

# CONSTRUCTION DOCUMENTS

## ROCKWALL HIGH SCHOOL PARKING LOT ADDITION

City of Rockwall, Texas



**Rockwall**  
INDEPENDENT SCHOOL DISTRICT

### Index Of Drawings

Cover Sheet  
Plat  
Site Plan

#### Civil Plans

C1.0 Demolition Plan  
C2.0 Paving Plan  
C3.0 Grading And Drainage Plan  
C4.0 Drainage Area Map & Calc. Plan  
C5.0 Erosion Control Plan  
C5.1 Erosion Control Notes  
C6.0 Site Details

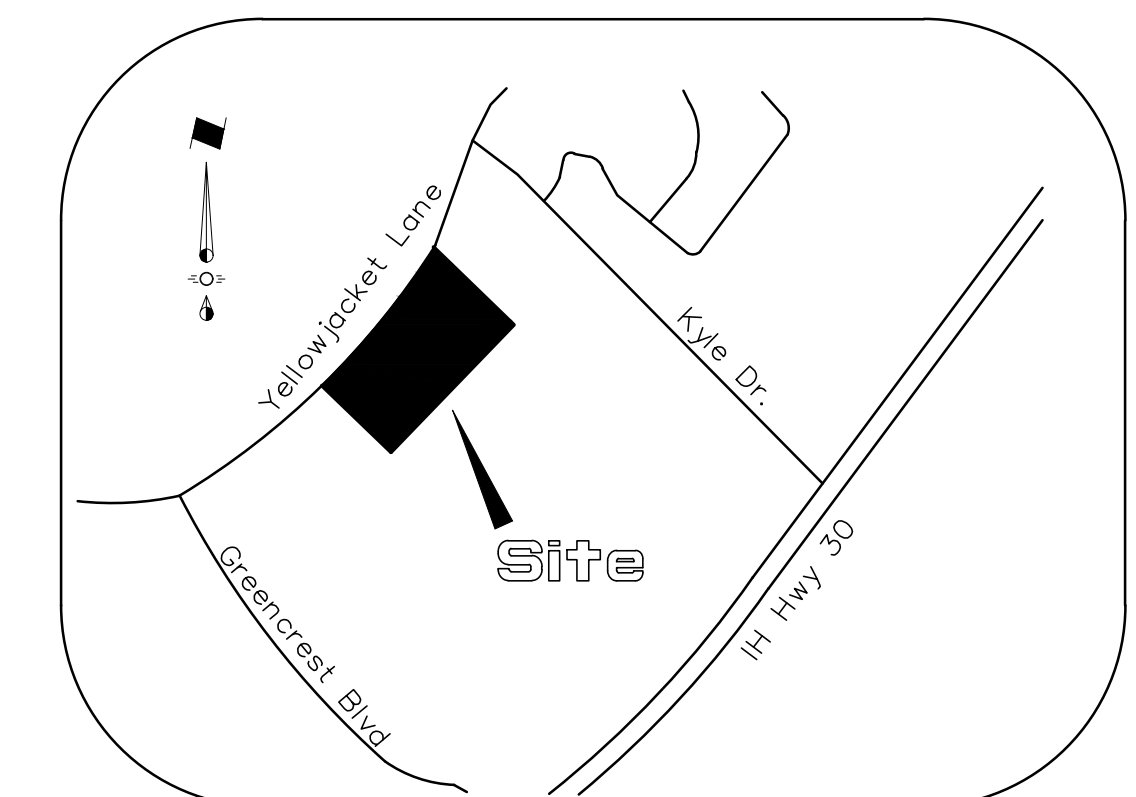
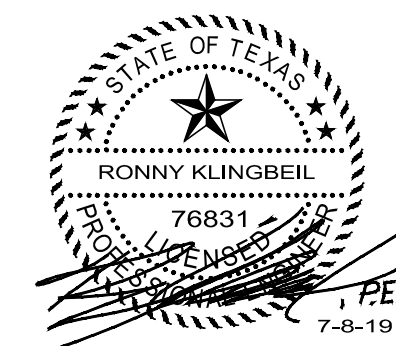
Prepared For

Rockwall Independent School District  
1191 T.L. Townsend Drive  
Rockwall, Texas 75087  
Telephone 972 772-1148

Engineer



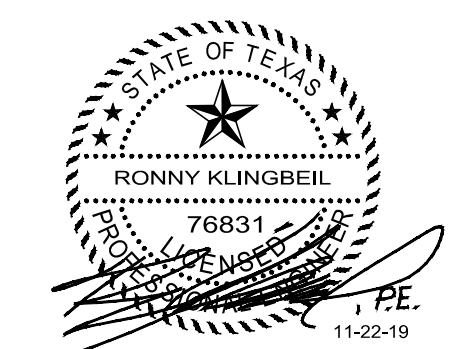
RLK ENGINEERING, INC.  
111 West Main  
Allen, Texas 75013  
(972) 359-1733 Off  
(972) 359-1833 Fax  
Texas Registration No. 579



Vicinity Map  
- not to scale -

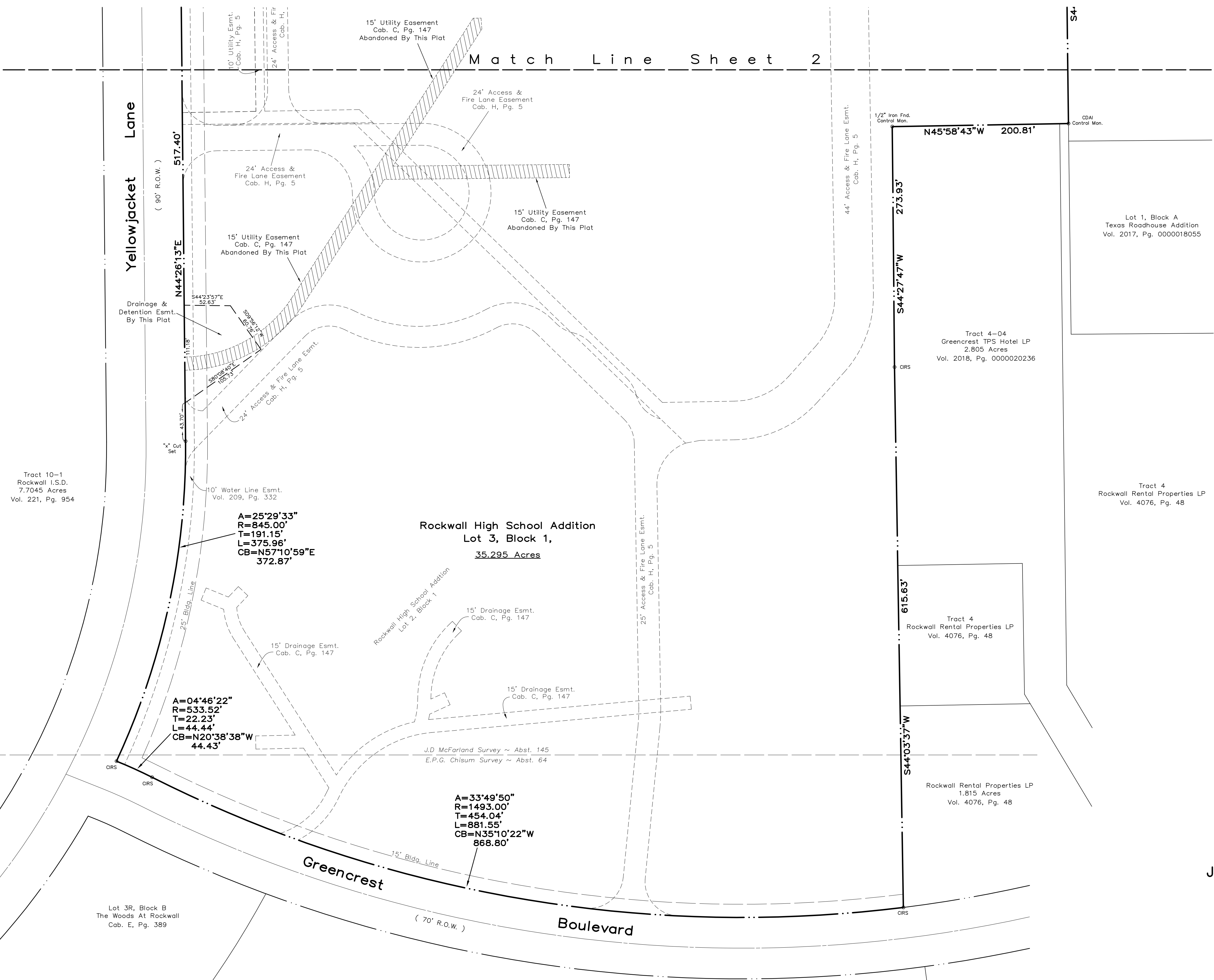
### RECORD DRAWING

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.



### Note:

Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.



Tract 10-1  
Rockwall I.S.D.  
7.7045 Acres  
Vol. 221, Pg. 954

Lot 3R, Block B  
The Woods At Rockwall  
Cab. E, Pg. 389

A=25°29'33"  
R=845.00'  
T=191.15'  
L=375.96'  
CB=N57°10'59"E  
372.87'

A=04°46'22"  
R=533.52'  
T=22.23'  
L=44.44'  
CB=N20°38'38"W  
44.43'

A=33°49'50"  
R=1493.00'  
T=454.04'  
L=881.55'  
CB=N35°10'22"W  
868.80'

Rockwall High School Addition  
Lot 3, Block 1,  
35.295 Acres

Lot 6, Block A  
Wal-Mart Super Center Addition  
Cab. G, Pg. 253

Lot 1, Block A  
Wal-Mart Super Center Addition  
Cab. C, Pg. 383

Tract 4  
Rockwall Rental Properties LP  
1.815 Acres  
Vol. 4076, Pg. 48

Tract 4  
Rockwall Rental Properties LP  
Vol. 4076, Pg. 48

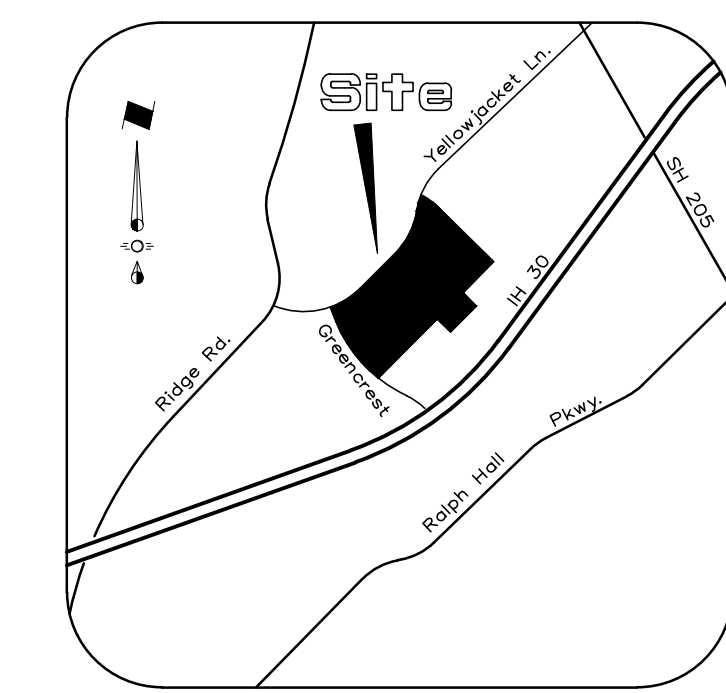
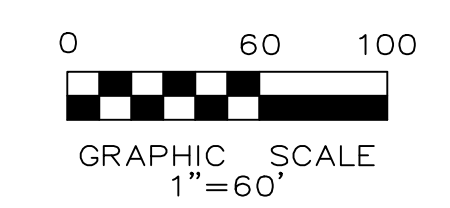
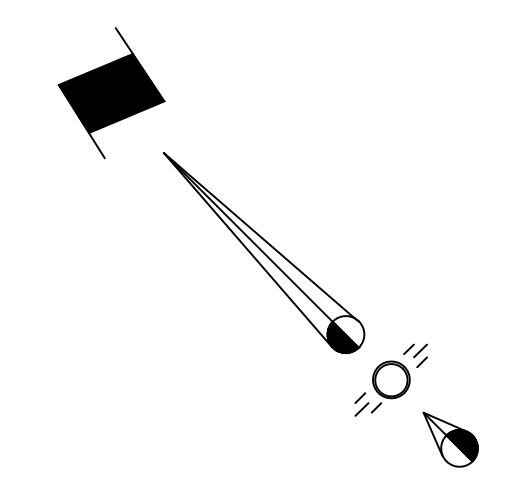
Tract 4-04  
Greencrest TPS Hotel LP  
2.805 Acres  
Vol. 2018, Pg. 000020236

Tract 4  
Rockwall Rental Properties LP  
Vol. 4076, Pg. 48

Lot 1, Block A  
Texas Roadhouse Addition  
Vol. 2017, Pg. 0000018055

NOTE:  
The easements shown are graphically located from the previous plats. The plat recorded in Cabinet C, Page 147 was unreadable, and the plat recorded in Cabinet H, Page 5, had a portion of the line table missing.

**PURPOSE OF REPLAT:**  
To dedicate a Drainage & Detention Easement and to abandon a 15' Utility Easement.



VICINITY MAP  
NTS

**LEGEND:**  
CIRS.....1/2" Iron Set With Yellow Plastic Cap Stamped "4613"

SHEET 1 OF 3  
FINAL PLAT  
**ROCKWALL HIGH SCHOOL ADDITION**  
LOT 3, BLOCK 1  
Being A Replat Of  
Rockwall High School Addition, Lot 2, Block 1  
Recorded In Cabinet H, Page 5, P.R.R.C.T.  
35.295 Acres Situated In The  
E.P.G. CHISUM SURVEY ~ ABST. 64  
J.D. McFARLAND SURVEY ~ ABST. 145  
CITY OF ROCKWALL  
ROCKWALL COUNTY, TEXAS

**Owner**  
Rockwall Independent School District  
1191 T.L. Townsend Drive  
Rockwall, Texas 75087  
Telephone 972 772-1148

**Engineer**  
RLK Engineering, Inc.  
Texas Registration No. 579  
111 West Main Street  
Allen, Texas 75013  
Telephone 972 359-1733

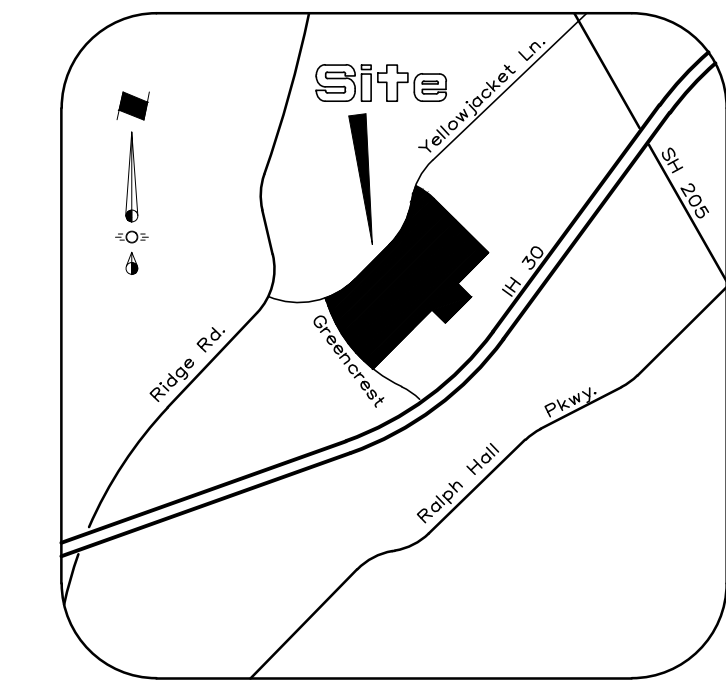
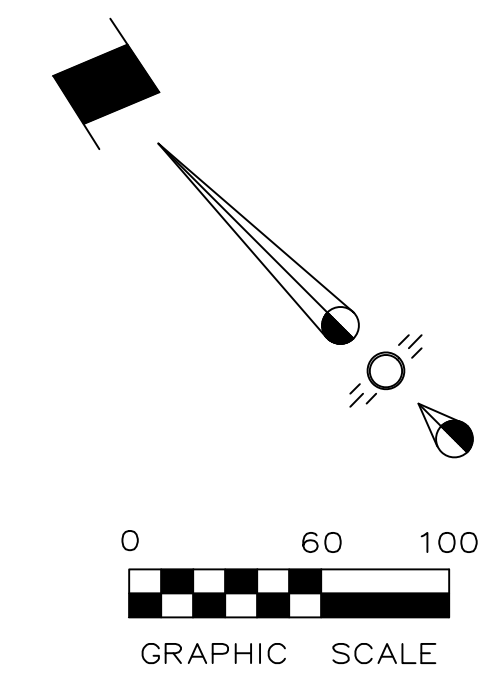
**Surveyor**  
Surdukan Surveying, Inc.  
Firm No. 10069500  
PO Box 126  
Anna, Texas 75409  
Telephone 972 924-8200

August 15, 2019

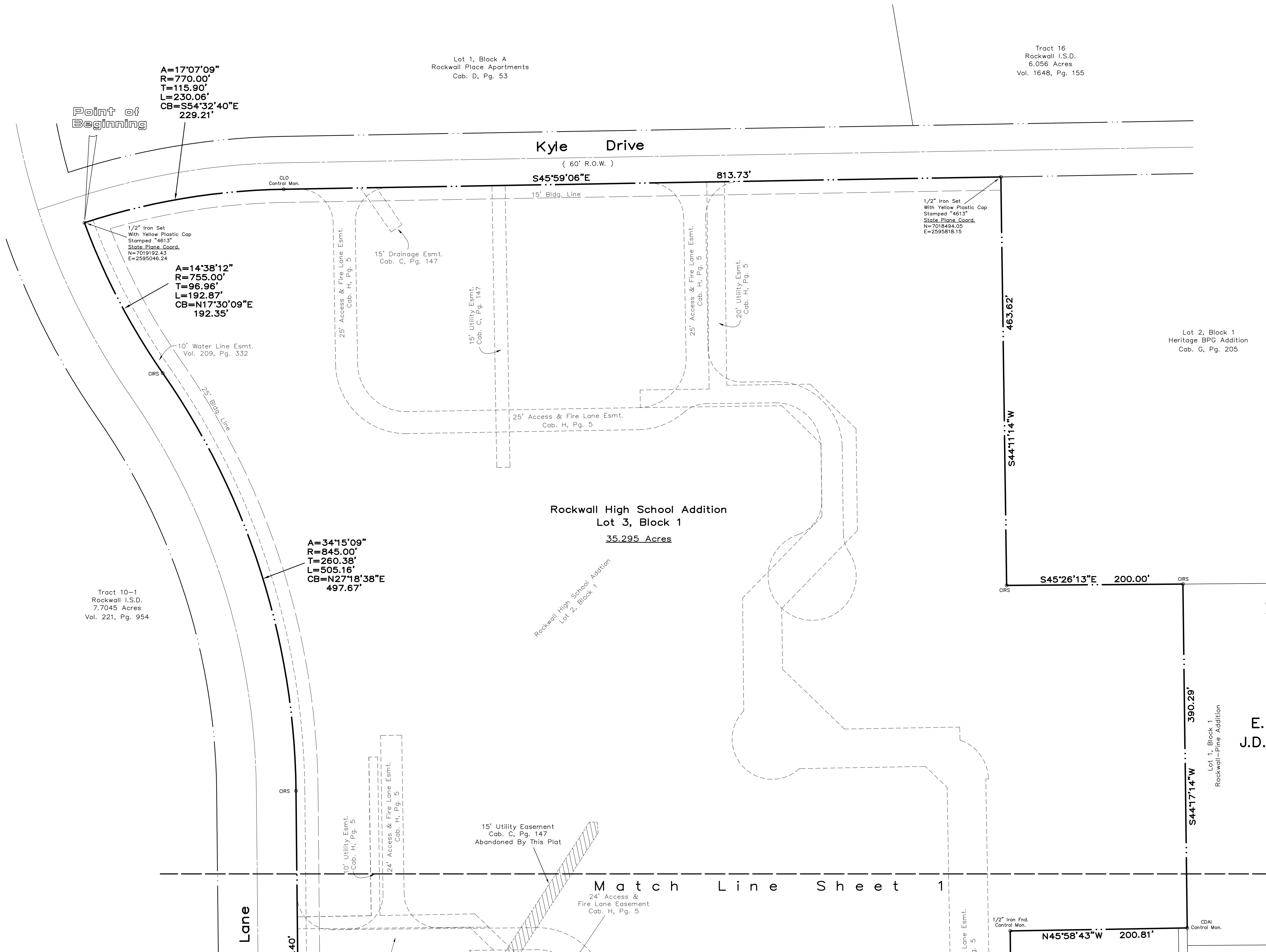
Case No. P2019-023

**LEGEND:**

CRS.....1/2" Iron Set With Yellow Plastic Cap Stamped "4613"



VICINITY MAP  
NTS



SHEET 2 OF 3  
FINAL PLAT

**ROCKWALL HIGH SCHOOL ADDITION**  
**LOT 3, BLOCK 1**  
Being A Replat Of  
Rockwall High School Addition, Lot 2, Block 1  
Recorded In Cabinet H, Page 5, P.R.R.C.T.  
35.295 Acres Situated In The  
E.P.G. CHISUM SURVEY ~ ABST. 64  
J.D. McFARLAND SURVEY ~ ABST. 145  
CITY OF ROCKWALL  
ROCKWALL COUNTY, TEXAS

**Owner**  
Rockwall Independent School District  
1191 T.L. Townsend Drive  
Rockwall, Texas 75087  
Telephone 972 772-1148

**Engineer**  
RLK Engineering, Inc.  
Texas Registration No. 579  
111 West Main Street  
Allen, Texas 75013  
Telephone 972 359-1733

**Surveyor**  
Surdukan Surveying, Inc.  
Firm No. 10069500  
PO Box 126  
Anna, Texas 75409  
Telephone 972 924-8200  
August 15, 2019

**PURPOSE OF REPLAT:**  
To dedicate a Drainage & Detention Easement and to abandon a 15' Utility Easement.

**NOTE:**  
The easements shown are graphically located from the previous plots. The plot recorded in Cabinet C, Page 147 was unreadable, and the plot recorded in Cabinet H, Page 5, had a portion of the line table missing.



OWNER'S CERTIFICATION

STATE OF TEXAS
COUNTY OF ROCKWALL

WHEREAS, the Rockwall Independent School District is the owner of a tract of land situated in the E.P.G. Chisum Survey, Abstract No. 64, and the J.D. McFarland Survey, Abstract No. 145, City of Rockwall, Rockwall County, Texas, and being all of Rockwall High School Addition, Lot 2, Block 1, as recorded in Cabinet H, Page Page 5, Plat Records of Rockwall County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner at the intersection of the southeasterly line of Yellowjacket Lane (a 90' R.O.W.) with the southwesterly line of Kyle Drive (a 60' R.O.W.) said point being the beginning of a curve to the right having a central angle of 17°07'09", a radius of 770.00 feet, a tangent length of 115.90 feet, and a chord bearing S54°32'40"E, 229.21 feet;

THENCE in a southeasterly direction along said curve to the right, and with the southwesterly line of Kyle Drive, an arc distance of 230.06 feet to a capped iron found stamped "CLO" for corner and the end of said curve;

THENCE S45°59'06"E, with the southwesterly line of Kyle Drive, a distance of 813.73 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, said point being the northwest corner of Lot 2, Block 1, Heritage BPG Addition, an addition to the City of Rockwall as recorded in Cabinet G, Page 205, Plat Records of Rockwall County, Texas;

THENCE S44°11'14"W, leaving Kyle Drive, a distance of 463.62 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a capped iron rod stamped "HALFF" bears N34°53'08"W, 0.44';

THENCE S45°26'13"E, a distance of 200.00 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a 1/2" iron rod bears N27°44'49"W, 0.25';

THENCE S44°17'14"W, a distance of 390.29 feet to a capped iron found stamped "CDAI" for corner;

THENCE N45°58'43"W, a distance of 200.81 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner;

THENCE S44°27'47"W, a distance of 273.93 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner;

THENCE S44°03'37"W, a distance of 615.63 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a 1/2" iron rod stamped "DAI" bears N40°59'38"E, 0.31', said corner being in the northeasterly line of Greencrest Boulevard (a 70' R.O.W.), said point being the beginning of a non-tangent curve to the right having a central angle of 33°49'50", a radius of 1493.00 feet, a tangent length of 454.04 feet, and a chord bearing N35°10'22"W, 868.80 feet;

THENCE in a northwesterly direction along said curve to the right, and with the northeasterly line of Greencrest Boulevard, an arc distance of 881.55 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a 1/2" iron rod bears N40°59'38"E, 0.31', said corner being the beginning of a reverse curve to the left having a central angle of 04°46'22", a radius of 533.52 feet, a tangent length of 22.23 feet, and a chord bearing N20°38'38"W, 44.43 feet;

THENCE in a northwesterly direction along said curve to the left, and with the northeasterly line of Greencrest Boulevard, an arc distance of 44.44 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a 1/2" iron rod bears N66°47'39"E, 2.95', said corner being the end of said curve, and being in the aforementioned southeasterly line of Yellowjacket Lane and the beginning of a non-tangent curve to the left having a central angle of 25°29'33", a radius of 845.00 feet, a tangent length of 191.15 feet, and a chord bearing N57°10'59"E, 372.87 feet;

THENCE in a northeasterly direction along said curve to the left, and with the southeasterly line of Yellowjacket Lane, an arc distance of 375.96 feet to an "x" cut set for corner and the end of said curve;

THENCE N44°26'13"E, with the southeasterly line of Yellowjacket Lane, a distance of 517.40 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner, from which a 1/2" iron rod bears N72°41'18"W, 2.03 feet, said corner being the beginning of a curve to the left having a central angle of 34°15'09", a radius of 845.00 feet, a tangent length of 260.38 feet, and a chord bearing N27°18'38"E, 497.67 feet;

THENCE in a northeasterly direction along said curve to the left, and with the southeasterly line of Yellowjacket Lane, an arc distance of 505.16 feet to a 1/2" iron rod set with yellow plastic cap stamped "4613" for corner and the beginning of a reverse curve to the right having a central angle of 14°38'12" a radius of 755.00 feet, a tangent length of 96.96 feet, and a chord bearing N17°30'09"E, 192.35 feet;

THENCE in a northeasterly direction along said curve to the right, and with the southeasterly line of Yellowjacket Lane, an arc distance of 192.87 feet to the POINT OF BEGINNING and CONTAINING 1,537,462 square feet, or 35.295 acres of land.

BASIS OF BEARINGS:

The bearings shown are derived from Texas WDS RTK Network, Texas State Plane Coordinate System, Nad83, North Central Zone, Nad 83 (CORS96) Epoch 2002.0, vertical positions are referenced using NAVD88 using (GEIOD03).

GENERAL NOTES

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

STATE OF TEXAS
COUNTY OF ROCKWALL

We, Rockwall Independent School District, the undersigned owner of the land shown on this plat, and designated Lot 3, Block 1, Rockwall High School Addition to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever, all streets, alleys, parks, water courses, drains, easements, and public places thereon shown for the purpose and consideration therein expressed.

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

- 1. No buildings shall be constructed 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 the purpose of construction, reconstruction, inspecting, patrolling, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.
3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.
4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.
5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.
6. Property owner is responsible for maintaining, repairing, and replacing detention and drainage system.
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 the prevailing private commercial rates, or have been 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.

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

Rockwall Independent School District
By: Dr. John Villareal
Title: Superintendent

STATE OF TEXAS
COUNTY OF ROCKWALL

BEFORE ME, the undersigned authority, a Notary Public in and for the State of Texas, on this day personally appeared Dr. John Villareal, 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 purposes and considerations therein expressed and in the capacity therein stated.

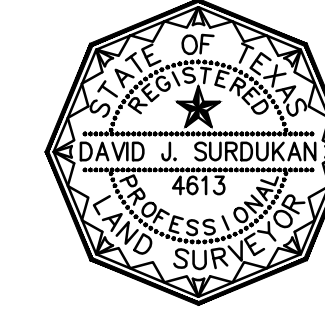
GIVEN under my hand and seal of office, this the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

Notary Public in and for the State of Texas

NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

That I, David J. Surdukan, do hereby certify that I prepared this plat from an actual and accurate survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision.

David J. Surdukan, RPLS
Registration No. 4613
TX Firm No. 10069500



RECOMMENDED FOR FINAL APPROVAL

Planning and Zoning Commission

Date

APPROVED

I hereby certify that the above and foregoing plan of an addition to the City of Rockwall, Texas was approved by the City Council of the City of Rockwall on the \_\_\_\_\_ day of \_\_\_\_\_, 2019.

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 \_\_\_\_\_, 2019

Mayor, City of Rockwall

City Secretary

City Engineer

SHEET 3 OF 3
FINAL PLAT

ROCKWALL HIGH SCHOOL ADDITION

LOT 3, BLOCK 1

Being A Replat Of

Rockwall High School Addition, Lot 2, Block 1
Recorded In Cabinet H, Page 5, P.R.R.C.T.

35.295 Acres Situated In The

E.P.G. CHISUM SURVEY ~ ABST. 64

J.D. McFARLAND SURVEY ~ ABST. 145

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

Owner
Rockwall Independent School District
1191 T.L. Townsend Drive
Rockwall, Texas 75087
Telephone 972 772-1148

Engineer
RLK Engineering, Inc.
Texas Registration No. 579
111 West Main Street
Allen, Texas 75013
Telephone 972 359-1733

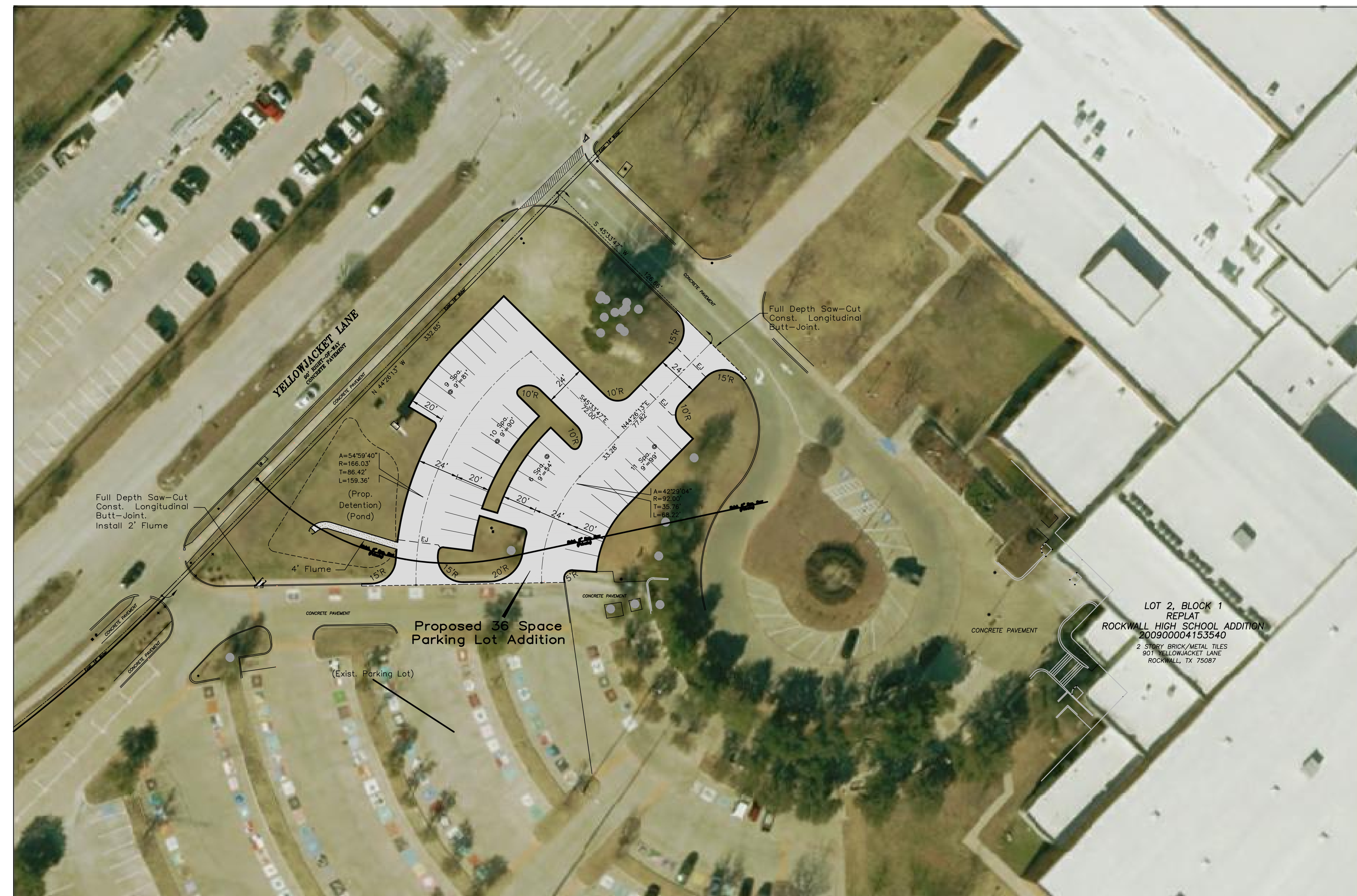
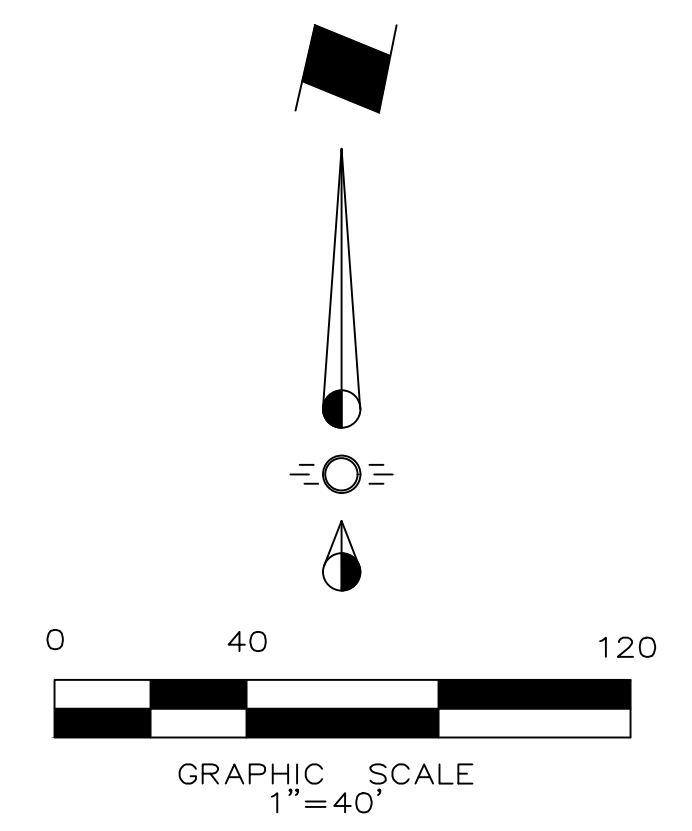
Surveyor
Surdukan Surveying, Inc.
Firm No. 10069500
PO Box 126
Anna, Texas 75409
Telephone 972 924-8200

PURPOSE OF REPLAT:

To dedicate a Drainage & Detention Easement and to abandon a 15' Utility Easement.

August 15, 2019

Case No. P2019-023



This Plan Is To Be Used For Reference Only. Not To Be Used For Construction Or Engineering Purposes.

LEGEND	
	7" 3,600 PSI Reinf. Conc. Pavement (Min. 6.5 Sack Mix) No. 3 Bars 18" OCEW With 6" Compacted Subgrade

Nov 23, 2019 - T. Bham - User: rkl

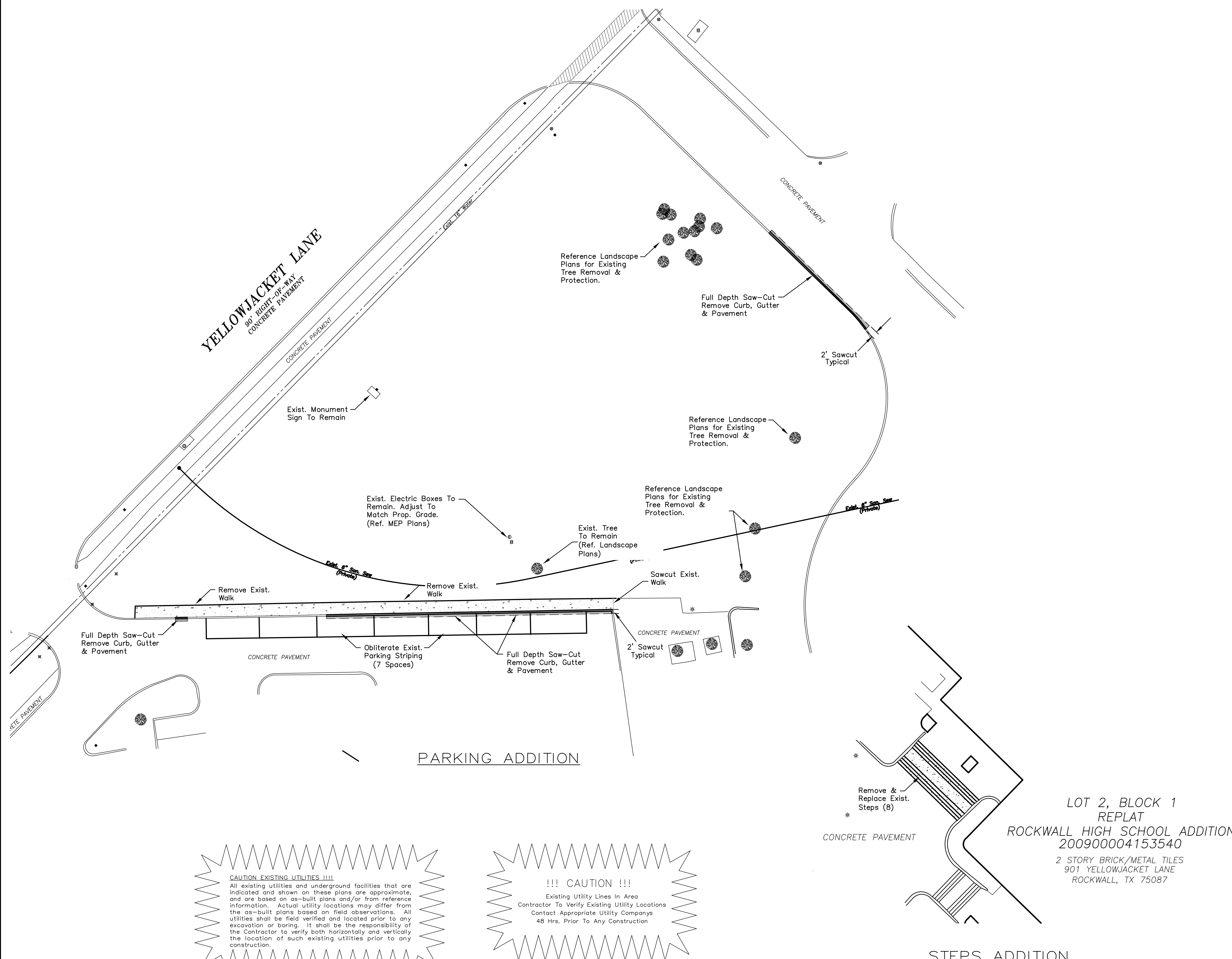
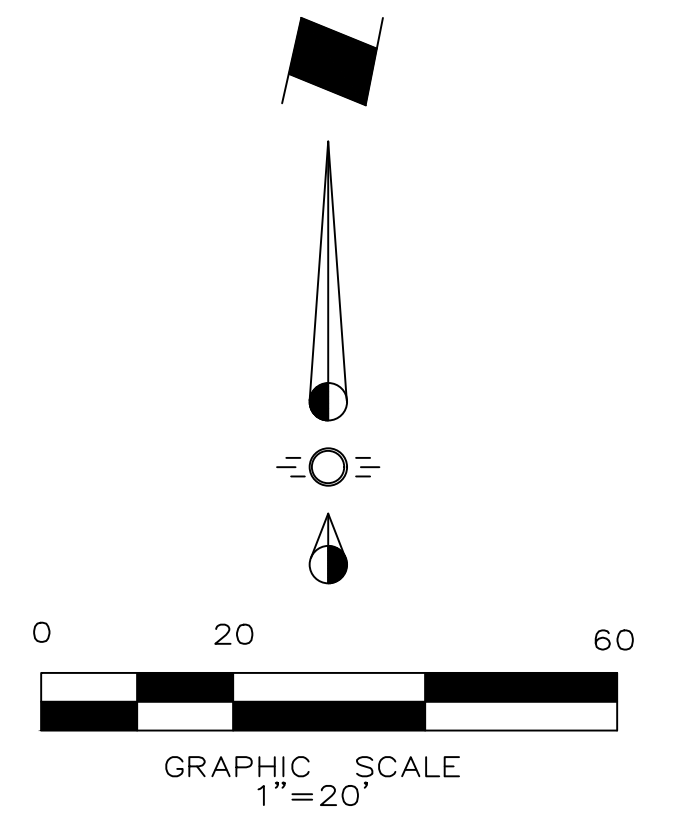
MISC. INFORMATION	REVISION	DATE	DESCRIPTION
<b>NOTE:</b> Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.			



RLK ENGINEERING, INC.  
 111 West Main  
 Allen, Texas 75013  
 (972) 359-1733 Off  
 (972) 359-1833 Fax  
 Texas Registration No. 579

SITE PLAN			
ROCKWALL HIGH SCHOOL			
ROCKWALL, TEXAS			
DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108 Site Plan.dwg	DRAWING SCALE: As Noted
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK 18108
SHEET:			





- DEMOLITION NOTES**
1. Contractor shall abide by all applicable City requirements, ordinances, etc.
  2. Contractor shall notify all affected utility companies a minimum of one week prior to demolition in order to comply with their requirements.
  3. Contractor shall maintain positive drainage at all times during the demolition process.
  4. Contractor shall protect all existing utilities during the demolition process.
  5. Perform work in a manner to eliminate hazards to persons or property, and avoid interference with adjacent areas, utilities, and structures.
  6. Provide temporary barricades, fences, warning signs, guardrails, warning lights, etc. as necessary.
  7. Protect existing structures, landscaping materials, and appurtenances which are not being demolished.
  8. Return structures and surfaces to remain to conditions existing prior to commencement of selective demolition work or better.
  9. All materials removed shall be disposed of offsite in a legal manner.
  10. Contractor shall refer to the Storm Water Pollution Prevention Plan for erosion and pollution control during the demolition process. The Contractor shall provide any additional erosion or pollution prevention devices as required during the demolition process in order to completely conform to the United States Environmental Protection Agency and all other agencies having jurisdiction.
  11. Refer to Landscape for removal of existing trees.
  12. Refer to Utility Plan for utility removal/relocation and utilities to remain.
  13. Sawcuts for pavement removal shall be made at existing joints where practical.

**NOTES**

All utility services to and under existing buildings to be removed shall be disconnected, removed and/or capped and plugged per the direction of the Owner and/or the appropriate utility company.

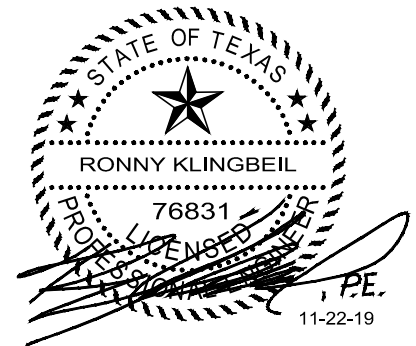
Prior to removal of any existing utility improvements, Contractor shall verify that lines are no longer in use, or connected to any other lines that are in use, so as to not adversely impact any current or future campus operations. Owner's representative shall be notified immediately if any utility to be removed needs to remain in service, either temporarily or permanently.

**RECORD DRAWING**

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.

**LEGEND**

- Concrete Removal
- Sidewalk Removal



LOT 2, BLOCK 1  
REPLAT  
ROCKWALL HIGH SCHOOL ADDITION  
200900004153540  
2 STORY BRICK/METAL TILES  
901 YELLOWJACKET LANE  
ROCKWALL, TX 75087

**CAUTION EXISTING UTILITIES !!!**  
All existing utilities and underground facilities that are indicated and shown on these plans are approximate, and are based on as-built plans and/or from reference information. Actual utility locations may differ from the as-built plans based on field observations. All utilities shall be field verified and located prior to any excavation or boring. It shall be the responsibility of the Contractor to verify both horizontally and vertically the location of such existing utilities prior to any construction.

**!!! CAUTION !!!**  
Existing Utility Lines In Area  
Contractor To Verify Existing Utility Locations  
Contact Appropriate Utility Companies  
48 Hrs. Prior To Any Construction

MISC. INFORMATION	REVISION	DATE	DESCRIPTION
<p><b>NOTE:</b> Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.</p>			

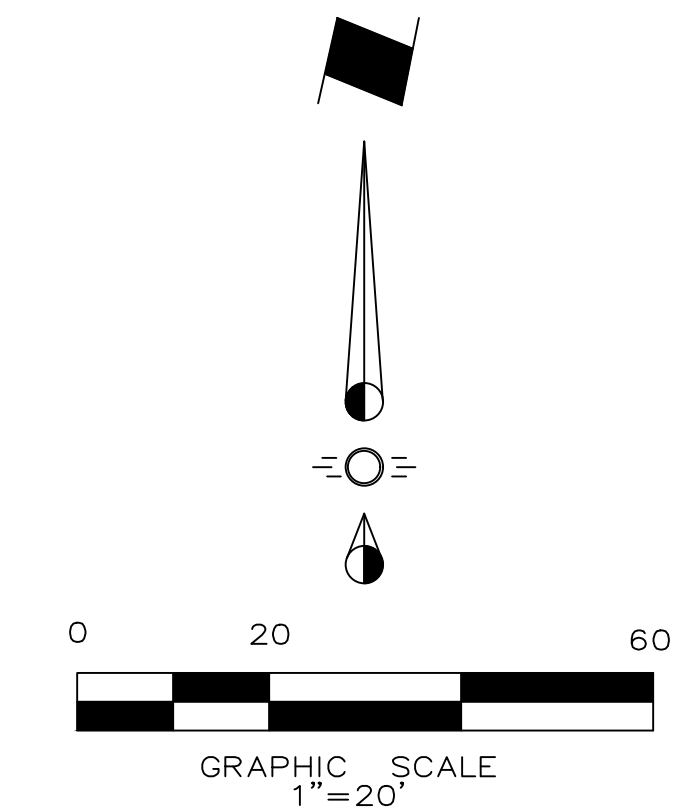


RLK ENGINEERING, INC.  
111 West Main  
Allen, Texas 75013  
(972) 359-1733 Off  
(972) 359-1833 Fax  
Texas Registration No. 579



<b>DEMOLITION PLAN</b>		ROCKWALL HIGH SCHOOL ROCKWALL, TEXAS	
DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108 DEMO.dwg	DRAWING SCALE: As Noted
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK 18108
			<b>C1.0</b>

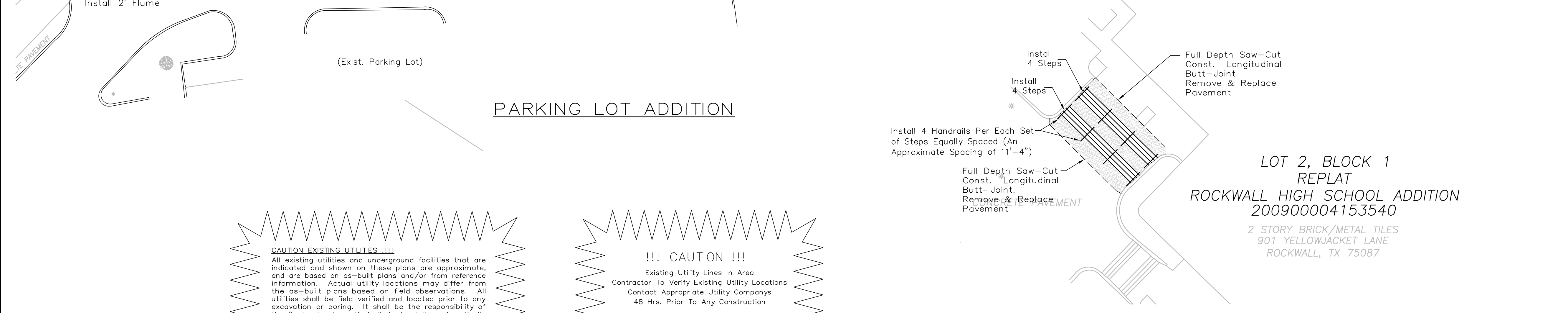
Nov 23, 2019 - 7:48am User: rkl



- PAVING NOTES**
- All materials and construction shall conform to the City of Rockwall Standards and Specifications, and North Central Texas Council of Governments Standard Specifications for Public Works Construction, 4th Edition.
  - It shall be the responsibility of the Contractor to protect all public and non-public utilities in the construction of this project. All manholes, cleanouts, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving and/or vegetation. Utilities must be maintained to proper line and grade during construction of this project.
  - The Contractor shall be responsible for coordinating with all the appropriate utility companies for the location of all utilities within the construction area.
  - The Paving Contractor shall not place permanent pavement until all sleeving for irrigation, electric, gas, telephone, cable TV, site lighting, etc. has been installed. It shall be the Paving Contractor's responsibility to insure that all sleeving is in place prior to placing permanent paving.
  - All paving and earthwork operations shall conform to the recommendations in the Geotechnical Exploration Report.
  - All dimensions are to face of curb unless otherwise noted.
  - Refer to Architectural Plans for exact building and related sidewalk dimensions.
  - All curb return radii are 3' unless otherwise noted.
  - All dimensions are perpendicular to the drive centerlines and/or property lines.
  - Fire lanes shall be striped in accordance with the City of Rockwall requirements.
  - Construct barrier free ramps at all driveway and street intersections.
  - Refer to Landscape Plan for tree removal/preservation.

**LEGEND**

	7" 3,600 PSI Reinf. Conc. Pavement (Min. 6.5 Sack Mix) No. 3 Bars 18" OCEW With 6" Compacted Subgrade
	5" 3,600 PSI Reinf. Conc. Pavement (Min. 6.5 Sack Mix) No. 3 Bars 18" OCEW With 6" Compacted Subgrade
	Proposed Expansion Joint



**CAUTION EXISTING UTILITIES !!!**  
 All existing utilities and underground facilities that are indicated and shown on these plans are approximate, and are based on as-built plans and/or from reference information. Actual utility locations may differ from the as-built plans based on field observations. All utilities shall be field verified and located prior to any excavation or boring. It shall be the responsibility of the Contractor to verify both horizontally and vertically the location of such existing utilities prior to any construction.

**!!! CAUTION !!!**  
 Existing Utility Lines In Area  
 Contractor To Verify Existing Utility Locations  
 Contact Appropriate Utility Companies  
 48 Hrs. Prior To Any Construction

**HIGH SCHOOL ENTRANCE STEPS AND HANDRAILS REPLACEMENT**  
 (By Separate Permit Through Building Department)

**RECORD DRAWING**  
 To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.



MISC. INFORMATION	REVISION	DATE	DESCRIPTION
<b>NOTE:</b> Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.			

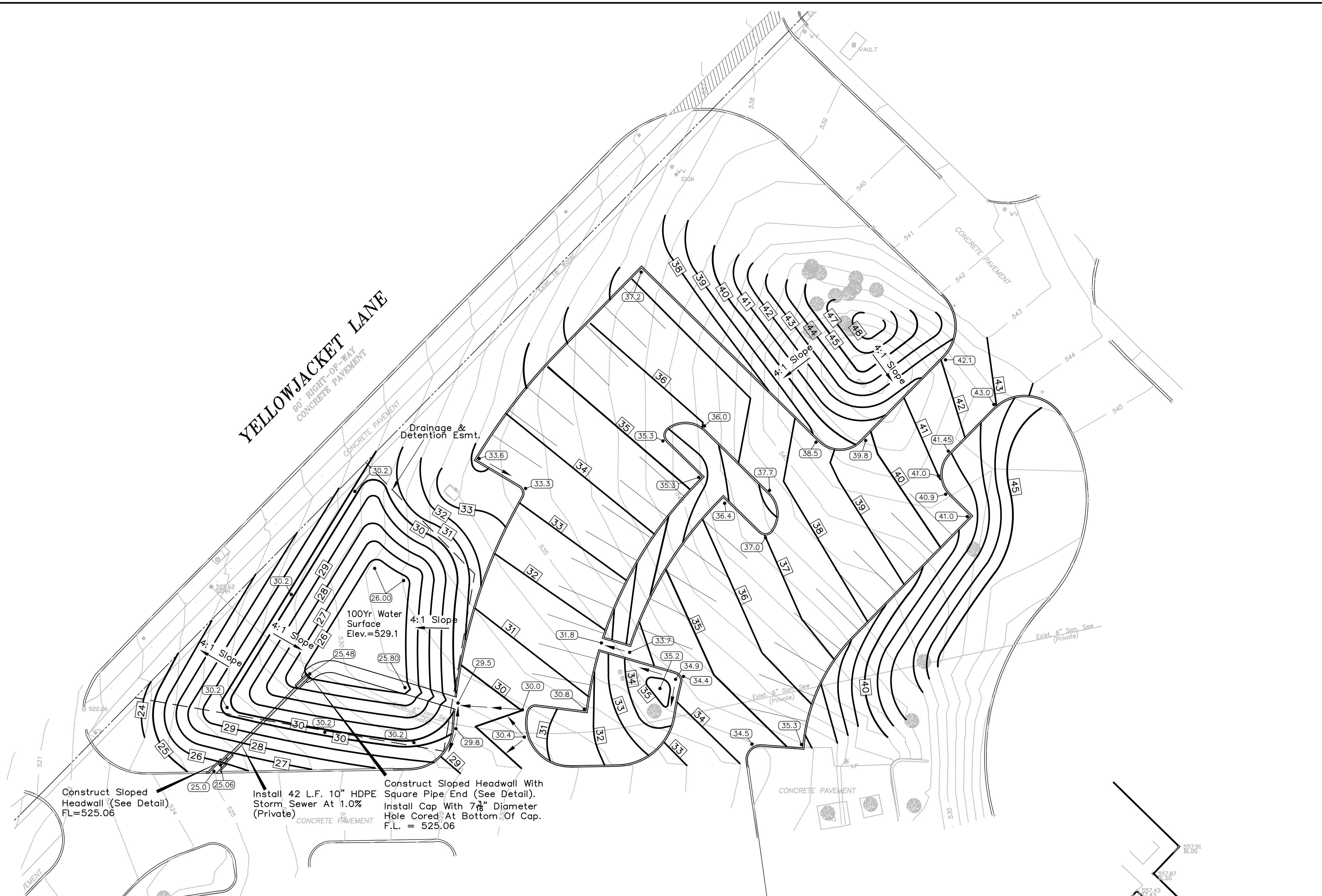
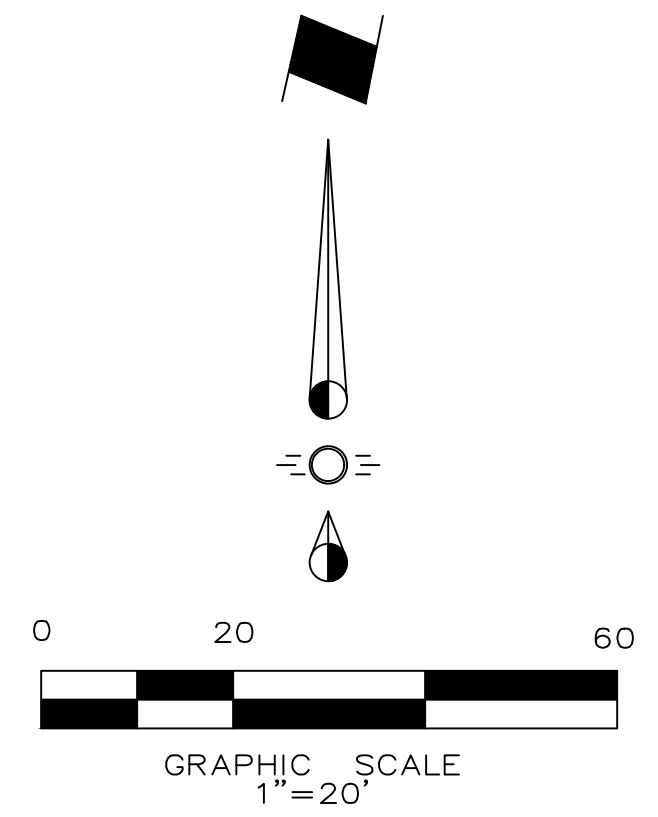
**RLK ENGINEERING, INC.**  
 111 West Main  
 Allen, Texas 75013  
 (972) 359-1733 Off  
 (972) 359-1833 Fax  
 Texas Registration No. 579



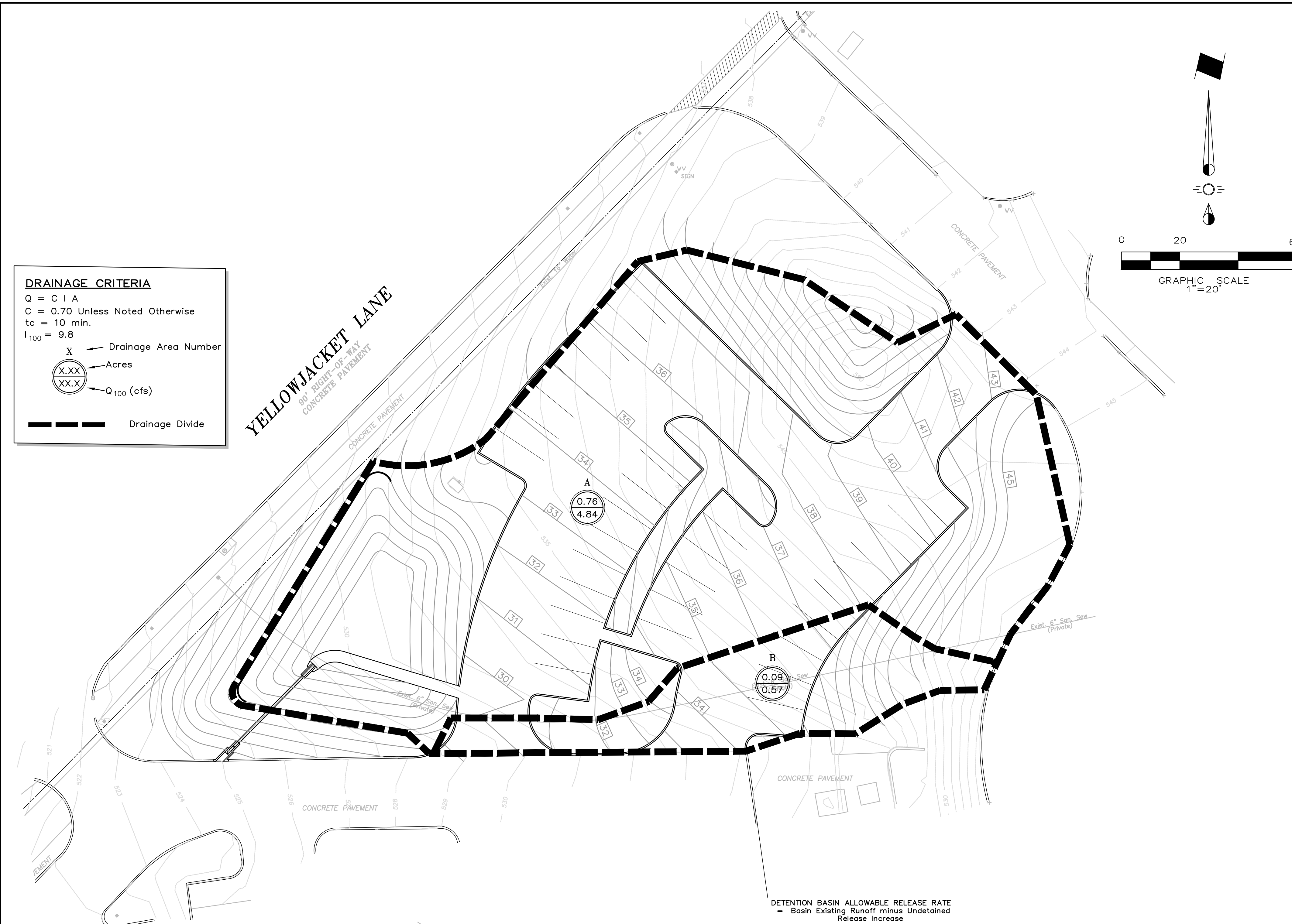
<b>PAVING PLAN</b>		<b>ROCKWALL HIGH SCHOOL</b>		<b>ROCKWALL, TEXAS</b>	
DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108 PAV.dwg	DRAWING SCALE: As Noted	DRAWING DATE: 7-08-19	SHEET: PROJECT NUMBER: RLK 18108
			<b>C2.0</b>		

Nov 22, 2019 - 7:56am User: rkl









**DRAINAGE CRITERIA**  
 $Q = C I A$   
 $C = 0.70$  Unless Noted Otherwise  
 $t_c = 10$  min.  
 $I_{100} = 9.8$

X → Drainage Area Number  
 XX.X → Acres  
 Q<sub>100</sub> (cfs)

--- Drainage Divide

**Solve for Flow Rate**  
 $Q = A * (0.61 \text{ sqrt}(2gh))$   
 Dia Orifice (ft) = 0.6  
 100yr WSEL = 529.1  
 HGL in Pipe = 526.2  
 $h = 2.9$   
 $A = 0.28$   
 $Q = 2.35$

**Solve for Flow Rate**  
 $Q = A * (0.61 \text{ sqrt}(2gh))$   
 Dia Orifice (ft) = 0.7  
 50yr WSEL = 528.5  
 HGL in Pipe = 526.2  
 $h = 2.3$   
 $A = 0.28$   
 $Q = 2.10$

**Solve for Flow Rate**  
 $Q = A * (0.61 \text{ sqrt}(2gh))$   
 Dia Orifice (ft) = 0.7  
 25yr WSEL = 528.2  
 HGL in Pipe = 526.2  
 $h = 2.1$   
 $A = 0.28$   
 $Q = 1.98$

**Solve for Flow Rate**  
 $Q = A * (0.61 \text{ sqrt}(2gh))$   
 Dia Orifice (ft) = 0.6  
 5yr WSEL = 527.2  
 HGL in Pipe = 526.2  
 $h = 1.1$   
 $A = 0.38$   
 $Q = 1.45$

**ROUND ORIFICE CALCULATIONS & DESIGN**  
 PROJECT: Rockwall High School  
 June 12, 2019

**Round Orifice Equation (Submerged)**  
 $Q = 0.61A \text{ sqrt}(2gh)$   
 $Q$  = Flow rate in cfs  
 $A$  = Area in sf  
 $g$  = gravity constant (32.2)  
 $h$  = head height (100yr WSEL - HGL in pipe)

**Solve for Orifice Size**  
 $A = Q / (0.61 \text{ sqrt}(2gh))$   
 $Q = 2.35$   
 100yr WSEL = 529.1  
 HGL in Pipe = 526.2  
 $h = 2.9$   
 $A = 0.28$   
 Dia (ft) = 0.60  
 Dia (in) = 7.19 (7 3/16")

**Pond Size Calc**  
 Calculated using average area method

Elevation	Contour Area (sf)	Average Area of Contour (sf)	Volume Per Foot of Pond (cf)	Accum. Volume
526	1026			
527	1649	1,338	1,338	1,338
528	2392	2,021	2,021	3,358
529	3283	2,838	2,838	6,196
530	4263	3,773	3,773	9,969
			9,969	Total Volume of Pond Available (cf)

3.351 Total Volume of Pond Needed for 100 Year Event (cf)  
 528.0 Water Surface Elevation derived by Interpolation

2.955 Total Volume of Pond Needed for 50 Year Event (cf)  
 527.9 Water Surface Elevation derived by Interpolation

2.515 Total Volume of Pond Needed for 25 Year Event (cf)  
 527.7 Water Surface Elevation derived by Interpolation

1.906 Total Volume of Pond Needed for 5 Year Event (cf)  
 527.3 Water Surface Elevation derived by Interpolation

DETENTION BASIN ALLOWABLE RELEASE RATE  
 Basin Existing Runoff minus Undetained Release Increase

**MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN**  
 PROJECT: Rockwall High School 100 YR  
 June 12, 2019

Runoff Coefficient C = 0.65  
 Drainage Area - A = 0.76 acres  
 Time of Concentration -  $t_c$  = 10 minutes  
 Maximum Outflow Rate - Q = 2.4 cfs (2.61-0.26)

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q-CiA	Inflow Volume Cu. Ft.	Outflow Duration (minutes)	Outflow Volume Cu. Ft.	Storage Volume Cu. Ft.
10	9.80	1.63	4.8	2,905	20	1,410	1,495
15	8.30	2.25	4.4	4,001	25	1,763	2,239
20	8.30	2.77	4.1	4,920	30	2,115	2,805
30	6.90	3.45	3.4	6,135	40	2,820	3,315
40	5.80	3.87	2.9	6,876	50	3,525	3,351
50	5.00	4.17	2.5	7,410	60	4,230	3,180
60	4.50	4.50	2.2	8,003	70	4,935	3,068
70	4.00	4.67	2.0	8,299	80	5,640	2,659
80	3.70	4.93	1.8	8,773	90	6,345	2,428
90	3.50	5.25	1.7	9,337	100	7,050	2,287
100	3.40	5.67	1.7	10,078	110	7,755	2,233
110	3.20	5.87	1.6	10,433	120	8,460	1,973

Required Storage Volume 3,351 cubic feet  
 0.08 acre-feet

**MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN**  
 PROJECT: Rockwall High School 50 YR  
 June 12, 2019

Runoff Coefficient C = 0.65  
 Drainage Area - A = 0.76 acres  
 Time of Concentration -  $t_c$  = 10 minutes  
 Maximum Outflow Rate - Q = 2.1 cfs (2.39-2.25)

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q-CiA	Inflow Volume Cu. Ft.	Outflow Duration (minutes)	Outflow Volume Cu. Ft.	Storage Volume Cu. Ft.
10	9.00	1.50	4.4	2,668	20	1,284	1,384
15	8.10	2.03	4.0	3,601	25	1,605	1,996
20	7.50	2.50	3.7	4,446	30	1,926	2,520
30	6.10	3.05	3.0	5,424	40	2,568	2,856
40	5.20	3.47	2.6	6,165	50	3,210	2,955
50	4.50	3.75	2.2	6,669	60	3,852	2,817
60	3.90	3.90	1.9	6,936	70	4,494	2,442
70	3.70	4.32	1.8	7,677	80	5,136	2,541
80	3.50	4.67	1.7	8,299	90	5,778	2,521
90	3.30	4.95	1.6	8,803	100	6,420	2,383
100	3.00	5.00	1.5	8,892	110	7,062	1,830
110	2.90	5.32	1.4	9,455	120	7,704	1,751

Required Storage Volume 2,955 cubic feet  
 0.07 acre-feet

**MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN**  
 PROJECT: Rockwall High School 25 YR  
 June 12, 2019

Runoff Coefficient C = 0.65  
 Drainage Area - A = 0.76 acres  
 Time of Concentration -  $t_c$  = 10 minutes  
 Maximum Outflow Rate - Q = 2.0 cfs (2.21-0.23)

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q-CiA	Inflow Volume Cu. Ft.	Outflow Duration (minutes)	Outflow Volume Cu. Ft.	Storage Volume Cu. Ft.
10	8.30	1.38	4.1	2,460	20	1,188	1,272
15	7.50	1.88	3.7	3,335	25	1,485	1,850
20	6.60	2.20	3.3	3,912	30	1,782	2,130
30	5.50	2.75	2.7	4,891	40	2,376	2,515
40	4.60	3.07	2.3	5,454	50	2,970	2,484
50	4.00	3.33	2.0	5,928	60	3,564	2,364
60	3.50	3.50	1.7	6,224	70	4,158	2,066
70	3.30	3.85	1.6	6,847	80	4,752	2,095
80	3.10	4.13	1.5	7,351	90	5,346	2,005
90	2.90	4.35	1.4	7,736	100	5,940	1,796
100	2.70	4.50	1.3	8,003	110	6,534	1,469
110	2.50	4.58	1.2	8,151	120	7,128	1,023

Required Storage Volume 2,515 cubic feet  
 0.06 acre-feet

**MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN**  
 PROJECT: Rockwall High School 5 YR  
 June 12, 2019

Runoff Coefficient C = 0.65  
 Drainage Area - A = 0.76 acres  
 Time of Concentration -  $t_c$  = 10 minutes  
 Maximum Outflow Rate - Q = 1.5 cfs (1.62-1.17)

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q-CiA	Inflow Volume Cu. Ft.	Outflow Duration (minutes)	Outflow Volume Cu. Ft.	Storage Volume Cu. Ft.
10	6.10	1.02	3.0	1,808	20	870	938
15	5.50	1.38	2.7	2,445	25	1,088	1,358
20	4.90	1.63	2.4	2,903	30	1,305	1,600
30	4.10	2.05	2.0	3,646	40	1,740	1,906
40	3.40	2.27	1.7	4,031	50	2,175	1,856
50	2.80	2.33	1.4	4,150	60	2,610	1,540
60	2.60	2.60	1.3	4,624	70	3,045	1,579
70	2.40	2.80	1.2	4,980	80	3,480	1,500
80	2.30	3.07	1.1	5,454	90	3,915	1,539
90	2.10	3.15	1.0	5,602	100	4,350	1,252
100	1.90	3.17	0.9	5,632	110	4,785	847
110	1.80	3.30	0.9	5,869	120	5,220	649

Required Storage Volume 1,906 cubic feet  
 0.04 acre-feet

**AREA B (Undetained Basin)**

BASIN PROPOSED RUNOFF COEFFICIENT	BASIN EXISTING RUNOFF	BASIN PROPOSED RUNOFF	ADDITIONAL UNDETAINED FLOWRATE (Proposed-Existing)
Total Basin Area = 0.09 Acres C = 0.35 Pervious Area = 0.041 Acres C = 0.35 Impervious Area = 0.049 Acres C = 0.90	Total Basin Area = 0.09 Acres C = 0.35 Tc = 10 min. I 100 = 9.8 in/hr. Q100 = 0.31cfs I 50 = 9.0 in/hr. Q50 = 0.28cfs I 25 = 8.3 in/hr. Q25 = 0.26cfs I 5 = 6.1 in/hr. Q5 = 0.19cfs	Total Basin Area = 0.09 Acres C = 0.65 Tc = 10 min. I 100 = 9.8 in/hr. Q100 = 0.57cfs I 50 = 9.0 in/hr. Q50 = 0.53cfs I 25 = 8.3 in/hr. Q25 = 0.49cfs I 5 = 6.1 in/hr. Q5 = 0.36cfs	Q100 = 0.26cfs Q50 = 0.25cfs Q25 = 0.23cfs Q5 = 0.17cfs

**AREA A (Detained Basin)**

BASIN PROPOSED RUNOFF COEFFICIENT	BASIN EXISTING RUNOFF	BASIN PROPOSED RUNOFF
Total Basin Area = 0.76 Acres C = 0.35 Pervious Area = 0.35 Acres C = 0.35 Impervious Area = 0.41 Acres C = 0.90	Total Basin Area = 0.76 Acres C = 0.35 Tc = 10 min. I 100 = 9.8 in/hr. Q100 = 2.61cfs I 50 = 9.0 in/hr. Q50 = 2.39cfs I 25 = 8.3 in/hr. Q25 = 2.21cfs I 5 = 6.1 in/hr. Q5 = 1.62cfs	Total Basin Area = 0.76 Acres C = 0.65 Tc = 10 min. I 100 = 9.8 in/hr. Q100 = 4.84cfs I 50 = 9.0 in/hr. Q50 = 4.45cfs I 25 = 8.3 in/hr. Q25 = 4.10cfs I 5 = 6.1 in/hr. Q5 = 3.01cfs

**Allowable Detention Basin Discharge**

BASIN EXISTING RUNOFF MINUS  
 ADDITIONAL UNDETAINED FLOWRATE

Q100 = 2.61cfs - 0.26cfs = 2.4cfs  
 Q50 = 2.39cfs - 0.25cfs = 2.1cfs  
 Q25 = 2.21cfs - 0.23cfs = 2.0cfs  
 Q5 = 1.62cfs - 0.17cfs = 1.5cfs

**RECORD DRAWING**

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.



**NOTE:**  
 Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.

MISC. INFORMATION	REVISION	DATE	DESCRIPTION

**RLK ENGINEERING, INC.**  
 111 West Main  
 Allen, Texas 75013  
 (972) 359-1733 Off  
 (972) 359-1833 Fax  
 Texas Registration No. 579



**DRAINAGE AREA MAP & CALCULATIONS**  
 ROCKWALL HIGH SCHOOL  
 ROCKWALL, TEXAS

DESIGNED BY: RLK Engineering	TECH REVIEW: As Noted	DRAWING FILE: 18108 DAMAP.dwg	DRAWING SCALE:	SHEET: C4.0
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK 18108	



**NOTE:**  
Owner and Contractor to be responsible for submitting N.O.I. (Notice Of Intent) prior to beginning any construction. Owner and Contractor also to submit N.O.T. (Notice Of Termination).

**!!! CAUTION !!!**  
Contractor shall locate existing water line prior to installation of silt fence.

**YELLOWJACKET LANE**  
90' RIGHT-OF-WAY  
CONCRETE PAVEMENT

Install Silt Fence

Install Silt Fence

Install Silt Fence

25'x50' Construction Entrance

Concrete Truck Wash Area\* (12'x12'x3'D)

\* Location To Be Determined By Contractor

Install Silt Fence

Install Erosion Control Log

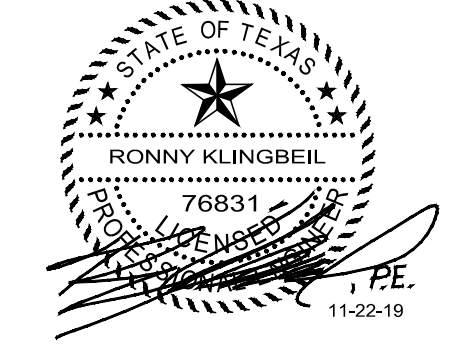
Install Silt Fence

**CAUTION EXISTING UTILITIES !!!**  
All existing utilities and underground facilities that are indicated and shown on these plans are approximate, and are based on as-built plans and/or from reference information. Actual utility locations may differ from the as-built plans based on field observations. All utilities shall be field verified and located prior to any excavation or boring. It shall be the responsibility of the Contractor to verify both horizontally and vertically the location of such existing utilities prior to any construction.

**!!! CAUTION !!!**  
Existing Utility Lines In Area  
Contractor To Verify Existing Utility Locations  
Contact Appropriate Utility Companies  
48 Hrs. Prior To Any Construction

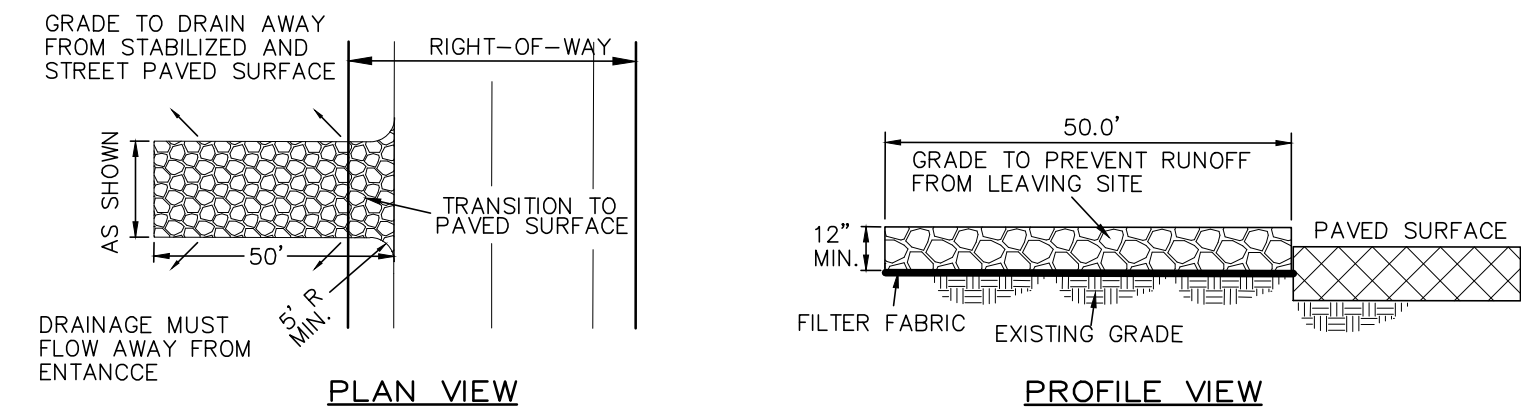
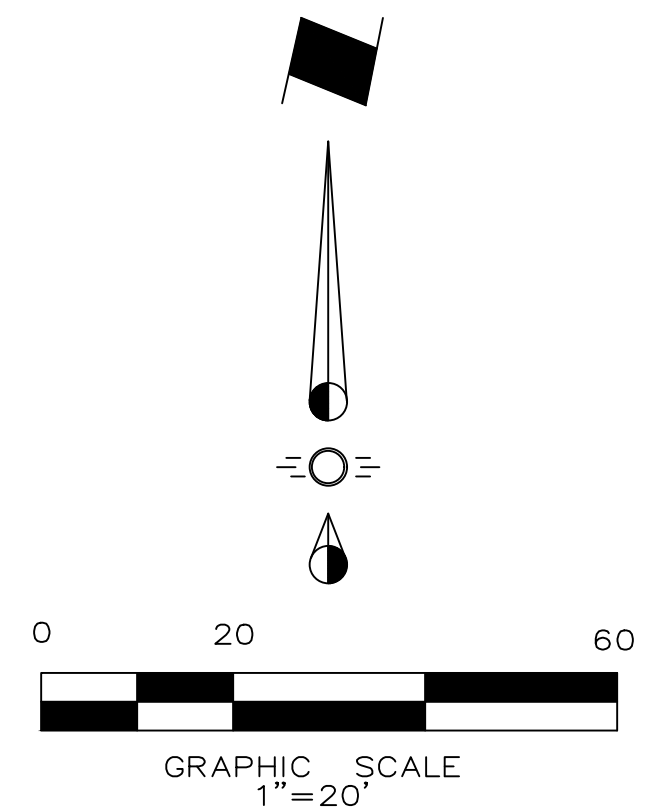
**RECORD DRAWING**

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.



**LEGEND**

	Proposed Erosion Control Device
	Proposed Contour
	Existing Contour
	Concrete Truck Wash Area

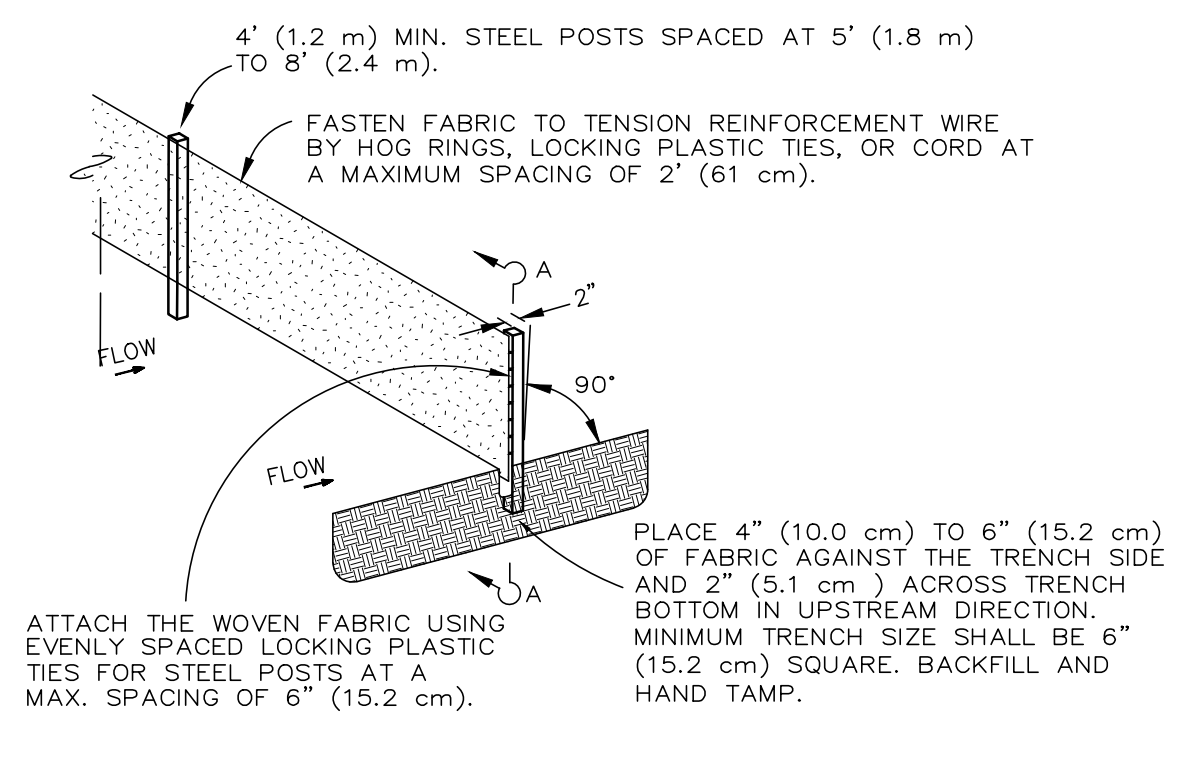


**STABILIZED CONSTRUCTION ENTRANCE**

Actual location of stabilized construction entrance shall be determined by Contractor at time of construction.

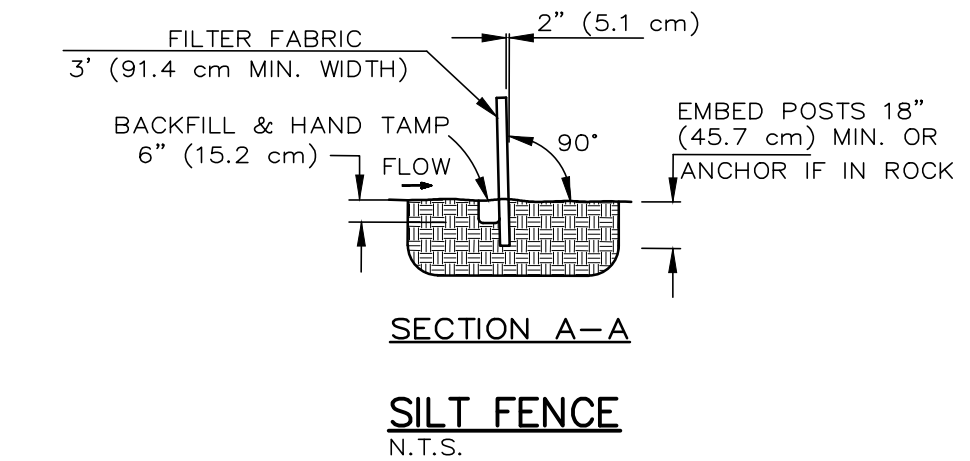
**NOTES**

1. Stone shall be 4 to 6 inch diameter crushed rock. No recycled or crushed concrete allowed.
2. When necessary, vehicles shall be cleaned to remove sediment prior to entrance onto a public roadway. When washing is required, it shall be done on an area stabilized with crushed stone, with drainage flowing away from both the street and the stabilized entrance. All sediment shall be prevented from entering any storm drain, ditch, or watercourse using approved methods.
3. The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto paved surfaces. This may require periodic top dressing with additional stone as conditions demand. All sediment spilled, dropped, washed, or tracked onto paved surfaces must be removed immediately.
4. The entrance must be properly graded or incorporate a drainage swale to prevent runoff from leaving the construction site.
5. Exact location of stabilized construction entrance shall be determined by contractor at time of construction.



**SILT FENCE**

1. Steel posts which support the silt fence shall be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of one foot.
2. The toe of the silt fence shall be trenched in with a spade or mechanical trencher, so that the downslope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched (e.g. pavement), weight fabric flap with washed gravel on uphill side to prevent flow under fence.
3. The trench must be a minimum of 6" deep and 6" wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
4. Silt fence should be securely fastened to each steel support post or to woven wire, which is then in turn attached to the steel fence post. There shall be a 6" double overlap, securely fastened where ends of fabric meet.
5. Inspection shall be made weekly or after each rainfall event. Repair or replacement shall be made promptly as needed.
6. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.
7. Accumulated silt shall be removed when it reaches a depth of 6". The silt shall be disposed of in an approved site and in such a manner as to not contribute to additional siltation.
8. Wood posts are not allowed.



**SILT FENCE**  
N.T.S.

**EROSION CONTROL NOTES**

1. Erosion control devices shown on this plan shall be installed prior to the start of land disturbing activities on the project.
2. All erosion control devices are to be installed in accordance with the approved plans and specifications for this project. Changes are to be approved before construction by the design Engineer and the City of Rockwall.
3. If the Erosion Control Plan as approved cannot control erosion and off-site sedimentation from the project, the Erosion Control Plan will be required to be revised and/or additional erosion control devices will be required on site.
4. Off-site soil borrow and spoil areas are considered as part of the project site, and must also comply with the erosion control requirements for this project. This includes the installation of BMPs to control offsite sedimentation and the establishment of permanent ground cover on disturbed areas prior to final approval of the project.
5. Inspections shall be made weekly and after rain storm events to insure that the devices are functioning properly. When sediment or mud has clogged the void spaces between stones or mud is being tracked onto a public roadway the aggregate pad must be washed down or replaced. Runoff from the wash down operation shall not be allowed to drain directly off site without first flowing through another BMP to control off site sedimentation. Periodic re-grading or the addition of new stone may be required to maintain the efficiency of the installation.
6. Contractor shall be responsible for submittal of N.O.I., N.O.T. and any additional information required by the E.P.A. Contractor shall comply with all E.P.A. storm water pollution prevention requirements.
7. Contractor shall control mud accumulation on all streets surrounding the project. No mud accumulation will be allowed in public streets.

MISC. INFORMATION	REVISION	DATE	DESCRIPTION
NOTE: Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.			



RLK ENGINEERING, INC.  
111 West Main  
Allen, Texas 75013  
(972) 359-1733 Off  
(972) 359-1833 Fax  
Texas Registration No. 579



**EROSION CONTROL PLAN**

ROCKWALL HIGH SCHOOL  
ROCKWALL, TEXAS

DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108.ER0.dwg	DRAWING SCALE: As Noted	SHEET: C5.0
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK 18108	



## SANDBLASTING WASTE MANAGEMENT

### DESCRIPTION

The objective of the management program is to minimize the potential of storm water quality degradation from sandblasting activities at construction sites. The key issues in this program are prudent handling and storage of sandblast media, dust suppression, and proper collection and disposal of spent media. It is not the intent of this program to outline all of the worker safety issues pertinent to this practice. Safety issues should be addressed by construction safety programs as well as local, state, and federal regulations utilized at sites in which Sandblasting waste is present.

### INSTALLATION/APPLICATION CRITERIA

Since the media consists of fine abrasive granules, it can be easily transported by running water. Sandblasting activities typically create a significant dust problem which must be contained and collected to prevent off-site migration problem which must be contained and collected to prevent off-site migration or fines.

#### Operational Procedures

Use only inert, non-degradable sandblast media.  
Use appropriate equipment for the job, do not over-blast.  
Whenever possible, blast in a downward direction.  
Install a wind sock or other wind direction instrument.  
Cease blasting activities in high winds or if wind direction could transport grit to drainage facilities.  
Install dust shielding around sandblasting areas.  
Collect and dispose of all spent sandblast grit, use dust containment fabrics and dust collection hoppers and barrels.  
Non-hazardous sandblast grit may be disposed in permitted construction debris landfills or permitted sanitary landfills.  
If sandblast media cannot be fully contained, construct sediment traps downstream from blasting area where appropriate.  
Use sand fencing where appropriate in areas where blast media cannot be fully contained.  
If necessary, install misting equipment to remove sandblast grit from the air prevent runoff from misting operations from entering drainage systems.  
Use vacuum grit collection systems where possible.  
Keep records of sandblasting materials, procedures, and weather conditions on a daily basis.  
Take all reasonable precautions to ensure that sandblasting grit is contained and kept away from drainage structures.

#### Educational Issues

Educate all on-site employees of potential dangers to humans and the environment from sandblast grit.  
Instruct all on-site employees of the potential hazardous nature of sandblast grit and possible symptoms of overexposure to sandblast grit.  
Instruct operators of sandblasting equipment on safety procedures and personal protection equipment.  
Instruct operators on proper procedures regarding storage, handling, and containment of sandblast grit.  
Instruct operators to recognize unfavorable weather conditions regarding sandblasting activities.  
Instruct operators and supervisors on current local, state, and federal regulations regarding fugitive dust and hazardous waste from sandblast grit.  
Have weekly meetings with operators to discuss and reinforce proper operational procedures.  
Establish a continuing education program to indoctrinate new employees.

#### Material Handling Recommendations

Sandblast media should always be stored under cover away from drainage structures.  
Ensure that stored media or grit is not subject to transport by wind.  
Ensure that all sandblasting equipment as well as storage containers comply with local, state, and federal regulations.  
Refer to Hazardous Waste BMP fact sheet if sandblast grit is known or suspected to contain hazardous components.  
Capture and treat runoff which comes into contact with sandblasting material or waste.  
Foreman and/or construction supervisor should monitor all sandblasting activities and safety procedures.

#### Quality Assurance

Educate, and if necessary, discipline workers who violate procedures.  
Take all reasonable precautions to ensure that sandblast grit is not transported off-site or into drainage facilities.

#### Requirements

Education and awareness program for all employees regarding control of sandblasting and potential dangers to humans and the environment.  
Operator and supervisor education program for those directly involved in sandblasting activities – instructions on material handling, proper equipment operation, personal protective equipment, fugitive dust control, record keeping and reporting.  
Proper sandblast equipment for the job.  
Site-specific fugitive dust control and containment equipment.  
Site-specific fugitive dust control procedure.  
Compliance by supervisors and workers.

#### Costs

Minimal cost for training and monitoring.  
Potential for significant cost for containment procedures on large jobs.  
Potential for significant costs associated with cleanup, correction and remediation if containment occurs.

#### LIMITATIONS

Site specific solutions to sandblasting problems may be required.  
Sandblasting operations on structures known to contain hazardous materials require special procedures not specifically outlined above including professional hazardous waste specialists.  
Where hazardous materials are known or suspected, a site assessment and remediation plan may be necessary.

## HAZARDOUS WASTE MANAGEMENT

### DESCRIPTION

The hazardous waste management BMP addresses the problem of storm water polluted with hazardous waste through spills or other forms of contact. The objective of the Management Program is to minimize the potential of storm water contamination from common construction site hazardous wastes through appropriate recognition, handling, storage, and disposal practices.

It is not the intent of this Management Program 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. The General Permit requires reporting of significant spills to the National Response Center (NRC) at (800)424-8802.

### PRIMARY USE

These management practices along with applicable OSHA and EPA guidelines should be incorporated at all construction sites which use or generate hazardous wastes. Many wastes such as fuel, oil, grease, fertilizer, and pesticide are present at most construction sites.

### INSTALLATION, APPLICATION AND DISPOSAL CRITERIA

The hazardous waste management techniques presented here are based on proper recognition, handling, and disposal practices by construction workers and supervisors. Key elements of the management program are education, proper disposal practices, as well as provisions for safe storage and disposal. Following are lists describing the targeted materials and recommended procedures:

#### Targeted Hazardous Waste Materials

Paints  
Solvents  
Stains  
Wood preservatives  
Cutting oils  
Greases  
Roofing tar  
Pesticides  
Fuel and lube oils  
Lead based paints (Demolition)

#### 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 site debris.  
Designate a foreman or supervisor to oversee hazardous materials handling procedures.  
Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.  
Store waste materials away from drainage ditches, swales, and catch basins.  
Use containment berms in fueling and maintenance areas and where the potential for spills is high.  
Ensure that adequate hazardous waste storage volume is available.  
Ensure that hazardous waste collection containers are conveniently located.  
Do not allow potentially hazardous waste materials to accumulate on the ground.  
Enforce hazardous waste handling and storage procedures.  
Clearly mark on all hazardous waste containers which materials are acceptable for the container.

#### Disposal Procedures

Regularly schedule hazardous waste removal to minimize on-site storage.  
Use only reputable, licensed hazardous waste haulers.

#### Education

Instruct workers in identification of hazardous waste.  
Educate workers of potential dangers to humans and the environment from hazardous wastes.  
Instruct workers on safety procedures for common construction site hazardous wastes.  
Educate all workers on hazardous waste 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.

#### Quality Assurance

Foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.  
Educate, and if necessary, discipline workers who violate procedures.  
Ensure that the hazardous waste disposal contractor is reputable and licensed.

#### Requirements

Job-site waste handling and disposal education and awareness program.  
Commitment by management to implement hazardous waste management practices.  
Compliance by workers.  
Sufficient and appropriate hazardous waste storage containers.  
Timely removal of stored hazardous waste materials.

#### Costs

Possible modest cost impact for additional hazardous 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.

#### LIMITATIONS

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 asbestos, are not addressed by this program. Site specific information on plans is necessary.  
Contaminated soils are not addressed.  
One part of a comprehensive construction site waste management program.

## SOLID WASTE MANAGEMENT

### DESCRIPTION

Large volumes of solid waste are often generated at construction sites including: packaging, pallets, wood waste, concrete waste, soil, electrical wiring, cuttings, and a variety of other materials. The solid waste management practice lists techniques to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices.

### PRIMARY USE

These practices 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.

### APPLICATIONS

The solid waste management practice 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:

#### Targeted Solid Waste Materials

Paper and cardboard containers  
Plastic packaging  
Styrofoam packing and forms  
Insulation materials (non-hazardous)  
Wood pallets  
Wood cuttings  
Pipe and electrical cuttings  
Concrete, brick, and mortar waste  
Shingle cuttings and waste  
Roofing tar  
Steel (cuttings, nails, rust residue)  
Gypsum board cuttings and waste  
Sheathing cuttings and waste  
Miscellaneous cutting and waste  
Food waste  
Demolition waste

#### Storage Procedures

Wherever possible, minimize production of solid waste materials.  
Designate a foreman or supervisor to oversee and enforce proper solid waste procedures.  
Instruct construction workers in proper solid waste procedures.  
Segregate potentially hazardous waste from non-hazardous construction site debris.  
Keep solid waste materials under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff.  
Store waste materials away from drainage ditches, swales and catch basins.  
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, segregate recyclable wastes from non-recyclable waste materials and dispose of properly.  
General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).  
Use waste facilities approved by local jurisdiction.  
Runoff which comes into contact with unprotected waste shall be directed into structural treatment such as silt fence to remove debris.

#### Education

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 (incorporate in regular safety seminars).  
Clearly mark on all solid waste containers which materials are acceptable.

#### Quality Control

Foreman and/or construction supervisor shall monitor on-site solid waste storage and disposal procedures.  
Discipline workers who repeatedly violate procedures.

#### Requirements

Jobsite waste handling and disposal education and awareness program.  
Commitment by management to implement and enforce Solid Waste Management Program.  
Compliance by workers.  
Sufficient and appropriate waste storage containers.  
Timely removal of stored solid waste materials.  
Possible modest cost impact for additional waste storage containers.  
Small cost impact for training and monitoring.  
Minimal overall cost impact.

#### LIMITATIONS

Only addresses non-hazardous solid waste.  
One part of a comprehensive construction site management program.

## CONCRETE WASTE MANAGEMENT

### DESCRIPTION

Concrete waste at construction sites comes in two forms; 1) excess fresh concrete mix including truck and equipment washing, and 2) concrete dust and concrete debris resulting from demolition and sawing. Both forms have the potential to impact water quality through storm water runoff contact with the waste.

### PRIMARY USE

Concrete waste is present at most construction sites. This BMP should be utilized at sites in which concrete waste is present.

### APPLICATIONS

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:

#### Current Unacceptable Waste Concrete Disposal Practices

Dumping in vacant areas on the job-site.  
Illicit dumping off-jobsite.  
Dumping into ditches or drainage facilities.

#### Recommended Disposal Practices

Avoid unacceptable dumping 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.  
Never dump waste concrete illicitly or without property owners knowledge and consent.  
Treat runoff from storage area through the use of structural controls as required.

#### Education

Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).  
Supervisors must be made aware of the potential environmental consequences of improperly handling concrete waste.

#### Enforcement

The construction site manager or foreman must ensure that employees and pre-mix companies follow proper procedures for concrete disposal and equipment washing.  
Employees violating disposal or equipment cleaning directives must be reeducated or disciplined if necessary.

#### Demolition Practices

Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters.  
Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

#### Requirements

Use predetermined disposal 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 procedures.

#### Costs

Minimal cost impact for training and monitoring.  
Concrete disposal cost depends on availability and distance to suitable disposal areas.  
Additional costs involved in equipment washing could be significant.

#### LIMITATIONS

This concrete waste management program is one part of a comprehensive construction site management program.

## RECORD DRAWING

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.



### MISC. INFORMATION

REVISION	DATE	DESCRIPTION



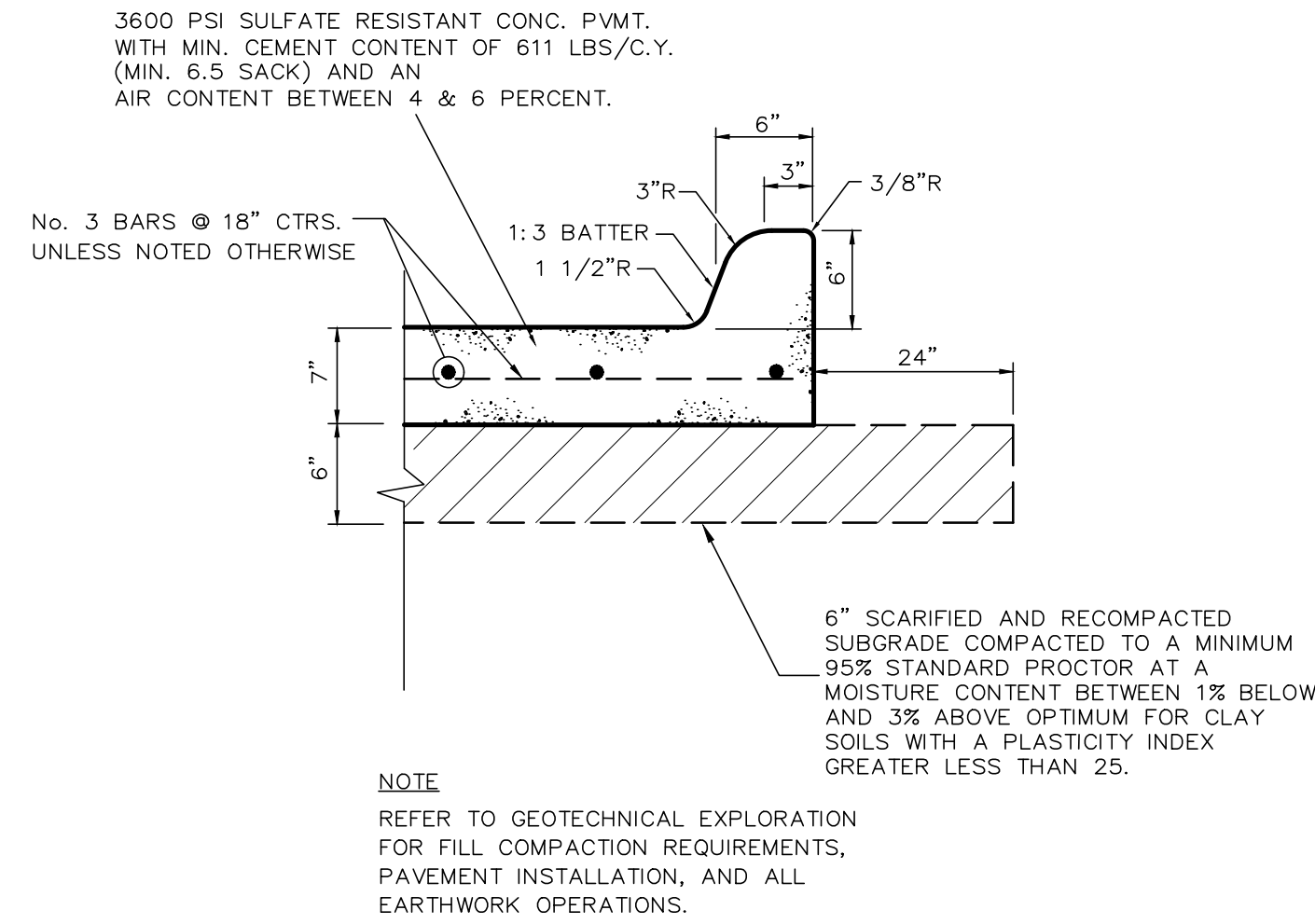
RLK ENGINEERING, INC.  
111 West Main  
Allen, Texas 75013  
(972) 359-1733 Off  
(972) 359-1833 Fax  
Texas Registration No. 579

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF RONNY KLINGBEIL, P.E. NO. 76831 ON April 2, 2019.  
IT IS NOT TO BE USED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES.

## EROSION CONTROL NOTES

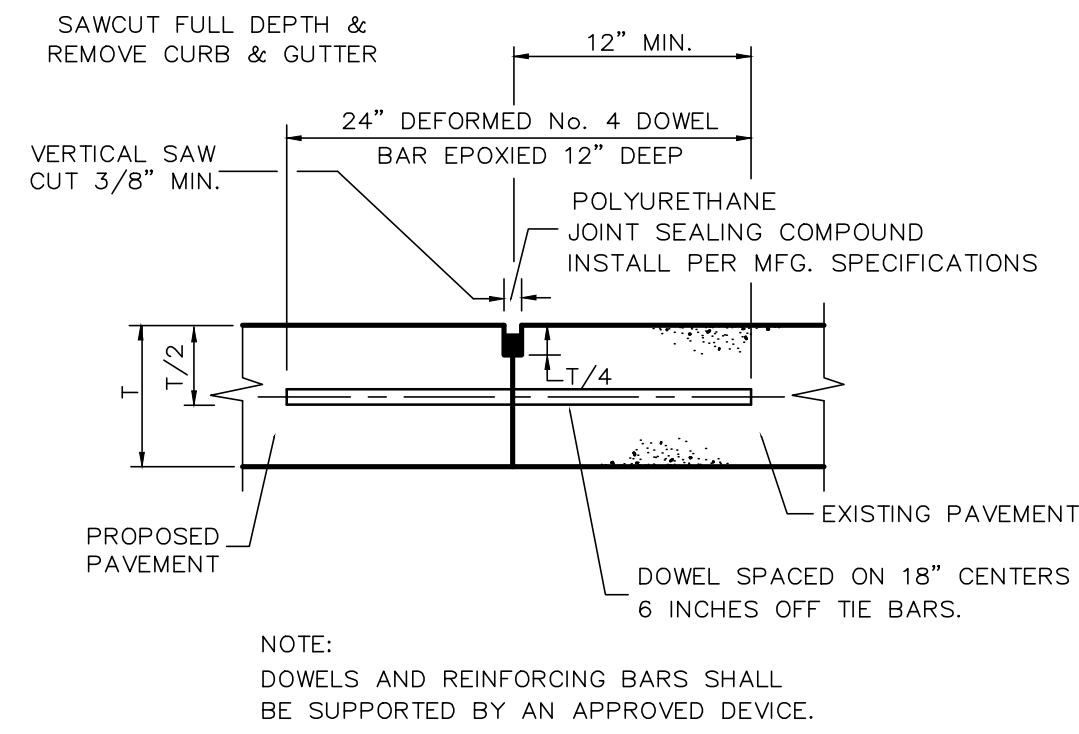
ROCKWALL HIGH SCHOOL  
ROCKWALL, TEXAS

DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108 ECH.dwg	DRAWING SCALE: As Noted	SHEET:
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK-18108	C5.1



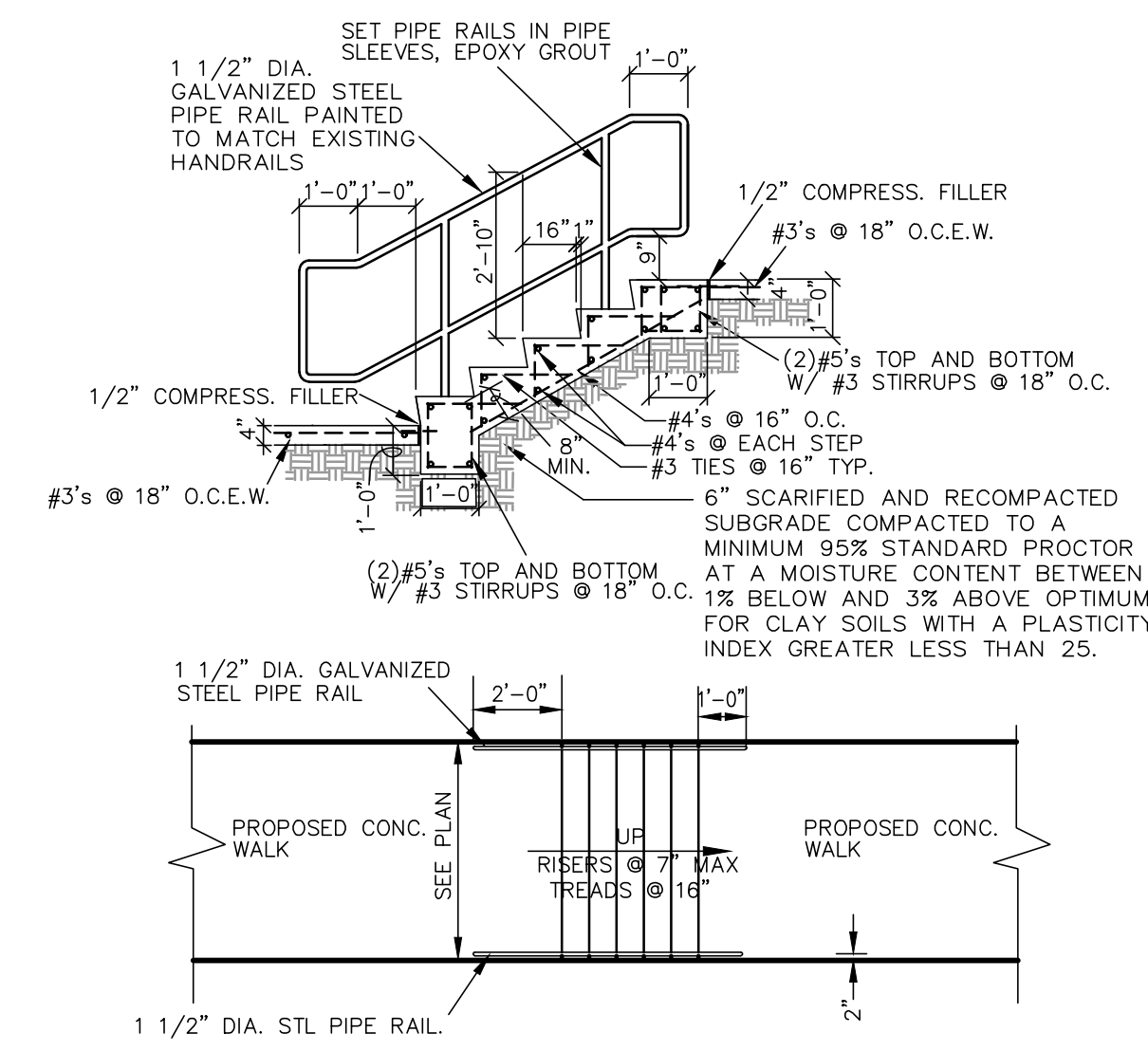
**CONCRETE PAVEMENT SECTION**

N.T.S.



**LONGITUDINAL BUTT JOINT**

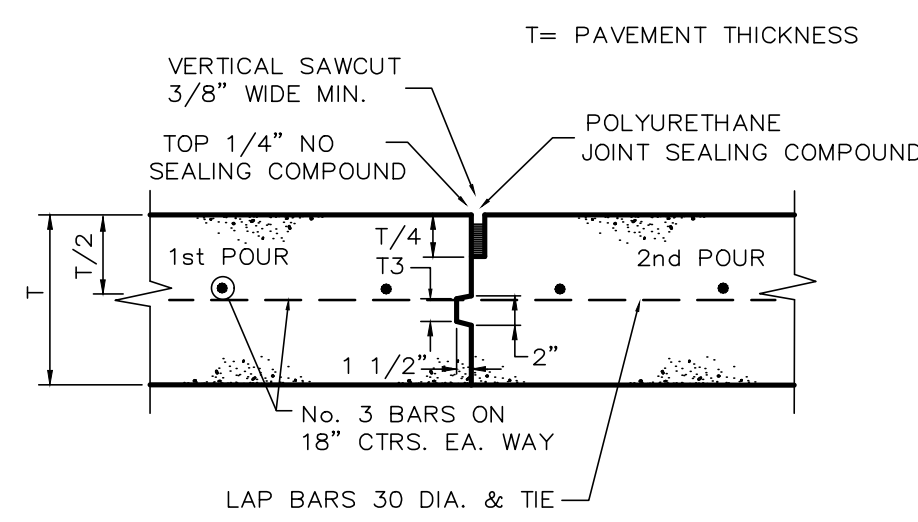
N.T.S.



**STEP AND HANDRAIL DETAIL**

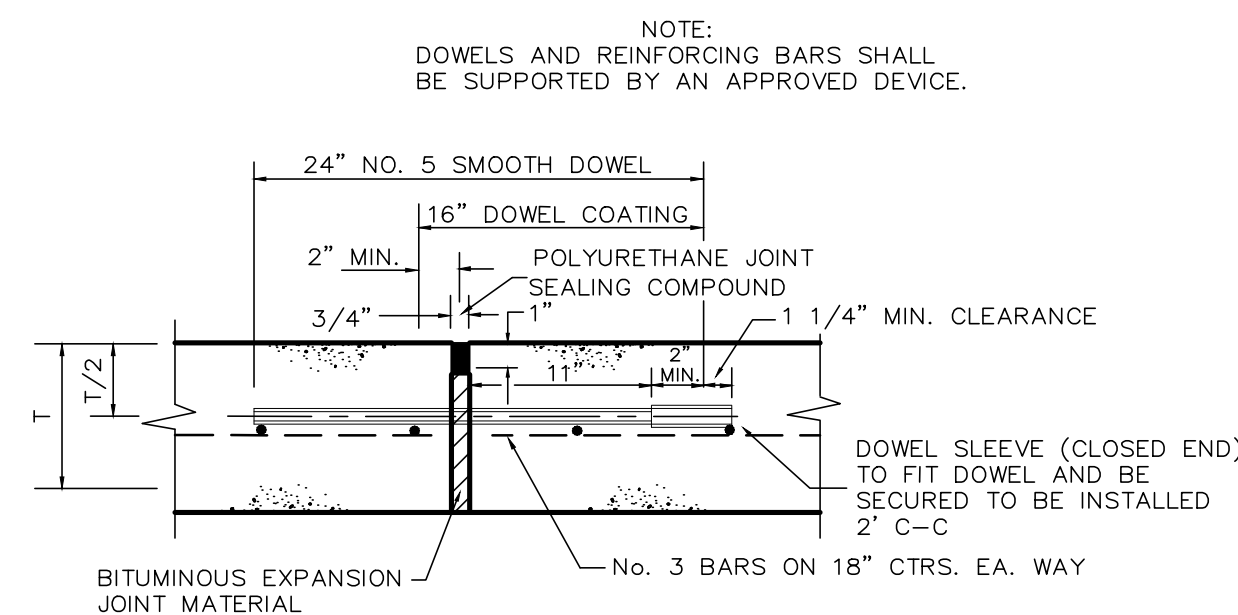
N.T.S.

(By Separate Permit Through Building Department)



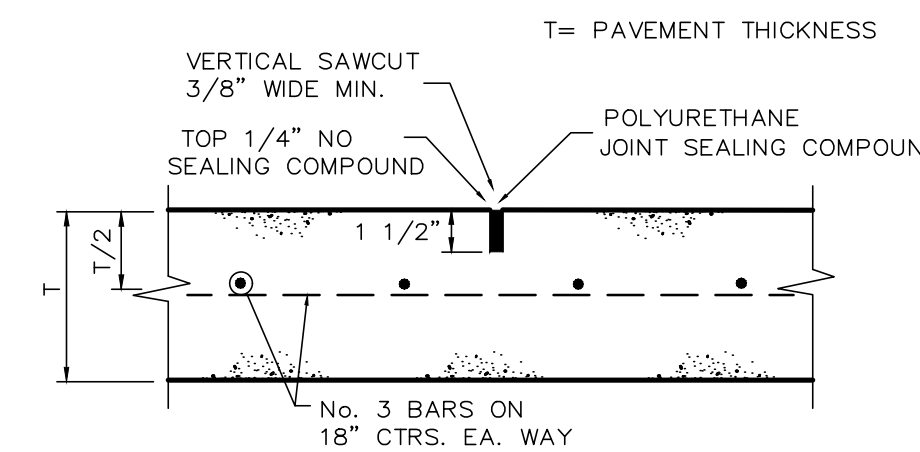
**CONSTRUCTION JOINT**

N.T.S.



**EXPANSION JOINT**

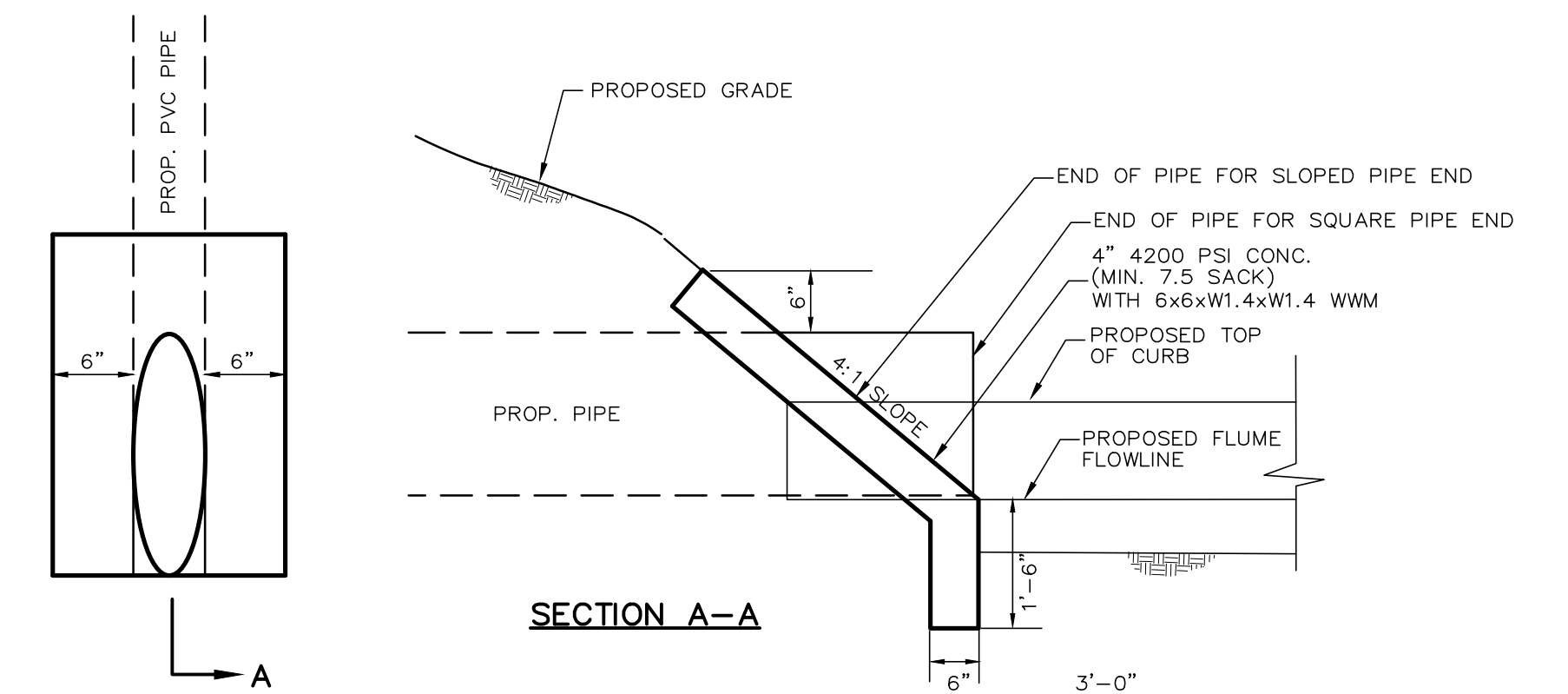
N.T.S.



**SAWED DUMMY (CONTROL) JOINT**

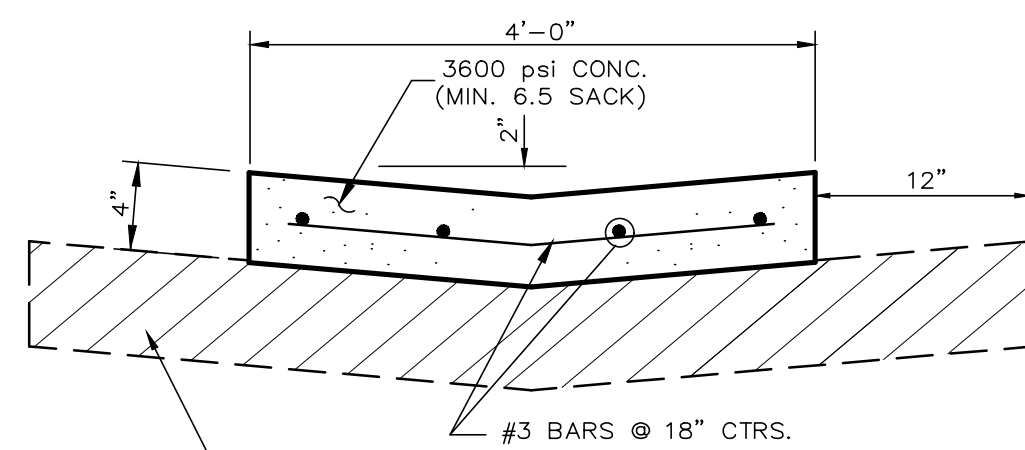
N.T.S.

MAXIMUM SPACING IS 15' CTRS. (TYP.)



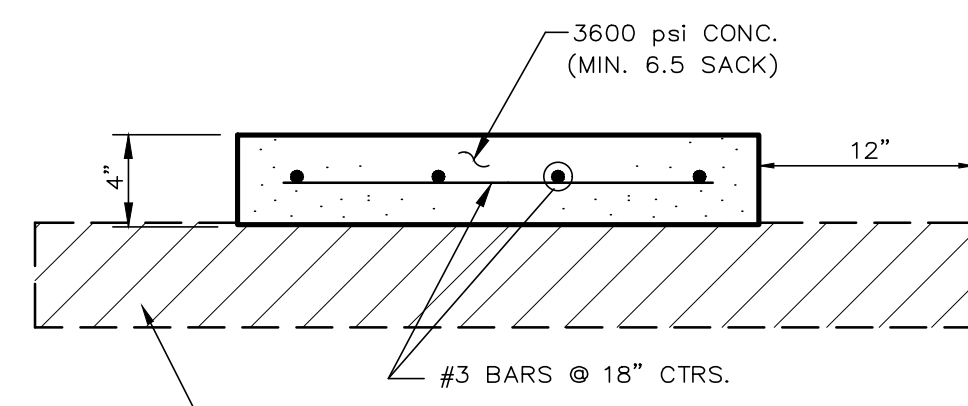
**SLOPED HEADWALL DETAIL**

N.T.S.



**FLUME DETAIL**

N.T.S.

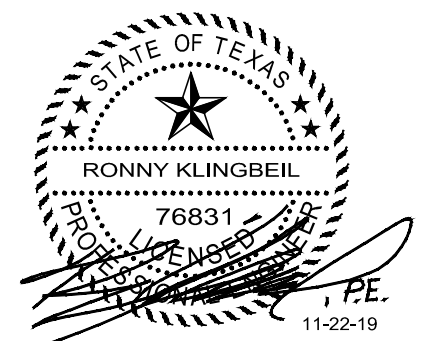


**SIDEWALK**

N.T.S.

**RECORD DRAWING**

To the best of our knowledge, RLK Engineering, Inc. hereby states that this plan is as built. Information provided is based on surveying at the site and information provided by contractor.

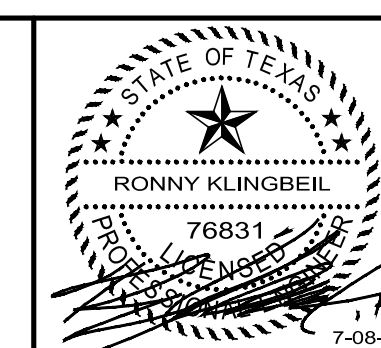


NOTE:  
CITY DETAILS TAKE PRECEDENCE IN CITY R.O.W.

MISC. INFORMATION	REVISION	DATE	DESCRIPTION
NOTE: Prior to beginning any construction or construction staking, it shall be the Contractor's responsibility to contact the civil engineer to insure that all parties are in possession of the most current set of construction documents.			



RLK ENGINEERING, INC.  
111 West Main  
Allen, Texas 75013  
(972) 359-1733 Off  
(972) 359-1833 Fax  
Texas Registration No. 579



SITE DETAILS			
ROCKWALL HIGH SCHOOL ROCKWALL, TEXAS			
DESIGNED BY: RLK Engineering	TECH REVIEW: RLK	DRAWING FILE: 18108 DTL.dwg	DRAWING SCALE: As Noted
DRAWN BY: RLK Engineering	PEER REVIEW: RLK	DRAWING DATE: 7-08-19	PROJECT NUMBER: RLK-18108
			SHEET: <b>C6.0</b>

Nov 22, 2019 - 7:51am User: rck