO. C 0 03A

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DRAWN BY: KJB
SCALE AS NOTED
DATE 06/17/2024

LA COA: 5809

GENERAL NOTES:

1. ALL ELEVATIONS REFER TO NAVD88.
2. CONTRACTOR SHALL PROTECT ADJACENT PROPERTY AND IMPROVEMENTS FROM DAMAGE AND REPLACE ANY PORTIONS DAMAGED THROUGH HIS OPERATION AT HIS OWN COST. ALL REPAIR WORK SHALL BE SUBJECT TO THE APPROVAL OF THE A/E.
3. CONTRACTOR SHALL NOT DAMAGE TREES TO REMAIN. IF DAMAGED, CONTRACTOR SHALL REPLACE AT HIS OWN COST. THE CONTRACTOR SHALL PROVIDE A LOUISIANA LICENSED ARBORIST TO PERFORM NECESSARY TREE TRIMMING, ROOT PRUNING, OR RECOMMENDATION OF REMOVAL OF ANY TREE GREATER THAN 12" CALIPER PRIOR TO BEGINNING EXCAVATION. CONTRACTOR SHALL USE A CHAIN SAW TO CUT ROOTS OF TREES EXPOSED DURING EXCAVATION AND COORDINATE WITH OWNER. CONTRACTOR SHALL NOT BREAK ROOTS BY PULLING THEM WITH DIGGING MACHINES. ROOTS AND BRANCH PROTECTANT SHALL BE SPRAYED OR PAINTED ON BRANCHES OR ROOTS WHICH HAVE BEEN CUT.
4. PROTECT ALL EXISTING TREES, PLANTING AND LAWNS FROM DAMAGE. ALL STREET SIGNS, FENCES, SHRUBBERY, ETC. RELOCATED DURING CONSTRUCTION SHALL BE RETURNED TO THEIR ORIGINAL LOCATION AND IN ORIGINAL CONDITIONS. PARISH STREET RIGHT OF WAY AND ALL SERVITUDES SHALL BE CLEARED OF ALL TREES AND OBSTRUCTIONS.
5. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL MAKE PROVISIONS TO PROTECT EXISTING UTILITIES WHEN EXCAVATING IN THESE AREAS SO AS NOT TO DAMAGE OR DISRUPT THESE UTILITIES. CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES PRIOR TO EXCAVATION.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR DESIGN SERVICES, SUPPLYING MATERIALS, AND LABOR NECESSARY TO PROVIDE SHEETING, SHORING AND BRACING OR SUPPORTS AS REQUIRED TO PROVIDE A SAFE WORKING CONDITION FOR CONTRACTOR'S PERSONNEL AND TO PROVIDE FOR PROTECTION OF UTILITIES, BUILDINGS, LEVEES, AND STRUCTURES. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH THESE REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE SYSTEM TO WITHSTAND LATERAL PRESSURE. SHEET DESIGN AND INSTALLATION SHALL BE INCLUDED IN THE COST OF THE PIPE OR STRUCTURAL INSTALLATION.
7. CONTRACTOR SHALL VERIFY TOP OF CASTING ELEVATIONS PRIOR TO ORDERING MANHOLES.
8. CONTRACTOR SHALL REGRADE ALL AREAS AFFECTED BY CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE. WORK SHALL BE IN A WORKMAN LIKE MANNER AND IN ACCORDANCE WITH A/E REQUIREMENTS. IF CONTRACTOR DETERMINES THAT ANY AREAS AFFECTED BY CONSTRUCTION CANNOT BE REGRADED TO DRAIN, CONTRACTOR SHALL DOCUMENT (I.E., TAKE ELEVATIONS, PICTURES, ETC.) EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
9. ALL DRIVEWAYS DISRUPTED BY EXCAVATION SHALL BE RESTORED USING LIKE MATERIAL TO ORIGINAL OR BETTER CONDITION.
10. CONTRACTOR SHALL GIVE THOSE AFFECTED BY CONSTRUCTION 24 HOURS NOTICE PRIOR TO DISRUPTION OF DRIVEWAYS. DRIVEWAYS AND STREETS SHALL NOT REMAIN CLOSED OVERNIGHT.
11. CONTRACTOR SHALL AT ALL TIMES CONDUCT HIS OPERATIONS AS TO INSURE THE LEAST INCONVENIENCE TO THE GENERAL PUBLIC AND ADJACENT PROPERTY OWNERS.
    11.1. CONTRACTOR SHALL PROVIDE ACCESS TO RESIDENTIAL PROPERTIES AT ALL TIMES. VEHICULAR ACCESS SHALL BE PROVIDED AS DIRECTED BY ENGINEER. UPON APPROVAL BY ENGINEER, VEHICULAR ACCESS MAY BE LIMITED DURING PAVING OF DRIVEWAYS. CONTRACTOR SHALL CONTACT AND ADVISE ALL AFFECTED PROPERTY OWNERS.
12. CONTRACTOR SHALL COORDINATE AND PAY FOR THE DE-ENERGIZING AND RE-ENERGIZING OF POWER LINES FOR CONSTRUCTION PURPOSES AS REQUIRED BY LOCAL, STATE, AND FEDERAL AGENCIES.
13. CONTRACTOR SHALL CONTACT THE FOLLOWING ENTITIES AT LEAST (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION.
    13.1. ST. CHARLES PARISH PUBLIC WORKS DEPT. – MILES BINGHAM, DIRECTOR, MBINGHAM@STCHARLESGOV.NET (985)783-5102
    13.2. "LOUISIANA ONE CALL" LAONECALL.COM 1-800-272-3020
    13.3. ST. CHARLES PARISH DEPT. OF PUBLIC UTILITIES: WASTEWATER DEPARTMENT – DAVID DEGENERES, DIRECTOR (985)783-5100
    WATER DEPARTMENT (SEAN LEWIS) – LULING, LA (504)329-5949
14. THE CONTRACTOR IS TO NOTIFY EACH UTILITY COMPANY 10 DAYS PRIOR TO BEGINNING CONSTRUCTION. OWNER AND CONTACTS FOR UTILITIES KNOWN, BUT NOT LIMITED, TO BE IN THE PROXIMITY OF THE CONSTRUCTION AREA ARE:
    14.1. LOUISIANA ONE CALL-811 (225)275-3700
    14.2. GAS – ATMOS ENERGY – SHAUN BORDERLON SHAUN.BORDERLON@ATMOSENERGY.COM (504)849-4410
    14.3. CABLE – COX COMMUNICATIONS – PHILLIP JOEY PHILLIP.BERTINILLO@COX.COM
    14.4. POWER SYSTEMS – ENTERGY – SEAN SIMMONS SSIMMO2@ENTERGY.COM
15. CONTRACTOR SHALL NOTIFY THOSE AFFECTED BY CONSTRUCTION 24 HOURS PRIOR TO DISRUPTION OF WATER, SEWER OR OTHER UTILITY SERVICE. UTILITY SERVICES SHALL BE PROMPTLY REPAIRED AND NOT REMAIN OUT OF SERVICE OVERNIGHT.
16. CONTRACTOR SHALL BRACE UTILITY POLES ADJACENT TO EXCAVATION. BRACING SHALL REMAIN IN PLACE AFTER BACKFILLING UNTIL COMPACTION STANDARDS HAVE BEEN MET. COMPLETE WORK PROMPTLY ONCE EXCAVATION HAS BEGUN ADJACENT TO POLES.
17. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE DIRECTLY WITH THE APPROPRIATE UTILITY COMPANIES TO HAVE THE UTILITIES RELOCATED.
18. THE EXISTING WATER MAIN MUST NOT BE OUT OF SERVICE FOR MORE THAN FOUR (4) HOURS DURING TIE-IN, AND SHUT OFF SHOULD BE DONE UNDER THE DIRECT SUPERVISION OF ST. CHARLES PARISH WATER DEPARTMENT.
19. SPECIALIZED ENGINEERING IS NOT RESPONSIBLE FOR BIDDING AND CONSTRUCTION ADMINISTRATION.
20. PLACE LONGITUDINAL METAL-KEYED JOINTS AT CENTER OF PAVEMENT WIDTH. DO NOT TOOL METAL-KEYED JOINTS. METAL-KEYED JOINTS SHALL BE HECKMAN NO. 95, 16 GAUGE TONGUE AND GROOVE JOINT, OR APPROVED EQUAL, WITH BOTH 18 GAUGE STAKE PIN AND DOWEL HOLES.
21. JOINT SEALER FOR EXPANSION AND TOOLED JOINTS SHALL BE COAL TAR EQUAL TO SONNEBORNE SONOLASIC NP# OR COAL TAR MEETING LA DOTD SPECIFICATIONS.
22. PLACE EXPANSION JOINTS AT 90' INTERVALS, P.C.'S & P.T.'S.
23. PLACE DUMMY JOINTS AT 15' O.C. BETWEEN EXPANSION JOINTS.
24. BACKFILL ALL UTILITY CROSSINGS, EXCAVATIONS UNDER THE ROADWAY AND SHOULDER WITH GRANULAR MATERIAL.
25. THE SURFACE TO RECEIVE PAVEMENT SHALL BE STRIPPED OF VEGETATION,SOFT OR LOOSE SOILS, AND OTHER DELETERIOUS MATERIALS. THE EXPOSED EXCAVATED SURFACE SHALL BE "PROOF ROLLED" WITH HEAVY EQUIPMENT TO DETECT WEAK ZONES. THESE SHOULD BE EXCAVATED TO FIRM SOILS AND REPLACED WITH SUBGRADE MATERIAL AS SPECIFIED.
26. WHEN THE PROJECT IS COMPLETE, CONTRACTOR SHALL FURNISH TO DEPT. OF PUBLIC WORKS AS BUILT CROSS SECTIONS EVERY 300' SHOWING STREET & DITCH GRADES.
27. THE ENTIRE SWALE MUST BE CAPPED IN CLAY AND THE SLOPES SEEDED.
28. AFTER CLEARING RIGHT OF WAYS, PROVIDE ELEVATION TO A/E AT CENTER LINE OF RIGHT OF WAY EVERY 200 FEET.
29. OWNER'S SURVEYOR TO PROVIDE RIGHT OF WAY CORNERS AND P.C. OF OVERALL SUBDIVISION. CONTRACTOR'S SURVEYOR TO PROVIDE CONTROL AND OTHER SURVEY INFORMATION NEEDED FOR CONSTRUCTION.

CONCRETE PAVEMENT NOTES:

1. CONCRETE THICKNESS. THE MINIMUM CONCRETE THICKNESS SHALL BE EIGHT (8) INCHES FOR LOCAL STREETS, COLLECTOR STREETS, AND IN COMMERCIAL SUBDIVISIONS. THE MINIMUM CONCRETE THICKNESS OF ARTERIAL STREETS SHALL BE TEN (10) INCHES.
2. CONCRETE MIX DESIGN: CONCRETE SHALL BE PROPORTIONED TO PRODUCE A MINIMUM COMPRESSIVE STRENGTH OF FOUR THOUSAND (4,000) P.S.I. AT TWENTY-EIGHT (28) DAYS. ALL CONCRETE STREETS SHALL BE REINFORCED. CONCRETE REINFORCEMENT SHALL BE ONE OF THE FOLLOWING: FIBER, REBAR OR HIGHWAY WIRE MESH. FIBER REINFORCEMENT IS PREFERRED. THE MINIMUM CEMENT CONTENT SHALL BE FIVE AND ONE-HALF (5 1/2) BAGS (94 LBS./BAG) OF CEMENT PER CUBIC YARD WITH A MAXIMUM WATER-CEMENT RATIO OF SIX (6) GALLONS OF WATER PER BAG. SLUMP OF THE CONCRETE SHALL RANGE FROM TWO (2) INCHES TO FOUR (4) INCHES WHEN USING A VIBRATING SCREEN AND FROM ONE (1) INCH TO TWO AND ONE-HALF (2 1/2) INCHES WHEN USING A SLIP FORM PAVER.
3. SUBBASE COURSE. THE MINIMUM SUBBASE COURSE FOR ARTERIAL STREETS SHALL BE TWELVE (12) INCHES OF A-3 MATERIAL COMPACTED TO NINETY-SEVEN (97) PERCENT STANDARD PROCTOR DENSITY WITH THE TOP SIX (6) INCHES CEMENT STABILIZED. THE MINIMUM SUBBASE COURSE FOR COLLECTOR STREETS SHALL BE TWELVE (12) INCHES OF A-3 MATERIAL COMPACTED TO NINETY-SEVEN (97) PERCENT STANDARD PROCTOR DENSITY. THE SUBBASE COURSE FOR LOCAL STREETS SHALL BE SIX (6) INCHES OF A-3 MATERIAL COMPACTED TO NINETY-SEVEN (97) PERCENT STANDARD PROCTOR DENSITY.
4. SUBGRADE. ALL SUBGRADE MATERIAL WHICH WILL NOT SATISFACTORILY COMPACT SHALL BE REMOVED AND REPLACED WITH MATERIAL THAT WILL COMPACT SATISFACTORILY. THE SUBGRADE SHALL BE BROUGHT TO LINE AND GRADE AND THE TOP SIX (6) INCHES COMPACTED TO NINETY-FIVE (95) PERCENT STANDARD PROCTOR DENSITY.
5. WHERE THE SUBGRADE IS OF NON-UNIFORM COMPACTED NATURE, IT SHALL BE SCARIFIED TO A DEPTH OF SIX (6) INCHES FOR ITS FULL WIDTH AND THE MATERIAL SPREAD AND BROUGHT TO LINE AND GRADE AND COMPACTED AS SPECIFIED ABOVE.
6. ~~LOAD TRANSFER DEVICES. LOAD TRANSFER DEVICES SHALL BE REQUIRED FOR ALL COMMERCIAL SUBDIVISIONS AND ARTERIAL STREETS. THE TYPE OF DEVICES USED SHALL BE EITHER DOWEL BARS OR CANTILEVER DEVICES AS APPROVED BY THE LOUISIANA OFFICE OF HIGHWAYS STANDARD SPECIFICATIONS. LOAD TRANSFER DEVICES ARE NOT SPECIFIED FOR LOCAL STREETS. THEY SHALL BE USED FOR CONCRETE PAVING AS A CONSTRUCTION STANDARD.~~
7. JOINTS: JOINTS SHALL BE DESIGNED IN ACCORDANCE WITH THE PORTLAND CEMENT ASSOCIATION RECOMMENDATIONS.
8. TESTING: ONE SET OF THREE (3) CYLINDERS SHALL BE MADE FOR EACH FIFTY (50) CUBIC YARDS OF CONCRETE PLACED. CONCRETE CYLINDERS SHALL BE MOIST CURED IN THE LABORATORY AFTER SUFFICIENT CURING TIME HAS ELAPSED TO TRANSPORT THE CYLINDERS. ONE (1) CYLINDER SHALL BE BROKEN AT SEVEN (7) DAYS AND THE OTHER TWO (2) SHALL BE BROKEN AT TWENTY-EIGHT (28) DAYS. TESTING LAB TO BE SELECTED BY PARISH AND PAID BY CONTRACTOR.
9. ONE DENSITY TEST SHALL BE TAKEN FOR EACH TWO THOUSAND (2,000) SQUARE YARDS OF SUBBASE OR SUBGRADE. THE DENSITY TESTS SHALL BE TAKEN AT RANDOM LOCATIONS AND A MINIMUM OF ONE (1) TEST SHALL BE TAKEN ON ALL STREETS.

CONSTRUCTION INSPECTION:

1. THE DEPARTMENT OF PUBLIC WORKS SHALL ARRANGE FOR THE INSPECTION OF CONSTRUCTION ACTIVITIES AND INFRASTRUCTURE. THE INSPECTION ARRANGEMENTS SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY WORK NOTED IN THE APPROVED CONSTRUCTION PLANS. THE INSPECTION SHALL BE CONDUCTED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED WITH THE STATE OF LOUISIANA OR BY COMPETENT INDIVIDUALS HAVING INSPECTION EXPERIENCE WORKING UNDER THE PE'S DIRECT SUPERVISION AND INSTRUCTIONS, ALL BEING EMPLOYEES OF THE PARISH.

    A.THE INSPECTION DIRECTION AND REQUIREMENTS SHALL BE IN ACCORDANCE WITH AN "INSPECTION GUIDANCE" DOCUMENT FOR EACH SUBDIVISION THAT IS TO BE CONSTRUCTED. THE DOCUMENT IS TO BE PREPARED BY THE DEPARTMENT OF PUBLIC WORKS AND APPROVED FOR USE BY RESOLUTION OF THE PARISH COUNCIL PRIOR TO THE START OF CONSTRUCTION.

    B. THE FEES FOR CONSTRUCTION TESTING SHALL BE THE ACTUAL BILLED COST OF TESTING PERFORMED BY AN ACCREDITED INDEPENDENT MATERIAL TESTING FIRM CONTRACTED BY THE PARISH WHICH SHALL BE PAID TO THE PARISH BY THE DEVELOPER OR SUBDIVIDER PRIOR TO COUNCIL APPROVAL OF THE FINAL PLAT.

    C. THE FEE FOR CONSTRUCTION INSPECTION SHALL BE THE ACTUAL BILLED COST FOR ANY CONTRACTED INSPECTION OF A SUBDIVISION. THE COST SHALL BE BORNE BY THE APPLICANT AND PAID TO THE PARISH PRIOR TO COUNCIL APPROVAL OF THE FINAL PLAT.

    D. THE VARIOUS PARISH DEPARTMENTS SHALL HAVE THE RIGHT TO PERFORM ANY NECESSARY TESTING AND/OR INSPECTIONS SUPPLEMENTAL TO AND/OR IN ADDITION TO THAT ASSOCIATED WITH 5.A ABOVE AND TO ADDRESS ISSUES/CONFLICTS WHICH MAY ARISE DURING CONSTRUCTION IN ORDER TO APPROVE MODIFICATIONS TO THE APPROVED CONSTRUCTION PLANS OR TO PROVIDE DIRECTION AS MAY BE NEEDED. (ORD. NO. 17-7-18, § I, 7-31-17)

MONUMENTS:

1. PERMANENT CONTROL MONUMENTS OF MATERIAL SPECIFIED IN THESE REGULATIONS SHALL BE REQUIRED AT ALL OF THE FOLLOWING LOCATIONS AND SHALL BE SHOWN ON THE FINAL PLAT.
    1.1. AT ALL CORNERS, CONTROL POINT AND ANGLE POINTS ON THE BOUNDARY OF THE SUBDIVISION, BUT SPACED NO MORE THAN FIVE HUNDRED (500) FEET APPART.
    1.2. AT ALL POINTS WHERE THE BOUNDARY OF THE SUBDIVISION INTERSECTS STREET RIGHT-OF-WAY LINES.
    1.3. AT ALL CORNERS FORMED BY THE INTERSECTION OF STREET RIGHT-OF- WAY LINES.
    1.4. AT THE POINT OF CURVATURE AND THE POINT OF TANGENCY ON ALL HORIZONTAL CURVES.
2. SPECIFICATIONS
    2.1. SUBDIVISION BOUNDARY CORNER MARKERS SHALL BE CONCRETE MONUMENTS A MINIMUM OF FOUR (4) INCHES IN DIAMETER EXTENDING THREE (3) FEET BELOW THE GROUND LINE OR A STEEL PIPE A MINIMUM OF ONE-HALF (1/2) INCH IN DIAMETER AND A MAXIMUM OF THREE-QUARTERS (3/4) INCH IN DIAMETER FIRMLY EMBEDDED IN CONCRETE WHICH EXTENDS THREE (3) FEET BELOW THE GROUND.
    2.2. LOT CORNER MARKERS SHALL BE A STEEL PIPE ONE-HALF (1/2) INCH TO THREE-QUARTERS (3/4) INCH IN DIAMETER EXTENDING TWO (2) FEET BELOW THE GROUND LINE. IF CONDITIONS PROHIBIT PLACEMENT OF THE MONUMENTS ON LINE, OFF-SET MARKING WILL BE PERMITTED PROVIDED THAT EXACT OFF-SET DISTANCES AND COURSES ARE SHOWN ON THE FINAL PLAT.
    2.3. BENCHMARKS SHALL BE ACCESSIBLY PLACED AND SHALL BE CONSTRUCTED OF A BRASS DISC SET IN FOUR (4) INCH DIAMETER BY THREE (3) FOOT LONG CONCRETE POST. THIS DISC SHALL BE SET NOT MORE THAN SIX (6) INCHES ABOVE MEAN SEA LEVEL STAMPED THEREON.
3. SERVITUDES: ALL SERVITUDES IN FAVOR OF ST. CHARLES PARISH AND THE HOMEOWNERS ASSOCIATION SHALL BE CLEARLY FIELD MARKED WITH STEEL PIPE ONE-HALF (1/2) INCH TO THREE (3/4) INCH IN DIAMETER EXTENDING TWO (2) FEET BELOW THE LOT LINE.
4. CONTRACTOR TO PAY FOR SURVEYOR TO SET MONUMENTS.

DRAINAGE NOTES:

1. PLASTIC PIPE SHALL BE RIBBED POLYVINYL CHLORIDE CULVERT PIPE AND SHALL CONFORM TO ASTM F794, SERIES 46. ONLY PIPE ON THE STATE OF LOUISIANA QUALIFIED PRODUCTS LIST 66 WILL BE PERMITTED WITH TYPE 3 JOINTS. (DRAINAGE PIPE MATERIALS SHALL CONFORM TO ST. CHARLES PARISH REQUIREMENTS. ST. CHARLES PARISH WILL DETERMINE UPON SHOP DRAWING SUBMITTAL IF PIPE MATERIAL MEETS PARISH REQUIREMENTS.)
2. ALL PIPE JOINTS SHALL BE WRAPPED WITH A 36" WIDE PIECE OF PLASTIC FILTER CLOTH (LA D.O.T.D. SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION, SECTION 1019) CENTERED ON THE JOINT AND LAPPED 36".
3. TRENCHES WITHIN STREET RIGHT-OF-WAY SHALL BE BACKFILLED WITH PUMPED RIVER SAND. OTHER TRENCHES MAY BE BACKFILLED WITH SELECT MATERIAL FROM EXCAVATION.
4. DRAIN DITCHES CROSSING THE RIGHT-OF-WAY SHALL BE MUCKED OUT (MINIMUM OF 24") OR UNTIL GOOD SOIL IS REACHED WHICHEVER IS GREATER AND FILLED WITH PUMPED RIVER SAND. WHERE DITCHES CROSS THE LOTS, IT SHALL BE MUCKED OUT AND FILLED WITH SELECT MATERIAL AND MATERIAL FROM EXCAVATION.
5. THE CONTRACTOR SHALL PREPARE AND FURNISH THE ENGINEER WITH AN AS-BUILT DRAINAGE PLAN SHOWING STREET GRADES. ALL STRUCTURES MUST BE LOCATED BY STATIONS TIED TO A KNOWN-POINT SUCH AS A PROPERTY CORNER OR CROSSES AT CENTERLINE OF THE STREETS. CONTRACTOR MUST OBTAIN TOP OF CASTING ELEVATIONS AND INVERTS (NAVD88) OF ALL DRAINAGE STRUCTURES.
6. CONTRACTOR TO USE PROPER PIPE PULLER DEVICES (MECHANICAL DEVICE) FOR TIGHTENING JOINTS.
7. BACKFILL MATERIAL SHALL BE THOROUGHLY COMPACTED UNDER HAUNCHES AND THEN COMPACTED IN LAYERS NOT EXCEEDING 12 INCHES COMPACTED THICKNESS. EACH LAYER SHALL BE COMPACTED BY APPROVED METHODS TO AT LEAST 97 PERCENT OF MAXIMUM DENSITY PRIOR TO PLACEMENT OF A SUBSEQUENT LAYER. EXPOSED SLOPES AT THE CONDUIT ENDS SHALL BE COVERED BY AT LEAST 12 INCHES COMPACTED THICKNESS OF PLASTIC SOIL BLANKET.
8. A DENSITY TEST WILL BE REQUIRED AT 200 FEET INTERVALS, PER LAYER, ALONG A CONTINUOUS DRAIN LINE THAT MAY VARY IN SIZE, ALTERNATING FROM ONE SIDE OF THE PIPE TO THE OTHER. FOR PIPE LENGTHS LESS THAN 200 FEET, ONE TEST WILL BE REQUIRED PER LAYER.
9. MANHOLE CONNECTIONS (CONNECTION OF DRAIN PIPES TO MANHOLES) SHALL BE WATERTIGHT. CONNECTIONS OF PVC DRAIN PIPE TO MANHOLES WITH CONCRETE GROUT, WITHOUT SOME FORM OF APPROVED MANHOLE CONNECTOR OR WATER STOP, SHALL NOT BE PERMITTED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR MANHOLE CONNECTIONS TO THE PARISH ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
10. CORRUGATED METAL PIPE SHALL BE HELICAL FULL-FLO. PIPE SHALL BE DOUBLE DIPPED IN HOT ASPHALT INSIDE AND OUT AND THEN AN ASPHALT LINING SHALL BE SPUN INSIDE THE PIPE PRODUCING A SMOOTH INTERIOR WITH AN "n" FACTOR OF 0.012.

SEWER NOTES:

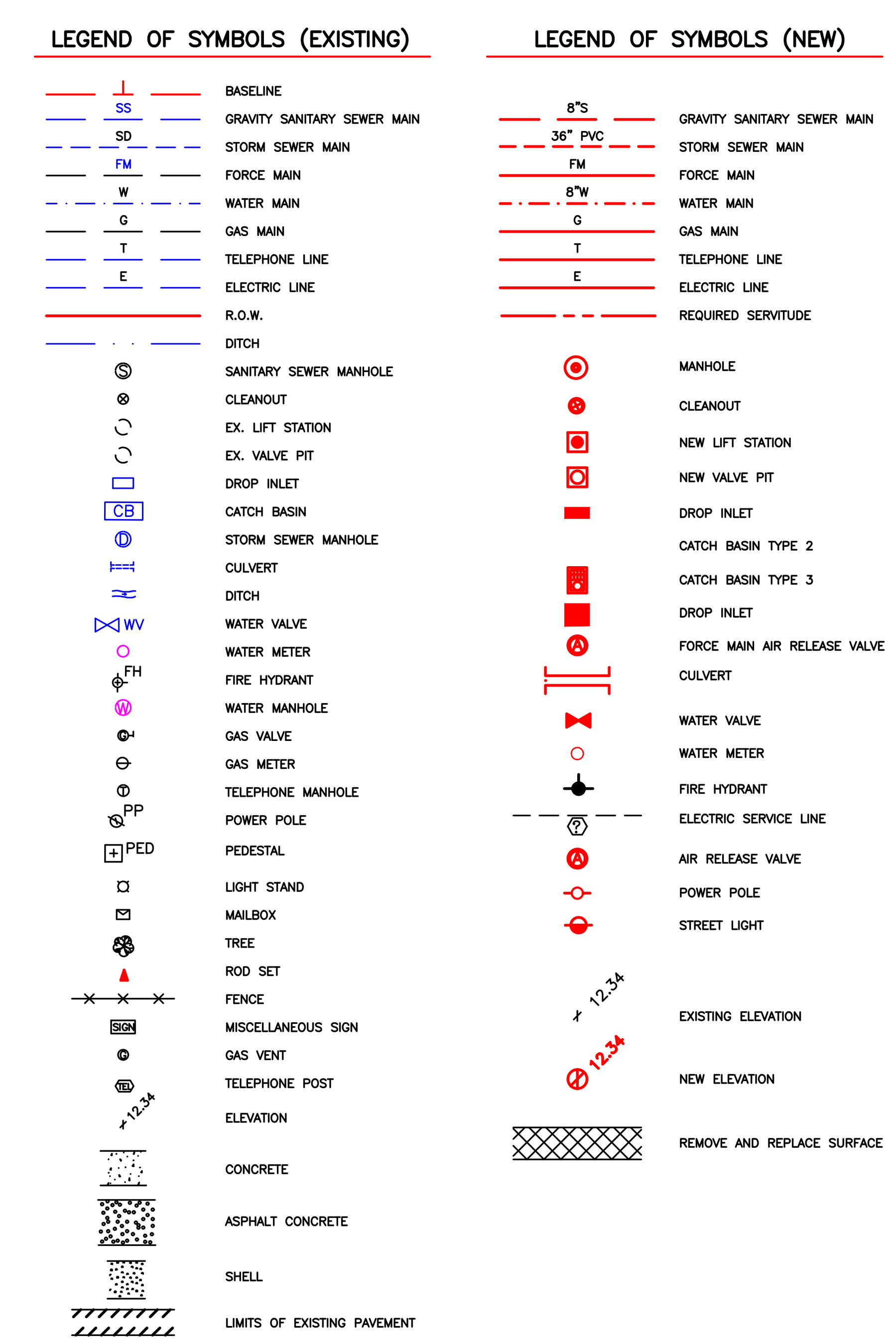
1. THE CONTRACTOR SHALL FURNISH ALL LABOR, SUPERVISION, MATERIALS, EQUIPMENT, SERVICES, AND PERMITS NECESSARY TO CONSTRUCT THE SEWER DISTRIBUTION SYSTEM AS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL FOLLOW ALL ST. CHARLES PARISH WASTEWATER REQUIREMENTS. ANY NOTES .
3. CONTRACTOR TO PROVIDE AS BUILT PLAN SHOWING THE FOLLOWING:
    3.1. THE DISTANCE FROM DOWNSTREAM MANHOLE TO EACH SERVICE CONNECTION AS MEASURED AGAINST THE FLOW. THE DISTANCE SHALL BE MEASURED ALONG THE CENTERLINE OF THE MAIN AND SHALL BE EQUAL TO THE DISTANCE FROM THE CENTER OF THE DOWNSTREAM MANHOLE TO THE PROJECTION POINT OF EACH H.C. ONTO THE MAIN.
    3.2. ELEVATION OF SERVICE CONNECTIONS AT THE PROPERTY LINE.
    3.3. THE INVERT AND TOP OF CASTING ELEVATIONS AND DEPTHS OF EACH MANHOLE.
    3.4. PIPE INVERTS AT MANHOLES.
    3.5. CENTER TO CENTER DISTANCE BETWEEN CONSECUTIVE MANHOLES
    3.6. THE TYPE AND SIZE OF SEWER PIPE INSTALLED UPON COMPLETION OF APPROPRIATE TESTING.
4. GRAVITY SEWER PIPE DEPTHS LESS THAN 4' SHALL BE TYPE 1 BEDDING, DEPTHS GREATER THAN 4' SHALL CONFORM TO TYPE II BEDDING. (SEE SEWER DETAIL SHEET.)
5. ALL CUTS UNDER DRIVEWAYS OR STREETS TO BE BACKFILLED WITH SIMILAR MATERIAL AS EXISTING FOR THE DRIVE SURFACE, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER AND COMPACTED TO 95% STD. PROCTOR. BORING BENEATH ROADWAYS IS AN ACCEPTABLE ALTERNATIVE. CONTRACTOR TO ASSUME ALL LIABILITY FOR STREET DAMAGE RESULTING FROM EXCAVATION OR BORING ACTIVITY AND SHALL REPAIR AND REPAVE ANY DAMAGE RESULTING FROM HIS CONSTRUCTION ACTIVITIES.
6. ALL LOTS MUST BE PROVIDED WITH A SEWER SERVICE/HOUSE CONNECTION (H.C.). SEWER H.C., IF PRACTICAL, SHALL BE INSTALLED PERPENDICULAR TO THE SEWR MAIN. ALL SEWER H.C. INSTALLED BY THE CONTRACTOR SHALL BE PROPERLY PLUGGED.
7. LOCATION OF ALL SEWER H.C. SHALL BE MARKED IN THE CURB. THE END OF THE H.C. SHALL BE INSTALLED WITH A 45' BEND W/ 6" SEWER H.C. 3 FEET EXPOSED ABOVE GRADE WITH CAP.
8. CONTRACTOR SHALL PROVIDE SEWER SERVICE CONNECTORS WITH MAGNETIC IDENTIFICATION DISKS WHICH CAN BE LOCATED WITH PARISH-OWNED EQUIPMENT.
9. ALL HOUSE CONNECTIONS SHALL BE 6"ø UNLESS NOTED OTHERWISE, WITH A BURIAL DEPTH OF 36".
10. SEWER SERVICE/HOUSE CONNECTIONS CONNECTED TO A TERMINAL MANHOLE SHALL BE CONNECTED AT THE INVERT OF THE TERMINAL MANHOLE.
11. MATERIALS
    11.1. SEWER PIPE SHALL BE PVC PIPE AND SHALL CONFORM TO ASTM D-3034, SDR 35 (THICK WALL EXTRA HEAVY SERIES.), OR APPROVED EQUAL. SEWER GRAVITY LINE SHALL BE GREEN IN COLOR.
    11.2. SEWER FORCE MAIN SHALL BE WHITE OR BLACK IN COLOR. FORCE MAIN SHALL BE C-900 OR HDPE DR 21 (PE 3408) AND CONFORM TO ASTM D-1248. FORCE MAIN SHALL BE MARKED WITH FIBERGLASS MARKER AT 1000 FOOT INTERVALS.
    11.3. ALL PVC SEWER FORCEMAIN LINES SHALL BE TRACED WITH APPROPRIATE TAPE MARKINGS
    11.4. UNDER NO CONDITIONS SHALL BLUE PIPE BE USED FOR SEWER LINES.
    11.5. ALL EXPOSED CONCRETE SHALL HAVE A PROTECTIVE COATING.
12. ~~INFILTRATION SHALL NOT EXCEED 125 GALLONS/INCH OF DIAMETER/MILE OF PIPE/24 HOURS. IT IS REQUIRED THAT A CERTIFICATION OF THE INFILTRATION REQUIREMENTS BE FURNISHED BY A TESTING LABORATORY AS SELECTED BY ST. CHARLES PARISH. THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST OF THE PIPE.~~
13. TESTING REQUIREMENTS. CONTRACTOR SHALL PROVIDE TESTING AS PER ST. CHARLES PARISH REQUIREMENTS DETAILED IN APPENDIX C OF THE CODE OF ORDINANCES.
14. THE CONTRACTOR IS RESPONSIBLE TO CHECK WITH THE UTILITY OWNER OR HIS REPRESENTATIVE FOR COORDINATION OF ALL TESTING NECESSARY TO SECURE APPROVAL FROM THE UTILITY OWNER FOR HIS WORK. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF ALL TESTING ASSOCIATED WITH VERIFYING THAT CONSTRUCTION IS IN COMPLIANCE WITH PLANS AND SPECIFICATIONS.
15. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES.
16. WHERE REQUIRED BY GROUND CONDITIONS OR OSHA REGULATIONS, THE CONTRACTOR SHALL USE TIMBER OR SHEETING OR OTHER MEANS TO CONTROL THE WIDTH OF THE EXCAVATION AND TO PROVIDE SAFE WORKING CONDITIONS FOR HIS WORKMEN. THE COST OF THIS SHEETING AND BRACING SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE FOR INSTALLING THE SEWER. NO EXTRA WILL BE PAID FOR THIS ITEM.
17. PRE-CAST CONCRETE MANHOLES (ASTM A48, CLASS 20) MAY BE USED AS APPROVED BY THE ENGINEER. ZYPEX ADDITIVE SHALL BE INCLUDED IN MIX.
18. PRECAST REINFORCED CONCRETE MANHOLES SHALL CONFORM TO ASTM A48. MANHOLE RISERS AND TOPS CONFORMING TO ASTM C-478 WITH JOINTS OF "RAM-NEK" PREFORMED PLASTIC ROPE AS MANUFACTURED BY K.T. SNYDER, HOUSTON, TEXAS OR ASTM C-443 RUBBER GASKET.
19. DROP SEWER MANHOLES SHALL BE INSTALLED WHEN THE VERTICAL DISTANCE FROM THE MANHOLE INVERT TO THE SEWER MAIN INVERT EXCEEDS THREE (3) FEET.
20. ALL MANHOLE FRAMES AND COVERS SHALL BE AS APPROVED BY ST. CHARLES PARISH DEPARTMENT OF WASTEWATER.
21. ALL SEWER MANHOLE COVERS TO BE PLACED APPROXIMATELY 4" ABOVE BACK OF CURB ELEVATION.
22. MANHOLE CONNECTIONS (CONNECTION OF SEWER PIPES TO MANHOLES) SHALL BE WATERTIGHT. CONNECTION OF PVC SEWER PIPE TO MANHOLES WITH CONCRETE GROUT, WITHOUT SOME FORM OF APPROVED MANHOLE CONNECTOR OR WATER STOP, SHALL NOT BE PERMITTED.
23. THE CONTRACTOR SHALL FURNISH A HOSE DOWN WATER LINE, MIN. 1" IN DIAMETER WITH HOSE BIB TO EACH SEWER LIFT STATION AND/OR SEWER TREATMENT PLANT AREA.
24. SEWER AND WATER MAINS SHALL BE LAID IN SEPARATE TRENCHES NOT LESS THAN SIX (6) FEET APART HORIZONTALLY, WHEN INSTALLED IN PARALLEL. CROSSING WATER AND SEWER MAINS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. THE SEWER LINE SHALL BE LAID LOWER IN ELEVATION THAN THE WATER LINE.

SEWER FORCE MAIN NOTES:

1. CONSTRUCT SEWER FORCE MAIN AS REQUIRED TO MAINTAIN A MINIMUM OF 36" OF COVER EVERYWHERE. FORCE MAIN SHALL BE TAPED AND TRACED PER SCP REGULATIONS.
2. IDENTIFICATION OR TRACER WIRE SHALL BE BURIED IN THE TRENCH ABOVE THE PIPE.
3. SEWER FORCE MAIN SHALL BE SCHEDULE 40 PVC PIPE. ALL BENDS ARE TO BE RESTRAINED WITH MECHANICAL JOINT RESTRAINT GLANDS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. PROVIDE RESTRAINED JOINT FITTINGS ON ALL FORCE MAIN JOINTS WITHIN 20' OF ANY BENDS FOR PVC OR DUCTILE IRON PIPE.
5. FORCE MAIN SHALL BE PRESSURED AND TESTED TO 50 PSI FOR 2 HOURS WITH NO PRESSURE DROP.
6. THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS LARGER THAN 11-1/2 DEGREES.
7. FORCE MAIN TO TIE TO EXISTING SEWER FORCE MAIN IN ACCORDANCE WITH ST. CHARLES PARISH REQUIREMENTS. ALL TIE-INS TO BE COORDINATED WITH ST. CHARLES PARISH SEWER DEPARTMENT.
8. FORCE MAIN CONNECTIONS TO A PROPOSED MANHOLE 8' OR LESS IN DEPTH SHALL BE MADE FROM UNDERNEATH THROUGH THE BOTTOM CENTER OF THE MANHOLE. CONNECTIONS TO PROPOSED MANHOLES OVER 8' IN DEPTH AND TO EXISTING MANHOLES SHALL BE MADE THROUGH THE SIDE AT THE SPECIFIED ELEVATION.

STREET LIGHT NOTES:

1. THE STREET LIGHTING SYSTEM SHALL BE BASED ON THE "AMERICAN STANDARD PRACTICE FOR ROADWAY LIGHTING" PREPARED BY THE AMERICAN STANDARDS ASSOCIATION.
2. THE STREET LIGHTING SYSTEM AND ELECTRICAL SERVICE SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL POWER COMPANY REGULATIONS.
3. ALL GENERAL ELECTRICAL SERVICE AND STREET LIGHTING SYSTEMS WITHIN THE SUBDIVISION SHALL BE PROVIDED VIA UNDERGROUND FEEDER LINES. ALL NEW INSTALLATIONS OF BURIED WIRE SHALL BE ENCASED IN 1-INCH PVC CONDUIT. THE MINIMUM SIZE AND TYPE OF COPPER WIRE TO THE LIGHT POLES SHALL BE #8 THHN. (ORD. NO. 02-5-20, § II, 5-20-02; ORD. NO. 20-12-3 , § IV, 12-7-20)
4. ALL STREET LIGHT FIXTURES, INSTALLED BY DEVELOPERS WITHIN THE PARISH OF ST. CHARLES SHALL BE THE FOLLOWING:
    a.COOPER LUMARK, 29 WATT, 4000k LUMEN, 120 TO 270 VOLT AC 50/60 HERTZ FIXTURES OR APPROVED EQUAL. (ORD. NO. 08-7-7, § I, 7-21-08, ORD. NO. 20-12-3 , § IV, 10-9-23)
    b.~~IF STREETLIGHT STANDARDS AND FIXTURES ARE TO BE OF CUSTOM, SPECIALIZED, OR OTHERWISE ATYPICAL DESIGN, ADDITIONAL STREETLIGHT STANDARDS AND FIXTURES OF LIKE STYLE SHALL BE PROVIDED TO ST. CHARLES PARISH FOR REPLACEMENT OF STREETLIGHTS IN THE EVENT THAT INSTALLED STREETLIGHTS BECOME INOPERABLE OR DAMAGED BEYOND PRACTICAL USE OR REPAIR. THE TOTAL NUMBER OF STREETLIGHT STANDARDS AND FIXTURES TO BE PROVIDED SHALL EQUAL TEN (10) PERCENT OF THE TOTAL NUMBER OF STREETLIGHTS INSTALLED WITHIN THE SUBDIVISION.~~
    c.PRIOR TO COMMENCEMENT OF CONSTRUCTION ON STREET LIGHT FACILITIES BY PRIVATE DEVELOPERS WITHIN THE PARISH OF ST. CHARLES, PLANS AND SPECIFICATIONS SHALL BE SUBMITTED TO LOUISIANA POWER AND LIGHT AND THE DEPARTMENT OF PUBLIC WORKS OF THE PARISH OF ST. CHARLES FOR APPROVAL OF SAID PLANS AND SPECIFICATIONS FOR CONSTRUCTION.
    d.THE PARISH SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF A STREET LIGHT UNIT (POLE, ARM(S), FIXTURE(S), PHOTO CELL(S), FOUNDATION, CONDUIT, FUSES, AND ELECTRICAL WIRING) UNTIL EACH OF THE FOLLOWING HAVE OCCURRED WITH REGARDS TO EACH UNIT: 1) THE UNIT HAS BEEN ENERGIZED TO SERVE A PROPERTY UPON WHICH BUILDING RELATED CONSTRUCTION ACTIVITY HAS COMMENCED, AND 2) TWELVE (12) MONTHS HAVE ELAPSED FOLLOWING THE ENERGIZING OF THE UNIT. ADDITIONAL STREET LIGHT UNITS MAY BE ENERGIZED WHEN DEEMED NECESSARY AND IN THE PUBLIC'S BEST INTEREST BY THE PARISH PRESIDENT. (ORD. NO. 12-11-17, § I, 11-19-12)
    e.BEFORE FINAL ACCEPTANCE OF A SUBDIVISION'S STREET LIGHT UNITS, THE FOLLOWING CONDITIONS MUST BE MET:
        i. THE DEVELOPER MUST DEPOSIT THE CASH SUM OF THREE HUNDRED DOLLARS ($450.00) PER STREET LIGHT WITH THE PARISH OF ST. CHARLES.
        ii. THE CASH DEPOSIT HELD IN ESCROW WILL BE UTILIZED TO PAY FOR ANY DAMAGE TO STREET LIGHT UNITS, BY CONSTRUCTION, VANDALISM, OR ANY OTHER CAUSE OCCURRING PRIOR TO THE TIME OF OCCUPANCY AS REQUIRED IN SECTION IV.E.3.C. ABOVE.
        iii. WHEN ALL OF THE STREET LIGHT UNITS WITHIN A PROJECT HAVE BEEN ENERGIZED IN ACCORDANCE WITH SECTION IV.E.3.C. ABOVE, THE CASH DEPOSIT, LESS COST OF REPAIRS, IF ANY, SHALL BE REFUNDED TO THE DEVELOPER.



STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME ALLISON B. FROEBA
NUMBER 32492

REV NO.	DESCRIPTION	SIGN	DATE

ALMEDIA GARDENS SUBDIVISION
GENERAL NOTES AND LEGEND

ST. CHARLES PARISH

ISSUE NO.	CADD NO.: FDN. DWG	DRAWING NO.
A	C 0	04

THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS DATED AND SIGNED AS CHECKED AND APPROVED

DRAWN BY: KJB
DATE 06/17/2024
SCALE AS NOTED

LA COA: 5809

WATER NOTES:

1. NOT LESS THAN SEVEN (7) DAYS BEFORE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR MUST SUBMIT TO THE WATERWORKS A WRITTEN NOTICE STATING THE DATE CONSTRUCTION WILL BEGIN.
2. A PRE–CONSTRUCTION CONFERENCE WILL BE HELD BY THE CONTRACTOR WITH THE WATERWORKS' REPRESENTATIVE(S).
3. CONSTRUCTION MUST BEGIN WITHIN TWELVE (12) MONTHS OF THE DATE OF APPROVAL OR THE PLANS AND SPECIFICATIONS MUST BE RESUBMITTED TO THE WATERWORKS. APPROVAL FOR ANY PORTION UNFINISHED AFTER THREE (3) YEARS IS AUTOMATICALLY RESCINDED. PLANS AND SPECIFICATIONS MUST THEN BE RESUBMITTED TO THE WATERWORKS FOR APPROVAL.
4. UPON COMPLETION OF CONSTRUCTION, PRESSURE AND LEAKAGE TESTS WILL BE CONDUCTED, THE LINES DISINFECTED, AND BACTERIOLOGICAL SAMPLES TAKEN.
5. THE LOUISIANA DEPARTMENT OF HEALTH AND HOSPITALS MUST APPROVE BACTERIOLOGICAL TESTS ON THE NEW SYSTEM.
6. A FINAL INSPECTION AND APPROVAL MUST BE OBTAINED FROM THE WATERWORKS.
7. THE CONTRACTOR SHALL GUARANTEE THE INSTALLATION AGAINST ANY DEFECTS BEGINNING WITH COMMENCEMENT OF CONSTRUCTION AND ENDING ONE YEAR AFTER APPROVAL BY THE COUNCIL. ANY LINES, HYDRANTS, FITTINGS, ETC., WHICH FAIL DUE TO DEFECTIVE MATERIAL OR FAULTY INSTALLATION WILL BE REPAIRED PROMPTLY BY THE CONTRACTOR IF IMMEDIATE REPAIR IS NOT MADE, WATERWORKS' PERSONNEL WILL MAKE THE REPAIR AND THE DEVELOPER WILL BE BILLED FOR ACTUAL TIME, MATERIAL AND EQUIPMENT REQUIRED FOR REPAIRS.
8. THE WATERWORKS WILL BE GIVEN ONE (1) SET OF "AS BUIILT" PLANS AND ONE SET OF ELECTRONIC PLANS.
9. A NOTICE OF COMPLETION MUST BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF HEALTH AND HOSPITALS.
10. UPON FINAL ACCEPTANCE OF THE DEVELOPMENT, THE WATERWORKS WILL GIVE WRITTEN NOTICE TO THE PLANNING AND ZONING COMMISSION.
11. BEFORE A NEW WATER METER SERVICE CAN BE INSTALLED, THE WATERWORKS, MUST BE PRESENTED WITH A PLANNING AND ZONING "CERTIFICATE OF ZONING COMPLIANCE", A "SEWER SERVICE PERMIT" (IF APPLICABLE), A PAYMENT FOR A METER INSTALLATION SERVICE CHARGE AND A METER DEPOSIT. NEW METER SERVICES WILL BE PLACED ON THE RIGHT PROPERTY LINE.

MATERIAL SPECIFICATIONS

1. SPECIFICATION REFERENCE TO STANDARD SPECIFICATIONS OF AWWA, ASTM, ANSI, AWPA, ETC. SHALL APPLY TO THE LATEST EDITION, REVISION OR ADDENDUM THERETO.
2. DUCTILE IRON PIPE SHALL BE MECHANICAL JOINT TYPE MANUFACTURED AND FACTORY TESTED IN ACCORDANCE WITH AWWA C150 AND AWWA C151, CLASS 50, CEMENT LINED CONFORMING TO AWWA C104.
3. POLYVINYL CHLORIDE (PVC) PLASTIC PIPE SHALL BE CLASS 150 WITH INTEGRAL BELL THAT MEETS THE REQUIREMENTS OF AWWA C–900 AND UNDERWRITER'S LABORATORIES (UL). THE PIPE SHALL MEET REQUIREMENTS OF WALL THICKNESS, OF DIMENSION RATIO DR18 AND SHALL BE MANUFACTURED TO DUCTILE IRON SIZE OUTSIDE DIMENSIONS. ONLY PVC IN BLUE COLOR WILL BE USED UNDERGROUND. THE STANDARD LENGTH SHALL BE 20 FEET. THE BELL SHALL CONSIST OF AN INTEGRAL WALL SECTION WITH REINFORCED RUBBER RING. MECHANICAL JOINT FITTINGS WILL BE USED WITH PVC PIPE.
4. POLYETHYLENE PIPE SHALL BE CLASS DR–11 DUCTILE IRON SIZE THAT MEETS THE REQUIREMENTS OF AWWA C–906. POLYETHYLENE PIPE WILL ONLY BE ALLOWED IN REMOTE AREAS AND WILL NOT HAVE ANY SERVICE TAPS MADE ON IT. THE FINAL DECISION ON ALLOWABLE USAGE OF POLYETHYLENE PIPE WILL BE MADE BY THE WATERWORKS DEPARTMENT.
5. MECHANICAL JOINT FITTINGS SHALL MEET OR EXCEED AWWA DUCTILE IRON C153/A21.53 SSB OR APPROVED EQUAL, LATEST REVISION. MJ FITTINGS SHALL BE THE RUBBER GASKET COMPRESSION TYPE. MJ FITTINGS SHALL CONFORM TO AWWA/ANSI C111/A21.11, LATEST REVISION. GASKET MATERIAL SHALL BE CHLORAMINES RESISTANT. FITTING BODY MATERIAL SHALL BE DUCTILE IRON CONFORMING TO ASTM 536. PRESSURE RATING SHALL BE 350 PSI FOR 4" – 24" DIAMETER FITTINGS. PLAIN END FITTINGS ARE NOT PERMITTED. FITTINGS SHALL HAVE FUSION–BONDED EPOXY COATINGS ON ALL INTERIOR AND EXTERIOR SURFACES OF DUCTILE IRON IN ACCORDANCE WITH AWWA/ANSI C116/A21.16, LATEST REVISION. SIGMA, STAR OR APPROVED (CR TAG).
6. GATE VALVES SHALL BE IRON BODIED AND HAVE ALL INTERNAL AND EXTERNAL FERROUS SURFACES COATED WITH A FUSION BONDED THERMOSETTING POWDER EPOXY COATING OF A MINIMUM OF 10 MILS NOMINAL THICKNESS. THE COATING SHALL CONFORM TO AWWA C550. THE VALVE DISC AND GUIDE LUGS MUST BE FULLY (100%) ENCAPSULATED IN EPDM RUBBER MATERIAL. EPDM MUST BE IN RAISED LETTERS MOLDED IN THE RESILIENT WEDGE. IT MUST BE FULLY SUPPORTED WITH A MODIFIED WEDGE DISC WITH A RESILIENT RUBBER SEAT RING INTERNALLY REINFORCED BY A CONCENTRIC STEEL RING, WHICH ARE MANUFACTURED AND TESTED IN ACCORDANCE WITH AWWA SPECIFICATION C509. THEY SHALL BE 200 PSI WORKING PRESSURE AND 400 PSI TEST PRESSURE. VALVES SHALL BE NON–RISING STEM WITH A 2 INCH SQUARE WRENCH NUT, SHALL OPEN BY TURNING COUNTER CLOCKWISE AND SHALL BE EQUIPPED WITH CHLORAMINES RESISTANT O–RING STEM SEALS. HEX HEAD NUT AND BOLT MATERIAL SHALL BE 304 OR 316 STAINLESS STEEL. VALVES SHALL BE MUELLER SERIES A–2360–20/A–2360–16 AND T–2360–16 OR APPROVED EQUAL.
7. TAPPING SLEEVE VALVES SHALL BE SIMILAR TO GATE VALVES SPECIFIED ABOVE AND SHALL BE MUELLER A2360–16 OR APPROVED EQUAL.
8. TAPPING SLEEVES SHALL BE THE STAINLESS STEEL SLEEVE TYPE. THE BODY SHALL BE A FULL CIRCLE BAND THAT MEETS OR EXCEEDS THE WATERWORKS SPECIFICATIONS FOR REPAIR CLAMPS, STAINLESS STEEL 18–8 TYPE 304 GRIDDED OVERLAPPING VIRGIN NEOPRENE RUBBER GASKET. THE FLANGE SHALL BE 304(18–8) STAINLESS STEEL OR DUCTILE IRON AWWA C207 CLASS D ANSI 150 LB. DRILLING RECESSED TO ACCEPT A STANDARD TAPPING VALVE. ALL BOLTS SHALL BE TYPE 304 STAINLESS STEEL. TAPPING SLEEVES SHALL BE SMITH–BLAIR 662 OR 663, JCM 432, ROMAC SST OR MUELLER H–304.
9. VALVE BOXES SHALL BE CONSTRUCTED OF CAST IRON FOR ROADWAY SERVICE, WITH A MINIMUM INSIDE DIAMETER OF 5 1/4 INCHES. THE BOX SHALL BE THE ADJUSTABLE SCREW TYPE CONSISTING OF TWO PIECES (A BASE AND A TOP SECTION) AND SHALL INCLUDE A COVER. THE COVER SHALL BE OF THE DEEP (2 INCHES) SOCKET TYPE WITH THE WORD WATER CAST ON THE TOP. THE BOX SHALL BE TYLER 461–S/562–S OR APPROVED EQUAL.
10. VALVE BOX RISERS SHALL BE MADE OF CAST IRON FOR ROADWAY SERVICE. THE RISER SHALL FIT INTO THE TOP SECTION OF TYLER 461–S/562–S VALVE BOXES AND ACCEPT THE LID. THE RISER SHALL BE A TRUMBULL 357 SERIES OR APPROVED EQUAL.
11. FIRE HYDRANTS SHALL CONFORM TO AWWA SPECIFICATION C–502. MAIN VALVE SHALL BE 5 1/4" INCH COMPRESSION TYPE WHICH CLOSES WITH PRESSURE. FIRE HYDRANTS SHALL BE THREE–WAY IN DESIGN, HAVING TWO 2 ½ INCH HOSE NOZZLES AND ONE 4 1/2" INCH PUMPER NOZZLE WITH NOZZLE CAPS AND CAP CHAINS. ALL NOZZLES SHALL HAVE NATIONAL STANDARD THREADS. OPERATING NUT SHALL BE PENTAGONAL MEASURING 1 ½ INCHES FROM POINT TO FLAT. HYDRANT SHALL OPEN BY TURNING COUNTER–CLOCKWISE INTO HYDRANT BARREL UTILIZING A CHLORAMINES RESISTANT O–RING SEAL. A SUITABLE NOZZLE LOCK SHALL BE IN PLACE TO PREVENT INADVERTENT NOZZLE REMOVAL. HYDRANT SHOE SHALL HAVE MECHANICAL JOINT CONNECTION FOR 6 INCH PIPE. THE INTERIOR OF THE SHOE INCLUDING THE LOWER VALVE PLATE AND STEM CAP NUT SHALL HAVE A PROTECTIVE COATING THAT MEETS THE REQUIREMENTS OF AWWA C–550. FIRE HYDRANTS SHALL BE RED IN COLOR. FIRE HYDRANTS SHALL BE RATED FOR A WORKING PRESSURE OF 250 PSIG. COMPOSITION OF THE MAIN VALVE SHALL BE EPDM MOLDED RUBBER HAVING A DUROMETER HARDNESS OF 95+/– 5 AND SHALL BE REVERSIBLE IN DESIGN TO PROVIDE A SPARE IN PLACE. THE GREASE OR OIL USED FOR LUBRICATION SHALL BE NONTOXIC AND SAFE FOR USE IN POTABLE WATER SYSTEMS. ALL HYDRANTS WILL BE OF THE TRAFFIC "BREAKAWAY" TYPE WITH SAFETY STEM COUPLING AND BREAKABLE FLANGE THAT PERMITS FULL 360 DEGREE ROTATION OF THE NOZZLE SECTION. CUT DOWN BOLTS ARE NOT ACCEPTABLE FOR THIS REQUIREMENT. ALL BELOW GROUND NUTS AND BOLTS SHALL BE STAINLESS STEEL FOR CORROSION RESISTANCE. THE HYDRANT SHALL BE DESIGNED WITH AN ANTI–FRICTION BEARING, LOCATED SO THAT IT REDUCES THE TORQUE REQUIRED TO OPERATE THE HYDRANT. PLASTIC (POLYURETHANE) MAIN VALVES ARE UNACCEPTABLE. THE MAIN VALVE SHALL HAVE A CROSS SECTION NOT LESS THAN 1". HYDRANT SHALL BE MUELLER A–423 SUPER CENTURION 250 OR APPROVED EQUAL.
12. MEGA LUGS PIPE RESTRAINERS SHALL BE USED FOR THE INSTALLATION OF FIRE HYDRANTS, TEES, VALVES AND ANY DIRECTIONAL CHANGE OF WATER MAIN.
13. SLEEVES OR CLAMPS SHALL NOT BE USED FOR WATER MAIN INSTALLATIONS EXCEPT FOR CONNECTION TO EXISTING MAINS OR AS DIRECTED BY THE WATERWORKS.
14. CONCRETE PRECAST SLABS AROUND VALVE BOXES SHALL BE 2500 POUND COMPRESSION STRENGTH AT 28 DAYS, TWO FEET SQUARE AND 4" THICK. THE CIRCULAR OPENING IN THE CENTER OF THE SLAB SHALL BE APPROXIMATELY 3/4" GREATER IN DIAMETER THAN THE OUTER DIAMETER OF THE VALVE BOX.
15. REPAIR CLAMP SHALL BE A COMPLETE CIRCLE STAINLESS STEEL CLAMP PRE–ASSEMBLED WITH A GASKET, A BRIDGE PLATE, LUGS, NUTS AND BOLTS. THE BAND SHALL BE STAINLESS STEEL TYPE 304 WITH ENDS CONTOURED INTO AND POSITIVELY ATTACHED TO DUCTILE IRON OR STAINLESS STEEL LUGS. THE GASKET SHALL BE A LAP TYPE WITH TAPERED ENDS, GRIDDED, OF VIRGIN NEOPRENE RUBBER FOR WATER SERVICE. THE BRIDGE PLATE SHALL BE STAINLESS STEEL TYPE 304 RECESSED FLUSH AND BONDED INTO THE GASKET. BOLTS SHALL BE HIGH STRENGTH TYPE 304 STAINLESS STEEL. LUGS SHALL BE ULTRA HIGH STRENGTH DUCTILE IRON TO ASTM A536 OR STAINLESS STEEL. THE CLAMP SHALL BE A SMITH–BLAIR 226 OR 261, JCM 101 OR 131, ROMAC CL1 OR SS1, OR MUELLER 210 OR 211 STAINLESS STEEL.
16. LUMBER FOR THRUST BLOCKS OR FIXTURE FOUNDATION SHALL BE MADE WITH PRESSURE TREATED SOUTHERN YELLOW PINE C–2.40 TREATED LUMBER FOR UNDERGROUND SERVICE.
17. CONCRETE POSTS SHALL BE NOT LESS THAN 4 1/2 INCHES SQUARE WITH A LENGTH OF 7 FEET FOR VALVE MARKERS. EACH POST SHALL BE REINFORCED WITH TWO NO. 3 DEFORMED REINFORCING BARS. THESE POSTS MAY BE SECURED FROM PRECAST CONCRETE STEP COMMUNITY, 901 SOUTH WHITE, NEW ORLEANS, LOUISIANA.

DESIGN REQUIREMENTS

1. WATER MAINS SHALL BE A MINIMUM OF 8–INCH DIAMETER. LARGER DIAMETER MAINS MAY BE REQUIRED BY THE WATERWORKS TO INSURE AN ADEQUATE SUPPLY TO THE DEVELOPMENT. WATER MAINS SHALL BE VALVED AT EACH INTERSECTION, AS REQUIRED AT TEES OR CROSSES AND AT A MINIMUM OF EVERY 1000 FEET. VALVES SHALL BE LOCATED AS SHOWN ON APPROVED PLANS AND SHALL BE SET WITH STEMS VERTICAL. THE CONTRACTOR WILL INDICATE THE LOCATION OF EACH VALVE BY MEANS OF A "V" SHAPED NOTCH CUT INTO THE CURBING AT THE VALVE SITE. EACH VALVE MUST HAVE A VALVE BOX CENTERED OVER THE VALVE STEM TO ALLOW FREE ACCESS OF A VALVE WRENCH. THE TOP SHALL BE SET LEVEL WITH THE FINISHED GRADE SURFACE. A PRE–CAST CONCRETE SLAB SHALL BE SET AROUND EACH VALVE BOX AND THE TOP LEVEL WITH THE FINISHED GRADE SURFACE.
2. COVER OVER WATER LINES SHALL BE MAINTAINED AS FOLLOWS:
   - 2.1. 8" MAIN SHALL HAVE 36" TO 40" OF COVER.
   - 2.2. MAINS LARGER THAN 8" SHALL HAVE 42" TO 46" OF COVER.
   - 2.3. MAINS WHICH CROSS UNDER DITCHES SHALL BE 24" TO 28" BELOW THE INVERT OF THE DITCH.
   - 2.4. MAINS WHICH CROSS UNDER A CANAL SHALL BE INSTALLED UNDER THE CANAL 26" TO 40" BELOW THE INVERT OF THE CANAL. IF THE INVERT OF THE CANAL IS MORE THAN 20 FEET IN WIDTH, A CASING MUST BE INSTALLED.
3. WATER MAIN LOOPING: ALL 6" WATER MAINS OF 1500 FEET OR MORE, AND 8" WATER MAINS OF 1000 FEET OR MORE, INCLUDING EXISTING MAINS, SHALL BE LOOPED TO TWO (2) SEPARATE SOURCES OF WATER, WHERE PRACTICAL.
4. FIRE HYDRANTS SHALL BE INSTALLED NOT MORE THAN 500 FEET APART ON THE PROPERTY LINE EXTENDED AND AT ENDS OF LINES TO ALLOW FOR FLUSHING. INSTALL ALL HYDRANTS IN A EXACT VERTICAL POSITION. PUMPER NOZZLES SHALL FACE TOWARD THE STREET. HYDRANT SHALL HAVE PROPER BURY LENGTH SO THAT THE BOTTOM OF THE SAFETY FLANGE IS BETWEEN 5" AND 8" ABOVE FINISHED GRADE LEVEL OR TOP OF CURB WITHOUT THE USE OF RISES, WHICHEVER IS HIGHER. EACH HYDRANT SHALL HAVE A 6" MAIN LEAD OF AT LEAST 3 FEET. HYDRANTS SHALL BE ATTACHED WITH ROMAC GRIP RING PIPE RESTRAINTS. HYDRANT VALVES SHALL BE A MINIMUM OF 3 FEET FROM HYDRANTS LOCATED ALONG A HIGHWAY OR THOROUGHFARE SHALL BE VALVED. HYDRANTS THAT REQUIRE VALVES SHALL BE CONNECTED BY A MECHANICAL JOINT X FLANGED TEE.
5. PIPE SHALL BE RECEIVED, STORED, HANDLED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ONLY LUBRICANT SPECIFIED BY THE PIPE MANUFACTURER SHALL BE USED. ENDS OF PIPE AND FITTING SHALL BE THOROUGHLY CLEANED BEFORE APPLYING JOINT LUBRICANT. DURING JOINT ASSEMBLY, PVC PIPE SHALL BE PUSHED INTO THE BELL UP TO THE CIRCUMFERENTIAL REFERENCE MARK. IN NO CASE WILL SOLVENT CEMENT BE USED FOR JOINING PIPE. TIGHTEN MECHANICAL JOINT BOLTS ALTERNATELY ON OPPOSITE SIDES IN ORDER TO COMPRESS THE GASKET UNIFORMLY. ALL UNDERGROUND DUCTILE PIPE AND FITTING SHALL BE COVERED WITH 8 MIL POLYETHYLENE FILM.
6. PIPE SHALL BE INSTALLED ACCORDING TO APPLICABLE AWWA STANDARDS.
7. A 3" PVC SCHEDULE 40 PIPE SHALL BE LAID UNDER ALL NEW STREETS THAT DO NOT HAVE WATER LINES ON EACH SIDE OF THE ROAD. THE PIPE SHALL BE LINED UP WITH EACH PROPERTY LINE ON THE OPPOSITE SIDE OF THE ROAD FROM THE WATER LINE. THE PIPE SHALL BE BETWEEN 18" TO 24" IN DEPTH AND SHALL EXTEND OUTWARD 12" PAST THE OUTER EDGE OF THE COMPACTED SUB–BASE AND SHALL BE CAPPED ON EACH END.
8. EACH SECTION OF PIPE AND EACH FITTING SHALL BE EXAMINED FOR DEFECTS BEFORE LOWERING IN THE TRENCH. ANY DEFECTIVE OR DAMAGED MATERIAL SHALL BE REJECTED AND REMOVED FROM THE WORK SITE. ALL PIPE AND ACCESSORIES SHALL BE CAREFULLY LOWERED INTO THE TRENCH IN SUCH A MANNER AS TO PREVENT DAMAGE. UNDER NO CIRCUMSTANCES SHALL PIPE OR ACCESSORIES BE DUMPED OR DROPPED INTO THE TRENCH. HOLES FOR COUPLINGS OR BELLS SHALL BE CUT FOR ALL PIPE REGARDLESS OF TYPE OF PIPE USED. THE BARREL OF THE PIPE SHALL REST EVENLY ON THE TRENCH FROM END TO END EXCEPT FOR COUPLING OR BELL HOLES. IF THE TRENCH BOTTOM WILL NOT SUPPORT THE WEIGHT OF THE FITTING, A FOUNDATION OF SELECT EARTH OF SHELL SHALL BE INSTALLED. HOLES SHALL BE SUFFICIENTLY LARGE TO ALLOW PROPER MAKEUP OF JOINT SO THAT JOINTS DO NOT SUPPORT THE PIPE WEIGHT.
9. ALL PIPE AND MATERIAL SHALL BE KEPT CLEAN DURING AND AFTER LAYING. A SWAB SHALL BE USED. TRENCH WATER SHALL NOT BE PERMITTED TO ENTER PIPES. THE WATERWORKS RESERVES THE RIGHT TO SUSPEND PIPE–LAYING OPERATIONS WHEN UNSUITABLE TRENCH CONDITIONS EXIST. WHEN PIPE–LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY USE OF TEMPORARY PIPE PLUGS OR NIGHT CAPS. PLYWOOD OR SIMILAR MAKE SHIFT BLOCKING WHICH DOES NOT PRODUCE A WATER TIGHT SEAL WILL NOT BE ACCEPTABLE.
10. ALL PIPE SHALL BE LAID TRUE TO ALIGNMENT AND GRADE. REQUIRED HORIZONTAL OR VERTICAL DEFECTION SHALL NOT EXCEED 75% OF THE MAXIMUM RECOMMENDED BY THE PIPE MANUFACTURER.
11. HOT TAPS MADE BY THE CONTRACTOR ON EXISTING WATER MAINS SHALL BE MADE WITH A MUELLER CL12 OR C1–36 TAPPING MACHINE.
12. ALL PLUGS, TEE, BENDS, AND HYDRANTS SHALL HAVE CELCURE TREATED LUMBER RATED FOR UNDERGROUND USE FOR THRUST BLOCKS AND FIXTURE FOUNDATION OF SUFFICIENT SIZE TO RESIST THE FORCE OF WATER ON OR THROUGH THE FITTING.
13. ANY UNDERGROUND FACILITY INSTALLED THAT IS NON–CONDUCTIVE TO ELECTRIC CURRENT MUST BE INSTALLED WITH A NON–CORROSIVE TAPE PLACED DIRECTLY OVER AND ON THE CENTER OF THE FACILITY ABOUT 24 INCHES ABOVE THE PIPE. THE TAPE MUST BE CONNECTED TO ALL FIXTURES AND APPURTENANCES A TRACER WIRE SHALL ALSO BE DIRECTLY TO THE PIPE, ALL FIXTURES AND APPURTENANCES. THE TRACER WIRE WILL BE RUN TO THE TOP OF EACH VALVE BOX TO ALLOW DIRECT CONNECTION TO THE WIRE.
14. RADIAL CLEARANCE BETWEEN PARALLEL WATER AND SEWER LINES SHALL BE NOT LESS THAN SIX (6) FEET RADIAL DISTANCE FROM WATER LINES. IN THE EVENT THAT SEWER LINES CROSS WATER MAINS, SEWER LINES MUST BE AT LEAST EIGHTEEN (18) INCHES BELOW WATER MAIN AT A 90° CROSSING. NO UTILITIES SHALL BE INSTALLED DIRECTLY ABOVE THE WATER LINES RUNNING PARALLEL OR CLOSER THAN THREE (3) FEET TO THE CENTER OF THE WATER MAIN.
15. METER SERVICE LINES: UNDERGROUND SERVICE LINE VALVES AND FITTINGS SHALL CONFORM TO AWWA C800. CORPORATION STOPS HALL BE MUELLER H–15000, OR APPROVED EQUAL. CURB STOPS SHALL BE MUELLER H–15166, OR APPROVED EQUAL. COPPER TUBING CONFORMING TO AWWA C800 OR POLYETHYLENE TUBING 200 PSI PE3408 OR APPROVED EQUAL CONFORMING TO AWWA C901 AND ASTM D2737 MAY BE USED FOR 1" SERVICE LINES.
16. THE CONTRACTOR SHALL CONDUCT ALL WORK IN SUCH A MANNER THAT WILL NOT DISTURB THE EXISTING WATER LINE OR CONTAMINATE DRINKING WATER IN EXISTING WATERWORKS' LINES.
17. THE CONTRACTOR MUST TAKE EVERY PRECAUTION TO KEEP WATER MAINS CLEAN BEFORE AND DURING INSTALLATION TO AVOID UNNECESSARY DELAYS DUE TO BACTERIOLOGICAL CONTAMINATION.
18. THE CONTRACTOR SHALL NOT EXPOSE, CUT, TAP INTO OR CONNECT TO EXISTING WATERWORKS' LINES AND SHALL NOT OPEN OR CLOSE ANY VALVES OR ANY FIRE HYDRANTS WITHOUT FIRST ADVISING AND SECURING PERMISSION OF THE WATERWORKS AND A WATERWORKS REPRESENTATIVE MUST BE PRESENT.
19. THE CONTRACTOR MUST PURCHASE WATER USED FOR ANY PURPOSE OTHER THAN FOR PRE–ARRANGED FLUSHING AND TESTING OF THE WATER LINES.
20. ANY BREAKAGE OF EXISTING WATERLINES OR OTHER UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
21. THE INSTALLATION OF WATER SYSTEMS SHALL BE INSPECTED BY THE WATERWORKS' DESIGNATED INSPECTOR AND WATERWORKS PERSONNEL FOR COMPLIANCE WITH APPROVED PLANS AND SPECIFICATIONS AT THE EXPENSE OF THE DEVELOPER.
22. THE CONTRACTOR SHALL EXTEND FULL COOPERATION TO THE INSPECTOR AND ANY WATERWORKS PERSONNEL IN THE COURSE OF MAKING INSPECTIONS AND SHALL COMPLY WITH ALL REASONABLE REQUESTS TO OBSERVE WORK IN PROGRESS AND TO REVIEW WORK WHICH HAS ALREADY BEEN PERFORMED. THE INSPECTOR AND WATERWORKS' PERSONNEL WILL BE ALLOWED AN OPPORTUNITY TO INSPECT ALL LINES, VALVES AND FITTINGS BEFORE BEING COVERED. REQUIRED PRESSURE AND LEAKAGE TESTS SHALL BE WITNESSED BY THE INSPECTOR AND BY WATERWORKS' PERSONNEL.
23. THE WATERWORKS SHALL BE REIMBURSED FOR ALL FEES AND EXPENSES INCURRED BY THE INSPECTOR, PRIOR OR CONCURRENT WITH, REQUESTING THE WATERWORKS TO APPROVE THE INSTALLATION.
24. FLUSHING, PRESSURE TESTS AND LEAKAGE TESTS FOR DUCTILE IRON, POLYETHYLENE AND PVC PIPE SHALL BE PERFORMED IN ACCORDANCE TO APPLICABLE SECTIONS OF AWWA C600 AT THE PRESSURES, TIME AND ALLOWABLE LEAKAGE STATED BELOW.

FLUSHING

1. BEFORE TESTING AND DISINFECTING, THE PIPELINE SHALL BE FLUSHED CLEAN WITH POTABLE WATER. FLUSHING SHALL BE ACCOMPLISHED THROUGH A STAND PIPE OF THE SAME DIAMETER OF THE NEWLY INSTALLED WATER MAIN.
2. THE CONTRACTOR SHALL NOTIFY THE DISTRICT PRIOR TO FILLING OR FLUSHING NEW LINES. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES IN THE WATERWORKS' SYSTEM WITHOUT SECURING PERMISSION. WATERWORKS' PERSONNEL SHALL BE PRESENT PRIOR TO ANY FLUSHING.
3. THE CONTRACTOR WILL BE ALLOWED FOUR TIMES THE VOLUME OF WATER IN THE PIPE BEING LAID FOR FLUSHING PURPOSES. ANY ADDITIONAL WATER REQUIRED FOR FLUSHING SHALL BE CHARGED TO THE CONTRACTOR AT THE CURRENT WATER RATES.
4. CONTRACTOR SHALL REMOVE TEMPORARY BACKFLOW PREVENTER AND MAKE NECESSARY TIE–INS WITHIN 5 WORKING DAYS, AFTER BACTERIOLOGICAL SAMPLES ARE APPROVED BY DHH.

PRESSURE AND LEAKAGE TEST

1. WATERWORKS PERSONNEL SHALL BE PRESENT PRIOR TO THE COMMENCEMENT OF ANY PRESSURE TEST. EACH SECTION OF LINE BETWEEN VALVES AND/OR A LONGER SECTION IF PERMITTED BY THE WATERWORKS, SHALL BE SUBMITTED TO A HYDROSTATIC PRESSURE TEST AND LEAKAGE TEST OF 120 PSI FOR NOT LESS THAN TWO HOURS.
2. WATER LINES BEING PRESSURE TESTED MUST ONLY BE CONNECTED TO A WATERWORKS' LINE BY THE USE OF A REDUCED PRESSURE BACK FLOW ASSEMBLY.
3. EACH SECTION OF PIPE TO BE TESTED SHALL BE SLOWLY FILLED WITH WATER, AND ALL AIR EXPELLED FROM THE PIPE THROUGH TAPS AT POINTS OF HIGHEST ELEVATION IN THE SECTION TO BE TESTED. IF HYDRANTS OR BLOW OFFS ARE NOT AVAILABLE AT HIGH SPOTS IN THE LINE FOR AIR REMOVAL, TAPS SHALL BE MADE TO ACCOMMODATE A STANDARD 3/4" MUELLER H–15000 CORPORATION STOP WITH MUELLER THREADS, OR EQUAL, WHICH SHALL BE REMOVED AND THE TAP PLUGGED WITH A BRASS PLUG UPON COMPLETION OF THE TEST.
4. AFTER THE TEST PRESSURE OF 120 POUNDS PER SQUARE INCH HAS BEEN OBTAINED, VERIFY ALL VALVES IN THE SECTION BEING TESTED ARE OPEN COMPLETELY AND COMMENCE TO LEAKAGE TEST IN ACCORDANCE WITH AWWA C605–94 AS FOLLOWS: LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE PIPE SECTION BEING TESTED TO MAINTAIN A PRESSURE WITHIN 5 PSI OF THE SPECIFIED LEAKAGE TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND AIR IN THE PIPELINE HAS BEEN EXPELLED. NO INSTALLATION WILL BE ACCEPTED IF THE LEAKAGE IS GREATER THAN THAT DETERMINED BY THE FORMULA:

   L=(ND X SQUARE ROOT OF P) DIVIDED BY 7,400

   WHERE:
   L=ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
   N= NUMBER OF JOINTS IN THE LENGTH OF PIPELINE TESTED
   D=NOMINAL DIAMETER OF THE PIPE, IN INCHES
   P=AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

   LEAKAGE GALLONS PER HOUR = (# OF JOINTS) X (PIPE DIAMETER) X (0.00148)
5. ALL PRESSURE TEST AND LEAKAGE TESTS ARE PERFORMED AT 120 PSI.
6. IF ANY LOSS IN PRESSURE IS NOTED DURING THE TWO–HOUR TEST PERIOD, THE CONTRACTOR SHALL EXAMINE THE PIPELINE AND DETERMINE THE SOURCE OF THE LEAKAGE. IF LEAKS ARE FOUND IN A JOINT, THE JOINT SHALL BE DISASSEMBLED, AND NECESSARY REPAIRS MADE. CLAMPS SHALL NOT BE USED TO REPAIR LEAKS. ANY CRACKED OR DEFECTIVE PIPES, FITTINGS OR SPECIALS DISCOVERED INCONSEQUENCE OF THIS PRESSURE TEST SHALL BE REMOVED AND REPLACED WITH SOUND MATERIAL AT THE CONTRACTOR'S EXPENSE. AFTER REPAIRS, THE SECTION OF LINE SHALL BE RE–TESTED UNTIL A HYDROSTATIC PRESSURE AND LEAKAGE TEST OF 120 PSI IS MAINTAINED FOR NOT LESS THAN TWO HOURS.

LEAKAGE TEST

1. WATER LINES BEING TESTED FOR LEAKAGE MUST ONLY BE CONNECTED TO A WATERWORKS' LINE BY THE USE OF A REDUCED PRESSURE BACK FLOW ASSEMBLY.
2. THE PIPELINE AS A WHOLE OR IN SUCH SECTIONS AS THE WATERWORKS MAY DESIGNATE, SHALL BE TESTED TO A PRESSURE OF 120 POUNDS PER SQUARE INCH. THE 120 POUNDS PER SQUARE INCH PRESSURE SHALL BE HELD A SUFFICIENT TIME TO ALLOW A TRUE EVALUATION OF LEAKAGE AND SHALL DEPEND UPON THE LENGTH OF LIEN TESTED, EXCEPT, THAT IN NO EVENT SHALL THE PRESSURE BE MAINTAINED FOR LESS THAN TWO HOURS. SUITABLE MEANS SHALL BE PROVIDED FOR DETERMINING THE QUANTITY OF WATER LOST BY LEAKAGE DURING THE FINAL HYDROSTATIC PRESSURE TEST. NO PIPELINE OR PORTION THEREOF SHALL BE ACCEPTED UNTIL OR UNLESS THE LEAKAGE IS WITHIN THE LIMIT OF 0,00148 GALLONS PER JOINT PER INCH OF NOMINAL PIPE DIAMETER PER HOUR.
3. ANY SECTION OF LINE THAT FAILS TO MEET THE LEAKAGE TEST SHALL BE REPAIRED BY THE CONTRACTOR AND RE–TESTED UNTIL THE LEAKAGE IS WITHIN THE ALLOWABLE LIMITS. THE WATERWORKS' EMPLOYEE MUST WITNESS FINAL PRESSURE AND LEAKAGE TESTS.

DISINFECTING

1. AFTER COMPLETION OF LEAKAGE TESTS, ALL PARTS OF THE PIPELINES INSTALLED SHALL BE DISINFECTED BY THE DEPARTMENT OF WATERWORKS AT OWNER'S EXPENSE. COORDINATE WITH ST. CHARLES PARISH WATERWORKS DEPT. FOR COST OF CHLORINATION TESTS. DISINFECTION SHALL CONFORM TO AWWA STANDARD C651. IF THE DISCHARGE OF HIGHLY CHLORINATED WATER WOULD BE HARMFUL TO VEGETATION, WILDLIFE, OR THE ENVIRONMENT, MEASURES MUST BE TAKEN TO IMPOUND AND NEUTRALIZE THE CHLORINATED WATER PRIOR TO DISCHARGING OR TO REMOVE AND DISPOSE OF IN AN APPROVED MANNER, AT NO ADDITIONAL COST.

CHLORINE APPLICATION

1. ALL NEW MAINS AND SERVICES AND ANY PORTION OF EXISTING MAINS REPAIRED SHALL BE CHLORINATED BY THE APPLICATION OF SUFFICIENT CHLORINE TO PROVIDE A CHLORINE RESIDUAL OF NOT LESS THAN 10 PPM AFTER THE CHLORINE SOLUTION HAS BEEN HELD IN THE PIPELINE FOR 24 HOURS. MAINS SHOULD BE SUFFICIENTLY CLEAN AFTER PROPER PRECAUTIONS DURING LAYING AND FLUSHING OF THE LINE SO THAT AN INITIAL APPLICATION OF 50 PPM OF CHLORINE WILL PRODUCE THE REQUIRED RESIDUAL. ADDITIONAL CHLORINE MAY BE NECESSARY IF THE MAINS HAVE NOT BEEN KEPT CLEAN. CALCIUM HYPOCHLORITE CONFORMING TO AWWA B300 IS TO BE USED FOR CHLORINATION. CHLORINE SOLUTION SHALL BE APPLIED AT ONE END OF THE LINE BEING DISINFECTED. WATER SHALL BE WITHDRAWN FROM THE OPPOSITE END AND FROM THE ENDS OF ALL BRANCHES UNTIL THE CHLORINE SOLUTION COMPLETELY FILLS ALL LINES TO BE DISINFECTED. VALVES AND HYDRANTS IN THE LINES BEING CHLORINATED SHALL BE OPERATED WHILE THE CHLORINE SOLUTION IS IN THE LINE.

FINAL FLUSHING

1. AFTER THE 24–HOUR RETENTION PERIOD, THE CHLORINE SOLUTION SHALL BE FLUSHED OUT OF THE LINES FOR APPROPRIATE DISPOSAL AND THE LIENS FILLED WITH POTABLE WATER. THE LINES SHALL THEN STAND FOR 24 HOURS BEFORE SAMPLES ARE TAKEN FOR BACTERIOLOGICAL TESTS. SAMPLE POINTS SHALL BE INSTALLED AS DIRECTED BY THE WATERWORKS. SAMPLES SHALL BE TAKEN BY THE WATERWORKS' PERSONNEL AND SUBMITTED TO THE STATE DEPARTMENT OF HEALTH FOR BACTERIOLOGICAL EXAMINATION. IF ANY SAMPLES SHOW A POSITIVE REACTION, THAT PORTION OF THE LINE REPRESENTED BY THE SAMPLE SHALL BE DISINFECTED AGAIN AND THE FLUSHING AND SAMPLING REPEATED. THIS PROCEDURE SHALL BE REPEATED UNTIL ALL PORTIONS OF THE SYSTEM ARE COMPLETELY DISINFECTED.

STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME ALLISON B. FROEBA
NUMBER 32492

ALMEDIA GARDENS SUBDIVISION
WATER NOTES

ST. CHARLES PARISH

DATE	SIGN	REV NO.	DESCRIPTION	ISSUE NO.
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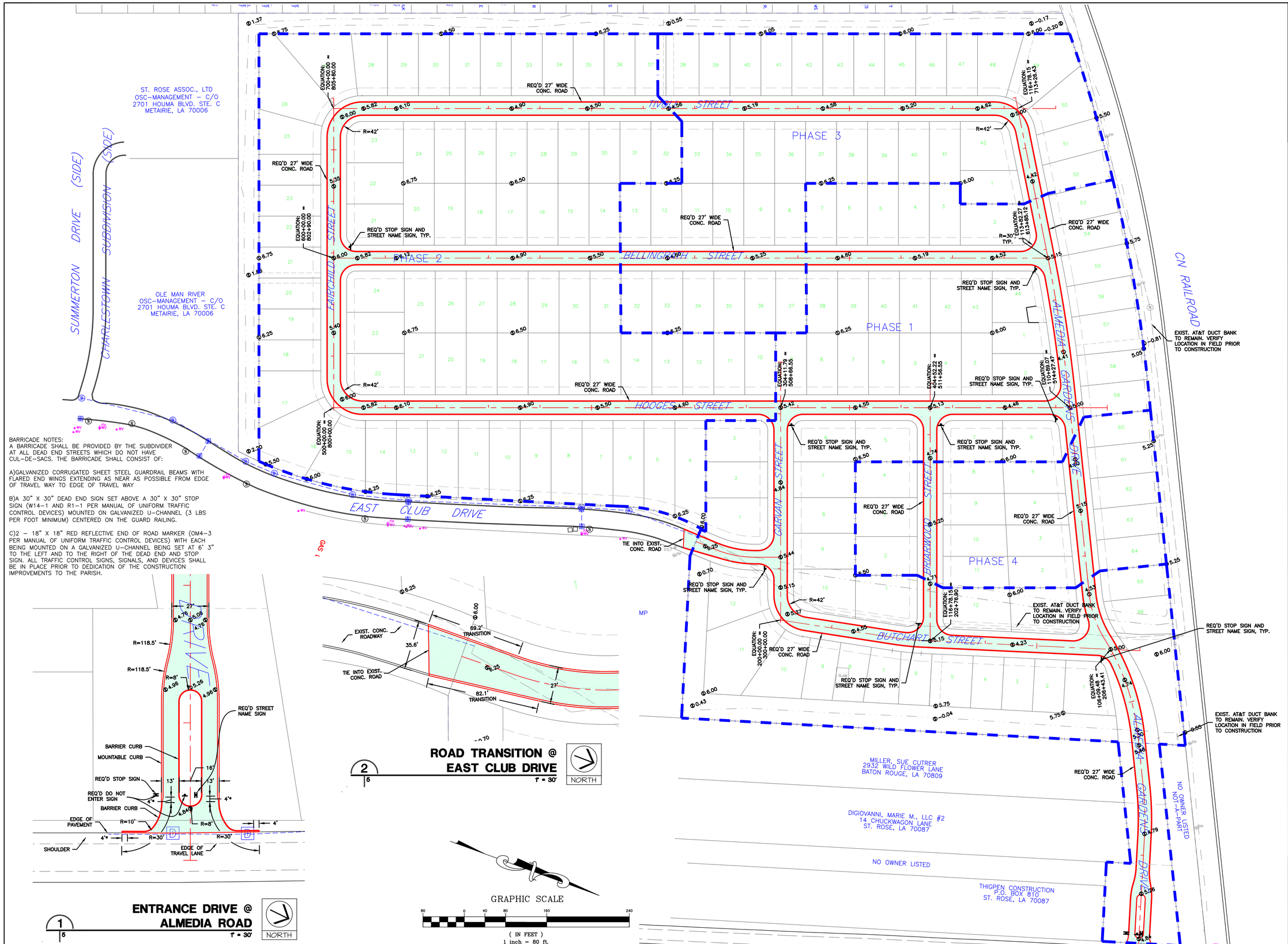
DATE: 06/17/2024

LA COA: 5809



BARRICADE NOTES:
A BARRICADE SHALL BE PROVIDED BY THE SUBDIVIDER AT ALL DEAD END STREETS WHICH DO NOT HAVE CUL-DE-SACS. THE BARRICADE SHALL CONSIST OF:

A)GALVANIZED CORRUGATED SHEET STEEL GUARDRAIL BEAMS WITH FLARED END WINGS EXTENDING AS NEAR AS POSSIBLE FROM EDGE OF TRAVEL WAY TO EDGE OF TRAVEL WAY

B)A 30" X 30" DEAD END SIGN SET ABOVE A 30" X 30" STOP SIGN (W14-1 AND R1-1 PER MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES) MOUNTED ON GALVANIZED U-CHANNEL (3 LBS PER FOOT MINIMUM) CENTERED ON THE GUARD RAILING.

C)2 - 18" X 18" RED REFLECTIVE END OF ROAD MARKER (OM4-3 PER MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES) WITH EACH BEING MOUNTED ON A GALVANIZED U-CHANNEL BEING SET AT 6' 3" TO THE LEFT AND TO THE RIGHT OF THE DEAD END AND STOP SIGN. ALL TRAFFIC CONTROL SIGNS, SIGNALS, AND DEVICES SHALL BE IN PLACE PRIOR TO DEDICATION OF THE CONSTRUCTION IMPROVEMENTS TO THE PARISH.

1 | 5 **ENTRANCE DRIVE @ ALMEDIA ROAD** 1" = 30'

2 | 5 **ROAD TRANSITION @ EAST CLUB DRIVE** 1" = 30'

STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME: ALLISON B. FROEBA
NUMBER: 32492

REV NO.	DESCRIPTION	DATE	SIGN

ALMEDIA GARDENS SUBDIVISION
MASTER PAVING AND SIGNAGE PLAN

ST. CHARLES PARISH

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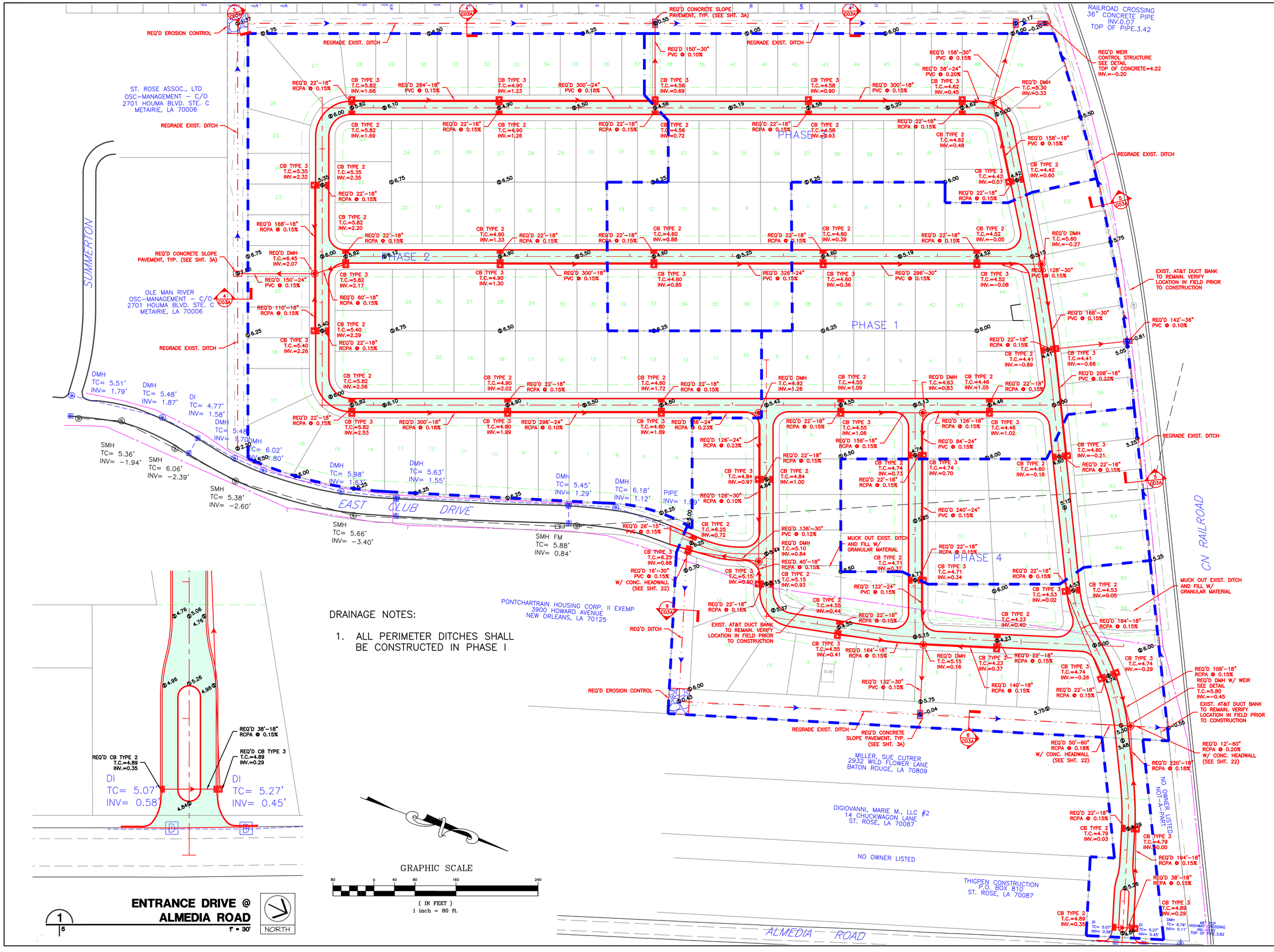

DRAINAGE NOTES:

1. ALL PERIMETER DITCHES SHALL BE CONSTRUCTED IN PHASE I

ENTRANCE DRIVE @ ALMEDIA ROAD

1 / 5 — 1" = 30'

STATE OF LOUISIANA
ALLISON B. FROEBA
License No. 32492
PROFESSIONAL ENGINEER IN CIVIL ENGINEERING
6/17/24

ENGINEER OF RECORD
NAME: ALLISON B. FROEBA
NUMBER: 32492

DATE	SIGN

ALMEDIA GARDENS SUBDIVISION
MASTER DRAINAGE PLAN

ST. CHARLES PARISH

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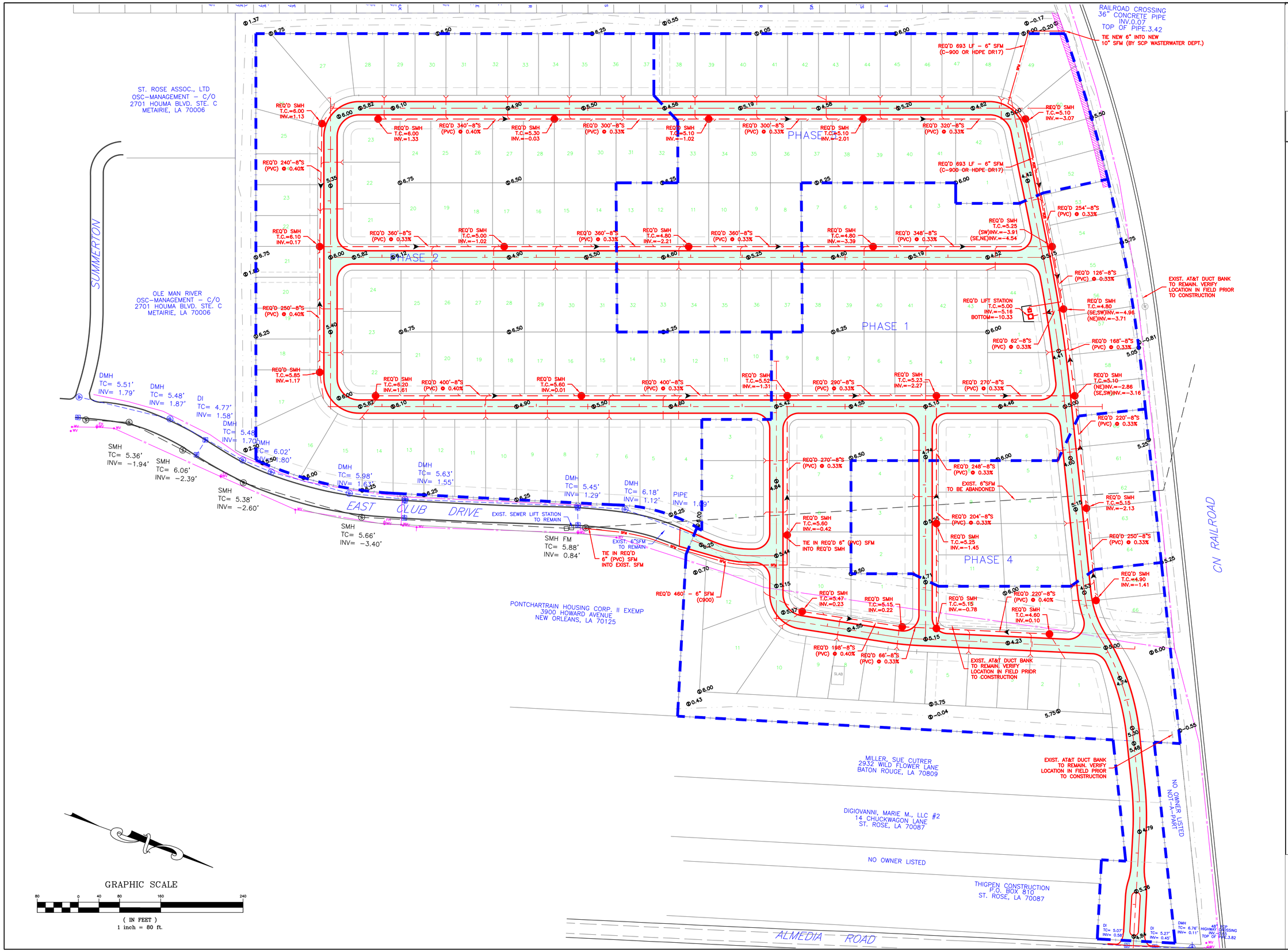

STATE OF LOUISIANA
ALLISON B. FROEBA
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ENGINEER OF RECORD
NAME ALLISON B. FROEBA
NUMBER 32492

ALMEDIA GARDENS SUBDIVISION
MASTER SEWER PLAN

ST. CHARLES PARISH

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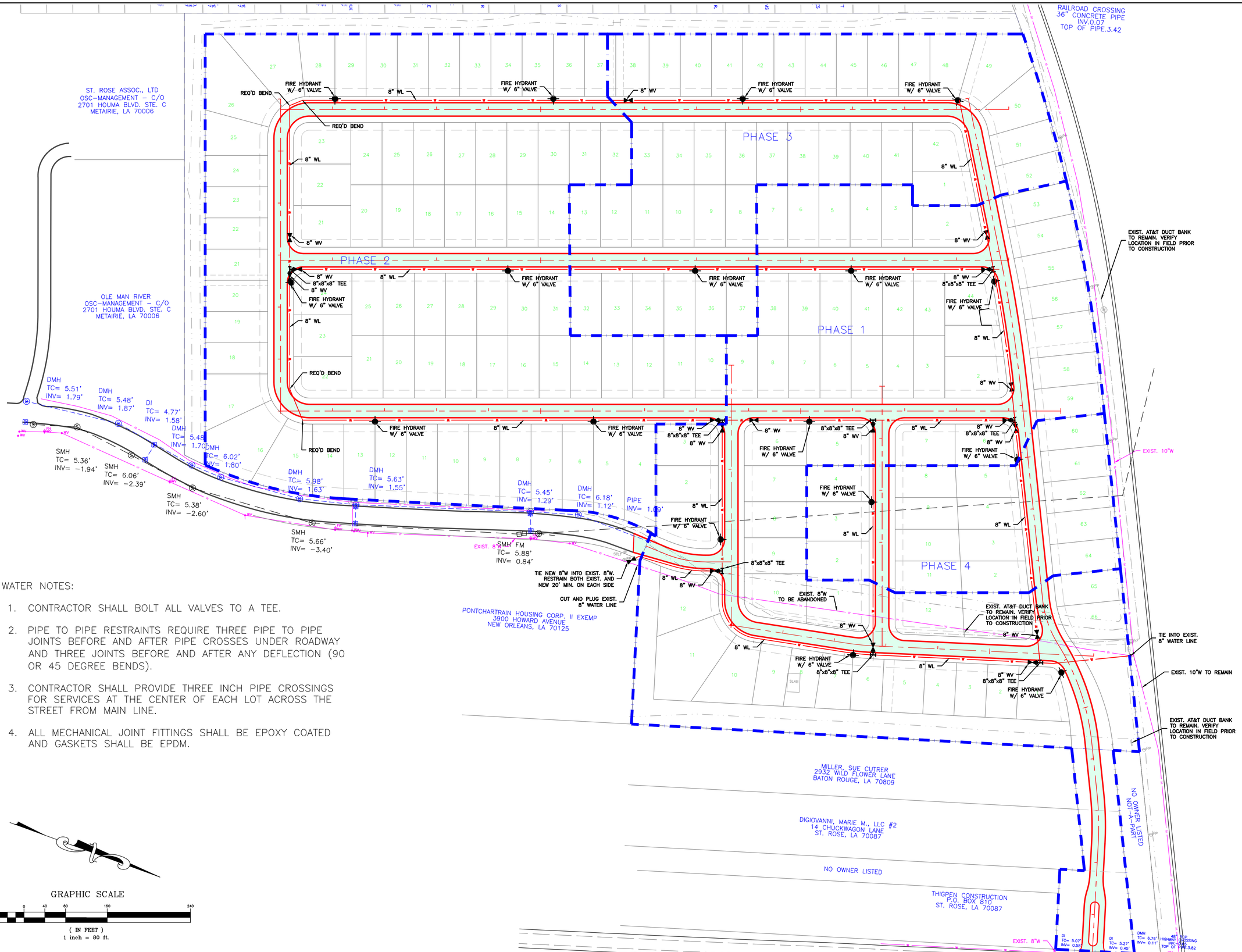

WATER NOTES:

1. CONTRACTOR SHALL BOLT ALL VALVES TO A TEE.
2. PIPE TO PIPE RESTRAINTS REQUIRE THREE PIPE TO PIPE JOINTS BEFORE AND AFTER PIPE CROSSES UNDER ROADWAY AND THREE JOINTS BEFORE AND AFTER ANY DEFLECTION (90 OR 45 DEGREE BENDS).
3. CONTRACTOR SHALL PROVIDE THREE INCH PIPE CROSSINGS FOR SERVICES AT THE CENTER OF EACH LOT ACROSS THE STREET FROM MAIN LINE.
4. ALL MECHANICAL JOINT FITTINGS SHALL BE EPOXY COATED AND GASKETS SHALL BE EPDM.

STATE OF LOUISIANA
ALLISON B. FROEBA
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NUMBER: 32492

REV NO.	DESCRIPTION	DATE	SIGN

ALMEDIA GARDENS SUBDIVISION
MASTER WATER PLAN

ST. CHARLES PARISH

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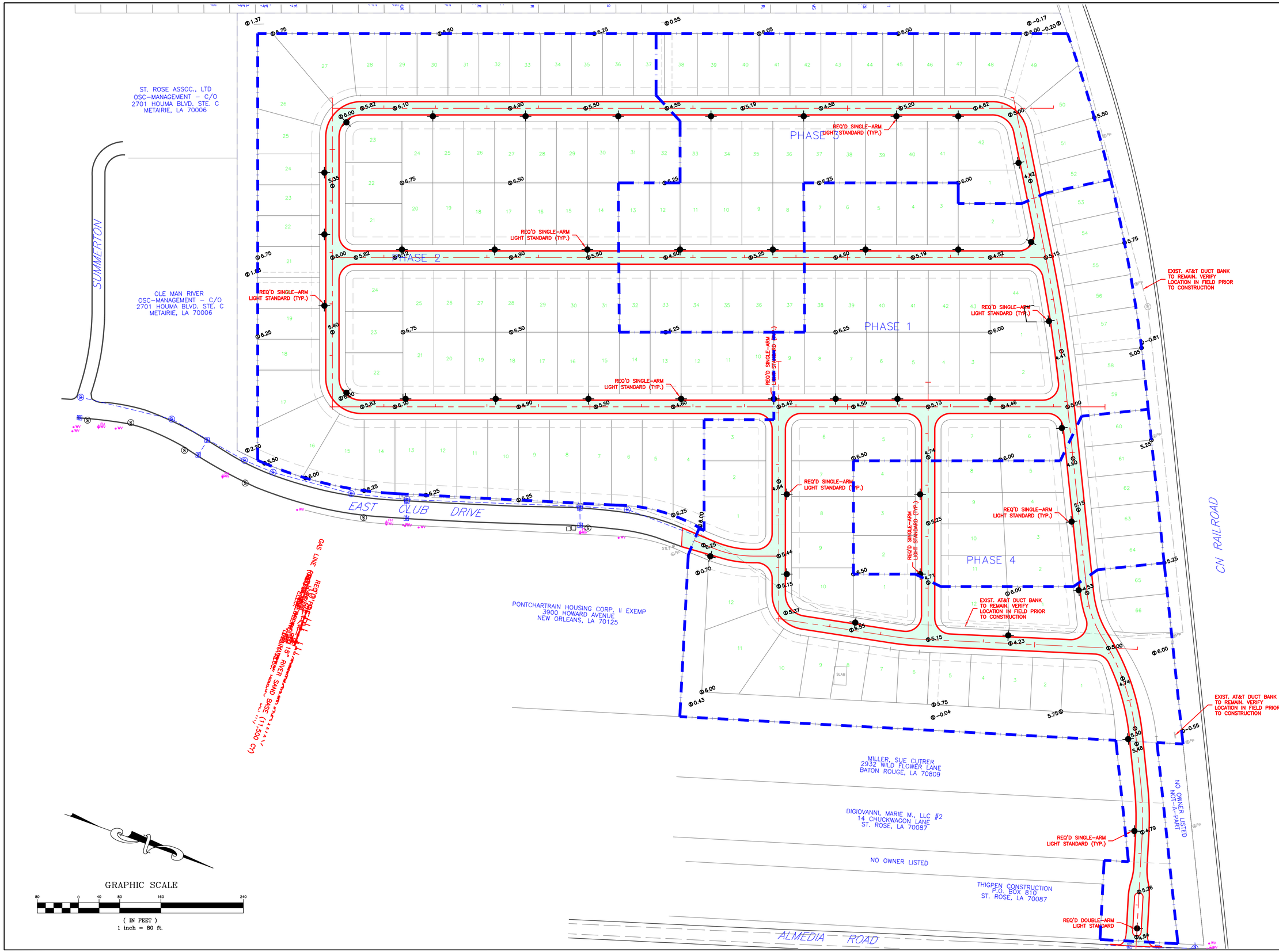

STATE OF LOUISIANA
ALLISON B. FROEBA
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IN
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6/17/24

ENGINEER OF RECORD
NAME: ALLISON B. FROEBA
NUMBER: 32492

ALMEDIA GARDENS SUBDIVISION
MASTER STREET LIGHTING PLAN

ST. CHARLES PARISH

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