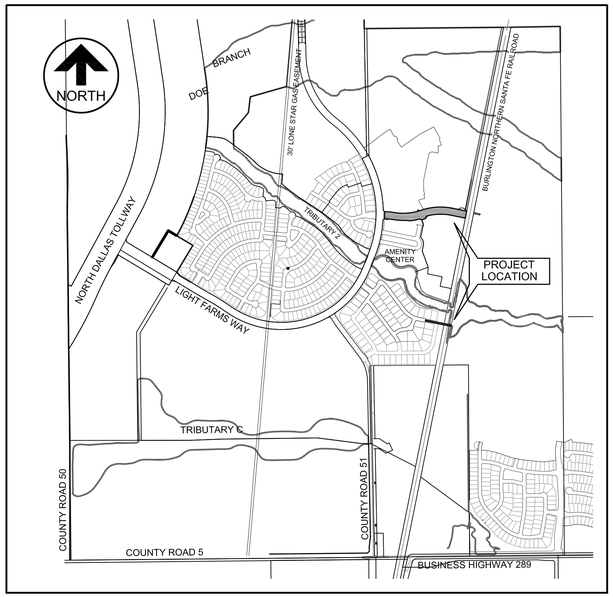
ENGINEERING PLANS FOR THE CONSTRUCTION OF

CYPRESS CREEK WAY EXTENSION

AT

LIGHT FARMS

COLLIN COUNTY, TEXAS



LOCATION MAP

N.T.S.

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RECORD DRAWING:

THIS DRAWING HAS BEEN MODIFIED FROM THE ORIGINAL TO SHOW ONLY THE FIELD CHANGED AND ADJUSTMENTS MAE DURING CONSTRUCTION BY THE CONTRACTOR WHICH WERE DOCUMENTED AND FURNISHED TO THE ENGINEER FOR THE PURPOSE OF PREPARING THERE RECORD DRAWINGS. FIELD INSPECTION OF CONSTRUCTION WAS PERFORMED BY OTHERS. TO THE BEST OF OUR KNOWLEDGE AND UNDERSTANDING THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" CONDITIONS.

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STATE OF TEXAS
ROBERT M. STENGELE
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REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

DWG: I:\proj\013905010\1390533 Cypress Creek Extension\dwg\00-00 COVER SHEET.dwg USER: aloeffel
DATE: Oct 29, 2014 1:17pm XREFS: GBS BASE-CR51 LF-MASTER-BASE BASE BASE Cypress Creek

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P-201311-02

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION INCLUDING THE STANDARD DRAWINGS THEREIN AND THE CITY OF CELINA'S ADDENDUM THERETO. CONTRACTOR SHALL HAVE ATLEAST ONCE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES. SEE SUPPLEMENTARY CONDITIONS, SC-3.02.

2. BEFORE BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A CONSTRUCTION SEQUENCE SCHEDULE. THE CONSTRUCTION SCHEDULE SHALL BE SUCH THAT THERE IS THE MINIMUM INTERFERENCE WITH TRAFFIC ALONG OR ADJACENT TO THE PROJECT.

3. CONSTRUCTION MAY NOT BEGIN EARLIER THAN 7:00 A.M. ON WEEKDAYS NOR CONTINUE AFTER DARK WITHOUT PERMISSION FROM THE CITY OF CELINA. CONSTRUCTION ON HOLIDAYS AND SATURDAY MUST BE APPROVED TWO DAYS IN ADVANCE, A FEE OF $300.00 A DAY FOR WORKING ON HOLIDAYS AND SATURDAY WILL BE ASSESSED PAYABLE TO THE CITY BEFORE WORK IS PREFORMED. WORK MAY NOT BE BEGIN BEFORE 8:00 A.M. AND WORK ON SUNDAY IS PROHIBITED WITHOUT SPECIAL PERMISSION AND PAYMENT OF FEES.

4. UTILITIES SHOWN ON THE PLANS WERE TAKEN FROM FIELD SURVEYS AND INFORMATION PROVIDED BY THE UTILITY COMPANIES. THE COMPLETENESS AND THE ACCURACY OF THIS DATA IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES AND PROTECTING THEM FROM DAMAGE DURING CONSTRUCTION. 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 LOCATION PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL ASSUME FULL LIABILITY TO THOSE COMPANIES FOR ANY DAMAGES CAUSED TO THEIR FACILITIES.

5. WORK MAY NOT BE BACKFILLED OR COVERED UNTIL THE CITY HAS INSPECTED IT.

6. THE OWNER WILL PAY FOR FIRST TIME MATERIAL TESTING. ANY RETESTING WILL BE AT CONTRACTOR'S EXPENSE. MATERIAL TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY OF OWNER'S CHOICE. THE FOLLOWING MATERIAL TESTS SHALL BE PROVIDED BY THE CONTRACTOR:
   - 6.A. EMBANKMENT - ONE SOIL DENSITY TEST SHALL BE PERFORMED AT EACH LOCATION FOR EACH 500 C.Y. OF BACKFILL PLACED.
   - 6.B. PAVEMENT SUB GRADE - ONE GRADATION TEST (WHERE LIME STABILIZED) AND ONE SOIL DENSITY TEST SHALL BE PERFORMED FOR EACH 300 LINEAR FEET OF PAVEMENT UNLESS OTHERWISE NOTED. GRADATIONS MUST PASS 100% THROUGH A 1¾" SIEVE AND 60% THROUGH A #4 SIEVE.
   - 6.C. UTILITY TRENCH BACKFILL - ONE SOIL DENSITY TEST SHALL BE PERFORMED A 300 FEET INTERVALS OR AS DIRECTED BY THE INSPECTOR.
   - 6.D. CONCRETE TESTS:
     - 6.D.1. COMPRESSIVE STRENGTH - FOUR TEST CYLINDERS SHALL BE TAKEN FROM A REPRESENTATIVE PORTION OF THE CONCRETE BEING PLACED FOR EVERY 150-CUBIC YARDS OF CONCRETE PAVEMENT PLACED, BUT IN NO CASE SHALL LESS THAN 2 SETS OF CYLINDERS BE TAKEN FROM ANY ONE DAY'S PLACEMENT.
     - 6.D.2. AIR, SLUMP, AND TEMPERATURE TESTS SHALL BE TAKEN FOR EVERY SET OF CYLINDERS MADE. CONCRETE WITH A TEMPERATURE ABOVE 95°F WILL BE REJECTED.
     - 6.D.3. ADDITIONAL CYLINDERS AND/OR TESTS MAY BE REQUIRED AT THE INSPECTOR'S DISCRETION.
   - 6.E. THE CITY SHALL SELECT THE LOCATION AND DEPTH OF EACH SOIL DENSITY TEST, UNLESS OTHERWISE DIRECTED.

7. ALL EXCAVATION ON THE PROJECT IS UNCLASSIFIED.

8. TEMPORARY EROSION CONTROL SHALL BE USED TO MINIMIZE THE SPREAD OF SILT AND MUD FROM THE PROJECT ON TO EXISTING STREETS, ALLEYS, DRAINAGE WAYS AND PUBLIC AND PRIVATE PROPERTY. TEMPORARY EROSION CONTROLS MAY INCLUDE SILT FENCES, ROCK CHECK DAMS, STABILIZED CONSTRUCTION ENTRANCES, STRAW BALES, BERMS, DIKES, SWALES, STRIPS OF UNDISTURBED VEGETATION, CHECK DAMS AND OTHER METHODS AS REQUIRED BY THE CITY MANAGER OR HIS REPRESENTATIVE AND SHALL CONFORM TO THE STORM WATER QUALITY BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES AS PUBLISHED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS AND THE CITY OF CELINA EROSION AND SEDIMENT CONTROL MANUAL.

9. FINISHED SLOPES ON PUBLIC RIGHTS-OF-WAY AND EASEMENTS SHALL NOT BE STEEPER THAN 4:1. ALL SLOPES STEEPER THAN 6:1 SHALL BE COVERED WITH EROSION CONTROL MATTING AND ARE HYDRO MULCHED AND MAINTAINED BY THE CONTRACTOR UNTIL GRASS COVERS ALL PARTS OF THE SLOPE.

10. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES ALONG THE PROJECT.

11. REMOVE, SALVAGE AND REPLACE ALL STREET AND TRAFFIC CONTROL SIGNS, WHICH MAY BE DAMAGED BY THE CONSTRUCTION OF THE PROJECT.

12. ALL TRENCHING AND EXCAVATION SHALL BE PERFORMED IN ACCORDANCE WITH OSHA STANDARDS. TRENCH SAFETY DESIGN WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL SUBMIT A TRENCH SAFETY DESIGN APPROVED BY A PROFESSIONAL ENGINEER TO THE CITY FOR REVIEW PRIOR TO THE START OF ANY UNDERGROUND UTILITY CONSTRUCTION.

13. PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS, THE PLANS INCLUDING ALL NOTES, AND OTHER APPLICABLE STANDARDS OR SPECIFICATIONS RELEVANT TO THE PROPER COMPLETION OF THE WORK SPECIFIED. FAILURE ON THE PART OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL STANDARDS OR SPECIFICATIONS PERTAINING TO THIS WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.

14. CONTRACTOR SHALL HAVE IN HIS POSSESSION, PRIOR TO CONSTRUCTION, ALL NECESSARY PERMITS, AND LICENSES, ETC. CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES.

15. IN THE EVENT AN ITEM IS NOT COVERED IN THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AN ALTERNATIVE TO THE OWNER AND ENGINEER. THE ENGINEER SHALL REVIEW AND APPROVE CONSTRUCTION MATERIALS, SHOP DRAWINGS AND SPECIFICATIONS.

16. CONSTRUCTION OBSERVATION WILL BE PERFORMED BY REPRESENTATIVES OF THE OWNER, ENGINEER, DISTRICT, 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.

17. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS ONTO DEVELOPED OR UNDEVELOPED AREAS WILL BE ALLOWED, UNLESS SPECIFICALLY NOTED ON PLANS. ANY DAMAGE RESULTING THERE FROM SHALL BE CONTRACTOR'S RESPONSIBILITY TO REPAIR.

18. 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.

19. CONSTRUCTION STAKING WILL BE PERFORMED BY OWNER'S ENGINEER. SEE SUPPLEMENTARY CONDITIONS, SC-4.05.

20. IF UNFORESEEN PROBLEMS OR CONFLICTS ARE ENCOUNTERED IN THE CONSTRUCTION, FOR WHICH AN IMMEDIATE SOLUTION IS NOT APPARENT, THE ENGINEER AND OWNER SHALL BE NOTIFIED IMMEDIATELY.

21. CONTRACTORS SHALL BE RESPONSIBLE FOR FIELD LOCATIONS AND WORKING AROUND EXISTING UTILITIES AND IMPROVEMENTS. SEE SUPPLEMENTARY CONDITIONS, SC-4.02 AND SC-6.13.

22. TRAFFIC CONTROL MEASURES SHALL BE INSTALLED FOR ANY WORK ACTIVITY THAT TAKES PLACE ON OR ADJACENT TO ANY PUBLIC STREET OR ROADWAY. TRAFFIC CONTROL MEASURES SHALL CONFORM TO PART IV OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

23. THE CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN AND BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO HIS WORK.

24. ALL PIPE PRICES SHALL INCLUDE REQUIRED EMBEDMENT PER PLANS AND SPECIFICATIONS.

GRADING NOTES

1. HAUL ROADS ARE SUBSIDIARY TO THIS CONTRACT.

2. TOPSOIL STRIPPING & REPLACEMENT: THIS CONTRACT REQUIRES THAT A NOMINAL 3-INCH DEPTH OF TOPSOIL BE STRIPPED FROM ALL CLEARED AND GRUBBED AREAS. TOPSOIL STRIPPINGS SHALL BE INCORPORATED INTO LANDSCAPE AREAS OUTSIDE OVERBUILT PADS. IN STREET PARKWAYS, MEDIANS, OPEN SPACE, EARTHEN DRAINAGE DITCHES AND SWALES FOR ALL SUBDIVISIONS, A MINIMUM OF 4 INCHES OF TOPSOIL SHALL BE PLACED IN ADVANCE OF GRASSING OPERATIONS. THE GRADING OPERATIONS SHALL ACCOMMODATE TOPSOIL TO BE PLACED IN THESE DESIGNATED AREAS. STOCKPILED TOP SOIL SHALL BE PROTECTED FROM EROSION WITH APPROPRIATE EROSION CONTROL MEASURES AT ALL TIMES. ONCE THE EXCESS MATERIAL HAS BEEN PLACED AND COMPACTED THE TOP SOIL SHALL BE EVENLY REDISTRIBUTED ON TOP OF THE PLACED FILL BEFORE BEING REVEGETATED.

3. REGRADING WORK SHALL BE CLOSELY COORDINATED WITH THE OWNER AND ENGINEER BEFORE AND AS THE WORK IS BEING ACCOMPLISHED. ONCE STARTED, THIS WORK SHALL BE PROSECUTED WITH DILIGENCE UNTIL COMPLETE.

4. ALL NEW WORK SHALL SLOPE UNIFORMLY BETWEEN SPOT ELEVATIONS UNLESS NOTED OTHERWISE. PROVIDE POSITIVE DRAINAGE ON ALL FINISH GRADES.

5. MASS GRADING: MASS GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE RECOMMENDATIONS IN THE PRELIMINARY GEOTECHNICAL INVESTIGATIONS AS PROVIDED IN CONTRACT DOCUMENTS. COMPACTION OF ALL FILL MATERIAL SHALL BE A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY AS DETERMINED BY ASTM D 698 OR AS REQUIRED IN THE PRELIMINARY GEOTECHNICAL INVESTIGATION. THE MOISTURE CONTENT OF ALL FILL MATERIAL SHALL BE NEAR ITS OPTIMUM MOISTURE CONTENT (ASTM D 69B); DRY SOILS SHALL HAVE WATER ADDED AND WET SOILS SHALL BE AERATED, SO THAT ALL SOIL PLACEMENT WILL MEET DENSITY REQUIREMENTS.

6. CLEARING AREAS TO BE FILLED: IN AREAS TO BE FILLED, ALL TREES, STUMPS, BRUSH, ABANDONED STRUCTURES, ROOTS, TOPSOIL, VEGETATION, SEDIMENTS, LARGE ROCK FRAGMENTS, RUBBISH, AND ANY OTHER UNDESIRABLE OR DELETERIOUS MATTER SHOULD BE PROPERLY REMOVED AND DISPOSED OF. ALL TOPSOIL, ROOTS, OTHER VEGETATION AND LOOSE OR SOFT SOILS SHOULD BE STRIPPED TO A DEPTH OF 6 INCHES AND THE EXPOSED SURFACE SHOULD BE SCARIFIED TO AN ADDITIONAL DEPTH OF AT LEAST 6 INCHES. TO THE EXTENT PRACTICAL, IT IS RECOMMENDED THAT TREES SCHEDULED FOR REMOVAL IN THE VICINITY OF PROPOSED SLAB-ON-GRADE FOUNDATIONS BE REMOVED AS FAR IN ADVANCE OF SLAB CONSTRUCTION AS POSSIBLE. THIS WILL TEND TO RESTORE A MORE FAVORABLE SOIL MOISTURE EQUILIBRIUM WHICH WILL, IN TURN, TEND TO MINIMIZE THE POTENTIAL FOR GREATER THAN ANTICIPATED POST-CONSTRUCTION GROUND MOVEMENTS. TREES SHOULD BE EXCAVATED TO BELOW THEIR ROOT BALLS. THEN THE EXCAVATION SHOULD BE FILLED WITH SOIL SIMILAR TO THE SURROUNDING SOIL. THE FILL SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE RECOMMENDATIONS PRESENTED IN THE PRELIMINARY GEOTECHNICAL INVESTIGATION.

7. WATERING: WATERING OF EARTHWORK PLACED IN FILL AREAS MAY BE NECESSARY TO ACHIEVE THE SPECIFIED MOISTURE DENSITY REQUIREMENT, AND TO GERMINATE/SUSTAIN GRASS COVER IN AREAS TO RECEIVE A VEGETATIVE COVER AFTER GRADING IS COMPLETE. THE CONTRACTOR MAY REQUEST A FIRE HYDRANT METER FROM THE CITY OF CELINA FOR CONSTRUCTION WATER USE OR OBTAIN WATER FROM AN ALTERNATE SOURCE. NO EXTRA PAYMENT WILL BE MADE TO THE CONTRACTOR FOR WATER.

8. SWALE AND FINE GRADING OF LOTS: THE TOLERANCE FOR FINE GRADING OF THE LOT PADS AND OTHER AREAS UNDER THIS CONTRACT IS PLUS OR MINUS 0.30 FEET. SURFACES SHALL BE GRADED STRAIGHT AND SMOOTH BETWEEN CONTROL POINTS OR GRADES, WITHOUT BULGES OR DEPRESSIONS, AS DETAILED ON THE DRAWINGS. SEE REQUIREMENTS FOR TOPSOIL PLACEMENT IN NOTE #1 ABOVE.

9. SWALES ARE TO BE GRADED AS SHOWN ON THE GRADING PLANS. FINE GRADING CONSISTS OF CREATING A SMOOTH FINISHED LEVEL HOUSE PAD WITH A UNIFORM TRANSITION TO SIDE YARD SWALES AND FRONT YARD SLOPES TO THE RIGHT-OF-WAY AND CURB.

10. CONTRACTOR IS HEREBY DIRECTED TO ENSURE THAT ALL SWALES, AS SHOWN ON THE GRADING PLANS, ARE PROPERLY INSTALLED. AT LOCATIONS WHERE RETAINING WALLS EXIST AND/OR ARE PROPOSED BEHIND, BESIDE OR BETWEEN LOTS, SWALES MUST BE CREATED ON THE UPPER LOT DIRECTLY BEHIND THE WALL AND ON THE LOWER LOT ADJACENT TO THE WALL WHERE SHOWN TO CONVEY SURFACE DRAINAGE IN THE DIRECTION SHOWN ON THE GRADING PLAN.

11. REESTABLISHMENT OF VEGETATION: ESTABLISHMENT OF VEGETATION SHALL BE INITIATED IMMEDIATELY AFTER COMPLETING GRADING AND IN NO CASE LATER THAN 14 DAYS AFTER COMPLETION OF GRADING. THE CONTRACTOR WILL BE REQUIRED TO BROADCAST SEED AND FERTILIZER ON FINISHED LOTS. TILLING WILL NOT BE REQUIRED. THE SEED MIX SHALL BE 50% UNHULLED BERMUDA AND 50% FOXTAIL MILLET-GERMAN STRAIN R APPLIED AT A RATE OF 10 LBS. PER ACRE. 10-10-10 FERTILIZER SHALL BE APPLIED AT THE RATE OF 200 LBS. PER ACRE OR AS RECOMMENDED BY THE FERTILIZER MANUFACTURER. THE UNIT PRICE BID FOR "REVEGETATION OF GRADED LOTS" SHALL INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND SPREADING SEED AND FERTILIZER. THE VEGETATION MUST ACHIEVE A COVER THAT IS 70 PERCENT OF THE NATIVE BACKGROUND VEGETATIVE COVER TO BE CONSIDERED FINAL STABILIZATION.

WATER AND SANITARY SEWER

1. SPECIFICATIONS AND DETAILS ARE NOT MEANT TO EXCLUDE ANY MANUFACTURER. ANY SPECIFICATION OR DETAIL MAY BE REPLACED WITH AN APPROVED EQUAL UPON APPROVAL BY THE CITY OF CELINA.

2. WATER MAINS SHALL BE AWWA C-900 PVC OR 905 PVC CLASS 200 UNLESS OTHERWISE NOTED. MINIMUM COVER FOR WATERLINES IS 48" BELOW TOP OF CURB, 60" WHERE NO CURBED STREET IS PRESENT OR AS REQUIRED TO CLEAR EXISTING UTILITIES, WHICHEVER IS GREATER. CLASS "B+" EMBEDMENT UNLESS OTHERWISE NOTED. CAST IRON FITTINGS, EMBEDMENT, AND THRUST BLOCKING ARE SUBSIDIARY TO THE UNIT PRICE.

3. ALL UTILITY TRENCH BACKFILL SHALL BE PERFORMED IN 12" LOOSE LIFTS AND MECHANICALLY COMPACTED WITH APPROVED VIBRATORY METHODS. WATER JETTING IS PROHIBITED.

4. MARKING TAPE SHALL BE INSTALLED ONE FOOT ABOVE AND OVER PVC WATER LINES.

5. FITTINGS FOR PVC WATER LINES SHALL BE DUCTILE IRON AND BE ENCASED IN A POLYETHYLENE SHEATH, AND ARE SUBSIDIARY TO THE UNIT PRICE FOR WATER LINE.

6. ALL MECHANICAL JOINTS WILL BE RESTRAINED. (MEGA-LUG, ETC.)

7. VALVES, INCLUDING TAPPING VALVES SHALL BE RESILIENT SEAT GATE VALVES, UNLESS OTHERWISE NOTED.

8. ALL DIRECT BURIAL VALVES SHALL BE PROVIDED WITH CAST IRON VALVE BOXES WITH PVC STACKS. VALVE STACKS SHALL BE VERTICAL AND CONCENTRIC WITH THE VALVE STEM. STAINLESS STEEL VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES WHERE THE OPERATING NUT IS GREATER THAN 4 FEET BELOW FINISHED GRADE.

9. FIRE HYDRANTS SHALL BE WATEROUS OR EQUAL AS DIRECTED OR APPROVED BY THE CITY OF CELINA ON A CASE BY CASE BASIS AND FIELD PAINTED SILVER WITH BONNET AND CAPS COLOR-CODED TO PIPE SIZE.
   - 9.A. SIX INCH LINE- SILVER BODY WITH RED BONNET AND CAPS.
   - 9.B. EIGHT INCH LINE- SILVER BODY WITH BLUE BONNET AND CAPS.
   - 9.C. TEN INCH LINE- SILVER BODY WITH GREEN BONNET AND CAPS.
   - 9.D. TWELVE INCH AND LARGER- SILVER BODY WITH YELLOW BONNET AND CAPS.

10. ALL EXPOSED BOLTING ON ANY BURIED EQUIPMENT OR MATERIAL SHALL BE STAINLESS STEEL. INCLUDED ARE:
   - 10.A. BONNET AND STUFFING BOX BOLTS ON VALVES.
   - 10.B. SHOE BOLTS ON FIRE HYDRANTS.
   - 10.C. FLANGE BOLTS.
   - 10.D. "COR-TEN" MECHANICAL JOINT "T" BOLTS ARE ACCEPTABLE FOR DIRECT BURIAL SERVICE.

11. DEPENDING ON METER SIZE; METER BOXES SHALL BE DFW37C-12-1SAF, DFW38C-14-1SAF, DFW65C-14-1SAF, OR APPROVED EQUAL, AND SHALL INCORPORATE THE CELINA LOGO IN THE LID.

12. ONE SAMPLE STATION SHALL BE PROVIDED FOR EVERY 250 CONNECTIONS.

13. FIRE HYDRANT ASSEMBLY: FIRE HYDRANT ASSEMBLY SHALL INCLUDE A 6" PVC LEAD, 6" VALVE, FITTINGS, CONCRETE BLOCKING, AND THE FIRE HYDRANT.

14. WATER METERS: WATER METERS WILL BE SET AT A LATER DATE BY OTHERS. UTILITY CONTRACTOR WILL BE RESPONSIBLE FOR MAKING THE TAP, INSTALLING THE COPPER SERVICE LINE PER NCTCOG STANDARD DETAILS, PROVIDING THE CURB STOP AND DEADHEAD VALVES, AND PROPERLY PLACING A METER BOX. LOCATOR PADS SHALL BE PLACED AT ALL VALVE LOCATIONS. THE LOCATOR PAD SHALL BECOME THE PROPERTY OF THE CITY. THE TERM 'WATER METER BOX' AND 'WATER METER CAN' ARE USED INTERCHANGEABLY.

15. SANITARY SEWER MAINS SHALL BE DR 35 PVC. EMBEDMENT SHALL BE CLASS H UNLESS OTHERWISE NOTED.
   - 15.A. THE CONTRACTOR SHALL INSTALL AND MAINTAIN WATERTIGHT PLUGS IN ALL CONNECTIONS TO THE CITY'S SANITARY SEWER SYSTEM UNTIL THE CITY ACCEPTS THE PROJECT.
   - 15.B. ALL SANITARY SEWER LINES AND MANHOLES SHALL BE LEAK TESTED BEFORE THE PROJECT IS ACCEPTED. DEFLECTION TESTING OF PVC SEWER LINES IS REQUIRED. DEFLECTION SHALL BE TESTED WITH A MANDREL FOR 5% DEFLECTION.
   - 15.C. ALL SEWER LINES SHALL BE VIDEO INSPECTED WITH A COPY OF THE VIDEO AND STATION REPORT SUBMITTED TO THE INSPECTOR.
   - 15.D. MANDREL, AIR TEST, AND VIDEO INSPECTION SHALL NOT BE PERFORMED UNTIL ALL UTILITIES ARE COMPLETE, IN PLACE, AND BACKFILLED.

16. SANITARY SEWER STUB-OUTS FROM MANHOLES SHALL BE FITTED WITH WATER TIGHT STOPPER OR CAP.

17. STUB-OUTS FROM MANHOLES SHALL BE A MINIMUM OF 5-FT LONG WITH CONCRETE CRADLE (FROM SAME POUR) UNDER THE ENTIRE LENGTH PER NCTCOG STANDARD DRAWING NO. 5020 AND 5030, DATED OCTOBER 2004, AND NCTCOG STANDARD DRAWING NO. 3010 CLASS "A" EMBEDMENT, DATED OCTOBER 2004.

18. ALL VALVES, FIRE HYDRANTS, METER BOXES, SEWER SERVICES, SEWER MANHOLES, AND SEWER CLEANOUTS REQUIRE CURB MARKS PER CITY STANDARDS.

19. HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE SHALL NOT EXCEED AMOUNT ALLOWED OR RECOMMENDED BY AWWA FORMULA:

$$Q=(LD(P^{0.5}))/148,000$$

WHERE Q=QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR; L=LENGTH OF THE PIPE SECTION BEING TESTED; D=NOMINAL DIAMETER OF THE PIPE IN INCHES; AND P=AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

STORM DRAINAGE CONSTRUCTION NOTES

3. STORM SEWER PIPE SHALL BE REINFORCED CONCRETE, CLASS III UNLESS OTHERWISE NOTED.

4. ALL STRUCTURAL CONCRETE SHALL BE CLASS "C" (3600 PSI COMPRESSIVE STRENGTH AT 28 DAYS), AIR ENTRAINED.

5. THE CONTRACTOR SHALL INSTALL PLUGS IN STORM SEWER LINES OR OTHERWISE PREVENT MUD FROM ENTERING THE STORM SEWER SYSTEM DURING CONSTRUCTION.

6. INLET BLOCKOUTS, VARIABLE CURB, AND INLET TOP WILL BE THE UTILITY CONTRACTOR'S RESPONSIBILITY FOLLOWING PAVING OPERATIONS. INLET BLOCKOUTS SHALL BE PLACED 3.5 FEET FROM BACK OF CURB FOR A DISTANCE OF TEN (10) FEET UPSTREAM (BOTH SIDES IN SAG CONDITIONS) AND FIVE (5) FEET DOWNSTREAM OF THE INSIDE FACE OF INLET. UNLESS OTHERWISE NOTED IN CONSTRUCTION PLANS.

7. STORM DRAINAGE PIPE AND HEADWALLS: UNLESS NOTED OTHERWISE ON THE PLANS, ALL STORM DRAINAGE PIPE SHALL BE CLASS III AND EMBEDMENT SHALL BE CLASS "C" PER NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, STANDARD DRAWING NO. 3040. THE UNIT PRICE SUPPLIED FOR THE CONSTRUCTION OF THE STORM HEADWALLS SHALL INCLUDE VALUE FOR THE NECESSARY EXCAVATION/GRADE-TO-DRAIN ACTIVITY CONSIDERED SUBSIDIARY TO THE INSTALLATION OF THE STORM OUTFALL STRUCTURES. THE EXCAVATED CHANNEL SHALL HAVE A MINIMUM 1% LONGITUDINAL SLOPE AND MINIMUM BOTTOM WIDTH OF TWICE THE WIDTH OF THE OUTFALLING PIPE OR BOX, UNLESS OTHERWISE NOTED, AND SHALL HAVE THE EMBANKMENTS SLOPED BACK AT A 3:1 SLOPE.

8. INLET BOTTOM CONSTRUCTION: WITHIN 24 HOURS OF THE COMPLETION OF THE CONSTRUCTED INLET BOTTOM, EROSION CONTROL MEASURES SHALL BE EMPLOYED AS SHOWN IN THE NCTCOG EROSION CONTROL DETAILS. INTERIM EROSION CONTROL MEASURES SHALL BE EMPLOYED UNTIL THE CONCRETE FOR THE INLET BASE HAS SET AND THE REQUIRED EROSION CONTROL MEASURES INSTALLED.

9. ROCK RIP RAP: THE PLACEMENT OF ROCK RIP-RAP AT STORM DRAINAGE OUTFALLS WILL BE DELAYED UNTIL THE COMPLETION OF ALL UTILITY WORK. THE ROCK RIP-RAP MAY ALSO BE DESIGNATED FOR PLACEMENT ON THE FRESH EMBANKMENTS TO STABILIZE THE SLOPES.

UTILITY SEPARATION NOTES

1. SEPARATION DISTANCES BETWEEN PUBLIC WATER SUPPLY PIPES AND SANITARY SEWER COLLECTION SYSTEMS OR MANHOLES MUST COMPLY WITH 30 TAC 217.53(D) AND 30TAC 290.44(E).

2. COLLECTION SYSTEM PIPES MUST BE INSTALLED IN TRENCHES SEPARATE FROM PUBLIC WATER SUPPLY TRENCHES.

3. COLLECTION SYSTEM PIPES MUST BE NO CLOSER THAN NINE FEET IN ANY DIRECTION TO A PUBLIC WATER SUPPLY LINE.

4. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.
   - 4.A. A.MINIMUM SANITARY SEWER PIPE SEGMENT LENGTH SHALL BE AT LEAST 18-FEET WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED.
   - 4.B. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, NON-PRESSURE RATED SANITARY SEWER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE SANITARY SEWER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE SANITARY SEWER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE SANITARY SEWER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE SANITARY SEWER MAIN OR LATERAL. IF THE EXISTING SANITARY SEWER MAIN OR LATERAL IS DISTURBED OR SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
   - 4.C. WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED SANITARY SEWER MAIN OR LATERAL AND THE STANDARD PIPE SEGMENT LENGTH OF THE SANITARY SEWER MAIN OR LATERAL IS AT LEAST 18 FEET, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE SANITARY SEWER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE SANITARY SEWER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE SANITARY SEWER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE SANITARY SEWER MAIN OR LATERAL. THE SANITARY SEWER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE SANITARY SEWER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. WHERE SHOWN, THE SANITARY SEWER LINE SHALL BE CONSTRUCTED OF 150 PSI PRESSURE RATED PIPE.
   - 4.D. WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE SANITARY SEWER MAIN OR LATERAL.
   - 4.E. WHEN A NEW WATERLINE CROSSES UNDER A SANITARY SEWER MAIN OR LATERAL, ALL SECTIONS OF WATERLINE WITHIN NINE FEET HORIZONTALLY OF THE SANITARY SEWER MAIN OR LATERAL SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE SANITARY SEWER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. IN LIEU OF THE ENCASEMENT, THE WATERLINE CAN ALSO BE CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE SANITARY SEWER MAIN OR LATERAL SHALL BE PROVIDED.
   - 4.F. WATERLINE AND SANITARY SEWER MAIN OR LATERAL MANHOLE OR CLEANOUT SEPARATION: THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A SANITARY SEWER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
   - 4.G. LOCATION OF FIRE HYDRANTS: FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY SANITARY SEWER MAIN, SANITARY SEWER LATERAL, OR SANITARY SEWER SERVICE LINE REGARDLESS OF CONSTRUCTION.

PAVING NOTES

1. ALL EMBANKMENTS SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.

2. ALL STREETS AND ALLEYS SHALL BE PLACED ON LIME STABILIZED SUB GRADE WITH A LIME CONTENT NOT LESS THAN 7% OR AS APPROVED BY THE CITY ENGINEER.

3. THE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF CONCRETE STREET PAVING SHALL NOT BE LESS THAN 3600 PSI AND SHALL BE AIR ENTRAINED. WATER MAY NOT BE APPLIED TO THE SURFACE OF CONCRETE PAVING TO IMPROVE WORKABILITY.

4. ALL CURB AND GUTTER SHALL BE INTEGRAL WITH THE PAVEMENT.

5. PARABOLIC CROWNS ARE REQUIRED ON ALL STREET PAVEMENTS EXCEPT ON MAJOR THOROUGHFARES WHERE STRAIGHT SECTIONS ARE REQUIRED.

6. STREETS AND ALLEYS SHALL BE CONSTRUCTED WITH PROVISIONS FOR SIDEWALK RAMPS AT ALL INTERSECTIONS.

STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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LIGHT FARMS

GENERAL NOTES

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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HUITT-ZOLLARS
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Dallas, Texas 75202-1236
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SCALE	SHEET No.
N/A	1
DATE	
29-OCT-2014	

PROJECT NUMBER: 01-3905-33

DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\00-01 GENERAL NOTES.dwg USER: aloeffel
DATE: Oct 29, 2014 1:17pm XREFS: GBS

CAD FILE PATH: i:\proj\01390501\01390533 cypress creek extension\dwg\00-01 general notes.dwg

P-201311-02

TCEQ WATER DISTRIBUTION GENERAL NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIROMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS, AT A MINIMUM, MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.

2. AN APPOINTED ENGINEER SHALL NOTIFY IN WRITING THE LOCAL TCEQ'S REGIONAL OFFICE WHEN CONSTRUCTION WILL START. PLEASE KEEP IN MIND THAT UPON COMPLETION OF THE WATER WORKS PROJECT, THE ENGINEER OR OWNER SHALL NOTIFY THE COMMISSION'S WATER SUPPLY DIVISION, IN WRITING, AS TO ITS COMPLETION AND ATTEST TO THE FACT THAT THE WORK HAS BEEN COMPLETED ESSENTIALLY ACCORDING TO THE PLANS AND CHANGE ORDERS ON FILE WITH THE COMMISSION AS REQUIRED IN 30 TAC §290.39(H)(3).

3. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD61–G AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI, AS REQUIRED BY 30 TAC §290.44(A)(1).

4. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL(NSF PW–G) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS, AS REQUIRED BY 30 TAC §290.44(A)(2).

5. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY, AS REQUIRED BY 30 TAC §290.44(A)(3).

6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 25 INCHES BELOW GROUND SURFACE, AS REQUIRED BY 30 TAC §290.44(A)(4).

7. PURSUANT TO 30 TAC §290.44(A)(5). THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
   THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C–605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;
   WHERE:
   Q = [LD(P^0.5)]/148,000

   Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
   L=THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
   D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
   P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

   THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C–600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;
   WHERE:
   L = [SD(P^0.5)]/148,000
   L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
   S =THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
   D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
   P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

8. PROJECTS CONSTRUCTED ON OR AFTER JANUARY 1, 2014 MUST COMPLY WITH THE CHANGES TO THE SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES TO 0.25 PERCENT.

9. THE SYSTEM MUST BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 35 PSI AT ALL POINTS WITHIN THE DISTRIBUTION NETWORK AT FLOW RATES OF AT LEAST 1.5 GALLONS PER MINUTE PER CONNECTION. WHEN THE SYSTEM IS INTENDED TO PROVIDE FIREFIGHTING CAPABILITY, IT MUST ALSO BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI UNDER COMBINED FIRE AND DRINKING WATER FLOW CONDITIONS AS REQUIRED BY 30 TAC §290.44(D).

10. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES IN THE DISTRIBUTION SYSTEM AT ALL POINTS WHERE TOPOGRAPHY OR OTHER FACTORS MAY CREATE AIR LOCKS IN THE LINES. ALL VENT OPENINGS TO THE ATMOSPHERE SHALL BE COVERED WITH 16–MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT AS REQUIRED BY 30 TAC §290.44(D)(1).

11. PURSUANT TO 30 TAC §290.44(D)(4), ACCURATE WATER METERS SHALL BE PROVIDED. SERVICE CONNECTIONS AND METER LOCATIONS SHOULD BE SHOWN ON THE PLANS.

12. PURSUANT TO 30 TAC §290.44(D)(5), SUFFICIENT VALVES AND BLOWOFFS TO MAKE REPAIRS. THE ENGINEERING REPORT SHALL ESTABLISH CRITERIA FOR THIS DESIGN.

13. PURSUANT TO 30 TAC §290.44(D)(6), THE SYSTEM SHALL BE DESIGNED TO AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD–END MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD–END LINES LESS THAN TWO INCHES IN DIAMETER WILL NOT REQUIRE FLUSH VALVES IF THEY END AT A CUSTOMER SERVICE. WHERE DEAD ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO PROVIDE CIRCULATION

14. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES AND SEPTIC TANK DRAINFIELDS. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET 30 TAC §290.44(E)(1–4) OF THE CURRENT RULES.

15. PURSUANT TO 30 TAC §290.44(E) (5), THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE–FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE–FOOT INTERVALS WITH SPACERS OR BE FILLED O THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.

16. PURSUANT TO 30 TAC §290.44(E)(6), FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.

17. PURSUANT TO 30 TAC §290.44(E)(7), SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.

18. PURSUANT TO 30 TAC §290.44(E)(8), WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.

19. PURSUANT TO 30 TAC §290.44(F)(1), THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.

20. PURSUANT TO 30 TAC §290.44(F)(2), WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI–PERMANENT BODY OF WATER THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED.

21. THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH AWWA STANDARD C–651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER, IN ACCORDANCE WITH 30 TAC §290.44(F)(3).

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

BM # 79 - Brass monument set on top of curb, southeast side of Light Farms Way, 520+- feet southwesterly from the centerline of Wildrye Ridge, Elev. = 635.51'

BM # 80 - Brass monument set on curb inlet, southeast side of Light Farms Way, 79+- feet northeasterly from the centerline of Wildrye Ridge. Elev. = 633.47'

BM # 81 - Brass monument set on curb inlet, east side of Light Farms Way, 186+- feet southerly from the centerline of Cypress Creek Road. Elev. = 632.00

STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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LIGHT FARMS

TCEQ GENERAL NOTES

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
Phone (214) 292-3410 Fax (214) 292-3411

HUITT-ZOLLARS
Huitt-Zollars, Inc. Dallas
1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE	SHEET No.
DATE 29-OCT-2014	1A

PROJECT NUMBER: 01-3905-33

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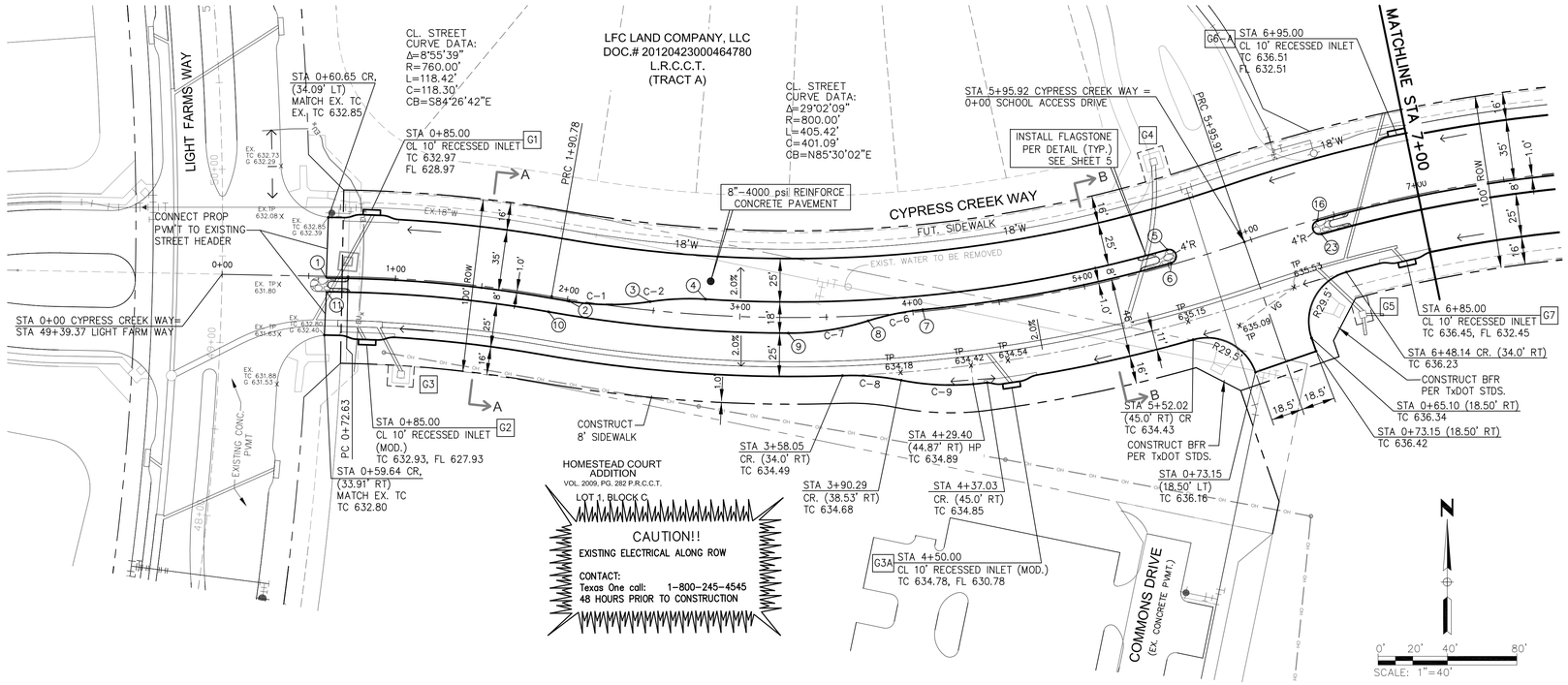
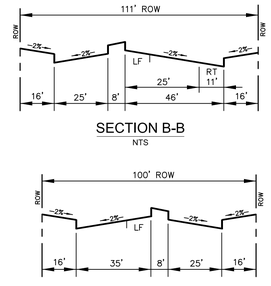
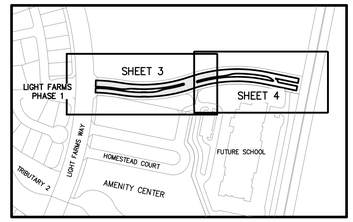






NOTES:

1. ALL DIMENSIONS ARE FROM BACK OF CURB.
2. ALL CURBS WILL BE 6", 4000 PSI REINFORCED CONCRETE STANDARD CURB.
3. TYPICAL STREET 2-25' B-B WITH 2.0% CROSS SLOPE.
4. PAVERS WITHIN BARRIER FREE RAMPS SHALL BE PAVESTONE ADA PAVERS (TERRA COTTA BLEND).
5. FOR TURN LANES STORAGE LENGTH, REFER TO STRIPING, SIGNAGE & SLEEVING PLAN (SHEET 5).
6. SEE SHEETS CS1-CS4 FOR CITY STANDARD PAVING DETAILS.

LEGEND

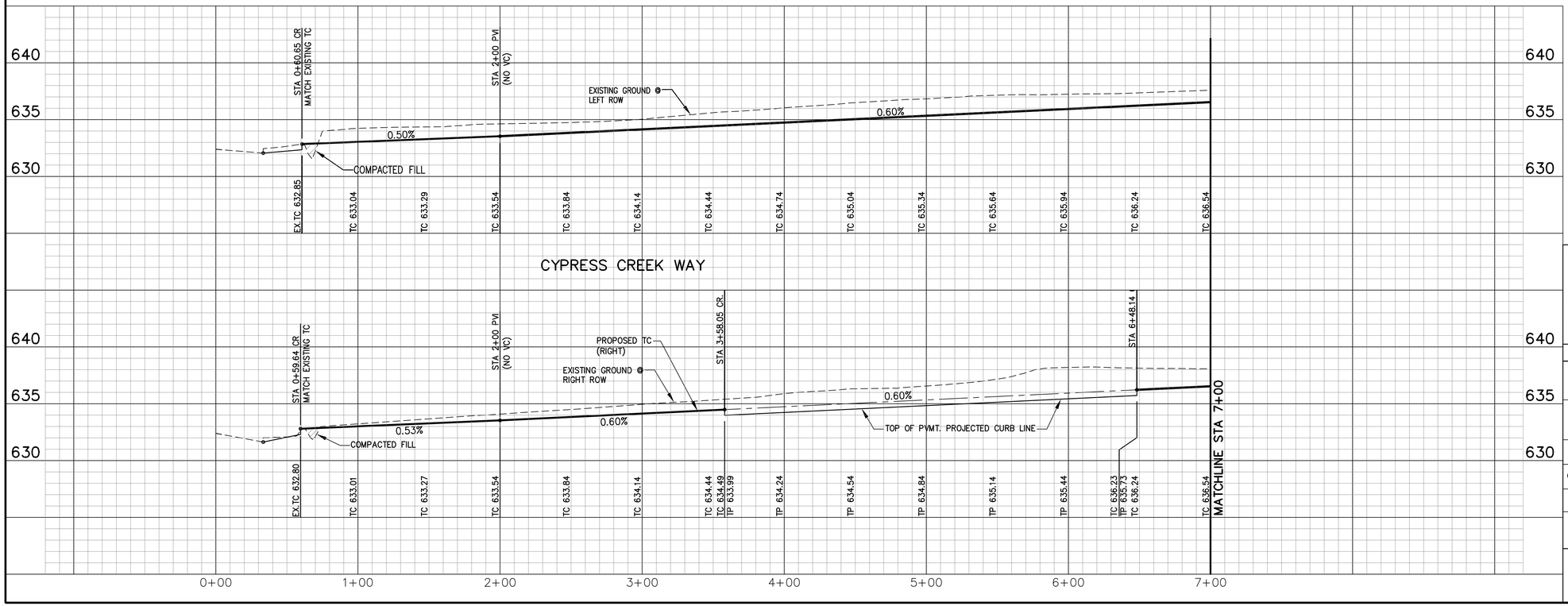
- PROPOSED WATER MAIN (PVC)
- EXISTING WATER MAIN (PVC)
- EXISTING WATER MAIN TO BE REMOVED
- EXISTING ROW TO BE REMOVED
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED STORM SEWER

CURVE TABLE:

CURVE #	Δ	R	T	L
C-1	17°54'22"	150.00'	23.63'	46.88'
C-2	12°16'51"	150.00'	16.14'	32.15'
C-3	12°18'17"	150.00'	16.17'	32.21'
C-4	17°52'19"	150.00'	23.59'	46.79'
C-5	37°40'06"	75.00'	25.58'	49.31'
C-6	12°18'17"	150.00'	16.17'	32.21'
C-7	17°52'19"	150.00'	23.59'	46.79'
C-8	13°00'58"	150.00'	17.11'	34.08'
C-9	19°01'58"	150.00'	25.15'	49.83'

STREET CURB DATA (CYPRESS CREEK WAY)

1	STA 0+60.12 (0.91' RT)	TC 633.25
2	STA 2+01.18 (1.0' RT)	TC 634.25
3	STA 2+47.61 (4.93' LT)	TC 634.41
4	STA 2+79.72 (9.0' LT)	TC 634.52
5	STA 5+51.91 (9.0' LT)	TC 636.15
6	STA 5+51.92 (1.0' LT)	TC 636.35
7	4+05.75 (1.0' LT)	TC 635.47
8	STA 3+73.90 (3.08' RT)	TC 635.20
9	STA 3+28.02 (9.0' RT)	TC 634.81
10	STA 1+90.49 (9.0' RT)	TC 633.99
11	STA 0+60.31 (8.91' RT)	TC 633.20



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BENCHMARKS:

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LIGHT FARMS

PAVING PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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SCALE	SHEET No.
H: 1" = 40' V: 1" = 5'	4
DATE 29-OCT-2014	

PROJECT NUMBER: 01-3905-33

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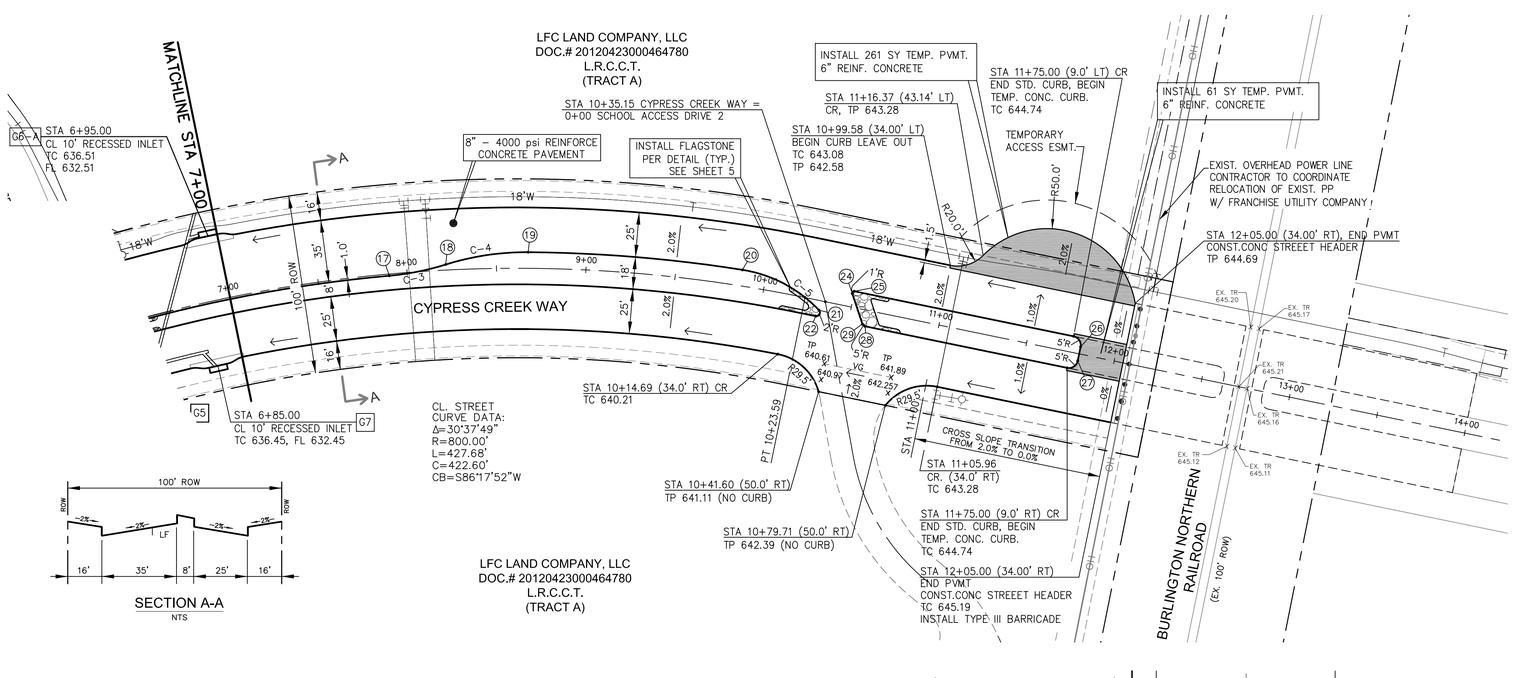
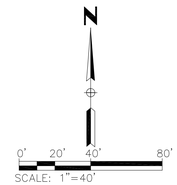
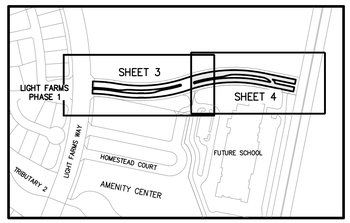
P-201311-02







KEY MAP
NTS

STREET CURB DATA (CYPRESS CREEK WAY)

16	STA 6+39.91 (1.0' RT)	TC 636.88
17	STA 7+89.91 (1.0' RT)	TC 637.78
18	STA 8+21.77 (3.08' LT)	TC 637.89
19	STA 8+67.65 (9.0' LT)	TC 638.05
20	STA 9+86.56 (9.0' LT)	TC 639.79
21	STA 10+32.66 (5.36' RT)	TC 641.39
22	STA 10+31.52 (9.0' RT)	TC 641.28
23	STA 6+39.91 (9.0' RT)	TC 636.68
24	STA 10+49.00 (7.50' RT)	TC 641.90
25	STA 10+49.87 (9.0' LT)	TC 641.90
26	STA 11+80.01 (4.0' LT)	TC 644.91
27	STA 11+80.01 (4.0' RT)	TC 644.91
28	STA 10+59.68 (9.0' RT)	TC 642.23
29	STA 10+57.95 (8.00' RT)	TC 642.19

CURVE TABLE:

CURVE #	Δ	R	T	L
C-1	17°54'22"	150.00'	23.63'	46.88'
C-2	12°16'51"	150.00'	16.14'	32.15'
C-3	12°18'17"	150.00'	16.17'	32.21'
C-4	17°52'19"	150.00'	23.59'	46.79'
C-5	37°40'06"	75.00'	25.58'	49.31'
C-6	12°18'17"	150.00'	16.17'	32.21'
C-7	17°52'19"	150.00'	23.59'	46.79'
C-8	13°00'58"	150.00'	17.11'	34.08'
C-9	19°01'58"	150.00'	25.15'	49.83'

NOTES:

1. ALL DIMENSIONS ARE FROM BACK OF CURB.
2. ALL CURBS WILL BE 6", 4000 PSI REINFORCED CONCRETE STANDARD CURB.
3. TYPICAL STREET 2-25' B-B WITH 2.0% CROSS SLOPE.
4. PAVERS WITHIN BARRIER FREE RAMPS SHALL BE PAVESTONE ADA PAVERS (TERRA COTTA BLEND).
5. FOR TURN LANES STORAGE LENGTH, REFER TO STRIPING, SIGNAGE & SLEEVING PLAN (SHEET 5).
6. SEE SHEETS CS1-CS4 FOR CITY STANDARD PAVING DETAILS.

LEGEND

- PROPOSED WATER MAIN (PVC)
- EXISTING WATER MAIN (PVC)
- EXISTING WATER MAIN TO BE REMOVED
- EXISTING ROW TO BE REMOVED
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED STORM SEWER

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

BM # 79 - Brass monument set on top of curb, southeast side of Light Farms Way, 520+- feet southwesterly from the centerline of Willdrye Ridge. Elev. = 635.51'

BM # 80 - Brass monument set on curb inlet, southeast side of Light Farms Way, 79+- feet northeasterly from the centerline of Willdrye Ridge. Elev. = 633.47'

BM # 81 - Brass monument set on curb inlet, east side of Light Farms Way, 186+- feet southerly from the centerline of Cypress Creek Road. Elev. = 632.00

STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

RECORD DRAWING:

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LIGHT FARMS

PAVING PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
Phone (214) 292-3410 Fax (214) 292-3411

HUITT-ZOLLARS
Huitt-Zollars, Inc. Dallas
1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE H: 1" = 40' V: 1" = 5'
DATE 29-OCT-2014
SHEET No. 5

PROJECT NUMBER: 01-3905-33

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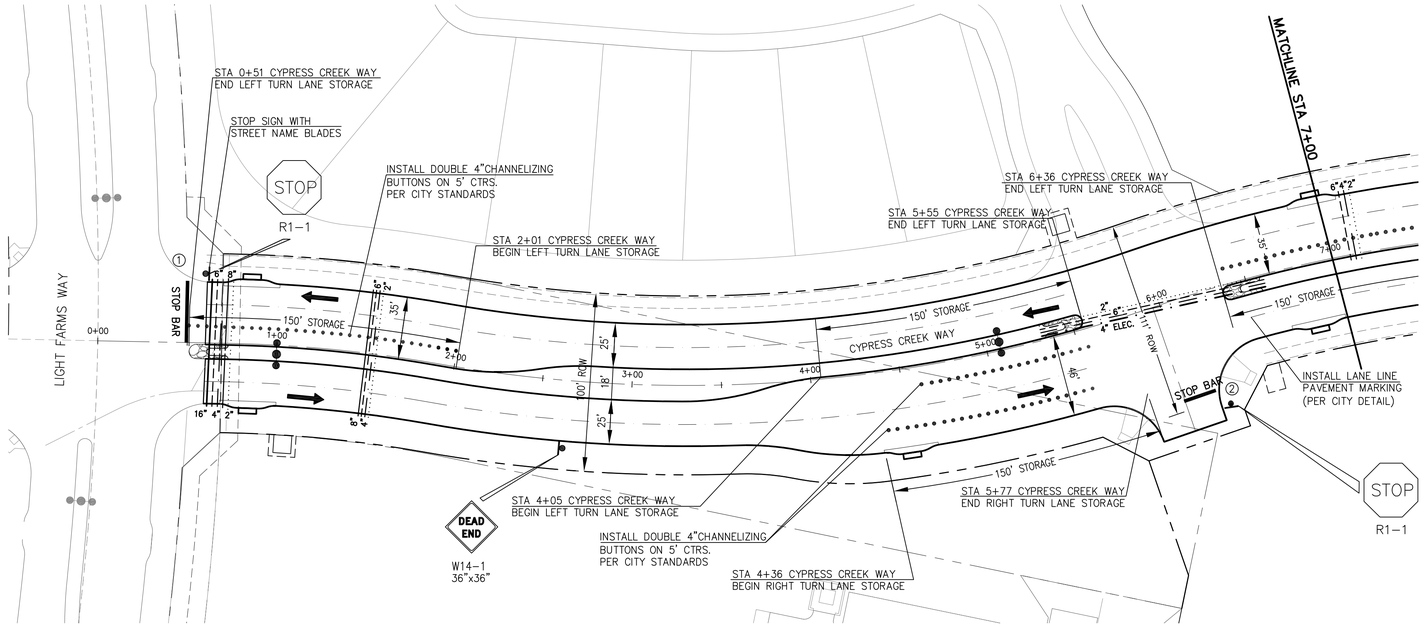
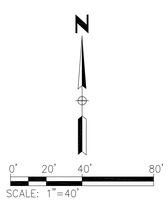
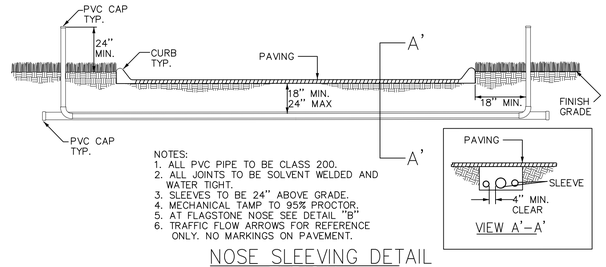
P-201311-02





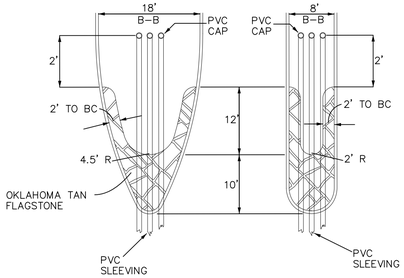


NOTES:
1. ALL PVC PIPE TO BE CLASS 200.
2. ALL JOINTS TO BE SOLVENT WELDED AND WATER TIGHT.
3. SLEEVES TO BE 24" ABOVE GRADE.
4. MECHANICAL TAMP TO 95% PROCTOR.
5. AT FLAGSTONE NOSE SEE DETAIL "B".
6. TRAFFIC FLOW ARROWS FOR REFERENCE ONLY. NO MARKINGS ON PAVEMENT.

NOSE SLEEVING DETAIL TYPICAL

LEGEND

- 16" IRRIGATION SLEEVE
- 8" IRRIGATION SLEEVE
- 6" IRRIGATION SLEEVE
- 4" IRRIGATION SLEEVE
- 4" ELECTRICAL SLEEVE
- 2-2" IRRIGATION SLEEVES
- 12" WIDE STOP BAR
- STREET LIGHT (BY OTHERS; EXACT LOCATION TO BE DETERMINED AT TIME OF STREET LIGHTING DESIGN)
- R3-2
- STOP R1-1 (36")
- ① SIGN KEY



DETAIL "B" FLAGSTONE NOSINGS TYPICAL

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

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STATE OF TEXAS
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50145
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PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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Blade #1 36x6" 2-Sided Sign Blade					Blade #2 36x6" 2-Sided Sign Blade			
Sign Key	Block No. (South)	Name	Suffix	Block No. (North)	Block No. (West))	Name	Suffix	Block No. (East)
1	3700	LIGHT FARMS	WAY	3600		CYPRESS CREEK	WAY	1200
2	XXXX		WAY	XXXX	1200	CYPRESS CREEK	WAY	1100

LIGHT FARMS

STRIPING, SIGNAGE & SLEEVING

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

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Dallas, Texas 75202-1236
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SCALE 1" - 40'
DATE 29-OCT-2014
SHEET No. 6

PROJECT NUMBER: 01-3905-33

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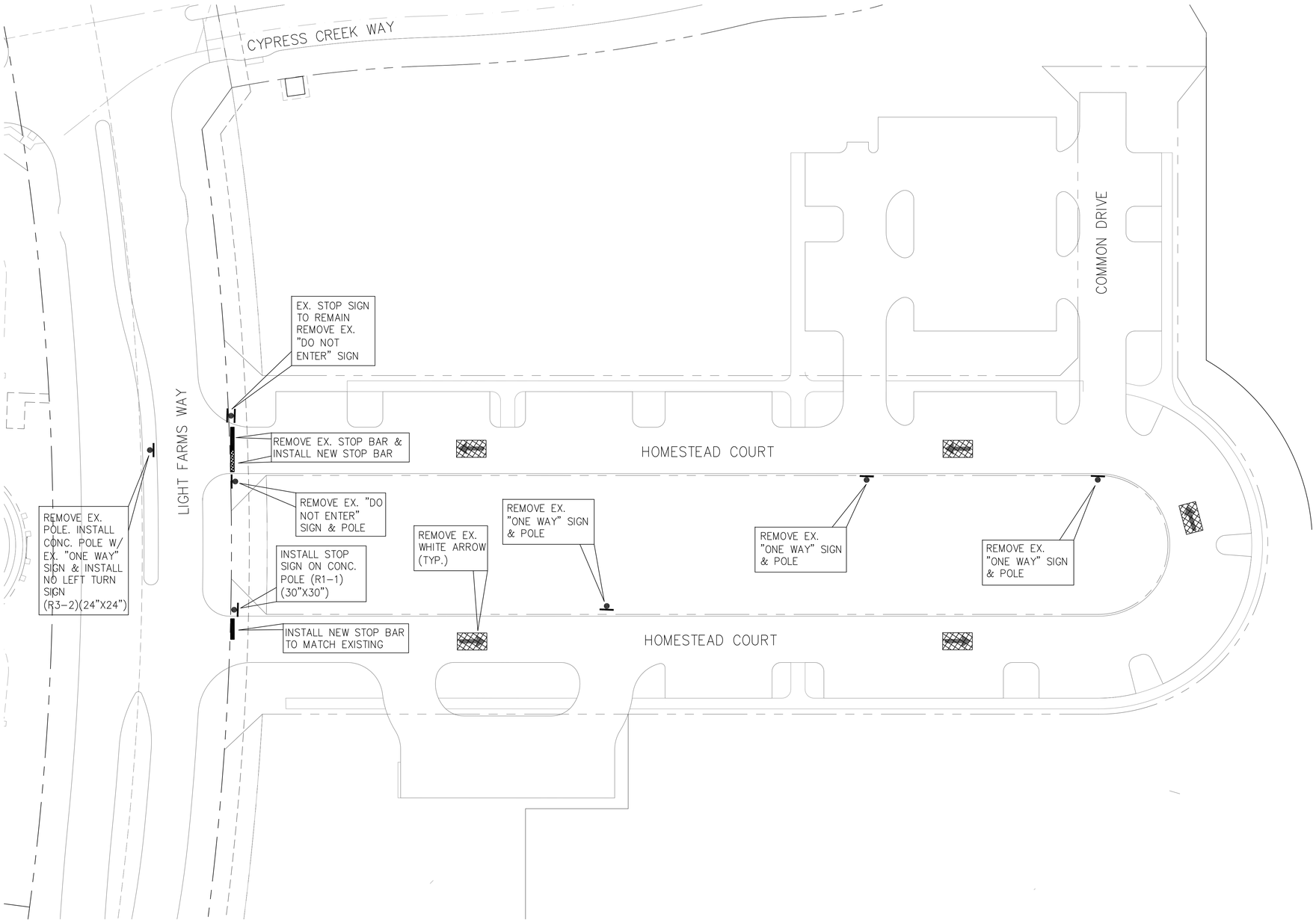

N

0' 20' 40' 80'

SCALE: 1"=40'

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

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LIGHT FARMS

HOMESTEAD COURT STRIPING & SIGNAGE PLAN

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

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8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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SCALE	SHEET No.
1" - 40'	7
DATE	
29-OCT-2014	

PROJECT NUMBER: 01-3905-33

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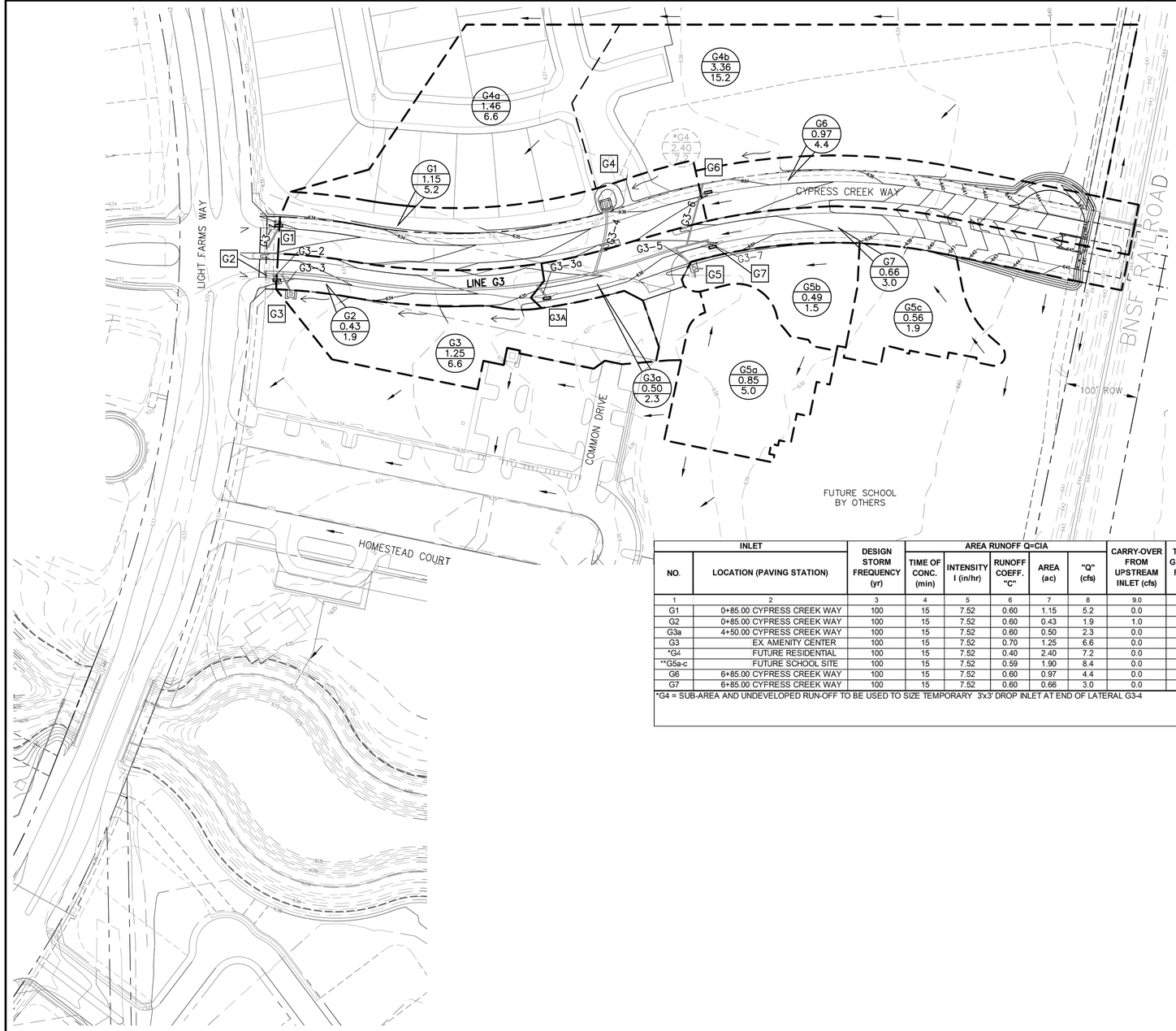

DESIGN FLOW (Q_{DS}) BY RATIONAL METHOD						
LOCATION, AREA DESIGNATION	TIME OF CONCENTRATION, T_C (MIN.)	INTENSITY "I_{100}" (in/hr)	DRAINAGE AREA "A" (AC)	RUNOFF COEFFICIENT "C"	FREQUENCY (YRS.)	DESIGN FLOW "Q_{100}"= C*I*A (CFS)
1	2	3	4	5		6
G1	15	7.52	1.15	0.60	100	5.2
G2	15	7.52	0.43	0.60	100	1.9
G3	15	7.52	1.25	0.70	100	6.6
G3a	15	7.52	0.50	0.60	100	2.3
G4a	15	7.52	1.46	0.60	100	6.6
G4b	15	7.52	3.36	0.60	100	15.2
*G4	15	7.52	2.40	0.40	100	7.2
**G5a	15	7.52	0.85	0.79	100	5.0
**G5b	15	7.52	0.49	0.41	100	1.5
**G5c	15	7.52	0.56	0.44	100	1.9
G6	15	7.52	0.97	0.60	100	4.4
G7	15	7.52	0.66	0.60	100	3.0

*G4 = SUB-AREA AND UNDEVELOPED RUN-OFF TO BE USED TO SIZE TEMPORARY 3'x3' DROP INLET AT END OF LATERAL G3-4
G4b = DRNG. AREA AND DEVELOPVED RESIDENTIAL RUN-OFF TO BE USED TO SIZE LATERAL G3-4

INLET		DESIGN STORM FREQUENCY (yr)	AREA RUNOFF Q=CIA					CARRY-OVER FROM UPSTREAM INLET (cfs)	TOTAL GUTTER FLOW (cfs)	GUTTER CAPACITY (cfs)	GUTTER SLOPE (ft/100 ft)	CROWN TYPE	SELECTED INLET		INLET CPACITY (cfs)	CARRY-OVER TO DOWNSTREAM INLET (cfs)
NO.	LOCATION (PAVING STATION)		TIME OF CONC. (min)	INTENSITY I (in/hr)	RUNOFF COEFF. "C"	AREA (ac)	"Q" (cfs)						LENGTH "LI" (feet)	TYPE		
1	2	3	4	5	6	7	8	9.0	10	11	12	13	14	15	16	16
G1	0+85.00 CYPRESS CREEK WAY	100	15	7.52	0.60	1.15	5.2	0.0	5.2	18.7	0.006	STRAIGHT CROWN	10	GRADE	6.3	0.0
G2	0+85.00 CYPRESS CREEK WAY	100	15	7.52	0.60	0.43	1.9	1.0	2.9	18.7	0.006	STRAIGHT CROWN	11	GRADE	7.3	0.0
G3a	4+50.00 CYPRESS CREEK WAY	100	15	7.52	0.60	0.50	2.3	0.0	1.5	18.7	0.006	STRAIGHT CROWN	10	SAG	6.3	0.0
G3	EX. AMENITY CENTER	100	15	7.52	0.70	1.25	6.6	0.0	6.6	-	-	-	11	DROP	12.0	0.0
*G4	FUTURE RESIDENTIAL	100	15	7.52	0.40	2.40	7.2	0.0	7.2	-	-	-	12	DROP	12.0	0.0
**G5a-c	FUTURE SCHOOL SITE	100	15	7.52	0.59	1.90	8.4	0.0	8.4	-	-	-	12	MH	12.0	0.0
G6	6+85.00 CYPRESS CREEK WAY	100	15	7.52	0.60	0.97	4.4	0.0	4.4	18.7	0.006	STRAIGHT CROWN	10	GRADE	6.3	0.0
G7	6+85.00 CYPRESS CREEK WAY	100	15	7.52	0.60	0.66	3.0	0.0	3.0	18.7	0.006	STRAIGHT CROWN	10	GRADE	6.3	0.0

*G4 = SUB-AREA AND UNDEVELOPED RUN-OFF TO BE USED TO SIZE TEMPORARY 3'x3' DROP INLET AT END OF LATERAL G3-4

LEGEND

- XX-X / AC / CFS — PROP. DRAINAGE AREA INFO
- XX-X / AC / CFS — SUB.DRAINAGE AREA INFO
- EX-X / AC / CFS — EX. DRAINAGE AREA INFO
- PROP. DRAINAGE AREA LINE
- EX. DRAINAGE AREA LINE
- OFF-SITE SURFACE FLOW
- ON-SITE SURFACE FLOW
- G1 — INLET NUMBER

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STATE OF TEXAS
ROBERT M. STENGELE
50145
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PROFESSIONAL ENGINEER
10-29-14

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LIGHT FARMS

DRAINAGE AREA MAP

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

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8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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SCALE	SHEET No.
1" = 80'	8
DATE	
29-OCT-2014	

PROJECT NUMBER: 01-3905-33

CAD FILE PATH: I:\proj\01390501\01390533 cypress creek extension\dwg\creo drainage map.dwg

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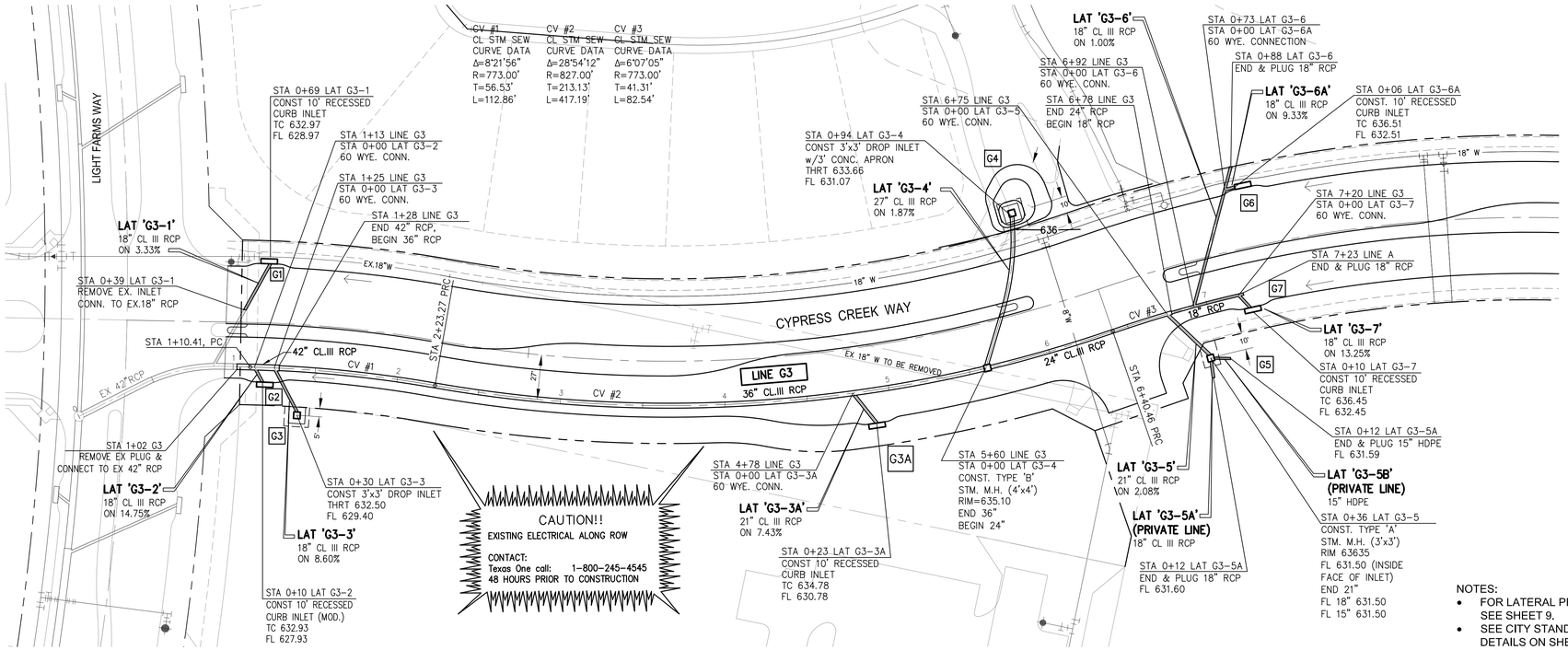
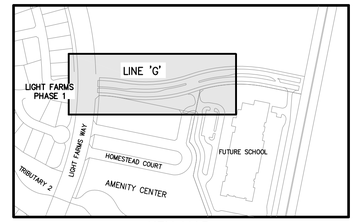
P-201311-02





KEY MAP
NTS

N

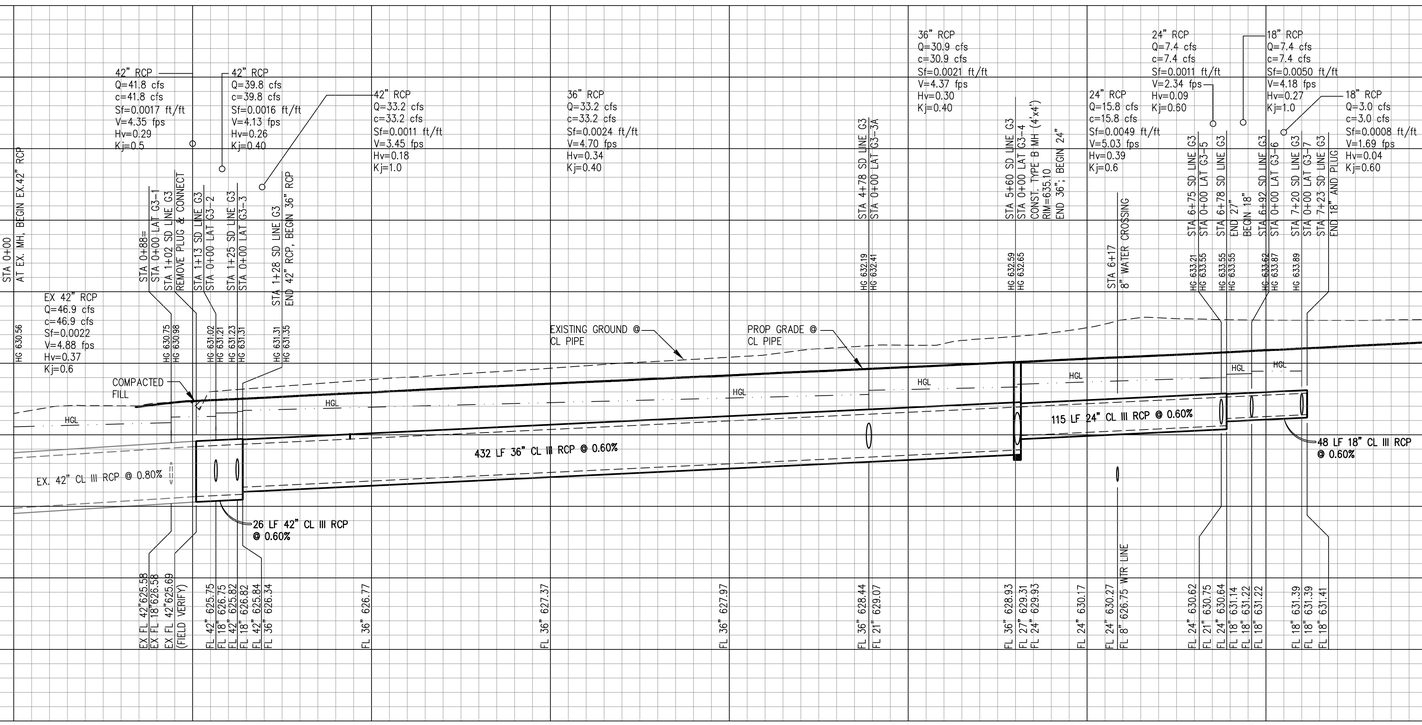
0' 20' 40' 80'

SCALE: 1" = 40' (HORIZONTAL)
1" = 5' (VERTICAL)

LEGEND

- PROPOSED STORM SEWER (RCP)
- EXISTING STORM SEWER (RCP)
- PROPOSED STORM INLET
- EXISTING STORM INLET
- SURFACE FLOW DIRECTION
- PROPOSED DROP INLET
- PROPOSED STORM MANHOLE

NOTES:
- FOR LATERAL PROFILES SEE SHEET 9.
- SEE CITY STANDARD DRAINAGE DETAILS ON SHEETS CS5-CS7
- LAT G3-5A & G3-5B TO BE MAINTAINED BY PISD.



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LIGHT FARMS

STORM DRAINAGE PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

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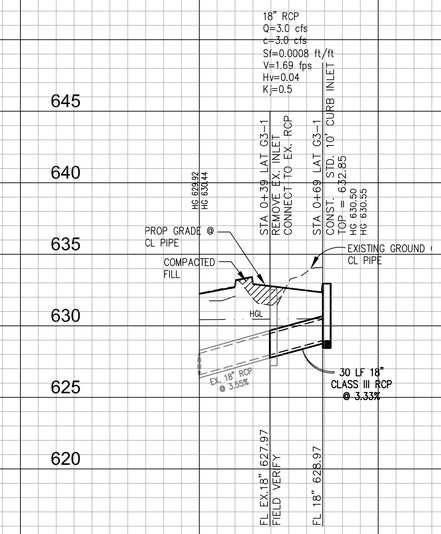
SCALE	SHEET No.
1" - 40'	9
DATE	
29-OCT-2014	

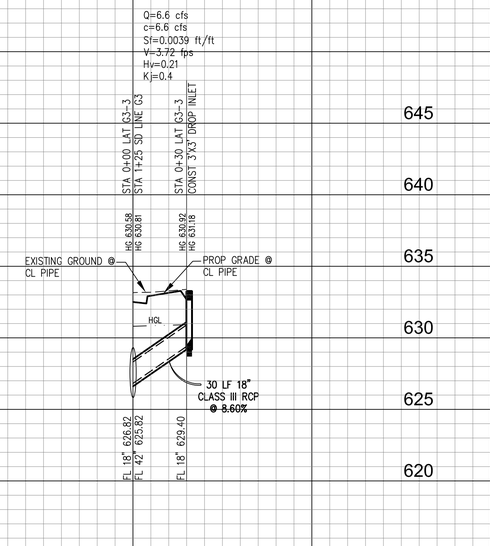
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\013905010\01390533 Cypress Creek Extension\dwg\04-01 STORM DRAINAGE PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 2:04pm XREFS: BASE Cypress Creek GBS BASE-GRADING Cypress Creek KEY MAP PROF STORM BASE-STORM Cypress Creek PROF STREET LF-MASTER-BASE BASE-UTIL Cypress Creek LF-MASTER-UTI

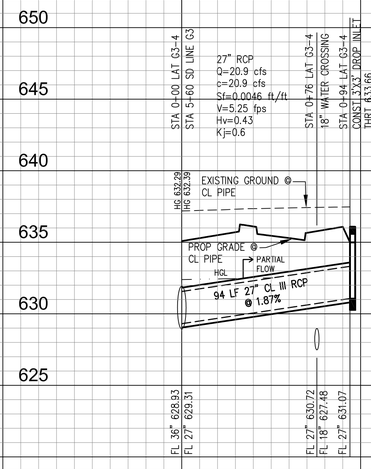
CAD FILE PATH: \proj\013905010\01390533 cypress creek extension\dwg\04-01 storm drainage plan.dwg



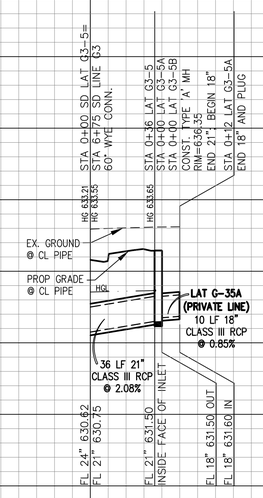
LAT G3–1



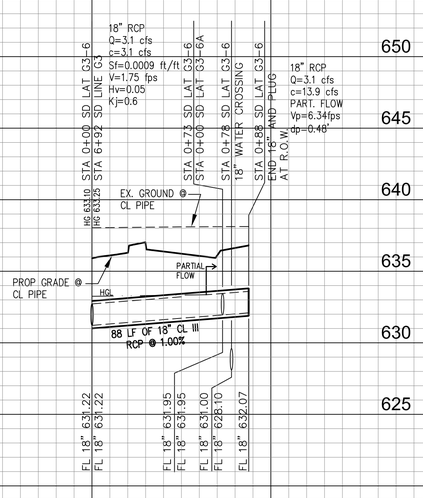
LAT G3–3



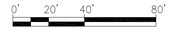
LAT G3–4



LAT G3–5



LAT G3–6



SCALE: 1" = 40' (HORIZONTAL)
1" = 5' (VERTICAL)

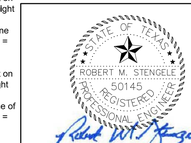
BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

BM # 79 - Brass monument set on top of curb, southeast side of Light Farms Way, 520+- feet southwesterly from the centerline of Wildrye Ridge, Elev. = 635.51'

BM # 80 - Brass monument set on curb inlet, southeast side of Light Farms Way, 79+- feet northeasterly from the centerline of Wildrye Ridge. Elev. = 633.47'

BM # 81 - Brass monument set on curb inlet, east side of Light Farms Way, 186+- feet southerly from the centerline of Cypress Creek Road. Elev. = 632.00



Huitt-Zollars, Inc.
Firm Registration No. F-761

RECORD DRAWING:

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LIGHT FARMS

STORM DRAINAGE PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
Phone (214) 292-3410 Fax (214) 292-3411

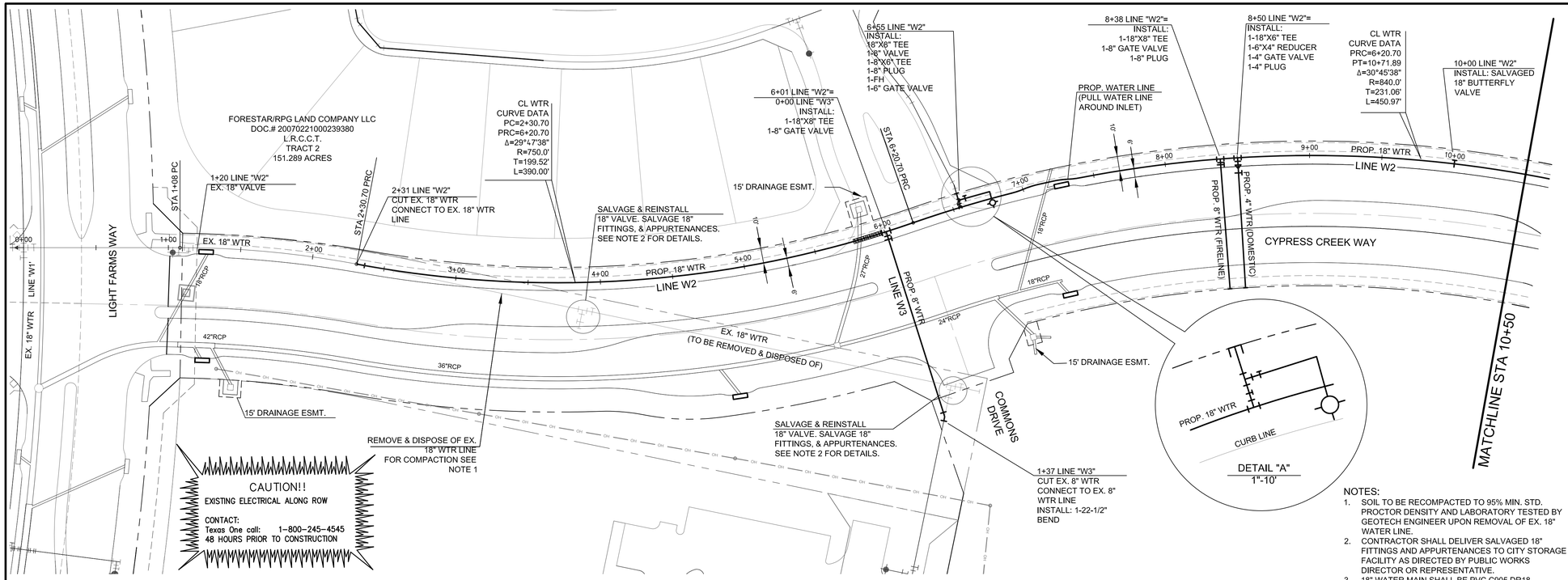
HUITT-ZOLLARS
Huitt-Zollars, Inc. Dallas
1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE	SHEET No.
DATE 29-OCT-2014	10

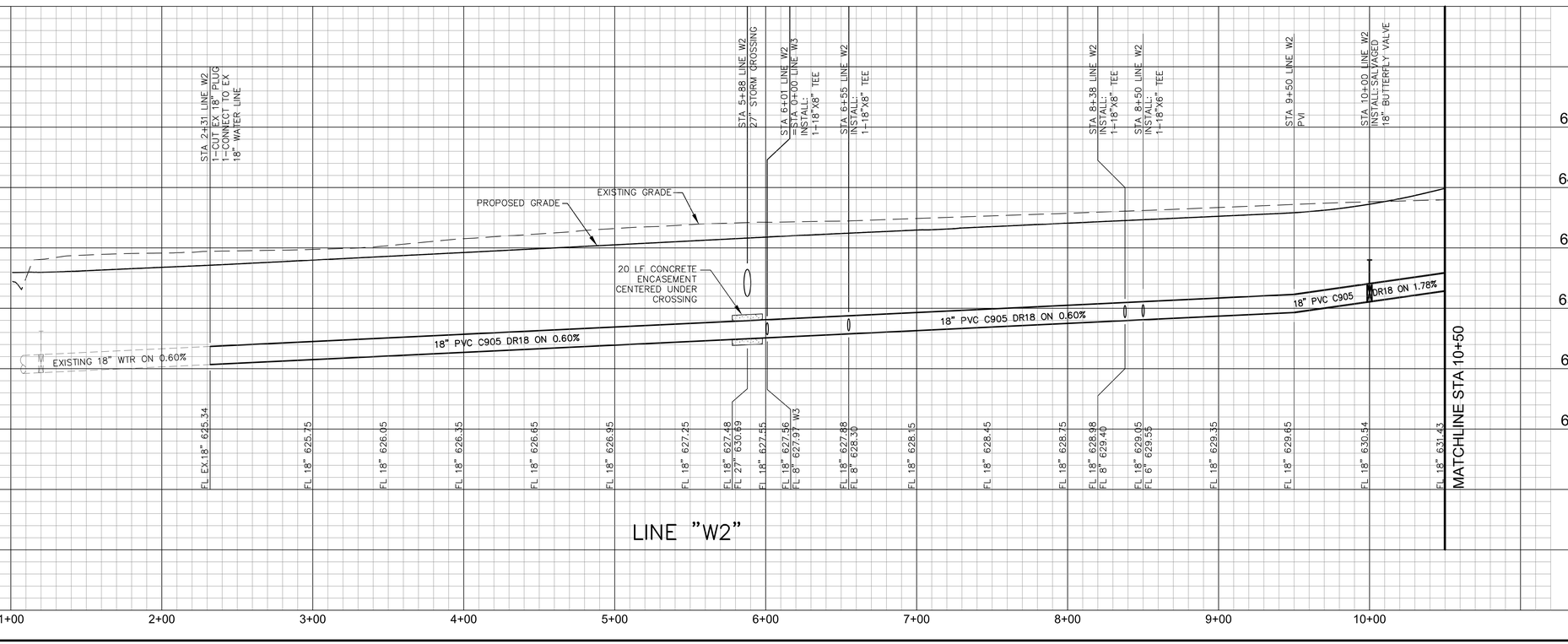
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\04-01 STORM DRAINAGE PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 2:06pm XREFS: BASE Cypress Creek GBS BASE-GRADING Cypress Creek KEY MAP PROF STORM BASE-STORM Cypress Creek PROF STREET LF-MASTER-BASE BASE-UTIL Cypress Creek LF-MASTER-UTI
CAD FILE PATH: \\proj\01390501\01390533 cypress creek extension\dwg\04-01 storm drainage plan.dwg

P-201311-02



NOTES:
1. SOIL TO BE RECOMPACTED TO 95% MIN. STD. PROCTOR DENSITY AND LABORATORY TESTED BY GEOTECH ENGINEER UPON REMOVAL OF EX. 18" WATER LINE.
2. CONTRACTOR SHALL DELIVER SALVAGED 18" FITTINGS AND APPURTENANCES TO CITY STORAGE FACILITY AS DIRECTED BY PUBLIC WORKS DIRECTOR OR REPRESENTATIVE.
3. 18" WATER MAIN SHALL BE PVC C905 DR18.
4. SEE CITY STANDARD WATER DETAILS ON SHEETS CS8-CS9.



BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

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STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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LIGHT FARMS

WATER PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
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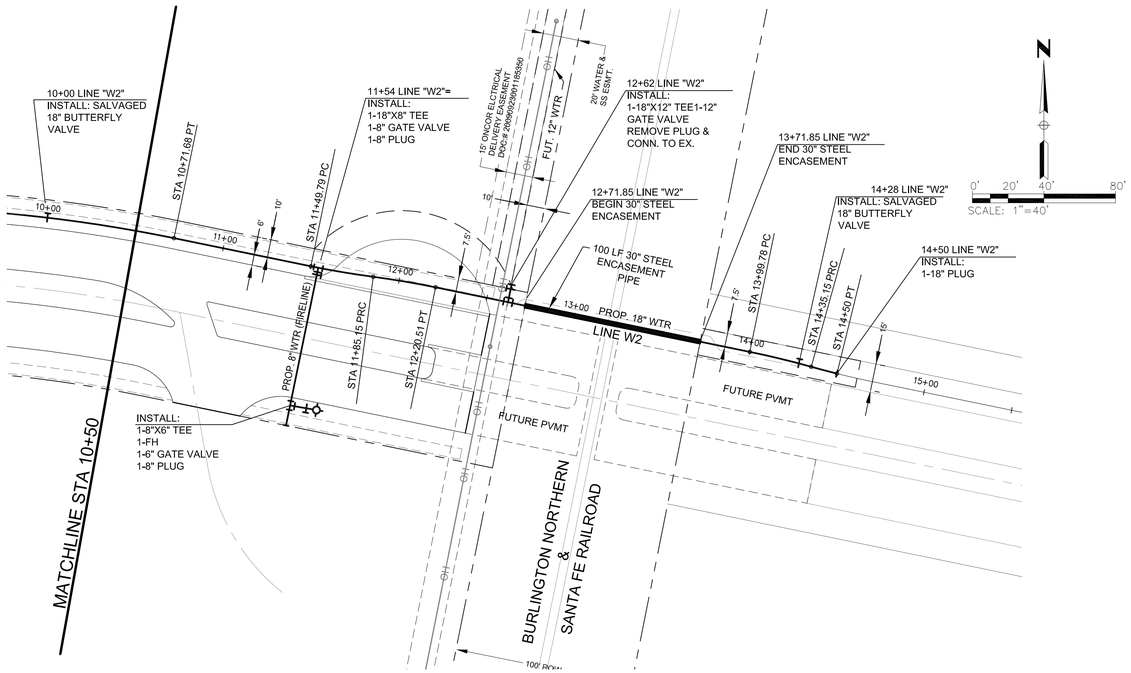
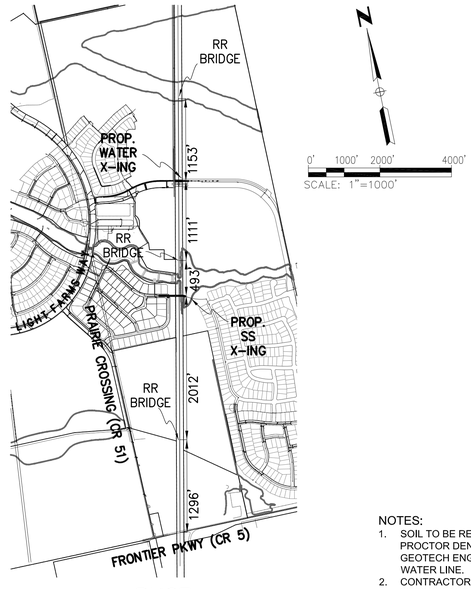
SCALE	SHEET No.
H = 1" = 40' V = 1" = 5'	11
DATE 29-OCT-2014	

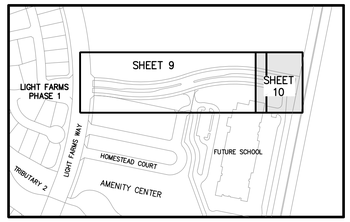
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\013905\01\1390533 Cypress Creek Extension\dwg\04-01 UTILITY PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 2:07pm XREFS: LF-MASTER-BASE v2007271f64- h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek GBS BASE-EXISTING Cypress Creek BASE-GRADING Cypress Creek PROF UTIL KEY MAP BASE LF-MASTER-UTI
CAD FILE PATH: I:\proj\013905\01\1390533 cypress creek extension\dwg\04-01 utility plan.dwg





BNSF
RAILROAD STRUCTURE
LOCATION



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3. 18" WATER MAIN SHALL BE PVC C905 DR18.
4. SEE CITY STANDARD WATER DETAILS ON SHEETS CS8-CS9.

LEGEND

- PROPOSED WATER MAIN (PVC)
- EXISTING WATER MAIN (PVC)
- EXISTING WATER MAIN TO BE REMOVED(PVC)
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- EXISTING WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED STORM SEWER
- EXISTING ROW TO BE REMOVED

LINE "W2" CONT.

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

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STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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LIGHT FARMS

WATER PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
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Huitt-Zollars, Inc. Dallas
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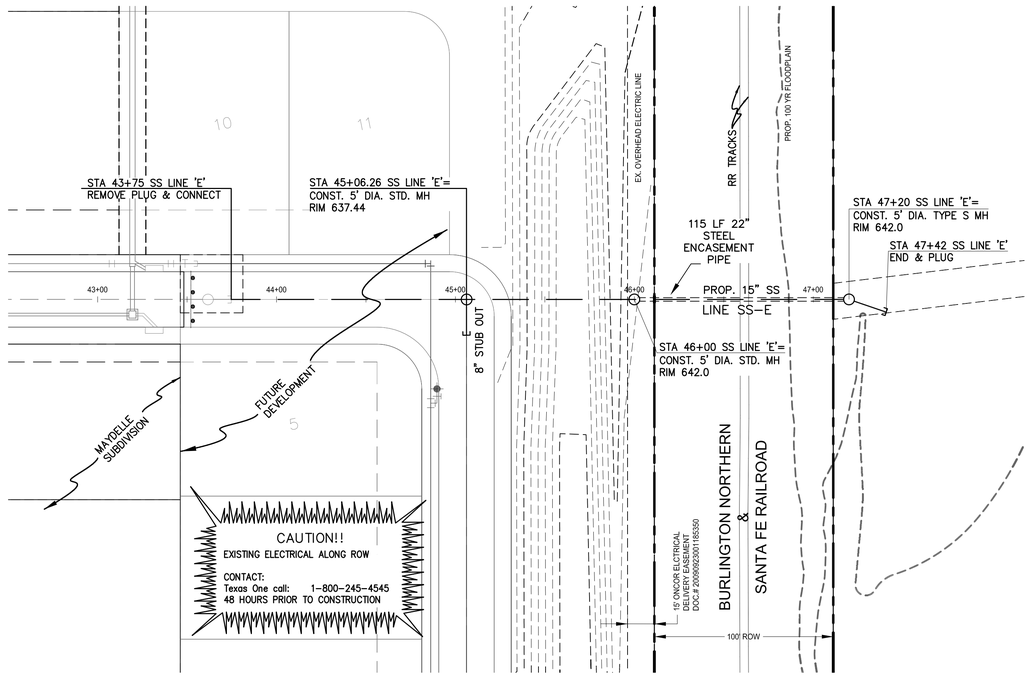
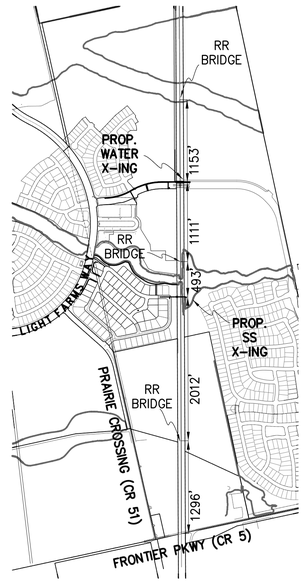
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE	SHEET No.
H = 1" - 40' V = 1"- 5'	12
DATE 29-OCT-2014	

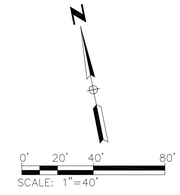
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\04-01 UTILITY PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 2:13pm XREFS: LF-MASTER-BASE v2007271641-h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek BASE-EXISTING Cypress Creek GBS PROF UTIL KEY MAP BASE LF-MASTER-UTI
CAD FILE PATH: \proj\01390501\01390533 cypress creek extension\dwg\04-01 utility plan.dwg





BNSF
RAILROAD STRUCTURE
LOCATION



LEGEND

- PROPOSED WATER MAIN (PVC)
- EXISTING WATER MAIN (PVC)
- PROPOSED SANITARY SEWER (PVC)
- EXISTING SANITARY SEWER (PVC)
- PROPOSED FIRE HYDRANT
- EXISTING FIRE HYDRANT
- PROPOSED SANITARY SEWER M.H.
- EXISTING SANITARY SEWER M.H.
- PROPOSED WATER VALVE
- EXISTING WATER VALVE

NOTE:

1. 15" WASTEWATER MAIN SHALL BE PVC SDR26.
2. REF. BNSF PERMIT & SPECIFICATIONS FOR WORK IN AND ADJACENT TO RAILROAD.
3. SEE CITY STANDARD WASTEWATER DETAILS ON SHEETS CS10 & CS11.

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

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STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

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LIGHT FARMS

SANITARY SEWER PLAN & PROFILE

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
Phone (214) 292-3410 Fax (214) 292-3411

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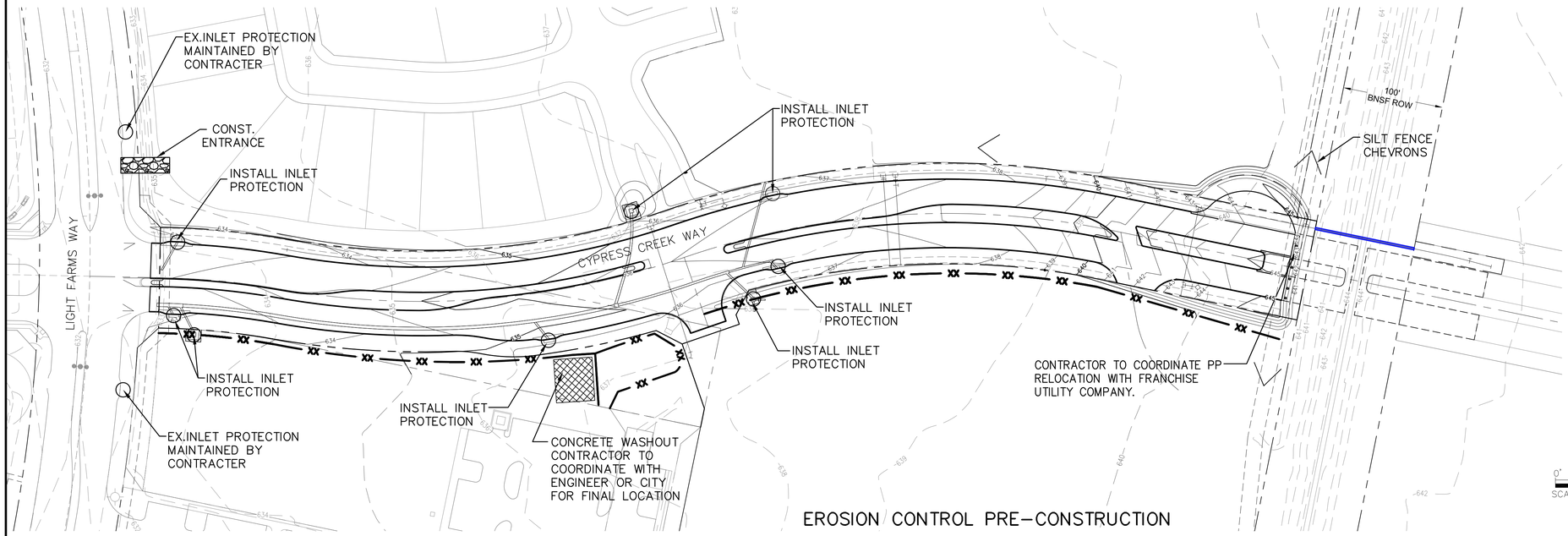
1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE H = 1" - 40' V = 1" - 5'
DATE 29-OCT-2014
SHEET No. 13

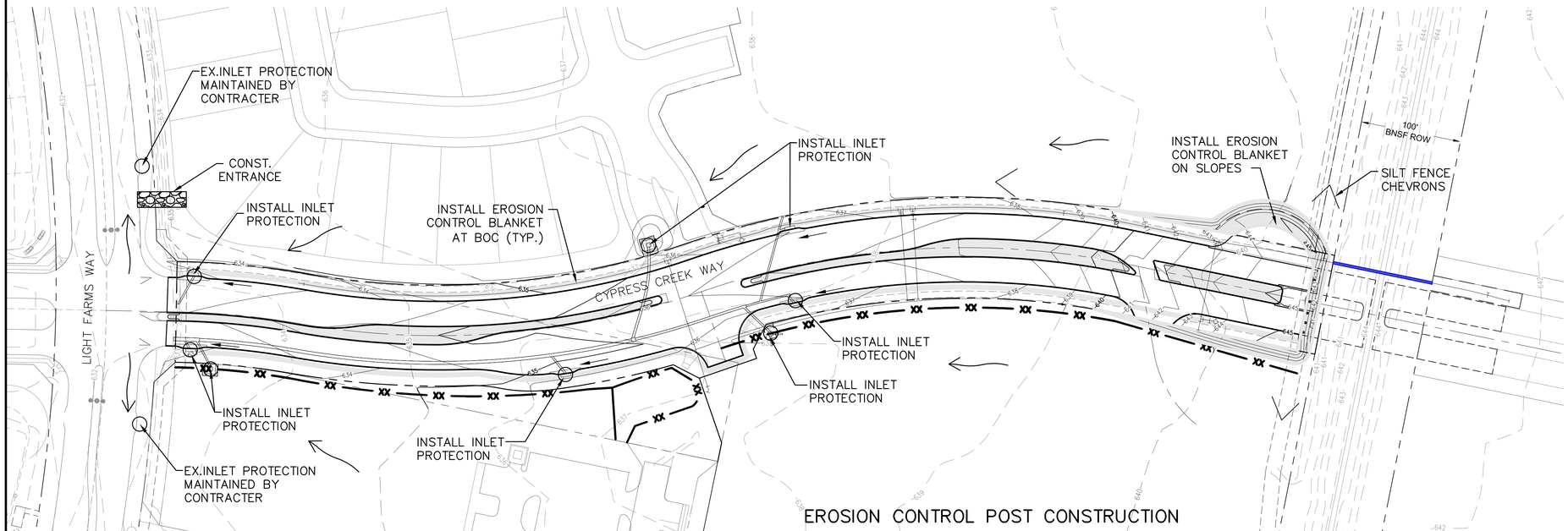
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\04-02 SANITARY SEWER PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 2:11pm XREFS: LF-MASTER-BASE v2007271f64- h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek GBS
BASE-EXISTING Cypress Creek GBS BASE-GRADING Cypress Creek PROF UTIL 03-01 GRADING PLAN-4 20130702 BASE
CAD FILE PATH: I:\proj\01390501\01390533 cypress creek extension\dwg\04-02 sanitary sewer plan.dwg

P-201311-02



EROSION CONTROL PRE-CONSTRUCTION



EROSION CONTROL POST CONSTRUCTION

AREA OF DISTURBANCE = 3.7 AC.

PHASES OF EROSION CONTROL

A. GRADING/EXCAVATION
1. INSTALL SILT FENCE
2. INSTALL CONSTRUCTION ENTRANCE
3. INSTALL SEDIMENT BASIN
4. INSTALL INLET PROTECTIONS ON EXISTING INLETS

B. UTILITIES
1. MAINTAIN SILT FENCE. INSTALL SILT FENCE AROUND ALL STORM SEWER MANHOLES
2. MAINTAIN CONSTRUCTION ENTRANCE
3. INSTALL INLET PROTECTIONS ON NEW INLETS

C. PAVING
1. MAINTAIN SILT FENCE
2. REMOVE CONSTRUCTION ENTRANCE
3. INSTALL CONCRETE WASHOUT AREA
4. INSTALL EROSION CONTROL BLANKET ALONG BACK OF CURB

NOTE:
1. PAVING CONTRACTOR REQUIRED TO REPAIR AND/OR REPLACE EXISTING EROSION CONTROL DEVICES CAUSE BY HIS ACTIVITY.
5. SEE EROSION CONTROL DETAILS ON SHEET 16.

LEGEND
- SILT FENCE
- CONCRETE WASHOUT AREA
- CLEARING LIMITS
- INLET PROTECTION
- PROPOSED OFFSITE FLOW
- PROPOSED ONSITE FLOW
- SILT FENCE CHEVERONS
- EROSION CONTROL BLANKET
- CONST ENTRY/EXIT

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

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STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

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LIGHT FARMS

EROSION CONTROL PLAN

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

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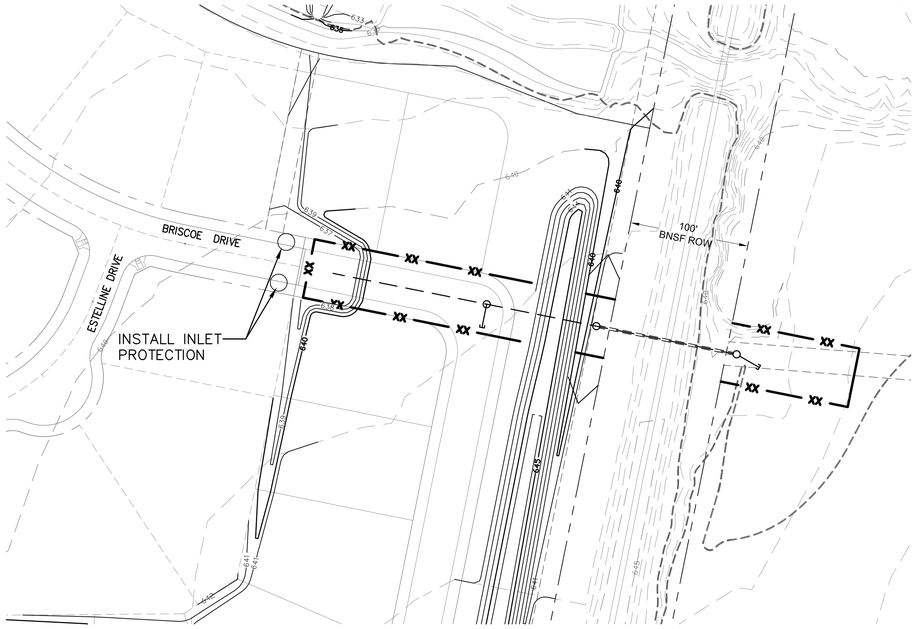
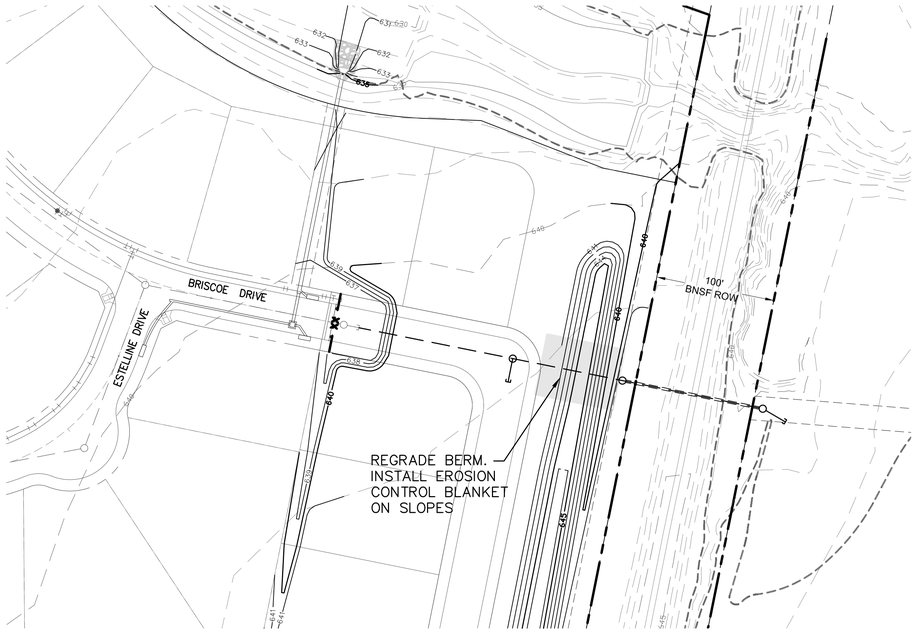
SCALE	SHEET No.
1" - 60'	14
DATE	
29-OCT-2014	

PROJECT NUMBER: 01-3905-33

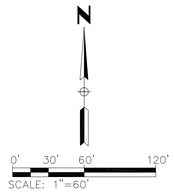
DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\06-01 EROSION PLAN.dwg
DATE: Oct 29, 2014 2:19pm
XREFS: LF-MASTER-BASE v200727184- h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek GBS BASE-GRADING Cypress Creek BASE CONTOURS
USER: dloeffel
CAD FILE PATH: I:\proj\01390501\01390533 cypress creek extension\dwg\06-01 erosion plan.dwg



EROSION CONTROL PRE-CONSTRUCTION



EROSION CONTROL POST CONSTRUCTION



AREA OF DISTURBANCE = 0.4 AC.

PHASES OF EROSION CONTROL

A. SANITARY SEWER
1. INSTALL SILT FENCE
2. MAINTAIN MAYDELLE CONSTRUCTION ENTRANCE.
4. INSTALL INLET PROTECTIONS ON EXISTING INLETS

B. POST CONSTRUCTION
1. MAINTAIN SILT FENCE AT END OF EXISTING STREET.
2. REMOVE CONSTRUCTION ENTRANCE
3. INSTALL EROSION CONTROL BLANKET ON REGRADED BERM AREAS.

NOTE:
CONTRACTOR REQUIRED TO REPAIR AND/OR REPLACE EXISTING EROSION CONTROL DEVICES CAUSE BY HIS ACTIVITY.

LEGEND

- SILT FENCE
- CONCRETE WASHOUT AREA
- CLEARING LIMITS
- INLET PROTECTION
- PROPOSED OFFSITE FLOW
- PROPOSED ONSITE FLOW
- SILT FENCE CHEVERONS
- EROSION CONTROL BLANKET
- CONST ENTRY/EXIT

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STATE OF TEXAS
ROBERT M. STENGELE
50145
REGISTERED
PROFESSIONAL ENGINEER
10-29-14

Huitt-Zollars, Inc.
Firm Registration No. F-761

RECORD DRAWING:
THIS DRAWING HAS BEEN MODIFIED FROM THE ORIGINAL TO SHOW ONLY THE FIELD CHANGED AND ADJUSTMENTS MAE DURING CONSTRUCTION BY THE CONTRACTOR WHICH WERE DOCUMENTED AND FURNISHED TO THE ENGINEER FOR THE PURPOSE OF PREPARING THERE RECORD DRAWINGS. FIELD INSPECTION OF CONSTRUCTION WAS PERFORMED BY OTHERS. TO THE BEST OF OUR KNOWLEDGE AND UNDERSTANDING THESE RECORD DRAWINGS REPRESENT THE "AS-BUILT" CONDITIONS.

LIGHT FARMS

EROSION CONTROL PLAN

CYPRESS CREEK WAY EXTENSION

COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO.1

COLLIN COUNTY, TEXAS

LFC LAND COMPANY, LLC
8401 North Central Expressway, Suite 350, Dallas, Texas 75225
Phone (214) 292-3410 Fax (214) 292-3411

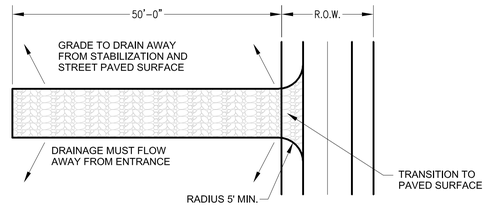
HUITT-ZOLLARS
Huitt-Zollars, Inc. Dallas
1717 McKinney Avenue, Suite 1400
Dallas, Texas 75202-1236
Phone (214) 871-3311 Fax (214) 871-0757

SCALE	SHEET No.
1" - 60'	15
DATE	
29-OCT-2014	

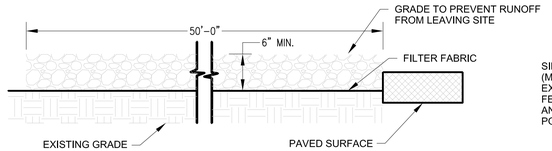
PROJECT NUMBER: 01-3905-33

DWG: I:\proj\01390501\01390533 Cypress Creek Extension\dwg\06-01 EROSION PLAN.dwg USER: dloeffel
DATE: Oct 29, 2014 2:21pm XREFS: LF-MASTER-BASE v200727164- h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek
GBS BASE-GRADING Cypress Creek BASE CONTOURS

CAD FILE PATH: I:\proj\01390501\01390533 cypress creek extension\dwg\06-01 erosion plan.dwg



PLAN



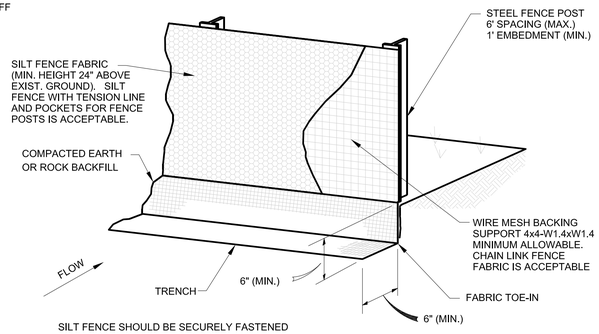
PROFILE

STABILIZED CONSTRUCTION ENTRANCE / EXIT

NCTCOG 02270.G
STORM WATER QUALITY
BEST MANAGEMENT PRACTICES
FOR CONSTRUCTION ACTIVITIES

DETAIL 'A'
N.T.S.

The Stabilized Construction Entrance / Exit Is To Be Used As A Vehicle Wash Down Area For Debris And Soil Removal Before Exiting The Site Onto The Existing Roadway. Location For Installation Should Be Identified On The Project's Erosion Control Plan. An Alternate Location Must Be Approved By Owner Or Engineer Prior To Installation. Stabilized Construction Entrance / Exit Shall Be Top Dressed With Additional Stone As Necessary.

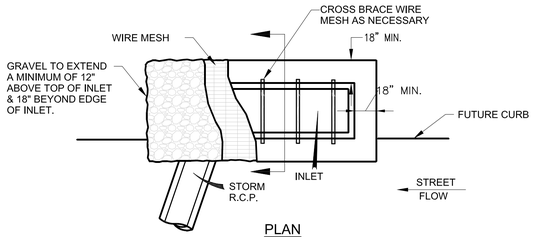


SILT FENCE SHOULD BE SECURELY FASTENED TO BACKING SUPPORT AND POSTS.

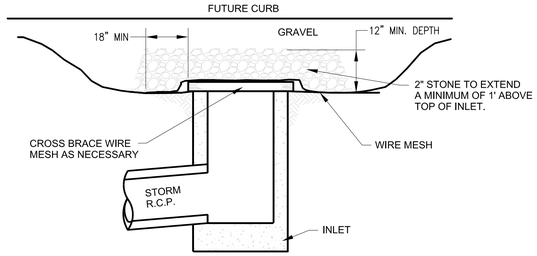
SILT FENCE

NCTCOG 02270.B
STORM WATER QUALITY
BEST MANAGEMENT PRACTICES
FOR CONSTRUCTION ACTIVITIES

DETAIL 'B'
N.T.S.



PLAN



CROSS-SECTION

INLET PROTECTION WIRE MESH & GRAVEL

NCTCOG 02270.G
STORM WATER QUALITY
BEST MANAGEMENT PRACTICES
FOR CONSTRUCTION ACTIVITIES

DETAIL 'C'
N.T.S.

CONTRACTOR SHALL INTERCEPT FLOW AND INSTALL INLET PROTECTION MEASURES AS SOON AS PRACTICABLE.

SILT FENCE GENERAL NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

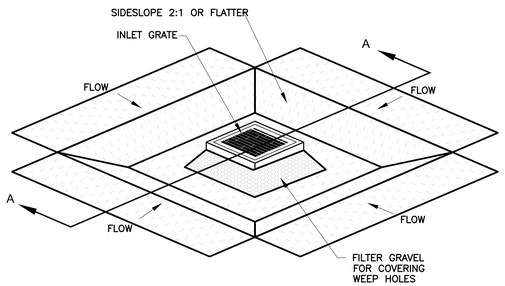
4.SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT
POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.

5. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

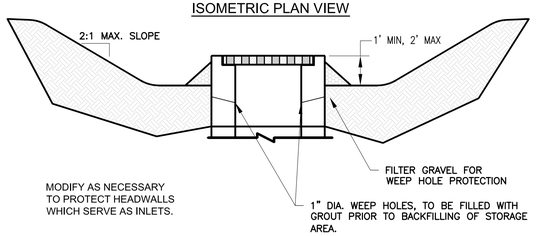
6. INSPECTION SHALL BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

7. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY.
STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF
HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO TO ADDITIONAL SILTATION.



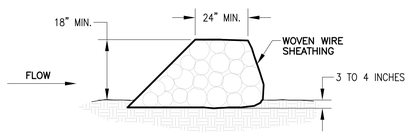
ISOMETRIC PLAN VIEW



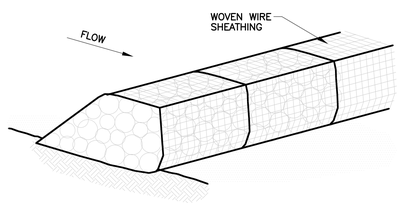
SECTION A-A

EXCAVATED IMPOUNDMENT INLET PROTECTION

DETAIL 'D'
N.T.S.



CROSS SECTION

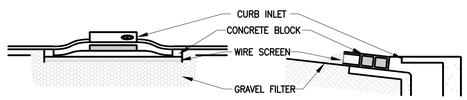


ISOMETRIC PLAN VIEW

ROCK BERM

DETAIL 'E'
N.T.S.

METHODOLOGY APPLIES TO RECESSED AND STANDARD CURB INLETS. CARE SHOULD BE TAKEN TO KEEP MEASURE OUT OF TRAFFIC.



CURB INLET PROTECTION

DETAIL "F"
N.T.S.

BASIS OF VERTICAL DATUM - NAVD 1988 based on National Geodetic Survey Benchmarks N-185 (Elevation 650.78') and H263 (Elevation - 643.81')

BENCHMARKS:

BM # 79 - Brass monument set on top of curb, southeast side of Light Farms Way, 520+- feet southwesterly from the centerline of Wildrye Ridge, Elev. = 635.51'

BM # 80 - Brass monument set on curb inlet, southeast side of Light Farms Way, 79+- feet northeasterly from the centerline of Wildrye Ridge. Elev. = 633.47'

BM # 81 - Brass monument set on curb inlet, east side of Light Farms Way, 186+- feet southerly from the centerline of Cypress Creek Road, Elev. = 632.00

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LIGHT FARMS

EROSION CONTROL DETAILS

CYPRESS CREEK WAY EXTENSION

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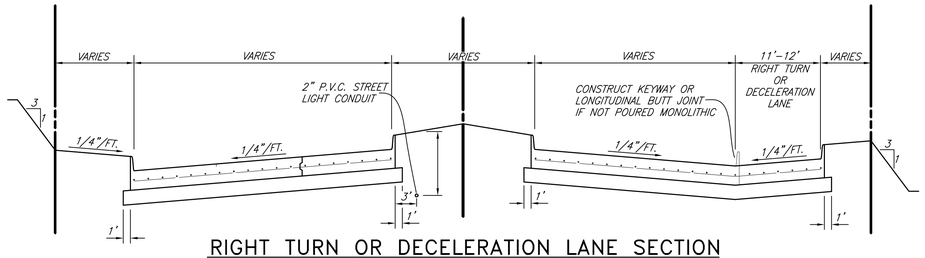
SCALE 1" = 80'
DATE 29-OCT-2014
SHEET No. 16

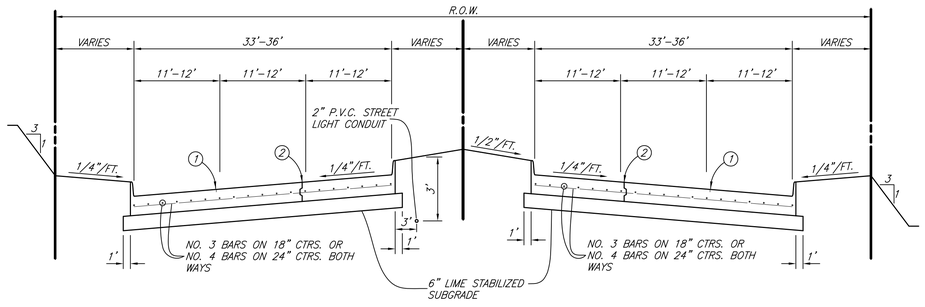
PROJECT NUMBER: 01-3905-33

DWG: i:\proj\01390501\01390533 Cypress Creek Extension\dwg\06-01 EROSION PLAN.dwg USER: aloeffel
DATE: Oct 29, 2014 3:08pm XREFS: L1-MASTER-BASE v2007271764- h base BASE-UTIL Cypress Creek BASE Cypress Creek BASE-STORM Cypress Creek BASE-GRADING Cypress Creek GBS BASE Cypress Creek CONTOURS

CAD FILE PATH: i:\proj\01390501\01390533 cypress creek extension\dwg\06-01 erosion plan.dwg



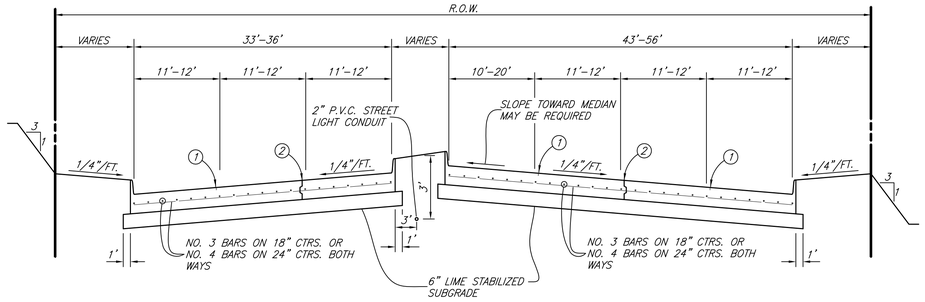
RIGHT TURN OR DECELERATION LANE SECTION



REGULAR SECTION

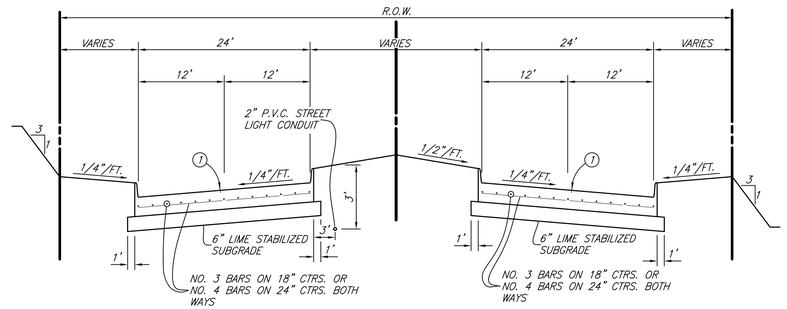
M6D & P6D

(REG_SECT)



LEFT TURN SECTION

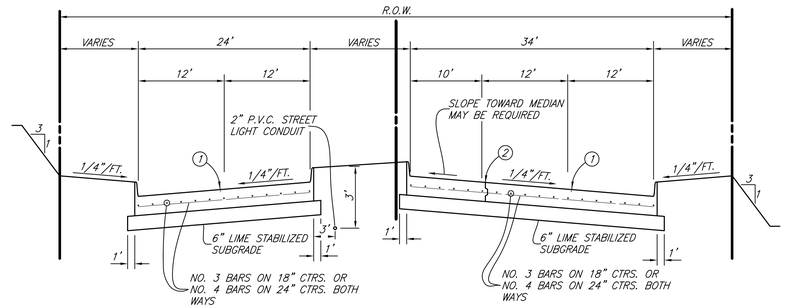
(LTURN_SECT)



REGULAR SECTION

M4D

(REG_SECT2)



LEFT TURN SECTION

NOTE:
FOR RETROFIT TURN LANES AND MEDIAN OPENINGS. TWO ADDITIONAL INCHES OF CONCRETE CAN BE PLACED IN LIEU OF LIME STABILIZATION.

(LTURN_SECT2)

M60, P60, M4D SECTIONS SHALL HAVE MINIMUM PAVEMENT THICKNESS OF 8 INCHES.

LIME STABILIZED SUBGRADE – THE RATE OF HYDRATED LIME SHALL BE 7 1/2% BY UNIT DRY WEIGHT OR THAT PERCENT TO REDUCE THE SOIL P.I. TO LESS THAN 15. CONTRACTOR TO PROVIDE CITY WITH LIME SERIES TEST TO DETERMINE THE OPTIMUM LIME CONTENT.

LEGEND

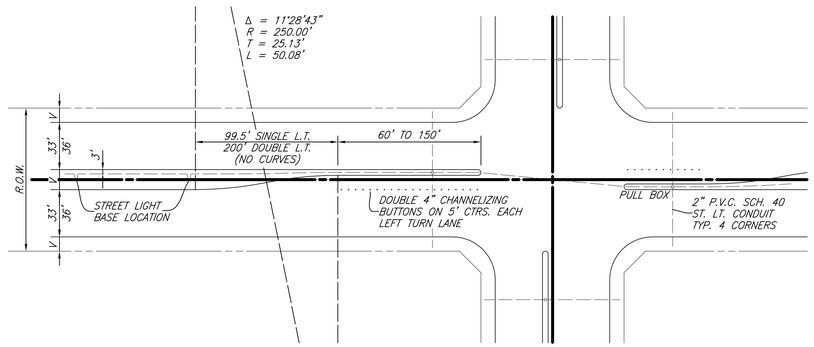
① – *SAWED LONGITUDINAL DUMMY JOINT*

A. CONSTRUCTION JOINT (FULL WIDTH PVMT. IS ALLOWED WHERE APPROVED BY CITY).

② – *B. DELETE IT WHEN PAVING IS 25 FT. WIDTH TO BE WIDENED IN FUTURE.*

C. INSTALL CURB IF PAVING IS LESS THAN FULL WIDTH OF 33'-36'.

(LEGNED_PVMT)



LEFT TURN PLAN

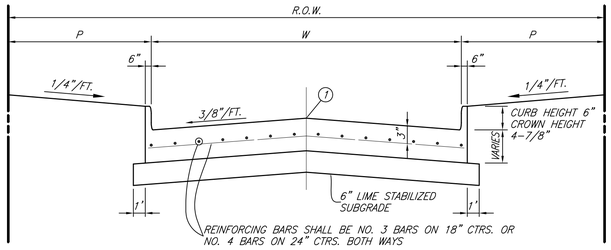
(PVMT-PLAN)

CITY OF CELINA, TEXAS

PAVING

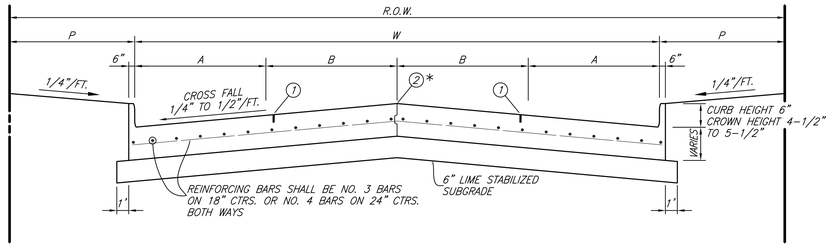
STANDARD DETAILS CS1

P-201311-02



REGULAR SECTION

R2U
C2U



REGULAR SECTION

C4U
M4U
M5U

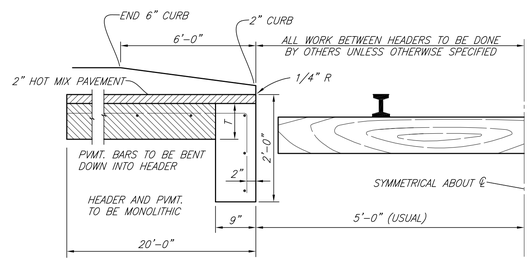
(PARA_SECT)

LEGEND

① – SAWED LONGITUDINAL DUMMY JOINT

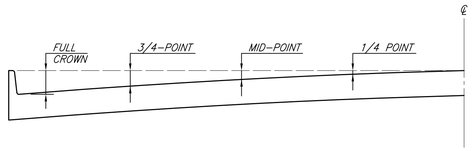
② – CONSTRUCTION JOINT (FULL WIDTH PVMT. IS ALLOWED WHERE APPROVED BY CITY)

(LEGEND_PVMT2)



RAIL HEADER

(RR-HEADER)



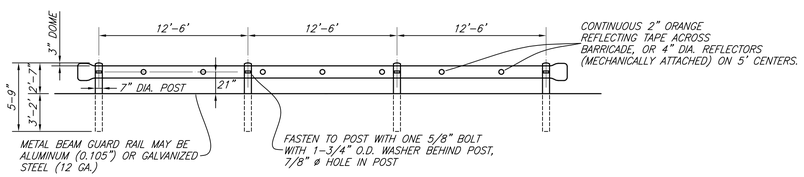
ROADWAY WIDTH (W)	TOTAL CROWN HEIGHT	3/4 POINT	MID-POINT	1/4 POINT
26'	4"	2-1/4"	1"	1/4"
36'	6"	3-3/8"	1-1/2"	3/8"
44'	6"	3-3/8"	1-1/2"	3/8"

TABLE OF CROWN HEIGHTS AND ORDINATES FOR VARIOUS PARABOLIC SECTIONS

SLIP-FORM PAVEMENT MUST MEET CROWN GRADES AT GUTTERS, AT MID-POINTS & ℄

PARABOLIC ROADS ONLY TO BE CONSTRUCTED WITH SLIP FORM PAVERS

(PARA-TABLE)

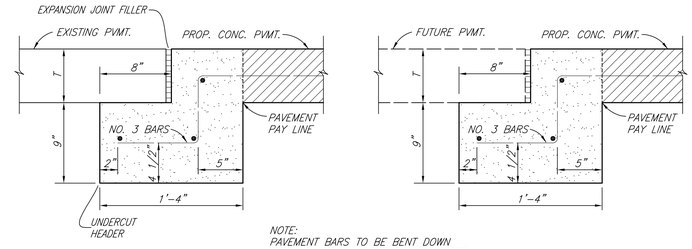


NON CONSTRUCTION BARRICADES (PERMANENT BARRICADES) SHALL CONSIST OF TxDOT GF(TD)-87 METAL BEAM GUARD FENCE WITH TERMINAL CONNECTOR SECTIONS AT EACH END. PERMANENT BARRICADES SHALL BE MANUFACTURED AND CONSTRUCTED IN ACCORDANCE WITH TxDOT DETAILS. BARRICADE SHALL EXTEND FROM OUTSIDE CURB TO OUTSIDE CURB.

TYPICAL PERMANENT BARRICADE DETAIL

(PERM-BARRICADE)

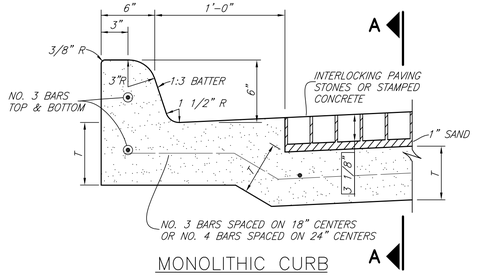
R2U, C2U, C4U, M4U & M5U PAVING SECTIONS SHALL HAVE A MINIMUM PAVEMENT THICKNESS OF 6 INCHES.



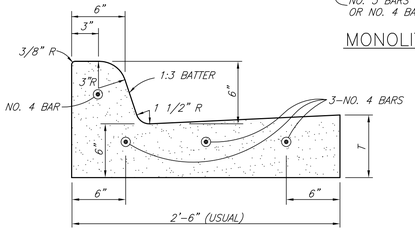
NOTE:
PAVEMENT BARS TO BE BENT DOWN INTO HEADER. PAVEMENT AND HEADER SHALL BE MONOLITHIC.

STREET HEADER

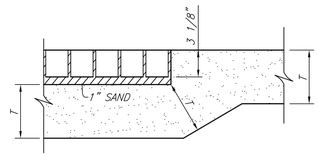
(HEADER)



MONOLITHIC CURB



SEPARATE CURB AND GUTTER



SECTION A-A

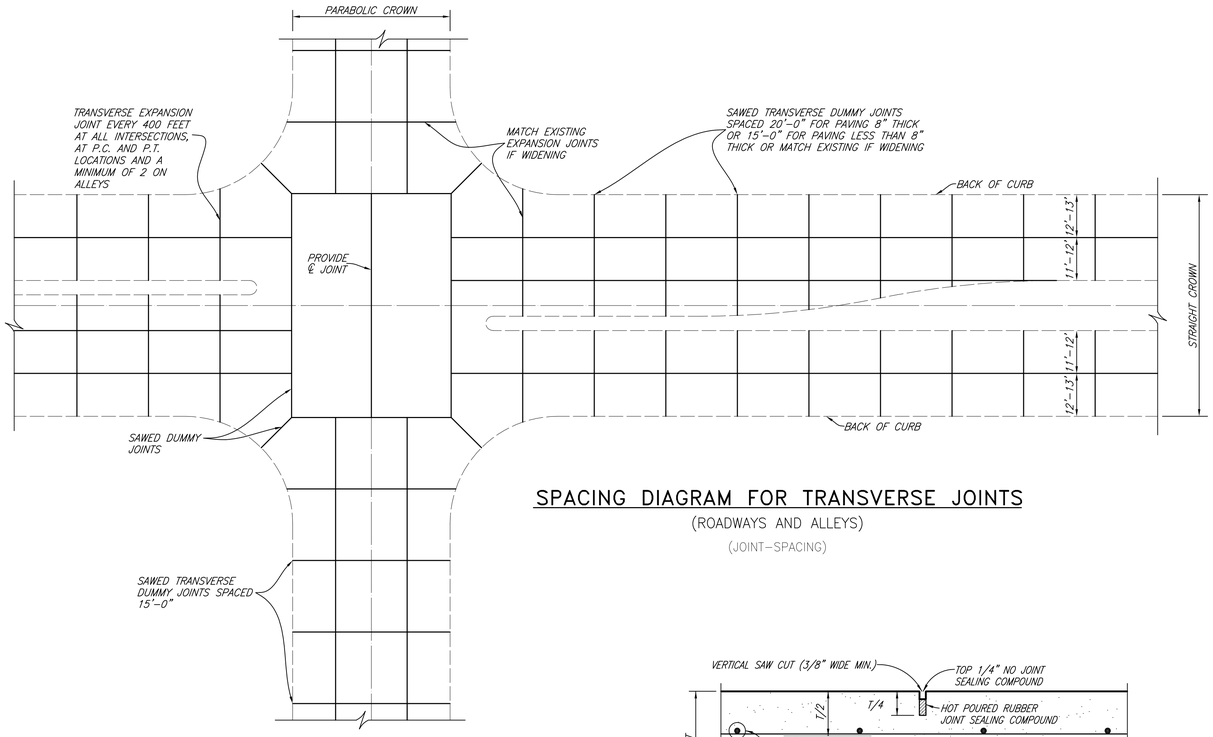
PAVING STONES SHALL BE PER NCTCOG ITEMS 2.3.7 AND 5.8 OF SPECIAL PROVISIONS

CURB AND CURB AND GUTTER

(CURB-GUT)

CITY OF CELINA, TEXAS

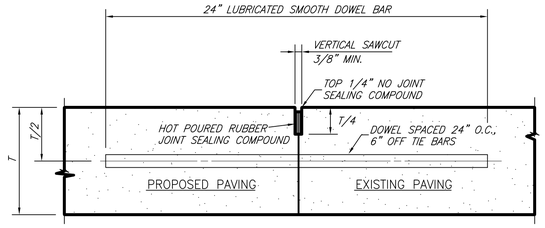
PAVING
STANDARD DETAILS – CS2



SPACING DIAGRAM FOR TRANSVERSE JOINTS

(ROADWAYS AND ALLEYS)

(JOINT-SPACING)

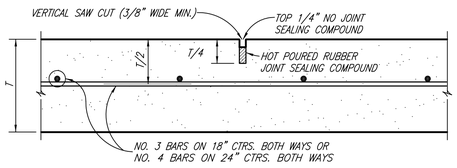


NOTE:

1. T-8" AND GREATER NO. 6 BAR, T-6" AND LESS NO. 5 BAR
2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. HAND DRILLING NOT ACCEPTABLE. DAMAGE TO EXISTING PAVEMENT SHALL BE REMOVED BY CONTRACTOR AND JOINT CONSTRUCTED AT CONTRACTORS EXPENSE.
4. DOWEL BAR SHOWN IS IN ADDITION TO TIE BARS (12" O.C.-6" OFF DOWELS).
5. TIE BARS SHALL BE NO. 5 BAR DEFORMED. TIE BAR SHALL HAVE A LENGTH OF 24 INCHES.

LONGITUDINAL BUTT JOINT

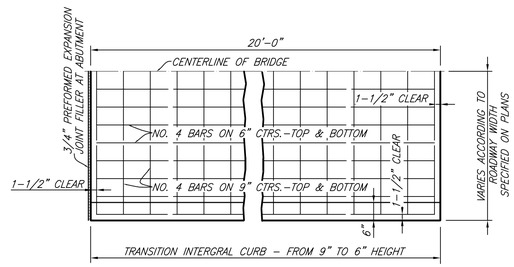
(BUTTJNT)



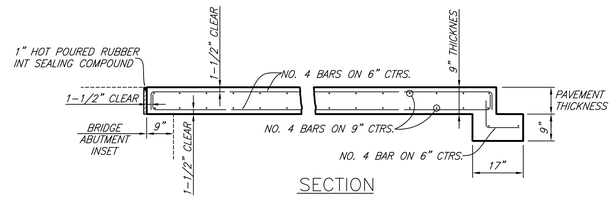
TRANSVERSE JOINTS SPACED 15 FT. C.-C. (MAX.)
LONGITUDINAL JOINTS SPACED 20 FT. C.-C. (MAX.)

SAWED DUMMY JOINT

(DUMMYJNT)



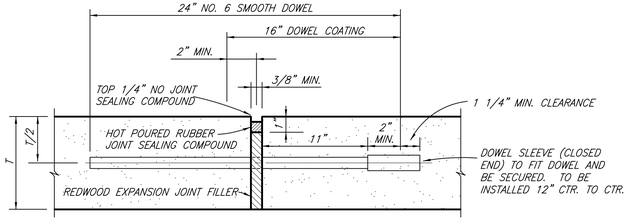
PLAN



SECTION

BRIDGE APPROACH SLAB

(APPROACHSLAB)

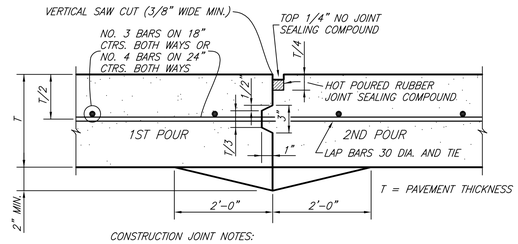


TRANSVERSE EXPANSION JOINT NOTES:

1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
2. TRANSVERSE EXPANSION JOINTS SHALL BE SPACED AT 400 FT. MAXIMUM AND AT ALL INTERSECTIONS.

TRANSVERSE EXPANSION JOINT

(EXPJNT)



CONSTRUCTION JOINT NOTES:

1. CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT (DRILL DOWELS INTO FIRST POUR).
2. THICKENED EDGES ARE REQUIRED FOR FUTURE WIDENING ONLY.

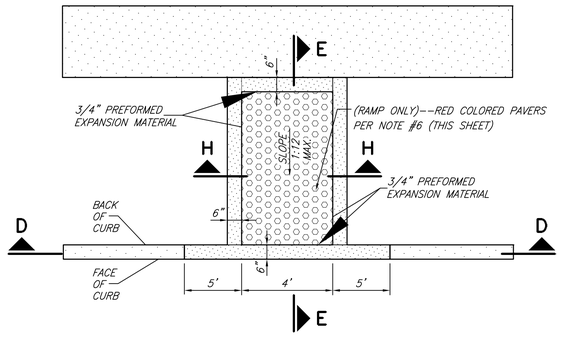
CONSTRUCTION JOINT

(CONSTJNT)

CITY OF CELINA, TEXAS

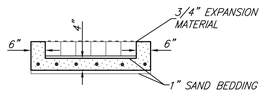
PAVING

STANDARD DETAILS - CS3

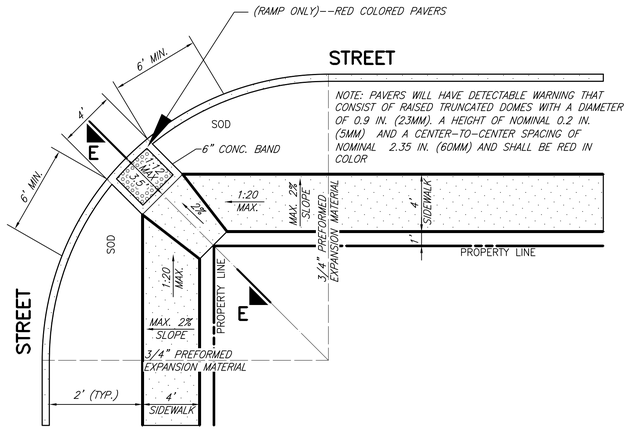


BARRIER FREE RAMP @ STRAIGHT CURB

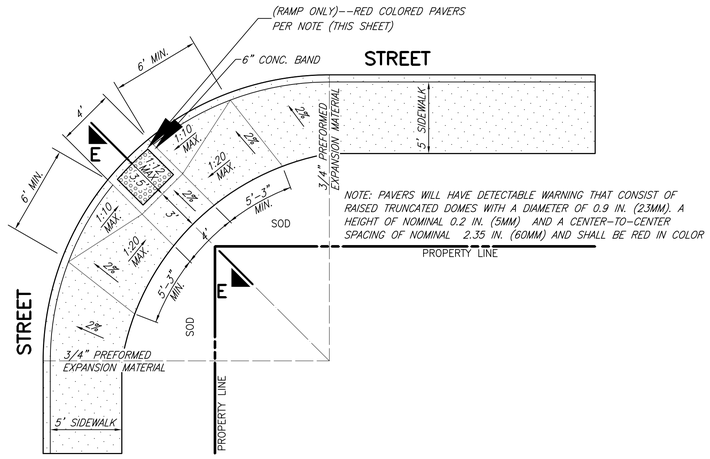
SECTION D–D



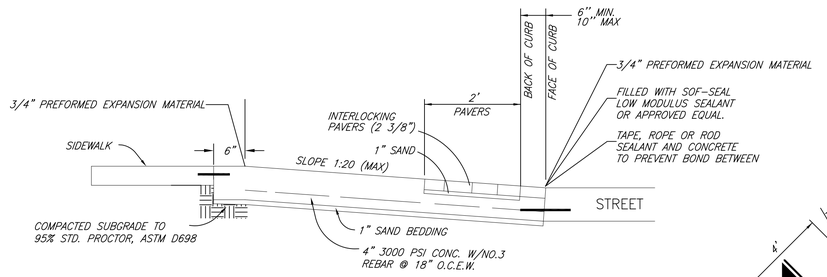
SECTION H–H



RAMP FOR 4 FEET SIDEWALK AWAY FROM CURB

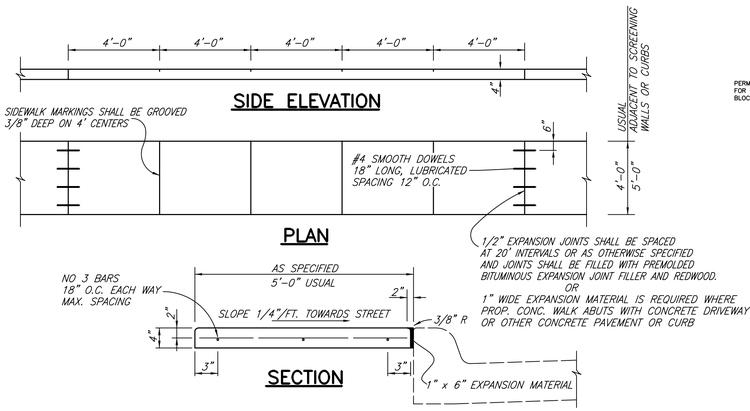


RAMP FOR 5 FEET SIDEWALK NEXT TO CURB



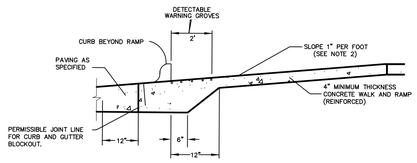
SECTION E–E

(BARRIER_FREE)



REINFORCED CONCRETE SIDEWALK

(SIDEWALK)

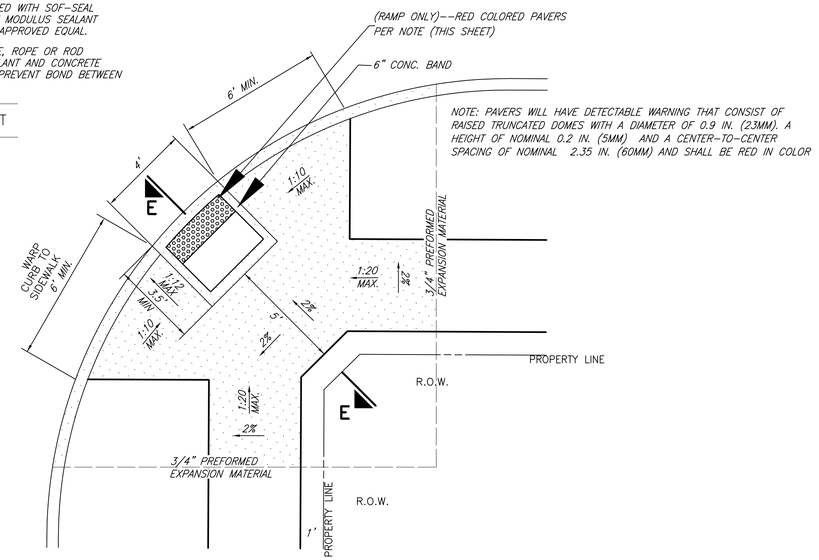


BARRIER FREE RAMP
TYPICAL SECTION THRU RESIDENTIAL RAMP
NTS

GENERAL NOTES:

1. BARRIER FREE RAMPS SHALL BE CONSTRUCTED AS EXTENSIONS OF STANDARD CONCRETE SIDEWALKS EXCEPT AS NOTED IN THESE DETAILS.
2. MAXIMUM SLOPE ON BARRIER FREE RAMPS SHALL NOT EXCEED 1" PER FOOT AT ANY LOCATION.
3. DESIGNS SHOWN ARE FOR 6" CURBS. FOR CURBS WITH HEIGHT GREATER THAN 6", DIMENSIONS SHALL BE INCREASED PROPORTIONATELY.
4. STREETS ON STEEP GRADE WILL REQUIRE LONGER TRANSITIONS ON UPGRADE SIDE.
5. LOCATION OF BARRIER FREE RAMP MAY BE SHIFTED TO CLEAR OBSTRUCTIONS WITH THE APPROVAL OF THE CITY ENGINEER.
6. ACCESS RAMP FROM STREET GRADE SHALL HAVE DETECTABLE WARNING GROVES THAT SHALL BE 1/4" TO 3/4" WIDE, 1/8" DEEP, SPACED 2" APART.
7. ALL LANDINGS ARE TO BE 5'X5' AREAS WITH 2% (MAX) SLOPES IN ANY DIRECTION

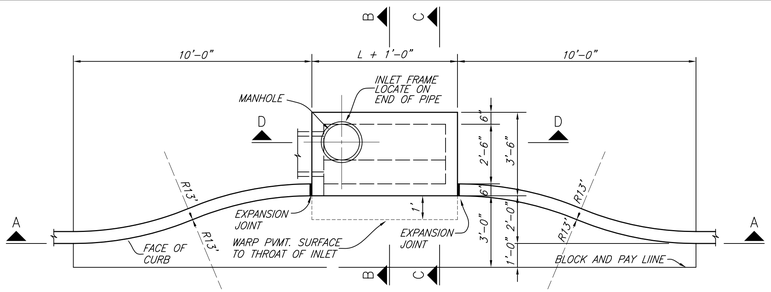
RAMP WITH DOMES



DETAIL 'A'
BARRIER FREE RAMP
STREET INTERSECTION
PLAN VIEW
NTS

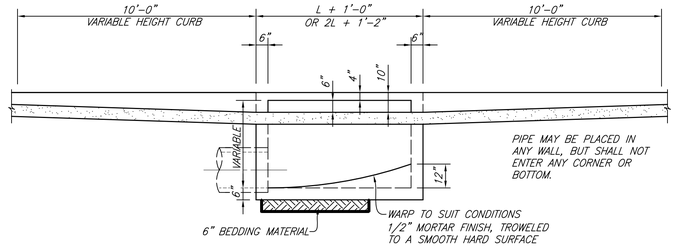
CITY OF CELINA, TEXAS

PAVING
STANDARD DETAILS – CS4



PLAN – RECESSED INLET

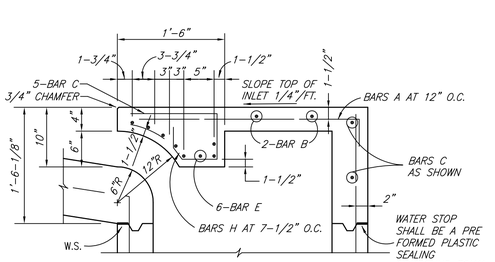
(REC–INT1)



SECTION A–A–RECESSED AND STANDARD INLETS

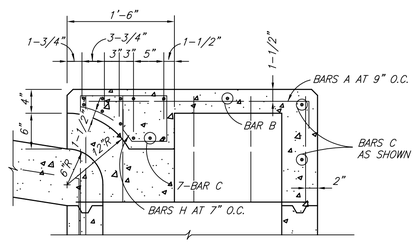
4, 6, 8, AND 10 FOOT INLETS

(PLAN–10)



SECTION C–C

(SECT_C–C)



NOTE: FOR ADDITIONAL INFORMATION SEE SECTION C–C

SECTION E–E

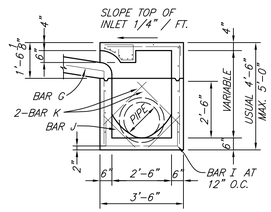
(SECT_E–E)

NOTES:

THE FLOOR OF THE EXCAVATION FOR INLET BOX MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.

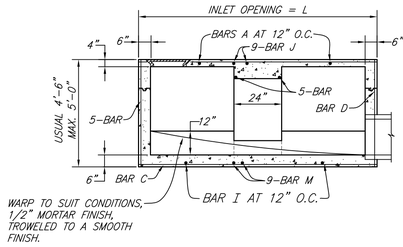
A MINIMUM OF 6 INCHES OF 1" DIAMETER (MAXIMUM) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR LIEU OF THIS, AT LEAST 6 INCHES OF 2–SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED–SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.

AFTER CASING HAS BEEN INSTALLED ON THE PROPER BEDDING, THE BACKFILL MATERIAL, WHICH IS FREE FLOWING AND CLEAR OF ROCKS, IN EXCESS OF 4" DIAMETER AND OTHER LUMPS WHICH WOULD PROHIBIT PROPER COMPACTION, SHALL BE COMMENCED IN LIFTS OF NO MORE THAN 18". THE MATERIAL USED FOR BACKFILL SHOULD BE A TYPE SUITABLE TO OBTAIN THE DENSITY REQUIREMENTS FOR THE SPECIFIC JOB.



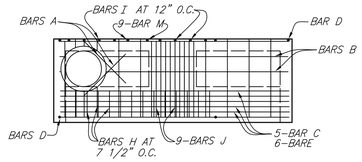
SECTION B–B

(SECT_B–B)



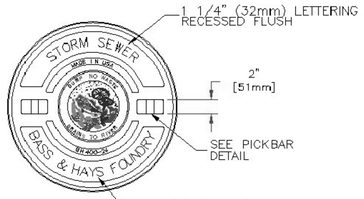
SECTION A–A – STANDARD AND RECESSED INLETS

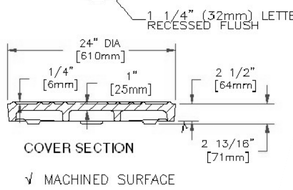
(SECT_A–A1)

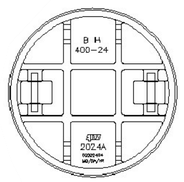


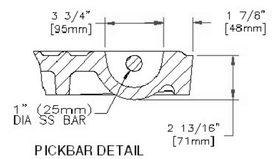
PLAN – STANDARD INLET

(PLAN_STDINL)









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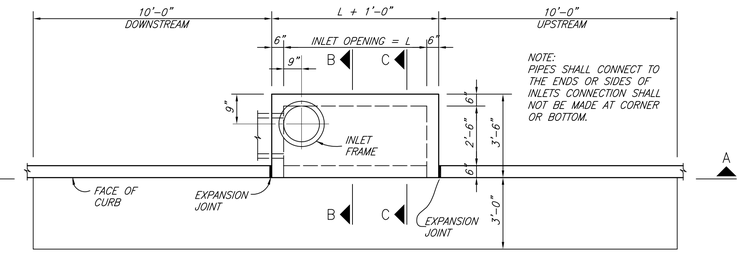
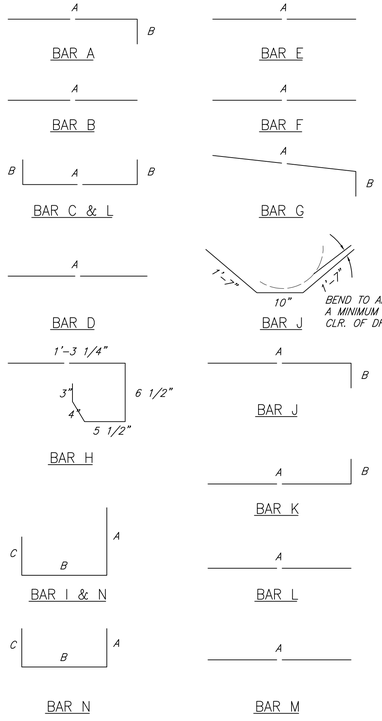


PLAN – STANDARD INLET

4, 6, 8 AND 10 FOOT INLETS

(STDINLT1)



BAR DIAGRAMS

(BARDIAG)

REINFORCING STEEL SCHEDULE

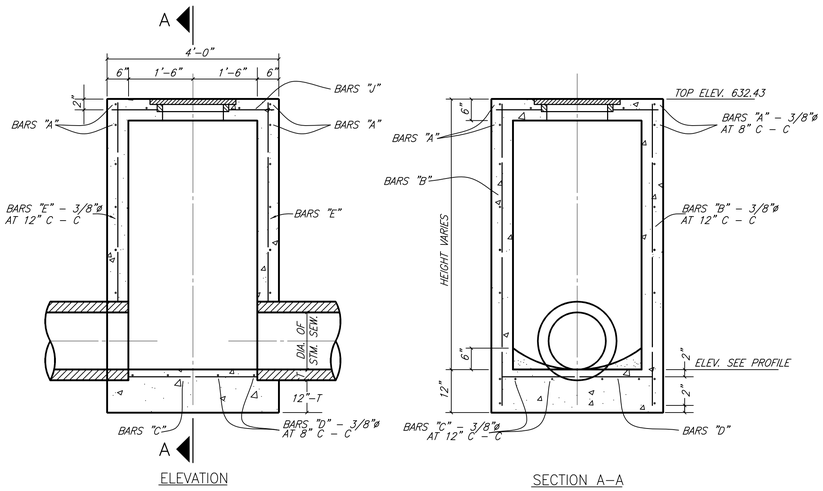
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS A	B	C
4	A	3	6	3'–2"	0'–3"	–
	B	3	1	2'–10"	–	–
	C	4	15	4'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	F	4	1	3'–2"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	6	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
6	A	3	9	3'–2"	0'–3"	–
	B	3	1	4'–10"	–	–
	C	4	15	6'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	F	4	1	3'–2"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	9	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
8	A	3	12	3'–2"	0'–3"	–
	B	4	1	6'–10"	–	–
	C	4	15	8'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	F	4	1	3'–2"	–	–
	G	3	5	2'–0'	1'–3"	–
	H	3	12	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
10	A	3	13	3'–2"	0'–3'	–
	B	3	2	8'–10"	–	–
	C	4	16	10'–8"	0'–6"	–
	D	4	4	4'–8"	–	–
	E	5	6	10'–8"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	14	*	*	*
	I	4	8	4'–8"	3'–2"	3'–2"
	L	4	5	4'–3"	–	–

* SEE DIAGRAM FOR DIMENSIONS.
4', 6', 8' AND 10' INLETS

CITY OF CELINA, TEXAS

DRAINAGE
STANDARD DETAILS – CS5



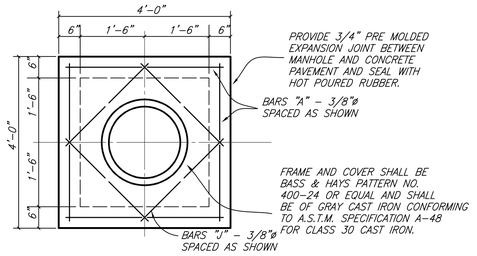
ELEVATION

SECTION A–A

STORM SEWER TYPE A MANHOLE

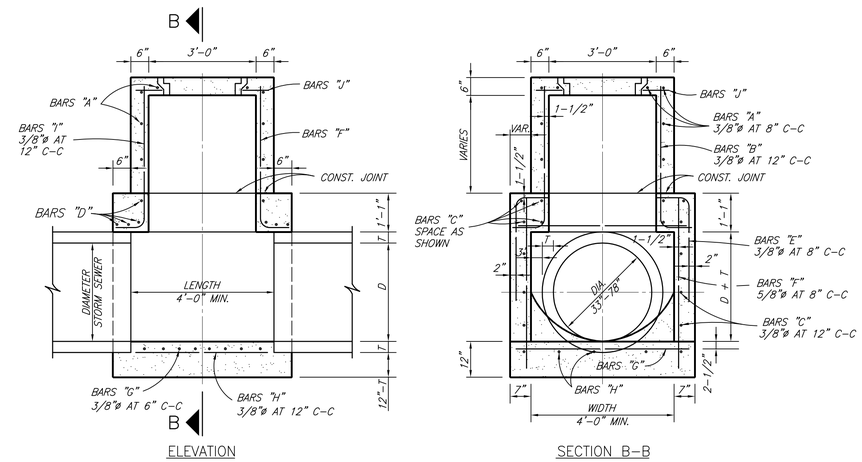
MAX. PIPE SIZE 30"

(TYPEAMH)



TOP PLAN
TYPE A & TYPE B
STORM SEWER MANHOLE

(MH_TOP)



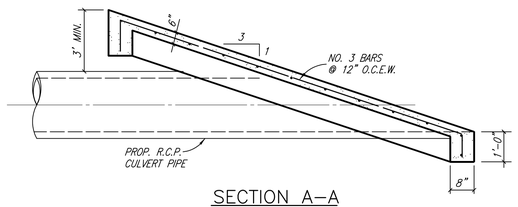
ELEVATION

SECTION B–B

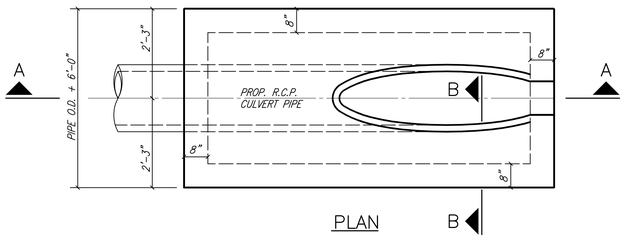
TYPE B STORM SEWER MANHOLE

MAX. PIPE SIZE 78"

(TYPEBMH)



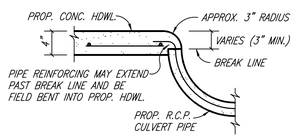
SECTION A–A



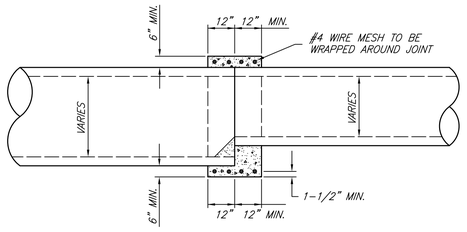
PLAN B

SLOPED CONCRETE HEADWALL

(SLOPEHWL)



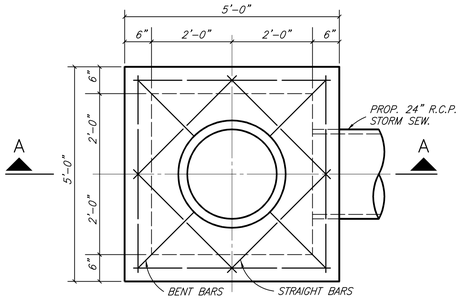
SECTION B–B



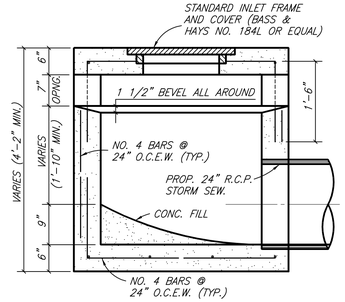
DETAIL OF CONCRETE COLLAR
FOR R.C.P. OR R.C.A.P. CONNECTIONS

INSIDE JOINT SHALL BE CONCRETE MORTAR

(CONCCOL)



PLAN



SECTION A–A

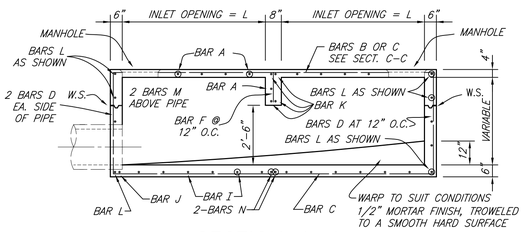
STANDARD DROP INLET

(DROPINLET)

CITY OF CELINA, TEXAS

DRAINAGE

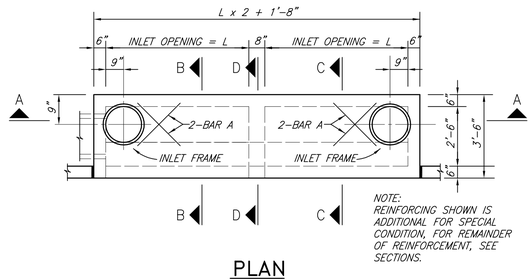
STANDARD DETAILS – CS7



SECTION A–A

12, 14, 16 AND 20 FOOT INLETS

(SECT_A–A)

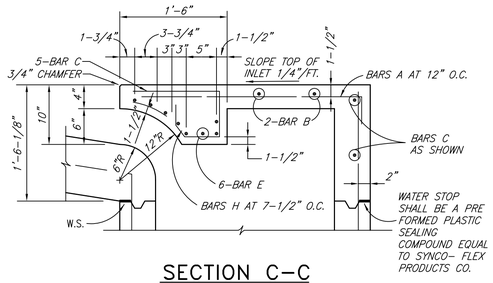


NOTE: REINFORCING SHOWN IS ADDITIONAL FOR SPECIAL CONDITION, FOR REMAINDER OF REINFORCEMENT, SEE SECTIONS.

PLAN

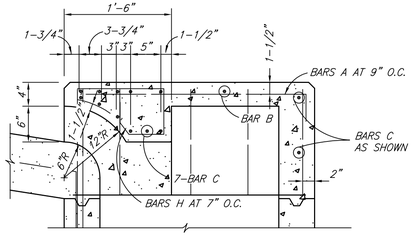
20 FOOT INLETS

(PLAN_20)



SECTION C–C

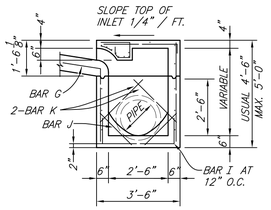
(SECT_C–C)



NOTE: FOR ADDITIONAL INFORMATION SEE SECTION C–C

SECTION D–D

(SECT_D–D)



SECTION B–B

(SECT_B–B)

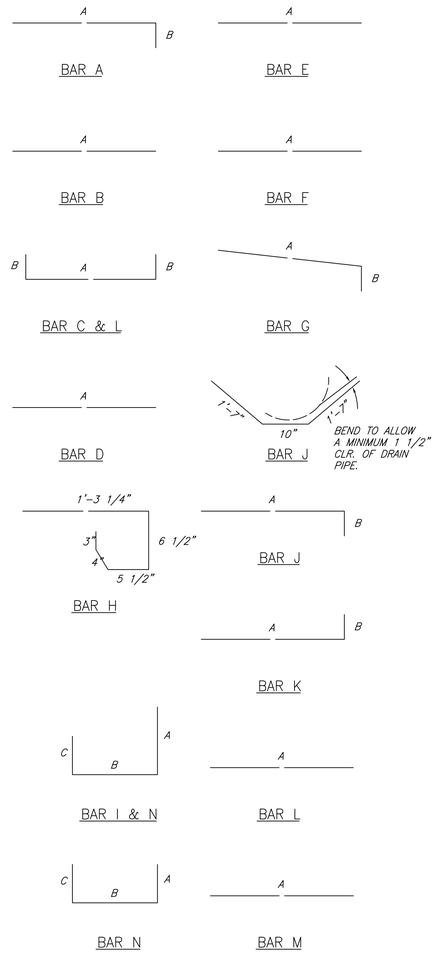
DOUBLE INLETS

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS A	B	C
6 FT.	A	3	15	3'-2"	0'-6"	–
	B	3	2	11'-6"	–	–
	C	4	16	13-4"	0'-6"	–
	D	4	9	4'-8"	–	–
	E	5	6	13-4"	–	–
	F	4	5	1'-2"	–	–
	G	3	12	2'-0"	1'-3"	–
	H	3	26	*	*	*
	I	4	12	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	–
	L	4	11	3'-2"	0'-6"	–
	M	4	2	3'-0" **	–	–
	N	4	2	4'-8"	3'-2"	4'-8"
7 FT.	A	3	17	3'-2"	0'-6"	–
	B	3	2	13'-6"	–	–
	C	4	16	15'-4"	0'-3'	–
	D	4	9	4'-8"	–	–
	E	5	6	15'-4"	–	–
	F	4	5	1'-2"	–	–
	G	3	15	2'-0"	1'-3"	–
	H	3	32	*	*	*
	I	4	14	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	–
	L	4	11	3'-2"	0'-6"	–
	M	4	2	3'-0" **	–	–
	N	4	2	4'-8"	3'-2"	4'-8"
8 FT.	A	3	19	3'-2"	0'-6"	–
	B	3	2	15'-6"	–	–
	C	4	16	17'-4"	0'-6"	–
	D	4	9	4'-8"	–	–
	E	5	6	17'-4"	–	–
	F	4	5	1'-2"	–	–
	G	3	12	2'-0"	1'-3"	–
	H	3	26	*	*	*
	I	4	16	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	–
	L	4	11	3'-2"	0'-6"	–
	M	4	2	3'-0" **	–	–
	N	4	2	4'-8"	3'-2"	4'-8"
10 FT.	A	3	23	3'-2"	0'-6"	–
	B	3	2	19'-6"	–	–
	C	4	16	21'-4"	0'-6"	–
	D	4	9	4'-8"	–	–
	E	5	6	21'-4"	–	–
	F	4	5	1'-2"	–	–
	G	3	15	2'-0"	1'-3"	–
	H	3	32	*	*	*
	I	4	20	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
	K	5	6	3'-2"	0'-6"	–
	L	4	11	3'-2"	0'-6"	–
	M	4	2	3'-0" **	–	–
	N	4	2	4'-8"	3'-2"	4'-8"

* SEE DIAGRAM FOR DIMENSIONS.
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 16' AND 20' INLETS

REINFORCING STEEL SCHEDULE



△ BEND TO ALLOW A MINIMUM 1 1/2" CIR. OF DRAIN PIPE
* SEE DIAGRAMS FOR DIMENSIONS
** FIELD CUT AS REQUIRED TO ACCOMODATE DRAIN PIPE

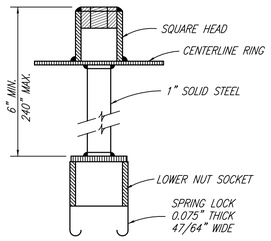
BAR BENDING DIAGRAMS

(BARLIST2)

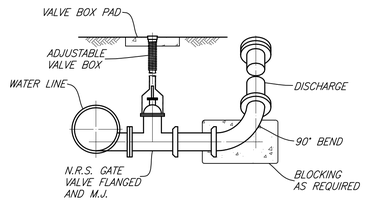
CITY OF CELINA, TEXAS

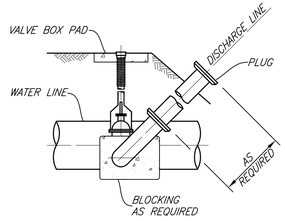
DRAINAGE

STANDARD DETAILS – CS6

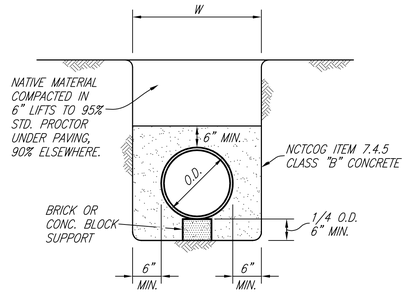


SPRING LOCK VALVE EXTENSION



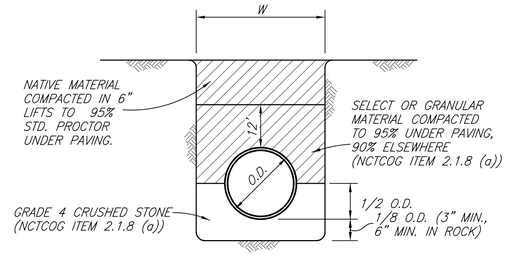


BLOW OFF VALVE



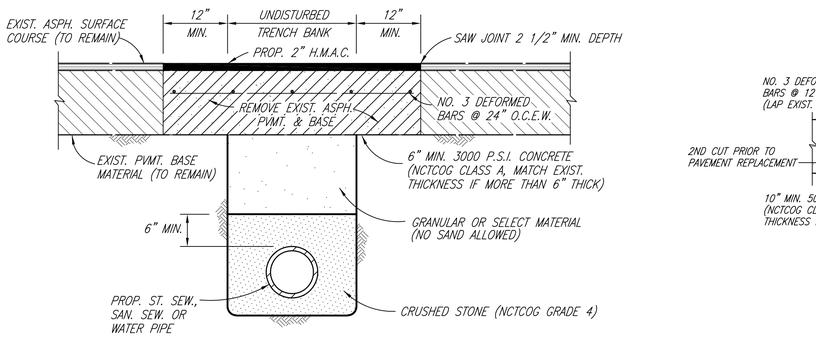
CLASS G EMBEDMENT

CONCRETE ENCASEMENT
NO SCALE



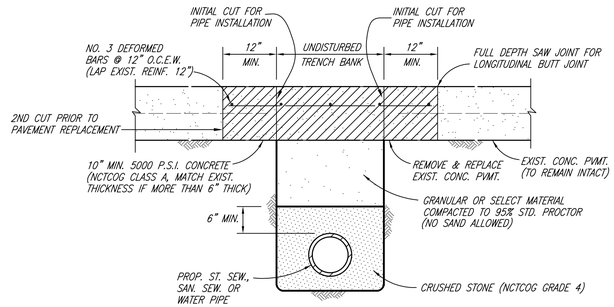
CLASS B+ EMBEDMENT

STD PVC WATER



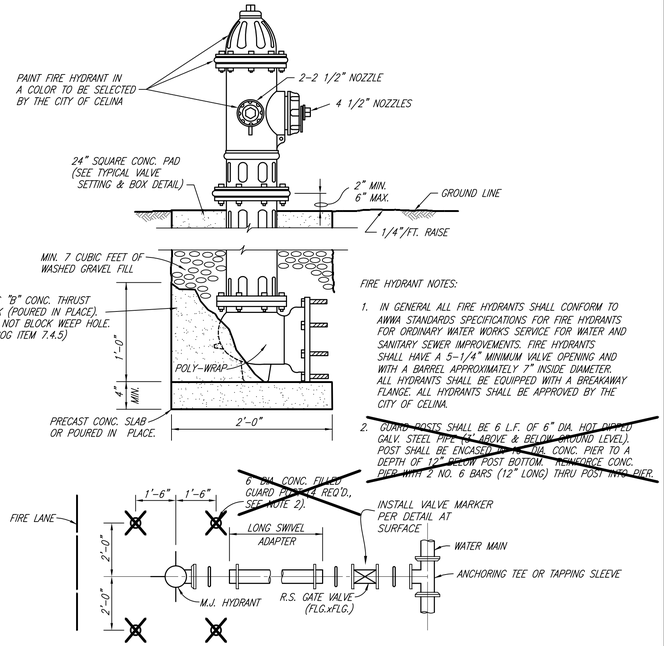
ASPHALT STREET REPAIR

NO SCALE



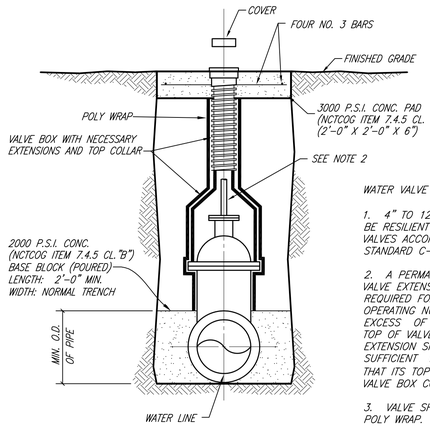
CONCRETE STREET REPAIR

NO SCALE



TYPICAL FIRE HYDRANT INSTALLATION

NO SCALE

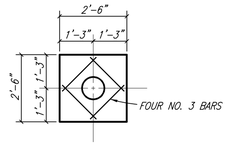


VALVE SETTING & BOX

NO SCALE

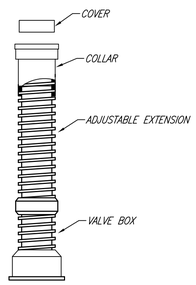
WATER VALVE NOTES:

1. 4" TO 12" GATE VALVE SHALL BE RESILIENT SEATED WEDGE GATE VALVES ACCORDANCE WITH AWWA STANDARD C-509.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX COVER.
3. VALVE SHALL BE WRAPPED IN POLY WRAP.



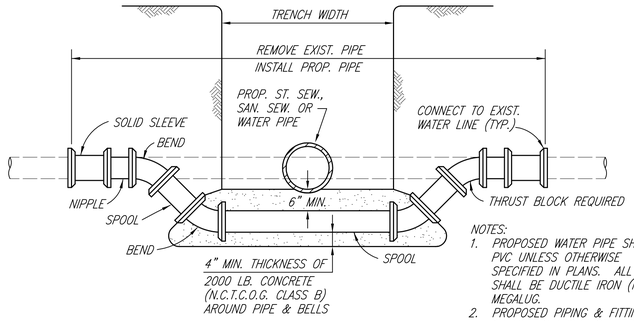
VALVE BOX PAD PLAN

NO SCALE



VALVE BOX WITH EXTENSION

NO SCALE



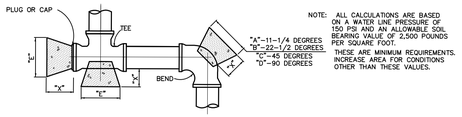
WATER MAIN LOWERING

NOTES:
1. PROPOSED WATER PIPE SHALL BE PVC UNLESS OTHERWISE SPECIFIED IN PLANS. ALL FITTINGS SHALL BE DUCTILE IRON (M.J.-P.E.) MEGALUG.
2. PROPOSED PIPING & FITTINGS ARE SYMMETRIC ABOUT CENTER OF PROP. SAN. SEW. OR ST. SEW. PIPE AND SHALL RETAIN TEST PRESSURES.
3. ALL THRUST BLOCKING SHALL BE SUBSIDIARY TO UNIT PRICE.
4. CROSSING OF SANITARY SEWER SHALL BE IN ACCORDANCE WITH T.N.R.C.C. REQUIREMENTS. (CHAPTER 317.13 APPENDIX E)

CITY OF CELINA, TEXAS

WATER DISTRIBUTION SYSTEM
STANDARD DETAILS – CS8

P-201311-02



NOTE: ALL CALCULATIONS ARE BASED ON A WATER LINE PRESSURE OF 150 PSI AND AN ALLOWABLE SOIL BEARING VALUE OF 2,500 POUNDS PER SQUARE FOOT.

THESE ARE MINIMUM REQUIREMENTS. INCREASE AREA FOR CONDITIONS OTHER THAN THESE VALUES.

HORIZONTAL BLOCKING TABLE

PIPE SIZE	"X" DIM. IN FT.	11-1/4 DEGREES "A"	11-1/4 DEGREES MIN. AREA	22-1/2 DEGREES "B"	22-1/2 DEGREES MIN. AREA	45 DEGREES "C"	45 DEGREES MIN. AREA	90 DEGREES "D"	90 DEGREES MIN. AREA	TEE & PLUG "E"	TEE & PLUG MIN. AREA
4"	1.5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.00	1.00
6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70
8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02
10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71
12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79
14"	1.5	1.03	1.81	1.90	3.60	2.66	7.07	3.61	13.06	3.04	9.24
16"	2.0	1.18	2.36	2.17	4.71	3.04	9.23	4.13	17.06	3.47	12.06
18"	2.0	1.33	2.99	2.44	5.96	3.42	11.69	4.65	21.59	3.91	15.27
20"	2.0	1.48	3.70	2.71	7.35	3.80	14.43	5.16	26.66	4.34	18.85
21"	2.0	1.55	4.07	2.85	8.11	3.99	15.91	5.42	29.39	4.56	20.78
24"	2.0	1.77	5.32	3.25	10.59	4.56	20.77	6.20	38.39	5.21	27.14
27"	2.5	1.99	6.73	3.66	13.40	5.13	26.29	6.97	48.58	5.86	34.35
30"	2.5	2.22	8.31	4.07	16.55	5.70	32.46	7.74	59.98	6.51	42.41
33"	2.5	2.44	10.06	4.47	20.02	6.27	39.28	8.52	72.57	7.16	51.31
36"	2.5	2.66	11.97	4.88	23.83	6.84	46.74	9.29	86.37	7.81	61.07
39"	3.0	2.88	14.05	5.29	27.97	7.41	54.86	10.07	101.36	8.47	71.68
42"	3.0	3.10	16.30	5.69	32.43	7.98	63.62	10.85	117.56	9.12	83.13

NOTE: CLASS "B" CONCRETE 2,000 PSI SHALL BE USED FOR ALL BLOCKING UNLESS OTHERWISE NOTED ON STANDARD DETAILS AND / OR PLANS.

THE MINIMUM VERTICAL DIMENSION OF ALL BLOCKING SHALL BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 TIMES THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW THE PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "A" DIMENSION FOR 11-1/4° BENDS.

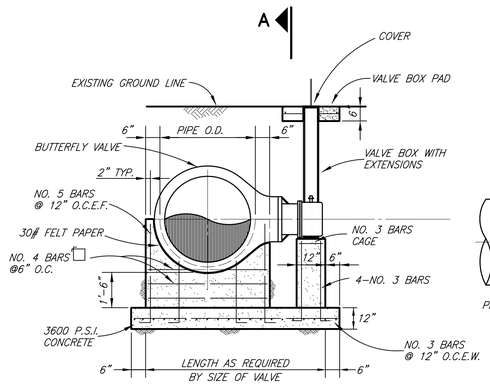
FOR 22-1/2 °, 45 °, 90 °, AND TEES AND PLUGS, THE VERTICAL DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENSION SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA.

ALL MINIMUM AREAS ARE IN SQUARE FEET.

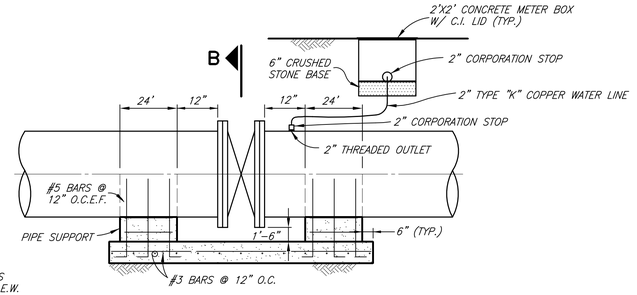
BLOCKING TO BE AGAINST UNDISTURBED TRENCH WALLS AND BOTTOM.

HORIZONTAL THRUST BLOCKING DETAIL

NO SCALE

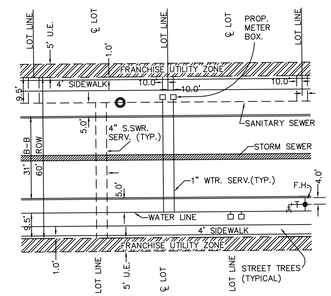


SECTION B-B



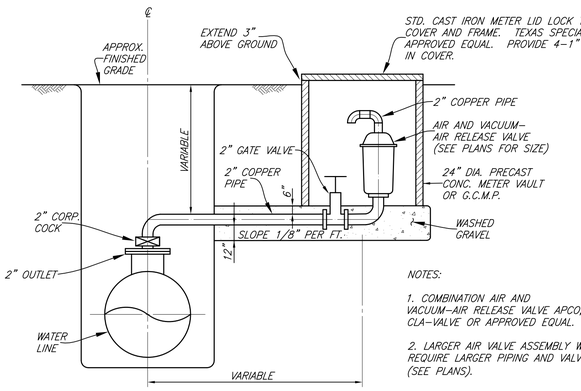
SECTION A-A

BUTTERFLY VALVE INSTALLATION



UTILITY PLACEMENT DETAIL

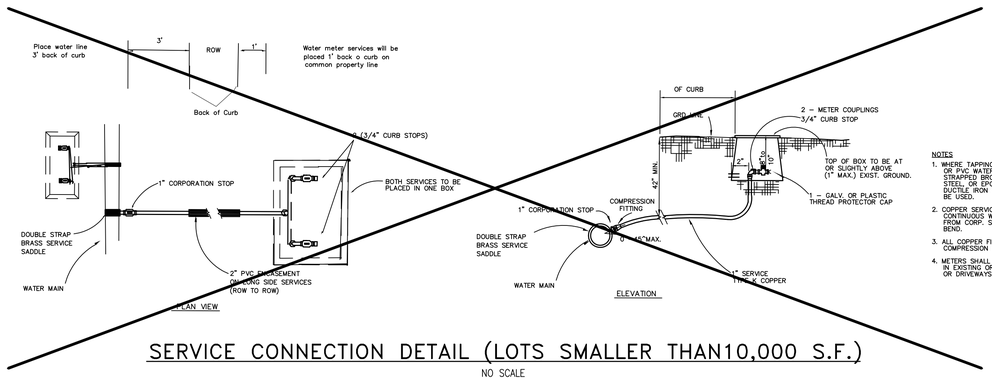
NO SCALE



NOTES:

1. COMBINATION AIR AND VACUUM-AIR RELEASE VALVE APCO, CLA-VALVE OR APPROVED EQUAL.
2. LARGER AIR VALVE ASSEMBLY WILL REQUIRE LARGER PIPING AND VALVE (SEE PLANS).

AIR AND VACUUM - AIR RELEASE VALVE INSTALLATION

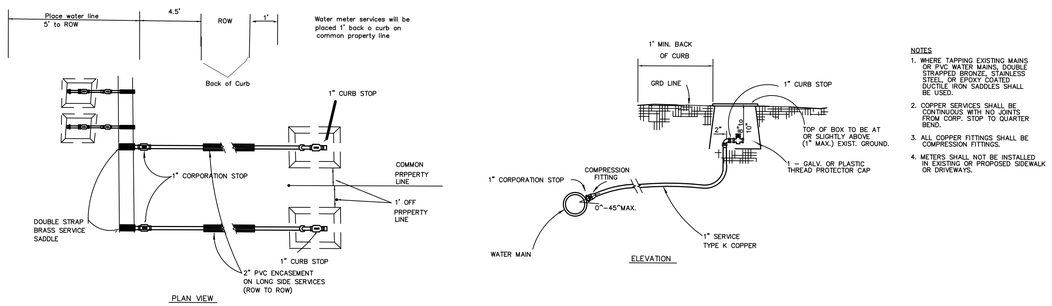


NOTES

1. WHERE TAPPING EXISTING MAINS OR PVC WATER MAINS, DOUBLE STRAPPED BRONZE, STAINLESS STEEL, OR EPOXY COATED DUCTILE IRON SADDLES SHALL BE USED.
2. COPPER SERVICES SHALL BE TYPE K CONTINUOUS WITH NO JOINTS FROM CORP. STOP TO QUARTER BEND.
3. ALL COPPER FITTINGS SHALL BE COMPRESSION FITTINGS.
4. METERS SHALL NOT BE INSTALLED IN EXISTING OR PROPOSED SIDEWALK OR DRIVEWAYS.

SERVICE CONNECTION DETAIL (LOTS SMALLER THAN10,000 S.F.)

NO SCALE



NOTES

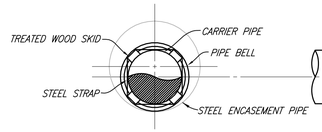
1. WHERE TAPPING EXISTING MAINS OR PVC WATER MAINS, DOUBLE STRAPPED BRONZE, STAINLESS STEEL, OR EPOXY COATED DUCTILE IRON SADDLES SHALL BE USED.
2. COPPER SERVICES SHALL BE CONTINUOUS WITH NO JOINTS FROM CORP. STOP TO QUARTER BEND.
3. ALL COPPER FITTINGS SHALL BE COMPRESSION FITTINGS.
4. METERS SHALL NOT BE INSTALLED IN EXISTING OR PROPOSED SIDEWALK OR DRIVEWAYS.

SERVICE CONNECTION DETAIL (LOTS10,000 S.F. OR LARGER)

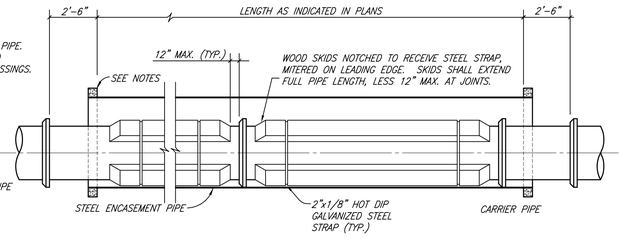
NO SCALE

BORING NOTES:

1. 2 MORTAR BANDS FOR R.C.C.P. AND CEMENT LINED & COATED STEEL PIPE MAY BE USED IN LIEU OF SKIDS & STRAPS.
2. CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
3. ENDS OF ENCASEMENT PIPE SHALL BE PLUGGED WITH BRICK AND MORTAR FOR ROADWAY CROSSINGS AND CLAY FOR RAILROAD CROSSINGS.



SECTION



ELEVATION

ENCASED ROAD OR RAILROAD BORE

CITY OF CELINA, TEXAS

WATER DISTRIBUTION SYSTEM

STANDARD DETAILS - CS9

P-201311-02

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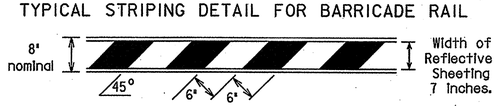
TYPE III BARRICADES

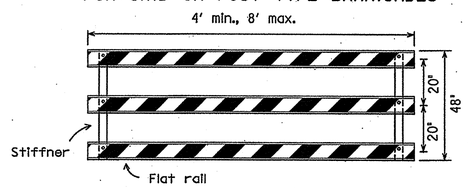
1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type III Barricades and a list of all materials used in the construction of Type III Barricades.
2. Type III Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades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

Barricades shall NOT be used as a sign support.

TYPICAL STRIPING DETAIL FOR BARRICADE RAIL

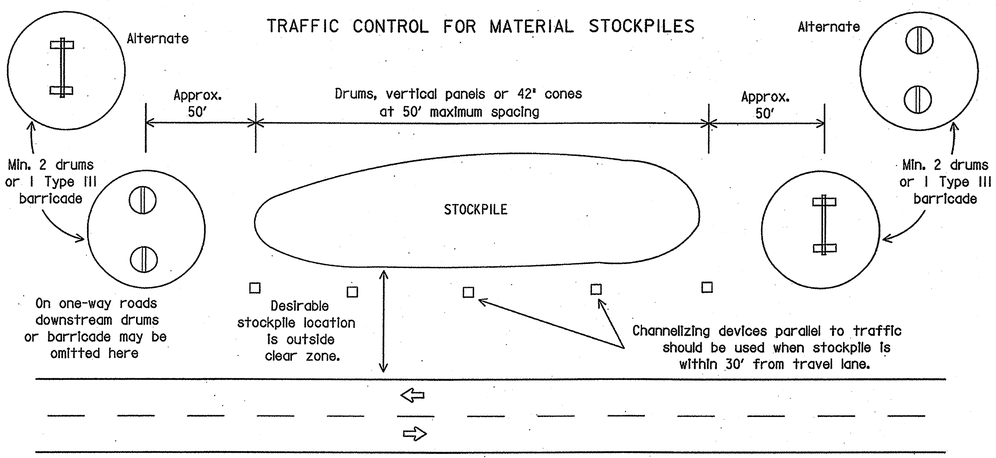


TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



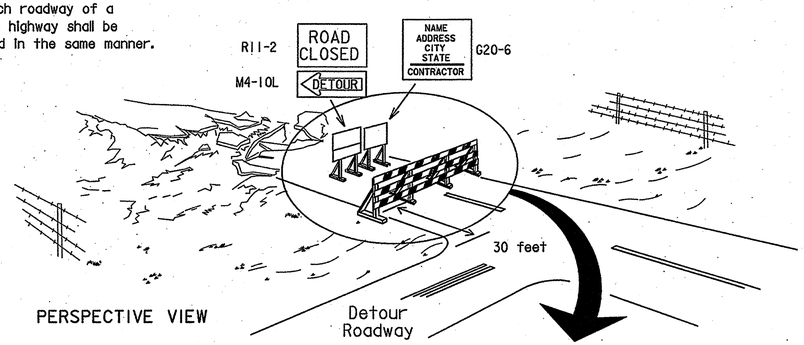
Stiffner may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

TRAFFIC CONTROL FOR MATERIAL STOCKPILES



TYPE III BARRICADE (POST AND SKID) TYPICAL APPLICATION

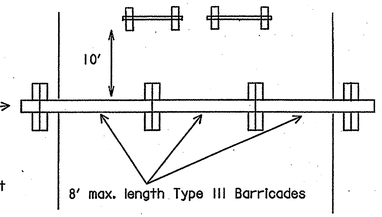
Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

The three rails on Type III barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.

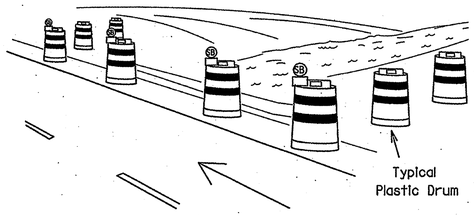
Barricade striping should slant downward in the direction of detour.



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

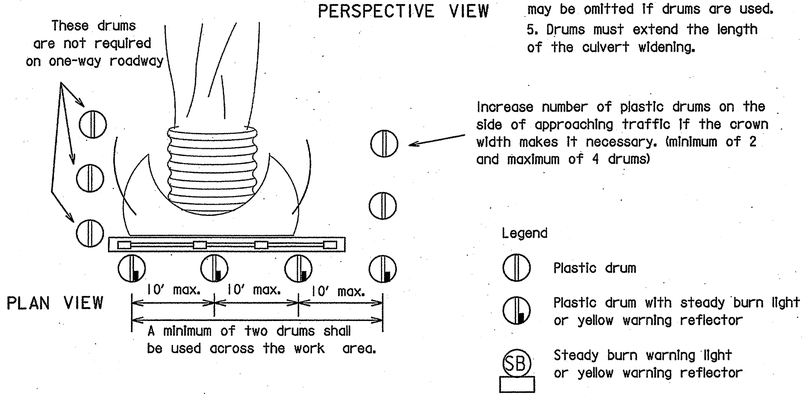
PLAN VIEW

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



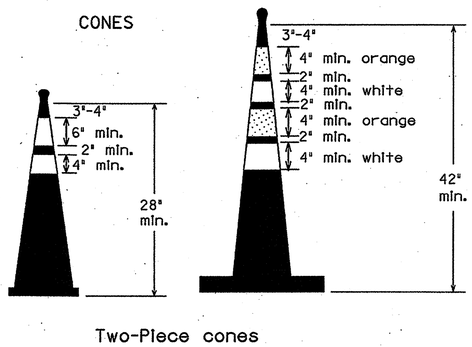
PERSPECTIVE VIEW

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

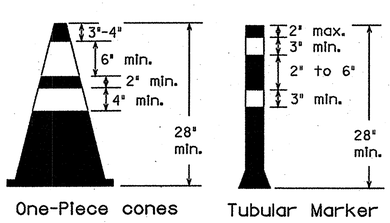


PLAN VIEW

CONES



Two-Piece cones

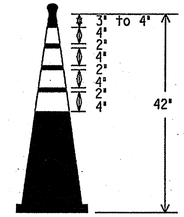


One-Piece cones Tubular Marker

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

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

1. Traffic cones and tubular markers shall be a minimum of 28 inches in height when used either on freeways or at nighttime.
2. Cones or tubular markers shall be predominantly orange, fluorescent red-orange, or fluorescent yellow-orange. They should be kept clean and bright for maximum visibility.
3. Cones used only for daytime operations do not require the reflectorized bands.
4. Cones and tubular markers used for nighttime operations shall be reflectorized. Reflectorized material shall have a smooth, sealed outer surface that displays the same approximate color during the day and night. The reflectorized bands shall be retroreflective Type C (High Specific Intensity) conforming to Departmental Material Specification DMS-8300, unless otherwise noted.
5. When used at night, appropriate personnel shall ensure that cones and tubular markers remain in their proper location and in an upright position.
6. Reflectorization of 28"cones shall consist of a minimum 6 inch band placed at least 3 inches but not more than 4 inches from the top, supplemented by a minimum 4 inch band spaced a minimum of 2 inches below the 6 inch band.
7. Reflectorization of 42" cones shall be provided by alternating 4 to 6" orange and white stripes with orange on top.
8. Reflectorization of tubular markers shall be a minimum of two 3 inch bands placed a maximum of 2 inches from the top with a maximum of 6 inches between bands.
9. One-piece cones or tubular markers are generally suitable for temporary usage (up to 8 hours) with other channelization devices such as vertical panels, drums or two-piece cones for long term usage. Care should be taken to ensure they remain in their proper location and in an upright position.
10. Cones or tubular markers used on each project shall be of the same size and shape.
11. The handle may be designed as a hook or other shape, fabricated from non-rigid materials similar to the cone material, and may extend up to a maximum of 8 inches above the top of cone. Length of the handle shall not be considered with regard to the overall height of the cone.



EDGELINE CHANNELIZER

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

Texas Department of Transportation
Traffic Operations Division

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES STANDARD

10 of 12 BC(10)-07

©TxDOT 11-4-02

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
DIST	COUNTY		SHEET NO.

9-07 REVISIONS

109A

P-201311-02

DATE:
FILE: