GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT THE CITY OF TOMBALL A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK.
2. CONTRACTOR SHALL ADEQUATELY PROTECT EXISTING STRUCTURES, UTILITIES, TREES, SHRUBS AND OTHER PERMANENT OBJECTS.
3. TREES WITHIN THE STREET RIGHT–OF–WAY SHALL NOT BE REMOVED OR DISTURBED, EXCEPT WHERE CALLED OUT TO BE REMOVED. WHERE TREE ROOTS MUST BE CUT, FOLLOW THE REPAIR METHODS DESCRIBED IN THE SPECIFICATIONS.
4. THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN A MANNER SUCH THAT TRUCKS AND OTHER VEHICLES DO NOT CREATE A DIRT NUISANCE OR SAFETY HAZARD IN ANY STREETS, PUBLIC OR PRIVATE. CLEAN UP OF STREETS SHALL BE PERFORMED AS NECESSARY.
5. ANY AREA OF GRASS, WHICH IS DISTURBED OR DUG UP DURING CONSTRUCTION, SHALL BE REPLACED WITH SEED OR SOD.
6. ALL NON ACTIVE EXPOSED AREAS OF EXCAVATION SHALL BE COVERED WITH STEEL SHEETING WHEN IN PAVED AREAS. THE CONTRACTOR SHALL INSTALL CONSTRUCTION FENCING AND TRAFFIC BARRICADES AROUND ALL OTHER EXPOSED AREAS OF EXCAVATION.
7. EXISTING PAVEMENTS, CURBS, SIDEWALKS, DRIVEWAYS AND LANDSCAPING DAMAGED OR REMOVED DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE REPLACED TO ORIGINAL OR BETTER CONDITION BY THE CONTRACTOR AT THEIR EXPENSE.
8. WHEN ANY STREET OR ANY SECTION OF A STREET IS CLOSED, THE CONTRACTOR SHALL FURNISH AND MAINTAIN ADEQUATE BARRICADES, WARNING AND DIRECTING SIGNS, RED FLAGS AND LIGHTS AT THE END OF EACH STREET AND AT ALL INTERSECTIONS ALONG THE STREET WITHIN THE LIMIT OF THE WORK AREA. ALL EXPENSE INCURRED FOR THE ABOVE REQUIREMENTS SHALL BE BORNE BY THE CONTRACTOR. ALL WARNING SIGNS AND BARRICADES SHALL CONFORM TO THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. CONTRACTOR TO NOTIFY PROPER AUTHORITIES A MINIMUM OF 48 HOURS PRIOR TO ANY STREET OR PARTIAL STREET CLOSING
9. CONTRACTOR SHALL PROVIDE THE CITY OF TOMBALL ONE SET OF (RECORD) DRAWINGS AS PER SPECIFICATIONS.
10. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENDING WORK. CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES RESULTING FROM FAILURE TO LOCATE AND PRESERVE UNDERGROUND UTILITIES.
11. IN ACCORDANCE WITH TEXAS STATE LAW THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING TEXAS 811 AT LEAST 48 HOURS PRIOR TO COMMENDING CLEARING OR EXCAVATION.
13. CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED.
14. EXISTING PAVEMENTS, CURBS, SIDEWALKS AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO ORIGINAL OR BETTER CONDITION.
15. CONDITION OF THE FACILITIES, UPON COMPLETION OF JOB, SHALL BE AS GOOD OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK. THE CONTRACTOR SHALL RESTORE ALL GRADES AND LANDSCAPING TO PRECONSTRUCTION CONDITIONS AND RE–ESTABLISH TURF AREAS DAMAGED BY THE CONSTRUCTION ACTIVITIES UNLESS OTHERWISE STATED IN THE CONTRACT DOCUMENTS.
16. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY CONSTRUCTION BY MEANS OF ANCHORED STEEL PLATES, BY BACKFILLING IMMEDIATELY AFTER CONSTRUCTION, AND/OR BY PLACING SHELL OR LIMESTONE SURFACES FOR TEMPORARY DRIVEWAY PURPOSES. CONTRACTOR'S ATTENTION IS DIRECTED TO HS–20 LOAD RATED ACCESS REQUIREMENTS FOR ALL SUCH AREAS.
17. ALL EXCESS DIRT FROM EXCAVATION SHALL BE DISPOSED OF OFFSITE BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS INCLUDING HARRIS COUNTY, TXDOT AND CITY OF TOMBALL.
19. CONTRACTOR TO REMOVE ALL TRASH, EXCESS MATERIAL, DEBRIS, ETC. FROM THE SITE UPON COMPLETION OF THE PROJECT PRIOR TO INSPECTION AND APPROVAL BY THE APPROVING AGENCIES.
20. TEXAS LAW ARTICLE 1436C, PROHIBITS ALL ACTIVITIES IN WHICH PERSONS OR EQUIPMENT MAY COME WITHIN 6 FEET OF ENERGIZED OVERHEAD POWER LINES, AND FEDERAL REGULATION, TITLE 29, PART 1910.190(L) AND PART 1926.440(A)(15) REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. THE ABOVE LAWS CARRY BOTH CRIMINAL AND CIVIL LIABILITIES, WITH CONTRACTORS AND OWNERS BEING LEGALLY RESPONSIBLE FOR THE SAFETY OF WORKERS UNDER THESE LAWS. IF YOU OR YOUR COMPANY MUST WORK NEAR OVERHEAD POWER LINES, CALL 713–207–7777 FOR THE LINES TO BE DE–ENERGIZED AND/OR MOVED AT YOUR EXPENSE.
21. CONTRACTOR IS RESPONSIBLE FOR HORIZONTAL AND VERTICAL CONTROL. REFERENCE POINTS AND CONSTRUCTION STAKING IS INCIDENTAL TO THE PROJECT.
22. SIDEWALKS ARE REQUIRED IN ACCORDANCE WITH CHAPTER 40, SECTION 40–65(i), THE COMPREHENSIVE PLAN, AND THE LIVABLE CENTERS STUDY.
23. EACH CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION OPERATIONS WITH THOSE OF OTHER CONTRACTORS AND ENTITIES TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE PROPOSED WORK.
24. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL POWER/TELEPHONE POLES AND CORRESPONDING GUY WIRES WITHIN FIFTEEN (15) FEET OF PROPOSED WORK. CONTRACTOR SHALL REPAIR DAMAGED POLES AND GUY WIRES AS REQUIRED BY THE UTILITY OWNER AT NO ADDITIONAL COST TO THE OWNER.
25. CITY OF TOMBALL NORMAL WORKING HOURS ARE MONDAY THROUGH FRIDAY FROM 7 AM TO 5 PM, EXCEPT CITY OBSERVED HOLIDAYS. THE CONTRACTOR SHALL NOT BE PERMITTED TO CLOSE LANES OR DO ANY WORK THAT REQUIRES THE SERVICE OR INSPECTION OF THE CITY OUTSIDE OF THE NORMAL WORKING HOURS UNLESS LISTED IN THE PERMIT. THE CONTRACTOR WITH THE PERMITSSION OF THE CITY OF TOMBALL MAY BE PERMITTED TO WORK OUTSIDE OF THE NORMAL WORK HOURS FOR CLEAN–UP ACTIVITIES OR OTHER SUCH ITEMS THAT DO NOT ADVERSELY IMPACT TRAFFIC, RESIDENTS, BUSINESSES OR CITY SERVICES.

WASTEWATER NOTES

1. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT OR ROAD RIGHT–OF–WAY.
2. SEWER MAINS, MANHOLES AND LIFT STATIONS ARE TO BE DESIGNED, TO BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH CITY OF TOMBALL STANDARDS AND TCEQ TITLE 30 CHAPTER 217 OF THE TEXAS ADMINISTRATIVE CODE. TAC' 217.2 REQUIRES LOW–PRESSURE AIR TESTS TO CONFORM TO THE PROCEDURE DESCRIBED IN ASTM C828, C924, F–1417 OR OTHER APPROPRIATE PROCEDURES. FOR SAFETY REASONS, AIR TESTING OF SECTIONS OF PIPE SHALL BE LIMITED TO LINES LESS THAN 36–INCH AVERAGE INSIDE DIAMETER. LINES 36–INCH IN DIAMETER OR LARGER MAY BE AIR TESTED AT EACH JOINT. DEFLECTION TESTING OF ALL FLEXIBLE AND SEMI–RIGID PIPE SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE FOR AT LEAST 30 DAYS. RIGID PIPE SHALL NOT EXCEED A DEFLECTION OF 1%. FLEXIBLE PIPE SHALL NOT EXCEED A DEFLECTION OF 5%. THE DEFLECTION TEST IS TO BE RUN USING A RIGID MANDREL, AND SHALL HAVE A DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES. ALL TESTS TO BE WITNESSED & APPROVED BY CITY OF TOMBALL.
3. MAINTAIN 12 INCH MINIMUM CLEARANCE AT CROSSINGS BETWEEN ALL OTHER UTILITY LINES, STORM SEWERS, AND CULVERTS UNLESS OTHERWISE NOTED.
4. SEWER TRENCHES UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT TO BE BACKFILLED WITH CEMENT SAND (1.5 SACKS PER TON) BACKFILL AS SPECIFIED, TO WITHIN ONE (1) FOOT OF SUBGRADE, BEDDING WILL BE CLASS AAA WHERE CEMENT–SAND BACKFILL IS USED FOR SANITARY SEWERS. INCLUDE COST OF BACKFILL IN UNIT PRICE BID PER LINEAR FOOT OF PIPE.
5. UNLESS OTHERWISE NOTED ALL PROPOSED GRAVITY WASTEWATER MAINS 8" TO 15" SHALL BE PVC PIPE (ASTM D3034 OR D2241 SDR 26). ALL PROPOSED GRAVITY WASTEWATER MAINS 18" TO 36" SHALL BE PVC PIPE (ASTM F679 PS 115).
6. FOR PVC PIPE, USE MANHOLE WATERSTOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS (NO SEPARATE PAY).
7. SANITARY SEWER MANHOLES SHALL BE PRECAST OR POURED IN PLACE MONOLITHIC CONCRETE, AND BACKFILLED WITH CEMENT STABILIZED SAND (1.5 SACKS PER YARD) AS SPECIFIED (NO SEPARATE PAY). MANHOLES WILL BE VACUUM TESTED AS SPECIFIED BY THE CITY OF TOMBALL.
8. ALL SERVICE LEADS SHALL BE FOUR (4) INCHES OR SIX (6) INCHES AT 1.0% MINIMUM SLOPE. ALL FAR SIDE LEADS (OPEN–CUT OR BORED AND JACKED) SHALL CONFORM TO ASTM D1784 (SCHEDULE 80), ASTM D2241 (SDR 26) OR ASTM D3034 (SDR 26).
9. STUBS OR LEADS SERVING TWO LOTS SHALL HAVE A SERVICE WYE WITH TEMPORARY PLUGS. THE WYE SHALL BE LOCATED WITHIN THE STREET RIGHT–OF–WAY OR AN ADJOINING UTILITY EASEMENT.
10. MANHOLE RIMS ARE TO BE SET AT THE ELEVATIONS SHOWN ON THE PLANS INITIALLY, AFTER PAVING AND GRADING IS COMPLETED, RIMS ARE TO BE ADJUSTED TO THREE (3) TO SIX (6) INCHES ABOVE FINAL GRADE AND GRADE SOIL SO AS TO PROVIDE DRAINAGE AWAY FROM MANHOLE.
11. ALL PVC PIPE SHALL HAVE RUBBER GASKET EQUIPPED BELL AND SPIGOT JOINTS. SOLVENT WELDED JOINTS SHALL NOT BE CONSIDERED AN ACCEPTABLE MATERIAL.
12. ALL GRADE CHANGES AT MANHOLES IN EXCESS OF 2 FEET SHALL BE ACCOMPLISHED WITH DROP MANHOLE CONNECTIONS.
13. CONTRACTOR TO FURNISH CITY WITH RECORD DRAWINGS UPON COMPLETION OF PROJECT (CERTIFIED BY ENGINEER).
14. ALL MANHOLES SHALL BE LINED WITH RAVEN LINING 405 EPOXY LINER OR APPROVED EQUAL WITH 100 MILS MINIMUM THICKNESS.
15. THE CONTRACTOR SHALL BE ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWAGE OCCURS. THE PERSON IDENTIFIED WITH THIS RESPONSIBILITY SHALL BE ON–SITE WHEN ACTIVITIES THAT COULD RESULT IN A SPILL OR OVERFLOW ARE BEING PERFORMED. SHOULD AN OVERFLOW OR SPILL OCCUR, THE CONTRACTOR SHALL IMMEDIATELY:
   - 15.1. IDENTIFY THE SOURCE OF THE SPILL, ATTEMPT TO STOP AND ELIMINATE ANY ADDITIONAL SPILLAGE OR OVERFLOW,
   - 15.2. NOTIFY THE CITY OF TOMBALL CITY PUBLIC WORKS DEPARTMENT (281) 290–1400,
   - 15.3. CONTAIN THE SPILL IN PLACE AND PREVENT CONTAMINATION OF STREAMS AND WATERWAYS,
   - 15.4. CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS,
   - 15.5. DISINFECT THE AREA WITH A MIXTURE OF HTH CHLORINE AND WATER,
   - 15.6. IDENTIFY AND TRAIN CONTRACTOR'S PERSONNEL RESPONSIBLE FOR SPILL PREVENTION AND CONTROL,
   - 15.7. ALL WORK PERFORMED IN RELATION TO A SPILL SHALL BE IN CONFORMANCE WITH TCEQ REGULATIONS AND AT NO ADDITIONAL COST TO THE CITY OF TOMBALL
16. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND MARKING ALL STACKS AND SERVICE LEADS AFTER THE PAVING IS COMPLETE. A ¼ –INCH DEEP NOTCH SHALL BE CUT IN THE CURB AND PAINTED WITH A RED LINE ADJACENT TO THE STACK OR LEAD. IF STAKES ARE LEFT IN THE GROUND AT THE STACKS AND LEADS AFTER CONSTRUCTION OF UTILITIES, THEN AN EFFORT WILL BE MADE TO PRESERVE THEM DURING PAVING CONSTRUCTION. HOWEVER, IF THESE STAKES ARE KNOCKED OUT FOR ANY REASON, THE UTILITY CONTRACTOR REMAINS RESPONSIBLE FOR LOCATING AND MARKING THE FACILITIES AS DESCRIBED ABOVE.

WATER NOTES

1. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED AND/OR RECORDED SUBDIVISION OR ROAD RIGHT–OF–WAY PLAT.
2. ALL WATER LINE CONSTRUCTION TO BE ACCOMPLISHED IN ACCORDANCE WITH THE LATEST EDITION OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.
3. ALL WATER LINES TO BE LOCATED INSIDE PUBLIC ROAD RIGHT–OF–WAYS OR PUBLIC EASEMENTS. CITY REPRESENTATIVE TO INSPECT & APPROVE PRIOR TO BACKFILL.
4. ALL WATER MAINS LESS THAN OR EQUAL TO 12" IN DIAMETER SHALL BE PVC C–900 (DR–18). ALL PROPOSED WATER MAINS GREATER THAN OR EQUAL TO 14" IN DIAMETER SHALL BE PVC C–905 (DR–18).
5. WATER MAINS TO HAVE A MINIMUM COVER OF FOUR (4) FEET. VARY FLOW LINE UNIFORMLY FROM DEPTH AND LOCATION SHOWN IN PLANS.
6. WATER LINE FITTINGS TO BE DUCTILE IRON WITH POLYETHYLENE WRAP AS SPECIFIED UNLESS OTHERWISE NOTED.
7. MAINTAIN 12–INCH MINIMUM CLEARANCE AT CROSSINGS BETWEEN ALL WATER LINES AND ALL UTILITIES INCLUDING STORM SEWERS AND CULVERTS UNLESS OTHERWISE NOTED.
8. WATER LINES SHALL BE SAND–BEDDED AS SHOWN IN THE CITY OF TOMBALL DETAILS. (COT–WA–02) ALL WATER LINES TO BE INSPECTED BY CITY OF TOMBALL PRIOR TO BACKFILL.
9. WATERLINE TRENCHES UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED PER THE CITY OF TOMBALL DETAILS (COT–WA–02).
10. ALL 2" THRU 12" GATE VALVES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH AWWA C509 DOUBLE SEATED RESILIENT SEAT GATE VALVES AND SHALL OPEN IN A COUNTER CLOCKWISE DIRECTION ONLY. VALVES ON ALL TAPPING SLEEVES ARE TO BE OF THE SAME TYPE.
11. VALVES TO BE LOCATED OPPOSITE PROPERTY CORNER WHERE APPROPRIATE.
12. ALL VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE AFTER PAVING/GRADING IS COMPLETE.
13. ALL FIRE HYDRANTS SHALL BE MUELLER CENTURION OR AMERICAN DARLING. EQUIP EACH FIRE HYDRANT WITH TWO (2) TWO AND ONE–HALF (2 ½) INCH NOMINAL INSIDE DIAMETER HOSE NOZZLES AND ONE (1) FIVE AND ONE–QUARTER (5 ¼) INCH NOMINAL INSIDE DIAMETER PUMPER NOZZLE WITH NATIONAL STANDARD THREADS ON EACH NOZZLE. SUPPLY STORZ CONNECTOR & PRESSURE CAP FOR PUMPER NOZZLE.
14. CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING TO WITHSTAND TEST PRESSURES SPECIFIED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND THE CITY OF TOMBALL.
15. ALL WATER LINE TESTING SHALL BE WITNESSED AND APPROVED BY THE CITY OF TOMBALL.
16. TWELVE (12) GAUGE LOCATOR WIRE TO BE INSTALLED ON ALL WATER LINES, GAS LINES AND FORCE MAINS. TO BE ACCESSIBLE AT VALVE STACKS.
17. ALL TS&V SHALL BE FULL BODY – CAST IRON OR APPROVED STAINLESS STEEL OR DUCTILE IRON.
18. ONE (1) WATER SAMPLE PER 1000 FEET SHALL BE SUBMITTED TO A TEXAS DEPARTMENT OF HEALTH APPROVED LABORATORY AND SHALL BE FREE OF ANY CONTAMINATES, PRIOR TO BEING PUT IN SERVICE.
19. DISINFECTION OF NEW AND REPAIRED WATER MAINS SHALL BE IN CONFORMANCE WITH AWWA C651. ALL NEW WATER MAINS SHALL BE DISINFECTED BEFORE THEY ARE PLACED IN SERVICE. ALL WATER MAINS TAKEN OUT OF SERVICE FOR INSPECTING, REPAIRING OR OTHER ACTIVITY, WHICH MIGHT LEAD TO CONTAMINATION OF WATER, SHALL BE DISINFECTED BEFORE THEY ARE RETURNED TO SERVICE. (NON PAY ITEM)
20. ALL WATER AND WASTEWATER CROSSINGS SHALL CONFORM TO TCEQ CHAPTER 217 AND 290 SEPARATION REQUIREMENTS.
21. ALL VALVE BOXES SHALL BE ERECTED PLUMBED & BE FREE OF DEBRIS.
22. PROVIDE BACKFLOW PREVENTOR BASED ON APPROPRIATE APPLICATIONS (I.E. IRRIGATION, DOMESTIC, FIRE)
23. ALL DUCTILE IRON FITTINGS SHALL BE WRAPPED IN MINIMUM 8 MIL POLYETHYLENE WRAP.

PAVEMENT NOTES

1. ALL INTERSECTIONS WHERE A STOP SIGN IS LOCATED SHALL HAVE A STOP BAR. STOP BARS SHALL BE LOCATED WHERE PEDESTRIAN CROSSWALKS ARE PROVIDED, 1'–4" BEHIND CROSSWALKS.
2. STOP BARS SHALL BE 24" WIDE, AND CONSIST OF SOLID WHITE LINES EXTENDING ACROSS APPROACH LANES TO INDICATE THE POINT AT WHICH THE STOP IS INTENDED OR REQUIRED TO BE MADE.
3. ON APPROACH – BEGINNING WITH STOP BAR, INSTALL A 4" WIDE SOLID WHITE LINE FOR 50 FT BACK FROM STOP BAR SKIP 25' AND BEGIN NORMAL LANE LINES.
4. ON EXIT – BEGINNING WITH CROSSWALK, OR 12' FROM CURB LINE OF INTERSECTING STREET, INSTALL A 4" WIDE SOLID WHITE LINE FOR 50 FT., AND BEGIN NORMAL LANE LINE.
5. CROSSWALKS SHALL BE A MINIMUM INSIDE WIDTH OF 5' (FT.). AT LOCATIONS WHERE ADDITIONAL VISIBILITY IS REQUIRED, WHERE TRAFFIC CONTROL DEVICES ARE NOT PRESENT, AND IN SCHOOL ZONES CONTINENTAL CROSSWALKS SHALL BE USED.
6. ALL PAVEMENT MARKINGS AT INTERSECTIONS SHALL BE THERMOPLASTIC IN ACCORDANCE WITH COT APPROVED PRODUCT LIST.
7. PAVEMENT MARKINGS MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS. ALL PAVEMENT MARKINGS MUST BE RETRO–REFLECTIVE MATERIAL APPLIED TO THE ROAD SURFACE IN A MOLTEN STATE BY SCREED/EXTRUSION, SUSPENDED EXTRUSION, OR SPRAY MEANS, WITH A SURFACE APPLICATION OF GLASS BEADS.
8. THE COLOR OF RAISED PAVEMENT MARKERS UNDER BOTH DAYLIGHT AND NIGHTTIME CONDITIONS SHALL CONFORM TO THE COLOR OF THE MARKING FOR WHICH THEY SERVE AS A POSITIONING GUIDE OR FOR WHICH THEY SUPPLEMENT OR SUBSTITUTE.
9. ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROX. 2").
10. ALL BUTTONS SHALL BE INSTALLED WITH AN APPROVED EXPOXY.
11. A BLUE REFLECTORIZED BUTTON SET 6" OFF CENTERLINE OF ROADWAY SHALL BE INSTALLED ADJACENT TO ALL FIRE HYDRANTS.
12. PAVEMENT SURFACE AREAS PRIOR TO PLACEMENT OF PAVEMENT MARKINGS, AND/OR RAISED PAVEMENT MARKERS SHALL BE CLEANED IN ACCORDANCE WITH C.O.M.C. STANDARDS. CONCRETE SURFACES SHALL BE CLEANED BY ABRASIVE BLASTING MEDIUM. ASPHALT PAVEMENT SURFACES SHALL BE CLEANED BY BRUSHING, WASHING, COMPRESSED AIR, AND/OR HIGH–PRESSURE WATER. AREAS MUST BE FREE OF CURING MEMBRANCE, DIRT, GREASE, LOOSE AND/OR FLAKING EXISTING MARKERS AND OTHER FORMS OF DEBRIS.
13. ALL ESPLANADE NOSES, AND CURBS IN LEFT TURN BAY'S SHALL BE BRICK STAMPED OR PAVERS AND SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC DEVICES, A.D.A., T.A.S., AND COT STANDARDS AND ALL REVISIONS THEREOF.
14. ALL ROADWAYS WITHOUT CURB SHALL HAVE A SOLID 4" WHITE REFLECTORIZED STRIPE 12" INSIDE THE EDGE OF PAVEMENT.
15. WITHIN A TANGENT SECTION THE TYPE I–C PAVEMENT MARKERS CAN BE PLACED AT 40' C–C ON ROADWAYS WITHOUT CURB AND GUTTERS.
16. ALL STREET CROSSINGS SHALL COMPLY WITH T.A.S. AND A.D.A., SEE HANDICAP CROSS DETAIL.
17. ALL PAVEMENT MARKINGS, AND/OR RAISED PAVEMENT MARKERS SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC DEVICES, A.D.A., T.A.S., AND C.O.M.C. STANDARDS AND ALL REVISIONS THEREOF.
18. ALL MARKINGS SHALL HAVE A UNIFORM CROSS–SECTION, AND THE DENSITY AND QUALITY OF THE MARKING'S SHALL BE UNIFORM THROUGHOUT THEIR THICKNESS.
19. PAVEMENT MARKING'S PLACED THAT ARE NOT IN ALIGNMENT OR SEQUENCE, AS SHOWN ON THE PLANS OR STATED IN THE PROJECT SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
20. FOR SKEW INTERSECTIONS AND STREET WIDTHS NOT SHOWN, COORDINATE WITH THE COT DEPARTMENT OF ENGINEERING & PLANNING.

STORM SEWER NOTES

1. STORM SEWER CONSTRUCTION SHALL CONFORM TO THE CITY OF TOMBALL SPECIFICATIONS FOR STORM SEWER CONSTRUCTION.
2. ALL STORM SEWER TO BE ASTM C–76, CLASS III REINFORCED CONCRETE PIPE WITH RUBBER GASKETED JOINTS CONFORMING TO ASTM C443. CLASS IV RCP REQUIRED UNDER PAVEMENT WITH LESS THEN 2' OF COVER.
3. ALL STORM SEWER INLETS SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND (1.5 SACKS PER TON). ALL BEDDING SHALL BE CLASS "AA". ALL STORM SEWERS TO BE INSPECTED BY CITY PRIOR TO BACKFILL.
4. ALL STORM SEWER TRENCHES UNDER PROPOSED AND FUTURE PAVEMENT OR WITHIN ONE FOOT (1') FROM BACK OF CURB TO BE BACKFILLED WITH CEMENT STABILIZED SAND (1.5 SACKS PER TON) TO A POINT OF ONE FOOT (1') BELOW PAVEMENT SUBGRADE. THE REMAINING BACKFILL TO BE MADE WITH COMPACTED SELECT MATERIAL. COST OF BACKFILL AND BEDDING TO BE INCLUDED IN UNIT PRICE PER LINEAR FOOT OF PIPE.
5. HIGH DENSITY POLYETHYLENE PIPE MAY BE SUBSTITUTED ON PRIVATE PROPERTY FOR REINFORCED CONCRETE PIPE SUBJECT TO THE FOLLOWING:
   - 5.1. FOR PIPES 36" AND SMALLER – CEMENT STABILIZED SAND PLACED BEFORE PIPE IS LAID, TO 7" MIN. BEDDING DEPTH. FOR SEWERS 42"–60" CEMENT STABILIZED SAND PLACED BEFORE PIPE IS LAID, TO 10" MIN. BEDDING DEPTH. THE SIDES SHALL BE 12" MIN. FROM EDGE OF TRENCH TO SPRINGLINE.
   - 5.2. CEMENT STABILIZED SAND SHALL BE THOROUGHLY RODDED, PLACED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY 1'–0" ABOVE THE TOP OF PIPE, AFTER PIPE IS LAID.
   - 5.3. PIPE AND FITTINGS: THE TYPES OF PIPE WILL BE INDICATED ON THE DRAWINGS BY THE FOLLOWING DESCRIPTION CONFORMING TO AASHTO M 252, AASHTO M 294, AND/OR AASHTO MP6–95, LATEST EDITION. PIPE DESCRIPTION: CPP (CORRUGATED POLYETHYLENE PIPE).
   - 5.4. TYPE S (THIS PIPE SHALL HAVE A FULL CIRCULAR CROSS–SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINE).

SIDEWALK NOTES

1. EXISTING CURB AND GUTTER TO BE SAW CUT, REMOVED AND REPLACED. DOWEL STEEL FOR MINMUM REINFORCING OVERLAP OF 10 INCHES (10") DOWELS SHALL BE EIGHTEEN INCHES (18") LONG AND EPOXIED A MINIMUM OF (8") EIGHT INCHES INTO EXISTING PAVEMNENT.
2. IF SIDEWALKS ARE NEITHER EXISTING NOR PROPOSED WHERE CURB RAMP ACCESS IS REQUIRED, CONCRETE SIDEWALKS SURFACE 4 1/2" THICK SHALL BE INSTALLED TO PROVIDE ACCESS TO THE PEDESTRIAN PUSH BUTTONS.
3. DETECTABLE WARNINGS REQUIRED BY T.A.S. SECTIONS 4.1 AND 4.7 SHALL COMPLY WITH T.A.S. SECTION 4.29
4. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACE SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND–ON–CANE.
5. DETECTABLE WARNING SURFACE SHALL COVER THE ENTIRE WIDTH AND DEPTH OF RAMP.
6. DETECTABLE WARNINGS SHALL BE INSTALLED WITH PAVERS IN ACCORDANCE WITH MANUFACTURE'S REQUIREMENTS.
7. CONCRETE PAVER UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C–935, C–33, AND SHALL BE PLACE IN A TWO BY TWO UNIT BASKET WEAVE PATTERN, UNLESS SHOWN OTHERWISE IN THE PLANS.
8. CONCRETE PAVER UNITS SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
9. CONCRETE PAVER UNIT COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR THAT PROVIDES A LIGHT REFLECTIVE THAT SIGNIFICANTLY CONTRASTS WITH THE ADJACENT SURFACES. ADJACENT SURFACES INCLUDE SIDE FLARES. COLORS OTHER THAN RED–BROWN REQUIRE COT APPROVAL.
10. CONCRETE PAVER UNITS SHALL BE SAW CUT ONLY, AND ANY CUT UNIT SHALL NOT BE LESS THAN 25% OF A FULL UNIT.
11. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'–0"
12. EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD WITH DOWELS.
13. SCORED CONTRACTION JOINTS SHALL BE EVERY 4' OR EQUAL TO WIDTH OF SIDEWALK.
14. ALL ADJACENT EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS AND APPROVED BY CITY ENGINEER.
15. 6 INCH, 5 SACK CEMENT PER CUBIC YARD CONCRETE, 3000 PSI. REINFORCED CONCRETE WITH #3 BARS, 18 INCHES O.C.E.W., FOR SIDEWALKS, #4 BARS 18' O.C.E.W. FOR CURB RAMPS IS THE MINIMUM ACCEPTED. MINIMUM 3 LONGITUDINAL BARS.
16. USE RADIUS TOOL ON ALL EXPOSED EDGES.
17. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN COT STANDARD SPECIFICATION 02775.
18. REFER TO GENERAL NOTES AND CONCRETE/PAVING NOTES.
19. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS.

DRIVEWAY NOTES

1. SIDEWALK, DRIVEWAY, CURB AND GUTTER AND GRADE SHALL BE APPROVED BY ENGINEERING & PLANNING DIRECTOR.
2. SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, 5.5 SACK CEMENT PER CUBIC YARD (MIN. 3000 PSI), 4 1/2" THICK, 4'–0" MINIMUM WIDTH, AND BE REINFORCED WITH # 3 @ 18" O.C.E.W.
3. DRIVEWAYS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, 5.5 SACK CEMENT PER CUBIC YARD (MIN. 3000 PSI), 6" THICK, FROM CURB TO PROPERTY LINE AND BE REINFORCED WITH MINIMUM # 3 @ 18" O.C.E.W. (16" MIN. LENGTH OF LAP) OR # 4 @ 24" O.C.E.W. (22" MIN. LENGTH OF LAP).
4. ONE–INCH BOARD EXPANSION OR 1/2" NON–EXTRUDING PREFORMED JOINT; AT INTERVALS OF 20 FT. (MAXIMUM) THROUGHOUT ENTIRE LENGTH OF SIDEWALKS, WHERE NEW WALK MEETS OLD WALK AND/OR NEW DRIVEWAY.
5. ONE–INCH BOARD EXPANSION OR 1/2" NON–EXTRUDING PREFORMED JOINT, BETWEEN SIDEWALK AND CURB, AROUND FIRE HYDRANTS AND UTILITY POLES.
6. NO WORK PRIOR TO OBTAINING A CITY OF TOMBALL DRIVEWAY PERMIT

NATURAL GAS NOTES

1. CONSTRUCTION OF NATURAL GAS PIPING SYSTEM MUST BE PERFORMED BY AN APPROVED CITY OF TOMBALL CONTRACTOR IN GOOD STANDING WITH THE CITY. ALL PERSONNEL CERTIFICATIONS MUST BE KEPT ON SITE WITH CONSTRUCTION CREW AT ALL TIMES.
2. CONTRACTOR MUST BE IN COMPLIANCE WITH CITY OF TOMBALL ANTI–DRUG AND ALCOHOL MISUSE PLAN BY PARTICIPATING IN AN APPROVED DRUG TESTING PROGRAM. PROOF OF TESTING PROTOCOLS IS REQUIRED.
3. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL NATURAL GAS FACILITIES AS PROPOSED IN THIS PLAN SET. ANY DEVIATIONS MUST FIRST BE APPROVED BY THE ENGINEER OF RECORD AND THE CITY OF TOMBALL PUBLIC WORKS DIRECTOR OR DESIGNATED REPRESENTATIVE.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE MEANS, METHODS, SEQUENCE, PROCEDURES, TECHNIQUES AND/OR SCHEDULING OF ALL PORTIONS OF THE GAS WORK ARE PERFORMED SAFELY AND IN ACCORDANCE WITH CITY OF TOMBALL REQUIREMENTS, OSHA REGULATIONS, AND ANY OTHER STANDARDS OR CODES REQUIRED BY ANY OTHER REGULATORY AGENCY.
5. SHUT–INS AND/OR SYSTEM TIES ARE THE RESPONSIBILITY OF THE CITY OF TOMBALL. AT GAS REPRESENTATIVE'S DISCRETION, CONTRACTOR MAY BE ALLOWED TO TAP OR SHUT IN EXISTING MAINS, IF CONTRACTOR CAN PROVE COMPETENCY AND MAINTAINS OPERATOR QUALIFICATIONS FOR APPROPRIATE TASKS. THE CITY GAS REPRESENTATIVE MUST BE ON SITE DURING TIE–IN PROCEDURE.
6. THE CITY OF TOMBALL GAS REPRESENTATIVE MUST BE CONTACTED AS FOLLOWS:
   - 6.1. GAS CONSTRUCTION START. CONTRACTOR MUST NOTIFY GAS REPRESENTATIVE AT LEAST 48 HOURS PRIOR TO THE INITIAL START OF ANY NATURAL GAS CONSTRUCTION TO SCHEDULE AN ON SITE MEETING. DURING THIS MEETING, ALL CONTRACTOR PERSONNEL CERTIFICATIONS WILL BE REVIEWED TO CONFIRM ALL CONTRACTOR PERSONNEL MEET CITY OF TOMBALL REQUIREMENTS. DELAYS WILL NOT BE PAID FOR IN THE EVENT GAS CONSTRUCTION CANNOT START DUE TO LACKING CREDENTIALS.
   - 6.2. BACKFILL. CONTRACTOR MUST NOTIFY GAS REPRESENTATIVE TO COORDINATE A TRENCH INSPECTION PRIOR TO BACKFILLING. SEE TRENCH & BACKFILL REQUIREMENTS FOR MORE INFORMATION.
   - 6.3. ENCASEMENT. CONTRACTOR MUST ALLOW GAS REPRESENTATIVE TO OBSERVE THE INSTALLATION OF THE CARRIER PIPE AND TO INSPECT ALL CASING END POINTS. SEE MINIMUM ENCASEMENT REQUIREMENTS FOR MORE DETAIL.
   - 6.4. PRESSURE TEST. CONTRACTOR MUST COORDINATE WITH GAS REPRESENTATIVE PRIOR TO PERFORMING ANY PRESSURE TESTS. PRESSURE CHARTS CAN BE FURNISHED BY EITHER THE CONTRACTOR OR THE CITY; HOWEVER, ALL CHARTS MUST BE INITIALED BY GAS REPRESENTATIVE BEFORE THE PRESSURE TEST BEGINS.
7. DRIVEWAYS WILL BE BORED, UNLESS OTHERWISE SPECIFIED IN PLANS OR AS DIRECTED BY GAS REPRESENTATIVE.
8. TREES IN OR ADJACENT TO PUBLIC RIGHTS OF WAY WHICH HAVE DRIP LINES EXTENDING INTO PUBLIC RIGHTS OF WAY AND A TRUNK CALIPER OF SIX (6) INCHES OR MORE DETERMINED BY THE CITY OF TOMBALL TO HAVE ENVIRONMENTAL OR AESTHETIC VALUE MUST BE BORED FROM DRIP LINE TO DRIP LINE.
9. EXISTING UTILITIES EXPOSED DURING TRENCHING OPERATIONS MUST BE SUPPORTED; CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES.
10. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES SHOWN IN THE PLANS. ADDITIONALLY, CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES.
11. CONTRACTOR MUST VISUALLY INSPECT ALL MATERIAL FOR DAMAGE BEFORE CONSTRUCTION AND PRIOR TO BACKFILLING.
12. ALL POLYFUSION MUST BE PERFORMED BY A CERTIFIED OPERATOR. POLYFUSION CERTIFICATION WILL BE CHECKED AT THE CONSTRUCTION KICKOFF MEETING.
13. CONTRACTOR IS REQUIRED TO RECORD ALL POLYETHYLENE MATERIAL SPECIFICATIONS ON POLYETHYLENE PIPE LINE DATA CHART (AS SHOWN BELOW).
14. CONTRACTOR MUST COMPLETE THE POLYETHYLENE PIPE LINE DATA CHART FOR ALL POLYETHYLENE PIPE INSTALLED IN EACH APPLICABLE SHEET (SEE THE FOLLOWING EXAMPLE):

POINT SPAN			LINE DATA	CONTRACTOR	FUSED BY	DATE INSTALLED
1	TO	2	2" IPS SDR 11 DRISCOPIPE 8100 GAS PE2406/PE100 CEE ASTM D2513 WT015 R NR 0356 A1–043 072706 COIL 0152	COMPANY X	JOHN DOE	X/X/20XX

15. CONTRACTOR IS RESPONSIBLE FOR TESTING ALL NEW FACILITIES IN ACCORDANCE WITH CITY OF TOMBALL STANDARDS. ALL TESTS MUST BE DOCUMENTED BY PRESSURE CHART AND
16. MAGNETIC WARNING TAPE AND #12 TRACER WIRE MUST BE INSTALLED ABOVE PIPE INSTALLATIONS ALONG THE TRENCH IN ACCORDANCE WITH CITY OF TOMBALL REQUIREMENTS. TRACER WIRE SHALL BE 6" ABOVE THE PIPE, AND MAGNETIC WARNING TAPE SHALL BE 6" ABOVE THE TRACER WIRE. ALL TRACER WIRE CONNECTIONS MUST BE WATER TIGHT. IN THE EVENT MAGNETIC WARNING TAPE IS ALREADY PRESENT IN THE TRENCH, CONTRACTOR MUST STRIP BACK A PORTION OF THE EXISTING TAPE AND TIE THE NEW TAPE INTO THE EXISTING.AT VALVE LOCATIONS, TRACER WIRE MUST BE INSTALLED AROUND VALVE STACKS, NOT THROUGH THEM. FOR DETAILED PLACEMENT INFORMATION, SEE TRENCH & BACKFILL REQUIREMENTS AND/OR VALVE STACK REQUIREMENTS.
17. ALL VALVES ARE TO BE INSTALLED WITH VALVE BOXES IN ACCORDANCE WITH CITY OF TOMBALL REQUIREMENTS. A SUPPORT MUST BE PLACED IN ACCORDANCE WITH THE VALVE MANUFACTURER SPECIFICATIONS.
18. PIPELINE MARKERS ARE TO BE INSTALLED IN ACCORDANCE WITH CITY OF TOMBALL REQUIREMENTS. CONTRACTOR IS REQUIRED TO PLACE MARKERS AT OR NEAR TAPS, TEES, CAPS AND AT 500' INTERVALS ALONG NATURAL GAS MAINS. FINAL PLACEMENT OF PIPELINE MARKERS IS SUBJECT TO FIELD CONDITIONS; CONTRACTOR MUST USE DISCRETION TO ENSURE APPROPRIATE LINE OF SIGHT IS ESTABLISHED WITH PIPELINE MARKERS. GAS REPRESENTATIVE MAY DETERMINE THE NEED FOR ADDITIONAL PIPELINE MARKER INSTALLATIONS.
19. TEST STATIONS ARE TO BE INSTALLED AT 1000' INTERVALS OR AS OTHERWISE DIRECTED BY THE PLANS OR THE GAS REPRESENTATIVE.

NO.	DATE	REVISION

THE CITY OF TOMBALL TEXAS FOUNDED 1907

CITY OF TOMBALL

GENERAL CONSTRUCTION NOTES

APPROVED BY CITY OF TOMBALL ENGINEERING DEPARTMENT

CITY ENGINEER

EFFECTIVE MARCH 8, 2021

SHEET GEN–01

SEQ.