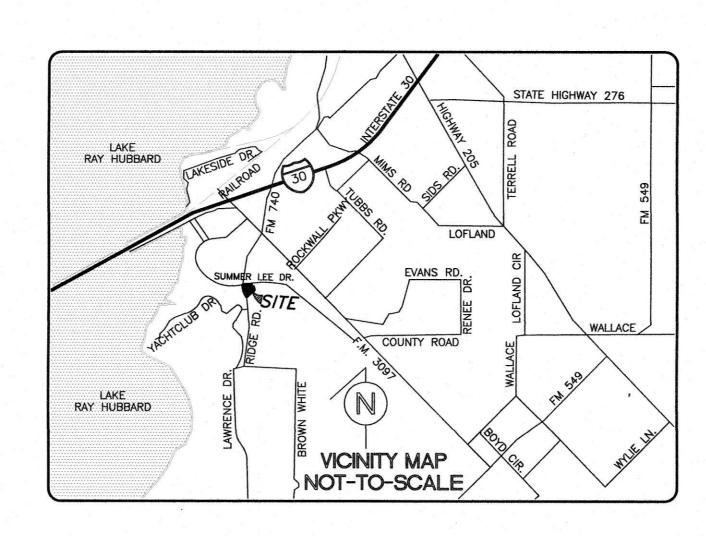
BUILDING EXPANSION PLANS FOR



LOT 1, BLOCK A RIDGE/SUMMER LEE ADDITION S.E.C. RIDGE ROAD (F.M. 740) & SUMMER LEE DRIVE THE CITY OF ROCKWALL, TEXAS

OWNER:
ALDI, INC.
2500 WESTCOURT ROAD
DENTON, TEXAS 76207
(940) 220-5400
CONTACT: CHRIS WARWICK

CIVIL ENGINEER:
BURGER ENGINEERING, LLC
TEXAS REGISTERED ENGINEERING FIRM F-12997
17103 PRESTON ROAD, SUITE 180N
DALLAS, TEXAS 75248
(972) 630-3360
FAX: (972) 630-3380
CONTACT: BRYAN M. BURGER, P.E.



SHEET INDEX

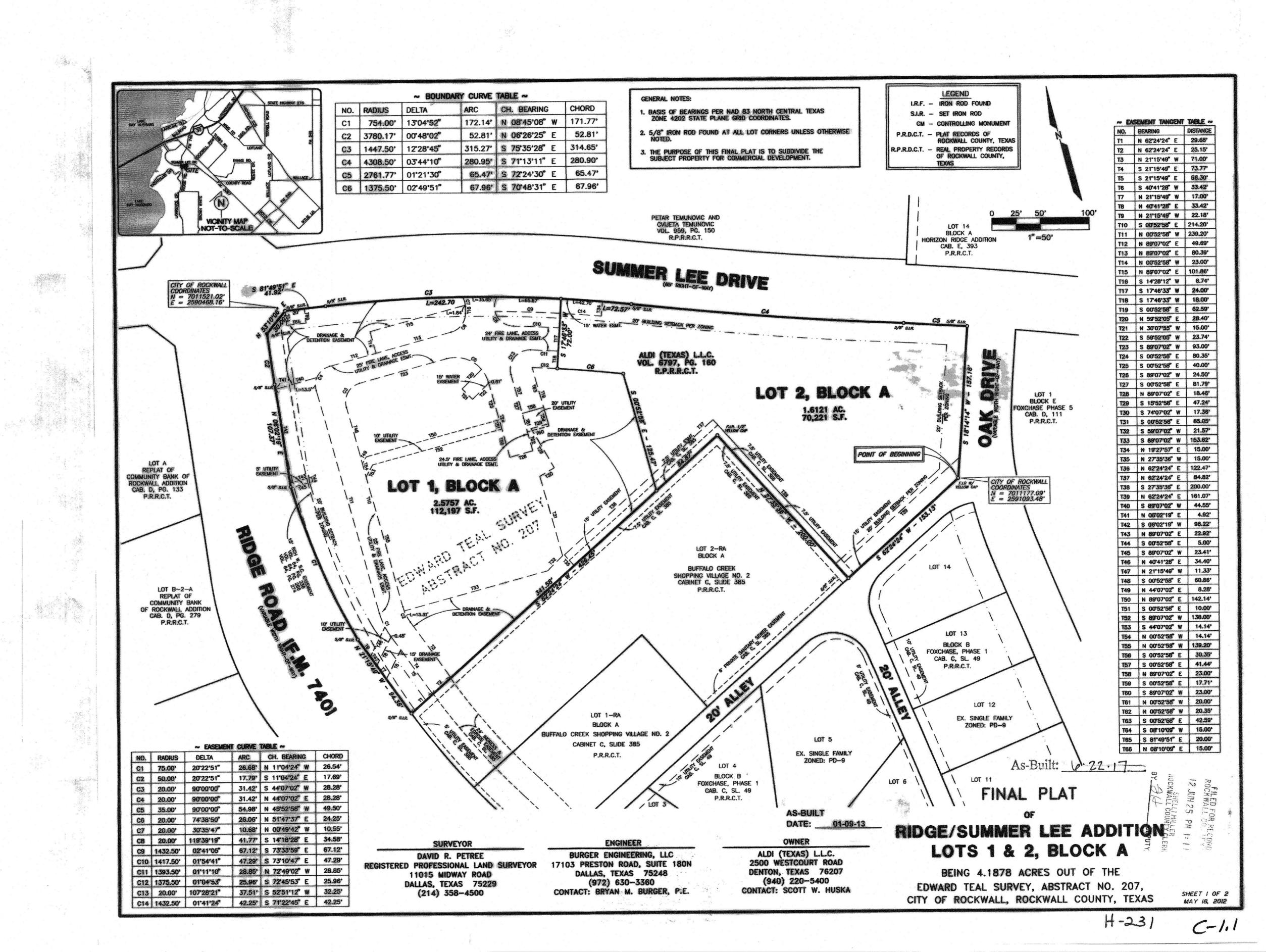
C-1.1 - C-1.2 FINAL PLAT
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LANDSCAPE PLAN



As-Built: 6.22.17



17103 Preston Road, Suite 180N Dallas, Texas 75248 Office: 972.630.3360 Fax: 972.630.3380 TBPE F-12997



OWNER'S CERTIFICATE

COUNTY OF ROCKWAL

7. 14 44

WHEREAS, ALDI (TEXAS) LL.C. IS THE OWNER OF A TRACT OF LAND SITUATED IN THE EDWARD TEAL SURVEY, ABSTRACT NO. 207, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS AND BEING ALL OF A 4.1878 ACRE TRACT OF LAND AS DESCRIBED IN A GENERAL WARRANTY DEED TO ALDI (TEXAS) LL.C., RECORDED IN VOLUME 6797, PAGE 160, OF THE REAL PROPERTY RECORDS OF ROCKWALL COUNTY, TEXAS AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS;

BEGINNING AT A 5/8" IRON ROD WITH YELLOW CAP FOUND FOR CORNER AT THE SOUTHEAST CORNER OF SAID 4.1878 ACRE TRACT, AND BEING AT THE INTERSECTION OF THE WEST RIGHT-OF-WAY LINE OF OAK DRIVE (VARIABLE WIDTH RIGHT-OF-WAY) AND THE NORTHWEST LINE OF A 20 FOOT ALLEY PER PLAT OF FOXCHASE PHASE 1, AN ADDITION TO THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, ACCORDING TO THE PLAT THEREOF RECORDED IN CABINET C AT SLIDE 49 OF THE PLAT RECORDS OF ROCKWALL COUNTY, TEXAS;

THENCE SOUTH 62" 24" WEST AND DEPARTING THE WEST RIGHT-OF-WAY LINE OF SAID OAK DRIVE AND FOLLOWING ALONG THE NORTHWEST RIGHT-OF-WAY LINE OF SAID ALLEY, FOR A DISTANCE OF 153.13 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE EAST CORNER OF LOT 2-RA, BLOCK A OF THE AMENDED PLAT FOR BUFFALO CREEK SHOPPING VILLAGE NO. 2, BEING A REPLAT OF LOT 1, BLOCK A, AN ADDITION TO THE CITY OF ROCKWALL, TEXAS, ACCORDING TO THE PLAT THEREOF RECORDED IN CABINET C AT SLIDE 385, OF THE PLAT RECORDS OF ROCKWALL COUNTY, TEXAS;

THENCE NORTH 27" 35" 36" WEST AND FOLLOWING ALONG THE EASTERLY LINE OF SAID LOT 2-RA, BLOCK A FOR A DISTANCE OF 200.00 FEET TO A 1/2" IRON ROD WITH YELLOW CAP FOUND FOR THE NORTHEAST CORNER OF SAID LOT 2-RA, BLOCK A;

THENCE SOUTH 62" 24" WEST AND FOLLOWING ALONG THE NORTHWEST LINE OF SAID LOT 2-RA, BLOCK A FOR A DISTANCE OF 426.45 FEET TO A 5/8" IRON ROD SET FOR CORNER IN THE EAST RIGHT-OF-WAY LINE OF RIDGE ROAD - F.M. 740 (A VARIABLE WIDTH RIGHT-OF-WAY), AS ESTABLISHED BY DEED CONVEYED TO THE STATE OF TEXAS CALLED 0.1366 ACRES AS RECORDED IN DOCUMENT NUMBER 2009-00411059 OF THE REAL PROPERTY RECORDS OF ROCKWALL COUNTY, TEXAS;

THENCE NORTH 21° 15′ 49" WEST AND FOLLOWING ALONG THE EAST RIGHT OF WAY LINE OF SAID RIDGE ROAD F.M. 740 AS CONVEYED TO THE STATE OF TEXAS AS RECORDED IN DOCUMENT NUMBER 2009-00411059 OF THE
REAL PROPERTY RECORDS OF ROCKWALL COUNTY, TEXAS, FOR A DISTANCE OF 94.36 FEET TO A 5/8" IRON ROD
SET FOR CORNER, SAID POINT BEING THE BEGINNING OF A ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF
754.00 FEET WITH A CENTRAL ANGLE OF 13° 04' 52" AND A CHORD BEARING NORTH 08° 45' 08" WEST AT A

THENCE NORTHWESTERLY ALONG SAID CURVE TO THE RIGHT AND ALONG THE EAST RIGHT-OF-WAY LINE OF SAID RIDGE ROAD - F.M. 740, FOR AN ARC DISTANCE OF 172.14 FEET TO A 5/8" IRON ROD SET FOR CORNER;

THENCE NORTH 06° 02' 19" EAST AND CONTINUING ALONG THE EAST RIGHT-OF-WAY LINE OF SAID RIDGE ROAD + F.M. 740, FOR A DISTANCE OF 107.37 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE BEGINNING OF A CURVE TO THE RIGHT HAVING A RADIUS OF 3780.17 FEET WITH A CENTRAL ANGLE OF 00" 48' 02" AND A CHORD BEARING NORTH 06" 26' 25" EAST AT A DISTANCE OF 52.81 FEET;

THENCE NORTHEASTERLY ALONG SAID CURVE TO THE RIGHT AND FOLLOWING ALONG THE EAST RIGHT-OF-WAY LINE OF SAID RIDGE ROAD - F.M. 740, FOR AN ARC DISTANCE OF 52.61 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE SOUTH END OF A CORNER CLIP FOUND AT THE INTERSECTION OF EAST RIGHT-OF-WAY LINE OF SAID RIDGE ROAD - F.M. 740 AND THE SOUTHWEST RIGHT-OF-WAY LINE OF SUMMER LEE DRIVE AS ESTABLISHED BY RIGHT OF WAY DEED TO THE CITY OF ROCKWALL AS RECORDED IN DOCUMENT NO. 2008-00396193 OF THE REAL PROPERTY RECORDS OF ROCKWALL COUNTY, TEXAS;

THENCE NORTH 53' 10' 06" EAST AND FOLLOWING ALONG SAID CORNER CLIP, FOR A DISTANCE OF 30.00 FEET TO A 5/8" IRON ROD SET FOR CORNER, SAME BEING THE NORTH END OF SAID CORNER CLIP IN THE SOUTHWEST RIGHT-OF-WAY LINE OF SUMMER LEE DRIVE (65 FOOT WIDE);

THENCE SOUTH 81' 49' 51" EAST AND FOLLOWING ALONG THE SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEE DRIVE, FOR A DISTANCE OF 41.92 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE BEGINNING OF A CURVE TO THE RIGHT HAVING A RADIUS OF 1447.50 FEET WITH A CENTRAL ANGLE OF 12" 28' 45" AND A CHORD BEARING SOUTH 75' 35' 28" EAST AT A DISTANCE OF 314.65 FEET;

THENCE SOUTHEASTERLY ALONG SAID CURVE TO THE RIGHT AND FOLLOWING ALONG THE SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEE DRIVE, FOR AN ARC DISTANCE OF 315.27 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE BEGINNING OF A CURVE TO THE LEFT HAVING A RADIUS OF 4308.50 FEET WITH A CENTRAL ANGLE OF 03" 44' 10" AND A CHORD BEARING OF SOUTH 71" 13' 11" EAST AT A DISTANCE OF 280.90

THENCE SOUTHEASTERLY ALONG SAID CURVE TO THE LEFT AND FOLLOWING ALONG THE SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEE DRIVE, FOR AN ARC DISTANCE OF 280.95 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE BEGINNING OF A CURVE TO THE LEFT HAVING A RADIUS OF 2761.77 FEET WITH A CENTRAL ANGLE OF 01" 21" 30" AND A CHORD BEARING OF SOUTH 72" 24" 30" EAST AT A DISTANCE OF 65.47

THENCE SOUTHEASTERLY ALONG SAID CURVE TO THE LEFT AND ALONG THE SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEE DRIVE, FOR AN ARC DISTANCE OF 65.47 FEET TO A 5/8" IRON ROD SET FOR CORNER AT THE INTERSECTION OF SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEE DRIVE AND THE NORTHWEST RIGHT-OF-WAY LINE OF AFOREMENTIONED OAK DRIVE;

THENCE SOUTH 18" 14" 14" WEST AND DEPARTING THE SOUTHWEST RIGHT-OF-WAY LINE OF SAID SUMMER LEEDRIVE AND FOLLOWING ALONG THE NORTHWEST RIGHT-OF-WAY LINE OF AFOREMENTIONED OAK DRIVE, FOR A DISTANCE OF 157.16 FEET TO THE POINT OF BEGINNING AND CONTAINING WITHIN THESE METES AND BOUNDS, 4.1878 ACRES OR 182,419 SQUARE FEET OF LAND, MORE OR LESS.

OWNER'S DEDICATION

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 RIDGE/SUMMER LEE 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 RIDGE/SUMMER LEE ADDITION HAVE BEEN NOTIFIED AND SIGNED THIS PLAT.

WE UNDERSTAND AND DO HEREBY RESERVE THE EASEMENT STRIPS SHOWN ON THIS PLAT FOR THE PURPOSE STATED AND FOR THE MUTUAL USE AND ACCOMMODATION OF ALL UTILITIES DESIRING TO USE OR USING SAME. 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 OF 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, FORM AND UPON THE SAID EASEMENT STRIPS FOR PURPOSE OF CONSTRUCTION, RECONSTRUCTION, INSPECTING, PATROLLING, MAINTAINING, AND EITHER ADDING TO OR REMOVING ALL OF PART OF THEIR RESPECTIVE SYSTEM WITHOUT THE NECESSITY OF, AT ANY TIME, PROCURING THE PERMISSION OF ANYONE.
- 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 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; WE, OUR SUCCESSORS AND ASSIGNS HEREBY WAIVE ANY CLAIM, DAMAGE, OR CAUSE OF ACTION THAT WE MAY HAVE AS A RESULT OF THE DEDICATION OF EXACTIONS MADE HEREIN.

WITNESS, MY HAND AT DECTED, TEXAS, THIS THE 29 DAY OF MOY ... 2012

ALDI (TEXAS), LLC.
A TEXAS LIMITED LIABILITY COMPANY

BY: ALDI INC. (PENNSYLVANIA), A PENNSYLVANIA CORPORATION, ITS: SOLE MEMBER

NAME: SCOTT W. HUSKA
TITLE: VICE PRESIDENT

SURVEYOR'S STATEMENT

MAN ALL MEN BY THE PARTY

THAT I, DAVID R. PETREE, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL SURVEY OF LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PLACED UNDER MY PERSONAL SUPERVISION.

DATED THIS THE 28 TH DAY OF MAY 2012

David R. Patra

DAVID R. PETREE, R.P.L.S. REGISTERED PROFESSIONAL LAND SURVEYOR NO. 1890

STATE OF TEXAS COUNTY OF DALLAS

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED DAVID R. PETREE, 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 22 DAY OF WAY , 201

NOTARY PUBLIC IN ANIL FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES

RECOMMENDED FOR FINAL APPROVAL

PLANNING AND ZONING COMMISSION

DATE

APPROVED

I HEREBY CERTIFY THAT THE ABOVE AND FORGOING PLAT OF AND ADDITION TO THE CITY OF ROCKWALL ON THE 222 DAY OF APEC 2 , 2012.

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) DAY FROM SAID DATE OF FINAL APPROVAL.

WITNESS OUR HANDS, THIS 20 DAY OF JUNE 2011

MAYOR, CITY OF ROCKWALL PRINTS CITY ENGINEER

MET OCKWALL

MAYOR, CITY OF ROCKWALL

MAYOR, CANANA CONTROL

MAYOR, CITY OF ROCKWALL

MAYOR, CITY OF ROCKWALL

MAYOR, CITY OF ROCKWALL

MAYOR, CONTROL

MAYOR, CONTROL

MAYOR,

OWNER

ALDI (TEXAS) L.L.C.
2500 WESTCOURT ROAD
DENTON, TEXAS 76207
(940) 220-5400
CONTACT: SCOTT W. HUSKA

BURGER ENGINEERING, LLC
17103 PRESTON ROAD, SUITE 180N
DALLAS, TEXAS 75248
(972) 630-3360
CONTACT: BRYAN M. BURGER, P.E.

DAVID R. PETREE
REGISTERED PROFESSIONAL LAND SURVEYOR
11015 MIDWAY ROAD
DALLAS, TEXAS 75229
(214) 358-4500

As-Built: 6.22-17

STATE OF TEXAS

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED SCOTT W. HUSKA, 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.

- TRIBUNE + GERK

Transpropries State of Texa May Currentesion Expires

GIVEN UPON MY HAND AND SEAL OF OFFICE THIS 29 DAY OF MOY 2013

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

4-17-13 MY COMMISSION EXPIRES

ATE: 01-09-13

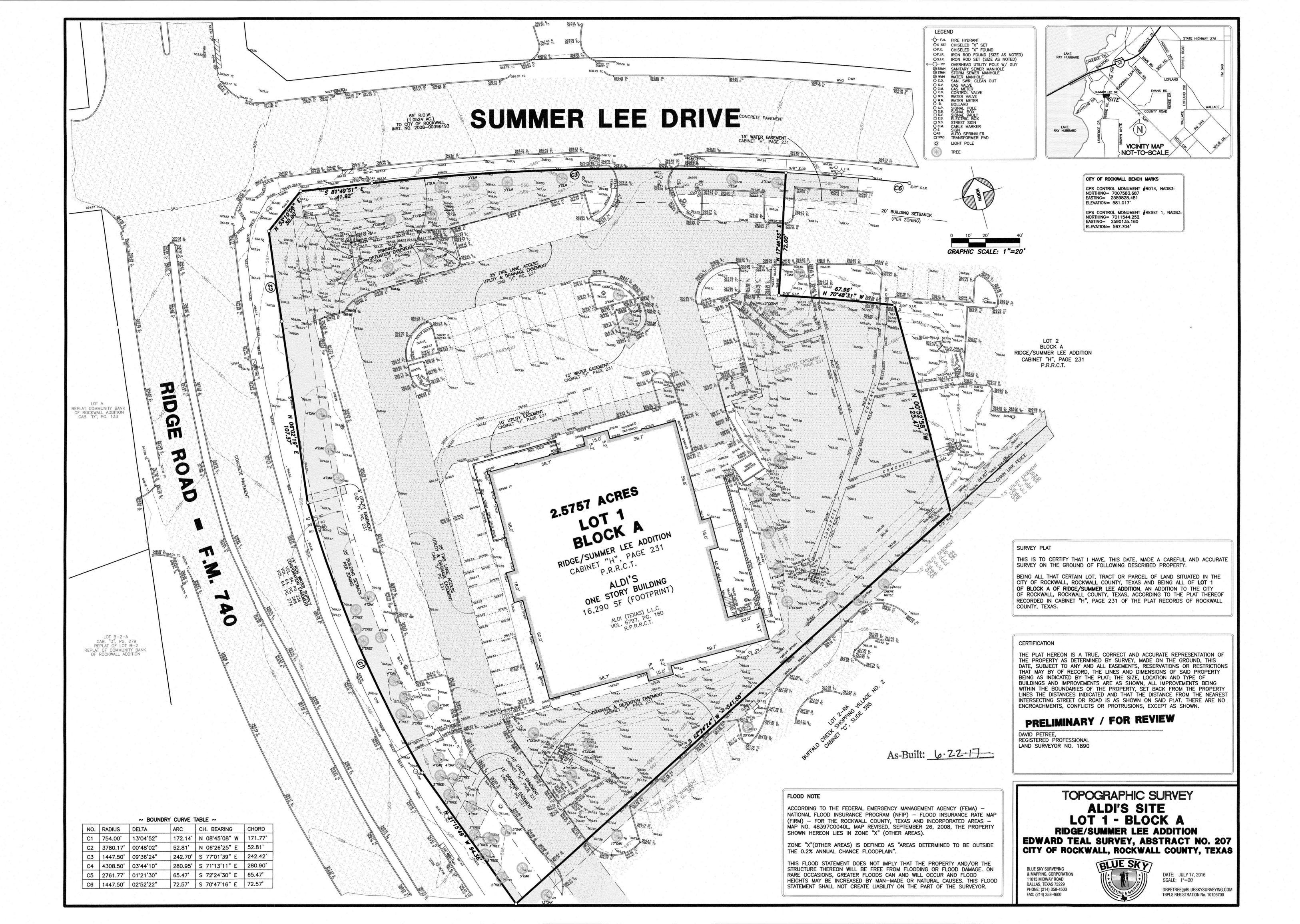
FINAL PLAT

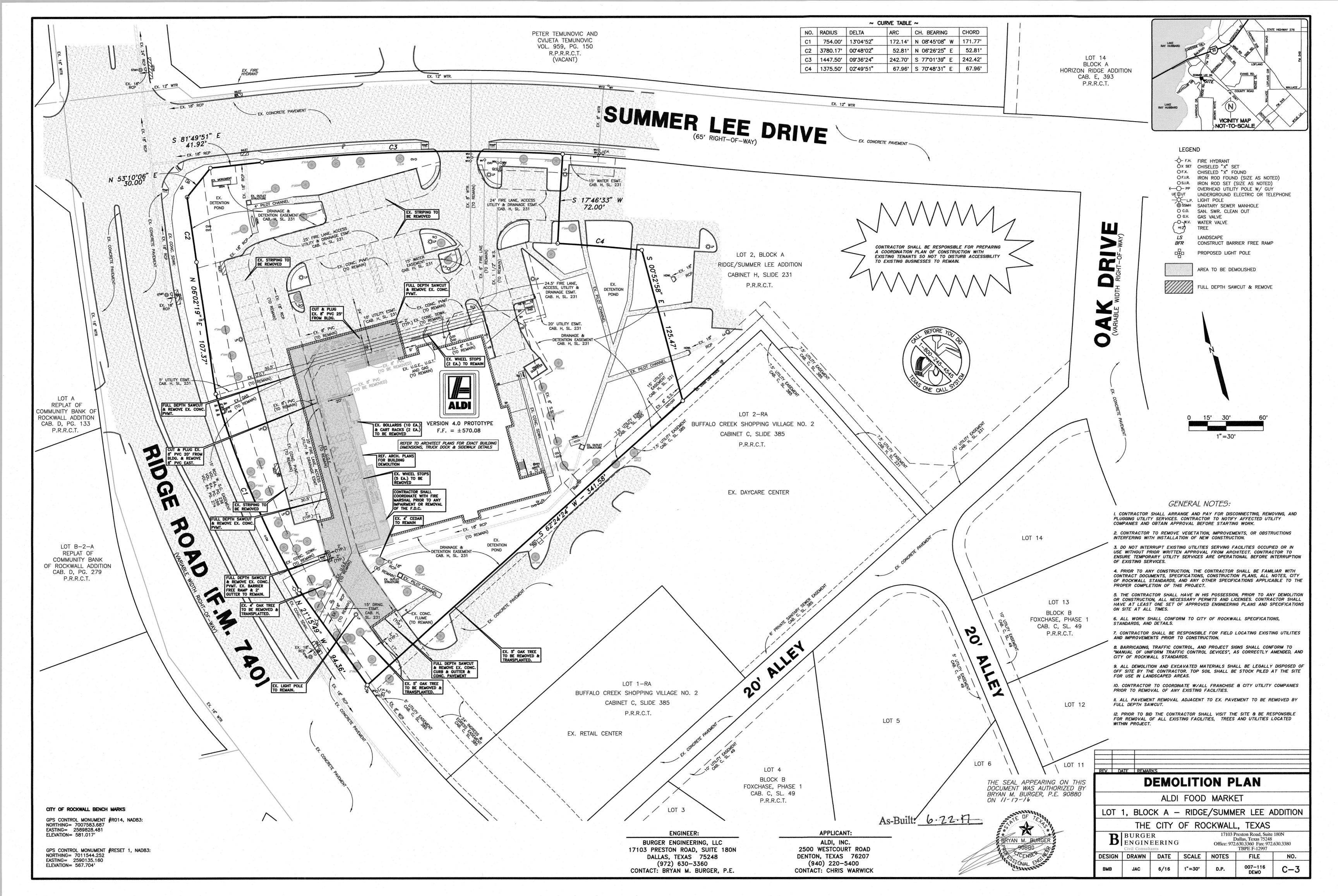
RIDGE/SUMMER LEE ADDITION LOTS 1 & 2, BLOCK A

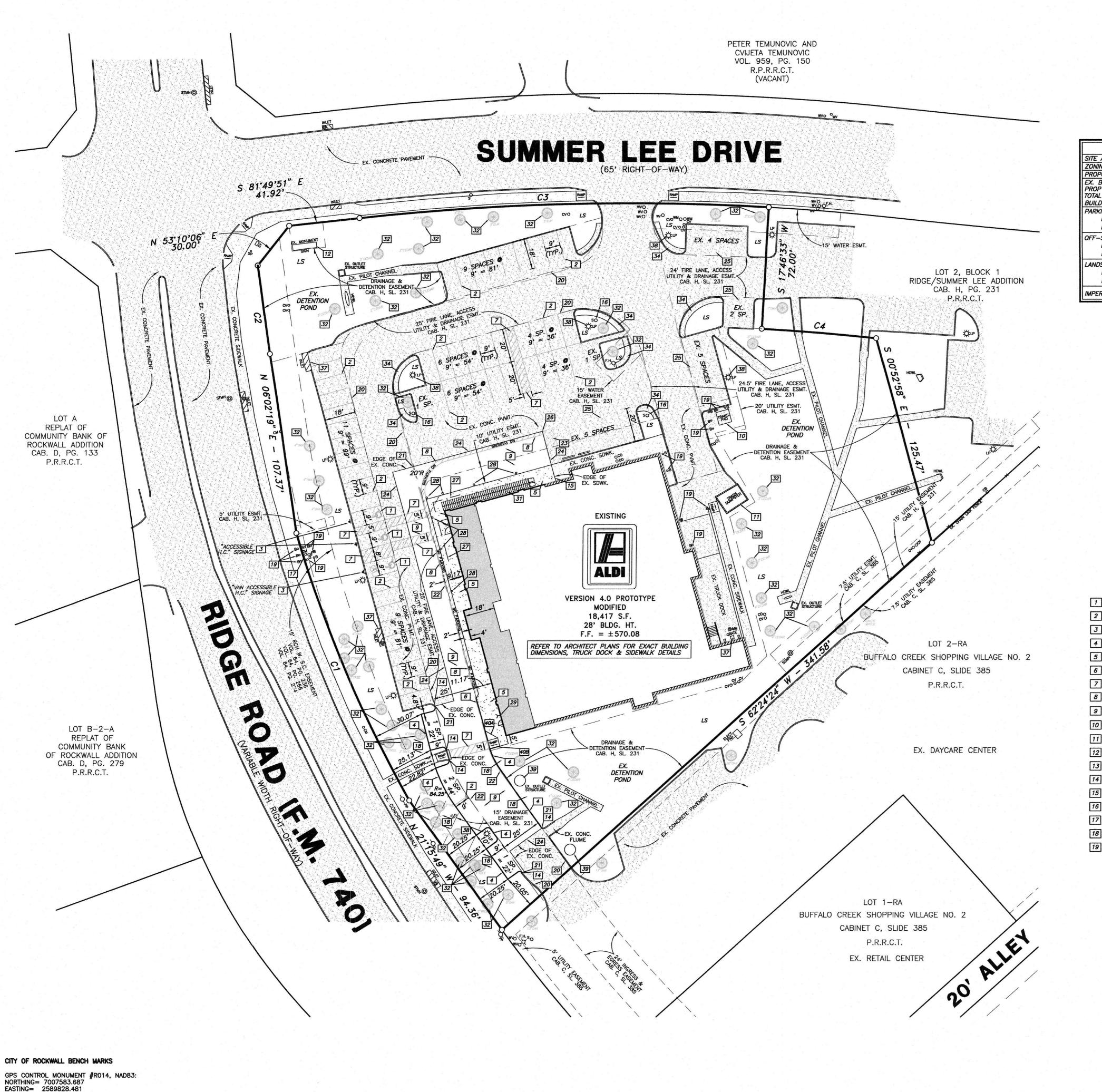
BEING 4.1878 ACRES OUT OF THE EDWARD TEAL SURVEY, ABSTRACT NO. 207, CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 2 OF 2 MAY 18, 2012

LL - 7 2 5 C-1. 2



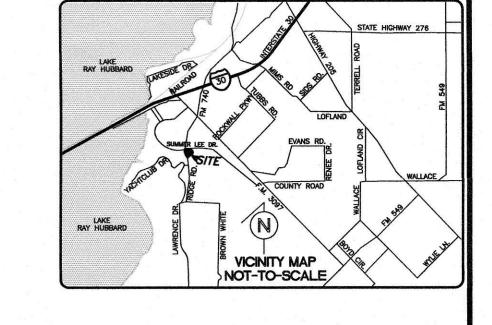




~ CURVE TABLE ~

| NO. | RADIUS | DELTA | ARC | CH. BEARING | CHORD | |
|-----|----------|-----------|---------|---------------|---------|--|
| C1 | 754.00' | 13°04'52" | 172.14' | N 08'45'08" W | 171.77' | |
| C2 | 3780.17' | 00'48'02" | 52.81' | N 06'26'25" E | 52.81' | |
| С3 | 1447.50' | 09'36'24" | 242.70' | S 77"01'39" E | 242.42' | |
| C4 | 1375.50' | 02°49'51" | 67.96' | S 70°48'31" E | 67.96' | |

| LOT 1, BLOCK | A - SITE DATA |
|---|--|
| SITE AREA: | 2.5757 AC. (112,197 S.F.) |
| ZONING DISTRICT: | GENERAL RETAIL (GR) |
| PROPOSED USE: | GROCERY STORE |
| EX. BUILDING AREA: PROP BUILDING EXPANSION: TOTAL NEW BUILDING AREA: BUILDING HEIGHT: | 15,945 S.F. 2,472 S.F. 18,417 S.F. 28' (SINGLE STORY) |
| PARKING: REQUIRED: 1 SPACE/250 SF OF BUILDING AREA PROVIDED: | 74 74 (3 H.C.) |
| OFF—STREET LOADING: REQUIRED: PROVIDED: | 1 1 |
| LANDSCAPE AREA: REQUIRED: PROVIDED: | 16,830 S.F. (15%) 45,629 S.F. (40.67%) |
| IMPERVIOUS AREA: | 66,568 S.F. (59.33%) |



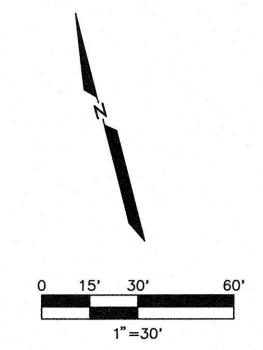
LEGEND

- F.H. FIRE HYDRANT OX SET CHISELED "X" SET OF.X. CHISELED "X" FOUND OF.I.R. IRON ROD FOUND (SIZE AS NOTED)

OS.I.R. IRON ROD SET (SIZE AS NOTED) ← O- PP OVERHEAD UTILITY POLE W/ GUY UE ФUT UNDERGROUND ELECTRIC OF LP. LIGHT POLE SANITARY SEWER MANHOLE UNDERGROUND ELECTRIC OR TELEPHONE

O c.o. SAN. SWR. CLEAN OUT O G.V. GAS VALVE
O_W.V. WATER VALVE
o12) TREE

LANDSCAPE



PROJECT NOTES:

- . ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- TOPOGRAPHIC BOUNDARY SURVEY, INCLUDING PROPERTY LINE, LEGAL DESCRIPTION, EXISTING UTILITIES, SITE TOPOGRAPHY WITH SPOT ELEVATIONS, OUTSTANDING PHYSICAL FEATURES AND EXISTING STRUCTURE LOCATIONS WAS PROVIDED BY:
- BLUE SKY SURVEYING & MAPPING, CORPORATION 11015 MIDWAY ROAD DALLAS, TEXAS 75229 (214) 358-4500
- REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS, SIDEWALK & RAMPING BETWEEN CURB & BUILDING.
- 4. ALL RADII ARE 2' UNLESS OTHERWISE NOTED.
- COORDINATE & CONFIRM ALL BUILDING DIMENSIONS WITH ARCHITECTURAL PLANS.
- 6. REFERENCE FINAL PLAT FOR ALL PROPERTY LINE INFORMATION.
- 7. NO TREES TO BE PLANTED WITHIN 5' OF ANY UTILITIES.

LAYOUT NOTES

- PAINTED HANDICAP PARKING SYMBOL
- PARKING STALLS / 4" PAINTED STRIPE (YELLOW 2 COATS)
- DIRECTIONAL SIGNAGE
- INTEGRAL CONCRETE CURB
- TYPICAL BUILDING SIDEWALK (REF. ARCH. PLANS FOR DETAILS)
- TURN DOWN CURB
- STRIPING W/ "NO PARKING" WORDS
- CONCRETE PAVEMENT
- EX. PAD MOUNTED TRANSFORMER
- DUMPSTER / STORAGE AREA W/SCREENING
- EX. MONUMENT SIGN
- EX. PYLON SIGN (NOT USED)
- MATCH LOCATION & ELEVATION OF EX. CONCRETE CURB
- MATCH EX. CONCRETE SIDEWALK
- EX. DIRECTIONAL SIGNAGE
- EX. GAS METER
- ADJUST EX. LANDSCAPING & IRRIGATION (REF. LANDSCAPE PLAN) EX. PIPE BOLLARD

- EX. FIRE LANE STRIPING
- MATCH EX. FIRE LANE STRIPE
- FIRE LANE STRIPING
- EX. STRIPING MATCH EX. CONCRETE PAVEMENT
- EX. PAINTED STRIPE
- MATCH EX. STRIPING PROP. CANOPY (REF. ARCH. PLANS FOR DETAILS)
- PROP. PIPE BOLLARD (REF. ARCH. PLANS FOR DETAILS)
- PROP. F.D.C. LOCATION
- END CURB @ BUILDING (NOT USED)
- PROP. CART STORAGE AREA (REF. ARCH. PLANS FOR DETAILS)
- EX. TREE TO REMAIN
- RADIUS PROTECTION (NOT USED)
- EX. RADIUS PROTECTION / CONC. STEP OUT
- 1' CURB OPENING (NOT USED) CURB TURN DOWN (NOT USED)
- EX. LIGHT POLE
- RELOCATED OAK TREE
- CURBED RAMP "A" FLARED SIDES "B" SHORT FLARED SIDES



As-Built: 6.22.17



SITE PLAN ALDI FOOD MARKET

LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION THE CITY OF ROCKWALL, TEXAS

17103 Preston Road, Suite 180N Dallas, Texas 75248 B BURGER ENGINEERING Office: 972.630.3360 Fax: 972.630.3380 TBPE F-12997 DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. 007-116 SITE PLAN JAC 6/16 1"=30" D.P.

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 ON 11-17-16

APPLICANT: ALDI, INC. 2500 WESTCOURT ROAD DENTON, TEXAS 76207 (940) 220-5400 CONTACT: CHRIS WARWICK

ENGINEER:

BURGER ENGINEERING, LLC

17103 PRESTON ROAD, SUITE 180N

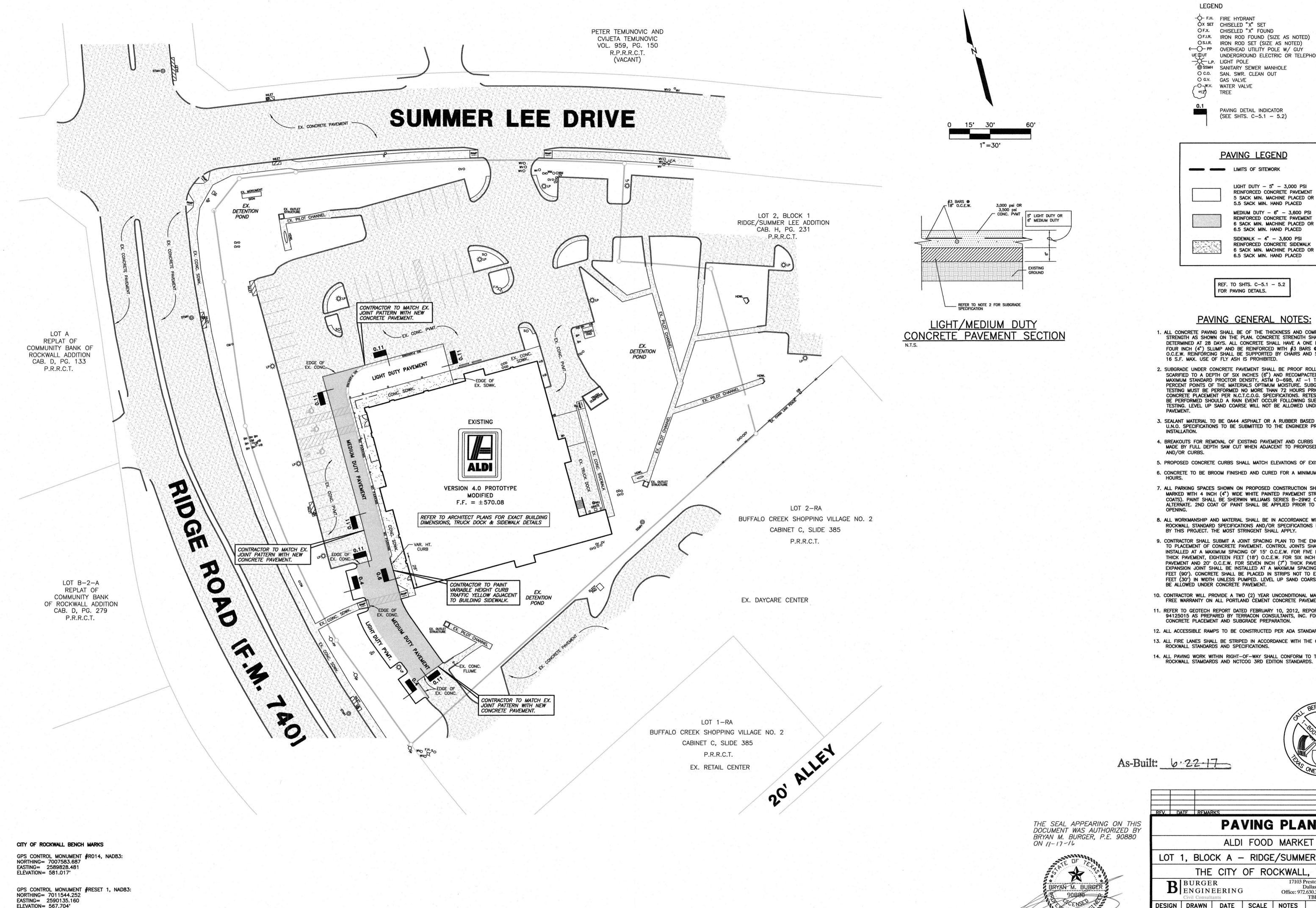
DALLAS, TEXAS 75248

(972) 630-3360

CONTACT: BRYAN M. BURGER, P.E.

GPS CONTROL MONUMENT #RESET 1, NAD83: NORTHING= 7011544.252 EASTING= 2590135.160 ELEVATION= 567.704'

ELEVATION= 581.017'



-O- F.H. FIRE HYDRANT OX SET CHISELED "X" SET OF.X. CHISELED "X" FOUND OF.I.R. IRON ROD FOUND (SIZE AS NOTED) OS.I.R. IRON ROD SET (SIZE AS NOTED) ← O- PP OVERHEAD UTILITY POLE W/ GUY UNDERGROUND ELECTRIC OR TELEPHONE

UE HUT UNDERGROUND ELECTRIC OF LP. LIGHT POLE

SSMH SANITARY SEWER MANHOLE O c.o. SAN. SWR. CLEAN OUT

PAVING DETAIL INDICATOR (SEE SHTS. C-5.1 - 5.2)

PAVING LEGEND

MEDIUM DUTY - 6" - 3,600 PSI REINFORCED CONCRETE PAVEMENT 6 SACK MIN. MACHINE PLACED OR 6.5 SACK MIN. HAND PLACED

SIDEWALK - 4" - 3,600 PSI REINFORCED CONCRETE SIDEWALK 6 SACK MIN. MACHINE PLACED OR 6.5 SACK MIN. HAND PLACED

REF. TO SHTS. C-5.1 - 5.2 FOR PAVING DETAILS.

PAVING GENERAL NOTES:

- 1. ALL CONCRETE PAVING SHALL BE OF THE THICKNESS AND COMPRESSIVE STRENGTH AS SHOWN ON THE PLAN. CONCRETE STRENGTH SHALL BE DETERMINED AT 28 DAYS. ALL CONCRETE SHALL HAVE A ONE INCH (1") TO FOUR INCH (4") SLUMP AND BE REINFORCED WITH #3 BARS @ 18" O.C.E.W. REINFÓRCING SHALL BE SUPPORTED BY CHAIRS AND SPACED AT
- 2. SUBGRADE UNDER CONCRETE PAVEMENT SHALL BE PROOF ROLLED & SCARIFIED TO A DEPTH OF SIX INCHES (6") AND RECOMPACTED TO 95% MAXIMUM STANDARD PROCTOR DENSITY, ASTM D-698, AT -1 TO +3 PERCENT POINTS OF THE MATERIALS OPTIMUM MOISTURE. SUBGRADE TESTING MUST BE PERFORMED NO MORE THAN 72 HOURS PRIOR TO CONCRETE PLACEMENT PER N.C.T.C.O.G. SPECIFICATIONS. RETESTING MUST BE PERFORMED SHOULD A RAIN EVENT OCCUR FOLLOWING SUBGRADE TESTING. LEVEL UP SAND COARSE WILL NOT BE ALLOWED UNDER CONCRETE
- 3. SEALANT MATERIAL TO BE 0A44 ASPHALT OR A RUBBER BASED COMPOUND, U.N.O. SPECIFICATIONS TO BE SUBMITTED TO THE ENGINEER PRIOR TO
- 4. BREAKOUTS FOR REMOVAL OF EXISTING PAVEMENT AND CURBS SHALL BE MADE BY FULL DEPTH SAW CUT WHEN ADJACENT TO PROPOSED PAVING
- 5. PROPOSED CONCRETE CURBS SHALL MATCH ELEVATIONS OF EXISTING CURB. 6. CONCRETE TO BE BROOM FINISHED AND CURED FOR A MINIMUM OF 72
- 7. ALL PARKING SPACES SHOWN ON PROPOSED CONSTRUCTION SHALL BE
- MARKED WITH 4 INCH (4") WIDE WHITE PAINTED PAVEMENT STRIPING (2 COATS). PAINT SHALL BE SHERWIN WILLIAMS SERIES B-29W2 OR APPROVED ALTERNATE. 2ND COAT OF PAINT SHALL BE APPLIED PRIOR TO STORE
- 8. ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH CITY OF ROCKWALL STANDARD SPECIFICATIONS AND/OR SPECIFICATIONS ESTABLISHED BY THIS PROJECT. THE MOST STRINGENT SHALL APPLY.
- 9. CONTRACTOR SHALL SUBMIT A JOINT SPACING PLAN TO THE ENGINEER PRIOR TO PLACEMENT OF CONCRETE PAVEMENT. CONTROL JOINTS SHALL BE INSTALLED AT A MAXIMUM SPACING OF 15' O.C.E.W. FOR FIVE INCH (5") THICK PAVEMENT, EIGHTEEN FEET (18') O.C.E.W. FOR SIX INCH (6") THICK PAVEMENT AND 20' O.C.E.W. FOR SEVEN INCH (7") THICK PAVEMENT. EXPANSION JOINT SHALL BE INSTALLED AT A MAXIMUM SPACING OF NINETY FEET (90'). CONCRETE SHALL BE PLACED IN STRIPS NOT TO EXCEED 30 FEET (30') IN WIDTH UNLESS PUMPED. LEVEL UP SAND COARSE WILL NOT
- 10. CONTRACTOR WILL PROVIDE A TWO (2) YEAR UNCONDITIONAL MAINTENANCE FREE WARRANTY ON ALL PORTLAND CEMENT CONCRETE PAVEMENT.
- 11. REFER TO GEOTECH REPORT DATED FEBRUARY 10, 2012, REPORT NO. 94125015 AS PREPARED BY TERRACON CONSULTANTS, INC. FOR ADDITIONAL CONCRETE PLACEMENT AND SUBGRADE PREPARATION.
- 12. ALL ACCESSIBLE RAMPS TO BE CONSTRUCTED PER ADA STANDARDS.
- 13. ALL FIRE LANES SHALL BE STRIPED IN ACCORDANCE WITH THE CITY OF
- 14. ALL PAVING WORK WITHIN RIGHT-OF-WAY SHALL CONFORM TO THE CITY OF ROCKWALL STAMDARDS AND NCTCOG 3RD EDITION STANDARDS.



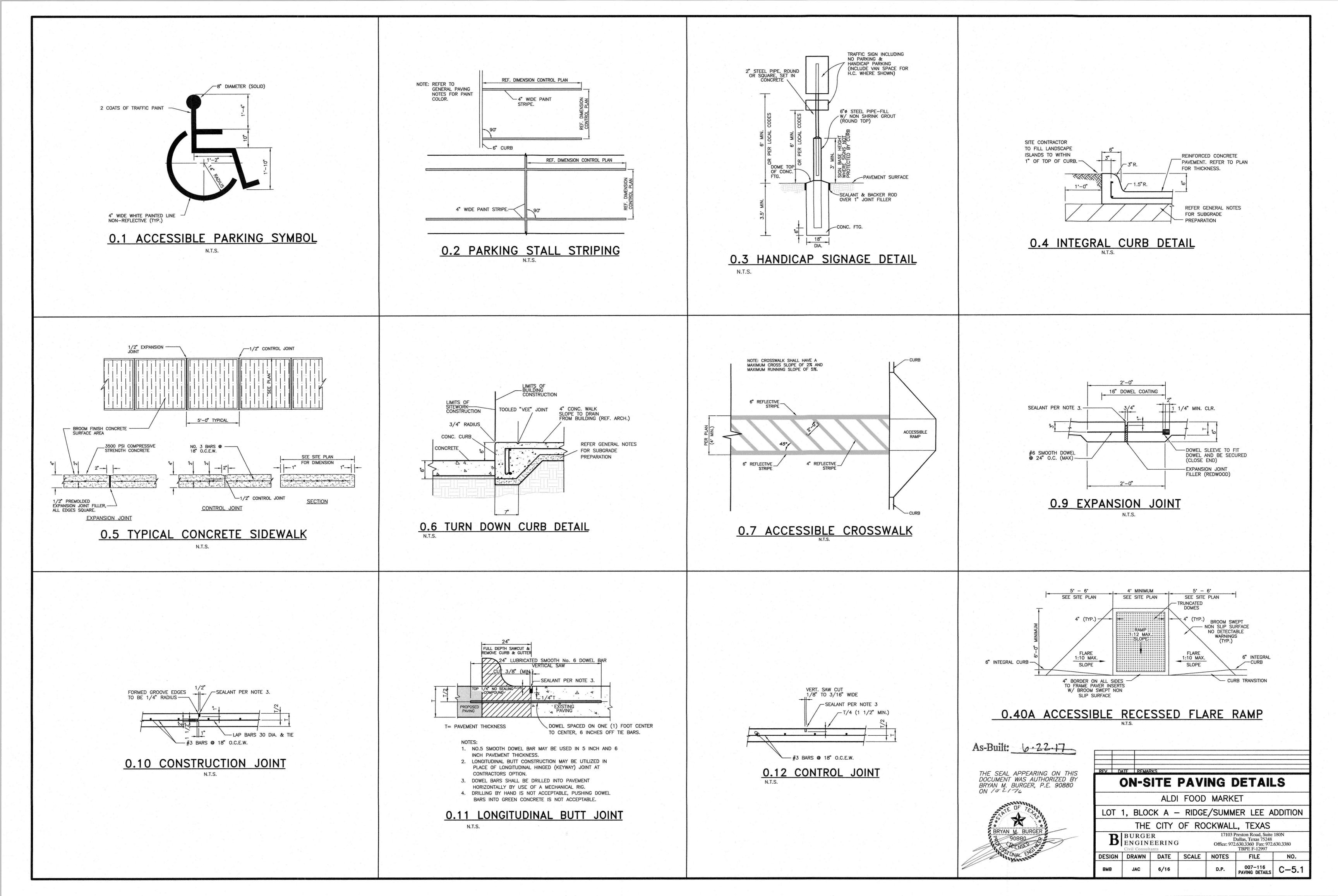
PAVING PLAN

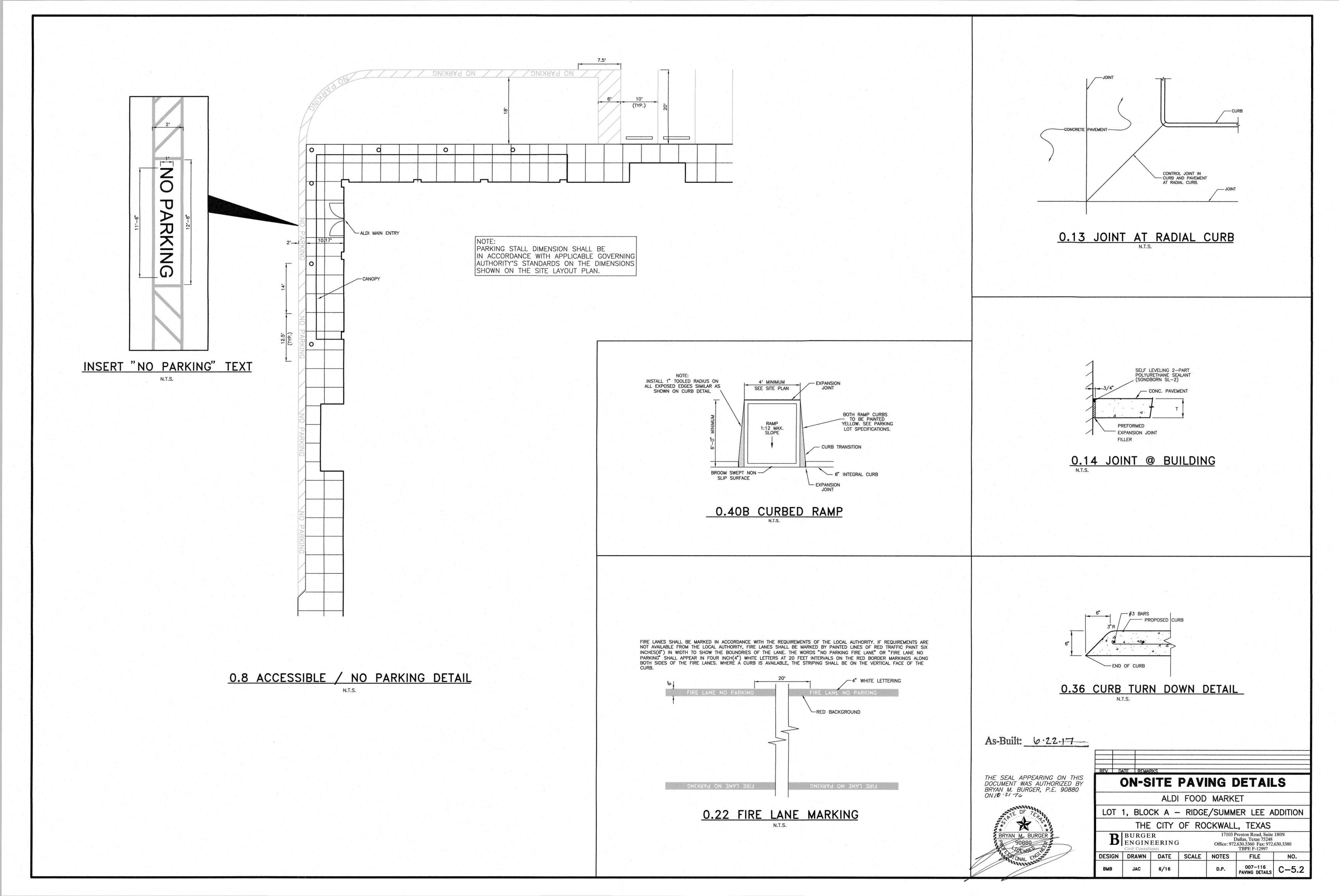
ALDI FOOD MARKET

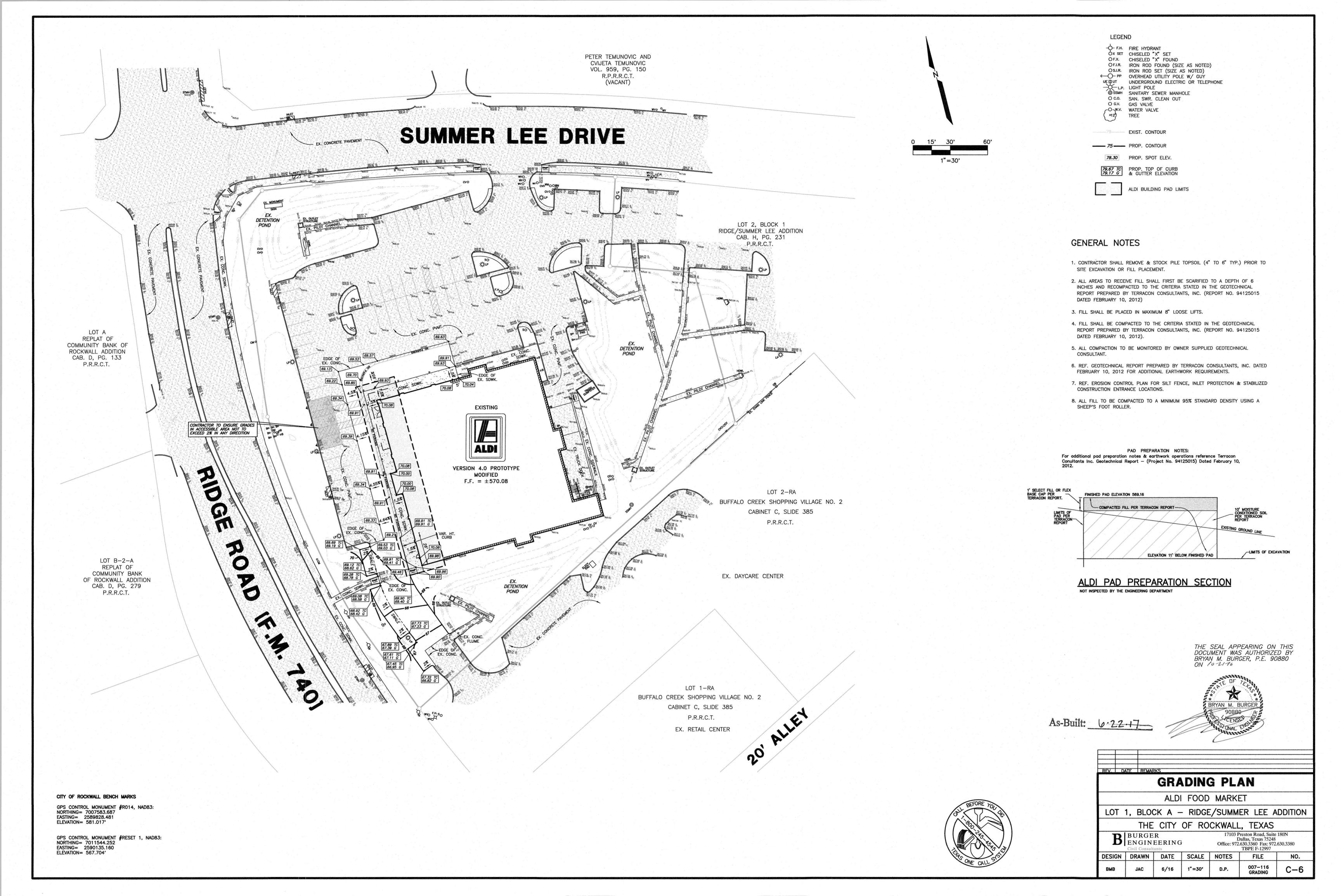
LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION

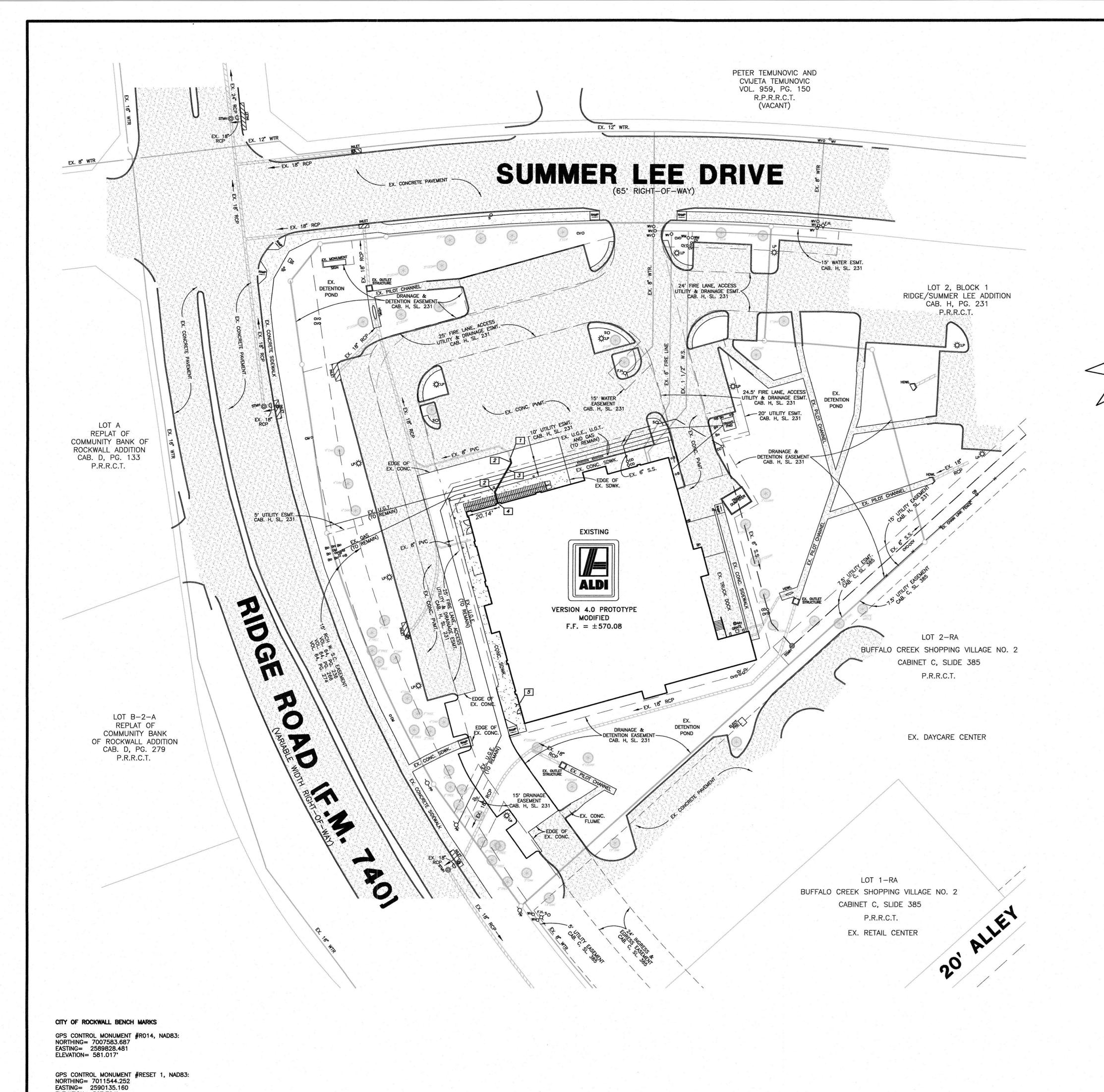
| | THE | CITY | OF | ROCKWALL, | TEXAS |
|--------|-----|------|----|--------------------------------|--------------|
| BURGER | | | | 17103 Preston Road, Suite 1801 | |

Office: 972.630.3360 Fax: 972.630.3380 DESIGN | DRAWN | DATE | SCALE | NOTES | FILE NO. 007-116 PAVING 1"=30" JAC 6/16 D.P.









ELEVATION= 567.704'



CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING A COORDINATION PLAN OF CONSTRUCTION WITH EXISTING TENANTS SO NOT TO DISTURB ACCESSIBILITY

LAYOUT NOTES

F.D.C. LOCATION

REMOVE EX. 8" PLUG & CONNECT TO EX. 8" PVC

FL 8" PVC = 665.60 (VERIFY)

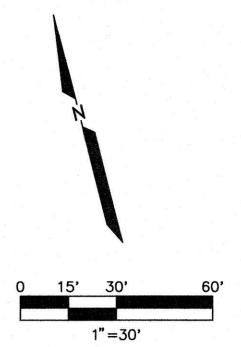
TO EXISTING BUSINESSES TO REMAIN.

- F.H. FIRE HYDRANT OX SET CHISELED "X" SET OF.X. CHISELED "X" FOUND

OF.I.R. IRON ROD FOUND (SIZE AS NOTED) OS.I.R. IRON ROD SET (SIZE AS NOTED) ← O- PP OVERHEAD UTILITY POLE W/ GUY

UE TUT UNDERGROUND ELECTRIC OR TELEPHONE
LP. LIGHT POLE SSMH SANITARY SEWER MANHOLE O C.O. SAN. SWR. CLEAN OUT

O G.V. GAS VALVE Owv. WATER VALVE TREE



DRAINAGE GENERAL NOTES

- 1. ALL WORK, UNLESS OTHERWISE NOTED, SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.
- 2. THE HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING SUBSURFACE UTILITIES HAVE BEEN DETERMINED FROM DATA RECORDED BY OTHERS. CONTRACTOR SHALL VERIFY THAT NECESSARY CROSSING CLEARANCES BETWEEN EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION OF ANY SUCH CROSSING.
- 3. CONTRACTOR SHALL COORDINATE WITH THE OWNER, ENGINEER, OR HIS REPRESENTATIVE AND CITY REPRESENTATIVE REGARDING ANY DEVIATIONS FROM
- 4. CONTRACTOR SHALL MAINTAIN ONE SET OF RECORD DRAWINGS (AS BUILT) ON SITE WHICH WILL BE SUBMITTED TO THE ENGINEER UPON COMPLETION OF THIS
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT; ALL MANHOLES, CLEANOUTS, VALVE BOXES, FIRE HYDRANTS, SEWER LATERALS, WATER SERVICE, ETC.
- 6. THE CONTRACTOR SHALL SET UTILITIES TO PROPER LINE AND GRADE PRIOR TO THE PLACING OF PERMANENT PAVEMENT.
- 7. ALL STORM SEWER PIPE SHALL CONFORM TO CITY SPECIFICATIONS AND SHALL BE MANUFACTURED FROM ONE OF THE FOLLOWING MATERIALS:

a. CLASS III RCP UNLESS OTHERWISE NOTED

18"-60"

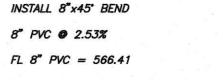
Diameter

b. SDR 35 PVC

RCP PIPE UNLESS OTHERWISE NOTED.

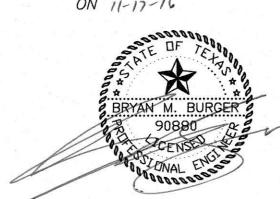
8"-15" 8. ANY PIPE LOCATED WITHIN THE RIGHT-OF-WAY OR IN AN EASEMENT WILL BE

- 9. ALL STORM PIPES ARE PRIVATE EXCEPT THOSE SHOWN IN CITY & STATE R.O.W.
- 10. ALL RCP PIPE INSTALLATION SHALL CONFORM TO THE AMERICAN CONCRETE PIPE ASSOCIATION INSTALLATION MANUAL.
- 11. RADIAL RCP PIPE IS REQUIRED FOR ALL CURVES. NO PULLED JOINTS ARE





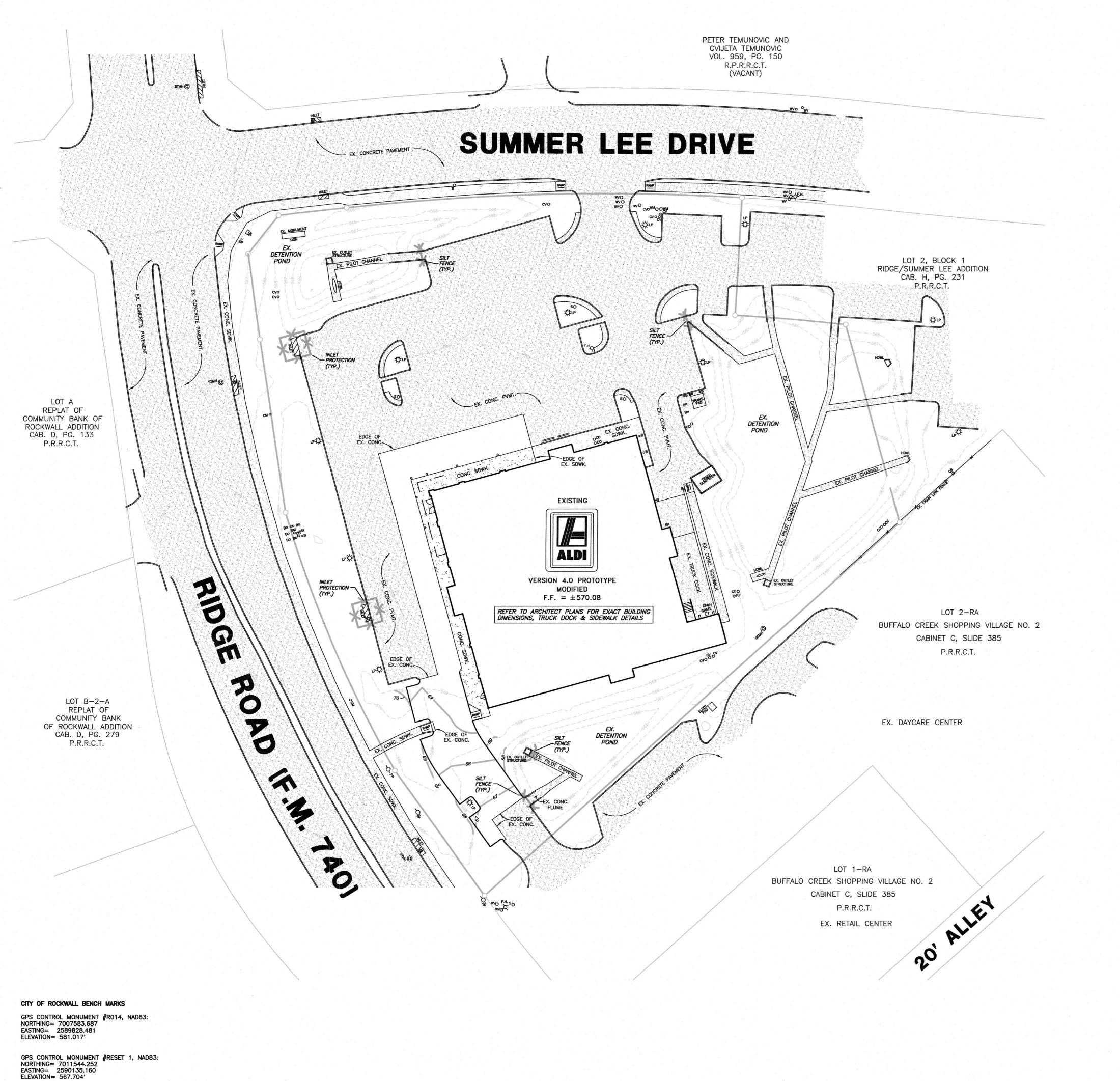
THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (WHETHER SHOWN ON PLANS OR NOT) PRIOR TO COMMENCING CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON THE PLANS THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 ON 11-17-16

As-Built: 6.22-17

UTILITY PLAN ALDI FOOD MARKET LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N Dallas, Texas 75248 Office: 972.630.3360 Fax: 972.630.3380 TBPE F-12997 **D** BURGER Bengineering DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. 007-116 UTILITY JAC 6/16 1"=30' D.P.





0 15' 30'

OF.X. CHISELED "X" SET

OF.I.R. IRON ROD FOUND (SIZE AS NOTED)
OS.I.R. IRON ROD SET (SIZE AS NOTED)
OVERHEAD UTILITY POLE W/ GUY
UNDERGROUND ELECTRIC OR TELEPHO

UE TUT UNDERGROUND ELECTRIC OR TELEPHONE

LP. LIGHT POLE

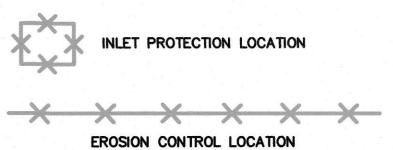
SANITARY SEWER MANHOLE

O C.O. SAN. SWR. CLEAN OUT

O G.V. GAS VALVE

Owv. WATER VALVE 12) TREE

----79 EXIST. CONTOUR



REFER TO SHEET C-8.1 & 8.2 FOR EROSION CONTROL DETAILS.

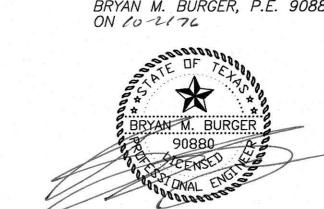
EROSION CONTROL GENERAL NOTES

- I. GENERAL CONTRACTOR AND OWNER ARE RESPONSIBLE FOR PREVENTING THE FLOW OR OFF-SITE TRACKING OF SEDIMENT AND OTHER POLLUTANTS TO EXISTING STREETS AND ADJACENT PROPERTIES.
- 2. ALL POINTS USED AS AN EXIT FROM AREAS OF EXPOSED SOIL MUST HAVE A ROCK STABILIZED CONSTRUCTION ENTRY/EXIT FIFTY FEET (50') IN LENGTH WITH THREE INCH (3") DIAMETER STONE COVER. GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS POINTS AND PREVENTING EXIT AT UNPROTECTED LOCATIONS.
- 3. IF "SUMP" PUMPS ARE USED TO REMOVE WATER FROM EXCAVATED AREAS, FILTER THE DISCHARGE TO REMOVE SEDIMENT AND OTHER POLLUTANTS BEFORE THE WATER LEAVES THE SITE.
- 4. PERIMETER EROSION CONTROL MEASURES AND THE ROCK STABILIZED CONSTRUCTION EXIT MUST BE IN PLACE BEFORE STARTING SOIL DISTURBANCE
- 5. DISTURBED SOIL MUST BE STABILIZED WITHIN 14 DAYS IN AREAS WHERE GRADING IS TEMPORARILY OR PERMANENTLY STOPPED FOR MORE THAN 21
- 6. ALL SURFACE AREAS DISTURBED WITHIN OR ADJACENT TO THE CONSTRUCTION LIMITS MUST BE PERMANENTLY STABILIZED. STABILIZATION IS OBTAINED WHEN THE SITE IS COVERED WITH IMPERVIOUS STRUCTURES, PAVING OR A UNIFORM PERENNIAL VEGETATIVE COVER. THE PERENNIAL VEGETATION MUST HAVE A COVERAGE DENSITY OF AT LEAST 70 PERCENT. STABILIZATION IS REQUIRED BEFORE TERMINATING MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES.
- 7. THE GENERAL CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS AFTER A STORM EVENT OF 0.5 INCH OR GREATER TO MAINTAIN FUNCTION OF THE CONTROLS. MAINTENANCE IS CRUCIAL TO EROSION CONTROL EFFECTIVENESS. EROSION CONTROL MEASURES THAT PROVE TO BE INEFFECTIVE SHALL BE REPLACED WITH MORE EFFECTIVE MEASURES OR ADDITIONAL MEASURES.
- 8. FOR DETAILS OF STABILIZATION AND EROSION CONTROL MEASURES, REFER TO THE CONSTRUCTION BEST MANAGEMENT PRACTICES (BMP) MANUAL PUBLISHED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS



As-Built: 6.22-17

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 ON 10-2176



| VL | EROSION | CONTRO | L PLA |
|----|---------|------------|-------|
| | ALDI | FOOD MARKI | ET |

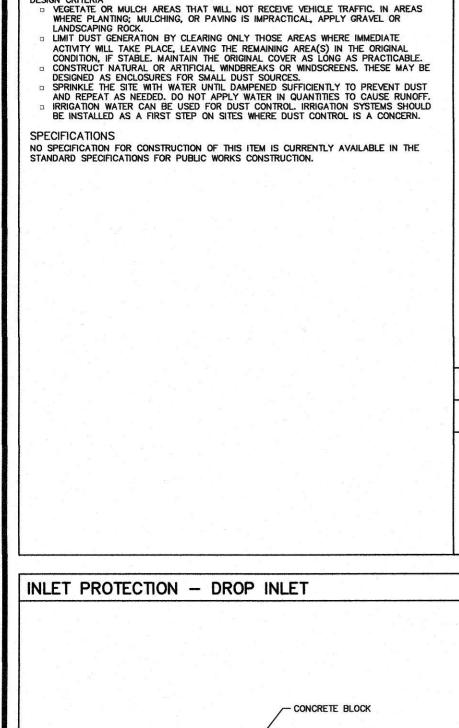
LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION

THE CITY OF ROCKWALL, TEXAS

BURGER
ENGINEERING
Civil Consultants

THE CITY OF ROCKWALL, TEXAS

17103 Preston Road, Suite 180N
Dallas, Texas 75248
Office: 972.630.3360 Fax: 972.630.3380
TBPE F-12997



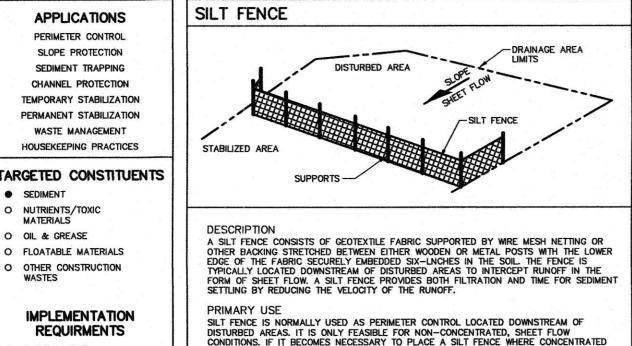
DUST CONTROL INCLUDES THOSE MEASURES NECESSARY TO PREVENT WIND TRANSPORT OF DUST FROM DISTURBED SOIL SURFACES ONTO ROADWAYS, DRAINAGE WAYS, AND SURFACE

DUST CONTROL IS APPLIED IN AREAS (INCLUDING ROADWAYS) SUBJECT TO SURFACE AND AIR MOVEMENT TO DUST WHERE ON-SITE AND OFF-SITE IMPACTS TO ROADWAYS,

DUST CONTROL

DRAINAGE WAYS, OR SURFACE WATERS ARE LIKELY.

DESCRIPTION



APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

CHANNEL PROTECTION

TEMPORARY STABILIZATION PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

SEDIMENT

WASTES

O NUTRIENTS/TOXIC

O OIL & GREASE

O CAPITAL COST

MAINTENANCE

TRAINING

O FLOATABLE MATERIALS O OTHER CONSTRUCTION

IMPLEMENTATION

REQUIRMENTS

SUITABILITY FOR SLOPES >

LEGEND

SIGNIFICANT IMPACT

UNKNOWN OR QUESTIONABLE IMPACT

E-8

MEDIUM IMPACT

O LOW IMPACT

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 MEASURES THAT WILL SUPPORT THE SILT FENCE.

APPLICATIONS 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 THE
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,

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 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

MEDIUM IMPACT LOW IMPACT QUESTIONABLE IMPACT

Fe = 0.75

S-1

SIGNIFICANT IMPACT

APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

CHANNEL PROTECTION

TEMPORARY STABILIZATION

PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

TARGETED CONSTITUENTS

SEDIMENT

O NUTRIENTS TOXIC

● FLOATABLE MATERIALS

OTHER CONSTRUCTION

IMPLEMENTATION

REQUIRMENTS

■ SUITABILITY FOR SLOPES >

LEGEND

O OIL & GREASE

CAPITAL COST

MAINTENANCE

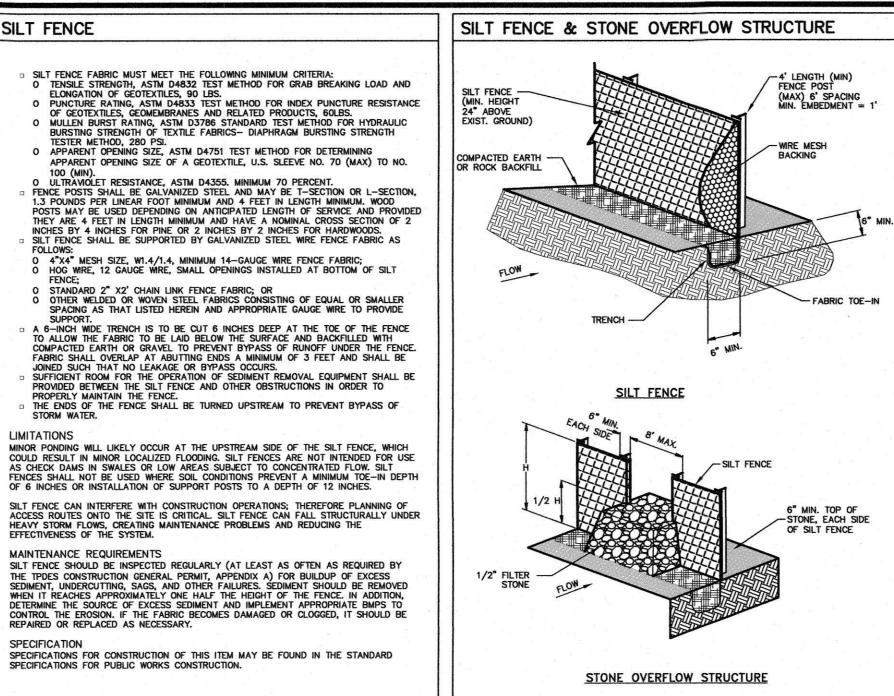
O TRAINING

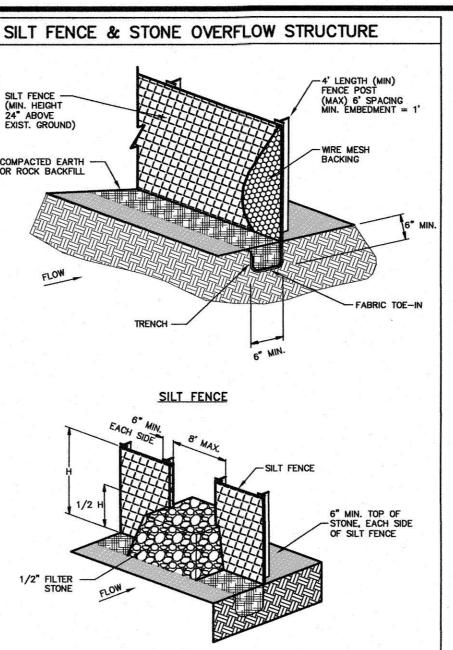
CONTROL THE EROSION. IF THE FABRIC BECOMES DAMAGED OR CLOGGED, IT SHOULD BE REPAIRED OR REPLACED AS NECESSARY. SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

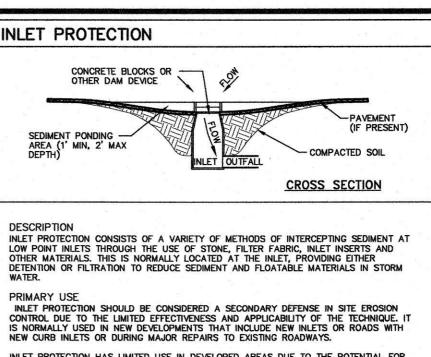
EFFECTIVENESS OF THE SYSTEM.

MAINTENANCE REQUIREMENTS

SILT FENCE







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 FLOODING, 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

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

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. DESIGN CRITERIA

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. 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 WIRE 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

PERIMETER CONTROL

SLOPE PROTECTION

CHANNEL PROTECTION

TEMPORARY STABILIZATION

PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

TARGETED CONSTITUENTS

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O NUTRIENTS TOXIC

⊖ FLOATABLE MATERIALS

OTHER CONSTRUCTION

IMPLEMENTATION

REQUIRMENTS

O SUITABILITY FOR SLOPES >

LEGEND

UNKNOWN OR QUESTIONABLE IMPACT

VARIES

S-4

SIGNIFICANT IMPACT

MEDIUM IMPACT

LOW IMPACT

MATERIALS

O OIL & GREASE

CAPITAL COST

MAINTENANCE

O TRAINING

SEDIMENT TRAPPING

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 TO FLOODING.
FILTER BARRIER PROTECTION

FILTER BARRIER 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
ENTRENCHMENT 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.

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.

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.

INLET INSERTS ARE COMMERCIALLY AVAILABLE TO REMOVE SEDIMENT, CONSTITUENTS
(POLLUTANTS) ABSORED TO SEDIMENT, AND OIL AND GREASE, MAINTENANCE IS (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

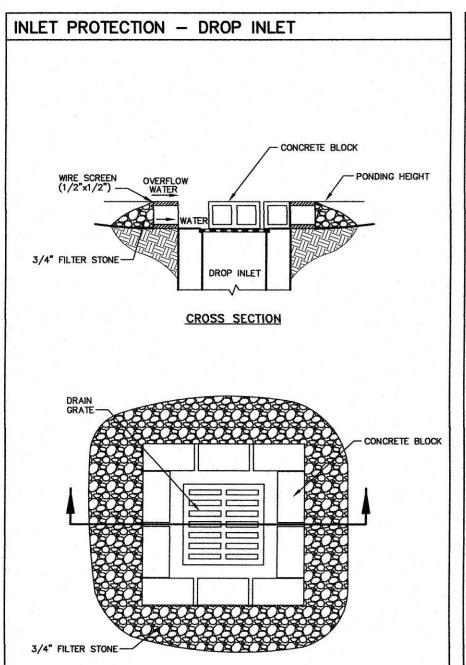
LIMITATIONS SPECIAL CAUTION MUST BE EXERCISED WHEN INSTALLING INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS. ENSURE THAT INLET PROTECTION IS PROPERLY DESIGNED, INSTALLED AND MAINTAINED TO AVOID FLOODING OF THE ROADWAY

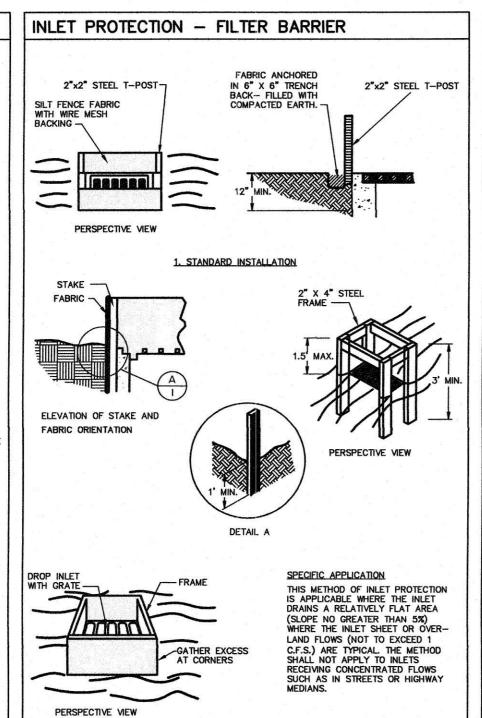
OR ADJACENT PROPERTIES AND STRUCTURES. INLET PROTECTION IS ONLY VIABLE AT LOW POINT INLETS. INLETS THAT ARE ON A SLOPE CANNOT BE EFFECTIVELY PROTECTED BECAUSE STORM WATER WILL BYPASS THE INLET AND CONTINUE DOWNSTREAM, CAUSING AN OVERLOAD CONDITION AT INLETS DOWNSTREAM.

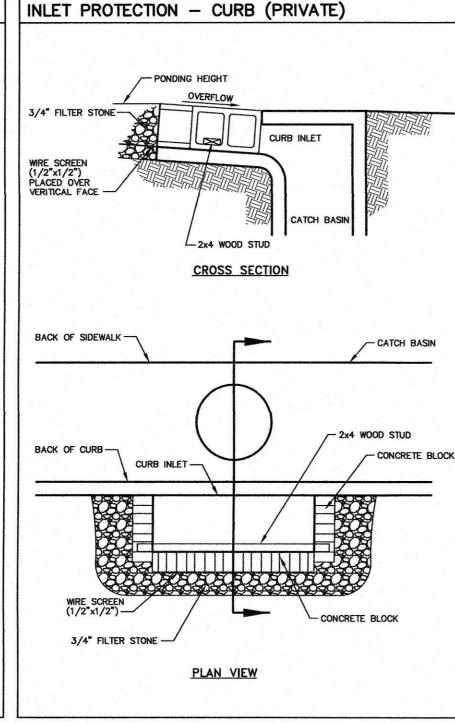
INLET PROTECTION SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A). WHEN SILT FENCE IS USED END THE FABRIC BECOMES CLOGGED, IT SHOULD BE CLEANED OR, IF NECESSARY, REPLACED. ALSO, SEDIMENT SHOULD BE REMOVED WHEN IT REACHES APPROXIMATELY 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







APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

TARGETED CONSTITUENTS

IMPLEMENTATION

REQUIRMENTS

O SUITABILITY FOR SLOPES >

LEGEND

SIGNIFICANT IMPACT

UNKNOWN OR QUESTIONABLE IMPACT

Fe = N/A

S-9

℮ MEDIUM IMPACT

O LOW IMPACT

→ SEDIMENT

O NUTRIENTS TOXIC

O FLOATABLE MATERIALS

O OTHER CONSTRUCTION

O OIL & GREASE

CAPITAL COST

MAINTENANCE

O TRAINING

VEGETATION

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

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. WOOD

4"X4" MESH SIZE, W1.4/1.4, MINIMUM 14—GAUGE WRE FENCE FABRIC; HOG WRE, 12 GAUGE WRE, 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

PROPERLY MAINTAIN THE FENCE.
THE ENDS OF THE FENCE SHALL BE TURNED UPSTREAM TO PREVENT BYPASS OF

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

100 (MIN). JLTRAVIOLET RESISTANCE, ASTM D4355. MINIMUM 70 PERCENT

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.

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 PROPER SPECIES AND APPLICATION TECHNIQUE IN THIS AREA.
SEEDING RATE SHOULD BE IN ACCORDANCE WITH THE TABLE BELOW OR AS RECOMMENDED BY THE NRCS OR ENGINEERING EXTENSION SERVICE. RECOMMENDATION WITH PROPER SPREADER EQUIPMENT. TYPICAL APPLICATION RATE FOR 10-10-10 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,

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 PLANTE WHEN ITS MOISTURE CONDITION IS SO EXCESSIVELY WET OR DRY THAT IT'S SURVIVAL SOD SHALL BE PLANTED WITHIN 3 DAYS AFTER IT IS EXCAVATED.

TERRASEEDING OR HYDROSEEDER.

PROVIDE ADEQUATE WATER TO AID IN ESTABLISHMENT OF VEGETATION.

IN AREAS SUBJECT TO DIRECT SUNLIGHT, PRE-MOISTEN PREPARED SOD BED BY WATERING IMMEDIATELY PRIOR TO PLACING SOD.

SODDED AREAS SHALL BE THOROUGHLY WATERED IMMEDIATELY AFTER THEY ARE ADDITIONAL GUIDANCE ESTABLISHING A GOOD VEGETATIVE COVER IS DEPENDENT OF THE SEASON OF THE

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.

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 STREAMS AND LAKES. IN THIS LATTER REGARD THEY ARE A POLLUTANT. THE USE OF NATIVE VEGETATION RATHER THAN EXOTICS REDUCES THE NEED OF FERTILIZERS. GROW THE STANDPOINT OF ENVIRONMENTAL CONDITIONS.

STEEP SLOPES REPRESENT A PROBLEM FOR ESTABLISHING VEGETATION. BONDED STEEP SLOPES REPRESENT A PROBLEM FOR ESTABLISHING VEGETATION. BONDET BER MATRIX OR MECHANICALLY BONDED FIBER MATRIX PRODUCTS APPLIED WITH

TEMPORARY VEGETATION THE TABLE ON THE FOLLOWING PAGE LISTS RECOMMENDED PLANT SPECIES FOR THE REGION DEPENDING ON THE SEASON FOR PLANTING.

TACKIFIER ARE USEFUL FOR ESTABLISHING VEGETATION ON SLOPES.

VEGETATION

RECOMMENDED GRASS MIXTURE FOR TEMPORARY EROSION CONTROL:

| 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 |

PERMANENT VEGETATION GRASS SEED FOR PERMANENT VEGETATION CAN BE SOWN AT THE SAME TIME AS SEEDING GRASS SCELD 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 GRASSES 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 APPROPRIATE BMPS TO CONTROL THE EROSION.

MULCHING

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 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 DRAW 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 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 NITROGEN DEFICIENCY OR TO FERTILIZE. AVAILABLE AS A BONDED FIBER MATRIX (BFM) WHICH MAY BE PARTICULARLY EFFECTIVE

APPLICATIONS PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION

PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES

TARGETED 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

O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT

> Fe = 0.9E-5

MULCHING

COMPOST AND WOOD MULCH MIXTURES SHOULD BE A BLEND OF 50% UNTREATED WOOD MULCH WITH 50% COMPOST MEASURED BY VOLUME. WOOD MULCH SHOULD BE A BLEND OF SQUAL 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.

FIND 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 DURING WINTER MONTHS.
ORGANIC MULCHES MAY BE DISTRIBUTED BY HAND OR BY MECHANICAL MEANS, BUT TO BE EFFECTIVE A COMPLETE COVERING

LIMITATIONS 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.

REFER TO THE TABLE ON THE FOLLOWING PAGE FOR ADDITIONAL GUIDANCE.

PLAN VIEW

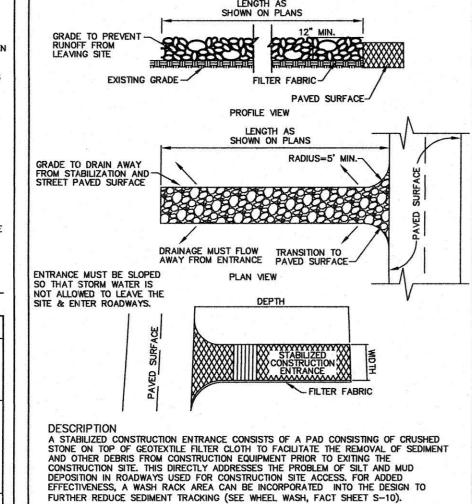
MAINTENANCE REQUIREMENTS MULCHED AREAS SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A) FOR THIN OR BARE SPOTS CAUSED BY NATURAL DECOMPOSTION OR WEATHER RELATED EVENTS. MULCH IN HIGH TRAFFIC AREAS SHOULD BE REPLACED ON A REGULAR BASIS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

MULCH SHOULD NOT BE APPLIED WITHIN THE ORDINARY HIGH-WATER MARK OF SURFACE WATERS, AS IT CAN BE A POTENTIAL

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 AS 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 CLOGGING 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. | BONDED FIBER MATRIX MAY BE PARTICULARY EFFECTIVE ON SLOPES STEEPER THAN 2.5:1. | | |

PER ACRE OR GREATER)



STABILIZED CONSTRUCTION ENTRANCES ARE USED PRIMARILY FOR SITES IN WHICH SIGNIFICANT TRUCK TRAFFIC OCCURS ON A DAILY BASIS. IT REDUCES THE NEED TO REMOVE SEDIMENT FROM STREETS. IF PROPERLY USED, IT ALSO THE MAJORITY OF TRAFFIC TO A SINGLE LOCATION, REDUCING THE NUMBER AND QUANTITY OF DISTURBED AREAS ON THE SITE AND PROVIDING PROTECTION FOR OTHER STRUCTURAL CONTROLS THEOLIGHT TRAFFIC CONTROLS

STABILIZED CONSTRUCTION ENTRANCES ARE A REQUIRED PART OF THE EROSION 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

STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE

DESIGN CRITERIA SEDIMENT TRAPPING 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 CHANNEL PROTECTION TEMPORARY STABILIZATION

REMOVAL OF WASH WATER.

THE 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. NO CRUSHED CONCRETE ALLOWED.

PREVENT SHORTCUTING 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

LBS.
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 ENTRANCI |
|------------|----------------------|---------------------------|---------------------------|
| < 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 |

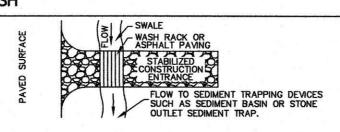
SELECTION OF THE CONSTRUCTION ENTRANCE LOCATION IS CRITICAL. TO BE EFFECTIVE, IT STABILIZED ENTRANCES ARE RATHER EXPENSIVE CONSIDERING THAT IT MUST BE INSTALLED IN COMBINATION WITH ONE OR MORE OTHER SEDIMENT CONTROL TECHNIQUES, BUT IT MAY BE COST EFFECTIVE COMPARED TO LABOR—INTENSIVE STREET CLEANING

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

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

WHEEL WASH



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 SEDIMENT PRIOR TO DISCHARGE.

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.

APPLICATIONS WHEEL WASHES SHOULD BE CONSIDERED AN ANCILLARY COMPONENT TO STABILIZED

THE LOCATION SHOULD BE WITHIN THE STABILIZED CONSTRUCTION ENTRANCE SO THAT THE VEHICLE DOES NOT PICK UP ADDITIONAL SEDIMENT LOAD BY TRAVERSING THAT THE VEHICLE BOOS NOT TOOL OF A STATEMENT OF THAT ALL WASH 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. SUGGESTED DESIGNS:
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. MAINTENANCE REQUIREMENTS

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 HAT 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 PROTECTED FROM EROSION.

NO SPECIFICATION FOR CONSTRUCTION OF THIS ITEM IS CURRENTLY AVAILABLE IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES

APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

ARGETED CONSTITUENTS SEDIMENT NUTRIENTS TOXIC MATERIALS

IMPLEMENTATION

LEGEND

O OIL & GREASE O FLOATABLE MATERIALS O OTHER CONSTRUCTION

REQUIRMENTS CAPITAL COST MAINTENANCE

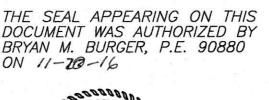
TRAINING O SUITABILITY FOR SLOPES >

 SIGNIFICANT IMPACT MEDIUM IMPACT O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT

> Fe = N/AS - 10

As-Built: 6.22-17

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.



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BRYAN M. BURGE

EROSION CONTROL DETAILS ALDI FOOD MARKET

LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION

THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N BURGER DENGINEERING TBPE F-12997

Dallas, Texas 75248 Office: 972.630.3360 Fax: 972.630.3380 DESIGN DRAWN DATE SCALE NOTES FILE NO. EROS DETAILS C-8. JAC 6/16

DEBRIS AND TRASH MANAGEMENT **APPLICATIONS** PERIMETER CONTROL DESCRIPTION LARGE VOLUMES OF DEBRIS AND TRASH ARE OFTEN GENERATED AT CONSTRUCTION SITES INCLUDING: PACKAGING, PALLETS, WOOD WASTE, CONCRETE WASTE, SOIL, ELECTRICAL WRING, CUTTINGS, AND A VARIETY OF OTHER MATERIALS. THERE ARE SEVERAL TECHNIQUES AND PROCEDURES TO MINIMIZE THE POTENTIAL OF STORM WATER CONTAMINATION FROM SOLID WASTE THROUGH APPROPRIATE STORAGE AND DISPOSAL PRACTICES. RECYCLING OF CONSTRUCTION DEBRIS ALSO REDUCES THE VOLUME OF WATER AND ASSOCIATED COSTS. SLOPE PROTECTION SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION MATERIAL TO BE DISPOSED OF AND ASSOCIATED COSTS PERMANENT STABILIZATION WASTE MANAGEMENT DEBRIS AND TRASH MANAGEMENT SHOULD BE A PART OF ALL CONSTRUCTION PRACTICES. BY LIMITING THE TRASH AND DEBRIS ON SITE, STORM WATER QUALITY IS IMPROVED ALONG WITH REDUCED CLEAN UP REQUIREMENTS AT THE COMPLETION OF THE PROJECT. HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS APPLICATIONS SOLID WASTE MANAGEMENT FOR CONSTRUCTION SITES IS BASED ON PROPER STORAGE O SEDIMENT SOLID WASTE MANAGEMENT FOR CONSTRUCTION STIES IS BASED ON PROPER STORAGE. AND DISPOSAL PRACTICES BY CONSTRUCTION WORKERS AND SUPERVISORS. KEY ELEMENTS OF THE PROGRAM ARE EDUCATION AND MODIFICATION OF IMPROPER DISPOSAL HABITS. COOPERATION AND VIGILANCE IS REQUIRED ON THE PART OF SUPERVISORS AND WORKERS TO ENSURE THAT THE RECOMMENDATIONS AND PROCEDURES ARE FOLLOWED. FOLLOWING ARE LISTS DESCRIBING THE TARGETED MATERIALS AND RECOMMENDED PROCEDURES: NUTRIENTS/TOXIC O OIL & GREASE FLOATABLE MATERIALS CONSTRUCTION, (AND DEMOLITION) DEBRIS DIMENSIONAL LUMBER OTHER CONSTRUCTION MISCELLANEOUS WOOD (PALLETS, PLYWOOD, ETC) COPPER (PIPE AND ELECTRICAL WIRING) MISCELLANEOUS METAL (STUDS, PIPE, CONDUIT, SHEATHING, NAILS, ETC) **IMPLEMENTATION** INSULATION CONCRETE, BRICK, AND MORTAR REQUIRMENTS ROOFING MATERIALS GYPSUM BOARD CAPITAL COST MAINTENANCE TRAINING PAPER AND CARDBOARD (PACKAGING, CONTAINERS, WRAPPERS) PLASTIC (PACKAGING, BOTTLES, CONTAINERS O SUITABILITY FOR SLOPES > STYROFOAM (CUPS, PACKING, AND FORMS) FOOD AND BEVERAGE CONTAINERS FOOD WASTE STORAGE PROCEDURES LEGEND WHEREVER POSSIBLE, MINIMIZE PRODUCTION OF DEBRIS AND TRASH. DESIGNATE A FOREMAN OR SUPERVISOR TO OVERSEE AND ENFORCE PROPER DEBRIS AND TRASH PROCEDURES. INSTRUCT CONSTRUCTION WORKERS IN PROPER DEBRIS AND TRASH STORAGE AND SIGNIFICANT IMPACT **■ MEDIUM IMPACT** O LOW IMPACT HANDLING PROCEDURES. SEGREGATE POTENTIALLY HAZARDOUS WASTE FROM NON-HAZARDOUS CONSTRUCTION UNKNOWN OR QUESTIONABLE IMPACT SEGREGATE RECYCLABLE CONSTRUCTION DEBRIS FROM OTHER NON-RECYCLABLE MAIERIALS. KEEP DEBRIS AND TRASH UNDER COVER IN ETHER A CLOSED DUMPSTER OR OTHER ENCLOSED TRASH CONTAINER THAT LIMITS CONTACT WITH RAIN AND RUNOFF AND PREVENTS LIGHT MATERIALS FROM BLOWING OUT. STORE WASTE MATERIALS AWAY FROM DRAINAGE DITCHES, SWALES AND CATCH M-1DO NOT ALLOW TRASH CONTAINERS TO OVERFLOW, DO NOT ALLOW WASTE MATERIALS TO ACCUMULATE ON THE GROUND. PROHIBIT LITTERING BY WORKERS AND VISITORS. POLICE SITE DAILY FOR LITTER AND DEBRIS, ENFORCE SOLID WASTE HANDLING AND STORAGE PROCEDURES. DISPOSAL PROCEDURES □ IF FEASIBLE, RECYCLE CONSTRUCTION AND DEMOLITION DEBRIS SUCH AS WOOD, METAL, AND CONCRETE. GENERAL CONSTRUCTION DEBRIS MAY BE HAULED TO A LICENSED CONSTRUCTION DEBRIS LANDFILL (TYPICALLY LESS EXPENSIVE THAN A SANITARY LANDFILL), USE WASTE AND RECYCLING HAULERS/FACILITIES APPROVED BY THE LOCAL JURISDICTION. DEBRIS AND TRASH MANAGEMENT **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION SEDIMENT TRAPPING EDUCATE ALL WORKERS ON SOLID WASTE STORAGE AND DISPOSAL PROCEDURES INSTRUCT WORKERS IN IDENTIFICATION OF SOLID WASTE AND HAZARDOUS WASTE. HAVE REGULAR MEETINGS TO DISCUSS AND REINFORCE DISPOSAL PROCEDURES CHANNEL PROTECTION TEMPORARY STABILIZATION (INCORPORATE IN REGULAR SAFETY SEMINARS). CLEARLY MARK ON ALL DEBRIS AND TRASH CONTAINERS WHICH MATERIALS ARE PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ON-SITE SOLID WASTE STORAGE AND DISPOSAL PROCEDURES. DISCIPLINE WORKERS WHO REPEATEDLY VIOLATE PROCEDURES. TARGETED CONSTITUENTS REQUIREMENTS O SEDIMENT JOB-SITE WASTE HANDLING AND DISPOSAL EDUCATION AND AWARENESS PROGRAM,. NUTRIENTS TOXIC COMPLIANCE BY WORKERS. SUFFICIENT AND APPROPRIATE WASTE STORAGE CONTAINERS. TIMELY REMOVAL OF STORED SOLID WASTE MATERIALS.. TRAINING WORKERS AND MONITORING COMPLIANCE. O OIL & GREASE FLOATABLE MATERIALS OTHER CONSTRUCTION ONLY ADDRESSES NON-HAZARDOUS SOLID WASTE. ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE MANAGEMENT PROGRAM. IMPLEMENTATION REQUIRMENTS CAPITAL COST MAINTENANCE TRAINING O SUITABILITY FOR SLOPES > LEGEND SIGNIFICANT IMPACT ■ MEDIUM IMPACT O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT M-1CHEMICAL MANAGEMENT **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION CHEMICAL MANAGEMENT ADDRESSES THE PROBLEM OF STORM WATER POLLUTED WITH CHEMICAL POLLUTANTS THROUGH SPILLS OR OTHER FORMS OF CONTACT. THE OBJECTIVE OF THE CHEMICAL MANAGEMENT IS TO MINIMIZE THE POTENTIAL OF STORM WATER CONTAMINATION FROM CONSTRUCTION CHEMICALS THROUGH APPROPRIATE RECOGNITION, SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION IT IS NOT THE INTENT OF CHEMICAL MANAGEMENT TO SUPERSEDE OR REPLACE NORMAL SITE ASSESSMENT AND REMEDIATION PROCEDURES. SIGNIFICANT SPILLS AND/OR CONTAMINATION WARRANT IMMEDIATE RESPONSE BY TRAINED PROFESSIONALS. SUSPECTED JOB-SITE CONTAMINATION SHOULD BE IMMEDIATELY REPORTED TO REGULATORY AUTHORITIES AND PROTECTIVE ACTIONS TAKEN. SIGNIFICANT SPILLS SHOULD BE REPORTED WASTE MANAGEMENT HOUSEKEEPING PRACTICES TO THE NATIONAL RESPONSE CENTER (NRC) AT (800) 424-8802. TARGETED CONSTITUENTS THESE MANAGEMENT PRACTICES ALONG WITH APPLICABLE OSHA AND EPA GUIDELINES SHOULD BE INCORPORATED AT ALL CONSTRUCTION SITES THAT USE OR GENERATE HAZARDOUS WASTES. MANY CHEMICALS SUCH AS FUEL, OIL, GREASE, FERTILIZER, AND PESTICIDE ARE PRESENT AT MOST CONSTRUCTION SITES. O SEDIMENT NUTRIENTS TOXIC MATERIALS OIL & GREASE INSTALLATION, APPLICATION AND DISPOSAL CRITERIA O FLOATABLE MATERIALS THE CHEMICAL MANAGEMENT TECHNIQUES PRESENTED HERE ARE BASED ON PROPER RECOGNITION, HANDLING, AND DISPOSAL PRACTICES BY CONSTRUCTION WORKERS AND SUPERVISORS. KEY ELEMENTS ARE EDUCATION, PROPER DISPOSAL PRACTICES, AS WELL OTHER CONSTRUCTION AS PROVISIONS FOR SAFE STORAGE AND DISPOSAL. FOLLOWING ARE LISTS DESCRIBING THE TARGETED MATERIALS AND RECOMMENDED PROCEDURES: TARGETED CHEMICAL MATERIALS PAINTS **IMPLEMENTATION** REQUIRMENTS SOLVENTS CAPITAL COST WOOD PRESERVATIVES CUTTING OILS GREASES ROOFING TAR PESTICIDES, HERBICIDES, & FERTILIZER FUELS & LUBE OILS **● MAINTENANCE** TRAINING O SUITABILITY FOR SLOPES > STORAGE PROCEDURES WHEREVER POSSIBLE, MINIMIZE USE OF HAZARDOUS MATERIALS. MINIMIZE GENERATION OF HAZARDOUS WASTES ON THE JOB—SITE. SEGREGATE POTENTIALLY HAZARDOUS WASTE FROM NON HAZARDOUS CONSTRUCTION LEGEND SIGNIFICANT IMPACT DESIGNATE A FOREMAN OR SUPERVISOR TO OVERSEE HAZARDOUS MATERIALS HANDLING PROCEDURES. O LOW IMPACT KEEP CHEMICALS IN APPROPRIATE CONTAINERS (CLOSED DRUMS OR SIMILAR) AND UNDER COVER. STORE CHEMICALS AWAY FROM DRAINAGE DITCHES, SWALES AND CATCH BASINS. USE CONTAINMENT BERMS IN FUELING AND MAINTENANCE AREAS AND WHERE THE POTENTIAL FOR SPILLS IS HIGH. UNKNOWN OR QUESTIONABLE IMPACT WASTE HANDLING ENSURE THAT ADEQUATE HAZARDOUS WASTE STORAGE VOLUME IS AVAILABLE. ENSURE THAT HAZARDOUS WASTE COLLECTION CONTAINERS ARE CONVENIENTLY M-2LOCATED. DO NOT ALLOW POTENTIALLY HAZARDOUS WASTE MATERIALS TO ACCUMULATE. ENFORCE HAZARDOUS WASTE HANDLING AND DISPOSAL PROCEDURES. CLEARLY MARK ON ALL HAZARDOUS WASTE CONTAINERS WHICH MATERIALS ARE ACCEPTABLE FOR THE CONTAINER. DISPOSAL PROCEDURES ENSURE THAT ADEQUATE CLEANUP AND CONTAINMENT MATERIALS ARE AVAILABLE REGULARLY SCHEDULE HAZARDOUS WASTE REMOVAL TO MINIMIZE ON-SITE STORAGE.

USE ONLY LICENSED HAZARDOUS WASTE HAULERS.

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CHEMICAL MANAGEMENT
                                                                                                                                                               APPLICATIONS
                                                                                                                                                               PERIMETER CONTROL
                                                                                                                                                               SLOPE PROTECTION
     □ INSTRUCT WORKERS ON SAFETY PROCEDURES FOR CONSTRUCTION SITE CHEMICAL STORAGE.
□ INSTRUCT WORKERS IN IDENTIFICATION OF CHEMICAL POLLUTANTS.
□ ENSURE THAT WORKERS ARE TRAINED IN PROCEDURES FOR SPILL PREVENTION AND
                                                                                                                                                               SEDIMENT TRAPPING
                                                                                                                                                            CHANNEL PROTECTION
                                                                                                                                                           TEMPORARY STABILIZATION
       RESPONSE.

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
                                                                                                                                                        HOUSEKEEPING PRACTICES
       DISPOSAL PROCEDURES (INCORPORATE IN REGULAR SAFETY SEMINARS).
ESTABLISH A CONTINUING EDUCATION PROGRAM TO INDOCTRINATE NEW EMPLOYEES.
                                                                                                                                                   TARGETED CONSTITUENTS
 QUALITY ASSURANCE
      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

                                                                                                                                                    OIL & GREASE
  REQUIREMENTS
      JOB-SITE CHEMICAL AND HAZARDOUS WASTE HANDLING AND DISPOSAL EDUCATION AND AWARENESS PROGRAM.

COMMITMENT BY MANAGEMENT TO IMPLEMENT CHEMICAL STORAGE AND HAZARDOUS WASTE MANAGEMENT PRACTICES.
                                                                                                                                                    O FLOATABLE MATERIALS

    OTHER CONSTRUCTION

        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.
                                                                                                                                                    MAINTENANCE
                                                                                                                                                    TRAINING
                                                                                                                                                       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
                                                                                                                                                                    LEGEND

    SIGNIFICANT IMPACT

 CONTAMINATED SOILS ARE NOT ADDRESSED.
                                                                                                                                                    MEDIUM IMPACT
                                                                                                                                                    O LOW IMPACT
                                                                                                                                                         UNKNOWN OR QUESTIONABLE IMPACT
                                                                                                                                                                      M-2
 CONCRETE 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
                                                                                                                                                          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
                                                                                                                                                       SEDIMENT
                                                                                                                                                     O NUTRIENTS TOXIC
                                                                                                                                                           MATERIALS
    UNACCEPTABLE CONCRETE WASTE DISPOSL PRACTICES

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

    OTHER CONSTRUCTION

   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.
                                                                                                                                                            IMPLEMENTATION
           NEVER DUMP WASTE CONCRETE ILLICITLY OR WITHOUT PROPERTY OWNER'S
                                                                                                                                                               REQUIRMENTS
             KNOWLEDGE AND CONSENT.
            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
                                                                                                                                                    O SUITABILITY FOR SLOPES >
      DRIVERS AND EQUIPMENT OPERATORS SHOULD BE INSTRUCTED ON PROPER DISPOSAL
           SUPERVISORS MUST BE MADE AWARE OF THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF IMPROPERLY HANDLED CONCRETE WASTE.
                                                                                                                                                                    LEGEND
        THE CONSTRUCTION SITE MANAGER OR FOREMAN MUST ENSURE THAT EMPLOYEES

AND PRE-MIX COMPANIES FOLLOW PROPER PROCEDURES FOR CONCRETE DISPOSAL

    SIGNIFICANT IMPACT

          AND EQUIPMENT WASHING.
EMPLOYEES VIOLATING DISPOSAL OR EQUIPMENT CLEANING DIRECTIVES CRUST BE
                                                                                                                                                    MEDIUM IMPACT
                                                                                                                                                    O LOW IMPACT
             REEDUCATED OR DISCIPLINED IF NECESSARY
                                                                                                                                                        UNKNOWN OR QUESTIONABLE IMPACT
    DEMOLITION PRACTICES
        MOLITOR 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.
       EQUIREMENTS

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-3
         MINIMAL COST IMPACT FOR TRAINING AND MONITORING,
CONCRETE DISPOSAL COST DEPENDS ON AVAILABILITY AND DISTANCE TO SUITABLE
           ADDITIONAL COSTS INVOLVED IN EQUIPMENT WASHING COULD BE SIGNIFICANT.
 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
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
                                                                                                                                                    O SEDIMENT
                                                                                                                                                   O NUTRIENTS TOXIC
                                                                                                                                                    O OIL & GREASE
         DURING SAW CUTTING OPERATIONS, THE SLURRY AND CUTTINGS SHALL BE CONTINUOUSLY VACUUMED TO CONTROL THE FLOW OF WATER FROM THE OPERATIONS
                                                                                                                                                    O 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 SURFACE WATER
                                                                                                                                                             REQUIRMENTS
                                                                                                                                                    O CAPITAL COST
                                                                                                                                                    ⊖ MAINTENANCE
          NEVER DUMP WASTE ILLICITLY OR WITHOUT PROPERTY OWNER'S KNOWLEDGE AND
                                                                                                                                                    TRAINING
                                                                                                                                                     O SUITABILITY FOR SLOPES >
            SLURRY MAY BE DISPOSED OF IN FACILITIES DESIGNATED FOR WASHDOWN OF
           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.
                                                                                                                                                     O SIGNIFICANT IMPACT
                                                                                                                                                    ⊖ MEDIUM IMPACT
                                                                                                                                                    O LOW IMPACT
```

UNKNOWN OR

QUESTIONABLE IMPACT

M-4

LIME STABILIZATION MANAGEMENT APPLICATIONS PERIMETER CONTROL LIME STABILIZED SURFACE -SLOPE PROTECTION ROUGHEN SLOPES \ COLLECT RUNOFF SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS LIME STABILIZATION IS USED EXTENSIVELY IN THE NORTH CENTRAL TEXAS REGION TO STABILIZE PAVEMENT SUBBASES FOR ROADWAYS, PARKING LOTS, END OTHER PAVED SURFACES, AND AS A SUBGRADE AMENDMENT FOR BUILDING PAD SITES. HYDRATED LIME IS APPLIED TO THE SOIL AND MIXED THROUGH DISKING AND OTHER TECHNIQUES, THEN ALLOWED TO CURE. THIS PRACTICE WILL REDUCE THE POTENTIAL FOR RUNOFF TO CARRY LIME OFFSITE, WHERE IT MAY IMPACT AQUATIC LIFE BY CHANGING THE pH BALANCE OF STREAMS, PONDS, AND OTHER WATER BODIES. O SEDIMENT NUTRIENTS TOXIC O OIL & GREASE O FLOATABLE MATERIALS O OTHER CONSTRUCTION WASTES THIS BMP SHOULD BE IMPLEMENTED WHEN LIME IS REQUIRED FOR SOIL STABILIZATION. LIME STABILIZATION CAN BE USED UNDER A VARIETY OF CONDITIONS. THE ENGINEER SHOULD DETERMINE THE APPLICABILITY OF LIME STABILIZATION BASED ON SITE CONDITIONS SUCH AS AVAILABLE OPEN SPACE, QUANTITY OF AREA TO BE STABILIZED, PROXIMITY OF NEARBY WATER COURSES AND OTHER BMPS EMPLOYED AT THE SITE. THE USE OF IMPLEMENTATION REQUIRMENTS DIVERSION DIKES AND INTERCEPTOR SWALES (SEE APPROPRIATE FACT SHEETS) TO DIVERT RUNOFF AWAY FROM AREAS TO BE STABILIZED CAN BE USED IN CONJUNCTION WITH O CAPITAL COST MAINTENANCE THESE TECHNIQUES TO REDUCE THE IMPACT OF THE LIME O TRAINING DESIGN CRITERIA

THE CONTRACTOR SHALL LIMIT LIME OPERATIONS TO THAT WHICH CAN BE THOROUGHLY MIXED AND COMPACTED BY THE END OF EACH WORKDAY.

NO TRAFFIC OTHER THAN WATER TRUCKS AND MIXING EQUIPMENT SHALL BE ALLOWED TO PASS OVER THE SPREAD LIME UNTIL AFTER COMPLETION OF MIXING.

AREAS ADJACENT AND DOWNSTREAM OF STABILIZED AREAS SHALL BE ROUGHENED TO INTERCEPT LIME FROM RUNOFF AND REDUCE RUNOFF VELOCITY.

GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SILT FENCE SHOULD NOT BE USED TO ADDRESS LIME SINCE THE GRAIN SIZE OF LIME IS SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.

FOR AREAS FOR WHICH PHASING OF LIME OPERATIONS IS IMPRACTICAL, USE OF A CURING SEAL SUCH AS LIQUID ASPHALT, GRADE MC—250 OR MC—800 APPLIED AT A RATE OF 0.15 GALLONS PER SQ. YD. OF SURFACE CAN BE USED TO PROTECT THE BASE. O SUITABILITY FOR SLOPES > LEGEND SIGNIFICANT IMPACT MEDIUM IMPACT O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT USE OF SEDIMENT BASINS WITH A SIGNIFICANT (>36 HOUR) DRAWDOWN TIME IS ENCOURAGED FOR LARGE AREAS TO BE STABILIZED (SEE S-6, SEDIMENT BASIN).

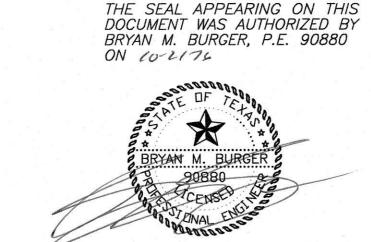
PROVIDE CONTAINMENT AROUND LIME STORAGE, LOADING, AND DISPENSING AREAS. LIMITATIONS

LIME STABILIZATION CAN BE PART OF AN OVERALL PLAN TO REDUCE POLLUTANTS FROM AN ACTIVE CONSTRUCTION SITE. IN THE CASE OF POLLUTION DUE TO LIME, PREVENTION OF CONTAMINATION IS THE ONLY EFFECTIVE METHOD TO ADDRESS THIS POLLUTANT. PROPER APPLICATION AND MIXING ALONG WITH AVOIDING APPLICATIONS WHEN THERE IS A SIGNIFICANT PROBABILITY OF RAIN WILL REDUCE LIME RUNOFF. SANITARY FACILITIES APPLICATIONS PERIMETER CONTROL SLOPE PROTECTION PACILITIES FOR COLLECTION AND DISPOSAL OF SANITARY WASTE MUST BE PROVIDED AND PROPERLY MANAGED TO MINIMIZE THE POTENTIAL CONTAMINATION OF SURFACE WATER WITH SEPTIC WASTES. LOCATION OF PORTABLE FACILITIES AWAY FROM STORM DRAIN SYSTEMS AND SURFACE WATERS OR CONTAINMENT IS NECESSARY IN CASE OF SPILLS. SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PROCEDURES

SANITARY FACILITIES MUST BE PROVIDED ON THE SITE IN CLOSE PROXIMITY TO AREAS WHERE PEOPLE ARE WORKING,
PORTABLE TOILETS MUST BE PROVIDED IF NO PERMANENT FACILITIES ARE AVAILABLE.
LOCATE PORTABLE TOILETS A MINIMUM OF 20 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE CHANNELS, OR SURFACE WATERS.

IF UNABLE TO MEET 20—FOOT DISTANCE REQUIREMENT, PROVIDE CONTAINMENT FOR PORTABLE TOILETS.
PORTABLE TOILETS SHOULD BE REGULARLY SERVICED. PERMANENT STABILIZATION WASTE MANAGEMENT HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS O SEDIMENT NUTRIENTS TOXIC O OIL & GREASE O FLOATABLE MATERIALS OTHER CONSTRUCTION IMPLEMENTATION REQUIRMENTS O CAPITAL COST MAINTENANCE TRAINING O SUITABILITY FOR SLOPES > **LEGEND** SIGNIFICANT IMPACT **● MEDIUM IMPACT** O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT M-7

As-Built: 6.22.17



EROSION CONTROL DETAILS

ALDI FOOD MARKET

LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION

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BURGER DENGINEERING DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO. 007-116 C-8.2 007-116 JAC 6/16 D.P.

CLEAR AND GRUB

- 1. THE CONTRACTOR SHALL REVIEW PLANS AND IDENTIFY AND SAFELY MARK ALL PLANTS AND TREES TO BE SAVED. THE CONTRACTOR SHALL PROTECT ALL PLANTS AND TREES TO BE SAVED THROUGH OUT THE CONTRACT. THIS SHALL INCLUDE PROHIBITING ANY WORK WITHIN THE DRIP LINE OF THE TREE EXCEPT UNDER THE SUPERVISION OF A LICENSED LANDSCAPE ARCHITECT.
- 2. ALL AREAS TO BE CLEARED AND GRUBBED SHALL BE SURVEYED IN THE FIELD TO ESTABLISH THE APPROPRIATE LIMITS OF WORK.
- 3. THE CONTRACTOR SHALL TAKE WHAT EVER MEASURES NECESSARY TO LOCATE AND PROTECT EXISTING UTILITIES, STRUCTURES, AND OTHER FACILITIES TO REMAIN.
- 4. ALL TREES, SHRUBS, STUMPS, ROOTS AND OTHER DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
- 5. NO BURNING WILL BE ALLOWED ON SITE.

DEMOLITION

- 1. THE CONTRACTOR SHALL INSPECT ALL STRUCTURES, FACILITIES AND AREAS SLATED FOR DEMOLITION TO GAIN A FULL UNDERSTANDING OF THE WORK REQUIRED. THE CONTRACTOR SHALL TAKE WHAT EVER MEASURES NECESSARY TO PROTECT THE SAFETY OF THE PUBLIC, HIS EMPLOYEES AND AGENTS DURING THE INSPECTIONS AND SUBSEQUENT WORK. THE OWNER, CLIENT AND ENGINEER ARE NOT RESPONSIBLE FOR THE CONDITION OF THE BUILDINGS, FACILITIES OR OTHER AREAS SLATED FOR DEMOLITION
- 2. ALL MATERIALS NOT SLATED FOR REUSE MUST BE DISPOSED OF OFF SITE IN A LEGAL MANNER. THE CONTRACTOR MAY SALVAGE ALL MATERIALS NOT DESIGNATED BY THE OWNER TO BE SAVED. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND STORE SAFELY ALL MATERIALS SLATED TO BE SAVED OR REUSED. THE CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS USING PHOTOGRAPHS PRIOR TO START OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS TO REPAIR OR REPLACE MATERIALS DAMAGED DUE TO HIS WORK OR FAILURE TO PROTECT THROUGH OUT THE DURATION OF HIS CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH ALL APPROPRIATE UTILITY OWNERS, OPERATORS AND USERS PRIOR TO DISCONNECTION AND DEMOLITION. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION. ALL PLUGS, STOPS AND CAPS SHALL BE PER AGENCIES REQUIREMENTS AND IF NONE EXIST THEN A 3000 PSI CONCRETE PLUG WITH A THICKNESS EQUAL TO THE DIAMETER OF THE PIPE SHALL BE USED.
- 4. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY AND STOP ALL WORK IN AREAS WHERE HAZARDOUS MATERIALS ARE DISCOVERED. WHEN REQUIRED, THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE ENVIRONMENTAL AND HEALTH AGENCIES.
- NO BURNING, EXPLOSIVES OR OTHER POTENTIALLY DANGEROUS METHODS OF DEMOTION WILL BE ALLOWED UNLESS WRITTEN PERMISSION IS GRANTED BY THE OWNER AND ALL APPROPRIATE PERMITS ARE GRANTED.
- 6. THE CONTRACTOR WILL PROVIDE WHAT EVER SAFETY EQUIPMENT AND DEVICES ARE NECESSARY TO PROTECT THE ADJACENT PROPERTIES, STRUCTURES AND OTHER AREAS SLATED TO REMAIN. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS TO REPAIR OR REPLACE ANY DAMAGE CAUSED BY HIS WORK. THIS WILL ALSO INCLUDE EROSION CONTROL, DUST CONTROL AND SETTLEMENT.
- ALL AREAS SHALL BE BROUGHT BACK TO THEIR ORIGINAL GRADE OR THAT OF THE SURROUNDING AREA, WHICH EVER IS CLOSER TO THE FINAL GRADES OF THE PROJECT FOR THAT AREA. ALL AREAS REQUIRING FILL SHALL BE COMPACTED TO THE REQUIREMENTS OF THE AREA BUT IN NO CASE LESS THAN 90% OF MODIFIED PROCTOR (ASTM D 1557).

EARTHWORK

- 1. PRIOR STARTING ANY CUTS OF FILLS THE CONTRACTOR SHALL STRIP AND STOCKPILE ALL TOPSOIL. STRIPPING OF TOPSOIL CAN ONLY COMMENCE AFTER THE CLEAR AND GRUB OPERATIONS ARE COMPLETE IN THAT AREA. TOPSOIL SHALL BE STOCKPILED IN AREAS DESIGNATED ON THE PLANS OR APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL REVIEW THE SOILS REPORTS, BORING LOGS AND WHEN NECESSARY HIS OWN FIELD VERIFICATION SO AS TO BE FAMILIAR WITH THE DEPTH OF TOPSOIL. THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT OVER AND UNDER REMOVAL.
- 2. UNLESS OTHERWISE NOTED, THE GRADES SHOWN ON THE PLANS ARE FINISHED GRADES. THEREFORE, PAVEMENT, FLOORS, SUBBASE AND OTHER IMPROVEMENTS MUST BE SUBTRACTED TO CALCULATE SUBGRADE ELEVATIONS.
- 3. THE CONTRACTOR SHALL MAINTAIN A SURVEY GRID OF NOT LESS THAN 100' X 100' OR OTHER MEANS ACCEPTABLE TO THE OWNER'S REPRESENTATIVE THAT WILL INDICATE LOCATION AND AMOUNT OF CUT OR FILLS REMAINING. AT SUBGRADE THIS GRID SHALL BE 50' X 50' WITH LOCATION AND FINAL GRADE MARKED CLEARLY OR SURVEY SHALL BE COMPLETED DEMONSTRATING THAT THE SUBGRADE IS +/- 0.1 FEET OF REQUIRED SUBGRADE.
- 4. UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL RETAIN AND PAY ALL COST FOR SOIL COMPACTION TESTING TO BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY. FOR EACH LIFT PLACED, COMPACTION TESTING SHALL BE DONE EVERY 2000 SQ. FT. IN TRENCHES, COMPACTION TESTING SHALL BE DONE EVERY OTHER LIFT WITH AT LEAST 1 TEST EVERY 100 LF.
- COMPACTION REQUIREMENTS SHALL BE THOSE OUTLINED IN THE SOILS REPORT. IF THE SOILS REPORT IS NOT CLEAR OR DOES NOT GIVE REQUIREMENTS THE FOLLOWING WILL BE USED. UNDER AND TO 20 FEET OUTSIDE THE BUILDING ENVELOPE THE SOILS SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D1557 (MODIFIED PROCTOR). UNDER PROPOSED OR FUTURE PAVEMENT AREAS, INCLUDING 10 FEET OUTSIDE SUCH AREAS, THE SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY PER ASTM D 1557 (MODIFIED PROCTOR). ALL LANDSCAPE AND LAWN AREAS SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY PER ASTM D 1557 (MODIFIED PROCTOR). THE TESTING LAB SHALL TEST SOILS IN ACCORDANCE WITH ASTM D2922 (NUCLEAR METHOD) WITH PROCTORS FOR EACH SOIL TYPE. ALL FILL SHALL BE COMPACTED USING A SHEEP'S HEAD ROLLER.
- MILESS OTHERWISE NOTED IN THE SOILS REPORT OR ON THE DRAWINGS, THE ON SITE MATERIAL SHALL BE USED TO MAKE FILLS. ALL MATERIAL TO BE USED FOR FILL SHALL BE FREE OF ORGANICS, FROZEN MATERIAL, CONTAMINATED MATERIAL, DEBRIS AND ANY ROCKS LARGER THAN 4 INCHES. FOR FILL PLACEMENT WITHIN 1 FOOT OF SUBGRADE, NO ROCK SHALL BE GREATER THAN 2 INCHES IN DIAMETER. THE CONTRACTOR SHALL BEAR ALL COST ASSOCIATED WITH DRYING, SEGREGATING OR REQUIRED METHODS TO TREAT SOILS TO MEET COMPACTION AND OTHER REQUIREMENTS.
- 7. FILLS SHALL BE PLACED IN LIFTS NOT TO EXCEED 1 FOOT IN MASS FILLS AND 8 INCHES IN TRENCH OR RESTRICTED AREAS.
- 8. IF IMPORTED MATERIAL IS REQUIRED, THE SOURCE AND A RANDOM COMPOSITE SAMPLE SHALL BE REVIEWED BY THE TESTING LABORATORY PRIOR TO BEING BROUGHT TO SITE. THE TESTING LABORATORY SHALL TEST FOR PERCENT PASSING THE 200 SIEVE THAT DOES NOT EXCEED THE EXISTING ON SITE MATERIAL OR IN NO CASE GREATER THAN 35%. THEY SHALL ALSO VERIFY CONSISTENCY WITH EXISTING ON SITE MATERIALS AND ALL OTHER REQUIREMENTS. WAIVERS TO THESE REQUIREMENTS CAN ONLY BE GIVEN JOINTLY BY ALDI AND THE GEOTECHNICAL ENGINEER THAT PREPARED THE SOILS REPORT.
- 9. THE TESTING LAB MAY RESTRICT SOME ON SITE MATERIALS FROM BEING USED AS FILL IN BUILDING OR PAVEMENT AREAS WHEN IT IS THEIR OPINION THAT THE MATERIAL WILL NOT MEET REQUIREMENTS STATED HERE. IF SUCH CONDITIONS DO EXIST AND OTHER MATERIAL IS NOT AVAILABLE ON SITE, THE OWNER'S REPRESENTATIVE MUST AUTHORIZE IN WRITING THE USE OF IMPORT MATERIAL UNLESS THERE WILL BE NO ADDITION COST TO THE CONTRACT.
- 10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EARTHWORK OPERATIONS FROM WEATHER AND GROUND WATER INCLUDING KEEPING POSITIVE DRAINAGE, DIVERT DRAINAGE, DEWATERING AND SEALING DISTURBED AREAS WITH A STEEL DRUM ROLLER PRIOR TO INCLEMENT WEATHER.
- 11. PRIOR PLACEMENT OF FILLS, IN AREAS WHERE THE FINAL FILL DEPTH WILL BE LESS THAN 4 FEET, THE AREA SHALL BE PROOF ROLLED WITH A 10 TON ROLLER OR A LOADED 10 WHEEL DUMP TRUCK. SOFT AREAS SHALL BE SCARIFIED, DRIED AND RE-COMPACTED PRIOR TO FILL BEING PLACED. RETEST BY PROOF ROLL AS NECESSARY.
- 12. ALL FINAL SUBGRADE UNDER PROPOSED PAVEMENT, BUILDING OR OTHER STRUCTURE SHALL BE PROOF ROLLED AS DESCRIBED ABOVE FOR THE IDENTIFYING OF SOFT AREAS. AREAS FOUND TO BE UNACCEPTABLE SHALL BE SCARIFIED, DRIED AND RECOMPACTED. RETEST BY PROOF ROLL AS NECESSARY.

- 13. TRENCH EXCAVATION REQUIRING SHEETING, SHORING OR OTHER STABILIZING DEVICES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER AND MEET ALL O.S.H.A. REQUIREMENTS. ALL EXCAVATIONS SHALL MAINTAIN SAFE SIDE SLOPES IN ACCORDANCE WITH LOCAL, STATE AND O. S. H. A. REQUIREMENTS. NO STOCKING OF MATERIAL CLOSE TO AN OPEN CUT OR STEEP SLOPE WILL BE PERMITTED IN AN EFFORT TO PREVENT CAVE-INS.
- 14. TRENCH EXCAVATIONS SHALL BE MADE UNIFORM AND STRAIGHT TO THE FOLLOWING WIDTHS: (FOR PIPES 36 INCHES OR LESS THE TRENCH WIDTH SHALL BE THE DIAMETER PLUS 2 FEET), (FOR PIPES 36 INCHES OR GREATER THE WIDTH SHALL BE THE DIAMETER PLUS 3 FEET). ADDITIONAL WIDTH WILL ONLY BE ALLOWED WHEN COMPACTION EQUIPMENT LIMITATIONS REQUIRE AND ONLY AFTER APPROVAL OF THE ENGINEER OF RECORD. NO MORE TRENCH SHALL BE OPEN IN ONE DAY THAN CAN BE PROPERLY BACKFILLED IN THAT SAME DAY TO MINIMIZE WEATHER AND SAFETY CONCERNS. WHEN BACKFILLING AROUND PIPES PROVIDE UNIFORM SUPPORT AT INVERT AND PROPER COMPACTION UNDER, ALONG AND OVER THE PIPE. CARE SHALL BE GIVEN WHILE BACKFILLING AROUND PIPES TO PREVENT DAMAGE TO THE PIPES INCLUDING: PLACING BACKFILL/BEDDING BY HAND, USING HAND OPERATED PLATE TAMPS OR JUMPING JACKS, AND OTHER LOAD RESTRICTIVE TECHNIQUES UNTIL FILLS ARE A MINIMUM OF 2 FEET OR MANUFACTURES RECOMMEND DEPTH, WHICH EVER IS GREATER, ABOVE THE TOP OF THE PIPE. COMPACTION REQUIREMENTS ARE NOT RELIEVED IN THESE AREAS
- 15. IF ROCK IS ENCOUNTERED THAT WAS NOT INDICATED ON THE PLANS OR SOILS REPORT THE AREA FOR REMOVAL SHOULD BE MEASURED AND REVIEWED WITH THE OWNER'S REPRESENTATIVE PRIOR TO ROCK REMOVAL. ROCK WILL BE DEFINED AS THE NATURAL EARTH MATERIALS THAT CAN NOT BE REMOVED WITH CONVENTIONAL EARTH WORKING

AND WILL REMAIN AS STATED ON THE DRAWINGS OR ABOVE.

- 16. WHERE ROCK IS ADJACENT TO A STRUCTURE OR UTILITY, THE ROCK SHALL BE REMOVED TO A MINIMUM OF 6 INCHES BELOW AND 1 TIMES THE DIAMETER, BUT NOT LESS THAN 1 FOOT OR GREATER THAN 3 FEET ON ANY SIDE.
- 17. NO EXPLOSIVES WILL BE ALLOWED UNTIL ALL PERMITS ARE GRANTED AND THE OWNER HAS SIGNED OFF. PRE AND POST BLAST REPORTS MUST BE KEPT AND RECORDED. ALL STRUCTURES WITHIN THE AREA OF THE BLAST MUST RECEIVE A PRE- BLAST SURVEY. ALL BLASTING MUST BE PERFORMED BY A LICENSED BLASTER.
- 18. UNLESS OTHERWISE NOTED ON THE DRAWINGS, THE CONTRACTOR SHALL REMOVE ALL EXCESS TOPSOIL, CUT MATERIAL OR WASTE MATERIAL FROM SITE AND DISPOSE OF IN A LEGAL MANNER.

EROSION CONTROL

- 1. PRIOR TO CONSTRUCTION EQUIPMENT ENTERING OR EXITING THE SITE, A
 CONSTRUCTION ENTRANCE SHALL BE BUILT UNLESS EXISTING CONDITIONS PREVENT
 ANY TRACKING OF DIRT, MUD, OR DEBRIS OFF THE SITE. THE CONTRACTOR WILL BE
 RESPONSIBLE TO KEEP ALL ROADS, PARKING LOTS, SIDEWALKS AND ADJACENT
 PROPERTIES FREE OF DIRT, MUD OR OTHER DEBRIS. THIS WILL INCLUDE BUILDING THE
 CONSTRUCTION ENTRANCE, SWEEPING, SCRAPING AND WASHING THE PAVEMENT
 SURFACES WHEN EVER NEEDED. THE CONSTRUCTION ENTRANCE SHALL BE
 CONSTRUCTED AS SHOWN ON THE PLANS. IF A DETAIL IS NOT PROVIDED, CONSTRUCT
 THE ENTRANCE WITH CLEAN 4 TO 6 INCH STONE, 12 INCHES THICK, OVER STABILIZING
 FABRIC TO THE DIMENSIONS OF 12 FEET WIDE AND 50 LONG. NO CRUSHED CONCRETE
 ALLOWED. THE ENTRANCE SHOULD BE LOCATED SO THAT ALL VEHICLES LEAVING THE
 SITE WILL UTILIZE IT.
- ALL EROSION CONTROL DEVICES SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH FEDERAL, STATE, LOCAL AND MANUFACTURES RECOMMENDATIONS. THE CONTRACTOR SHALL PLACE AND MAINTAIN ALL EROSION CONTROL DEVICES AS NEEDED THROUGH OUT THE PROJECT.
- 3. SILT FENCE SHALL HAVE STEEL STAKES 2X2 INCH AND 4 FEET LONG WOVEN INTO THE FABRIC. THE BASE OF THE SILT FENCE SHALL BE EXCAVATED SO AS TO PROVIDE AN AREA TO BURY THE BOTTOM OF THE FABRIC AT LEAST 6 INCHES INTO THE GROUND. THE STAKES SHALL BE DRIVEN TO A DEPTH THAT WILL PLACE THE BOTTOM FABRIC AT THE BOTTOM OF THE TRENCH. THEN BACKFILL THE BOTTOM FABRIC ON THE UPSTREAM SIDE WITH THE MATERIAL THAT WAS EXCAVATED.
- 4. SILT FENCE SHALL BE PLACED WHERE EVER SURFACE DRAINAGE CAN LEAVE THE SITE.
- 5. STONE FILTERS SHALL BE PLACED IN ALL DRAINAGE WAYS BUT NOT IN STREAMS, CREEKS OR RIVERS. STONE FILTERS SHALL CONSIST OF A UNIFORM MIX OF 1/4 TO 3/4 INCH CLEAN STONE WRAPPED IN FILTER FABRIC AND COVERED WITH 4 INCH STONE.
- INCH CLEAN STONE WRAPPED IN FILTER FABRIC AND COVERED WITH 4 INCH STONE.
 SEDIMENT TRAPS SHALL BE PLACED AND MAINTAINED AS NEEDED. THEY SHALL BE SIZED TO PROVIDE ADEQUATE STORAGE TO ALLOW SEDIMENT TO PRECIPITATE OUT PRIOR DISCHARGING DOWN STREAM.
- TEMPORARY SEEDING SHALL CONSIST OF LIME @ ½ TON PER ACRE, FERTILIZER 5-10-10 @ 600 POUNDS PER ACRE, RYEGRASS (ANNUAL OR PERENNIAL) @ 40 POUNDS PER ACRE AND STRAW MULCH @ 2 TON PER ACRE. JUTE MESH SHALL BE PLACED OVER MULCH AND STAKED WHENEVER WINDS OR SLOPE WILL CAUSE THE MULCH AND SEED TO BECOME DEPLETED OR ERODED. AREAS SHALL BE TEMPORARY SEEDED WHEN THEY ARE SUBJECT TO EROSION AND WILL LIE DORMANT FOR A MONTH OR MORE.

GENERAL CONSTRUCTION CONDITIONS

- 1. THE TERM OF OWNER AS USED IN THESE SPECIFICATIONS AND NOTES SHALL INCLUDE THE OWNER OF THE PROPERTY, THE COMPANY OR PARTY THAT HIRED THE CONTRACTOR, THE COMPANY OR PARTY THAT SIGNED THE CONTRACT FOR THIS WORK AND THE AGENTS OF EACH. THE OWNER'S REPRESENTATIVE SHALL BE THE INDIVIDUAL OR PARTY ASSIGNED BY THE OWNER TO BE THE OWNER'S REPRESENTATIVE.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PERMITS, CONNECTION PERMITS, FEES, INSPECTIONS AND RECORD KEEPING REQUIRED BY ALL MUNICIPAL, UTILITY, HEALTH, ENVIRONMENTAL, STATE OR FEDERAL AGENCIES THAT MAY HAVE JURISDICTION. FURTHERMORE, THE CONTRACTOR SHALL BE RESPONSIBLE TO MEET OR EXCEED ALL REQUIREMENTS OF THE AGENCIES OR AUTHORITIES HAVING JURISDICTION OVER HIS WORK. ALL CONFLICTS IN REQUIREMENTS OF DIFFERENT AGENCIES, AUTHORITIES AND/OR THE DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND MAINTAIN THE PROPERTY AND PROJECT LIMITS THROUGH OUT THE PROJECT. ALL CONFLICTS BETWEEN THE DESIGN AND THE PROJECT/PROPERTY LIMITS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. UNLESS DESCRIBED IN THE CONTRACT DOCUMENTS OR SHOWN ON THE DRAWINGS THE OWNER HAS NOT SECURED ANY RIGHT OF WAYS, EASEMENTS OR AGREEMENTS WITH OTHER PROPERTY OWNERS OR PROPERTY USERS. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE AND MAINTAIN ANY TEMPORARY RIGHT OF WAYS, EASEMENTS, PERMITS OR AGREEMENTS HE MAY NEED TO PERFORM HIS WORK. ALL SUCH AGREEMENTS SHALL HOLD THE OWNER, ENGINEER AND HIS AGENTS HARMLESS AND THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR ALL COSTS. THE CONTRACTOR SHALL COPY THE OWNER ON RELEASES OF ALL AGREEMENTS PRIOR TO FINAL PAYMENT BY THE OWNER TO THE CONTRACTOR.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY, LAYOUT AND RECORD DRAWINGS FOR THIS CONTRACT. ANY CONFLICTS IN SURVEY/LAYOUT AND THE DESIGN OR AGENCIES REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL PROTECT AND SAFEGUARD ALL EXISTING SURVEY MONUMENTS, CONTROL AND TIE-DOWNS. THE CONTRACTOR SHALL PAY ALL COSTS TO REPAIR OR REPLACED DAMAGED SURVEY MONUMENTS, CONTROL AND TIE-DOWNS.
- NO CHANGES TO THE DESIGN OR MATERIALS SPECIFIED MAY BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE ENGINEER OR IN THE CASE OF UTILITIES OR ROAD WORK TO BE DEDICATED, THE AUTHORITY RECEIVING DEDICATION. AT THE END OF THE CONTRACT, THE CONTRACTOR SHALL PROVIDE TO THE OWNER A RECORD SET OF DRAWING REFLECTING ALL CHANGES MADE BY THE CONTRACTOR DURING CONSTRUCTION.
- EROSION CONTROL IS NECESSARY WHEN EVER SEDIMENT, DUST, EROSION, OR CONTAMINATED RUN-OFF MAY OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE TO PLACE AND MAINTAIN WHAT EVER EROSION CONTROL OR RUN-OFF PROTECTION IS REQUIRED TO PROTECT HIS WORK, THE WORK OF OTHERS, THE PROJECT, ADJACENT PROPERTIES AND THE HEALTH AND WELL BEING OF THE WORKERS, PUBLIC AND SURROUNDING NATURAL RESOURCES. THEY SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING EROSION AND RUN-OFF CONTROL.
- THE CONTRACTOR SHALL BE FAMILIAR WITH THE PROJECT SITE AND ALL ADJACENT PEDESTRIAN, TRAFFIC AND BUSINESS USES. THE CONTRACTOR SHALL TAKE WHAT EVER PRECAUTIONS AND STEPS NECESSARY TO MAINTAIN SAFETY AND OPERATION OF THESE USES IN ACCORDANCE WITH FEDERAL, STATE, COUNTY AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DAMAGES CAUSED FROM HIS FAILURE TO TAKE PROPER AND ADEQUATE PRECAUTIONS. THE CONTRACTOR SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS REGARDING THESE USES.

- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DELAYS ASSOCIATED WITH WEATHER, GROUNDWATER, AND OTHER OCCURRENCES THAT COULD BE EXPECTED OR ARE COMMON WITH THIS TYPE WORK. THE CONTRACTOR SHALL REVIEW ALL PERTINENT DOCUMENTS INCLUDING SOILS REPORTS, SOILS BORINGS AND OTHER SOIL 5.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE TO SAVE AND PROTECT HIS WORK THROUGH OUT THE CONTRACT. ANY DAMAGES REQUIRING REPAIRS OR REPLACEMENT SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.
- 10. WHEN WORK IS DONE WITHIN A ROAD, UTILITY OR PRIVATE EASEMENT, RIGHT OF WAY OR OTHER PROPERTY AGREEMENT THE CONTRACTOR SHALL DO ALL WORK WITHIN THAT AREA PER THE AUTHORITY HAVING JURISDICTION.
- 11. WHEN SEPARATE SITE AND BUILDING CONTRACTS ARE PERFORMED THE SITE CONTRACTOR SHALL BE RESPONSIBLE TO BRING UTILITIES TO WITHIN 5 FEET OF BUILDING FACE UNLESS NOTED OTHERWISE ON DRAWINGS OR CONTRACT DOCUMENTS.
- 12. ALL UTILITIES ARE SHOWN PER SURFACE SURVEYS AND/OR RECORD MAPS AND MAY VARY FROM ACTUAL IN FIELD LOCATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY STAKE OUTS AND LOCATING UTILITIES PRIOR TO COMMENCING WORK. ANY DAMAGE TO UTILITIES DUE TO IMPROPER STAKE OUT, LACK OF STAKE OUT OR THE FAILURE TO VERIFY DIFFERENCES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR, REPLACE OR PAY DAMAGES AT NO EXPENSE TO THE CONTRACT. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING ALL UTILITIES TO FINAL GRADE INCLUDING EXISTING UTILITIES.

PAVEMENT AND STRUCTURAL SUBBASE

- THE TYPE OF SUBBASE REQUIRED FOR EACH USE SHALL BE CALLED OUT ON THE DRAWINGS. NO LEVEL UP SAND COURSE ALLOWED.
- 2. FINAL GRADING OF SUBBASE SHALL BE TO +/- 1 INCH OF THAT DESIGNATED ON THE DRAWINGS AND +/- 1 INCH OF THE REQUIRED THICKNESS FOR THICKNESS OF 8 INCHES OR GREATER AND +/- ½ INCH FOR THICKNESS LESS THAN 8 INCHES.
- 3. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS IN PREPARING THE SUBGRADE TO RECEIVE SUBBASE. THIS SHALL INCLUDE FINE GRADING AND COMPACTING AS NECESSARY TO MEET THE REQUIREMENTS STATED HERE AND UNDER
- THE AMOUNT OF TESTING REQUIRED TO VERIFY THE COMPACTION SHALL BE THE SAME AS STATED UNDER "EARTHWORK".

SANITARY SEWER SYSTEMS

- THE SANITARY SEWER SYSTEM SHALL BE SUPPLIED AND PLACED INACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL SANITARY SEWER AUTHORITY FOR THIS PROJECT IS THE CITY OF ROCKWALL AND THE TREATMENT PLANT IS THE CITY OF ROCKWALL.
- ALL SANITARY SEWER MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING.
- 3. UNLESS OTHERWISE NOTED SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 3034, SDR 35, WITH GASKETS PER ASTM D 3212, ELASTOMERIC SEAL. THE PIPE SHALL BE BED 6 INCHES BELOW AND UP HALF ITS DIAMETER WITH CLEAN STONE OF A UNIFORM MIX RANGING IN SIZE OF 1/4 INCH TO 1/4
- 4. FORCEMAIN PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2241, SDR 210R LOWER IF PRESSURES ARE HIGH IN SYSTEM WITH GASKETS PER ASTM D 3139, AND ELASTOMERIC SEAL. THE PIPE SHALL BE ENCASED IN A RUN OF CRUSH STONE OR GRAVEL MATERIAL WITH 100% PASSING THE 2 INCH SIEVE AND 2 TO 10% PASSING THE 200 SIEVE.
- 5. MANHOLES SHALL BE PROVIDED PER ASTM C 478 WITH STEEL CORE POLYETHYLENE STEPS. GASKETS BETWEEN RISERS SHALL BE RUBBER PER ASTM C 443 AND MORTARED WATER TIGHT WITH A WATERPROOF/PLUG MORTAR. THE INVERT SHALL BE MADE WITH CONCRETE OR ½ ROUND SECTION OF PIPE. PIPE JOINTS SHALL BE A PRESS WEDGE OR CAST IN PLACE BOOT. BOTH WILL HAVE ADDITIONAL VOIDS FILLED WITH WATERPROOF/PLUG MORTAR. ADJUSTMENT RINGS SHALL BE PRECAST CONCRETE 4200 PSI AND 5 TO 8% AIR ENTRAINMENT. EXTERIOR MANHOLES SHALL BE COATED WITH A SEAL COAT ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. RAVEN LINED OR APPROVED EQUAL.
- 6. CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN STONE OF THE SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT. CLEANOUTS SHOULD BE NO MORE THAN 90 FEET APART ON LATERALS.
- MANHOLE FRAMES AND COVERS SHALL BE PER ASTM A 48, CLASS 30B, FULLY COATED WITH THE LETTERING "SANITARY" CAST INTO IT. THE MINIMUM SIZE WILL BE A 24 INCH INSIDE OPENING AND DESIGN FOR A MINIMUM OF H-20 LOADING.
- 8. ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.
- ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP.
 ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN
- 10. ALL TAPS TO MAIN LINES SHALL BE MADE WITH SADDLES WHEN THE TAP IS ½ THE DIAMETER OR LESS OF THE EXISTING PIPE, BUT MADE WITH A SLEEVE WHEN THE TAP IS GREATER THAN ½ THE DIAMETER OR EQUAL TO THE EXISTING PIPE. IF CONNECTIONS ARE REQUIRED TO EQUAL SIZE PIPES OF 8 INCHES OR GREATER, A MANHOLE SHOULD BE INSTALLED OVER THE CONNECTION POINT AND INVERTS FORMED. WHEN CONNECTING TO AN EXISTING MANHOLE THE CONNECTING PIPE HOLE SHALL BE CORED AND A PRESS WEDGE INSTALLED. THE CONNECTION SHALL BE MORTARED UP WITH WATERPROOF/PLUG MORTAR. INSIDE THE EXISTING MANHOLE, THE EXISTING INVERT SHALL BE BROKE OUT IN A MANNER THAT PROTECTS FROM DEBRIS ENTERING THE LIVE SYSTEM. WHILE A NEW INVERT IS FORMED.
- 11. SANITARY MANHOLES SHALL BE VISUALLY LAMPED AFTER BACKFILL TO VERIFY ALIGNMENT, CLEANLINESS AND THERE IS NO DAMAGE TO THE SYSTEM. AFTER THE SYSTEM HAS BEEN BACKFILLED FOR 30 DAYS, THE SYSTEM WILL BE RELAMPED AND MAY BE TESTED WITH A MANDREL SIZED AT 95% OF THE INTENDED INSIDE DIAMETER
- 12. GRAVITY SYSTEMS SHALL BE AIR TESTED BETWEEN MANHOLES TO 3.5 PSI FOR 5 MINUTES PER ASTM F 1417 FOR PLASTIC PIPES.
- 13. MANHOLES SHALL BE TESTED SEPARATELY FOR LEAKAGE OR INFILTRATION USING ASTM C 969. THE ALLOWED LEAKAGE = 0.1 GALLONS/{(FEET OF DIAMETER)(FEET OF HEAD)(# OF HOURS)} AND THE TEST SHALL RUN FOR 24 HOURS.
- 14. WHEN NECESSARY TO VERIFY SYSTEM INTEGRITY THE ENTIRE SYSTEM MAY BE TESTED FOR INFILTRATION AND EXFILTRATION USING ASTM C 969. THE SYSTEM SHALL BE BROKEN UP INTO SECTIONS WHEN NECESSARY TO CONSIDER GROUNDWATER DEPTH, LENGTH AND ELEVATION DIFFERENCES.
- 15. FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.
- AFTER ALL TESTING IS COMPLETE AND BEFORE THE SYSTEM IS TURNED OVER TO THE AUTHORITY HAVING JURISDICTION THE SYSTEM SHALL BE CHECKED TO VERIFY IT IS CLEAN AND FREE OF DIRT, DEBRIS AND OTHER FOREIGN MATTER. THE CONTRACTOR SHALL CLEAN ANY SECTIONS REQUIRING SUCH AT NO ADDITIONAL EXPENSE TO THE CONTRACT

SEEDING AND LANDSCAPING

- TOPSOIL SHALL BE REMOVED FROM STOCKPILES AND SPREAD IN THE AREAS SHOWN ON THE PLANS. THE DEPTH OF TOPSOIL SHALL BE AS SHOWN ON THE PLANS. IF THE DEPTH OF TOPSOIL IS NOT GIVEN THE FOLLOWING SHALL BE USED: "A MINIMUM OF 4 INCHES IN LAWN AREAS" AND "A MINIMUM OF 12 INCHES IN LANDSCAPE PLANTING AREAS".
- AFTER THE TOPSOIL IS IN PLACE IT SHALL BE FINE GRADED REMOVING ALL ROOTS, STICKS, STONES AND DEBRIS GREATER THAN 2 INCHES IN ANY DIMENSION. THE TOPSOIL SHALL BE FINE GRADED TO THE LINES AND GRADES SHOWN ON THE PLANS
- THE TOPSOIL SOIL SHALL HAVE A PH OF 5.5 TO 7.6 AND AN ORGANIC CONTENT OF 3 TO 20%. THE GRADATION OF THE TOPSOIL SHALL BE 100% PASSING 2 INCH SIEVE, 85 TO 100 % PASSING THE 1 INCH SIEVE, 65 TO 100% PASSING THE ½ INCH SIEVE AND 20 TO 80% PASSING THE NO. 200 SIEVE.

- LIME OF TYPE RECOMMENDED FOR SOIL CONDITIONING SHALL BE USED TO TREAT ACIDIC SOILS.
- LAWN FERTILIZER SHALL BE 55% NITROGEN, 10% PHOSPHORUS AND 10% POTASH WHERE 50% OF THE NITROGEN IS DERIVED FROM UREAFORM SOURCE.
- 6. LAWN SEED (WHEN NOT GIVEN ON THE PLANS) SHALL BE "50% BY WEIGHT, 85% PURITY, 85% GERMINATION OF PENNFINE PERENNIAL RYE"; "30% BY WEIGHT, 97% PURITY, 85% GERMINATION OF PENNLAWN RED FESCUE"; "20% BY WEIGHT, 85% PURITY, 80% GERMINATION OF COMMON KENTUCKY BLUEGRASS".
- 7. WHEN PLACING BY HYDROSEEDING APPLICATION FERTILIZER SHALL BE PLACED AT 80 POUNDS PER ACRE, HYDROMULCH AT 1,200 POUNDS PER ACRE, WATER AT 500 GALLONS PER ACRE AND SEED AT A MINIMUM OF 220 POUNDS PER ACRE. ALL OVER SPRAY AREAS SHALL BE PROPERLY CLEANED AND RESTORED AT NO EXPENSE TO THE CONTRACT.
- 8. IF PLACING BY MECHANICAL MEANS, FERTILIZER SHALL BE PLACED AT 25 POUNDS PER 1,000 SQUARE FEET, SEED AT 5 POUNDS PER 1,000 SQUARE FEET, AND STRAW MULCH AT 2 TONS PER ACRE. PLACE FERTILIZER AND SEED, THEN LIGHTLY RAKE AND THE ROLL WITH 200 POUND ROLLER. MULCH THE AREA AND THEN WATER. STRAW MAY NEED TO BE SECURED TO PREVENT IT BLOWING AWAY.
- 9. WATER LAWN AREAS AS NEEDED TO PROMOTE GROWTH. THE CONTRACTOR WILL BE RESPONSIBLE TO WATER, RESEED OR WORK WHEN NECESSARY TO INSURE THE GROWTH OF THE LAWN UNTIL A COMPLETE AND UNIFORM STAND OF GRASS HAS GROWN AND BEEN CUT AT LEAST TWICE.
- 10. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL AREAS NOT RECEIVING STRUCTURES, PAVEMENT, RIP RAP, LANDSCAPING OR OTHER IMPROVEMENTS OR FUTURE IMPROVEMENTS SHALL BE CONSIDERED LAWN AREAS AND RECEIVE TOPSOIL AND SEEDING PER DRAWINGS AND ABOVE STATED REQUIREMENTS.
- 11. PLANTINGS SHALL BE SUPPLIED IN ACCORDANCE WITH THE PLANS AND ANSI 260.1
 "AMERICAN STANDARD FOR NURSERY STOCK" IN GOOD HEALTH, VIGOROUS, AND FREE
 OF INSECTS, LARVAE, EGGS, DEFECTS AND DISEASE.
- 12. PLANTING BEDS SHALL BE PREPARED BY LOOSENING THE TOP 1 FOOT OF TOPSOIL. PLANTS SHALL BE LOCATED PER THE PLANS. THE HOLES SHALL BE EXCAVATED (PER THE DETAILS ON THE DRAWINGS) WITH THE CENTER SLIGHTLY HIGHER TO PROMOTE DRAINAGE. USE A TOPSOIL BACKFILL MIX OF 4 PARTS TOPSOIL, 1 PART PEAT MOSS, AND 10 POUNDS 5-10-5 PLANTING FERTILIZER AND PROPERLY MIXED PER CUBIC YARD. BERM AROUND PLANTS TO FORM A BOWL SHAPE.
- 13. WEED BARRIER MADE FROM FIBERGLASS AND ULTRA-VIOLET LIGHT RESISTANT SHALL BE PLACE UNDER ALL PLANTING BEDS PRIOR MULCHING.
- 14. ALL TREES AND SHRUBS SHALL BE STAKED AS DETAILED ON THE DRAWINGS. TREE WRAPPING WILL BE PROVIDED AT THE BASE OF ALL TREES AS DETAILED.
- 15. MULCH SHALL BE 50% SHREDDED BARK AND 50% WOOD CHIPS, ¾ TO 2 INCH IN SIZE, UNIFORMLY MIXED AND FREE OF ELM WOOD. MULCH SHALL BE PLACED UNIFORMLY OVER THE PLANTING BED ALLOWING NO WEED BARRIER TO BE SEEN.
- 16. ALL LANDSCAPING SHALL BE GUARANTEED FOR ONE YEAR AFTER FINAL ACCEPTANCE. ANY PLANTINGS IN NEED OF REPLACEMENT WILL BE GUARANTEED FROM THE TIME OF REPLACEMENT IF AFTER FINAL ACCEPTANCE.

SITE CONCRETE - INCLUDING CURB, SIDEWALKS AND GUTTERS

- 1. THE DIMENSIONS SHALL BE THOSE SHOWN ON THE DRAWINGS. THE CONCRETE MIX SHALL BE AS SHOWN ON THE PLANS AT 28 DAYS MADE WITH TYPE I OR TYPE II CEMENT, PER ASTM C 150, AND AGGREGATES MEETING STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS. SLUMP FOR SLIP FORMING SHALL BE 1 INCH +/- ½ INCH AND FOR FORMED CONCRETE THE SLUMP SHALL BE 3 INCH +/- 1 INCH. AIR ENTRAINMENT MIXTURE SHALL MEET THE REQUIREMENTS OF ASTM C 260 4% +/- 1 ½% FOR SLIP FORM WORK AND 6% +/- 1 ½% FOR FORMED AND PLACED CONCRETE. WATER REDUCING AGENT SHALL CONFORM TO ASTM C 494, TYPE A. CURING COMPOUNDS SHALL CONFORM TO ASTM C309, TYPE I, CLASS A MOISTURE LOSS OF NOT MORE THAN .055 GR/SQ CM WHEN APPLIED AT 200 SQ FT PER GALLON.
- 2. SIDEWALKS, GUTTERS AND CURBS SHALL BE PLACED ON COMPACTED SUBBASE, CONSISTENT WITH THE PAVEMENT SUBBASE, AS SHOWN ON THE DRAWINGS. WHEN SUBBASE DETAILS ARE MISSING AND NO AGENCY HAS JURISDICTION USE THE FOLLOWING: SIDEWALKS AND GUTTERS SHALL BE PLACED ON A MINIMUM OF 6 INCHES OF COMPACTED SUBBASE AND CURBS SHALL BE PLACED ON A MINIMUM OF 6 INCHES OF COMPACTED SUBBASE.
- 3. ALL FORMING, PLACEMENT, MATERIALS AND CURING SHALL CONFORM TO THE LATEST ADDITION OF ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ALL SIMILAR STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS.
- 4. REINFORCING SHALL BE INACCORDANCE WITH THAT SPECIFIED ON THE DRAWINGS AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) "MANUAL OF STANDARD PRACTICES". REINFORCING STEEL SHALL BE ASTM A 615, GRADE 60, DEFORMED. WELDED WIRE FABRIC SHALL BE ASTM A 185, WELDED WIRE STEEL FABRIC.
- 5. SIDEWALKS AND GUTTERS SHALL HAVE A BROOM FINISH PERPENDICULAR TO FLOW WITH A PICTURE FRAME EDGE JOINT ALL THE WAY AROUND. CURBS SHALL HAVE A SMOOTH FINISH OR LIGHT RUB FINISH, BUT CONSISTENT THROUGH OUT THE PROJECT
- 6. EXPANSION JOINTS SHALL BE PLACED EVERY 50 FEET AND AT ADJOINING STRUCTURES SUCH AS WALLS, MANHOLES AND VAULTS. EXPANSION JOINT MATERIAL SHALL BE PREMOLDED, ½ INCH MATERIAL WITH ½ INCH CAP INACCORDANCE WITH ASTM D1751. AFTER CONCRETE HAS SET, THE CAP SHOULD BE REMOVED AND VOID FILLED WITH WATERPROOF JOINT FILLER. CURB AND GUTTER SHALL BE CUT OR TOOL JOINTED TO 1/3 THE DEPTH EVERY 10 FEET. SIDEWALKS SHOULD HAVE TOOLED OR CUT JOINTS TO 1/3 THE DEPTH IN SQUARES OR AS CLOSE TO SQUARE AS POSSIBLE NOT EXCEEDING 5FT X5FT.

STORM WATER SYSTEM

- 1. THE STORM WATER SYSTEM SHALL BE SUPPLIED AND PLACED INACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL STORM WATER AUTHORITY FOR THIS PROJECT IS THE CITY OF ROCKWALL AND THE EROSION CONTROL AND RUN-OFF AUTHORITY IS THE CITY OF ROCKWALL.
- STORM DESIGN INCLUDES MANY VARIABLES, SUCH AS PIPE ROUGHNESS COEFFICIENT, THAT CAN AFFECT THE ACTUAL FINAL RUN-OFF. IF NO ALTERNATIVE MATERIALS ARE LISTED ON THE UTILITY DRAWINGS NO SUBSTITUTIONS MAY BE MADE BY THE CONTRACTOR UNLESS FIRST REVIEWED AND ACCEPTED BY THE ENGINEER.
- 3. ALL STORM MATERIAL SIZES, TYPES AND SPECIFICS ARE LISTED ON THE DRAWINGS. IF THE PLANS DO NOT LIST ALL INFORMATION OR ARE UNCLEAR USE THE FOLLOWING.
- 4. STORM PIPE 18 INCHES AND UP SHALL BE CLASS III REINFORCED CONRETE PIPE (RCP).
- 5. STORM PIPE BELOW 18 INCHES SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 3034, SDR 35 WITH GASKETS PER ASTM D 3212, ELASTOMERIC SEAL. THE PIPE SHALL BE BED 6 INCHES BELOW AND UP HALF ITS DIAMETER WITH CLEAN STONE OF A UNIFORM MIX RANGING IN SIZE FROM ¼ INCH TO ¾ INCH.
- 6. END SECTIONS SHALL BE THE SAME MATERIAL AS THE PRECEDING PIPE AND APPROPRIATE COLLAR.
- 7. MANHOLES SHALL BE PROVIDED PER ASTM C 478 WITH STEEL CORE POLYETHYLENE STEPS. THE MANHOLE SHALL BE SIZED TO A MINIMUM OF 2 FOOT GREATER THAN THE LARGEST DIAMETER PIPE ENTERING OR EXISTING. INCREASE SIZE OF MANHOLE IF IN THE SAME HORIZONTAL PLANE THERE IS TWO AREAS WHERE THE AREA BETWEEN TWO PIPES IS LESS THAN 8 INCHES OR HALVE OR THE CIRCUMFERENCE IS SUPPORTED BY LESS THAN 1/2 OF THE DIAMETER OF THE MANHOLE. INVERTS SHALL BE SMOOTH CAST IN PLACE CONCRETE. UNLESS OTHERWISE INDICATED, 4 INCH WEEPS COVER WITH FILTER FABRIC AND 2 INCH STONE SHALL BE PROVIDED AT THE CROWN OF PIPES AND AT SUBGRADE ELEVATION. GASKETS BETWEEN RISERS SHALL BE RUBBER PER ASTM C 443. ADJUSTMENT RINGS SHALL BE PRECAST CONCRETE 4200 PSI, MIN. 6.5 SACK MIX AND 5 TO 8% AIR ENTRAINMENT.
- 8. INLETS SHALL MEET THE SAME REQUIREMENTS AS THOSE LISTED FOR MANHOLES.
- GRATES SHALL BE RETICULINE AND GALVANIZED PER ASTM A123. MINIMUM GRATE OPENING SIZE WILL BE 24 INCHES X 24 INCHES AND DESIGN FOR A MINIMUM OF H-20 LOADING.
- MANHOLE FRAMES AND COVERS SHALL BE PER ASTM A 48, CLASS 30B, FULLY COATED WITH THE LETTERING "STORM" CAST INTO IT. THE MINIMUM SIZE WILL BE A 24 INCH INSIDE OPENING AND DESIGN FOR A MINIMUM OF H-20 LOADING.

- 11. CLEANOUTS SHALL BE MADE OF THE SAME PIPE MATERIAL AS THE CARRIER PIPE. A
 CAST IRON FRAME AND COVER SHALL BE PROVIDED FOR ACCESS AT GRADE AND
 DESIGNED FOR H-20 LOADING. THE CLEANOUT SHALL BE ENCASED IN STONE OF THE
 SAME TYPE AS THE PIPE BEDDING FOR THE FULL DEPTH OF THE CLEANOUT
- 12. GROUTED RIP RAP SHALL BE PLACED AT THE END OF ALL OUTFALL STRUCTURES. UNLESS OTHERWISE NOTED, THE RIP RAP SHALL BE A CLEAN DURABLE STONE WITH AVERAGE WEIGHTS OF 100 POUNDS. THE RIP RAP SHALL BE PLACED ON 1 FOOT OF GRAVEL SUBBASE OR STABILIZING FABRIC.
- 13. DRY WELLS SHALL MEET THE SAME REQUIREMENTS AS THOSE LISTED FOR MANHOLES WITH THE ADDITION OF OPENINGS OF APPROXIMATELY 15% OF THE RINGS INTERIOR SURFACE. THE OPENINGS SHALL BE 1 X 3 INCH SLOTS OR 1 INCH DIAMETER ON THE INSIDE SURFACE. DRY WELLS SHALL BE BACKFILLED WITH A MINIMUM OF 1 FOOT OF CLEAN STONE SIZED BETWEEN 3 AND 4 INCHES. OUTSIDE THE STONE THE ENTIRE STRUCTURE SHALL BE WRAPPED IN FILTER FABRIC TO PREVENT OUTSIDE SOILS FROM ENTERING THE STONE AND DRY WELL.
- 14. UNLESS OTHERWISE NOTED, TRENCH DRAINS SHALL BE MADE WITH 4 INCH
 PERFORATED CORRUGATED POLYETHYLENE PIPE ENCASED IN CLEAN STONE SIZED
 BETWEEN 2 INCH AND 1/4 INCH AND THEN WRAPPED IN FILTER FABRIC. OUTSIDE
- 15. ALL JOINTS BETWEEN PIPES AND PRECAST STRUCTURES SHALL BE MORTARED TIGHT.

DIMENSIONS OF THE TRENCH DRAIN WILL NOT BE LESS THAN 1 FOOT.

- ALL PIPE SHALL BE PLACED IN ACCORDANCE WITH THE MANUFACTURES
 RECOMMENDATION AND TO THE LINES AND GRADES SHOWN ON THE DRAWINGS. CARE
 SHALL BE GIVEN DURING BACKFILL OPERATIONS NOT TO MOVE OR DAMAGE PIPE OR
 APPURTENANCES WHILE ACHIEVING THE APPROPRIATE COMPACTION REQUIREMENTS.

 DIAMETER, SCREW TYPE EXTENS
 CURB STOPS SHALL HAVE A BRO
 HEAD. THE CURB STOP SHALL BE
- 17. ALL SYSTEMS SHALL BE VISUALLY INSPECTED FOR ALIGNMENT AND WORKMANSHIP. ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM FLUSHED CLEAN.
- 18. ANY PIPES FOUND WITH DIAMETER DEFLECTIONS GREATER THAN 5% OF THE SPECIFIED PIPE DIAMETER WILL BE REPAIRED OR REPLACED. ANY ALIGNMENT DIFFERENTIALS GREATER THAN 5% OF THE DIAMETER OF THE PIPE WILL BE CORRECTED OR REPLACED.
- 19. ANY CLEANING, REPAIRS OR REPLACEMENT REQUIRED, DUE TO FAILURE OF TESTING OR POOR WORKMANSHIP, SHALL BE DONE BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CONTRACT.

TRAFFIC SIGNAGE AND PAVEMENT MARKINGS

- 1. PAVEMENT MARKINGS SHALL BE THE TYPE, COLOR, SIZE AND LOCATIONS SHOWN ON THE PLANS. IF THE INFORMATION ON THE PLANS IS NOT COMPLETE AND AUTHORITY HAVING JURISDICTION DOES NOT HAVE REQUIREMENTS REGARDING THIS USE THE FOLLOWING. PAINT SHALL BE SUPPLIED IN ACCORDANCE WITH AASHTO: M 248 LATEST ADDITION. COLORS SHALL BE AS FOLLOWS (YELLOW- PARKING STALLS, HANDICAP PARKING AND CHARACTERS, PARKING ISLANDS, TRAFFIC CONTROL LETTERING AND CHARACTERS AND FIRE LANES) (WHITE STOP BARS, PEDESTRIAN CROSSINGS AND STOP LETTERING).
- 2. THE PAVEMENT SHALL BE CLEAN AND FREE OF DIRT, DUST, MOISTURE, OILS AND OTHER FOREIGN MATERIALS. ANY OLD PAVEMENT MARKINGS SHALL BE REMOVED UNLESS PAINTS ARE COMPATIBLE AND OVERLAY IDENTICALLY. THE SURFACE OF THE PAVEMENT PRIOR APPLICATION SHALL BE 45 DEGREES F AND RISING UNLESS MANUFACTURE'S RECOMMENDATIONS ARE GREATER.
- 3. THE SIGNAGE SHALL BE THE TYPE AND LOCATED PER THE DRAWINGS. THE SIGNAGE SHALL BE PROVIDED IN ACCORDANCE WITH THE LOCAL HIGHWAY, COUNTY HIGHWAY AND STATE DEPARTMENT OF TRANSPORTATION. IF LOCAL, COUNTY OR STATE CODES DO NOT EXIST USE AASHTO: M268.

POSTS, BRACKETS AND FRAMES SHALL BE STEEL PER ASTM A-36, A-242, A-441, A-572,

- A588, GRADE 50 AND HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. ALL CUTTING, DRILLING OR OTHER POLE MODIFICATIONS SHALL BE PAINTED WITH GALVANIZING PAINT. ALL BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

 5. POST HOLES SHALL BE A MINIMUM OF FOUR FEET DEEP AND 12 INCHES IN DIAMETER UNLESS POOR SOILS OR FROST CONDITIONS REQUIRE GREATER DEPTH. SIGN POSTS
- ABLE TO WITHSTAND 33 POUNDS PER SQUARE FOOT.

 6. CONTRACTORS CAN PLACE SIGNS ON POSTS AFTER CONCRETE HAS CURED FOR SEVEN

IS PLACED AROUND THE POST. THE OVERALL SIGN AND POST SYSTEM SHOULD BE

SHALL BE KEPT PLUMB, 6 INCHES OFF BOTTOM AND CENTERED AS 3000 PSI CONCRETE

DAYS OR % STRENGTH IS ACHIEVED.

7. ALL HANDICAP STRIPING AND SIGNAGE SHALL MEET THE AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. FIRE LANE STRIPING AND SIGNAGE SHALL MEET THE

REQUIREMENTS OF THE LOCAL BUILDING INSPECTOR AND FIRE DEPARTMENT.

WATER SYSTEMS AND SERVICES

- THE WATER SYSTEMS AND SERVICES SHALL BE SUPPLIED AND PLACED INACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE LOCAL WATER AUTHORITY FOR THIS PROJECT IS THE CITY OF ROCKWALL AND THE HEALTH DEPARTMENT IS THE CITY OF ROCKWALL.
- 2. IF THE AUTHORITY HAVING JURISDICTION DOES NOT HAVE SPECIFIC REQUIREMENTS REGARDING MATERIALS AND PLACEMENT THE FOLLOWING WILL BE USED.
- 3. ALL WATER PIPING, FITTINGS AND APPURTENANCES SHALL BE PLACED A MINIMUM OF 6 INCHES BELOW FROSTLINE OR 5 FEET WHICH EVER IS GREATER. PIPE SIZES 4 INCHES AND UP SHALL BE DUCTILE IRON OR POLYVINYL CHLORIDE AS INDICATED ON THE DRAWINGS (IF NOT SHOWN USE DUCTILE IRON). PIPE SIZES BELOW 4 INCHES SHALL BE COPPER OR POLYETHYLENE AS INDICATED ON THE DRAWINGS (IF NOT SHOWN USE
- 4. THE MINIMUM SEPARATION BETWEEN WATER SERVICES AND SEWER LINES SHALL BE 18 INCHES MEASURED VERTICALLY FROM OUTSIDE TO OUTSIDE OF PIPE AT THE CROSSING. A STANDARD LENGTH OF WATER PIPE SHALL BE CENTER AT THE CROSSING TO MAXIMIZE THE DISTANCE BETWEEN THE CROSSING AND THE NEAREST WATER SERVICE PIPE JOINT. WHEN THE WATER SERVICE RUNS UNDER THE SEWER LINE, A GRAVEL OR CRUSH STONE BACKFILL MEETING THE REQUIREMENTS OF SUBBASE SHALL BE PLACED AND COMPACTED AROUND THE WATER PIPE UP HALF THE DIAMETER OF THE SEWER PIPE TO PROVIDE ADEQUATE SUPPORT TO THE SEWER LINE. WATER SERVICES AND SEWER LINES RUNNING PARALLEL SHALL HAVE A MINIMUM SEPARATION OF 10 FEET MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.
- 5. DUCTILE IRON PIPE SHALL BE PROVIDED INACCORDANCE WITH AWWA C151, (6 INCH DIAMETER AND GREATER SHALL BE CLASS 50) AND (6 INCHES AND SMALLER SHALL BE CLASS 51). DUCTILE IRON PIPE SHALL BE LINED WITH A CEMENT MORTAR AND SEAL COATED IN ACCORDANCE WITH AWWA C104. GASKETS SHALL BE PROVIDED INACCORDANCE WITH AWWA C111. FITTINGS SHALL BE DUCTILE IRON INACCORDANCE WITH AWWA C153 COMPACT FITTINGS WITH A PRESSURE RATING OF 350 PSI.
- 6. STANDARD DUCTILE IRON OR CAST IRON FITTINGS SHALL BE SUPPLIED INACCORDANCE WITH AWWA C110 WITH A PRESSURE RATING OF 250 PSI. THE LINING AND GASKETS FOR THE FITTING SHALL MEET THE SAME REQUIREMENTS AS THE PIPE. PLASTIC WRAP PIPES INACCORDANCE WITH AWWA C105 AND TAR COAT ALL FITTING BOLTS WHEN EVER SOILS ARE PRIMARILY CLAY OR NOT PH BALANCED. SEE SOILS REPORT FOR SOILS TYPE AND RECOMMENDATIONS.

As-Built: 6-22-17

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 ON 12-8-16



- 7. PVC (POLYVINYL CHLORIDE) PIPE SHALL BE FURNISHED INACCORDANCE WITH AWWA C900 FOR PIPE 4 INCHES OR GREATER AND ASTM D 1785, DR14 CLASS 200), GASKETS PER ASTM F 477- ELASTOMERIC SEAL, SOLVENT CEMENT PER ASTM D 2564 FOR PIPES SMALLER THAN 4 INCHES. TEN GAUGE COPPER TRACER WIRE SHALL BE PLACED WITH
- 8. THRUST RESTRAINTS SHALL BE USED AT ALL FITTINGS, PLUGS AND APPURTENANCES THAT CAUSE A CHANGE IN DIRECTION, FLOW OR ARE SUBJECT TO THRUST OR HAMMERING BY WATER FLOW. THRUST RESTRAINS WILL INCLUDE CONCRETE THRUST BLOCKS (3000 PSI), ANCHORING JOINTS AND TIE RODS. CONCRETE THRUST BLOCKS SHALL BE USED UNLESS SPACE, ACCESS OR MAINTENANCE RESTRAINS PROHIBIT THEIR
- 9. COPPER WATER PIPE SHALL BE SUPPLIED INACCORDANCE WITH ASTM B 88- TYPE K, SEAMLESS WITH FITTINGS PER AWWA C800.
- 10. PE (POLYETHYLENE) PIPE SHALL BE FURNISHED INACCORDANCE WITH AWWA C901 AND
- GATE VALVES SHALL BE NONRISING STEM, DOUBLE DISC, BRONZE DISC RESILIENT SEATED, CAST IRON OR DUCTILE IRON BODY AND BONNET IN ACCORDANCE WITH AWWA C509 AND PRESSURE RATED FOR 250 PSI. TEN GAUGE COPPER TRACER WIRE WILL BE PLACED WITH ALL PIPES.
- 12. VALVE BOX SHALL BE CAST IRON WITH A BASE COMPATIBLE WITH VALVE, 5 INCHES IN DIAMETER, SCREW TYPE EXTENSION AT TOP AND A COVER THAT READS "WATER".
- 13. CURB STOPS SHALL HAVE A BRONZE BODY, GROUND KEY PLUG OR BALL WITH WIDE TEE HEAD. THE CURB STOP SHALL BE COMPATIBLE WITH ADJOINING PIPES. THE SERVICE BOX SHALL HAVE A TELESCOPING TOP SECTION WITH A LENGTH THAT WILL PLACE THE ADJUSTMENT CENTERED WHEN BURIED TO THE APPROPRIATE DEPTH. THE SERVICE BOX SHALL BE OF A SIZE AND TYPE THAT IS COMPATIBLE WITH THE CURB STOP. THE COVER SHALL HAVE THE LETTERING "WATER".
- 14. ALL METERS, VAULTS AND BACKFLOW SHALL MEET THE REQUIREMENTS OF THE HEALTH DEPARTMENT AND OTHER AGENCIES HAVING JURISDICTION.
- 15. FIRE HYDRANTS SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL WATER AUTHORITY, FIRE DEPARTMENT AND AWWA C502. DRAIN STONE SHALL HAVE 100% PASSING THE 1½ INCH SIEVE, 90 100% PASSING THE 1 INCH SIEVE, 35 95% PASSING THE ½ INCH SIEVE AND 0 15% PASSING THE ¼ INCH SIEVE. ALL HYDRANTS WILL INCLUDE A GATE VALVE AND BOX LOCATED AT THE HYDRANT BRANCH TO SHUT OFF THE HYDRANT LINE.
- 16. DUCTILE IRON PIPE SHALL BE INSTALLED INACCORDANCE WITH AWWA C600 AND BE ENCASED IN SELECT BACKFILL WHICH WILL MEAN NO STONE OTHER MATERIAL GREATER THAN 2 INCHES IN ANY DIRECTION.
- 17. PVC, PE AND COPPER PIPE SHALL BE PLACED PER MANUFACTURES
 RECOMMENDATIONS AND EMBEDDED IN A 6 INCH SAND ENCASEMENT MEASURED FROM
 OUTSIDE SURFACE OF THE PIPE TO THE OUTSIDE OF SAND ENCASEMENT.
- 18. ALL BEDDING AND ENCASEMENTS SHALL BE COMPACTED WITH CARE TO ACHIEVE PROPER COMPACTION WITHOUT DAMAGING THE PIPE, FITTINGS OR APPURTENANCES.
- 19. ALL WATER MAINS FITTINGS AND VALVES SHALL BE TESTED FOR PRESSURE AND LEAKAGE INACCORDANCE WITH AWWA C600. TEST WATER SHALL BE POTABLE. TEST PRESSURES SHALL NOT BE LESS THAN 1.25 TIMES THE WORKING PRESSURE AT THE HIGHEST POINT AND 1.5 TIMES THE WORKING PRESSURE AT THE TESTING POINT. THE PRESSURE MAY NOT DROP MORE THAN 5 PSI DURING THE 2 HOUR TEST. LEAKAGE WILL NOT EXCEED MORE THAN (L={SD(P) ½} /133,200) WHERE "L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR" "S= LENGTH OF PIPE TESTED, IN FEET" "D= NOMINAL DIAMETER OF PIPE, IN INCHES" "P= AVERAGE TEST PRESSURE DURING TEST, IN POUNDS PER SQUARE INCH (GAUGE) DURING THE SAME 2 HOUR DURATION.
- WITH AND COORDINATED WITH THE LOCAL WATER AUTHORITY AND HEALTH DEPARTMENT. WHEN THE AUTHORITY SO REQUIRES, THE TAPS AND/OR CONNECTIONS SHALL BE DONE BY THE AUTHORITY THEMSELVES AND PAID FOR BY THE CONTRACTOR

ALL TAP AND/OR CONNECTION MATERIAL AND WORK SHALL BE DONE IN ACCORDANCE

- 21. OTHER FITTING AND APPURTENANCES NOT PART OF THE MAIN LINE TESTING SHALL BE TESTED BY VISUAL INSPECTION FOR LEAKAGE UNDER NORMAL WORKING PRESSURES.
- 22. ALL MAIN LINES AND APPROPRIATE APPURTENANCES SHALL BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH AWWA C651 AND THE REQUIREMENTS OF THE APPROPRIATE HEALTH DEPARTMENT.
- 23. THE CONTRACTOR WILL COORDINATE ALL TESTING AND DISINFECTING WITH THE WATER AUTHORITY AND HEALTH DEPARTMENT. IF PROFESSIONAL ENGINEER CERTIFICATION IS REQUIRED THE CONTRACTOR SHALL NOTIFY THE OWNER'S

THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT

REPRESENTATIVE AT LEAST TEN DAYS PRIOR TO THE START OF WORK.

24. FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED

TERMITE CONTROL

EXCESSIVELY WET SOILS.

- PROVIDE SOIL TREATMENT FOR TERMITE CONTROL IN STATES THAT REQUIRE TERMITE CONTROL.
- WARRANTY: SUBMIT MANUFACTURER'S STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS. WARRANTY PERIOD: 5 YEARS.
 COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF
- SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

 4. A. SOIL TREATMENT MATERIALS: SOIL TREATMENT MATERIALS SHALL BEAR FEDERAL REGISTRATION NUMBER OF U.S. ENVIRONMENTAL PROTECTION AGENCY AND ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. IF ACCEPTABLE, PRODUCTS MAY

INCLUDE CHLOROPYRIFOS, PERMATHRIN, CYPERMETHRINE, FENVALERATE,

ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR

- ISOFENPHOSE.
 TREAT SOIL IN STRICT COMPLIANCE WITH NATIONAL PEST CONTROL ASSOCIATION STANDARDS AND WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND
- 6. TREAT AREAS UNDER FLOOR SLABS PRIOR TO PLACEMENT OF CONCRETE IF POSSIBLE TO AVOID DRILLING. TREAT AREAS OUTSIDE FOUNDATION WALLS AFTER EXCAVATION, FILLING AND GRADING ARE COMPLETE. DO NOT APPLY TREATMENT TO FROZEN OR
- POST SIGNS AND OTHER WARNINGS INDICATING THAT SOIL POISONING HAS BEEN APPLIED. PROTECT PERSONS AND PROPERTY FROM INJURY OR DAMAGE FROM SOIL TREATMENT WORK.

NOTE:
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN
REMAINS WITH THE DESIGN ENGINEER. THE CITY OF
ROCKWALL, IN REVIEWING AND RELEASING PLANS
FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY
FOR ADEQUACY OR ACCURACY OF DESIGN.

ALDI SPECIFICATIONS

ALDI FOOD MARKET

LOT 1, BLOCK A - RIDGE/SUMMER LEE ADDITION

THE CITY OF ROCKWALL, TEXAS

BURGER
ENGINEERING

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Dallas, Texas 75248
Office: 972.630.3360 Fax: 972.630.3380

Civil ConsultantsTBPE F-12997DESIGN DRAWN DATESCALE NOTESFILENO.BMB JAC6/16N.T.S.D.P.007-116 ALDI SPECC-9

