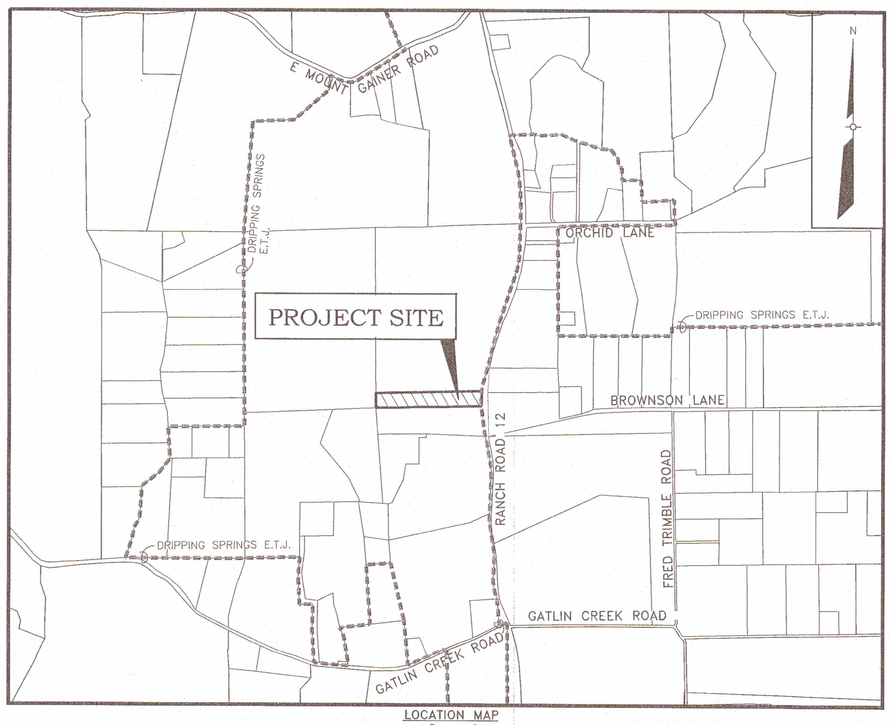
ARMADILLO SOUTH 12

CITY OF DRIPPING SPRINGS
HAYS COUNTY, TEXAS



LOCATION MAP
1"= 1000'

PROJECT DATA:

SUBDIVISION PLAT NUMBER: _____

SUBMITTAL DATE: _____

PROJECT ADDRESS: 22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS

ZONING: NA–CITY OF DRIPPING SPRINGS ETJ

USE: WAREHOUSE/ FOOD TRAILERS

SHEET INDEX:

LEGAL DESCRIPTION:

BEING A 7.16 ACRE TRACT OR PARCEL OUT OF THE J.N. HALFORD SURVEY, HAYS COUNTY, TEXAS; CONVEYED TO MEMORY LANE EVENT CENTER, LLC, AS RECORDED IN DOCUMENT NO. 2014-14000091, OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS.

BENCHMARKS:

BM1: HAYS COUNTY BENCHMARK "H043"

NORTHING: 13958305.727179

EASTING: 2256356.279587

ELEVATION = 1,150.67'

PREPARED BY:

STATE OF TEXAS
HUGO ELIZONDO, JR.
69781
LICENSED
PROFESSIONAL ENGINEER

5/11/18
DATE:

HUGO ELIZONDO, JR., P.E.
CUATRO CONSULTANTS, LTD.
3601 KYLE CROSSING, SUITE A
KYLE, TEXAS 78640
(512) 312-5040
(512) 312-4399 FAX

REVIEWED BY:

3-23-21
MIKE MORGAN, OWNER
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPINGS SPRINGS, TEXAS 78620
DATE:

CHAD GILPIN
3-23-21
CHAD GILPIN, P.E.
CITY ENGINEER
DATE:

Michelle Fischer
3/24/21
MICHELLE FISCHER
CITY ADMINISTRATOR
DATE:

3/24/21
CITY OF DRIPPING SPRINGS
FIRE MARSHAL
EMERGENCY SERVICE DISTRICT #6
DATE:

SD2017-0010
DEVELOPMENT PERMIT NUMBER

GENERAL NOTES:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF DRIPPING SPRINGS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. THIS PROJECT IS LOCATED IN THE ONION CREEK WATERSHED.
3. THE PROJECT IS LOCATED OVER THE EDWARDS AQUIFER CONTRIBUTING ZONE.
4. NO PORTION OF THIS TRACT IS WITHIN THE BOUNDARIES OF A 100 YEAR FLOODPLAIN AS INDICATED ON THE FEDERAL FLOOD INSURANCE ADMINISTRATION FIRM PANEL NO. 48209C 0115F DATED SEPTEMBER 2, 2005, HAYS COUNTY, TEXAS.
5. THE LOCATION OF ALL EXISTING UTILITIES IS APPROXIMATE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING LINE LOCATIONS. THE CONTRACTOR MUST VERIFY THE LOCATION, DEPTH, AND TYPE OF ANY AND ALL BURIED UTILITIES AFFECTED BY THIS WORK. ANY DISCREPANCIES BETWEEN ACTUAL AND PLAN LOCATION OF UTILITIES SHALL BE REPORTED AND RESOLVED WITH ENGINEER PRIOR TO INITIATING WORK.
6. LIGHTING OF ALL OFF-STREET PARKING, DRIVEWAYS AND LOADING AREAS IS REQUIRED TO BE NON-FLASHING AND DIRECTED AWAY FROM ALL ABUTTING LOTS AND PUBLIC STREETS SO AS TO TO ELIMINATE OBJECTIONABLE GLARE.
7. ALL SIGNAGE REQUIRES SEPARATE PERMIT. APPROVAL OF THIS SITE PLAN DOES NOT CONSTITUTE APPROVAL OF SIGN LOCATIONS.

NOTES TO CONTRACTOR:

1. BY THE ACT OF SUBMITTING A BID FOR THIS PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE, HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS, SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HER SUBCONTRACTORS' AND MATERIAL SUPPLIERS' KNOWLEDGE ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES.
2. THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAS BEEN BASED UPON RECORD INFORMATION ONLY AND MAY NOT MATCH LOCATIONS AND/OR DEPTHS AS CONSTRUCTED. THE CONTRACTOR SHALL CONTACT OWNER OF EACH INDIVIDUAL UTILITY FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS AND DEPTHS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL UTILITY CROSSINGS PRIOR TO BEGINNING ANY CONSTRUCTION.

UTILITIES:

WATER

TCEQ APPROVED PUBLIC WATER SYSTEM–
MEMORY LANE WATER DIVISION

WASTEWATER

HAYS COUNTY APPROVED
ONSITE SEPTIC SYSTEM

POWER

PEDERNALES ELECTRIC COMPANY
CONTACT: JUANITA RANGEL
PHONE: 1–(800) 868–4791 EXT. 7523
EMAIL: JUANITA.RANGEL@PECI.COM

REVISIONS:

REVISIONS/ CORRECTIONS

NO.	DESCRIPTION	REVISE (R) ADD (A) VOID (V) SHEET No.'s	TOTAL NO. SHEETS IN PLAN SET	NET CHANGE IMP. COVER (sq.ft.)	TOTAL SITE IMP. COVER (sq.ft.)/ %	APPROVAL/ DATE	DATE IMAGED

REVISION	DESCRIPTION	BY:	DATE:

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite A Phone: (512) 312-5040 Fax: (512) 312-4399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE:	SEPTEMBER, 2017
PROJECT:	JOB # 17–118
DRAWING'S NAME:	COVER
DESIGN:	CHECKED: HE.jr.
DRAWN:	APPROVED: HE.jr.
SHEET:	1 OF 15

Doc-14000091 Bk-OPR VI-4831 Pg-710

17-118 DEEDS

**** Electronically Filed Document ****

Hays County Texas
Liz Q. Gonzalez
County Clerk

Document Number: 2014-14000091
Recorded As : ELECTRONIC RECORDING

Recorded On: January 02, 2014
Recorded At: 10:11:27 am
Number of Pages: 5
Book-VI/Pg: Bk-OPR VI-4831 Pg-710
Recording Fee: $38.00

Parties:

Direct- BRADBURY MARY MARGARET
Indirect- MEMORY LANE EVENT CENTER LLC

Receipt Number: 356738
Processed By: Olga Martinez

************ THIS PAGE IS PART OF THE INSTRUMENT ************

Any provision herein which restricts the Sale, Rental or use of the described REAL PROPERTY because of color or race is invalid and unenforceable under federal law.

COUNTY OF HAYS COUNTY TEXAS

I hereby certify that this Instrument was filed for record in my office on the date and time stamped hereon and was recorded on the volume and page of the named records of Hays County, Texas

Liz Q. Gonzalez, County Clerk

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NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFERS AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

WARRANTY DEED WITH VENDOR'S LIEN

DATE: December 31, 2013

GRANTOR (whether one or more): MARY MARGARET BRADBURY, a single person

GRANTOR'S MAILING ADDRESS:
165 Decker
Kyle, Texas 78640-5791

GRANTEE (whether one or more): MEMORY LANE EVENT CENTER LLC

GRANTEE'S MAILING ADDRESS:
123 Dolly Street
San Marcos, Texas 78666

CONSIDERATION:

TEN DOLLARS ($10.00) and a note of even date that is in the principal amount of ONE HUNDRED FORTY FOUR THOUSAND AND NO/100 DOLLARS ($144,000.00), and is executed by Grantee, payable to the order of PROSPERITY BANK. The note is secured by a vendor's lien retained in favor of PROSPERITY BANK in this deed and by a deed of trust of even date from Grantee to DAVID ZALMAN, Trustee.

PROPERTY (including any improvements):

Being 7.16 acres of land out of the J. N. Halford Survey, Hays County, Texas, and being more particularly described by metes and bounds in Exhibit "A" attached hereto and made a part hereof.

RESERVATIONS FROM AND EXCEPTIONS TO CONVEYANCE AND WARRANTY:

Easements and rights-of-way of record; ad valorem taxes for 2013; all presently recorded restrictions, reservations, covenants,

1

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conditions, and mineral severances, that affect the property.

Grantor, for the consideration and subject to the reservations from and exceptions to conveyance and warranty, grants, sells and conveys to Grantee the property, together with all and singular the rights and appurtenances thereto in any wise belonging, to have and hold it to Grantee, Grantee's heirs, executors, administrators, successors and assigns forever. Grantor hereby binds Grantor and Grantor's heirs, administrators, executors, successors and assigns to WARRANT AND FOREVER DEFEND all and singular the property to Grantee, Grantee's heirs, executors, administrators, successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the reservations from and exceptions to conveyance and warranty.

The vendor's lien against and superior title to the property are retained until each note described is fully paid according to its terms, at which time this deed shall become absolute.

When the context requires, singular nouns and pronouns include the plural.

PROSPERITY BANK, at Grantee's request, has paid in cash to Grantor that portion of the purchase price of the property that is evidenced by the note described. The vendor's lien and superior title to the property are retained for the benefit of PROSPERITY BANK, and are transferred to that party without recourse on Grantor.

MARY BRADBURY

STATE OF TEXAS)
)
COUNTY OF TRAVIS)

This instrument was acknowledged before me on this 31st day of December, 2013, by MARY BRADBURY.

SHERI WATTS
Notary Public, State of Texas
My Commission Expires
MAY 10, 2014

NOTARY PUBLIC, STATE OF TEXAS

2

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AFTER RECORDING, RETURN TO:
MEMORY LANE EVENT CENTER LLC
123 Dolly Street
San Marcos, Texas 78666

3

Doc-14000091 Bk-OPR VI-4831 Pg-714

FIELD NOTE DESCRIPTION
OF A SURVEY OF
7.16 ACRES OF LAND
OUT OF THE
J.N. HALFORD SURVEY
HAYS COUNTY, TEXAS

VOL. 310 PAGE 818

BEING A PORTION OF THAT 160 ACRE TRACT OF LAND CONVEYED TO H.W. ROBERTS BY B.W. ROBERTS BY DEED DATED NOVEMBER 17,1906 AND RECORDED IN VOLUME 52, PAGE 334, HAYS COUNTY DEED RECORDS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, TO-WIT:

BEGINNING at a corner fence post for the Southwest corner of the tract herein described, being the Southwest corner of the J.N. Halford Survey, and a re-entrant corner of the J.M. Mading Survey, same being the Southwest corner of the said Roberts 160 acre tract, the Northwest corner of that 309 acre tract of land conveyed to K.C. Whisenant by Minnie H. Black by deed dated March 26,1941, and recorded in Volume 120, Page 142, Hays County Deed Records, the Southeast corner of that 113.00 acre tract of land conveyed to B.J. Purcell by K.C. Whisenant by deed dated May 10,1966, and recorded in Volume 223, Page 632, Hays County Deed Records, and being the Northeast corner of that 57 1/7 acre tract of land conveyed to William S. Leonard by K.C. Whisenant, by deed dated June 17,1968, and recorded in Volume 224, Page 495, Hays County Deed Records, all as fenced and occupied upon the ground;

THENCE, leaving the said Whisenant 309 acre tract, and the said Leonard 57 1/7 acre tract, with an East line of the said J.M. Mading Survey, the West line of the said J.N. Halford Survey, same being the West line of the said Roberts 160 acre tract, and the East line of the said Purcell 113 acre tract, the following courses numbered (1) and (2):

(1) N 03° 05' W, 112.08 feet, to an angle point in fence;
(2) N 01° 07' E, 96.86 feet, to an iron stake set under fence for the Northwest corner of the tract herein described;

THENCE, leaving the East line of the said J.M. Mading Survey, same being the West line of the J.N. Halford Survey, the East line of the said Purcell 113.00 acre tract, and the West line of the said Roberts 160 acre tract, N 89° 23' W, 1493.85 feet, to an iron stake set on the arc of a curve to the left on the West line of Ranch Road #12, for the Northeast corner of the tract herein described;

THENCE, with the West line of said Ranch Road #12, 209.48 feet, along the arc of said curve to the left, having a radius of 756.20 feet, and a sub-chord which bears S 02° 25' W, 208.81 feet to an iron stake set for the Southeast corner of the tract herein described, same being the Northeast corner of that 3.62 acre tract of land conveyed to E.F. Oliver by K.C. Whisenant by deed dated September 26,1968, and recorded in Volume 226, Page 489, Hays County Deed Records, and being on the South line of the said J.N. Halford Survey, same being a North line of the J.M. Mading Survey, and the South line of the aforementioned Roberts 160 acre tract;

THENCE, leaving Ranch Road #12, with the South line of the J.N. Halford Survey, the said North line of the J.M. Mading Survey, same being the South line of the said Roberts 160 acre tract, and the North line of the said Oliver 3.62 acre tract, the following courses numbered (3) thru (7):

(3) N 89° 55' W, at 42.94 feet passing an 18 inch Cedar tree at an angle point in fence, and continuing on in all 271.09 feet to an iron stake set;
(4) N 89° 51' W, at about 256.6 feet, passing the Northwest corner of the said Oliver 3.62 acre tract, same being the Northeast corner of the 1.092 acre tract of land conveyed to E.F. Oliver by K.C. Whisenant by deed dated October 15,1968, and recorded in Volume 214, Page 191, Hays County Deed Records, and continuing on [illegible] the North line of the said Oliver 1.092 acre tract, in all [illegible] feet to an iron stake set;
(5) N 87° 45' W, at about 151.5 feet, passing the Northwest corner of the said Oliver 1.092 acre tract, same being on the line of the aforesaid Whisenant 309 acre tract and continuing on with the North line of the said Whisenant 309 acre tract, in all 285.35 feet, to an 18 inch Oak tree;
(6) S 89° 32' W, 295.53 feet to a 6 inch Oak tree;
(7) N 88° 55' W, 312.51 feet to the POINT OF BEGINNING, containing 7.16 acres

Exhibit "A"

ORIGINAL DIM

REVISION	DESCRIPTION	BY:	DATE:

4CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite A Phone: (512) 312-5040 Fax: (512) 312-5399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

PROPERTY DEED

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12, LLC
P O BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: MIS_DETAILS	
DESIGN: LG	CHECKED: HE.jr.
DRAWN:	APPROVED: HE.jr.
SHEET: **2 OF 15**	

CITY OF DRIPPING SPRINGS
GENERAL CONSTRUCTION NOTES:

1. THE SPECIFICATIONS ATTACHED TO THE CONSTRUCTION PLANS SHALL GOVERN MATERIALS AND METHODS USED TO PERFORM THIS WORK. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPANIED IN ACCORDANCE WITH APPLICABLE STATE, LOCAL AND FEDERAL STATUTES AND U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS (O.S.H.A.). COPIES OF O.S.H.A. STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE OBTAINED FROM O.S.H.A. @ 611 EAST 6 STREET, ROOM 303, AUSTIN, TEXAS.
2. CONTRACTOR TO TAKE PRECAUTIONARY MEASURES WHEN OPERATING EQUIPMENT IN THE VICINITY OF ELECTRICAL LINES. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK WITH THE APPROPRIATE ELECTRIC UTILITY/COMPANY.
3. AT LEAST 48 HOURS BEFORE BEGINNING ANY WATER AND WASTEWATER CONSTRUCTION IN THE PUBLIC RIGHT-OF-WAY OR PUBLIC EASEMENT, THE CONTRACTOR MUST NOTIFY: CUATRO CONSULTANTS, LTD. (512) 312-5040
4. THE CONTRACTOR SHALL CONTACT THE TESS @ 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS 48 HOURS PRIOR TO ANY EXCAVATION. KNOWN EXISTING UTILITIES ARE SHOWN ON THE DRAWINGS. PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES THAT ARE TO BE EXTENDED, TIED-TO, CROSSED, OR ALTERED; OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE DISTRICTS WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT RIGHT-OF-WAY/ EASEMENT LINES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL SPOILS MATERIAL FORM THE CONSTRUCTION SITE. ALL SPOILS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED SPOIL SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SECURING A PERMIT FOR THE SITE; AND SHALL NOTIFY THE INSPECTOR AT LEAST FORTY-EIGHT HOURS PRIOR TO DISPOSAL OF THE MATERIAL.
6. NO BLASTING WILL BE ALLOWED.
7. MANHOLE FRAMES AND COVERS, AND WATER VALVES SHALL BE RAISED TO FINISHED PAVEMENT GRADE AT THE CONTRACTORS EXPENSE.
8. TRENCH AND EXCAVATION SAFETY PLAN
CONTRACT DOCUMENTS WHICH INCLUDE A TRENCH SAFETY PLAN AND A PAY ITEM FOR TRENCH SAFETY MEASURES, IN COMPLIANCE WITH TEXAS HOUSE BILL 1569, MUST BE RECEIVED BY A REGISTERED ENGINEER BEFORE BEGINNING WORK ON THE PROJECT.
9. ALL MATERIALS TEST, INCLUDING SOIL DENSITY TESTS AND RELATED SOIL ANALYSIS, SHALL BE ACCOMPLISHED BY AN INDEPENDENT LABORATORY FUNDED BY THE OWNER. RE-TESTING DUE TO TEST FAILURE WILL BE A CONTRACTORS EXPENSE.
10. MANDREL TESTING WILL BE REQUIRED ON ALL FLEXIBLE WASTEWATER PIPE AS PER TNRCC RULES.
11. THE CONTRACTOR SHALL CONTACT MUNICIPALITY, WATER COMPANY OR DISTRICT, TO MAKE ARRANGEMENTS FOR METERING CONSTRUCTION WATER PRIOR TO USING ANY WATER.
12. THE CONTRACTOR SHALL BACKFILL AND CLOSE TRENCHES AS PIPE IS INSTALLED. NO TRENCH WILL BE ALLOWED TO BE LEFT OPEN OVER NIGHT.
13. THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION ACTIVITY DOES NOT ADVERSELY AFFECT EXISTING DRAINAGE PATTERNS.
14. ALL CONSTRUCTION ACTIVITY SHALL BE PERFORMED TO MAINTAIN A SAFE ENVIRONMENT FOR WORKERS AND PUBLIC SAFETY. CONTRACTOR SHALL INSTALL TRAFFIC CONTROLS IN CONFORMANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
15. SEWER LINES BRIDGING CAVERNS OR OTHER SOLUTION FEATURES. SEWER LINES THAT BRIDGE CAVERNS OR SOLUTION FEATURES MUST BE CONSTRUCTED IN A MANNER THAT WILL MAINTAIN THE STRUCTURAL INTEGRITY OF THE LINE. WHEN SUCH GEOLOGIC FEATURES ARE ENCOUNTERED, THE LOCATION AND EXTENT MUST BE REPORTED TO THE APPROPRIATE TNRCC DISTRICT OFFICE WITHIN TWO (2) WORKING DAYS OF DISCOVERING THE SIGNIFICANT RECHARGE FEATURE (S).
16. EROSION AND SEDIMENTATION CONTROL. A TEMPORARY EROSION AND SEDIMENTATION CONTROL PLAN MUST BE INCLUDED WITH ALL CONSTRUCTION PLANS. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION, MUST BE MAINTAINED DURING CONSTRUCTION, AND SHALL BE REMOVED WHEN VEGETATION IS ESTABLISHED AND THE CONSTRUCTION AREA IS STABILIZED.
17. SAND IS NOT ALLOWED AS BEDDING FOR WASTEWATER.
18. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROPOSED REGULATED PROJECT SHALL BE PROVIDED WITH COPIES OF THE SEWAGE COLLECTION SYSTEM SUBMITTAL AND THE TNRCC LETTER INDICATING THE SPECIFIC CONDITIONS OF ITS APPROVAL. DURING THE COURSE OF THESE REGULATED ACTIVITIES, THE CONTRACTORS SHALL BE REQUIRED TO KEEP ON-SITE COPIES OF THE SUBMITTAL AND THE APPROVAL LETTER.
19. FIBER REINFORCED CONCRETE WILL NOT BE ALLOWED FOR PROJECTS IN THE R.O.W..
20. REBAR CHAIRS MUST BE USED FOR ALL REINFORCEMENT USED WITHIN THE R.O.W..
21. THE CITY OF DRIPPINGS SPRINGS REQUIRES THAT A PRE CONSTRUCTION MEETING BE HELD PRIOR TO CONSTRUCTION. AS BUILTS AND AN ENGINEERS CONCURRENCE LETTER ARE REQUIRED WHEN THE CONSTRUCTION IS COMPLETE.

CONSTRUCTION SEQUENCE

THE CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING EROSION CONTROL AND STORMWATER MANAGEMENT CONTROL STRUCTURES. THE CONTRACTOR MAY DESIGNATE THESE TASKS TO CERTAIN SUBCONTRACTORS, BUT THE ULTIMATE RESPONSIBILITY FOR IMPLEMENTING THESE CONTROLS AND ENSURING THEIR PROPER FUNCTIONING REMAINS WITH THE CONTRACTOR. THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS (REFER TO STORMWATER POLLUTION PREVENTION PLAN SHEET CONTAINED IN THIS SWPPP FOR DETAILS):

A. CONSTRUCT TEMPORARY CONSTRUCTION EXITS AT LOCATIONS SHOWN ON THE EROSION CONTROL PLAN SHEET.

B. INSTALL SILT FENCES AND ROCK BERMS IN THE LOCATIONS SHOWN ON THE SWPPP PLAN SHEET. CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING WITH REPRESENTATIVES AND CONTRACTOR/ SUBCONTRACTOR SUPERINTENDENT.

C. BEGIN CLEARING, GRUBBING, AND TOPSOIL REMOVAL OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE HOMESTEADS ARE PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.

D. FREQUENT WATERING OF THE EXCAVATION AND FILL AREAS SHALL BE DONE TO MINIMIZE WIND EROSION.

E. ROUGH CUT POND, INSTALL STORM SEWER PIPING AND DRAINAGE STRUCTURES.

F. INSTALL PROTECTIVE SILT FENCES AT THE LOCATIONS OF ALL GRATE INLETS, CURB INLETS AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.

G. BEGIN SITE GRADING OPERATIONS AND PARKING SUBGRADE PREPARATION.

H. FINALIZE PAVEMENT SUBGRADE PREPARATION, INSTALL BASE MATERIAL. CONSTRUCT ALL GRATE INLETS, CURB INLETS, HEADWALLS AND SLOPED END TREATMENTS. INLET PROTECTION SILT FENCES MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION.

I. INSTALL ALL UNDERGROUND UTILITY LINES.

J. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.

K. CARRY OUT FINAL GRADING AND SEEDING AND REVEGETATION.

L. REMOVE SILT FENCING ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.

M. REMOVE TEMPORARY CONSTRUCTION EXITS ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THESE AREAS (THESE AREAS ARE TO BE PAVED LAST).

N. INSTALL FINAL PAVEMENT AS SHOWN ON THE PLANS.

TPDES STORMWATER POLLUTION PREVENTION PLAN GENERAL NOTES

(TO COMPLY WITH TPDES REQUIREMENTS)

1. SEE COVER SHEET OF THE PLANS FOR A GENERAL LOCATION MAP.

2. THE NATURE OF THE CONSTRUCTION ACTIVITY CONSISTS OF COMMERCIAL DEVELOPMENT. THE MAIN POTENTIAL SOURCE OF POLLUTION FROM THE CONSTRUCTION IS SEDIMENT FROM THE DISTURBED AREAS.

3. FOR SEQUENCE OF CONSTRUCTION, SEE "CONSTRUCTION SEQUENCE" NOTES THIS SHEET.

4. THE CONSTRUCTION SITE DISTURBED AREA IS ESTIMATED TO BE 4.9 ACRES.

5. THE RUNOFF COEFFICIENT AFTER CONSTRUCTION WILL BE THE SAME AS THE EXISTING CONDITION AND DRAINAGE PATTERNS WILL BE UNCHANGED FROM EXISTING.

6. THE EXISTING QUALITY OF STORMWATER DISCHARGING FROM THE SITE IS CHARACTERISTIC OF A PARTIALLY DEVELOPED SITE. POST-DEVELOPMENTAL QUALITY WILL NOT BE SIGNIFICANTLY CHANGED UPON STABILIZATION OF THE SITE.

7. THE RECEIVING BODY OF WATER IS ONION CREEK. WETLANDS OR AQUATIC SITES AS DESCRIBED UNDER 40 CFR 230.3 (q-1) WILL NOT BE DISTURBED OR RECEIVE DISCHARGES FROM DISTURBED AREAS OF THE PROJECT.

8. NO DESIGNATED CRITICAL HABITAT OCCURS WITHIN THE PROXIMITY OF THE CONSTRUCTION ACTIVITY. LISTED ENDANGERED OR THREATENED SPECIES DO NOT OCCUR WITHIN THE PROXIMITY OF THE CONSTRUCTION ACTIVITY.

9. PROPERTY LISTED OR ELIGIBLE FOR LISTING ON THE NATIONAL REGISTER OF HISTORIC PLACES DOES NOT OCCUR WITHIN THE PROXIMITY OF THE CONSTRUCTION ACTIVITY.

10. SEE CONSTRUCTION CONTRACT FOR A COPY OF THE STORM WATER GENERAL PERMIT AND FOR CONSTRUCTION ACTIVITY IN REGION 6.

11. SOILS ON THE SITE CONSIST DOSS SILTY CLAY, BRACKETT ROCK, THAT BELONG TO THE "D" HYDROLOGIC GROUP. SITE ALSO CONSISTS OF SUNEV CLAY LOAM WHICH BELONG TO THE "B" HYDROLOGIC GROUP.

12. FOR DEVELOPED CONDITION DRAINAGE PATTERNS REFER TO THE SWPPP OR DRAINAGE AREA MAP SHEET. GRADING WILL BE UNCHANGED FROM THE EXISTING CONDITION.

13. THE "EROSION/SEDIMENTATION CONTROL PLAN" INDICATED THE AREA TO BE DISTURBED BY THE LIMITS OF CONSTRUCTION LINE, LOCATIONS OF STABILIZATION MEASURES, CONTROLS, CONTRACTOR STAGING AREAS, AND TEMPORARY MATERIAL STOCKPILING, AND ANY ADJACENT WATERWAYS.

14. THE PERMITTEE MUST POST A NOTICE NEAR THE MAIN ENTRANCE OF THE CONSTRUCTION SITE WITH THE FOLLOWING INFORMATION:
- * TPDES PERMIT NUMBER OR A COPY OF THE NOI IF NO NUMBER HAS BEEN ASSIGNED
- * NAME AND PHONE NUMBER OF A LOCAL CONTACT, AND
- * A BRIEF PROJECT DESCRIPTION AND LOCATION OF THE SWPPP IF NOT LOCATED ON THE CONSTRUCTION SITE.

CONTROLS

STRUCTURAL EROSION CONTROL MEASURES TO BE USED DURING CONSTRUCTION CONSIST OF SILT FENCE AND ROCK BERM. THE TIMING FOR THE INSTALLATION OF THESE CONTROLS IS CONTAINED IN THE "SEQUENCE OF CONSTRUCTION" NOTES INCLUDED IN THESE PLANS. RESPONSIBLE PARTY FOR IMPLEMENTATION, INSPECTION, AND MAINTENANCE OF CONTROLS IS THE CONTRACTOR.

1. GOALS AND CRITERIA FOR EROSION/SEDIMENTATION CONTROLS
A. THE CONSTRUCTION PHASE EROSION AND SEDIMENT CONTROLS SHOULD BE DESIGNED TO RETAIN SEDIMENT ON SITE TO THE EXTENT PRACTICABLE.

B. ALL CONTROL MEASURES MUST BE PROPERLY SELECTED, INSTALLED, AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND GOOD ENGINEERING PRACTICES. IF PERIODIC INSPECTIONS OR OTHER INFORMATION INDICATES A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE PERMITEE MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS.

C. IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFFSITE ACCUMULATION OF SEDIMENT MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS. (E.G. SEDIMENT IN STREET IS WASHED INTO STORMSEWER)

D. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS WHEN DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

E. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE.

F. SPOIL MATERIAL DISPOSED OR STOCKPILE MATERIAL STORED AT AN OFFSITE LOCATION THAT IS USED SOLELY BY THE PERMITTED PROJECT IS CONSIDERED PART OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR REVISING THE SWPPP TO COVER THIS ACTIVITY.

2. STABILIZATION PRACTICES: THE PERMANENT EROSION CONTROLS NOTES INCLUDED IN THE GENERAL NOTES SPECIFY THE CRITERIA FOR REVEGETATION OF DISTURBED AREAS. THE EROSION/SEDIMENTATION CONTROL PLAN, INCLUDED AS PART OF THESE CONSTRUCTION PLANS, PROVIDES PROTECTION OF ADJACENT VEGETATION BY DEFINITION OF A LIMITS OF CONSTRUCTION AND ANY APPROPRIATE TREE PROTECTION ONSITE.
A. STABILIZATION (SEEDING, SODDING, MULCHING, ETC.): DISTURBED AREA WHERE CONSTRUCTION HAS PERMANENTLY OR TEMPORARILY CEASED MUST BE STABILIZED WITHIN 14 DAYS OF THE LAST DISTURBANCE. (AREAS WHICH WILL BE REDISTURBED WITHIN 21 DAYS DO NOT HAVE TO BE STABILIZED.)

B. IN ARID AREAS, AREAS EXPERIENCING DROUGHT, AND IN AREAS EXPERIENCING FROZEN GROUND CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE.

3. STRUCTURAL PRACTICES:
A. PERMANENT CONTROLS SHALL CONSIST OF AN EXISTING WATER QUALITY POND, AND DETENTION POND.

B. STORMWATER MANAGEMENT: STORMWATER SHALL BE DIRECTED TO NATURAL SWALES OR PROPOSED DITCHES. ALL LOW POINTS LEAVING THE SITE SHALL HAVE TEMPORARY EROSION CONTROLS, I.E., SILT FENCE, OR ROCK BERM.

C. OTHER CONTROLS:
1. NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED TO THE RECEIVING WATERS.
2. OFFSITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED.
3. APPLICATION OF THE SWPPP SHALL BE CONSISTENT WITH OTHER LOCAL AND STATE REGULATIONS.

4. RELEASES OF REPORTABLE QUANTITIES: THE TCEQ HAS ISSUED REGULATIONS THAT DEFINE WHAT REPORTABLE QUANTITY LEVELS ARE FOR OIL AND HAZARDOUS SUBSTANCES. THESE REGULATIONS ARE FOUND IN TAC CHAPTER 327 AND TABLE 302.4 IN 40 CFR 302.4. IF THERE IS A RQ RELEASE DURING THE CONSTRUCTION PERIOD, THEN THE FOLLOWING STEPS MUST BE TAKEN:
- * NOTIFY STATE EMERGENCY RESPONSE COMMISSION (SERC) IMMEDIATELY AT 1-800-832-8224
- * WITHIN 14 DAYS, MODIFY THE SWPPP WITH A WRITTEN DESCRIPTION OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.

5. INSPECTION: THE SWPP GENERAL PERMIT REQUIRES WRITTEN INSPECTIONS EVERY 14 DAYS OR WITHIN 24 HOURS OF A STORM OF 0.5 INCHES OR MORE IN DEPTH. ALL DISTURBED AREAS OF THE SITE, AREAS FOR MATERIAL STORAGE, LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE, AND ALL OF THE EROSION AND SEDIMENT CONTROLS THAT WERE IDENTIFIED AS PART OF THE PLAN MUST BE INSPECTED. CONTROLS MUST BE IN GOOD OPERATING CONDITION UNTIL THE AREA THEY PROTECT HAS BEEN COMPLETELY STABILIZED AND THE CONSTRUCTION ACTIVITY IS FINISHED.

6. MAINTENANCE/REPAIRS: IF SITE SPECIFICS AND OPERATION OF THE CONTROLS INDICATE MODIFICATIONS ARE REQUIRED, THEN SUCH MODIFICATIONS SHALL BE INDICATED ON THE SWPPP WITH ASSOCIATED DESCRIPTION AS TO NEED FOR THE ADDITIONAL CONTROLS. REVISIONS TO THE SWPPP SHALL BE COMPLETED WITHIN 7 CALENDAR DAYS FOLLOWING INSPECTION. IF EXISTING BMP'S NEED TO BE MODIFIED OF ADDITIONAL BMP'S ADDED IMPLEMENTATION SHALL BE COMPLETED BEFORE THE NEXT ANTICIPATED STORM EVENT. IF THIS IS IMPRACTICABLE, THEY SHALL BE IMPLEMENTED AS SOON AS POSSIBLE. THE INSPECTOR MUST RECORD ANY DAMAGES OR DEFICIENCIES IN THE CONTROL MEASURES ON AN INSPECTION REPORT FORM. THESE REPORTS DOCUMENT THE INSPECTION OF THE POLLUTION PREVENTION MEASURES. RECORDS SHALL BE KEPT TO INDICATE THAT CORRECTION OF DAMAGE OR DEFICIENCIES WERE MADE.

7. RECORD KEEPING: IN ADDITION TO THE INSPECTION AND MAINTENANCE RECORDS, THE OPERATOR SHOULD KEEP RECORDS OF THE CONSTRUCTION ACTIVITY ON THE SITE. IN PARTICULAR, THE OPERATOR SHOULD KEEP A RECORD OF THE FOLLOWING INFORMATION:
- * THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR IN A PARTICULAR AREA.
- * THE DATES WHEN CONSTRUCTION ACTIVITIES CEASE IN AN AREA, TEMPORARILY OR PERMANENTLY.
- * THE DATES WHEN AN AREA IS STABILIZED, TEMPORARILY OR PERMANENTLY.
- * A COPY OF THE SWPPP AND NPDES PERMIT (OR NOI FORM) MUST BE KEPT AT THE CONSTRUCTION SITE FROM THE TIME CONSTRUCTION BEGINS UNTIL THE SITE IS FINALLY STABILIZED.

8. RETENTION OF RECORDS: RETENTION OF RECORDS: RETENTION OF RECORDS REQUIRES THAT COPIES OF THE SWPPP AND ALL OTHER REPORTS REQUIRED BY THE PERMIT, AS WELL AS ALL OF THE DATA USED TO COMPLETE THE N.O.I. BE RETAINED FOR 3 YEARS AFTER THE COMPLETION OF FINAL SITE STABILIZATION.

9. NOTICE OF TERMINATION: THE NOT IS A ONE-PAGE FORM WHICH SHOULD BE COMPLETED AND SUBMITTED TO EPA WHEN A SITE HAS BEEN FINALLY STABILIZED OR WHEN AN OPERATOR OF A CONSTRUCTION ACTIVITY CHANGES.

604S.1 DESCRIPTION

THIS ITEM SHALL GOVERN THE PREPARATION OF A SEED BED TO THE LINES AND GRADES INDICATED ON THE DRAWINGS, SOWING OF SEEDS, FERTILIZING, MULCHING WITH STRAW, CELLULOSE FIBER WOOD CHIPS, RECYCLED PAPER MULCH AND OTHER MANAGEMENT PRACTICES ALONG AND ACROSS SUCH AREAS AS INDICATED IN THE DRAWING OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

THIS SPECIFICATION IS APPLICABLE FOR PROJECTS OR WORK INVOLVING EITHER INCH-POUND OF SI UNITS. WITHIN THE TEXT, INCH-POUND UNITS ARE GIVEN PREFERENCE WITH SI UNITS SHOWN WITHIN PARENTHESIS.

604S.2 SUBMITTALS

THE SUBMITTAL REQUIREMENTS FOR THIS SPECIFICATION ITEM SHALL INCLUDE:
A. IDENTIFICATION OF THE TYPE, SOURCE, MIXTURE, PLS AND RATE OF APPLICATION OF THE SEED TYPE OF MULCH.
B. TYPE OF TACKING AGENT.
C. TYPE AND RATE OF APPLICATION OF FERTILIZER.

604S.3 MATERIALS

A. SEED
ALL SEED MUST MEET THE REQUIREMENTS OF THE TEXAS SEED LAW INCLUDING THE LABELING REQUIREMENTS FOE SHOWING PURE LIVE SEED(PLS), NAME AND TYPE OF SEED. THE SEED FURNISHED SHALL BE OF THE PREVIOUS SEASONS CROP AND THE DATE OF ANALYSIS SHOWN ON EACH BAG SHALL BE WITHIN NINE MONTHS OF THE TIME OF DELIVERY TO THE PROJECT. EACH VARIETY OF SEED SHALL BE FURNISHED AND DELIVERED IN SEPARATE BAGS OR CONTAINERS. A SAMPLE OF EACH VARIETY OF SEED SHALL BE FURNISHED FOR ANALYSIS AND TESTING WHEN DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
THE AMOUNT OF SEED PLANTED PER ACRE (HECTARE) SHALL BE OF THE TYPE SPECIFIED IN SECTIONS 604S.5 AND 604S.6

B. WATER
WATER SHALL BE CLEAN AND FREE OF INDUSTRIAL WASTES AND OTHER SUBSTANCES HARMFUL TO THE GROWTH OF GRASS OR THE AREA IRRIGATED.

C. TOPSOIL
TOPSOIL SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 601S.3(A).

D. FERTILIZER
THE FERTILIZER SHALL CONFORM TO STANDARD SPECIFICATION ITEM NO. 606S, "FERTILIZER".

E. STRAW AND MULCH OR HAY MULCH
STRAW MULCH SHALL BE OAT, WHEAT OR RICE STRAW. HAY MULCH SHALL BE PRAIRIE GRASS, BERMUDA GRASS, OR OTHER HAY APPROVED BY ENGINEER OR DESIGNATED REPRESENTATIVE. THE STRAW OR HAY SHALL BE FREE OF JOHNSON GRASS OR OTHER NOXIOUS WEEDS AND FOREIGN MATERIALS. IT SHALL BE KEPT IN A DRY CONDITION AND SHALL NOT BE MOLDED OR ROTTED.

F. TACKING AGENTS
THE TACKING AGENT SHALL BE A BIODEGRADABLE TACKING AGENT, APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

G. CELLULOSE FIBER MULCH (NATURAL WOOD)
CELLULOSE FIBER MULCH SHALL BE NATURAL CELLULOSE FIBER MULCH PRODUCED FROM GRINDING CLEAN WHOLE WOOD CHIPS. THE MULCH SHALL BE DESIGNED FOR USE IN CONVENTIONAL MECHANICAL PLANTING, HYDRAULIC PLANTING OF SEED OR HYDRAULIC MULCHING OF GRASS SEED, EITHER ALONE OR WITH FERTILIZERS AND OTHER ADDITIVES. THE MULCH SHALL BE SUCH, THAT WHEN APPLIED, THE MATERIAL FORM A STRONG, MOISTURE-RETAINING MAT WITHOUT THE NEED OF AN ASPHALT BINDER.

H. RECYCLED PAPER MULCH
RECYCLED PAPER MULCH SHALL BE SPECIFICALLY MANUFACTURED FROM POST-CONSUMER PAPER AND SHALL CONTAIN A MINIMUM OF 85% RECYCLED PAPER CONTENT BY WEIGHT, SHALL CONTAIN NO MORE THAN 15% MOISTURE AND 1.6% ASH, AND SHALL CONTAIN NO GROWTH INHIBITING MATERIAL OR WEED SEEDS. THE RECYCLED PAPER SHALL BE MIXED WITH GRASS SEED AND FERTILIZER FOR HYDRO-SEEDING/MULCHING, EROSION CONTROL, AND A BINDER OVER STRAW MULCH. THE MULCH, WHEN APPLIED, SHALL FORM A STRONG, MOISTURE-RETAINING MAT OF A GREEN COLOR WITHOUT THE NEED OF AN ASPHALT BINDER.

604S.4 CONSTRUCTION METHODS

A. PREPARING SEED BED
AFTER THE DESIGNATED AREAS HAVE BEEN ROUGH GRADED TO THE LINES, GRADES AND TYPICAL SECTIONS INDICATED IN THE DRAWINGS OR AS PROVIDED FOR IN OTHER ITEMS OF THIS CONTRACT AND FOR ANY OTHER SOIL AREA DISTURBED BY THE CONSTRUCTION, A SUITABLE SEEDBED SHALL BE PREPARED. THE SEEDBED SHALL CONSIST OF A MINIMUM OF EITHER 4" (100MILLIMETERS) OF APPROVED TOPSOIL OR 4" (100 MILLIMETERS) OF APPROVED SALVAGED TOPSOIL, CULTIVATED AND ROLLED SUFFICIENTLY TO REDUCE THE SOIL TO A STATE OF GOOD TILTH, WHEN THE SOIL PARTICLES ON THE SURFACE ARE SMALL ENOUGH AND LIE CLOSELY ENOUGH TOGETHER TO PREVENT THE SEED FROM BEING COVERED TOO DEEPLY FOR OPTIMUM GERMINATION. THE OPTIMUM DEPTH FOR SEEDING SHALL BE $\frac{1}{4}$" (6 MILLIMETERS). WATER SHALL BE GENTLY APPLIED AS REQUIRED TO PREPARE THE SEEDBED PRIOR TO THE PLANTING OPERATION EITHER BY BROADCAST SEEDING OR HYDRAULIC PLANTING. SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS HEREINAFTER DESCRIBED.

B. WATERING
ALL WATERING SHALL COMPLY WITH CITY ORDINANCES. BROADCAST SEEDED AREAS SHALL IMMEDIATELY BE WATERED WITH A MINIMUM OF 5 GALLONS OF WATER PER SQUARE YARD (22.5 LITERS OF WATER PER SQUARE METER) OR AS NEEDED AND IN THE MANNER AND QUANTITY AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. HYDRAULIC SEEDED AREAS AND NATIVE GRASS SEEDED AREAS SHALL BE WATERED COMMENCING AFTER THE TACKIFIER HAS DRIED WITH A MINIMUM OF 5 GALLONS OF WATER PER SQUARE YARD (22.5 LITERS OF WATER PER SQUARE METER) OR AS NEEDED TO KEEP THE SEEDBED IN A WET CONDITION FAVORABLE FOR THE GROWTH OF THE GRASS.
WATERING APPLICATIONS SHALL CONSTANTLY MAINTAIN THE SEEDBED IN A WET CONDITION FAVORABLE FOR THE GROWTH OF GRASS. WATERING SHALL CONTINUE UNTIL THE GRASS IS UNIFORMLY 1 $\frac{1}{2}$" (40MM) IN HEIGHT AND ACCEPTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. WATERING CAN BE POSTPONED IMMEDIATELY AFTER A $\frac{1}{2}$" (12.5MM) OR GREATER RAINFALL ON THE SITE BUT SHALL BE RESUMED BEFORE THE SOIL DRIES OUT.

604S.5 NON-NATIVE SEEDING

A. METHOD A – BROADCAST SEEDING. THE SEED OR SEED MIXTURE IN THE QUANTITY SPECIFIED SHALL BE UNIFORMLY DISTURBED OVER THE PREPARED SEED AREAS INDICATED ON THE DRAWINGS OR WHERE DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. IF THE SOWING OF SEED IS BY HAND, RATHER THAN BY MECHANICAL METHODS, THE SEED SHALL BE SOWN IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER. IF MECHANICAL EQUIPMENT IS USED, ALL VARIETIES OF SEED, AS WELL AS FERTILIZER, MAY BE DISTRIBUTED AT THE SAME TIME, PROVIDED THAT EACH COMPONENT IS UNIFORMLY APPLIED AT THE SPECIFIED RATE. AFTER PLANTING, THE PLANTED AREA SHALL BE ROLLED WITH A CORRUGATED ROLLER OF THE "CULTIPACKER" TYPE. ALL ROLLING OF THE SLOPE AREAS SHALL BE ON THE CONTOUR.

SEED MIXTURE AND RATE OF APPLICATION FOR BROADCAST SEEDING:

FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH A COMBINATION OF UNHULLED BERMUDA GRASS AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET (1.0 KILOGRAMS PER 100 SQUARE METERS) AND COOL SEASON COVER CROP (SEE TABLE 4) AT A RATE OF 1.5 POUNDS PER 1000 SQUARE FEET (0.75 KILOGRAMS PER 100 SQUARE METERS).
FROM MARCH 1 TO SEPTEMBER 15, SEEDING SHALL BE WITH HULLED BERMUDA GRASS AT A PLS=0.83. FERTILIZER SHALL BE APPLIED AND SHALL CONFORM TO ITEM NO.606S, "FERTILIZER".

B. METHOD B – HYDRAULIC PLANTING. THE SEEDBED SHALL BE PREPARED AS SPECIFIED ABOVE AND HYDRAULIC PLANTING EQUIPMENT, WHICH IS CAPABLE OF PLACING ALL MATERIALS IN A SINGLE OPERATION, SHALL BE USED.

MARCH 1 TO SEPTEMBER 15
HYDRAULIC PLANTING MIXTURE AND MINIMUM RATE OF APPLICATION POUNDS PER 1000 SQUARE FEET (KILOGRAMS PER 100 SQUARE METERS)

TABLE 1: NON-NATIVE GRASS

HULLED BERMUDA SEED (PLS=0.83)	FIBER MULCH		SOIL TACKIFIER
	CELLULOSE	WOOD	
1 LBS/1000FT^2 (0.5 KGS/100 M^2)	45.9 LBS/100 FT^2 (22.5 KGS/100M^2)		1.4LBS/1000 FT^2 (0.7KGS\ 100M^2)
		57.4LBS/1000 FT^2 (28.01KGS/100M^2)	1.5LBS/1000 FT^2 (0.75KGS/100M^2)

SEPTEMBER 15 TO MARCH 1
ADD 1.5 POUNDS PER 1000 SQUARE FEET (0.75 KILOGRAMS PER 100 SQUARE METERS) OF COOL SEASON COVER CROP (SEE TABLE 4) TO ABOVE MIXTURE. THE FERTILIZER SHALL CONFORM TO CITY OF AUSTIN STANDARD SPECIFICATION ITEM NO. 606S, "FERTILIZER".

604S.7 MULCH

A. STRAW MULCH
STRAW MULCH SHALL BE SPREAD UNIFORMLY OVER THE AREA INDICATED OR AS DESIGNATED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE AT THE RATE OF 2 TO 2 $\frac{1}{2}$ TONS OF STRAW PER ACRE (4.5 TO 5.6 MEGAGRAMS OF STRAW PER HECTARE). THE ACTUAL RATE OF APPLICATION WILL BE DESIGNATED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. STRAW MAY BE HAND OR MACHINE PLACED AND ADEQUATELY SECURED.

B. FIBER MULCH
CELLULOSE AND WOOD FIBER MULCH SHALL BE SPREAD UNIFORMLY OVER THE AREA INDICATED OR AS DESIGNATED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE AT A RATE THAT WILL PROVIDE 100% COVERAGE.

D. SHREDDED BRUSH MULCH
SMALL BRUSH OR TREE LIMBS EXCEPT JUNIPER, WHICH HAVE BEEN SHREDDED, MAY BE USED FOR MULCHING NATIVE GRASS SEEDING.

604S.8 MEASUREMENT

WORK AND ACCEPTABLE MATERIAL FOR "SEEDING FOR EROSION CONTROL" WILL BE MEASURED BY THE SQUARE YARD (METER: 1 METER= 1.196 SQUARE YARDS) OR BY THE ACRE (HECTARE: 1 HECTARE= 2.471 ACRES) COMPLETE IN PLACE, WITH A MINIMUM OF 95% COVERAGE FOR THE NON-NATIVE MIX, AND 75% COVERAGE FOR THE NATIVE MIX. BARE AREAS SHALL NOT EXCEED 16 SQUARE FEET (1.5 SQUARE METERS), AND THE HEIGHT OF VEGETATION SHALL STAND AT A MINIMUM OF 1 $\frac{1}{2}$" (40 MILLIMETERS). BARE AREAS SHALL BE RE-PREPARED AND RESEEDED AS REQUIRED TO DEVELOP AN ACCEPTABLE STAND OF GRASS.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL AND SIGNAGE FOR ALL WORK IN R.O.W.

2. THE CONTRACTOR SHALL NOTIFY ALL OTHER GOVERNMENTAL AGENCIES WHOSE RIGHT-OF-WAYS ARE AFFECTED BY HIS WORK ZONE TRAFFIC CONTROLS. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL TRAFFIC CONTROL DEVICES THAT THEY MAY REQUIRE.

3. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES WHILE CROSSING EXISTING ROADWAYS UNLESS OTHERWISE NOTED ON THE PLANS.

4. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS AT ALL TIMES. IF ACCESS CANNOT BE MAINTAINED, AT LEAST 24 HOUR WRITTEN NOTICE WILL BE GIVEN TO AFFECTED PROPERTY OWNERS.

5. ALL TRENCHES SHALL BE EITHER BACKFILLED, PLATED OR FENCED WITH SAFETY FENCING.

6. THE CONTRACTOR SHALL MAKE INSPECTION OF ALL TRAFFIC CONTROL DEVICES AT LEAST TWO TIMES A DAY (ONCE AT THE BEGINNING OF THE DAY AND ONCE AT THE END OF THE WORK DAY), INCLUDING NON WORKING DAYS TO INSURE THAT ALL DEVICES ARE IN PROPER WORKING ORDER.

7. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

8. ALL SIGNS USED AT NIGHT SHALL BE REFLECTORIZED AND SHALL HAVE A TYPE A FLASHING LIGHT.

TCEQ WATER DISTRIBUTION
GENERAL CONSTRUCTION NOTES:

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

2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].

3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS [§290.44(A)(2)].

4. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY [§290.44(A)(3)].

5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].

6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].

7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].

8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].

9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].

10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)]. REVISED OCTOBER 2017

11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS. THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5).

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

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

14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].

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

16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].

17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].

18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

• OWNER INFORMATION:

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PHONE: (512)669-9072

REPRESENTATIVE: JON THOMPSON (POINT OF CONTACT) 512-568-2184

• DESIGN ENGINEER: REPRESENTATIVE RESPONSIBLE FOR PLAN CHANGES.

NAME: HUGO ELIZONDO, Jr., P.E.
C/O CUATRO CONSULTANTS, LTD

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REVISION	DESCRIPTION	BY:	DATE:

STATE OF TEXAS — HUGO ELIZONDO, JR. — 69781 — LICENSED PROFESSIONAL ENGINEER — 5/18/18

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GENERAL NOTES

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22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
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DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017
PROJECT: JOB # 17-118
DRAWING'S NAME: G_NOTES
DESIGN: | CHECKED: HE.jr.
DRAWN: | APPROVED: HE.jr.

TREE TABLE

TAG #	SIZE/TYPE	TAG #	SIZE/TYPE	TAG #	SIZE/TYPE	TAG #	SIZE/TYPE	TAG #	SIZE/TYPE	TAG #	SIZE/TYPE
T-101	9" POST OAK	T-151	12" LIVE OAK	T-201	8" LIVE OAK	T-251	17" POST OAK	T-301	17" LIVE OAK	T-351	13" LIVE OAK
T-102	17" ELM	T-152	9" LIVE OAK	T-202	9" LIVE OAK	T-252	23" LIVE OAK	T-302	16" LIVE OAK	T-352	23" LIVE OAK
T-103	17" POST OAK	T-153	19" LIVE OAK	T-203	9" LIVE OAK	T-253	22" POST OAK	T-303	10" LIVE OAK	T-353	10" LIVE OAK
T-104	10" POST OAK	T-154	11" LIVE OAK	T-204	8" LIVE OAK	T-254	12" LIVE OAK	T-304	10" LIVE OAK	T-354	17" LIVE OAK
T-105	11" LIVE OAK	T-155	11" LIVE OAK	T-205	9" LIVE OAK	T-255	10" LIVE OAK	T-305	10" LIVE OAK	T-355	19" ELM
T-106	11" LIVE OAK	T-156	10" LIVE OAK	T-206	12" LIVE OAK	T-256	12" POST OAK	T-306	8" LIVE OAK	T-356	10" LIVE OAK
T-107	11" LIVE OAK	T-157	10" LIVE OAK	T-207	12" LIVE OAK	T-257	17" POST OAK	T-307	8" LIVE OAK	T-357	12" LIVE OAK
T-108	20" LIVE OAK	T-158	13" LIVE OAK	T-208	12" LIVE OAK	T-258	15" POST OAK	T-308	9" LIVE OAK	T-358	15" CEDAR
T-109	13" RED OAK	T-159	13" POST OAK	T-209	14" LIVE OAK	T-259	16" POST OAK	T-309	8" LIVE OAK	T-359	12" ELM
T-110	9" LIVE OAK	T-160	30" LIVE OAK	T-210	19" LIVE OAK	T-260	15' LIVE OAK	T-310	8" LIVE OAK	T-360	11" RED OAK
T-111	8" LIVE OAK	T-161	9" LIVE OAK	T-211	11" LIVE OAK	T-261	16" LIVE OAK	T-311	9" LIVE OAK	T-361	21" CEDAR
T-112	13" LIVE OAK	T-162	8" LIVE OAK	T-212	12" LIVE OAK	T-262	12" POST OAK	T-312	8" LIVE OAK	T-362	13" CEDAR
T-113	9" LIVE OAK	T-163	14" LIVE OAK	T-213	12" LIVE OAK	T-263	11" POST OAK	T-313	9" LIVE OAK	T-363	12" ELM
T-114	10" ELM	T-164	12" LIVE OAK	T-214	15" RED OAK	T-264	8" LIVE OAK	T-314	10" LIVE OAK		
T-115	15" ELM	T-165	13" LIVE OAK	T-215	15" LIVE OAK	T-265	13" LIVE OAK	T-315	13" LIVE OAK		
T-116	13" LIVE OAK	T-166	9" LIVE OAK	T-216	9" LIVE OAK	T-266	13" LIVE OAK	T-316	11" LIVE OAK		
T-117	13" POST OAK	T-167	14" LIVE OAK	T-217	10" LIVE OAK	T-267	11" LIVE OAK	T-317	10" LIVE OAK		
T-118	9" LIVE OAK	T-168	13" LIVE OAK	T-218	12" LIVE OAK	T-268	10" LIVE OAK	T-318	23" LIVE OAK		
T-119	9" LIVE OAK	T-169	13" LIVE OAK	T-219	9" LIVE OAK	T-269	12" LIVE OAK	T-319	15" LIVE OAK		
T-120	9" LIVE OAK	T-170	13" LIVE OAK	T-220	12" LIVE OAK	T-270	12" LIVE OAK	T-320	8" LIVE OAK		
T-121	11" LIVE OAK	*T-171	11" POST OAK	T-221	12" LIVE OAK	T-271	12" LIVE OAK	T-321	9" LIVE OAK		
T-122	9" LIVE OAK	T-172	8" LIVE OAK	T-222	9" LIVE OAK	T-272	18" POST OAK	T-322	8" LIVE OAK		
T-123	9" LIVE OAK	T-173	8" LIVE OAK	T-223	17' LIVE OAK	T-273	15' POST OAK	T-323	17" LIVE OAK		
T-124	12" LIVE OAK	T-174	12" LIVE OAK	T-224	10" LIVE OAK	T-274	13" LIVE OAK	T-324	10" LIVE OAK		
T-125	10" LIVE OAK	T-175	12" LIVE OAK	*T-225	8" CEDAR	T-275	10" LIVE OAK	T-325	10" LIVE OAK		
T-126	10" LIVE OAK	T-176	12" LIVE OAK	*T-226	8" CEDAR	T-276	9" LIVE OAK	T-326	9" LIVE OAK		
T-127	8" LIVE OAK	T-177	18" POST OAK	T-227	11" LIVE OAK	T-277	9" LIVE OAK	T-327	9" RED OAK		
T-128	11" LIVE OAK	T-178	9" LIVE OAK	*T-228	10" CEDAR	T-278	13" LIVE OAK	T-328	12" LIVE OAK		
T-129	9" LIVE OAK	T-179	10" CEDAR	T-229	9" LIVE OAK	T-279	14" LIVE OAK	T-329	14" RED OAK		
T-130	10" LIVE OAK	T-180	10" LIVE OAK	T-230	19" POST OAK	T-280	10" LIVE OAK	T-330	8" LIVE OAK		
T-131	8' LIVE OAK	T-181	10" CEDAR	T-231	13" LIVE OAK	T-281	8" LIVE OAK	T-331	13" LIVE OAK		
T-132	15" LIVE OAK	T-182	9" LIVE OAK	T-232	10" LIVE OAK	T-282	17" LIVE OAK	T-332	13" LIVE OAK		
T-133	12" LIVE OAK	T-183	9" LIVE OAK	T-233	13" POST OAK	T-283	13" HACKBERRY	T-333	8" ELM		
T-134	14" LIVE OAK	T-184	17" LIVE OAK	T-234	16" POST OAK	T-284	9" LIVE OAK	T-334	13" LIVE OAK		
T-135	11" LIVE OAK	T-185	22" LIVE OAK	T-235	14" POST OAK	T-285	8" LIVE OAK	T-335	13" LIVE OAK		
T-136	26" LIVE OAK	T-186	10" CEDAR	T-236	13" POST OAK	T-286	8" LIVE OAK	T-336	11" LIVE OAK		
T-137	11" LIVE OAK	T-187	19" LIVE OAK	T-237	10" LIVE OAK	T-287	8" LIVE OAK	T-337	12" LIVE OAK		
T-138	8" LIVE OAK	T-188	8" LIVE OAK	T-238	11" LIVE OAK	T-288	14" LIVE OAK	T-338	12" LIVE OAK		
T-139	16" LIVE OAK	T-189	9" LIVE OAK	T-239	17" POST OAK	T-289	20" CEDAR	T-339	14" LIVE OAK		
T-140	16" RED OAK	T-190	11" LIVE OAK	T-240	10" CEDAR	T-290	24" LIVE OAK	T-340	12" LIVE OAK		
*T-141	11" LIVE OAK	T-191	11" LIVE OAK	T-241	10" LIVE OAK	T-291	12" LIVE OAK	T-341	12" LIVE OAK		
*T-142	8" LIVE OAK	T-192	11" LIVE OAK	T-242	20" POST OAK	T-292	10" LIVE OAK	T-342	17" CEDAR		
T-143	9" LIVE OAK	T-193	13" LIVE OAK	T-243	13" POST OAK	T-293	12" LIVE OAK	T-343	15" ELM		
T-144	10" LIVE OAK	T-194	13" LIVE OAK	T-244	12" POST OAK	T-294	9" LIVE OAK	T-344	10 LIVE OAK		
T-145	12" LIVE OAK	T-195	12" LIVE OAK	T-245	14" POST OAK	T-295	10" LIVE OAK	T-345	9" LIVE OAK		
T-146	8" LIVE OAK	T-196	12" LIVE OAK	*T-246	12" POST OAK	T-296	10" LIVE OAK	T-346	14" LIVE OAK		
T-147	9" LIVE OAK	T-197	9" RED OAK	T-247	10" LIVE OAK	T-297	10" LIVE OAK	T-347	14" LIVE OAK		
T-148	9" LIVE OAK	T-198	8" LIVE OAK	T-248	8" LIVE OAK	T-298	14" LIVE OAK	T-348	10 LIVE OAK		
T-149	13" LIVE OAK	T-199	11" LIVE OAK	T-249	9" LIVE OAK	T-299	9" LIVE OAK	T-349	12" LIVE OAK		
T-150	13" LIVE OAK	T-200	10" LIVE OAK	T-250	9" LIVE OAK	T-300	13" LIVE OAK	T-350	27" LIVE OAK		

* = TREE TO BE REMOVED

LEGAL DESCRIPTION:

BEING A 7.16 ACRE TRACT OR PARCEL OUT OF THE J.N. HALFORD SURVEY, HAYS COUNTY, TEXAS; CONVEYED TO MEMORY LANE EVENT CENTER, LLC, AS RECORDED IN DOCUMENT NO. 2014-14000091, OF THE OFFICIAL PUBLIC RECORDS OF HAYS COUNTY, TEXAS.

BENCHMARKS:

BM1: APPROXIMATELY 1,419 FT SOUTHEAST OF THE SOUTHEAST CORNER OF THIS TRACT TO A HAYS COUNTY BENCHMARK "H043".

ELEVATION = 1,150.67'

NOTES:

1. THE 100 YEAR REGULATORY FLOODPLAN DOES NOT EXIST ON THIS SITE, PER FEMA FIRM PANEL NO. 48209C 0115F DATED 9/2/05.
2. ALL EXISTING DRIVEWAYS WITHIN 500 FEET OF SITE ARE SHOWN ON PLAN

LEGEND

EXISTING	DESCRIPTION
	BOUNDARY LINE
	EASEMENT BOUNDARY
915	CONTOURS
	LOT LINE
	CENTER LINE OF DITCH
TEL	TELEPHONE LINE
W	WATER LINE
	WATER VALVE
	FIRE HYDRANT
	WATER METER
WW	WASTEWATER LINE
FM	FORCE MAIN
	WASTEWATER MANHOLE
C.O.	WASTEWATER CLEANOUT
	WASTEWATER SERVICE
F.V.	FLUSH VALVE
	AIR RELEASE VALVE
	EXISTING GAS RISER
	EXISTING IRRIGATION VALVE
OHE	OVER HEAD ELECTRIC
OHT	OVER HEAD TELEPHONE
	POWER POLE
	GUY WIRE
SS	STORM SEWER
	CMP/ RCP PIPES
ATT	AT&T LINE
FOC	FIBER OPTIC CABLE
GAS	GAS LINE
	PAVEMENT
	CONCRETE
L.P.	LIGHT POLE
T100	TREE WITH TAG NUMBER
	EXISTING SHRUBS
	CHAIN LINK FENCE
	WOOD FENCE
	BARB WIRE FENCE
	TRAFFIC FLOW

N

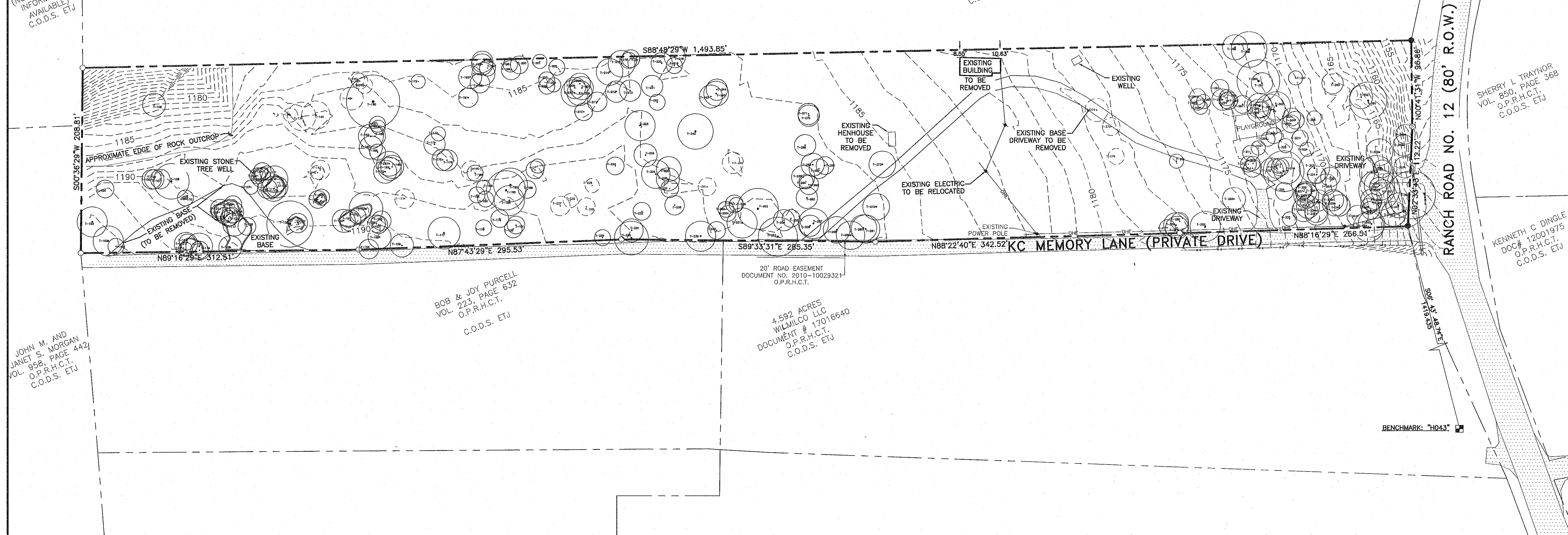
0' 60' 120'

SCALE 1" = 60'

BOB PURCELL (NO RECORDING INFORMATION AVAILABLE) C.O.D.S. ETJ

AGNES L NELSON AND FRANCIS KAYE MARTIN VOL. 778, PAGE 854 O.P.R.H.C.T. C.O.D.S. ETJ

TODD AND SUSANA MILLER DOC# 080006415 O.P.R.H.C.T. C.O.D.S. ETJ



REFERENCE NOTES:

1. FOR DRAINAGE CALCULATIONS, SEE SHEET 5 AND 6.
2. FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET 3 AND 14.

SURVEY DATA SOURCE:

SURVEY DATA SHOWN ON THIS PLAN AS COLLECTED AND PROVIDED BY CELCO SURVEYING, INC. COMPLETED IN SUMMER OF 2017.

REVISION	DESCRIPTION	BY:	DATE:

STATE OF TEXAS
HUGO ELIZONDO JR.
69781
LICENSED
PROFESSIONAL ENGINEER

CUATRO Consultants, LTD.

Registration No. F-3524

EXISTING CONDITIONS PLAN

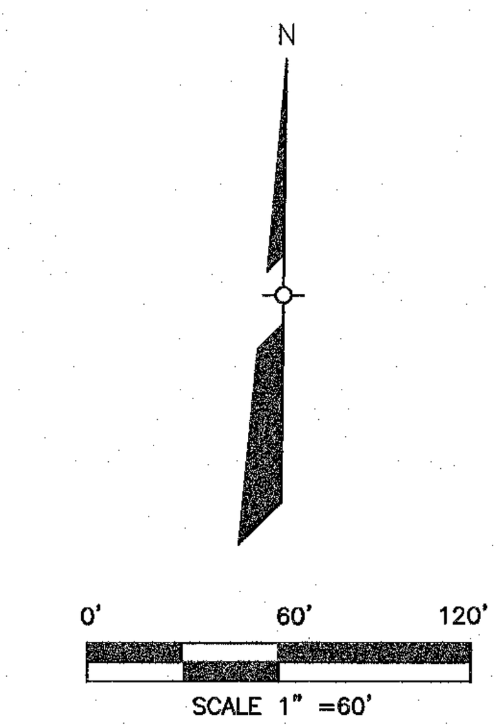
ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: EROSION	
DESIGN:	CHECKED: HE.jr.
DRAWN: FCL	APPROVED: HE.jr.
SHEET: 4 OF 15	

Time of Concentration (TR-55 method) & Run-off Values DRAINAGE AREA - OFFSITE		
Subbasin		OS-1
Area	sf	131,279
	ac	3.01
	sq mi	0.00470
Impervious	sf	26,255
Impervious	%	20%
Pervious	Cn	77.00
Composite	Cn	81
Retention	in	2.32
Initial Abstraction	in	0.463
Sheet Flow		
Slope	in/in	0.03
Length	ft.	100
Roughness	n	0.20
Time	hr.	0.15
Shallow Concentrated		
Slope	in/in	0.012
Length	ft.	1000
Paved?	p/u	u
Time	hr.	0.16
Channel Flow		
Slope	in/in	0.068
Length	ft.	336.00
Velocity	fps	4.0
Time	hr.	0.02
Summary		
Travel Time	hr.	0.34
Tc	min.	20.13
Lag Time	min.	12.08
Run-off Values		
2 Year	cfs	4.0
10 Year	cfs	9.0
25 Year	cfs	12.0
100 Year	cfs	17.1

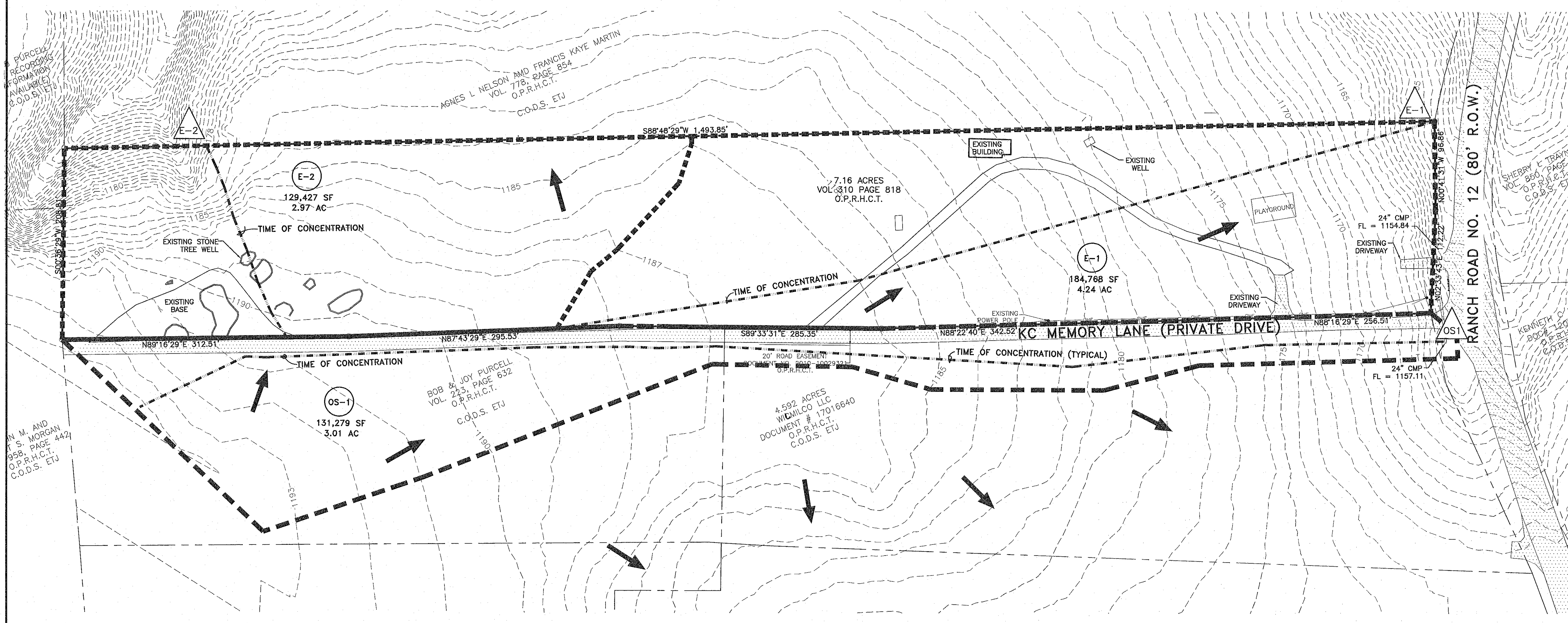
Time of Concentration (TR-55 method) & Run-off Values DRAINAGE AREA - EXISTING			
Subbasin		E-1	E-2
Area	sf	184,768	129,427
	ac	4.24	2.97
	sq mi	0.00663	0.00464
Impervious	sf	2,384	0
Impervious	%	1.29%	0.00%
Pervious	Cn	77	77
Composite	Cn	77	77
Retention	in	2.94	2.99
Initial Abstraction	in	0.588	0.597
Sheet Flow			
Slope	in/in	0.0080	0.0191
Length	ft.	100	100
Roughness	n	0.2	0.2
Time	hr.	0.26	0.18
Shallow Concentrated			
Slope	in/in	0.0398	0.0858
Length	ft.	884	127
Paved?	p/u	u	u
Time	hr.	0.08	0.01
Channel Flow			
Slope	in/in	0	0
Length	ft.	0	0
Velocity	fps	4	4
Time	hr.	0.00	0.00
Summary			
Travel Time	hr.	0.34	0.19
Tc	min.	20.30	11.55
Lag Time	min.	12.18	6.93
Run-off Values			
2 Year	cfs	4.4	3.6
10 Year	cfs	11.5	9.3
25 Year	cfs	15.9	12.8
100 Year	cfs	23.2	18.6



LEGEND

EXISTING | PROPOSED | DESCRIPTION

- BOUNDARY LINE
- EASEMENT BOUNDARY
- CONTOURS
- LOT LINE
- CENTER LINE OF DITCH
- OVER HEAD ELECTRIC
- OVER HEAD TELEPHONE
- POWER POLE
- GUY WIRE
- STORM SEWER
- CMP/ RCP PIPES
- GAS LINE
- PAVEMENT
- CONCRETE
- CHAIN LINK FENCE
- WOOD FENCE
- BARB WIRE FENCE
- FIRE LANE
- ADA ACCESSIBLE ROUTE
- PHASING LINE
- OFFSITE DRAINAGE BOUNDARY
- ON-SITE DRAINAGE BOUNDARY
- DRAINAGE FLOW DIRECTION
- PROPERTY BOUNDARY
- PROPOSED DRAINAGE BOUNDARY
- PROPOSED DRAINAGE EASEMENT
- DRAINAGE AREA
- POINT OF CONCENTRATION



NOTES:
1. TOPOGRAPHY SOURCE: HAYS COUNTY GIS DEPT.
2 FOOT CONTOURS

REVISION	DESCRIPTION	BY:	DATE:

STATE OF TEXAS
HUGO ELIZONDO, JR.
69781
LICENSED PROFESSIONAL ENGINEER

4 CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite A Phone: (512) 312-5040 Fax: (512) 312-5399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

EXISTING DRAINAGE PLAN

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017
PROJECT: JOB # 17-118
DRAWING'S NAME: EXISTING DRAINAGE
DESIGN: RLE | CHECKED: HE.jr.
DRAWN: RLE | APPROVED: HE.jr.
SHEET: **5 OF 15**

Time of Concentration (TR-55 method) & Run-off Values DRAINAGE AREA - OFFSITE		
Subbasin		OS-1
Area	sf	131,279
	ac	3.01
	sq mi	0.00470
Impervious	sf	26,255
Impervious	%	20%
Pervious	Cn	77.00
Composite	Cn	81
Retention	in	2.32
Initial Abstraction	in	0.463
Sheet Flow		
Slope	in/in	0.03
Length	ft.	100
Roughness	n	0.20
Time	hr.	0.15
Shallow Concentrated		
Slope	in/in	0.012
Length	ft.	1000
Paved?	p/u	u
Time	hr.	0.16
Channel Flow		
Slope	in/in	0.068
Length	ft.	336.00
Velocity	fps	4.0
Time	hr.	0.02
Summary		
Travel Time	hr.	0.34
Tc	min.	20.13
Lag Time	min.	12.08
Run-off Values		
2 Year	cfs	4.0
10 Year	cfs	9.0
25 Year	cfs	12.0
100 Year	cfs	17.1

Time of Concentration (TR-55 method) & Run-off Values DRAINAGE AREA - EXISTING			
Subbasin		E-1	E-2
Area	sf	184,768	129,427
	ac	4.24	2.97
	sq mi	0.00663	0.00464
Impervious	sf	2,384	0
Impervious	%	1.29%	0.00%
Pervious	Cn	77	77
Composite	Cn	77	77
Retention	in	2.94	2.99
Initial Abstraction	in	0.588	0.597
Sheet Flow			
Slope	in/in	0.0080	0.0191
Length	ft.	100	100
Roughness	n	0.2	0.2
Time	hr.	0.26	0.18
Shallow Concentrated			
Slope	in/in	0.0398	0.0858
Length	ft.	884	127
Paved?	p/u	u	u
Time	hr.	0.08	0.01
Channel Flow			
Slope	in/in	0	0
Length	ft.	0	0
Velocity	fps	4	4
Time	hr.	0.00	0.00
Summary			
Travel Time	hr.	0.34	0.19
Tc	min.	20.30	11.55
Lag Time	min.	12.18	6.93
Run-off Values			
2 Year	cfs	3.4	3.6
10 Year	cfs	9.0	9.3
25 Year	cfs	12.4	12.8
100 Year	cfs	23.1	18.6

Time of Concentration (TR-55 method) & Run-off Values DRAINAGE AREA - PROPOSED			
Subbasin		DA 1	DA 2
Area	sf	144,326	169,842
	ac	3.31	3.90
	sq mi	0.00518	0.00609
Impervious	sf	43,301	61,078
Impervious	%	30.0%	36.0%
Pervious	Cn	77	77
Composite	Cn	83	85
Retention	in	2.00	1.83
Initial Abstraction	in	0.401	0.365
Sheet Flow			
Slope	in/in	0.0200	0.0100
Length	ft.	100	100
Roughness	n	0.2	0.2
Time	hr.	0.18	0.24
Shallow Concentrated			
Slope	in/in	0.0495	0.0083
Length	ft.	637	216
Paved?	p/u	u	u
Time	hr.	0.05	0.04
Channel Flow			
Slope	in/in	0.01	0.011
Length	ft.	0	400
Velocity	fps	3	3
Time	hr.	0.00	0.04
Summary			
Travel Time	hr.	0.23	0.32
Tc	min.	13.85	19.05
Lag Time	min.	8.31	11.43
Run-off Values			
2 Year	cfs	5.4	6.0
10 Year	cfs	12.2	12.9
25 Year	cfs	15.9	16.8
100 Year	cfs	22.2	23.4

PHASE 1: PRE AND POST RUNOFF SUMMARY		
DESIGN STORM	PRE	POST
2 Yr	3.4	5.4
10 Yr	9	12.2
25 Yr	12.4	15.9
100 Yr	23.1	22.2

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Armadillo South 12 Phase 1
Date Prepared: 5/8/2018

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 | Pages 3-27 to 3-30

Page 3-29 Equation 3.3: L_M = 27.2(A_N x P)

where: $L_{M\ TOTAL\ PROJECT}$ = 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 =	Hays	
Total project area included in plan * =	3.89	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan* =	1.40	acres
Total post-development impervious cover fraction * =	0.36	
P =	33	inches
$L_{M\ TOTAL\ PROJECT}$ =	1257	lbs.

*** The values entered in these fields should be for the total project area.**

Number of drainage basins / outfalls areas leaving the plan area = 1

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

Drainage Basin/Outfall Area No. =	1	
Total drainage basin/outfall area =	3.90	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.40	acres
Post-development impervious fraction within drainage basin/outfall area =	0.36	
$L_{M\ THIS\ BASIN}$ =	1257	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	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 = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where: 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 =	3.89	acres
A_I =	1.40	acres
A_P =	2.49	acres
L_R =	1462	lbs

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

Desired $L_{M\ THIS\ BASIN}$ =	951	lbs.
F =	0.65	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 | Pages 3-34 to 3-36

Rainfall Depth =	1.32	inches
Post Development Runoff Coefficient =	0.24	
On-site Water Quality Volume =	4547	cubic feet

Calculations from RG-348 | Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	909	
Total Capture Volume (required water quality volume(s) x 1.20) =	5456	cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 | Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin =	3286	cubic feet	
Minimum filter basin area =	152	square feet	
Maximum sedimentation basin area =	1369	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	342	square feet	**For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	3286	cubic feet	
Minimum filter basin area =	274	square feet	
Maximum sedimentation basin area =	1095	square feet	**For minimum water depth of 2 feet**
Minimum sedimentation basin area =	68	square feet	**For maximum water depth of 8 feet**

15. Grassy Swales Designed as Required in RG-348 | Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A =	3.89	acres
Impervious Cover in Drainage Area =	1.40	acres
Rainfall intensity = i =	1.1	in/hr
Swale Slope =	0.01	ft/ft
Side Slope (z) =	3	
Design Water Depth = y =	0.33	ft
Weighted Runoff Coefficient = C =	0.48	
A_{CS} = cross-sectional area of flow in Swale =	5.72	sf
P_W = Wetted Perimeter =	18.26	feet
R_H = hydraulic radius of flow cross-section = A_{CS}/P_W =	0.31	feet
n = Manning's roughness coefficient =	0.2	

15A. Using the Method Described in the RG-348

Manning's Equation: $Q = \frac{1.49}{n} A_{CS} R_H^{2/3} S^{0.5}$

$b = \frac{0.134 \times Q}{y^{1.67} S^{0.5}} - zy$ = 16.15 feet

Q = CIA = 2.04 cfs

To calculate the flow velocity in the swale:

V (Velocity of Flow in the swale) = Q/A_{CS} = 0.36 ft/sec

To calculate the resulting swale length:

L = Minimum Swale Length = V (ft/sec) * 300 (sec) = 107.24 feet

19. BMPs Installed in a Series Designed as Required in RG-348 | Pages 3-32

Michael E. Barrett, Ph.D.. P.E. recommended that the coefficient for E_2 be changed from 0.5 to 0.65 on May 3, 2006

E_{TOT} = [1 - ((1 - E_1) X (1 - 0.65E_2) x (1 - 0.25E_3))] X 100 =	94.01	percent	NET EFFICIENCY OF THE BMPs IN THE SERIES
EFFICIENCY OF FIRST BMP IN THE SERIES = E_1 =	89.00	percent	
EFFICIENCY OF THE SECOND BMP IN THE SERIES = E_2 =	70.00	percent	
EFFICIENCY OF THE THIRD BMP IN THE SERIES = E_3 =	0.00	percent	

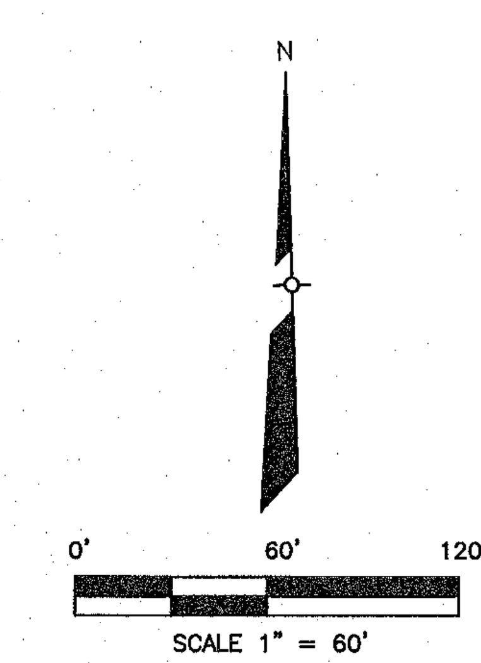
THEREFORE, THE NET LOAD REMOVAL WOULD BE:
(A_I AND A_P VALUES ARE FROM SECTION 3 ABOVE)

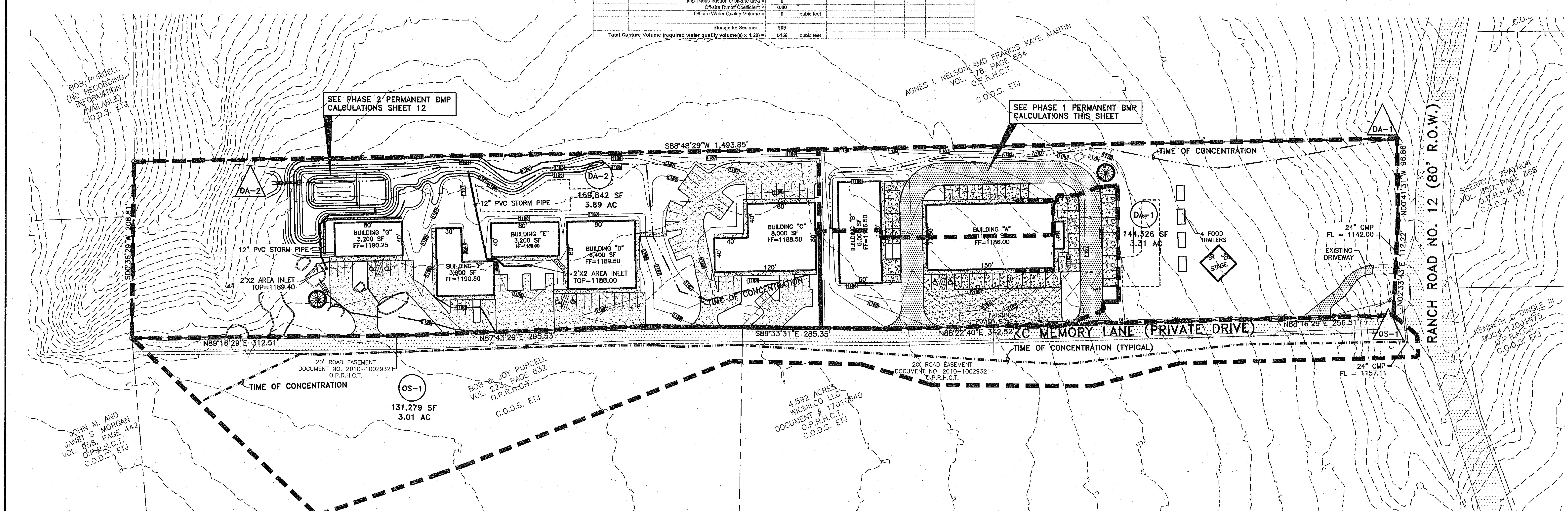
L_R = E_{TOT} X P X (A_I X 34.6 X A_P X0.54) = 1544.40 lbs

TSS REMOVAL

CITY OF DRIPPING SPRINGS ORDINANCES REQUIRE 90% REMOVAL PER [WQO 22.05.015 (c)(3)]. PHASE 1 OF THIS DEVELOPMENT UTILIZES ROCK FILTER AREAS 89% AND GRASSY SWALES 70% TO ACHIEVE A TOTAL TSS REMOVAL OF 94%.

LEGEND	
EXISTING / PROPOSED	DESCRIPTION
	BOUNDARY LINE
	EASEMENT BOUNDARY
915	CONTOURS
	LOT LINE
	CENTER LINE OF DITCH
OHE	OVER HEAD ELECTRIC
OHT	OVER HEAD TELEPHONE
	POWER POLE
	GUY WIRE
SS	STORM SEWER
	CMP/ RCP PIPES
GAS	GAS LINE
	PAVEMENT
	CONCRETE
	CHAIN LINK FENCE
	WOOD FENCE
	BARB WIRE FENCE
	FIRE LANE
	ADA ACCESSIBLE ROUTE
	PHASING LINE
	OFFSITE DRAINAGE BOUNDARY
	ON-SITE DRAINAGE BOUNDARY
	DRAINAGE FLOW DIRECTION
	PROPERTY BOUNDARY
	PROPOSED DRAINAGE BOUNDARY
	PROPOSED DRAINAGE EASEMENT
1	DRAINAGE AREA
1	POINT OF CONCENTRATION





REVISION | DESCRIPTION | BY: | DATE:

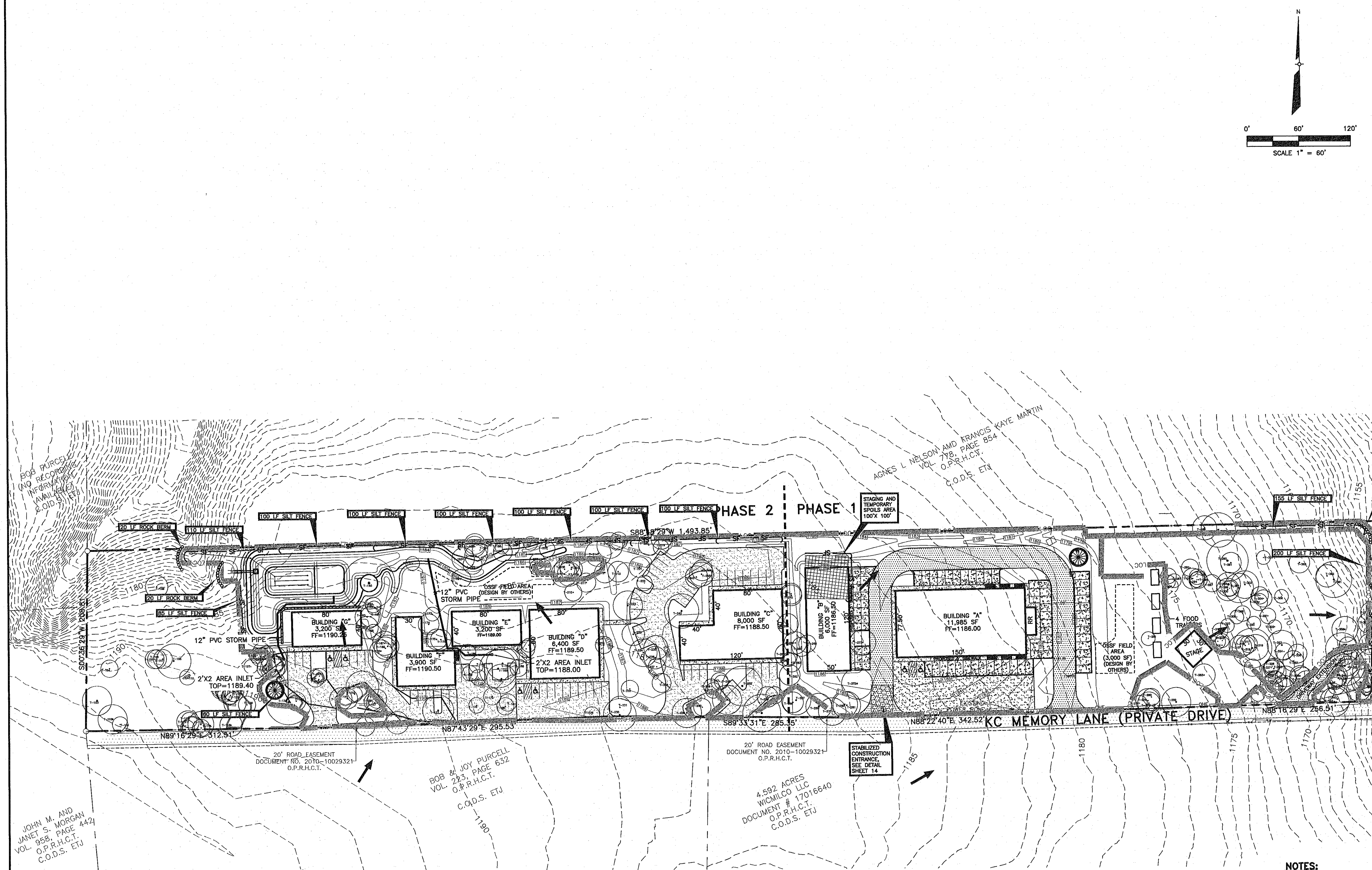
4CUATRO Consultants, LTD.

MASTER DRAINAGE PLAN

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME:	
DESIGN:	CHECKED: HE.jr.
DRAWN:	APPROVED: HE.jr.



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
		CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
		TELEPHONE LINE
		WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
		WASTEWATER LINE
		FORCE MAIN
		WASTEWATER MANHOLE
		WASTEWATER CLEANOUT
		WASTEWATER SERVICE
		FLUSH VALVE
		AIR RELEASE VALVE
		OVER HEAD ELECTRIC
		OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
		STORM SEWER
		CMP/ RCP PIPES
		AT&T LINE
		FIBER OPTIC CABLE
		GAS LINE
		PAVEMENT
		CONCRETE
		LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARBED WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
		LIMITS OF CONSTRUCTION
		SILT FENCE WITH "J" HOOKS
		STABILIZED CONSTRUCTION ENTRANCE
		STAGING/STORAGE AREA
		INLET PROTECTION
		UNDISTURBED AREAS
		DISTURBED AREAS
		ROCK BERM
		DRAINAGE FLOW
		TREE PROTECTION

NOTES:

1. SEE SWPPP, PREPARED FOR THIS PROJECT (BY OTHERS) FOR OTHER TPDES PERMIT REQUIREMENTS.
2. SEE DETAILS, ON SHEET 14.
3. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING.
4. J–HOOKS WILL BE UTILIZED WHEN THE SILT FENCE INSTALLATION IS NOT PARALLEL TO THE EXISTING CONTOURS. SEE DETAIL SHEET 14.
5. LOCATION OF CONTROLS IS SHOWN FOR SCHEMATIC REPRESENTATION ONLY.
6. CONTRACTOR IS RESPONSIBLE FOR INSTALLING FENCE WITHIN PROJECT SITE AND AT EFFECTIVE LOCATIONS.

REFERENCE NOTES:

1. FOR DRAINAGE CALCULATIONS, SEE SHEET 5 AND 6.
2. FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET 3 AND 14.
3. FOR PERMANENT BMP CALCULATION SEE SHEET 6 AND 12.

REVISION	DESCRIPTION	BY:	DATE:
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 60' ROW	HE	2/8/21

HUGO ELIZONDO JR. 69781 LICENSED PROFESSIONAL ENGINEER, STATE OF TEXAS 2/8/21

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite A Kyle, Texas 78640
Phone: (512) 312-5040 Fax: (512) 312-5399
e-mail: cuatro@cuatroconsultants.com

EROSION CONTROL PLAN

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17–118	
DRAWING'S NAME: EROSION	
DESIGN: RLE	CHECKED: HE.jr.
DRAWN: FCL	APPROVED: HE.jr.
SHEET: 7 OF 15	

FIRE PROTECTION NOTES:

1. APPROVED NUMERALS OF A MINIMUM 6" HEIGHT AND OF A COLOR CONTRASTING WITH THE BACKGROUND DESIGNATING THE ADDRESS SHALL BE PLACED ON ALL NEW AND EXISTING BUILDINGS OR STRUCTURES IN A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY AND FROM ALL REAR ALLEYWAYS/ACCESS.

2. WHERE BUILDINGS DO NOT IMMEDIATELY FRONT A STREET, APPROVED 6 INCH HEIGHT BUILDING NUMERALS OR ADDRESSES AND 3-INCH HEIGHT SUITE/APARTMENT NUMERALS OF A COLOR CONTRASTING WITH THE BACKGROUND OF THE BUILDING SHALL BE PLACED ON ALL NEW AND EXISTING BUILDINGS OR STRUCTURES. NUMERALS OR ADDRESSES SHALL BE POSTED ON A MINIMUM 20 INCH BY 30 INCH BACKGROUND ON BORDER.

   STRIPING– FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF CURB.

3. SIGNS– SIGNS SHALL READ "FIRE LANE – NO PARKING" AND SHALL BE 12" WIDE AND 18" HIGH. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NO MORE THAN FIFTY (50') APART ALONG BOTH SIDES OF THE FIRE LANE. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE CHIEF.

4. WHEN FIRE APPARATUS ACCESS ROADS OR A WATER SUPPLY FOR FIRE PROTECTION IS REQUIRED TO BE INSTALLED FOR ANY STRUCTURE OR DEVELOPMENT, THEY SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO THE TIME OF WHICH CONSTRUCTION HAS PROGRESSED BEYOND COMPLETION OF THE FOUNDATION OF ANY STRUCTURE.

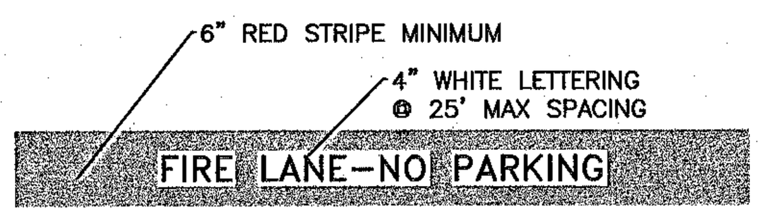
5. FIRE APPARATUS ACCESS ROADS SHALL HAVE UNOBSTRUCTED WIDTH OF NOT LESS THAN 20–24 FEET, EXCLUSIVE OF SHOULDERS, EXCEPT FOR APPROVED SECURITY GATES IN ACCORDANCE WITH IFC SECTION 503.6, AND AN UNOBSTRUCTED VERTICAL CLEARANCE OF NOT LESS THAN 13 FEET 6 INCHES.

   FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. ALL-WEATHER PAVEMENT WILL BE DEFINED AS CONCRETE OR HOT MIX ASPHALT OVER FLEXIBLE BSAE CAPABLE OF AT LEAST 75,000 POUNDS. WHERE CONDITIONS EXIST NOT MEETING THIS CODE DEFINITION OF ALL WEATHER PAVEMENT, AND THE CONDITION EXISTED PRIOR TO EFFECTIVE DATE OF THIS CODE, THE FIRE CHIEF OR HIS/HHER DESIGNEE SHALL HAVE THE AUTHORITY TO CONSIDER AND APPROVE ALTERNATIVE PROPOSED SURFACES.

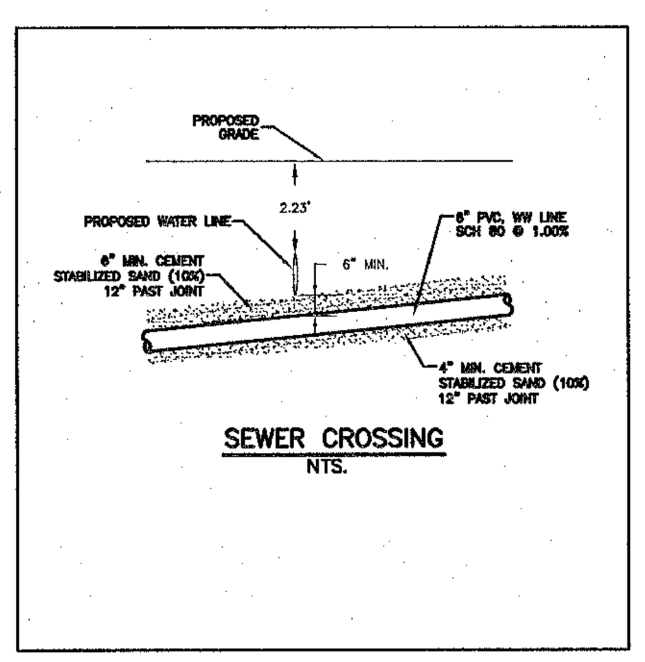
6. WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION, INCLUDING A MEANS OF OPERATION WITHOUT POWER AND A MEANS OF OPERATION WITH A KNOX BOX OR A SIREN OPERATED SENSOR. THE SECURITY GATES AND EMERGENCY OPERATION SHALL BE MAINTAINED AT ALL TIMES. IF A SIREN SENSOR IS UTILIZED, A SIGN WILL BE PLACED ON THE GATE TO NOTIFY EMERGENCY RESPONDERS THAT THE S.O.S. SYSTEM IS IN PLACE.

   A SINGLE GATE SERVING TWO-WAY TRAFFIC SHALL BE 20 FEET IN CLEAR OPEN WIDTH. WHEN TWO GATES ARE INSTALLED AND EACH ONLY SERVES ONE DIRECTION OF TRAVEL, THEY SHALL BE 15 FEET IN CLEAR OPEN WIDTH EACH.

7. "STORZ" ADAPTORS REQUIRED. FIRE SUPPRESSION TANKS SHALL EACH BE PROVIDED WITH A "STORZ" ADAPTOR. DRY HYDRANTS SHALL ALSO BE FITTED WITH A "STORZ" ADAPTOR, SEE DETAIL SHEET 14 OF 15.



FIRE LANE STRIPING DETAIL
N.T.S.



SEWER CROSSING
NTS.

PER CHAPTER 290.44 (E)(4)(B)

(IV) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(V) WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION

REQUIRED TANK SIZE CALCULATIONS: PHASE 1

A. BUILDING "A" (8,000 SF X20' HIGH)
   OHC = 5
   EXPOSURE =1.5
   CC = 0.75,

THEREFORE, REQUIRED TANK SIZE = 38,998 GALLONS (TABLE H.2.4.(C))

PROVIDE 32,208 GALLON TANK (PER NFPA 22 REQUIREMENTS)

REQUIRED TANK SIZE CALCULATIONS: PHASE 2

A. BUILDING "A" (80'X80'X20' HIGH)
   OHC = 5
   EXPOSURE =1.5
   CC = 0.75,

THEREFORE, REQUIRED TANK SIZE = 31,199 GALLONS (TABLE H.2.4.(C))

PROVIDE 32,208 GALLON TANK (PER NFPA 22 REQUIREMENTS)

IMPERVIOUS COVER SUMMARY–PHASE 1

PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.21 AC.)	314,175 SF
TOTAL PHASE AREA:	144,339 SF
TOTAL BUILDING COVERAGE:	19,365 SF
TWO-COURSE DRIVEWAY:	12,078 SF
CRUSHED STONE PARKING AREA: 10,377 x .5 CREDIT =	5,188 SF
D.G. DRIVEWAY/PARKING AREAS:	4,885 SF
SIDEWALKS:	1,785 SF
TOTAL PH.1 PROPOSED IMPERVIOUS COVER:	43,301 SF/144,339 SF=30.00%

IMPERVIOUS COVER SUMMARY–PHASE 2

PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.21 AC.)	314,175 SF
TOTAL PHASE AREA:	169,842 SF
TOTAL BUILDING COVERAGE:	24,700 SF
D.G. DRIVEWAY/PARKING AREAS:	31,931 SF
SIDEWALKS:	4,447 SF
TOTAL PH.2 PROPOSED IMPERVIOUS COVER:	61,078 SF/169,842 SF=35.90%

IMPERVIOUS COVER SUMMARY–TOTAL

PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.16 AC.)	314,175 SF
TOTAL BUILDING COVERAGE:	44,065 SF
D.G. DRIVEWAY/PARKING AREA:	36,816 SF
SIDEWALKS:	6,232 SF
CRUSHED STONE PARKING AREA: 10,377 X .5 CREDIT =	5,188 SF
TWO-COURSE DRIVEWAY:	12,078 SF
TOTAL PROPOSED IMPERVIOUS COVER:	104,379 SF/314,175 SF=33.20%

N

0' 30' 60'
SCALE 1" = 30'

SURFACE LEGEND:

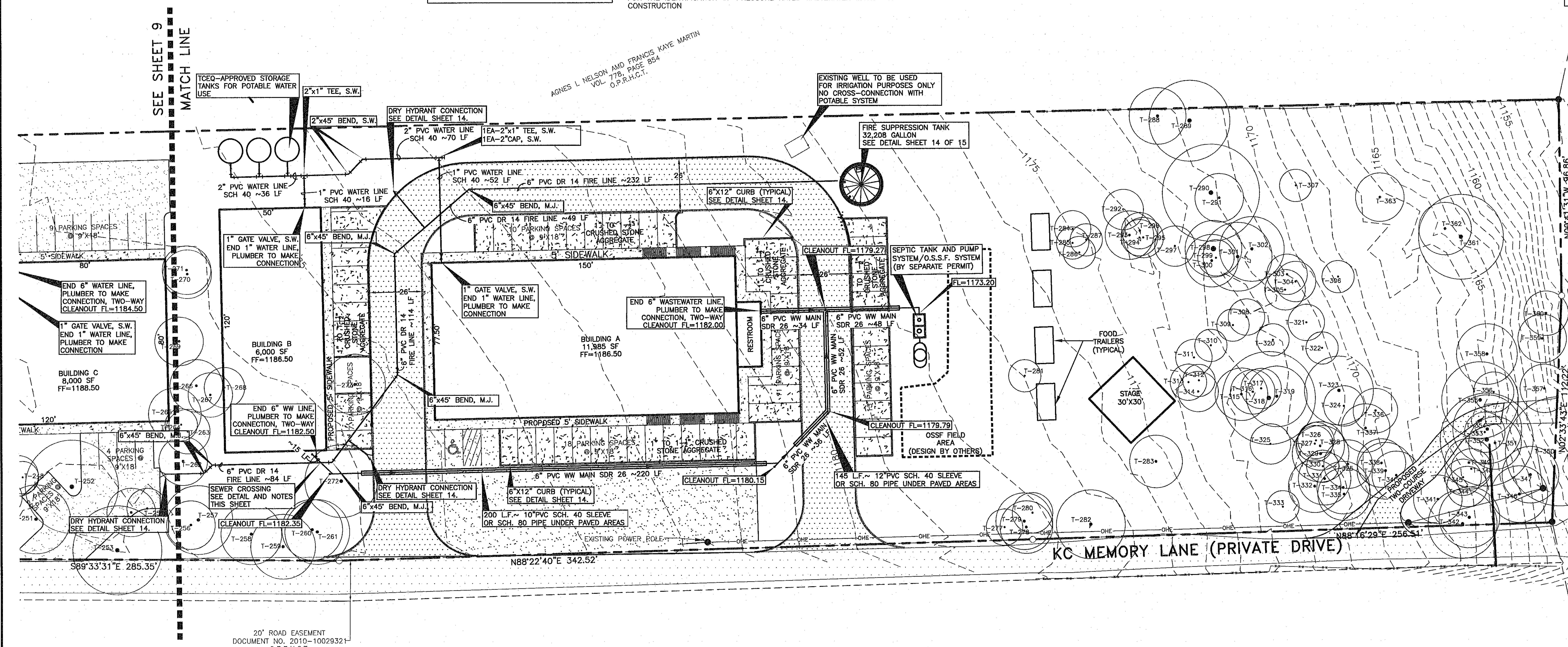
- TWO-COURSE TREATMENT
- DECOMPOSED GRANITE
- CRUSHED STONE

NOTE:

1. FOR PAVEMENT AND DRIVEWAY SECTIONS SEE GRADING PLAN SHEETS 10 AND 11 OF 15.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
915	915	CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
TEL	TEL	TELEPHONE LINE
W	W	WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
WW	WW	WASTEWATER LINE
FM	FM	FORCE MAIN
		WASTEWATER MANHOLE
C.O.	C.O.	WASTEWATER CLEANOUT
		WASTEWATER SERVICE
F.V.	F.V.	FLUSH VALVE
		AIR RELEASE VALVE
OHE	OHE	OVER HEAD ELECTRIC
OHT	OHT	OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
SS	SS	STORM SEWER
		CMP/ RCP PIPES
ATT	ATT	AT&T LINE
FOC	FOC	FIBER OPTIC CABLE
GAS	GAS	GAS LINE
		PAVEMENT
		CONCRETE
L.P.	L.P.	LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARB WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
		FIRE LANE



REFERENCE NOTES:

1. FOR DETAILED SITE GRADING, SEE SHEETS 10 AND 11.
2. FOR DRAINAGE CALCULATIONS, SEE SHEET 5 AND 6.
3. FOR EROSION CONTROL PLAN, SEE SHEET 7.
4. FOR DIMENSION CONTROL PLAN, SEE SHEET 14.

REVISION	DESCRIPTION	BY:	DATE:
1	REVISED LOCATIONS OF WATER AND AND WASTEWATER LINES PER COUNTY DEVELOPMENT SERVICES COMMENTS	H.E.Jr.	02/15/19
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 60' ROW	HE	2/3/21

STATE OF TEXAS — HUGO ELIZONDO JR. 69781 LICENSED PROFESSIONAL ENGINEER 2/3/21

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite B Phone: (512) 312-5040 Fax: (512) 312-5399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

SITE PLAN/ UTILITY LAYOUT: PHASE 1

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: ARM-SITE-PLAN	
DESIGN: STAFF	CHECKED: HE.jr.
DRAWN: FL	APPROVED: HE.jr.
SHEET: 8 OF 15	

FIRE PROTECTION NOTES:

1. APPROVED NUMERALS OF A MINIMUM 6" HEIGHT AND OF A COLOR CONTRASTING WITH THE BACKGROUND DESIGNATING THE ADDRESS SHALL BE PLACED ON ALL NEW AND EXISTING BUILDINGS OR STRUCTURES IN A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY AND FROM ALL REAR ALLEYWAYS/ACCESS.

2. WHERE BUILDINGS DO NOT IMMEDIATELY FRONT A STREET, APPROVED 6 INCH HEIGHT BUILDING NUMERALS OR ADDRESSES AND 3-INCH HEIGHT SUITE/APARTMENT NUMERALS OF A COLOR CONTRASTING WITH THE BACKGROUND OF THE BUILDING SHALL BE PLACED ON ALL NEW AND EXISTING BUILDINGS OR STRUCTURES. NUMERALS OR ADDRESSES SHALL BE POSTED ON A MINIMUM 20 INCH BY 30 INCH BACKGROUND ON BORDER.

   STRIPING– FIRE APPARATUS ACCESS ROADS SHALL BE CONTINUOUSLY MARKED BY PAINTED LINES OF RED TRAFFIC PAINT SIX INCHES (6") IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. THE WORDS "FIRE LANE – NO PARKING" SHALL APPEAR IN FOUR INCH (4") WHITE LETTERS AT 25 FEET INTERVALS ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF CURB.

3. SIGNS– SIGNS SHALL READ "FIRE LANE – NO PARKING" AND SHALL BE 12" WIDE AND 18" HIGH. SIGNS SHALL BE PERMANENTLY AFFIXED TO A STATIONARY POST AND THE BOTTOM OF THE SIGN SHALL BE SIX FEET, SIX INCHES (6'6") ABOVE FINISHED GRADE. SIGNS SHALL BE SPACED NO MORE THAN FIFTY (50') APART ALONG BOTH SIDES OF THE FIRE LANE. SIGNS MAY BE INSTALLED ON PERMANENT BUILDINGS OR WALLS OR AS APPROVED BY THE FIRE CHIEF.

4. WHEN FIRE APPARATUS ACCESS ROADS OR A WATER SUPPLY FOR FIRE PROTECTION IS REQUIRED TO BE INSTALLED FOR ANY STRUCTURE OR DEVELOPMENT, THEY SHALL BE INSTALLED, TESTED AND APPROVED PRIOR TO THE TIME OF WHICH CONSTRUCTION HAS PROGRESSED BEYOND COMPLETION OF THE FOUNDATION OF ANY STRUCTURE.

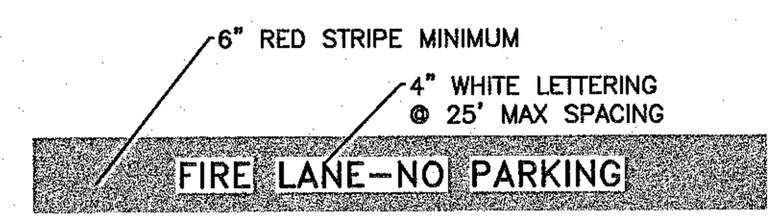
5. FIRE APPARATUS ACCESS ROADS SHALL HAVE UNOBSTRUCTED WIDTH OF NOT LESS THAN 20–24 FEET, EXCLUSIVE OF SHOULDERS, EXCEPT FOR APPROVED SECURITY GATES IN ACCORDANCE WITH IFC SECTION 503.6, AND AN UNOBSTRUCTED VERTICAL CLEARANCE OF NOT LESS THAN 13 FEET 6 INCHES.

   FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS AND SHALL BE SURFACED SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. ALL-WEATHER PAVEMENT WILL BE DEFINED AS CONCRETE OR HOT MIX ASPHALT OVER FLEXIBLE BSAE CAPABLE OF AT LEAST 75,000 POUNDS. WHERE CONDITIONS EXIST NOT MEETING THIS CODE DEFINITION OF ALL WEATHER PAVEMENT, AND THE CONDITION EXISTED PRIOR TO EFFECTIVE DATE OF THIS CODE, THE FIRE CHIEF OR HIS/HHER DESIGNEE SHALL HAVE THE AUTHORITY TO CONSIDER AND APPROVE ALTERNATIVE PROPOSED SURFACES.

6. WHERE SECURITY GATES ARE INSTALLED, THEY SHALL HAVE AN APPROVED MEANS OF EMERGENCY OPERATION, INCLUDING A MEANS OF OPERATION WITHOUT POWER AND A MEANS OF OPERATION WITH A KNOX BOX OR A SIREN OPERATED SENSOR. THE SECURITY GATES AND EMERGENCY OPERATION SHALL BE MAINTAINED AT ALL TIMES. IF A SIREN SENSOR IS UTILIZED, A SIGN WILL BE PLACED ON THE GATE TO NOTIFY EMERGENCY RESPONDERS THAT THE S.O.S. SYSTEM IS IN PLACE.

   A SINGLE GATE SERVING TWO-WAY TRAFFIC SHALL BE 20 FEET IN CLEAR OPEN WIDTH. WHEN TWO GATES ARE INSTALLED AND EACH ONLY SERVES ONE DIRECTION OF TRAVEL, THEY SHALL BE 15 FEET IN CLEAR OPEN WIDTH EACH.

7. "STORZ" ADAPTORS REQUIRED. SIRE SUPPRESSION TANKS SHALL EACH BE PROVIDED WITH A "STORZ" ADAPTOR. DRY HYDRANTS SHALL ALSO BE FITTED WITH A "STORZ" ADAPTOR, SEE DETAIL SHEET 14 OF 15.



FIRE LANE STRIPING DETAIL
N.T.S.

REQUIRED TANK SIZE CALCULATIONS: PHASE 1

A. BUILDING "A" (8,000 SF X20' HIGH)
OHC = 5
EXPOSURE =1.5
CC = 0.75,
THEREFORE, REQUIRED TANK SIZE = 38,998 GALLONS (TABLE H.2.4.(C))
PROVIDE 32,208 GALLON TANK (PER NFPA 22 REQUIREMENTS)

REQUIRED TANK SIZE CALCULATIONS: PHASE 2

A. BUILDING "A" (80'X80'X20' HIGH)
OHC = 5
EXPOSURE =1.5
CC = 0.75,
THEREFORE, REQUIRED TANK SIZE = 31,199 GALLONS (TABLE H.2.4.(C))
PROVIDE 32,208 GALLON TANK (PER NFPA 22 REQUIREMENTS)

IMPERVIOUS COVER SUMMARY–PHASE 1

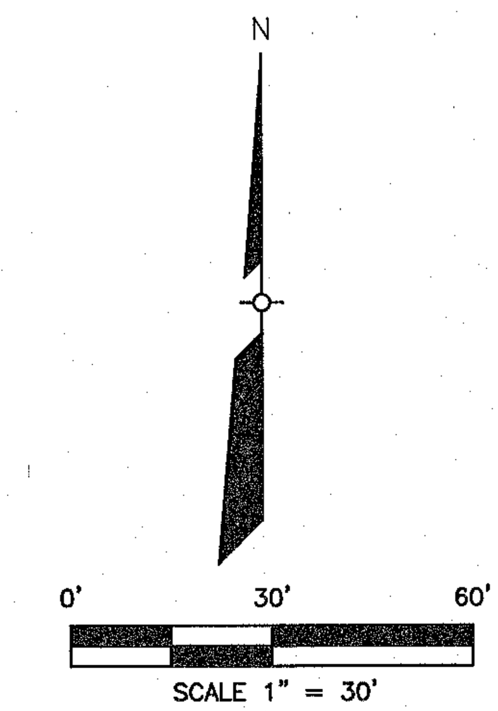
PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.21 AC.)	314,175 SF
TOTAL PHASE AREA:	144,339 SF
TOTAL BUILDING COVERAGE:	19,365 SF
TWO-COURSE DRIVEWAY:	12,078 SF
CRUSHED STONE PARKING AREA: 10,377 x .5 CREDIT =	5,188 SF
D.G. DRIVEWAY/PARKING AREAS:	4,885 SF
SIDEWALKS:	1,785 SF
TOTAL PH.1 PROPOSED IMPERVIOUS COVER:	43,301 SF/144,339 SF=30.00%

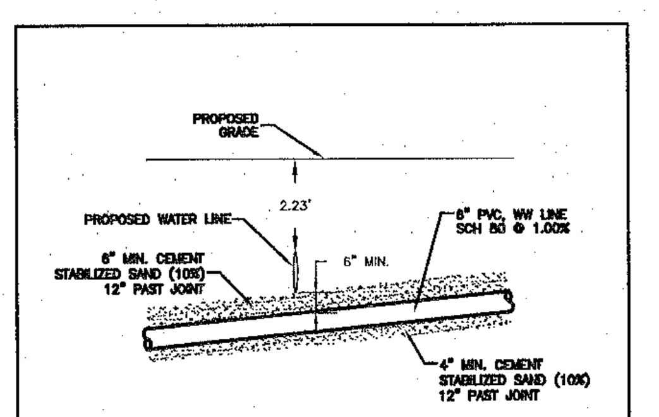
IMPERVIOUS COVER SUMMARY–PHASE 2

PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.21 AC.)	314,175 SF
TOTAL PHASE AREA:	169,842 SF
TOTAL BUILDING COVERAGE:	24,700 SF
D.G. DRIVEWAY/PARKING AREAS:	31,931 SF
SIDEWALKS:	4,447 SF
TOTAL PH.2 PROPOSED IMPERVIOUS COVER:	61,078 SF/169,842 SF=35.90%

IMPERVIOUS COVER SUMMARY–TOTAL

PROPOSED IMPERVIOUS COVER	
ZONING:	N/A
TOTAL SITE AREA: (7.16 AC.)	314,175 SF
TOTAL BUILDING COVERAGE:	44,065 SF
D.G. DRIVEWAY/PARKING AREA:	36,816 SF
SIDEWALKS:	6,232 SF
CRUSHED STONE PARKING AREA: 10,377 X .5 CREDIT =	5,188 SF
TWO-COURSE DRIVEWAY:	12,078 SF
TOTAL PROPOSED IMPERVIOUS COVER:	104,379 SF/314,175 SF=33.20%





SEWER CROSSING
NTS.

PER CHAPTER 290.44 (E)(4)(B)

(IV) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(V) WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION

SURFACE LEGEND:

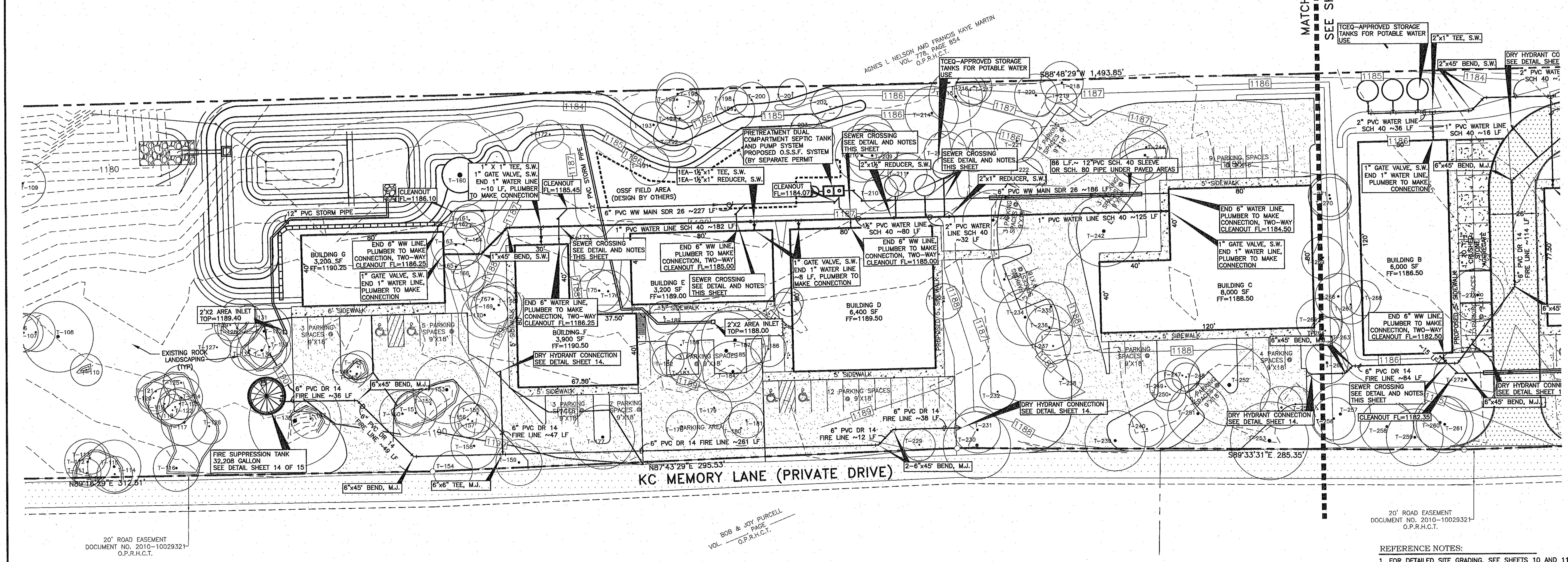
- TWO-COURSE TREATMENT
- DECOMPOSED GRANITE
- CRUSHED STONE

NOTE:

1. FOR PAVEMENT AND DRIVEWAY SECTIONS SEE GRADING PLAN SHEETS 10 AND 11 OF 15.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
915	915	CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
TEL	TEL	TELEPHONE LINE
W	W	WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
WW	WW	WASTEWATER LINE
FM	FM	FORCE MAIN
		WASTEWATER MANHOLE
C.O.	C.O.	WASTEWATER CLEANOUT
		WASTEWATER SERVICE
F.V.	F.V.	FLUSH VALVE
		AIR RELEASE VALVE
OHE	OHE	OVER HEAD ELECTRIC
OHT	OHT	OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
SS	SS	STORM SEWER
		CMP/ RCP PIPES
ATT	ATT	AT&T LINE
FOC	FOC	FIBER OPTIC CABLE
GAS	GAS	GAS LINE
		PAVEMENT
		CONCRETE
L.P.	L.P.	LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARB WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
		FIRE LANE



REFERENCE NOTES:

1. FOR DETAILED SITE GRADING, SEE SHEETS 10 AND 11.
2. FOR DRAINAGE CALCULATIONS, SEE SHEET 5 AND 6.
3. FOR EROSION CONTROL PLAN, SEE SHEET 7.
4. FOR DIMENSION CONTROL PLAN, SEE SHEET 14.

REVISION	DESCRIPTION	BY:	DATE:
1	REVISED LOCATIONS OF WATER AND AND WASTEWATER LINES PER COUNTY DEVELOPMENT SERVICES COMMENTS	H.E.jr.	02/15/19
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 60' ROW	HS	2/8/21

STATE OF TEXAS — HUGO ELIZONDO JR. 69781 LICENSED PROFESSIONAL ENGINEER 2/8/21

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite B Phone: (512) 312-5040 Fax: (512) 312-5399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

SITE PLAN/ UTILITY LAYOUT: PHASE 2

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT: ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: ARM-SITE-PLAN	
DESIGN: STAFF	CHECKED: HE.jr.
DRAWN: FL	APPROVED: HE.jr.
SHEET: 9 OF 15	

PAVEMENT SECTION

A. DRIVEWAY AREAS

TWO-COURSE SURFACE TREATMENT

- SUBGRADE PREPARATION: 6" MOISTURE CONDITIONED CLAY, 100% COMPACTION, PROOFROLL WITH 25 TON ROLLER OBSERVED BY ENGINEER.
- FLEXIBLE BASE: 8" CRUSHED STONE FLEXIBLE BASE COURSE, TxDOT ITEM 247, TYPE A, GRADE 1 OR 2.
- SURFACE: 2 COURSE SURFACE TREATMENT OR 1-½" HMAC

B. CRUSHED STONE PARKING AREA

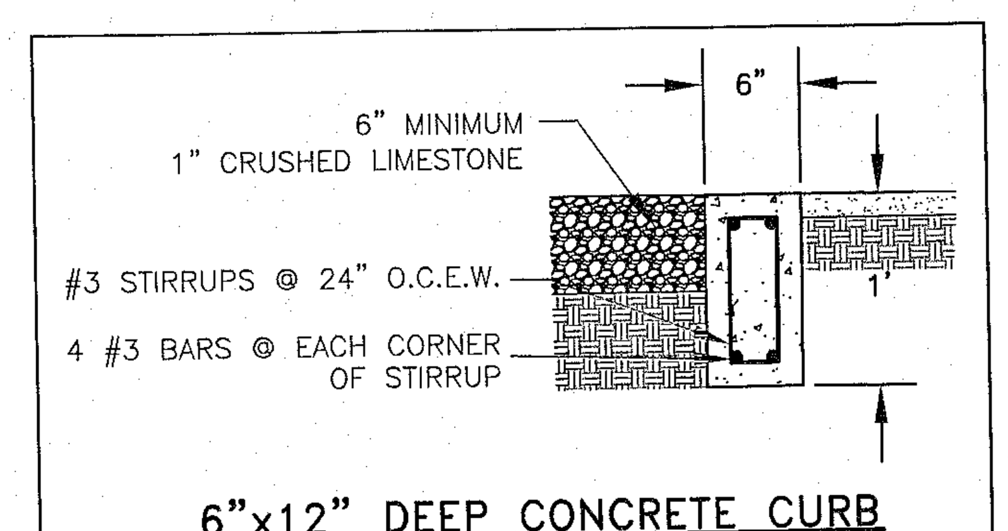
- SUBGRADE PREPARATION: STRIP TOP 6" INCHES OF SOIL PROFILE, REMOVE ALL ORGANICS AND TOPSOIL STRIPPINGS AND STOCKPILE ONSITE TO SPREAD AS FINISH TOP PRESSING
- STONE PERVIOUS SUB-BASE: 6" INCH MINIMUM THICKNESS OF 1" CRUSHED LIMESTONE, CLASS 1 BEDDING MATERIAL, NO FINES, PLACE ON STRIPPED AND SCARIFIED PARKING AREA

C. DECOMPOSED GRANITE

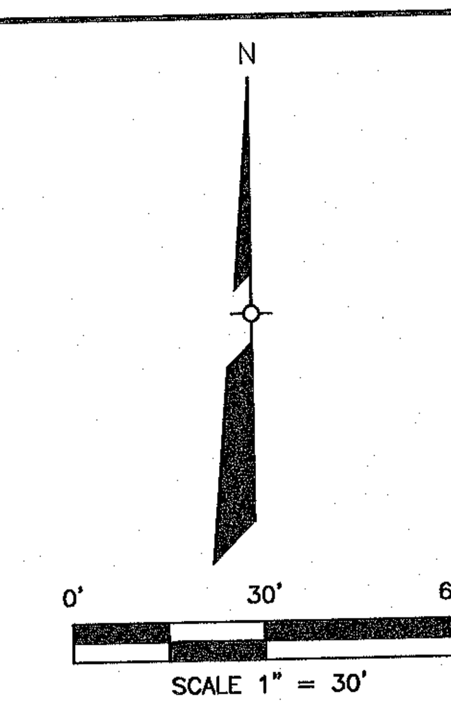
- SUBGRADE PREPARATION: STRIP TOP 6" INCHES OF SOIL PROFILE, REMOVE ALL ORGANICS AND TOPSOIL STRIPPINGS AND STOCKPILE ONSITE TO SPREAD AS FINISH TOP PRESSING
- FLEXIBLE BASE: 6" CRUSHED STONE FLEXIBLE BASE COURSE, TXDOT ITEM 247, TYPE A, GRADE 1 OR 2.
- SURFACE: 2" DECOMPOSED GRANITE WEAR SURFACE

CONSTRUCTION NOTES:

1. ALL SPOT ELEVATIONS CALLOUTS ARE TOP OF PAVEMENT UNLESS SHOWN OTHERWISE
2. ALL STORM PIPE SHALL BE BEDDED PER C.O.A. REQUIREMENTS, ITEM 510. SEE DETAIL SHEET 12 OF 13



6"x12" DEEP CONCRETE CURB
SCALE: 1" = 1'-0"

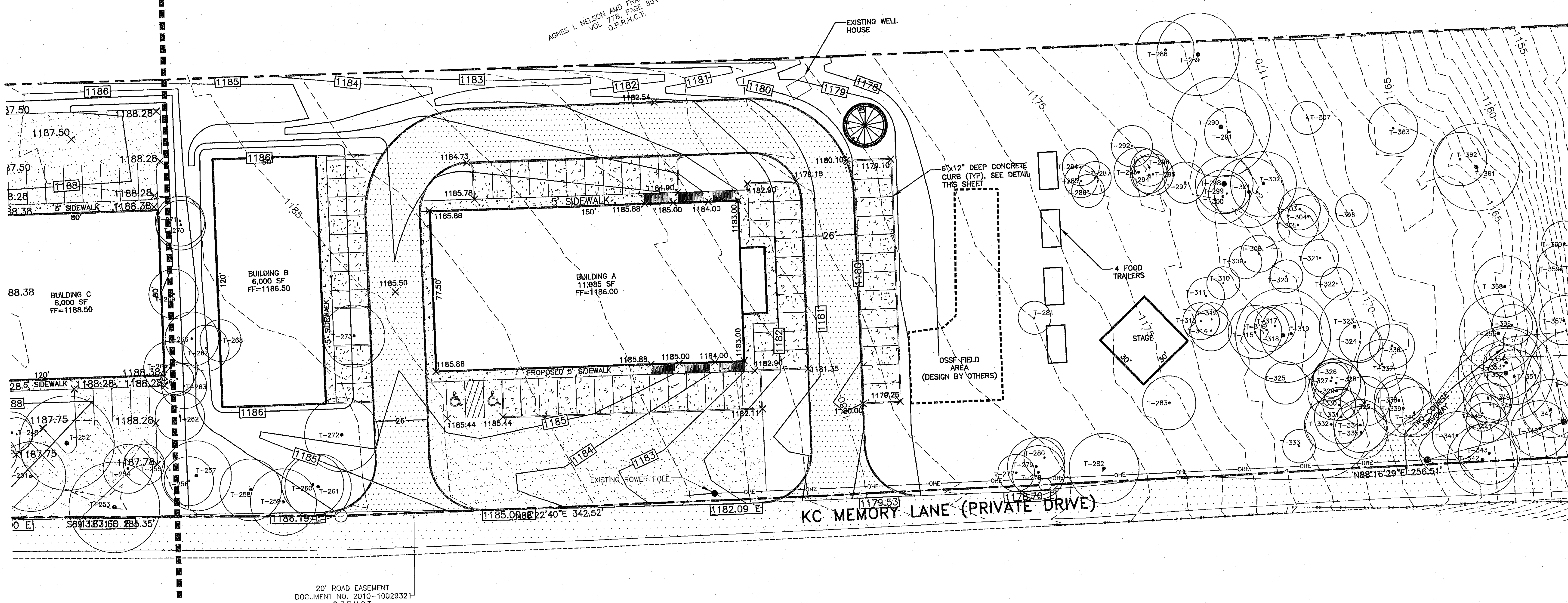


LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
915	915	CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
TEL	TEL	TELEPHONE LINE
W	W	WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
WW	WW	WASTEWATER LINE
FM	FM	FORCE MAIN
		WASTEWATER MANHOLE
C.O.	C.O.	WASTEWATER CLEANOUT
		WASTEWATER SERVICE
F.V.	F.V.	FLUSH VALVE
		AIR RELEASE VALVE
OHE	OHE	OVER HEAD ELECTRIC
OHT	OHT	OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
		CMP/ RCP PIPES
ATT	ATT	AT&T LINE
FOC	FOC	FIBER OPTIC CABLE
GAS	GAS	GAS LINE
		PAVEMENT
		CONCRETE
		RECLAIMED ASPHALT
L.P.	L.P.	LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARBED WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
		FIRE LANE
		5' SIDEWALK/CLEAR ZONE
		7' PLANTING ZONE
		AWNING AREA
		ADA ACCESSIBLE ROUTE
	H.P.	HIGH POINT
× 749.50 E	× 749.50	SPOT ELEVATIONS
	×749.50 T/G	TOP OF GRATE INLET ELEVATION
	×749.50TC	TOP OF CURB ELEVATION
	×749.50G	CURB GUTTER ELEVATION
	×749.50 T/W	TOP OF WALL ELEVATION
	×749.50 B/W	TOP OF WALL ELEVATION

SURFACE LEGEND:

- TWO-COURSE TREATMENT
- DECOMPOSED GRANITE
- CRUSHED STONE



BENCHMARKS:

BM1: APPROXIMATELY 1,419 FT SOUTHEAST OF THE SOUTHEAST CORNER OF THIS TRACT TO A HAYS COUNTY BENCHMARK "H043".

ELEVATION = 1,150.67'

REFERENCE NOTES:

1. FOR SITE PLAN/UTILITY INFORMATION, SEE SHEET 8 AND 9.
2. FOR DRAINAGE, SEE SHEET 5 AND 6.
3. FOR EROSION CONTROL PLAN, SEE SHEET 7.

REVISION	DESCRIPTION	BY:	DATE:
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 60' ROW	HE	2/21

HUGO ELIZONDO JR. 69781 LICENSED PROFESSIONAL ENGINEER — STATE OF TEXAS

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite B Kyle, Texas 78640
Phone: (512) 312-5040 Fax: (512) 312-5399
e-mail: cuatro@cuatroconsultants.com

GRADING PLAN PHASE 1

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: ARM-GRADING	
DESIGN: STAFF	CHECKED: HE.jr.
DRAWN: FL	APPROVED: HE.jr.
SHEET: 10 OF 15	

PAVEMENT SECTION

A. DRIVEWAY AREAS

TWO-COURSE SURFACE TREATMENT

- SUBGRADE PREPARATION: 6" MOISTURE CONDITIONED CLAY, 100% COMPACTION, PROOFROLL WITH 25 TON ROLLER OBSERVED BY ENGINEER.
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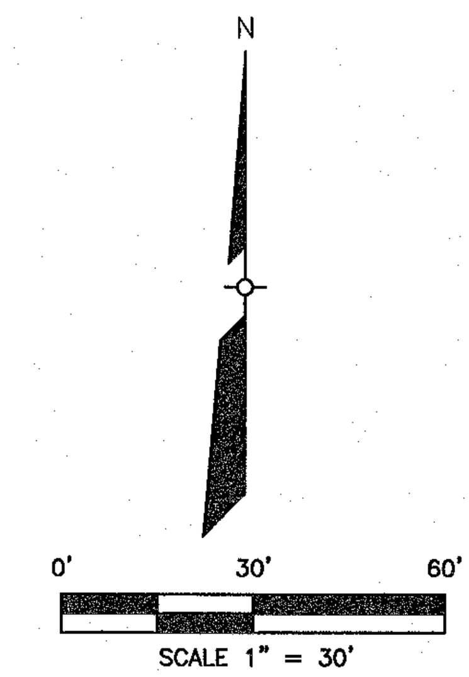
2. ALL STORM PIPE SHALL BE BEDDED PER C.O.A. REQUIREMENTS, ITEM 510. SEE DETAIL SHEET 14 OF 15



SURFACE LEGEND:

- TWO-COURSE TREATMENT
- DECOMPOSED GRANITE
- CRUSHED STONE

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
915	915	CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
TEL	TEL	TELEPHONE LINE
W	W	WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
WW	WW	WASTEWATER LINE
FM	FM	FORCE MAIN
		WASTEWATER MANHOLE
C.O.	C.O.	WASTEWATER CLEANOUT
		WASTEWATER SERVICE
F.V.	F.V.	FLUSH VALVE
		AIR RELEASE VALVE
OHE	OHE	OVER HEAD ELECTRIC
OHT	OHT	OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
		CMP/ RCP PIPES
ATT	ATT	AT&T LINE
FOC	FOC	FIBER OPTIC CABLE
GAS	GAS	GAS LINE
		PAVEMENT
		CONCRETE
		RECLAIMED ASPHALT
L.P.	L.P.	LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARBED WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
		FIRE LANE
		5' SIDEWALK/CLEAR ZONE
		7' PLANTING ZONE
		AWNING AREA
		ADA ACCESSIBLE ROUTE
	H.P.	HIGH POINT
× 749.50 E	× 749.50	SPOT ELEVATIONS
	× 749.50 T/G	TOP OF GRATE INLET ELEVATION
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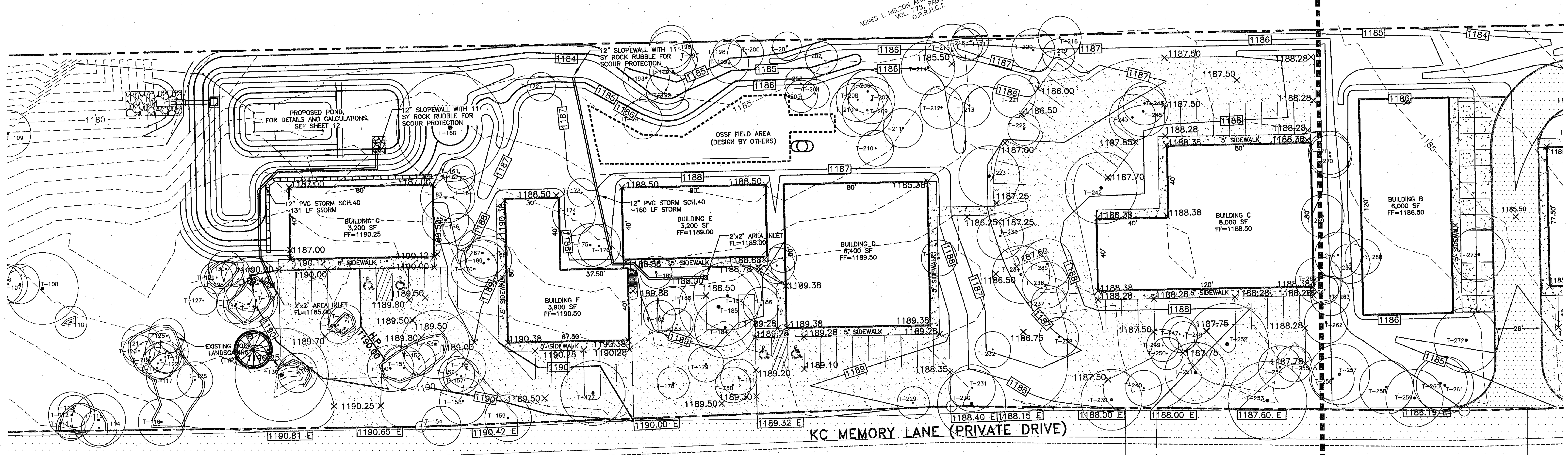

BENCHMARKS:

BM1: APPROXIMATELY 1,419 FT SOUTHEAST OF THE SOUTHEAST CORNER OF THIS TRACT TO A HAYS COUNTY BENCHMARK "H043".

ELEVATION = 1,150.67'

REFERENCE NOTES:

1. FOR SITE PLAN/UTILITY INFORMATION, SEE SHEET 8 AND 9.
2. FOR DRAINAGE, SEE SHEET 5 AND 6.
3. FOR EROSION CONTROL PLAN, SEE SHEET 7.

REVISION	DESCRIPTION	BY:	DATE:
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 100' ROW	HG	2/26/21

STATE OF TEXAS — HUGO ELIZONDO JR. — 69781 — LICENSED PROFESSIONAL ENGINEER

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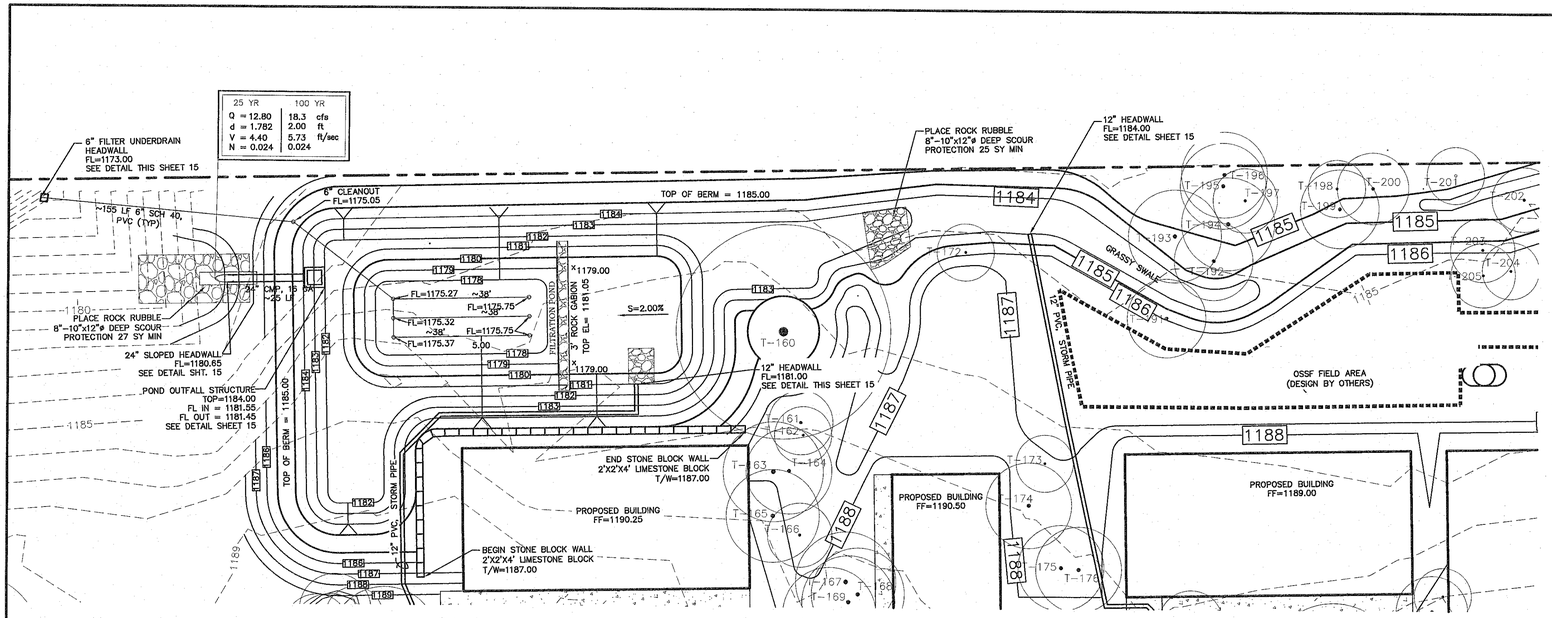
e-mail: cuatro@cuatroconsultants.com

GRADING PLAN PHASE 2

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

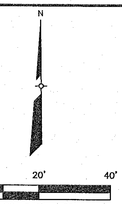
CLIENT: ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: ARM-GRADING	
DESIGN: STAFF	CHECKED: HE.jr.
DRAWN: FL	APPROVED: HE.jr.
SHEET: 11 OF 15	



WATER QUALITY & DETENTION POND

SCALE: 1" = 20'



SCALE 1" = 20'

POND CONSTRUCTION NOTES:

1. POND INTERIOR/EXTERIOR FILL SLOPES SHALL BE INSTALLED AT 3:1 (H:V). ANY SLOPES GREATER THAN 3:1 NEED STABILIZATION.
2. ALL POND INTERIOR SLOPES REQUIRE CURLEX MATTING PER TXDOT ITEM 169.
3. POND ACCESS RAMPS SHALL HAVE A SLOPE OF 4:1 MAXIMUM.
4. INSTALL 4'0" CHAIN LINK ON ANY STRUCTURE WITH A VERTICAL DIFFERENCE OD 2'0"

48-HOUR DRAWDOWN TIME:

$$A_o = \frac{0.001 BMP\_VOL}{C\sqrt{2gH_{avg}}} = \frac{(.001)(9,100)}{0.62\sqrt{(32.2)(3.5')}} = \frac{9.10}{9.95} = 1" \quad \text{USE } 1"\ \text{MAX}$$

A_o = MAXIMUM ORIFICE AREA (SQUARE INCHES)
BMP VOL. = REQUIRED BASIN VOLUME AS CALCULATED ABOVE (CUBIC FEET)
C = ORIFICE COEFFICIENT (TYPICAL 0.62)
G = ACCELERATION OF GRAVITY (32.2 FT/S2)
H_{avg} = h/2, AVERAGE HYDRAULIC HEAD (FT)
Hr = TOTAL HYDRAULIC HEAD DETERMINED FROM DIFFERENCE BETWEEN THE WQ ELEV. AND THE CENTER OF ORIFICE (THE ORIFICE WILL BE LOCATED AT THE BOTTOM OF THE CAP)

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		BOUNDARY LINE
		EASEMENT BOUNDARY
915	910	CONTOURS
		LOT LINE
		CENTER LINE OF DITCH
TEL	TEL	TELEPHONE LINE
W	W	WATER LINE
		WATER VALVE
		FIRE HYDRANT
		WATER METER
WW	WW	WASTEWATER LINE
FM	FM	FORCE MAIN
		WASTEWATER MANHOLE
	C.O.	WASTEWATER CLEANOUT
		WASTEWATER SERVICE
		FLUSH VALVE
		AIR RELEASE VALVE
OHE	OHE	OVER HEAD ELECTRIC
OHT	OHT	OVER HEAD TELEPHONE
		POWER POLE
		GUY WIRE
SS	SS	STORM SEWER
		END/FLARED PIPES
ATT	ATT	ATAT LINE
FOC	FOC	FIBER OPTIC CABLE
GAS	GAS	GAS LINE
		PAVEMENT
		CONCRETE
	LT.	LIGHT POLE
		CHAIN LINK FENCE
		WOOD FENCE
		BARBED WIRE FENCE
		TRAFFIC FLOW
		HANDICAP SPACE
LOC	LOC	LIMITS OF CONSTRUCTION
	SF	SILT FENCE WITH "J" HOOKS
		STABILIZED CONSTRUCTION ENTRANCE
		STAGING/STORAGE AREA
		INLET PROTECTION
		UNDISTURBED AREAS
		DISTURBED AREAS
		ROCK BERM
		DRAINAGE FLOW
	TP	TREE PROTECTION

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Armadillo South 12 phase 2
Date Prepared: 5/8/2018

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadshee

1. The Required Load Reduction for the total project: Calculations from RG-349 — Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:
$L_{M\,TOTAL\,PROJECT}$ = 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 =	Hays	
Total project area included in plan * =	3.89	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	1.40	acres
Total post-development impervious cover fraction * =	0.36	
P =	33	inches
$L_{M\,TOTAL\,PROJECT}$ =	1258	lbs.

*** The values entered in these fields should be for the total project area.**

Number of drainage basins / outfalls areas leaving the plan area =	1	

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

Drainage Basin/Outfall Area No. =	**1**	
Total drainage basin/outfall area =	3.89	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	1.40	acres
Post-development impervious fraction within drainage basin/outfall area =	0.36	
$L_{M\,THIS\,BASIN}$ =	1258	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Sand Filter	
Removal efficiency =	89	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 = (BMP efficiency) x P x (A_I x 34.5 + A_P x 0.54)

where:
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 =	3.31	acres
A_I =	1.40	acres
A_P =	1.91	acres
L_R =	1455	lbs

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

Desired $L_{M\,THIS\,BASIN}$ =	1258	lbs.
F =	0.86	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-349 — Pages 3-34 to 3-36

Rainfall Depth =	1.38	inches
Post Development Runoff Coefficient =	0.32	
On-site Water Quality Volume =	9277	cubic feet

Calculations from RG-348 — Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1055	
Total Capture Volume (required water quality volume(s) x 1.20) =	9332	cubic feet

6B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins =	9332	cubic feet	
Minimum filter basin area =	526	square feet	
Maximum sedimentation basin area =	2111	square feet	For minimum water depth of 2 feet
Minimum sedimentation basin area =	132	square feet	For maximum water depth of 8 feet

15. Grassy Swales — Designed as Required in RG-349 — Pages 3-51 to 3-54

Design parameters for the swale:

Drainage Area to be Treated by the Swale = A_s =	3.31	acres
Impervious Cover in Drainage Area =	1.40	acres
Rainfall Intensity = i =	1.1	in/hr
Swale Slope =	0.67	%
Side Slope (z) =	3	ft/ft
Design Water Depth = y =	0.33	ft
Weighted Runoff Coefficient = C =	0.50	
A_{CS} = cross-sectional area of flow in Swale =	6.13	sf
P_W = Wetted Perimeter =	18.60	feet
R_H = hydraulic radius of flow cross-section = A_{CS}/P_W =	0.33	feet
n = Manning's roughness coefficient =	0.2	

15A. Using the Method Described in the RG-348

Manning's Equation: $Q = 1.49 A_{CS} R_H^{2/3} S^{1/2} / n$

$b = \frac{0.134 \times Q}{y^{1.67} S^{1/2}} - 2y$ = 14.39 feet

Q = CiA = 1.83 cfs

To calculate the flow velocity in the swale:

V (Velocity of Flow in the swale) = Q/A_{CS} = 0.30 ft/sec

To calculate the resulting swale length:

L_s = Minimum Swale Length = V (ft/sec) * 300 (sec) = 107.24 feet

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters must be modified and this solver recalc

19. BMPs Installed in a Series — Designed as Required in RG-349 — Pages 3-32

Michael E. Barrett, Ph.D., P.E. recommended that the coefficient for E_2 be changed from 0.5 to 0.65 on May 3, 2006

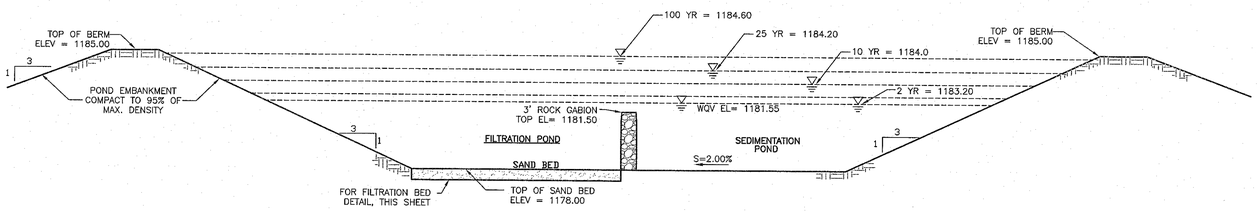
$E_{COMB} = [1 - (1 - E_1) \times (1 - 0.65E_2)] \times 100$ =	94.01 percent	NET EFFICIENCY OF THE BMPs IN THE SERIES
EFFICIENCY OF FIRST BMP IN THE SERIES = E_1 =	89.00 percent	
EFFICIENCY OF THE SECOND BMP IN THE SERIES = E_2 =	70.00 percent	
EFFICIENCY OF THE THIRD BMP IN THE SERIES = E_3 =	0.00 percent	

THEREFORE, THE NET LOAD REMOVAL WOULD BE:
(A AND A_P VALUES ARE FROM SECTION 3 ABOVE)

L_R = E_{TOT} X P X (A_I X 34.6 X A_P X0.54) = 1535.80 lbs

TSS REMOVAL

CITY OF DRIPPING SPRINGS ORDINANCES REQUIRE 90% REMOVAL PER [WQO 22.05.015 (C)(3)]. PHASE 2 OF THIS DEVELOPMENT UTILIZES PARTIAL SEDIMENTATION/FILLTRATION POND 89% AND GRASSY SWALES 70% TO ACHIEVE A TOTAL TSS REMOVAL OF 94%.



TYPICAL SECTION – POND

SCALE: NTS

APPENDIX R - 3
PARTIAL SEDIMENTATION/FILTRATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

Project: Armadillo South 12

DRAINAGE AREA DATA

Drainage Area to Control (DA)	3.89	ac.
Drainage Area Impervious Cover	36.00	%
Capture Depth (CD)=(0.5"+((IC-20)/100))	0.66	in.

WATER QUALITY CONTROL CALCULATIONS	Required		Provided	
The Water Quality Control is to be **PARTIAL SEDIMENTATION FILTRATION**				
25-year Peak Flow Rate to Control	14.52	cfs		
100 - year Peak Flow Rate to Control	21.05	cfs		
Water Quality Volume (WQV=CD*DA*3630)	9,319.66	cf.	9,320.04	cf.
Maximum Ponding Depth above Sand Bed (H)			4.00	ft.
Sedimentation Pond Area			1,109.84	sf.
Sedimentation Pond Volume (Vs=WQVx0.20)	1,863.93	cf.	2,762.04	cf.
Filtration Pond Area (WQV/4+1.33*H)	999.96	sf.	984.00	sf.
Filtration Pond Volume (Vf=WQV-Vs)			6,558.00	cf.
Water Quality Elevation	1181.60	ft. msl		
Elevation of Splitter/Overflow Weir(≥WQ elev)	≥1181.60	ft. msl	1181.60	ft. msl
Height of Gabion Wall	WQV Elevation-0.50 ft	ft. msl	1181.10	ft. msl
Length of Splitter Weir			N/A	ft
Required Head to Pass $Q_{(100)}$	Maximum 1.0 ft.		N/A	ft
Pond Freeboard Provided to Pass the $Q_{(100)}$	Minimum. 0.25 ft.			
48 Hour Drawdown time Orifice Opening Diameter (inches).			1.0	in.

SEDIMENTATION POND:

Stage	Area (ft^2)	Cum. Storage (cu-ft)	Cum. Storage (ac-ft)
1179.00	0	0	
1180.00	1,109.84	554.92	0.012739
1181.00	1,412.00	1,815.84	0.041686
1182.00	1,742.00	3,392.84	0.077889

FILTRATION POND:

Stage	Area (ft^2)	Cum. Storage (cu-ft)	Cum. Storage (ac-ft)
1178.00	984	0	0
1179.00	1,423.00	1,203.50	0.027629
1180.00	1,824.00	2,827.00	0.064899
1181.00	2,254.00	4,866.00	0.111708
1182.00	2,692.00	7,339.00	0.16848

DETENTION POND STAGE VALUES

Stage	Area	Volume	cum. Volume	Ac-ft
1181.6 ft	0 sf	0 cf	0 cf	0.0000
1182.0 ft	5,127 sf	1,154 cf	1,154 cf	0.0260
1183.0 ft	7,025 sf	6,076 cf	7,230 cf	0.1610
1184.0 ft	9,318 sf	8,172 cf	15,401 cf	0.2140
1185.0 ft	12,106 sf	10,712 cf	26,113 cf	0.2780

PRE, POST, AND ROUTED- DETENTION RUNOFF SUMMARY

DESIGN STORM	EXIST	PROP	PROP-ROUTED	WS ELEV.
2 Yr	3.6	6.0	3.1	1183.2
10 Yr	9.3	12.9	9.3	1184
25 Yr	12.8	16.8	12.8	1184.2
100 Yr	18.6	23.4	18.30	1184.6

REFERENCE NOTES:

1. FOR DRAINAGE CALCULATIONS, SEE SHEET 5 AND 6.
2. FOR EROSION CONTROL NOTES AND DETAILS, SEE SHEET 3 AND 14.

DATE: | BY: | DESCRIPTION | REVISION

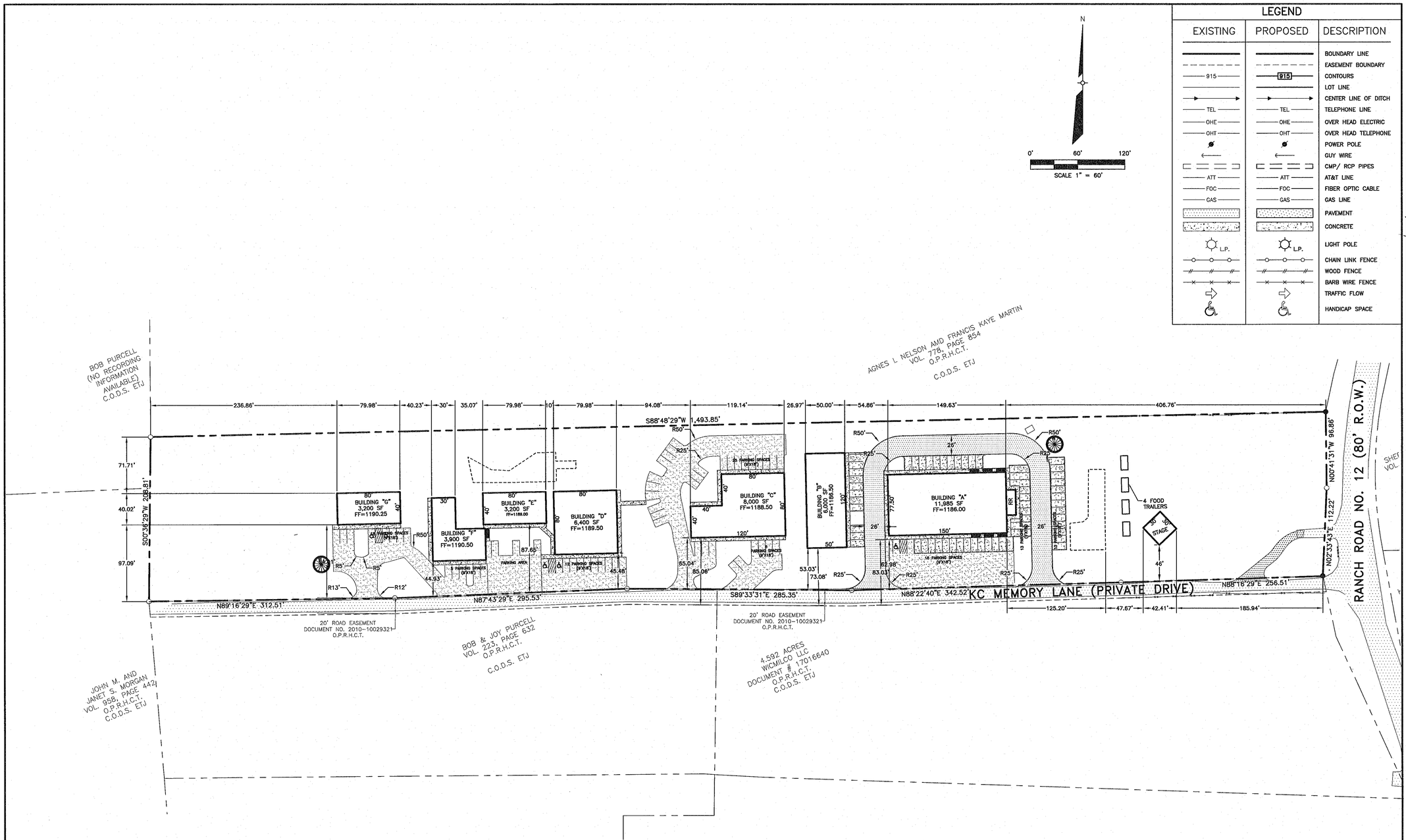
STATE OF TEXAS — HUGO ELIZONDO, III — LICENSED PROFESSIONAL ENGINEER — 69781 — 5/8/18

4QUATRO Consultants, LTD.
Registration No. F-3524
3401 Kyle Crossing, Suite A
Kyle, Texas 78640
Phone: (512) 312-5995 Fax: (512) 312-5997
e-mail: courtney@fourtroconsultants.com

WATER QUALITY/ DETENTION POND AND CALCULATIONS
ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

DATE: SEPTEMBER, 2017
PROJECT: JOB # 17-118
DRAWING'S NAME: EROSION
DESIGN: HE.jr. | CHECKED:
DRAWN: LG | APPROVED: HE.jr.
SHEET: **12 OF 15**



NOTES:

1. ALL DIMENSIONS ARE FROM BACK OF CURB (UNLESS OTHERWISE SHOWN).
   ALL CURB RADIUS DIMENSIONS ARE FROM FACE OF CURB (UNLESS OTHERWISE SHOWN).
2. CURB RADIUS:
   MINIMUM CURB RADIUS: 25 FEET (UNLESS OTHERWISE SHOWN).
   CURB RADIUS @ CORNERS: 3 FEET MINIMUM (UNLESS OTHERWISE SHOWN).

REVISION	DESCRIPTION	BY:	DATE:
2	ADJUSTED BLDG A & B OUTSIDE FUTURE 60' ROW	HE	9/18/17

EQUATRO Consultants, LTD.
Registration No. F-5524
3401 Kyle Crossing, Suite B Phone: (512) 312-5040 Fax: (512) 312-5599
Kyle, Texas 78640 e-mail: equatroconsultants.com

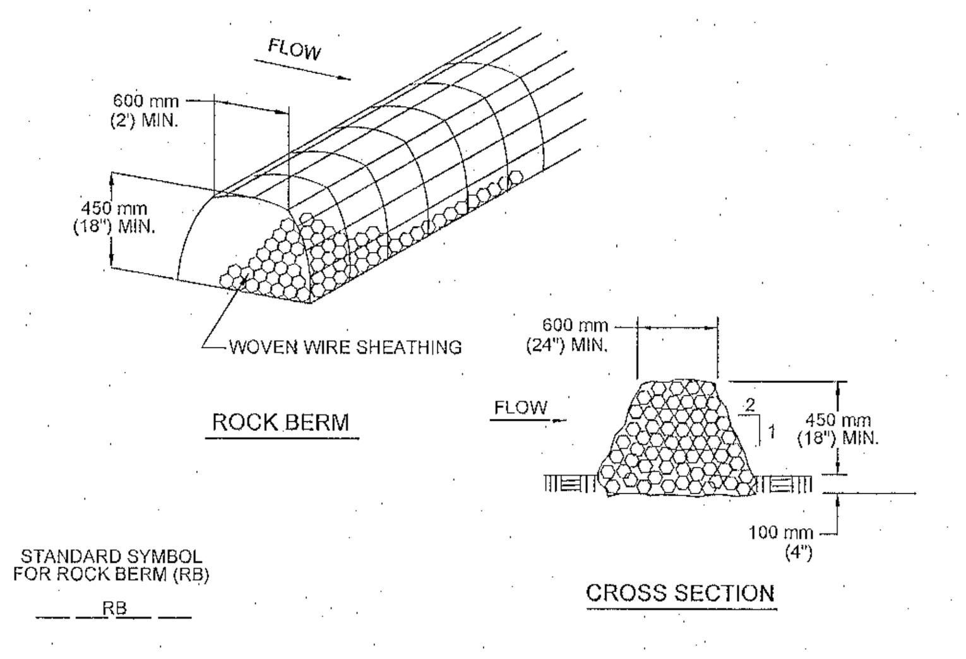
HUGO ELIONDO JR. 69781 LICENSED PROFESSIONAL ENGINEER 9/18/17

DIMENSION CONTROL PLAN

ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

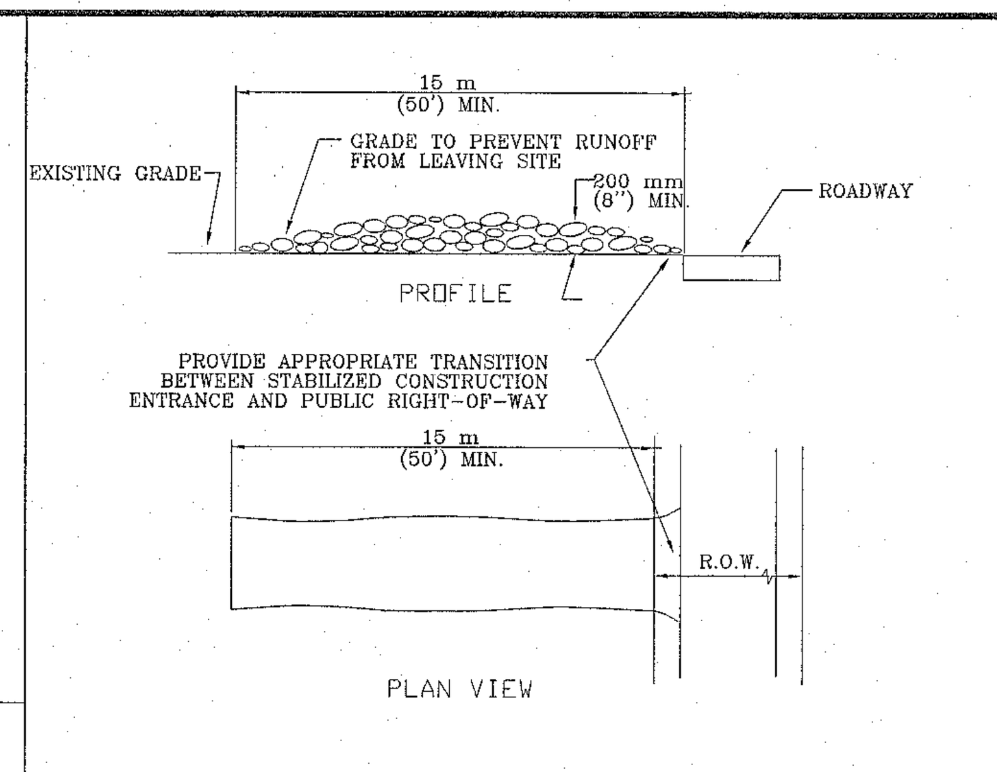
DATE:	SEPTEMBER, 2017
PROJECT:	JOB # 17-118
DRAWING'S NAME:	DAR-DIMS
DESIGN: RLE	CHECKED: HE,Jr.
DRAWN: FCL	APPROVED: HE,Jr.
SHEET:	13 OF 15



NOTES:

1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5") DIAMETER FOR ALL CONDITIONS.
2. 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).
3. 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, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. 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 SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

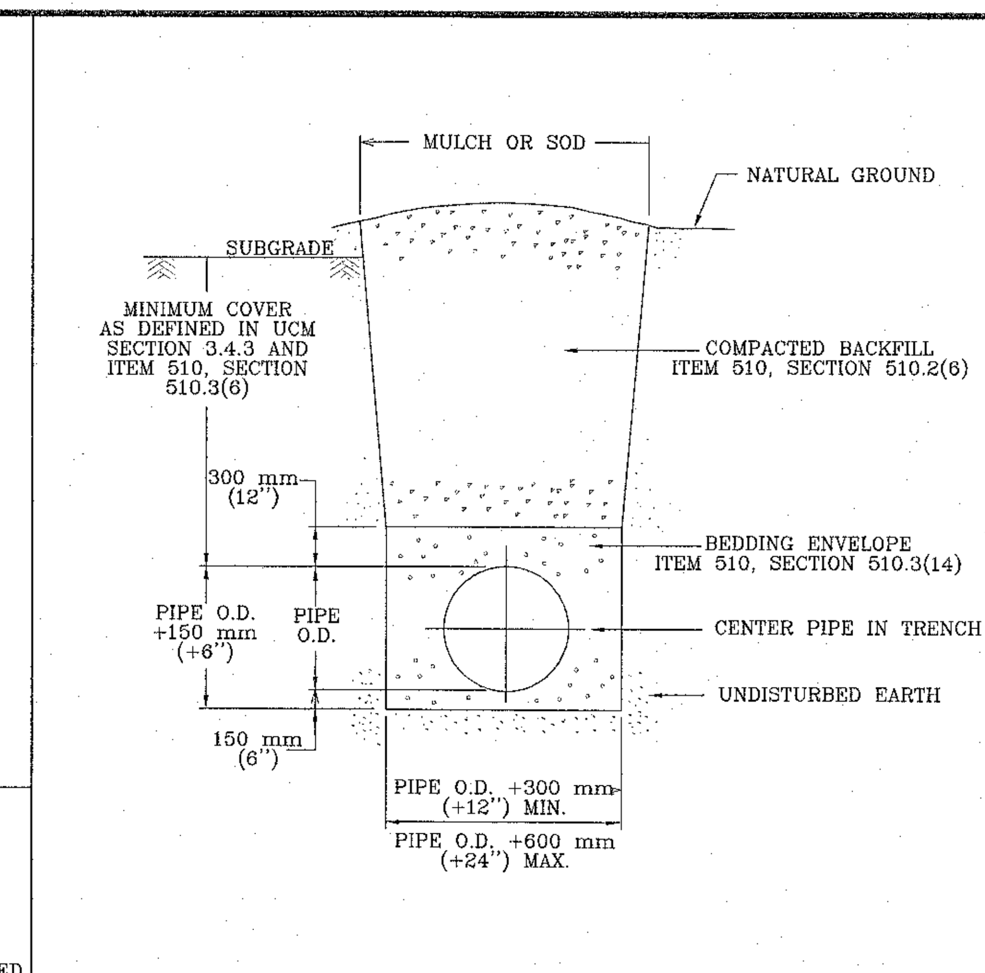
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	ROCK BERM	
RECORD COPY SIGNED BY MORGAN BYARS 6/24/2010 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 639S-1



NOTES:

1. STONE SIZE: 75–125 mm (3–5") OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8").
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. 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.
6. 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.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

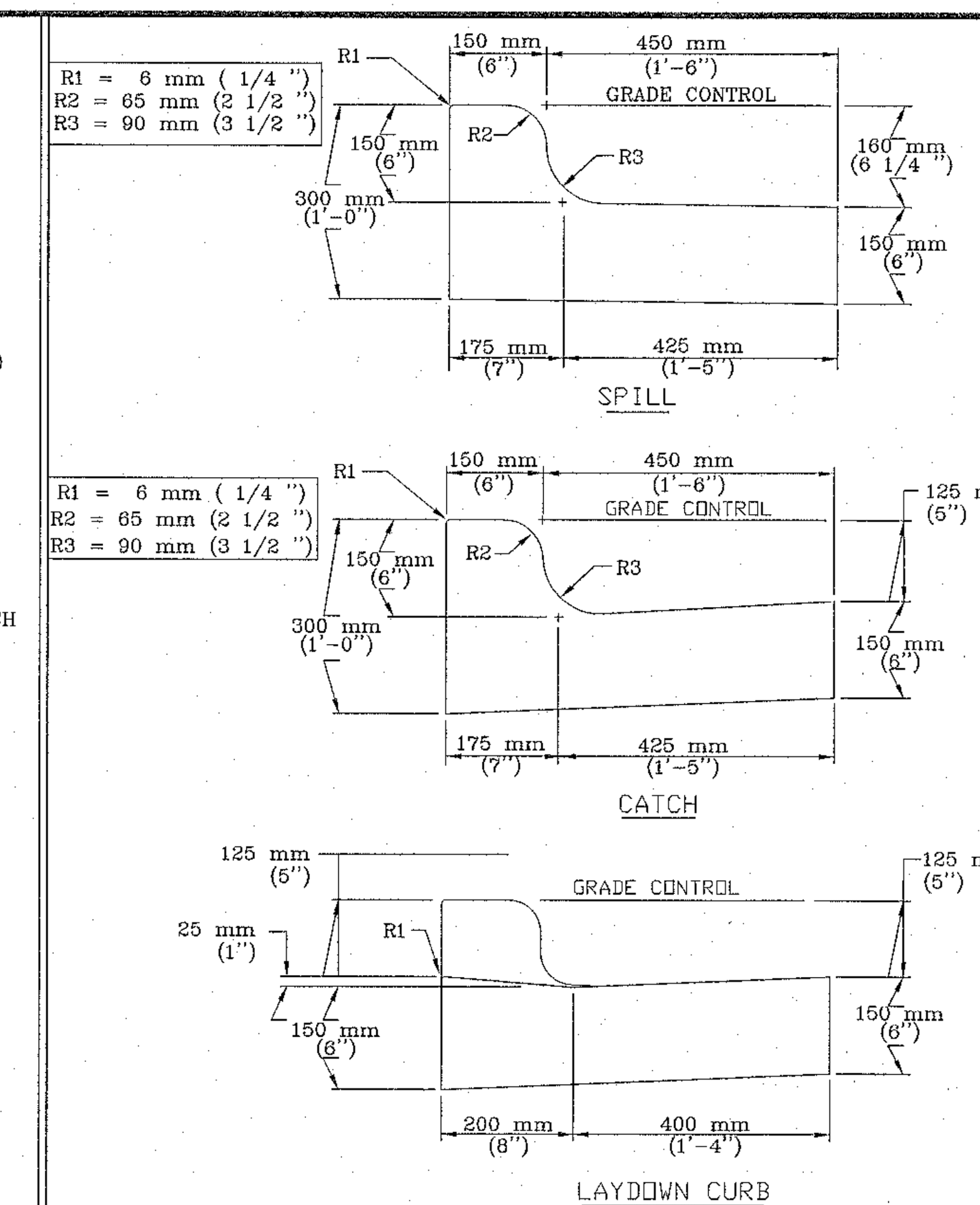
CITY OF AUSTIN WATERSHED PROTECTION DEPARTMENT	STABILIZED CONSTRUCTION ENTRANCE	
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 641S-1



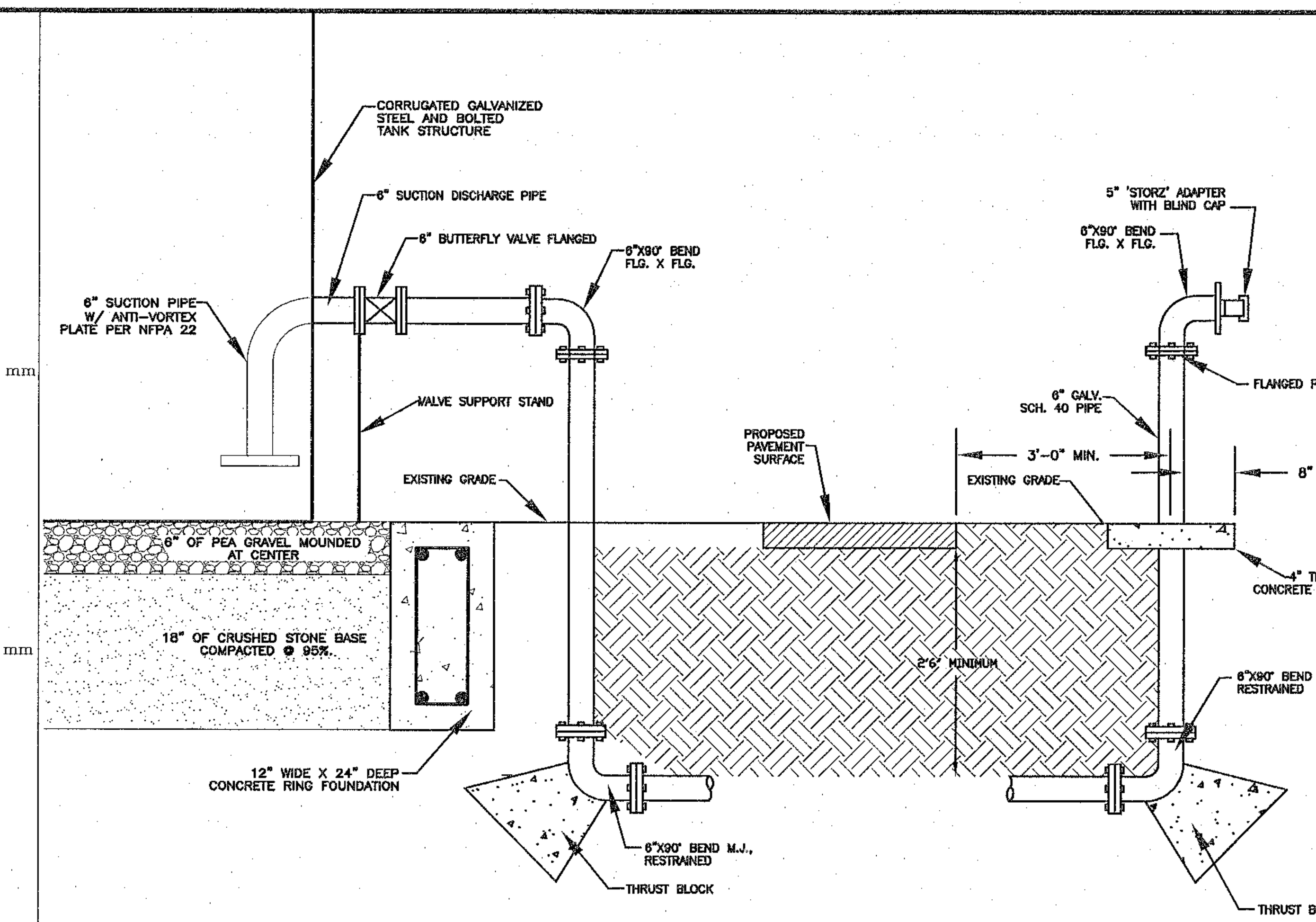
REFERENCES:

1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510, SECTION 510.2(6), "SELECT BACKFILL OR BORROW"; SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER"; SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPICAL TRENCH DETAIL WITH UNFINISHED SURFACE	
RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-5

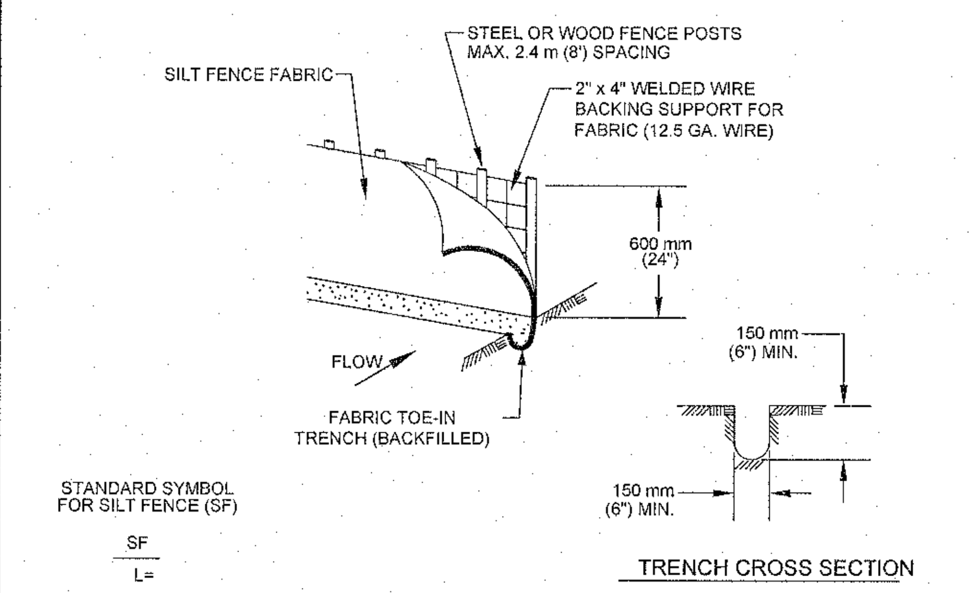


CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION	CURB AND GUTTER SECTION	
RECORD COPY SIGNED BY LINO RIVERA 9/29/99 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 430S-1



DRY HYDRANT CONNECTION

N.T.S.



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. 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.

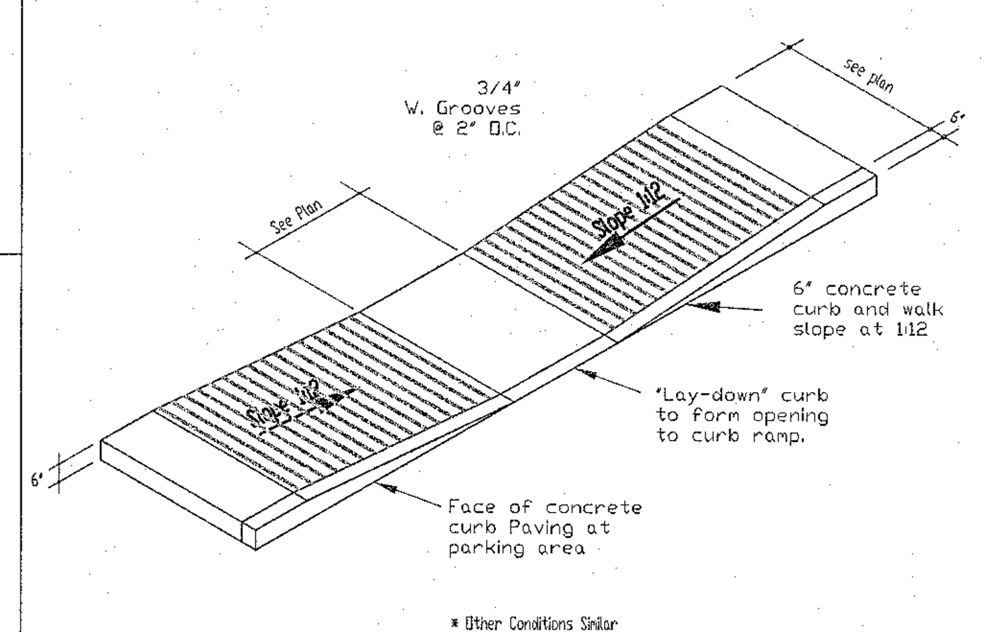
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

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

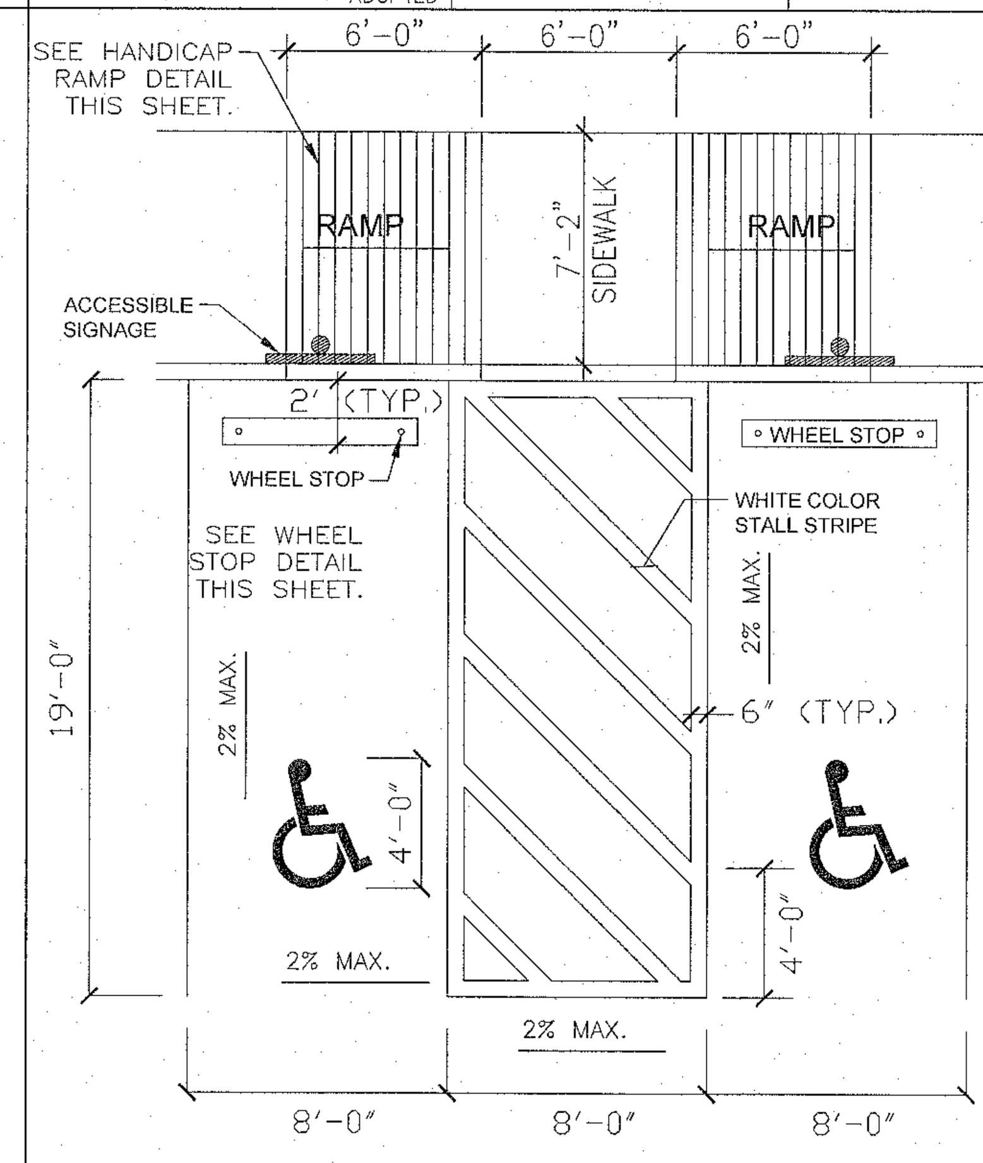
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

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



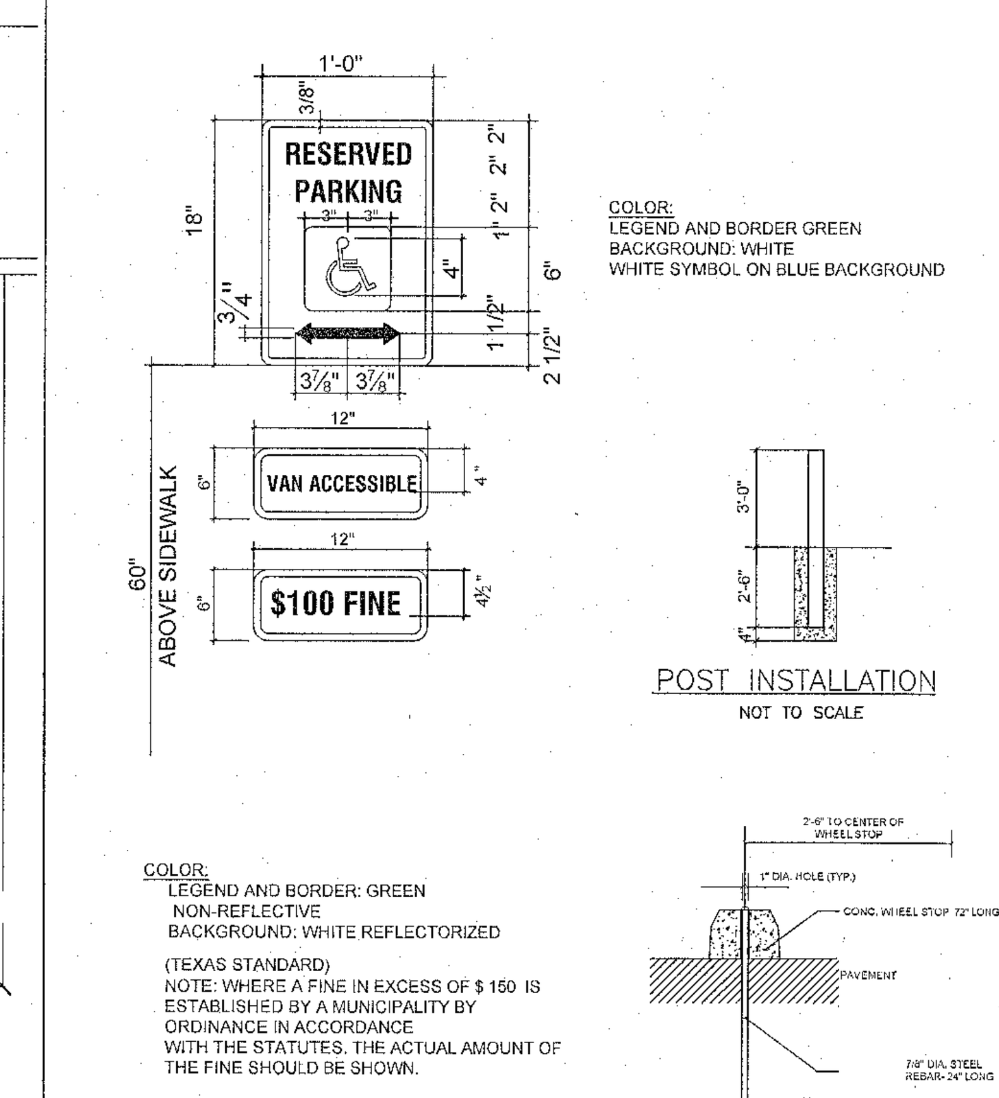
HANDICAP RAMP/ SIDEWALK

NOT TO SCALE



HANDICAP RAMP/ SIDEWALK

NOT TO SCALE

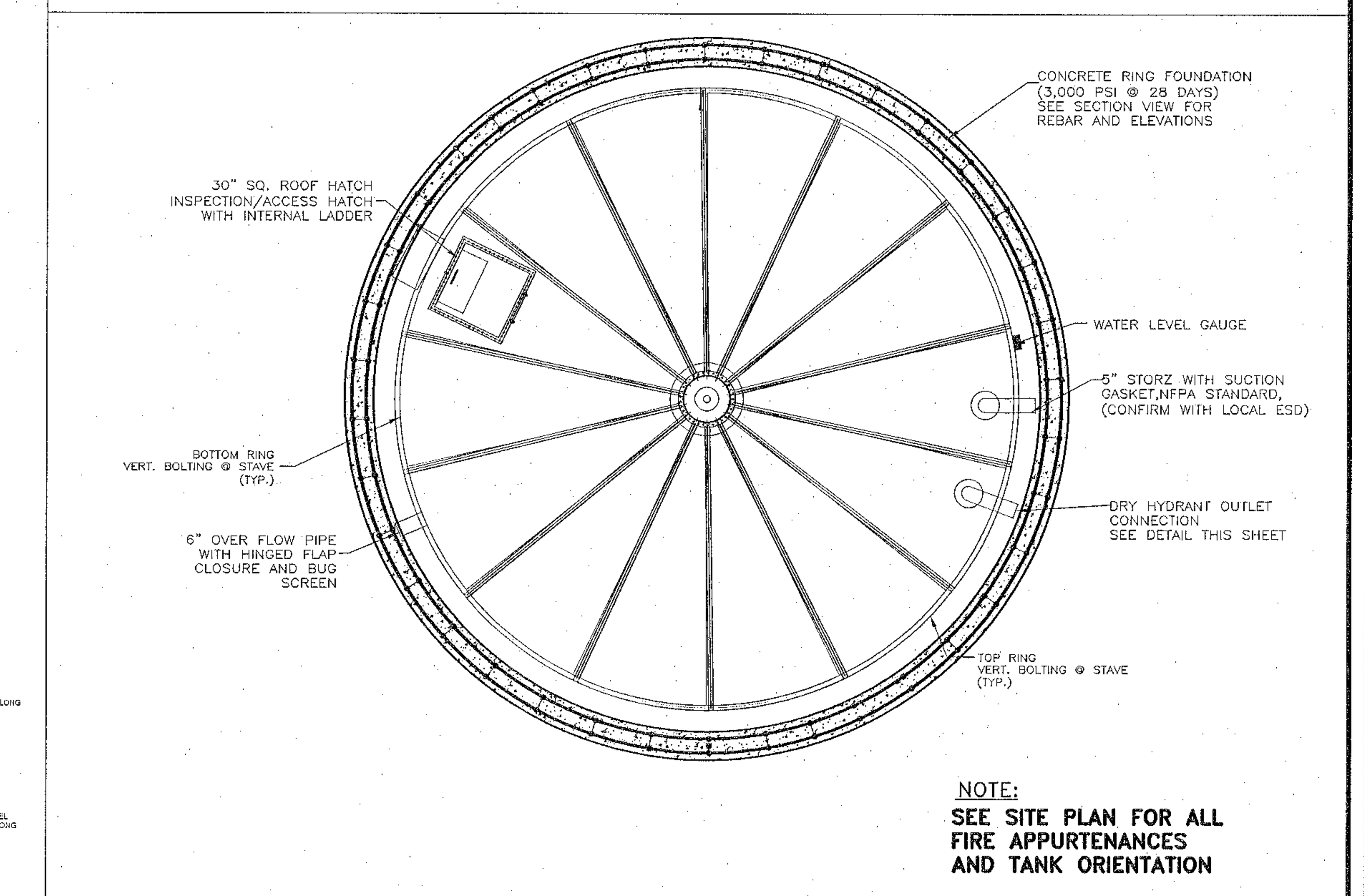


HANDICAP SIGN

NOT TO SCALE

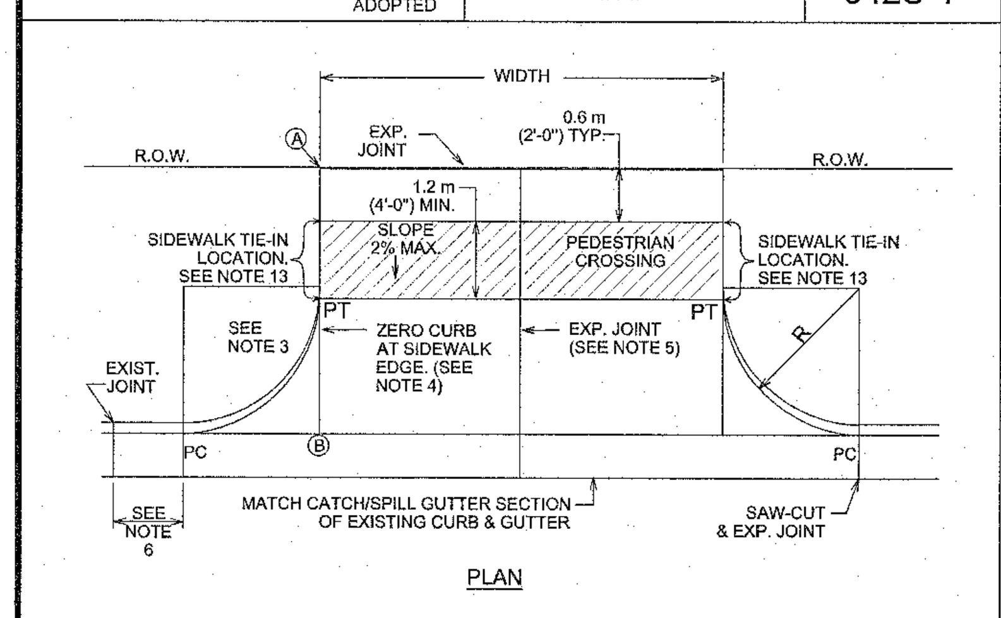
WHEEL STOP

NOT TO SCALE

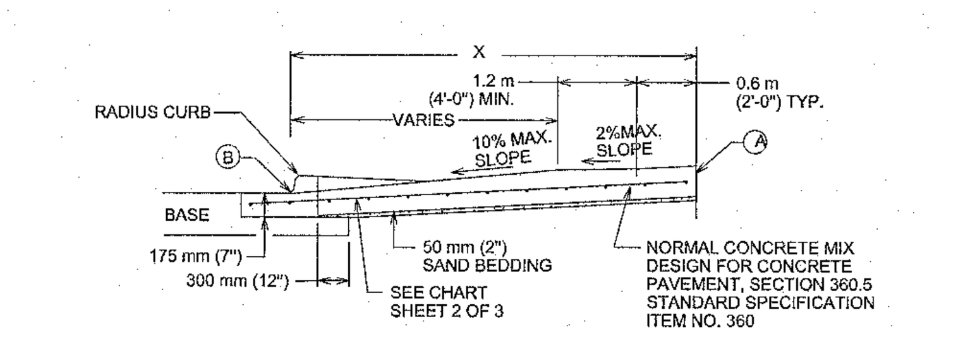


PLAN ORIENTATION: SCHEMATIC ONLY

N.T.S.



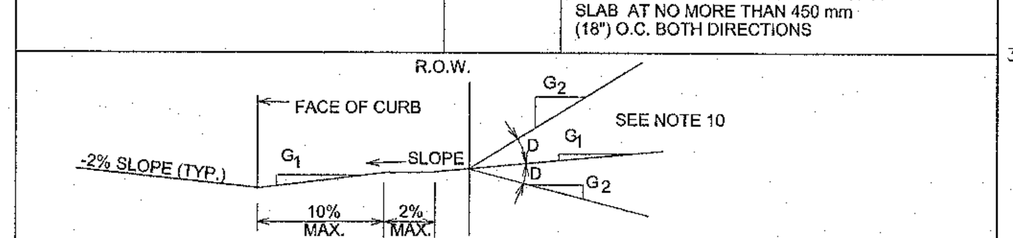
NOTE: ALL DRIVEWAYS SHALL BE SLOPED TOWARDS THE STREET FROM THE R.O.W. LINE. ELEVATION OF POINT A ABOVE POINT B IS, TYPICALLY A MINIMUM OF 150 mm (6") PLUS 20 mm/m (1/4" RISE/FOOT) OVER DISTANCE "X" IN METERS (FEET).



CROSS SECTION

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 1 OF 2

USE	THICKNESS	REINFORCEMENT
DRIVEWAYS FOR PASSENGER VEHICLE PARKING LOTS	150 mm (6") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS
ALL OTHERS	175 mm (7") MIN.	125 mm (5") MIN. CONCRETE WITH ONE LAYER OF13M (#4) BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB AT NO MORE THAN 450 mm (18") O.C. BOTH DIRECTIONS



ALLOWABLE GRADES

DRIVEWAY VOLUME (ADT)	D=GRADE CHANGE STD.	MAX
>1500	0%	3%
500-1500	3%	6%
< 500	6%	15%

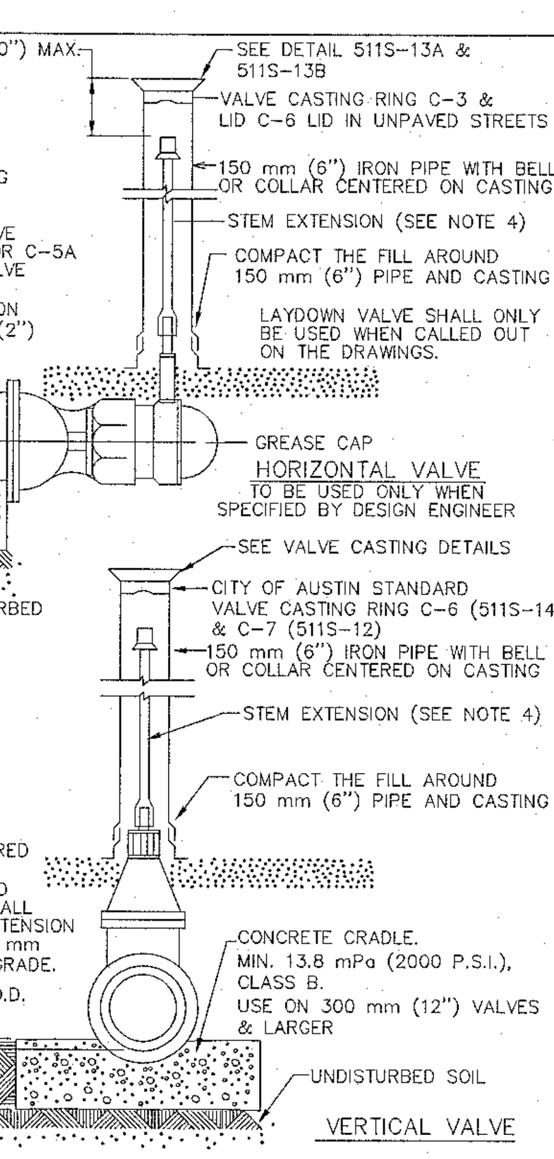
NOTES:

1. ALL TYPE II DRIVEWAYS SHALL HAVE RADIUS ENDS.
2. DRIVEWAY WIDTHS AND RADII DIMENSIONS, ONE/TWO WAY TRAVEL REQUIREMENTS, AND GEOMETRIC LAY-OUT ARE HIGHLY VARIABLE, SUBJECT TO SITE SPECIFIC CONDITIONS AND REQUIREMENTS. SEE TRANSPORTATION CRITERIA MANUAL. SECTION 5 "DRIVEWAYS".
3. THE DRIVEWAY EDGE SHALL BE SMOOTHLY TRANSITITIONED INTO THE SIDEWALK TIE-IN LOCATION BEGINNING AT THE RADIUS PC LINE.
4. "ZERO" CURB AT PT OR SIDEWALK EDGE, WHICHEVER IS ENCOUNTERED FIRST.
5. PLACE AN EXPANSION JOINT DOWN THE CENTER OF DRIVEWAY ALL DRIVEWAYS.
6. IF DIMENSION IS LESS THAN 1.5 METERS (5 FEET), REMOVE CURB AND GUTTER TO EXISTING JOINT AND POUR MONOLITHICALLY WITH DRIVEWAY.
7. IF THE BASE IS OVER-EXCAVATED WHERE THE CURB AND GUTTER WERE REMOVED, BACKFILL WITH CONCRETE MONOLITHICALLY WITH THE DRIVEWAY.
8. TYPE II DRIVEWAYS ARE TO BE LOCATED NO CLOSER TO THE CORNER OF INTERSECTING RIGHT OF WAY THAN 60% OF PARCEL FRONTAGE AT 30 METERS (100 FEET): WHICHEVER IS LESS.
9. DRIVEWAY SHALL NOT BE CONSTRUCTED WITHIN THE CURB RETURN OF A STREET INTERSECTION.
10. WHILE THE PROPERTY OWNER REMAINS RESPONSIBLE FOR GRADE BREAKS WITHIN PRIVATE PROPERTY, THE FIRE DEPARTMENT SHALL BE CONSULTED WHERE THE DRIVEWAY IS ESSENTIAL TO EMERGENCY VEHICLE ACCESS AND "G2 IS GREATER THAN 15%.
11. USE 12 MM (1/2") ASPHALT BOARD OR OTHER APPROVED MATERIAL FOR CURB AND GUTTER EXPANSION JOINTS. SIDEWALK, AT THE R.O.W. LINE AND AT MIDWIDTH, SEE NOTE 5.
12. SEE TRANSPORTATION CRITERIA MANUAL, SECTION 5 FOR OTHER DRIVEWAY REQUIREMENTS.
13. THE SIDEWALK, REGARDLESS OF ITS LOCATION WITH RESPECT TO THE CURB OR PROPERTY LINE, SHALL BE CONNECTED TO THE DRIVEWAY AT THESE LOCATIONS.
14. WATER METER BOXES AND WASTEWATER CLEAN OUTS ARE PROHIBITED FROM BEING LOCATED IN DRIVEWAY AREAS.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	TYPE II DRIVEWAY	
RECORD COPY SIGNED BY CUONG TRAN 02/24/10 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 433S-2 2 OF 2

NOTES:

1. WELD SOCKET 64 mm X 51 mm (2½" X 2") DEEP TO 25 mm (1") SCH. 40 ROUND STEM EXTENSION, FITTED ON OPERATING NUT, SCH. 80 FOR LENGTHS OVER 3 m (10').
2. CITY OF AUSTIN STANDARD VALVE CASTING RING C-6 & LID C-7 OR C-5A LID IN UNPAVED AREAS. SEE VALVE CASTING DETAIL.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 51 mm (2") LONG WELDED TO TOP OF ROD.

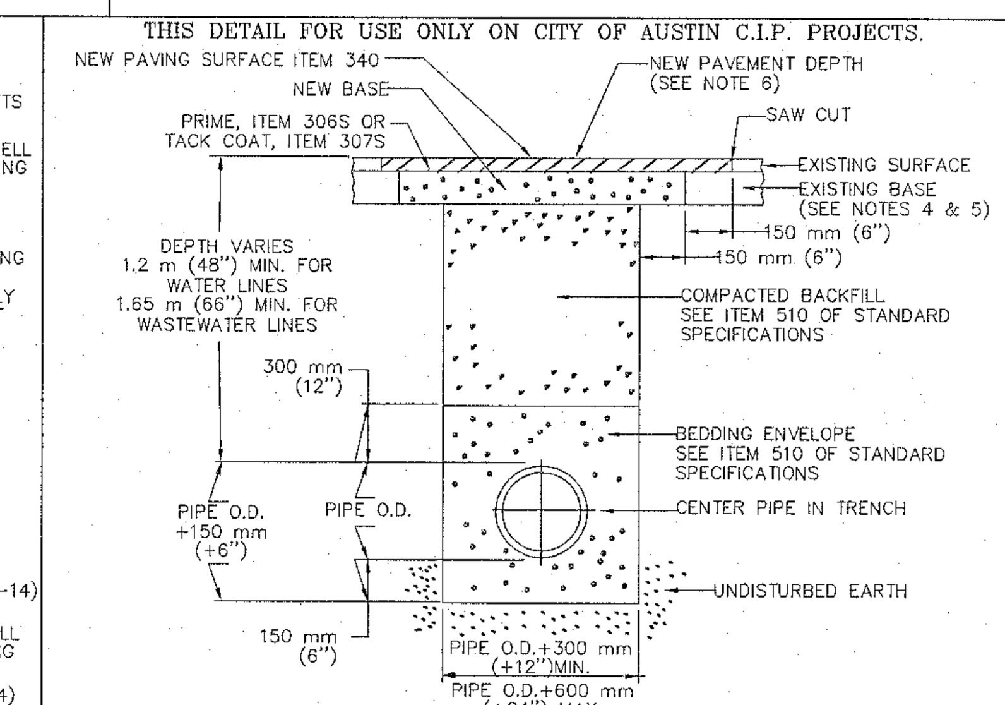


NOTES (CONT.):

4. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 0.9 m (3') DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 450 AND 600 mm (18 AND 24") FROM FINISHED GRADE.

CITY OF AUSTIN AUSTIN WATER UTILITY	TYPICAL GATE VALVE 100 mm–600 mm (4"–24")	
RECORD COPY SIGNED BY KATHI L. FLOWERS 3/9/04 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 511S-7

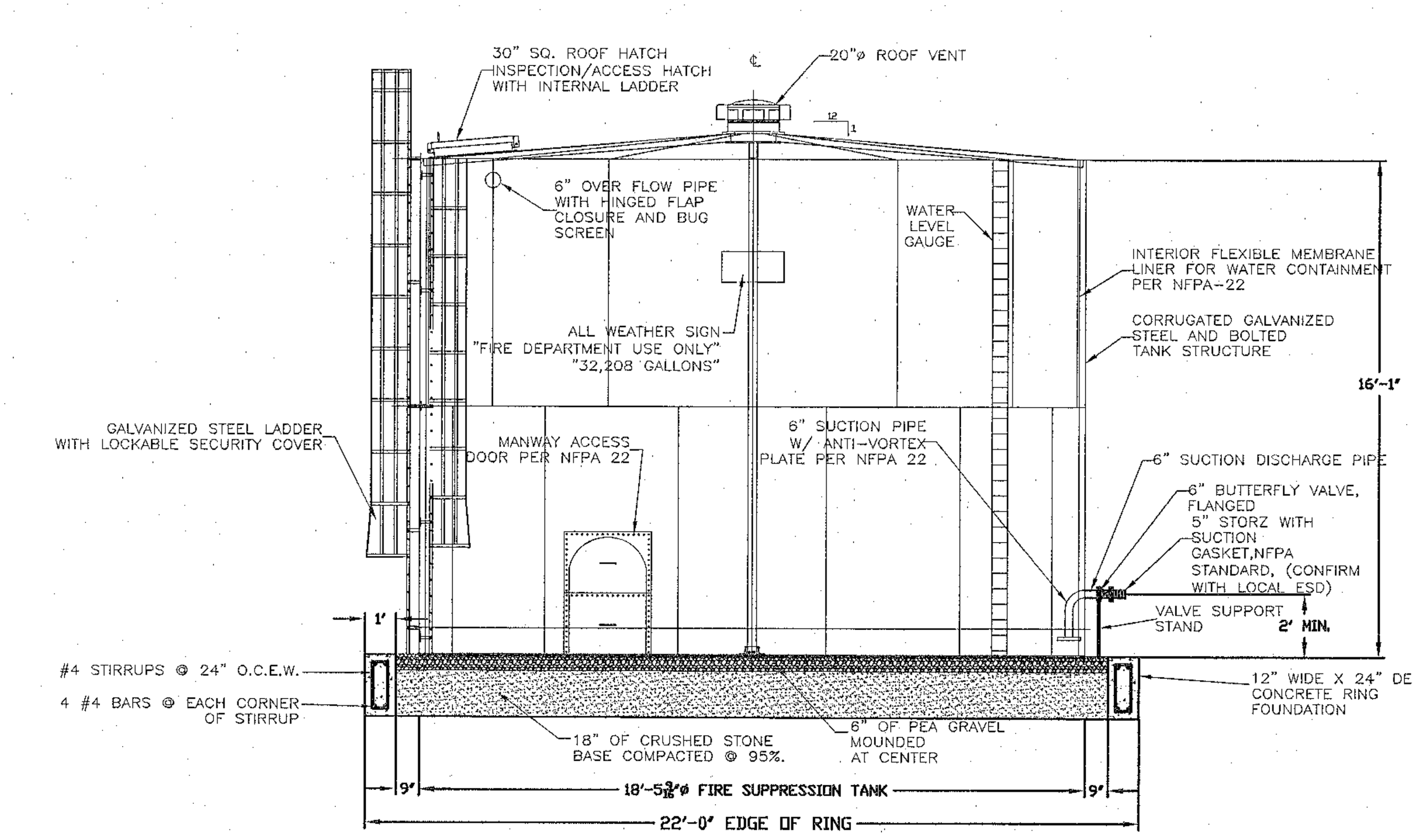
THIS DETAIL FOR USE ONLY ON CITY OF AUSTIN C.I.P. PROJECTS.



NOTES:

1. THE EXISTING PAVING SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 300 mm (12") WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. ANY CONCRETE PAVING SHALL BE SAW CUT 150 mm (6") WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
3. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH COLD MIX OR TEMPORARY HOT MIX ASPHALTIC CONCRETE.
4. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND OF EQUAL THICKNESS, OR MINIMUM BASE THICKNESS OF 250 mm (10"), WHICHEVER IS GREATER.
5. ALL DAMAGED AREAS OF PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 200 mm (8") OF BASE OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.
6. SURFACE PAVEMENT SHALL BE OF THE KIND AND THICKNESS AS EXISTING, OR MINIMUM 50 mm (2"), WHICHEVER IS GREATER.

CITY OF AUSTIN WATER AND WASTEWATER UTILITY	TYPICAL TRENCH WITH PAVED SURFACE	
RECORD COPY SIGNED BY KATHI L. FLOWERS 8/19/02 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 510S-3



TANK ELEVATION
SCHEMATIC ONLY

N.T.S.

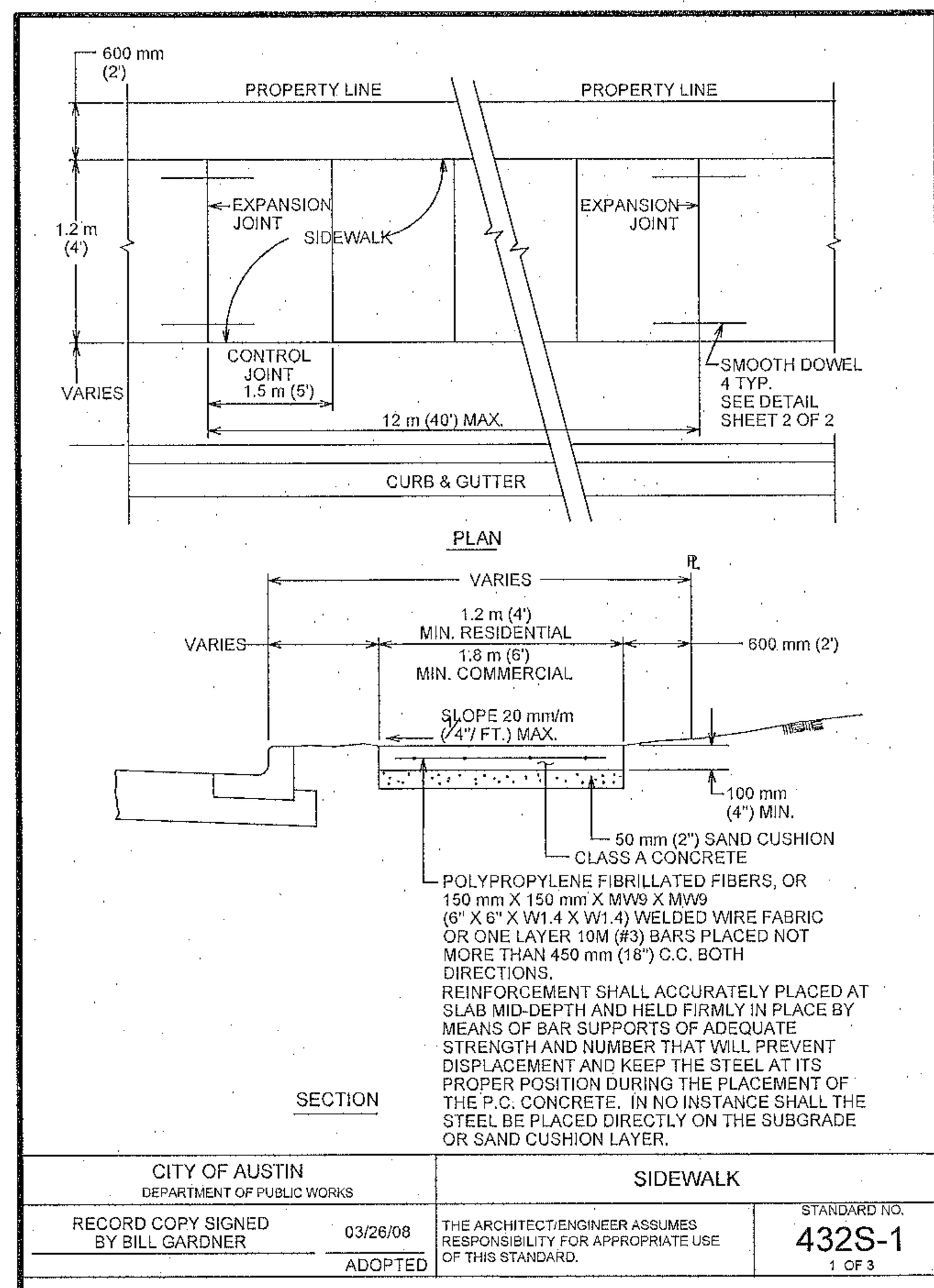
CUATRO Consultants, LTD.
3601 Kyle Crossing, Suite A, Kyle, Texas 78640

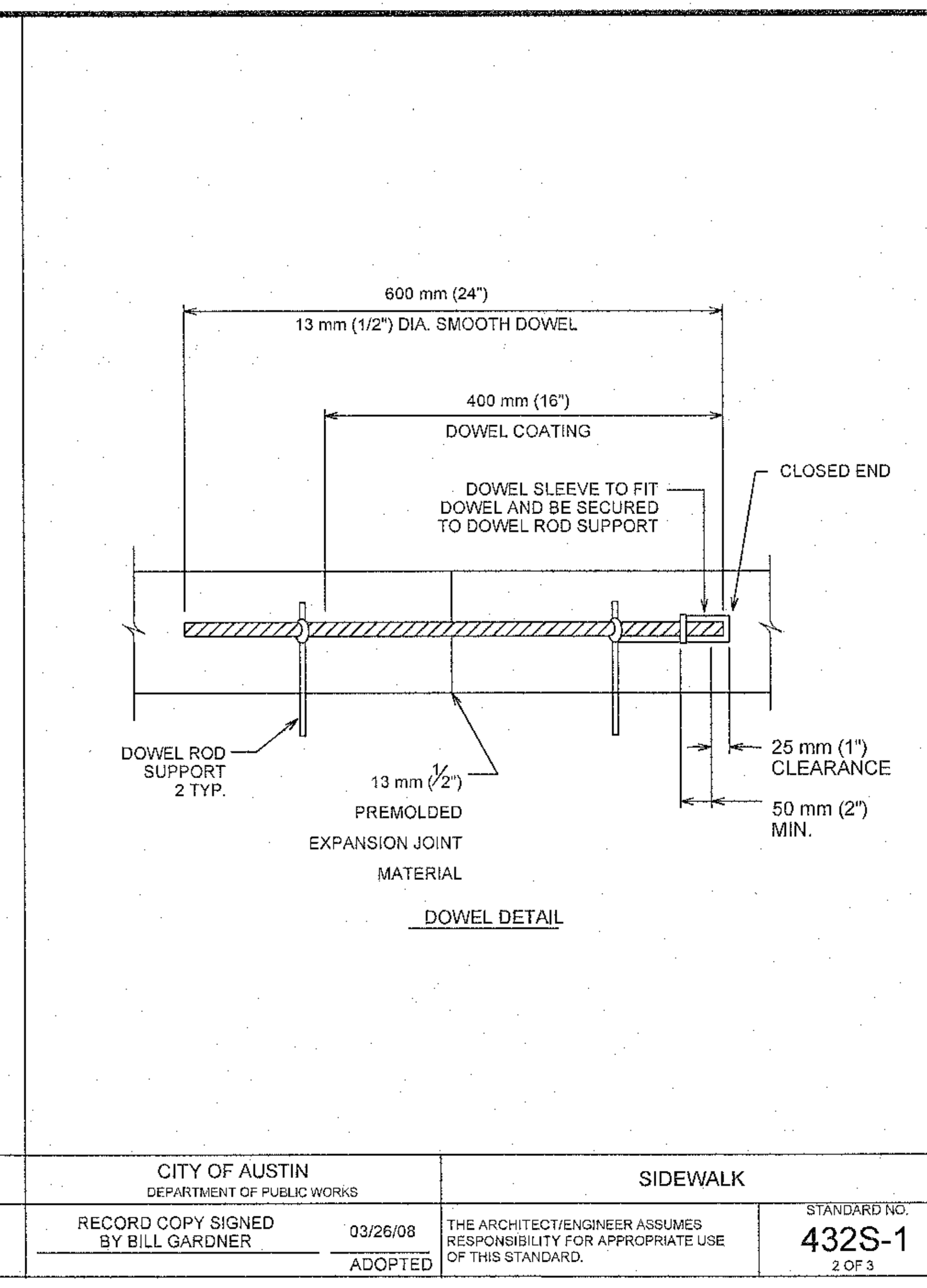
MISCELLANEOUS DETAILS

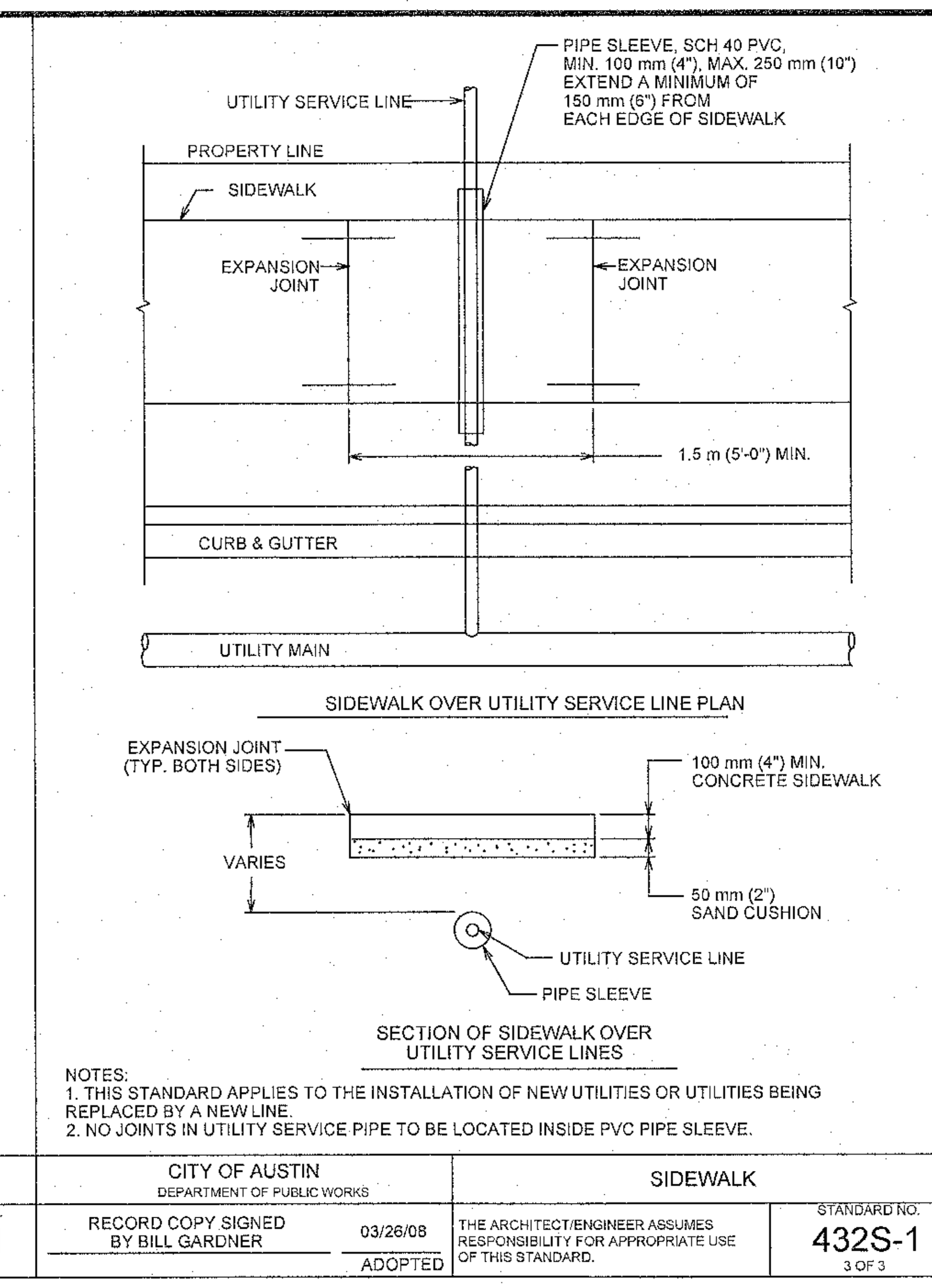
ARMADILLO SOUTH 12
22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

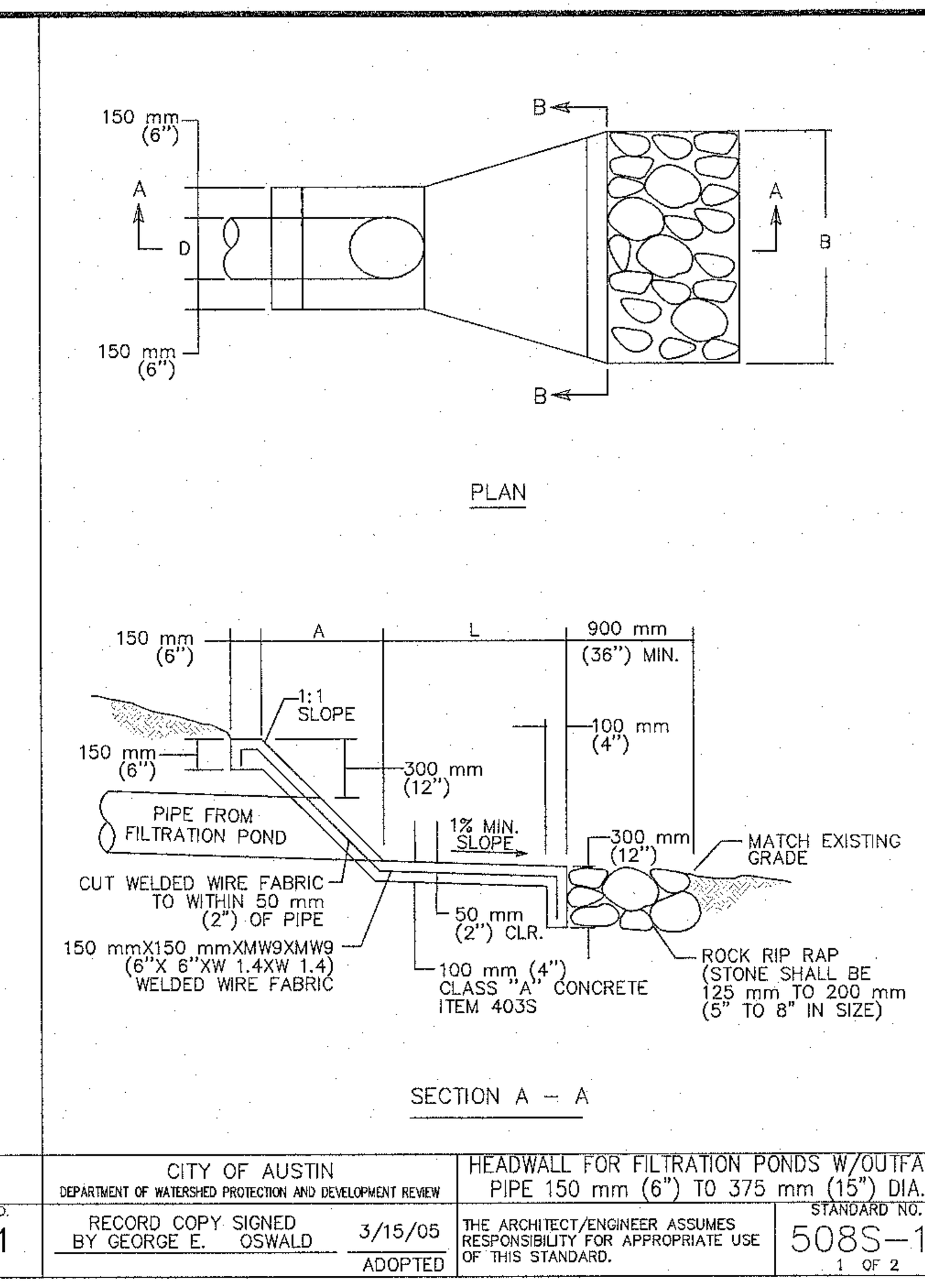
CLIENT:
ARMADILLO SOUTH 12 LLC
P.O. BOX 803
DRIPPING SPRINGS, TEXAS 78620

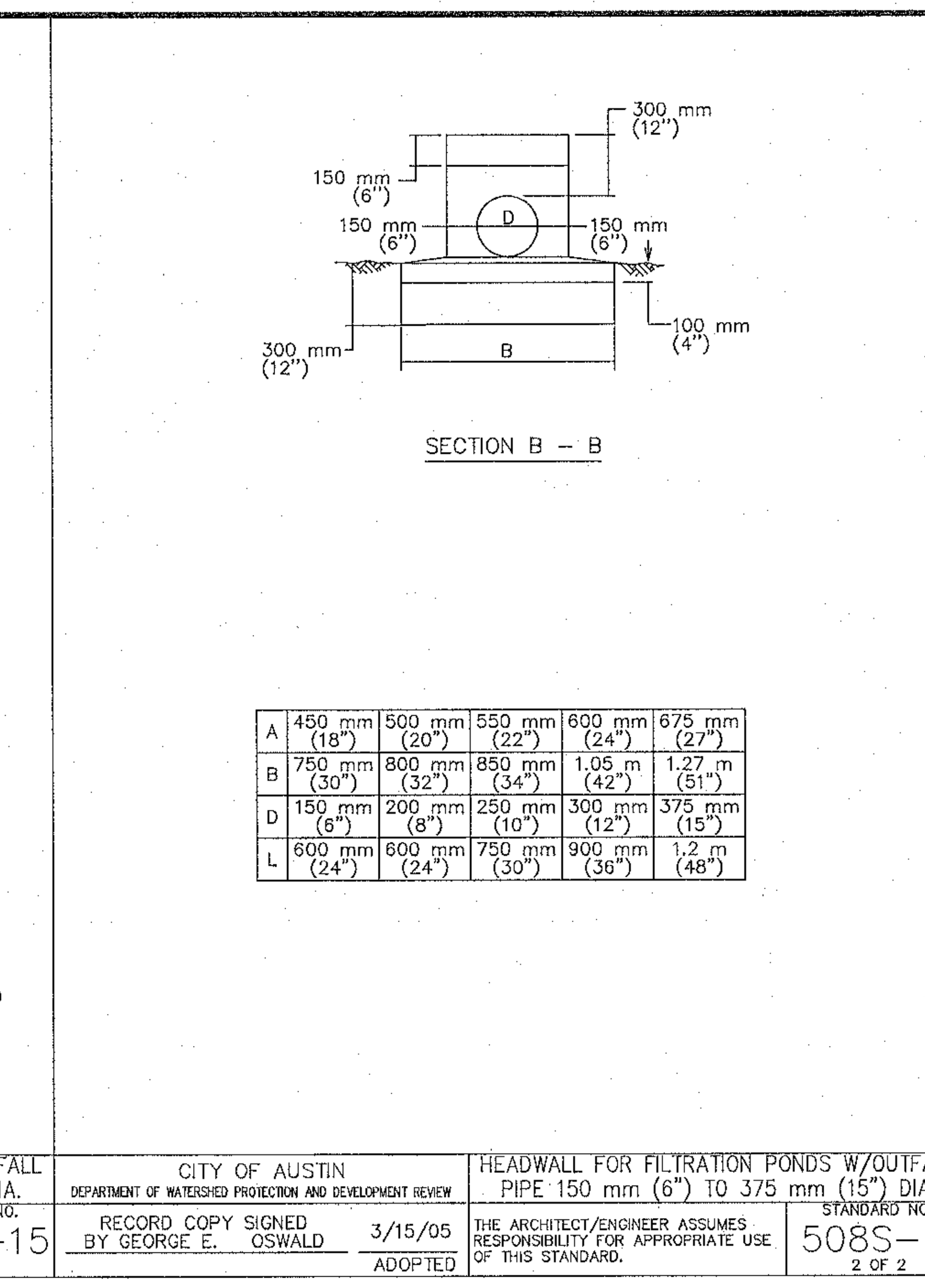
DATE: SEPTEMBER, 2017	
PROJECT: JOB # 17-118	
DRAWING'S NAME: MIS_DETAILS	
DESIGN:	CHECKED: HE.jr.
DRAWN:	APPROVED: HE.jr.
SHEET: 14 OF 15	

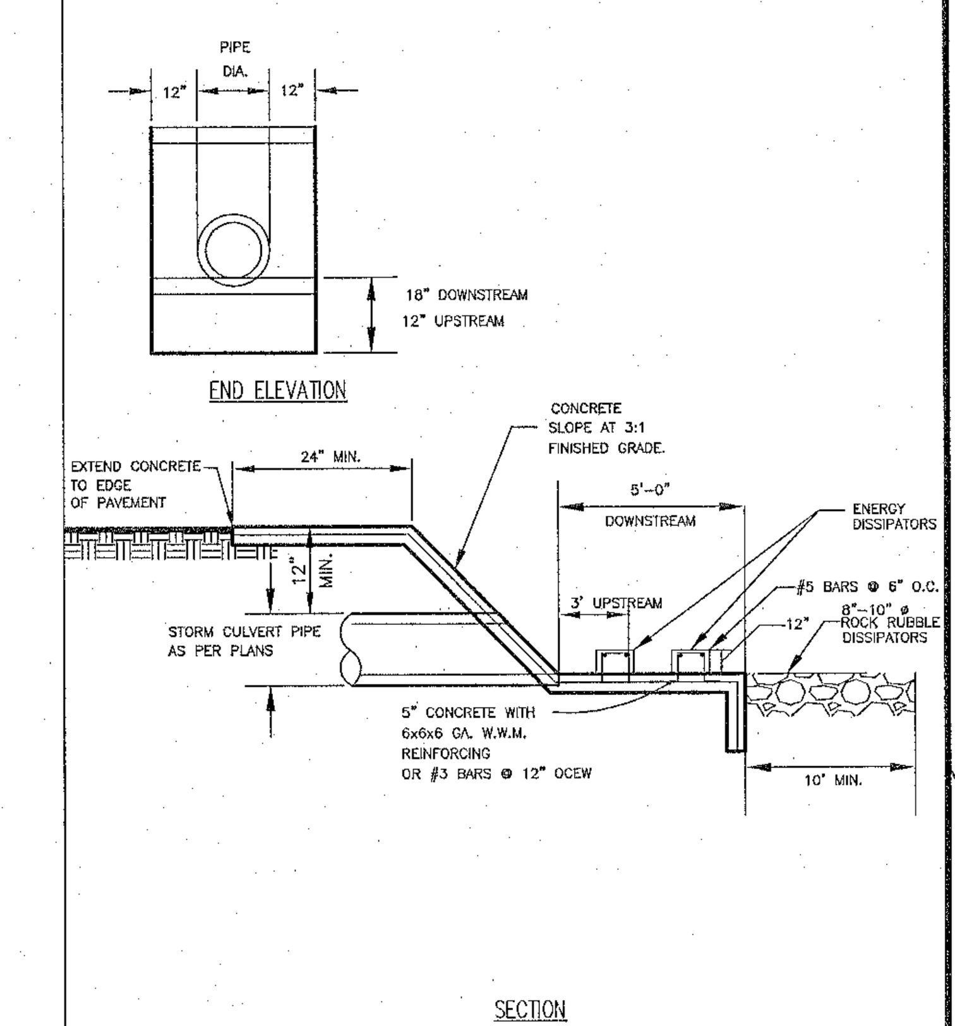

PROPERTY LINE
EXPANSION JOINT
SIDEWALK
CONTROL JOINT 1.5 m (5')
12 m (40') MAX.
SMOOTH DOWEL 4 TYP. SEE DETAIL SHEET 2 OF 2
CURB & GUTTER
PLAN
VARIES
1.2 m (4') MIN. RESIDENTIAL
1.8 m (6') MIN. COMMERCIAL
SLOPE 20 mm/m (1/4"/FT.) MAX.
600 mm (2')
100 mm (4") MIN.
50 mm (2") SAND CUSHION
CLASS A CONCRETE
SECTION
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
SIDEWALK
RECORD COPY SIGNED BY BILL GARDNER 03/26/08
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 432S-1
1 OF 3


600 mm (24")
13 mm (1/2") DIA. SMOOTH DOWEL
400 mm (16")
DOWEL COATING
DOWEL SLEEVE TO FIT DOWEL AND BE SECURED TO DOWEL ROD SUPPORT
CLOSED END
DOWEL ROD SUPPORT 2 TYP.
PREMOLDED EXPANSION JOINT MATERIAL
25 mm (1") CLEARANCE
50 mm (2") MIN.
DOWEL DETAIL
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
SIDEWALK
RECORD COPY SIGNED BY BILL GARDNER 03/26/08
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 432S-1
2 OF 3


PIPE SLEEVE, SCH 40 PVC, MIN. 100 mm (4") MAX. 250 mm (10") EXTEND A MINIMUM OF 150 mm (6") FROM EACH EDGE OF SIDEWALK
UTILITY SERVICE LINE
PROPERTY LINE
SIDEWALK
EXPANSION JOINT
1.5 m (5'-0") MIN.
CURB & GUTTER
UTILITY MAIN
SIDEWALK OVER UTILITY SERVICE LINE PLAN
EXPANSION JOINT (TYP. BOTH SIDES)
100 mm (4") MIN. CONCRETE SIDEWALK
VARIES
50 mm (2") SAND CUSHION
UTILITY SERVICE LINE
PIPE SLEEVE
SECTION OF SIDEWALK OVER UTILITY SERVICE LINES
NOTES:
1. THIS STANDARD APPLIES TO THE INSTALLATION OF NEW UTILITIES OR UTILITIES BEING REPLACED BY A NEW LINE.
2. NO JOINTS IN UTILITY SERVICE PIPE TO BE LOCATED INSIDE PVC PIPE SLEEVE.
CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS
SIDEWALK
RECORD COPY SIGNED BY BILL GARDNER 03/26/08
ADOPTED
STANDARD NO. 432S-1
3 OF 3


PLAN
SECTION A – A
1:1 SLOPE
PIPE FROM FILTRATION POND
CUT WELDED WIRE FABRIC TO WITHIN 50 mm (2") OF PIPE
CLASS "A" CONCRETE ITEM 403S
MATCH EXISTING GRADE
ROCK RIP RAP (STONE SHALL BE 125 mm TO 200 mm (5" TO 8" IN SIZE)
CITY OF AUSTIN
HEADWALL FOR FILTRATION PONDS W/OUTFALL PIPE 150 mm (6") TO 375 mm (15") DIA.
RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-15
1 OF 2

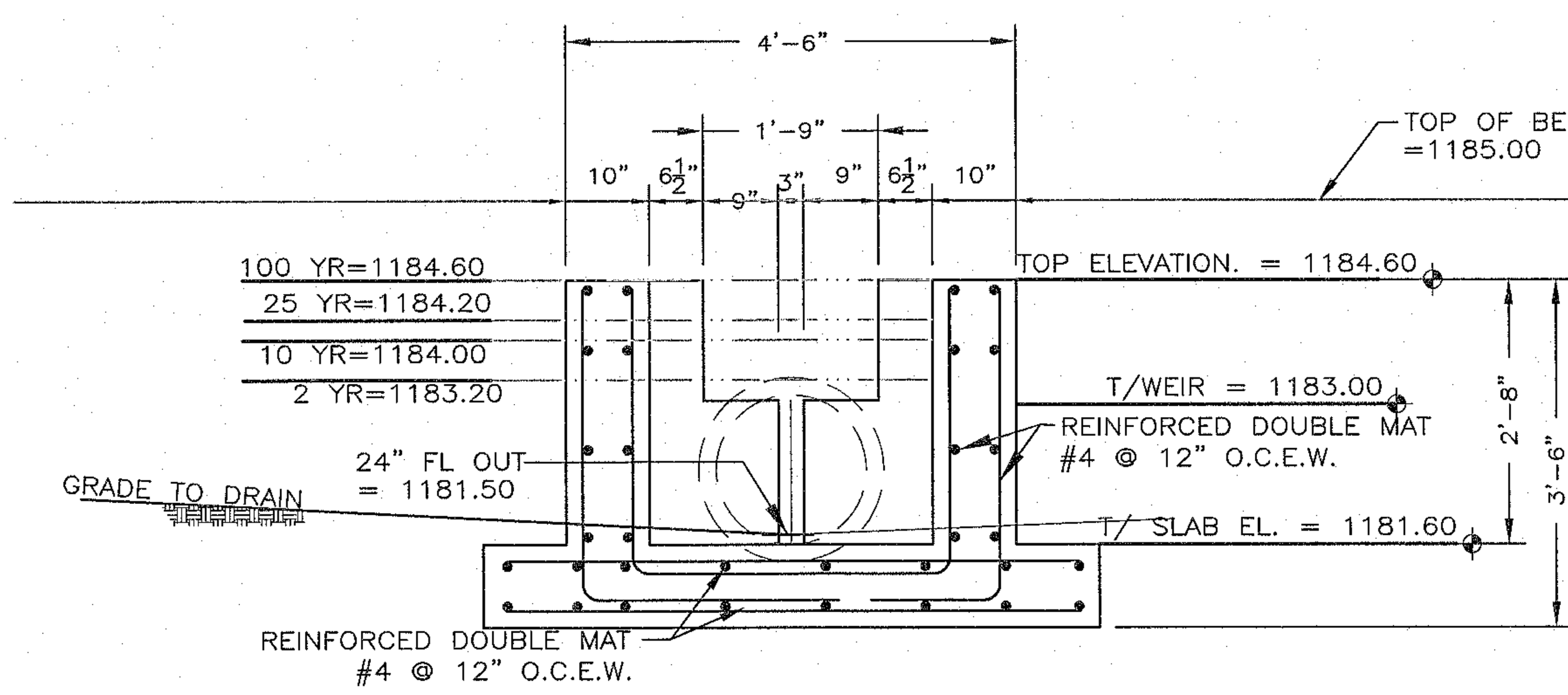

SECTION B – B
CITY OF AUSTIN
HEADWALL FOR FILTRATION PONDS W/OUTFALL PIPE 150 mm (6") TO 375 mm (15") DIA.
RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05
ADOPTED
THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.
STANDARD NO. 508S-15
2 OF 2



CONCRETE SLOPEWALL DETAIL

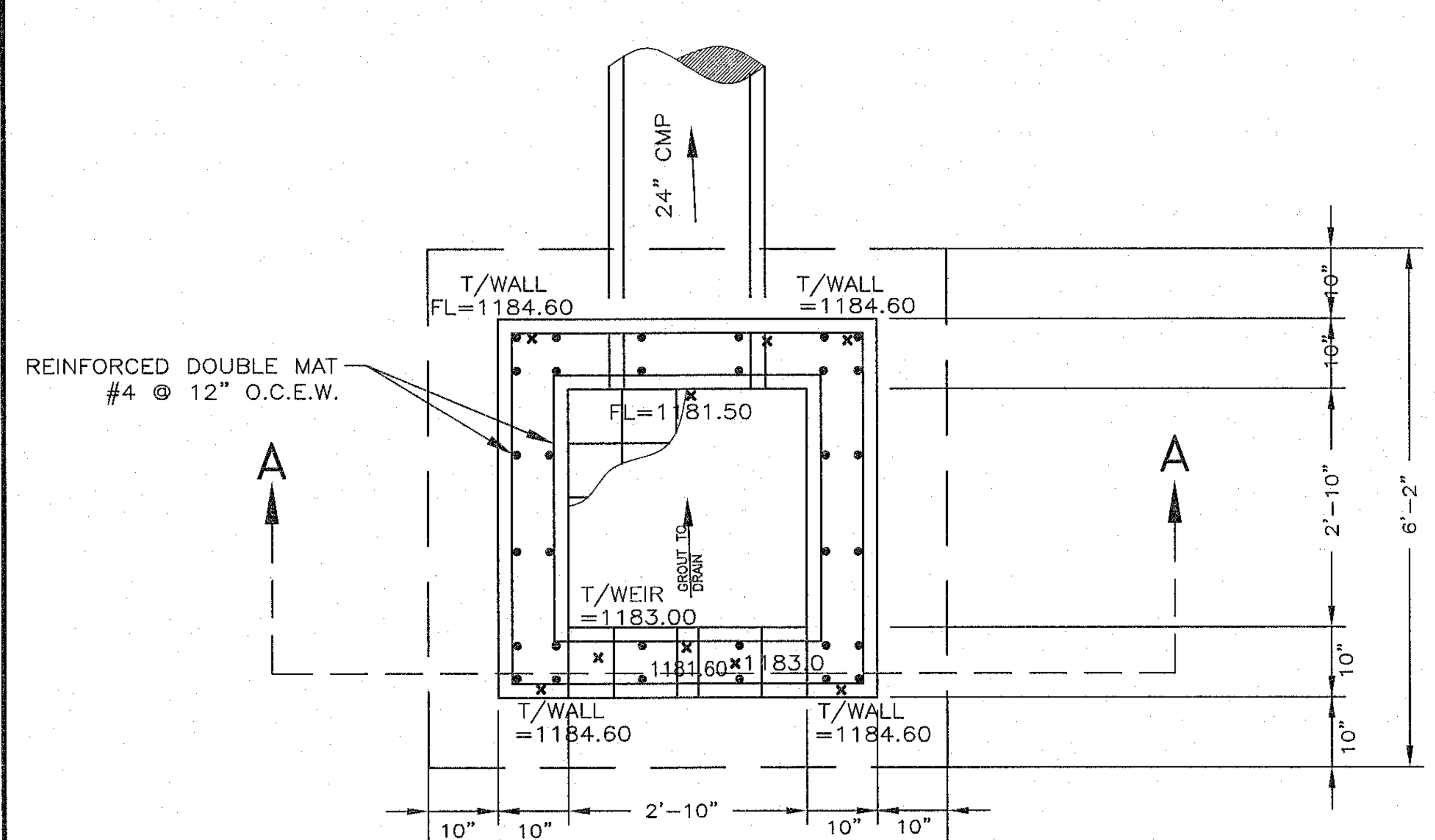
(SINGLE PIPE)

N.T.S.



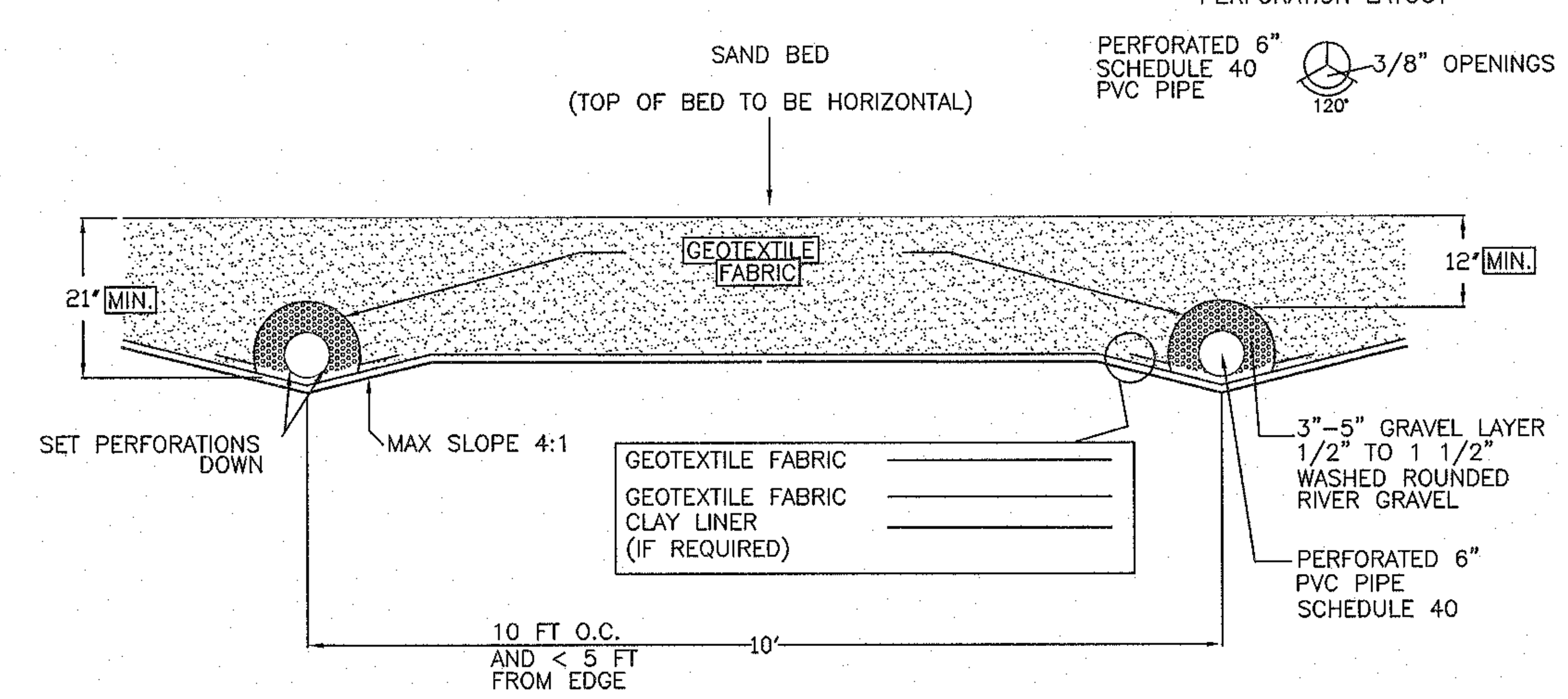
OUTFALL STRUCTURE: SECTION A-A, POND "A"

SCALE: 1/2"=1'-0"



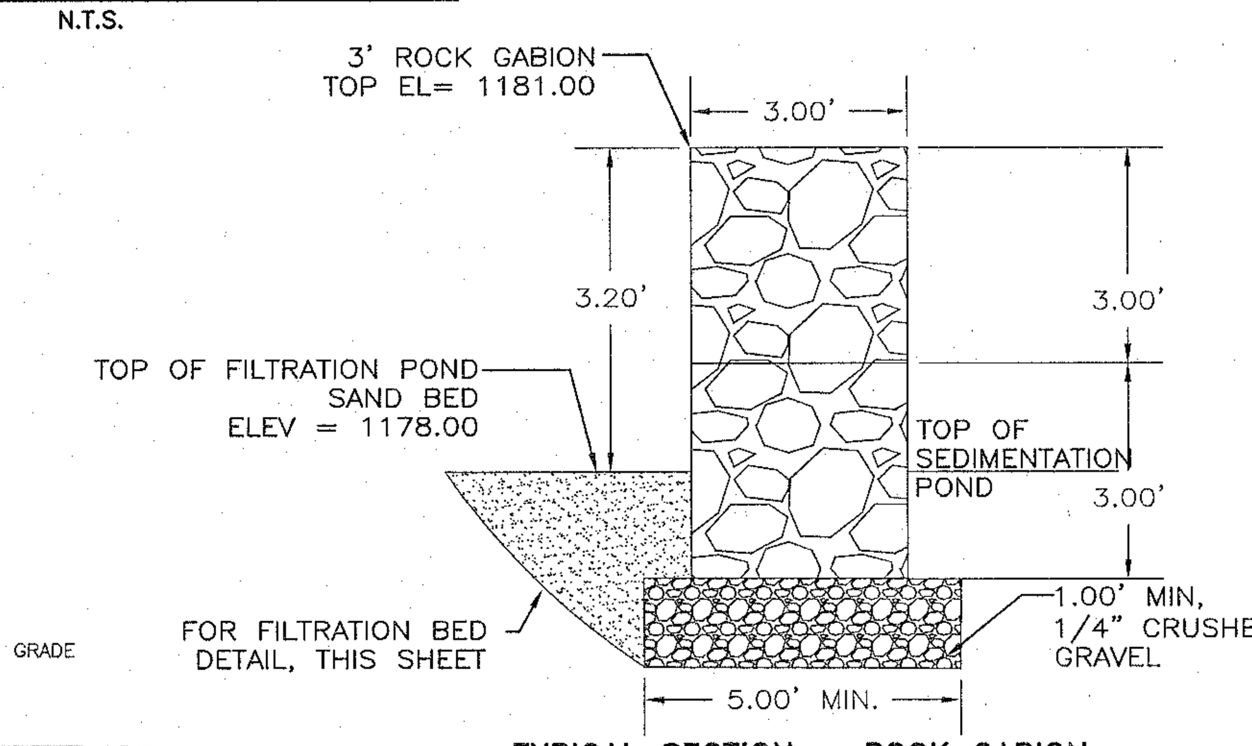
OUTFALL STRUCTURE: PLAN, POND "A"

SCALE: 1/2" = 1'-0"


SAND BED
(TOP OF BED TO BE HORIZONTAL)
PERFORATION LAYOUT
PERFORATED 6" SCHEDULE 40 PVC PIPE
3/8" OPENINGS
GEOTEXTILE FABRIC
12" MIN.
21" MIN.
SET PERFORATIONS DOWN
MAX SLOPE 4:1
GEOTEXTILE FABRIC
GEOTEXTILE FABRIC CLAY LINER (IF REQUIRED)
3"-5" GRAVEL LAYER 1/2" TO 1 1/2" WASHED ROUNDED RIVER GRAVEL
PERFORATED 6" PVC PIPE SCHEDULE 40
10 FT O.C. AND < 5 FT FROM EDGE

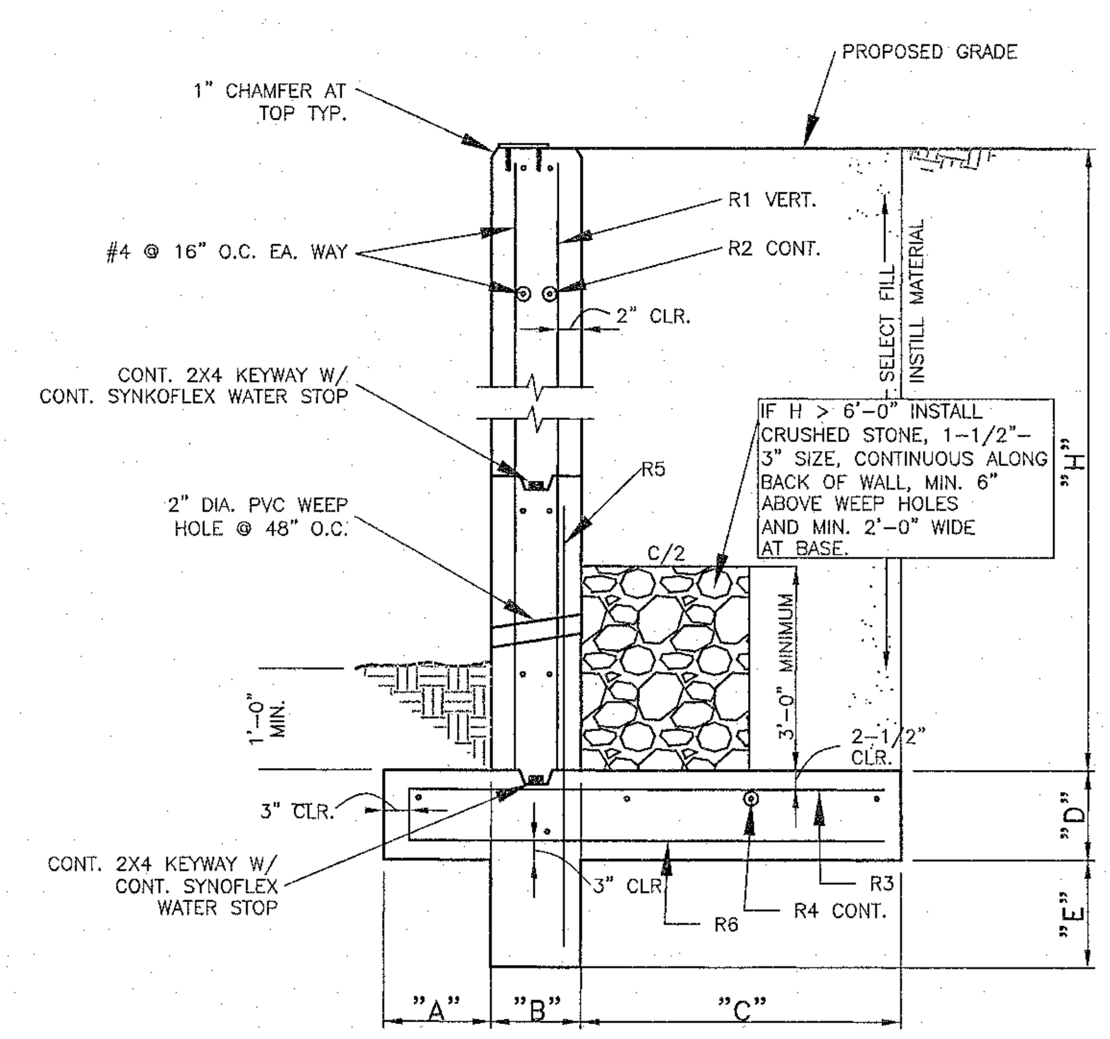
SAND BED PROFILE (TRENCH DESIGN)

N.T.S.



TYPICAL SECTION – ROCK GABION

SCALE: NTS


1" CHAMFER AT TOP TYP.
PROPOSED GRADE
R1 VERT.
R2 CONT.
#4 @ 16" O.C. EA. WAY
2" CLR.
CONT. 2X4 KEYWAY W/ CONT. SYNOFLEX WATER STOP
SELECT FILL INSTALL MATERIAL
IF H > 6'-0" INSTALL CRUSHED STONE, 1-1/2"-3" SIZE, CONTINUOUS ALONG BACK OF WALL, MIN. 6" ABOVE WEEP HOLES AND MIN. 2'-0" WIDE AT BASE
2" DIA. PVC WEEP HOLE @ 48" O.C.
R5
C/2
"H"
1'-0" MIN.
2-1/2" CLR.
3" CLR.
R3
R4 CONT.
R6
"D"
"E"
"A"
"B"
"C"

RETAINING WALL DETAIL

N.T.S.

RETAINING WALL DIMENSIONS AND STEEL SCHEDULE					
"H"	≤4.0'	≤6.0'	6'-8'	8'-10'	10'-12'
"A"	1'-0"	1'-0"	1'-0"	1'-0"	1'-3"
"B"	8"	10"	10"	1'-0"	1'-2"
"C"	1'-3"	1'-9"	3'-0"	4'-9"	4'-9"
"D"	10"	10"	10"	1'-4"	1'-4"
"E"	6"	12"	1'-4"	1'-4"	2'-0"
"R1"	#5 @ 16"	#5 @ 16"	#5 @ 10"	#6 @ 10"	#8 @ 12"
"R2"	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 14" CONT.
"R3"	#5 @16" 6" 2'-0"	#5 @16" 6" 3'-0"	#5 @16" 6" 4'-3"	#5 @12" 10" 5'-0"	#6 @12" 10" 6'-6"
"R4"	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 14" CONT.
"R5"	#5 @16" 3'-6"	#5 @16" 3'-6"	#5 @10" 3'-6"	#6 @10" 3'-6"	#8 @12" 3'-6"
"R6"	#5 @ 16" CONT.	#5 @ 16" CONT.	#5 @ 10" CONT.	#5 @ 10" CONT.	#5 @ 12" CONT.

GENERAL CONCRETE NOTES:

1. ALL CONCRETE SHALL BE STONE AGGREGATE CONCRETE UNLESS NOTED OTHERWISE. MINIMUM CONCRETE COMPRESSIVE STRENGTH FOR BUILDING FOUNDATIONS OR OTHER STRUCTURES SHALL BE 3,600 P.S.I. WHEN TESTED AT 28 DAYS. ALL OTHER CONCRETE SHALL BE 3,000 P.S.I. (CLASS A) AT 28 DAYS. POURING TEMPERATURE SHALL BE 40°F AND RISING CONCRETE SHALL HAVE A MAX. SLUMP OF 4". IF TEMPERATURE IS ABOVE 80°F AT POURING, CONTRACTOR SHALL APPLY A COAT OF CURING COMPOUND.
2. HORIZONTAL CONSTRUCTION JOINTS IN CONCRETE POURS SHALL BE PERMITTED ONLY WHERE INDICATED ON THE DRAWINGS. ALL CONSTRUCTION JOINTS SHALL BE MADE IN THE CENTER OF SPANS. SEE DRAWINGS FOR TYPICAL DETAIL. THE LOCATION OF CONSTRUCTION JOINTS SHALL BE AS APPROVED BY THE STRUCTURAL ENGINEER. ADDITIONAL REINFORCING AT CONSTRUCTION JOINTS SHALL BE AS SPECIFIED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS FOR CONSTRUCTION JOINTS NOT SHOWN ON DRAWINGS FOR APPROVAL BY THE STRUCTURAL ENGINEER.
3. ALL PIPE SLEEVES IN CONCRETE MEMBERS SHALL BE SCHEDULE 40, PVC PIPE UNLESS SHOWN OTHERWISE ON THE STRUCTURAL DRAWINGS. LOCATION OF SLEEVES SHALL BE AS APPROVED BY THE STRUCTURAL ENGINEER.
4. REINFORCING STEEL SHALL CONFORM TO ACI 318 AND 315, LATEST EDITION. REINFORCING STEEL SHALL BE DEFORMED NEW BILLET STEEL BARS IN ACCORDANCE WITH ASTM SPECIFICATION A615 GRADE 60.
5. DETAILING OF REINFORCING STEEL SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL.
6. PROVIDE 2– #6 X 4' – 0" "L" SHAPED BARS TOP AND BOTTOM AT ALL CORNERS AND "T" INTERSECTIONS OF BEAMS.
7. ALL HOOKS AND BENDS IN REINFORCING BARS SHALL CONFORM TO ACI STANDARDS UNLESS SHOWN OTHERWISE.
8. LAP CONTINUOUS UNSCHEDULED REINFORCING BARS 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE. TOP BARS SHALL HAVE A BAR LAP OF 50 BAR DIAMETERS.
9. ALL INTERSECTIONS OF STEEL SHALL BE TIED.
10. TACK WELDING ON REINFORCING STEEL WILL NOT BE PERMITTED.
11. HEAT SHALL NOT BE USED IN THE FABRICATION OR INSTALLATION OF REINFORCEMENT.
12. REINFORCING STEEL MINIMUM CLEARANCE SHALL BE AS FOLLOWS:
    A) FOOTINGS 1 1/2 " TOP, 3" BOTTOM, 2" SIDEFORMED, 3" SIDE AGAINST EARTH
    B) WALLS 2"
13. HORIZONTAL WALL REINFORCEMENT SHALL BE CONTINUOUS AROUND BENDS.
14. CONTRACTOR SHALL PROVIDE 1" CHAMFER ON ALL EXPOSED EDGES AND A RUBBED FINISH ON ALL EXPOSED FACES UNLESS OTHERWISE SPECIFIED.
15. PROVIDE POURABLE URETHANE SEALANT AT ALL JOINTS.
16. USE SPACING CHAIRS TO MAINTAIN MINIMUM CLEARANCE AT REINFORCING STEEL MATT OFF SOIL SUBGRADE. THE USE OF ROCK, BLOCK, BRICK, ETC. IS ONLY PERMITTED AS BEAM STEEL SUPPORTS.
17. CONCRETE FOUNDATION FORMWORK AND REINFORCEMENT SHALL BE INSPECTED BY CUATRO CONSULTANTS, LTD. PRIOR TO THE POURING OF CONCRETE.
18. THE FOUNDATION PAD SHALL HAVE AN APPLICATION OF TERMITE CONTROL AND VAPOR BARRIER INSTALLED.
19. CONCRETE SHALL HAVE A SMOOTH FINISH AT FOUNDATION, AND A BROOM FINISH AT PORCHES, DRIVEWAY, SIDEWALKS, AND APPROACH.
20. GRADE SITE AROUND FOUNDATION TO DRAIN AWAY FROM STRUCTURE A MINIMUM OF 10 FEET IN ALL DIRECTIONS. ON UPGRADIENT SIDE, INSTALL SWALE OR BERM TO DIRECT STORM WATER RUNOFF AROUND STRUCTURE. USE OF GUTTERS AND DOWNSPOUTS AT UPGRADIENT SIDE IS RECOMMENDED TO DIRECT UPHILL RUNOFF AWAY FROM STRUCTURE.
21. STRUCTURAL FILL MATERIAL SHALL COMPLY WITH RECOMMENDATIONS SET FORTH IN SUBSURFACE EXPLORATION AND GEOTECHNICAL EVALUATION.

"FILL PLACEMENT
SELECT FILL THAT IS RE–USED OR IMPORTED TO THE SITE FOR USE UNDER SLABS SHOULD BE CLASSIFIED ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) AS CL, SM, SC, GM, OR GC, AND SHOULD MEET THE FOLLOWING CRITERIA:
- PERCENT PASSING THE NO. 4 SIEVE: 50% TO 100% (0% TO 50% GRAVEL)
- PERCENT PASSING THE NO. 200 SIEVE: 20% TO 65%
- PI OF SOIL PASSING THE NO.40 SIEVE: 4 TO 22
- MAXIMUM SIZE OF GRAVEL OR ROCK FRAGMENTS: 3 INCHES IN ANY DIRECTION

SELECT FILL THAT IS RE–USED OR IMPORTED TO THE SITE FOR USE UNDER PAVEMENT FLEXIBLE BASE COURSE (WITHIN 2 FEET OF THE BOTTOM OF THE BASE COURSE) MUST BE CLASSIFIED ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM, (USCS) AS SM, SC, GM, OR GC, AND MUST MEET THE FOLLOWING CRITERIA:
- PERCENT PASSING THE NO. 4 SIEVE: 40% TO 70% (30% TO 60% GRAVEL)
- PERCENT PASSING THE NO. 200 SIEVE: 10% TO 40%
- PI OF SOIL PASSING THE NO. 40 SIEVE: 6 TO 22
- MAXIMUM SIZE OF GRAVEL OR ROCK FRAGMENTS: 4 INCHES IN ANY DIMENSION

A COMPACTED SELECT FILL BUILDING PAD MUST EXTEND HORIZONTALLY BEYOND THE EDGE OF THE FOUNDATION SLAB FOOTPRINT A MINIMUM DISTANCE EQUAL TO THE THICKNESS OF THE FILL BETWEEN BOTTOM OF THE PERIMETER BEAM AND THE BOTTOM OF THE FILL PAD (I.E. IF THERE IS GOING TO BE APPROXIMATELY 2 FEET OF FILL BENEATH THE PERIMETER BEAM IN ONE ARE, THEN THE FILL PAD MUST EXTEND HORIZONTALLY AT LEAST 2 FEET BEYOND THE EDGE OF THE SLAB)."

22. ANCHOR BOLTS: ANCHORING OF BUILDING TO FOUNDATION SHALL BE PER ACI CODE WITH ANCHOR BOLTS AT 4' O.C. AND WITHIN 12" OF ALL CORNERS. USE OF STUD ANCHORS MUST BE SUBMITTED FOR APPROVAL BY ENGINEER PRIOR TO USE ON PROJECT.
23. SEE ARCHITECTURAL PLANS FOR SLAB DEPRESSIONS.
24. CONTRACTOR/ SUBCONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS WITH ARCHITECTURAL PLANS BEFORE COMMENCING ANT WORK, THE CONTRACTOR/ SUBCONTRACTOR SHALL REPORT ANY DESCREPANCIES TO THE ARCHITECT/ENGINEER BEFORE THE WORK COMMENCES.
25. ON VERTICAL WALLS, CHAMFER ALL EXPOSED EDGES 3/4 INCH.

REVISION	DESCRIPTION	BY:	DATE:

STATE OF TEXAS
HUGO ELIZONDO, JR.
69781
LICENSED PROFESSIONAL ENGINEER

CUATRO Consultants, LTD.
Registration No. F-3524
3601 Kyle Crossing, Suite A Phone: (512) 312-5040 Fax: (512) 312-5399
Kyle, Texas 78640 e-mail: cuatro@cuatroconsultants.com

MISCELLANEOUS AND STRUCTURAL DETAILS

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22601 RANCH ROAD 12
DRIPPING SPRINGS, TEXAS 78620

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DRAWN: FCL | APPROVED: HE.jr.