CIVIL CONSTRUCTION PLANS
PAVING & UTILITIES
FOR
JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS
CITY PROJECT NO. --

PLAN SUBMITTAL/REVIEW LOG

1ST SUBMITTAL TO CITY	08/26/2019
2ND SUBMITTAL TO CITY	10/28/2019
3RD SUBMITTAL TO CITY	12/11/2019
ISSUE FOR CONSTRUCTION	01/30/2020

ENGINEER

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STATE OF TEXAS
REGISTRATION NO. F-928

OWNER/DEVELOPER

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811 Know what's below. Call before you dig.

TREE SURVEY NOTE:
A TREE SURVEY WAS NOT INCLUDED WITH THIS PLAN SET DUE TO EXEMPTION PER ARTICLE IX, SECTION 5.1.3 OF CITY ORDINANCES.

VICINITY MAP
SCALE: 1" = 2,000'

JANUARY 2020

SHEET INDEX

ANTHONY M. LOEFFEL
122029
LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
1-8-21

RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PRELIMINARY SITE PREPARATIONS

1. SITE PREPARATION - THE BELOW NOTED SITE PREPARATION ITEMS ARE TO BE IN PLACE, INSPECTED AND APPROVED BY THE CITY, PRIOR TO THE START OF ANY CLEARING, GRUBBING OR GRADING OPERATIONS.
2. PROTECTED TREES WHICH ARE DESIGNATED TO REMAIN ON SITE - ARE TO BE IDENTIFIED, TAGGED AND BANDED WITH BRIGHT ORANGE OR RED BANDS.
3. PROTECTED TREES WHICH ARE DESIGNATED TO BE REMOVED FORM THE SITE ARE TO BE IDENTIFIED TAGGED AND BANDED WITH BLUE BANDS OR BLUE PAINT MARKINGS.
4. TREE IDENTIFICATION TAGS – ARE TO CONSIST OF METAL TAGS WHICH HAVE THE TREE IDENTIFICATION NUMBER STENCILED OR STAMPED OR ENGRAVED ON THE TAG. THE NUMBERS USED TO IDENTIFY THE PROTECTED TREES SHALL CORRESPOND TO THE TREE IDENTIFICATION NUMBER NOTED ON THE APPROVED TREESCAPE PLANS.
5. PROTECTED TREE - BARRIER FENCING:
   - 5.1. CHAIN LINK BARRIER FENCING – SHALL BE PLACED AROUND THE DRIP LINES OF THE INDIVIDUAL PROTECTED TREES OR GROUPS OF PROTECTED TREES, WHICH ARE DESIGNATED TO REMAIN AT THE SITE IF THEY ARE LOCATED WITHIN 10-FEET OF ANY CUT/FILL GRADING LOCATION.
   - 5.2. PLASTIC MESH BARRIER FENCING - SHALL BE PLACED AROUND THE DRIP LINES OF INDIVIDUAL PROTECTED TREES OR GROUPS OF PROTECTED TREES, WHICH ARE LOCATED OVER 10-FEET OR MORE OUTSIDE A CUT/FILL GRADING LOCATION.
6. SILT FENCE ALONG WITH CONSTRUCTION ENTRANCE AND ANY OTHER DESIGNATED EROSION BMP'S MUST BE INSTALLED AND INSPECTED. NO SILT FENCING MAY BE INSTALLED AT THE SITE UNTIL THE TREES HAVE BEEN IDENTIFIED, BANDED, TAGGED, FENCED AND INSPECTED BY THE CITY.
7. PORTABLE TOILET FACILITIES MUST BE ON SITE AND VERIFIED.
8. TRASH RECEPTACLE MUST BE ON SITE AND VERIFIED.
9. CONSTRUCTION SITE WORKING HOURS AND NOISE CONTROL SIGNAGE – SIGN INSTALLED AT THE SITE AND VERIFIED.
10. PORTABLE TOILET FACILITIES WILL BE REQUIRED ON ALL CONSTRUCTION SITES OR AS OTHERWISE DEEMED NECESSARY BY THE CITY OF ROCKWALL. IT IS ESSENTIAL THAT ADEQUATE ON-SITE RESTROOM FACILITIES BE AVAILABLE FOR ALL CONSTRUCTION WORKERS. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL AND MAINTAIN THE FACILITIES THROUGH THE COMPLETION OF THE PROJECT. THESE FACILITIES MUST BE IN PLACE PRIOR TO MOVING PERSONNEL ON SITE AND BEFORE CONSTRUCTION CAN BEGIN.
11. PORTABLE TRASH RECEPTACLE IS TO REMAIN ON THE JOBSITE THROUGH THE COURSE OF CONSTRUCTION. THE SITE IS TO REMAIN FREE OF CONSTRUCTION LITTER AND DEBRIS. CONSTRUCTION WORKERS SHALL PLACE ALL LUNCH TRASH IN "TRASH CONTAINERS" IMMEDIATELY AFTER LUNCH.
12. CITY ORDINANCE 05-45 – LIMITS CONSTRUCTION AND CONSTRUCTION RELATED ACTIVITIES TO THE HOURS OF 7:00 A.M. TO 7:00 P.M. MONDAY TROUGH FRIDAY AND 8:00 A.M. TO 7:00 P.M. ON SATURDAY. NO SUNDAY CONSTRUCTION ALLOWED. THE CITY OF ROCKWALL REQUIRES THAT A SIGN BE POSTED AT EACH COMMERCIAL/RESIDENTIAL DEVELOPMENT CONSTRUCTION SITE. THE CONSTRUCTION RELATED ACTIVITIES ARE TO INCLUDE BUT NOT BE LIMITED TO MAINTENANCE, SERVICING AND FUELING CONSTRUCTION EQUIPMENT, THE DELIVERY OF CONSTRUCTION RELATED MATERIALS AND/OR CONSTRUCTION EQUIPMENT. AT LOCATIONS WHERE COMPLIANCE TO ORDINANCE 05-45 IS NOT BEING OBSERVED, THE CITY OF ROCKWALL MAY ISSUE WRITTEN ORDERS TO STOP WORK OR FURTHER REGULATE THE SITE CONSTRUCTION WORK HOURS. THE CITY MAY ALSO ISSUE CITATIONS IF IT IS DETERMINED THAT A VIOLATION OF THE CONSTRUCTION ORDINANCE EXISTS.
13. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE INSPECTIONS PRIOR TO CONSTRUCTION. INSPECTIONS MAY BE SCHEDULED AND COORDINATED IN THE FIELD OR BY CELL PHONE DIRECTLY WITH THE ENGINEERING INSPECTOR. INSPECTION OF CONSTRUCTION AND VERIFICATION OF COMPLIANCE TO PLANS AND SPECIFICATIONS SHALL BE CONDUCTED BY THE CITY OF ROCKWALL ENGINEERING INSPECTOR. THE GENERAL CONTRACTOR SHALL NOTIFY ALL OF HIS CONSTRUCTION CONTRACTORS OF THIS REQUIREMENT. ITEMS TO BE INSPECTED MUST BE SUFFICIENTLY READY FOR INSPECTION AT THE TIME OF YOUR REQUESTED INSPECTION APPOINTMENT AS INSPECTOR'S TIME IS LIMITED. FAILURE TO BE READY FOR INSPECTIONS MAY RESULT IN INSPECTION RESCHEDULING TO THE FOLLOWING DAY. NO DEVELOPMENT WILL BE ACCEPTED BY THE CITY OF ROCKWALL UNTIL ALL CONSTRUCTION HAS BEEN APPROVED BY THE CITY OF ROCKWALL INSPECTORS.
14. FOR SATURDAY INSPECTIONS, THE CONTRACTOR SHALL BE CHARGED A MINIMUM 2 HOURS INSPECTION CHARGE FOR ALL SATURDAY INSPECTIONS. ALL SATURDAY INSPECTIONS MUST BE SCHEDULED IN WRITING TO THE ENGINEERING DEPARTMENT BY NOON ON THE THURSDAY BEFORE THE INSPECTION DATE. A SIGNED SATURDAY ENGINEERING INSPECTION REQUEST FORM MUST BE EMAILED TO THE AMY WILLIAMS (AWILLIAMS@ROCKWALL.COM) AND JOHN CRANSON (JCRANSON@ROCKWALL.COM). APPROVAL/DISAPPROVAL WILL BE EMAILED BACK TO THE REQUESTING CONTRACTOR WITH THE SATURDAY INSPECTOR'S INFORMATION. ALL CANCELLATIONS MUST BE GIVEN VERBALLY AND WRITTEN TO THE SATURDAY INSPECTOR NO LATER THAN 8 AM ON DAY OF INSPECTION. TWO HOURS OF OVERTIME INSPECTION WILL BE CHARGED TO THE CONTRACTOR IF NO CANCELLATION IS GIVEN PRIOR TO THE INSPECTOR ARRIVING AT THE PROJECT SITE. CONTRACTOR MUST SIGN ENGINEERING INSPECTOR'S REPORT OF OVERTIME FORM TO FINALIZE THE INSPECTION. NO ACCEPTANCE AND/OR CERTIFICATION OF OCCUPANCY WILL BE GIVEN UNTIL ALL OVERTIME ENGINEERING INSPECTION FEES ARE PAID IN FULL.
15. FOR BEFORE/AFTER WEEKDAY HOURS INSPECTIONS, THE CONTRACTOR WILL BE CHARGED ON 15 MINUTE INTERVALS FOR ANY BEFORE/AFTER HOUR'S INSPECTIONS. CONTRACTOR MUST SIGN ENGINEERING INSPECTOR'S REPORT OF OVERTIME FORM TO FINALIZE THE INSPECTION. NO ACCEPTANCE AND/OR CERTIFICATION OF OCCUPANCY WILL BE GIVEN UNTIL ALL OVERTIME ENGINEERING INSPECTION FEES ARE PAID IN FULL.
16. ROCKWALL POLICE DEPARTMENT (CRIME PREVENTION UNIT) PERIODICALLY PATROLS THE IDENTIFIED ACTIVE CONSTRUCTION SITES IN AN EFFORT TO REDUCE CONSTRUCTION SITE CRIME ACTIVITY INCLUDING THEFT, VANDALISM AND ARSON.
17. CONTRACTOR SHALL PROVIDE PROJECT INFORMATION AND CONTACT INFORMATION AS REQUESTED ON THE CHECKLIST AND FORWARD TO THE CITY OF ROCKWALL POLICE DEPARTMENT. SUBMIT THE CHECKLIST TO THE POLICE DEPARTMENT PRIOR TO PLACING EQUIPMENT OR CONSTRUCTION MATERIALS ON SITE. A COPY OF THE FORM FOR THE CONSTRUCTION SITE LIST MAY BE OBTAINED AT THE PRE-CONSTRUCTION MEETING OR OBTAINED THROUGH THE CITY OF ROCKWALL POLICE DEPARTMENT AND/OR ENGINEERING DEPARTMENT.
18. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL HAVE IN THEIR POSSESSION ALL NECESSARY PERMITS, PLANS, LICENSES, ETC. CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES.
19. POSTING OF SITE ADDRESS - THE PROJECT SITE ADDRESS SHALL BE POSTED AT THE SITE FOR 911 LOCATION IDENTIFICATION PURPOSES. THE NUMBERS SHALL BE VISIBLE FROM THE STREET AND HAVE A MINIMUM NUMBER SIZE OF TWELVE INCHES IN HEIGHT.
20. ALL WORK SHALL CONFORM TO THE CITY OF ROCKWALL DESIGN MANUALS AND STANDARDS. IN THE EVENT AN ITEM IS NOT COVERED IN THE PLANS OR THE CITY OF ROCKWALL DESIGN MANUALS AND STANDARDS, THE 4TH EDITION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL APPLY WITH CONCURRING NOTIFICATION TO THE CITY ENGINEER AND PROJECT ENGINEER. THE CITY ENGINEER SHALL HAVE THE FINAL DECISION ON ALL CONSTRUCTION MATERIALS, METHODS, AND PROCEDURES.
21. ABOVE GROUND FUEL STORAGE TANKS - A PERMIT MUST BE OBTAINED FROM THE FIRE DEPARTMENT, PRIOR TO PLACING ANY ABOVE GROUND FUEL TANKS ON THE SITE. CONTACT ARIANA ADAIR - CITY OF ROCKWALL, FIRE MARSHALL AT THE ROCKWALL FIRE DEPARTMENT AT TELEPHONE NUMBER 972-771-7770 FOR MORE INFORMATION.
22. THE CITY OF ROCKWALL (CITY-UTILITIES) IS NOT PART OF THE DIG-TESS OR TEXAS ONE CALL LINE LOCATE SYSTEM. NOTIFY DIG-TESS OR TEXAS ONE CALL LINE LOCATING SYSTEMS FOR ALL FRANCHISE UTILITY LINE LOCATES. ALL CITY OF ROCKWALL UTILITY LINE LOCATES ARE TO BE SCHEDULED WITH THE CITY, AT THE CITY OF ROCKWALL-SERVICE CENTER. A 48-HOUR ADVANCES NORICE IS REQUIRED FOR ALL NON-EMERGENCY LINE LOCATES. THE TELEPHONE NUMBER FOR THE SERVICE CENTER IS 972-771-7730.
23. CONSTRUCTION INSPECTION WILL BE PERFORMED BY REPRESENTATIVES OF THE OWNER, ENGINEER, CITY, GEOTECHNICAL ENGINEER, AND REVIEWING AUTHORITIES AND AGENCIES. UNRESTRICTED ACCESS SHALL BE PROVIDED TO THEM AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING REQUIRED INSPECTIONS. TESTING SAMPLES SHALL BE COLLECTED AND PROCESSED BY CERTIFIED TECHNICIANS.
24. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS ONTO DEVELOPED OR UNDEVELOPED AREAS WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S RESPONSIBILITY TO REPAIR.
25. IT WILL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES FOR LINE LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL ASSUME FULL LIABILITY TO THOSE COMPANIES FOR ANY DAMAGES CAUSED TO THEIR FACILITIES.
26. TRENCH SAFETY DESIGN WILL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR. CONTRACTOR SHALL SUBMIT A TRENCH SAFETY DESIGN APPROVED BY A PROFESSIONAL ENGINEER TO THE CITY ENGINEERING INSPECTOR FOR REVIEW PRIOR TO THE START OF ANY UNDERGROUND UTILITY CONSTRUCTION.
27. PRIOR TO CONSTRUCTION BEGINNING, THE PROJECT SHALL BE STAKED WITH OFFSET STAKES AT INTERVALS OF 50 FEET. THESE STAKES WILL OFFSET FROM THE BACK OF THE OUTSIDE CURB, A CONVENIENT DISTANCE TO PERMIT ALL OPERATIONS TO BE COMPLETED WITHOUT DISTURBING THESE STAKES. INFORMATION ON THESE STAKES SHALL BE THE STATION NUMBER, OFFSET DISTANCE FROM BACK OF CURB, ELEVATIONS OF HUB. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN THESE STAKES, AND USE THE INFORMATION FOR ALL OTHER HORIZONTAL AND VERTICAL CONTROL REQUIRED. THE CONTRACTOR WILL BE REQUIRED TO FURNISH EXPERIENCE PERSONNEL TO DO THIS WORK. THE CONTRACTOR WILL SET ALL FORMS USING THE DATA SHOWN ON PLANS. BLUE TOPS FOR FINAL GRADING AND ALL OTHER VERTICAL AND HORIZONTAL CONTROL ARE REQUIRED.
28. IF ANY CONFLICT ARISES BETWEEN THESE GENERAL NOTES AND ANY OTHER NOTES FOUND IN THE PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR CLARIFICATION.

GRADING

1. THE CITY OF ROCKWALL REQUIRES THE USE OF A SHEEP'S FOOT ROLLER AT ALL GENERAL FILL LOCATIONS. THE MECHANICAL TAMPING IS ALLOWED FOR TRENCH BACKFILL. THE SHEEP'S FOOT ROLLER IS TO BE ON SITE AND ACTIVE WHENEVER GENERAL FILL MATERIAL IS BEING PLACED. CONTRACTOR SHALL ENSURE THAT ALL DENSITY AND MOISTURE REQUIREMENTS ARE MET PER THE CITY'S STANDARD SPECIFICATIONS.
2. BACKFILL UNDER R.O.W. - MECHANICAL TAMPING - THE BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 8" LOOSE THICKNESS. THE MOISTURE CONTENT SHALL BE UNIFORM AND NEAR THE OPTIMUM MOISTURE CONTENT FOR THE MATERIAL. IN CASES WHERE THE MATERIALS BEING PLACED DO NOT HAVE THE PROPER MOISTURE, THE MATERIAL SHALL BE DRIED OUT OR ADDITIONAL MOISTURE SHALL BE ADDED BY SATISFACTORY METHODS SUCH THAT THE ADDITIONAL WATER IS DISTRIBUTED UNIFORMLY THROUGHOUT THE MATERIAL BEING PLACED. THE LAYERS OF BACKFILL SHALL BE REDUCED IN THICKNESS WHEN SATISFACTORY COMPACTION CANNOT BE OBTAINED WITH THE EQUIPMENT BEING USED. IN ALL CASES, A DENSITY OF NOT LESS THAN 95% OF THE STANDARD PROCTOR DENSITY MUST BE OBTAINED.
3. CONTRACTOR SHALL ARRANGE FOR THE NECESSARY LABORATORY TESTING, AT THEIR EXPENSE, TO DETERMINE THE DENSITY OF THE MATERIAL. THE CONTRACTOR SHALL SCHEDULE HIS OPERATIONS AND SHALL USE METHODS AND CONSTRUCTION OPERATIONS ESTABLISHED BY THE CITY OF ROCKWALL SO THAT UNIFORM TEST OF COMPACTION ARE OBTAINED.
4. ROLLING COMPACTION METHODS: THE BACKFILL MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 8" LOOSE THICKNESS. THE MOISTURE CONTENT IN THE MATERIAL BEING ROLLED SHALL BE UNIFORM AND NEAR THE OPTIMUM MOISTURE CONTENT FOR THE MATERIAL. IN CASES WHERE THE MATERIAL SHALL BE DRIED OUT OR ADDITIONAL MOISTURE SHALL BE ADDED BY SATISFACTORY METHODS SUCH THAT THE ADDITIONAL WATER IS DISTRIBUTED UNIFORMLY THROUGHOUT THE MATERIALS BEING PLACED. THE LAYERS OF BACKFILL SHOULD BE REDUCED IN THICKNESS WHEN SATISFACTORY COMPACTION CANNOT BE OBTAINED WITH EQUIPMENT BEING USED. IN ALL CASES A DENSITY OF NOT LESS THAN 95% OF THE STANDARD PROCTOR DENSITY MUST BE OBTAINED. NOTE* ALL OUTSIDE UTILITIES WORKING WITHIN THE RIGHT-OF-WAYS OF STREETS OR ALLEYS SHALL ALSO COMPLY WITH THE ABOVE NOTED SPECIFICATIONS WITH LABORATORY TESTING RESULTS PROVIDED TO THE CITY OF ROCKWALL. EASEMENT LOCATIONS UNDER PAVEMENT SHALL ALSO HAVE DENSITY CONTROL BACKFILL TO 95% OF THE STANDARD PROCTOR DENSITY.
5. 75-80% OF ALL DISTURBED AREA SHALL HAVE A MINIMUM OF 1" OF GRASS (NOT WEEDS OR WINTER RYE) PRIOR TO FINAL ACCEPTANCE.

EROSION CONTROL & VEGETATION

1. CONTRACTOR SHALL SUBMIT A COPY OF THE SWP3 TO THE CITY.
2. THE CSN OR NOI SHALL BE POSTED IN A LOCATION VIEWABLE TO THE PUBLIC UNTIL CONSTRUCTION IS COMPLETE AND NOTICE OF TERMINATION (NOT) SUBMITTED. THE STORM WATER POLLUTION PREVENTION PLAN (SWP3) SHALL BE READILY AVAILABLE FOR REVIEW BY FEDERAL, STATE, OR LOCAL OFFICIALS.
3. NO SOIL DISTURBING ACTIVITIES WILL OCCUR PRIOR TO THE SWP3, ECP, AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMP) BEING FULLY IMPLEMENTED.
4. THE CONTRACTOR SHALL COMPLY WITH THE CURRENT NCTCOG ISWMTM TECHNICAL MANUAL FOR CONSTRUCTION, THE TPDES GENERAL CONSTRUCTION PERMIT TXR150000 AND ANY OTHER STATE AND/OR LOCAL REGULATIONS.
5. THE CONTRACTOR SHALL EMPLOY MEASURES AS NECESSARY TO PREVENT DIRT, MUD, DEBRIS FROM BEING TRACKED OFF SITE. ANY DIRT, MUD, DEBRIS TRACKED OFFSITE SHALL BE CLEANED UP BY THE CONTRACTOR IMMEDIATELY.
6. THE SITE SHALL BE REVIEWED BY THE OPERATOR OR HIS REPRESENTATIVE WEEKLY, AND AFTER ANY MAJOR STORM. ADJUSTMENTS/REPAIRS TO THE EROSION CONTROL MEASURES WILL BE MADE AS NEEDED.
7. CONTRACTOR SHALL ESTABLISH PERENNIAL VEGETATION ON ALL OTHER DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING ACTIVITIES. AN APPROPRIATE SEED MIX SHOULD BE CONSIDERED WITH RESPECT TO THE SEASON AND THE TIMING OF FINAL ACCEPTANCE. A COOL SEASON SEED MIX SHOULD BE USED BETWEEN SEPTEMBER 15TH AND APRIL 15TH.
8. CONTRACTOR SHALL MAINTAIN THE SILT FENCING, AND CONSTRUCTION ENTRANCE ALONG WITH ALL OTHER APPROVED CONSTRUCTION SITE EROSION BMP'S THAT IS INSTALL AT THE SITE.
9. CONTRACTOR SHALL KEEP DIRT AND/OR MUD OFF PUBLIC STREETS AND FIRE LANES. CONTRACTOR SHALL HAVE SUFFICIENT EQUIPMENT AND MATERIALS ON SITE TO SAFELY REMOVE MUD/DIRT FROM THE ROADWAY WHEN NECESSARY. THE MATERIALS SHOULD INCLUDE TRAFFIC FLAGS, BROOMS, SHOVELS, SAFETY VEST, TRAFFIC CONES, VERTICAL PANELS OR OTHER APPROVED TRAFFIC CHANNELING DEVICES.
10. ALL PARKWAYS AND MEDIANS SET TO FINAL GRADE WITHIN RIGHTS OF WAYS TO BE SODDED PRIOR TO CITY ACCEPTANCE.

TREE PRESERVATION

1. ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL EXTERIOR WORK HAS BEEN COMPLETED.
2. THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, NO TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.
3. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES GREATER THAN 6" SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS.

TRAFFIC CONTROL

1. WHEN THE NORMAL FUNCTION OF THE ROADWAY IS SUSPENDED THROUGH CLOSURE OF ANY PORTION OF THE RIGHT-OF-WAY, TEMPORARY CONSTRUCTION WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE INSTALLED TO EFFECTIVELY GUIDE THE MOTORING PUBLIC THROUGH THE AREA. CONSIDERATION FOR ROAD USER SAFETY, WORKER SAFETY, AND THE EFFICIENCY OF ROAD USER FLOW SHALL BE AN INTEGRAL ELEMENT OF EVERY TRAFFIC CONTROL ZONE. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST T.M.U.T.C.D. AND N.C.H.R.P. 350.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES ON AN AROUND-THE-CLOCK BASIS, WHETHER OR NOT WORK IS ACTIVE. ANY DEFICIENCIES SHALL BE CORRECTED BY THE CONTRACTOR IMMEDIATELY, REGARDLESS OF TIME OF DAY.
3. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED. WHEN WORK IS SUSPENDED FOR SHORT PERIODS OF TIME AT THE END OF THE WORKDAY, TEMPORARY TRAFFIC CONTROL DEVICES THAT ARE NO LONGER APPROPRIATE SHALL BE REMOVED OR COVERED.
4. ACCESS MUST BE MAINTAINED TO ALL DRIVES AND SIDE STREETS OR AS INDICATED IN THE TRAFFIC CONTROL PLAN.

WATER

1. ALL WATER LINES AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT CITY OF ROCKWALL STANDARDS AND TCEQ REQUIREMENTS CHAPTER 290.
2. ALL PIPES AND APPURTENANCES SHALL CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61 AND MUST BE CERTIFIED BY ANSI AND MADE IN THE USA
3. ALL PIPES AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.
4. WATER SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH CITY OF ROCKWALL STANDARDS AND THEN FLUSHED AND SAMPLED BEFORE BEING PLACED IN SERVICE. SAMPLES SHALL BE COLLECTED IN ACCORDANCE WITH CITY OF ROCKWALL TESTING REQUIREMENTS.
5. ALL WATERLINES SHALL BE DESIGNED, MANUFACTURED, INSTALLED AND TESTED PER CITY OF ROCKWALL WATER STANDARD DETAILS.
6. ALL PVC PIPE WATER LINE SHALL BE BLUE IN COLOR.
7. ALL GATE VALVES SHALL BE RESILIENT WEDGE.
8. RESTRAINED JOINTS SUCH AS MEGA-LUG AT ALL FITTINGS.
9. THE EXISTENCE AND LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN (MAIN LINE ONLY, NO LATERALS OR SERVICES ARE SHOWN) ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NOR THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS.
10. ANY CONTRACTOR/SUBCONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE BUT NOT BE LIMITED TO BERMS, DITCHES, FENCES, PLANTS, IRRIGATION. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY THE ENGINEER.
11. CONTRACTOR SHALL SHORE ALL TRENCHES AND CONDUCT ALL CONSTRUCTION AND OPERATIONS IN ACCORDANCE WITH OSHA REQUIREMENTS.
12. ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH CITY OF ROCKWALL SPECIFICATIONS. ANY CONSTRUCTION AND/OR MATERIALS NOT COVERED IN CITY OF ROCKWALL SPECIFICATIONS SHALL BE IN ACCORDANCE WITH NCTCOG SPECIFICATIONS (4TH EDITION).
13. PIPE SHALL BE HANDLED SO AS TO PROTECT PIPE AND PIPE JOINTS AND CAREFULLY BEDDED TO PROVIDE CONTINUOUS BEARING AND PREVENT UNEVEN SETTLEMENT. PIPE SHALL BE PROTECTED AGAINST FLOTATION AT ALL TIMES. OPEN ENDS OF INSTALLED PIPE SHALL BE SEALED AT ALL TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE "AS-BUILT" DRAWINGS TO THE PROJECT DESIGN ENGINEER AND CITY ENGINEER IMMEDIATELY AFTER CONSTRUCTION.
15. IT SHALL BE CONTRACTOR'S RESPONSIBILITIES TO VERIFY LOCATION, ELEVATION AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCE, IF REQUIRED. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATION SHALL BE RESTORED AT HIS EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY'S GRADES CONFLICT WITH EXISTING UTILITY'S GRADES.
16. CONTRACTOR TO MAINTAIN COVER PER CITY OF ROCKWALL STANDARDS. A MINIMUM DEPTH OF 42" WHERE THERE IS EXISTING OR PROPOSED PERMANENT PAVEMENT. 60" COVER MUST EXIST ON ALL WATER LINES IN PUBLIC ROWS, EASEMENTS, OR UNIMPROVED AREAS WITHOUT PERMANENT PAVING AREAS WITH BASE.
17. CONTRACTOR TO PROVIDE EXTENSIONS FOR ALL VALVE STACKS AND FIRE HYDRANT LEADS/RISERS FOR ALL WATERLINES DEEPER THAN 48" DEPTH.
18. CONTRACTOR TO PROVIDE A CURVE IN WATERLINE TO AVOID STORM DRAIN INLETS AT ALL LOCATIONS.
19. ALL PVC PIPE SHALL BE INSTALLED WITH TRACER TAPE.
20. ALL EMBEDMENT SHALL BE INSTALLED AND CONSTRUCTED TO CURRENT PUBLISHED CITY OF ROCKWALL STANDARDS AND DETAILS
21. ALL DUCTILE IRON FITTINGS, VALVES, ETC. SHALL BE ENCASED WITH TWO LAYERS OF POLYETHYLENE WRAP. THE INNER LAYER SHALL BE 4 MILS THICK OF CROSS-LAMINATED WRAP. THE OUTER LAYER SHALL BE 8 MILS THICK OF UNIDIRECTIONAL WRAP.
22. FIRE HYDRANT FLOW TESTING SHALL BE DONE PER THE CITY'S STANDARDS AND PROCEDURES.
23. ALL VALVE LIDS SHALL BE PAINTED PER THE FOLLOWING: MAINLINE VALVE LIDS SHALL BE BLUE, FIRE HYDRANT VALVE LIDS SHALL BE RED, STUBOUT (DEAD END) VALVE LIDS SHALL BE WHITE.
24. ALL OPERATING VALVE NUTS SHALL BE SET AT A HEIGHT BETWEEN THREE AND FOUR FEET BELOW FINISHED GRADE.
25. ALL FIRE HYDRANTS MUST HAVE THE CENTER NOZZLE BETWEEN 19 AND 28 INCHES ABOVE THE ADJACENT FINAL GRADE ELEVATION. ALL FIRE HYDRANTS LOCATED WITHIN AN UNPAVED AREA SHALL HAVE A 3'X3' REINFORCED CONCRETE PAD. THE PAD SHALL HAVE A MINIMUM THICKNESS OF FOUR INCHES AND BE PLACED A MINIMUM OF 6-INCHES TO A MAXIMUM OF 12-INCHES BELOW FINAL GRADE ELEVATION. THE PAD SHALL BE CONSTRUCTED OF REINFORCED CLASS "A" CONCRETE.
26. ALL FIRE HYDRANTS LOCATED AT THE SITE SHALL BE PAINTED TO CITY SPECIFICATIONS. A MINIMUM OF TWO COATS OF ALUMINUM PAINT, MOBILE 11-A-19 OR TNEMEC 2-COLOR TNEMEC-GLOSS OR APPROVED EQUAL, ARE TO BE APPLIED TO EACH HYDRANT. THE FIRE HYDRANT BODY SHALL BE PAINTED SILVER. THE HYDRANT NOZZLE AND BONNET ARE TO BE PAINTED TO COMPLY WITH THE FOLLOWING LINE SIZE COLOR CODE. THE COLOR INDICATING THE LINE SIZE SHALL BE AS FOLLOWS - SOLID SILVER FOR 6-INCH WATER MAINS, BLUE FOR 8-INCH WATER MAINS AND YELLOW FOR 10-INCH AND LARGER WATER MAINS
27. CONTRACTOR SHALL CUT AND PAINT A "V" MARK ON THE CURB TO NOTE THE VALVE LOCATIONS (BLUE PAINT FOR MAIN LINE VALVES, RED PAINT FOR FIRE HYDRANTS AND WHITE PAINT FOR STUB OUT VALVES). CUT THE "V" POINTING TOWARDS THE VALVE.
28. CONTRACTOR SHALL INSTALL BLUE EMS DISKS ON THE WATER LINE EVERY 250 FEET, CHANGE IN DIRECTION, FIRE HYDRANT AND SERVICE CONNECTION.
29. CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED UTILITIES TO FINAL GRADE.

STORM SEWER

1. WHEN THERE IS LESS THAN TWO FEET OF CLEARANCE BETWEEN A WATER/SEWER LINE AND A STORM SEWER, THE CONTRACTOR SHALL INSTALL CONCRETE ENCASEMENT AROUND THE SANITARY SEWER OR WATER LINES AT THE STORM SEWER CROSSING. THE ENCASEMENT SHALL BE A MINIMUM OF 10 L.F. AND 6" THICK CENTERED AT THE CROSSING.
2. MANHOLE LIDS ON STORM SEWER INLETS SHALL BE CENTERED OVER THE OUTGOING STORM LATERAL.
3. ALL BENDS AND WYES FOR PIPES LESS THAN 42" DIAMETER MUST BE FACTORY MANUFACTURED BENDS AND WYES.
4. STRUCTURAL CONCRETE USED FOR STORMWATER STRUCTURES SHALL BE IN COMPLIANCE WITH THE 4TH EDITION OF THE NCTCOG STANDARDS AND SPECIFICATIONS AND CITY STANDARDS (4200 PSI CONCRETE WITH 6.5 SACK MIX IF PREFABRICATED OR 7.0 SACK MIX IF CAST IN PLACE).
5. PRIOR TO FINAL ACCEPTANCE, ALL STORM SEWERS SHALL CLEARED OF ANY SEDIMENT AND DEBRIS.
6. STANDARD EMBEDMENT SHALL BE NCTCOG CLASS "B" WITH CITY AMENDMENTS FOR ALL PUBLIC STORM LINES.
7. ALL INLETS AND DRAINAGE STRUCTURES SHALL BE DOUBLE FORMED. NO EARTH FORMS WILL BE ALLOWED. ALL STRUCTURAL CONCRETE IS TO BE 4,200 PSI STRENGTH MINIMUM. ALL STORM STRUCTURES SHALL BE CAST IN PLACE UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. ALL PRE-FABRICATED STRUCTURES ARE TO BE APPROVED BY THE CITY ENGINEER PRIOR TO USE.
8. ALL CONCRETE STORMWATER STRUCTURES SHALL BE CAST-IN-PLACE. NO PRE-FABRICATED STRUCTURES ARE PERMITTED UNLESS OTHERWISE APPROVED IN WRITING BY THE CITY OF ROCKWALL.
9. MINIMUM DETENTION POND REQUIREMENTS PRIOR TO PAVEMENT PLACEMENT - THE DETENTION SYSTEMS ARE TO BE INSTALLED AND VERIFIED FOR DESIGN COMPLIANCE ALONG WITH THE ASSOCIATED STORM SEWER AND OUTFALL STRUCTURES AND DRAINAGE CHANNELS, PRIOR TO THE START OF ANY PAVING OPERATIONS INCLUDING SLAB WORK. EROSION PROTECTION IS TO BE PLACED AT THE PONDS OUTFALL STRUCTURE ALONG WITH ANY ASSOCIATED EROSION BMP'S NOTED ON THE EROSION CONTROL PLAN. THE DETENTION POND FLOORS AND SLOPES ARE TO BE STABILIZED WITH SEEDED EROSION CONTROL MATERIAL OR SOD. THE MATTING OR SOD SHALL BE ANCHORED AT HIGH VELOCITY LOCATIONS IF DEEMED NECESSARY.
10. INLETS AND MANHOLES WITHIN THE PROPOSED PAVING WIDTH SHALL BE BACKFILLED AS SPECIFIED IN THE GRADING SECTION OF THESE NOTES AND CITY OF ROCKWALL STANDARD SPECIFICATIONS.
11. BACKFILLING FOR BOX CULVERTS AND WINGWALLS SHALL CONSIST OF CRUSHED LIMESTONE TYPE I EMBEDMENT OR GRAVEL TYPE II EMBEDMENT FOR A DISTANCE OF APPROXIMATELY TWO FEET BACK OF THE ENTIRE WALL, AND SUITABLE EXCAVATED MATERIAL FOR THE REMAINDER OF THE BACKFILL. THE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY.
12. ALL STORM SEWER AND LATERALS SHALL BE VISUALLY INSPECTED BY PHOTOGRAPHIC MEANS (TELEVISION AND DVD) PRIOR TO FINAL ACCEPTANCE. CONTRACTOR SHALL FURNISH A DVD TO THE CITY OF ROCKWALL.

SANITARY SEWER

1. UNLESS OTHERWISE NOTED ON THE PLANS, ALL SANITARY SEWER PIPE SHALL BE PVC ASTM DESIGNATION D3034, SDR-35 UP THROUGH 15" IN DIAMETER (FOR PIPE DEPTHS OF 10' OR GREATER, USE SDR-26 PIPE). PIPES LARGER THAN 15" IN DIAMETER SHALL BE DESIGNATED PVC ASTM F679. OTHER PIPE SHALL BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.
2. ALL RESIDENTIAL SANITARY SEWER LATERALS SHALL INCLUDE A 4" TEE WYE BEND, PIPE AND STOPPER, AND SHALL BE INSTALLED DOWNSTREAM FROM THE WATER SERVICE AT THE LOT CENTERLINE AND EXTENDED 10' BEYOND THE PROPERTY LINE ONTO PRIVATE PROPERTY. SEWER LATERALS SHALL BE LAID ON A MINIMUM SLOPE OF +2.00% FROM THE MAIN LINE TO THE STREET RIGHT-OF-WAY.
3. ALL SANITARY SEWERS AND LATERALS SHALL BE TESTED BY PULLING A MANDREL, AIR PRESSURE TEST, AND TELEVISION VIDEO. THE TELEVISION VIDEO SHALL BE PROVIDED TO THE CITY INSPECTOR IN A DVD FORMAT AND SHALL BE LABELED ACCORDINGLY FOR CITY RECORD.
4. ALL SANITARY SEWER MANHOLES WITHIN FLOOD PLAINS OR FLOOD PRONE AREAS REQUIRE TYPE "S" MANHOLE LIDS.
5. ALL MANHOLES SHALL BE VACUUM AND SPARK TESTED AND TESTING SHALL COMPLY WITH CITY OF ROCKWALL SPECIFICATIONS.
6. UNLESS OTHERWISE NOTED, IN OPEN SPACES, THE TOP OF THE SANITARY SEWER MANHOLE SHALL BE INSTALLED A MINIMUM OF 12 INCHES ABOVE THE SURROUNDING GROUND.
7. STRUCTURAL CONCRETE USED FOR WASTEWATER STRUCTURES SHALL BE IN COMPLIANCE WITH THE LATEST CITY STANDARDS AND SPECIFICATIONS (4200 PSI CONCRETE WITH 6.5 SACK MIX DESIGN FOR PREFABRICATED MANHOLES OR A 7.0 SACK MIX DESIGN FOR CAST IN PLACE MANHOLES).
8. STANDARD EMBEDMENT SHALL BE PER CITY OF ROCKWALL'S CURRENT PUBLISHED SPECIFICATIONS.
9. ALL SANITARY SEWER PIPE SHALL BE VISUALLY INSPECTED BY PHOTOGRAPHIC MEANS (TELEVISION AND DVD) PRIOR TO FINAL ACCEPTANCE. CONTRACTOR SHALL INSPECT THE SANITARY SEWER SYSTEM AGAIN AT TWENTY MONTHS INTO THE TWO YEAR MAINTENANCE WARRANTY. THE CONTRACTOR SHALL FURNISH A DVD TO THE CITY OF ROCKWALL.
10. CONTRACTOR SHALL CUT AND PAINT A "MH" MARK ON THE PAVEMENT CURB TO INDICATE MANHOLE LOCATIONS (GREEN PAINT).
11. CONTRACTOR SHALL INSTALL GREEN EMS DISKS ON THE SEWER LINE AT EVERY MANHOLE, CLEANOUT, CHANGE IN DIRECTION AND SERVICE CONNECTION.
12. ALL MANHOLES SHALL BE RAVEN COATED OR APPROVED EQUAL.

PAVING

1. ALL MIX DESIGNS SHALL BE SEALED BY A PROFESSIONAL ENGINEER AND SUBMITTED, WITH HISTORY OF RECENT CYLINDER BREAKS) TO THE CITY INSPECTOR TEN DAYS BEFORE A SCHEDULED POUR. MIX DESIGNS ARE SUBJECT TO APPROVAL BY THE CITY ENGINEER.
2. ALL CONCRETE PAVING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI, UNLESS A HIGHER COMPRESSIVE STRENGTH IS SPECIFIED WITHIN THE GEOTECHNICAL REPORT.
3. ALL FILL SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY IN A MAXIMUM OF 6" (SIX) INCH LIFTS OR PER THE APPROVED GEOTECHNICAL ENGINEERS REPORT.
4. SUBGRADE SHALL EXTEND 12" MINIMUM BEHIND THE CURB, BE A MINIMUM OF 8" THICK AND SHALL BE LIME STABILIZED AS RECOMMENDED IN THE GEOTECHNICAL REPORT. THE AMOUNT OF LIME TO BE ADDED SHALL BE SUFFICIENT TO ACHIEVE A PLASTICITY INDEX NOT TO EXCEED 12.
5. FOR EVERY 150 CUBIC YARDS OF CONCRETE OR A DAILY SET IF LESS THAN 150 CUBIC YARDS ARE TO BE PLACED IN ONE DAY, A MINIMUM OF FOUR (4) TEST CYLINDERS ARE REQUIRED FOR BREAKS AT 7 DAYS, 14 DAYS AND TWO AT 28 DAYS. IF THE 28 DAYS CYLINDER BREAKS FAIL, CORE TESTING SHALL BE DONE WITHIN 10 DAYS OF THE FAILED 28 DAY CYLINDER BREAK DATE.
6. ALL CITY STREETS ARE REQUIRED TO BE PAVED WITH THE USE OF AN APPROVED SLIP FORM PAVING MACHINE WITH MECHANICAL VIBRATION. HAND POURS ARE ONLY ALLOWED AT INTERSECTION RETURNS OR OTHER NON-STANDARD AREAS SUCH AS PARALLEL PARKING SPACES. HAND POURS SHALL BE VIBRATED BY AN APPROVED HAND VIBRATOR.
7. CONSTRUCTION JOINTS, COLD JOINTS AND CURB RETURNS SHALL HAVE FABRIC INSTALLED TO ALLOW FOR EXPANSION.
8. SAWED JOINTS SHALL BE EVERY 15 FEET FOR 6" THICK CONCRETE AND EVERY 20 FEET FOR 8" THICK CONCRETE; AND SHALL BE CONSTRUCTED WITHIN THE FIRST 12 HOURS OF CONCRETE PLACEMENT.
9. EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM EVERY 400 FEET.
11. ALL BARRIER FREE RAMPS - SHALL BE CLASS "C" CONCRETE 6.5 SACK - 3600 PSI MINIMUM. ALL BARRIER FREE RAMPS LOCATED WITHIN PUBLIC RIGHT OF WAYS OF THE PROJECT ARE TO CONSIST OF COLORED TRUNCATED DOME PLATES (MUST BE APPROVED BY THE CITY OF ROCKWALL ENGINEERING DEPARTMENT).
12. ALL SIDEWALKS LOCATED WITHIN THE PUBLIC RIGHT OF WAYS SHALL BE CLASS "A" REINFORCED CONCRETE 5.5 SACK MINIMUM 3000 PSI MINIMUM.
13. FLY ASH (NCTCOG ITEM 2.2.2 STANDARD SPECIFICATIONS) MAY BE USED IN CONCRETE PAVEMENT LOCATIONS PROVIDED THAT THE MAXIMUM CEMENT REDUCTION DOES NOT EXCEED 20% BY WEIGHT PER CUBIC YARD OF CONCRETE. THE FLY ASH REPLACEMENT SHALL BE 1.25 POUNDS PER 1.0 POUND OF CEMENT REDUCTION.
14. LIME SUBGRADE TEST - REQUIREMENTS FOR MIXING AND PULVERIZING OF MATERIALS AND COMPACTIONS SHALL BE AS SPECIFIED IN THE VARIOUS ITEMS OF THE CITY OF ROCKWALL STANDARD OF DESIGN AND SPECIFICATIONS.
15. ALL PAVEMENT SUBGRADES ARE TO BE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE STANDARD PROCTOR.
16. HOT WEATHER CONCRETE PLACEMENT - CONCRETE PLACEMENT SHALL CEASE IF CONCRETE TEMPERATURE MEETS OR EXCEEDS 95 DEGREE FAHRENHEIT.
17. COLD WEATHER CONCRETE PLACEMENT - CONCRETE PLACEMENT SHALL CEASE IF CONCRETE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING OR THE AIR TEMPERATURE IS LESS THAN 40 DEGREES FAHRENHEIT AND FALLING.
18. THE CONTRACTOR SHALL EMPLOY A QUALIFIED COMMERCIAL TESTING LABORATORY APPROVED BY THE CITY OF ROCKWALL. THE LAB SHALL BE GIVEN ADVANCED NOTICE OF CONSTRUCTION TO ALLOW PROPER TESTING OF MATERIAL. LABORATORY TESTING IS REQUIRED ON ALL PAVEMENTS AND STRUCTURE PLACEMENT POURS.
19. TEST DATA AND COPIES OF LABORATORY REPORTS FOR SITE WORK ARE TO BE DIRECTED TO THE ATTENTION OF THE DESIGNATED CONSTRUCTION INSPECTOR ASSIGNED TO THE PROJECT.
20. REINFORCING STEEL PLACED WITHIN THE PUBLIC RIGHT OF WAYS SHALL BE GRADE 60 STEEL AND COMPLY WITH TEXAS DEPARTMENT OF TRANSPORTATION SPECIFICATION ITEM 440.2.

GEOTECHNICAL REPORT NOTE

ALL WORK TO BE DONE IN ACCORDNACE WITH GEOTECHNICAL REPORT NO. G192806 DATED DECEMBER 13, 2019 BY ALPHA TESTING, INC.

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

No.	REVISIONS	DATE	BY

Kimley»Horn

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PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

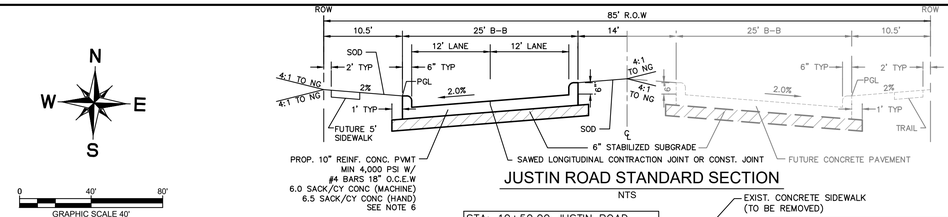
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: AML
CHECKED BY: BLM

GENERAL NOTES

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-02



JUSTIN ROAD STANDARD SECTION

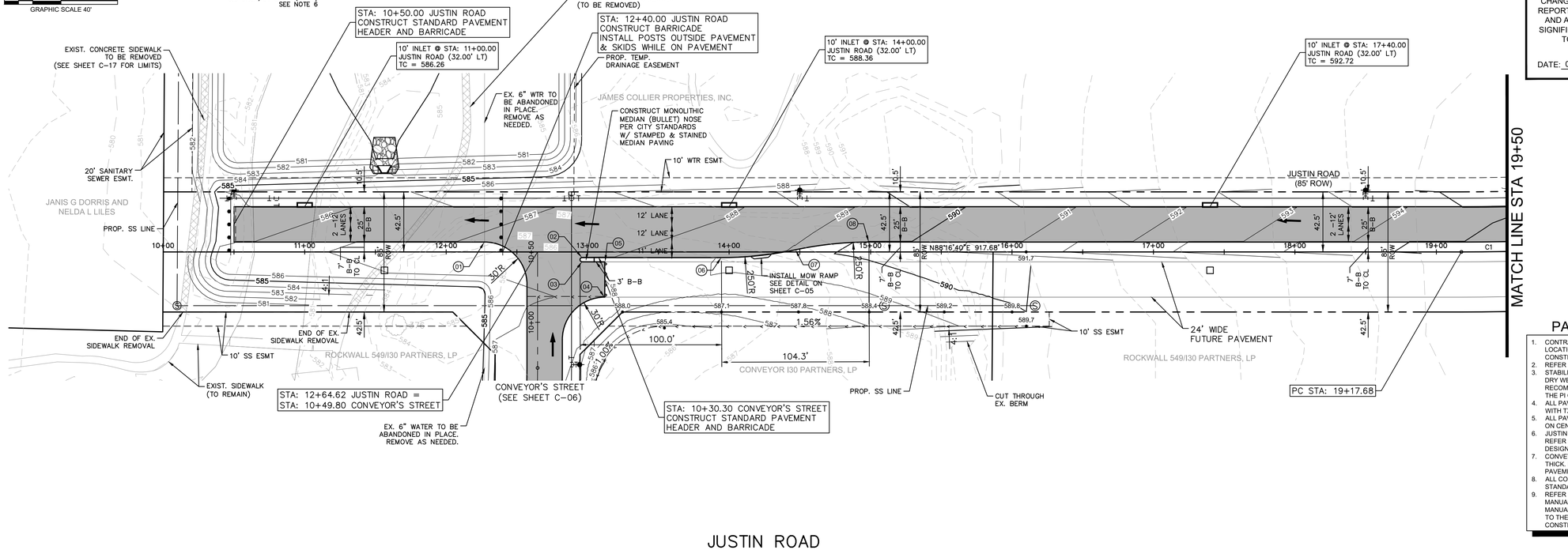
NTS

POINT TABLE					
POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
01	PCCR (TC)	JUSTIN ROAD	12+27.12	7.00' LT	587.63
02	PT (TC)	JUSTIN ROAD	12+96.12	4.00' RT	588.34
03	PT (TC)	JUSTIN ROAD	12+96.12	7.00' RT	588.14
04	PCCR (END PAVEMENT)	JUSTIN ROAD	13+12.12	32.00' RT	587.75
05	END PAVEMENT	JUSTIN ROAD	13+12.12	7.00' RT	588.25
06	PC (TC)	JUSTIN ROAD	13+94.62	4.00' RT	589.03
07	PRC (TC)	JUSTIN ROAD	14+46.77	1.50' LT	589.59
08	PT (TC)	JUSTIN ROAD	14+98.92	7.00' LT	590.11

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1550.00'	478.21'	N79°26'21"E	476.32'	17°40'38"	241.02'

N
W E
S

0 40' 80'
GRAPHIC SCALE 40'



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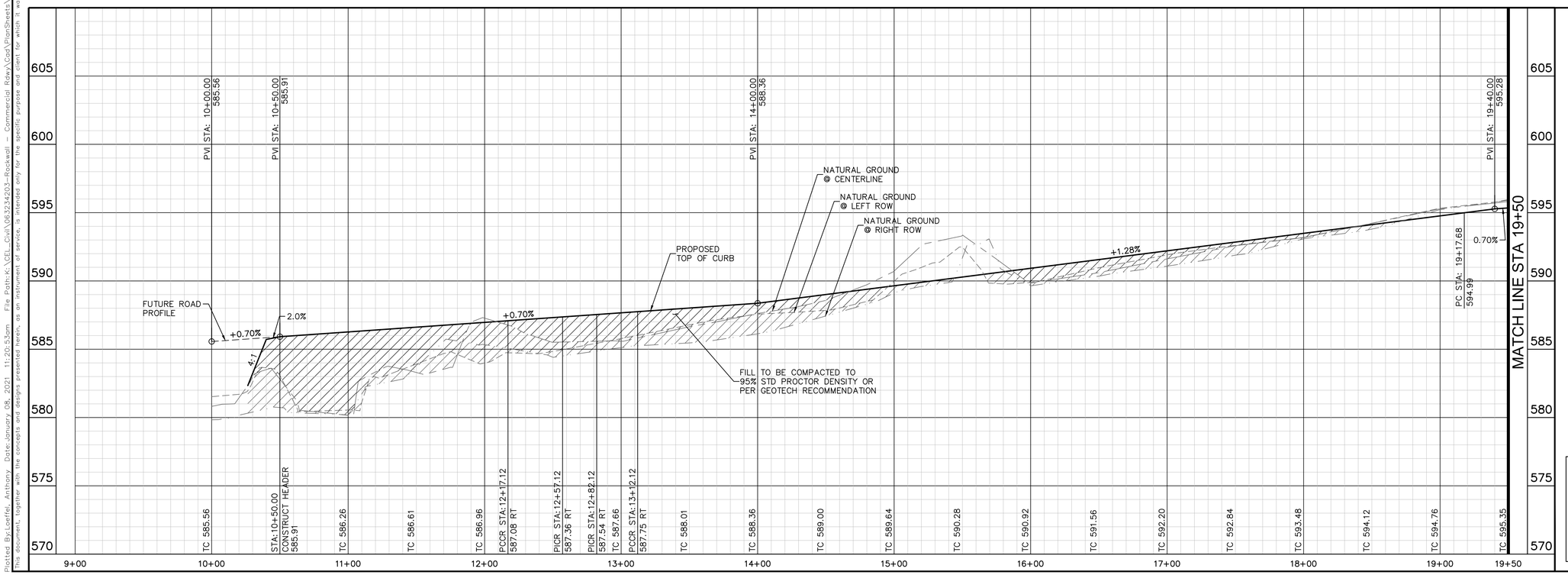
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PAVING GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING IMPROVEMENTS PRIOR TO CONSTRUCTION.
2. REFER TO SHEET C-02 FOR GENERAL PAVING NOTES.
3. STABILIZED SUBGRADE SHALL BE A MIN. DEPTH OF 6" WITH 9% DRY WEIGHT LIME CONTENT (4 LB/SY) OR PER GEOTECHNICAL RECOMMENDATIONS (WHICHEVER IS GREATER) TO REDUCE THE PI OF NATIVE MATERIAL TO 15 OR LESS.
4. ALL PAVING STEEL SHALL BE GRADE 60 STEEL AND COMPLY WITH TXDOT SPECIFICATIONS.
5. ALL PAVING STEEL SHALL BE #4 BARS WITH A SPACING OF 18" ON CENTER EACH WAY.
6. JUSTIN ROAD PAVEMENT SHALL BE A MINIMUM OF 10" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
7. CONVEYORS STREET PAVEMENT SHALL BE A MINIMUM OF 8" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
8. ALL CONSTRUCTION SHALL BE PER THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL.
9. REFER TO THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL FOR STANDARD CONSTRUCTION DETAILS. IF THIS MANUAL DOES NOT INCLUDE THE DETAILS SPECIFIED, REFER TO THE CURRENT VERSION OF THE NCTCOG PUBLIC WORKS CONSTRUCTION STANDARDS MANUAL.

JUSTIN ROAD



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM F-928

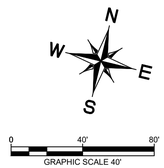
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

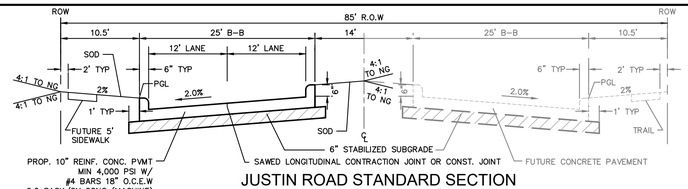
KHA PROJECT 063234203
DATE: MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: AML
CHECKED BY: BLM

PAVING PLAN & PROFILE - JUSTIN ROAD

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-03

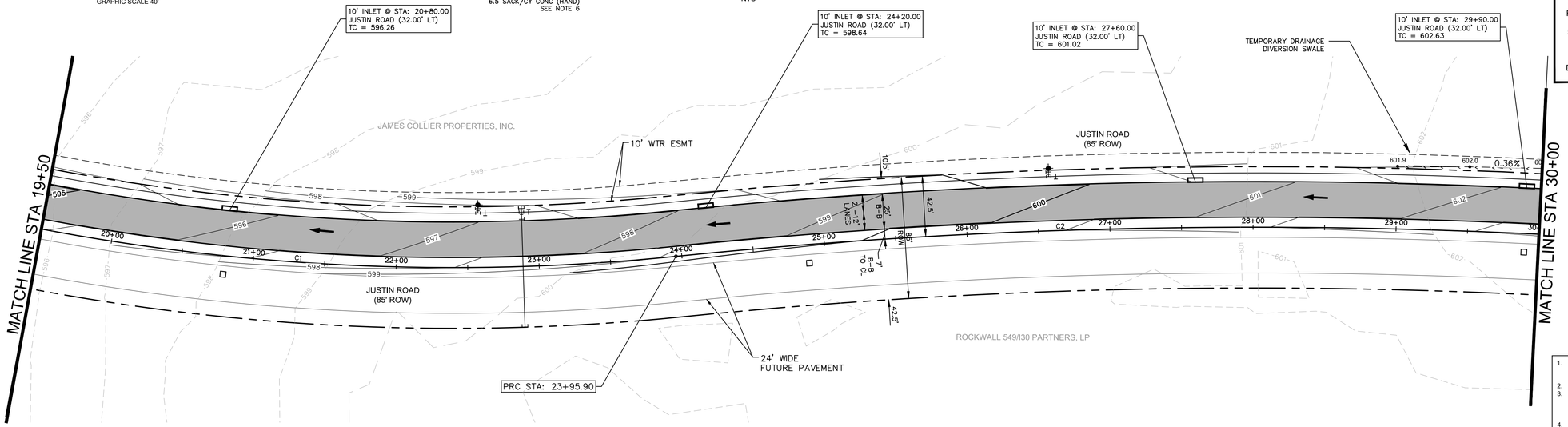




JUSTIN ROAD STANDARD SECTION

NTS

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1550.00'	478.21'	N79°26'21"E	476.32'	17°40'38"	241.02'
C2	4021.90'	1282.86'	N79°44'18"E	1277.43'	18°16'32"	646.92'



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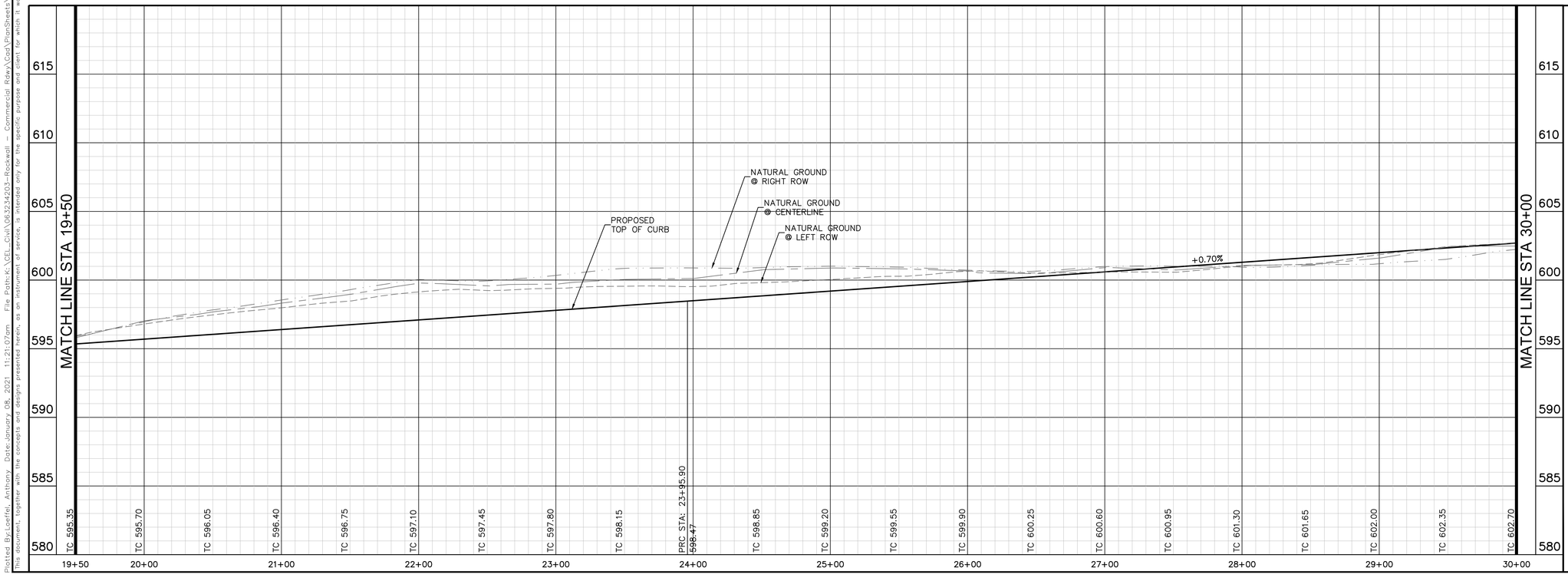
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PAVING GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING IMPROVEMENTS PRIOR TO CONSTRUCTION.
2. REFER TO SHEET C-02 FOR GENERAL PAVING NOTES.
3. STABILIZED SUBGRADE SHALL BE A MIN. DEPTH OF 6" WITH 9% DRY WEIGHT LIME CONTENT (41LB/SY) OR PER GEOTECHNICAL RECOMMENDATIONS (WHICHEVER IS GREATER) TO REDUCE THE PI OF NATIVE MATERIAL TO 15 OR LESS.
4. ALL PAVING STEEL SHALL BE GRADE 60 STEEL AND COMPLY WITH TXDOT SPECIFICATIONS.
5. ALL PAVING STEEL SHALL BE #4 BARS WITH A SPACING OF 18" ON CENTER EACH WAY.
6. JUSTIN ROAD PAVEMENT SHALL BE A MINIMUM OF 10" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
7. CONVEYORS STREET PAVEMENT SHALL BE A MINIMUM OF 8" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
8. ALL CONSTRUCTION SHALL BE PER THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL.
9. REFER TO THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL FOR STANDARD CONSTRUCTION DETAILS. IF THIS MANUAL DOES NOT INCLUDE THE DETAILS SPECIFIED, REFER TO THE CURRENT VERSION OF THE NCTCOG PUBLIC WORKS CONSTRUCTION STANDARDS MANUAL.

JUSTIN ROAD



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

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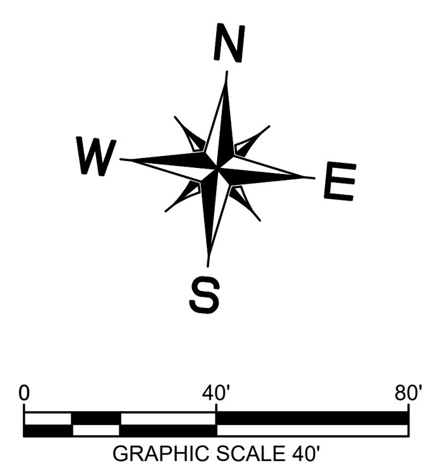
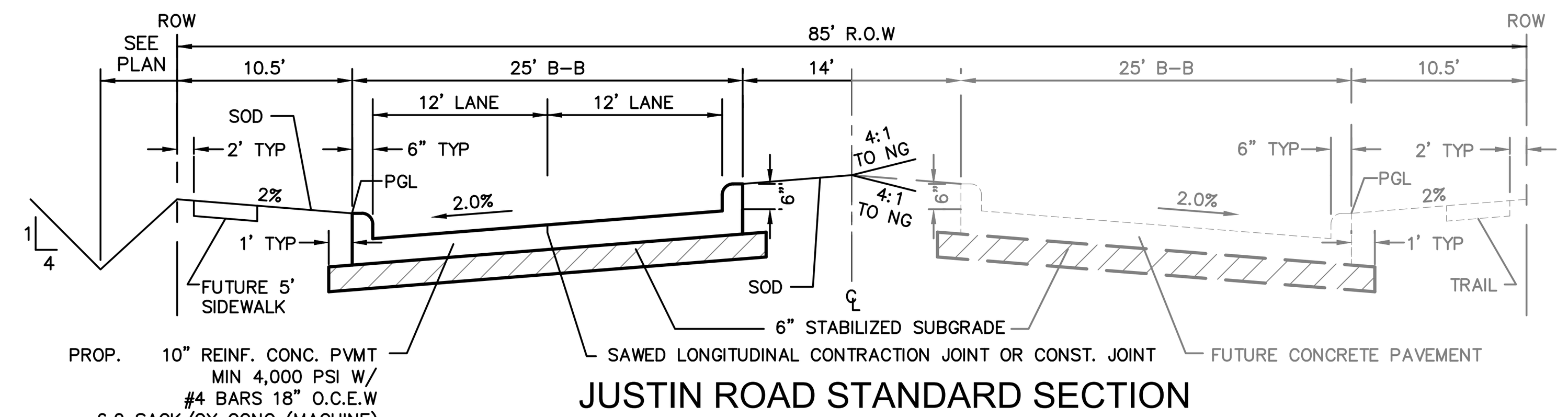
PAVING PLAN & PROFILE - JUSTIN ROAD

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

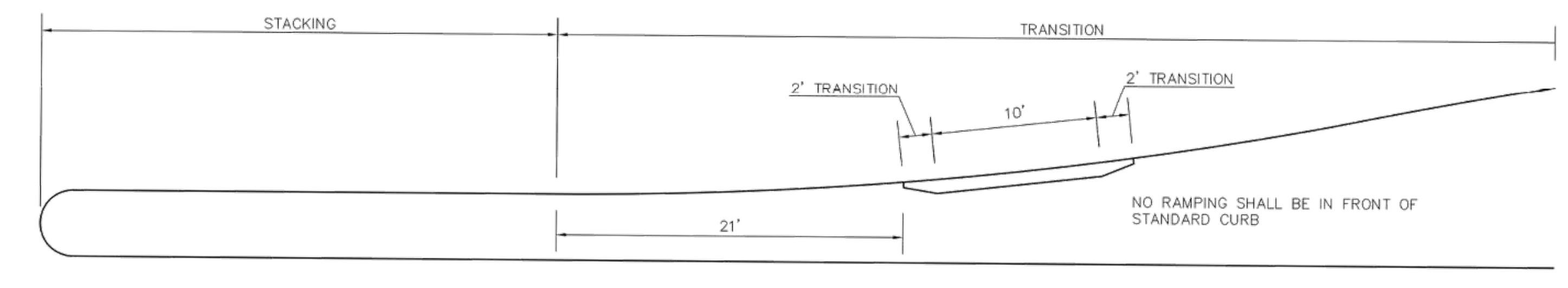
SHEET NUMBER
C-04





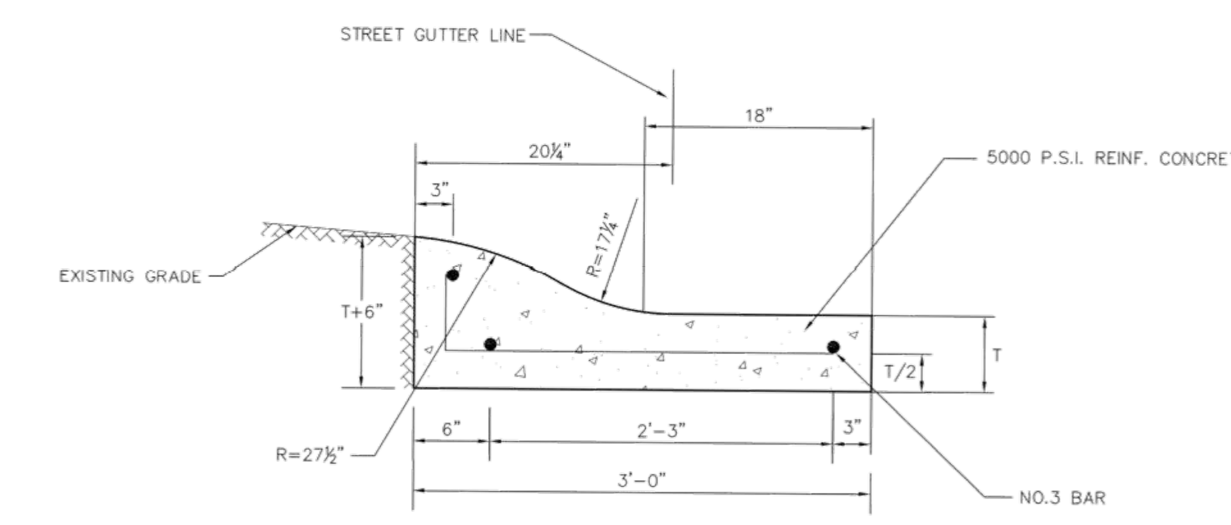
JUSTIN ROAD STANDARD SECTION

NTS

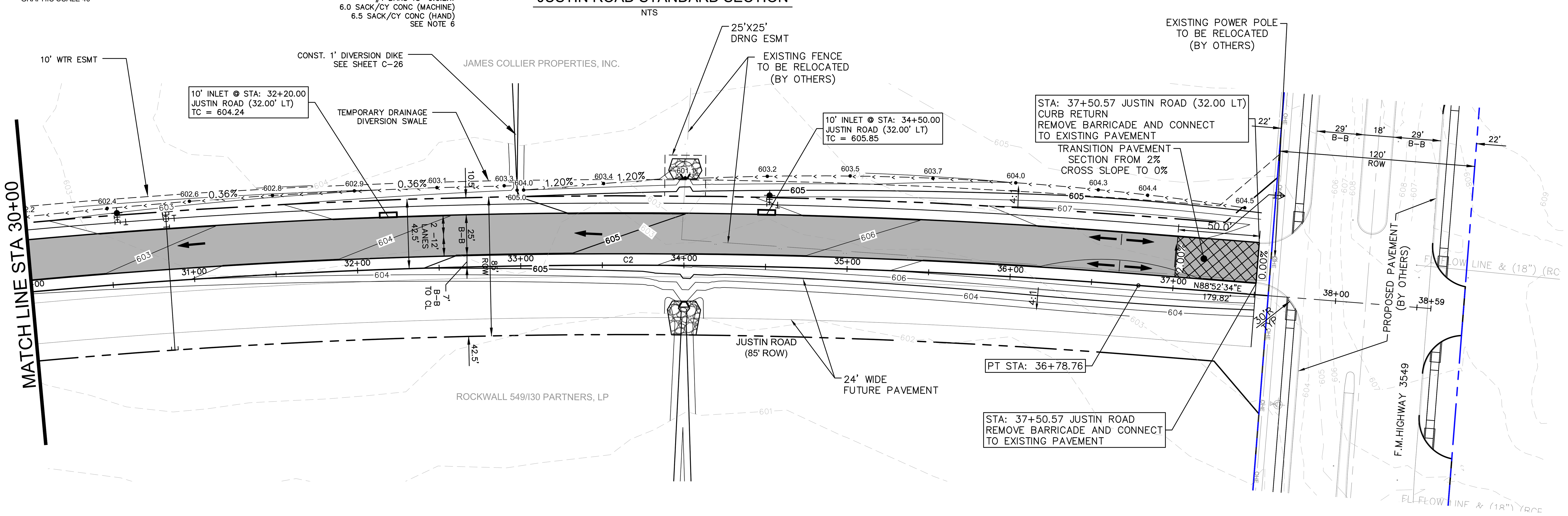


MOUNTABLE CURB DETAIL – PLAN VIEW

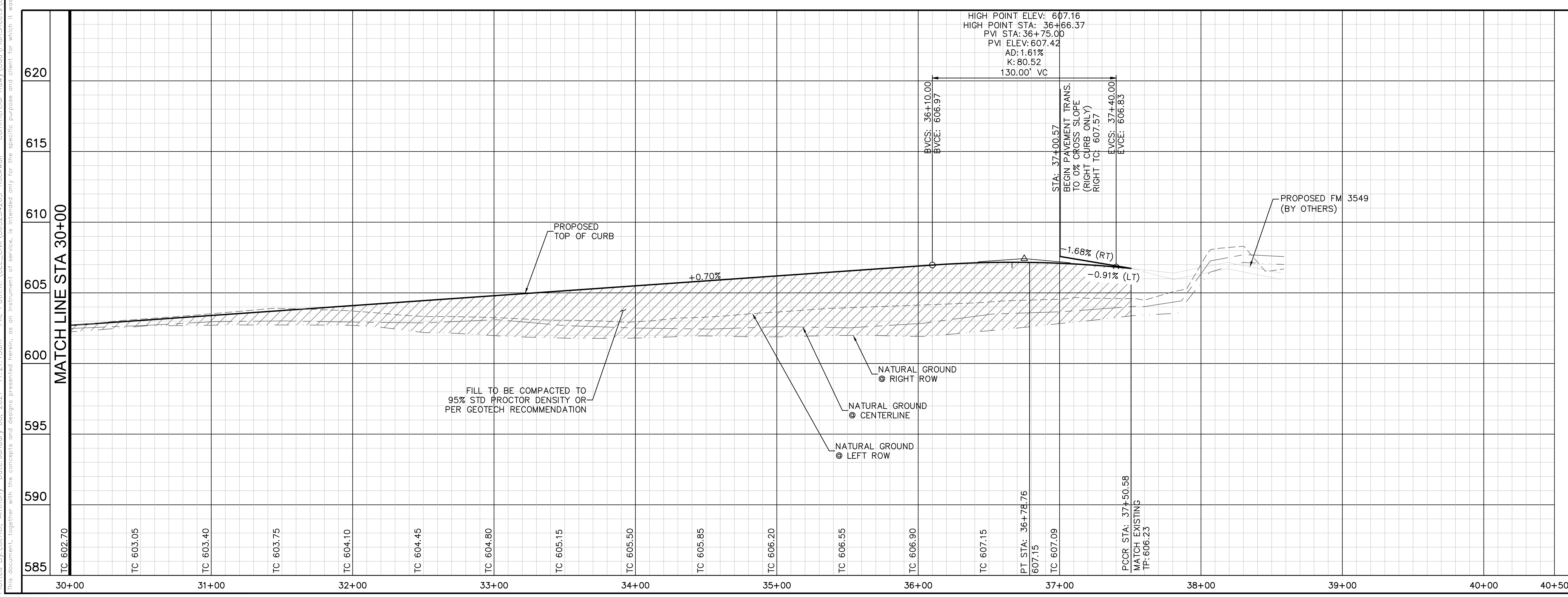
CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	4021.90'	1282.86'	N79°44'18"E	1277.43'	18°16'32"	646.92'



MOUNTABLE CURB SECTION



JUSTIN ROAD



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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PAVING GENERAL NOTES

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2. REFER TO SHEET C-02 FOR GENERAL PAVING NOTES.
3. STABILIZED SUBGRADE SHALL BE A MIN. DEPTH OF 6" WITH 9% DRY WEIGHT LIME CONTENT (41LB/SY) OR PER GEOTECHNICAL RECOMMENDATIONS (WHICHEVER IS GREATER) TO REDUCE THE PI OF NATIVE MATERIAL TO 15 OR LESS.
4. ALL PAVING STEEL SHALL BE GRADE 60 STEEL AND COMPLY WITH TXDOT SPECIFICATIONS.
5. ALL PAVING STEEL SHALL BE #4 BARS WITH A SPACING OF 18" ON CENTER EACH WAY.
6. JUSTIN ROAD PAVEMENT SHALL BE A MINIMUM OF 10" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
7. CONVEYORS STREET PAVEMENT SHALL BE A MINIMUM OF 8" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
8. ALL CONSTRUCTION SHALL BE PER THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL.
9. REFER TO THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL FOR STANDARD CONSTRUCTION DETAILS. IF THIS MANUAL DOES NOT INCLUDE THE DETAILS SPECIFIED, REFER TO THE CURRENT VERSION OF THE NCTCOG PUBLIC WORKS CONSTRUCTION STANDARDS MANUAL.

PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn

400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
[illegible]
1-8-21

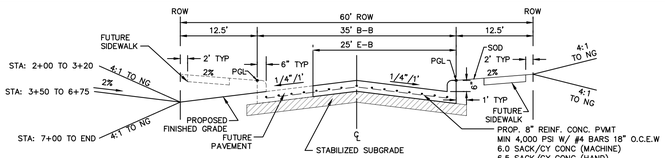
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: AML
CHECKED BY: BLM

PAVING PLAN & PROFILE - JUSTIN ROAD

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-05

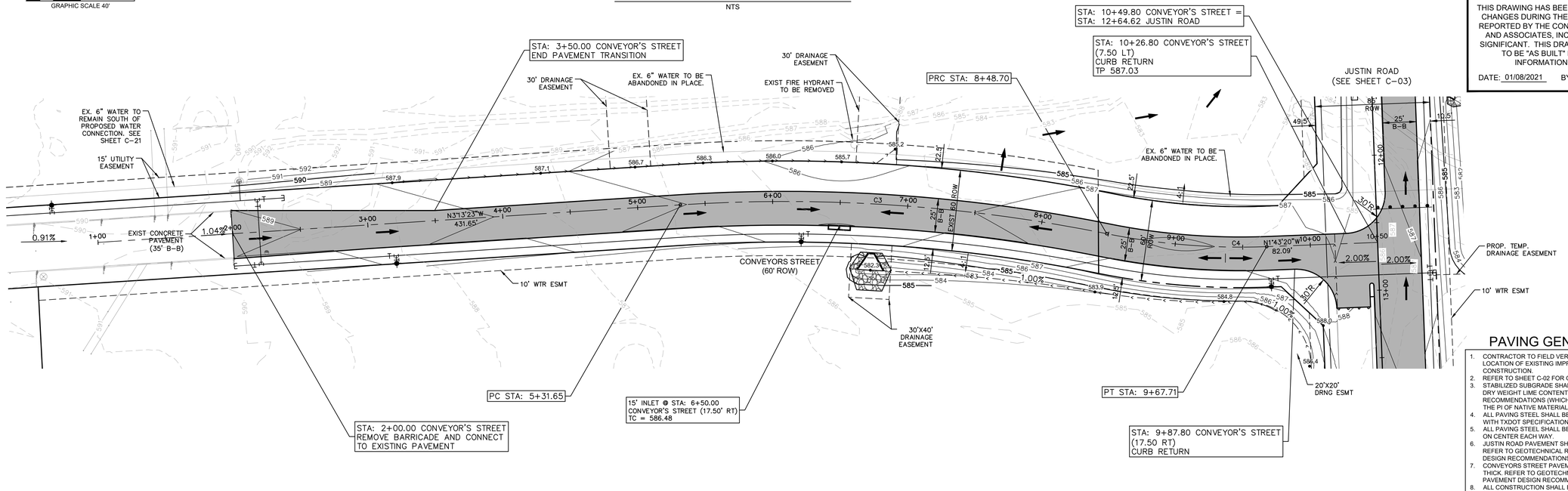
NOTE:
TRANSITION SLOPES IN SECTION BETWEEN STATIONS SHOWN IN THE SECTION



CONVEYOR'S ST STANDARD SECTION

NTS

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	1199.92'	317.05'	N4°20'47"E	316.12'	15°08'20"	159.45'
C4	500.00'	119.01'	N5°05'49"E	118.73'	13°38'17"	59.79'



RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PAVING GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING IMPROVEMENTS PRIOR TO CONSTRUCTION.
2. REFER TO SHEET C-02 FOR GENERAL PAVING NOTES.
3. STABILIZED SUBGRADE SHALL BE A MIN. DEPTH OF 6" WITH 9% DRY WEIGHT LIME CONTENT (41LB/SY) OR PER GEOTECHNICAL RECOMMENDATIONS (WHICHEVER IS GREATER) TO REDUCE THE PI OF NATIVE MATERIAL TO 15 OR LESS.
4. ALL PAVING STEEL SHALL BE GRADE 60 STEEL AND COMPLY WITH TXDOT SPECIFICATIONS.
5. ALL PAVING STEEL SHALL BE #4 BARS WITH A SPACING OF 18" ON CENTER EACH WAY.
6. JUSTIN ROAD PAVEMENT SHALL BE A MINIMUM OF 10" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
7. CONVEYORS STREET PAVEMENT SHALL BE A MINIMUM OF 8" THICK. REFER TO GEOTECHNICAL REPORT FOR FINAL PAVEMENT DESIGN RECOMMENDATIONS.
8. ALL CONSTRUCTION SHALL BE PER THE CITY OF ROCKWALL STANDARDS OF DESIGN MANUAL.
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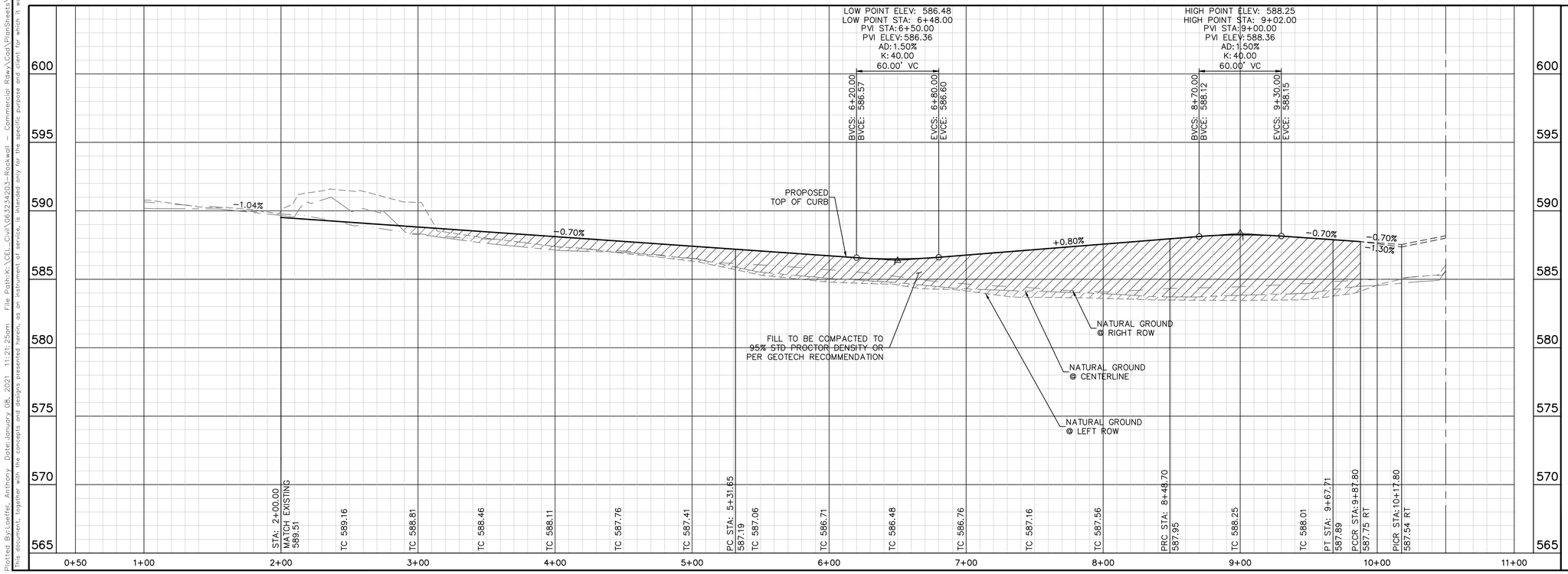
CONVEYOR'S STREET



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: AML
CHECKED BY: BLM

PAVING PLAN & PROFILE - CONVEYORS STREET

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-06

DGNO RAILROAD

DGNO RAILROAD

OUTFALL A

EX. FLOODPLAIN PER ROCKWALL CROSS SECTIONS

OUTFALL B

BUFFALO CREEK TRIBUTARY NO.1

PROPERTY LINES

EX. DRAINAGE AREA LINES

EX-6
25.89 ac
58.4 cfs

EX-7
9.13 ac
24.3 cfs

JUSTIN ROAD

PROPERTY LINES

OUTFALL C

EX. TIME OF CONCENTRATION PATHS

EX-5
4.04 ac
9.6 cfs

EX-1
35.97 ac
93.7 cfs

OUTFALL D

EX-3
13.98 ac
35.8 cfs

CONVEYOR'S ST

EX-4
8.96 ac
24.4 cfs

EX. DRAINAGE AREA LINES

EX-2
18.58 ac
44.6 cfs

OUTFALL F

EX-8
2.77 ac
7.3 cfs

PROPERTY LINES

OUTFALL E

IH 30

IH 30

FM 3549

RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

LEGEND

- BASIN / AREA / FLOW — BASIN NAME, ACRES, 100 YR FLOW (CFS)
- DRAINAGE AREA
- FLOW ARROW
- 425 — PROPOSED CONTOUR
- 425 — EXISTING CONTOUR
- PROPERTY LINE
- DRAINAGE PATH

N W E S

GRAPHIC SCALE IN FEET
0 50 100 200

811 Know what's below. Call before you dig.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

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ANTHONY M. LOEFFEL
122029
LICENSED PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE: MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

EXISTING DRAINAGE AREA MAP

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-07

DRAINAGE AREA TABLE

DRAINAGE AREA NO.	AREA (ac)	FREQUENCY FACTOR	RUNOFF COEFFICIENT "C"	RAINFALL INTENSITY "I"100 (in/hr)	TIME OF CONCENTRATION (minutes)	TOTAL FLOW Q100 (cfs)
EX-1	35.97	1.00	0.35	7.44	26.1	93.7
EX-2	18.58	1.00	0.35	6.86	30.4	44.6
EX-3	13.98	1.00	0.35	7.31	27.1	35.8
EX-4	8.96	1.00	0.35	7.77	23.8	24.4
EX-5	4.04	1.00	0.35	6.80	30.9	9.6
EX-6	25.89	1.00	0.35	6.45	34.1	58.4
EX-7	9.13	1.00	0.35	7.60	25.0	24.3
EX-8	2.77	1.00	0.35	7.55	25.4	7.3

Existing Condition Design Point Summary

Design Point	Contributing DA's	Area (ac)	Runoff Coefficient	Intensity (in/hr)	TOC (min)	Q_{100} (cfs)
A	EX-6	25.89	0.35	6.45	34.1	58.5
B	EX-7	9.13	0.35	7.60	25.0	24.3
C	EX-3, EX-4, EX-5	26.98	0.35	7.31	27.1	69.0
D	EX-8	2.77	0.35	7.55	25.4	7.3
E	EX-2	18.58	0.35	6.86	30.4	44.6
F	EX-1	35.97	0.35	7.44	26.1	93.7

EXISTING TIME OF CONCENTRATION
TR-55 Methodology

	SHEET FLOW						SHALLOW CONCENTRATED FLOW						OPEN CHANNEL FLOW												STORM SEWER FLOW				TOTAL	
	Tc = (0.007(nL)^0.8)/(P2^0.5)(s^0.4)						Tc = L / 3600*K*$S^{0.5}$						Tc = L / 3600*(1.49/n)*($R^{2/3}$)*($S^{1/2}$)												Tc = L / 60*V					
	2-year/24-hr Rainfall Depth from City of Rockwall Drainage Design Manual (in.) = 4.09						K = 16.13 for unpaved, K = 20.32 for paved																							
Basin	Length (ft)	$Elev_1$	$Elev_2$	Slope (ft/ft)	Manning's "n"	T_{c1} (min)	Length (ft)	$Elev_2$	$Elev_3$	Slope (ft/ft)	Condition TR-55 Fig. 3-1	V_{avg} (ft/s)	T_{c2} (min)	Length (ft)	Manning's "n"	Width (ft)	Side Slope (ft/ft)	Depth (ft)	Area (ft^2)	Perimeter (ft)	Radius (ft)	$Elev_5$	$Elev_6$	Slope (ft/ft)	V_{avg} (ft/s)	T_{c3} (min)	Inlet Time (min)	Length (ft)	V_{avg} (ft/s)	T_{c4} (min)	$T_{cMINIMUM}$ (min)	T_{cTOTAL} (min)
DP-A (EX-6)	100	607.00	606.00	0.0100	0.240	16.7	1724	606.00	580.00	0.0151	Unpaved	1.98	14.5	585	0.03	-	-	1.04	14.7	19.8	0.74	580.0	576.0	0.0068	3.4	2.9	0	0	-	0.0	20.0	34.1
DP-B (EX-7)	100	601.00	599.50	0.0150	0.240	14.2	1334	599.50	578.00	0.0161	Unpaved	2.05	10.9														0	0	-	0.0	20.0	25.0
DP-C (EX-3)	100	601.00	600.20	0.0080	0.240	18.2	686	600.20	589.00	0.0163	Unpaved	2.06	5.5	760	0.03	-	-	1.38	15.6	19.5	0.80	589.0	583.0	0.0079	3.8	3.3	0	0	-	0.0	20.0	27.1
EX-4	100	591.70	590.50	0.0120	0.240	15.5	867	590.50	580.40	0.0116	Unpaved	1.74	8.3														0	0	-	0.0	20.0	23.8
EX-5	100	590.40	589.70	0.0070	0.240	19.2	951	589.70	583.00	0.0070	Unpaved	1.35	11.7														0	0	-	0.0	20.0	30.9
DP-D (EX-8)	100	591.00	590.40	0.0060	0.240	20.4	618	590.40	580.00	0.0168	Unpaved	2.09	4.9														0	0	-	0.0	20.0	25.4
DP-E (EX-2)	100	601.00	600.20	0.0080	0.240	18.2	1087	600.20	589.00	0.0103	Unpaved	1.64	11.1	307	0.03	-	-	1.37	8.7	11.9	0.731092	589.0	585.0	0.0130	4.6	1.1	0	0	-	0.0	20.0	30.4
DP-F (EX-1)	100	601.00	600.30	0.0070	0.240	19.2	902	600.30	584.00	0.0181	Unpaved	2.17	6.9														0	0	-	0.0	20.0	26.1

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

Know what's **below.** **Call** before you dig.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
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TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

EXISTING DRAINAGE AREA MAP CALCULATIONS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-07A

DGNO RAILROAD

DGNO RAILROAD

EX. FLOODPLAIN PER ROCKWALL CROSS SECTIONS

OUTFALL A

BUFFALO CREEK TRIBUTARY NO.1

OUTFALL B

PROP. TEMP. DRAINAGE EASEMENT

PROP. DETENTION POND

EX. 6" WATER TO BE ABANDONED IN PLACE.

OUTFALL C

EX. 6" WATER TO BE ABANDONED IN PLACE.

OUTFALL D

EX. 6" WATER TO REMAIN SOUTH OF PROPOSED WATER CONNECTION. SEE SHEET C-21.

CONVEYOR'S ST

JUSTIN RD

FM 3549

IH 30

OUTFALL E

OUTFALL F

OS1	0.10 ac	0.9 cfs
OS2	0.20 ac	1.7 cfs
OS3	0.10 ac	0.9 cfs
OS4	29.14 ac	75.9 cfs
OS5	18.58 ac	44.6 cfs
OS6	25.57 ac	57.7 cfs
OS7	4.96 ac	13.3 cfs
OS8	2.77 ac	14.6 cfs
OS9	3.31 ac	9.6 cfs
OS10	4.92 ac	13.4 cfs
POND	1.56 ac	4.8 cfs
A1	0.23 ac	2.0 cfs
A2	0.23 ac	2.0 cfs
A3	0.34 ac	3.0 cfs
A4	0.23 ac	2.0 cfs
A5	0.23 ac	2.0 cfs
A6	0.33 ac	2.9 cfs
A7	0.22 ac	2.0 cfs
A8	0.33 ac	2.9 cfs
A9	0.34 ac	3.0 cfs
A10	0.33 ac	2.9 cfs
A11	0.33 ac	2.9 cfs
A12	0.33 ac	2.9 cfs
A13	0.33 ac	2.9 cfs
A14	0.34 ac	3.0 cfs
A15	0.34 ac	3.0 cfs
A16	0.31 ac	2.7 cfs
B1	0.60 ac	5.3 cfs
B2	0.58 ac	5.1 cfs
C	6.57 ac	38.0 cfs
D	10.77 ac	30.0 cfs
E	4.59 ac	13.3 cfs
E1	0.23 ac	2.0 cfs
E2	0.33 ac	2.9 cfs

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

LEGEND

BASIN / AREA / FLOW — BASIN NAME; ACRES; 100 YR FLOW (CFS)

DRAINAGE AREA

FLOW ARROW

425 — PROPOSED CONTOUR

425 — EXISTING CONTOUR

PROPOSED STORM SEWER LINE

PROPERTY LINE

DRAINAGE PATH

N W E S

GRAPHIC SCALE IN FEET
0 50 100 200

811 Know what's below. Call before you dig.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

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SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn

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1-8-21

KHA PROJECT	063234203
DATE	MARCH 2020
SCALE:	AS SHOWN
DESIGNED BY:	AML
DRAWN BY:	XXX
CHECKED BY:	BLM

DRAINAGE AREA MAP

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-08

DRAINAGE AREA TABLE

DRAINAGE AREA NO.	AREA (ac)	FREQUENCY FACTOR	RUNOFF COEFFICIENT "C"	RAINFALL INTENSITY "I"100 (in/hr)	TIME OF CONCENTRATION (minutes)	TOTAL FLOW Q100 (cfs)	FLOWS/DRAINS TO
A2	0.23	1.00	0.90	9.80	10.0	2.0	INLET A2
A3	0.34	1.00	0.90	9.80	10.0	3.0	FUT INLET A3
A4	0.23	1.00	0.90	9.80	10.0	2.0	INLET A4
A5	0.23	1.00	0.90	9.80	10.0	2.0	INLET A5
A6	0.33	1.00	0.90	9.80	10.0	2.9	FUT INLET A6
A7	0.22	1.00	0.90	9.80	10.0	2.0	FUT INLET A7
A8	0.33	1.00	0.90	9.80	10.0	2.9	INLET A8
A9	0.34	1.00	0.90	9.80	10.0	3.0	FUT INLET A9
A10	0.33	1.00	0.90	9.80	10.0	2.9	INLET A10
A11	0.33	1.00	0.90	9.80	10.0	2.9	FUT INLET A11
A12	0.33	1.00	0.90	9.80	10.0	2.9	INLET A12
A13	0.33	1.00	0.90	9.80	10.0	2.9	FUT INLET A13
A14	0.34	1.00	0.90	9.80	10.0	3.0	INLET A14
A15	0.34	1.00	0.90	9.80	10.0	3.0	FUT INLET A15
A16	0.31	1.00	0.90	9.80	10.0	2.7	INLET A16
B1	0.60	1.00	0.90	9.80	10.0	5.3	FUT INLET B0
B2	0.58	1.00	0.90	9.80	10.0	5.1	INLET B1
C	6.57	1.00	0.70	8.25	20.3	38.0	LINE B
D	10.77	1.00	0.35	7.96	22.4	30.0	LINE B
E	4.59	1.00	0.35	8.30	20.0	13.3	LINE E
E1	0.23	1.00	0.90	9.80	10.0	2.0	INLET E1
E2	0.33	1.00	0.90	9.80	10.0	2.9	FUT INLET E2
OS2	0.20	1.00	0.90	9.80	10.0	1.7	FUT INLET OS
OS3	0.10	1.00	0.90	9.80	10.0	0.9	FUT INLET OS
OS4	29.14	1.00	0.35	7.44	26.1	75.9	OUTFALL F
OS5	18.58	1.00	0.35	6.86	30.4	44.6	OUTFALL E
OS6	25.57	1.00	0.35	6.45	34.1	57.7	OUTFALL A
OS7	4.96	1.00	0.35	7.66	24.6	13.3	OUTFALL C
OS8	2.77	1.00	0.70	7.55	25.4	14.6	OUTFALL D
OS9	3.31	1.00	0.35	8.30	20.0	9.6	POND
OS10	4.92	1.00	0.35	7.78	23.7	13.4	OUTFALL B
POND	1.56	1.00	0.35	8.72	17.0	4.8	OUTFALL B

AREAS C, D, E, OS4, OS5, OS6, OS7, OS8, OS9 & OS10 WILL NEED TO BE DETAINED WHEN DEVELOPED IN THE FUTURE.

Proposed Condition Weighted Runoff Coefficient Calculations

Design Point	Drainage Area	Area (ac)	Runoff Coefficient	Total Area	Weighted C
B	A2	0.23	0.9	14.35	0.52
	A3	0.34	0.9		
	A4	0.23	0.9		
	A5	0.23	0.9		
	A6	0.33	0.9		
	A7	0.22	0.9		
	A8	0.33	0.9		
	A9	0.34	0.9		
	A10	0.33	0.9		
	A11	0.33	0.9		
	A12	0.33	0.9		
	A13	0.33	0.9		
	A14	0.34	0.9		
	A15	0.34	0.9		
	A16	0.31	0.9		
	POND	1.56	0.35		
	OS9	3.31	0.35		
	OS10	4.92	0.35		
C	B1	0.6	0.9	23.78	0.38
	B2	0.58	0.9		
	C	6.57	0.35		
	D	10.77	0.35		
	OS2	0.2	0.9		
	OS3	0.1	0.9		
	OS7	4.96	0.35		
F	E	4.59	0.35	34.29	0.36
	E1	0.23	0.9		
	E2	0.33	0.9		
	OS4	29.14	0.35		

Proposed Condition Design Point Summary

Design Point	Contributing DA's	Area (ac)	Runoff Coefficient	Intensity (in/hr)	TOC (min)	Q_{100} (cfs)
A	OS6	25.57	0.35	6.45	34.1	57.8
B	A2-16,POND,OS9,OS10	14.35	0.52	8.69	17.2	64.9
C	B1,B2,C,D,OS2,OS3,OS7	23.78	0.38	7.46	26.0	67.4
D	OS8	2.77	0.35	7.55	25.4	7.3
E	OS5	18.58	0.35	6.86	30.4	44.6
F	E,E1,E2,OS4	34.29	0.36	7.44	26.1	91.6
Line B	C & D	17.34	0.35	7.19	27.9	43.7
Line E	E	4.59	0.35	8.30	20.0	13.3

PROPOSED TIME OF CONCENTRATION
TR-55 Methodology

	SHEET FLOW						SHALLOW CONCENTRATED FLOW							OPEN CHANNEL FLOW											STORM SEWER FLOW				TOTAL	
	Tc = (0.007(nL)*0.8)/(P2^0.5)(s^0.4)						Tc = L / 3600*K*$S^{0.5}$ K = 16.13 for unpaved, K = 20.32 for paved							Tc = L / 3600*(1.49/n)*($R^{2/3}$)*($S^{1/2}$)											Tc = L / 60*V					
	2-year/24-hr Rainfall Depth from City of Rockwall Drainage Design Manual (in.) = 4.09																													
Basin	Length (ft)	$Elev_1$	$Elev_2$	Slope (ft/ft)	Manning's "n"	T_{c1} (min)	Length (ft)	$Elev_2$	$Elev_3$	Slope (ft/ft)	Condition TR-55 Fig. 3-1	$V_{av\,g}$ (ft/s)	T_{c2} (min)	Length (ft)	Manning's "n"	Width (ft)	Side Slope (ft/ft)	Depth (ft)	Area (ft^2)	Perimeter (ft)	Radius (ft)	$Elev_5$	$Elev_4$	Slope (ft/ft)	$V_{av\,g}$ (ft/s)	T_{c3} (min)	Inlet Time (min)	Length (ft)	$V_{av\,g}$ (ft/s)	T_{c4} (min)	$T_{cMINIMUM}$ (min)	T_{cTOTAL} (min)
DP-A (OS-6)	100	607.00	606.00	0.0100	0.240	16.7	1724	606.00	580.00	0.0151	Unpaved	1.98	14.5	585	0.03	-	-	1.04	14.7	19.8	0.74	580.0	576.0	0.0068	3.4	2.9	0	0	-	0.0	20.0	34.1
DP-B*																											REFERENCE LINE SD-A STORM CALCS				10.0	17.2
OS-9	100	597.00	595.50	0.0150	0.240	14.2	642	595.50	585.00	0.0164	Unpaved	2.06	5.2														0	0	-	0.0	20.0	20.0
OS-10	100	599.00	597.20	0.0180	0.240	13.2	1025	597.20	583.00	0.0139	Unpaved	1.90	9.0	214	0.03	-	-	0.19	4.9	30.1	0.16	583.0	578.0	0.0234	2.3	1.6	0	0	-	0.0	20.0	23.7
POND	100	585.00	580.00	0.0500	0.240	8.7	230	580.00	578.65	0.0059	Unpaved	1.24	3.1														0	0	-	1.0	20.0	20.0
DP-C	100	601.00	600.10	0.0090	0.240	17.4	623	600.10	590.00	0.0162	Unpaved	2.05	5.1	837	0.03	-	-	1.38	15.6	19.5	0.80	590.0	583.0	0.0084	3.9	3.6	0	0	-	0.0	20.0	26.0
OS-7	100	590.40	589.00	0.0140	0.240	14.6	825	589.00	583.00	0.0073	Unpaved	1.38	10.0														0	0	-	0.0	20.0	24.6
DP-D (0S-8)	100	591.00	590.40	0.0060	0.240	20.4	618	590.40	580.00	0.0168	Unpaved	2.09	4.9														0	0	-	0.0	20.0	25.4
DP-E (OS-5)	100	601.00	600.20	0.0080	0.240	18.2	1087	600.20	589.00	0.0103	Unpaved	1.64	11.1	307	0.03	-	-	1.37	8.7	11.9	0.73	589.0	585.0	0.0130	4.6	1.1	0	0	-	0.0	20.0	30.4
DP-F (OS-4)	100	601.00	600.30	0.0070	0.240	19.2	902	600.30	584.00	0.0181	Unpaved	2.17	6.9														0	0	-	0.0	20.0	26.1
C	100	591.70	590.50	0.0120	0.240	15.5	496	590.50	585.00	0.0111	Unpaved	1.70	4.9														0	0	-	0.0	20.0	20.3
D	100	601.00	600.10	0.0090	0.240	17.4	623	600.10	590.00	0.0162	Unpaved	2.05	5.1														0	0	-	0.0	20.0	22.4
LINE B	100	601.00	600.10	0.0090	0.240	17.4	623	600.10	590.00	0.0162	Unpaved	2.05	5.1	667	0.03	-	-	0.52	17	63.7	0.27	590.0	583.5	0.0097	2.0	5.5	0	0	-	0.0	20.0	27.9
LINE E (E)	100	610.00	608.50	0.0150	0.240	14.2	414	608.50	603.00	0.0133	Unpaved	1.86	3.7														0	0	-	0.0	20.0	20.0

RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

Know what's **below.** **Call** before you dig.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

DRAINAGE AREA MAP CALCULATIONS

JUSTIN RD & CONVEYOR'S ST EXTENSION

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-08A

Storm Drain Calculations

From	To	Pipe Length	Drainage Area Increme No.	Drainage Area Area acres	Drainage Area Total acres	Runoff "c"	Incr. cA	Total cA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover cfs	Inlet Carryover cfs	Q Pipe cfs	Pipe Size Diameter in	No. Barrels	n	Sf ft/ft	HGL U/S ft	HGL D/S ft	V1 (in) ft/s	V2 (out) ft/s	V1²/2G ft	V2²/2G ft	Kj	KjV1²/2G ft	Hk ft	Design HGL ft	Invert Elevation From ft	Invert Elevation To ft	T/C or Ground ft	T/C-HG ft	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18a	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35		
LINE SD-A																																			
24+12.83	23+48.82	64.01	A	0.23	0.23	0.90	0.20	0.20	10.0	0.2	10.2	9.80	1.99	0.00	0.00	1.99	18	1	0.013	0.0004	600.62	599.55	0.00	5.83	0.00	0.53	1.25	0.66	0.66	601.28	600.24	598.98	604.22	2.94	
23+48.82	21+64.81	184.01	A	0.00	0.23	0.90	0.00	0.20	10.2	0.9	11.1	9.80	1.99	0.00	0.00	1.99	18	1	0.013	0.0004	599.55	598.82	5.83	3.30	0.53	0.17	0.37	0.20	0.00	599.55	598.98	598.25	603.77	4.22	
21+64.81	19+09.53	255.28	A	0.57	0.79	0.90	0.51	0.71	11.1	1.5	12.6	9.80	6.98	0.00	0.00	6.98	21	1	0.013	0.0019	598.60	597.78	3.30	2.90	0.17	0.13	1.00	0.17	PARTIAL	598.60	598.00	595.94	602.48	3.88	
19+09.53	18+14.95	94.58	A	0.23	1.02	0.90	0.20	0.91	12.6	0.2	12.8	9.80	8.97	0.00	0.00	8.97	21	1	0.013	0.0032	597.23	596.93	2.90	6.60	0.13	0.68	1.00	0.13	0.55	597.78	595.94	595.18	600.69	2.91	
18+14.95	16+65.00	149.95	A	0.33	1.35	0.90	0.30	1.21	12.8	0.5	13.3	9.80	11.88	0.00	0.00	11.88	21	1	0.013	0.0056	596.41	595.26	6.60	4.94	0.68	0.38	1.00	0.68	0.00	596.41	595.18	593.98	600.03	3.62	
16+65.00	15+85.70	79.30	A	0.00	1.35	0.90	0.00	1.21	13.3	0.3	13.6	9.80	11.88	0.00	0.00	11.88	24	1	0.013	0.0028	595.25	595.03	4.94	3.78	0.38	0.22	0.05	0.02	0.01	595.26	593.73	592.94	598.98	3.72	
15+85.70	15+70.63	15.07	A	0.22	1.57	0.90	0.20	1.41	13.6	0.0	13.6	9.80	13.84	0.00	0.00	13.84	24	1	0.013	0.0037	594.29	594.23	3.78	7.89	0.22	0.97	1.00	0.22	0.74	595.03	592.94	592.79	598.42	3.39	
15+70.63	12+54.08	316.55	A	0.33	1.90	0.90	0.30	1.71	13.6	0.6	14.2	9.80	16.79	0.00	0.00	16.79	24	1	0.013	0.0055	594.07	591.62	7.89	8.52	0.97	1.13	1.00	0.97	0.16	594.23	592.79	589.62	598.32	4.09	
12+54.08	9+12.72	341.36	A	0.66	2.57	0.90	0.60	2.31	14.2	1.0	15.2	9.80	22.64	0.00	0.00	22.64	27	1	0.013	0.0053	590.81	588.06	8.52	5.69	1.13	0.50	1.00	1.13	0.50	591.31	589.37	585.96	596.12	4.81	
9+12.72	5+72.72	340.00	A	0.66	3.23	0.90	0.60	2.91	15.2	1.1	16.3	9.00	26.16	0.00	0.00	26.16	30	1	0.013	0.0041	587.62	586.24	5.69	5.33	0.50	0.44	1.00	0.50	0.44	588.06	585.71	582.96	592.59	4.53	
5+72.72	5+46.74	25.98	A	0.33	3.56	0.90	0.29	3.20	16.3	0.1	16.4	9.00	28.81	0.00	0.00	28.81	30	1	0.013	0.0049	585.70	585.57	5.33	5.87	0.44	0.53	1.00	0.44	0.53	586.24	582.96	582.84	588.16	1.92	
5+46.74	3+66.87	179.87	A	0.34	3.89	0.90	0.30	3.50	16.4	0.5	16.9	9.00	31.54	0.00	0.00	31.54	30	1	0.013	0.0059	585.47	584.41	5.87	6.42	0.53	0.64	1.00	0.53	0.11	585.57	582.84	581.43	588.05	2.48	
3+66.87	3+63.87	3.00	A	0.00	3.89	0.90	0.00	3.50	16.9	0.0	16.9	9.00	31.54	0.00	0.00	31.54	36	1	0.013	0.0022	584.21	584.20	6.42	4.46	0.64	0.31	0.00	0.00	0.20	584.41	580.93	580.91	586.79	2.38	
3+63.87	3+29.07	34.80	A	0.34	4.23	0.90	0.31	3.81	16.9	0.1	17.0	9.00	34.29	0.00	0.00	34.29	36	1	0.013	0.0026	583.84	583.75	4.46	4.85	0.31	0.37	1.00	0.37	0.37	584.20	580.91	580.64	586.77	2.57	
3+29.07	2+60.00	69.07	A	0.31	4.54	0.90	0.28	4.09	17.0	0.2	17.2	9.00	36.80	0.00	0.00	36.80	36	1	0.013	0.0030	583.64	583.43	4.85	5.21	0.37	0.42	0.25	0.09	0.11	583.75	580.64	580.43	586.53	2.78	
LATERAL A-3																																			
1+19.00	1+00.00	19.00	A	0.34	0.34	0.90	0.31	0.31	10.0	0.2	10.2	9.80	3.00	0.00	0.00	3.00	18	1	0.013	0.0008	598.65	598.63	-	1.70	-	0.04	1.25	0.00	0.06	598.70	0.00	0.00	602.63	3.93	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					598.60		1.70	2.90	0.04	0.13	0.25	0.01	0.03	598.63					
LATERAL A-4																																			
1+45.00	1+00.00	45.00	A	0.33	0.33	0.90	0.30	0.30	10.0	0.2	10.2	9.80	2.91	0.00	0.00	2.91	18	1	0.013	0.0008	599.18	598.80	-	4.87	-	0.37	1.25	0.00	0.46	599.64	598.63	598.23	602.63	2.99	
																					598.60		4.87	2.90	0.37	0.13	0.25	0.09	0.03	598.63					
LATERAL A-5																																			
1+52.06	1+00.00	52.06	A	0.23	0.23	0.90	0.20	0.20	10.0	0.8	10.8	9.80	1.99	0.00	0.00	1.99	18	1	0.013	0.0004	597.92	597.90	-	1.13	-	0.02	1.25	0.00	0.02	597.95	597.02	596.07	601.02	3.07	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					597.23		1.13	6.60	0.02	0.68	0.35	0.01	0.67	597.90					
LATERAL A-6																																			
1+21.92	1+00.00	21.92	A	0.33	0.33	0.90	0.30	0.30	10.0	0.2	10.2	9.80	2.91	0.00	0.00	2.91	18	1	0.013	0.0008	596.79	596.77	-	1.65	-	0.04	1.25	0.00	0.05	596.84	596.24	595.31	600.24	3.40	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					596.41		1.65	4.94	0.04	0.38	0.35	0.01	0.36	596.77					
LATERAL A-7																																			
1+21.92	1+00.00	21.92	A	0.22	0.22	0.90	0.20	0.20	10.0	0.3	10.3	9.80	1.97	0.00	0.00	1.97	18	1	0.013	0.0004	595.25	595.25	-	1.11	-	0.02	1.25	0.00	0.02	595.28	594.63	593.19	598.63	3.35	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					594.29		1.11	7.89	0.02	0.97	0.35	0.01	0.96	595.25					
LATERAL A-8																																			
1+52.06	1+00.00	52.06	A	0.33	0.33	0.90	0.30	0.30	10.0	0.5	10.5	9.80	2.94	0.00	0.00	2.94	18	1	0.013	0.0008	595.22	595.18	-	1.66	-	0.04	1.25	0.00	0.05	595.28	594.64	593.04	598.64	3.36	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					594.07		1.66	8.52	0.04	1.13	0.35	0.02	1.11	595.18					
LATERAL A-9																																			
1+19.00	1+00.00	19.00	A	0.34	0.34	0.90	0.30	0.30	10.0	0.2	10.2	9.80	2.96	0.00	0.00	2.96	18	1	0.013	0.0008	590.95	590.94	-	1.68	-	0.04	1.25	0.00	0.05	591.01	592.25	0.00	596.25	5.24	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					590.81		1.68	5.69	0.04	0.50	0.25	0.01	0.13	590.94					
LATERAL A-10																																			
1+45.00	1+00.00	45.00	A	0.33	0.33	0.90	0.29	0.29	10.0	0.1	10.1	9.80	2.89	0.00	0.00	2.89	18	1	0.013	0.0008	592.61	590.94	-	8.92	-	1.24	1.25	0.00	1.54	594.15	592.26	590.12	596.26	2.11	
																					590.81		8.92	5.69	1.24	0.50	0.25	0.31	0.13	590.94					
LATERAL A-11																																			
1+21.92	1+00.00	21.92	A	0.33	0.33	0.90	0.30	0.30	10.0	0.2	10.2	9.80	2.91	0.00	0.00	2.91	18	1	0.013	0.0008	588.06	588.05	-	1.65	-	0.04	1.25	0.00	0.05	588.12	588.72	0.00	592.72	4.60	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					587.62		1.65	5.33	0.04	0.44	0.35	0.01	0.43	588.05					
LATERAL A-12																																			
1+51.96	1+00.00	51.96	A	0.33	0.33	0.90	0.30	0.30	10.0	0.1	10.1	9.80	2.91	0.00	0.00	2.91	18	1	0.013	0.0008	589.09	587.65	-	8.72	-	1.18	1.25	0.00	1.48	590.57	588.72	586.71	592.72	2.15	
																					587.62		8.72	5.33	1.18	0.44	0.35	0.41	0.03	587.65					
LATERAL A-13																																			
1+21.92	1+00.00	21.92	A	0.33	0.33	0.90	0.29	0.29	10.0	0.2	10.2	9.80	2.88	0.00	0.00	2.88	18	1	0.013	0.0008	586.24	586.22	-	1.63	-	0.04	1.25	0.00	0.05	586.29	584.36	583.46	588.36	2.07	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					585.70		1.63	5.87	0.04	0.53	0.35	0.01	0.52	586.22					
LATERAL A-14																																			
1+51.96	1+00.00	51.96	A	0.34	0.34	0.90	0.30	0.30	10.0	0.5	10.5	9.80	2.97	0.00	0.00	2.97	18	1	0.013	0.0008	586.14	586.09	-	1.68	-	0.04	1.25	0.00	0.05	586.19	584.36	583.34	588.36	2.17	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					585.47		1.68	6.42	0.04	0.64	0.35	0.02	0.63	586.09					
LATERAL A-15																																			
1+19.00	1+00.00	19.00	A	0.34	0.34	0.90	0.31	0.31	10.0	0.2	10.2	9.80	3.00	0.00	0.00	3.00	18	1	0.013	0.0008	584.22	584.20	-	1.70	-	0.04	1.25	0.00	0.06	584.27	582.98	581.66	586.98	2.71	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					583.84		1.70	4.85	0.04	0.37	1.00	0.04	0.37	584.20					
LATERAL A-16																																			
1+74.99	1+11.35	63.64	A	0.31	0.31	0.90	0.28	0.28	10.0	0.7	10.7	9.80	2.73	0.00	0.00	2.73	18	1	0.013	0.0007	583.81	583.77	-	1.55	-	0.04	1.25	0.00	0.05	583.86	582.26	581.52	586.26	2.40	PARTIAL FLOW VELOCITIES > 2.5 FPS
1+11.35	1+00.00	11.35	A	0.00	0.31	0.90	0.00	0.28	10.7	0.1	10.8	9.80	2.73	0.00	0.00	2.73	18	1	0.013	0.0007	583.75	583.75	1.55	1.55	0.04	0.04	0.37	0.01	0.01	583.77	581.52	581.38	586.45	2.68	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					583.64		1.55	5.21	0.04	0.42	0.25	0.01	0.11	583.75					

Storm Drain Calculations

From	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area acres	Drainage Area Total acres	Runoff "c"	Incr. cA	Total cA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover (To Inlet) cfs	Inlet Carryover "q" (From Inlet) cfs	Q Pipe cfs	Pipe Size Diameter in	Box Size No. Barrels	Box Size Width ft	Box Size Height ft	n	Sf ft/ft	HGL U/S ft	HGL D/S ft	V1 (in) ft/s	V2 (out) ft/s	V1²/2G ft	V2²/2G ft	Kj	KjV1²/2G ft	Hk ft	Design HGL ft	Invert Elevation From ft	Invert Elevation To ft	T/C or Ground Elev. ft	T/C-HG ft	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35		36
LINE SD-B																																					
3+20.00	3+03.12	16.88	A	17.34	17.34	0.35	6.07	6.07	19.3	0.1	19.4	8.05	48.86	0.00	0.00	48.86	0	1	4	3	0.013	0.0016	584.40	584.38	-	4.19	-	0.27	0.40	0.11	0.11	584.51	581.30	581.26	585.54	1.03	
3+03.12	2+68.13	34.99	A	0.60	17.94	0.90	0.54	6.61	19.4	0.1	19.5	8.05	53.20	0.00	0.00	53.20	0	1	4	3	0.013	0.0019	584.32	584.26	4.19	4.57	0.27	0.32	1.00	0.27	0.05	584.38	581.26	581.19	586.48	2.10	
2+68.13	1+92.00	76.13	A	0.60	18.54	0.90	0.54	7.15	19.5	0.3	19.8	8.05	57.55	0.00	0.00	57.55	0	1	4	3	0.013	0.0022	584.20	584.04	4.57	4.94	0.32	0.38	1.00	0.32	0.06	584.26	581.19	581.04	586.05	1.79	
LATERAL B-1																																					
1+16.08	1+00.00	16.08	B1	0.60	0.60	0.90	0.54	0.54	10.0	0.1	10.1	9.80	5.29	0.00	0.00	5.29	21	1	0	0	0.013	0.0011	584.65	584.63	-	2.20	-	0.08	1.25	0.00	0.09	584.74	582.46	581.89	586.48	1.74	PARTIAL FLOW VELOCITIES > 2.5 FPS
																							584.32		2.20	4.57	0.08	0.32	0.25	0.02	0.30	584.63					
LINE SD-E																																					
4+96.11	4+35.00	61.11	A	4.59	4.59	0.35	1.61	1.61	20.0	0.2	20.2	8.30	13.34	0.00	0.00	13.34	24	1	0	0	0.013	0.0035	602.14	601.93	-	4.25	-	0.28	1.25	0.35	0.35	602.49	601.13	600.03	604.38	1.89	
4+35.00	4+20.00	15.00	A	0.23	4.82	0.90	0.20	1.81	20.2	0.1	20.3	8.30	15.03	0.00	0.00	15.03	24	1	0	0	0.013	0.0044	601.83	601.76	4.25	4.78	0.28	0.36	0.37	0.10	0.10	601.93	600.03	599.76	605.00	3.07	
LATERAL E-1																																					
1+63.90	1+00.00	63.90	B1	0.23	0.23	0.90	0.20	0.20	10.0	0.9	10.9	9.80	1.99	0.00	0.00	1.99	18	1	0	0	0.013	0.0004	602.20	602.17	-	1.13	-	0.02	1.25	0.00	0.02	602.22	601.85	600.28	605.85	3.63	PARTIAL FLOW VELOCITIES > 2.5 FPS
																					601.83		1.13	4.78	0.02	0.36	0.35	0.01	0.35	602.17					

RECORD DRAWING

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DATE: 01/09/2021 BY: ANTHONY LOEFFEL, P.E.

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

DRAINAGE CALCULATIONS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-09

Inlet No.	INLET LOCATION			Design Storm Frequency	AREA RUNOFF						Upstream Bypass Flow "C*A"	Total Gutter Flow "Q_T"	Roadway Classification	On-Grade or Sump	Manning's "n"	Roadway Longitudinal Slope		Crown Type	Roadway Cross Slope "S_X"	Depth of Depression	Width of Depression "W"	Flow Spread "T" (allow)	Flow Spread "T" (actual)	Gutter Flow Depth "y" (allow)	Gutter Flow Depth "y" (actual)	Max. Flow based on allow	INLETS CAPACITY				Conveyance Depressed Kw	Conveyance Beyond Depressed Ko	Flow Ratio "E_o"	Equivalent Cross Slope "S_e"	Required Length "L_t"	Actual Length "L"	Inlet Capacity "Q_i"	Bypass Flow "Q_b"	Runoff Coeff. "C"	Bypass Destination
																On Grade/ Sump Lower Station "S_L"	Sump Higher Station "S_L"									Depressed Gutter Section		Section Beyond Depression										
	Street	Station	Offset		Runoff Coeff. "C"	Area ID	Time of Concentration "Tc"	Rainfall Intensity "I"	Area "A"	Storm Water Runoff "Q"																Area "Aw"	Wetted Perimeter "Pw"	Area "Ao"	Wetted Perimeter "Po"										
		(FT)		(YRS)			(MIN)	(IN/HR)	(AC)	(CFS)	(CFS)	(CFS)				(FT/FT)	(FT/FT)		(FT/FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(SF)	(FT)	(SF)	(FT)									
1	2	3	4	5	6	7	8	9		11	12	13	14	15	16	17	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
A2	Justin Road	32+20.00	00+32.00	100	0.90	A2	10	9.80	0.23	2.03	0.00	2.03	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	10.37	0.24	0.21	2.98	0.87	2.07	0.70	8.37	41.80	11.37	0.79	0.22	5.17	10	2.03	0.00	0.00	
A3	Justin Road	FUTURE	00+32.00	100	0.90	A3	10	9.80	0.34	2.95	0.00	2.95	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.94	0.24	0.24	2.98	0.94	2.07	0.99	9.94	46.92	17.99	0.72	0.20	6.34	10	2.95	0.00	0.00	
A4	Justin Road	29+90.00	00+32.00	100	0.90	A4	10	9.80	0.23	2.03	0.00	2.03	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	10.37	0.24	0.21	2.98	0.87	2.07	0.70	8.37	41.80	11.37	0.79	0.22	5.17	10	2.03	0.00	0.00	
A5	Justin Road	27+60.00	00+32.00	100	0.90	A5	10	9.80	0.23	2.03	0.00	2.03	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	10.37	0.24	0.21	2.98	0.87	2.07	0.70	8.37	41.80	11.37	0.79	0.22	5.17	10	2.03	0.00	0.00	
A6	Justin Road	FUTURE	00+32.00	100	0.90	A6	10	9.80	0.33	2.91	0.00	2.91	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.87	0.24	0.24	2.98	0.93	2.07	0.97	9.87	46.70	17.67	0.73	0.20	6.29	10	2.91	0.00	0.00	
A7	Justin Road	FUTURE	00+32.00	100	0.90	A7	10	9.80	0.22	1.97	0.00	1.97	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	10.25	0.24	0.21	2.98	0.87	2.07	0.68	8.25	41.43	10.96	0.79	0.22	5.09	10	1.97	0.00	0.00	
A8	Justin Road	24+20.00	00+32.00	100	0.90	A8	10	9.80	0.33	2.94	0.00	2.94	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.92	0.24	0.24	2.98	0.94	2.07	0.98	9.92	46.85	17.89	0.72	0.20	6.32	10	2.94	0.00	0.00	
A9	Justin Road	FUTURE	00+32.00	100	0.90	A9	10	9.80	0.33	2.91	0.00	2.91	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.87	0.24	0.24	2.98	0.93	2.07	0.97	9.87	46.70	17.67	0.73	0.20	6.29	10	2.91	0.00	0.00	
A10	Justin Road	20+80.00	00+32.00	100	0.90	A10	10	9.80	0.33	2.91	0.00	2.91	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.87	0.24	0.24	2.98	0.93	2.07	0.97	9.87	46.70	17.67	0.73	0.20	6.29	10	2.91	0.00	0.00	
A11	Justin Road	FUTURE	00+32.00	100	0.90	A11	10	9.80	0.33	2.95	0.00	2.95	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.65	0.24	0.21	4.03	0.89	2.07	0.75	8.65	42.70	12.42	0.77	0.21	7.31	10	2.95	0.00	0.00	
A12	Justin Road	17+40.00	00+32.00	100	0.90	A12	10	9.80	0.33	2.95	0.00	2.95	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.65	0.24	0.21	4.03	0.89	2.07	0.75	8.65	42.70	12.42	0.77	0.21	7.31	10	2.95	0.00	0.00	
A13	Justin Road	FUTURE	00+32.00	100	0.90	A13	10	9.80	0.33	2.88	0.00	2.88	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.56	0.24	0.21	4.03	0.88	2.07	0.73	8.56	42.41	12.08	0.78	0.21	7.22	10	2.88	0.00	0.00	
A14	Justin Road	14+00.00	00+32.00	100	0.90	A14	10	9.80	0.34	2.97	0.00	2.97	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.68	0.24	0.21	4.03	0.89	2.07	0.75	8.68	42.81	12.55	0.77	0.21	7.34	10	2.97	0.00	0.00	
A15	Justin Road	FUTURE	00+32.00	100	0.90	A15	10	9.80	0.34	3.00	0.00	3.00	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.72	0.24	0.21	4.03	0.89	2.07	0.76	8.72	42.93	12.69	0.77	0.21	7.38	10	3.00	0.00	0.00	
A16	Justin Road	11+00.00	00+32.00	100	0.90	A16	10	9.80	0.31	2.73	0.00	2.73	M4D	On-Grade	0.0175	0.013	N/A	Straight	0.0200	0.50	2.00	12.00	10.35	0.24	0.21	4.03	0.87	2.07	0.70	8.35	41.76	11.33	0.79	0.22	7.02	10	2.73	0.00	0.00	
B0	Conveyors Street	FUTURE	00+17.50	100	0.90	B0	10	9.80	0.60	5.29	0.00	5.29	Collector	Sump	0.0175	0.007	0.015	Straight	0.0250	0.50	2.00	17.50	12.92	0.44	0.32	11.81	1.10	2.07	1.49	10.92	60.82	33.55	0.64	0.19	8.93	15	5.29	0.00	0.00	
B1	Conveyors Street	7+64.17	00+17.50	100	0.90	B1	10	9.80	0.60	5.29	0.00	5.29	Collector	Sump	0.0175	0.007	0.015	Straight	0.0250	0.50	2.00	17.50	12.92	0.44	0.32	11.81	1.10	2.07	1.49	10.92	60.82	33.55	0.64	0.19	8.93	15	5.29	0.00	0.00	
E1	Justin Road	34+50.00	00+32.00	100	0.90	E1	10	9.80	0.23	2.03	0.00	2.03	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	10.37	0.24	0.21	2.98	0.87	2.07	0.70	8.37	41.80	11.37	0.79	0.22	5.17	10	2.03	0.00	0.00	
E2	Justin Road	FUTURE	00+32.00	100	0.90	E2	10	9.80	0.33	2.91	0.00	2.91	M4D	On-Grade	0.0175	0.007	N/A	Straight	0.0200	0.50	2.00	12.00	11.87	0.24	0.24	2.98	0.93	2.07	0.97	9.87	46.70	17.67	0.73	0.20	6.29	10	2.91	0.00	0.00	

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

No.	REVISIONS	DATE	BY

Kimley»Horn

400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

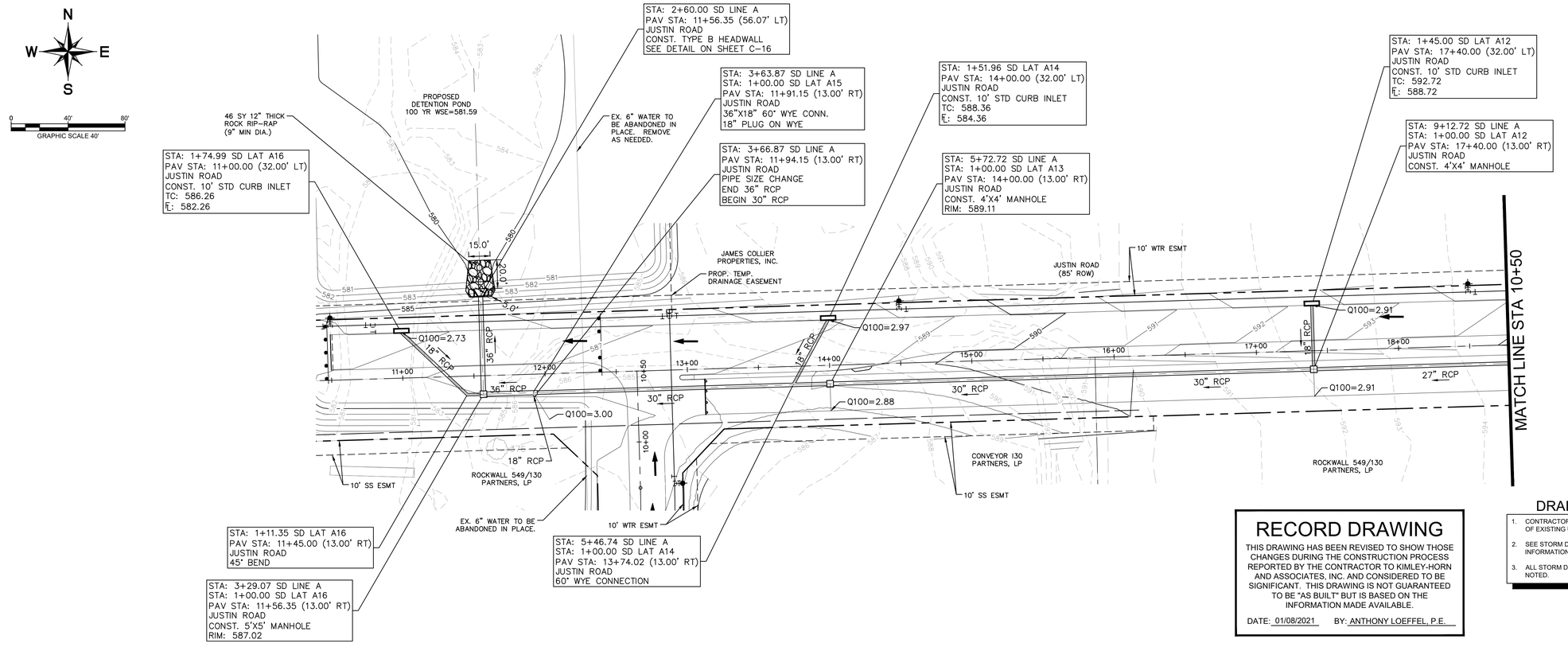
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

DRAINAGE CALCULATIONS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-10



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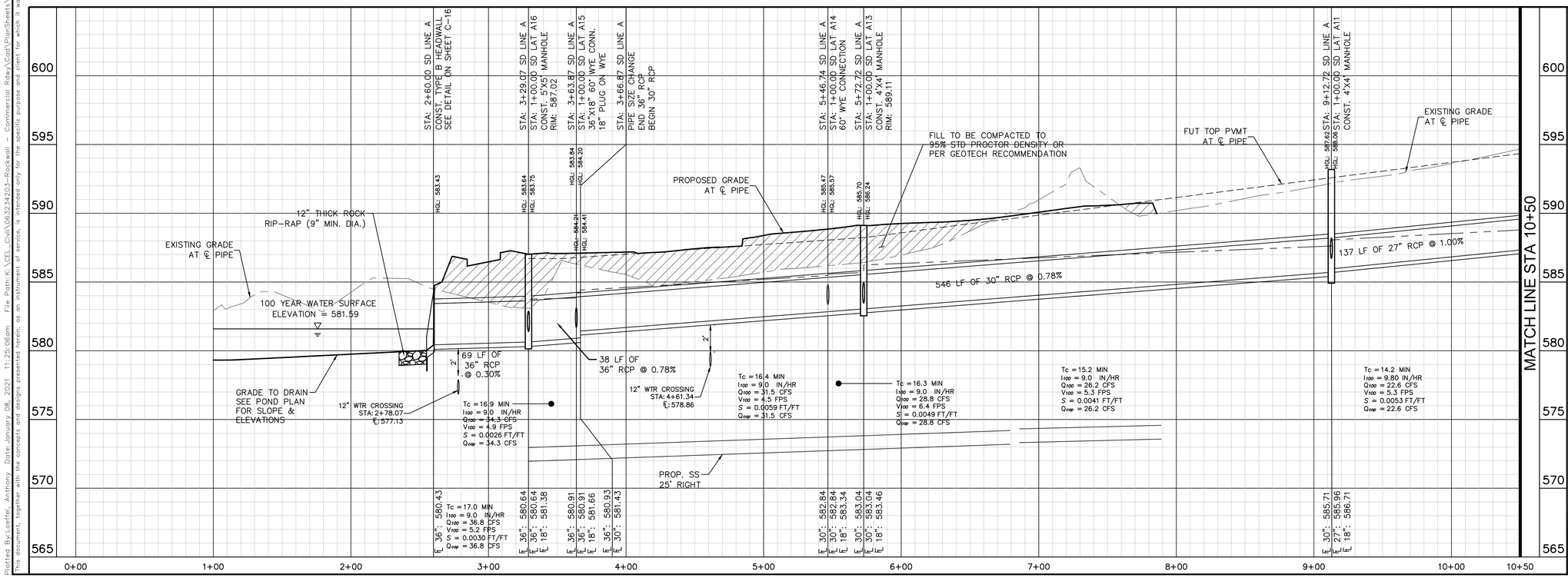
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

DRAINAGE GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. SEE STORM DRAIN PLAN & PROFILE SHEETS FOR DETAILED INFORMATION ON STORM DRAIN LINES.
3. ALL STORM DRAIN LINES SHALL BE RCP, CLASS III UNLESS OTHERWISE NOTED.

SD LINE A



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: DFW
CHECKED BY: BLM

STORM DRAIN PLAN & PROFILE - LINE SD-A

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-11

N
W E
S

0 40' 80'
GRAPHIC SCALE 40'

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1563.00'	482.23'	N79°26'21"E	480.31'	17°40'38"	243.04'
C2	4008.90'	776.18'	N76°08'50"E	774.97'	11°05'36"	389.31'

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

STA: 1+45.00 SD LAT A10
PAV STA: 20+80.00 (32.00' LT)
JUSTIN ROAD
CONST. 10' STD CURB INLET
TC: 596.26
FL: 592.26

STA: 1+52.06 SD LAT A8
PAV STA: 24+20.00 (32.00' LT)
JUSTIN ROAD
CONST. 10' STD CURB INLET
TC: 598.64
FL: 594.64

STA: 15+70.63 SD LINE A
STA: 1+00.00 SD LAT A8
PAV STA: 23+93.91 (13.00' RT)
JUSTIN ROAD
60° WYE CONNECTION

STA: 16+65.00 SD LINE A
PAV STA: 24+88.57 (13.00' RT)
JUSTIN ROAD
CONST. 4'X4' MANHOLE
RIM: 600.90

STA: 18+14.95 SD LINE A
STA: 1+00.00 SD LAT A6
PAV STA: 26+39.00 (13.00' RT)
JUSTIN ROAD
21"X18" 60° WYE CONN.
18" PLUG ON WYE

STA: 1+52.06 SD LAT A5
PAV STA: 27+60.00 (32.00' LT)
JUSTIN ROAD
CONST. 10' STD CURB INLET
TC: 601.02
FL: 597.02

MATCH LINE STA 10+50

MATCH LINE STA 21+00

10' WTR ESMT

JAMES COLLIER PROPERTIES, INC.

JUSTIN ROAD (85' ROW)

ROCKWALL 549/130 PARTNERS, LP

Q100=2.89
Q100=2.96
Q100=2.94
Q100=1.97
Q100=1.99
Q100=2.91

27" RCP
24" RCP
18" RCP
21" RCP

PC STA: 10+90.41

STA: 12+54.08 SD LINE A
STA: 1+00.00 SD LAT A10
PAV STA: 20+80.00 (13.00' RT)
JUSTIN ROAD
CONST. 4'X4' MANHOLE
RIM: 598.08

PRC STA: 15+72.63

STA: 15+85.70 SD LINE A
STA: 1+00.00 SD LAT A7
PAV STA: 24+09.00 (13.00' RT)
JUSTIN ROAD
24"X18" 60° WYE CONN.
18" PLUG ON WYE

STA: 1+03.00 SD LAT A7
PAV STA: 24+10.50 (15.60' RT)
JUSTIN ROAD
END & PLUG

STA: 1+03.00 SD LAT A6
PAV STA: 26+40.50 (15.60' RT)
JUSTIN ROAD
END & PLUG

STA: 19+09.53 SD LINE A
STA: 1+00.00 SD LAT A5
PAV STA: 27+33.89 (13.00' RT)
JUSTIN ROAD
60° WYE CONNECTION

DRAINAGE GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. SEE STORM DRAIN PLAN & PROFILE SHEETS FOR DETAILED INFORMATION ON STORM DRAIN LINES.
3. ALL STORM DRAIN LINES SHALL BE RCP, CLASS III UNLESS OTHERWISE NOTED.

SD LINE A

EXISTING GRADE AT ℄ PIPE
FUT TOP PVMT AT ℄ PIPE
PARTIAL FLOW
204 LF OF 27" RCP @ 1.00%
411 LF OF 24" RCP @ 1.00%
435 LF OF 21" RCP @ 0.80%
12" WTR CROSSING STA:14+64.57 FL: 588.48

STA: 12+54.08 SD LINE A
STA: 1+00.00 SD LAT A10
PAV STA: 20+80.00 (13.00' RT)
CONST. 4'X4' MANHOLE
RIM: 598.08

STA: 15+70.63 SD LINE A
STA: 1+00.00 SD LAT A8
60° WYE CONNECTION

STA: 15+85.70 SD LINE A
STA: 1+00.00 SD LAT A7
24"X18" 60° WYE CONN.
18" PLUG ON WYE

STA: 16+65.00 SD LINE A
CONST. 4'X4' MANHOLE
RIM: 600.90

STA: 18+14.95 SD LINE A
STA: 1+00.00 SD LAT A6
21"X18" 60° WYE CONN.
18" PLUG ON WYE

STA: 19+09.53 SD LINE A
STA: 1+00.00 SD LAT A5
60° WYE CONNECTION

HGL: 588.81
HGL: 592.49
HGL: 594.07
HGL: 594.23
HGL: 595.25
HGL: 595.26
HGL: 595.38
HGL: 596.41
HGL: 596.63
HGL: 597.23
HGL: 597.78
HGL: 594.29
HGL: 595.03
HGL: 590.81
HGL: 591.62

27": 589.37
24": 589.62
18": 590.12
24": 592.79
24": 592.79
18": 593.04
24": 592.94
24": 592.94
18": 593.19
24": 593.73
21": 593.98
21": 595.18
21": 595.18
18": 595.31
21": 595.94
21": 595.94
18": 596.07

Tc = 14.2 MIN
I100 = 9.80 IN/HR
Q100 = 22.6 CFS
V100 = 8.5 FPS
S = 0.0100 FT/FT
Qcap = 31.07CFS

Tc = 13.6 MIN
I100 = 9.80 IN/HR
Q100 = 16.79CFS
V100 = 7.9 FPS
S = 0.0100 FT/FT
Qcap = 22.7 CFS

Tc = 13.6 MIN
I100 = 9.80 IN/HR
Q100 = 13.84CFS
V100 = 3.8 FPS
S = 0.0037 FT/FT
Qcap = 13.84CFS

Tc = 13.3 MIN
I100 = 9.80 IN/HR
Q100 = 11.88CFS
V100 = 3.8 FPS
S = 0.0028 FT/FT
Qcap = 11.88 CFS

Tc = 12.8 MIN
I100 = 9.80 IN/HR
Q100 = 11.88CFS
V100 = 6.6 FPS
S = 0.0080 FT/FT
Qcap = 14.22CFS

Tc = 12.6 MIN
I100 = 9.80 IN/HR
Q100 = 8.97 CFS
V100 = 2.9 FPS
S = 0.0032 FT/FT
Qcap = 8.97 CFS

Tc = 11.1 MIN
I100 = 9.80 IN/HR
Q100 = 6.98 CFS
V100 = 2.9 FPS
S = 0.0019 FT/FT
Qcap = 6.98 CFS

PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

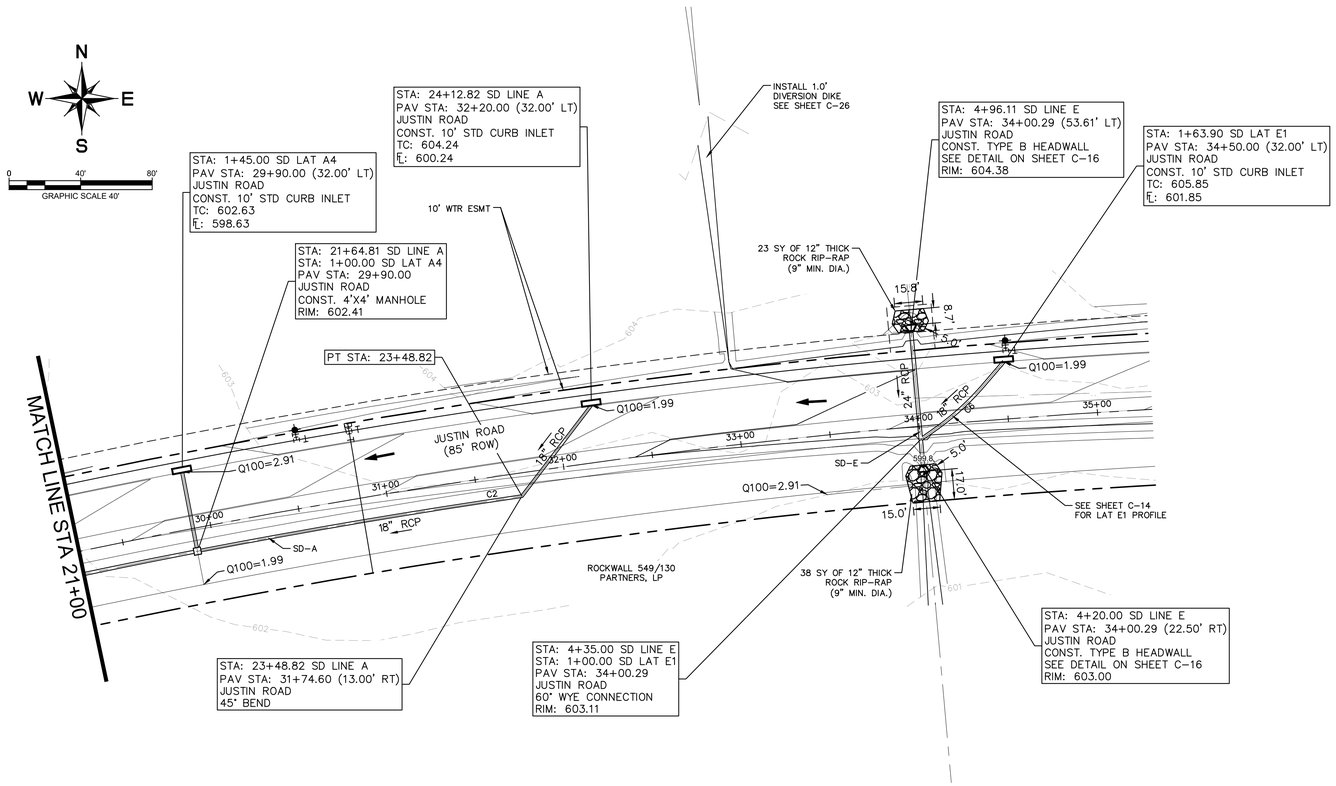
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED PROFESSIONAL ENGINEER
1-8-21

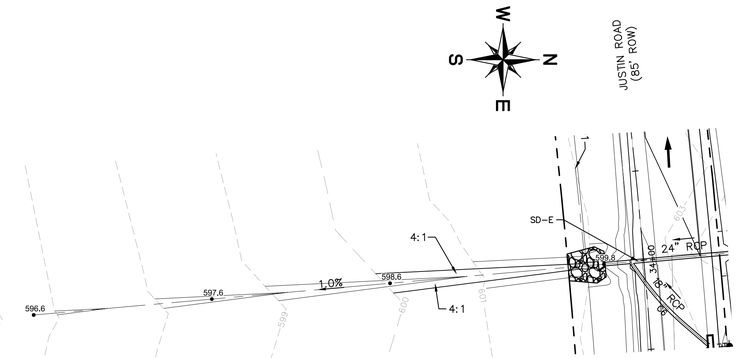
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: DFW
CHECKED BY: BLM

STORM DRAIN PLAN & PROFILE - LINE SD-A

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-12





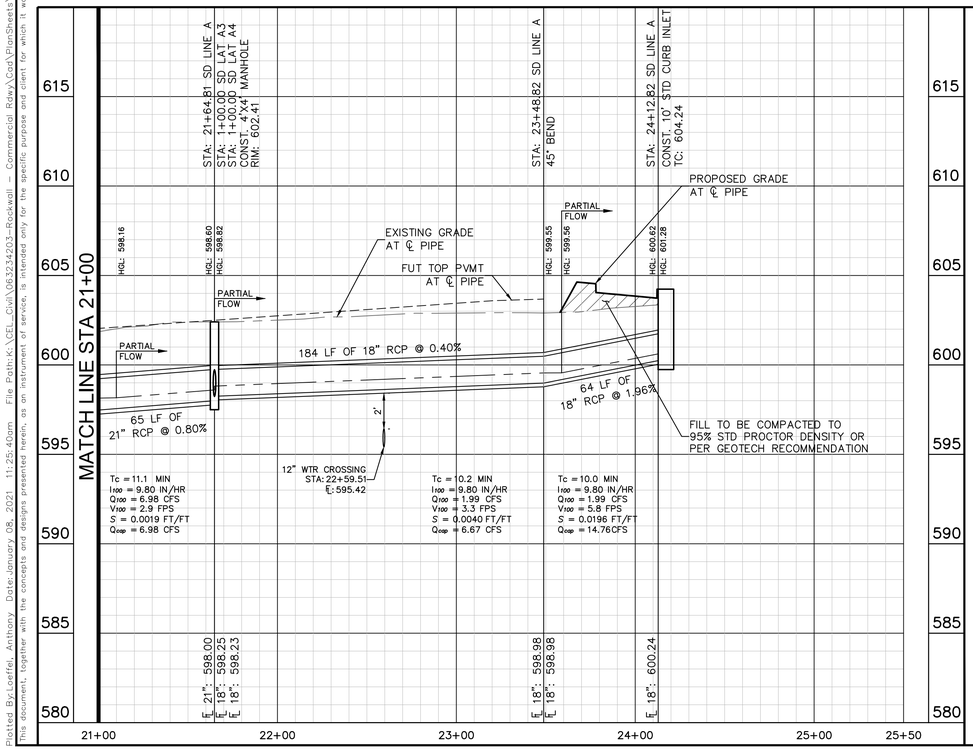
CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	4008.90'	776.18'	N76°08'50"E	774.97'	11°05'36"	389.31'
C6	150.00'	37.42'	N47°45'48"E	37.32'	14°17'31"	18.81'

RECORD DRAWING

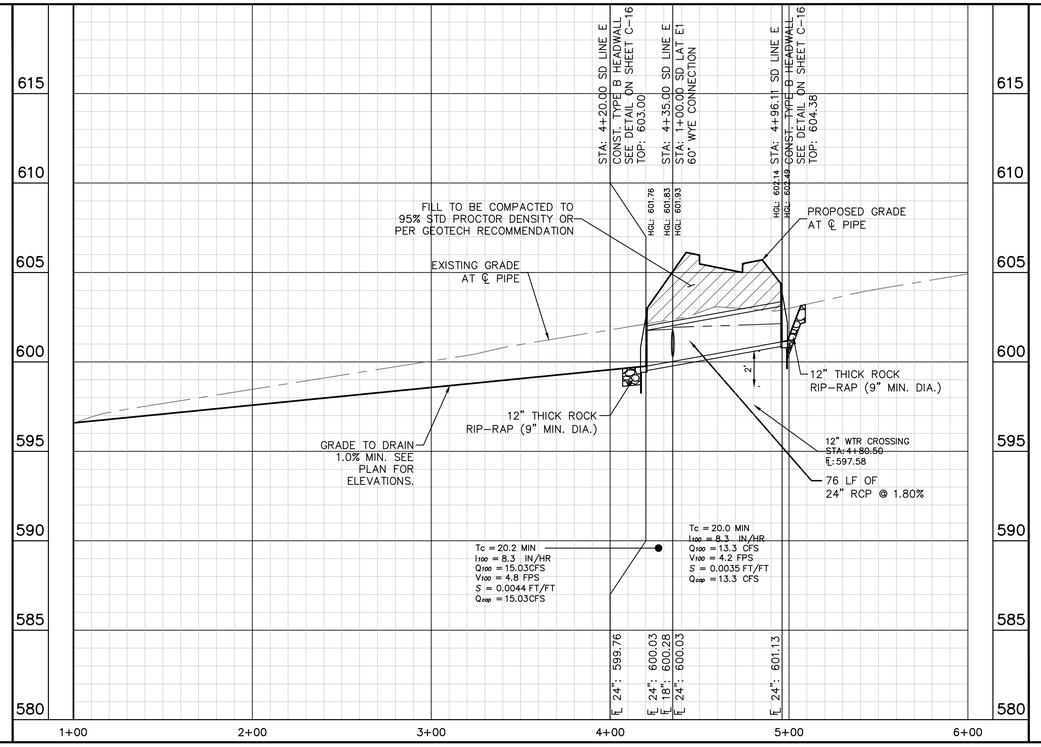
THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

SD LINE A



SD LINE E



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn

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PHONE: 469-501-2200
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STATE OF TEXAS
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PROFESSIONAL ENGINEER
1-8-21

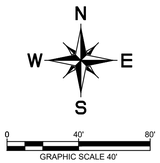
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: DFW
CHECKED BY: BLM

STORM DRAIN PLAN & PROFILE - LINE SD-A, LINE SD-C & LINE SD-D

JUSTIN RD & CONVEYOR'S ST EXTENSION

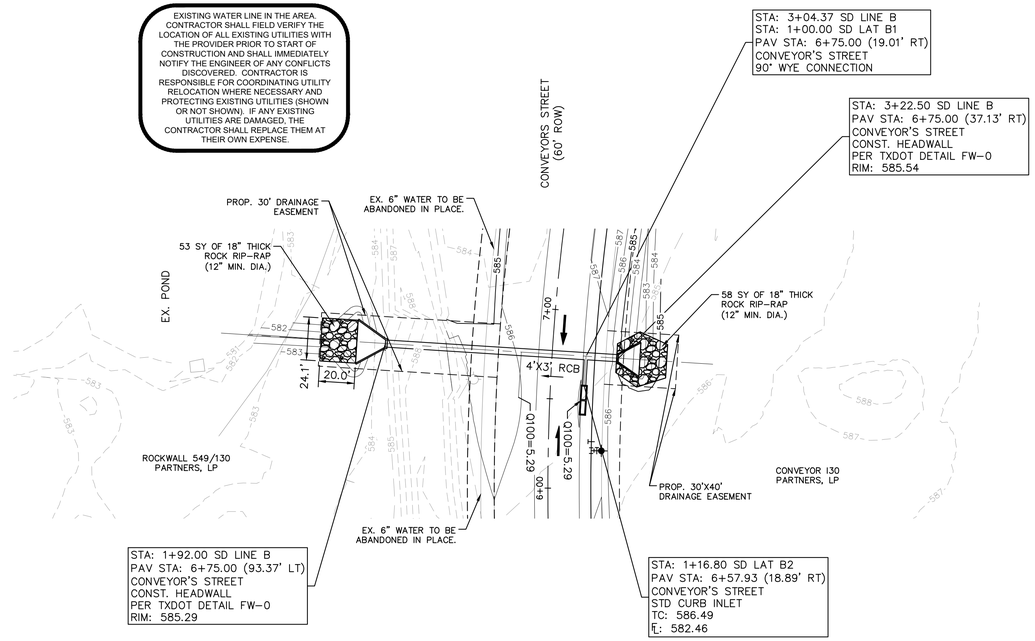
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-13

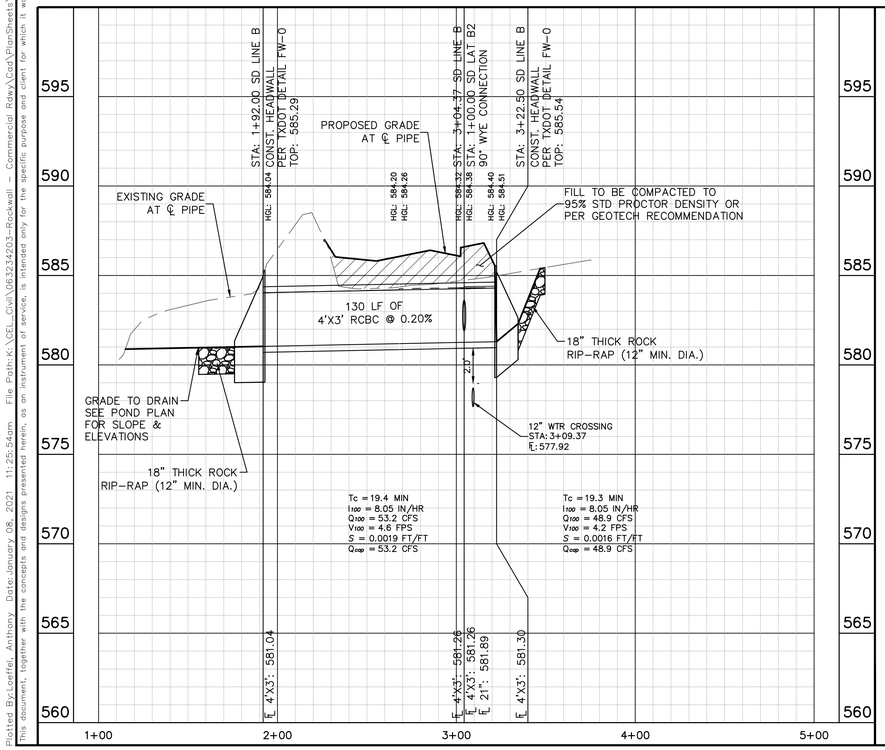


!!WARNING!!

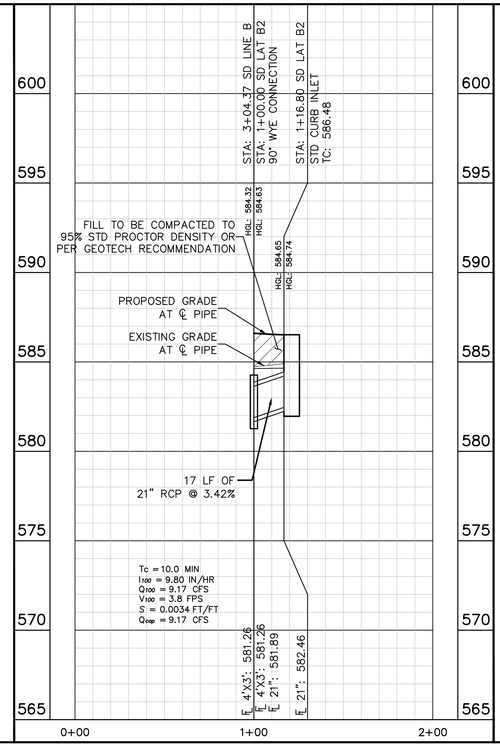
EXISTING WATER LINE IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.



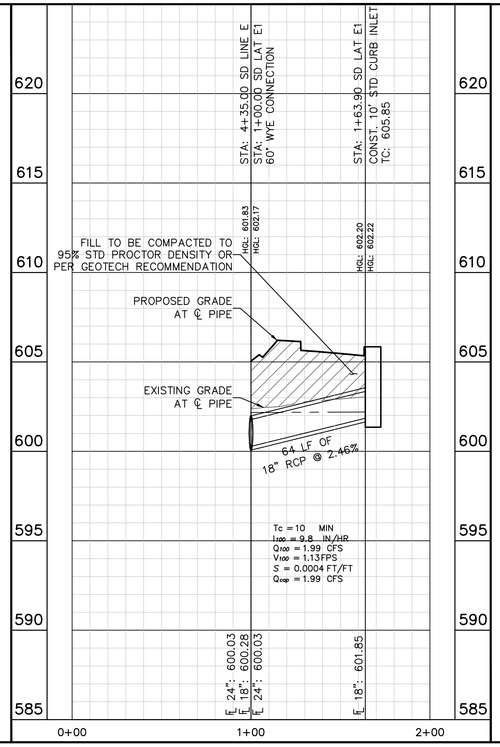
SD LINE B



SD LAT B2



SD LAT E1



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

No.	REVISIONS	DATE	BY

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TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

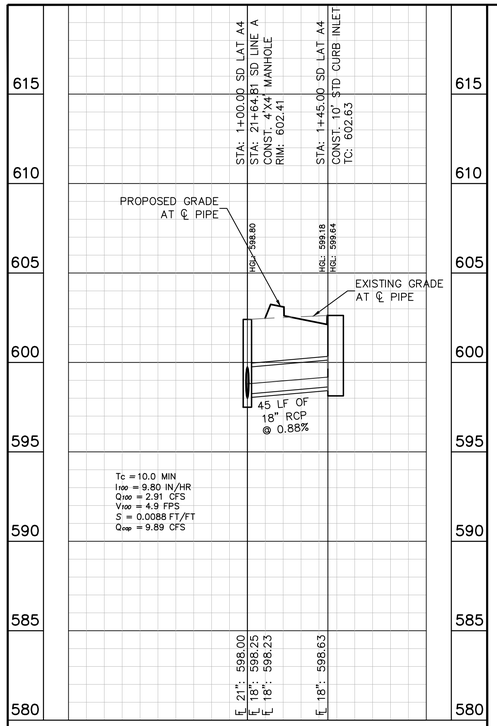
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: DFW
CHECKED BY: BLM

STORM DRAIN PLAN & PROFILE - LINE SD-B

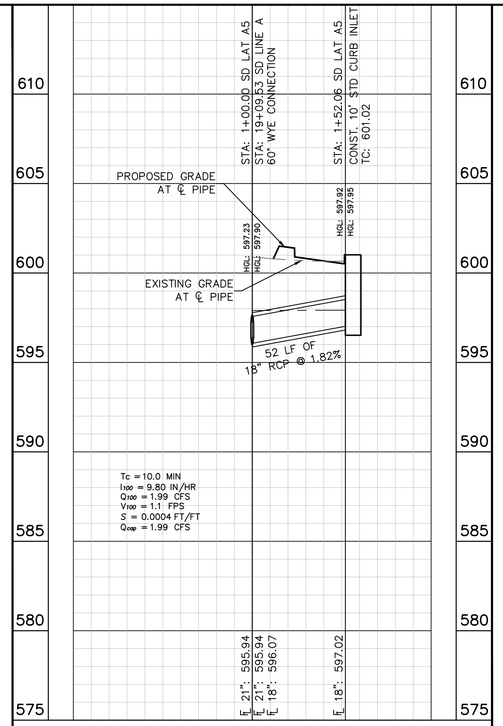
JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-14

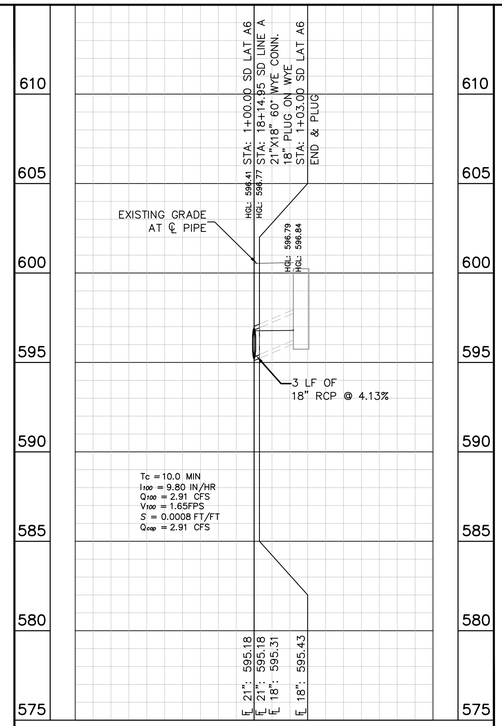
SD LAT A4



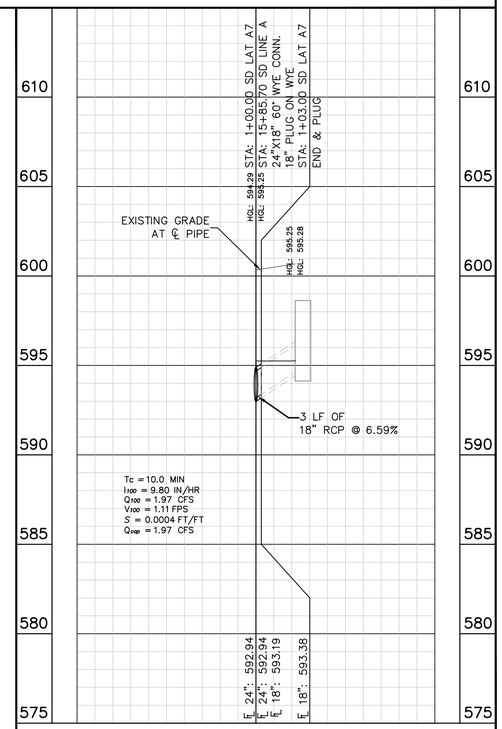
SD LAT A5



SD LAT A6 (FUTURE)

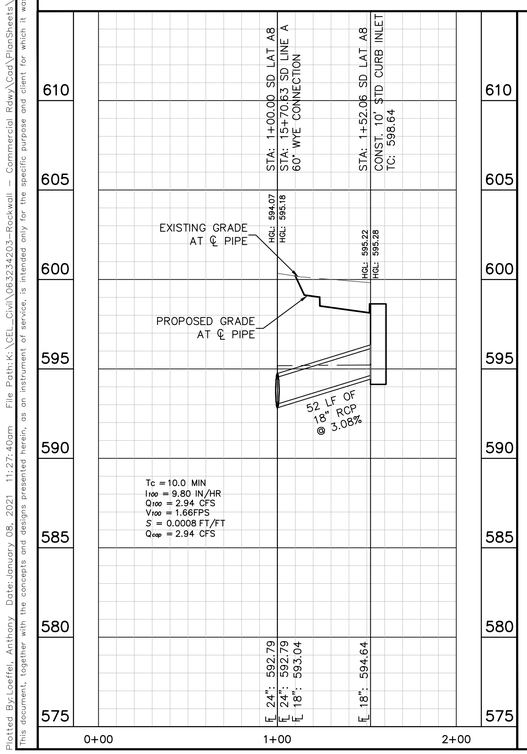


SD LAT A7 (FUTURE)

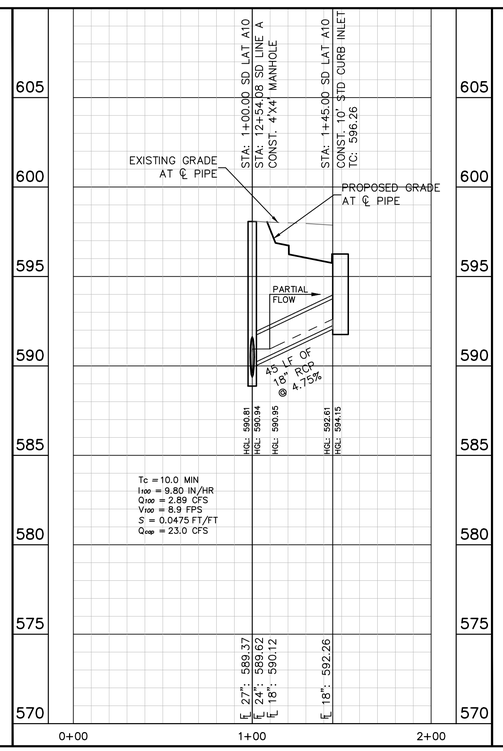


PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

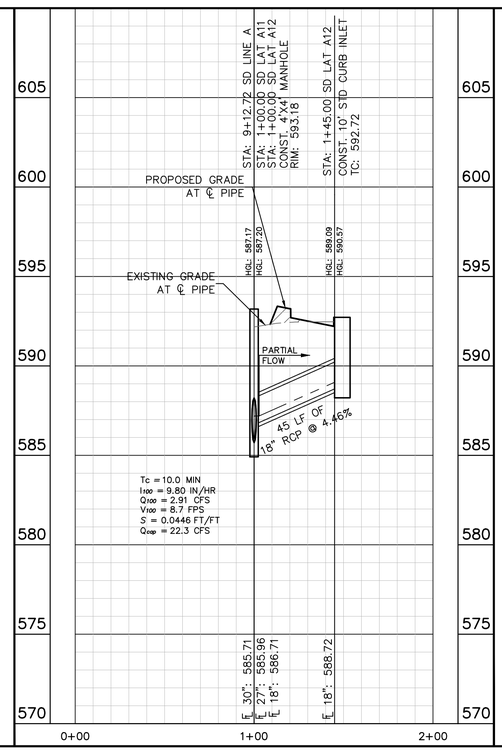
SD LAT A8



SD LAT A10



SD LAT A12



SPACE INTENTIONALLY LEFT BLANK

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

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BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
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TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

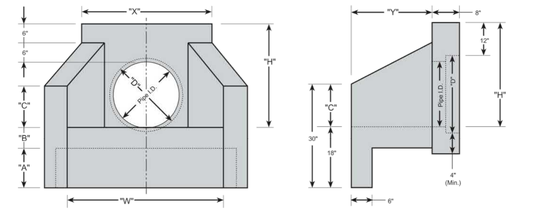
KHA PROJECT	063234203
DATE	MARCH 2020
SCALE: AS SHOWN	
DESIGNED BY:	AML
DRAWN BY:	DFW
CHECKED BY:	BLM

STORM PROFILES - LATERALS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

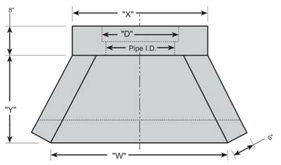
SHEET NUMBER
C-15

Precast Drainage Structures



End Elevation

Side Elevation



Plan View

Basic Dimensions

Pipe Dia. (In.)	"A" (In.)	"B" (In.)	"C" (In.)	"D" (In.)	"H" (In.)	"W" (In.)	"X" (In.)	"Y" (In.)	Approx. Weight (Lbs.)
12	12.00	6.00	12.00	17.00	30.00	48.875	35.00	24.00	2,100
15	12.00	6.00	12.00	20.50	30.00	48.875	35.00	24.00	2,100
18	12.00	6.00	12.00	24.00	30.00	48.875	35.00	24.00	2,100
21	12.00	6.00	12.00	27.50	36.00	69.750	42.00	36.00	3,400
24	12.00	6.00	12.00	31.00	36.00	69.750	42.00	36.00	3,400
27	12.00	6.00	12.00	35.00	42.00	90.000	49.00	48.00	4,900
30	12.00	6.00	12.00	38.50	42.00	90.000	49.00	48.00	4,900
33	12.00	6.00	12.00	42.00	60.00	111.500	56.00	60.00	6,700
36	12.00	6.00	12.00	45.50	60.00	111.500	56.00	60.00	6,700
42	9.00	9.00	18.00	52.50	63.00	153.000	70.00	84.00	14,500
48	9.00	9.00	18.00	59.50	63.00	153.000	70.00	84.00	14,500

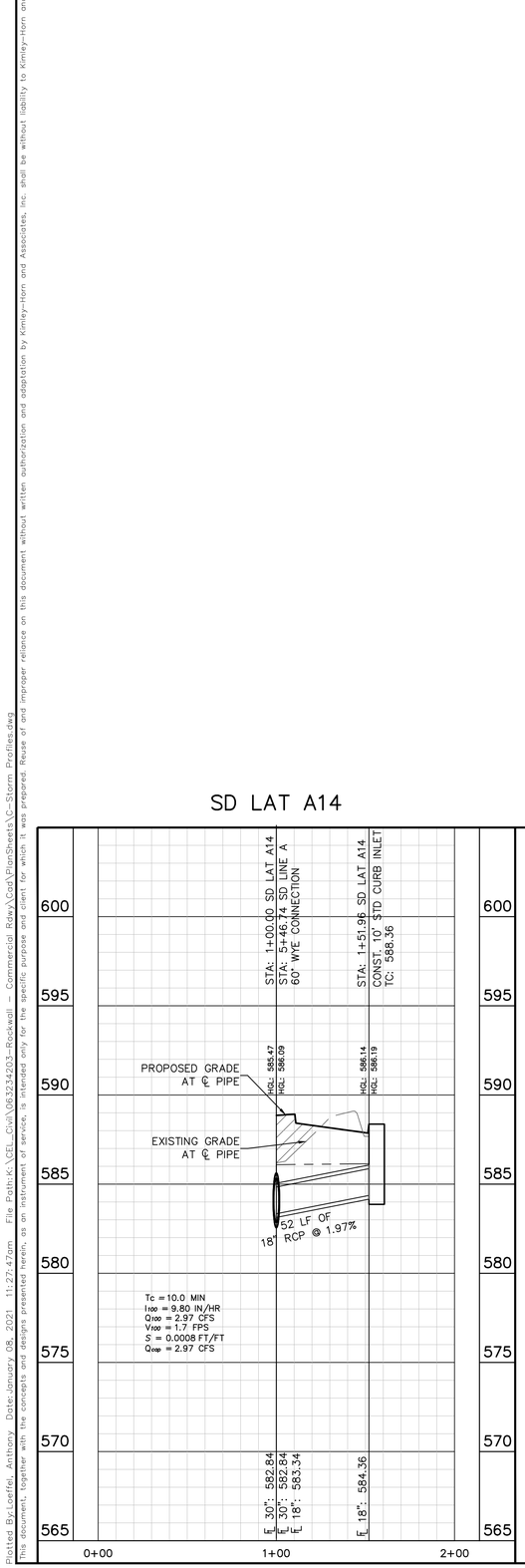
Note:
1.) All exposed corners shall be chamfered 3/4".
2.) Minimum reinforcing shall be #4 @ 6" (grade 60) or the equivalent steel area provided in the form of welded wire fabric.
3.) Concrete for precast (steel formed) sections shall be a minimum of ~~CL "A" (3,000 psi)~~ 4,200 psi (MIN 7.0 SACK/CY MIX)
4.) At the option and expense of the contractor, the next larger size of headwall may be furnished as long as the "D" dimension cast is that of the required size of pipe.

-No Scale-
All dimensions subject to allowable specification tolerances.

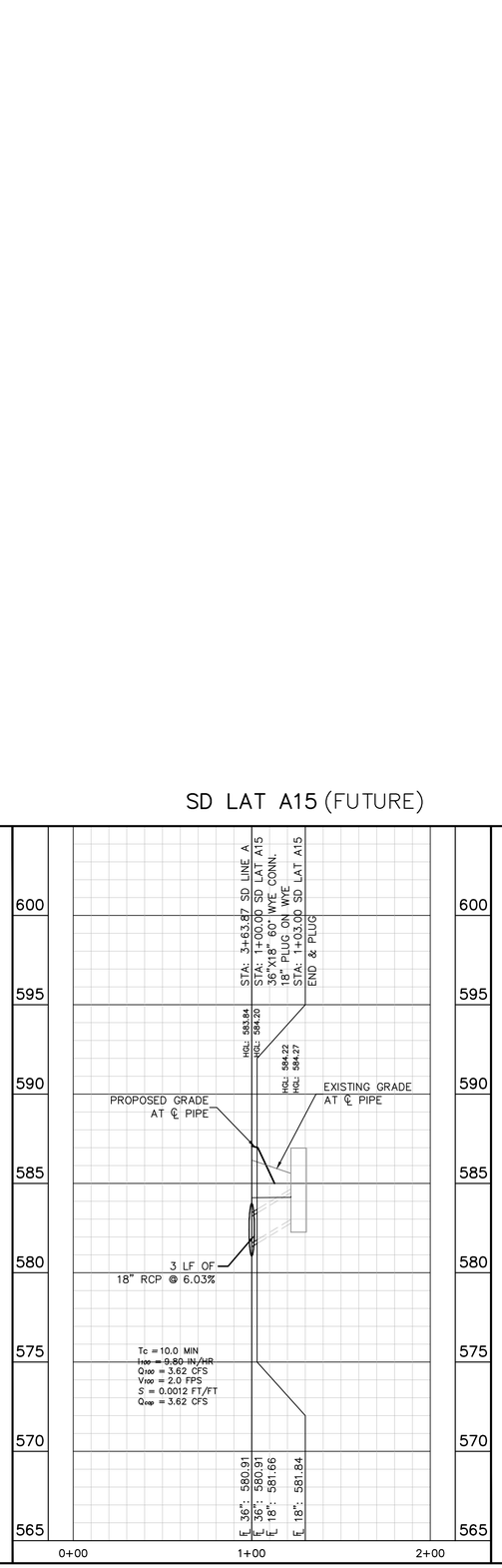
TITLE	PLANT	STATE	SECTION/PAGE	DATE
Precast Headwall - (Type B) For Reinforced Concrete Pipe	All Plants	TX	7.1	Feb 2016

FORTERRA

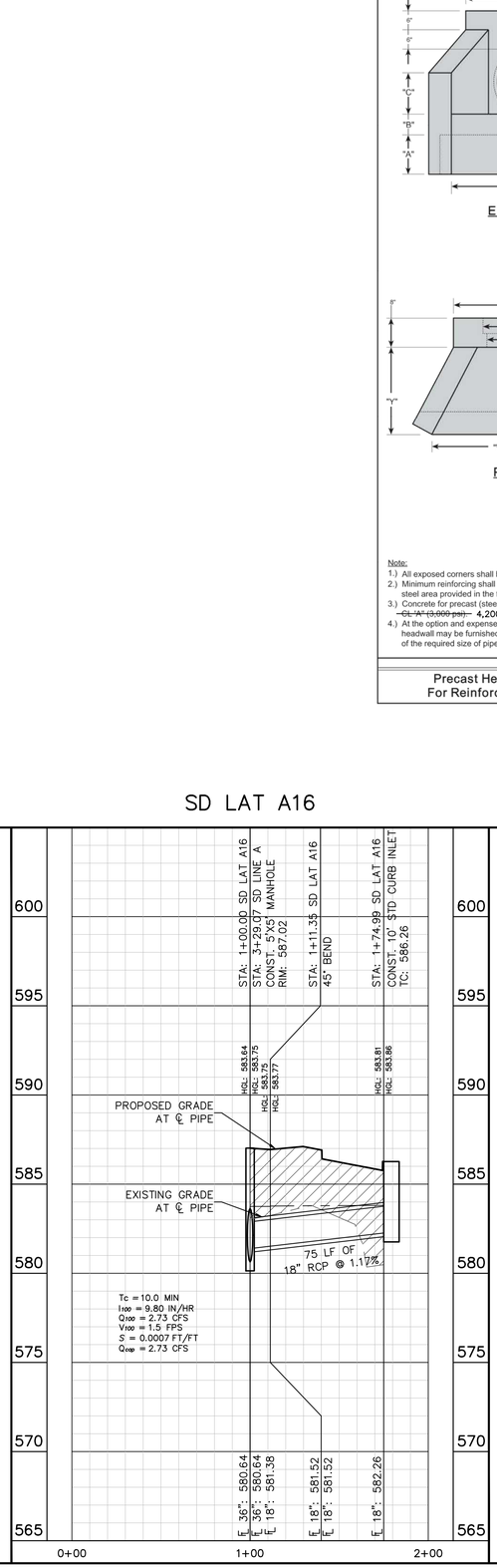
SD LAT A14



SD LAT A15 (FUTURE)



SD LAT A16



SPACE INTENTIONALLY LEFT BLANK

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

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ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

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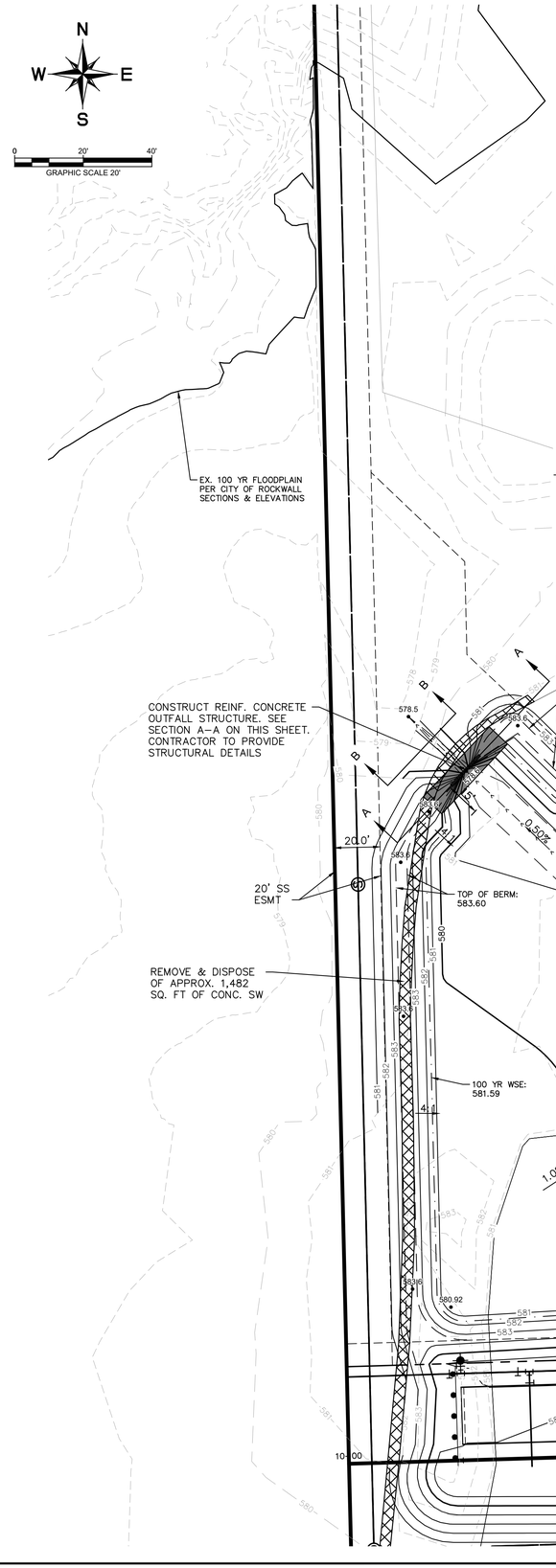
1-8-21

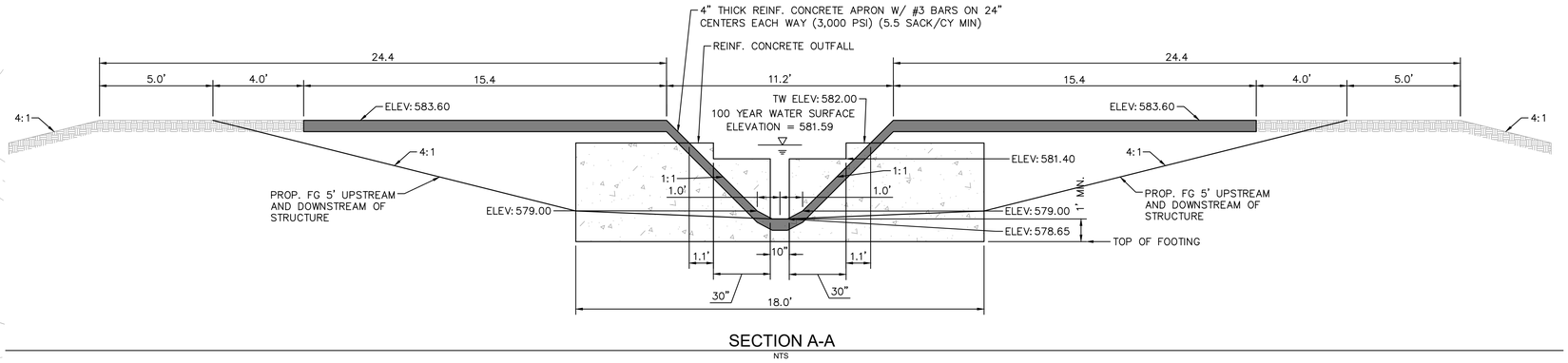
KHA PROJECT	063234203
DATE	MARCH 2020
SCALE:	AS SHOWN
DESIGNED BY:	AML
DRAWN BY:	DFW
CHECKED BY:	BLM

STORM PROFILES - LATERALS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-16





SECTION A-A
NTS

WEIR CALCULATIONS:

$Q = C*(L - 0.1*i*H)*H^{1.5}$
C = 3.33

OPENING #1	OPENING #2
L = 10 IN	L = 60 IN
i = 1	i = 1
INVERT ELEVATION = 578.65	INVERT ELEVATION = 581.40
HEAD = WSEL - INVERT	HEAD = WSEL - INVERT

Detention Pond - Outfall Structure Summary

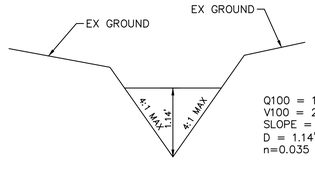
Design Storm	Volume (ac-ft)	Elevation	Opening #1		Opening #2		Total	
			Weir	Actual	Weir	Actual	Actual	Max
5-year	1.04	580.80	6.5	6.5	0.0	0.0	6.5	6.5
10-year	1.36	581.12	7.6	7.6	0.0	0.0	7.6	7.6
25-year	1.53	581.25	8.0	8.0	0.0	0.0	8.0	8.7
50-year	1.78	581.45	8.6	8.6	0.2	0.2	8.8	9.7
100-year	1.95	581.59	9.0	9.0	1.3	1.3	10.4	10.9

Detention Pond - Water Suface Elevation Summary

Storm Event	Elevation	Volume
5-yr Elevation (MRM Calcs) =	580.80	1.04
10-yr Elevation (MRM Calcs) =	581.12	1.36
25-yr Elevation (MRM Calcs) =	581.25	1.53
50-yr Elevation (MRM Calcs) =	581.45	1.78
100-yr Elevation (MRM Calcs) =	581.59	1.95

Detention Pond Summary Table

Elevation	Area (ac)	Volume (ac-ft)	Volume (ft^3)
578.65	0.00	0.00	0
579.00	0.05	0.01	381
580.00	0.58	0.32	14,118
581.00	1.21	1.22	53,026
582.00	1.29	2.46	107,310
583.00	1.37	3.79	165,149
583.60	1.42	4.63	201,594



SECTION B-B
NTS

POND NOTES

1. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT FOR POND LINER SPECIFICATIONS.
2. THE POND IS TO BE WATERTIGHT.
3. ANY GRAVEL OR OTHER PERVIOUS EMBEDMENT AROUND PIPES OR OUTFALL STRUCTURES NEAR THE POND SHALL BE ELIMINATED FOR AT LEAST 20' FROM THE POND SO NO ROUTE FOR WATER TO LEAK THROUGH THE EMBEDMENT MATERIAL IS PROVIDED. BACKFILL IN THESE AREAS SHALL BE OF IMPERVIOUS MATERIAL.
4. THE STORM PIPES AND HEADWALLS THAT DRAIN INTO THE POND ARE TO BE INSTALLED WITH WATER TIGHT JOINTS TO AT LEAST THE ELEVATION OF THE NORMAL POOL OF THE POND.
5. POND SIDE SLOPES TO BE SEEDED AND STABILIZED WITH CURLEX.
6. SEE SHEET C-17A FOR ALL DETENTION CALCULATIONS.

RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203	DATE MARCH 2020	SCALE: AS SHOWN	DESIGNED BY: AML	DRAWN BY: XXX	CHECKED BY: BLM

POND PLAN

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-17

DETENTION SYSTEM CALCULATIONS
MODIFIED RATIONAL METHOD
DESIGN FREQUENCY = 100 YEAR STORM

EXISTING CONDITIONS:

DRAINAGE AREAS	EX7	
DRAINAGE AREA (A)	9.13	AC
TIME OF CONC. (T_c)	25.0	MIN
RAINFALL INTENSITY (I)	7.60	IN/HR
RUNOFF COEFFICIENT (C)	0.35	
ALLOWABLE DISCHARGE	24.29	CFS

PASS THROUGH

DRAINAGE AREAS	OS9	
DRAINAGE AREA (A)	3.31	AC
TIME OF CONC. (T_c)	20.0	MIN
RAINFALL INTENSITY (I)	8.30	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	9.62	CFS

PROPOSED ONSITE CONDITIONS:

PROPOSED DETAINED

DRAINAGE AREAS	A2-16,POND	
DRAINAGE AREA (A)	6.12	AC
TIME OF CONC. (T_c)	17.2	MIN
RAINFALL INTENSITY (I)	8.69	IN/HR
WEIGHTED COEFFICIENT (C)	0.76	
UNDETAINED RUNOFF	40.42	CFS

PROPOSED BYPASS

DRAINAGE AREAS	OS10	
DRAINAGE AREA (A)	4.92	AC
TIME OF CONC. (T_c)	23.7	MIN
RAINFALL INTENSITY (I)	7.78	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	13.40	CFS

ALLOWABLE DISCHARGE **10.9 CFS**
ACTUAL DISCHARGE **10.4 CFS**

TIME (MIN)	TIME (HRS)	I_{100} (IN/HR)	INFLOW RATE (CFS)	INFLOW VOLUME (FT^3)	OUTFLOW RATE (CFS)	OUTFLOW VOLUME (FT^3)	STORAGE (FT^3)	
10	0.17	9.80	56.92	34,154	10.89	8,482	25,672	
15	0.25	9.00	52.28	47,049	10.89	10,041	37,008	
20	0.33	8.30	48.21	57,853	10.89	11,600	46,253	
30	0.50	6.90	40.08	72,142	10.89	14,718	57,424	
40	0.67	5.80	33.69	80,854	10.89	17,836	63,018	
50	0.83	5.00	29.04	87,128	10.89	20,954	66,173	
60	1.00	4.50	26.14	94,098	10.89	24,073	70,025	
70	1.17	4.00	23.23	97,583	10.89	27,191	70,392	
80	1.33	3.70	21.49	103,159	10.89	30,309	72,850	
90	1.50	3.50	20.33	109,781	10.89	33,427	76,354	
100	1.67	3.40	19.75	118,493	10.89	36,545	81,948	
110	1.83	3.20	18.59	122,676	10.89	39,664	83,012	
120	2.00	2.80	16.26	117,099	10.89	42,782	74,318	
140	2.33	2.64	15.36	129,026	10.89	49,018	80,008	
160	2.67	2.49	14.46	138,784	10.89	55,255	83,530	
180	3.00	2.33	13.55	146,374	10.89	61,491	84,883	**<== CONTROLS 1.95 AC-FT**
200	3.33	2.18	12.65	151,795	10.89	67,727	84,068	
220	3.67	2.02	11.75	155,048	10.89	73,964	81,085	
240	4.00	1.87	10.84	156,132	10.89	80,200	75,932	
260	4.33	1.71	9.94	155,048	10.89	86,437	68,612	
280	4.67	1.56	9.04	151,795	10.89	92,673	59,123	
300	5.00	1.40	8.13	146,374	10.89	98,909	47,465	

DETENTION SYSTEM CALCULATIONS
MODIFIED RATIONAL METHOD
DESIGN FREQUENCY = 50 YEAR STORM

EXISTING CONDITIONS:

DRAINAGE AREAS	EX7	
DRAINAGE AREA (A)	9.13	AC
TIME OF CONC. (T_c)	25.0	MIN
RAINFALL INTENSITY (I)	6.80	IN/HR
RUNOFF COEFFICIENT (C)	0.35	
ALLOWABLE DISCHARGE	21.73	CFS

PASS THROUGH

DRAINAGE AREAS	OS9	
DRAINAGE AREA (A)	3.31	AC
TIME OF CONC. (T_c)	20.0	MIN
RAINFALL INTENSITY (I)	7.50	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	8.69	CFS

PROPOSED ONSITE CONDITIONS:

PROPOSED DETAINED

DRAINAGE AREAS	A2-16,POND	
DRAINAGE AREA (A)	6.12	AC
TIME OF CONC. (T_c)	17.2	MIN
RAINFALL INTENSITY (I)	7.84	IN/HR
WEIGHTED COEFFICIENT (C)	0.76	
UNDETAINED RUNOFF	36.44	CFS

PROPOSED BYPASS

DRAINAGE AREAS	OS10	
DRAINAGE AREA (A)	4.92	AC
TIME OF CONC. (T_c)	23.7	MIN
RAINFALL INTENSITY (I)	6.98	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	12.02	CFS

ALLOWABLE DISCHARGE **9.7 CFS**
ACTUAL DISCHARGE **8.8 CFS**

TIME (MIN)	TIME (HRS)	I_{50} (IN/HR)	INFLOW RATE (CFS)	INFLOW VOLUME (FT^3)	OUTFLOW RATE (CFS)	OUTFLOW VOLUME (FT^3)	STORAGE (FT^3)	
10	0.17	9.00	52.28	31,366	9.71	7,209	24,157	
15	0.25	8.10	47.05	42,344	9.71	8,535	33,809	
20	0.33	7.50	43.56	52,277	9.71	9,860	42,417	
30	0.50	6.10	35.43	63,777	9.71	12,510	51,267	
40	0.67	5.20	30.20	72,490	9.71	15,161	57,329	
50	0.83	4.50	26.14	78,415	9.71	17,811	60,603	
60	1.00	3.90	22.65	81,551	9.71	20,462	61,089	
70	1.17	3.70	21.49	90,264	9.71	23,112	67,152	
80	1.33	3.50	20.33	97,583	9.71	25,763	71,820	
90	1.50	3.30	19.17	103,507	9.71	28,413	75,094	
100	1.67	3.00	17.43	104,553	9.71	31,064	73,489	
110	1.83	2.90	16.84	111,175	9.71	33,714	77,460	
120	2.00	2.45	14.23	102,462	9.71	36,365	66,097	
140	2.33	2.32	13.49	113,304	9.71	41,666	71,639	
160	2.67	2.19	12.75	122,366	9.71	46,967	75,399	
180	3.00	2.07	12.00	129,646	9.71	52,268	77,378	
200	3.33	1.94	11.26	135,144	9.71	57,569	77,576	**<== CONTROLS 1.78 AC-FT**
220	3.67	1.81	10.52	138,862	9.71	62,870	75,992	
240	4.00	1.68	9.78	140,798	9.71	68,171	72,627	
260	4.33	1.56	9.04	140,953	9.71	73,472	67,481	
280	4.67	1.43	8.29	139,327	9.71	78,773	60,554	
300	5.00	1.30	7.55	135,919	9.71	84,074	51,845	

DETENTION SYSTEM CALCULATIONS
MODIFIED RATIONAL METHOD
DESIGN FREQUENCY = 25 YEAR STORM

EXISTING CONDITIONS:

DRAINAGE AREAS	EX7	
DRAINAGE AREA (A)	9.13	AC
TIME OF CONC. (T_c)	25.0	MIN
RAINFALL INTENSITY (I)	6.05	IN/HR
RUNOFF COEFFICIENT (C)	0.35	
ALLOWABLE DISCHARGE	19.33	CFS

PASS THROUGH

DRAINAGE AREAS	OS9	
DRAINAGE AREA (A)	3.31	AC
TIME OF CONC. (T_c)	20.0	MIN
RAINFALL INTENSITY (I)	6.60	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	7.65	CFS

PROPOSED ONSITE CONDITIONS:

PROPOSED DETAINED

DRAINAGE AREAS	A2-16,POND	
DRAINAGE AREA (A)	6.12	AC
TIME OF CONC. (T_c)	17.2	MIN
RAINFALL INTENSITY (I)	7.10	IN/HR
WEIGHTED COEFFICIENT (C)	0.76	
UNDETAINED RUNOFF	33.03	CFS

PROPOSED BYPASS

DRAINAGE AREAS	OS10	
DRAINAGE AREA (A)	4.92	AC
TIME OF CONC. (T_c)	23.7	MIN
RAINFALL INTENSITY (I)	6.19	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	10.66	CFS

ALLOWABLE DISCHARGE **8.7 CFS**
ACTUAL DISCHARGE **8.0 CFS**

TIME (MIN)	TIME (HRS)	I_{25} (IN/HR)	INFLOW RATE (CFS)	INFLOW VOLUME (FT^3)	OUTFLOW RATE (CFS)	OUTFLOW VOLUME (FT^3)	STORAGE (FT^3)	
10	0.17	8.30	48.21	28,926	8.67	6,520	22,406	
15	0.25	7.50	43.56	39,207	8.67	7,718	31,489	
20	0.33	6.60	38.34	46,003	8.67	8,917	37,086	
30	0.50	5.50	31.95	57,504	8.67	11,314	46,190	
40	0.67	4.60	26.72	64,126	8.67	13,711	50,415	
50	0.83	4.00	23.23	69,702	8.67	16,108	53,594	
60	1.00	3.50	20.33	73,187	8.67	18,505	54,682	
70	1.17	3.30	19.17	80,506	8.67	20,902	59,604	
80	1.33	3.10	18.01	86,430	8.67	23,299	63,132	
90	1.50	2.90	16.84	90,961	8.67	25,696	65,265	
100	1.67	2.70	15.68	94,098	8.67	28,093	66,005	
110	1.83	2.50	14.52	95,840	8.67	30,490	65,350	
120	2.00	2.10	12.20	87,825	8.67	32,887	54,938	
140	2.33	2.00	11.62	97,583	8.67	37,681	59,902	
160	2.67	1.90	11.04	105,947	8.67	42,475	63,472	
180	3.00	1.80	10.46	112,917	8.67	47,269	65,648	
200	3.33	1.70	9.87	118,493	8.67	52,063	66,431	**<== CONTROLS 1.53 AC-FT**
220	3.67	1.60	9.29	122,676	8.67	56,857	65,819	
240	4.00	1.50	8.71	125,464	8.67	61,651	63,813	
260	4.33	1.40	8.13	126,858	8.67	66,445	60,413	
280	4.67	1.30	7.55	126,858	8.67	71,239	55,619	
300	5.00	1.20	6.97	125,464	8.67	76,033	49,431	

DETENTION SYSTEM CALCULATIONS
MODIFIED RATIONAL METHOD
DESIGN FREQUENCY = 10 YEAR STORM

EXISTING CONDITIONS:

DRAINAGE AREAS	EX7	
DRAINAGE AREA (A)	9.13	AC
TIME OF CONC. (T_c)	25.0	MIN
RAINFALL INTENSITY (I)	5.35	IN/HR
RUNOFF COEFFICIENT (C)	0.35	
ALLOWABLE DISCHARGE	17.10	CFS

PASS THROUGH

DRAINAGE AREAS	OS9	
DRAINAGE AREA (A)	3.31	AC
TIME OF CONC. (T_c)	20.0	MIN
RAINFALL INTENSITY (I)	5.90	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	6.84	CFS

PROPOSED ONSITE CONDITIONS:

PROPOSED DETAINED

DRAINAGE AREAS	A2-16,POND	
DRAINAGE AREA (A)	6.12	AC
TIME OF CONC. (T_c)	17.2	MIN
RAINFALL INTENSITY (I)	6.24	IN/HR
WEIGHTED COEFFICIENT (C)	0.76	
UNDETAINED RUNOFF	29.00	CFS

PROPOSED BYPASS

DRAINAGE AREAS	OS10	
DRAINAGE AREA (A)	4.92	AC
TIME OF CONC. (T_c)	23.7	MIN
RAINFALL INTENSITY (I)	5.49	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	9.46	CFS

ALLOWABLE DISCHARGE **7.6 CFS**
ACTUAL DISCHARGE **7.6 CFS**

TIME (MIN)	TIME (HRS)	I_{10} (IN/HR)	INFLOW RATE (CFS)	INFLOW VOLUME (FT^3)	OUTFLOW RATE (CFS)	OUTFLOW VOLUME (FT^3)	STORAGE (FT^3)	
10	0.17	7.10	41.24	24,744	7.64	6,173	18,571	
15	0.25	6.50	37.76	33,980	7.64	7,308	26,672	
20	0.33	5.90	34.27	41,124	7.64	8,443	32,682	
30	0.50	4.80	27.88	50,185	7.64	10,712	39,473	
40	0.67	4.00	23.23	55,762	7.64	12,982	42,780	
50	0.83	3.50	20.33	60,989	7.64	15,251	45,738	
60	1.00	3.00	17.43	62,732	7.64	17,521	45,211	
70	1.17	2.80	16.26	68,308	7.64	19,790	48,518	
80	1.33	2.60	15.10	72,490	7.64	22,060	50,431	
90	1.50	2.50	14.52	78,415	7.64	24,329	54,086	
100	1.67	2.40	13.94	83,642	7.64	26,599	57,044	
110	1.83	2.30	13.36	88,173	7.64	28,868	59,305	**<== CONTROLS 1.36 AC-FT**
120	2.00	1.80	10.46	75,278	7.64	31,138	44,141	
140	2.33	1.70	9.87	82,945	7.64	35,677	47,269	
160	2.67	1.60	9.29	89,219	7.64	40,216	49,003	
180	3.00	1.50	8.71	94,098	7.64	44,755	49,343	
200	3.33	1.40	8.13	97,583	7.64	49,294	48,289	
220	3.67	1.30	7.55	99,674	7.64	53,833	45,841	
240	4.00	1.20	6.97	100,371	7.64	58,372	41,999	
260	4.33	1.10	6.39	99,674	7.64	62,911	36,763	
280	4.67	1.00	5.81	97,583	7.64	67,450	30,133	
300	5.00	0.90	5.23	94,098	7.64	71,989	22,109	

DETENTION SYSTEM CALCULATIONS
MODIFIED RATIONAL METHOD
DESIGN FREQUENCY = 5 YEAR STORM

EXISTING CONDITIONS:

DRAINAGE AREAS	EX7	
DRAINAGE AREA (A)	9.13	AC
TIME OF CONC. (T_c)	25.0	MIN
RAINFALL INTENSITY (I)	4.50	IN/HR
RUNOFF COEFFICIENT (C)	0.35	
ALLOWABLE DISCHARGE	14.38	CFS

PASS THROUGH

DRAINAGE AREAS	OS9	
DRAINAGE AREA (A)	3.31	AC
TIME OF CONC. (T_c)	20.0	MIN
RAINFALL INTENSITY (I)	4.90	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	5.68	CFS

PROPOSED ONSITE CONDITIONS:

PROPOSED DETAINED

DRAINAGE AREAS	A2-16,POND	
DRAINAGE AREA (A)	6.12	AC
TIME OF CONC. (T_c)	17.2	MIN
RAINFALL INTENSITY (I)	5.24	IN/HR
WEIGHTED COEFFICIENT (C)	0.76	
UNDETAINED RUNOFF	24.35	CFS

PROPOSED BYPASS

DRAINAGE AREAS	OS10	
DRAINAGE AREA (A)	4.92	AC
TIME OF CONC. (T_c)	23.7	MIN
RAINFALL INTENSITY (I)	4.60	IN/HR
WEIGHTED COEFFICIENT (C)	0.35	
UNDETAINED RUNOFF	7.93	CFS

ALLOWABLE DISCHARGE **6.5 CFS**
ACTUAL DISCHARGE **6.5 CFS**

TIME (MIN)	TIME (HRS)	I_5 (IN/HR)	INFLOW RATE (CFS)	INFLOW VOLUME (FT^3)	OUTFLOW RATE (CFS)	OUTFLOW VOLUME (FT^3)	STORAGE (FT^3)	
10	0.17	6.10	35.43	21,259	6.45	5,296	15,963	
15	0.25	5.50	31.95	28,752	6.45	6,269	22,483	
20	0.33	4.90	28.46	34,154	6.45	7,243	26,911	
30	0.50	4.10	23.81	42,867	6.45	9,190	33,677	
40	0.67	3.40	19.75	47,397	6.45	11,137	36,261	
50	0.83	2.80	16.26	48,791	6.45	13,084	35,708	
60	1.00	2.60	15.10	54,368	6.45	15,031	39,337	
70	1.17	2.40	13.94	58,550	6.45	16,978	41,572	
80	1.33	2.30	13.36	64,126	6.45	18,925	45,201	**<== CONTROLS 1.04 AC-FT**
90	1.50	2.10	12.20	65,868	6.45	20,872	44,997	
100	1.67	1.90	11.04	66,217	6.45	22,819	43,398	
110	1.83	1.80	10.46	69,005	6.45	24,766	44,239	
120	2.00	1.55	9.00	64,823	6.45	26,713	38,110	
140	2.33	1.46	8.51	71,452	6.45	30,607	40,845	
160	2.67	1.38	8.01	76,889	6.45	34,501	42,388	
180	3.00	1.29	7.51	81,133	6.45	38,395	42,738	
200	3.33	1.21	7.02	84,185	6.45	42,289	41,896	
220	3.67	1.12	6.52	86,043	6.45	46,183	39,860	
240	4.00	1.04	6.02	86,709	6.45	50,077	36,632	
260	4.33	0.95	5.52	86,183	6.45	53,971	32,212	
280	4.67	0.87	5.03	84,463	6.45	57,865	26,598	
300	5.00	0.78	4.53	81,551	6.45	61,759	19,793	

RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

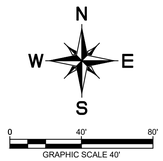
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

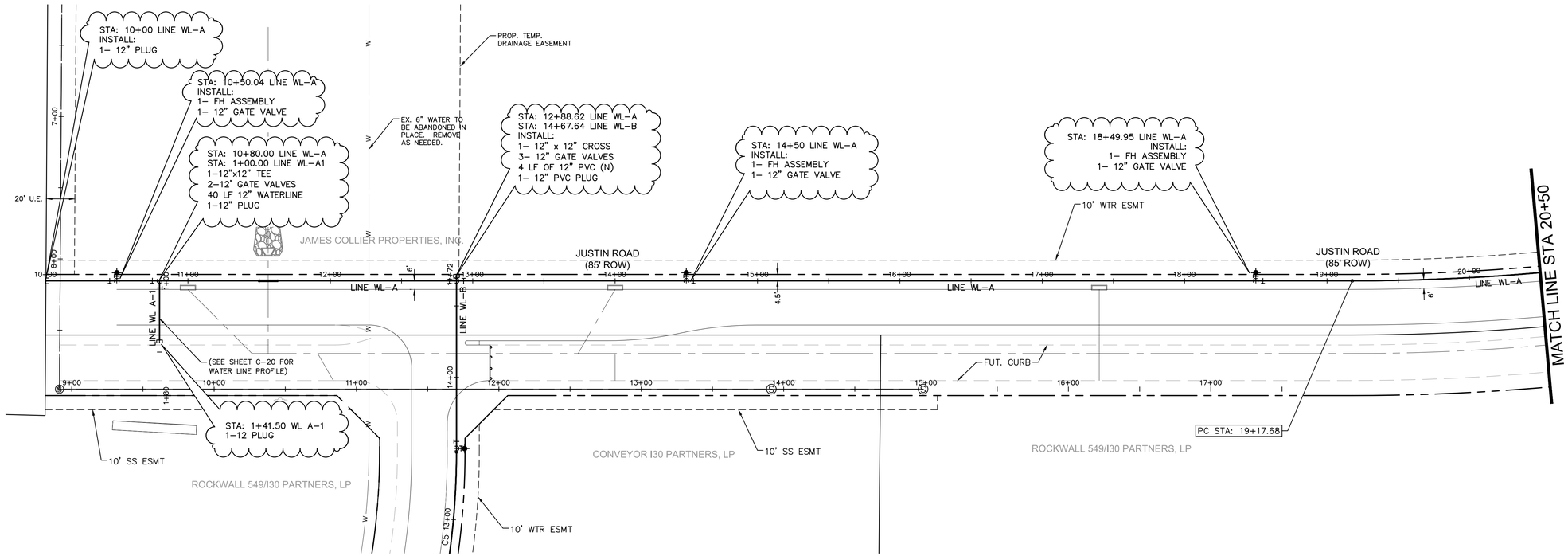
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY:
CHECKED BY: BLM

DETENTION CALCS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-17A



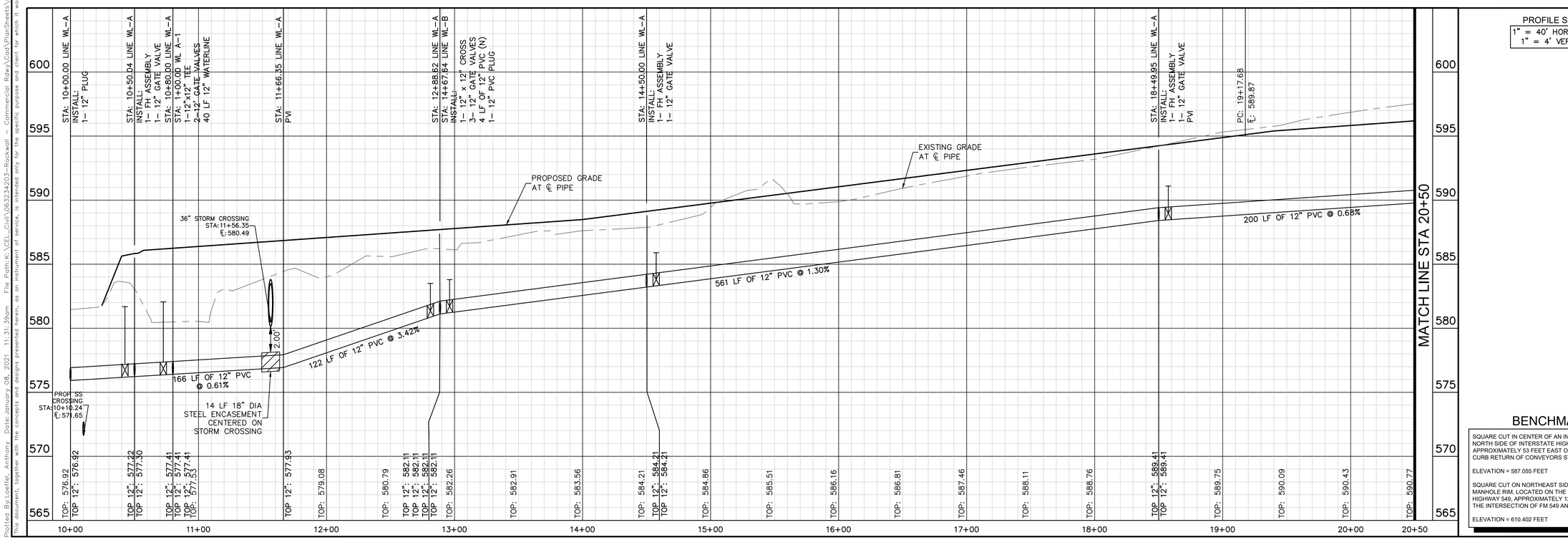


RECORD DRAWING

THIS DRAWING HAS BEEN REVISED TO SHOW THOSE CHANGES DURING THE CONSTRUCTION PROCESS REPORTED BY THE CONTRACTOR TO KIMLEY-HORN AND ASSOCIATES, INC. AND CONSIDERED TO BE SIGNIFICANT. THIS DRAWING IS NOT GUARANTEED TO BE "AS BUILT" BUT IS BASED ON THE INFORMATION MADE AVAILABLE.

DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

LINE WL-A



PROFILE SCALE

1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

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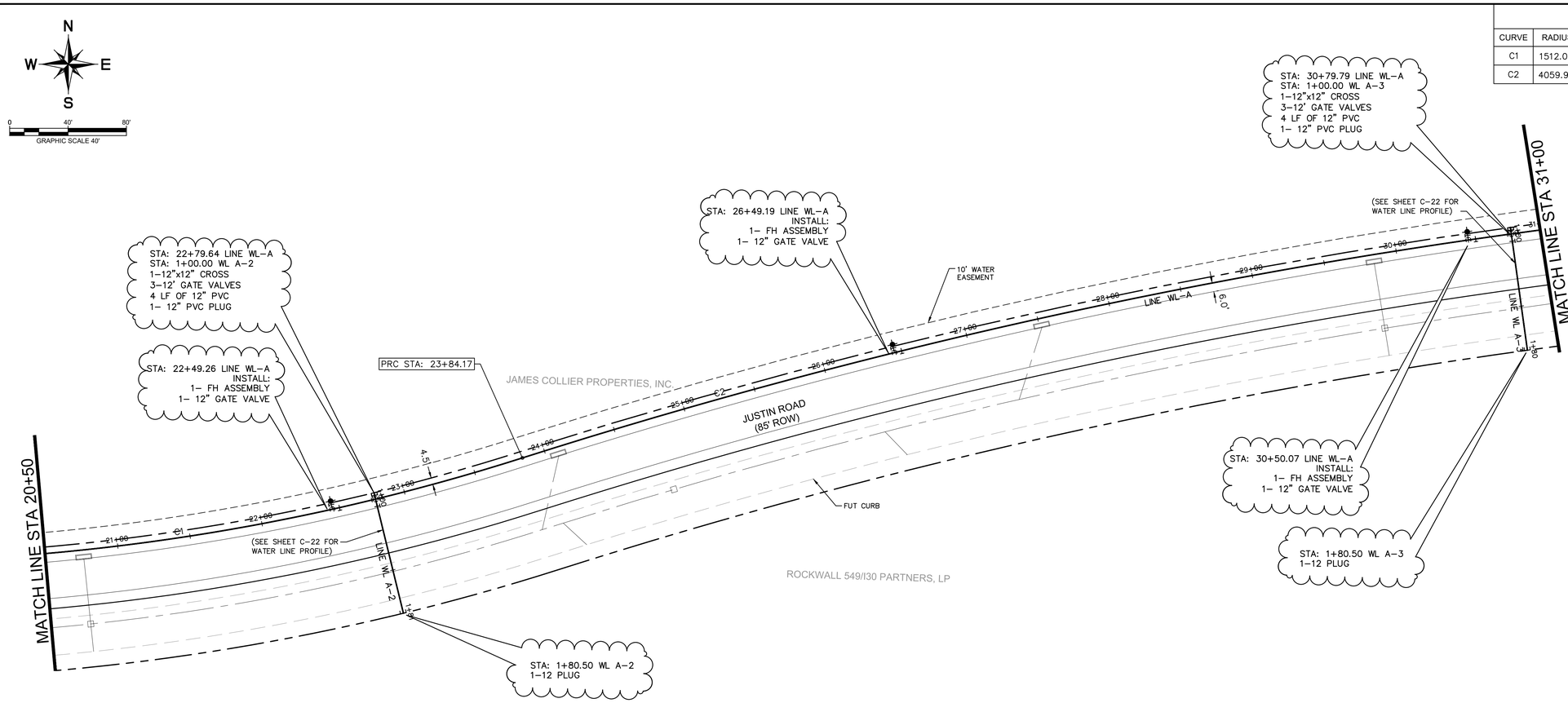
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: LRT
CHECKED BY: BLM

WATER PLAN & PROFILE - LINE WL-A (1 OF 3)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-18



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1512.00'	466.49'	N79°26'21"E	464.64'	17°40'38"	235.11'
C2	4059.90'	1294.98'	N79°44'18"E	1289.50'	18°16'32"	653.04'

RECORD DRAWING

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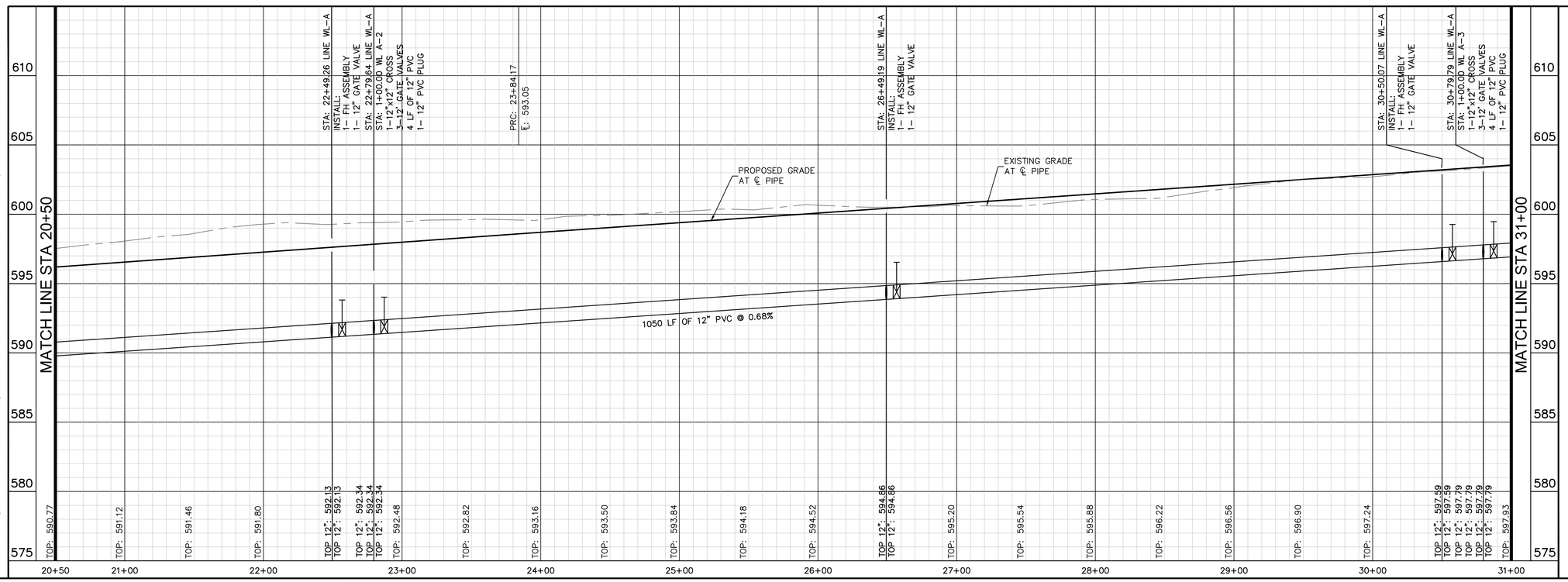
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

LINE WL-A



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

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SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

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1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
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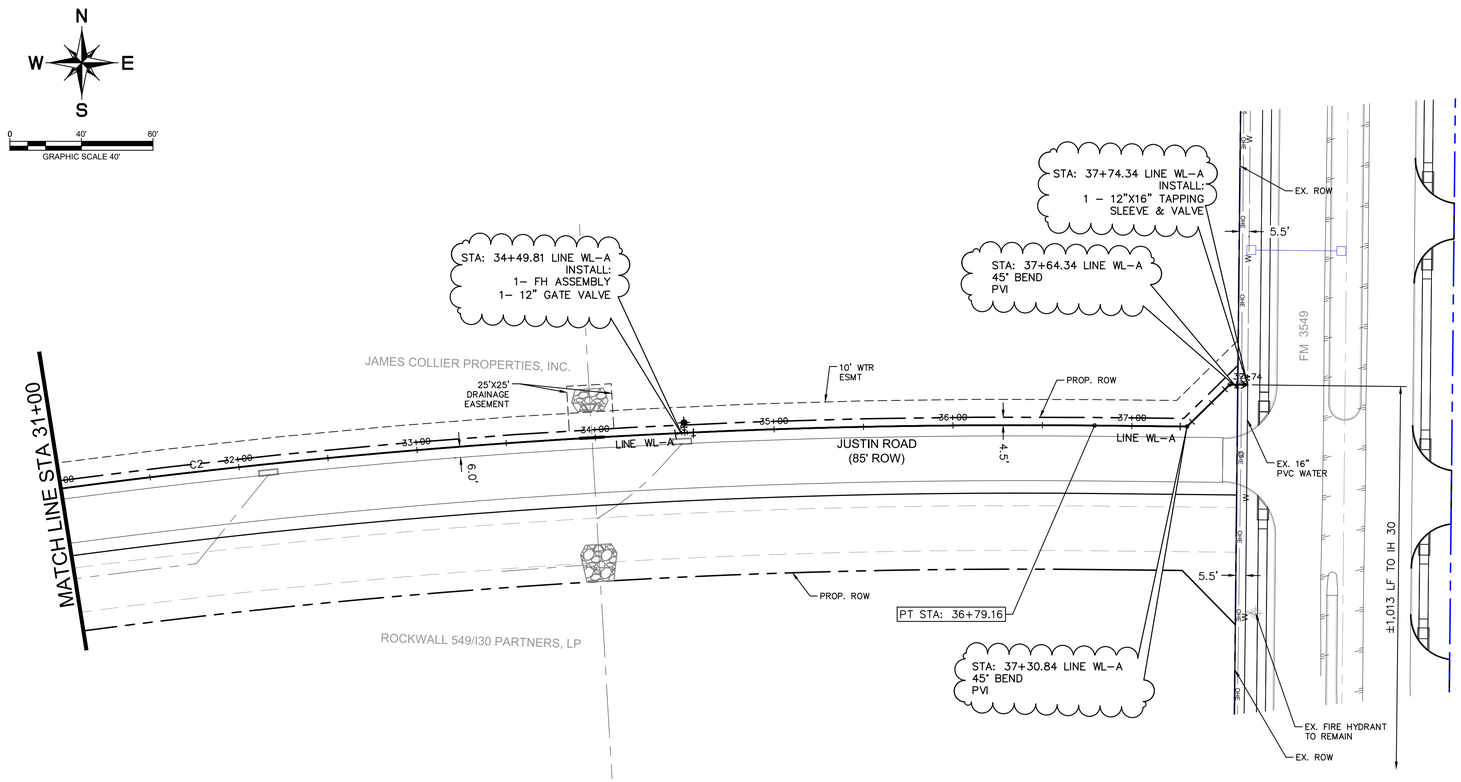
WATER PLAN & PROFILE - LINE WL-A (2 OF 3)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-19



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	4059.90'	1294.98'	N79°44'18"E	1289.50'	18°16'32"	653.04'

RECORD DRAWING

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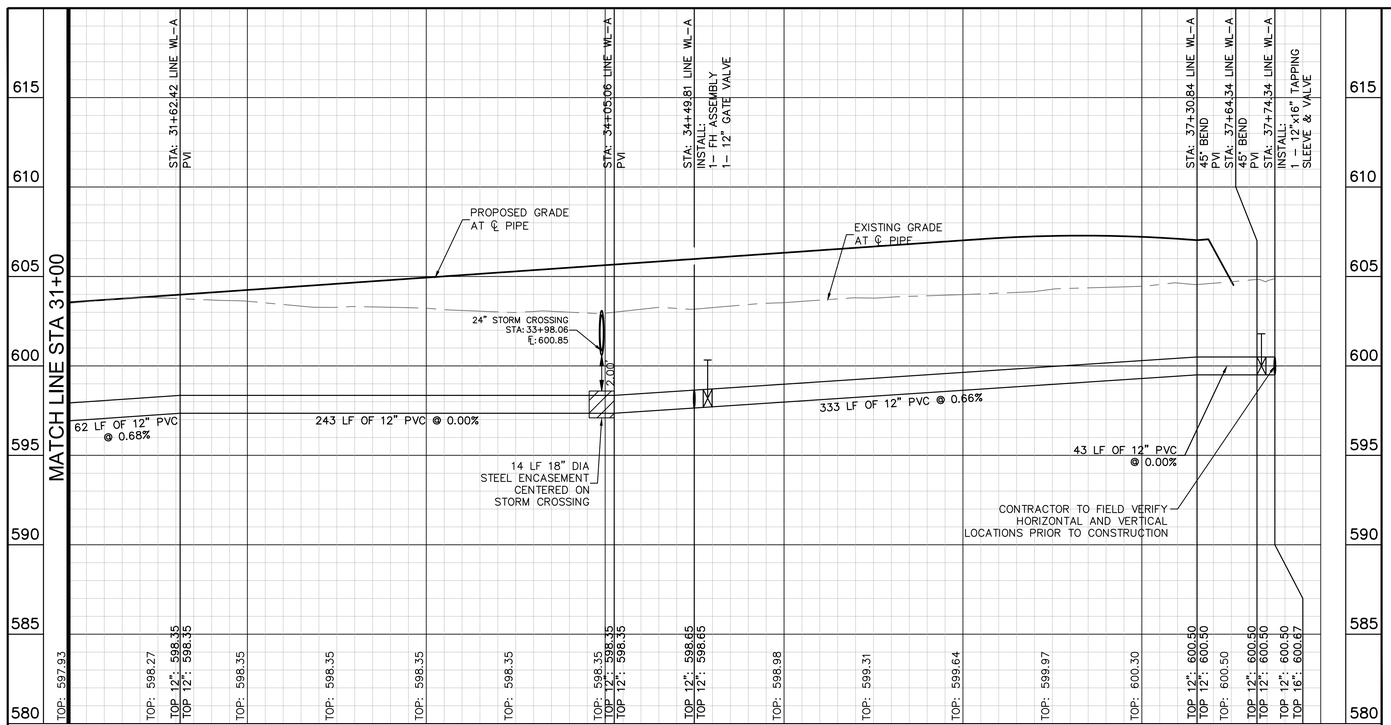
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

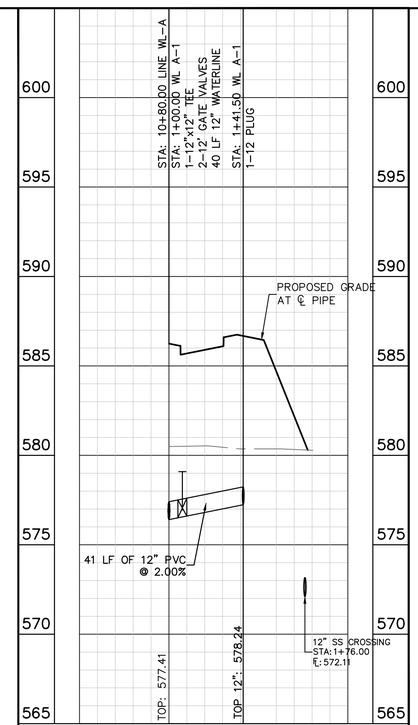
!!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN). IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

LINE WL–A



WL A–1



PROFILE SCALE
1" = 40' HORIZONTAL
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BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

ELEVATION = 587.055 FEET

SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY

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PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203	
DATE	MARCH 2020
SCALE: AS SHOWN	
DESIGNED BY:	AML
DRAWN BY:	LRT
CHECKED BY:	BLM

WATER PLAN & PROFILE - LINE WL-A (3 OF 3)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-20

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	1175.92'	310.70'	N4°20'47"E	309.80'	15°08'20"	156.26'

GRAPHIC SCALE 40'

STA: 0+38.12 LINE WL–B
INSTALL:
1– 12" X 16" TAPPING SLEEVE & VALVE

STA: 0+48.47 LINE WL–B
INSTALL:
1 – 12" 11.25° BEND

INSTALL 1" WATER SERVICE AND CONNECT TO EXISTING 1" WATER LINE. ABANDON EX. 2" WATER LINE IN PLACE.

PI STA: 3+01.68

STA: 4+00 LINE WL–B
INSTALL:
1– FH ASSEMBLY

EX. 2" WATER LINE TO BE ABANDONED IN PLACE NORTH OF CONNECTION.

EXIST CONCRETE SIDEWALK REMOVE AND REPLACE

EX. 2" WATER METER TO REMAIN. CONNECT EX. METER TO PROP. 12" WATER LINE WITH NEW 2" WATER SERVICE

STA: 5+52.00 LINE WL–B
INSTALL:
1– 12" X 12" TEE
2– 12" GATE VALVES
20 LF OF 12" PVC (N)
1– 12" PVC PLUG (N)

30' DRAINAGE EASEMENT

REMOVE & DISPOSE OF EXISTING FIRE HYDRANT

30' DRAINAGE EASEMENT

ROCKWALL 549/I30 PARTNERS, LP

EXIST CONCRETE DRIVEWAY REMOVE AND REPLACE

PI STA: 1+67.08

15' UTILITY EASEMENT

EX. 2" WATER LINE TO BE ABANDONED IN PLACE NORTH OF CONNECTION.

IH-30 FRONTAGE ROAD

N17°12'04"W 10.3'

N3°25'42"W 118.6'

N3°15'18"W 134.6'

CONVEYORS STREET

EXIST CONCRETE PVMT

EX. LIGHT POLE TO BE RELOCATED

EXIST 60' ROW

LINE WL–B

10' WTR ESMT

EX. ROW

PC STA: 9+12.12

C4

MATCH LINE STA 10+50

EXIST CONCRETE DRIVEWAY REMOVE AND REPLACE

EX. ROW

EX. BUILDING

14.3' BOC TO ROW

EXIST 16" W WATER LINE

±2,600 LF TO FM 3549

EXIST FIRE HYDRANT (TO REMAIN)

TXDOT DRAINAGE EASEMENT

EX. ROW

8.0'

EXISTING IRRIGATION VALVE. CONTRACTOR TO ENSURE VALVE IS OPERATIONAL PRIOR TO FINAL ACCEPTANCE.

STA: 7+00 LINE WL–B
INSTALL:
1– FH ASSEMBLY
1– 12" GATE VALVE

CONVEYOR I30 PARTNERS, LP

STA: 10+00 LINE WL–B
INTALL:
1– FH ASSEMBLY
1– 12" GATE VALVE
PVI

30'X40' DRAINAGE EASEMENT

STA: 6+00.00 LINE WL–B
INSTALL:
1– 12" X 12" TEE
1– 12" GATE VALVE
20 LF OF 12" PVC (S)
1– 12" PVC PLUG (S)

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

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LINE WL–B

STA: 0+38.12 LINE WL–B
INSTALL:
1– 12" x 16" TAPPING SLEEVE & VALVE

STA: 0+48.47 LINE WL–B
INSTALL:
1 – 12" 11.25° BEND

STA: 4+00.00 LINE WL–B
INSTALL:
1– FH ASSEMBLY

STA: 5+52.00 LINE WL–B
INSTALL:
1– 12" x 12" TEE
2– 12" GATE VALVES
20 LF OF 12" PVC (N)
1– 12" PVC PLUG (N)

STA: 6+00.00 LINE WL–B
INSTALL:
1– 12" x 12" TEE
1– 12" GATE VALVE
20 LF OF 12" PVC (S)
1– 12" PVC PLUG (S)

STA: 7+00.00 LINE WL–B
INSTALL:
1– FH ASSEMBLY
1– 12" GATE VALVE

PC: 9+12.12
E: 579.86

STA: 10+00.00 LINE WL–B
INTALL:
1– FH ASSEMBLY
1– 12" GATE VALVE
PVI

EXISTING GRADE AT ℄ PIPE

PROPOSED GRADE AT ℄ PIPE

15 LF 18" DIA STEEL ENCASEMENT CENTERED ON STORM CROSSING

362 LF OF 12" PVC @ 0.60%

161 LF OF 12" PVC @ -0.72%

300 LF OF 12" PVC @ -1.33%

50 LF OF 12" PVC @ 0.00%

CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS PRIOR TO CONSTRUCTION

MATCH LINE STA 10+50

TOP 12": 582.67
TOP 12": 582.73
TOP 12": 582.73
TOP: 583.04
TOP: 583.34
TOP: 583.64
TOP: 583.94
TOP: 584.24
TOP: 584.54
TOP 12": 584.64
TOP 12": 584.64
TOP: 584.48
TOP: 584.12
TOP 12": 583.75
TOP 12": 583.75
TOP 12": 583.40
TOP 12": 583.40
TOP 12": 583.40
TOP 12": 582.68
TOP 12": 582.68
TOP: 582.02
TOP: 581.35
TOP: 580.68
TOP: 580.02
TOP: 579.35
TOP 12": 578.69
TOP 12": 578.69
TOP: 578.69

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 10+50

600 595 590 585 580 575 570 565

PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

BENCHMARKS

SQUARE CUT IN CENTER OF AN INLET LOCATED ON THE NORTH SIDE OF INTERSTATE HIGHWAY 30, APPROXIMATELY 53 FEET EAST OF THE SOUTHEAST CURB RETURN OF CONVEYORS ST AND HWY 30.

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SQUARE CUT ON NORTHEAST SIDE OF WATER MANHOLE RIM, LOCATED ON THE WEST SIDE OF FM HIGHWAY 549, APPROXIMATELY 1246 FEET NORTH OF THE INTERSECTION OF FM 549 AND HWY 30.

ELEVATION = 610.402 FEET

No.	REVISIONS	DATE	BY
1	REVISED WATER LINE ALIGNMENT	3/25/20	AML

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STATE OF TEXAS
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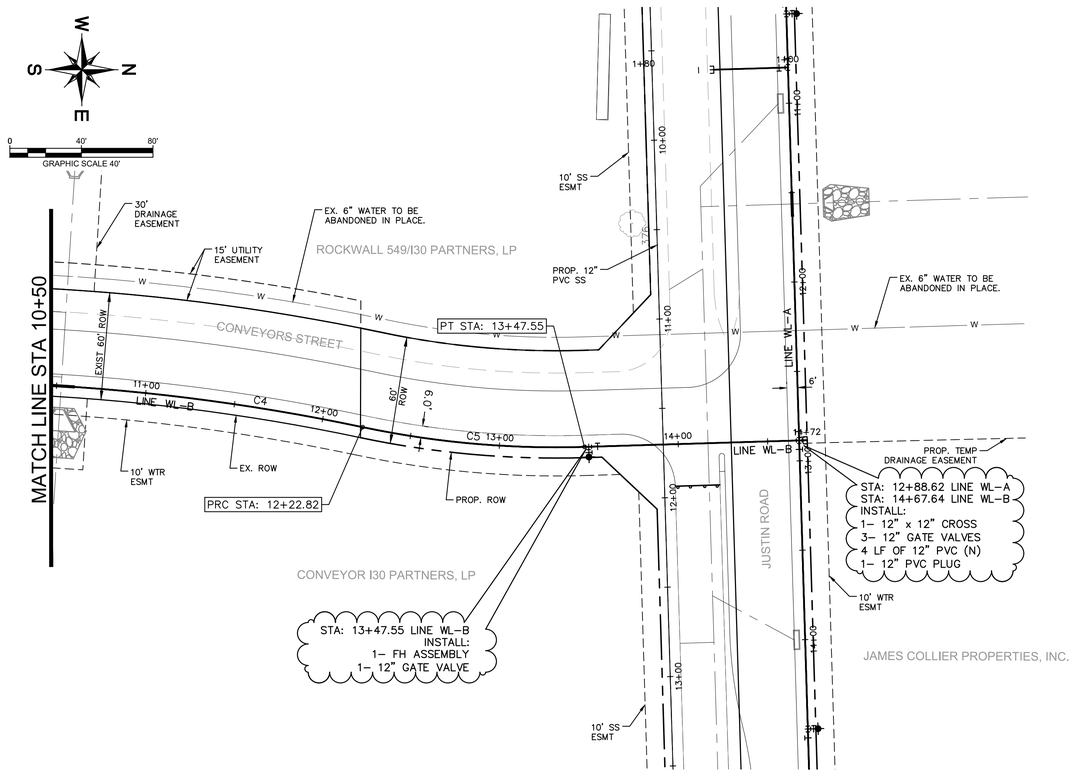
LICENSED PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: LRT
CHECKED BY: BLM

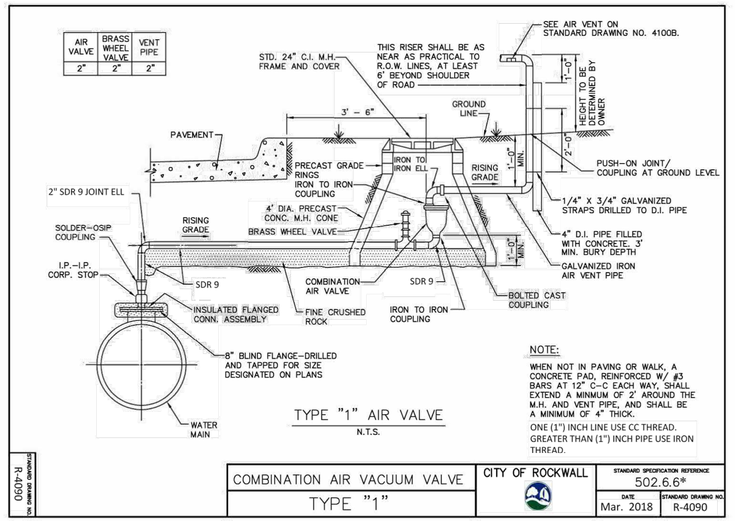
WATER PLAN & PROFILE - LINE WL-B (1 OF 2)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-21



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	1175.92'	310.70'	N4°20'47"E	309.80'	15°08'20"	156.26'
C5	524.00'	124.73'	N5°05'49"E	124.43'	13°38'17"	62.66'



*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

RECORD DRAWING

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DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

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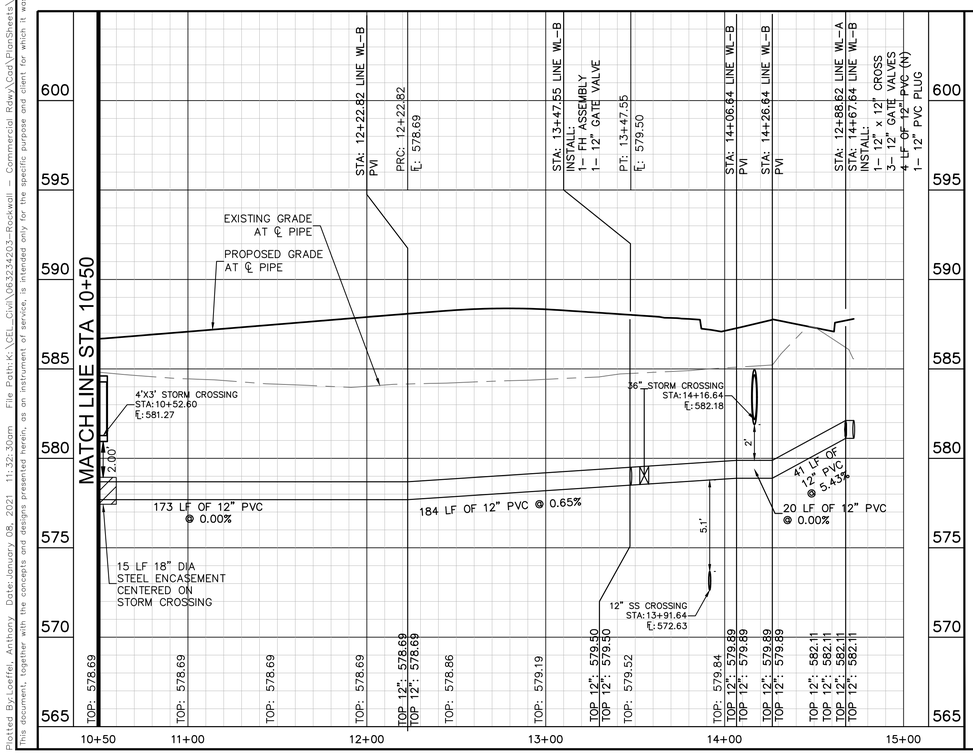
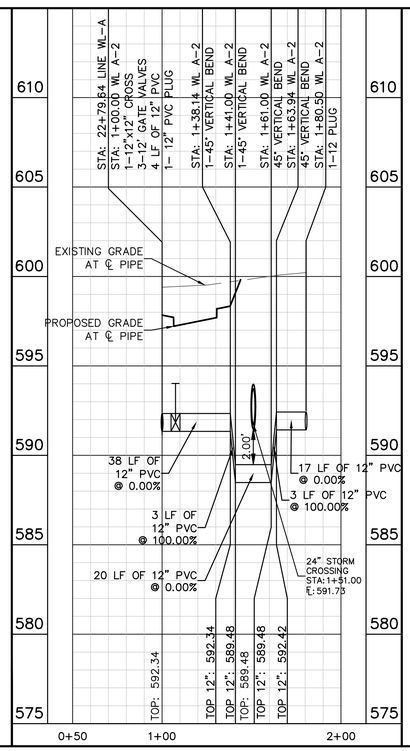
LINE WL-B



WL A-2



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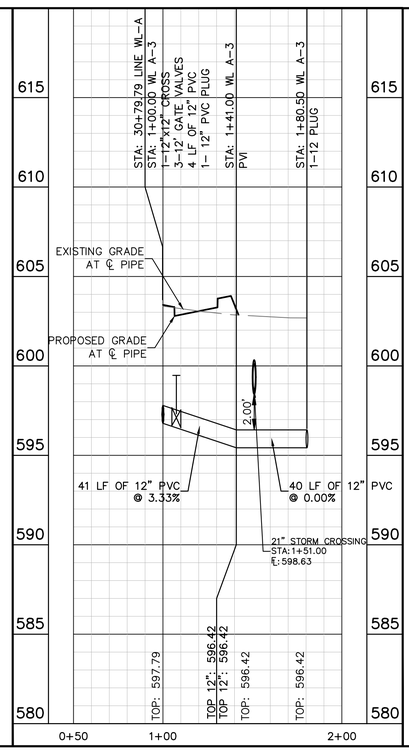

PROFILE SCALE
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BENCHMARKS

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1-8-21

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DATE MARCH 2020
SCALE: AS SHOWN
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DRAWN BY: LRT
CHECKED BY: BLM

WATER PLAN & PROFILE - LINE WL-B (2 OF 2)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-22

RECORD DRAWING

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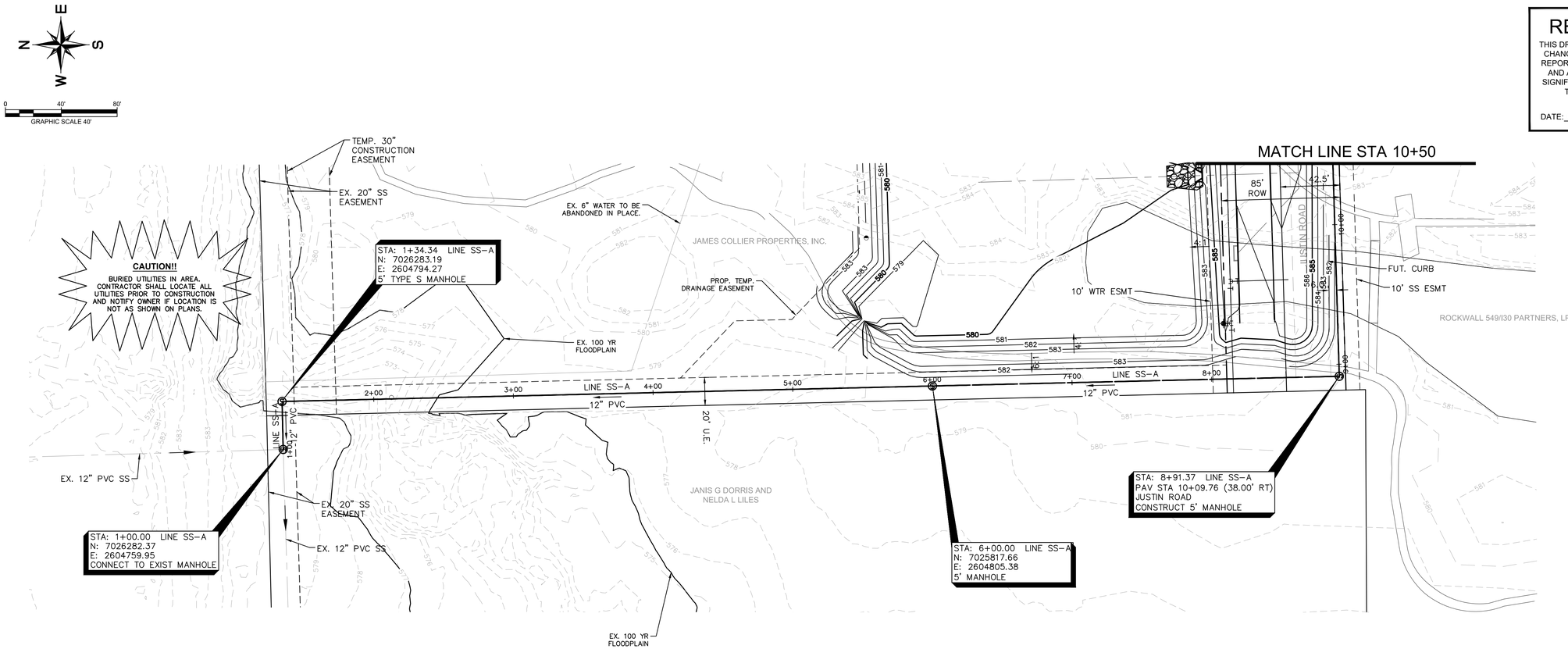
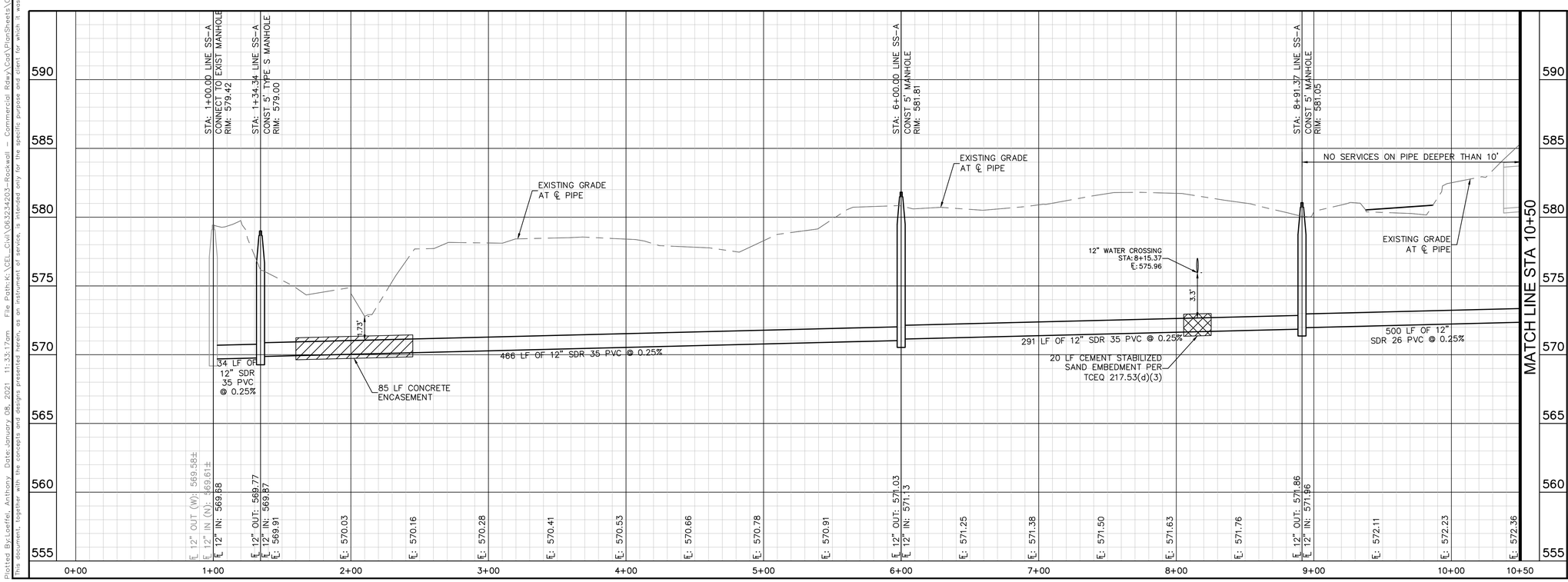


LINE SS-A



PROFILE SCALE
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1" = 4' VERTICAL

No.	REVISIONS	DATE	BY

Kimley»Horn

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STATE OF TEXAS
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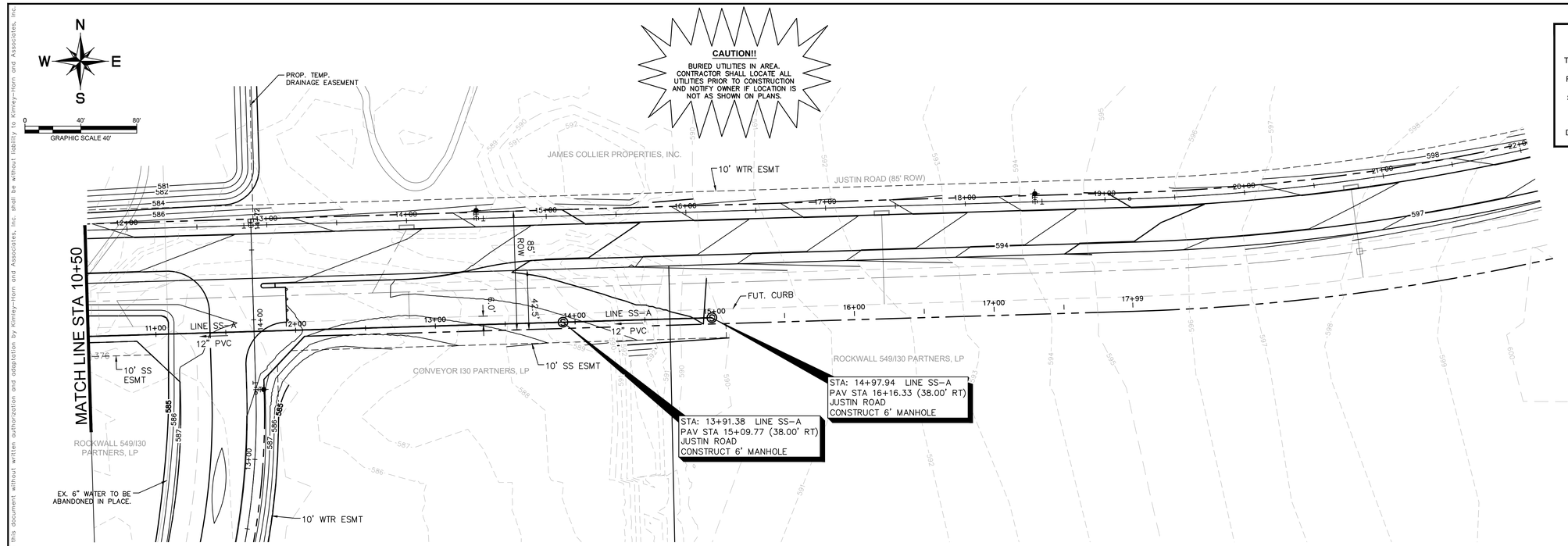
1-8-21

KHA PROJECT	063234203
DATE	MARCH 2020
SCALE:	AS SHOWN
DESIGNED BY:	AML
DRAWN BY:	LRT
CHECKED BY:	BLM

SANITARY SEWER PLAN & PROFILE - LINE SS-A (1 OF 2)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-23



RECORD DRAWING

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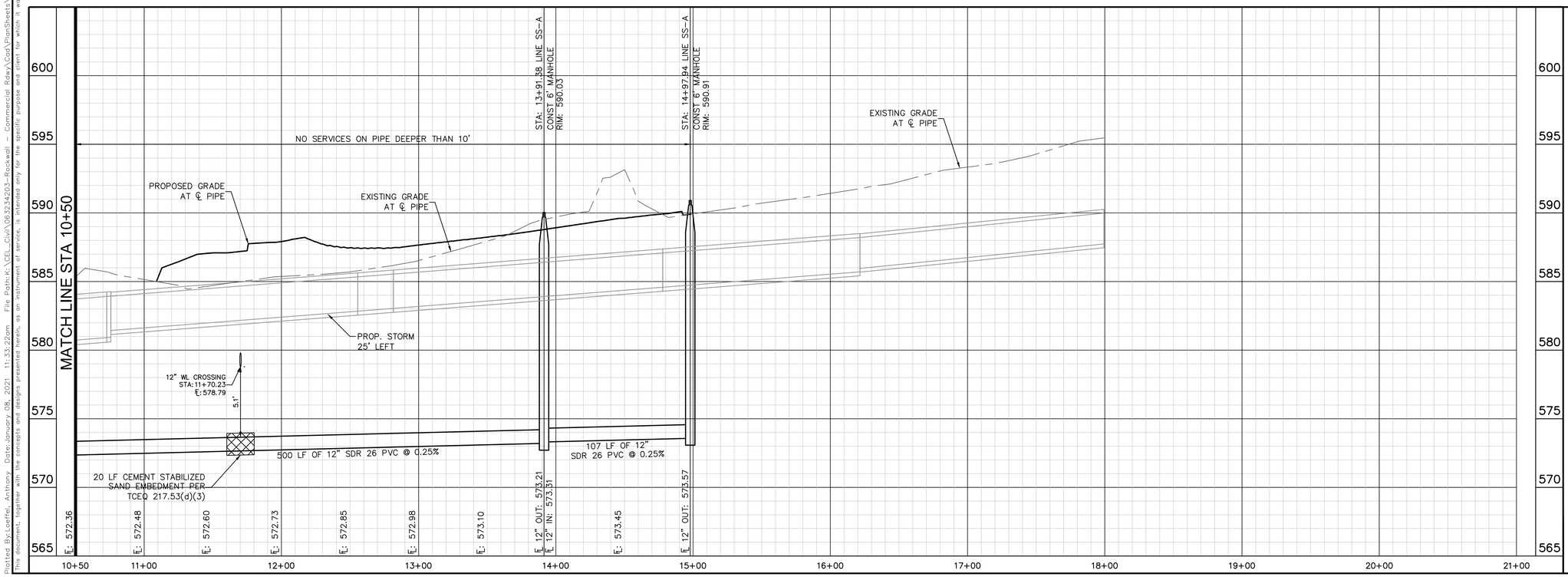
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.

LINE SS-A



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2021 KIMLEY-HORN AND ASSOCIATES, INC.
400 N. OKLAHOMA DRIVE, SUITE 105, CELINA, TX 75009
PHONE: 469-501-2200
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

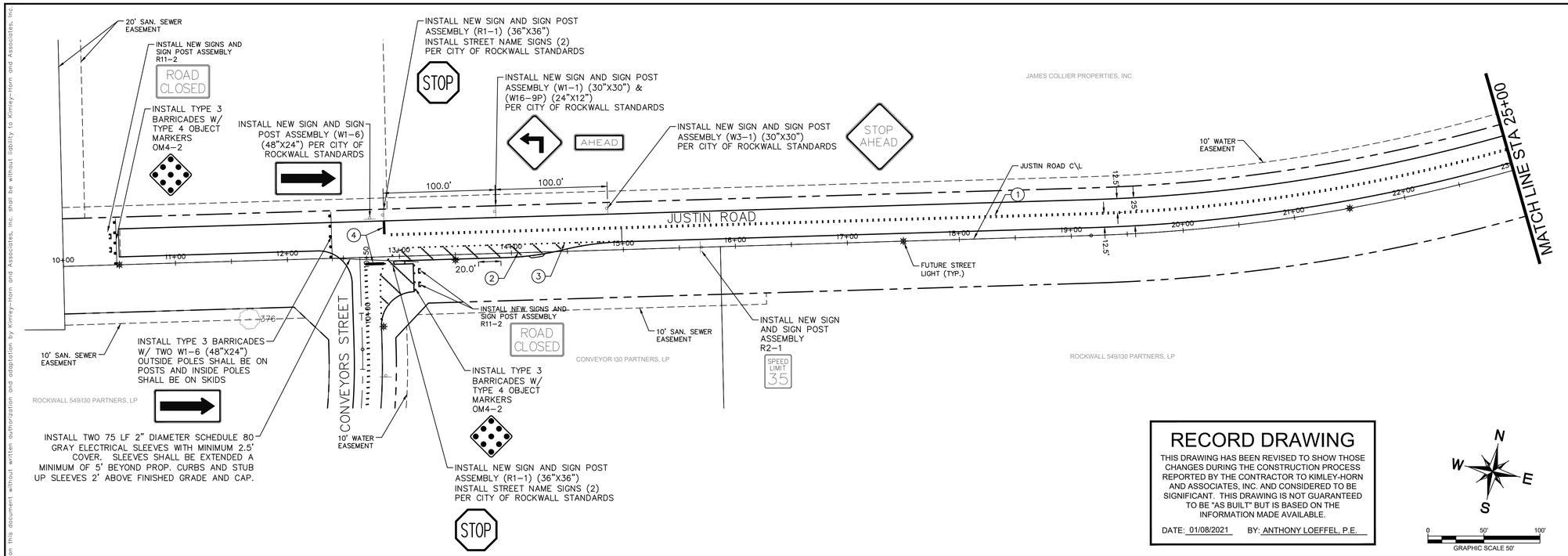
STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

KHA PROJECT	063234203
DATE	MARCH 2020
SCALE:	AS SHOWN
DESIGNED BY:	AML
DRAWN BY:	LRT
CHECKED BY:	BLM

SANITARY SEWER PLAN & PROFILE - LINE SS-A (2 OF 2)

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-24



STRIPING LEGEND	
1	INSTALL DOUBLE YELLOW CENTERLINE
2	INSTALL WHITE CROSS HATCH LINE
3	INSTALL WIDE YELLOW LINE
4	INSTALL 24" STOP BAR MARKING

NOTES

1. CONTRACTOR IS RESPONSIBLE FOR RELOCATION OF ANY SIGNS AND COORDINATION WITH THE OWNER ON ANY NECESSARY MODIFICATIONS.
2. DOUBLE YELLOW CENTERLINE SHALL BE INSTALLED PER THE CITY OF ROCKWALL'S STANDARD DETAIL R-2320.
3. WHITE CROSS HATCH LINE SHALL BE INSTALLED PER THE CITY OF ROCKWALL'S STANDARD DETAIL R-2320 AND R-2330. SPACING B SHALL BE 5'.
4. WIDE YELLOW LINE SHALL BE INSTALLED PER THE CITY OF ROCKWALL'S STANDARD DETAIL R-2320.
5. STOP BAR STRIPING SHALL BE THERMOPLASTIC WITH A MINIMUM THICKNESS OF 100 MILS.
6. BARRICADES SHALL CONTAIN NO WOODEN MATERIALS.

RECORD DRAWING

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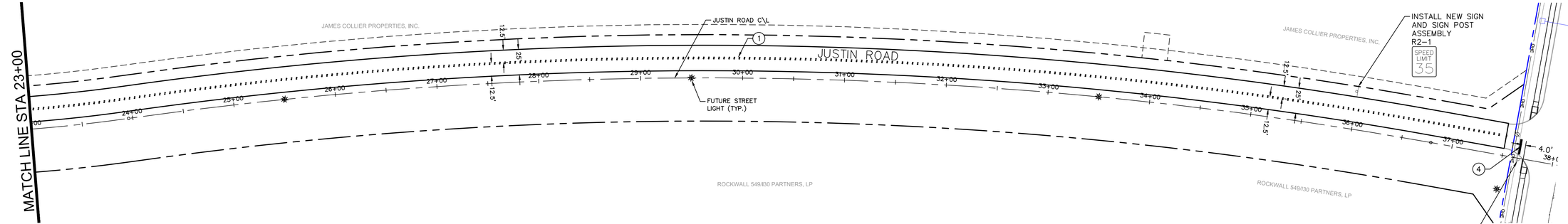
DATE: 01/08/2021 BY: ANTHONY LOEFFEL, P.E.



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STATE OF TEXAS
ANTHONY M. LOEFFEL
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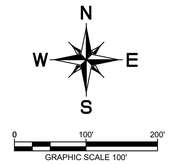
1-8-21

KHA PROJECT 063234203			
DATE	MARCH 2020	DESIGNED BY:	AML
SCALE:	AS SHOWN	DRAWN BY:	AML
		CHECKED BY:	BLM

STREET LIGHT, STRIPING & SIGN PLAN

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-25



SITE MAP GENERAL NOTES

1. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL SWPPP CONTROLS – CONTROLS SHOWN ON THIS SITE MAP ARE SUGGESTED CONTROLS ONLY.
2. CONTRACTOR SHALL RECORD INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL DATES FOR EACH BMP EMPLOYED (WHETHER CALLED OUT ON ORIGINAL SWPPP OR NOT) DIRECTLY ON THE SITE MAP.
3. DRAINAGE PATTERNS ARE SHOWN ON THIS PLAN BY PROPOSED AND EXISTING CONTOURS, FLOW ARROWS AND/OR SLOPES.
4. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE CIVIL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
5. BMP'S HAVE BEEN LOCATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSFER. FOR EXAMPLE: SILT FENCES LOCATED AT TOE OF SLOPE AND INLET PROTECTION FOR INLETS RECEIVING SEDIMENT FROM SITE RUN-OFF.
6. SANITARY SEWER EFFLUENT IS DISPOSED OF VIA AN ONSITE SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.

VEGETATIVE STABILIZATION REQUIREMENTS

TEMPORARY SEEDING

ALL DISTURBED AREAS WHICH WILL BE LEFT DORMANT FOR GREATER THAN 14 DAYS SHALL BE SEEDED WITH FAST– GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING OPERATIONS. SELECTION OF THE SEED WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED (SEE DESCRIPTIONS IN TABLE 2). REFERENCE LANDSCAPE PLAN FOR PERMANENT STABILIZATION REQUIREMENTS. ALL TEMPORARY SEEDING MATERIALS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO APPLICATION.

TABLE 2
VEGETATION TABLE*

TEMPORARY SEEDING SPECIES	PLANTING RATE	PLANTING–DATES
CRIMSON CLOVER	7#/ACRE	8/15 – 11/30
MILLET, FOXTAIL	30#/ACRE	5/1 – 8/31
RYEGRASS, ANNUAL	30#/ACRE	8/15 – 9/30
SPRANGLETOP, GREEN	2.5#/ACRE	2/1 – 5/1
TALL FESCUE	7#–10#/1000 SF	9/1 – 10/15

*USE ONLY USDA CERTIFIED SEED.

SURFACE PREPARATION FOR TEMPORARY SEEDING

1. INSTALL EROSION STRUCTURES SUCH AS DIKES, DIVERSIONS, ETC. PRIOR TO SEEDING.
2. FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR LINE BEFORE SEEDING.
3. ENSURE SEED BED IS PULVERIZED, LOOSE, AND UNIFORM.

APPLICATION

1. WHEN HYDROMULCHING IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES PRIOR TO APPLICATION.
2. APPLY SEED EVENLY USING PROPER EQUIPMENT AND WATER TO AID VEGETATION GROWTH.
3. EROSION CONTROL NETTING SHALL BE INSTALLED OVER FILL SLOPES WHICH HAVE BEEN BROUGHT TO FINAL GRADE AND HAVE BEEN SEEDED TO PROTECT AGAINST EROSION. MULCH (STRAW OR FIBER) SHALL BE USED ON RELATIVELY FLAT SLOPES.

EROSION CONTROL SCHEDULE AND PHASING

THE PROJECT SHALL GENERALLY CONFORM TO THE FOLLOWING:

PHASE A – GRADING
1. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE, SILT FENCE, DIKE, AND TREE PROTECTION FENCE ACCORDING TO THE APPROXIMATE LOCATION AND SHOWN ON GRADING AND EROSION CONTROL PLAN NOTES AND DETAIL SHEET.
2. BEGIN CLEARING AND GRADING OF SITE.
3. SEED AND REVEGETATE SLOPES WHERE SHOWN.

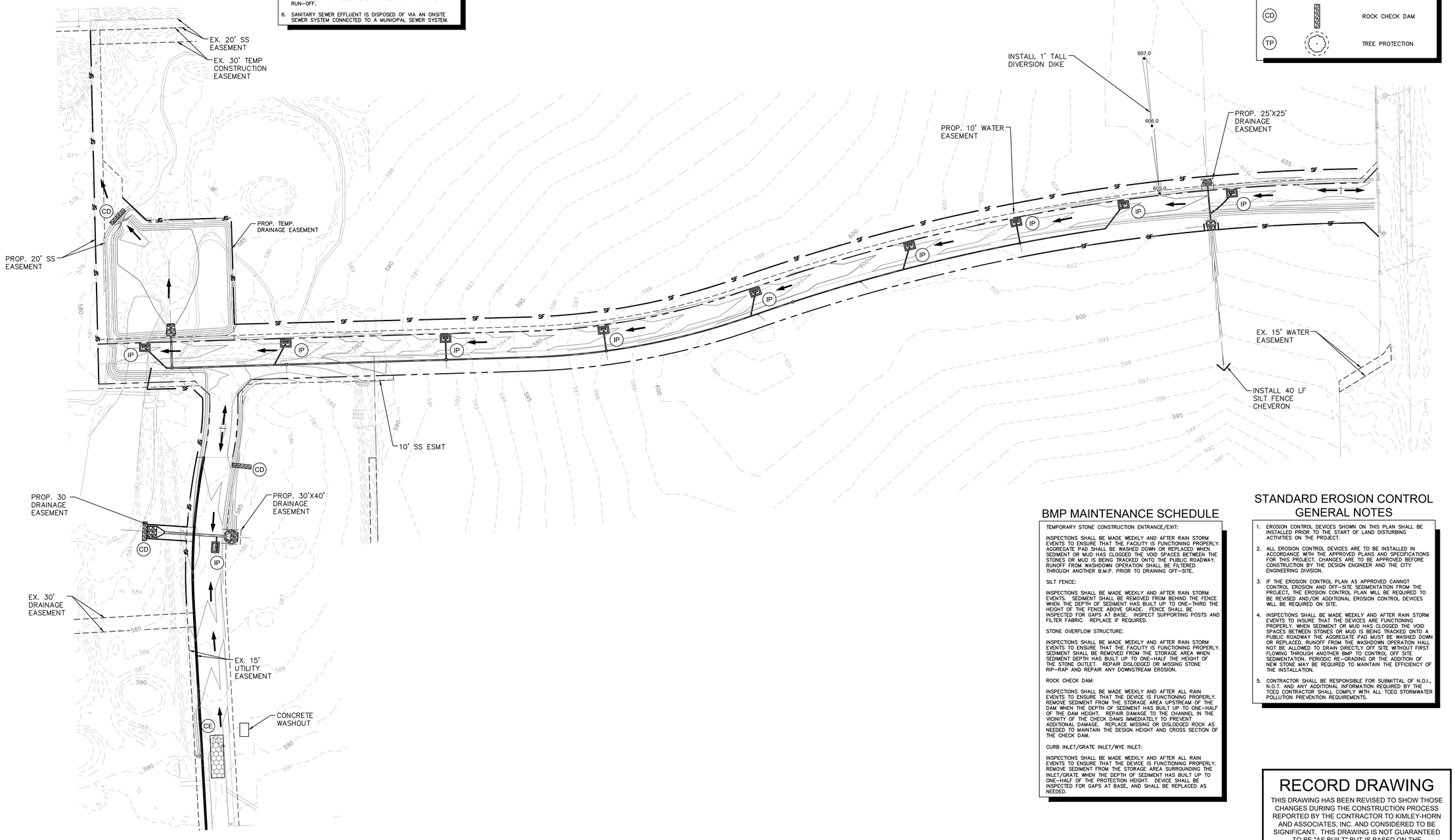
PHASE B – UTILITIES
1. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE.
2. INSTALL STORM DRAINS, SANITARY SEWER, AND WATER AS SPECIFIED ON PLAN SHEETS.

PHASE C – PAVING
1. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE. REMOVE AS NEEDED TO PAVE.
2. STABILIZE SUBGRADE.
3. PAVE STREETS AND SIDEWALKS AS SPECIFIED ON PLAN SHEETS.
4. RE–INSTALL ANY STORM WATER POLLUTION PREVENTION MEASURES REMOVED FOR PAVING OPERATIONS.

PHASE D – LANDSCAPING AND SOIL STABILIZATION.
1. REVEGETATE LOT AND PARKWAYS
2. LANDSCAPE CONTRACTOR SHALL REVEGETATE ALL AREAS RESERVED FOR LANDSCAPE VEGETATIVE COVERS.
3. REMOVE EROSION CONTROL DEVICES WHEN MINIMUM 70% GROUND COVER IS ESTABLISHED. VEGETATION MUST BE ESTABLISHED BEFORE STRUCTURAL CONTROLS REMOVED.

EROSION CONTROL LEGEND

- 632 — PROPOSED CONTOUR
- 632 — EXISTING CONTOUR
- HIGH POINT
- SWALE
- (CX) CX CURLEX
- (HM) SEEDED HAY MAT
- (SF) SF SILT FENCE
- (LD) LIMITS OF DISTURBANCE
- (CE) CONSTRUCTION ENTRANCE/EXIT
- (IP) INLET PROTECTION
- (CD) ROCK CHECK DAM
- (TP) TREE PROTECTION



BMP MAINTENANCE SCHEDULE

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO ENSURE THAT THE FACILITY IS FUNCTIONING PROPERLY. AGGREGATE PAD SHALL BE WASHED DOWN OR REPLACED WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN THE STONES OR MUD IS BEING TRACKED ONTO THE PUBLIC ROADWAY. RUNOFF FROM WASHDOWN OPERATION SHALL BE FILTERED THROUGH ANOTHER B.M.P. PRIOR TO DRAINING OFF–SITE.

SILT FENCE:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS. SEDIMENT SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE–THIRD THE HEIGHT OF THE FENCE ABOVE GRADE. FENCE SHALL BE INSPECTED FOR GAPS AT BASE. INSPECT SUPPORTING POSTS AND FILTER FABRIC. REPLACE IF REQUIRED.

STONE OVERFLOW STRUCTURE:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO ENSURE THAT THE FACILITY IS FUNCTIONING PROPERLY. SEDIMENT SHALL BE REMOVED FROM THE STORAGE AREA WHEN SEDIMENT DEPTH HAS BUILT UP TO ONE–HALF THE HEIGHT OF THE STONE OUTLET. REPAIR DISLODGED OR MISSING STONE RIP–RAP AND REPAIR ANY DOWNSTREAM EROSION.

ROCK CHECK DAM:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA UPSTREAM OF THE DAM WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE–HALF OF THE DAM HEIGHT. REPAIR DAMAGE TO THE CHANNEL IN THE VICINITY OF THE CHECK DAMS IMMEDIATELY TO PREVENT ADDITIONAL DAMAGE. REPLACE MISSING OR DISLODGED ROCK AS NEEDED TO MAINTAIN THE DESIGN HEIGHT AND CROSS SECTION OF THE CHECK DAM.

CURB INLET/GRATE INLET/WYE INLET:

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA SURROUNDING THE INLET/GRATE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE–HALF OF THE PROTECTION HEIGHT. DEVICE SHALL BE INSPECTED FOR GAPS AT BASE, AND SHALL BE REPLACED AS NEEDED.

STANDARD EROSION CONTROL GENERAL NOTES

1. EROSION CONTROL DEVICES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY ENGINEERING DIVISION.
3. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF–SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
4. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO INSURE THAT THE DEVICES ARE FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION HALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF SITE SEDIMENTATION. PERIODIC RE–GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTAL OF N.O.I., N.O.T. AND ANY ADDITIONAL INFORMATION REQUIRED BY THE TCEQ CONTRACTOR SHALL COMPLY WITH ALL TCEQ STORMWATER POLLUTION PREVENTION REQUIREMENTS.

RECORD DRAWING

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STATE OF TEXAS
ANTHONY M. LOEFFEL
122029
LICENSED
PROFESSIONAL ENGINEER
1-8-21

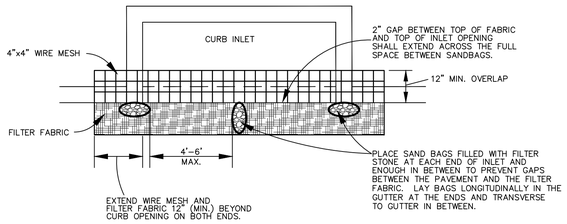
KHA PROJECT 063234203
DATE MARCH 2020
SCALE: AS SHOWN
DESIGNED BY: AML
DRAWN BY: XXX
CHECKED BY: BLM

EROSION CONTROL PLAN

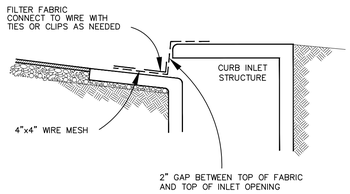
JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-26

NOTE:
VERTICAL PANEL BARRICADES TO BE PLACED WHEN LOCATED ON AN ACTIVE STREET.

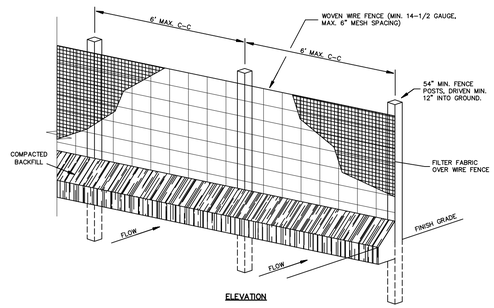


INLET PLAN VIEW

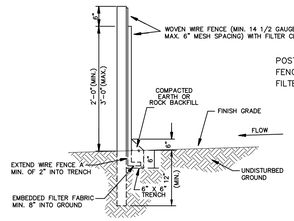


INLET SECTION

(IP) CURB INLET PROTECTION
N.T.S.



ELEVATION



POSTS: STEEL EITHER T OR U TYPE
FENCE: WOVEN WIRE, 14-1/2 GA. 6" MAX. MESH OPENING
FILTER FABRIC:
1. MIRAFI 140N
2. DUPONT TYPAR 3341
3. OR APPROVED EQUAL.

NOTE:
SILT FENCE WITH WIRE SUPPORT TO BE USED ONLY WHERE DISTANCE FROM HIGH POINT TO SILT FENCE EXCEEDS 100 FEET.

CROSS-SECTION

(SF) SEDIMENTATION/SILT FENCE WITH WIRE SUPPORT
N.T.S.

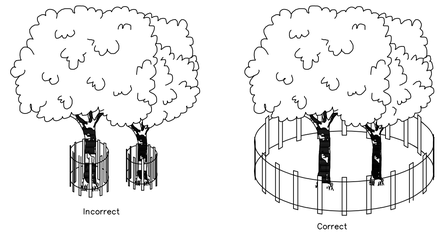
NOTES:

IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES REPAIR ANY DAMAGE TO THE CROWN, TRUNK OR ROOT SYSTEM IMMEDIATELY.

– REPAIR ROOTS BY CUTTING OFF THE DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOIST TOPSOIL OVER EXPOSED ROOTS.

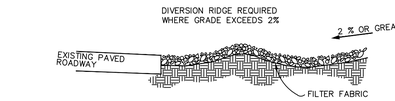
– REPAIR DAMAGE TO BARK BY TRIMMING AROUND THE DAMAGED AREAS, TAPER THE CUT TO PROVIDE DRAINAGE, AND PAINT WITH TREE PAINT.

– CUT OFF ALL DAMAGED TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE THREE SEPARATE CUTS TO AVOID PEELING BARK FROM HEALTHY AREAS OF THE TREE.

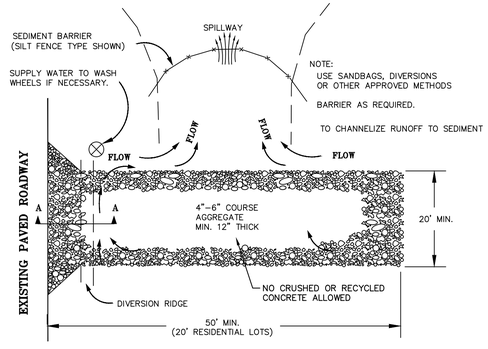


BARRIER SHOULD BE INSTALLED AT THE DRIP LINE OF TREE BRANCHES

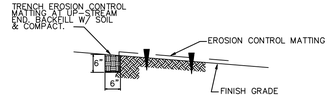
(TP) TREE PROTECTION
N.T.S.



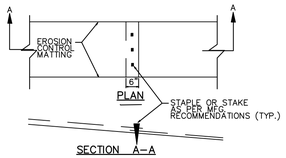
SECTION A – A



(CE) TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT
N.T.S.

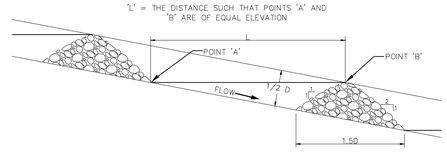


UPSTREAM ANCHORING

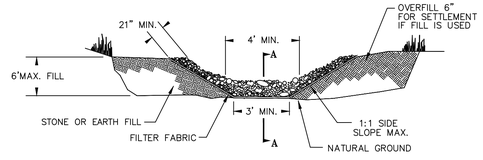


TYPICAL JOINT OVERLAP

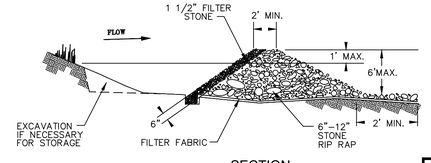
(CX) EROSION CONTROL MATTING (CURLEX)
N.T.S.



SECTION A - A AND SPACING BETWEEN CHECK DAMS



VIEW LOOKING UPSTREAM



SECTION

(RC) ROCK CHECK DAM
N.T.S.

RECORD DRAWING

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STATE OF TEXAS
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1-8-21

KHA PROJECT	063234203
DATE	MARCH 2020
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DESIGNED BY:	AML
DRAWN BY:	XXX
CHECKED BY:	BLM

EROSION CONTROL DETAILS

JUSTIN RD & CONVEYOR'S ST EXTENSION
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SHEET NUMBER
C-27