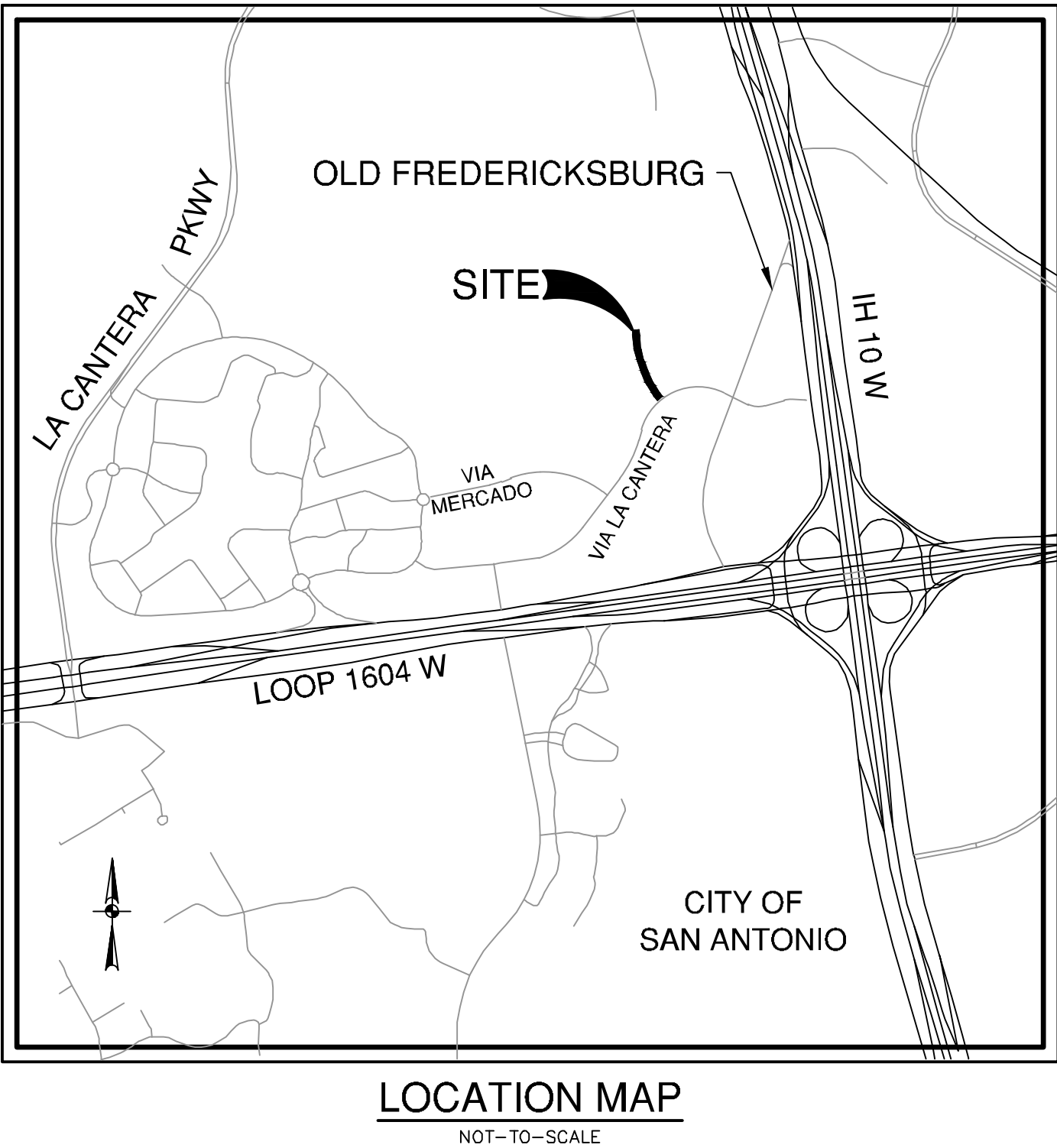


# LCTC EAST ACCESS (ENCLAVE)

## SAN ANTONIO, TEXAS

### CIVIL CONSTRUCTION PLANS

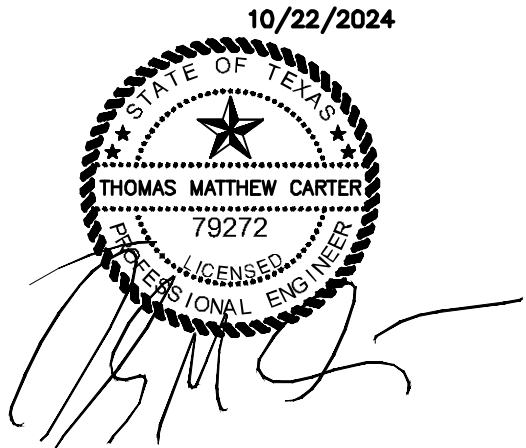
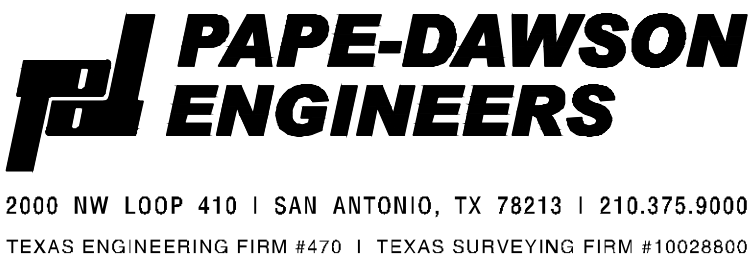


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PREPARED FOR:

US REAL ESTATE PARTNERSHIP  
9830 COLONNADE BLVD., STE. 600  
SAN ANTONIO, TX 78230

SEPTEMBER 2024



SHEET C0.00

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## GENERAL NOTES

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION JUNE 2008, OR LATEST.
- NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS, BUT NOT INCLUDED IN THE BID PROPOSAL. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED IN THE PAY ITEM TO WHICH IT RELATES.
- THE CONTRACTOR SHALL PROVIDE ACCESS FOR THE DELIVERY OF MAIL BY THE U.S. POSTAL SERVICE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION ANY DAMAGE DONE TO EXISTING FENCES, CONCRETE ISLANDS, STREET PAVING, CURBS, SHRUBS, BUSHES OR DRIVEWAYS. (NO SEPARATE PAY ITEM).
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL SIGNS AND BARRICADES ARE PROPERLY INSTALLED AND MAINTAINED. ALL LOCATIONS AND DISTANCES WILL BE DECIDED UPON IN THE FIELD BY THE CONTRACTOR, USING THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". THE CITY'S CONSTRUCTION INSPECTOR AND TRAFFIC ENGINEERING REPRESENTATIVE WILL ONLY BE RESPONSIBLE TO INSPECT BARRICADES AND SIGNS. IF, IN THE OPINION OF THE TRAFFIC ENGINEERING REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED.
- IF THE NEED ARISES, ADDITIONAL BARRICADES AND DIRECTIONAL DEVICES MAY BE ORDERED BY THE TRAFFIC ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.171 C.P.S. MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.
- CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR TWENTY FOUR (24) HOURS PRIOR TO BACKFILL OF ANY UTILITY TRENCHES TO SCHEDULE FOR DENSITY TEST AS REQUIRED.
- CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES, MARKS, ETC. IF ANY ARE DESTROYED OR REMOVED BY THE CONTRACTOR OR HIS EMPLOYEES, THEY SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION TO DETERMINE THE LOCATION OF EXISTING UTILITIES. CONTRACTOR SHALL NOTIFY THE FOLLOWING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION OPERATION:  
  
SAN ANTONIO WATER SYSTEM (SAWS)  
233-2010  
COSA DRAINAGE  
207-8048  
COSA SIGNAL OPERATIONS  
207-7720 / 207-7765  
TEXAS STATE WIDE ONE CALL LOCATOR  
1-800-344-8377  
- CITY PUBLIC SERVICE ENERGY  
- TIME WARNER  
- AT&T  
- MCI
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED, BUT SHALL BE INVESTIGATED AND VERIFIED BY THE CONTRACTOR BEFORE STARTING WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR THE MAINTENANCE AND PROTECTION OF THE EXISTING UTILITIES EVEN IF THEY ARE NOT SHOWN ON THE PLANS. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION AND HE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME DURING CONSTRUCTION.
- ALL WASTE MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE HIS SOLE RESPONSIBILITY TO DISPOSE OF THIS MATERIAL OFF THE LIMITS OF THE PROJECT. NO WASTE WATER- RIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING ARTIFICIAL OR NATURAL DRAINAGE.
- THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIAL IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
- THE CONTRACTOR SHALL MAINTAIN ALL ADJOINING STREETS AND TRAVELED ROUTES FREE FROM SPILLED AND / OR TRACKED CONSTRUCTION MATERIALS AND / OR DEBRIS.
- IF THE CONTRACTOR ENCOUNTERS ANY ARCHAEOLOGICAL DEPOSITS DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR MUST STOP EXCAVATION IMMEDIATELY, CONTACT THE CITY INSPECTOR, AND CALL THE CITY HISTORIC PRESERVATION OFFICE AT 207-7306 OR 207-3327 FOR AN ARCHAEOLOGICAL INVESTIGATION. THE CONTRACTOR CANNOT BEGIN EXCAVATION AGAIN WITHOUT WRITTEN PERMISSION FROM THE CITY. IF MORE THAN THREE (3) DAYS ARE REQUIRED FOR INVESTIGATION (NOT INCLUDING HOLIDAY AND WEEKENDS) AND IF THE CONTRACTOR IS UNABLE TO WORK IN OTHER AREAS, THEN THE CONTRACTOR WILL BE ALLOWED TO NEGOTIATE FOR ADDITIONAL CONSTRUCTION TIME UPON WRITTEN REQUEST WITHIN TEN (10) DAYS AFTER THE FIRST NOTICE TO THE CITY OF ARCHAEOLOGICAL INVESTIGATION FOR EACH EVENT. IF THE TIME REQUIRED FOR INVESTIGATION IS LESS THAN OR EQUAL TO THREE (3) DAYS FOR EACH EVENT, CONTRACT DURATION WILL NOT BE EXTENDED.
- IF SUSPECTED CONTAMINATION IS ENCOUNTERED DURING CONSTRUCTION OPERATIONS, THE C.O.S.A. SHALL BE NOTIFIED IMMEDIATELY WHEN CONTAMINATED SOILS AND / OR GROUNDWATER ARE ENCOUNTERED AT LOCATIONS NOT IDENTIFIED IN THE PLANS. THE NOTIFICATION SHOULD INCLUDE THE STATION NUMBER, TYPE OF CONTAMINATED MEDIA, EVIDENCE OF CONTAMINATION AND MEASURES TAKEN TO CONTAIN THE CONTAMINATED MEDIA AND PREVENT PUBLIC ACCESS. THE CONTAMINATED SOIL AND / OR GROUNDWATER SHALL NOT BE REMOVED FROM THE LOCATION WITHOUT PRIOR C.O.S.A. APPROVAL. THE CONTRACTOR MUST STOP THE EXCAVATION IMMEDIATELY AND CONTACT THE C.O.S.A. INSPECTOR. THE CONTRACTOR CANNOT BEGIN EXCAVATION ACTIVITIES WITHOUT WRITTEN PERMISSION FROM THE CITY.
- CONTRACTOR IS TO INCLUDE A MAILBOX POST BLOCKOUT FOR VACANT LOTS AND ALL RESIDENCES WHICH DO NOT HAVE MAILBOXES AT THE CURB. BLOCKOUTS ARE PROVIDED FOR FUTURE USE BY THE POST OFFICE.
- CONTRACTOR SHALL NOT REMOVE OR ADJUST ANY VIA FACILITIES. THE CONTRACTOR MUST CONTACT VIA FOURTEEN DAYS PRIOR, FOR THE REMOVAL OF BENCHES, STOP POLES OR ANY OTHER VIA FACILITIES THAT MAY BE PRESENT. PLEASE PROVIDE THIRTY DAYS PRIOR NOTICE FOR SHELTER REMOVAL. (TELEPHONE NOS: (210) 362-2155 OR (210) 362-2096). THE CONTRACTOR WILL BE LIABLE FOR ANY DAMAGES TO CONTRACTOR NOT REMOVED BY VIA. THE CONTRACTOR IS REQUIRED TO REPLACE ALL FLATWORK REMOVED OR DAMAGED IN THE COURSE OF EXECUTING THE CONTRACT UNLESS OTHERWISE NOTED BY VIA. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING VIA FACILITIES IF ADJACENT TO WORK AREA.

## TREE PROTECTION AND PRESERVATION GENERAL NOTES

- NO UTILITY OR STREET EXCAVATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.
- TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION, DURING CONSTRUCTION ACTIVITY, AT LEAST A SIX-INCH LAYER OF COARSE MULCH SHALL BE PLACED AND MAINTAINED OVER THE ROOT PROTECTION ZONE (NO SEPARATE PAY ITEM).
- THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY INSPECTOR FOR GUIDANCE.
- ROOTS WILL BE CUT WITH A ROCK SAW OR BY HAND, NOT BY AN EXCAVATOR OR OTHER ROAD CONSTRUCTION EQUIPMENT.
- ALL CURB AND SIDEWALK WORK SHALL USE ALTERNATIVE CONSTRUCTION METHODS TO MINIMIZE EXTENSIVE ROOT DAMAGE TO TREES (REFER TO DETAILS).
- EXPOSED ROOTS SHALL BE COVERED AT THE END OF THE DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH, OR WET BURLAP.
- NO EQUIPMENT, VEHICLES OR MATERIALS SHALL OPERATE OR BE STORED WITHIN THE ROOT PROTECTION ZONE OF ANY TREE NEAR THE PROJECT. ROOT PROTECTION ZONE IS 1 FOOT OF RADIUS PER INCH OF TREE'S DIAMETER. A 10-INCH DIAMETER TREE WOULD HAVE A 10 FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. OAK WOUNDS SHALL BE PAINTED OVER WITHIN 30 MINUTES TO PREVENT OAK WILT.
- SAPLINGS, SHRUBS OR BUSHES TO BE CLEARED FROM THE PROTECTED ROOT ZONE AREA OF A LARGE TREE SHALL BE REMOVED BY HAND AS DESIGNATED BY THE INSPECTOR.
- NO WIRES, NAILS OR OTHER MATERIAL MAY BE ATTACHED TO PROTECTED TREES.
- TREES, TREE LIMBS, BUSHES AND SHRUBS LOCATED IN THE CITY STREET OR ALLEY RIGHT-OF-WAY OR PERMANENT EASEMENTS WHICH INTERFERE WITH PROPOSED CONSTRUCTION ACTIVITIES SHALL BE PROPERLY PRUNED FOLLOWING THE ANSI A-300 STANDARDS FOR PRUNING. ALL TREE PRUNING SHALL BE COMPLETED BY A CITY OF SAN ANTONIO TREE MAINTENANCE LICENSED CONTRACTOR (ARTICLE 21-171, CITY CODE) ONLY AFTER APPROVAL FROM THE CAPITAL PROJECTS MANAGEMENT THROUGH THE INSPECTOR.
- NO EXCESSIVE TREE TRIMMING WILL BE PERMITTED.
- ALL DEBRIS GENERATED BY THE PRUNING AND TRIMMING OF THE TREES AND / OR BUSHES SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY (NO SEPARATE PAY ITEM).
- TREES MUST BE MAINTAINED IN GOOD HEALTH THROUGHOUT THE CONSTRUCTION PROCESS. MAINTENANCE MAY INCLUDE, BUT NOT LIMITED TO: WATERING THE ROOT PROTECTION ZONE, WASHING FOLIAGE, FERTILIZATION, PRUNING, ADDITIONAL MULCH APPLICATIONS AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT.
- ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST. (207-0278).
- TREES WHICH ARE DAMAGED OR LOST DUE TO THE CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE CITY'S SATISFACTION.
- TREE PLANTING FOR MITIGATION OR ENHANCEMENT: ALL PLANTED TREES SHALL BE MAINTAINED IN A HEALTHY CONDITION AT ALL TIMES. THIS INCLUDES IRRIGATION, FERTILIZING, PRUNING AND OTHER MAINTENANCE AS NEEDED ON THE PROJECT. TREES THAT DIE WITHIN TWELVE (12) MONTHS SHALL BE REPLACED WITH A TREE OF EQUAL SIZE AND SPECIES.

## ACCESSIBILITY REQUIREMENTS

- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS AT ALL TIMES TO LOCAL RESIDENCES AND BUSINESSES.
- WHEN THE WORK REQUIRES THE EXCAVATION OF THE STREET AND THE REMOVAL OF THE EXISTING DRIVEWAY APPROACHES AND SIDEWALKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY ALL-WEATHER ACCESS TO THE BUSINESSES AND RESIDENCES. THE TEMPORARY DRIVEWAY APPROACHES SHALL BE CONSTRUCTED WITH FLEXIBLE BASE OR GRAVEL MATERIAL AT NO SEPARATE COST TO THE CITY.
- PRIOR TO INITIATING THE CONSTRUCTION OF NEW DRIVEWAY APPROACHES, THE CONTRACTOR SHALL GIVE ADVANCE WARNING IN PERSON, OR IN WRITING, OF AT LEAST 48 HOURS TO EACH RESIDENCE THAT WILL BE IMMEDIATELY AFFECTED, SO THAT ALTERNATE PLANS MAY BE MADE BY THE RESIDENTS.
- FOR BUSINESSES WITH MORE THAN ONE DRIVEWAY, AT LEAST ONE DRIVEWAY SHALL REMAIN OPEN WHILE THE OTHER NEW DRIVEWAY APPROACHES ARE CONSTRUCTED. FOR BUSINESSES WITH ONLY ONE DRIVEWAY, THE NEW DRIVEWAY APPROACH SHALL BE CONSTRUCTED IN HALF WIDTHS, UNLESS A TEMPORARY ASPHALT DRIVEWAY IS FIRST INSTALLED AT NO SEPARATE COST TO THE CITY.

## FIRE PROTECTION NOTES:

- FIRE LANES SHALL HAVE A MINIMUM 2-WAY TRAFFIC WIDTH OF 25 FT. WITH A MINIMUM OUTSIDE TURNING RADIUS OF 50 FT., UNLESS OTHERWISE NOTED.
- FIRE LANES NEXT TO FIRE HYDRANTS OR DESIGNATED FOR AERIAL APPARATUS SHALL HAVE A MINIMUM OF 26 FT.
- FIRE LANES SHALL BE DESIGNATED IN ACCORDANCE TO THE LATEST INTERNATIONAL FIRE CODE AND PER APPLICABLE LOCAL AMENDMENTS.

## DEMOLITION NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING DEMOLITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING FROM THE SITE ALL ITEMS SHOWN TO BE DEMOLISHED UNLESS OTHERWISE INDICATED. ALL MATERIALS SHALL BE DEMOLISHED AND REMOVED FROM SITE IN ACCORDANCE WITH ALL APPLICABLE, FEDERAL, STATE AND LOCAL REGULATIONS.
- ALL EXISTING ITEMS NOT SPECIFICALLY NOTED TO BE DEMOLISHED SHALL REMAIN. CONTRACTOR IS RESPONSIBLE FOR REPLACING EXISTING ITEMS REMOVED DURING DEMOLITION THAT WERE TO REMAIN.
- CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL UTILITY COMPANIES REGARDING REMOVAL OF EXISTING SERVICES. POWER POLES TO BE REMOVED. VERIFYING UTILITIES ARE SHUT OFF, OR DISCONNECTED, AND THAT ALL POSSIBLE SAFETY PRECAUTIONS HAVE BEEN ENACTED TO ENSURE THE SAFEST ENVIRONMENT FOR ALL PERSONNEL.
- LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, THROUGHOUT ALL PHASES OF CONSTRUCTION.
- ALL NECESSARY EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO CONSTRUCTION. EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND IN WORKING CONDITION AT ALL TIMES.
- CONTRACTOR SHALL CONFORM WITH THE OWNER OR HIS DESIGNATE WHETHER TO SALVAGE AND MAKE ARRANGEMENTS TO STORE TRANSPLANTABLE TREES PRIOR TO REMOVAL.
- FOR TREES SHOWN TO REMAIN, THE CONTRACTOR SHALL INSTALL TREE PROTECTION IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL NOT REMOVE OR DAMAGE ANY TREES WITHOUT A PERMIT TO DO SO.
- THE CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES, NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
- THE CONTRACTOR SHALL PROTECT ALL PROPERTY PINS, BENCH MARKS, CONSTRUCTION STAKES, HUBS, OR OTHER KEY CONTROL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO RE-ESTABLISH ANY SUCH POINTS AT THEIR OWN EXPENSE.
- DEMOLITION CONTRACTOR IS RESPONSIBLE FOR CLEARING THE SITE OF ALL OBSTRUCTIONS THAT EXIST ON THIS SITE PRIOR TO THE START OF CONSTRUCTION OR DURING THE CONSTRUCTION SO AS TO NOT IMPEDE THE BUILDING CONSTRUCTION CONTRACTOR.
- CONTRACTOR SHALL COORDINATE WITH THE OWNER TO IDENTIFY ANY MATERIAL OR EQUIPMENT SCHEDULED FOR REMOVAL TO BE SALVAGED AND REUSED. CONTRACTOR SHALL REPLACE AT HIS EXPENSE ANY DESTROYED MATERIAL OR EQUIPMENT THAT WAS MARKED FOR SALVAGE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL HAZARDOUS MATERIAL OFFSITE FOLLOWING ALL APPLICABLE DISPOSABLE REGULATIONS. ON SITE CONCRETE PROPOSED FOR DEMOLITION MAY BE REUSED ON SITE AS FILL AS LONG AS IT IS CRUSHED, FREE OF REBAR, WIRE MESH AND DEBRIS AND CAN MEET GEOTECHNICAL SPECIFICATIONS.
- CONTRACTOR SHALL REMOVE ALL EXISTING IRRIGATION PIPING ON SITE UNLESS SHOWN OTHERWISE. CUT AND CAP LATERALS AT PROJECT LIMITS TO ALLOW PROPER FUNCTION OF ZONES INTENDED TO REMAIN OR EXTEND OFF-SITE.
- CONTRACTOR SHALL NOT DEMOLISH ANY PUBLIC WATER OR SANITARY SEWER LINES WITHOUT APPROVAL. EXISTING WATER AND SANITARY SEWER SERVICES SHALL REMAIN OPERATIONAL UNTIL NEW SERVICE IS COMPLETE. CUT AND CAP ANY ABANDONED SANITARY SEWER AND WATER SERVING THE AT EXISTING MAIN. NO ABANDONED SERVICES SHALL REMAIN CONNECTED TO THE PUBLIC MAIN.
- THE USE OF EXPLOSIVES WILL NOT BE PERMITTED.
- ALL WASTE MATERIAL REMAINING AFTER OWNER SALVAGE IS COMPLETE AND RESULTING FROM DEMOLITION OPERATIONS BECOMES THE PROPERTY OF THE CONTRACTOR. APPROPRIATE DISPOSAL OF WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT HIS OWN EXPENSE. ALL REMOVED ITEMS TO BE SALVAGED.
- THE CONTRACTOR SHALL MAINTAIN THE SITE IN A CLEAN AND ORDERLY MANNER.
- THE CONTRACTOR SHALL MEET ALL LOCAL, STATE, AND FEDERAL REGULATIONS FOR DUST CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE AT THEIR OWN EXPENSE FOR ANY FUGITIVE DUST ON ADJOINING PROPERTIES.

## DIMENSIONAL CONTROL NOTES

- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF DIMENSIONS NECESSARY FOR CONSTRUCTION OF THE PROJECT.
- THE CONTRACTOR SHALL PRESERVE ALL CONTROL POINTS, PROPERTY PINS, BENCH MARKS, HUBS OR OTHER KEY CONTROL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO RE-ESTABLISH ANY SUCH POINTS AT THEIR OWN EXPENSE IN THE EVENT THEY ARE REMOVED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
- UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE TRAVERSE CONTROL POINTS FOR HORIZONTAL CONTROL POINTS. IF TRAVERSE CONTROL POINTS ARE NOT PROVIDED, THE CONTRACTOR MAY USE PROPERTY CORNER PINS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
- COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, AND 83(96) DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY. (THE SURFACE ADJUSTMENT FACTOR FOR BEAR COUNTY IS 1.00017. OTHER COUNTIES WILL HAVE A DIFFERENT FACTOR; CHECK WITH THE SURVEYOR TO OBTAIN THE CORRECT SURFACE ADJUSTMENT FACTOR FOR PROJECTS LOCATED OUTSIDE OF BEAR COUNTY.)
- BENCHMARK ELEVATIONS ARE BASED ON NAVD 88, GEOID 03.
- ALL DIMENSIONAL CONTROL POINTS OR DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL AT THE BOTTOM TOE OF SLOPE AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
- CURB RADI ARE 3' UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- REFER TO THE ARCHITECTURAL, STRUCTURAL, AND LANDSCAPE PLANS FOR ADDITIONAL DIMENSIONAL CONTROL INFORMATION.
- THE CONTRACTOR SHALL RELY ON THE INFORMATION PROVIDED ON THE SIGNED AND SEALED CONSTRUCTION DRAWINGS. SUBJECT TO A SIGNED RELEASE AGREEMENT, CAD FILES MAY BE OBTAINED FROM THE ENGINEER FOR THE CONVENIENCE AND USE OF THE CONTRACTOR.

## PAVEMENT & STRIPING NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITY AND STORM DRAIN SYSTEMS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
- ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
- ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION.
- THE CONTRACTOR SHALL SAW CUT EXISTING PAVING, CURB, AND SIDEWALKS TO PROVIDE A SMOOTH TRANSITION. NO JAGGED OR IRREGULAR EDGES WILL BE ALLOWED.
- ALL CURBS WITHIN PRIVATE PROPERTY SHALL BE 6" HIGH AND ALL CURBS WITH IN PUBLIC RIGHT-OF-WAY SHALL BE 7" HIGH UNLESS OTHERWISE NOTED.
- ALL STANDARD PERPENDICULAR PARKING STALLS ARE 9' X 18' AND COMPACT PARKING STALLS ARE 8' X 16' UNLESS DIMENSIONED OTHERWISE.

## GRADING NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
- ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
- ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
- THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF-SITE. THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL ON SLOPE STRIKES AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (EROSION CONTROL MEASURES) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WASHES. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
- THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
- IN PROPOSED PAVING AREAS, IT IS INTENDED THAT THE MINIMUM GRADE IS 1%. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 2.0% UNLESS OTHERWISE SHOWN.
- ACCESSIBILITY: SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%. SIDEWALK LONGITUDINAL SLOPE ALONG ACCESSIBLE ROUTES SHALL NOT EXCEED 5%, UNLESS OTHERWISE NOTED. SIDEWALK CURB RAMPS SHALL NOT EXCEED 8.33% (SEE CURB RAMP DETAILS). CURB RAMP LANDINGS SHALL NOT EXCEED 2% ACCESSIBLE PARKING STALLS SHALL NOT EXCEED 2% IN ANY DIRECTION
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ENSURE UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
- POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
- FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

## SITE UTILITY NOTES

- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- DRAWINGS DO NOT SHOW ALL EXISTING UTILITIES. ALL EXISTING UTILITIES SHALL BE VERIFIED IN THE FIELD WHETHER SHOWN ON THIS PLAN OR NOT (PRIOR TO INSTALLATION OF ANY NEW LINES).
- ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES
- CONTRACTOR SHALL CALL FOR THE LOCAL JURISDICTIONAL INSPECTIONS AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL JURISDICTION WITH REGARDS TO MATERIALS AND INSTALLATION OF THE UTILITIES AND STORM DRAINS.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS, SPECIFICATIONS AND ALL TESTING.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL COMPLY WITH THE FOLLOWING AS APPLICABLE:  
  
A. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR CONSTRUCTION"  
  
B. CURRENT "SAN ANTONIO WATER SYSTEM UTILITY SERVICE REGULATIONS"  
  
C. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"  
  
D. CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND DRAINAGE"  
  
E. CURRENT CITY OF SAN ANTONIO "RIGHT-OF-WAY ORDINANCE AND CRITERIA MANUAL"
- MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
- ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
- CONTRACTOR SHALL PROTECT ALL EXISTING TREES, FENCES, PAVING, UTILITIES, AND OTHER STRUCTURES SCHEDULED TO REMAIN. ANY STRUCTURE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
- THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL FINAL UTILITY AS-BUILT MEASUREMENTS, TOPS AND LENGTH OF SERVICE CONNECTIONS OF THE PROJECT.
- ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS SOLE EXPENSE.
- GAS AND ELECTRIC ALIGNMENTS SHOWN ON THIS DRAWING ARE DETERMINED BY THE ACTUAL DESIGN AND LOCATIONS SHALL BE CONFIRMED BY THE LOCAL SERVICE PROVIDER OR MEP ENGINEER.
- CONTRACTOR SHALL COORDINATE TELE. COMMUNICATIONS, CABLE, ELECTRIC AND GAS LINE INSTALLATION WITH LOCAL SERVICE PROVIDER. THE SERVICE PROVIDER WILL BE RESPONSIBLE FOR INSTALLATION OF GAS LINE TO WITHIN 5' OF BUILDING.
- REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
- SEE IRRIGATION, LIGHTING AND ARCHITECTURAL PLANS FOR ADDITIONAL CONDUIT LOCATIONS AS APPLICABLE. VERIFY ALL CONDUIT AND SLEEVE LOCATIONS PRIOR TO PLACING ANY PAVEMENT.
- CONTRACTOR SHALL INSTALL ALL CONDUITS WITH A MINIMUM 4-FOOT SWEEP RADIUS. ALL CONDUITS SHALL HAVE A PULL STRING TO BE INSTALLED BY THE CONTRACTOR.
- NO WORK SHALL BE ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT AN APPROVED PERMIT.
- THE CONSTRUCTION OF UNDERGROUND PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEMS SHALL BE GOVERNED BY THE ENGINEERING CONSTRUCTION PLANS PREPARED BY THE LOCAL SERVICE PROVIDER. THIS DRAWING SHALL SERVE ONLY AS REFERENCE DOCUMENT TO COORDINATE LOCATION OF THE PROPOSED PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEM. THE LOCAL SERVICE PROVIDER'S CONSTRUCTION DRAWINGS AND CONSTRUCTION DETAILS SHALL GOVERN.
- CONTRACTOR SHALL INCLUDE IN HIS BID A 4" PVC CONDUIT FOR TELEPHONE AND A 2" PVC CONDUIT FOR CABLE TV TO BE IN THE SAME TRENCH AS UNDERGROUND ELECTRIC LINES. CONTRACTOR SHALL VERIFY WITH APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION ON NUMBER AND SIZE OF CONDUITS NEEDED FOR UTILITY SERVICE TO ALL BUILDINGS.
- BEDDING FOR ALL UTILITIES SHALL BE PER THE PROJECT SPECIFICATIONS. NO WATER JETTING OF BACKFILL MATERIAL WILL BE ALLOWED.

## DRAINAGE NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, AND THE CURRENT CITY, COUNTY OR TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES. THE CONTRACTOR SHOULD EXERCISE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES AND SHOULD THEY BE DAMAGED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO REPAIR OR REPLACE THE DAMAGED FACILITIES AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL OR BETTER CONDITION DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.
- WATER JETTING THE BACKFILL OF STORM DRAIN TRENCHES WILL NOT BE PERMITTED.
- CONTRACTOR SHALL ENSURE PROPER SIZE OF JUNCTION BOXES NEEDED WHERE REQUIRED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH STORM DRAIN PIPE TO JUNCTION BOXES PER MANUFACTURER'S SPECIFICATIONS.
- ALL STORM DRAIN TO JUNCTION BOX CONNECTIONS SHALL HAVE CONCRETE COLLARS.
- ALL GRATE INLETS MUST BE H20 RATED GRATES.
- TOPS OF MANHOLES, JUNCTION BOXES AND GRATES SHALL BE SET FLUSH TO FINISHED SURFACE BASED UPON GRADING PLAN.
- ALL STORM DRAIN JUNCTION BOX RINGS AND COVERS SHALL BE BOLTED. ALL GRATE INLETS SHALL HAVE GRATES RACK WELDED ON ALL SIDES.
- CONTRACTOR SHALL GROUT ALL STORM DRAIN JUNCTION BOXES AND DROP STRUCTURES TO DRAIN.
- CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTALS TO ENGINEER PRIOR TO STORM DRAINAGE CONSTRUCTION. GENERALLY SDR-26 PVC STORM DRAIN PIPE IS ACCEPTABLE UNDER 18", RCP OR HDPE PIPE IS ACCEPTABLE FROM 18" TO 48" AND RCP IS ACCEPTABLE AT 36" AND ABOVE. OTHER MATERIALS MAY BE CONSIDERED.

## SAWS CONSTRUCTION NOTES

(LAST REVISED JULY 2017)

### SAWS GENERAL SECTION

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:  
  
A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM"; TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER"; TAC TITLE 30 PART 1 CHAPTER 290.  
  
B. CURRENT TxDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".  
  
C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION"  
  
D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".  
  
E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

### SAWS SEWER NOTES

- THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE. ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH CURRENT SPECIFICATIONS.
- REFERENCE SANITARY SEWER SHEETS C4.00-C4.11.

### SAWS WATER NOTES

- THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE. ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH CURRENT SPECIFICATIONS.
- REFERENCE SANITARY SEWER SHEETS C5.00-C5.11.

## CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TEST AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

## CAUTION OVERHEAD UTILITIES

CONTRACTOR TO EXERCISE EXTREME CAUTION WHEN WORKING UNDER "HIGH VOLTAGE TRANSMISSION LINES", A WORKING HEIGHT OF 30' FROM GROUND ELEVATION WILL BE OBSERVED WHEN WORKING UNDER THE HIGH VOLTAGE LINE. COORDINATE ALL WORK WITH THE LOCAL UTILITY PROVIDER.

### TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM OSHA STANDARD 1910.66 FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS. THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

**PAPE-DAWSON ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008900

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

GENERAL NOTES

PLAT NO. 24-11800345  
JOB NO. 13225-01  
DATE SEPTEMBER 2024  
DESIGNER MC/KT/TR  
CHECKED WK/DS DRAWN TR/JJS  
SHEET C0.10



DRAINAGE NOTES:

1. CONTRACTOR SHALL ENSURE PROPER SIZE OF JUNCTION BOXES NEEDED WHERE INDICATED ON PLAN. CONTRACTOR SHALL CONNECT STORM DRAIN PIPE TO JUNCTION BOXES PER MANUFACTURES SPECIFICATIONS.
2. ALL STORM DRAIN TO JUNCTION BOX CONNECTIONS SHALL HAVE CONCRETE COLLARS.
3. ALL GRATE INLETS MUST BE H20 RATED GRATES.
4. TOPS OF MANHOLES, JUNCTION BOXES AND GRATES SHALL BE SET FLUSH TO FINISHED SURFACE BASED UPON GRADING PLAN.

DRAINAGE & GRADING NOTES:

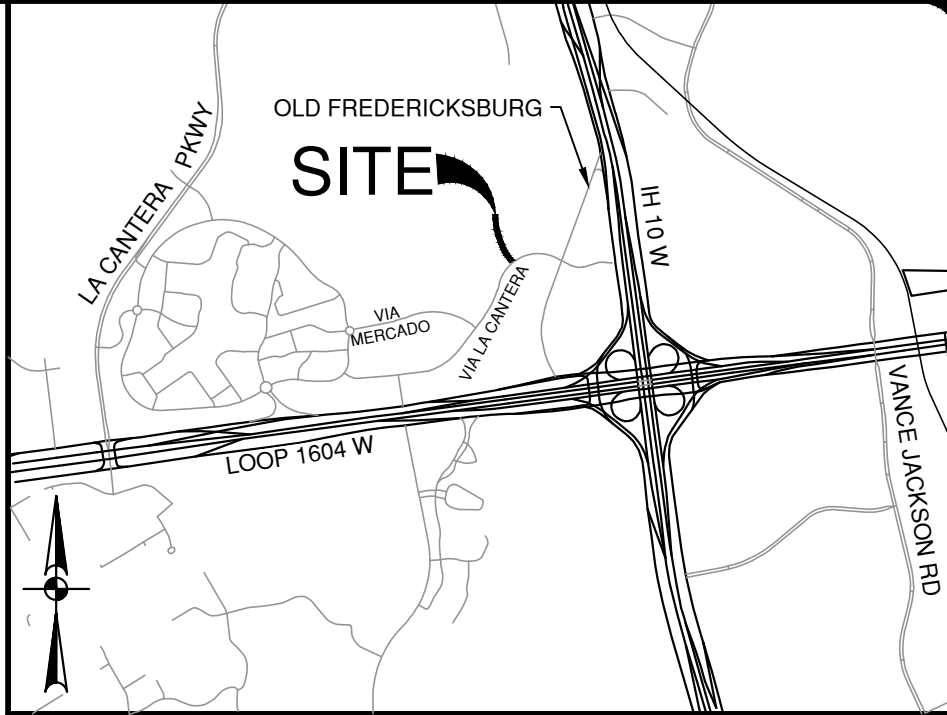
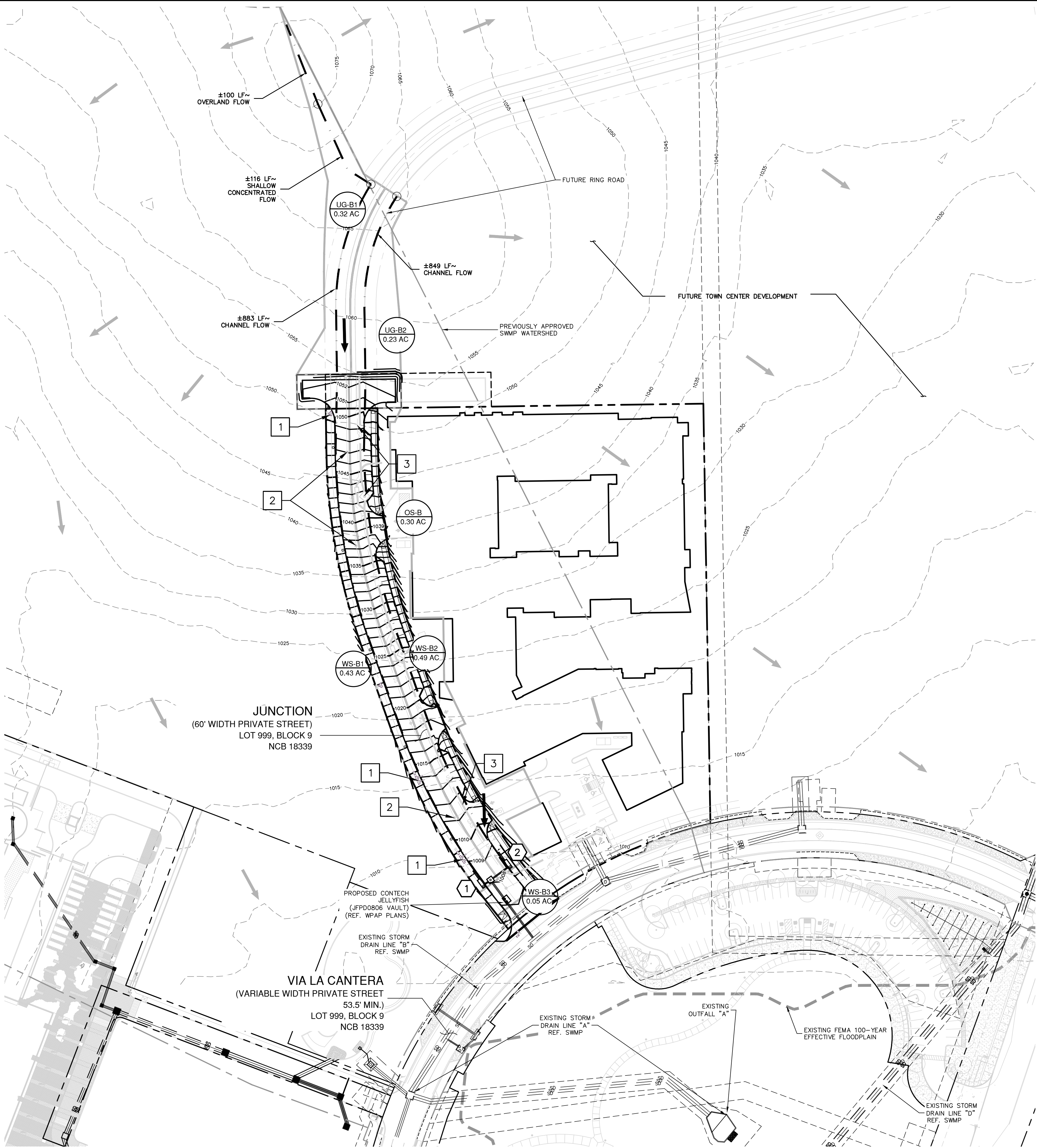
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF NEW BRAUNFELS WILL ACCEPT.
6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.



LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 60'



LEGEND

- PROPOSED PROPERTY LINE
- FLOW ARROW (EXISTING GRADE)
- FLOW ARROW (PROPOSED GRADE)
- EXISTING CONTOUR
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- WATERSHED AREA
- DESIGN STUDY POINT
- WATERSHED BOUNDARY
- EXISTING FEMA 100-YEAR EFFECTIVE FLOODPLAIN
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- FLOW PATH (T.O.C.)

KEYED NOTES:

- 1 PROPOSED WATER DISTRIBUTION  
REF. C5.00-C5.11 FOR DETAILS
- 2 PROPOSED SANITARY SEWER  
REF. C4.00-C4.11 FOR DETAILS
- 3 PROPOSED DRY UTILITIES  
REF. C6.00-C6.10 FOR DETAILS

PROPOSED CONDITIONS

WATERSHED	AREA (ac)	C	Tc (MIN)	FLOW Q (cfs)		
				5-YR	25-YR	100-YR
B1+UG	0.75	0.79	11	3.64	5.07	6.41
B2+UG+OS	1.02	0.88	11	5.47	7.64	9.65
B3	0.05	0.97	5	0.39	0.54	0.68

ULTIMATE DEVELOPMENT

WATERSHED	AREA (ac)	C	Tc (MIN)	FLOW Q (cfs)		
				5-YR	25-YR	100-YR
B1+UG	0.75	0.97	11	4.46	6.22	7.87
B2+UG+OS	1.02	0.97	7	7.09	9.93	12.56
B3	0.05	0.97	5	0.39	0.54	0.68

- 1 1'-10" COSA CURB INLET W/EXT. ON GRADE (CAPACITY = 11.59 CFS)  
25-YEAR ULT. DEV. FLOW = 6.22 CFS  
BYPASS FLOW = 0.00 CFS
- 2 1'-10" COSA CURB INLET W/EXT. ON GRADE (CAPACITY = 11.59 CFS)  
25-YEAR ULT. DEV. FLOW = 9.93 CFS  
BYPASS FLOW = 0.00 CFS

TYP. SECTION "A-A" - JUNCTION (3.25% MIN. SLOPE) CAPACITY = 71.34 CFS  
PROPOSED 100-YEAR FLOW = 21.1 CFS

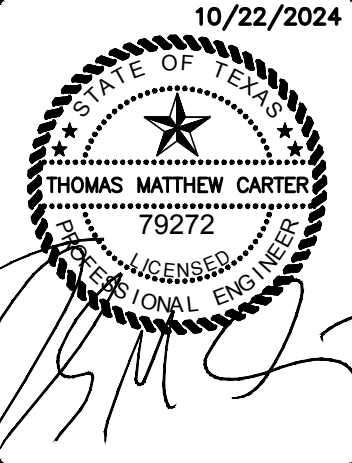
TYP. SECTION "B-B" - JUNCTION (3.25% MIN. SLOPE) CAPACITY = 106.8 CFS  
PROPOSED 100-YEAR FLOW = 21.1 CFS

NOTE: SEE C2.10 FOR SECTIONS (CAPACITIES SHOWN INCLUDE FULL CURB FLOW DEPTH ACROSS PROPOSED ON-STREET PARKING)

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

NO.	REVISION	DATE



**PAPE-DAWSON**  
**ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

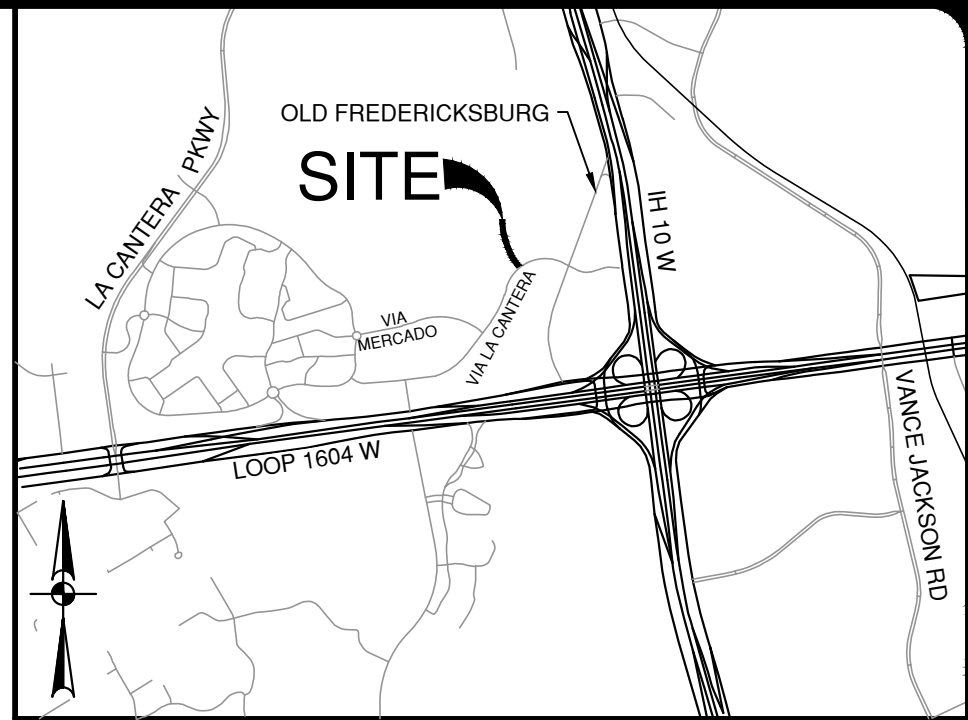
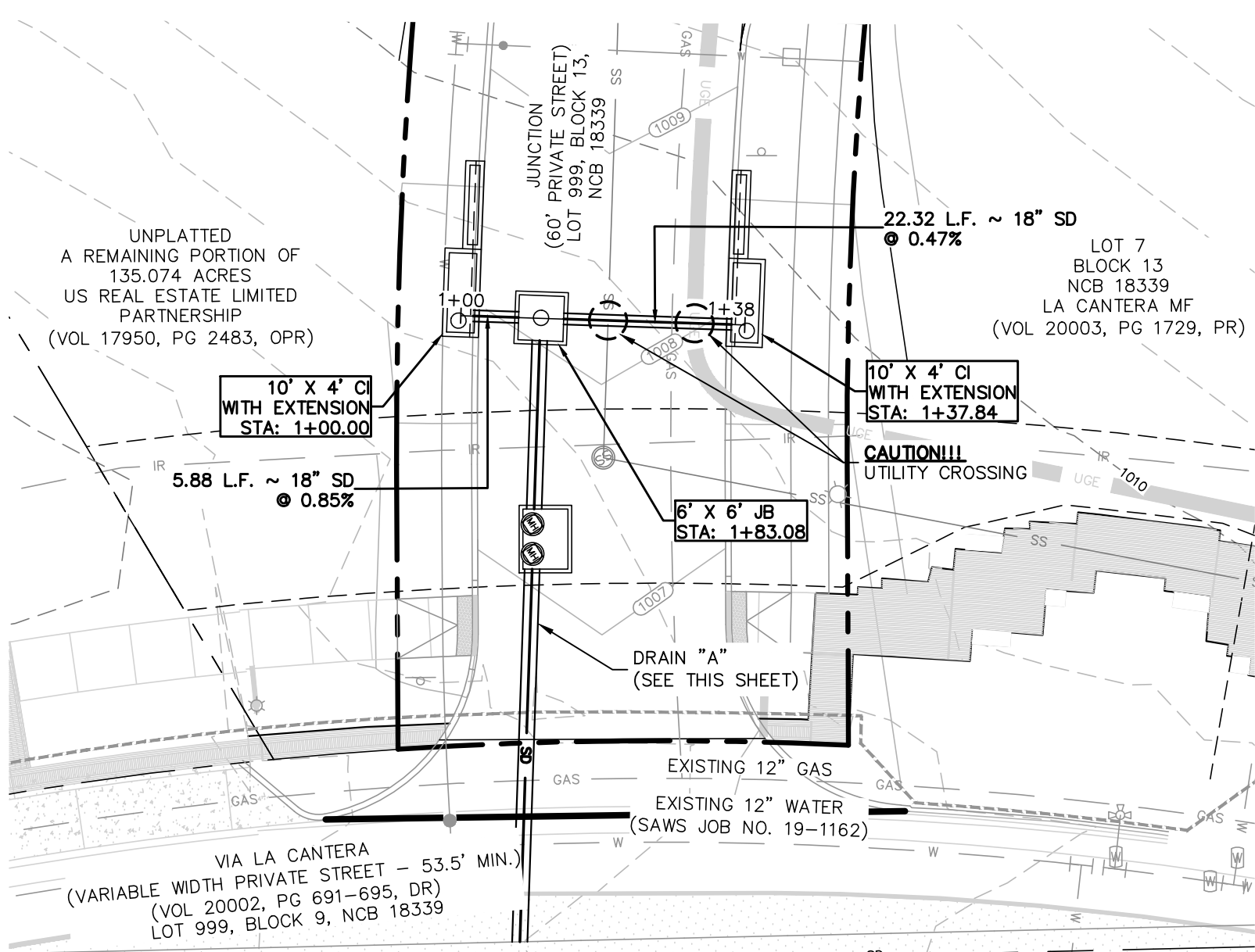
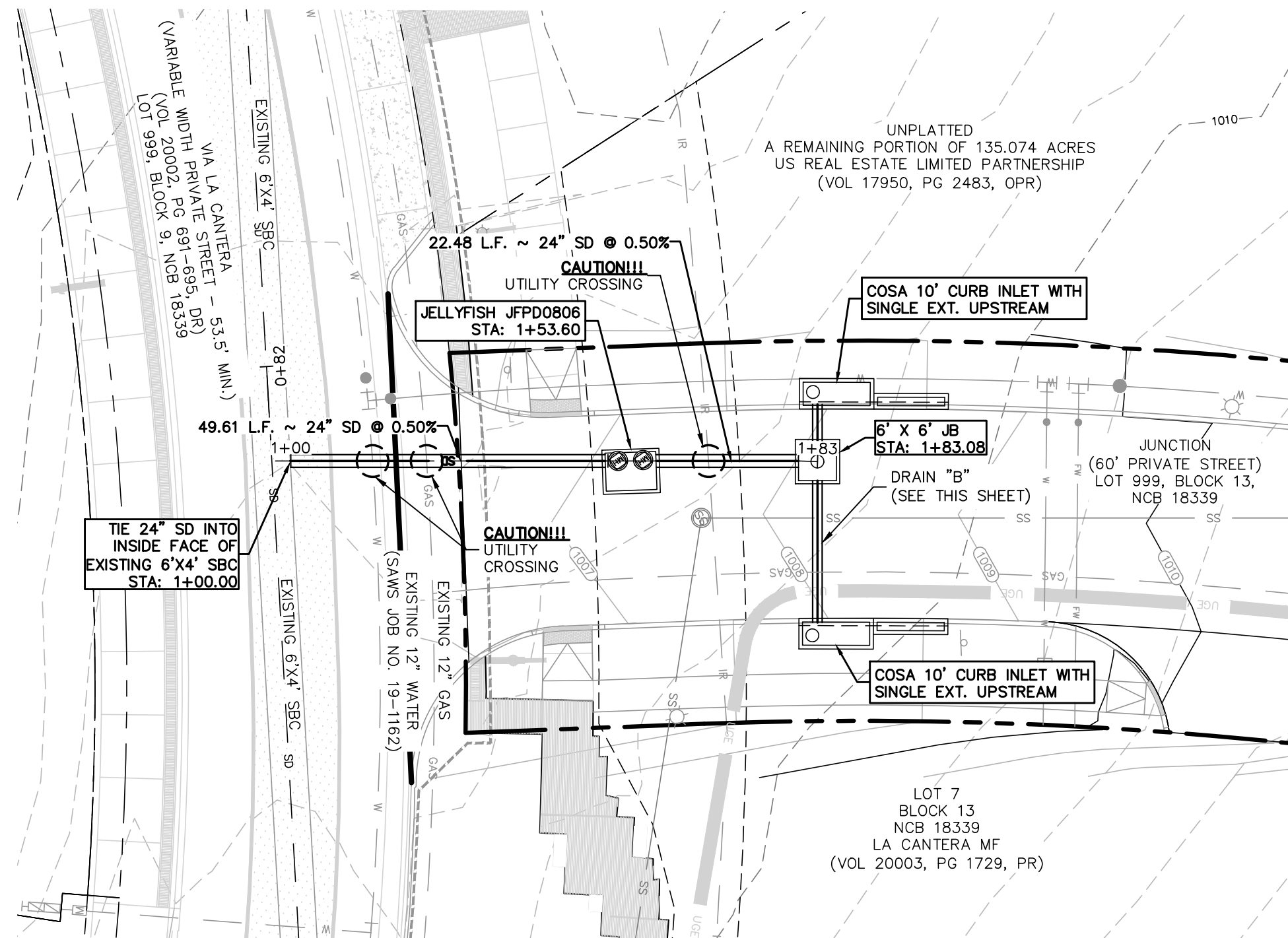
OVERALL DRAINAGE PLAN

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED WK/DS	DRAWN TR/JJS
SHEET	C1.00



Date: Oct 24, 2024, 3:43pm User ID: obentancourt  
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### LOCATION MAP

NOT-TO-SCALE  
SCALE: 1" = 50'  
VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'

### LEGEND

---	PROPERTY LINE
---	100-YR FLOODPLAIN
---OHE---	EXISTING OVERHEAD ELECTRIC
---W---	EXISTING WATER
---F---	EXISTING FIRE HYDRANT
---W---	PROPOSED WATER MAIN
---RW---	PROPOSED RECLAIMED WATER
---F---	PROPOSED FIRE HYDRANT
---OHE---	PROPOSED OVERHEAD ELECTRIC
---EX-SS---	EXISTING SANITARY SEWER
---MANHOLE---	PROPOSED SANITARY SEWER
---JUNCTION BOX---	PROPOSED STORM DRAIN
---WITH GRATE---	

### NOTE

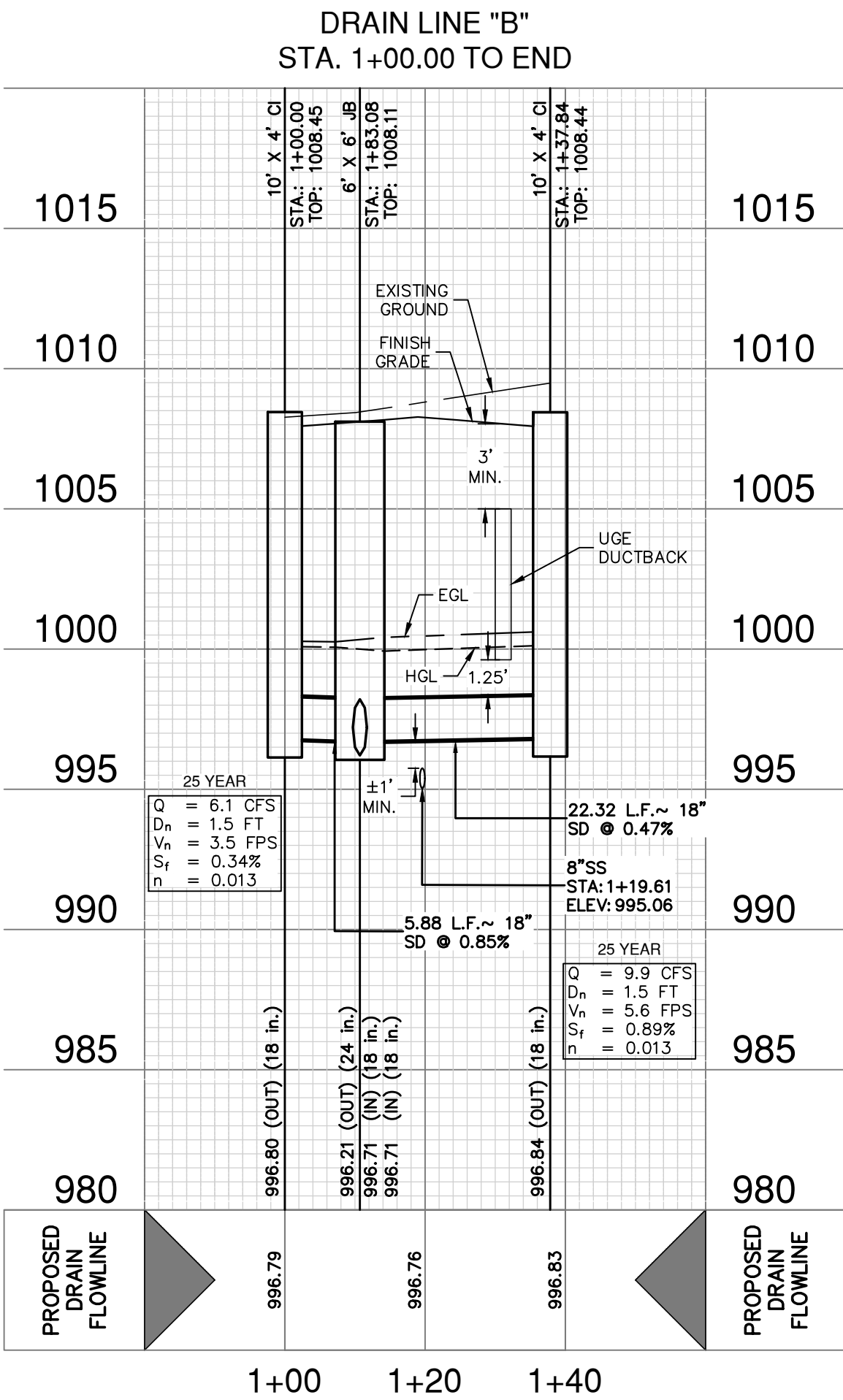
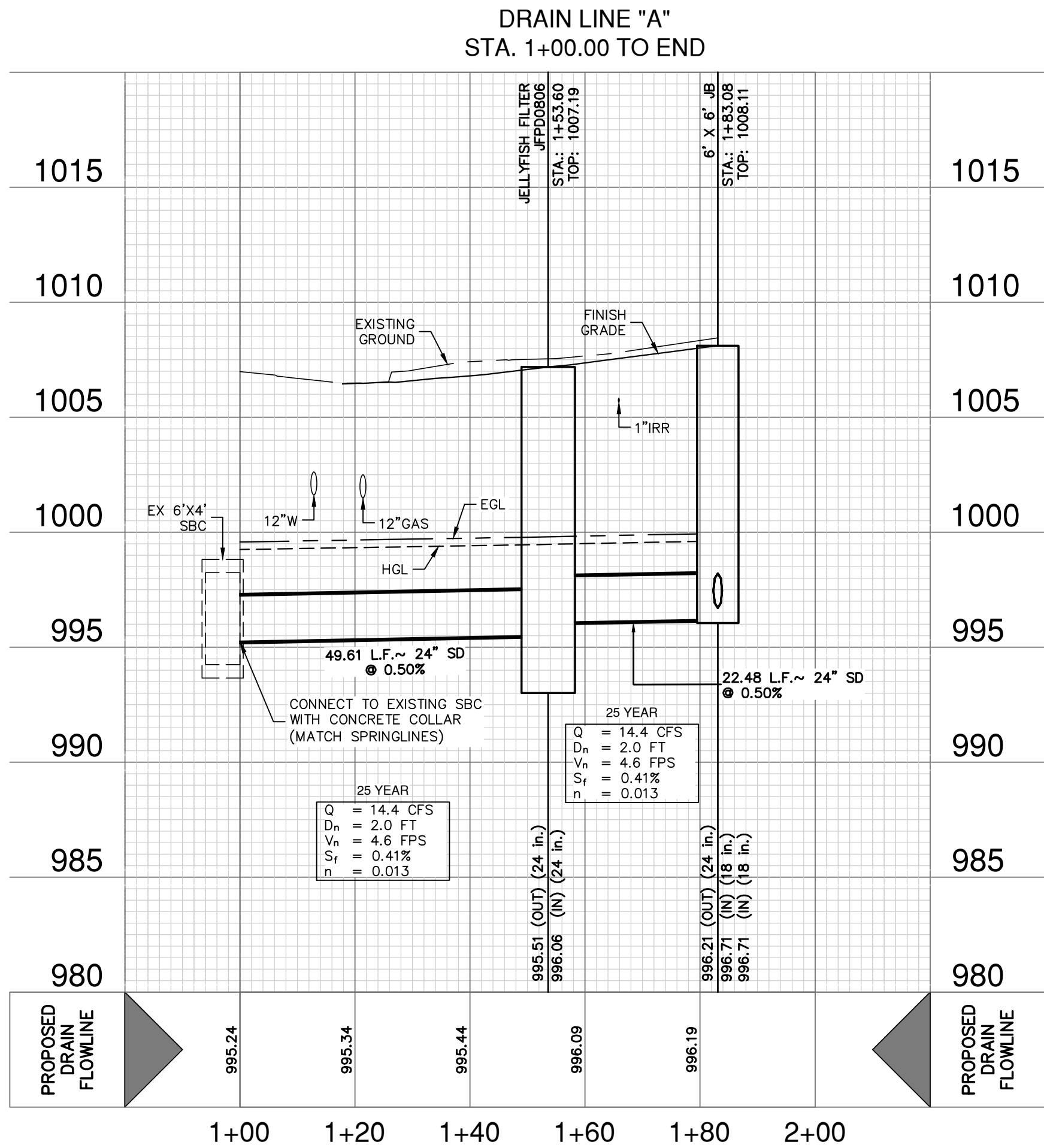
SEE SHEET C0.10 FOR CONSTRUCTION NOTES.

### DRAINAGE NOTES:

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK SHALL COMPLY WITH THE PROJECT GEOTECH REPORT, THE PROJECT SPECIFICATIONS, AND THE CURRENT CITY, COUNTY OR TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
- THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES. SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHALL BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.
- THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES. THE CONTRACTOR SHOULD EXERCISE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES AND SHOULD THEY BE DAMAGED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO REPAIR OR REPLACE THE DAMAGED FACILITIES AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL OR BETTER CONDITION DAMAGE DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES.
- CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION.
- WATER JETTING THE BACKFILL OF UTILITY TRENCHES WILL NOT BE PERMITTED.
- NORTHINGS AND EASTINGS LISTED ON THESE PLANS ARE TO CENTER OF BOX FOR JUNCTION BOXES AND GRATE INLETS AND TO OUTSIDE CORNER FACE OF CURB FOR ALL CURB AND COMBINATION INLETS. ALL LENGTHS OF PIPE ARE TO INSIDE FACE OF STRUCTURES.
- CONTRACTOR SHALL ENSURE PROPER SIZE OF JUNCTION BOXES NEEDED WHERE INDICATED ON PLAN. CONTRACTOR SHALL CONNECT STORM DRAIN PIPE TO JUNCTION BOXES PER MANUFACTURERS SPECIFICATIONS.
- ALL GRATE INLETS MUST BE H20 RATED GRATES.
- TOPS OF MANHOLES, JUNCTION BOXES AND GRATES SHALL BE SET FLUSH TO FINISHED SURFACE BASED UPON GRADING PLAN.
- PROVIDE CONCRETE COLLARS AT ALL PIPE/STRUCTURE JUNCTIONS (TYP.) (REF. DTL C1.10)
- CONTRACTOR TO GROUT INVERT TO PROVIDE FOR POSITIVE DRAINAGE (TYP.)
- ALL PIPES END AT INSIDE FACE OF STRUCTURE (TYP.)

### TRENCH EXCAVATION SAFETY PROTECTION:

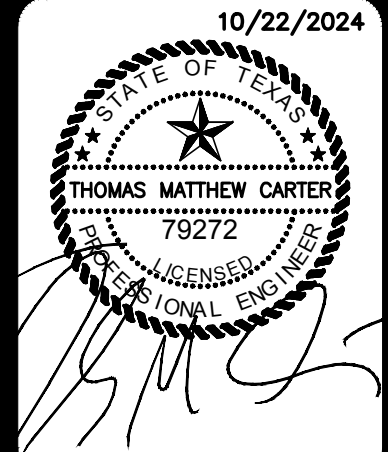
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



### CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

NO.	REVISION	DATE

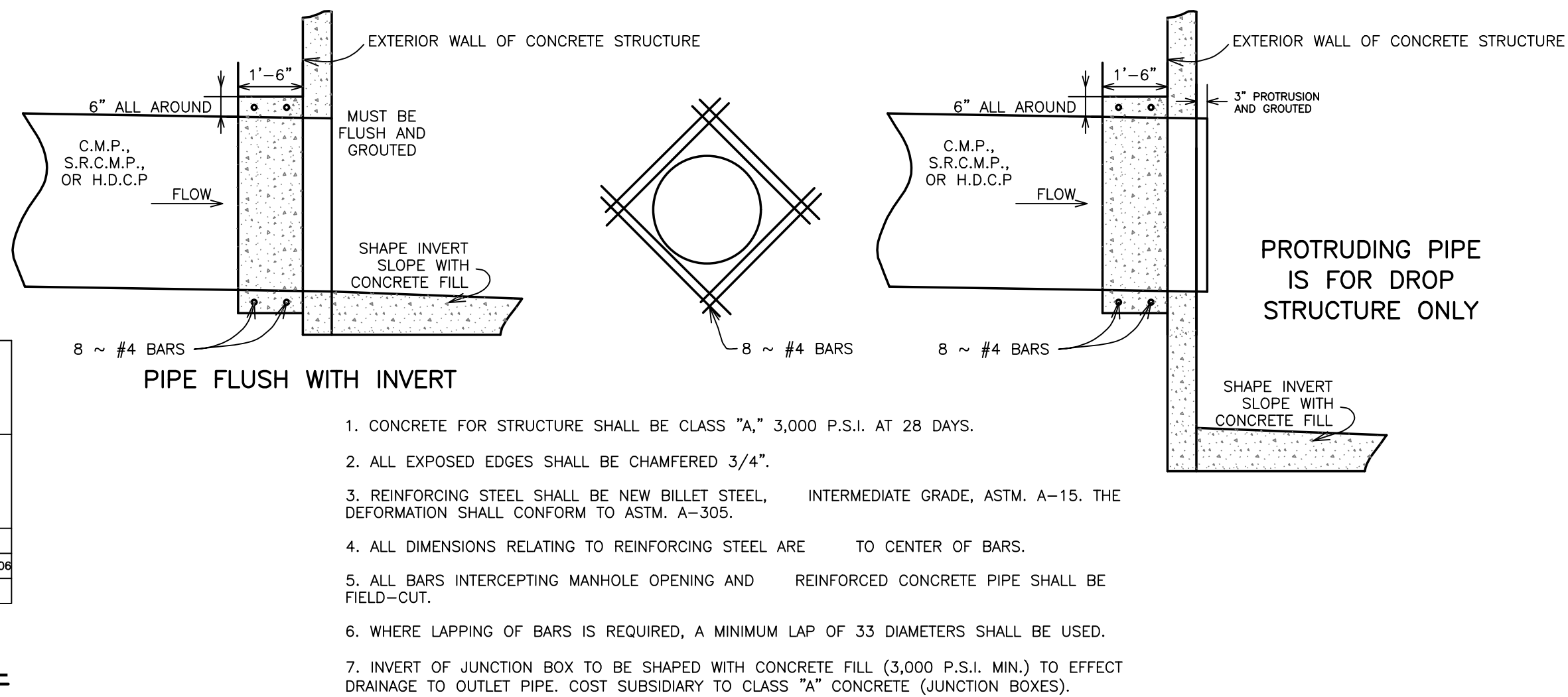
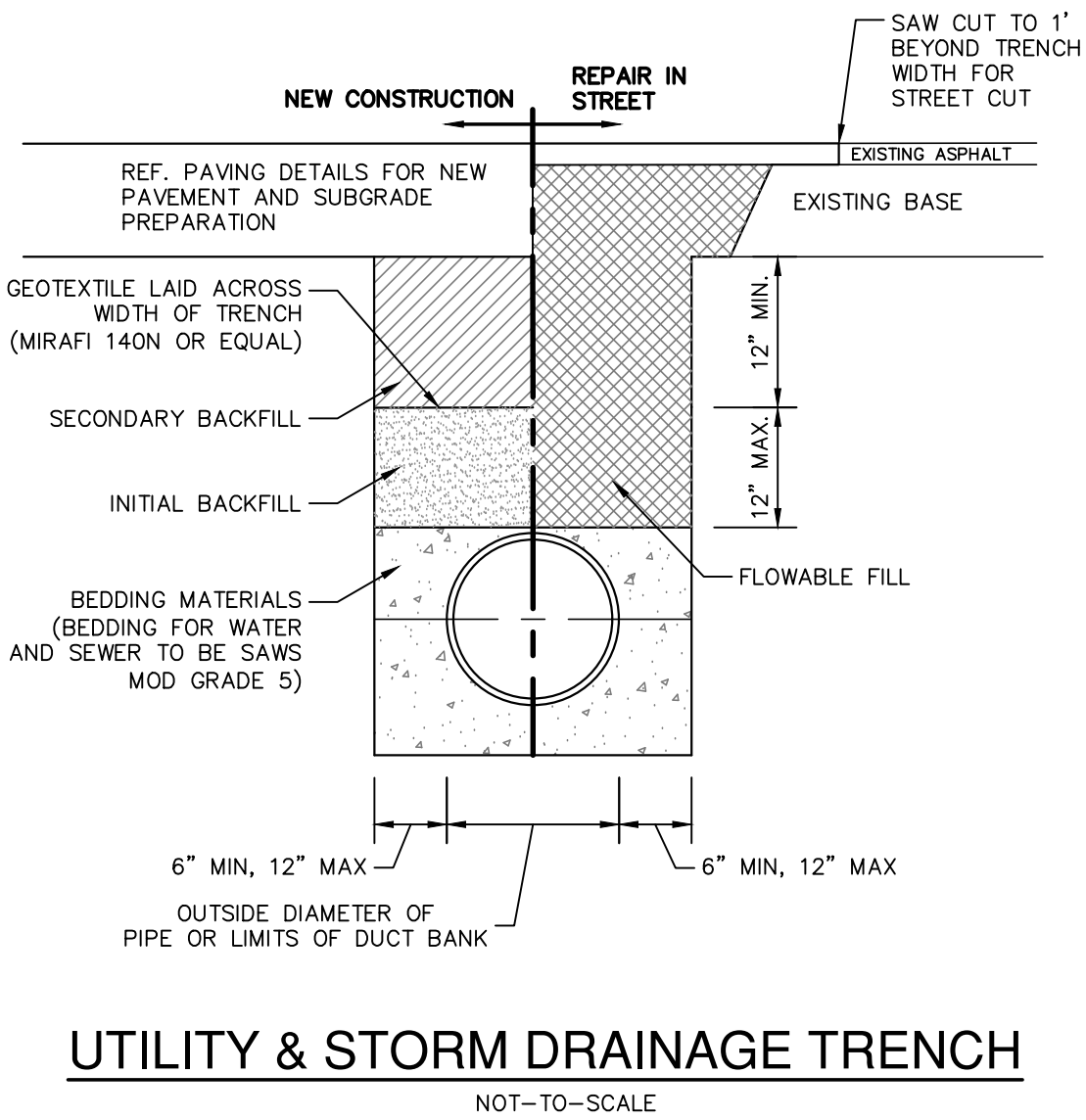
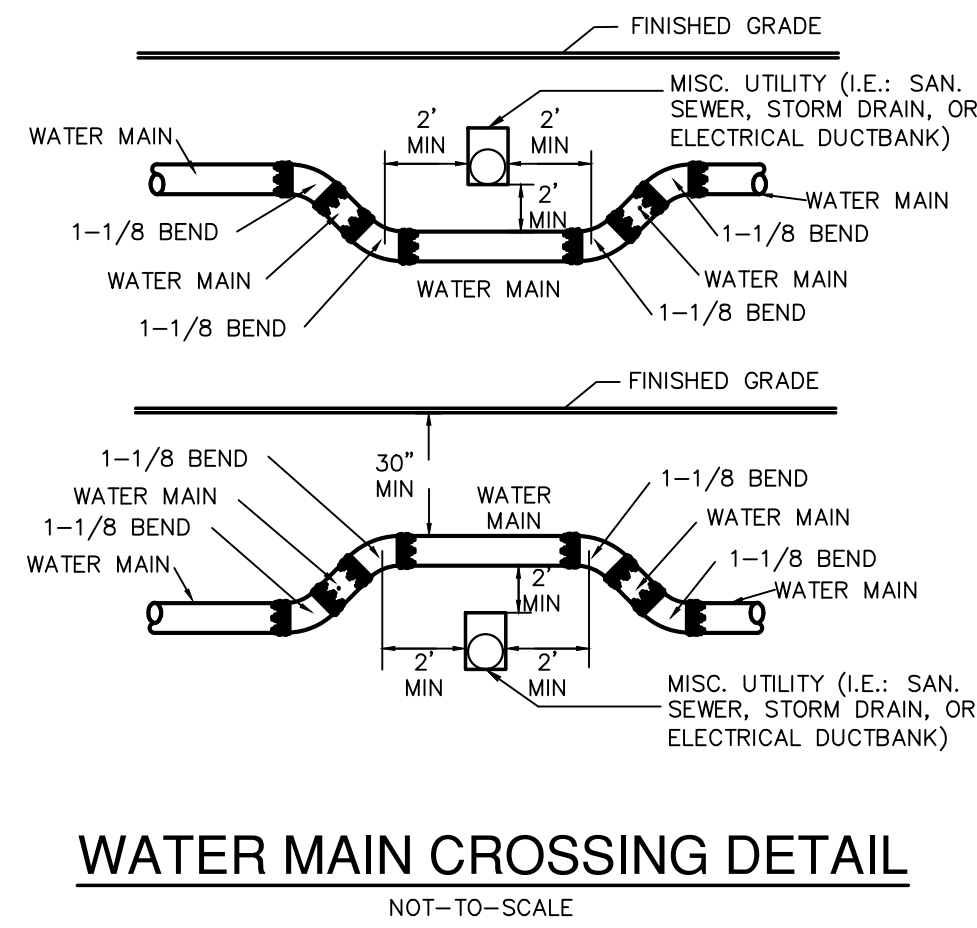
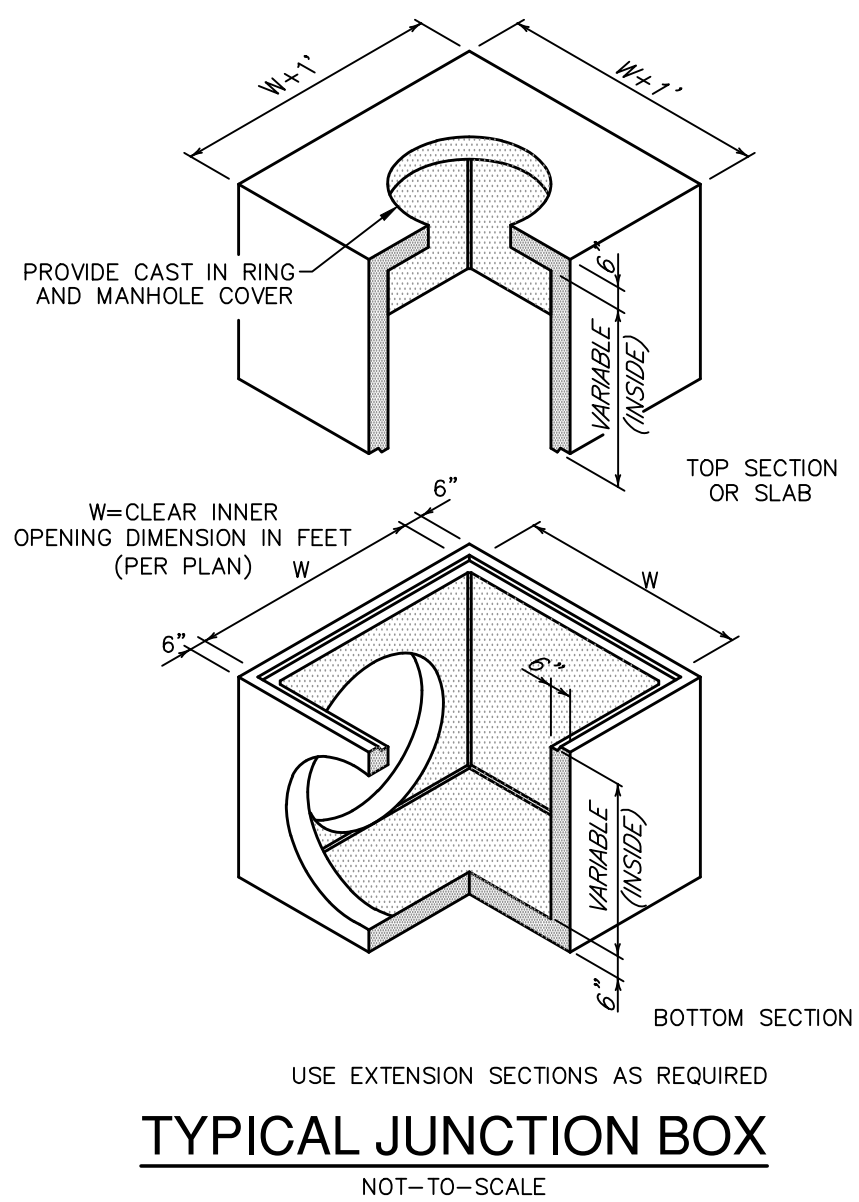
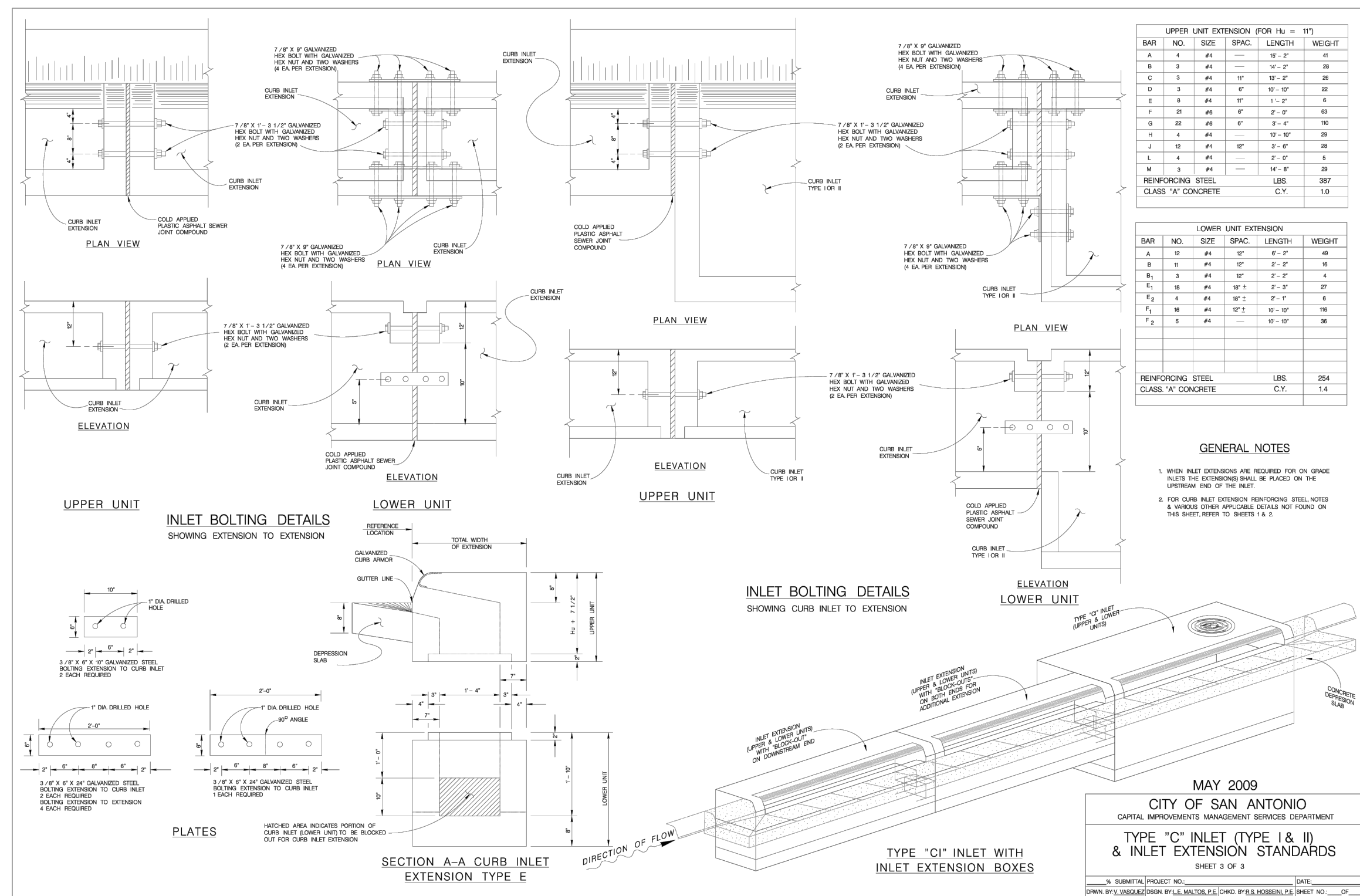
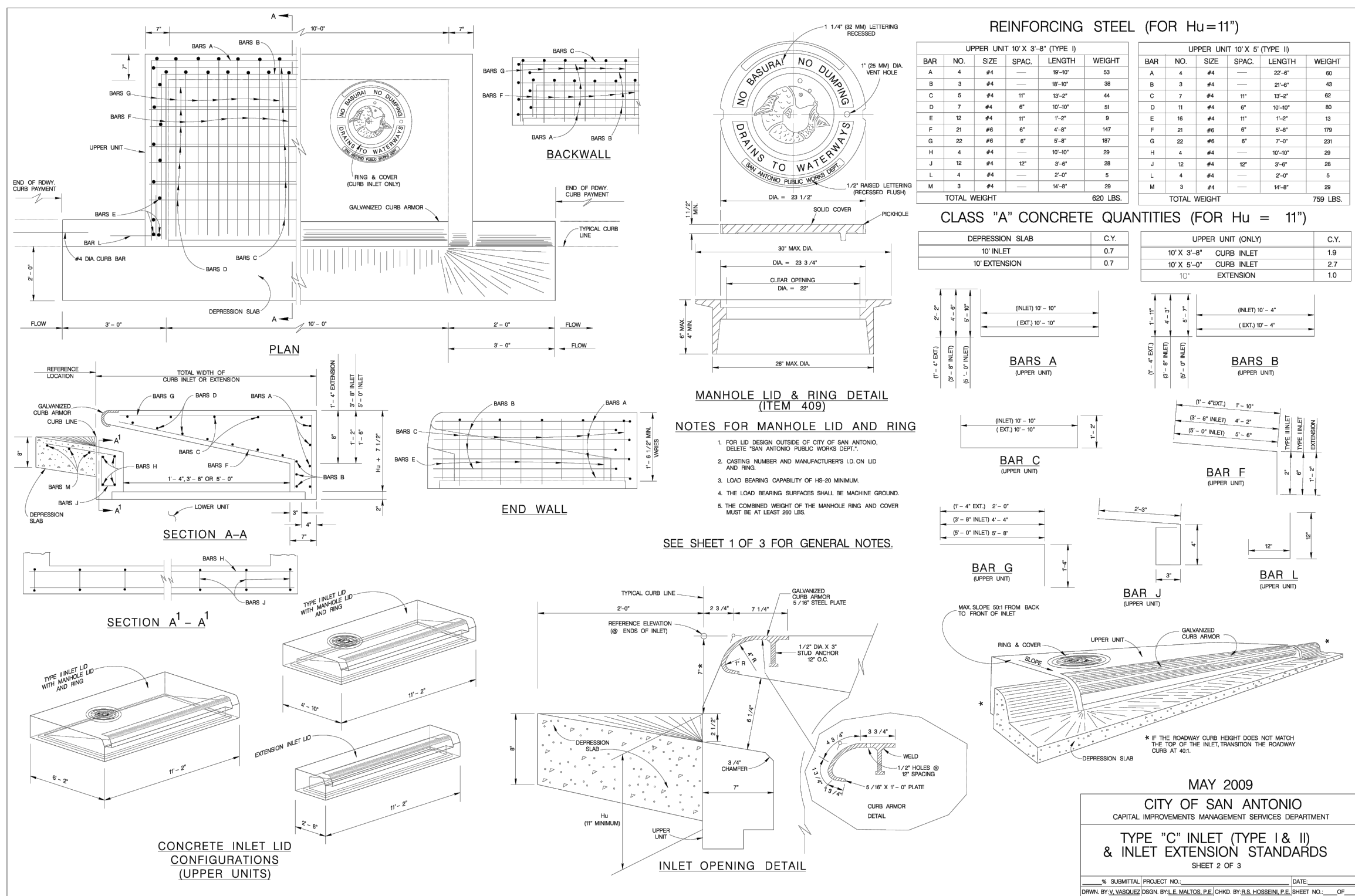
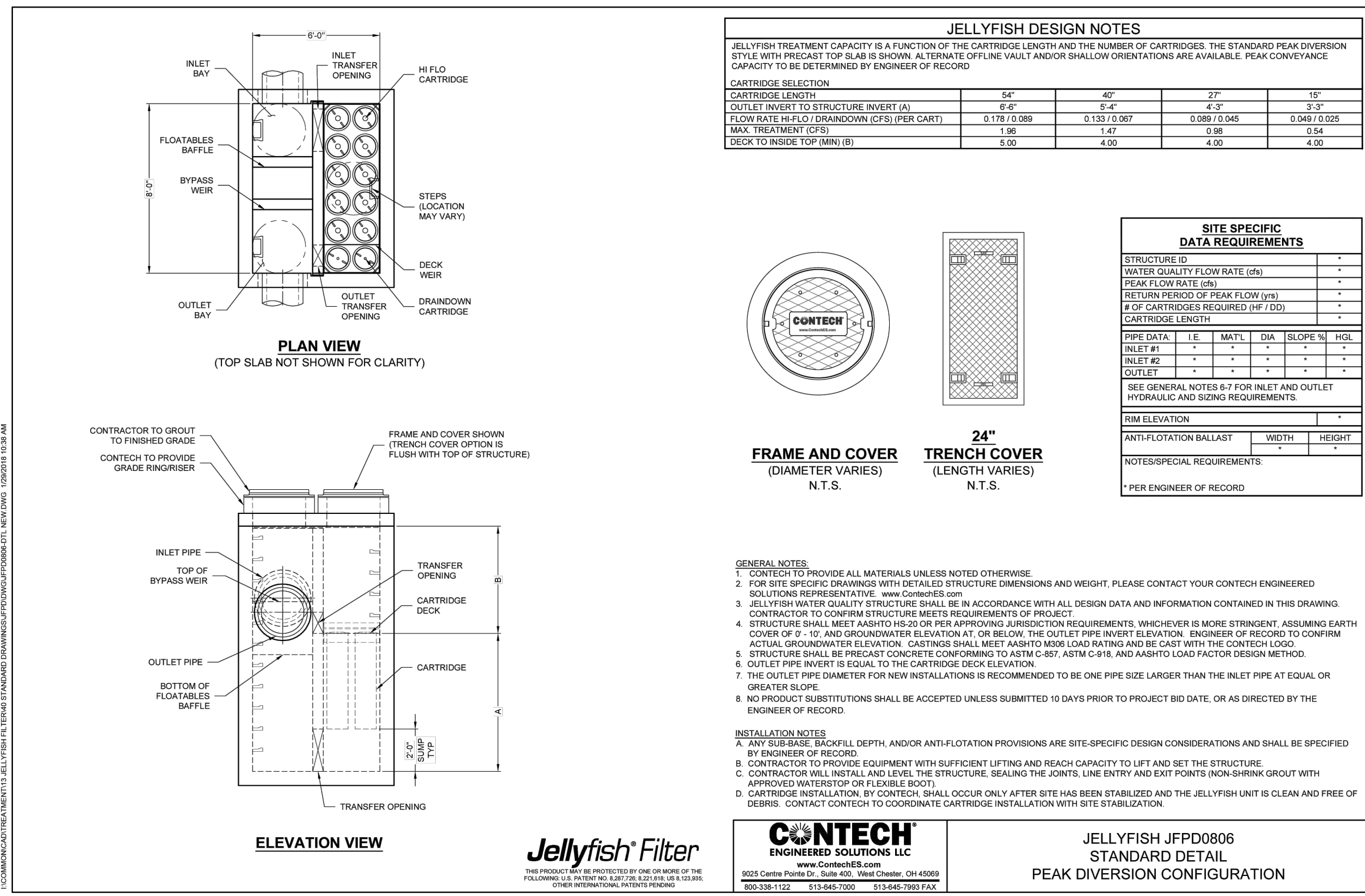
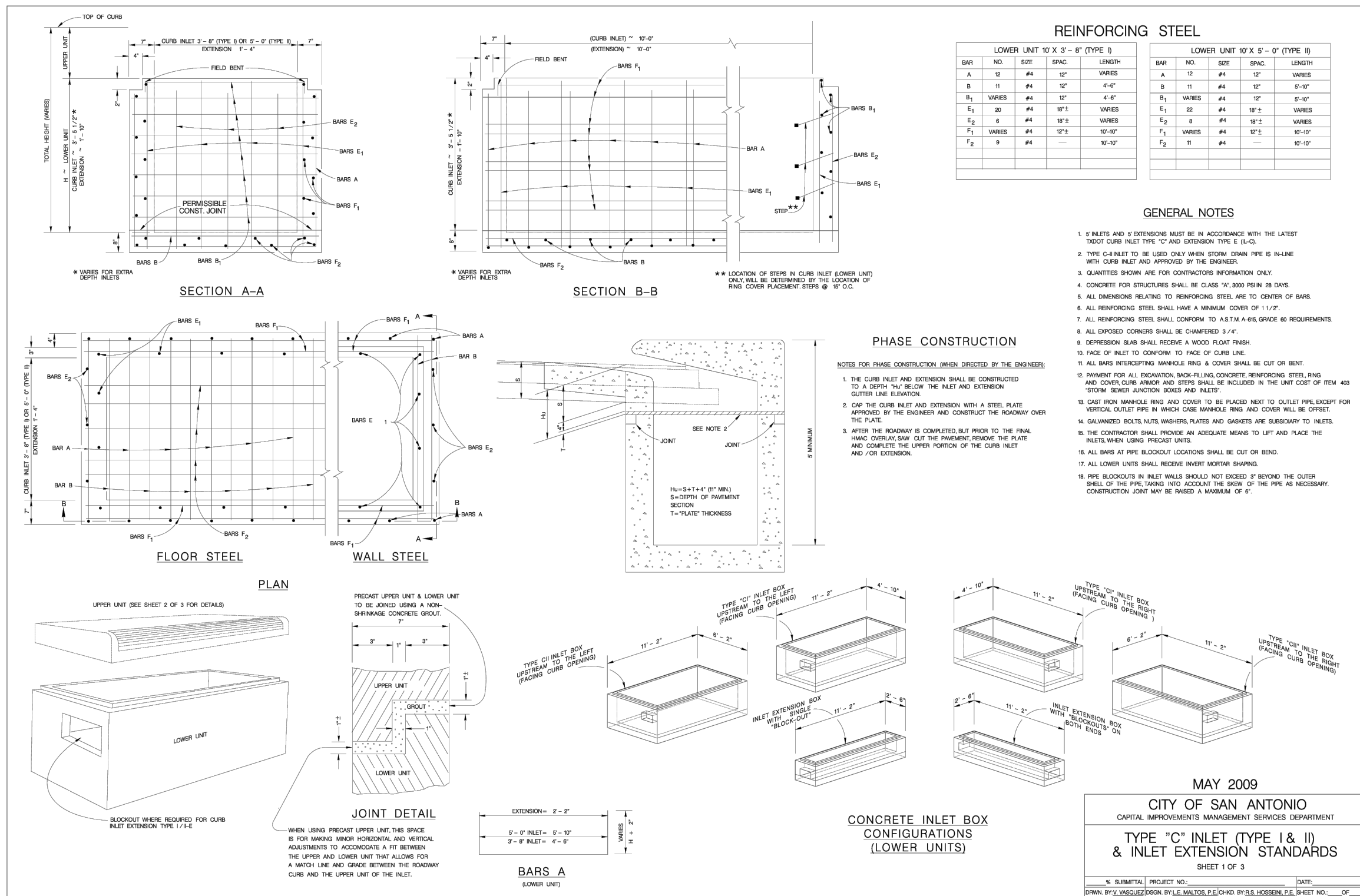


**PAPE-DAWSON**  
**ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #008890

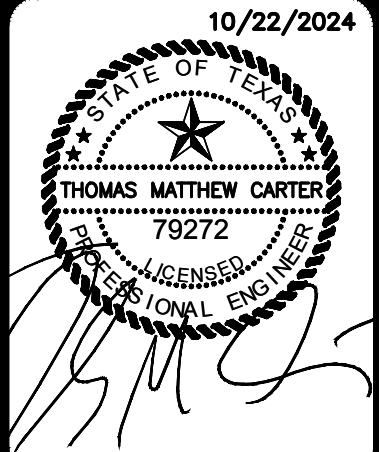
**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS  
**STORM DRAIN LINE A PLAN AND PROFILE**

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JUS
SHEET	C1.01





DATE	
NO.	
REVISION	



**PAPE-DAWSON ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000

TEXAS ENGINEERING FIRM #1008900

**LCTC EAST ACCESS (ENCLAVE)**

SAN ANTONIO, TEXAS

**DRAINAGE DETAILS**

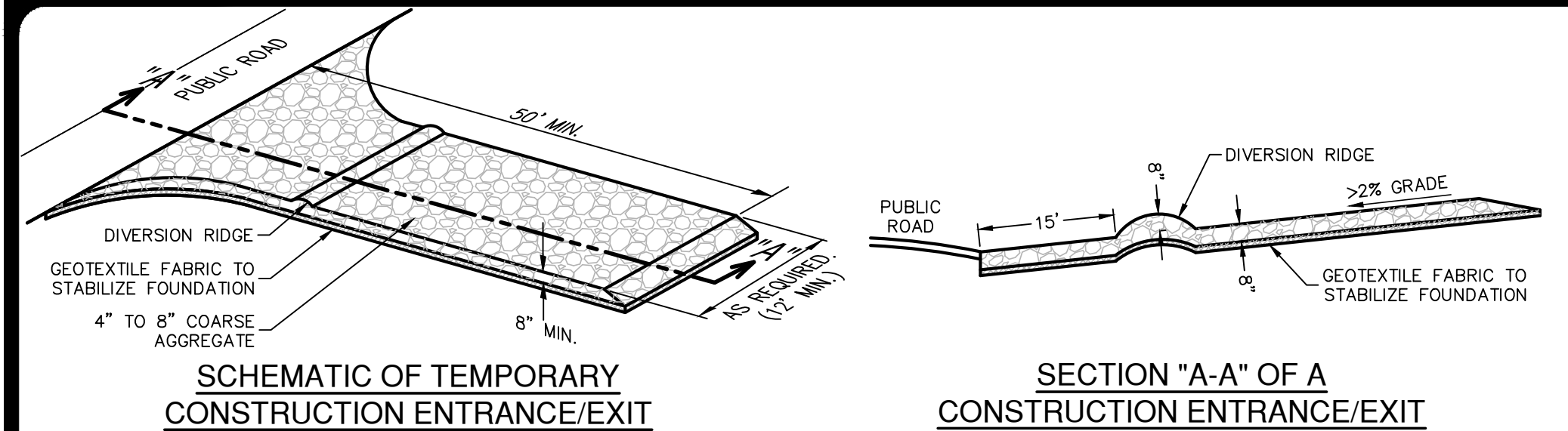
PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JJS
SHEET	C1.10



## PERMIT & PRICING SET



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#### MATERIALS

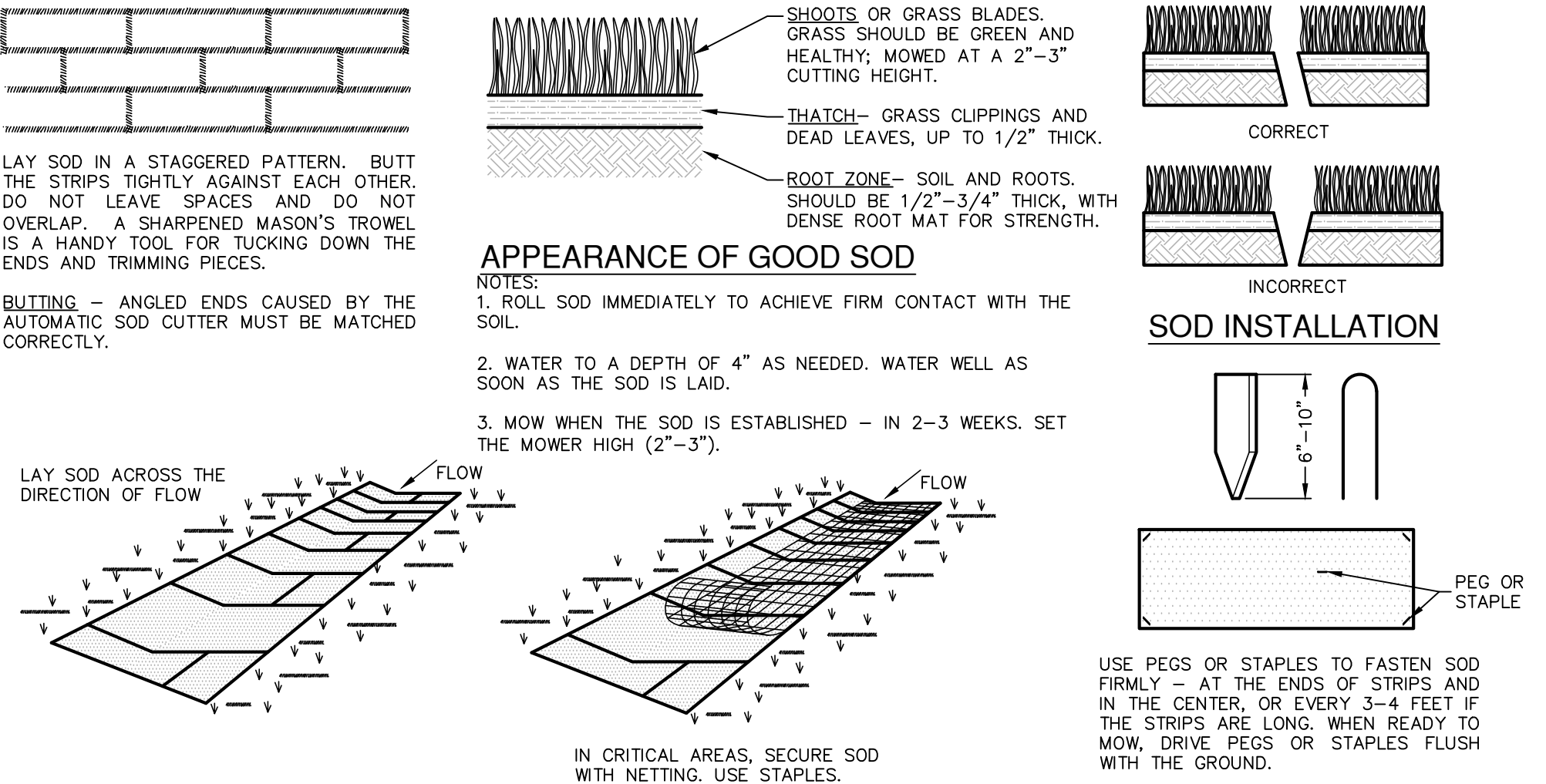
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD<sup>2</sup>, A MULLEN BURST RATING OF 140 LB/IN<sup>2</sup>, AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

#### INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

#### STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



#### MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.
3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.
4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

#### SITE PREPARATION

1. PRIOR TO SOD PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

#### INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).
2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

#### SOD INSTALLATION DETAIL

NOT-TO-SCALE

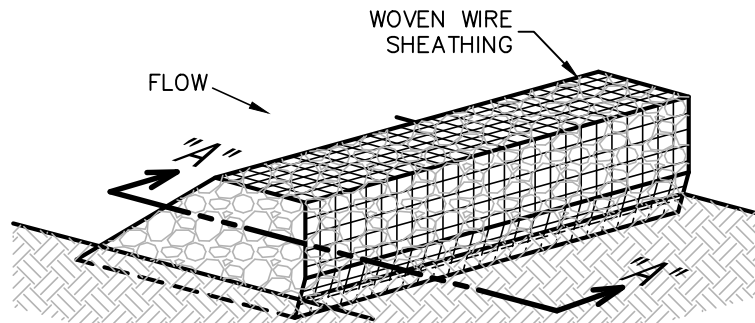
#### COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

#### INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

#### ISOMETRIC PLAN VIEW



#### ROCK BERMS

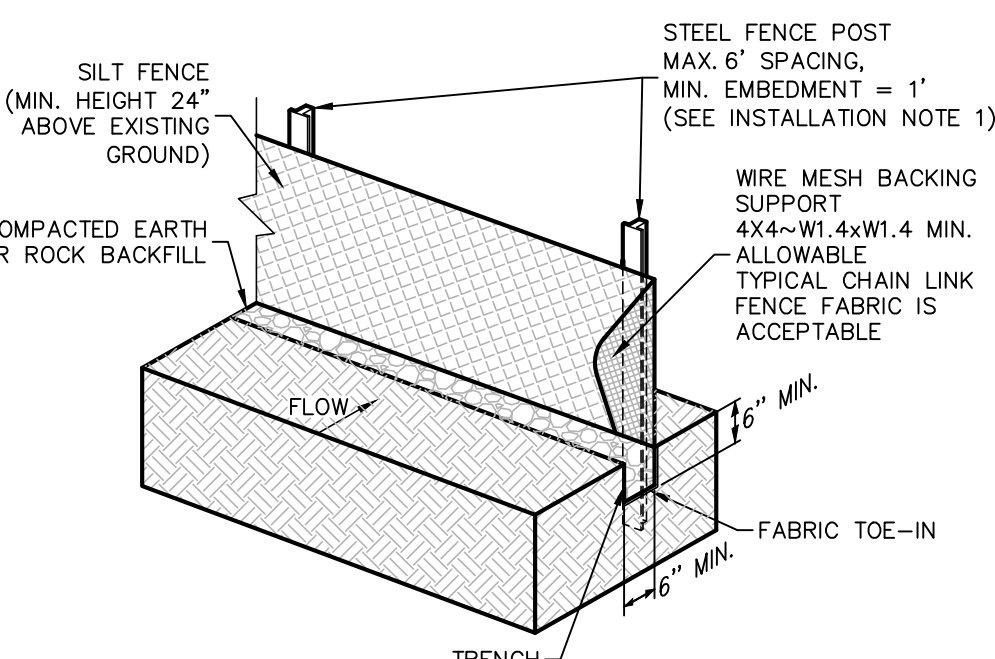
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

#### INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
3. REPAIR ANY LOOSE WIRE SHEATHING.
4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

#### ROCK BERM DETAIL

NOT-TO-SCALE



#### SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

#### MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN<sup>2</sup>, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

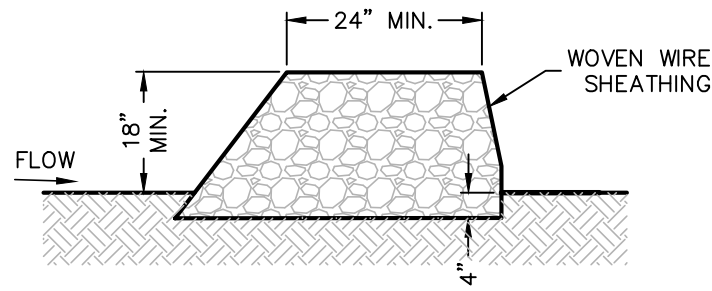
#### INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

#### SILT FENCE DETAIL

NOT-TO-SCALE



#### SECTION "A-A"

#### MATERIALS

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOOT RINGS.

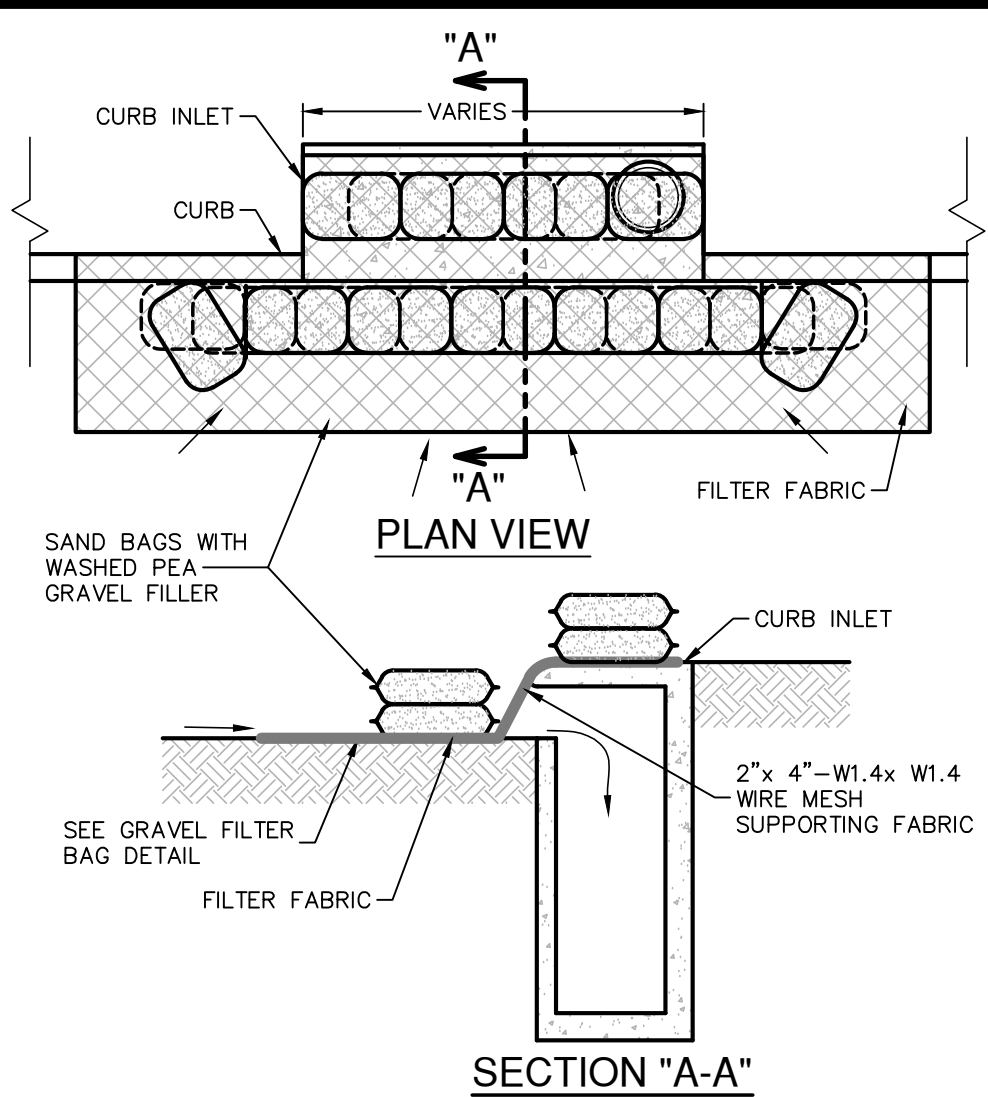
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

#### INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

#### COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING ANOTHER SIDE).



#### GENERAL NOTES

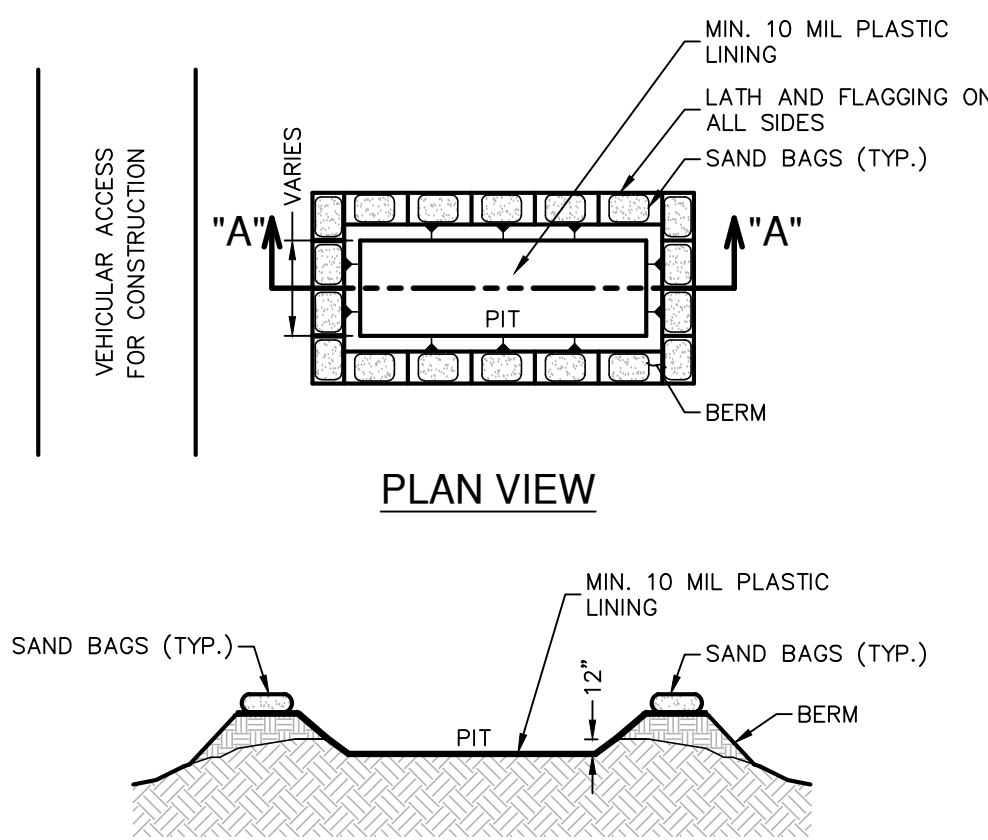
1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CUPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE CUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

#### INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

#### BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



#### GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.
5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

#### MATERIALS

PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

#### MAINTENANCE

1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

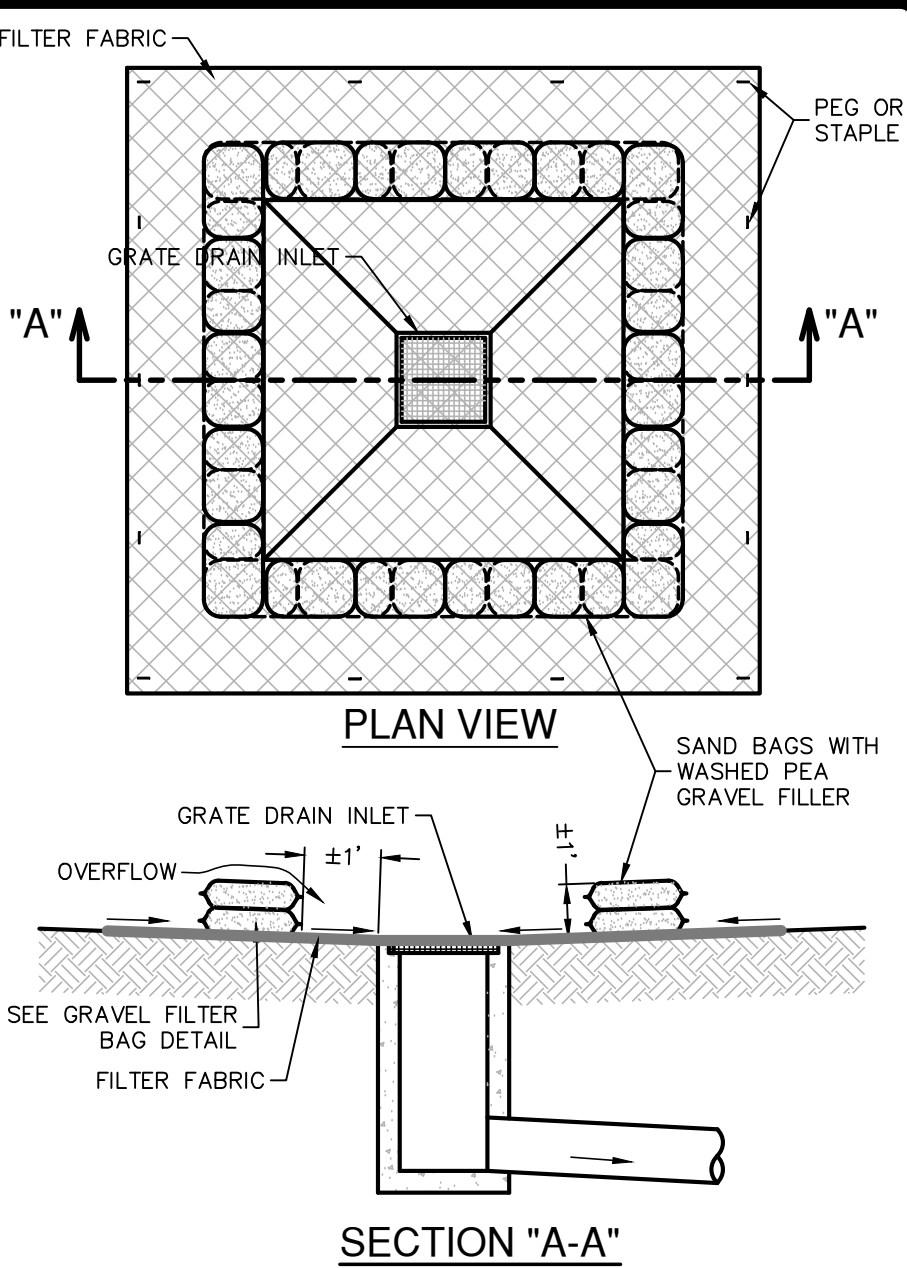
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

#### CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE PDPS-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.



#### GENERAL NOTES

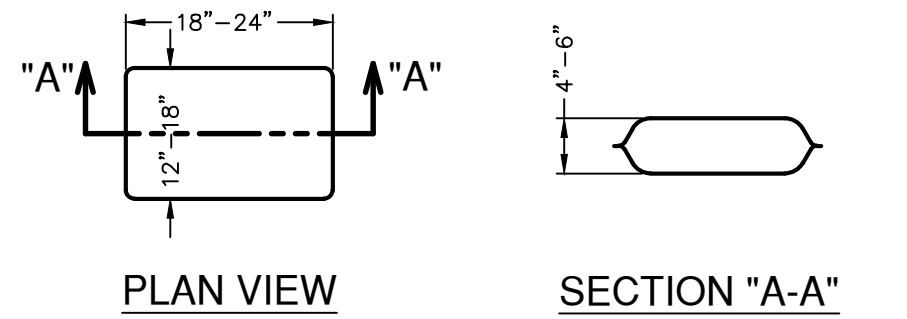
1. THE SANDBAGS SHOULD BE FILLED WITH WASHED PEA GRAVEL AND STACKED TO FORM A CONTINUOUS BARRIER ABOUT 1 FOOT HIGH AROUND INLETS.
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

#### INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

#### BAGGED GRAVEL GRATE INLET PROTECTION DETAIL

NOT-TO-SCALE

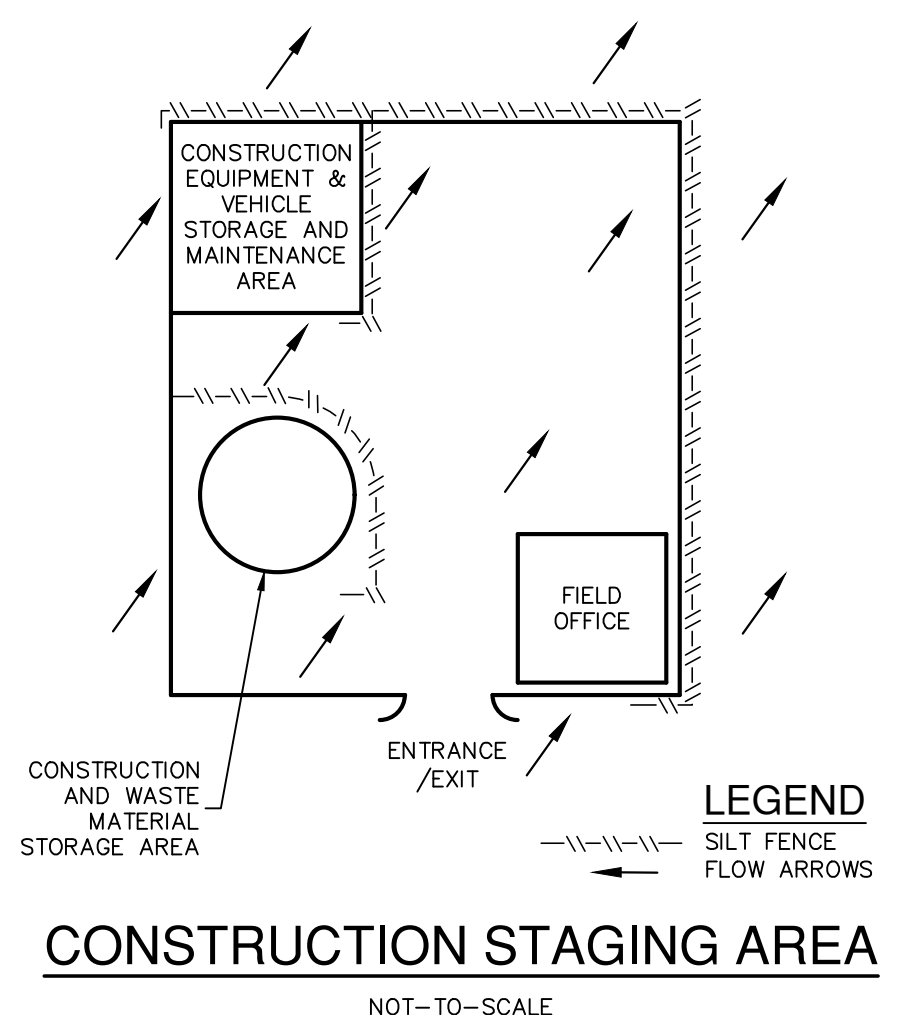


NOTES:

1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).
3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

#### GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



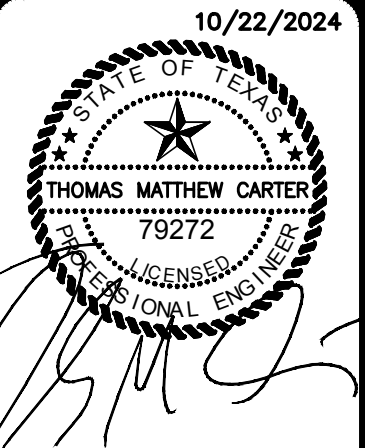
#### CONSTRUCTION STAGING AREA

NOT-TO-SCALE

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

#### EXHIBIT 3

DATE	
NO.	
REVISION	



**PAPE-DAWSON ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

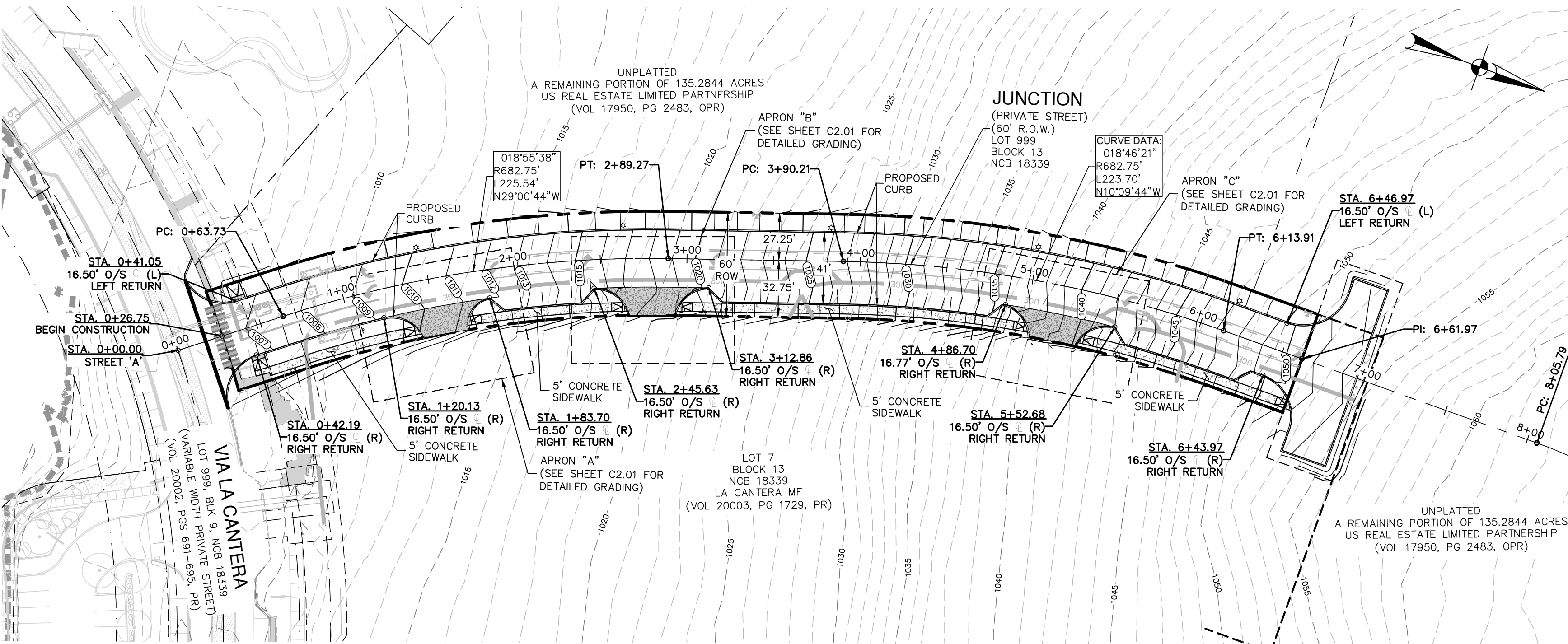
STORM WATER POLLUTION PREVENTION DETAILS

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JS
SHEET	C1.30

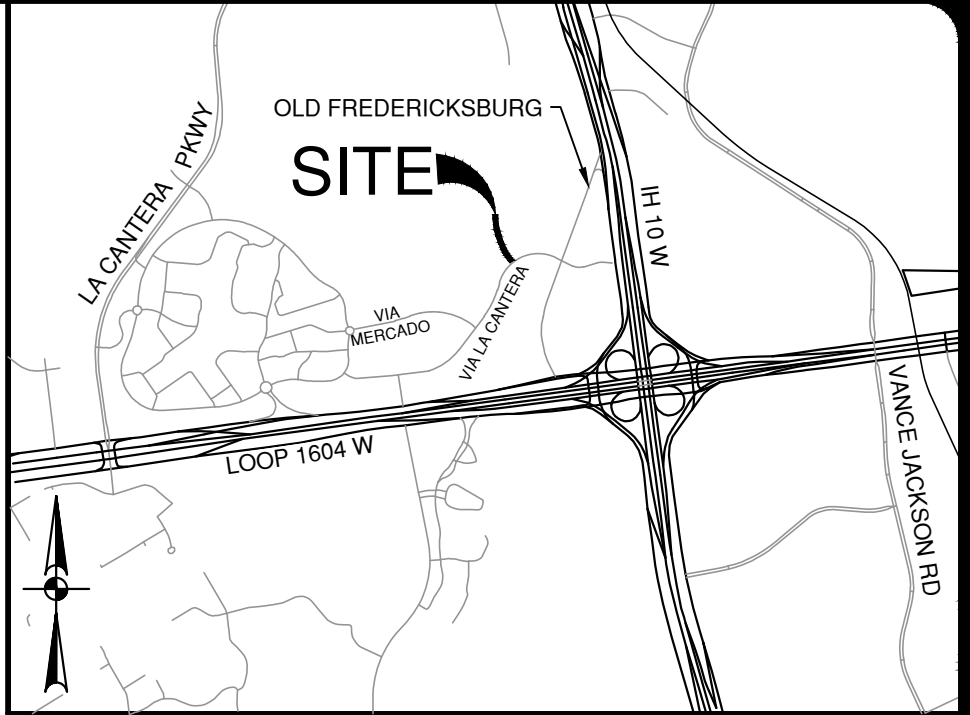
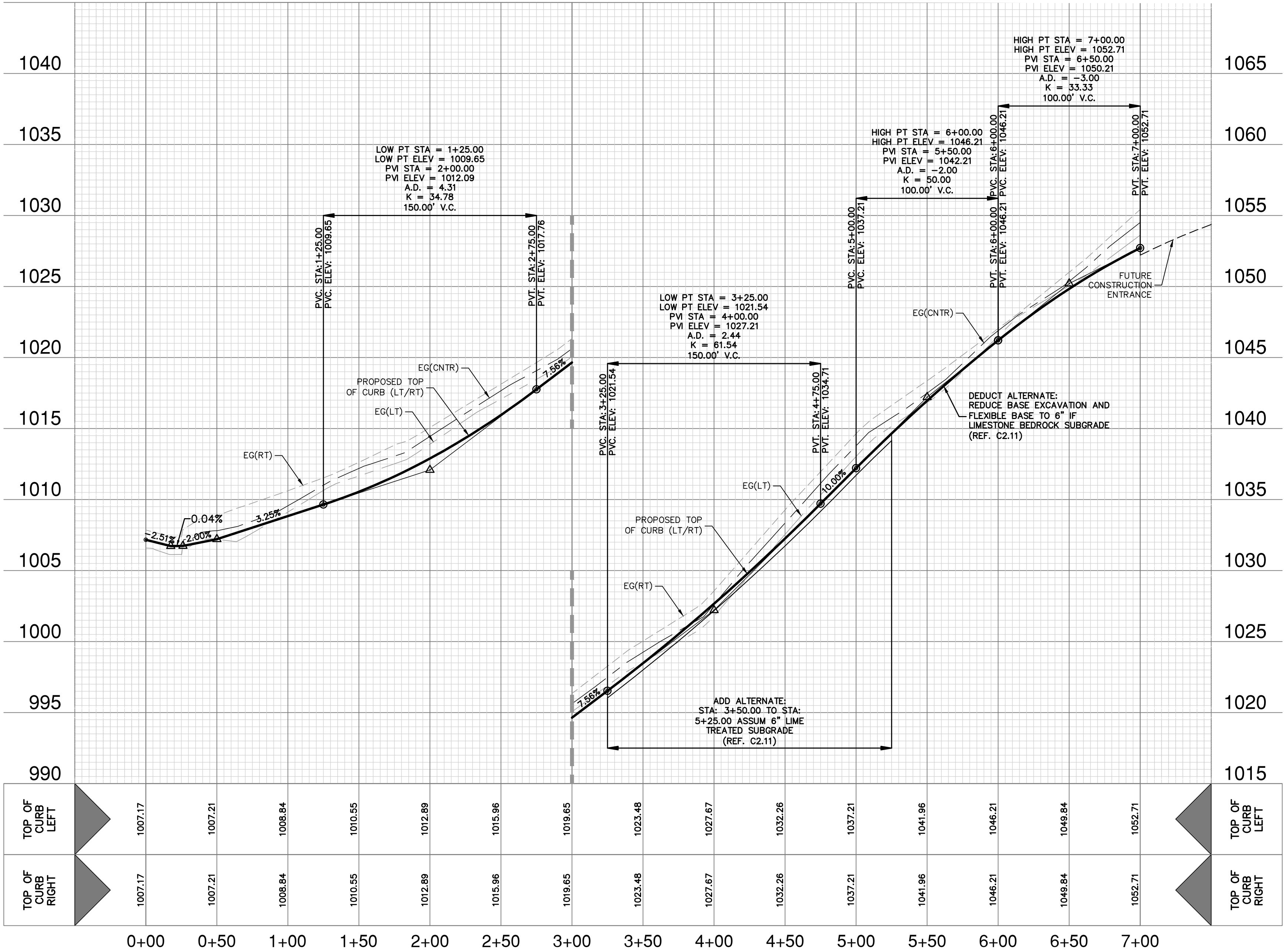


Date: Oct 24, 2024, 4:02pm User ID: obentancourt  
File: P:\132\25\01\Design\Gis\STPP-1322501.dwg

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JUNCTION (PRIVATE STREET)  
(STA. 0+00.00 TO 6+94.97)



LOCATION MAP  
NOT-TO-SCALE

SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'  
HORIZONTAL SCALE: 1" = 50'

LEGEND

- RIGHT-OF-WAY LINE
- STREET CENTER LINE
- 7" CONCRETE CURB
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED STORM DRAINAGE
- TOP OF CURB ELEVATION
- TOP OF PAVEMENT ELEVATION
- PROPOSED MULTI-PURPOSE SIDEWALK
- PRIVATE STREET LIGHT DESIGNED BY OTHERS

NOTE

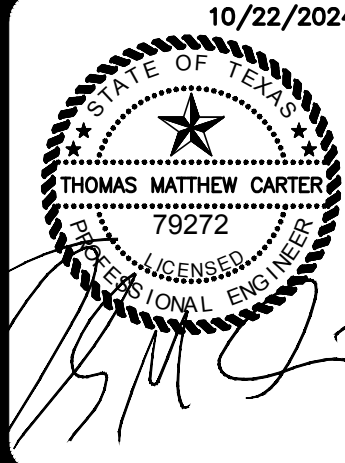
SEE SHEET C0.10 FOR CONSTRUCTION NOTES.

STRIPING NOTE:  
REFER TO SHEET C2.10 FOR ROAD STRIPING AND SIGNAGE

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

NO.	REVISION	DATE



**PAPE-DAWSON ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900

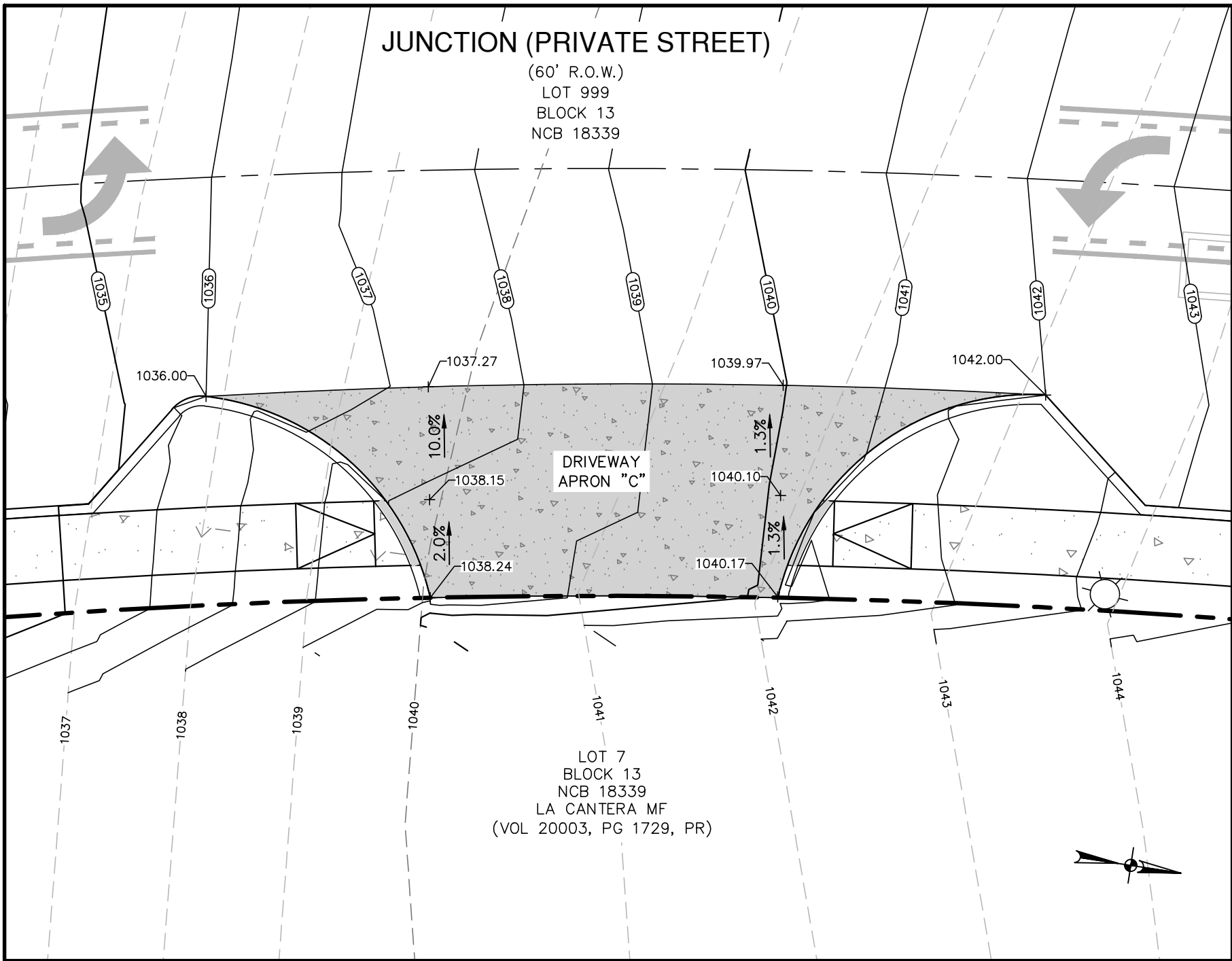
**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS  
JUNCTION PLAN AND PROFILE  
STA. 0+00.00 TO 6+94.97

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED/WK/BS	DRAWN/TR/JS
SHEET	C2.00

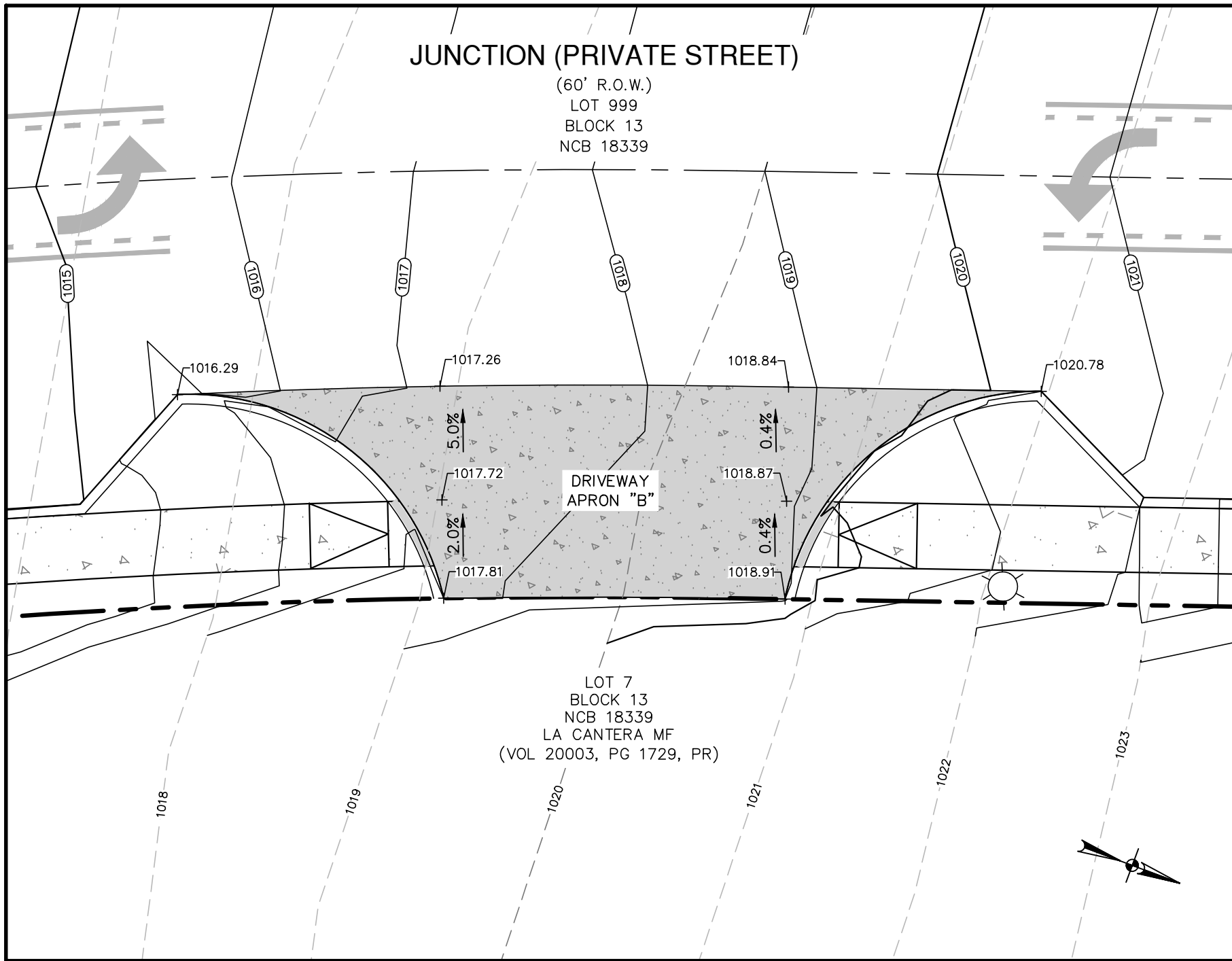


Date: Oct 24, 2024, 4:08pm User ID: obentancourt  
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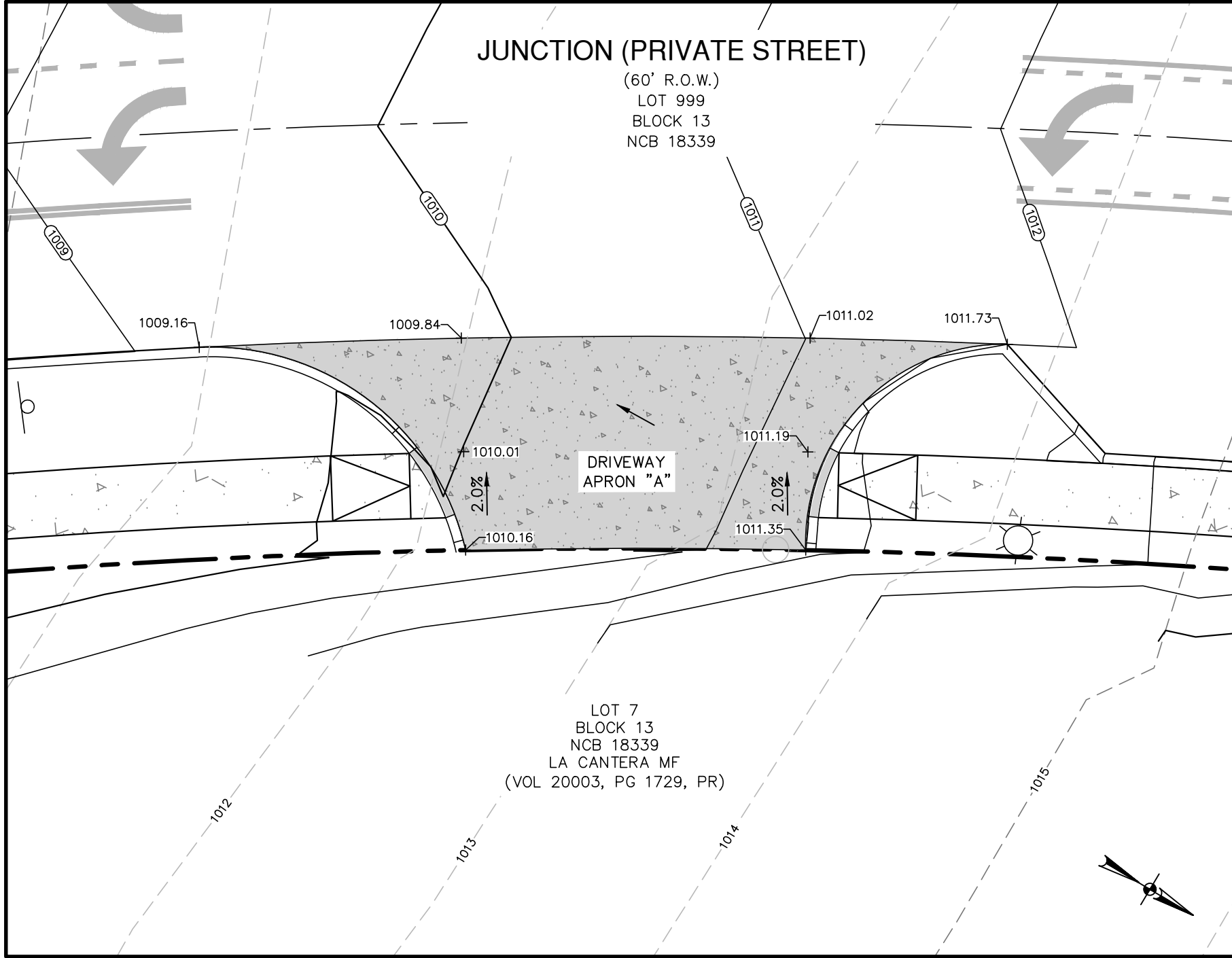
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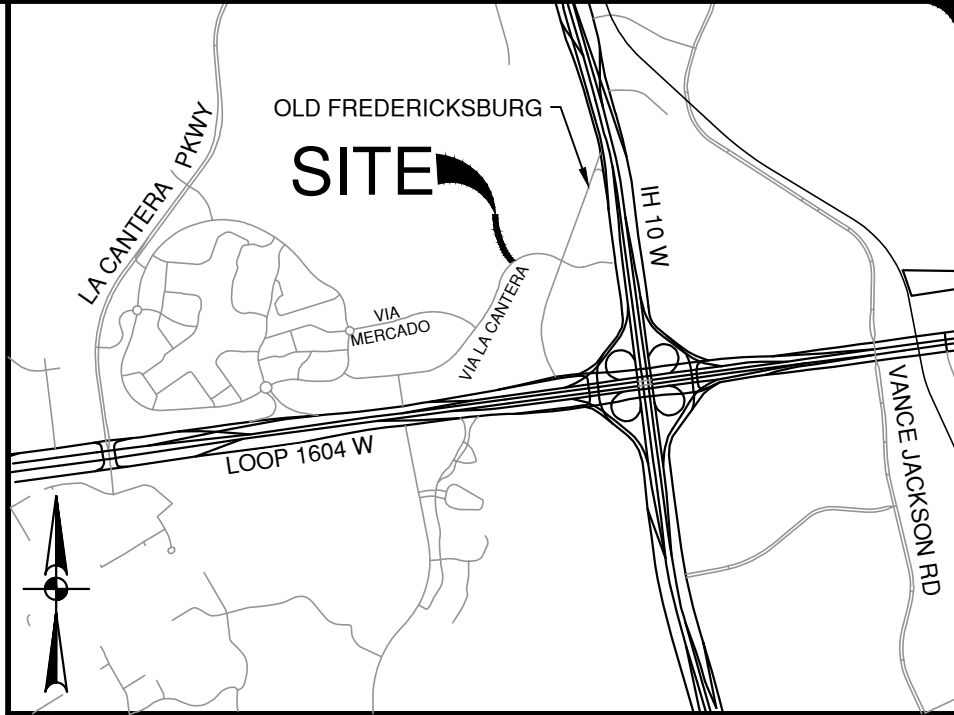
APRON "C" DETAIL  
SCALE: 1"=10'



APRON "B" DETAIL  
SCALE: 1"=10'



APRON "A" DETAIL  
SCALE: 1"=10'



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 50'



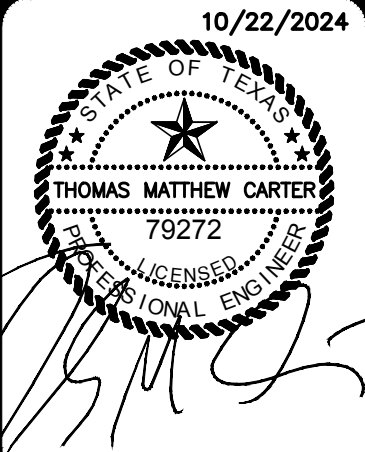
LEGEND

- RIGHT-OF-WAY LINE
- STREET CENTER LINE
- 6" CONCRETE CURB
- EXISTING CONTOURS
- PROPOSED CONTOURS

NOTE

SEE SHEET C0.10 FOR CONSTRUCTION NOTES.

NO.	REVISION	DATE



**PAPE-DAWSON**  
**ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

**DRIVEWAY APRON DETAILED GRADING**

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS DRAWN TR/JS
SHEET	C2.01

PAVEMENT & STRIPING NOTES

- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TxDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
- THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITY AND STORM DRAIN SYSTEMS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
- THE CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
- ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT, WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
- NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
- ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION.
- THE CONTRACTOR SHALL SAW CUT EXISTING PAVING, CURB, AND SIDEWALKS TO PROVIDE A SMOOTH TRANSITION. NO JAGGED OR IRREGULAR EDGES WILL BE ALLOWED.
- ALL CURBS SHALL BE 6" UNLESS OTHERWISE NOTED.
- ALL STANDARD PERPENDICULAR PARKING STALLS ARE 9' X 18' AND COMPACT PARKING STALLS ARE 8' X 16' UNLESS DIMENSIONED OTHERWISE.

SIGNAGE NOTES:

- UNDERGROUND UTILITIES EXIST WITHIN THE PROJECT. CONTRACTOR SHALL HAVE THE UTILITIES MARKED PRIOR TO INSTALLATION OF THE SIGN POST. SIGN LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SIGNS TO AVOID UTILITIES. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES BEFORE COMMENCING WORK.
- IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION ACT, THE TELEPHONE NUMBER FOR A UTILITY LOCATOR IS 1-800-TEAS-6005. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS FOR UTILITY LOCATORS, AS NEEDED.
- WHEN PREPARING HOLES FOR POSTS, CARE SHALL BE TAKEN SO AS NOT TO RUPTURE EXISTING DRAINAGE STRUCTURES, SPRINKLER SYSTEMS, TELECOMMUNICATION FACILITIES, ELECTRICAL CONDUITS AND PUBLIC UTILITIES.
- ALL SIGNS SHALL COMPLY WITH THE SIGN DESIGNS PRESENTED IN STANDARD HIGHWAY DESIGNS FOR TEXAS.
- SIGN LOCATIONS ILLUSTRATED ON THE PLANS ARE APPROXIMATE. SIGNS SHALL BE LOCATED IN THE FIELD TO PROVIDE APPROPRIATE FUNCTIONALITY. SIGN LOCATIONS SHALL COMPLY WITH GUIDELINES AND REQUIREMENTS PRESENTED IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- CONTRACTOR SHALL FURNISH AND MAINTAIN ALL TRAFFIC CONTROL DEVICES, LIGHTING, OR WARNING DEVICES REQUIRED TO COMPLETE THE WORK. ALL CONSTRUCTION SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THREE (3) COPIES OF EQUIPMENT SUBMITTALS FOR ALL TRAFFIC SIGN COMPONENTS SHALL BE SENT TO THE ENGINEER. SUBMITTALS SHALL CONSIST OF THE APPROPRIATE COMBINATION OF CATALOG SHEETS, MATERIALS LIST, MANUFACTURER'S BROCHURES, TECHNICAL BULLETINS, SPECIFICATIONS, DIAGRAMS, OR PRODUCT SAMPLES NECESSARY TO DESCRIBE A SYSTEM, PRODUCT, OR ITEM. SPECIFIC ITEM NUMBERS AND PRODUCT CODES WILL BE CLEARLY IDENTIFIED WHEN MULTIPLE PRODUCTS ARE LISTED ON THE SAME SHEET.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL CONFORM TO APPLICABLE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), TEXAS DOT STANDARD SPECIFICATIONS, CITY BUILDING CODE AND REGULATIONS AS WELL AS PROVISIONS APPLICABLE TO THE PROJECT AND AS OTHER SAFETY CODES AND INSPECTION REQUIREMENTS OF THE FIRE DEPARTMENT.
- MATERIALS FURNISHED BY THE CONTRACTOR SHALL BE NEW, UN-DEPRECIATED STOCK. ALL EQUIPMENT SHALL BE NEW, UNLESS OTHERWISE NOTED ON THE PLANS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION, OR BETTER, ANY DAMAGE DONE TO EXISTING BUILDINGS, RETAINING WALLS, UTILITIES, FENCES, PAVEMENT, CURBS OR DRIVEWAYS (NO SEPARATE PAY ITEM). CONTRACTOR SHALL RESTORE THE CONSTRUCTION AREA TO ORIGINAL CONDITION, OR BETTER, PRIOR TO FINAL INSPECTION.
- ANY CONFLICT BETWEEN ANY DEFINITION, MATERIAL SPECIFICATION, CONSTRUCTION SPECIFICATION, MEASUREMENT AND PAYMENT PROCEDURE, ETC., SHOWN IN THIS PLAN SET AND ANY TEXAS DEPARTMENT OF TRANSPORTATION OR CITY OF SAN ANTONIO STANDARD SPECIFICATION SHALL BE RESOLVED ONLY BY THE ENGINEER AND THE ENGINEER'S DECISION SHALL BE FINAL AND BINDING.

MONUMENT AND DIRECTIONAL SIGNAGE DETAILS AND LOCATIONS TO BE PROVIDED BY PROJECT SIGNAGE CONSULTANT UNDER SUPPLEMENTAL PLAN ISSUE.

NOTE: PROPOSED HARDSCAPE, PLANTING, LIGHTING, IRRIGATION AND OTHER RELATED STREET IMPROVEMENTS NOT INCLUDED HEREIN TO BE CONSTRUCTED UNDER SEPARATE STREETScape PERMIT A/P# 2534073

CAUTION!!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR AN APPROPRIATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ADVANCEANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SIGNAGE LEGEND

1

STREET NAME

STREET NAME

2

STOP

R1-1 30X30 - ITEM 531.3 (REF. DTL C2.12)

2

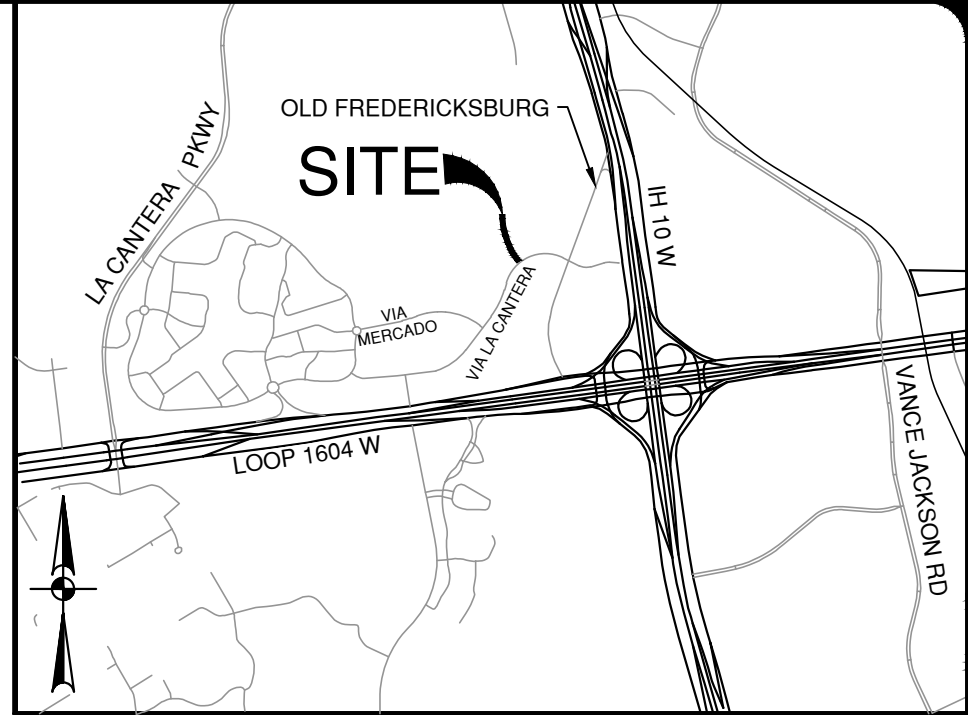
SPEED LIMIT 30

R2-1 - ITEM 531.6 (REF. DTL C2.12)

ITEM 531.57  
STANDARD COSA  
STREET NAME SIGN 9XSTD  
(FRONT & BACK)  
(REF. DTL C2.13)

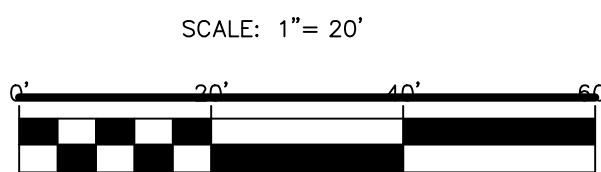
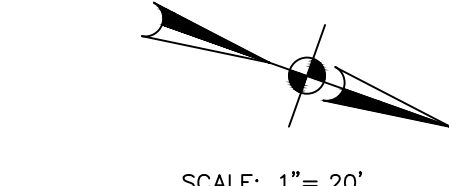
MATCHLINE - SEE THIS SHEET

MATCHLINE - SEE THIS SHEET



LOCATION MAP

NOT-TO-SCALE

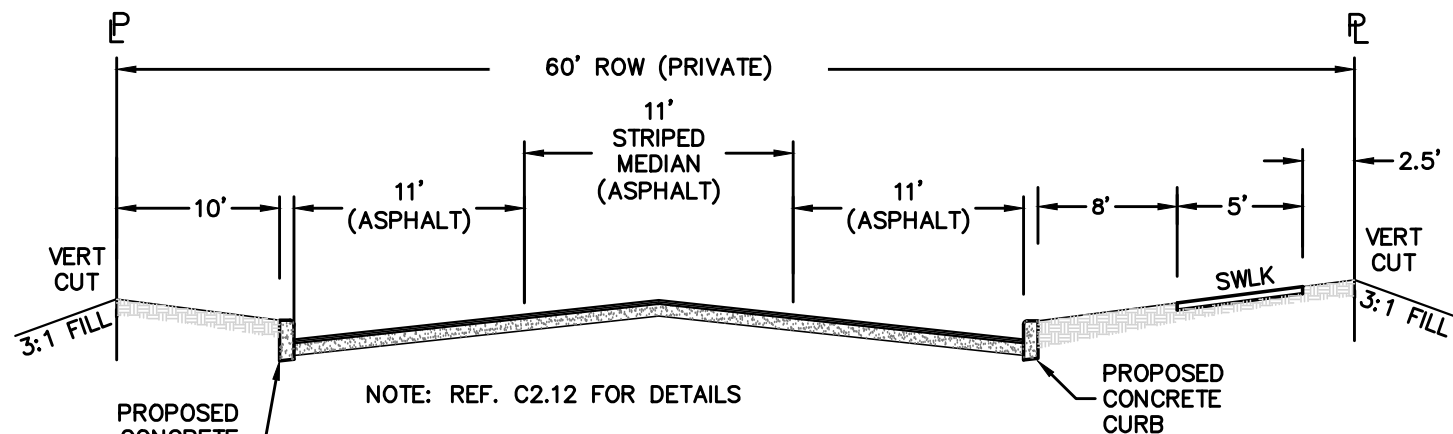


LEGEND

- |  |  |
|--|--|
|  | PROPERTY LINE  |
|  | EXISTING CURB  |
|  | PROPOSED CURB  |
|  | HEADER CURB  |
|  | HEAVY DUTY CONCRETE PAVEMENT (REF. C2.11 FOR DETAIL) |
|  | HEAVY DUTY ASPHALT PAVEMENT (REF. C2.11 FOR DETAIL)  |
|  | SIDEWALK PAVEMENT (REF. C2.11 FOR DETAIL)            |

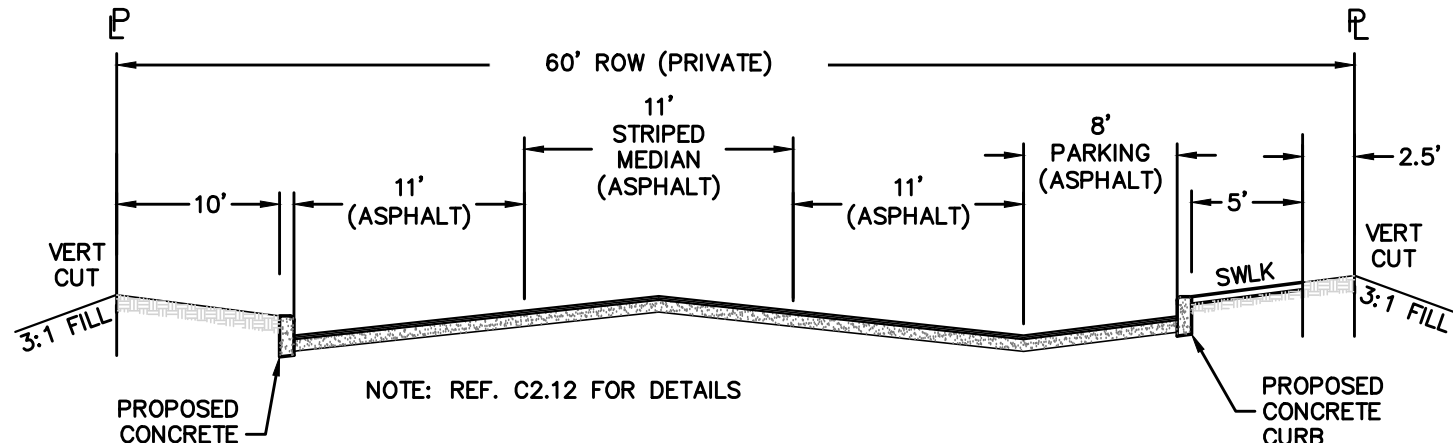
NOTE

SEE SHEET C0.10 FOR CONSTRUCTION NOTES.



SECTION A-A

NOT-TO-SCALE



SECTION B-B

NOT-TO-SCALE

LCTC EAST ACCESS (ENCLAVE)  
SAN ANTONIO, TEXAS

PAVING, STRIPING AND SIGNAGE PLAN

PLAT NO. 24-11800345  
JOB NO. 13225-01  
DATE SEPTEMBER 2024  
DESIGNER MC/KT/TR  
CHECKED WK/DS DRAWN TR/JJS  
SHEET C2.10

PAPE-DAWSON  
ENGINEERS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

10/22/2024  
THOMAS MATTHEW CARTER  
79272  
LICENSED PROFESSIONAL ENGINEER

NO.	REVISION	DATE











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File: P:\132\25\01\Design\Gens\PAOT-1322501.dwg

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GENERAL NOTES

1.) THE EXISTING SIGNS LOCATED ON THE JOBSITE ARE THE PROPERTY OF THE CITY OF SAN ANTONIO. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO TRAFFIC OPERATIONS. THE ASSISTANT TRAFFIC SUPERINTENDENT (207-7765) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.

2.) AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS SECTION OF THE PUBLIC WORKS DEPARTMENT (207-7765) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER CITY SIGNS AND POLES.

3.) PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE TRAFFIC ENGINEERING (207-7720) CONSTRUCTION INSPECTION AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.

4.) ALL GROUND MOUNTED SIGNS SHALL USE HIGH INTENSITY REFLECTIVE SHEETING.

5.) ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.

6.) ALL BLANKS TO BE ALUMINUM ALLOY NO. 5052-H38.

7.) "T" DENOTES THICKNESS OF SIGN BLANKS.

8.) ALL HOLES SHALL BE 3/8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND /OR ROUGH EDGES.

9.) SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL.

10.) ALL SIGN BLANK TO BE ETCHED, DEGREASED, AND HAVE AN ALODINE FINISH PRIOR TO APPLICATION OF LEGENDS.

11.) ALL DETAILS ARE NOT TO SCALE.

12.) ALL DIMENSIONS ARE IN INCHES.

13.) ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND STANDARD HIGHWAY SIGNS (FHWA) LATEST EDITION.

14.) REINSTALLATION OF PREVIOUSLY EXISTING SIGNS, WHERE REQUIRED BY THE CITY TRAFFIC ENGINEER, SHALL BE AT THE CONTRACTOR'S EXPENSE.

TYPICAL GROUND SIGN INSTALLATION

TYPE "U" MOUNT  
PERFORATED SQUARE METAL TUBING (DRIVEABLE)

SIGN AREA  
(REFER TO TABLE A)

24" (MIN.)  
FROM THE EDGE  
OF PAVEMENT  
OR CURB

GALVANIZED SQUARE  
SIGN POST INSERTED  
6" INTO ANCHOR STUB

CORNER BOLT,  
FLANGED  
WASHER NUT

NATURAL  
GROUND

GALVANIZED  
SQUARE  
ANCHOR STUB

TOP 12" OF ANCHOR  
STUB MUST BE COVERED  
WITH TAPE TO KEEP  
POST FREE OF CEMENT.

CLASS C  
CONCRETE  
FOOTING  
(MIN. 1 CU. FT.)

6" X 3/8" DIA.  
STEEL PIN OR  
DISBURSE END  
OF ANCHOR

VIEW K-K

DRIVE RIVET

3/8" X 1/2"  
DRIVE RIVET

GALVANIZED  
SQUARE  
SIGN POST

GALVANIZED  
SQUARE  
ANCHOR STUB

THE ORIGINAL OF THIS DRAWING WAS SIGNED  
AND SEALED BY EDWARD N. MERRY, P.E., #68698  
ON 02/06/06 AND IS ON FILE WITH THE  
TRAFFIC ENGINEERING DIVISION OF THE PUBLIC  
WORKS DEPARTMENT, CITY OF SAN ANTONIO.

TABLE A

METAL TUBING	SIGN AREA	
	< 10 SQ. FT.	> 10 SQ. FT.
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4" x 1-3/4" (14 GAUGE)	2" x 2" (12 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED)	2" X 2" (14 GAUGE)	2-1/4" x 2-1/4" (14 GAUGE)

FEBRUARY 2006  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS  
GENERAL NOTES AND  
GROUND SIGN MOUNTING  
SHEET 1 OF 4

N. SUBMITAL PROJECT NO. \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN BY: A.J.S. CHECKED BY: E.A.M. CHD BY: J.D.D./E.A.M. SHEET NO. \_\_\_\_ OF \_\_\_\_

9" D3 - STREET NAME SIGN

HWY B, C, OR D  
FONT STYLE

BLUE  
BACKGROUND

WHITE LETTERS,  
NUMBERS, & ARROWS

5/32" WHITE BORDER

9"

1 1/2"

6"

9"

HWY D - FONT STYLE  
FOR BLOCK NUMBERS

9"

2"

7/8"

0.2" BLACK BORDER

YELLOW  
BACKGROUND

BLACK  
ARROW

NEW 9" D3 W / DEAD END OR NO OUTLET SIGNAGE

9"

2"

7/8"

0.2" BLACK BORDER

YELLOW  
BACKGROUND

BLACK  
ARROW

TABLE - D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.125"
30"	9"	1/2"	3/4"	8"	15"	0.125"
36"	9"	1/2"	3/4"	8"	18"	0.125"
42"	9"	1/2"	3/4"	8"	21"	0.125"
48"	9"	1/2"	3/4"	8"	24"	0.125"
54"	9"	1/2"	3/4"	8"	27"	0.125"

NOTE: A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "DEAD END" OR "NO OUTLET" SUPPLEMENT IS REQUIRED.

D3 SIGN TO POLE INSTALLATION

FACE OF  
CURB OR  
EDGE OF  
PAVEMENT

REGULATORY,  
GUIDE OR  
PROHIBITION  
SIGN

NO PARKING  
ANYTIME SIGNS

ONE-WAY SIGNS OR  
LARGE ARROWS SIGN

80°

60°

3/8" x 1/2"  
DRIVE RIVET

9"

2"

7/8"

0.2" BLACK BORDER

YELLOW  
BACKGROUND

BLACK  
ARROW

TABLE - D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.125"
30"	9"	1/2"	3/4"	8"	15"	0.125"
36"	9"	1/2"	3/4"	8"	18"	0.125"
42"	9"	1/2"	3/4"	8"	21"	0.125"
48"	9"	1/2"	3/4"	8"	24"	0.125"
54"	9"	1/2"	3/4"	8"	27"	0.125"

NOTE: A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "DEAD END" OR "NO OUTLET" SUPPLEMENT IS REQUIRED.

TABLE - D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1/2"	3/4"	8"	12"	0.125"
30"	9"	1/2"	3/4"	8"	15"	0.125"
36"	9"	1/2"	3/4"	8"	18"	0.125"
42"	9"	1/2"	3/4"	8"	21"	0.125"
48"	9"	1/2"	3/4"	8"	24"	0.125"
54"	9"	1/2"	3/4"	8"	27"	0.125"

NOTE: A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "DEAD END" OR "NO OUTLET" SUPPLEMENT IS REQUIRED.

HEIGHT

9" (228 mm)

LENGTH

24" (600 MM) MIN.  
54" (1350 MM) MAX.  
6" (150 MM) INCREMENTS OF LENGTH

THICKNESS

0.125" (3MM)

SUBSTRATE

ALUMINUM ALLOY,  
5052-H38 (ASTM B-209)  
GOLD CHROMATE FINISH

SIGN  
FACE  
MATERIALS

BLUE FILM OVER  
HIGH INTENSITY  
FP-85, SECTION 718  
AND L-S-300C

LEGENDS  
AND  
SYMBOLS

SERIES D (USUAL)  
SERIES C OR B FOR  
MAXIMUM LENGTH  
SIGN BLANK,  
IF NECESSARY

COLOR

WHITE LEGEND ON  
BLUE BACKGROUND

LETTER  
TRACKING

10%

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TRAFFIC ENGINEERING DIVISION OF THE PUBLIC  
WORKS DEPARTMENT, CITY OF SAN ANTONIO.

FEBRUARY 2006  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS  
D3 STREET NAME SIGN  
AND SIGN MOUNTING  
SHEET 2 OF 4

N. SUBMITAL PROJECT NO. \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN BY: A.J.S. CHECKED BY: E.A.M. CHD BY: J.D.D./E.A.M. SHEET NO. \_\_\_\_ OF \_\_\_\_

15" METRO - STREET NAME SIGNS

LENGTH VARIES (SEE TABLE BELOW)

1/4" WHITE BORDER

BLUE BACKGROUND

WHITE LETTERS,  
NUMBERS & ARROWS

17/8" R

15" METRO w/CITY SKY LINE

12"

BLACK LOGO  
& LETTERING

WHITE BACKGROUND

BLACK LOGO  
& LETTERING

TABLE - 15" METRO SIGNS

A	B	C	D	E	F	T
48"	24"	2"	20"	2"	44"	17/8" 0.100
48"	36"	3"	30"	3"	42"	2 1/4" 0.100
60"	24"	2"	20"	2"	56"	11/2" 0.100
60"	36"	3"	30"	3"	54"	2 1/4" 0.100
48"	30"	3"	24"	3"	42"	17/8" 0.100
60"	30"	3"	24"	3"	54"	17/8" 0.100

TABLE - 15" METRO SIGNS

A	B	C	D	E	F	T
48"	24"	2"	20"	2"	44"	17/8" 0.100
48"	36"	3"	30"	3"	42"	2 1/4" 0.100
60"	24"	2"	20"	2"	56"	11/2" 0.100
60"	36"	3"	30"	3"	54"	2 1/4" 0.100
48"	30"	3"	24"	3"	42"	17/8" 0.100
60"	30"	3"	24"	3"	54"	17/8" 0.100

HEIGHT

15" (381 MM)

LENGTH

48" (1200 MM) MIN.  
72" (1800 MM) MAX. \*\*  
1" (25.4 MM) INCREMENTS OF LENGTH

THICKNESS

0.125" (3 MM)

SUBSTRATE

ALUMINUM ALLOY,  
5052-H38 (ASTM B-209)  
GOLD CHROMATE FINISH

SIGN  
FACE  
MATERIALS

BLUE FILM OVER  
DIAMOND GRADE  
FP-85, SECTION 718  
AND L-S-300C

LEGENDS  
AND  
SYMBOLS

SERIES D (USUAL)  
SERIES C OR B FOR  
MAXIMUM LENGTH  
SIGN BLANK,  
IF NECESSARY

COLOR

WHITE LEGEND ON  
BLUE BACKGROUND

LETTER  
TRACKING

17% (USUAL)  
10% (MIN.)

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FEBRUARY 2006  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS  
METRO STREET NAME SIGN  
AND SIGN PLACEMENT  
SHEET 4 OF 4

N. SUBMITAL PROJECT NO. \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN BY: A.J.S. CHECKED BY: E.A.M. CHD BY: J.D.D./E.A.M. SHEET NO. \_\_\_\_ OF \_\_\_\_

OCTAGONAL

A B C D T

24 3 18 0.080

30 3 24 0.080

36 3 30 0.100

DIAMOND (A)

A B C D T

18 9 11/2 0.080

24 12 11/2 0.080

30 15 1 7/8 0.080

36 18 2 1/4 0.100

DIAMOND (B)

A B C D T

48 15 15 3 0.100

CIRCLE

A B T

18 15 0.100

PENTAGON (SCHOOL)

A B C D T

36 24 3 2 1/4 0.100

EQUILATERAL TRIANGLE

A B C D T

36 2 24 2 0.100

ISOSCELES TRIANGLE

A B C D E T

40 30 17 1/2 12 17/8 0.100

48 36 9 15 2 1/4 0.100

SQUARE (A)

A B C D T

18 11/2 15 11/2 0.080

24 3 18 11/2 0.080

30 3 24 1 7/8 0.080

SQUARE (B)

A B C D E F T

48 6 36 9 30 3 0.100

VERTICAL / HORIZONTAL RECTANGLE

A B C D E F G T

12 18 11/2 15 11/2 11/2 9 0.080

12 36 3 30 11/2 11/2 9 0.080

18 24 11/2 21 11/2 11/2 15 0.080

24 30 3 24 11/2 3 18 0.080

24 36 3 30 11/2 3 18 0.080

24 48 6 36 1 7/8 3 18 0.080

30 36 3 30 1 7/8 3 24 0.080

HORIZONTAL RECTANGLE

A B C D E F T

6 12 1 4 1/4 0.080

6 18 1 4 1/4 0.080

20 36 11/2 17 11/2 0.080

VERTICAL RECTANGLE

A B C D E F G T

6 7 3/4 1/2 6 3/4 1/2 4 1/4 0.100

48 60 6 48 9 30 3 0.100

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FEBRUARY 2006  
CITY OF SAN ANTONIO  
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS  
GROUND MOUNTED  
SIGN SIZES  
SHEET 3 OF 4

N. SUBMITAL PROJECT NO. \_\_\_\_\_ DATE \_\_\_\_\_  
DRAWN BY: A.J.S. CHECKED BY: E.A.M. CHD BY: J.D.D./E.A.M. SHEET NO. \_\_\_\_ OF \_\_\_\_

LCTC EAST ACCESS (ENCLAVE)

SAN ANTONIO, TEXAS

STRIPING AND SIGNAGE DETAILS

PLAT NO. 24-11800345  
JOB NO. 13225-01  
DATE SEPTEMBER 2024  
DESIGNER MC/KT/TR  
CHECKED WK/DS DRAWN TR/JJS  
SHEET C2.13

PAPE-DAWSON  
ENGINEERS

2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 1 TEXAS SURVEYING FIRM #10028900

10/22/2024  
THOMAS MATTHEW CARTER  
79272  
PROFESSIONAL ENGINEER

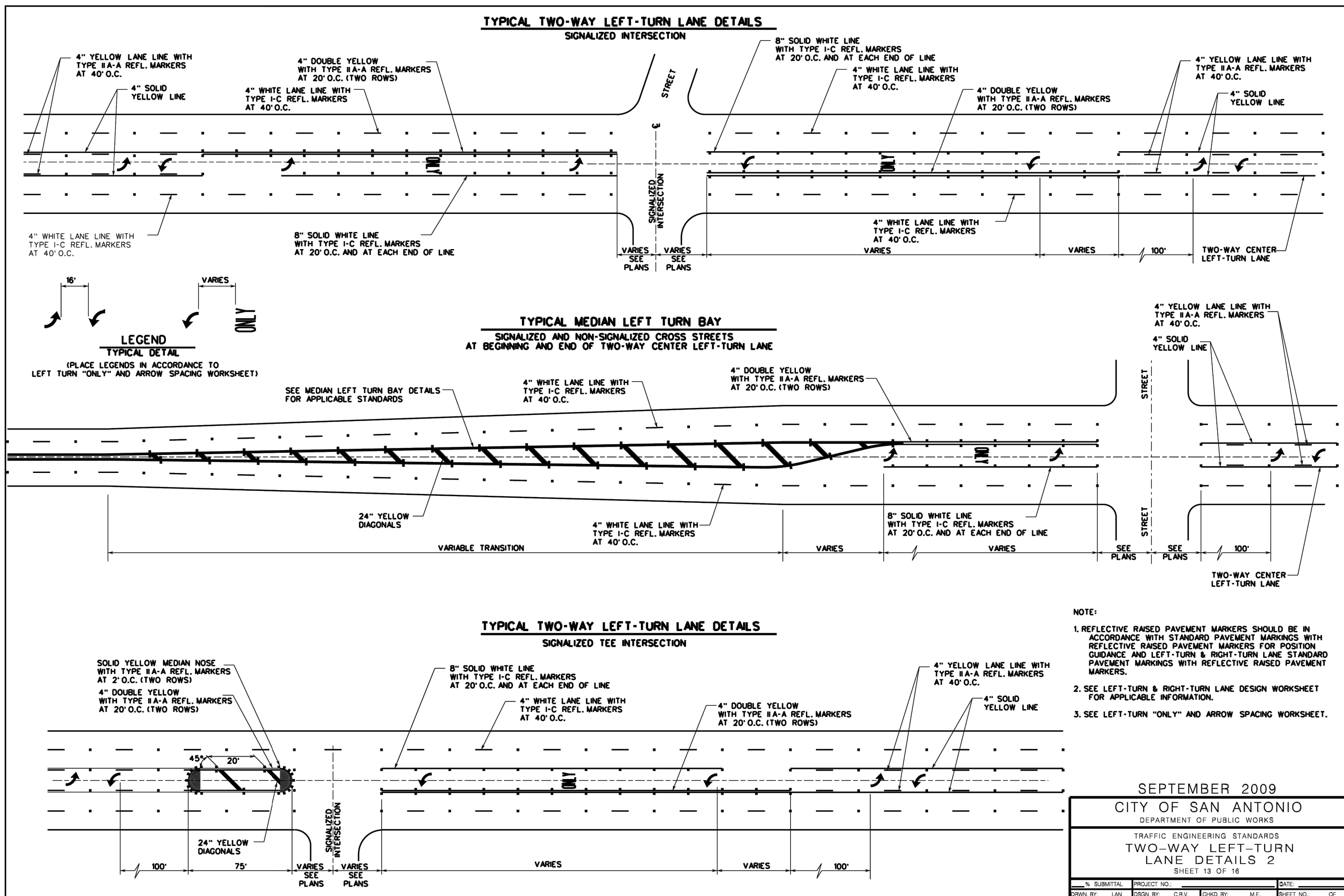
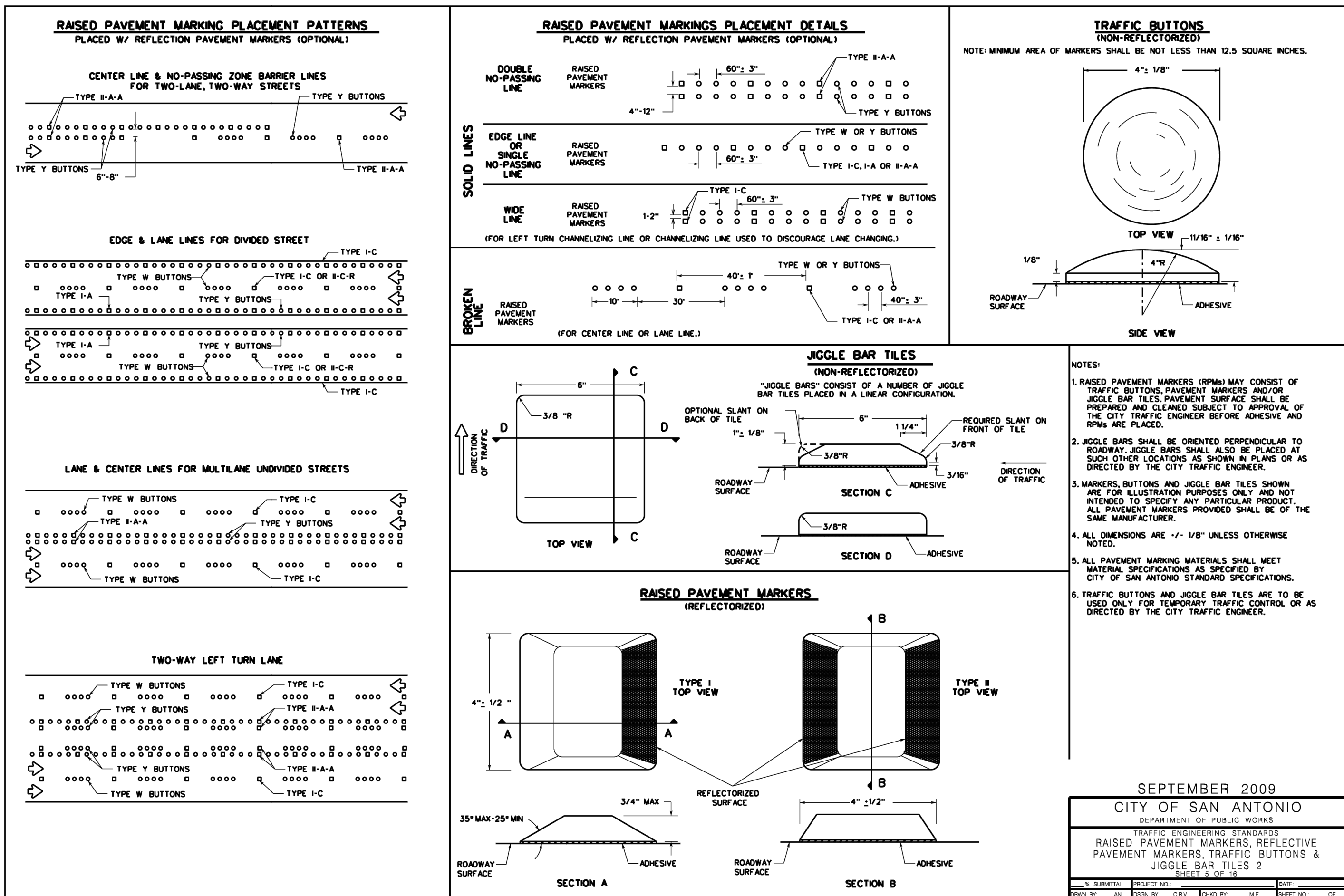
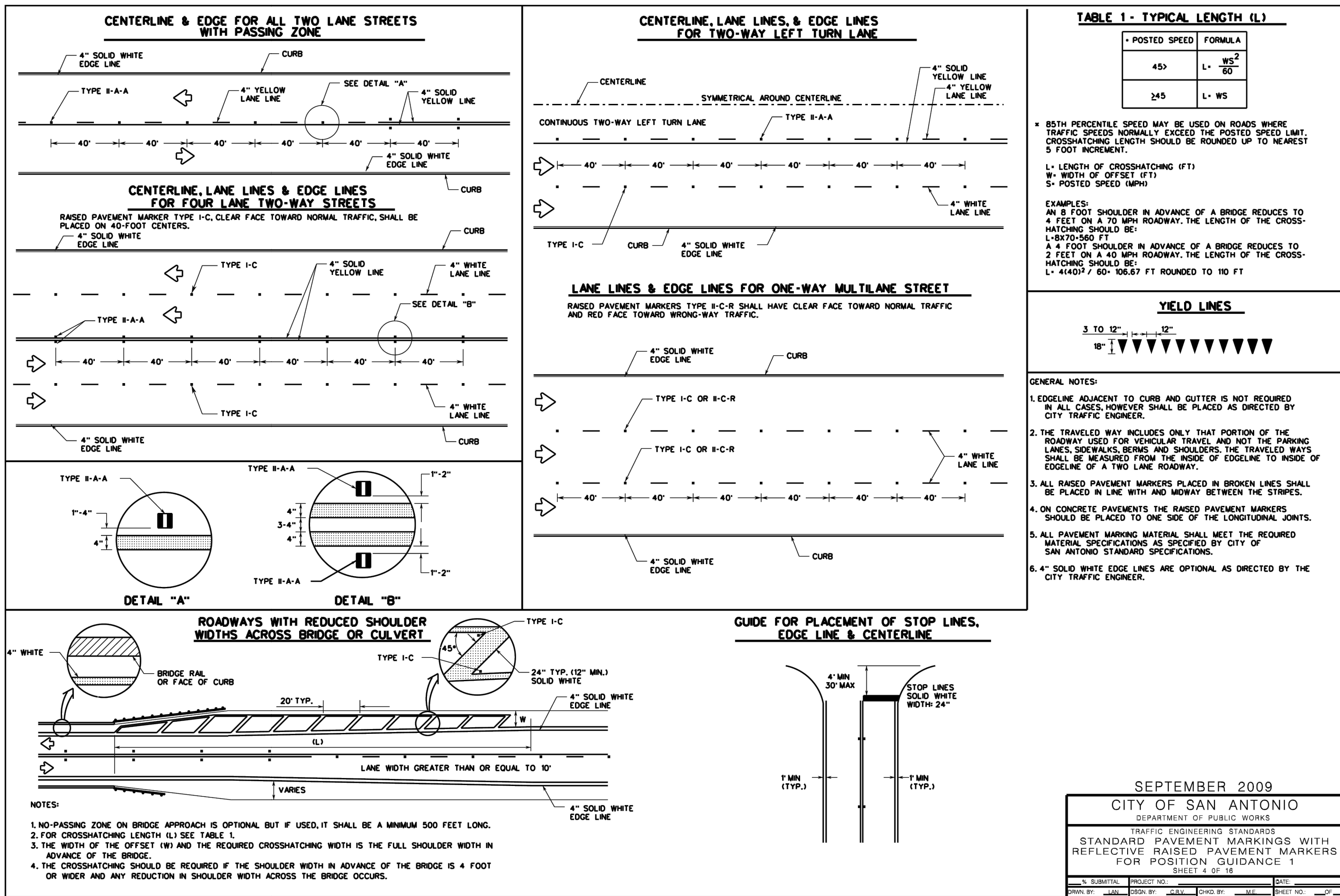
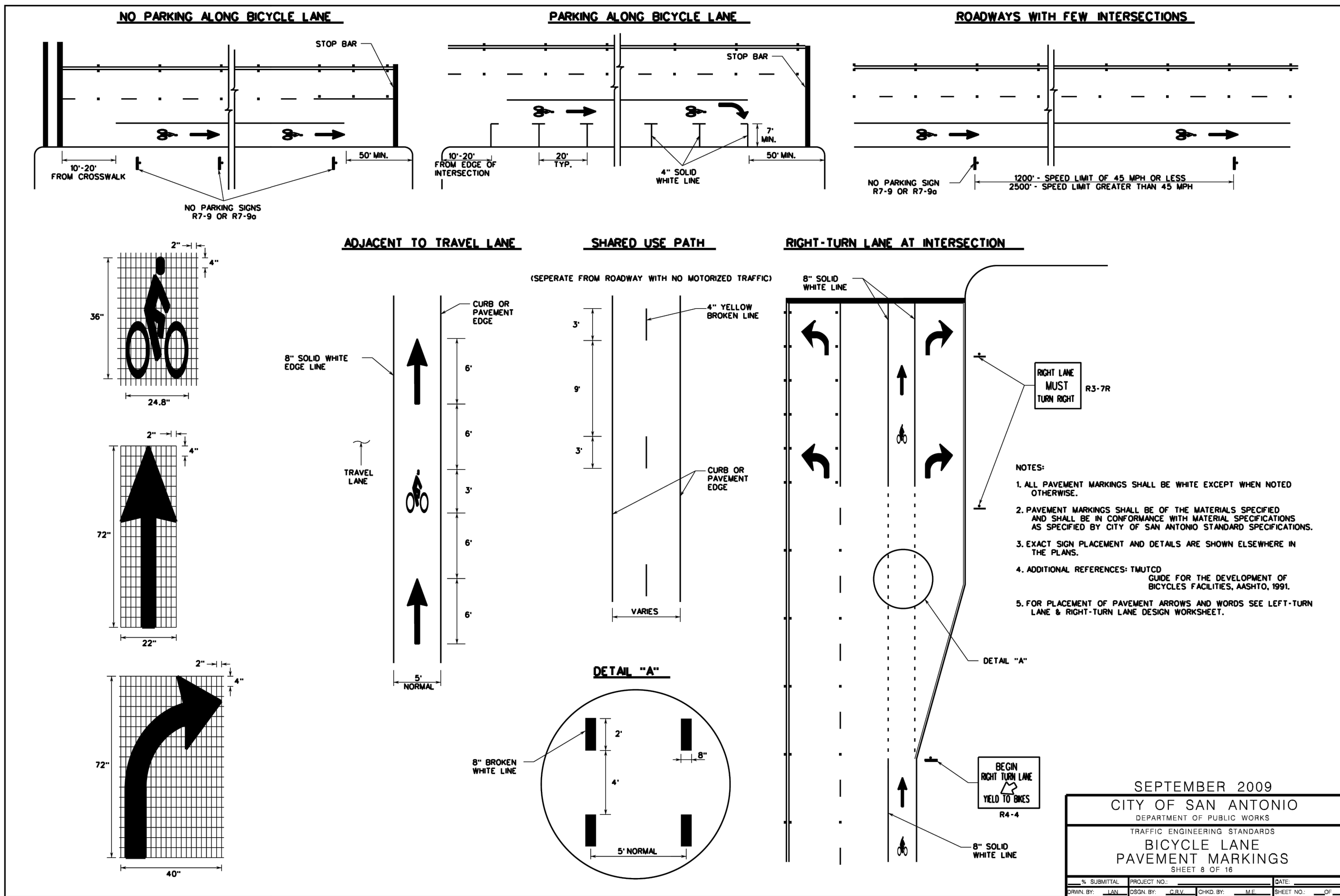
NO.	REVISION	DATE

PERMIT & PRICING SET

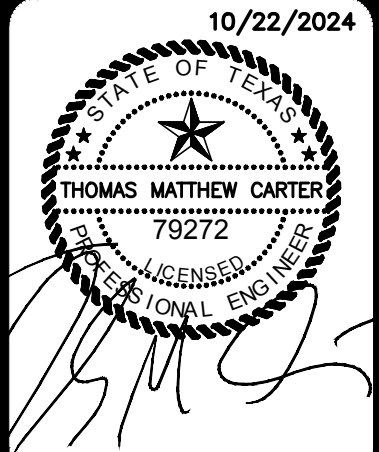


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**PAPE-DAWSON ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

STRIPING AND SIGNAGE DETAILS

PLAT NO. 24-11800345  
JOB NO. 13225-01  
DATE SEPTEMBER 2024  
DESIGNER MC/KT/TR  
CHECKED WK/DS DRAWN TR/JJS  
SHEET C2.14

PERMIT & PRICING SET



SITE UTILITY NOTES

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. DRAWINGS DO NOT PURPORT TO SHOW ALL EXISTING UTILITIES. ALL EXISTING UTILITIES SHALL BE VERIFIED IN THE FIELD WHETHER SHOWN ON THIS PLAN OR NOT PRIOR TO INSTALLATION OF ANY NEW LINES.
3. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
4. CONTRACTOR SHALL CALL FOR THE LOCAL JURISDICTIONAL INSPECTIONS AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL JURISDICTION WITH REGARDS TO MATERIALS AND INSTALLATION OF THE UTILITIES AND STORM DRAINS.
6. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
7. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL COMPLY WITH THE FOLLOWING AS APPLICABLE:
  - A. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATION FOR CONSTRUCTION"
  - B. CURRENT "SAN ANTONIO WATER SYSTEM UTILITY SERVICE REGULATIONS"
  - C. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION"
  - D. CURRENT TxDOT "STANDARD SPECIFICATION FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND DRAINAGE"
  - E. CURRENT CITY OF SAN ANTONIO "RIGHT-OF-WAY ORDINANCE AND CRITERIA MANUAL"
8. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
9. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
10. CONTRACTOR SHALL PROTECT ALL EXISTING TREES, FENCES, PAVING, UTILITIES, AND OTHER STRUCTURES SCHEDULED TO REMAIN. ANY STRUCTURE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
11. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL FINAL UTILITY AS-BUILT MEASUREMENTS, TOPS AND LENGTH OF SERVICE CONNECTIONS OF THE PROJECT.
12. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS SOLE EXPENSE.
13. GAS AND ELECTRIC ALIGNMENTS SHOWN ON THIS DRAWING ARE CONCEPTUAL. THE ACTUAL DESIGN AND LOCATIONS SHALL BE DETERMINED BY THE LOCAL SERVICE PROVIDER OR MEP ENGINEER.
14. CONTRACTOR SHALL COORDINATE ELECTRIC AND GAS LINE INSTALLATION WITH LOCAL SERVICE PROVIDER. THE SERVICE PROVIDER WILL BE RESPONSIBLE FOR INSTALLATION OF GAS LINE TO WITHIN 5' OF BUILDING.
15. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
16. SEE IRRIGATION AND ARCHITECTURAL PLANS FOR ADDITIONAL CONDUIT LOCATIONS. VERIFY ALL CONDUIT AND SLEEVE LOCATIONS PRIOR TO PLACING ANY PAVEMENT.
17. CONTRACTOR SHALL INSTALL ALL CONDUITS WITH A MINIMUM 4'-FOOT SWEEP RADIUS. ALL CONDUITS SHALL HAVE A PULL STRING TO BE INSTALLED BY THE CONTRACTOR.
18. NO WORK SHALL BE ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT AN APPROVED PERMIT.
19. THE CONSTRUCTION OF UNDERGROUND PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEMS SHALL BE GOVERNED BY THE ENGINEERING CONSTRUCTION PLANS PREPARED BY THE LOCAL SERVICE PROVIDER. THIS DRAWING SHALL SERVE ONLY AS REFERENCE DOCUMENT TO COORDINATE LOCATION OF THE PROPOSED PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEM. THE LOCAL SERVICE PROVIDER'S CONSTRUCTION DRAWINGS AND CONSTRUCTION DETAILS SHALL GOVERN.
20. CONTRACTOR SHALL INCLUDE IN HIS BID A 4" PVC CONDUIT FOR TELEPHONE AND A 2" PVC CONDUIT FOR CABLE TV TO BE IN THE SAME TRENCH AS UNDERGROUND ELECTRIC LINES. CONTRACTOR SHALL VERIFY WITH APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION ON NUMBER AND SIZE OF CONDUITS NEEDED FOR UTILITY SERVICE TO ALL BUILDINGS.
21. BEDDING FOR ALL UTILITIES SHALL BE PER THE PROJECT SPECIFICATIONS. NO WATER JETTING OF BACKFILL MATERIAL WILL BE ALLOWED.
22. CONTRACTOR TO INCLUDE ALLOWANCE FOR TWENTY (~70 LF LONG) CONDUIT CROSSINGS FOR IRRIGATION AND STREET LIGHTS (2~4" & 2~2")

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

CAUTION!!

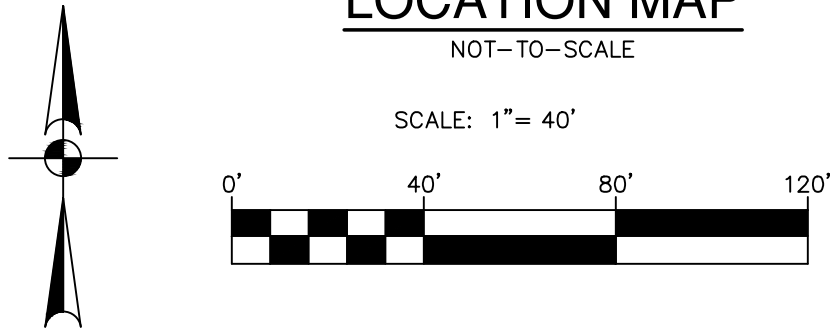
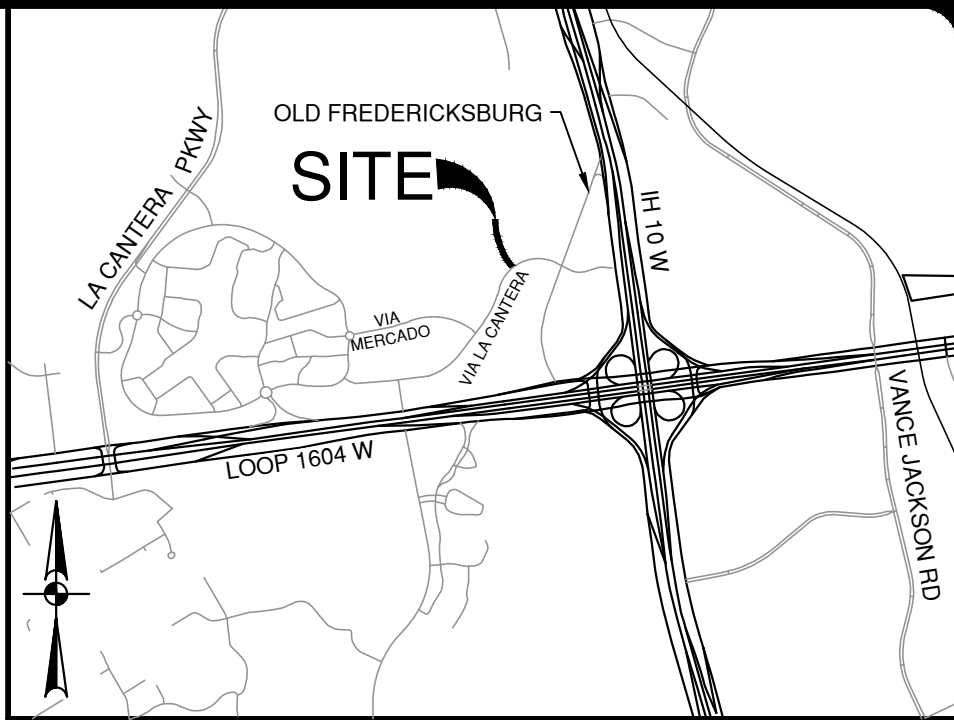
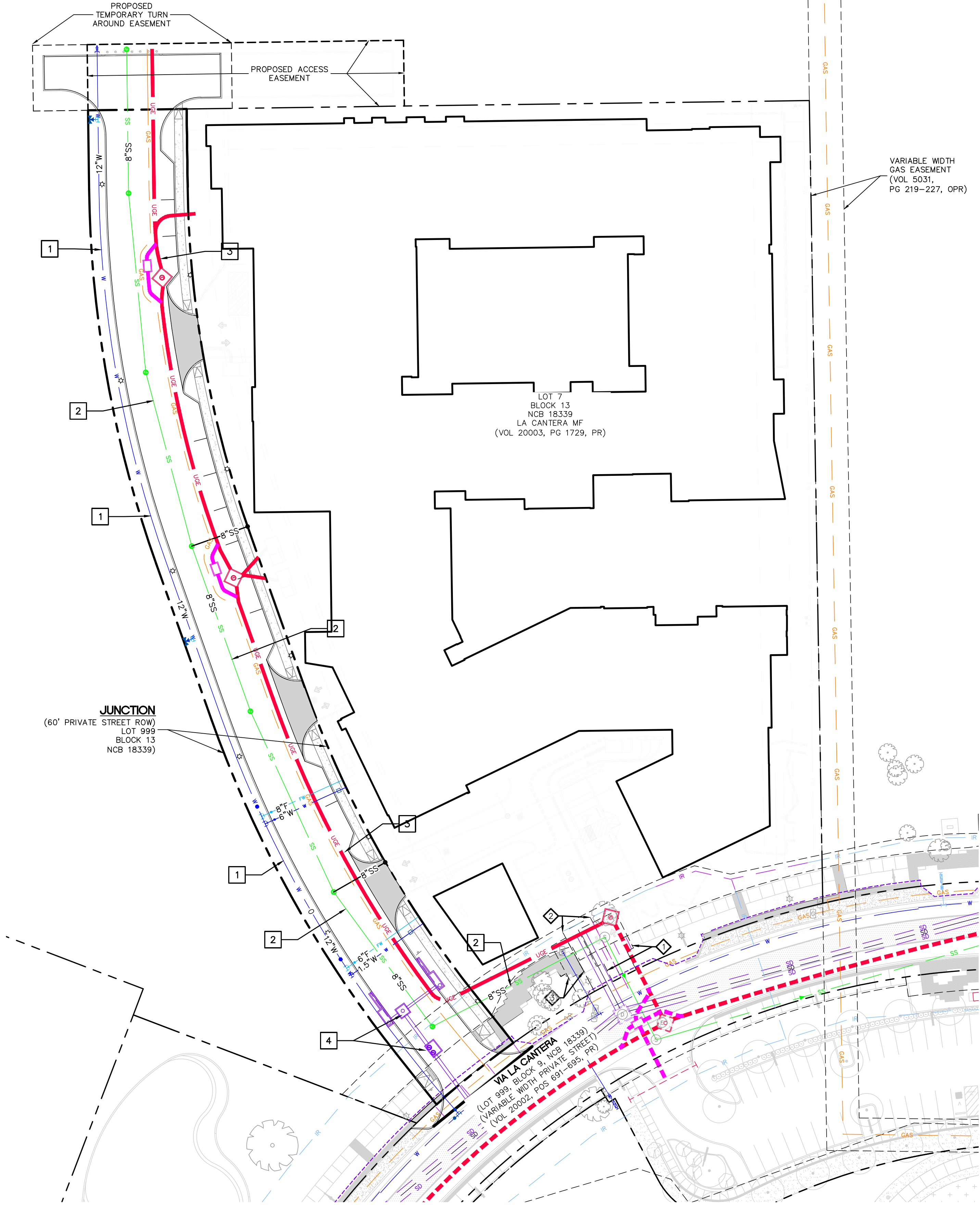
EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

UNPLATTED  
A REMAINING PORTION OF 136.154 ACRES  
US REAL ESTATE LIMITED PARTNERSHIP  
(VOL. 17950, PG. 2483, OPR)

UNPLATTED  
A REMAINING PORTION OF 136.154 ACRES  
US REAL ESTATE LIMITED PARTNERSHIP  
(VOL. 17950, PG. 2483, OPR)



LEGEND

- |     |                               |
|-----|-------------------------------|
| --- | PROPERTY LINE                 |
| --- | EXISTING UNDERGROUND ELECTRIC |
| --- | EXISTING COMMUNICATION        |
| --- | EXISTING WATER                |
| --- | EXISTING FIRE HYDRANT         |
| --- | PROPOSED WATER MAIN           |
| --- | PROPOSED RECLAIMED WATER      |
| --- | PROPOSED FIRE HYDRANT         |
| --- | PROPOSED UNDERGROUND ELECTRIC |
| --- | PROPOSED COMMUNICATION        |
| --- | PROPOSED GAS                  |
| --- | EXISTING SANITARY SEWER       |
| --- | PROPOSED SANITARY SEWER       |
| --- | PROPOSED STORM DRAIN          |

NOTE

SEE SHEET C0.10 FOR CONSTRUCTION NOTES.

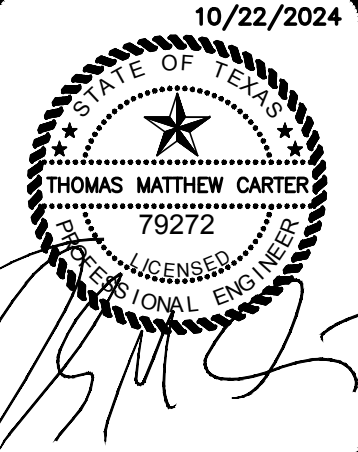
KEYED NOTES

- |   |   |
|---|---|
| 1 | VARIABLE WIDTH SANITARY SEWER EASEMENT<br>(VOL. 5031, PGS 219-227, OPR) |
| 2 | 41'x19' PRIVATE DRAINAGE EASEMENT<br>(VOL. 20002, PGS 691-695, DPR)     |
| 3 | 37'x10' WATER EASEMENT<br>(VOL. 20002, PGS 691-695, DPR)                |
| 4 | PROPOSED WATER AND FIRE<br>(REF. C5.00)                                 |
| 5 | PROPOSED SANITARY SEWER<br>(REF. C4.00)                                 |
| 6 | PROPOSED UNDERGROUND<br>ELECTRICAL/TELECOM/GAS<br>(REF. 6.00)           |
| 7 | PROPOSED STORM DRAIN<br>(REF. C1.00)                                    |

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

NO.	REVISION	DATE

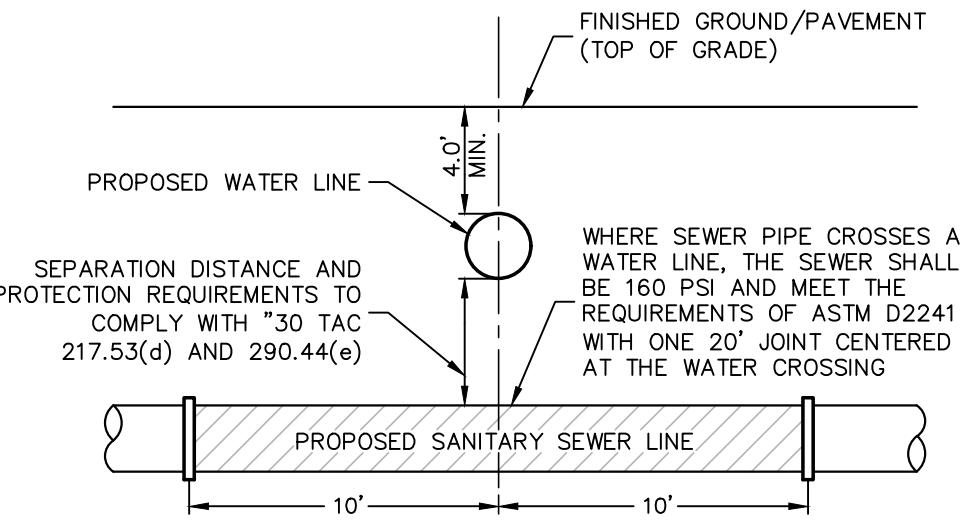


**PAPE-DAWSON**  
**ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028600

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS  
**OVERALL UTILITY PLAN**

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JS
SHEET	C3.00





## TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

NOTE: ALL SEWER LATERALS ON THE WATERLINE SIDE OF THE STREET WILL BE PRESSURE-RATED IN ACCORDANCE WITH NOTE #1 ON THIS SHEET

MANHOLE OPENING INCREASED TO 30" AS PER TCEQ CHAPTER 217.55

ALL MANHOLES CONSTRUCTED OVER THE EDWARDS AQUIFER RECHARGE ZONE SHALL BE WATERTIGHT AS PER TCEQ CHAPTER 213.5

SAWS WILL ONLY MAINTAIN INFRASTRUCTURE WITHIN SANITARY SEWER EASEMENT

CONTOURS SHOWN ARE FOR GRAPHICAL USE ONLY

ALL SEWER PIPE LATERALS SHALL BE SDR26

**NOTE:**  
GEOLOGIC FEATURES WHICH ARE FOUND IN THE TRENCH DURING CONSTRUCTION AND APPROVED FOR SEALING BY TCEQ MUST BE SHOWN AND RECORDED ON AS-BUILT DRAWINGS.

CONTRACTOR MUST NOTIFY ENGINEER 48 HOURS IN ADVANCE OF BEGINNING OF SEALING ANY GEOLOGIC FEATURE. CONTRACTOR MUST PROVIDE ENGINEER OR DESIGNATED CONSTRUCTION OBSERVER WITH OPPORTUNITY TO OBSERVE CONTRACTORS IMPLEMENTATION OF APPROVED TREATMENT METHOD.

## CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING, ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL, DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REDLOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

## CAUTION!!

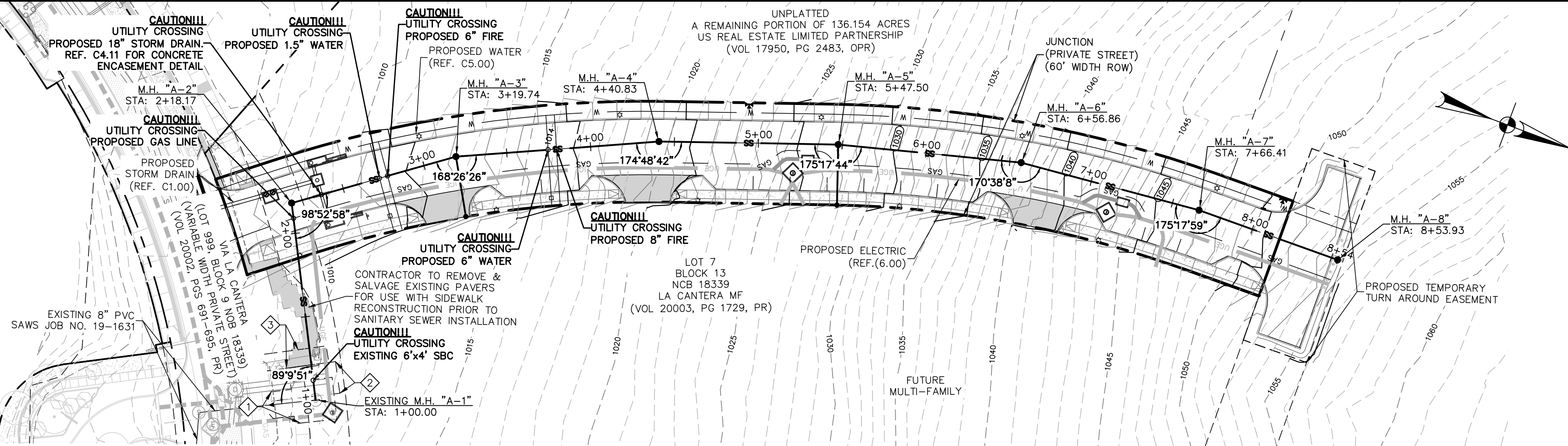
EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

## UTILITY TRENCH COMPACTION

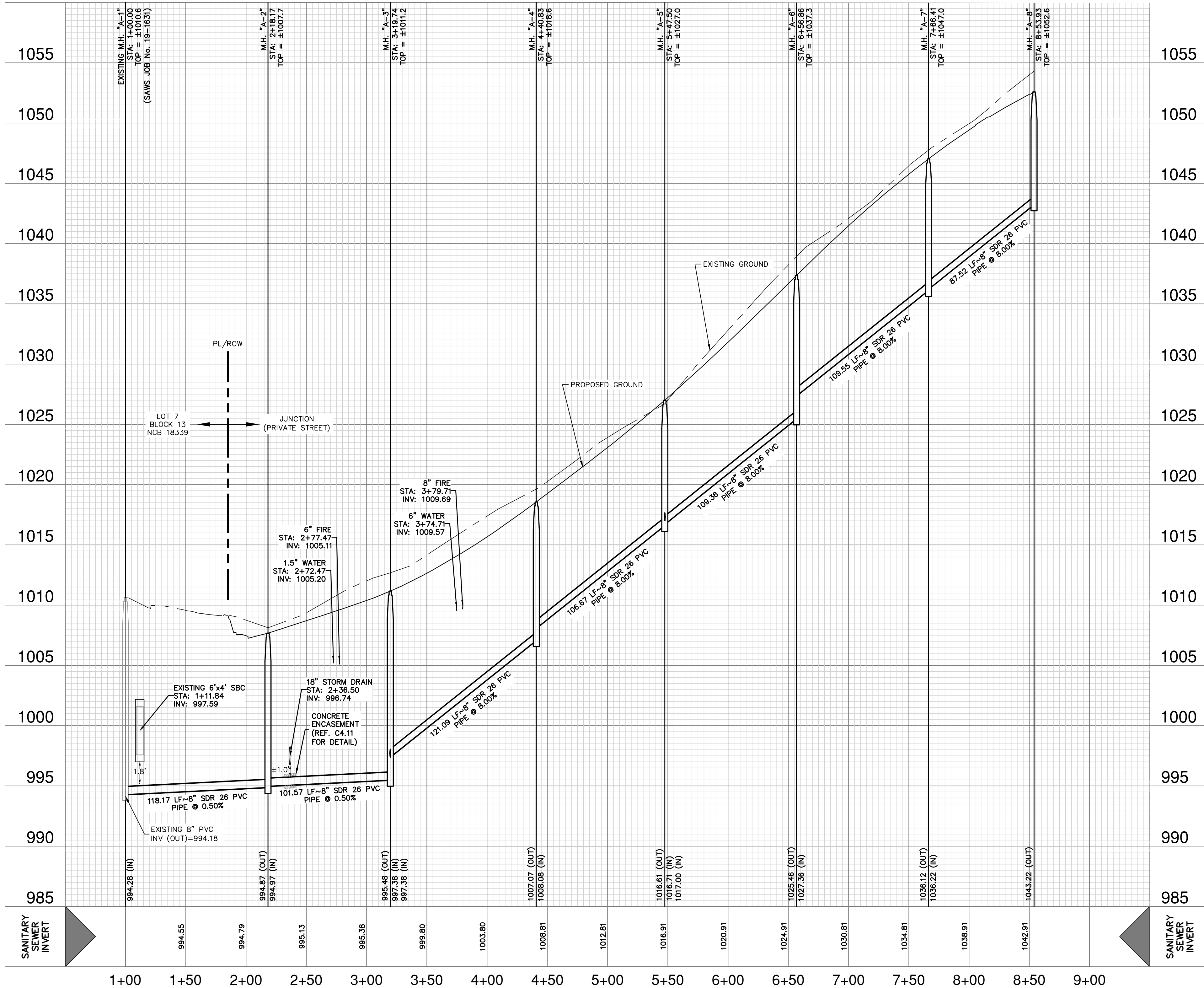
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E, THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

## TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



## SANITARY SEWER LINE "A" STA. 1+00.00 TO END



## LEGEND

---	PROPERTY LINE
---	100-YR FLOODPLAIN
---	EXISTING OVERHEAD ELECTRIC
---	EXISTING WATER
---	EXISTING FIRE HYDRANT
---	PROPOSED WATER MAIN
---	PROPOSED RECLAIMED WATER
---	PROPOSED FIRE HYDRANT
---	PROPOSED OVERHEAD ELECTRIC
---	EXISTING SANITARY SEWER
---	PROPOSED SANITARY SEWER
---	PROPOSED STORM DRAIN

## NOTE

SEE SHEET C0.10 FOR CONSTRUCTION NOTES.  
SEE SHEETS C4.10 AND C4.11 FOR SAWS SEWER DETAILS AND NOTES.

## KEYED NOTES

- VARIABLE WIDTH SANITARY SEWER EASEMENT (VOL 20002, PGS 691-695, PR)
- 41"x19" PRIVATE DRAINAGE EASEMENT (VOL 20002, PGS 691-695, PR)
- 37"x10" WATER EASEMENT (VOL 20002, PGS 691-695, PR)

## PRIVATE STREET DESIGNATION:

LOT 999, BLOCK 13, NCB 18339, IS A PRIVATE STREET AND IS DESIGNATED AS AN UNDERGROUND AND AT-GRADE INFRASTRUCTURE AND SERVICE FACILITIES EASEMENT FOR GAS, ELECTRIC, STREET LIGHT, TELEPHONE, CABLE TELEVISION, DRAINAGE, PEDESTRIAN, PUBLIC WATER, WASTEWATER, AND RECYCLED WATER MAINS.

## SANITARY SEWER NOTES

- SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 P.S.I. AND MEET THE REQUIREMENTS OF ASTM D22241 WITH ONE 20" JOINT CENTERED AT WATER MAIN.
- NO VERTICAL STACKS SHALL BE ALLOWED
- WHEN HORIZONTAL DISTANCE BETWEEN SEWER PIPES AND WATER MAIN IS LESS THAN 9 FT. OF SEPARATION, SEWER MAIN SHALL BE INSTALLED WITH 160 PSI (MIN) PRESSURE PIPE AND FITTINGS IN ACCORDANCE WITH SAWS CONSTRUCTION CRITERIA FOR CONSTRUCTION OF SEWER MAINS IN THE VICINITY OF WATER MAINS.
- ALL SEWER PIPES SHALL BE PVC (SDR 26), UNLESS OTHERWISE NOTED.
- PRIOR TO CONSTRUCTION CONTRACTOR IS TO VERIFY EXISTING INVERT OF EXISTING SANITARY SEWER MAINS AND ALERT ENGINEER IMMEDIATELY OF ANY DIFFERENCE FROM INVERT SHOWN ON PLANS.
- CONTOURS SHOWN ARE FOR GRAPHICAL USE ONLY.
- MANHOLE OPENINGS ARE 30" AS PER TCEQ CHAPTER 217.55
- CONTRACTOR TO INSTALL PERMANENT MARKERS AT THE END OF ALL SEWER LATERALS, PER HOUSE LATERAL DETAIL DD-854-01.
- ALL 6" SEWER LATERALS WILL BE SET AT A MINIMUM 2% SLOPE.
- BACKFILL MUST COMPLY WITH SAWS SPECIFICATIONS 804.4.
- TOPS OF EXISTING MANHOLES SHALL BE ADJUSTED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, AND TO BE 0.50 FEET ABOVE FINISHED GROUND ELEVATIONS IN UNPAVED AREAS WITH WATER TIGHT LIDS.

## SEWER: West Sewershed - Leon Creek W.R.C.

Developer's Name:	US REAL ESTATE LIMITED PARTNERSHIP
Address:	9830 COLONNADA BLVD., SUITE 600
City:	SAN ANTONIO
State:	TEXAS
Zip:	78230
Phone# (210) 641-8400	FAX# (210) 641-8463
SAWS Block Map# 124638	Total EDU's 0
Total Linear Footage of Pipe: 754 LF 8"SS	Plot No. 24-11800345
Number of Lots 1	SAWS JOB NO. 24-XXXX

**PAPE-DAWSON  
ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**LCTC EAST ACCESS (ENCLAVE)**

SAN ANTONIO, TEXAS

SANITARY SEWER LINE A PLAN AND PROFILE

PLAT NO. 24-11800345

JOB NO. 13225-01

DATE SEPTEMBER 2024

DESIGNER MC/KT/TR

CHECKED WK/BS DRAWN JR/JS

SHEET C4.00

PERMIT & PRICING SET



Date: Oct 24, 2024, 4:41pm User ID: obentencourt  
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TCEQ ORGANIZED SEWAGE  
COLLECTION SYSTEM (SCS)  
GENERAL CONSTRUCTION NOTES

1. THIS ORGANIZED SEWAGE COLLECTION SYSTEM MUST BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY'S (TCEQ) EDWARDS ACQUIFER RULES 30 TEXAS ADMINISTRATIVE CODE (TAC) §§213.5(C) AND 217.51-217.70 AND 30 TAC CHAPTER 217, SUBCHAPTER 4, AND THE SAN ANTONIO STANDARD SPECIFICATIONS.

2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT MUST BE PROVIDED WITH COPIES OF THE SEWAGE COLLECTION SYSTEM PLAN AND THE TCEQ LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS MUST BE REQUIRED TO KEEP ON-SITE COPIES OF THE PLAN AND THE APPROVAL LETTER.

3. NO LATER THAN 48 HOURS PRIOR TO COMMENCING ANY REGULATED ACTIVITY, THE APPLICANT OR HIS AGENT MUST NOTIFY THE REGIONAL OFFICE, IN WRITING, OF THE DATE ON WHICH THE REGULATED ACTIVITY WILL BEGIN.

4. ANY MODIFICATION TO THE ACTIVITIES DESCRIBED IN THE REFERENCED SCS APPLICATION FOLLOWING THE DATE OF APPROVAL MAY REQUIRE THE SUBMITTAL OF AN SCS APPLICATION TO MODIFY THIS APPROVAL, INCLUDING THE PAYMENT OF APPROPRIATE FEES AND ALL INFORMATION NECESSARY FOR ITS REVIEW AND APPROVAL.

5. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND MUST BE REMOVED WHEN SUFFICIENT VEGETATION IS ESTABLISHED TO CONTROL THE EROSION AND SEDIMENTATION AND THE CONSTRUCTION AREA IS STABILIZED.

6. THE SEWER LINE TRENCH DETAILS SHOWING THE CROSS SECTION WITH THE DIMENSIONS, PIPE PLACEMENT, AND BACKFILL INSTRUCTIONS ARE INCLUDED ON PLAN SHEET C5.10 OF THESE PLANS. ALL SEWER PIPES JOINTS MUST MEET THE REQUIREMENTS IN 30 TAC §§217.53(C) AND 217.65.

GRAVITY LINES MUST HAVE A SDR 26 OR LESS, PRESSURIZED SEWER SYSTEMS MUST HAVE PIPE WITH A MINIMUM WORKING PRESSURE RATING OF 150 PSI.

THE ASTM, ANSI, OR AWWA SPECIFICATION NUMBERS FOR THE PIPE(S) AND JOINTS ARE: ASTM D3034, ASTM 3212, ASTM D2241, AND ASTM D3239 CLASS 160.

THE PIPE MATERIAL, THE PRESSURE CLASSES, AND THE SDR AND/OR DR DESIGNATIONS ARE: PVC 115 PSI AND SDR 26; PVC 160 PSI, SDR 26.

7. IF ANY SENSITIVE FEATURES ARE DISCOVERED DURING THE WASTEWATER LINE TRENCHING ACTIVITIES, ALL REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MUST BE SUSPENDED IMMEDIATELY. THE APPLICANT MUST IMMEDIATELY NOTIFY THE APPROPRIATE REGIONAL OFFICE OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY OF THE FEATURE DISCOVERED. A GEOLOGIC ASSESSMENT OF THE LOCATION AND EXTENT OF THE FEATURE DISCOVERED MUST BE REPORTED TO THAT REGIONAL OFFICE IN WRITING WITHIN TWO WORKING DAYS. THE APPLICANT MUST SUBMIT A PLAN FOR ENSURING THE STRUCTURAL INTEGRITY OF THE SEWER LINE OR FOR MODIFYING THE PROPOSED SEWAGE COLLECTION SYSTEM ALIGNMENT AROUND THE FEATURE. THE REGULATED ACTIVITIES NEAR THE SENSITIVE FEATURE MAY NOT PROCEED UNTIL THE EXECUTIVE DIRECTOR HAS REVIEWED AND APPROVED THE METHODS PROPOSED TO PROTECT THE SENSITIVE FEATURE AND THE EDWARDS ACQUIFER FROM ANY POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY WHILE MAINTAINING THE STRUCTURAL INTEGRITY OF THE LINE.

8. SEWER LINES LOCATED WITHIN OR CROSSING THE 5-YEAR FLOODPLAIN OF A DRAINAGE WAY WILL BE PROTECTED FROM INUNDATION AND STREAM VELOCITIES WHICH COULD CAUSE EROSION AND SCOURING OF BACKFILL. THE TRENCH MUST BE FLOORED WITH CONCRETE TO PREVENT SCOURING OF BACKFILL, OR THE SEWER LINES MUST BE ENCASED IN CONCRETE. ALL CONCRETE SHALL HAVE A MINIMUM THICKNESS OF SIX (6) INCHES.

9. BLASTING PROCEDURES FOR PROTECTION OF EXISTING SEWER LINES AND OTHER UTILITIES WILL BE IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION CRITERIA. SAND IS NOT ALLOWED AS BEDDING OR BACKFILL IN TRENCHES THAT HAVE BEEN BLASTED. IF ANY EXISTING SEWER LINES ARE DAMAGED, THE LINES MUST BE REPAIRED AND RETESTED.

10. ALL MANHOLES CONSTRUCTED OR REHABILITATED ON THIS PROJECT MUST HAVE WATER-TIGHT SIZE ON SIZE RESILIENT CONNECTORS ALLOWING FOR DIFFERENTIAL SETTLEMENT. IF MANHOLES ARE CONSTRUCTED WITHIN THE 100-YEAR FLOODPLAIN, THE COVER MUST HAVE A GASKET AND BE BOLTED TO THE RING, WHERE GASKETED MANHOLE COVERS ARE REQUIRED FOR MORE THAN THREE MANHOLES IN SEQUENCE OR FOR MORE THAN 1500 FEET, ALTERNATE MEANS OF VENTING WILL BE PROVIDED. BRICKS ARE NOT AN ACCEPTABLE CONSTRUCTION MATERIAL FOR ANY PORTION OF THE MANHOLE.

THE DIAMETER OF THE MANHOLES MUST BE A MINIMUM OF FOUR FEET AND THE MANHOLE FOR ENTRY MUST HAVE A MINIMUM CLEAR OPENING DIAMETER OF 30 INCHES. THESE DIMENSIONS AND OTHER DETAILS SHOWING COMPLIANCE WITH THE COMMISSION'S RULES CONCERNING MANHOLES AND SEWER LINE/MANHOLE INVERTS DESCRIBED IN 30 TAC §217.55 ARE INCLUDED ON PLAN SHEET C4.00.

IT IS SUGGESTED THAT ENTRANCE INTO MANHOLES IN EXCESS OF FOUR FEET DEEP BE ACCOMPLISHED BY MEANS OF A PORTABLE LADDER. THE INCLUSION OF STEPS IN A MANHOLE IS PROHIBITED.

11. WHERE WATER LINES AND NEW SEWER LINE ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES), THE WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).

12. WHERE SEWERS LINES DEVIATE FROM STRAIGHT ALIGNMENT AND UNIFORM GRADE, ALL CURVATURE OF SEWER PIPES MUST BE ACHIEVED BY THE FOLLOWING PROCEDURE WHICH IS RECOMMENDED BY THE PIPE MANUFACTURER: N/A.

IF PIPE FLEXURE IS PROPOSED, THE FOLLOWING METHOD OF PREVENTING DEFLECTION OF THE JOINT MUST BE USED: N/A.

SPECIFIC CARE MUST BE TAKEN TO ENSURE THAT THE JOINT IS PLACED IN THE CENTER OF THE TRENCH AND PROPERLY BEDDED IN ACCORDANCE WITH 30 TAC §217.54.

13. NEW SEWAGE COLLECTION SYSTEM LINES MUST BE CONSTRUCTED WITH STUB OUTS FOR THE CONNECTION OF ANTICIPATED EXTENSIONS. THE LOCATION OF SUCH STUB OUTS MUST BE MARKED ON THE GROUND SUCH THAT THEIR LOCATION CAN BE EASILY DETERMINED AT THE TIME OF CONNECTION OF THE EXTENSIONS. SUCH STUB OUTS MUST BE MANUFACTURED WYES OR TEES THAT ARE COMPATIBLE IN SIZE AND MATERIAL WITH BOTH THE SEWER LINE AND THE EXTENSION. AT THE TIME OF ORIGINAL CONSTRUCTION, NEW STUB-OUTS MUST BE CONSTRUCTED SUFFICIENTLY TO EXTEND BEYOND THE END OF THE STREET PAVEMENT. ALL STUB-OUTS MUST BE SEALED WITH A MANUFACTURED CAP TO PREVENT LEAKAGE. EXTENSIONS THAT WERE NOT ANTICIPATED AT THE TIME OF ORIGINAL CONSTRUCTION OR THAT ARE TO BE CONNECTED TO AN EXISTING SEWER LINE NOT FURNISHED WITH STUB OUTS MUST BE CONNECTED USING A MANUFACTURED SADDLE AND IN ACCORDANCE WITH ACCEPTED PLUMBING TECHNIQUES.

IF NO STUB-OUT IS PRESENT AN ALTERNATE METHOD OF JOINING LATERALS IS SHOWN IN THE DETAIL ON PLAN SHEET C4.00. (FOR POTENTIAL FUTURE LATERALS).

THE PRIVATE SERVICE LATERAL STUB-OUTS MUST BE INSTALLED AS SHOWN ON THE PLAN AND PROFILE SHEETS ON PLAN SHEET C4.00 AND MARKED AFTER BACKFILLING AS SHOWN IN THE DETAIL ON PLAN SHEET C4.00.

14. TRENCHING, BEDDING AND BACKFILL MUST CONFORM WITH 30 TAC §217.54. THE BEDDING AND BACKFILL FOR FLEXIBLE PIPE MUST COMPLY WITH THE STANDARDS OF ASTM D-2321, CLASSES IA, IB, II OR III. RIGID PIPE BEDDING MUST COMPLY WITH THE REQUIREMENTS OF ASTM C 12 (ANSI A 106.2) CLASSES A, B OR C.

15. SEWER LINES MUST BE TESTED FROM MANHOLE TO MANHOLE. WHEN A NEW SEWER LINE IS CONNECTED TO AN EXISTING STUB OR CLEAN-OUT, IT MUST BE TESTED FROM EXISTING MANHOLE TO NEW MANHOLE. IF A STUB OR CLEAN-OUT IS USED AT THE END OF THE PROPOSED SEWER LINE, NO PRIVATE SERVICE ATTACHMENTS MAY BE CONNECTED BETWEEN THE LAST MANHOLE AND THE CLEANOUT UNLESS IT CAN BE CERTIFIED AS CONFORMING WITH THE PROVISIONS OF 30 TAC §213.5(C)(3)(E).

16. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH 30 TAC §217.57. THE ENGINEER MUST RETAIN COPIES OF ALL TEST RESULTS WHICH MUST BE MADE AVAILABLE TO THE EXECUTIVE DIRECTOR UPON REQUEST. THE ENGINEER MUST CERTIFY IN WRITING THAT ALL WASTEWATER LINES HAVE PASSED ALL REQUIRED TESTING TO THE APPROPRIATE REGIONAL OFFICE WITHIN 30 DAYS OF TEST COMPLETION AND PRIOR TO USE OF THE NEW COLLECTION SYSTEM. TESTING METHOD WILL BE:

(a) FOR A COLLECTION SYSTEM PIPE THAT WILL TRANSPORT WASTEWATER BY GRAVITY FLOW, THE DESIGN MUST SPECIFY AN INFILTRATION AND EXFILTRATION TEST OR A LOW-PRESSURE AIR TEST. A TEST MUST CONFORM TO THE FOLLOWING REQUIREMENTS:

(1) LOW PRESSURE AIR TEST.

(A) A LOW PRESSURE AIR TEST MUST FOLLOW THE PROCEDURES DESCRIBED IN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) C-828, ASTM C-924, OR ASTM F-1417 OR OTHER PROCEDURE APPROVED BY THE EXECUTIVE DIRECTOR, EXCEPT AS TO TESTING TIMES AS REQUIRED IN TABLE C.3 IN SUBPARAGRAPH (C) OF THIS PARAGRAPH OR EQUATION C.3 IN SUBPARAGRAPH (B)(I) OF THIS PARAGRAPH.

(B) FOR SECTIONS OF COLLECTION SYSTEM PIPE LESS THAN 36 INCH AVERAGE INSIDE DIAMETER, THE FOLLOWING PROCEDURE MUST APPLY, UNLESS A PIPE IS TO BE TESTED AS REQUIRED BY PARAGRAPH (2) OF THIS SUBSECTION.

(i) A PIPE MUST BE PRESSURIZED TO 3.5 POUNDS PER SQUARE INCH (PSI) GREATER THAN THE PRESSURE EXERTED BY GROUNDWATER ABOVE THE PIPE.

(ii) ONCE THE PRESSURE IS STABILIZED, THE MINIMUM TIME ALLOWABLE FOR THE PRESSURE TO DROP FROM 3.5 PSI GAUGE TO 2.5 PSI GAUGE IS COMPUTED FROM THE FOLLOWING EQUATION:

WHERE:

T = TIME FOR PRESSURE TO DROP 1.0 POUND PER SQUARE INCH GAUGE IN SECONDS  
K = 0.000419 X D X L X L, BUT NOT LESS THAN 1.0  
D = AVERAGE INSIDE PIPE DIAMETER IN INCHES

L = LENGTH OF LINE OF SAME SIZE BEING TESTED, IN FEET  
Q = RATE OF LOSS, 0.0015 CUBIC FEET PER MINUTE PER SQUARE FOOT INTERNAL SURFACE

(C) SINCE A K VALUE OF LESS THAN 1.0 MAY NOT BE USED, THE MINIMUM TESTING TIME FOR EACH PIPE DIAMETER IS SHOWN IN THE FOLLOWING TABLE C.3:

PIPE DIAMETER (INCHES)	MINIMUM TIME (SECONDS)	MAXIMUM LENGTH FOR MINIMUM TIME (FEET)	TIME FOR LONGER LENGTH (SECONDS /FOOT)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

(D) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 238 OF THE CALCULATED TESTING TIME.

(E) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 238 OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.

(F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.

(G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.

(2) INFILTRATION/EXFILTRATION TEST.

(A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.

(B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.

(C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.

(D) FOR CONSTRUCTION WITH A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.

(E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE QUANTITY OF INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.

(F) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:

(1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.

(A) MANDREL SIZING.

(i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD. THE AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED AGENCY.

(ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF THE PIPE. IN THIS CASE, THE ID OF THE PIPE IS THE AVERAGE INSIDE DIAMETER MINUS THE MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.

(iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.

(B) MANDREL DESIGN.

(i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.

(ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.

(iii) A BARREL SECTION LENGTH MUST EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.

(iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.

(C) METHOD OPTIONS.

(i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.

(ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.

(iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.

(2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.

(3) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.

(4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.

(5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%).

(6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

17. ALL MANHOLES MUST BE TESTED TO MEET OR EXCEED THE REQUIREMENTS OF 30 TAC §217.58.

(a) ALL MANHOLES MUST PASS A LEAKAGE TEST.

(A) AN OWNER SHALL TEST EACH MANHOLE (AFTER ASSEMBLY AND BACKFILLING) FOR LEAKAGE, SEPARATE AND INDEPENDENT OF THE COLLECTION SYSTEM PIPES, BY HYDROSTATIC EXFILTRATION TESTING, VACUUM TESTING, OR OTHER METHOD APPROVED BY THE EXECUTIVE DIRECTOR.

(1) HYDROSTATIC TESTING.

(A) THE MAXIMUM LEAKAGE FOR HYDROSTATIC TESTING OR ANY ALTERNATIVE TEST METHODS IS 0.025 GALLONS PER FOOT DIAMETER PER FOOT OF MANHOLE DEPTH PER HOUR.

(B) TO PERFORM A HYDROSTATIC EXFILTRATION TEST, AN OWNER SHALL SEAL ALL WASTEWATER PIPES COMING INTO A MANHOLE WITH AN INTERNAL PIPE PLUG, FILL THE MANHOLE WITH WATER, AND MAINTAIN THE TEST FOR AT LEAST ONE HOUR.

(C) A TEST FOR CONCRETE MANHOLES MAY USE A 24-HOUR WETTING PERIOD BEFORE TESTING TO ALLOW SATURATION OF THE CONCRETE.

(2) VACUUM TESTING.

(A) TO PERFORM A VACUUM TEST, AN OWNER SHALL PLUG ALL LIFT HOLES AND EXTERIOR JOINTS WITH A NON-SHRINK GROUT AND PLUG ALL PIPES ENTERING A MANHOLE.

(B) NO GROUT MUST BE PLACED IN HORIZONTAL JOINTS BEFORE TESTING.

(C) STUB-OUTS, MANHOLE BOOTS, AND PIPE PLUGS MUST BE SECURED TO PREVENT MOVEMENT WHILE A VACUUM IS DRAWN.

(D) AN OWNER SHALL USE A MINIMUM 60 INCH/LB TORQUE WRENCH TO TIGHTEN THE EXTERNAL CLAMPS THAT SECURE A TEST COVER TO THE TOP OF A MANHOLE.

(E) A TEST HEAD MUST BE PLACED AT THE INSIDE OF THE TOP OF A CONE SECTION, AND THE SEAL INFLATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

(F) THERE MUST BE A VACUUM OF 10 INCHES OF MERCURY TO A MANHOLE TO PERFORM A VALID TEST.

(G) A TEST DOES NOT BEGIN UNTIL AFTER THE VACUUM PUMP IS OFF.

(H) A MANHOLE PASSES THE TEST IF AFTER 20 MINUTES AND WITH ALL VALVES CLOSED, THE VACUUM IS AT LEAST 9.0 INCHES OF MERCURY.

18. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE UTILITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

ADDITIONAL MISCELLANEOUS  
SAWS NOTES

January 26, 2006

1. THIS PROJECT IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE. ALL MATERIAL AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEM (SAWS) AND COMPLY WITH CURRENT SPECIFICATIONS.

2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN THE COPY OF THE APPROVED S.C.P. FROM THE CONSULTANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS.

3. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, TO INCLUDE SERVICE LATERALS, SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES 48 HOURS PRIOR TO EXCAVATION AND TO PROTECT THE SAME DURING CONSTRUCTION.

SAN ANTONIO WATER SYSTEM  
COSA DRAINAGE  
COSA TRAFFIC SIGNAL OPERATIONS  
TEXAS STATE WIDE ONE CALL LOCATOR  
CITY PUBLIC SERVICE  
AT&T  
TIME WARNER CABLE  
VALERO ENERGY CO.

210-233-2010  
210-207-2800  
210-210-7575  
1-800-545-6005  
1-800-545-6005  
1-800-545-6005  
1-800-545-6005  
1-800-545-6005

4. THE CONTRACTOR SHALL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION.

5. ALL WORK IN TEXAS HIGHWAY DEPARTMENT AND BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT.

6. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CITY PUBLIC SERVICE MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND GAS VALVES THAT ARE IN THE PROJECT AREAS.

7. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.

8. ON ANY MANHOLES TO BE ABANDONED, THE RINGS AND COVER SHALL BE SALVAGED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, ITEM 862, AND THE HOLE BACKFILLED TO THE SATISFACTION OF THE INSPECTOR.

9. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION.

10. ALL PVC SEWER PIPE WITH OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH, MINIMUM PIPE STIFFNESS OF 115 PSI.

11. SEWER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS AS APPROVED BY SAWS, MECHANICAL JOINT "BOOT TYPE" CONNECTIONS ALONE WILL NOT BE ALLOWED. "BOOT TYPE" JOINTS MAY BE USED IN CONJUNCTION WITH COMPRESSION JOINTS AS APPROVED BY SAWS. ANY CHANGES FROM THESE METHODS MUST BE APPROVED BY SAWS.

12. ALL RESIDENTIAL SEWER SERVICE LATERAL SHALL BE EXTENDED TO THE PROPERTY LINE AND CAPPED AND SEALED. (ITEM NO. DD-854-01).

13. WHERE REQUIRED, CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLANE 6" ABOVE THE TOP OF THE PIPE, WITH PAY LIMITS AS SHOWN ON THE ITEM NO. DD-858-01.

14. A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAINS. LATERALS AT SUBGRADE, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.

15. NO BLASTING SHALL BE PERFORMED WITHIN 75 FEET OF EXISTING UTILITIES.

16. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVAL FLOOD PLAIN DEVELOPMENT PERMIT.

17. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS ACQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ.

18. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

19. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT'S PLAN AND PROFILE SHEETS.

B. AT A MINIMUM THESE CONTROLS SHALL CONSIST OF ROCK BERM AND/OR SILT FENCES CONSTRUCTED PARALLEL TO AND DOWN GRADIENT FROM THE TRENCHES. THE ROCK BERM OR SILT FENCES SHALL BE INSTALLED IN A MANNER SUCH THAT ANY RAINFALL RUNOFF SHALL BE FILTERED. BARS SHALL NOT BE USED FOR TEMPORARY EROSION AND SEDIMENTATION CONTROLS.

C. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED AND THE CONSTRUCTION AREA IS STABILIZED. ADDITIONAL PROTECTION MAY BE NECESSARY IF EXCESSIVE SOLIDS ARE BEING DISCHARGED FROM THE SITE.

20. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE SAN ANTONIO WATER SYSTEM.

21. PLACEMENT OF SUCH CONTROLS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS. ACTUAL LOCATIONS MAY VARY SLIGHTLY FROM THE PLANS, BUT WILL BE VERIFIED BY THE ENGINEER/INSPECTOR IN THE FIELD PRIOR TO SEWER LINE CONSTRUCTION. THE CONTRACTOR AND CITY INSPECTOR SHALL INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY SIGNIFICANT RAINFALL TO INSURE SIGNIFICANT DISTURBANCE TO THE STRUCTURES HAS NOT OCCURRED, SEDIMENT DEPOSITED AFTER A SIGNIFICANT RAINFALL SHALL BE REMOVED FROM THE SITE OR PLACED IN AN APPROVED DESIGNATED SOIL DISPOSAL AREA.

22. A DEFLECTION TEST SHALL BE PERFORMED ON ALL FLEXIBLE PIPE, THE TEST SHALL BE CONDUCTED AFTER INITIAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. ITEM NO. 849.

23. ALL MAINS MUST PASS AIR TESTING PER ITEM NO. 849 IN THE STANDARD SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE SAN ANTONIO WATER SYSTEM.

24. ALL MAINS MUST COMPLY WITH ITEM NO. 868 OF SEWER MAIN CLEANING.

25. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND SAWS ITEM 804.

26. SANITARY SEWER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS ITEM 849.

27. AFTER CONSTRUCTION, TESTING WILL BE DONE BY T.V. CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR, AND WASTEWATER ENGINEERING PERSONNEL. A T.V. CAMERA IS RUN THROUGH THE LINES. ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED JOINTS, MUST BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

28. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE SAN ANTONIO WATER SYSTEM CONSTRUCTION INSPECTION DIVISION.

29. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.

30. THE DEVELOPER DEDICATES THE SANITARY SEWER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE SAN ANTONIO WATER SYSTEM. THE SAN ANTONIO WATER SYSTEM WILL OWN AND MAINTAIN SAID SANITARY SEWER MAINS WHICH ARE LOCATED WITHIN THIS PARTICULAR SUBDIVISION, (AS APPLICABLE).

31. THE DEVELOPER WILL BE RESPONSIBLE FOR THE LIFT STATION MAINTENANCE FEE IN EFFECT AT THE TIME OF CERTIFICATION. THE CURRENT LIFT STATION MAINTENANCE FEE PER LIFT STATION WILL BE COLLECTED PRIOR TO PLAT RECORDATION.

32. WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A GENERAL CONSTRUCTION PERMIT OR THE CONSENT OF THE SAN ANTONIO WATER SYSTEM CONSTRUCTION INSPECTION DIVISION WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

TRENCH EXCAVATION SAFETY PROTECTION

33. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

34. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.

35. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. SANITARY SEWER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO THE S.A.W.S. STANDARD SPECIFICATIONS FOR CONSTRUCTION, ITEM NO. 850 & 804.

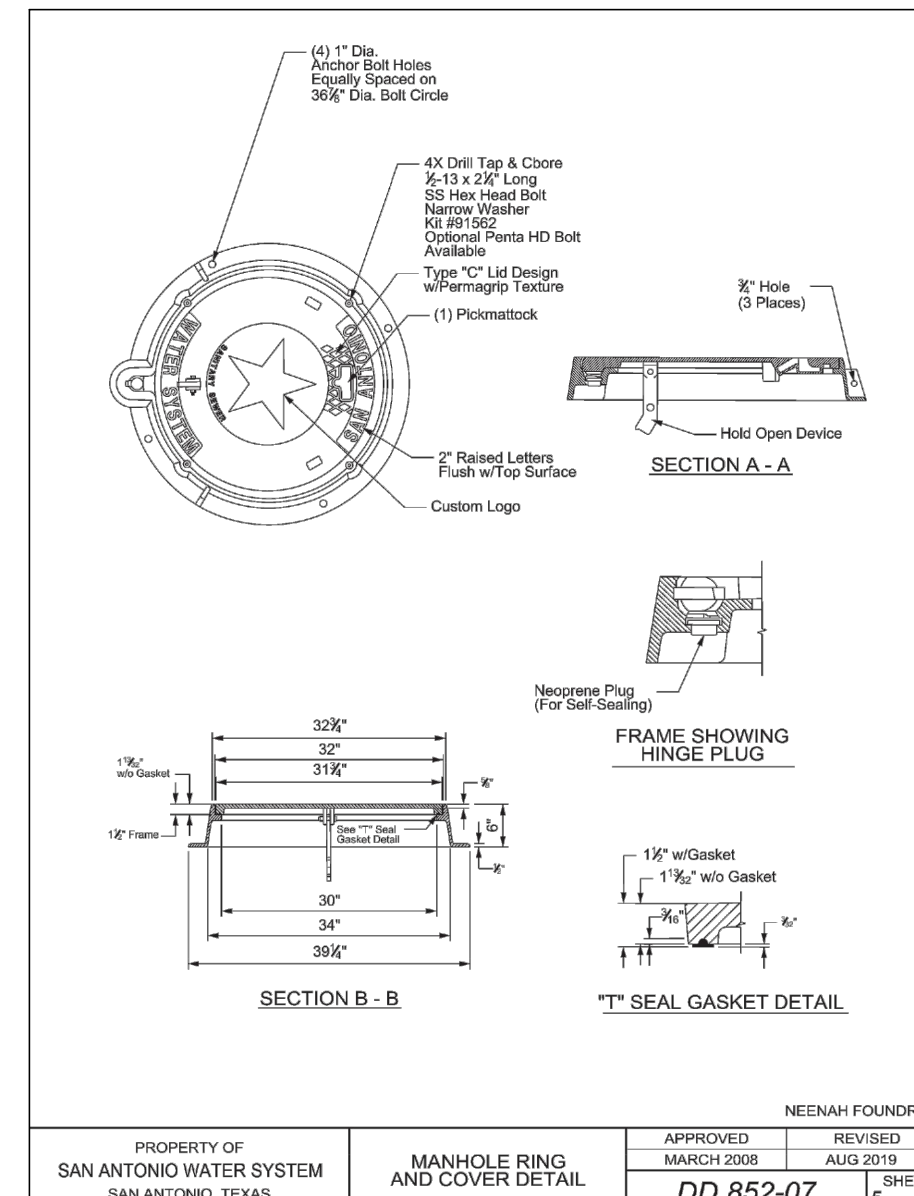
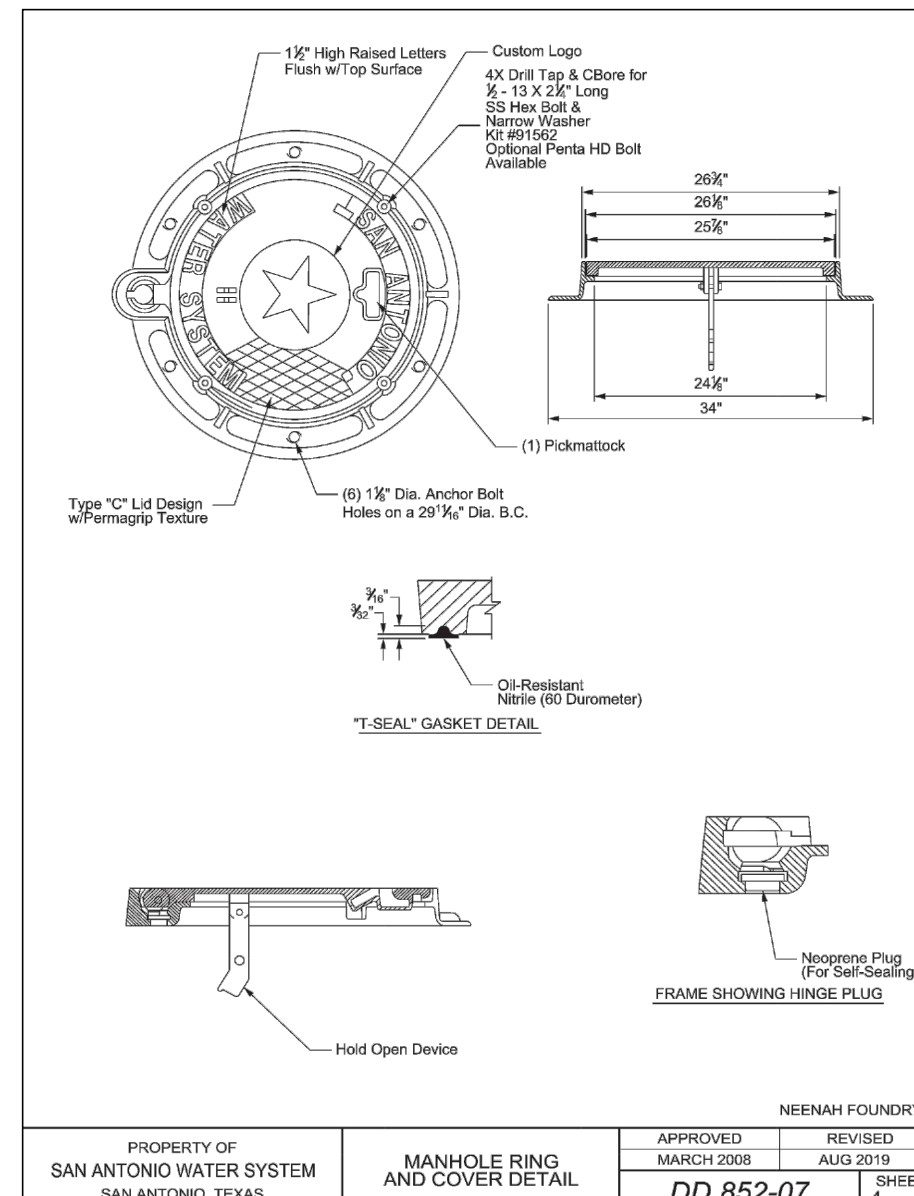
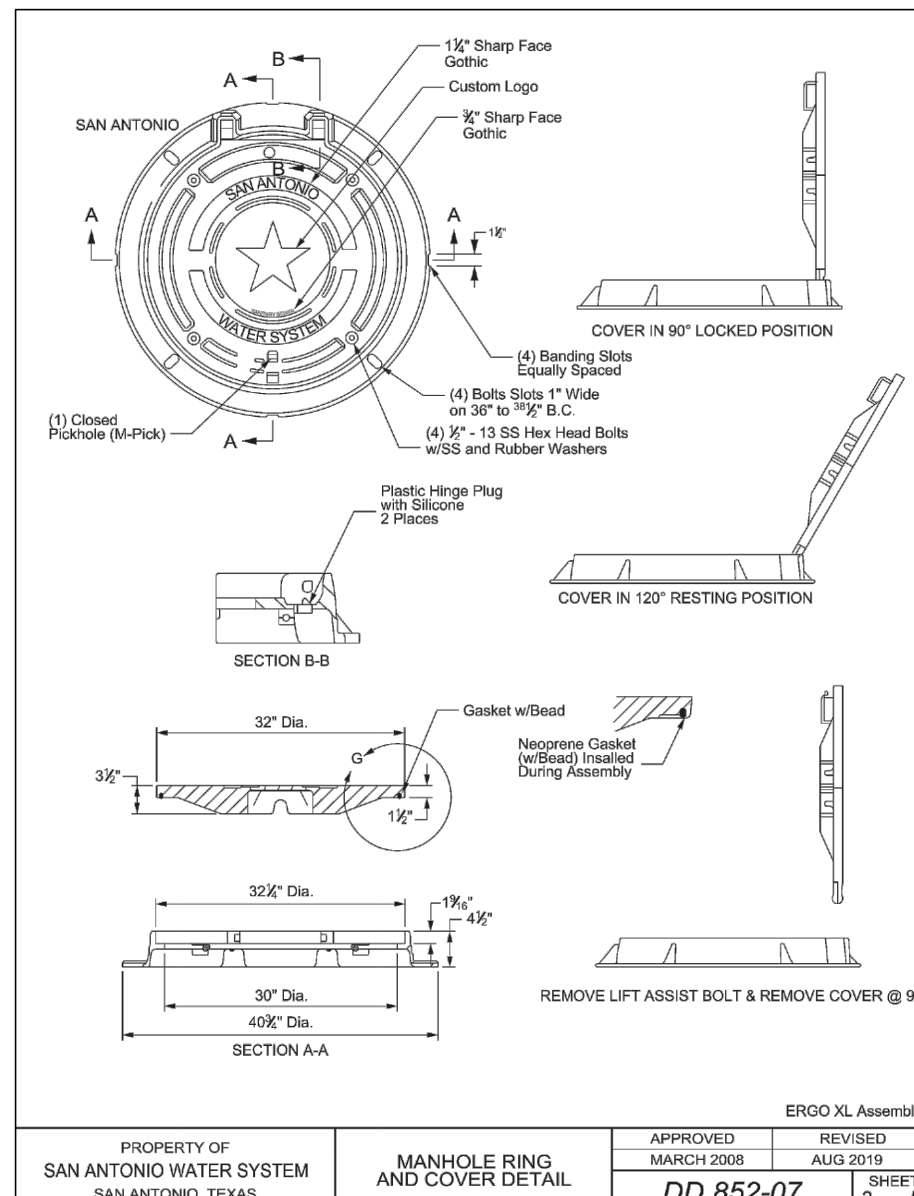
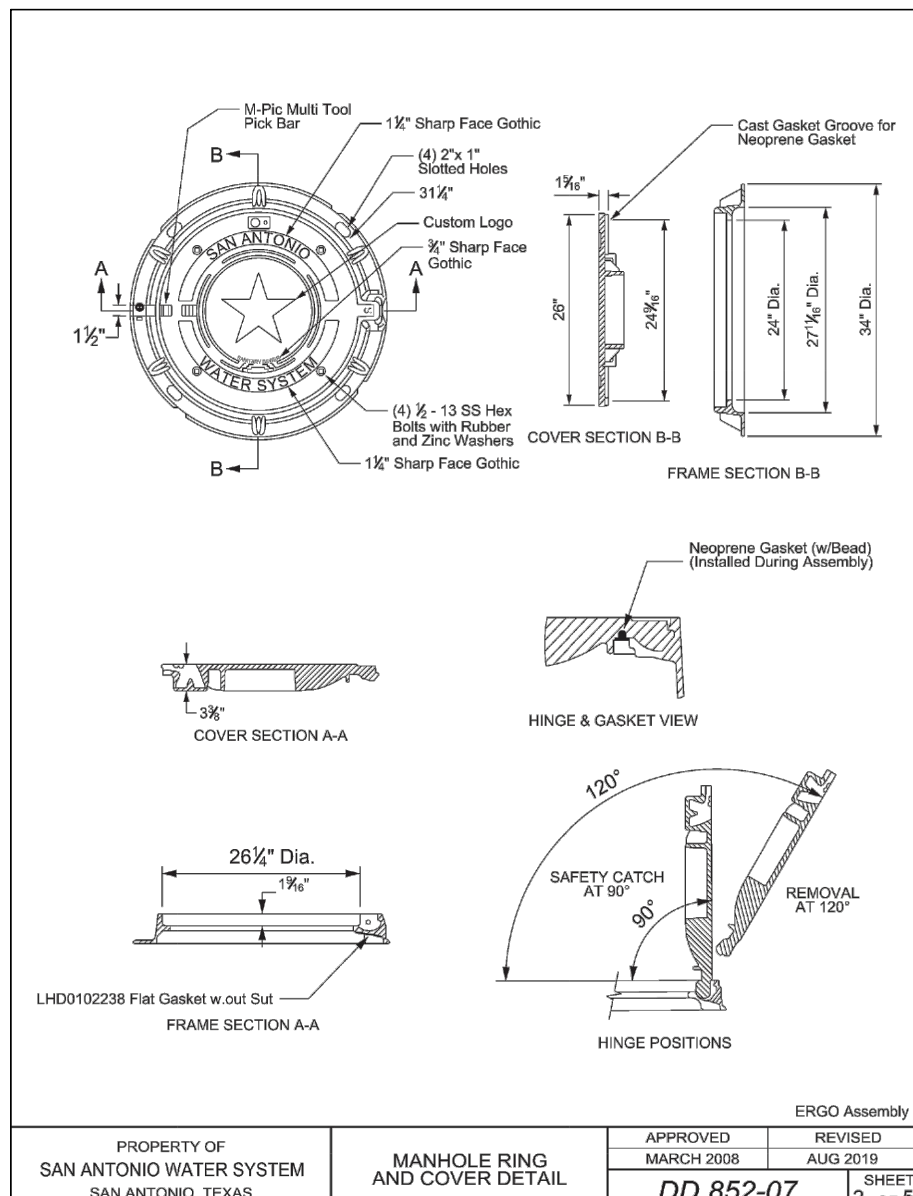
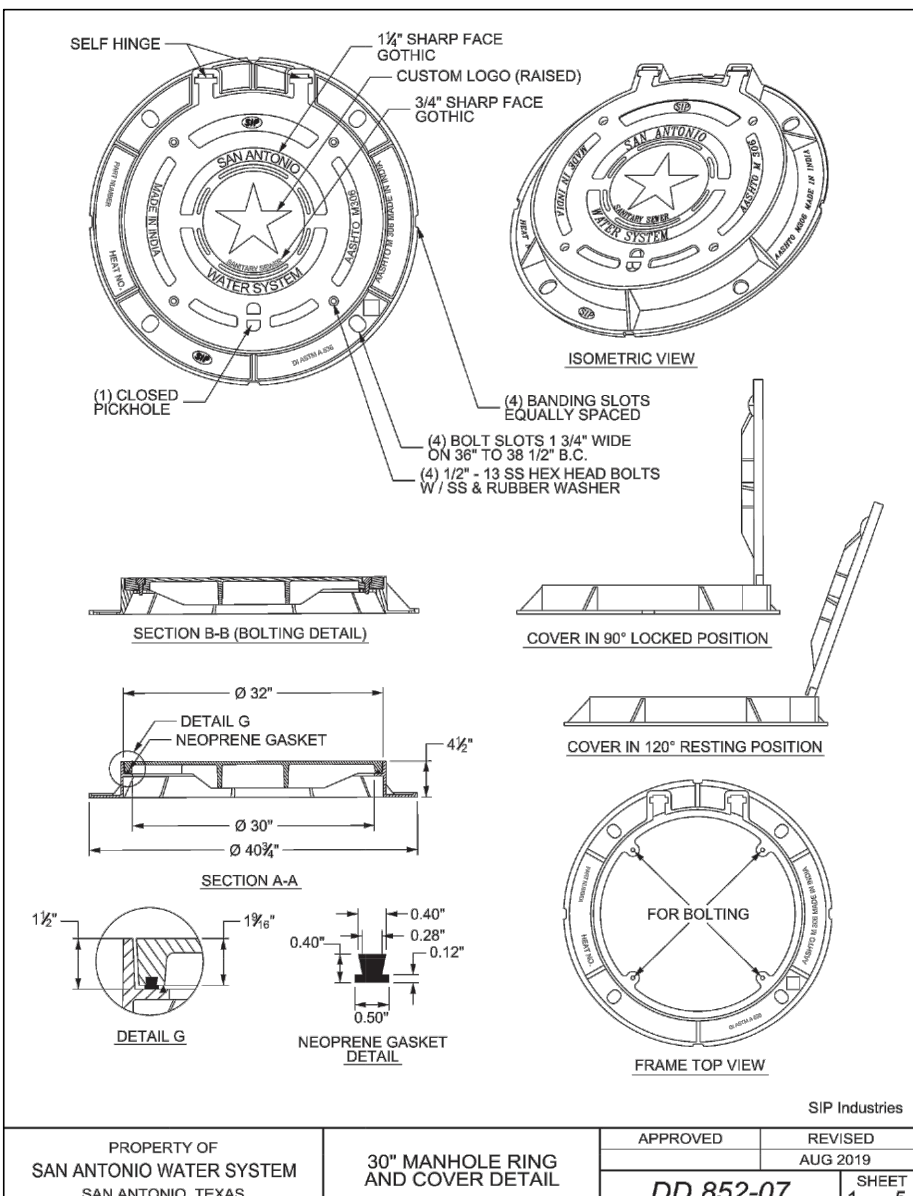
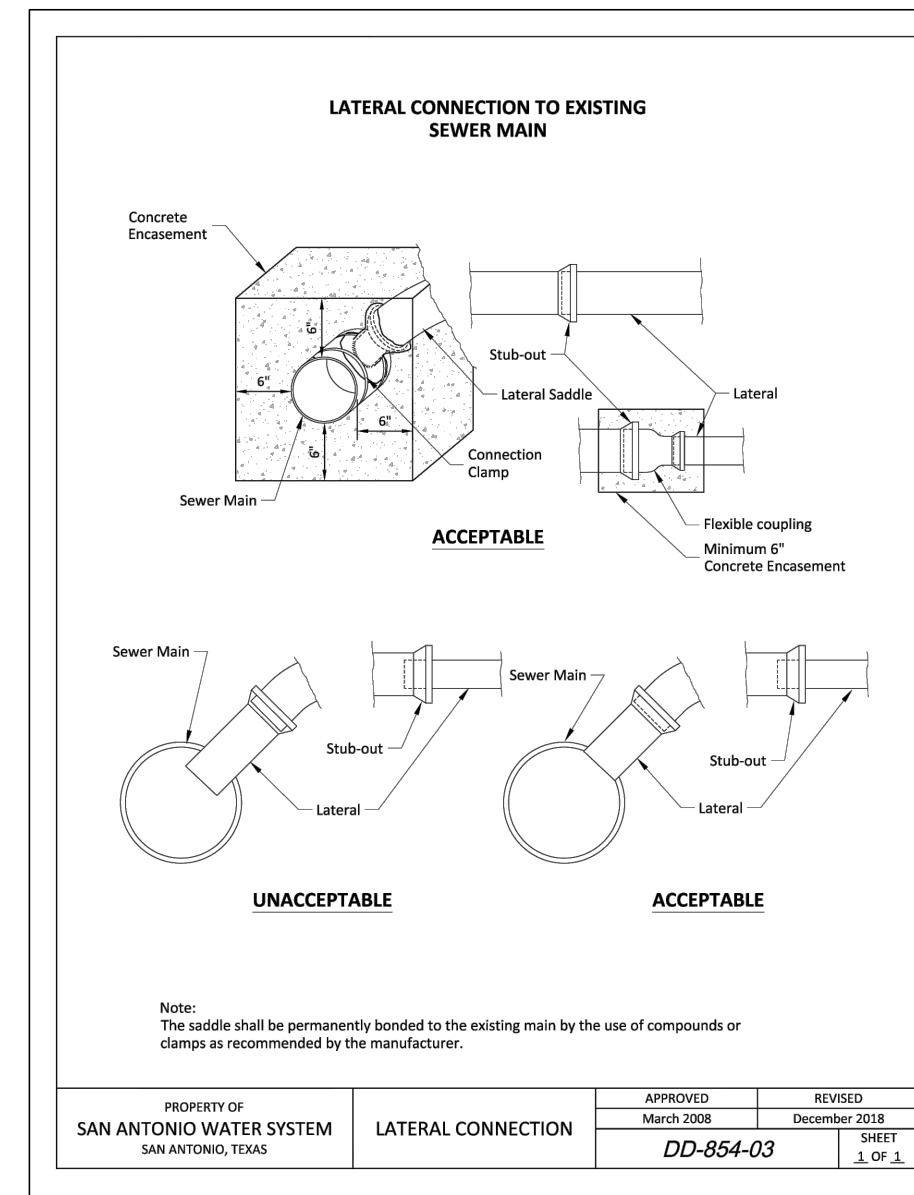
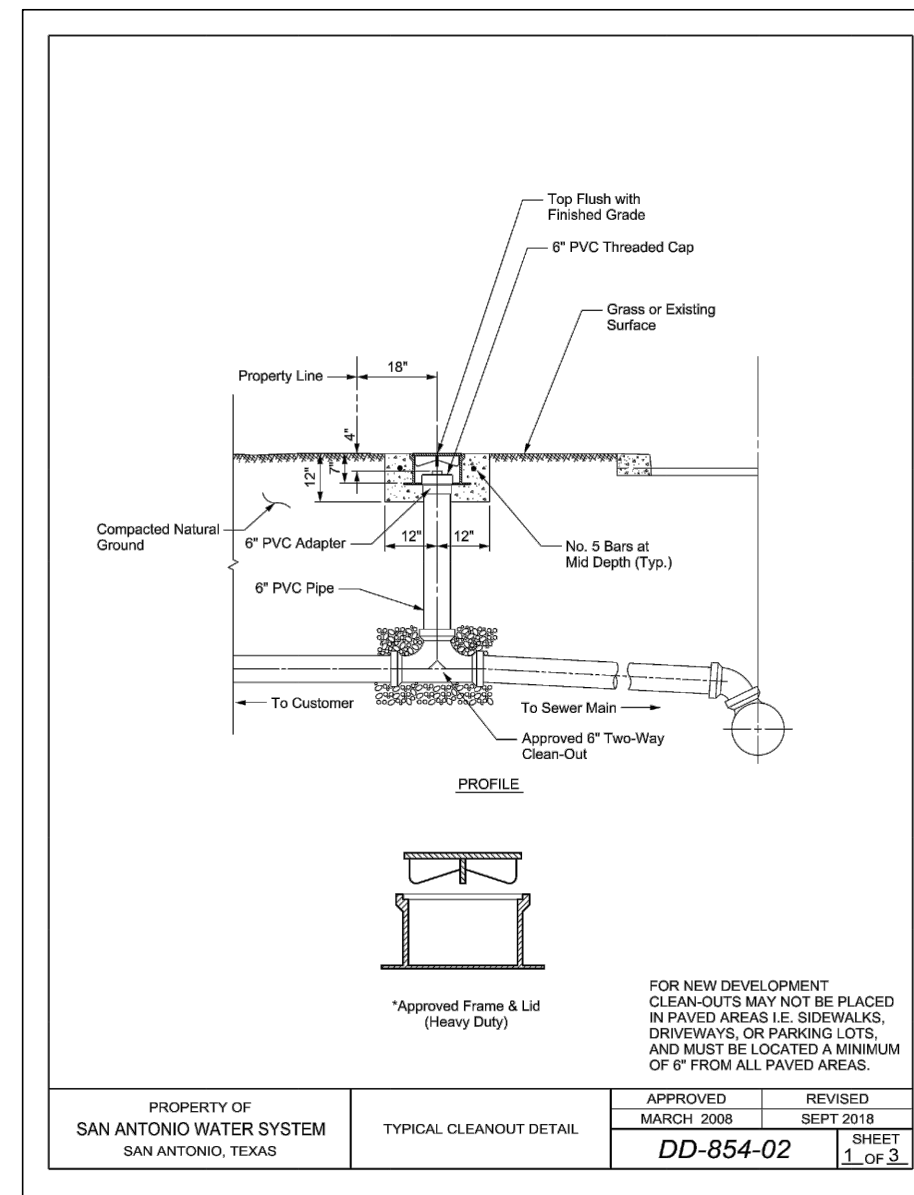
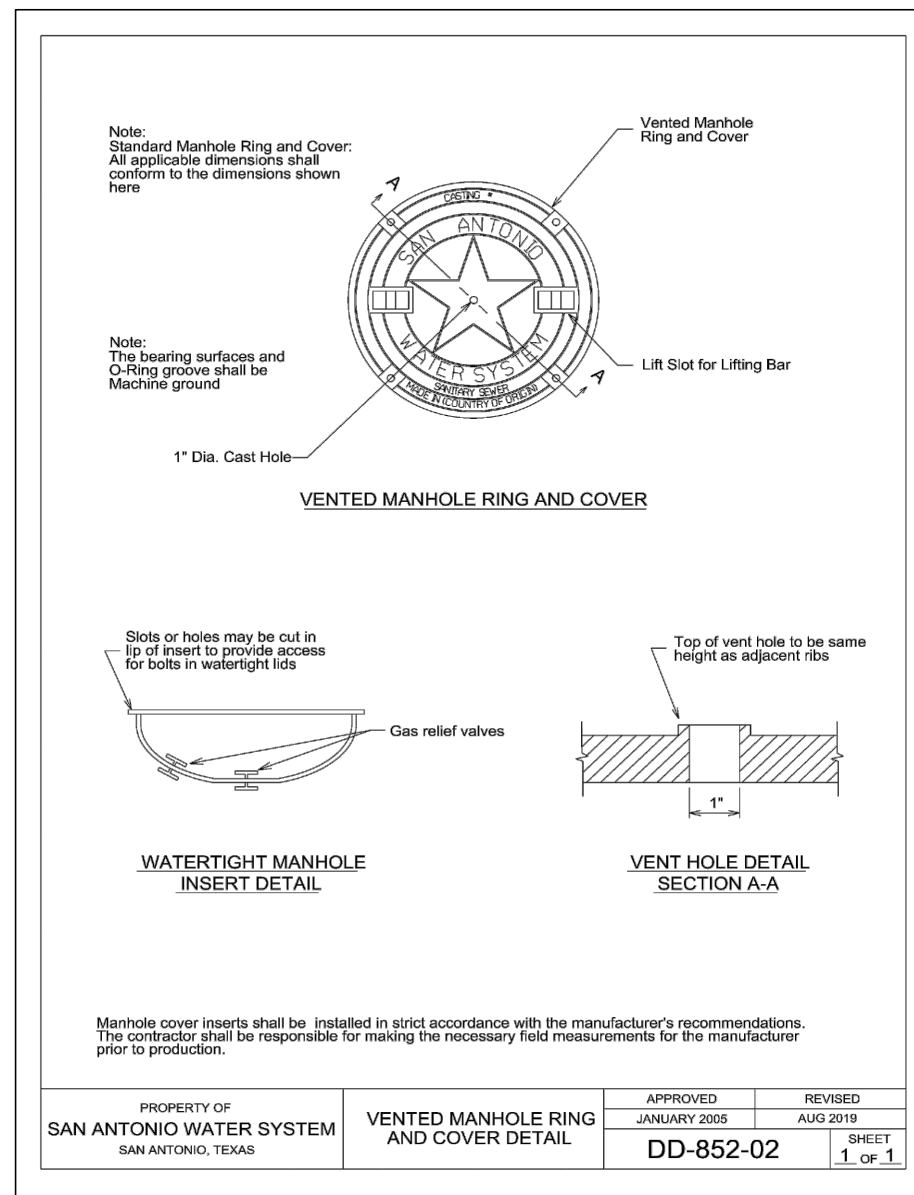
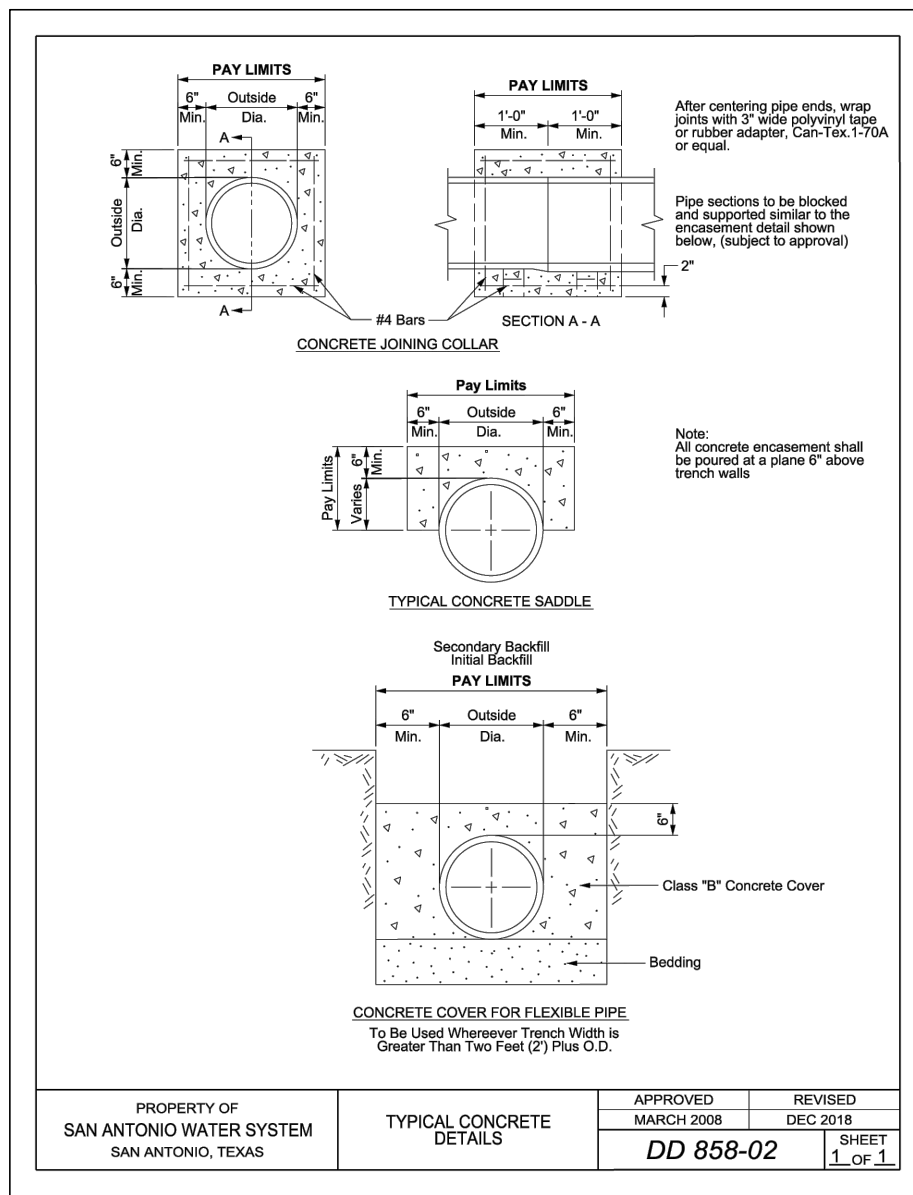
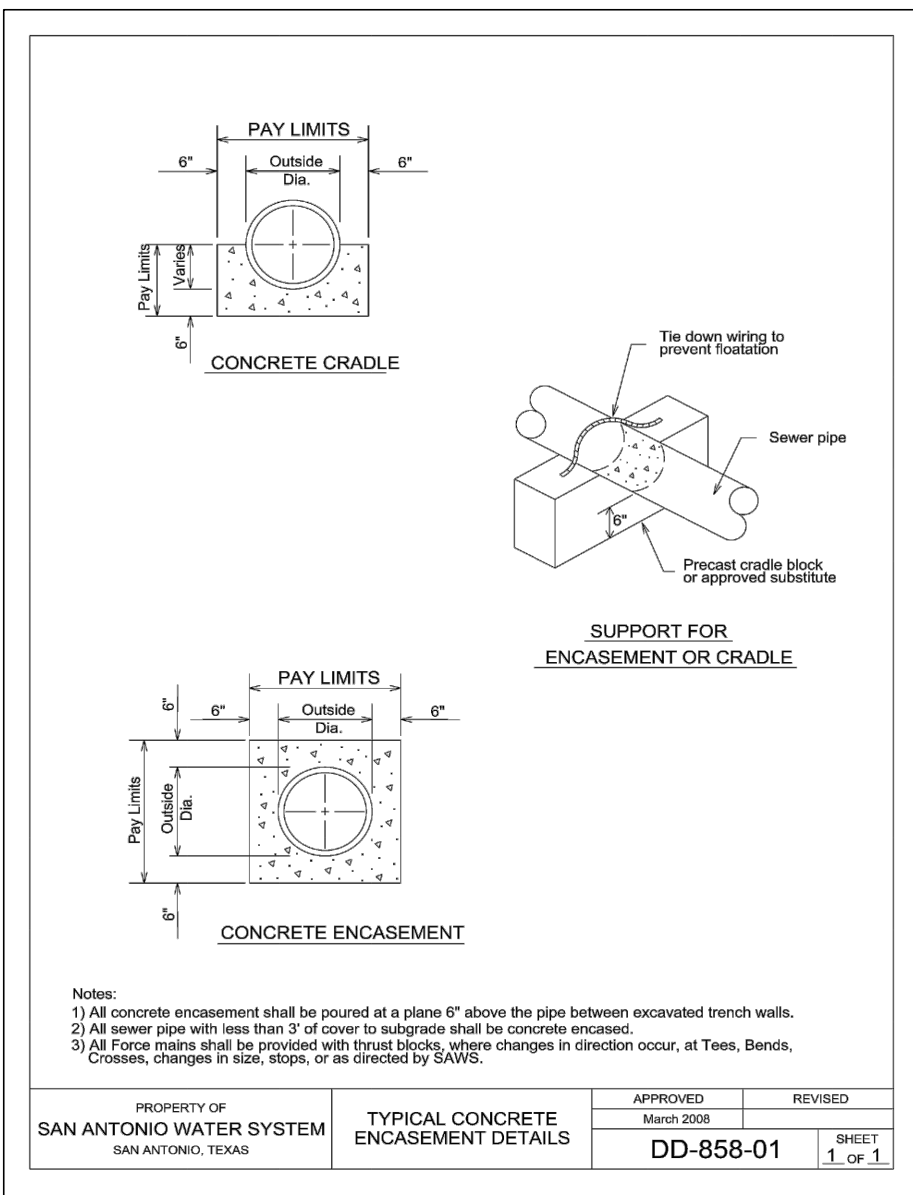
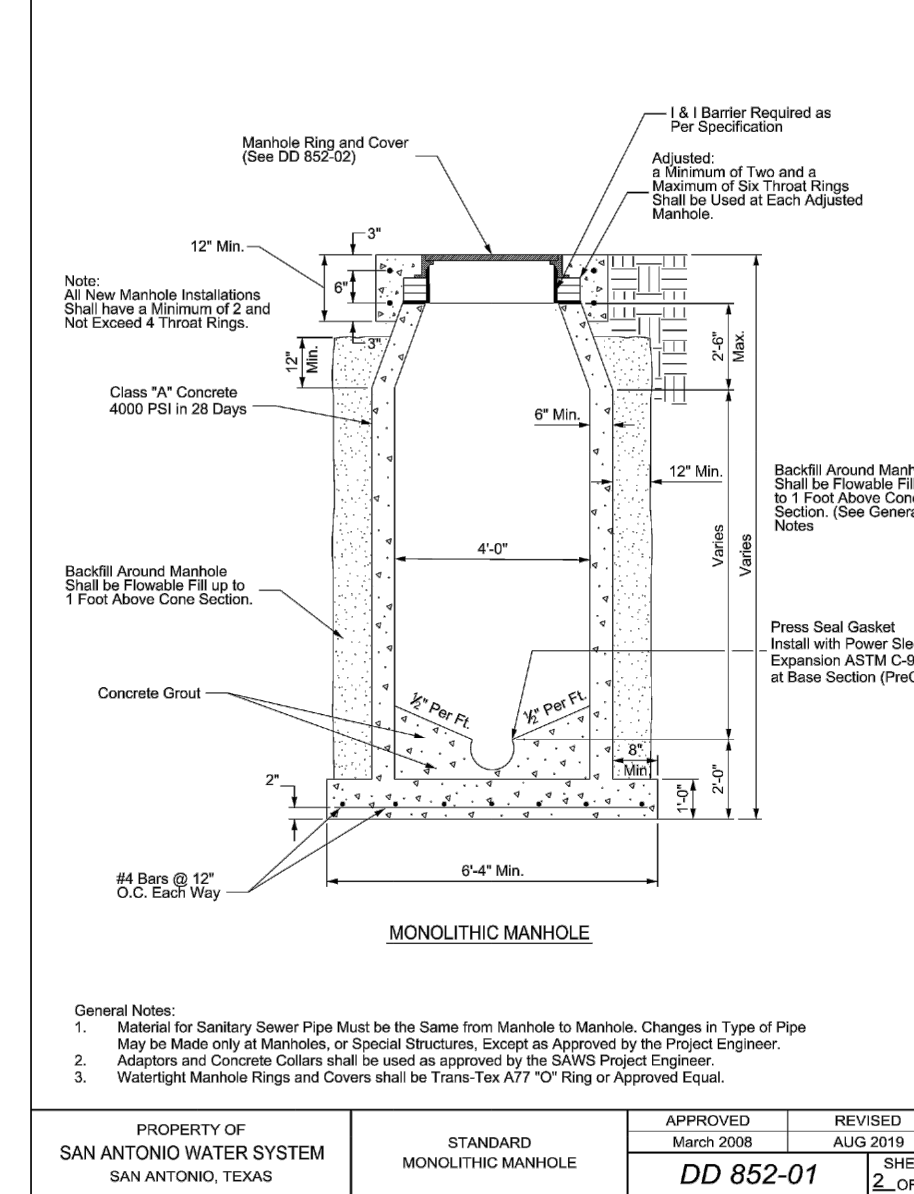
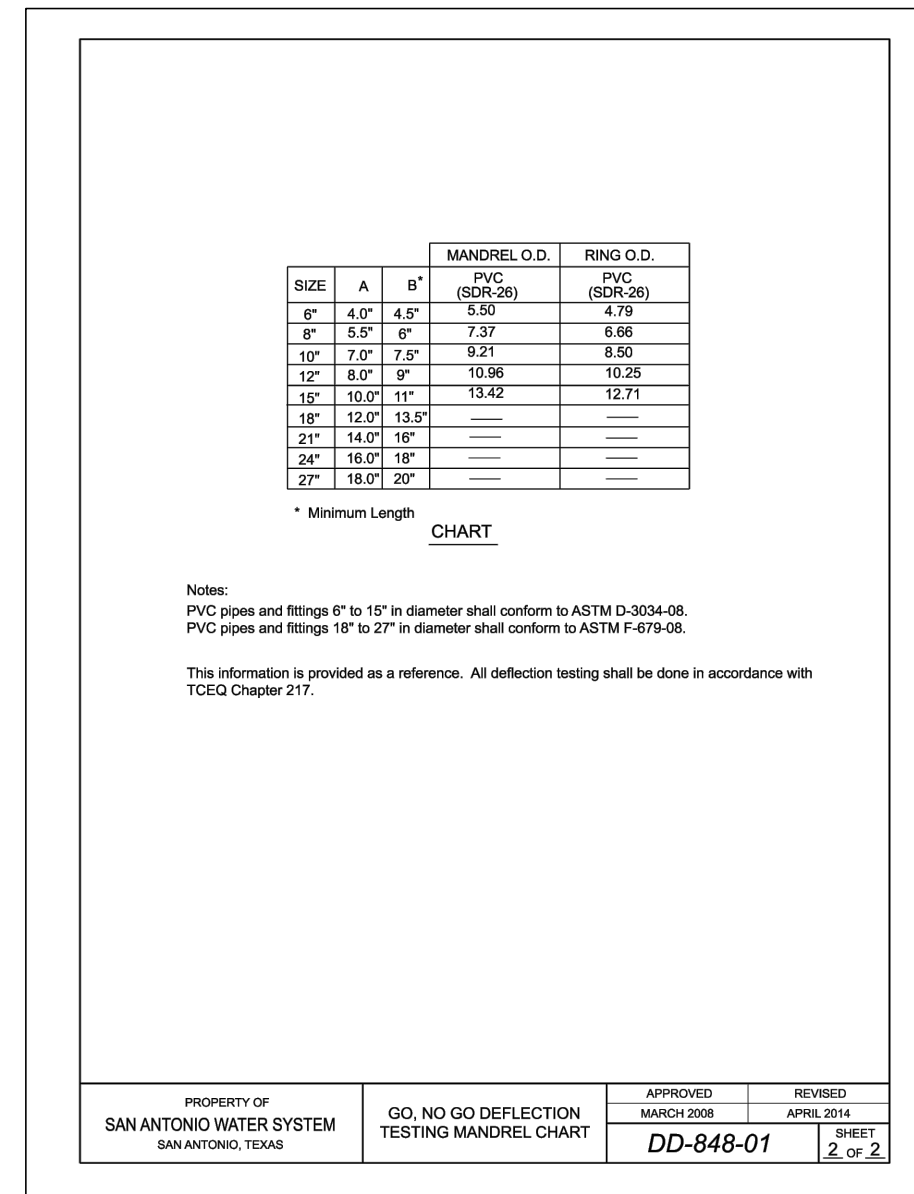
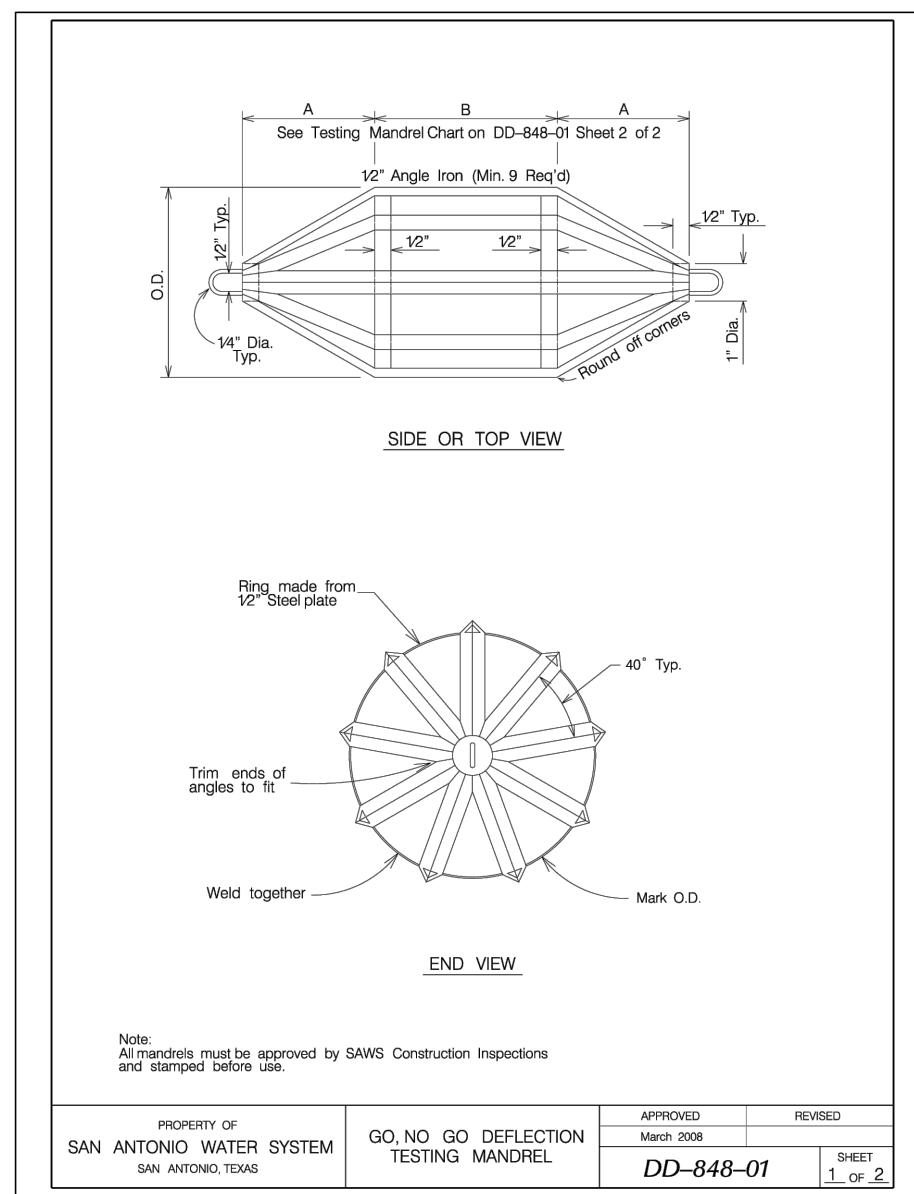
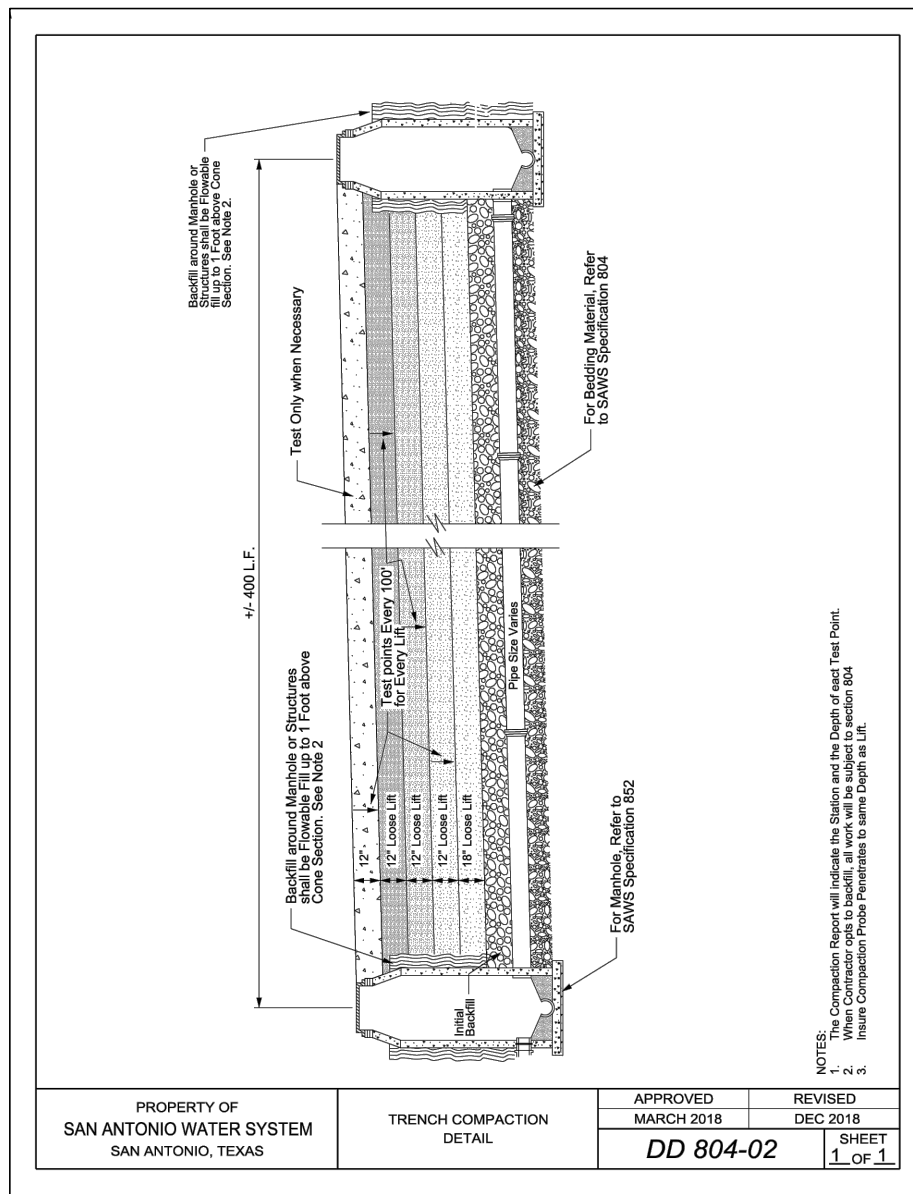
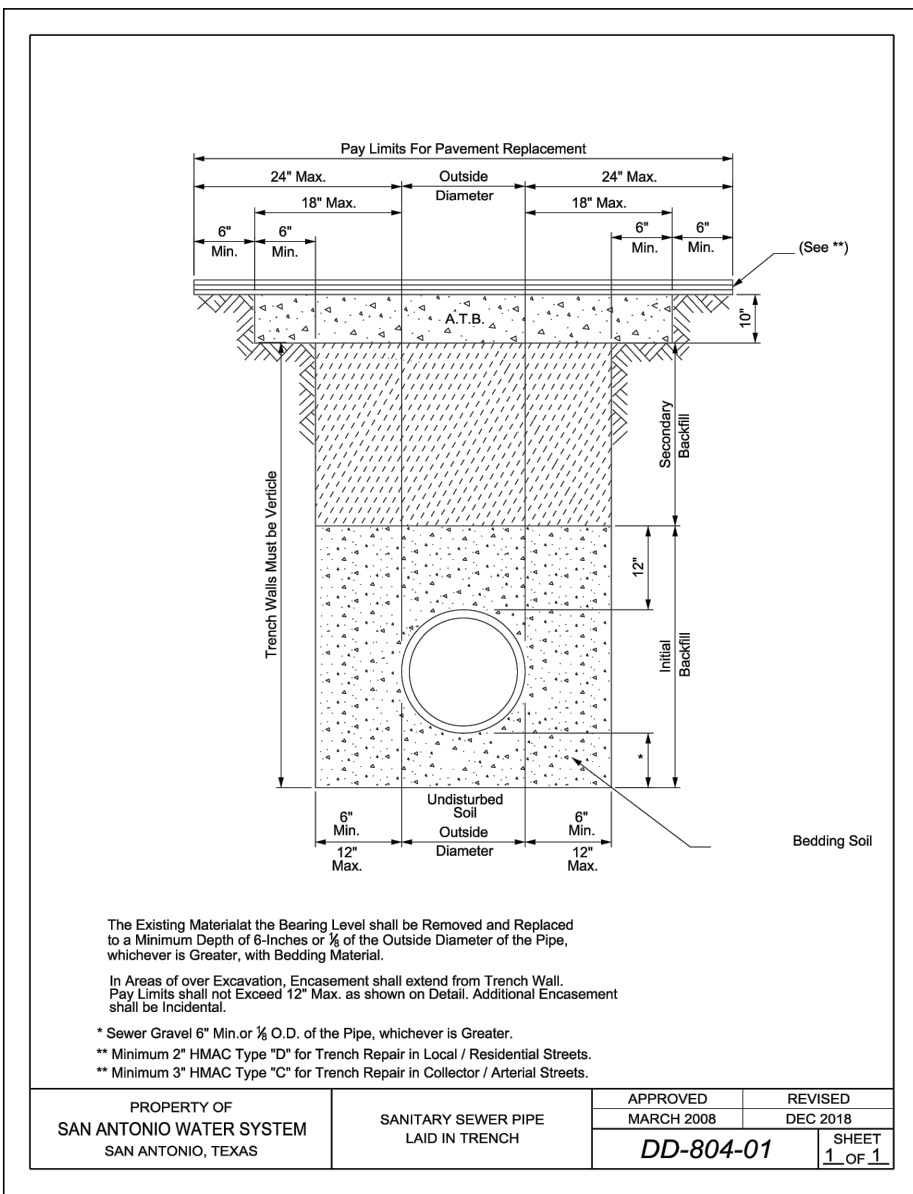
WATER LINE CROSSING

36. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN SEWER LINES AND WATER LINES/MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION'S RULES (30 TAC §17.13 APPENDIX E).

EROSION AND SEDIMENTATION CONTROL

37. THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF SEWER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTED ON THE PROJECT'S PLAN AND PROFILE SHEETS.





DATE

NO. REVISION

10/22/2024

STATE OF TEXAS  
THOMAS MATTHEW CARTER  
79272  
LICENSED PROFESSIONAL ENGINEER

PAPE-DAWSON  
ENGINEERS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008900

LCTC EAST ACCESS (ENCLAVE)  
SAN ANTONIO, TEXAS

SANITARY SEWER DETAILS

PLAT NO. 24-11800345

JOB NO. 13225-01

DATE SEPTEMBER 2024

DRAWN MC/KT/TR

CHECKED WK/DS

DRWN TR/JUS

SHEET C4.11

SEWER: West Sewershed - Leon Creek W.R.C.

Developer's Name: US REAL ESTATE LIMITED PARTNERSHIP

Address: 9830 COLONNADE BLVD., SUITE 600

City: SAN ANTONIO State: TEXAS ZIP: 78230

Phone# (210) 641-8400 FAX# (210) 641-8463

SAWS Block Map# 124638 Total EDU's 0 Total Acreage 1.080 AC

Total Linear Footage of Pipe: 754 LF 8"SS Plot No. 24-11800345

Number of Lots 1 SAWS JOB NO. 24-XXXX



TRENCH EXCAVATION SAFETY PROTECTION

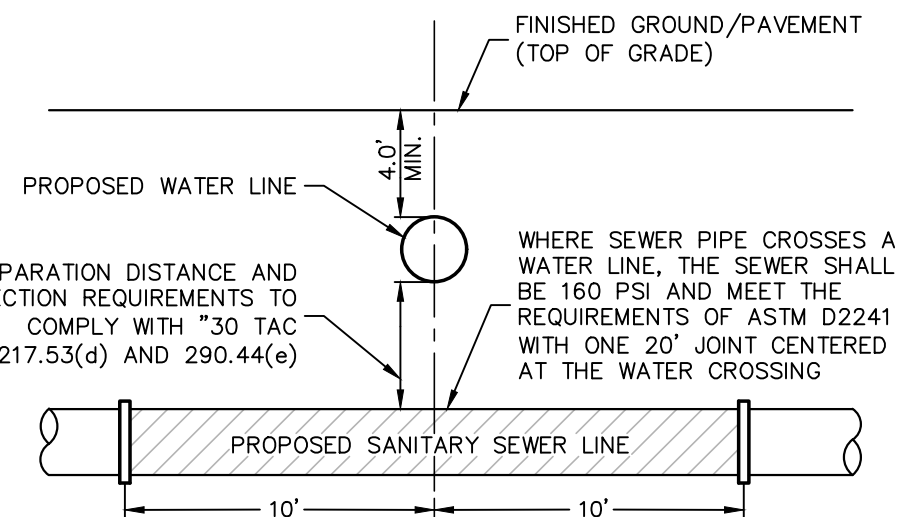
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CAUTION!!!

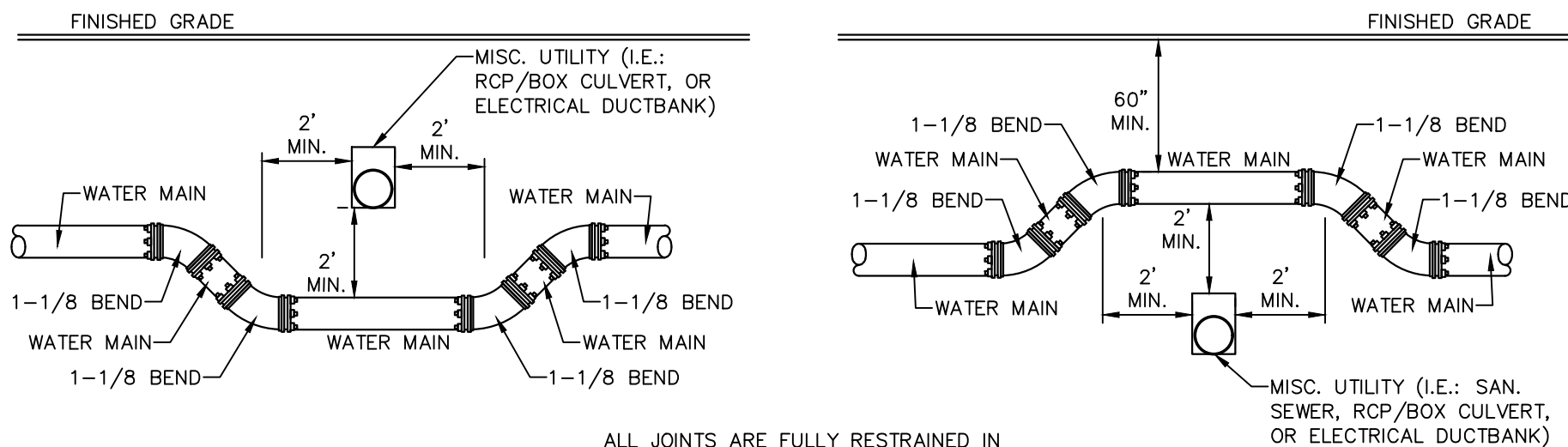
EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

CAUTION!!

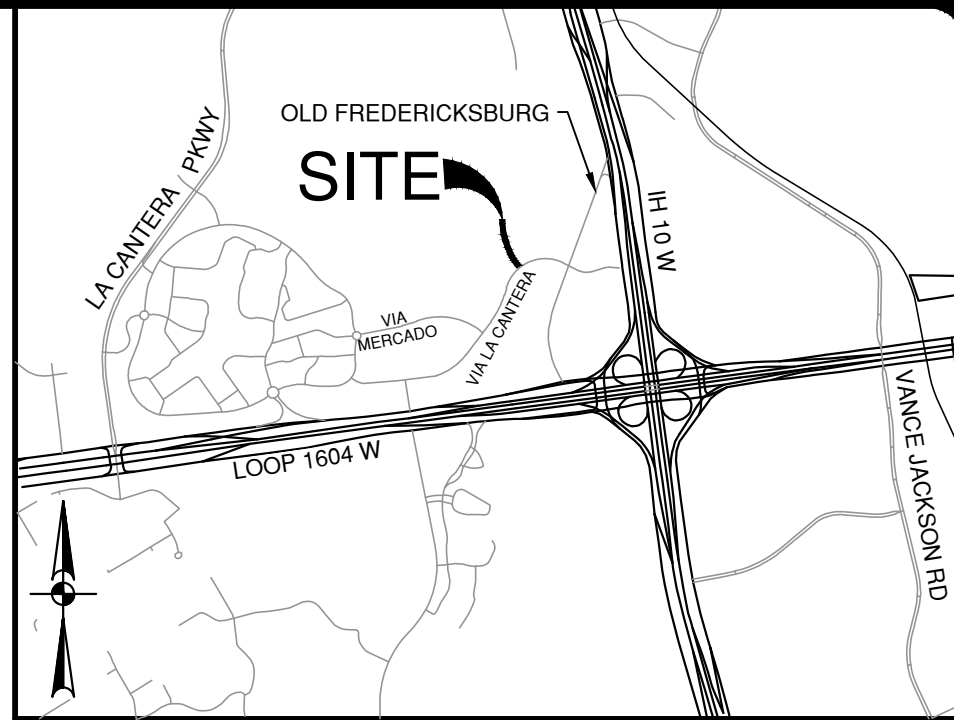
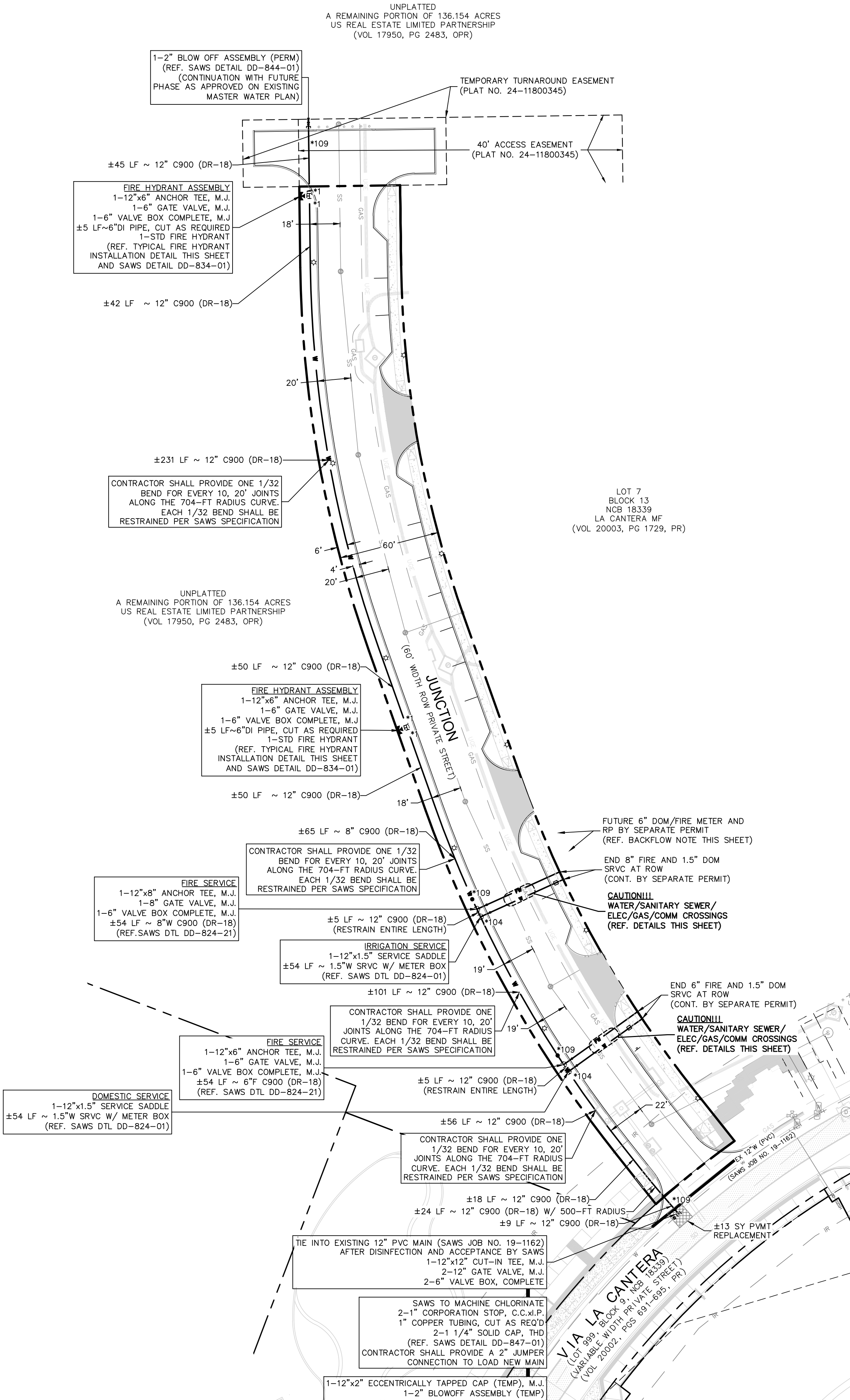
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINE. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL  
NOT-TO-SCALE



TYPICAL UTILITY/WATER CROSSING DETAIL  
NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1"= 40'



LEGEND

- PROPERTY LINE
- OVERHEAD ELECTRIC
- EXISTING WATER
- EXISTING FIRE HYDRANT
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT
- PROPOSED OVERHEAD ELECTRIC
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED STORM DRAIN
- JOINT RESTRAINT LENGTH

NOTE

SEE SHEET C0.10 FOR CONSTRUCTION NOTES.

PRIVATE STREET DESIGNATION NOTE:

LOT 999, BLOCK 9, NCB 18339 ARE PRIVATE STREETS AND ARE DESIGNATED AS AN UNDERGROUND ELECTRIC, GAS, TELEPHONE CABLE TELEVISION, DRAINAGE, WATER, PEDESTRIAN, AND SANITARY SEWER EASEMENT.

FIRE HYDRANT NOTE:

UNIT PRICE BID FOR "STANDARD FIRE HYDRANT ASSEMBLY" SHALL INCLUDE FIRE HYDRANT, 6-INCH GATE VALVE, 6-INCH VALVE BOX COMPLETE, NIPPLES AND FITTINGS EXCLUSIVE OF TEE ON MAINLINE, AND ALL 6-INCH D.I. PIPE REQUIRED. (D.I. PIPE REQUIRED SHALL INCLUDE ALL D.I. PIPE FROM THE TEE ON THE MAINLINE TO THE FIRE HYDRANT.) SAWS REQUIRES GCPS AND COUNTER PERMITS TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS.

PRESSURE REDUCING VALVE NOTE:

CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRACT IS BELOW GROUND ELEVATION OF 985 FEET WHERE THE STATIC PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 985 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE METER, AN APPROVED TYPE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO. NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF \*PRV IS/ARE REQUIRED FOR SUCH LOT(S). ONLY SINGLE SERVICE CONNECTIONS SHALL BE ALLOWED. \*NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

\* JOINT RESTRAINT NOTE:

CONTRACTOR SHALL INSTALL RESTRAINT GLANDS AT ALL FITTINGS AND PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 10 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. RESTRAINED LENGTH CALCULATIONS WERE PERFORMED USING THE "EBAA IRON INC." "RESTRAINED LENGTH CALCULATIONS PROGRAM" RELEASE 3.1. THE FOLLOWING PARAMETERS WERE USED TO DEVELOP THE RESTRAINED LENGTHS: PVC PIPE BEDDED IN COMPACTED GRANULAR BACKFILL EXTENDING TO THE TOP OF THE PIPE (TRENCH TYPE 5). NATIVE SOIL ID ASSUMED TO BE INTACT LIMESTONE BEDROCK. DEPTH OF BURY IS ASSUMED TO BE 4 FEET, TEST PRESSURE ASSUMED TO BE AT 200 PSI, AND SAFETY FACTOR OF 1.5:1.

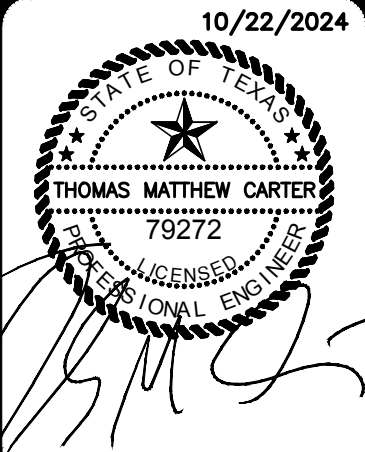
BACKFLOW NOTE

- RPs REQUIRED ON DOMESTIC AT THE METERS.
- DCVAs REQUIRED ON FIRE LINES.
- DCVAs REQUIRED ON IRRIGATION AT THE METERS.

WATER - SAWS: PZ8

Developer's Name:	US REAL ESTATE LIMITED PARTNERSHIP		
Address:	9830 COLONNADE BLVD., SUITE 600		
City:	SAN ANTONIO	State:	TEXAS
Zip:	78230		
Phone#:	(210) 641-8400	FAX#:	(210) 641-8463
SAWS Block Map#:	124638	Total EDU's:	0
Total Linear Footage of Pipe:	701 LF of 12"	Total Acreage:	1.080 AC.
Number of Lots:	1	Plot No.:	24-11800345
SAWS JOB NO.:	24-XXXX		

DATE	
NO.	
REVISION	



**PAPE-DAWSON ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

LCTC EAST ACCESS (ENCLAVE)  
SAN ANTONIO, TEXAS

WATER DISTRIBUTION PLAN

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JS
SHEET	C5.00



1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES ON PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
2. DRAWINGS DO NOT SHOW ALL EXISTING UTILITIES. ALL EXISTING UTILITIES SHALL BE VERIFIED IN THE FIELD WHETHER SHOWN ON THIS PLAN OR NOT (PRIOR TO INSTALLATION OF ANY NEW LINES).
3. ALL FILL MATERIAL IS TO BE IN PLACE AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
4. CONTRACTOR SHALL CALL FOR THE LOCAL JURISDICTIONAL INSPECTIONS AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL JURISDICTION WITH REGARDS TO MATERIALS AND INSTALLATION OF THE UTILITIES AND STORM DRAINS.
6. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS, SPECIFICATIONS AND ALL TESTING.
7. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL COMPLY WITH THE FOLLOWING AS APPLICABLE:
  - A. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR CONSTRUCTION"
  - B. CURRENT "SAN ANTONIO WATER SYSTEM UTILITY SERVICE REGULATIONS"
  - C. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION"
  - D. CURRENT "AASHTO" STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND DRAINAGE"
  - E. CURRENT CITY OF SAN ANTONIO "RIGHT-OF-WAY ORDINANCE AND CRITERIA MANUAL"
8. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
9. ALL CONCRETE FOR ENCASEMENTS SHALL HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH AT 3000 P.S.I.
10. CONTRACTOR SHALL PROTECT ALL EXISTING TREES, FENCES, PAVING, UTILITIES, AND OTHER STRUCTURES SCHEDULED TO REMAIN. ANY STRUCTURE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.
11. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL FINAL UTILITY AS-BUILT MEASUREMENTS, TOPS AND LENGTH OF SERVICE CONNECTIONS OF THE PROJECT.
12. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT HIS SOLE EXPENSE.
13. GAS AND ELECTRIC ALIGNMENTS SHOWN ON THIS DRAWING ARE CONCEPTUAL. THE ACTUAL DESIGN AND LOCATIONS SHALL BE DETERMINED BY THE LOCAL SERVICE PROVIDER OR MEP ENGINEER.
14. CONTRACTOR SHALL COORDINATE TELE. COMMUNICATIONS, CABLE, AND FIBER LINE INSTALLATION WITH LOCAL SERVICE PROVIDER. THE SERVICE PROVIDER WILL BE RESPONSIBLE FOR INSTALLATION OF GAS LINE TO WITHIN 5' OF BUILDING.
15. REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
16. SEE IRRIGATION, LIGHTING AND ARCHITECTURAL PLANS FOR ADDITIONAL CONDUIT LOCATIONS AS APPLICABLE. VERIFY ALL CONDUIT AND SLEEVE LOCATIONS PRIOR TO PLACING ANY PAVEMENT.
17. CONTRACTOR SHALL INSTALL ALL CONDUITS WITH A MINIMUM 4-FOOT SWEEP RADIUS. ALL CONDUITS SHALL HAVE A PULL STRING TO BE INSTALLED BY THE CONTRACTOR.
18. NO WORK SHALL BE ALLOWED WITHIN THE PUBLIC RIGHT-OF-WAY WITHOUT AN APPROVED PERMIT.
19. THE CONSTRUCTION OF UNDERGROUND PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEM SHALL BE COVERED BY THE ENGINEERING CONSTRUCTION PLANS PREPARED BY THE LOCAL SERVICE PROVIDER. THIS DRAWING SHALL SERVE ONLY AS REFERENCE DOCUMENT TO CORRELATE THE LOCATION OF THE PROPOSED PRIMARY ELECTRIC AND GAS DISTRIBUTION SYSTEM. THE LOCAL SERVICE PROVIDER'S CONSTRUCTION DRAWINGS AND CONSTRUCTION DETAILS SHALL GOVERN.
20. CONTRACTOR SHALL INCLUDE IN HIS BID A 4" PVC CONDUIT FOR TELEPHONE AND A 2" PVC CONDUIT FOR CABLE TV TO BE IN THE SAME TRENCH AS UNDERGROUND ELECTRIC LINES. CONTRACTOR SHALL VERIFY WITH APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION ON THE NUMBER AND SIZE OF CONDUITS NEEDED FOR UTILITY SERVICE TO ALL BUILDINGS.
21. BEDDING FOR ALL UTILITIES SHALL BE PER THE PROJECT SPECIFICATIONS. NO WATER SETTING OF BACKFILL MATERIAL WILL BE ALLOWED.

ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE SAN ANTONIO WATER SYSTEMS (SAWS) AND THE CITY OF SAN ANTONIO. THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:

- A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS, TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER"; TAC TITLE 30 PART 1 CHAPTER 290.
- B. CURRENT TUDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF PUBLIC HIGHWAYS, STREETS AND DRIVeways".
- C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION".
- D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".
- E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).

2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE APPROVED COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP) FROM THE CONSTANANT AND HAS BEEN NOTIFIED BY SAWS CONSTRUCTION INSPECTION DIVISION TO PROCEED WITH THE WORK. THE CONTRACTOR HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHIN THE APPROVED COUNTER PERMIT AND/OR A GCP WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.

3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, [HTTP://WWW.SAWS.ORG/BUSINESS\\_CENTER/SPECS](http://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS), UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLANS.

4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE SAWS CONSTRUCTION INSPECTION DIVISION AT 233-2973, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOMEOWNERS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.

5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO APPROXIMATE. THE ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AND REQUEST FOR CONSTRUCTION PERMIT TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO SAWS.

6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW US TO BUSINESS DAYS FOR LOCATES REQUESTING PLACEMENT MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:

- SAWS UTILITY LOCATES: [HTTP://WWW.SAWS.ORG/SERVICE/LOCATES](http://WWW.SAWS.ORG/SERVICE/LOCATES)
- COSA DRAINAGE (210) 207-0724 OR (210) 206-4408
- COSA TRAFFIC SIGNAL OPERATIONS (210) 206-8626
- COSA TRAFFIC SIGNAL DAMAGES (210) 207-3951
- TEXAS STATE WIDE ONE CALL LOCATOR 1-800-454-6005 OR 811

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND/OR BEAR COUNTY RIGHT-OF-WAY. IF DAMAGES ARE MADE AS A RESULT OF THE CONTRACTOR'S CONSTRUCTION.

8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.

9. THE CONTRACTOR SHALL COMPLY WITH CITY OF SAN ANTONIO OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.

10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAN PERMIT.

11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM SAWS WORK ON SAWS RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO [CONSWORK@SAWS.ORG](mailto:CONSWORK@SAWS.ORG).

12. WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE SAWS INSPECTION CONSTRUCTION DEPARTMENT 48 HOURS IN ADVANCE TO REQUEST TO BE FINIALIZED BY SAWS WITHOUT THE NEED TO [CONSWORK@SAWS.ORG](mailto:CONSWORK@SAWS.ORG).

13. ANY AND ALL SAWS UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.

14. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION PER LINEAL FOOT. FULLY COMPACTIONED SHALL BE INDICATED BY THE INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT UP TO 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED UNTIL ALL 12-INCH LIFT ARE COMPACTIONED. THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

15. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO SAWS CONSTRUCTION INSPECTION DIVISION.

PSY'S REQUIRED: CONTRACTOR TO VERIFY THAT NO PORTION OF THE TRIM OR THE EXISTING PIPING SHALL BE DISINFECTED. THE DISINFECTION PRESSURE WILL NORMALLY EXCEED 80 PSI. AT ALL SUCH LOCATIONS WHERE THE GROUND LEVEL IS BELOW 926 FEET, THE DEVELOPER OR BUILDER SHALL INSTALL AT EACH LOT, ON THE CUSTOMER'S SIDE OF THE LOT, AN AIR RELEASE VALVE. THE PRESSURE REGULATOR IN CONFORMANCE WITH THE PLUMBING CODE OF THE CITY OF SAN ANTONIO, NO DUAL SERVICES ALLOWED FOR ANY LOT(S) IF "PRV" IS USED. DUAL SERVICE CONNECTIONS SHALL EXCEED 100 PSI. DUAL SERVICE CONNECTIONS SHALL BE ALLOWED. NOTE: A PRESSURE REGULATOR IS ALSO KNOWN AS A PRESSURE REDUCING VALVE (PRV).

7. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR AND SHALL NOT EXCEED A MAXIMUM OF 100 FEET OF BOO FEET. THE METHOD OF DISINFECTION WILL BE SO FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURES TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.

8. BACKFLOW PREVENTION DEVICES:

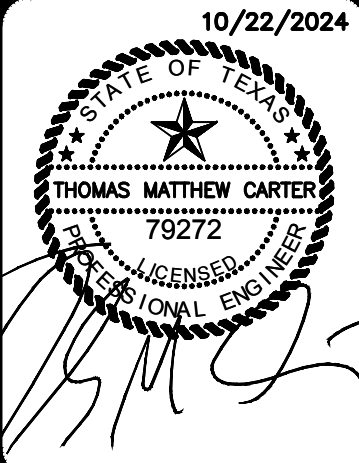
- ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
- ALL GENERAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.

9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE-TESTED, DISINTEGRATED, AND SAWS HAS RELEASED THE MAIN FOR TIE-IN AND USE.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT SPECIALIST SHALL BE RESPONSIBLE FOR THE DEVELOPMENT OF THE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DEVELOPMENT OF THE TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY/EQUIPMENT SPECIALIST SHALL BE RESPONSIBLE FOR THE DEVELOPMENT OF THE TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES THAT COMPLY WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

EXISTING UTILITIES ARE WITHIN THE LIMITS OF CONSTRUCTION. CONTRACTORS SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE, VERIFY THE EXACT LOCATION & IDENTIFY AREA OF CONFLICTS WITH EXISTING UTILITIES AND SHALL NOTIFY ENGINEER IF CONFLICT IS FOUND.

Developer's Name:		US REAL ESTATE LIMITED PARTNERSHIP	
Address:		9830 COLONNADE BLVD., SUITE 600	
City:	SAN ANTONIO	State:	TEXAS
Zip:	78230		
Phone:	(210) 641-8400	FAX#:	(210) 641-8463
SAWS Block Map# 124638		Total Edu's.	0
Total Linear Footage of Pipe:		701 LF of 12"	Plot No.24-11800345
Number of Lots	1	SAWS JOB NO.	24-XXXX

[illegible]

**PAPE-DAWSON  
ENGINEERS**  
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM # 0026800

**WATER DISTRIBUTION NOTES**

PLAT NO. 24-11800345  
 JOB NO. 13225-01  
 DATE SEPTEMBER 2024  
 DESIGNER MC/KT/TR  
 CHECKED WK/DS DRAWN TR/JS  
 SHEET C5.10



PIPE TAPPING SCHEDULE				
PIPE DIAMETER	SERVICE SIZE			
	3/4"	1"	1 1/2"	2"
6" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
14" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
14" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
14" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
16" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
16" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
16" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
18" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
18" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
18" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
20" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
20" C.I. D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
20" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle

NOTE: For Direct Tap Main, see Tapping Schedule

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

COPPER & HDPE  
SERVICE INSTALLATION  
TAPPING SCHEDULE

APPROVED  
MARCH 2008  
AUG 2019  
DD-824-01

REVISOR  
AUG 2019  
SHEET  
3 OF 3

NOTE: Tracer Wire for PVC (Tap for PVC & HDPE)  
NOTE: All Concrete to be 3,000 psi

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

INSTALLATION OF NON-GEARED  
GATE VALVE WITH VALVE BOX  
AND EXTENSION

APPROVED  
MARCH 2008  
AUG 2019  
DD 828-01

REVISOR  
AUG 2019  
SHEET  
1 OF 1

NOTE: Consider of Hydrant shall be Full Opened or Full Closed Throttling is Prohibited

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

FIRE HYDRANT  
INSTALLATION  
(JOINT RESTRAINT)

APPROVED  
MARCH 2008  
AUG 2019  
DD-834-01

REVISOR  
AUG 2019  
SHEET  
1 OF 2

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS  
FOR TEES

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-04

REVISOR  
AUG 2019  
SHEET  
1 OF 2

PIPE SIZE (in)	BRANCH SIZE (in)	LENGTH OF RUN (ft)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	26	20
6	6	10	43	31
6	4	0	42	31
8	4	0	59	44
8	4	5	26	13
8	6	0	7	1
8	6	5	26	20
8	6	10	43	31
8	8	0	79	58
8	8	5	30	23
8	8	10	47	35

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS  
FOR TEES

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-04

REVISOR  
AUG 2019  
SHEET  
2 OF 2

PIPE SIZE (in)	BRANCH SIZE (in)	LENGTH OF RUN (ft)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	7	1
12	4	10	1	1
12	6	0	59	44
12	6	5	26	20
12	6	10	43	31
12	8	0	79	58
12	8	5	30	23
12	8	10	47	35
12	12	0	109	82
12	12	5	40	30
12	12	10	60	45
12	12	15	79	59

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS FOR  
DEAD ENDS / INLINE VALVES

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-05

REVISOR  
AUG 2019  
SHEET  
1 OF 1

PIPE SIZE (in)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	89	66
8	125	94
10	155	117
12	185	140

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS  
VERTICAL OFFSETS

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-06

REVISOR  
AUG 2019  
SHEET  
1 OF 1

PIPE SIZE (in)	BEND ANGLE (deg)	LOW SIDE DEPTH (ft)	UPPER BEND LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND LENGTH IN FEET TEST PRESSURE = 200 psi	UPPER BEND LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	29	4	9	3
6	22.5	5	17	4	4	2
6	11.25	5	8	2	2	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	18	5	11	4
8	11.25	5	9	3	6	2
8	45	10	32	7	24	5
8	22.5	10	16	3	12	2
8	11.25	10	8	1	6	1
10	45	5	45	16	34	12
10	22.5	5	22	7	18	6
10	11.25	5	11	4	9	3
10	45	10	44	10	33	10
10	22.5	10	22	5	18	3
10	11.25	10	11	2	9	2

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS  
FOR REDUCERS

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-07

REVISOR  
AUG 2019  
SHEET  
1 OF 1

PIPE SIZE (in)	SMALL SIZE (in)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	4	29	17
6	3	17	8
6	2	8	4
6	1 1/2	4	2
6	1	2	1
8	4	32	16
8	3	16	8
8	2	8	4
8	1 1/2	4	2
8	1	2	1
10	4	44	22
10	3	22	11
10	2	11	6
10	1 1/2	6	3
10	1	3	2

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

RESTRAINED LENGTHS  
FOR HORIZONTAL BENDS

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-08

REVISOR  
AUG 2019  
SHEET  
1 OF 1

BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
90	29	17
45	17	8
22.5	8	4
11.25	4	2
6	2	1
45	32	16
22.5	16	8
11.25	8	4
6	4	2
45	44	22
22.5	22	11
11.25	11	6
6	6	3
45	44	22
22.5	22	11
11.25	11	6
6	6	3

NOTE: These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

POTABLE AND RECYCLED  
WATER MAIN DETAIL

APPROVED  
MARCH 2008  
AUG 2019  
DD-812-01

REVISOR  
AUG 2019  
SHEET  
2 OF 9

PIPE SIZE (in)	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET WHEN TEST PRESSURE = 150 psi
6	89	66
8	125	94
10	155	117
12	185	140

NOTE: \* Cut as required to extend beyond excavation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

2" (TEMPORARY)  
BLOW-OFF ASSEMBLY  
ON 12" & 16" MAINS  
(JOINT RESTRAINT)

APPROVED  
MARCH 2008  
AUG 2019  
DD-844-01

REVISOR  
AUG 2019  
SHEET  
4 OF 4

NOTE: \* Cut as required to extend beyond excavation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

THRUST BLOCKS FOR  
FITTINGS (WATER ONLY)

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-01

REVISOR  
AUG 2019  
SHEET  
1 OF 2

NOTE: \* Cut as required to extend beyond excavation.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

JOINT RESTRAINTS FOR  
FITTINGS (WATER ONLY)

APPROVED  
MARCH 2008  
AUG 2019  
DD-839-01

REVISOR  
AUG 2019  
SHEET  
2 OF 2

NOTE: 2-1 1/4" Solid Clip, Thd. to be installed on Corporation Stop after chlorination

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

STANDARD CHLORINATION  
INSTALLATION

APPROVED  
MARCH 2008  
AUG 2019  
DD-847-01

REVISOR  
AUG 2019  
SHEET  
1 OF 1

NOTE: PAVEMENT SECTION SHALL BE 10" ASPHALT TREATED BASE WITH TYPE "D" ASPHALT UNLESS CITY OF SAN ANTONIO REQUIRES/APPROVES AN ALTERNATE PAVING SECTION.

PROPERTY OF  
SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

TYPICAL PAVEMENT REPLACEMENT

APPROVED  
MARCH 2008  
AUG 2019  
DD-812-01

REVISOR  
AUG 2019  
SHEET  
2 OF 9

WATER - SAWS: PZ8

Developer's Name:	US REAL ESTATE LIMITED PARTNERSHIP
Address:	9830 COLONNADE BLVD., SUITE 600
City:	SAN ANTONIO
State:	TEXAS
ZIP:	78230
Phone#:	(210) 641-8400
FAX#:	(210) 641-8463
SAWS Block Map#:	124638
Total EDU's:	0
Total Acreage:	1.080 AC.
Total Linear Footage of Pipe:	701 LF of 12"
Plot No:	24-11800345
Number of Lots:	1
SAWS JOB NO.:	24-XXXX

**PAPE-DAWSON ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008800

**LCTC EAST ACCESS (ENCLAVE)**  
SAN ANTONIO, TEXAS

**WATER DISTRIBUTION DETAILS**

PLAT NO.	24-11800345
JOB NO.	13225-01
DATE	SEPTEMBER 2024
DESIGNER	MC/KT/TR
CHECKED	WK/DS
DRAWN	TR/JS
SHEET	C5.11



GENERAL NOTES

1. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL FINAL AS-BUILT MEASUREMENTS, TOPS AND LENGTH OF SERVICE CONNECTIONS UPON COMPLETION OF THE PROJECT.
2. CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT, PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR SHALL NOTIFY AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION:
- |                                       |          |
|---------------------------------------|----------|
| A) CPS ENERGY                         | 353-2000 |
| B) SAWS CONSTRUCTION INSPECTIONS      | 233-2009 |
| C) CITY SIDEWALKS AND TRENCH DIVISION | 207-1111 |
| D) AT&T                               | 954-4102 |
4. ALL GARBAGE OR SPOIL MATERIAL FROM THIS WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT THEIR EXPENSE.
5. UNDERGROUND CONDUITS FOR ELECTRIC, TELEPHONE, AND CABLE TELEVISION WILL SHARE A COMMON TRENCH. TELEPHONE, CABLE TELEVISION, AND ELECTRICAL CONDUIT ALIGNMENTS SHOWN ON THIS DRAWING ARE CONCEPTUAL.
6. CONTRACTOR SHALL INSTALL PULL STRINGS IN ALL CONDUITS.
7. CONTRACTOR SHALL INSTALL CONDUITS WITH A MINIMUM 4-FOOT SWEEP RADIUS.
8. CONTRACTOR SHALL COORDINATE WITH CPS FOR THE FINAL DESIGN AND LOCATION OF UNDERGROUND ELECTRIC, TELEPHONE, AND CABLE TELEVISION CONDUITS.
9. THE CONTRACTOR SHALL SAWCUT EXISTING PAVEMENT AT NEW PAVEMENT AND CURB JUNCTIONS. NO JAGGED OR IRREGULAR CUTS IN PAVEMENT WILL BE ALLOWED OR ACCEPTED.
10. REFER TO ELECTRICAL PLANS FOR LIGHT POLES, LIGHTING CONDUIT, UNDERGROUND ELECTRIC, AND TELEPHONE SERVICE. CONTRACTOR SHALL COORDINATE WITH CPS ENERGY TO ENSURE LIGHT POLES ARE NOT IN CONFLICT WITH EXISTING OVERHEAD LINES.
11. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS, WHETHER SHOWN ON THE PLANS OR NOT.

12. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS PROJECT SHALL CONFORM TO ALL APPLICABLE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS, CITY OF SAN ANTONIO BUILDING CODE AND REGULATIONS, AS WELL AS OTHER SAFETY CODES AND INSPECTION PROVISIONS APPLICABLE TO THE PROJECT AND REQUIREMENTS OF THE SAN ANTONIO FIRE DEPARTMENT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS, AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
14. ALL ITEMS NOT SPECIFICALLY CALLED FOR ON THE PLANS, OR IN THE SPECIFICATIONS, BUT NECESSARY TO REASONABLY CONSTRUCT THE FACILITY OR IMPROVEMENT, SHALL BE CONSIDERED INCIDENTAL TO THE OVERALL PROJECT AND NO SEPARATE PAYMENTS WILL BE MADE FOR THESE ITEMS.
15. THE CONTRACTOR SHALL EXCAVATE AROUND EXISTING UTILITIES WHICH INTERSECT THE PROPOSED ALIGNMENT OF THE SERVICES AND NOTIFY THE ENGINEER OF POTENTIAL SPACE CONFLICTS PRIOR TO ANY CONSTRUCTION IN THE AREA.
16. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. LOCATIONS AND DEPTHS OF UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION WHETHER SHOWN ON THE PLANS OR NOT. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
17. FIRE PROTECTION SERVICE SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH SAN ANTONIO WATER SYSTEM AND CITY OF SAN ANTONIO PLUMBING REQUIREMENTS. THE CONTRACTOR SHALL COORDINATE FOR PERMITTING, INSPECTION, AND CONSTRUCTION OPERATIONS.
18. ALL UTILITY CONNECTIONS TO BUILDINGS SHALL BE COORDINATED WITH MECHANICAL, ELECTRIC, AND PLUMBING PLANS. FOR INFORMATION ON ELECTRIC AND OTHER UTILITIES, SEE MECHANICAL AND ELECTRICAL PLANS.
19. DEPTH OF BURY FOR ALL PIPING SHALL BE A MINIMUM OF 4' UNLESS NOTED OTHERWISE.
20. NO WATER JETTING IS ALLOWED IN THIS PROJECT.
21. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

22. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHALL BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.
23. CONTRACTOR SHALL PROVIDE MATERIAL SUBMITTALS TO ENGINEER PRIOR TO STORM DRAINAGE CONSTRUCTION. GENERALLY SDR-26 PVC STORM DRAIN PIPE IS ACCEPTABLE UNDER 18" RCP OR HDPE PIPE IS ACCEPTABLE FROM 18" TO 30", AND RCP IS ACCEPTABLE AT 36" AND ABOVE. OTHER MATERIALS MAY BE CONSIDERED.
24. USE CAUTION WHEN EXCAVATING: THE LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE USAA PROJECT MANAGER PRIOR TO START OF EXCAVATION. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
25. THE CONTRACTOR SHALL NOT INTERFERE WITH UTILITY LINE OPERATIONS AND SHALL COORDINATE ALL WORK AFFECTING EXISTING UTILITIES WITH USAA FOR EACH UTILITY AND SHALL NOTIFY THE USAA PROJECT MANAGER PROMPTLY OF ANY PROBLEMS OR CONFLICTS ENCOUNTERED.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

UTILITY TRENCH COMPACTION

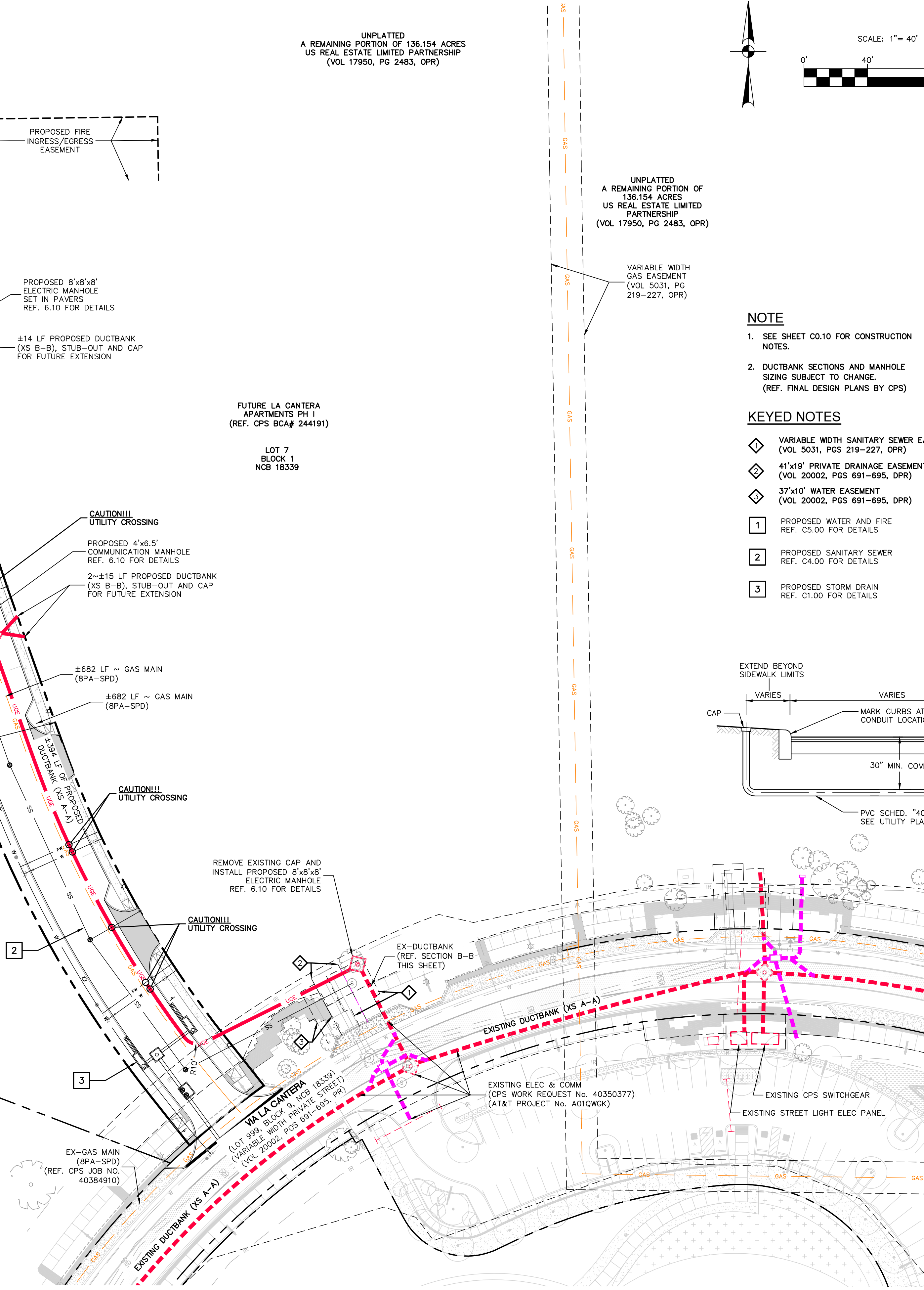
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

CAUTION UNDERGROUND UTILITIES

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. THE CONTRACTOR MUST CONTACT 1-800-DIG-TESS AND CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION AND/OR START OF CONSTRUCTION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



REF. IRRIGATION & MEP FOR POTENTIAL ADDITIONAL CONDUIT NOT SHOWN HERE. NOTIFY DESIGN CONSULTANTS OF ANY DISCREPANCIES.

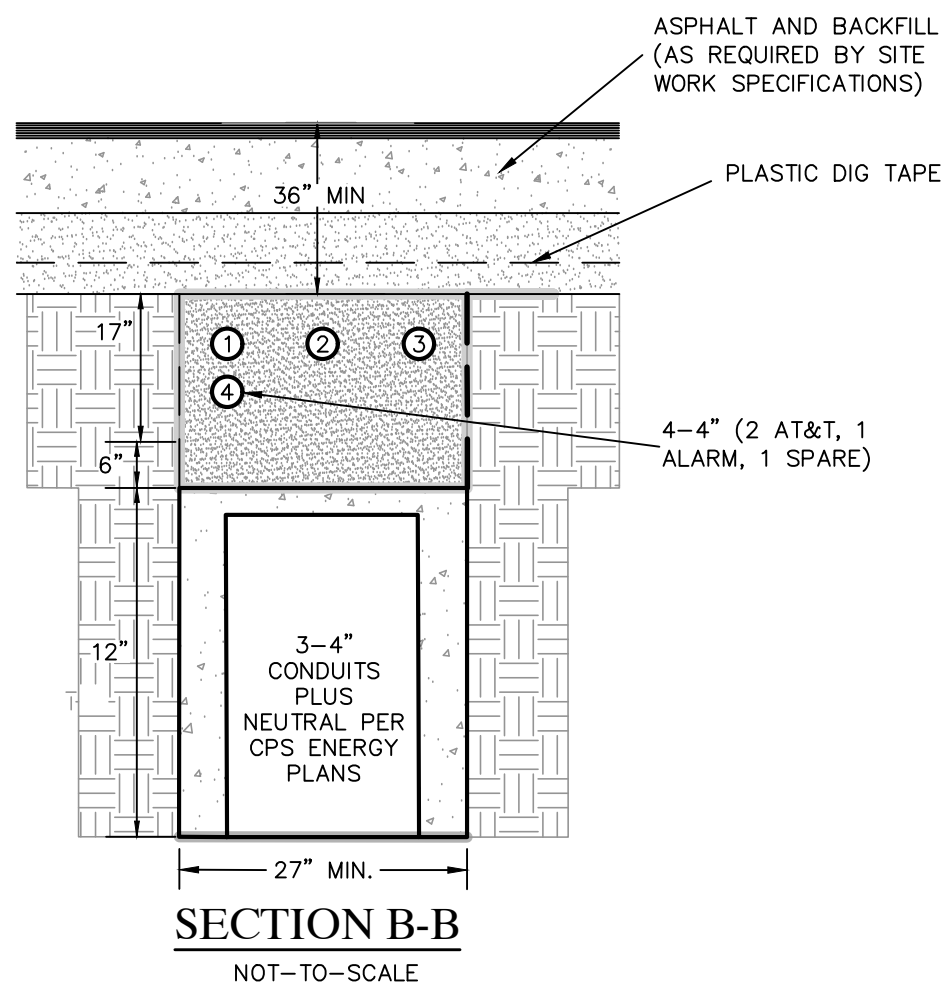
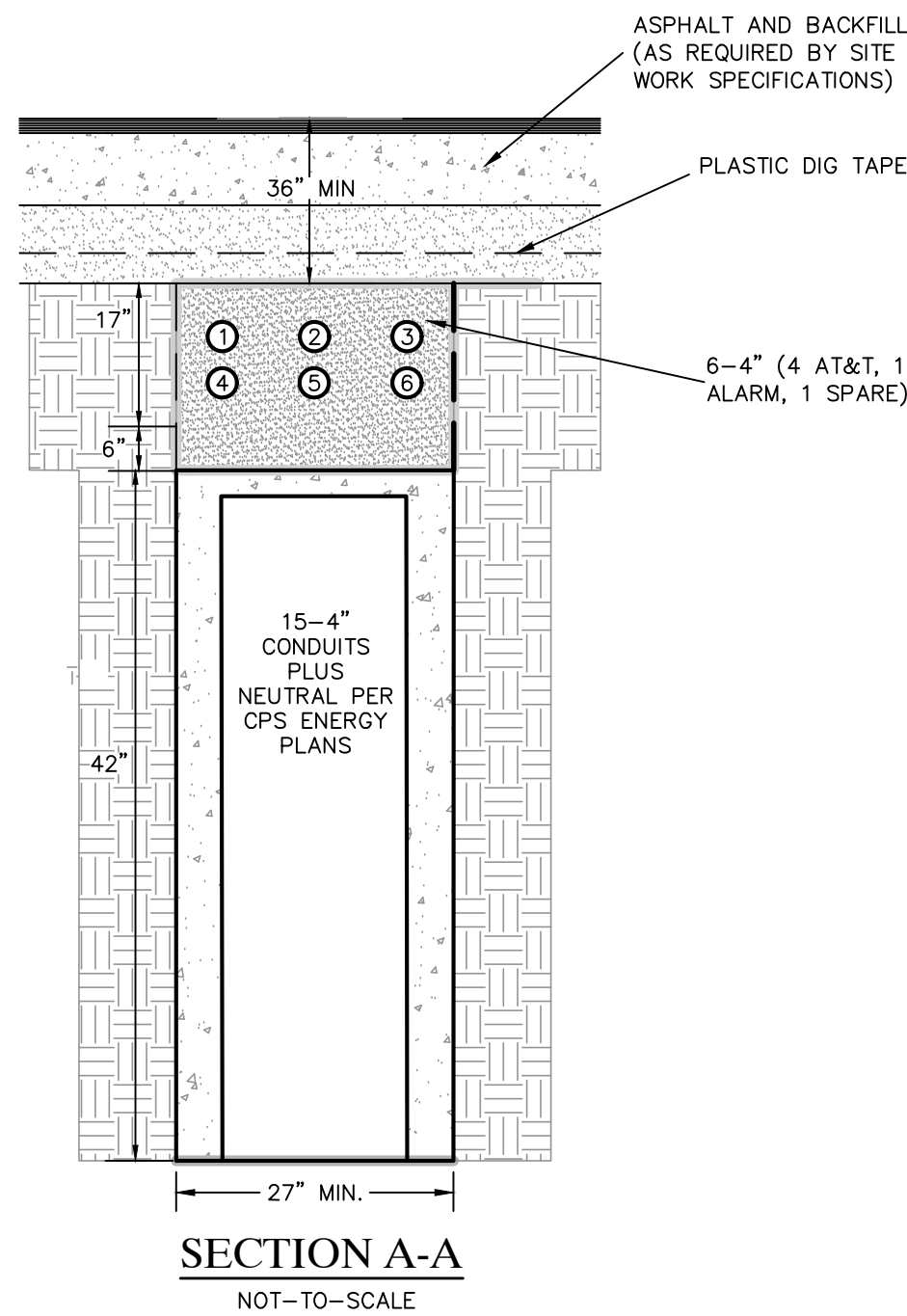
PRIVATE STREET DESIGNATION NOTE:  
LOT 999, BLOCK 9, NCB 18339 IS A PRIVATE STREET AND IS DESIGNATED AS AN UNDERGROUND ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION, DRAINAGE, WATER, PEDESTRIAN, AND SANITARY SEWER EASEMENT.

SECTION NOTES

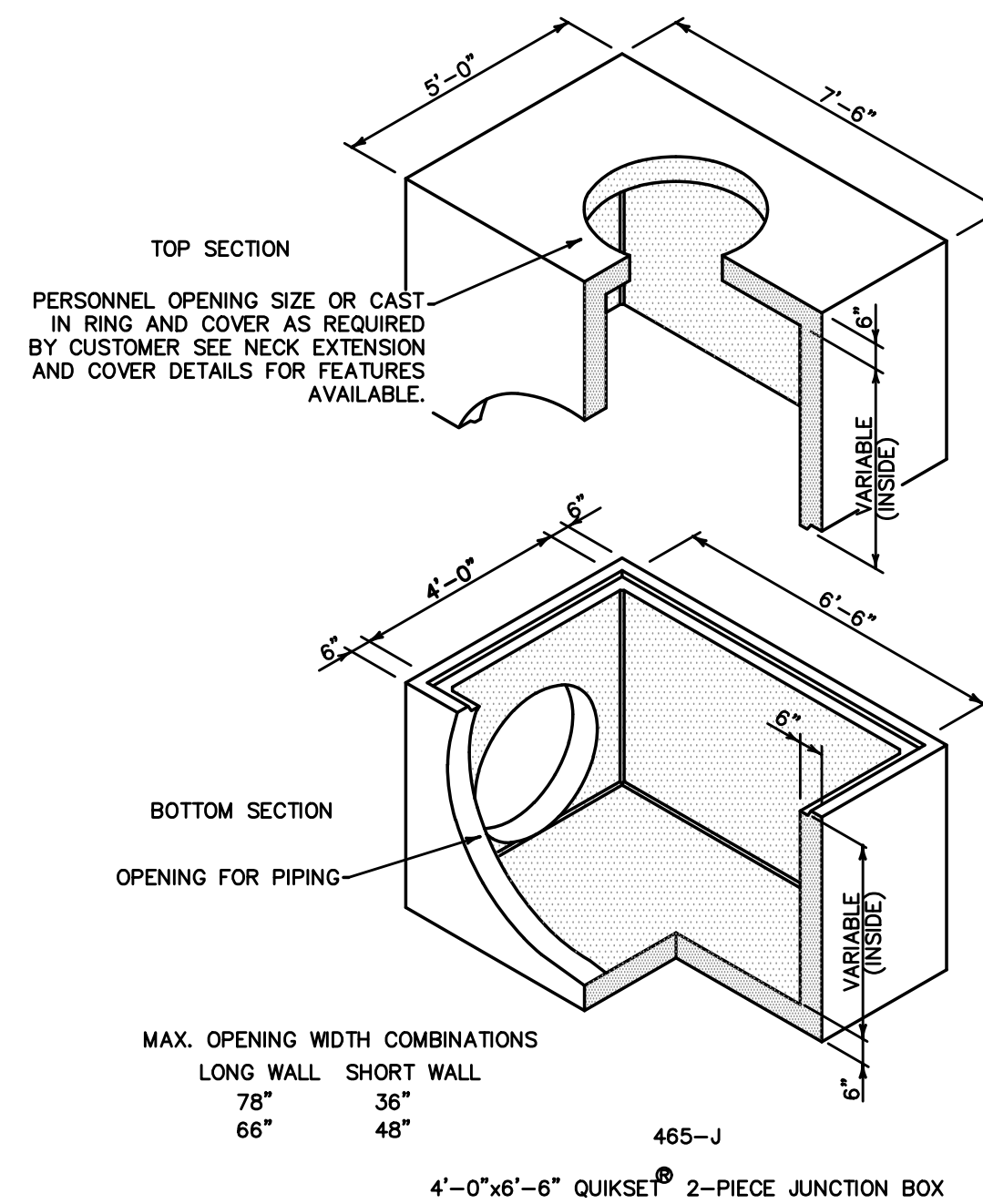
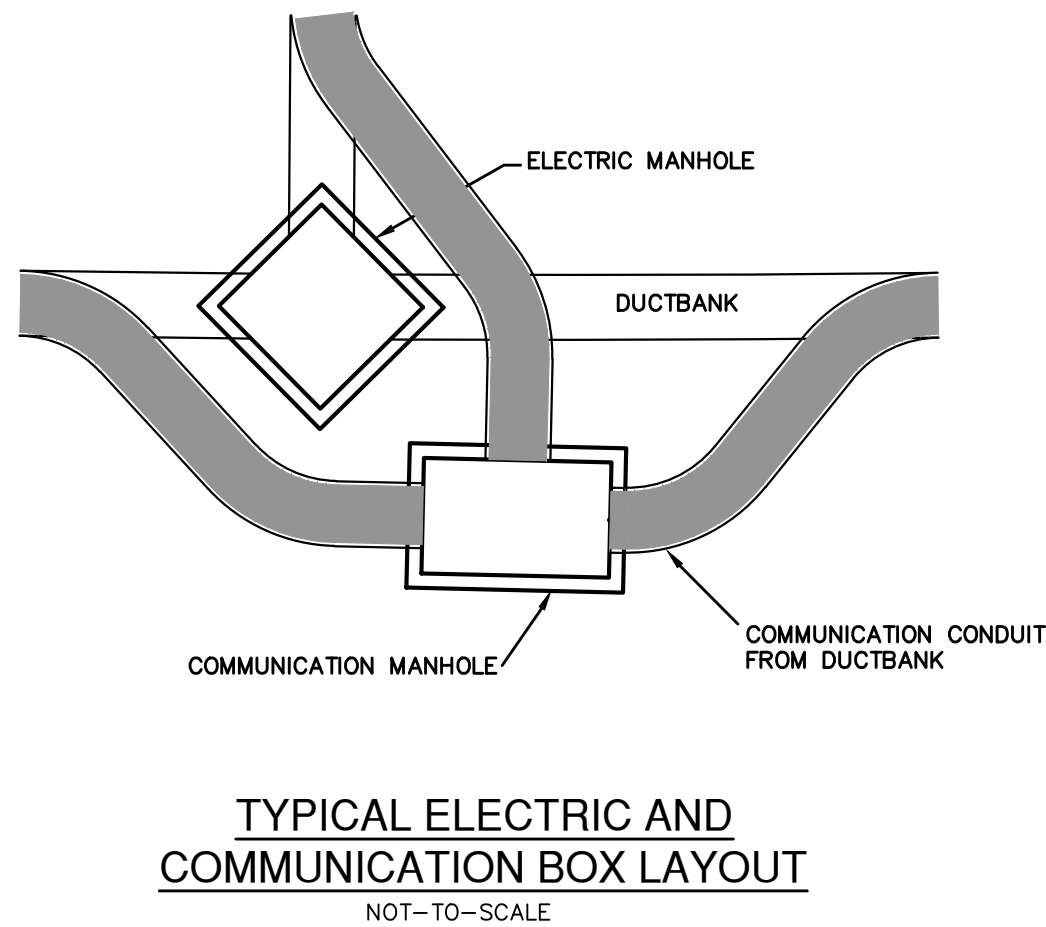
- SECTION "A-A"**  
THREE-PHASE: 15-4" IN DUCTBANK  
AT&T: 4-4" ABOVE DUCTBANK  
ALARM: 1-4" ABOVE DUCTBANK  
SPARE: 1-4" ABOVE DUCTBANK
- SECTION "B-B"**  
THREE-PHASE: 3-4" IN DUCTBANK  
AT&T: 2-4" ABOVE DUCTBANK  
ALARM: 1-4" ABOVE DUCTBANK  
SPARE: 1-4" ABOVE DUCTBANK



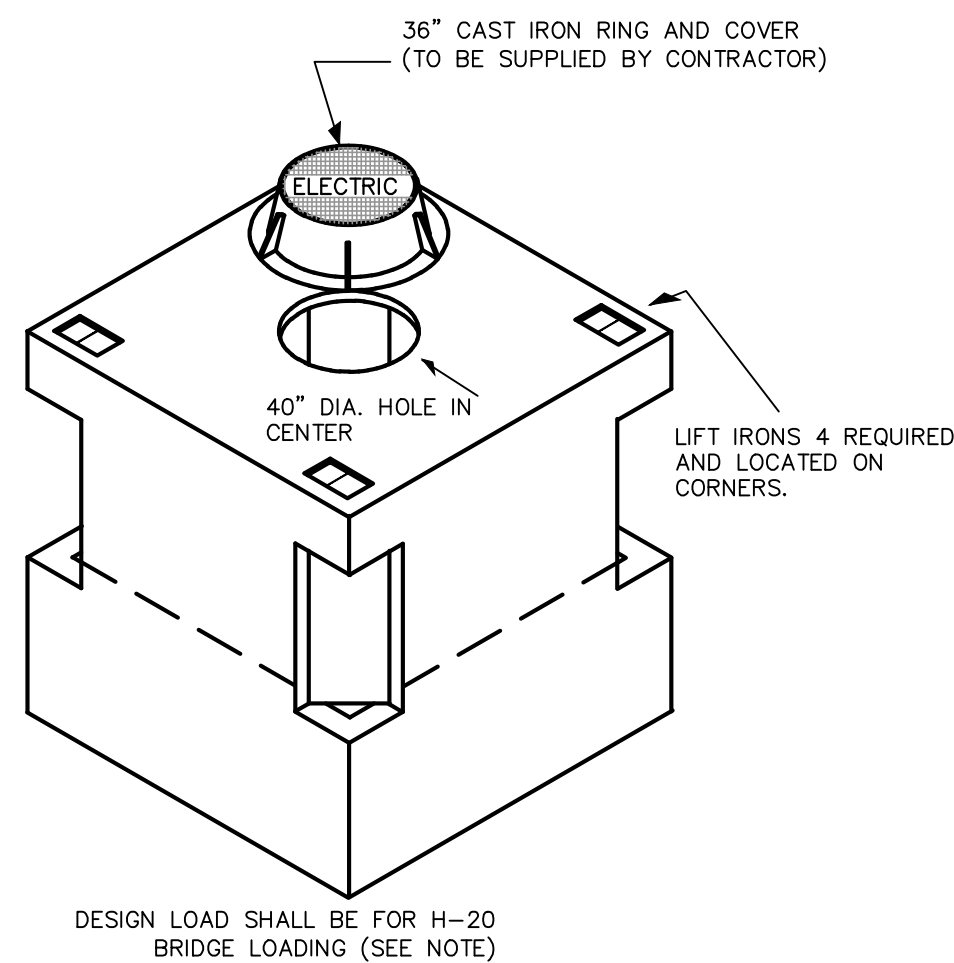
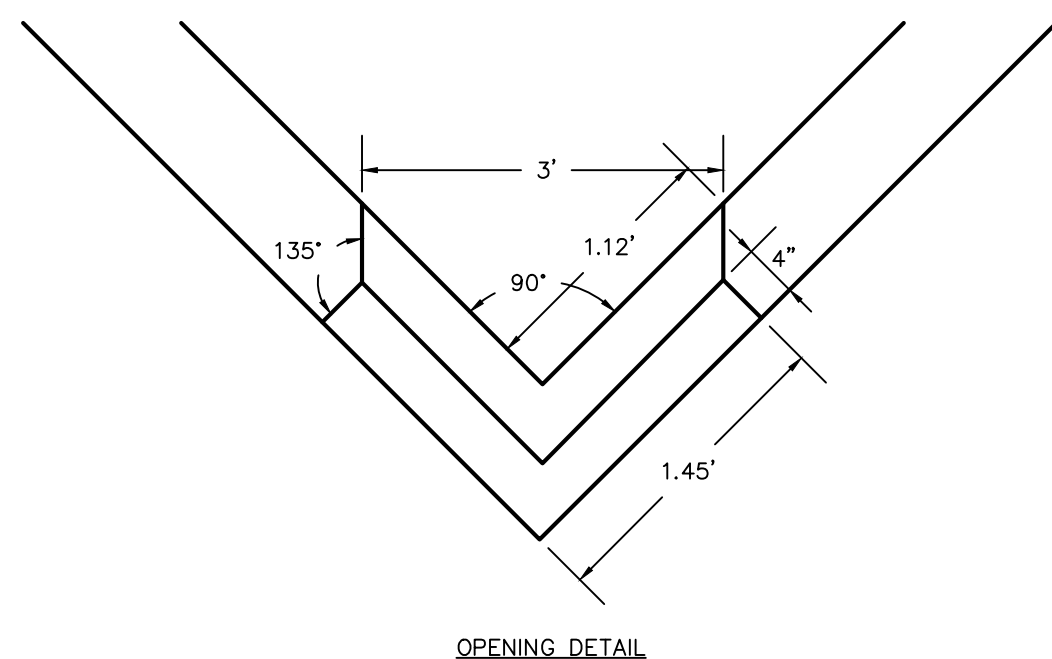
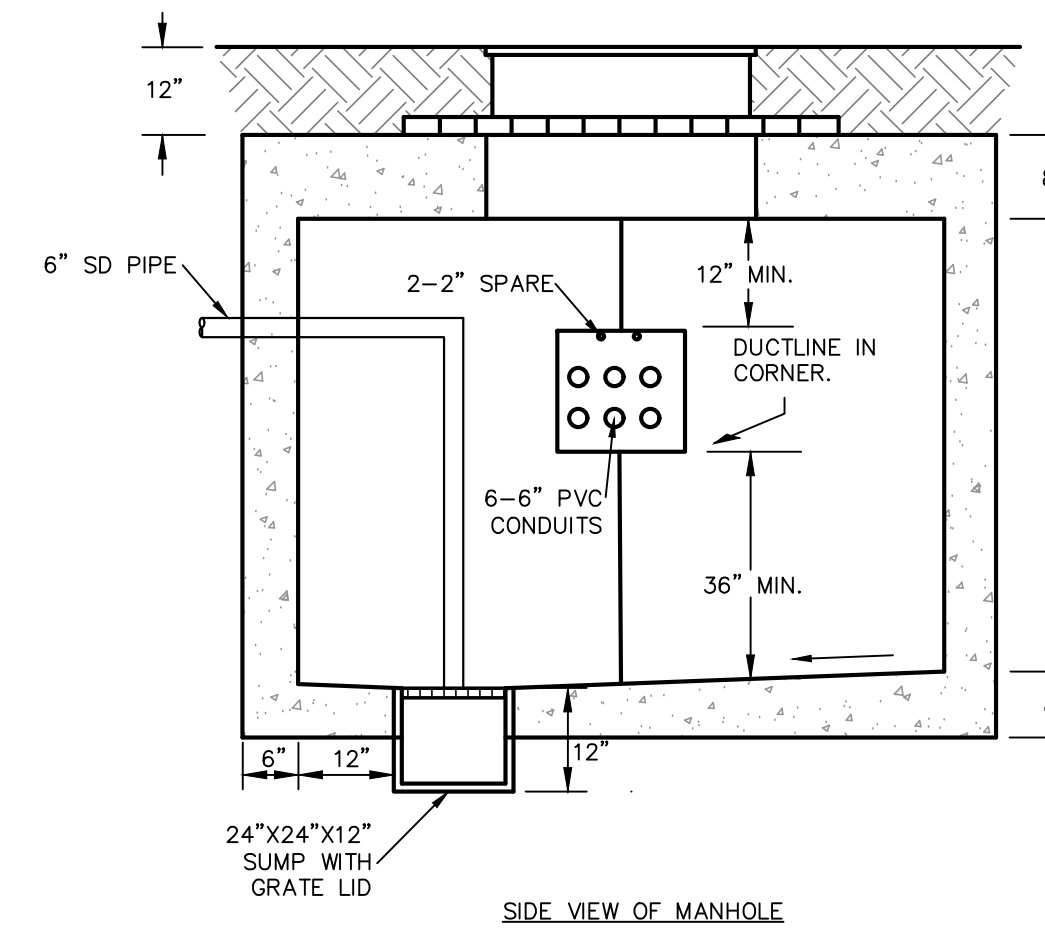
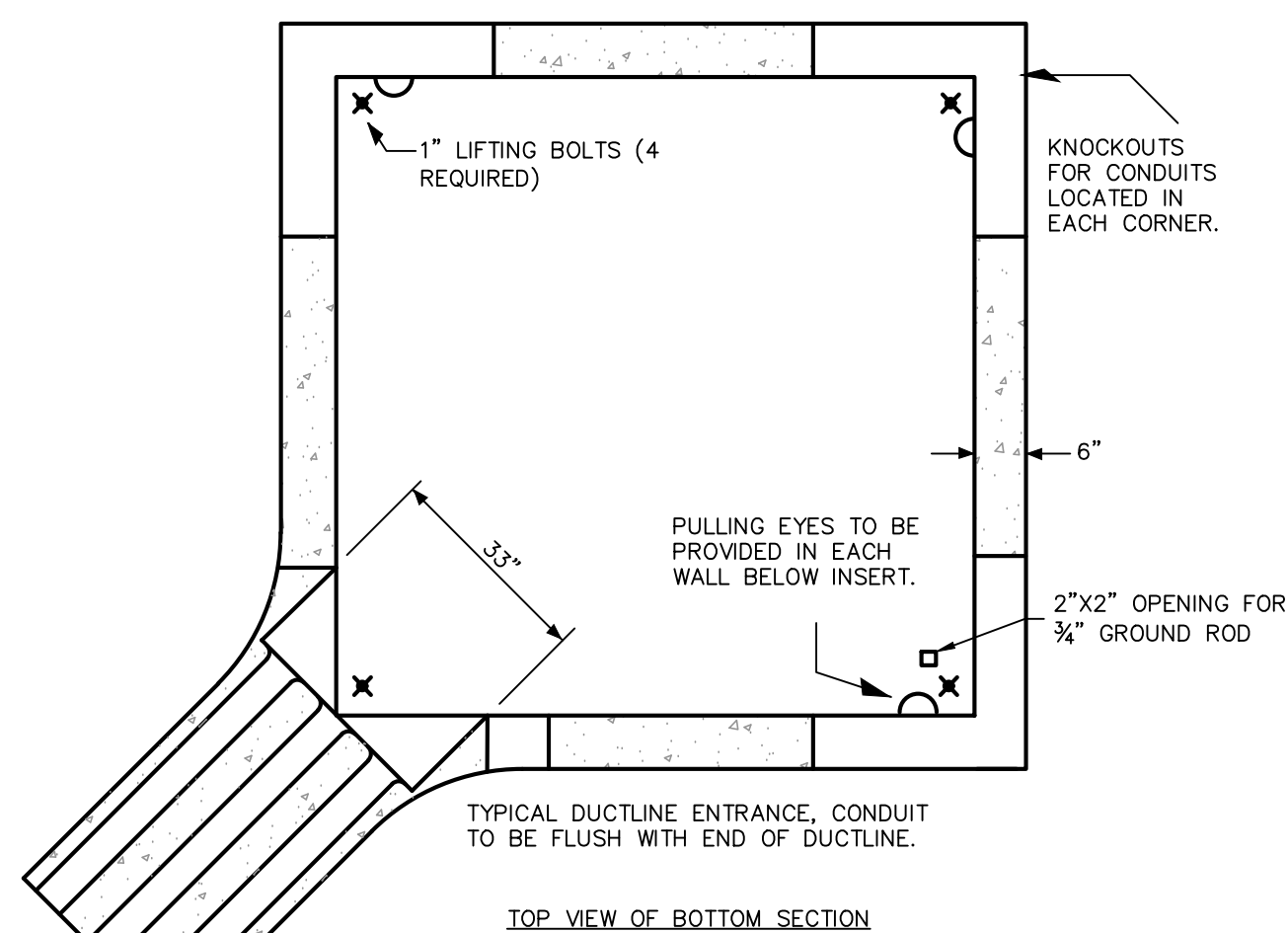
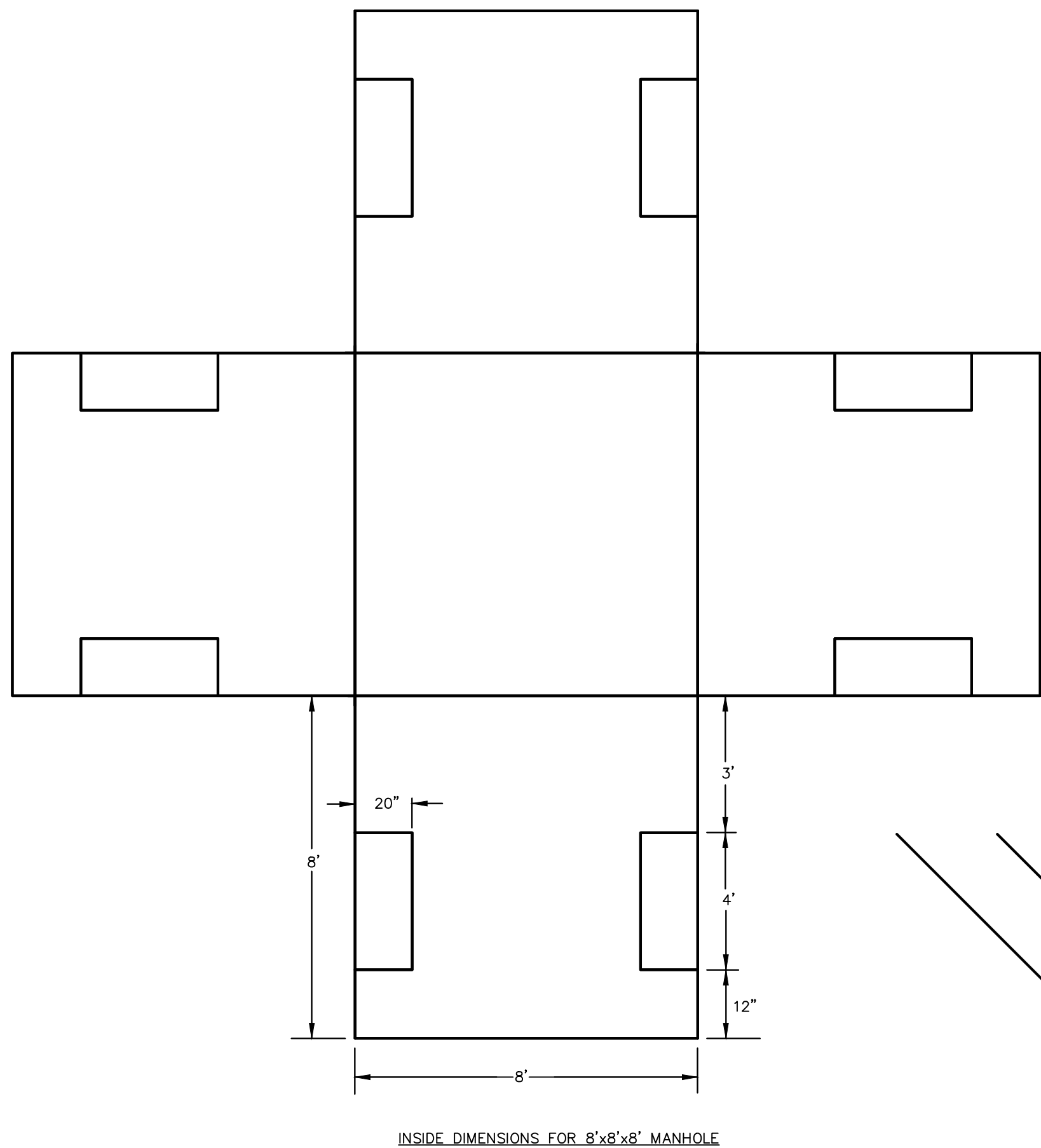
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COMM/ELEC/ DUCTBANK SECTIONS  
NOT-TO-SCALE



COMMUNICATION MANHOLE  
NOT-TO-SCALE



APPROXIMATE  
TOP OR BOTTOM WEIGHTS  
2'-0" INSIDE 6300 LBS. 2'-6"  
INSIDE 7200 LBS. 3'-0"  
INSIDE 8000 LBS. 3'-6"  
INSIDE 8800 LBS. 4'-0"  
INSIDE 9800 LBS.

MINIMUM EXCAVATION  
7'-0"x9'-6"

CONTRACTOR TO SUBMIT MANHOLE DETAILS FOR  
APPROVAL.

PRICE SHOULD INCLUDE:

- 47-HOLE GALVANIZED STEEL CABLE RACKS.  
PROVIDE THREE SUCH RACKS ON EACH OF THE  
TWO LONG WALLS AND ONE SUCH RACK ON EACH  
OF TWO SHORT WALLS.
- CAST 12" DIAMETER x 4" DEEP ENCLOSED SUMP  
WITH EXTRUDED PLASTIC GRATE LOCATED IN THE  
CENTER OF THE FLOOR.
- 8-FOOT GALVANIZED STEEL LADDER WITH 5/8"  
DIAMETER KNURLED RUNGS (12" ON CENTER) AND  
TWISTED TOP HOOKS FOR SECURING TO BOLT-ON  
STEPS.
- NECK EXTENSIONS WITH 3/4" DIAMETER GALVANIZED  
STEEL KNURLED NECK STEPS AS REQUIRED.
- SB-30 RING AND COVER WITH 30" DIAMETER  
OPENING. COVER SHALL BE LABELED  
"TELEPHONE", OR EQUIVALENT.
- THIN WALL KNOCKOUTS IN CENTER OF MANHOLE  
WALLS.
- DUCT TERMINATORS ON ALL DUCTS.
- TEN 7" HOOKS TO BE PROVIDED FOR EACH  
COMMUNICATIONS MANHOLE.
- MANHOLES SHOULD COMPLY WITH AT&T & TIME  
WARNER CABLE STANDARDS.

SERVICE PROVIDER TO PROVIDE ADDITIONAL CABLE  
RACK HOOKS FOR CABLE SUPPORT WITHIN MANHOLES.

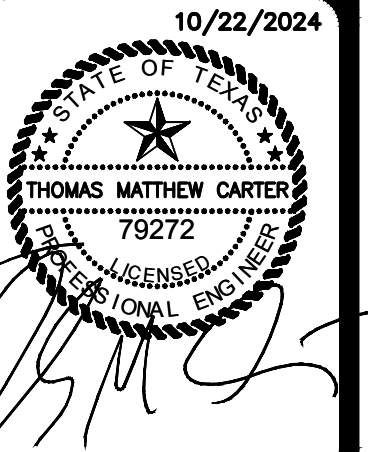
SERVICE PROVIDER TO PROVIDE SPLICE CASE  
MOUNTING CHANNELS IF SPLICING IS OCCURRING WITHIN  
A MANHOLE.

LCTC EAST ACCESS (ENCLAVE)

SAN ANTONIO, TEXAS

DRY UTILITY DETAILS

PLAT NO. 24-11800345  
JOB NO. 13225-01  
DATE SEPTEMBER 2024  
DESIGNER MC/KT/TR  
CHECKED WK/DS DRAWN TR/JS  
SHEET C6.10



PAPE-DAWSON  
ENGINEERS

2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000  
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028900