CITY OF SAN ANGELO, TEXAS

MARTIN LUTHER KING DRIVE STREET IMPROVEMENTS

FEDERAL PROJECT No. STP 2014(091)TE

TXDOT CSJ No. 0907-24-043

CITY PROJECT No. ES-03-16

RECONSTRUCT APPROXIMATELY 4,790 LF AND MILL AND OVERLAY APPROXIMATELY 2,950 LF OF ROADWAY ON MARTIN LUTHER KING DRIVE. INSTALL SIDEWALK AND BIKE TRAIL ALONG MARTIN LUTHER KING DRIVE FROM 29TH STREET TO 14TH STREET. IMPROVEMENTS TO SHARED USE PATH ALONG RIO CONCHO DRIVE. STRIPING OF BICYCLE LANE ON VARIOUS ROADWAYS IN DOWNTOWN SAN ANGELO.

JULY 2016

OWNER

CITY OF SAN ANGELO, TEXAS

MAYOR

DWAIN MORRISON

CITY COUNCIL MEMBERS

BILL RICHARDSON
MARTY SELF
HARRY THOMAS
LUCY GONZALES
LANE CARTER
CHARLOTTE FARMER

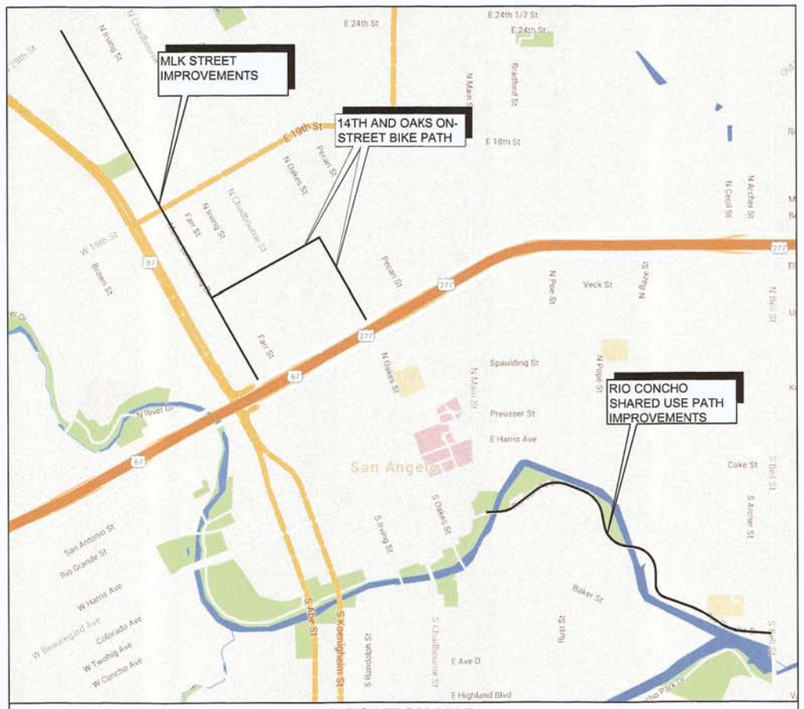
CITY MANAGER

DANIEL VALENZUELA

CITY ENGINEER

RUSSELL PEHL, P.E.

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION, NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, MAY 1, 2012).



LOCATION MAP

RECOMMENDED BY:

KSA

TBPE FIRM REGISTRATION No. F-1356

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER

David A. Alexander, P.E. 7/21/16

DAVID A. ALEXANDER, P.E. DATE
PROJECT MANAGER

ACCEPTED BY:

CITY OF SAN ANGELO

Russell Pehl 7/29/16

RUSSELL PEHL, P.E. DATE
CITY ENGINEER

APPROVED FOR LETTING:

TEXAS DEPARTMENT OF TRANSPORTATION

M. L. Jones, P.E. 7/29/16

MARK JONES, P.E. DATE
DISTRICT ENGINEER

KSA

58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

INDEX OF SHEETS

*THE STANDARD SHEETS SPECIFICALLY IDENTIFIED ON THIS SHEET HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER

SHEET NAME: INDEX OF SHEETS

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.056

CP&Y TBPE FIRM #F-1741

KSA

SHEET NO. 2

GENERAL CONSTRUCTION NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF SAN ANGELO DESIGN STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANGELO PUBLIC WORKS DEPARTMENT BY BOTH PHONE (325-657-4206) AND REGISTERED LETTER 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE TEXAS DEPARTMENT OF TRANSPORTATION 48 HOURS PRIOR TO STARTING ANY CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF STATE MAINTAINED ROADWAYS IN ORDER THAT THEY MAY HAVE A REPRESENTATIVE PRESENT.
4. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING PUBLIC AGENCIES AND PRIVATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE STARTING WORK IN THE ROADWAY RIGHT-OF-WAY OR EASEMENTS:

• **TEXAS811**	**811**
• **AT&T COMMUNICATIONS**	**(1-800) 344-8377**
• **VERIZON**	**(1-800) 554-3900**
• **AEP**	**(1-877) 373-4858**
• **ATMOS**	**(1-888) 286-6700**

5. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL DEVELOP IN DETAIL A CONSTRUCTION SCHEDULE AND METHOD THAT SHALL CAUSE MINIMUM INTERFERENCE WITH TRAFFIC ALONG, ACROSS, OR ADJACENT TO THE PROJECT DURING CONSTRUCTION. IF THE SCHEDULE OR METHOD BECOMES UNWORKABLE OR UNSATISFACTORY AS WORK PROCEEDS, ADJUSTMENTS SHALL BE MADE. IF AT ANY TIME DURING CONSTRUCTION, THE CONTRACTOR'S PROPOSED PLAN OF OPERATION RESULTS IN UNSATISFACTORY TRAFFIC MOVEMENT IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL IMMEDIATELY CORRECT THE UNSATISFACTORY CONDITION.
6. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT ONCE TO OBTAIN CLARIFICATIONS PRIOR TO STARTING CONSTRUCTION SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES OR OMISSIONS FROM THE PLANS.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL REVIEW AND FULLY UNDERSTAND THESE PLANS AND COORDINATE WITH THE LOCAL PUBLIC AND PRIVATE UTILITIES TO PREVENT ANY POSSIBLE CONFLICTS IN GRADE AND ELEVATIONS.
8. THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE PLANS UNLESS SPECIFICALLY ESTABLISHED IN THE BID SECTION OF THE CONTRACT DOCUMENTS, INCLUDE COST OF THIS WORK IN THE CONTRACT UNIT PRICE FOR ITEMS OF WHICH THIS WORK IS A COMPONENT OR INCIDENTAL.
9. THE PROJECT SITE IS LOCATED ON FIRM MAP No. 48451C0480E REVISION DATED JUNE 19, 2012. THE PROJECT IS NOT LOCATED IN THE FLOODPLAIN HAZARD AREAS.
10. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, AND/OR PERSONS IN CHARGE OF PUBLIC AND PRIVATE UTILITIES AND PIPELINES AFFECTED BY HIS OPERATIONS PRIOR TO STARTING WORK.
11. THE CONTRACTOR SHALL VERIFY BOTH HORIZONTAL AND VERTICAL CONTROL PRIOR TO CONSTRUCTION AND REPORT ANY CONFLICTS TO THE ENGINEER IMMEDIATELY.
12. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION SURVEYING.
13. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SECURITY TO PROTECT HIS OWN PROPERTY, EQUIPMENT, AND WORK IN PROGRESS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN UPDATED REDLINED "AS-BUILT" SET OF CONSTRUCTION DRAWINGS ON SITE FOR INSPECTION AT THE REQUEST OF THE CITY OF SAN ANGELO AND/OR THE ENGINEER.
16. THE CONTRACTOR STAGING AREA WILL BE DETERMINED BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION AND APPROVED BY THE CITY OF SAN ANGELO.
17. THE LOCATION AND ELEVATIONS OF ALL EXISTING UNDERGROUND UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN IN AN APPROXIMATE WAY ONLY. THESE UTILITIES ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR HAS THE SOLE RESPONSIBILITY FOR FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN. HE SHALL FIELD DETERMINE THE EXACT LOCATIONS OF THE EXISTING UTILITIES, NATURAL GROUND ELEVATIONS, PIPELINES, AND VERIFY TOPOGRAPHIC INFORMATION BEFORE COMMENCING ANY WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND MAINTAIN THESE UNDERGROUND UTILITIES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS FOUND IN ADDITION TO COORDINATING ALL CONFLICTS WITH THE APPROPRIATE GOVERNING AGENCY.
18. ANY PERMANENT RELOCATION OF AN EXISTING UTILITY NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO RELOCATION AND SHALL CONFORM TO THE APPLICABLE STANDARDS OF GOVERNING AUTHORITIES.
19. CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND FACILITIES DURING INSTALLATION OF PROPOSED WORK.
20. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE FACILITIES AND UTILITY LINES, INCLUDING BUT NOT LIMITED TO PAVING, WATER LINES, AND WASTEWATER COLLECTION SYSTEMS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF SAN ANGELO REQUIREMENTS AT THE CONTRACTOR'S EXPENSE. REPAIR MATERIALS MUST BE AVAILABLE FOR IMMEDIATE REPAIR. (NO SEPARATE PAY)
21. CONTRACTOR SHALL REMOVE AND REPLACE OR RECONSTRUCT EXISTING FENCES, POSTS, PLANTERS, TRASH CONTAINERS, CULVERTS, ETC. AS NECESSARY TO COMPLETE PROPOSED CONSTRUCTION. SUCH ITEMS ARE TO BE REPLACED WITH EQUAL OR BETTER AT NO EXTRA PAY. TREES, BUSHES, SHRUBBERY, AND OTHER PLANTINGS ARE TO BE REPLACED WITHIN 72 HOURS OF REMOVAL AND TO BE WATERED IN THOROUGHLY. (NO SEPARATE PAY)
22. IF EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS, THAT ARE TO REMAIN, ARE DAMAGED OR REMOVED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THEM TO ORIGINAL CONDITION OR BETTER, IN ACCORDANCE WITH CITY OF SAN ANGELO STANDARDS AND AT THE CONTRACTOR'S EXPENSE.
23. PAVED SURFACES SHALL BE PROTECTED FROM DAMAGE BY EQUIPMENT.
24. CONTRACTOR IS RESPONSIBLE FOR CLEANING OF STREETS CAUSED BY ASSOCIATED CONSTRUCTION AT CLOSE OF EACH WORKDAY. THE CONTRACTOR SHALL REMOVE ALL MUD, DIRT, AND DEBRIS DEPOSITED OR DROPPED ON EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY DAILY. MATERIAL THAT IS HAZARDOUS TO TRAFFIC SHALL BE REMOVED IMMEDIATELY.
25. CONDITION OF THE RIGHT-OF-WAY AND EXISTING ROAD, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITIONS PRIOR TO STARTING WORK.
26. ALL STATIONING IS MEASURED ALONG THE BASELINE AS NOTED ON THE DRAWINGS.
27. THE OFFSET DISTANCE FOR ALL PROPOSED UTILITY STRUCTURES IS MEASURED FROM THE PROJECT BASELINE TO THE CENTER OF THE PROPOSED STRUCTURE UNLESS OTHERWISE NOTED. STATIONS, PIPE LENGTHS, AND PIPING GRADES ARE MEASURED FROM THE CENTER OF STRUCTURES.
28. WHEN TRENCH CONDITION WARRANTS USING WELL POINTS, THE CONTRACTOR SHALL NOTIFY THE CITY OF SAN ANGELO AND REQUEST THE USE OF WELL POINTING.
29. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. ANY ROADSIDE DITCH, DRAINAGE DITCH, CHANNEL, OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE ENGINEER OR OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE LATEST COPY (INCLUDING AMENDMENTS THERETO) OF THE "STORMWATER DESIGN MANUAL" AS PREPARED BY THE CITY OF SAN ANGELO, ALL IN COMPLIANCE WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
30. CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES AT LOCATIONS AS REQUIRED TO PREVENT SOIL AND SEDIMENT RUNOFF. LOCATIONS SHALL ALSO BE AS DIRECTED BY THE OWNER AND ENGINEER. THIS ITEM OF WORK SHALL BE PAID FOR IN A PER LINEAR FOOT BASIS OF ACTUAL FILTER FABRIC FENCE INSTALLED OR AS SHOWN IN THE PROPOSAL.
31. CONTRACTOR'S ACTIVITIES ARE NOT TO ALTER OR CHANGE EXISTING DRAINAGE PATTERNS IN PROJECT AREA WITHOUT AUTHORIZATION TO DO SO. EXISTING SHEET DRAINAGE SHALL NOT BE IMPEDED BY PROPOSED CONSTRUCTION.
32. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING AND RESTORING ALL DRAINAGE SYSTEMS DISTURBED AS A RESULT OF HIS WORK.
33. CONTRACTOR SHALL KEEP TRENCHES DRY AT ALL TIMES AND KEEP TRENCHES, PIPE BEDDING, AND BACKFILL FREE OF DEBRIS.
34. THE CONTRACTOR SHALL GRADE ALL AREAS WITHIN THE PROJECT LIMITS TO INSURE POSITIVE DRAINAGE. ALL DISTURBED AREAS, AS A RESULT OF CONSTRUCTION WORK, SHALL BE REGRADED, COMPACTED, EITHER SEEDED OR SODDED, FERTILIZED, AND WATERED WITHIN 10 DAYS OF EACH OCCURRENCE TO MATCH EXISTING CONDITIONS (SAME SPECIES OF SIMILAR MATURITY) IN ACCORDANCE WITH THE CITY OF SAN ANGELO SPECIFICATIONS. (NO SEPARATE PAY)
35. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF EXISTING SHRUBS, PLANTS, AND TREES LOCATED OUTSIDE AND WITHIN 30-FEET OF THE PROPOSED ALIGNMENT UNLESS OTHERWISE NOTED. NO SHRUBS, PLANTS, OR TREES SHALL BE REMOVED WITHOUT PERMISSION OF THE CITY OF SAN ANGELO.
36. CONTRACTOR SHALL COMPLY WITH ALL OF THE APPLICABLE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT (A.D.A.).
37. THE CONTRACTOR SHALL PROVIDE TRENCH SAFETY SYSTEMS TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1926, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, AND DATED OCTOBER 31, 1989.
38. THE CONTRACTOR SHALL COMPLY WITH OSHA REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING, AND SHORING.
39. THE CONTRACTOR SHALL INDEMNIFY AND HOLD HARMLESS THE CITY OF SAN ANGELO AND ENGINEER FROM ANY AND ALL DAMAGES AND COSTS, INCLUDING WITHOUT LIMITATION, LEGAL FEES, COURT COSTS, AND THE COST OF INVESTIGATION, JUDGMENTS OR CLAIMS BY ANYONE FOR INJURY OR DEATH OF PERSONS RESULTING FROM THE COLLAPSE OR FAILURE OF TRENCHES CONSTRUCTED FOR THIS PROJECT.
40. ALL UTILITY CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST EDITION OF ACI-318.
41. ALL CONCRETE USED FOR PAVING AND UTILITY CONSTRUCTION SHALL HAVE A 28-DAY MINIMUM STRENGTH OF 3,000 P.S.I. UNLESS OTHERWISE NOTED.
42. ALL REINFORCED CONCRETE USED FOR PAVING AND UTILITY CONSTRUCTION SHALL BE GRADE 60 IN ACCORDANCE WITH ASTM A-615.
43. CEMENT STABILIZED SAND SHALL MEET OR EXCEED A PERFORMANCE SPECIFICATION MINIMUM 100 P.S.I. COMPRESSION TEST.
44. THE CONTRACTOR IS RESPONSIBLE FOR TRAFFIC HANDLING AND SAFETY IN THE CONSTRUCTION AREA DURING THE CONSTRUCTION PERIOD. SIGNS, BARRICADES, AND OTHER NECESSARY DEVICES SHALL BE FURNISHED AND MAINTAINED IN COMPLIANCE WITH PART VI OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION. PAYMENT FOR THIS WORK IS SUBSIDIARY TO THE VARIOUS ITEMS OF THE CONTRACT.
45. THE CONTRACTOR SHALL PROVIDE ACCESS TO EXISTING DRIVEWAYS AT ALL TIMES. ALL WEATHER GRAVEL SURFACE SHALL BE USED FOR MAINTAINING TEMPORARY ACCESS TO SAID DRIVEWAYS.
46. A VERY IMPORTANT FEATURE OF THIS CONTRACT IS PROVIDING FOR THE CONVENIENCE OF THE TRAVELING PUBLIC AND ABUTTING PROPERTY OWNER AND TENANT. THE SCHEDULE TO BE PROVIDED UNDER ITEM 5 OF THESE GENERAL NOTES SHALL ENSURE THIS PROVISION. WHERE, IN THE OPINION OF THE ENGINEER, LOCAL TRAFFIC AND ABUTTING PROPERTY OWNER WOULD BE UNDULY INCONVENIENCED FOR AN EXTENDED PERIOD OF TIME, THE ENGINEER SHALL LIMIT THE LENGTH OF EXCAVATION AREA THAT THE CONTRACTOR MAY OPEN AT ONE TIME. THE CONTRACTOR SHALL PLAN HIS WORK SO THAT LIME TREATED SUBGRADE FOLLOWS CLOSELY THE COMPLETION OF ROADWAY EXCAVATION AND EMBANKMENT AND THAT PAVING OPERATIONS WILL FOLLOW AFTER CURING THE LIME TREATED SUBGRADE. FOR PROTECTION OF THE PAVEMENT SUBGRADE AND TO REDUCE AN UNSIGHTLY CONDITION, BACKFILL SHALL BE PLACED BEHIND THE CURBS AFTER FORMS ARE REMOVED.
47. WATER SUPPLY FOR USE DURING CONSTRUCTION SHALL BE APPROVED BY THE ENGINEER AND SECURED BY THE CONTRACTOR FROM THE CITY OF SAN ANGELO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A METER TO BE INSTALLED AT LOCATIONS DESIGNATED BY THE CITY.
48. MAIL BOXES AND MAIL SERVICES SHALL BE MAINTAINED THROUGHOUT THE PROJECT. PAYMENT FOR REMOVAL, TEMPORARY RELOCATION AND PERMANENT LOCATION OF ALL MAIL BOXES, REGARDLESS OF TYPE OR CONSTRUCTION, SHALL BE INCLUDED IN OTHER ITEMS OR WORK.
49. ABANDONED WATER LINES THAT HAVE BEEN CUT DURING CONSTRUCTION SHALL BE PLUGGED BEFORE BACKFILL OPERATIONS ARE COMPLETE.
50. ALL TRENCHES WHICH CAUSE THE REMOVAL OF PAVEMENT SHALL BE BACKFILLED, COMPACTED AND COVERED WITH ALL WEATHER GRAVEL SURFACE TO PROVIDE ACCESS AT ALL TIMES DURING CONSTRUCTION UNTIL SUCH TIME AS THE PERMANENT PAVEMENT IS PLACED.
51. ALL TRENCH BACKFILL UNDER ROADBED AREAS SHALL BE MECHANICALLY COMPACTED AS REQUIRED BY TEXAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS ITEM 401.
52. EXISTING CONCRETE PAVEMENT, CURB, ASPHALT PAVEMENT, OR CURB AND GUTTER TO BE REMOVED, WHETHER IN STREETS OR DRIVES, SHALL BE SAWED ALONG NEAT LINES WHERE PORTIONS ARE TO BE LEFT IN PLACE.
53. THE END OF THE STREET AND DRIVEWAY PAVEMENT SHALL MATCH THE EXISTING PAVING UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR ASPHALT TIE-INS SHALL BE PAID AT THE UNIT PRICES FOR BASE AND ASPHALT SURFACE.
54. BARRIER FREE RAMPS SHALL BE PROVIDED AT ALL STREETS AND DRIVES ACCORDING TO THE STANDARD DETAILS FOR PAVING INCLUDED IN THE PLANS. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SIDEWALKS.
55. THE CONTRACTOR SHALL FURNISH THE ENGINEER A COPY OF THE SIGNED AGREEMENT WITH THE PROPERTY OWNER FOR EACH DISPOSAL SITE WHICH THE CONTRACTOR INTENDS TO USE FOR "WASTE" MATERIALS. CONDITIONS AND RESTRICTIONS, IF ANY, WILL BE CLEARLY STATED. COMPLIANCE WILL BE REQUIRED AND A RELEASE FROM THE PROPERTY OWNER MUST BE OBTAINED UPON COMPLETION OF THE PROJECT.
56. THE QUANTITIES SHOWN ON THE ESTIMATE AND QUANTITY SHEETS FOR EXCAVATION AND EMBANKMENT, ARE THEORETICAL CALCULATIONS BASED ON THE PROPOSED GRADE AND EXISTING TOPOGRAPHY. ITEMS FOR THIS WORK SHALL BE A PLAN QUANTITY PAYMENT ONLY. NO ADJUSTMENTS TO THE EXCAVATION QUANTITY WILL BE MADE.
57. TEMPORARY SHORING OR BRACING OF EXISTING UTILITIES DURING CONSTRUCTION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
58. ENGINEER SHALL SET BENCHMARKS IN THE PROJECT AREA FOR HORIZONTAL AND VERTICAL CONTROL. CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT THESE BENCHMARKS.
59. ALL SEWER AND WATER TAPS OR POTENTIAL TAPS MAY NOT BE SHOWN ON THE PLANS. FIELD VERIFY AND INSTALL ALL REQUIRED SERVICES.

PAVING CONSTRUCTION NOTES:

1. CITY TO RETAIN ASPHALT MILLINGS. CONTRACTOR SHALL COORDINATE WITH THE CITY OF SAN ANGELO TO DETERMINE STOCKPILING LOCATION.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY CITY OF SAN ANGELO AND TEXAS DEPARTMENT OF TRANSPORTATION RESPECTIVELY FOR CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY FOR THE OWNER. (NO SEPARATE PAY)
3. PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF SAN ANGELO PUBLIC WORKS DEPARTMENT'S ENGINEERING STANDARD DETAILS AND CONSTRUCTION SPECIFICATIONS AND THE LATEST REVISIONS AND/OR AMENDMENTS OF THE SAME.
4. SURPLUS EXCAVATED EARTHEN MATERIAL BECOMES THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED AND DISPOSED OF OFF-SITE. INCLUDE COST OF REMOVAL AND DISPOSAL IN OTHER ITEMS OF WHICH THIS WORK IS A COMPONENT PART. (NO SEPARATE PAY)
5. ALL PAVEMENT REMOVAL AND REPLACEMENT SHALL BE IN ACCORDANCE WITH THE CITY OF SAN ANGELO SPECIFICATIONS AS CURRENTLY AMENDED.

PRIVATE UTILITY CAUTION AND WARNING NOTES

CAUTION: UNDERGROUND TELEPHONE FACILITIES

1. THE CONTRACTOR SHALL CALL 1-800-554-3900 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
2. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF VERIZON FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE VERIZON FACILITY.
3. WHEN VERIZON FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES, THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

CAUTION: UNDERGROUND GAS FACILITIES

- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF UNDERGROUND GAS FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN UNDERGROUND GAS FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

WARNING: OVERHEAD ELECTRICAL FACILITIES

1. OVERHEAD LINES MAY EXIST ALONG THE PROJECT ROUTE. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. FEDERAL REGULATION, TITLE 29, PART 1910.190(1) AND PART 1926.440(A) (15) REQUIRE A MINIMUM CLEARANCE OF 10 FEET FROM THESE FACILITIES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED, CALL AEP.

SANITARY SEWER CONSTRUCTION NOTES

1. MUNICIPAL SANITARY SEWER LINES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE TCEQ CHAPTER 217, 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEMS'.
2. SANITARY SEWERS SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE LATEST CITY OF SAN ANGELO SPECIFICATIONS FOR SEWER CONSTRUCTION AND TESTED AS SPECIFIED IN THE CITY TEST PROCEDURE FOR EITHER LIQUID OR AIR, INCLUDING ALL AMENDMENTS AND REVISIONS THERETO. BEDDING AND BACKFILL FOR SANITARY SEWERS SHALL BE PLACED IN ACCORDANCE WITH CITY OF SAN ANGELO STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS.
3. MATERIALS AND CONSTRUCTION SHALL CONFORM TO LATEST CITY OF SAN ANGELO STANDARD SPECIFICATIONS.
4. SDR 26 PVC PIPES USES "FULL BODIED" SDR 26 PVC FITTINGS OR D.I.P. FITTINGS WITH APPROPRIATE ADAPTERS. AWWA C-900 DR-18 PVC PIPE USES EITHER AWWA C-900 DR-18 PVC FITTINGS OR D.I.P. FITTINGS. SDR-26 PVC PIPE SHALL HAVE A CELL CLASSIFICATION OF 12364-B AS DEFINED IN ASTM D-1784.
5. WHERE ASTM D-2680 RESIN TYPE "TRUSS PIPE" AND/OR P.V.C. (OR OTHER SMOOTH PLASTIC) PIPE IS TO BE USED, WATER-STOP GASKET AND CLAMP ASSEMBLY ARE TO BE FURNISHED AND INSTALLED AT EACH AND EVERY CONNECTION TO MANHOLE(S). NO SEPARATE PAY.
6. ADJUSTMENT RINGS FOR PRECAST CONCRETE MANHOLES SHALL NOT EXCEED 18" IN HEIGHT.
7. ALL SANITARY SEWER SERVICE LEADS SHALL BE FOUR (4) INCHES OR SIX (6) INCHES DIAMETER AT 0.70% MINIMUM SLOPE AND SHALL BE SCH 40 PVC.
8. CONTRACTOR SHALL KEEP RECORD OF LOCATION OF ALL STACKS, STUBS, ETC.
9. WATERLINES AND SANITARY SEWER LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.
10. INCLUDE COST OF BEDDING AND BACKFILL AS REQUIRED TO CONFORM TO CITY OF SAN ANGELO SPECIFICATIONS IN THE UNIT PRICE BID FOR PIPE.
11. BACKFILL FOR PIPE (AND M.R.C. SEWER) TRENCHES NOT UNDER PAVEMENT, THE EARTHEN BACKFILL FOR THE PIPE TRENCH SHALL BE MECHANICALLY COMPACTED TO A UNIFORM DENSITY OF AT LEAST 90% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH THE ASTM-D-698. FILL MATERIAL SHALL BE PLACED IN INDIVIDUALLY COMPACTED LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS. SEE PREVIOUS NOTES FOR MANHOLE BACKFILL.
12. ALL SANITARY SEWER MANHOLES SHALL BE CITY OF SAN ANGELO STANDARD FIBERGLASS, UNLESS OTHERWISE NOTED. **FOR PVC PIPE, USE MANHOLE WATER STOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS.**
13. SANITARY SEWER MANHOLE RIMS SHALL BE 3-INCHES (MINIMUM) TO 6-INCHES (MAXIMUM) ABOVE FINISHED GRADE WITHIN UTILITY EASEMENTS AND STREET RIGHT-OF-WAY UNLESS OTHERWISE NOTED. CLEAN FILL SHALL BE ADDED AS BACKFILL AND SLOPED AWAY FROM THE MANHOLE RIM FOR STORM WATER DRAINAGE.
14. SANITARY MANHOLES LOCATED IN PAVED AREAS SHALL HAVE A **WATERTIGHT SEALED COVER** TO THE FRAME PER CITY OF SAN ANGELO SPECIFICATIONS. THE FRAME AND COVER SHALL BE INSTALLED AND ADJUSTED SO THE TOP OF THE RIM ELEVATION MATCHES THE PAVEMENT SURFACE, AND SHALL BE EQUIPPED WITH INSERTS TO PREVENT INFLOW.
15. ALL SANITARY SEWERS CROSSING WATER LINES WITHIN 6-INCHES TO 9-FEET CLEARANCE SHALL HAVE A MINIMUM 18-FOOT JOINT OF D.I.P., THK. CL. 52 OR PVC DR-18 CENTERED ON THE WATER LINE.
16. CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 9-FEET BETWEEN WATER LINES AND SANITARY SEWER MANHOLES AND LINES.
17. NO DUMPING OF SANITARY SEWER EXCAVATION MATERIALS WILL BE ALLOWED ON PAVED AREAS. CONTRACTOR MUST DETERMINE A LOCATION TO TEMPORARILY STOCKPILE SANITARY SEWER EXCAVATION TO BE USED AS BACKFILL.
18. THE CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING SEWER SERVICES PRIOR TO RECONNECTION.
19. ALL EXISTING SEWER LINES AND MANHOLES TAKEN OUT OF SERVICE SHALL BE REMOVED AND DISPOSED OF.
20. SEWER SERVICES SHALL BE PAID PER EACH. PAYMENT FOR SEWER SERVICES SHALL INCLUDE ALL WORK REQUIRED TO TAP THE MAIN, SET THE CLEANOUT, AND RECONNECT THE CUSTOMER'S EXISTING SERVICE LINE.
21. REQUIREMENTS FOR WATER AND SEWER LINE CROSSINGS SHALL BE AS DEFINED IN THE LATEST ADDITION OF THE TCEQ RULES (30 TAC - 290.44(e) - LOCATION OF WATER LINES).
22. ALL MANHOLES AND LINES SHALL BE TESTED IN ACCORDANCE WITH SPECIFICATIONS AND THE LATEST RULES OF THE TCEQ.

WATER CONSTRUCTION NOTES

2. MUNICIPAL WATER LINES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE TCEQ CHAPTER 290, 'RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS'.
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND WATER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED WATER LINES.
4. EXISTING WATER MAINS SHALL BE CUT, GROUTED, AND PLUGGED AFTER NEW WATER LINES ARE PLACED IN SERVICE.
5. PRIOR TO RECONNECTING SERVICES AND THE CUTTING AND PLUGGING OF EXISTING WATER LINES, PROPOSED WATER MAINS SHALL BE TESTED AND STERILIZED IN ACCORDANCE WITH THE SPECIFICATIONS AND THE LATEST TCEQ STANDARDS. ITEM IS SUBSIDIARY TO WATER LINE INSTALLATION.
6. PAYMENT FOR WATER SERVICES SHALL INCLUDE ALL WORK REQUIRED TO TAP THE MAIN, CONNECT TO THE METER BOX, AND RECONNECT THE CUSTOMER'S EXISTING WATER SERVICE LINE. WATER METERS WILL NOT BE REPLACED.
7. ALL HORIZONTAL AND VERTICAL BENDS SHALL BE EQUIPPED WITH MEGA-LUGS AND HAVE CONCRETE THRUST BLOCKS INSTALLED PER DETAILS.
8. CONTRACTOR SHALL INSTALL WATER LINES WITH MINIMUM NUMBER OF BENDS. ADDITIONAL QUANTITIES OF BENDS BEYOND THOSE SHOWN IN THESE PLANS SHALL NOT BE CONSIDERED FOR PAYMENT UNLESS THE HORIZONTAL ALIGNMENT IS CHANGED AS DIRECTED BY THE ENGINEER.
9. CONTRACTOR SHALL INSTALL WATER MAINS TO AVOID CONFLICTS WITH EXISTING AND PROPOSED SANITARY SEWERS. ADJUSTMENTS SHALL BE MADE IN VERTICAL PROFILES OF THE LINES WHERE NEEDED.
10. MINIMUM WATER LINE COVER FROM PROPOSED STREET GRADE TO TOP OF PIPE SHALL BE 30 INCHES.
11. ALL EXISTING FIRE HYDRANTS AND VALVES TO BE REMOVED, SHALL BE SALVAGED AND STORED IN A LOCATION DESIGNATED BY THE OWNER.

PROPOSED SIDE WALK NOTES:

1. A 2'x2' SQUARE SHALL BE PLACED WITH AN EXPANSION JOINT AT ALL FIRE HYDRANTS, POWER POLES, METER BOXES, ETC. TO ALLOW FUTURE ACCESS. MASTIC JOINT FILLER SHALL BE PLACED AT THE BASE OF RIGID OBJECTS CAST INTO CONCRETE.
2. EXPANSION JOINTS SHALL BE PLACED AT THE END OF THE DAYS WORK, AT THE END OF SECTIONS, AND AT THE END OF BLOCKS.
3. BARRIER RAIL AS SHOWN IN TYPICAL DETAILS SHALL BE PROVIDED IN ALL SIDEWALK AREAS WHERE A POTENTIAL FOR FALL EXCEEDS 30".
4. CURRENT AREAS HAVING GRASS COVER SHALL BE ADJUSTED TO MATCH PROPOSED CURB OR SIDEWALK ELEVATIONS IN AREA. GRADE SHALL NOT EXCEED 3:1 CONTRACTOR SHALL REGRADE AND RESEED DISTURBED AREA.
5. ANY NON COMPLIANT WORK INCLUDING SIDEWALK, STEP, RAILS, ETC. SHALL BE REMOVED AND REPLACED AT CONTRACTORS EXPENSE.
6. ALL DIMENSIONS PROVIDED ON SIDEWALK PLAN DRAWINGS SHALL BE VERIFIED BY CONTRACTOR ONCE FORMS ARE IN PLACE BUT BEFORE CASTING SIDEWALKS. LENGTHS GIVEN FOR RAMPS AND LANDINGS SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN SLOPE INDICATED.
7. ALL ELEMENTS SHALL BE CONSTRUCTED TO COMPLY WITH THE TDLR TEXAS ACCESSIBILTIY STANDARDS AND USDOT ADA REGULATIONS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CORRECTIONS AND/ OR RECONSTRUCTION NECESSARY AS A RESULT OF ADA INSPECTION AT THE END OF THE PROJECT.

STANDARD PERMIT NOTES

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY THE TEXAS DEPARTMENT OF TRANSPORTATION PRIOR TO STARTING CONSTRUCTION OF UTILITY WITHIN A STATE ROAD RIGHT-OF-WAY.
2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS REQUIRED FROM ALL APPLICABLE GOVERNING AGENCIES AT THE CONTRACTOR'S EXPENSE.

SPECIAL NOTES

1. NO TRACK EXCAVATORS, WILL BE ALLOWED ON COUNTRY ROADS OR CITY ROADS.
2. THE CONTRACTOR WILL NOT HAVE EXCLUSIVE USE OF THE RIGHT OF WAY BUT SHALL COOPERATE IN THE USE OF THE RIGHT OF WAY WITH THE STATE, THE VARIOUS PUBLIC UTILITY COMPANIES AND THEIR CONTRACTORS.
3. THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS FROM THE WORK AREA THAT MIGHT ENDANGER THE TRAVELING PUBLIC AT THE END OF EACH WORK DAY.
4. IF ROAD AND/OR LANE CLOSURES ARE REQUIRED THEN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF IMPENDING/ UPCOMING LANE CLOSURE'S AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF SINGLE CLOSURES AND FIVE (5) WORKING DAYS FOR INTERSECTION BY LIMITING LANE CLOSURES TO THE HOURS BETWEEN 8:30 A.M. AND 4:30 P.M., MONDAY THROUGH FRIDAY. LANE CLOSURES DURING THE WEEKEND MAY BE ALLOWED UPON WRITTEN APPROVAL FROM THE ENGINEER.

SEQUENCE OF WORK

FINAL CLEAN-UP

1. UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE IS MADE, THE CONTRACTOR SHALL SHAPE AND FINISH SUCH PORTIONS OF THE RIGHT-OF-WAY AS MAY HAVE BEEN DISTURBED AND WILL BE REQUIRED TO LEAVE THE ENTIRE RIGHT-OF-WAY IN A SMOOTH, NEAT AND SIGHTLY CONDITION.

PAYMENT

1. ALL WORK MATERIALS REQUIRED WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT, UNLESS OTHERWISE INDICATED IN THE PLANS OR SPECIFICATIONS.

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ GENERAL NOTES.DWG | GENERAL NOTES | 7/15/2016 - 2:09 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
GENERAL NOTES

PROJECT NAME:
CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

TBPE FIRM #F-1741

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STATE OF TEXAS
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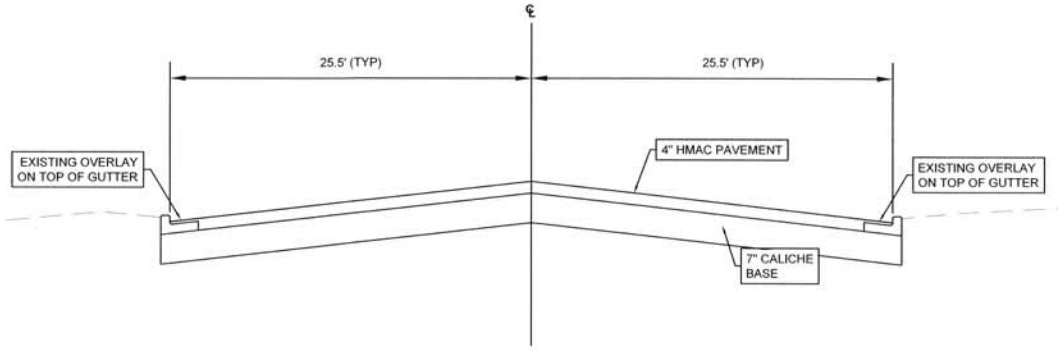
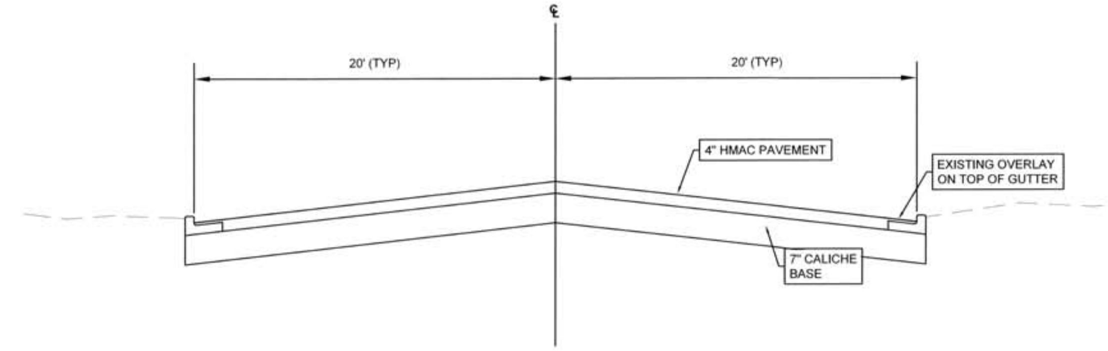
96658
LICENSED PROFESSIONAL ENGINEER
7/21/16
P.E.

SHEET NO. 3

EXISTING TYPICAL SECTIONS



STA. 0+00 TO STA. 18+00
N.T.S.



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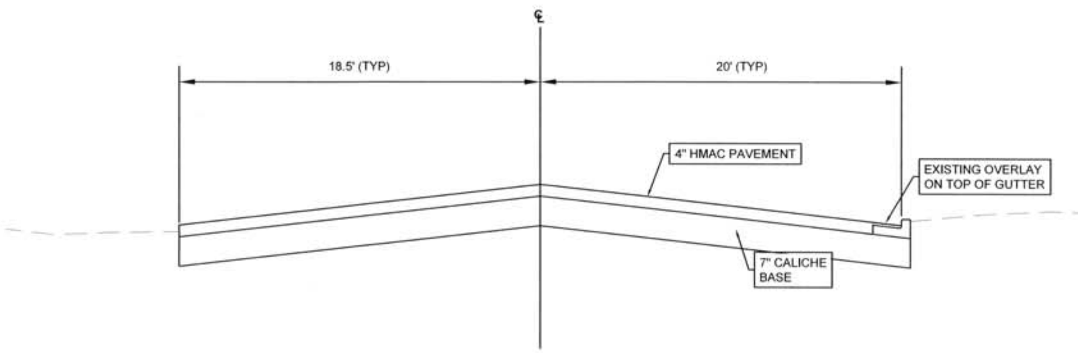

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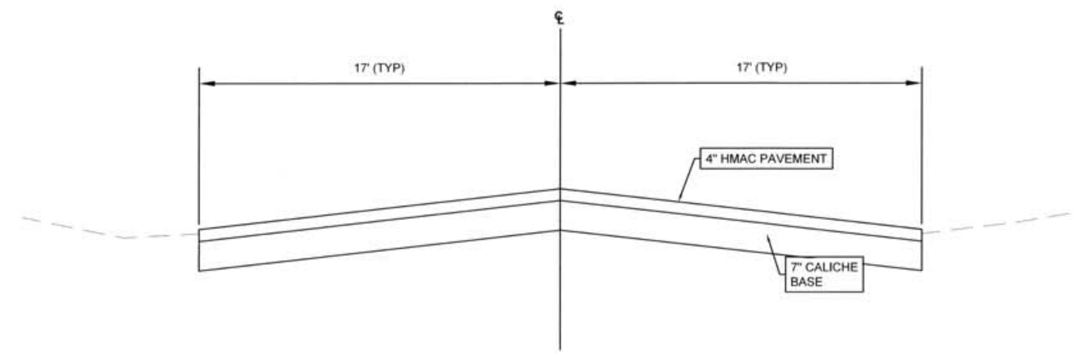
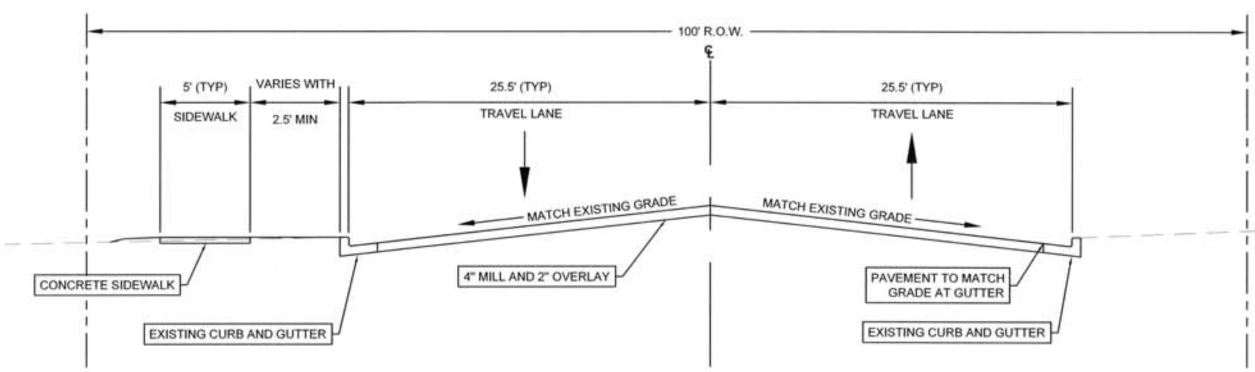
N.T.S.



STA. 61+60 TO STA. 77+28.81
N.T.S.

PROPOSED TYPICAL SECTIONS



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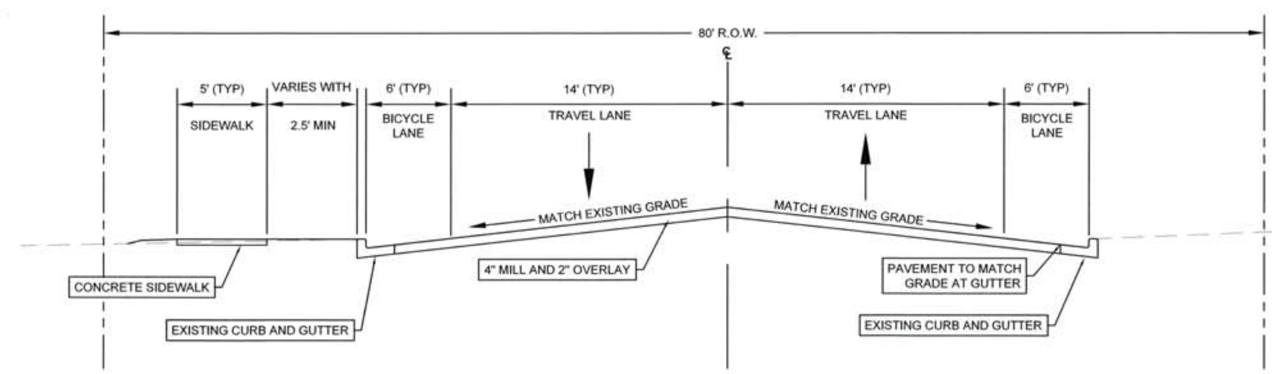

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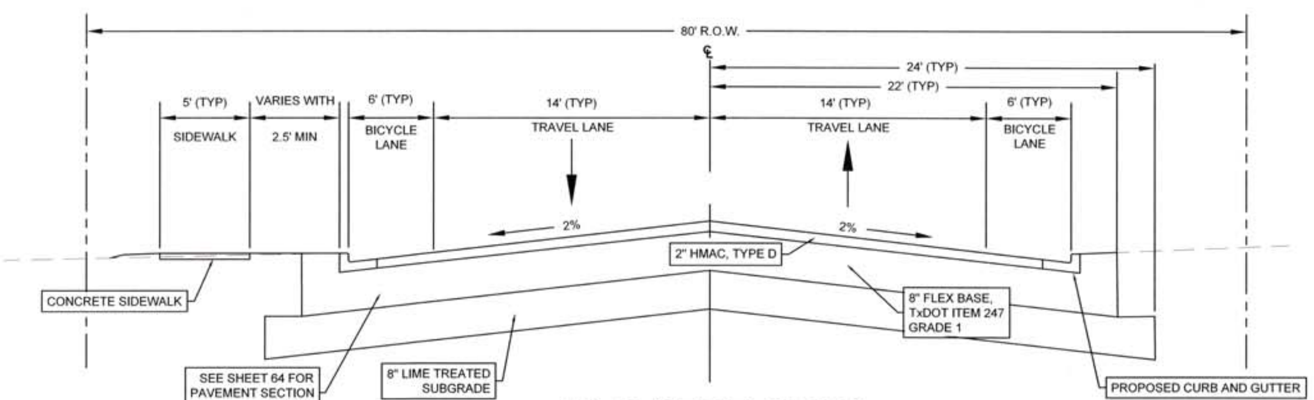
N.T.S.



STA. 29+40 TO STA. 77+28.81
N.T.S.

MARK	REVISION	DATE

SHEET NAME: MARTIN LUTHER KING DRIVE TYPICAL SECTIONS

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY	CBS
DESIGNED BY	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN 058

CP&Y TBPE FIRM #F-1741

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SHEET NO.
4

Item No. 1: Mobilization, Temporary Access and Erosion/Sedimentation Control Measures

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
1.01	TxDOT 500	Mobilization	LS	1	
1.02	TxDOT 502	Barricades, Signs, and Traffic Handling	Mo	18	
1.03	TxDOT 506	Storm Water Management	Mo	12	

Item No. 2: Utilities - Sanitary Sewer

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.01	02731	By-pass pumping	LF	7924	
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR PVC Pipe (All Depths)	LF	972	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	6952	
2.04	02731	Furnish and Install 6" Sanitary Service Connections (Including Clean-Out, Pipe, Couplers - Complete in Place)	EA	4	
2.05	02731	Furnish and Install 8" Sanitary Service Connections (Including Clean-Out, Pipe, Couplers - Complete in Place)	EA	17	
2.06	02610	Install/Replace Manholes	EA	46	
2.07	02731	Labor, Materials and Equipment to Perform Wellpointing (Remove Water in the Trench)	LF	250	
2.08	TxDOT 402	Furnish, Install, Maintain and Remove Trench Safety for Depths Greater than 5'	LF	345	

Item No. 3: Utilities - Water

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
3.01	02665	2" Schedule 40 Water Main (Including Class C Embedment Material, Related Fittings, Tracer Wire - Complete in Place)	EA	406	
3.02	02665	6" C-900 DR 18 PVC Water Main (Including Class C Embedment Material, Related Fittings, Tracer Wire - Complete in Place)	EA	2033	
3.03	02665	8" C-900 DR 18 PVC Water Main (Including Class C Embedment Material, Related Fittings, Tracer Wire - Complete in Place)	EA	1710	
3.04	02665	12" C-900 DR 18 PVC Water Main (Including Class C Embedment Material, Related Fittings, Tracer Wire - Complete in Place)	EA	100	
3.05	02669	2" Gate Valve and Box	EA	1	
3.06	02669	6" Gate Valve and Box	EA	14	
3.07	02669	8" Gate Valve and Box	EA	8	
3.08	02669	12" Gate Valve and Box	EA	2	
3.09	02665	Fire Hydrant Connection	EA	7	
3.10	02665	Water Meter Connection	EA	10	
3.11	02665	12" C-900 PVC Casing Pipe	EA	100	
3.12	02665	16" C-900 PVC Casing Pipe	EA	40	
3.13	02665	20" C-900 PVC Casing Pipe	EA	20	

Item No. 4: Street Rehabilitation

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	20844	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	25862	
4.03	TxDOT 110	Unclassified Excavation	CY	122	
4.04	TxDOT 134	Embankment	CY	127	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	25862	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	654	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 1	SY	25862	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	Ton	4500	
4.09	TxDOT 354	Planing and Texturing (Mill Asphalt Pavement 3"-4")	SY	15311	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	8423	
4.11	TxDOT 529	Concrete Valley Gutter	LF	801	
4.12	TxDOT 530	Driveway Reconnections	SY	1984	
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	12485	
4.14	TxDOT 666	Refl Pav Mrk TY I (W)4"(SLD)(090MIL)	LF	193	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	1131	
4.16	TxDOT 666	Refl Pav Mrk TY I (W)24"(SLD)(090MIL)	LF	280	
4.17	TxDOT 672	Reflectorized Pavement Markers Ty II-A-A	EA	256	
4.18	TxDOT 636	Aluminum Signs (TY A)	SF	433	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	52	
4.20	TxDOT 310	Prime Coat	GAL	6249	
4.21	TxDOT 316	Asphalt	GAL	8335	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	245	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillets	SY	1355	
4.24	02936	Seeding	AC	1	

Item No. 5: TEP Grant Pedestrian Facilities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
5.01	TxDOT 104	Removing Conc (Sidewalk)	SY	1120	
5.02	TxDOT 104	Removing Conc (Curbs)	LF	53	
5.03	TxDOT 104	Removing Conc (MOW Strip)	LF	3909	
5.04	TxDOT 110	Excavation (Roadway)	CY	730	
5.05	TxDOT 132	Embankment (Final)(Ord Comp)(TY A)	CY	760	
5.06	TxDOT 420	CL A Conc (Flume)	CY	12	
5.07	TxDOT 420	CL A Conc (Misc)	CY	2	
5.08	TxDOT 442	STR Steel (Misc Non-Bridge)	LB	2149	
5.09	TxDOT 450	Rail (Handrail) (TY B)	LF	150	
5.10	TxDOT 529	Conc Curb (Mono) (TY II)	LF	16	
5.11	TxDOT 531	Conc Sidewalks (5")	SY	4797	
5.12	TxDOT 531	Conc Sidewalks (Special) (Type B)	SY	167	
5.13	TxDOT 531	Curb Ramp (TY 1)	EA	8	
5.14	TxDOT 531	Curb Ramp (TY 2)	EA	2	
5.15	TxDOT 531	Curb Ramp (TY 3)	EA	2	
5.16	TxDOT 531	Curb Ramp (TY 7)	EA	48	
5.17	TxDOT 531	Curb Ramp (TY 10)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	SF	537	
5.19	TxDOT 644	IN SM RD SN SUP&AM TY 10BWG (1) SA (P)	EA	147	
5.20	TxDOT 644	IN SM RD SN SUP&AM TY TWT (1) WS (P)	EA	4	
5.21	TxDOT 666	Refl Pav Mrk TY I (W)4"(BRK)(090MIL)	LF	878	
5.22	TxDOT 666	Refl Pav Mrk TY I (W)4"(SLD)(090MIL)	LF	49509	
5.23	TxDOT 667	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	99	
5.24	TxDOT 666	Refl Pav Mrk TY I (W)24"(SLD)(090MIL)	LF	96	
5.25	TxDOT 666	Refl Pav Mrk TY I (W)(ARROW)(090MIL)	LF	105	
5.26	TxDOT 666	Refl Pav Mrk TY I (W)(BIKE SYM)(090MIL)	LF	101	
5.27	TxDOT 666	Refl Pav Mrk TY I (W)(BIKE ARW)(090MIL)	LF	111	
5.28	TxDOT 666	Refl Pav Mrk TY I (Y)4"(BRK)(090MIL)	LF	2082	
5.29	TxDOT 666	Refl Pav Mrk TY I (Y)4"(SLD)(090MIL)	LF	520	
5.30	TxDOT 666	Refl Pav Mrk TY II (Y)4"(BRK)	LF	1035	
5.31	TxDOT636	Relocate Sign	EA	3	

Item No. 6: Traffic Signals

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
6.01	TxDOT 416	DRILL SHAFT (TRF SIG POLE) (24 IN)	LF	70	
6.02	TxDOT 416	DRILL SHAFT (TRF SIG POLE) (30 IN)	LF	79	
6.03	TxDOT 416	DRILL SHAFT (TRF SIG POLE) (36 IN)	LF	13	
6.04	TxDOT 618	CONDT (PVC) (SCH 40) (2")	LF	410	
6.05	TxDOT 618	CONDT (PVC) (SCH 80) (2") (BORE)	LF	380	
6.06	TxDOT 618	CONDT (PVC) (SCH 40) (3")	LF	20	
6.07	TxDOT 618	CONDT (PVC) (SCH 80) (3") (BORE)	LF	70	
6.08	TxDOT 620	ELEC CONDR (NO.8) INSULATED	LF	710	
6.09	TxDOT 620	ELEC CONDR (NO.6) BARE	LF	950	
6.10	TxDOT 620	ELEC CONDR (NO.6) INSULATED	LF	360	
6.11	TxDOT 624	GROUND BOX TY D (162922)W/APRON	EA	11	
6.12	TxDOT 628	ELC SRV TY T 120/240 000(NS)GS(L)TS(O)	EA	1	
6.13	TxDOT 628	RELOC EX ELEC SERVICE	LS	1	
6.14	TxDOT 636	ALUMINUM SIGNS (TY A)	SF	169	
6.15	TxDOT 666	REFL PAV MRK TY I (W)4"(BRK)(100MIL)	LF	800	
6.16	TxDOT 666	REFL PAV MRK TY I (W)4"(SLD)(100MIL)	LF	600	
6.17	TxDOT 666	REFL PAV MRK TY I (W)24"(SLD)(100MIL)	LF	1,450	
6.18	TxDOT 666	REFL PAV MRK TY I (Y)4"(SLD)(100MIL)	LF	2,500	
6.19	TxDOT 666	REFL PAV MRK TY I (W)(ARROW)(100MIL)	EA	8	
6.20	TxDOT 680	INSTALL HWY TRF SIG (ISOLATED)	EA	2	
6.21	TxDOT 680	REMOVING TRAFFIC SIGNALS	EA	2	
6.22	TxDOT 682	VEH SIG SEC (12")LED(GRN)	EA	18	
6.23	TxDOT 682	VEH SIG SEC (12")LED(YEL)	EA	18	
6.24	TxDOT 682	VEH SIG SEC (12")LED(RED)	EA	18	
6.25	TxDOT 682	VEH SIG SEC (12")LED(GRN ARW)	EA	2	
6.26	TxDOT 682	VEH SIG SEC (12")LED(YEL ARW)	EA	2	
6.27	TxDOT 682	PED SIG SEC (LED)(2 INDICATIONS)	EA	16	
6.28	TxDOT 682	BACK PLATE (12")(3 SEC)	EA	16	
6.29	TxDOT 682	BACK PLATE (12")(5 SEC)	EA	2	
6.30	TxDOT 684	TRF SIG CBL (TY A)(14 AWG)(2 CONDR)	LF	290	
6.31	TxDOT 684	TRF SIG CBL (TY A)(14 AWG)(16 CONDR)	LF	680	
6.32	TxDOT 686	INS TRF SIG PL AM(S)1 ARM(24')LUM	EA	1	
6.33	TxDOT 686	INS TRF SIG PL AM(S)1 ARM(32')	EA	4	
6.34	TxDOT 686	INS TRF SIG PL AM(S)1 ARM(32')LUM	EA	2	
6.35	TxDOT 686	INS TRF SIG PL AM(S)1 ARM(36')	EA	1	
6.36	TxDOT 688	PED DETECT PUSH BUTTON (APS)	EA	16	
6.37	TxDOT 688	PEDESTRIAN PUSH BUTTON STATION ASSEMBLY	EA	15	
6.38	TxDOT 690	INSTALL OF FND FOR GROUND MNT CABINETS	EA	1	
6.39	TxDOT 690	OPTICOM MODEL 722 DETECTOR	EA	8	
6.40	TxDOT 690	OPTICOM MODEL 138 DETECTOR CABLE	LF	680	
6.41	TxDOT 690	OPTICOM PHASE SELECTOR	EA	2	
6.42	TxDOT 6002	VIVDS PROCESSOR SYSTEM	EA	2	
6.43	TxDOT 6002	VIVDS CAMERA ASSEMBLY	EA	8	
6.44	TxDOT 6002	VIVDS COMMUNICATION CABLE (COAXIAL)	LF	680	

SUMMARY OF QUANTITIES

MARK	REVISION	DATE

I:\KSA-SA-SERVER1-PROJECTS\SAN\5600.07 CADD\2 PROJECT SHEETS\SUMMARY OF QUANTITIES.DWG | LAYOUT1 | 7/21/2016 - 3:14 PM
DRAWING PATH/NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN.056

CP&Y TBPE FIRM #F-1741

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7/21/16

SHEET NO.
5

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SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE: FRP = Fiberglass, TWT = Thin-Wall, 10BWG = 10 BWG, S80 = Sch 80	POSTS: 1 or 2	ANCHOR TYPE: UA=Universal Conc, UB=Universal Bolt, SA=Slipbase-Conc, SB=Slipbase-Bolt, WS=Wedge Steel, WP=Wedge Plastic	MOUNTING DESIGNATION: PREFABRICATED (P = "Plain", T = "T", U = "U")	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext, BM = Extruded Wind Beam, WC = 1.12 #/ft Wing Channel, EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2): TYPE N	TYPE S
71	1	S1-1	SCHOOL CROSSWALK	36"X36"	X		10BWG	1	SA	P			
71	2	S5-1	SCHOOL SPEED LIMIT 20MPH	24"X48"	X		10BWG	1	SA	P			
71	3	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
71	4	W14-2	NO OUTLET	30"X30"	X		10BWG	1	SA	P			
71	5	-	DRUG FREE GUN FREE SCHOOL ZONE SIGN	24"x24"	X		10BWG	1	SA	P			
71	6	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 8TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 800)	36"X12"									
71	7	-	SCHOOL BUS ONLY	24"x24"	X		10BWG	1	SA	P			
71	8	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
71	9	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 9TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 900)	36"X12"									
71	10	R2-1	SPEED LIMIT 30	24"X30"	X		10BWG	1	SA	P			
71	11	S5-1	SCHOOL SPEED LIMIT 20MPH	24"X48"	X		10BWG	1	SA	P			
71	12	S1-1	SCHOOL CROSSWALK	36"X36"	X		10BWG	1	SA	P			
71	13	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 10TH ST 300)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1000)	36"X12"									
71	14	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
71	15	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
71	16	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
72	17	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
72	18	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 12TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1200)	36"X12"									
72	19	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
72	20	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 13TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1300)	36"X12"									
72	21	R2-1	SPEED LIMIT 30	24"X30"									
72	22	D11-1	BIKE ROUTE	24"X18"	X		10BWG	1	SA	P			
		R3-17aP	BEGIN	24"X8"									
72	23	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
72	24	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 14TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1400)	36"X12"									
72	25	RS-031	TRANSA BUS STOP SIGN	24"X24"	X		10BWG	1	SA	P			
72	26	R3-17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7-9	NO PARKING BIKE LANE	12"X18"									
72	27	D11-1	BIKE ROUTE	24"X18"	X		10BWG	1	SA	P			
		M6-1	DIRECTIONAL ARROW	12"X9"									
73	28	R2-1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
73	29	R3-17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7-9	NO PARKING BIKE LANE	12"X18"									
73	30	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
73	31	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 15TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1500)	36"X12"									
73	32	R3-17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7-9	NO PARKING BIKE LANE	12"X18"									
73	33	R3-17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7-9	NO PARKING BIKE LANE	12"X18"									
73	34	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
73	35	R1-1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 16TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1600)	36"X12"									
73	36	-	CHURCH	24"X24"	X		10BWG	1	SA	P			
73	37	R3-17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7-9	NO PARKING BIKE LANE	12"X18"									

DATE:
FILE:

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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NOTE:

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2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST		COUNTY	SHEET NO.

18

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ SIGN SUMMARY.DWG | SHEET 1 | 7/15/2016 - 2:09 PM

DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: SUMMARY OF SIGNS SHEET #1

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/2016 P.E.

SHEET NO.
6

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X–XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE FRP = Fiberglass TWT = Thin–Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase–Conc SB=Slipbase–Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TYPE N	TYPE S
73	38	R2–1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
73	39	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
73	40	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
74	41	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 17TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1700)	36"X12"									
74	42	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
74	43	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
74	44	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
74	45	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 18TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 1800)	36"X12"									
74	46	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
74	47	–	CHURCH	24"X24"	X		10BWG	1	SA	P			
74	48	R2–1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
74	49	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
74	50	M1–5	TEXAS STATE 208 ROUTE SIGN	24"X24"	X		10BWG	1	SA	P			
		M3–1	NORTH DIRECTIONAL AUXILARY	24"X12"									
74	51	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
75	52	R2–1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
75	53	R3–7R	RIGHT LANE MUST TURN RIGHT	30"X30"	X		10BWG	1	SA	P			
75	54	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 20TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2000)	36"X12"									
75	55	R4–4	BEGIN RIGHT TURN LANE YIELD TO BIKES	36"X30"	X		10BWG	1	SA	P			
75	56	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
75	57	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 21TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2100)	36"X12"									
75	58	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
76	59	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 22TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2200)	36"X12"									
76	60	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
76	61	R2–1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
76	62	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
76	63	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
76	64	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 23TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2300)	36"X12"									
76	65	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
76	66	R2–1	SPEED LIMIT 35	24"X30"	X		10BWG	1	SA	P			
76	67	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 24TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2400)	36"X12"									
76	68	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
77	69	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS					
		DIST	COUNTY		SHEET NO.
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MARK	REVISION	DATE

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7/19/2016 - 2:09 PM
DRAWING PATHNAME - LAYOUT PLOT DATE - TIME

SUMMARY OF SIGNS
SHEET #2

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN.058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
7

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DATE:
FILE:

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X–XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE: FRP = Fiberglass; TWT = Thin–Wall; 10BWG = 10 BWG; S80 = Sch 80	POSTS: 1 or 2	ANCHOR TYPE: UA=Universal Conc; UB=Universal Bolt; SA=Slipbase–Conc; SB=Slipbase–Bolt; WS=Wedge Steel; WP=Wedge Plastic	MOUNTING DESIGNATION: PREFABRICATED: P = "Plain"; T = "T"; U = "U"	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext; BM = Extruded Wind Beam; WC = 1.12 #/ft Wing Channel; EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TYPE N	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TYPE S
77	70	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 25TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2500)	36"X12"									
77	71	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
77	72	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
77	73	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 26TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2600)	36"X12"									
77	74	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 26TH ST 300)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2600)	36"X12"									
77	75	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
77	76	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 27TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2700)	36"X12"									
77	77	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
78	78	R1–1	STOP SIGN	30"X30"	X		10BWG	1	SA	P			
		D3	STREET SIGN (W. 28TH ST 200)	36"X12"									
		D3	STREET SIGN (MARTIN LUTHER KING DR 2800)	36"X12"									
78	79	R3–17	BIKE LANE	24"X18"	X		10BWG	1	SA	P			
		R7–9	NO PARKING BIKE LANE	12"X18"									
78	80	D11–1	BIKE ROUTE	24"X18"	X		10BWG	1	SA	P			
		R3–17bP	ENDS	12"X18"									

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS					
		DIST	COUNTY		SHEET NO.

18

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7/15/2016 - 2:09 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SUMMARY OF SIGNS
SHEET #3

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY	DESIGNED BY	LATEST REVISION	KSA JOB NO.
CBS	JWD	7/14/2016	SAN 058

CP&Y
TBPE FIRM #F-1741

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TBPE Firm Registration No. F-1356
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STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
8

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SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE: FRP = Fiberglass, TWT = Thin-Wall, 10BWG = 10 BWG, S80 = Sch 80	POSTS: 1 or 2	ANCHOR TYPE: UA=Universal Conc, UB=Universal Bolt, SA=Slipbase-Conc, SB=Slipbase-Bolt, WS=Wedge Steel, WP=Wedge Plastic	MOUNTING DESIGNATION: PREFABRICATED (P = "Plain", T = "T", U = "U")	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext, BM = Extruded Wind Beam, WC = 1.12 #/ft Wing Channel, EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2): TYPE N	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2): TYPE S
66	1	R1-1	STOP	18"x18"	A		TWT	1	WS	P			
66	2	W3-1	STOP AHEAD	18"x18"	A		TWT	1	WS	P			
74	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
74	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
74	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
74	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
74	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
75	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
75	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
75	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
75	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
76	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	5	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	6	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
76	7	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
77	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
77	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
78	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
78	2	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
78	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
78	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
78	5	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
78	6	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
79	1	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
79	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
79	3	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
79	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
79	5	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
79	6	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
79	7	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
79	8	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
79	9	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
79	10	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
80	1	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
80	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
80	3	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
80	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
80	5	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
80	6	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
80	7	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
80	8	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
80	9	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
80	10	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
81	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
81	2	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
81	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
81	4	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
81	5	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
81	6	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
81	7	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
81	8	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			

DATE:
FILE:

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

18

MARK	REVISION	DATE

C:\PWWORKING\CWILSON\D0481149\ 15504ST-SOSS.DWG | SOSS-1 | 7/28/2016 - 2:56 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: SUMMARY OF SMALL SIGNS SHEET 1

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING BLVD RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CMW
DESIGNED BY: CMW
LATEST REVISION: 5/12/2015
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741
CPY PROJECT #: KSAE15504.00

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

STATE OF TEXAS
CRAIG M. WILSON
94710
LICENSED PROFESSIONAL ENGINEER

7-28-2016

SHEET NO.
9

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SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE: FRP = Fiberglass, TWT = Thin-Wall, 10BWG = 10 BWG, S80 = Sch 80	POSTS: 1 or 2	ANCHOR TYPE: UA=Universal Conc, UB=Universal Bolt, SA=Slipbase-Conc, SB=Slipbase-Bolt, WS=Wedge Steel, WP=Wedge Plastic	MOUNTING DESIGNATION: PREFABRICATED P = "Plain", T = "T", U = "U"	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext, BM = Extruded Wind Beam, WC = 1.12 #/ft Wing Channel, EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TYPE N	TYPE S
82	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
82	2	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
82	3	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
82	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
82	5	R8-3	NO PARKING (SYMBOL)	24"x24"	A		10BWG	1	SA	P			
82	6	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
83	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
83	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
83	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
84	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
84	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
84	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
84	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
84	5	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
85	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
85	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
85	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
85	4	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
86	1	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
86	2	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
86	3	R4-11	BICYCLES MAY USE FULL LANE	30"x30"	A		10BWG	1	SA	P			
86	4	W11-15	COMBINATION BIKE AND PED CROSSING	24"x24"	A		10BWG	1	SA	P			
		W11-15P	TRAIL CROSSING (PLAQUE)	24"x18"	A		10BWG	1	SA	P			
		W16-9P	AHEAD (PLAQUE)	24"x12"	A		10BWG	1	SA	P			
86	5	W11-1	BICYCLE WARNING	24"x24"	A		10BWG	1	SA	P			
		W16-1P	SHARE THE ROAD (PLAQUE)	18"x24"	A		10BWG	1	SA	P			
86	6	W11-15	COMBINATION BIKE AND PED CROSSING	24"x24"	A		10BWG	1	SA	P			
		W16-7PR	DIAGONAL ARROW RIGHT (PLAQUE)	24"x12"	A		10BWG	1	SA	P			
86	7	W11-15	COMBINATION BIKE AND PED CROSSING	24"x24"	A		10BWG	1	SA	P			
		W16-7PL	DIAGONAL ARROW LEFT (PLAQUE)	24"x12"	A		10BWG	1	SA	P			
86	8	W11-15	COMBINATION BIKE AND PED CROSSING	24"x24"	A		10BWG	1	SA	P			
		W11-15P	TRAIL CROSSING (PLAQUE)	24"x18"	A		10BWG	1	SA	P			
		W16-9P	AHEAD (PLAQUE)	24"x12"	A		10BWG	1	SA	P			
89	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
89	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
91	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
91	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
92	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
92	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
92	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
93	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
93	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
93	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	8	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	9	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
94	10	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation — Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT

REVISIONS | CONT | SECT | JOB | HIGHWAY | DIST | COUNTY | SHEET NO.
18

DATE:
FILE:

SUMMARY OF SMALL SIGNS SHEET 2

CITY OF SAN ANGELO
MARTIN LUTHER KING BLVD RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CMW | DESIGNED BY: CMW | LATEST REVISION: 5/12/2015 | KSA JOB NO: SAN 058

CP&Y TBPE FIRM #F-1741

KSA — TBPE Firm Registration No. F-1356, 58 Buick Street, San Angelo, Texas 76901, T. 325-947-1555 F. 325-947-1559, www.ksaeng.com

STATE OF TEXAS — CRAIG M. WILSON — 94710 — LICENSED PROFESSIONAL ENGINEER
Craig Wilson 7-12-2016

SHEET NO. 10

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SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE: FRP = Fiberglass, TWT = Thin-Wall, 10BWG = 10 BWG, S80 = Sch 80	POSTS: 1 or 2	ANCHOR TYPE: UA=Universal Conc, UB=Universal Bolt, SA=Slipbase-Conc, SB=Slipbase-Bolt, WS=Wedge Steel, WP=Wedge Plastic	MOUNTING DESIGNATION: PREFABRICATED P = "Plain", T = "T", U = "U"	MOUNTING DESIGNATION: 1EXT or 2EXT = # of Ext, BM = Extruded Wind Beam, WC = 1.12 #/ft Wing Channel, EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2): TYPE N	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2): TYPE S
95	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
95	8	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
96	8	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
98	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
98	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
98	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
98	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
99	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
99	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
100	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
100	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
100	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
101	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
102	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
102	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
102	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
106	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	1	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	2	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	3	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	4	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	5	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	6	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			
107	7	R7-9	NO PARKING BIKE LANE	12"x18"	A		10BWG	1	SA	P			

DATE:
FILE:

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

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Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE: sums16.dgn	DN: _TxDOT_	CK: TxDOT	DW: _TxDOT_	CK: TxDOT
©TxDOT May 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

18

MARK	REVISION	DATE

C:\PWWORKING\CWILSON\D0481149\15504ST-SOSS.DWG | SOSS-3 | 7/13/2016 - 2:42 PM
DRAWING PATH/NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: SUMMARY OF SMALL SIGNS SHEET 3

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING BLVD RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CMW
DESIGNED BY: CMW
LATEST REVISION: 5/12/2015
KSA JOB NO.: SAN.058

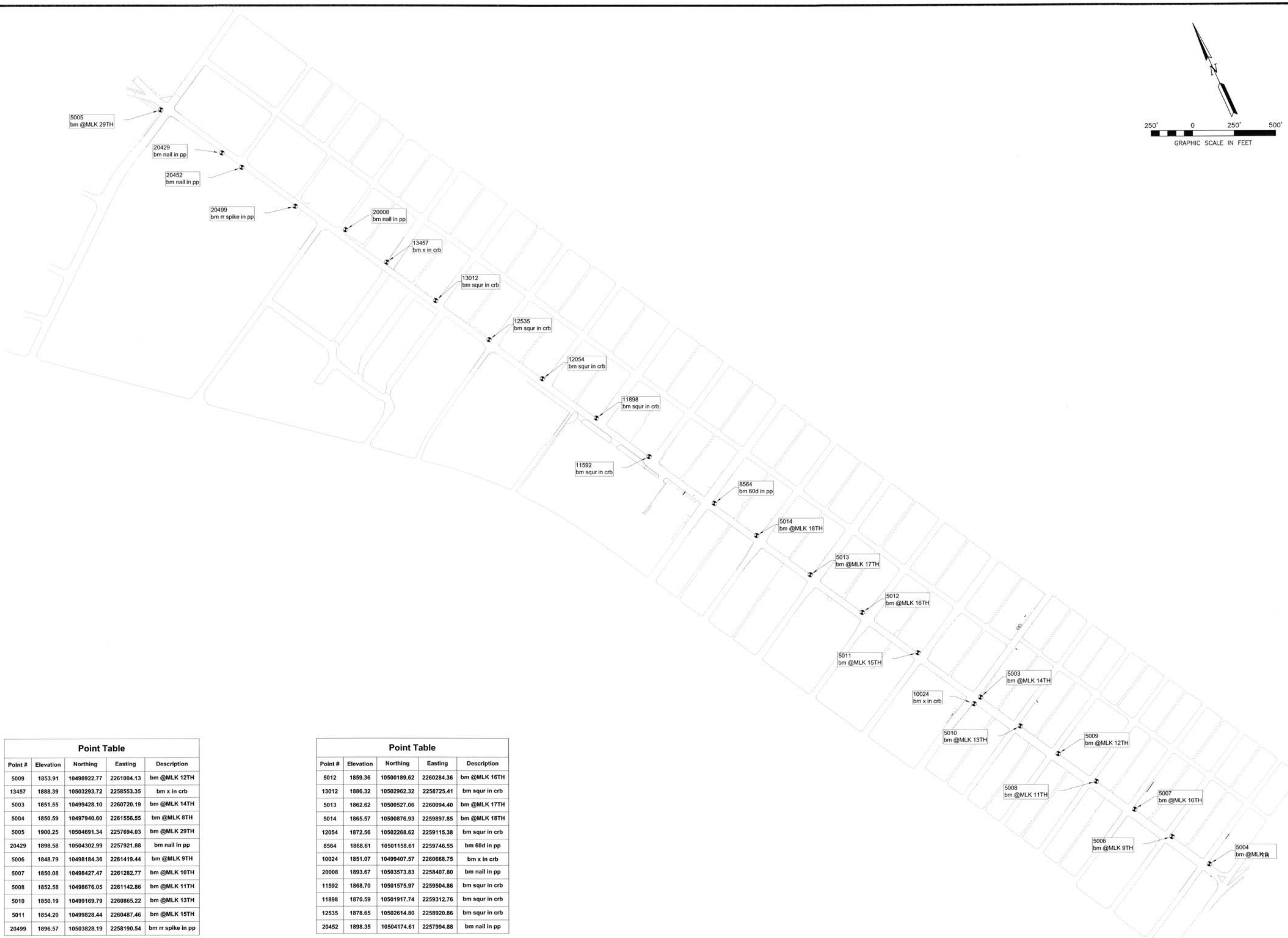
CP&Y TBPE FIRM #F-1741
CPY PROJECT #: KSAE15504.00

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

STATE OF TEXAS
CRAIG M. WILSON
94710
LICENSED PROFESSIONAL ENGINEER

7-12-2016

SHEET NO.
11



Point Table

Point #	Elevation	Northing	Easting	Description
5009	1853.91	10498922.77	2261004.13	bm @MLK 12TH
13457	1888.39	10503293.72	2258553.35	bm x in crb
5003	1851.55	10499428.10	2260720.19	bm @MLK 14TH
5004	1850.59	10497940.60	2261556.55	bm @MLK 8TH
5005	1900.25	10504691.34	2257694.03	bm @MLK 29TH
20429	1898.58	10504302.99	2257921.88	bm nail in pp
5006	1848.79	10498184.36	2261419.44	bm @MLK 9TH
5007	1850.08	10498427.47	2261282.77	bm @MLK 10TH
5008	1852.58	10498676.05	2261142.86	bm @MLK 11TH
5010	1850.19	10499169.79	2260865.22	bm @MLK 13TH
5011	1854.20	10499828.44	2260487.46	bm @MLK 15TH
20499	1896.57	10503828.19	2258190.54	bm rr spike in pp

Point Table

Point #	Elevation	Northing	Easting	Description
5012	1859.36	10500189.62	2260284.36	bm @MLK 16TH
13012	1886.32	10502962.32	2258725.41	bm squr in crb
5013	1862.62	10500527.06	2260094.40	bm @MLK 17TH
5014	1865.57	10500876.93	2259897.85	bm @MLK 18TH
12054	1872.56	10502268.62	2259115.38	bm squr in crb
8564	1868.61	10501158.61	2259746.55	bm 60d in pp
10024	1851.07	10499407.57	2260668.75	bm x in crb
20008	1893.67	10503573.83	2258407.80	bm nail in pp
11592	1868.70	10501575.97	2259504.86	bm squr in crb
11898	1870.59	10501917.74	2259312.76	bm squr in crb
12535	1878.65	10502614.80	2258920.86	bm squr in crb
20452	1898.35	10504174.61	2257994.88	bm nail in pp

MARK | REVISION | DATE

SHEET NAME: MARTIN LUTHER KING DRIVE SURVEY CONTROL PLAN

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

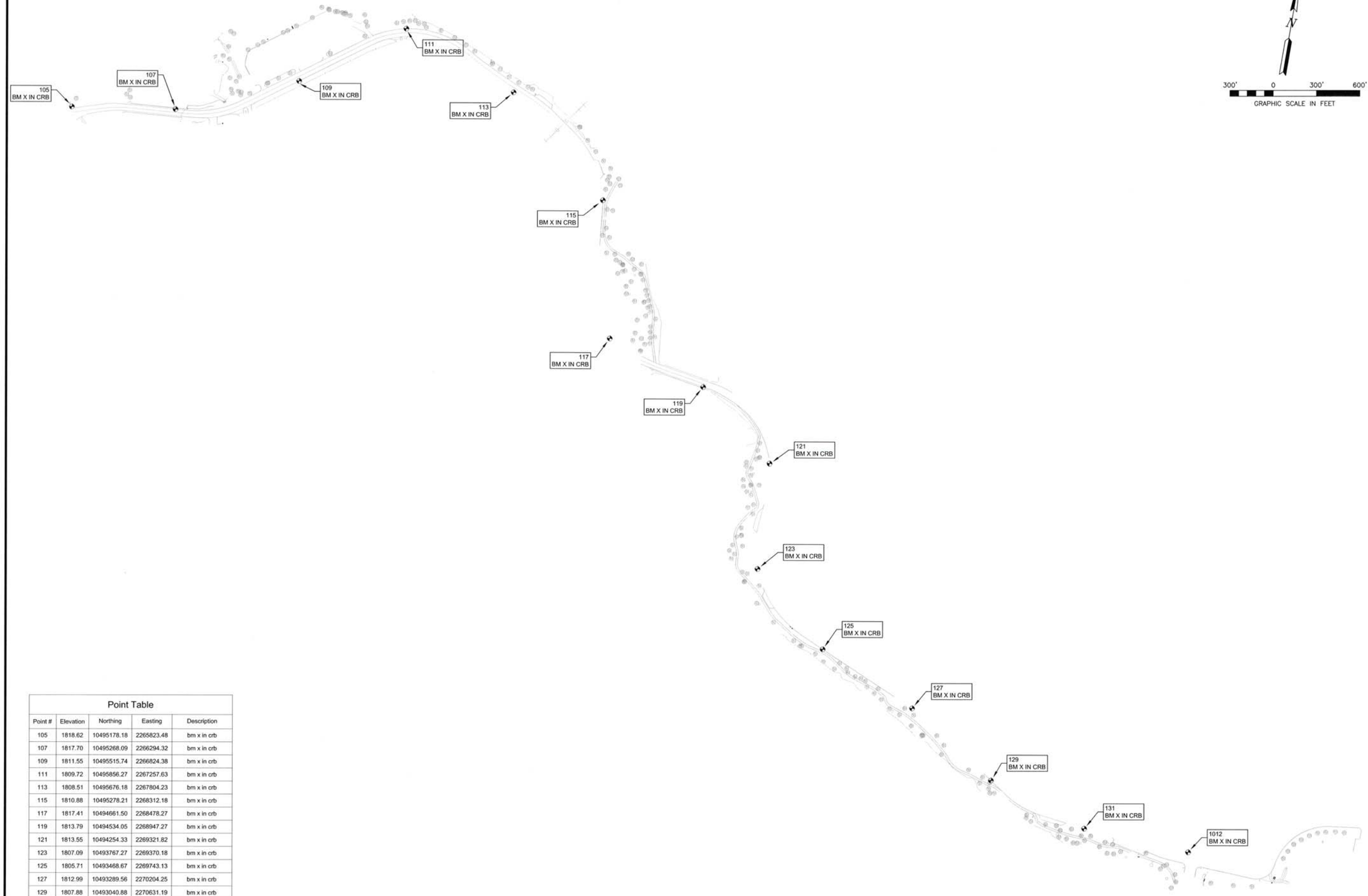
DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 6/20/2016
KSA JOB NO.: SAN 058

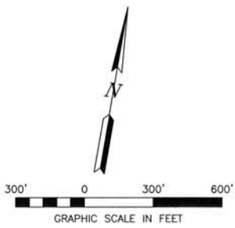
CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER

SHEET NO. 12





Point Table				
Point #	Elevation	Northing	Easting	Description
105	1818.62	10495178.18	2265823.48	bm x in crb
107	1817.70	10495268.09	2266294.32	bm x in crb
109	1811.55	10495515.74	2266824.38	bm x in crb
111	1809.72	10495856.27	2267257.63	bm x in crb
113	1808.51	10495676.18	2267804.23	bm x in crb
115	1810.88	10495278.21	2268312.18	bm x in crb
117	1817.41	10494661.50	2268478.27	bm x in crb
119	1813.79	10494534.05	2268947.27	bm x in crb
121	1813.55	10494254.33	2269321.82	bm x in crb
123	1807.09	10493767.27	2269370.18	bm x in crb
125	1805.71	10493468.67	2269743.13	bm x in crb
127	1812.99	10493289.56	2270204.25	bm x in crb
129	1807.88	10493040.88	2270631.19	bm x in crb
131	1806.14	10492915.06	2271099.31	bm x in crb
1012	1807.74	10492909.87	2271591.94	bm x in crb cosa 22

MARK	REVISION	DATE

K:\KSA-SA-SERVER\MAIN\PROJECTS\SANGELO ST CAD\02 PROJECT\02 SHEETS\ 05- SURVEY CONTROL PLAN (RIO CONCHO DRIVE).DWG | LAYOUT1 | 7/15/2016 - 2:10 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

RIO CONCHO DRIVE
SURVEY CONTROL PLAN

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY	CBS
DESIGNED BY	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN.058

CP&Y
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STATE OF TEXAS
DAVID A. ALEXANDER
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LICENSED
PROFESSIONAL ENGINEER
7/21/16

SHEET NO.
13

PHASES:

1. UNDERGROUND UTILITIES
2. RECONSTRUCT
   - A. STA. 53+50 TO STA. 77+28 (EAST LANE)
   - B. STA. 53+50 TO STA. 77+28 (WEST LANE)
3. RECONSTRUCT
   - A. STA. 29+40 TO STA. 53+50 (EAST LANE)
   - B. STA. 29+40 TO STA. 53+50 (WEST LANE)
4. MILL AND OVERLAY
5. FINAL PAVEMENT MARKINGS

NOTES:

CHIP SEAL ALL WORK UPON COMPLETION OF RECONSTRUCTION.

100' 0 100' 200'
GRAPHIC SCALE IN FEET

SHEET NO. 14

DAVID A. ALEXANDER — 96658 — LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

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CP&Y
TBPE FIRM #F-1741

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO.:	SAN.058

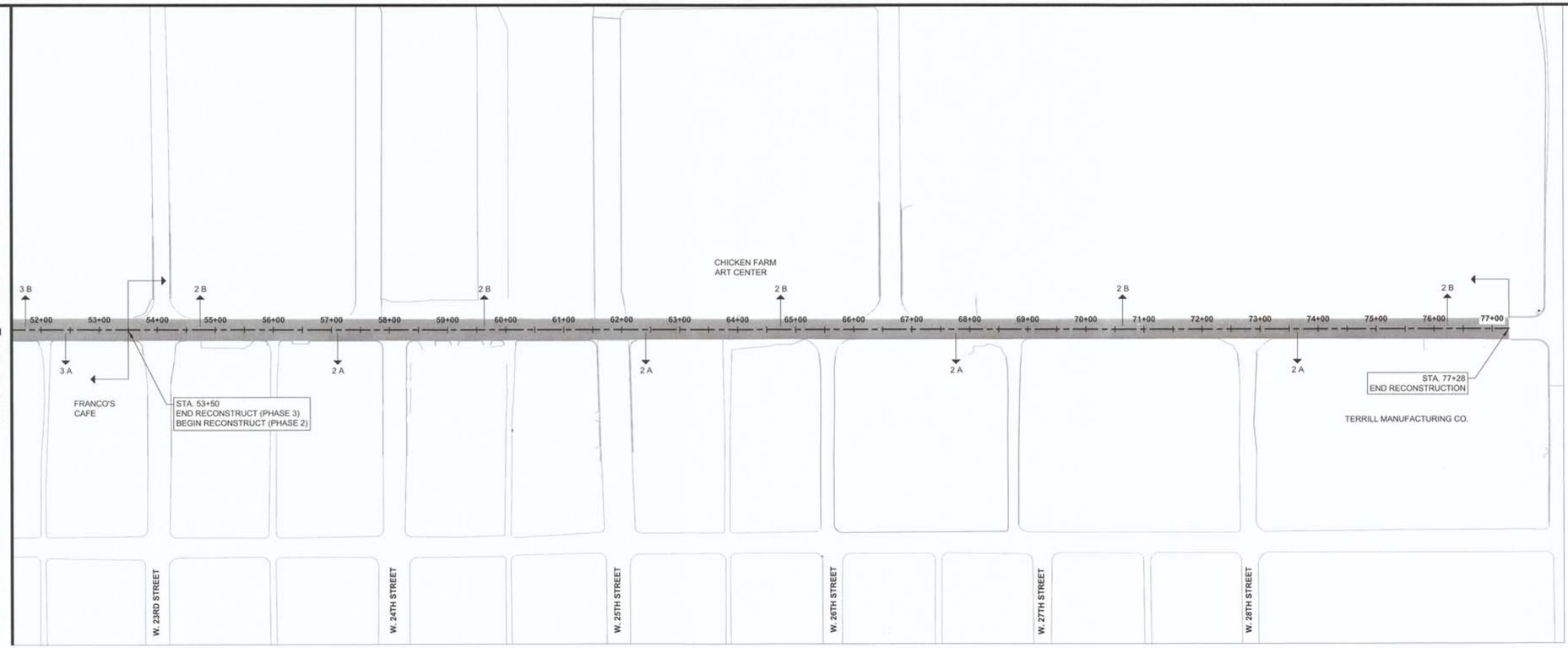
PROJECT NAME: **CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX**

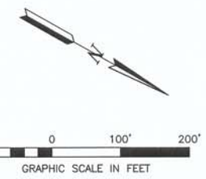
SHEET NAME: **TRAFFIC CONTROL PLAN- SHEET 1**

MARK	REVISION	DATE

\\KSA-SA-SERVER1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ TRAFFIC CONTROL PLAN.DWG [1] 7/21/2016 - 3:23 PM

DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME



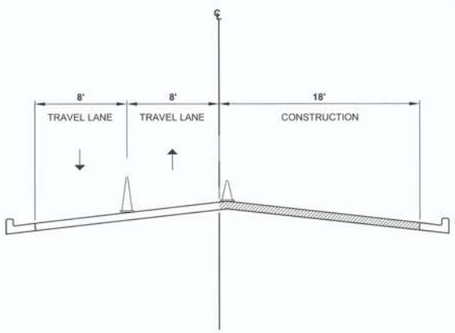


PHASES:

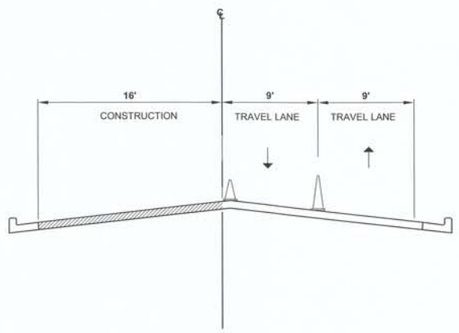
1. UNDERGROUND UTILITIES
2. RECONSTRUCT
   - A. STA. 53+50 TO STA. 77+28 (EAST LANE)
   - B. STA. 53+50 TO STA. 77+28 (WEST LANE)
3. RECONSTRUCT
   - A. STA. 29+40 TO STA. 53+50 (EAST LANE)
   - B. STA. 29+40 TO STA. 53+50 (WEST LANE)
4. MILL AND OVERLAY
5. FINAL PAVEMENT MARKINGS

NOTES:

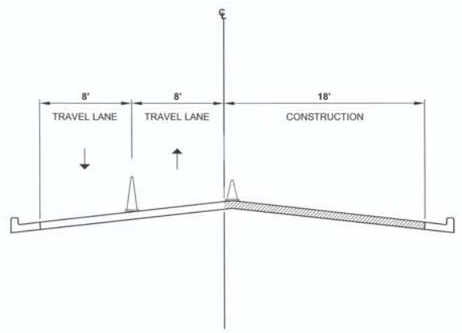
CHIP SEAL ALL WORK UPON COMPLETION OF RECONSTRUCTION.



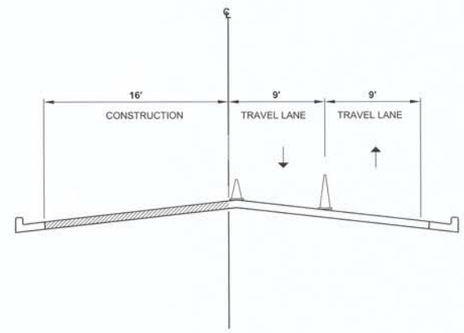
STA. 53+50 TO STA. 77+28 (END)
(2 A) EAST LANE
SEE TRAFFIC CONTROL PLAN 1-3-12, PG. 14)



STA. 53+50 TO STA. 77+28 (END)
(2 B) WEST LANE
(SEE TRAFFIC CONTROL PLAN 1-3-12, PG. 14)



STA. 29+40 TO STA. 53+50
(2 C) EAST LANE
(SEE TRAFFIC CONTROL PLAN 1-3-12, PG. 14)



STA. 29+40 TO STA. 53+50
(2 D) WEST LANE
(SEE TRAFFIC CONTROL PLAN 1-3-12, PG. 14)

MARK	REVISION	DATE

I:\KSA-SA-SERVER\PROJECT\SAN0580.07 CAD\02 PROJECT SHEETS\1 TRAFFIC CONTROL PLAN\SAN0580 | 2 | 7/21/2016 - 3:24 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME

TRAFFIC CONTROL PLAN- SHEET 2

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN.058

CP&Y
TBPE FIRM #F-1741

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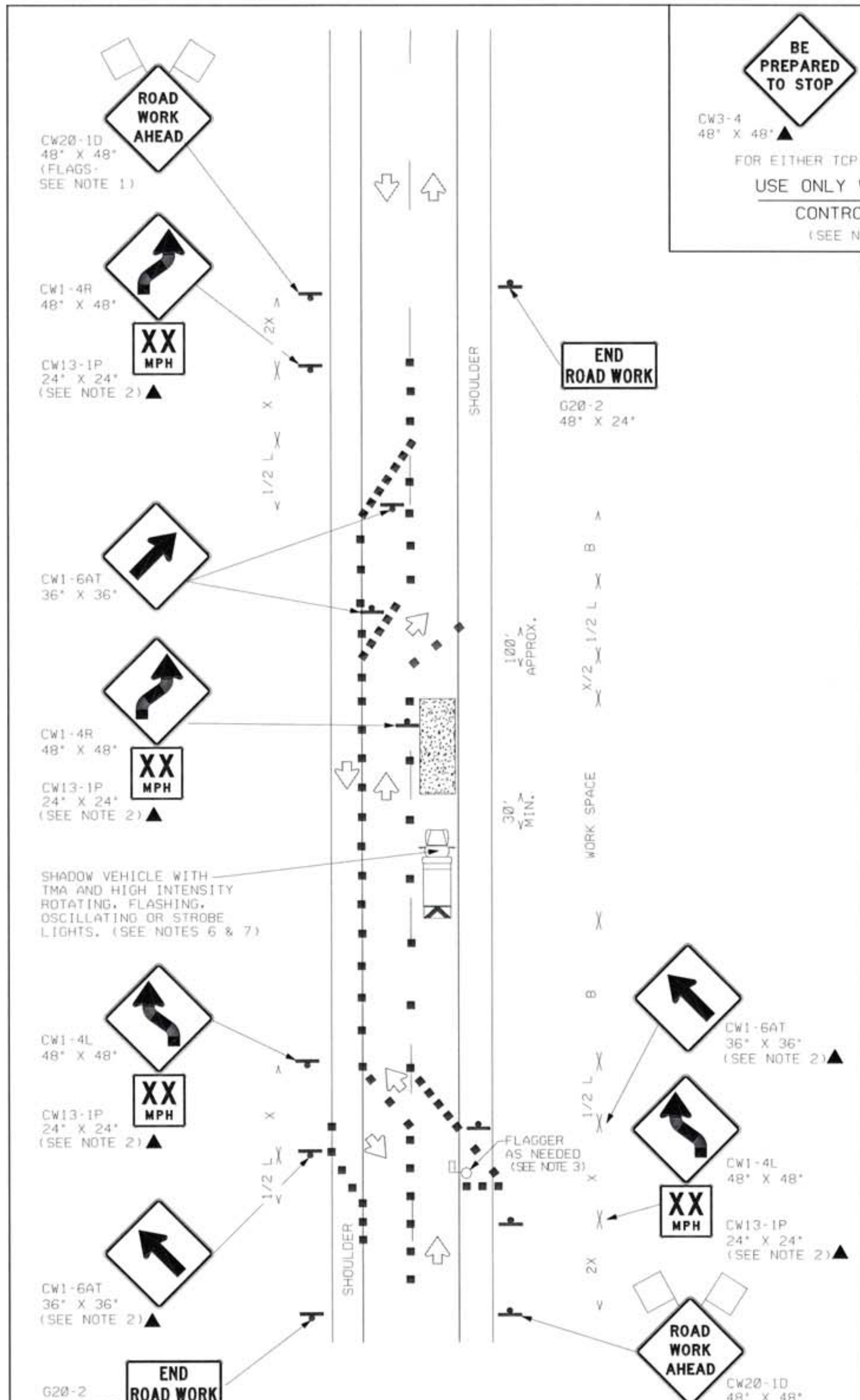
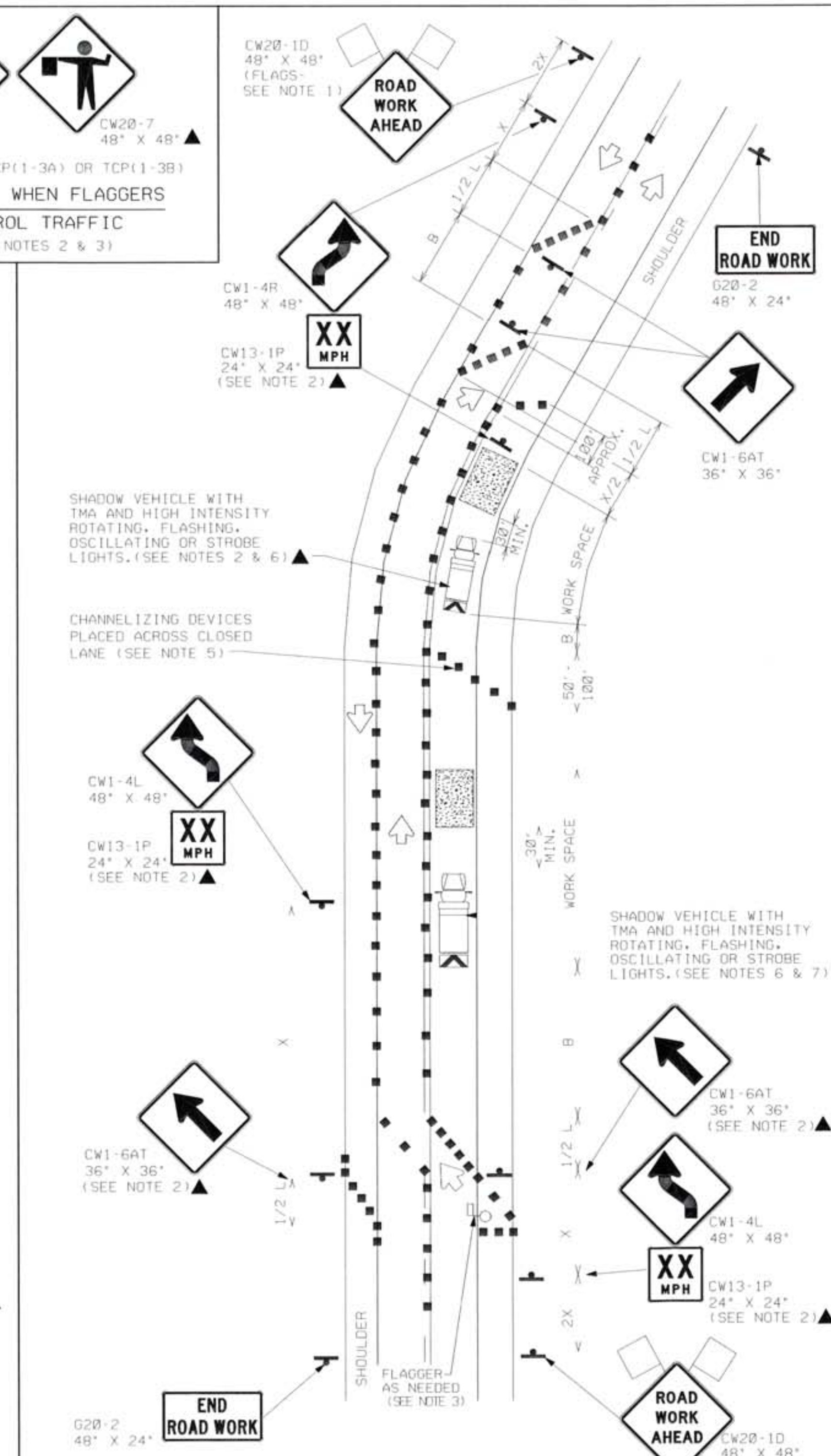
PROFESSIONAL ENGINEER
7/14/16
David A. Alexander, P.E.

SHEET NO.
15



TCP (1-3A)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
ADEQUATE FIELD OF VIEW



TCP (1-3B)
2-LANE ROADWAY WITH PAVED SHOULDERS
ONE LANE CLOSED
INADEQUATE FIELD OF VIEW

LEGEND			
	TYPE 3 BARRICADE		CHANNELIZING DEVICES
	HEAVY WORK VEHICLE		TRUCK MOUNTED ATTENUATOR (TMA)
	TRAILER MOUNTED FLASHING ARROW BOARD		PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	SIGN		TRAFFIC FLOW
	FLAG		FLAGGER

POSTED SPEED *	FORMULA	MINIMUM DESIRABLE TAPER LENGTHS **			SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES		MINIMUM SIGN SPACING "X" DISTANCE	SUGGESTED LONGITUDINAL BUFFER SPACE "B"
		10' OFFSET	11' OFFSET	12' OFFSET	ON A TAPER	ON A TANGENT		
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* CONVENTIONAL ROADS ONLY

** TAPER LENGTHS HAVE BEEN ROUNDED OFF.
L=LENGTH OF TAPER(FT) W=WIDTH OF OFFSET(FT) S=POSTED SPEED(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. FLAGS ATTACHED TO SIGNS WHERE SHOWN ARE REQUIRED.
2. ALL TRAFFIC CONTROL DEVICES ILLUSTRATED ARE REQUIRED, EXCEPT THOSE DENOTED WITH THE TRIANGLE SYMBOL MAY BE OMITTED WHEN STATED ELSEWHERE IN THE PLANS, OR FOR ROUTINE MAINTENANCE WORK, WHEN APPROVED BY THE ENGINEER.
3. FLAGGER CONTROL SHOULD NOT BE USED UNLESS ROADWAY CONDITIONS OR HEAVY TRAFFIC VOLUME REQUIRE ADDITIONAL EMPHASIS TO SAFELY CONTROL TRAFFIC. ADDITIONAL FLAGGERS MAY BE POSITIONED IN ADVANCE OF TRAFFIC QUEUES TO ALERT TRAFFIC TO REDUCE SPEED.
4. DO NOT PASS, PASS WITH CARE AND CONSTRUCTION REGULATORY SPEED ZONE SIGNS MAY BE INSTALLED DOWNSTREAM OF THE ROAD WORK AHEAD SIGNS.
5. WHEN THE WORK ZONE IS MADE UP OF SEVERAL WORK SPACES, CHANNELIZING DEVICES SHOULD BE PLACED LATERALLY ACROSS THE CLOSED LANE TO RE-EMPHASIZE CLOSURE. LATERALLY PLACED CHANNELIZING DEVICES SHOULD BE REPEATED EVERY 500 TO 1000 FEET IN URBAN AREAS AND EVERY 1/4 TO 1/2 MILE IN RURAL AREAS.
6. A SHADOW VEHICLE WITH A TMA SHOULD BE USED ANYTIME IT CAN BE POSITIONED 30 TO 100 FEET IN ADVANCE OF THE AREA OF CREW EXPOSURE WITHOUT ADVERSELY AFFECTING THE PERFORMANCE OR QUALITY OF THE WORK. IF WORKERS ARE NO LONGER PRESENT BUT ROAD OR WORK CONDITIONS REQUIRE THE TRAFFIC CONTROL TO REMAIN IN PLACE, TYPE 3 BARRICADES OR OTHER CHANNELIZING DEVICES MAY BE SUBSTITUTED FOR THE SHADOW VEHICLE AND TMA.
7. ADDITIONAL SHADOW VEHICLES WITH TMAS MAY BE POSITIONED OFF THE PAVED SURFACE, NEXT TO THOSE SHOWN IN ORDER TO PROTECT WIDER WORK SPACES.
8. WHERE TRAFFIC IS DIRECTED OVER A YELLOW CENTERLINE, CHANNELIZING DEVICES WHICH SEPARATE TWO-WAY TRAFFIC SHOULD BE SPACED ON TAPERS AT 20', OR 15' IF POSTED SPEED ARE 35 MPH OR SLOWER, AND FOR TANGENT SECTIONS, AT 1/2S WHERE S IS THE SPEED IN MPH. THIS TIGHTER DEVICE SPACING IS INTENDED FOR THE AREA OF CONFLICTING MARKINGS NOT THE ENTIRE WORK ZONE.

FOR CONSTRUCTION OR MAINTENANCE CONTRACT WORK, SPECIFIC PROJECT REQUIREMENTS FOR SHADOW VEHICLES CAN BE FOUND IN THE PROJECT GENERAL NOTES FOR ITEM 502, BARRICADES, SIGNS AND TRAFFIC HANDLING.

TEXAS DEPARTMENT OF TRANSPORTATION
TRAFFIC OPERATIONS DIVISION

TRAFFIC CONTROL PLAN
TRAFFIC SHIFTS ON
TWO LANE ROADS

TCP(1-3)-12

© TxDOT DECEMBER 1985
2-94 2-12
8-95
1-97
4-98
153

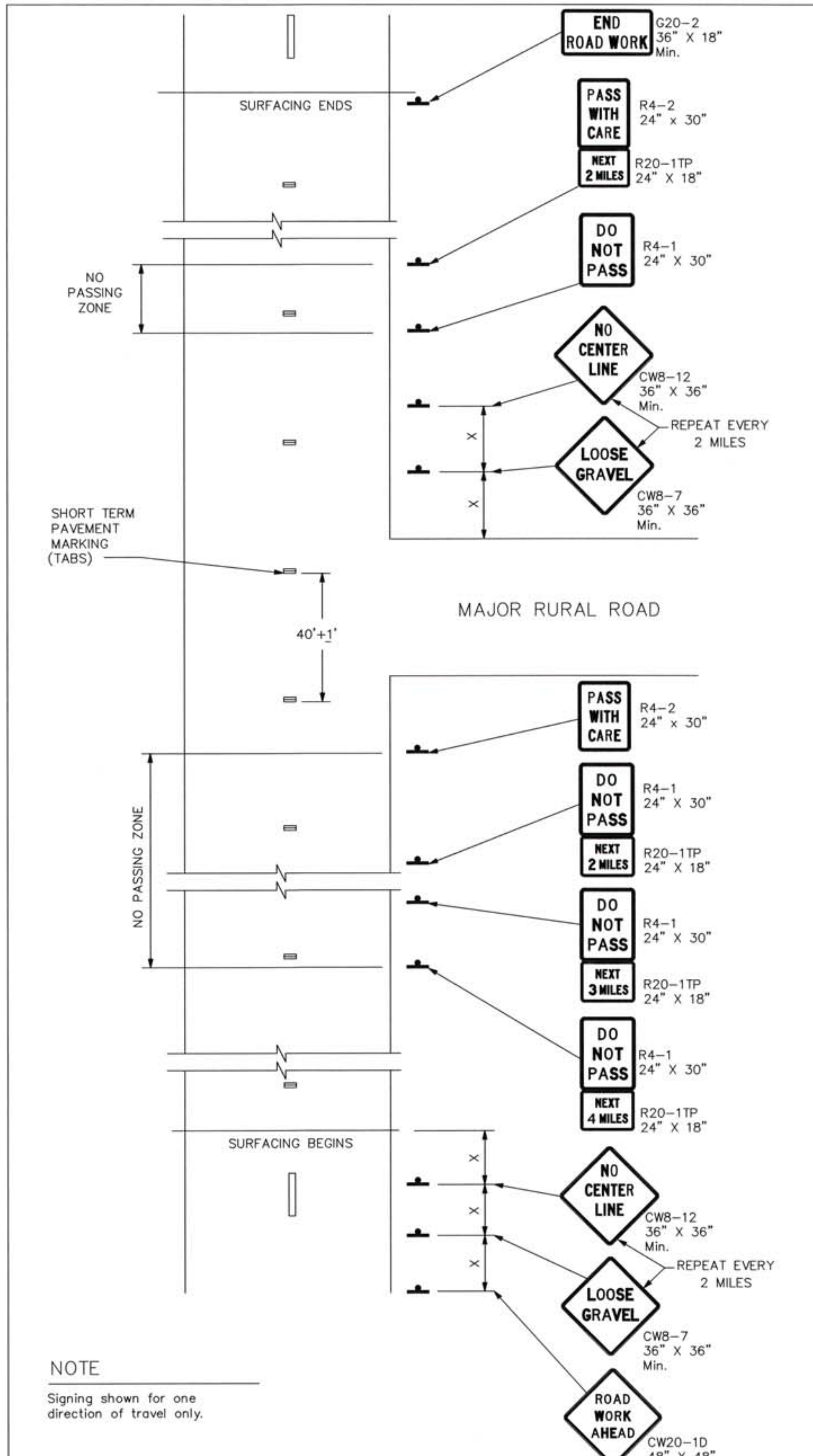
TRAFFIC CONTROL PLAN SHIFTS ON TWO LANE ROAD

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

KSA CP&Y
TBPE FIRM #F-1741

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

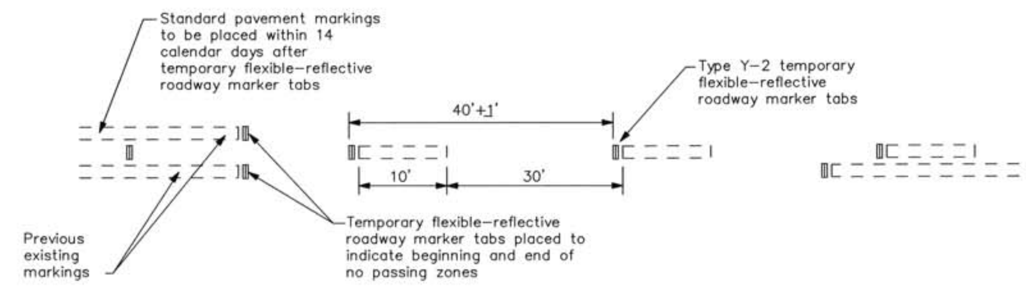
SHEET NO. 16



NOTE

Signing shown for one direction of travel only.

NO PASSING ZONES ON TWO-LANE TWO-WAY ROADS



TABS ON CENTERLINES OF TWO-LANE TWO-WAY ROADS

For seal coat, micro-surface or similar operations

"DO NOT PASS" SIGN (R4-1) and NO-PASSING ZONES

A. Prior to the beginning of construction, all currently striped no-passing zones shall be signed with the DO NOT PASS (R4-1) signs and PASS WITH CARE (R4-2) signs placed at the beginning and end of each zone for each direction of travel except as otherwise provided herein. Signs marking these individual no-passing zones need not be covered prior to construction if the signs supplement the existing pavement markings.

B. At the discretion of the Engineer, in areas of numerous no-passing zones, several zones may be combined as a single zone. If passing is to be prohibited over one or more lengthy sections, a DO NOT PASS sign and a NEXT XX MILES (R20-1TP) plaque may be used at the beginning of such zones. The DO NOT PASS sign and the NEXT XX MILES plaque should be repeated every mile to the end of the no-passing zone. In areas where there is considerable distance between no-passing zones, the end of the no-passing zone may be signed with a PASS WITH CARE sign and a NEXT XX MILES plaque.

C. Depending on traffic volumes and length of sections, it may be desirable to prohibit passing throughout the project to prevent damage to windshield and lights. The DO NOT PASS sign and NEXT XX MILES plaque should be used and repeated as often as necessary for this purpose. Where several existing zones are to be combined into one individual no-passing zone, the sign at the beginning of the zone should be covered until the surfacing operation has passed this location so as not to have the DO NOT PASS sign conflict with the existing pavement markings. Also, unless one days operation completes the entire length of such combined zones, appropriate DO NOT PASS and PASS WITH CARE signs should be placed at the beginning and end of the no-passing zones where the surfacing operation has stopped for the day.

D. R4-1 and R4-2 are to remain in place until standard pavement markings are installed.

"NO CENTER LINE" SIGN (CW8-12)

A. Center line markings are yellow pavement markings that delineate the separation of travel lanes that have opposite directions of travel on a roadway. Divided highways do not typically have center line markings.

B. At the time construction activity obliterates the existing center line markings(low volume roads may not have an existing centerline), a NO CENTER LINE (CW8-12) sign should be erected at the beginning of the work area, at approximately 2 mile intervals within the work area, beyond major intersections and other locations deemed necessary by the Engineer.

C. The NO CENTER LINE signs are to remain in place until standard pavement markings are installed.

"LOOSE GRAVEL" SIGN (CW8-7)

A. When construction begins, a LOOSE GRAVEL (CW8-7) sign should be erected at each end of the work area and repeated at intervals of approximately 2 miles in rural areas and closer in urban areas.

B. The LOOSE GRAVEL signs are to remain in place until the condition no longer exists.

PAVEMENT MARKINGS

A. Temporary markings for surfacing projects shall be Temporary Flexible-reflective Roadway Marker Tabs unless otherwise approved by the Engineer. Tabs are to be installed to provide true alignment for striping crews or as directed by the Engineer. Tabs will be placed at the spacing indicated. Tabs should be applied to the pavement no more than two (2) days before the surfacing is applied. After the surfacing is rolled and swept, the cover over the reflective strip shall be removed.

B. Tabs shall not be used to simulate edge lines.

C. Tab placement for overlay/inlay operations shall be as shown on the WZ(STPM) standard sheet.

COORDINATION OF SIGN LOCATIONS

A. The location of warning signs at the beginning and end of a work area are to be coordinated with other signing typically shown on the Barricade and Construction Standards for project limits to ensure adequate sign spacing.

B. Where possible the ROAD WORK AHEAD (CW20-1D), LOOSE GRAVEL (CW8-7), and NO CENTER LINE (CW8-12) signs should be placed in the sequence shown following the OBEY WARNING SIGNS STATE LAW (R20-3T) and the TRAFFIC FINES DOUBLE (R20-5T) sign, and one "X" sign spacing prior to the CONTRACTOR (G20-6T)sign typically located at or near the limits of surfacing. LOOSE GRAVEL and NO CENTER LINE signs will then be repeated as described above.

Posted Speed *	Minimum Sign Spacing "X" Distance
30	120'
35	160'
40	240'
45	320'
50	400'
55	500'
60	600'
65	700'
70	800'
75	900'

* X Conventional Roads Only

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
			✓	✓

GENERAL NOTES

1. The traffic control devices detailed on this sheet will be furnished and erected as directed by the Engineer on sections of roadway where tabs must be placed prior to the surfacing operation which will cover or obliterate the existing pavement markings.

2. The devices shown on this sheet are to be used to supplement those required by the BC Standards or others required elsewhere in the plans.

3. Signs shall be erected as detailed on the BC Standards or the Compliant Work Zone Traffic Control Devices List (CWZTCD) on supports approved for Long-Term / Intermediate-Term Work Zone Sign Supports.

4. When surfacing operations take place on divided highways, freeways or expressways, the size of diamond shaped construction warning signs shall be 48" x 48".

5. Signs on divided highways, freeways and expressways will be placed on both right and left sides of the roadway based on roadway conditions as directed by the Engineer.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL DETAILS FOR SURFACING OPERATIONS

TCP(7-1)-13

FILE:	tcp7-1.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	March 1991	CONT	SECT	JOB	HIGHWAY
REVISIONS					
4-92 4-98		DIST	COUNTY		SHEET NO.
1-97 7-13					
210					

DATE:
FILE:

TRAFFIC CONTROL DETAILS SURFACING OPERATIONS

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

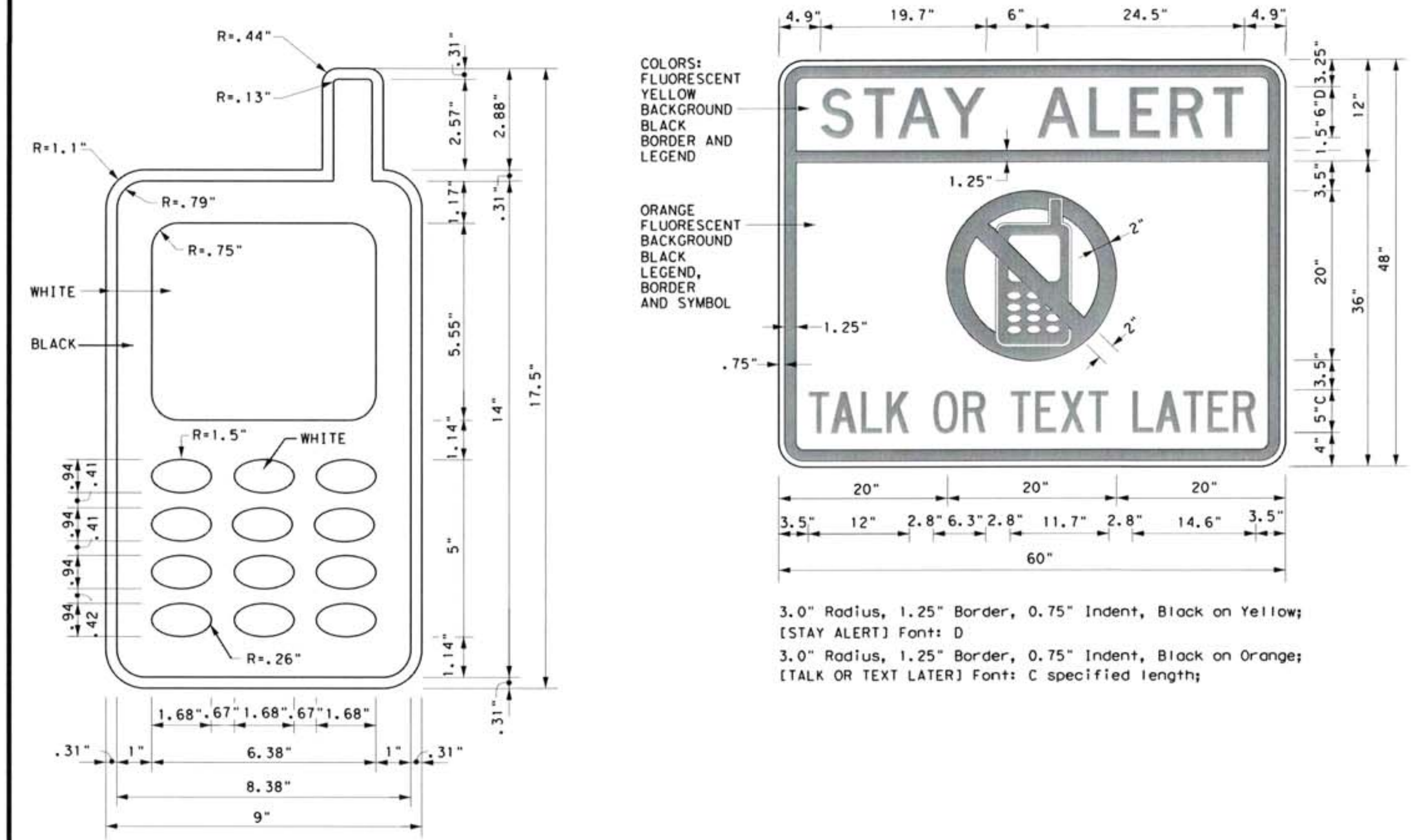
KSA TBPE Firm Registration No. F-1356, 58 Buick Street, San Angelo, Texas 76901, T. 325-947-1555 F. 325-947-1559, www.ksaeng.com

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
10. As shown on BC(2), the OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER (see Sign Detail G20-10T) and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. However, the TRAFFIC FINES DOUBLE sign will not be required on projects consisting solely of mobile operation work, such as striping or milling edgeline rumble strips. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits.
11. Except for devices required by Note 10, traffic control devices should be in place only while work is actually in progress or a definite need exists.
12. The Engineer has the final decision on the location of all traffic control devices.
13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY APPAREL NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.



3.0" Radius, 1.25" Border, 0.75" Indent, Black on Yellow;
[STAY ALERT] Font: D
3.0" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TALK OR TEXT LATER] Font: C specified length;

SIGN DETAIL (G20-10T)

Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources and may be found on-line at the web address given below or by contacting:

Texas Department of Transportation
Traffic Operations Division - TE
Phone (512) 416-3118

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

DATE:
FILE:

SHEET 1 OF 12

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS 4-03 5-10 8-14 9-07 7-13	DIST	COUNTY	SHEET NO.	

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MARK	REVISION	DATE

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DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: BARRICADE PLAN TXDOT 1

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

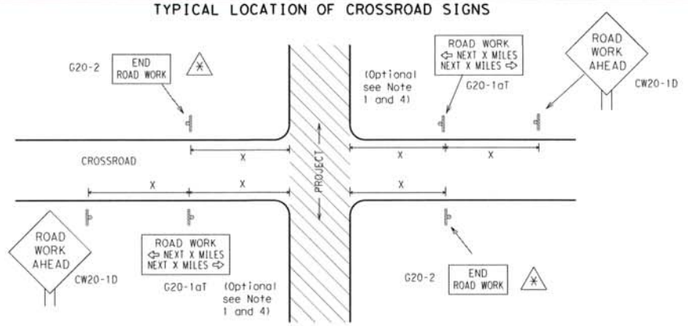
DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901 T. 325-947-1555 F. 325-947-1559 www.ksaeng.com

SHEET NO. 18

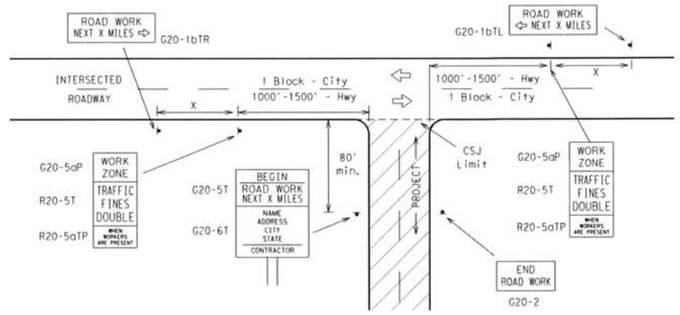
TYPICAL LOCATION OF CROSSROAD SIGNS



(*) May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES" (G20-1aT) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign Spacing "X" (Δ)
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	* [3]

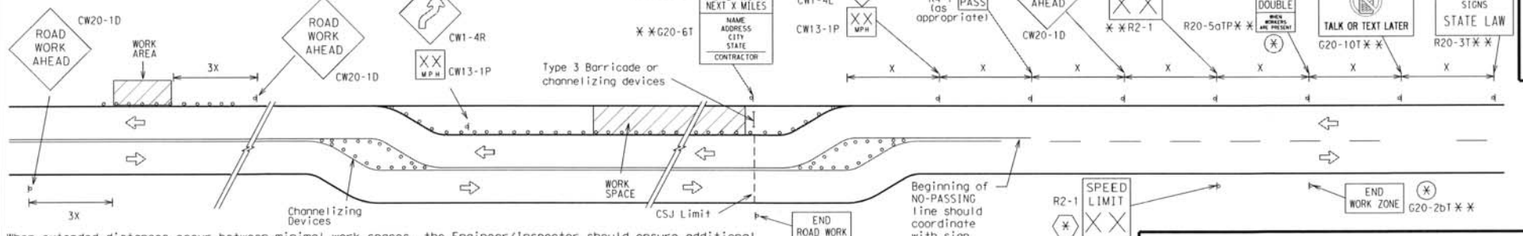
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

Δ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

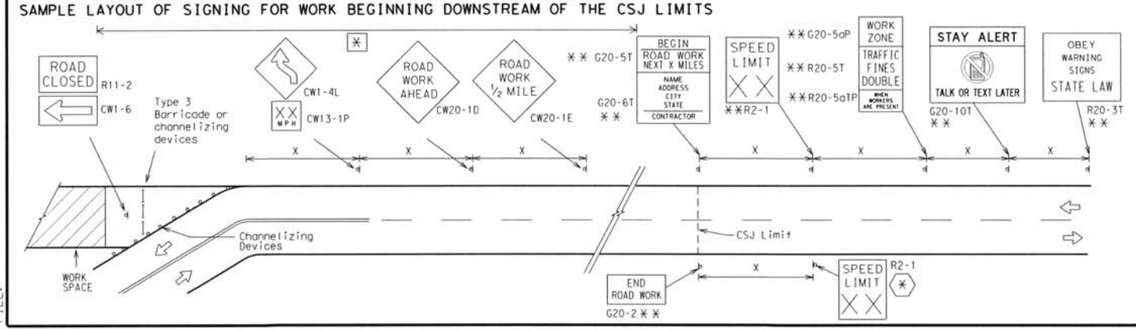
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

(X) The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** Required CSJ Limit signing. See Note 10 on BC(1). TRAFFIC FINES DOUBLE signs will not be required on projects consisting solely of mobile operations work.

[X] Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.

(X) Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⊢⊣	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

SHEET 2 OF 12

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-14

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REVISIONS 9-07 8-14 7-13	DIST	COUNTY		SHEET NO.

96

MARK	REVISION	DATE

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SHEET NAME: BARRICADE PLAN TXDOT 2

PROJECT NAME: CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY:	DESIGNED BY:	LATEST REVISION	KSA JOB NO
CBS	JWD	7/14/2016	SAN 2058

CP&Y TBPE FIRM #F-1741

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www.ksaeng.com

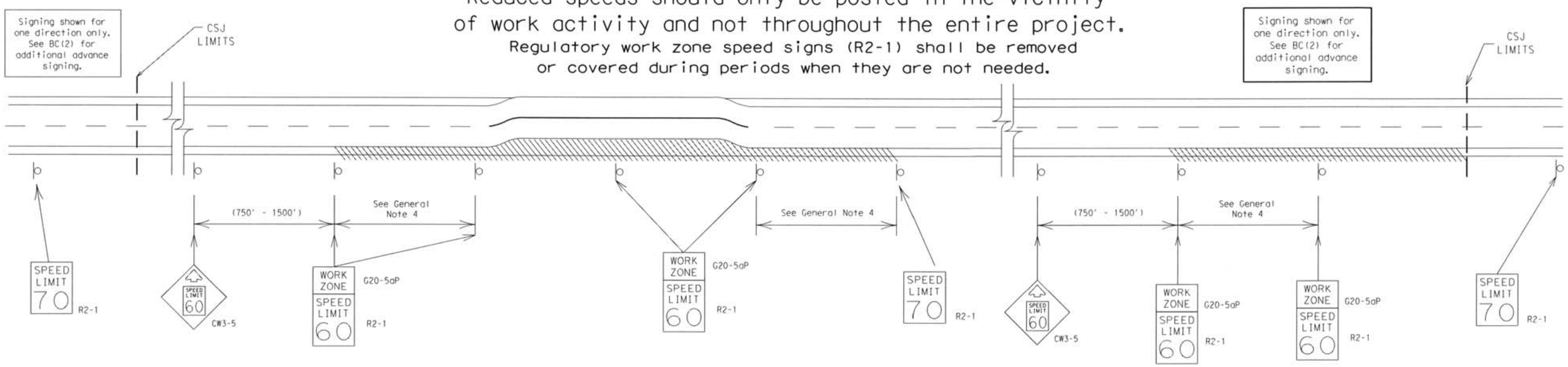
SHEET NO. 19

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the travelled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

SHEET 3 OF 12

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-14

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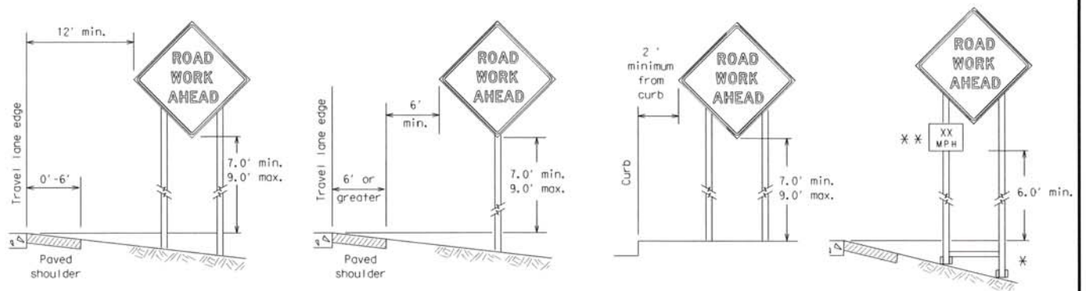
BARRICADE PLAN TXDOT 3

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

KSA — CP&Y — TBPE FIRM #F-1741

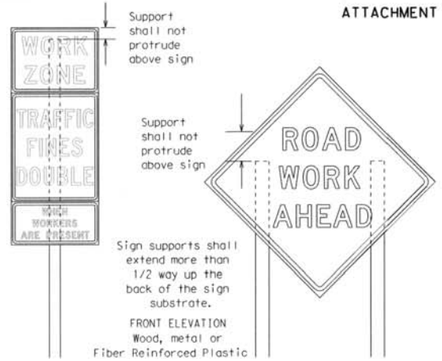
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS



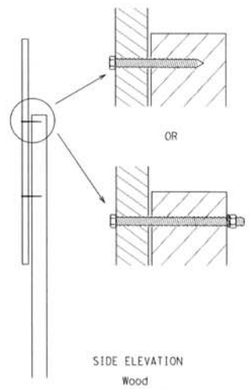
* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

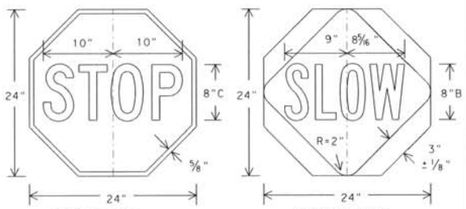


Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24" as detailed below.
2. When used at night, the STOP/SLOW paddle shall be retroreflectorized.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC sheets or the CWZTCD. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD). The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-14

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REVISIONS 9-07 8-14 7-13	DIST	COUNTY		SHEET NO.

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MARK	REVISION	DATE

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DRAWING PATHNAME - LAYOUT PLOT DATE - TIME

SHEET NAME: **BARRICADE PLAN TXDOT 4**

PROJECT NAME: **CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX**

DRAWN BY:	DESIGNED BY:	LATEST REVISION	KSA JOB NO.
CBS	JWD	7/14/2016	SAN 058

C&P TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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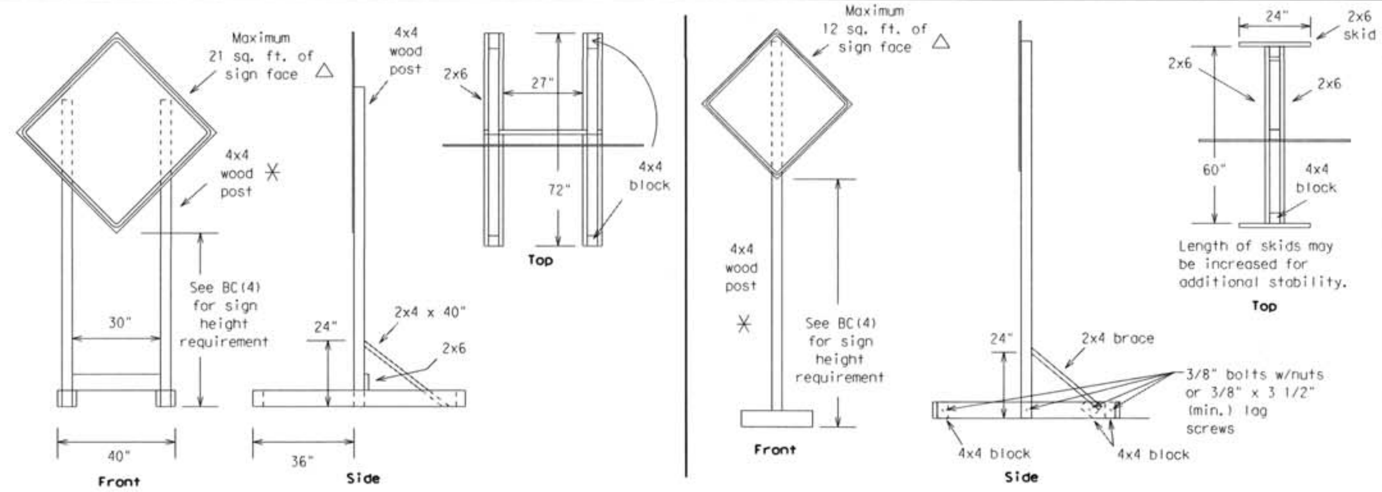
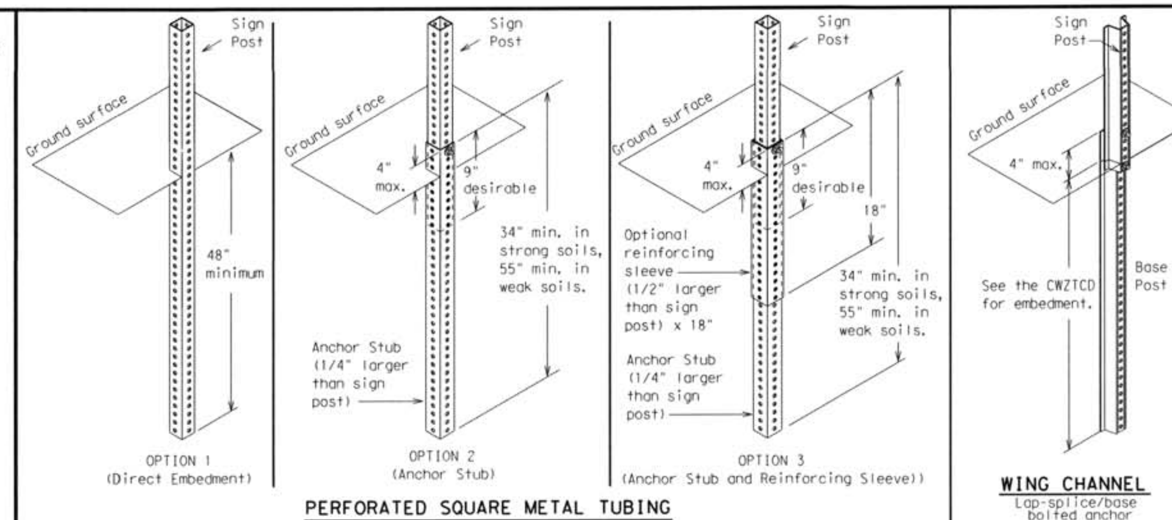
ksaonline.com

SHEET NO. **21**



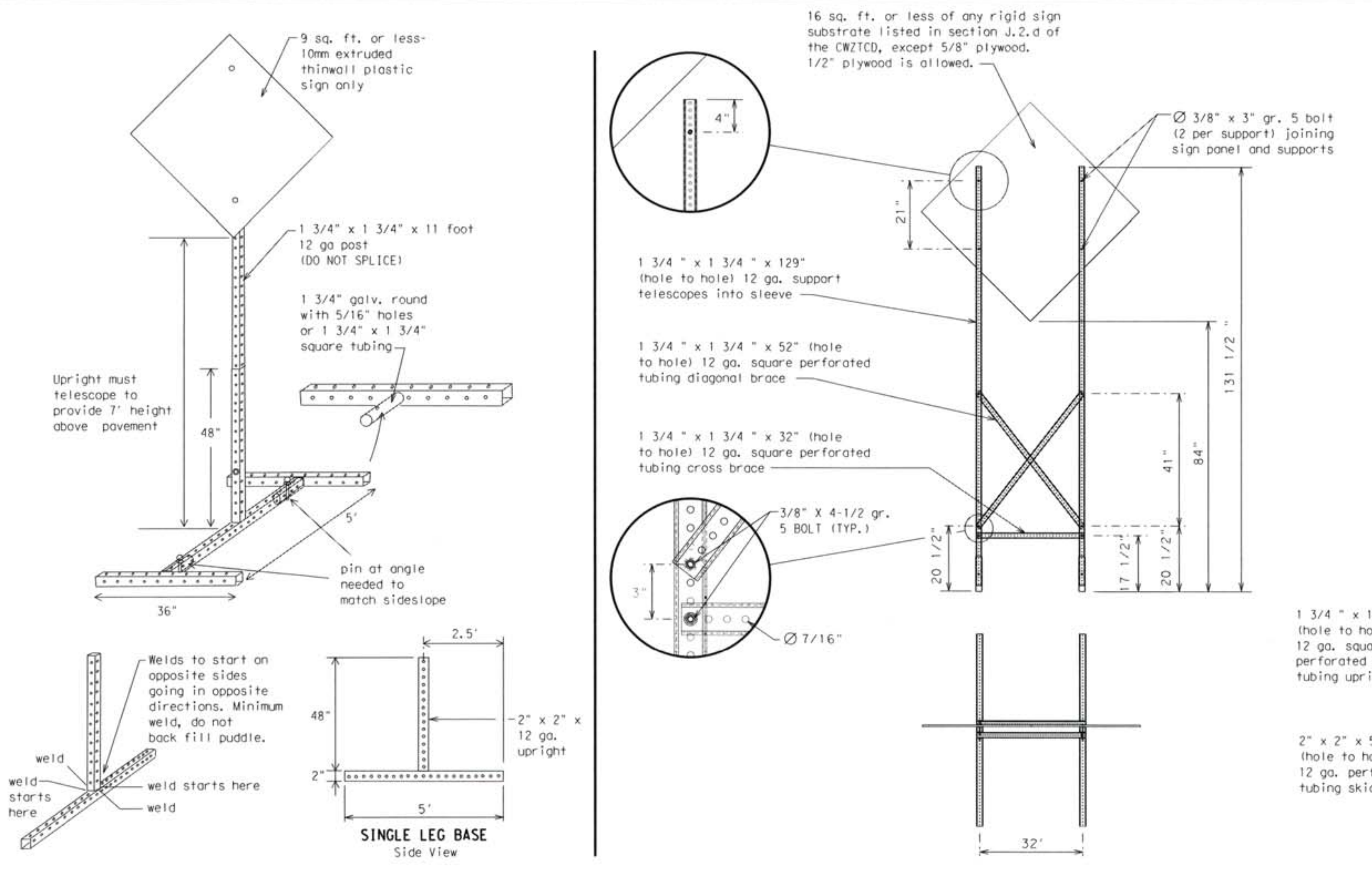
SKID MOUNTED WOOD SIGN SUPPORTS

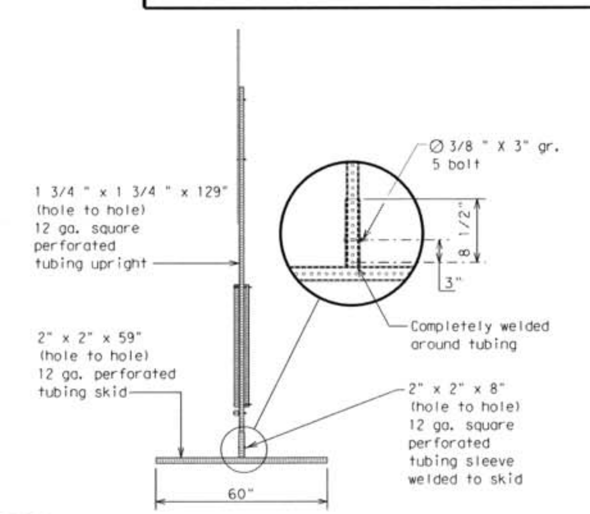
LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS □



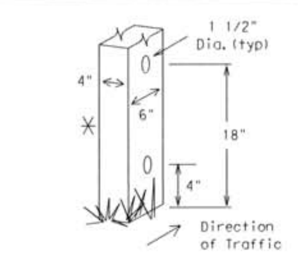
GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.





SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS



Nominal Post Size	Number of Posts	Maximum Sq. feet of Sign Face	Minimum Soil Embedment	Drilled Hole(s) Required
4 x 4	1	12	36"	NO
4 x 4	2	21	36"	NO
4 x 6	1	21	36"	YES
4 x 6	2	36	36"	YES

WOOD POST SYSTEM FOR GROUND MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

□ See BC(4) for definition of "Work Duration."

✳ Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

△ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

SHEET 5 OF 12

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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CP&Y — TBPE FIRM #F-1741

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN.058

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

SHEET NAME: BARRICADE PLAN TXDOT 5

MARK | REVISION | DATE

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WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy Vehicle	HOV
Highway	HWY
Hour (s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation # IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

FREEWAY CLOSED X MILE	FRONTAGE ROAD CLOSED
ROAD CLOSED AT SH XXX	SHOULDER CLOSED XXX FT
ROAD CLSD AT FM XXXX	RIGHT LN CLOSED XXX FT
RIGHT X LANES CLOSED	RIGHT X LANES OPEN
CENTER LANE CLOSED	DAYTIME LANE CLOSURES
NIGHT LANE CLOSURES	I-XX SOUTH EXIT CLOSED
VARIOUS LANES CLOSED	EXIT XXX CLOSED X MILE
EXIT CLOSED	RIGHT LN TO BE CLOSED
MALL DRIVEWAY CLOSED	X LANES CLOSED TUE - FRI
XXXXXXXX BLVD CLOSED	

Other Condition List

ROADWORK XXX FT	ROAD REPAIRS XXXX FT
FLAGGER XXXX FT	LANE NARROWS XXXX FT
RIGHT LN NARROWS XXXX FT	TWO-WAY TRAFFIC XX MILE
MERGING TRAFFIC XXXX FT	CONST TRAFFIC XXX FT
LOOSE GRAVEL XXXX FT	UNEVEN LANES XXXX FT
DETOUR X MILE	ROUGH ROAD XXXX FT
ROADWORK PAST SH XXXX	ROADWORK NEXT FRI-SUN
BUMP XXXX FT	US XXX EXIT X MILES
TRAFFIC SIGNAL XXXX FT	LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

MERGE RIGHT	FORM X LINES RIGHT
DETOUR NEXT X EXITS	USE XXXXX RD EXIT
USE EXIT XXX	USE EXIT I-XX NORTH
STAY ON US XXX SOUTH	USE I-XX E TO I-XX N
TRUCKS USE US XXX N	WATCH FOR TRUCKS
WATCH FOR TRUCKS	EXPECT DELAYS
EXPECT DELAYS	PREPARE TO STOP
REDUCE SPEED XXX FT	END SHOULDER USE
USE OTHER ROUTES	WATCH FOR WORKERS
STAY IN LANE *	

Location List

AT FM XXXX
BEFORE RAILROAD CROSSING
NEXT X MILES
PAST US XXX EXIT
XXXXXXX TO XXXXXXX
US XXX TO FM XXXX

Warning List

SPEED LIMIT XX MPH
MAXIMUM SPEED XX MPH
MINIMUM SPEED XX MPH
ADVISORY SPEED XX MPH
RIGHT LANE EXIT
USE CAUTION
DRIVE SAFELY
DRIVE WITH CARE

** Advance Notice List

TUE-FRI XX AM- X PM
APR XX- XX X PM-X AM
BEGINS MONDAY
BEGINS MAY XX
MAY X-X XX PM - XX AM
NEXT FRI-SUN
XX AM TO XX PM
NEXT TUE AUG XX
TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-14

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DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

SHEET NAME: BARRICADE PLAN TXDOT 6

MARK	REVISION	DATE

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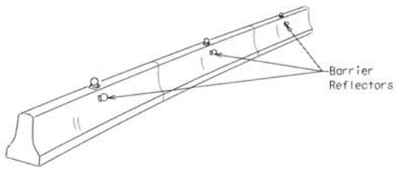
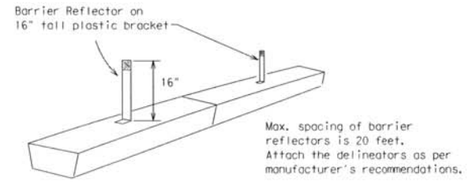
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.

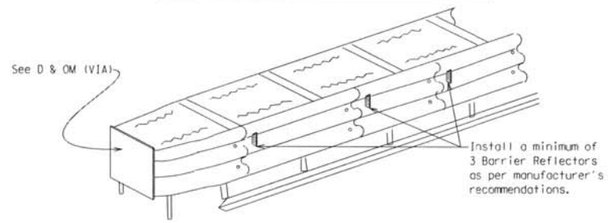


CONCRETE TRAFFIC BARRIER (CTB)

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



LOW PROFILE CONCRETE BARRIER (LPCB)

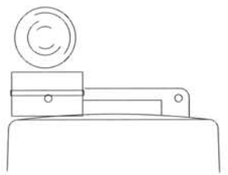


DELINEATION OF END TREATMENTS

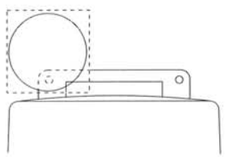
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet crashworthy standards as defined in the National Cooperative Highway Research Report 350. Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.



Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING LIGHTS

1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

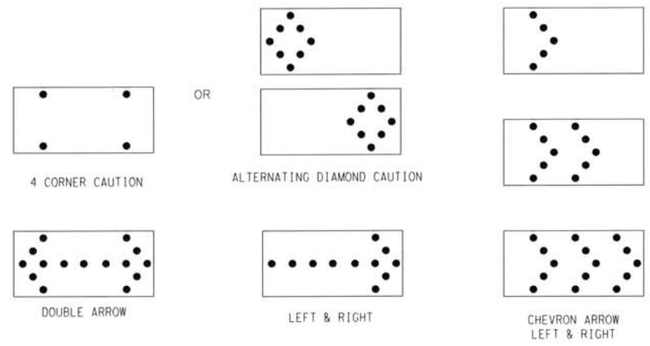
1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential Chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION
Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the National Cooperative Highway Research Report No. 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-14

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BARRICADE PLAN TXDOT 7

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO.	SAN.0568

CP&Y TBPE FIRM #F-1741

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SHEET NO.
24

GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

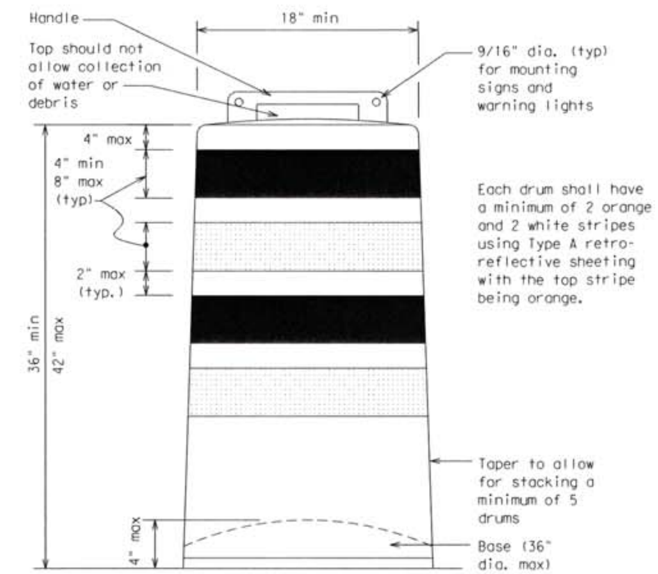
RETROREFLECTIVE SHEETING

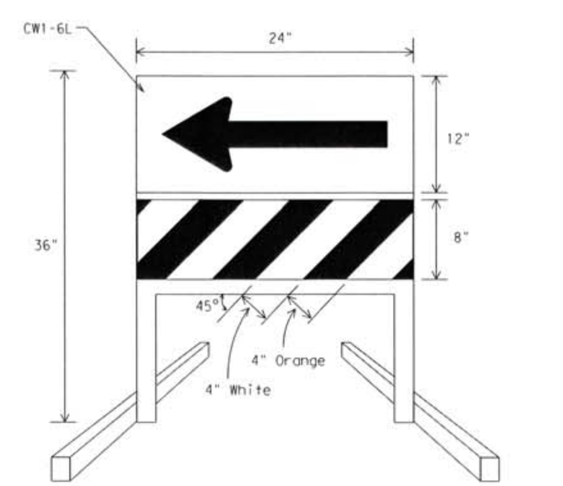
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.

DATE:
FILE:

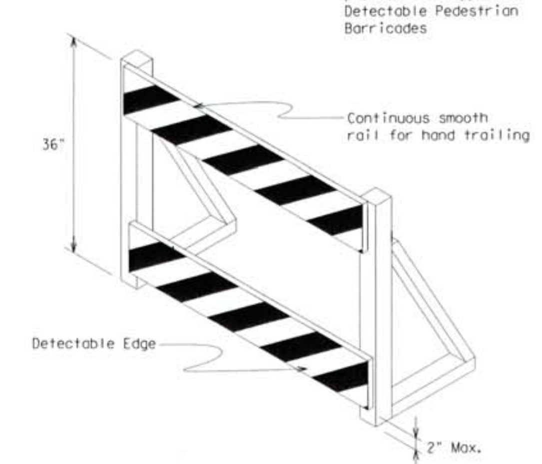




DIRECTION INDICATOR BARRICADE

1. The Direction Indicator Barricade may be used in tapers, transitions, and other areas where specific directional guidance to drivers is necessary.
2. If used, the Direction Indicator Barricade should be used in series to direct the driver through the transition and into the intended travel lane.
3. The Direction Indicator Barricade shall consist of One-Direction Large Arrow (CW1-6) sign in the size shown with a black arrow on a background of Type B_{FL} or Type C_{FL} Orange retroreflective sheeting above a rail with Type A retroreflective sheeting in alternating 4" white and orange stripes sloping downward at an angle of 45 degrees in the direction road users are to pass. Sheeting types shall be as per DMS 8300.
4. Double arrows on the Direction Indicator Barricade will not be allowed.
5. Approved manufacturers are shown on the CWZTCD List. Ballast shall be as approved by the manufacturers instructions.

This detail is not intended for fabrication. See note 3 and the CWZTCD list for providers of approved Detectable Pedestrian Barricades



DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades may use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.

18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer

12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation — Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ BARRICADE PLAN TXDOT STANDARD 2.DWG | 2 | 7/15/2016 - 2:11 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: BARRICADE PLAN TXDOT 8

PROJECT NAME: CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

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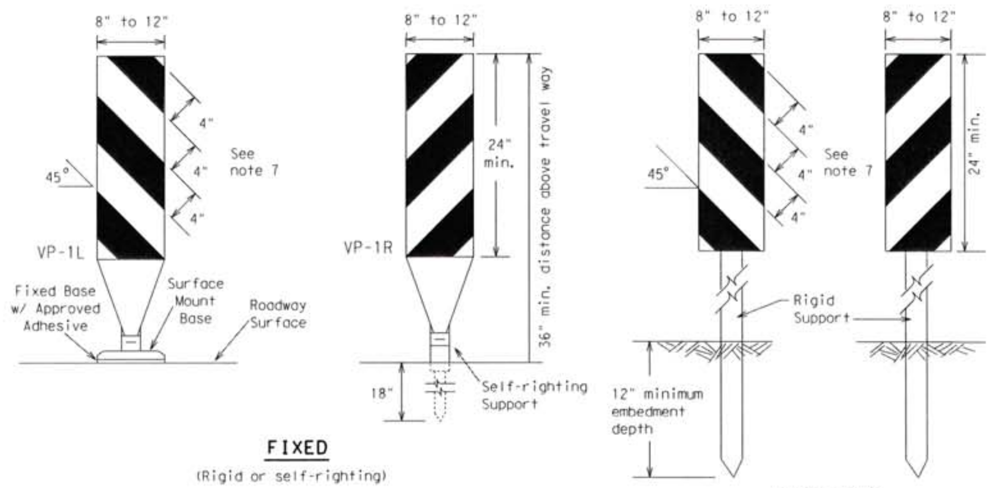
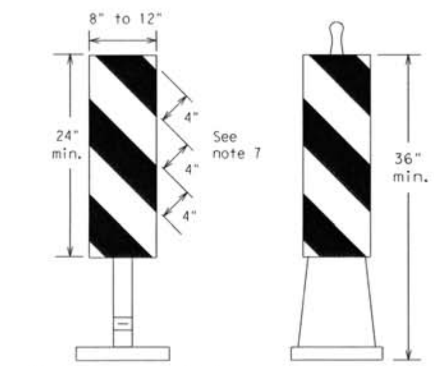


FIXED
(Rigid or self-righting)

DRIVEABLE

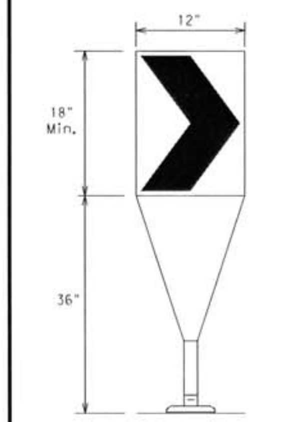


(Rigid or self-righting)

PORTABLE

1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual Appendix B "Treatment of Pavement Drop-offs in Work Zones" for additional guidelines on the use of VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



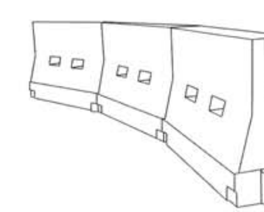
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

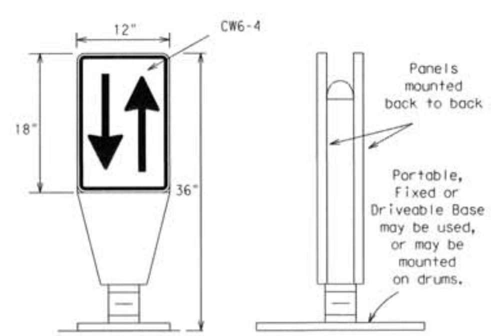
1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10) placed near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate NCHRP 350 crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices	
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation

Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-14

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REVISIONS 9-07 8-14 7-13	DIST	COUNTY		SHEET NO.

103

BARRICADE PLAN TXDOT 9

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN.058

KSA CP&Y
TBPE FIRM #F-1741
TBPE Firm Registration No. F-1356
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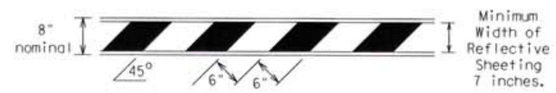
SHEET NO. 26

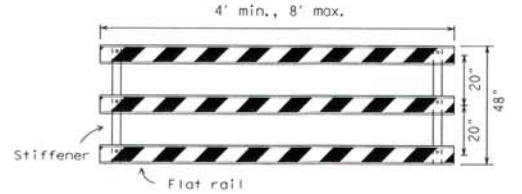
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



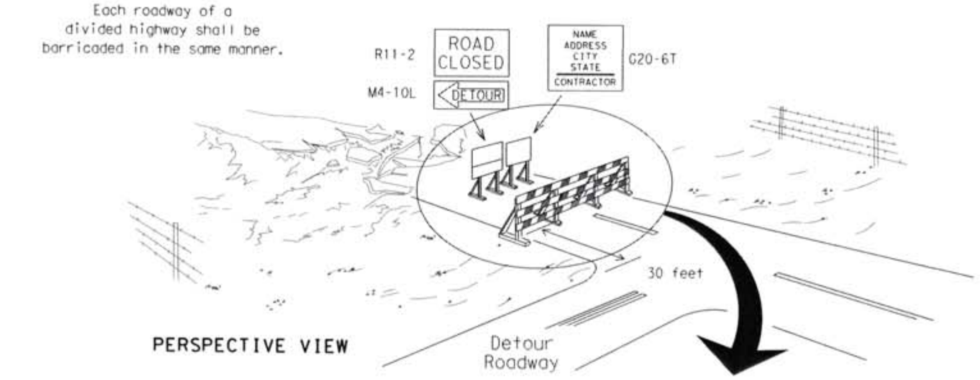
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

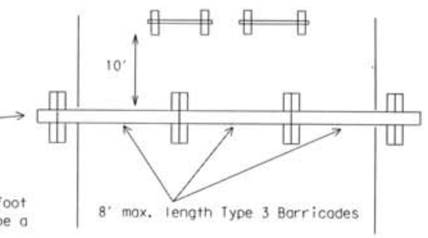
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

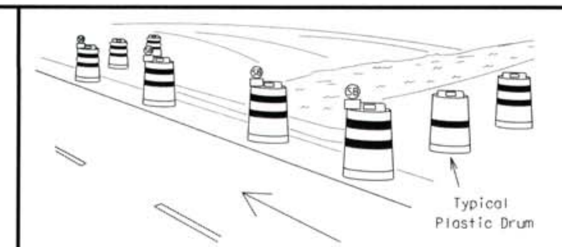
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



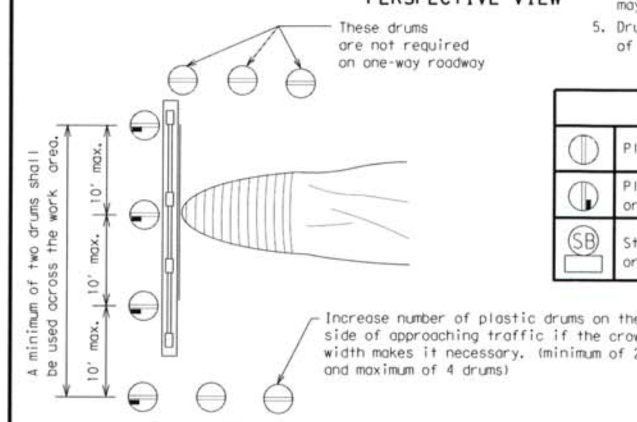
PLAN VIEW

1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW



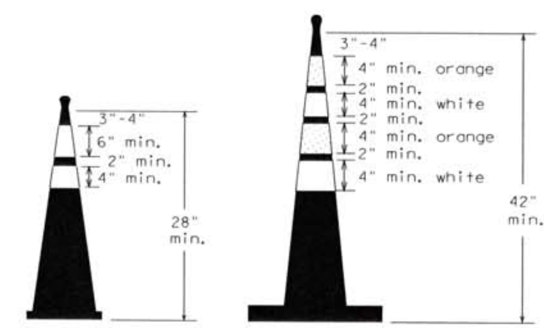
PLAN VIEW

1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.

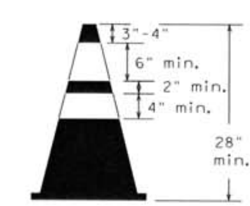
LEGEND	
(symbol)	Plastic drum
(symbol)	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

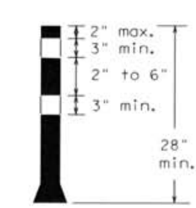
CONES



Two-Piece cones



One-Piece cones



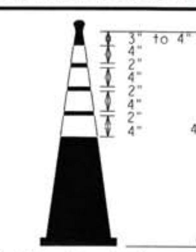
Tubular Marker

28" Cones shall have a minimum weight of 9 1/2 lbs.

42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

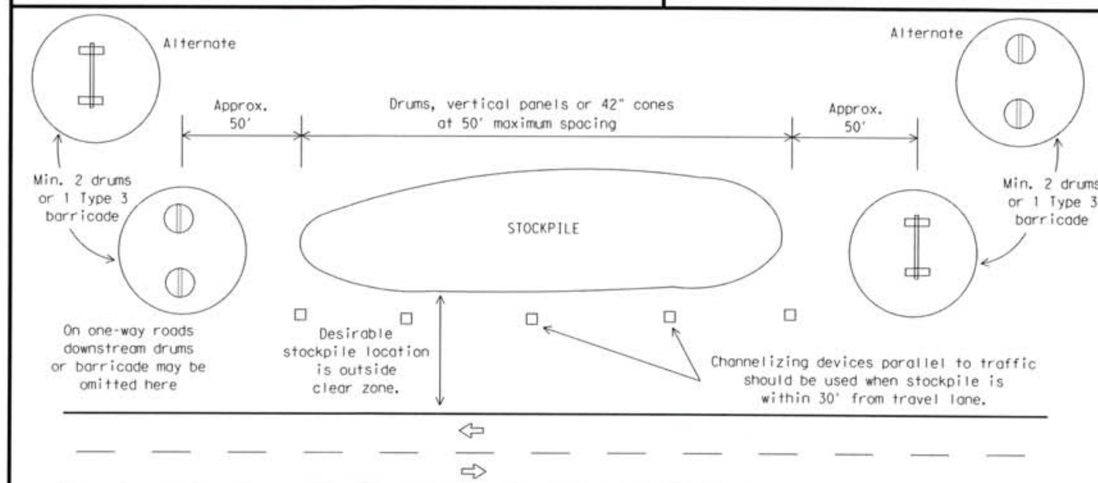
1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers used at night shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.

THIS DEVICE SHALL NOT BE USED ON PROJECTS LET AFTER MARCH 2014.



EDGELINE CHANNELIZER

1. This device is intended only for use in place of a vertical panel to channelize traffic by indicating the edge of the travel lane. It is not intended to be used in transitions or tapers.
2. This device shall not be used to separate lanes of traffic (opposing or otherwise) or warn of objects.
3. This device is based on a 42 inch, two-piece cone with an alternate striping pattern: four 4 inch retroreflective bands, with an approximate 2 inch gap between bands. The color of the band should correspond to the color of the edgeline (yellow for left edgeline, white for right edgeline) for which the device is substituted or for which it supplements. The reflectorized bands shall be retroreflective Type A conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
4. The base must weigh a minimum of 30 lbs.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

SHEET 10 OF 12

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS 9-07 8-14 7-13	DIST		COUNTY	SHEET NO.
104				

MARK	REVISION	DATE

KSA-SA-SERVER1\MAIN\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ BARRICADE PLAN TXDOT STANDARD 2.DWG 14:7/15/2016 2:12 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: BARRICADE PLAN TXDOT 10

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO.:	SAN.058

KSA CP&Y
TBPE FIRM #F-1741
TBPE Firm Registration No. F-1356
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SHEET NO. 27

WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

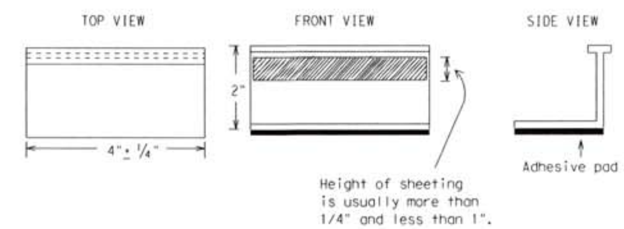
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12

Texas Department of Transportation | Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-14

FILE: bc-14.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT February 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-98 9-07 1-02 7-13 11-02 8-14	DIST	COUNTY		SHEET NO.

105

DATE:
FILE:

BARRICADE PLAN TXDOT 11

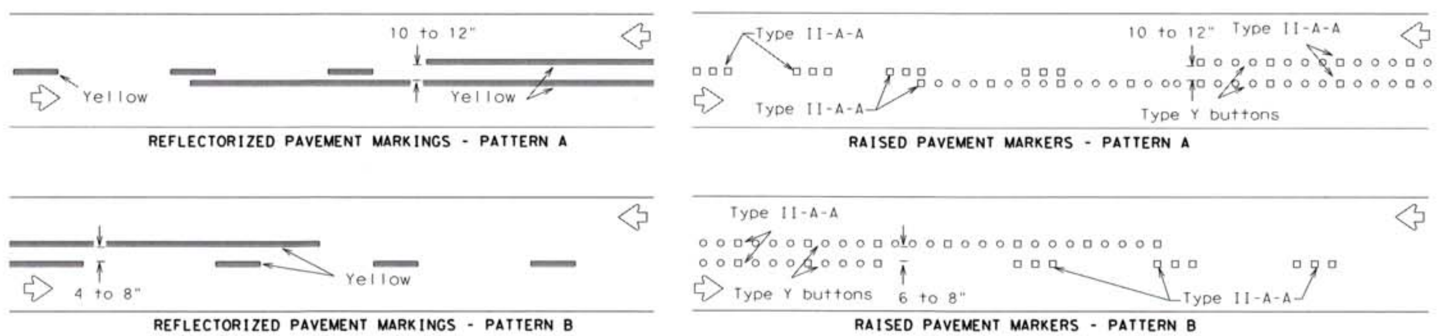
CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY	DESIGNED BY	LATEST REVISION	KSA JOB NO.
CBS	JWD	7/14/2016	SAN 058

KSA CP&Y TBPE FIRM #F-1741

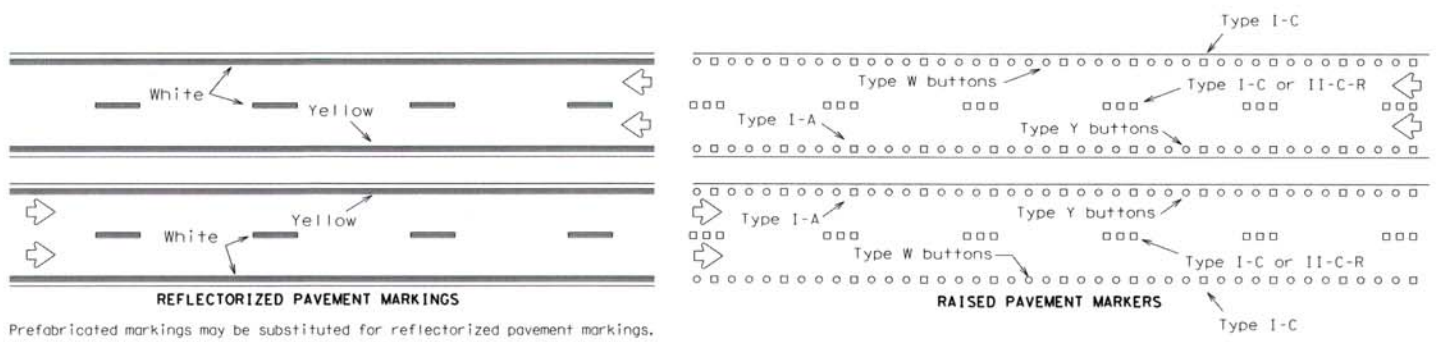
SHEET NO.
28

PAVEMENT MARKING PATTERNS



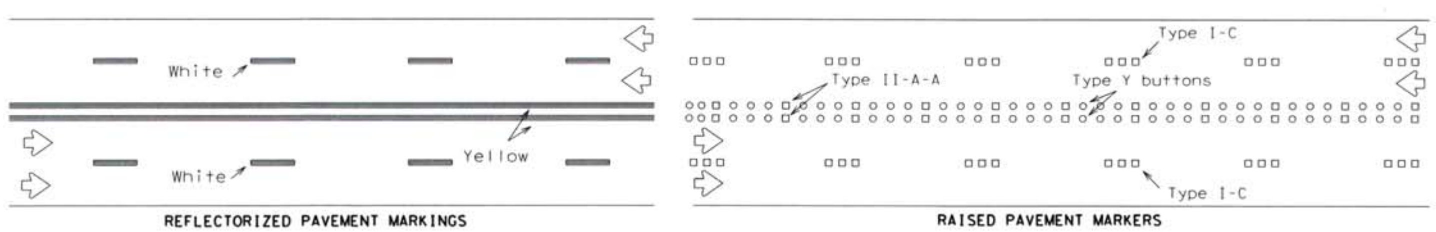
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



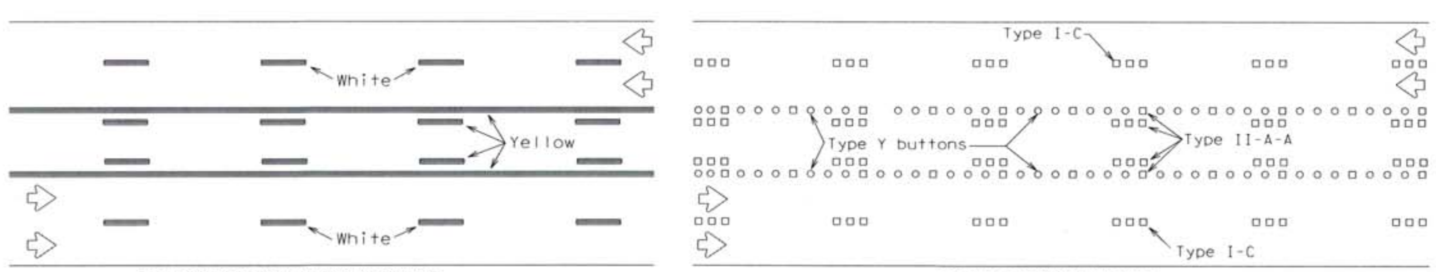
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS

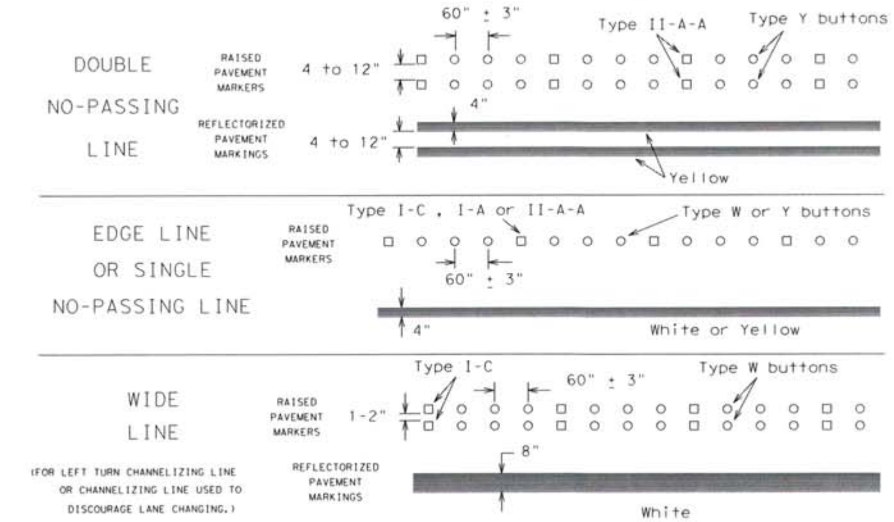


Prefabricated markings may be substituted for reflectorized pavement markings.

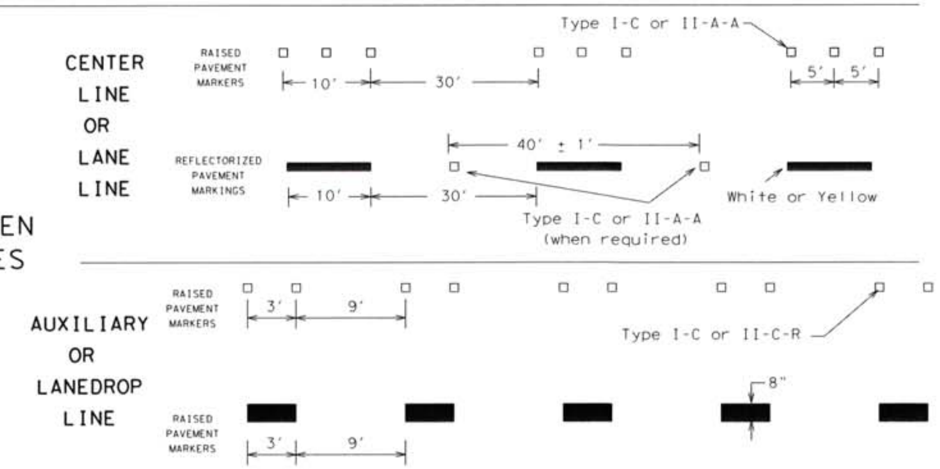
TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

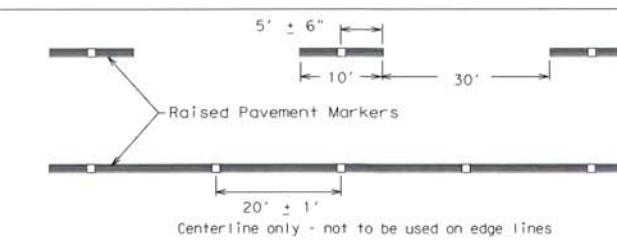


BROKEN LINES



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation
Traffic Operations Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-14

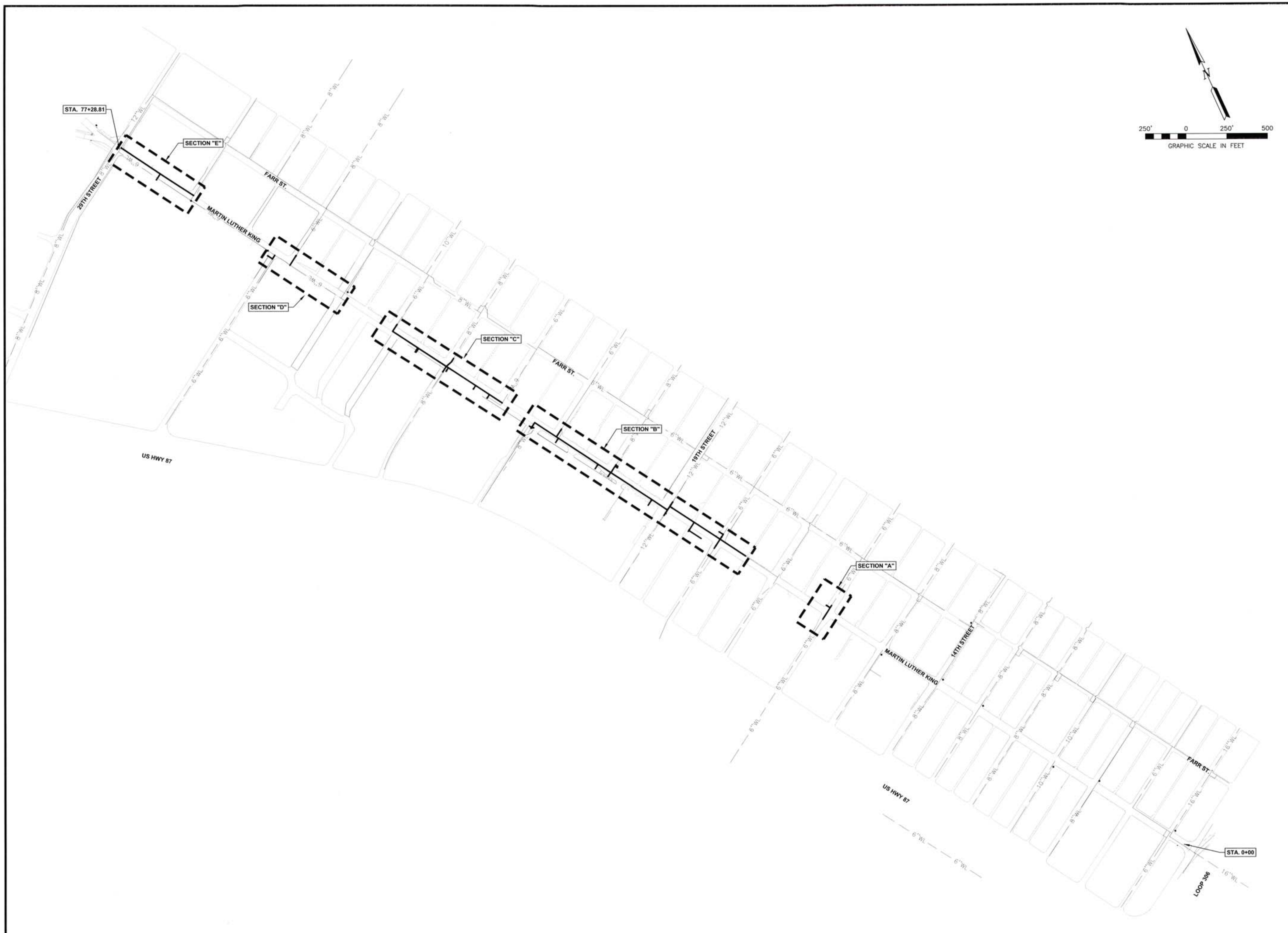
FILE: bc-14.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT
© TxDOT February 1998 | CONT | SECT | JOB | HIGHWAY
REVISIONS
1-97 9-07
2-98 7-13
11-02 8-14
DIST | COUNTY | SHEET NO.
106

BARRICADE PLAN TXDOT 12

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN.058

KSA CP&Y
TBPE FIRM #F-1741



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DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE PROPOSED WATER LINE LAYOUT

PROJECT NAME:
CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y
TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
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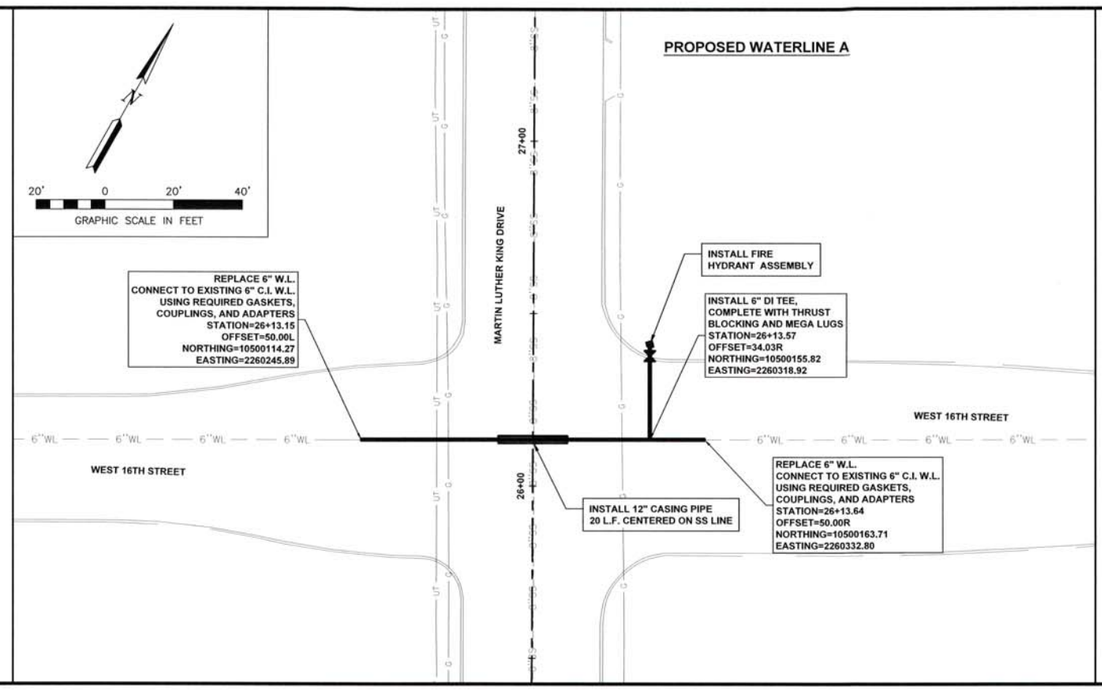
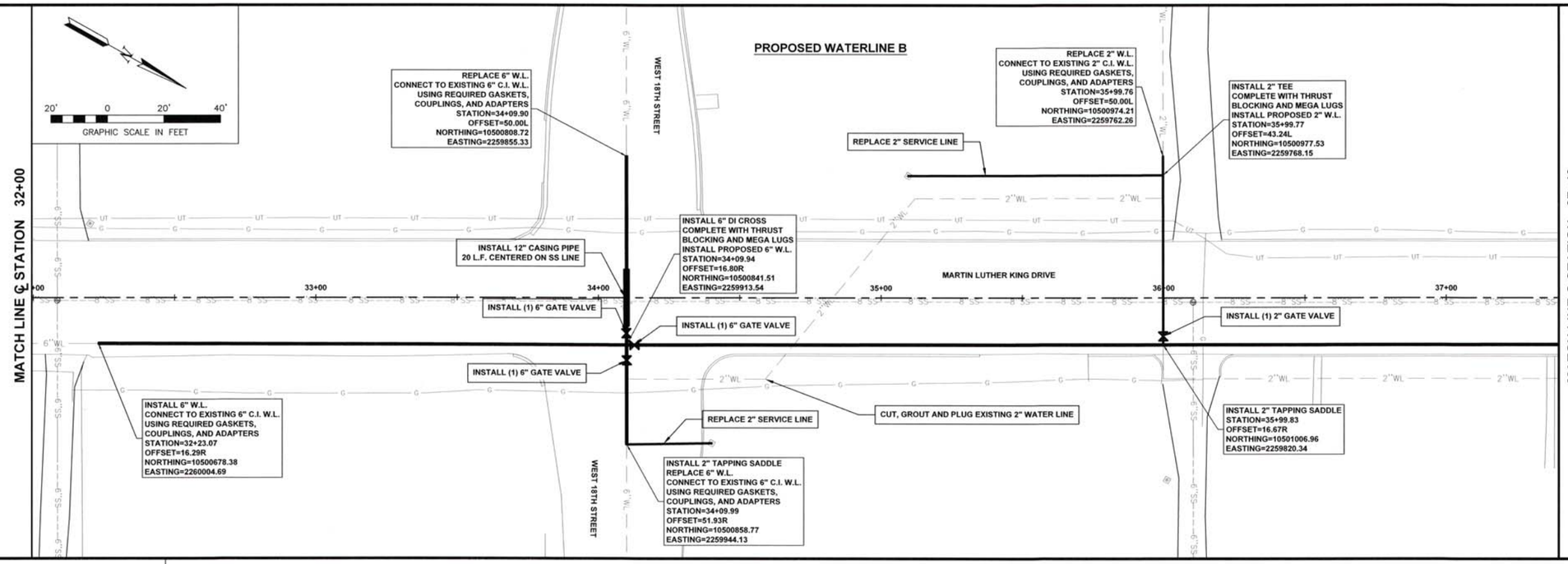
STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
30





LEGEND:

- PROPOSED WATER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

Proposed Water Lines A and B - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
3.01	02665	2" Schedule 40 Water Main (Including Class C Embedment Material and Tracer Wire)	LF	187	
3.02	02665	6" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	747	
3.05	02669	2" Gate Valve and Box	EA	1	
3.06	02669	6" Gate Valve and Box	EA	4	
3.09	02665	Fire Hydrant Connection	EA	1	
3.10	02665	Water Meter Connection	EA	2	
3.11	02665	12" C-900 PVC Casing Pipe	LF	40	

MARK	REVISION	DATE

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DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE
PROPOSED WATER LINES
A AND B

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO:	SAN.058

CP&Y TBPE FIRM #F-1741

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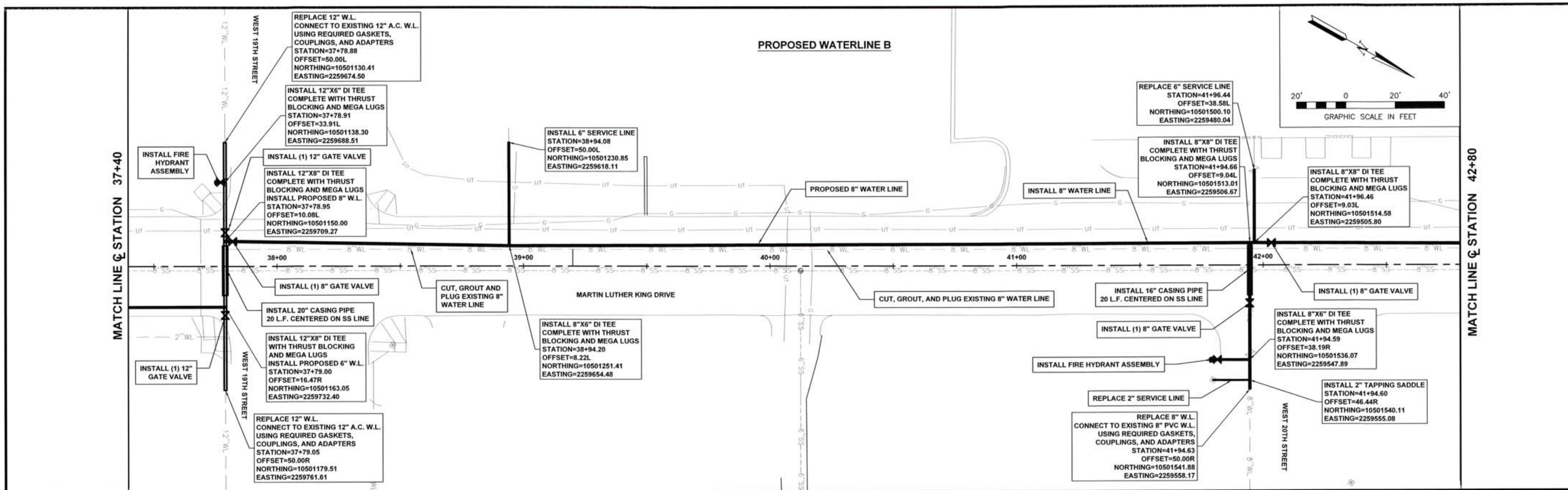
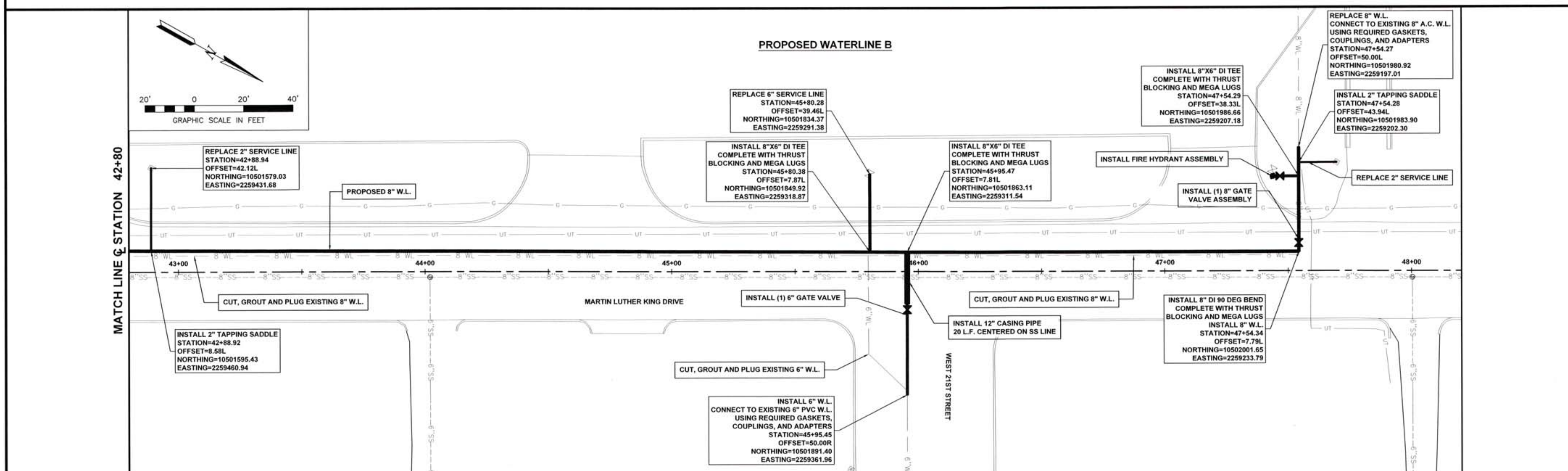
SHEET NO.
31





LEGEND:

- PROPOSED WATER LINE
- EXISTING 2" WATER LINE
- EXISTING 4" WATER LINE
- EXISTING 6" WATER LINE
- EXISTING 8" WATER LINE
- EXISTING 12" WATER LINE
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- EXISTING 6" SANITARY SEWER LINE
- EXISTING 8" SANITARY SEWER LINE
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE

Proposed Water Lines B - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
3.01	02665	2" Schedule 40 Water Main (Including Class C Embedment Material and Tracer Wire)	LF	64	
3.02	02665	6" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	236	
3.03	02665	8" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	1074	
3.04	02665	12" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	100	
3.06	02669	6" Gate Valve and Box	EA	4	
3.07	02669	8" Gate Valve and Box	EA	4	
3.08	02669	12" Gate Valve and Box	EA	2	
3.09	02665	Fire Hydrant Connection	EA	3	
3.10	02665	Water Meter Connection	EA	3	
3.11	02665	12" C-900 PVC Casing Pipe	LF	20	
3.12	02665	16" C-900 PVC Casing Pipe	LF	20	
3.13	02665	20" C-900 PVC Casing Pipe	LF	20	

MARTIN LUTHER KING DRIVE
PROPOSED WATER LINES
WATER LINE B

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN.058

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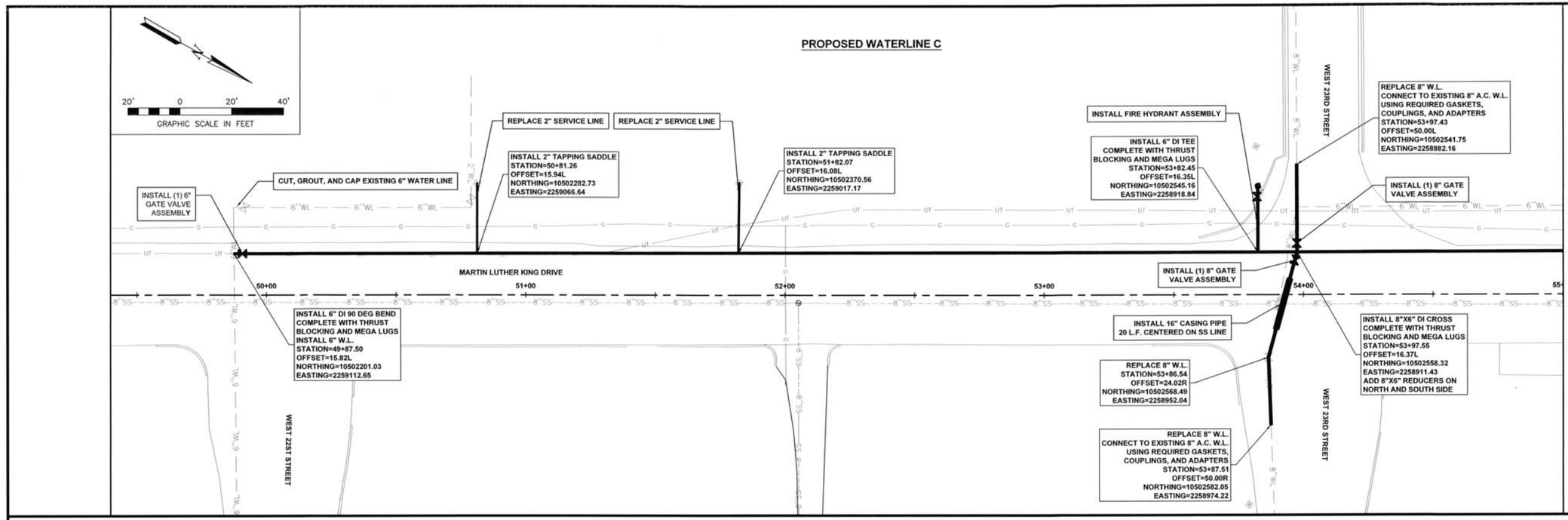
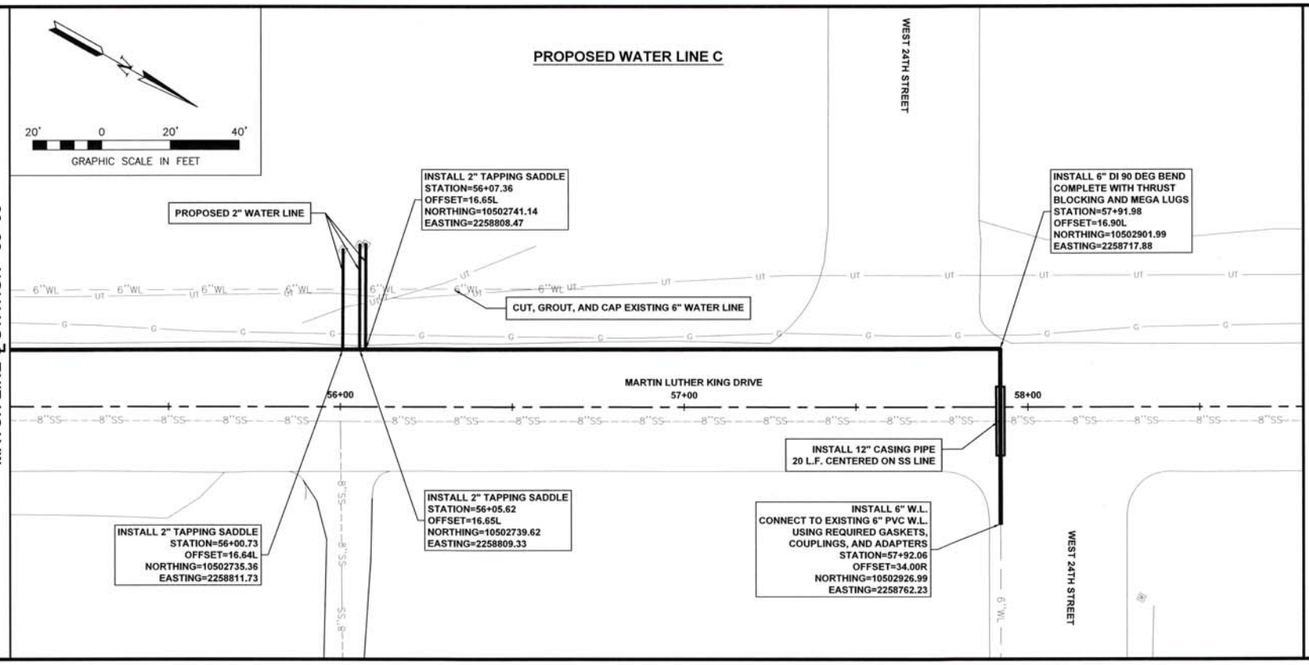
7/21/16

SHEET NO. 32





LEGEND:

- PROPOSED WATER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

Proposed Water Lines C - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
3.01	02665	2" Schedule 40 Water Main (Including Class C Embedment Material and Tracer Wire)	LF	155	
3.02	02665	6" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	881	
3.03	02665	8" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	102	
3.06	02669	6" Gate Valve and Box	EA	2	
3.07	02669	8" Gate Valve and Box	EA	2	
3.09	02665	Fire Hydrant Connection	EA	1	
3.10	02665	Water Meter Connection	EA	5	
3.11	02665	12" C-900 PVC Casing Pipe	LF	20	
3.12	02665	16" C-900 PVC Casing Pipe	LF	20	

MARK | REVISION | DATE

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DRAWING PATH/NAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE
PROPOSED WATER LINES
WATER LINE C

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY	CBS
DESIGNED BY	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN 058

CP&Y
TBPE FIRM #F-1741

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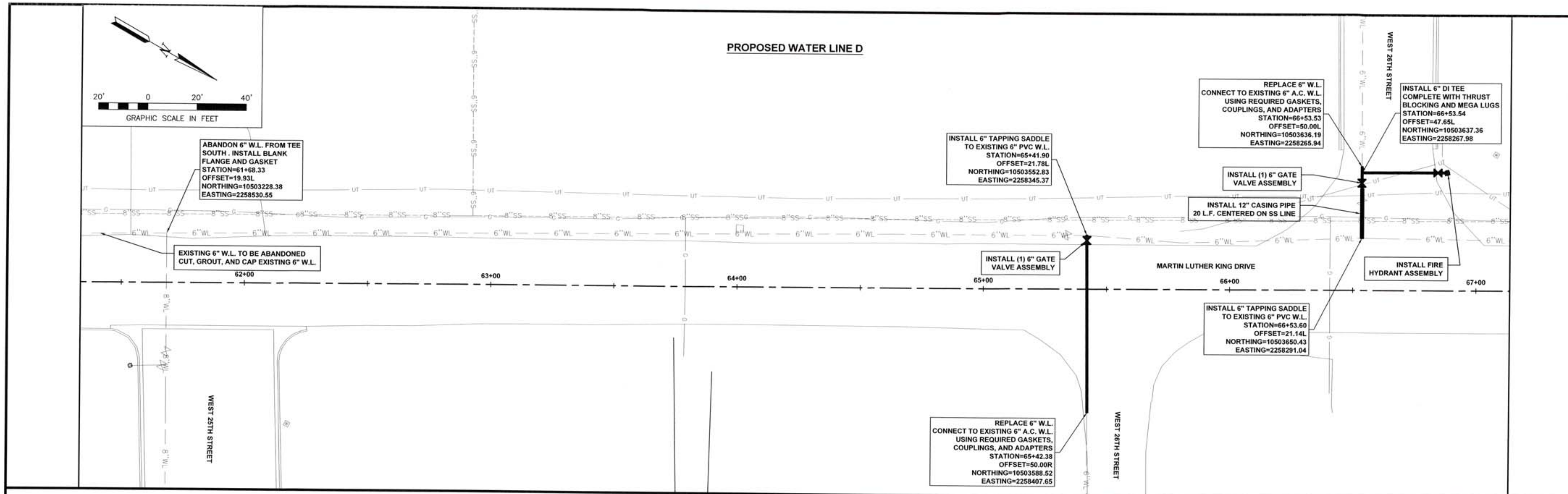
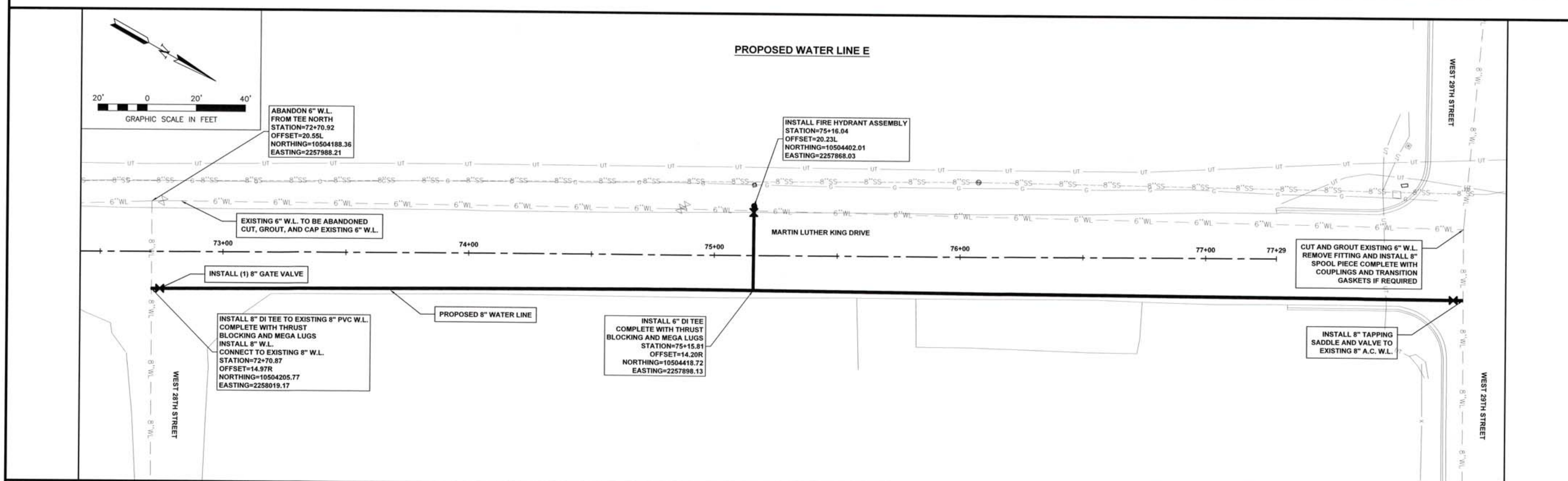
7/21/16

SHEET NO.
33





LEGEND:

- PROPOSED WATER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

Proposed Water Lines D and E - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
3.02	02665	6" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	170	
3.03	02665	8" C-900 DR 18 PVC Water Main (Including Class C Embedment Material and Tracer Wire)	LF	534	
3.06	02669	6" Gate Valve and Box	EA	4	
3.07	02669	8" Gate Valve and Box	EA	2	
3.09	02665	Fire Hydrant Connection	EA	2	
3.11	S-33	12" C-900 PVC Casing Pipe	LF	20	

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00 07 CAD\02 PROJECT\30 SHEETS\ MLK WATER A AND B.DWG | WL D AND E | 7/15/2016 - 2:22 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE PROPOSED WATER LINES D AND E

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y
TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
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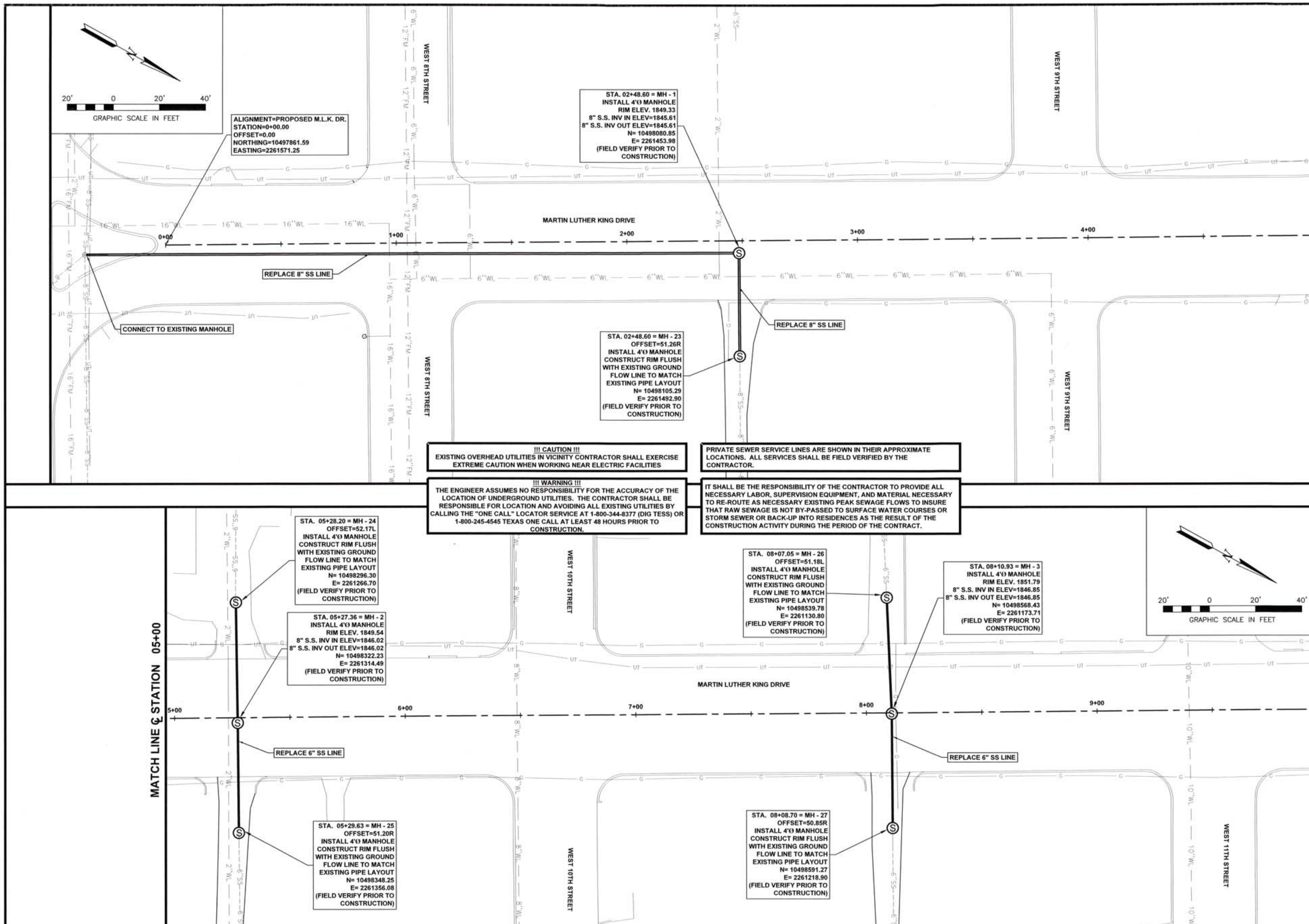
STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/21/16
David A. Alexander P.E.

SHEET NO.
34



LEGEND:

- PROPOSED SEWER LINE
- PROPOSED MAN HOLE
- EXISTING 6" SANITARY SEWER LINE
- EXISTING 8" SANITARY SEWER LINE
- EXISTING 2" WATER LINE
- EXISTING 4" WATER LINE
- EXISTING 6" WATER LINE
- EXISTING 8" WATER LINE
- EXISTING 12" WATER LINE
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 0+00 to STA. 10+00 - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	100	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	318	
2.06	02610	Install/Replace Manholes	EA	8	

MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 00+00 TO STA. 10+00

SHEET NAME

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

KSA — CP&Y — TBPE FIRM #F-1741

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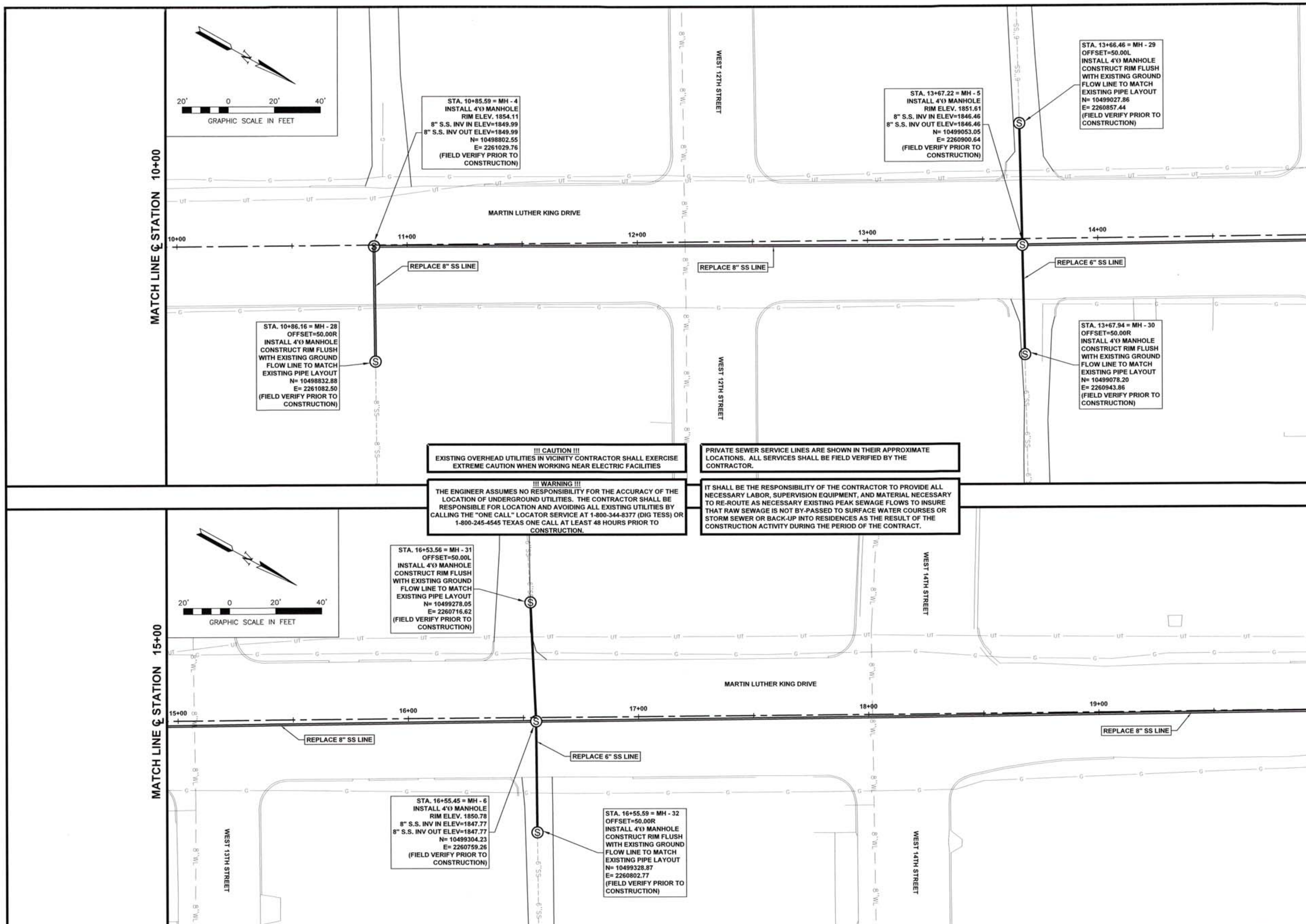
STATE OF TEXAS — DAVID A. ALEXANDER — 96658 — LICENSED PROFESSIONAL ENGINEER

SHEET NO. 35



LEGEND:

- PROPOSED SEWER LINE
- Ⓢ PROPOSED MAN HOLE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 10+00 to STA. 20+00 - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	250	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	954	
2.06	02610	Install/Replace Manholes	EA	8	

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00 07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA. 0+00 TO STA. 22+40.DWG | STA. 10+00 TO STA. 20+00 | 7/15/2016 - 2:30 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 10+00 TO STA. 20+00

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y
TBPE FIRM #F-1741

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STATE OF TEXAS
DAVID A. ALEXANDER
96658
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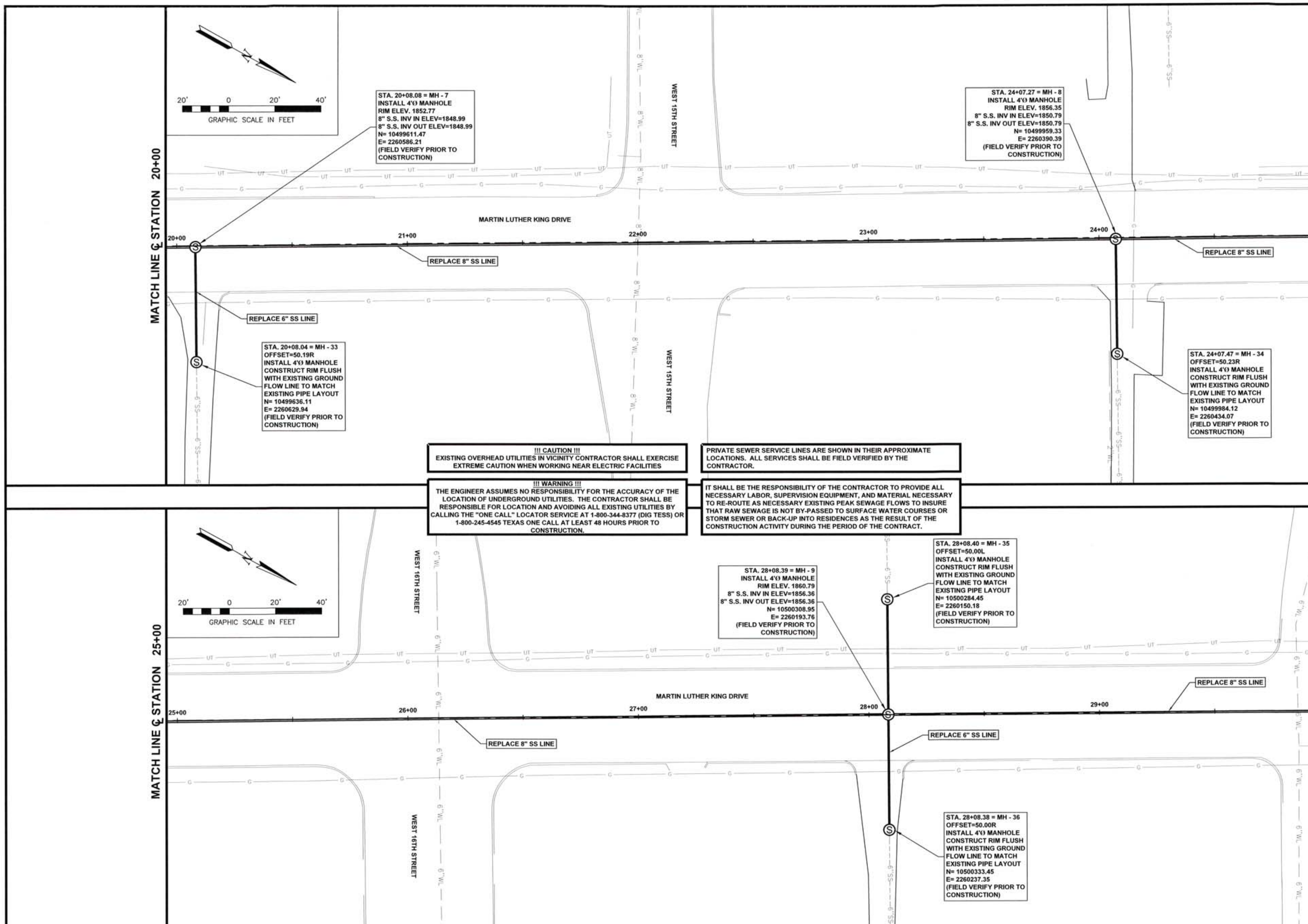
7/21/16

SHEET NO. 36



LEGEND:

- PROPOSED SEWER LINE
- PROPOSED MAN HOLE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 20+00 to STA. 30+00 - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	200	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	1000	
2.06	02610	Install/Replace Manholes	EA	7	

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA. 0+00 TO STA. 22+40 DWG | STA. 20+00 TO STA. 30+00 | 7/15/2016 - 2:30 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 20+00 TO STA. 30+00

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

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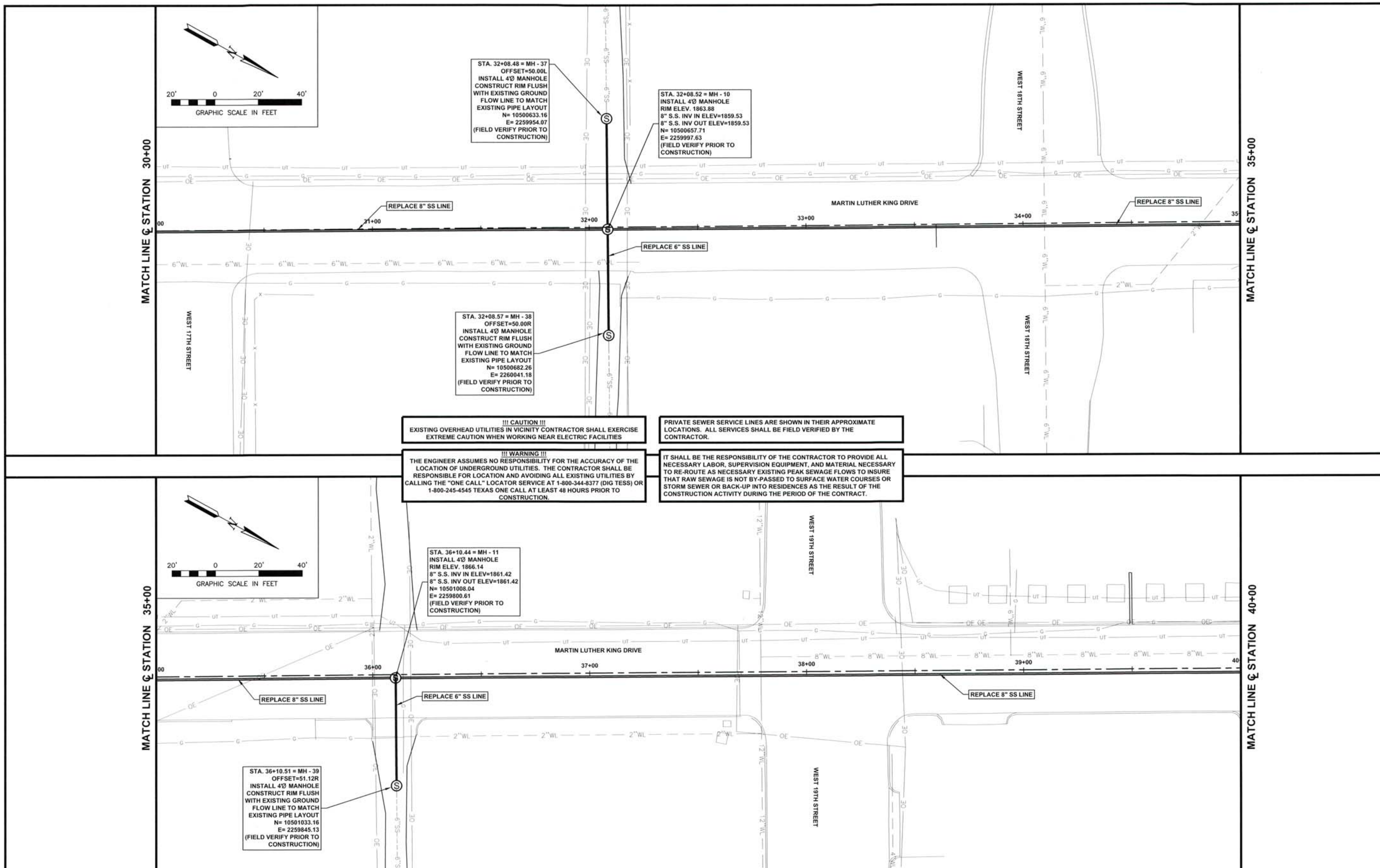
7/15/16
David A. Alexander, P.E.

SHEET NO. 37



LEGEND:

- PROPOSED SEWER LINE
- PROPOSED MAN HOLE
- EXISTING 6" SANITARY SEWER LINE
- EXISTING 8" SANITARY SEWER LINE
- EXISTING 2" WATER LINE
- EXISTING 4" WATER LINE
- EXISTING 6" WATER LINE
- EXISTING 8" WATER LINE
- EXISTING 12" WATER LINE
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 30+00 to STA. 40+00 - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	150	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	1000	
2.06	02610	Install/Replace Manholes	EA	5	

MARK	REVISION	DATE

\\KSA-SA-SERVER1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA. 22+40 TO STA 44+80.DWG | STA. 30+00 TO 40+00 | 7/21/2016 - 3:11 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 30+00 TO STA. 40+00

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

KSA
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DAVID A. ALEXANDER
96658
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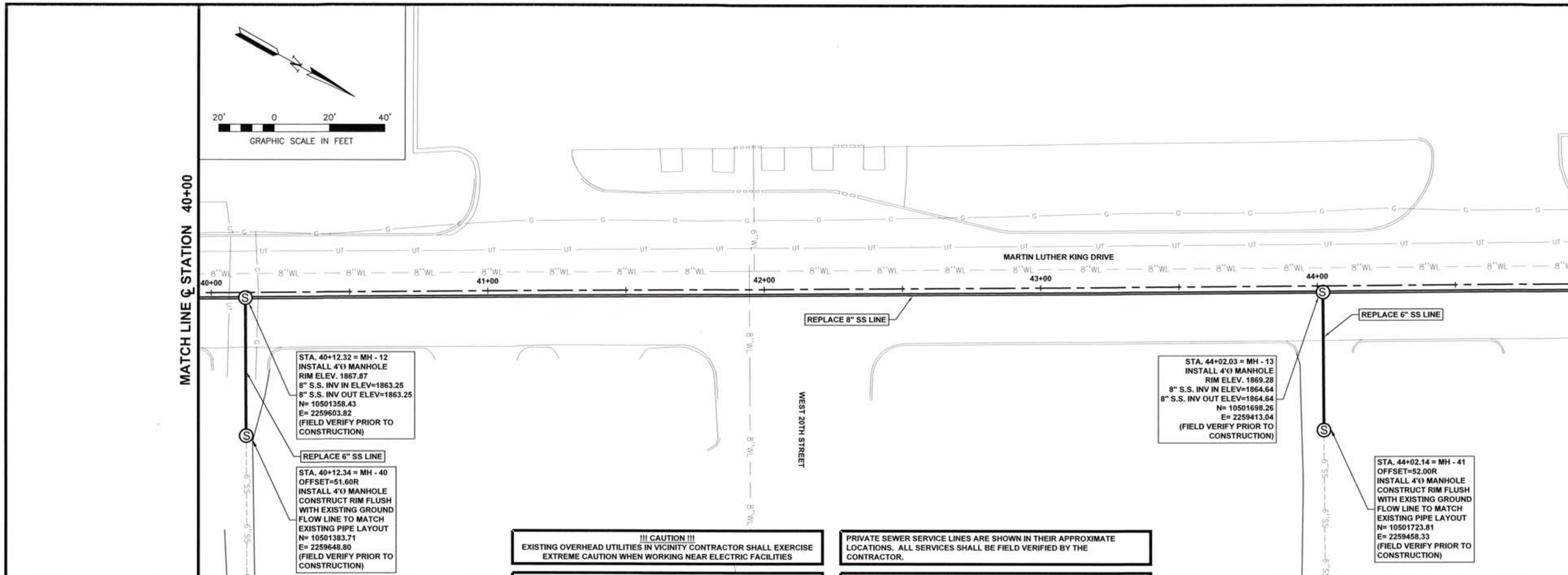
7/21/16
P.E.

SHEET NO. 38

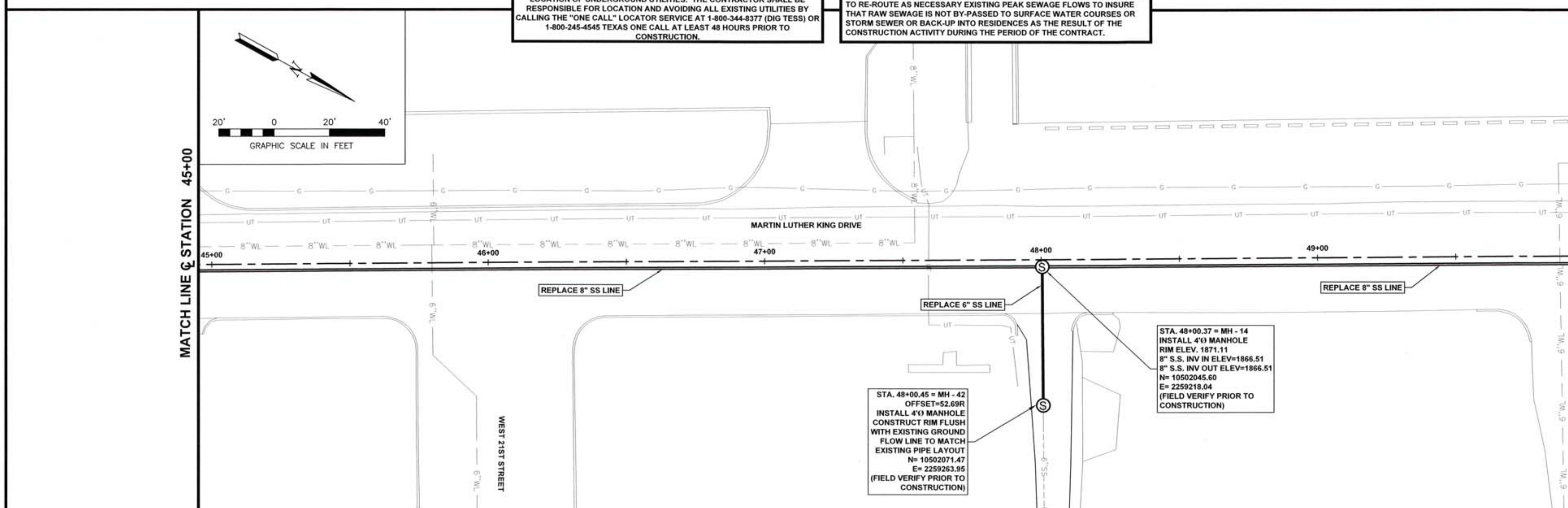


!!! CAUTION !!!
EXISTING OVERHEAD UTILITIES IN VICINITY CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING NEAR ELECTRIC FACILITIES

PRIVATE SEWER SERVICE LINES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. ALL SERVICES SHALL BE FIELD VERIFIED BY THE CONTRACTOR.

!!! WARNING !!!
THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION AND AVOIDING ALL EXISTING UTILITIES BY CALLING THE "ONE CALL" LOCATOR SERVICE AT 1-800-344-8377 (DIG TESS) OR 1-800-245-4545 TEXAS ONE CALL AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL NECESSARY LABOR, SUPERVISION EQUIPMENT, AND MATERIAL NECESSARY TO RE-ROUTE AS NECESSARY EXISTING PEAK SEWAGE FLOWS TO INSURE THAT RAW SEWAGE IS NOT BY-PASSED TO SURFACE WATER COURSES OR STORM SEWER OR BACK-UP INTO RESIDENCES AS THE RESULT OF THE CONSTRUCTION ACTIVITY DURING THE PERIOD OF THE CONTRACT.



LEGEND:

- PROPOSED SEWER LINE
- Ⓢ PROPOSED MAN HOLE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 40+00 to STA. 50+00 - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	150	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	1000	
2.06	02610	Install/Replace Manholes	EA	6	

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA. 22+40 TO STA 44+80.DWG | STA. 40+00 TO 50+00 | 7/15/2016 - 2:34 PM
DRAWING PATH/NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 40+00 TO 50+00

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
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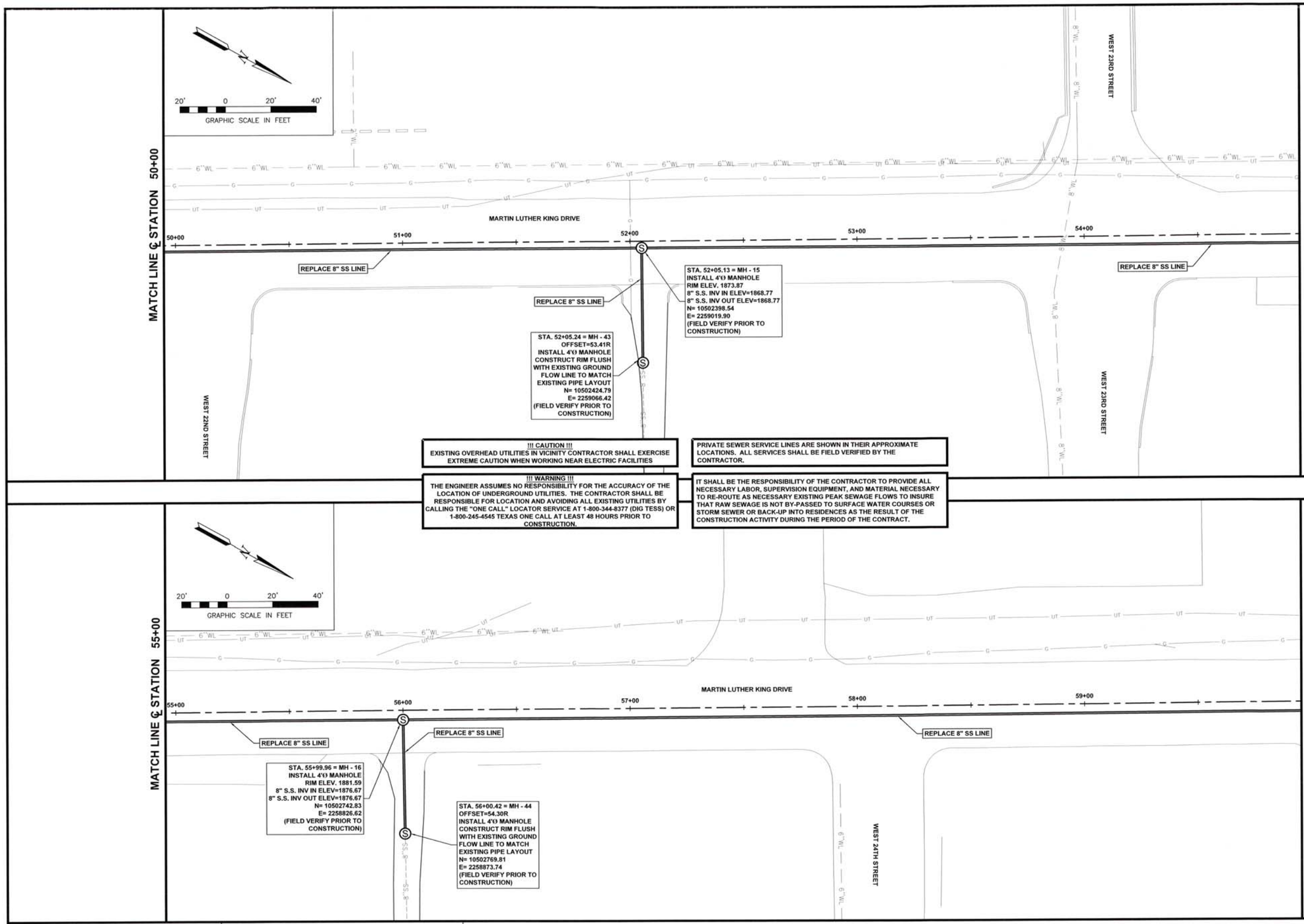
STATE OF TEXAS ★ DAVID A. ALEXANDER 96658 LICENSED PROFESSIONAL ENGINEER 7/14/16

SHEET NO. 39



LEGEND:

- PROPOSED SEWER LINE
- PROPOSED MAN HOLE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 50+00 to STA. 60+00 - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	100	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	1000	
2.06	02610	Install/Replace Manholes	EA	4	

MARK	REVISION	DATE

K:\SA-SEWER MAIN\PROJECTS\SAN0650.07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA 44+80 TO STA 65+53.41.DWG | STA. 50+00 TO 60+00 | 7/15/2016 - 2:40 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 50+00 TO STA. 60+00

SHEET NAME

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME

DRAWN BY	DESIGNED BY	LATEST REVISION	KSA JOB NO
CBS	JWD	7/14/2016	SAN.0650

CP&Y TBPE FIRM #F-1741

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STATE OF TEXAS
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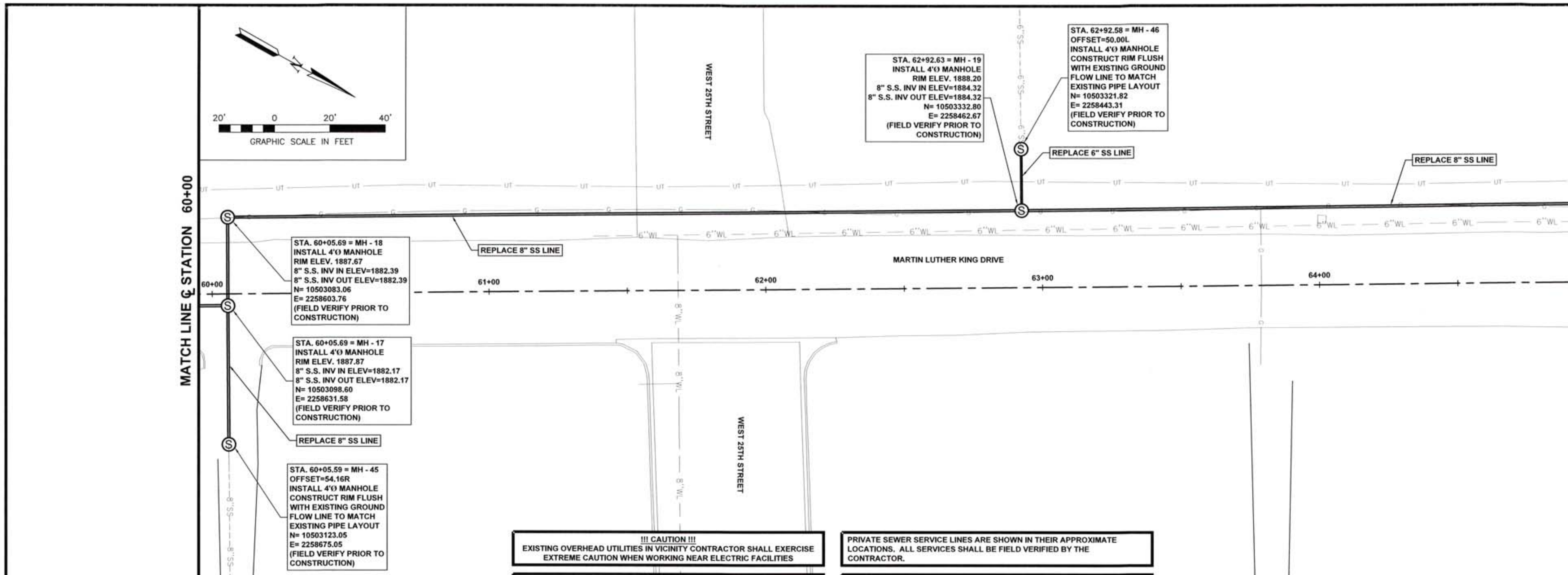
PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
40



!!! CAUTION !!!
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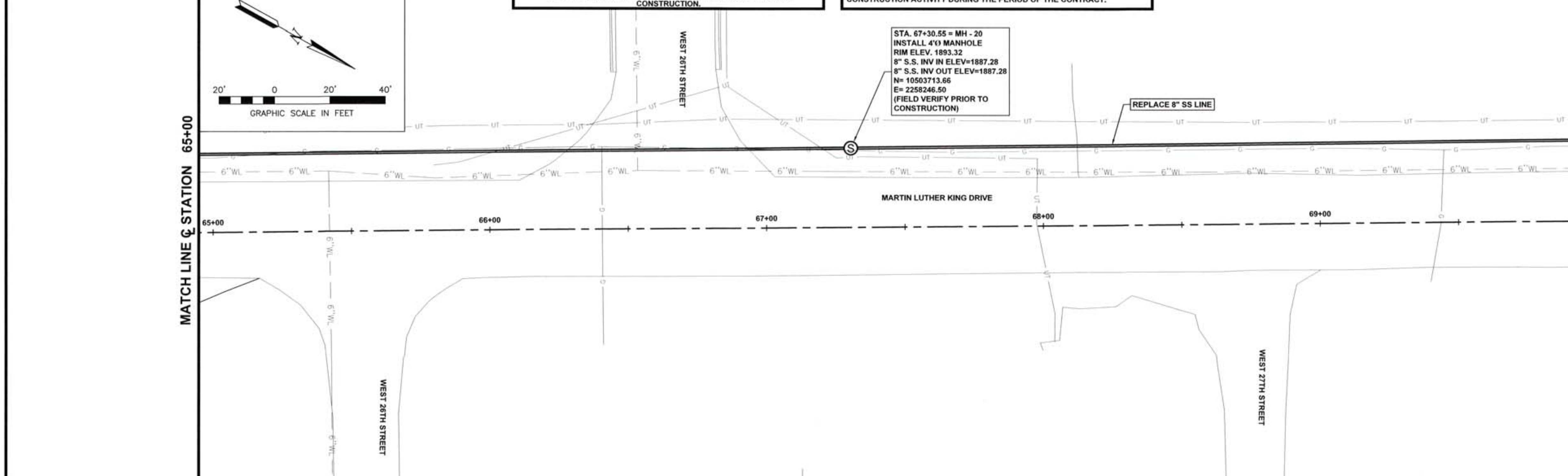

LEGEND:

- PROPOSED SEWER LINE
- PROPOSED MAN HOLE
- EXISTING 6" SANITARY SEWER LINE
- EXISTING 8" SANITARY SEWER LINE
- EXISTING 2" WATER LINE
- EXISTING 4" WATER LINE
- EXISTING 6" WATER LINE
- EXISTING 8" WATER LINE
- EXISTING 12" WATER LINE
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 60+00 to STA. 70+00 - Quantities					
Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	22	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	1072	
2.06	02610	Install/Replace Manholes	EA	6	

MARK | REVISION | DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK SEWER A STA. 44+80 TO STA.65+53.41.DWG | STA. 60+00 TO 70+00 | 7/15/2016 - 2:40 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE SANITARY SEWER LINES STA. 60+00 TO STA. 70+00

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y
TBPE FIRM #F-1741

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DAVID A. ALEXANDER
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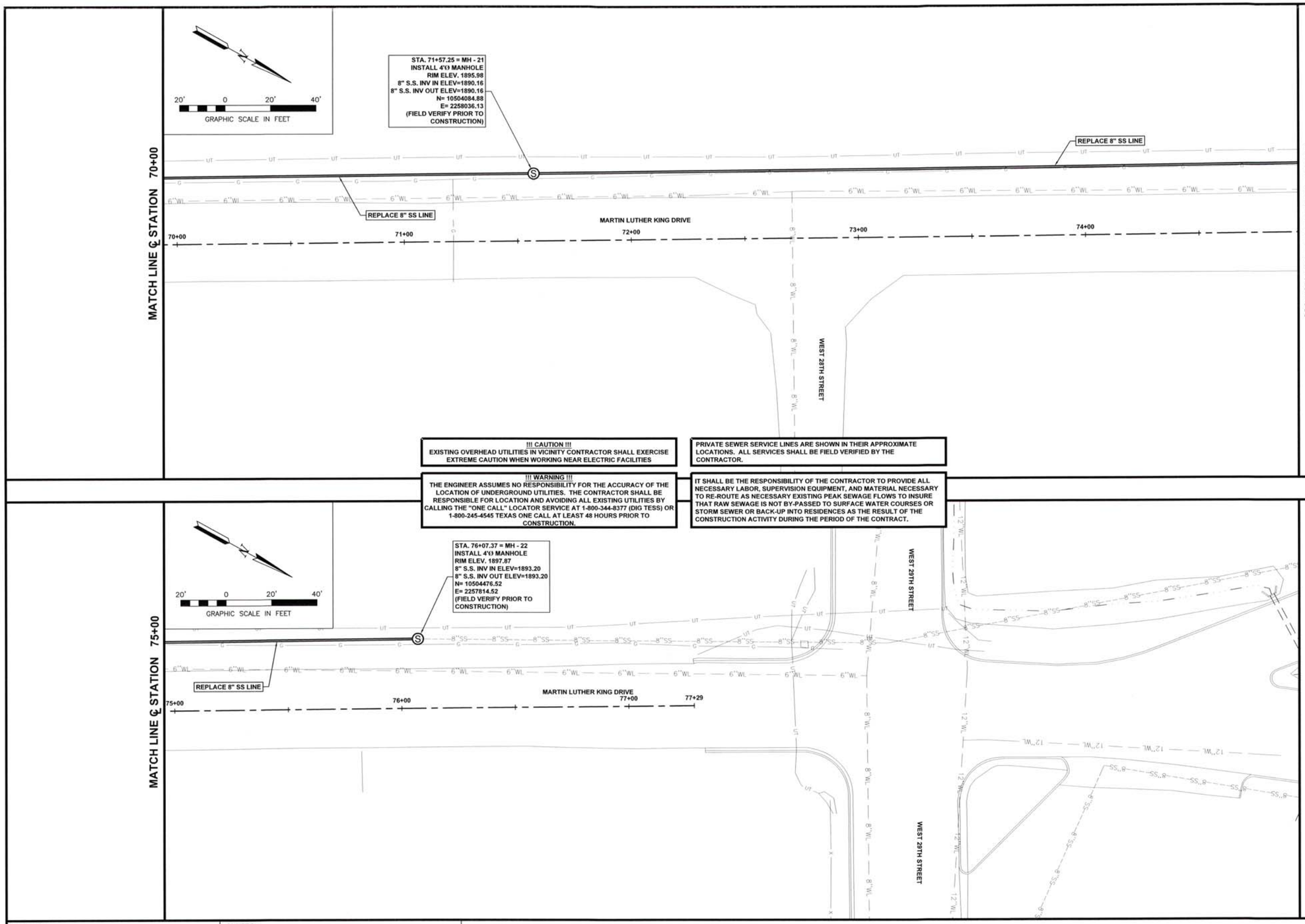
7/21/16

SHEET NO.
41



!!! CAUTION !!!
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LEGEND:

- PROPOSED SEWER LINE
- Ⓢ PROPOSED MAN HOLE
- 6" SS — EXISTING 6" SANITARY SEWER LINE
- 8" SS — EXISTING 8" SANITARY SEWER LINE
- 2" WL — EXISTING 2" WATER LINE
- 4" WL — EXISTING 4" WATER LINE
- 6" WL — EXISTING 6" WATER LINE
- 8" WL — EXISTING 8" WATER LINE
- 12" WL — EXISTING 12" WATER LINE
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE

NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AND SEWER SERVICES PRIOR TO CONSTRUCTION OF PROPOSED SEWER LINE.
2. CONTRACTOR SHALL FIELD VERIFY, REPLACE, AND RECONNECT ALL EXISTING SEWER SERVICES TO ROW.
3. CONTRACTOR TO INSURE THAT MANHOLES ARE FLUSH WITH FINISHED GRADE OF ROADWAY.

Proposed Sewer Lines - STA. 70+00 to STA. 77+29 - Quantities

Item No.	Spec. No.	Description	Units	Estimated Quantity	Actual Quantity
2.02	02731	Replace 6" Sanitary Sewer with 6" SDR 26 PVC Pipe (All Depths)	LF	0	
2.03	02731	Replace 8" Sanitary Sewer with 8" SDR 26 PVC Pipe (All Depths)	LF	608	
2.06	02610	Install/Replace Manholes	EA	2	

MARK	REVISION	DATE

I:\KSA-SA-SERVER1\MAIN I\PROJECTS\SAN\508.07 CAD\02 PRODUCTION\SHEETS\MARTIN LUTHER KING DRIVE STA.65+53.41 DWG | STA.70+00 TO 80+00 | 7/15/2016 - 2:40 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE
SANITARY SEWER LINES
STA. 70+00 TO STA. 80+00
SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX
PROJECT NAME

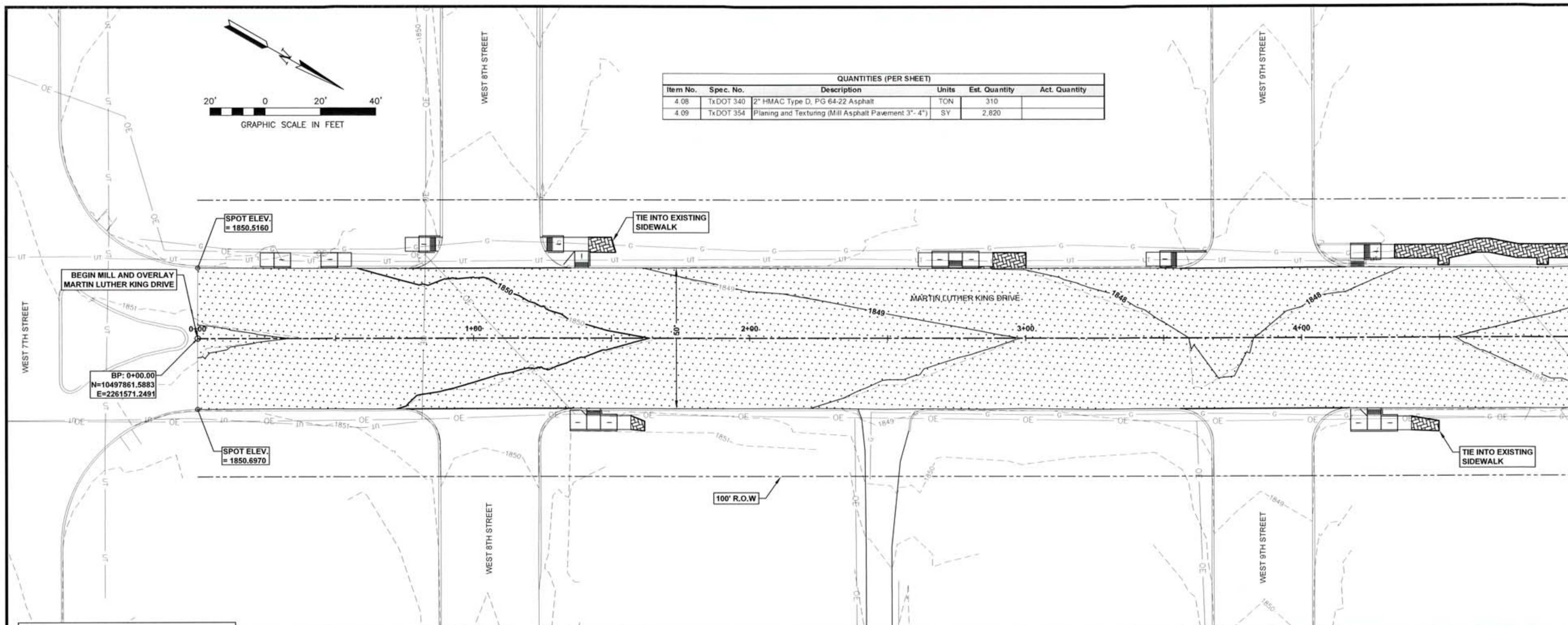
DRAWN BY	CBS
DESIGNED BY	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN 058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

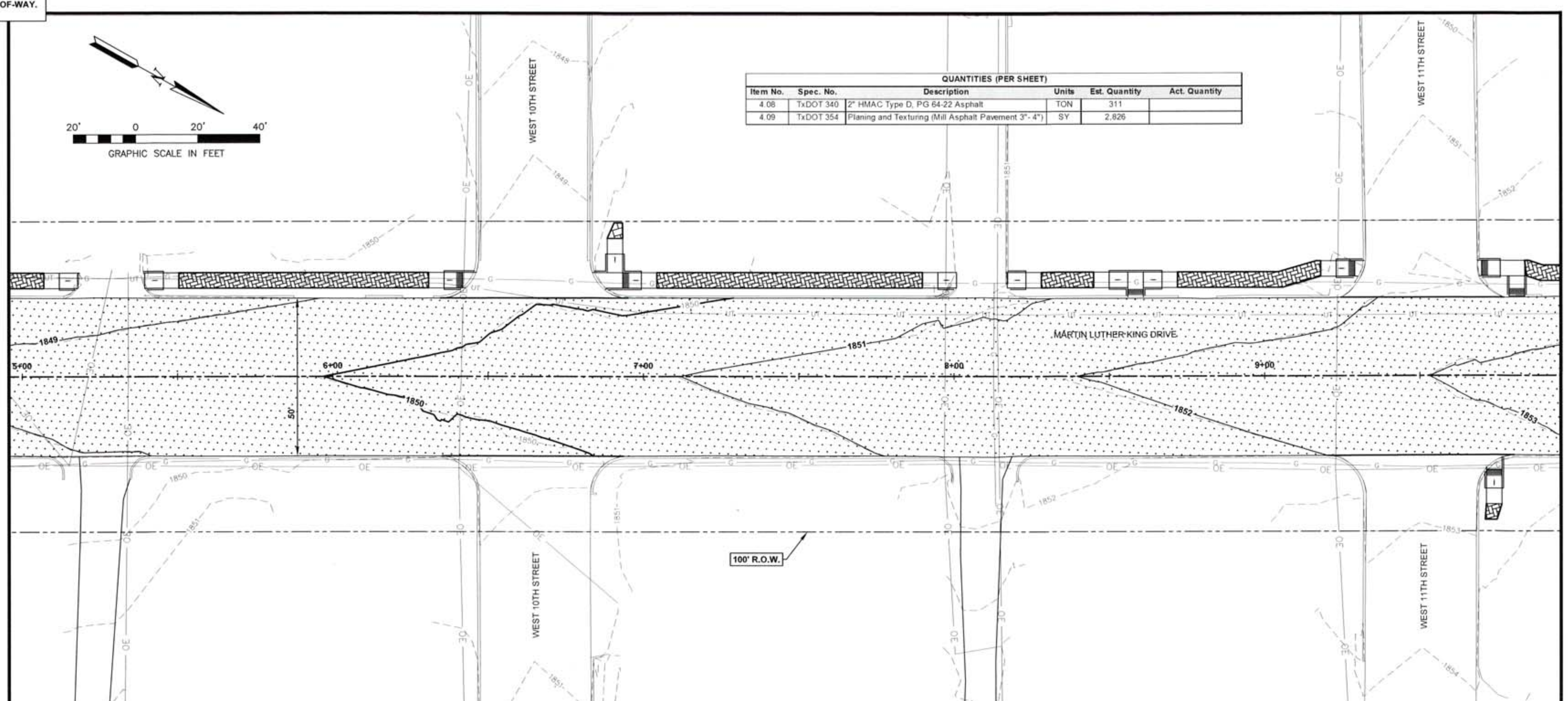
STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
42



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	310	
4.09	TxDOT 354	Planing and Texturing (Mill Asphalt Pavement 3"- 4")	SY	2,820	

NOTE:
MATCH NEW DRIVEWAY/INTERSECTION ELEVATION WITH THAT OF EXISTING GRADES AT RIGHT-OF-WAY.



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	311	
4.09	TxDOT 354	Planing and Texturing (Mill Asphalt Pavement 3"- 4")	SY	2,826	

LEGEND

- 1850 EXISTING CONTOURS
- 1850 PROPOSED CONTOURS
- OE EXISTING OVERHEAD ELECTRIC
- G EXISTING GAS LINE
- UT EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED MILL AND OVERLAY

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. (0+00 TO 10+00) STA (10+00 TO 20+00).DWG | STA 0+00 TO STA. 10+00 | 7/15/2016 - 3:00 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE PLAN VIEW STA. 0+00 TO STA. 10+00

PROJECT NAME:
CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
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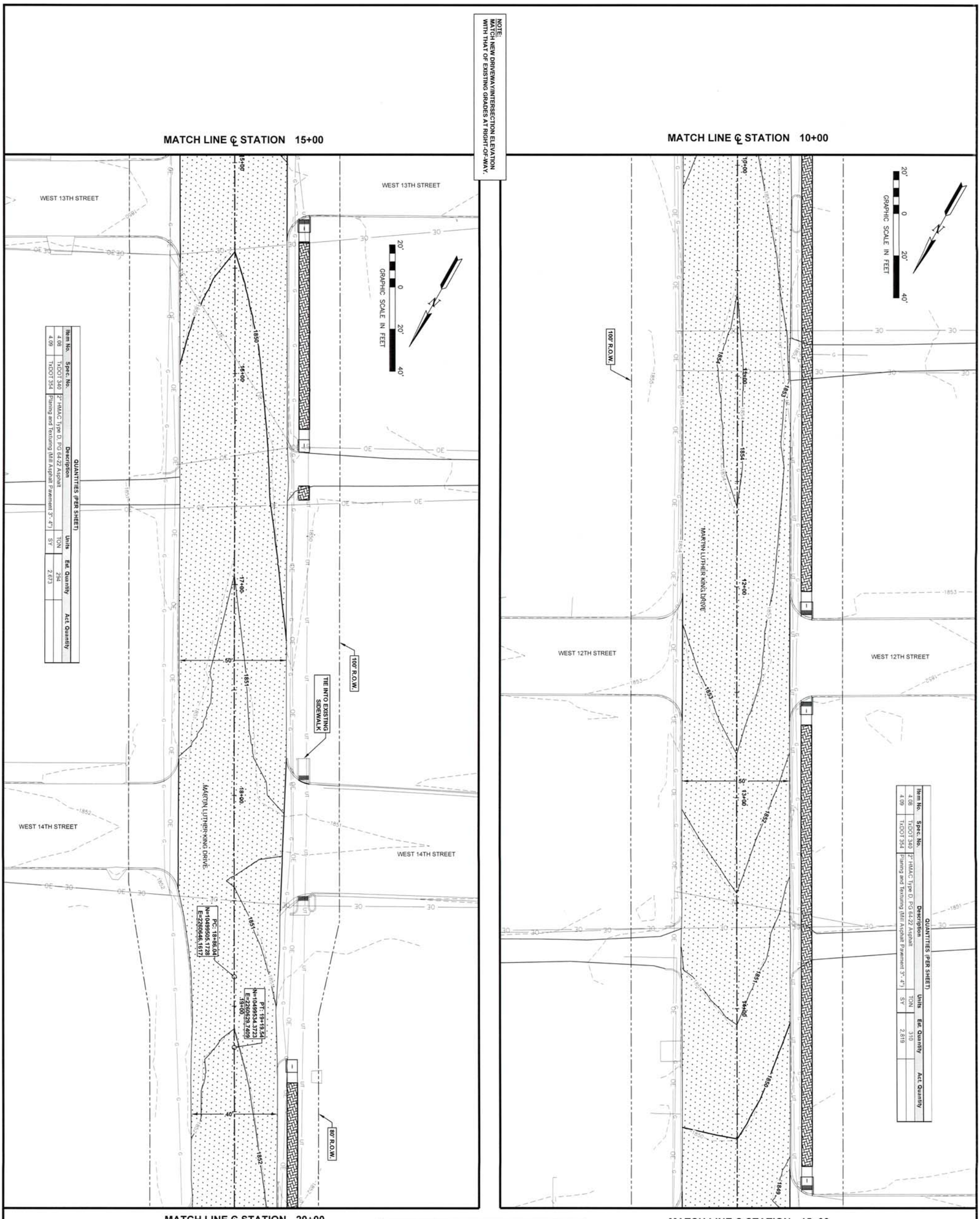
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/21/16

SHEET NO.
43



SHEET NO. 44

DAVID A. ALEXANDER, 99658, LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
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CP&Y
TBPE FIRM #F-1741

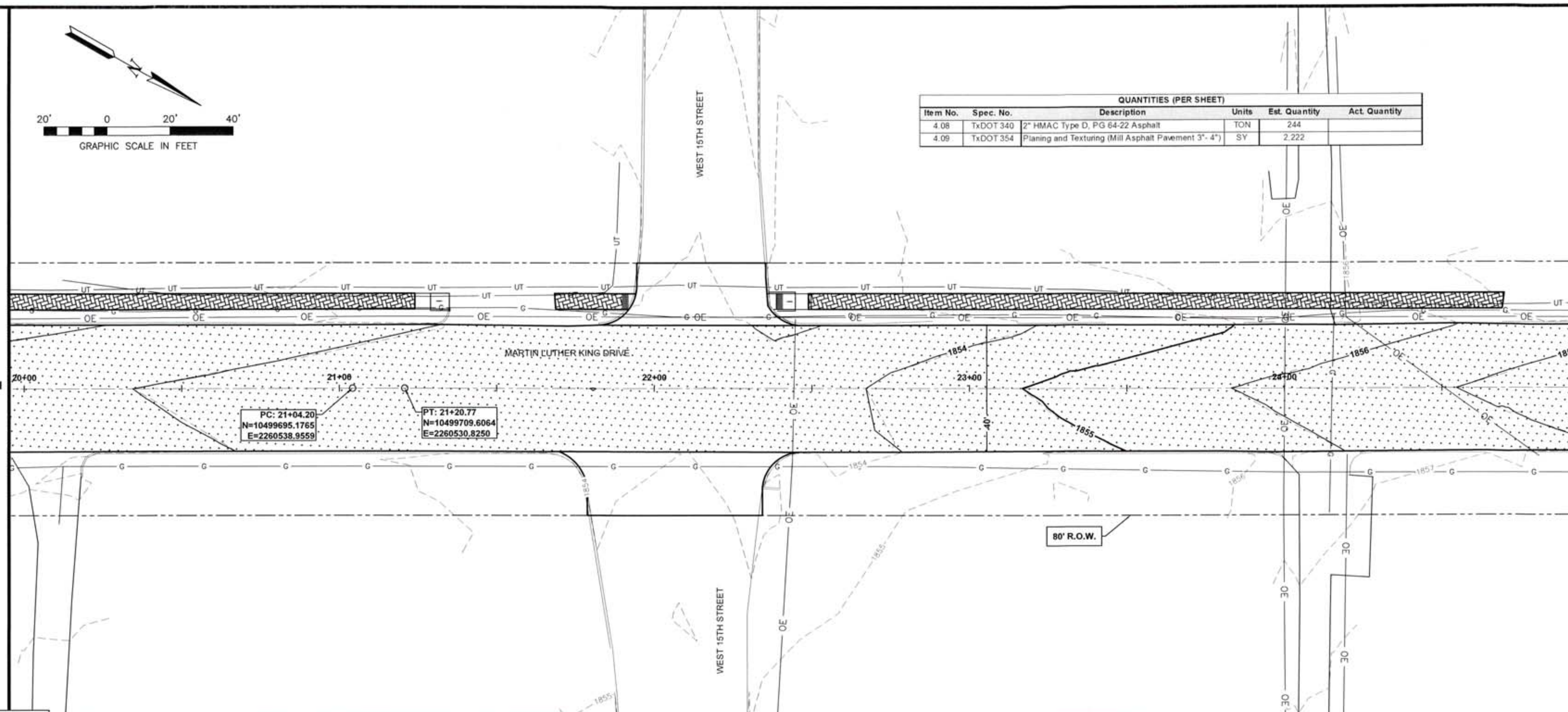
DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO.:	SAN 058

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX
PROJECT NAME

MARTIN LUTHER KING DRIVE
PLAN VIEW
STA. 10+00 TO STA. 20+00
SHEET NAME

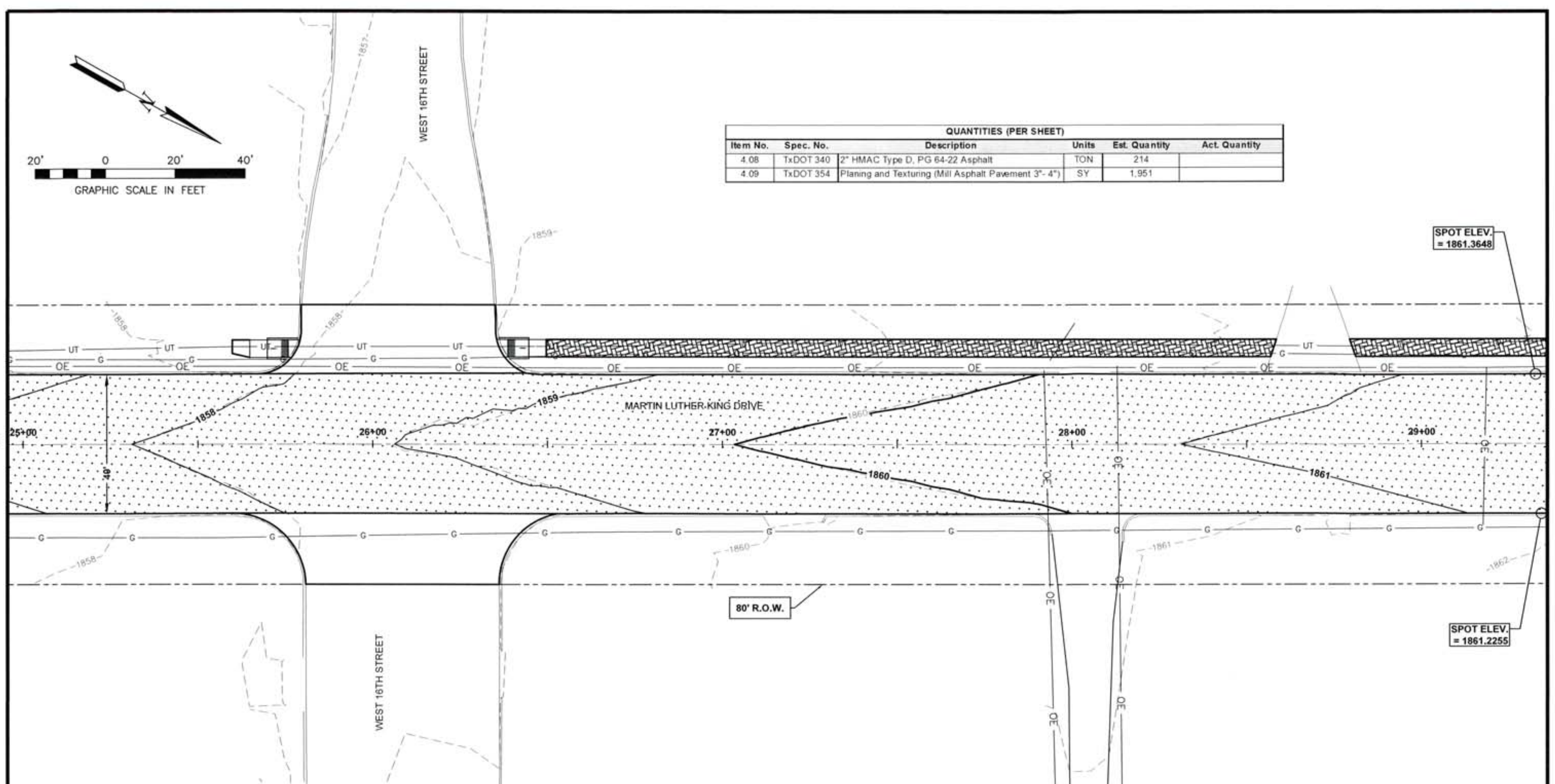
MARK	REVISION	DATE

I:\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. (0+00 TO 10+00) STA. (10+00 TO 20+00).DWG | STA.10+00 TO STA. 20+00 | 7/15/2016 - 2:09 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	244	
4.09	TxDOT 354	Planing and Texturing (Mill Asphalt Pavement 3"- 4")	SY	2,222	

NOTE:
MATCH NEW DRIVEWAY/INTERSECTION ELEVATION WITH THAT OF EXISTING GRADES AT RIGHT-OF-WAY.



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	214	
4.09	TxDOT 354	Planing and Texturing (Mill Asphalt Pavement 3"- 4")	SY	1,951	

LEGEND

- 1850 EXISTING CONTOURS
- 1850 PROPOSED CONTOURS
- OE EXISTING OVERHEAD ELECTRIC
- G EXISTING GAS LINE
- UT EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED MILL AND OVERLAY

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. 20+00 TO STA.30+00.DWG | STA. 20+00 TO STA. 29+40 | 7/15/2016 - 3:01 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 20+00 TO STA. 29+40

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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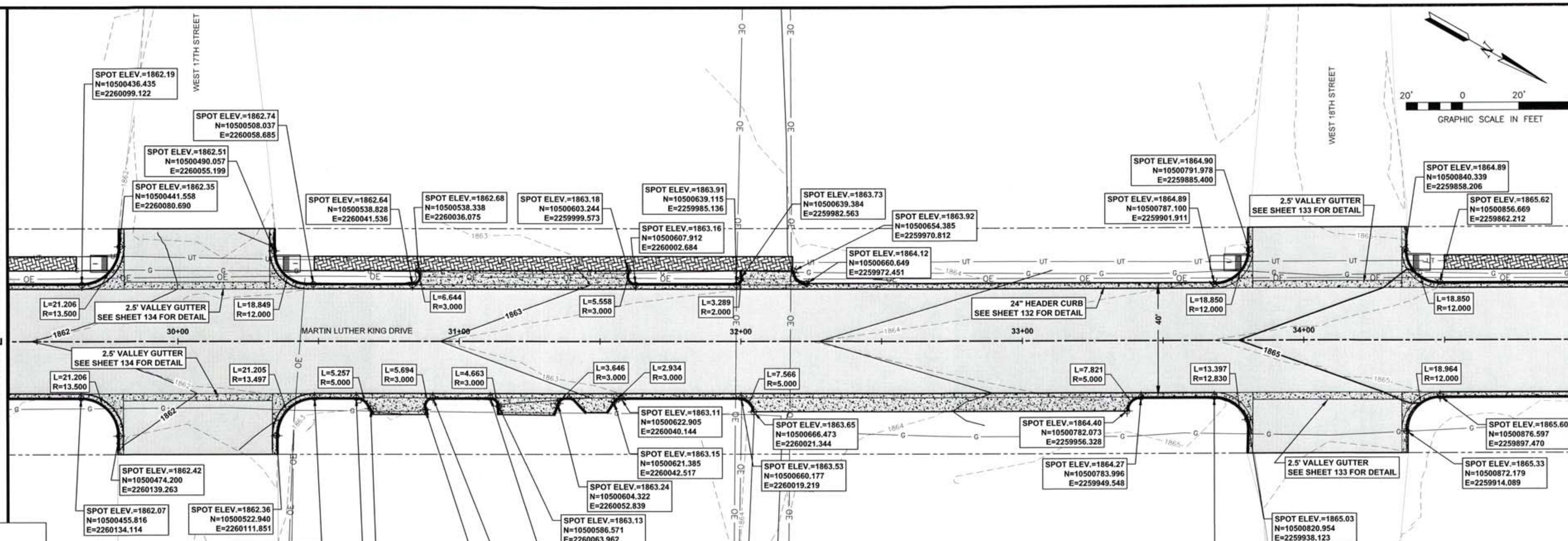
www.ksaeng.com

STATE OF TEXAS DAVID A. ALEXANDER 96658 LICENSED PROFESSIONAL ENGINEER 7/21/16

SHEET NO. 45

LEGEND

- 1850 — EXISTING CONTOURS
- 1850 — PROPOSED CONTOURS
- OE — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

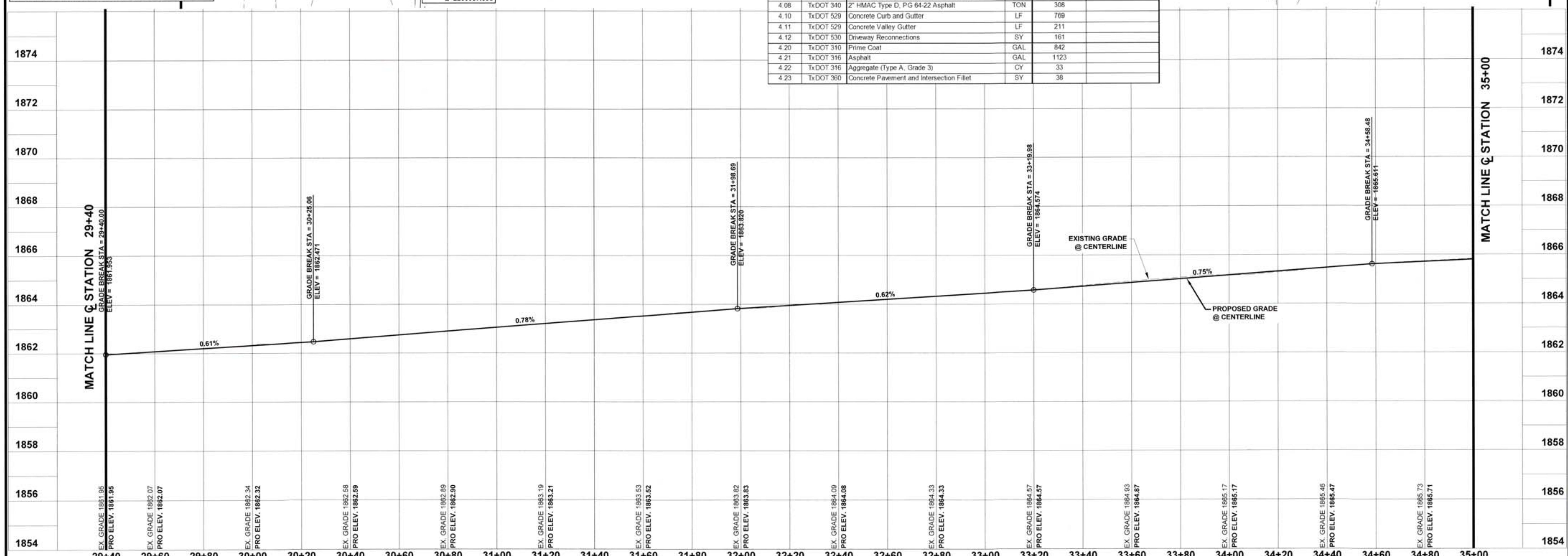


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,807	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	3,206	
4.03	TxDOT 110	Unclassified Excavation	CY	9	
4.04	TxDOT 134	Embankment	CY	5	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	3,206	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	80	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	3,206	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	308	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	769	
4.11	TxDOT 529	Concrete Valley Gutter	LF	211	
4.12	TxDOT 530	Driveway Reconnections	SY	161	
4.20	TxDOT 310	Prime Coat	GAL	842	
4.21	TxDOT 316	Asphalt	GAL	1123	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	33	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	38	



MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 29+40 TO STA. 35+00

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN 058

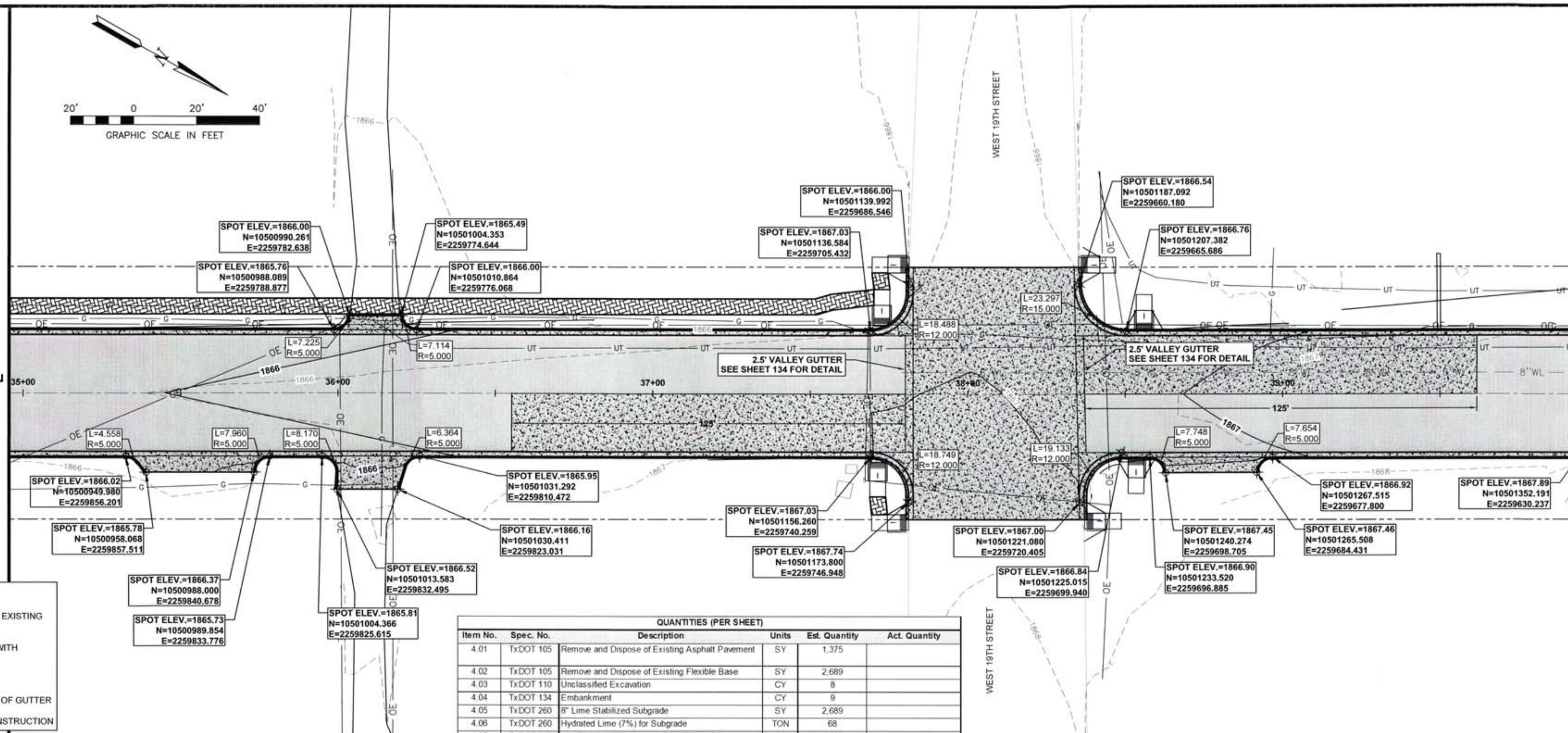
KSA — TBPE Firm Registration No. F-1356, 58 Buick Street, San Angelo, Texas 76901, T. 325-947-1555 F. 325-947-1559, www.ksaeng.com
CP&Y — TBPE FIRM #F-1741

STATE OF TEXAS — DAVID A. ALEXANDER — 96658 — LICENSED PROFESSIONAL ENGINEER

SHEET NO. 46

LEGEND

- - -1850- - - EXISTING CONTOURS
—1850— PROPOSED CONTOURS
—OE— EXISTING OVERHEAD ELECTRIC
—G— EXISTING GAS LINE
—UT— EXISTING TELEPHONE LINE
- - - - RIGHT OF WAY LINE
PROPOSED SIDEWALK
PROPOSED CONCRETE PAVEMENT
PROPOSED HMAC PAVEMENT

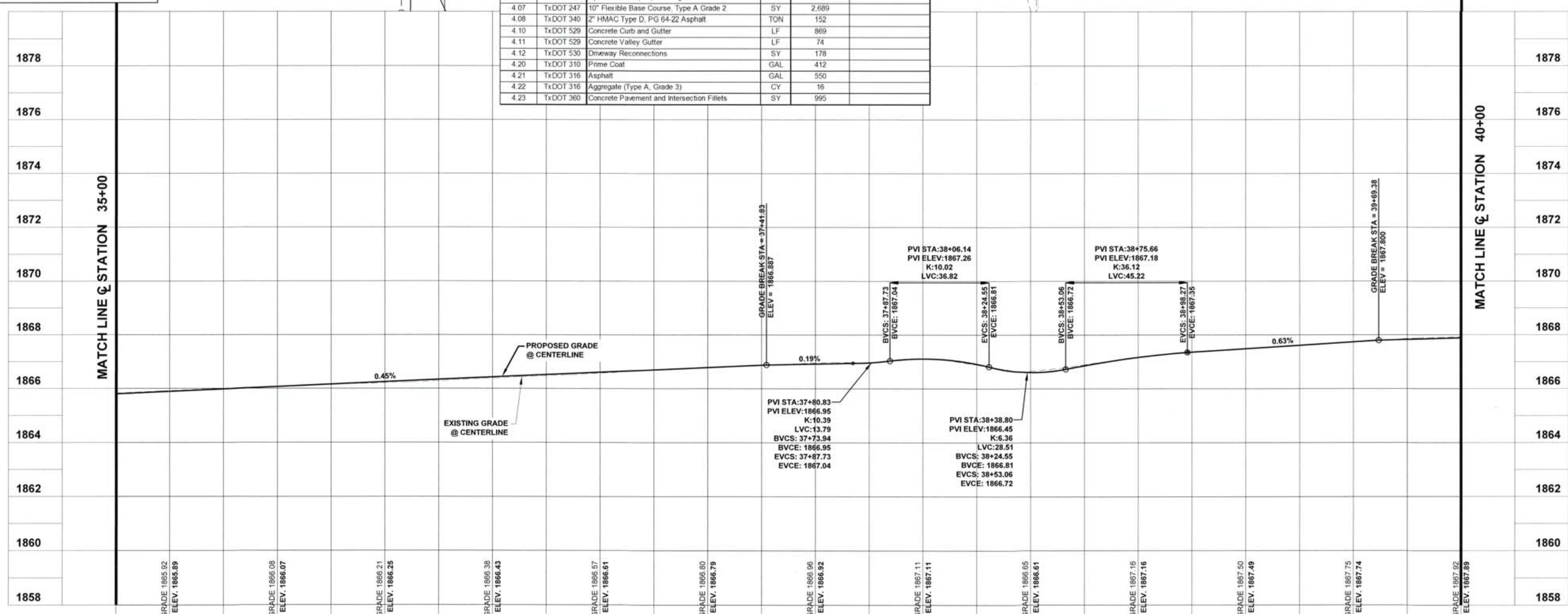


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	1,375	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,689	
4.03	TxDOT 110	Unclassified Excavation	CY	8	
4.04	TxDOT 134	Embankment	CY	9	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,689	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	68	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,689	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	152	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	869	
4.11	TxDOT 529	Concrete Valley Gutter	LF	74	
4.12	TxDOT 530	Driveway Reconnections	SY	178	
4.20	TxDOT 310	Prime Coat	GAL	412	
4.21	TxDOT 316	Asphalt	GAL	550	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	16	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillets	SY	995	



CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME:

MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 35+00 TO STA. 40+00

SHEET NAME:

DRAWN BY	DESIGNED BY	LATEST REVISION	KSA JOB NO
CBS	JWD	7/14/2016	SAN 058

MARK	REVISION	DATE

KSA CP&Y TBPE FIRM #F-1741

TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/21/16

SHEET NO. **47**

LEGEND

- 1850 — EXISTING CONTOURS
- 1850 — PROPOSED CONTOURS
- OE — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

20' 0 20' 40'
GRAPHIC SCALE IN FEET

MATCH LINE ℄ STATION 40+00

MATCH LINE ℄ STATION 45+00

SPOT ELEV.=1866.90 N=10501412.290 E=2259528.945
SPOT ELEV.=1867.08 N=10501446.936 E=2259509.494
SPOT ELEV.=1867.55 N=10501455.884 E=2259508.124
SPOT ELEV,=1868.17 N=10501525.842 E=2259469.354
8' SAW TOOTH CURB SEE SHEET 131 FOR DETAIL
SPOT ELEV.=1868.67 N=10501589.588 E=2259451.115
SPOT ELEV.=1868.50 N=10501710.307 E=2259352.129
SPOT ELEV.=1868.92 N=10501749.980 E=2259330.356
SPOT ELEV.=1869.47 N=10501701.832 E=2259388.101
SPOT ELEV.=1867.96 N=10501406.723 E=2259553.776
8' SAW TOOTH CURB SEE SHEET 132 FOR DETAIL
L=7.944 R=13.607
L=3.451 R=14.500
L=26.704 R=17.000
L=2.435 R=10.000
L=39.270 R=25.000
L=40.841 R=26.000
40+00 41+00 42+00 43+00 44+00
L=6.943 R=5.000
L=7.993 R=5.000
L=7.854 R=5.000
L=5.321 R=5.000
L=7.854 R=5.000
L=18.525 R=12.000
L=18.850 R=12.000
L=6.414 R=5.000
L=7.854 R=5.000
L=7.854 R=5.000
SPOT ELEV.=1867.55 N=10501380.668 E=2259614.276
SPOT ELEV.=1867.98 N=10501379.670 E=2259624.013
SPOT ELEV.=1868.15 N=10501423.808 E=2259590.057
SPOT ELEV.=1867.91 N=10501430.667 E=2259592.064
SPOT ELEV.=1868.07 N=10501456.214 E=2259577.757
SPOT ELEV.=1867.90 N=10501458.058 E=2259570.828
SPOT ELEV.=1868.01 N=10501469.698 E=2259570.028
SPOT ELEV.=1868.16 N=10501462.264 E=2259568.467
SPOT ELEV.=1868.56 N=10501523.343 E=2259549.624
SPOT ELEV.=1868.10 N=10501506.251 E=2259543.773
SPOT ELEV.=1867.61 N=10501496.716 E=2259549.126
SPOT ELEV.=1868.25 N=10501494.804 E=2259555.933
SPOT ELEV.=1868.17 N=10501577.398 E=2259503.831
SPOT ELEV.=1868.43 N=10501571.834 E=2259522.387
2.5' VALLEY GUTTER SEE SHEET 134 FOR DETAIL
SPOT ELEV.=1869.33 N=10501694.566 E=2259438.052
SPOT ELEV.=1869.25 N=10501702.314 E=2259439.436
SPOT ELEV.=1869.23 N=10501719.643 E=2259429.708
SPOT ELEV.=1868.97 N=10501721.555 E=2259422.900
SPOT ELEV.=1869.68 N=10501760.937 E=2259400.791
SPOT ELEV.=1869.68 N=10501767.783 E=2259402.773
WEST 20TH STREET

NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,180	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,568	
4.03	TxDOT 110	Unclassified Excavation	CY	20	
4.04	TxDOT 134	Embankment	CY	4	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,568	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	68	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,568	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	240	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	856	
4.11	TxDOT 529	Concrete Valley Gutter	LF	52	
4.12	TxDOT 530	Driveway Reconnections	SY	560	
4.20	TxDOT 310	Prime Coat	GAL	654	
4.21	TxDOT 316	Asphalt	GAL	872	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	26	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	9	

1880 1878 1876 1874 1872 1870 1868 1866 1864 1862 1860 1859

MATCH LINE ℄ STATION 40+00

MATCH LINE ℄ STATION 45+00

GRADE BREAK STA = 40+40.00 ELEV = 1868.000
GRADE BREAK STA = 40+94.97 ELEV = 1868.095
GRADE BREAK STA = 42+07.80 ELEV = 1867.978
GRADE BREAK STA = 43+60.00 ELEV = 1869.120
EXISTING GRADE @ CENTERLINE
PROPOSED GRADE @ CENTERLINE
0.28% 0.17% -0.10% 0.75%

EX. GRADE 1867.92 PRO ELEV. 1867.89
EX. GRADE 1867.99 PRO ELEV. 1868.00
EX. GRADE 1868.07 PRO ELEV. 1868.07
EX. GRADE 1868.06 PRO ELEV. 1868.07
EX. GRADE 1868.00 PRO ELEV. 1868.03
EX. GRADE 1867.97 PRO ELEV. 1867.99
EX. GRADE 1868.25 PRO ELEV. 1868.22
EX. GRADE 1868.59 PRO ELEV. 1868.52
EX. GRADE 1868.90 PRO ELEV. 1868.82
EX. GRADE 1869.15 PRO ELEV. 1869.12
EX. GRADE 1869.36 PRO ELEV. 1869.30
EX. GRADE 1869.49 PRO ELEV. 1869.49
EX. GRADE 1869.67 PRO ELEV. 1869.67

MARK	REVISION	DATE

K:\SA-SERVER1\MAIN\PROJECTS\SAN\05\05.07 CAD\02 PROJECT\00 SHEETS\ MLK STREET STA. 40+00 TO STA.45+00.DWG | STA. 40+00 TO STA. 45+00 | 7/15/2016 - 3:05 PM | PLOTTING PATH/NAME | LAYOUT | PLOT DATE - 1:36E

MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 40+00 TO STA. 45+00

SHEET NAME

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME

DRAWN BY	CBS
DESIGNED BY	JWD
LATEST REVISION	7/14/2016
KSA JOB NO.	SAN 05B

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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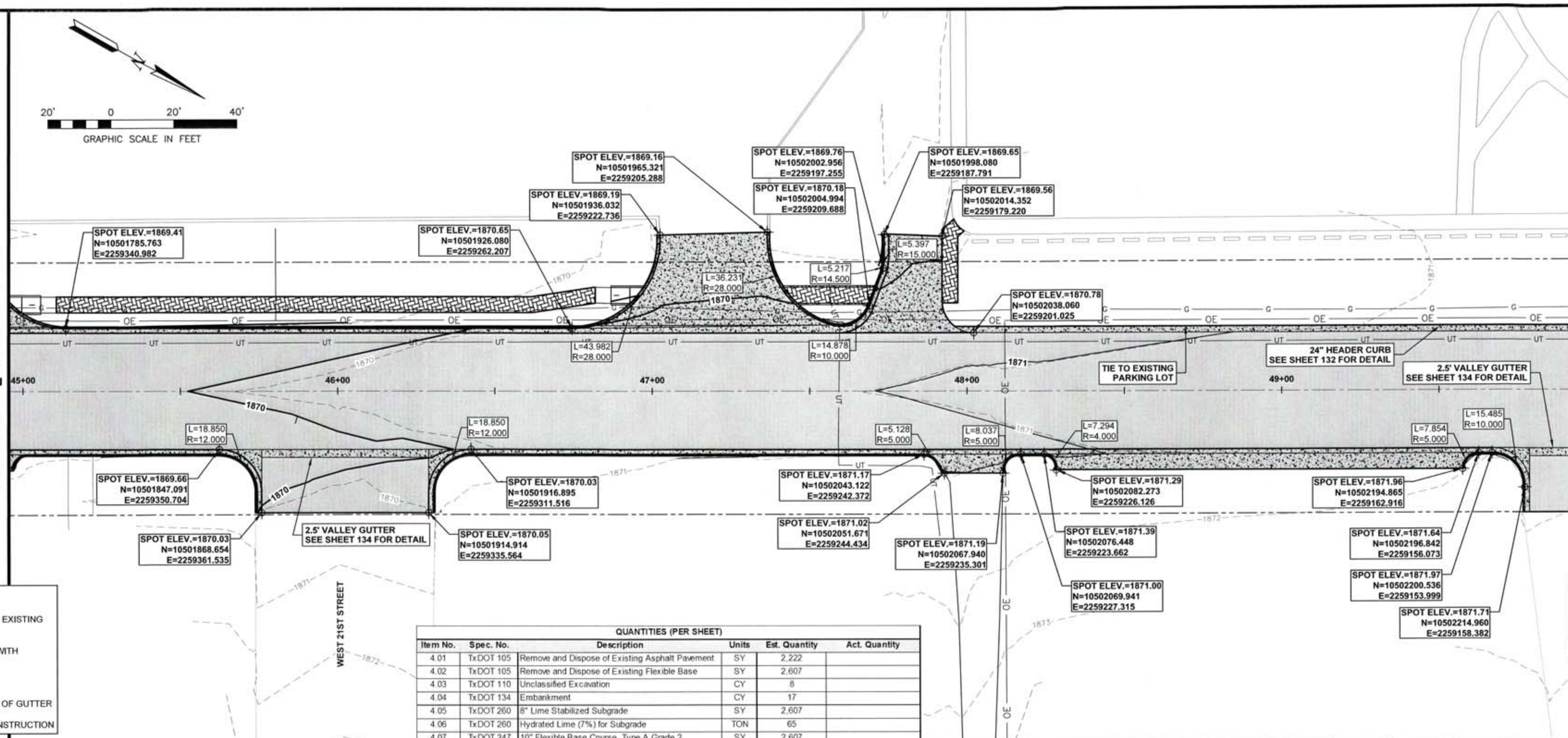
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/14/16
P.E.

SHEET NO.
48

LEGEND

- ---1850--- EXISTING CONTOURS
- — 1850 — PROPOSED CONTOURS
- — OE — EXISTING OVERHEAD ELECTRIC
- — G — EXISTING GAS LINE
- — UT — EXISTING TELEPHONE LINE
- — - — RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

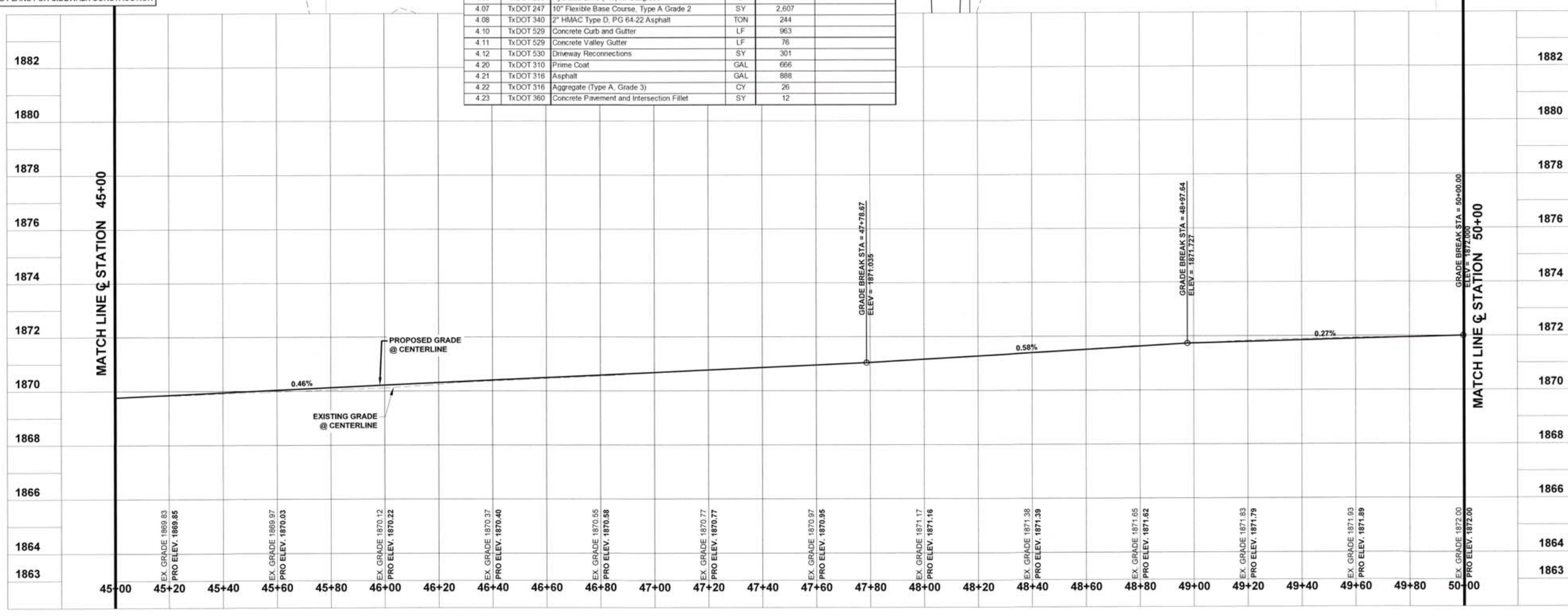


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,222	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,607	
4.03	TxDOT 110	Unclassified Excavation	CY	8	
4.04	TxDOT 134	Embankment	CY	17	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,607	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	65	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,607	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	244	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	963	
4.11	TxDOT 529	Concrete Valley Gutter	LF	76	
4.12	TxDOT 530	Driveway Reconnections	SY	301	
4.20	TxDOT 310	Prime Coat	GAL	666	
4.21	TxDOT 316	Asphalt	GAL	888	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	26	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	12	



CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME:

MARTIN LUTHER KING DRIVE
PLAN AND PROFILE
STA. 45+00 TO STA. 50+00

SHEET NAME:

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. 45+00 TO STA 50+00 DWG | STA. 45+00 TO STA. 50+00 | 7/15/2016 - 3:39 PM
DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

CP&Y
TBPE FIRM #F-1741

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/14/16

SHEET NO.
49

LEGEND

- 1850 EXISTING CONTOURS
- 1850 PROPOSED CONTOURS
- OE EXISTING OVERHEAD ELECTRIC
- G EXISTING GAS LINE
- UT EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

GRAPHIC SCALE IN FEET (20' 0 20' 40')

MATCH LINE ℄ STATION 50+00

MATCH LINE ℄ STATION 55+00

WEST 22ND STREET

WEST 23RD STREET

SPOT ELEV.=1871.93 N=10502263.707 E=2259131.015

SPOT ELEV.=1872.03 N=10502267.971 E=2259116.141

SPOT ELEV.=1872.93 N=10502341.793 E=2259023.090

SPOT ELEV.=1873.53 N=10502340.072 E=2259029.217

SPOT ELEV.=1873.28 N=10502317.793 E=2259041.725

SPOT ELEV.=1872.32 N=10502307.941 E=2259042.137

SPOT ELEV.=1873.46 N=10502364.501 E=2259010.342

SPOT ELEV.=1873.87 N=10502370.627 E=2259012.063

SPOT ELEV.=1874.26 N=10502400.927 E=2258995.053

SPOT ELEV.=1874.66 N=10502402.663 E=2258988.952

SPOT ELEV.=1876.52 N=10502524.129 E=2258926.460

SPOT ELEV.=1876.34 N=10502517.282 E=2258924.479

SPOT ELEV.=1876.97 N=10502535.493 E=2258879.658

SPOT ELEV.=1876.81 N=10502560.003 E=2258865.670

SPOT ELEV.=1878.87 N=10502608.995 E=2258878.816

TIE TO EXISTING PARKING LOT

24" HEADER CURB SEE SHEET 132 FOR DETAIL

2.5' VALLEY GUTTER SEE SHEET 134 FOR DETAIL

L=6.604 R=9.500

L=17.127 R=11.000

L=5.665 R=3.000

L=7.213 R=3.000

L=8.049 R=5.000

L=5.487 R=5.000

L=4.123 R=2.000

L=3.142 R=2.000

L=14.685 R=10.000

L=7.854 R=5.000

L=53.068 R=35.123

L=54.978 R=35.000

L=15.708 R=10.000

SPOT ELEV.=1873.39 N=10502347.205 E=2259071.659

SPOT ELEV.=1873.31 N=10502351.878 E=2259075.023

SPOT ELEV.=1873.26 N=10502368.241 E=2259065.836

SPOT ELEV.=1872.97 N=10502367.447 E=2259060.294

SPOT ELEV.=1873.43 N=10502396.642 E=2259043.904

SPOT ELEV.=1873.61 N=10502403.541 E=2259045.988

SPOT ELEV.=1873.76 N=10502424.206 E=2259031.127

SPOT ELEV.=1873.77 N=10502420.777 E=2259031.032

SPOT ELEV.=1873.79 N=10502420.737 E=2259036.334

SPOT ELEV.=1876.02 N=10502528.753 E=2258972.436

SPOT ELEV.=1875.94 N=10502529.339 E=2258969.408

SPOT ELEV.=1876.88 N=10502547.175 E=2258959.395

SPOT ELEV.=1877.06 N=10502561.890 E=2258964.360

SPOT ELEV.=1878.30 N=10502610.566 E=2258937.033

SPOT ELEV.=1878.51 N=10502613.640 E=2258922.081

SPOT ELEV.=1878.71 N=10502621.777 E=2258917.512

SPOT ELEV.=1878.81 N=10502628.845 E=2258919.888

SPOT ELEV.=1878.93 N=10502647.018 E=2258909.076

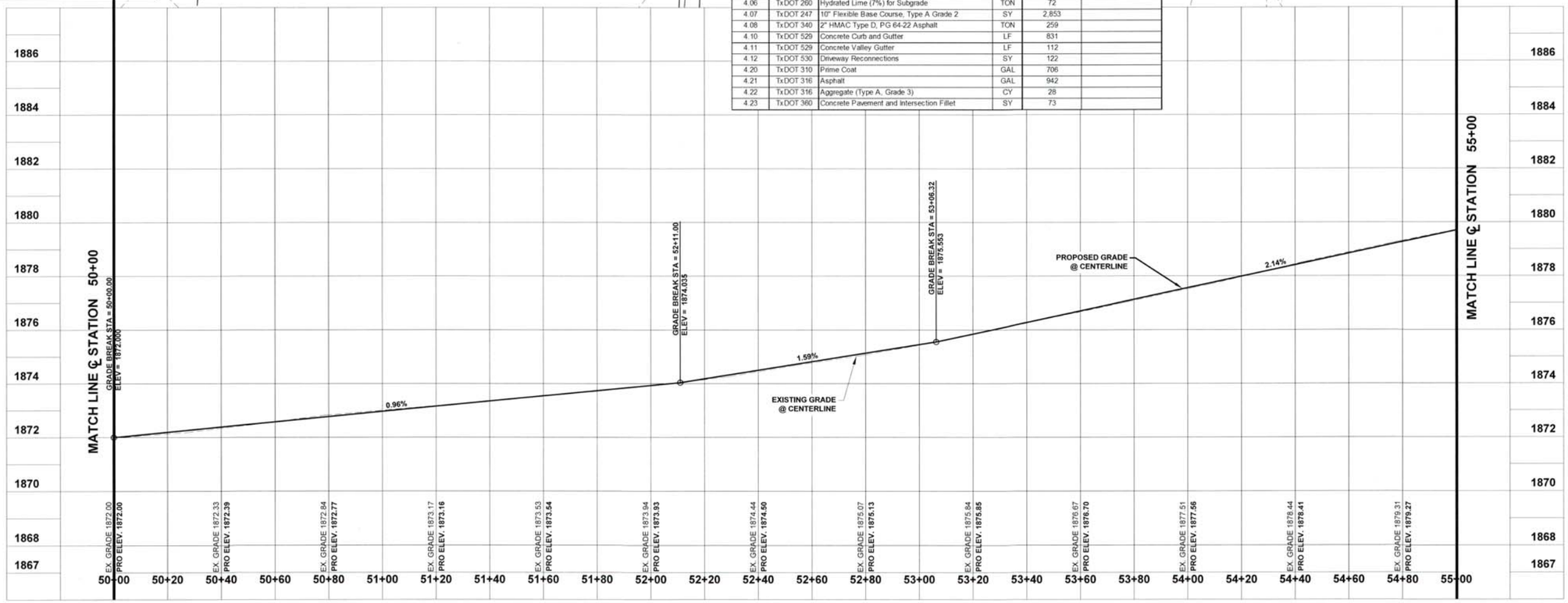
SPOT ELEV.=1878.94 N=10502648.739 E=2258902.949

NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,356	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,853	
4.03	TxDOT 110	Unclassified Excavation	CY	8	
4.04	TxDOT 134	Embankment	CY	16	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,853	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	72	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,853	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	259	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	831	
4.11	TxDOT 529	Concrete Valley Gutter	LF	112	
4.12	TxDOT 530	Driveway Reconnections	SY	122	
4.20	TxDOT 310	Prime Coat	GAL	706	
4.21	TxDOT 316	Asphalt	GAL	942	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	28	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	73	



MARK	REVISION	DATE

H:\KSA-SERVER\MAIN\PROJECTS\SAN\2016\07 CAD\02 PROJECT\05 SHEETS\ MLK STREET | STA. 50+00 TO STA.55+00.DWG | STA. 50+00 TO STA. 55+00 | 7/15/2016 - 3:08 PM

DRAWING PATH/NAME - LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE
PLAN AND PROFILE
STA. 50+00 TO STA. 55+00

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	DESIGNED BY:	LATEST REVISION	KSA JOB NO.
CBS	JWD	7/14/2016	SAN 058

C&P TBPE FIRM #F-1741

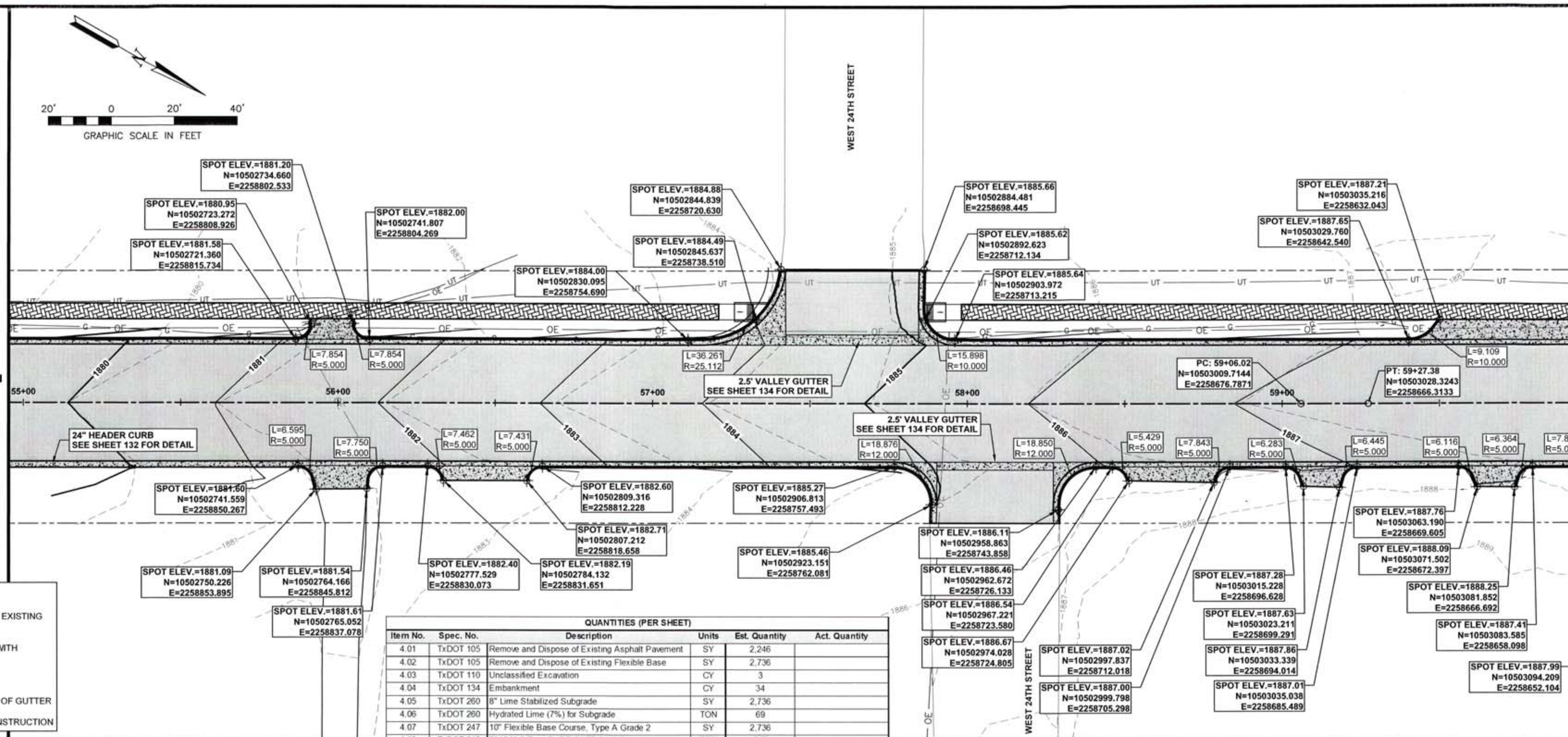
KSA TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T.: 325-947-1555 F.: 325-947-1599
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/21/16

SHEET NO.
50

LEGEND

- 1850 EXISTING CONTOURS
- 1850 PROPOSED CONTOURS
- OE EXISTING OVERHEAD ELECTRIC
- G EXISTING GAS LINE
- UT EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

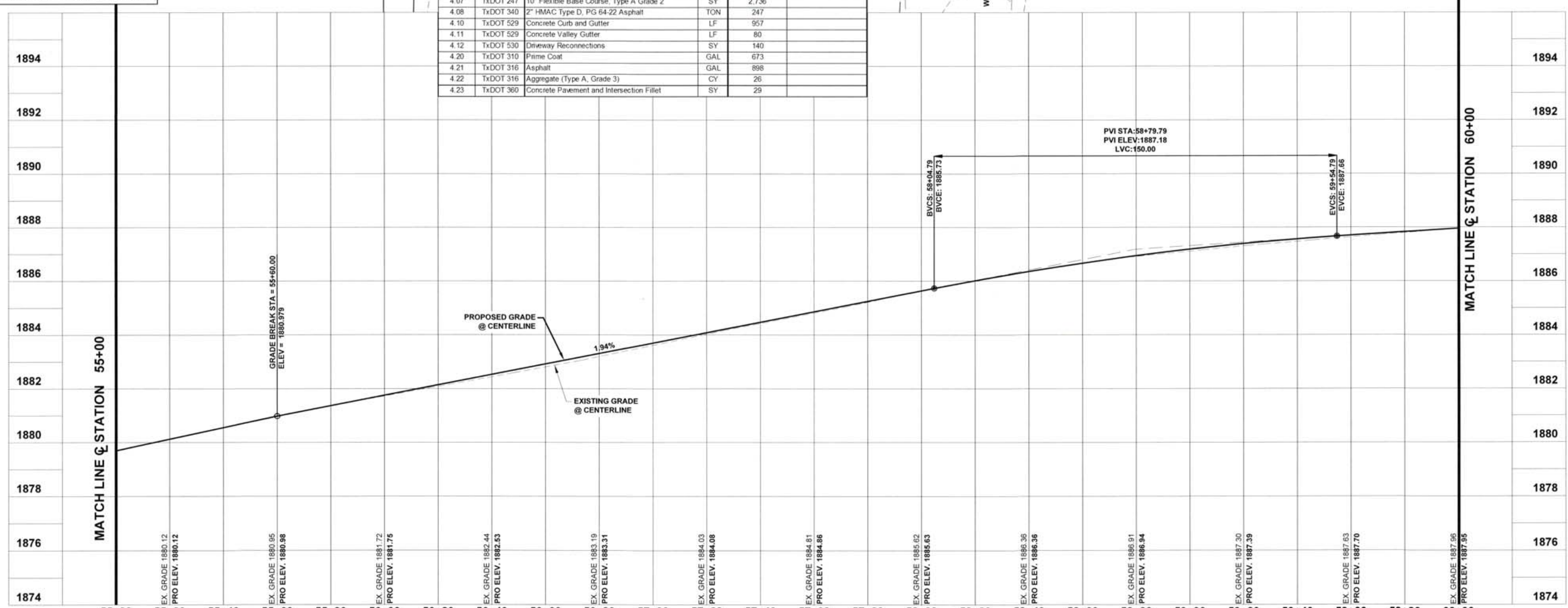


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,246	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,736	
4.03	TxDOT 110	Unclassified Excavation	CY	3	
4.04	TxDOT 134	Embankment	CY	34	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,736	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	69	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,736	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	247	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	957	
4.11	TxDOT 529	Concrete Valley Gutter	LF	80	
4.12	TxDOT 530	Driveway Reconnections	SY	140	
4.20	TxDOT 310	Prime Coat	GAL	673	
4.21	TxDOT 316	Asphalt	GAL	898	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	26	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	29	



MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 55+00 TO STA. 60+00

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

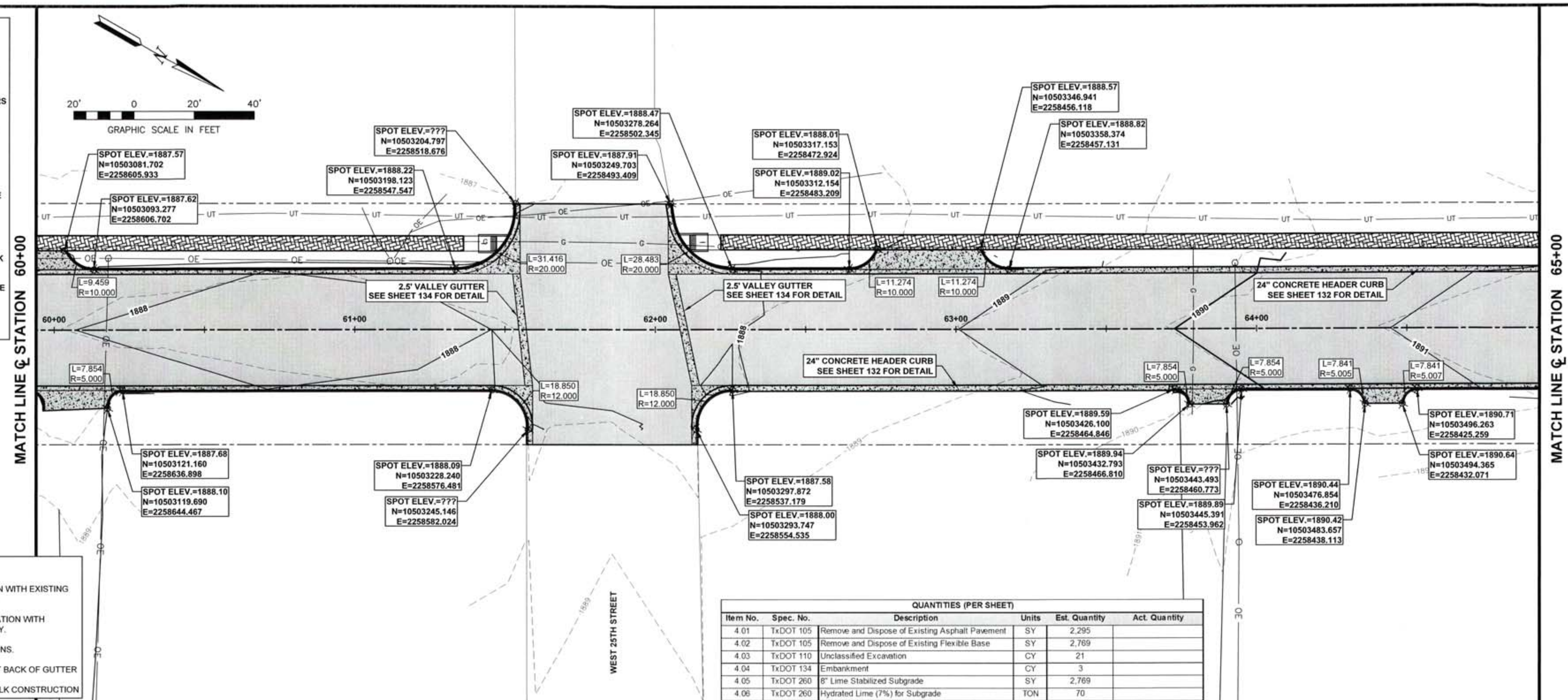
KSA TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901 T. 325-947-1555 F. 325-947-1559 www.ksaeng.com

STATE OF TEXAS DAVID A. ALEXANDER 96658 LICENSED PROFESSIONAL ENGINEER

SHEET NO. 51

LEGEND

- 1850 — EXISTING CONTOURS
- 1850 — PROPOSED CONTOURS
- OE — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

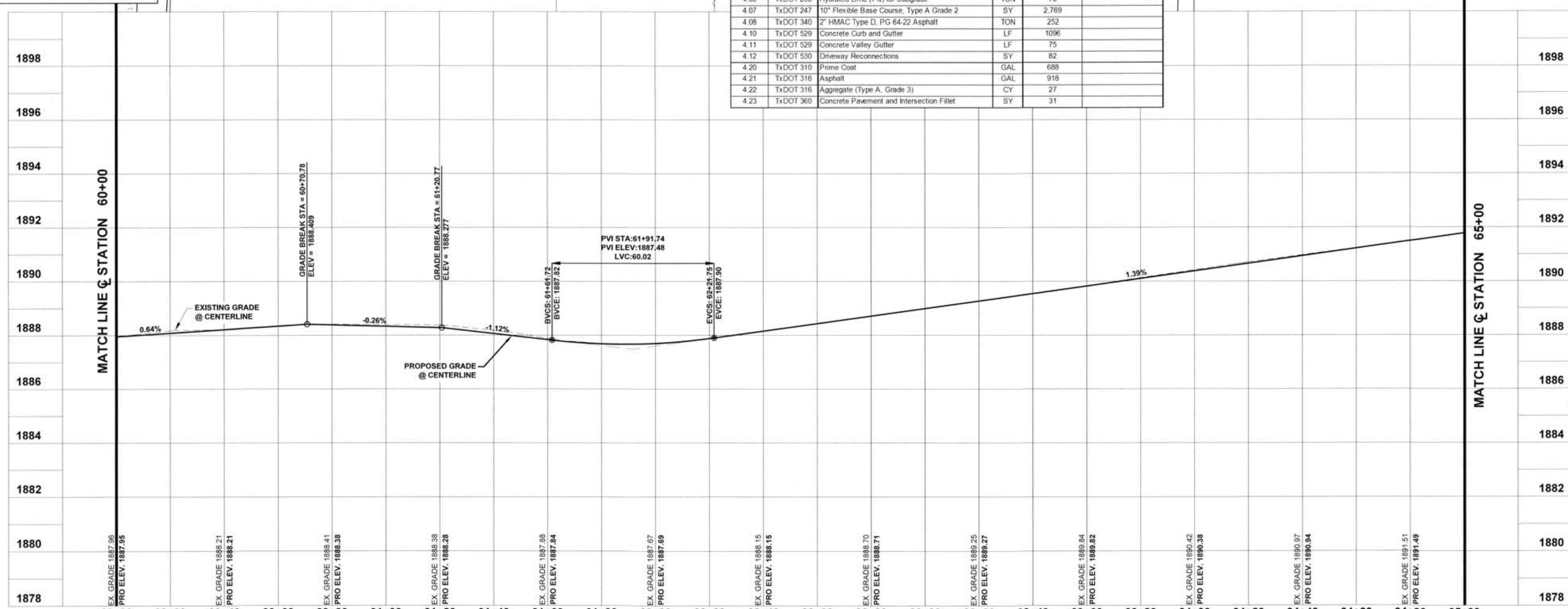


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,295	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,769	
4.03	TxDOT 110	Unclassified Excavation	CY	21	
4.04	TxDOT 134	Embankment	CY	3	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,769	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	70	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,769	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	252	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	1096	
4.11	TxDOT 529	Concrete Valley Gutter	LF	75	
4.12	TxDOT 530	Driveway Reconnections	SY	82	
4.20	TxDOT 310	Prime Coat	GAL	688	
4.21	TxDOT 316	Asphalt	GAL	918	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	27	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	31	



MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. 60+00 TO STA.65+00.DWG | STA. 60+00 TO STA. 65+00 | 7/15/2016 - 3:35 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME: **MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 60+00 TO STA. 65+00**

PROJECT NAME: **CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX**

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

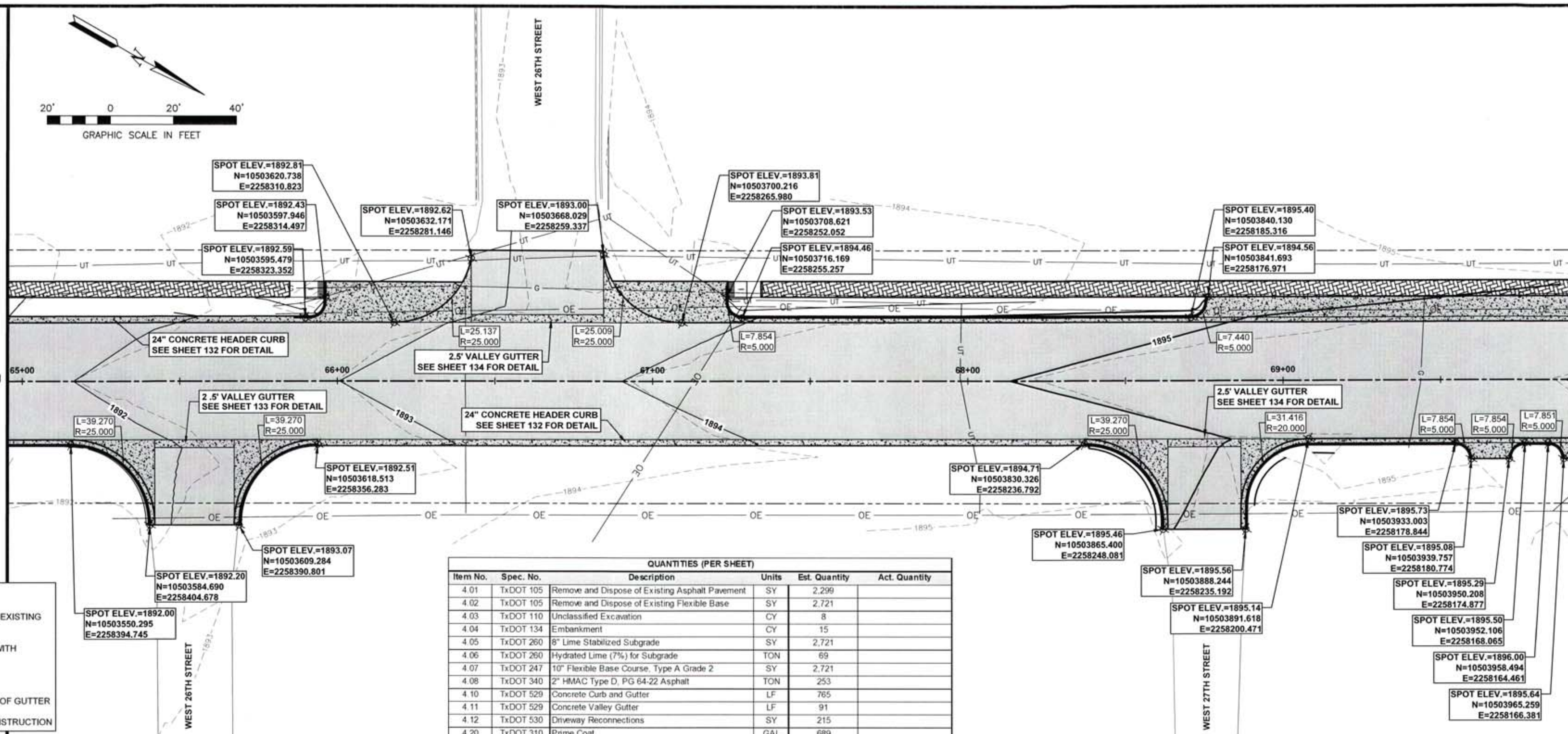
KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/21/16

SHEET NO. **52**

LEGEND

- 1850 — EXISTING CONTOURS
- 1850 — PROPOSED CONTOURS
- OE — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT



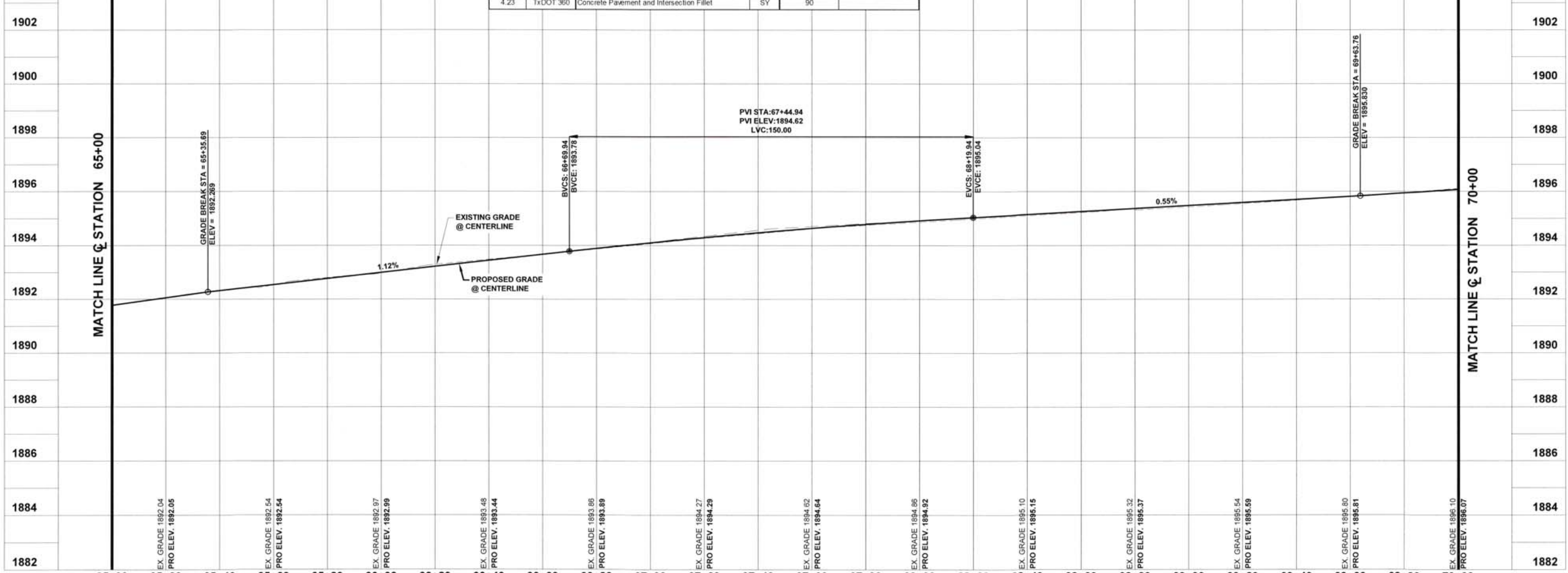
GRAPHIC SCALE IN FEET
WEST 26TH STREET
WEST 27TH STREET
MATCH LINE ℄ STATION 65+00
MATCH LINE ℄ STATION 70+00
24" CONCRETE HEADER CURB SEE SHEET 132 FOR DETAIL
2.5' VALLEY GUTTER SEE SHEET 133 FOR DETAIL
2.5' VALLEY GUTTER SEE SHEET 134 FOR DETAIL
SPOT ELEV.=1892.81 N=10503620.738 E=2258310.823
SPOT ELEV.=1892.43 N=10503597.946 E=2258314.497
SPOT ELEV.=1892.59 N=10503595.479 E=2258323.352
SPOT ELEV.=1892.62 N=10503632.171 E=2258281.146
SPOT ELEV.=1893.00 N=10503668.029 E=2258259.337
SPOT ELEV.=1893.81 N=10503700.216 E=2258265.980
SPOT ELEV.=1893.53 N=10503708.621 E=2258252.052
SPOT ELEV.=1894.46 N=10503716.169 E=2258255.257
SPOT ELEV.=1895.40 N=10503840.130 E=2258185.316
SPOT ELEV.=1894.56 N=10503841.693 E=2258176.971
SPOT ELEV.=1892.51 N=10503618.513 E=2258356.283
SPOT ELEV.=1893.07 N=10503609.284 E=2258390.801
SPOT ELEV.=1892.20 N=10503584.690 E=2258404.678
SPOT ELEV.=1892.00 N=10503550.295 E=2258394.745
SPOT ELEV.=1894.71 N=10503830.326 E=2258236.792
SPOT ELEV.=1895.46 N=10503865.400 E=2258248.081
SPOT ELEV.=1895.56 N=10503888.244 E=2258235.192
SPOT ELEV.=1895.14 N=10503891.618 E=2258200.471
SPOT ELEV.=1895.73 N=10503933.003 E=2258178.844
SPOT ELEV.=1895.08 N=10503939.757 E=2258180.774
SPOT ELEV.=1895.29 N=10503950.208 E=2258174.877
SPOT ELEV.=1895.50 N=10503952.106 E=2258168.065
SPOT ELEV.=1896.00 N=10503958.494 E=2258164.461
SPOT ELEV.=1895.64 N=10503965.259 E=2258166.381

NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,299	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,721	
4.03	TxDOT 110	Unclassified Excavation	CY	8	
4.04	TxDOT 134	Embankment	CY	15	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,721	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	69	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,721	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	253	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	765	
4.11	TxDOT 529	Concrete Valley Gutter	LF	91	
4.12	TxDOT 530	Driveway Reconnections	SY	215	
4.20	TxDOT 310	Prime Coat	GAL	689	
4.21	TxDOT 316	Asphalt	GAL	919	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	27	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	90	



PVI STA:67+44.94
PVI ELEV:1894.62
LVC:150.00
GRADE BREAK STA = 65+35.69 ELEV = 1892.269
BVCS: 66+69.94 BVCE: 1893.78
EVCS: 68+19.94 EVCE: 1895.04
GRADE BREAK STA = 69+63.76 ELEV = 1895.830
EXISTING GRADE @ CENTERLINE
PROPOSED GRADE @ CENTERLINE
1.12%
0.55%
MATCH LINE ℄ STATION 65+00
MATCH LINE ℄ STATION 70+00
1902
1900
1898
1896
1894
1892
1890
1888
1886
1884
1882
65+00
65+20
65+40
65+60
65+80
66+00
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69+60
69+80
70+00

MARTIN LUTHER KING DRIVE
PLAN AND PROFILE
STA. 65+00 TO STA. 70+00

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN 058

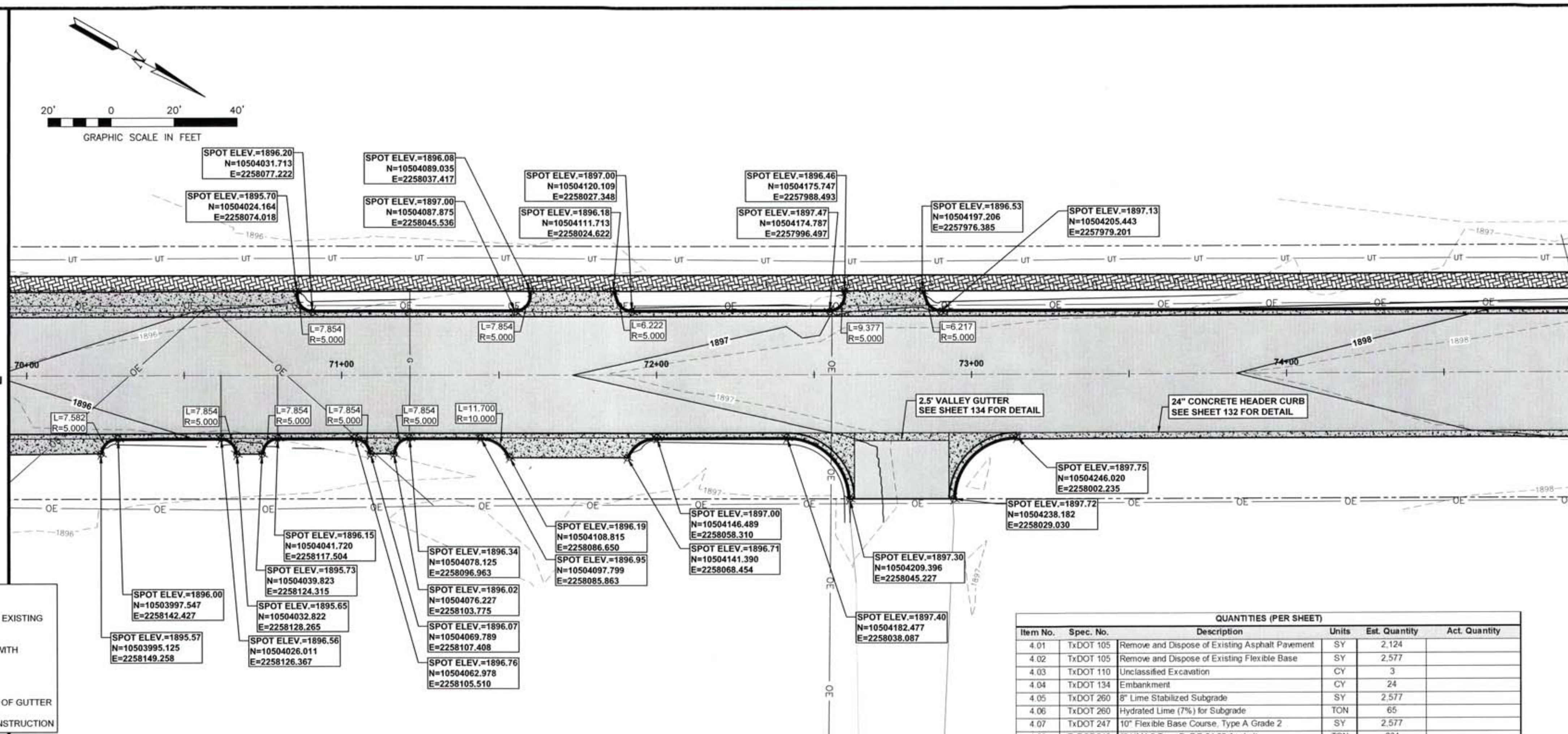
KSA — TBPE Firm Registration No. F-1356 — 58 Buick Street, San Angelo, Texas 76901
CP&Y — TBPE FIRM #F-1741

STATE OF TEXAS — DAVID A. ALEXANDER — 96658 — LICENSED PROFESSIONAL ENGINEER

SHEET NO. 53

LEGEND

---1850---	EXISTING CONTOURS
—1850—	PROPOSED CONTOURS
—OE—	EXISTING OVERHEAD ELECTRIC
—G—	EXISTING GAS LINE
—UT—	EXISTING TELEPHONE LINE
— - —	RIGHT OF WAY LINE
(hatch)	PROPOSED SIDEWALK
(stipple)	PROPOSED CONCRETE PAVEMENT
(blank)	PROPOSED HMAC PAVEMENT

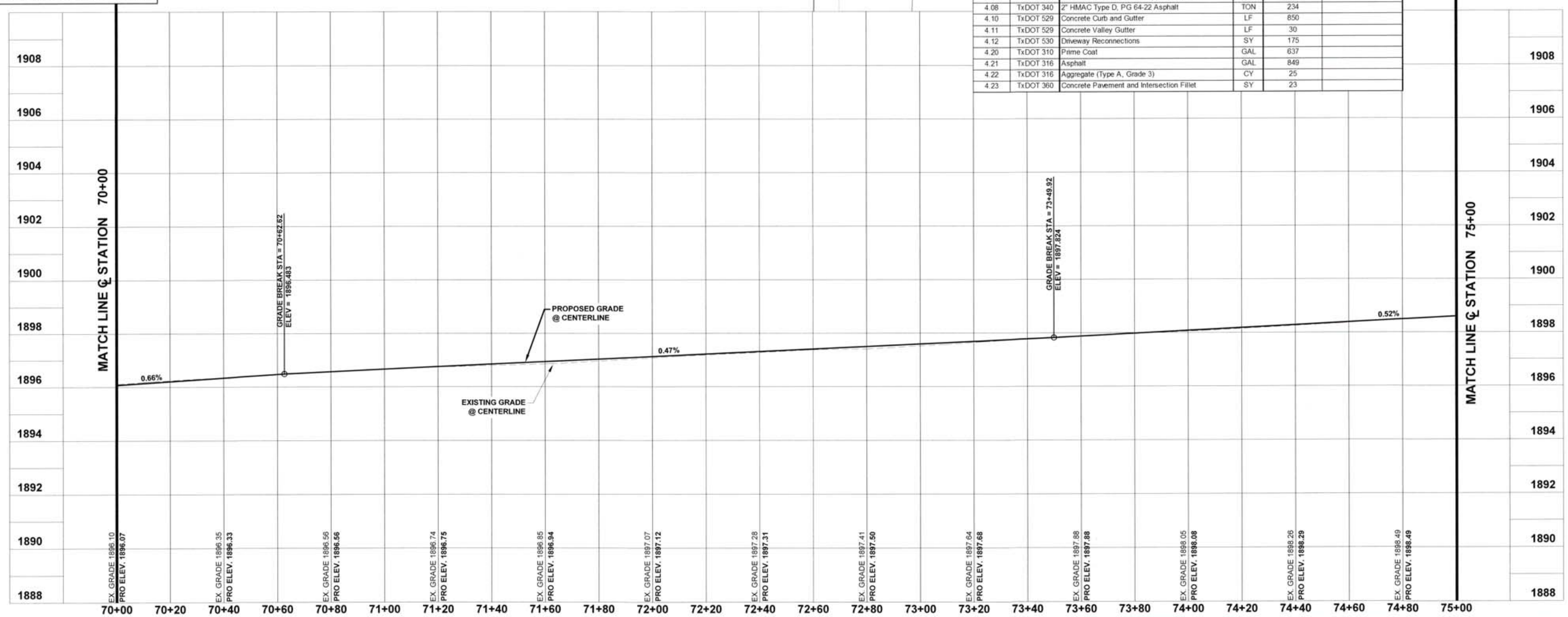


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	2,124	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	2,577	
4.03	TxDOT 110	Unclassified Excavation	CY	3	
4.04	TxDOT 134	Embankment	CY	24	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	2,577	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	65	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	2,577	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	234	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	850	
4.11	TxDOT 529	Concrete Valley Gutter	LF	30	
4.12	TxDOT 530	Driveway Reconnections	SY	175	
4.20	TxDOT 310	Prime Coat	GAL	637	
4.21	TxDOT 316	Asphalt	GAL	849	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	25	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	23	



MARK | REVISION | DATE

KSA-SA-SERVER\MAIN\PROJECTS\SAN058\00 07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. 70+00 TO STA. 75+00.DWG | STA. 70+00 TO STA. 75+00 | 7/15/2016 - 3:35 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 70+00 TO STA. 75+00

SHEET NAME:

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME:

DRAWN BY: CBS
DESIGNED BY: JVD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN 058

KSA CP&Y
TBPE FIRM #F-1741

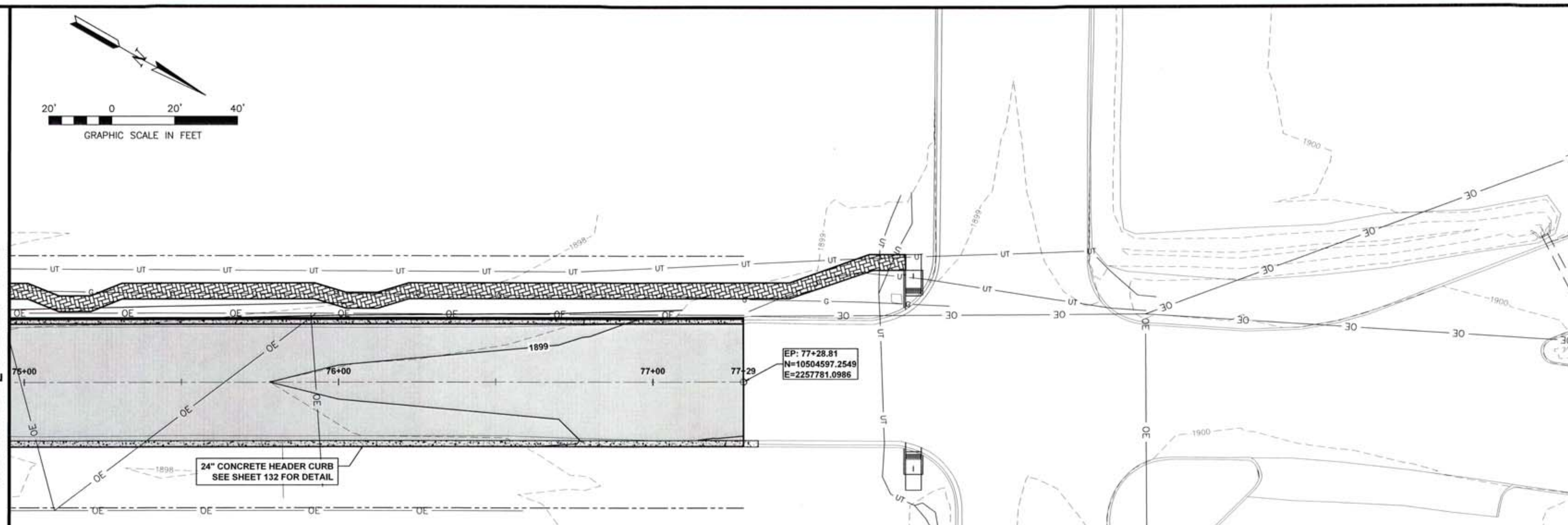
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
www.ksaeng.com

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/21/16

SHEET NO.
54

LEGEND

- 1850 — EXISTING CONTOURS
- 1850 — PROPOSED CONTOURS
- OE — EXISTING OVERHEAD ELECTRIC
- G — EXISTING GAS LINE
- UT — EXISTING TELEPHONE LINE
- RIGHT OF WAY LINE
- PROPOSED SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED HMAC PAVEMENT

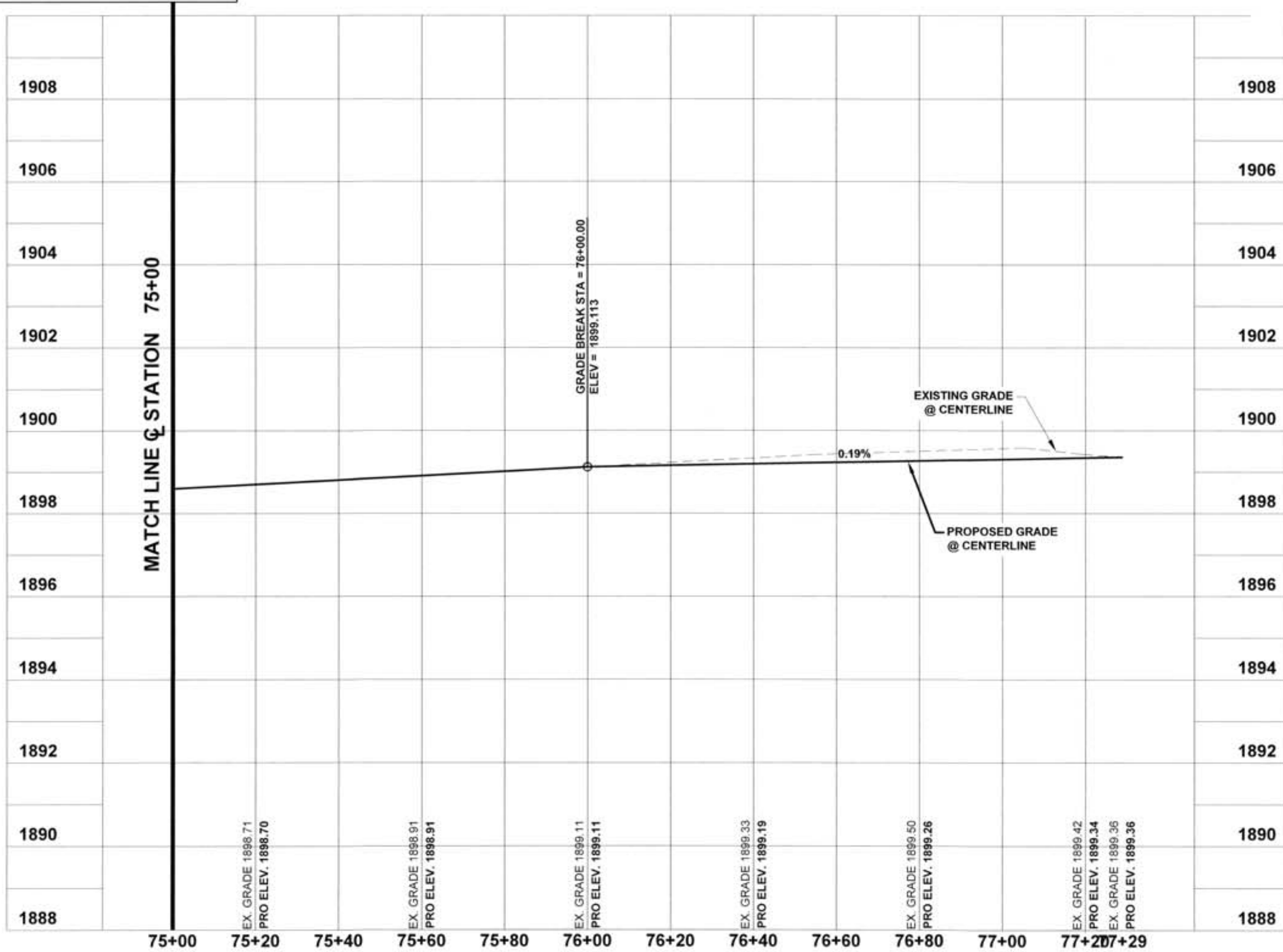


NOTES:

1. MATCH NEW DRIVEWAY ELEVATION WITH EXISTING GRADE 5 FT FROM BACK OF CURB.
2. MATCH NEW INTERSECTION ELEVATION WITH EXISTING GRADE AT RIGHT-OF-WAY.
3. SEE SHEET 4 FOR TYPICAL SECTIONS.
4. SPOT ELEVATIONS SHOWN ARE AT BACK OF GUTTER
5. SEE MARKING PLANS FOR SIDEWALK CONSTRUCTION

QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.01	TxDOT 105	Remove and Dispose of Existing Asphalt Pavement	SY	940	
4.02	TxDOT 105	Remove and Dispose of Existing Flexible Base	SY	1,136	
4.03	TxDOT 110	Unclassified Excavation	CY	34	
4.05	TxDOT 260	8" Lime Stabilized Subgrade	SY	1,136	
4.06	TxDOT 260	Hydrated Lime (7%) for Subgrade	TON	28	
4.07	TxDOT 247	10" Flexible Base Course, Type A Grade 2	SY	1,136	
4.08	TxDOT 340	2" HMAC Type D, PG 64-22 Asphalt	TON	105	
4.10	TxDOT 529	Concrete Curb and Gutter	LF	467	
4.20	TxDOT 310	Prime Coat	GAL	282	
4.21	TxDOT 316	Asphalt	GAL	376	
4.22	TxDOT 316	Aggregate (Type A, Grade 3)	CY	11	
4.23	TxDOT 360	Concrete Pavement and Intersection Fillet	SY	55	



MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK STREET STA. 75+00 TO STA 77+29.DWG | STA. 75+00 TO STA. 77+29 | 7/15/2016 - 3:35 PM
DRAWING PATH-NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:
MARTIN LUTHER KING DRIVE PLAN AND PROFILE STA. 75+00 TO STA. 77+29

PROJECT NAME:
CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
58 Buick Street, San Angelo, Texas 76901
T. 325-947-1555 F. 325-947-1559
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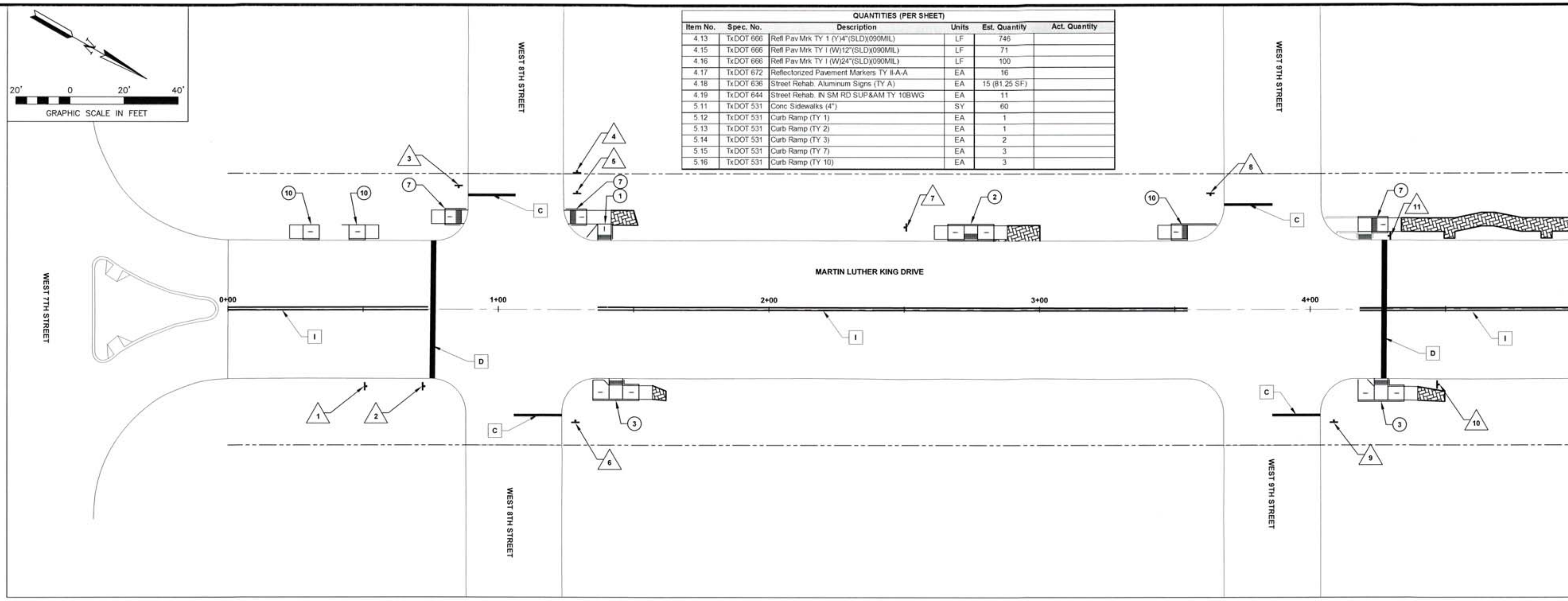
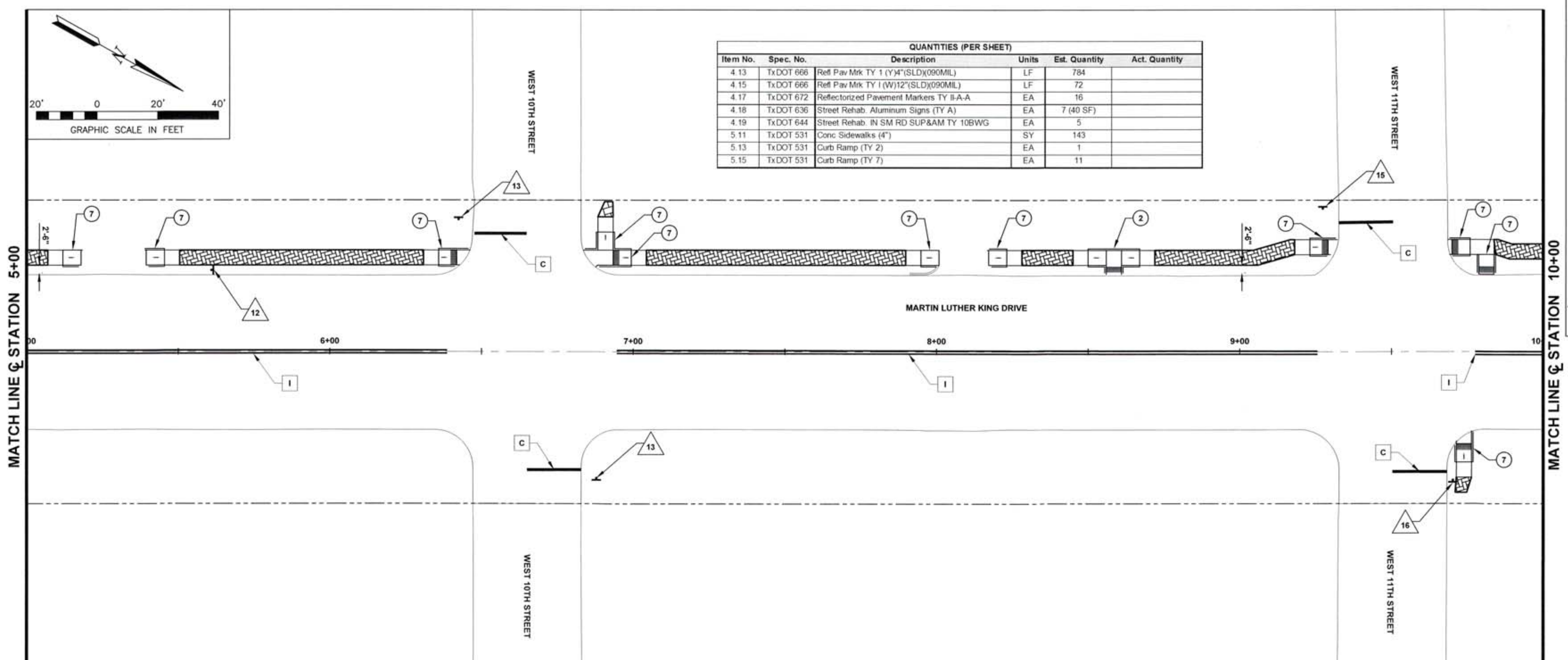
STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/14/16
David A. Alexander P.E.

SHEET NO. 55



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	746	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	71	
4.16	TxDOT 666	Refl Pav Mrk TY I (W)24"(SLD)(090MIL)	LF	100	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Street Rehab. Aluminum Signs (TY A)	EA	15 (81.25 SF)	
4.19	TxDOT 644	Street Rehab. IN SM RD SUP&AM TY 10BWG	EA	11	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	60	
5.12	TxDOT 531	Curb Ramp (TY 1)	EA	1	
5.13	TxDOT 531	Curb Ramp (TY 2)	EA	1	
5.14	TxDOT 531	Curb Ramp (TY 3)	EA	2	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.16	TxDOT 531	Curb Ramp (TY 10)	EA	3	



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	784	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	72	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Street Rehab. Aluminum Signs (TY A)	EA	7 (40 SF)	
4.19	TxDOT 644	Street Rehab. IN SM RD SUP&AM TY 10BWG	EA	5	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	143	
5.13	TxDOT 531	Curb Ramp (TY 2)	EA	1	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	11	

LEGEND

- A RFL PAV MRK TY 1 (W) 4" (DOT)
- B RFL PAV MRK TY 1 (W) 4" (SLD)
- C RFL PAV MRK TY 1 (W) 12" (SLD)
- D RFL PAV MRK TY 1 (W) 24" (SLD)
- E RFL PAV MRK TY 1 (W) (BIKE ARW)
- F RFL PAV MRK TY 1 (W) (BIKE SYM)
- G RFL PAV MRK TY 1 (W) (ARROW)
- H RFL PAV MRK TY 1 (Y) 4" (BRK)
- I RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- # STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS

MARK | REVISION | DATE

K:\SA-SERVER\MAIN\PROJECTS\SAN\058\00.07 CAD\02 PROJECT\20 SHEETS\ MLK MARKING PLAN STA. 0+00 TO 10+00.DWG | LAYOUT1 | 7/15/2016 - 3:16 PM

DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 0+00 TO STA. 10+00

SHEET NAME:

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME:

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN.058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1356
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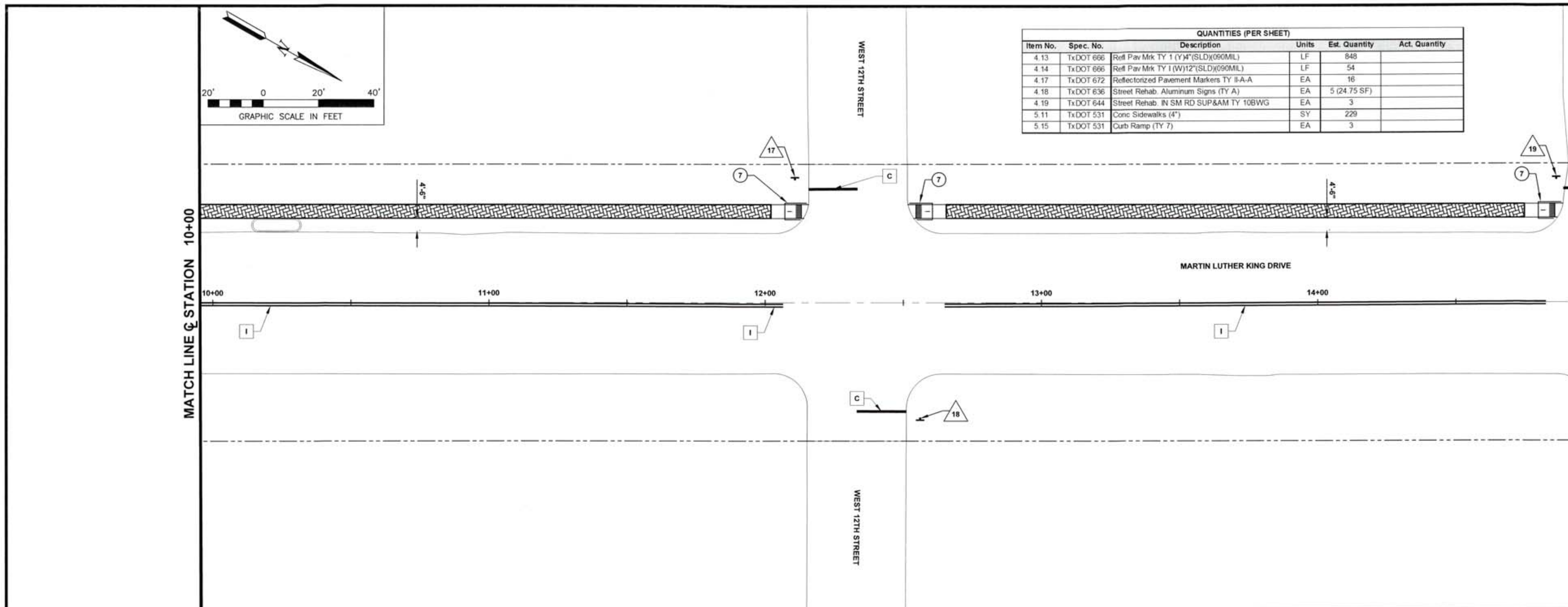
STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER

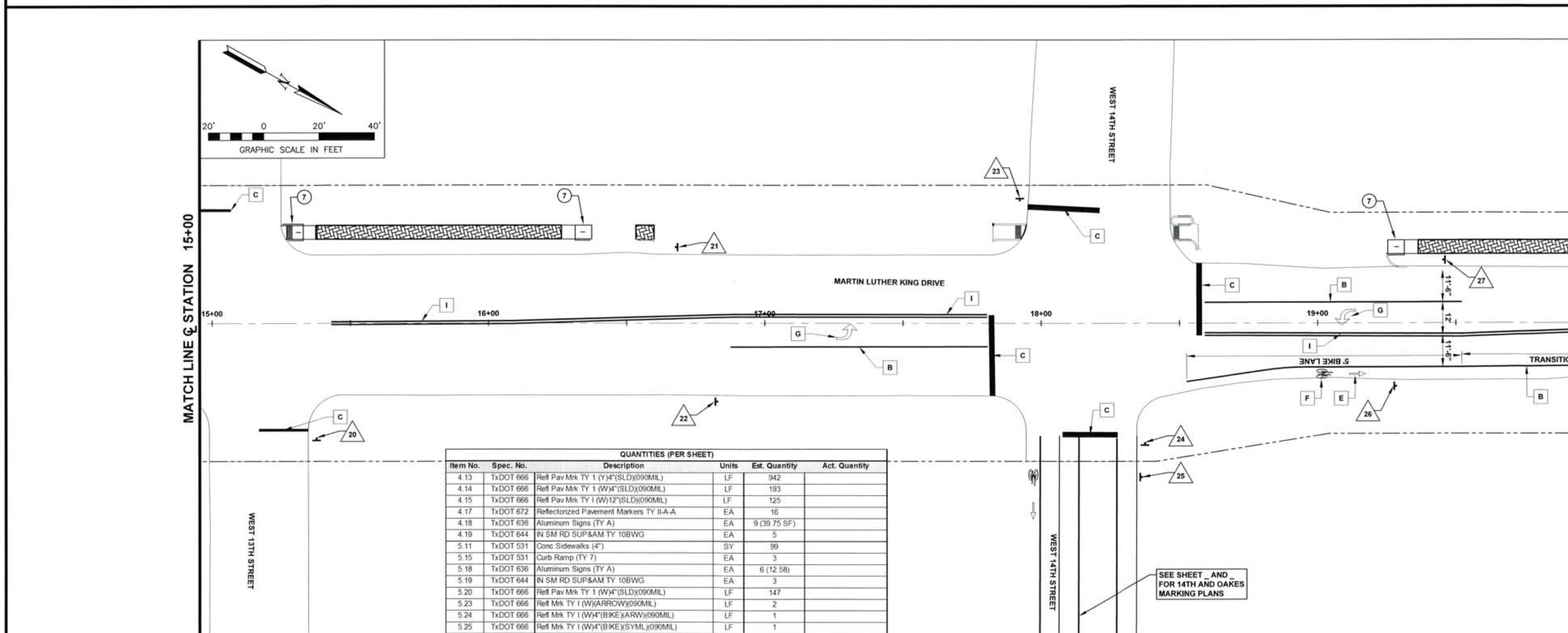
SHEET NO.
56



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	848	
4.14	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	54	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Street Rehab. Aluminum Signs (TY A)	EA	5 (24.75 SF)	
4.19	TxDOT 644	Street Rehab. IN SM RD SUP&AM TY 10BWG	EA	3	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	229	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	

LEGEND

- A — RFL PAV MRK TY 1 (W) 4" (DOT)
- B — RFL PAV MRK TY 1 (W) 4" (SLD)
- C — RFL PAV MRK TY 1 (W) 12" (SLD)
- D — RFL PAV MRK TY 1 (W) 24" (SLD)
- E — RFL PAV MRK TY 1 (W) (BIKE ARW)
- F — RFL PAV MRK TY 1 (W) (BIKE SYM)
- G — RFL PAV MRK TY 1 (W) (ARROW)
- H — RFL PAV MRK TY 1 (Y) 4" (BRK)
- I — RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- (#) STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	942	
4.14	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	193	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	125	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	9 (39.75 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	5	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	99	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	6 (12.58)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	147	
5.23	TxDOT 666	Refl Mrk TY I (W)(ARROW)(090MIL)	LF	2	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	1	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	1	

MARK | REVISION | DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK MARKING PLAN STA. 10+80 TO 22+00.DWG | LAYOUT1 | 7/15/2016 - 3:16 PM

DRAWING PATH\NAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 10+00 TO STA. 20+00

PROJECT NAME:

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO: SAN 058

CP&Y TBPE FIRM #F-1741

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TBPE Firm Registration No. F-1356
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STATE OF TEXAS
DAVID A. ALEXANDER
96658
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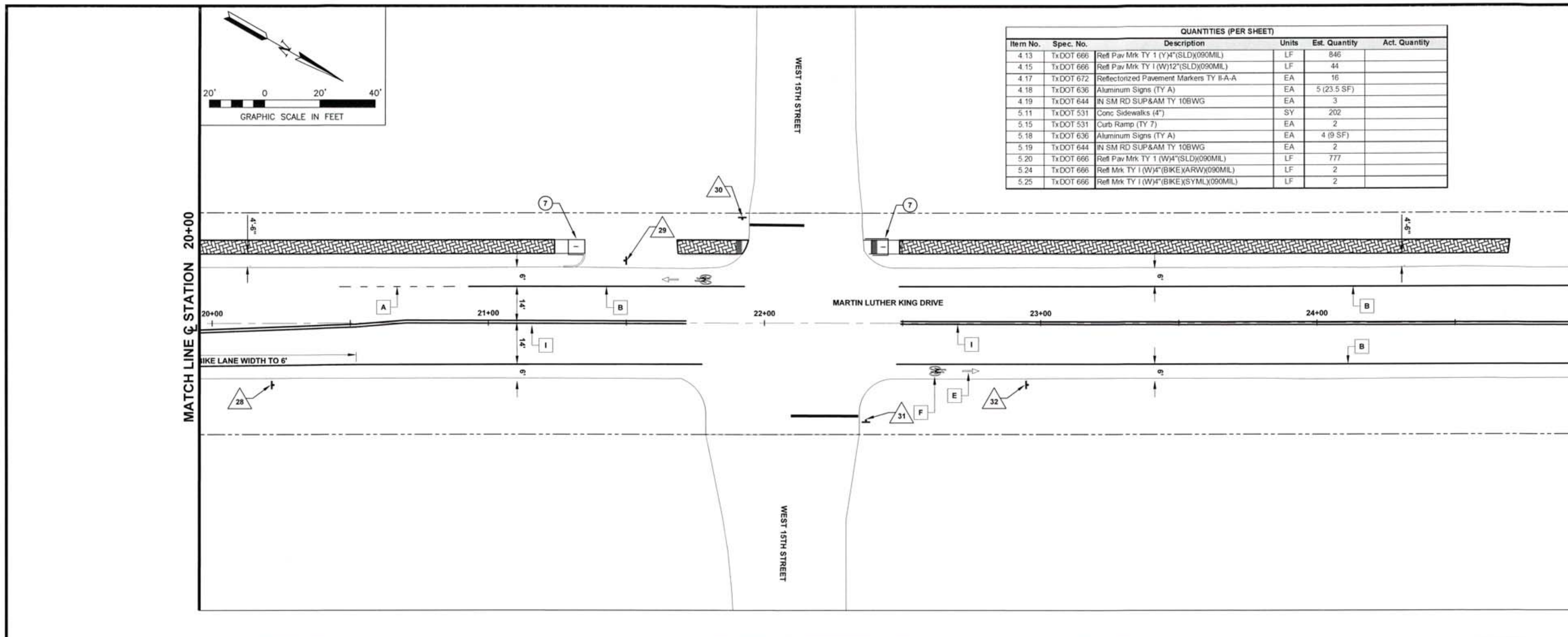
7/20/16
P.E.

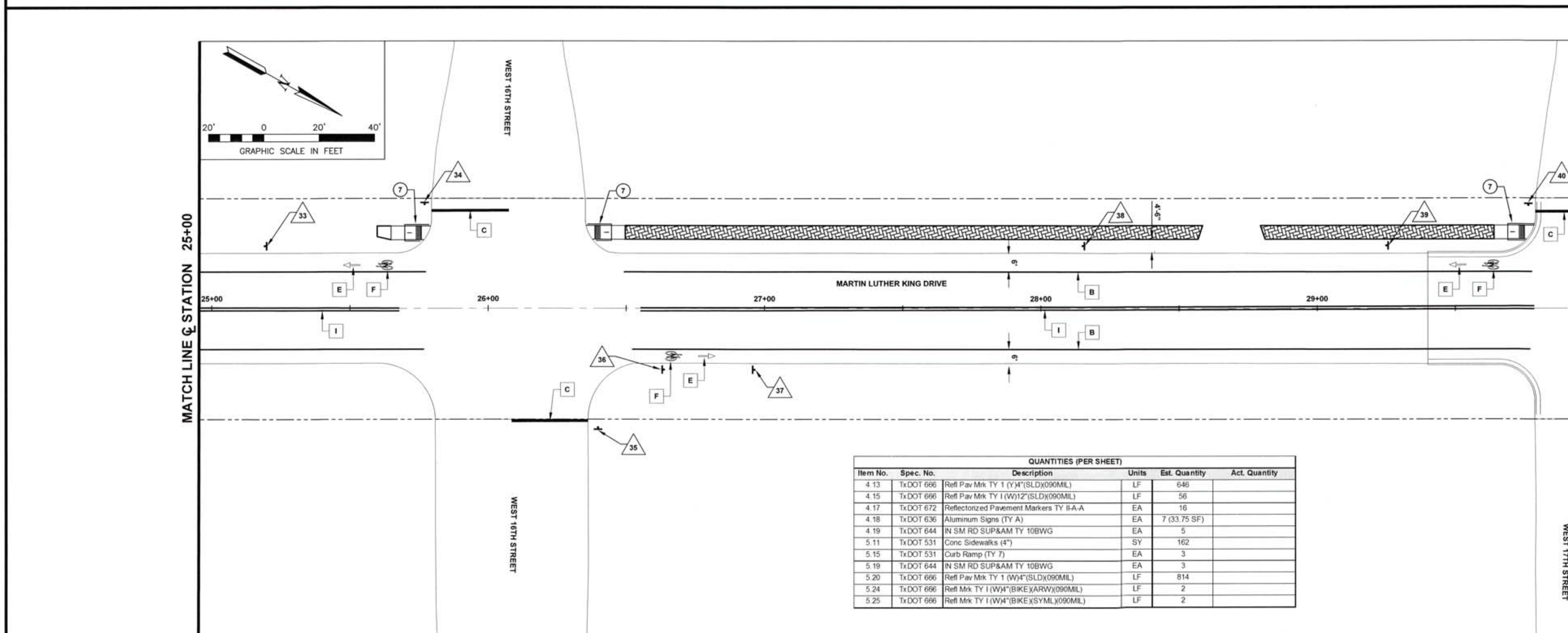
SHEET NO.
57



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	846	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	44	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	5 (23.5 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	202	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	2	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (9 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	2	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	777	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	2	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	2	

LEGEND

- A RFL PAV MRK TY 1 (W) 4" (DOT)
- B RFL PAV MRK TY 1 (W) 4" (SLD)
- C RFL PAV MRK TY 1 (W) 12" (SLD)
- D RFL PAV MRK TY 1 (W) 24" (SLD)
- E RFL PAV MRK TY 1 (W) (BIKE ARW)
- F RFL PAV MRK TY 1 (W) (BIKE SYM)
- G RFL PAV MRK TY 1 (W) (ARROW)
- H RFL PAV MRK TY 1 (Y) 4" (BRK)
- I RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- (#) STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	646	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	56	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	7 (33.75 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	5	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	162	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	814	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	2	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	2	

MARK | REVISION | DATE

SHEET NAME: MARTIN LUTHER KING DRIVE MARKING PLAN STA. 20+00 TO STA. 30+00

PROJECT NAME: CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

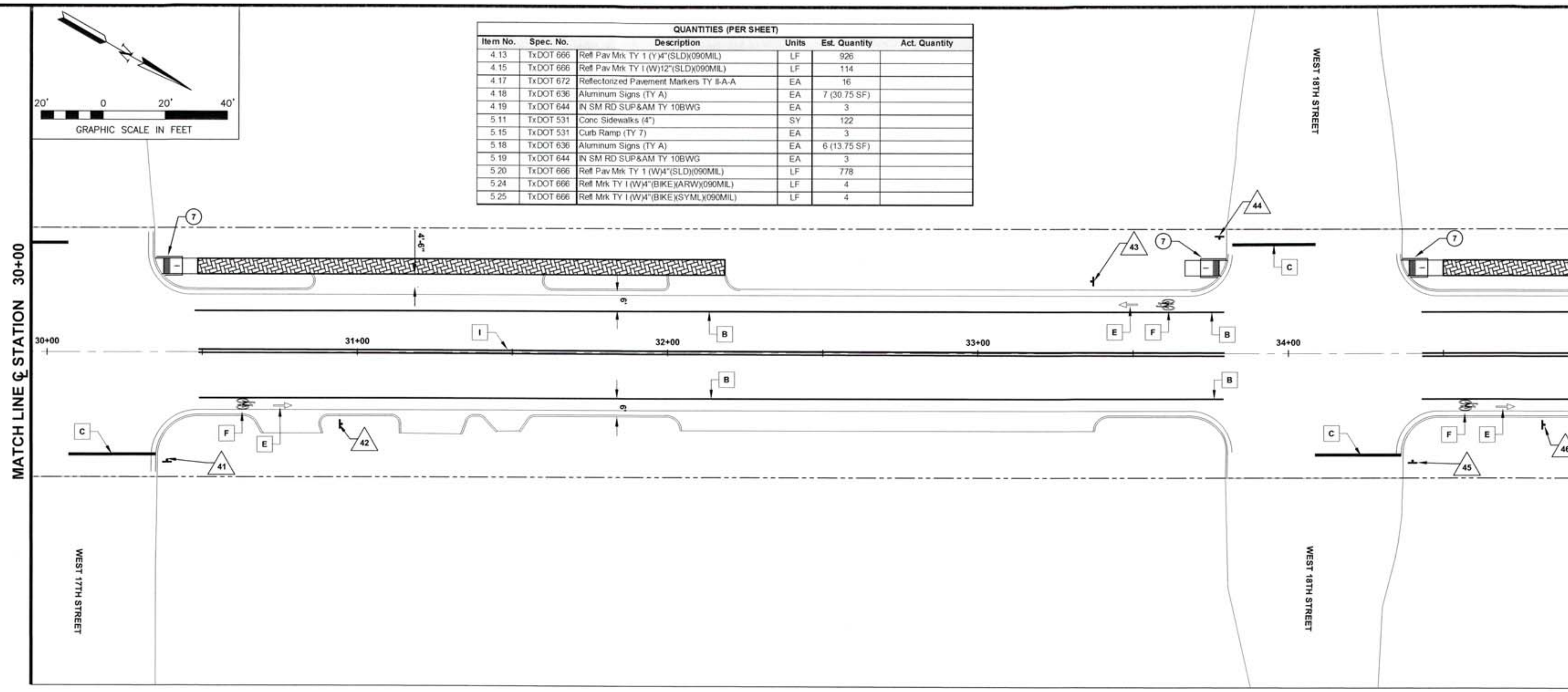
DRAWN BY: CBS
DESIGNED BY: JVD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN.058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356

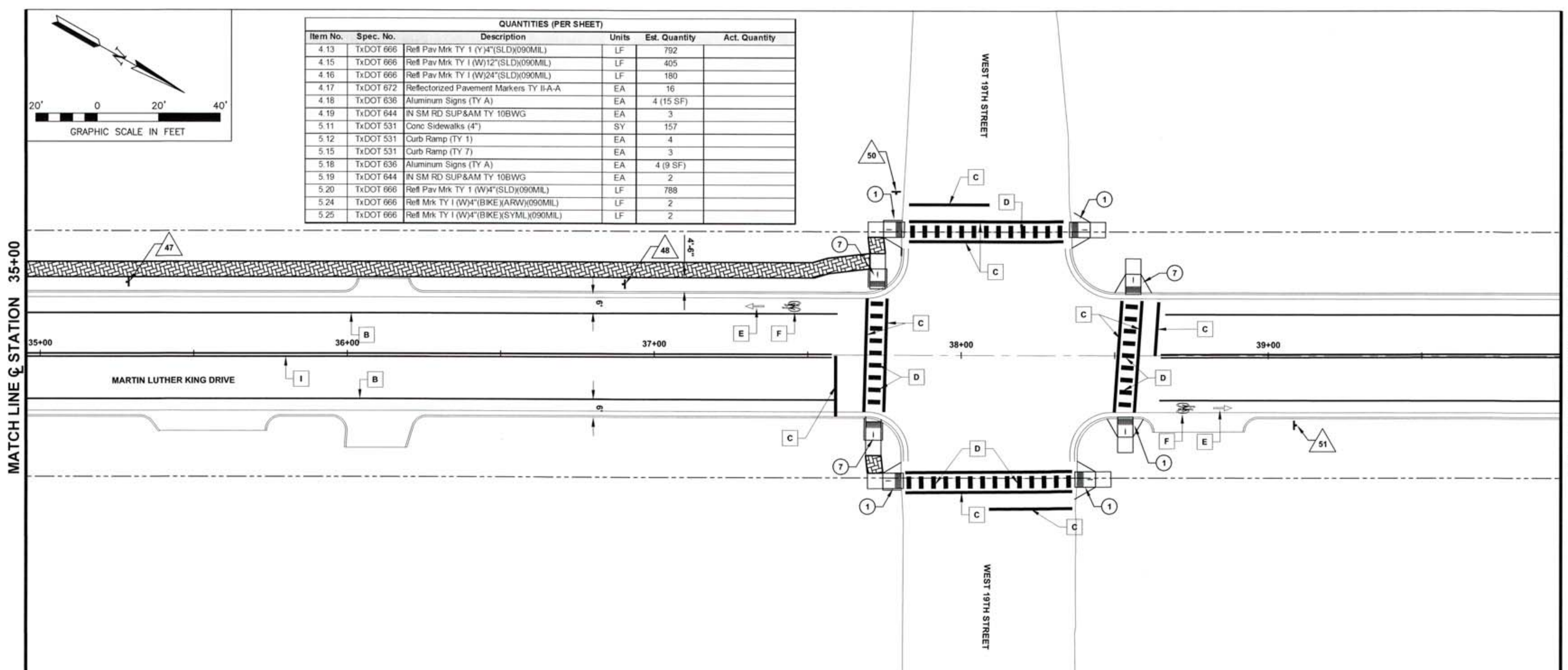
STATE OF TEXAS DAVID A. ALEXANDER 96658 LICENSED PROFESSIONAL ENGINEER 7/21/16

SHEET NO. 58



QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	926	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	114	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	7 (30.75 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	122	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	6 (13.75 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	778	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	4	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	4	



QUANTITIES (PER SHEET)

Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	792	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	405	
4.16	TxDOT 666	Refl Pav Mrk TY I (W)24"(SLD)(090MIL)	LF	180	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (15 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	157	
5.12	TxDOT 531	Curb Ramp (TY 1)	EA	4	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (9 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	2	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	788	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	2	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	2	

LEGEND

- A — RFL PAV MRK TY 1 (W) 4" (DOT)
- B — RFL PAV MRK TY 1 (W) 4" (SLD)
- C — RFL PAV MRK TY 1 (W) 12" (SLD)
- D — RFL PAV MRK TY 1 (W) 24" (SLD)
- E — RFL PAV MRK TY 1 (W) (BIKE ARW)
- F — RFL PAV MRK TY 1 (W) (BIKE SYM)
- G — RFL PAV MRK TY 1 (W) (ARROW)
- H — RFL PAV MRK TY 1 (Y) 4" (BRK)
- I — RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- (# triangle) STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS

MARK	REVISION	DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK MARKING PLAN STA. 33+20 TO 44+40.DWG | LAYOUT1 | 7/15/2016 - 3:18 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 30+00 TO STA. 40+00

SHEET NAME

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY: CBS
DESIGNED BY: JVD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

KSA — TBPE Firm Registration No. F-1356
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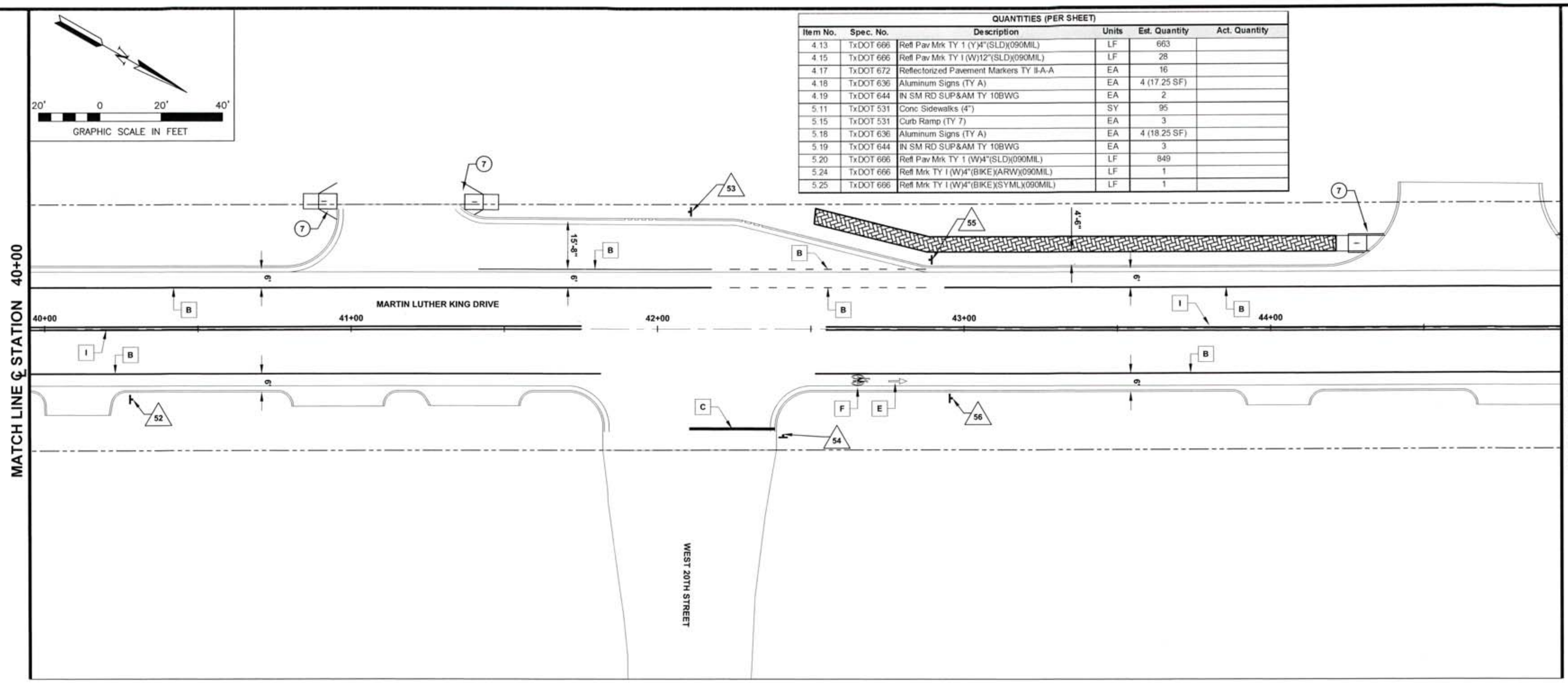
T: 325-947-1555 F: 325-947-1559
www.ksaeng.com

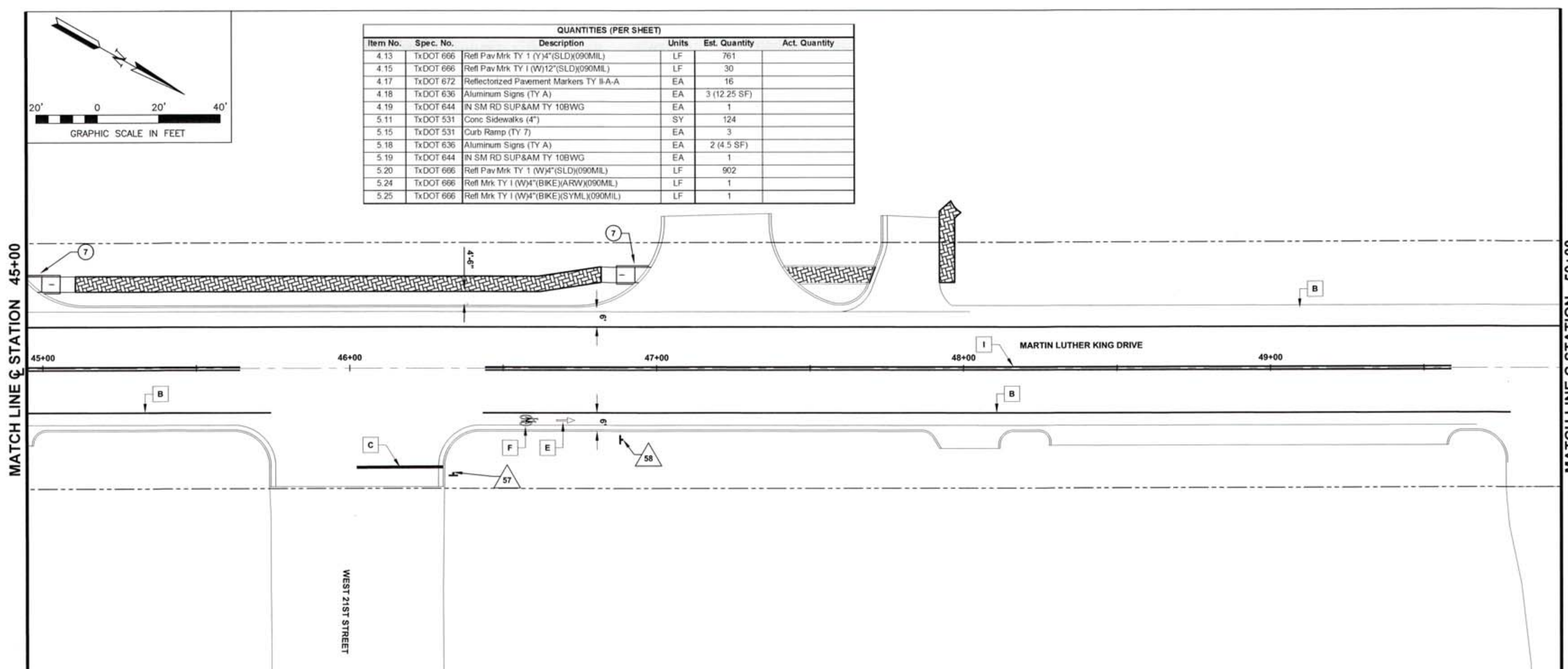
CP&Y — TBPE FIRM #F-1741

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED
PROFESSIONAL ENGINEER
7/21/16

SHEET NO.
59



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	663	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	28	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (17.25 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	2	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	95	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (18.25 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	849	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	1	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	1	



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	761	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	30	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	3 (12.25 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	124	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	3	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	2 (4.5 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	902	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	1	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	1	

LEGEND

- A — RFL PAV MRK TY 1 (W) 4" (DOT)
- B — RFL PAV MRK TY 1 (W) 4" (SLD)
- C — RFL PAV MRK TY 1 (W) 12" (SLD)
- D — RFL PAV MRK TY 1 (W) 24" (SLD)
- E — RFL PAV MRK TY 1 (W) (BIKE ARW)
- F — RFL PAV MRK TY 1 (W) (BIKE SYM)
- G — RFL PAV MRK TY 1 (W) (ARROW)
- H — RFL PAV MRK TY 1 (Y) 4" (BRK)
- I — RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- (#) STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 40+00 TO 50+00

SHEET NAME:

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME:

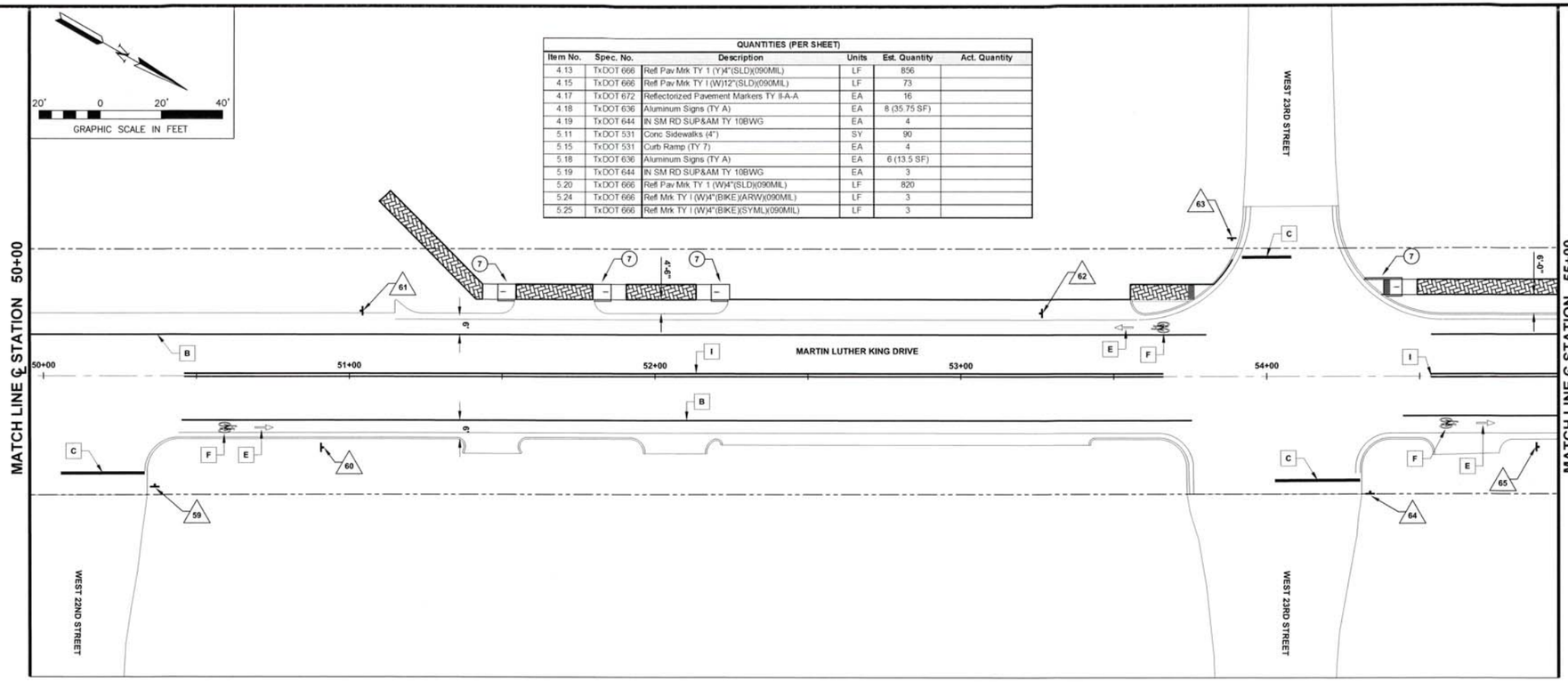
DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
Buick Street, San Angelo, Texas 76901 T: 325-947-1555 F: 325-947-1559 www.ksaeng.com

STATE OF TEXAS — DAVID A. ALEXANDER 96658 LICENSED PROFESSIONAL ENGINEER 7/21/16

SHEET NO. 60



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	856	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	73	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	8 (35.75 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	4	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	90	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	4	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	6 (13.5 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	820	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	3	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	3	

LEGEND

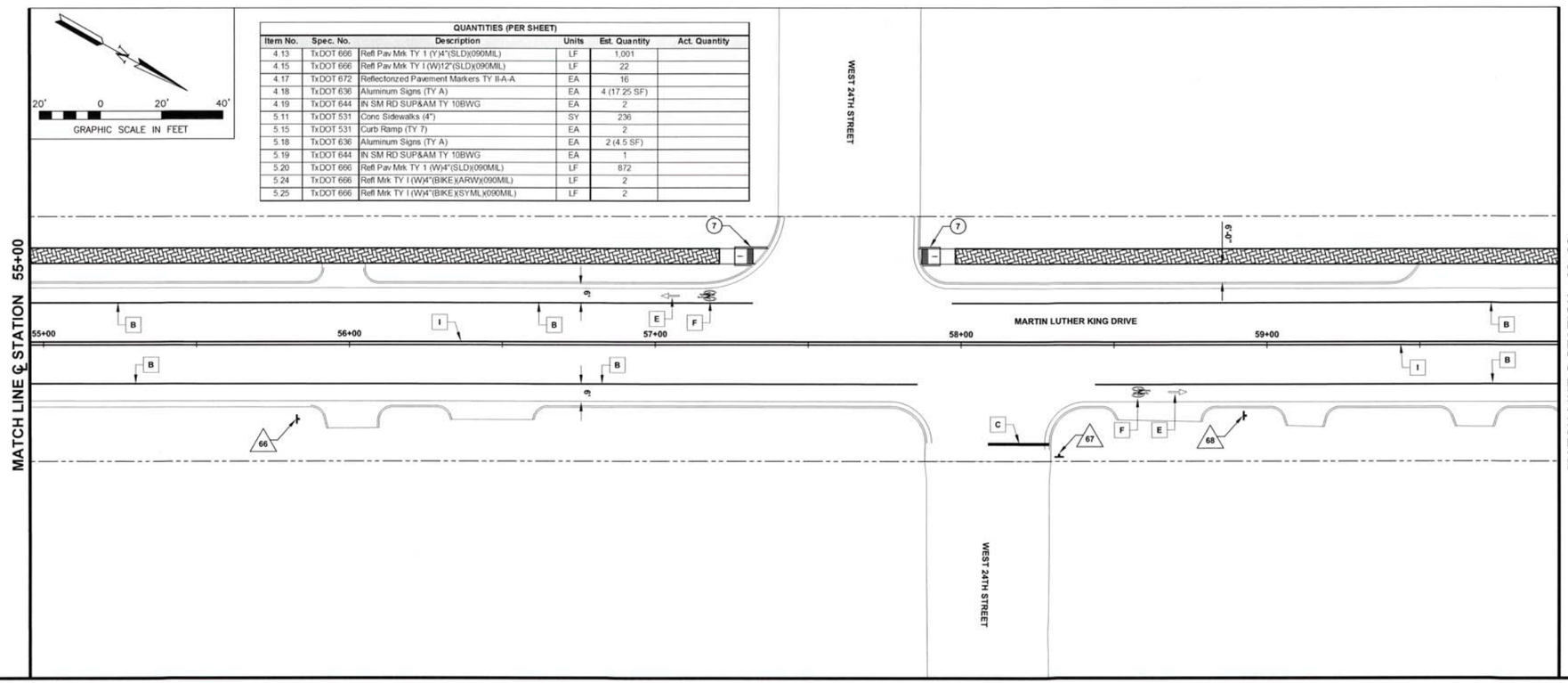
- A — RFL PAV MRK TY 1 (W) 4" (DOT)
- B — RFL PAV MRK TY 1 (W) 4" (SLD)
- C — RFL PAV MRK TY 1 (W) 12" (SLD)
- D — RFL PAV MRK TY 1 (W) 24" (SLD)
- E — RFL PAV MRK TY 1 (W) (BIKE ARW)
- F — RFL PAV MRK TY 1 (W) (BIKE SYM)
- G — RFL PAV MRK TY 1 (W) (ARROW)
- H — RFL PAV MRK TY 1 (Y) 4" (BRK)
- I — RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- # — STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS

MARK	REVISION	DATE

K:\KSA SERVER\MAIN\PROJECTS\SAN0058\07 CAD\02 PROJECT SHEETS\MLK MARKING PLAN STA. 50+00 TO STA. 66+90.DWG | LAYOUT | 7/15/2016 - 3:19 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 50+00 TO 60+00

SHEET NAME



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	1,001	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	22	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (17.25 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	2	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	236	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	2	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	2 (4.5 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	872	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	2	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	2	

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE
RECONSTRUCTION
SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	DESIGNED BY:	LATEST REVISION	KSA JOB NO.
CBS	JWD	7/14/2016	SAN 0058

CP&Y TBPE FIRM #F-1741

KSA
TBPE Firm Registration No. F-1386
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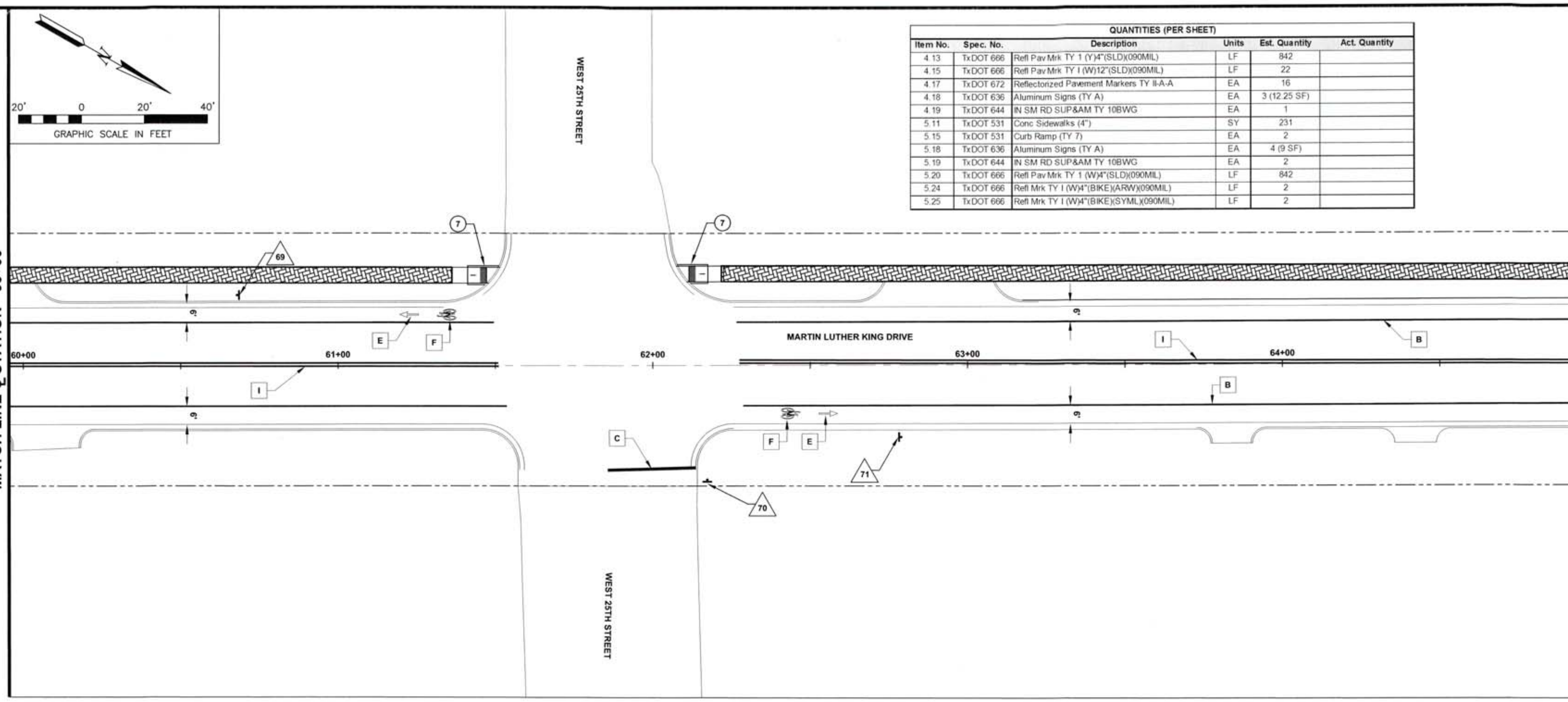
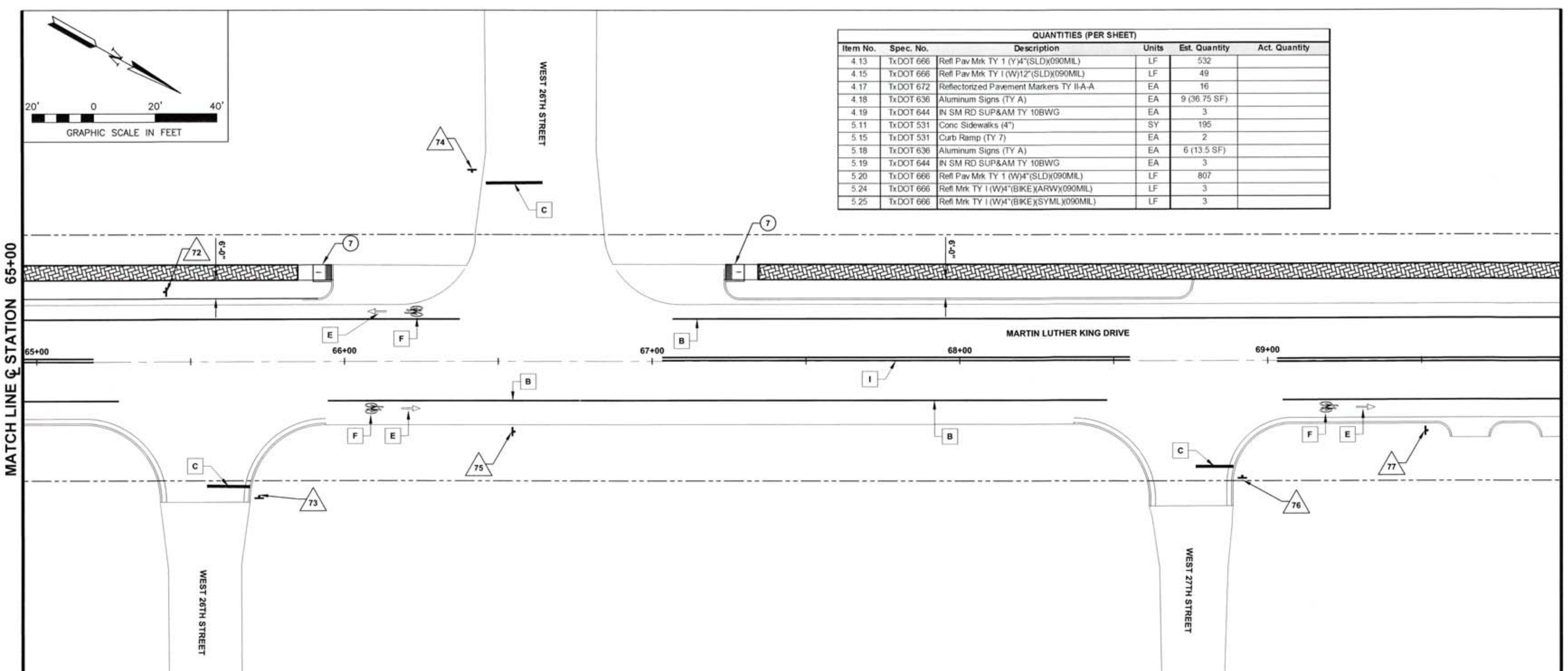
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER
7/14/16
P.E.

SHEET NO.
61



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	842	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	22	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	3 (12.25 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	231	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	2	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	4 (9 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	2	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	842	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	2	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	2	



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	532	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	49	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	9 (36.75 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	195	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	2	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	6 (13.5 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	3	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	807	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	3	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	3	

LEGEND

- A — RFL PAV MRK TY 1 (W) 4" (DOT)
- B — RFL PAV MRK TY 1 (W) 4" (SLD)
- C — RFL PAV MRK TY 1 (W) 12" (SLD)
- D — RFL PAV MRK TY 1 (W) 24" (SLD)
- E — RFL PAV MRK TY 1 (W) (BIKE ARW)
- F — RFL PAV MRK TY 1 (W) (BIKE SYM)
- G — RFL PAV MRK TY 1 (W) (ARROW)
- H — RFL PAV MRK TY 1 (Y) 4" (BRK)
- I — RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- # STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS

MARK | REVISION | DATE

\\KSA-SA-SERVER1\MAIN1\PROJECTS\SAN058\00.07 CAD\02 PROJECT\30 SHEETS\ MLK MARKING PLAN STA. 66+80 TO 77+20.DWG | 60+00 TO 70+00 | 7/15/2016 - 3:19 PM
DRAWING PATHNAME | LAYOUT | PLOT DATE - TIME

SHEET NAME:

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 60+00 TO 70+00

PROJECT NAME:

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

KSA CP&Y TBPE FIRM #F-1741

TBPE Firm Registration No. F-1356
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STATE OF TEXAS
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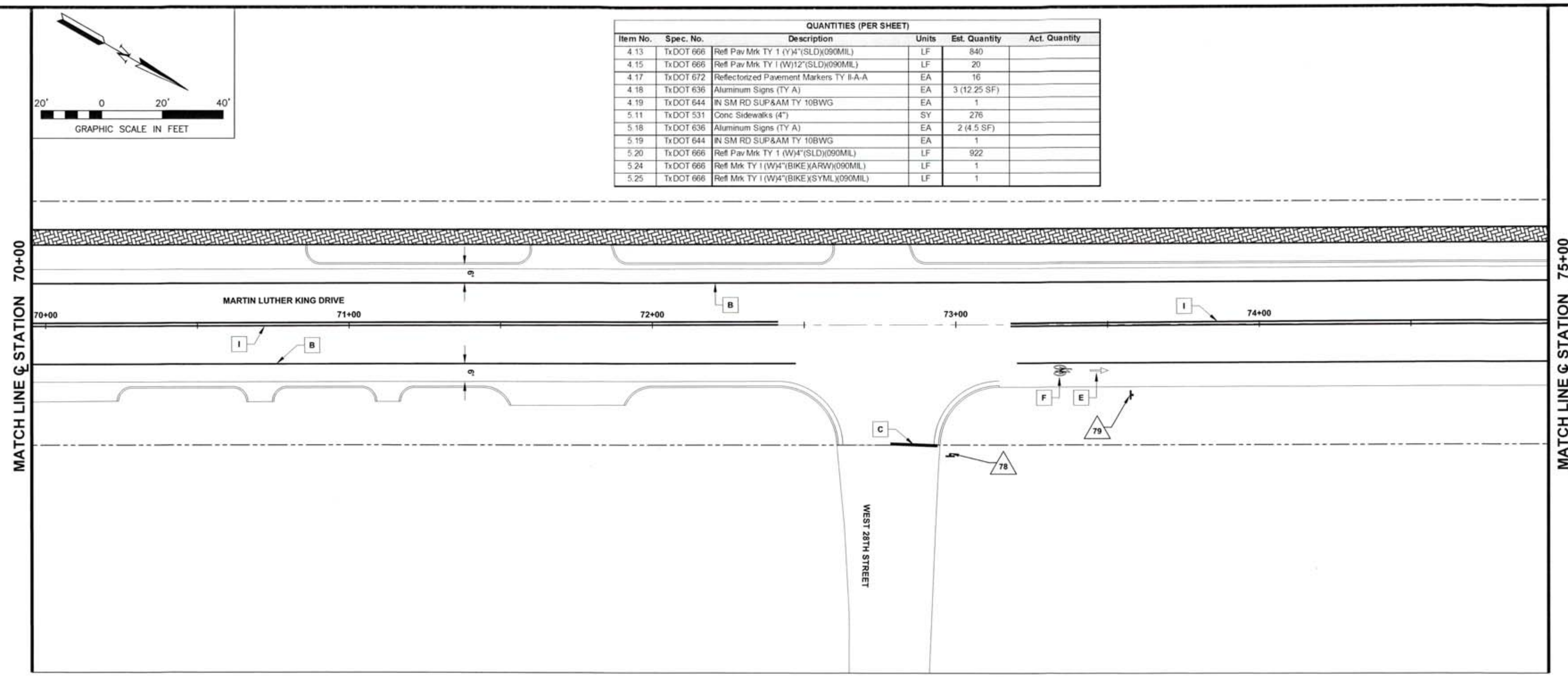
7/14/16
P.E.

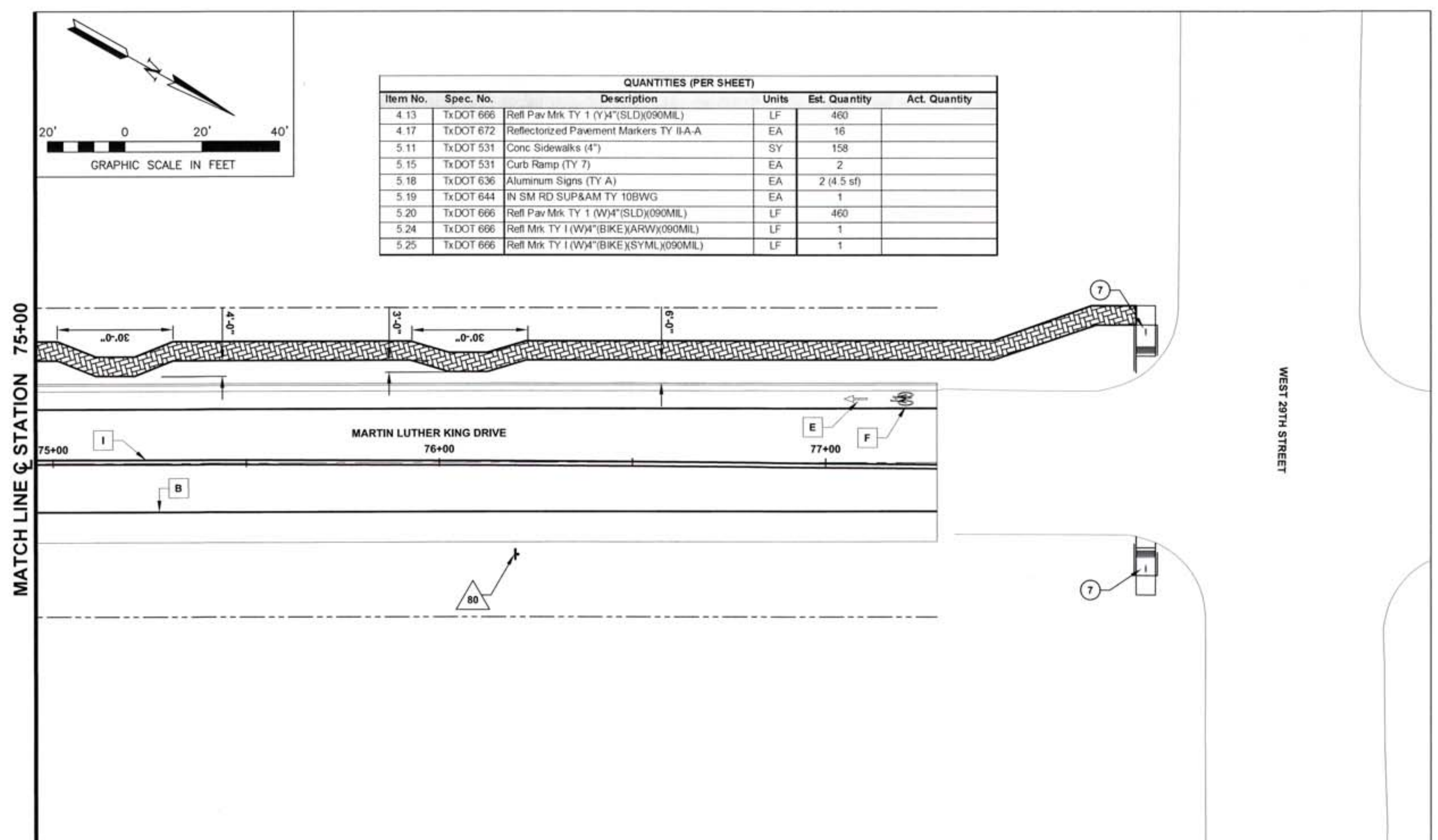
SHEET NO.
62



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	840	
4.15	TxDOT 666	Refl Pav Mrk TY I (W)12"(SLD)(090MIL)	LF	20	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
4.18	TxDOT 636	Aluminum Signs (TY A)	EA	3 (12.25 SF)	
4.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	276	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	2 (4.5 SF)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	922	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	1	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	1	

LEGEND

- A RFL PAV MRK TY 1 (W) 4" (DOT)
- B RFL PAV MRK TY 1 (W) 4" (SLD)
- C RFL PAV MRK TY 1 (W) 12" (SLD)
- D RFL PAV MRK TY 1 (W) 24" (SLD)
- E RFL PAV MRK TY 1 (W) (BIKE ARW)
- F RFL PAV MRK TY 1 (W) (BIKE SYM)
- G RFL PAV MRK TY 1 (W) (ARROW)
- H RFL PAV MRK TY 1 (Y) 4" (BRK)
- I RFL PAV MRK TY 1 (Y) 4" (DBL SLD)
- (1) CURB RAMP (TY 1)
- (2) CURB RAMP (TY 2)
- (3) CURB RAMP (TY 3)
- (7) CURB RAMP (TY 7)
- (10) CURB RAMP (TY 10)
- (#) STREET SIGN TO BE INSTALLED SEE SHEETS 7-9 FOR SUMMARY OF SMALL SIGNS



QUANTITIES (PER SHEET)					
Item No.	Spec. No.	Description	Units	Est. Quantity	Act. Quantity
4.13	TxDOT 666	Refl Pav Mrk TY 1 (Y)4"(SLD)(090MIL)	LF	460	
4.17	TxDOT 672	Reflectorized Pavement Markers TY II-A-A	EA	16	
5.11	TxDOT 531	Conc Sidewalks (4")	SY	158	
5.15	TxDOT 531	Curb Ramp (TY 7)	EA	2	
5.18	TxDOT 636	Aluminum Signs (TY A)	EA	2 (4.5 sf)	
5.19	TxDOT 644	IN SM RD SUP&AM TY 10BWG	EA	1	
5.20	TxDOT 666	Refl Pav Mrk TY 1 (W)4"(SLD)(090MIL)	LF	460	
5.24	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(ARW)(090MIL)	LF	1	
5.25	TxDOT 666	Refl Mrk TY I (W)4"(BIKE)(SYML)(090MIL)	LF	1	

MARTIN LUTHER KING DRIVE MARKING PLAN STA. 70+00 TO 77+29

SHEET NAME

CITY OF SAN ANGELO MARTIN LUTHER KING DRIVE RECONSTRUCTION SAN ANGELO, TX

PROJECT NAME

DRAWN BY:	CBS
DESIGNED BY:	JWD
LATEST REVISION:	7/14/2016
KSA JOB NO.:	SAN.058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356
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STATE OF TEXAS
DAVID A. ALEXANDER
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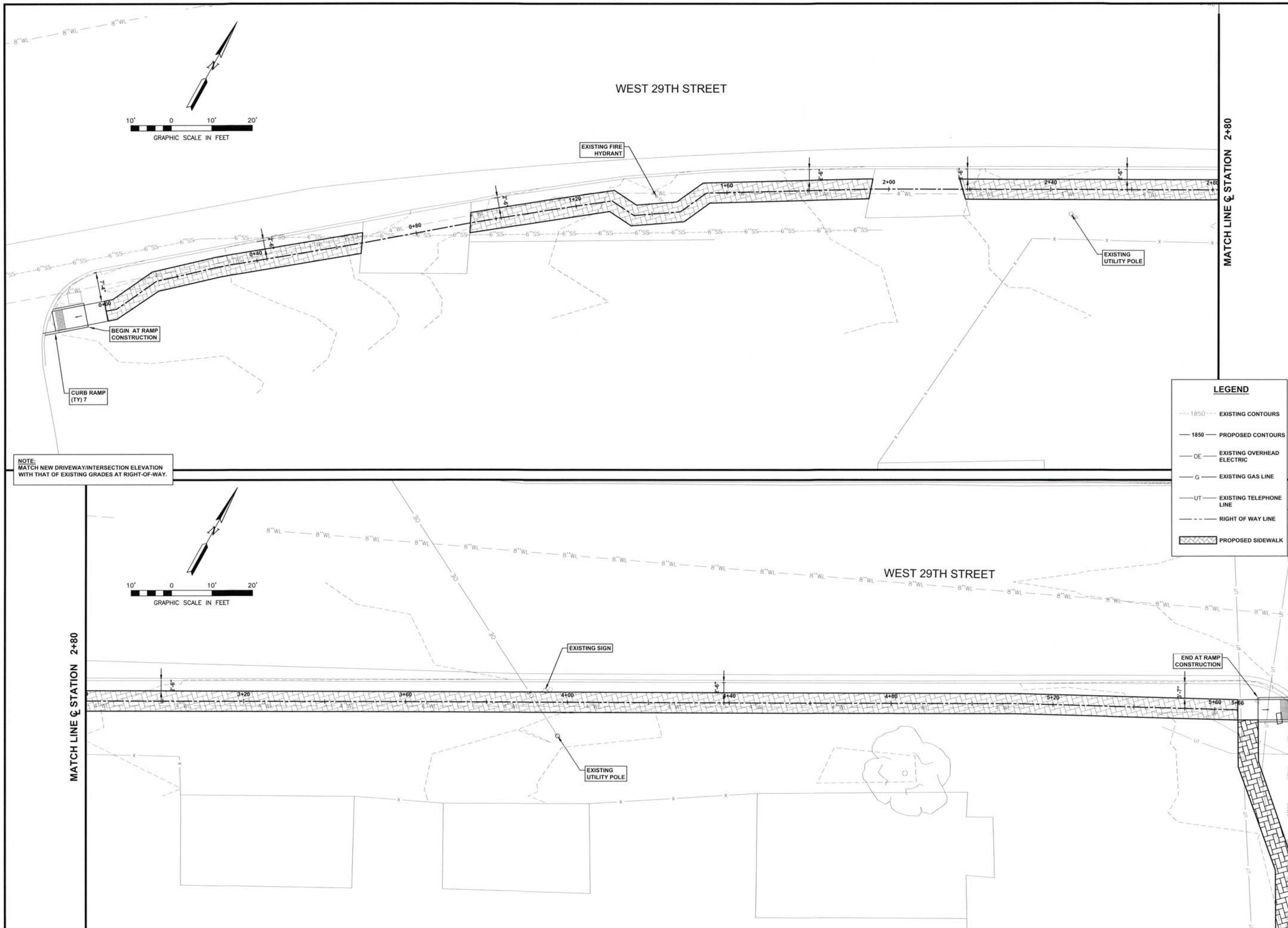
LICENSED PROFESSIONAL ENGINEER
7/21/16


WEST 29TH STREET
GRAPHIC SCALE IN FEET
EXISTING FIRE HYDRANT
BEGIN AT RAMP CONSTRUCTION
CURB RAMP (TY) 7
EXISTING UTILITY POLE
MATCH LINE ℄ STATION 2+80
NOTE:
MATCH NEW DRIVEWAY/INTERSECTION ELEVATION WITH THAT OF EXISTING GRADES AT RIGHT-OF-WAY.
LEGEND
EXISTING CONTOURS
PROPOSED CONTOURS
EXISTING OVERHEAD ELECTRIC
EXISTING GAS LINE
EXISTING TELEPHONE LINE
RIGHT OF WAY LINE
PROPOSED SIDEWALK
EXISTING SIGN
END AT RAMP CONSTRUCTION

WEST 29TH STREET SIDEWALK
STA. 0+00 TO STA. 5+66

CITY OF SAN ANGELO
MARTIN LUTHER KING DRIVE RECONSTRUCTION
SAN ANGELO, TX

DRAWN BY: CBS
DESIGNED BY: JWD
LATEST REVISION: 7/14/2016
KSA JOB NO.: SAN 058

CP&Y TBPE FIRM #F-1741

KSA TBPE Firm Registration No. F-1356

STATE OF TEXAS
DAVID A. ALEXANDER
96658
LICENSED PROFESSIONAL ENGINEER

SHEET NO. 63A