

CONSTRUCTION PLANS FOR COMMUNITY DEVELOPMENT GROUP FUTURE TOWNHOMES

HIGHLAND ENCLAVE 9116 W. MONTGOMERY ROAD HOUSTON, TEXAS 77088 SITWORK ONLY

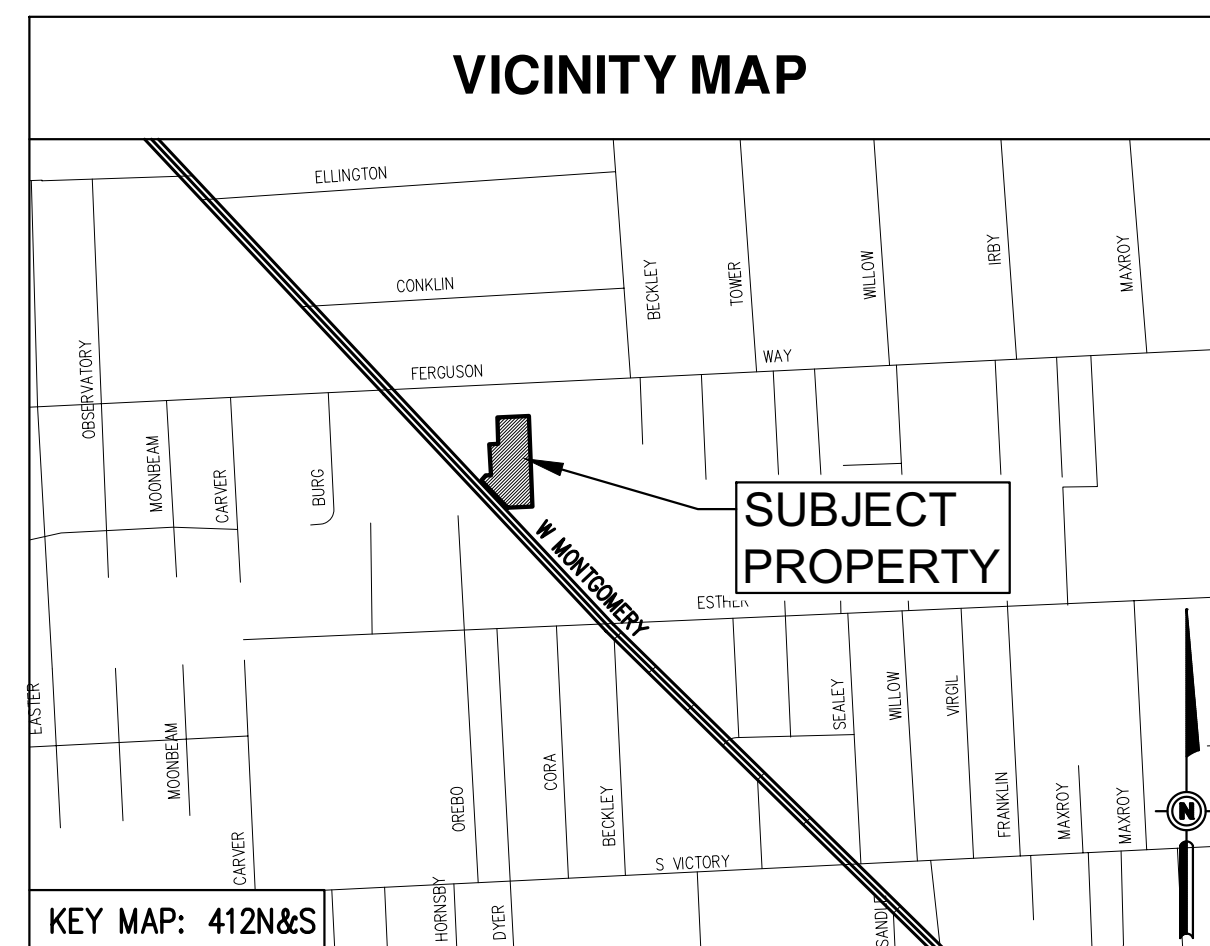
City of Houston Texas



21023933

REVIEWED FOR COMPLIANCE

Performance of this review does not relieve the applicant from full responsibility to comply with all applicable codes, ordinances and regulations. 10/25/22



SHEET NUMBER	SHEET TITLE
C1	COVER SHEET
C2	GENERAL NOTES & LEGEND
C3	SITE PLAN
C4	GRADING AND DRAINAGE PLAN
C5	UTILITY PLAN
C6	PAVING PLAN
C7	STORM WATER POLLUTION PREVENTION PLAN
C8	DETAILS
-	PLAT

ONE CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG !!!
811 (IN HOUSTON)
(NEW STATEWIDE NUMBER OUTSIDE HOUSTON)
1-800-344-8377

FLOOD INFORMATION

F.I.R.M. NO.: 480296 PANEL: 0465M
 REVISED DATE: JUNE 09, 2014 ZONE: X-UNSHADED
 BASE FLOOD ELEVATION: N/A
 DESIGNATED FLOOD ELEVATION: N/A
 TOPOGRAPHIC SURVEY DATED: MARCH 2021
 PREPARED BY: MOMENTUM ENGINEERING & SURVEYING

**COMMUNITY DEVELOPMENT GROUP
FUTURE TOWNHOMES**
HIGHLAND ENCLAVE
9116 W. MONTGOMERY ROAD
HOUSTON, TEXAS 77088

PIONEER ENGINEERING
 7060 EAST FREEWAY, SUITE 1A, HOUSTON, TEXAS 77020
 (832) 307-0010
 FIRM NO. 18084

OWNER/DEVELOPER:
COMMUNITY DEVELOPMENT GROUP
4919 LOCHMAN LANE
PEARLAND, TX 77584
PHONE: 832-870-4134

ARCHITECT:
PRESTON WOOD & ASSOCIATES, LLC
500 LOVETT BLVD., SUITE 250
HOUSTON, TX 77006
PHONE: 713-522-2724

SURVEYOR:
MOMENTUM
ENGINEERING/SURVEYING
12651 BRIAR FOREST, SUITE 350
HOUSTON, TX
PHONE: 281-741-1998

GENERAL CONSTRUCTION

- 1. OWNER TO OBTAIN ALL PERMITS REQUIRED BY CITY OF HOUSTON PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN CITY OF HOUSTON'S RIGHT-OF-WAY.
2. CONTRACTOR SHALL VERIFY LOCATION OF UNDERGROUND UTILITY LINES AND SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING TEXAS ONE CALL, AND ONE STAR ONE CALL AT LEAST 48 HOURS BEFORE COMMENCING WORK.
3. CONTRACTOR SHALL COMPLY WITH "OSHA" REGULATIONS AND STATE OF TEXAS LAW CONCERNING TRENCHING AND SHORING.
4. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF "OSHA" SAFETY AND HEALTH REGULATIONS, PART 1926, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54 , No. 209, DATED OCTOBER 31, 1989.
5. TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATIONS, TITLE 29, PART 1910.190(1) AND PART 1926.404(A)(15) REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES.
6. WATERLINES, WASTEWATER COLLECTION SYSTEMS, PAVING, TRAFFIC SIGNALS AND DRAINAGE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING.
7. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWATER COLLECTION SYSTEMS AND STORM SEWERS.
8. CONTRACTOR SHALL TAKE EXTRA CARE TO PROTECT TREES IN AREAS ADJACENT TO CONSTRUCTION.
9. ANY AREAS OF GRASS WITHIN THE CITY'S RIGHT-OF-WAY WHICH ARE DISTURBED OR DUG UP DURING CONSTRUCTION SHALL BE REPLACED WITH ST. AUGUSTINE, OR GRASS WHICH MATCHES THE GRASS REMOVED.
10. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
11. ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
12. IF THE CONSTRUCTION DOES NOT BEGIN WITHIN A YEAR AFTER THE PLANS HAVE BEEN SIGNED, NEW SIGNATURES MUST BE OBTAINED.
13. CONTRACTOR SHALL PREPARE A SET OF "AS-BUILT" DRAWINGS SHOWING ANY FIELD CHANGES MADE TO THE APPROVED ENGINEERING PLANS AND SUBMIT TO ENGINEER.
14. CONTRACTOR SHALL REVIEW & BECOME THOROUGHLY FAMILIAR WITH THE CONTENTS OF REFERENCED SOILS REPORT, WHICH WILL BE CONSIDERED AN INTEGRAL PART OF THE CONSTRUCTION DOCUMENTS.
15. CONTRACTOR/BUILDER SHALL FIELD-VERIFY EXISTING ELEVATIONS AND SET FINISHED FLOOR (FF) ELEVATION AT LEAST 24 INCHES ABOVE THE 500-YEAR DESIGNATED FLOOD ELEVATION (DFE), ACCORDING TO FEMA FLOOD INSURANCE STUDY (FIS) & TOPOGRAPHIC SURVEY DATA.
16. PROPOSED FF ELEVATION IS MINIMUM. BUILDER MAY SET SLAB @ A HIGHER ELEVATION, BUT NOTIFY ENGINEER PRIOR TO SETTING FORM.
17. FINISH GRADE ELEVATIONS @ SIDE & REAR PROPERTY LINES SHALL MATCH EXISTING GRADE ELEVATIONS U.O.N.
18. CONTRACTOR/BUILDER SHALL FIELD-VERIFY ALL EXISTING CONDITIONS & INFORM ENGINEER OF ALL DISCREPANCIES THAT MAY IMPACT THIS WORK.
19. ALL EXCAVATED SOIL FROM FOUNDATIONS SHALL BE REMOVED FROM CONSTRUCTION SITE AND MAY NOT BE USED AS FILL DIRT, UNLESS SPECIFICALLY APPROVED BY FOUNDATION SYSTEM ENGINEER AND CALLED FOR IN FOUNDATION DRAWINGS.
20. CONSTRUCTION SITE IS TO BE MAINTAINED FREE OF ANY OPEN TRENCHES, PITS, HOLES, OR OTHER EXCAVATIONS THAT MAY HOLD WATER.
21. RUNOFF FROM CONSTRUCTION SITE SHALL BE FILTERED SO AS TO PREVENT SAND, MUD AND DIRT OF ANY KIND FROM ENTERING CITY STORM DRAINAGE SYSTEM.
22. ALL AREAS NOT UNDER THE FOOTPRINT OF THE BUILDINGS ARE TO BE CONSIDERED COMMON AREAS.
23. ADJOINING PROPERTIES
24. CITY RIGHT-OF-WAY

STORM SEWER SYSTEM

- 1. MATERIAL SPECIFICATIONS:
A. ALL STORM SEWER PIPE 60" OR SMALLER SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE, UNLESS NOTED OTHERWISE.
B. ALL STORM SEWER PIPE 72" OR LARGER SHALL BE ALUMINIZED CORRUGATED METAL PIPE (ACMP)
C. STORM SEWER PIPE MATERIAL SHALL CONFORM TO:
ASHTO STANDARD M252 (FOR PIPES 10" OR SMALLER)
ASHTO STANDARD M284 (FOR PIPES 12" OR LARGER)
2. ALL STORM SEWER PIPE WITHIN CITY RIGHT-OF-WAY SHALL BE REINFORCED CONCRETE PIPE (RCP), UNLESS NOTED OTHERWISE.
3. ALL JOINTS SHALL UTILIZE RUBBER GASKET FITTINGS.
4. SET STORM SEWER MANHOLES TO MATCH FINISH GRADE.
5. CONCRETE PIPE SHALL BE BEDDED WITH CEMENT STABILIZED SAND IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATIONS FOR CONCRETE PIPE.
6. PVC PIPE SHALL BE BEDDED WITH A MINIMUM OF ONE FOOT OF CEMENT STABILIZED SAND. CEMENT STABILIZED SAND SHALL BE LAID IN 8" LIFTS COMPACTED TO 95% PROCTOR MAX. DRY DENSITY (ASTM D698).
7. STORM SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION AS CURRENTLY AMENDED.
8. PROTECT, MAINTAIN, AND RESTORE EXISTING BACKSLOPE DRAINAGE SYSTEMS.
9. ESTABLISH TURF GRASS ON ALL DISTURBED AREAS WITHIN THE CHANNEL OR DETENTION RIGHT-OF-WAY, EXCEPT THE CHANNEL BOTTOM AND WHERE STRUCTURAL EROSION MEASURES ARE USED.
10. BACKFILL IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD SPECIFICATION.
11. EXCAVATE CHANNEL FLOWLINE TO DESIGN ELEVATION AS SHOWN ON PLANS AND DOWNSLOPE, AS NECESSARY, TO ENSURE NO WATER REMAINS IN THE FACILITY (STORM SEWER, LATERAL CHANNEL, OR DRY BOTTOM DETENTION BASIN) DURING NORMAL WATER SURFACE CONDITIONS IN THE CHANNEL, SO THE FACILITY WILL FUNCTION AS INTENDED.
12. MAINTAIN FLOW IN CHANNEL DURING CONSTRUCTION AND RESTORE CHANNEL TO ORIGINAL CONDITION.
13. REMOVE ALL EXCAVATED MATERIAL FROM THE DRAINAGE RIGHT-OF-WAY.

WATER DISTRIBUTION SYSTEM

- 1. WATER LINE SHALL BE SCHEDULE 40 PVC PIPE INSIDE THE PROPERTY AND SEAMLESS COPPER IN THE R.O.W.
2. WATER LINE SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION FOR WATER MAIN CONSTRUCTION AS CURRENTLY AMENDED.
3. WATER LINE SHALL HAVE BANK SAND BEDDING AND BACKFILL.
4. PROVIDE THRUST BLOCKING ACCORDING TO CITY OF HOUSTON STANDARDS & SPECIFICATIONS.
5. PROVIDE A MINIMUM 6-INCHES OF CLEARANCE AT STORM SEWER AND WATER LINE CROSSING.
6. WATER LINES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD SPECIFICATIONS AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATERLINES, STORM DRAINAGE AND STREET PAVING, LATEST EDITIONS.
7. ALL WATERLINES SHALL BE ENCASED IN CEMENT-STABILIZED BANK SAND UP TO SUBGRADE. COST OF BANK SAND WILL BE INCLUDED IN UNIT PRICE OF WATERLINE.
8. SANITARY PRECAUTIONS MUST BE TAKEN DURING WATERLINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS. PRECAUTIONS INCLUDE KEEPING PIPE CLEAN AND CAPPING OR OTHERWISE EFFECTIVELY COVERING OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS IN PROGRESS.
9. WATER MAINS SHALL HAVE A MINIMUM OF 4" COVER FROM TOP OF CURB, EXCEPT 16" AND LARGER WATER LINES SHALL HAVE A MINIMUM OF 5" COVER FROM TOP OF CURB.
10. ALL DUCTILE IRON PIPE WATERLINE SHALL HAVE BANK RUN SAND EMBEDMENT IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD SPECIFICATION NO. 5 S 02317-EXCAVATION AND BACKFILL FOR UTILITIES AND 02320- UTILITY BACKFILL MATERIALS.
11. ALL WATER MAINS UNDER STREET PAVEMENT, IF NOT STEEL SECTION, SHALL BE P.V.C. PIPE. SIZES 4 THRU 12 INCH SHALL BE AWWA C-900 CLASS 150 DR-18.
12. ALL WATER LINE MAINS SIZES 1" THRU 3" SHALL BE PVC SDR 26 OR BETTER.
13. SERVICE LEADS TO INDIVIDUAL UNITS SHALL BE A MINIMUM OF 1-1/2"x1", PVC SCHEDULE 40 PIPE, WITH GATE VALVE STOP.
14. THIS PROJECT SHALL BE BUILT BY OPEN-CUT METHOD, EXCEPT AS NOTED OTHERWISE IN THE DRAWINGS. CONTRACTOR SHALL DETERMINE THE LOCATIONS OF BORE PITS IN THE FIELD SUBJECT TO ENGINEER'S APPROVAL.
15. CONTRACTOR SHALL PROVIDE ADEQUATE CONCRETE THRUST BLOCKING TO WITHSTAND TEST PRESSURE AS SPECIFIED IN CITY OF HOUSTON SPECIFICATIONS.
16. PRIOR TO WATER MAIN ADJUSTMENTS, THE INSTALLATION OF WATER METERS AND LEADS OR UNMETERED SPRINKLER LINE, THE CONTRACTOR SHALL CONTACT CITY OF HOUSTON, FOR DETAILS OF PERMITS AND BONDS.
17. PRIOR TO WATER MAIN CONSTRUCTION, THE CONTRACTOR SHALL CONTACT CAPITAL PROJECTS, PLAN REVIEW SECTION AND COMPLY WITH ALL REQUIREMENTS NECESSARY FOR ISSUANCE OF A WORK ORDER FOR WATER MAIN CONSTRUCTION.
18. WATER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS WITH LATEST AMENDMENTS AND AMENDMENTS THERETO.
19. WATER TAPS AND INSTALLATION OF WATER METERS, BACKFLOW PREVENTORS AND FIRELINE CHECK VALVES TO BE PERFORMED BY A CONTRACTOR LICENSED BY THE CITY OF HOUSTON FOR THIS SPECIFIC TYPE OF WORK.

STREET, BRIDGE AND RIGHT-OF-WAY

- 1. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
2. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BARS, 24" LONG, 24" C-C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROCS" OR EQUAL.
3. CONTRACTOR TO MAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS, AND TREES ALONG THE AREA OF EXCAVATION.
4. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.
5. CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING.
6. EXISTING PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO THE OWNING AUTHORITY STANDARDS.
7. WHEELCHAIR RAMPS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF HOUSTON STANDARDS AT ALL INTERSECTIONS WHERE SIDEWALKS EXIST AND THE EXISTING CURB OR SIDEWALK IS DAMAGED OR REMOVED DURING CONSTRUCTION. ADA RAMPS SHALL BE TDOT PED-05 AND CONFORM TO ADA REGULATIONS.
8. DEPTH AND EACH COMPACTED TO NOT LESS THAN 95% STANDARD PROCTOR DENSITY. FILL AREAS NOTED ON PLANS SHALL BE FILLED IN LAYERS NOT EXCEEDING 8" IN PRIOR TO INSTALLATION OF WATER LINE AND FILL AREAS SHALL BE SEEDED AND FERTILIZED WITHIN 10 WORKING DAYS.
9. UTILITY CONTRACTOR SHALL PROVIDE TEMPORARY SILT BARRIER FENCE ON ALL NON-CURB INLETS WHICH WILL REMAIN IN PLACE AFTER UNDERGROUND CONTRACT IS COMPLETE.
10. CONTRACTOR SHALL PROVIDE SILT BARRIER FENCE ON ALL STAGE 1 CURB INLETS.
11. PRIOR TO STREET CONSTRUCTION, THE CONTRACTOR SHALL CONTACT DEPARTMENT OF PUBLIC WORKS AND ENGINEERING AND COMPLY WITH ALL REQUIREMENTS FOR THE ISSUANCE OF THE NECESSARY PERMITS/ WORK ORDERS FOR STREET CONSTRUCTION.

PAVING

- 1. SUBGRADE PREPARATION:
A. REMOVE ALL CONSTRUCTION DEBRIS AND ORGANIC SOILS TO A DEPTH OF AT LEAST 6".
B. PROOF ROLL STRUCTURAL AND PAVEMENT AREAS. UNDERCUT SOFT SOILS, IF ENCOUNTERED, DOWN TO FIRM SOIL OR TO A MINIMUM OF TWELVE INCHES BELOW THE GROUND SURFACE. IF PUMPING IS OBSERVED DURING PROOF ROLLING, REMOVE AND REPLACE THE WET SILTY SOIL OR MIX LINE, CEMENT AND/OR FLY ASH WITH THE WET SILTY SOIL TO ABSORB EXCESS MOISTURE.
C. STABILIZE SUBGRADE PER GEOTECHNICAL ENGINEERS RECOMMENDATION OR PER SOILS REPORT.
D. PLACE FILL IN LOOSE LIFTS NOT EXCEEDING 9 INCHES AND COMPACT NOT TO LESS THAN 95% OF THE MAXIMUM DRY DENSITY DETERMINE BY ASTM SPECIFICATION D698 (STANDARD PROCTOR). MOISTURE CONTENT OF THE FILL SHOULD NOT BE LESS THAN 2% BELOW OPTIMUM VALUE NOR MORE THAN 3% ABOVE THE OPTIMUM VALUE.
E. EXCAVATE THE SOIL IN CUT AREAS TO GRADE AND PROOF ROLL THE SURFACE SOIL.
F. PERFORM FIELD DENSITY TESTS TO VERIFY COMPACTION AT A FREQUENCY OF ONE TEST PER LIFT OF FILL FOR EVERY 2,000 SQUARE FEET OF COMPACTED AREA.
G. SAND SHOULD NOT BE USED AS A LEVELING COURSE UNDER FLOOR SLAB AND PAVEMENT, SINCE IT PROVIDES READY PATH FOR MOISTURE TO GET IN.
2. CONCRETE COMPRESSIVE STRENGTH = 3,000 PSI @ 28 DAYS.
3. REINFORCEMENT: #4 @ 18" EA. WY. ASTM A615 GRADE 60.
4. REINFORCEMENT SHALL BE SUPPORTED ON METAL OR PLASTIC CHAIRS, SPACED AT A MAXIMUM OF FOUR (4) FEET EACH WAY.
5. PAVEMENT JOINTS:
A. EXPANSION JOINTS, AS DETAILED IN THESE DRAWINGS, SHALL BE INSTALLED AT A MAXIMUM SPACING OF SEVENTY-FIVE (75) FEET.
B. SAW-CUT JOINTS SHALL BE PLACED AT A MAXIMUM SPACING OF FIFTEEN (15) FEET.
6. EXCESS SOIL MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR & IS TO BE PROPERLY DISPOSED OFFSITE.
7. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY.

NOTES ON DOWNSPOUT LEADS

- 1. NUMBER, SIZE & LOCATION OF DOWNSPOUTS IS STRICTLY THE RESPONSIBILITY OF GUTTER SYSTEM INSTALLER.
2. ALL DOWNSPOUTS SHALL BE CONNECTED DIRECTLY TO SUBSURFACE DRAINAGE SYSTEM.
3. NO MORE THAN FOUR DOWNSPOUTS SHALL BE CONNECTED TO A SINGLE LEAD.
4. PROVIDE ADEQUATE TRANSITION BOOTS FROM DOWNSPOUTS TO LEADS.

NOTES ON AREA DRAINS

- 1. AREA DRAINS MAY BE ADDED TO PROPOSED DRAINAGE SYSTEM SHOWN HEREIN, SO AS TO IMPROVE LOCALIZED DRAINAGE CONDITIONS.
2. MAXIMUM SOIL CUT AND/OR FILL AROUND TREES SHALL BE FOUR (4) INCHES, UNLESS TREE SPECIALIST APPROVES OTHERWISE.
3. 4" PIPE MAY BE USED FOR DRAIN LEADS FROM AREA DRAINS TO MAIN SYSTEM PIPE OR CATCH BASINS.

SANITARY SEWER SYSTEM

- 1. SANITARY SEWER PIPE 6" AND SMALLER SHALL BE SCHEDULE 40 PVC, SANITARY SEWER PIPE 8" AND LARGER SHALL BE SDR-35 PVC INSIDE THE PROPERTY AND C900 DR-18 (GREEN) IN THE R.O.W.
2. PIPE SHALL BE BEDDED WITH A MINIMUM OF ONE FOOT OF CEMENT STABILIZED SAND. CEMENT STABILIZED SAND SHALL BE LAID IN 8" LIFTS COMPACTED TO 95% STD. PROCTOR MAX. DRY DENSITY
3. SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON SPECIFICATION AS CURRENTLY AMENDED.
4. PLACE IN-LINE CLEAN OUT AT LEAST EVERY 90 FEET FOR PIPE SIZES 6" OR SMALLER. CLEAN OUT SHALL MATCH PIPE SIZE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFELY SHORING ALL TRENCHES IN EXCESS OF 6'-0" IN DEPTH IN COMPLIANCE W/ OSHA.
SIDEWALKS
1. TYPICAL WIDTH OF SIDEWALK = 5 FT. TYPICAL THICKNESS = 4 INCHES.
2. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH (F'c) = 3,000 PSI.
3. SIDEWALKS SHALL BE REINFORCED WITH #4 @ 18" O.C.E.W.
4. TRANSVERSE MARKINGS OR PLANES OF WEAKNESS SHALL BE PROVIDED AT 4 FEET O.C. MAX.
5. EXPANSION JOINTS SHALL BE PROVIDED AT NOT MORE THAN 40-FOOT INTERVALS BY USE OF 3/4 INCH REDWOOD EXPANSION JOINTS.
6. THREE 1/2 INCH DIA. x 3'-0" DOWELS SHALL BE PROVIDED AT EACH EXPANSION JOINT, EXTENDING NINE (9) INCHES EITHER SIDE OF JOINT. DOWELS SHALL BE WRAPPED IN ROOFING FELT OR TREATED PAPER TO PREVENT BOND, ON ONE END ONLY.

DRIVEWAY

- 1. PROPOSED DRIVEWAY, SIDEWALK, CURB, GUTTER LINE AND GRADE SHALL MATCH EXISTING STREET.
2. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM LAP OF 8 INCHES.
3. PROPOSED GUTTER LINE IS TO BE MAINTAINED AT FACE OF EXISTING CURB.
4. SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
5. SAW CUT EXISTING PAVEMENT A MINIMUM OF 12 INCHES AWAY FROM FACE OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCEMENT STEEL.
6. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE TO 95% OF STANDARD PROCTOR DENSITY (1-1/2% OPTIMUM MOISTURE). THE ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
7. IF MORE THAN ONE PROPOSED DRIVEWAY IS BUILT ON THE SAME PROPERTY, SAID DRIVEWAYS SHALL BE SEPARATED BY A MINIMUM DISTANCE OF 20 FEET (ROADWAYS W/ CURBS SIDEWALKS).
8. REINFORCING STEEL SHALL BE ELEVATED A MINIMUM OF 3" ABOVE SUBGRADE. 3 INCH MANUFACTURED CHAIRS ARE REQUIRED WITH MAXIMUM SPACING OF 72 INCHES EACH WAY.

UTILITY COMPANIES NOTES:

AT&T TEXAS/SWBT FACILITIES

- 1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713) 567-4552 OR EMAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
-WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 207-5463 OR (713) 945-8037 (7:00 AM TO 4:30 PM), FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
-WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTER POINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
-WHEN CENTER POINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
-FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.
THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURES TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL FACILITIES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND
OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITH 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.
PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.
ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY.
NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

SPECIFICATIONS: CAST-IN-PLACE CONCRETE

GENERAL

QUALITY ASSURANCE:
1. WORK SHALL COMPLY WITH THE FOLLOWING CODES, SPECIFICATIONS, AND STANDARDS:
A. ACI 304, "GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
B. ACI SP-86, "ACI DETAILING MANUAL"
C. CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "PLACING REINFORCING BARS"
D. CRSI, "REINFORCED CONCRETE MANUAL OF STANDARD PRACTICE".
2. GENERAL CONTRACTOR SHALL EMPLOY A TESTING AGENCY ACCEPTABLE TO ENGINEER TO DESIGN CONCRETE MIXES, AND TO PERFORM MATERIAL TESTING, AS DESCRIBED BELOW, OR AS DIRECTED BY ENGINEER. SUBMIT DESIGN & TEST DATA FOR ENGINEER'S REVIEW.

PRODUCTS

- 2.01 FORM MATERIALS:
A. FORMS FOR EXPOSED CONCRETE SURFACES: SUITABLE PANEL-TYPE MATERIAL TO WITHSTAND PRESSURE OF CONCRETE WITHOUT BOW OR DEFLECTING, AND TO PROVIDE CONTINUOUS, STRAIGHT, SMOOTH EXPOSED SURFACES.
2.02 REINFORCING MATERIALS:
A. DEFORMED BARS: ASTM A 615, GRADE 60
B. WELDED WIRE FABRIC: ASTM A 185 OR A 409. FURNISH IN FLAT SHEETS.
2.03 CONCRETE MATERIALS:
A. PORTLAND CEMENT: ASTM C 150, OR TYPE I
B. FLY ASH: ASTM C 618, TYPE F
C. AGGREGATES: ASTM C 33
D. WATER: POTABLE
2.04 ADMIXTURES:
A. AIR-ENTRAINING ADMIXTURES: ASTM C 260
B. WATER-REDUCING ADMIXTURES EXPOSED TO FREEZING & THAWING: 2-4% FOR OTHER CONCRETE.
C. WATER-REDUCING, RETARDING, AND ACCELERATING CHEMICAL ADMIXTURES: ASTM C 494

- 2.06 READY-MIX CONCRETE: ASTM C 94
2.06 MIX PROPORTIONS AND DESIGN:
PROPORTION MIXES COMPLYING WITH MIX DESIGN PROCEDURES SPECIFIED IN ACI 301:
A. NORMAL-WEIGHT CONCRETE WITH 28-DAY COMPRESSIVE STRENGTH (F'c) = 3,000 PSI.
B. LIMIT USE OF FLY ASH TO NOT EXCEED 25 PERCENT OF CEMENT CONTENT BY WEIGHT.
C. SLUMP LIMITS SHALL BE 5 TO 7 INCHES.
2.07 RELATED MATERIALS:
A. ABSORPTIVE COVER: BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ. PER SQUARE YARD, COMPLYING WITH ASTM C 171.
B. MOISTURE-RETAINING COVER: WATERPROOF PAPER, POLYETHYLENE FILM, OR POLYETHYLENE-COATED BURLAP, COMPLYING WITH ASTM C 171; ASTM C 309, TYPE I
C. MEMBRANE-FORMING CURING COMPOUND: MOISTURE LOSS NOT MORE THAN 1 LB./SQ. YD. WHEN APPLIED AT 200 SO. FT./GAL..

EXECUTION

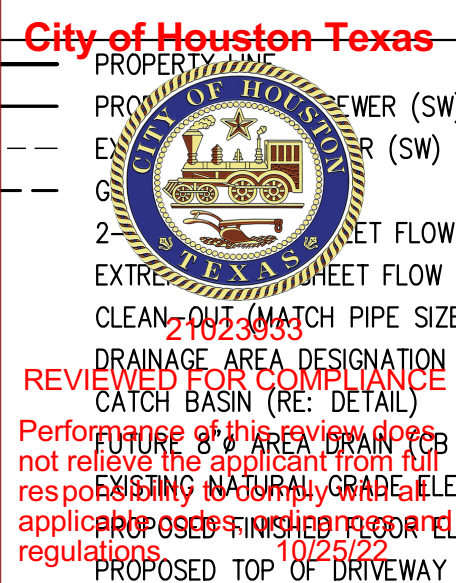
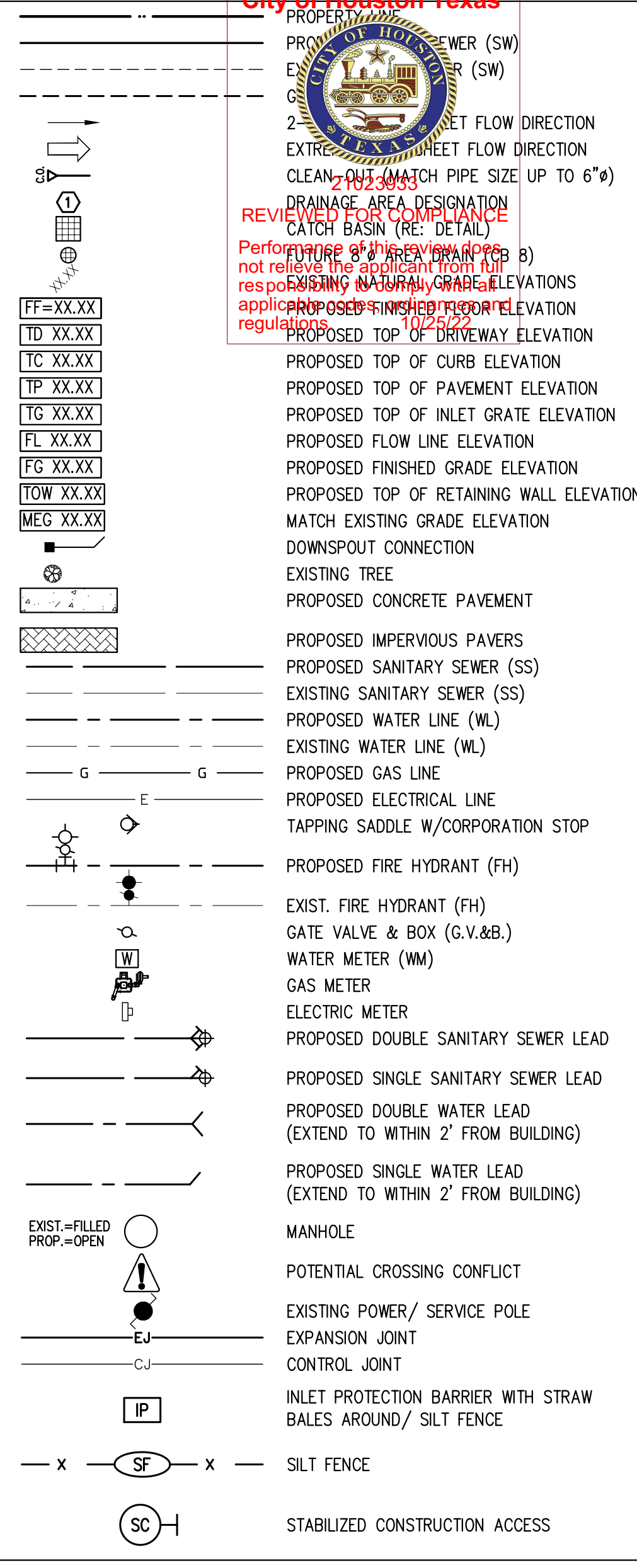
- 3.01 TOLERANCES:
CONFORM TO ALL THE REQUIREMENTS OF ACI 117, "STANDARD SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS."
3.02 FORMWORK:
A. MAINTAIN FORMWORK TOLERANCE AND SURFACE IRREGULARITIES WITHIN ACI 347 LIMITS, CLASS A TOLERANCES & CLASS C FOR OTHER CONCRETE SURFACES.
B. CLEAN AND ADJUST FORMS PRIOR TO CONCRETE PLACEMENT. APPLY FORM-RELEASE AGENTS OR WET FORMS AS REQUIRED.
3.03 REINFORCEMENT:
A. ACCURATELY POSITION AND SUPPORT REINFORCEMENT, AND SECURE AGAINST DISPLACEMENT. USE METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS AS REQUIRED.
B. SUPPORT PAVEMENT REINFORCEMENT ON CHAIRS SPACED 4'-0" O.C. MAXIMUM EACH WAY.
C. LAP CONTINUOUS REINFORCING BARS A MINIMUM OF 36 BAR DIAMETERS.
3.04 EMBEDDED ITEMS:
SET AND BULL ANCHORAGE DEVICES AND OTHER EMBEDDED ITEMS, USING SETTING DIAGRAMS, RIGID TEMPLATES, AND SUPPLIER INSTRUCTIONS FOR LOCATING AND SETTING.
3.05 CONCRETE PLACEMENT:
PLACE CONCRETE IN COMPLIANCE WITH ACI 304 AND, IN A CONTINUOUS OPERATION WITHIN PLANNED JOINTS OR SECTIONS.
A. CONSOLIDATE PLACED CONCRETE USING MECHANICAL VIBRATING EQUIPMENT WITH HAND RODDING AND TAMING SO THAT CONCRETE IS WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO FORMS.
B. PROTECT CONCRETE FROM PHYSICAL DAMAGE OR REDUCED STRENGTH DUE TO WEATHER EXTREMES:
1. IN COLD WEATHER COMPLY WITH ACI 306
2. IN HOT WEATHER COMPLY WITH ACI 305.
3.06 FINISH OF FORMED SURFACES:
A. FINISH: PROVIDE A SMOOTH FINISH FOR CONCRETE SURFACES EXPOSED TO VIEW, OR TO BE COVERED DIRECTLY WITH A COATING OR COVERING MATERIAL. REPAIR AND PATCH DEFECTIVE AREAS, WITH FINIS AND OTHER PROJECTIONS COMPLETELY REMOVED AND SMOOTHED.

Table with 2 columns: FINISH TYPE, APPLICABLE SURFACE DESCRIPTION. Includes rows for FLOAT, NONSLIP BROOM, and NON-SLIP AGGREGATE.

- 3.08 CURING:
PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. IN HOT, DRY, AND WINDY WEATHER, APPLY AN EVAPORATION-CONTROL COMPOUND ACCORDING TO MANUFACTURER'S INSTRUCTIONS AFTER SCREEDING AND BULL-FLOATING, BUT BEFORE FLOPING AND TROWELING.
A. BEGIN INITIAL CURING AS SOON AS FREE WATER HAS DISAPPEARED FROM EXPOSED SURFACES.
B. CONTINUE CURING UNIFORM CONCRETE SURFACES BY FLOODING, CONTINUOUS FOG SPRAYING, CONTINUOUSLY WETTED ABSORPTIVE COVER, OR BY MOISTURE-RETAINING COVER CURING. CURE FORMED SURFACES BY MOST CURING UNTIL FORMS ARE REMOVED. KEEP CONCRETE CONTINUOUSLY MOIST FOR 7 DAYS.
C. APPLY MEMBRANE-FORMING CURING COMPOUND TO EXPOSED INTERIOR AND EXTERIOR SLABS, AS SOON AS FINAL FINISHING OPERATIONS ARE COMPLETE. APPLY UNIFORMLY AND IN STRICT ADHERENCE TO MANUFACTURER'S INSTRUCTIONS.
3.09 FIELD QUALITY CONTROL:
A. SAMPLING: ASTM C 172 (EXCEPT MODIFIED FOR SLUMP TO COMPLY W/ASTM C 94).
B. TESTING (FOR EACH CLASS OF CONCRETE):

Table with 3 columns: TEST TYPE, ASTM #, TEST SIZE/DESCRIPTION. Includes rows for TEST SPECIMENS, COMPRESSIVE STRENGTH, SLUMP, AIR CONTENT, and CONCRETE TEMPERATURE.

LEGEND



PROPERTY OWNER: PIONEER ENGINEERING
PROJECT: FUTURE TOWNHOMES
CITY OF HOUSTON
REVISIONS: 09/19/22, 03/23/21
PERMITS: 21026
CONTRACTOR: PIONEER ENGINEERING, LLC
DATE: 03/09/21
DRAWN BY: MP
CHECKED BY: AT
PEPN: 21026 COH: 21023933

PIONEER ENGINEERING
7060 EAST FREEWAY, SUITE 1A, HOUSTON, TEXAS 77020
(832) 307-0010
FIRM NO. 18084

COMMUNITY DEVELOPMENT GROUP
FUTURE TOWNHOMES
9116 W. MONTGOMERY ROAD
HOUSTON, TEXAS 77088
GENERAL NOTES & LEGEND

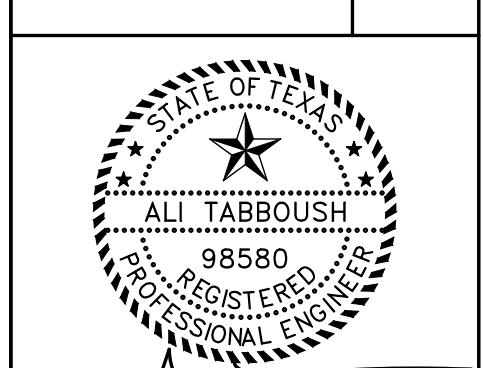


Table with 2 columns: DATE, DESCRIPTION. Includes ISSUE HISTORY (09/19/22, 03/23/21) and REVISIONS (08/08/21, 02/14/22, 03/31/22).

(THESE NOTES CONTROL EXCEPT AS NOTED OTHERWISE IN PLANS & DETAILS)

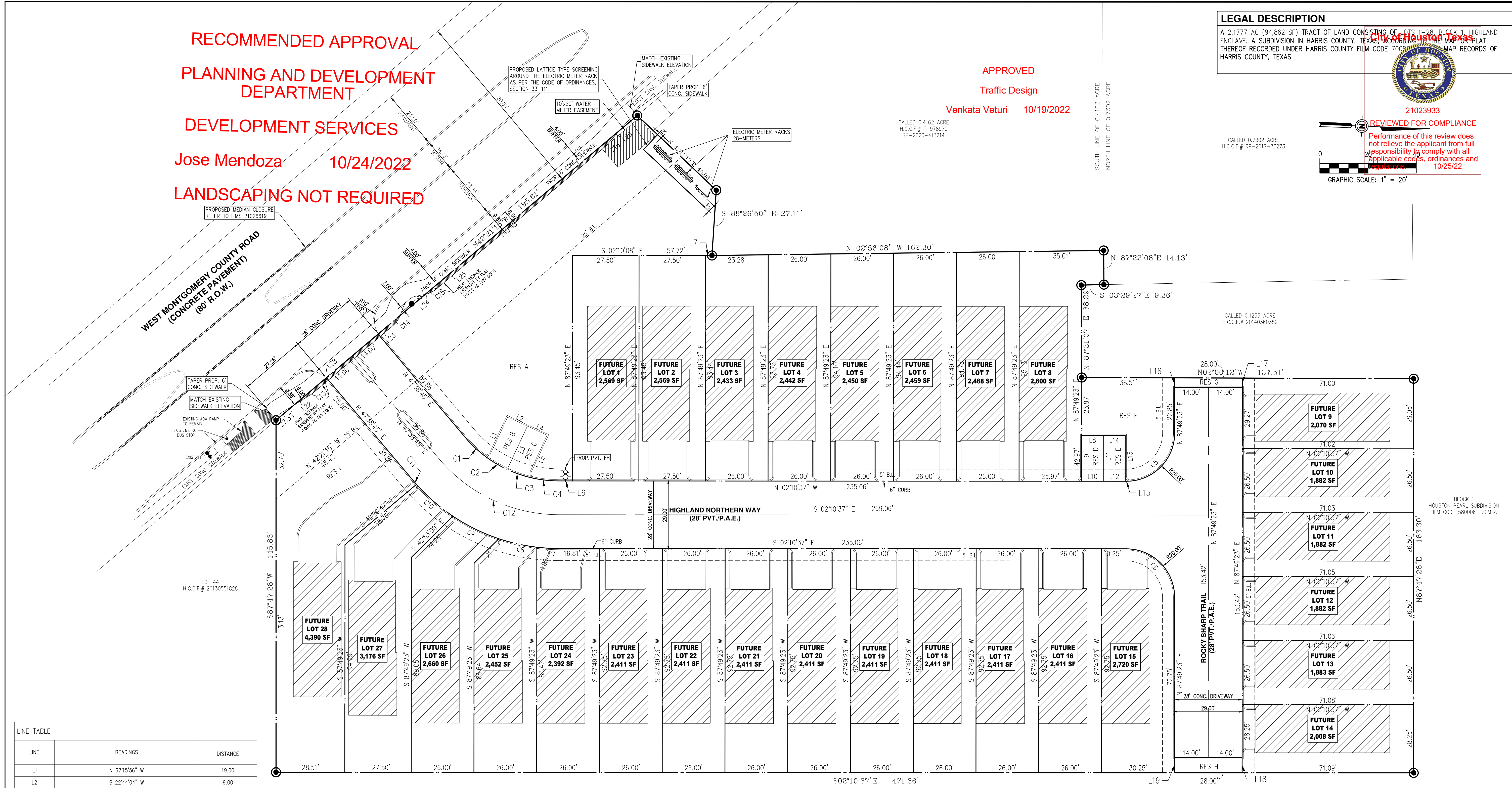
RECOMMENDED APPROVAL
PLANNING AND DEVELOPMENT
DEPARTMENT
DEVELOPMENT SERVICES
 Jose Mendoza 10/24/2022
LANDSCAPING NOT REQUIRED

APPROVED
 Traffic Design
 Venkata Veturi 10/19/2022

LEGAL DESCRIPTION
 A 2.1777 AC (94,862 SF) TRACT OF LAND CONSISTING OF LOTS 1-28, BLOCK 1, HIGHLAND ENCLAVE, A SUBDIVISION IN HARRIS COUNTY, TEXAS, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER HARRIS COUNTY FILM CODE 700880000, MAP RECORDS OF HARRIS COUNTY, TEXAS.



21023933
REVIEWED FOR COMPLIANCE
 Performance of this review does not relieve the applicant from full responsibility to comply with all applicable codes, ordinances and regulations.
 10/25/22
 GRAPHIC SCALE: 1" = 20'



LINE TABLE

LINE	BEARINGS	DISTANCE
L1	N 67°15'56" W	19.00
L2	S 22°44'04" W	9.00
L3	N 67°15'56" W	19.80
L4	S 22°44'04" W	9.00
L5	N 67°15'56" W	19.00
L6	N 02°10'37" W	5.58
L7	S 02°10'08" E	2.72
L8	N 02°10'37" W	9.00
L9	N 87°49'23" E	19.00
L10	N 02°10'37" W	9.00
L11	S 87°49'23" W	19.00
L12	N 02°10'37" W	9.00
L13	S 87°49'23" W	19.00
L14	N 02°10'37" W	9.00
L15	N 02°10'37" W	0.51
L16	S 87°49'23" W	3.93
L17	S 87°49'23" W	3.85
L18	N 87°49'23" E	6.25
L19	N 87°49'23" E	6.25
L20	N 68°40'23" W	10.35
L21	S 46°53'00" E	14.43
L22	N 33°57'23" W	8.39
L23	N 42°21'25" W	43.37
L24	N 13°32'19" W	0.08
L25	N 42°21'25" W	91.37
L26	N 50°45'27" W	8.33
L27	S 42°21'15" E	105.23
L28	S 42°21'15" E	57.29

CURVE TABLE

CURVE NO.	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	13.13	51.00	14°44'50"	N 40°16'21" E	13.09
C2	9.05	51.00	10°09'51"	N 27°49'00" E	9.04
C3	9.05	51.00	10°09'51"	N 17°39'09" E	9.04
C4	13.13	51.00	14°44'50"	N 05°11'48" E	13.09
C5	31.42	20.00	90°00'00"	N 47°10'37" W	28.28
C6	31.42	20.00	90°00'00"	S 42°49'23" W	28.28
C7	5.07	79.00	03°40'25"	S 00°20'24" E	5.06
C8	20.31	79.00	14°43'35"	S 08°51'36" W	20.25
C9	21.24	79.00	15°24'18"	S 23°55'33" W	21.18
C10	20.12	79.00	14°35'29"	S 38°55'27" W	20.06
C11	1.97	79.00	01°25'34"	S 46°55'58" W	1.97
C12	56.52	65.00	49°49'22"	N 22°44'04" E	54.76
C13	0.73	5.00	08°24'02"	S 38°09'24" E	0.73
C14	5.11	10.01	29°15'24"	S 56°59'22" E	5.05
C15	5.03	10.00	28°49'06"	S 27°56'52" E	4.98
C16	0.73	5.00	08°24'02"	S 46°33'26" E	0.73

RESERVE CHART

RESERVE	DESCRIPTION	SQUARE FEET	ACRES
A	DETENTION	8,267	0.1898
B	PARKING	175	0.0040
C	PARKING	175	0.0040
D	PARKING	171	0.0039
E	PARKING	171	0.0039
F	OPEN SPACE/LANDSCAPE	1,224	0.0281
G	OPEN SPACE/LANDSCAPE	108	0.0025
H	OPEN SPACE/LANDSCAPE	175	0.0040
I	OPEN SPACE/LANDSCAPE	946	0.0217
TOTAL		11,412	0.2619

DETENTION NOTE:
 1. PROPERTY OWNER IS RESPONSIBLE OF MAINTAINING THE DETENTION FACILITY.
 2. SUBSURFACE DRAINAGE SYSTEM IS REQUIRED TO BE DRAINED IN 48 HRS.
 3. CONTRACTOR TO PROVIDE SIGNAGE WARNING PROPERTY OWNERS THAT ON-SITE DETENTION AREA WATER LEVEL MAY RISE DURING HEAVY RAINFALL EVENTS.

REFER TO PLAN & PROFILE DRAWINGS FOR WORK WITHIN R.O.W. (NOT IN THIS SET) (ILMS NO. 21026619)

NOTE:
 BEFORE STARTING ANY CONSTRUCTION WORK, CONTRACTOR SHALL FIELD-VERIFY LOCATION, DEPTH AND CONDITION OF ALL EXISTING UTILITIES AND DRAINAGE FACILITIES, TO ASSURE THAT PROPOSED CONNECTIONS CAN BE MADE AS INDICATED IN THESE DRAWINGS.
 CONTACT ENGINEER IMMEDIATELY IF ANY DISCREPANCIES THAT MAY IMPACT WORK DESCRIBED HEREIN ARE DISCOVERED.

NOTE:
 ALL HOMES ARE FUTURE. TO BE PERMITTED SEPARATELY.

NOTE:
 ALL AREA(S) NOT UNDER THE FOOTPRINT OF THE BUILDINGS ARE TO BE CONSIDERED COMMON AREAS.

NOTE ON ELECTRIC SERVICE:
 ELECTRIC METER RACK(S) AND SERVICE LINES ARE DIAGRAMMATICAL. FINAL LOCATION SHALL BE DETERMINED BY CENTERPOINT ENERGY. CONTRACTOR SHALL PROVIDE SCREENING AROUND ELECTRIC METER RACK(S) VISIBLE FROM THE RIGHT-OF-WAY, PER SECTION 33-111 OF THE CITY OF HOUSTON CODE OF ORDINANCE.

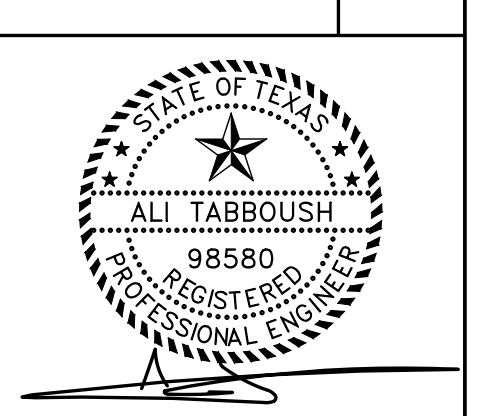
NOTE ON GAS SERVICE:
 GAS MANIFOLD(S) AND SERVICE LINES ARE DIAGRAMMATICAL. FINAL LOCATION SHALL BE DETERMINED BY CENTERPOINT ENERGY.

CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.

NOTE:
 PROPOSED SITE WORK DOES NOT INCLUDE RETAINING WALLS.

PIONEER ENGINEERING
 7050 EAST FREEWAY, SUITE 1A, HOUSTON, TEXAS 77020
 (832) 307-3000
 FIRM NO. 18084

COMMUNITY DEVELOPMENT GROUP
FUTURE TOWNHOMES
 9116 W. MONTGOMERY ROAD
 HOUSTON, TEXAS 77088



09/21/22

ISSUE HISTORY

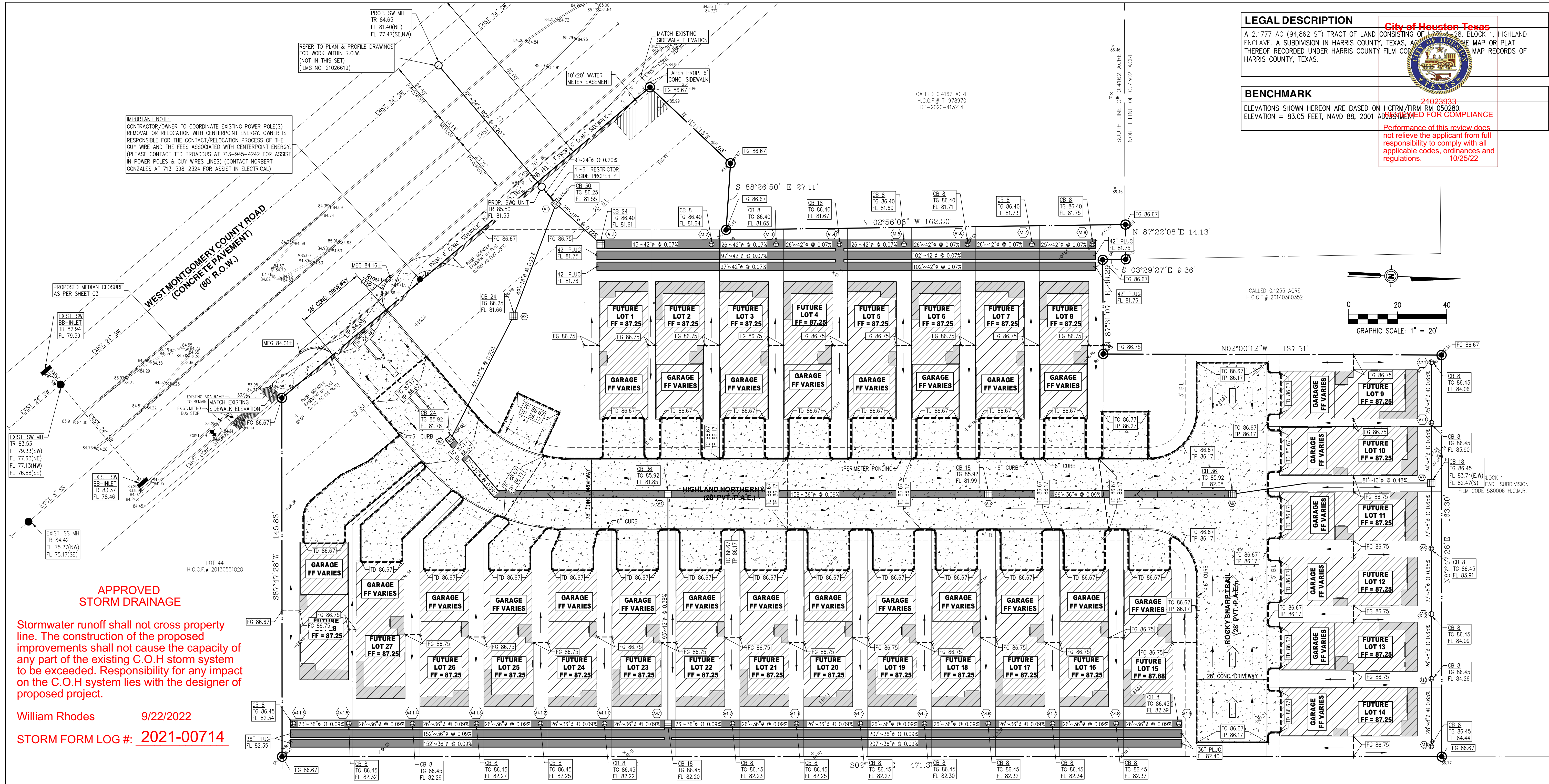
DATE	ISSUED FOR
09/19/22	CLIENT REVIEW
03/23/21	PERMIT

REVISIONS

DATE	DESCRIPTION
09/08/21	COH COMMENTS DATED 04/21/21
02/14/22	COH COMMENTS DATED 10/19/21
03/31/22	COH COMMENTS DATED 03/23/22

©PIONEER ENGINEERING, LLC 2022
 DATE: 03/09/21
 DRAWN BY: MP
 CHECKED BY: AT
 PEPN: 21026 COH: 21023933

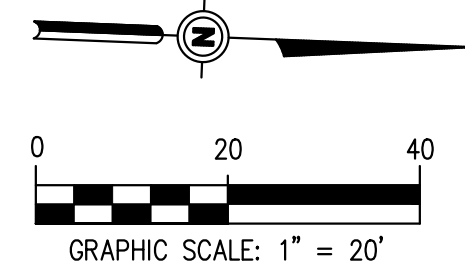
SHEET C3



LEGAL DESCRIPTION
 City of Houston, Texas
 A 2.1777 AC (94,862 SF) TRACT OF LAND CONSISTING OF LOTS 28, BLOCK 1, HIGHLAND ENCLAVE. A SUBDIVISION IN HARRIS COUNTY, TEXAS, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER HARRIS COUNTY FILM CODE 580006 H.C.M.R. MAP RECORDS OF HARRIS COUNTY, TEXAS.

BENCHMARK
 ELEVATIONS SHOWN HEREON ARE BASED ON HCFRM/FIRM RM 050280. ELEVATION = 83.05 FEET, NAVD 88, 2001 ADJUSTED FOR COMPLIANCE

Performance of this review does not relieve the applicant from full responsibility to comply with all applicable codes, ordinances and regulations. 10/25/22



APPROVED STORM DRAINAGE

Stormwater runoff shall not cross property line. The construction of the proposed improvements shall not cause the capacity of any part of the existing C.O.H storm system to be exceeded. Responsibility for any impact on the C.O.H system lies with the designer of proposed project.

William Rhodes 9/22/2022
 STORM FORM LOG #: 2021-00714

NOTE: ALL HOMES ARE FUTURE. TO BE PERMITTED SEPARATELY.

NOTE: SHEET FLOW IS NOT ALLOWED INTO ADJACENT PROPERTIES AND/OR ROW.

NOTE: ALL AREA(S) NOT UNDER THE FOOTPRINT OF THE BUILDINGS ARE TO BE CONSIDERED COMMON AREAS.

NOTE: BEFORE STARTING ANY CONSTRUCTION WORK, CONTRACTOR SHALL VERIFY LOCATION, DEPTH AND CONDITION OF ALL EXISTING UTILITIES AND DRAINAGE FACILITIES, TO ASSURE THAT PROPOSED CONNECTIONS CAN BE MADE AS INDICATED IN THESE DRAWINGS. CONTACT ENGINEER IMMEDIATELY IF ANY DISCREPANCIES THAT MAY IMPACT WORK DESCRIBED HEREIN ARE DISCOVERED.

NOTE: FUTURE 8" AREA DRAINS AND DOWNSPOUT COLLECTOR PIPES SHALL BE INSTALLED IN CONJUNCTION OF GUTTER INSTALLATION OF CORRESPONDING UNITS.

NOTE: CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.

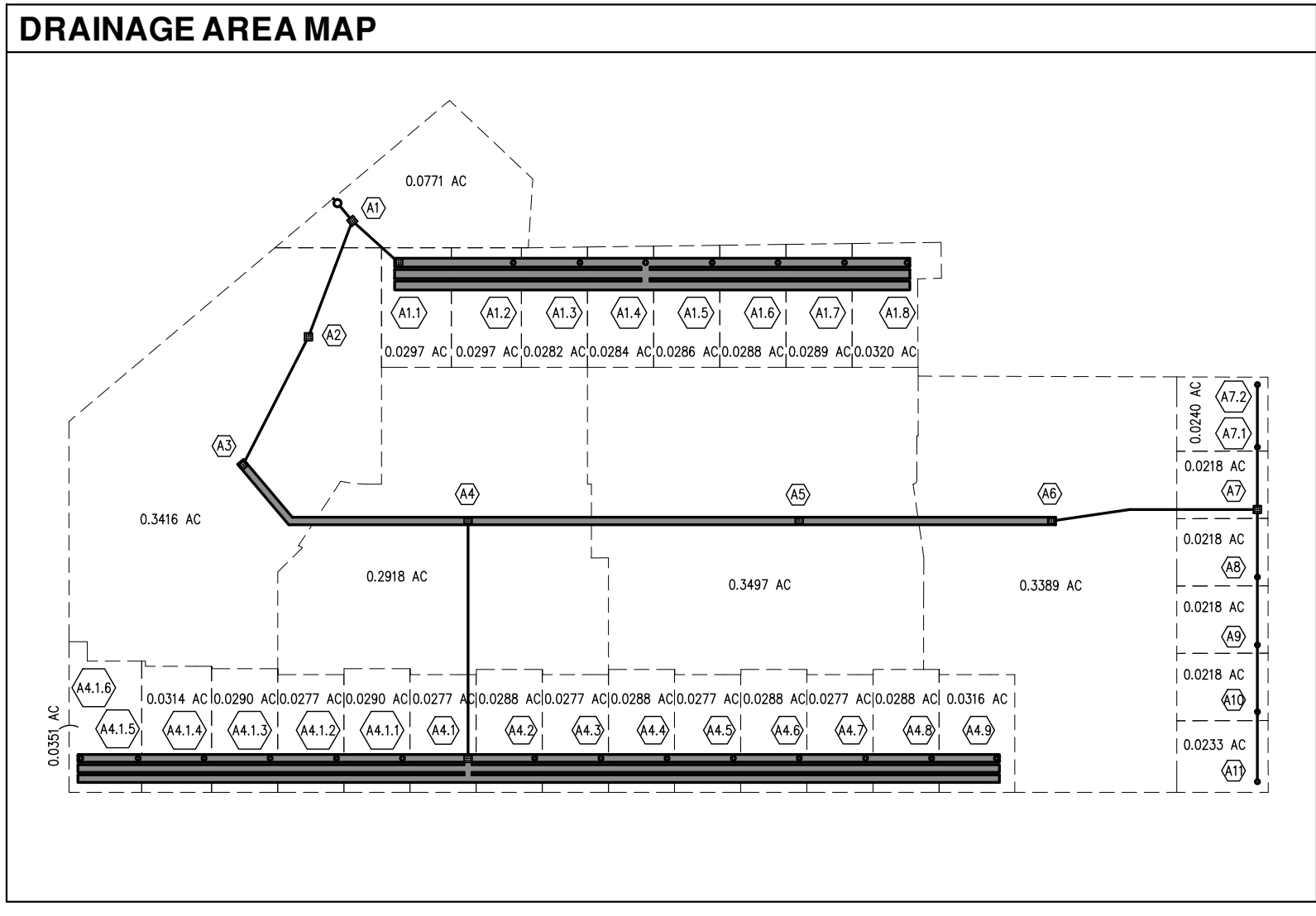
NOTE: ALL WATER, SANITARY SEWER, STORM PIPING, PAVING, GAS, AND ELECTRICAL FACILITIES LOCATED IN THE COMMON AREA(S) TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION.

DETENTION NOTE:

- PROPERTY OWNER IS RESPONSIBLE OF MAINTAINING THE DETENTION FACILITY.
- SUBSURFACE DRAINAGE SYSTEM IS REQUIRED TO BE DRAINED IN 48 HRS.
- CONTRACTOR TO PROVIDE SIGNAGE WARNING PROPERTY OWNERS THAT ON-SITE DETENTION AREA WATER LEVEL MAY RISE DURING HEAVY RAINFALL EVENTS.

STORM SEWER (SW) PIPE MATERIAL:

- MATERIAL SPECIFICATIONS:
 - ALL SW PIPE SHALL BE HDPE (U.O.N.)
 - SW PIPE MATERIAL SHALL CONFORM TO: AASHTO STANDARD M252 (FOR PIPES 10" OR SMALLER)
 - AASHTO STANDARD M294 (FOR PIPES 12" OR LARGER)
- ALL SW PIPE WITHIN CITY RIGHT-OF-WAY SHALL BE REINFORCED CONCRETE (RPC) UNLESS NOTED OTHERWISE.



STORM SEWER CALCULATIONS

Station	Flow (cfs)	Velocity (ft/s)	Depth (ft)	Time (min)	Notes
1+00	0.00	0.00	0.00	0.00	Start
1+10	0.00	0.00	0.00	0.00	Manhole A1
1+20	0.00	0.00	0.00	0.00	Manhole A2
1+30	0.00	0.00	0.00	0.00	Manhole A3
1+40	0.00	0.00	0.00	0.00	Manhole A4
1+50	0.00	0.00	0.00	0.00	Manhole A5
1+60	0.00	0.00	0.00	0.00	Manhole A6
1+70	0.00	0.00	0.00	0.00	Manhole A7
1+80	0.00	0.00	0.00	0.00	Manhole A8
1+90	0.00	0.00	0.00	0.00	Manhole A9
2+00	0.00	0.00	0.00	0.00	Manhole A10
2+10	0.00	0.00	0.00	0.00	Manhole A11
2+20	0.00	0.00	0.00	0.00	Manhole A12
2+30	0.00	0.00	0.00	0.00	Manhole A13
2+40	0.00	0.00	0.00	0.00	Manhole A14
2+50	0.00	0.00	0.00	0.00	End

DETENTION CALCULATIONS

Project Name: 9116 West Montgomery Road
 Project Number: 21026
 Date: 09/27/2022

1 City of Houston Detention Rate:
 Property area is 2.1777 acres, which is larger than 1 acre.
 Detention will be provided at a rate of 0.5 acre-feet per acre of proposed impervious cover.

2 Area of Proposed Impervious Cover:

Building	30,796.33 sq ft
Shared Drive/Garage Approach/Parking	23,829.85 sq ft
ROW Pavement	1,381.70 sq ft
Total Area	56,006.88 sq ft = 1.2857 Acres

3 Required Detention Volume:
 $V_d = [43,580 \times (0.5 \text{ acre-feet per acre} \times 1.2857 \text{ acres})]$
28,003.44 c.f.

4 Provided Detention Volume:
Maximum Water Surface Elevation: 86.67

Detention:

Area (sq ft)	Curb Depth (in)	Non-Curb Depth (in)	Volume (c.f.)
23,142.19	6.00	3.00	13,499.61
Subtotal:			13,499.61 c.f.

Underground Detention System (Pipe):

Length (ft)	Diameter (in)	Vol. (c.f./ft)	Vol. (c.f.)
157.00	8	0.35	54.80
81.00	10	0.55	44.18
93.00	12	0.79	73.04
130.00	18	1.77	231.73
1,407.00	36	7.07	9,945.50
598.00	42	9.62	5,750.43
Subtotal:			16,100.68 c.f.

Total Detention Provided = 29,600.29 c.f.

PIONEER ENGINEERING
 7060 EAST FREEWAY, SUITE 1A, HOUSTON, TEXAS 77020
 (832) 307-0010
 FIRM NO. 18094

COMMUNITY DEVELOPMENT GROUP
FUTURE TOWNHOMES
 9116 W. MONTGOMERY ROAD
 HOUSTON, TEXAS 77088

GRADING AND DRAINAGE PLAN

ISSUE HISTORY

DATE	ISSUED FOR
09/19/22	CLIENT REVIEW
03/23/21	PERMIT

REVISIONS

DATE	DESCRIPTION
09/08/21	COH COMMENTS DATED 04/21/21
02/14/22	COH COMMENTS DATED 10/19/21
03/31/22	COH COMMENTS DATED 03/23/22

©PIONEER ENGINEERING, LLC 2022

DATE: 03/09/21
 DRAWN BY: MP
 CHECKED BY: AT
 PEPN: 21026 COH: 21023933

SHEET C4

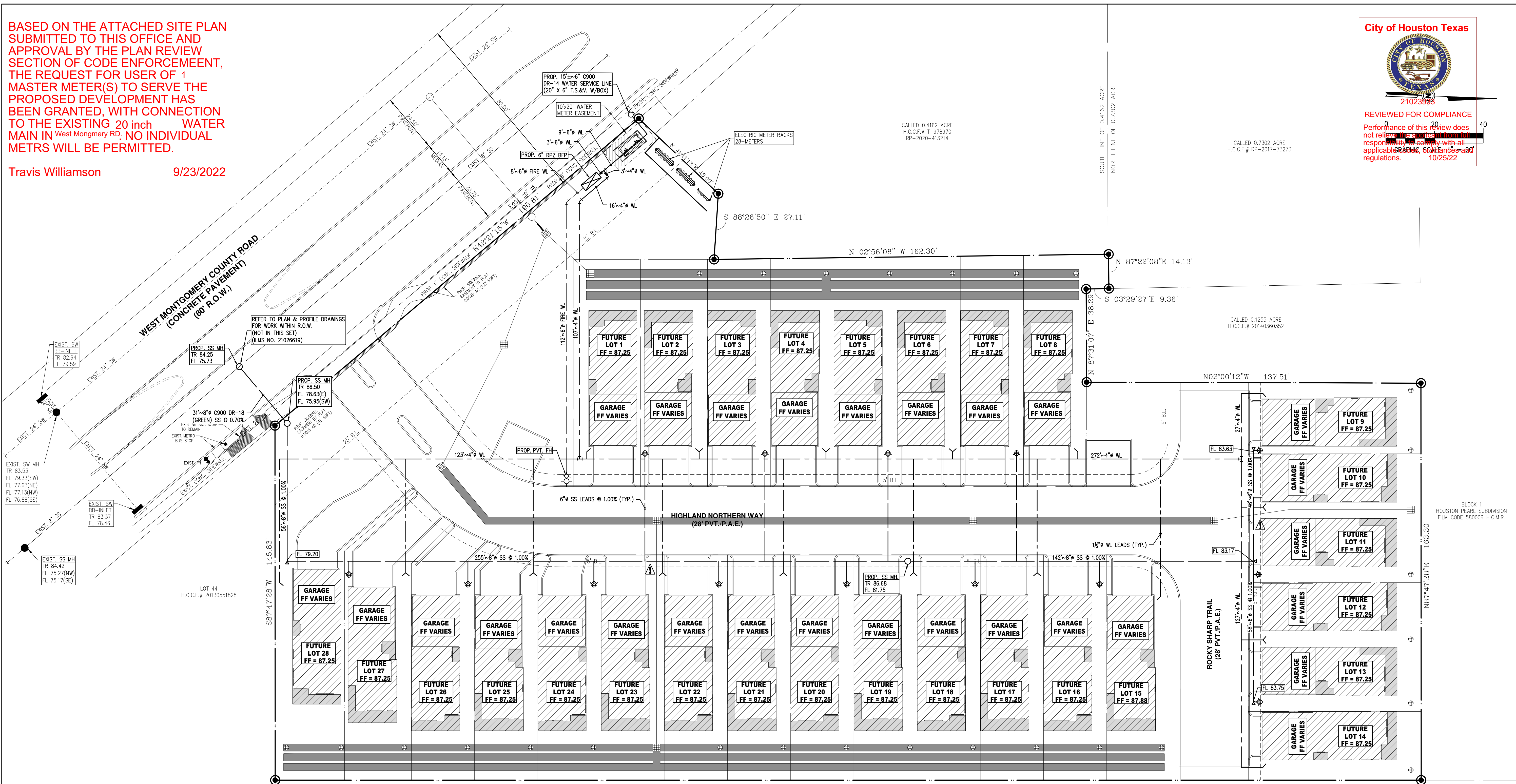
BASED ON THE ATTACHED SITE PLAN SUBMITTED TO THIS OFFICE AND APPROVAL BY THE PLAN REVIEW SECTION OF CODE ENFORCEMENT, THE REQUEST FOR USER OF 1 MASTER METER(S) TO SERVE THE PROPOSED DEVELOPMENT HAS BEEN GRANTED, WITH CONNECTION TO THE EXISTING 20 inch WATER MAIN IN West Montgomery RD. NO INDIVIDUAL METRS WILL BE PERMITTED.

Travis Williamson 9/23/2022

City of Houston Texas



2102393
 REVIEWED FOR COMPLIANCE
 Performance of this review does not relieve the applicant from its responsibility to comply with all applicable codes, standards and regulations. 10/25/22



NOTE ON ELECTRIC SERVICE:
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NOTE ON GAS SERVICE:
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NOTE:
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NOTE:
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NOTE:
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CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND DIMENSIONS OF EXIT PORCHES, RAMPS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.

Approved for sanitary sewer point of connection via a recorded common area agreement.
 Travis Williamson 9/23/2022

NOTE:
 ALL HOMES ARE FUTURE. TO BE PERMITTED SEPARATELY.

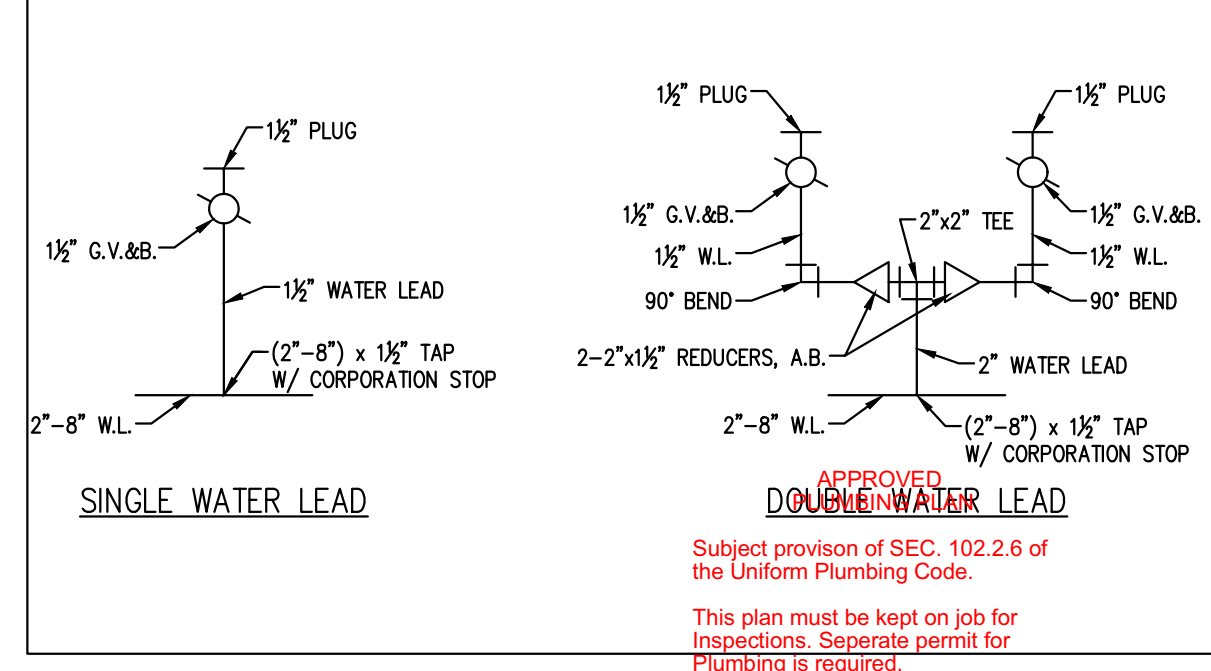
NOTE:
 ALL AREA(S) NOT UNDER THE FOOTPRINT OF THE BUILDINGS ARE TO BE CONSIDERED COMMON AREAS.

NOTE:
 PROPOSED SITE WORK DOES NOT INCLUDE RETAINING WALLS.

WATER LINE (WL) PIPE MATERIAL:
 1. WL SHALL BE SCHEDULE 40 PVC PIPE INSIDE THE PROPERTY AND SEAMLESS COPPER IN THE R.O.W.
 2. ALL WATER MAINS UNDER STREET PAVEMENT, IF NOT STEEL SECTION, SHALL BE P.V.C. PIPE. SIZES 4" THRU 12" SHALL BE AWWA C-900 CLASS 150 DR-18.

SANITARY SEWER (SS) PIPE MATERIAL:
 1. SS PIPE 6" AND SMALLER SHALL BE SCHEDULE 40 PVC. SS PIPE 8" AND LARGER SHALL BE SDR-35 PVC INSIDE THE PROPERTY AND C900 DR-18 (GREEN) IN THE R.O.W.

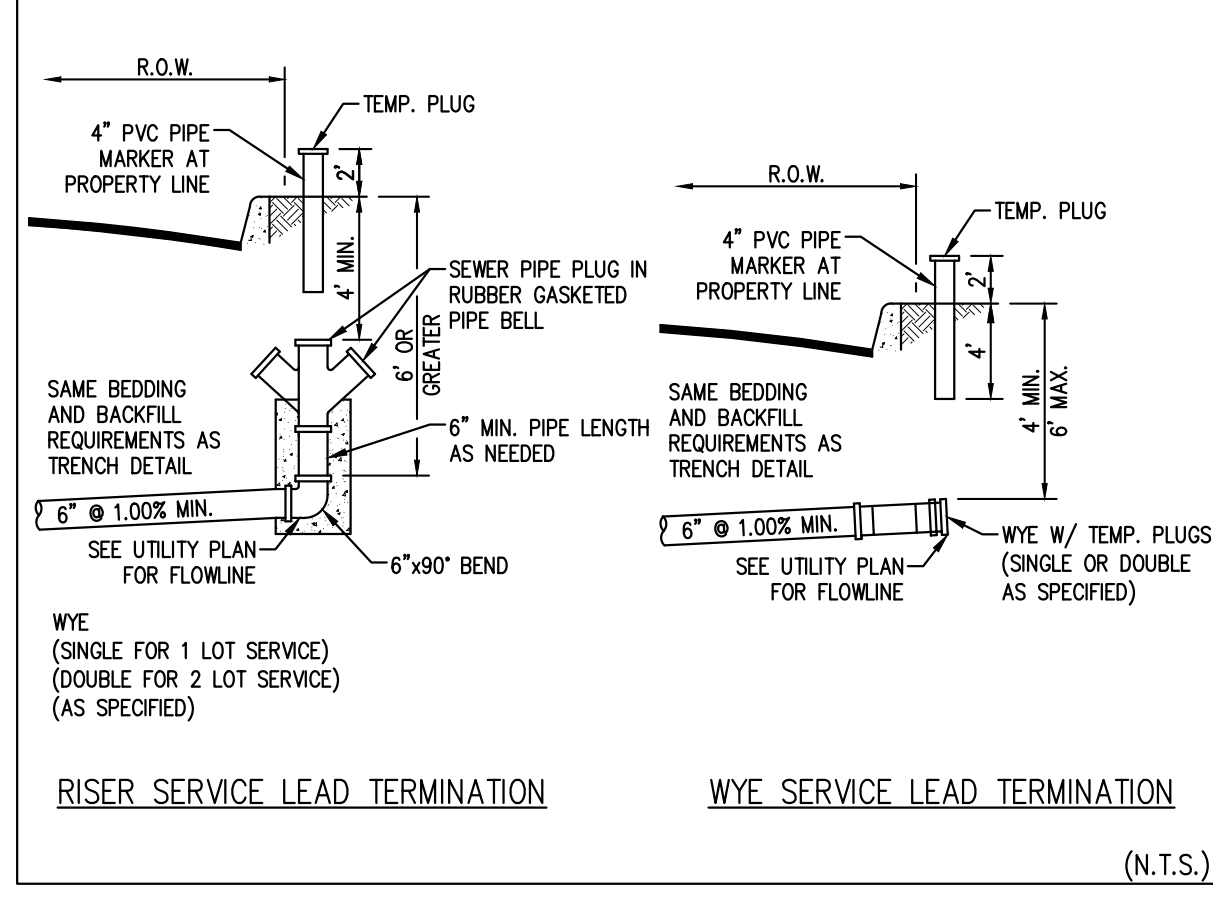
SINGLE & DOUBLE WATER LEAD DETAILS



PLUMBING FIXTURE COUNTS (TYPICAL) (ALL LOTS)				DRAINAGE FIXTURE UNITS (TYPICAL) (ALL LOTS)			
FIXTURE TYPE OR GROUP	QTY.	U.F.U.**	TOTAL	FIXTURE TYPE OR GROUP	QTY.	U.F.U.**	TOTAL
BATH/TUB (WITH/WITHOUT SHOWER HEAD)	3	4	12	BATH/TUB (WITH/WITHOUT SHOWER HEAD)	3	2	6
SHOWER STALL	1	2	2	SHOWER STALL	1	2	2
LAUNDRY	5	1	5	LAUNDRY	1	1	1
WATER CLOSET (1.6 GPF)	4	2.5	10	WATER CLOSET (1.6 GPF)	4	3	12
DISHWASHER	1	1.5	1.5	DISHWASHER	1	2	2
KITCHEN SINK	1	1.5	1.5	KITCHEN SINK	1	2	2
CLOTHES WASHER	1	4	4	CLOTHES WASHER	1	3	3
HOSE BIB	3	2.5	4.5	TOTAL			32
TOTAL			40.5	TOTAL			32

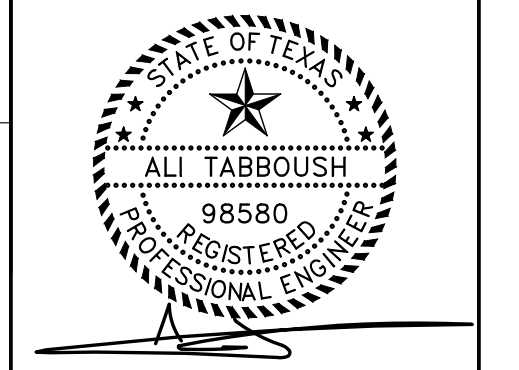
WATER PIPE SIZE IS BASED ON UPC 2012, TABLE 610.4, PRESSURE RANGE 30 TO 45 PSIG.
 * ACCORDING TO UPC 2012, TABLE 610.4, THE WATER LINE DIAMETER MUST BE 4", WITH A WATER METER AND STREET SERVICE OF 6".
 ** ACCORDING TO UPC 2012, TABLE 703.2, A 6" PIPE CAN CARRY UP TO 720 D.F.U @ 2% SLOPE WITH A MAXIMUM LENGTH OF 510 FEET.
 28 UNITS X 32.0 D.F.U = 896 D.F.U, USE 6" & 8"
 - HIGHEST FIXTURE UNIT IS APPROXIMATELY 32' ABOVE NATURAL GROUND.

SANITARY SEWER LEADS DETAIL



PIONEER ENGINEERING
 7060 EAST FREEWAY, SUITE 1A, HOUSTON, TEXAS 77020
 (832) 307-0010
 FIRM NO. 18084

COMMUNITY DEVELOPMENT GROUP
FUTURE TOWNHOMES
 9116 W. MONTGOMERY ROAD
 HOUSTON, TEXAS 77088
UTILITY PLAN



09/21/22

ISSUE HISTORY	
DATE	ISSUED FOR
09/19/22	CLIENT REVIEW
03/23/21	PERMIT

REVISIONS	
DATE	DESCRIPTION
09/08/21	COH COMMENTS DATED 04/21/21
02/14/22	COH COMMENTS DATED 10/19/21
03/31/22	COH COMMENTS DATED 03/23/22

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 DATE: 03/09/21
 DRAWN BY: MP
 CHECKED BY: AT
 PEPP: 21026 COH: 21023933
SHEET C5