

THE CITY OF LUCAS, TEXAS PLANS FOR THE CONSTRUCTION OF WATER, SANITARY SEWER, PAVING, AND DRAINAGE IMPROVEMENTS TO SERVE

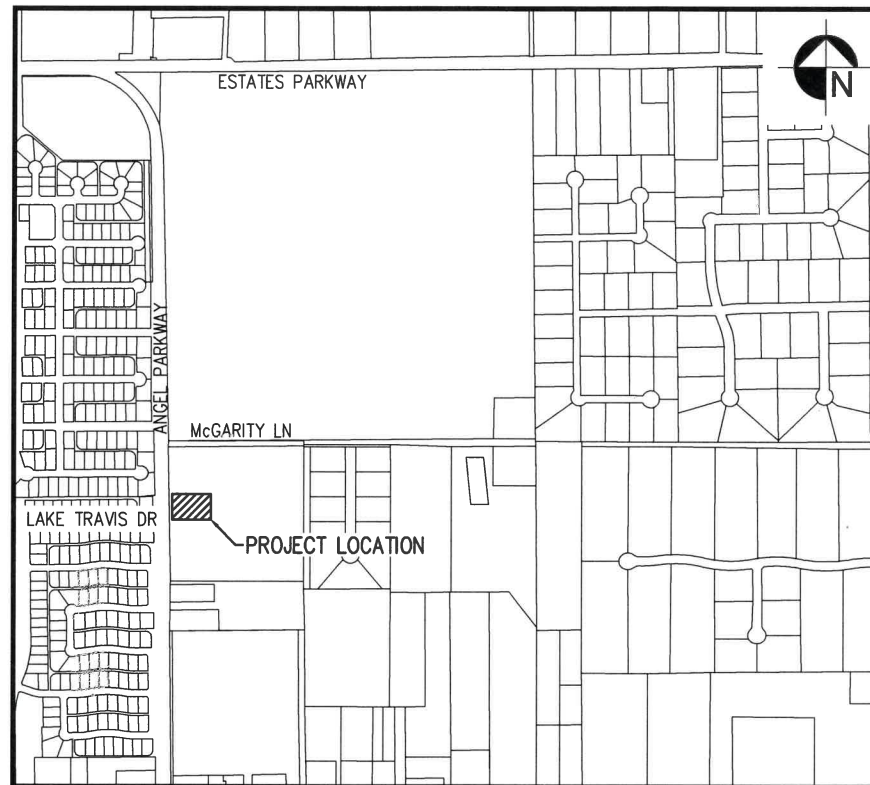
APPROVED
CITY OF LUCAS

CITY ENGINEER *[Signature]* DATE **12-21-18**

LUCAS PLAZA PHASE II

GENERAL NOTES:

- COORDINATION OF WORK: IT SHALL BE FURNISHED BY THE CONTRACTOR TO COORDINATE HIS WORK WITH ANY PUBLIC OR PRIVATE UTILITY ENGAGED IN INSTALLATION OF NEW OR ADJUSTMENT OF EXISTING FACILITIES ON THE PROJECT SITE.
- BARRICADES AND WARNING SIGNS: BARRICADES AND WARNING SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE CITY OF LUCAS STANDARDS AND/OR AS DIRECTED BY ENGINEER. CONSTRUCTION OF SIGNING AND BARRICADES SHALL BE DIRECTED BY THE ENGINEER. CONSTRUCTION OF SIGNING AND BARRICADES SHALL CONFORM WITH 1980 TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, VOLUME 1.
- ZONING REQUIREMENTS: DURING THE CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR SHALL COMPLY WITH PRESENT ZONING REQUIREMENTS OF THE CITY OF LUCAS IN THE USE OF VACANT PROPERTY FOR STORAGE PURPOSES.
- DRAINAGE CHANNELS: WHERE SURFACE DRAINAGE CHANNELS ARE TEMPORARILY DISTURBED OR BLOCKED DURING CONSTRUCTION, THEY SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR GRADE AND CROSS SECTION AFTER THE WORK IS COMPLETED.
- VENDOR'S CERTIFICATION: ALL MATERIALS USED IN CONSTRUCTION SHALL HAVE A VENDOR'S CERTIFIED TEST REPORT. TEST REPORTS SHALL BE DELIVERED TO THE ENGINEER BEFORE PERMISSION WILL BE GRANTED FOR USE OF THE MATERIAL. ALL VENDOR'S TEST REPORTS SHALL BE SUBJECT TO REVIEW BY THE ENGINEER, AND SHALL BE SUBJECT TO VERIFICATION BY TESTING OF SAMPLES OF MATERIALS AS RECEIVED FOR USE ON THE PROJECT. IN THE EVENT ADDITIONAL TESTS ARE REQUIRED, THEY SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY AND SHALL BE PAID FOR BY THE CONTRACTOR.
- CLEAN-UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN-UP OF ALL PARTS OF THE WORK BEFORE ACCEPTANCE BY THE DEVELOPER OR HIS REPRESENTATIVE. THIS CLEAN-UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN ORDERLY MANNER OF APPEARANCE.
- PROTECTION OF EXISTING UTILITIES AND IMPROVEMENTS: THE CONTRACTOR SHALL TAKE ADEQUATE MEASURES TO PROTECT ALL EXISTING STRUCTURES, IMPROVEMENTS AND UTILITIES WHICH MAY BE ENCOUNTERED.
- PROPERTY LINES AND MONUMENTS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET AT THE EXPENSE OF THE CONTRACTOR.
- WATER FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR PURCHASING WATER FROM THE CITY OF LUCAS.
- PARKING OF CONSTRUCTION EQUIPMENT: AT NIGHT AND DURING ALL OTHER PERIODS OF TIME WHEN EQUIPMENT IS NOT BEING ACTIVELY USED ON THE CONSTRUCTION WORK, THE CONTRACTOR SHALL PARK THE EQUIPMENT AT LOCATIONS WHICH ARE APPROVED BY THE DEVELOPER. THE CONTRACTOR SHALL PROVIDE ADEQUATE BARRICADES, MARKERS AND LIGHTS TO PROTECT THE DEVELOPER, THE CITY, THE PUBLIC AND THE OTHER WORK. ALL BARRICADES, LIGHTS, AND MARKERS MUST MEET THE REQUIREMENTS OF THE CITY, STATE AND FEDERAL REGULATIONS.
- ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS: ALL HAUL ROADS AND ACCESS ROUTES AND THE LOCATION OF ALL STAGING AREAS AND STORAGE AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL ROADS AND OTHER FACILITIES USED DURING CONSTRUCTION. UPON COMPLETION OF THE PROJECT ALL EXISTING ROADS SHALL BE LEFT IN A CONDITION EQUAL TO THAT AT THE TIME THE CONTRACTOR COMMENCES WORK ON THIS PROJECT.
- EXISTING UTILITIES: THE LOCATION AND DIMENSIONS SHOWN ON THE PLANS RELATIVE TO EXISTING UTILITIES ARE BASED ON THE BEST INFORMATION AVAILABLE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL SERVICES ENCOUNTERED. ANY DAMAGES TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE.
- EXCESS MATERIAL: SUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF ON THE SITE AT LOCATIONS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL IS DEFINED AS ROCK MEASURING 4" IN THE LARGEST DIMENSION. UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
- TRENCH SAFETY: PER TEXAS HOUSE BILL 1569, EFFECTIVE AS OF SEPTEMBER 1, 1989, IT SHALL BE THE RESPONSIBILITY OF THE CONSTRUCTION CONTRACTOR TO PROVIDE AND MAINTAIN A TRENCH SAFETY SYSTEM AT ALL TIMES DURING CONSTRUCTION ACTIVITIES. THE CONTRACTOR IS DIRECTED TO BECOME KNOWLEDGEABLE AND FAMILIAR WITH THE STANDARDS AS SET BY THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S (OSHA) FOR TRENCH SAFETY THAT WILL BE IN EFFECT DURING THE PERIOD OF CONSTRUCTION ON THIS PROJECT.
- COORDINATION WITH OTHERS: IN THE EVENT THAT OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH THIS PROJECT, THE CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH THAT OF THE OTHER CONTRACTORS.
- COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT.
- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, IMPACT AND INSPECTION FEES AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHEREVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE CITY OF LUCAS OR OTHER PUBLIC AUTHORITIES, DUPLICATE COPIES OF SUCH PERMITS SHALL BE FURNISHED TO THE ENGINEER BY THE CONTRACTOR HEREUNDER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED. ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, HE SHALL IMMEDIATELY REPORT THIS TO THE DEVELOPER FOR RESOLUTION.
- REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK WHICH HAS BEEN REJECTED OR CONDEMNED SHALL BE REPAIRED; OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT PROPER INSPECTION, OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE DEVELOPER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORILY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE DEVELOPER, THE DEVELOPER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMOVED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF FROM ANY MONIES DUE OR TO BECOME DUE TO THE CONTRACTOR.
- DURING CONSTRUCTION: DURING CONSTRUCTION OF THE WORK, THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE OF THE WORK AND ADJACENT PREMISES AS FREE FROM MATERIAL, DEBRIS AND RUBBISH AS IS PRACTICAL AND SHALL REMOVE SAME FROM ANY PORTION OF THE SITE IF, IN THE OPINION OF THE DEVELOPER, SUCH MATERIAL, DEBRIS OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE. IN CASE OF FAILURE ON THE PART OF THE CONTRACTOR TO MAINTAIN A CLEAN SITE, THE DEVELOPER MAY, UPON 24 HOUR WRITTEN NOTICE, CLEAN THE SITE, AND THE COST THEREOF SHALL BE DEDUCTED FROM ANY MONIES DUE OR TO BECOME DUE TO THE CONTRACTOR UNDER HIS CONTRACT; OR WHERE SUFFICIENT CONTRACT FUNDS ARE UNAVAILABLE FOR THIS PURPOSE, THE CONTRACTOR OR HIS SURETY SHALL REIMBURSE THE DEVELOPER FOR SUCH COST.
- RECORD DRAWINGS: EACH CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE INSTALLMENT OF ALL MATERIALS AND SYSTEMS BY HIS CONTRACTUAL AGREEMENT. THESE RECORD PRINTS WILL BE REVIEWED BY THE DEVELOPER EACH MONTH PRIOR TO THE PRELIMINARY REVIEW OF THE CONTRACTOR'S REQUEST FOR PAYMENT. IF THE DRAWINGS ARE NOT COMPLETE, ACCURATE AND UP-TO-DATE, THE PAYMENT REQUEST WILL NOT BE ACCEPTED BY THE DEVELOPER. THE COMPLETED SET OF "RECORD" DRAWINGS MUST BE DELIVERED TO THE DEVELOPER BEFORE REQUESTING FINAL PAYMENT.
- INSPECTION AND TESTING: INSPECTION AND TESTING OF THE PROPOSED CONSTRUCTION WILL BE PROVIDED BY THE DEVELOPER AND/OR THE CITY OF LUCAS. COSTS FOR THE INSPECTION AND TESTING SERVICES WILL BE ASSUMED BY THE DEVELOPER AND/OR THE TOWN.
- STORM WATER POLLUTION PREVENTION PLAN (SWPPP): THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE CONDITIONS OF THE SWPPP WHILE CONDUCTING HIS ACTIVITIES ON THIS PROJECT. IN ADDITION TO CONSTRUCTING THOSE ITEMS INDICATED ON THE PLAN SHEETS, COMPLIANCE WITH THE SWPPP INCLUDED CONFORMANCE TO CERTAIN PRACTICES IDENTIFIED IN THE SWPPP DURING PROJECT CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED TO SIGN AND SUBMIT TO ENVIRONMENTAL PROTECTION AGENCY A NOTICE OF INTENT, CONTRACTOR CERTIFICATION AND NOTICE OF TERMINATION, ALL OF WHICH WILL BE PROVIDED BY THE DEVELOPER. CONTRACTOR SHALL SEND COPIES OF ALL NOTICES (NOIS, NOTS, BI-MONTHLY INSPECTION REPORTS AND EVENT REPORTS) TO DEVELOPER. ALL REPORTS TO BE FILED DURING THE PAY PERIOD SHALL BE INCLUDED WITH THE PAY APPLICATION BEFORE THE PAY APPLICATION WILL BE PROCESSED. CONTRACTOR SHALL SUBMIT TO DEVELOPER A COPY OF THE COMPLETE SWPPP BINDER WITH THE FINAL PAY APPLICATION. INCLUDE ALL REPORTS, NOIS, AND THE NOT. THE NOT SHALL NOT BE FILED AND THE CONTRACTOR WILL REMAIN RESPONSIBLE UNTIL FINAL PAYMENT IS MADE.



LOCATION MAP
N.T.S.

DECEMBER 2018

Sheet List Table

C1	COVER SHEET
C2	SITE PLAN
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C5	PAVING DETAILS
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C7	GRADING PLAN
C8	EXISTING DRAINAGE AREA MAP
C9	PROPOSED DRAINAGE AREA MAP
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C12	WATER & SANITARY SEWER DETAILS
C13	EROSION CONTROL PLAN & DETAILS

ABBREVIATIONS

BC	BACK OF CURB
CONC	CONCRETE
DIA	DIAMETER
DR	DOOR
DS	DOWNSPOUT
E	EAST, EASTING
EL	ELEVATION
EOC	EDGE OF CONCRETE
EOP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX	EXISTING
FC	FACE OF CURB
FF	FINISHED FLOOR
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
GB	GRADE BREAK
GV	GATE VALVE
HC	HANDICAP
HORZ	HORIZONTAL
HP	HIGH POINT
INV	INVERT
LP	LOW POINT
LSD	LANDSCAPE DRAIN
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH, NORTHING
PR	PROPOSED
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SAN	SANITARY
SS	SANITARY SEWER
STA	STATION
STM	STORM
TB	THRUST BLOCK
TOP	TOP OF PIPE
TYP	TYPICAL
VERT	VERTICAL
WAT	WATER

BENCHMARK:

CITY OF ALLEN MONUMENT NO. 1.3-1/2" ALUMINUM DISK SET IN CONCRETE, LOCATED 460' ± WEST OF THE INTERSECTION OF WHITMAN DRIVE AND BETHANY ROAD AT THE EAST END OF BRIDGE IN GRASS MEDIAN. ELEVATION 597.82.



OWNER/DEVELOPER:
LEGACY ALLIANCE
4125 CENTURION PARKWAY, SUITE 100
ADDISON, TEXAS 75001
PHONE: (214) 731-3133
CONTACT: CHRIS LEAVELL

ENGINEER:
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HarrisKocherSmith.com
TBPE Firm# F-15501 • TBPLS Firm# 10194145
CONTACT: REECE FLANAGAN, PE

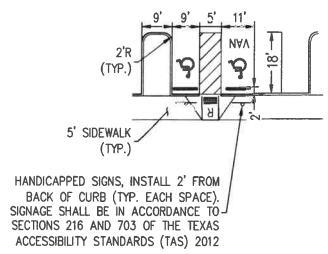


CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

ISSUE DATE:	12/17/2018	PROJECT #:	180833
DATE		REVISION	COMMENTS
09/20/18	1ST SUBMITTAL		
10/19/18	2ND SUBMITTAL		
11/15/18	3RD SUBMITTAL		
12/04/18	4TH SUBMITTAL		
12/05/18	ISSUED FOR CONSTRUCTION		
12/17/18	REISSUED FOR CONSTRUCTION		

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.
Plan# 01180626/ENR/ENR/CONCO/COVER SHEET/DWG Layer: COVER
2: REECE FLANAGAN, PE
PROJECT NO: 121718

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LEGEND:

	8" PORTLAND CEMENT CONCRETE 3,600 PSI AT 28 DAYS REINFORCEMENT: #3 @ 18" O.C.E.W.
	5" PORTLAND CEMENT CONCRETE 3,500 PSI AT 28 DAYS REINFORCEMENT: #3 BARS @ 18" O.C.E.W.
	4" PORTLAND CEMENT CONCRETE 3,000 PSI AT 28 DAYS REINFORCEMENT: #3 BARS @ 18" O.C.E.W.
	FULL-DEPTH SAWCUT REMOVE & REPLACE/TIE IN TO EXISTING CONCRETE PAVEMENT ADA CURB RAMP
	PROPOSED 24" FIRE LANE (W/ STRIPING PER CITY CRITERIA) 8" PORTLAND CEMENT CONCRETE 3,600 PSI AT 28 DAYS REINFORCEMENT: #4 BARS @ 18" O.C.E.W.

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED FIRE LANE THICKNESS TO 7"	12/11/2018
2	REVISED PAVEMENT THICKNESSES	12/17/2018

GENERAL NOTES:

- REFER TO REPORT OF GEOTECHNICAL EXPLORATION, FOR LUCAS PLAZA PHASE II, AND CITY DESIGN CRITERIA FOR PAVEMENT AND SUBGRADE SPECIFICATIONS. IF ANY DISCREPANCIES EXIST BETWEEN THESE PLANS, THE GEOTECHNICAL REPORT, AND CITY CRITERIA, THE CITY CRITERIA GOVERNS.
- ALL STRIPING AND SIGNAGE MUST CONFORM TO THE CITY OF LUCAS SIGNAGE CRITERIA.
- CONTRACTOR IS TO VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION, SHALL ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES DAMAGED BY CONTRACTOR'S ACTIVITIES.

PAVING NOTES:

- THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND RECOMPACTED FOLLOWING THE MASS GRADING REQUIREMENTS.
- THE SUBGRADE SHOULD BE UNIFORMLY COMPACTED TO A MINIMUM OF 95 PERCENT OF ASTM D698 BETWEEN 0 TO 4 PERCENT OF THE OPTIMUM MOISTURE CONTENT DETERMINED BY THAT TEST. IT SHOULD BE PROTECTED AND MAINTAINED IN A MOIST CONDITION UNTIL THE PAVEMENT IS PLACED.

PAVEMENT JOINTING NOTES:

- SAW CUTTING SHALL BE DONE WITHIN 8 HOURS OF POUR OR AS SOON AS CONCRETE CAN SUPPORT WEIGHT, AND PROVIDE A NEAT CUT WHICH IS TRUE IN ALIGNMENT.
- ALL JOINTS ARE TO CONTINUE THROUGH THE CURB.
- RADIAL JOINTS SHOULD BE NO GREATER THAN 18".
- ALL CONSTRUCTION JOINTS SHALL BE SAWED CLEANED OF DEBRIS, BLOWN DRY AND IMMEDIATELY SEALED.
- ODD SHAPED PANELS SHALL BE REINFORCED WITH #3 BARS AT 18" EACH WAY. AN ODD SHAPED PANEL IS CONSIDERED TO BE ONE IN WHICH THE SLAB TAPERS TO A SHARP ANGLE WHEN THE LENGTH TO WIDTH RATIO EXCEEDS 3 TO 1 OR WHEN A SLAB IS NEITHER SQUARE OR RECTANGLE.

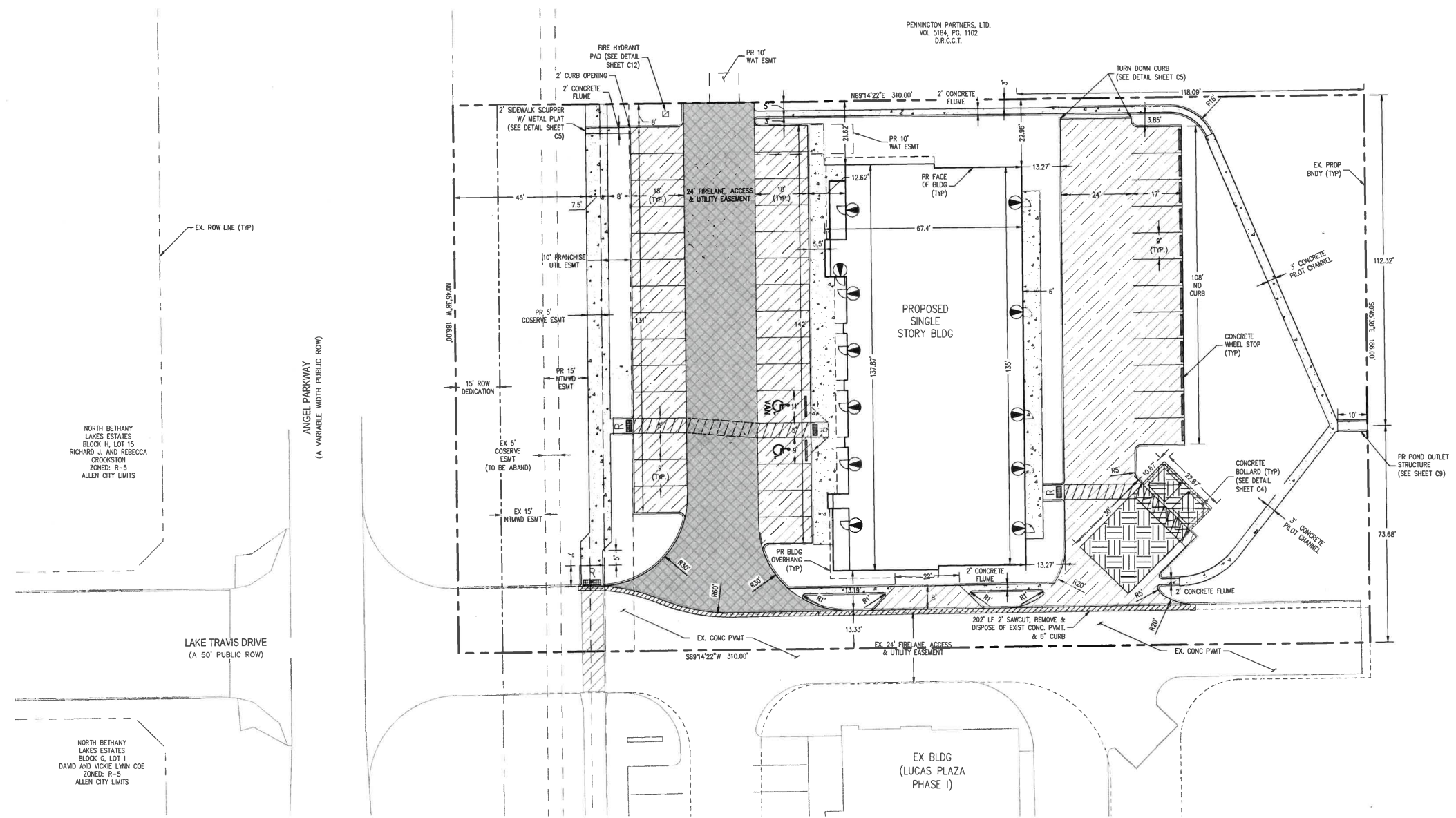
LAYOUT & DIMENSION CONTROL NOTES:

- ALL DIMENSIONS ARE TO FACE OF CURB WHERE APPLICABLE UNLESS OTHERWISE NOTED.
- ALL CURB RADI ARE 2.0' (FACE OF CURB) UNLESS NOTED OTHERWISE.
- PARKING PROVIDED: 42 TOTAL (INCLUDING 2 HANDICAP)
- ALL WORK SHALL CONFORM TO THESE PLANS AND CONTRACT DOCUMENTS AND THE INTERNATIONAL BUILDING CODE.
- CONTRACTOR SHALL REFER TO BUILDING PLANS FOR ACTUAL BUILDING DIMENSIONS. DIMENSIONS SHOWN ARE TO OUTSIDE FACE OF BUILDING.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT CURB RAMPS ARE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, STATE AND/OR FEDERAL REGULATIONS AND STANDARDS INCLUDING BUT NOT LIMITED TO, THE AMERICANS WITH DISABILITIES ACT (ADA), THE FAIR HOUSING ACT (FHA) AND THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI). THE BOUNDARY WILL BE MONUMENTED PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL LOCATE AND VERIFY THE BOUNDARY MONUMENTATION AND THE PROJECT BENCHMARK PRIOR TO COMMENCING CONSTRUCTION. THE BOUNDARY MONUMENTATION SHALL BE USED AS HORIZONTAL PROJECT CONTROL AND SHALL BE PROTECTED BY THE CONTRACTOR DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR MUST NOTIFY THE OWNER OF MISSING OR CONFLICTING MONUMENTATION PRIOR TO COMMENCING CONSTRUCTION.

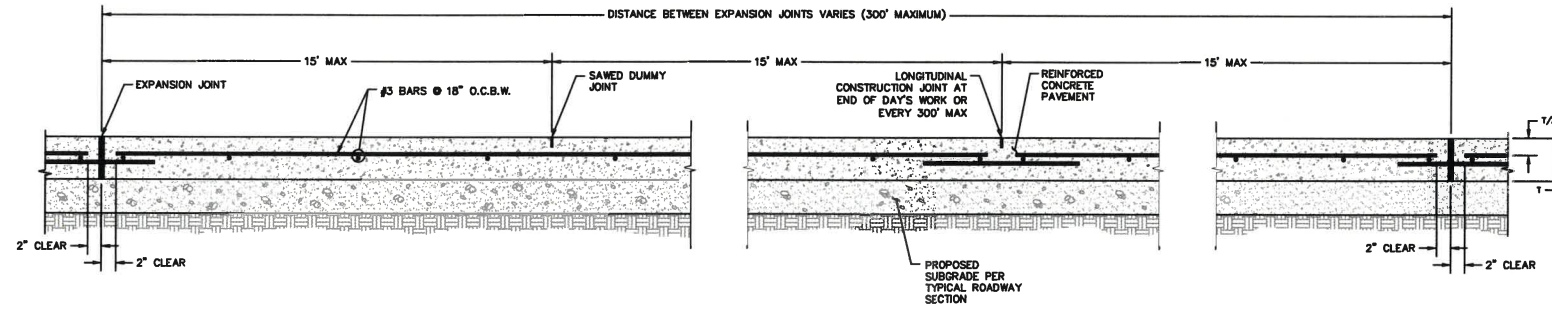
ADA NOTES:

- CONTRACTOR TO ASSURE SITE ADA ACCESS AREAS AND ROUTES WITHIN:
 - ASSURE THE RUNNING SLOPE AT THE WALKS ALONG THE ACCESSIBLE ROUTE HAVE A RUNNING SLOPE OF 1:20 OR 5% MAXIMUM (EXCEPT AT THE CURB RAMPS, WHICH CAN BE UP TO 1:12 OR 8.33%) AND A CROSS SLOPE OF 1:48 OR 2% MAXIMUM. THIS INCLUDES AT THE CROSSING OF DRIVE LANES (A COMMON ISSUE).
 - ASSURE THE MANEUVERING CLEARANCE AT THE EXTERIOR SIDE OF ALL ENTRY DOORS HAVE A SLOPE OF 1:48 OR 2% MAXIMUM IN ANY DIRECTION.
 - ASSURE A 30" X48" CLEAR FLOOR SPACE IS PROVIDED ADJACENT TO THE EXTERIOR SITE ELEMENTS SUCH AS THE BENCHES, TRASH CANS AND BIKE RACKS AND HAVE A SLOPE OF 1:48 OR 2% MAXIMUM IN ANY DIRECTION.

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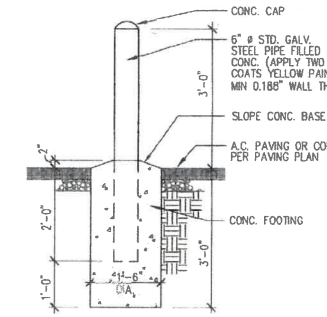


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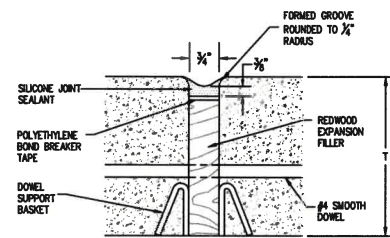
LONGITUDINAL PAVING SECTION

SCALE: N.T.S.



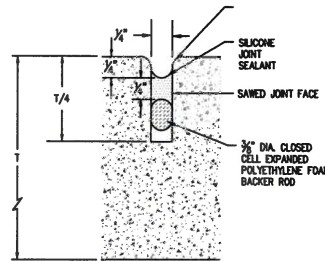
CONCRETE BOLLARD

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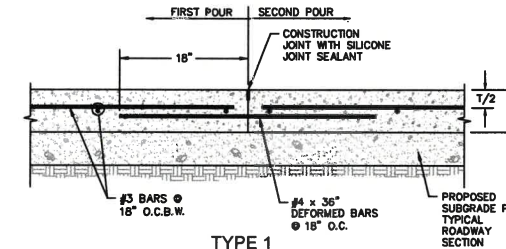
REDWOOD EXPANSION JOINT

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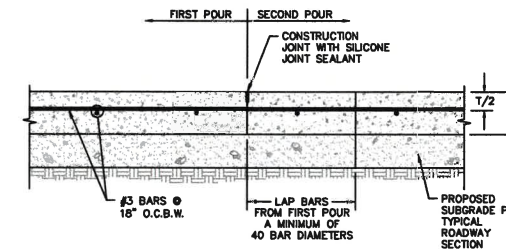


SAWED JOINT DETAIL

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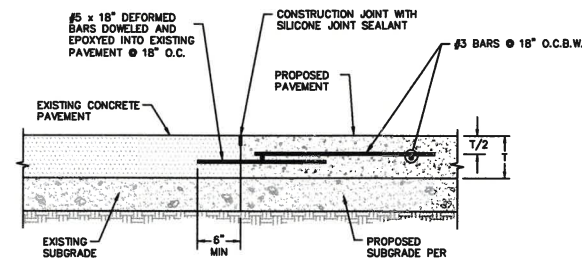
TYPE 1



TYPE 2

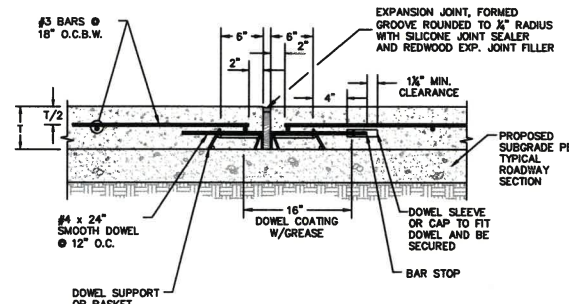
CONSTRUCTION JOINT

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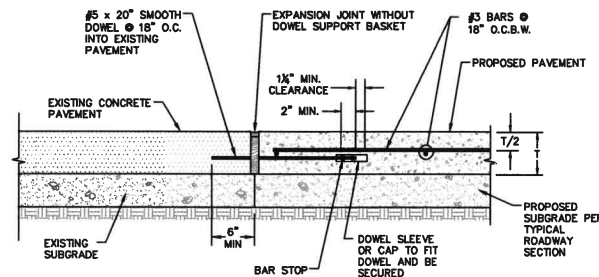
CONSTRUCTION JOINT (BETWEEN EXISTING AND PROPOSED PAVEMENT)

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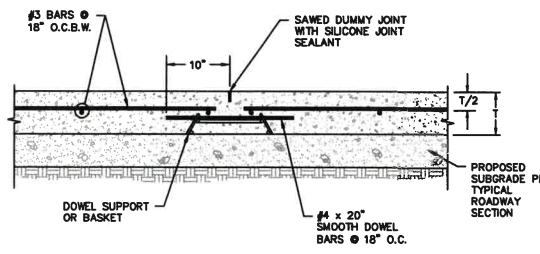
EXPANSION JOINT

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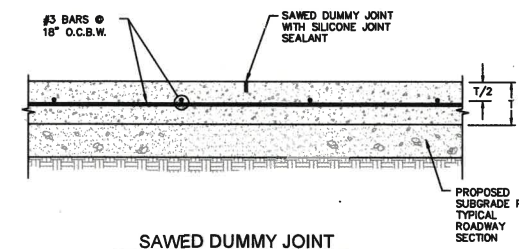
EXPANSION CONSTRUCTION JOINT (BETWEEN EXISTING AND PROPOSED PAVEMENT)

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CONTRACTION JOINT

SCALE: N.T.S.



SAWED DUMMY JOINT

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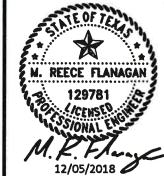
REVISIONS

NO.	DESCRIPTION	DATE

GENERAL NOTES:

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- ALL PAVING WORK SHALL COMPLY WITH CITY OF LUCAS CONSTRUCTION STANDARDS.

OK FE
12-21-18



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Fort Worth, Texas 76102
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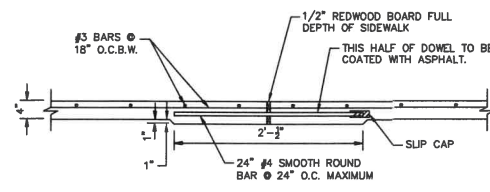
LUCAS PLAZA PHASE II

PAVING DETAILS

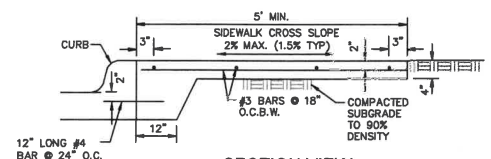
DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET C4 OF C13
CHECKED: MRF			
DRAWN: DFW			

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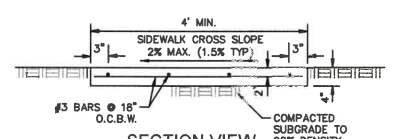
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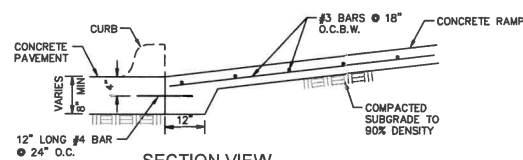
EXPANSION JOINT DETAIL



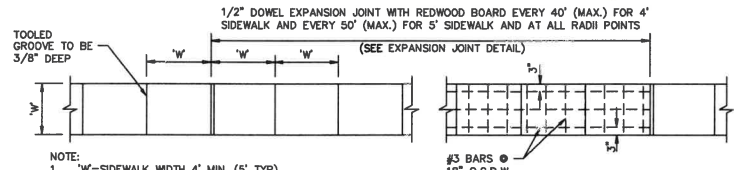
SECTION VIEW SIDEWALK ADJACENT TO CURB



SECTION VIEW SIDEWALK



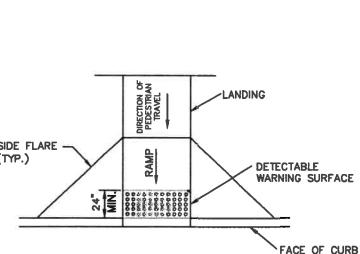
SECTION VIEW RAMP TIE-IN AT PAVEMENT



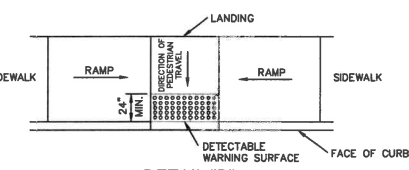
PLAN REINFORCED CONCRETE SIDEWALK

SIDEWALK DETAILS

SCALE: N.T.S.



DETAIL 'A' TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

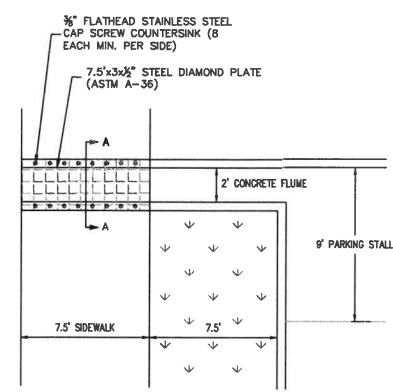


DETAIL 'B' TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE

- NOTES:**
- CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE 2012 TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES, INCLUDING SIDE FLARES. FURNISH AND INSTALL AN APPROVED DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
 - DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
 - ALIGN THE ROWS OF TRUNCATED DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET.
 - DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
 - DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE EXTENSION OF THE BACK OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG A CORNER RADIUS.
 - FURNISH DETECTABLE WARNING PAVEMENT UNITS MEETING ALL REQUIREMENTS OF ASTM C-936. LAY IN A TWO BY TWO UNIT BASKET WAVE PATTERN OR AS DIRECTED BY ENGINEER.
 - LAY FULL-SIZE UNIT FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING PAVEMENT UNITS USING A POWER SAW. DETAILS ARE PROVIDED HEREIN FOR THE PLACEMENT OF PAVERS. FOR OTHER MATERIALS, REFER TO THE MANUFACTURER'S PRODUCT MANUAL FOR PROPER INSTALLATION.
 - THE FOLLOWING IS AN APPROVED LIST OF CAST-IN-PLACE DETECTABLE WARNING MATERIALS AND THEIR MANUFACTURERS:
 - ARMOR TILE (VITRIFIED POLYMER COMPOSITE) BY ENGINEERED PLASTICS, INC., WILLIAMSVILLE, NY.
 - TACTILE PAVERS (FIRED CLAY PAVERS) BY PINE HALL BRICK, WINSTON-SALEM, NC.
 - DETECTABLE WARNING PAVEMENT (FIRED CLAY PAVERS) BY WESTERN BRICK CO., HOUSTON, TX.
 - THE ABOVE LIST OF DETECTABLE WARNING MATERIALS OR THEIR APPROVED EQUAL SHALL BE USED AS THE DETECTABLE WARNING SURFACE ON CURB RAMPS AS SHOWN IN THE STANDARD DETAILS.

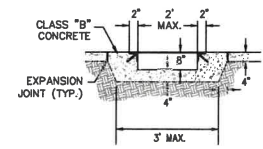
DETECTABLE WARNING SURFACE

SCALE: N.T.S.

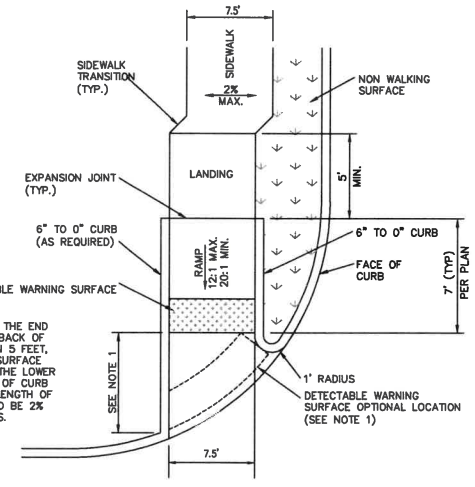


PLAN SIDEWALK SCUPPER

SCALE: N.T.S.

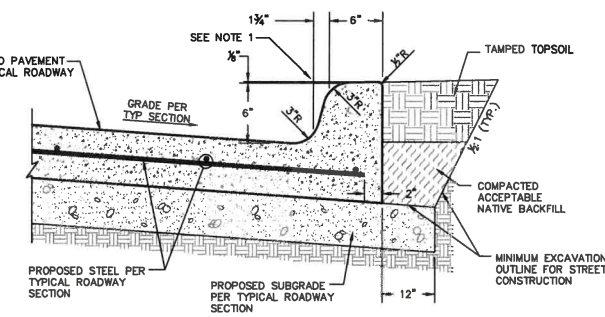


SECTION A-A



TYPE P-1 PERPENDICULAR CURB RAMP

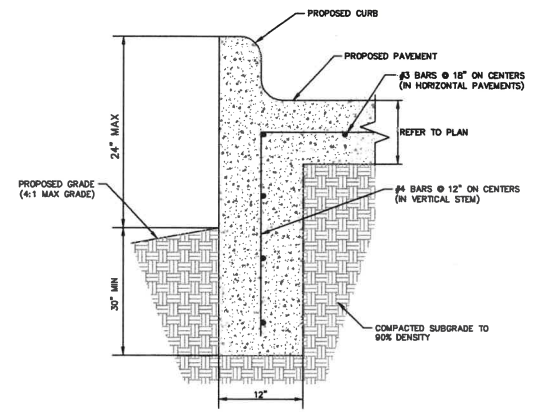
SCALE: N.T.S.



STANDARD MONOLITHIC CURB

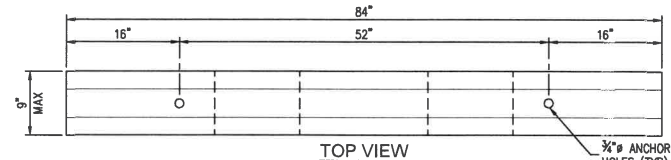
SCALE: N.T.S.

- NOTES:**
- CITY APPROVAL REQUIRED FOR USE OF CURB MULE WITH DIMENSIONS THAT VARY FROM DETAIL.
 - MATCH STREET SAWED JOINTS FOR SAWED JOINTS IN CURB.

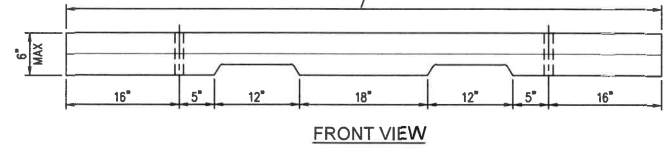


TURN DOWN CURB DETAIL

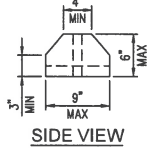
SCALE: N.T.S.



TOP VIEW



FRONT VIEW



SIDE VIEW

CONCRETE WHEELSTOP DETAIL

SCALE: N.T.S.

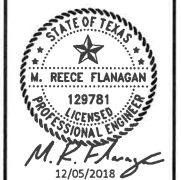
REVISIONS		
NO.	DESCRIPTION	DATE

GENERAL NOTES:

- REFER TO REPORT OF GEOTECHNICAL EXPLORATION, FOR LUCAS PLAZA PHASE II FOR PAVEMENT AND SUBGRADE SPECIFICATIONS. IF ANY DISCREPANCIES EXIST BETWEEN THESE PLANS AND THE GEOTECHNICAL REPORT, THE REPORT SHALL GOVERN.
- ALL PAVING WORK SHALL COMPLY WITH CITY OF LUCAS CONSTRUCTION STANDARDS.

JHf

12-21-18



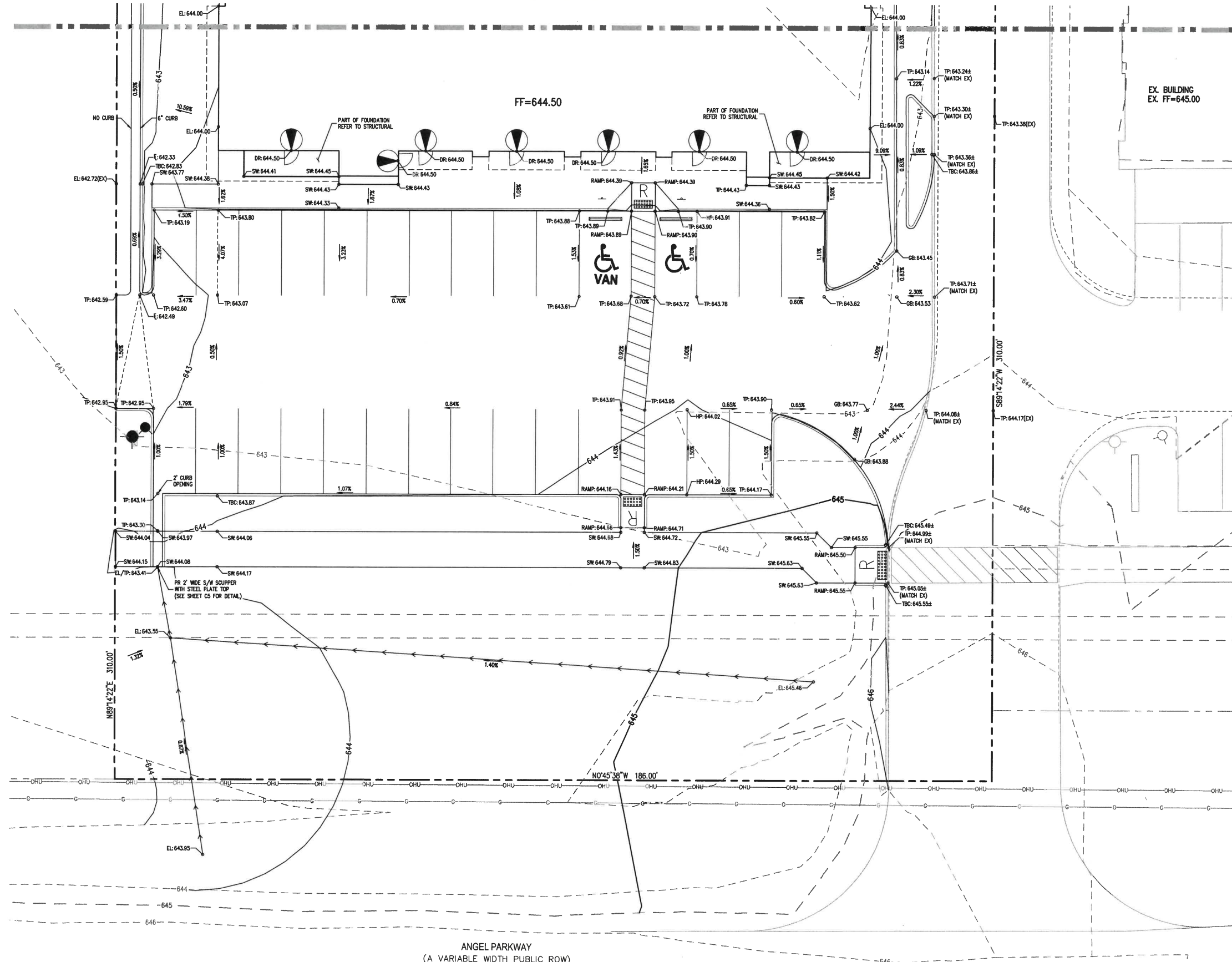
HKS HARRIS KOCHER SMITH 101 Summit Avenue, Suite 1014
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HarrisKocherSmith.com
TBPE Firm No. F-15501

LUCAS PLAZA PHASE II

PAVING DETAILS

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET: C5 OF C13
CHECKED: MRF			
DRAWN: DFW			

MATCHLINE SEE SHEET C7



ANGEL PARKWAY
(A VARIABLE WIDTH PUBLIC ROW)

REVISIONS

NO.	DESCRIPTION	DATE

LEGEND:

- 588-590 PROPOSED CONTOURS
- 588-590 EXISTING CONTOURS
- TP: 650.00 PROPOSED TOP OF PAVEMENT ELEVATION
- LP: 650.00 PROPOSED LOW POINT ELEVATION
- EL: 650.00 PROPOSED ELEVATION
- DR: 650.00 PROPOSED DOOR ELEVATION
- TBC: 650.00 PROPOSED TOP OF CURB ELEVATION
- TP: 650.00 (MATCH EX) MATCH EXISTING TOP OF PAVEMENT ELEVATION

GENERAL GRADING NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT HANDRAILS, STAIRS, CURB RAMPS, AND RAMPS ARE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND STANDARDS, INCLUDING BUT NOT LIMITED TO, THE AMERICANS WITH DISABILITIES ACT (ADA), THE FAIR HOUSING ACT (FHA) AND THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
- ALL SPOT ELEVATIONS IN PAVING AREA ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE.
- CROSS SLOPES ALONG THE ACCESSIBLE ROUTE OR AT LANDINGS SHALL NOT EXCEED 2% IN ANY DIRECTION.
- LONGITUDINAL SLOPES ALONG THE ACCESSIBLE ROUTE SHALL NOT EXCEED 5%. LONGITUDINAL SLOPES ON RAMPS SHALL NOT EXCEED 8.33%. RAMPS, EXCEPT CURB RAMPS, SHALL HAVE HANDRAILS ON BOTH SIDES.
- MULCH, IF PLACED UPSTREAM OF CONCRETE FLATWORK OR GRASSED AREA, SHALL BE PLACED ON TOP OF FINISHED GRADE SHOWN ON THESE PLANS. ROCK MULCH AREAS SHALL BE DESIGNED AND CONSTRUCTED TO ADEQUATELY DRAIN AND NOT RETAIN WATER. ALL LANDSCAPE EDGE MATERIALS SHALL NOT PREVENT DRAINAGE TO PASS THROUGH.
- NON-PAVED GRADES ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM ALL BUILDINGS AT A MINIMUM OF 5-10% FOR 5'. ALL PAVED GRADES ATTACHED TO BUILDINGS SHALL SLOPE AWAY FROM ALL BUILDINGS AT A MINIMUM OF 1%, UNLESS OTHERWISE NOTED.
- PORTIONS OF STAIRS THAT DO NOT MEET THE MINIMUM 4-INCH RISER HEIGHT (DUE TO AN ADJACENT SLOPING PUBLIC WAY) SHALL HAVE A DISTINCTIVE MARKING STRIPE, 1-INCH TO 2-INCHES IN WIDTH, WITH A SLIP-RESISTANT SURFACE, IN ACCORDANCE WITH CURRENT INTERNATIONAL BUILDING CODE REGULATIONS.
- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL ENGINEERING REPORT.
- CONTRACTOR SHALL ENSURE ACCESSIBLE EXTERIOR DOORS ARE CONSTRUCTED WITH ADEQUATE LANDING WIDTH AND DEPTH TO COMPLY WITH APPLICABLE AMERICANS WITH DISABILITIES ACT (ADA) AND AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) MANEUVERING CLEARANCES AT DOORS REQUIREMENTS, BASED ON THE DIRECTION OF APPROACH OF THE SIDE WALK.
- ALL EXISTING UTILITY LIDS AND RIMS MUST BE ADJUSTED TO PROPOSED GRADE.

STAFF
12-21-18

SCALE: 1" = 10'

M. R. Flanagan
12/05/2018

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TBPE Firm No. F-15501

LUCAS PLAZA
PHASE II

GRADING PLAN

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET C6 OF C13
CHECKED: MRF			
DRAWN: DFW			

Filepath: O:\BARR\ENGINEERING\PROJECTS\GRADING\PLANS\ANGEL PARKWAY LAYOUT GRADING PLAN.dwg
 Project: MED 12/21/18 12:30:17 PM By: Renee Flanagan
 NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

REVISIONS

NO.	DESCRIPTION	DATE

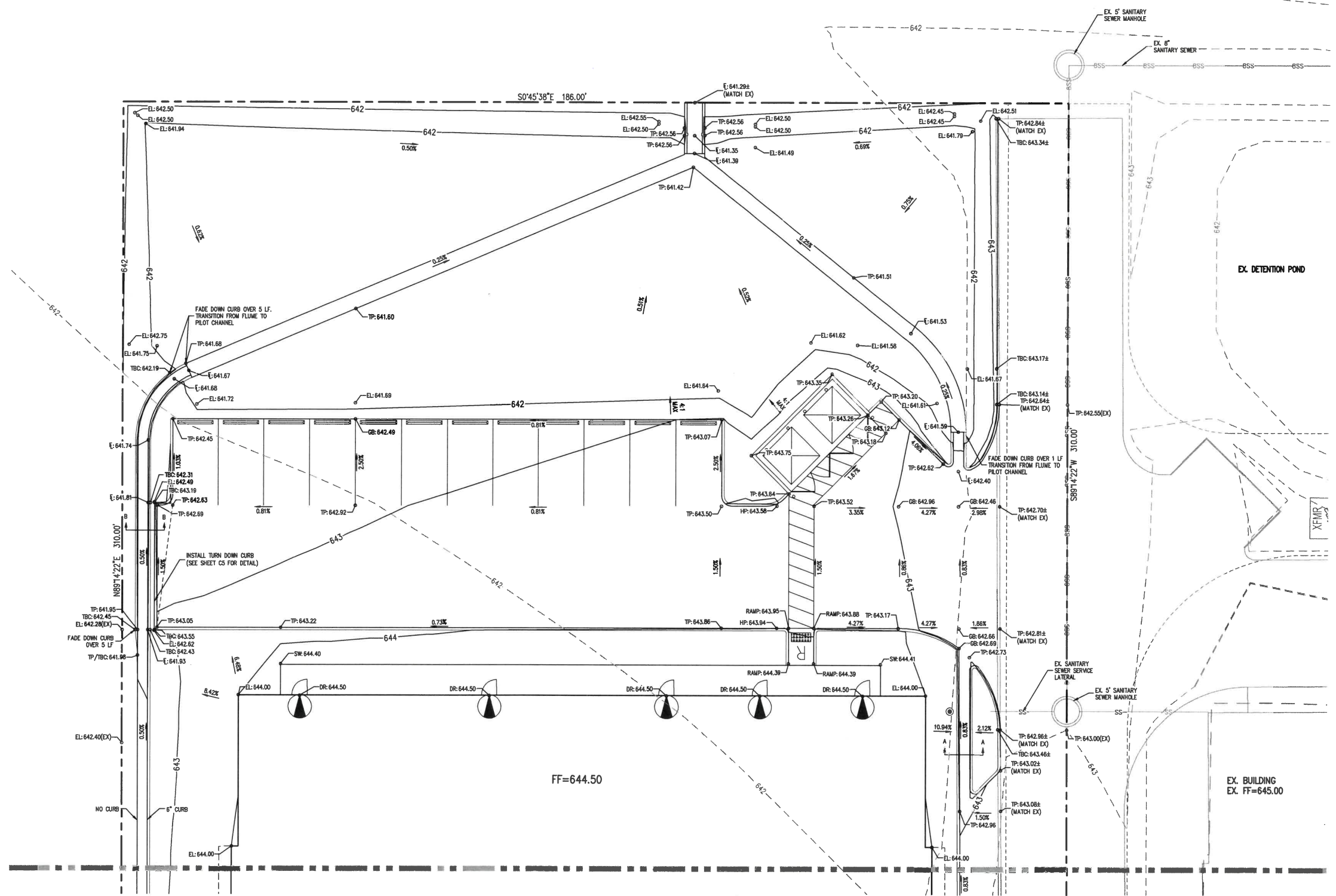
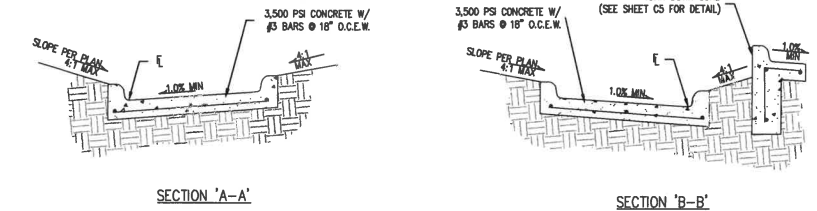
LEGEND:

- PROPOSED CONTOURS
- EXISTING CONTOURS
- TP: 650.00 PROPOSED TOP OF PAVEMENT ELEVATION
- LP: 650.00 PROPOSED LOW POINT ELEVATION
- EL: 650.00 PROPOSED ELEVATION
- DR: 650.00 PROPOSED DOOR ELEVATION
- TBC: 650.00 PROPOSED TOP OF CURB ELEVATION
- TP: 650.00 MATCH EXISTING TOP OF PAVEMENT ELEVATION (MATCH EX)

GENERAL GRADING NOTES:

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- ALL EXISTING UTILITY LIDS AND RIMS MUST BE ADJUSTED TO PROPOSED GRADE.

SJA FR
12.21.18



North arrow pointing up and slightly right. Scale: 1" = 10'. Professional Engineer seal for M. R. Flanagan, License No. 129781, State of Texas, dated 12/05/2018.

HKS HARRIS KOCHER SMITH 101 Summit Avenue, Suite 1014 Fort Worth, Texas 76102 P: 817.789.6278 F: 817.789.6298 HarrisKocherSmith.com TBPE Firm No. F-15501

LUCAS PLAZA PHASE II

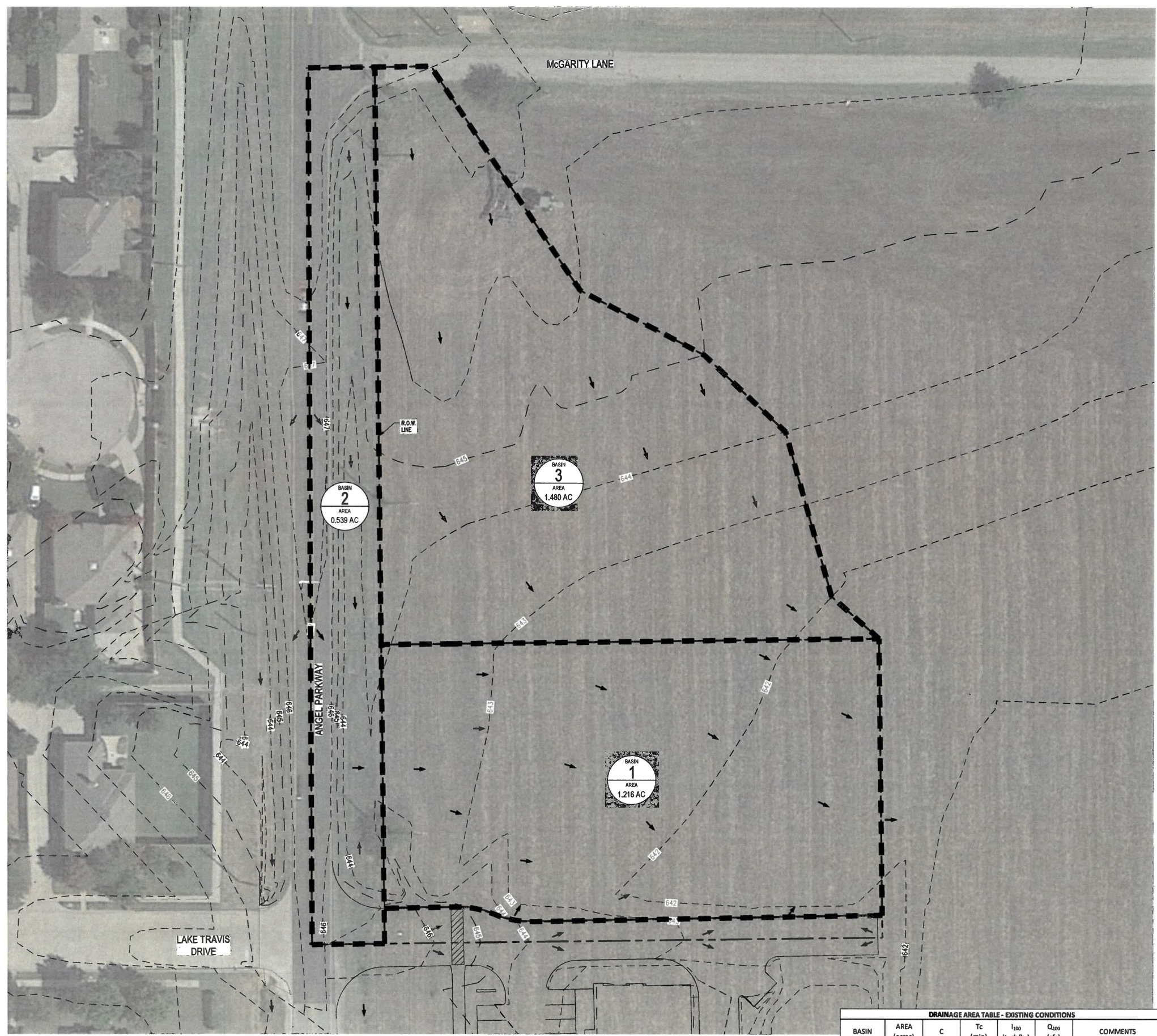
GRADING PLAN

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET C7 OF C13
CHECKED: MRF			
DRAWN: DFW			

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

MATCHLINE SEE SHEET C6

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.




BASIN	AREA (acres)	C	Tc (min)	I ₁₀₀ (inch/hr)	Q ₁₀₀ (cfs)	COMMENTS
1	1.216	0.350	15	7.86	3.35	SHEET FLOWS OFF SITE
2	0.539	0.519	15	7.86	2.20	
3	1.480	0.350	15	7.86	4.07	


NO.	DESCRIPTION	DATE

LEGEND:
 EXISTING CONTOURS - - - 588 - - - 590
 MAJOR DRAINAGE DIVIDE — — — — —
 MINOR DRAINAGE DIVIDE - - - - -
 FLOW ARROW →

ST FA
12.21.18

FLOODPLAIN NOTE
 ACCORDING TO MAP NO. 48085C0405, DATED JUNE 2, 2009 OF THE NATIONAL FLOOD INSURANCE PROGRAM MAP, FLOOD INSURANCE RATE MAP OF COLLIN COUNTY, TEXAS, FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION, THIS PROPERTY IS WITHIN ZONE "X" (SHADED) AND IS NOT WITHIN A SPECIAL FLOOD HAZARD AREA.


 SCALE: 1" = 30'


M.R. Flanagan
 12/05/2018

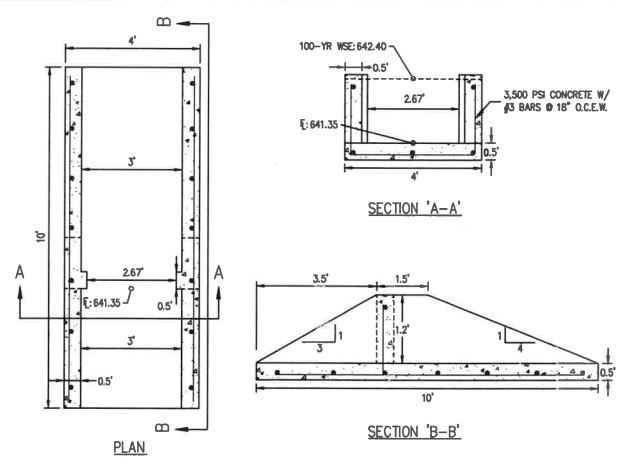
HKS HARRIS KOCHER SMITH 101 Summit Avenue, Suite 1014
 Fort Worth, Texas 76102
 P: 817.769.6279 F: 817.769.6298
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LUCAS PLAZA PHASE II

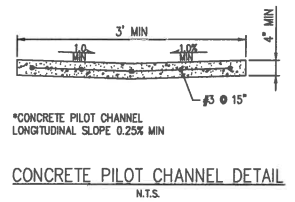
EXISTING DRAINAGE AREA MAP

DESIGNED: KDA PROJECT #: 180833 ISSUE DATE: 12/05/2018 SHEET: C8 OF C13
 CHECKED: MRF
 DRAWN: DFW

Prepared by: HARRIS KOCHER SMITH, INC. (HKS) ENGINEERING & ARCHITECTURE, L.P. (HKS E&A)
 Checked by: MRF
 Drawn by: DFW
 Date: 12/05/2018



OUTFALL STRUCTURE DETAIL
N.T.S.



CONCRETE PILOT CHANNEL DETAIL
N.T.S.

Duration (min)	Rainfall Intensity (in/hr)	Inflow Rate (cfs)	Inflow Volume (cf)	Allowable Release Rate (cfs)	Outflow Volume (cf)	Inflow - Outflow Volume (cf)	Required Storage (ac-ft)
10	9.20	16.10	9,861	9.13	5,479	4,182	0.096
15	7.86	13.76	12,381	9.13	6,849	5,532	0.127
20	6.90	12.08	14,452	9.13	8,219	6,233	0.144
25	6.18	10.82	16,224	9.13	9,589	6,635	0.152
30	5.62	9.84	17,705	9.13	10,959	6,746	0.155
35	5.16	9.03	18,965	9.13	12,328	6,637	0.152
40	4.78	8.37	20,078	9.13	13,698	6,380	0.146
45	4.46	7.81	21,078	9.13	15,063	6,008	0.138
50	4.19	7.33	22,000	9.13	16,438	5,562	0.128
55	3.95	6.91	22,814	9.13	17,808	5,006	0.115
60	3.75	6.59	23,627	9.13	19,177	4,450	0.102
120	2.39	4.18	30,117	9.13	35,615	-5,498	-0.126
180	1.81	3.17	34,213	9.13	52,953	-17,840	-0.410
360	1.11	1.94	41,962	9.13	101,366	-59,404	-1.364
720	0.67	1.17	50,657	9.13	199,993	-149,336	-3.428
1440	0.41	0.72	61,988	9.13	397,247	-335,258	-7.696

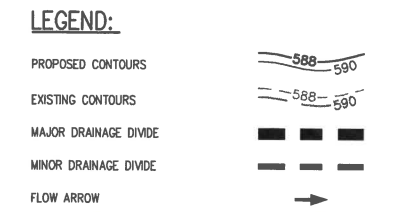
DRAINAGE AREA TABLE - PROPOSED CONDITIONS						
BASIN	AREA (acres)	C	Tc (min)	I ₁₀₀ (in/hr)	Q ₁₀₀ (cfs)	COMMENTS
1	1.113	0.800	10	9.20	8.19	DRAINS TO PROPOSED DETENTION POND
1A	0.176	0.350	15	7.86	0.48	
2	0.539	0.519	15	7.86	2.20	
3	1.480	0.350	15	7.86	4.07	

Elevation (feet)	2.57' Broad-Crested Weir Discharge (cfs)	Outflow Rate (cfs)	Outflow Volume (cf)	Required Storage (cf)	Provided Storage (cf)	Difference (cf)	Incr. Volume (cf)	Contour Area (sq. ft.)
641.35	0.00	0.00	0	17,705	0	(17,705)	0	6
641.40	0.10	0.10	113	17,592	1	(17,591)	1	20
641.45	0.28	0.28	319	17,385	7	(17,378)	7	247
641.50	0.51	0.51	586	17,119	37	(17,081)	30	352
641.55	0.79	0.79	903	16,802	115	(16,687)	77	2,147
641.60	1.11	1.11	1,282	16,443	283	(16,161)	148	3,760
641.65	1.45	1.45	1,658	16,048	491	(15,557)	229	5,396
641.70	1.83	1.83	2,090	15,615	792	(14,823)	300	6,612
641.75	2.24	2.24	2,553	15,152	1,140	(14,012)	348	7,304
641.80	2.67	2.67	3,047	14,658	1,617	(13,141)	377	7,788
641.85	3.13	3.13	3,568	14,136	2,115	(12,221)	398	8,144
641.90	3.61	3.61	4,117	13,589	2,529	(11,259)	414	8,367
641.95	4.11	4.11	4,691	13,014	2,752	(10,262)	424	8,562
642.00	4.64	4.64	5,289	12,415	3,183	(9,233)	430	8,696
642.05	5.19	5.19	5,911	11,794	3,619	(8,174)	436	8,768
642.10	5.75	5.75	6,556	11,149	4,062	(7,087)	442	8,911
642.15	6.34	6.34	7,222	10,483	4,511	(5,972)	449	9,040
642.20	6.94	6.94	7,909	9,795	4,966	(4,829)	455	9,173
642.25	7.56	7.56	8,617	9,087	5,428	(3,659)	462	9,311
642.30	8.20	8.20	9,345	8,359	5,897	(2,462)	469	9,458
642.35	8.85	8.85	10,093	7,612	6,374	(1,238)	477	9,614
642.40	9.53	9.53	10,859	6,846	6,859	13	485	9,773

REQUIRED STORAGE: 6,846 cf
PROVIDED STORAGE: 6,859 cf

Basin 2 Weighted Runoff Coefficient				
Area (sf)	Percent of Total Drainage Area	Runoff Coefficient	Weighted Runoff Coefficient	
Impervious	0.337	0.95	0.320	
Unpaved/Grassed	0.663	0.30	0.199	
Total Weighted Runoff Coefficient =				0.819

REVISIONS		
NO.	DESCRIPTION	DATE



Handwritten: 12.21.18

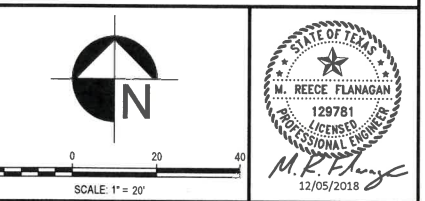
Modified Rational Method for Stormwater Detention
Lucas Plaza Retail Phase II - City of Lucas, Collin County, Texas
1.26 Acre Site - 100 Year Storm Event - Proposed Detention Pond

Purpose: To determine the volume of stormwater storage needed to compensate for increased runoff due to development.
Method: Use the Modified Rational Method to determine maximum rate of runoff, $Q = cTA$.
Where: c = Runoff Coefficient
 I = Rainfall Intensity (in/hr)
 A = Drainage Area (acres)
County: Collin
Assumptions: Rainfall Intensity determined from SMM Technical Manual Intensity Tables given Time of Concentration (Tc)
For undeveloped conditions: Use $c = 0.350$, $Tc = 15$ min., $I = 7.86$ in./hr.
For developed conditions: Use $c = 0.832$, $Tc = 10$ min., $I = 9.20$ in./hr.

EXISTING CONDITIONS - BEFORE DEVELOPMENT	
Onsite Area Contributing to Discharge Point (acres)	1,216
Adjacent Property Contributing to Discharge Point (acres)	1,480
Right-of-Way Contributing to Discharge Point (acres)	0.539
Total Time of Concentration (minutes)	15
Undeveloped Onsite Area Being Detained (acres)	0.350
Right-of-Way Runoff Coefficient	0.519
Rainfall Intensity (inches/hour)	7.86
Allowable Release Rate (cfs)	9.82

PROPOSED CONDITIONS - AFTER DEVELOPMENT	
Developed Area Being Detained (acres)	1.113
Undeveloped Onsite Area Being Detained (acres)	0.176
Adjacent Property Going Through Detention (acres)	1,480
Right-of-Way Going Through Detention (acres)	0.539
Total Time of Concentration (minutes)	10
Developed Weighted Runoff Coefficient	0.800
Undeveloped Runoff Coefficient	0.350
Right-of-Way Weighted Runoff Coefficient	0.519
Rainfall Intensity (inches/hour)	9.20
Onsite Flow Being Detained (cfs)	8.58
Onsite Flow Being Detained (cfs)	6.27

FLOODPLAIN NOTE
ACCORDING TO MAP NO. 4808SC0405, DATED JUNE 2, 2009 OF THE NATIONAL FLOOD INSURANCE PROGRAM MAP, FLOOD INSURANCE RATE MAP OF COLLIN COUNTY, TEXAS, FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION, THIS PROPERTY IS WITHIN ZONE "X" (SHADED) AND IS NOT WITHIN A SPECIAL FLOOD HAZARD AREA.



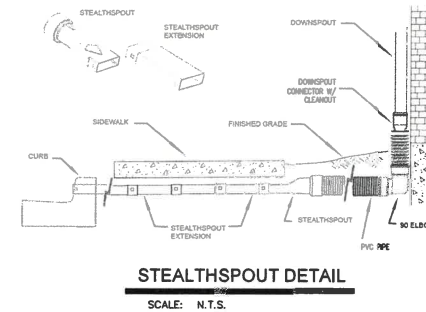
HKS HARRIS KOCHER SMITH 101 Summit Avenue, Suite 1014
Fort Worth, Texas 76102
P: 817.789.6279 F: 817.789.6298
HarrisKocherSmith.com
TBPE Firm No. F-15501

LUCAS PLAZA PHASE II
PROPOSED DRAINAGE AREA MAP

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET: C9 OF C13
CHECKED: MRF			
DRAWN: DFW			

HKS HARRIS KOCHER SMITH ENGINEERS ARCHITECTS PLANNERS
 101 SUMMIT AVENUE, SUITE 1014, FORT WORTH, TEXAS 76102
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 HARRISKOCHERSMITH.COM
 TBPE FIRM NO. F-15501

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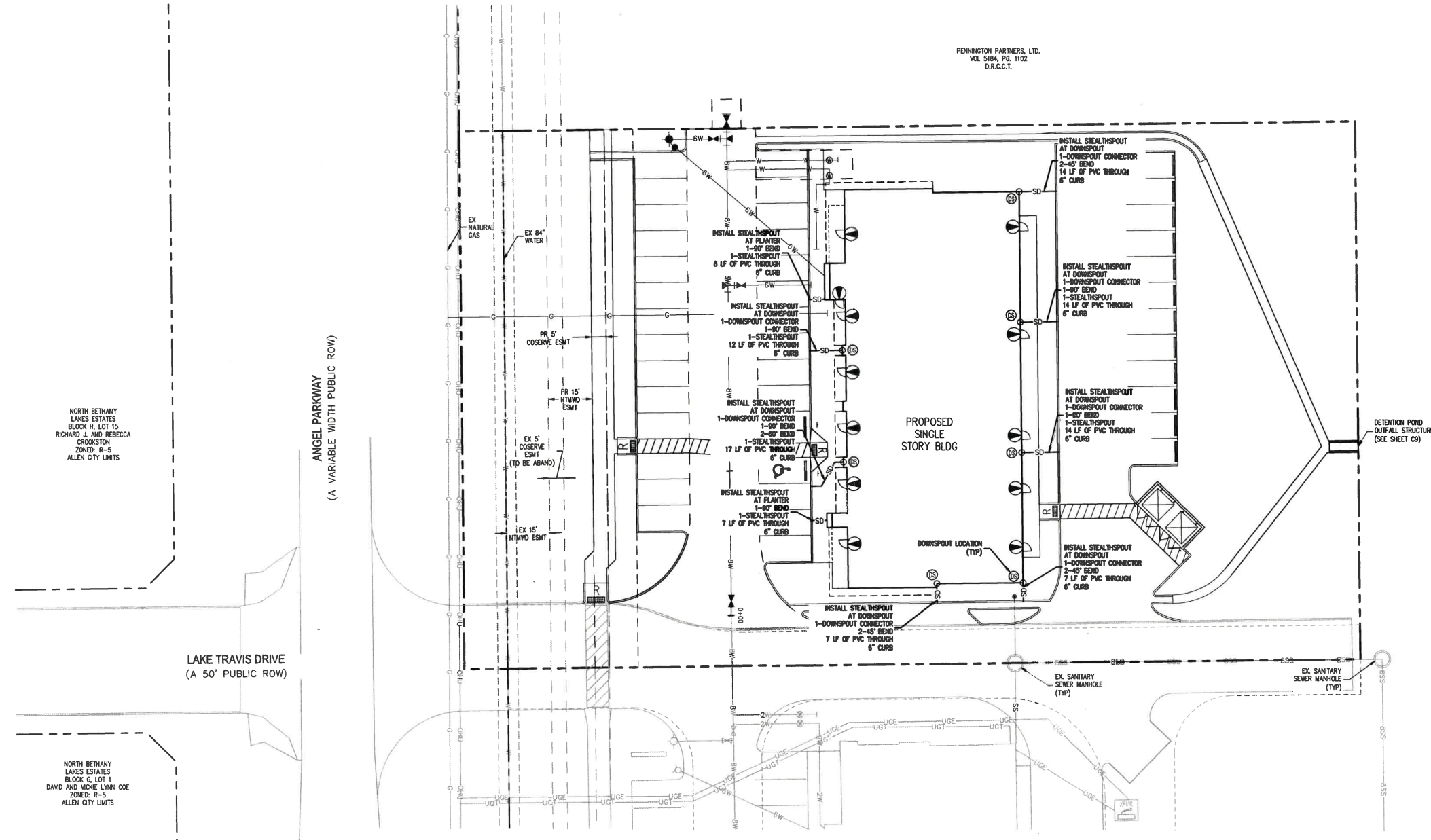
LEGEND:

	PROPOSED	EXISTING
SANITARY SEWER	—SS—	—SS—
NATURAL GAS	—G—	—G—
WATER	—W—	—W—
STORM DRAIN	—SD—	—SD—
FIRE HYDRANT	⊕	⊕
WATER VALVE	⊕	⊕
MANHOLE	⊕	⊕
WATER METER	⊕	⊕
ELECTRIC TRANSFORMER	⊕	⊕
SANITARY SEWER SERVICE	---	---
SANITARY SEWER CLEAN OUT	•	•

REVISIONS		
NO.	DESCRIPTION	DATE

NOTES:
 1) DOWNSPOUT LOCATIONS SHOWN ARE APPROXIMATE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS.

SJA FH
12.21.18



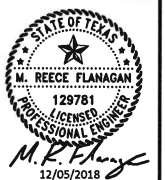
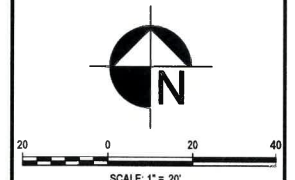
PENNINGTON PARTNERS, LTD.
 VOL 5184, PG. 1102
 D.R.C.C.T.

NORTH BETHANY LAKES ESTATES
 BLOCK H, LOT 15
 RICHARD J. AND REBECCA CROOKSTON
 ZONED: R-5
 ALLEN CITY LIMITS

ANGEL PARKWAY
 (A VARIABLE WIDTH PUBLIC ROW)

LAKE TRAVIS DRIVE
 (A 50' PUBLIC ROW)

NORTH BETHANY LAKES ESTATES
 BLOCK C, LOT 1
 DAVID AND MONIE LYNN COE
 ZONED: R-5
 ALLEN CITY LIMITS



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LUCAS PLAZA
 PHASE II

LANDSCAPE DRAIN PLAN

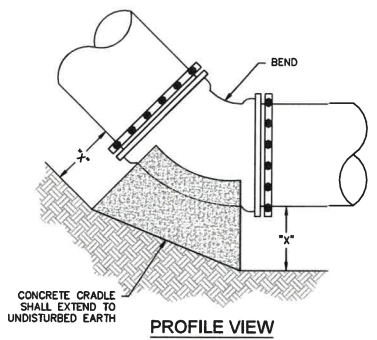


CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET C10 OF C13
CHECKED: MRF			
DRAWN: DFW			

Filepath: O:\HKS\ENGINEERING\DRAWINGS\02 - DRAINAGE PLAN\DWG Layout Layout
 7/20/18 10:58 AM
 7/20/18 10:58 AM
 7/20/18 10:58 AM

NO CHANGES ARE TO BE MADE TO THIS DRAWING WITHOUT WRITTEN PERMISSION OF HARRIS KOCHER SMITH.

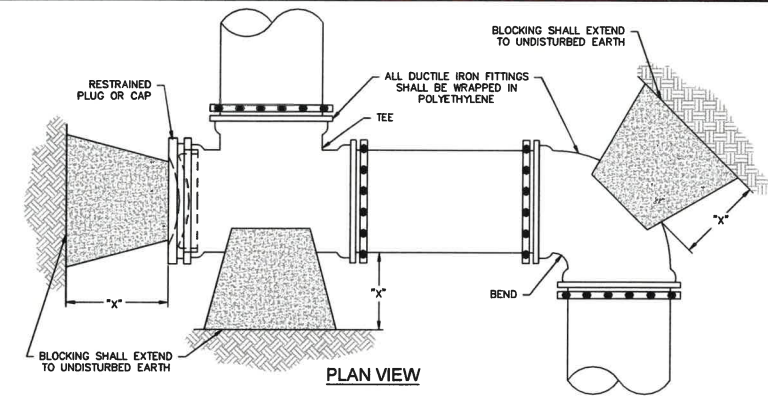


PIPE SIZE	"X" DIM. "	90° BENDS		45° BENDS		22.5° BENDS		11.25° BENDS	
		MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)
6"	1'-6"	4.50	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
8"	1'-6"	8.00	4.33	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
10"	1'-6"	12.50	6.76	4.50*	4.00*	4.00*	4.00*	4.00*	4.00*
12"	1'-6"	17.99	9.74	4.96	4.00*	4.00*	4.00*	4.00*	4.00*
16"	2'-0"	31.98	17.31	6.83	4.43	4.43	4.43	4.43	4.43
20"	2'-0"	49.98	27.05	13.79	6.93	6.93	6.93	6.93	6.93
24"	2'-0"	71.97	38.95	19.86	9.98	9.98	9.98	9.98	9.98

*MINIMUM THRUST BLOCKING SURFACE AREA SHALL BE 4 SQUARE FEET.
 **DIMENSION "X" TO BE A MINIMUM OF ONE FOOT AND SIX INCHES, BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH BOTTOM.

- NOTES:**
- THRUST BLOCKING AREAS SHOWN ARE BASED ON:
 - 225 PSI TEST PRESSURE
 - 3,000 PSF HORIZONTAL OR LATERAL BEARING PRESSURE FOR ACCEPTABLE SOILS
 - MINIMUM COVER OF 42"
 - A SAFETY FACTOR OF 1.5.
 - THE ENGINEER SHALL PROVIDE A SEPARATE BLOCKING TABLE WHEN THE CONDITIONS DO NOT MEET THE ABOVE ASSUMPTIONS.
 - THE CONTRACTOR IS REQUIRED TO PROVIDE THRUST RESTRAINT BY MEANS OF THRUST BLOCKING FOR ALL PIPES. THIS ITEM SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS BID.
 - ALL MJ FITTINGS SHALL BE ADDITIONALLY RESTRAINED WITH RETAINER GLANDS.
 - CRADLES FOR WATER LINES LARGER THAN 24" SHALL BE DESIGNED FOR THE SPECIFIC LOCATION AND SHOWN ON THE DRAWINGS.
 - ALL DUCTILE IRON FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASUREMENT PRIOR TO PLACING OF BLOCKING.

CONCRETE CRADLE
SCALE: N.T.S.

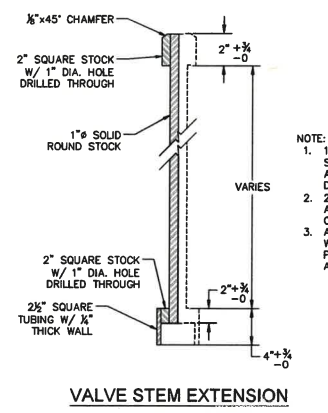
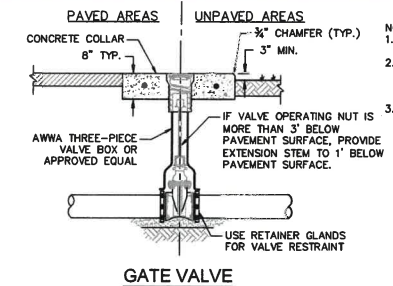
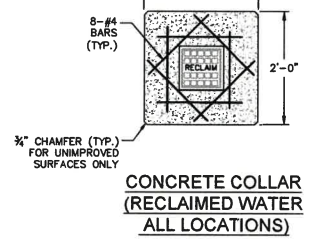
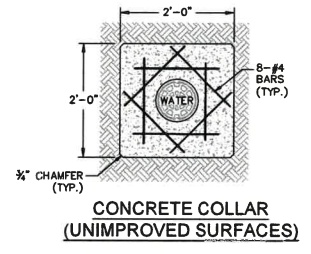
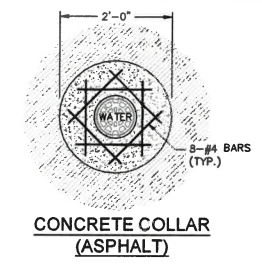


PIPE SIZE	"X" DIM. "	PLUGS, TEES, DEAD-ENDS		90° BENDS		45° BENDS		22.5° BENDS		11.25° BENDS	
		MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)	MIN. AREA (SF)
6"	1'-6"	4.00*	4.50	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
8"	1'-6"	5.65	8.00	4.33	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
10"	1'-6"	8.84	12.50	6.76	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
12"	1'-6"	12.72	17.99	9.74	4.96	4.00*	4.00*	4.00*	4.00*	4.00*	4.00*
16"	2'-0"	22.62	31.99	17.31	8.83	4.43	4.43	4.43	4.43	4.43	4.43
20"	2'-0"	35.34	49.98	27.05	13.79	6.93	6.93	6.93	6.93	6.93	6.93
24"	2'-0"	50.89	71.97	38.95	19.86	9.98	9.98	9.98	9.98	9.98	9.98

*MINIMUM THRUST BLOCKING SURFACE AREA SHALL BE 4 SQUARE FEET.
 **DIMENSION "X" TO BE A MINIMUM OF ONE FOOT AND SIX INCHES, BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.

- NOTES:**
- THRUST BLOCKING AREAS SHOWN ARE BASED ON:
 - 225 PSI TEST PRESSURE
 - 3,000 PSF HORIZONTAL OR LATERAL BEARING PRESSURE FOR ACCEPTABLE SOILS
 - MINIMUM COVER OF 42"
 - A SAFETY FACTOR OF 1.5.
 - THE ENGINEER SHALL PROVIDE A SEPARATE BLOCKING TABLE WHEN THE CONDITIONS DO NOT MEET THE ABOVE ASSUMPTIONS.
 - THE CONTRACTOR IS REQUIRED TO PROVIDE THRUST RESTRAINT BY MEANS OF THRUST BLOCKING FOR ALL PIPES. THIS ITEM SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS BID.
 - ALL MJ FITTINGS SHALL BE ADDITIONALLY RESTRAINED WITH RETAINER GLANDS.
 - BLOCKING FOR WATER LINES LARGER THAN 24" SHALL BE DESIGNED FOR THE SPECIFIC LOCATION AND SHOWN ON THE DRAWINGS.
 - ALL DUCTILE IRON FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASUREMENT PRIOR TO PLACING OF BLOCKING.

HORIZONTAL THRUST BLOCKING
SCALE: N.T.S.

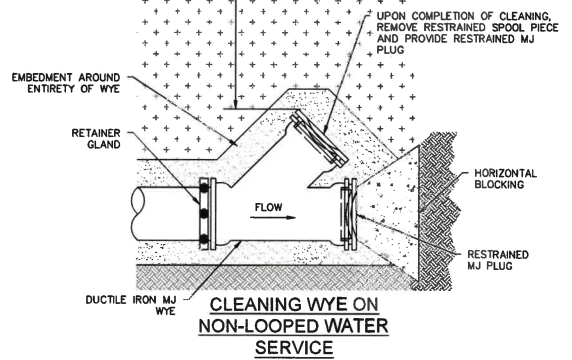


WATER DISTRIBUTION GATE VALVE & BOX (12" AND SMALLER)
SCALE: N.T.S.

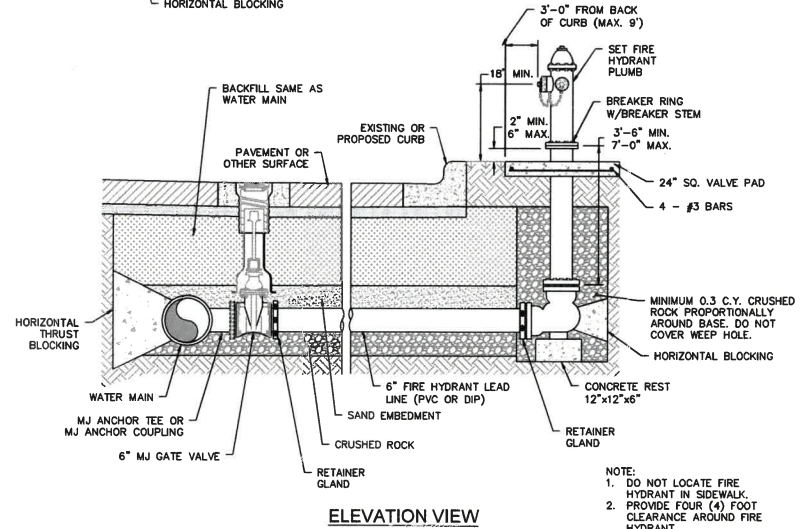
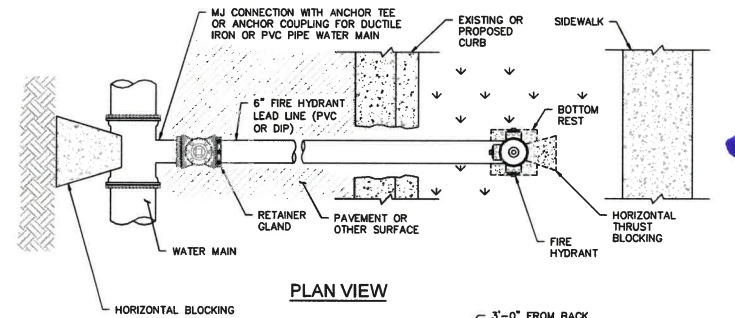
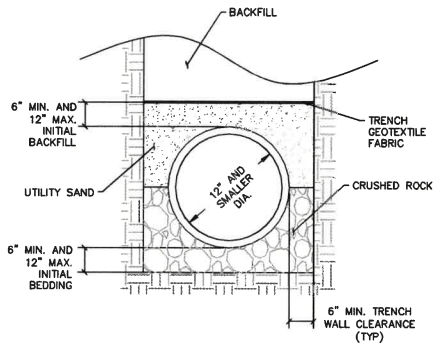
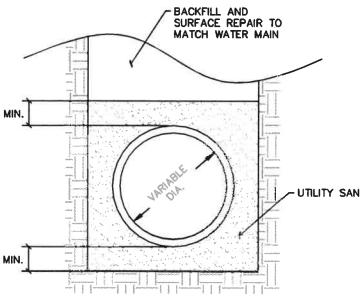
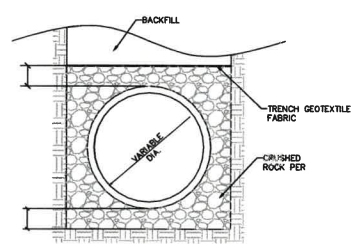
- NOTE:**
- GATE VALVES SHALL BE RESILIENT SEATED
 - PROVIDE 3" MIN. OF COVER OVER REINFORCEMENT IN ALL DIRECTIONS.
 - COLLARS SHALL BE 4,000 PSI CONCRETE

- NOTE:**
- 1" ROUND SOLID BAR & 2" SQUARE PER ASTM A-108-B1, SAE 1020, COLD DRAWN OR BETTER.
 - 2-1/2" SQUARE TUBING PER ASTM A-512-79, SAE 1020, COLD DRAWN OR BETTER.
 - ALL WELDS SHALL COMPLY WITH A.W.S. CODE FOR PROCEDURE, APPEARANCE AND QUALITY OF WELDS.

- NOTES:**
- WYES SHALL ONLY BE LOCATED WHERE INDICATED ON THE DRAWINGS.
 - ALL WATER PIPING 12" AND SMALLER SHALL BE DUCTILE IRON OR PVC.



STANDARD CLEANING WYE FOR WATER DISTRIBUTION PIPE (12" AND SMALLER)
SCALE: N.T.S.



STANDARD FIRE HYDRANT (STRAIGHT)
SCALE: N.T.S.

- NOTE:**
- DO NOT LOCATE FIRE HYDRANT IN SIDEWALK.
 - PROVIDE FOUR (4) FOOT CLEARANCE AROUND FIRE HYDRANT.
 - EXTENSION SECTIONS MAY BE USED AS REQUIRED AND INSTALLED AS PER MANUFACTURER'S INSTRUCTIONS.
 - FOR CONCRETE PRESSURE PIPE OR BURIED STEEL PIPE, PROVIDE AN ISOLATION KIT AND WAX PETROLATUM TAPE COATING.

JK FK
12.21.18

NO.	DESCRIPTION	DATE

WATER NOTES:

- CONTRACTOR SHALL COMPLY WITH THE CITY OF LUCAS WATER SYSTEM IMPROVEMENTS GUIDELINES/STANDARDS. IF THERE ARE ANY DISCREPANCIES/CONFLICTS BETWEEN THESE DETAILS AND CITY GUIDELINES/STANDARDS THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

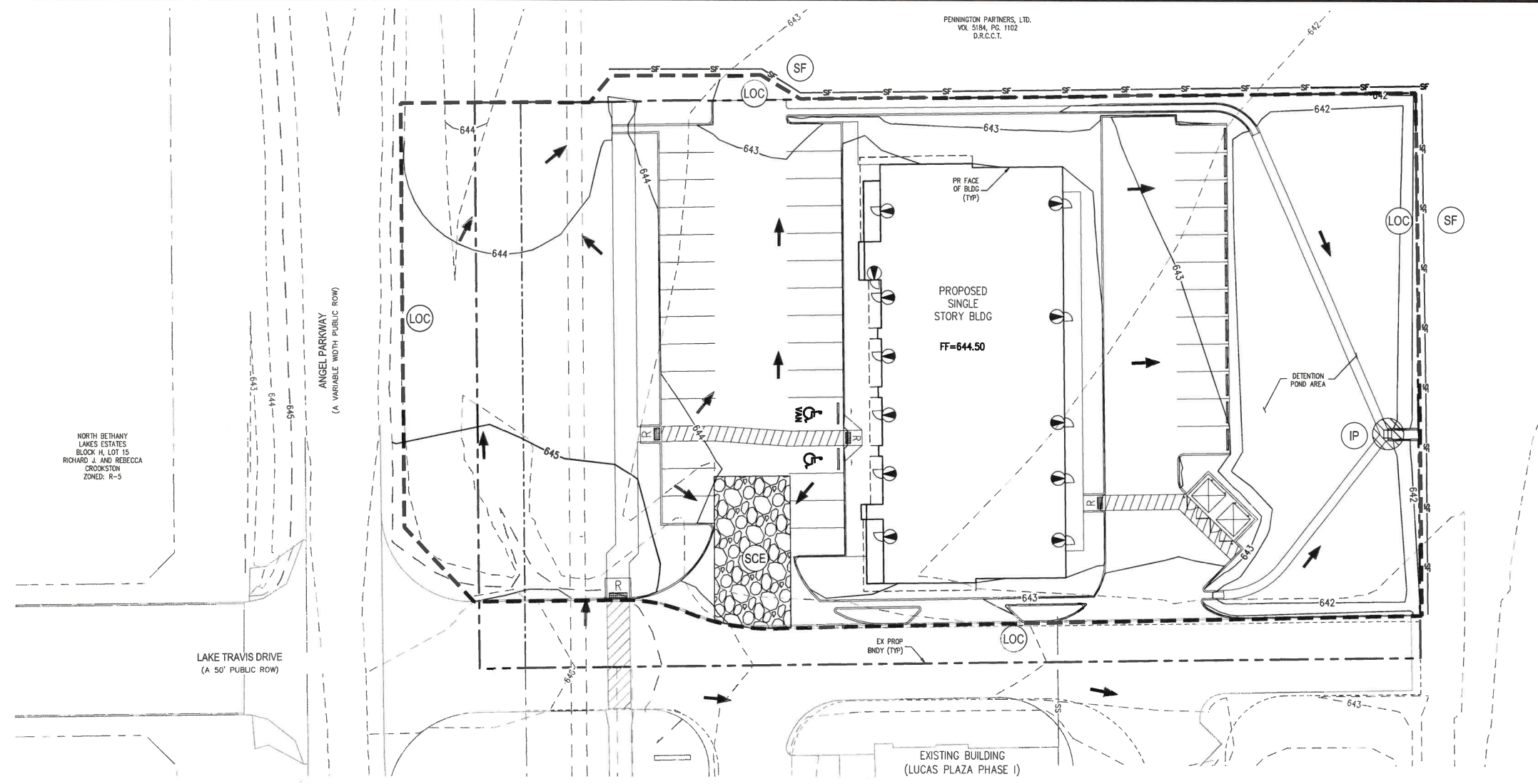


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LUCAS PLAZA PHASE II
WATER & SANITARY SEWER DETAILS

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/05/2018	SHEET C12 OF C13
CHECKED: MRF			
DRAWN: DFW			

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REVISIONS		
NO.	DESCRIPTION	DATE
1	UPDATED CONSTRUCTION ENTRANCE DETAIL	12/17/2018

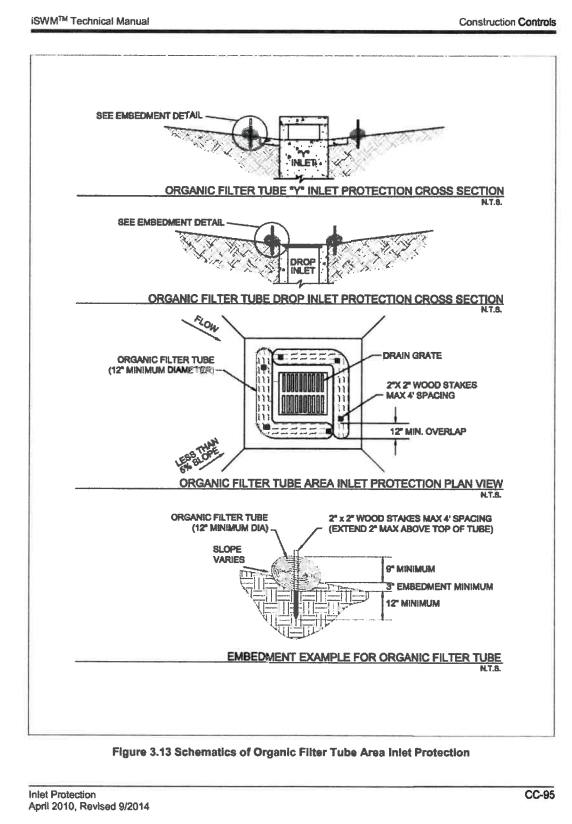
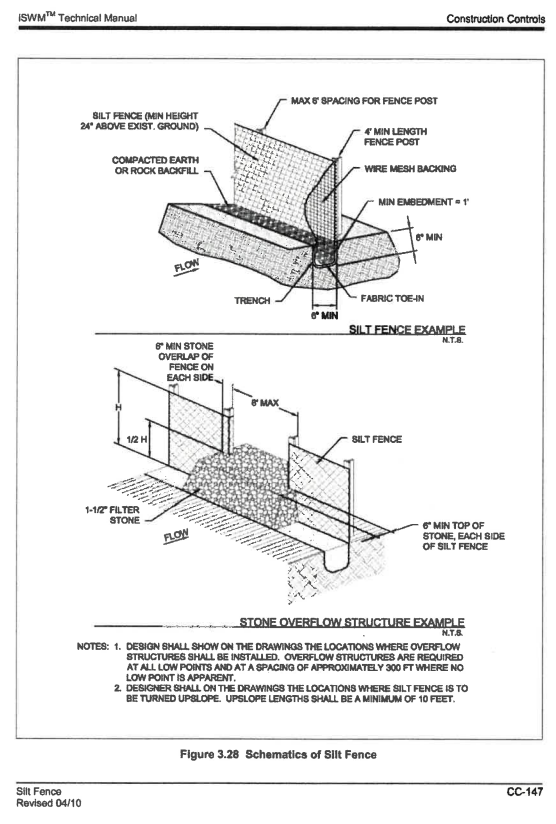
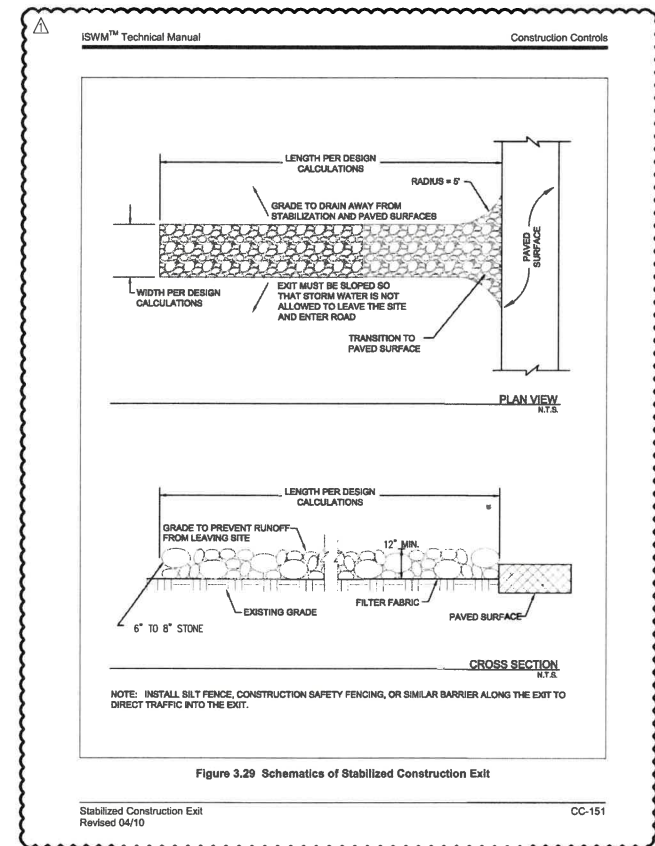
- EROSION CONTROL NOTES:**
- ALL GRASS SHALL BE RE-ESTABLISHED TO EXISTING OR BETTER CONDITION.
(A) A SEED INJECTED COMPOST BLANKET MINIMUM 2" DEPTH SHALL BE USED
 - CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS NOT FORMALLY LANDSCAPED PER THE APPROVED LANDSCAPE PLAN SEED MIX.
 - ROCK SOCKS MAY BE SUBSTITUTED FOR SILT FENCE AS PERIMETER CONTROL ON HARDSCAPE SURFACE AREAS.
 - ALL EROSION AND SEDIMENT CONTROL PRACTICES AND OTHER PROTECTIVE MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. PROPER SELECTION AND INSTALLATION OF BMPs AND IMPLEMENTATION OF COMPREHENSIVE INSPECTION AND MAINTENANCE PROCEDURES, IN ACCORDANCE WITH THE ISWM, SHOULD BE ADEQUATE TO MEET THIS CONDITION. BMPs THAT ARE NOT ADEQUATELY MAINTAINED IN ACCORDANCE WITH GOOD ENGINEERING, HYDROLOGIC AND POLLUTION CONTROL PRACTICES, INCLUDING REMOVAL OF COLLECTED SEDIMENT OUTSIDE THE ACCEPTABLE TOLERANCES OF THE BMPs, ARE CONSIDERED TO BE NO LONGER OPERATING EFFECTIVELY AND MUST BE ADDRESSED.
 - EROSION CONTROL MEASURES MAY ONLY BE PLACED IN FRONT OF INLETS, OR IN CHANNELS, DRAINAGEWAYS OR BORROW DITCHES AT RISK OF CONTRACTOR, CONTRACTOR SHALL REMAIN LIABLE FOR ANY DAMAGE CAUSED BY THE MEASURES, INCLUDING FLOODING DAMAGE, WHICH MAY OCCUR DUE TO BLOCKED DRAINAGE. AT THE CONCLUSION OF ANY PROJECT, ALL CHANNELS, DRAINAGEWAYS AND BORROW DITCHES IN THE WORK ZONE SHALL BE DREGGED OF ANY SEDIMENT GENERATED BY THE PROJECT OR DEPOSITED AS A RESULT OF EROSION CONTROL MEASURES

LEGEND:

- PROPOSED 1' CONTOURS:
- EXISTING 1' CONTOURS:
- SILT FENCE:
- PROPERTY BOUNDARY:
- FLOW ARROW:
- LIMITS OF CONSTRUCTION:
- INLET PROTECTION (ORGANIC FILTER TUBE):
- STABILIZED CONSTRUCTION ENTRANCE/ EXT 50'x25':

APPROXIMATE TOTAL DISTURBANCE AREA: 1.33 ACRES

OK FL
12.21.18



SCALE 1" = 20'

N

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TBPE Firm No. F-15501

**LUCAS PLAZA
PHASE II**

**EROSION CONTROL PLAN
& DETAILS**

DESIGNED: KDA	PROJECT #: 180833	ISSUE DATE: 12/17/2018	SHEET C13 OF C13
CHECKED: MRF			
DRAWN: DFW			

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

CALL 3 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

FILED: 01/18/2019 09:00 AM
 PROJECT: 180833
 SHEET: C13 OF C13
 HARRIS KOCHER SMITH
 101 SUMMIT AVENUE, SUITE 1014
 FORT WORTH, TEXAS 76102
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