

OWNER/DEVELOPER: BANDALI BUILDERS & ESTATE DEVELOPERS
 CONTACT: AMAN BANDALI
 P.O. BOX 27878
 AUSTIN, TX 78755
 (512) 374-4949

ENGINEER: JAMISON CIVIL ENGINEERING LLC
 CONTACT: STEPHEN R. JAMISON, P.E.
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
 (737) 484-0880

SURVEYOR: LANDPOINT INC.
 CONTACT: ROBERT GLEN MALOY, RPLS
 6410 SOUTHWEST BLVE., STE. 127
 FT WORTH, TEXAS 76109
 (817) 554-1805

LANDSCAPE ARCHITECT: MHB LANDSCAPE ARCHITECT
 CONTACT: MARK BROOKS
 544 MILITARY DRIVE
 CANYON LAKE, TEXAS 78133
 (512) 448-0137

THE SQUARE AT CRYSTAL FALLS

SITE DEVELOPMENT PLANS

PROJECT #21-SD-036

SHEET INDEX

01	COVER SHEET
02	GENERAL NOTES
03	FINAL PLAT
04	FINAL PLAT
05	FINAL PLAT
06	EXISTING CONDITIONS & DEMOLITION PLAN
07	EROSION SEDIMENTATION CONTROL PLAN
08	GRADING PLAN
09	STORM SEWER LAYOUT
10	STORM SEWER PROFILES
11	CULVERT 1 PLAN & PROFILE
12	EXISTING POND DRAINAGE MAP
13	DEVELOPED POND DRAINAGE MAP
14	PROPOSED INLET BASIN MAP
15	WATER QUALITY & DETENTION POND PLAN
16	JELLYFISH DETAILS
17	JELLYFISH DETAILS
18	DETENTION POND DETAILS
19	DETENTION POND DETAILS
20	DETENTION POND DETAILS
21	DETENTION POND DETAILS
22	DETENTION POND DETAILS
23	DETENTION POND DETAILS
24	WATER QUALITY & DETENTION CALCULATIONS
25	SITE PLAN
26	PAVING PLAN
27	WATER LINE LAYOUT
28	WASTEWATER LINE LAYOUT
29	WASTEWATER LINE A & B PROFILE
30	EROSION SEDIMENTATION CONTROL DETAILS
31	GENERAL DETAILS
32	GENERAL DETAILS
33	WATER & WASTEWATER DETAILS
34	WATER & WASTEWATER DETAILS
35	ALTERNATIVE LANDSCAPE PLAN
36	LANDSCAPE DETAILS
37	MAJOR CORRIDOR STREETScape
38	ADDRESS PLAN
39	GEOTECHNICAL REPORT

WATERSHED STATUS:

1. THIS PROJECT IS WITHIN THE BRUSHY CREEK WATERSHED.
2. THIS SITE IS LOCATED OVER THE EDWARDS AQUIFER CONTRIBUTING ZONE.

FLOOD PLAIN NOTE:

NO PORTION OF THIS SITE IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN, FIRM MAP NO. 48491C0461F WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS. DATED DECEMBER 20, 2019.

GENERAL NOTES:

1. THE DISTURBED AREAS WITHIN THIS PROJECT SHALL BE REVEGETATED AND ALL PERMANENT EROSION/SEDIMENTATION CONTROLS COMPLETED PRIOR TO THE ISSUANCE OF OCCUPANCY PERMITS FOR THAT PHASE. TEMPORARY EROSION/SEDIMENTATION CONTROLS SHALL BE ADJUSTED AS NEEDED PRIOR TO THIS RELEASE TO INSURE THAT SUBSEQUENT PHASE DISTURBED AREAS ARE ADEQUATELY COVERED. ANY AREA WITHIN THE LIMIT OF DISTURBANCE OF THE PROJECT WHICH IS NOT ADEQUATELY REVEGETATED SHALL BE BROUGHT INTO COMPLIANCE PRIOR TO THE RELEASE OF THE FINAL PHASE.
2. CONTRACTOR SHALL CALL THE ONE CALL CENTER (1-800-245-4545 OR 1-800-545-6005) OR DIG TESS (1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN EASEMENTS OR STREET R.O.W.
3. ALL CONSTRUCTION OPERATIONS AROUND SLOPES OR TRENCHES GREATER THAN FIVE FEET IN DEPTH SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)

LEGAL DESCRIPTION:

LOT 1, BLOCK A THE SQUARE @ CRYSTAL FALLS RECORDED IN DOC. # 2022086492 OF THE OFFICIAL PUBLIC RECORDS OF WILLIAMSON COUNTY, TEXAS.

BENCHMARK(S):

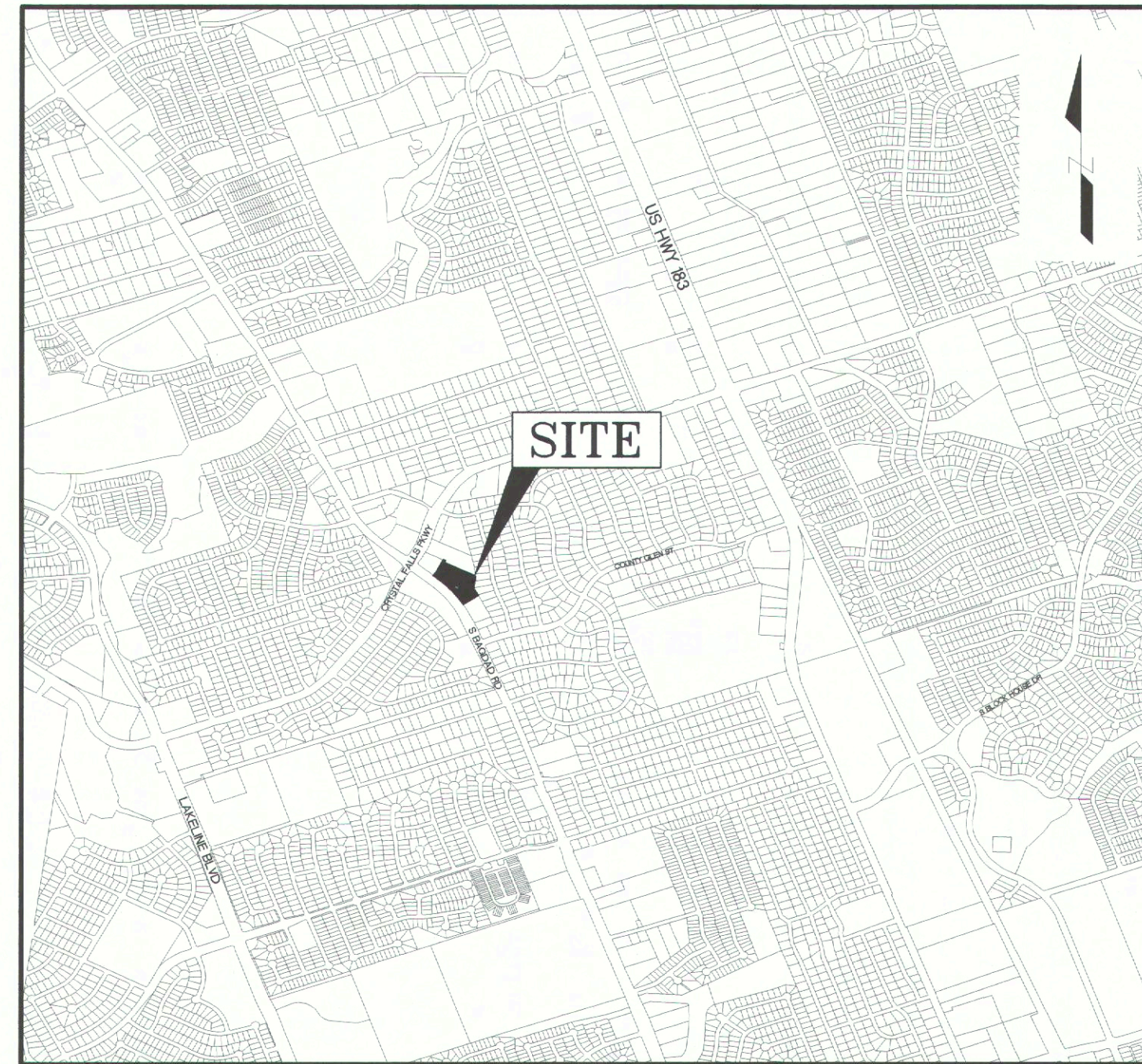
TEMPORARY BENCHMARK 1 FOR THIS SURVEY IS A SQUARE CUT IN THE EXISTING WEST DRIVE AISLE, LOCATED APPROXIMATELY 17 FEET FROM THE SOUTHWEST CORNER OF THE SUBJECT PROPERTY.

NAVD 1988 ELEVATION: 1049.30'

TEMPORARY BENCHMARK 2 FOR THIS SURVEY IS A SQUARE CUT IN THE EXISTING WEST DRIVE AISLE, LOCATED APPROXIMATELY 5 FEET FROM THE NORTHWEST CORNER OF THE SUBJECT PROPERTY.

NAVD 1988 ELEVATION: 1048.73'

REVISIONS				
NO.	DESCRIPTION	REVISE(R)/ADD(A) SHEET NO.'S	TOTAL # SHEETS IN PLAN SET	APPROVED/DATE



LOCATION MAP
1"=2,000'

LAND USE SUMMARY	
ZONING	= GC-3-C
PROPOSED USE	= RETAIL
TOTAL ACREAGE	= 3.289 Ac.
TOTAL IMPERVIOUS COVER	= 96,105 SF / 2.21 Ac.
BUILDING IMPERVIOUS COVER	= 21,000 SF / 0.48 Ac.
COMMERCIAL	= 1 LOT
FUTURE LAND USE CATEGORY	= MULTI-USE CORRIDOR

LIMITATION OF LIABILITY - JAMISON CIVIL ENGINEERING LLC ASSUMES NO LIABILITY FOR ANY DESIGN OR DRAWINGS IN THESE PLANS THAT ARE NOT SIGNED AND SEALED BY A PROFESSIONAL ENGINEER EMPLOYED BY THE FIRM. OTHER CONSULTANTS' WORK SHOWN IN THESE PLANS IS THE RESPONSIBILITY OF THE CONSULTANT WHO PREPARED SUCH WORK, AND IS INCLUDED IN THIS PLAN SET FOR REVIEW REQUIREMENTS ONLY.

SITE PLAN COMPONENTS - ALL BUILDING AND STRUCTURAL IMPROVEMENTS SHOWN HEREON ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY. JAMISON CIVIL ENGINEERING LLC IS NOT RESPONSIBLE OR LIABLE FOR THE DESIGN OF BUILDING AND STRUCTURAL IMPROVEMENTS BY OTHERS.

STRUCTURAL COMPONENTS - ALL STRUCTURAL DESIGN IS THE RESPONSIBILITY OF THE OWNER'S STRUCTURAL ENGINEER. STRUCTURAL DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S STRUCTURAL ENGINEER.

PAVEMENT DESIGN - PAVEMENT DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S GEOTECHNICAL CONSULTANT. JAMISON CIVIL ENGINEERING LLC MAKES NO WARRANTY OR GUARANTEE AS TO ITS SUITABILITY, AND ASSUMES NO LIABILITY THEREFOR.

THIS SITE PLAN HAS BEEN REVIEWED AND APPROVED BY THE CITY OF LEANDER. ALL CONSTRUCTION ON THE SUBJECT SITE MUST BE CONSTRUCTED CONSISTENT WITH THESE PLANS. ALL RESPONSIBILITY FOR ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF LEANDER MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.

THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, REGULATORY COMPLIANCE, AND ADEQUACY OF THESE PLANS AND OR SPECIFICATIONS, WHETHER OR NOT THE PLANS OR SPECIFICATIONS WERE REVIEWED BY CITY ENGINEER(S).

THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. IT IS A RESPONSIBILITY OF THE OWNER TO PROVIDE COMPLIANCE WITH ALL LEGISLATION RELATED TO ACCESSIBILITY WITHIN THE LIMITS OF CONSTRUCTION SHOWN IN THESE PLANS.

SUBMITTAL DATE: 10/05/2021

21-SD-036

CASE NUMBER

SUBMITTED BY:

SRJ
 STEPHEN R. JAMISON, P.E.
 JAMISON CIVIL ENGINEERING LLC
 TX. PE FIRM REG #F-17756
 DATE: 7/27/2022

APPROVED BY:

Rob M. Griffin
 ROBIN M. GRIFFIN, AICP, EXECUTIVE DIRECTOR
 OF DEVELOPMENT SERVICES
 DATE: 08/26/2022

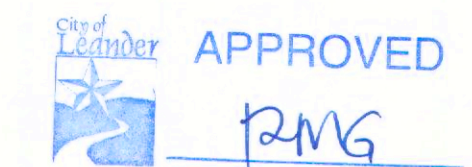
ROB
 ROSS E. BLACKETTER, P.E., CITY ENGINEER
 DATE: 23 Aug 22

Mark Tummons
 MARK TUMMONS, CRRP, DIRECTOR OF
 PARKS AND RECREATION
 DATE: 8/25/22

Chf J Davis
 CHIEF JOSHUA DAVIS, FIRE MARSHAL
 DATE: 8/24/22

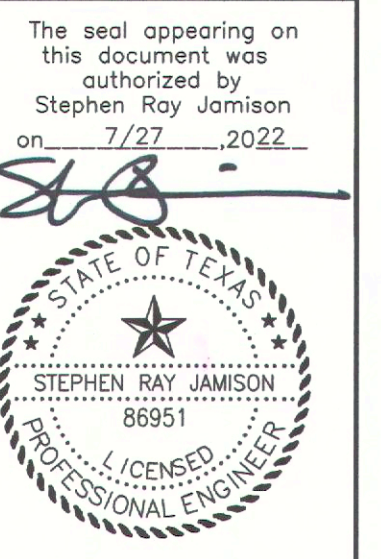
21-SD-036

CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY/ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK. (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.



JAMISON CIVIL ENGINEERING LLC
 (TX. PE FIRM REG. #F-17756)
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
 COVER SHEET
 PROJECT NUMBER #21-SD-036



File: H:\1900 BAGDADD\DWG\PLANS\COVER.DWG	Snapshot:	Scale (Hor.):	Scale (Vert.):	Checked By: SRJ	Drawn By: MM
Job No.	Date: 09/09/21	Revision 1:	Revision 2:	Revision 3:	Revision 4:

GENERAL NOTES

REVISED FEBRUARY 25, 2020

ANY CHANGES TO THESE NOTES SHOULD BE CLOUDED ON THE PLAN SET.

CITY CONTACTS:
ENGINEERING MAIN LINE: 512-528-2766
PLANNING DEPARTMENT: 512-528-2750
PUBLIC WORKS MAIN LINE: 512-259-2640
STORMWATER INSPECTIONS: 512-285-0055
UTILITIES MAIN LINE: 512-259-1142
UTILITIES ON-CALL: 512-690-4760

- 1. THE CONTRACTOR SHALL VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION...
2. THE CONTRACTOR SHALL CONTACT THE TEXAS EXCAVATION SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS 48 HOURS PRIOR TO THE START OF CONSTRUCTION...
3. CONTACT THE CITY OF LEANDER PUBLIC WORKS DEPARTMENT FOR EXISTING WATER, WASTEWATER, STREET LIGHT ELECTRICAL WIRING, AND TRAFFIC SIGNAL WIRING LOCATIONS A MINIMUM OF 48 HOURS PRIOR TO START OF CONSTRUCTION...
4. ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE CITY BY THE DESIGN ENGINEER FOR REVIEW AND WRITTEN APPROVAL PRIOR TO CONSTRUCTION OF THE REVISION.

WATER AND WASTEWATER NOTES

- 1. PRESSURE TAPS SHALL BE IN ACCORDANCE WITH CITY OF LEANDER STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, ETC. AND SHALL FURNISH, INSTALL AND AIR TEST THE SLEEVE AND VALVE...
2. FIRE HYDRANTS ON MAINS UNDER CONSTRUCTION SHALL BE SECURELY WRAPPED WITH A BLACK POLY WRAP BAG AND TAPED INTO PLACE...
3. CURVILINEAR WASTEWATER DESIGN LAYOUT IS NOT PERMITTED.

STREET AND DRAINAGE NOTES

- 1. ALL SIDEWALKS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. THE CITY OF LEANDER HAS NOT REVIEWED THESE PLANS FOR COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT...
2. PRIOR TO ACCEPTANCE THE ENGINEER SHALL SUBMIT DOCUMENTATION THAT THE IMPROVEMENTS WERE INSPECTED BY TDLR OR A REGISTERED ACCESSIBILITY SPECIALIST (RAS) AND ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE TABA.

CONSTRUCTION SEQUENCE NOTES:

- 1. INSTALL STABILIZED CONSTRUCTION ENTRANCES WHERE REQUIRED.
2. INSTALL ALL TEMPORARY EROSION CONTROLS.
3. CLEAR AND GRUB STRIP TOPSOIL. STOCKPILE TOPSOIL FOR LATER USE.

EROSION CONTROL NOTES

- 1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS AND TREE PROTECTIVE FENCING PRIOR TO ANY WORK (CLEARING, GRUBBING OR EXCAVATION). CONTACT STORMWATER INSPECTOR FOR ON SITE INSPECTION PRIOR TO BEGINNING CONSTRUCTION.

TRENCH SAFETY NOTES

- 1. TRENCH SAFETY SYSTEMS TO BE UTILIZED FOR THIS PROJECT ARE DESCRIBED IN ITEM 509S 'TRENCH SAFETY SYSTEMS' OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS AND SHALL BE IN ACCORDANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE U.S. OCCUPATION SAFETY AND HEALTH ADMINISTRATION REGULATIONS.

GRADING NOTES

- 1. POSITIVE DRAINAGE SHALL BE MAINTAINED ON ALL SURFACE AREAS WITHIN THE SCOPE OF THIS PROJECT. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.

BENCHMARK NOTES

TEMPORARY BENCHMARK FOR THIS SURVEY IS A SQUARE CUT IN THE EXISTING WEST DRIVE AISLE, LOCATED APPROXIMATELY 17 FEET FROM THE SOUTHWEST CORNER OF THE SUBJECT PROPERTY.

CAUTION!!!
CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK.
(BOTH HORIZONTALLY AND VERTICALLY).
THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.



JAMISON CIVIL ENGINEERING LLC
(TX, PE FIRM REG. #E-17756)
13812 RESEARCH BLVD. #B-2
AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
GENERAL NOTES
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Roy Jamison on 12/28/2021

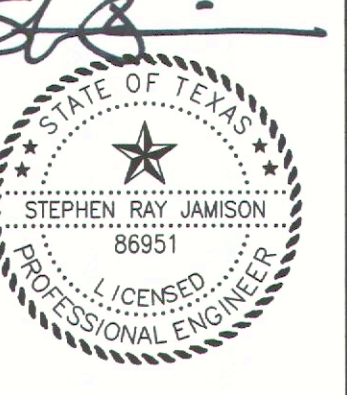


Table with project details: File: H11900.BAGDADDWGLANSNOTES.DWG, Job No., Scale (Hor.), Date: 08/09/21, Checked By: SRJ, Drawn By: MM, Scale (Vert.), Revision 1, Revision 2, Revision 3, Revision 4.

Doc # 2022086492

THE SQUARE AT CRYSTAL FALLS
Establishing the subdivision of a 2.768 acre tract out of the S. J. Dover Survey,
Abstract 168 and Replat of Lot 22, Block D of the County Glen Section 8 Subdivision
Short Form Final Plat
CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

OWNER

THE SQUARE @ CRYSTAL FALLS, LLC
7817 ROCKWOOD LN. STE. 300
AUSTIN, TX 78757
AMAN@BANDALIBUILDERS.COM
(512) 374-4949

DEVELOPER

BANDALI BUILDERS & ESTATE DEVELOPERS
P.O. BOX 27878
AUSTIN, TX 78755
AMAN@BANDALIBUILDERS.COM
(512) 374-4949

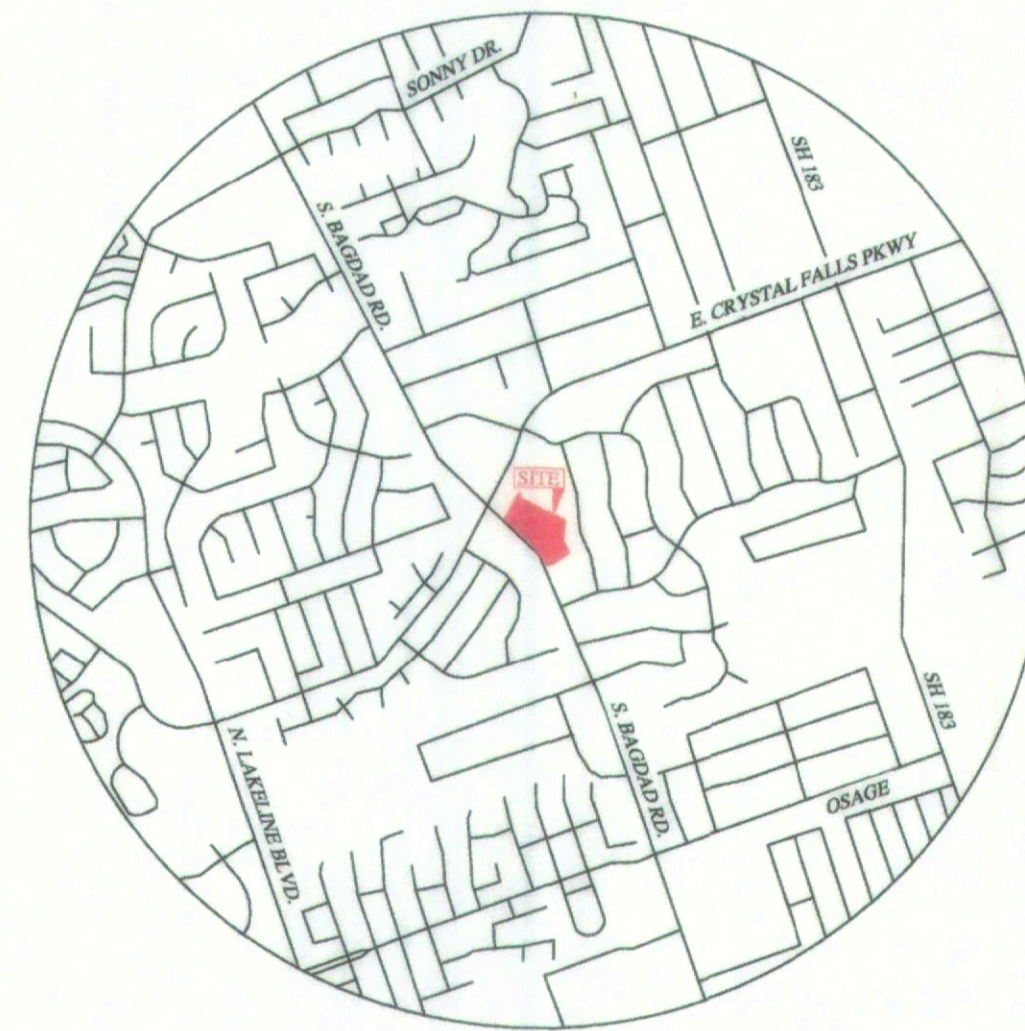
ENGINEER

JAMISON CIVIL ENGINEERING, LLC
STEPHEN R. JAMISON, P.E.
13812 RESEARCH BLVD. #B-2
AUSTIN, TX 78750
STEVE@JAMISONENG.COM
(512) 840-1512

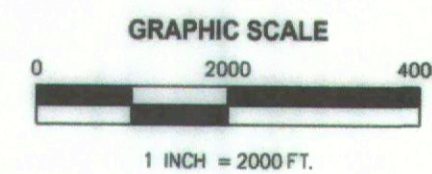
SURVEYOR

LANDPOINT, LLC
6410 SOUTHWEST BLVD. STE. 127
FORT WORTH, TX 76109
CONTACT@LANDPOINT.NET
(817) 554-1805

SUBMITTAL DATE= 9/28/2021



VICINITY MAP



SHEET INDEX:

- 1. COVER SHEET
- 2. FINAL PLAT
- 3. NOTES AND SIGNATURES

LAND USE:

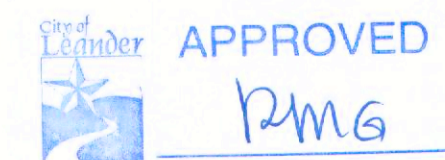
NUMBER OF LOTS: 1
TOTAL ACREAGE: 3.234 ACRES



4100 INTERNATIONAL PLAZA, STE. 240
FORT WORTH, TX 76109
(817) 554-1805
www.landpoint.net
TBPELS REG. NO. 10194220
SHEET 1 OF 3

21-SD-036

CAUTION!!!
CONTRACTOR SHALL LOCATE ANY/ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK, (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.



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THE SQUARE AT CRYSTAL FALLS
FINAL PLAT
PROJECT NUMBER #21-SD-036

File: H:\1900 BAGDADDI\DWG\PLANS\PLAT.DWG	Snapshot:
Job No.:	Scale (Hor.):
Scale (Vert.):	Date: 08/09/21
Checked By: SRJ	Drawn By: MM
Revision 1:	Revision 2:
Revision 3:	Revision 4:

Doc #2022086492

THE SQUARE AT CRYSTAL FALLS
Establishing the subdivision of a 2.768 acre tract out of the S. J. Dover Survey,
Abstract 168 and Replat of Lot 22, Block D of the County Glen Section 8 Subdivision
Short Form Final Plat
CITY OF LEANDER, WILLIAMSON COUNTY, TEXAS

STATE OF TEXAS
COUNTY OF WILLIAMSON

WHEREAS The Square @ Crystal Falls LLC is the owner of that certain 3.234 acre tract of land situated in the S. J. Dover Survey, Abstract No. 168, in the City of Leander, Williamson County, Texas, and being all of that certain called 2.768 acre tract of land described in the deed to The Square @ Crystal Falls LLC, recorded in Document No. 2021012738, Official Public Records, Williamson County, Texas and all of Lot 22, Block D, County Glen, Section Eight, according to the plat thereof recorded in Cabinet F, Slide 379, Plat Records, Williamson County, Texas and described in the deed to The Square @ Crystal Falls LLC, recorded in Document No. 2021010791, Official Public Records, Williamson County, Texas and being more particularly described by metes and bounds as follows:

BEGINNING at the Northeast corner of the tract being described herein at a capped iron rod stamped "Terra Firma" found in the West line of said County Glen for the Southeast corner of Lot 1, Bagdad Falls, according to the plat thereof recorded in Document No. 2008020586, Official Public Records, Williamson County, Texas and the Northeast corner of said 2.768 acre tract of land, said point being in the West line of Lot 10, Block D of said County Glen;

THENCE with the West line of said County Glen and the East line of said 2.768 acre tract of land, the following courses and distances:

S05°42'49"E, a distance of 14.45 feet to a 5/8-inch iron rod with plastic cap stamped "Landpoint" set (hereinafter referred to as capped iron rod set) for corner;

S06°48'33"W, a distance of 147.78 feet to a 5/8-inch iron rod found for the Southwest corner of Lot 11, Block D, the Northwest corner of Lot 12, Block D of said County Glen, the North corner of said Lot 22 and the Southeast corner of said 2.768 acre tract of land;

THENCE S29°59'02"E, with the West line of said Lot 12 and the Northeasterly line of said Lot 22, a distance of 110.83 feet to a point for the Southwest corner of said Lot 12, the Northwest corner of Lot 13, Block D, the North corner of Lot 21, Block D of said County Glen, the East corner of said Lot 22 and the Southeast corner of said tract herein described, from which a 1/2-inch iron rod found for reference bears S56°03'58"W, a distance of 0.69 feet;

THENCE S56°03'58"W, with the Northwesterly line of said Lot 21 and the Southeasterly line of said Lot 22, a distance of 202.43 feet to a capped iron rod set in the Northeasterly right-of-way line of South Bagdad Road (120-foot width right-of-way) for the West corner of said Lot 21, the South corner of said Lot 22 and the South corner of said tract herein described, said point being in a curve to the left;

THENCE with the Northeasterly right-of-way line of said South Bagdad Road, the Southwesterly line of said Lot 22, the Southwesterly line of said 2.768 acre tract of land and with said curve to the left, passing at an arc length of 100.03 feet a 1/2-inch iron rod found for the West corner of said Lot 22 and the South corner of said 2.768 acre tract of land, passing at an arc length of 341.51 feet a capped iron rod stamped "Diamond Surveying" found for reference and continuing on said curve for a total arc length of 441.26 feet, having a central angle of 16°56'14", a radius of 1492.68 feet and a chord that bears N42°22'54"W, a distance of 439.65 feet to a capped iron rod set at the end of said curve;

THENCE N50°50'44"W, continuing with the Northeasterly right-of-way line of said South Bagdad Road and the Southwesterly line of said 2.768 acre tract of land, a distance of 67.37 feet to a 3/4-inch iron rod found for the South corner of Lot 2, Final Plat of Lot 2 of Bagdad Falls Subdivision, according to the plat thereof recorded in Document No. 2011035753, Official Public Records, Williamson County, Texas, the West corner of said 2.768 acre tract of land and the West corner of said tract herein described;

THENCE with the Southeasterly line of said Lot 2 and the Northwesterly line of said 2.768 acre tract of land, the following courses and distances:

N39°19'27"E, a distance of 14.65 feet to a capped iron rod stamped "Terra Firma" found for the beginning of a curve to the left;

With said curve to the left, an arc length of 69.98 feet, having a central angle of 14°04'04", a radius of 285.00 feet and a chord that bears N31°52'57"E, a distance of 69.80 feet to a 1/2-inch iron rod found at the end of said curve;

N24°52'22"E, a distance of 149.72 feet to a mag nail with washer found in the Southwesterly line of Lot 1 of said Bagdad Falls for the East corner of said Lot 2, the North corner of said 2.768 acre tract of land and the North corner of said tract herein described;

THENCE with the Southwesterly line of said Lot 1 and the Northeasterly line of said 2.768 acre tract of land, the following courses and distances:

S65°17'19"E, a distance of 22.39 feet to a mag nail with washer found for corner;

S24°57'28"W, a distance of 29.95 feet to a mag nail with washer found for corner;

S65°07'32"E, a distance of 397.27 feet to the POINT OF BEGINNING and containing 3.234 acres of land.

STATE OF TEXAS
COUNTY OF WILLIAMSON

That I, Robert Glen Maloy, am authorized under the laws of the State of Texas to practice the profession of land surveying and hereby state that I prepared this plat from an actual and accurate on-the-ground survey of the land and that the corner monuments shown thereon were properly placed under my personal supervision, fieldwork was completed on April 1, 2021, in accordance with all City of Leander Ordinances and Codes and that all existing easements of record as found on the Title Policy provided by Stewart Title Guaranty Company, GF No. 974495, effective date: October 12, 2020, issue date: October 12, 2020 (2.768 Acres) and from Title Resources Guaranty Company, GF No. 2065715-COM, effective date: October 30, 2020, issue date: November 10, 2020 (Lot 22) have been shown or noted herein.

Robert Glen Maloy
Registered Professional Land Surveyor
Registration No. 6028



06/16/2022
Date

KNOW ALL MEN BY THESE PRESENTS

That The Square @ Crystal Falls LLC, as the owner of that certain 3.269 acre tract of land recorded in Document Nos. 2021012738 and 2021010791, Official Public Records, Williamson County, Texas, does hereby dedicate to the public forever use of all additional ROW, streets, alleys, easements, parks, and all other lands intended for public dedication, or when the subdivisor has made provision for perpetual maintenance thereof, to the inhabitants of the subdivision as shown hereon to be known as:

THE SQUARE AT CRYSTAL FALLS

The Square @ Crystal Falls LLC

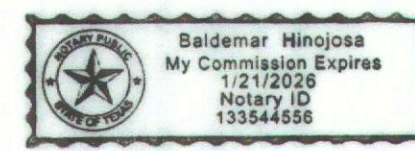
Amran Bandali
Member Owner G.C.

STATE OF TEXAS
COUNTY OF WILLIAMSON

BEFORE ME, the undersigned authority, a Notary Public in and for said County and State, on this the 20th day of JUNE, 2022, personally appeared, AMRAN ULIAH BANDALI as OWNER of The Square @ Crystal Falls LLC, a duly authorized agent with authority to sign said document, personally known to me (and proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE on this the 20th day of JUNE, 2022.

Baldemar Hinojosa
Notary Public
State of Texas



Baldemar Hinojosa
Printed Name

01/21/2020
My Commission Expires

NOTES:

- 1. This subdivision is wholly contained within the current corporate limits of the City of Leander, Texas.
2. No lot in this subdivision shall be occupied until connected to the City of Leander water distribution and wastewater collection facilities.
3. A Building Permit is required from the City of Leander prior to construction of any building or site improvements on any lot in this subdivision.
4. No buildings, fences, landscaping or other structures are permitted within drainage easements shown except as approved by the City of Leander Public Works Department.
5. Property owner shall provide for access to drainage easements as may be necessary and shall not prohibit access by the City of Leander.
6. All easements on private property shall be maintained by the property owner or his or her assigns.
7. In addition to the easement shown hereon, a ten (10') foot wide public utility easement is dedicated along and adjacent to all right-of-way and a two and a half (2.5') foot wide public utility easement is dedicated along all side lot lines.
8. No portion of this tract is shown as a flood hazard area as shown on the Flood Insurance Rate Map Panel # 48491C0461F for Williamson Co., effective December 20, 2019.
9. Building setbacks shall shown hereon shall comply with the most current zoning ordinance of the City of Leander. Additional residential garage setbacks may be required as listed in the current zoning ordinance.
10. Sidewalks shall be installed on the subdivision side of Bagdad Road. Those sidewalks not abutting a residential, commercial, or industrial lot (including sidewalks along street frontages of lots proposed for schools, churches, park lots, detention lots, drainage lots, landscape lots, or similar lots), sidewalks on arterial to which access is prohibited, sidewalks on double frontage lots on the side to which access is prohibited, and all sidewalks on safe school routes shall be installed when the adjoining street is constructed.
11. All utility lines must be located underground.
12. Approval of this final plat does not constitute the approval of variances or waivers to ordinance requirements.
13. All drive lanes, fire lanes, and driveways within this subdivision shall provide for reciprocal access for ingress and egress to all other lots within the subdivision and to adjacent properties.
14. At the time of site development permit, the applicant will provide a payment to the City in lieu of a traffic impact analysis (TIA), unless a TIA for the entire development indicates that average daily trips are estimated below 2,000.

STATE OF TEXAS
COUNTY OF WILLIAMSON

That I, Stephen R. Jamison, am authorized under the laws of the State of Texas to practice the profession of engineering, and do hereby state that this plat conforms with the applicable ordinances of the City of Leander, Texas.

Stephen R. Jamison
Professional Engineer
Registration No. 86951
TPE Firm No. F-1775b

06/15/2022
Date

Approved this the 14th day of July, 2022 A.D. at a public meeting of the Planning and Zoning Commission of the City of Leander, Texas, and authorized to be filed for record by the County Clerk of Williamson County.
Attest: Ellen Coufal, Secretary
City of Leander, Texas

SCHEDULE B NOTES G.F. NO. 974495

- 10a. Rights of parties in possession. (Owner Title Policy only)
10b. An electric transmission and distributing line easement granted to Texas Power & Light Company, recorded in Volume 235, Page 184, Deed Records of Williamson County, Texas, as affected by Exclusion from Easement recorded in Document Number 2006092225, Official Public Records of Williamson County, Texas, can not be located by description.
10c. A pipeline easement granted to Leander Water Supply Corporation, as described in Volume 934, Page 100, of the Deed Records of Williamson County, Texas, to the extent that the same may affect the subject property, does not affect subject tract.
10d. A 20' electric transmission and/or distribution line easement granted to Pedernales Electric Cooperative, Inc., recorded in Volume 1667, Page 570, Official Records of Williamson County, Texas, affects subject tract as shown.
10e. A 20' electric transmission and/or distribution line easement granted to Pedernales Electric Cooperative, Inc., recorded in Volume 1667, Page 582, Official Records of Williamson County, Texas, affects subject tract as shown.
10f. All terms, conditions, and provisions of that certain Easement Agreement, recorded in/under Document Number 2006022614 of the Official Public Records of Williamson County, Texas, does not affect subject tract.
10g. All terms, conditions, and provisions of that certain Shared Access and Utility Easement granted to Sundance Southwest Development LLC, recorded in/under Document Number 2008002966 of the Official Public Records of Williamson County, Texas, affects as shown.
10h. All terms, conditions, and provisions of that certain Drainage Easement Agreement, recorded in/under Document Number 2008002967 of the Official Public Records of Williamson County, Texas, affects as shown.
10i. All terms, conditions, and provisions of that certain Ingress, Egress and Utilities Easement, recorded in/under Document Number 2011087368 of the Official Public Records of Williamson County, Texas, affects as shown.
10j. All leases, grants, exceptions or reservations of coal, lignite, oil, gas and other minerals, together with all rights, privileges, and immunities relating thereto, appearing in the Public Records whether listed in Schedule B or not. There may be leases, grants, exceptions or reservations of mineral interests that are not listed.
10k. Rights of tenants, and assigns, as tenants only, under currently effective lease agreements.

SCHEDULE B NOTES G.F. NO. 2065715-COM

- 1. Subject to restrictive covenants recorded in Cabinet F, Slide 379, Plat Records, Volume 1180, Page 13, Official Records, Williamson County, Texas, but omitting any covenant or restriction based on race, color, religion, sex, disability, handicap, familial status or national origin.
10a. Building setback lines as set forth on the recorded plat and dedication set out in Schedule A hereof, effects as shown.
10b. Building setback lines as set forth in instrument recorded in Volume 1180, Page 13, Official Records, Williamson County, Texas, Lot 22, Block D exempt from restrictions.
10c. Easement as shown on the plat and dedication set out in Schedule A hereof: Purpose: public utility
Location: 10' in width along the rear lot line, effects as shown.
10d. Easement/Recorded: Volume 1180, Page 13, Official Records, Williamson County, Texas; Purpose: drainage and public utility
Location: 7.5' in width along the rear lot line, Lot 22, Block D exempt from restrictions.
10e. Easement/Recorded: Volume 235, Page 184, Deed Records, Williamson County, Texas.
To: Texas Power & Light Co.
Purpose: electric, can not be located by description.
10f. Easement/Recorded: Volume 657, Page 792, Deed Records, Williamson County, Texas.
To: Leander Water Supply Corp. Purpose: water line, does not affect subject tract.
10g. Easement/Recorded: Volume 734, Page 658, Deed Records, Williamson County, Texas.
To: Leander Water Supply Corp. Purpose: water line, 15' in width with the centerline thereof being the pipeline as installed.
10h. Easement/Recorded: Volume 1659, Page 59, Official Public Records, Williamson County, Texas. (Lot 22, Block D)
To: Pedernales Electric Cooperative, Inc. Purpose: electric utility, effects as shown.
10i. Easement/Recorded: Volume 1739, Page 85, Official Public Records, Williamson County, Texas. (Lot 22, Block D)
To: City of Leander, Williamson County, Texas.
Purpose: public utility, effects as shown.
10j. Inclusion within the Brushy Creek WCID No.1.
10k. Rights of Parties in Possession. (Owner Policy).
10l. Any visible and apparent easement, either public or private, located on or across the land, the existence of which is not disclosed by the Public Records as herein defined.
10m. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the land.

The subdivision is subject to all general notes and restrictions appearing on the plat of COUNTY GLEN SECTION 8, BLOCK D, Lot(s) 22, recorded by

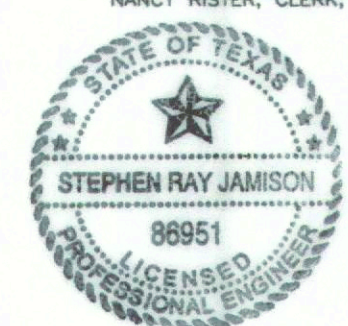
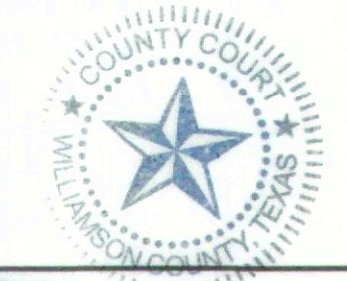
Instrument # CABINET F, SLIDE 379 of Plat Records of Williamson County, Texas.

STATE OF TEXAS 88
COUNTY OF WILLIAMSON 88

I, NANCY RISTER, CLERK OF THE COUNTY COURT OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT IN WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE ON THIS THE 20th DAY OF July, 2022 A.D., AT 10:51 O'CLOCK, A.M. AND DULY RECORDED THIS 20th DAY OF July, 2022 A.D., AT 10:51 O'CLOCK, A.M. IN THE PLAT RECORDS OF SAID COUNTY IN INSTRUMENT NO. 2022086492.

TO CERTIFY WHICH, WITNESS MY HAND AND SEAL AT THE COUNTY COURT OF SAID COUNTY, AT MY OFFICE IN GEORGETOWN, TEXAS, THE DATE LAST SHOWN ABOVE WRITTEN.

NANCY RISTER, CLERK COUNTY COURT OF WILLIAMSON COUNTY, TEXAS
BY: Brenda Miskovic - Brenda Miskovic
NANCY RISTER, CLERK, COUNTY COURT, WILLIAMSON COUNTY, TEXAS DEPUTY



4100 INTERNATIONAL PLAZA, STE. 240
FORT WORTH, TX 76109
(817) 554-1805
www.landpoint.net
TBPELS REG. NO. 10194220

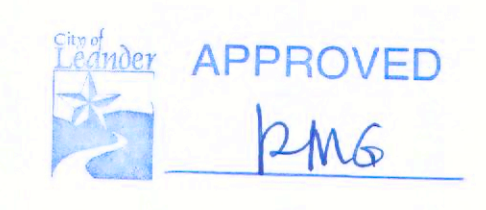
SHEET 3 OF 3

JAMISON CIVIL ENGINEERING LLC
(TX, PE FIRM REG. #F-17756)
13812 RESEARCH BLVD. #B-2
AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
INFO@JAMISONENG.COM

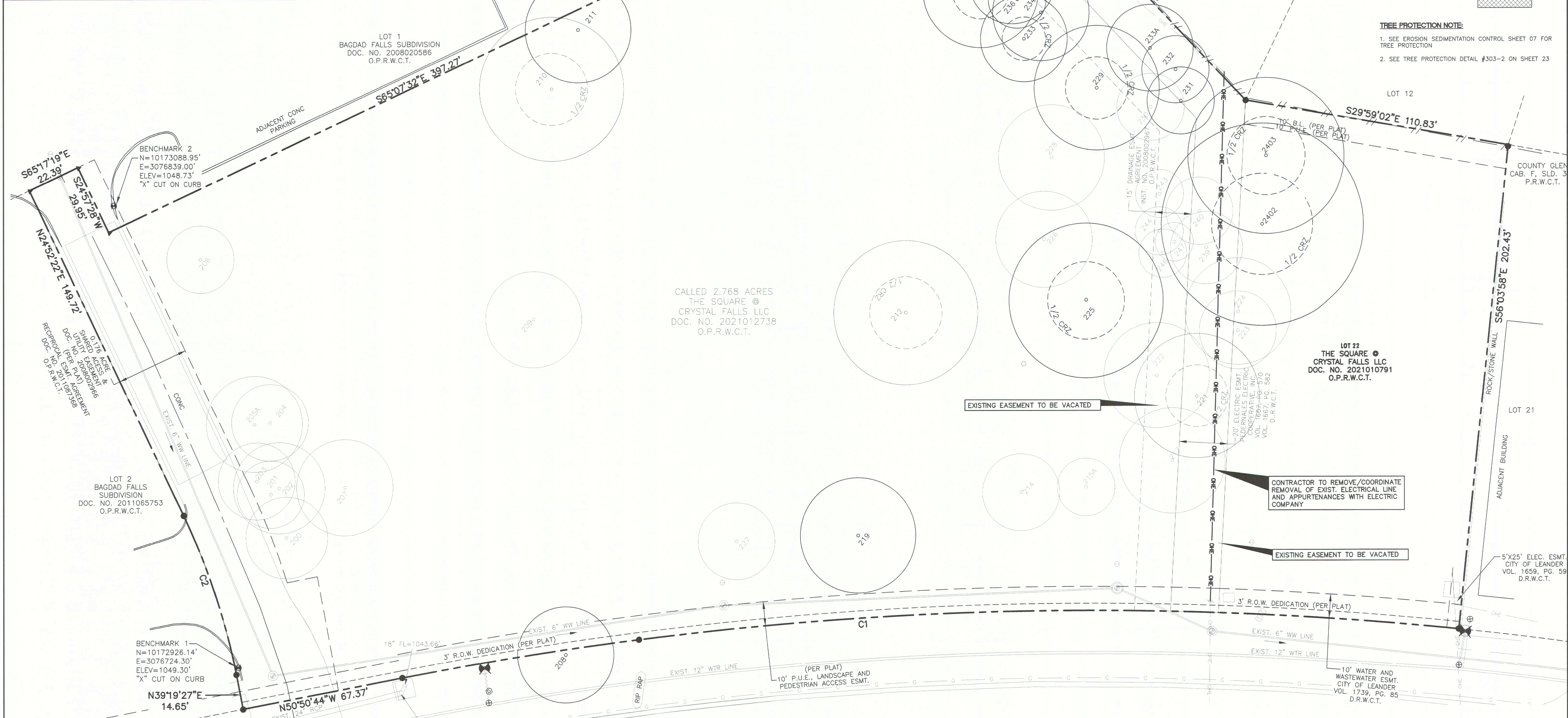
THE SQUARE AT CRYSTAL FALLS
FINAL PLAT
PROJECT NUMBER #21-SD-036

Table with 4 columns: Job No., Scale (Hor.), Date, Checked By, SRJ, Drawn By, MIM, Revision 1, Revision 2, Revision 3, Revision 4.

21-SD-036
CAUTION!!
CONTRACTOR SHALL LOCATE ANY/ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.



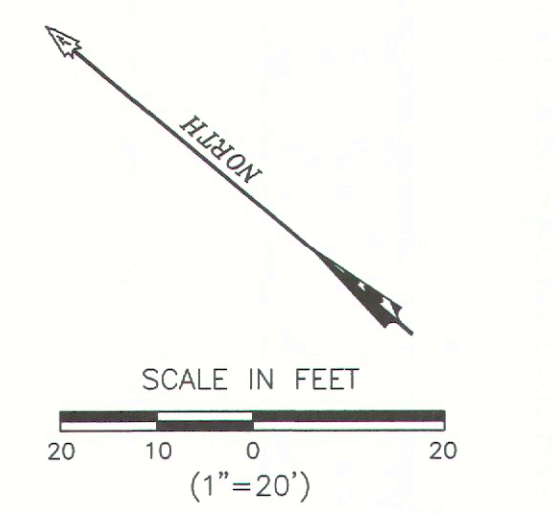
TREE NUMBER	TREE TYPE	CALIPER (IN.)	REMOVED	PROTECTED	HERITAGE	REASON FOR REMOVAL	TREE NUMBER	TREE TYPE	CALIPER (IN.)	REMOVED	PROTECTED	HERITAGE	REASON FOR REMOVAL
200	OAK	17	YES	YES	NO	PAVEMENT/BUILDING	229	OAK	28.5	NO	YES	NO	N/A
201	OAK	14	YES	YES	NO	PAVEMENT/BUILDING	230	OAK	14	YES	YES	NO	PAVEMENT
202	OAK	11.5	YES	YES	NO	PAVEMENT/BUILDING	231	OAK	14	NO	YES	NO	N/A
202.1	OAK	12.5	YES	YES	NO	PAVEMENT/BUILDING	232	OAK	14	NO	YES	NO	N/A
203	OAK	16	YES	YES	NO	PAVEMENT/BUILDING	233	OAK	10	NO	YES	NO	N/A
204	OAK	16	YES	YES	NO	PAVEMENT/BUILDING	233.1	OAK	12	NO	YES	NO	N/A
205	ELM	14	NO	YES	NO	N/A	234	OAK	12	NO	YES	NO	N/A
205A	OAK	18.5	YES	YES	NO	PAVEMENT	234.1	OAK	13.5	NO	YES	NO	N/A
206	OAK	14	YES	YES	NO	PAVEMENT	236	OAK	12	NO	YES	NO	N/A
207	OAK	18.5	YES	YES	NO	BUILDING	237	OAK	19.5	NO	YES	NO	N/A
208	OAK	16	NO	YES	NO	N/A	238	OAK	23	NO	YES	NO	N/A
209	OAK	20	YES	YES	NO	PAVEMENT	239	OAK	15M	YES	YES	NO	PAVEMENT
210	OAK	29.5	YES	YES	YES	BUILDING	240	OAK	14	YES	YES	NO	PAVEMENT
211	OAK	21.5	NO	YES	NO	N/A	243	OAK	10	YES	YES	NO	N/A
212	OAK	20.5	YES	YES	NO	PAVEMENT	244	OAK	10	YES	YES	NO	PAVEMENT
214	OAK	16	YES	YES	NO	N/A	246	OAK	10	YES	YES	NO	PAVEMENT
215	OAK	12	NO	YES	NO	N/A	247	OAK	8	YES	YES	NO	PAVEMENT
215A	OAK	12	YES	YES	NO	PAVEMENT	2402	OAK	14.5	NO	YES	NO	N/A
217	OAK	20	YES	YES	NO	BUILDING	2402.1	OAK	16.5	NO	YES	NO	N/A
219	OAK	19	NO	YES	NO	N/A	2402.2	OAK	14	NO	YES	NO	N/A
219.1	OAK	15.5	NO	YES	NO	N/A	2402.3	OAK	16	NO	YES	NO	N/A
221	OAK	16	YES	YES	NO	BUILDING	2403	OAK	16	NO	YES	NO	N/A
221.1	OAK	16.5	YES	YES	NO	BUILDING	2403.1	OAK	17.5	NO	YES	NO	N/A
222	OAK	20.5	YES	YES	NO	BUILDING	2403.2	OAK	11.5	NO	YES	NO	N/A
223	OAK	16M	YES	YES	NO	POND							
224	OAK	13.5	YES	YES	NO	POND							
224.1	OAK	6.5	YES	YES	NO	POND							
224.2	OAK	11	YES	YES	NO	POND							
225	OAK	30.5	NO	YES	YES	N/A							
226	OAK	18.5	YES	YES	NO	PAVEMENT							
227	OAK	16	YES	YES	NO	PAVEMENT							
228	OAK	20.5	YES	YES	NO	PAVEMENT							



CALLLED 2.768 ACRES
THE SQUARE @
CRYSTAL FALLS LLC
DOC. NO. 2021012738
O.P.R.W.C.T.

CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	441.26'	1492.68'	16°56'14"	N42°22'54"W	439.65'
C2	69.98'	285.00'	14°04'04"	N31°52'57"E	69.80'

TOPO SOURCE: DESIGN SURVEY
DATE OF SURVEY: APRIL 2021



- LEGEND**
- PROPERTY LINE
 - LOT LINE
 - EASEMENT LINE
 - EXISTING CONTOUR LINE
 - EXISTING TREE
 - DEMOLITION AREA

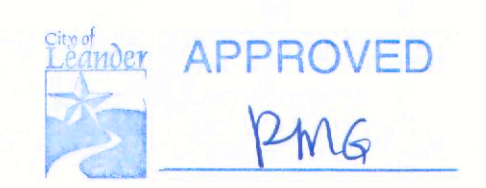
- TREE PROTECTION NOTE**
- SEE EROSION SEDIMENTATION CONTROL SHEET 07 FOR TREE PROTECTION
 - SEE TREE PROTECTION DETAIL #303-2 ON SHEET 23

CONTRACTOR TO REMOVE/COORDINATE
REMOVAL OF EXIST. ELECTRICAL LINE
AND APPURTENANCES WITH ELECTRIC
COMPANY

EXISTING EASEMENT TO BE VACATED

21-SD-036

CAUTION!!
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UTILITIES PRIOR TO ANY SITE WORK.
(BOTH HORIZONTALLY AND VERTICALLY).
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FOR DAMAGES TO ANY EXISTING UTILITIES
OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO
ANY UTILITIES NOT PROPERLY LOCATED.



JAMISON CIVIL ENGINEERING LLC
(TX. PE FIRM REG. #F-17756)
13812 RESEARCH BLVD. #B-2
AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
EXISTING CONDITIONS & DEMOLITION PLAN
PROJECT NUMBER #21-SD-036

The seal appearing on
this document was
authorized by
Stephen Ray Jamison
on 5/09/2022

File: H:\1800 BAGDAD\DWG\PLANS\EXISTING.DWG
Job No. Snapshot: WATER
Scale (Hor.): 1"=30' Scale (Vert.):
Date: 08/09/21 Checked By: SRJ Drawn By: MM
Revision 1:
Revision 2:
Revision 3:
Revision 4:

SHEET
06 of 39

TREE NUMBER	TREE TYPE	CALIPER (IN.)	REMOVED	PROTECTED	HERITAGE	REASON FOR REMOVAL	TREE NUMBER	TREE TYPE	CALIPER (IN.)	REMOVED	PROTECTED	HERITAGE	REASON FOR REMOVAL
200	OAK	17	YES	YES	NO	PAVEMENT/BUILDING	229	OAK	24.5	NO	YES	NO	N/A
201	OAK	14	YES	YES	NO	PAVEMENT/BUILDING	230	OAK	14	YES	YES	NO	PAVEMENT
202	OAK	11.5	YES	YES	NO	PAVEMENT/BUILDING	231	OAK	14	NO	YES	NO	N/A
202.1	OAK	12.5	YES	YES	NO	PAVEMENT/BUILDING	232	OAK	14	NO	YES	NO	N/A
203	OAK	16	YES	YES	NO	PAVEMENT/BUILDING	233	OAK	10	NO	YES	NO	N/A
204	OAK	16	YES	YES	NO	PAVEMENT/BUILDING	233.1	OAK	12	NO	YES	NO	N/A
205	ELM	14	NO	YES	NO	N/A	234	OAK	12	NO	YES	NO	N/A
205A	OAK	18.5	YES	YES	NO	PAVEMENT	234.1	OAK	13.5	NO	YES	NO	N/A
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208	OAK	16	NO	YES	NO	N/A	238	OAK	23	NO	YES	NO	N/A
209	OAK	20	YES	YES	NO	PAVEMENT	239	OAK	15M	YES	YES	NO	PAVEMENT
210	OAK	29.5	YES	YES	YES	BUILDING	240	OAK	14	YES	YES	NO	PAVEMENT
211	OAK	21.5	NO	YES	NO	N/A	241	OAK	10	YES	YES	NO	PAVEMENT
212	OAK	20.5	YES	YES	NO	PAVEMENT	244	OAK	10	YES	YES	NO	PAVEMENT
214	OAK	16	YES	YES	NO	PAVEMENT	246	OAK	10	YES	YES	NO	PAVEMENT
215	OAK	12	NO	YES	NO	N/A	247	OAK	8	YES	YES	NO	PAVEMENT
215A	OAK	12	YES	YES	NO	PAVEMENT	2402	OAK	14.5	NO	YES	NO	N/A
217	OAK	20	YES	YES	NO	BUILDING	2402.1	OAK	16.5	NO	YES	NO	N/A
219	OAK	19	NO	YES	NO	N/A	2402.2	OAK	14	NO	YES	NO	N/A
219.1	OAK	15.5	NO	YES	NO	N/A	2402.3	OAK	16	NO	YES	NO	N/A
221	OAK	16	YES	YES	NO	BUILDING	2403	OAK	16	NO	YES	NO	N/A
221.1	OAK	16.5	YES	YES	NO	BUILDING	2403.1	OAK	17.5	NO	YES	NO	N/A
222	OAK	20.5	YES	YES	NO	BUILDING	2403.2	OAK	11.5	NO	YES	NO	N/A
223	OAK	16M	YES	YES	NO	POND							
224	OAK	13.5	YES	YES	NO	POND							
224.1	OAK	6.5	YES	YES	NO	POND							
224.2	OAK	11	YES	YES	NO	POND							
225	OAK	30.5	NO	YES	YES	N/A							
226	OAK	18.5	YES	YES	NO	PAVEMENT							
227	OAK	16	YES	YES	NO	PAVEMENT							
228	OAK	20.5	YES	YES	NO	PAVEMENT							

NOTE:
A PRECONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.

LEGEND

LIMITS OF CONSTRUCTION
LOC

INLET PROTECTION (SEE DETAILS ON SHEET 23)
IP

SILT FENCE (100' MAX. CONTINUOUS RUN) (SEE DETAIL #642S-1 ON SHEET 23)
SF

EXISTING TREE W/TREE PROTECTION (SEE DETAIL #303-2 ON SHEET 23)
T

EXISTING TREE TO BE REMOVED
T

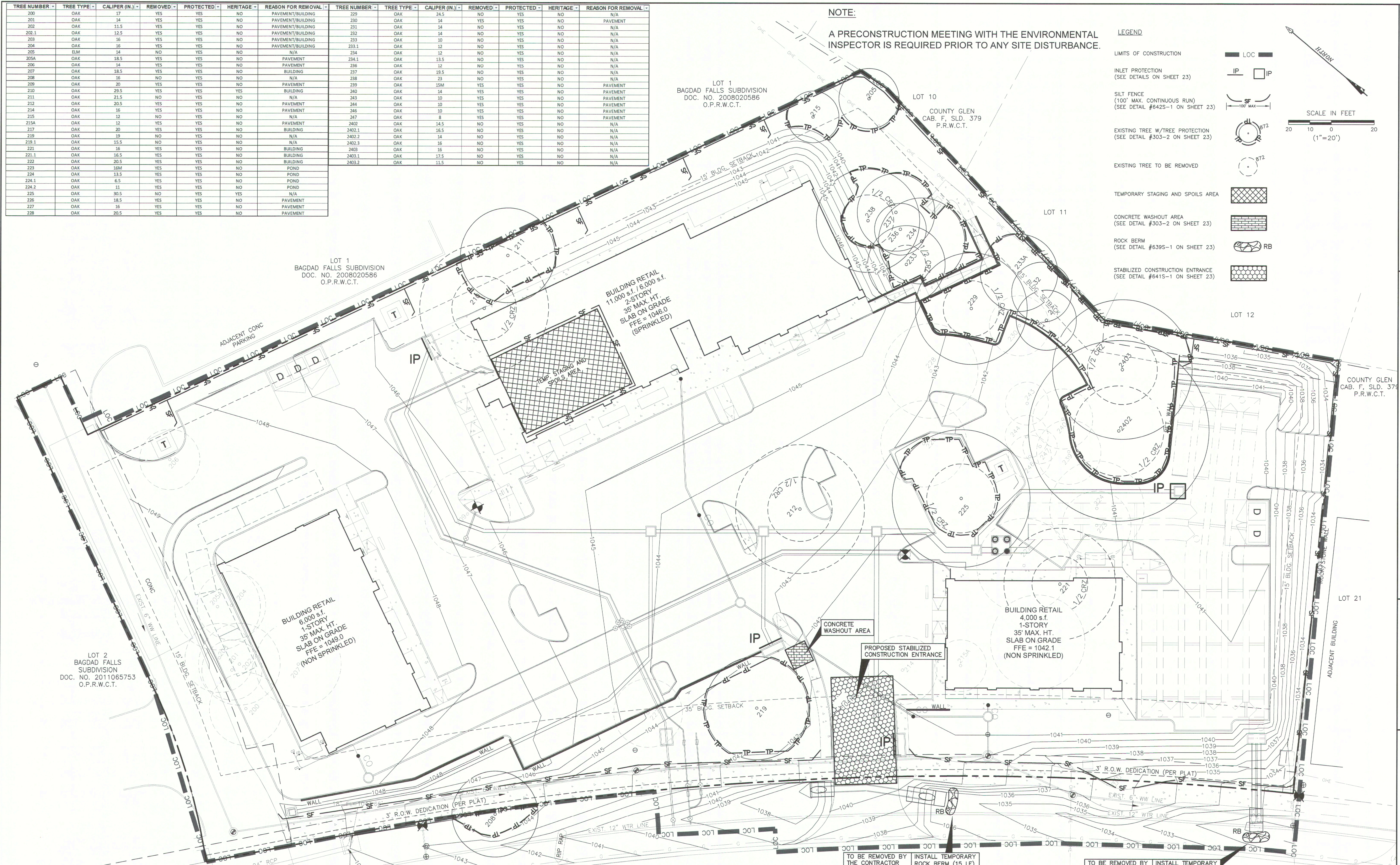
TEMPORARY STAGING AND SPOILS AREA
[Cross-hatched pattern]

CONCRETE WASHOUT AREA (SEE DETAIL #303-2 ON SHEET 23)
[Grid pattern]

ROCK BERM (SEE DETAIL #639S-1 ON SHEET 23)
RB

STABILIZED CONSTRUCTION ENTRANCE (SEE DETAIL #641S-1 ON SHEET 23)
[Stippled pattern]

SCALE IN FEET
20 10 0 20
(1"=20')



- NOTES
- IF DISTURBED AREA IS NOT TO BE WORKED ON FOR MORE THAN 14 DAYS, DISTURBED AREA NEEDS TO BE STABILIZED BY REVEGETATION, MULCH, TARP OR REVEGETATION MATTING.
 - ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD AND/OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE TO KEEP PROJECT IN COMPLIANCE WITH THE CITY OF LEANDER RULES AND REGULATIONS.
 - CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER CITY OF LEANDER ENVIRONMENTAL REGULATIONS, OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
 - SILT FENCE TYPE AND INSTALLATION SHALL COMPLY WITH CITY OF LEANDER ENVIRONMENTAL REGULATIONS.
 - CONTRACTOR SHALL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY.
 - WASHOUT AREA LOCATION (FOR CONCRETE MIXERS, PAINT, STUCCO, ETC.) TO BE SET DURING PRE-CON MEETING WITH ENVIRONMENTAL INSPECTOR.
 - INTERIOR SILT FENCE TO BE REMOVED AFTER INSTALLATION OF STORM SEWER IS COMPLETE.
 - ONCE FINAL GRADE IS ACHIEVED, PERMANENT STABILIZATION MUST BE INITIATED WITHIN 7 DAYS TO LIMIT TIME SOIL IS EXPOSED FOR POTENTIAL EROSION.
 - THE CITY OF LEANDER ENVIRONMENTAL INSPECTOR HAS THE AUTHORITY TO ADD OR MODIFY EROSION/SEDIMENTATION CONTROLS ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
 - CONTRACTOR SHALL REMOVE/REINSTALL/REPLACE EROSION CONTROLS AS NECESSARY TO FACILITATE CONSTRUCTION.

21-SD-036

CAUTION!!!
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APPROVED
[Signature]

JAMISON CIVIL ENGINEERING LLC
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AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
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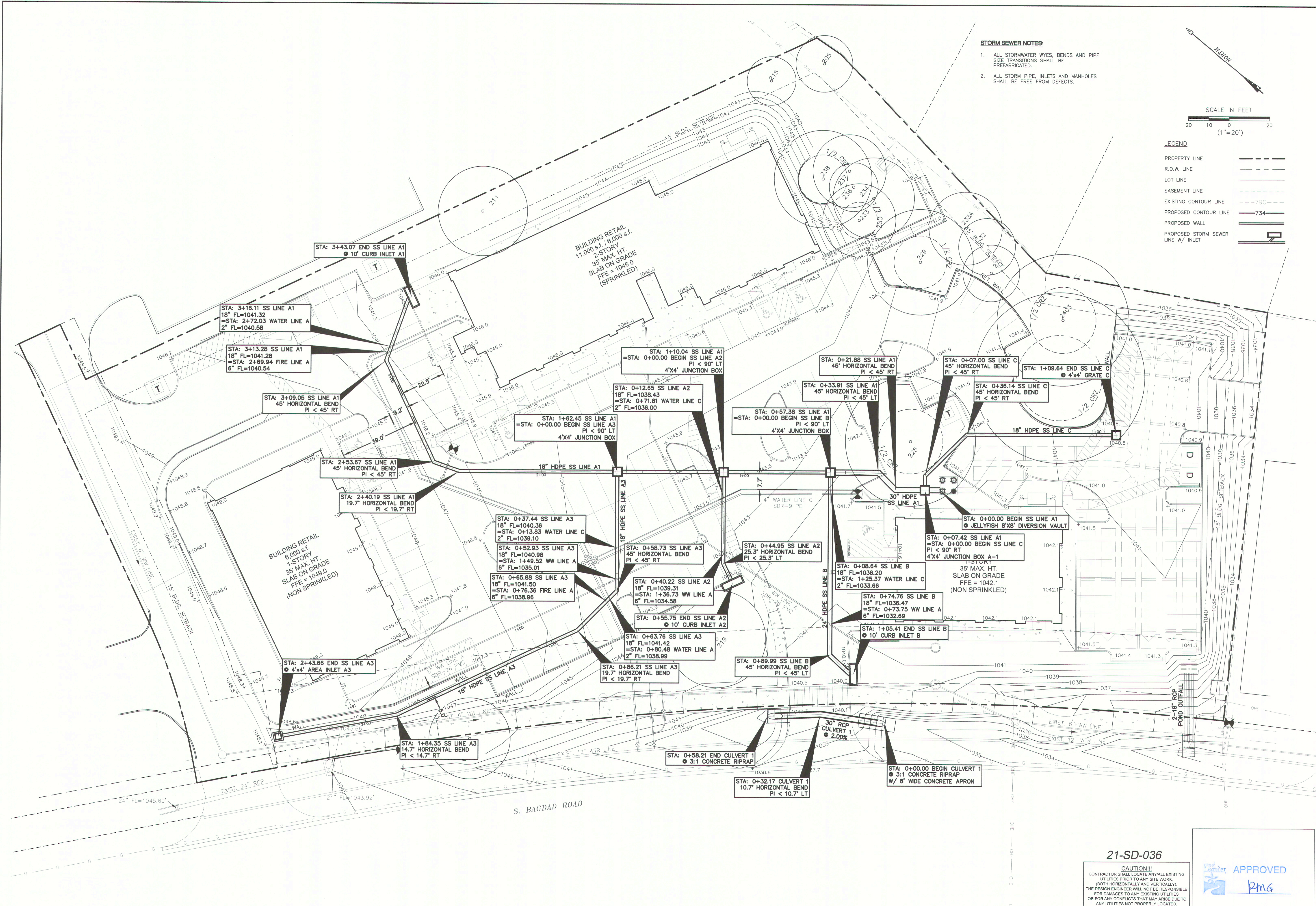
THE SQUARE AT CRYSTAL FALLS
EROSION SEDIMENTATION CONTROL PLAN
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Roy Jamison on 7/05/2022.

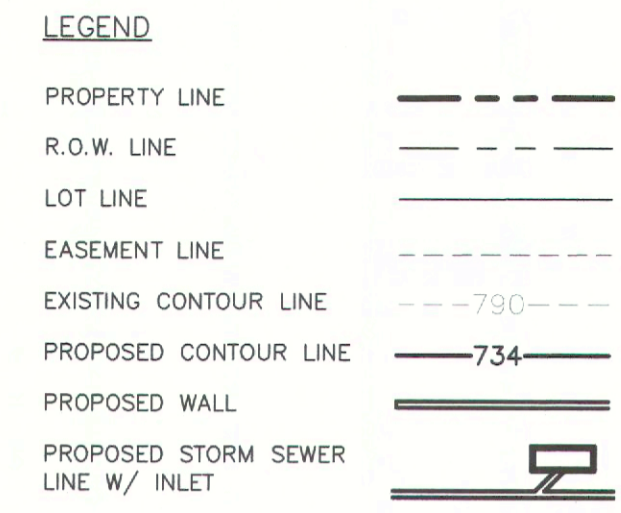
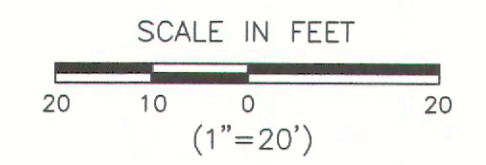
[Professional Engineer Seal: Stephen Roy Jamison, License No. 86951, State of Texas]

File: H:\1600 BAGDAD\DWG\PLANS\EROSION.DWG	Job No.	Snapshot: WATER
Scale (Hor.): 1"=30'	Scale (Vert.):	
Date: 08/09/21	Checked By: SRJ	Drawn By: MM
Revision 1:		
Revision 2:		
Revision 3:		
Revision 4:		

SHEET
07 of 39



- STORM SEWER NOTES:**
1. ALL STORMWATER WYES, BENDS AND PIPE SIZE TRANSITIONS SHALL BE PREFABRICATED.
 2. ALL STORM PIPE, INLETS AND MANHOLES SHALL BE FREE FROM DEFECTS.



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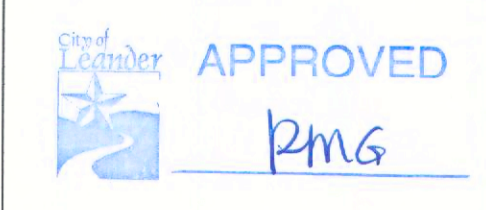
THE SQUARE AT CRYSTAL FALLS
STORM SEWER LAYOUT
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/05/2022.

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Date: 08/09/21	Scale (Vert.):
Checked By: SRJ	Drawn By: DPG
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Revision 2:	
Revision 3:	
Revision 4:	

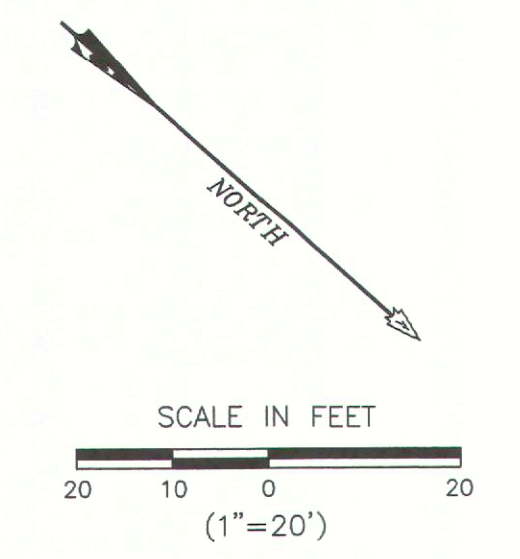
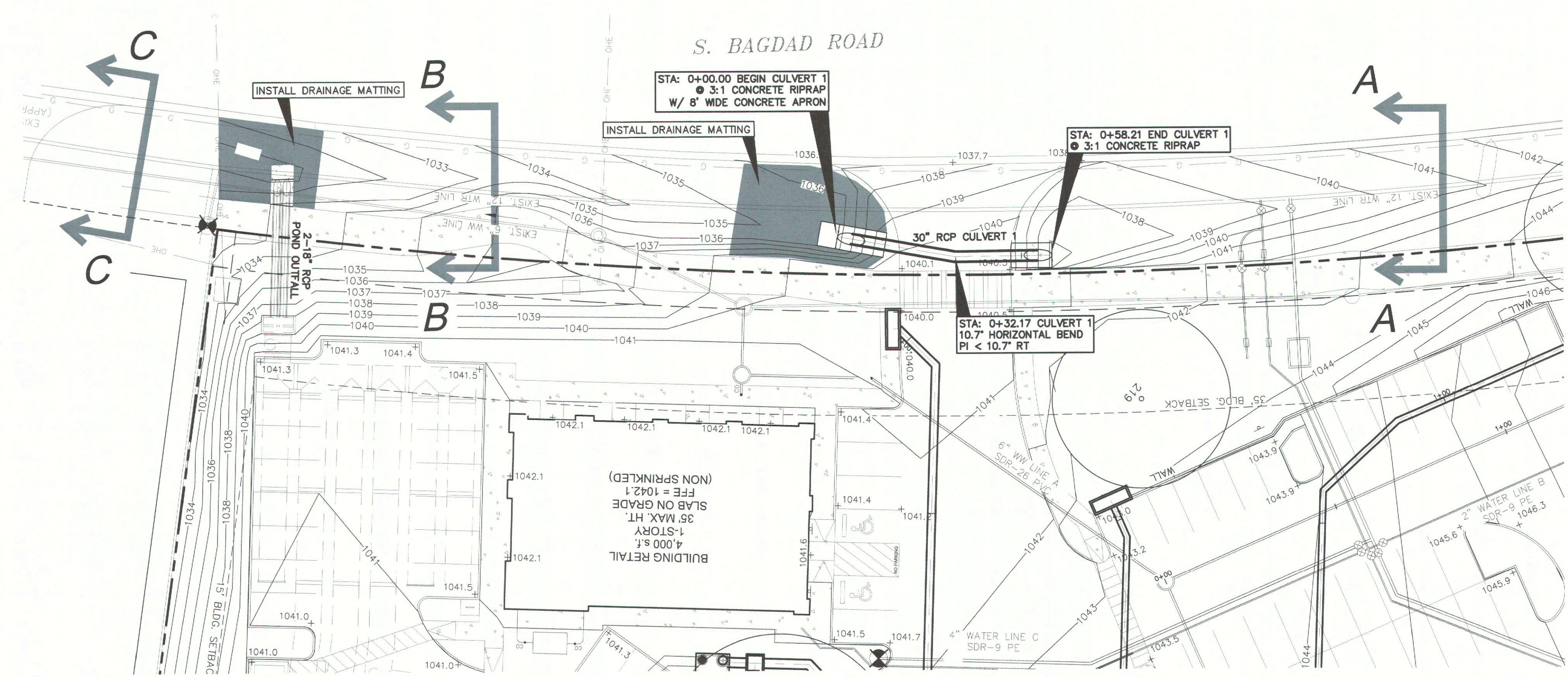
21-SD-036

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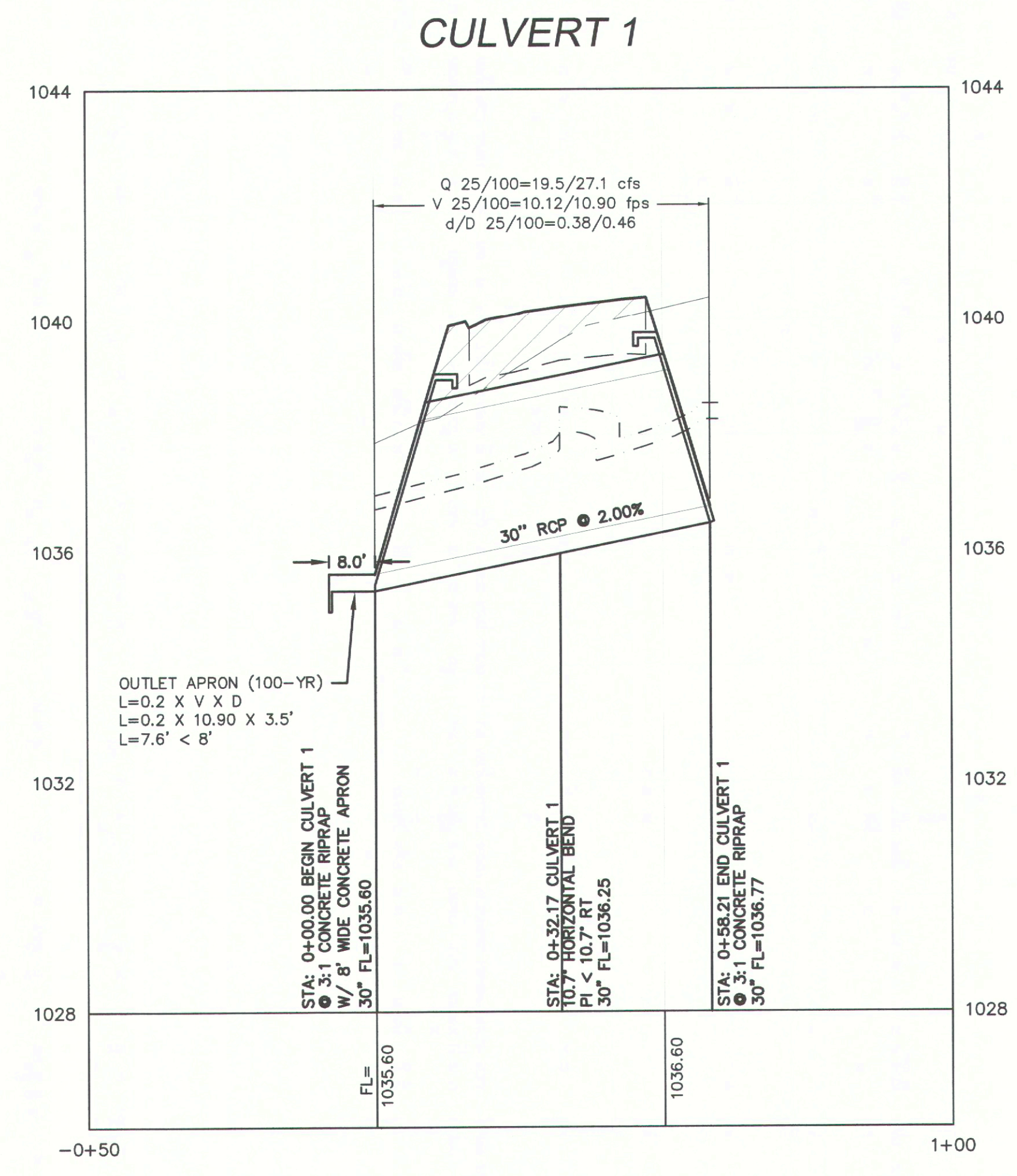
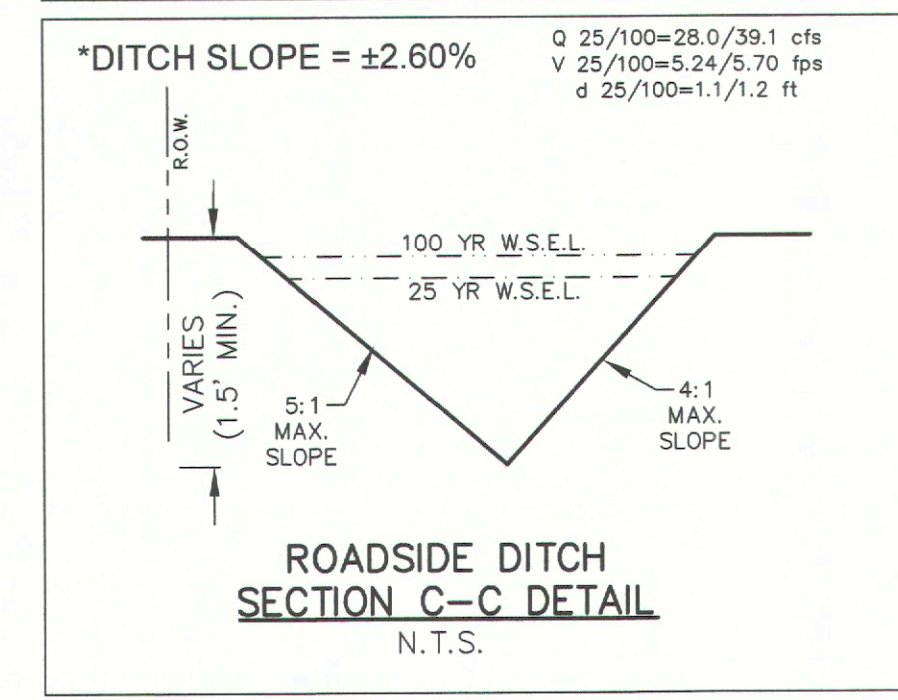
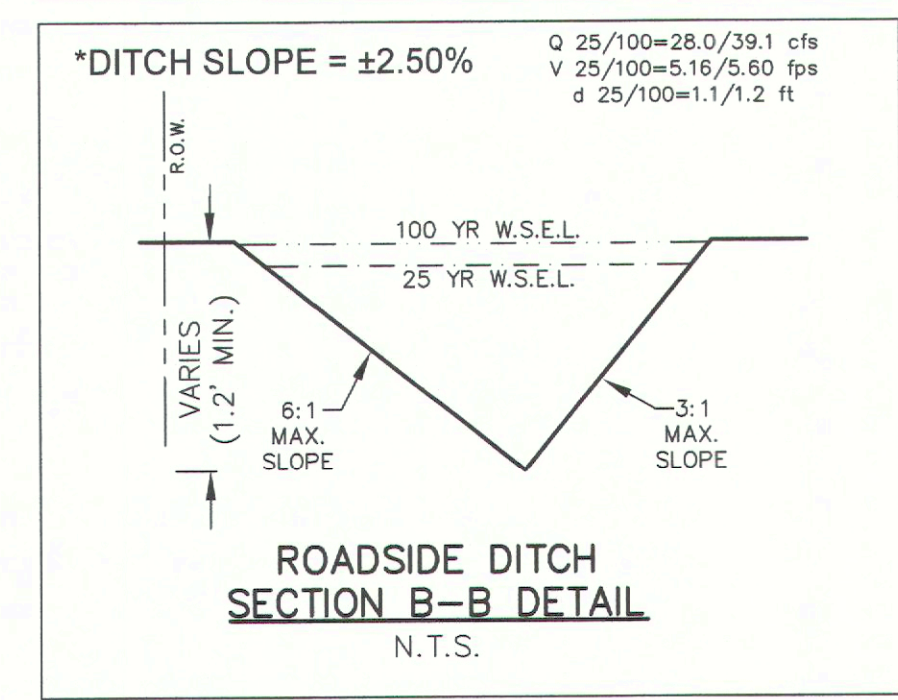
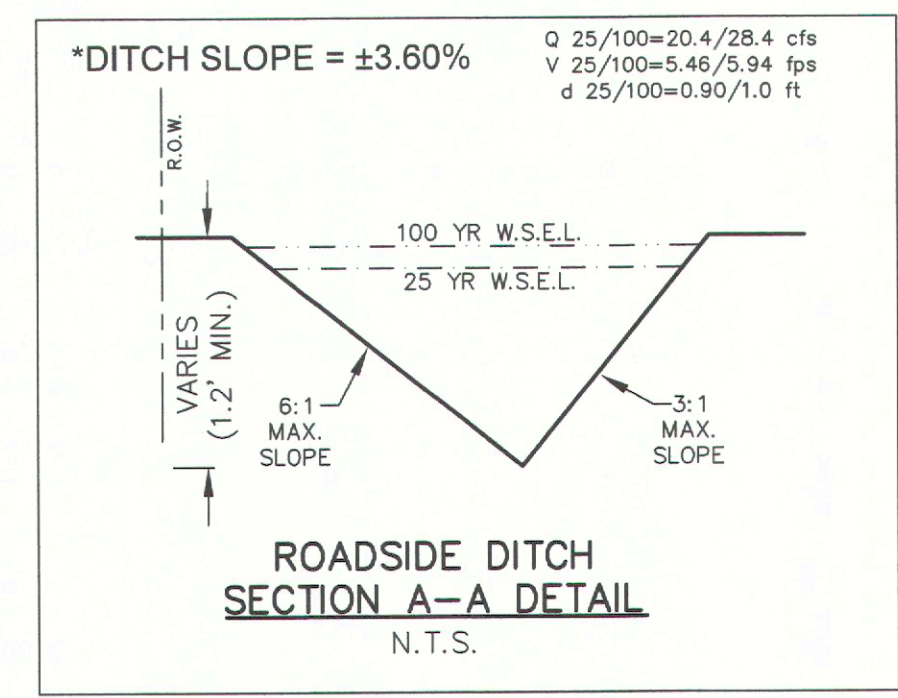
The seal appearing on this document was authorized by Stephen Ray Jamison on 6/03/2022.

File: H:\1900 BAGDAD\DWG\PLANS\STORM.DWG	Job No.	Snapshot: CULVERT
Scale (Hor.): 1"=20'	Scale (Vert.): 1"=2'	Drawn By: DPG
Date: 08/09/21	Checked By: SRJ	Revision 1:
Revision 2:	Revision 3:	Revision 4:



- PROPERTY LINE ————
- ADJACENT PROPERTY ————
- EASEMENT LINE ————
- EXISTING CONTOUR LINE ————
- PROPOSED CONTOUR LINE ———— 734
- PROPOSED STORM SEWER LINE ————

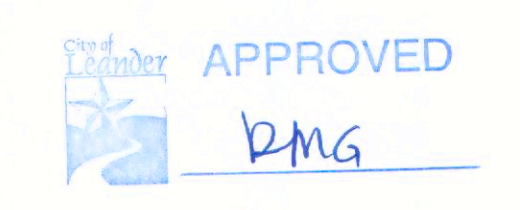
- STORM SEWER NOTES:**
- ALL STORMWATER WYES, BENDS AND PIPE SIZE TRANSITIONS SHALL BE PREFABRICATED.
 - ALL STORM PIPE, INLETS AND MANHOLES SHALL BE FREE FROM DEFECTS.

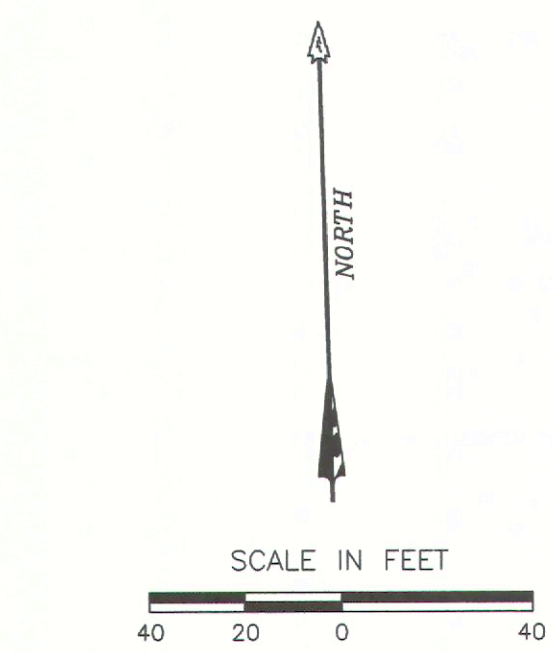
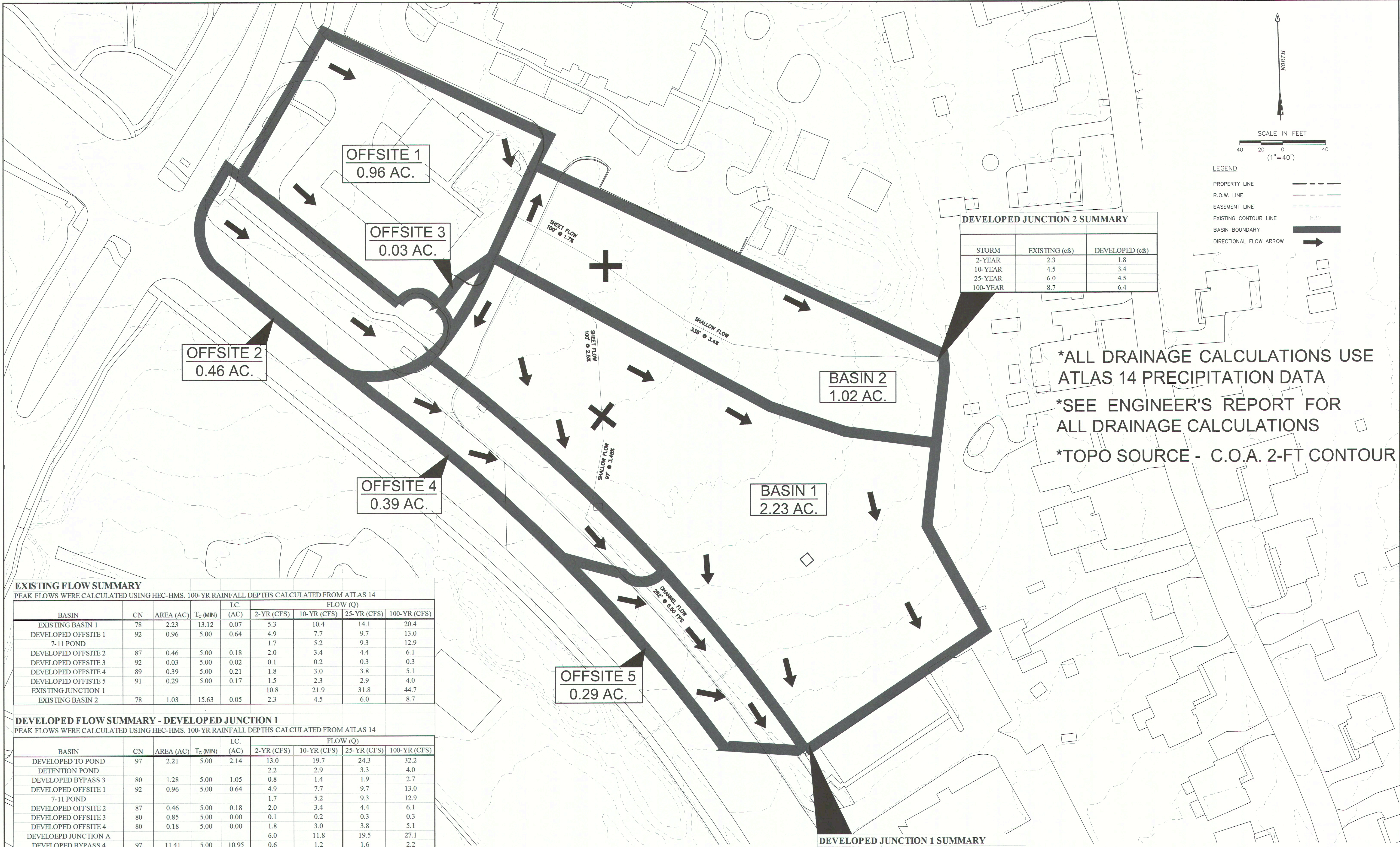


- FINISHED GRADE ————
- EXISTING GRADE ————
- 100-YR HGL ————
- 25-YR HGL ————
- FILL, COMPACT & TEST TO 95% DENSITY PRIOR TO UTILITY INSTALLATION
- PROFILE SCALE
 1" = 20' HOR.
 1" = 2' VERT.

21-SD-036

CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.





LEGEND

PROPERTY LINE

R.O.W. LINE

EASEMENT LINE

EXISTING CONTOUR LINE

BASIN BOUNDARY

DIRECTIONAL FLOW ARROW

DEVELOPED JUNCTION 2 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	2.3	1.8
10-YEAR	4.5	3.4
25-YEAR	6.0	4.5
100-YEAR	8.7	6.4

*ALL DRAINAGE CALCULATIONS USE ATLAS 14 PRECIPITATION DATA
 *SEE ENGINEER'S REPORT FOR ALL DRAINAGE CALCULATIONS
 *TOPO SOURCE - C.O.A. 2-FT CONTOUR

EXISTING FLOW SUMMARY
 PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
EXISTING BASIN 1	78	2.23	13.12	0.07	5.3	10.4	14.1	20.4
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	92	0.03	5.00	0.02	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	89	0.39	5.00	0.21	1.8	3.0	3.8	5.1
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
EXISTING JUNCTION 1					10.8	21.9	31.8	44.7
EXISTING BASIN 2	78	1.03	15.63	0.05	2.3	4.5	6.0	8.7

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 1
 PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED TO POND	97	2.21	5.00	2.14	13.0	19.7	24.3	32.2
DETENTION POND					2.2	2.9	3.3	4.0
DEVELOPED BYPASS 3	80	1.28	5.00	1.05	0.8	1.4	1.9	2.7
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	80	0.85	5.00	0.00	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	80	0.18	5.00	0.00	1.8	3.0	3.8	5.1
DEVELOPED JUNCTION A					6.0	11.8	19.5	27.1
DEVELOPED BYPASS 4	97	11.41	5.00	10.95	0.6	1.2	1.6	2.2
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
DEVELOPED JUNCTION 1					9.9	17.4	26.6	36.5

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 2
 PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED BYPASS 1	97	0.02	5.00	0.02	0.1	0.1	0.2	0.2
DEVELOPED BYPASS 5	80	0.20	5.00	0.00	0.7	1.3	1.7	2.5
DEVELOPED BYPASS 6	95	0.30	5.00	0.00	1.0	2.0	2.6	3.7
DEVELOPED JUNCTION 2					1.8	3.4	4.5	6.4

DEVELOPED JUNCTION 1 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	10.8	9.9
10-YEAR	21.9	17.4
25-YEAR	31.8	26.6
100-YEAR	44.7	36.5

JAMISON CIVIL ENGINEERING LLC
 (TX, PE FIRM REG. #F-17756)
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
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 INFO@JAMISONENG.COM

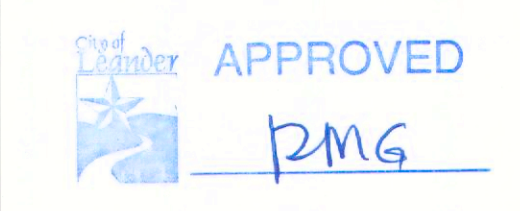
THE SQUARE AT CRYSTAL FALLS
 EXISTING POND DRAINAGE MAP
 PROJECT NUMBER #21-SD-036

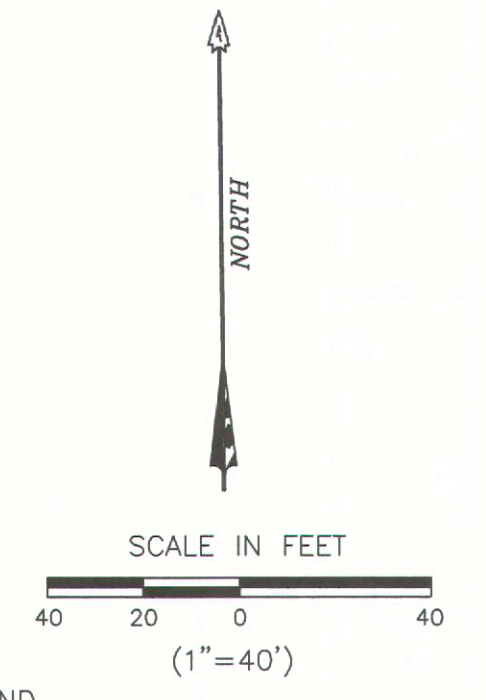
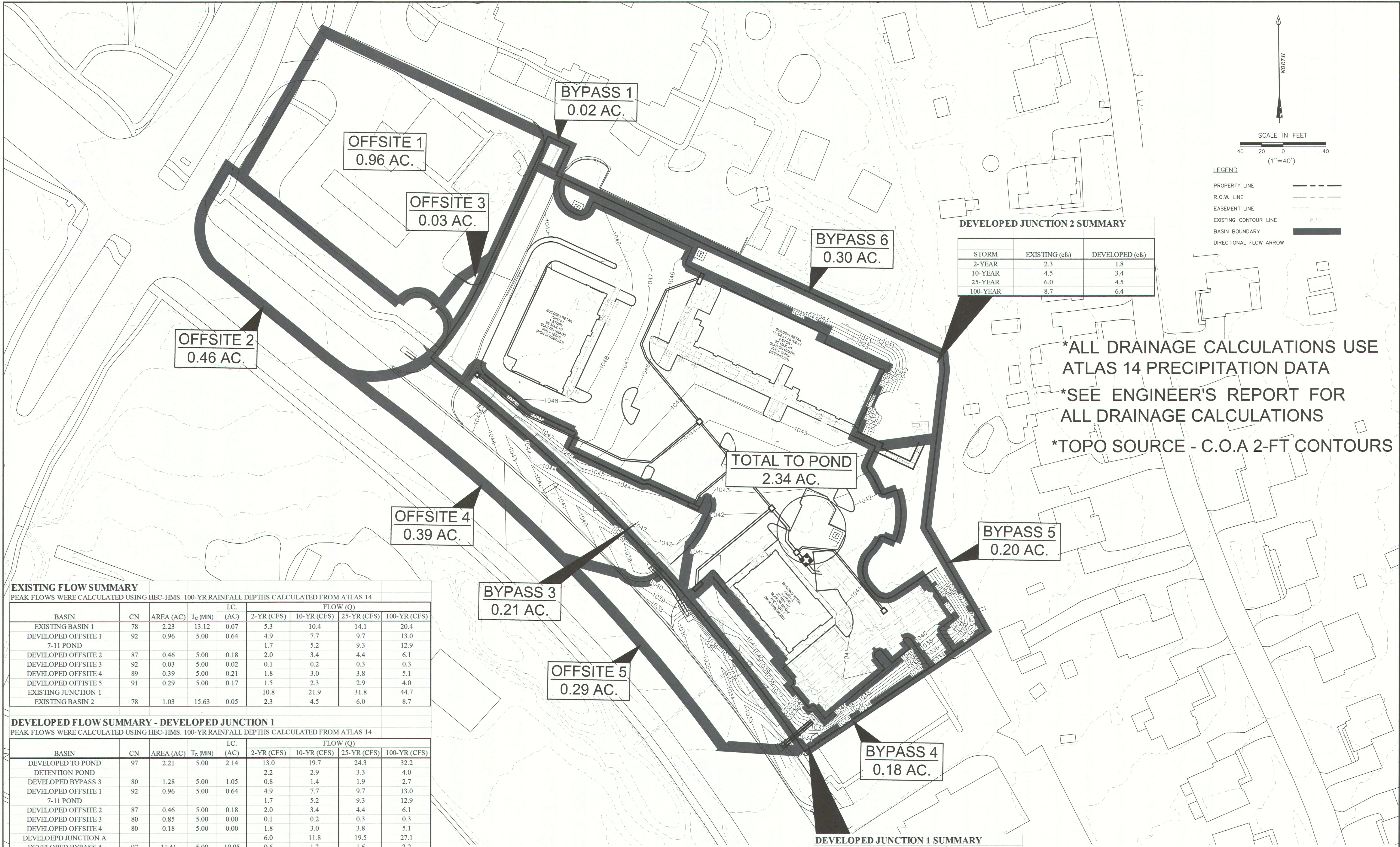
The seal appearing on this document was authorized by Stephen Ray Jamison on 5/03/2022.

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 Date: 08/09/21 Checked By: SRJ Drawn By: DPG
 Revision 1:
 Revision 2:
 Revision 3:
 Revision 4:

21-SD-036

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LEGEND

- PROPERTY LINE
- R.O.W. LINE
- EASEMENT LINE
- EXISTING CONTOUR LINE 832
- BASIN BOUNDARY
- DIRECTIONAL FLOW ARROW

DEVELOPED JUNCTION 2 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	2.3	1.8
10-YEAR	4.5	3.4
25-YEAR	6.0	4.5
100-YEAR	8.7	6.4

*ALL DRAINAGE CALCULATIONS USE ATLAS 14 PRECIPITATION DATA
 *SEE ENGINEER'S REPORT FOR ALL DRAINAGE CALCULATIONS
 *TOPO SOURCE - C.O.A 2-FT CONTOURS

EXISTING FLOW SUMMARY

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
EXISTING BASIN 1	78	2.23	13.12	0.07	5.3	10.4	14.1	20.4
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	92	0.03	5.00	0.02	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	89	0.39	5.00	0.21	1.8	3.0	3.8	5.1
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
EXISTING JUNCTION 1					10.8	21.9	31.8	44.7
EXISTING BASIN 2	78	1.03	15.63	0.05	2.3	4.5	6.0	8.7

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 1

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED TO POND	97	2.21	5.00	2.14	13.0	19.7	24.3	32.2
DETENTION POND					2.2	2.9	3.3	4.0
DEVELOPED BYPASS 3	80	1.28	5.00	1.05	0.8	1.4	1.9	2.7
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	80	0.85	5.00	0.00	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	80	0.18	5.00	0.00	1.8	3.0	3.8	5.1
DEVELOPED JUNCTION A					6.0	11.8	19.5	27.1
DEVELOPED BYPASS 4	97	11.41	5.00	10.95	0.6	1.2	1.6	2.2
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
DEVELOPED JUNCTION 1					9.9	17.4	26.6	36.5

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 2

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

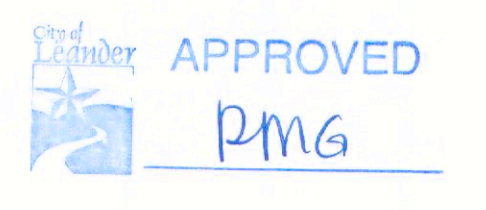
BASIN	CN	AREA (AC)	T _c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED BYPASS 1	97	0.02	5.00	0.02	0.1	0.1	0.1	0.2
DEVELOPED BYPASS 5	80	0.20	5.00	0.00	0.7	1.3	1.7	2.5
DEVELOPED BYPASS 6	95	0.30	5.00	0.00	1.0	2.0	2.6	3.7
DEVELOPED JUNCTION 2					1.8	3.4	4.5	6.4

DEVELOPED JUNCTION 1 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	10.8	9.9
10-YEAR	21.9	17.4
25-YEAR	31.8	26.6
100-YEAR	44.7	36.5

21-SD-036

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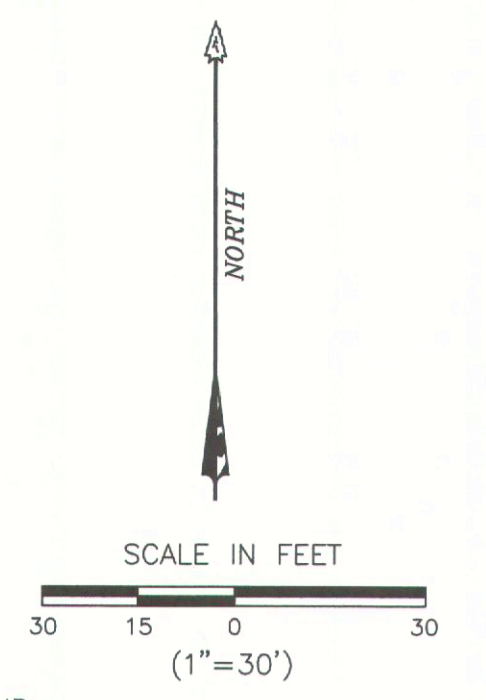
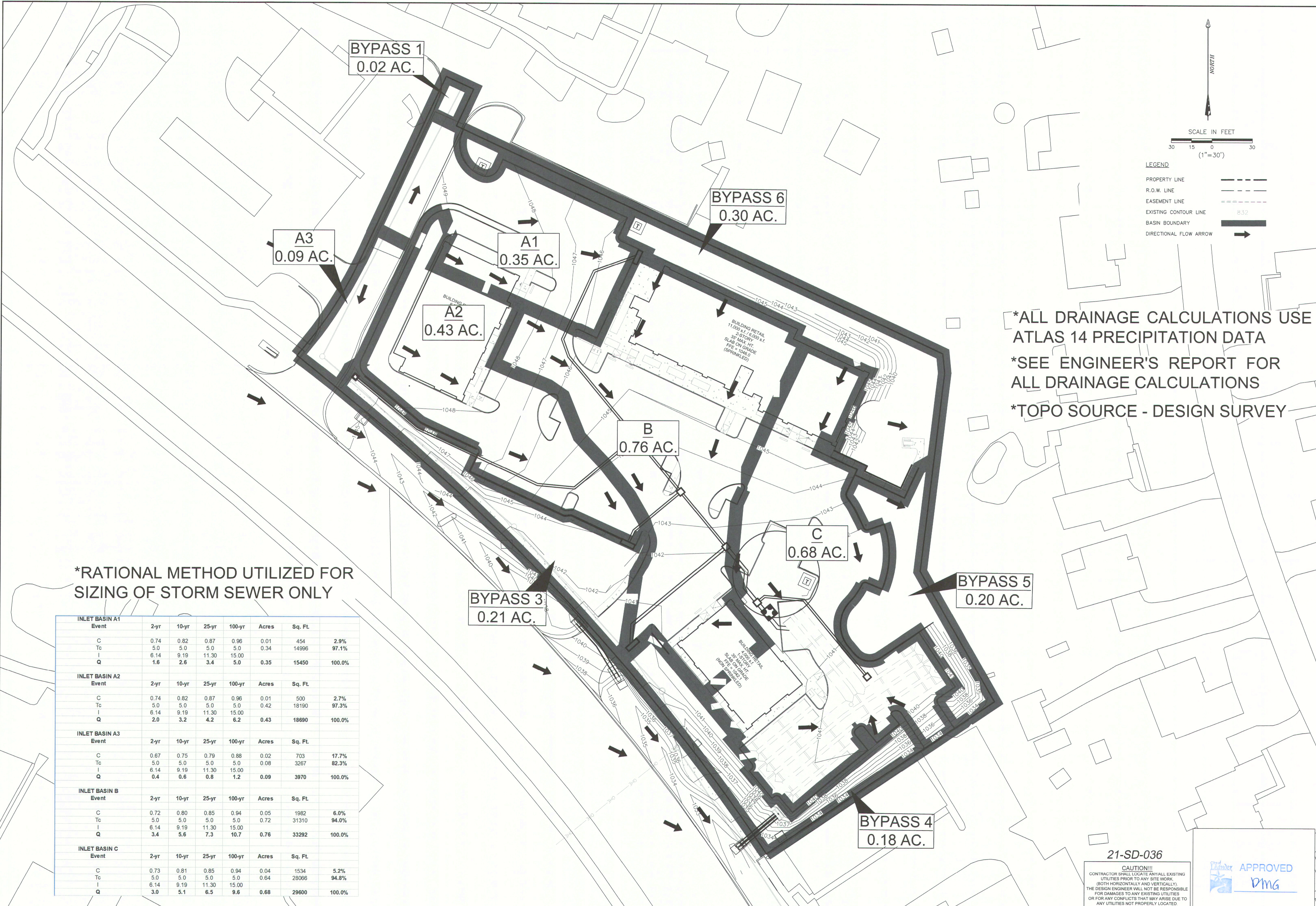
JAMISON CIVIL ENGINEERING LLC
 (TX. PE FIRM REG. #F-17756)
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
 DEVELOPED POND DRAINAGE MAP
 PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/05/2022.

File: H:\1900 BAGDAD\DWG\PLANS\DRAINAGE.DWG

Job No.	Snapshot: SS
Scale (Hor.): 1"=40'	Scale (Vert.):
Date: 08/09/21	Checked By: SRJ Drawn By: DPG
Revision 1:	
Revision 2:	
Revision 3:	
Revision 4:	



LEGEND

PROPERTY LINE	---
R.O.W. LINE	----
EASEMENT LINE	----
EXISTING CONTOUR LINE	8.32
BASIN BOUNDARY	—
DIRECTIONAL FLOW ARROW	→

*ALL DRAINAGE CALCULATIONS USE ATLAS 14 PRECIPITATION DATA
 *SEE ENGINEER'S REPORT FOR ALL DRAINAGE CALCULATIONS
 *TOPO SOURCE - DESIGN SURVEY

*RATIONAL METHOD UTILIZED FOR SIZING OF STORM SEWER ONLY

INLET BASIN A1							
Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.	
C	0.74	0.82	0.87	0.96	0.01	454	2.9%
Tc	5.0	5.0	5.0	5.0	0.34	14996	97.1%
I	6.14	9.19	11.30	15.00			
Q	1.6	2.6	3.4	5.0	0.35	15450	100.0%
INLET BASIN A2							
Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.	
C	0.74	0.82	0.87	0.96	0.01	500	2.7%
Tc	5.0	5.0	5.0	5.0	0.42	18190	97.3%
I	6.14	9.19	11.30	15.00			
Q	2.0	3.2	4.2	6.2	0.43	18690	100.0%
INLET BASIN A3							
Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.	
C	0.67	0.75	0.79	0.88	0.02	703	17.7%
Tc	5.0	5.0	5.0	5.0	0.06	3267	82.3%
I	6.14	9.19	11.30	15.00			
Q	0.4	0.6	0.8	1.2	0.09	3970	100.0%
INLET BASIN B							
Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.	
C	0.72	0.80	0.85	0.94	0.05	1982	6.0%
Tc	5.0	5.0	5.0	5.0	0.72	31310	94.0%
I	6.14	9.19	11.30	15.00			
Q	3.4	5.6	7.3	10.7	0.76	33292	100.0%
INLET BASIN C							
Event	2-yr	10-yr	25-yr	100-yr	Acres	Sq. Ft.	
C	0.73	0.81	0.85	0.94	0.04	1534	5.2%
Tc	5.0	5.0	5.0	5.0	0.64	28066	94.8%
I	6.14	9.19	11.30	15.00			
Q	3.0	5.1	6.5	9.6	0.68	29600	100.0%

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 AUSTIN, TEXAS 78750
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 INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
 PROPOSED INLET BASIN MAP
 PROJECT NUMBER #21-SD-036

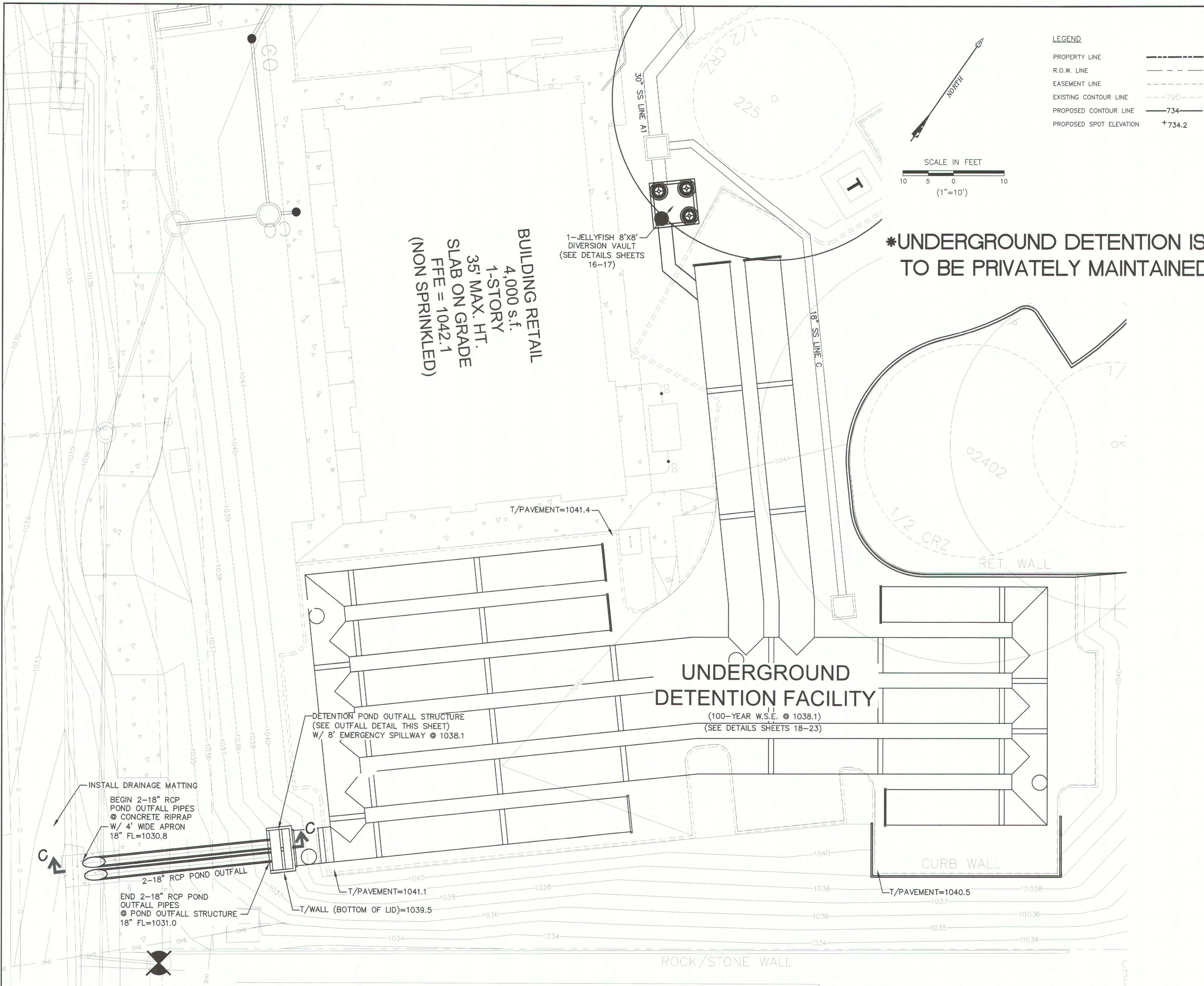
The seal appearing on this document was authorized by Stephen Ray Jamison on 7/06/2022

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Date: 08/09/21	Scale (Hor.): 1"=30'	Scale (Vert.):
Checked By: SRJ	Drawn By: DPG	
Revision 1:	Revision 2:	Revision 3:
Revision 4:		

21-SD-036

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***UNDERGROUND DETENTION IS TO BE PRIVATELY MAINTAINED**

BUILDING RETAIL
4,000 s.f.
1-STORY
35' MAX. HT.
SLAB ON GRADE
FFE = 1042.1
(NON SPRINKLED)

1-JELLYFISH 8'X8' DIVERSION VAULT (SEE DETAILS SHEETS 16-17)

UNDERGROUND DETENTION FACILITY
(100-YEAR W.S.E. @ 1038.1)
(SEE DETAILS SHEETS 18-23)

DETECTION POND OUTFALL STRUCTURE (SEE OUTFALL DETAIL THIS SHEET)
W/ 8' EMERGENCY SPILLWAY @ 1038.1

INSTALL DRAINAGE MATTING
BEGIN 2-18" RCP POND OUTFALL PIPES @ CONCRETE RIPRAP W/ 4' WIDE APRON 18" FL=1030.8

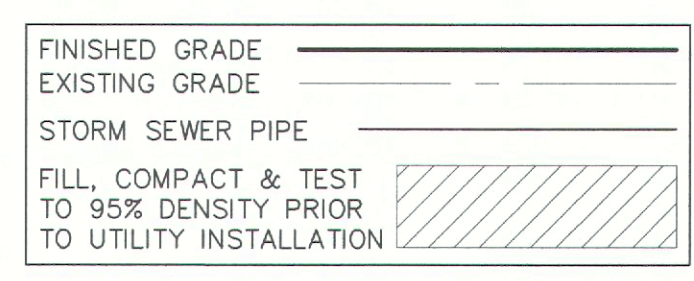
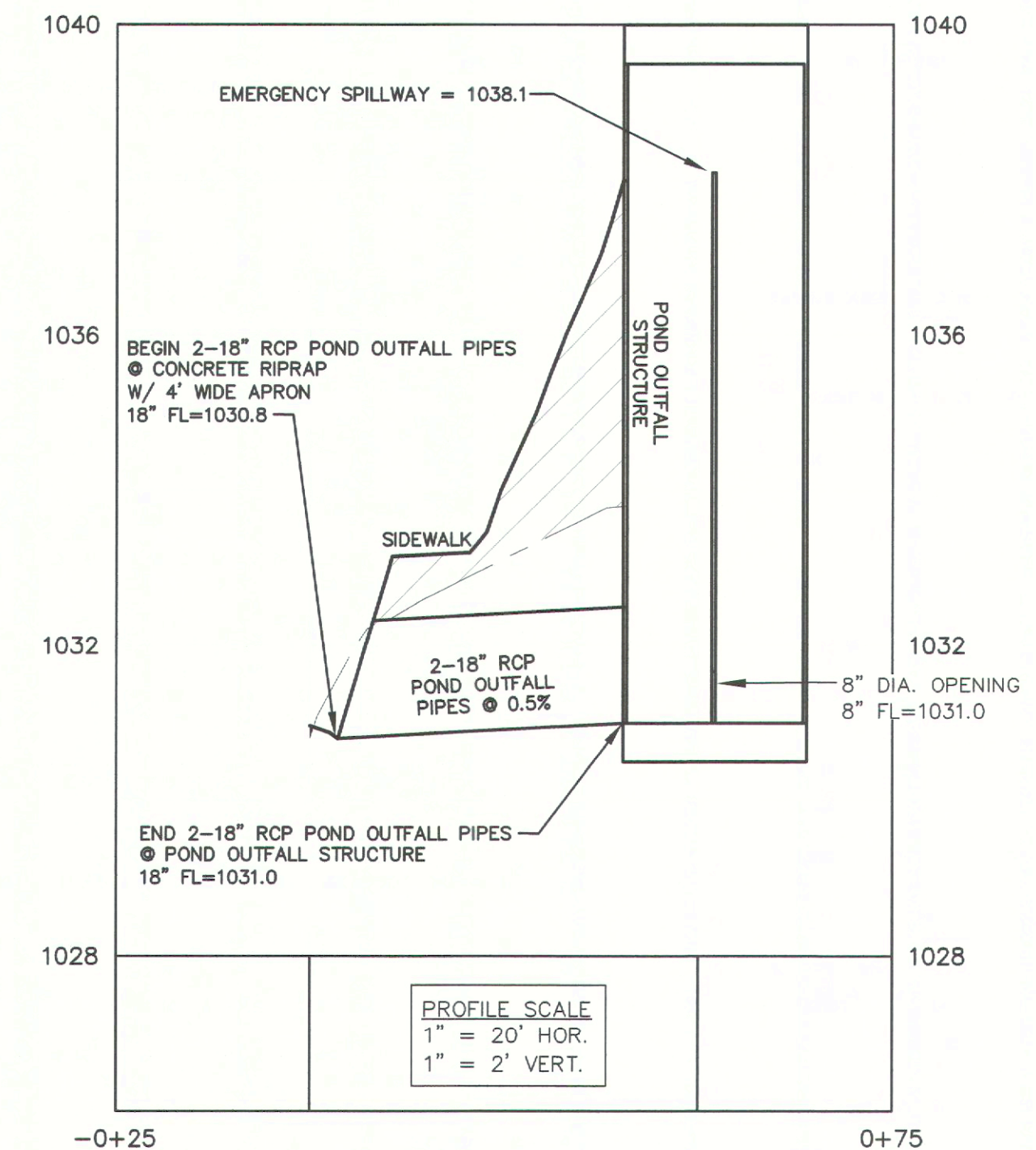
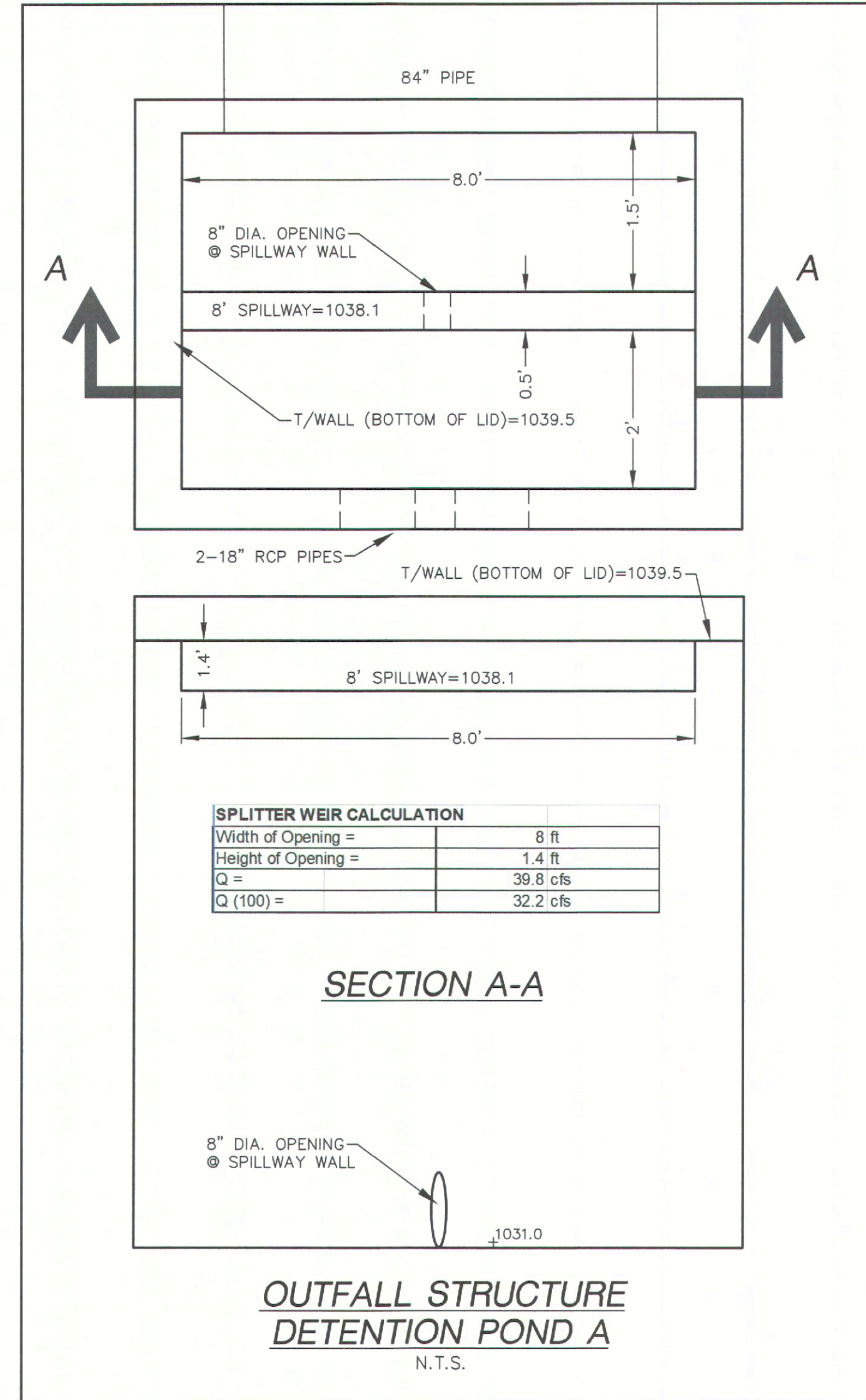
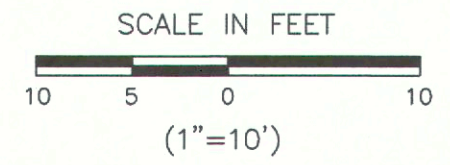
END 2-18" RCP POND OUTFALL PIPES @ POND OUTFALL STRUCTURE 18" FL=1031.0

OUTFALL PIPE SIZING CALCULATIONS
 $Q(100) = 32.2 \text{ CFS}$
 $A (18" \text{ DIA.}) = 1.764 \text{ SF}$
 $H = 1038.1 - 1031.0 - 0.75 = 6.35'$
 $Q = 0.6 * A * (2 * 32.2 * H)^{0.5}$
 $Q = 0.6 * 1.764 * (64.4 * 6.35)^{0.5}$
 $Q = 21.4 \text{ CFS} \times 2 \text{ PIPES} = 42.8 \text{ CFS} (> 32.2 \text{ CFS})$

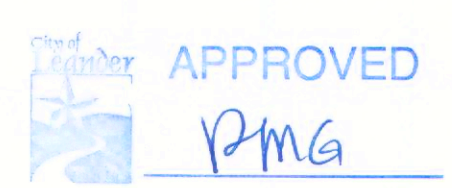
***SEE ENGINEER'S REPORT FOR ALL DRAINAGE CALCULATIONS.**
***SEE ENGINEER'S REPORT FOR BLOCKED ORIFICE CALCULATIONS**

LEGEND

PROPERTY LINE	---
R.O.W. LINE	----
EASEMENT LINE	- - - -
EXISTING CONTOUR LINE	-790-
PROPOSED CONTOUR LINE	-734-
PROPOSED SPOT ELEVATION	+734.2



21-SD-036
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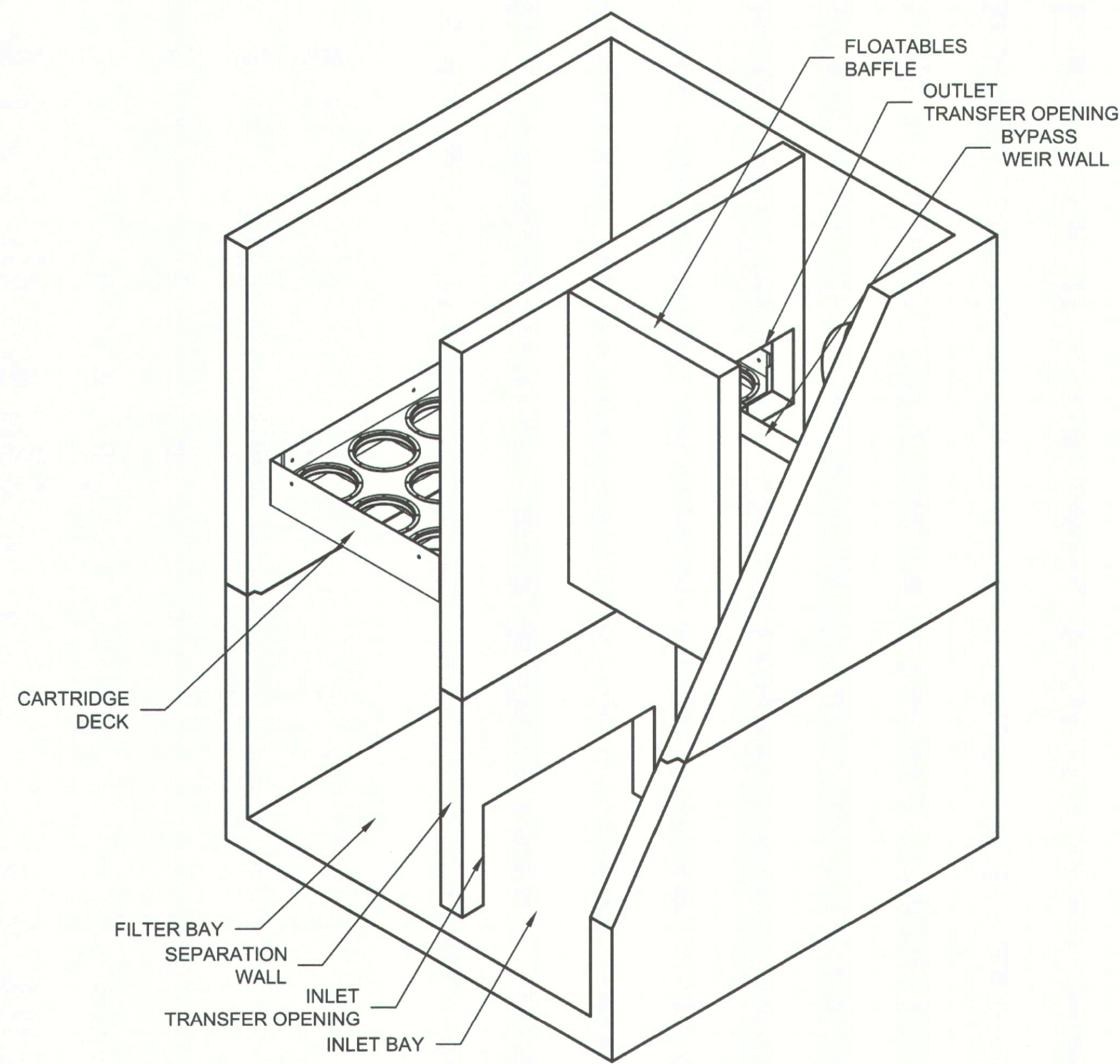
JAMISON CIVIL ENGINEERING LLC
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THE SQUARE AT CRYSTAL FALLS
WATER QUALITY & DETENTION POND PLAN
PROJECT NUMBER #21-SD-036

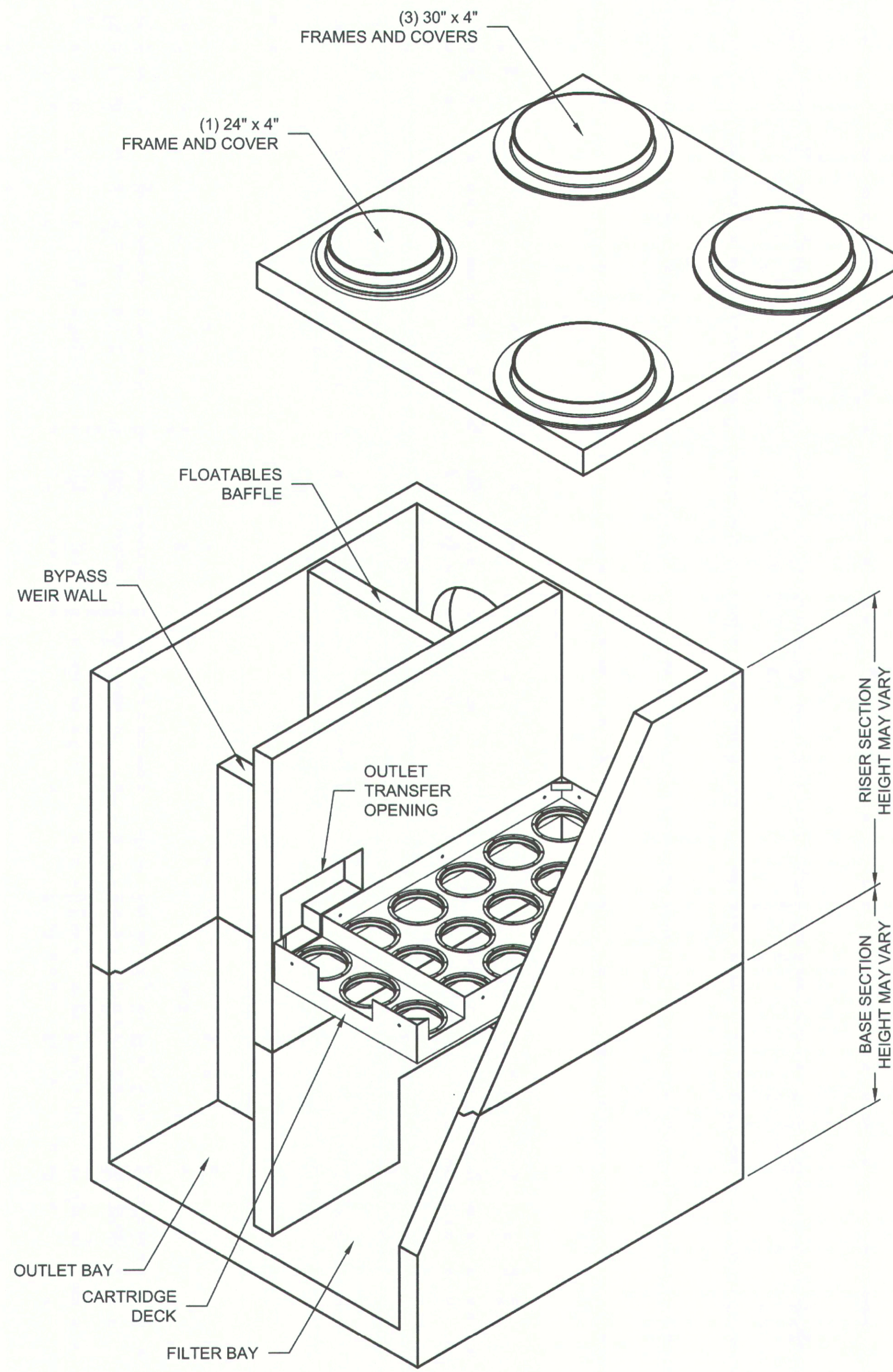
The seal appearing on this document was authorized by Stephen Roy Jamison on 6/03/2022.

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Scale (Vert.): 1"=2'
Date: 08/09/21
Checked By: SRJ
Drawn By: DPG
Revision 1:
Revision 2:
Revision 3:
Revision 4:
SHEET
15 of 39

I:\MERLIN\PROJECT\ACTIVE\6900094\690094-10-JELLYFISH\DRAWINGS\690094-10-JFPC0808-CONFAB.DWG 12/21/2021 4:35 PM



NW ISOMETRIC VIEW



SE ISOMETRIC VIEW

ISOMETRIC VIEWS ARE REPRESENTATIONAL. SEE DETAILED CONTRACT DRAWING FOR SITE SPECIFIC DIMENSIONS

**CONTECH
CONTRACT
DRAWING**

<p>The design and information shown on this drawing is provided as a service to the project owner, engineer and contractor. It is not to be used for any other purpose without the written consent of CONTECH. Failure to comply with the terms of this agreement may result in legal action at the discretion of CONTECH. CONTECH is not responsible for any errors or omissions in this drawing or for any consequences that may arise from its use. If discrepancies between the original information upon which this drawing is based and actual field conditions are discovered, the user is responsible for verifying the accuracy of the information. CONTECH is not responsible for any consequences that may arise from its use. CONTECH is not responsible for any consequences that may arise from its use.</p>	
DATE:	12/03/21
DESIGNED:	SJ
DRAWN:	BEP
CHECKED:	SJ
APPROVED:	SJ
PROJECT No.:	690094
SEQUENCE No.:	010
SHEET:	2 OF 2

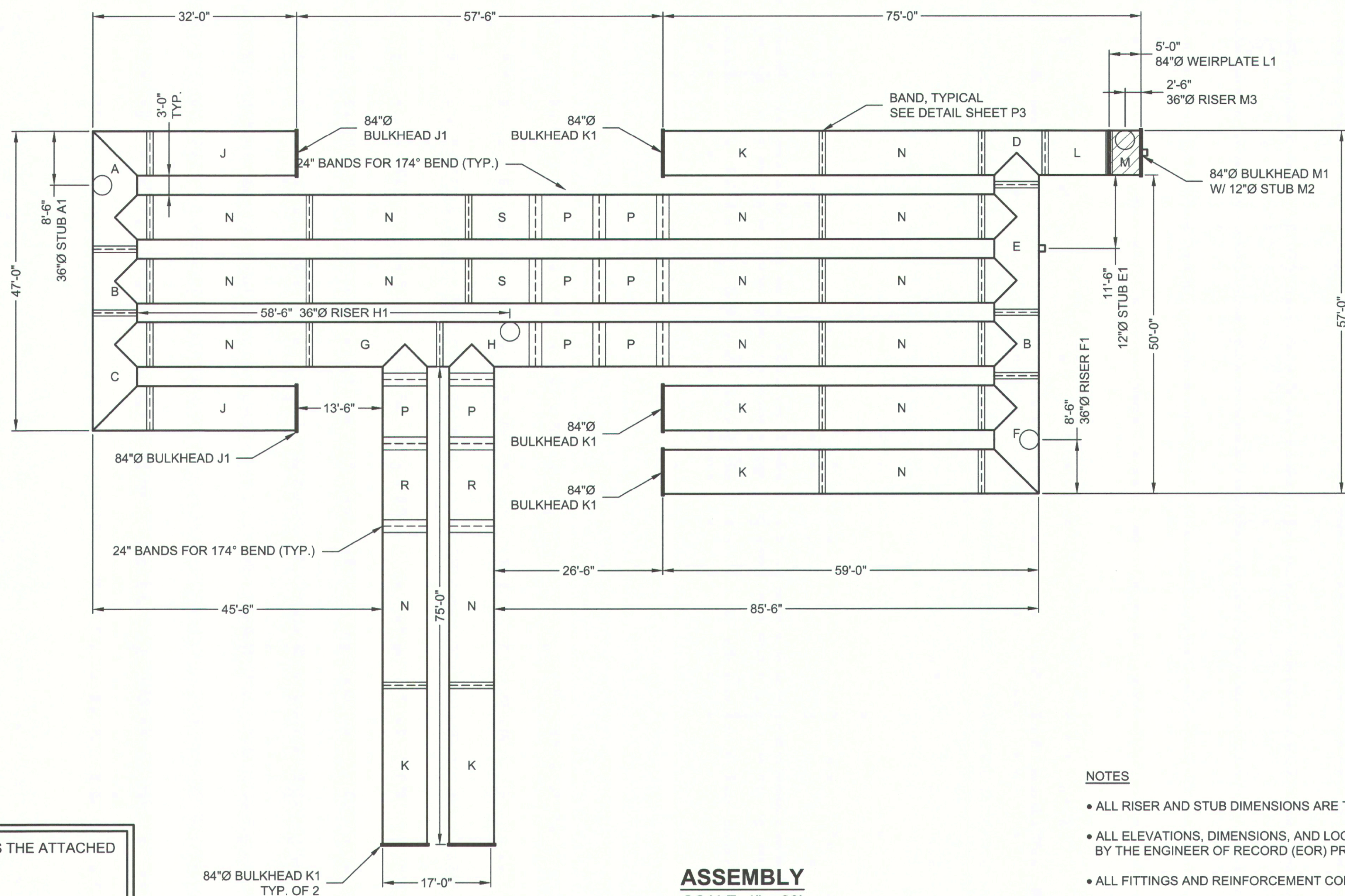
8' X 8' JELLYFISH - 690094-010
 THE SQUARE AT CRYSTAL FALLS
 LEANDER, TX
 SITE DESIGNATION: PEAK DIVERSION

CONTECH
 ENGINEERED SOLUTIONS LLC
 www.conteches.com
 8022 Centre Pointe Dr., Suite 400, West Chester, OH 45389
 800-338-1122 513-845-7000 513-845-7965 FAX

Jellyfish Filter
 THE PRODUCT IS NOT PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS: 7,812,117; 7,812,118; 7,812,119; 7,812,120; 7,812,121; 7,812,122; 7,812,123; 7,812,124; 7,812,125; 7,812,126; 7,812,127; 7,812,128; 7,812,129; 7,812,130; 7,812,131; 7,812,132; 7,812,133; 7,812,134; 7,812,135; 7,812,136; 7,812,137; 7,812,138; 7,812,139; 7,812,140; 7,812,141; 7,812,142; 7,812,143; 7,812,144; 7,812,145; 7,812,146; 7,812,147; 7,812,148; 7,812,149; 7,812,150; 7,812,151; 7,812,152; 7,812,153; 7,812,154; 7,812,155; 7,812,156; 7,812,157; 7,812,158; 7,812,159; 7,812,160; 7,812,161; 7,812,162; 7,812,163; 7,812,164; 7,812,165; 7,812,166; 7,812,167; 7,812,168; 7,812,169; 7,812,170; 7,812,171; 7,812,172; 7,812,173; 7,812,174; 7,812,175; 7,812,176; 7,812,177; 7,812,178; 7,812,179; 7,812,180; 7,812,181; 7,812,182; 7,812,183; 7,812,184; 7,812,185; 7,812,186; 7,812,187; 7,812,188; 7,812,189; 7,812,190; 7,812,191; 7,812,192; 7,812,193; 7,812,194; 7,812,195; 7,812,196; 7,812,197; 7,812,198; 7,812,199; 7,812,200; 7,812,201; 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STAGE STORAGE TABLE

ELEVATION (FT)	STORAGE (CF)
0	0
0.5	2,338
1.0	5,168
1.5	8,274
2.0	11,566
2.5	14,983
3.0	18,480
3.5	22,015
4.0	25,550
4.5	29,047
5.0	32,465
5.5	35,756
6.0	38,362
6.5	41,692
7.0	44,030
7.5	45,725



STUB INFORMATION

PIECE	STUB INVERT	SYSTEM INVERT
12"Ø STUB E1	1,031.00'	1,031.00'
12"Ø STUB M2	1,031.00'	1,031.00'

RISER INFORMATION

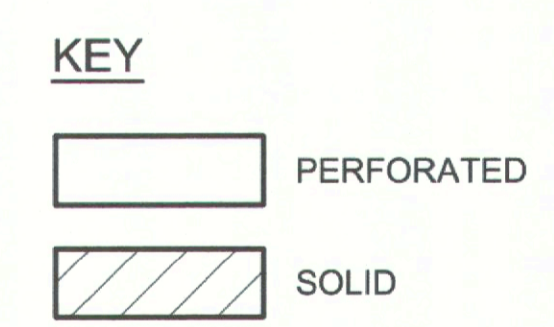
PIECE	*RIM ELEV.	SYSTEM INVERT
36"Ø RISER A1	1,041.00	1,031.00'
36"Ø RISER F1	1,041.00	1,031.00'
36"Ø RISER H1	1,041.00	1,031.00'
36"Ø RISER M3	1,041.00	1,031.00'

*ALL RISER ELEVATIONS ARE TO BE CONFIRMED BY THE ENGINEER OF RECORD

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (6) PAGES INCLUDING THE FOLLOWING:

- PIPE STORAGE = 33,848 CF
- MAINLINE PIPE GAGE = 16
- WALL TYPE = PERFORATED
- DIAMETER = 84"
- FINISH = ALT2
- CORRUGATION = 5x1

CUSTOMER _____ DATE _____



ASSEMBLY
 SCALE: 1" = 20'
 PIPE STORAGE: 33,848 CF
 STRUCTURAL BACKFILL STORAGE: 11,877 CF
 TOTAL STORAGE PROVIDED: 45,725 CF
 LOADING: H20
 PIPE INV. = 1,031.00'±

- NOTES**
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
 - ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD (EOR) PRIOR TO RELEASING FOR FABRICATION.
 - ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
 - ALL RISERS AND STUBS ARE 2½" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
 - RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
 - QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.

I:\MERLIN\PROJECTS\21-SD-036\21-SD-036-DRAWINGS\PROPOSAL\90094-020-CMP-PRO-DWG 4/16/2022 2:51 PM

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MARK	DATE	REVISION DESCRIPTION	BY

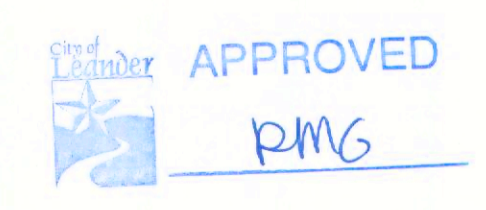
CONTECH
 ENGINEERED SOLUTIONS LLC
 www.CotechES.com
 11815 NE Glenn Widing Drive, Portland, OR 97220
 800-548-4667 503-240-3393 800-561-1271 FAX

CONTECH
 CMP DETENTION SYSTEMS
 CONTECH
 PROPOSAL
 DRAWING

84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
 THE SQUARE AT CRYSTAL FALLS
 LEANDER, TX
 SITE DESIGNATION: UNDERGROUND DETENTION

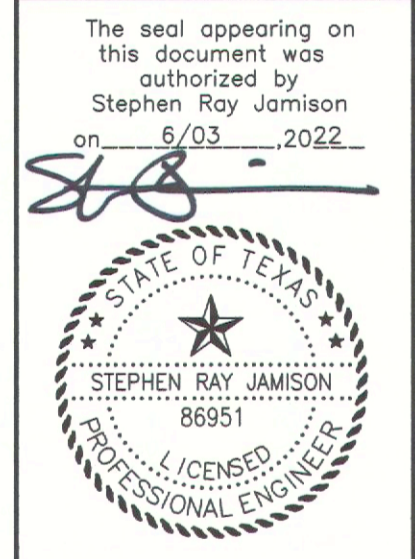
PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P1	OF 6	

21-SD-036
CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY/ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.

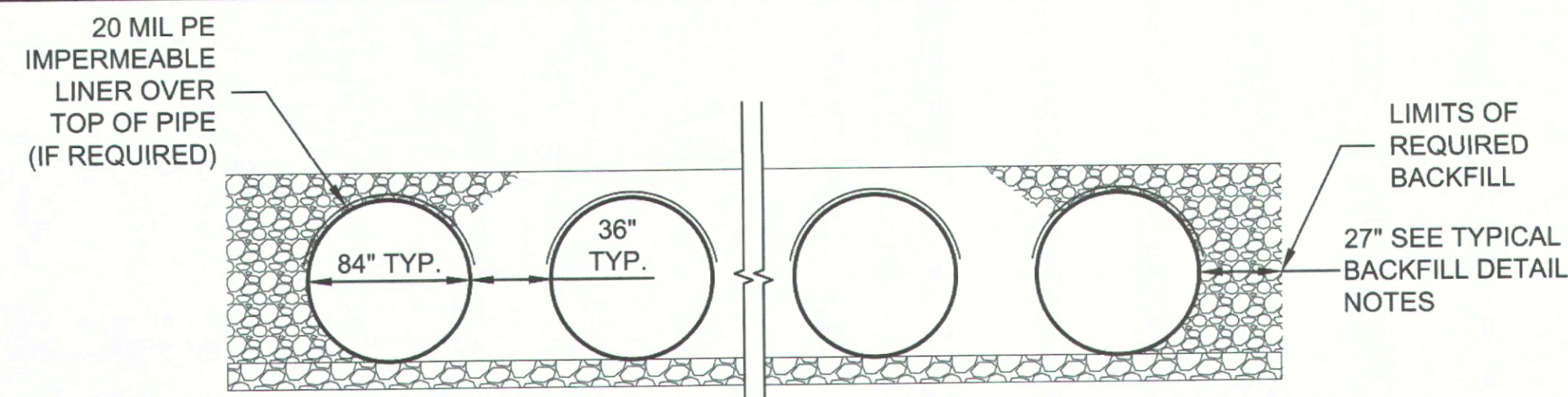


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 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
 DETENTION POND DETAILS
 PROJECT NUMBER #21-SD-036

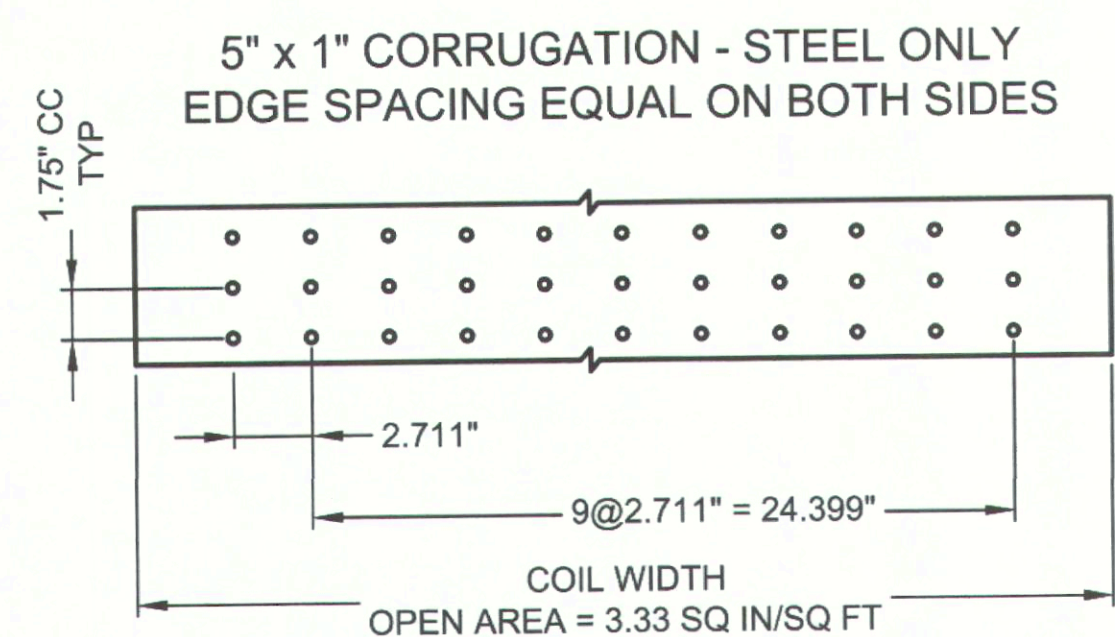


Job No.:	Snapshot: POND
Scale (Hor.):	Scale (Vert.):
Date: 09/09/21	Checked By: SRJ / Drawn By: DPG
Revision 1:	Revision 2:
Revision 3:	Revision 4:



TYPICAL SECTION VIEW
NOT TO SCALE

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



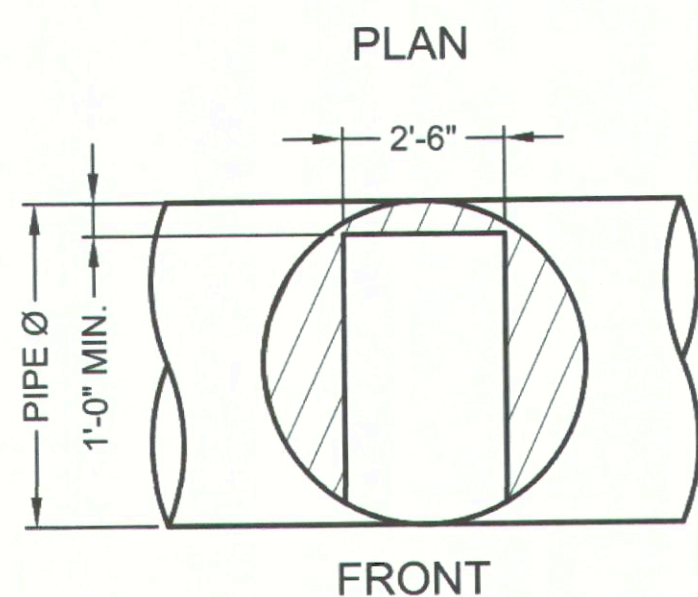
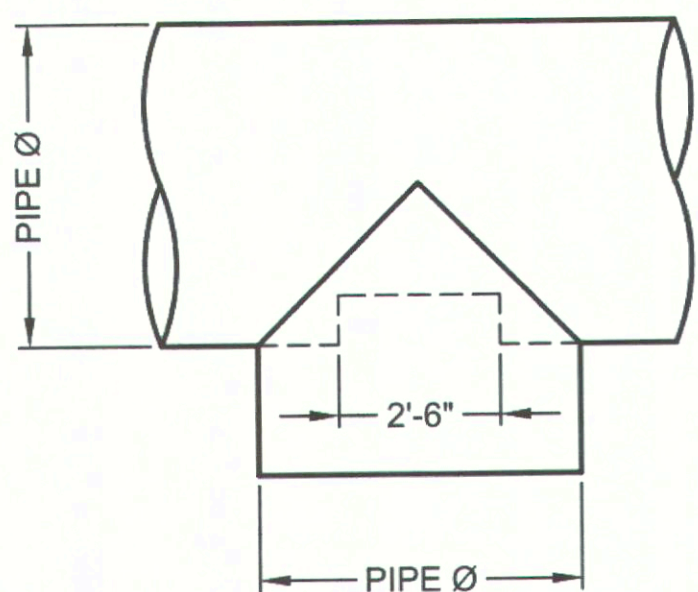
- NOTES:**
- PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
 - PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
 - DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.
 - ALL HOLES 3/8"Ø.

EXFILTRATION AREA
STANDARD PERFORATION PATTERNS

PIPE	CORRUGATION PATTERN			
	2 2/3" x 1/2"	3" x 1"	5" x 1"	ULTRA FLO
84"Ø	85.5 SQ. IN.	90.3 SQ. IN.	87.9 SQ. IN.	

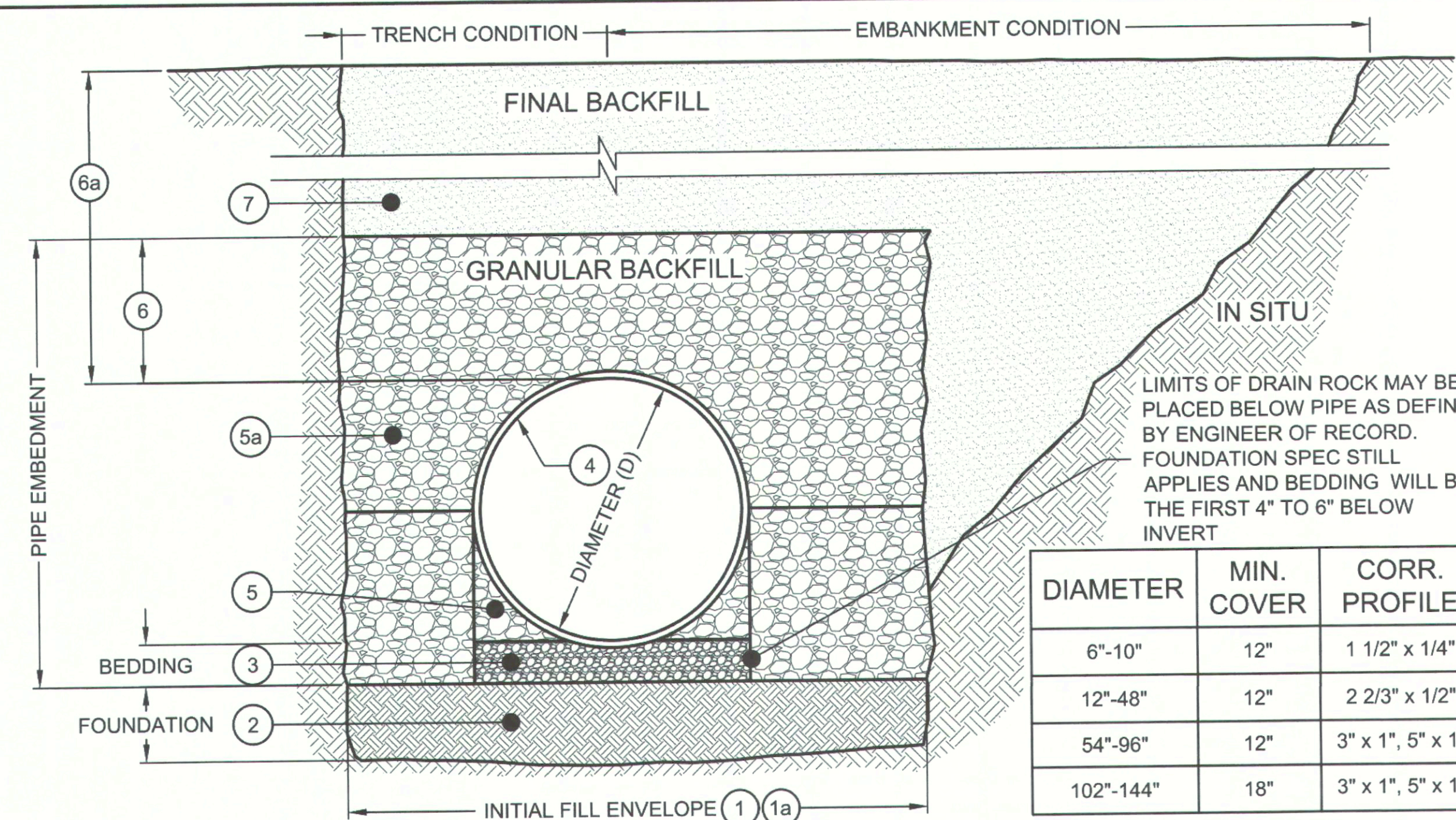
- NOTES:**
- GAGE AND COATING LIMITATIONS APPLY. 5" x 1" IS NOT AVAILABLE IN ALUMINUM.
 - DIMENSIONS SUBJECT TO MANUFACTURER'S TOLERANCES.

TYPICAL PERFORATION DETAIL
NOT TO SCALE



48"Ø TO 90"Ø FITTING REINFORCEMENT
MAY BE REQUIRED BASED ON HEIGHT OF
COVER AND LIVE LOAD CONDITION

TYPICAL MANWAY DETAIL
NOT TO SCALE



DIAMETER	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
54"-96"	12"	3" x 1", 5" x 1"
102"-144"	18"	3" x 1", 5" x 1"

- MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE TRENCH WIDTH IS THE MINIMUM AMOUNT REQUIRED FOR PROPER INSTALLATION AND TO SUPPORT HORIZONTAL PRESSURE FROM THE PIPE. THE MANUFACTURER'S SUGGESTED MINIMUM VALUE IS: 1.5D + 12".
 - MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: 3.0D BUT NO LESS THAN D + 40".
 - FOUNDATION SHALL BE WELL CONSOLIDATED & STABLE, CAPABLE OF SUPPORTING FILL MATERIAL LOAD.
 - OPEN-GRADED GRANULAR BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 4" TO 6" IN DEPTH. SUGGESTED PARTICLE SIZE OF 1/2 CORRUGATION DEPTH.
 - CORRUGATED STEEL PIPE (CSP / HEL-COR).
 - HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION.
 - THE BACKFILL MATERIAL SHALL BE A FREE-DRAINING, ANGULAR, WASHED-STONE PER AASHTO M 43 SIZE #3 WITH A 1/2" - 2" PARTICLE SIZE OR APPROVED EQUAL. MATERIAL SHALL BE PLACED IN 12" MAXIMUM LIFTS AND SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY PLATE OR OTHER EFFECTIVE METHODS. COMPACTION IS CONSIDERED ADEQUATE WHEN A DENSITY EQUIVALENT TO 90% STANDARD PROCTOR IS ACHIEVED OR WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR OR UNDER FOOT. THE PROJECT ENGINEER OR HIS REPRESENTATIVE MUST BE SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE PIPE DEFLECTIONS AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT SETTLEMENT OF THE SOILS OVER THE SYSTEM.
 - INITIAL OPEN GRADED GRANULAR BACKFILL ABOVE PIPE MAY INCLUDE ROAD BASE MATERIAL (AND RIGID PAVEMENT IF APPLICABLE). SEE TABLE ABOVE.
 - TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.
 - FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.
- NOTES:**
- GEOTEXTILE SHOULD BE USED TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT ENGINEER).
 - FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA. / 2 BUT NO LESS THAN 12", OR 36" FOR PIPE DIAMETERS 72" AND LARGER.
 - CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING (TABLE C12.6.7-1).

TYPICAL BACKFILL DETAIL
NOT TO SCALE

84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
THE SQUARE AT CRYSTAL FALLS
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P2	OF 6	

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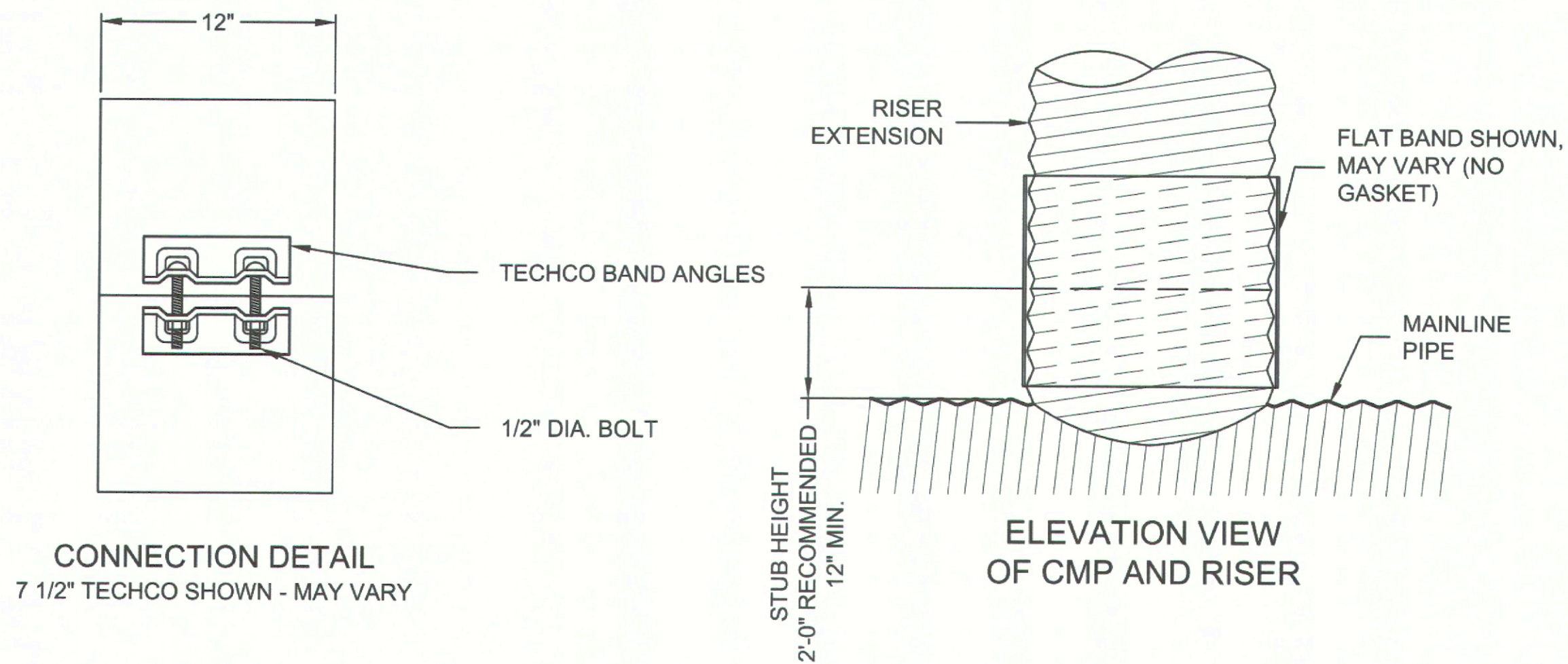
THE SQUARE AT CRYSTAL FALLS
DETENTION POND DETAILS
PROJECT NUMBER #21-SD-036

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Job No. Snapshot: POND
Scale (Hor.): Scale (Vert.):
Date: 08/09/21 Checked By: SRJ Drawn By: DPG
Revision 1: Revision 2: Revision 3: Revision 4:

21-SD-036
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APPROVED
RMG

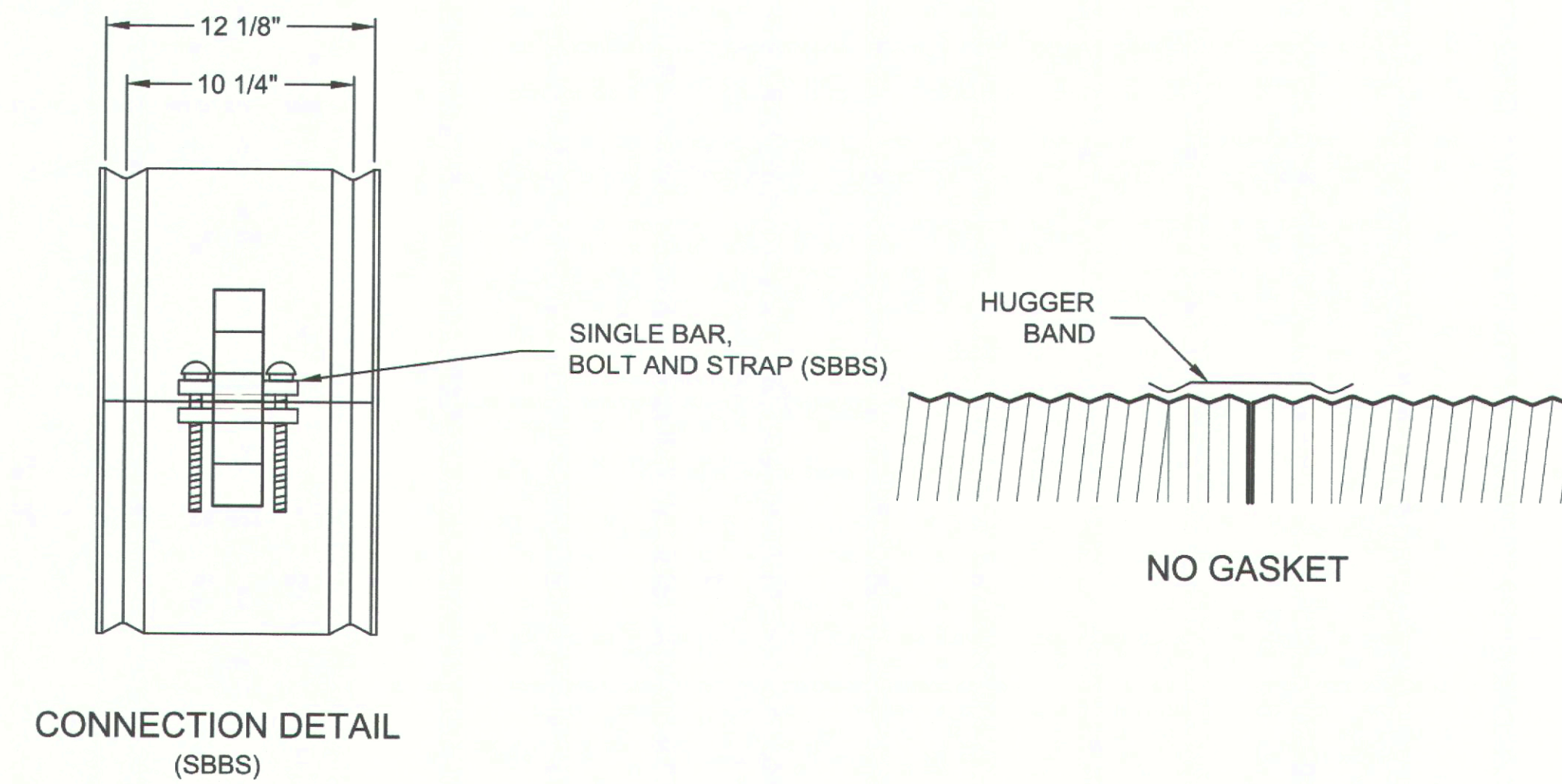


PLAIN END CMP RISER PIPE

GENERAL NOTES:

1. DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.
2. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
3. BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
4. IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
5. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
 - 12" THRU 48" 1-PIECE
 - 54" 2-PIECES
6. ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
7. MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
8. DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

12" RISER BAND DETAIL
NOT TO SCALE



2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

GENERAL NOTES:

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. BAND MATERIALS AND/OR COATING CAN VARY BY LOCATION. CONTACT YOUR CONTECH REPRESENTATIVE FOR AVAILABILITY.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
 - 12" THRU 48" 1-PIECE
 - 54" THRU 96" 2-PIECES
 - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION, IF REQUIRED (SEE DETAILS ABOVE).

H-12 HUGGER BAND DETAIL
NOT TO SCALE

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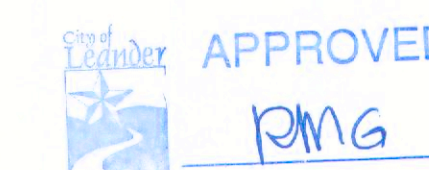
CONTECH
CMP DETENTION SYSTEMS
CONTECH PROPOSAL DRAWING

84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
THE SQUARE AT CRYSTAL FALLS
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P3	OF 6	

21-SD-036

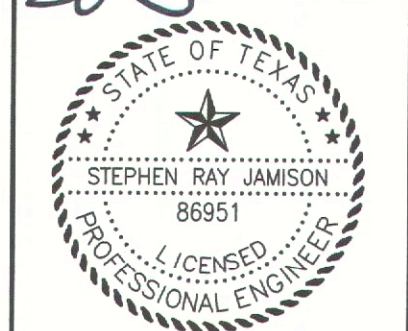
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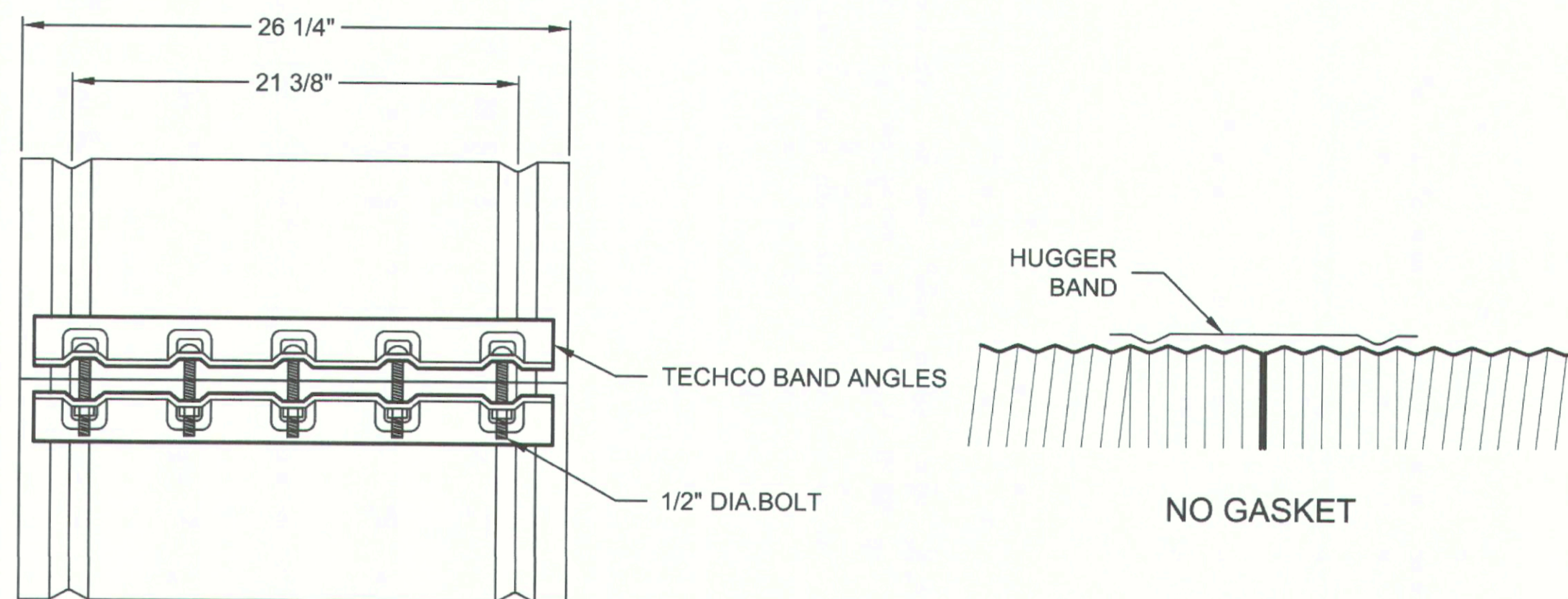
THE SQUARE AT CRYSTAL FALLS
DETENTION POND DETAILS
PROJECT NUMBER #21-SD-036

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Job No.	Snapshot: POND
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Date: 08/09/21	Checked By: SRJ
Revision 1:	Drawn By: DPG
Revision 2:	
Revision 3:	
Revision 4:	

SHEET
20 of 39



CONNECTION DETAIL
24" TECHCO

GENERAL NOTES: 2 2/3"x1/2" RE-ROLLED END HEL-COR PIPE

1. JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
2. THE H-24 HUGGER BAND IS MANUFACTURED ONLY AT THE MASON, MICHIGAN PLANT.
3. BANDS ARE SHAPED TO MATCH THE PIPE-ARCH WHEN APPLICABLE.
4. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
 - 12" THRU 48" 1-PIECE
 - 54" THRU 96" 2-PIECE
 - 102" THRU 144" 3-PIECES
5. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
6. ALL CMP IS REROLLED TO HAVE ANNULAR END CORRUGATIONS OF 2 2/3"x1/2"
7. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
8. ORDER SHALL DESIGNATE GASKET OPTION IF REQUIRED. SEE DETAILS ABOVE.

H-24 HUGGER BAND DETAIL
NOT TO SCALE

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84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
THE SQUARE AT CRYSTAL FALLS
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P4 OF 6		

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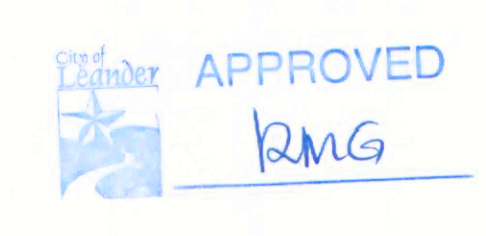
THE SQUARE AT CRYSTAL FALLS
DETENTION POND DETAILS
PROJECT NUMBER #21-SD-036

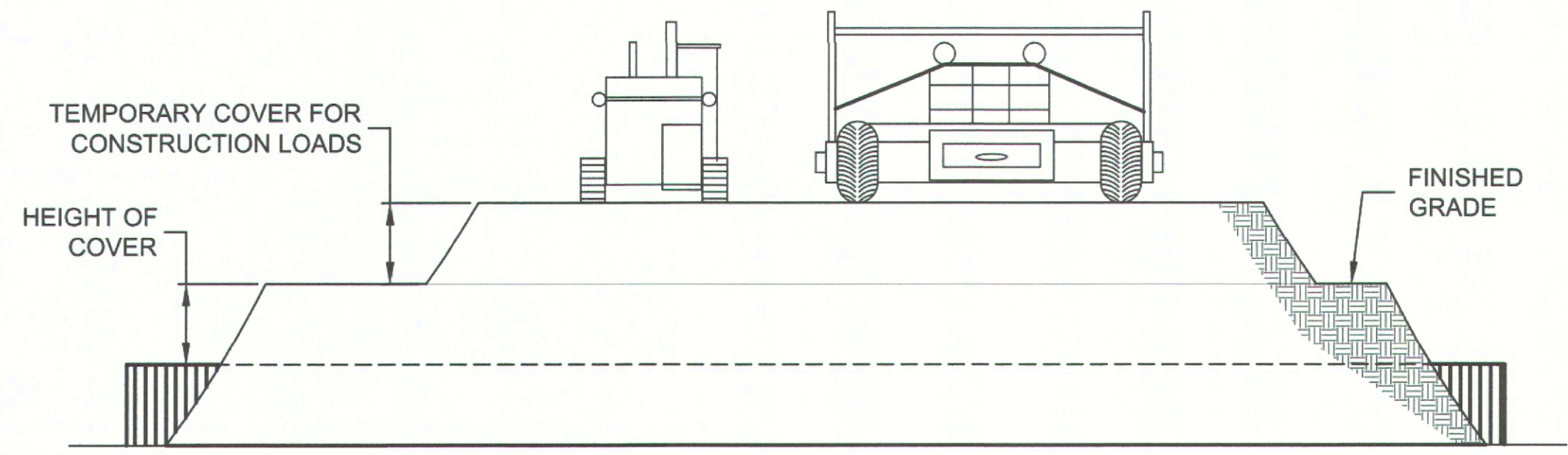
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File: H:\1800 BAGDADD\DWG\PLANS\POND.DWG

Job No.	Snapshot: POND
Scale (Hor.):	Scale (Vert.):
Date: 09/09/21	Checked By: SRJ / Drawn By: DPG
Revision 1:	Revision 2:
Revision 3:	Revision 4:

21-SD-036
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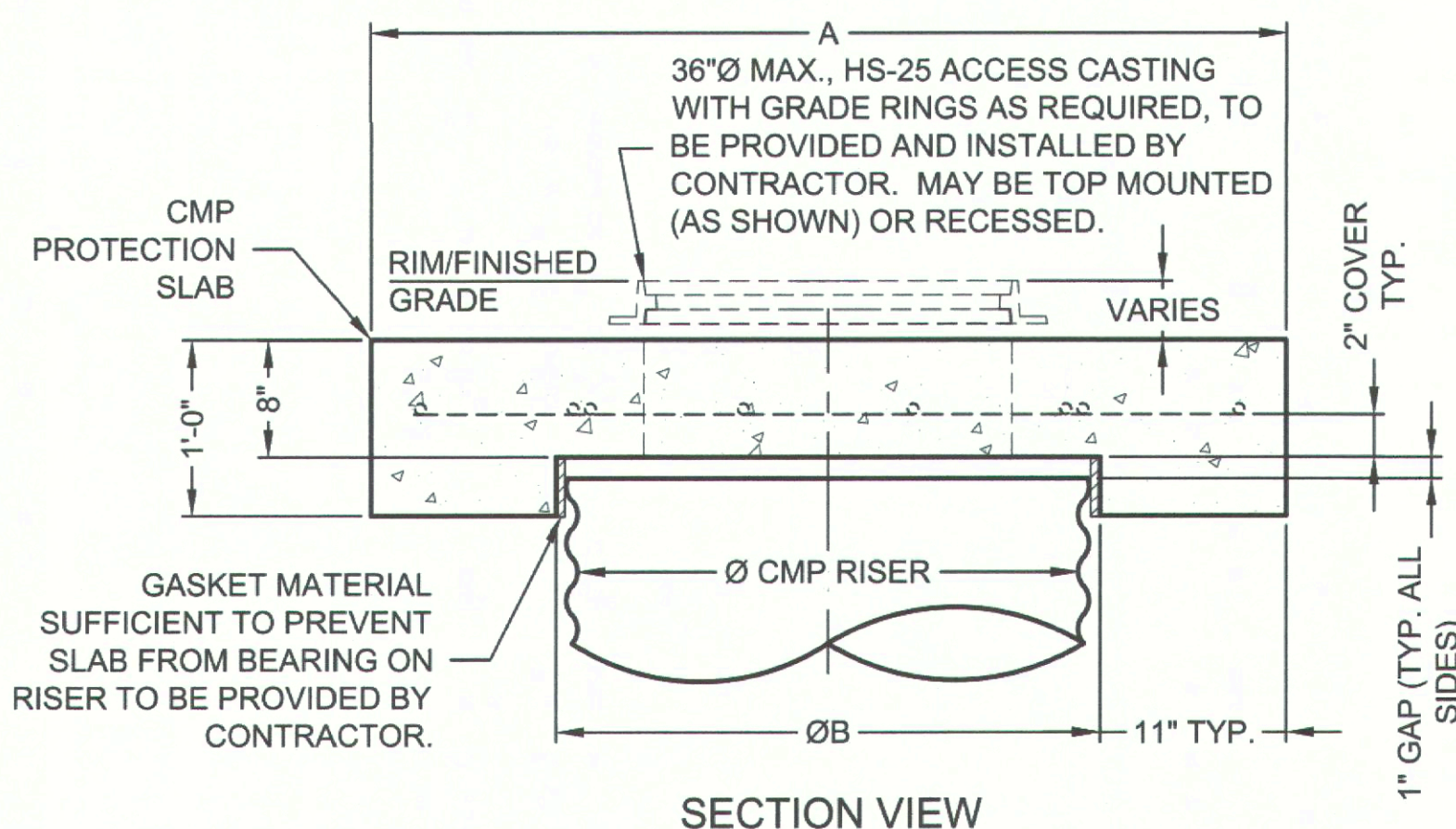
CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
NOT TO SCALE

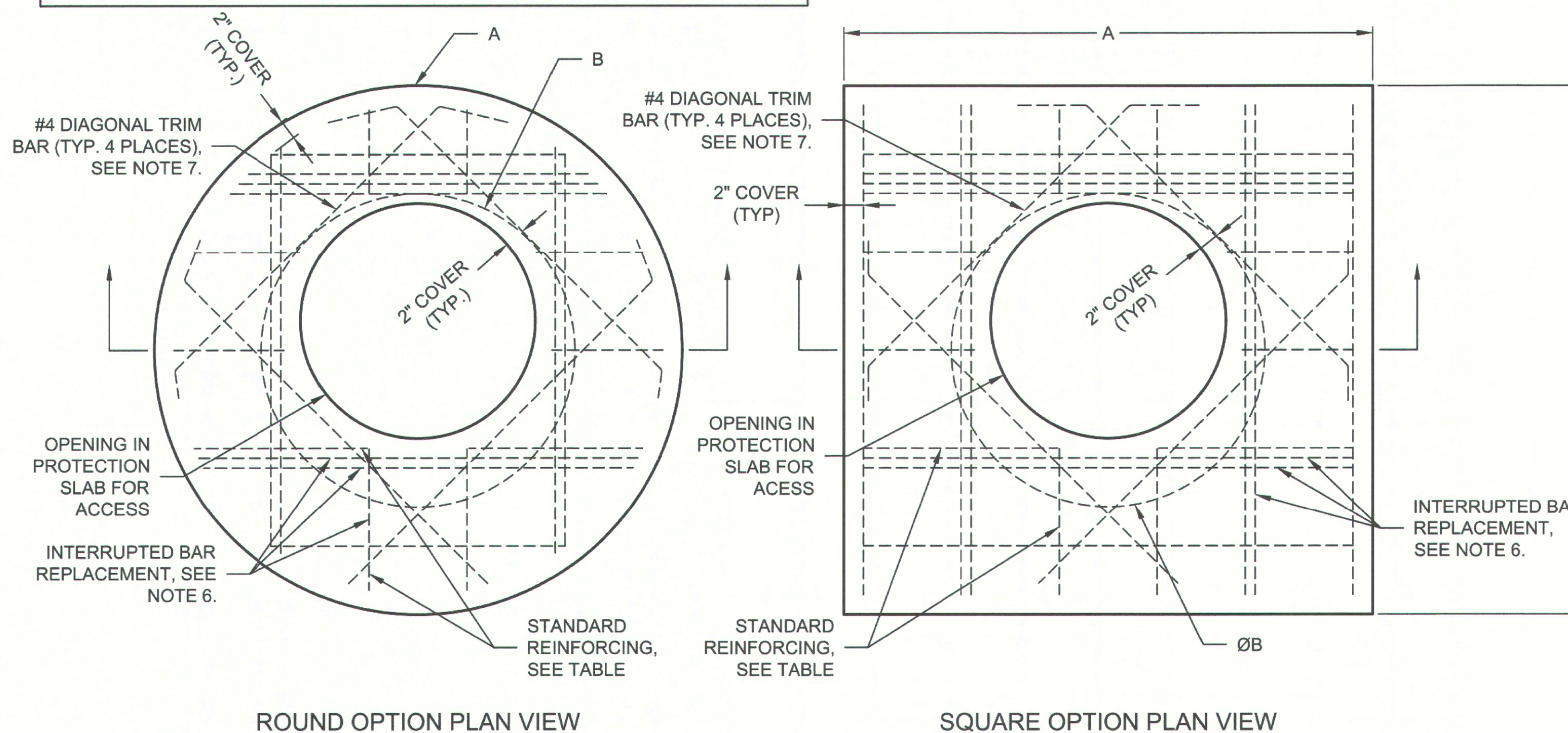


SECTION VIEW

Ø CMP RISER	A	B Ø	REINFORCING	**BEARING PRESSURE (PSF)
24"	4'Ø 4'x4'	26"	#5 @ 10" OCEW #5 @ 10" OCEW	2,540 1,900
30"	4'-6"Ø 4'-6" x 4'-6"	32"	#5 @ 10" OCEW #5 @ 9" OCEW	2,260 1,670
36"	5'Ø 5' x 5'	38"	#5 @ 9" OCEW #5 @ 8" OCEW	2,060 1,500
42"	5'-6"Ø 5'-6" x 5'-6"	44"	#5 @ 8" OCEW #5 @ 8" OCEW	1,490 1,370
48"	6'Ø 6' x 6'	50"	#5 @ 7" OCEW #5 @ 7" OCEW	1,210 1,270

** ASSUMED SOIL BEARING CAPACITY

ACCESS CASTING NOT SUPPLIED BY CONTECH



ROUND OPTION PLAN VIEW

SQUARE OPTION PLAN VIEW

NOTES:

- DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION AND ACI 350.
- DESIGN LOAD HS25.
- EARTH COVER = 1' MAX.
- CONCRETE STRENGTH = 4,000 psi
- REINFORCING STEEL = ASTM A615, GRADE 60.
- PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.

- TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
- PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
- DETAIL DESIGN BY DELTA ENGINEERS, ARCHITECTS AND LAND SURVEYORS, ENDWELL, NY.

MANHOLE CAP DETAIL
NOT TO SCALE

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSIPA)

INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.

ANTI-FLOTATION PROVISIONS DUE TO HIGH GROUNDWATER OR OTHER FLOTATION CONCERNS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.

MATERIAL SPECIFICATION
NOT TO SCALE

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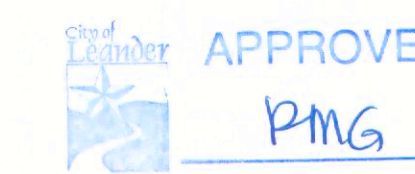
CONTECH
PROPOSAL
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84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
THE SQUARE AT CRYSTAL FALLS
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P5 OF 6		

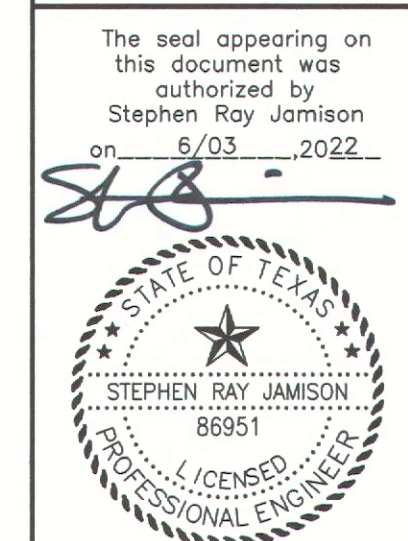
21-SD-036

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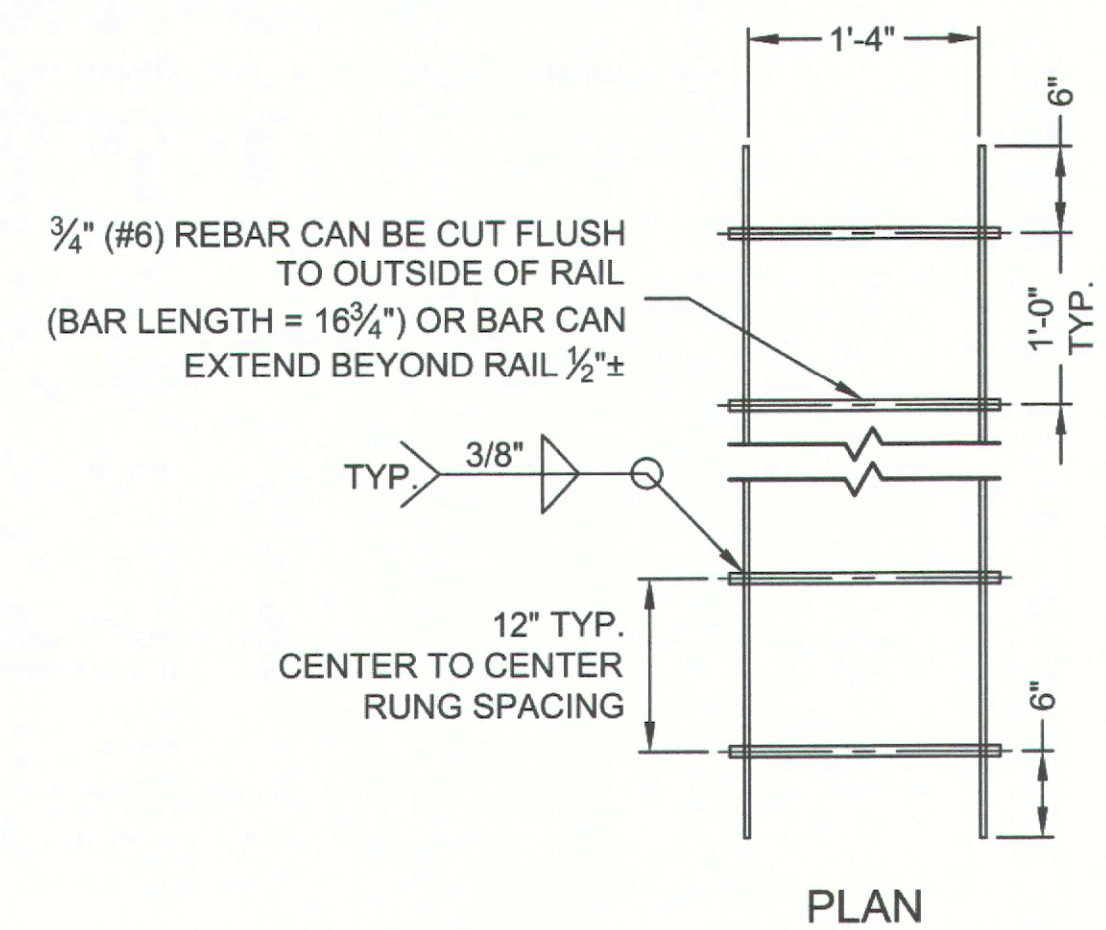
JAMISON CIVIL ENGINEERING LLC
(TX, PE FIRM REG. #F-17756)
13812 RESEARCH BLVD. #B-2
AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
DETENTION POND DETAILS
PROJECT NUMBER #21-SD-036



File: H:\1900 BAGDADD\DWG\PLANS\DETENTION POND.DWG	Snapshot: POND	Scale (Vert.):	Drawn By: DPG
Job No.:	Scale (Hor.):	Date: 08/09/21	Checked By: SRJ
Revision 1:	Revision 2:	Revision 3:	Revision 4:

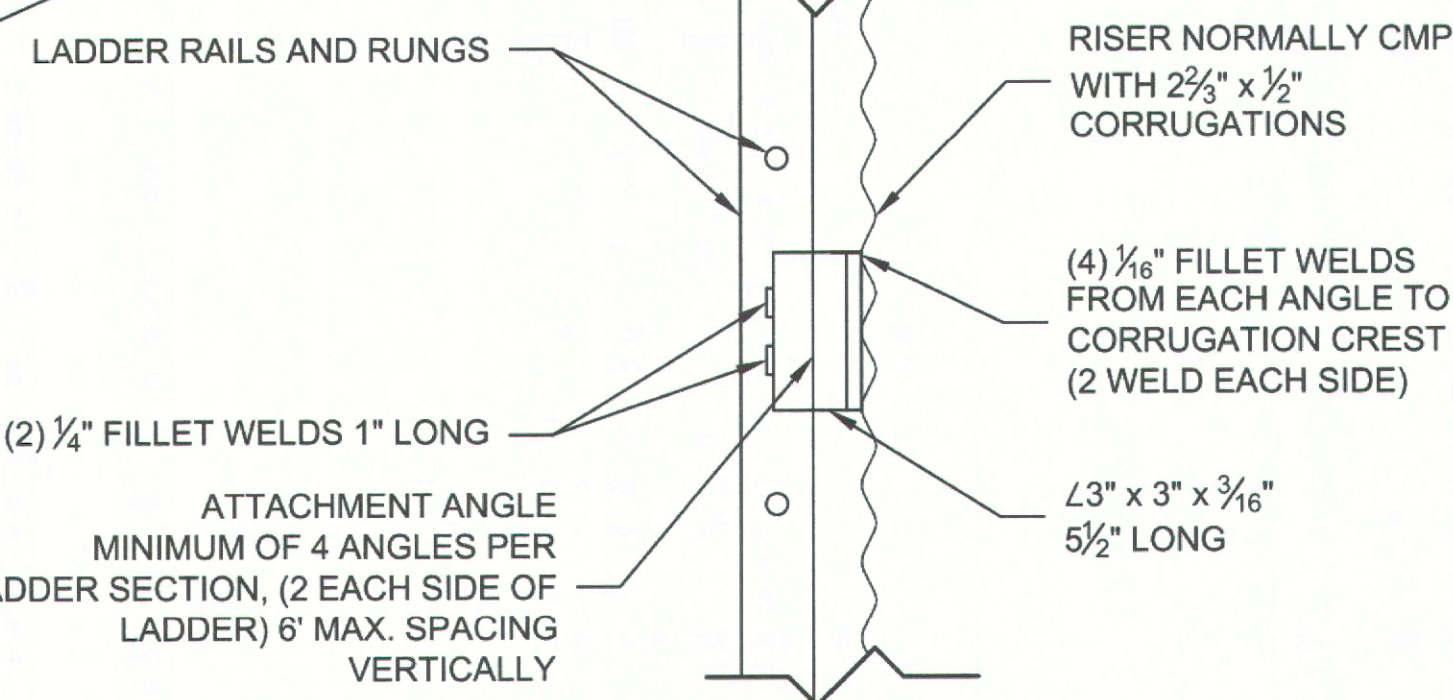
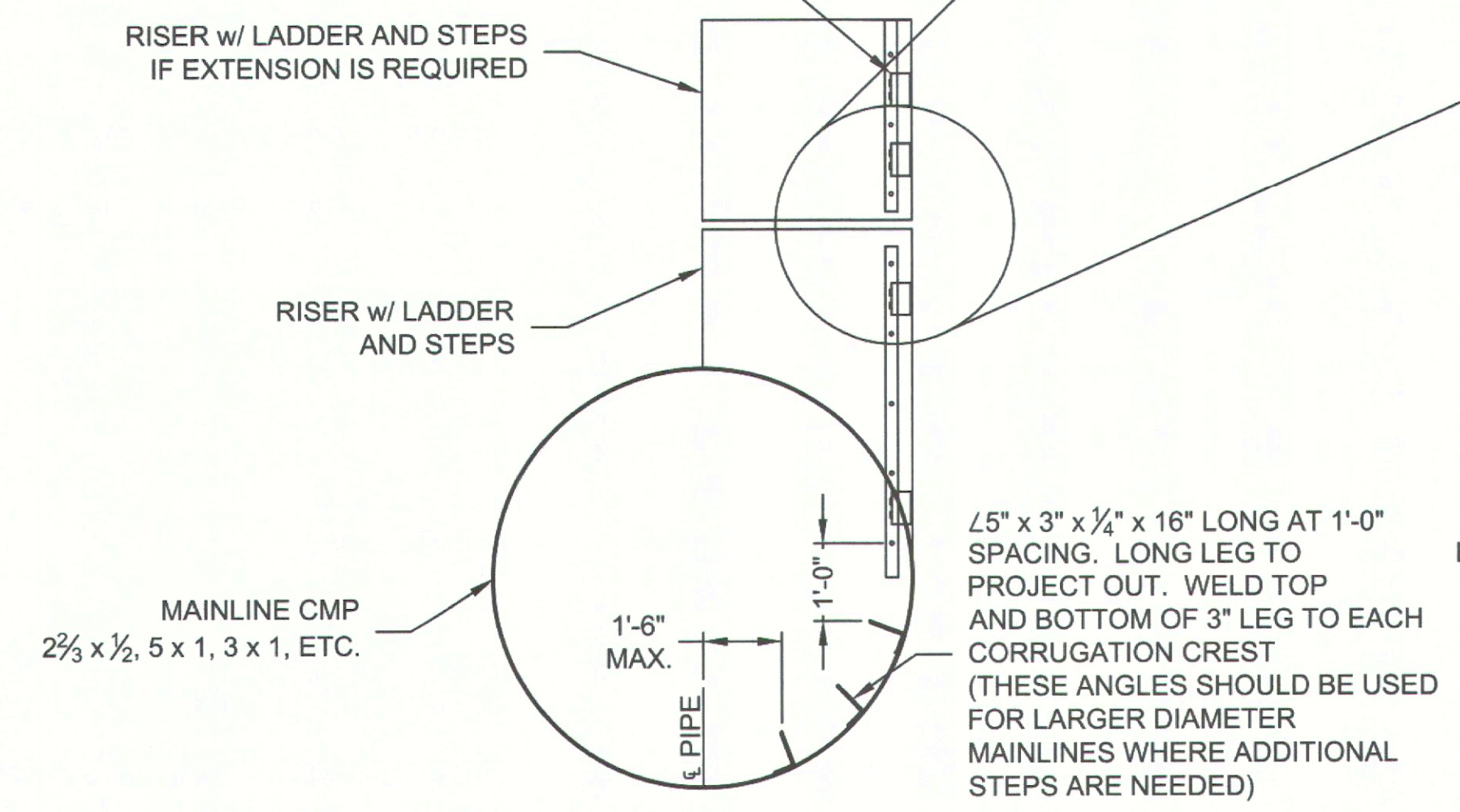
SHEET
22 of 39



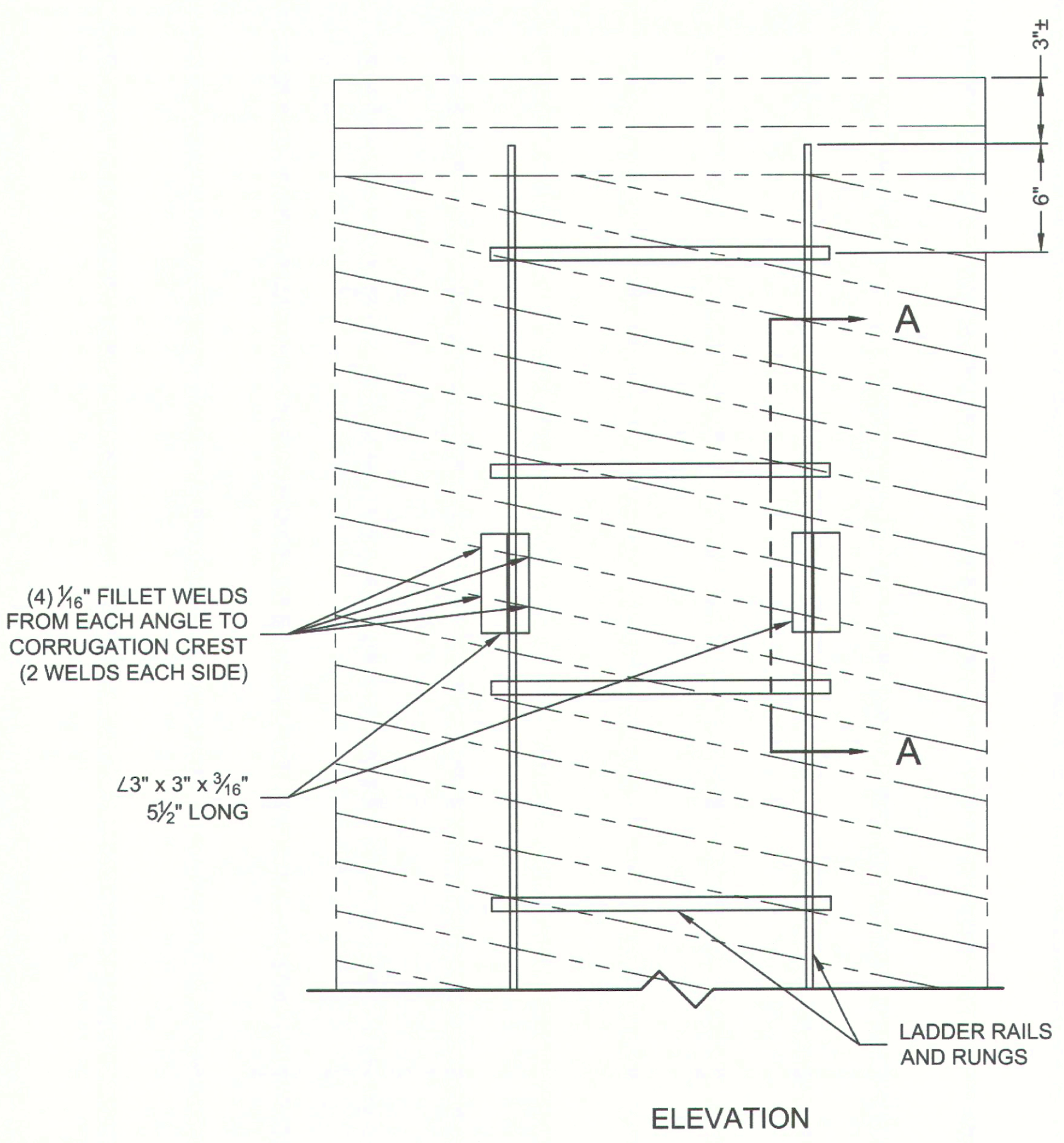
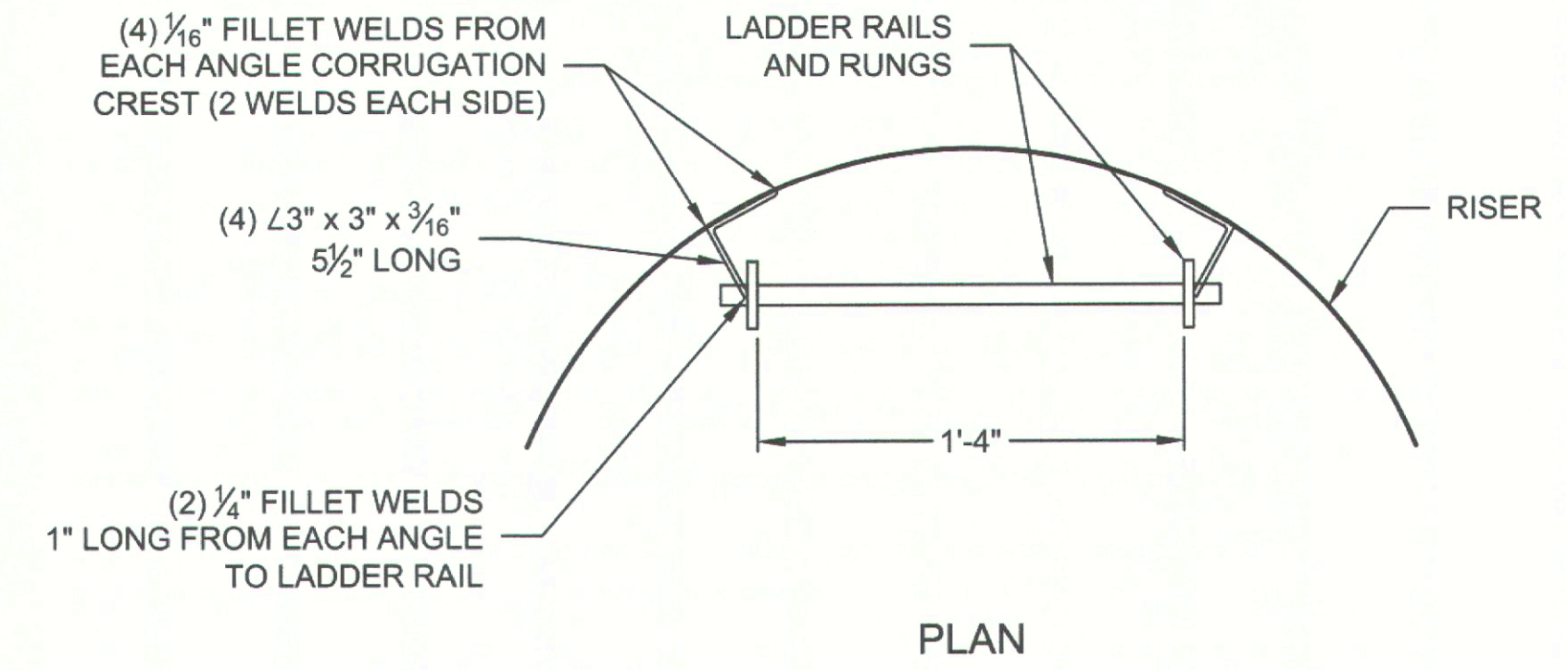
- NOTES:
- LADDERS CAN BE MADE IN 20'-0" STANDARD LENGTHS AND CUT TO FIT
 - ALL MATERIAL TO MEET ASTM A36
 - LADDER TO BE HOT DIPPED GALVANIZED PER ASTM A-123 AFTER FABRICATION IS COMPLETE

STANDARD LADDER DETAIL
NOT TO SCALE
PART NO. HALAGVL16

PROVIDE MINIMUM OF 4 ATTACHMENT ANGLES (2 ON EITHER SIDE OF LADDER RAIL) TO CONNECT LADDER TO RISER EXTENSION



RISER LADDER DETAIL
NOT TO SCALE

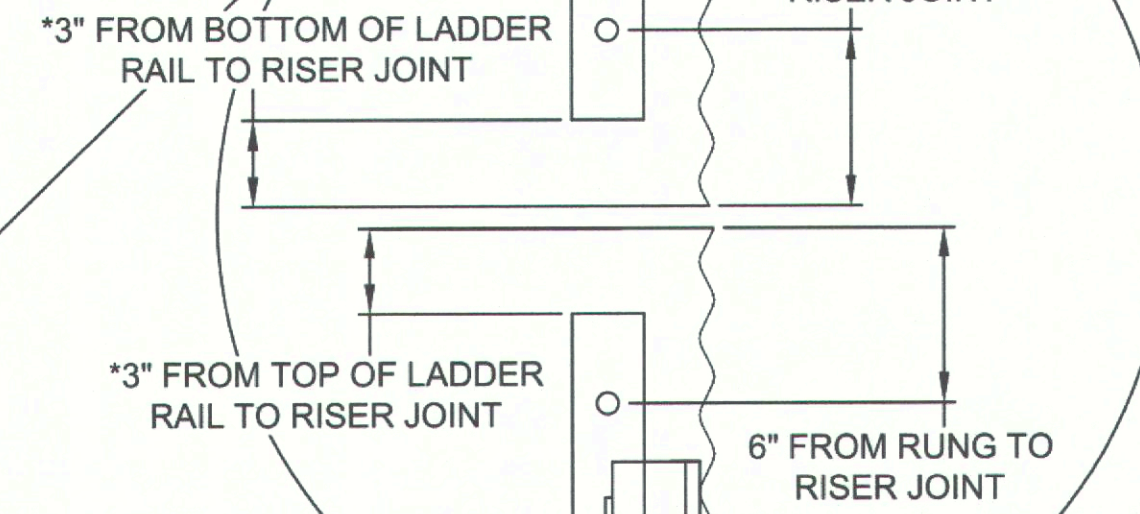


ELEVATION

ALL STEEL PER ASTM A36

FABRICATION TOLERANCE: ±1/4" FLAT BAR AND REBAR: MILL TOLERANCE APPLIES

*NOTE: WHEN RISER EXTENSIONS ARE USED, THE PLANT SHOULD CUT 3" FROM THE SIDE RAILS AS SHOWN



SECTION A-A

84"Ø PERFORATED UNDERGROUND RETENTION SYSTEM - 690094-020
THE SQUARE AT CRYSTAL FALLS
LEANDER, TX
SITE DESIGNATION: UNDERGROUND DETENTION

PROJECT No.: 690094	SEQ. No.: 020	DATE: 12/2/2021
DESIGNED: SJ	DRAWN: AKMH	
CHECKED: SJ	APPROVED: SJ	
SHEET NO.: P6	OF 6	

I:\MERLIN\PROJECTS\ACTIVE\6900094-020-CMP DETENTION\DRAWINGS\PROPOSAL\690094-020-CMP PRO.DWG 4/16/2022 2:51 PM

NOTE:
THIS DRAWING IS INTENDED TO APPLY TO LADDERS INSTALLED IN RISERS HAVING A DIAMETER OF 30" OR LARGER. DUE TO SPACE CONSTRAINTS AND LIMITED ACCESSIBILITY, THE PRACTICALITY AND SUITABILITY OF UTILIZING RISERS SMALLER THAN 30" DIAMETER AND/OR INCORPORATING LADDERS IN THESE SMALLER DIAMETER RISERS SHOULD BE ADDRESSED BY THE OWNER AND PROJECT ENGINEER

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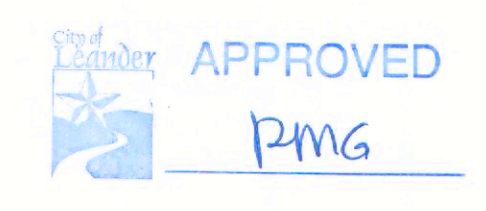
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MARK	DATE	REVISION DESCRIPTION	BY

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ENGINEERED SOLUTIONS LLC
www.ContechES.com
11815 NE Glenn Widing Drive, Portland, OR 97220
800-548-4667 503-240-3393 800-561-1271 FAX

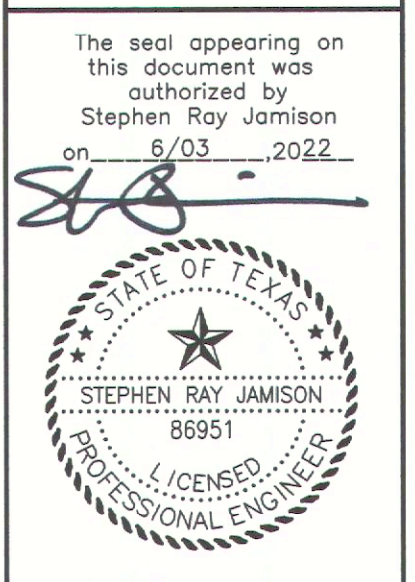
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21-SD-036
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THE SQUARE AT CRYSTAL FALLS
DETENTION POND DETAILS
PROJECT NUMBER #21-SD-036



Job No.	Snapshot: POND
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Revision 2:	
Revision 3:	
Revision 4:	

Contech Engineered Solutions Calculations for Texas Commission on Environmental Quality
TSS Removal Calculations

Project Name: **The Square at Crystal Falls**
Date Prepared: 1/24/2022

1. The Required Load Reduction for the total project:

Calculations from RG-348 Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$
Pages 3-27 to 3-30

$L_{M\text{TOTAL PROJECT}}$ = Required TSS removal resulting from the proposed development = 80% of increased load
 A_N = Net increase in impervious area for the project
 P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County = **Williamson**
Total project area included in plan = **3.26** acres
Predevelopment impervious area within the limits of the plan = **0.00** acres
Total post-development impervious area within the limits of the plan = **2.29** acres
Total post-development impervious cover fraction = **0.70**
 P = **32** inches

$L_{M\text{TOTAL PROJECT}}$ = **1993** lbs.

Number of drainage basins / outfalls areas leaving the plan area = **2**

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = **1**

Total drainage basin/outfall area = **2.34** acres
Predevelopment impervious area within drainage basin/outfall area = **0.00** acres
Post-development impervious area within drainage basin/outfall area = **2.28** acres
Post-development impervious fraction within drainage basin/outfall area = **0.97**
 $L_{M\text{THIS BASIN}}$ = **1985** lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = **JF** abbreviation
Removal efficiency = **86** percent

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:
 $L_R = (\text{BMP efficiency}) \times P \times (A_i \times 34.6 + A_p \times 0.54)$

A_C = Total On-Site drainage area in the BMP catchment area
 A_i = Impervious area proposed in the BMP catchment area
 A_p = Pervious area remaining in the BMP catchment area
 L_R = TSS Load removed from this catchment area by the proposed BMP

A_C = **2.34** acres
 A_i = **2.28** acres
 A_p = **0.06** acres
 L_R = **2172** lbs.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\text{THIS BASIN}}$ = **1993** lbs.
 F = **0.92**

6. Calculate Treated Flow required by the BMP Type for this drainage basin / outfall area.

Offsite area draining to BMP = **0.00** acres
Offsite impervious cover draining to BMP = **0.00** acres

Calculations from RG-348
Pages Section 3.2.22

Rainfall Intensity = **1.20** inches per hour
Effective Area = **2.05** acres
Cartridge Length = **54** inches

Peak Treatment Flow Required = **2.49** cubic feet per second

7. Jellyfish
Designed as Required in RG-348
Section 3.2.22

Flow Through Jellyfish Size

Jellyfish Size for Flow-Based Configuration = **JFPD0808-13-3**
Jellyfish Treatment Flow Rate = **2.58** cfs

DETENTION POND 1 VOLUMES

Elevation *	Depth	Total Vol.
Ft. msl	Ft.	AC-FT
1031.00	-	-
1031.50	0.50	0.054
1032.00	0.50	0.119
1032.50	0.50	0.190
1033.00	0.50	0.266
1033.50	0.50	0.344
1034.00	0.50	0.424
1034.50	0.50	0.505
1035.00	0.50	0.587
1035.50	0.50	0.667
1036.00	0.50	0.745
1036.50	0.50	0.821
1037.00	0.50	0.892
1037.50	0.50	0.957
1038.00	0.50	1.011
1038.50	0.50	1.050

EXISTING FLOW SUMMARY

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T_c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
EXISTING BASIN 1	78	2.23	13.12	0.07	5.3	10.4	14.1	20.4
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	92	0.03	5.00	0.02	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	89	0.39	5.00	0.21	1.8	3.0	3.8	5.1
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
EXISTING JUNCTION 1					10.8	21.9	31.8	44.7
EXISTING BASIN 2	78	1.03	15.63	0.05	2.3	4.5	6.0	8.7

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 1

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T_c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED TO POND	97	2.21	5.00	2.14	13.0	19.7	24.3	32.2
DETENTION POND					2.2	2.9	3.3	4.0
DEVELOPED BYPASS 3	80	1.28	5.00	1.05	0.8	1.4	1.9	2.7
DEVELOPED OFFSITE 1	92	0.96	5.00	0.64	4.9	7.7	9.7	13.0
7-11 POND					1.7	5.2	9.3	12.9
DEVELOPED OFFSITE 2	87	0.46	5.00	0.18	2.0	3.4	4.4	6.1
DEVELOPED OFFSITE 3	80	0.85	5.00	0.00	0.1	0.2	0.3	0.3
DEVELOPED OFFSITE 4	80	0.18	5.00	0.00	1.8	3.0	3.8	5.1
DEVELOPED JUNCTION A					6.0	11.8	19.5	27.1
DEVELOPED BYPASS 4	97	11.41	5.00	10.95	0.6	1.2	1.6	2.2
DEVELOPED OFFSITE 5	91	0.29	5.00	0.17	1.5	2.3	2.9	4.0
DEVELOPED JUNCTION 1					9.9	17.4	26.6	36.5

DEVELOPED FLOW SUMMARY - DEVELOPED JUNCTION 2

PEAK FLOWS WERE CALCULATED USING HEC-HMS. 100-YR RAINFALL DEPTHS CALCULATED FROM ATLAS 14

BASIN	CN	AREA (AC)	T_c (MIN)	I.C. (AC)	FLOW (Q)			
					2-YR (CFS)	10-YR (CFS)	25-YR (CFS)	100-YR (CFS)
DEVELOPED BYPASS 1	97	0.02	5.00	0.02	0.1	0.1	0.1	0.2
DEVELOPED BYPASS 5	80	0.20	5.00	0.00	0.7	1.3	1.7	2.5
DEVELOPED BYPASS 6	95	0.30	5.00	0.00	1.0	2.0	2.6	3.7
DEVELOPED JUNCTION 2					1.8	3.4	4.5	6.4

PROPOSED DETENTION POND SUMMARY

STORM	DETENTION POND STORAGE (AC-FT)	DETENTION POND ELEVATION	DETENTION POND DISCHARGE (CFS)
2-YEAR	0.3	1033.1	2.2
10-YEAR	0.5	1034.2	2.9
25-YEAR	0.6	1035.1	3.3
100-YEAR	0.9	1036.9	4.0

DEVELOPED JUNCTION 1 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	10.8	9.9
10-YEAR	21.9	17.4
25-YEAR	31.8	26.6
100-YEAR	44.7	36.5

DEVELOPED JUNCTION 2 SUMMARY

STORM	EXISTING (cfs)	DEVELOPED (cfs)
2-YEAR	2.3	1.8
10-YEAR	4.5	3.4
25-YEAR	6.0	4.5
100-YEAR	8.7	6.4

21-SD-036

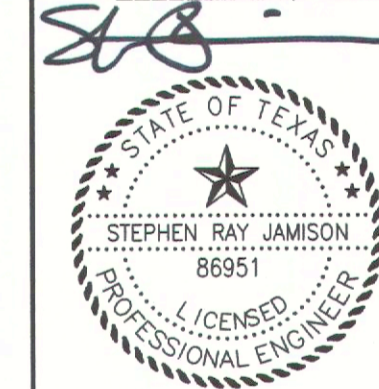
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APPROVED
Rmg

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THE SQUARE AT CRYSTAL FALLS
WATER QUALITY & DETENTION CALCULATIONS
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 6/03/2022



File: H11900 BAGDAD\DWG\PLANS\POND.DWG
Job No.
Snapshot: POND
Scale (Hor.):
Scale (Vert.):
Date: 08/09/21
Checked By: SRJ
Drawn By: DPG
Revision 1:
Revision 2:
Revision 3:
Revision 4:

SHEET
24 of 39

SITE CALCULATIONS:
 TOTAL SITE AREA = 142,418 SF. = 3.269 AC

IMPERVIOUS COVER:

EXISTING (TO REMAIN):	6,491 SF. / 0.15 AC.
PROPOSED:	
BUILDINGS:	21,000 SF. / 0.48 AC.
SIDEWALK:	8,953 SF. / 0.21 AC.
PAVING:	63,308 SF. / 1.45 AC.
SUBTOTAL:	93,261 SF. / 2.14 AC.
TOTAL:	99,752 SF. / 2.29 AC. / 70.0% OF SITE AREA

LIMITS OF CONSTRUCTION = 148,580 SF / 3.41 AC.

GROSS FLOOR AREA	= 27,000 SF / 0.62 AC. (18.9%)
BUILDING COVERAGE	= 21,000 SF / 0.48 AC. (14.6%)
FLOOR TO AREA RATIO	= 27,000 SF / 0.62 AC. = 0.18:1
BUILDING HEIGHT	= 35 FT (MAX.)
BUILDING TYPE	= TYPE II B
LAND USE	= RETAIL SALES

PARKING TABLE
 PARKING REQUIRED FOR RETAIL SALES (1 SPACE FOR 225 SQ FT.)

REQUIRED PARKING:
 RETAIL SALES: 27,000 SF/225 = 120 SPACES
 TOTAL REQUIRED PARKING: = 120 SPACES
 HANDICAP PARKING: = 7 SPACES

PROPOSED PARKING (PH1):
 REGULAR PARKING: = 100 SPACES
 COMPACT PARKING: = 12 SPACES
 HANDICAP PARKING: = 8 SPACES (8 VAN)
 SUBTOTAL PROPOSED PARKING: = 120 SPACES

BICYCLE PARKING PROPOSED: = 8 SPACES

BOUNDARY CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	441.26'	1492.68'	16°56'14"	N42°22'54"W	439.65'
C2	69.98'	285.00'	14°04'04"	N31°52'57"E	69.80'

*SEE TXDOT DETAIL SHEET 32 FOR TRAFFIC CONTROL MEASURES

*SEE DETAILS #501-1 & #501-2 (ON SHEET 23) FOR FIRE LANE STRIPING AND SIGNAGE REQUIREMENTS

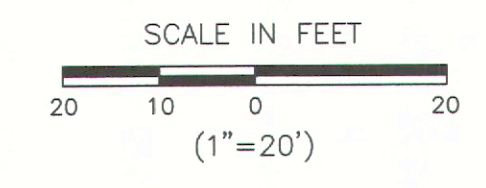
*UNDERGROUND DETENTION IS TO BE PRIVATELY MAINTAINED

*SEE SHEET 05 FOR METES AND BOUNDS DESCRIPTION

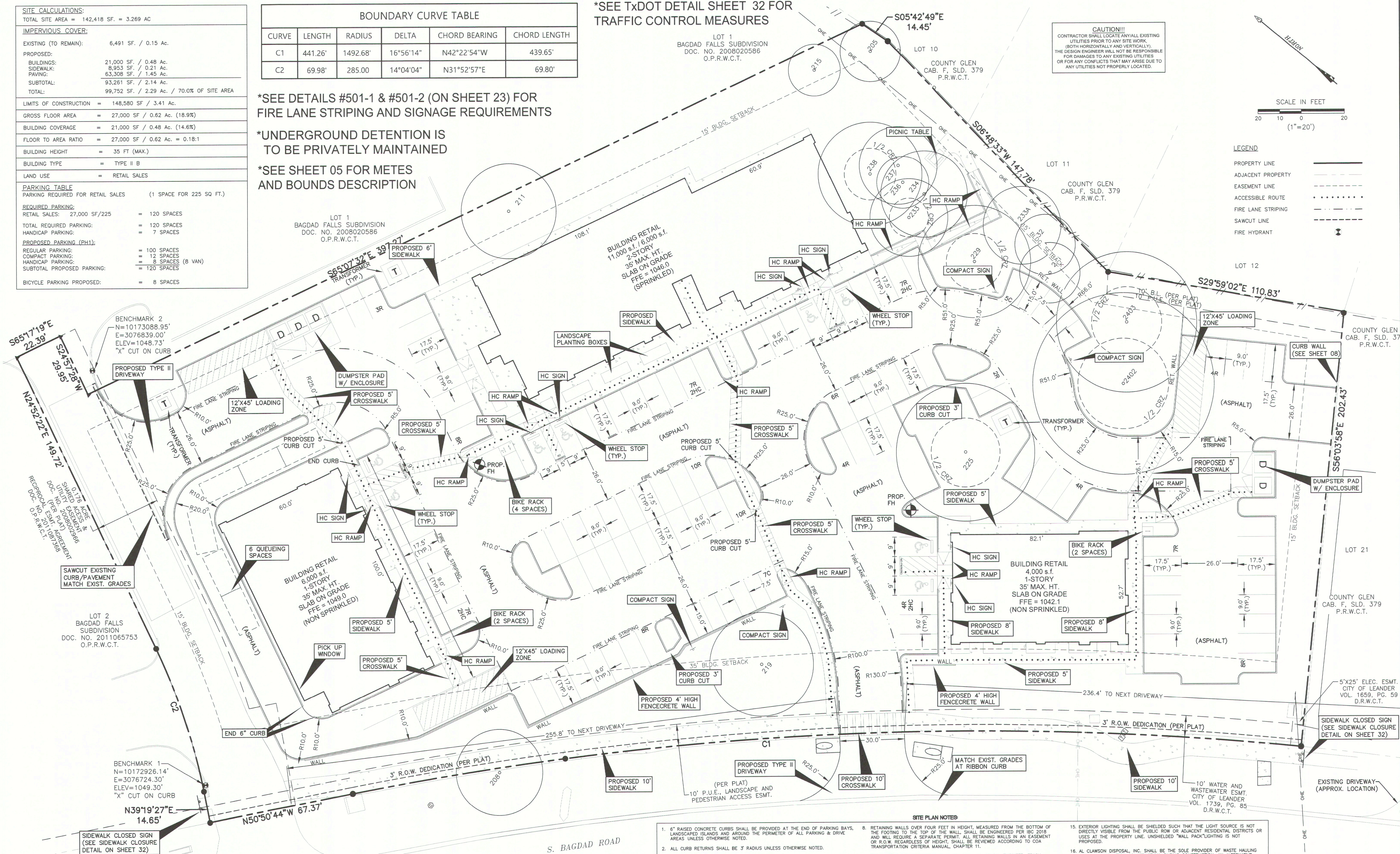
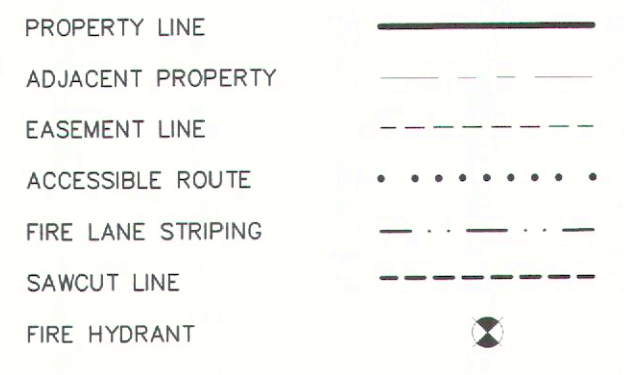
LOT 1
 BAGDAD FALLS SUBDIVISION
 DOC. NO. 2008020586
 O.P.R.W.C.T.

LOT 10
 BAGDAD FALLS SUBDIVISION
 DOC. NO. 2008020586
 O.P.R.W.C.T.

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LEGEND



- SITE PLAN NOTES**
- 6" RAISED CONCRETE CURBS SHALL BE PROVIDED AT THE END OF PARKING BAYS, LANDSCAPED ISLANDS AND AROUND THE PERIMETER OF ALL PARKING & DRIVE AREAS UNLESS OTHERWISE NOTED.
 - ALL CURB RETURNS SHALL BE 3' RADIUS UNLESS OTHERWISE NOTED.
 - THE USE OF COAL TAR BASED ASPHALT SEALANTS FOR CONSTRUCTION OR REPAIR OF ASPHALTIC CONCRETE PAVING IS PROHIBITED ON THIS PROPERTY.
 - RUNNING SLOPE OF ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20 (5.0%), CROSS SLOPE OF ACCESSIBLE ROUTE SHALL NOT EXCEED 1:50 (2.0%). CONTRACTOR TO VERIFY ALL SLOPES PRIOR TO CONSTRUCTION OF ACCESSIBLE ROUTES.
 - ALL NEW PAVING SHALL BE PER THE PAVING PLAN.
 - THE NOISE LEVEL OF MECHANICAL EQUIPMENT WILL NOT EXCEED 70 DBA AT THE PROPERTY LINE ADJACENT TO RESIDENTIAL USES.
 - A MINIMUM VERTICAL CLEARANCE OF 14' MUST BE PROVIDED AT ACCESSIBLE PASSENGER LOADING ZONES AND ALONG VEHICLE ACCESS ROUTES TO SUCH AREAS FROM SITE ENTRANCES. A MINIMUM VERTICAL CLEARANCE OF 9'8" MUST BE PROVIDED FOR VAN-ACCESSIBLE PARKING SPACES AND ALONG THE VEHICULAR ROUTE THERETO.
 - RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL, SHALL BE ENGINEERED PER IRC 2018 AND WILL REQUIRE A SEPARATE PERMIT. ALL RETAINING WALLS IN AN EASEMENT OR R.O.W. REGARDLESS OF HEIGHT, SHALL BE REVIEWED ACCORDING TO COA TRANSPORTATION CRITERIA MANUAL, CHAPTER 11.
 - DUMPSTER PAD TO BE DESIGNED BY OWNERS STRUCTURAL ENGINEER; TRASH COLLECTION WILL BE PROVIDED BY A PRIVATE COMPANY.
 - SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS OR OF EQUAL QUALITY TO PRINCIPAL BUILDING MATERIALS.
 - ALL EXISTING STRUCTURES WITHIN 50' OF THE SITE ARE SHOWN.
 - ALL SIGNS MUST COMPLY WITH THE LATEST REQUIREMENTS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - APPROVAL OF THESE PLANS BY THE CITY OF LEANDER INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. APPROVAL BY OTHER GOVERNMENTAL ENTITIES MAY BE REQUIRED PRIOR TO THE START OF CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR DETERMINING WHAT ADDITIONAL APPROVALS MAY BE NECESSARY.
 - ALL SITE UTILITY LINES ARE PROPOSED TO BE LOCATED UNDERGROUND.
 - EXTERIOR LIGHTING SHALL BE SHIELDED SUCH THAT THE LIGHT SOURCE IS NOT DIRECTLY VISIBLE FROM THE PUBLIC ROW OR ADJACENT RESIDENTIAL DISTRICTS OR USES AT THE PROPERTY LINE. UNSHIELDED "WALL PACK" LIGHTING IS NOT PROPOSED.
 - AL CLAWSON DISPOSAL, INC. SHALL BE THE SOLE PROVIDER OF WASTE HAULING FOR THIS SITE AFTER CONSTRUCTION. DURING CONSTRUCTION, AN ALTERNATIVE WASTE HAULER MAY BE USED AS LONG AS THEY HAVE A FRANCHISE AGREEMENT WITH THE CITY. HERE IS A LINK TO THE APPROVED WASTE HAULERS: <https://www.leandertx.gov/utilities/page/garbage-and-recycling>
 - AIR CONDITIONING UNITS ARE NOT PROPOSED FORWARD OF THE FRONT WALL OF THE BUILDING. GARBAGE DUMPSTERS ARE LOCATED NO CLOSER TO A ROADWAY THAN THE FRONT WALL OF THE PRINCIPAL STRUCTURE LOCATED CLOSEST TO THE ROADWAY. GARBAGE DUMPSTERS ARE SCREENED BY A WALL (COMPRISED OF MASONRY COMPATIBLE WITH THE STRUCTURE OR WOODCRETE) AT LEAST AS HIGH AS THE CONTAINER. THE OPEN SIDE TO THE DUMPSTER OR OTHER TRASH RECEPTACLE IS A GATE CONSTRUCTED OF SOLID WOOD OR METAL. THE DUMPSTER IS ORIENTED FOR PICKUP BY A FRONT LOAD GARBAGE TRUCK.
 - FOR 90 GALLON ROLL OUT CONTAINER STORE OUTSIDE, IT IS REQUIRED TO BE ENCLOSED BY PRIVACY FENCE.

ADDITIONAL EASEMENTS
 ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN DATED: OCTOBER 20, 2020. CONDUCTED BY STEWART TITLE GUARANTY COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

ADDITIONAL EASEMENTS
 ALL EASEMENTS OF RECORD AS INDICATED ON THE MOST RECENT TITLE RUN DATED: OCTOBER 20, 2020. CONDUCTED BY TITLE RESOURCES GUARANTY COMPANY FOR THIS PROPERTY ARE SHOWN ON THIS SITE PLAN.

*PLEASE NOTE: THERE ARE NO EXISTING DRIVEWAYS ACROSS BAGDAD RD. ADJACENT TO THIS SITE.

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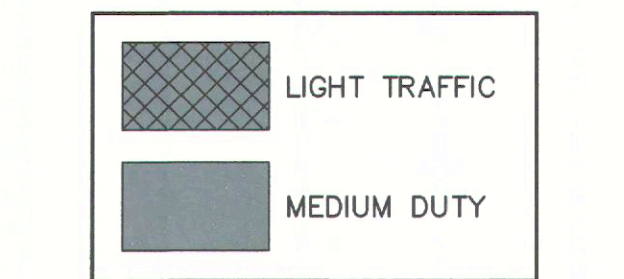
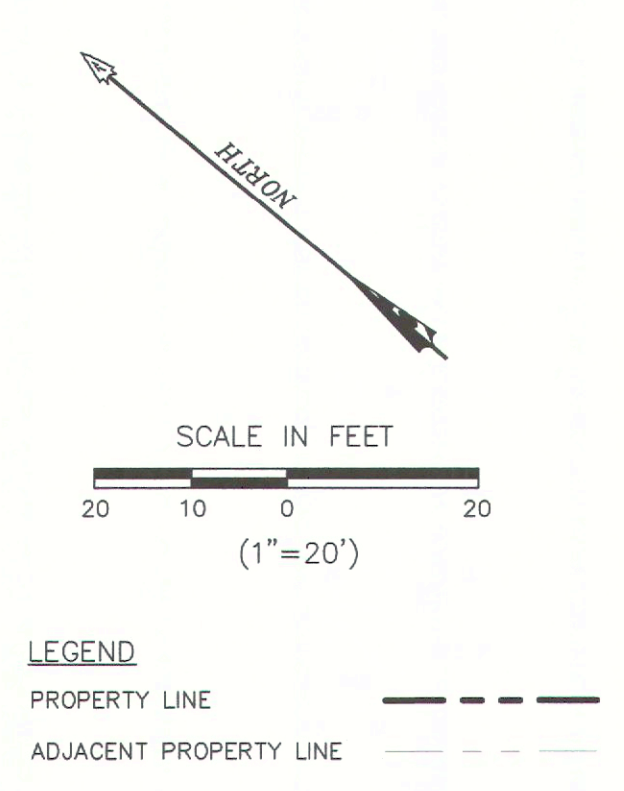
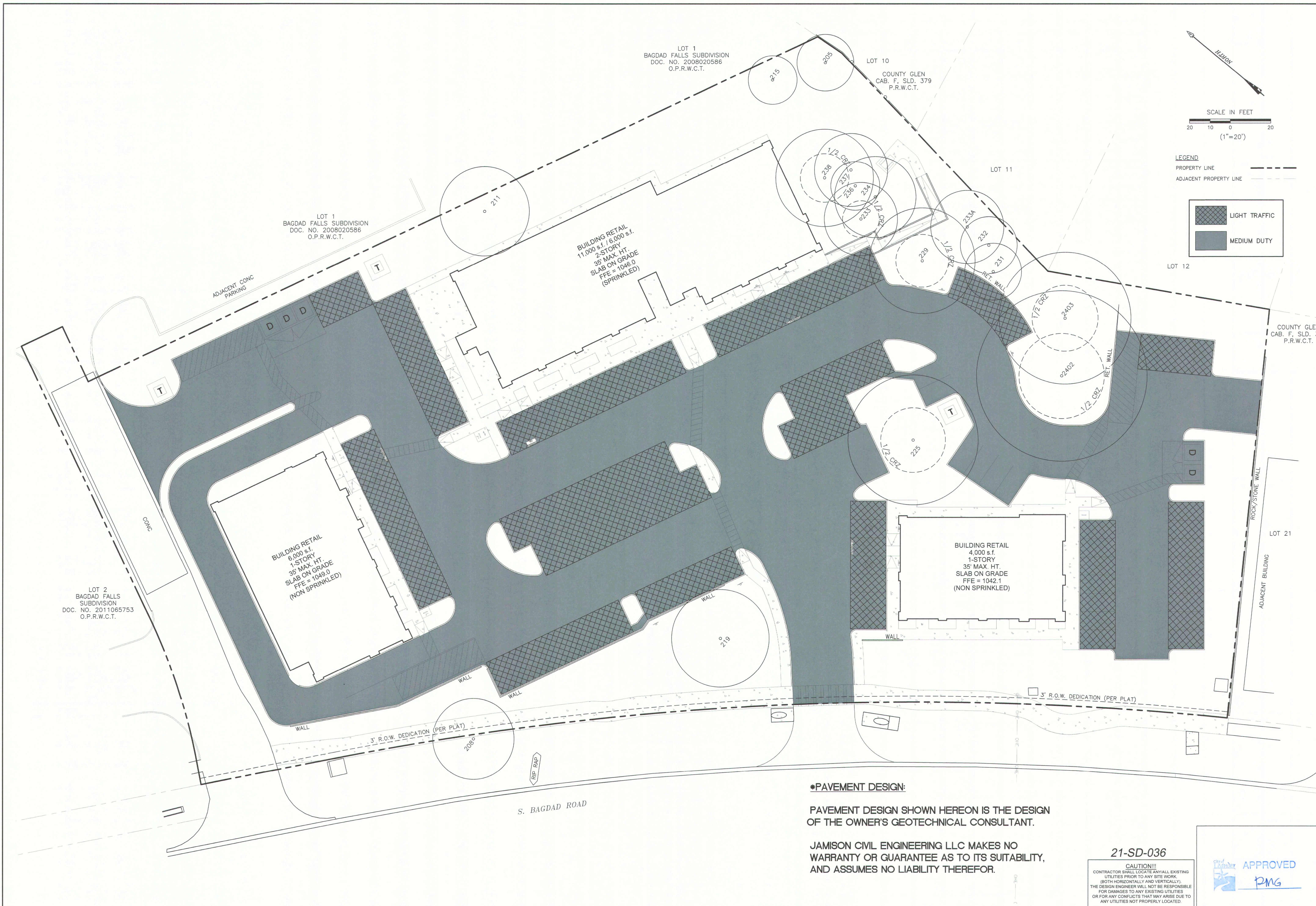
THE SQUARE AT CRYSTAL FALLS
 SITE PLAN
 PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/06/2022.

Files: H:\1900 BAGDAD FALLS\ANSI SITE.DWG
 Job No. Snapshot: SITE
 Scale (Hor.): 1"=30'
 Date: 08/09/21
 Checked By: SRJ
 Drawn By: MM
 Revision 1:
 Revision 2:
 Revision 3:
 Revision 4:

APPROVED

SHEET
 25 of 39



JAMISON CIVIL ENGINEERING LLC
 (TX. PE FIRM REG. #F-17756)
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

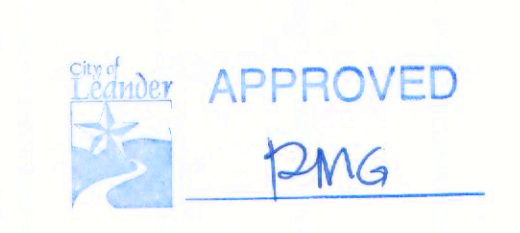
THE SQUARE AT CRYSTAL FALLS
 PAVING PLAN
 PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Roy Jamison on 7/09/2022.

File: H:\1900 BAGDAD\DWG\PLANS\PAVING.DWG
Job No. Snapshot: PAVING
Scale (Hor.): 1"=30'
Scale (Vert.):
Date: 08/09/21
Checked By: SRJ
Drawn By: MM
Revision 1:
Revision 2:
Revision 3:
Revision 4:

***PAVEMENT DESIGN:**
 PAVEMENT DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S GEOTECHNICAL CONSULTANT.
 JAMISON CIVIL ENGINEERING LLC MAKES NO WARRANTY OR GUARANTEE AS TO ITS SUITABILITY, AND ASSUMES NO LIABILITY THEREFOR.

21-SD-036
CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY/ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.



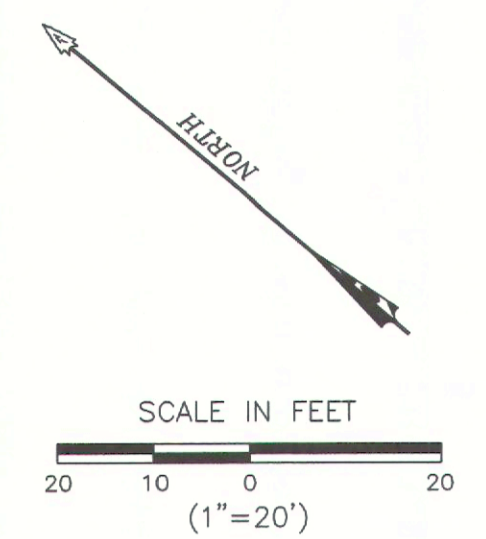
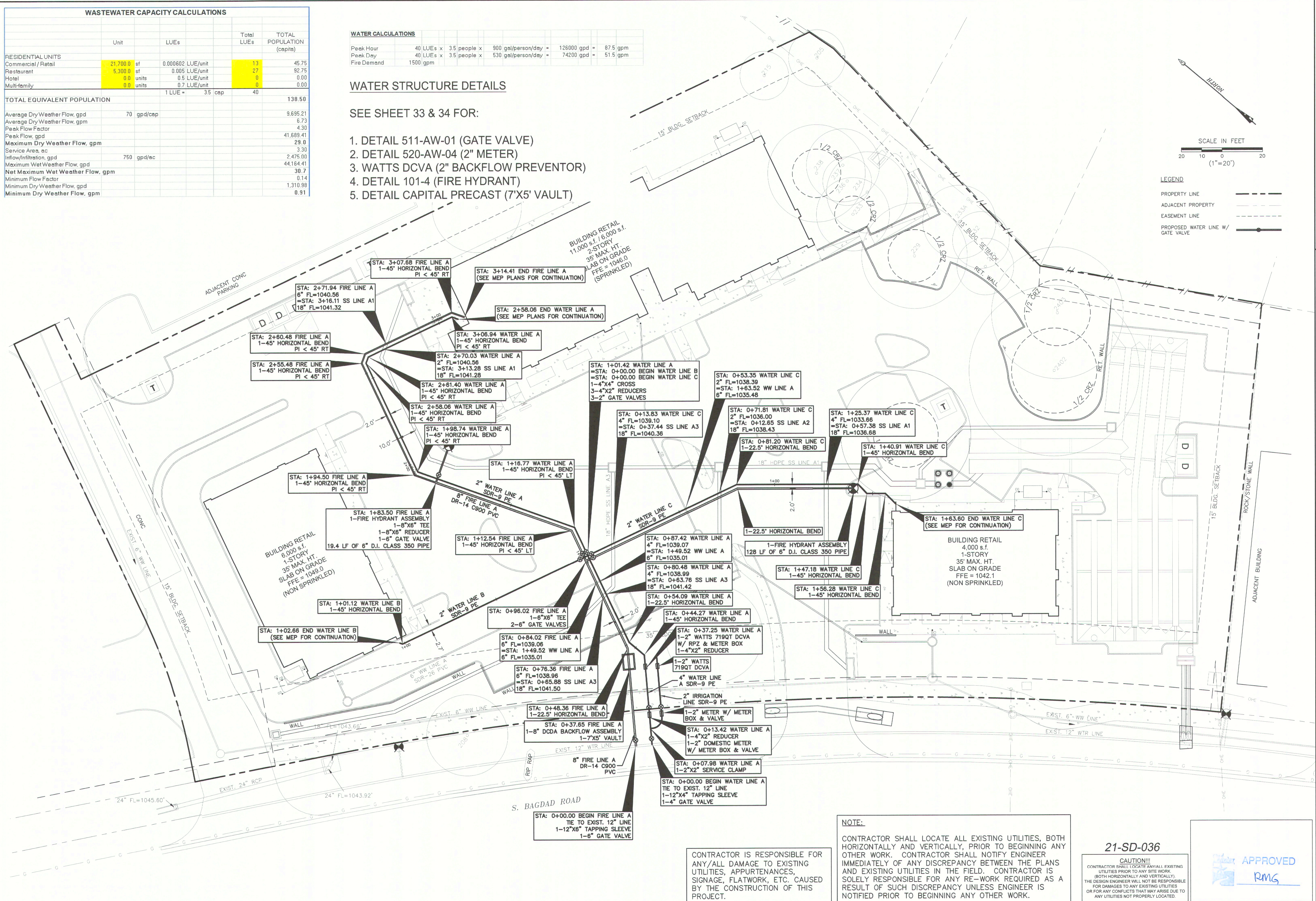
WASTEWATER CAPACITY CALCULATIONS				
	Unit	LUEs	Total LUEs	TOTAL POPULATION (capita)
RESIDENTIAL UNITS				
Commercial/Retail	21,700.0 sf	0.000602 LUE/unit	13	45.75
Restaurant	5,300.0 sf	0.005 LUE/unit	27	92.75
Hotel	0.0 units	0.5 LUE/unit	0	0.00
Multi-family	0.0 units	0.7 LUE/unit	0	0.00
TOTAL EQUIVALENT POPULATION		1 LUE = 3.5 cap	40	138.50
Average Dry Weather Flow, gpd	70 gpd/cap			9,695.21
Average Dry Weather Flow, gpm				6.73
Peak Flow Factor				4.30
Peak Flow, gpd				41,689.41
Maximum Dry Weather Flow, gpm				29.0
Service Area, ac				3.30
Inflow/Infiltration, gpd	750 gpd/ac			2,475.00
Maximum Wet Weather Flow, gpd				44,164.41
Net Maximum Wet Weather Flow, gpm				30.7
Minimum Flow Factor				0.14
Minimum Dry Weather Flow, gpd				1,310.98
Minimum Dry Weather Flow, gpm				0.91

WATER CALCULATIONS					
Peak Hour	40 LUEs x 3.5 people x 900 gal/person/day	=	126000 gpd	=	87.5 gpm
Peak Day	40 LUEs x 3.5 people x 530 gal/person/day	=	74200 gpd	=	51.5 gpm
Fire Demand	1500 gpm				

WATER STRUCTURE DETAILS

SEE SHEET 33 & 34 FOR:

1. DETAIL 511-AW-01 (GATE VALVE)
2. DETAIL 520-AW-04 (2" METER)
3. WATTS DCVA (2" BACKFLOW PREVENTOR)
4. DETAIL 101-4 (FIRE HYDRANT)
5. DETAIL CAPITAL PRECAST (7'X5' VAULT)



LEGEND	
PROPERTY LINE	---
ADJACENT PROPERTY	---
EASEMENT LINE	---
PROPOSED WATER LINE W/ GATE VALVE	---

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THE SQUARE AT CRYSTAL FALLS
WATER LINE LAYOUT
 PROJECT NUMBER #21-SD-036

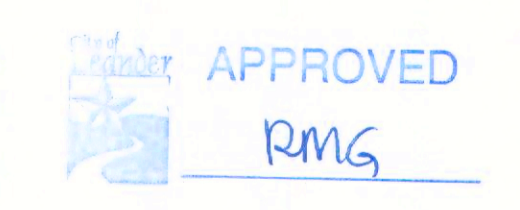
The seal appearing on this document was authorized by Stephen Ray Jamison on 7/09/2022

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Date: 08/09/21	Scale (Vert.):
Checked By: SRJ	Drawn By: MM
Revision 1:	
Revision 2:	
Revision 3:	
Revision 4:	

CONTRACTOR IS RESPONSIBLE FOR ANY/ALL DAMAGE TO EXISTING UTILITIES, APPURTENANCES, SIGNAGE, FLATWORK, ETC. CAUSED BY THE CONSTRUCTION OF THIS PROJECT.

NOTE:
 CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO BEGINNING ANY OTHER WORK. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCY BETWEEN THE PLANS AND EXISTING UTILITIES IN THE FIELD. CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY RE-WORK REQUIRED AS A RESULT OF SUCH DISCREPANCY UNLESS ENGINEER IS NOTIFIED PRIOR TO BEGINNING ANY OTHER WORK.

21-SD-036
CAUTION!!!
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NOTES:

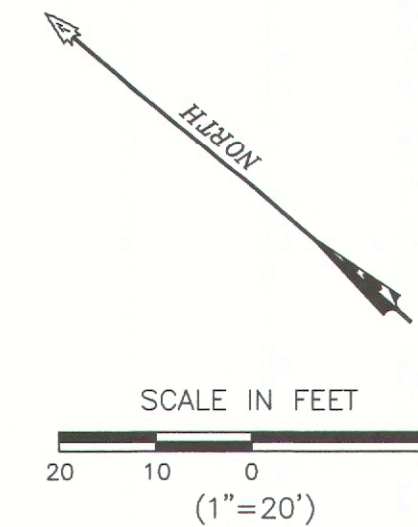
- WATER LINES ARE SHOWN ON THE WASTEWATER PLAN & PROFILE SHEETS FOR REFERENCE ONLY. ALL WATERLINES, VALVES AND FIRE HYDRANT ASSEMBLIES SHALL BE INSTALLED AT THE LOCATIONS THAT ARE INDICATED ON THE WATER DISTRIBUTION PLANS ONLY.
 - ALL WASTEWATER LINES WILL BE AIR, MANDREL AND CAMERA TESTED. ALL MANHOLES SHALL BE VACUUM TESTED.
 - CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO BEGINNING ANY OTHER WORK. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCY BETWEEN THE PLANS AND EXISTING UTILITIES IN THE FIELD. CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY RE-WORK REQUIRED AS A RESULT OF SUCH DISCREPANCY UNLESS ENGINEER IS NOTIFIED PRIOR TO BEGINNING ANY OTHER WORK.
 - PRIVATE DRIVE AISLES SHOULD BE AT SUB GRADE, FINISHED GRADE AND CURB STAKES IN PLACE BEFORE WATER OR WASTEWATER INSTALLATION CAN BEGIN.
 - ALL 8" AND 6" WASTEWATER LINES TO BE SDR 26 (GREEN COLOR ONLY) AND 45' BENDS ON SERVICE MUST BE SDR 14.
6. AT ALL WATER AND WASTEWATER CROSSINGS:
- WASTEWATER LINES MUST BE INSTALLED UNDER THE WATER LINE, WITH A MIN. OF 2 FEET OF CLEARANCE FROM OUTSIDE OF THE PIPES.
 - IF A WASTEWATER PIPE IS WITHIN NINE FEET OF A WATER SUPPLY PIPE, THE INITIAL BACKFILL AROUND THE WASTEWATER PIPE MUST BE:
 - SAND STABILIZED WITH TWO OR MORE 80 POUND BAGS OF CEMENT PER CUBIC YARD OF SAND FOR ANY SECTION OF WASTEWATER PIPE WITHIN NINE FEET OF A PUBLIC WATER SUPPLY PIPE.
 - INSTALLED FROM ONE QUARTER OF THE DIAMETER OF THE WASTEWATER PIPE BELOW THE CENTERLINE OF THE COLLECTION SYSTEM PIPE TO ONE PIPE DIAMETER (BUT NOT LESS THAN 12 INCHES) ABOVE THE TOP OF THE COLLECTION SYSTEM PIPE.
 - CENTER ONE 20' SECTION OF PIPE AT WATERLINE CROSSING.
 - IF 2 FEET OF CLEARANCE CANNOT BE MET, THE ENTIRE SECTION OF WASTEWATER MAIN OR WASTEWATER SERVICE, (MANHOLE TO MANHOLE FOR MAINS OR MANHOLE TO END OF SERVICE) SHALL BE PVC PIPE PRESSURE RATED TO 150 PSI MINIMUM (ASTM D2241 SDR-26 PVC). MINIMUM CLEARANCE SHALL BE 6 INCHES FROM THE OUTSIDE OF THE PIPES.

WATER CALCULATIONS

Peak Hour	40 LUEs x 3.5 people x 900 gal/person/day	= 126000 gpd	= 87.5 gpm
Peak Day	40 LUEs x 3.5 people x 530 gal/person/day	= 74200 gpd	= 51.5 gpm
Fire Demand	1500 gpm		

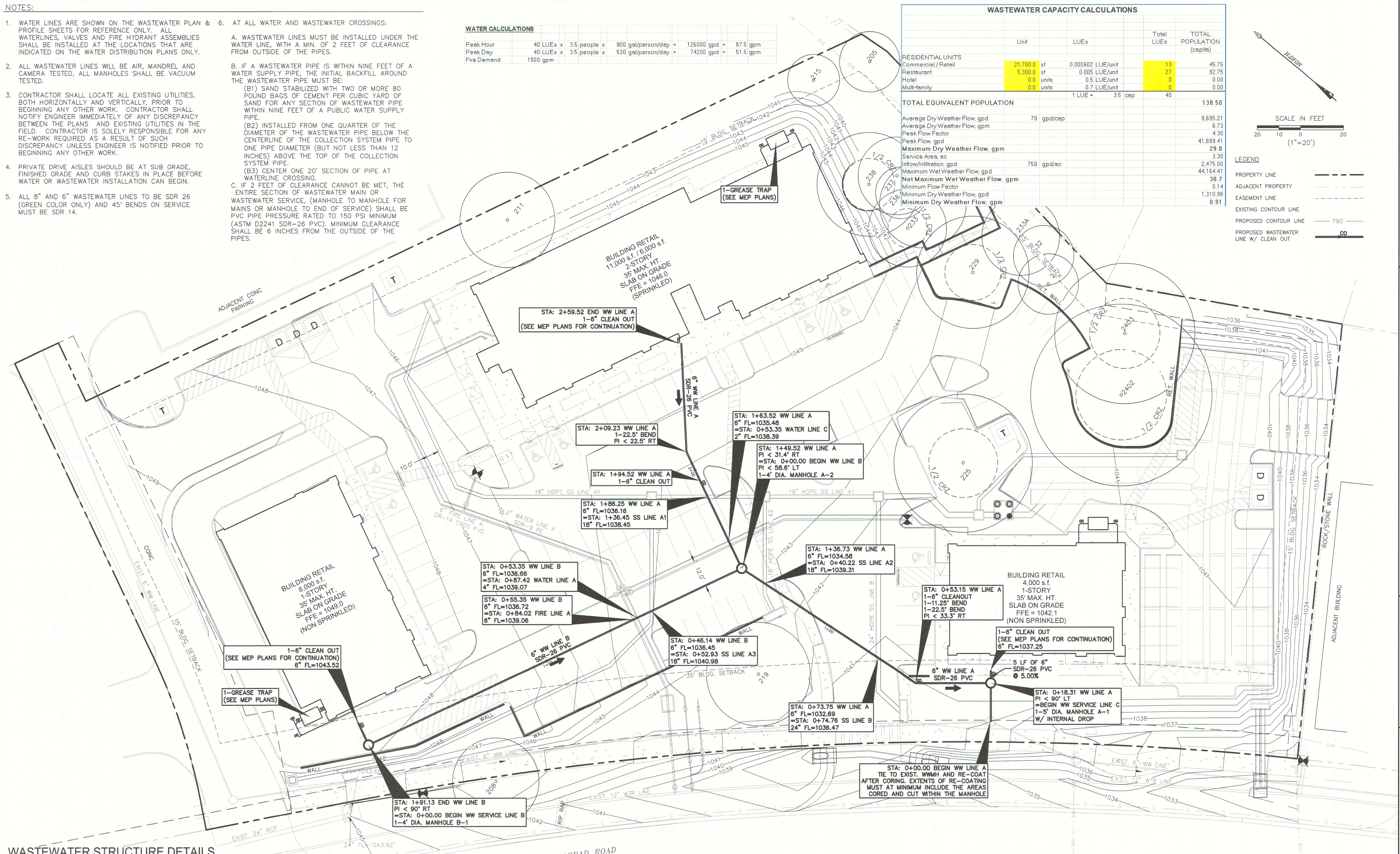
WASTEWATER CAPACITY CALCULATIONS

	Unit	LUEs	Total LUEs	TOTAL POPULATION (capite)
RESIDENTIAL UNITS				
Commercial/Retail	21,700 sf	0.000602 LUE/unit	13	45.75
Restaurant	5,300 sf	0.005 LUE/unit	27	92.75
Hotel	0 units	0.5 LUE/unit	0	0.00
Multi-family	0 units	0.7 LUE/unit	0	0.00
		1 LUE = 3.5 cap	40	
TOTAL EQUIVALENT POPULATION				138.50
Average Dry Weather Flow, gpd	70 gpd/cap			9,695.21
Average Dry Weather Flow, gpm				6.73
Peak Flow Factor				4.30
Peak Flow, gpd				41,689.41
Maximum Dry Weather Flow, gpm				29.0
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Inflow/Infiltration, gpd	750 gpd/ac			2,475.00
Maximum Wet Weather Flow, gpd				44,164.41
Net Maximum Wet Weather Flow, gpm				30.7
Minimum Flow Factor				0.14
Minimum Dry Weather Flow, gpd				1,310.98
Minimum Dry Weather Flow, gpm				0.91



LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY
- EASEMENT LINE
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE 790
- PROPOSED WASTEWATER LINE W/ CLEAN OUT 60



WASTEWATER STRUCTURE DETAILS

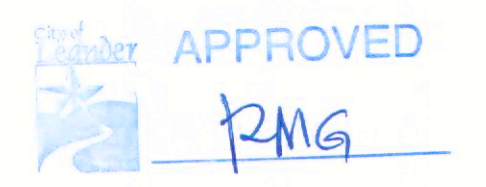
SEE SHEET 34 FOR:

- DETAIL 506S-10 (WASTEWATER MANHOLE)
- DETAIL 107-1 (WASTEWATER COVER)
- DETAIL 520-AW-03 (CLEAN OUT)
- GREASE TRAP (SEE ARCH. PLANS)

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21-SD-036
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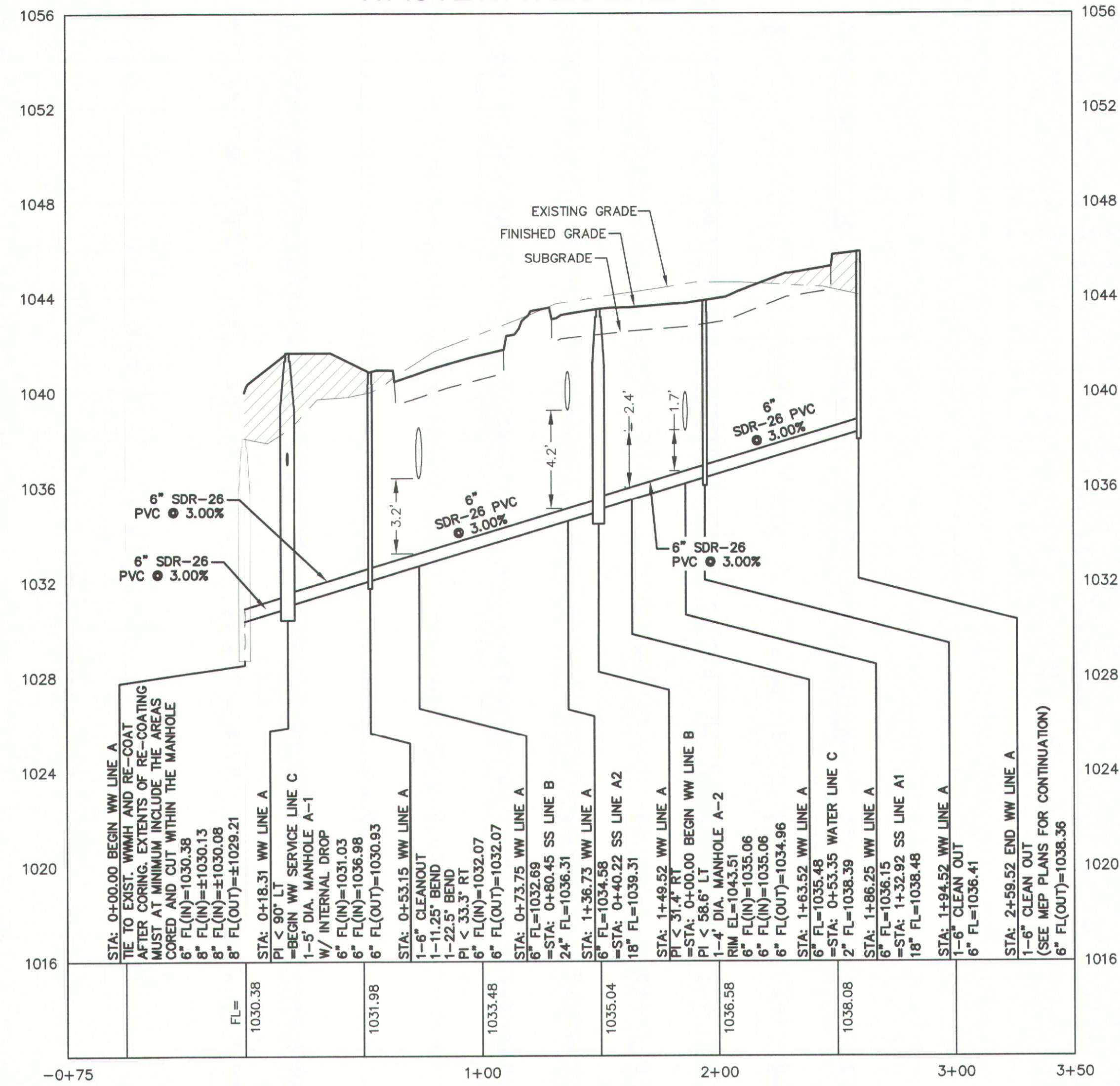
THE SQUARE AT CRYSTAL FALLS
WASTEWATER LINE LAYOUT
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/07/2022.

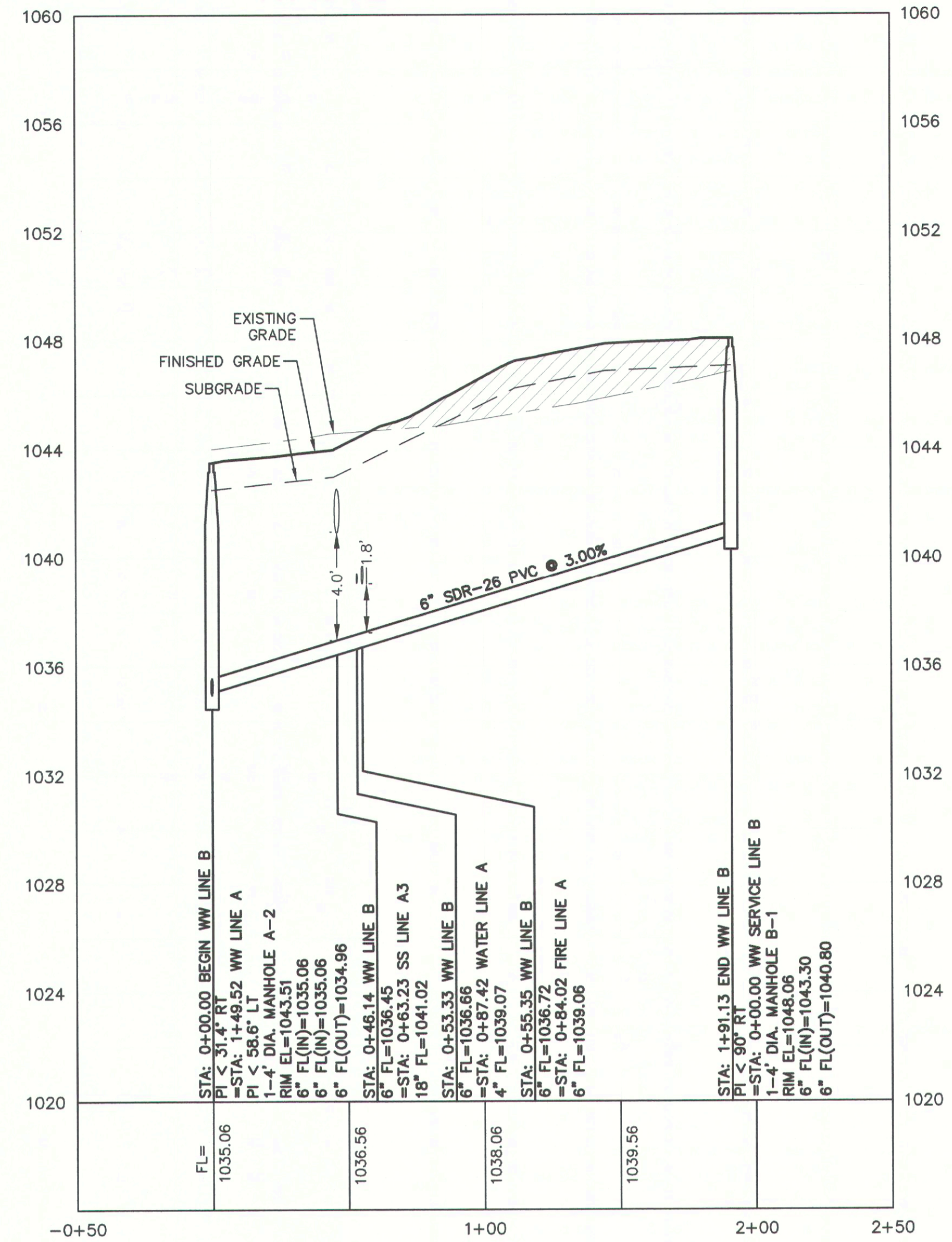
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Scale (Vert.):
Date: 08/09/21
Checked By: SRJ
Drawn By: MM
Revision 1:
Revision 2:
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Revision 4:

SHEET
28 of 39

WASTEWATER LINE A



WASTEWATER LINE B



FILL, COMPACT & TEST TO 95% DENSITY PRIOR TO UTILITY INSTALLATION

FINISHED GRADE
SUBGRADE
EXISTING GRADE

PROFILE SCALE
1" = 40' HOR.
1" = 4' VERT.

NOTES:

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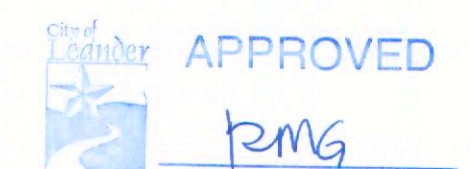
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21-SD-036

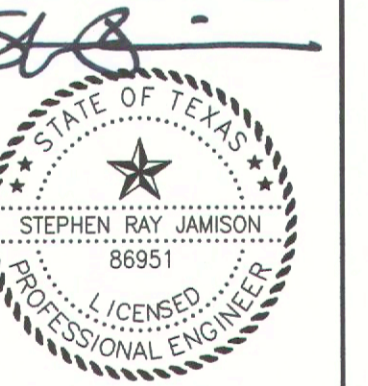
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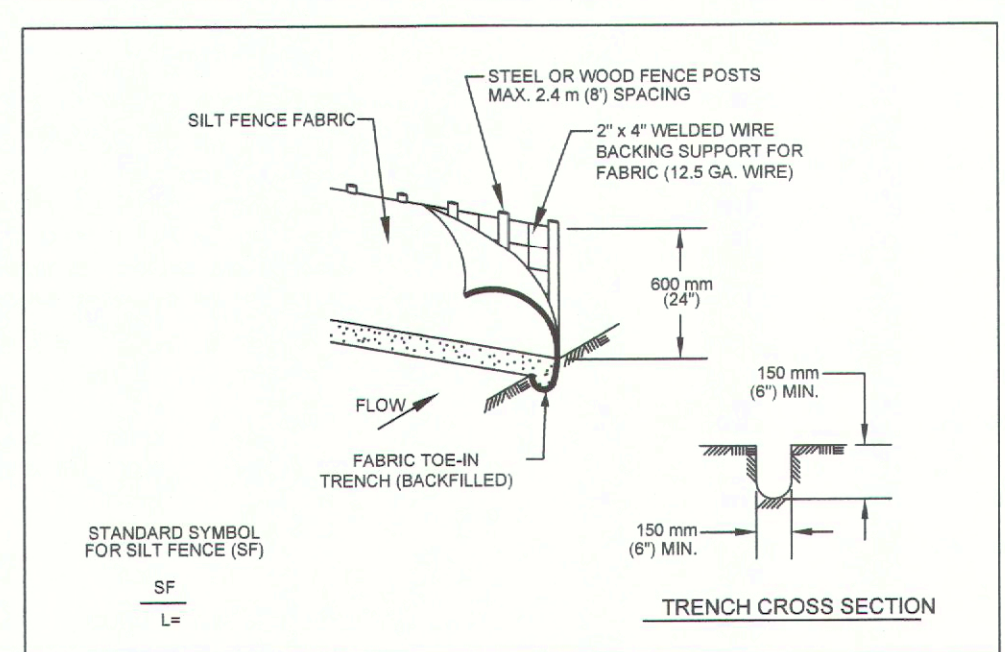
THE SQUARE AT CRYSTAL FALLS
WASTEWATER LINE A & B PROFILE
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/07/2022.



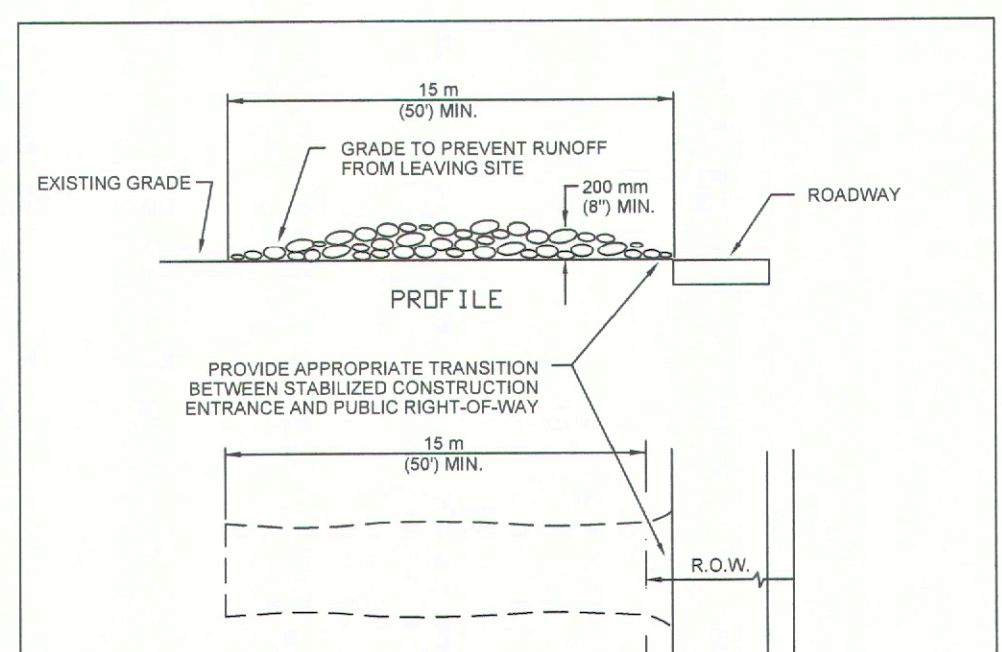
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Revision 1:	Revision 2:	Revision 3:
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SHEET
29 of 39



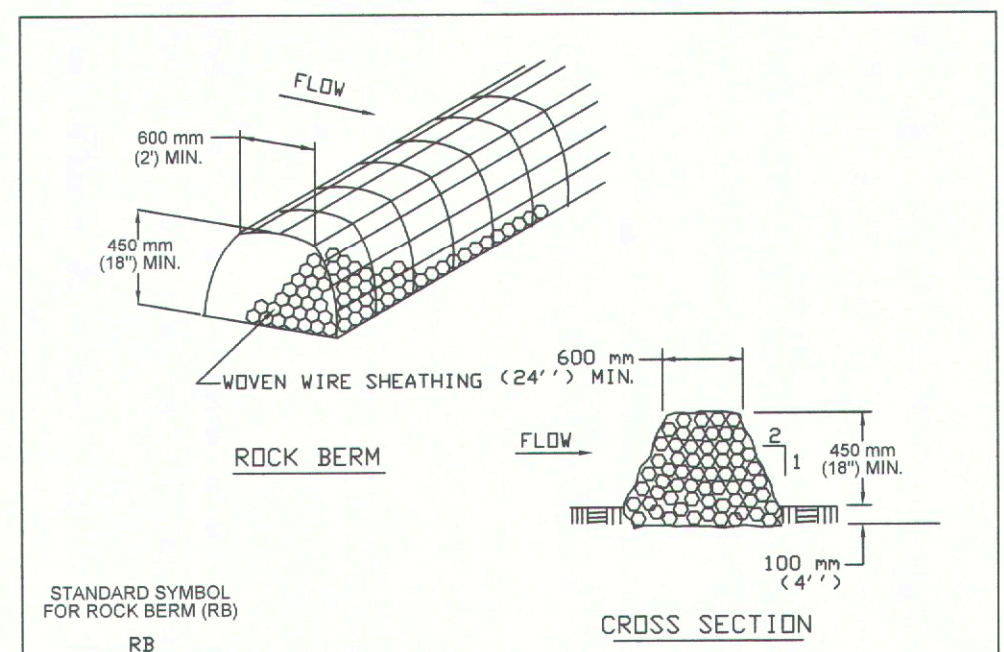
- STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 INCH) DEPTH, USE STEEL POSTS.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
- THE TRENCH MUST BE A MINIMUM OF 150 mm (6 INCHES) DEEP AND 150 mm (6 INCHES) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
- INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPED EROSION FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 INCHES). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 09/01/2011	STANDARD NO: 642S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



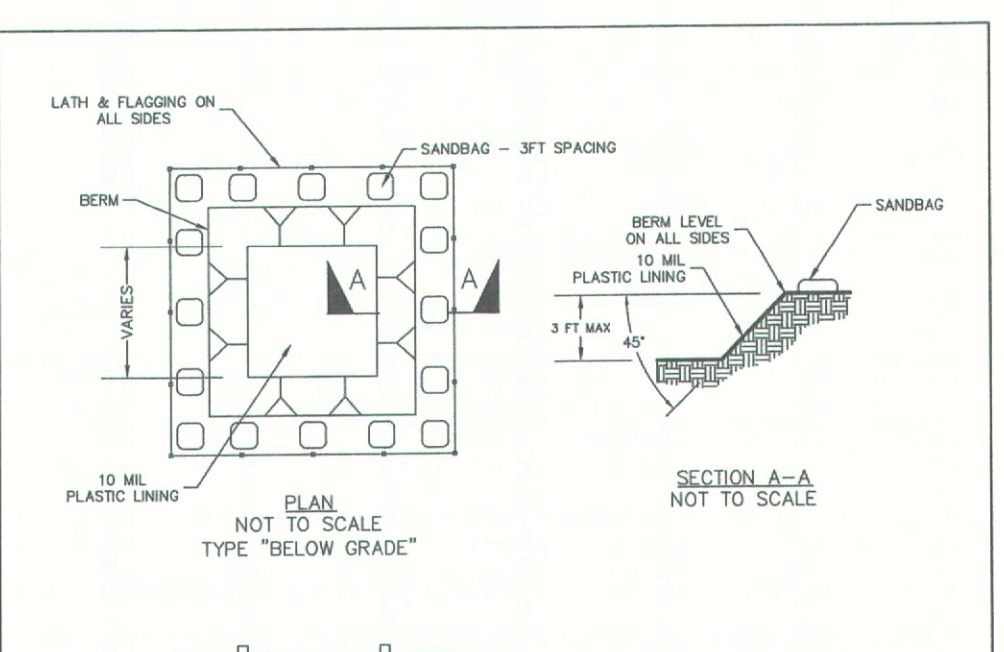
- STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
- LENGTH AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
- THICKNESS: NOT LESS THAN 200 mm (8").
- WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
- WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
- MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
- DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY: PATRICK MURPHY	DATE: 6/29/00	STANDARD NO: 641S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



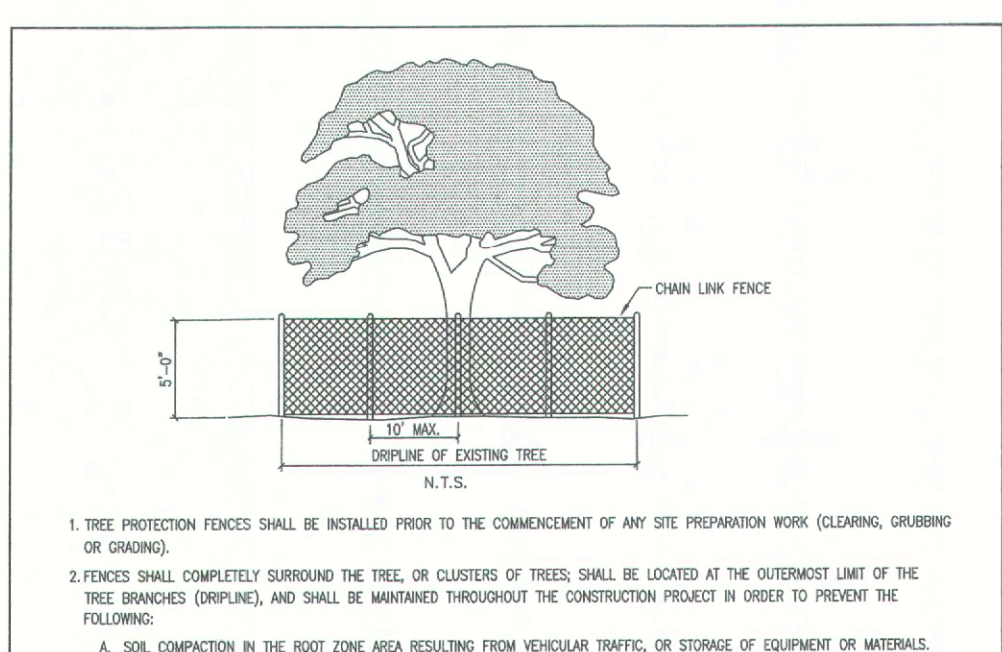
- USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
- THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
- THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED. DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHING, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
- WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



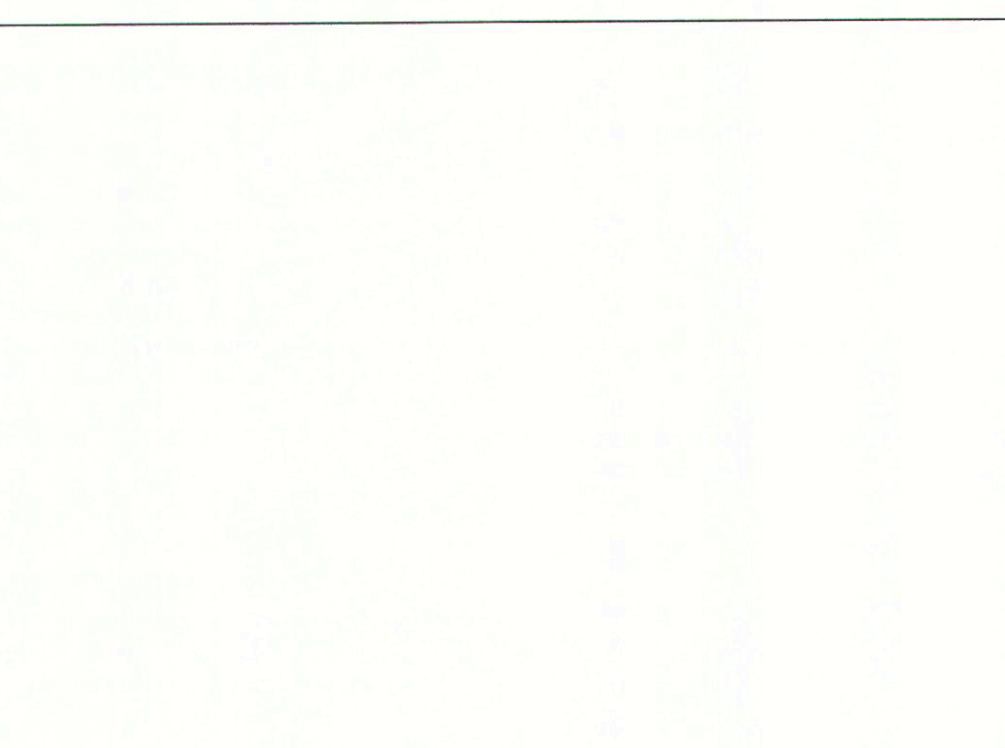
- ACTUAL LAYOUT DETERMINED IN FIELD.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



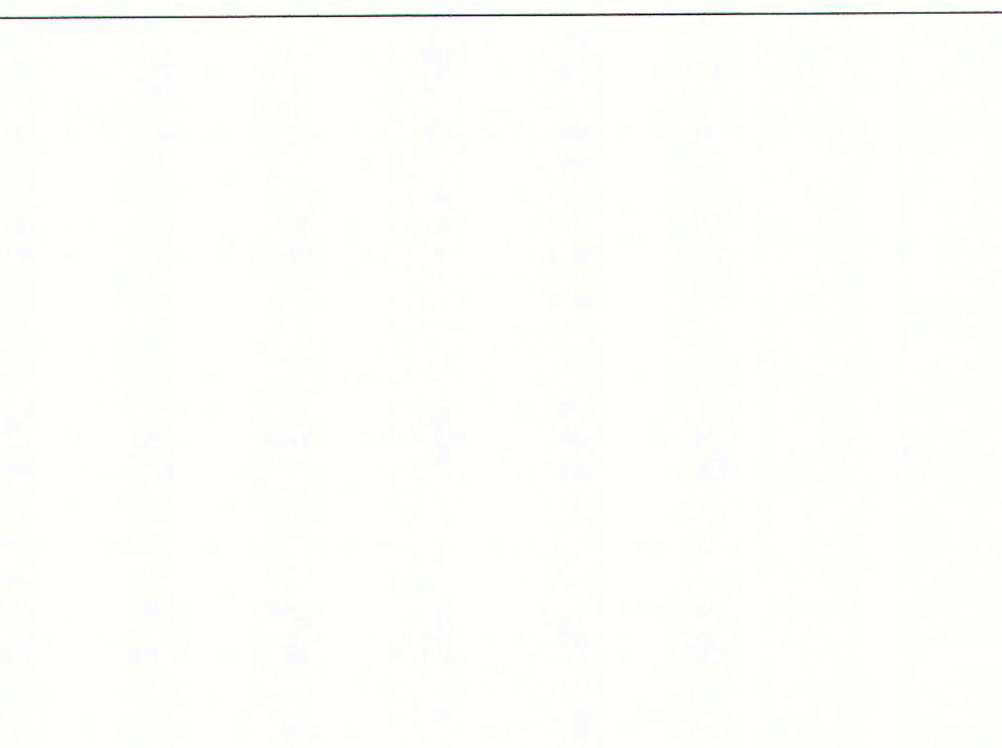
- THREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR SHOVING).
- FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES. FENCES SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRUPLINE), AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
 - A SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
 - ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6")) CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
 - WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
 - OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FILL.
- EXCEPTIONS TO INSTALLING FENCES AT TREE DRUPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
 - A WHERE PERMISSIBLE FENCING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMISSIBLE FENCING AREA.
 - WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.
- CRITICAL ROOT ZONE REQUIREMENTS
 - A NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PROTECTED. INCLUDING SUBSEQUENT TRIMMING, REMOVAL OF TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE ENSURED, THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
 - THE DEFINED AREA SHALL BE FLAGGED AND ENCLOSED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE FENCING DESIGNER MAY APPROVE CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (50) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND LONGEVITY OF THE SPECIES.
 - CUT OR FILL THAT IS GREATER THAN FOUR (4) INCHES IN DEPTH AND THE CUTTING OF MAIN ROOTS SHALL BE CONSIDERED DISTURBANCE FOR THE PURPOSES OF THIS ORDINANCE.
 - WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY FLATTENING, DUCKING, OR SIMILAR CONSTRUCTION MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
 - IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS ORDINANCE, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TREE PROTECTION	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 08/21/15	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



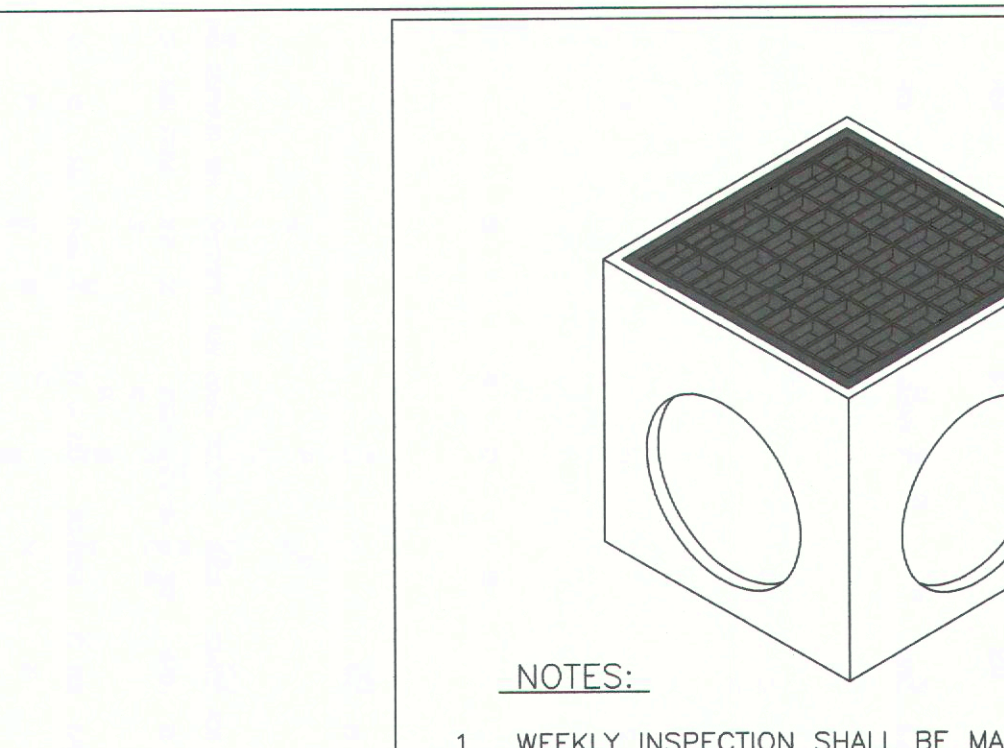
- STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 INCH) DEPTH, USE STEEL POSTS.
- THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.
- THE TRENCH MUST BE A MINIMUM OF 150 mm (6 INCHES) DEEP AND 150 mm (6 INCHES) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
- SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.
- INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
- SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPED EROSION FLOW OR DRAINAGE.
- ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 INCHES). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		SILT FENCE	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 09/01/2011	STANDARD NO: 642S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



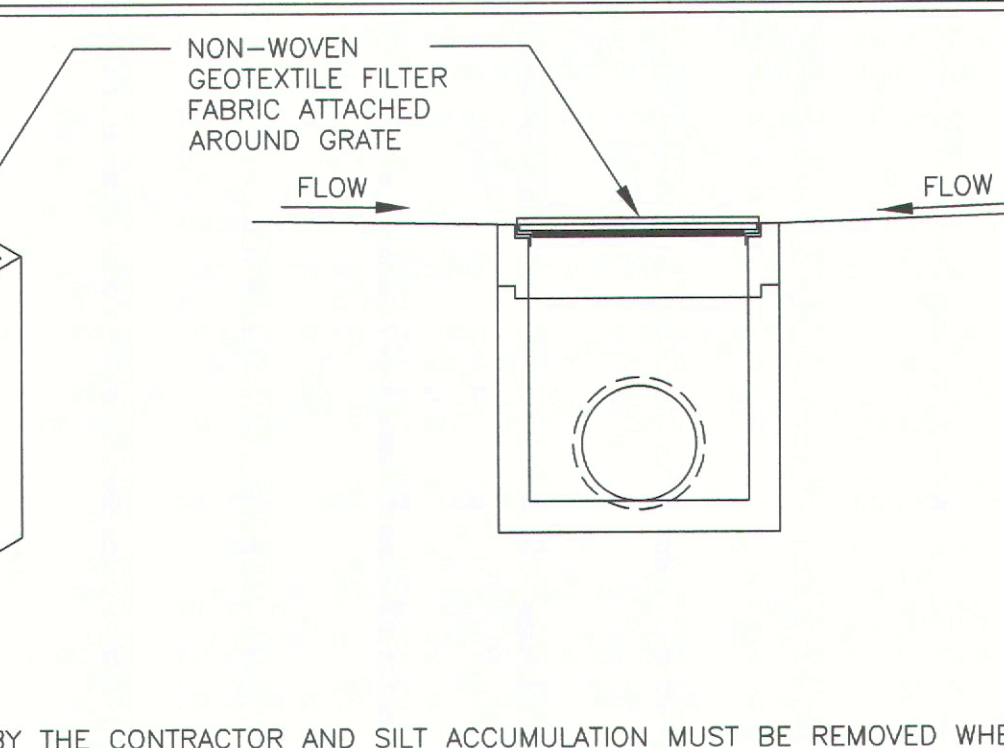
- STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
- LENGTH AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
- THICKNESS: NOT LESS THAN 200 mm (8").
- WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
- WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
- MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
- DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY: PATRICK MURPHY	DATE: 6/29/00	STANDARD NO: 641S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



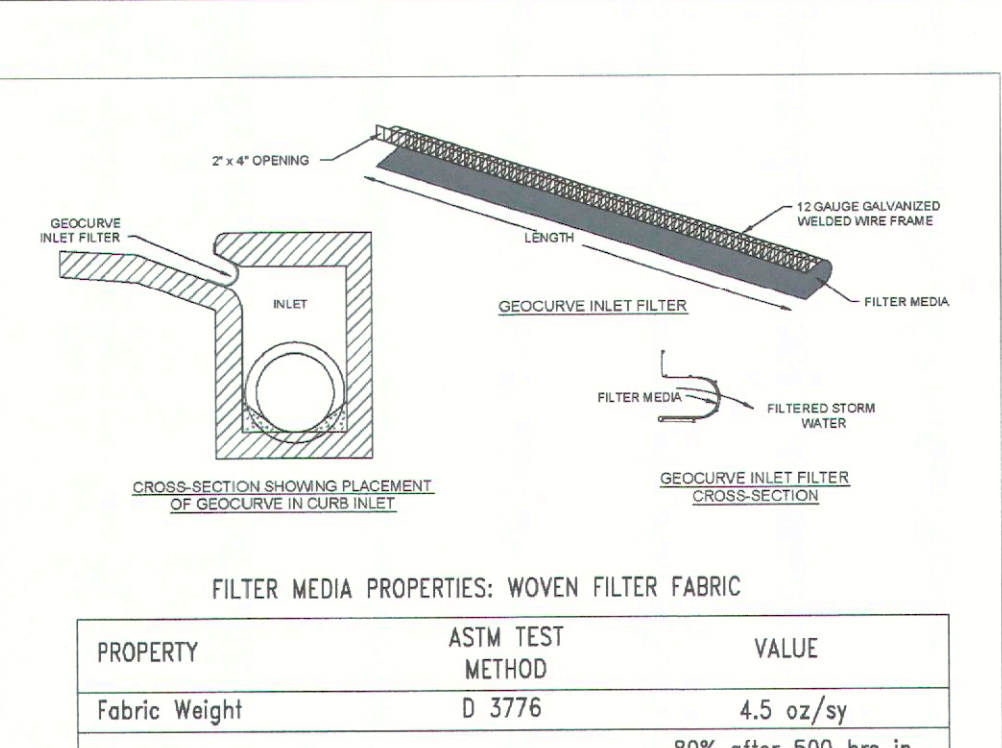
- USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
- THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1") OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
- THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED. DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHING, CONSTRUCTION TRAFFIC DAMAGE, ETC.
- IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6"), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTATION PROBLEM.
- WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



- ACTUAL LAYOUT DETERMINED IN FIELD.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		ROCK BERM	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



- THREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR SHOVING).
- FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES. FENCES SHALL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRUPLINE), AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
 - A SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.
 - ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6")) CUT OR FILL, OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.
 - WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
 - OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FILL.
- EXCEPTIONS TO INSTALLING FENCES AT TREE DRUPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:
 - A WHERE PERMISSIBLE FENCING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMISSIBLE FENCING AREA.
 - WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.
- CRITICAL ROOT ZONE REQUIREMENTS
 - A NO CONSTRUCTION OR DISTURBANCE SHALL OCCUR WITHIN AN AREA THAT CONSTITUTES MORE THAN FIFTY (50%) OF THE TOTAL CRITICAL ROOT ZONE AND ONE HALF THE RADIAL DISTANCE OF THE CRITICAL ROOT ZONE FOR EACH TREE BEING PROTECTED. INCLUDING SUBSEQUENT TRIMMING, REMOVAL OF TREES, AND ANY OTHER TREES FOR WHICH PRESERVATION IS TO BE ENSURED, THE REMAINING CRITICAL ROOT ZONE SHALL CONSIST OF AT LEAST ONE HUNDRED (100) SQUARE FEET.
 - THE DEFINED AREA SHALL BE FLAGGED AND ENCLOSED WITH PROTECTIVE FENCING DURING CONSTRUCTION. THE FENCING DESIGNER MAY APPROVE CONSTRUCTION CLOSER TO THE TRUNK THAN ONE HALF (50) THE RADIAL DISTANCE, DEPENDING ON THE SIZE, SPACING, OR SPECIES OF THE TREE, THE TYPE OF DISTURBANCE PROPOSED, AND LONGEVITY OF THE SPECIES.
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 - WITHIN THE PROTECTED CRITICAL ROOT ZONE, ONLY FLATTENING, DUCKING, OR SIMILAR CONSTRUCTION MAY BE APPROVED AND SHALL NOT AFFECT THE BRANCHING OF THE TREE.
 - IF PROPOSED OR ACTUAL PROTECTION OF THE CRITICAL ROOT ZONE OF A TREE DOES NOT MEET THE REQUIREMENTS OF THIS ORDINANCE, THEN THE TREE SHALL BE CONSIDERED REMOVED AND SHALL REQUIRE MITIGATION IN ACCORDANCE WITH THIS ORDINANCE.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		TREE PROTECTION	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 08/21/15	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

Texas Commission on Environmental Quality
Contributing Zone Plan
General Construction Notes

Edwards Aquifer Protection Program Construction Notes – Legal Disclaimer

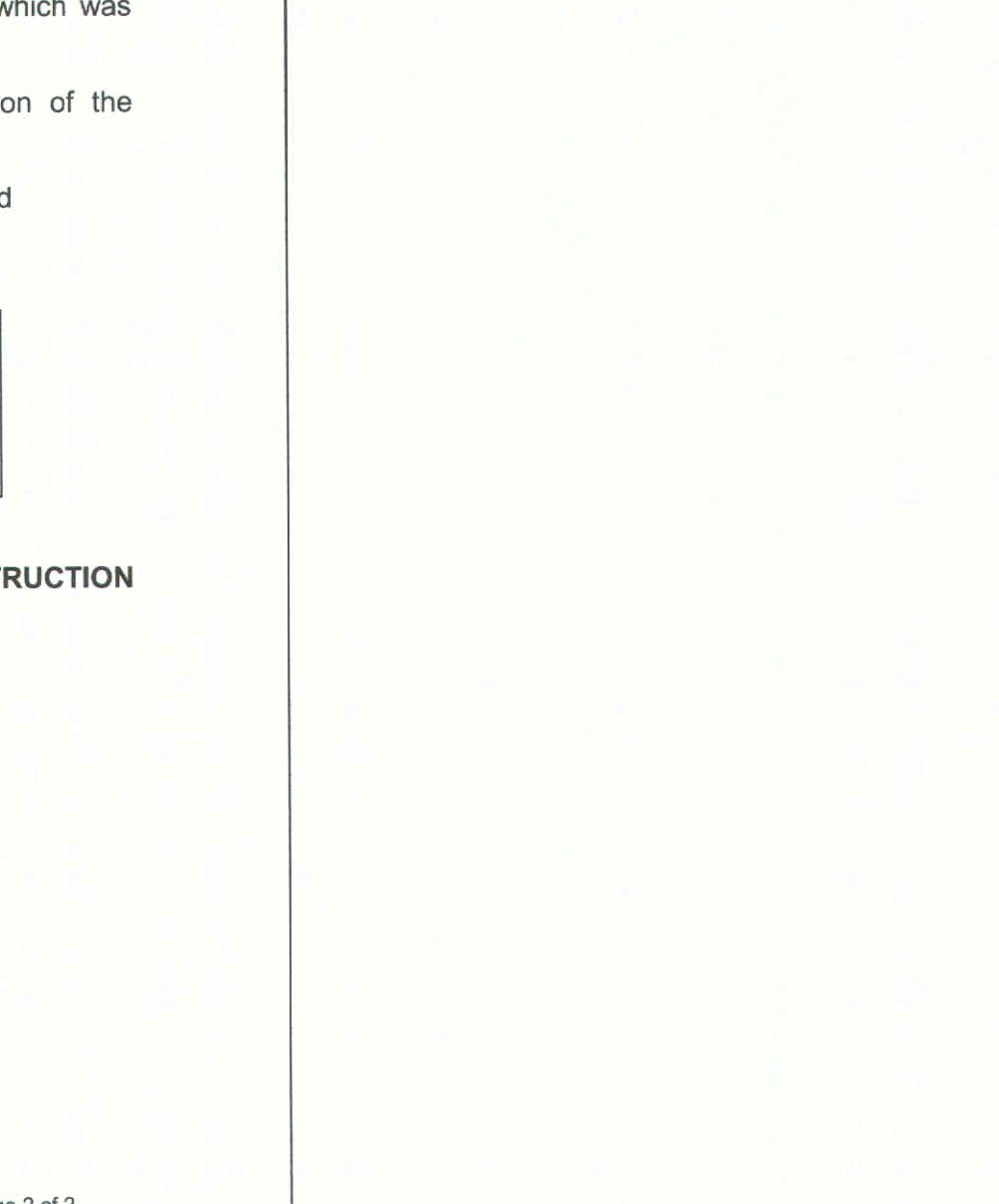
The following listed "construction notes" are intended to be advisory in nature only and do not constitute an approval or conditional approval by the Executive Director (ED), nor do they constitute a comprehensive listing of rules or conditions to be followed during construction. Further actions may be required to achieve compliance with TCEQ regulations found in Title 30, Texas Administrative Code (TAC), Chapters 213 and 217, as well as local ordinances and regulations providing for the protection of water quality. Additionally, nothing contained in the following listed "construction notes" restricts the powers of the ED, the commission or any other governmental entity to prevent, correct, or curtail activities that result or may result in pollution of the Edwards Aquifer or hydrologically connected surface waters. The holder of any Edwards Aquifer Protection Plan containing "construction notes" is still responsible for compliance with Title 30, TAC, Chapters 213 or any other applicable TCEQ regulation, as well as all conditions of an Edwards Aquifer Protection Plan through all phases of plan implementation. Failure to comply with any condition of the ED's approval, whether or not in contradiction of any "construction notes," is a violation of TCEQ regulations and any violation is subject to administrative rules, orders, and penalties as provided under Title 30, TAC § 213.10 (relating to Enforcement). Such violations may also be subject to civil penalties and injunction. The following listed "construction notes" in no way represent an approved exception by the ED to any part of Title 30 TAC, Chapters 213 and 217, or any other TCEQ applicable regulation

- A written notice of construction must be submitted to the TCEQ regional office at least 48 hours prior to the start of any ground disturbance or construction activities. This notice must include:
 - the name of the approved project;
 - the activity start date; and
 - the contact information of the prime contractor.
- All contractors conducting regulated activities associated with this project should be provided with complete copies of the approved Contributing Zone Plan (CZP) and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractor(s) should keep copies of the approved plan and approval letter on-site.
- No hazardous substance storage tank shall be installed within 150 feet of a water supply source, distribution system, well, or sensitive feature.
- Prior to beginning any construction activity, all temporary erosion and sedimentation (E&S) control measures must be properly installed and maintained in accordance with the manufacturers specifications. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. These controls must remain in place until the disturbed areas have been permanently stabilized.
- Any sediment that escapes the construction site must be collected and properly disposed of before the next rain event to ensure it is not washed into surface streams, sensitive features, etc.
- Sediment must be removed from the sediment traps or sedimentation basins when it occupies 50% of the basin's design capacity.
- Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from being discharged offsite.
- All excavated material that will be stored on-site must have proper E&S controls.
- If portions of the site will have a cease in construction activity lasting longer than 14 days, soil

- The following records should be maintained and made available to the TCEQ upon request:
 - the dates when major grading activities occur;
 - the dates when construction activities temporarily or permanently cease on a portion of the site; and
 - the dates when stabilization measures are initiated.
- The holder of any approved CZP must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:
 - any physical or operational modification of any best management practices (BMPs) or structures(s), including but not limited to temporary or permanent ponds, dams, berms, silt fences, and diversionary structures;
 - any change in the nature or character of the regulated activity from that which was originally approved;
 - any change that would significantly impact the ability to prevent pollution of the Edwards Aquifer; or
 - any development of land previously identified as undeveloped in the approved contributing zone plan.

Austin Regional Office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329
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THESE GENERAL CONSTRUCTION NOTES MUST BE INCLUDED ON THE CONSTRUCTION PLANS PROVIDED TO THE CONTRACTOR AND ALL SUBCONTRACTORS.



- WEEKLY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
- CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
- INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		AREA INLET PROTECTION DETAIL	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.



CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		AREA INLET PROTECTION DETAIL	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		AREA INLET PROTECTION DETAIL	
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CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT		AREA INLET PROTECTION DETAIL	
RECORD COPY SIGNED BY: MORGAN BYARS	DATE: 8/24/2010	STANDARD NO: 639S-1	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

JAMISON CIVIL ENGINEERING LLC
(TX, PE FIRM REG. #F-17756)
13812 RESEARCH BLVD. #B-2
AUSTIN, TEXAS 78750
OFFICE: (737) 484-0880
INFO@JAMISONENG.COM

JCE

THE SQUARE AT CRYSTAL FALLS
EROSION SEDIMENTATION CONTROL DETAILS
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 12/28/2021

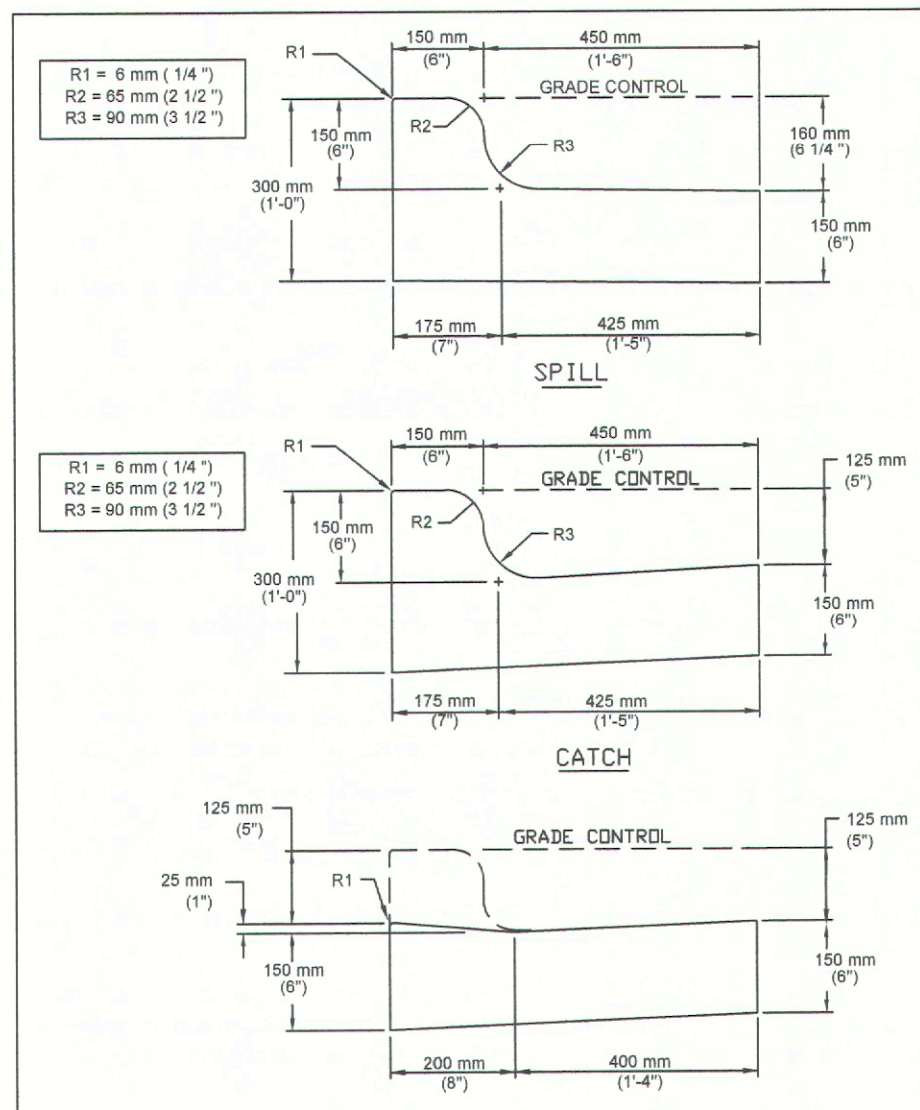
STATE OF TEXAS
STEPHEN RAY JAMISON
86951
LICENSED PROFESSIONAL ENGINEER

File: H11900 BAGDADD\DWG\PLANS\DETAILS.DWG
Job No. Snapshot
Scale (Hor.): Scale (Vert.):
Date: 08/09/21 Checked By: SRJ Drawn By: MM
Revision 1:
Revision 2:
Revision 3:
Revision 4:

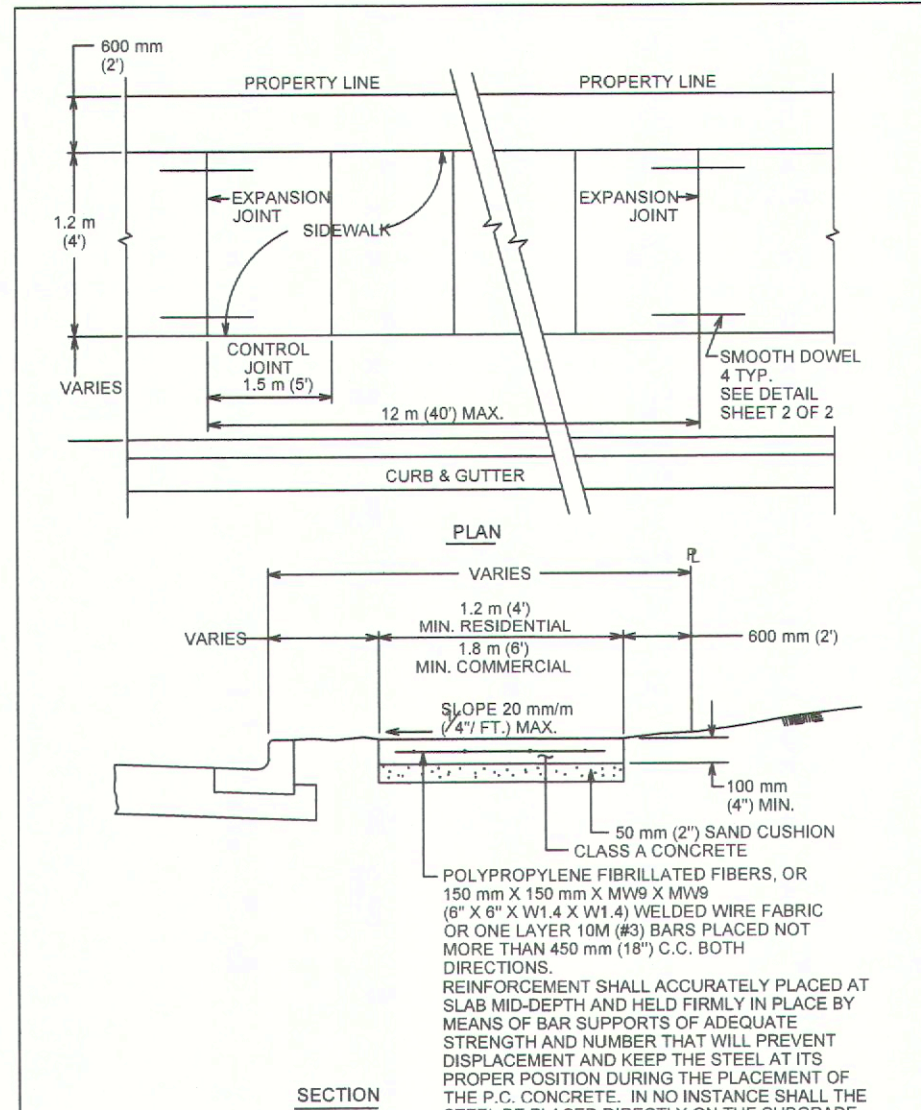
CAUTION!!
CONTRACTOR SHALL LOCATE ANY EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.

APPROVED
RMS

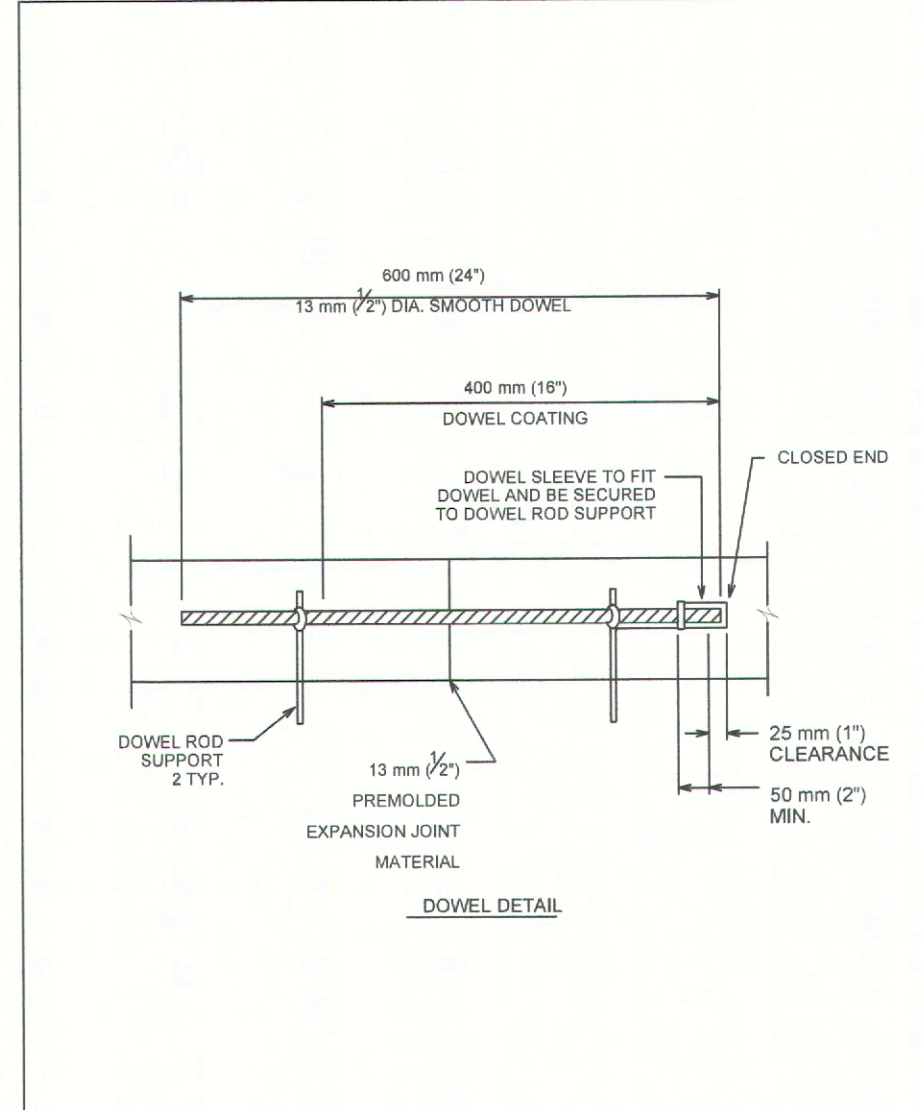
SHEET
30 of 39



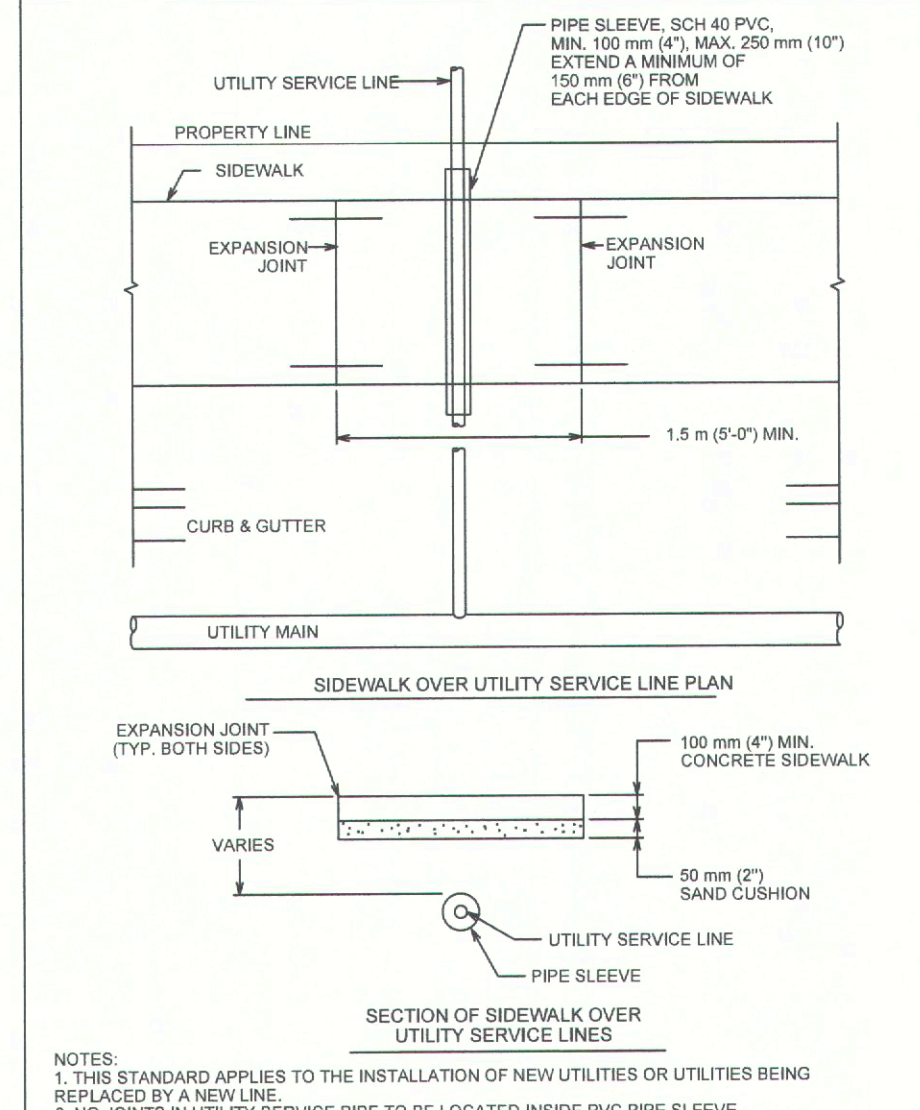
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	CURB AND GUTTER SECTION	STANDARD NO. 430S-1
RECORD COPY SIGNED BY LINO RIVERA	9/28/09 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



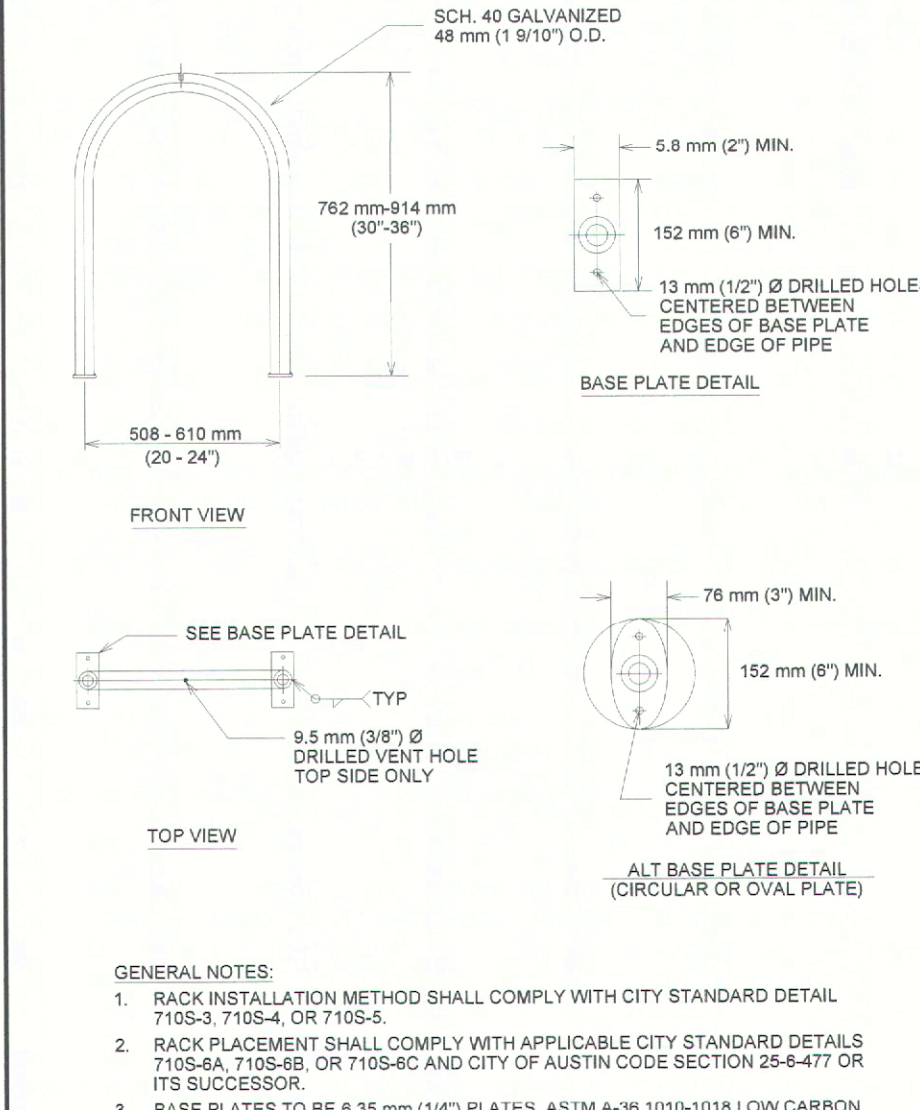
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	SIDEWALK	STANDARD NO. 432S-1
RECORD COPY SIGNED BY BILL GARDNER	03/26/08 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



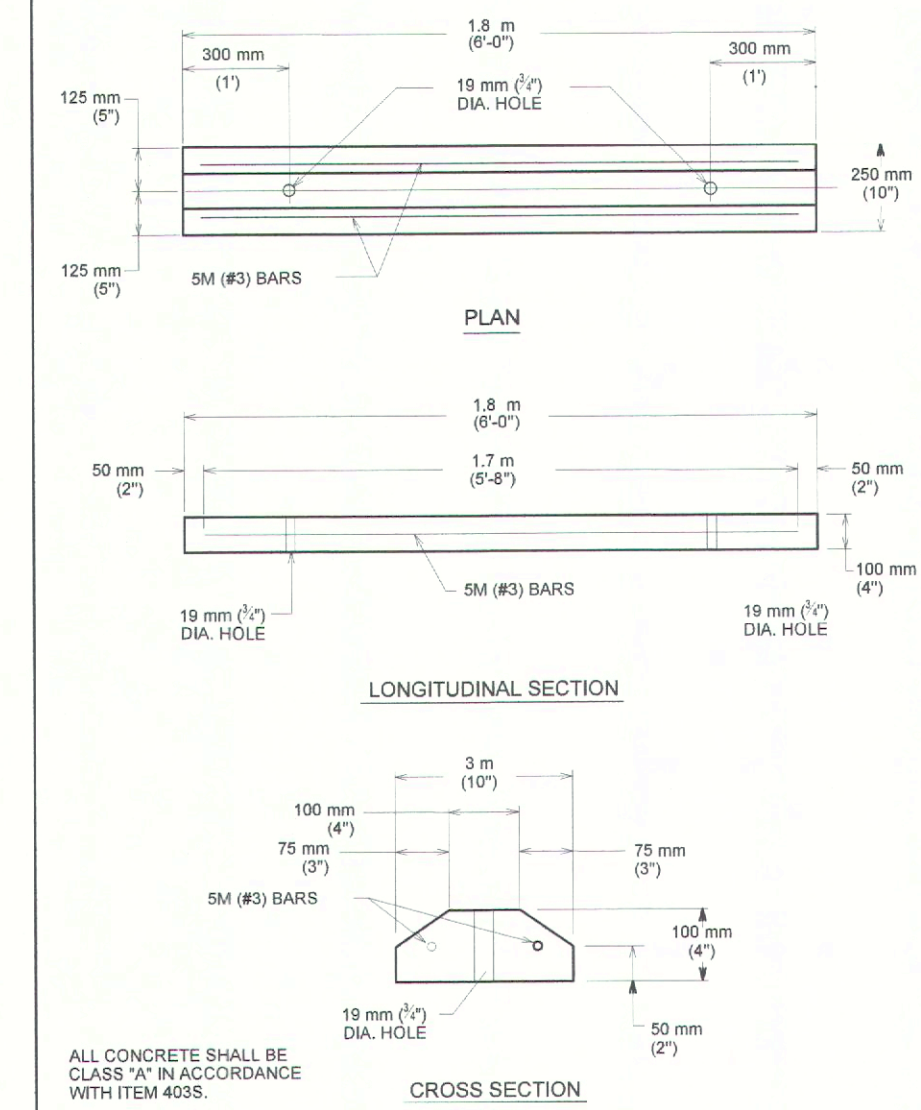
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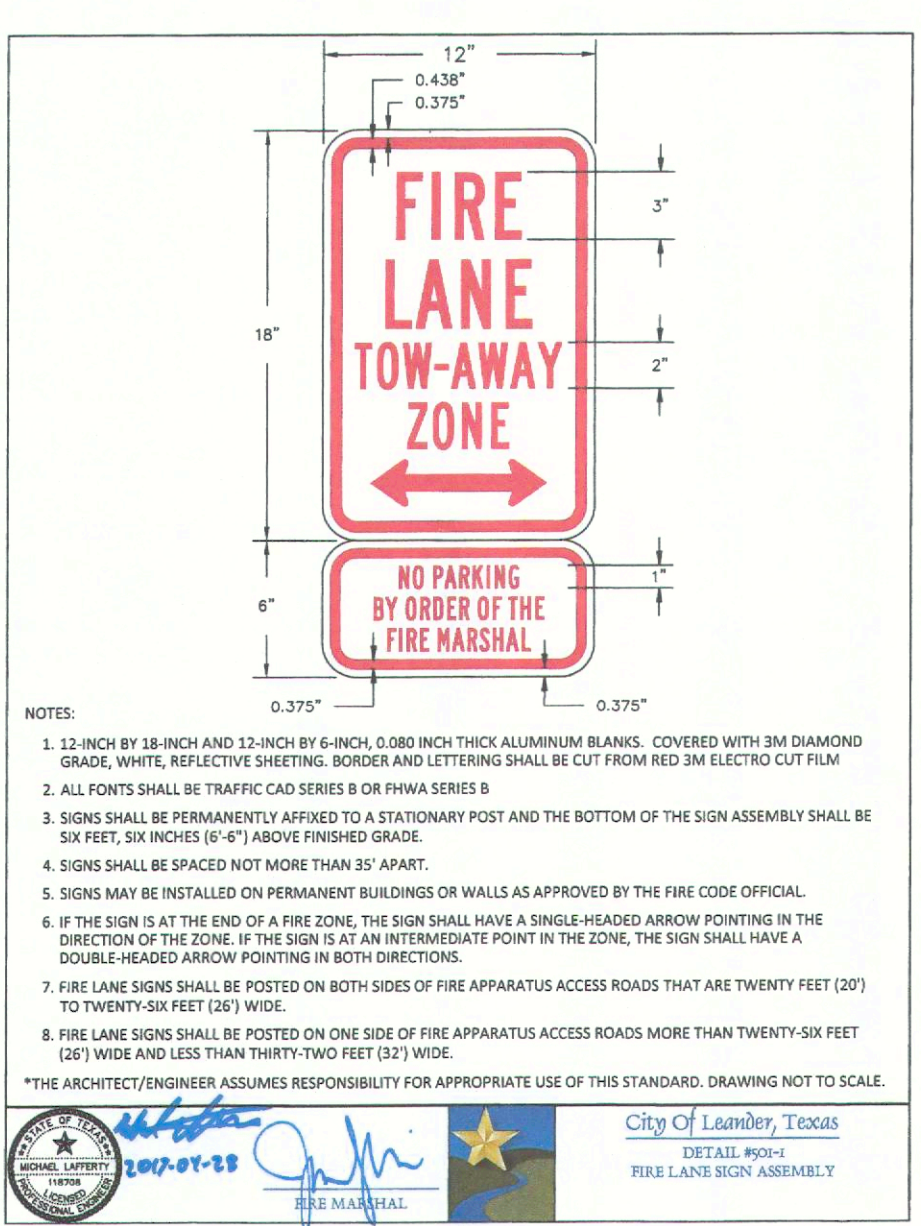
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



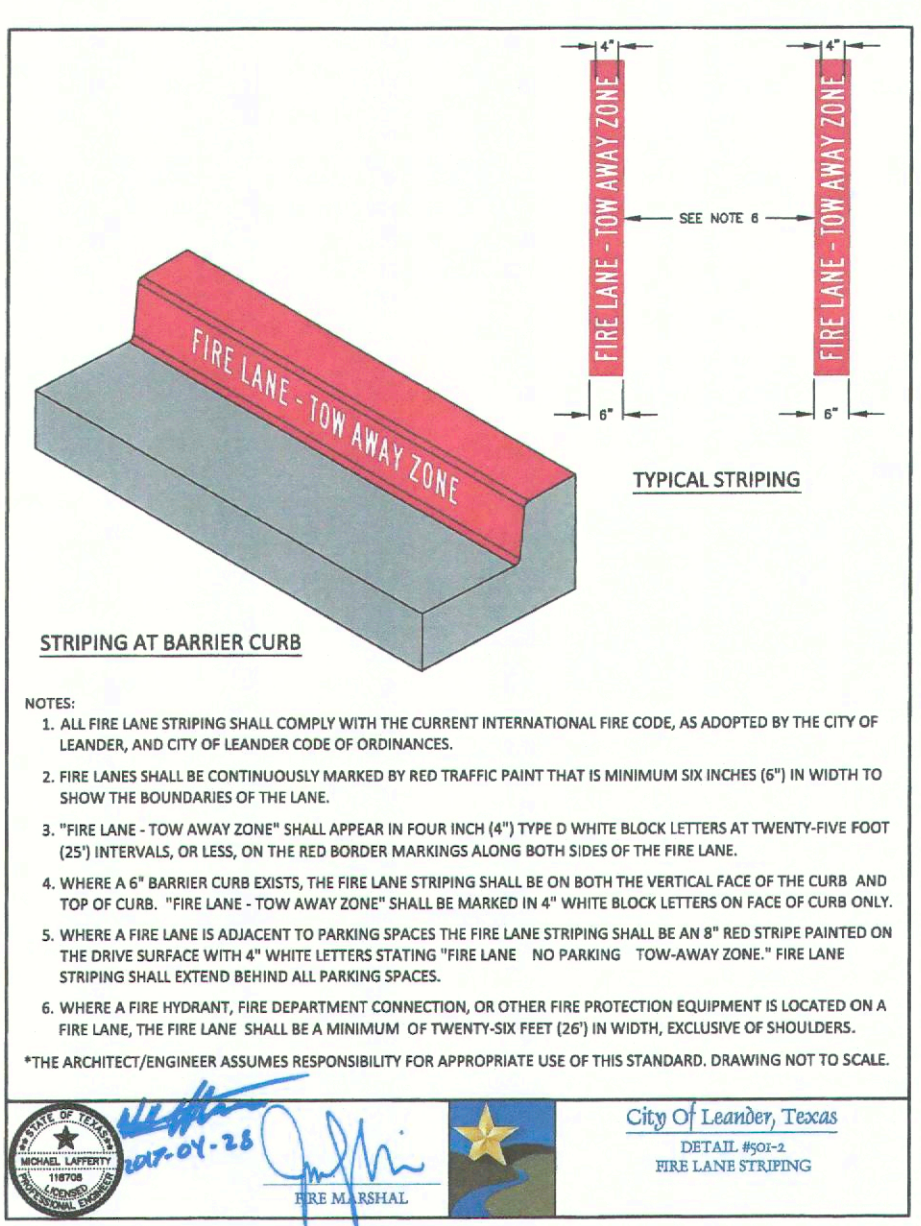
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CLASS III STYLE BICYCLE PARKING	STANDARD NO. 710S-1
RECORD COPY SIGNED BY COUNG TRAN	09/12/12 ADOPTED	
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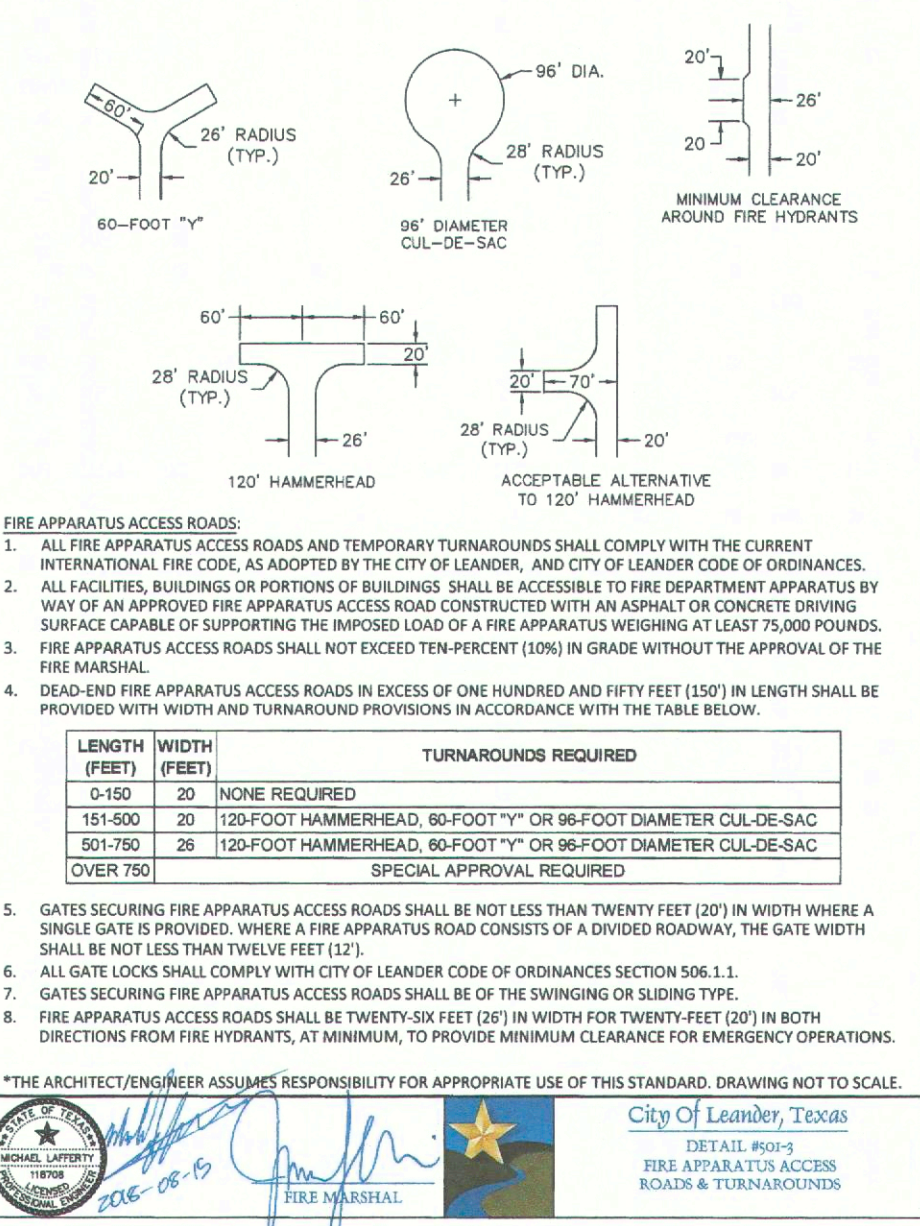
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	PARKING LOT BUMPER CURB	STANDARD NO. 439S-1
RECORD COPY SIGNED BY BILL GARDNER	3/15/05 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



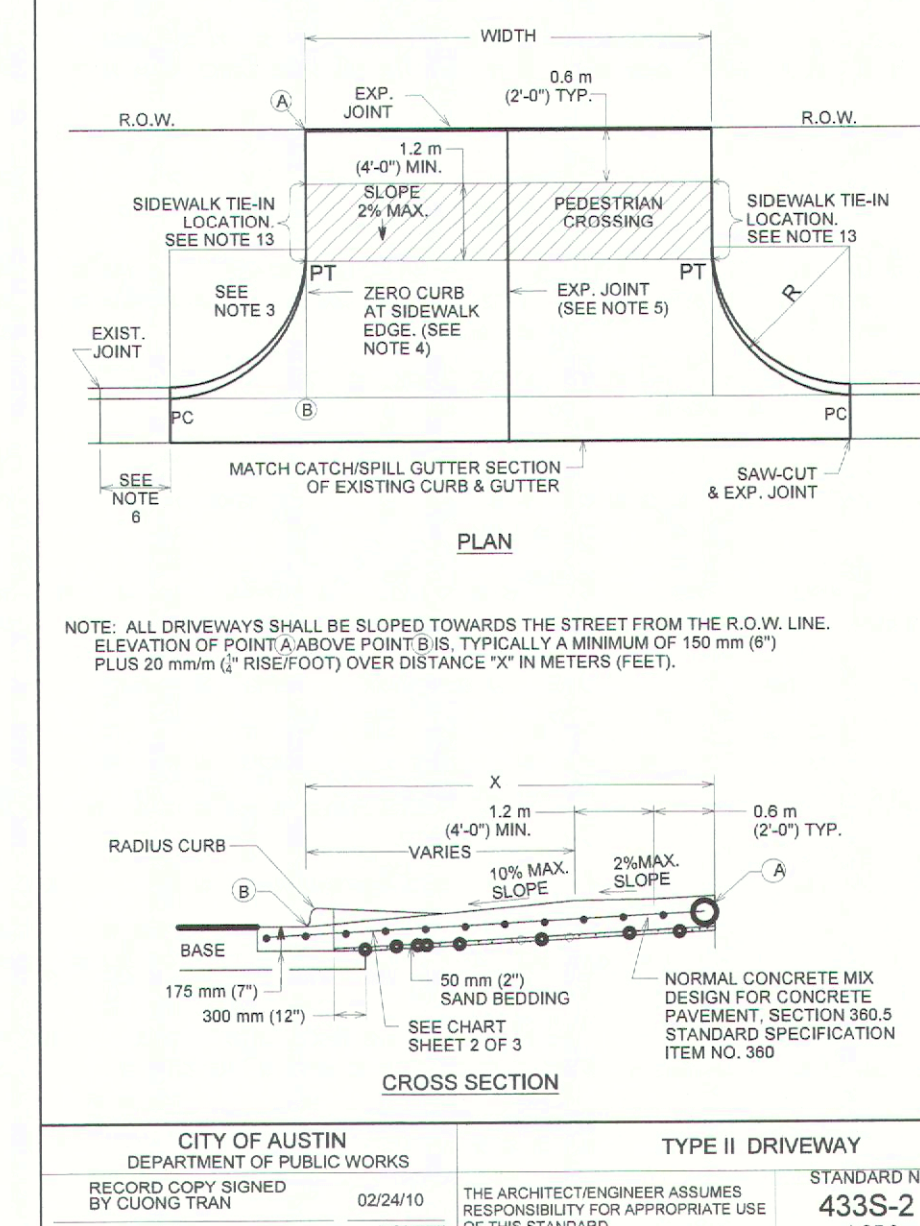
CITY OF LEANER, TEXAS	FIRE LANE SIGN ASSEMBLY	STANDARD NO. 433S-1
RECORD COPY SIGNED BY LINO RIVERA	03/26/08 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



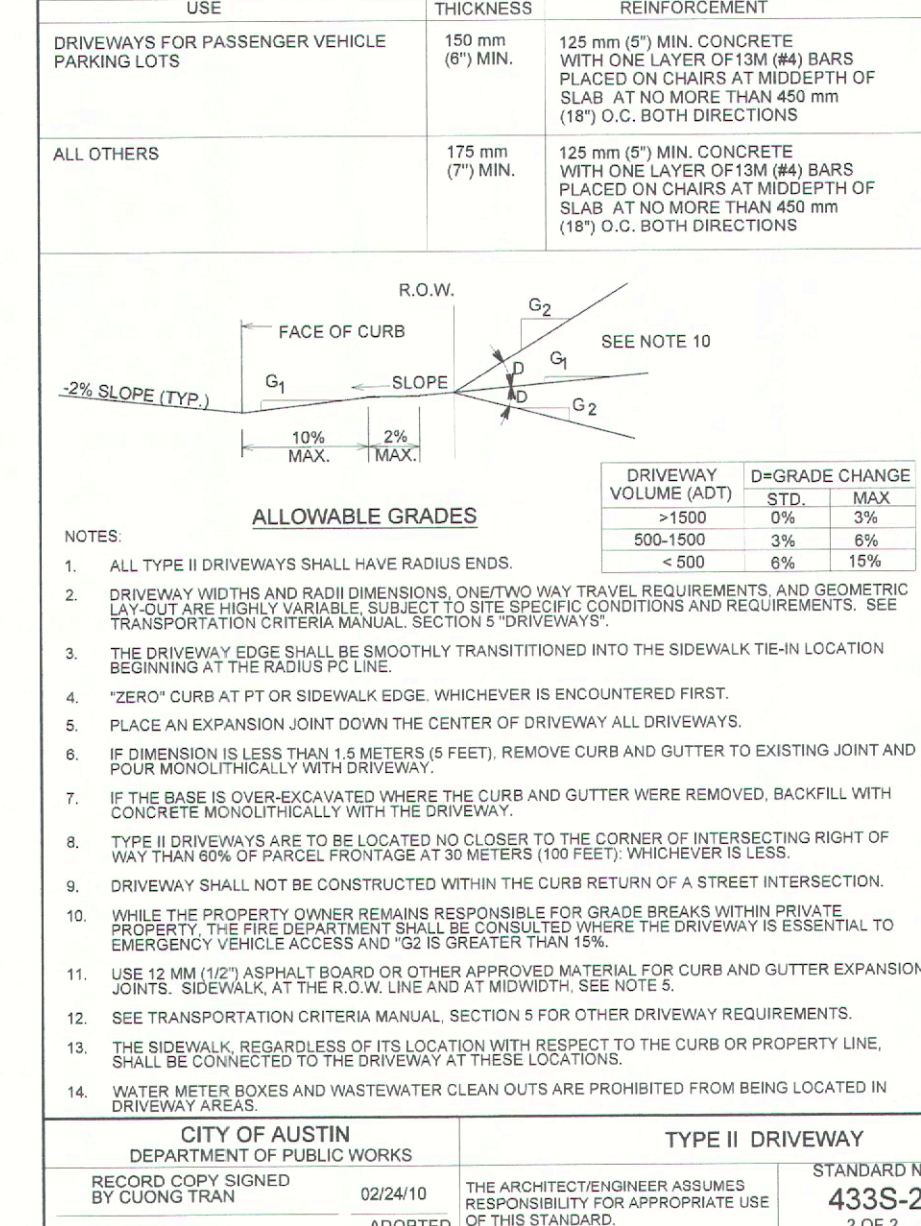
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



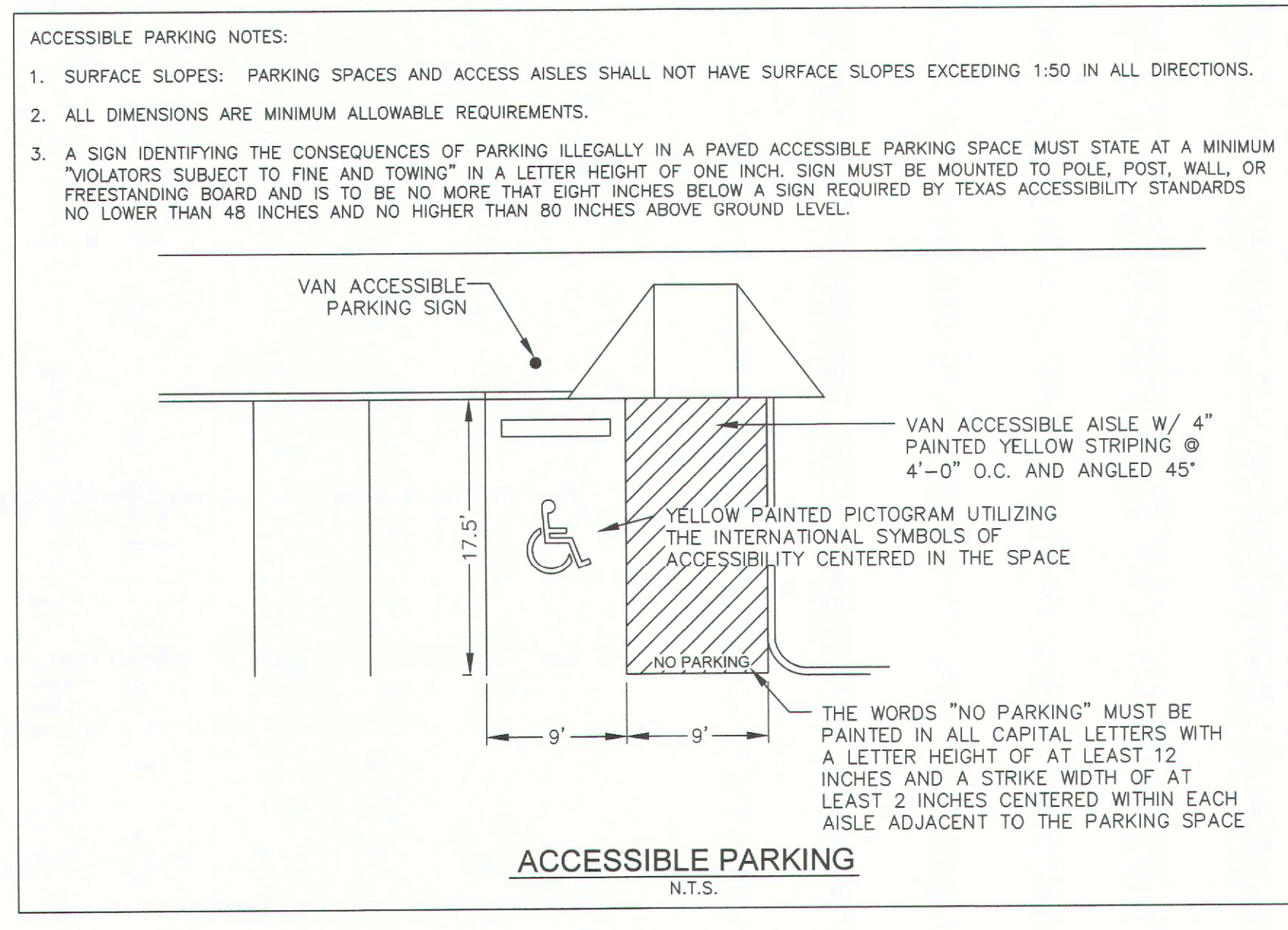
CITY OF LEANER, TEXAS	FIRE APPARATUS ACCESS ROAD & TURNAROUNDS	STANDARD NO. 433S-2
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



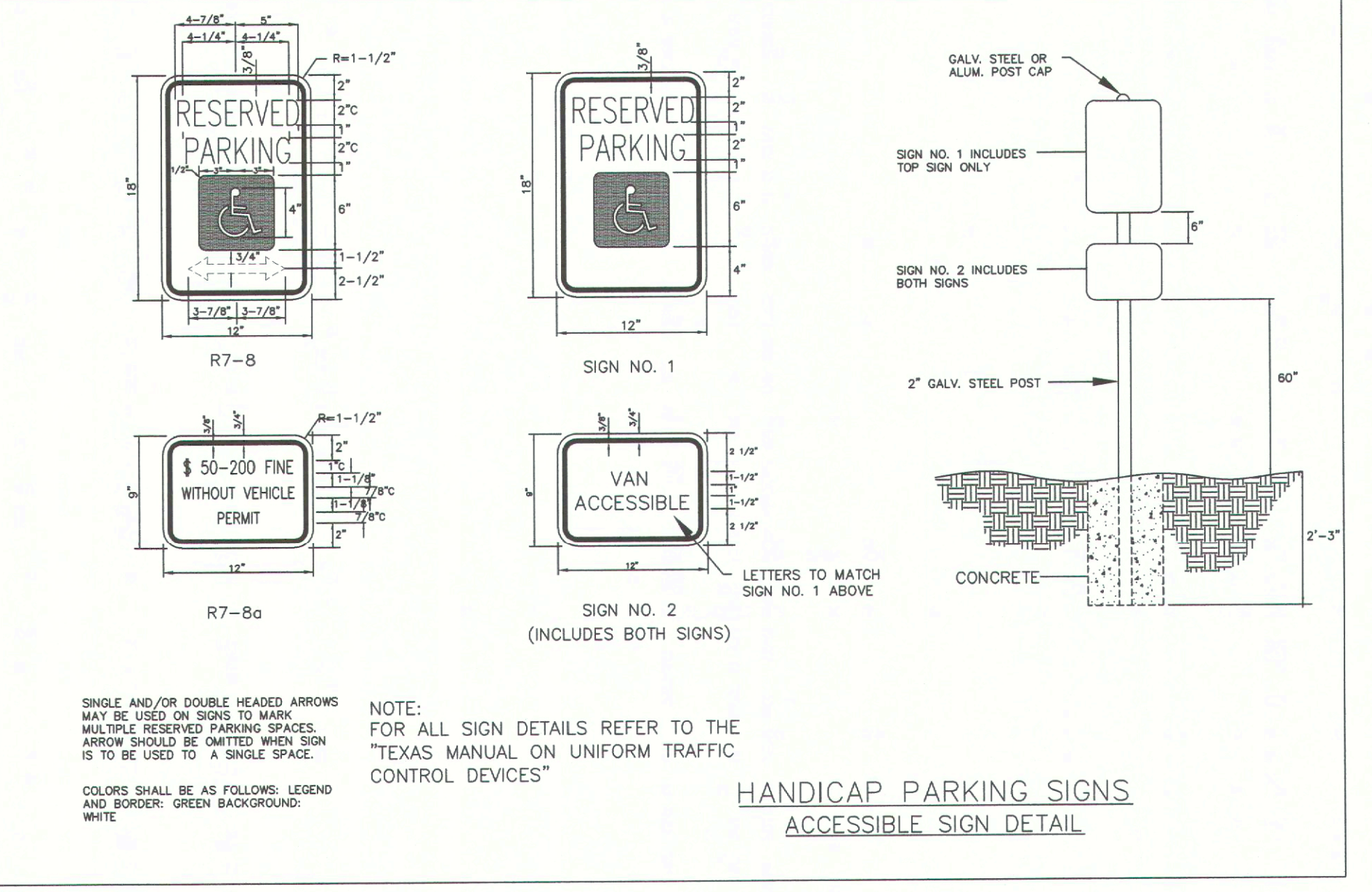
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	STANDARD NO. 433S-2
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



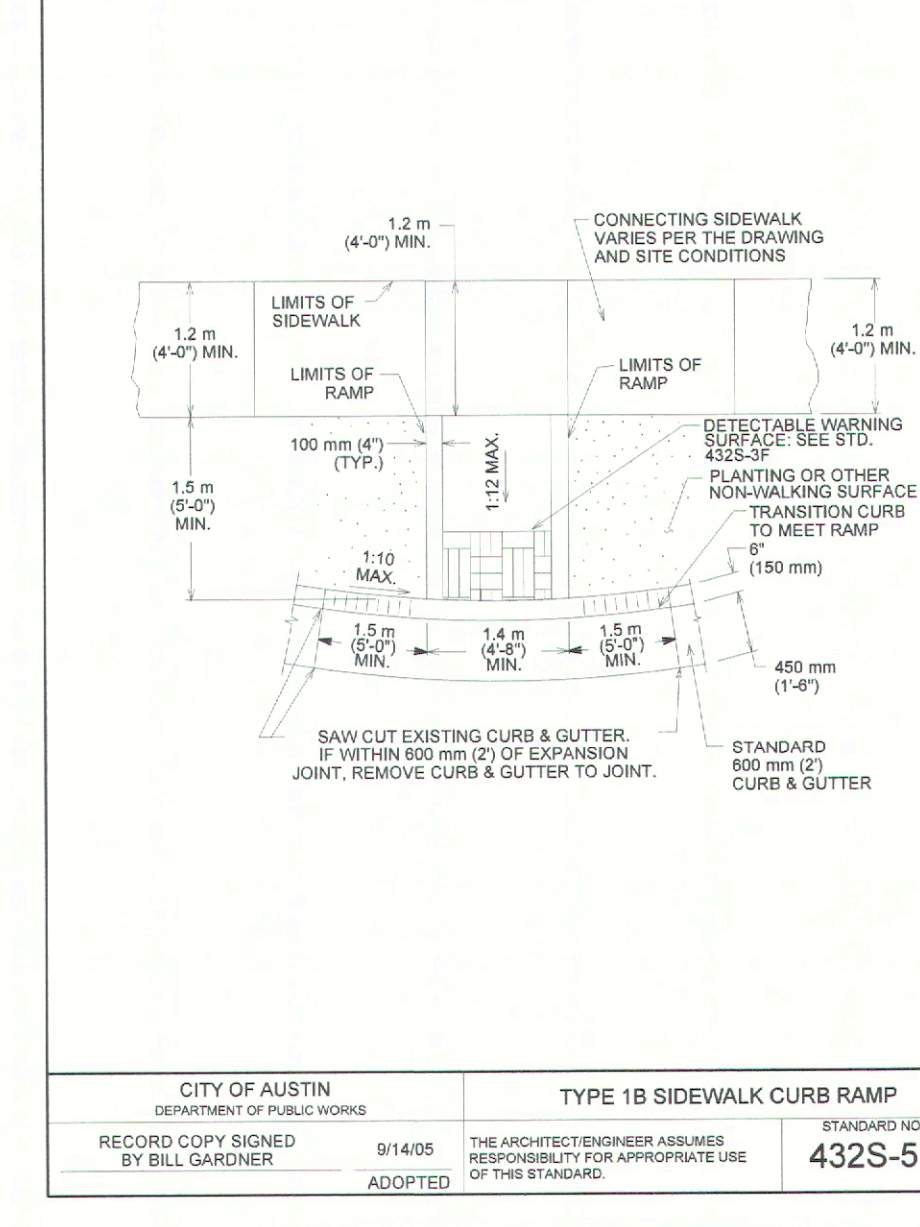
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	STANDARD NO. 433S-2
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THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



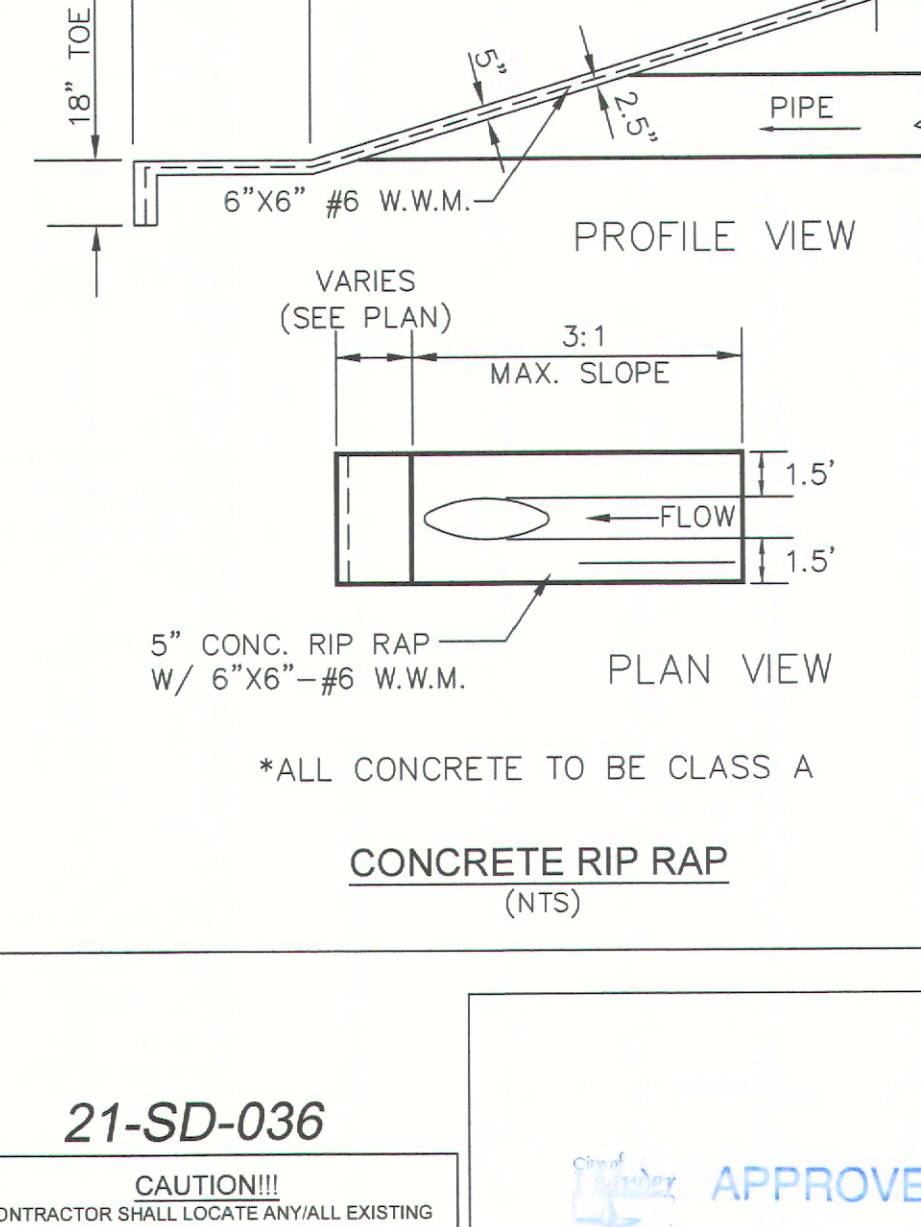
CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	ACCESSIBLE PARKING	STANDARD NO. 432S-5B
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	HANDICAP PARKING SIGNS	STANDARD NO. 432S-5B
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		

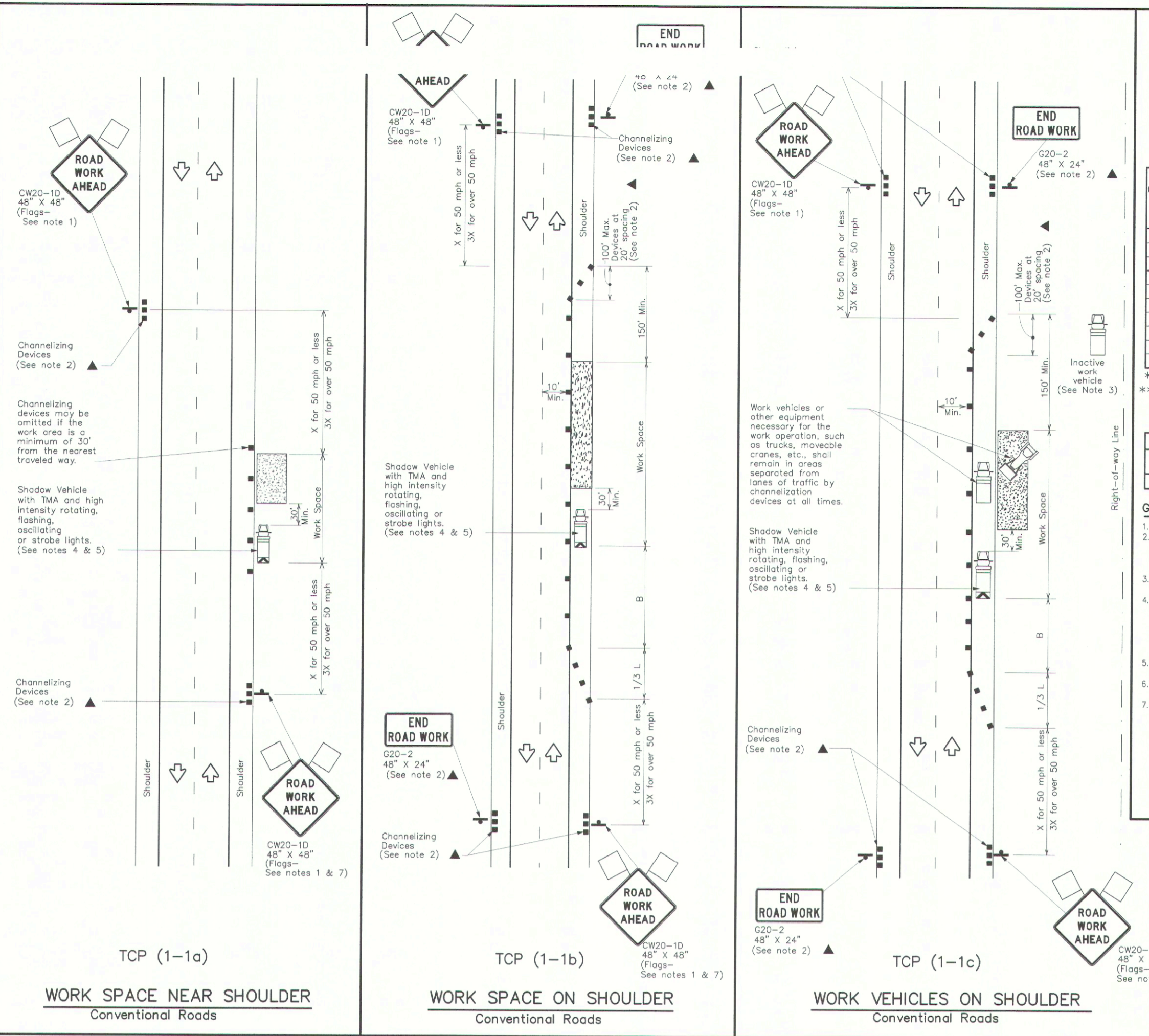


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE 1B SIDEWALK CURB RAMP	STANDARD NO. 432S-5B
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		



CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	CONCRETE RIP RAP	STANDARD NO. 432S-5B
RECORD COPY SIGNED BY BILL GARDNER	9/14/05 ADOPTED	
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.		

DATE: FILE:
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LEGEND

Type 3 Barricade	Channelizing Devices
Heavy Work Vehicle	Truck Mounted Attenuator (TMA)
Trailer Mounted Flaring Arrow Board	Portable Chiropractic Message Sign (PCMS)
Sign	Traffic Flow
Flag	Flagger

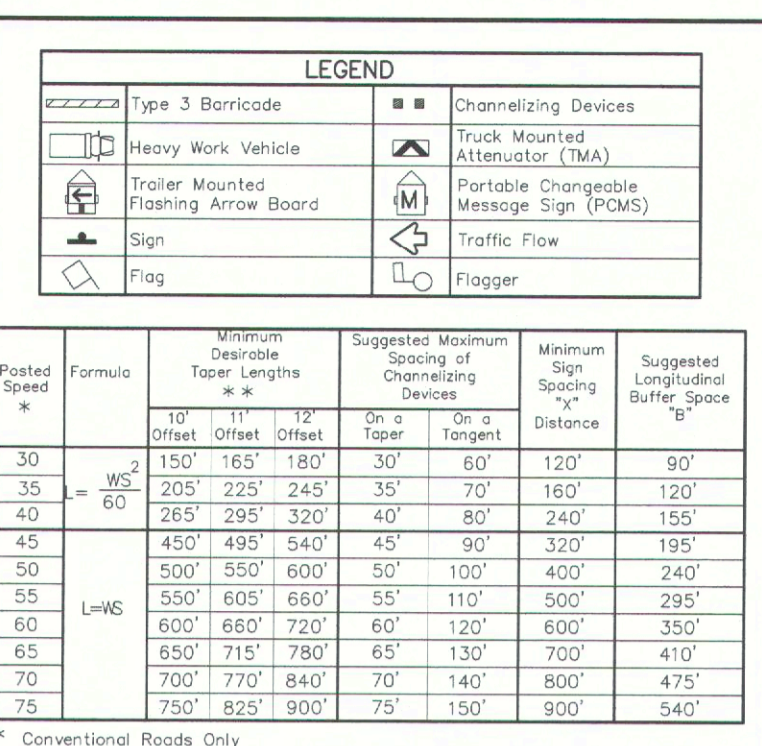
Posted Speed	Formula	Minimum Spacing of Channelizing Devices	Minimum Sign Spacing	Suggested Longitudinal Buffer Space
30	10' + 1/2' (S)	30'	60'	90'
35	15' + 1/2' (S)	35'	70'	120'
40	20' + 1/2' (S)	40'	80'	150'
45	25' + 1/2' (S)	45'	90'	180'
50	30' + 1/2' (S)	50'	100'	240'
55	35' + 1/2' (S)	55'	110'	295'
60	40' + 1/2' (S)	60'	120'	350'
65	45' + 1/2' (S)	65'	130'	410'
70	50' + 1/2' (S)	70'	140'	475'
75	55' + 1/2' (S)	75'	150'	540'

TYPICAL USAGE

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

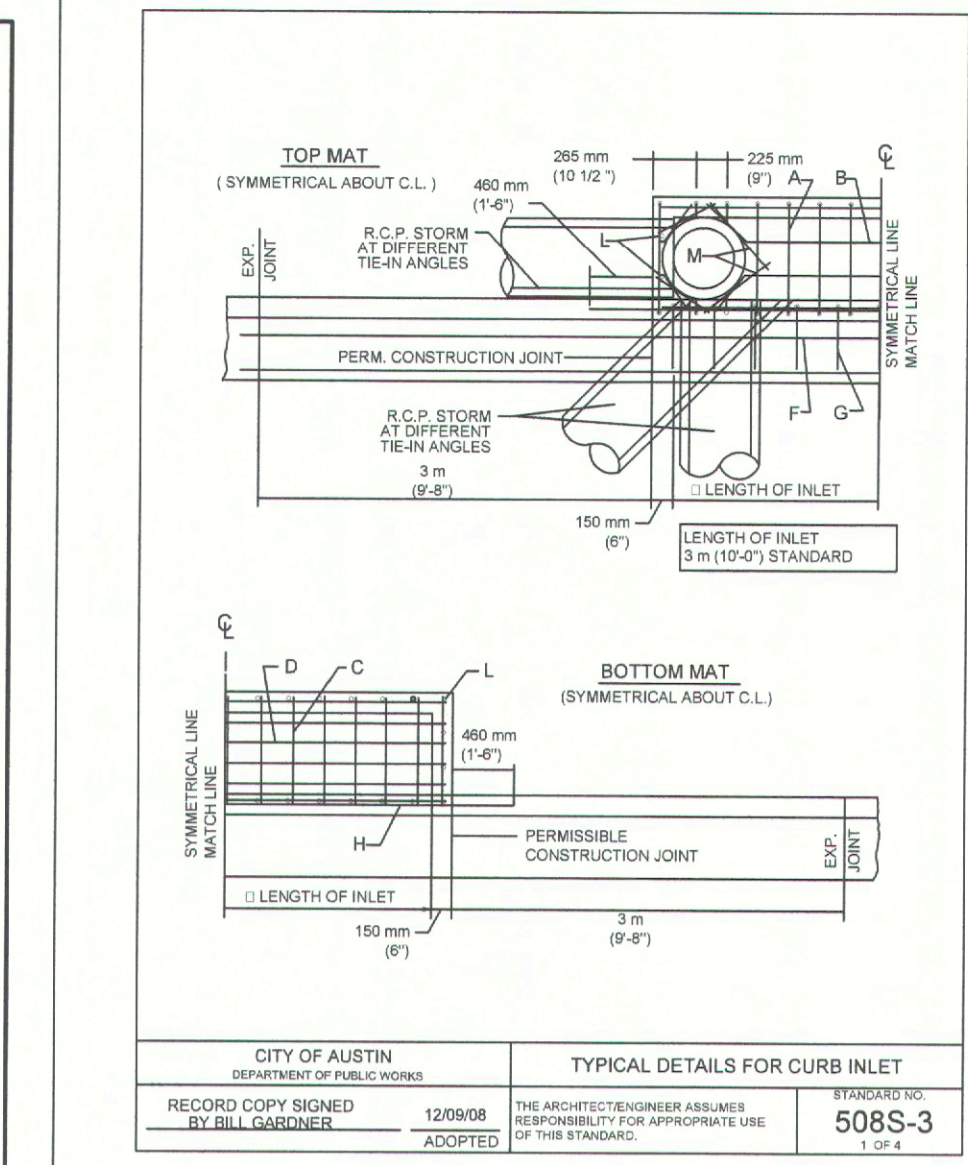
GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- A Show Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the zone of work without adversely affecting the performance or quality of the work. If workers are no longer present but road work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Show Vehicle and TMA.
- Additional Show Vehicles with TMA may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- See TCP(1-1) for shoulder work on divided highways, expressways and freeways.
- CW2-5 "SHOULDER WORK" signs may be used in place of CW2-10 "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.



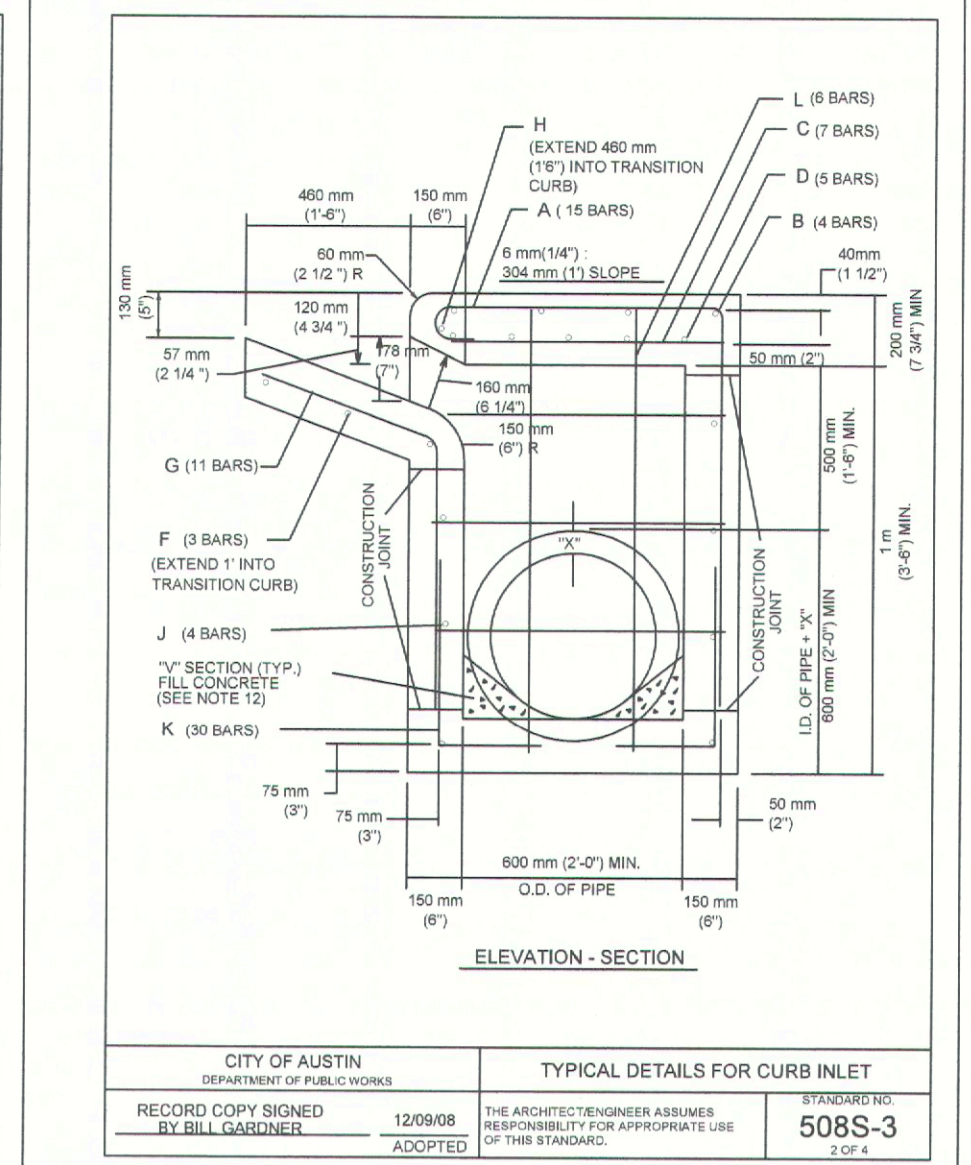
TYPICAL DETAILS FOR CURB INLET

CITY OF AUSTIN
 DEPARTMENT OF PUBLIC WORKS
 RECORD COPY SIGNED BY BILL GARDNER 12/09/08 ADOPTED
 THE ARCHITECT/ENGINEER ASSURES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. 508S-3 1 OF 4



TYPICAL DETAILS FOR CURB INLET

CITY OF AUSTIN
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TYPICAL DETAILS FOR CURB INLET

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 THE ARCHITECT/ENGINEER ASSURES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. 508S-3 3 OF 4

TABLE OF QUANTITIES FOR 1" OUTLET PIPE REINFORCING STEEL QUANTITIES

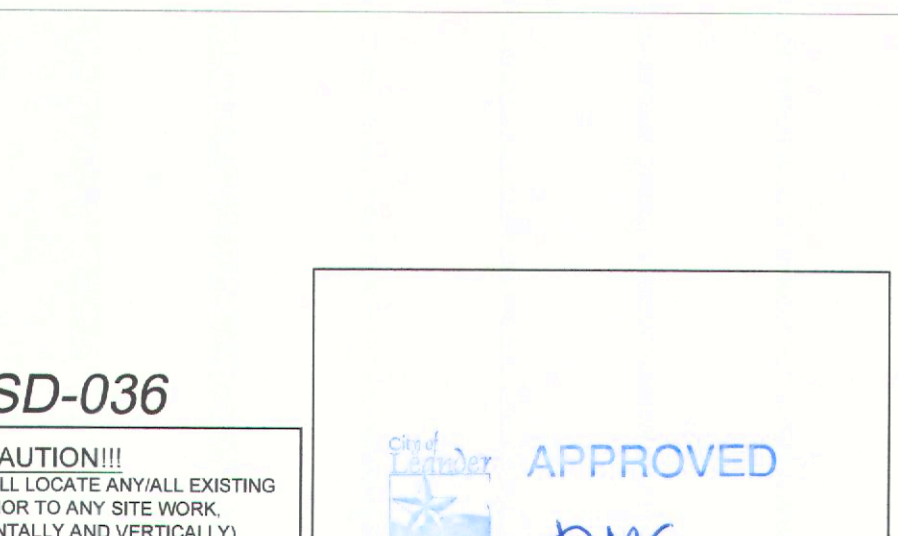
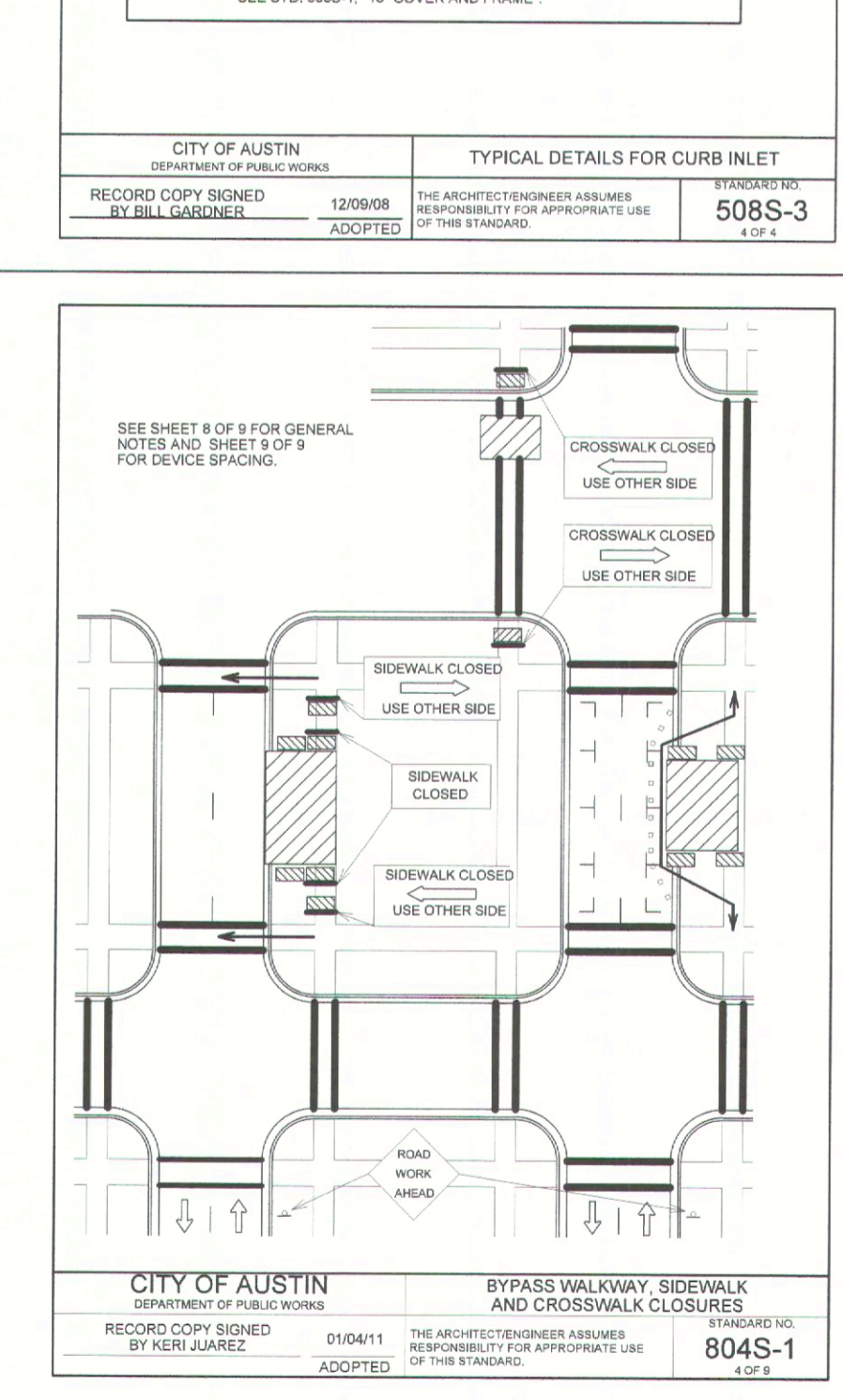
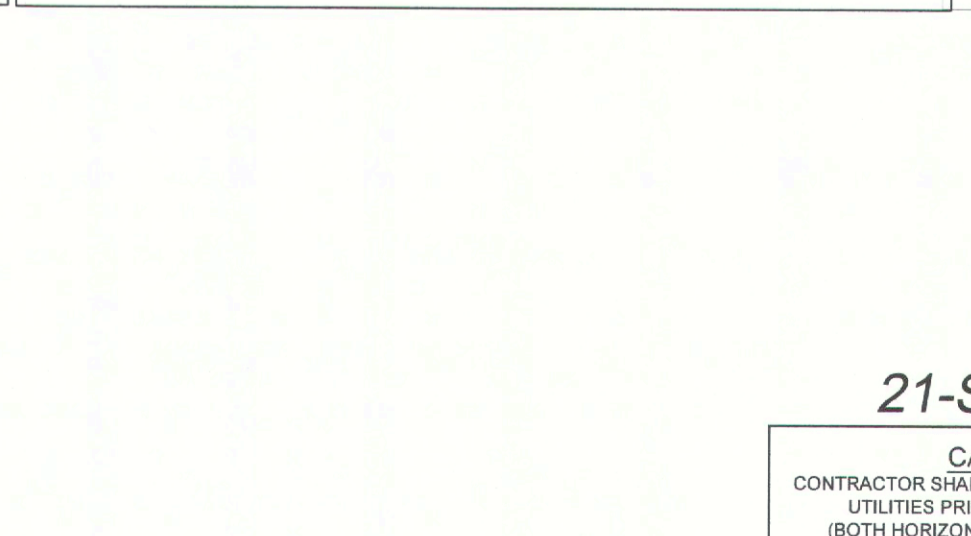
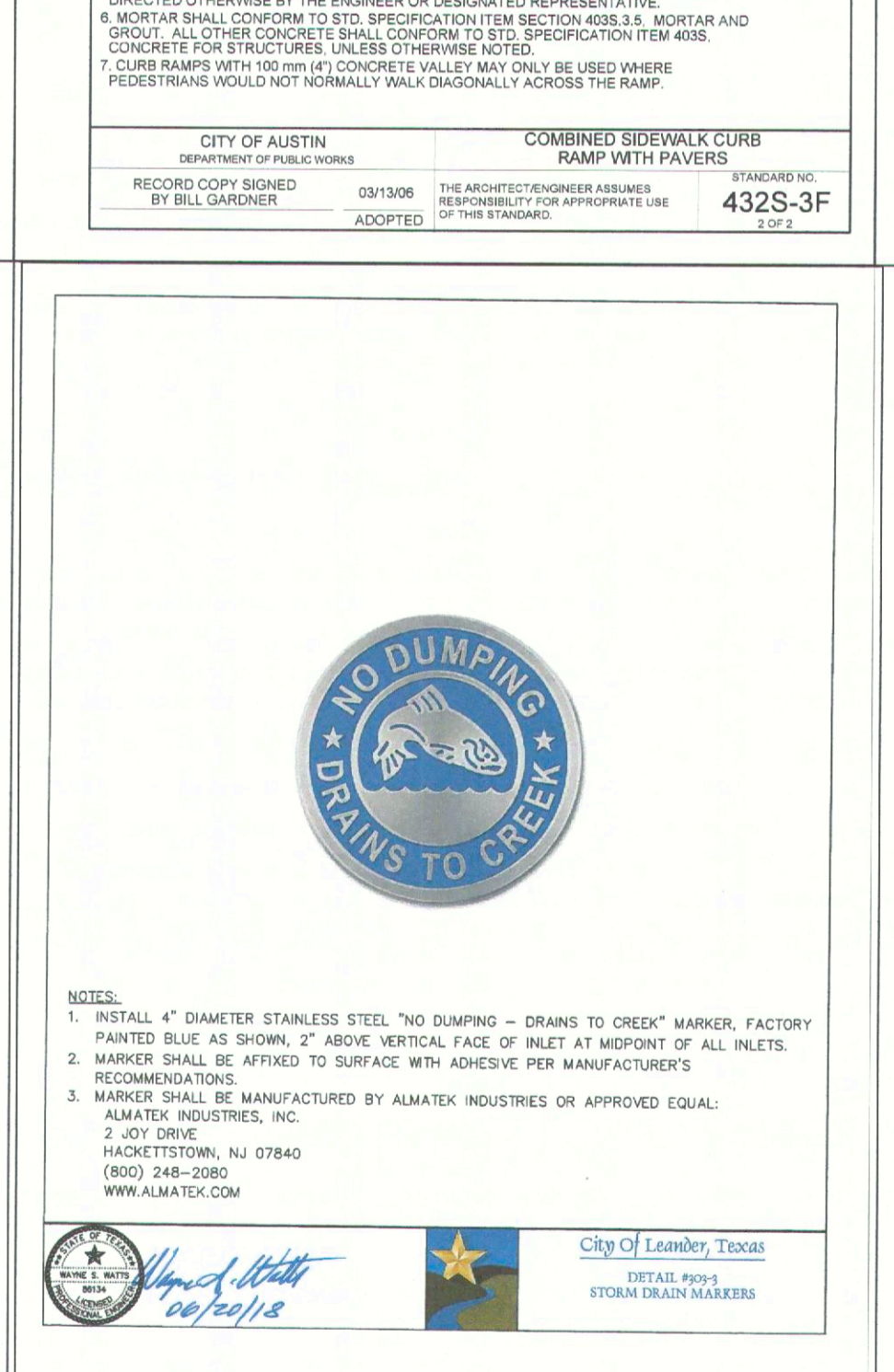
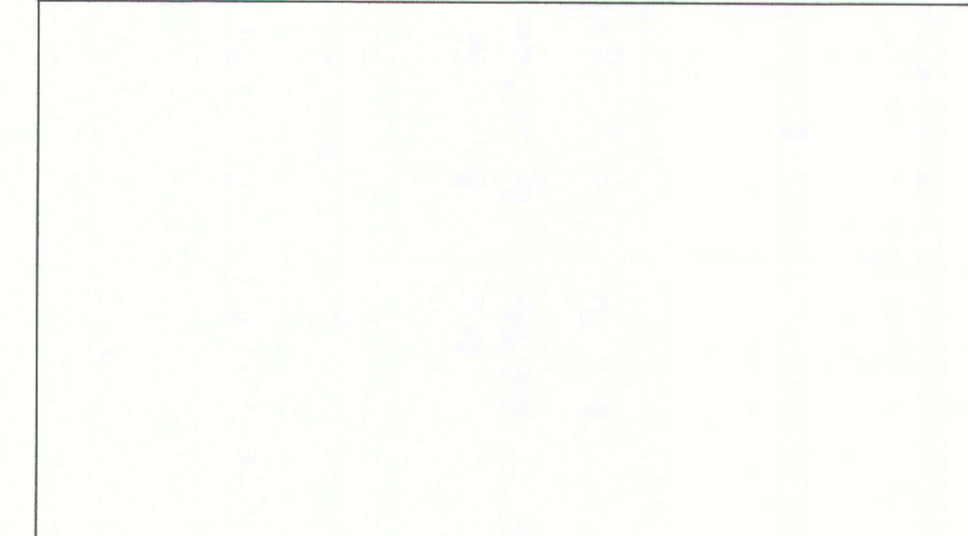
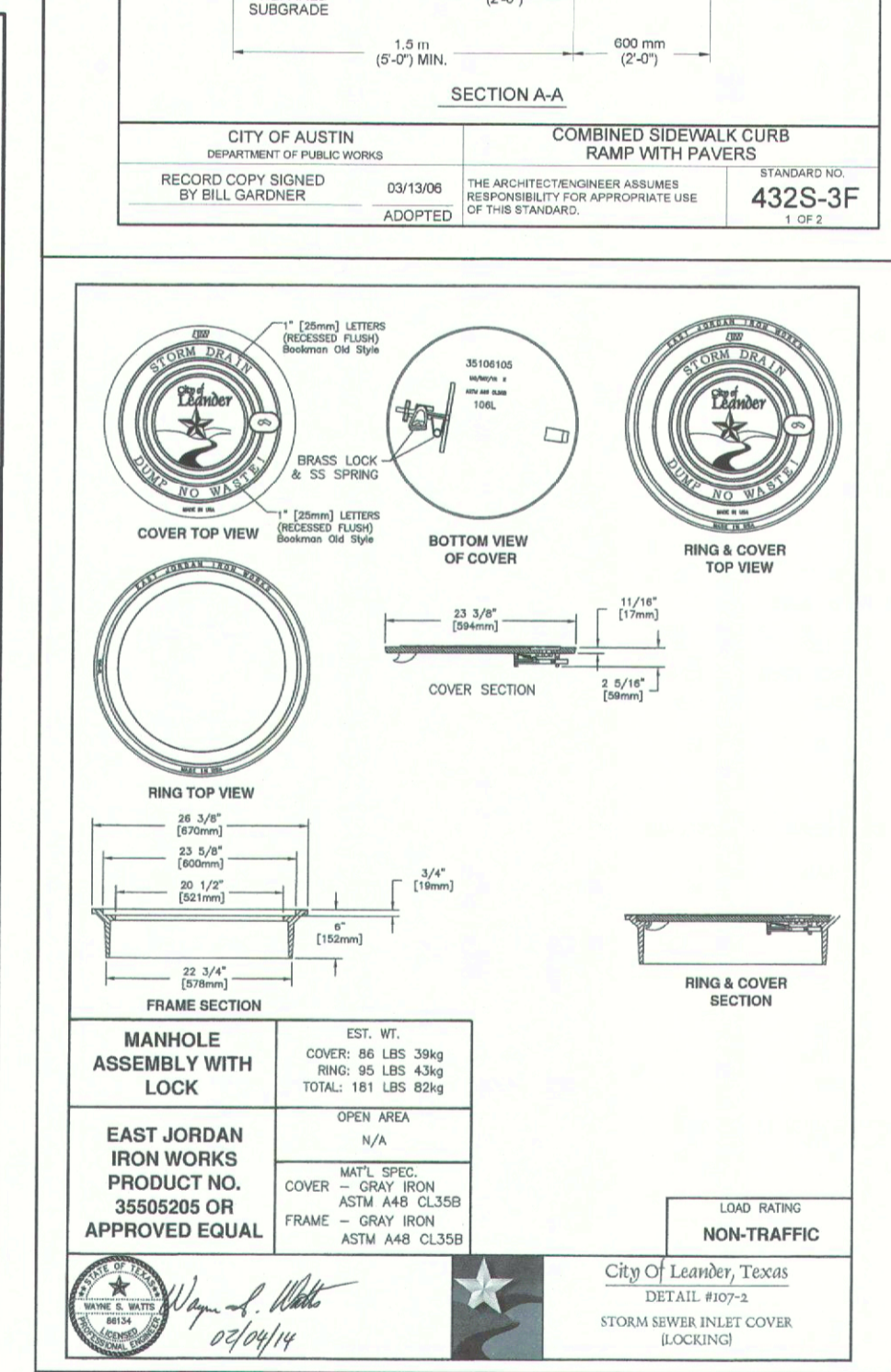
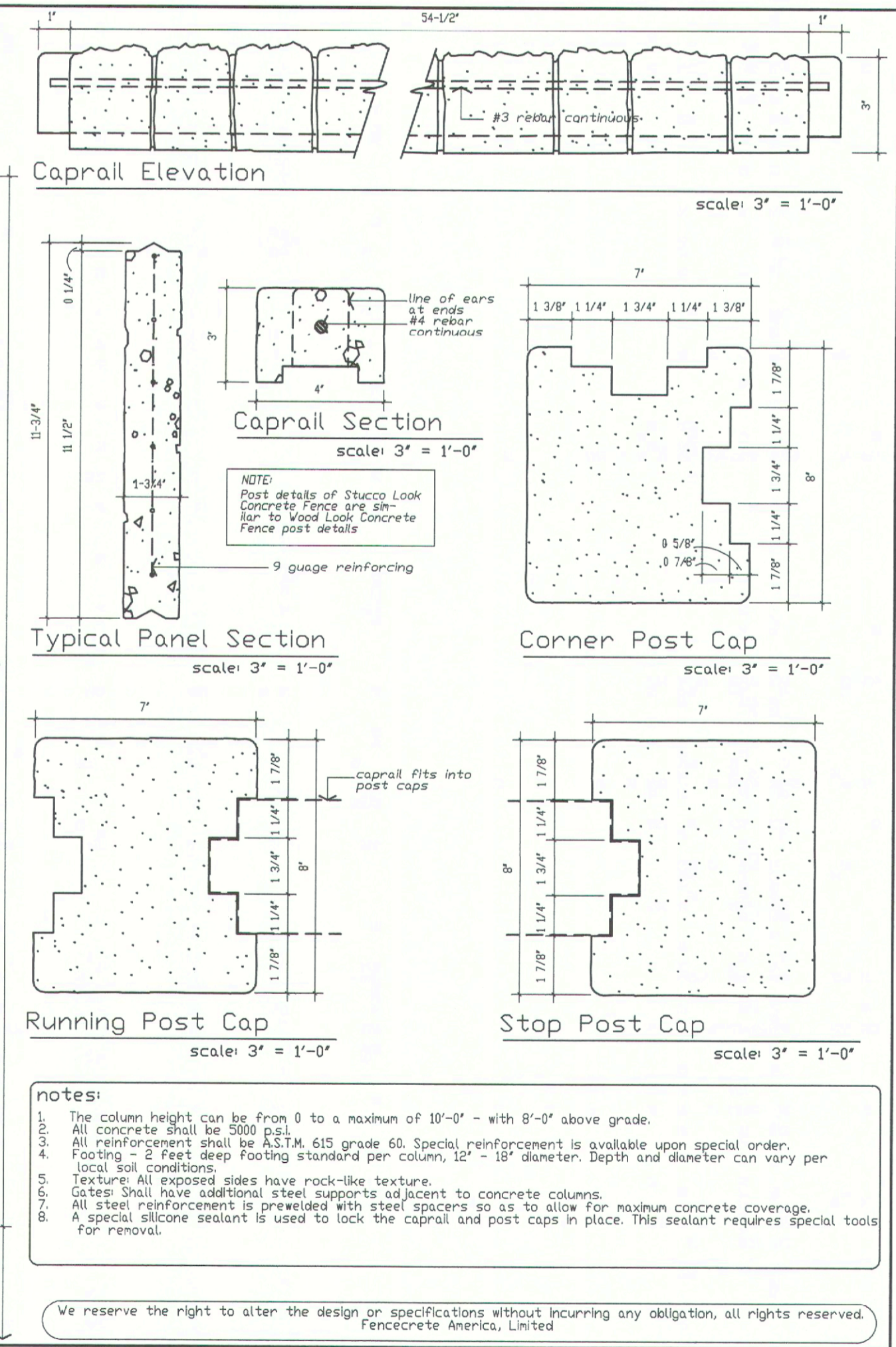
BAR	SIZE	SPACING	NUMBER	LENGTH	WEIGHT
A	4	200mm (8")	15	2.2m (7'-2")	75
B	4	200mm (8")	4	3.2m (10'-6")	29
C	4	400mm (16")	7	7.8m (25'-6")	12
D	6	150mm (6")	5	3.2m (10'-6")	80
E	4	300mm (12")	6	7.8m (25'-6")	10
F	4	200mm (8")	3	1.4m (4'-7")	35
G	4	300mm (12")	11	1.2m (4'-3")	31
H	6	-	1	4.2m (13'-6")	20
J	4	300mm (12")	7	3.2m (10'-6")	59
K	4	300mm (12")	3	8.0m (26'-3")	52
L	4	300mm (12")	6	1.3m (4'-3")	17
M	4	-	4	8.0m (26'-3") AVG.	4
TOTAL STEEL LB					413
TOTAL CONCRETE C.Y.					4.08

FENCECRETE AMERICA, LTD.
 manufacturers of precast concrete fencing and masonry wall systems
 15089 tradesmen drive san antonio, texas 78249 210-492-7911 800-229-7811 www.fencecrete.com

Partial Fence Elevation scale: 1-1/2" = 1'-0"

Rock Look Concrete Fence

Contact: Matt Booth 210-861-5210 matt@fencecrete.com



JAMISON CIVIL ENGINEERING LLC
 (TX. PE FIRM REG. #F-17756)
 13812 RESEARCH BLVD. #B-2
 AUSTIN, TEXAS 78750
 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

JCE

THE SQUARE AT CRYSTAL FALLS
 GENERAL DETAILS
 PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Roy Jamison on 7/07/2022.

STEPHEN RAY JAMISON
 86951
 LICENSED PROFESSIONAL ENGINEER

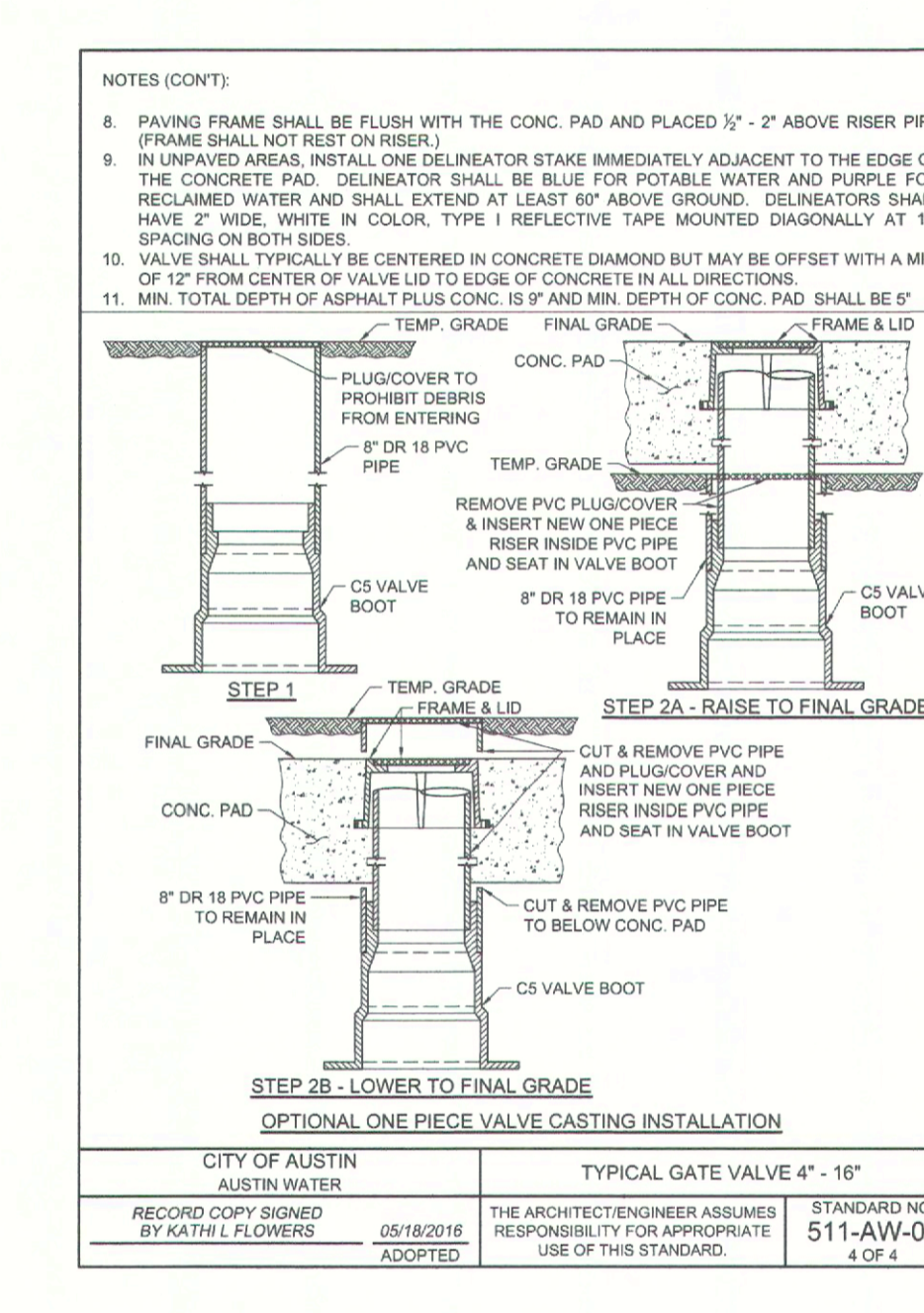
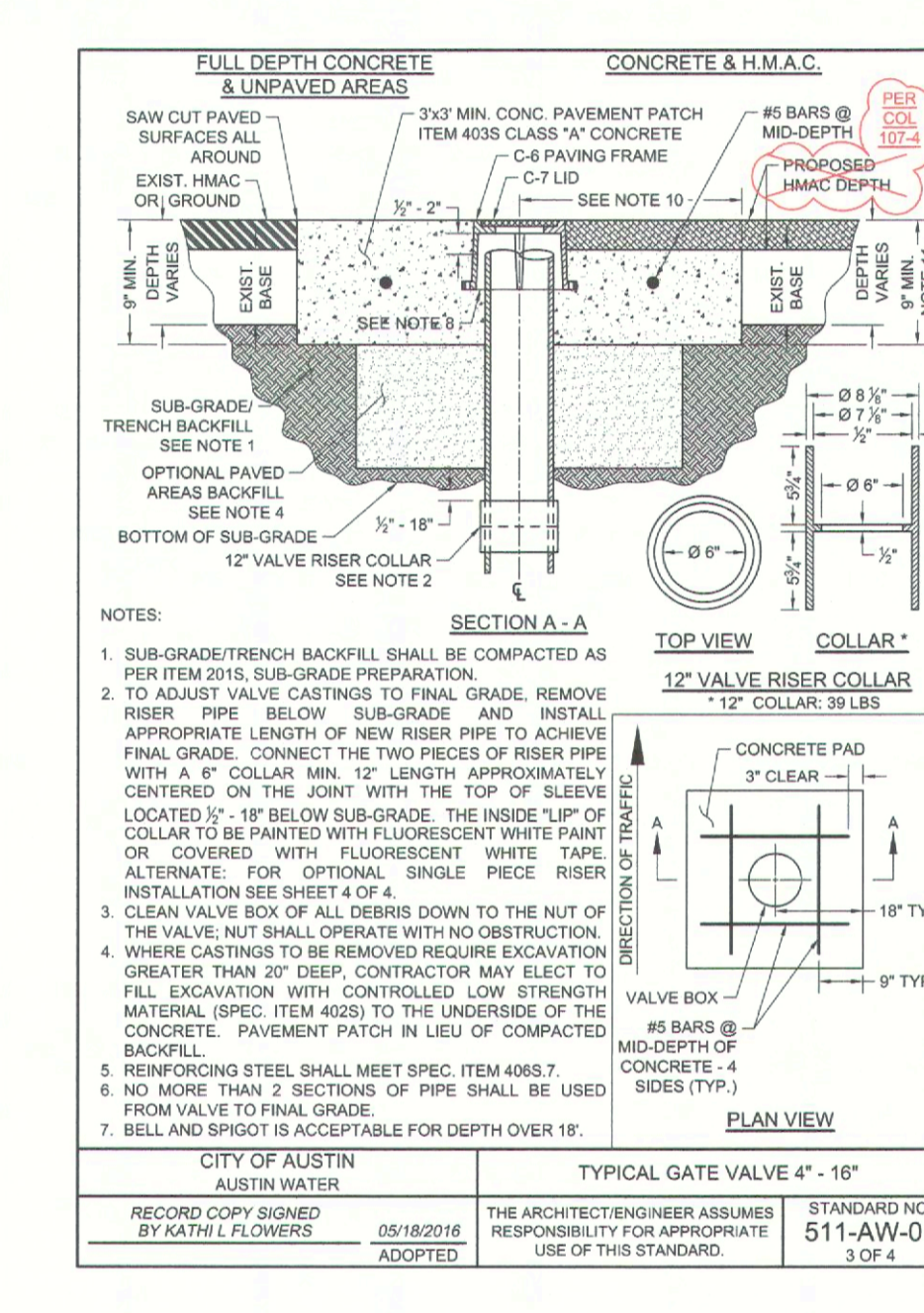
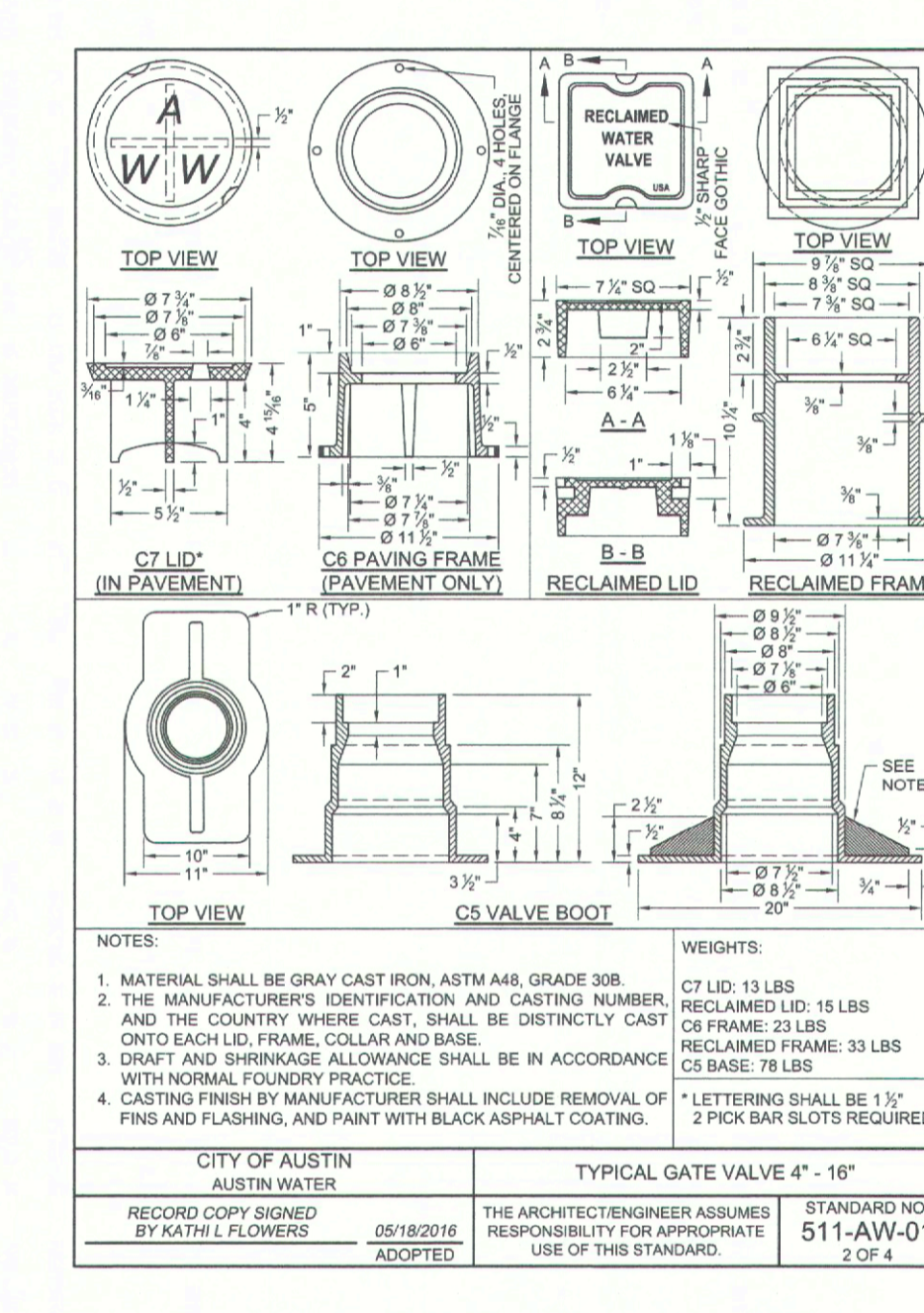
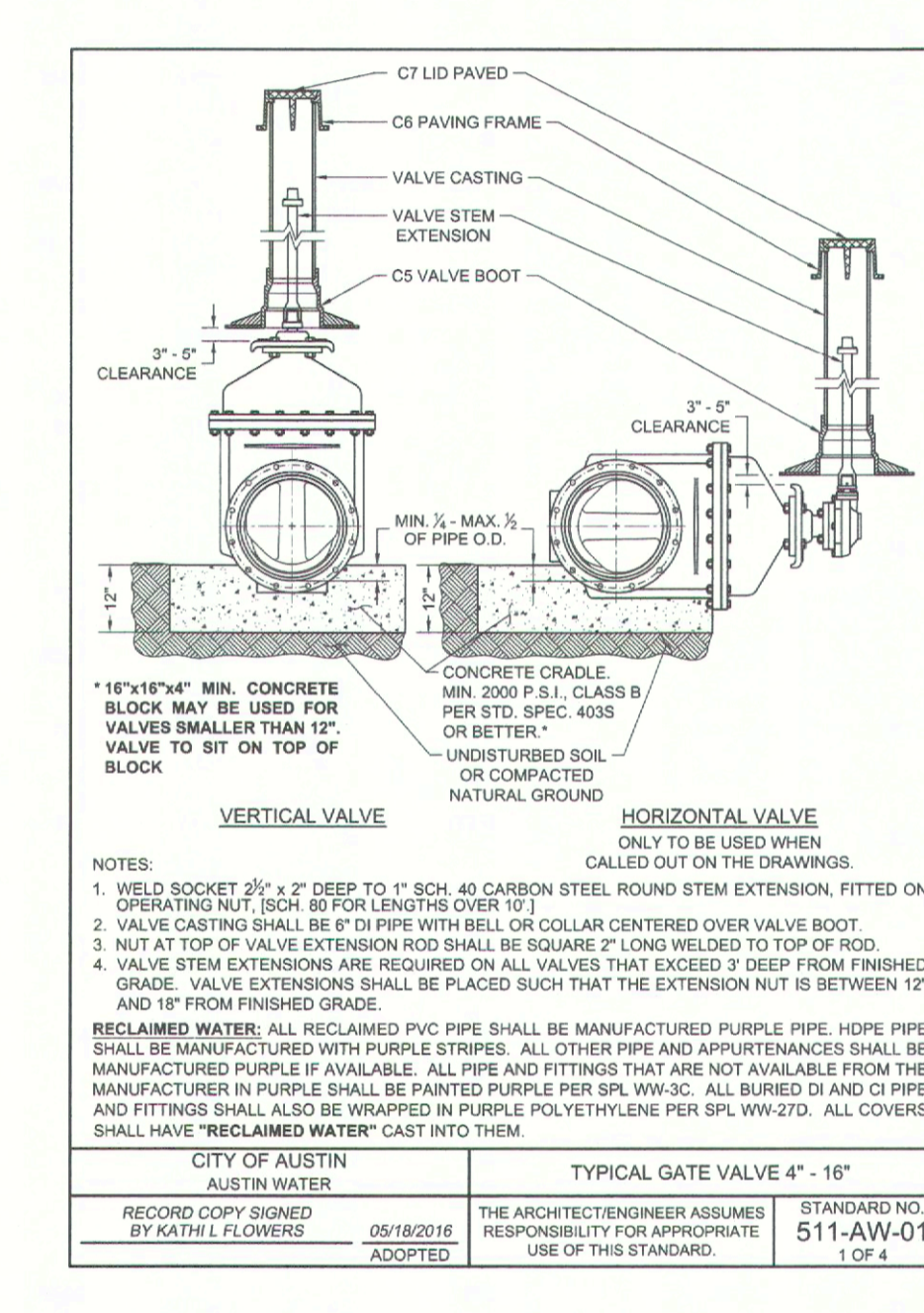
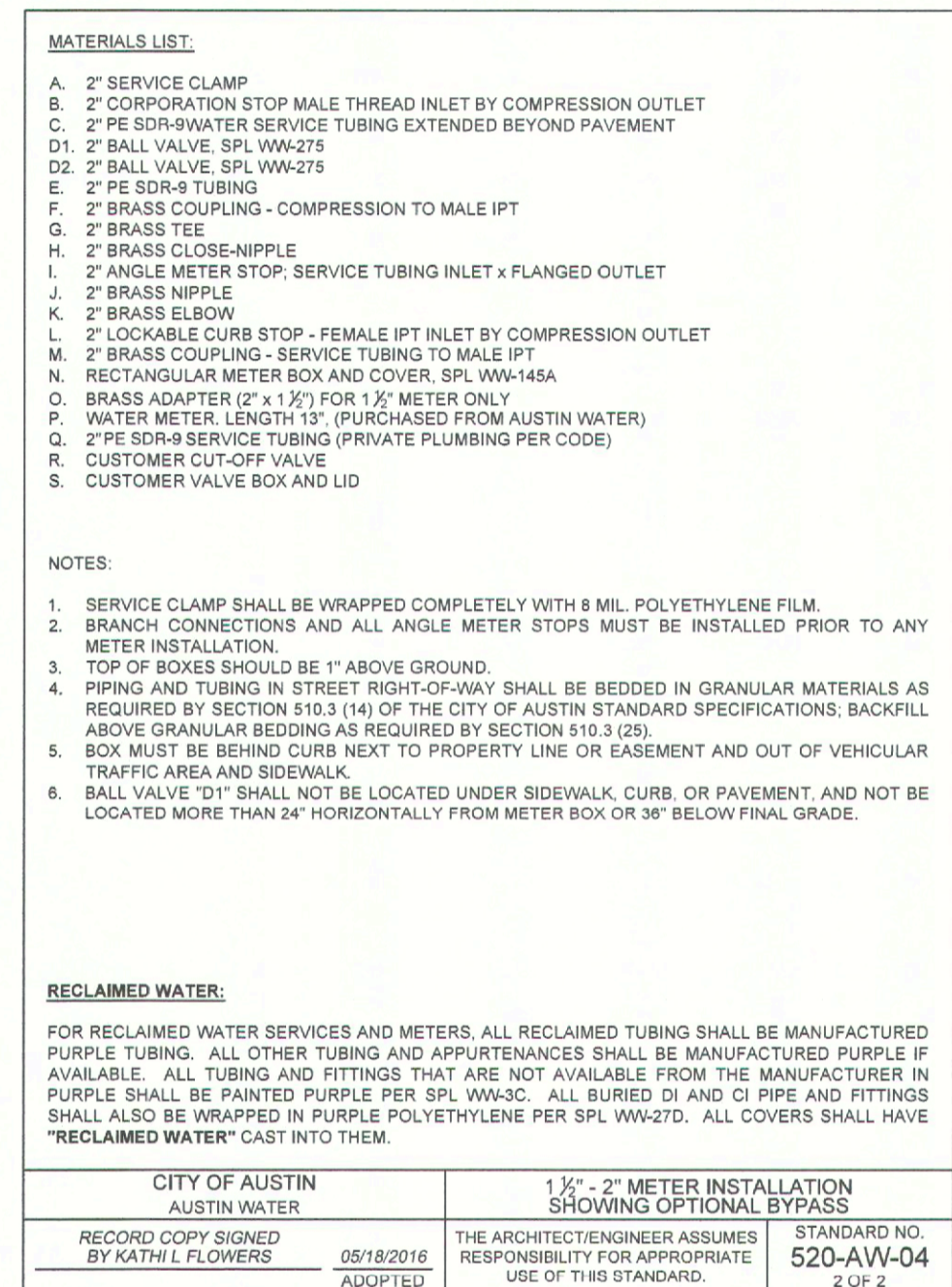
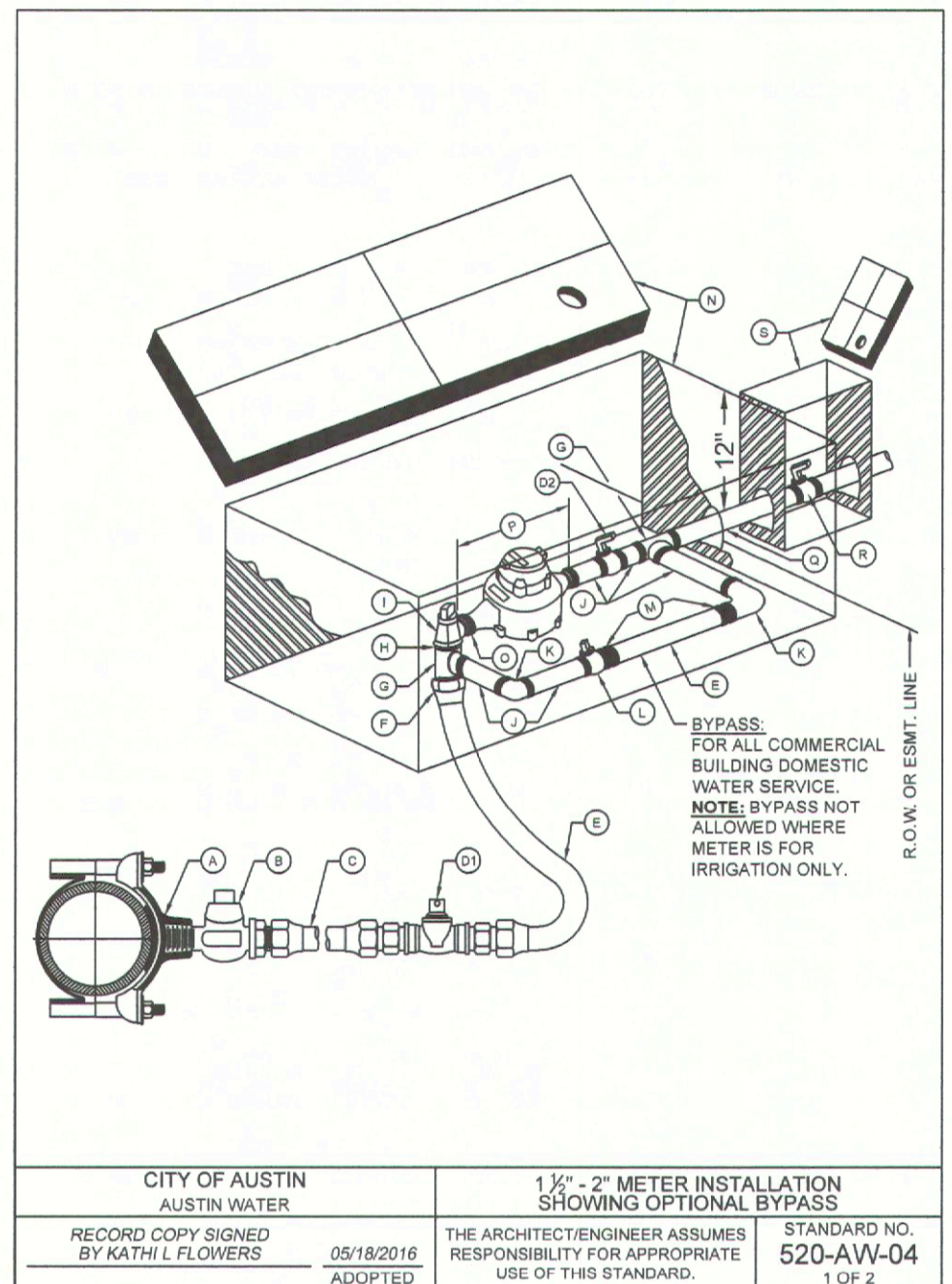
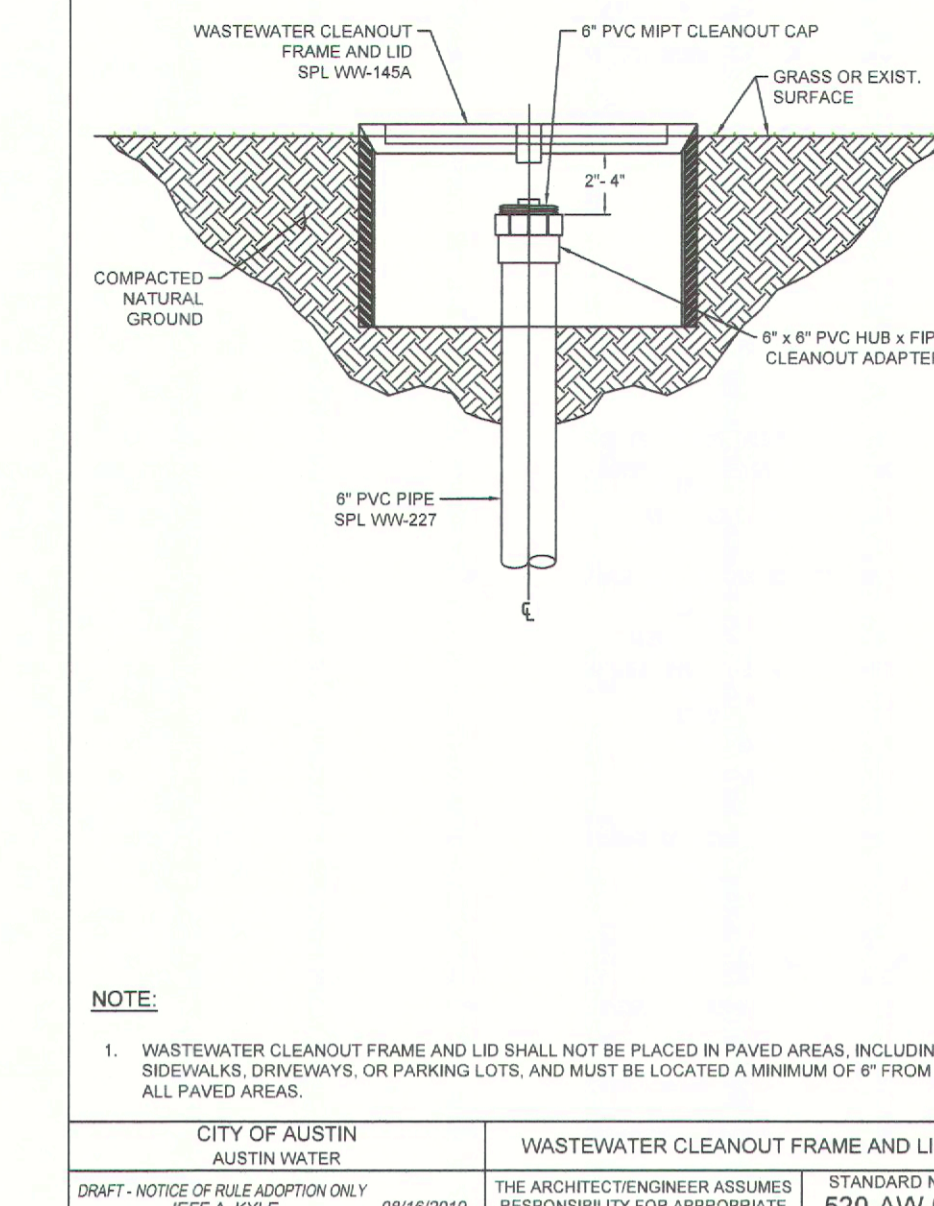
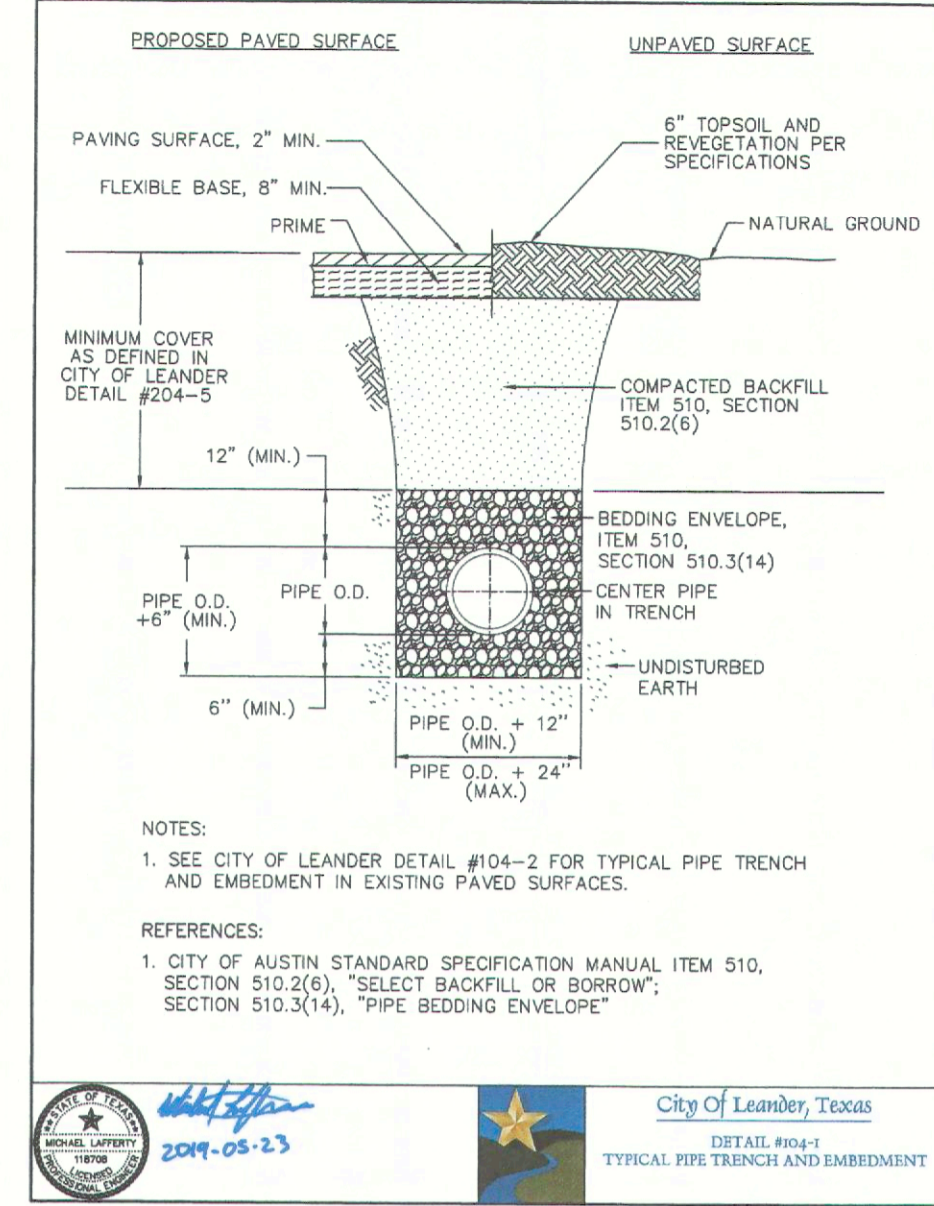
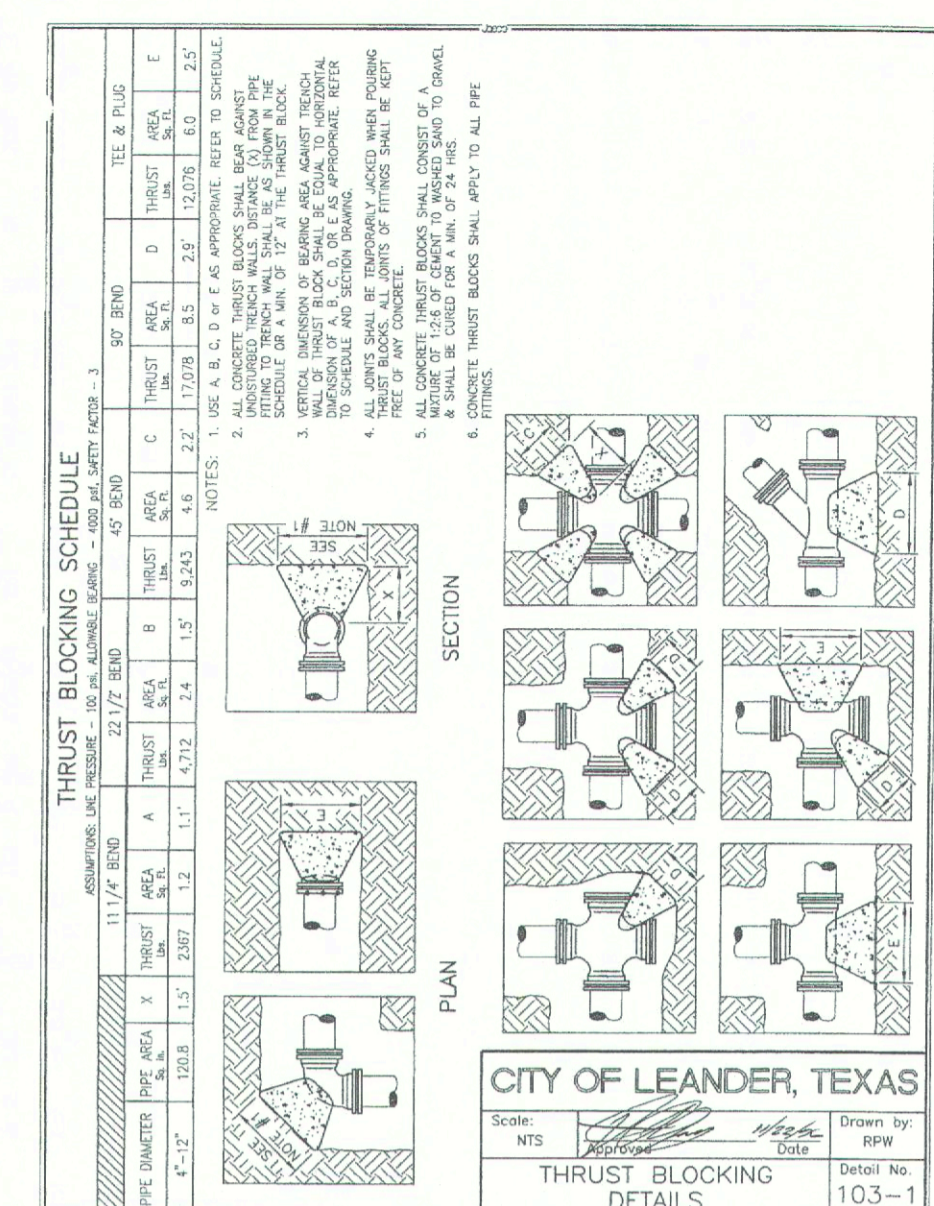
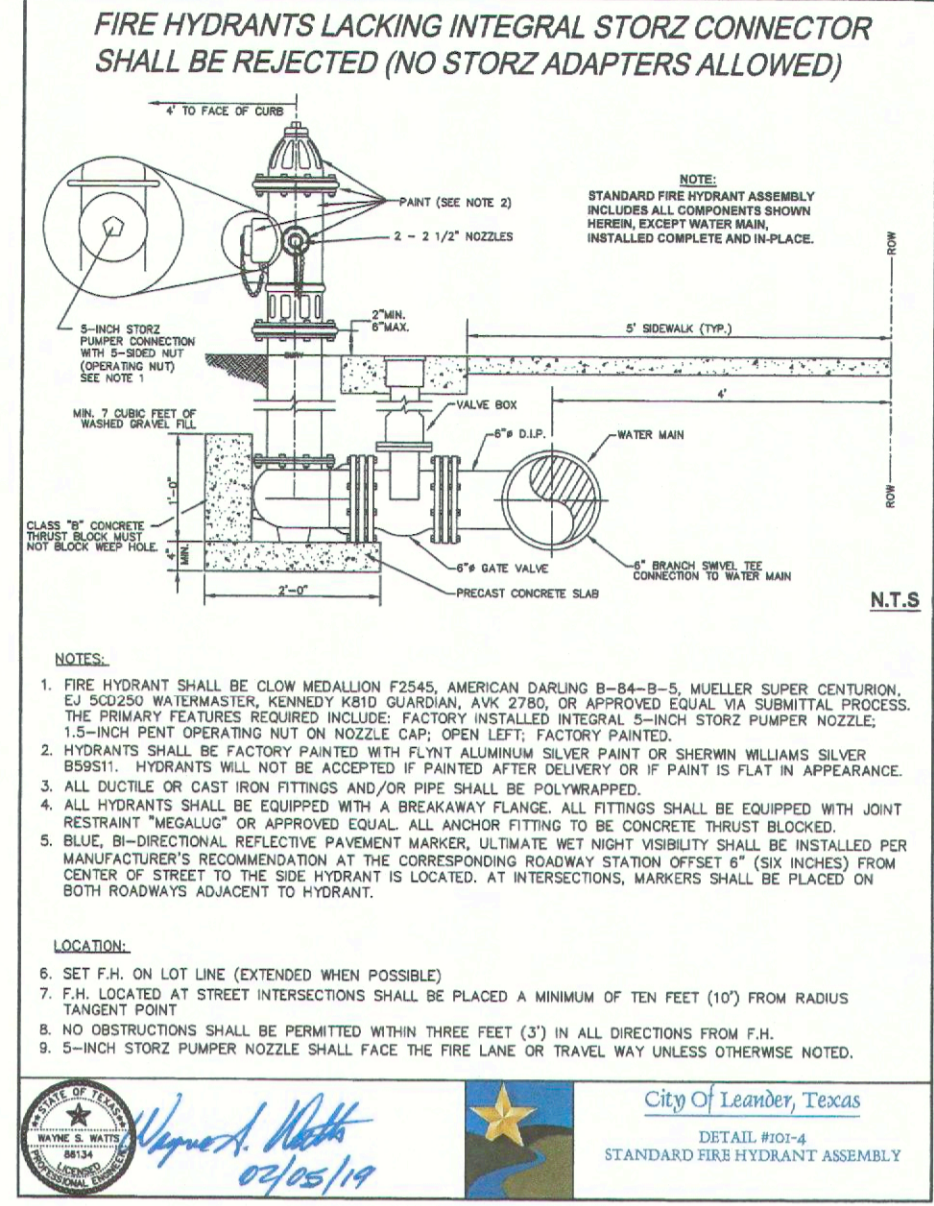
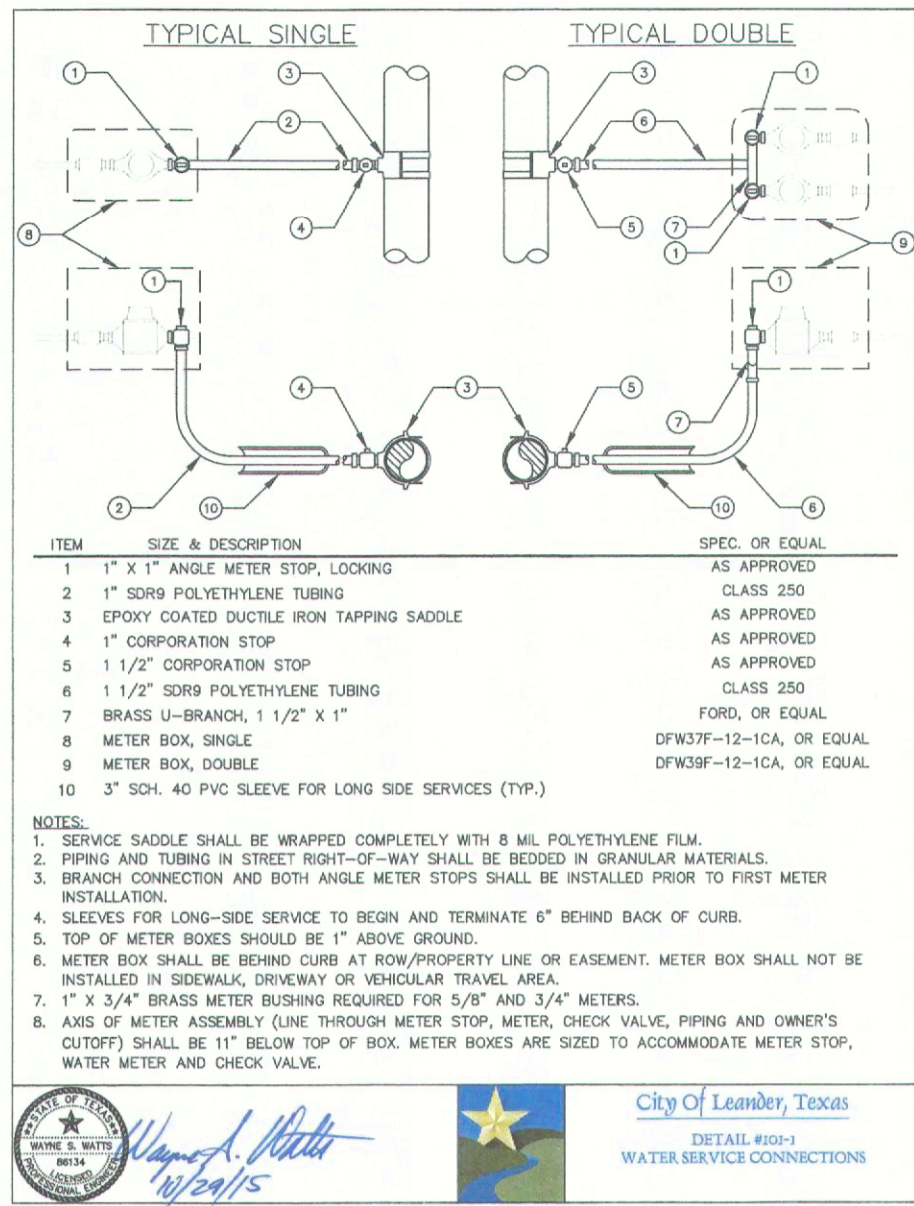
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 Date: 08/09/21 Checked By: SFJ Drawn By: MM
 Revision 1:
 Revision 2:
 Revision 3:
 Revision 4:

21-SD-036

CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.

APPROVED
 DMG

SHEET
 32 of 39



JAMISON CIVIL ENGINEERING LLC
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 OFFICE: (737) 484-0880
 INFO@JAMISONENG.COM

THE SQUARE AT CRYSTAL FALLS
WATER & WASTEWATER DETAILS
PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by
 Stephen Ray Jamison
 on 12/28, 2021

File: H:\1900 BAGDAD\DWG\PLANS\DETAILS.DWG
 Job No. Snapshot:
 Scale (Hor.): Scale (Vert.):
 Date: 09/09/21 Checked By: SRJ Drawn By: MM
 Revision 1:
 Revision 2:
 Revision 3:
 Revision 4:

CAUTION!!!
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APPROVED
 RMG

CITY OF LEANDER LANDSCAPE NOTES

1. Tree caliper is the trunk diameter of a tree at one (1') foot above natural grade per the Composite Zoning Ordinance.
2. A minimum six (6") inch topsoil depth will be provided in all landscaped areas and mulch will be provided around plantings.
3. All disturbed areas and ROW will be re-vegetated by the developer.
4. All new landscapes (non-residential and residential) are required to have a minimum of six inches (6") of soil depth in areas planted with turfgrass. This six inch (6") minimum soil depth will consist of 75 percent soil blended with 25 percent compost. The soil/compost blend shall be incorporated into the top two inches of the native soil. The six inch (6") depth requirement does not apply to the area between the drip line and trunk of existing trees, shrub beds or wildscape areas. Areas with existing native vegetation that remain undisturbed shall be exempt from the soil depth provision; provided that native soil and vegetation in such area is fenced during construction and protected from disturbance and compaction during the construction process.
5. No more than 50% of the same species may be planted to meet the tree planting requirements.
6. Mechanical equipment shall be screened from the view of at least sixty (60%) of any street or public right-of-way.
7. A minimum pervious area three feet (3') in radius and not less than 50% of the calculated drip line is provided around the trunks of all existing and proposed trees.
8. No landscaping over three feet (3') high is located within forty feet (40') of the intersection of any street (Measured from edge of pavement as if the curbs are not rounded off at and intersect at right angle).
9. All invasive species to be removed.

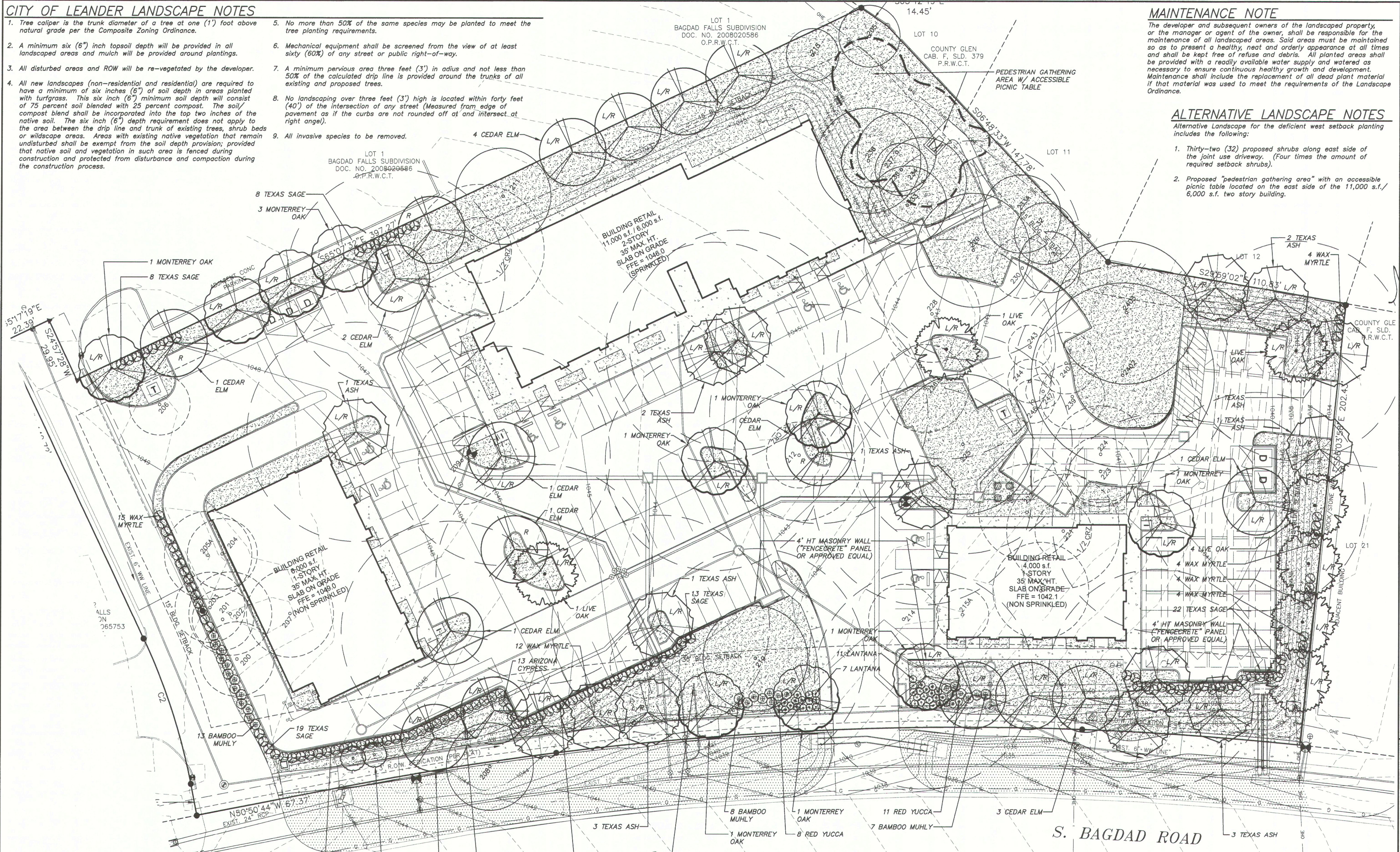
MAINTENANCE NOTE

The developer and subsequent owners of the landscaped property, or the manager or agent of the owner, shall be responsible for the maintenance of all landscaped areas. Said areas must be maintained so as to present a healthy, neat and orderly appearance at all times and shall be kept free of refuse and debris. All planted areas shall be provided with a readily available water supply and watered as necessary to ensure continuous healthy growth and development. Maintenance shall include the replacement of all dead plant material if that material was used to meet the requirements of the Landscape Ordinance.

ALTERNATIVE LANDSCAPE NOTES

Alternative Landscape for the deficient west setback planting includes the following:

1. Thirty-two (32) proposed shrubs along east side of the joint use driveway. (Four times the amount of required setback shrubs).
2. Proposed "pedestrian gathering area" with an accessible picnic table located on the east side of the 11,000 s.f./6,000 s.f. two story building.



REPLACEMENT TREE KEY
 R = Replacement tree (18" replacement)
 L/R = Landscape Ordinance/Replacement tree (100" replacement)

FRONT LANDSCAPE AREA
 Required (21,362 s.f. x 0.5) 10,681.00 s.f.
 Provided 10,687.17 s.f.

TURF GRASS CALCULATIONS
 Total Allowed turf grass = 21,344.5 s.f.
 Total Proposed turf grass = 27 s.f.*
 *On-site turf grass only

TREE PLANTING CALCULATIONS
 Total Required Trees = 72
 Total Allowed Ornamental/Small trees = 18
 Total Proposed Ornamental/Small trees = 2

LANDSCAPE CALCULATIONS
LOT DEVELOPED AREA
 142,412 s.f.

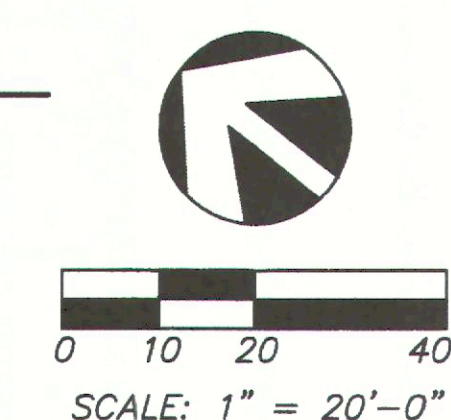
REQUIRED LANDSCAPE
 190,439 s.f. x 15% = 21,362 s.f./600 = 36 units
 36 units x 2 trees = 72 *330 trees provided
 36 units x 4 shrubs = 144 191 shrubs provided

*Includes credit for existing retained trees 8" plus

NOTE
 Refer to the "Landscape Details" sheet for the Plant List, Planting Details, Landscape Plan Notes, Turf Application Notes, and City of Leander landscape calculations & required notes.

GROUND COVER LEGEND

	BUFFALOGRASS SOD		GRAVEL MULCH
--	------------------	--	--------------



APPROVED
 RMG

M-B Landscape Architect
 544 military drive - canyon lake, texas 78133
 (512) 448-0137
 mb@mla.com



THE SQUARE AT CRYSTAL FALLS
1900 S. BAGDAD ROAD
LEANDER, TEXAS 78641

ALTERNATIVE LANDSCAPE PLAN

SHEET
35
 OF 39

PLANT LIST

QUANTITY	DESCRIPTION
1,183 sq. yds.	BUFFALOGRASS - <i>Bouteloua dactyloides</i>
13	ARIZONA CYPRESS - <i>Cupressus arizonae</i>
18	PURPLE TRAILING LANTANA - <i>Lantana montevidensis</i>
19	RED YUCCA - <i>Hesperaloe parviflora</i>
28	BAMBOO MUHLY - <i>Muhlenbergia dumosa</i>
43	WAX MYRTLE - <i>Myrica carifera</i>
70	TEXAS SAGE - <i>Leucophyllum frutescens</i> "Green Cloud"
2	TEXAS REDBUD - <i>Cercis canadensis</i> var. <i>texensis</i>
15	TEXAS ASH - <i>Fraxinus texensis</i>
10	MONTERREY OAK - <i>Quercus polymorpha</i>
7	LIVE OAK - <i>Quercus virginiana</i>
17	CEDAR ELM - <i>Ulmus crassifolia</i>

TREE PRESERVATION PLAN

TREE CALIPER INCHES

TREE SIZE (in caliper inches)	TOTAL INCHES	SAVED INCHES	SAVED INCHES %	REMOVED INCHES	REMOVED INCHES %
8" to 18"	284	66	23%	218	77%
>18" to 26"	377	164	44%	213	56%
SUBTOTAL 8" to 26"	661	230	35%	431	65%
>26"	193	101	48%	92	52%
TOTALS	854	331	39%	523	61%

TOTAL TREES

TREE SIZE (in caliper inches)	TOTAL TREES	SAVED TREES	SAVED TREES %	REMOVED TREES	REMOVED TREES %
8" to 18"	21	5	24%	16	76%
>18" to 26"	16	7	44%	9	56%
SUBTOTAL 8" to 26"	37	12	32%	25	68%
>26" HERITAGE	6	3	40%	3	60%
TOTALS	43	15	35%	28	65%

MITIGATION PLAN: 8" - 18"

TREE SIZE (in caliper inches)	>50% REMOVAL	1:1 REPLACEMENT	2:1 REPLACEMENT	3:1 REPLACEMENT	FEES
8" to 18"	76	76	-	-	-

MITIGATION PLAN: Protected & Heritage Trees

TREE SIZE (in caliper inches)	Removed (total inches)	1:1 REPLACEMENT	2:1 REPLACEMENT	3:1 REPLACEMENT	FEES
>18" to 26"	213	-	426	-	\$7600**
>26" HERITAGE	60	-	-	180	\$45,000*

* (60" X \$300/IN) + (180" X \$150/IN)
 ** 426" - 42" on site replacement = 384" x \$150/IN

LANDSCAPE WORKSHEET

Overall Required Landscape Area				Provided Landscape Area			
%	SQFT	Total	%	Total Area	SQFT	Total	%
Multi-Family	20%	X	= 0	Total Area	142,418		
Office/Professional	15%	X	= 0	Total Provided	42,689	29.97	
Commercial	15%	X	142,218 = 21333				
Industrial/Manufacturing	10%	X	= 0				
School/Church/Community	15%	X	= 0				
Park	15%	X	= 0				

*The minimum percentage of landscape area may include setback areas. However, the setback areas are required to be landscaped even if they exceed the above percentage.

Setback Areas

SQFT	REQUIRED	PROVIDED	DIFFERENCE	
			Inches	Shrubs
North 2,215 + 600 = 3,6917 Units	8 16 16	8 16 16	0	0
East 2,298 + 600 = 3,833 Units	8 16 16	8 16 16	0	0
South 3,581 + 600 = 5,977 Units	12 24 24	12 24 31	0	7
West 1,100 + 600 = 1,8333 Units	4 8 8	*0 *0 0	0	0

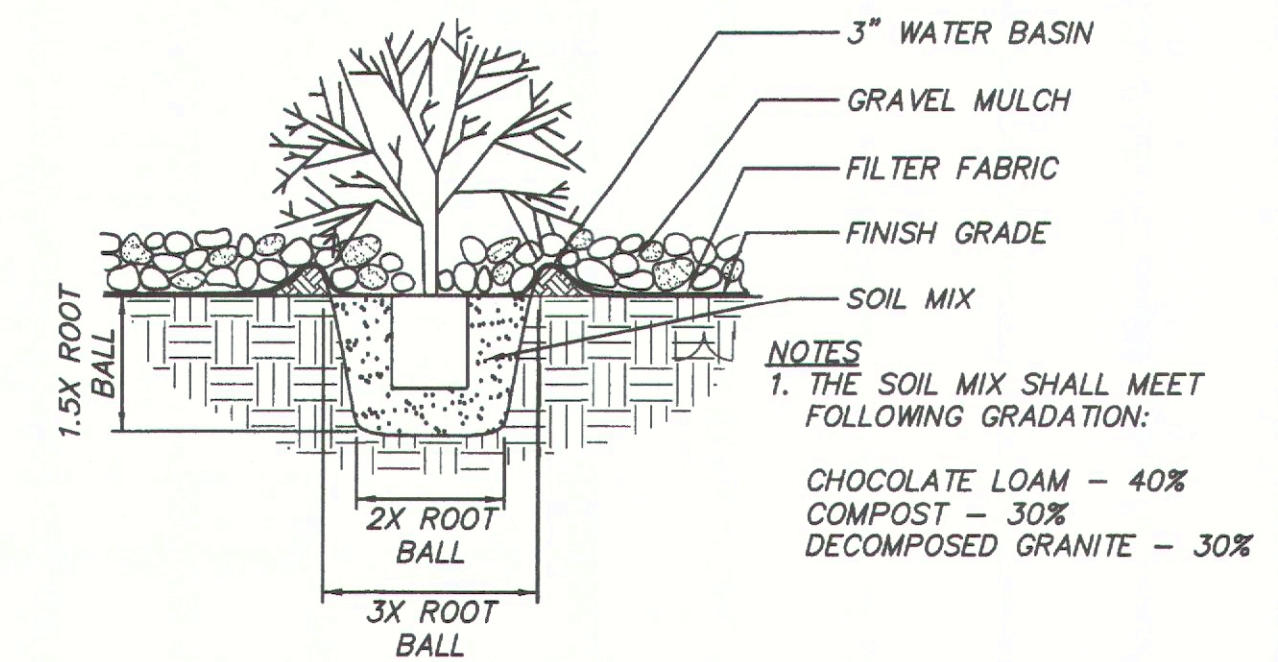
* Setback landscape area covered by existing joint use driveway pavement

LANDSCAPE PLAN NOTES

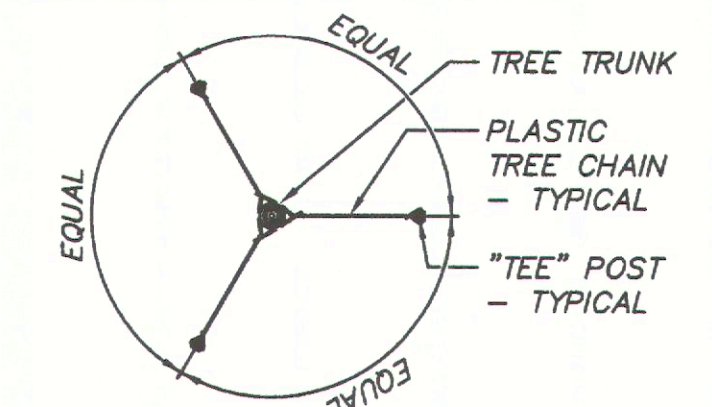
- Contractor to verify all site dimensions and layout prior to the commencement of landscape construction. Any discrepancies between the drawings and the actual site conditions shall be brought to the attention of the Owner's Representative immediately.
- Contractor is responsible for verification of the location all underground utilities. Repair to said utilities as a result of the work of the Contractor shall be the responsibility of the Contractor. **NOTE:** All existing and proposed utilities may not be shown on this plan.
- Utilities may exist on site that were unknown during the development of this drawing. Contractor to notify the Owner's Representative immediately if the location of any proposed plant material conflicts with any site utility lines including but not limited to manholes, pull boxes, valve boxes, meters, transformers, etc. Do not plant a tree within 20 feet of the above-mentioned structures unless otherwise directed by the drawings. Failure to notify the Owner's Representative of such conflicts will result in the Contractor being responsible in replacing the affected plant material at the Owner's discretion.
- Contractor is responsible for verification of all plant quantities based on the drawings and actual field conditions. Plant quantities have been provided for estimating purposes only. Contractor shall provide unit prices to the owner in case of any shortages/overages or revisions to the planting design.
- Contractor shall supply nursery-grown trees (except for ball & burlap as approved by the Landscape Architect), shrubs, and ground covers of species, type and size as specified in the Plant List.
- All plants shall be legibly labelled true to specified size and variety in accordance with Standardized Plant Names, American Joint Committee on Horticulture. Sizes must be in accordance with the American Association of Nurseryman Standards.
- Irrigation system installation to be complete (with the exception of tree bubblers if applicable) prior to the installation of any plant material.
- Contractor to remove all clods, rocks, concrete, trash and any other debris prior to installation of soil mix or plant material.
- Contractor is responsible for removal of trash and repair of hazardous conditions (tools, open holes, etc.) on a daily basis by the end of the work day.
- All planting beds shall be separated from turf areas by using 1/8" x 4" x 16' Colmet steel edging. Trim steel edging at a 45° angle at pavement or curb intersections.
- Upon completion of construction and prior to final approval, Contractor shall thoroughly clean the site of all trash, spilled soil, and litter, etc. that has resulted from landscape construction operations. Repair all damage including tailings from excavations, wheel ruts, etc. caused from construction.
- Remove all tags, ribbons and wires from all newly installed plant material upon Owner's authorization.
- Contractor to replace all materials which are dead, unhealthy, or unsightly (as determined by the Owner) with the cost of replacement to be at the Contractor's expense. Replacement material to be in accordance with the drawings and shall be warranted per the guarantee requirements stated herein.
- All plant material to be guaranteed to remain alive and in healthy vigorous condition for a period of one year after acceptance by the Owner.
- Warranty shall not include damage or loss of plants due to acts of God, acts of vandalism or negligence on the part of the Owner.

TURF APPLICATION NOTES

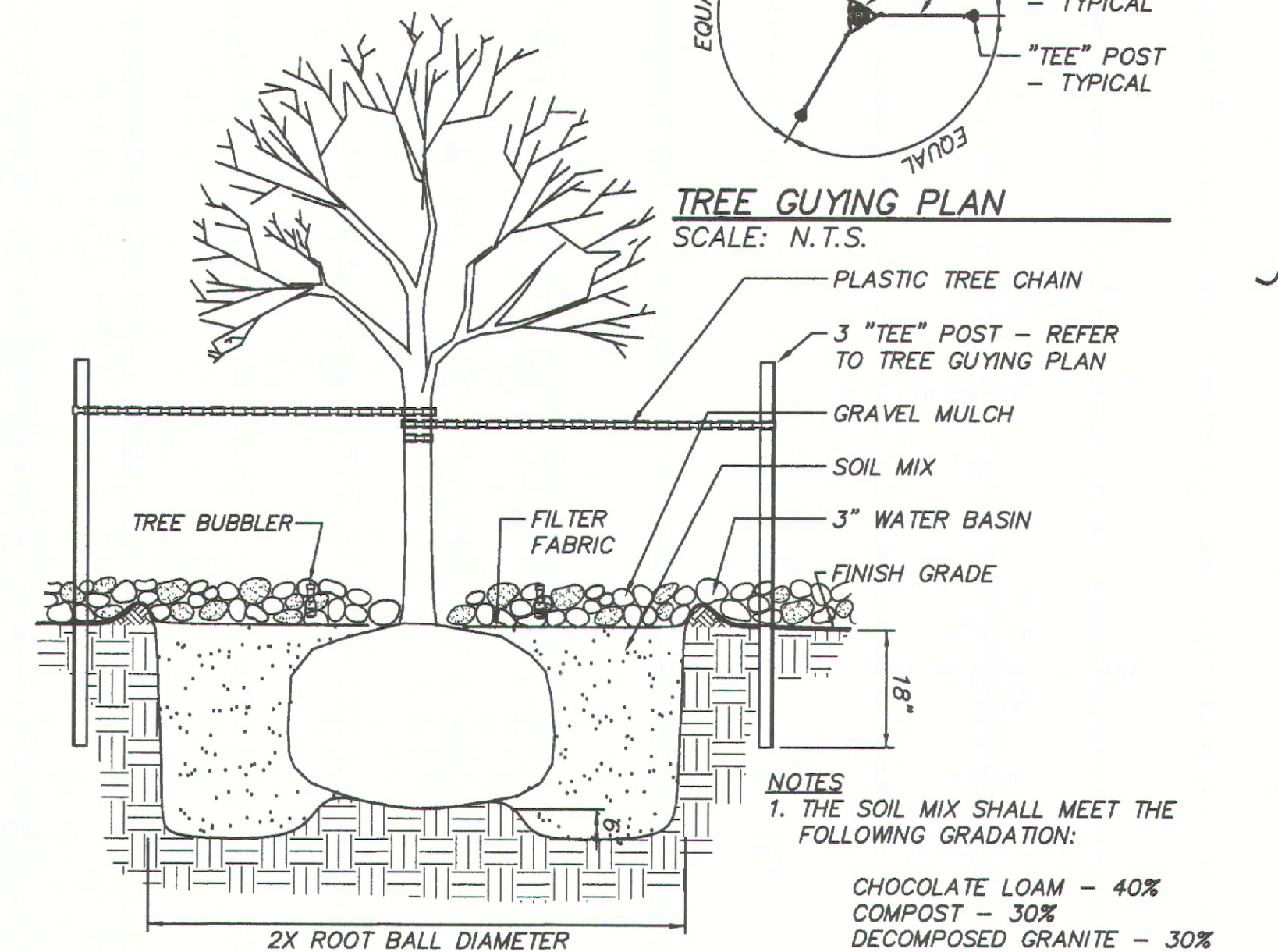
- A. Coordination:**
- Install sod after tree, shrub and groundcover installation is complete.
 - Contractor to coordinate with Irrigation Contractor to insure functional irrigation system prior to any lawn installation.
- B. Preparation:**
- Pre-Plant Weed Control:**
 - If weeds exist within proposed landscape areas at the beginning of work, spray with a nonselective systematic contact herbicide, as recommended and applied by an approved licensed applicator.
 - Clear and remove these existing weeds upon herbicide's completed action by grubbing off all plant parts at least 1/2"-1" below the surface of the soil.
 - Contractor to remove all sticks, trash, rocks and other debris and dispose off site.
 - Contractor to import and spread chocolate loam to a compacted depth of four (4) inches unless noted otherwise on plan in all lawn areas. Note: use of sandy loam is un-acceptable.
 - Contractor to rake entire area, leveling any imperfections in the grades left by the site work contractor. Landscape contractor to ensure that there will be positive drainage and no ponding on site. Finished grade of lawn areas to be 1/2" below top of curbs, sidewalks and other pavements. Remove any large (greater than 2") dirt clods, rocks, and trash and prepare a smooth, level, loose and coarse surface. Landscape Architect to approve fine grading prior to any lawn installation. Lawn bed shall be moist (but not muddy) to receive seed and sod.
- C. Sod Installation:**
- Lay sod within 24 hours from time of harvesting.
 - Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work sifted soil into minor cracks between pieces of sod; remove excess sod to avoid smothering adjacent grass.
 - Sod pads shall be of fullest size possible-no sod slivers or scraps will be permitted.
 - Finished grade of new sod shall be flush with adjacent lawn and pavement. Ensure positive drainage.
 - Roll entire sodded area with sod roller. Water sod thoroughly.



SHRUB PLANTING DETAIL
SCALE: N.T.S.



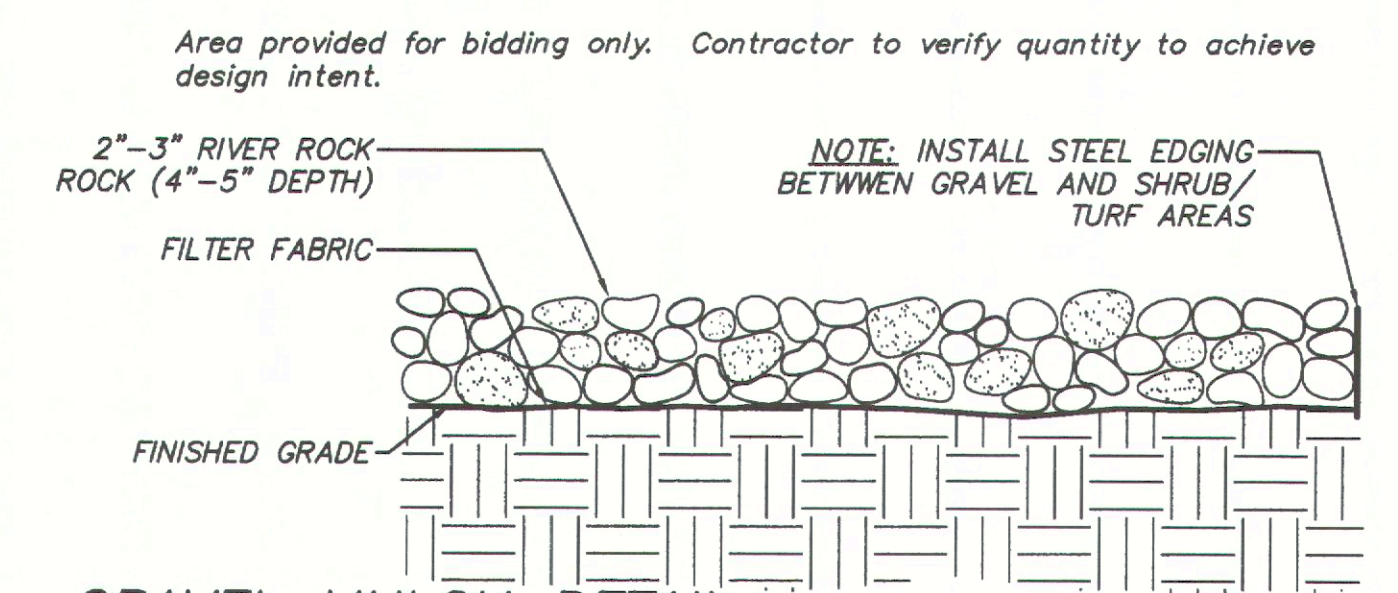
TREE GUYING PLAN
SCALE: N.T.S.



TREE PLANTING DETAIL
SCALE: N.T.S.

MATERIAL LIST

ITEM	SPECIFICATION
GRAVEL	LLANO RIVER ROCK - (SUBMIT SAMPLE PRIOR TO PLACEMENT)
MULCH	2" - 3" AGGREGATE SIZE
(39,630 sq. ft.)	4"-5" DEPTH LAID OVER FILTER FABRIC
	WASH PRIOR TO PLACEMENT



GRAVEL MULCH DETAIL
SCALE: N.T.S.

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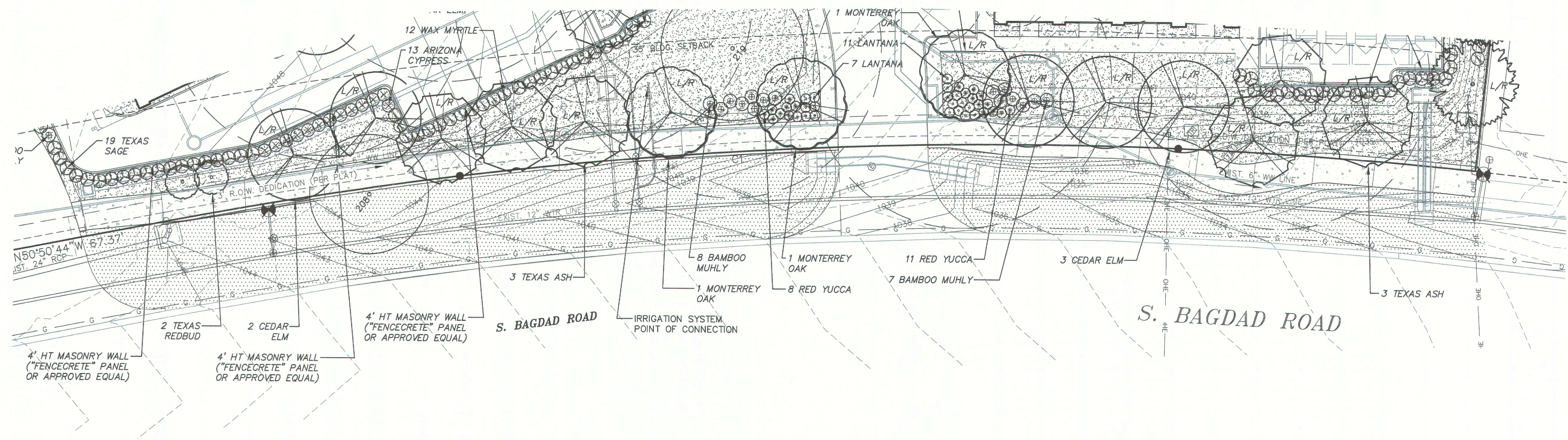
MHB Landscape Architect
5444 military drive - canyon lake, texas 78133
ph. (512) 448-0137
mhbls@gvcc.com



THE SQUARE AT CRYSTAL FALLS
1900 S. BAGDAD ROAD
LEANDER, TEXAS 78641

LANDSCAPE DETAILS

SHEET
36
OF 39



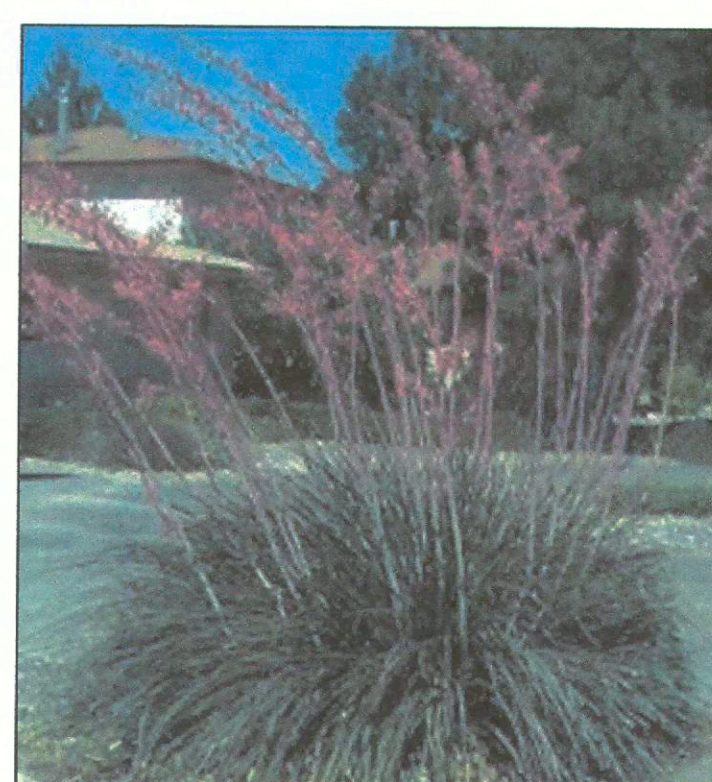
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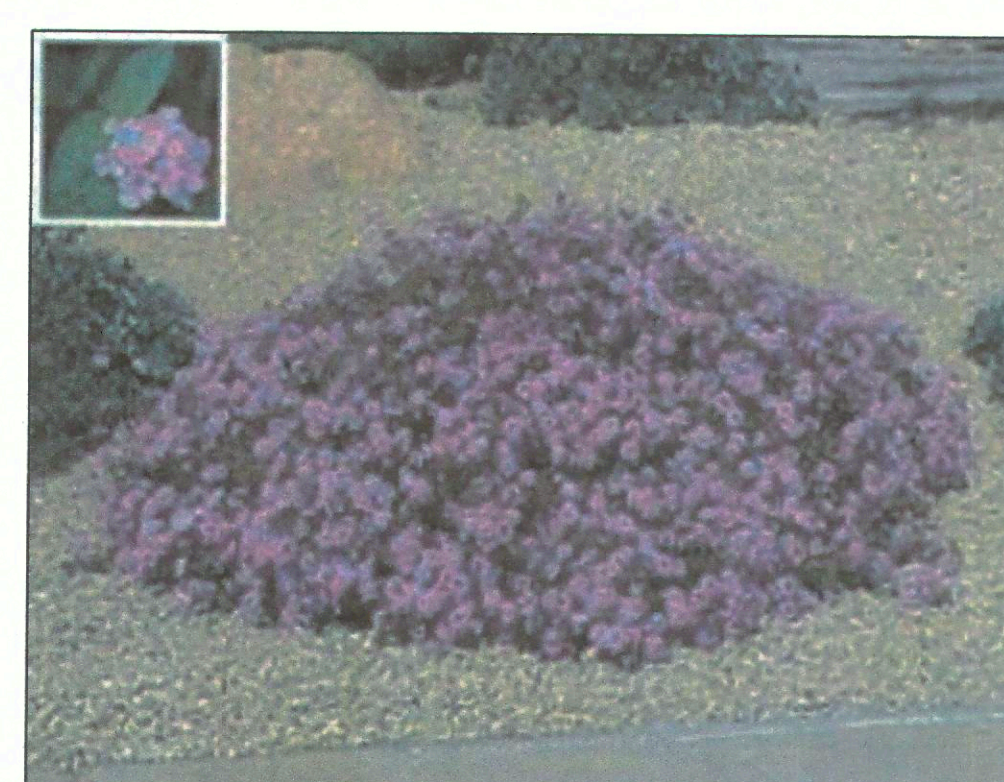
TEXAS SAGE



BAMBOO MUHLY



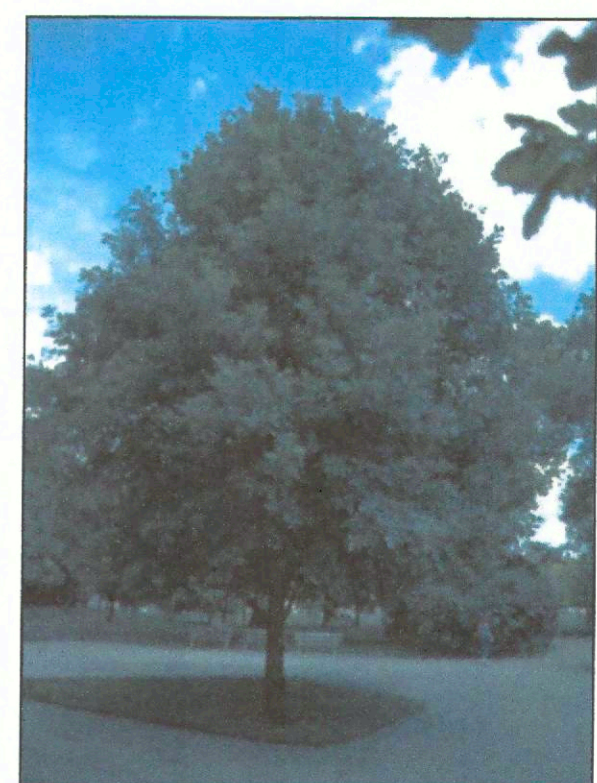
RED YUCCA



LANTANA



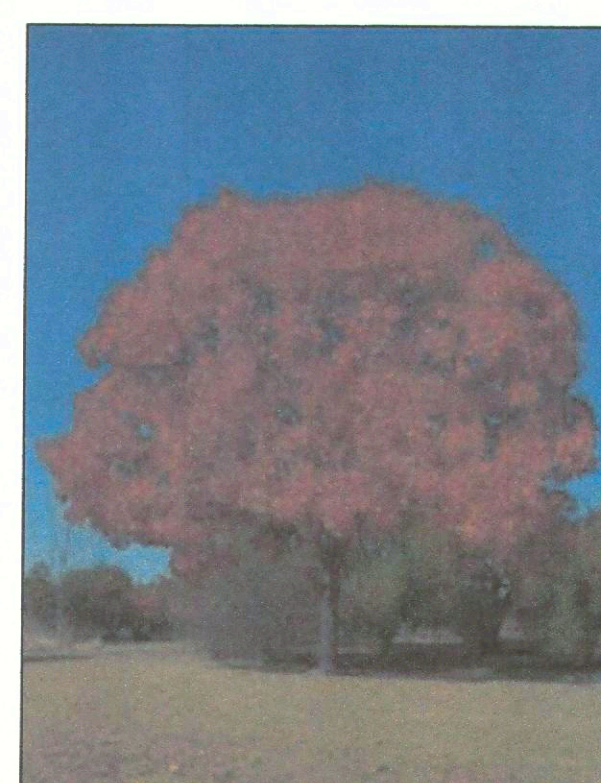
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TURF



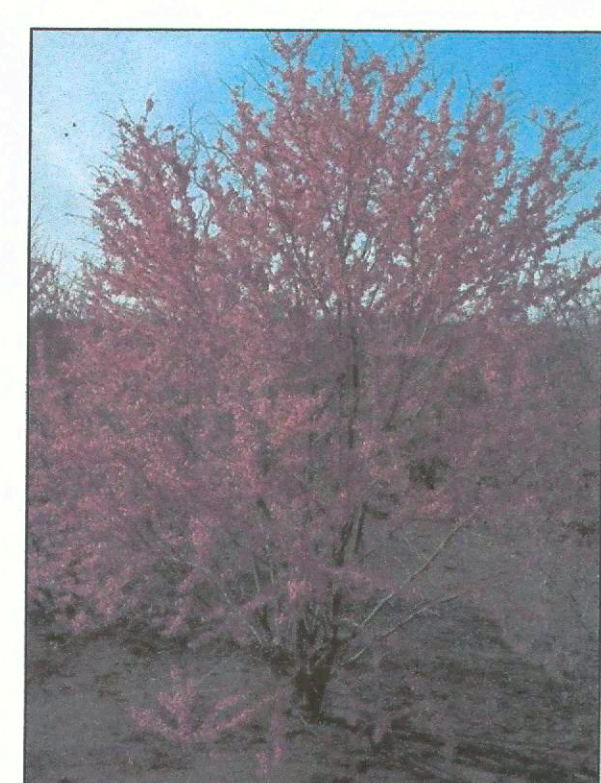
MONTERREY OAK
TREES



CEDAR ELM



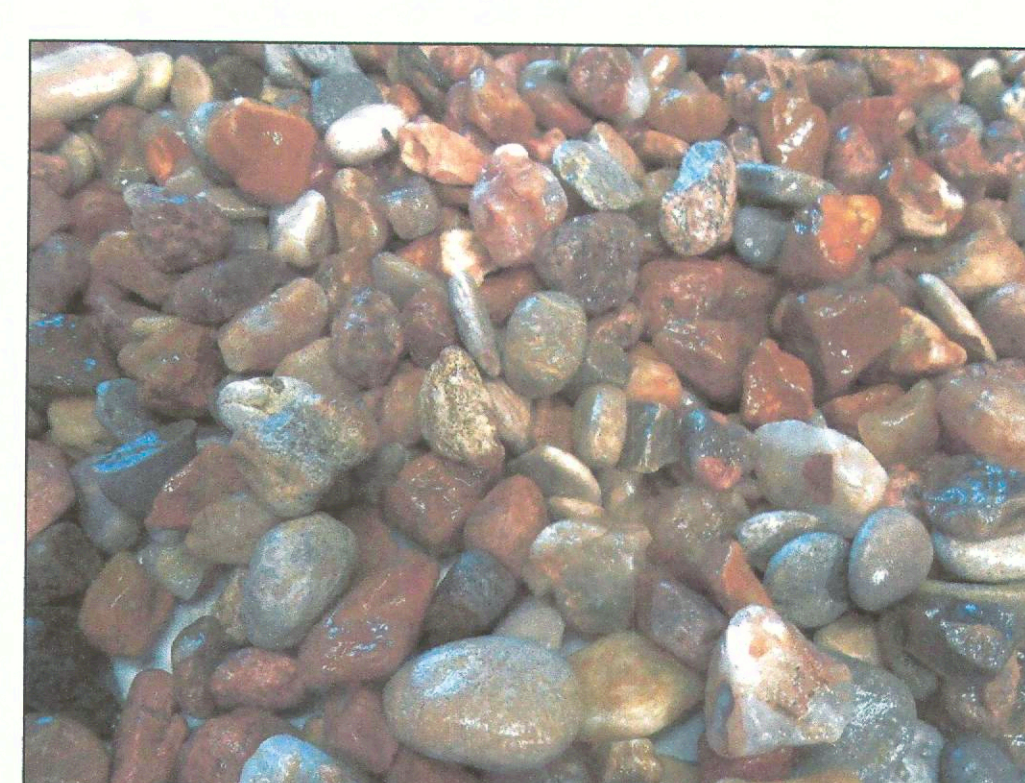
TEXAS ASH



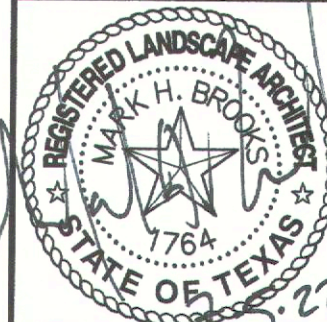
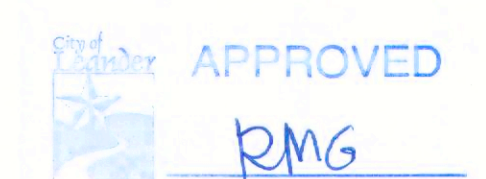
TEXAS REDBUD

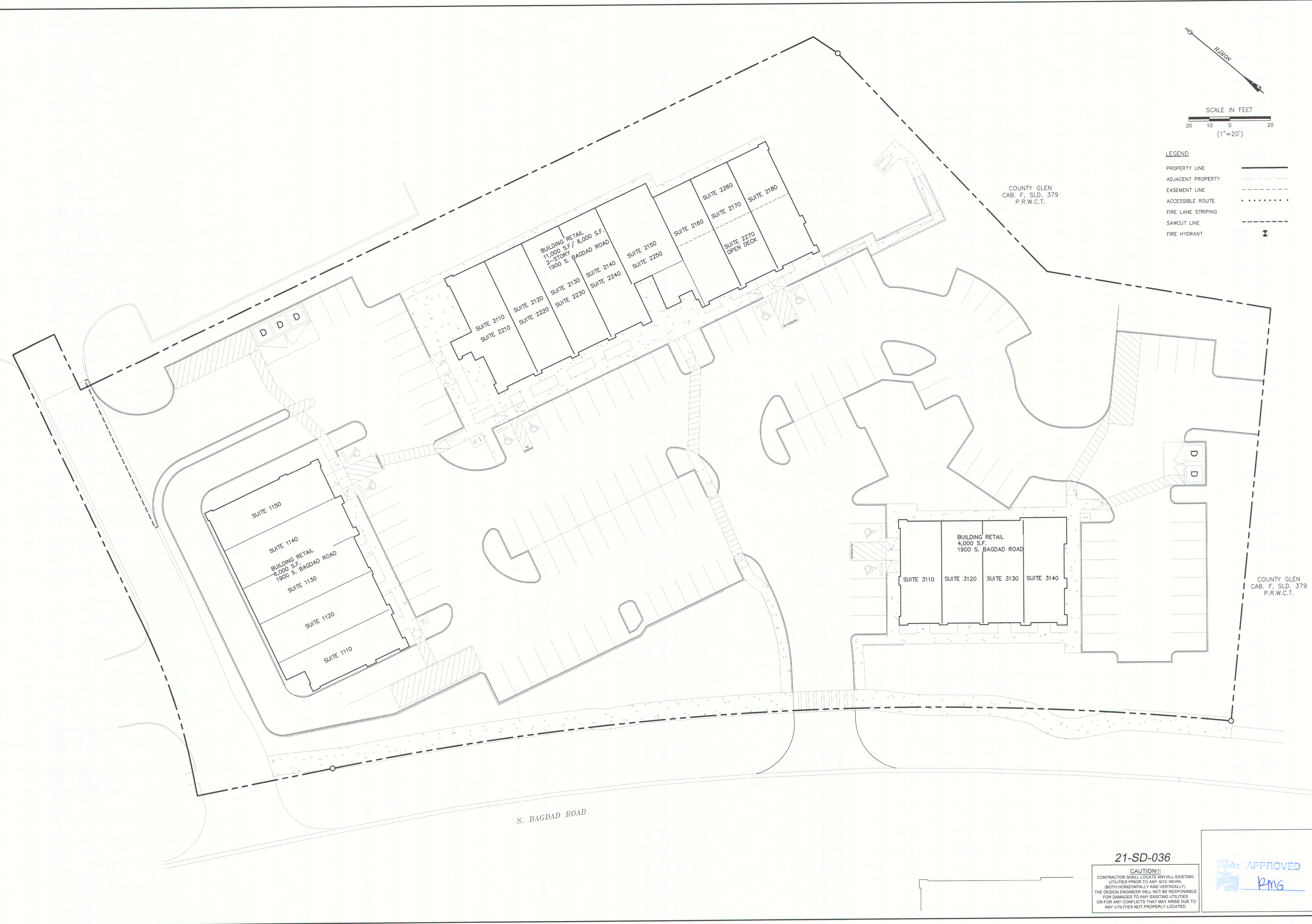


EXISTING LIVE OAK



LLANO RIVER ROCK
GRAVEL MULCH





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JCE

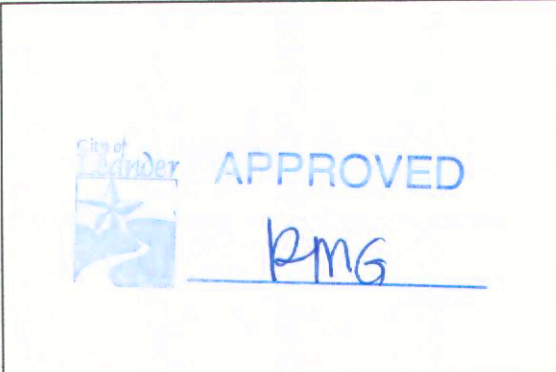
THE SQUARE AT CRYSTAL FALLS
 ADDRESS PLAN
 PROJECT NUMBER #21-SD-036

The seal appearing on this document was authorized by Stephen Ray Jamison on 7/29/2022.

File: H:\1900 BAGDAD\DWG\PLANS\ADDRESS PLAN.DWG	Snapshot: ADDRESS
Job No.	Scale (Hor.): 1"=30'
Date: 08/09/21	Scale (Vert.):
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Revision 1:	Revision 2:
Revision 3:	Revision 4:

21-SD-036

CAUTION!!!
 CONTRACTOR SHALL LOCATE ANY ALL EXISTING UTILITIES PRIOR TO ANY SITE WORK. (BOTH HORIZONTALLY AND VERTICALLY). THE DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR DAMAGES TO ANY EXISTING UTILITIES OR FOR ANY CONFLICTS THAT MAY ARISE DUE TO ANY UTILITIES NOT PROPERLY LOCATED.





- GEOTECHNICAL ENGINEERING
- ENVIRONMENTAL CONSULTING
- CONSTRUCTION MATERIALS ENGINEERING
- CONSTRUCTION MATERIALS TESTING

Subsurface Exploration and Geotechnical Evaluation Square at Crystal Falls Leander, Texas

Prepared for:

Bandali Builders & Estate Development
Mr. Aman Bandali

Prepared by:

Alliance Engineering Group
200 Mustang Cove
Taylor, Texas 76574
(512)281-4688

Alliance Engineering Group Project # AE21-0702

August 31, 2021

200 Mustang Cove - Taylor, Texas 76574
Tel: 512-281-4688 - Fax: 512-281-4191

GROUNDWATER

Groundwater was not encountered in any of our exploratory borings at the time of drilling. Groundwater can be temporary instead of perennial, so water levels at later dates could be different from those observed during the subsurface exploration. **Although groundwater was not encountered during the drilling and sampling operation, our experience requires us to emphasize that groundwater can still appear later (e.g., during construction)**, so the owner, the General Contractor, and the site Civil Engineer should not be surprised if groundwater appears in a localized area and requires the installation of a collection and removal system. Groundwater may develop after periods of rain and can develop after construction in response to landscaping irrigation. Groundwater levels may fluctuate seasonally in the project area due to variations in precipitation, runoff, evaporation, groundwater pumping, and other factors that affect groundwater recharge.

POTENTIAL MOVEMENT OF THE CLAY SOILS

The lean clay soils will experience minor changes in condition due to changes in environmental conditions (rainfall quantities and frequency, temperature, evaporation, tree roots, etc.) or man-made conditions (leaking water lines, landscape irrigation, or poor drainage) that affect the moisture content of the clay soils. The clay soil may harden, shrink, and crack when subjected to drying, swell when subjected to wetting, and soften when subjected to saturation.

The TxDOT Potential Vertical Rise (PVR) (Tex-124-E) considering existing conditions and existing overburden pressure only was calculated to be about less than 1 inch. The soils were modeled to be in an initially "dry" to "average" moisture condition and the lower clay was modeled to be in an initially "average" to "wet" moisture condition as defined by the method at the time of construction and the thickness of the active zone was assumed to be 1½ feet. Note that the TxDOT PVR method assumes limited wetting occurs and should only be used as an index tool. The TxDOT PVR value should not be considered an accurate estimate of maximum potential vertical heave.

The amount of total and differential heave or shrinkage is impossible to accurately predict because it will depend on the extent of impervious cover, seasonal changes in climate conditions, drainage conditions, presence of leaking water pipes, groundwater conditions, landscape watering, vegetation planting, and varying physical characteristics and mineralogy of the clay soils. The PVR is not a static value because it depends on how you model the soil behavior and the boundary conditions such as what changes in moisture content to consider.

BUILDING FOUNDATION RECOMMENDATIONS

Footing Foundations

Based on the subsurface conditions encountered and our experience with similar construction, the building may be supported on a ground-supported footing foundations within the weathered limestone. A net allowable bearing pressure of 8,000 psf can be used to design the footings extending at least 12 inches into the weathered limestone and extending at least 18 inches below final adjacent exterior grades.

5

Shallow footing foundations may resist lateral and overturning forces through a combination of sliding friction and dead weight of the structure and any overlying soil. Resistance to sliding along the footing may be calculated using the friction between the footing base and the subgrade soil. The coefficient of friction for the weathered limestone may be estimated as 0.40. The resultant force due to friction may be calculated by using the weight of the footing, plus the weight of the soil that lies above the footing (using a unit weight of 120 pcf).

Tilt wall panels are typically point loaded on rectangular footings and should not be placed on strip footing. Other types of wall loads may be placed on strip footings with a recommended minimum width of 10 inches. The depth, width and reinforcing steel requirements of the grade footings will be determined by the project Structural Engineer.

The footing foundations should be designed in accordance with the following information:

1. Footing dimensions and reinforcing steel should be observed and documented as-built. Concrete material should be sampled and tested for compressive strength, and placement operations should be monitored to record concrete slump, temperature, and age at time of placement. Concrete batch tickets should be provided by the supplier so that water-cement ratios and cement content can be checked and documented.
2. Prior to concrete placement, a representative of Alliance Engineering Group, Inc. should observe and test the footing subgrade to determine if the foundations are being placed on suitable materials and to document that loose material has been removed. Dynamic Cone Penetrometer (DCP) tests can be performed to help evaluate subgrade condition.

Ground Supported Floor Slabs

The building floor slabs may be ground-supported upon a one (1) foot flexible base over native soil and/or compacted fill soil subgrade. Flat floor slabs may be used. The floor slab subgrade should be cut or filled to one (1) foot below finished grade, to allow for the flexible base layer. The flexible base should consist of crushed limestone and generally conform to TxDOT Item 247 Type A, Grade 1. The compaction and moisture requirements for both subgrade and flexible base materials are presented in Table 5.

All grading fill below the flexible base shall consist of on-site lean clay or select fill. These soils shall be proof-rolled and observed by a representative of Alliance Engineering Group. The proof roll shall be performed with equipment capable of providing a minimum of a 20-ton wheel load, typically, a fully loaded 12-yard tandem axle dump truck. Any soft or pumping/rutting areas should be scarified and recompacted/tested.

A net allowable bearing pressure of 3,000 psf can be used to design the slabs, on the modified soil subgrade. A subgrade modulus of 250 pcf may be used for design.

The ground-supported floor slabs should be designed in accordance with the following information:

1. Floor coverings (carpet, tile, wood, laminate, vinyl) can be damaged or subject to mold growth by moisture penetrating the slab, therefore a moisture and vapor barrier such as a geosynthetic

6

If any problems are encountered during the earthwork operations, or if site conditions differ from those encountered during our subsurface exploration, the Geotechnical Engineer should be notified immediately to determine the effect on recommendations expressed in this report. Fill compaction parameters are provided in Table 5.

Table 5:

Fill Compaction Parameters

Material/Use	Proctor Standard	Percent Compaction	Moisture Content	
Building	Select Fill	Standard (ASTM D698)	95+	-2 to +2
	Moisture-Conditioned Subgrade/Clay Cap	Standard (ASTM D698)	92 - 98	+2 to +6
Paving	Flexible Base	Modified (ASTM D1557)	95+	-2 to +2
		TEX 113	100+	
Non-Structural	Moisture-Conditioned Subgrade	Standard (ASTM D698)	92 - 98	+2 to +6
	General/Utility Fill	Standard (ASTM D698)	95+	Optimum +
Non-Structural	Backfill	Standard Proctor (ASTM D698)	90	-2 to +2

9

The flexible base should consist of crushed limestone and generally conform to TxDOT Item 247 Type A, Grade 1. The compaction and moisture requirements for both subgrade and flexible base materials are presented in Table 5

Concrete should have a minimum flexural strength of 600 psi at 28 days that corresponds to roughly 3,600-psi compressive strength. Concrete should be steel reinforced and include joints to control the formation of temperature and shrinkage related cracks. Concrete should include air entrainment to increase the resistance to temperature effects.

As a general guide, the air entrainment should vary from 3 to 6 percent. We recommend reinforcing concrete paving with grade 60, #4 deformed bars spaced at 18 inches on center each way. We recommend a maximum joint spacing of 20' x 20'. Sawcut joints should be cut to a depth of ¼ the thickness of the paving. Saw cutting should be conducted within 4 to 12 hours of initial set.

SITE PREPARATION AND EARTHWORK

All of the topsoil (soil with high organic content, e.g., >4%), tree roots, vegetation, wet soils, and any soft or loose soils must be removed from the proposed buildings and pavement areas. The stripped materials may either be wasted or stockpiled for later use in landscaping.

Prior to the addition of fill in building or paving areas, the stripped or excavated subgrade shall be proof-rolled and observed by a representative of Alliance Engineering Group. The proof roll shall be performed with equipment capable of providing a minimum of a 20-ton wheel load, typically, a fully loaded 12-yard tandem axle dump truck.

Alliance Engineering Group, Inc. recommends that select fill and backfill be placed in horizontal loose lifts of not more than 8 inches in thickness. Re-use of existing material may require some wetting or drying to produce the necessary moisture content at the time of compaction.

Appropriate laboratory tests such as Proctor moisture-density tests should be performed on samples of fill material. Field moisture-density tests and visual observation of lift thickness and material types should be performed during compaction operations to verify that the construction satisfies material and compaction requirements. Appropriate compaction testing methods and recommended density and moisture contents for material are presented below.

Fill materials should not be placed on soils that have been recently subjected to precipitation or saturation. All wet soils should be removed or allowed to dry prior to continuation of fill placement operations. Imported fill materials should not contain wet materials at the time of placement.

Select fill that is imported to the site should be classified according to the Unified Soil Classification System (USCS) as SM, SC, GM, or GC, and should meet the following criteria:

- Percent passing the No. 4 sieve: 50% to 80% (20% to 50% gravel)
- Percent passing the No. 200 sieve: 20% to 50%
- PI of soil passing the No. 40 sieve: 4 to 20
- Maximum size of gravel or rock fragments: 3 inches in any dimension

8

geomembrane should be placed on top of the base layer or granular forming fill to limit the migration of moisture to and through the slab, and to serve as a separator between the fill and fresh concrete.

2. Slab dimensions and reinforcing steel should be observed and documented as-built. Concrete material should be sampled and tested for compressive strength, and placement operations should be monitored to record concrete slump, temperature, and age at time of placement. Concrete batch tickets should be provided by the supplier so that water-cement ratios and cement content can be checked and documented.

PAVEMENT SYSTEM

The untreated subgrade clay soils at the site are generally considered "average" subgrade materials for support of pavements. Based on the soil types encountered in the borings and previous experience with materials of this type, a modulus of subgrade reaction value of 100 pci shall be used in design of rigid pavements. Recommended pavement sections are provided in Table 4.

Table 4:

Recommended Pavement Sections

Traffic Conditions	Pavement Section (from top to the subgrade)
Passenger Parking Lots	<ul style="list-style-type: none"> • 5" Portland Cement Concrete* • 6" Flexible Base
	<ul style="list-style-type: none"> • 1½" Hot-Mix Asphalt Concrete (1½" TxDOT Item 340 Type D) • 8" Flexible Base
Main Drive or Delivery Truck Drive Lane	<ul style="list-style-type: none"> • 2" Hot-Mix Asphalt Concrete (1½" TxDOT Item 340 Type D) • 10" Flexible Base
	<ul style="list-style-type: none"> • 5.5" Portland Cement Concrete* • 6" Flexible Base
Dumpster Pad Area	<ul style="list-style-type: none"> • 6" Portland Cement Concrete* • 6" Flexible Base

* The flexible base may be removed by adding an additional inch of concrete thickness.

7

*SHEETS 1, 5 TO 9 FROM THE GEOTECHNICAL REPORT PREPARED, SIGNED AND SEALED BY ALLIANCE ENGINEERING GROUP, INC., PER GEOTECHNICAL REPORT DATED AUGUST 31, 2021.

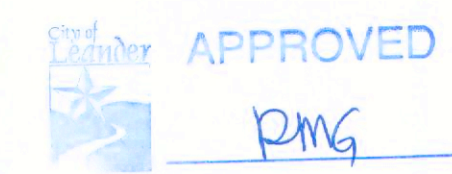
***PAVEMENT DESIGN:**

PAVEMENT DESIGN SHOWN HEREON IS THE DESIGN OF THE OWNER'S GEOTECHNICAL CONSULTANT - ALLIANCE ENGINEERING GROUP, INC., PER GEOTECHNICAL REPORT DATED AUGUST 31, 2021.

JAMISON CIVIL ENGINEERING LLC MAKES NO WARRANTY OR GUARANTEE AS TO ITS SUITABILITY, AND ASSUMES NO LIABILITY THEREFOR.

21-SD-036

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THE SQUARE AT CRYSTAL FALLS
GEOTECHNICAL REPORT

PROJECT NUMBER #21-SD-036

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Revision 2: _____
Revision 3: _____
Revision 4: _____

SHEET
39 of 39