

NOTE:
CONTRACTOR TO USE CONSTRUCTION DETAILS
OUTLINED IN THE STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION, NORTH CENTRAL
TEXAS, THIRD EDITION & CITY OF ROCKWALL
STANDARDS OF DESIGN & CONSTRUCTION.

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

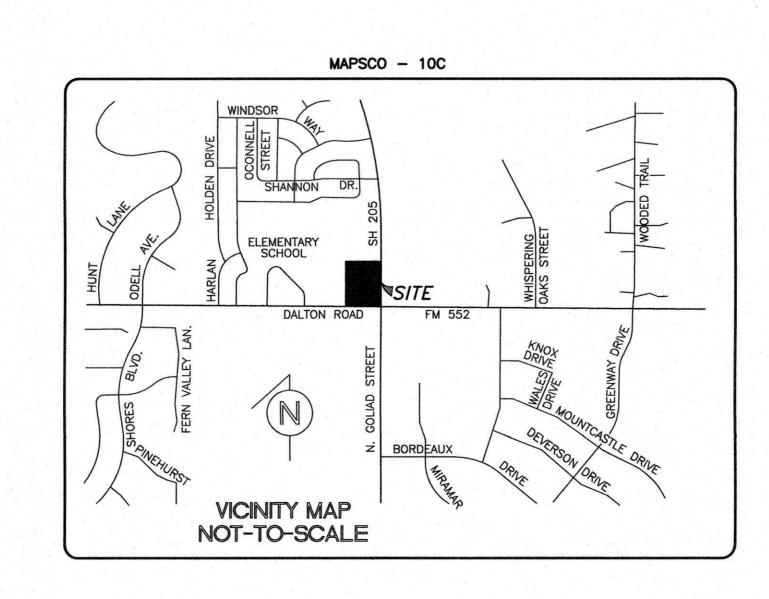
OR ADEQUACY OR ACCURACY OF DESIGN

# LOT 1, BLOCK A DALTON GOLIAD ADDITION N.W.C. N. GOLIAD STREET (S.H. 205) & DALTON ROAD THE CITY OF ROCKWALL, TEXAS

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

OWNER:
ROCKWALL 205-552, LLC
14801 QUORUM DRIVE, SUITE 160
DALLAS, TEXAS 75254
(972) 980-8807
CONTACT: DON SILVERMAN

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.





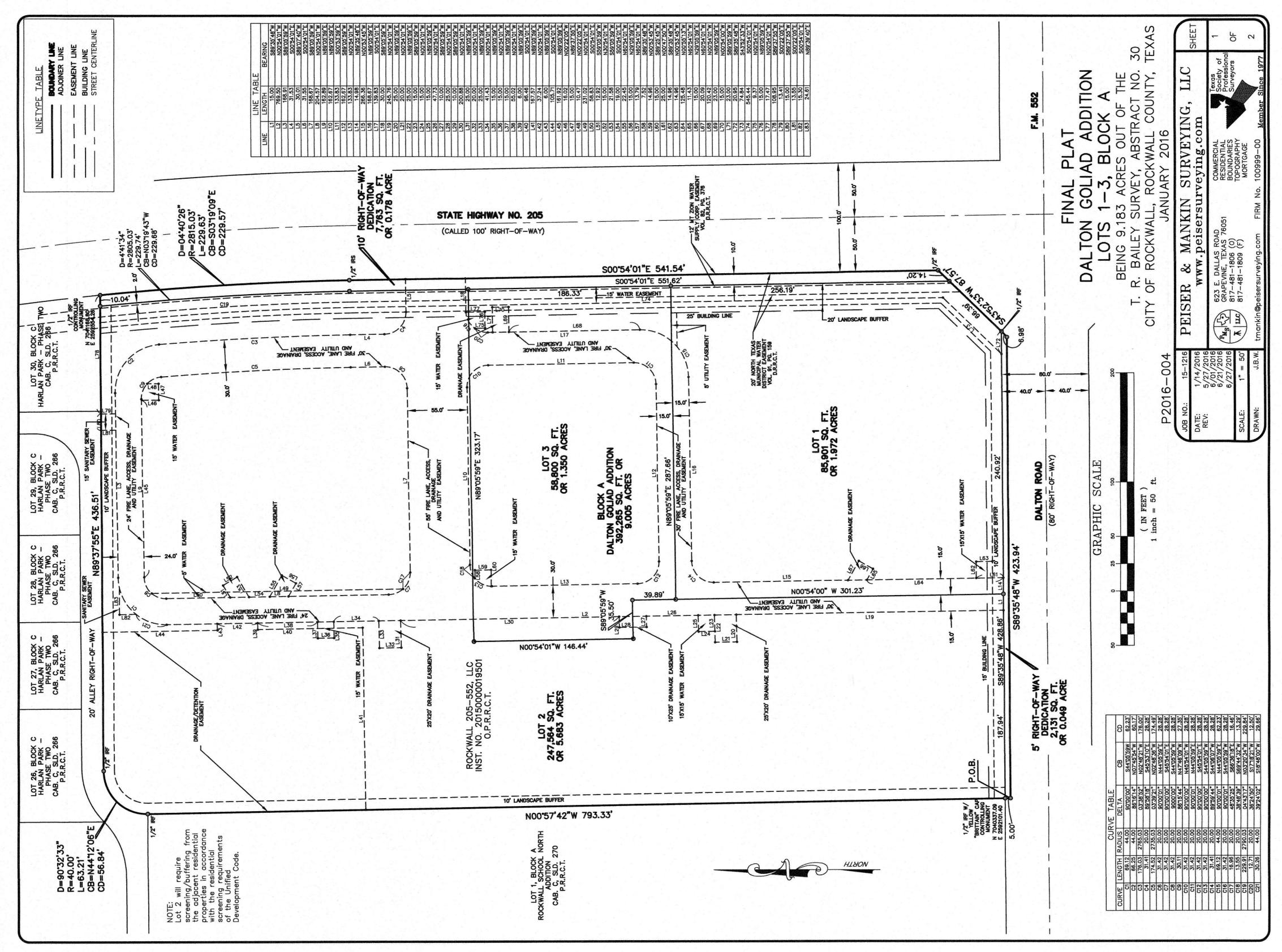
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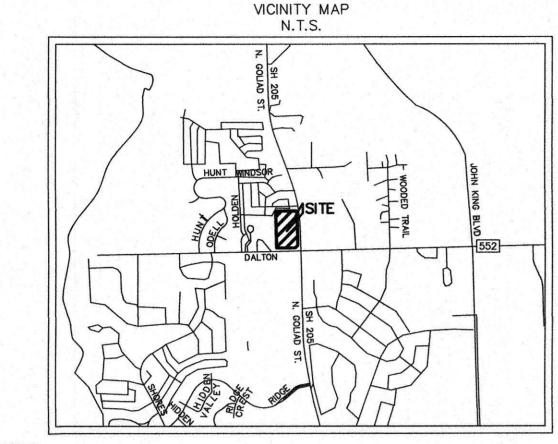
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As-Built: 9.11.18



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





I. IRF - Iron Rod Found

2. IRS - Iron Rod Set w/ "PEISER & MANKIN SURV" red

5. Notice: Selling a portion of this addition by metes and bounds is a violation of city subdivisions ordinance and state platting statues and is subject to fines and withholding of

utilities and building certificates. 4. P.O.B. - Point of Beginning. O.P.R.D.C.T. - Official Public Records, Collin County, Texas. b. D.R.C.C.T. — Deed Records, Collin County, Texas. . Bearings based on the Texas State Plano Coordinate

System, North Central Zone 4202, NAD83, as derived by field observations utilizing the RTK Network Administrated by

Western Data Systems. 8. Lots 3 and 4 will require screening/buffering from the adjacent residential properties in accordance with the residential screening requirements of the Unified Development

9. SLD. - SLIDE CAB. – CABINET

RECOMMENDED FOR FINAL APPROVAL

Planning & Zoning Commission, Chairman Date

hereby certify that the above and foregoing plat of an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the \_\_\_\_\_, 2016.

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

WITNESS OUR HANDS, this \_\_\_\_\_ day of \_\_\_\_\_, 2016.

Mayor, City of Rockwall

City Secretary

City Engineer

SURVEYOR'S CERTIFICATE

, Timothy R. Mankin, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that I prepared this plat from an actual on the ground survey of the land and that the monuments shown thereon were properly placed under my personal supervision in accordance with the subdivision regulations of the City of Rockwall, Texas. 06/27/2016

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED Timothy Por RELIED UPON AS A FINAL SURVEY DOCUMENT Registered Professional Land Surveyor, No. 6122

STATE OF TEXAS

COUNTY OF TARRANT

BEFORE me, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared TIMOTHY R. MANKIN, known to me to be the person or persons whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same in the capacity herein stated and the act and deed of said company.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this \_\_\_\_ day of \_\_\_\_\_ 2016.

Notary Public in and for the State of Texas

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS

COUNTY OF ROCKWALL

I the undersigned owner of the land shown on this plat, and designated herein as the DALTON GOLIAD ADDITION subdivision 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. I further certify that all other parties who have a mortgage or lien interest in the DALTON GOLIAD ADDITION subdivision have been notified and signed this plat. I understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. I also understand the following;

1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.

2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.

3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.

4. The developer and subdivision engineer shall bear total responsibility for storm drain

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. All detention/drainage systems to be maintained, repaired, and replaced by property owner. 7. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements itself. Such deposit may be used by the owner and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall. I further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City: I. my successors and assigns hereby waive any claim, damage, or cause of action that I may have as a result of the dedication of exactions made herein.

WITNESS MY HAND, this \_\_\_\_\_, 2016

ROCKWALL 205-552, LLC

By: OWNER

STATE OF TEXAS:

COUNTY OF \_\_\_\_:

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared \_\_\_\_\_\_, 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 thereof expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2016.

NOTARY PUBLIC in and for the STATE OF TEXAS

OWNER'S CERTIFICATION

WHEREAS ROCKWALL 205-552, LLC, BEING THE OWNER OF A TRACT OF land in the County of Rockwall, State of Texas, said tract being described as follows:

BEING that certain tract of land situated in the T. R. BAILEY SURVEY, ABSTRACT NO. 30, in the City of Rockwall, Rockwal County, Texas, and being all of that certain tract of land conveyed to ROCKWALL 205-552, LLC in Warranty Deed recorded under Instrument Number 20150000019501, Deed Records, Rockwall County, Texas, and being more particularly described as follows;

BEGINNING at a point for the Southwest corner of said Rockwall 205 tract, same being in the North right-of-way line of Dalton Road (80 foot right-of-way);

THENCE North 00 deg. 57 min. 42 sec. West, along the west line of said Rockwall 205 tract, passing at a distance of 5.00 feet, a 1/2 inch iron rod with yellow "Brittain" cap found, same being the Southeast corner of Lot 1, Block A, Rockwall School North Addition, an addition to the City of Rockwall, Rockwall County, Texas, according to the plat thereof recorded in Cabinet C, Page 270, Plat Records, Rockwall County, Texas, and continuing along the common line of said Rockwall 205 tract and said Rockwall School North Addition, a total distance of 793.33 feet to a 1/2 inch iron rod found for the most westerly Northwest corner of said Rockwall 205 tract, same being the Northeast corner of said Rockwall School North Addition, same being in the South line of a 20 foot alley in Block C, Harlan Park — Phase Two, an addition to the City of Rockwall, Rockwall County, Texas, according to the plat thereof recorded in Cabinet C, Page 266, said Plat Records, same being the beginning of a curve to the right, having a radius of 40.00 feet, a central angle of 90 deg. 32 min. 33 sec., and a chord bearing and distance of North 44 deg. 12 min. 06 sec. East, 56.84 feet;

THENCE along the common line of said Rockwall 205 tract and said Block C as follows:

Along said curve to the right, an arc distance of 63.21 feet to a 1/2 inch iron rod found for angle point;

North 89 deg. 37 min. 55 sec. East, a distance of 436.51 feet to a 1/2 inch iron rod found for the Northeast corner of said Rockwall 205 tract, same being the Southeast corner of said Block C, same being in the westerly right-of-way line of State Highway No. 205 (called 100' right-of-way), same being the beginning of a non-tangent curve to the right, having a radius of 2815.03 feet, a central angle of 04 deg. 40 min. 26 sec., and a chord bearing and distance of South 03 deg. 19 min. 09 sec. East, 229.57 feet;

THENCE along the common line of said Rockwall 205 tract and said State Highway No. 205 as

Along said non-tangent curve to the right, an arc distance of 229.63 feet to a 1/2 inch iron rod set with "Peiser & Mankin SURV" red plastic cap for angle point;

South 00 deg. 54 min. 01 sec. East, a distance of 541.54 feet to a 1/2 inch iron rod found for the most easterly Southeast corner of said Rockwall 205 tract, same being the North end of a corner clip in the intersection of said State Highway No. 205 and aforesaid Dalton Road;

THENCE South 43 deg. 52 min. 33 sec. West, along the common line of said Rockwall 205 tract and said corner clip, passing at a distance of 80.59 feet, a 1/2 inch iron rod found, and continuing a total distance of 87.57 feet to a point for the most southerly Southeast corner of said Rockwall 205 tract, same being the South end of said corner clip;

THENCE South 89 deg. 35 min. 48 sec. West, along the common line of said Rockwall 205 tract and said Dalton Road, a distance of 423.94 feet to the POINT OF BEGINNING and containing 402,160 square feet or 9.232 acre of computed land, more or less.

# FINAL PLAT DALTON GOLIAD ADDITION LOTS 1-3, BLOCK A

BEING 9.183 ACRES OUT OF THE T. R. BAILEY SURVEY, ABSTRACT NO. 30 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

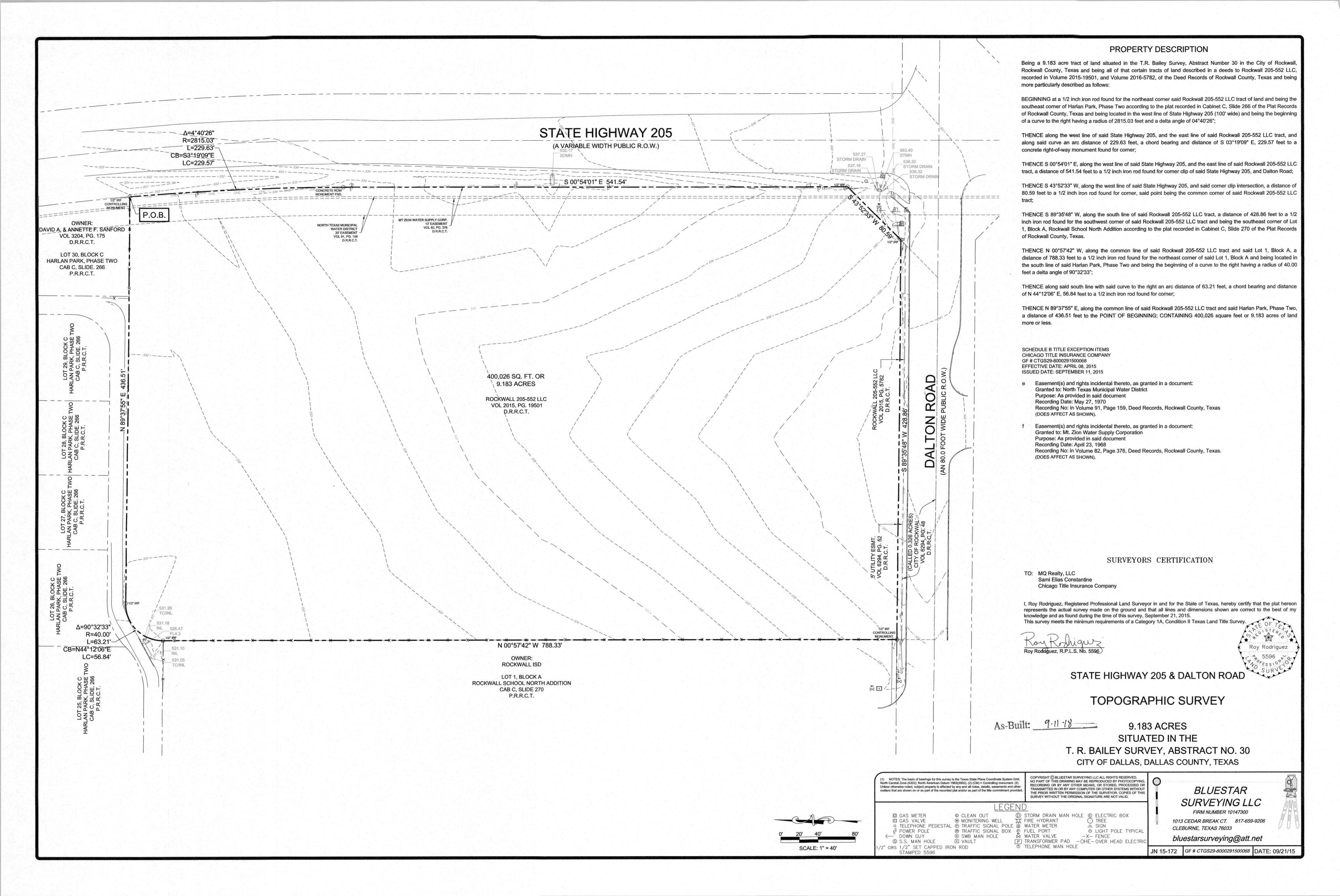
P201	6-004	JANUARY 2016			
JOB NO.:	15-1216	PEISER & MANKIN SURVEYING, LLC	SHEET		
DATE: REV:	1/14/2016 5/27/2016	www.peisersurveying.com			
	6/01/2016 6/21/2016 6/27/2016	623 E. DALLAS ROAD GRAPEVINE, TEXAS 76051 817-481-1806 (0) 817-481-1809 (F)  COMMERCIAL RESIDENTIAL BOUNDARIES TOPOGRAPHY  Topography	2 OF		
SCALE:	1" = 50'	M LLC 817-481-1809 (F) TOPOGRAPHY MORTGAGE	2		
DRAWN:	J.B.W.	tmankin@peisersurveying.com FIRM No. 100999-00 Member Since 1977			

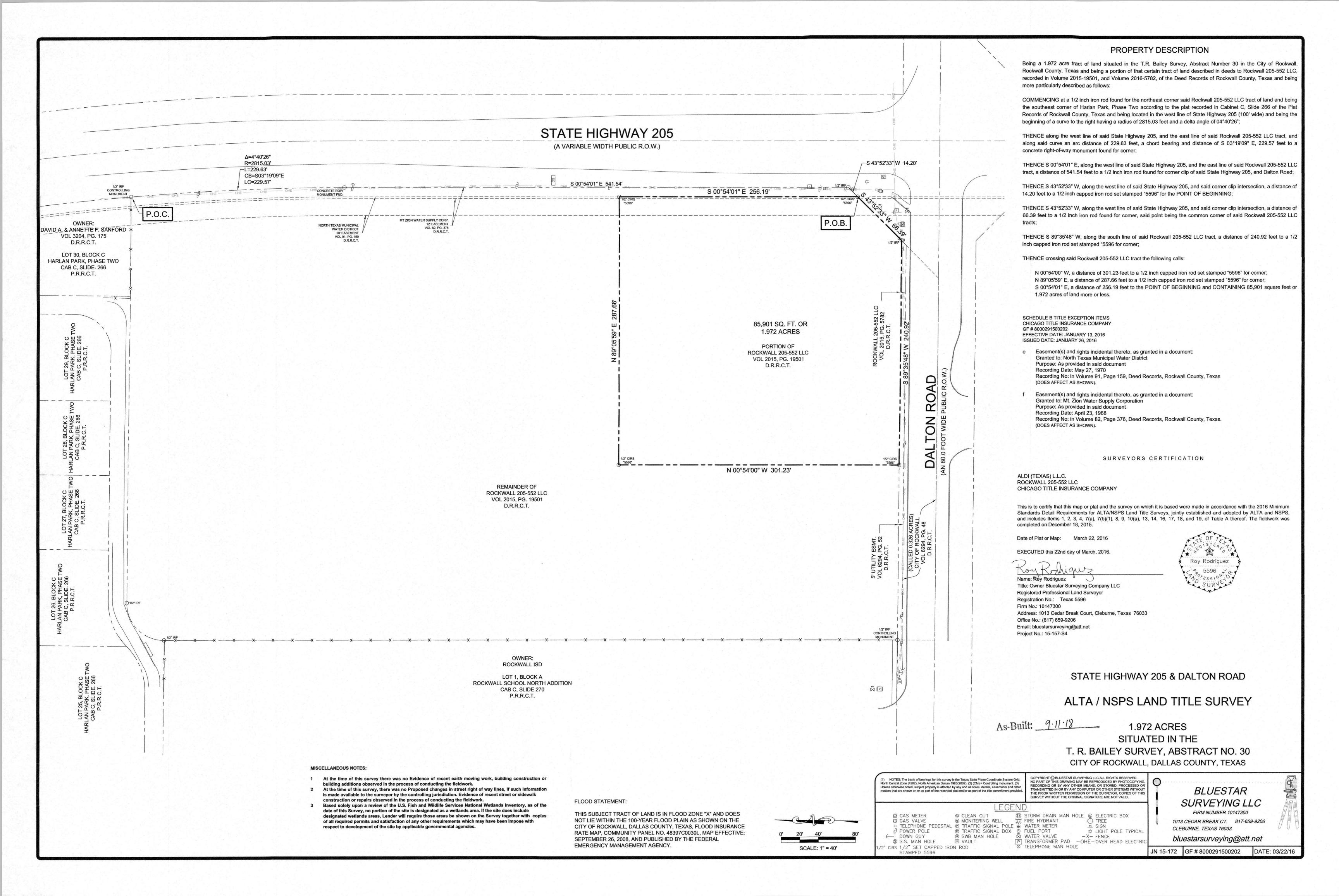
**ENGINEER:** 

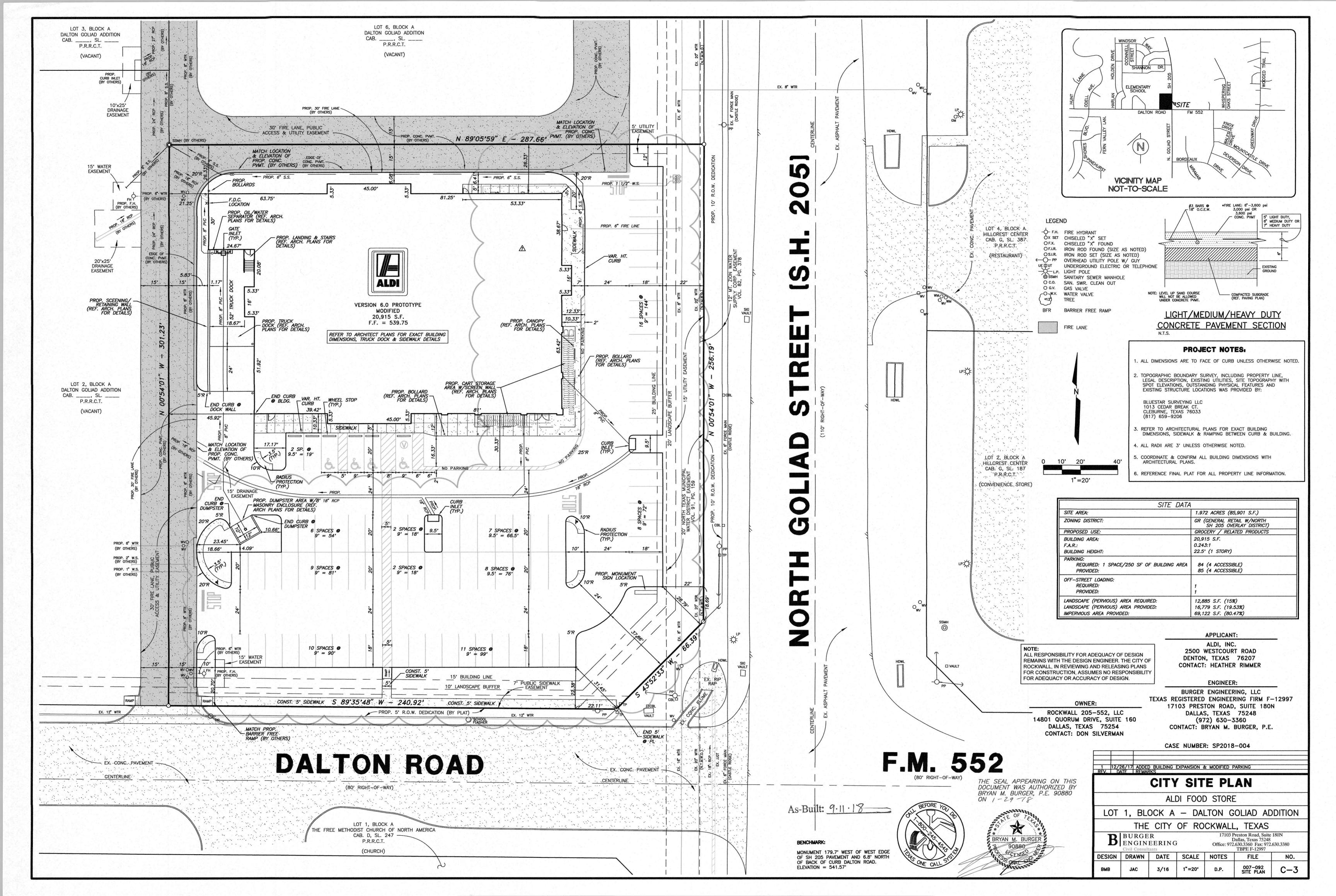
OWNER:

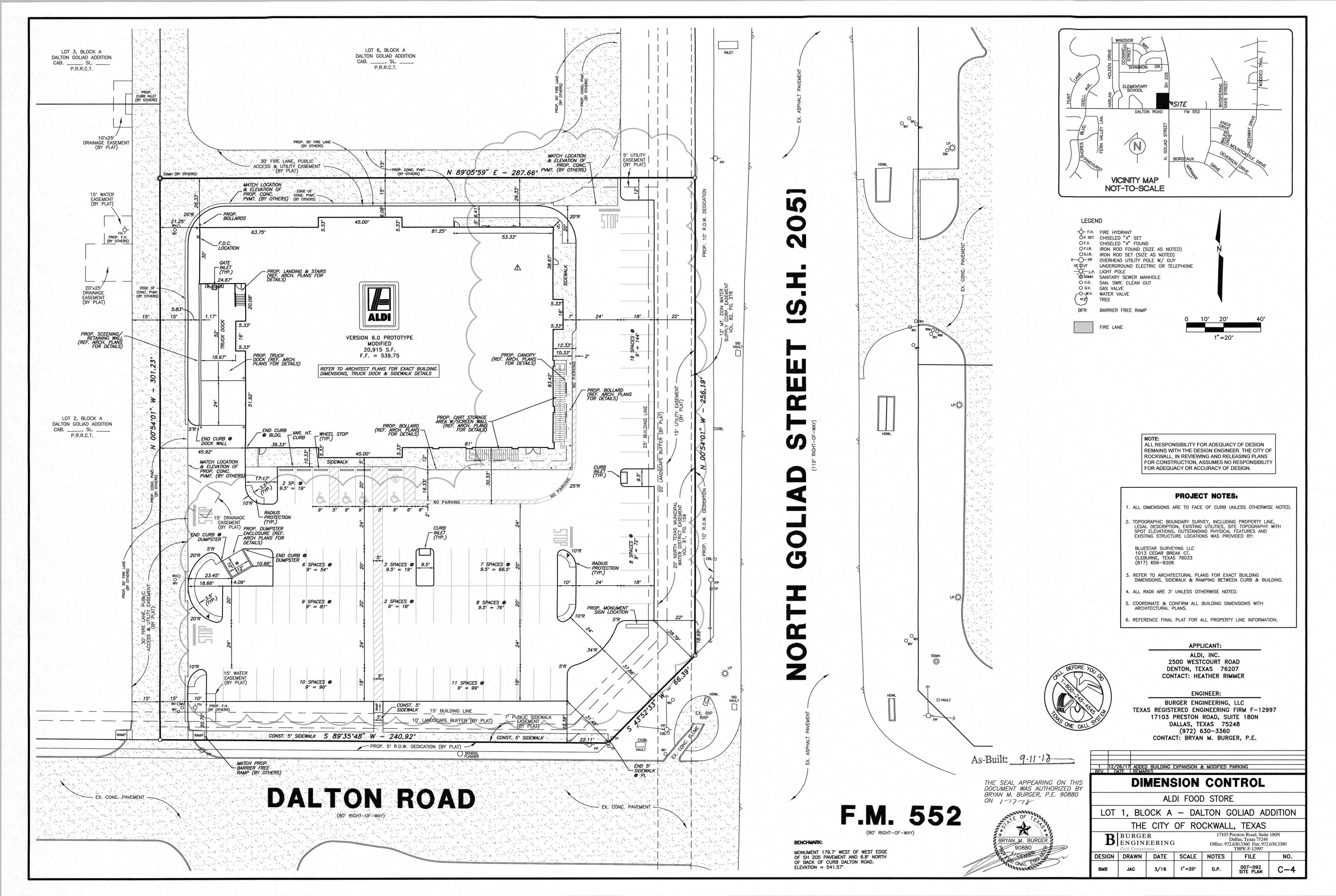
VASQUEZ ENGINEERING, L.L.C. 1919 S. SHILOH ROAD SUITE 440, LB 44 GARLAND, TEXAS 75042 972-278-2948 CONTACT: JUAN VASQUEZ, P.E.

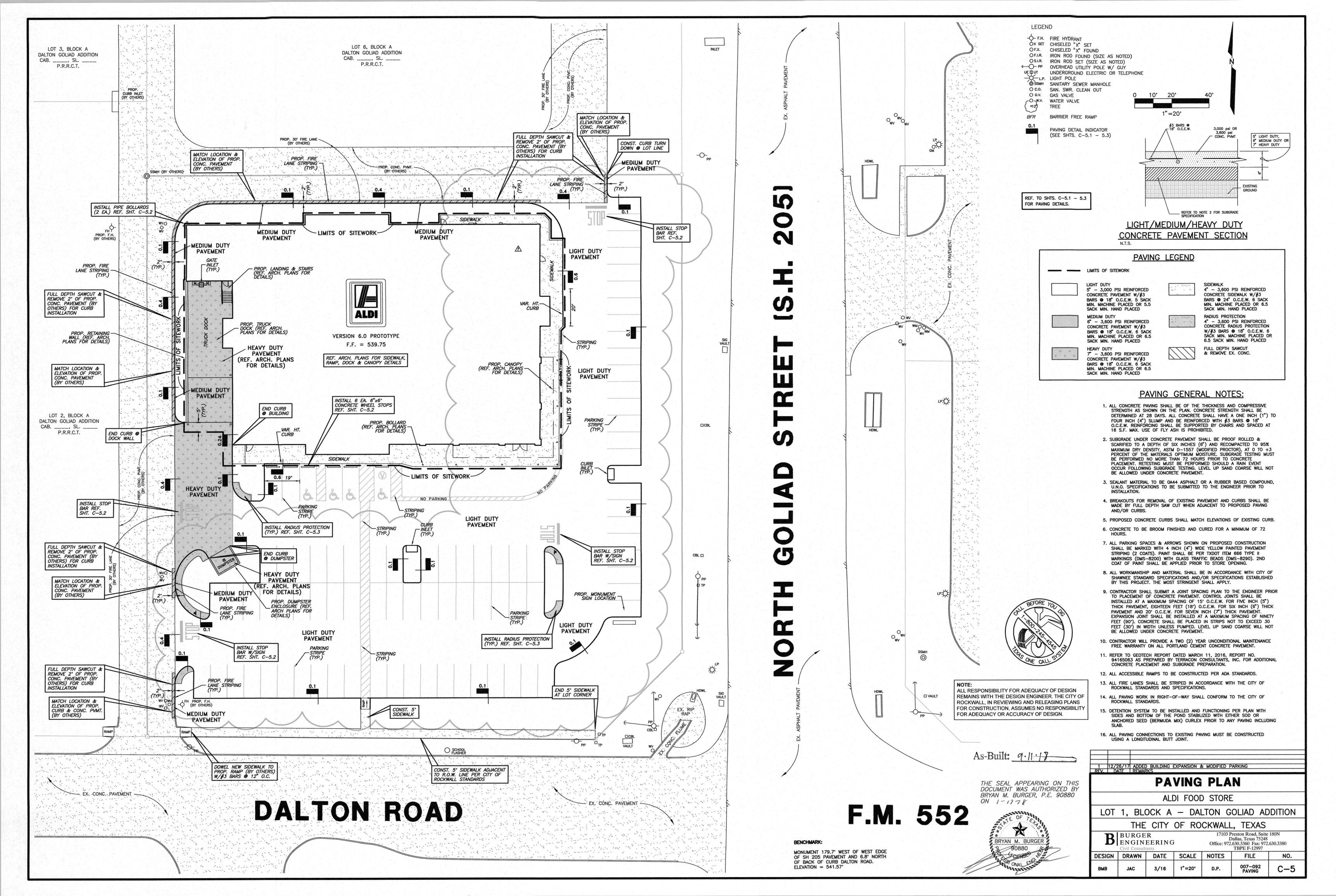
ROCKWALL 205-552, LLC 1408 QUORUM DRIVE SUITE 160 DALLAS, TX 75254

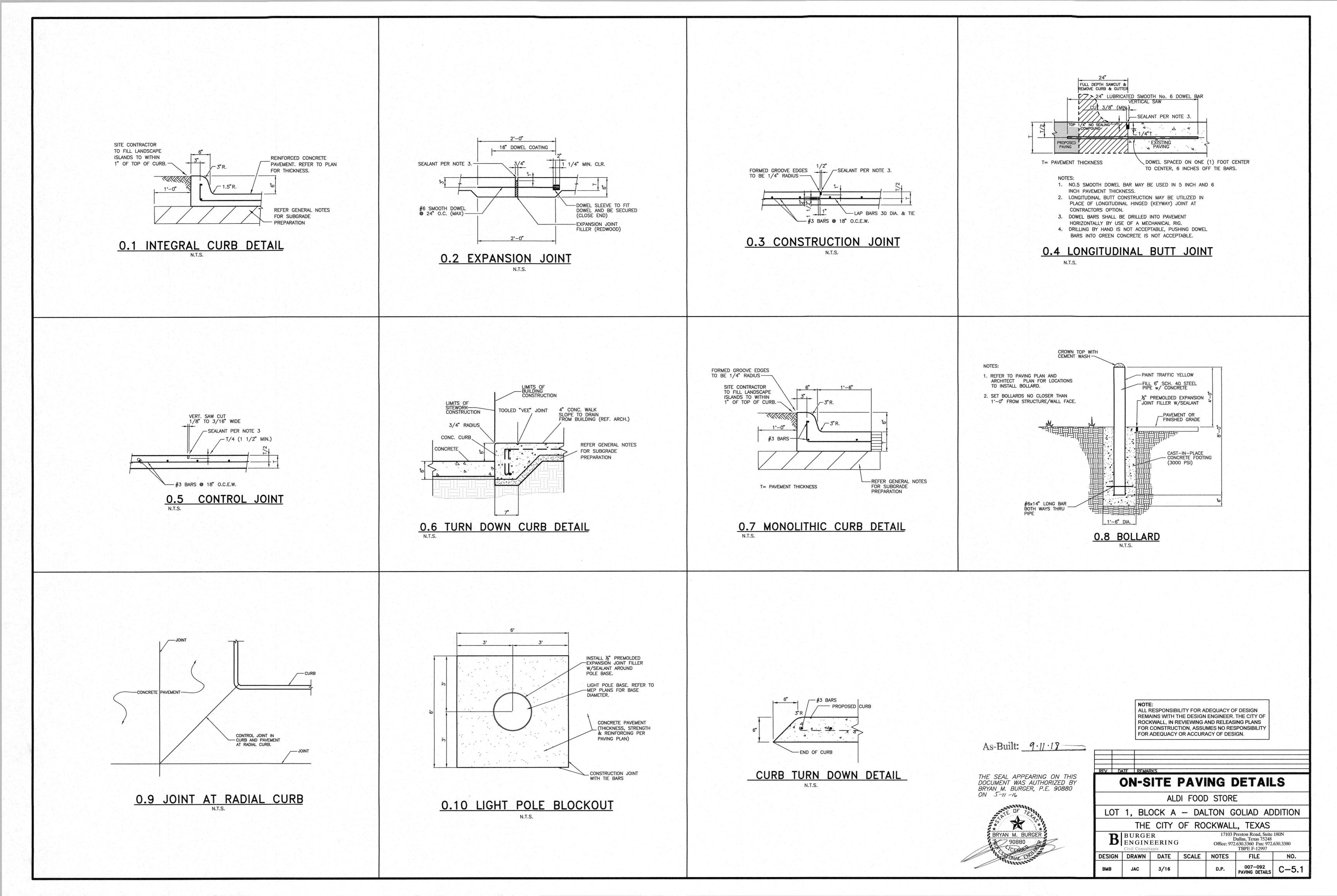


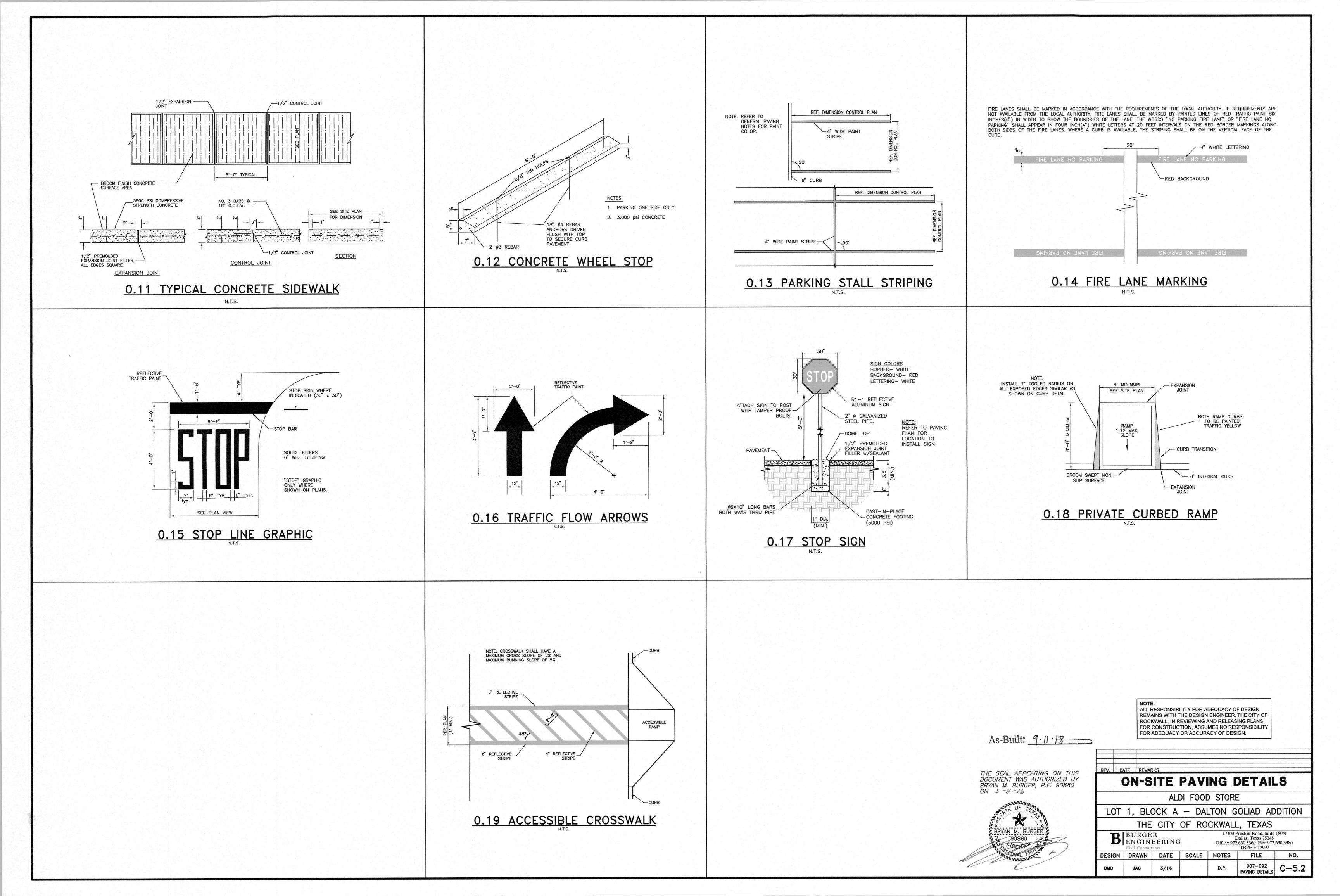


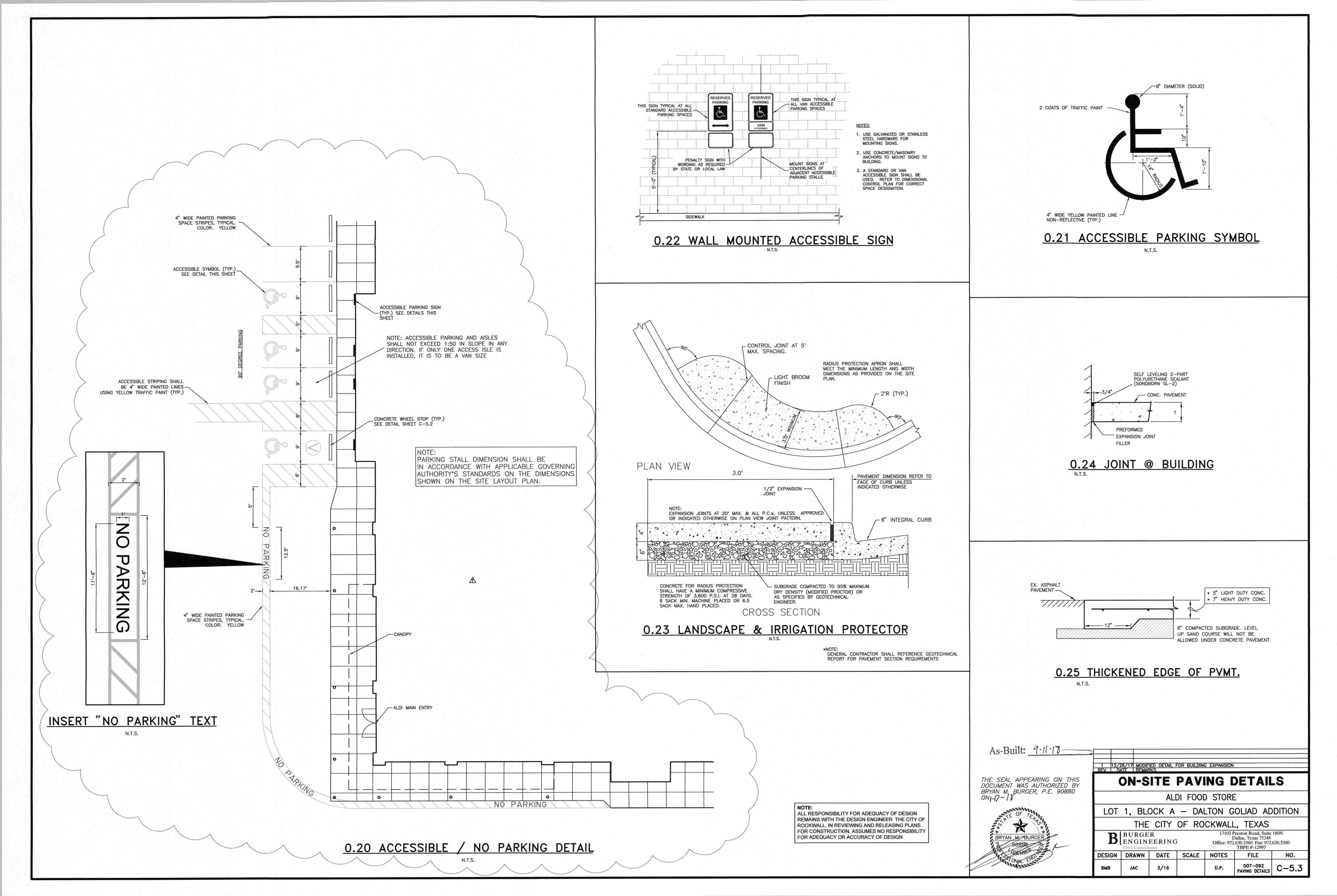


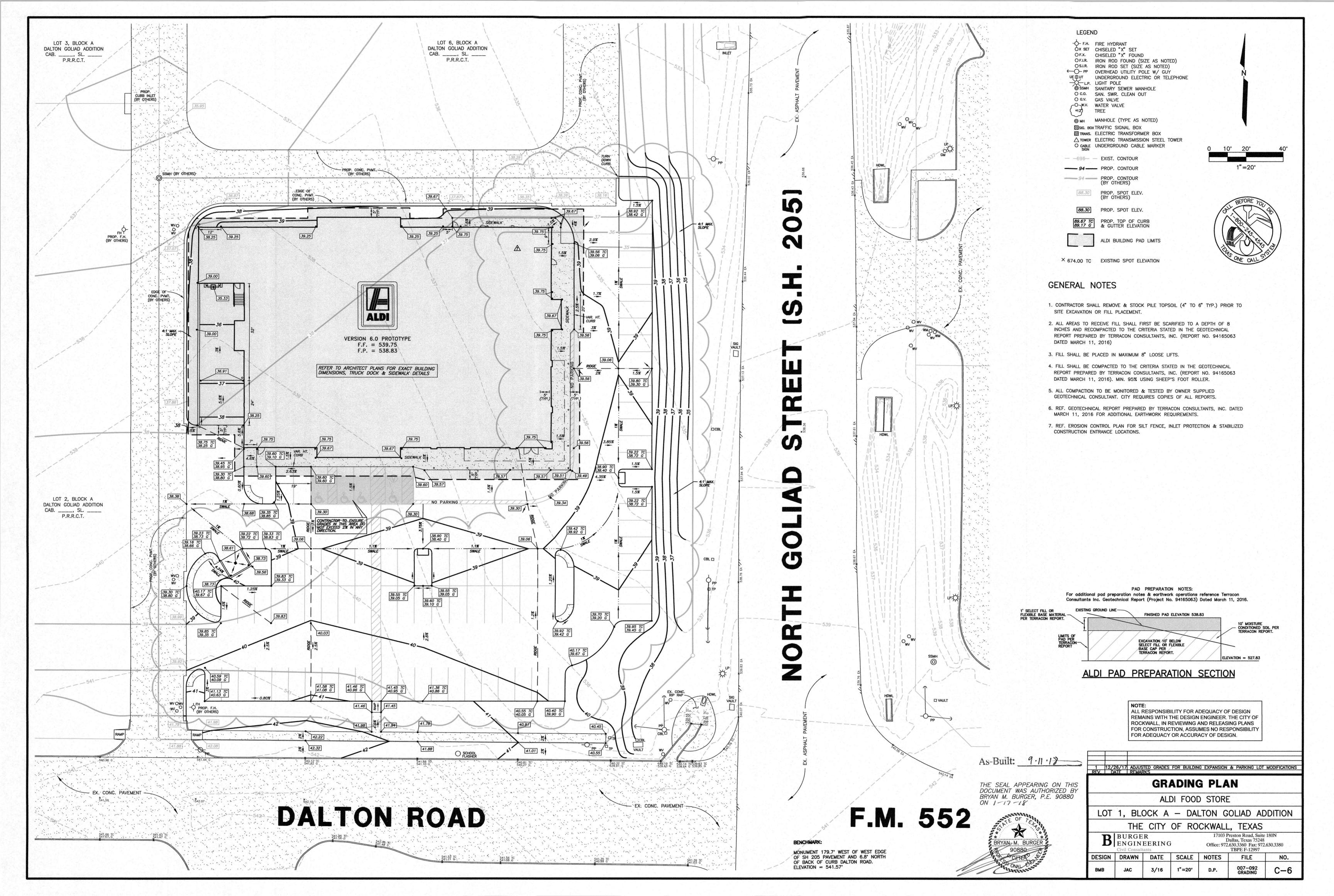


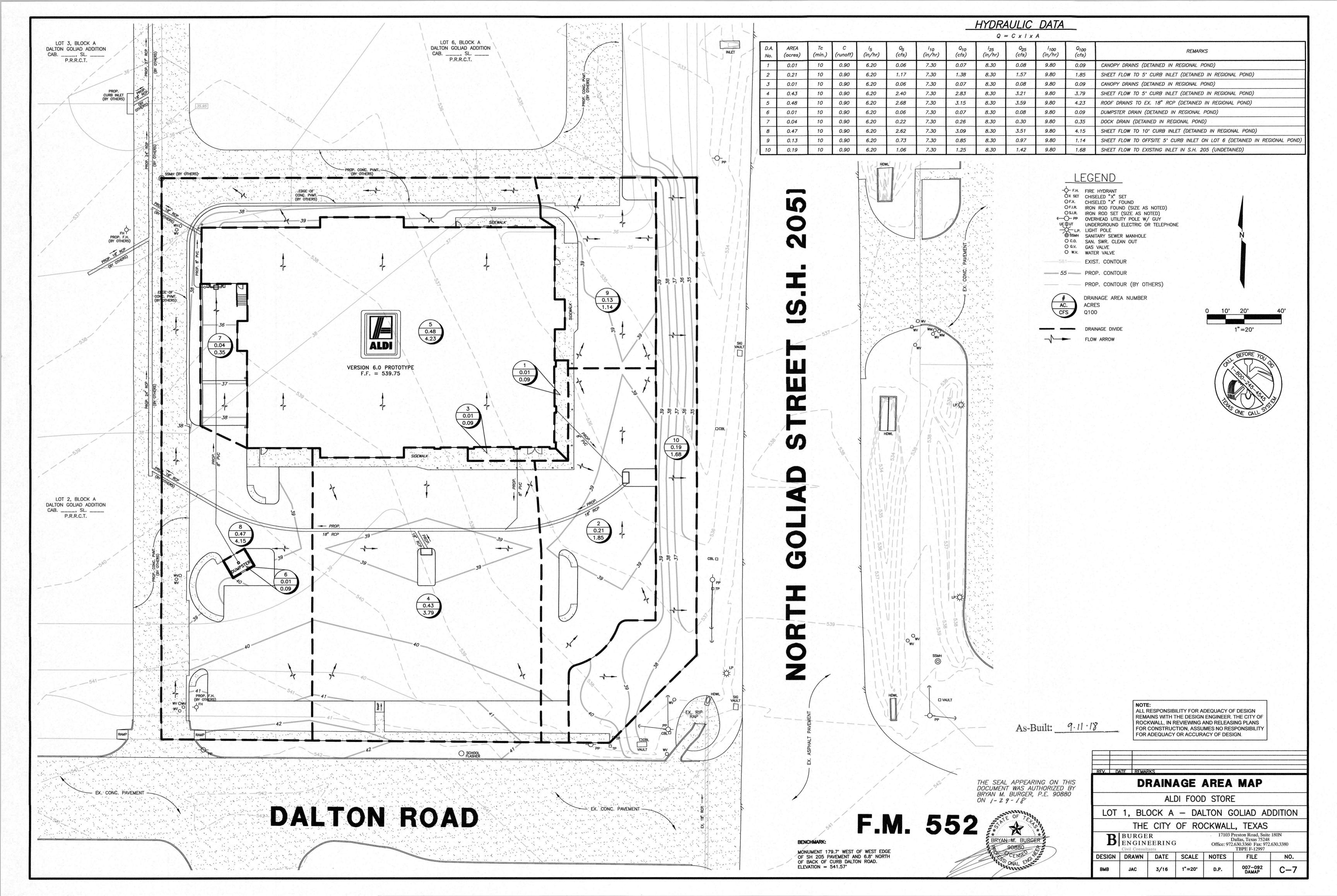


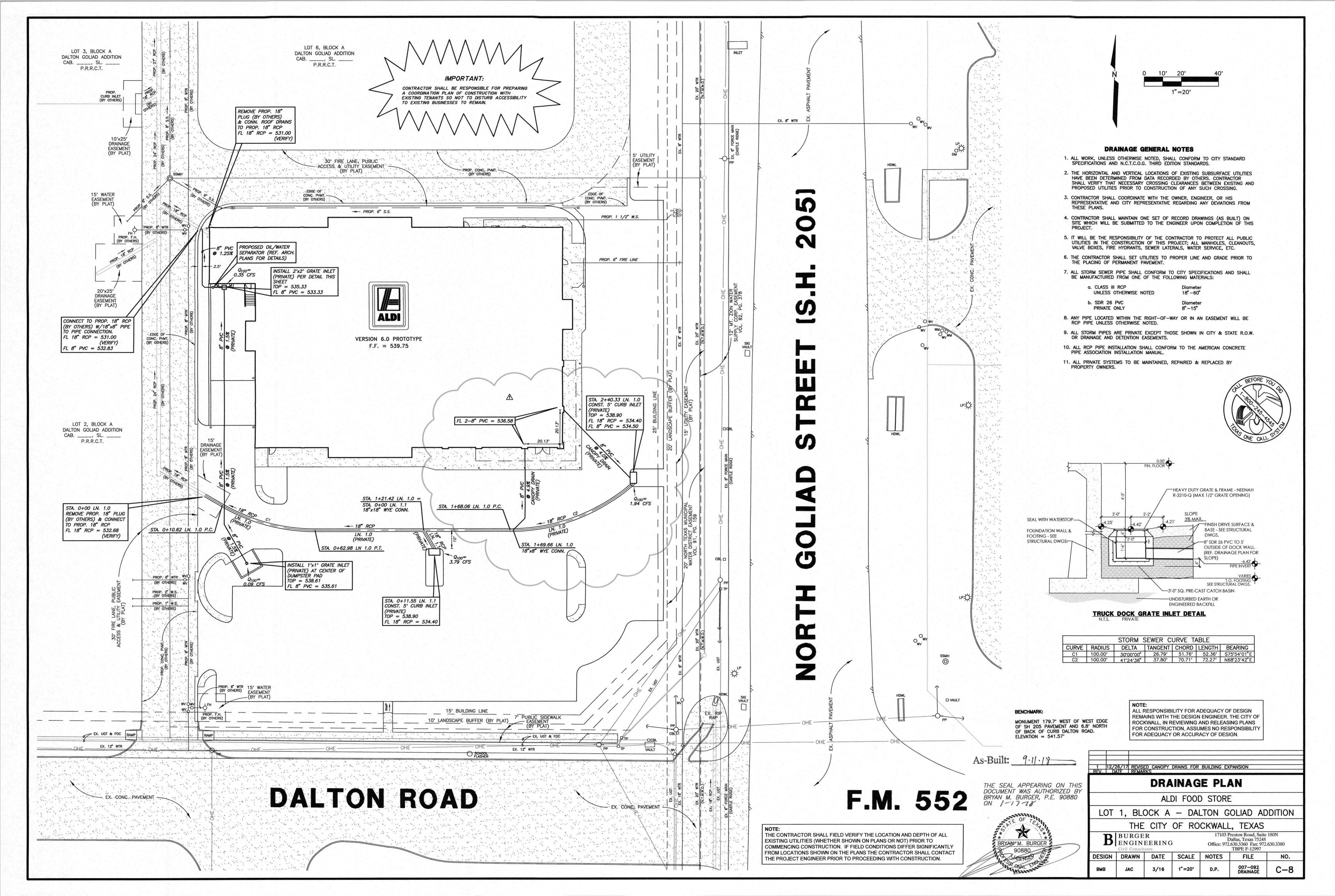


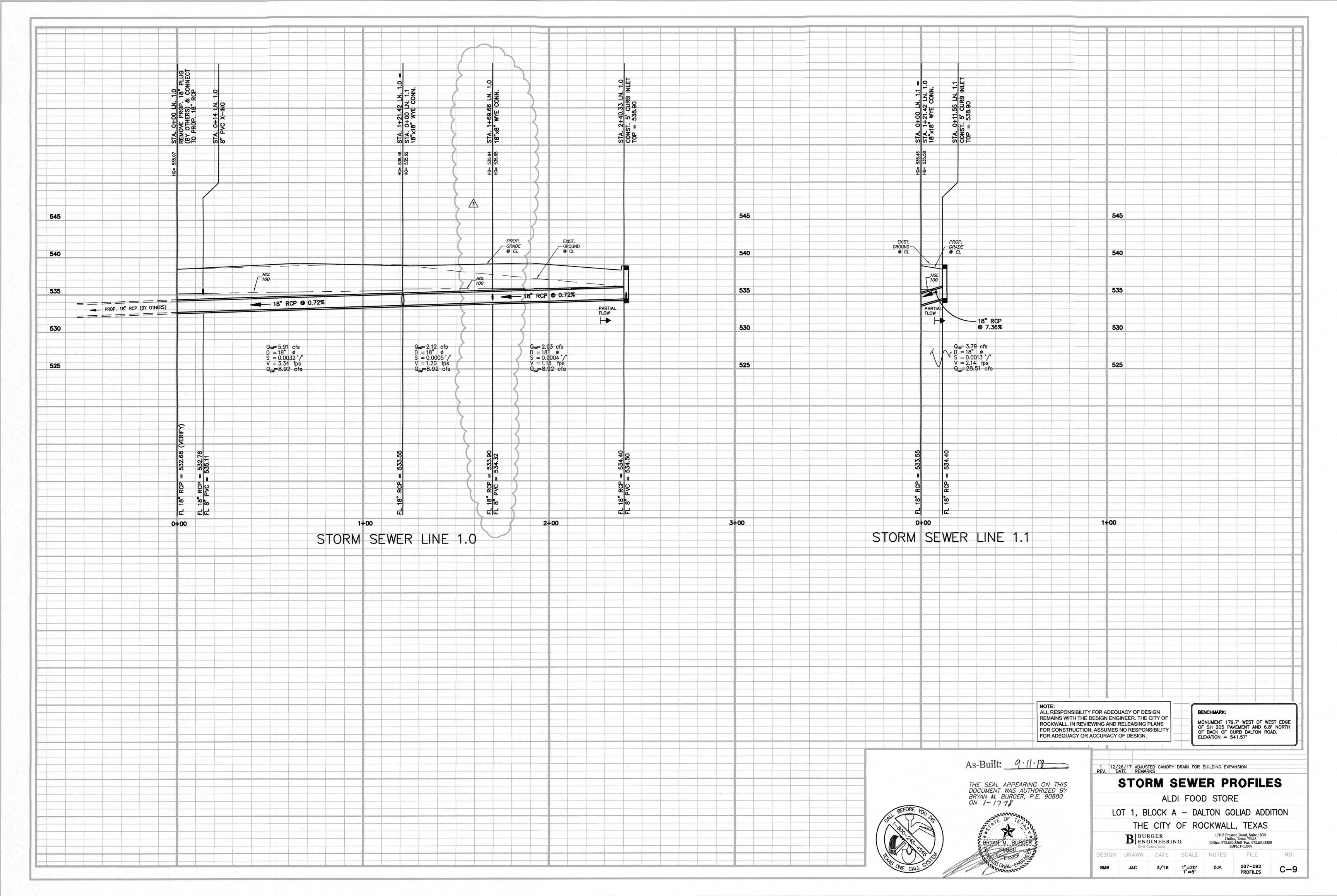


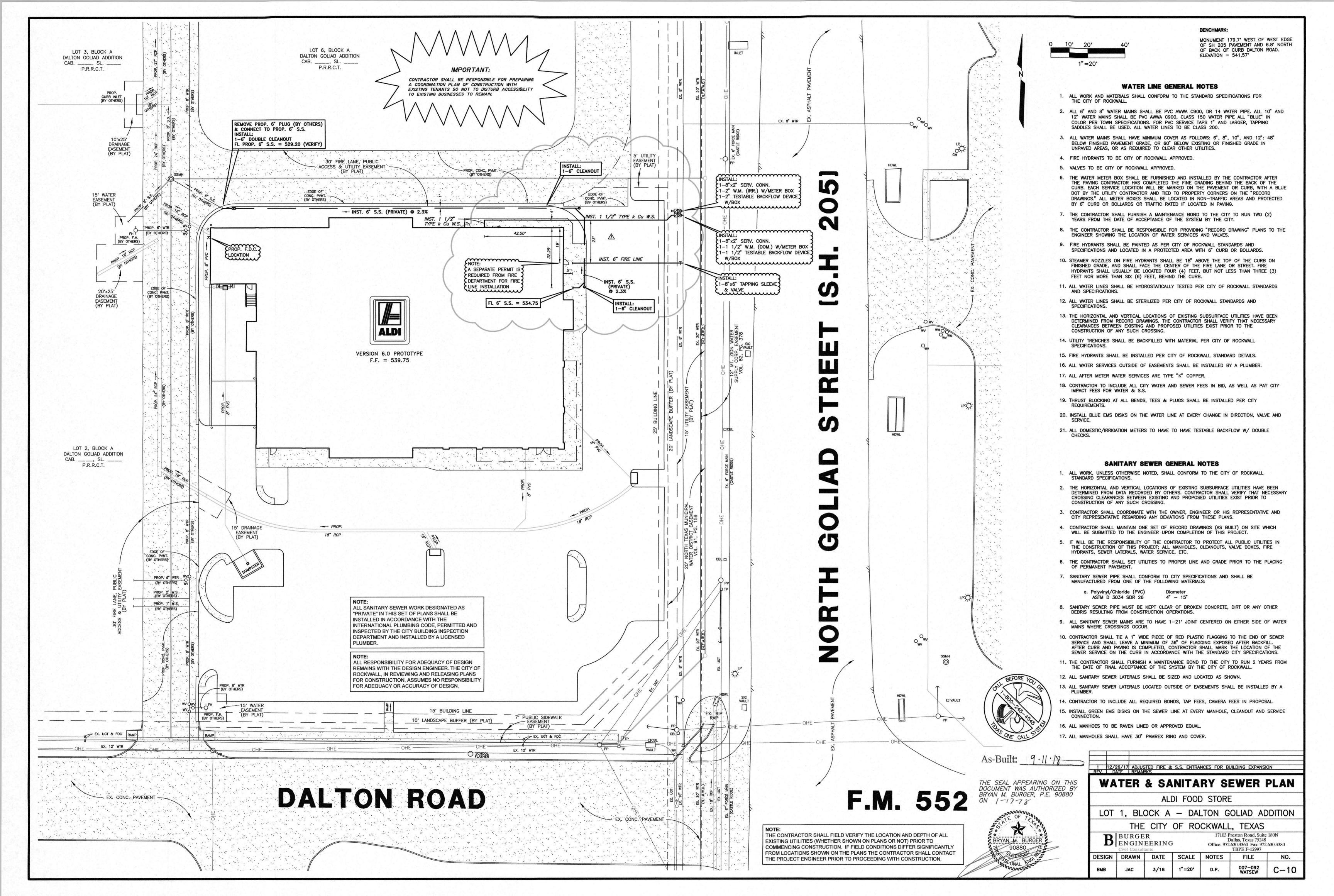


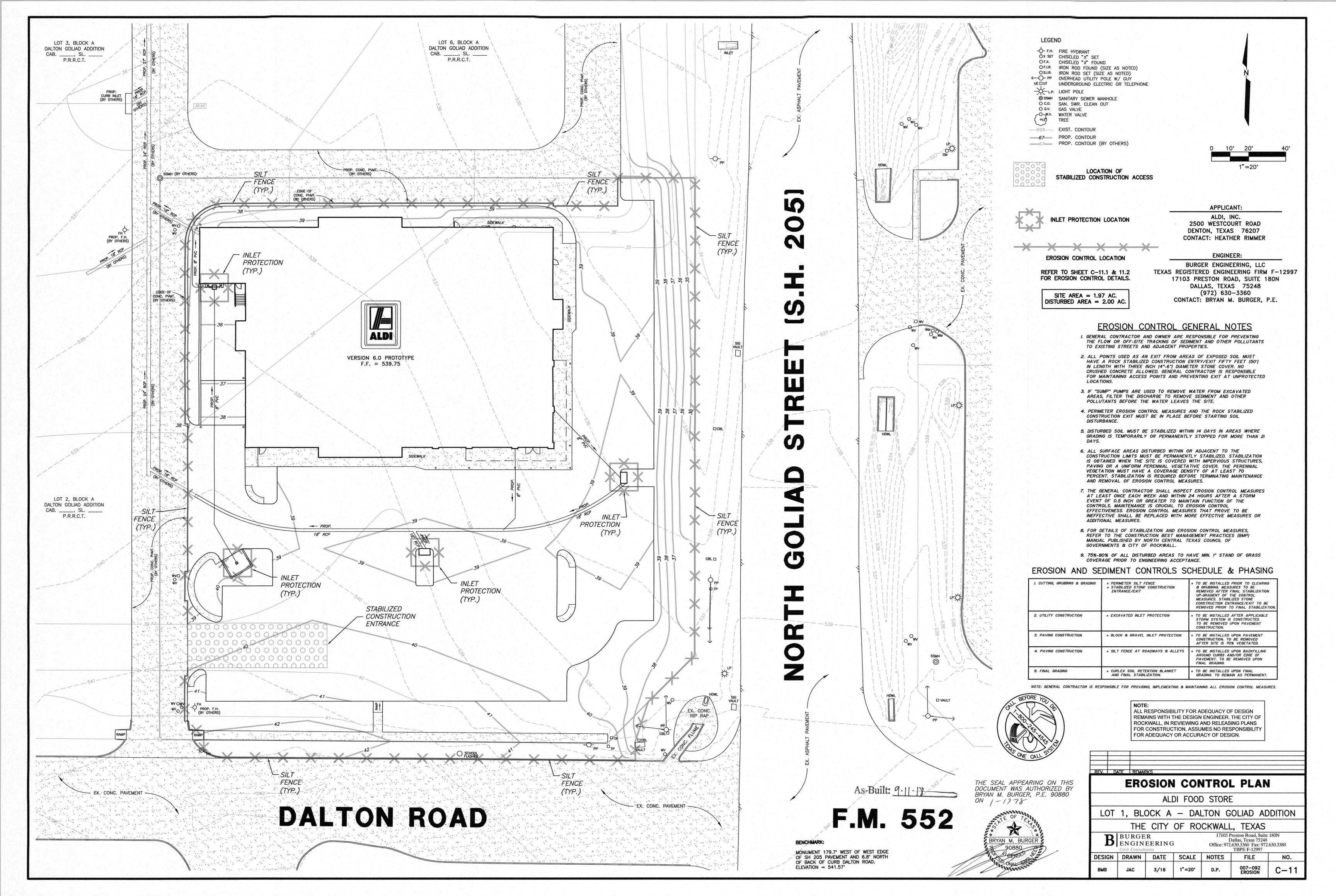


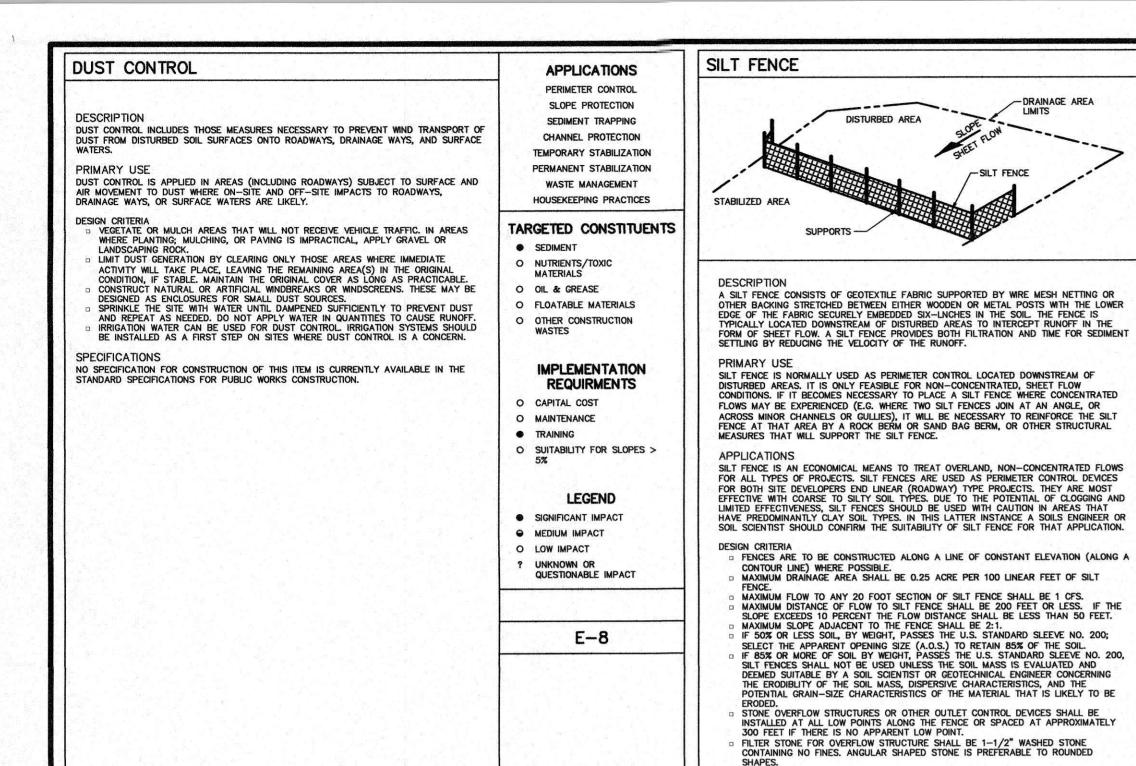


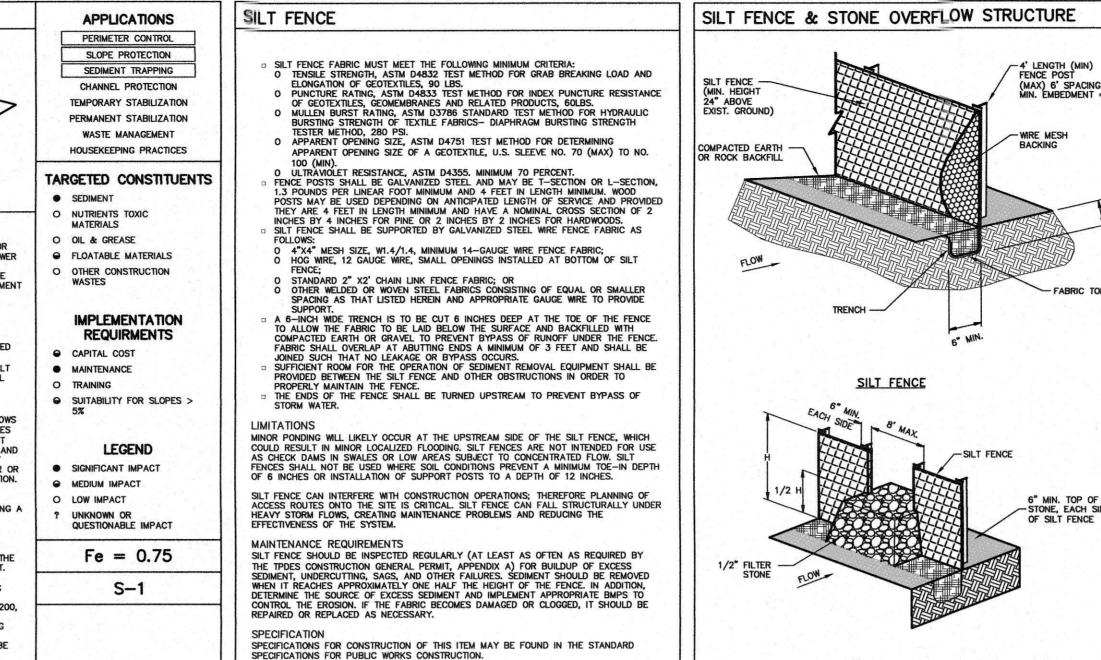


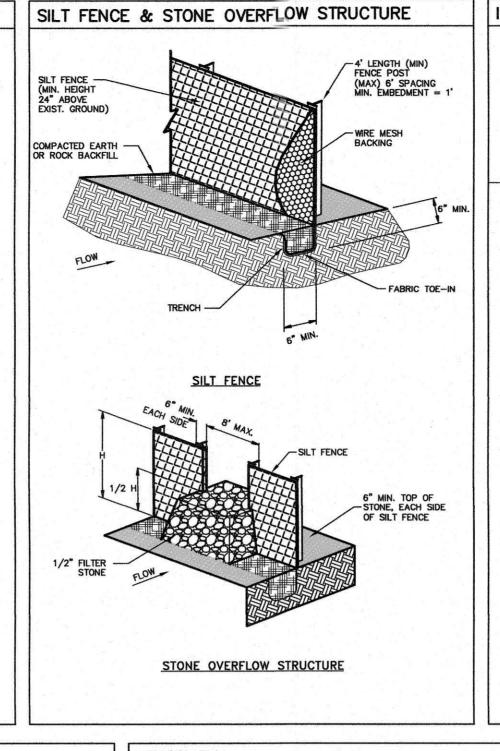


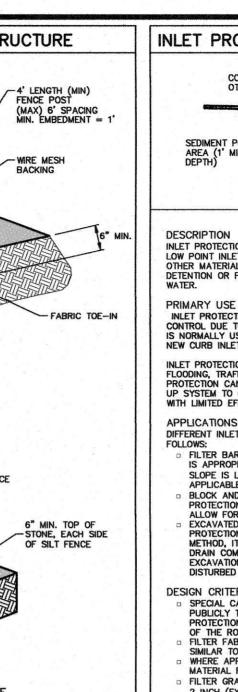












INLET PROTECTION AREA (1' MIN, 2' MAX CROSS SECTION

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

**APPLICATIONS** DIFFERENT INLET PROTECTION VARIATIONS ARE USED FOR DIFFERENT CONDITIONS AS 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.

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

FILTER FABRIC PROTECTION SHALL BE DESIGNED AND MAINTAINED IN A MANNER SIMILAR TO SILT FENCE.

WHERE APPLICABLE, FILTER FABRIC, POSTS, AND 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

INLET PROTECTION

**APPLICATIONS** 

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

CHANNEL PROTECTION

TEMPORARY STABILIZATION

PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

ARGETED CONSTITUENTS

SEDIMENT

O NUTRIENTS TOXIC

MATERIALS

O OIL & GREASE

CAPITAL COST

MAINTENANCE

O TRAINING

FLOATABLE MATERIALS

O OTHER CONSTRUCTION

IMPLEMENTATION

REQUIRMENTS

O SUITABILITY FOR SLOPES

LEGEND

QUESTIONABLE IMPACT

**VARIES** 

S-4

SIGNIFICANT IMPACT

MEDIUM IMPACT

O LOW IMPACT

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 STABLISHED SWALES, STREETS, OR OTHER WATERCOURSES TO MINIMIZE DAMAGE DU TO FLOODING.
FILTER BARRIER PROTECTION

SILTER 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 GUTWARD NOT LIEWARD 1.2 12/27 WINDER MESH SHALL THEN BE

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 WRE MESH TO THE TOP OF THE BLOCKS WITH THE BASE OF THE STONES BEING A MINIMUM OF 18 INCHES FROM THE BLOCK.

ALTERNATIVELY WHERE LOOSE STONE IS A CONCERN (STREETS, ETC.), THE FILTER STONE MAY BE PLACED IN APPROPRIATELY SIZED GEOTEXTILE FABRIC BAGS. PERIODICALLY, WHEN THE STONE FILTER BECOMES CLOGGED, THE STONE MUST BE REMOVED AND CLEANED IN A PROPER MANNER OR REPLACED WITH NEW STONE AND 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 (POILLIANTS) ARSORED TO SEDIMENT AND ON AND OPEASE MAINTENANCE IS

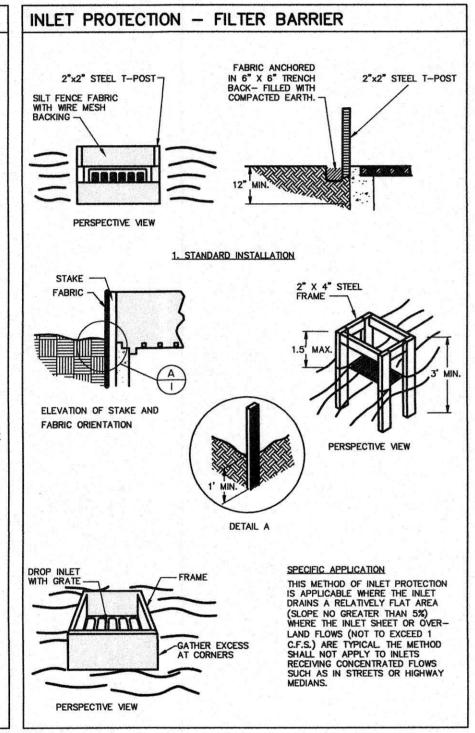
(POLLUTANTS) ABSORED TO SEDIMENT, AND OIL AND GREASE, MAINTENANCE IS REQUIRED TO REMOVE SEDIMENT AND DEBRIS THAT COULD CLOG THE FILTERS. INLET INSERTS MUST HAVE A BYPASS FUNCTION TO PREVENT FLOODING FROM CLOGGING OR SPECIAL CAUTION MUST BE EXERCISED WHEN INSTALLING INLET PROTECTION ON PUBLICLY TRAVELED STREETS OR IN DEVELOPED AREAS. ENSURE THAT INLET PROTECTION IS PROPERLY DESIGNED, INSTALLED AND MAINTAINED TO AVOID FLOODING OF THE ROADWAY OR ADJACENT PROPERTIES AND STRUCTURES.

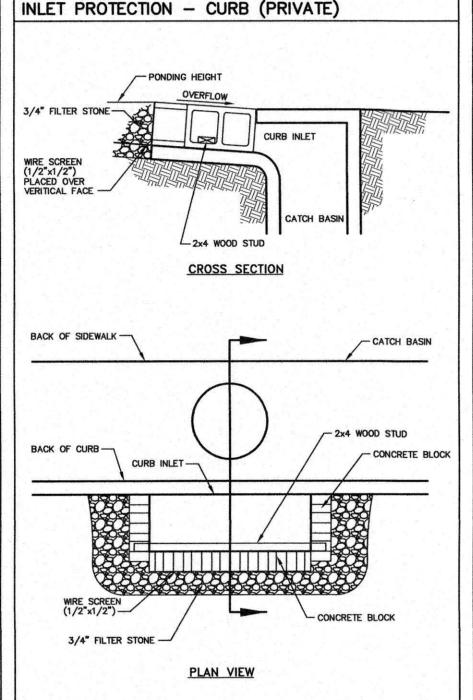
INLET PROTECTION IS ONLY VIABLE AT LOW POINT INLETS. INLETS THAT ARE ON A SLOPE CANNOT BE EFFECTIVELY PROTECTED BECAUSE STORM WATER WILL BYPASS THE INLET AND CONTINUE DOWNSTREAM, CAUSING AN OVERLOAD CONDITION AT INLETS DOWNSTREAM. MAINTENANCE REQUIREMENTS INLET PROTECTION SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE 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 RELEVANCE APPOIND. THE INJECTION OF THE PROPERTY O PUT NEW STONE AROUND THE INLET.

SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

INLET PROTECTION - DROP INLET - CONCRETE BLOCK 3/4" FILTER STONE CROSS SECTION CONCRETE BLOCK 3/4" FILTER STONE PLAN VIEW





**APPLICATIONS** 

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

CHANNEL PROTECTION

TEMPORARY STABILIZATION

PERMANENT STABILIZATION

WASTE MANAGEMENT

HOUSEKEEPING PRACTICES

TARGETED CONSTITUENTS

SEDIMENT

O NUTRIENTS TOXIC

O FLOATABLE MATERIALS

O OTHER CONSTRUCTION WASTES

IMPLEMENTATION

REQUIRMENTS

O SUITABILITY FOR SLOPES >

LEGEND

SIGNIFICANT IMPACT

UNKNOWN OR QUESTIONABLE IMPACT

Fe = N/A

S-9

MEDIUM IMPACT

O LOW IMPACT

O OIL & GREASE

• CAPITAL COST

**⊖** MAINTENANCE

O TRAINING

**VEGETATION** 

ROVIDE 4-8 INCHES OF TOPSOIL OVER ROCK, GRAVEL OR OTHERWISE UNSUITABLE SOILS. POOR QUALITY TOPSOIL SHOULD BE AMENDED WITH COMPOST BEFORE APPLYING SEED OR SOD. AMENDMENT SHOULD BE THREE PARTS OF TOPSOIL TO ONE PART COMPOST BY VOLUME THOROUGHLY BLENDED. SEED BED SHOULD BE WELL PULVERIZED, LOOSE AND UNIFORM.

PLANT SELECTION, FERTILIZATION AND SEEDING USE ONLY HIGH QUALITY, USDA CERTIFIED SEED.
USE AN APPROPRIATE SPECIES OR SPECIES MIXTURE ADAPTED TO LOCAL CLIMATE, SOIL CONDITIONS AND SEASON AS SHOWN BELOW, OR CONSULT WITH THE LOCAL OFFICE OF THE NATURAL RESOURCE CONSERVATION SERVICE (NRCS) OR ENGINEERIN 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.

FERTILIZER SHALL BE APPLIED ACCORDING TO THE MANUFACTURER'S 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,

TERRASEEDING OR HYDROSEEDER.

PROVIDE ADEQUATE WATER TO AID IN ESTABLISHMENT OF VEGETATION. USE APPROPRIATE MULCHING TECHNIQUES WHERE NECESSARY, ESPECIALLY DURING COLD PERIODS OF THE YEAR.

SOD SHALL BE ST. AUGUSTINE GRASS, COMMON BERMUDAGRASS, BUFFALO GRASS, AN APPROVED HYBRID OF COMMON BERMUDAGRASS OR AN APPROVED ZOYSLAGRASS. THE SOD SHOULD BE MOWED PRIOR TO SOD CUTTING SO THAT THE HEIGHT OF THE CRASS SHALL NOT EXCEED 2-INCHES AND SHOULD NOT BE HARVESTED OR PLANTED WHEN ITS MOISTURE CONDITION IS SO EXCESSIVELY WET OR DRY THAT IT'S SURVIVAL

SHALL BE AFFECTED. SOD SHALL BE PLANTED WITHIN 3 DAYS AFTER IT IS EXCAVATED. IN AREAS SUBJECT TO DIRECT SUNLICHT, PRE-MOISTEN PREPARED SOD BED BY WATERING IMMEDIATELY PRIOR TO PLACING SOD.

SODDED AREAS SHALL BE THOROUGHLY WATERED IMMEDIATELY AFTER THEY ARE

DITIONAL GOIDANCE.

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 EIGHTEEN\_FOOT MODIT WHERE VEGETATION IS USED FOR PERIMETER CONTROL, THE USE OF SOD IS NECESSARY FOR A FIFTEEN-FOOT WDTH.

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

FERTILIZERS HAVE BOTH BENEFICIAL AND ADVERSE EFFECTS. FERTILIZERS PROVIDE NUTRIENTS TO THE VEGETATION, BUT ALSO FERTILIZERS ARE A SOURCE OF NUTRIENTS TO STREAMS AND LAKES. IN THIS LATTER REGARD THEY ARE A POLLUTANT. THE USE OF NATIVE VEGETATION RATHER THAN EXOTICS REDUCES THE NEED OF FERTILIZERS FROM THE STANDPOINT OF ENVIRONMENTAL CONDITIONS.

STEPP SLOPES REPRESENT A PROBLEM FOR FSTABLISHING VEGETATION. BONDED STEEP SLOPES REPRESENT A PROBLEM FOR ESTABLISHING VEGETATION. BONDED FIBER MATRIX OR MECHANICALLY BONDED FIBER MATRIX PRODUCTS APPLIED WITH A TACKIFIER ARE USEFUL FOR ESTABLISHING VEGETATION ON SLOPES.

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

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 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.	

LIMITATIONS 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 STABLISHMENT. 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 E 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

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

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 AREA.

APPLICATIONS 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 AREAS THAT ARE NOT CONDUSIVE TO SEEDING OR PLANTING. 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.

DESIGN CRITERIA MULCH MAY BE USED BY ITSELF OR IN COMBINATION WITH NETTING OTHER ANCHORS TO

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.

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

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

MULCH HYDRAULICALLY APPLIED WITH TACKIFIERS AND BINDING AGENTS IS COMMERCIALLY AVAILABLE AS A BONDED FIBER MATRIX (BFM) WHICH MAY BE PARTICULARLY EFFECTIVE AVAILABLE AS A BONDED FIBER MATRIX (BFM) WHICH MAY BE PARTICULARLY EFFECTIVE 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.

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

SPECIFICATION

HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS SEDIMENT

NUTRIENTS TOXIC

PERMANENT STABILIZATION

WASTE MANAGEMENT

FLOATABLE MATERIALS OTHER CONSTRUCTION

MATERIALS OIL & GREASE

CAPITAL COST MAINTENANCE TRAINING

O SUITABILITY FOR SLOPES >

IMPLEMENTATION

REQUIRMENTS

**LEGEND** 

SIGNIFICANT IMPACT MEDIUM IMPACT LOW IMPACT QUESTIONABLE IMPACT

Fe = 0.9

E-5

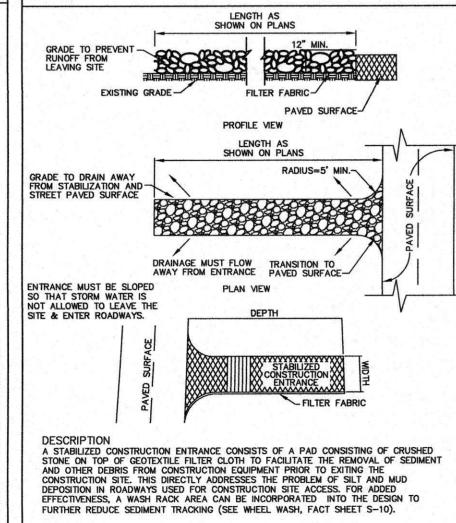
# MULCHING

- COMPOST AND WOOD MULCH MIXTURES SHOULD BE A BLEND OF 50% UNTREATED WOOD MULCH WITH 50% COMPOST MEASURED BY VOLUME. WOOD MULCH SHOULD BE LESS THAN OR EQUAL TO 5 IN. IN LENGTH WITH 95% PASSING A 2 IN. SCREEN AND LESS THAN 30% PASSING A 1 IN. SCREEN. THE COMPOST SHALL MEET THE PHYSICAL REQUIREMENTS SPECIFIED IN TABLE 1 OF TXDOT SPECIFICATION 1058, COMPOST, WHICH CAN BE FOUND IN APPENDIX F.

  PRIOR TO THE PLACEMENT OF ANY MULCH, THE AREA TO BE PROTECTED MUST BE GRADED IN ACCORDANCE WITH PLANS.
  FERTILIZATION AND SOIL TREATMENT SHOULD THEN BE DONE PRIOR TO PLACEMENT OF MULCH WITH THE EXCEPTIONS OF WHEN SEED IS TO APPLIED BY MEANS OF HYDRO—SEED OR WHEN SEED IS DISTRIBUTED FOLLOWING STRAW MULCH SPREADING
- ORGANIC MULCHES MAY BE DISTRIBUTED BY HAND OR BY MECHANICAL MEANS, BUT TO BE EFFECTIVE A COMPLETE COVERING REFER TO THE TABLE ON THE FOLLOWING PAGE FOR ADDITIONAL GUIDANCE.
- MULCHES ARE SUBJECT TO REMOVAL BY WIND OR WATER UNDER SEVERE CLIMATIC CONDITIONS.
- MULCHES LOWER THE SOIL TEMPERATURE, WHICH MAY RESULT IN LONGER SEED GERMINATION PERIODS. MULCH SHOULD NOT BE APPLIED WITHIN THE ORDINARY HIGH-WATER MARK OF SURFACE WATERS, AS IT CAN BE A POTENTIAL FLOATATION MATERIAL.
- MULCHED AREAS SHOULD BE INSPECTED REGULARLY (AT LEAST AS OFTEN AS REQUIRED BY THE TPDES CONSTRUCTION GENERAL PERMIT, APPENDIX A) FOR THIN OR BARE SPOTS CAUSED BY NATURAL DECOMPOSTION OR WEATHER RELATED EVENTS. MULCH IN HIGH TRAFFIC AREAS SHOULD BE REPLACED ON A REGULAR BASIS TO MAINTAIN UNIFORM PROTECTION. EXCESS MULCH SHOULD BE BROUGHT TO THE SITE AND STOCKPILED FOR USE DURING THE MAINTENANCE PERIOD TO DRESS PROBLEM SPOTS.
- SPECIFICATIONS FOR CONSTRUCTION OF THIS ITEM MAY BE FOUND IN THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS

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)



PRIMARY USE.

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 THROUGH TRAFFIC CONTROL.

APPLICATIONS
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

**APPLICATIONS** 

STABILIZED CONSTRUCTION ENTRANCE

# STABILIZED CONSTRUCTION ENTRANCE

- DESIGN CRITERIA STABILIZED CONSTRUCTION ENTRANCES ARE TO BE CONSTRUCTED SUCH THAT DRAINAGE ACROSS THE ENTRANCE IS DIRECTED TO A CONTROLLED, STABILIZED OUTLET ON SITE WITH PROVISIONS FOR STORAGE, PROPER FILTRATION, AND
- OUTLET ON SITE WITH PROVISIONS FOR STORAGE, PROPER FILIRATION, AND 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.
- STONE SHALL BE A MINIMUM OF 4 10 b INCH COARSE AGGILLATED CONCRETE ALLOWED.

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

  THE GEOTEXTILE FABRIC MUST MEET THE FOLLOWING MINIMUM CRITERIA:

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

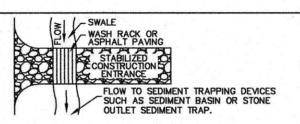
  PUNCTURE STRENGTH, ASTM D4833 TEST METHOD FOR INDEX PUNCTURE DESISTANCE OF GEOTETILES. GEOMEMBRANES AND RELATED PRODUCTS, 120-RESISTANCE OF GEOTETILES, GEOMEMBRANES AND RELATED PRODUCTS, 120-
- O MULLEN BURST RATING, ASTM D3786 STANDARD TEST METHOD FOR
- O MULLEN BURST RATING, ASTM D3786 STANDARD TEST METHOD FOR HYDRAULIC BURSTING STRENGTH OF TEXTILE FABRICS—DIAPHRAGM BURSTING STRENGTH TESTER METHOD, 600—P.S.I.
  O 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 FILL TRATION DEVICE. SEDIMENTATION/FILLTRATION DEVICE.
  MINIMUM DIMENSIONS FOR THE ENTRANCE SHALL BE AS FOLLOWS:
- MIN. WIDTH MIN. DEPTH TRACT AREA TRACT. DEPTH OF ENTRANCE OF ENTRANCE 15 FEET < 1 ACRE 100 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



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

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

WHEEL WASHES SHOULD BE CONSIDERED AN ANCILLARY COMPONENT TO STABILIZED

THE LOCATION SHOULD BE WITHIN THE STABILIZED CONSTRUCTION ENTRANCE SO THAT THE VEHICLE DOES NOT PICK UP ADDITIONAL SEDIMENT LOAD BY TRAVERSING DISTURBED AREAS.

THE SIZE OF THE WHEEL WASH FACILITY SHOULD BE SUFFICIENT SO THAT ALL WASH WATER AND SEDIMENT IS COLLECTED AND DRAINED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT BASIN OR STONE OUTLET SEDIMENT TRAP.

DEVICE SUCH AS A SEMIMENT BASIN OF CHOISE
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.

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. SEDIMEN THAT HAS ACCUMULATED IN THE WASH WATER SEDIMENTATION BMP (SEDIMENT TRAP, SEDIMENT BASIN, ETC.) MUST BE REMOVED WHEN IT REACHES A DEPTH OF APPROXIMATELY 1/3 THE DESIGN DEPTH OF THE DEVICE OR 12", WHICHEVER IS LESS. THE REMOVED SEDIMENT SHALL BE STOCKPILED OR REDISTRIBUTED IN AREAS THAT ARE PROTECTED FROM EROSION.

ON 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 TARGETED CONSTITUENTS

APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

SEDIMENT TRAPPING

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

SEDIMENT

IMPLEMENTATION REQUIRMENTS CAPITAL COST MAINTENANCE

TRAINING O SUITABILITY FOR SLOPES >

> LEGEND SIGNIFICANT IMPACT **⊖** MEDIUM IMPACT O LOW IMPACT

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 UNKNOWN OR QUESTIONABLE IMPACT ON 6-21-16

S - 10

Fe = N/A

REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY As-Built: 9.11.18

> LOT 1, BLOCK A - DALTON GOLIAD ADDITION BURGER DENGINEERING

FOR ADEQUACY OR ACCURACY OF DESIGN. REV. DATE REMARKS

NOTE:

**EROSION CONTROL DETAILS** ALDI FOOD STORE

ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN

THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N Dallas, Texas 75248 Office: 972.630.3360 Fax: 972.630.3380

DESIGN DRAWN DATE | SCALE | NOTES FILE NO. 007-092 EROS DETAILS C-11. JAC 3/16

#### 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 TO THE PROCEDURES THE VOLUME OF THE POTENTIAL OF THE POTENTIAL OF STORM WATER CONTAMINATION FROM SOLID WASTE THROUGH APPROPRIATE STORAGE AND DISPOSAL TO THE POTENTIAL OF THE SEDIMENT TRAPPING CHANNEL PROTECTION TEMPORARY STABILIZATION PRACTICES, RECYCLING OF CONSTRUCTION DEBRIS ALSO REDUCES THE VOLUME OF 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 SOLID WASTE MANAGEMENT FOR CONSTRUCTION SITES IS BASED ON PROPER STORAGE O SEDIMENT SOLID WASTE MANAGEMENT FOR CONSTRUCTION SITES 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 MATERIALS 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 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 LEGEND STORAGE PROCEDURES WHEREVER POSSIBLE, MINIMIZE PRODUCTION OF DEBRIS AND TRASH. SIGNIFICANT IMPACT DESIGNATE A FOREMAN OR SUPERVISOR TO OVERSEE AND ENFORCE PROPER DEBRIS **● MEDIUM IMPACT** INSTRUCT CONSTRUCTION WORKERS IN PROPER DEBRIS AND TRASH STORAGE AND HANDLING PROCEDURES. SEGREGATE POTENTIALLY HAZARDOUS WASTE FROM NON-HAZARDOUS CONSTRUCTION O LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT SITE DEBRIS. SEGREGATE RECYCLABLE CONSTRUCTION DEBRIS FROM OTHER NON-RECYCLABLE MATERIALS. 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 BASINS. M-1BASINS. DO 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, 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 DEBRIS AND TRASH MANAGEMENT **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION EDUCATION 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 QUALITY CONTROL 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 O SEDIMENT REQUIREMENTS 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. MATERIALS O OIL & GREASE FLOATABLE MATERIALS OTHER CONSTRUCTION WASTES LIMITATIONS ONLY ADDRESSES NON-HAZARDOUS SOLID WASTE. ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE MANAGEMENT PROGRAM. IMPLEMENTATION REQUIRMENTS O 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 SEDIMENT TRAPPING CHANNEL PROTECTION CONTAMINATION FROM CONSTRUCTION CHEMICALS THROUGH APPROPRIATE RECOGNITION, HANDLING, STORAGE, AND DISPOSAL PRACTICES. TEMPORARY 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 PERMANENT STABILIZATION 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 AS PROVISIONS FOR SAFE STORAGE AND DISPOSAL. FOLLOWING ARE LISTS DESCRIBING THE TARGETED MATERIALS AND RECOMMENDED PROCEDURES: OTHER CONSTRUCTION TARGETED CHEMICAL MATERIALS IMPLEMENTATION REQUIRMENTS STAINS WOOD PRESERVATIVES CUTTING OILS GREASES CAPITAL COST MAINTENANCE ROOFING TAR PESTICIDES, HERBICIDES, & FERTILIZER FUELS & LUBE OILS **⊖** 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 **● MEDIUM IMPACT** HANDLING PROCEDURES. O LOW IMPACT KEEP CHEMICALS IN APPROPRIATE CONTAINERS (CLOSED DRUMS OR SIMILAR) AND UNDER COVER. J 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 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 ONSITE. REGULARLY SCHEDULE HAZARDOUS WASTE REMOVAL TO MINIMIZE ON—SITE STORAGE. USE ONLY LICENSED HAZARDOUS WASTE HAULERS.

DEBRIS AND TRASH MANAGEMENT

APPLICATIONS

PERIMETER CONTROL

SLOPE PROTECTION

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

EDUCATE ALL WORKERS ON CHEMICAL STORAGE AND DISPOSAL PROCEDURES.

HAVE REGULAR MEETINGS TO DISCUSS AND REINFORCE IDENTIFICATION, HANDLING, AND DISPOSAL PROCEDURES (INCORPORATE IN REGULAR SAFETY SEMINARS).

ESTABLISH A CONTINUING EDUCATION PROGRAM TO INDOCTRINATE NEW EMPLOYEES.
                                                                                                                                                          PERMANENT STABILIZATION
                                                                                                                                                          WASTE MANAGEMENT
                                                                                                                                                          HOUSEKEEPING PRACTICES
                                                                                                                                                   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 LICENIES.
                                                                                                                                                    O SEDIMENT

    NUTRIENTS TOXIC

    OIL & GREASE

  REQUIREMENTS
      QUIREMENTS
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.
COMPLIANCE BY WORKERS.
SUFFICIENT AND APPROPRIATE CHEMICAL AND HAZARDOUS WASTE STORAGE CONTAINERS.
                                                                                                                                                    O FLOATABLE MATERIALS

    OTHER CONSTRUCTION

                                                                                                                                                          IMPLEMENTATION
        TIMELY REMOVAL OF STORED HAZARDOUS WASTE MATERIALS.
                                                                                                                                                             REQUIRMENTS

    POSSIBLE MODEST COST IMPACT FOR ADDITIONAL CHEMICAL STORAGE CONTAINERS.
    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.
                                                                                                                                                     CAPITAL COST
                                                                                                                                                    ⊖ MAINTENANCE
                                                                                                                                                   ⊖ TRAINING
                                                                                                                                                    O SUITABILITY FOR SLOPES >
THIS PRACTICE IS NOT INTENDED TO ADDRESS SITE—ASSESSMENTS AND PRE—EXISTING CONTAMINATION. MAJOR CONTAMINATION, LARGE SPILLS AND OTHER SERIOUS HAZARDOUS WASTE INCIDENTS REQUIRE IMMEDIATE RESPONSE FROM SPECIALISTS.
DEMOLITION ACTIVITIES AND POTENTIAL PRE-EXISTING MATERIALS, SUCH AS LEAD AND ASBESTOS, ARE NOT ADDRESSED BY THIS PROGRAM. SITE-SPECIFIC INFORMATION ON PLANS IS NECESSARY.
                                                                                                                                                                    LEGEND

    SIGNIFICANT IMPACT

                                                                                                                                                   MEDIUM IMPACT
 CONTAMINATED SOILS ARE NOT ADDRESSED.
                                                                                                                                                   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
    PRIMARY USE
 CONCRETE WASTE IS PRESENT AT MOST CONSTRUCTION SITES. THIS BMP SHOULD BE UTILIZED AT SITES IN WHICH CONCRETE WASTE IS PRESENT.
                                                                                                                                                          PERMANENT STABILIZATION
                                                                                                                                                           WASTE MANAGEMENT
                                                                                                                                                          HOUSEKEEPING PRACTICES
    A NUMBER OF WATER QUALITY PARAMETERS CAN BE AFFECTED BY INTRODUCTION OF
  CONCRETE — ESPECIALLY FRESH CONCRETE. CONCRETE AFFECTS THE pH OF RUNOFF, CAUSING SIGNIFICANT CHEMICAL CHANGES IN WATER BODIES AND HARMING AQUATIC LIFE. SUSPENDED SOLIDS IN THE FORM OF BOTH CEMENT AND AGGREGATE DUST ARE ALSO GENERATED FROM BOTH FRESH AND DEMOLISHED CONCRETE WASTE.
                                                                                                                                                   TARGETED CONSTITUENTS
                                                                                                                                                    O SEDIMENT
                                                                                                                                                    O NUTRIENTS TOXIC
                                                                                                                                                          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
  EDUCATION

DRIVERS AND EQUIPMENT OPERATORS SHOULD BE INSTRUCTED ON PROPER DISPOSAL
                                                                                                                                                  O SUITABILITY FOR SLOPES >
           AND EQUIPMENT WASHING PRACTICES (SEE ABOVE).
SUPERVISORS MUST BE MADE AWARE OF THE POTENTIAL ENVIRONMENTAL
                                                                                                                                                                    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
REEDUCATED OR DISCIPLINED IF NECESSARY.
                                                                                                                                                    MEDIUM IMPACT
                                                                                                                                                         LOW IMPACT
                                                                                                                                                          UNKNOWN OR QUESTIONABLE IMPACT
 DEMOLITION PRACTICES

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

WHERE APPROPRIATE, CONSTRUCT SEDIMENT TRAPS OR OTHER TYPES OF SEDIMENT
        QUIREMENTS

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
      DISTORMAL COST IMPACT FOR TRAINING AND MONITORING,

CONCRETE DISPOSAL COST DEPENDS ON AVAILABILITY AND DISTANCE TO SUITABLE DISPOSAL AREAS

ADDITIONAL COSTS INVOLVED IN EQUIPMENT WASHING COULD BE SIGNIFICANT.
   LIMITATIONS
CONCRETE WASTE MANAGEMENT IS ONE PART OF A COMPREHENSIVE CONSTRUCTION SITE WASTE MANAGEMENT PROGRAM.
 CONCRETE SAWCUTTING WASTE MANAGEMENT
                                                                                                                                                              APPLICATIONS
                                                                                                                                                              PERIMETER CONTROL
                                                                                                                                                              SLOPE PROTECTION
                                                                                                                                                              SEDIMENT TRAPPING
    SAW CUTTING OF CONCRETE PAVEMENT IS A ROUTINE PRACTICE, NECESSARY TO CONTROL
                                                                                                                                                           CHANNEL PROTECTION
 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.
                                                                                                                                                          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
                                                                                                                                                          SEDIMENT
                                                                                                                                                          NUTRIENTS TOXIC
                                                                                                                                                          MATERIALS
    DESIGN CRITERIA
                                                                                                                                                    O OIL & GREASE
    SLURRY COLLECTOR
         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 TO DRY OUT.
                                                                                                                                                          WASTES
                                                                                                                                                          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
                                                                                                                                                         CAPITAL COST
                                                                                                                                                   MAINTENANCE
          NEVER DUMP WASTE ILLICITLY OR WITHOUT PROPERTY OWNER'S KNOWLEDGE AND
                                                                                                                                                   TRAINING
                                                                                                                                                         SUITABILITY FOR SLOPES >
           SLURRY MAY BE DISPOSED OF IN FACILITIES DESIGNATED FOR WASHDOWN OF
           CONCRETE TRUCKS (SEE M-3, CONCRETE WASTE MANAGEMENT).
     MAINTENANCE
                                                                                                                                                                     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
                                                                                                                                                          SIGNIFICANT IMPACT

● MEDIUM IMPACT

     REMOVAL HAS BEEN ADEQUATELY PERFORMED
                                                                                                                                                    O LOW IMPACT
                                                                                                                                                         UNKNOWN OR QUESTIONABLE IMPACT
                                                                                                                                                                      M-4
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LIME STABILIZATION MANAGEMENT **APPLICATIONS** PERIMETER CONTROL LIME STABILIZED SURFACE SLOPE PROTECTION 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 SEDIMENT **NUTRIENTS TOXIC** MATERIALS OIL & GREASE STREAMS, PONDS, AND OTHER WATER BODIES. FLOATABLE MATERIALS OTHER CONSTRUCTION THIS BMP SHOULD BE IMPLEMENTED WHEN LIME IS REQUIRED FOR SOIL STABILIZATION. WASTES **APPLICATIONS** 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 THESE TECHNIQUES TO REDUCE THE IMPACT OF THE LIME. CAPITAL COST MAINTENANCE TRAINING DESIGN CRITERIA 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.

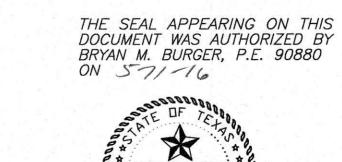
FOR AREAS FOR WHICH PHASING OF LIME OPERATIONS IS IMPRACTICAL, USE OF A CURING SEAL SUCH AS LIQUID ASPHALT, GRADE MC—250 OR MC—800 APPLIED AT A RATE OF 0.15 GALLONS PER SQ. YD. OF SURFACE CAN BE USED TO PROTECT THE BASE. SUITABILITY FOR SLOPES > LEGEND SIGNIFICANT IMPACT MEDIUM IMPACT LOW IMPACT UNKNOWN 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. M-6SANITARY FACILITIES **APPLICATIONS** PERIMETER CONTROL SLOPE PROTECTION 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 PERMANENT STABILIZATION 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 WASTE MANAGEMENT HOUSEKEEPING PRACTICES TARGETED CONSTITUENTS PORTABLE TOILETS.

PORTABLE TOILETS SHOULD BE REGULARLY SERVICED. O SEDIMENT NUTRIENTS TOXIC MATERIALS O OIL & GREASE O FLOATABLE MATERIALS OTHER CONSTRUCTION **IMPLEMENTATION** REQUIRMENTS O CAPITAL COST MAINTENANCE TRAINING O SUITABILITY FOR SLOPES > LEGEND SIGNIFICANT IMPACT MEDIUM IMPACT LOW IMPACT UNKNOWN OR QUESTIONABLE IMPACT M-7

As-Built: 9-11-17

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





LOT 1. BLOCK A - DALTON GOLIAD ADDITION

3/16

JAC

THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N BURGER Dallas, Texas 75248 DENGINEERING Office: 972.630.3360 Fax: 972.630.3380 TBPE F-12997 DESIGN | DRAWN | DATE | SCALE | NOTES FILE NO.

007-092 EROS DETAILS C-11.2

#### **CLEAR AND GRUB**

- 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
- THE CONTRACTOR SHALL TAKE WHAT EVER MEASURES NECESSARY TO LOCATE AND PROTECT EXISTING UTILITIES, STRUCTURES, AND OTHER FACILITIES TO REMAIN.
- ALL TREES, SHRUBS, STUMPS, ROOTS AND OTHER DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
- NO BURNING WILL BE ALLOWED ON SITE.

- 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
- 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.
- 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.
- 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).

- 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 OVER AND UNDER REMOVAL
- LINESS 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.
- 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 GENERAL CONSTRUCTION CONDITIONS COMPLETED DEMONSTRATING THAT THE SUBGRADE IS +/- 0.1 FEET OF REQUIRED SUBGRADE.
- 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.
- UNLESS 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.
- FILLS SHALL BE PLACED IN LIFTS NOT TO EXCEED 1 FOOT IN MASS FILLS AND 8 INCHES IN TRENCH OR RESTRICTED AREAS.
- 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

14. TRENCH EXCAVATIONS SHALL BE MADE UNIFORM AND STRAIGHT TO THE FOLLOWING

PLUS 3 FEET). ADDITIONAL WIDTH WILL ONLY BE ALLOWED WHEN COMPACTION

RECORD. NO MORE TRENCH SHALL BE OPEN IN ONE DAY THAN CAN BE PROPERLY

COMPACTION UNDER, ALONG AND OVER THE PIPE. CARE SHALL BE GIVEN WHILE

BACKFILL/BEDDING BY HAND, USING HAND OPERATED PLATE TAMPS OR JUMPING

15. IF ROCK IS ENCOUNTERED THAT WAS NOT INDICATED ON THE PLANS OR SOILS REPORT,

16. WHERE ROCK IS ADJACENT TO A STRUCTURE OR UTILITY, THE ROCK SHALL BE

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

PROPERTIES FREE OF DIRT, MUD OR OTHER DEBRIS. THIS WILL INCLUDE BUILDING THE

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

RECOMMENDATIONS. THE CONTRACTOR SHALL PLACE AND MAINTAIN ALL EROSION

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

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

AREA TO BURY THE BOTTOM OF THE FABRIC AT LEAST 6 INCHES INTO THE GROUND.

4. SILT FENCE SHALL BE PLACED WHERE EVER SURFACE DRAINAGE CAN LEAVE THE SITE.

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

SEDIMENT TRAPS SHALL BE PLACED AND MAINTAINED AS NEEDED. THEY SHALL BE

SIZED TO PROVIDE ADEQUATE STORAGE TO ALLOW SEDIMENT TO PRECIPITATE OUT

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

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.

MULCH AND STAKED WHENEVER WINDS OR SLOPE WILL CAUSE THE MULCH AND SEED

THE TERM OF OWNER AS USED IN THESE SPECIFICATIONS AND NOTES SHALL INCLUDE

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

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

JURISDICTION OVER HIS WORK. ALL CONFLICTS IN REQUIREMENTS OF DIFFERENT

TO MEET OR EXCEED ALL REQUIREMENTS OF THE AGENCIES OR AUTHORITIES HAVING

AGENCIES, AUTHORITIES AND/OR THE DESIGN SHALL BE BROUGHT TO THE ATTENTION

THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND MAINTAIN THE PROPERTY

DESIGN AND THE PROJECT/PROPERTY LIMITS SHALL BE BROUGHT TO THE ATTENTION

OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING. UNLESS DESCRIBED IN THE

SECURED ANY RIGHT OF WAYS, EASEMENTS OR AGREEMENTS WITH OTHER PROPERTY

EASEMENTS, PERMITS OR AGREEMENTS HE MAY NEED TO PERFORM HIS WORK. ALL

SUCH AGREEMENTS SHALL HOLD THE OWNER, ENGINEER AND HIS AGENTS HARMLESS

CONTRACTOR SHALL COPY THE OWNER ON RELEASES OF ALL AGREEMENTS PRIOR TO

UNLESS OTHERWISE NOTED ON THE DRAWINGS OR IN THE CONTRACT DOCUMENTS THE

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SURVEY, LAYOUT AND

THE DESIGN OR AGENCIES REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF

CONTRACTOR SHALL PROTECT AND SAFEGUARD ALL EXISTING SURVEY MONUMENTS.

CONTROL AND TIE-DOWNS. THE CONTRACTOR SHALL PAY ALL COSTS TO REPAIR OR

WRITTEN AUTHORIZATION BY THE ENGINEER OR IN THE CASE OF UTILITIES OR ROAD

CONTRACT, THE CONTRACTOR SHALL PROVIDE TO THE OWNER A RECORD SET OF

EROSION CONTROL IS NECESSARY WHEN EVER SEDIMENT, DUST, EROSION, OR

PLACE AND MAINTAIN WHAT EVER EROSION CONTROL OR RUN-OFF PROTECTION IS

PROPERTIES AND THE HEALTH AND WELL BEING OF THE WORKERS, PUBLIC AND

REQUIRED TO PROTECT HIS WORK, THE WORK OF OTHERS, THE PROJECT, ADJACENT

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

EVER PRECAUTIONS AND STEPS NECESSARY TO MAINTAIN SAFETY AND OPERATION OF

DAMAGES CAUSED FROM HIS FAILURE TO TAKE PROPER AND ADEQUATE PRECAUTIONS.

PEDESTRIAN TRAFFIC AND BUSINESS USES. THE CONTRACTOR SHALL TAKE WHAT

THESE USES IN ACCORDANCE WITH FEDERAL, STATE, COUNTY AND LOCAL

REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND

THE CONTRACTOR SHALL BE FAMILIAR WITH ALL FEDERAL, STATE AND LOCAL

REQUIREMENTS REGARDING THESE USES.

WORK TO BE DEDICATED, THE AUTHORITY RECEIVING DEDICATION. AT THE END OF THE

CONTAMINATED RUN-OFF MAY OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE TO

RECORD DRAWINGS FOR THIS CONTRACT. ANY CONFLICTS IN SURVEY/LAYOUT AND

THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK. THE

NO CHANGES TO THE DESIGN OR MATERIALS SPECIFIED MAY BE MADE WITHOUT

REPLACED DAMAGED SURVEY MONUMENTS, CONTROL AND TIE-DOWNS.

DRAWING REFLECTING ALL CHANGES MADE BY THE CONTRACTOR DURING

AND PROJECT LIMITS THROUGH OUT THE PROJECT. ALL CONFLICTS BETWEEN THE

CONTRACT DOCUMENTS OR SHOWN ON THE DRAWINGS THE OWNER HAS NOT

OWNERS OR PROPERTY USERS. THEREFORE, IT SHALL BE THE CONTRACTOR'S

RESPONSIBILITY TO SECURE AND MAINTAIN ANY TEMPORARY RIGHT OF WAYS.

AND THE RESPONSIBILITY OF THE CONTRACTOR TO BEAR ALL COSTS. THE

THE OWNER OF THE PROPERTY THE COMPANY OR PARTY THAT HIRED THE

OR PARTY ASSIGNED BY THE OWNER TO BE THE OWNER'S REPRESENTATIVE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY PERMITS,

OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING.

FINAL PAYMENT BY THE OWNER TO THE CONTRACTOR.

RESPONSIBLE TO KEEP ALL ROADS, PARKING LOTS, SIDEWALKS AND ADJACENT

SURFACES WHEN EVER NEEDED. THE CONSTRUCTION ENTRANCE SHALL BE

IN ACCORDANCE WITH FEDERAL, STATE, LOCAL AND MANUFACTURES

CONTROL DEVICES AS NEEDED THROUGH OUT THE PROJECT.

SIDE WITH THE MATERIAL THAT WAS EXCAVATED.

CONSTRUCTION ENTRANCE, SWEEPING, SCRAPING AND WASHING THE PAVEMENT

AND WILL REMAIN AS STATED ON THE DRAWINGS OR ABOVE.

LESS THAN 1 FOOT OR GREATER THAN 3 FEET ON ANY SIDE.

ALL BLASTING MUST BE PERFORMED BY A LICENSED BLASTER.

LEGAL MANNER.

**EROSION CONTROL** 

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

EQUIPMENT LIMITATIONS REQUIRE AND ONLY AFTER APPROVAL OF THE ENGINEER OF

BACKFILLED IN THAT SAME DAY TO MINIMIZE WEATHER AND SAFETY CONCERNS. WHEN

BACKFILLING AROUND PIPES TO PREVENT DAMAGE TO THE PIPES INCLUDING: PLACING

JACKS, AND OTHER LOAD RESTRICTIVE TECHNIQUES UNTIL FILLS ARE A MINIMUM OF 2

TOP OF THE PIPE. COMPACTION REQUIREMENTS ARE NOT RELIEVED IN THESE AREAS

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

REMOVED TO A MINIMUM OF 6 INCHES BELOW AND 1 TIMES THE DIAMETER, BUT NOT

NO EXPLOSIVES WILL BE ALLOWED UNTIL ALL PERMITS ARE GRANTED AND THE OWNER

STRUCTURES WITHIN THE AREA OF THE BLAST MUST RECEIVE A PRE- BLAST SURVEY.

HAS SIGNED OFF, PRE AND POST BLAST REPORTS MUST BE KEPT AND RECORDED. ALL

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

FEET OR MANUFACTURES RECOMMEND DEPTH, WHICH EVER IS GREATER, ABOVE THE

BACKFILLING AROUND PIPES PROVIDE UNIFORM SUPPORT AT INVERT AND PROPER

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.

ARE COMMON WITH THIS TYPE WORK. THE CONTRACTOR SHALL REVIEW ALL

WEATHER, GROUNDWATER, AND OTHER OCCURRENCES THAT COULD BE EXPECTED OR

- 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
- 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.
- 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 +/- 1/2 INCH FOR THICKNESS LESS THAN 8 INCHES.
- 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
- UNLESS OTHERWISE NOTED SANITARY PIPE AND FITTINGS SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 3034, SDR 35, WITH GASKETS PER ASTM D 3212, ALL EROSION CONTROL DEVICES SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND 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
  - FORCEMAIN PIPE SHALL BE POLYVINYL CHLORIDE (PVC) PER ASTM D 2241, SDR 210F 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
  - 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 1/2 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.
  - 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
  - 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.
  - 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.
  - 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.
  - FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.
  - 16. 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

- 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
- 2. 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 1/4 INCH SIEVE AND 20 TO 80% PASSING THE NO. 200 SIEVE.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS AND DELAYS ASSOCIATED WITH

  4. LIME OF TYPE RECOMMENDED FOR SOIL CONDITIONING SHALL BE USED TO TREAT
- PERTINENT DOCUMENTS INCLUDING SOILS REPORTS, SOILS BORINGS AND OTHER SOIL 5. LAWN FERTILIZER SHALL BE 55% NITROGEN, 10% PHOS₽HORUS AND 10% POTASH WHERE 50% OF THE NITROGEN IS DERIVED FROM UREAFORM SOURCE.
  - 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"
  - 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
- BUILDING FACE UNLESS NOTED OTHERWISE ON DRAWINGS OR CONTRACT DOCUMENTS. 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.
  - 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.
  - MULCH SHALL BE 50% SHREDDED BARK AND 50% WOOD CHIPS, 1/4 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 +/- 1/2 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 1/2/6 FOR SLIP FORM WORK AND 6% +/- 1 1/2% 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.
- 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.
- ALL FORMING, PLACEMENT, MATERIALS AND CURING SHALL CONFORM TO THE LATES' ADDITION OF ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND ALL SIMILAR STATE DEPARTMENT OF TRANSPORTATION REQUIREMENTS.
- 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.
- 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
- EXPANSION JOINTS SHALL BE PLACED EVERY 50 FEET AND AT ADJOINING STRUCTURES SUCH AS WALLS, MANHOLES AND VAULTS. EXPANSION JOINT MATERIAL SHALL BE PREMOLDED, 1/2 INCH MATERIAL WITH 1/2 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

- 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.
- 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.
- 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 1/4 INCH TO 3/4 INCH.
- END SECTIONS SHALL BE THE SAME MATERIAL AS THE PRECEDING PIPE AND APPROPRIATE COLLAR.
- 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 CAS 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.
- 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
- 10. 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.

- 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
- 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.
- 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 DIMENSIONS OF THE TRENCH DRAIN WILL NOT BE LESS THAN 1 FOOT.
- 15. ALL JOINTS BETWEEN PIPES AND PRECAST STRUCTURES SHALL BE MORTARED TIGHT.
- 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 WORKMANSHIF ALL DEBRIS, DIRT OR OTHER FOREIGN OBJECTS SHALL BE REMOVED AND THE SYSTEM
- 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.
- 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.

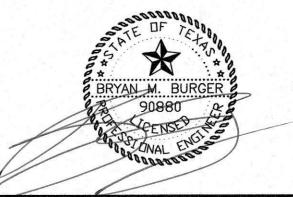
#### TRAFFIC SIGNAGE AND PAVEMENT MARKINGS

- 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).
- 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.
- 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 SHALL BE KEPT PLUMB, 6 INCHES OFF BOTTOM AND CENTERED AS 3000 PSI CONCRETE IS PLACED AROUND THE POST. THE OVERALL SIGN AND POST SYSTEM SHOULD BE ABLE TO WITHSTAND 33 POUNDS PER SQUARE FOOT.
- 6. CONTRACTORS CAN PLACE SIGNS ON POSTS AFTER CONCRETE HAS CURED FOR SEVEN DAYS OR 3/4 STRENGTH IS ACHIEVED.
- 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
- IF THE AUTHORITY HAVING JURISDICTION DOES NOT HAVE SPECIFIC REQUIREMENTS REGARDING MATERIALS AND PLACEMENT THE FOLLOWING WILL BE USED.
- 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
- 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.
- 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.

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY BRYAN M. BURGER, P.E. 90880 ON 6-7-16



- 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
- 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
- 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".
- 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".
- ALL METERS, VAULTS AND BACKELOW 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 1 1/2 INCH SIEVE, 90 - 100% PASSING THE 1 INCH SIEVE, 35 - 95% PASSING THE 1/2 INCH SIEVE AND 0 - 15% PASSING THE 1/4 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.
- 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.
- 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) 1/2} /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.
- ALL TAP AND/OR CONNECTION MATERIAL AND WORK SHALL BE DONE IN ACCORDANCE 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.
- OTHER FITTING AND APPURTENANCES NOT PART OF THE MAIN LINE TESTING SHALL BE TESTED BY VISUAL INSPECTION FOR LEAKAGE UNDER NORMAL WORKING PRESSURES.
- 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

REPRESENTATIVE AT LEAST TEN DAYS PRIOR TO THE START OF WORK

FAILURE OF ANY TESTING SHALL REQUIRE THE CONTRACTOR TO REPAIR OR REPLACED THE FAILED SECTION AT NO ADDITIONAL EXPENSE TO THE CONTRACT.

# **TERMITE CONTROL**

ISOFENPHOSE

RECOMMENDATIONS.

TREATMENT WORK

- PROVIDE SOIL TREATMENT FOR TERMITE CONTROL IN STATES THAT REQUIRE TERMITE
- WARRANTY: SUBMIT MANUFACTURER'S STANDARD WARRANTY. INCLUDE LABOR AND MATERIALS TO REPAIR OR REPLACE DEFECTIVE MATERIALS. WARRANTY PERIOD: 5
- COMPLY WITH GOVERNING CODES AND REGULATIONS. PROVIDE PRODUCTS OF ACCEPTABLE MANUFACTURERS WHICH HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR THREE YEARS. USE EXPERIENCED INSTALLERS. DELIVER, HANDLE, AND
- STORE MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 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,
- TREAT SOIL IN STRICT COMPLIANCE WITH NATIONAL PEST CONTROL ASSOCIATION STANDARDS AND WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND
- 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 EXCESSIVELY WET SOILS.
- POST SIGNS AND OTHER WARNINGS INDICATING THAT SOIL POISONING HAS BEEN APPLIED. PROTECT PERSONS AND PROPERTY FROM INJURY OR DAMAGE FROM SOIL

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 STORE

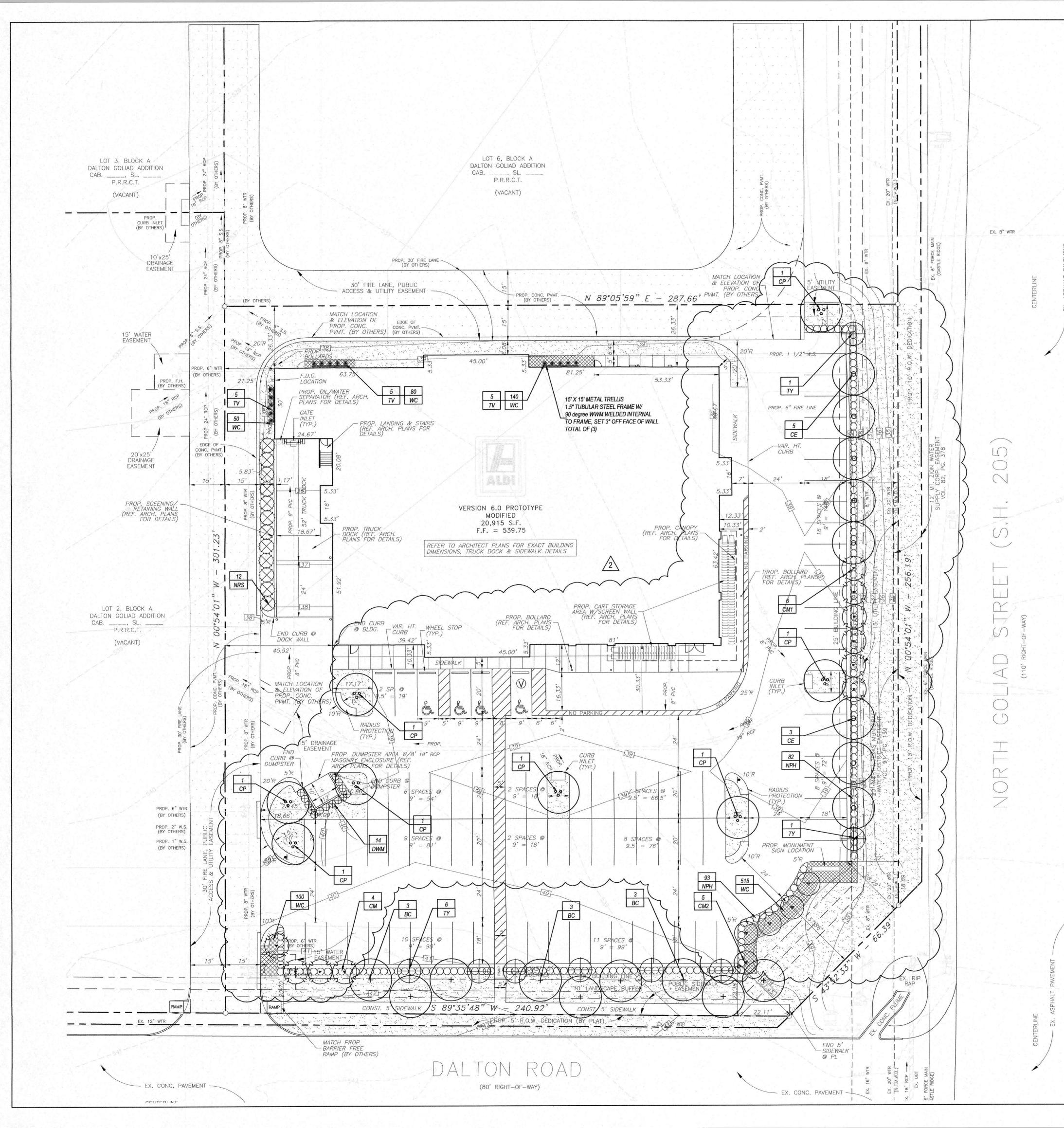
LOT 1, BLOCK A - DALTON GOLIAD ADDITION

THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N BURGER Dallas, Texas 75248 DENGINEERING Office: 972.630.3360 Fax: 972.630.3380 TRPF F-12997 DESIGN DRAWN DATE SCALE NOTES FILE 007-092

ALDI SPEC

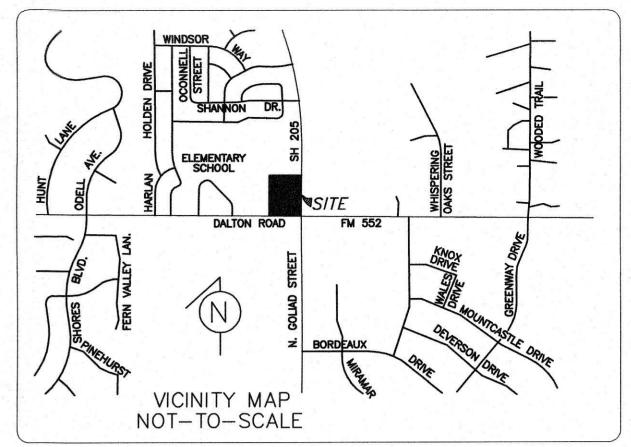
N.T.S.

3/16



#### LANDSCAPE NOTES

- Contractor shall verify all existing and proposed site elements and notify Architect of any discrepancies. Survey data of existing conditions was supplied by others.
- Contractor shall locate all existing underground utilities and notify Architect of any conflicts. Contractor shall exercise caution when working in the vicinity of underground utilities.
- Contractor is responsible for obtaining all required landscape and irrigation
- 4. Contractor to provide a minimum 2% slope away from all structures.
- 5. All planting beds and lawn areas to be separated by steel edging. No steel to be installed adjacent to sidewalks or curbs.
- All landscape areas to be 100% irrigated with an underground automatic irrigation system and shall include rain and freeze sensors.
- 7. All lawn areas to be Solid Sod Bermudagrass, unless otherwise noted on the



#### **PLANT LIST**

QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
9	BC	Bald Cypress	Taxodium distichum	4" cal.	container grown, 15' ht. 5' spread min.
8	CE	Cedar Elm	Ulmus crassifolia	4" cal.	container grown, 15' ht., 5' spread min.
8	CP	Chinese Pistache	Pistachia chinensis	4" cal.	container grown, 15' ht., 5' spread min.
18	TY	Tree Yaupon Holly	llex vomitoria	6' ht.	B&B, 3 cane, tree form, no cross caning
2/(6)	CM1	Crepe Myrtle 'Catawba'	Lagerstroemia indica 'Catawba'	6' ht.	container grown, 3-5 cane, no cross caning
5	CM2	Crepe Myrtle 'Hopi'	Lagerstroemia indica 'Hopi'	5' ht.	container grown, 3-5 cane, no cross caning
SHRUBS					
QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
175	NPH	Needlepoint Holly	llex cornuta 'Needlepoint'	5 gal.	container, full plant, 36" o.c.
12	NRS	Nellie R. Stevens Holly	llex sp. ' Nellie R. Stevens'	5' ht.	container, full to base, 6' o.c.
(14)	DWM	Dwarf Wax Myrtle 'Dons Dwarf'	Myrica pusilla	5 gal.	container, full plant, 36" o.c.
 GROUND	COVERS				
QTY.	TYPE	COMMON NAME	BOTANICAL NAME	SIZE	REMARKS
15	TV	Trumpet Vine	Campsis radicans	5 gal.	container, (6) 36" runners min.
(885)	WC	Wintercreeper	Euonymus fortunei coloratus	4" pots	container, (3) 12" runners min. 12" o.c.
7 (000)		Common Bermudagrass	Cynodon dactylon	roll sod	solid sod, refer to notes

NOTE: Plant list is an aid to bidders only. Contractor shall verify all quantities on plan. All heights and spreads are minimums. All plant material shall meet or exceed remarks as indicated. All trees to have straight trunks and be matching within varieties.

#### MAINTENANCE NOTES

 The Owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscape.

- All landscape shall be maintained in a neat and orderly manner at all times.
   This shall include mowing, edging, pruning, fertilizing, watering, weeding and other such activities common to landscape maintenance.
- All landscape areas shall be kept free of trash, litter, weeds and other such material or plants not part of this plan.
  All plant material shall be maintained in a healthy and growing condition as is
- appropriate for the season of the year.

  5. All plant material which dies shall be replaced with plant material of equal or
- Contractor shall provide separate bid proposal for one year's maintenance to begin after final acceptance.

# GENERAL LAWN NOTES

better value.

- Fine grade areas to achieve final contours indicated on civil plans.
- Adjust contours to achieve positive drainage away from buildings. Provide uniform rounding at top and bottom of slopes and other breaks in grade. Correct irregularities and areas where water may stand.
- All lawn areas to receive solid sod shall be left in a maximum of 1" below final finish grade. Contractor to coordinate operations with on-site Construction Manager.
- Imported topsoil shall be natural, friable soil from the region, known as bottom and soil, free from lumps, clay, toxic substances, roots, debris, vegetation, stones, containing no salt and black to brown in color.
- finish grade approved by the Owner's Construction Manager or Architect prior to installation.

All lawn areas to be fine graded, irrigation trenches completely settled, and

- All rocks 3/4" diameter and larger, dirt clods, sticks, concrete spoils, etc. shall be removed prior to placing topsoil and any lawn installation
- Contractor shall provide (1") one inch of imported topsoil on all areas to receive lawn.

#### LANDSCAPE TABULATIONS

SITE REQUIREMENTS (site area 85,901 s.f.)
Requirements: 15% site area to be landscaped

Required Provided 12,885 s.f. (15%) 16,779 s.f. (19.53 %)

FRONT YARD REQUIREMENTS

Requirements: 50% of required landscape must be located in front yard

Required Provided 6,442 s.f. (50%) 6,442 s.f.

STREET REQUIREMENTS: SH 205 OVERLAY
Requirements: (3) canopy tree 4" cal. and (4) accent trees, 4' ht.

per 100 l.f. of frontage

DALTON ROAD (307.31 l.f.)
Required Provided
(9) trees, 4" cal.
(12) trees, 4' ht. (12) trees, 6' ht.

NORTH GOLIAD STREET (256.19 l.f.)
Required Provided
(8) trees, 4" cal.
(10) trees, 4' ht. (10) trees, 6' ht.

PARKING LOT (85 spaces; 39,124 s.f.)
Requirements: 5% of total parking lot area and (1) tree, 4" cal.
per 10 REQUIRED parking spaces (84 REQUIRED)

Required Provided
(8) trees, 3" cal. (8) trees, 4" cal.
1,956 s.f. (5%) 2,483 s.f. 6.3%

ALL TREES TO BE LOCATED 5' FROM WATER, SEWER AND STORM SEWER LINES

ALL TREES AND SHRUBS TO BE SETBACK 4' FROM ALL HEAD-IN PARKING

01 LANDSCAPE PLAN SCALE: 1" = 20'-0"

Dallas, Texas 75202
Tel 214.871.0083
Fax 214.871.0545
Email smr@smr-la.com

SP2016-007

landscape architects, inc.

1708 N. Griffin Street

APPLICANT:

ALDI, INC.

WESTCOURT ROAD

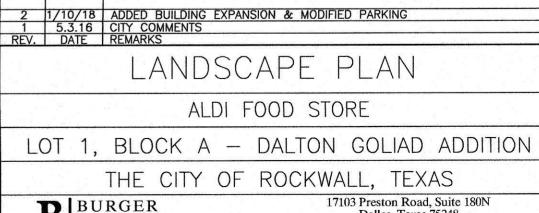
As-Built: 9.11.18

ALDI, INC.
2500 WESTCOURT ROAD
DENTON, TEXAS 76207
CONTACT: HEATHER RIMMER

ENGINEER:

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





LOI	I, BL	OCK A	- DA	LION G	OLIAD AD	NOITION
	THE	CITY	OF RO	CKWALL	_, TEXAS	
BURGER ENGINEERING Civil Consultants  17103 Preston Road, Suite 180N Dallas, Texas 75248 Office: 972.630.3360 Fax: 972.630.3380 TBPE F-12997						
DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
BDA	BDA	3/28/16	1"=20'	D.P.	007-092 SITE PLAN	L-1

#### **SECTION 02900 - LANDSCAPE**

#### PART 1 - GENERAL

#### 1.1 REFERENCED DOCUMENTS

Refer to bidding requirements, special provisions, and schedules for additional requirements.

#### 1.2 DESCRIPTION OF WORK

Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

- Planting (trees, shrubs, and grass)
- Bed preparation and fertilization Notification of sources
- 4. Water and Maintenance until final acceptance Guarantee

#### 1.3 REFERENCE STANDARDS

- A. American Standard for Nursery Stock published by American Association of Nurserymen: 27 October 1980, Edition; by American National Standards Institute, Inc. (Z60.1) - plant
- American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names
- Texas Association of Nurserymen, Grades and Standards.
- D. Hortis Third, 1976 Cornell University

#### 1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

- The Contractor shall, within ten (10) days following acceptance of bid, notify the Architect/Owner of the sources of plant materials and bed preparation required for the
- Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on
- Product Data: Submit complete product data and specifications on all other specified
- Submit three representative samples of each variety of ornamental trees, shrubs, and groundcover plants for Architect's approval. When approved, tag, install, and maintain as representative samples for final installed plant materials.
- File Certificates of Inspection of plant material by state, county, and federal authorities
- F. Soil Analysis: Provide sandy loam soil analysis if requested by the Architect.

#### **JOB CONDITIONS**

- General Contractor to complete the following punch list: Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3") inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid sod shall be left one (1") inch below the finish grade of sidewalks, drives, and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.
- General Contractor shall provide topsoil as described in Section 02200 Earthwork.
- Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

#### 1.6 MAINTENANCE AND GUARANTEE

#### A. Maintenance

- The Landscape Contractor will be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show a healthy growth and satisfactory foliage conditions.
- Maintenance shall include watering of trees and plants, cultivation, weeding spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary
- 3. A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by
- Owner and Landscape Contractor will be completed prior to written acceptance. After final acceptance of installation, the Landscape Contractor will not be required to do any of the above listed work.

- Trees shall be guaranteed for a twelve (12) month period after acceptance. Shrubs and groundcover shall be guaranteed for twelve (12) months. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be considered subject to replacement. In such
- cases, the opinion of the Owner shall be final. a. Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately
- b. At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.
- c. When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and reinspected for full compliance with Contract requirements. All replacements are to be included under "Work" of this section.

2. The Owner agrees that for the guarantee to be effective, he will water plants at least

twice a week during dry periods and cultivate beds once a month after final

3. The above guarantee shall not apply where plants die after acceptance because of

injury from storms, hail, freeze, insects, diseases, injury by humans, machines or

provided the job is in a completed, undamaged condition, and there is a stand of

grass in all lawn areas. At this time, the Owner will assume maintenance on the

4. Acceptance for all landscape work shall be given after final inspection by the Owner

Repairs: Any necessary repairs under the Guarantee must be made within ten (10) days

does not make repairs accordingly, the Owner, without further notice to Contractor, may

after receiving notice, weather permitting, and in the event the Landscape Contractor

General: Comply with applicable Federal, State, County and Local regulations governing

Personnel: Employ only experienced personnel who are familiar with the required work.

Provide full time supervision by a qualified foreman acceptable to Landscape Architect.

1. Make contact with suppliers immediately upon obtaining notice of contract acceptance

fertilization) which will insure the purchased materials will meet and/or exceed project

growth for compliance with requirements for genus, species, cultivar/variety, size and

to select and book materials. Develop a program of maintenance (pruning and

2. Landscape Architect will provide a key identifying each tree location on site. Written

verification will be required to document material selection, source and delivery

3. Owner and/or Architect shall inspect all plant materials when reasonable at place of

arrival at the site and during installation for size and condition of root balls, limbs,

during the process of work. Remove rejected materials from the site immediately

1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will

2. Container Grown Plants: Deliver plants in rigid container to hold ball shape and

5. Owner and/or Architect may reject unsatisfactory or defective material at any time

4. Owner and/or Architect retains the right to further inspect all plant material upon

branching habit, insects, injuries, and latent defects.

Plants damaged in transit or at job site shall be rejected.

not damage roots, branches, shape, and future development.

1 TREE PLANTING DETAIL

provide materials and men to make such repairs at the expense of the Landscape

accepted work.

Selection of Plant Material:

schedules to site.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

1.7 QUALITY ASSURANCE

- 1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored
- 2. Deliver only plant materials that can be planted in one day unless adequate storage
- and watering facilities are available on job site. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
- 4. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.
- 5. Notify Architect of delivery schedule 72 hours in advance so plant material may be observed upon arrival at job site.
- 6. Remove rejected plant material immediately from site. 7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

#### PART 2 - PRODUCTS

#### 2.1 PLANTS

- General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal oute width of the plant, not to the outer leaf tips. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.
- Quantities: The drawings and specifications are complimentary. Anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.
- Quality and size: Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched, and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae and are to be of specimen quality.
- Approval: All plant materials shall be subject to the approval of the Owner. All plants which are found unsuitable in growth, or in any unhealthy, badly shaped, or undersized condition, will be rejected by the Landscape Architect, either before or after planting, and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plants as specified.
- Trees shall be healthy, full-branched, well-shaped and shall meet the trunk diameter and height requirements of the plant schedule. Balls shall be firm, neat, slightly tapered, and well wrapped in burlap. Any tree loose in the ball or with broken ball at time of planting will be rejected. Balls shall be ten (10") inched in diameter for each one (1") inch of trunk diameter, Measured six (6") inched above ball. Nomenclature conforms to the customary nursery usage: for clarification, the term
- Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect, shall be executed by the Landscape Contractor at no additional cost to the Owner.

"multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.

#### A. Sandy Loam:

2.2 SOIL PREPARATION MATERIALS

- 1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other
- extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallasgrass or Nutgrass shall be rejected. 2. Physical properties as follows:
- Clay between 7-27 percent Silt - between 15-25 percent
- Sand less than 52 percent 3. Organic matter shall be 3%-10% of total dry weight.
- 4. If requested, provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.
- Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.
- Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.
- Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.
- Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.
- Organic Fertilizer: Fertilaid, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened
- containers, each bearing the manufacturer's guaranteed statement of analysis. Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum
- 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulphur and 4% iron,
- Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

#### 2.3 MISCELLANEOUS MATERIALS

- A. Steel Edging: Shall be Ryerson "Estate Curbing", 1/8" x 4" with stakes 4' on center.
- Staking Material for Shade Trees:
- 1. Post: Studded T-Post, #1 Armco with anchor plate; 6'-0" length; paint green.
- 2. Wire: 12 gauge, single strand, galvanized wire. 3. Rubber hose: 2 ply, fiber reinforced hose, minimum 1/2 inch inside diameter. Color:
- Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.
- Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Loftland Co., (214) 631-5250 or approved equal.

SHRUBS AND GROUNDCOVER

PREPARED SOIL MIX

PER SPECIFICATIONS

AND TOP OF CONCRETE

-SIDEWALK

REFER TO PLANS FOR PLANT TYPES

1/2" MINIMUM BETWEEN TOP OF MULCH

SHRUBS AND GROUNDCOVER

PREPARED SOIL MIX

PER SPECIFICATIONS

WITH STAKES

-1/2" MAXIMUM

--- MULCH PER SPECIFICATIONS

1/8" X 4" GREEN STEEL EDGING

REF. PLAN FOR SHRUB TYPE

FINISH GRADE

A DEPTH OF 6"

-NATIVE SOIL

- 2" LAYER OF SPECIFIED BARK MULCH

ROOTBALL, DO NOT DISTURB

PREPARED SOIL MIX PER SPECS.

6" MIN. OF PREPARED SOIL MIX

TILLED INTO EXISTING SOIL TO

REFER TO PLANS FOR PLANT TYPES

#### PART 3 - EXECUTION

#### 3.1 BED PREPARATION & FERTILIZATION

- Landscape Contractor to inspect all existing conditions and report any deficiencies to the
- B. All planting areas shall be conditioned as follows:
  - 1. Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per manufacturers recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand
- (1,000) square feet. 2. All planting areas shall receive a two (2") inch layer of specified mulch. 3. Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc.,

#### placed in nine (9") inch layers and watered in thoroughly. C. Grass Areas:

- 1. Areas to be Solid Sod Bermudagrass: Blocks of sod should be laid joint to joint (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a
- smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly. 2. Areas to be Hydromulch Common Bermudagrass: Hydromulch with bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. Use a 4' x 8'

#### batter board against the bed areas. 3.2 INSTALLATION

- Maintenance of plant materials shall begin immediately after each plant is delivered to the
- site and shall continue until all construction has been satisfactorily accomplished Plant materials shall be delivered to the site only after the beds are prepared and area ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and sun. Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All
- plants remain the property of the Contractor until final acceptance. Position the trees and shrubs in their intended location as per plan
- Notify the Landscape Architect for inspection and approval of all positioning of plant
- Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relationship to the finish grade as it did to soil surface in original place of growth.

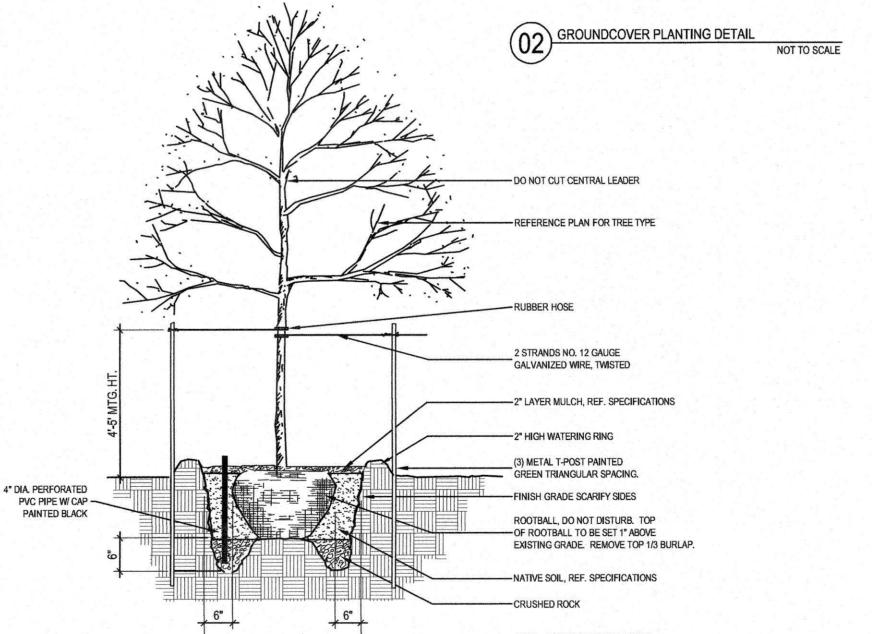
- Shrub and tree pits shall be no less than two (2') feet, twenty-four (24") inches, wider than the lateral dimension of earth ball and six (6") inches deeper than it's vertical dimension Remove and haul from site all rocks and stones over one (1") inch in diameter. Plants should be thoroughly moist before removing containers.
- Dig a wide, rough sided hole exactly the same depth as the height of the ball, especially at the surface of the ground. The sides of the hole should be rough and jagged, never slick
- Percolation Test: Fill the hole with water. If the water level does not percolate within 24 hours, the tree needs to move to another location or have drainage added. Install a PVC stand pipe per tree planting detail as approved by the Landscape Architect.
- Backfill only with 5 parts existing soil or sandy loam and 1 part bed preparation. When the hole is dug in solid rock, topsoil from the same area should not be used. Carefully settle by watering to prevent air pockets. Remove the burlap from the top 1/3 of the ball. as well as all nylon, plastic string and wire mesh. Container trees will usually be pot bound, if so follow standard nursery practice of 'root scoring'.
- Do not wrap trees.
- K. Do not over prune.
- Mulch the top of the ball. Do not plant grass all the way to the trunk of the tree. Leave the area above the top of the ball and mulch with at least two (2") inches of specified mulch
- All plant beds and trees to be mulched with a minimum settled thickness of two (2") inches over the entire bed or pit.
- Obstruction below ground: In the event that rock, or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this section, alternate locations may be selected by the Owner. Where locations cannot be changed, the obstructions shall be removed to a depth of not less than three (3') feet below grade and no less than six (6") inches below the bottom of ball when plant is properly set at the required grade. The work of this section shall include the removal from the site of such rock or underground obstructions encountered at the cost of the Landscape Contractor.
- Trees and large shrubs shall be staked as site conditions require. Position stakes to secure tree against seasonal prevailing winds.
- Pruning and Mulching: Pruning shall be directed by the Architect and shall be pruned in accordance with standard horticultural practice following Fine Pruning, Class I pruning standards provided by National Arborist Association
- 1. Dead wood or suckers and broken badly bruised branches shall be removed. General tipping of the branched is not permitted. Do not cut terminal branches. 2. Pruning shall be done with clean, sharp tools. 3. Immediately after planting operations are completed, all tree pits shall be covered with
- a layer of organic material two (2") inches in depth. This limit of the organic material Steel Curbing Installation:
- 1. Curbing shall be aligned as indicated on plans. Stake out limits of steel curbing and obtain Owners approval prior to installation.
- All steel curbing shall be free of kinks and abrupt bends. . Top of curbing shall be 3/4" maximum height above grade.
- Stakes are to be installed on the planting bed side of the curbing, as opposed to the Do not install steel edging along sidewalks.

#### Cut steel edging at 45 degree angle where edging meets sidewalk. 3.3 CLEANUP AND ACCEPTANCE

Cleanup: During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be so organized that they, too, are neat and orderly All trash and debris shall be removed from the site as work progresses. Keep paved areas clean by sweeping or hosing at end of each days work

# **END OF SECTION**





NOT TO SCALE

NOTE: NO STEEL EDGING TO BE INSTALLED ALONG SIDEWALKS (04) STEEL EDGING DETAIL NOT TO SCALE NOTE: LOCATE STAKES OUTSIDE OF TREE WELL, POSITION STAKES SPACING PER OF ROOTBALL TO SECURE TREE AGAINST SEASONAL PLANT LIST PREVAILING WINDS. NOTE: POCKET PLANTING NOT

NOT TO SCALE

APPLICANT: ALDI, INC. 2500 WESTCOURT ROAD

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

# SOLID SOD NOTES

- Fine grade areas to achieve final contours indicated. Leave areas to receive topsoil 3" below final desired grade in planting areas and 1" below final grade in turf areas.
- Adjust contours to achieve positive drainage away from buildings. Provide uniform rounding at top and bottom of slopes and other breaks in grade. Correct irregularities and areas where water may stand.
- All lawn areas to receive solid sod shall be left in a maximum of 1" below final finish grade. Contractor to coordinate operations with on-site Construction
- 4. Contractor to coordinate with on-site Construction Manager for availability of existing topsoil.
- Plant sod by hand to cover indicated area completely. Insure edges of sod are touching. Top dress joints by hand with topsoil to fill voids.
- Roll grass areas to achieve a smooth, even surface, free from unnatural undulations.
- Water sod thoroughly as sod operation progresses.

(1000) square feet.

- 8. Contractor shall maintain all lawn areas until final acceptance. This shall include, but not limited to: mowing, watering, weeding, cultivating, cleaning and replacing dead or bare areas to keep plants in a vigorous, healthy
- Contractor shall guarantee establishment of an acceptable turf area and shall provide replacement from local supply if necessary.
- 10. If installation occurs between September 1 and March 1, all sod areas to be over-seeded with Winter Ryegrass, at a rate of (4) pounds per one thousand



landscape architects, inc. 1708 N. Griffin Street Dallas, Texas 75202 Tel 214.871.0083 Fax 214.871.0545 Email smr@smr-la.com

smr

FILE

NO.

CASE NUMBER: SP2016-007

DESIGN | DRAWN | DATE | SCALE | NOTES

3/28/16

REV. DATE REMARKS

BDA

BDA

LANDSCAPE SPECIFICATIONS ALDI FOOD STORE LOT 1. BLOCK A - DALTON GOLIAD ADDITION THE CITY OF ROCKWALL, TEXAS 17103 Preston Road, Suite 180N BURGER Dallas, Texas 75248 DENGINEERING Office: 972.630.3360 Fax: 972.630.3380 Civil Consultant

NONE

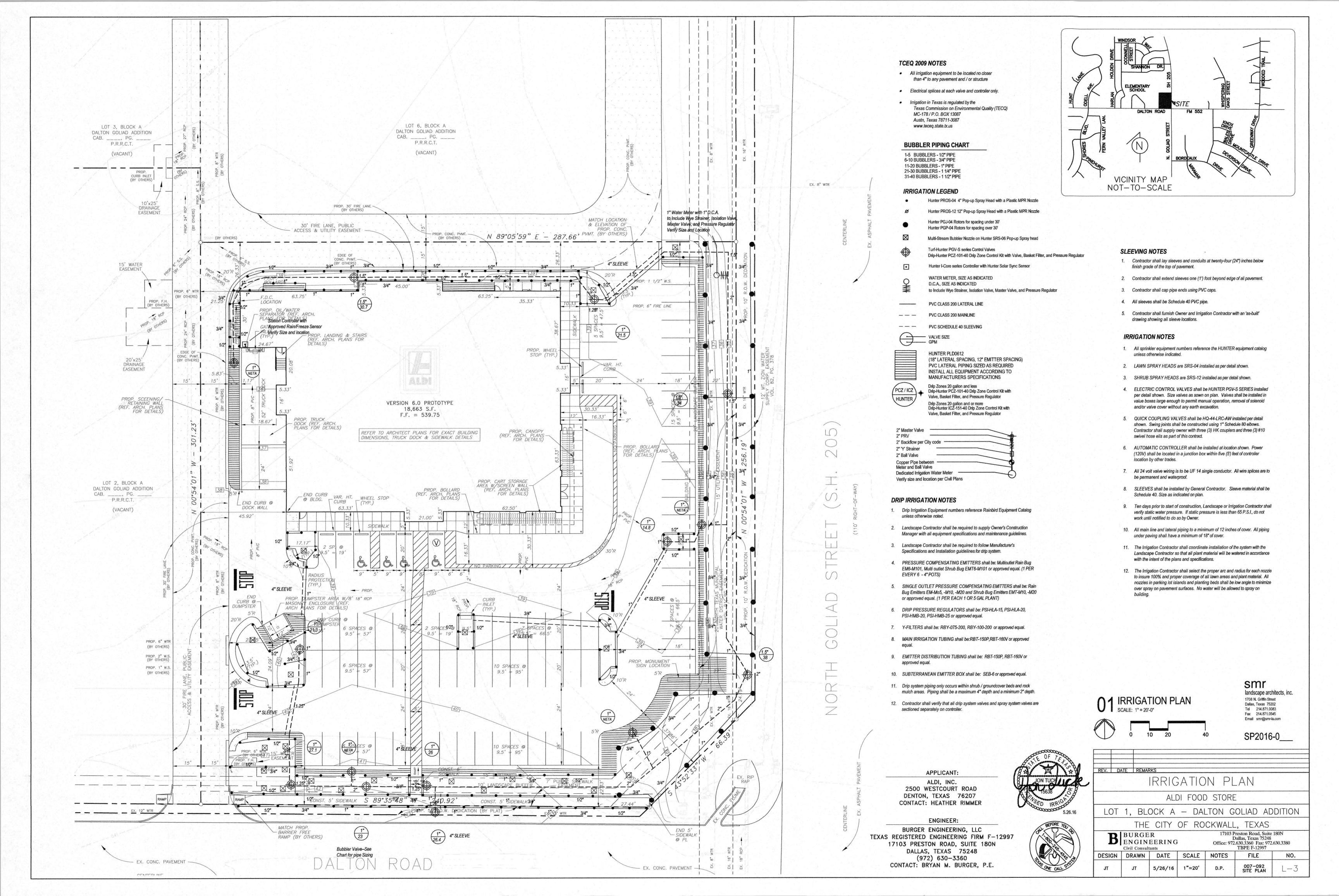
D.P.

As-Built: 9.11.18

DENTON, TEXAS 76207 CONTACT: HEATHER RIMMER

(05) SHRUB PLANTING DETAIL

no steel along sidewalks



#### SECTION 02810 - IRRIGATION

#### PART 1 - GENERAL

#### 1.1 SCOPE

- Provide complete sprinkler installation as detailed and specified herein, includes furnishing all labor, materials, and equipment for the proper installation. Work includes but is not limited to:
  - Trenching and backfill Automatic controlled system.
  - 3. Upon completion of installation, supply drawings showing details of construction including location of mainline piping, manual and automatic valves, electrical supply to valves, and specifically exact location of automatic valves.
- All sleeves as shown on plans will be furnished by General Contractor. Meter and power source to be provided by General Contractor.

#### 1.2 RELATED WORK SPECIFIED ELSEWHERE

- See Irrigation Plans. See plans for controller, heads, and valves.
- B. Section 02900-Landscape
- Section 02811-Underground Irrigation Sleeve and Utility Conduits

#### 1.3 APPLICABLE STANDARDS

- A. America Standard for Testing and Materials (ASTM) Latest edition.
  - 1. D2241 Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR) D2464 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Thread, Schedule 80 D2455 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 4. D2467 Poly (Vinyl Chloride) (PVC) Plastic Pipe Fittings, Socket Type, Schedule 80
  - 6. D2287 Flexible Poly Vinyl Chloride (PVC) Plastic Pipe F656 Poly Vinyl Chloride (PVC) Solvent Weld Primer 8. D2855 Making Solvent - Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and

5. D2564 Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Pipe and Fittings

# 1.4 MAINTENANCE AND GUARANTEE

acceptance.

- A. Materials and workmanship shall be fully guaranteed for one (1) year after final
- Provide maintenance of system, including raising and lowering of heads to compensate for lawn growth, cleaning and adjustment of heads, raising and lowering of shrub heads to compensate for shrub growth, for one (1) year after completion of installation.
- C. Guarantee is limited to repair and replacement of defective materials or workmanship, including repair of backfill settlement.

HARD WIRE 117 VOLT A.C. POWER TO

RIGID STEEL CONDUIT (SAME SIZE AS

- STEEL COUPLING (AS REQUIRED)

--- RIGID STEEL CONDUIT BELOW FLOOR OR GRADE

- STEEL MALE CONNECTOR

- 1 1/4" RIGID STEEL CONDUIT

BE PLUMB.

- STEEL SWEEP ELL

FINISH FLOOR

(05) WALL MOUNTED CONTROLLER

TO FLUSH OUTLET BEHIND CONTROLLER

STEEL SPLICE BOX WITH FRONT ACCESS PANEL

CONDUIT BELOW GRADE) CONDUIT SHALL

#### 1.5 SUBMITTALS

- A. Procedure: Comply with Division I requirements.
- B. Product Data: Submit (5) copies of equipment manufacturer's specifications and literature for approval by Landscape Architect prior to installation

#### C. Project Record Documents

- 1. Comply with Division I requirements.
- 2. Locate by written dimension, routing of mainline piping, remote control valves and quick coupling valves. Locate mainlines by single dimensions from permanent site features provided they run parallel to these elements. Locate valves, intermediate electrical connections, and quick couplers by two dimensions from a permanent site feature at approximately 70 degrees to each other.
- 3. When dimensioning is complete, transpose work to mylar reproducible tracings. 4. Submit completed tracings prior to final acceptance. Mark tracings "Record Prints Showing Significant Changes". Date and sign drawings.
- 5. Provide three complete operation manuals and equipment brochures neatly bound in a hard back three-ring binder. Include product data on all installed materials. Include warranties and guarantees extended to the Owner by the manufacturer of all
- D. Quick Coupler Keys: Provide 3 coupler keys with boiler drains attached using brass
- E. Controller Keys: Provide three sets of keys to controller enclosure(s).

originally designed and specified system.

- Use of materials differing in quality, size, or performance from those specified will only be allowed upon written approval of the Landscape Architect. The decision will be based on comparative ability of material or article to perform fully all purposes of mechanics and general design considered to be possessed by item specified.
- Bidders desiring to make a substitution for specified sprinklers shall submit manufacturer's catalog sheet showing full specification of each type sprinkler proposed as a substitute, including discharge in GPM maximum allowable operating pressure at
- Approval of substitute sprinkler shall not relieve Irrigation Contractor of his responsibility to demonstrate that final installed sprinkler system will operate according to intent of
- I. It is the responsibility of the Irrigation Contractor to demonstrate that final installed sprinkler system will operate according to intent of originally designed and specified system. If Irrigation Contractor notes any problems in head spacing or potential coverage, it is his responsibility to notify the Landscape Architect in writing, before proceeding with work. Irrigation Contractor guarantees 100% coverage of all areas to be

- A. Perform testing required with other trades, including earthwork, paving, plumbing,
- electrical, etc. to avoid unnecessary cutting, patching and boring. Wire Connectors: Waterproof splice kit connectors. Type DBY by 3M.

CLASS 200 PVC LATERAL LINE

FLEXIBLE PVC (LENGTH AS REQUIRED)

SCHEDULE 40 PVC STREET ELL

NOT TO SCALE

NOT TO SCALE

NOT TO SCALE

#### 2.6 SCHEDULE 80 PVC NIPPLES

Sprinkler heads in lawn area as specified on plan.

Electric valves to be all plastic construction as indicated on plans.

Refer to drawing for backflow prevention requirements and flow valve.

if furnished take preference over this general specification.

Staking: Before installation is started, place a stake where each sprinkler is to be located,

B. Excavations: Excavations are unclassified and include earth, loose rock, rock or any

area to leave grade in as good or better condition than before installation.

in accordance with drawing. Staking shall be approved by Landscape Architect before

combination thereof, in wet or dry state. Backfill trenches with material that is suitable for

Backfill: Flood or hand-tamp to prevent after settling. Hand rake trenches and adjoining

Piping Layout: Piping layout is diagrammatic. Route piping around trees and shrubs in

such a manner as to avoid damage to plantings. Do not dig within ball of newly planted

Sprinkler Mains: Install a four (4") inch minimum trench with a minimum of eighteen (18")

Lateral Piping: Install a four (4") inch wide minimum trench deep enough to allow for

Trenching: Remove lumber, rubbish, and large rocks from trenches. Provide firm,

installation of sprinkler heads and valves, but in no case, with less than twelve (12") of

uniform bearing for entire length of each pipe line to prevent uneven settlement. Wedging

or blocking of pipe will not be permitted. Remove foreign matter or dirt from inside of pipe

before welding, and keep piping clean by approved means during and after laying of pipe.

compaction and contains no lumps, clods rock, debris, etc. Special backfill specifications,

Copper Tubing (City Connection): Type "M"

PVC Pipe: Class 200, SPR 21

24V Wire: Size 14, Type U.F.

2.7 MATERIALS - See Irrigation Plan

**PART 3 - EXECUTION** 

3.1 INSTALLATION - GENERAL

trees or shrubs.

3.2 PIPE INSTALLATION

- Solvent: Use only solvent recommended by manufacturer to make solvent-welded joints. Composed of Standard Schedule 40 PVC Fittings and PVC meeting noted standards. No clamps or wires may be used. Nipples for heads and shrub risers to be nominal one-half Thoroughly clean pipe and fittings of dirt, dust and moisture before applying solvent. inch diameter by eight inches long, where applicable.
- B. PVC to metal connection: Work metal connections first. Use a non-hardening pipe dope Polyethylene nipples six (6") inches long to be used on all pop-up spray heads.
  - such as Permatex No. 2 on threaded PVC adapters into which pipe may be welded.

#### 3.4 COPPER TUBING AND FITTING ASSEMBLY

3.3 PVC PIPE AND FITTING ASSEMBLY

Clean pipe and fitting thoroughly and lightly sand pipe connections to remove residue from pipe. Attach fittings to tubing in an approved manner using 50-50 soft solid core solder.

#### 3.5 POP-UP SPRAY HEADS

Supply pop-up spray heads in accordance with materials list and plan. Attach sprinkler to lateral piping with a semi-flexible polyethylene nipple not less than three (3") inches or more than six (6")

#### 3.6 VALVES

Supply valves in accordance with materials list and sized according to drawings. Install valves in a level position in accordance with Manufacturer's Specifications. See plan for typical installation of electric valve, valve box.

#### WIRING

- Supply wire from the automatic sprinkler controls to the valves. No conduit will be required for U.F. wire unless otherwise noted on the plan. Wire shall be tucked under the
- A separate wire is required from the control to each electric valve. A common neutral wire is also required from each control to each of the valves served by each particular
- Bundle multiple wires and tape them together at ten (10') foot intervals. Install ten (10") inch expansion coil at not more than one hundred (100') foot intervals. Make splices

#### 3.8 AUTOMATIC SPRINKLER CONTROLS

NOT TO SCALE

VALVE BOX AND LIE

Supply in accordance with Irrigation Plan. Install according to manufacturer's recommendations.

#### 3.9 TESTING

A. Sprinkler Mains: Test sprinkler main only for a period of twelve (12) to fourteen (14) hours under normal pressure. If leaks occur, replace joint or joints and repeat test.

FINISH GRADE

ADAPT INLET AND OUTLET

PVC LINE PER SPECIFICATIONS TO IRRIGATION SYSTEMS

FEBCO MODEL 805 DOUBLE CHECK VALVE, LINE SIZE

MAIN FROM SOURCE PER CITY REQUIREMENT

(09) TRENCH DETAIL

UTILITY GRAVEL (1/2" - 3/4" DIA.). 10" DEPTH for Testing and Repair

MASTER VALVE

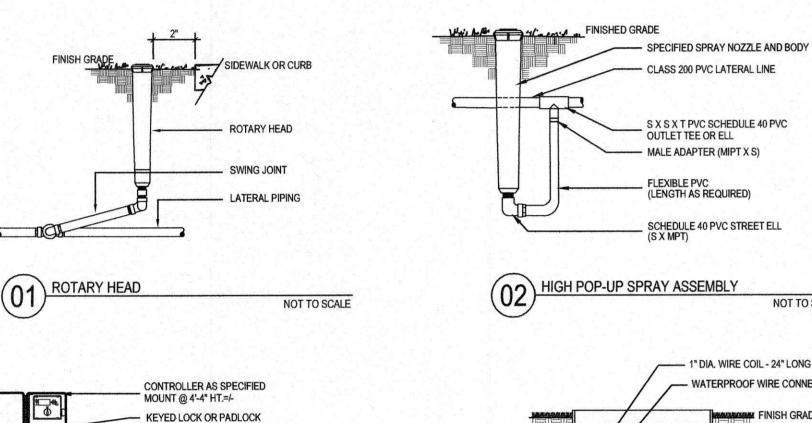
B. Complete tests prior to backfilling. Sufficient backfill material may be placed in trenches between fittings to insure stability of line under pressure. In each case, leave fittings and couplings open to visual inspection for full period of test.

### 3.10 FINAL ADJUSTMENT

After installation has been completed, make final adjustment of sprinkler system in preparation for Landscape Architect's final inspection. Completely flush system to remove debris from lines and turning on system. Check sprinklers for proper operation and proper alignment for direction of flow. Check each section of spray heads for operating pressure and balance to other sections by use of flow adjustment and top of each valve. Check nozzling for proper coverage. Prevailing wind conditions may indicate that arch of angle of spray should be other than shown on drawings.

**END OF SECTION** 

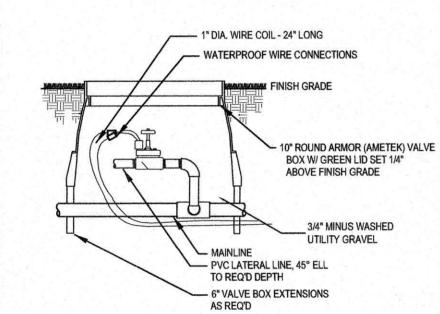
In this case, change nozzles to provide correct coverage.

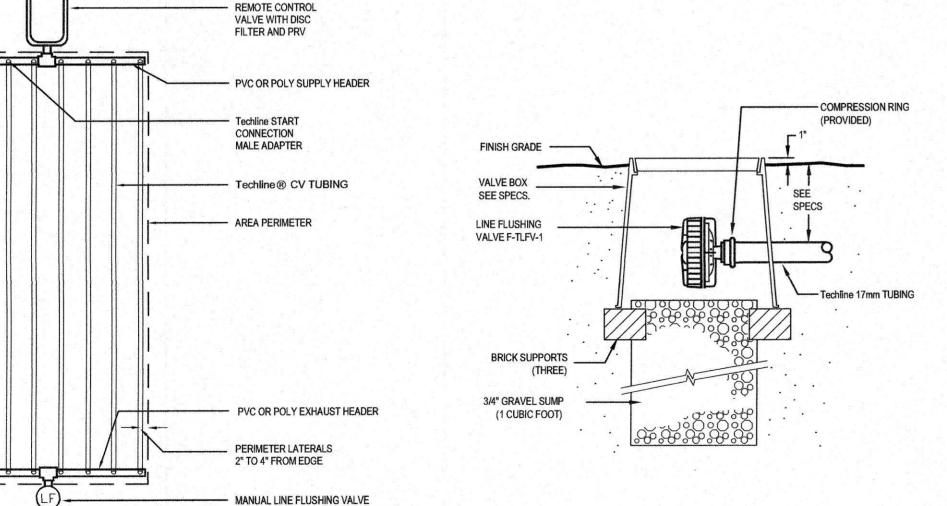


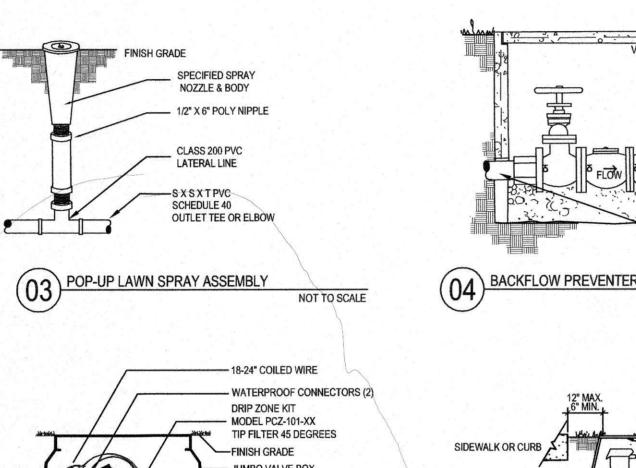
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PLUMBED TO PVC OR POLY

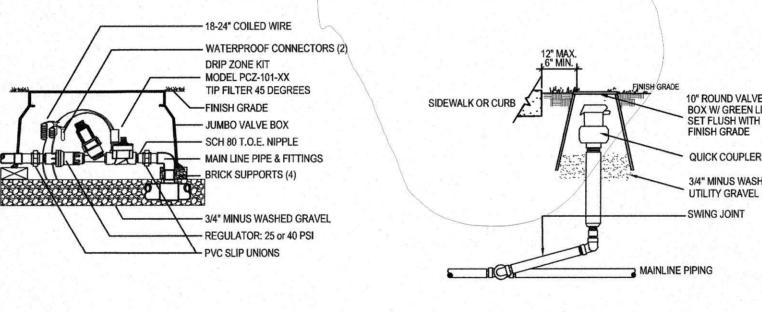
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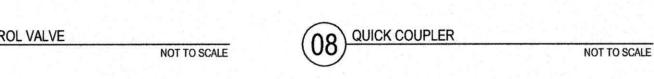


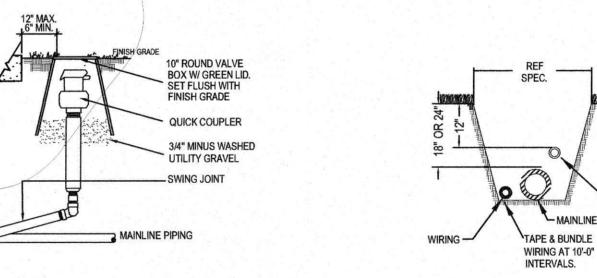


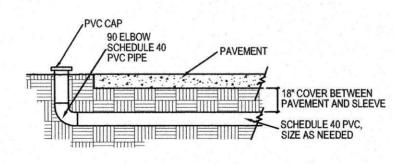


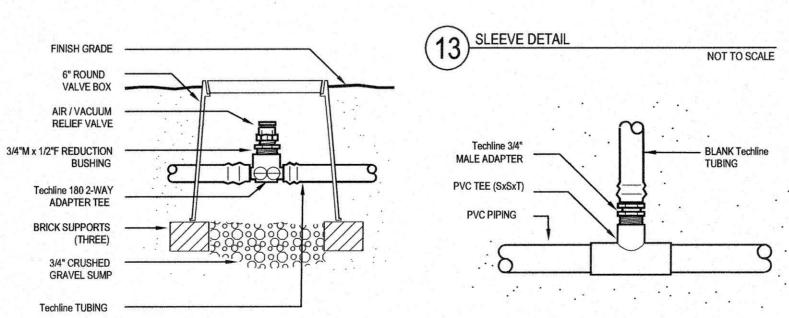
TechLine AIR/VACUUM RELIEF





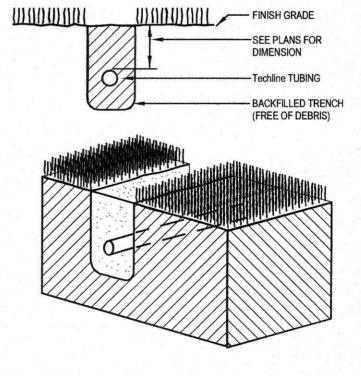






NOT TO SCALE





NOT TO SCALE

15) TechLine TRENCHING NOT TO SCALE

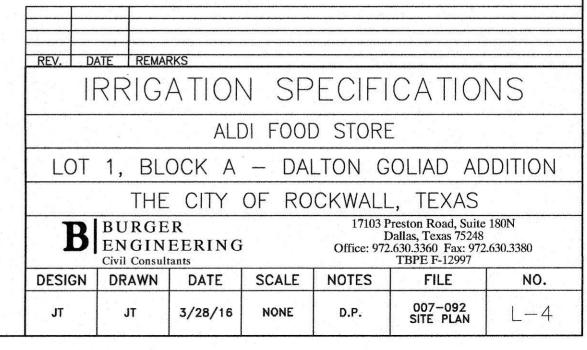
**ENGINEER:** BURGER ENGINEERING, LLC TEXAS REGISTERED ENGINEERING FIRM F-12997 17103 PRESTON ROAD, SUITE 180N DALLAS, TEXAS 75248 (972) 630-3360 CONTACT: BRYAN M. BURGER, P.E.

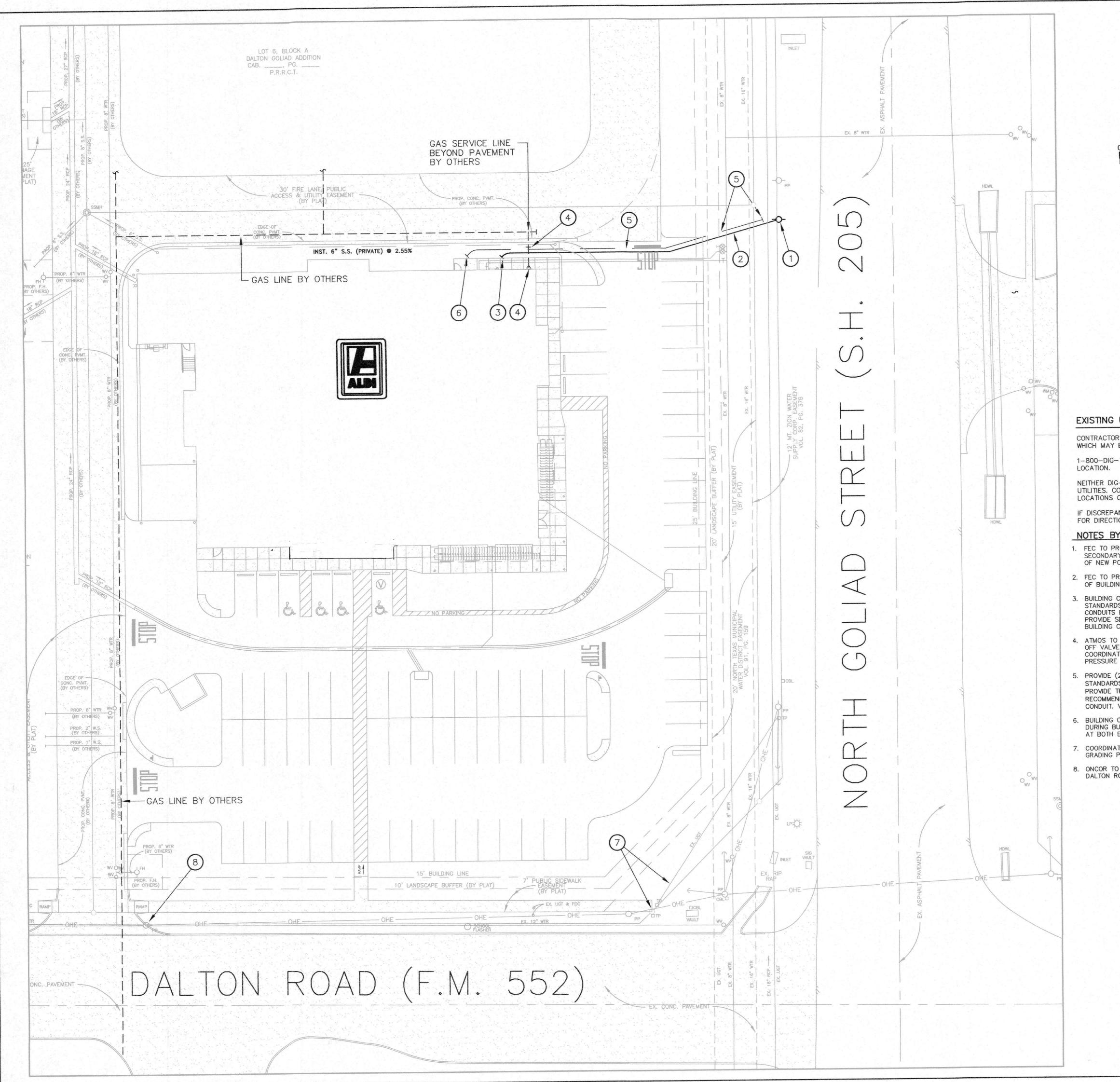
APPLICANT: ALDI, INC. 2500 WESTCOURT ROAD DENTON, TEXAS 76207 CONTACT: HEATHER RIMMER

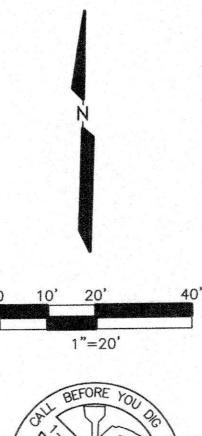


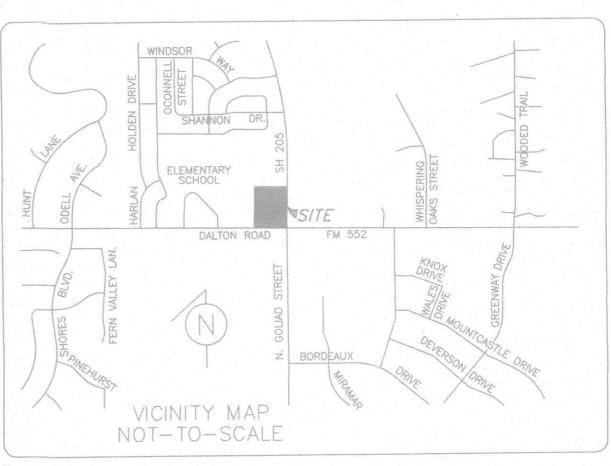
landscape architects, inc. 1708 N. Griffin Street Dallas, Texas 75202 Tel 214.871.0083 Fax 214.871.0545 Email smr@smr-la.com

SP2016-0\_\_\_









#### GENERAL NOTES

- 1. COORDINATE ALL WORK WITH UTILITY COMPANIES AND OWNER'S REPRESENTATIVE.
- 2. STAKE EASEMENTS, CENTERLINE OF TRENCHES, ENDS OF LINES AND CORNERS OF PADS FOR UTILITY COMPANIES. COORDINATE EXACT LOCATIONS WITH CIVIL ENGINEER AND WITH UTILITY COMPANIES.
- 3. VERIFY ALL DIMENSIONS WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH-IN.
- 4. PROVIDE TRENCHING, BACKFILL AND COMPACTION FOR UTILITY COMPANIES PER SOILS ENGINEER RECOMMENDATIONS AND UTILITY COMPANIES' STANDARDS U.N.O.
- 5. ALL WORK IS TO BE PROVIDED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED TO BE PROVIDED BY THE UTILITY COMPANIES.
- 6. COMMON UTILITY TRENCHES MAY BE USED IF ACCEPTABLE TO THE UTILITY COMPANIES. MAINTAIN ALL UTILITY COMPANIES' REQUIRED SEPARATIONS HORIZONTALLY AND VERTICALLY. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING. BEDDING, BACKFILL AND COMPACTION PER UTILITY COMPANIES' REQUIREMENTS AND SOILS ENGINEER'S RECOMMENDATIONS.
- 7. PROVIDE SWEEPING BENDS FOR FIBER OPTIC CABLES FOR ALL TELECOM CONDUITS. VERIFY REQUIREMENTS WITH TELECOM COMPANIES.

#### EXISTING UTILITIES NOTES

CONTRACTOR IS TO CONTACT 1-800-DIG-TESS AND HAVE THEM LOCATE ALL BURIED UTILITIES WHICH MAY BE AFFECTED IN ANY WAY BY THE WORK OF THIS PROJECT.

1-800-DIG-TESS WILL LOCATE UTILITIES WITHIN 2'0" HORIZONTALLY OF THEIR EXISTING BURIED LOCATION.

NEITHER DIG-TESS NOR THE UTILITY COMPANIES WILL WARRANTY EXISTING DEPTH OF BURIED UTILITIES. CONTRACTOR IS TO CAREFULLY DIG 'POTHOLES' UNTIL DEPTH AND EXACT HORIZONTAL LOCATIONS OF ALL UTILITIES CAN BE VERIFIED.

IF DISCREPANCIES AND CONFLICTS ARE DISCOVERED, CONTACT THE OWNER'S REPRESENTATIVE FOR DIRECTIONS PRIOR TO PROCEEDING WITH AFFECTED WORK.

# NOTES BY SYMBOL ' O' - MEP SITE PLAN

- FEC TO PROVIDE NEW IN-LINE POLE AND POLE MOUNTED TRANSFORMERS WITH 120/208V, 3P, 4W SECONDARY VOLTAGE. FEC TO PROVIDE SECONDARY CONDUIT RISERS. COORDINATE EXACT LOCATION OF NEW POLE WITH FEC.
- FEC TO PROVIDE (3) 3" SECONDARY CONDUITS WITH PULLSTRINGS FROM POLE RISER TO WITHIN 5'0" OF BUILDING WALL. VERIFY EXACT LOCATION WITH FEC. CAP, STAKE AND LABEL END.
- 3. BUILDING CONTRACTOR TO INSTALL TRANSOCKET METER BASE FURNISHED BY FEC PER FEC STANDARDS ON BUILDING WALL. FEC TO RETURN TO SITE AND PROVIDE SECONDARY SERVICE CONDUITS EXTENSITIONS TO TRANSOCKET METER BASE DURING BUILDING CONSTRUCTION. FEC TO PROVIDE SECONDARY CONDUCTORS AND TERMINATIONS AT TRANSFORMERS AND TRANSOCKET DURING BUILDING CONSTRUCTION.
- 4. ATMOS TO PROVIDE EXTENSION OF GAS SERVICE LINE TO A STUBUP AT BUILDING WITH A MAIN SHUT OFF VALVE, PRESSURE REGULATOR SET FOR 2 PSI DISCHARGE PRESSURE AND ATMOS GAS METER. COORDINATE EXACT LOCATION AT BUILDING WITH ATMOS. BUILDING CONTRACTOR TO PROVIDE PRESSURE REGULATOR DOWNSTREAM OF METER.
- 5. PROVIDE (2) 4" SCHEDULE 40 PVC COMMUNICATION CONDUITS WITH PULLSTRINGS PER AT&T STANDARDS FROM N. GOLIAD STREET (S.H. 205) RIGHT-OF-WAY TO WITHIN 5'0" OF BUILDING WALL. PROVIDE TRENCH, BACKFILL AND COMPACTION PER AT&T STANDARDS AND SOILS ENGINEER'S RECOMMENDATIONS. INSTALL A MINIMUM OF 24" BELOW FINAL GRADE/TOP OF PAVING TO TOP OF CONDUIT. VERIFY EXACT LOCATION AT RIGHT-OF-WAY WITH AT&T. CAP, STAKE AND LABEL ENDS.
- 6. BUILDING CONTRACTOR TO EXTEND CONDUITS AND PULLSTRINGS TO INTERIOR TERMINAL BOARD DURING BUILDING CONSTRUCTION AND COORDINATE WITH AT&T TO PROVIDE CABLE AND TERMINATIONS AT BOTH ENDS DURING BUILDING CONSTRUCTION.
- 7. COORDINATE WITH AT&T TO ADJUST EXISTING TELEPHONE PEDESTALS TO ACCOMMODATE PROPOSED GRADING PLAN AT NEW SIDEWALK. SEE GRADING PLAN FOR DETAILS.
- 8. ONCOR TO RELOCATE EXISTING POWER POLE THAT IS IN CONFLICT WITH PROPOSED DRIVEWAY AT DALTON ROAD. NEW DRIVEWAY IS BY OTHERS AND NOT IN THIS CONTRACT.

# UTILITY COMPANY CONTACTS

FARMERS ELECTRIC COOPERATIVE (FEC)
MR. FRANK SPATARO
2000 INTERSTATE 30 EAST
GREENVILLE, TX 75402
FSPATARO@FARMERSELECTRIC.COOP
903-461-2452 CELL
903-453-0583 OFC

MR. PHILLIP DICKERSON
310 HWY 205 NORTH
TERRELL, TX 75160
PHILLIP.DICKERSON@ONCOR.COM
972-551-6712 OFC

ATMOS ENERGY
MRS. DINAH WOOD
1310 S.H. 66
GARLAND, TX 75010
DINAH.WOOD@ATMOSENERGY.COM
972-485-6277 OFC

AT&T MR. CHRIS HOLMES 2702 WESLEY STREET GREENVILLE, TX 75401 CH7658@ATT.COM 903-457-2303 OFC

CHARTER SPECTRUM
MR. WAYNE CARTER
15100 TRINITY BLVD., SUITE 500
FORT WORTH, TX 76115
WAYNE.CARTER@CHARTER.COM
817-298-2085 CELL
817-298-3635 OFC
FORCED RELOCATES:
FORCEDRELOS@KINETIC-ENG.COM



ROBINETT & ASSOCIATES
2011 North Collins Blvd., Suite 701
Richardson, TX 75080
972-234-1945

robinett01@aol.com

TBPE # F-3821

REV. DATE REMARKS

MEP SITE PLAN

ALDI FOOD STORE

LOT 1, BLOCK A - DALTON GOLIAD ADDITION

THE CITY OF ROCKWALL, TEXAS

BURGER
ENGINEERING
Civil Consultants

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

DESIGN DRAWN DATE SCALE NOTES FILE NO.

GF RS 4/27 1"=20' - 007-092 SITE PLAN MEP1