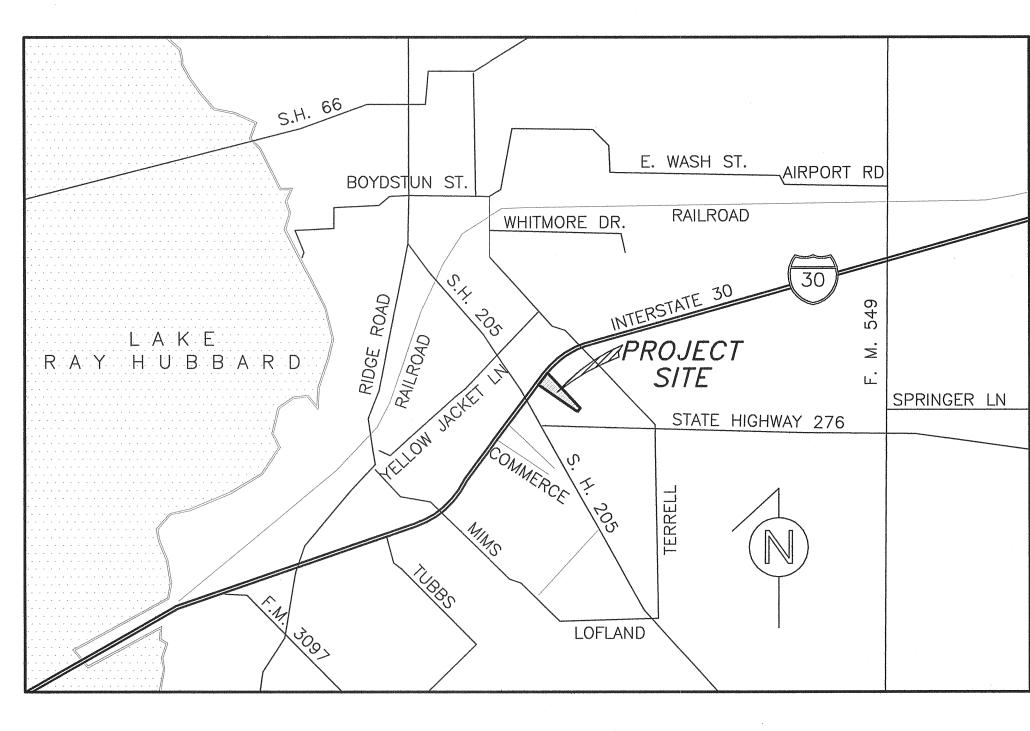
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## 1154 E. IH 30 LOT 2, BLOCK 1, ROCKWALL CENTRE CORNER ADDITION THE CITY OF ROCKWALL ROCKWALL COUNTY, TEXAS

OWNER / DEVELOPER: LEBCO INDUSTRIES, L.P. 10676 KING WILLIAMS DALLAS, TEXAS 75220 PHONE: (214) 631-1813 CONTACT: LEW BROWN

CIVIL ENGINEER:
CATES-CLARK & ASSOCIATES, LLP
14800 QUORUM DRIVE, SUITE 200
DALLAS, TEXAS 75254
PHONE: (972) 385-2272
FAX: (972) 980-1627
TEXAS REGISTERED ENGINEERING FIRM F-3751
CONTACT: LAWRENCE A. CATES, P.E., R.P.L.S.
EMAIL: LCATES@CATES-CLARK.COM

ARCHITECT:
HODGES ARCHITECTURE
13642 OMEGA
DALLAS, TEXAS 75244
PHONE: (972) 387-1000
CONTACT: STEVE SCHWARTZ



VICINITY MAP

N.T.S.

MAPSCO: 20D-W

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Cates-Clark & Associates, LLP
Consulting Engineers

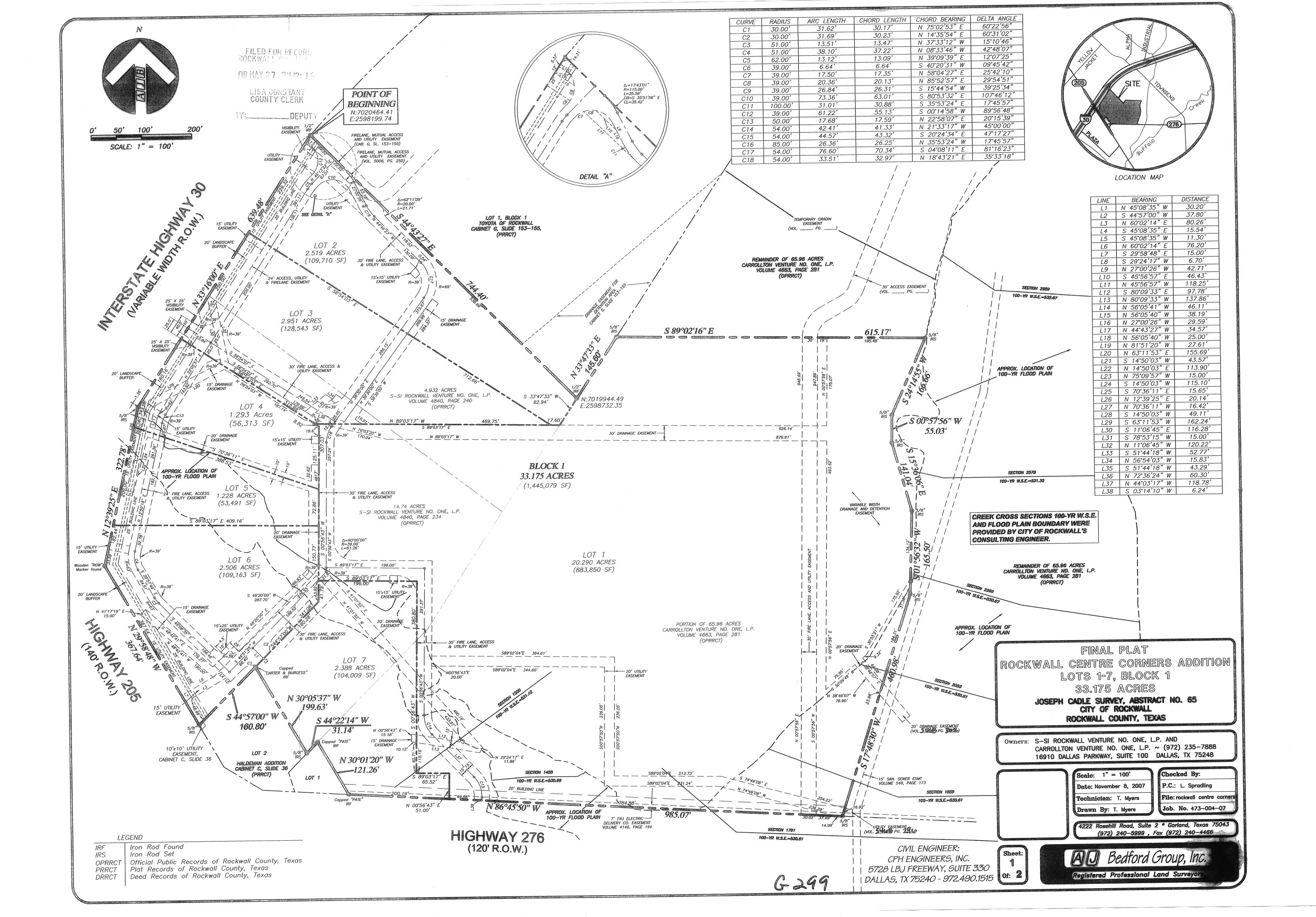
14800 Quorum Drive, Suite 200 Dallas, Texas 75254 Office: 972-385-2272 Fax: 972-980-1627 TBPE F-3751 THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY DANIEL B. STEWART, P.E. 107767 ON - 14-14

DANIEL B. STEWART

AS-BUILT 02/10/14

2 09/20/13 C6.2, C7 1 08/13/13 C7.1

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STATE OF TEXAS COUNTY OF ROCKWALL

WHEREAS, We, S-SI ROCKWALL VENTURE NO. ONE, L.P. and CARROLLTON VENTURE NO. ONE, L.P., being the owner of a tract of land in the County of Rockwall, State of Texas, said tract being described as follows:

BEING all that certain lot, tract or parcel of land situated in the JOSEPH CADLE SURVEY, ABSTRACT NO. 65, in the City of Rockwall, Rockwall County, Texas, and being a portion of a 65.96 acre tract of land as described in a deed to Carrollton Venture No. One. L.P. recorded in Volume 4663, Page 281, Official Public Records of Rockwall County, Texas (OPRRCT), and also being all of a 14.74 acre tract of land as described in deed to S-SI Rockwall Venture No. One L.P. recorded in Volume 4840, Page 234 (OPRRCT), and also being all of a 4.932 acre tract of land described in a deed to S-SI Rockwall Venture No. One, L.P. recorded in Volume 4840. Page 240. (OPRRCT), and being more particularly described as follows:

BEGINNING at a 1/2 inch iron rod found for corner in the southeasterly right—of—way line of Interstate Highway No. 30 (a variable width right-of-way) at the most northerly corner of said 4.932 acre tract and the most westerly corner of Lot 1, Block 1. Toyota of Rockwall, an addition to City of Rockwall, according to the plat recorded in Cabinet G. Slide 1553, Plat Records of Rockwall County, Texas (PRRCT);

THENCE SOUTH 44°43'27° EAST, departing the southeasterly right-of-way line of said Interstate Highway No. 30 and along the southwesterly line of said Lot 1, a distance of 744.40 feet to a 1/2 inch iron rod found for the most southerly corner of said

THENCE NORTH 33°47'33" EAST, along the southeasterly line of said Lot 1, a distance of 145.60 feet to a 5/8 inch iron rod set for comer:

THENCE SOUTH 89°02'16" EAST, departing the southeasterly line of said Lot 1, over and across said Carrollton Venture tract, for a distance of 615.16 feet to a 5/8 inch iron rod set for corner:

THENCE continuing over and across said Carrollton Venture tract as follows:

SOUTH 24°14'55" WEST, a distance of 166.66 feet to a 5/8 inch iron rod set for corner at an angle point;

SOUTH OD'57'56" WEST, a distance of 55.03 feet to a 5/8 inch iron rod set for corner at an angle point;

SOUTH 15°36'06" EAST, a distance of 141.04 feet to a 5/8 inch iron rod set for corner at an anale point:

SOUTH 01°56'32" WEST, a distance of 165.50 feet to a 5/8 inch iron rod set for corner at an angle point;

SOUTH 17'48'30" WEST. a distance of 460.98 feet to a 5/8 inch iron rod set for corner in the northerly right-of-way line of State Highway No. 276 (a 120' wide right-of-way);

THENCE NORTH 86°45'50" WEST, along the northerly right-of-way line of said State Highway No. 276, a distance of 985.07 feet to an iron rod capped "PATE" found for the most easterly corner of Lot 1 of the Haldeman Addition, an addition to the City of Rockwall, according to the plat recorded in Cabinet C, Slide 36 (PRRCT);

THENCE NORTH 30°01'20" WEST, along the northeasterly line of said Lot 1 of Haleman Addition, a distance of 121.26 feet to an iron rod capped "PATE" found for the most northerly corner of said Lot 1 of Haleman Addition;

THENCE SOUTH 44°22'14" WEST, along the northerly line of said Lot 1 of Haldeman Addition, a distance of 31.14 feet to a 5/8 inch iron rod set for the most easterly southeast corner of Lot 2 of said Haldeman Addition;

THENCE NORTH 30°05'37" WEST, along the northeasterly line of said Lot 2 of Haldeman Addition, a distance of 199.63 feet to an iron rod capped "CARTER & BURGESS" found for the most Northerly corner of said Lot 2 of Haldeman Addition:

THENCE SOUTH 44°57'00" WEST, along the northwesterly line of said Lot 2 of Haldeman Addition, a distance of 160.80 feet to a 5/8 inch iron rad set for corner on the northeasterly right-of-way line of State Highway No, 205 (a 140 foot wide right-of-way);

THENCE NORTH 29°58'48" WEST, along the northeasterly right-of-way line of said State Highway No. 205, a distance of 367.64 feet to a wooden right-of-way marker found at the intersection of the northeasterly right-of-way line of said State Highway No. 205 and the southeasterly right—of—way line of said Interstate Highway No. 30;

THENCE along the southeasterly right-of-way line of said Interstate Highway No. 30 as follows:

MORTH 12°39'25" EAST, a distance of 322.78 feet to a 51/8 inch iron rod set for corner at an anale point:

NORTH 33°16'00" EAST, a distance of 639.48 feet to the POINT OF BEGINNING and CONTAINING 33.175 acres or 1.445.079 sauare feet of land more or less.

NOW. THEREFORE. KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS COUNTY OF ROCKWALL

WE the undersigned owners of the land shown on this plat, and designated herein as the ROCKWALL CENTRE CORNERS ADDITION to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. WE further certify that all other parties who have a mortgage or lien interest in the ROCKWALL CENTRE CORNERS ADDITION have been notified and signed this plat.

WE understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. I (we) also understand the following:

- 1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.
- 2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.
- 3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.
- 4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.
- 5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.
- 6. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall: or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written gareement, but in no case shall the City be obligated to make such improvements itself. Such deposit may be used by the owner and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or

Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.

WE further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; I (we), my (our) successors and assigns hereby waive any claim, damage, or cause of action that I (we) may have as a result of the dedication of exactions made herein.

S-SI ROCKWALL VENTURE NO. ONE. L.P. By: St. Ives Holdings. LLC, its General Partner By: St. Ives Realty, Inc., its Manager By: Troy Bathman, its President

CARROLLTON VENTURE NO. ONE. L.P. By: St. Ives Holdings. LLC, its General Partner St. Ives Realty, Inc., its Manager By: Troy Bathman, its President

STATE OF TEXAS COUNTY OF DALLAS

Before me, the undersigned authority, on this day personally appeared Troy Bathman, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

MMM

Notary Public in and for the State of Texas

NDA TERMIN Y COMMISSION EXPIRES August 14, 2009

My Commission Expires:

Sianature of Party with Mortage or Lien Interest

EXECUTIVE V.P., SOVEREIGN BANK

NOTE: It shall be the policy of the City of Rockwall to withhold issuing building permits until all streets, water sewer and storm drainage systems have been accepted by the City. The approval of a plat by the City does not constitute any representation, assurance or guarantee that any building within such plat shall be approved authorized or permit therefore issued, nor shall such approval constitute any representation, assurance or guarantee by the City of the adequacy and availability for water for personal use and fire protection within such plat, as required under Ordinance 83-54.

SURVEYOR'S CERTIFICATE

NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

THAT I, Austin J. Bedford, do hereby certify that I prepared this plat from an actual and accurate survey of the land, and that the corner remainents shown thereon were properly placed under my personal supervision.

Austin J. Bedford Registered Professional Land Surveyar May 15, 2008

AUSTIN J. BEDFORD 4132

STATE OF TEXAS

Before me, the undersigned authority, on this day personally appeared Austin J. Bedford, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

Given upon my hand and seal of office this 15th day of May. 2008.

TERESA ANNAISE MYERS NOTARY PUBLIC State of Texas Comm. Exp. 07-05-2010

My Commission Expires Notary Public in and for the State of Texas

RECOMMENDED FOR FINAL APPROVAL

Briches Planning and Zoning Commission

**APPROVED** 

I hereby certify that the above and foregoing plat of an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the 440 day of FCDruary

This approval shall be invalid unless the approved plat for such addition is recorded in the office of the County Clerk of Rockwall, County, Texas, within one hundred eighty (180) days from said date of final

WITNESS OUR HANDS, this 20th day of May

SEAL

NOTES

Bearings shown hereon are based on the southeast line of IH-30 (N 33°16'00° E) as shown on TXDOT Right-of-way map, sheet No. 2.

All easements shown hereon are to be dedicated by this plat, unless otherwise noted.

All interior Lot corners are monumented with a 5/8" iron rod set unless otherwise noted.

Coordinates shown hereon are grid coordinates and were obtained using City Monuments R016 and N1495 with a combined scale factor of 0.9998738368405. All ofther distances ahown hereon are surface.

> CIVIL ENGINEER: CPH ENGINEERS, INC. 5728 LBJ FREEWAY, SUITE 330 DALLAS. TX 75240 - 972.490.1515

FINAL PLAT ROCKWALL CENTRE CORNERS ADDITION LOTS 1-7, BLOCK 1 33.174 ACRES JOSEPH CADLE SURVEY, ABSTRACT NO. 65

CITY OF ROCKWALL ROCKWALL COUNTY. TEXAS

Owners: S-SI ROCKWALL VENTURE NO. ONE. L.P. AND CARROLLTON VENTURE NO. ONE. L.P. ~ (972) 235-7888 16910 DALLAS PARKWAY, SUITE 100 DALLAS, TX 75248

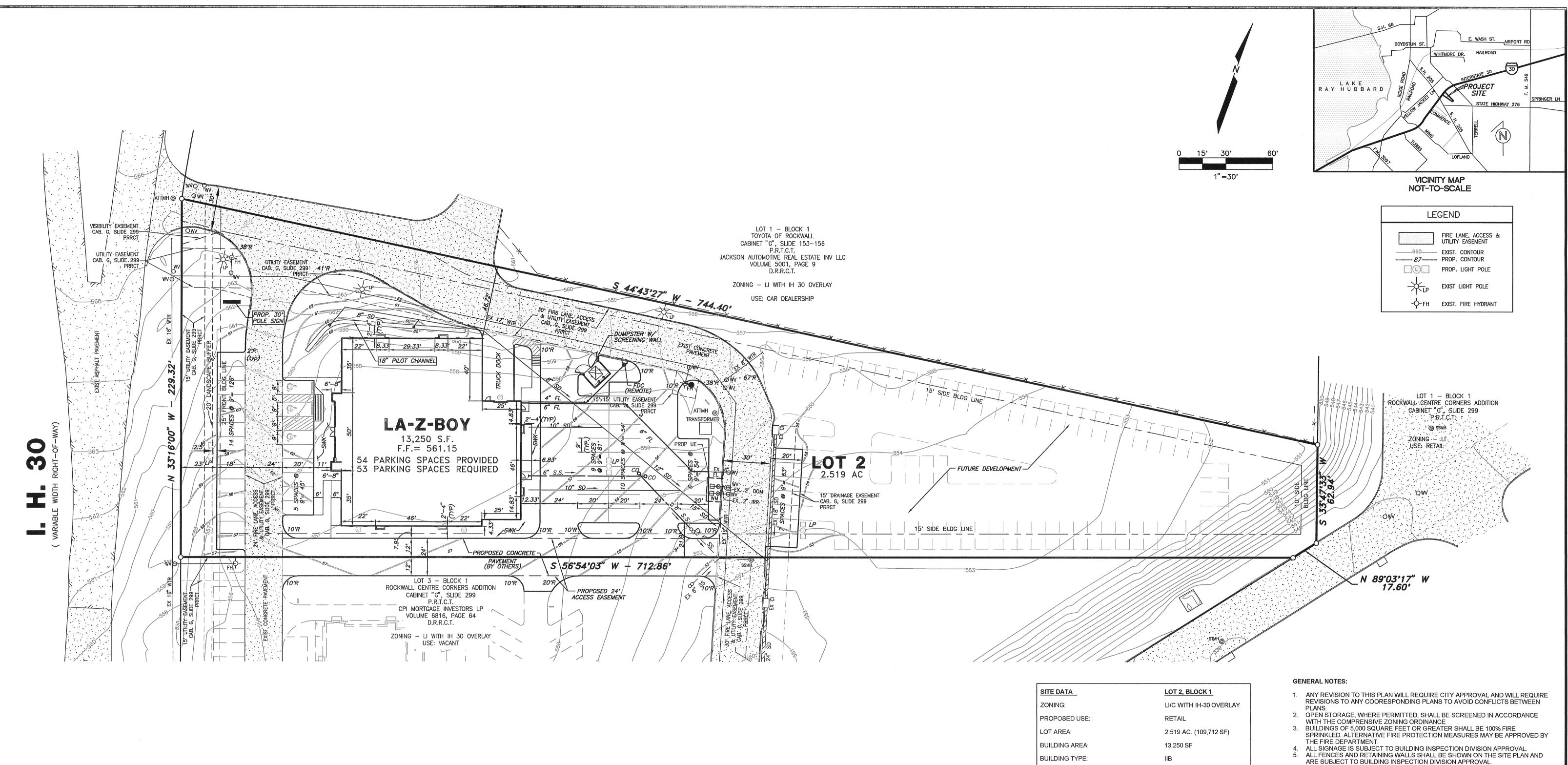
> Date: November 8, 2007 Technician: T. Myers Drawn By: T. Myers

Checked By: A.J. Bedford P.C.: L. Spradling File: rockwall centre corner Job. No. 473-004-07

4222 Rosehill Road. Suite 2 \* Garland. Texas 75043 (972) 240-5999 , Fox (972) 240-4466



Bedford Group, Inc. Registered Professional Land Surveyors



SITE DATA	LOT 2, BLOCK 1
ZONING:	LI/C WITH IH-30 OVERLAY
PROPOSED USE:	RETAIL
LOT AREA:	2.519 AC. (109,712 SF)
BUILDING AREA:	13,250 SF
BUILDING TYPE:	IIB
BUILDING HEIGHT:	33'-6"
#STORIES:	1
LOT COVERAGE:	12.08%
FLOOR AREA RATIO:	0.121:1
FRONT BUILDING SETBACK:	25'
PARKING REQUIRED:	53 SPACES
HANDICAP PARKING REQUIRED:	3 SPACES
PARKING PROVIDED:	54 SPACES
LANDSCAPE REQUIRED:	16,456 SF
LANDSCAPE PROVIDED:	20,414 SF*
IMPERVIOUS AREA:	55,162 S.F. (0.503:1)

\*DOES NOT INCLUDE FUTURE DEV. AREA

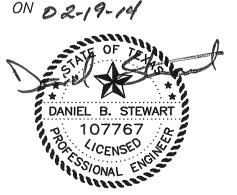
LEBCO INDUSTRIES, L.P. 10676 KING WILLIAMS DALLAS, TEXAS 75220 PHONE: (214) 631-1813 CONTACT: LEW BROWN

OWNER:

ENGINEER/SURVEYOR CATES - CLARK & ASSOC., LLP 14800 QUORUM DRIVE, SUITE 200 DALLAS, TEXAS 75254 PHONE: (972) 385-2272 CONTACT: LAWRENCE A. CATES, P.E., R.P.L.S.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY DANIEL B. STEWART, P.E. 107767 ON 02-19-14



#### BENCHMARKS:

1. AT&T MANHOLE LOCATED AT 5.5 FEET FROM THE NORTH CORNER OF LOT 2 IN THE RIGHT OF WAY OF INTERSTATE HIGHWAY NO. 30. ELEVATION = 565.20'

2. WATER VALVE LOCATED 5.7 FEET FROM THE WEST CORNER OF LOT 2 IN THE RIGHT OF WAY OF INTERSTATE HIGHWAY NO. 30. **ELEVATION** = 559.42'

AS-BUIL

### SITE PLAN - SP2013-014 LA-Z-BOY

LOT 2, BLOCK 1, ROCKWALL CENTRE CORNERS ADDN. THE CITY OF ROCKWALL, TEXAS

14800 Quorum Drive, Suite 200 Dallas, Texas 75254 Office: 972-385-2272 Fax: 972-980-1627 TBPE F-3751 Cates - Clark & Associates, LLP Consulting Engineers DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. CCA CCA 07.09.13 1"=30" D.P.

#### **GENERAL NOTES**

- 1. STANDARDS AND SPECIFICATIONS: ALL MATERIALS, CONSTRUCTION METHODS, WORKMANSHIP, EQUIPMENT, SERVICES AND TESTING FOR ALL PUBLIC IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' ORDINANCES, REGULATIONS, REQUIREMENTS, STATUTES, SPECIFICATIONS AND DETAILS, LATEST PRINTING AND AMENDMENTS THERETO. THE GOVERNING AUTHORITIES' PUBLIC WORKS AND WATER DEPARTMENT REQUIREMENTS, PLUMBING CODES, AND FIRE DEPARTMENT REGULATIONS SHALL TAKE PRECEDENT FOR ALL PRIVATE IMPROVEMENTS WHERE APPLICABLE. ALL OTHER PRIVATE CONSTRUCTION, NOT REGULATED BY THE GOVERNING AUTHORITY, SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, 3rd EDITION PRINTING AND CITY AMENDMENTS THERETO, EXCEPT AS MODIFIED BY THE PROJECT CONTRACT DOCUMENTS.
- 2. EXAMINATION OF PLANS: PRIOR TO COMMENCING ANY CONSTRUCTION, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. FAILURE ON THE PART OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE WORK SHALL IN NO WAY RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PERFORMING THE WORK IN ACCORDANCE WITH ALL SUCH APPLICABLE STANDARDS AND SPECIFICATIONS.
- 3. EXAMINATION OF SITE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING AND SATISFYING HIMSELF AS TO THE CONDITIONS AFFECTING THE WORK, INCLUDING BUT NOT RESTRICTED TO THOSE BEARING UPON TRANSPORTATION, DISPOSAL, HANDLING AND STORAGE OF MATERIALS, AVAILABILITY OF LABOR, WATER, ELECTRIC POWER, ROADS AND UNCERTAINTIES OF WEATHER, OR SIMILAR PHYSICAL CONDITIONS AT THE SITE, CONDITIONS OF THE GROUND, THE CHARACTER OF EQUIPMENT AND FACILITIES NEEDED PRELIMINARY TO AND DURING THE PERFORMANCE OF THE WORK. FAILURE BY THE CONTRACTOR TO ACQUAINT HIMSELF WITH THE AVAILABLE INFORMATION WILL NOT RELIEVE HIM FROM RESPONSIBILITY FOR ESTIMATING THE DIFFICULTY OR COST OF SUCCESSFULLY PERFORMING THE WORK.
- 4. CONSTRUCTION MATERIALS TESTING: TESTING SHALL BE PERFORMED BY REED ENGINEERING GROUP, 2424 STUTZ DRIVE, SUITE 400, DALLAS, TEXAS 75235. ATTENTION: KUNDAN K. PANDAY, PhD., P.E., (214) 350-5600. WHO WILL BE EMPLOYED AND PAID DIRECTLY BY THE OWNER. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE PLANS AND THE SPECIFICATIONS. IN THE EVENT INITIAL TEST RESULTS DO NOT MEET THE SPECIFICATIONS, SUBSEQUENT TESTS NECESSARY TO DETERMINE THE ACCEPTABILITY OF CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE. PAVEMENT FOUND TO BE DEFICIENT IN STRENGTH OR THICKNESS SHALL BE REMOVED AND REPLACED SOLELY AT THE EXPENSE OF THE CONTRACTOR.
- 5. TOPOGRAPHIC SURVEY: TOPOGRAPHIC SURVEY INFORMATION SHOWN ON THE PLANS IS PROVIDED FOR INFORMATIONAL PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE INFORMATION SHOWN IS CORRECT, AND SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY ERRORS, DISCREPANCIES OR OMISSIONS TO THE SURVEY INFORMATION PROVIDED.
- 6. COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH EXIST OR MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT. ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, HE SHALL IMMEDIATELY REPORT THIS TO THE OWNER FOR RESOLUTION.
- 7. PUBLIC CONVENIENCE AND SAFETY: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. MATERIALS STORED ON THE WORK SITE SHALL BE PLACED, AND THE WORK SHALL AT ALL TIMES BE SO CONDUCTED, AS TO CAUSE NO GREATER OBSTRUCTION TO THE TRAVELING PUBLIC THAN IS CONSIDERED ACCEPTABLE BY THE GOVERNING AUTHORITIES AND THE OWNER AND NOT TO PREVENT FREE UNINTERRUPTED ACCESS TO ALL FIRE HYDRANTS, WATER VALVES, GAS VALVES, MANHOLES AND FIRE ALARM OR POLICE CALL BOXES IN THE VICINITY.
- 8. STORM WATER POLLUTION PREVENTION PLAN (SWPPP): THE CONTRACTOR SHALL COMPLY WITH THE CONDITIONS OF THE SWPPP WHILE CONDUCTING HIS ACTIVITIES ON THE PROJECT.
- 9. PERMITS AND LICENSES: THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHENEVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE GOVERNING AUTHORITIES, THE CONTRACTOR SHALL FURNISH DUPLICATE COPIES OF SUCH PERMITS TO THE OWNER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS HAVE BEEN OBTAINED.
- 10. APPROVED PLANS: EACH CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED PLANS ON-SITE AT ALL TIMES. NO COPIED PLANS ARE ALLOWED ON THE CONSTRUCTION SITE.
- 11. BONDS: PERFORMANCE, PAYMENT AND MAINTENANCE BONDS MAY BE REQUIRED FROM THE CONTRACTOR FOR "PUBLIC" IMPROVEMENTS. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE THE BONDS IN THE FORM AND IN THE AMOUNTS AS REQUIRED BY THE GOVERNING AUTHORITIES. COSTS ASSOCIATED WITH PROVIDING THE BONDS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 12. TESTING: THE TESTING AND CONTROL OF ALL MATERIALS USED IN THE WORK SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY, EMPLOYED AND PAID DIRECTLY BY THE OWNER. IN THE EVENT THE RESULTS OF INITIAL TESTING DO NOT COMPLY WITH THE PLANS AND SPECIFICATIONS, SUBSEQUENT TESTS NECESSARY TO DETERMINE THE ACCEPTABILITY OF MATERIALS OR CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 13. INSPECTION: THE GOVERNING AUTHORITIES AND/OR THE OWNER WILL PROVIDE INSPECTION OF THE PROPOSED CONSTRUCTION. THE OWNER WILL PAY THE COSTS FOR INSPECTION SERVICES. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE WELL IN ADVANCE OF PENDING CONSTRUCTION ACTIVITIES TO THE GOVERNING AUTHORITIES AND/OR OWNER FOR SCHEDULING OF INSPECTION SERVICES.
- 14. SHOP DRAWINGS: THE CONTRACTOR SHALL HAVE PREPARED, REVIEW, AND SUBMIT ALL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES REQUIRED BY THE GOVERNING AUTHORITIES AND THE PROJECT CONTRACT DOCUMENTS IN ACCORDANCE WITH ITEM 1.28 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL TEXAS NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS.
- 15. SURVEYING: ALL SURVEYING REQUIRED FOR CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE OWNER SHALL PROVIDE THE PROPERTY CORNERS AND TWO BENCHMARKS FOR USE AS HORIZONTAL AND VERTICAL DATUM. THE CONTRACTOR SHALL EMPLOY A REGISTERED PROFESSIONAL LAND SURVEYOR TO PERFORM ALL ADDITIONAL SURVEY, LAYOUT AND MEASUREMENT WORK NECESSARY FOR THE COMPLETION OF THE PROJECT. THE COSTS ASSOCIATED WITH THE CONSTRUCTION STAKING SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 16. PROTECTION OF PROPERTY CORNERS AND BENCHMARKS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS AND BENCHMARKS. WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET BY A REGISTERED PUBLIC SURVEYOR AT THE EXPENSE OF THE CONTRACTOR.
- 17. EXISTING STRUCTURES: THE PLANS SHOW THE LOCATION OF ALL KNOWN SURFACE AND SUBSURFACE STRUCTURES, HOWEVER, THE DEVELOPER, ENGINEER AND CITY ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS, OR TO SHOW THEM IN THEIR EXACT LOCATION. SUCH FAILURE SHALL NOT BE CONSIDERED SUFFICIENT BASIS FOR CLAIMS FOR ADDITIONAL COMPENSATION FOR EXTRA WORK OR FOR INCREASING THE PAY QUANTITIES IN ANY MANNER WHATSOEVER, UNLESS THE OBSTRUCTION ENCOUNTERED IS SUCH AS TO REQUIRE CHANGES IN THE LINES OR GRADES, OR REQUIRE THE CONSTRUCTION OF SPECIAL WORK, FOR WHICH PROVISIONS ARE NOT MADE IN THE PLANS.
- 18. PROTECTION OF EXISTING UTILITIES: AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT", TEXAS ONE CALL SYSTEM MUST BE CONTACTED AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS BEING PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM (800-245-4545) AND CITY OF ROCKWALL PUBLIC WORKS DEPARTMENT (972-771-7730). THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON THE BEST RECORDS AND/OR FIELD INFORMATION AVAILABLE AND ARE NOT GUARANTEED BY THE OWNER OR ENGINEER TO BE ACCURATE AS TO THE LOCATION AND DEPTH. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF HIS ACTIVITIES IN ORDER THAT HE MAY NEGOTIATE SUCH LOCAL ADJUSTMENTS AS NECESSARY IN THE CONSTRUCTION PROCESS TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL EXISTING UTILITIES, SERVICES AND STRUCTURES ENCOUNTERED, WHETHER OR NOT THEY ARE ON THE PLANS. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. TO AVOID UNNECESSARY INTERFERENCES OR DELAYS, THE CONTRACTOR SHALL COORDINATE ALL UTILITY REMOVALS, REPLACEMENTS AND CONSTRUCTION WITH THE APPROPRIATE GOVERNING AUTHORITIES. THE OWNER WILL NOT BE LIABLE FOR DAMAGES DUE TO DELAY BECAUSE OF THE ABOVE.
- 19. DAMAGE TO EXISTING FACILITIES: ALL EXISTING UTILITIES, PAVEMENT, SIDEWALKS, WALLS, FENCES, ETC. DAMAGED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE TO A CONDITION AS GOOD AS OR BETTER THAN THE CONDITIONS PRIOR TO STARTING THE WORK. ANY EXISTING STRUCTURES OR APPURTENANCES DISTURBED MAY NEED TO BE ADJUSTED TO MATCH FINAL GRADE.
- **20. FIRE AND LIFE SAFETY SYSTEMS:** THE CONTRACTOR SHALL NOT REMOVE, DISABLE OR DISRUPT EXISTING FIRE OR LIFE SAFETY SYSTEMS WITHOUT RECEIVING PRIOR WRITTEN PERMISSION FROM THE GOVERNING AUTHORITY.
- 21. TRENCH SAFETY: THE CONTRACTOR IS RESPONSIBLE FOR HAVING A TRENCH SAFETY PLAN PREPARED IN ACCORDANCE WITH OSHA REQUIREMENTS BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS FOR THE IMPLEMENTATION OF TRENCH SAFETY CONTROL MEASURES THAT WILL BE IN EFFECT DURING THE CONSTRUCTION OF THE PROJECT. THE COSTS FOR PREPARATION OF THE TRENCH SAFETY PLAN SHALL BE INCLUDED IN THE CONTRACT AMOUNT. THE PLAN SHALL BE SUBMITTED TO THE CITY PRIOR TO THE START OF CONSTRUCTION.

- 22. TRAFFIC CONTROL: IF REQUIRED, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DEVELOP AND SUBMIT FOR APPROVAL BY THE GOVERNING AUTHORITIES, A TRAFFIC CONTROL PLAN, PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS, OUTLINING TRAFFIC MANAGEMENT PROCEDURES TO BE PROVIDED DURING CONSTRUCTION. THE COSTS ASSOCIATED WITH THE PREPARATION AND IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN SHALL BE INCLUDED IN THE CONTRACT AMOUNT. TRAFFIC CONTROL MEASURES SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:
- a. CONSTRUCTION OF SIGNING AND BARRICADES SHALL CONFORM WITH THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
- b. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH BARRICADES, FLARES, FLAGMEN, ETC., FOR THE PROTECTION OF THE PUBLIC, EMPLOYEES AND THE WORK.
- c. THE CONTRACTOR SHALL PERFORM HIS WORK IN SUCH A MANNER AS TO CREATE A MINIMUM OF INTERRUPTION TO TRAFFIC ALONG ADJACENT ROADWAYS. THE CONTRACOTOR SHALL MAINTAIN TWO WAY TRAFFIC ON ALL ROADWAYS AT ALL TIMES THROUGHOUT CONSTRUCTION UNLESS THE GOVERNING AUTHORITIES GRANT WRITTEN PERMISSION.
- d. ALL SIGNAGE, MARKINGS, LIGHTING, BARRICADES, FLAGMEN AND OTHER DEVICES AND PERSONNEL REQUIRED FOR TRAFFIC CONTROL DURING CONSTRUCTION OF THE PROJECT WILL BE INCLUDED IN THE CONTRACT
- e. ALL TRAFFIC CONTROL DEVICES USED DURING NIGHTTIME SHALL BE REFLECTORIZED, ILLUMINATED FROM WITHIN OR EXTERNALLY ILLUMINATED.
- f. THE CONTRACTOR SHALL NOT REMOVE ANY REGULATORY SIGN, INSTRUCTIONAL SIGN, WARNING SIGN, STREET NAME SIGN OR ANY SIGNAL, WHICH CURRENTLY EXISTS, WITHOUT THE CONSENT OF THE GOVERNING AUTHORITIES.
- g. THE CONTRACTOR SHALL MAINTAIN AND REPLACE WHERE NECESSARY AT THE END OF CONSTRUCTION AND RESTORE UNIMPROVED PAVEMENT AND OTHER DISTURBED AREAS TO THEIR ORIGINAL PLACE.
- h. THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL MEASURES AT THE END OF CONSTRUCTION AND RESTORE UNIMPROVED PAVEMENT AND OTHER DISTURBED AREAS TO THEIR ORIGINAL CONDITION.
- 23. ACCESS TO ADJACENT PROPERTIES: ACCESS TO ADJACENT PROPERTIES SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE DIRECTED BY THE GOVERNING AUTHORITIES AND/OR OWNER.
- 24. ACCESS ROUTES, STAGING AREAS AND STORAGE AREAS: ALL PRIVATE HAUL ROADS AND ACCESS ROUTES AND THE LOCATION OF ALL STAGING AREAS AND STORAGE AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REPAIRING ALL ROADS AND OTHER FACILITIES USED DURING CONSTRUCTION. UPON COMPLETION OF THE PROJECT, ALL HAUL ROADS, ACCESS ROADS, STAGING AREAS AND STORAGE AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT AT THE TIME THE CONTRACTOR COMMENCES WORK ON THE PROJECT.
- 25. PARKING OF CONSTRUCTION EQUIPMENT: AT NIGHT AND DURING ALL OTHER PERIODS OF TIME WHEN EQUIPMENT IS NOT BEING ACTIVELY USED FOR THE CONSTRUCTION WORK, THE CONTRACTOR SHALL PARK THE EQUIPMENT AT LOCATIONS WHICH ARE APPROVED BY THE OWNER. DURING THE CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL COMPLY WITH THE PRESENT ZONING REQUIREMENTS OF THE GOVERNING AUTHORITIES IN THE USE OF VACANT PROPERTY FOR STORAGE PURPOSES. THE CONTRACTOR SHALL ALSO PROVIDE ADEQUATE BARRICADES, MARKERS AND LIGHTS TO PROTECT THE OWNER, THE GOVERNING AUTHORITIES, THE PUBLIC AND THE OTHER WORK. ALL BARRICADES, LIGHTS, AND MARKERS MUST MEET THE REQUIREMENTS OF THE GOVERNING AUTHORITIES' REGULATIONS. IN NO CASE SHALL CONSTRUCTION EQUIPMENT BE PARKED IN A FIRE LANE.
- **26. WATER FOR CONSTRUCTION:** THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR PURCHASING WATER FROM THE GOVERNING AUTHORITY FOR HIS USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH THIS SERVICE SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 27. TEMPORARY ELECTRIC AND COMMUNICATIONS FOR CONSTRUCTION: THE CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR INSTALLATION AND PURCHASING OF TEMPORARY ELECTRIC AND COMMUNICATIONS SERVICES FROM THE GOVERNING AUTHORITIES FOR HIS USE ON THE PROJECT SITE. COSTS ASSOCIATED WITH PURCHASING THESE SERVICES SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 28. FENCES: ALL FENCES ENCOUNTERED AND REMOVED DURING CONSTRUCTION, EXCEPT THOSE DESIGNATED TO BE REMOVED OR RELOCATED, SHALL BE RESTORED TO THE ORIGINAL OR BETTER THAN CONDITION UPON COMPLETION OF THE PROJECT. WHERE WIRE FENCING, EITHER WIRE MESH OR BARBED WIRE, IS NOT TO BE CROSSED, THE CONTRACTOR SHALL SET CROSS-BRACED POSTS ON EITHER SIDE OF THE CROSSING. TEMPORARY FENCING SHALL BE ERECTED IN PLACE OF THE FENCING REMOVED WHENEVER THE WORK IS NOT IN PROGRESS AND WHEN THE SITE IS VACATED OVERNIGHT AND/OR AT ALL TIMES TO PREVENT PERSONS AND/OR LIVESTOCK FROM ENTERING THE CONSTRUCTION AREA. THE COST OF FENCE REMOVAL, TEMPORARY CLOSURES AND REPLACEMENT SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 29. COORDINATION WITH OTHERS: IN THE EVENT THAT OTHER CONTRACTORS ARE DOING WORK IN THE SAME AREA SIMULTANEOUSLY WITH THE PROJECT, THE CONTRACTOR SHALL COORDINATE HIS PROPOSED CONSTRUCTION WITH THAT OF THE OTHER CONTRACTORS.
- 30. CONDITION OF SITE DURING CONSTRUCTION: THE CONTRACTOR SHALL KEEP THE SITE OF THE WORK AND ADJACENT PREMISES AS FREE FROM MATERIAL, DEBRIS AND RUBBISH AS IS PRACTICABLE. THE CONTRACTOR SHALL REMOVE MATERIAL, DEBRIS AND RUBBISH FROM ANY PORTION OF THE SITE IF, IN THE OPINION OF THE OWNER, SUCH MATERIAL, DEBRIS OR RUBBISH CONSTITUTES A NUISANCE OR IS OBJECTIONABLE.
- **31. EXISTING ROADWAYS:** THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE CLEANLINESS OF EXISTING PAVED ROADS. COSTS ASSOCIATED WITH MAINTAINING THE CLEANLINESS OF EXISTING ROADS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 32. DUST CONTROL: THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO CONTROL DUST ON THE PROJECT SITE BY SPRINKLING OF WATER, OR ANY OTHER METHODS APPROVED BY THE GOVERNING AUTHORITIES. COSTS ASSOCIATED WITH DUST CONTROL SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 33. CLEAN UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN UP OF ALL PARTS OF THE WORK PRIOR TO ACCEPTANCE BY THE OWNER. THIS CLEAN UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN AN ORDERLY MANNER OF APPEARANCE.
- 34. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK, WHICH HAS BEEN REJECTED OR CONDEMNED, SHALL BE REPAIRED, OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT REQUIRED INSPECTION, OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT THE CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE OWNER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE OWNER, THE OWNER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMEDIED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF ANY MONIES DUE OR TO BECOME DUE THE CONTRACTOR.
- 35. DISPOSITION AND DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS: ALL MATERIALS TO BE REMOVED FROM THE SITE INCLUDING BUT NOT LIMITED TO EXCESS MATERIAL AND UNSUITABLE MATERIALS SUCH AS CONCRETE, ASPHALT, LARGE ROCKS, REFUSE, AND OTHER DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE THE LIMITS OF THE PROJECT AND CITY LIMITS OF ROCKWALL. CONTRACTOR SHALL ALSO COMPLY WITH ALL APPLICABLE LAWS GOVERNING SPILLAGE OF DEBRIS WHILE TRANSPORTING TO A DISPOSAL SITE. COSTS ASSOCIATED WITH THE DISPOSAL OF EXCESS AND UNSUITABLE MATERIALS SHALL BE INCLUDED IN THE CONTRACT AMOUNT.
- 36. RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY THE PROJECT CONTRACT DOCUMENTS. THE COMPLETED SET OF "RECORD" DRAWINGS" MUST BE DELIVERED TO THE OWNER AND/OR ENGINEER BEFORE REQUESTING FINAL PAYMENT.
- 37. GEOTECHNICAL REPORT: SITE PREPARATION, GRADING, FILL COMPACTION, AND BUILDING PAD PREPARATION SHALL BE PREFORMED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT BY REED ENGINEERING GROUP, REPORT NO. 18798, DATED APRIL, 2013. IN THE EVENT OF A CONFLICT BETWEEN THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT AND THE NOTED ON THE GRADING PLAN, THE GEOTECHNICAL REPORT SHALL GOVERN.

	LEGEND		
	EXISTING	PROPOSED	FUTURE
PROPERTY LINE			N/A
BUILDING	Emma		COURS STATES STATES STATES
FINISH FLOOR ELEVATION	F.F.=650.00	F.F.= 650.00	N/A
SPOT ELEVATION	×650.50	50.50	N/A
CURB		#USANINE FAIR AND COMMON AND COMMON AND AND AND AND AND AND AND AND AND AN	UNIVERSAL Sectionaries statisticalists substitutionary
EDGE OF ASPHALT PAVEMENT		N/A	N/A
RIDGE LINE	N/A	RL	N/A
SWALE OR VALLEY GUTTER	N/A		N/A
CONTOUR LINE	375_	75	1-75-1
STORM DRAIN	EX. 21" SD	21" SD	FUT. 21" SD-
STORM DRAIN MANHOLE (JUNCTION BOX)	ZZZZZ O ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ	SDMH	FUT. SC
CURB INLET	EX. CI		pro 100 and 100 and 100 and 100 and 100 and 100 and
RECESSED CURB INLET	EX. RCI	RCI	FUT. R
GRATE INLET	⊠ <sup>EX. GI</sup>	∏G/	面FUT. GI
WATER LINE	EX. 8" WTR.	8" WTR	FUT. 8" WTR.
FIRE HYDRANT	-ф- ғ.н.	● FH	○ FUT. FH
WATER VALVE	· ————————————————————————————————————	Control Consession and Consession an	N/A
WATER METER BOX	⊚ <sup>wM</sup>	⊗	N/A
CONTROL VALVE	<b>®</b>	N/A	N/A
BACKFLOW PREVENTOR	В	В	N/A
DETECTOR CHECK	DC	DC	N/A
SANITARY SEWER LINE	EX. 8" S.S	8" S.S.——	FUT. 8" S.S.
SANITARY SEWER MANHOLE	SSMH_	SSMH	FUT. SSI
CLEANOUT	co	co	FUT. CO
DOUBLE CLEANOUT	o_DCO	DCO	FUT. DO
LIGHT POLE	LP LP		N/A
POWER POLE	T PP	→ PP	N/A
DOWN GUY	<i>~</i>	N/A	N/A
SIGN	_		
ACCESSIBLE PARKING		<u>.</u>	N/A
		-	N/A
VAN ACCESSIBLE PARKING	©	<b>V</b>	N/A
ACCESSIBLE ROUTE	N/A	00000	N/A
RETAINING WALL	Secretary of the special and the secretary of the secreta	DESCRIPTION OF STREET	N/A
WOOD FENCE	Δ	Q	N/A
SCREEN WALL FENCE	~~~~ <u> </u>		N/A
CHAIN LINK FENCE	O	······································	N/A
WIRE FENCE		——————————————————————————————————————	N/A
TREE	$( \cdot )$	N/A	N/A
TREE TO BE REMOVED	N/A		N/A
OVERHEAD LINE	OHL	N/A	N/A
OVERHEAD ELECTRIC LINE	OHE	OHE	N/A
OVERHEAD TELEPHONE LINE	ОНТ	OHT	N/A
UNDERGROUND ELECTRIC LINE	UGE	UGE	N/A
UNDERGROUND TELEPHONE LINE	UGT	UGT	N/A
UNDERGROUND CABLE LINE	CATV	CATV	N/A
ELECTRIC METER	EM	EM	N/A
ELECTRIC TRANSFORMER	TRANSFORMER	T	N/A
ELECTRIC SWITCHGEAR	SWITCHGEAR	S	N/A
GAS METER	GM	GM	N/A
GAS LINE	GAS	GAS	N/A
BOLLARD	•		N/A

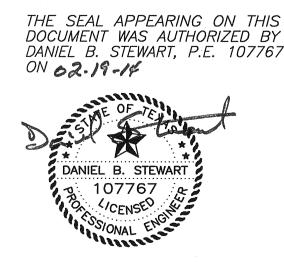
APPROX. APPROXIMATELY ASPH. ASPHALT BACK OF CURB BACK TO BACK OF CURB BARRIER FREE RAMP BENCHMARK BOTTOM OF WALL CUBIC FEET PER SECOND CURB INLET CORRUGATED METAL PIPE CONC. CONCRETE CONSTRUCT CENTER LINE CRAPE MYRTLE TREE DOUBLE CHECK DETECTOR CHECK DOUBLE CLEANOUT DRAINAGE EASEMENT DROP INLET DIAMETER DUCTILE IRON PIPE DOMESTIC WATER ELECTRIC BOX EXPANSION JOINT ELECTRIC MANHOLE EDGE OF PAVEMENT EASEMENT EXISTING FACE TO FACE OF CURB FINISHED FLOOR ELEVATION FIRE HYDRANT FORCE MAIN FIBER OPTICS FINISHED PAD FEET PER SECOND FLOW LINE GRATE INLET GAS MARKER HACKBERRY TREE HIGH DENSITY POLYETHYLENE PIPE HEADWALL HMAC HORIZ. HOT MIX ASPHALTIC CONCRETE HORIZONTAL HIGH POINT HEATING, VENTILATION AND AIR CONDITIONING JUNCTION BOX LINEAL FEET LIVE OAK TREE LOW POINT MANHOLE NOT APPLICABLE NATURAL GROUND (EXISTING) POINT OF CURVATURE POINT OF COMPOUND CURVATURE POINT OF INTERSECTION POST INDICATOR VALVE PROPERTY LINE POWER POLE POINT OF REVERSE CURVATURE PROPOSED PROPOSED BY OTHERS POINT OF TANGENCY POLYVINYL CHLORIDE PIPE ON CENTER EACH WAY OVERHEAD ELECTRIC REINFORCED CONCRETE BOX RECESSED CURB INLET REINFORCED CONCRETE PIPE REINFORCED CONCRETE CYLINDRICAL PIPE REINF. REINFORCED RIDGE LINE RED OAK TREE RIGHT OF WAY SQUARE FEET STORM DRAIN STORM DRAIN MANHOLE SANITARY SEWER SANITARY SEWER EASEMENT STATION SQUARE YARD TOP OF CURB TRENCH DRAIN TEL. MH. TELEPHONE MANHOLE TOP OF BANK TOE OF SLOPE TOP OF PAVEMENT TOP OF WALL UTILITY EASEMENT UNDERGROUND ELECTRIC VITRIFIED CLAY PIPE WATER FASEMENT WATER METER WATER MANHOLE WTR WATER WATER VALVE WASTEWATER

**ABBREVIATIONS** 

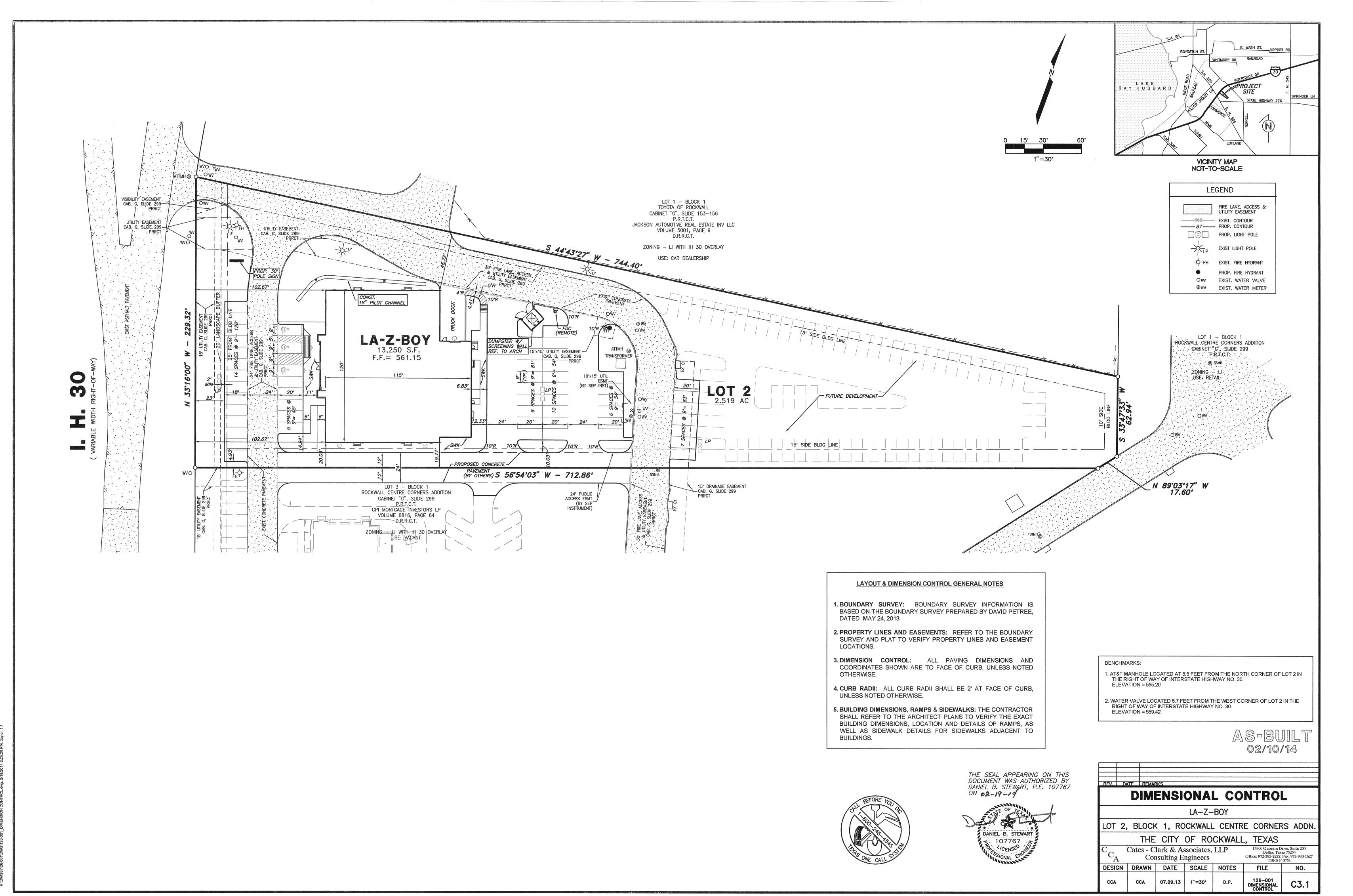
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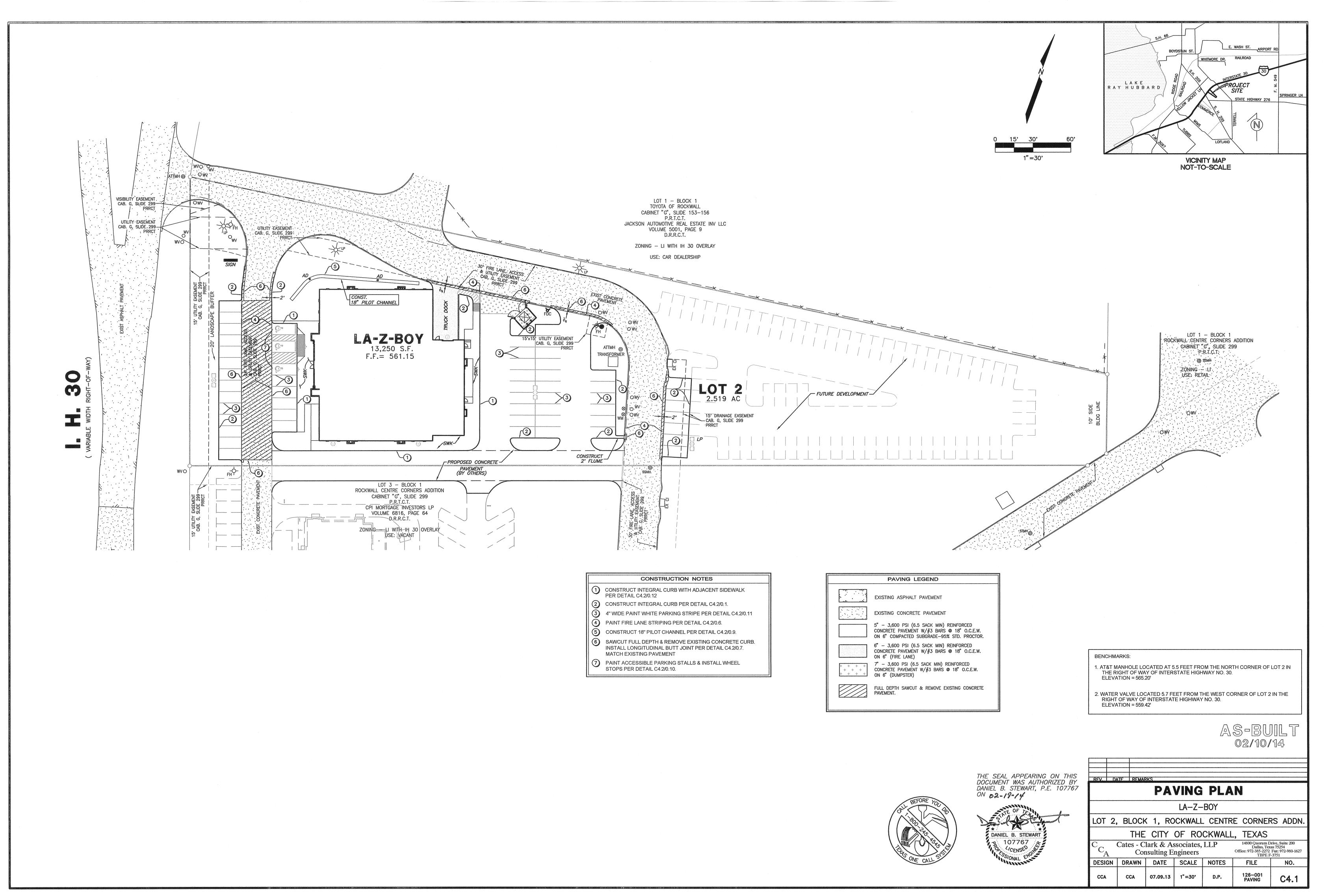
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THE CITY OF ROCKWALL, TEXAS						
Cates - Clark & Associates, LLP Consulting Engineers  Cates - Clark & Associates, LLP Consulting Engineers  14800 Quorum Drive, Suite 200 Dallas, Texas 75254 Office: 972-385-2272 Fax: 972-980-1627 TBPE F-3751						
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#### **PAVING GENERAL NOTES**

- STANDARDS AND SPECIFICATIONS: ALL MATERIALS, CONSTRUCTION METHODS, WORKMANSHIP, EQUIPMENT SERVICES AND TESTING FOR ALL IMPROVEMENTS SHALL BE IN ACCORDANCE WITH THE PROJECT DOCUMENTS AND THE GOVERNING AUTHORITIES' REQUIREMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT DOCUMENTS AND THE GOVERNING AUTHORITIES' REQUIREMENTS, THE MORE STRINGENT SHALL APPLY.
- GEOTECHNICAL REPORT: SUBGRADE PREPARATION AND PAVEMENT STRENGTH AND THICKNESS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT BY REED ENGINEERING GROUP, REPORT NO. 18798, DATED APRIL, 2013 AND SUPPLEMENTS AND/OR AMENDMENTS THERETO.
- 3. PAVEMENT WARRANTY: THE CONTRACTOR SHALL PROVIDE A TWO (2) YEAR UNCONDITIONAL MAINTENANCE FREE WARRANTY ON ALL PAVEMENT SURFACES.
- PROOF-ROLL SUBGRADE: PRIOR TO PREPARATION OF THE SUBGRADE, THE SUBGRADE SHALL BE PROOF-ROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHALL BE EXCAVATED TO FIRM SUBGRADE AND BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- 5. PAVEMENT SUBGRADE PREPARATION: PAVEMENT SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF SIX INCHES (6") AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698) AND AT OR ABOVE THE MATERIAL'S OPTIMUM MOISTURE CONTENT. DENSITY TEST MUST BE TAKEN NO MORE THAN 72 HOURS PRIOR TO PLACEMENT OF CONCRETE. THE SUBGRADE SHALL BE PROTECTED AND MAINTAINED IN A MOIST CONDITION UNTIL THE PAVEMENT IS PLACED. PAVEMENT SUBGRADES SHALL BE GRADED TO PREVENT PONDING AND INFILTRATION OF EXCESSIVE MOISTURE ON OR ADJACENT TO THE PAVEMENT SUBGRADE. ALL FILL SHALL BE COMPACTED WITH A SHEEPSFOOT ROLLER.
- 5. SAND CUSHION PROHIBITED: THE USE OF "LEVEL UP" SAND UNDER PAVEMENT WILL NOT BE ACCEPTED.
- CONCRETE PAVEMENT DESIGN: ALL ON SITE CONCRETE PAVEMENTS SHALL BE THE THICKNESS. COMPRESSIVE STRENGTH (28 DAYS) AND REINFORCED AS SHOWN ON THE PAVING PLAN AND DETAILS. THE CONCRETE SHALL HAVE A WATER-CEMENT RATIO TO PRODUCE A MINIMUM OF 3 TO MAXIMUM OF 5 INCH SLUMP AND CONTAIN PERCENT-ENTRAINED AIR RANGING FROM 4 TO 6. FLY ASH IN CONCRETE IN
- REINFORCING BARS: ALL REINFORCING BARS SHALL BE GRADE 60 KSI DEFORMED BILLET STEEL BARS, UNCOATED FINISH. SIZE AND SPACING SHALL BE IN ACCORDANCE WITH THE PAVING PLAN AND DETAILS.
- . BAR CHAIRS: ALL REINFORCING STEEL AND DOWEL BARS IN PAVEMENT SHALL BE SUPPORTED AND MAINTAINED AT THE CORRECT CLEARANCES BY THE USE OF BAR CHAIRS.
- 10. WEATHER CONDITIONS FOR CONCRETE PLACEMENT: CONCRETE SHALL NOT BE PLACED WHEN THE TEMPERATURE IS BELOW 40 DEGREES FAHRENHEIT AND FALLING, BUT MAY BE PLACED WHEN THE TEMPERATURE IS ABOVE 35 DEGREES FAHRENHEIT AND RISING. NO CONCRETE SHALL BE PLACED WHEN CONCRETE TEMPERATURE IS GREATER THAN 95 DEGREES FAHRENHEIT. THE TEMPERATURE READING SHALL BE TAKEN IN THE SHADE AWAY FROM ARTIFICIAL HEAT. DO NOT PLACE CONCRETE WHILE IT IS RAINING OR RAIN IS IMMINENT.
- 11. CONCRETE PLACEMENT: CONCRETE SHALL BE PLACED IN STRIPS NOT TO EXCEED 30' IN WIDTH, UNLESS PUMPED.
- 12. CONCRETE PAVEMENT CURING: CONCRETE SHALL BE BROOM FINISHED AND CURED FOR A MINIMUM OF 72 HOURS.

13. PAVEMENT JOINTING:

a. JOINT LAYOUT: CONTRACTOR SHALL PREPARE A JOINT LAYOUT AND PROVIDE IT TO THE ENGINEER FOR REVIEW. THE JOINT LAYOUT SHALL BE PROVIDED A MINIMUM OF ONE (1) WEEK PRIOR TO PLACING PAVEMENT. JOINTS SHALL BE SPACED AS FOLLOWS:

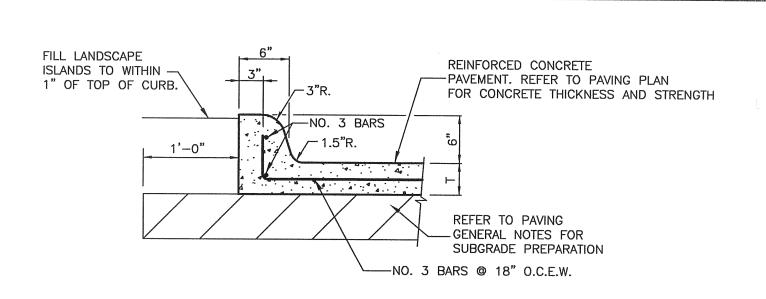
> **CONTROL JOINTS:** 5" PAVEMENT: 12.5' MAX. 6" PAVEMENT: 15' MAX. 7" PAVEMENT: 15' MAX.

**EXPANSION JOINTS:** 90' MAX. THE JOINT PATTERN SHALL BE CAREFULLY LAID OUT BY THE CONTRACTOR TO AVOID IRREGULAR SHAPES

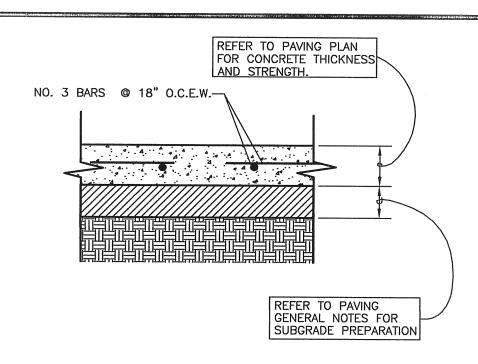
- EXPANSION JOINTS SHALL NOT BE LOCATED ALONG "VALLEYS" IN THE PAVEMENT SUSCEPTIBLE TO STORM WATER DRAINAGE FLOW. b. SAW CUTTING: SAW CUTTING SHALL BE DONE WITHIN 8 HOURS OF POUR OR AS SOON AS CONCRETE CAN
- SUPPORT WEIGHT. ALL SAWED JOINTS ARE TO BE TRUE IN ALIGNMENT AND SHALL CONTINUE THROUGH THE CURB. RADIAL JOINTS SHALL BE NO SHORTER THAN 18 INCHES. c. JOINT SEALING: ALL CONSTRUCTION JOINTS SHALL BE SAWN, CLEANED OF DEBRIS, DIRT, DUST, SCALE,
- CURING COMPOUND AND CONCRETE, BLOWN DRY AND IMMEDIATELY SEALED. SEALANT MATERIAL SHALL BE SONNEBORN SONOLASTIC SL2 MULTI-COMPONENT, SELF-LEVELING, ELASTOMERIC POLYURETHANE OR EQUIVALENT. SEALANT COLOR SHALL MATCH PAVEMENT. THE CONTRACTOR SHALL SUBMIT SEALANT SPECIFICATIONS/COLOR TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT.
- 14. PAVEMENT REMOVAL: BREAKOUTS FOR REMOVAL OF EXISTING PAVEMENT AND CURBS SHALL BE MADE BY FULL DEPTH SAW CUT WHEN ADJACENT TO PROPOSED PAVEMENT AND/OR CURBS.
- 15. CONNECTION TO EXISTING PAVEMENT: PROPOSED PAVEMENT AND/OR CURBS SHALL MATCH THE ELEVATION OF EXISTING PAVEMENT AND/OR CURBS.

#### 16. PAVEMENT MARKINGS:

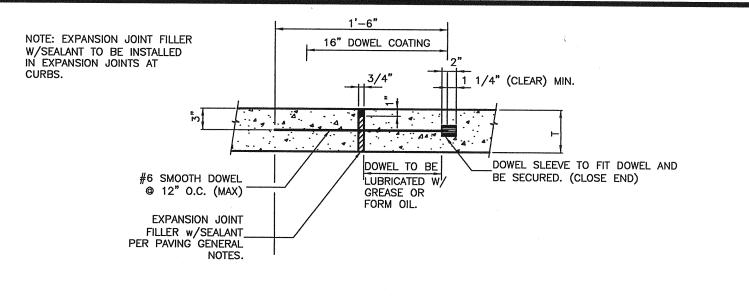
- a. PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE TEXAS "UNIFORM TRAFFIC MANUAL FOR PAVEMENT MARKINGS".
- b. FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE GOVERNING AUTHORITIES' REQUIREMENTS.
- c. ALL ACCESSIBLE PAVEMENT MARKINGS SHALL COMPLY WITH ADAAG STANDARDS AND STATE AND LOCAL CODES.
- d. PARKING SPACE STRIPES, ACCESSIBLE SPACES, PEDESTRIAN STRIPING, DIRECTIONAL ARROWS AND LETTERING SHALL BE SOLID WHITE, UNLESS A SPECIFIC COLOR IS REQUIRED BY LOCAL CODE. TWO (2) COATS OF VOC COMPLIANT, LOCAL DOT APPROVED, UNDILUTED, SOLVENT BASED OR LATEX TRAFFIC PAINT SHALL BE APPLIED. USE MANUFACTURER'S RECOMMENDED APPLICATION RATE, WITHOUT ADDITION OF A THINNER, WITH A MAXIMUM OF 100 SQUARE FEET PER GALLON OR AS REQUIRED PROVIDING MINIMUM 15 MILS WET FILM THICKNESS AND 7 1/2 MILS DRY FILM THICKNESS PER COAT WITH A MINIMUM OF 30 DAYS BETWEEN APPLICATIONS. THE SECOND COAT OF PAINT SHALL NOT BE APPLIED EARLIER THAN 7 DAYS PRIOR TO THE STORE OPENING. PAINT SHALL BE CRISP, STRAIGHT AND APPLIED UNIFORMLY ACROSS THE WIDTH OF THE LINE FOR A MINIMUM TOTAL DRY FILM THICKNESS OF 15 MILS.
- 17. CONDUIT: CONTRACTOR SHALL REFER TO THE SITE MEP PLAN AND LANDSCAPE IRRIGATION PLAN FOR CONDUIT TO BE INSTALLED UNDER PAVEMENT PRIOR TO COMMENCING PAVEMENT SUBGRADE PREPARATION.
- 18. ACCESSIBLE ROUTES: SIDEWALKS, CROSSWALKS AND RAMPS ALONG ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH TAS AND ADA STANDARDS. PAVEMENT AND CROSSWALKS ALONG ACCESSIBLE ROUTES SHALL HAVE A MAXIMUM RUNNING SLOPE OF 5% AND A MAXIMUM CROSS SLOPE OF 2%. ACCESSIBLE PARKING SPACES SHALL HAVE A MAXIMUM SLOPE OF 2% IN ALL DIRECTIONS.
- 19. CLEAN UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN UP OF ALL PAVED AREAS PRIOR TO ACCEPTANCE BY THE OWNER. THIS CLEAN UP SHALL INCLUDE POWER WASHING THE PAVEMENT IF REQUIRED.



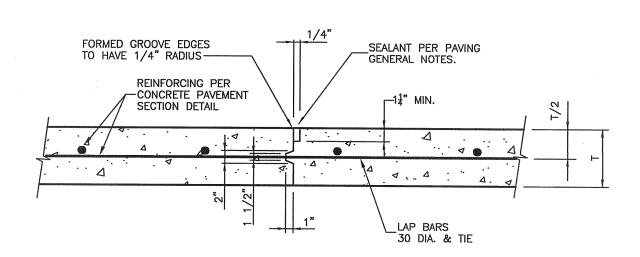
0.1 INTEGRAL CURB DETAIL



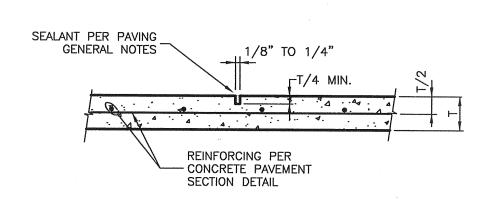
0.2 CONCRETE PAVEMENT SECTION



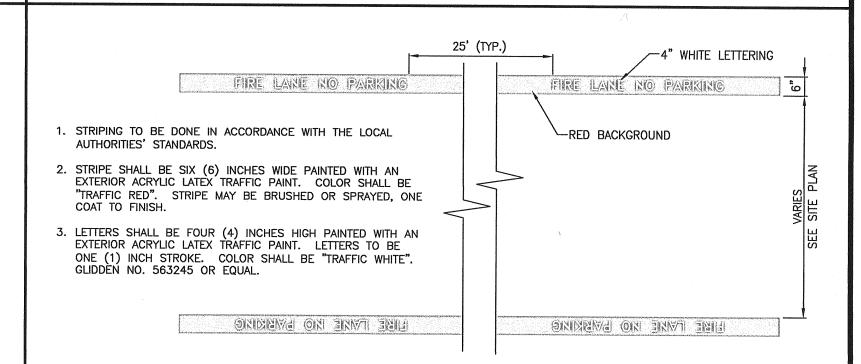
0.3 EXPANSION JOINT



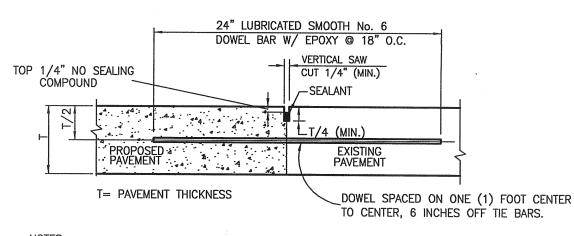
0.4 CONSTRUCTION JOINT



0.5 CONTROL JOINT



0.6 FIRE LANE MARKING

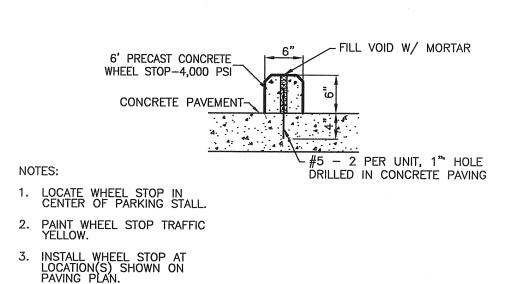


1. NO.5 SMOOTH DOWEL BAR MAY BE USED IN LIEU OF NO. 6 BAR IN 5 INCH AND 6 INCH

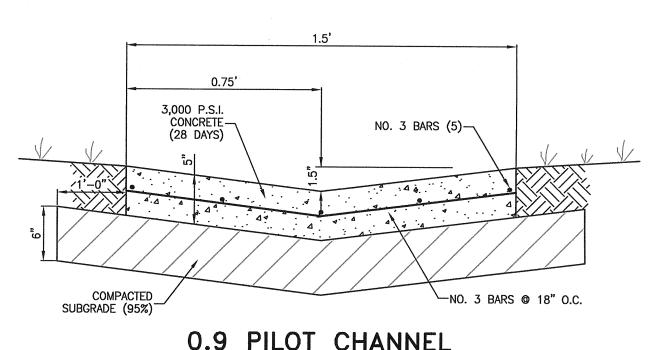
PAVEMENT THICKNESS.

- 2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
- 3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.
- DRILLING BY HAND IS NOT ACCEPTABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT

0.7 LONGITUDINAL BUTT JOINT AT EXISTING PAVEMENT



0.8 WHEEL STOP



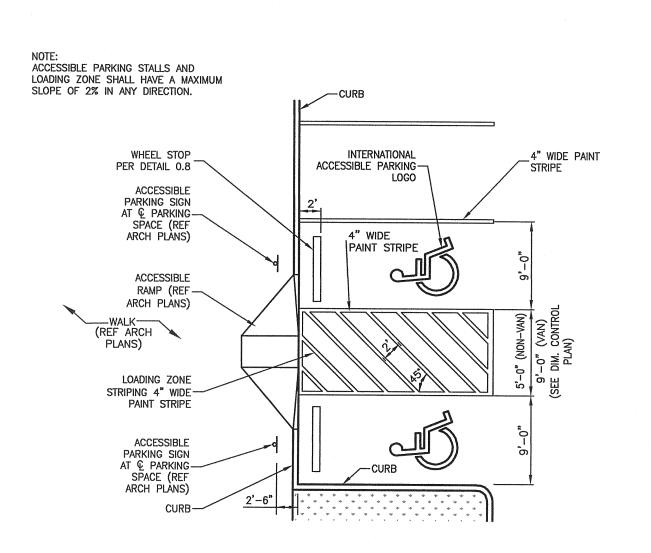
0.9 PILOT CHANNEL

REV. DATE REMARKS

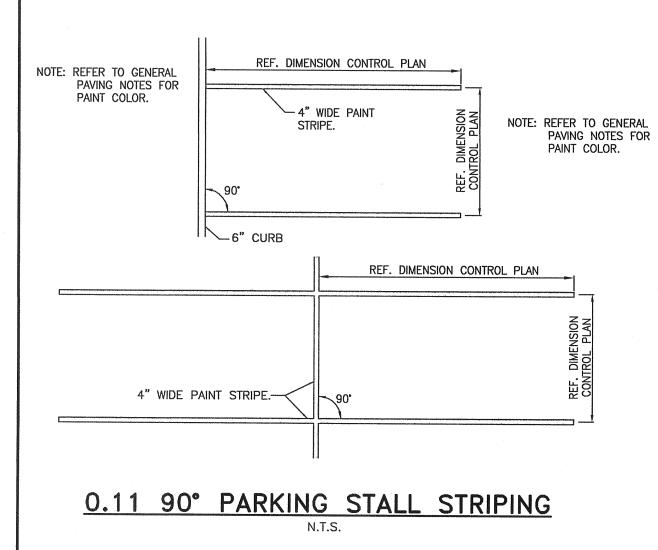
CCA

DESIGN

CCA



0.10 ACCESSIBLE PARKING STALLS



0.12 INTEGRAL CURB w/ SIDEWALK

REINFORCED CONCRETE PAVEMENT.

REFER TO PAVING PLAN FOR-

CONCRETE THICKNESS AND

STRENGTH

—NO. 3 BARS

REFER TO PAVING

- GENERAL NOTES FOR SUBGRADE PREPARATION.

1/2" PREMOLDED

GENERAL NOTES.

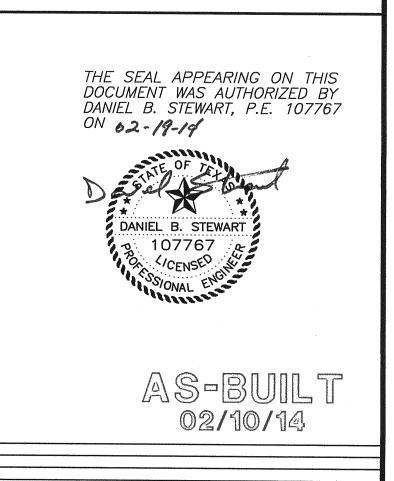
EXPANSION JOINT FILLER

REFER TO

SIDEWALK -

DETAIL.

w/ SEALANT PER PAVING



14800 Quorum Drive, Suite 200 Dallas, Texas 75254 Office: 972-385-2272 Fax: 972-980-1627 TBPE F-3751

NO.

C4.2

FILE

126-001 PAVING DET

**PAVING DETAILS** 

LA-Z-BOY

LOT 2, BLOCK 1, ROCKWALL CENTRE CORNERS ADDN.

THE CITY OF ROCKWALL, TEXAS

D.P.

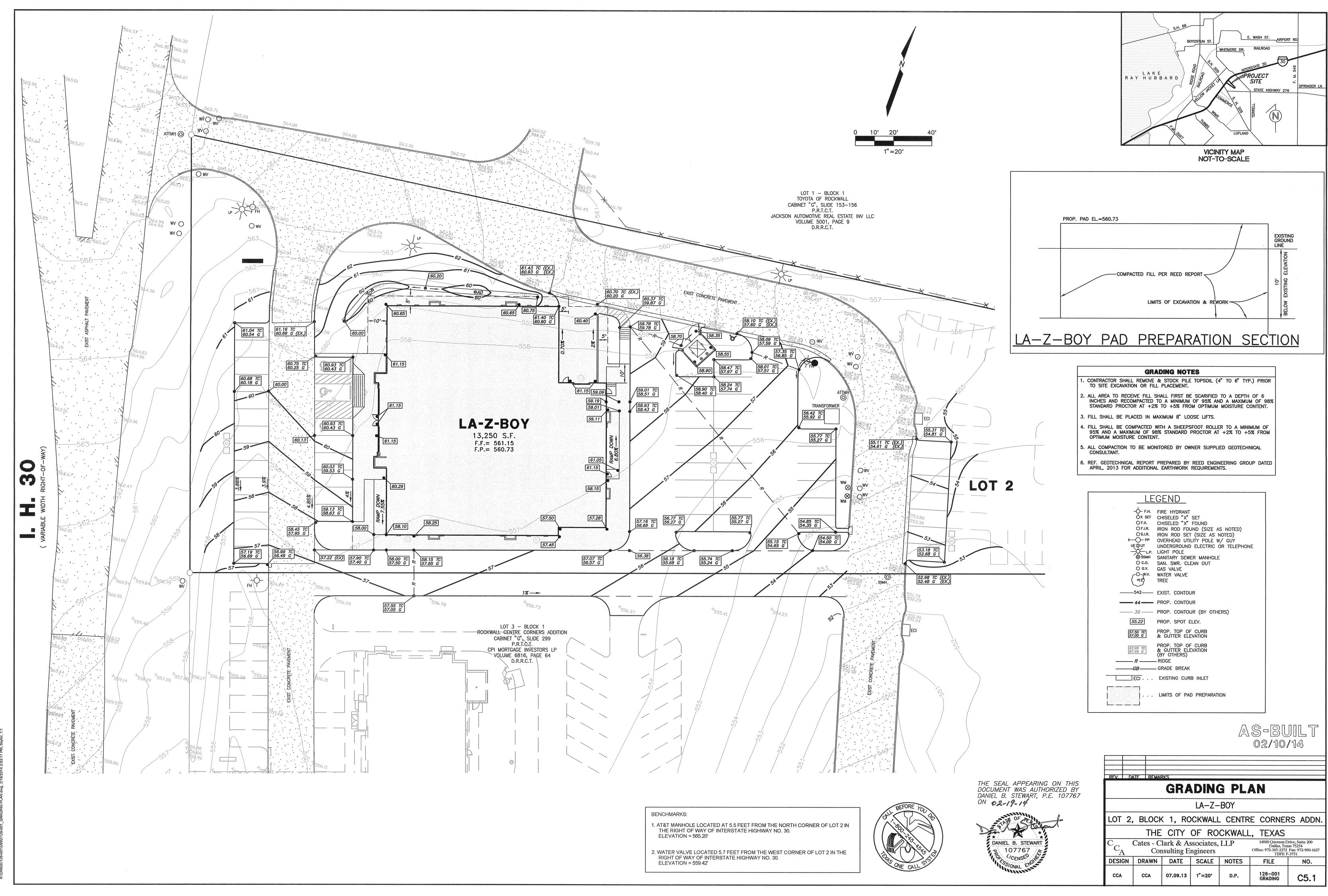
Cates - Clark & Associates, LLP Consulting Engineers

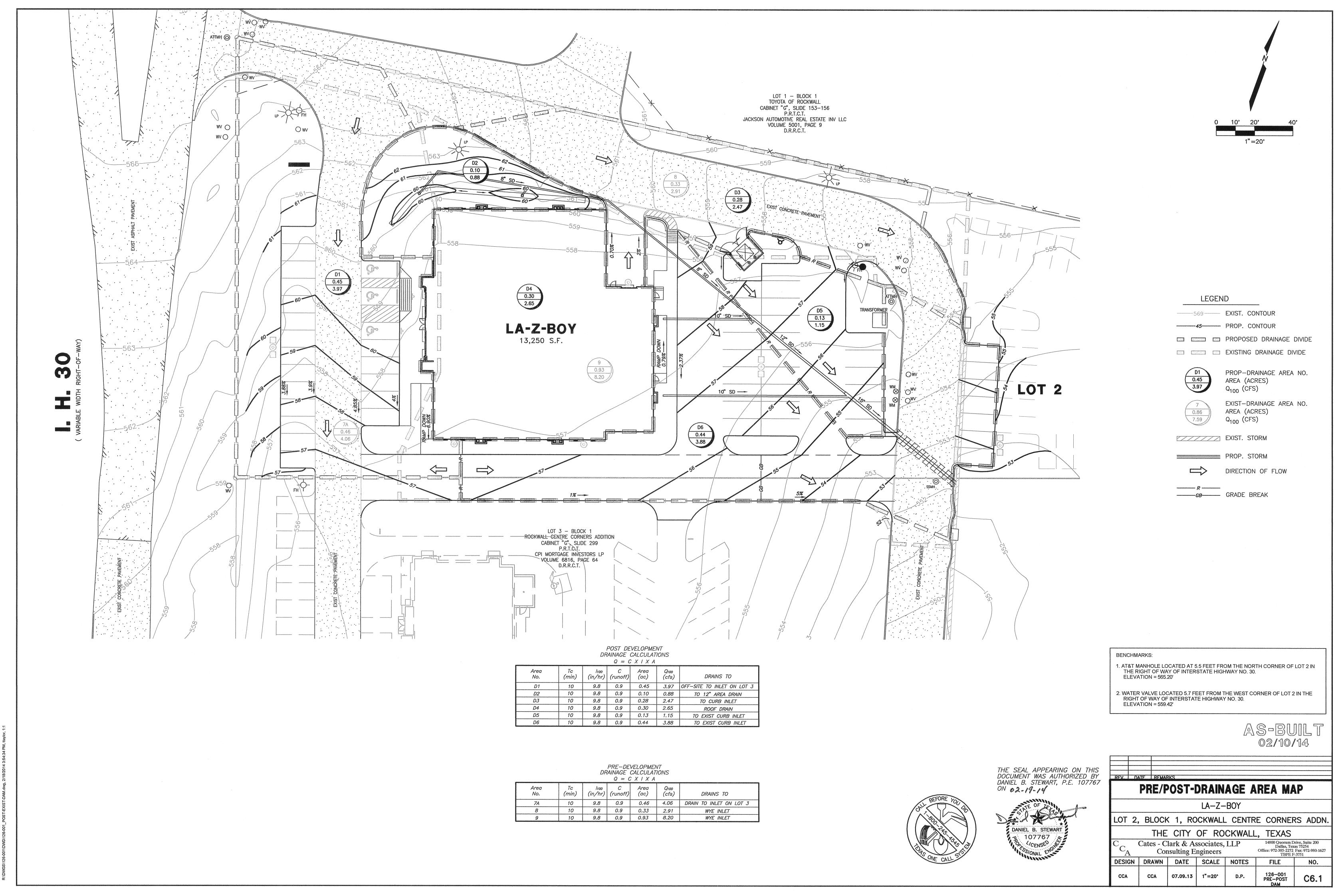
07.09.13

DRAWN DATE SCALE NOTES

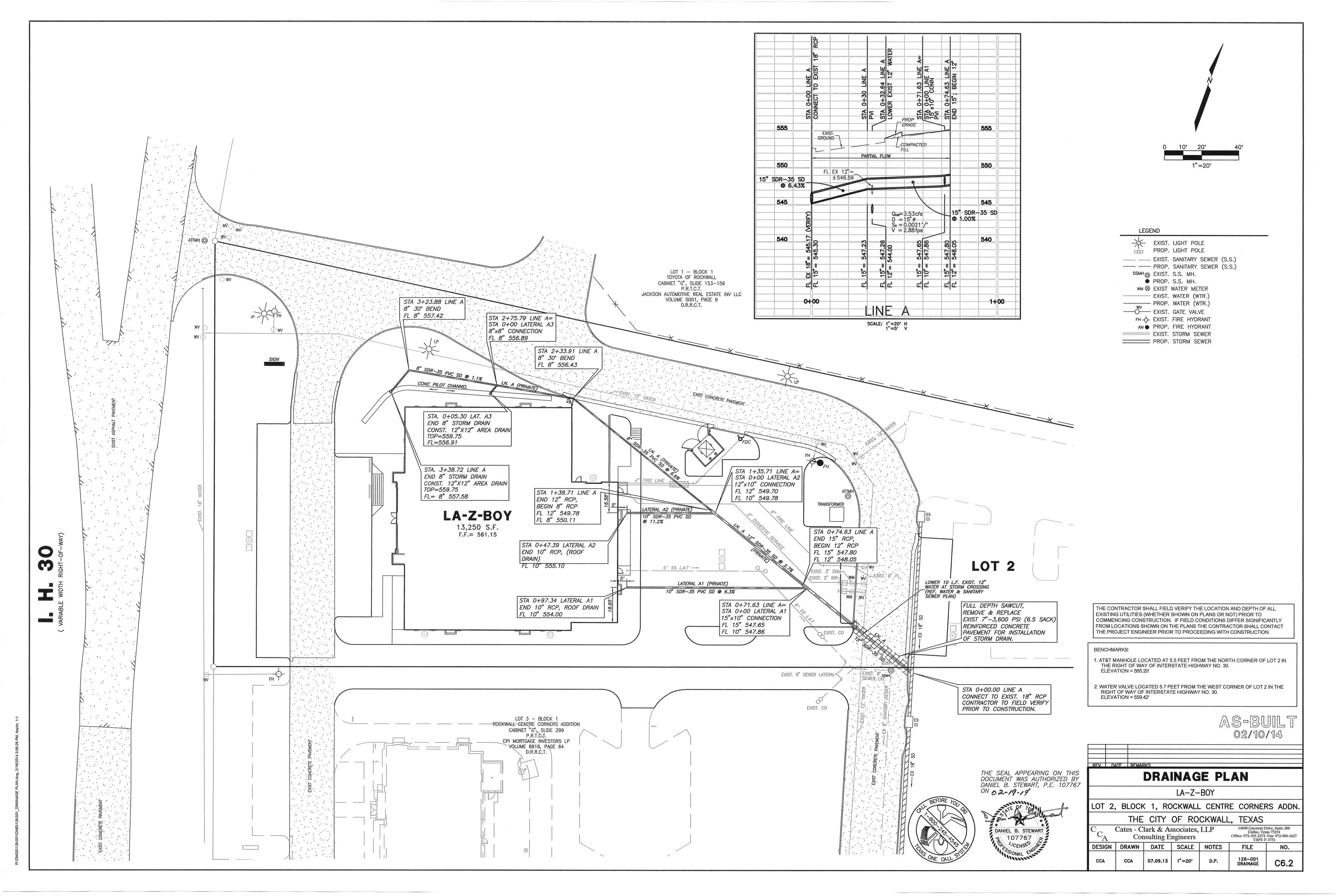
N'.∓.20'

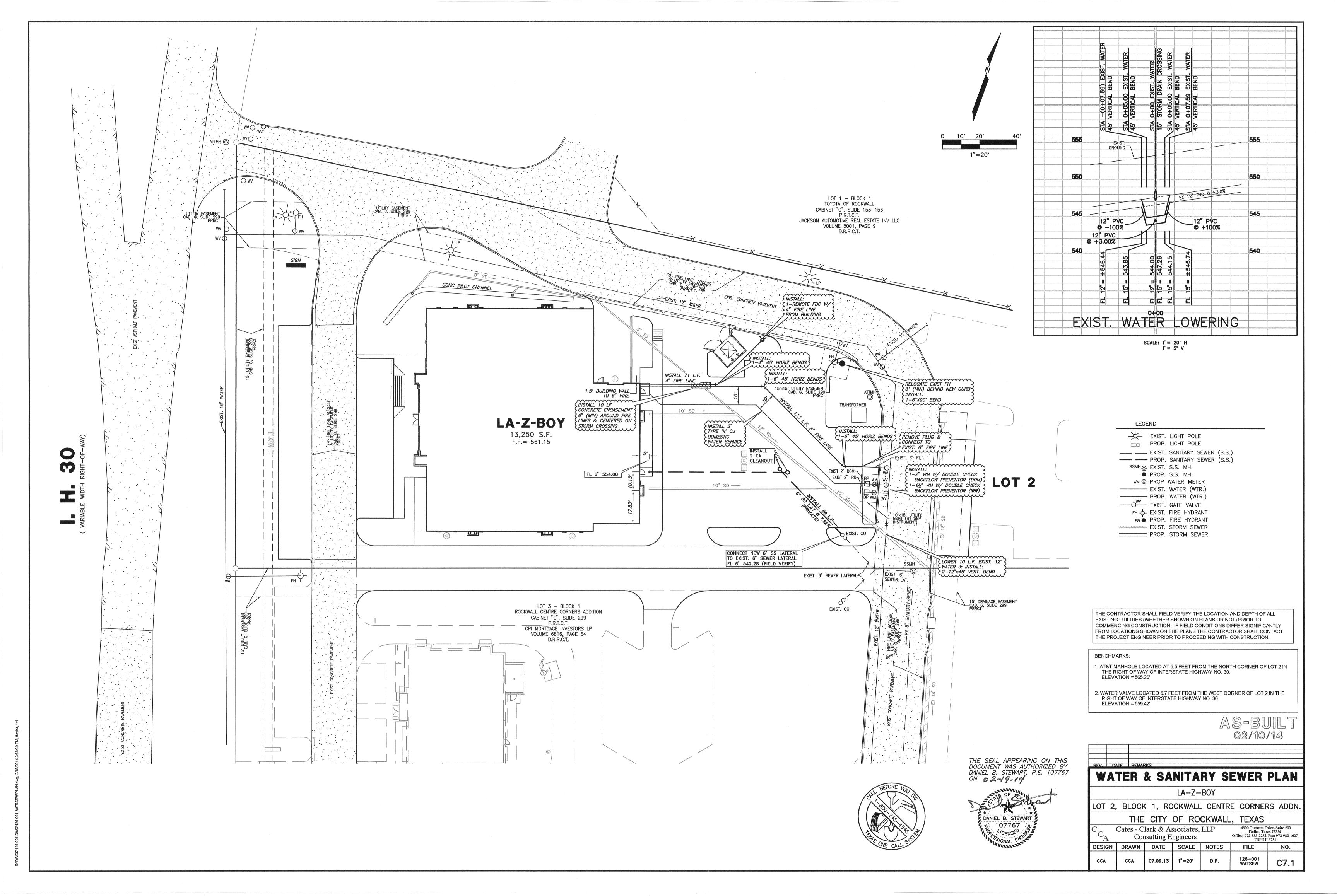
REINFORCING PER CONCRETE PAVEMENT SECTION DETAIL.

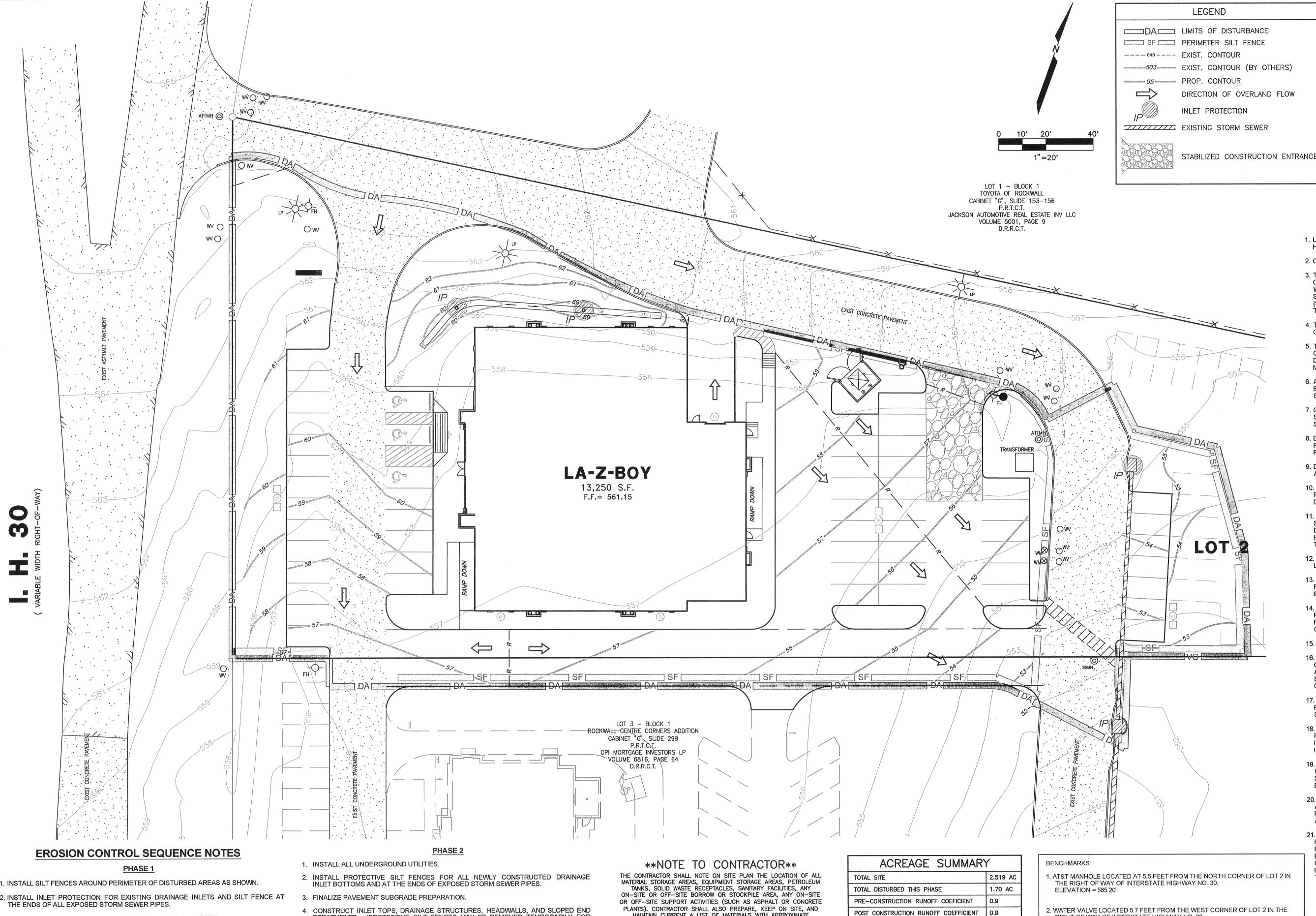




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- 2. INSTALL INLET PROTECTION FOR EXISTING DRAINAGE INLETS AND SILT FENCE AT
- 3. CONSTRUCT THE TEMPORARY CONSTRUCTION ENTRANCE/EXIT(S).
- 4. CONSTRUCT TEMPORARY SEDIMENT BASIN DEWATERING DEVICE AND EMERGENCY SPILLWAY. CLEAR, GRUB AND REMOVE VEGETATION REQUIERD FOR CONSTRUCTION OF BASIN.
- 5. COMMENCE CLEARING, GRUBBING AND REMOVAL OF VEGETATION IN AREA TO RECEIVE CUT OR FILL.
- 6. COMMENCE GRADING OPERATION.

- 4. CONSTRUCT INLET TOPS, DRAINAGE STRUCTURES, HEADWALLS, AND SLOPED END TREATMENTS. (PROTECTIVE SILT FENCES MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION.)
- TEMPORARY SEDIMENT BASIN MAY BE REMOVED AFTER ALL STORM SEWER SYSTEMS ARE FUNCTIONAL WITH INLET PROTECTION IN PLACE.
- REMOVE INLET PROTECTION AROUND INLETS NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
- 7. INSTALL PAVEMENT.
- REMOVE TEMPORARY CONSTRUCTION ENTRANCE/EXIT(S) ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THESE AREAS. (THESE AREAS ARE TO BE PAVED
- 9. COMPLETE SEEDING/PLANTING OF VEGETATED AREAS IN ACCORDANCE WITH THE LANDSCAPING PLAN TO ACCOMPLISH FINAL STABILIZATION.
- 10. 75% 80% OF ENTIRE DISTURBED AREA TO HAVE ESTABLISHED GRASS A MINIMUM OF ONE INCH (1") TALL, UNLESS OTHERWISE SPECIFIED ON APPROVED LANDSCAPE PLAN, PRIOR TÒ CITY ENGINEERING APPROVAL.

PLANTS). CONTRACTOR SHALL ALSO PREPARE, KEEP ON SITE, AND MAINTAIN CURRENT A LIST OF MATERIALS WITH APPROXIMATE QUANTITIES, WHICH ARE STORED ON SITE.

#### \*\*NOTE\*\* ALL AREAS DISTURBED BY UTILITY & PAVING CONSTRUCTION SHALL BE RESTORED TO GRADE &

\*\*NOTE\*\* THERE ARE NO SENSITIVE AREAS, INCLUDING WETLANDS OR WATERS OF THE US, ON OR NEAR THE SITE.

THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL

COMMENCING CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY

FROM LOCATIONS SHOWN ON THE PLANS THE CONTRACTOR SHALL CONTACT

EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) PRIOR TO

THE PROJECT ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

HYDROMULCHED PER NOTE #11.

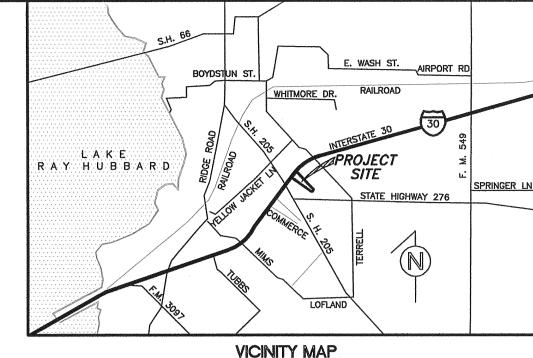
- 1. AT&T MANHOLE LOCATED AT 5.5 FEET FROM THE NORTH CORNER OF LOT 2 IN
- 2. WATER VALVE LOCATED 5.7 FEET FROM THE WEST CORNER OF LOT 2 IN THE RIGHT OF WAY OF INTERSTATE HIGHWAY NO. 30. ELEVATION = 559.42'

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY DANIEL B. STEWART, P.E. 107767

THEREON.



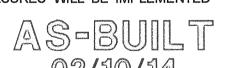




NOT-TO-SCALE

#### **EROSION CONTROL GENERAL NOTES**

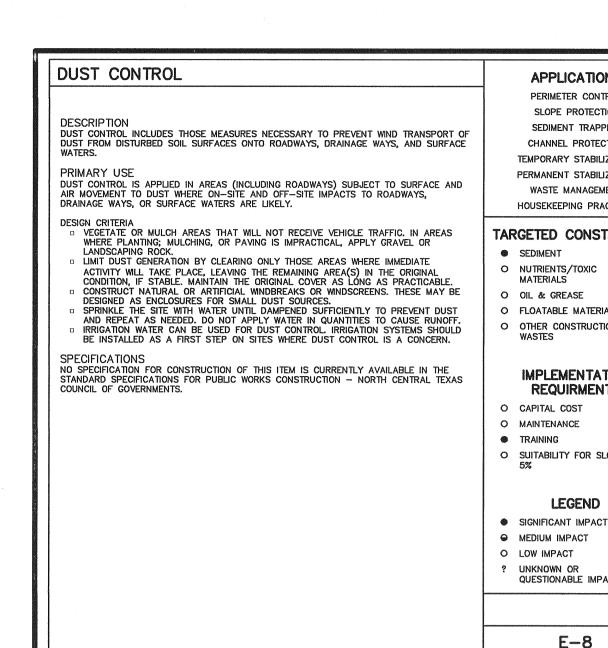
- 1. LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAVE BEEN RECEIVED BY THE GOVERNING AUTHORITIES.
- 2. CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
- 3. THE GENERAL CONTRACTOR (AND ALL SUBCONTRACTORS INVOLVED WITH ANY CONSTRUCTION ACTIVITY RELATED TO EARTHWORK, EROSION CONTROL, ETC. OR WHICH UTILIZE POSSIBLE POLLUTANTS AS DEFINED IN THE TPDES GENERAL PERMIT) SHALL REVIEW AND ADHERE TO THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE PROJECT, AS WELL AS ALL THE TCEQ REQUIREMENTS SET FORTH IN THE TPDES GENERAL PERMIT.
- 4. THIS EROSION CONTROL PLAN IS A SUPPLEMENT TO THE SWPPP PREPARED BY OTHERS. REFER TO THE SWPPP FOR ADDITIONAL REQUIREMENTS.
- 5. THE CONTRACTOR SHALL ADHERE TO THE SEQUENCE OF OPERATIONS FOR EROSION CONTROL IMPLEMENTATION SHOWN HEREON. ANY DEVIATION FROM THIS SEQUENCE DEEMED NECESSARY BY THE CONTRACTOR MAY REQUIRE THAT THE SWPPP BE MODIFIED IN ACCORDANCE WITH THE TCEQ'S TPDES GENERAL PERMIT GUIDELINES.
- 6. ALL WASH WATER SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT BETWEEN WASH WATER POLLUTANTS AND STORM RUNOFF DISCHARGED FROM THIS
- 7. OIL AND GREASE ABSORBING MATERIALS SHALL BE READILY AVAILABLE ON-SITE AND SHALL BE PROMPTLY USED TO CONTAIN AND/OR CLEAN UP ALL FUEL OR CHEMICAL SPILLS OR LEAKS.
- 8. DUST CONTROL SHALL BE ACCOMPLISHED BY WATERING DRY, EXPOSED AREAS ON A REGULAR BASIS. SPRAYING OF PETROLEUM BASED OR TOXIC LIQUIDS FOR THIS IS PROHIBITED.
- 9. DISTURBED AREAS ON THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR AT LEAST 14 DAYS SHALL BE TEMPORARILY PLANTED AND/OR SEEDED AND WATERED.
- 10. DISTURBED AREAS ON THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED SHALL BE PERMANENTLY PLANTED AND/OR SEEDED WITHIN 14
- 11. PLANTING AND/OR SEEDING OF VEGETATED AREAS TO ACCOMPLISH STABILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LANDSCAPING PLAN. AREAS BEYOND THE LIMITS OF THE LANDSCAPING PLAN SHALL BE HYDROMULCHED WITH HIGHWAY MIX AND WATERED WITH TEMPORARY ABOVE GROUND IRRIGATION UNTIL THE VEGETATION IS ESTABLISHED.
- 12. ALL VEHICLES SHALL BE CLEANED AT THE CONSTRUCTION EXIT POINT(S) BEFORE LEAVING THE SITE.
- 13. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED ONTO ADJACENT ROADWAYS BY ANY VEHICLES EXITING THE SITE SHALL BE CLEANED OR REMOVED IMMEDIATELY.
- 14. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SILT IN ANY TEMPORARY OR PERMANENT DETENTION PONDS. STORM SEWER INLETS AND PIPES, AND ALONG SILT FENCES, WITHIN 48 HOURS AFTER INSPECTION OF DEVICES REVEALS THE PRESENCE OF EXCESS SILTATION.
- 15. SILT FENCES SHALL BE PLACED AROUND ANY STOCKPILES USED ON THE SITE.
- 16. ADDITIONAL EROSION CONTROL MEASURES MAY BE IMPLEMENTED BY THE CONTRACTOR AT HIS DISCRETION AT NO ADDITIONAL EXPENSE TO THE OWNER. THE ADDITION OR DELETION OF ANY EROSION CONTROL MEASURE MAY REQUIRE THAT THE SWPPP BE MODIFIED IN ACCORANCE WITH THE TCEQ'S TPDES GENERAL PERMIT
- 17. ALL TEMPORARY EROSION CONTROL DEVICES (SILT FENCE, ETC.) SHALL BE REMOVED AND PROPERLY DISPOSED OF OFF SITE WITHIN THIRTY DAYS AFTER STABILIZATION OF ALL DISTURBED SURFACES IS COMPLETE.
- 18. THE CONTRACTOR SHALL ASSUME LIABILITY FOR DAMAGE TO ADJACENT PROPERTIES AND/OR PUBLIC RIGHT OF WAY RESULTING FROM FAILURE TO FULLY IMPLEMENT AND EXECUTE ALL EROSION CONTROL PROCEDURES SHOWN AND NOTED IN THESE PLANS.
- 19. THE CONTRACTOR SHALL MODIFY THIS PLAN TO SHOW LOCATIONS OF TEMPORARY WASHDOWN AREA, PORTABLE TOILETS, EQUIPMENT MAINTENANCE/REPAIR AREAS, STOCKPILE AREAS, FUEL STORAGE AREAS, ETC. AND POLLUTANT CONTROLS FOR
- 20. THE GENERAL CONTRACTOR, AS THE TCEQ DEFINED "OPERATOR", SHALL PERFORM ALL REQUIRED INSPECTIONS OF STORM WATER CONTROLS AND PRACTICES AT FREQUENCES OUTLINED IN THE TPDES GENERAL PERMIT, AND SHALL FILL OUT APPROPRIATE INSPECTION FORMS (AS PROVIDED IN THE SWPPP).
- 21. IF DIRT OR ROCK IS EXPORTED FROM THIS SITE, OR IF DIRT OR ROCK IS IMPORTED FROM AN OFF SITE BORROW LOCATION, THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR COMPLIANCE WITH ALL TCEQ STORM WATER REQUIREMENTS FOR THE REMOTE SITE. THE CONTRACTOR SHALL FURNISH THE OWNER WITH A COPY OF THE WRITTEN AGREEMENT WITH THE LANDOWNER OF THE REMOTE SITE INDICATING PERMITTING AND EROSION CONTROL MEASURES WILL BE IMPLEMENTED





LA-Z-BOY LOT 2, BLOCK 1, ROCKWALL CENTRE CORNERS ADDN.

THE CITY OF ROCKWALL, TEXAS 14800 Quorum Drive, Suite 200 Cates - Clark & Associates, LLP Dallas, Texas 75254 Office: 972-385-2272 Fax: 972-980-1627 Consulting Engineers DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. CCA 07.09.13 1"=20' CCA D.P. C8.1 **EROSION** 



SEDIMENT

MATERIALS

OIL & GREASE

O CAPITAL COST

TRAINING

FLOATABLE MATERIALS

OTHER CONSTRUCTION

**IMPLEMENTATION** 

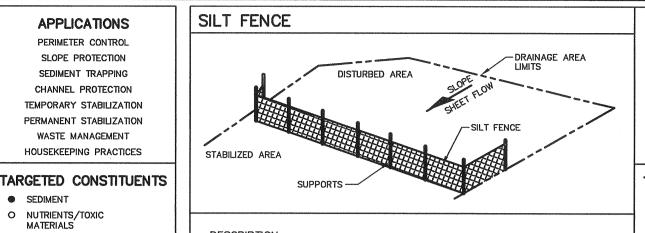
REQUIRMENTS

O SUITABILITY FOR SLOPES >

LEGEND

UNKNOWN OR QUESTIONABLE IMPACT

E-8



A SILT FENCE CONSISTS OF GEOTEXTILE FABRIC SUPPORTED BY WIRE MESH NETTING OR OTHER BACKING STRETCHED BETWEEN METAL POSTS WITH THE LOWER EDGE OF THE FABRIC SECURELY EMBEDDED SIX-LNCHES IN THE SOIL. THE FENCE IS TYPICALLY LOCATED DOWNSTREAM OF DISTURBED AREAS TO INTERCEPT RUNOFF IN THE FORM OF SHEET FLOW.
A SILT FENCE PROVIDES BOTH FILTRATION AND TIME FOR SEDIMENT SETTLING BY REDUCING THE VELOCITY OF THE RUNOFF

PRIMARY USE SILT FENCE IS NORMALLY USED AS PERIMETER CONTROL LOCATED DOWNSTREAM OF DISTURBED AREAS. IT IS ONLY FEASIBLE FOR NON-CONCENTRATED, SHEET FLOW CONDITIONS. IF IT BECOMES NECESSARY TO PLACE A SILT FENCE WHERE CONCENTRATED FLOWS MAY BE EXPERIENCED (E.G. WHERE TWO SILT FENCES JOIN AT AN ANGLE, OR ACROSS MINOR CHANNELS OR GULLIES), IT WILL BE NECESSARY TO REINFORCE THE SILT FENCE AT THAT AREA BY A ROCK BERM OR SAND BAG BERM, OR OTHER STRUCTURAL

SILT FENCE IS AN ECONOMICAL MEANS TO TREAT OVERLAND, NON-CONCENTRATED FLOWS FOR ALL TYPES OF PROJECTS. SILT FENCES ARE USED AS PERIMETER CONTROL DEVICES FOR BOTH SITE DEVELOPERS END LINEAR (ROADWAY) TYPE PROJECTS. THEY ARE MOST EFFECTIVE WITH COARSE TO SILTY SOIL TYPES. DUE TO THE POTENTIAL OF CLOGGING AND LIMITED EFFECTIVENESS, SILT FENCES SHOULD BE USED WITH CAUTION IN AREAS THAT HAVE PREDOMINANTLY CLAY SOIL TYPES. IN THIS LATTER INSTANCE A SOILS ENGINEER OR SOIL SCIENTIST SHOULD CONFIRM THE SUITABILITY OF SILT FENCE FOR THAT APPLICATION.

FENCES ARE TO BE CONSTRUCTED ALONG A LINE OF CONSTANT ELEVATION (ALONG A CONTOUR LINE) WHERE POSSIBLE. MAXIMUM DRAINAGE AREA SHALL BE 0.25 ACRE PER 100 LINEAR FEET OF SILT MAXIMUM FLOW TO ANY 20 FOOT SECTION OF SILT FENCE SHALL BE 1 CFS.
MAXIMUM DISTANCE OF FLOW TO SILT FENCE SHALL BE 200 FEET OR LESS. IF THI
SLOPE EXCEEDS 10 PERCENT THE FLOW DISTANCE SHALL BE LESS THAN 50 FEET.
MAXIMUM SLOPE ADJACENT TO THE FENCE SHALL BE 2:1.
IF 50% OR LESS SOIL, BY WEIGHT, PASSES THE U.S. STANDARD SLEEVE NO. 200; SELECT THE APPARENT OPENING SIZE (A.O.S.) TO RETAIN 85% OF THE SOIL.

IF 85% OR MORE OF SOIL BY WEIGHT, PASSES THE U.S. STANDARD SLEEVE NO. 200, IF 63% OR MORE OF SOIL BY WEIGHT, PASSES THE U.S. STANDARD SLEEVE NO. 200. SILT FENCES SHALL NOT BE USED UNLESS THE SOIL MASS IS EVALUATED AND DEEMED SUITABLE BY A SOIL SCIENTIST OR GEOTECHNICAL ENGINEER CONCERNING THE ERODIBLITY OF THE SOIL MASS, DISPERSIVE CHARACTERISTICS, AND THE POTENTIAL GRAIN—SIZE CHARACTERISTICS OF THE MATERIAL THAT IS LIKELY TO BE STONE OVERFLOW STRUCTURES OR OTHER OUTLET CONTROL DEVICES SHALL BE

INSTALLED AT ALL LOW POINTS ALONG THE FENCE OR SPACED AT APPROXIMATELY 300 FEET IF THERE IS NO APPARENT LOW POINT.

FILTER STONE FOR OVERFLOW STRUCTURE SHALL BE 1-1/2" WASHED STONE CONTAINING NO FINES. ANGULAR SHAPED STONE IS PREFERABLE TO ROUNDED

SILT FENCE **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION

TARGETED CONSTITUENTS

SEDIMENT

O NUTRIENTS TOXIC

O OTHER CONSTRUCTION

**IMPLEMENTATION** 

REQUIRMENTS

SUITABILITY FOR SLOPES >

LEGEND

SIGNIFICANT IMPACT

■ MEDIUM IMPACT

UNKNOWN OR

QUESTIONABLE IMPACT

Fe = 0.75

S-1

O LOW IMPACT

MATERIALS

O OIL & GREASE

CAPITAL COST

MAINTENANCE

O TRAINING

SILT FENCE FABRIC MUST MEET THE FOLLOWING MINIMUM CRITERIA:

O TENSILE STRENGTH, ASTM D4832 TEST METHOD FOR GRAB BREAKING LOAD AND ELONGATION OF GEOTEXTILES, 90 LBS.

O PUNCTURE RATING, ASTM D4833 TEST METHOD FOR INDEX PUNCTURE RESISTANCE OF GEOTEXTILES, GEOMEMBRANES AND RELATED PRODUCTS, 60LBS.
MULLEN BURST RATING, ASTM D3786 STANDARD TEST METHOD FOR HYDRAULIC
BURSTING STRENGTH OF TEXTILE FABRICS— DIAPHRAGM BURSTING STRENGTH TESTER METHOD, 280 PSI.
APPARENT OPENING SIZE, ASTM D4751 TEST METHOD FOR DETERMINING WASTE MANAGEMENT HOUSEKEEPING PRACTICES

APPARENT OPENING SIZE OF A GEOTEXTILE, U.S. SLEEVE NO. 70 (MAX) TO NO. 100 (MIN).

O ULTRAVIOLET RESISTANCE, ASTM D4355. MINIMUM 70 PERCENT.
FENCE POSTS SHALL BE GALVANIZED STEEL AND MAY BE T-SECTION OR L-SECTION,
1.3 POUNDS PER LINEAR FOOT MINIMUM AND 4 FEET IN LENGTH MINIMUM.
SILT FENCE SHALL BE SUPPORTED BY GALVANIZED STEEL WIRE FENCE FABRIC AS O 4"X4" MESH SIZE, W1.4/1.4, MINIMUM 14-GAUGE WIRE FENCE FABRIC; HOG WRE, 12 GAUGE WIRE, SMALL OPENINGS INSTALLED AT BOTTOM OF SILT

STANDARD 2" X2' CHAIN LINK FENCE FABRIC; OR
OTHER WELDED OR WOVEN STEEL FABRICS CONSISTING OF EQUAL OR SMALLER
SPACING AS THAT LISTED HEREIN AND APPROPRIATE GAUGE WIRE TO PROVIDE SUPPORT.
A 6-INCH WIDE TRENCH IS TO BE CUT 6 INCHES DEEP AT THE TOE OF THE FENCE TO ALLOW THE FABRIC TO BE LAID BELOW THE SURFACE AND BACKFILLED WITH COMPACTED EARTH OR GRAVEL TO PREVENT BYPASS OF RUNOFF UNDER THE FENCE. FABRIC SHALL OVERLAP AT ABUTTING ENDS A MINIMUM OF 3 FEET AND SHALL BE

JOINED SUCH THAT NO LEAKAGE OR BYPASS OCCURS.

SUFFICIENT ROOM FOR THE OPERATION OF SEDIMENT REMOVAL EQUIPMENT SHALL BE PROVIDED BETWEEN THE SILT FENCE AND OTHER OBSTRUCTIONS IN ORDER TO PROPERLY MAINTAIN THE FENCE.

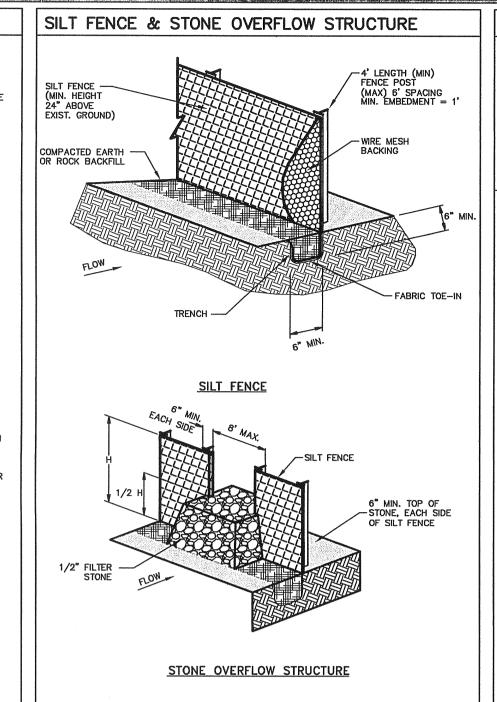
THE ENDS OF THE FENCE SHALL BE TURNED UPSTREAM TO PREVENT BYPASS OF MINOR PONDING WILL LIKELY OCCUR AT THE UPSTREAM SIDE OF THE SILT FENCE, WHICH COULD RESULT IN MINOR LOCALIZED FLOODING. SILT FENCES ARE NOT INTENDED FOR USE AS CHECK DAMS IN SWALES OR LOW AREAS SUBJECT TO CONCENTRATED FLOW. SILT

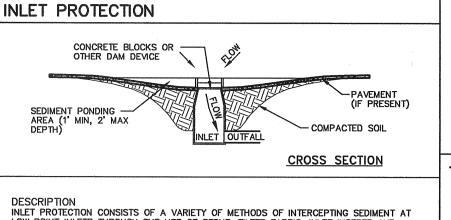
FENCES SHALL NOT BE USED WHERE SOIL CONDITIONS PREVENT A MINIMUM TOE-IN DEPTH OF 6 INCHES OR INSTALLATION OF SUPPORT POSTS TO A DEPTH OF 12 INCHES. SILT FENCE CAN INTERFERE WITH CONSTRUCTION OPERATIONS; THEREFORE PLANNING OF ACCESS ROUTES ONTO THE SITE IS CRITICAL. SILT FENCE CAN FALL STRUCTURALLY UNDER HEAVY STORM FLOWS, CREATING MAINTENANCE PROBLEMS AND REDUCING THE EFFECTIVENESS OF THE SYSTEM. MAINTENANCE REQUIREMENTS

SILT FENCE SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A) FOR BUILDUP OF EXCESS SEDIMENT, UNDERCUTTING, SAGS, AND OTHER FAILURES. SEDIMENT SHOULD BE REMOVED WHEN IT REACHES APPROXIMATELY ONE HALF THE HEIGHT OF THE FENCE. IN ADDITION, DETERMINE THE SOURCE OF EXCESS SEDIMENT AND IMPLEMENT APPROPRIATE BMPS TO CONTROL THE EROSION. IF THE FABRIC BECOMES DAMAGED OR CLOGGED, IT SHOULD BE REPAIRED OR REPLACED AS NECESSARY.

SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—NORTH CENTRAL TEXAS COUNCIL OF

**VEGETATION** 





INLET PROTECTION CONSISTS OF A VARIETY OF METHODS OF INTERCEPTING SEDIMENT AT LOW POINT INLETS THROUGH THE USE OF STONE, FILTER FABRIC, INLET INSERTS AND OTHER MATERIALS. THIS IS NORMALLY LOCATED AT THE INLET, PROVIDING EITHER DETENTION OR FILTRATION TO REDUCE SEDIMENT AND FLOATABLE MATERIALS IN STORM

INLET PROTECTION SHOULD BE CONSIDERED A SECONDARY DEFENSE IN SITE EROSION CONTROL DUE TO THE LIMITED EFFECTIVENESS AND APPLICABILITY OF THE TECHNIQUE, IT IS NORMALLY USED IN NEW DEVELOPMENTS THAT INCLUDE NEW INLETS OR ROADS WITH NEW CURB INLETS OR DURING MAJOR REPAIRS TO EXISTING ROADWAYS. INLET PROTECTION HAS LIMITED USE IN DEVELOPED AREAS DUE TO THE POTENTIAL FOR

FILTER BARRIER PROTECTION (SIMILAR TO A SILT FENCE BARRIER AROUND THE INLET) IS APPROPRIATE WHEN THE DRAINAGE AREA IS LESS THAN ONE ACRE AND THE BASIN SLOPE IS LESS THAN FIVE (5) PERCENT. THIS TYPE OF PROTECTION IS NOT APPLICABLE IN PAVED AREAS. APPLICABLE IN PAVED AREAS.

BLOCK AND GRAVEL (CRUSHED STONE, RECYCLED CONCRETE IS ALSO APPROPRIATE)
PROTECTION IS USED WHEN FLOWS EXCEED 0.5 C.F.S. AND IT IS NECESSARY TO
ALLOW FOR OVERTOPPING TO PREVENT FLOODING,
EXCAVATED IMPOUNDMENT PROTECTION AROUND A DROP INTEL MAY BE USED FOR
PROTECTION AGAINST SEDIMENT ENTERING A STORM DRAIN SYSTEM. WITH THIS
METHOD, IT IS NECESSARY TO INSTALL WEEP HOLES TO ALLOW THE IMPOUNDMENT TO
DRAIN COMPLETELY. THE IMPOUNDMENT SHALL BE SIZED SUCH THAT THE VOLUME OF
EXCAVATION SHALL BE EQUAL TO 1800 TO 3600 CUBIC FEET PER ACRE OF
DISTURBED AREA ENTERING THE INLET FOR FULL EFFECTIVENESS.

SPECIAL CAUTION MUST BE EXERCISED WHEN INSTALLING INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS. ENSURE THAT INLET PROTECTION IS PROPERLY DESIGNED, INSTALLED AND MAINTAINED TO AVOID FLOODING OF THE ROADWAY OR ADJACENT PROPERTIES AND STRUCTURES.

FILTER FABRIC PROTECTION SHALL BE DESIGNED AND MAINTAINED IN A MANNER SIMILAR TO SILT FENCE.
WHERE APPLICABLE, FILTER FABRIC, POSTS, AND WRE BACKING SHALL MEET THE MATERIAL REQUIREMENTS SPECIFIED IN BMP FACT SHEET S-1, SILT FENCE. FILTER GRAVEL SHALL BE 3/4 INCH (BLOCK AND GRAVEL PROTECTION) OR 1-1/2 TO 2 INCH (EXCAVATED IMPOUNDMENT PROTECTION) WASHED STONE CONTAINING NO FINES. ANGULAR SHAPED STONE IS PREFERABLE TO ROUNDED SHAPES. CONCRETE BLOCKS SHALL BE STANDARD 8" X 8" X 16" CONCRETE MASONRY UNITS
MAXIMUM DEPTH OF FLOW SHALL BE EIGHT (8) INCHES OR LESS.

INLET PROTECTION **APPLICATIONS** POSITIVE DRAINAGE IS CRITICAL IN THE DESIGN OF INLET PROTECTION. IF OVERFLOW IS NOT PROVIDED FOR AT THE INLET, EXCESS FLOWS SHALL BE ROUTED THROUGH ESTABLISHED SWALES, STREETS, OR OTHER WATERCOURSES TO MINIMIZE DAMAGE DUE

SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES

**FARGETED CONSTITUENTS** 

**IMPLEMENTATION** 

O SUITABILITY FOR SLOPES >

LEGEND

QUESTIONABLE IMPACT

**VARIES** 

S-4

SIGNIFICANT IMPACT

MEDIUM IMPACT

O LOW IMPACT

UNKNOWN OR

CAPITAL COST

MAINTENANCE

O TRAINING

REQUIRMENTS

SEDIMENT NUTRIENTS TOXIC

O OIL & GREASE ■ FLOATABLE MATERIALS OTHER CONSTRUCTION

FLODDING, TRAFFIC SAFETY, PEDESTRIAN SAFETY AND MAINTENANCE PROBLEMS. INLET PROTECTION CAN REDUCE SEDIMENT IN STORM SEWER SYSTEMS BY SERVING AS A BACK UP SYSTEM TO ONSITE CONTROLS OR BY REDUCING SEDIMENT LOADS FROM CONTROLS

WITH LIMITED EFFECTIVENESS. DIFFERENT INLET PROTECTION VARIATIONS ARE USED FOR DIFFERENT CONDITIONS AS FOLLOWS:

DESIGN CRITERIA

PERIMETER CONTROL SLOPE PROTECTION

> SILT FENCE SHALL CONSIST OF NYLON GEOTEXTILE SUPPORTED BY WIRE MESH, W1.4 X W1.4, AND GALVANIZED STEEL POSTS SET A MINIMUM OF 1 FOOT DEPTH AND SPACED NOT MORE THAN 6 FEET ON CENTER. A 6 INCH WIDE TRENCH IS TO BE CUT 6 INCHES DEEP AT THE TOE OF THE FENCE TO ALLOW THE FABRIC TO BE LAID BELOW THE SURFACE AND BACKFILLED WITH COMPACTED EARTH OR GRAVEL. THIS NTRENCHMENT PREVENTS ANY BYPASS OF RUNOFF UNDER THE FENCE. BLOCK AND GRAVEL PROTECTION (CURB AND DROP INLETS) CONCRETE BLOCKS ARE TO BE PLACED ON THEIR SIDES IN A SINGLE ROW AROUND THE PERIMETER OF THE INLET, WITH ENDS ABUTTING. OPENINGS IN THE BLOCKS SHOULD FACE OUTWARD, NOT UPWARD. 1/2 X1/2" WLRE MESH SHALL THEN BE PLACED OVER THE OUTSIDE FACE OF THE BLOCKS COVERING THE HOLES. FILTER STONE SHALL THEN BE PILIED AGAINST THE WIRE MESH TO THE TOP OF THE BLOCKS WITH THE BASE OF THE STONES BEING A MINIMUM OF 18 INCHES FROM THE BLOCK. ALTERNATIVELY WHERE LOOSE STONE IS A CONCERN (STREETS, ETC.), THE FILTER STONE MAY BE PLACED IN APPROPRIATELY SIZED GEOTEXTILE FABRIC BAGS. PERIODICALLY, WHEN THE STONE FILTER BECOMES CLOGGED, THE STONE MUST BE REMOVED AND CLEANED IN A PROPER MANNER OR REPLACED WITH NEW STONE AND PILED BACK AGAINST THE WIRE MESH. PILED BACK AGAINST THE WIRE MESH.
>
> EXCAVATED IMPOUNDMENT PROTECTION

EXCAVATED IMPOUNDMENT PROTECTION
AN EXCAVATED IMPOUNDMENT SHALL BE SIZED TO PROVIDE A STORAGE VOLUME OF
BETWEEN 1800 AND 3600 CUBIC FEET PER ACRE OF DISTURBED AREA. THE TRAP
SHALL HAVE A MINIMUM DEPTH OF ONE FOOT AND A MAXIMUM DEPTH OF 2 FEET AS
MEASURED FROM THE TOP OF THE INLET AND SHALL HAVE SIDESLOPES OF 2:1 OR
FLATTER. WEEP HOLES ARE TO BE INSTALLED IN THE INLET WALLS TO ALLOW FOR
THE COMPLETE DEWATERING OF THE TRAP. WHEN THE STORAGE CAPACITY OF THE
IMPOUNDMENT HAS BEEN REDUCED BY ONE—HALF, THE SILT SHALL BE REMOVED AND
DISPOSED IN A PROPER MANNER DISPOSED IN A PROPER MANNER. INLET INSERTS ARE COMMERCIALLY AVAILABLE TO REMOVE SEDIMENT, CONSTITUENTS (POLLUTANTS) ABSORED TO SEDIMENT, AND OIL AND GREASE, MAINTENANCE IS REQUIRED TO REMOVE SEDIMENT AND DEBRIS THAT COULD CLOG THE FILTERS. INLET INSERTS MUST HAVE A BYPASS FUNCTION TO PREVENT FLOODING FROM CLOGGING OR

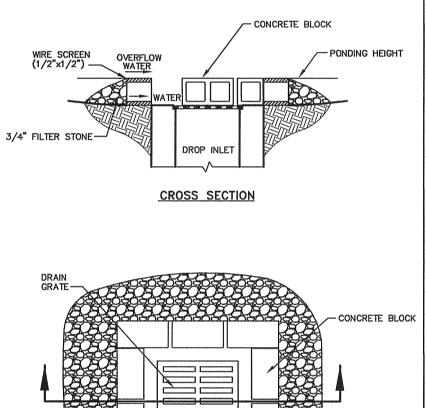
LIMITATIONS SPECIAL CAUTION MUST BE EXERCISED WHEN INSTALLING INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS. ENSURE THAT INLET PROTECTION IS PROPERLY DESIGNED, INSTALLED AND MAINTAINED TO AVOID FLOODING OF THE ROADWAY OR ADJACENT PROPERTIES AND STRUCTURES.

INLET PROTECTION IS ONLY VIABLE AT LOW POINT INLETS. INLETS THAT ARE ON A SLOPE CANNOT BE EFFECTIVELY PROTECTED BECAUSE STORM WATER WILL BYPASS THE INLET AND CONTINUE DOWNSTREAM, CAUSING AN OVERLOAD CONDITION AT INLETS DOWNSTREAM. MAINTENANCE REQUIREMENTS INLET PROTECTION SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED

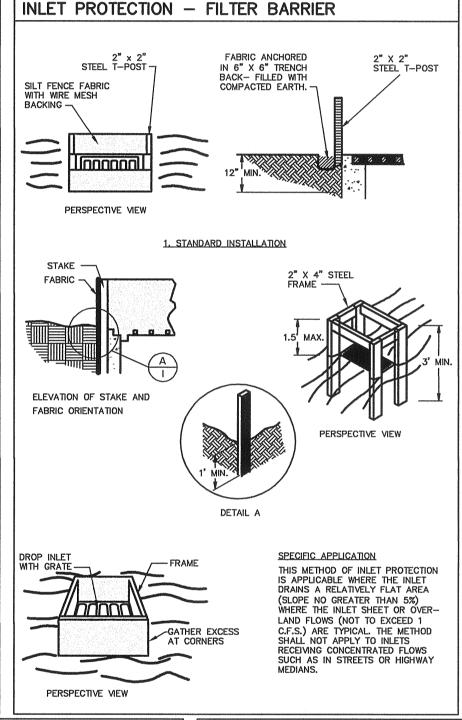
BY THE TPROTECTION SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A). WHEN SILT FENCE IS USED END THE FABRIC BECOMES CLOGGED, IT SHOULD BE CLEANED OR, IF NECESSARY, REPLACED. ALSO, SEDIMENT SHOULD BE REMOVED WHEN IT REACHES APPROXIMATELY ONE—HALF THE HEIGHT OF THE INLET PROTECTION DEVICE. IF A SUMP IS USED, SEDIMENT SHOULD BE REMOVED WHEN THE VOLUME OF THE BASIN IS REDUCED BY 50%. FOR SYSTEMS USING FILTER STONE, WHEN THE FILTER STONE BECOMES CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY FROM THE INLET AND CLEANED OR REPLACED. SINCE CLEANING OF STONE AT A CONSTRUCTION SITE MAY BE DIFFICULT, AN ALTERNATIVE APPROACH WOULD BE TO USE THE CLOGGED STONE AS FILL MATERIAL AND PUT NEW STONE AROUND THE INLET.

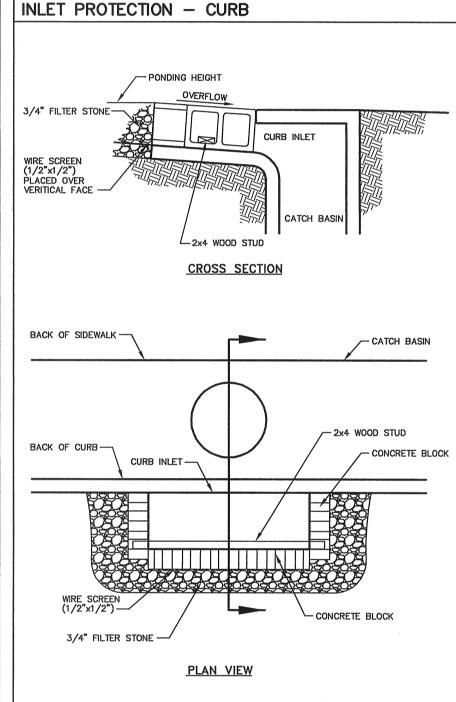
SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, SECTION 201.15 INLET PROTECTION.

INLET PROTECTION - DROP INLET



PLAN VIEW





PROVIDE 4—8 INCHES OF TOPSOIL OVER ROCK, GRAVEL OR OTHERWISE UNSUITABLE SOILS. POOR QUALITY TOPSOIL SHOULD BE AMENDED WITH COMPOST BEFORE APPLYING SEED OR SOD. AMENDMENT SHOULD BE THREE PARTS OF TOPSOIL TO ONE PART COMPOST BY VOLUME THOROUGHLY BLENDED. SEED BED SHOULD BE WELL PULVERIZED, LOOSE AND UNIFORM. PLANT SELECTION, FERTILIZATION AND SEEDING USE ONLY HIGH QUALITY, USDA CERTIFIED SEED.
USE AN APPROPRIATE SPECIES OR SPECIES MIXTURE ADAPTED TO LOCAL CLIMATE, SOIL CONDITIONS AND SEASON AS SHOWN BELOW, OR CONSULT WITH THE LOCAL OFFICE OF THE NATURAL RESOURCE CONSERVATION SERVICE (NRCS) OR ENGINEERING EXTENSION SERVICE AS NECESSARY FOR SELECTION OF PROPÈR SPÉCIES AN APPLICATION TECHNIQUE IN THIS AREA.

SEEDING RATE SHOULD BE IN ACCORDANCE WITH THE TABLE BELOW OR AS ECOMMENDED BY THE NRCS OR ENGINEERING EXTENSION SERVICE FERTILIZER SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATION WITH PROPER SPREADER EQUIPMENT. TYPICAL APPLICATION RATE FOR 10-10 GRADE FERTILIZER IS 10 LBS. PER 1,000 FT^2. IF HYDRO-SEEDING IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION. EVENLY APPLY SEED USING CYCLONE SEEDER, SEED DRILL, CULLPACKER, TERRASEEDING OR HYDROSEEDER.
PROVIDE ADEQUATE WATER TO AID IN ESTABLISHMENT OF VEGETATION. USE APPROPRIATE MULCHING TECHNIQUES WHERE NECESSARY, ESPECIALLY DURING COLD PERIODS OF THE YEAR. SOD SHALL BE ST. AUGUSTINE GRASS, COMMON BERMUDAGRASS, BUFFALO GRASS, AN APPROVED HYBRID OF COMMON BERMUDAGRASS OR AN APPROVED ZOYSLAGRASS.

THE SOD SHOULD BE MOWED PRIOR TO SOD CUTTING SO THAT THE HEIGHT OF THE GRASS SHALL NOT EXCEED 2-INCHES AND SHOULD NOT BE HARVESTED OR PLANTED WHEN ITS MOISTURE CONDITION IS SO EXCESSIVELY WET OR DRY THAT IT'S SURVIVAL SHALL BE AFFECTED.
SOD SHALL BE PLANTED WITHIN 3 DAYS AFTER IT IS EXCAVATED. IN AREAS SUBJECT TO DIRECT SUNLIGHT, PRE-MOISTEN PREPARED SOD BED BY WATERING IMMEDIATELY PRIOR TO PLACING SOD. MINIMUM OF ONE INCH (1") TALL, UNLESS OTHERWISE SPECIFIED ON APPROVED LANDSCAPE PLAN, PRIOR TO CITY ENGINEERING APPROVAL. ESTABLISHING A GOOD VEGETATIVE COVER IS DEPENDENT OF THE SEASON OF THE YEAR. PROJECTS THAT COMMENCE IN THE FALL OF THE YEAR MAY NOT BE

CANDIDATES FOR VEGETATION USED AS A BMP.
WHERE VEGETATION IS USED IN SWALES AND CHANNELS IT MAY BE NECESSARY TO USED SOD, RATHER THAN SEEDING, TO ESTABLISH AN EROSION RESISTANT SURFACE TO ACCOMMODATE RAINFALL RUNOFF FLOWS.
WHERE VEGETATION IS USED FOR PERIMETER CONTROL, THE USE OF SOD IS NECESSARY FOR A FIFTEEN-FOOT WIDTH. NECESSARY FOR A FIFTEEN-FOOT WIDTH.

MULCH SHOULD BE USED TO ENHANCE VEGETATIVE GROWTH, IN THAT MULCH
PROTECTS SEEDS FROM HEAT, PREVENTS SOIL MOISTURE LOSS, AND PROVIDE
EROSION PROTECTION UNTIL THE VEGETATION IS ESTABLISHED.

FERTILIZERS HAVE BOTH BENEFICIAL AND ADVERSE EFFECTS. FERTILIZERS PROVIDE
NUTRIENTS TO THE VEGETATION, BUT ALSO FERTILIZERS ARE A SOURCE OF
NUTRIENTS TO STREAMS AND LAKES. IN THIS LATTER REGARD THEY ARE A
POLLUTANT. THE USE OF NATIVE VEGETATION RATHER THAN EXOTICS REDUCES THE
NEED OF FERTILIZED AND LAKES. NEED OF FERTILIZER. ORGANIC FERTILIZERS ARE GENERALLY PREFERRED OVER CHEMICAL FERTILIZERS FROM THE STANDPOINT OF ENVIRONMENTAL CONDITIONS. STEEP SLOPES REPRESENT A PROBLEM FOR ESTABLISHING VEGETATION. BONDED FIBER MATRIX OR MECHANICALLY BONDED FIBER MATRIX PRODUCTS APPLIED WITH A TACKIFIER ARE USEFUL FOR ESTABLISHING VEGETATION ON SLOPES.

THE TABLE ON THE FOLLOWING PAGE LISTS RECOMMENDED PLANT SPECIES FOR THE NORTH CENTRAL TEXAS REGION DEPENDING ON THE SEASON FOR PLANTING.

**VEGETATION** 

RECOMMENDED GRASS MIXTURE FOR TEMPORARY EROSION CONTROL:

ENDED GRASS MIXTURE FOR TEMPORARY EROSION CO				
SEASON	COMMON NAME	RATE (LBS/ACRE)		
AUG 15-NOV 30	TALL FESCUE WESTERN WHEAT GRASS WHEAT (RED, WINTER)	4.0 5.0 30.0		
MAY 1-AUG 31	FOXTAIL MILLET	30.0		
FEB 15-MAY 31 SEP 1-DEC 31	ANNUAL RYE	20.0		

GRASS SEED FOR PERMANENT VEGETATION CAN BE SOWN AT THE SAME TIME AS SEEDING FOR TEMPORARY (ANNUAL) VEGETATION. DROUGHT TOLERANT NATIVE VEGETATION IS RECOMMENDED RATHER THAN EXOTICS AS A LONG—TERM WATER CONSERVATION MEASURE. NATIVE GRASSES CAN BE PLANTED AS SEED OR PLACED AS SOD. BUFFALOE 609, FOR EXAMPLE, IS A HYBRID GRASS THAT IS PLACED AS SOD. FERTILIZERS ARE NOT NORMALLY USED TO ESTABLISH NATIVE GRASSES, BUT MULCHING IS EFFECTIVE IN RETAINING SOIL MOISTURE FOR THE NATIVE PLANTS.

RECOMMENDED NATIVE CRASSES FOR PERMANENT EROSION CONTROL

GRASS		RATE
BUFFALOE GRASS	FULL TURF APPLICATION	3-4 lbs./1000 sqft.
BLUE GRAMA	FULL TURF APPLICATION	2 lbs./1000 sqft.
SIDE OATS GRAMA	APPLIED WITH OTHER NATIVE SEED	1/4 lb./1000 sqft.

VEGETATION IS NOT APPROPRIATE FOR AREAS SUBJECTED TO HEAVY PEDESTRIAN OR VEHICULAR TRAFFIC. AS A TEMPORARY TECHNIQUE, VEGETATION MAY BE COSTLY WHEN COMPARED TO OTHER TECHNIQUES. VEGETATION MAY REQUIRE A PERIOD OF DAYS TO WEEKS BEFORE BECOMING ESTABLISHED. LACK OF WATER AND LACK OF OR IMPROPER USE OF SOIL AMENDMENTS (COMPOST, FERTILIZER, ETC.) WILL USUALLY RESULT IN POOR TURF ESTABLISHMENT. ALTERNATE EROSION CONTROL (E.G. MULCHING, SODDING VEGETATIVE STRIPS, ETC ) SHOULD BE USED UNTIL VEGETATION CAN BE ESTABLISHED.

VEGETATION IS NOT APPROPRIATE FOR ROCK, GRAVEL OR COARSE GRAINED SOILS UNLESS 4 TO 6 INCHES OF TOPSOIL IS APPLIED. MAINTENANCE REQUIREMENTS PROTECT NEWLY SEEDED AREAS FROM EXCESSIVE RUNOFF AND TRAFFIC UNTIL VEGETATION IS ESTABLISHED. A WATERING AND FERTILIZING SCHEDULE WILL BE REQUIRED AS PART OF THE SWPPP TO ASSIST IN THE ESTABLISHMENT OF THE VEGETATION. VEGETATION SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A) TO ENSURE THAT THE PLANT MATERIAL IS ESTABLISHED PROPERLY AND REMAINS HEALTHY. BARE SPOTS SHALL BE RESEEDED AND/OR PROTECTED FROM EROSION BY MATCH OR OTHER BMP, ACCUMULATED SEDIMENT DEPOSITED BY RUNOFF SHOULD BE REMOVED TO PREVENT SMOTHERING OF THE VEGETATION. IN ADDITION, DETERMINE THE SOURCE OF EXCESS SEDIMENT AND IMPLEMENT

MULCHING

DESCRIPTION MULCHING IS THE APPLICATION OF A LAYER OF CHOPPED STRAW, HAY, CHIPPED SITE VEGETATION, OR OTHER MATERIAL, WHICH IS SPREAD UNIFORMILY OVER BARREN AREAS TO REDUCE THE EFFECTS OF EROSION FROM RAINFALL. TYPES OF MULCH INCLUDE ORGANIC

REDUCE THE EFFECTS OF EROSION FROM RAINFALL. TYPES OF MULCH INCLUDE ORGANIC MATERIALS (E.G. COMPOST MIXTURES), STRAW, WOOD CHIPS, BARK, OR OTHER FIBERS. ANOTHER FROM OF MULCH, WHICH HAS BEEN COMMERCIALIZED, USES STRAW OR OTHER MATERIAL WITH ORGANIC AND INORGANIC BINDING SYSTEMS WHICH ARE TYPICALLY SPRAYED OVER THE CONTROL AREA. SOME OF THESE PRODUCTS MAY BE VERY EFFECTIVE ON STEEPER SLOPES WHERE THERE IS NO VEHICULAR OR FOOT TRAFFIC TO DISRUPT THE APPLICATION UNTIL VEGETATION IS ESTABLISHED. MULCH SHOULD NOT CONTAIN CHIPPED MANUFACTURED BOARDS OR CHEMICALLY TREATED WOOD SUCH AS PARTICLEBOARD, RAILROAD TIES OR SIMILAR TREATED WOOD. HAY SHOULD NOT BE USED AS A REPLACEMENT FOR STRAW UNLESS IT CAN BE DETERMINED THAT IT IS WEED AND SEED FREE.

MULCH IS USED TO TEMPORARILY AND/OR PERMANENTLY STABILIZE BARE OR FRESHLY SEEDED AREAS. IT PROTECTS THE SOIL FROM EROSION AND MOISTURE LOSS BY LESSENING THE EFFECTS OF WIND, WATER AND SUNLIGHT. IT ALSO DECREASES THE VELOCITY OF SHEET FLOW, THEREBY REDUCING THE VOLUME OF SEDIMENT—LADEN WATER FLOW LEAVING THE MULCHED

MULCH MAY BE USED ON MOST CONSTRUCTION—RELATED DISTURBED AREAS FOR SURFACE PROTECTION INCLUDING:

□ FRESHLY SEEDED OR PLANTED AREAS.
□ AREAS AT RISK DUE TO THE TIME PERIOD BEING UNSUITABLE FOR GROWING

STEEP SLOPES (E.G. >3H:1V), PROVIDED THE MULCH IS ANCHORED TO THE SOIL BY USE OF A COMBINATION OF TACKIFIERS AND NETTING, OR CRIMPING.

MULCH MAY BE USED BY ITSELF OR IN COMBINATION WITH NETTING OTHER ANCHORS TO PROMOTE SOIL STABILIZATION. CHOICE OF MULCH DEPENDS LARGELY ON SLOPE, CLIMATE, AND SOIL TYPE IN ADDITION

TO AVAILABILITY OF MATERIALS.

MULCH SHOULD BE APPLIED IN AN EVEN AND UNIFORM MANNER WHERE CONCENTRATED WATER FLOW IS NEGLIGIBLE. WATER FLOW IS NEGLIGIBLE.

THE APPLICATION OF STRAW MULCH SHOULD BE APPROXIMATELY 2 TONS DRY STRAW PER ACRE SPREAD UNIFORMLY ACROSS THE AREA. OTHER FORMS OF MULCH, SUCH AS WOOD CHIPS OR CHOPPED SITE VEGETATION SHOULD BE PLACED IN THICKNESS OF TWO-INCHES OR GREATER OVER THE AREA.

STRAW MULCH SHOULD BE ANCHORED BY APPLICATION OF A FIBER MULCH BINDER, BY THE APPLICATION OF A SYNTHETIC LIQUID MULCH BINDER, BY USING A TRACTOR DRAWN CRIMPER TO PUNCH INTO THE SOIL, OR BY PLACING A NETTING ABOVE THE MULCH STAPLED TO THE GROUND AS REQUIRED.

MULCH HYDRAULICALLY APPLIED WITH TACKIFIERS AND BINDING AGENTS IS COMMERCIALLY AVAILABLE AS A RONDER FIBER MATRIX (REM) WHICH MAY BE PARTICILLABLY FEEFCTIVE. MULCH HYDRAULICALLY APPLIED WITH TACKIFIERS AND BINDING AGENTS IS COMMERCIALLY AVAILABLE AS A BONDED FIBER MATRIX (BFM) WHICH MAY BE PARTICULARLY EFFECTIVE ON SLOPES STEEPER THAN 2.5:1.

WOOD CHIPS ARE SUITABLE FOR AREAS THAT WILL NOT REQUIRE MOWING FREQUENTLY AND ARE HEAVY ENOUGH THAT THEY DO NOT REQUIRE ANCHORING. THEY DO, HOWEVER, DEPLETE NITROGEN FROM THE SOIL, WHICH IS A NECESSARY NUTRIENT FOR ALL PLANTS. TO ALLEVIATE THIS CONDITION, WOOD CHIPS MUST BE TREATED WITH 12 POUNDS OF AMMONIUM NITRATE PER TON OF MULCH USED.

BARK CHIPS ARE POPULAR FOR ORNAMENTAL APPLICATIONS, AS THEY DO NOT REQUIRE ANCHORING, DO NOT DECOMPOSE VERY RAPIDLY AND SERVE AS AN EXCELLENT INSULATION MATERIAL. WHEN USING BARK CHIPS. IT IS NOT NECESSARY TO TREAT FOR

INSULATION MATERIAL WHEN USING BARK CHIPS, IT IS NOT NECESSARY TO TREAT FOR NITROGEN DEFICIENCY OR TO FERTILIZE.

**APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES **FARGETED CONSTITUENTS** SEDIMENT

NUTRIENTS TOXIC

OIL & GREASE

FLOATABLE MATERIALS

OTHER CONSTRUCTION **IMPLEMENTATION** 

REQUIRMENTS CAPITAL COST MAINTENANCE O TRAINING

O SUITABILITY FOR SLOPES >

LEGEND

SIGNIFICANT IMPACT ■ MEDIUM IMPACT LOW IMPACT UNKNOWN OR

QUESTIONABLE IMPACT Fe = 0.9

E-5

CCA

MULCHING

3/4" FILTER STONE ---

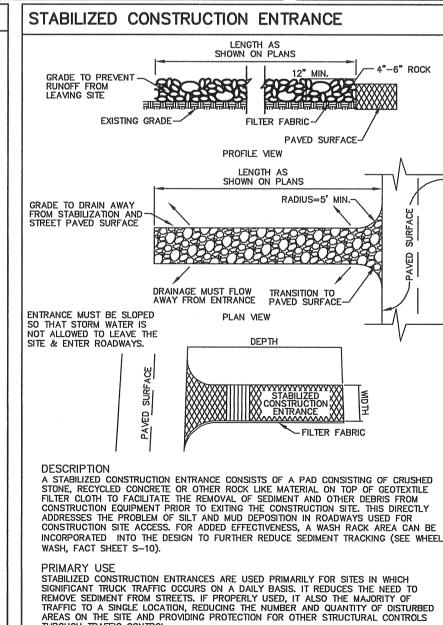
COMPOST AND WOOD MULCH MIXTURES SHOULD BE A BLEND OF 50% UNTREATED WOOD MULCH WITH 50% COMPOST MEASURED BY VOLUME. WOOD MULCH SHOULD BE LESS THAN OR EQUAL TO 5 IN. IN LENGTH WITH 95% PASSING A 2 IN. SCREEN AND LESS THAN 30% PASSING A 1 IN. SCREEN. THE COMPOST SHALL MEET THE PHYSICAL REQUIREMENTS SPECIFIED IN TABLE 1 OF TXDOT SPECIAL SPECIFICATION 1058, COMPOST, WHICH CAN BE FOUND IN APPENDIX F.
PRIOR TO THE PLACEMENT OF ANY MULCH, THE AREA TO BE PROTECTED MUST BE GRADED IN ACCORDANCE WITH PLANS.
FERTILIZATION AND SOIL TREATMENT SHOULD THEN BE DONE PRIOR TO PLACEMENT OF MULCH WITH THE EXCEPTIONS OF WHEN SEED IS TO APPLIED BY MEANS OF HYDRO-SEED OR WHEN SEED IS DISTRIBUTED FOLLOWING STRAW MULCH SPREADING ORGANIC MULCHES MAY BE DISTRIBUTED BY HAND OR BY MECHANICAL MEANS, BUT TO BE EFFECTIVE A COMPLETE COVERING REFER TO THE TABLE ON THE FOLLOWING PAGE FOR ADDITIONAL GUIDANCE.

MULCHES ARE SUBJECT TO REMOVAL BY WIND OR WATER UNDER SEVERE CLIMATIC CONDITIONS. MULCHES LOWER THE SOIL TEMPERATURE, WHICH MAY RESULT IN LONGER SEED GERMINATION PERIODS. MULCH SHOULD NOT BE APPLIED WITHIN THE ORDINARY HIGH-WATER MARK OF SURFACE WATERS, AS IT CAN BE A POTENTIAL

MULCHED AREAS SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A) FOR THIN OR BARE SPOTS CAUSED BY NATURAL DECOMPOSTION OR WEATHER RELATED EVENTS. MULCH IN HIGH TRAFFIC AREAS SHOULD BE REPLACED ON A REGULAR BASIS TO MAINTAIN UNIFORM PROTECTION. EXCESS MULCH SHOULD BE BROUGHT TO THE SITE AND STOCKPILED FOR USE DURING THE MAINTENANCE PERIOD TO DRESS PROBLEM SPOTS.

SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, SECTION 201.17 MULCHING.

	MULCH STANDARDS AND GUIDELINES						
MULCH MATERIAL	QUALITY STANDARDS	APPLICATION RATES	REMARKS				
STRAW	AIR-DRIED, FREE FROM UNDESIRABLE SEED AND FROM COARSE MATERIAL.	2"-3" THICK, APPROX. 2 TONS PER ACRE.	COST-EFFECTIVE WHEN APPLIED WITH ADEQUATE THICKNESS. HAY CAN BE USED IF WEED AND SEED FREE. IN WINDY AREAS AND STEEP SLOPES, STRAW MUST BE HELD IN PLACE BY CRIMPING, USING A TACKIFIER, OR COVERING WITH NETTING.				
CHIPPED SITE VEGITATION	SHOULD INCLUDE GRADATION FROM FINE TO COURSE TO PROMOTE INTERLOCKING PROPERTIES. MAXIMUM SIZE 6 INCHES IN LENGTH.	2"MINIMUM THICKNESS OVER AREA; APPROX 10 TONS PER ACRE.	COST-EFFECTIVE MANNER OF DISPOSING OF VEGETATIVE DEBRIS FROM SITE. DO NOT PLACE IN AREAS SUBJECT TO FLOODING. DECOMPOSITION OF CHIPPED VEGETATION COMPLETES WITH NUTRIENTS IMPORTANT TO SUBSEQUENT GRASS ESTABLISHMENT.  MULCH MUST BE FREE OF WASTE MATERIALS SUCH A PLASTIC BAG, METAL DEBRIS, ETC.				
WOOD MULCH AND COMPOST MIXTURE	COMPOST SHALL MEET THE PHYSICAL REQUIREMENTS (TABLE 1) OF APPENDIX F.	2"MINIMUM THICKNESS OVER AREA; APPROX 10 TONS PER ACRE.	SPECIAL CAUTION IS ADVISED REGARDING THE SOURCE AND COMPOSITION OF WOOD MULCHES. DETERMINE WHETHER THE PREPARATION INCLUDES WEED AND SEED CONTROL. WOOD MULCHES ARE AN EXCELLENT SOIL AMENDMENT, ULTIMATELY IMPROVING THE ORGANIC CONTENT FOR THE SOIL.				
HYDROMULCH	NO GROWTH INHIBITING FACTORS.	APPROX. 25-30 LBS PER 1000 SF OR 1500-2000 LBS PER ACRE.	APPLY WITH A HYDROMULCHER. FIBERS SHOULD BE KEPT TO LESS THAN 3/4 INCH TO PREVENT CLOGGIN EQUIPMENT. BEST USED IN CONJUNCTION WITH SEED AT TIME OF APPLICATION.				
BONDED FIBER MATRIX	HYDRAULICALLY APPLIED MULCH WITH TACKIFIERS AND BINDING AGENTS.	FOLLOW THE MANUFACTURE'S RECOMMENDATIONS. (TYPICALLY 3000 LBS. PER ACRE OR GREATER)	BONDED FIBER MATRIX MAY BE PARTICULARY EFFECTIVE ON SLOPES STEEPER THAN 2.5:1.				



STABILIZED CONSTRUCTION ENTRANCES ARE A REQUIRED PART OF THE FROSION CONTROL PLAN FOR ALL SITE DEVELOPMENTS LARGER THAN ONE ACRE AND A RECOMMENDED PRACTICE FOR ALL CONSTRUCTION SITES. IF POSSIBLE, CONTROLLED ENTRANCES SHOULD BE INCORPORATED INTO SMALL LOT CONSTRUCTION DUE TO THE LARGE PERCENTAGE OF DISTURBED AREA ON THE SITE AND HIGH POTENTIAL FOR OFFSITE TRACKING OF SILT AND

**APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS SEDIMENT NUTRIENTS TOXIC MATERIALS O OIL & GREASE O FLOATABLE MATERIALS O OTHER CONSTRUCTION

**IMPLEMENTATION** REQUIRMENTS CAPITAL COST 

TRAINING SUITABILITY FOR SLOPES > **LEGEND** SIGNIFICANT IMPACT LIMITATIONS SELECTION OF THE CONSTRUCTION ENTRANCE LOCATION IS CRITICAL. TO BE EFFECTIVE, IT O LOW IMPACT

Fe = N/AS - 9

UNKNOWN OR QUESTIONABLE IMPACT

STABILIZED CONSTRUCTION ENTRANCE

DESIGN CRITERIA STABILIZED CONSTRUCTION ENTRANCES ARE TO BE CONSTRUCTED SUCH THAT DRAINAGE ACROSS THE ENTRANCE IS DIRECTED TO A CONTROLLED, STABILIZED OUTLET ON SITE WITH PROVISIONS FOR STORAGE, PROPER FILTRATION, AND REMOVAL OF WASH WATER. HE ENTRANCE MUST BE SLOPED AWAY FROM THE PAVED SURFACE SO THAT STORM WATER IS NOT ALLOWED TO LEAVE THE SITE ONTO ROADWAYS.

MINIMUM WIDTH OF ENTRANCE SHALL BE 15 FEET.

STONE SHALL BE PLACED IN A LAYER OF AT LEAST 12-INCHES THICKNESS. THE
STONE SHALL BE A MINIMUM OF 4 TO 6 INCH COARSE AGGREGATE. CRUSHED

CONCRETE IS PROHIBITED.

PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.

THE GEOTEXTILE FABRIC MUST MEET THE FOLLOWING MINIMUM CRITERIA:

TENSILE STRENGTH, ASTM D4632 TEST METHOD FOR GRAB BREAKING LOAD AND ELONGATION OF GEOTEXTILES, 300—LBS.

PUNCTURE STRENGTH, ASTM D4833 TEST METHOD FOR INDEX PUNCTURE RESISTANCE OF GEOTETILES, GEOMEMBRANES AND RELATED PRODUCTS, 120—188

MULLEN BURST RATING, ASTM D3786 STANDARD TEST METHOD FOR HYDRAULIC BURSTING STRENGTH OF TEXTILE FABRICS—DIAPHRAGM BURSTING STRENGTH TESTER METHOD, 600—P.S.I. APPARENT OPENING SIZE, ASTM D4751 TEST FOR DETERMINING APPARENT

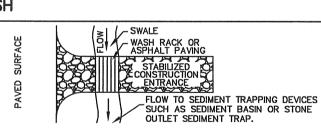
OPENING SIZE OF A GEOTEXTILE, U.S. SIEVE No. 40(MAX).
WHEN NECESSARY, VEHICLES MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PAVED ROADS, STREETS, OR PARKING LOTS. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A CONSTRUCTED WHEEL WASH FACILITY THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN OR OTHER SEDIMENTATION/FILLTRATION DEVICE.
MINIMUM DIMENSIONS FOR THE ENTRANCE SHALL BE AS FOLLOWS:

TRACT AREA	AVG. TRACT. DEPTH	MIN. WIDTH OF ENTRANCE	MIN. DEPTH OF ENTRANCE
< 1 ACRE	100 FEET	15 FEET	20 FEET
< 5 ACRES	200 FEET	20 FEET	50 FEET
> 5 ACRES	> 200 FEET	25 FEET	75-100 FEET

STABILIZED ENTRANCES ARE RATHER EXPENSIVE CONSIDERING THAT IT MUST BE INSTALLED IN COMBINATION WITH ONE OR MORE OTHER SEDIMENT CONTROL TECHNIQUES, BUT IT MAY BE COST EFFECTIVE COMPARED TO LABOR—INTENSIVE STREET CLEANING MAINTENANCE REQUIREMENTS CONSTRUCTION ENTRANCES SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A). WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE—GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING. IF THE STABILIZED CONSTRUCTION ENTRANCE IS NOT EFFECTIVELY REMOVING SEDIMENT FROM WHEELS THEN A WHEEL WASH SHOULD BE CONSIDERED SPECIFICATION FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD

SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION — NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, SECTION 201.10 STABILIZED CONSTRUCTION ENTRANCE.

WHEEL WASH



APPLICATIONS PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION

DESCRIPTION
THE WHEEL WASH IS USED IN CONJUNCTION WITH A STABILIZED CONSTRUCTION ENTRANCE
TO PROVIDE AN AREA WHERE TRUCK WHEELS AND UNDERCARRIAGES CAN BE CLEANED
PRIOR TO TRAVERSING THE STABILIZED CONSTRUCTION ENTRANCE AND ENTERING THE
PUBLIC ROAD SYSTEM. A WHEEL WASH MAY CONSIST OF AN IMPERVIOUS AREA OR A
GRATE OVER A SWALE. WASH WATER FROM HAND HELD PRESSURE WASHERS OR FIXED
NOZZLES IS COLLECTED AND DRAINED TO A SEDIMENT—TRAPPING DEVICE SUCH AS A
STONE OUTLET SEDIMENT TRAP OR SEDIMENT BASIN TO PROVIDE FOR REMOVAL OF

WHEEL WASHES SHOULD BE USED ON LARGE JOBS WHERE THERE IS SIGNIFICANT TRUCK TRAFFIC, ON THOSE SITES WHERE SITE CONDITIONS CAUSE THE STABILIZED CONSTRUCTION ENTRANCE TO BE OVERLOADED WITH SEDIMENT AND BECOME INEFFECTIVE, AND IN THOSE INSTANCES WHERE CONTAMINATED SOLIDS MIGHT BE PRESENT ON SITE. THEY PROVIDE ADDED PROTECTION AND REDUCE THE NEED TO REMOVE SEDIMENT FROM STREETS. WHEEL WASHES SHOULD BE CONSIDERED AN ANCILLARY COMPONENT TO STABILIZED CONSTRUCTION ENTRANCE.

 THE LOCATION SHOULD BE WITHIN THE STABILIZED CONSTRUCTION ENTRANCE SO
 THAT THE VEHICLE DOES NOT PICK UP ADDITIONAL SEDIMENT LOAD BY TRAVERSING
 DISTURBED AREAS. THE SIZE OF THE WHEEL WASH FACILITY SHOULD BE SUFFICIENT SO THAT ALL WASH WATER AND SEDIMENT IS COLLECTED AND DRAINED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT BASIN OR STONE OUTLET SEDIMENT TRAP.

o 4—INCH THICK ASPHALT PAVEMENT ON AN 8—INCH BASE OF CRUSHED
ROCK GRADED SO THAT WASH WATER DRAINS TO A SWALE; OR
GRATE SUITABLY DESIGNED TO SUPPORT CONSTRUCTION VEHICLES INSTALLED OVER A SWALE.

THE FACILITY SHOULD BE DESIGNED SO THAT IT CAN BE CLEANED BETWEEN USES. SEDIMENT TRAPPING BMPs USED IN CONJUNCTION WITH WHEEL WASH FACILITIES MUST BE CAREFULLY DESIGNED FOR THE ANTICIPATED AMOUNT OF WASH WATER TO BE TREATED.

WHEEL WASH FACILITIES SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A). THE SURFACE OF THE WHEEL WASH SHOULD BE CLEANED BETWEEN VEHICLES AS NECESSARY. SEDIMENT THAT HAS ACCUMULATED IN THE WASH WATER SEDIMENTATION BMP (SEDIMENT TRAP, SEDIMENT BASIN, ETC.) MUST BE REMOVED WHEN IT REACHES A DEPTH OF APPROXIMATELY 1/3 THE DESIGN DEPTH OF THE DEVICE OR 12", WHICHEVER IS LESS. THE REMOVED SEDIMENT SHALL BE STOCKPILED OR REDISTRIBUTED IN AREAS THAT ARE

NO SPECIFICATION FOR CONSTRUCTION OF THIS ITEM IS CURRENTLY AVAILABLE IN THE

STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION—NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS.

PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS

SEDIMENT NUTRIENTS TOXIC MATERIALS O OIL & GREASE O FLOATABLE MATERIALS O OTHER CONSTRUCTION

> **IMPLEMENTATION** REQUIRMENTS MAINTENANCE

TRAINING O SUITABILITY FOR SLOPES >

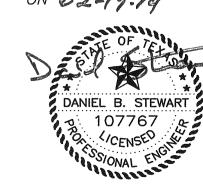
LEGEND

SIGNIFICANT IMPACT ■ MEDIUM IMPACT O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT

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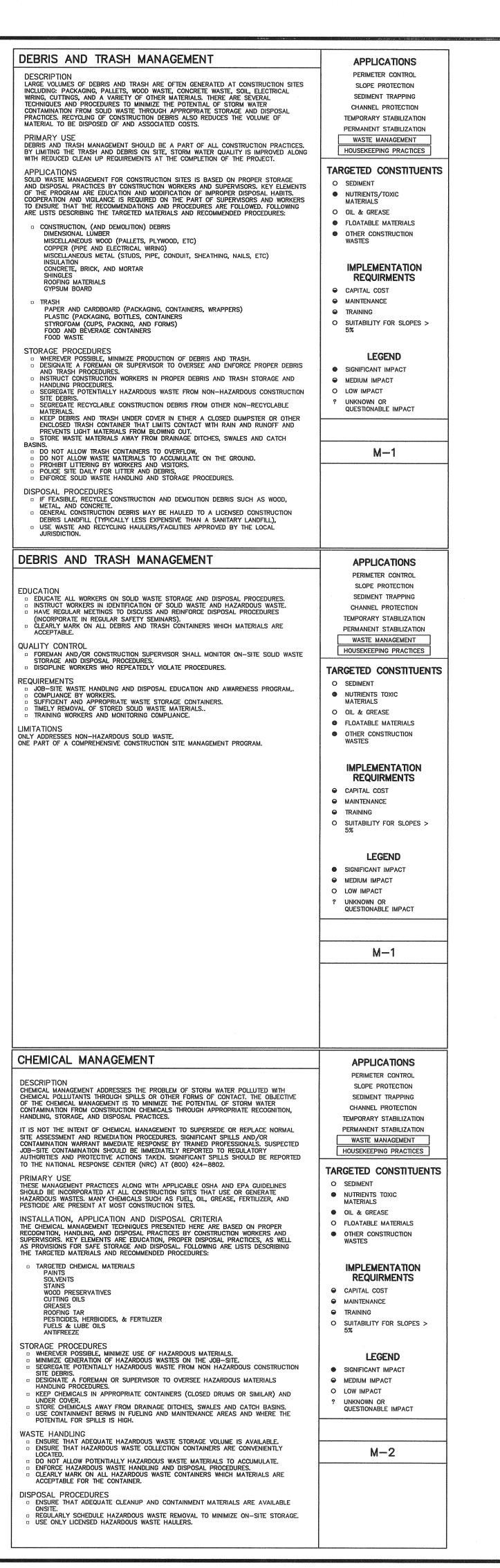
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY DANIEL B. STEWART, P.E. 107767



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LOT 2, BLOCK 1, ROCKWALL CENTRE CORNERS ADDN. THE CITY OF ROCKWALL, TEXAS 14800 Quorum Drive, Suite 200 Cates - Clark & Associates, LLP Consulting Engineers Office: 972-385-2272 Fax: 972-980-1627 DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. 126-001 CCA 07.09.13 N.T.S. D.P. C8.2 **DETAILS** 



CHEMICAL MANAGEMENT APPLICATIONS PERIMETER CONTROL SLOPE PROTECTION INSTRUCT WORKERS ON SAFETY PROCEDURES FOR CONSTRUCTION SITE CHEMICAL SEDIMENT TRAPPING INSTRUCT WORKERS IN IDENTIFICATION OF CHEMICAL POLLUTANTS.
ENSURE THAT WORKERS ARE TRAINED IN PROCEDURES FOR SPILL PREVENTION AND CHANNEL PROTECTION TEMPORARY STABILIZATION EDUCATE WORKERS OF POTENTIAL DANGERS TO HUMANS AND THE ENVIRONMENT FROM CHEMICAL POLLUTANTS.

EDUCATE ALL WORKERS ON CHEMICAL STORAGE AND DISPOSAL PROCEDURES.

HAVE REGULAR MEETINGS TO DISCUSS AND REINFORCE IDENTIFICATION, HANDLING, AND PERMANENT STABILIZATION WASTE MANAGEMENT DISPOSAL PROCEDURES (INCORPORATE IN REGULAR SAFETY SEMINARS). ESTABLISH A CONTINUING EDUCATION PROGRAM TO INDOCTRINATE NEW EMPLOYEES. HOUSEKEEPING PRACTICES QUALITY ASSURANCE TARGETED CONSTITUENTS FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ON—SITE CHEMICAL STORAGE AND DISPOSAL PROCEDURES.

EDUCATE AND IF NECESSARY, DISCIPLINE WORKERS WHO VIOLATE PROCEDURES.

ENSURE THAT THE HAZARDOUS WASTE DISPOSAL CONTRACTOR IS REPUTABLE AND O SEDIMENT NUTRIENTS TOXIC MATERIALS OIL & GREASE REQUIREMENTS O FLOATABLE MATERIALS JOB-SITE CHEMICAL AND HAZARDOUS WASTE HANDLING AND DISPOSAL EDUCATION AND AWARENESS PROGRAM OTHER CONSTRUCTION COMMITMENT BY MANAGEMENT TO IMPLEMENT CHEMICAL STORAGE AND HAZARDOUS WASTE MANAGEMENT PRACTICES. WASTES COMPLIANCE BY WORKERS. SUFFICIENT AND APPROPRIATE CHEMICAL AND HAZARDOUS WASTE STORAGE CONTAINERS. TIMELY REMOVAL OF STORED HAZARDOUS WASTE MATERIALS. **IMPLEMENTATION** REQUIRMENTS POSSIBLE MODEST COST IMPACT FOR ADDITIONAL CHEMICAL STORAGE CONTAINERS. CAPITAL COST SMALL COST IMPACT FOR TRAINING AND MONITORING.
POTENTIAL COST IMPACT FOR HAZARDOUS WASTE COLLECTION AND DISPOSAL BY
LICENSED HAULER — ACTUAL COST DEPENDS ON TYPE OF MATERIAL AND VOLUME. ■ TRAINING O SUITABILITY FOR SLOPES > THIS PRACTICE IS NOT INTENDED TO ADDRESS SITE-ASSESSMENTS AND PRE-EXISTING CONTAMINATION. MAJOR CONTAMINATION, LARGE SPILLS AND OTHER SERIOUS HAZARDOUS WASTE INCIDENTS REQUIRE IMMEDIATE RESPONSE FROM SPECIALISTS. DEMOLITION ACTIVITIES AND POTENTIAL PRE-EXISTING MATERIALS, SUCH AS LEAD AND ASBESTOS, ARE NOT ADDRESSED BY THIS PROGRAM. SITE-SPECIFIC INFORMATION ON PLANS IS NECESSARY. LEGEND SIGNIFICANT IMPACT CONTAMINATED SOILS ARE NOT ADDRESSED. ■ MEDIUM IMPACT O LOW IMPACT ? UNKNOWN OR QUESTIONABLE IMPACT M-2CONCRETE WASTE MANAGEMENT **APPLICATIONS** PERIMETER CONTROL CONCRETE WASTE AT CONSTRUCTION SITES COMES IN TWO FORMS: 1) EXCESS FRESH SLOPE PROTECTION CONCRETE MIX INCLUDING TRUCK AND EQUIPMENT WASHING, AND 2) CONCRETE DUST AND CONCRETE DEBRIS RESULTING FROM DEMOLITION. BOTH FORMS HAVE THE POTENTIAL TO IMPACT WATER QUALITY THROUGH STORM WATER RUNOFF CONTACT WITH THE WASTE. SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION CONCRETE WASTE IS PRESENT AT MOST CONSTRUCTION SITES. THIS BMP SHOULD BE UTILIZED AT SITES IN WHICH CONCRETE WASTE IS PRESENT. PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES A NUMBER OF WATER QUALITY PARAMETERS CAN BE AFFECTED BY INTRODUCTION OF CONCRETE — ESPECIALLY FRESH CONCRETE. CONCRETE AFFECTS THE pH OF RUNOFF, CAUSING SIGNIFICANT CHEMICAL CHANGES IN WATER BODIES AND HARMING AQUATIC LIFE. SUSPENDED SOLIDS IN THE FORM OF BOTH CEMENT AND AGGREGATE DUST ARE ALSO GENERATED FROM BOTH FRESH AND DEMOLISHED CONCRETE WASTE. TARGETED CONSTITUENTS O SEDIMENT O NUTRIENTS TOXIC UNACCEPTABLE CONCRETE WASTE DISPOSL PRACTICES

DUMPING IN VACANT AREAS ON THE JOB-SITE. LLICIT DUMPING OFF-JOBSITE
DUMPING INTO DITCHES OR DRAINAGE FACILITIES. O OIL & GREASE O FLOATABLE MATERIALS RECOMMENDED DISPOSAL PRACTICES

AVOID UNACCEPTABLE DISPOSAL PRACTICES LISTED ABOVE.

DEVELOP PREDETERMINED, SAFE CONCRETE DISPOSAL AREAS.

PROVIDE A WASHOUT AREA WITH A MINIMUM OF 6 CUBIC FEET OF CONTAINMENT AREA VOLUME FOR EVERY 10 CUBIC YARDS OF CONCRETE POURED. OTHER CONSTRUCTION NEVER DUMP WASTE CONCRETE ILLICITLY OR WITHOUT PROPERTY OWNER'S KNOWLEDGE AND CONSENT. IMPLEMENTATION REQUIRMENTS OVERFLOW OF WASHDOWN WATER SHALL BE DISCHARGED IN AN AREA PROTECTED BY ONE OR MORE SEDIMENT REMOVAL BMPS AND SHALL BE DONE IN A MANNER THAT DOES NOT RESULT IN A VIOLATION OF GROUNDWATER OR SURFACE WATER QUALITY CAPITAL COST MAINTENANCE ₩ TRAINING DRIVERS AND EQUIPMENT OPERATORS SHOULD BE INSTRUCTED ON PROPER DISPOSAL O SUITABILITY FOR SLOPES > SUPERVISORS MUST BE MADE AWARE OF THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF IMPROPERLY HANDLED CONCRETE WASTE ENFORCEMENT

THE CONSTRUCTION SITE MANAGER OR FOREMAN MUST ENSURE THAT EMPLOYEES AND PRE-MIX COMPANIES FOLLOW PROPER PROCEDURES FOR CONCRETE DISPOSAL AND EQUIPMENT WASHING.

EMPLOYEES VOLATING DISPOSAL OR EQUIPMENT CLEANING DIRECTIVES CRUST BE LEGEND SIGNIFICANT IMPACT MEDIUM IMPACT REEDUCATED OR DISCIPLINED IF NECESSARY. LOW IMPACT DEMOLITION PRACTICES

MONITOR WEATHER AND WIND DIRECTION TO ENSUE CONCRETE DUST IS NOT ENTERING DRAINAGE STRUCTURES AND SURFACE WATER.

WHERE APPROPRIATE, CONSTRUCT SEDIMENT TRAPS OR OTHER TYPES OF SEDIMENT DETENTION DEVICES DOWNSTREAM OF DEMOLITION ACTIVITIES. UNKNOWN OR QUESTIONABLE IMPACT USE PREDETERMINED DISPOSAL SITES FOR WASTE CONCRETE.

PROHIBIT DUMPING WASTE CONCRETE ANYWHERE BUT PREDETERMINED AREAS.

ASSIGN PREDETERMINED TRUCK AND EQUIPMENT WASHING AREAS.

EDUCATE DRIVERS AND OPERATORS ON PROPER DISPOSAL AND EQUIPMENT CLEANING M-3OSIS

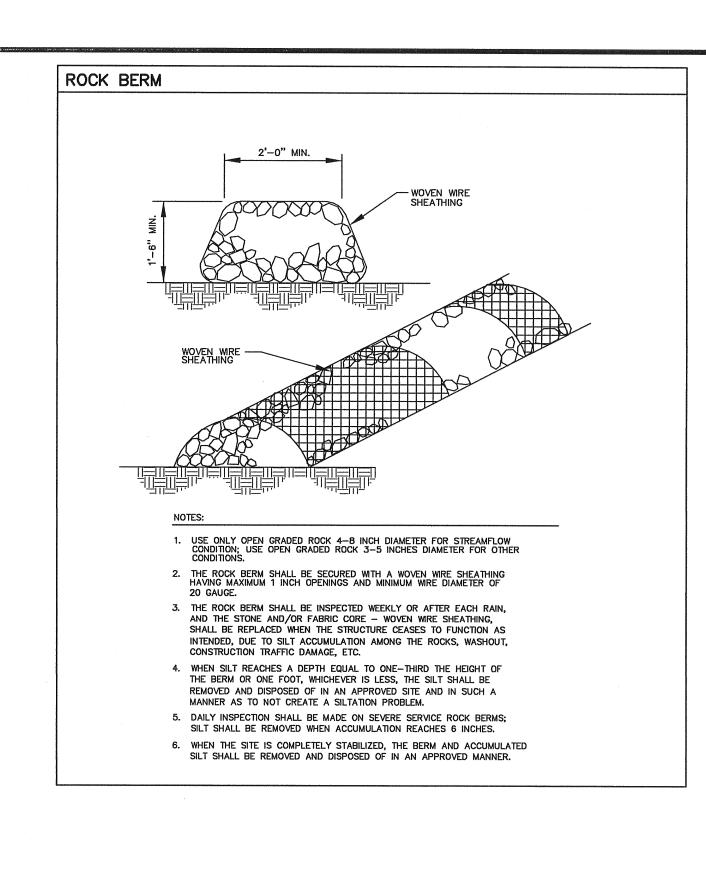
MINIMAL COST IMPACT FOR TRAINING AND MONITORING,
CONCRETE DISPOSAL COST DEPENDS ON AVAILABILITY AND DISTANCE TO SUITABLE DISPOSAL AREAS
ADDITIONAL COSTS INVOLVED IN EQUIPMENT WASHING COULD BE SIGNIFICANT. LIMITATIONS
CONCRETE WASTE MANAGEMENT IS ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE WASTE MANAGEMENT PROGRAM. CONCRETE SAWCUTTING WASTE MANAGEMENT **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING DESCRIPTION
SAW CUTTING OF CONCRETE PAVEMENT IS A ROUTINE PRACTICE, NECESSARY TO CONTROL
SHRINKAGE CRACKING IMMEDIATELY FOLLOWING PLACEMENT OF PLASTIC CONCRETE. IT IS
ALSO USED TO REMOVE CURB SECTIONS AND PAVEMENT SECTIONS FOR PAVEMENT
REPAIRS, UTILITY TRENCHES, AND DRIVEWAYS, SAWCUTTING FOR JOINTS INVOLVES SAWING
A NARROW, SHALLOW GROOVE IN THE CONCRETE, WHILE SAWCUTTING FOR REMOVALS IS
USUALLY DONE FULL DEPTH THROUGH THE SLAB. WATER IS USED TO CONTROL SAW
BLADE TEMPERATURE AND TO FLUSH THE DETRITUS FROM THE SAWED GROOVE. THE
RESULTING SLURRY OF PROCESS WATER AND FINE PARTICLES AND HIGH pH MUST BE
PROPERLY MANAGED. CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES A NUMBER OF WATER QUALITY PARAMETERS CAN BE AFFECTED BY INTRODUCTION OF CONCRETE FINES. CONCRETE AFFECTS THE pH OF RUNOFF, CAUSING SIGNIFICANT CHEMICAL CHANGES TO WATER BODIES AND HARMING AQUATIC LIFE. SUSPENDED SOLIDS IN THE FORM OF SAW FINES ARE ALSO GENERATED FROM SAWCUTTING OPERATIONS. TARGETED CONSTITUENTS NUTRIENTS TOXIC DESIGN CRITERIA MATERIALS OIL & GREASE DURING SAW CUTTING OPERATIONS, THE SLURRY AND CUTTINGS SHALL BE
CONTINUOUSLY VACUUMED TO CONTROL THE FLOW OF WATER FROM THE OPERATIONS FLOATABLE MATERIALS OTHER CONSTRUCTION THE SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO DRAIN TO THE STORM DRAIN SYSTEM, SWALE, STREAM OR OTHER WATER BODY.

THE SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO REMAIN ON THE PAVEMENT **IMPLEMENTATION** SLURRY DISPOSAL

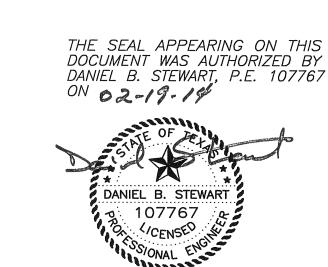
DEVELOP PREDETERMINED, SAFE SLURRY DISPOSAL AREAS.

COLLECTED SLURRY AND CUTTINGS SHALL BE DISCHARGED IN AN AREA PROTECTED BY ONE OR MORE SEDIMENT REMOVAL BMPS AND SHALL BE DONE IN A MANNER THAT DOES NOT RESULT IN A VIOLATION OF GROUNDWATER OR SUFFACE WATER REQUIRMENTS CAPITAL COST MAINTENANCE NEVER DUMP WASTE ILLICITLY OR WITHOUT PROPERTY OWNER'S KNOWLEDGE AND SLURRY MAY BE DISPOSED OF IN FACILITIES DESIGNATED FOR WASHDOWN OF SUITABILITY FOR SLOPES > CONCRETE TRUCKS (SEE M-3, CONCRETE WASTE MANAGEMENT). LEGEND PROJECT PERSONNEL SHOULD INSPECT THE OPERATIONS TO ASSURE THAT OPERATORS ARE DILIGENT IN CONTROLLING THE WATER PRODUCED BY THE SAW CUTTING ACTIVITIES. FOLLOWING OPERATIONS THE PAVEMENT SHOULD BE INSPECTED TO ENSURE THAT WASTE REMOVAL HAS BEEN ADEQUATELY PERFORMED. SIGNIFICANT IMPACT MEDIUM IMPACT O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT M-4





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