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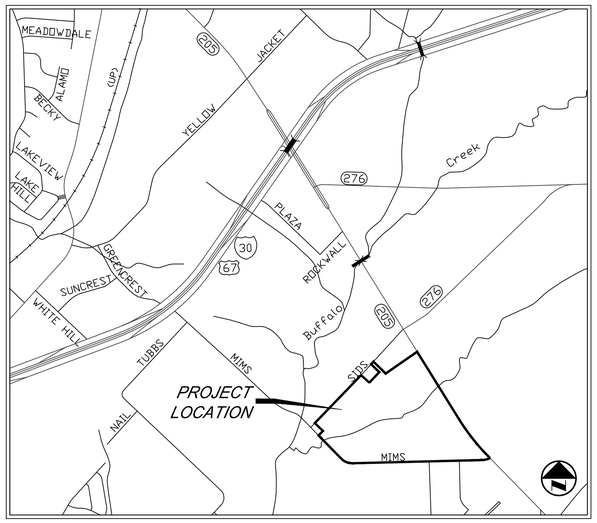
RAYBURN ELECTRIC COOPERATIVE CAMPUS EXPANSION

LOT 1, BLOCK A
REC CAMPUS ADDITION
950 SIDS ROAD
ROCKWALL, TEXAS 75032



VICINITY MAP
N.T.S.

MAPSCO GRID 30D–E

LANDSCAPE PLANS (PREPARED BY KIMLEY-HORN AND ASSOCIATES, INC.)

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SL.00	SITE LIGHTING

GENERAL NOTES

ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION IN NORTH TEXAS AND CITY OF ROCKWALL STANDARDS, LATEST EDITION, BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, P.O. BOX COG, ARLINGTON, TEXAS 76005–5888 (817) 461–3300, A COPY OF THIS BOOK MAY BE OBTAINED FROM THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS AT THE ADDRESS OR PHONE NUMBER LISTED ABOVE.

1. The existing public water, sanitary sewer, and storm sewer utility lines and appurtenances shown on these plans have been taken from record drawings and utility locator maps. The Engineer makes no guarantee that the underground utility lines and structures shown comprise all the underground utility lines and appurtenances in the area, either in service or abandoned. The Engineer furthermore does not warrant the accuracy of the information shown on the record drawings and the utility maps.

2. The contractor shall be responsible for determining the depth and location of existing underground utilities prior to trenching or excavation and is required to take any precautionary measures to protect all lines shown and / or any other underground utilities not of record shown on the plans. Contractor is responsible for contacting all the franchise utility companies, county utility departments and TEXAS 811 for locates prior to construction.

3. The contractor shall maintain daily contact with each agency's inspector during construction of improvements. No public sanitary sewer, water or storm sewer pipe shall be covered without approval of the city. No subgrade material or rock paving shall be applied without approval of the inspector. The inspector may at any time cause any construction, installation, maintenance of improvements to cease when, in his/her judgment the Standard Construction Details have been violated and may require reconstruction or other works as may be necessary to correct the violation.

4. The owner is responsible for obtaining all applicable city, county, state, and federal permits.

5. Erosion control and storm water management measures must be in place and comply with applicable county, state and federal regulations. Erosion and sedimentation control measures and practices shall be maintained at all times during construction, additional measures and practices shall be installed if deemed necessary by the inspector.

6. The contractor shall make every effort not to impede traffic on existing streets, alleys or fire lanes open to the public. The contractor is responsible for furnishing and installing all temporary and permanent traffic control devices in accordance with the minimum requirements of the latest revision to the Texas Manual on Uniform Traffic Control Handbook.

7. All excavations within the right of way shall be filled and compacted as required by the permitting agency and in no case shall exceed twenty–four (24) hours after completion of work and no excavation shall remain open for longer than 96 hours.

PREPARED BY:

r.delta ENGINEERS

618 MAIN STREET GARLAND, TX. 75040
PH. 972 494 5031 FAX 972 487 2270
www.rdelta.com TBPE REG. F-001515

JUNE 2025

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

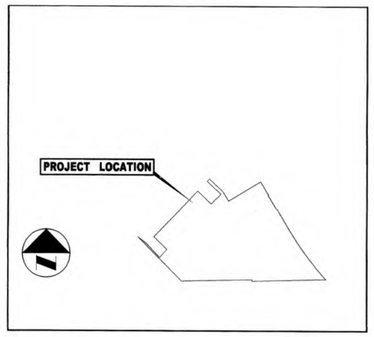
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
COVER SHEET

CASE# E2023-007

SHEET NO.
C1

20250000007337 PLAT Total Pgs: 5



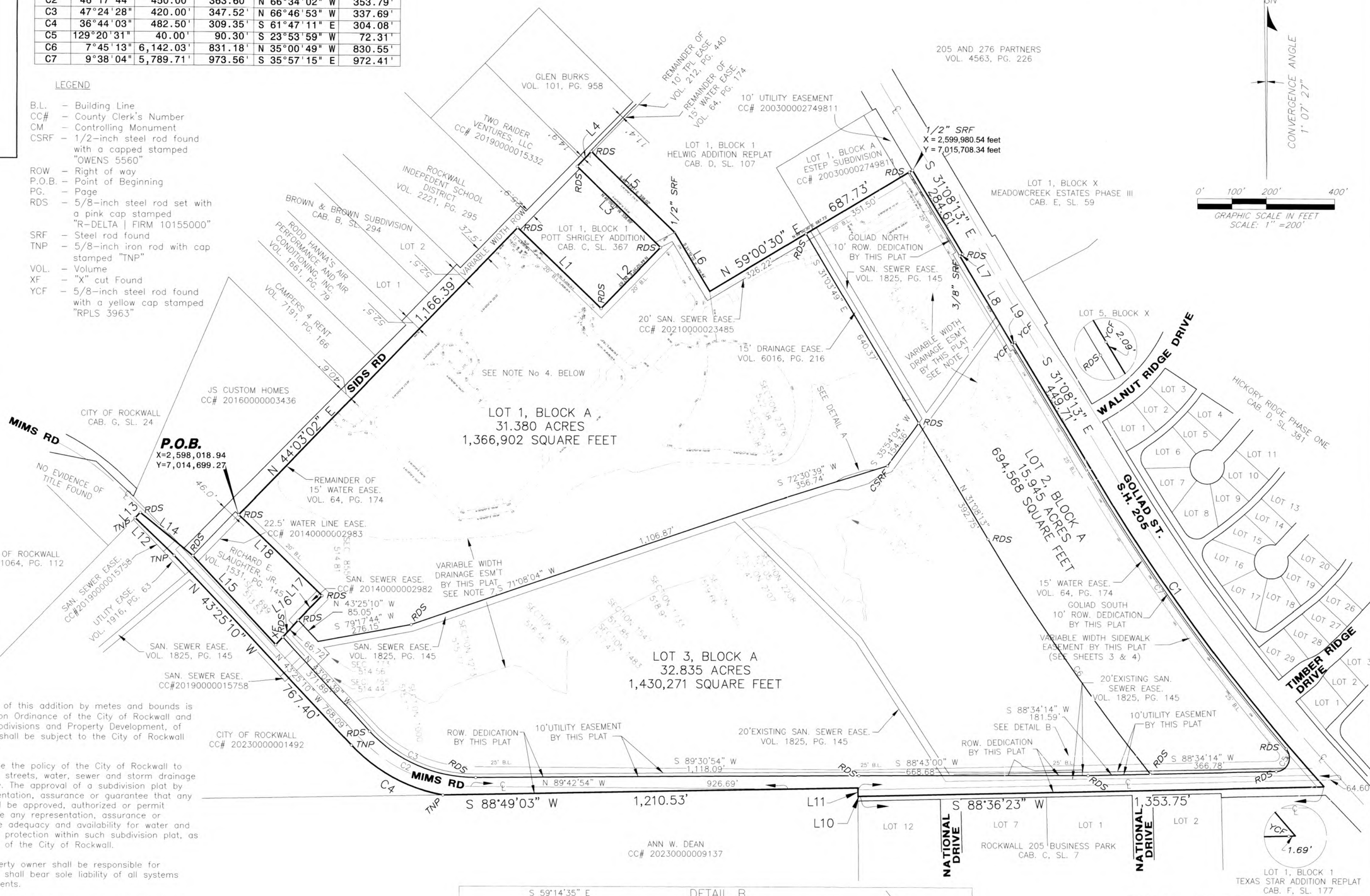
VICINITY MAP
NOT TO SCALE

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	11°11'01"	5,779.71'	1,128.15'	S 36°43'43" E	1,126.36'
C2	46°17'44"	450.00'	363.60'	N 66°34'02" W	353.79'
C3	47°24'28"	420.00'	347.52'	N 66°46'53" W	337.69'
C4	36°44'03"	482.50'	309.35'	S 61°47'11" E	304.08'
C5	129°20'31"	40.00'	90.30'	S 23°53'59" W	72.31'
C6	7°45'13"	6,142.03'	831.18'	N 35°00'49" W	830.55'
C7	9°38'04"	5,789.71'	973.56'	S 35°57'15" E	972.41'

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 46°15'45" E	338.73'
L2	N 44°02'35" E	247.63'
L3	N 46°09'17" W	338.69'
L4	N 44°03'02" E	59.41'
L5	S 46°15'31" E	338.02'
L6	S 31°10'16" E	199.44'
L7	S 58°51'47" W	10.00'
L8	S 31°08'13" E	297.94'
L9	N 58°32'10" E	10.00'
L10	S 89°33'39" W	6.66'
L11	N 00°38'52" W	24.56'
L12	N 46°36'51" W	144.18'
L13	N 44°06'51" E	21.42'
L14	S 50°58'40" E	197.86'
L15	S 43°15'37" E	353.17'
L16	N 42°24'17" E	96.84'
L17	N 44°27'12" E	99.73'
L18	N 46°14'22" W	338.24'

LEGEND

- B.L. – Building Line
- CC# – County Clerk's Number
- CM – Controlling Monument
- CSRF – 1/2-inch steel rod found with a capped stamped "OWENS 5560"
- ROW – Right of way
- P.O.B. – Point of Beginning
- PG. – Page
- RDS – 5/8-inch steel rod set with a pink cap stamped "R-DELTA | FIRM 10155000"
- SRF – Steel rod found
- TNP – 5/8-inch iron rod with cap stamped "TNP"
- VOL. – Volume
- XF – "X" cut Found
- YCF – 5/8-inch steel rod found with a yellow cap stamped "RPLS 3963"



NOTE:
WATER AND SANITARY SEWER SERVCE PROVIDER FOR THIS SITE IS THE CITY OF ROCKWALL, TEXAS.

NOTES

1. Subdivider's Statement. Selling a portion of this addition by metes and bounds is unlawful and a violation of the Subdivision Ordinance of the City of Rockwall and Chapter 212, Municipal Regulation of Subdivisions and Property Development, of the Texas Local Government Code, and shall be subject to the City of Rockwall withholding utilities and building permits.
2. Public Improvement Statement. 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 subdivision plat by the City does not constitute and representation, assurance or guarantee that any building within such subdivision plat shall be approved, authorized or permit issued, nor shall such approval constitute any representation, assurance or guarantee by the City of Rockwall of the adequacy and availability for water and sanitary sewer for personal use and fire protection within such subdivision plat, as required under the Subdivision Ordinance of the City of Rockwall.
3. Drainage and Detention Easements. Property owner shall be responsible for maintaining, repairing, and replacing and shall bear sole liability of all systems within the drainage and detention easements.
4. Fire Lanes. All Fire Lanes will be constructed, maintained, repaired and replaced by the property owner. Fire Lanes shall be constructed in accordance with the approved Civil Engineering Plans for both on-site and off-site Fire Lane Improvements.
5. *The Bearings and Coordinates reported hereon are based on the Texas Coordinate System of 1983, North Central Zone (Zone 4202) as tied to City of Rockwall published control station COR-11.*

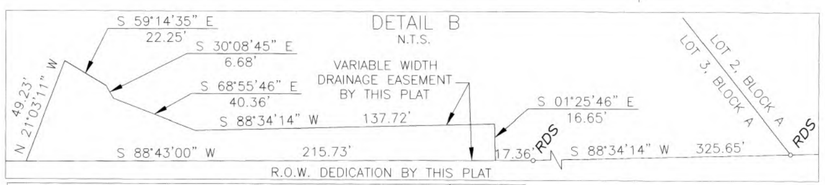
   All reported distances are surface distances. To obtain distances on the projection grid multiply the reported distances by the average combined factor of 0.999853886 as published by TxDOT for Rockwall County, Texas.

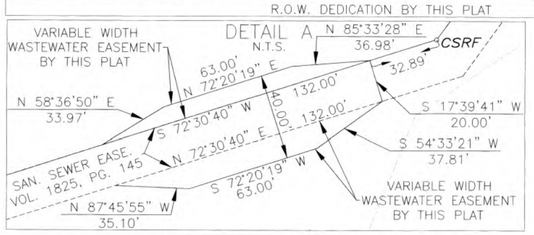
   The convergence or mapping angle at the P.O.B. is 1°07'07"
6. *See Sheets 2-5 for additional proposed Easement details by this plat.*
7. A variable width drainage easement being ten feet outside of gradient lines defined by elevations two-feet above the fully developed 100-year flood plain water surface elevation. An approximation of this ambulatory line is graphically depicted here as a guide to the location of the actual boundary of the rights associated with this easement.

AREA SUMMARY REPORT:

LOT 1	1,366,902 SQ FT	31.380 ACRES
LOT 2	694,568 SQ FT	15.945 ACRES
LOT 3	1,430,271 SQ FT	32.835 ACRES
LOTS	3,491,741 SQ FT	80.160 ACRES
GOLIAD NORTH	2,846 SQ FT	0.065 ACRES
GOLIAD SOUTH	16,708 SQ FT	0.384 ACRES
MIMS	182,402 SQ FT	4.187 ACRES
DED:	201,956 SQ FT	4.636 ACRES
PARTS:	3,693,697 SQ FT	84.796 ACRES
BOUNDARY:	3,693,697 SQ FT	84.796 ACRES

Water and sanitary sewer provided by the City of Rockwall, Texas.





SURVEYOR:
r.delta ENGINEERS
618 Main Street
Garland, TX 75040
Ph. (972) 494-5031
Fax (972) 487-2270
www.rdelta.com
TBPE No. F-1515
TBPLS No. 10155000

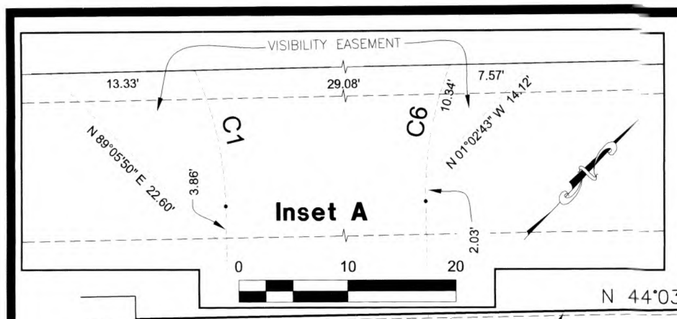
FINAL PLAT
LOTS 1-3, BLOCK A
REC CAMPUS ADDITION

BEING 3 LOTS
84.796 ACRES OR 3,693,697 SF
SITUATED IN THE
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

OWNER: Rayburn Country Electric Cooperative, Inc.
950 Sids Road
Rockwall, Texas 75032
TEL (469) 402-2100

CASE NO. P2023-018
RDE Proj. No. 3036-22

EASEMENT DEDICATIONS BY THIS PLAT



SIDS RD

N 44°03'02" E 387.98

See Inset A

See Inset B

See Inset C

15' DRAINAGE & UTILITY EASEMENT CAB. I, SL. 69

1,166.39'

644.76'

REMAINDER OF 15' WATER EASE. VOL. 64, PG. 174

DRAINAGE AND DETENTION EASEMENT CC# 20190000004594

100-YR WATER SURFACE ELEVATION 518.90

VARIABLE WIDTH DRAINAGE ESM'T SEE NOTE 7 ON SHEET 1

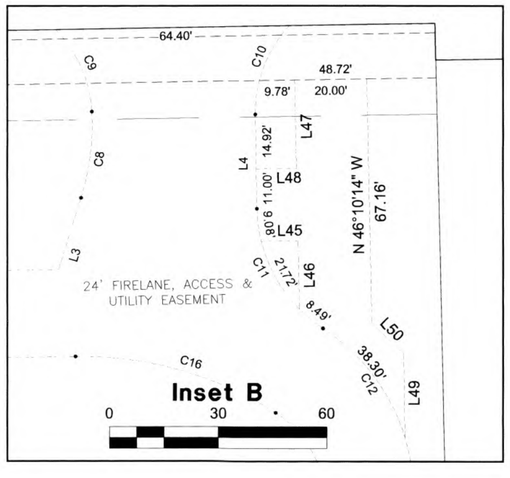
LOT 1, BLOCK A
31.380 ACRES
1,366,902 SQUARE FEET

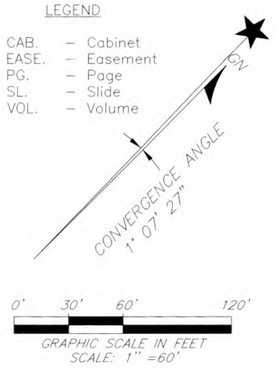
LOT 1, BLOCK 1
POTT SHRIGLEY ADDITION
CAB. C, SL. 367

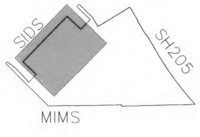
MATCH LINE SHEET 3

EASEMENT LINE TABLE

LINE	BEARING	LENGTH
L1	S 46°11'30" E	24.15'
L2	S 46°11'30" E	24.15'
L3	N 27°38'40" W	20.69'
L4	S 45°56'58" E	25.93'
L5	S 11°33'42" W	15.00'
L6	S 45°56'58" E	43.53'
L7	S 44°03'02" W	13.59'
L8	S 45°56'58" E	56.53'
L9	S 44°03'02" W	24.00'
L10	N 11°33'42" E	15.00'
L11	S 44°03'02" W	13.59'
L12	S 45°56'58" E	43.53'
L13	N 44°03'02" E	13.59'
L14	N 45°56'58" W	43.53'
L15	N 45°56'58" W	20.00'
L16	N 44°03'02" E	27.34'
L17	N 00°56'58" W	5.19'
L18	S 44°03'02" W	24.89'
L19	N 89°03'02" E	7.85'
L20	N 00°56'58" W	22.16'
L21	N 44°03'02" E	44.84'
L22	S 45°56'45" E	20.00'
L23	S 44°03'02" W	36.55'
L24	S 00°56'58" E	22.16'
L25	S 89°03'02" W	7.85'
L26	S 44°02'57" W	28.28'
L27	N 44°03'02" E	38.71'
L28	N 45°56'58" W	36.72'
L29	N 44°03'02" E	20.00'
L30	S 45°56'58" E	36.72'
L31	N 00°56'58" W	12.09'
L32	S 11°33'42" W	13.31'
L33	S 89°03'02" W	8.24'
L34	S 89°03'02" W	10.47'
L35	S 89°03'02" W	27.24'
L36	N 45°56'58" W	13.01'
L37	N 44°03'02" E	20.00'
L38	S 45°56'58" E	4.72'
L39	N 89°03'02" E	10.67'
L40	N 89°03'02" E	10.47'
L41	N 45°56'58" W	14.60'
L42	N 44°03'02" E	30.00'
L43	S 45°56'58" E	14.60'
L44	N 89°03'02" E	17.34'
L45	N 44°03'02" E	10.19'
L46	S 46°10'14" E	18.85'
L47	S 46°10'14" E	24.23'
L48	S 44°03'02" W	11.13'
L49	N 45°56'58" W	23.19'
L50	S 89°03'02" W	12.04'
L51	N 45°56'58" W	51.06'
L52	N 45°56'58" W	51.06'
L53	S 45°56'58" E	51.06'
L54	S 45°56'58" E	51.06'
L55	S 45°56'58" E	14.63'
L56	S 44°03'02" W	30.00'
L57	S 45°56'58" E	18.38'
L58	S 44°03'02" W	20.00'
L59	N 45°56'58" W	33.01'
L60	N 44°02'57" E	50.01'
L61	N 44°03'02" E	13.85'
L62	S 45°56'58" E	20.00'
L63	S 44°03'02" W	13.85'
L64	N 10°57'53" W	14.98'
L65	S 79°02'07" W	20.00'
L66	S 10°57'53" E	14.98'
L67	N 44°03'02" E	37.03'
L68	S 45°56'58" E	20.00'
L69	S 44°03'02" W	37.03'
L70	N 44°03'02" E	12.25'
L71	N 45°56'58" W	20.00'
L72	S 44°03'02" E	12.25'
L73	N 79°02'07" E	20.00'
L74	N 45°57'39" W	20.00'
L75	N 44°03'02" E	3.13'
L76	N 44°03'02" E	7.13'
L77	N 45°56'58" W	20.00'
L78	N 44°02'57" E	28.97'







EASEMENT CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD	TAN
C1	23°53'10"	30.00'	12.51'	S 58°08'05" E		12.42'
C2	65°00'43"	54.00'	61.27'	S 78°41'51" E		58.04'
C3	65°14'33"	30.00'	34.16'	S 78°34'56" E		32.34'
C4	55°00'14"	54.00'	51.84'	S 73°27'46" E		49.87'
C5	34°59'10"	54.00'	32.97'	N 61°32'32" E		32.46'
C6	23°37'46"	30.00'	12.37'	S 34°22'37" E		12.28'
C7	89°45'28"	30.00'	47.00'	N 88°55'46" E		42.34'
C8	20°20'16"	67.50'	23.96'	N 37°48'59" W		23.83'
C9	41°23'58"	35.00'	25.29'	N 68°41'06" W		24.74'
C10	43°59'56"	35.00'	26.88'	S 23°57'00" E		26.22'
C11	56°16'39"	40.00'	39.29'	S 74°05'17" E		37.73'
C12	56°16'39"	54.00'	53.04'	S 74°05'17" E		50.94'
C13	57°30'40"	54.00'	54.20'	S 17°11'38" E		51.96'
C14	57°30'40"	30.00'	30.11'	S 17°11'38" E		28.86'
C15	90°00'05"	30.00'	47.12'	N 89°03'00" E		42.43'
C16	33°19'57"	100.00'	58.18'	S 60°43'01" W		57.36'
C17	90°00'00"	20.00'	31.42'	S 00°56'58" E		28.28'
C18	90°00'00"	44.00'	69.12'	S 00°56'58" E		62.23'
C19	90°00'00"	20.00'	31.42'	S 00°56'58" E		28.28'
C20	90°00'00"	20.00'	31.42'	S 89°03'02" W		28.28'
C21	90°00'42"	20.00'	31.42'	S 00°57'19" E		28.29'
C22	55°00'14"	30.00'	28.80'	S 73°27'46" E		27.71'
C23	34°59'10"	30.00'	18.32'	N 61°32'32" E		18.04'
C24	89°59'55"	30.00'	47.12'	N 00°57'00" W		42.43'
C25	57°30'40"	54.00'	54.20'	N 17°11'38" W		51.96'
C26	57°30'40"	30.00'	30.11'	N 17°11'38" W		28.86'
C27	56°40'03"	30.00'	29.68'	N 74°16'59" W		28.48'
C28	90°00'00"	20.00'	31.42'	S 00°56'58" E		28.28'
C29	90°00'00"	20.00'	31.42'	N 89°03'02" E		28.28'
C30	90°00'00"	20.00'	31.42'	N 00°56'58" W		28.28'
C31	90°00'00"	20.00'	31.42'	S 89°03'02" W		28.28'
C32	26°10'28"	54.00'	24.67'	S 31°26'26" E		24.45'
C33	37°19'58"	30.00'	19.55'	S 07°06'17" E		19.20'

FINAL PLAT
LOTS 1–3, BLOCK A
REC CAMPUS ADDITION
BEING 3 LOTS
84.796 ACRES OR 3,693,697 SF
SITUATED IN THE
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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TBPE No. F-1515
TBPLS No. 10155000

OWNER: Rayburn Country Electric Cooperative, Inc.
950 Sids Road
Rockwall, Texas 75032
TEL (469) 402-2100

CASE NO. P2023-018
RDE Proj. No. 3036-22

EASEMENT DEDICATIONS BY THIS PLAT

GOLIAD ST. S.H. 205

10' ROW. DEDICATION BY THIS PLAT

10' UTILITY EASEMENT
CC# 200300002749811

VARIABLE WIDTH SIDEWALK EASEMENT BY THIS PLAT

MATCH LINE SHEET 4

CONVERGENCE ANGLE
1° 07' 27"

0' 30' 60' 120'
GRAPHIC SCALE IN FEET
SCALE: 1" =60'

LEGEND

CC# – County Clerk's Number
CM – Controlling Monument
ROW – Right of way
POB – Point of Beginning
PG. – Page
SRF – Steel rod found
VOL. – Volume
XF – "X" cut Found

LOT 1, BLOCK A
ESTEP SUBDIVISION
CC# 200300002749811

24' ACCESS & FIRELANE EASEMENT

50' ACCESS & FIRELANE EASEMENT

20' WATER EASEMENT

LOT 2, BLOCK A
15.945 ACRES
694,568 SQUARE FEET

VARIABLE WIDTH DRAINAGE ESM'T
SEE NOTE 7 ON SHEET 1

SAN. SEWER EASE.
(VOL. 1825, PG. 145)

S 31°03'49" E 640.37'

15' DRAINAGE EASE.
(VOL. 6016, PG. 216)

15' DRAINAGE EASE.
(VOL. 6016, PG. 216)

S 35°54'04" W 154.36'

LOT 3, BLOCK A
32.835 ACRES
1,430,271 SQUARE FEET

N 59°00'30" E 687.73'

20' SAN. SEWER EASE.
CC# 202100000023485

LOT 1, BLOCK 1
HELWIG ADDITION REPLAT
CAB. D, SL. 107

LOT 1, BLOCK A
31.380 ACRES
1,366,902 SQUARE FEET

VARIABLE WIDTH
DRAINAGE ESM'T
SEE NOTE 7 ON SHEET 1

N 59°00'30" E 209.50'

S 31°10'16" E 199.44'

S 08°15'42" E 149.08'

See Inset D
VISIBILITY EASEMENT

S 46°15'31" E 338.02'

S 45°57'00" E 316.70'

30' FIRELANE, ACCESS & UTILITY EASEMENT

N 45°57'00" W 315.05'

N 46°09'17" W 338.69'

VISIBILITY EASEMENT
See Inset D

SIDS RD

WATER EASEMENT

LOT 1, BLOCK 1
POTT SHRIGLEY ADDITION
CAB. C, SL. 367

N 44°02'35" E 247.63'

MATCH LINE SHEET 2

DRAINAGE & DETENTION EASEMENT
(AMENITY & DETENTION POND)
100-YEAR WSEL 527.57

X=2,599,565.70
Y=7,014,880.41

X=2,599,363.44
Y=7,015,038.73

N 83°52'57" W 144.58'

N 88°57'01" W 133.09'

SIDS RD

VISIBILITY EASEMENT

S 00°56'58" E 14.14'

S 89°03'02" W 14.07'

Inset D
0 10 20

SIDS SH205 MIMS

EASEMENT CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD LEN.
C34	87°04'53"	30.00'	45.60'	N 00°30'30" E	41.33'
C35	26°05'17"	215.00'	97.89'	N 29°59'18" W	97.05'
C36	29°00'21"	175.00'	88.59'	N 31°26'50" W	87.65'
C37	23°26'52"	25.00'	10.23'	N 57°40'26" W	10.16'
C38	19°23'44"	25.00'	8.46'	S 36°15'08" E	8.42'
C39	29°00'21"	205.00'	103.78'	S 31°26'50" E	102.68'
C40	26°05'17"	185.00'	84.23'	S 29°59'18" E	83.51'
C41	87°04'56"	60.00'	91.19'	S 00°30'32" W	82.66'
C42	118°48'03"	30.00'	62.20'	S 15°21'04" E	51.64'
C43	61°11'57"	30.00'	32.04'	S 74°38'56" W	30.54'
C44	26°36'38"	30.00'	13.93'	S 30°44'38" W	13.81'
C45	60°28'15"	30.00'	31.66'	S 12°47'49" E	30.21'
C46	2°53'47"	215.00'	10.87'	S 41°35'03" E	10.87'
C47	23°11'30"	215.00'	87.03'	S 28°32'24" E	86.43'
C48	34°17'52"	60.00'	35.92'	S 25°53'00" E	35.38'
C49	22°59'55"	60.00'	24.08'	S 02°45'53" W	23.92'
C50	29°47'08"	60.00'	31.19'	S 29°09'25" W	30.84'
C51	3°24'34"	30.00'	1.79'	N 42°20'40" E	1.78'
C52	16°37'35"	210.00'	60.94'	N 67°48'48" E	60.73'
C53	17°07'05"	160.00'	47.80'	N 67°34'03" E	47.62'
C54	17°07'05"	180.00'	53.78'	S 67°34'03" W	53.58'
C55	16°37'35"	190.00'	55.14'	S 67°48'48" W	54.94'
C56	14°45'48"	160.00'	41.23'	N 68°44'41" E	41.11'
C57	2°21'17"	160.00'	6.58'	N 60°11'09" E	6.58'
C58	15°01'30"	180.00'	47.20'	S 68°36'50" W	47.07'
C59	2°05'35"	180.00'	6.58'	S 60°03'17" W	6.57'
C60	41°04'11"	65.00'	46.59'	S 38°28'24" W	45.60'
C61	90°00'00"	30.00'	47.12'	N 75°59'30" W	42.43'
C62	15°47'59"	146.72'	40.46'	S 87°48'03" E	40.33'
C63	13°20'54"	96.96'	22.59'	S 81°28'57" E	22.54'
C64	12°44'11"	157.51'	35.01'	S 78°59'30" E	34.94'
C65	96°20'44"	206.08'	346.53'	S 20°21'57" E	307.12'
C66	68°18'38"	51.01'	60.81'	S 61°57'44" W	57.27'
C67	30°01'19"	301.46'	157.96'	N 39°27'49" E	156.16'
C68	30°45'17"	295.26'	158.49'	N 07°01'23" E	156.59'
C69	13°41'04"	49.26'	11.77'	N 63°46'19" E	11.74'
C70	23°24'47"	51.19'	20.92'	N 68°58'09" E	20.77'
C71	14°33'45"	108.50'	27.58'	S 23°51'20" E	27.50'
C72	20°21'45"	138.50'	49.22'	S 41°19'05" E	48.96'
C73	33°13'59"	131.50'	76.27'	S 34°52'59" E	75.21'
C74	56°03'57"	78.50'	76.82'	S 45°46'33" E	73.79'
C75	61°11'31"	61.00'	65.15'	S 18°03'51" E	62.10'
C76	37°50'02"	109.00'	71.98'	S 29°44'36" E	70.68'
C77	39°41'58"	151.00'	104.63'	S 30°40'34" E	102.55'

EASEMENT LINE TABLE

LINE	BEARING	DISTANCE
L80	N 44°03'02" E	33.48'
L81	S 44°02'57" W	20.49'
L82	S 74°45'06" E	3.51'
L83	S 15°14'54" W	24.00'
L84	N 74°45'06" W	49.69'
L85	S 44°03'02" W	20.00'
L86	N 45°56'58" W	16.58'
L87	N 44°02'57" E	18.22'
L88	S 45°56'58" E	16.64'
L89	S 44°02'57" W	2.27'
L90	N 30°59'30" W	37.05'
L91	S 13°52'25" E	21.50'
L92	S 76°07'35" W	20.00'
L93	N 13°52'25" W	21.50'
L94	S 76°07'35" W	46.43'
L95	S 30°30'00" E	27.13'
L96	S 59°30'00" W	20.00'
L97	N 30°30'00" W	27.13'
L98	S 30°59'30" E	20.02'
L99	S 30°59'30" E	15.12'
L100	N 76°51'16" W	37.28'
L101	N 45°19'36" E	16.30'
L102	S 18°16'29" E	23.16'
L103	S 31°08'13" E	6.28'

FINAL PLAT
LOTS 1–3, BLOCK A
REC CAMPUS ADDITION

BEING 3 LOTS
84.796 ACRES OR 3,693,697 SF
SITUATED IN THE
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CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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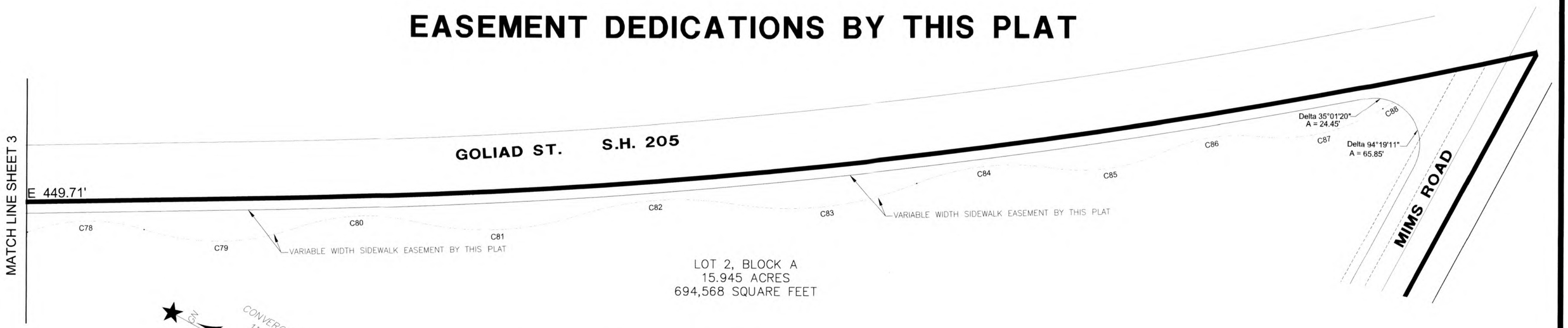
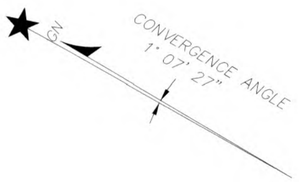
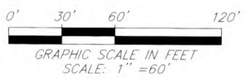
CASE NO. P2023-018
RDE Proj. No. 3036-22

EASEMENT DEDICATIONS BY THIS PLAT

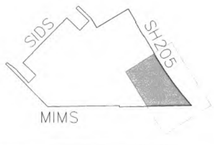






EASEMENT CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD LN
C78	37°57'34"	159.00'	105.34'	S 31°32'46" E	103.42'
C79	36°41'12"	216.00'	138.31'	S 31°00'34" E	135.96'
C80	32°08'10"	189.00'	106.01'	S 33°13'46" E	104.62'
C81	30°48'48"	271.00'	145.74'	S 32°34'04" E	143.99'
C82	27°07'51"	294.00'	139.22'	S 34°24'33" E	137.92'
C83	31°00'52"	306.00'	165.64'	S 36°21'04" E	163.62'
C84	30°22'07"	229.00'	121.38'	S 36°40'26" E	119.96'
C85	33°32'48"	176.00'	103.05'	S 38°15'47" E	101.58'
C86	31°29'01"	154.00'	84.62'	S 39°17'40" E	83.56'
C87	38°36'18"	171.00'	115.22'	S 42°51'19" E	113.05'
C88	4°07'13"	154.00'	11.07'	S 60°05'51" E	11.07'



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CASE NO. P2023–018
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OWNER'S CERTIFICATE

STATE OF TEXAS §
§
COUNTY OF ROCKWALL §

WHEREAS RAYBURN COUNTRY ELECTRIC COOPERATIVE, INC., being the owner of a tract of land in the County of Rockwall, State of Texas, said tract being a 84.796–acre tract of land situated within the City of Rockwall in the William N. Barnes Survey, Abstract No. 26 comprised of:

- Lot 6 and Lot 7, Block A, of the Replat of Rayburn Country Addition, Lots 4–7, Block A, according to the plat thereof recorded in Cabinet J, on Slide 342 of the Plat Records of Rockwall County, Texas (PRRCT) and also filed as Document Number 20180000008589 of the Official Public Records of Rockwall County, Texas (OPRRCT)
- Lot 8 and Lot 9, Block A, of the Replat of Rayburn Country Addition, Lot 8 and 9, Block A, according to the plat thereof recorded as Document Number 20190000004594 OPRRCT
- The remainder of a called 63.708–acre tract of land described in the deed dated the 13th day of September, 2021, from Peggy's Folly, LP to Rayburn Country Electric Cooperative, Inc. (RCEC) and recorded as Document Number 20210000024965 OPRRCT

And being more particularly described as follows:

BEGINNING at a 5/8–inch steel rod set with a pink plastic cap stamped "R–DELTA | FIRM 10155000" (hereafter RDS) to replace a called 5/8–inch iron rod with a yellow cap stamped "RPLS 3963" which has been destroyed, marking the west corner of Lot 9, Block A of the above referenced Rayburn Country Addition, said RDS being in the northeast boundary line of a 1.50–acre tract of land described in the deed to Richard E. Slaughter, Jr. as recorded in Volume 1531, at Page 145 of the DRRCT and being on the southeasterly right–of–way line of Sids Road as dedicated to the City of Rockwall on the Final Plat of Rayburn Country Addition, Lots 1–3, Block A, according to the plat thereof recorded in Cabinet I, on Slide 169 PRRCT and also filed as Document Number 20140000011313 OPRRCT, and having coordinates of:
X = 2,598,018.94 feet,
Y = 7,014,699.27 feet;

THENCE N 44°03'02" E with the southeast right–of–way line of Sids Road (a variable width right–of–way) for a distance of 1,166.39 feet to a RDS in the southwest line of Lot 1, Block 1 of Pott Shrigley Addition, an addition to the City Rockwall according to the plat thereof for the north corner of Lot 4, Block A of the above referenced Rayburn Country Addition, Lots 4–7, Block A;

THENCE with the perimeter of the last mentioned Lot 1, Block 1 of Pott Shrigley Addition, the following three (3) courses and distances:
S 46°15'45" E for a distance of 338.73 feet to a RDS;
N 44°02'35" E for a distance of 247.63 feet to a RDS;
N 46°09'17" W for a distance of 338.69 feet to a RDS for a west corner of Lot 6, Block A and being on the southeast right–of–way line of Sids Road as dedicated on the aforementioned Replat of Rayburn Country Addition, Lots 4–7, Block A;

THENCE N 44°03'02" E with the southeast right–of–way line of Sids Road for a distance of 59.41 feet to a RDS in the southwest line of Lot 1, Block 1, of Helwig Addition Replat, according to the plat thereof recorded in Cabinet D, on Slide 107 of the PRRCT;

THENCE with the perimeter of said Lot 1, Block 1, of Helwig Addition, the following three courses and distances:
1. S 46°15'31" E for a distance of 338.02 feet to a 1/2–inch steel rod found;
2. S 31°10'16" E for a distance of 199.44 feet to a RDS;
3. N 59°00'30" E at a distance of 350.31 feet pass the east corner of said Lot 1, Block 1, of Helwig Addition, to a point in a rock fence pillar for the south corner of Lot 1, Block "A", Estep Subdivision, an addition to the city of Rockwall, Texas, according to the plat thereof recorded in Cabinet E, on Slide 273 of the PRRCT, and continue on the same course with the southeast line of said Lot 1, Block "A", Estep Subdivision an additional distance of 337.42 feet for a total distance of 687.73 feet to a 1/2–inch steel rod found at the east corner of said Lot 1, Block "A", Estep Subdivision in the southwesterly right–of–way line of State Highway (SH) No. 205 (a/k/a Goliad Street) as described in the RIGHT OF WAY DEED dated the 3rd day of October, 1935, from A. L. Moody, the State of Texas filed in Volume 517, at Page 205 of the Deed Records of Rockwall County, Texas (DRRCT);

THENCE S 31°08'13" E 284.61 feet to a RDS;

THENCE S 58°51'47" W continuing with the southwesterly right–of–way line of SH No. 205 for a distance of 10.00 feet to a 3/8–inch steel rod found;

THENCE S 31°08'13" E continuing with the southwesterly right–of–way line of SH No. 205 at a distance of 205.57 feet pass a 5/8–inch steel rod with a yellow plastic cap found marked "RPLS 3963" marking the east corner of Lot 7, Block A of the aforementioned Replat of Rayburn Country Addition, Lots 4–7, Block A, and continuing on the same course and with the southwesterly right–of–way line of SH No. 205 for an additional distance of 92.37 feet to for a total distance of 297.94 feet to a 5/8–inch steel rod with a yellow plastic cap marked "RPLS 3963";

THENCE N 58°32'10" E continuing with the southwesterly right–of–way line of SH No. 205 for a distance of 10.00 to a 5/8–inch steel rod with a yellow plastic cap marked "RPLS 3963";

THENCE S 31°08'13" E continuing with the southwesterly right–of–way line of SH No. 205 at a distance of 447.62 feet pass a 5/8–inch steel rod with a yellow plastic cap marked "RPLS 3963", and continue on the same course an additional distance of 2.09 feet for a total distance of 449.71 feet to the point of curvature (hereafter P.C.) of a curve to the left having a radius of 5,779.71 feet, a central angle of 11°11'01" and a chord that bears S 36°43'43" E for a distance of 1,126.36 feet;

THENCE in a southeasterly direction with the arc of said curve for a distance of 1,128.15 feet to a point on the south margin of Sids Road (a variable width right–of–way) marking the east corner of the aforementioned 63.708–acre tract of land to RCEC;

THENCE S 88°36'23" W along and within Mims Road and with the south line of the said 63.708–acre tract of land to RCEC at a distance of 1.69 feet pass a 5/8–inch steel rod with a yellow plastic cap marked "RPLS 3963" found and continue on the same course an additional distance of 1,352.06 feet for a total distance of 1,353.75 feet;

THENCE S 89°33'39" W continuing in the southerly margin of Mims Road and with the south line of the said 63.708–acre tract of land to RCEC for a distance of 6.66 feet to the point where said line intersects the east line a 141.3576–acre tract of land designated as Tract 3 in the deed dated November 21, 2000, from Victor Manson Wallace to VICMAR I, LTD. recorded in Volume 2016, at Page 200 of the DRRCT;

THENCE N 00°38'52" W with the east line of said VICMAR I, LTD. tract for a distance of 24.56 feet to the northeast corner thereof;

THENCE S 88°49'03" W along a line in the southerly margin of Mims Road for a distance of 1,210.53 feet to a 5/8–inch steel rod found with a cap stamped "TNP" (hereafter TNP) for the most easterly corner of a 15.053–acre tract of land described in the deed dated the 2nd day of February, 2003, from Rayburn Country Electric Cooperative, Inc. to The City of Rockwall as recorded in Instrument No. 20230000001492 in the OPRRCT, said TNP marking the beginning of a curve concave to the northeast, having a radius of 482.50 feet, a central angle of 36°44'03" and a chord that bears N 61°47'11"W for a distance of 304.08 feet;

THENCE in a northwesterly direction with said 15.053–acre tract and the arc of said curve 309.35 feet to a TNP set for the point of tangency of said curve;

THENCE N 43°25'10" W with said 15.053–acre tract for a distance of 767.40 feet to a TNP set;

THENCE N 46°36'51" W with said 15.053–acre tract for a distance of 144.18 feet to a TNP set on the accepted southeasterly line of a tract of land described in the deed dated June 28, 1995, from Raymond B. Cameron and wife, Elizabeth R. Cameron to the City of Rockwall recorded in Volume 1064, at Page 112 of the DRRCT;

THENCE N 44°06'51" E for a distance of 21.42 feet;

THENCE S 50°58'40" E for a distance of 197.86 feet to a point on the southwesterly line of a 1.50–acre tract of land described in the deed dated the 22nd day of December, 1998, from Edrich Development to Richard E. Slaughter, Jr. recorded in Volume 1531, at Page 145 of the DRRCT;

THENCE with the perimeter of the 1.5–acre tract to Richard E. Slaughter the following three (3) courses and distances:
1. S 43°15'37" E for a distance of 353.17 feet to an "X" found for its south corner;
2. N 42°24'17" E for a distance of 96.84 feet to a RDS for the west corner of the aforementioned Lot 9, Block A of the Replat of Rayburn Country Addition, Lot 8 and 9;
3. N 44°27'12" E for a distance of 99.73 feet to a RDS for the east corner of said Slaughter tract;

THENCE N 46°14'22" W continuing with the northeasterly line of the 1.5–acre tract to Richard E. Slaughter for a distance of 338.24 feet to the POINT OF BEGINNING and containing 3,693,697 square feet or 84.796 acres of land.

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 REC CAMPUS ADDITION, an addition to the City of Rockwall, Texas, and whose name is subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. I further certify that all other parties who have a mortgage or lien interest in the REC CAMPUS ADDITION, an addition to the City of Rockwall, Texas, 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 off–site and on–site utility easements as described herein.

2. Any public utility shall have the right to removed 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 to their respective system on any of these easement strips; any and all 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 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/property owner and subdivision engineer shall bear total responsibility for storm drain improvements.

5. The developer/property owner 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. The property owner shall be responsible for maintenance of detention ponds and easements.

6. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or

Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written 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.

Rayburn Country Electric Cooperative, Inc.
Stephen Geiger,

STATE OF TEXAS §
§
COUNTY OF ROCKWALL §

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

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 25 day of March, 2025.

Notary Public for and in the State of Texas

My commission expires: 9.1.26

PAMELA BUIE
Notary Public, State of Texas
Comm. Expires 09-01-2026
Notary ID 133943018

SURVEYOR'S CERTIFICATE

STATE OF TEXAS §
§
COUNTY OF DALLAS §

THAT I, Wayne C. Terry, 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.

Wayne C. Terry
Registered Professional Land Surveyor
Registration No. 4184

STATE OF TEXAS REGISTERED WAYNE C. TERRY 4184 PROFESSIONAL LAND SURVEYOR

STATE OF TEXAS §
§
COUNTY OF DALLAS §

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

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this 25 day of March, 2025.

Blaine Cantrell

Notary Public for and in the State of Texas

My commission expires: 8/12/2028

STATE OF TEXAS §
§
COUNTY OF ROCKWALL §

BLAINE CANTRELL
Notary Public, State of Texas
Comm. Expires 08-12-2028
Notary ID 135036841

APPROVED:
I hereby certify that the above and foregoing subdivision plat being an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall, Texas on the 17 day of April, 2025.

Mayor of the City of Rockwall

CITY OF ROCKWALL TEXAS

Planning and Zoning Commission Chairman

City Secretary

City Engineer

THE STATE OF TEXAS
COUNTY OF ROCKWALL
I hereby certify that this instrument was FILED on the date and the time stamped hereon by me and was duly RECORDED in the Records of Rockwall County, Texas.
20250000007337 PLAT
04/29/2025 11:08:34 AM Total Fees: $245.00
COPY
Jennifer Fogg, County Clerk
Rockwall County, TX

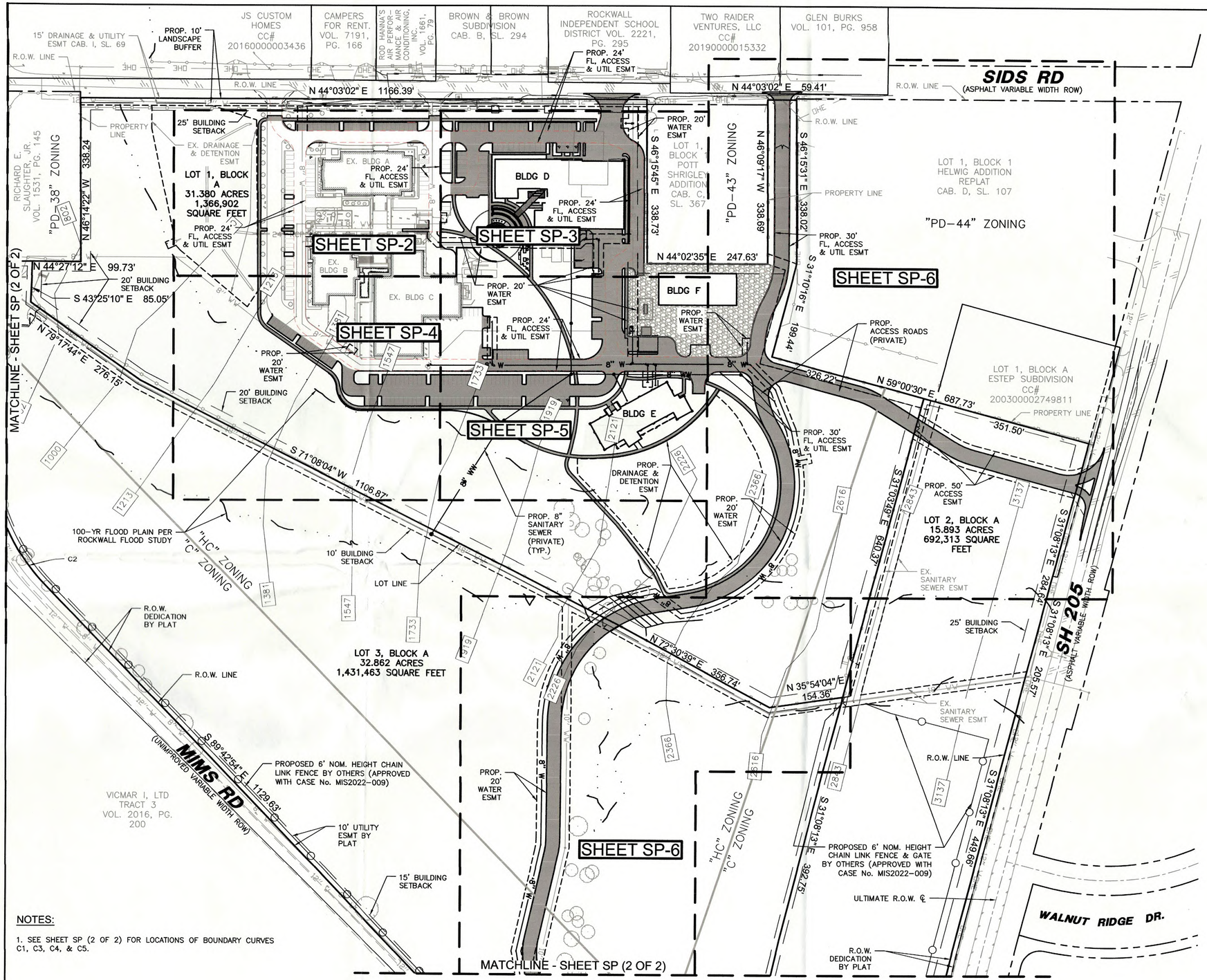
FINAL PLAT
LOTS 1–3, BLOCK A
REC CAMPUS ADDITION
BEING 3 LOTS
84.796 ACRES OR 3,693,697 SF
SITUATED IN THE
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SURVEYOR:
r.delta ENGINEERS
618 Main Street
Garland, TX 75040
Ph. (972) 494-5031
Fax (972) 487-2270
www.rdelta.com
TBPE No. F-1515
TBPLS No. 10155000

OWNER: Rayburn Country Electric Cooperative, Inc.
950 Sids Road
Rockwall, Texas 75032
TEL (469) 402–2100

CASE NO. P2023–018
RDE Proj. No. 3036–22

R0145



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EXISTING CORRUGATED METAL PIPE & SIZE
	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
PP	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	PROPOSED 6' CHAIN LINK FENCE BY OTHERS
	100-YR FLOOD PLAIN-ROCKWALL
	BFR - CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION-CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL SURFACING

GRAPHIC SCALE IN FEET
100 50 0 100
SCALE: 1" = 100'

EXISTING SITE PARKING DATA

PUBLIC SPACES	ACCESSIBLE SPACES	TOTAL
125	5	130

PROPOSED SITE PARKING DATA

PUBLIC SPACES	ACCESSIBLE SPACES	TOTAL
262	9	271

SITE INFORMATION:

EXISTING ZONING: HEAVY COMMERCIAL (HC), COMMERCIAL (C), & AGRICULTURAL (AG)

PROPOSED ZONING: NO CHANGE

PROPOSED USE: EXPANSION OF EXISTING SITE TO INCLUDE 2 NEW OFFICE BUILDINGS, TRUCK WAREHOUSE, AND LAYDOWN STORAGE WAREHOUSE

TOTAL AREA LOT 1: 1,366,902 SQ FT 31.38 AC
TOTAL AREA LOTS 1-4: 4,146,392 SQ FT 95.19 AC

LOT 1 "HC" ZONING

MAXIMUM BUILDING HEIGHT: 60 FT
MAXIMUM LOT COVERAGE: 60%
MAXIMUM FLOOR AREA RATIO: 4:1
MAXIMUM IMPERVIOUS PARKING: 90-95%

PROPOSED MAX. BUILDING D HEIGHT: 40'
PROPOSED MAX. BUILDING E HEIGHT: 46'-4"
PROPOSED MAX. BUILDING F HEIGHT: 26'-8"
PROPOSED LOT COVERAGE: 106,281/1,366,902 = 7.8%
PROPOSED FLOOR AREA RATIO: 113,260/1,366,902 = 0.08:1
PROPOSED IMPERVIOUS PARKING: 65,088/1,366,902 = 4.8%

EXISTING PARKING:
EXISTING WAREHOUSE 23,520 SQ FT (1:1000) = 24 SPACES
EXISTING OFFICE 31,530 SQ FT (1:300) = 106 SPACES
REMOVED OFFICE 7,700 SQ FT (1:300) = -26 SPACES

EXISTING REQUIRED PARKING = 104 SPACES

REQUIRED PARKING:
PROPOSED WAREHOUSE D 12,750 SQ FT (1:1000) = 13 SPACES
PROPOSED OFFICE D 19,600 SQ FT (1:300) = 66 SPACES
PROPOSED OFFICE E 23,000 SQ FT (1:300) = 77 SPACES
PROPOSED WAREHOUSE F 10,560 SQ FT (1:1000) = 11 SPACES

TOTAL REQUIRED PARKING = 271 SPACES
TOTAL PROVIDED PARKING = 271 SPACES

PAVEMENT INFORMATION:

ALL PAVEMENTS BELOW HAVE #3 BARS 24" O.C.E.W.

PAVEMENT TYPE	THICKNESS (INCHES)	28-DAY (PSI)	MIN. CEMENT (SACKS/CY) MACHINE	HAND
FIRE LANE	6"	3,600	6.0	6.5
DRIVEWAYS	6"	3,600	6.0	6.5
BARRIER FREE RAMPS	6"	3,600	6.0	6.5
DUMPSTER PADS	7"	3,600	6.0	6.5
SIDEWALKS	4"	3,000	N/A	5.5
PARKING LOT/ DRIVE AISLES	5"	3,000	5.0	5.5

BOUNDARY CURVE DATA

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD
C1	11°11'01"	5,779.71'	1,128.15'	S 36°43'43" E	1,126.36'
C2	46°17'44"	417.50'	337.34'	N 66°34'02" W	328.24'
C3	36°44'03"	482.50'	309.35'	S 61°47'11" E	304.08'
C4	129°16'42"	40.00'	90.25'	S 23°55'53" W	72.29'
C5	7°41'42"	6,142.03'	824.89'	N 34°59'04" W	824.27'

NOTES:

1. SEE SHEET SP (2 OF 2) FOR LOCATIONS OF BOUNDARY CURVES C1, C3, C4, & C5.

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

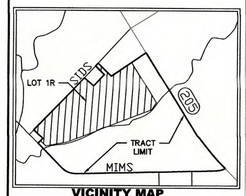
MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

PRELIMINARY
SUBMITTED FOR REVIEW
BY: BRIAN PAUL PATRICK
P.E. 80844
R-Delta Engineers, Inc.
Date: November 25, 2022
NOT FOR CONSTRUCTION, BIDDING OR PERMITTING PURPOSES



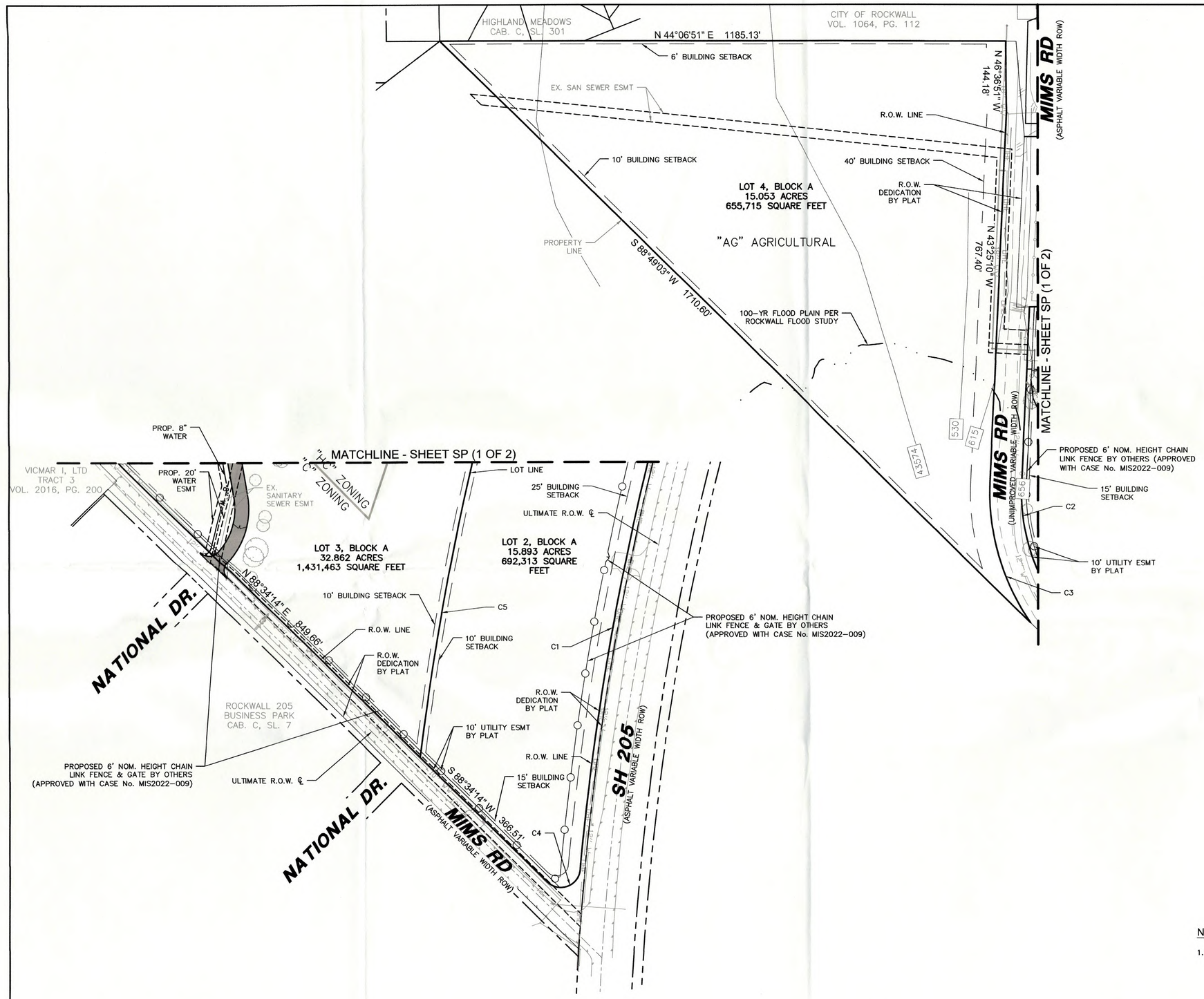
VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP (1 OF 2)



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
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	EXISTING CHAIN LINK FENCE
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OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	PROPOSED 6' CHAIN LINK FENCE BY OTHERS
	100-YR FLOOD PLAIN-ROCKWALL
	BFR - CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION- CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT

N

100 50 0 100

GRAPHIC SCALE IN FEET
SCALE: 1" = 100'

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

SITE INFORMATION:

SEE SP (1 OF 2)

PAVEMENT INFORMATION:

SEE SP (1 OF 2)

NOTES:

1. SEE SHEET SP (2 OF 2) FOR BOUNDARY CURVE DATA.

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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Rayburn Electric COOPERATIVE

PRELIMINARY
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P.E. 80844
R-Delta Engineers, Inc.
Date: November 25, 2022
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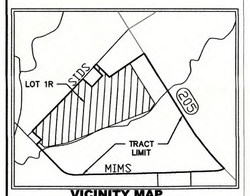

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

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3036.21
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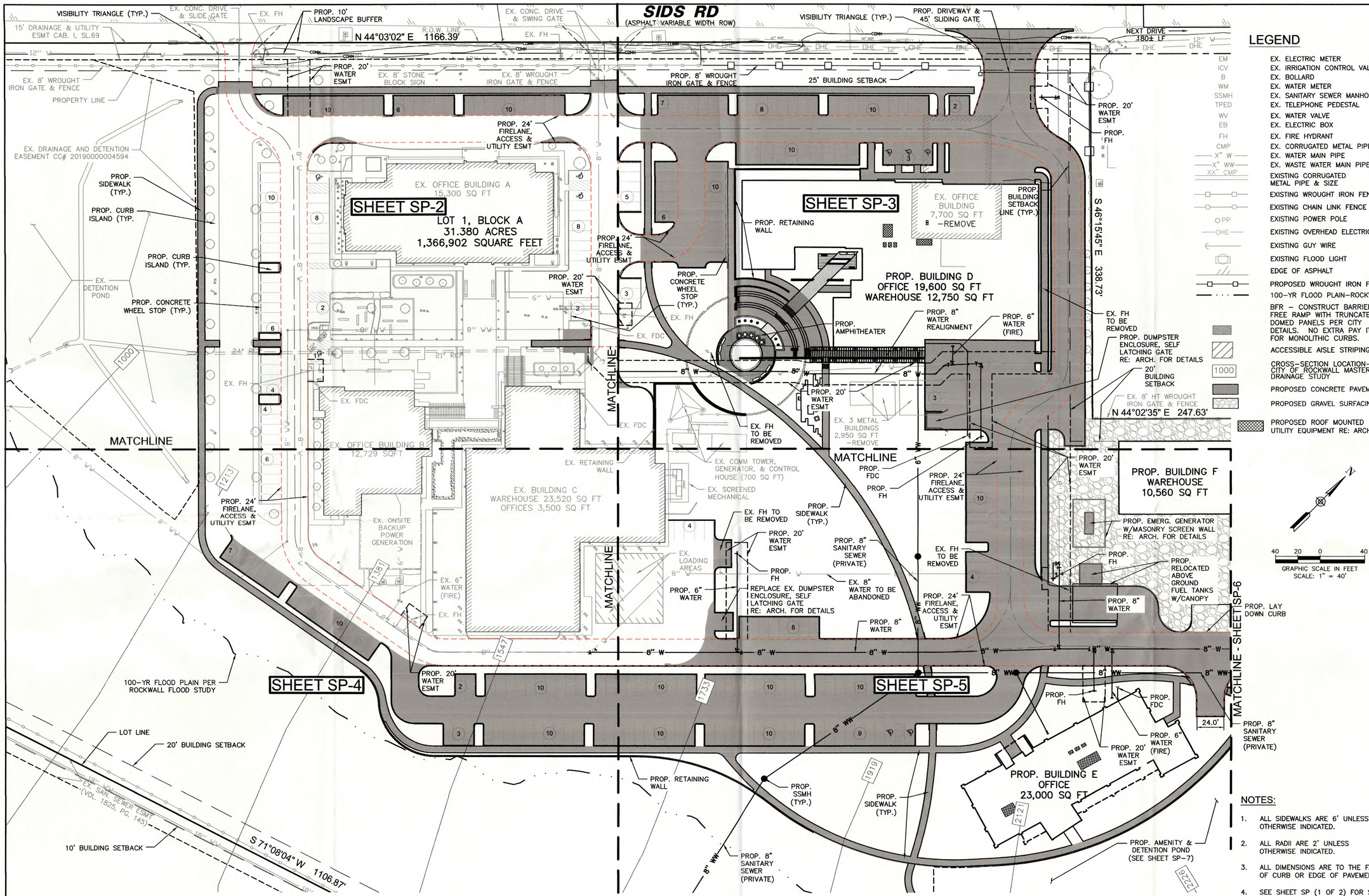
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP (2 OF 2)



LEGEND

- EM — EX. ELECTRIC METER
- ICV — EX. IRRIGATION CONTROL VALVE
- B — EX. BOLLARD
- WM — EX. WATER METER
- SSMH — EX. SANITARY SEWER MANHOLE
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- WV — EX. WATER VALVE
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- X" W — EX. WATER MAIN PIPE
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- EXISTING CHAIN LINK FENCE
- OPP — EXISTING POWER POLE
- OHE — EXISTING OVERHEAD ELECTRIC
- EXISTING GUY WIRE
- EXISTING FLOOD LIGHT
- EDGE OF ASPHALT
- PROPOSED WROUGHT IRON FENCE
- 100-YR FLOOD PLAIN–ROCKWALL
- BFR – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
- ACCESSIBLE AISLE STRIPING
- 1000 — CROSS-SECTION LOCATION– CITY OF ROCKWALL MASTER DRAINAGE STUDY
- PROPOSED CONCRETE PAVEMENT
- PROPOSED GRAVEL SURFACING
- PROPOSED ROOF MOUNTED UTILITY EQUIPMENT RE: ARCH.

40 20 0 40
GRAPHIC SCALE IN FEET
SCALE: 1" = 40'

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

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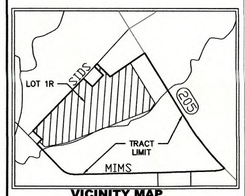

VICINITY MAP
NTS

REVISION

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SITE PLAN
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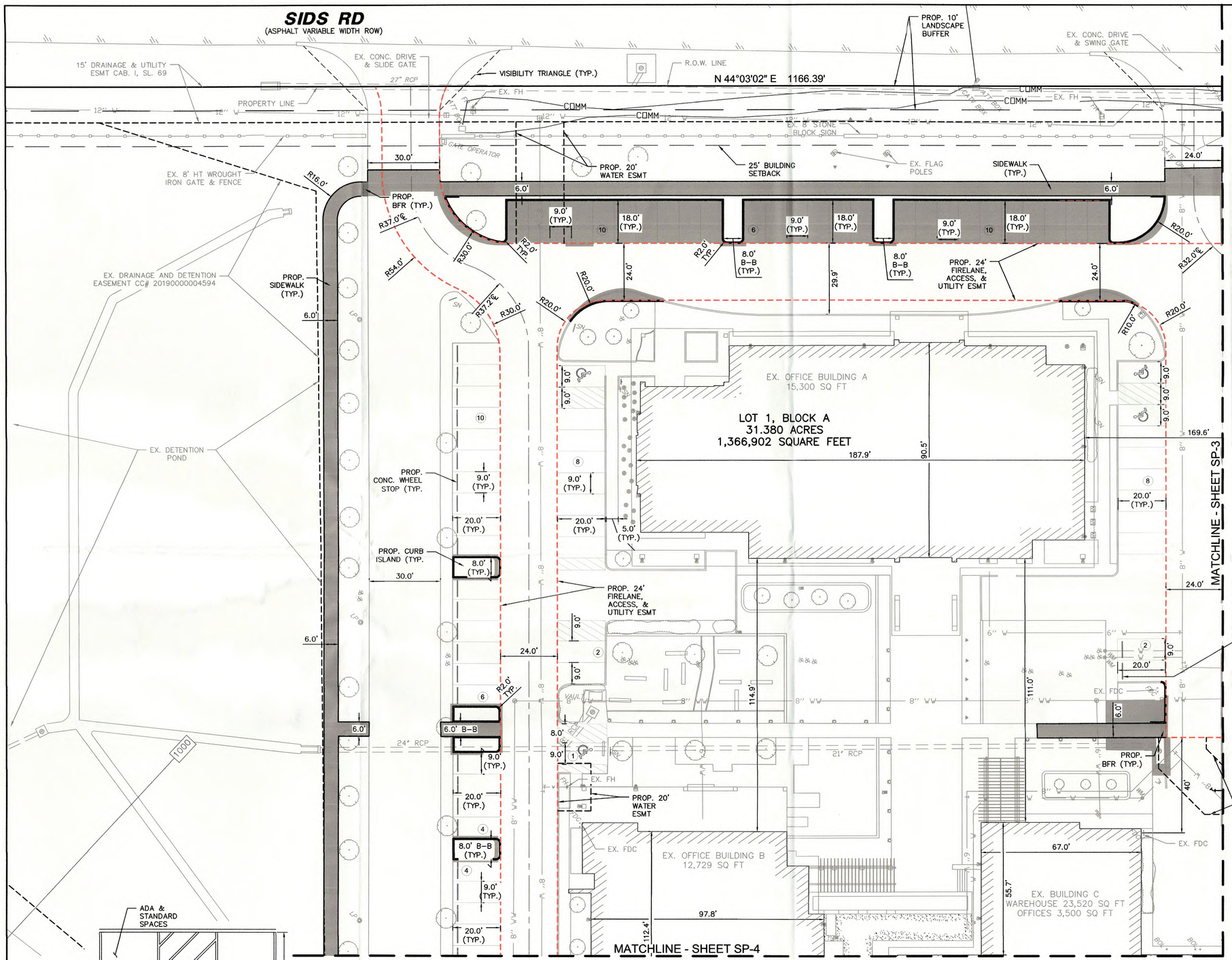
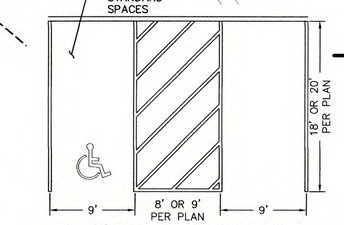
SHEET NO.
SP-1





TYPICAL PARKING SPACE
N.T.S.

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022

WITNESS OUR HANDS, this 16 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EXISTING CORRUGATED METAL PIPE & SIZE
	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
OPP	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	100-YR FLOOD PLAIN-ROCKWALL
	BFR - CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION-CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

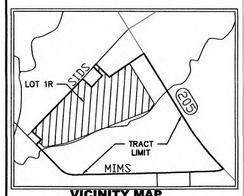
MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

PRELIMINARY
SUBMITTED FOR REVIEW
BY: BRIAN PAUL PATRICK
P.E. 80844
R-Delta Engineers, Inc.
Date: November 25, 2022
NOT FOR CONSTRUCTION, BIDDING OR PERMITTING PURPOSES



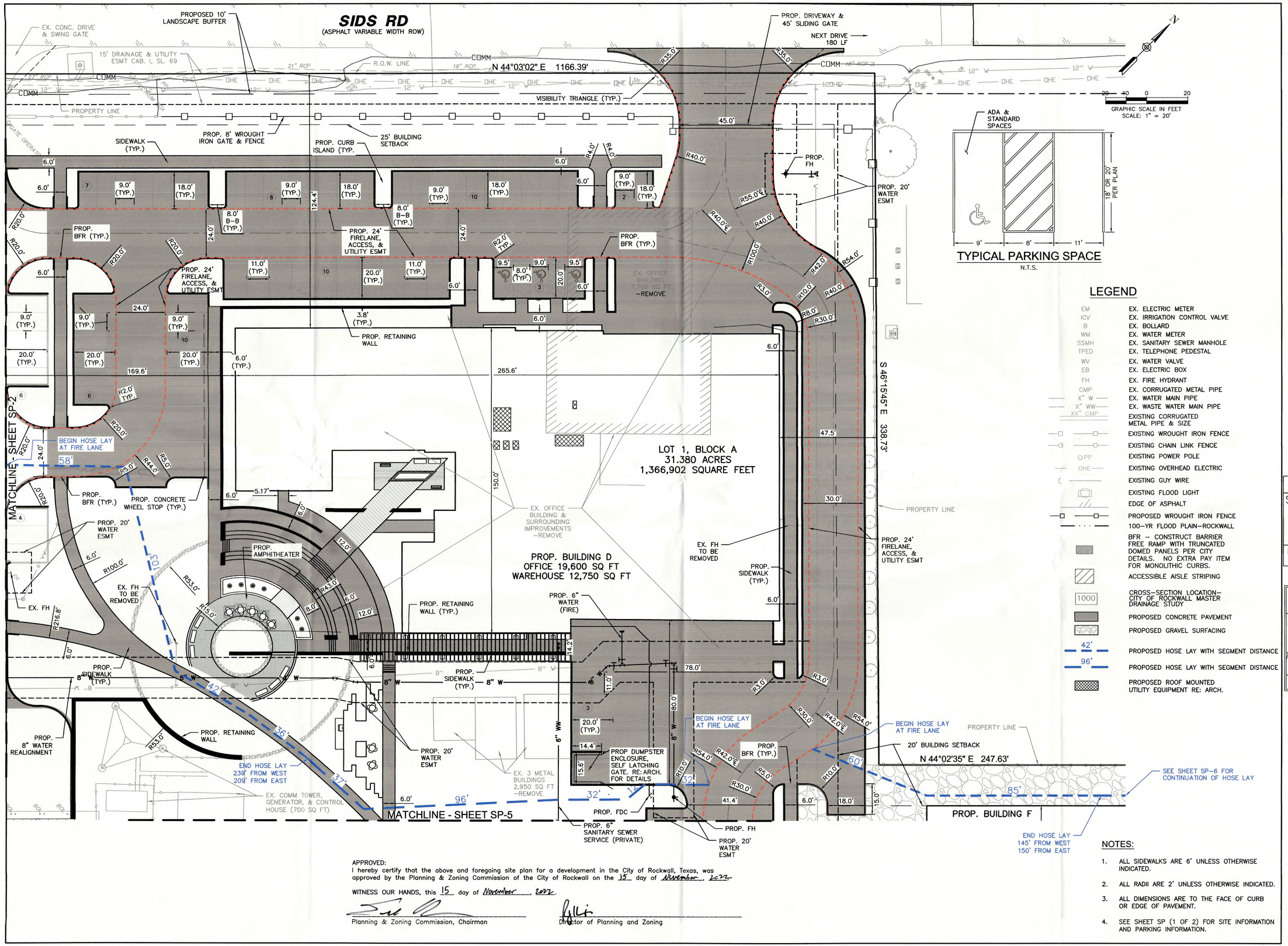
VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-2



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
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FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EXISTING CORRUGATED METAL PIPE & SIZE
	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
PP	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	100-YR FLOOD PLAIN-ROCKWALL
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	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION- CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL SURFACING
42'	PROPOSED HOSE LAY WITH SEGMENT DISTANCE
96'	PROPOSED HOSE LAY WITH SEGMENT DISTANCE
	PROPOSED ROOF MOUNTED UTILITY EQUIPMENT RE: ARCH.

APPROVED:
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WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

NOTES:

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MCKINNEY, TX 75069

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HKS, INC.
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DALLAS, TX 75201- 4240

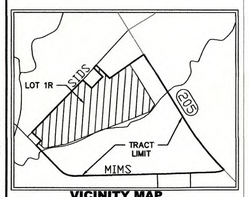
MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

PRELIMINARY
SUBMITTED FOR REVIEW
BY: BRIAN PAUL PATRICK
P.E. 80844
R-Delta Engineers, Inc.
Date: November 25, 2022
NOT FOR CONSTRUCTION, BIDDING OR PERMITTING PURPOSES



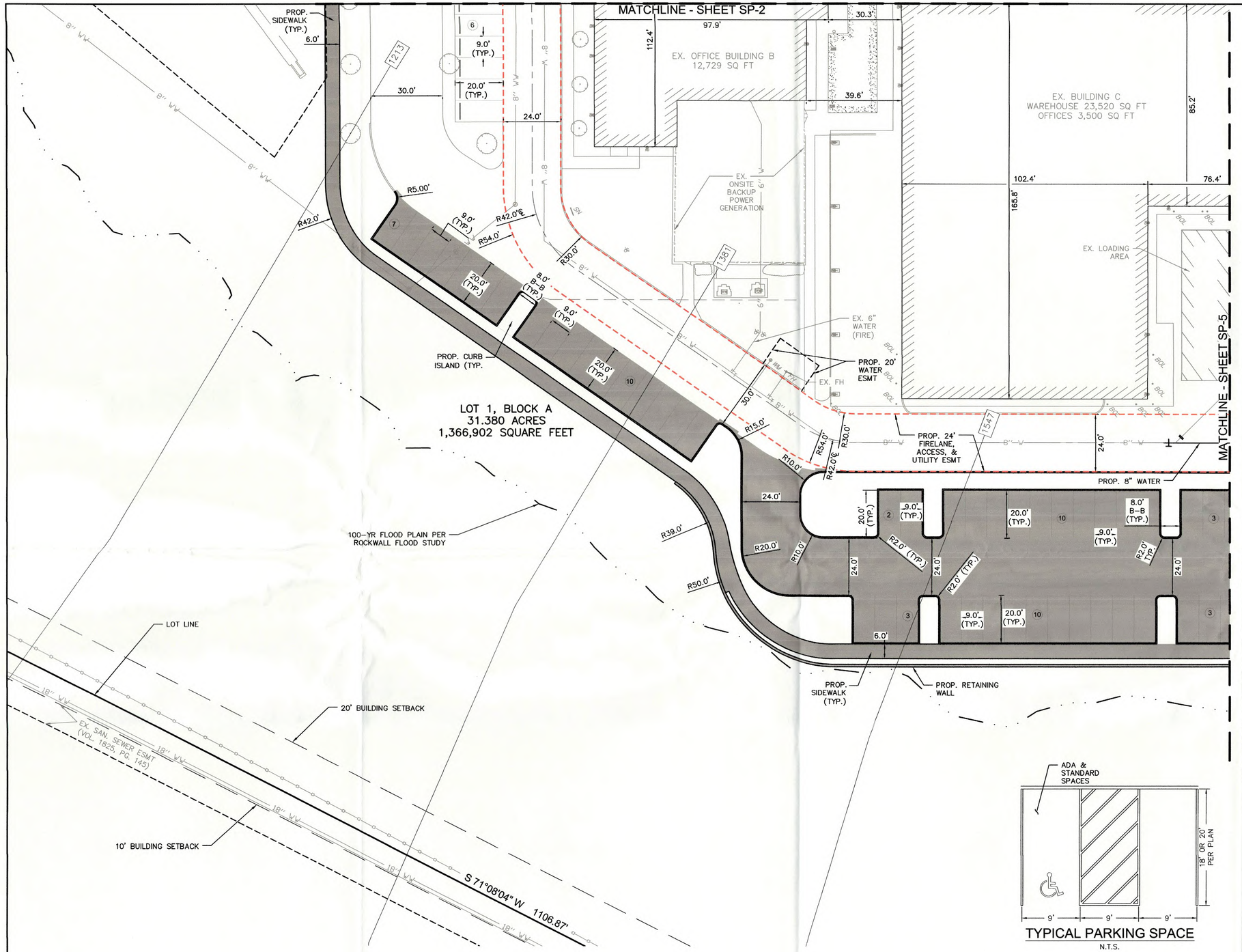
VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-3



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EXISTING CORRUGATED METAL PIPE & SIZE
	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
PP	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	100-YR FLOOD PLAIN-ROCKWALL
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	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION-CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT

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TYPICAL PARKING SPACE
N.T.S.

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Planning & Zoning Commission, Chairman

Director of Planning and Zoning

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HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

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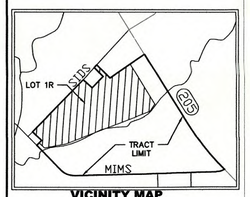

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-4

MATCHLINE - SHEET SP-3

MATCHLINE - SHEET SP-4

MATCHLINE - SHEET SP-6

EX. BUILDING C
WAREHOUSE 23,520 SQ FT
OFFICES 3,500 SQ FT

EX. LOADING AREA

EX. FH TO BE REMOVED

PROP. FH

PROP. 20' WATER ESMT

EX. 8" WATER TO BE ABANDONED

REPLACE EX. DUMPSTER ENCLOSURE, SELF LATCHING GATE RE: ARCH. FOR DETAILS

PROP. ACCESS DRIVE A

PROP. SIDEWALK (TYP.)

PROP. 24' FIRELANE, ACCESS, & UTILITY ESMT

PROP. 6" SANITARY SEWER SERVICE (PRIVATE)

PROP. CURB ISLAND (TYP.

PROP. 8" SANITARY SEWER (PRIVATE)

BEGIN HOSE LAY AT FIRE LANE

PROP. BUILDING F
WAREHOUSE
10,560 SQ FT

PROP. OUTSIDE STORAGE

PROP. EMERG. GENERATOR W/MASONRY SCREEN WALL, SELF LATCHING GATE RE: ARCH. FOR DETAILS

PROP. RELOCATED ABOVE GROUND FUEL TANKS W/CANOPY

PROP. BFR (TYP.)

PROP. FDC

PROP. 8" SANITARY SEWER (PRIVATE)

PROP. 6" WATER (FIRE)

PROP. BUILDING E
OFFICE
23,000 SQ FT

LOT 1, BLOCK A
31.380 ACRES
1,366,902 SQUARE FEET

PROP. SSMH (TYP.)

PROP. RETAINING WALL

PROP. 8" SANITARY SEWER (PRIVATE)

100-YR FLOOD PLAIN PER ROCKWALL FLOOD STUDY

END HOSE LAY
250' FROM WEST
247' FROM NORTH

PROP. AMENITY & DETENTION POND (SEE SHEET SP-7)

PROP. DRAINAGE & DETENTION ESMT (SEE SHEET SP-7)

ADA & STANDARD SPACES

TYPICAL PARKING SPACE
N.T.S.

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100-YR FLOOD PLAIN-ROCKWALL
	BFR - CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION-CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL SURFACING
74'	PROPOSED HOSE LAY WITH SEGMENT DISTANCE
85'	PROPOSED HOSE LAY WITH SEGMENT DISTANCE
	PROPOSED ROOF MOUNTED UTILITY EQUIPMENT RE: ARCH.

NOTES:

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4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

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Planning & Zoning Commission, Chairman

Director of Planning and Zoning

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SUITE 100
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STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

PRELIMINARY
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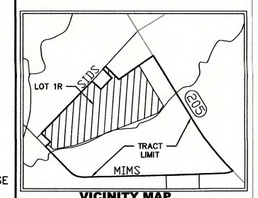
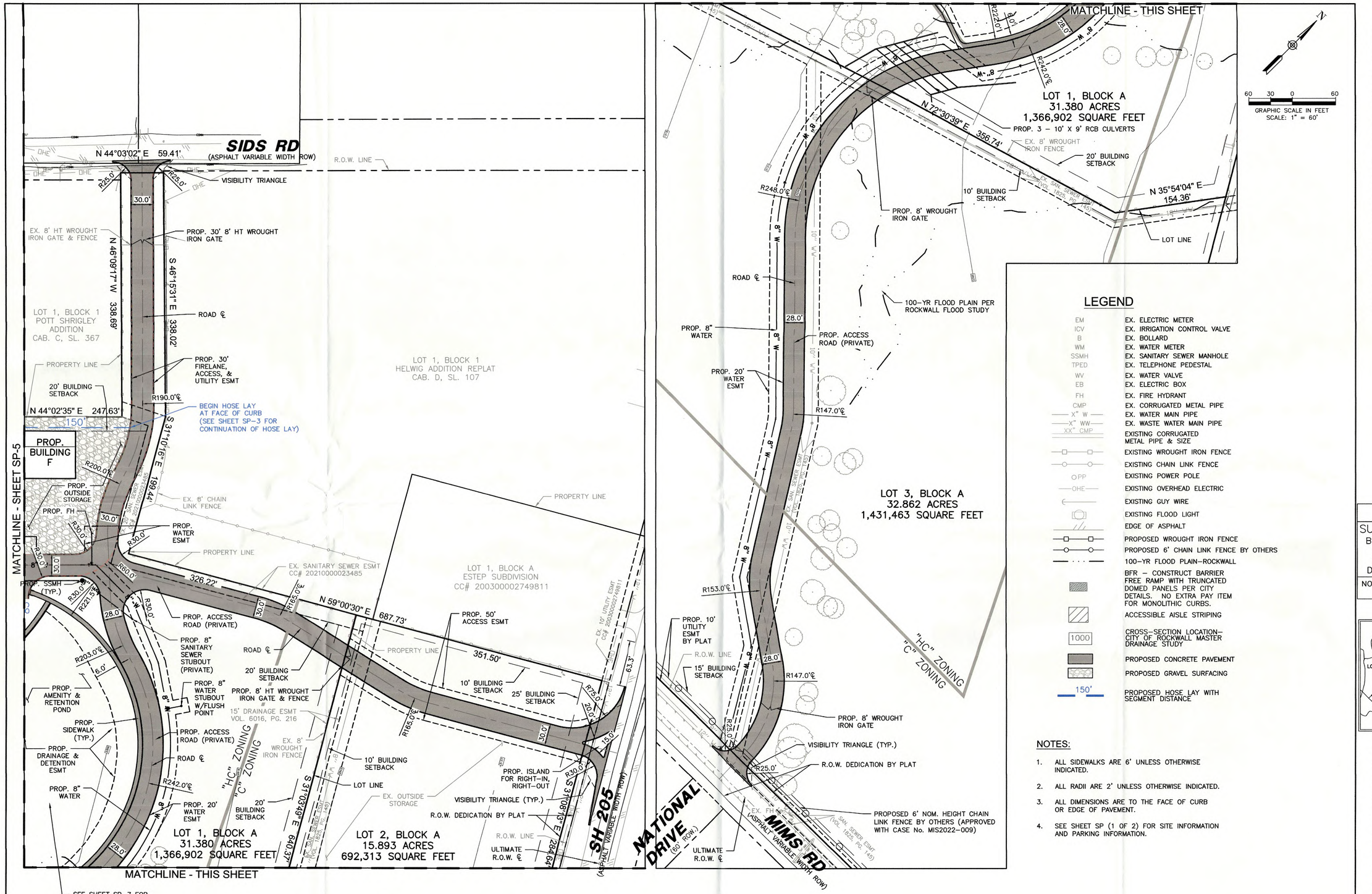


VICINITY MAP
NTS

REVISION NO. | DESCRIPTION | DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-5



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
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X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EXISTING CORRUGATED METAL PIPE & SIZE
	EXISTING WROUGHT IRON FENCE
	EXISTING CHAIN LINK FENCE
PP	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
	EXISTING GUY WIRE
	EXISTING FLOOD LIGHT
	EDGE OF ASPHALT
	PROPOSED WROUGHT IRON FENCE
	PROPOSED 6' CHAIN LINK FENCE BY OTHERS
	100-YR FLOOD PLAIN-ROCKWALL
	BFR – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
1000	CROSS-SECTION LOCATION-CITY OF ROCKWALL MASTER DRAINAGE STUDY
	PROPOSED CONCRETE PAVEMENT
	PROPOSED GRAVEL SURFACING
150'	PROPOSED HOSE LAY WITH SEGMENT DISTANCE

NOTES:

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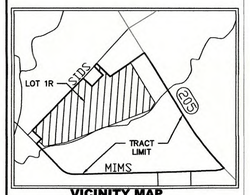

VICINITY MAP
NTS

REVISION

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3036.21
DATE
11/25/2022
ISSUE
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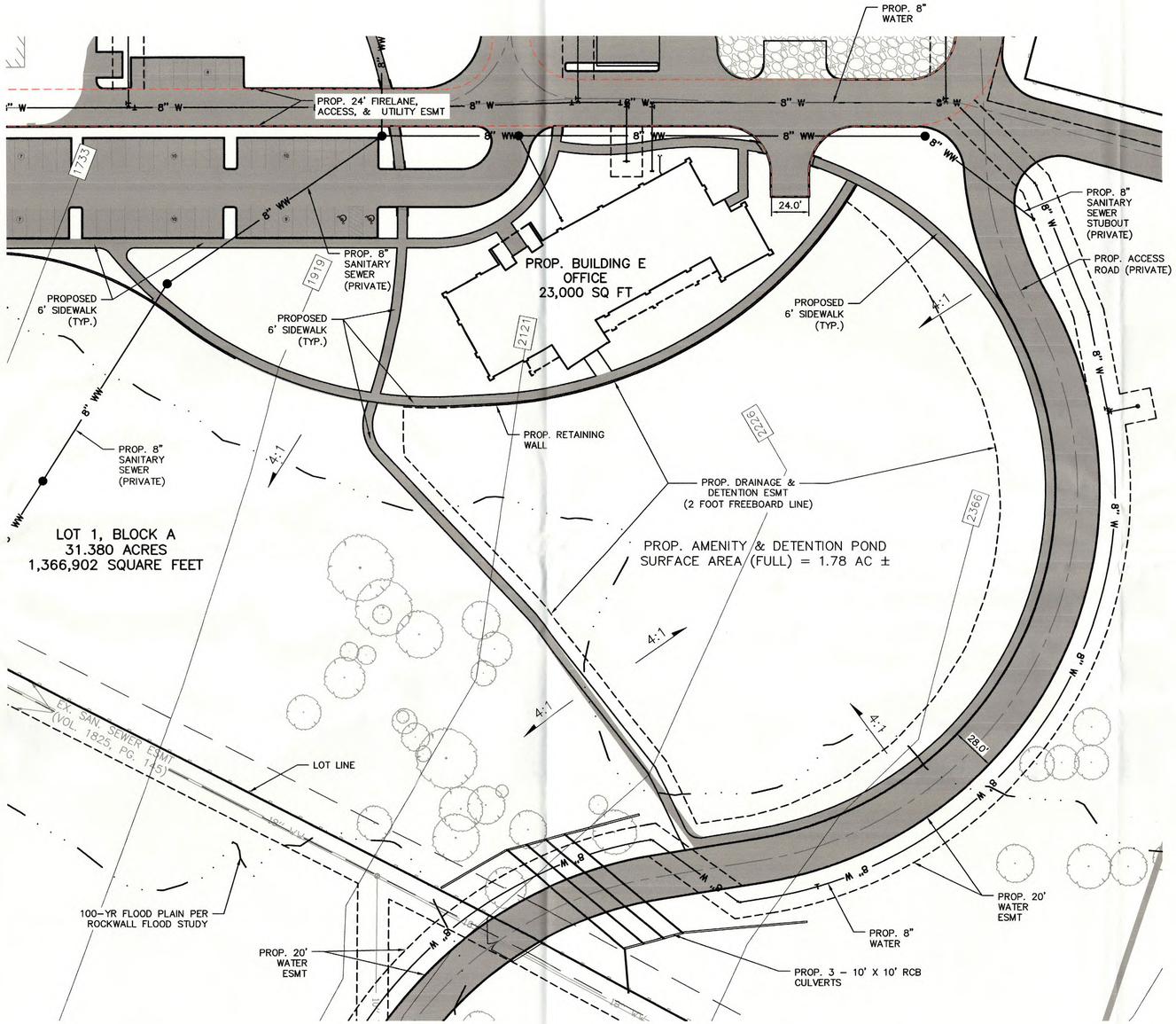
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-6



40 20 0 40

GRAPHIC SCALE IN FEET
SCALE: 1" = 40'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
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	EX. WROUGHT IRON FENCE
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PP	EX. POWER POLE
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	EX. GUY WIRE
	EX. FLOOD LIGHT
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HKS, INC.
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DALLAS, TX 75201- 4240

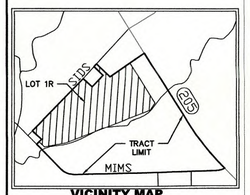
MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

PRELIMINARY
SUBMITTED FOR REVIEW
BY: BRIAN PAUL PATRICK
P.E. 80844
R-Delta Engineers, Inc.
Date: November 25, 2022
NOT FOR CONSTRUCTION, BIDDING OR PERMITTING PURPOSES



VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
11/25/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE PLAN
CASE# SP2022-058

SHEET NO.
SP-7

PROJECT CONTROL

RC104
MAG NAIL IN THE ASPHALT PAVEMENT OF SIDS ROAD APPROXIMATELY FOUR FEET NORTHWEST OF THE NORTH CORNER OF THE NORTHERLY DRIVE APPROACH TO THE RAYBURN HEADQUARTERS FACILITY
X = 2,598,820.82 FEET
Y = 7,015,546.06 FEET
ELEV. = 539.83 FEET

RC213
X SET ON THE EAST CORNER OF A CURB INLET ON THE SOUTHEASTERLY SECTION OF THE LOOP ROAD AROUND THE RAYBURN HEADQUARTERS FACILITY AND NORTH OF THE DUMPSTER ENCLOSURE AND BEING S. 71-1/4° W. APPROXIMATELY 96 FEET FROM THE EAST CORNER OF EXISTING BUILDING C
X = 2,598,878.97 FEET
Y = 7,014,980.81 FEET
ELEV. = 531.48 FEET

RC216
60D NAIL ON THE WESTERLY EDGE OF A DRIVEWAY CURVE APPROXIMATELY 43 FEET SOUTHWEST OF THE NORTHEASTERLY PERIMETER FENCE AND APPROXIMATELY SOUTH 80-1/2° EAST OF THE EAST CORNER OF AN ENCLOSURE FENCE ON THE EAST SIDE OF THE NORTHERLY BUILDING COMPLEX AND FROM WHICH THE SOUTH STEEL FENCE CORNER OF THE ENCLOSURE FENCE IS S. 76-1/4° E. APPROXIMATELY 88 FEET
X = 2,598,988.99 FEET
Y = 7,015,324.45 FEET
ELEV. = 542.36 FEET

RC320
X SET ON A CONCRETE HEADWALL ON THE SOUTHWESTERLY SIDE OF S. GOLIAD STREET (STATE HIGHWAY NO. 205) APPROXIMATELY 700 FEET SOUTHEAST OF ITS INTERSECTION WITH SIDS ROAD AND A STONE FENCE CORNER POST FOR A WROUGHT IRON FENCE BEARS S. 13° E. APPROXIMATELY 55 FEET
X = 2,599,965.94 FEET
Y = 7,015,763.88 FEET
ELEV. = 542.36 FEET

RC403
X SET ON THE WEST CORNER OF THE TOP OF THE FIRST Y-INLET NORTHEAST OF THE MAIN ENTRANCE TO THE RAYBURN CAMPUS ON THE SOUTHEASTERLY SIDE OF SIDS ROAD APPROXIMATELY TWENTY-FIVE FEET NORTHWEST OF THE RAYBURN WROUGHT IRON PERIMETER FENCE AT A POINT THAT IS APPROXIMATELY 1,490 FEET SOUTHWEST OF THE INTERSECTION OF SIDS ROAD WITH S. GOLIAD STREET (STATE HIGHWAY NO. 205) AND MEASURING S. 77° W. APPROXIMATELY 49 FROM THE NORTH CORNER OF RAYBURN WROUGHT IRON PERIMETER FENCE
X = 2,598,555.01 FEET
Y = 7,015,261.82 FEET
ELEV. = 533.15 FEET

RC405
X SET ON THE WEST CORNER OF A HEADWALL FOR A CULVERT SITUATED APPROXIMATELY 35 FEET SOUTHWEST OF THE SOUTHWEST ENTRANCE TO THE RAYBURN HEADQUARTERS CAMPUS AND IN THE OPEN DITCH ON THE SOUTHEASTERLY SIDE OF SIDS ROAD APPROXIMATELY 1,920 FEET SOUTHWEST OF THE INTERSECTION OF SIDS ROAD WITH S. GOLIAD STREET (STATE HIGHWAY NO. 205) AND N. 44-1/4° E. AT APPROXIMATELY 347 FEET FROM THE WEST CORNER OF THE RAYBURN WROUGHT IRON PERIMETER FENCE AND APPROXIMATELY 23 FEET NORTHWEST OF THAT FENCE

X = 2,598,258.66 FEET
Y = 7,014,949.91 FEET
ELEV. = 523.66 FEET

RC406
X SET ON THE WEST CORNER OF THE TOP OF A Y-INLET AT THE WESTERLY OR SOUTHWESTERLY END OF THE CONCRETE FLUME SYSTEM AT ITS DISCHARGE POINT WEST OF THE MAIN RAYBURN HEADQUARTERS CAMPUS
X = 2,598,383.81 FEET
Y = 7,014,687.00 FEET
ELEV. = 520.13 FEET

RC409
X SET ON THE TOP OF A CONCRETE CURB ON THE SOUTH SIDE OF THE SOUTHERLY PERIMETER ROAD FROM WHICH THE SOUTH STEEL FENCE CORNER POST OF A CHAIN LINK FENCE ON THE SOUTH LAWN OF EXISTING BUILDING B BEARS N. 78-1/2° W. APPROXIMATELY 103 FEET AND THE SOUTH CORNER OF EXISTING BUILDING C BEARS N. 07-1/4° E. APPROXIMATELY 50 FEET
X = 2,598,815.58 FEET
Y = 7,014,716.20 FEET
ELEV. = 528.21 FEET

LEGEND

- EXISTING LIMIT OF TREE LINE/DENSE VEGETATION
- XX" RCP — EXISTING CONCRETE PIPE & SIZE
- 530 — EXISTING CONTOUR SURFACE ELEVATION MAJOR
- 531 — EXISTING CONTOUR SURFACE ELEVATION MINOR
- EXISTING CHAIN LINK FENCE
- EXISTING WROUGHT IRON FENCE
- PP — EXISTING POWER POLE
- OHE — EXISTING OVERHEAD ELECTRIC
- EXISTING GUY WIRE
- EXISTING SIGN
- PROPOSED WROUGHT IRON FENCE/GATE
- 530 — PROPOSED CONTOUR SURFACE ELEVATION MAJOR
- 531 — PROPOSED CONTOUR SURFACE ELEVATION MINOR

PROJECT NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRENCH AND EXCAVATION SAFETY REQUIREMENTS IN ACCORDANCE WITH CITY AND COUNTY STANDARDS, TEXAS LAW, AND O.S.H.A. STANDARDS FOR ALL EXCAVATION IN EXCESS OF FIVE FEET IN DEPTH.

2. THE LOCATION OF ALL UTILITIES SHOWN ON THESE PLANS ARE TAKEN FROM EXISTING PUBLIC RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL PUBLIC UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.

3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEAN-OUTS, VALVE BOXES, FIRE HYDRANTS, ETC. MUST BE ADJUSTED TO PROPER LINE AND GRADE BY THE CONTRACTOR AS NECESSARY PRIOR TO AND AFTER THE PLACING OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THE PAVING FOR THIS PROJECT.

4. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES 48 HRS. PRIOR TO ANY EXCAVATION TO FACILITATE UNDERGROUND DAMAGE PREVENTION: TEXAS 811 (OR 800-344-8377).

5. ALL RADII ARE TO EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

6. SITE AND ACCESS DRIVE PREPARATION SHALL INCLUDE THE REMOVAL OF ALL EXISTING VEGETATION, TOPSOIL, AND OTHER EXISTING ELEMENTS AS REQUIRED. AREAS TO RECEIVE FILL OR PAVING SHALL BE STRIPPED TO A MINIMUM DEPTH OF THREE (3) INCHES AND GRUBBED TO REMOVE VEGETATION AND ORGANIC MATTER. STRIPPING, GRUBBING, AND SUBGRADE PREPARATION FOR PAVING AREAS SHALL EXTEND TO 5 FEET BEYOND THE PAVING LIMITS. STRIPPED VEGETATION AND ORGANIC MATTER MAY BE REUSED IN AREAS OUTSIDE OF PAVING AREAS THAT REQUIRE THE ADDITION OF TOPSOIL IF THESE MATERIALS MEET THE TOPSOIL SPECIFICATION.

   THE CONTRACTOR SHALL THEN EXCAVATE TO THE PROPOSED GRADE/SUBGRADE AS NECESSARY. PRIOR TO THE PLACEMENT OF ANY STRUCTURAL FILL, THE EXPOSED SUBGRADE SHOULD BE EXAMINED BY BY THE GEOTECHNICAL ENGINEER OR AUTHORIZED REPRESENTATIVE. THE EXPOSED SUBGRADE SHOULD BE THOROUGHLY PROOFROLLED WITH PREVIOUSLY APPROVED CONSTRUCTION EQUIPMENT HAVING A MINIMUM AXLE LOAD OF 20 TONS (E.G. FULLY LOADED TANDEM-AXLE DUMP TRUCK) TO IDENTIFY ANY SOFT, UNSUITABLE, OR OTHER LOCALIZED YIELDING MATERIALS. THE AREAS SUBJECT TO PROOFROLLING SHOULD BE TRAVERSED BY THE EQUIPMENT IN TWO PERPENDICULAR (ORTHOGONAL) WITH OVERLAPPING PASSES OF THE OF THE VEHICLE UNDER THE OBSERVATION OF THE GEOTECHNICAL ENGINEER OR AUTHORIZED REPRESENTATIVE. ANY UNSTABLE OR "PUMPING" SUBGRADE AREAS IDENTIFIED BY THE PROOFROLLING SHOULD BE MARKED FOR REPAIR PRIOR TO PLACEMENT OF ANY SUBSEQUENT FILL OR OTHER CONSTRUCTION MATERIALS. METHODS OF STABILIZING "PUMPING" AREAS MAY INCLUDE UNDERCUTTING, MOISTURE CONDITIONING, OR CHEMICAL STABILIZATION AND SHOULD BE DISCUSSED WITH THE GEOTECHNICAL ENGINEER TO DETERMINE THE APPROPRIATE PROCEDURE. EXCAVATED AREAS SHOULD BE BACKFILLED WITH SUITABLE, PROPERLY PLACED AND COMPACTED FILL IN ACCORDANCE WITH THE FILL SPECIFICATIONS HEREIN.

   SUITABLE AREAS TO RECEIVE FILL OR FLEXIBLE BASE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES AND UNIFORMLY COMPACTED TO A MINIMUM OF NINETY-FIVE PERCENT (95%) MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D 698) WITH A MINIMUM MOISTURE CONTENT AT OR ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST. ALL FILLS SHOULD BE BENCHED INTO THE EXISTING SOILS.

   ON-SITE SOILS FREE OF VEGETATION, DEBRIS, AND ROCKS NO GREATER THAN TWO (2) INCHES IN MAXIMUM DIMENSION ARE GENERALLY SUITABLE FOR SITE GRADING OPERATIONS. IMPORTED FILL MATERIALS, IF USED, SHALL BE CLEAN, SOIL BORROW FOR BACKFILLING AND SITE GRADING AND SHALL BE EARTHEN COHESIVE SOIL MATERIALS CONFORMING TO THE PROJECT SPECIFICATIONS WITH A PLASTICITY INDEX (PI) NO GREATER THAN 40 WITH NO ROCK GREATER THAN FOUR (4) INCHES IN MAXIMUM DIMENSION.

   THE SOILS SHALL BE SPREAD ON PREVIOUSLY SCARIFIED AND COMPACTED GROUND IN LOOSE LIFTS LESS THAN EIGHT (8) INCHES THICK FOR MASS GRADING OPERATIONS AND LESS THAN FOUR (4) INCHES THICK FOR TRENCH TYPE EXCAVATIONS WHERE WALK BEHIND OR "JUMPING JACK" COMPACTION EQUIPMENT IS USED AND UNIFORMLY COMPACTED TO A MINIMUM OF NINETY-FIVE PERCENT (95%) MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D698) WITH A MOISTURE CONTENT AT OR ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST. UPON COMPLETION OF FILLING OPERATIONS, CARE SHOULD BE TAKEN TO MAINTAIN THE SOIL MOISTURE CONTENT AS NECESSARY PRIOR TO CONSTRUCTION OF SWITCHYARD AND SUBSTATION FOUNDATIONS. IF FILL OPERATIONS ARE SUSPENDED AND THE SURFACE OF THE PREVIOUSLY PLACED MATERIAL BECOMES DESICCATED OR RUTTED, THE SURFACE SHALL BE REWORKED AND RETESTED AS REQUIRED PRIOR TO PLACEMENT OF A SUBSEQUENT LIFT. FIELD DENSITY AND MOISTURE TESTS SHOULD BE PERFORMED ON EACH LIFT AS NECESSARY TO VERIFY THAT ADEQUATE COMPACTION IS ACHIEVED. A MINIMUM OF ONE TEST PER 2,500 SQUARE FEET PER LIFT IS REQUIRED. UTILITY TRENCH BACKFILL SHOULD BE TESTED AT A RATE OF ONE TEST PER LIFT PER EACH 150 LINEAR FEET OF TRENCH (TWO TESTS MINIMUM PER LIFT).

   ACCESS DRIVE, FIRE LANE, DUMPSTER, AND BUILDING F YARD SUBGRADE AREAS SHALL BE SCARIFIED TO A MINIMUM DEPTH OF SIX (6) INCHES AND UNIFORMLY COMPACTED TO A MINIMUM DEPTH OF 6 INCHES TO A MINIMUM OF NINETY-FIVE PERCENT (95%) MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D698) WITH A MOISTURE CONTENT AT OR ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST. AS SPECIFIED IN THE BELOW REFERENCED GEOTECHNICAL REPORT, 6 INCHES COMPACTED DEPTH OF LIME STABILIZED SOIL (8% HYDRATED LIME AT 36 LBS/SY) IS RECOMMENDED FOR STANDARD DUTY, MEDIUM DUTY, AND DUMPSTER PAVEMENT AREAS. THERE IS AN OPTION TO REPLACE THE LIME STABILIZED SUBGRADE IN THESE PAVEMENT AREAS WITH 6 INCHES OF COMPACTED SOIL SUBGRADE AND TO INCREASE THE CONCRETE PAVEMENT THICKNESSES BY ONE HALF INCH TO EACH OF THE STANDARD DUTY, MEDIUM DUTY, AND DUMPSTER PAVEMENT THICKNESSES IN THE PLANS. IF LIME STABILIZATION IS CONSIDERED, THE SUBGRADE SOILS SHOULD BE EVALUATED FOR SOLUBLE SULFATE CONCENTRATIONS TO EVALUATE THE SUITABILITY OF SOILS FOR LIME STABILIZATION.

   FLEXIBLE BASE SURFACING MEETING THE REQUIREMENTS OF TxDOT ITEM 247 TYPE A GRADE 1-2 (WET BALL MILL MAX. = 25%) SHALL BE UNIFORMLY COMPACTED TO A MINIMUM DEPTH OF SIX (6) INCHES TO A MINIMUM OF NINETY-FIVE (95) PERCENT MAXIMUM STANDARD PROCTOR DRY DENSITY (ASTM D698) WITH A MOISTURE CONTENT AT OR ABOVE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST.

   SOIL STERILANT SHALL BE APPLIED TO THE BUILDING F GRAVEL YARD AREA RECEIVING FLEXIBLE BASE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS PRIOR TO PLACEMENT OF FLEXIBLE BASE.

   ALL DRAINAGE AND UTILITY TRENCH EXCAVATION BACKFILL ABOVE PIPE EMBEDMENT MATERIAL SHALL MEET THE ABOVE COMPACTION SPECIFICATIONS FOR FILL MATERIALS. THE UPPER LAYER OF ALL TRENCHES IN THE BUILDING F YARD AND REPAIRS TO ACCESS DRIVES, IF NECESSARY, SHALL BE BACKFILLED WITH FLEXIBLE BASE SURFACING MEETING THE REQUIREMENTS OF TXDOT ITEM 247 TYPE A GRADE 1-2 (WET BALL MILL MAX. = 25%). COMPACTION SPECIFICATIONS SHALL BE AS NOTED ABOVE FOR FLEXIBLE BASE SURFACING.

   CRUSHED ROCK SURFACING FOR THE BUILDING F YARD AREA SHALL BE PREPARED PER THE SPECIFICATIONS AND BE UNIFORMLY COMPACTED TO A MINIMUM DEPTH OF 2 INCHES AT A MINIMUM OF SEVENTY PERCENT (70%) RELATIVE DENSITY (ASTM D4253 AND D4254).

7. EXISTING VEGETATION SHALL BE UNDISTURBED, WHENEVER POSSIBLE, THROUGHOUT THE REMAINDER OF THE SITE NOT AFFECTED BY THE INSTALLATION OF THE APPROVED FACILITIES. ALL AREAS DISTURBED OUTSIDE OF THE YARD SURFACING AND DRIVEWAY PAVING AREAS BY CONTRACTOR'S OPERATIONS SHALL BE STABILIZED BY BROADCAST SEEDING AND FERTILIZER OVER 4" OF TOP SOIL UPON COMPLETION OF GRADING OPERATIONS. CONTRACTOR SHALL PROVIDE WATER AS NECESSARY TO ESTABLISH PERMANENT VEGETATION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

8. CONCRETE PAVING SHALL HAVE A CONSTRUCTION JOINT OR SAWED CONTROL JOINT EVERY FIFTEEN (15) FEET TRANSVERSELY AND LONGITUDINALLY WITH EXPANSION JOINTS AT INTERSECTIONS, BEGINNING AND ENDING OF HORIZONTAL CURVES, AND AT MAXIMUM TWO HUNDRED (200) FEET SPACING. JOINTS SHALL INTERSECT ALL PAVEMENT EDGES AT NINETY (90) DEGREES INCLUDING RADIUS RETURNS. WHEN INTERSECTING RADIUS RETURNS, THE MINIMUM PERPENDICULAR DISTANCE INTO THE RETURN SHALL BE ONE AND A HALF (1.5) FEET.

9. THE PAVING CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO INSURE ALL UNDERGROUND CONSTRUCTION IS COMPLETE PRIOR TO SUBGRADE PREPARATION.

10. REFER TO PROJECT GEOTECHNICAL SPECIFICATIONS IN ECS SOUTHWEST, LLP GEOTECHNICAL ENGINEERING REPORT FOR PROJECT NO. 19: 8878 TITLED "REC CAMPUS EXPANSION, 950 SIDS ROAD, ROCKWALL, TEXAS" DATED OCTOBER 4, 2022 FOR SITE PREPARATION, EXCAVATION, FILL COMPACTION, TESTING REQUIREMENTS, ETC. REFER TO "ADDENDUM 1" TO THIS GEOTECHNICAL ENGINEERING REPORT DATED OCTOBER 5, 2022 FOR SITE RETAINING WALL DESIGN PARAMETERS AND "ADDENDUM 2" TO THIS GEOTECHNICAL ENGINEERING REPORT DATED JANUARY 24, 2023 FOR DESIGN AND CONSTRUCTION RECOMMENDATIONS FOR THE RETENTION POND. THESE DOCUMENTS SHALL BECOME A PART OF THESE PLANS AND SPECIFICATIONS. REFER TO SHEET C13.1 TYPICAL PAVING SECTIONS FOR SPECIFIC PAVING AND SUBGRADE MATERIALS AND THICKNESSES FOR THIS PROJECT.

11. REFER TO PROJECT SPECIFICATIONS FOR ADDITIONAL INFORMATION.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

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CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
LEGEND, PROJECT CONTROL & NOTES

CASE# E2023-007

SHEET NO.
C1.1

GENERAL ITEMS

1. All construction shall conform to the requirements set forth in the City of Rockwall's Engineering Department's "Standards of Design and Construction" and the "Standard Specifications for Public Works Construction" by the North Texas Central Council of Governments, 5th edition amended by the City of Rockwall. The CONTRACTOR shall reference the latest City of Rockwall standard details provided in the Rockwall Engineering Departments "Standards of Design and Construction" manual for details not provided in these plans. The CONTRACTOR shall possess one set of the NCTCOG Standard Specifications and Details and the City of Rockwall's "Standards of Design and Construction" manual on the project site at all times
2. Where any conflicting notes, details or specifications occur in the plans the City of Rockwall General Construction Notes, Standards, Details and Specifications shall govern unless detail or specification is more strict.
3. The City of Rockwall Engineering Departments "Standards of Design and Construction" can be found online at: http://www.rockwall.com/engr.asp
4. All communication between the City and the CONTRACTOR shall be through the Engineering Construction Inspector and City Engineer or designated representative only. It is the responsibility of the CONTRACTOR to contact the appropriate department for inspections that do not fall under this approved engineering plan set.
5. Prior to construction, CONTRACTOR shall have in their possession all necessary permits, plans, licenses, etc.
6. The CONTRACTOR shall have at least one original stamped and signed set of approved engineering plans and specifications on-site and in their possession at all times. A stop work order will be issued if items are not on-site. Copies of the approved plans will not be substituted for the required original "approved plans to be on-site".
7. All material submittals, concrete batch designs and shop drawings required for City review and approval shall be submitted by the CONTRACTOR to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
8. All site dimensions are referenced to the face of curb or edge of pavement unless otherwise noted.
9. The City requires ten (10%) percent-two (2) year maintenance bond for paving, paving improvements, water systems, wastewater systems, storm sewer systems including detention systems, and associated fixtures and structures which are located within the right-of-ways or defined easements. The two (2) year maintenance bond is to state "from date of City acceptance" as the starting time.
10. A review of the site shall be conducted at twenty (20) months into the two (2) year maintenance period. The design engineer or their designated representative and the CONTRACTOR shall be present to walk the site with the City of Rockwall Engineering Inspection personnel.

EROSION CONTROL & VEGETATION

1. The CONTRACTOR or developer shall be responsible, as the entity exercising operational control, for all permitting as required by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). This includes, but is not limited to, preparation of the Storm Water Pollution Prevention Plan (SWPPP), the Construction Site Notice (CSN), the Notice of Intent (NOI), the Notice of Termination (NOT) and any Notice of Change (NOC) and is required to pay all associated fees
2. Erosion control devices as shown on the erosion control plan for the project shall be installed prior to the start of land disturbing activities.
3. All erosion control devices are to be installed in accordance with the approved plans, specifications and Storm Water Pollution Prevention Plan (SWPPP) for the project. Erosion control devices shall be placed and in working order prior to start of construction. Changes are to be reviewed and approved by the design engineer and the City of Rockwall prior to implementation.
4. If the Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) as approved cannot appropriately control erosion and off-site sedimentation from the project, the erosion control plan and/or the SWPPP is required to be revised and any changes reported to the Texas Commission on Environmental Quality (TCEQ), when applicable.
5. All erosion control devices shall be inspected weekly by the CONTRACTOR and after all major rain events, or more frequently as dictated in the project Storm Water Pollution Prevention Plan (SWPPP). CONTRACTOR shall provide copies of inspection's reports to the engineering inspection after each inspection.
6. The CONTRACTOR shall not dispose of waste and any materials into streams, waterways or floodplains. The CONTRACTOR shall secure all excavation at the end of each day and dispose of all excess materials.
7. CONTRACTOR shall take all available precautions to control dust. CONTRACTOR shall control dust by sprinkling water or other means as approved by the City Engineer.
8. CONTRACTOR shall establish grass and maintain the seeded area, including watering, until a "Permanent Stand of Grass" is obtained at which time the project will be accepted by the City. A "Stand of Grass" (not winter rye or weeds) shall consist of 75% to 80% coverage of all disturbed areas and a minimum of one-inch (1") in height as determined by the City. No bare spots will be allowed. Re-seeding will be required in all washed areas and areas that don't grow.
9. All City right-of-ways shall be sodded if disturbed. No artificial grass is allowed in any City right-of-way and/or easements.
10. All adjacent streets/alleys shall be kept clean at all times
11. CONTRACTOR shall keep construction site clean at all times, immediately contain all debris and trash, all debris and trash shall be removed at the end of each work day, and all vegetation on the construction site 10-inches or taller in height must be cut immediately.
12. Suspension of all construction activities for the project will be enforced by the City if any erosion control requirements are not meet. Work may commence after deficiency has been rectified.
13. During construction of the project, all soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The CONTRACTOR is responsible for the temporary protection and permanent stabilization of all soil stockpiles on-site as well as borrow areas and soil intentionally transported from the project site.
14. Where construction vehicles access routes intersect paved or public roads/alleys, construction entrances shall be installed to minimize the transport of sediment by vehicular tracking onto paved surfaces. Where sediment is transferred onto paved or public surfaces, the surface shall be immediately cleaned. Sediment shall be removed from the surface by shoveling or sweeping and transported to a sediment disposal area. Pavement washing shall be allowed only after sediment is removed in this manner.
15. All drainage inlets shall be protected from siltation, ineffective or unmaintained protection devices shall be immediately replaced and the inlet and storm system cleaned. Flushing is not an acceptable method of cleaning.
16. During all dewatering operations, water shall be pumped into an approved filtering device prior to discharge into a receiving outlet.

TRAFFIC CONTROL

1. All new Detouring or Traffic Control Plans are required to be submitted to the City for review and approval a minimum of 21 calendar days prior to planned day of implementation.
2. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety, and the efficiency of road user flow is an integral element of every traffic control zone.
3. All traffic control plans shall be prepared and submitted to the Engineering Department in accordance with the standards identified in Part VI of the most recent edition of the TMUTCD. Lane closures will not occur on roadways without an approval from the Rockwall Engineering Department and an approved traffic control plan. Traffic control plans shall be required on all roadways as determined by the City Engineer or the designated representative.
4. All traffic control plans must be prepared, signed, and sealed by an individual that is licensed as a professional engineer in the State of Texas. All traffic control plans and copies of work zone certification must be submitted for review and approval a minimum of three (3) weeks prior to the anticipated temporary traffic control.
5. The CONTRACTOR executing the traffic control plan shall notify all affected property owners two (2) weeks prior to any the closures in writing and verbally.
6. Any deviation from an approved traffic control plan must be reviewed by the City Engineer or the designated representative. If an approved traffic control plan is not adhered to, the CONTRACTOR will first receive a verbal warning and be required to correct the problem immediately. If the deviation is not corrected, all construction work will be suspended, the lane closure will be removed, and the roadway opened to traffic.
7. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, all temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure.
8. Lane closures on any major or minor arterial will not be permitted between the hours of 6:00 am to 9:00 am and 3:30 pm to 7:00 pm. Where lane closures are needed in a school area, they will not be permitted during peak hours of 7:00 am – 9:00 am and 3:00 pm to 5:00 pm. Closures may be adjusted according to the actual start-finish times of the actual school with approval by the City Engineer. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure of a roadway whether they are working or not.
9. No traffic signs shall be taken down without permission from the City.
10. No street/roadway will be allowed to be fully closed.

UTILITY LINE LOCATES

1. It is the CONTRACTOR's responsibility to notify utility companies to arrange for utility locates at least 48 hours prior to beginning construction. The completeness and accuracy of the utility data shown on the plans is not guaranteed by the design engineer or the City. The CONTRACTOR is responsible for verifying the depth and location of existing underground utilities proper to excavating, trenching, or drilling and shall be required to take any precautionary measures to protect all lines shown and .or any other underground utilities not on record or not shown on the plans.
2. The CONTRACTOR shall be responsible for damages to utilities
3. CONTRACTOR shall adjust all City of Rockwall utilities to the final grades.
4. All utilities shall be placed underground.
5. CONTRACTOR shall be responsible for the protection of all existing main lines and service lines crossed or exposed by construction operations. Where existing mains or service lines are cut, broken or damaged, the CONTRACTOR shall immediately make repairs to or replace the entire service line with same type of original construction or better. The City of Rockwall can and will intervene to restore service if deemed necessary and charge the CONTRACTOR for labor, equipment, material and loss of water if repairs aren't made in a timely manner by the CONTRACTOR.
6. The City of Rockwall (City utilities) is not part of the Dig Tess or Texas one Call – 811 – line locate system. All City of Rockwall utility line locates are to be scheduled with the City of Rockwall Service Center. 972-771-7730. A 48-hour advance notice is required for all non-emergency line locates.
7. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Material used for backfilling trenches shall be properly compacted to 95% standard density in order to minimize erosion, settlement, and promote stabilization that the geotechnical engineer recommends.
   c. Applicable safety regulations shall be complied with.
11. This plan details pipes up to 5 feet from the building. Refer to the building plans for building connections. CONTRACTOR shall supply and install pipe adapters as necessary.
12. All underground lines shall be installed, inspected, and approved prior to backfilling.
13. All concrete encasement shall have a minimum of 28 days compressive strength at 3,000 psi (min. 5.5 sack mix).

WATER LINE NOTES

1. The CONTRACTOR shall maintain existing water service at all times during construction.
2. Proposed water lines shall be AWWA C900-16 PVC Pipe (blue in color) for all sizes, DR 14 (PC 305) for pipeline sizes 12-inch and smaller, and DR 18 (PC 235) for 14-inch and larger water pipelines unless otherwise shown on water plan and profiles sheets. Proposed water lines shall be constructed with minimum cover of 4 feet for 6-inch through 8-inch, 5 feet for 12-inch through 18-inch and 6 feet for 20-inch and larger.
3. Proposed water line embedment shall be NCTCOG Class 'B-3' as amended by the City of Rockwall's engineering standards of design and construction manual.
4. CONTRACTOR shall coordinate the shutting down of all water lines with the City of Rockwall Engineering Inspector and Water Department. The City shall operate all water valves. Allow 5 business days from the date of notice to allow City personnel time to schedule a shut down. Two additional days are required for the CONTRACTOR to notify residents in writing of the shut down after the impacted area has been identified. Water shut downs impacting businesses during their normal operation hours is not allowed. CONTRACTOR is required to coordinate with the Rockwall Fire Department regarding any fire watch requirements as well as any costs incurred when the loss of fire protection to a structure occurs.
5. CONTRACTOR shall furnish and install gaskets on water lines between all dissimilar metals and at valves (both existing and proposed).
6. All fire hydrants and valves removed and salvaged shall be returned to the City of Rockwall Municipal Service Center.
7. Blue EMS pads shall be installed at every change in direction, valve, curb stop and service tap on the proposed water line and every 250'.
8. All water valve hardware and valve extensions, bolts, nuts and washers shall be 316 stainless steel.
9. All fire hydrants bolts, nuts and washers that are buried shall be 316 stainless steel.
10. Abandoned water lines to remain in place shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product. Valves to be abandoned in place shall have any extensions and the valve box removed and shall be capped in concrete.
11. All fire hydrants will have a minimum of 5 feet of clearance around the appurtenance including but not limited to parking spaces and landscaping.
12. All joints are to be megalug joints with thrust blocking.
13. Water and sewer mains shall be kept 10 feet apart (parallel) or when crossing 2 feet vertical clearance.
14. CONTRACTOR shall maintain a minimum of 4 feet of cover on all water lines.
15. All domestic and irrigation services are required to have a testable backflow device with a double check valve installed per the City of Rockwall regulations at the property line and shown on plans.

WASTEWATER LINE NOTES

1. The CONTRACTOR shall maintain existing wastewater service at all times during construction.
2. Wastewater line for 4-inch through 15-inch shall be Green PVC – SDR 35 (ASTM D3034) [less 10 ft cover] and SDR 26 (ASTM D3034) [10 ft or more cover]. For 18-inch and lager wastewater line shall be Green PVC – PS 46 (ASTM F679) [less 10 ft cover] and PS 115 (ASTM F679) [10 ft or more cover]. No services will be allowed on a sanitary sewer line deeper than 10 feet.
3. Proposed wastewater line embedment shall be NCTCOG Class 'H' as amended by the City of Rockwall's public works standard design and construction manual.
4. Green EMS pads shall be installed at every 250', manhole, clean out and service lateral on proposed wastewater lines.
5. CONTRACTOR shall CCTV all existing wastewater lines that are to be abandoned to ensure that all laterals are accounted for and transferred to proposed wastewater lines prior to abandonment.
6. All abandoned wastewater and force main lines shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product.
7. Existing manholes and cleanouts not specifically called to be relocated shall be adjusted to match final grades.
8. All wastewater pipes and public services shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR's expense. A television survey will be performed as part of the final testing in the twentieth (20^{th}) month of the maintenance period.
9. All manholes (public or private) shall be fitted with inflow prevention. The inflow prevention shall conform to the measures called out in standard detail R-5031.
10. All new or existing manholes being modified shall have corrosion protection being Raven Liner 405 epoxy coating, ConShield, or approved equal.. Consheild must have terracotta color dye mixed in the precast and cast-in-place concrete. Where connections to existing manholes are made the CONTRACTOR shall rehab manhole as necessary and install a 125 mil thick coating of Raven Liner 405 or approved equal.
11. All new or existing manholes that are to be placed in pavement shall be fitted with a sealed (gasketed) rim and cover to prevent inflow.
12. If an existing wastewater main or trunk line is called out to be replaced in place a wastewater bypassing pump plan shall be required and submitted to the Engineering Construction Inspector and City Engineer for approval prior to implementation. Bypass pump shall be fitted with an auto dialer and conform to the City's Noise Ordinance. Plan shall be to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
13. CONTRACTOR shall maintain a minimum of 4 feet of cover on all wastewater lines.

GENERAL CONSTRUCTION NOTES
Sheet 1 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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OWNER/ APPLICANT
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TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
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06/23/2025
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ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
COR GENERAL CONSTRUCTION NOTES

CASE# E2023-007

SHEET NO.
C1.2

DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

1. All pavements to be removed and replaced shall be saw cut to full depth along neat squared lines shown in the plans.
2. Proposed concrete pavement shall be constructed with longitudinal butt construction joints at all connections to existing concrete pavement.
3. All public concrete pavement to be removed and replaced shall be full panel replacement, 1-inch thicker and on top of 6-inch thick compacted flexbase.
4. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the City of Rockwall. No excess excavation shall be deposited in the City Limits without a permit from the City of Rockwall. If the CONTRACTOR places excess materials in these areas without written permission, the CONTRACTOR will be responsible for all damages resulting from such fill and shall remove the material at their own cost.

PAVING AND GRADING

1. All detention systems are to be installed and verified for design compliance along with the associated storm sewer and outflow structures, prior to the start of any paving operations (including building foundations). Erosion protection shall be placed at the pond outflow structures, silt fence along the perimeter of the pond along with any of the associated erosion BMPs noted on the erosion control plan, and the sides and bottom of the detention system shall have either sod or anchored seeded curlex installed prior to any concrete placement.
2. All paving roadway, driveways, fire lanes, drive-isles, parking, dumpster pads, etc. sections shall have a minimum thickness, strength, reinforcement, joint type, joint spacing and subgrade treatment shall at a minimum conform to the City standards of Design and Construction and table below.

Street/Pavement Type	Minimum Thickness (inches)	Strength 28-Day (psi)	Minimum Cement (sacks / CY)		Steel Reinforcement	
			Machine placed	Hand Placed	Bar #	Spacing (O.C.E.W.)
Arterial	10”	3,600	6.0	6.5	#4 bars	18”
Collector	8”	3,600	6.0	6.5	#4 bars	18”
Residential	6”	3,600	6.0	6.5	#3 bars	24”
Alley	7”-5”-7”	3,600	6.0	6.5	#3 bars	24”
Fire Lane	6”	3,600	6.0	6.5	#3 bars	24”
Driveways	6”	3,600	6.0	6.5	#3 bars	24”
Barrier Free Ramps	6”	3,600	N/A	6.5	#3 bars	24”
Sidewalks	4”	3,000	N/A	5.5	#3 bars	24”
Parking Lot/Drive Aisles	5”	3,000	5.0	5.5	#3 bars	24”
Dumpster Pads	7”	3,600	6.0	6.5	#3 bars	24”

3. Reinforcing steel shall be tied (100%). Reinforcing steel shall be set on plastic chairs. Bar laps shall be minimum 30 diameters. Sawed transverse dummy joints shall be spaced every 15 feet or 1.25 time longitudinal butt joint spacing whichever is less. Sawing shall occur within 5 to 12 hours after the pour, including sealing. Otherwise, the section shall be removed and longitudinal butt joint constructed.
4. No sand shall be allowed under any paving.
5. All concrete mix design shall be submitted to the City for review and approval prior to placement.
6. Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per C.Y. of concrete. The fly ash replacement shall be 1.25 lbs. per 1.0 lb. cement reduction.
7. All curb and gutter shall be integral (monolithic) with the pavement.
8. All fill shall be compacted by sheep's foot roller to a minimum 95% standard proctor. Maximum loose lift for compaction shall be 8 inches. All lifts shall be tested for density by an independent laboratory. All laboratory compaction reports shall be submitted to the City Engineering Construction Inspector once results are received. All reports will be required prior to final acceptance.
9. All concrete compression tests and soil compaction/density tests are required to be submitted to the City’s Engineering Inspector immediately upon results.
10. All proposed sidewalks shall include barrier free ramps at intersecting streets, alleys, etc. Barrier free ramps (truncated dome plate in Colonial or brick red color) shall meet current City and ADA requirements and be approved by the Texas Department of Licensing and Regulation (TDLR).
11. All public sidewalks shall be doweled into pavement where it abuts curbs and driveways. Expansion joint material shall be used at these locations.
12. All connection of proposed concrete pavement to existing concrete pavement shall include a longitudinal butt joint as the load transfer device. All longitudinal butt joints shall be clean, straight and smooth (not jagged in appearance)
13. Cracks formed in concrete pavement shall be repaired or removed by the CONTRACTOR at the City's discretion. CONTRACTOR shall replace existing concrete curbs, sidewalk, paving, a gutters as indicated on the plans and as necessary to connect to the existing infrastructure, including any damage caused by the CONTRACTOR.
14. All residential lots will require individual grading plans submitted during the building permit process that correspond with the engineered grading and drainage area plans.
15. Approval of this plan is not an authorization to grade adjacent properties when the plans or field conditions warrant off-site grading. Written permission must be obtained and signed from the affected property owner(s) and temporary construction easements may be required. The written permission shall be provided to the City as verification of approval by the adjacent property owner(s). Violation of this requirement will result in suspension of all work at the job site until issue has been rectified.
16. All cut or fill slopes of non-paved areas shall be a maximum of 4:1 and minimum of 1%.
17. CONTRACTOR agrees to repair any damage to property and the public right-of-way in accordance with the City Standards of Design and Construction.
18. CONTRACTOR shall protect all monuments, iron pins/rods, and property corners during construction.
19. CONTRACTOR shall ensure positive drainage so that runoff will drain by gravity flow to new or existing drainage inlets or sheet flow per these approved plans.

DRAINAGE / STORM SEWER NOTES

1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural concrete shall be 4200 psi compressive strength at 28 days minimum 7.0 sack mix, air entrained, unless noted otherwise. Fly ash shall not be allowed in any structural concrete.
3. Proposed storm sewer embedment shall be NCTCOG Class 'B' as amended by the City of Rockwall's Engineering Department Standards of Design and Construction Manual.
4. All public storm pipe shall be a minimum of 18-inch reinforced concrete pipe (RCP), Class III, unless otherwise noted.
5. All storm pipe entering structures shall be grouted to assure connection at the structure is watertight.
6. All storm structures shall have a smooth uniform poured mortar invert from invert in to invert out.
7. All storm sewer manholes in paved areas shall be flush with the paving grade, and shall have traffic bearing ring and covers.
8. All storm sewer pipes and laterals shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Pipes shall be cleaned prior to TV inspection of the pipes. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR’s expense. A television survey will be performed as part of the final testing in the twentieth (20^{th}) month of the maintenance period.

RETAINING WALLS

1. All retaining walls, regardless of height, will be reviewed and approved by the City Engineering Department
2. All retaining walls (including foundation stem walls), regardless of height, will be constructed of rock/stone/brick or rock/stone/brick faced. No smooth concrete walls are allowed. Wall materials shall be the same for all walls on the project.
3. All portions, including footings, tie-backs, and drainage backfill, of the wall shall be on-site and not encroach into any public easements or right-of-way. The entire wall shall be in one lot and shall not be installed along a lot line.
4. All walls 3 feet and taller will be designed and signed/sealed by a registered professional engineer in the State of Texas. The wall design engineer is required to inspect the wall construction and supply a signed/sealed letter of wall construction compliance to the City of Rockwall along with wall as-builts prior to City Engineering acceptance.
5. No walls are allowed in detention easements. A variance to allow retaining walls in a detention easement will require approval by the Planning and Zoning Commission with appeals being heard by the City Council.

FINAL ACCEPTANCE AND RECORD DRWINGS/AS-BUILTS

1. Final Acceptance shall occur when all the items on the Checklist for Final Acceptance have been completed and signed-off by the City. An example of the checklist for final acceptance has been included in the Appendix of the Standards of Design and Construction. Items on the checklist for final acceptance will vary per project and additional items not shown on the check list may be required.
2. After improvements have been constructed, the developer shall be responsible for providing to the City “As Built” or “Record Drawings”. The Design Engineer shall furnish all digital files of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (.pdf) format with a CD-ROM disk or flash drive. The disk or drive shall include a full set of plans along with any landscaping, wall plans, and details sheets.
3. Submit 1-set of printed drawings of the “Record Drawings” containing copies of all sheets to the Engineering Construction Inspector for the project. The printed sheets will be reviewed by the inspector PRIOR to producing the “Record Drawing” digital files on disk or flash drive. This will allow any revisions to be addressed prior to producing the digital files.
4. Record Drawing Disk drawings shall have the Design Engineers seal, signature and must be stamped and dated as “Record Drawings” or “As Built Drawings” on all sheets.
5. The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineer’s surveyor/surveyors did not verify grades after construction, or that the Record Drawings were based solely on information provided by the construction contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.
6. Example of Acceptable Disclaimer: “To the best of our knowledge ABC Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.”

GENERAL CONSTRUCTION NOTES
Sheet 2 of 2
October 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087

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06/20/2025
FRANK A. POMA, P.E., TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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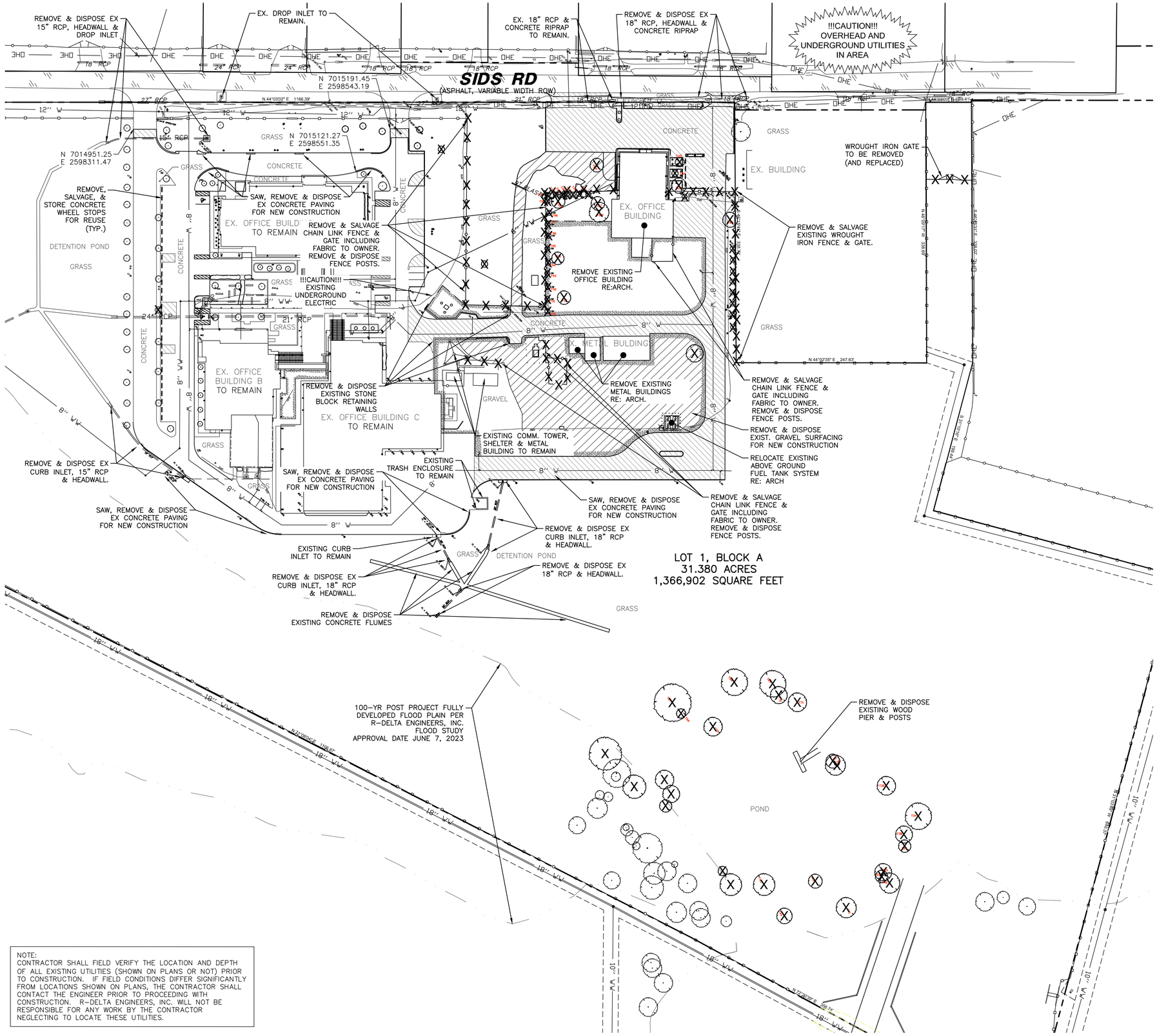
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
COR GENERAL CONSTRUCTION NOTES
CASE# E2023-007
SHEET NO.
C1.3



NOTE:
EROSION & SEDIMENT CONTROL BMPS SHALL BE IN PLACE PRIOR TO ANY SOIL DISTURBING ACTIVITIES.

LEGEND

- EXISTING WROUGHT IRON FENCE
- EXISTING CHAIN LINK FENCE
- XXXXX EXISTING ITEM REMOVAL
- PROPOSED LIMIT OF TREE REMOVAL (SEE NOTE 6)
- GRAVEL REMOVAL
- CONCRETE REMOVAL
- TREE REMOVAL
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY

NOTES:

1. REFER TO SHEET C1.1 FOR LEGEND, PROJECT CONTROL AND PROJECT NOTES.
2. CONTRACTOR SHALL CONTACT TEXAS 811 TO LOCATE ALL UTILITIES PRIOR TO BEGINNING ALL WORK.
3. CONTRACTOR SHALL PROTECT EXISTING BUILDINGS, FOUNDATIONS, AND STRUCTURES THROUGHOUT CONSTRUCTION.
4. REMOVE AND DISPOSE EXISTING CULVERTS AS NOTED AND BACKFILL VOIDS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
5. THE EXISTING SITE SHALL BE CLEARED, GRUBBED, AND 3" OF TOP SOIL STRIPPED, WHERE NEEDED, WITHIN THE ACCESS ROADS AND ON THE NEW CAMPUS SITE.
6. LIMITS OF TREE REMOVAL SHALL INCLUDE THOSE TREES WHOSE TRUNK IS ENTIRELY ON REC'S PROPERTY. CONTRACTOR SHALL PROTECT ALL TREES NOT IDENTIFIED FOR REMOVAL – NO EXTRA PAY ITEM.
7. ALL WHEEL STOPS TO REUSED SHALL BE REMOVED & STORED AS NECESSARY.
8. ALL PAVING TO BE REMOVED SHALL BE SAWED FULL DEPTH.
9. CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND REPLACING ALL IRRIGATION PIPES, HEADS, METERS, VALVES, AND ALL APPURTENANCES DAMAGED DURING CONSTRUCTION.
10. EXISTING AND AND ADJACENT IMPROVEMENTS SHOWN FROM FIELD SURVEY BY R-DELTA ENGINEERS, INC. AND SUPPLEMENTED WITH LIDAR DATA.

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

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06/20/2025
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RayburnElectric COOPERATIVE

VICINITY MAP
NTS

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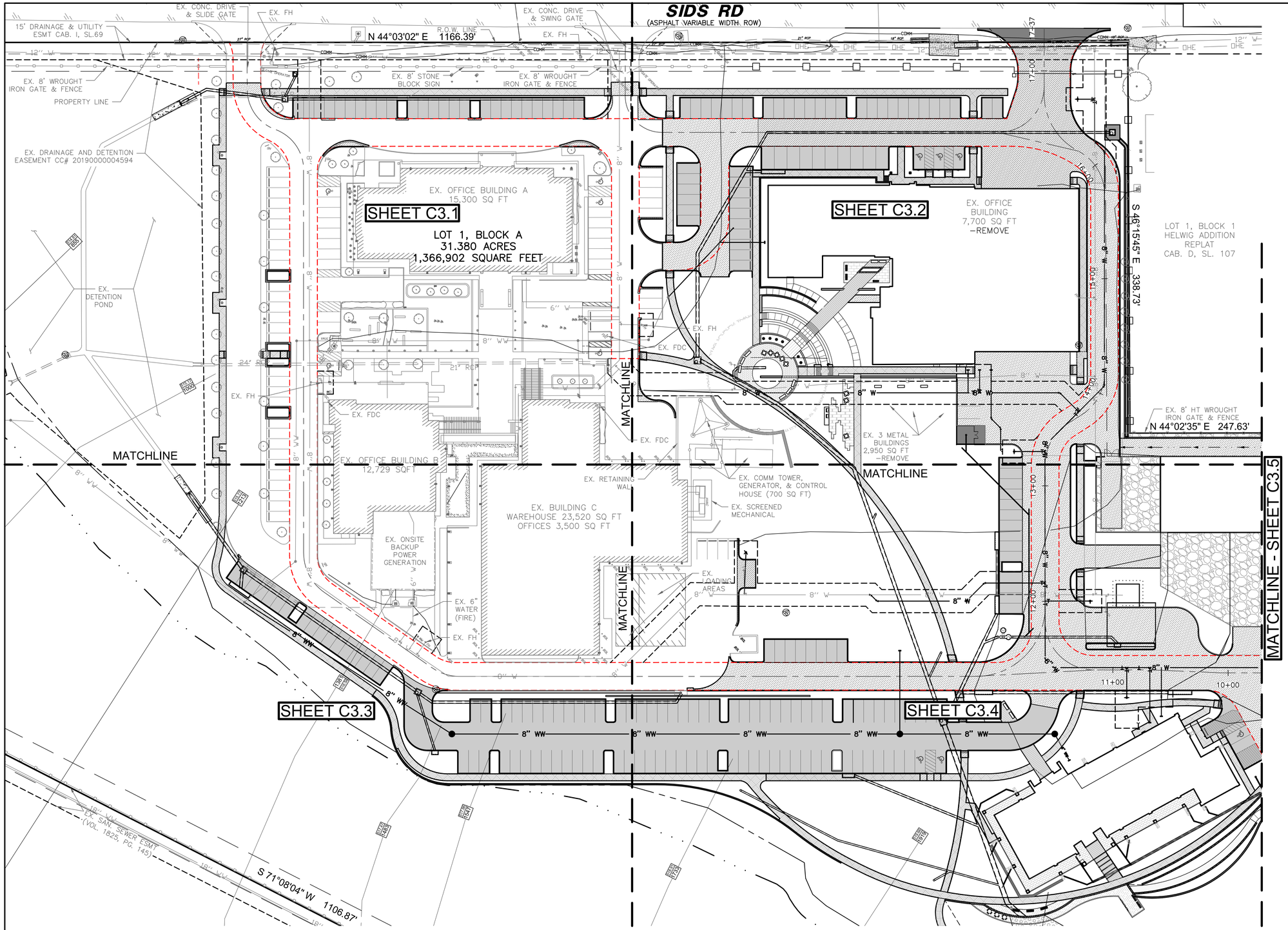
SHEET TITLE
DEMOLITION PLAN 1

CASE# E2023-007

SHEET NO.
C2.1



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FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

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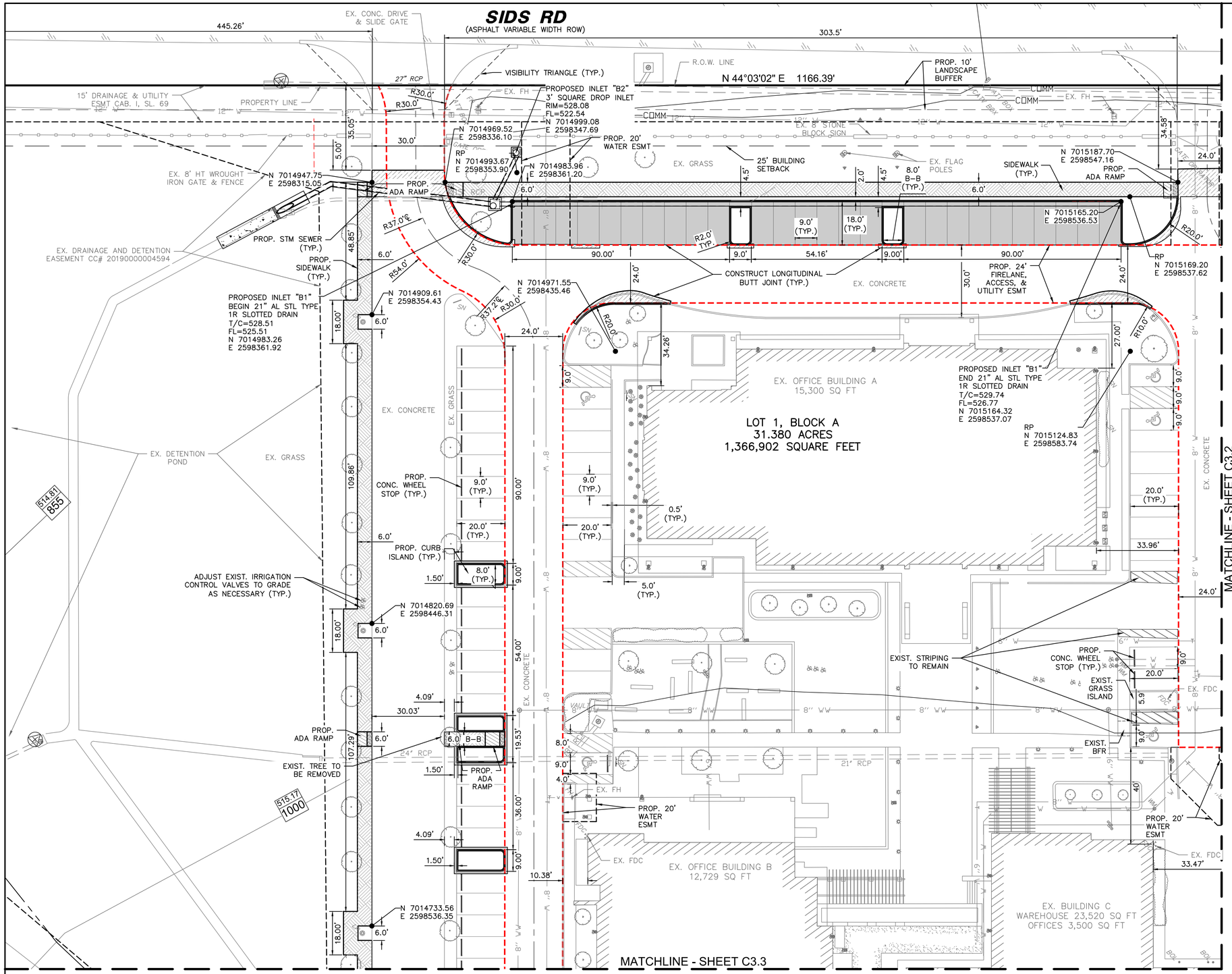
SHEET TITLE
DIMENSIONAL CONTROL & PAVING KEY MAP

CASE# E2023-007

SHEET NO.
C3.0



GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100–YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R–DELTA ENGINEERS, INC. FLOOD STUDY
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C–C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
	PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
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	PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS–SECTION LOCATION– R–DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
BW	BOTTOM OF RETAINING WALL

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
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3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. CONSTRUCT LONGITUDINAL BUTT JOINTS FOR ALL CONNECTIONS TO EXISTING PAVEMENT.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS.

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R–DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

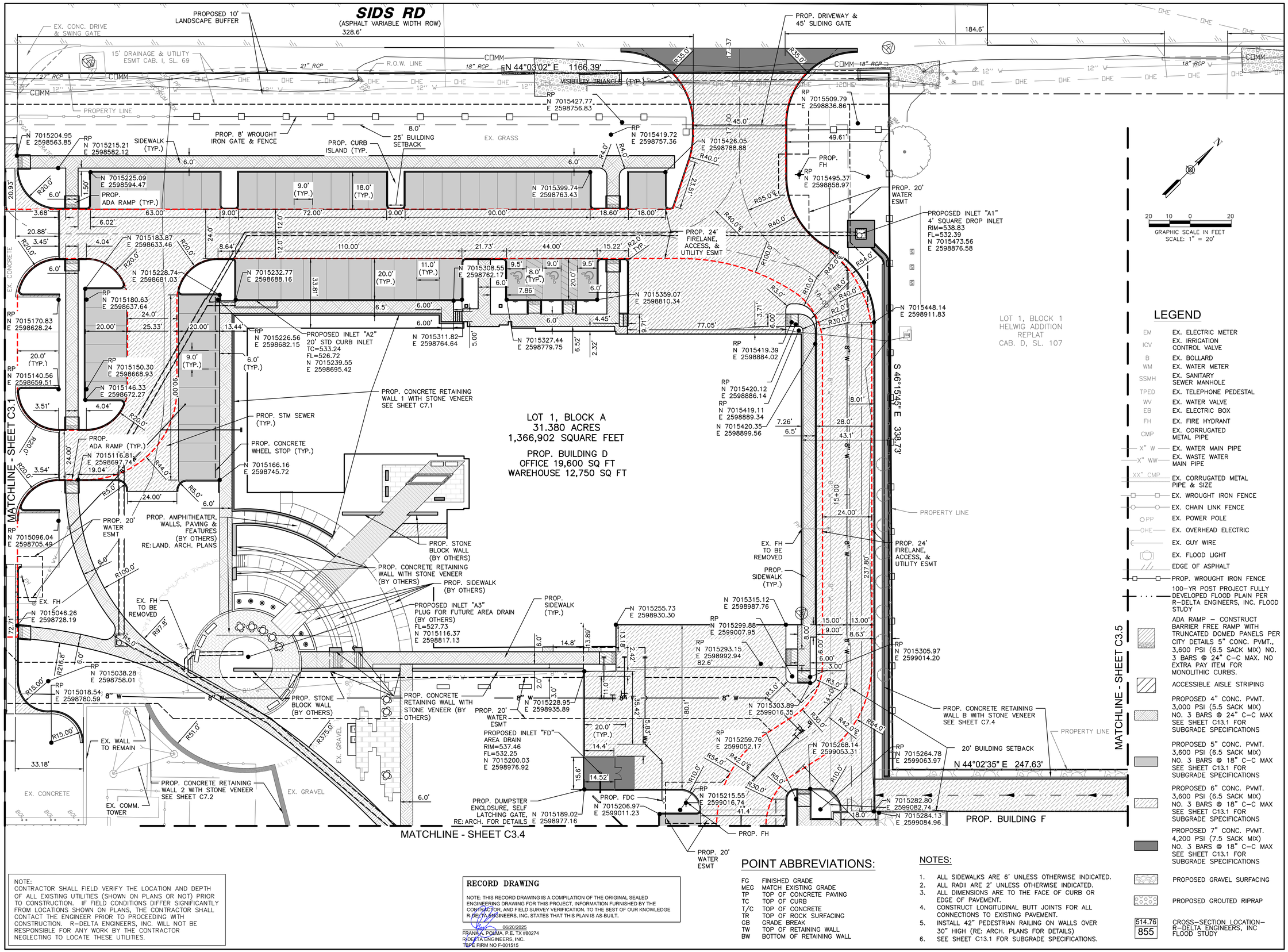
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DIMENSIONAL CONTROL & PAVING PLAN

CASE# E2023-007

SHEET NO.
C3.1



LEGEND

EM	EX. ELECTRIC METER
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514.76 / 855	CROSS–SECTION LOCATION– R–DELTA ENGINEERS, INC FLOOD STUDY

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

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REVISION

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PROJECT NUMBER
3036.21

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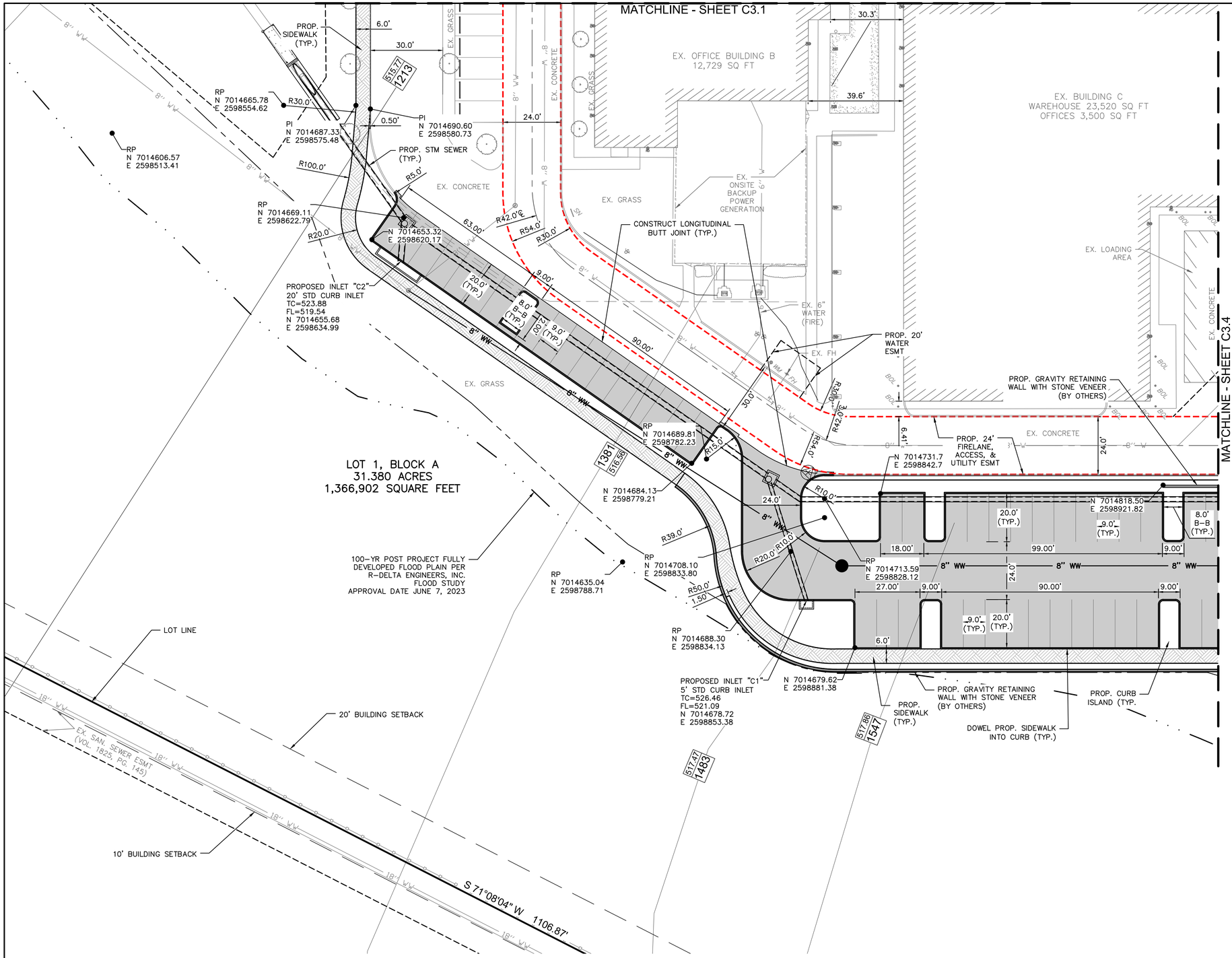
SHEET TITLE
DIMENSIONAL CONTROL & PAVING PLAN

CASE# E2023-007

SHEET NO.
C3.2



GRAPHIC SCALE IN FEET
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514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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TBPE FIRM NO F-001515

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Rayburn Electric COOPERATIVE

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PROJECT NUMBER
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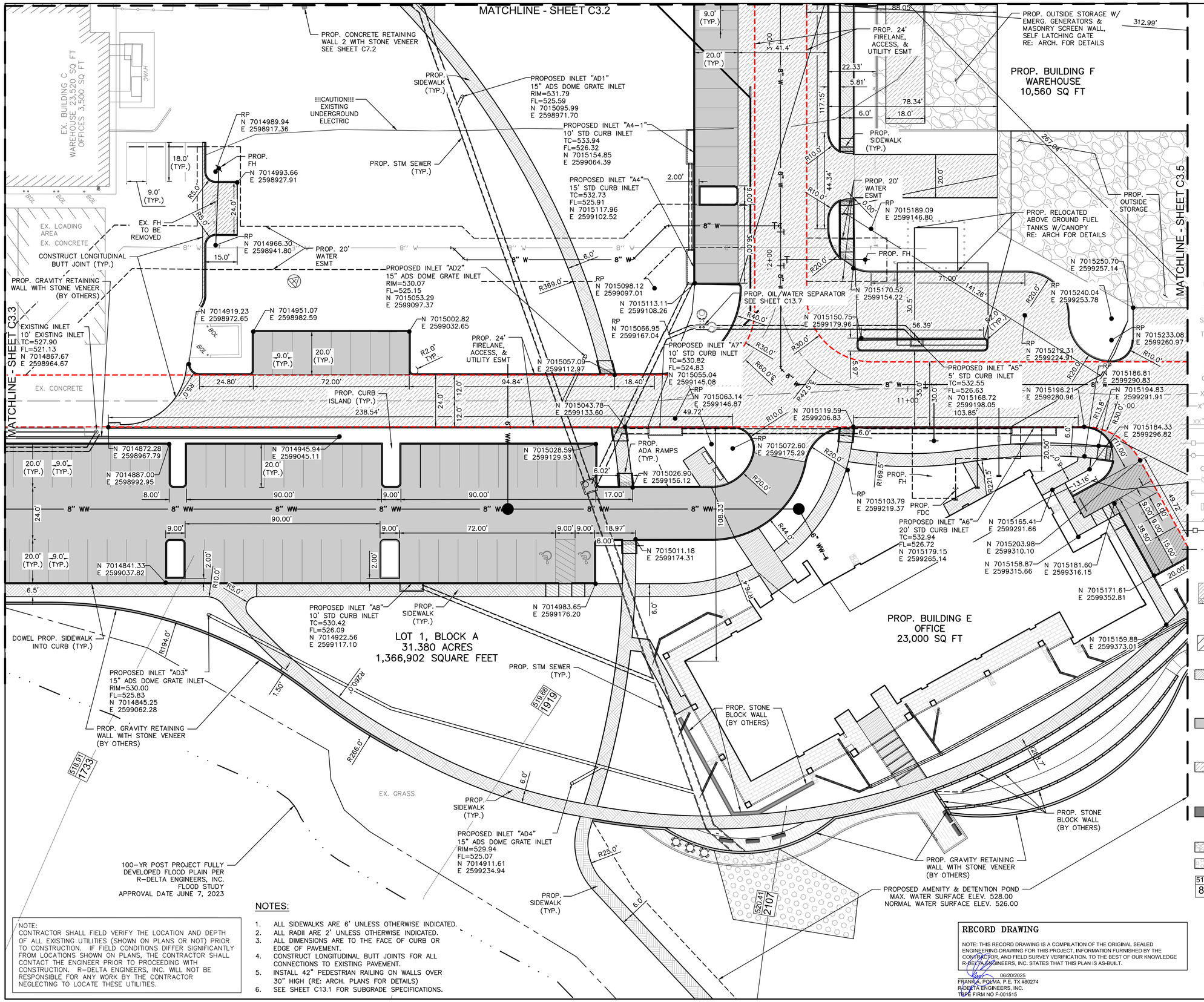
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
DIMENSIONAL CONTROL & PAVING PLAN

CASE# E2023-007

SHEET NO.
C3.3



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514.76 / 855	CROSS-SECTION LOCATION– R-DELTA ENGINEERS, INC FLOOD STUDY

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TBPE FIRM NO F-001515

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REVISION

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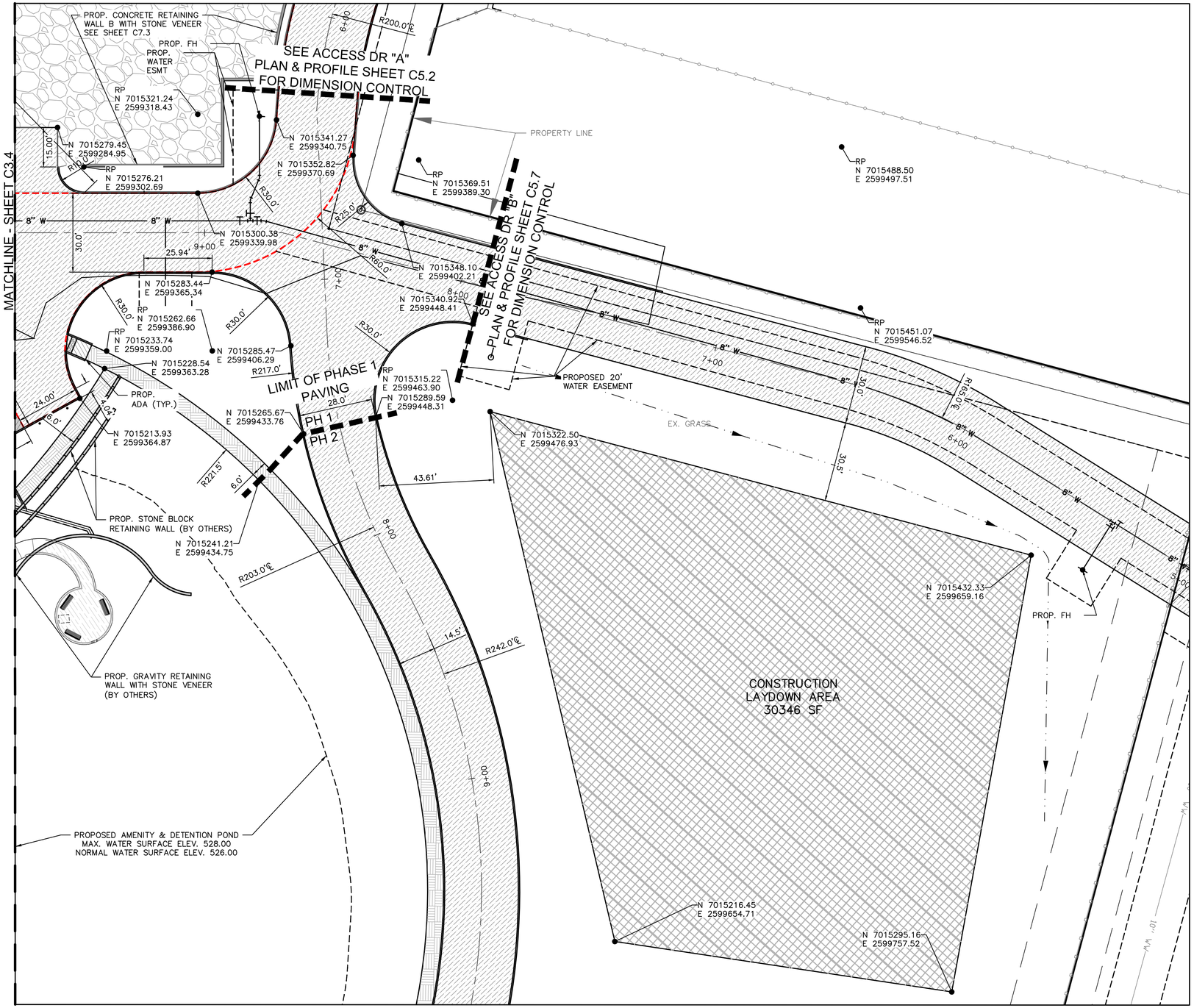
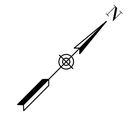
SHEET TITLE
DIMENSIONAL CONTROL & PAVING PLAN

CASE# E2023-007

SHEET NO.
C3.4





20 10 0 20

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RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

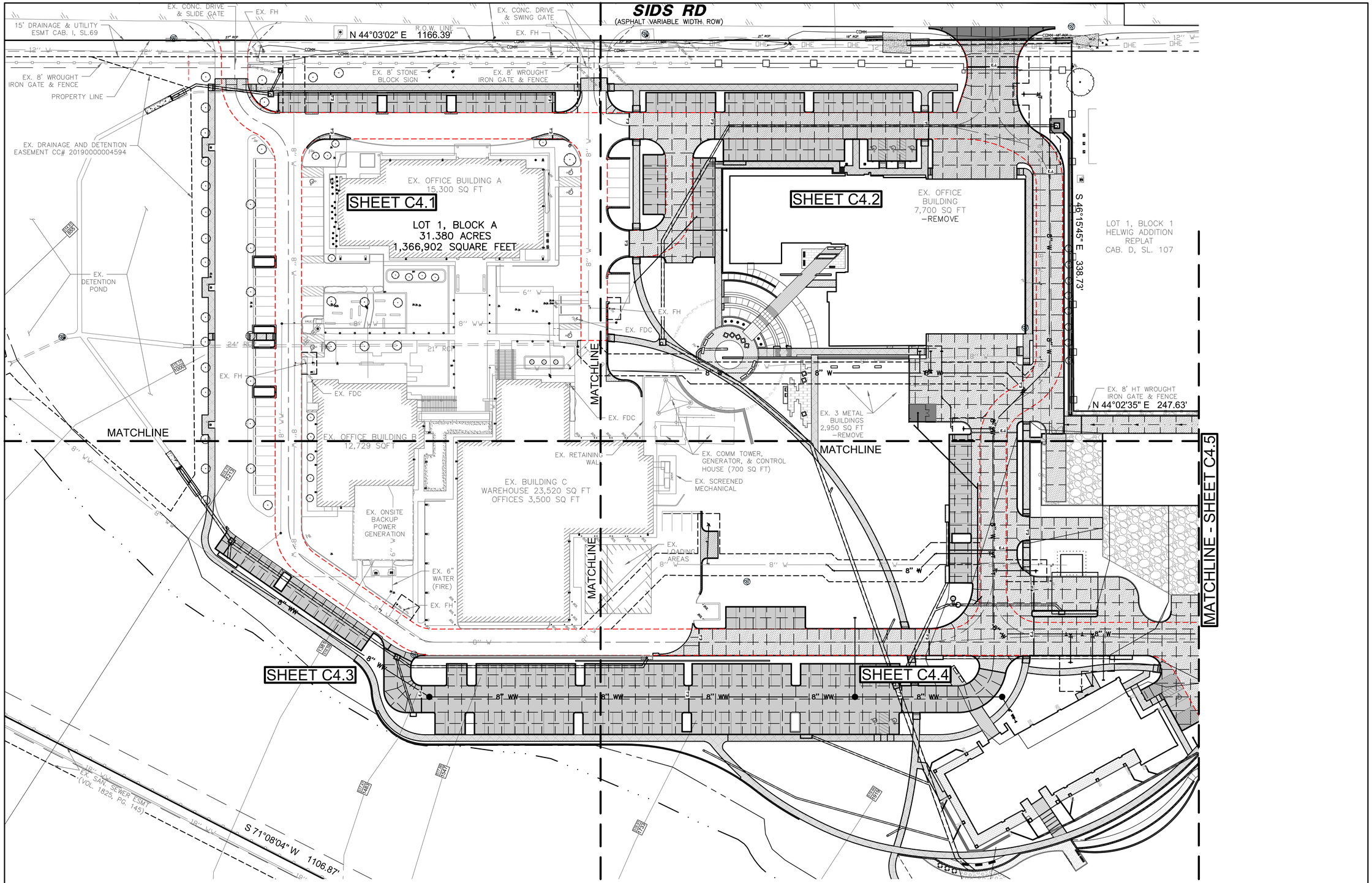
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DIMENSIONAL CONTROL & PAVING PLAN

CASE# E2023-007

SHEET NO.
C3.5



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RECORD DRAWING

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

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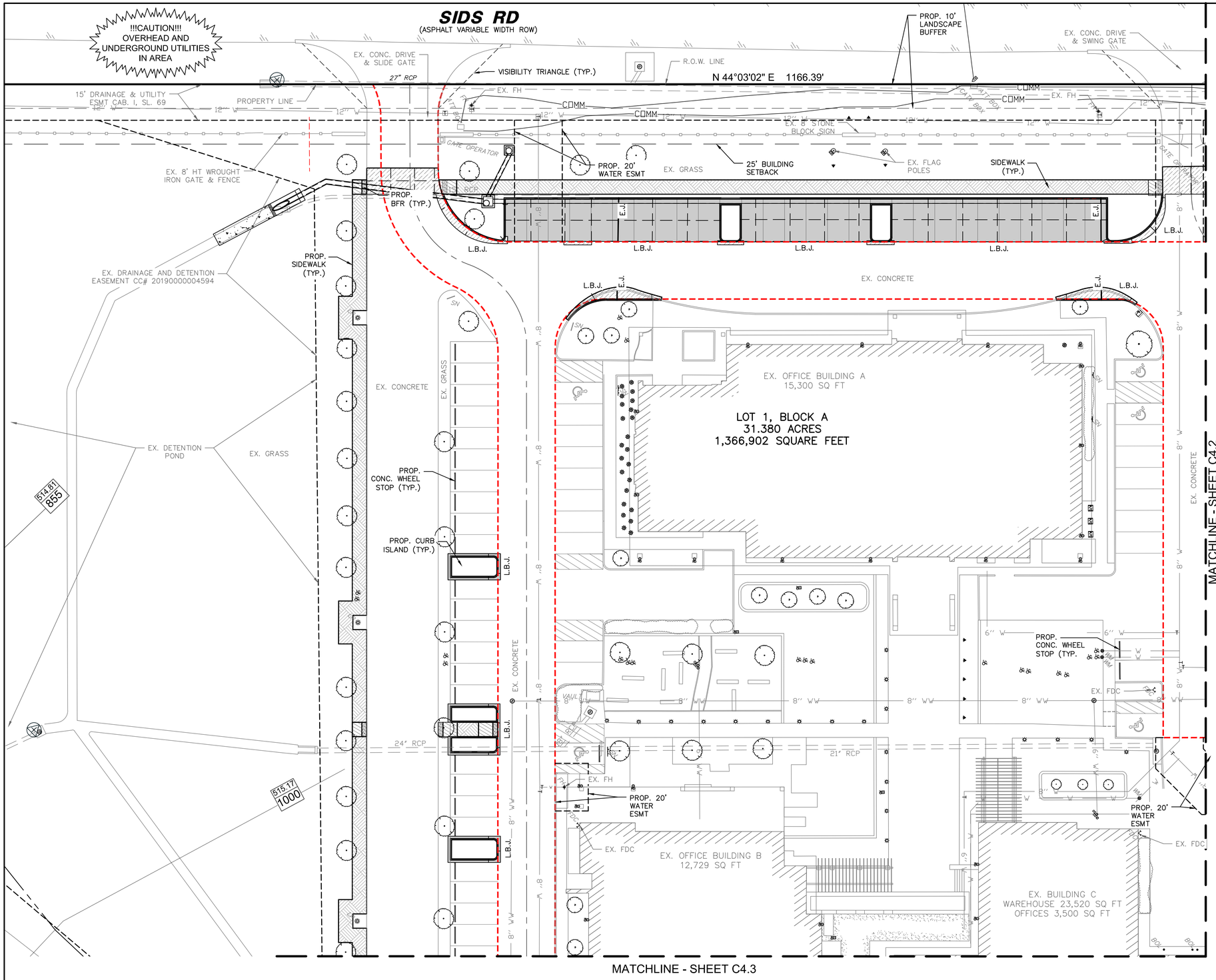
REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
PAVING JOINT KEY MAP

CASE# E2023-007
SHEET NO.
C4.0



N

20 10 0 20

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	CONTRACTION JOINT
	EXPANSION JOINT (E.J.)
	100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
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	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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06/20/2025
FRANK A. POLIMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

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TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

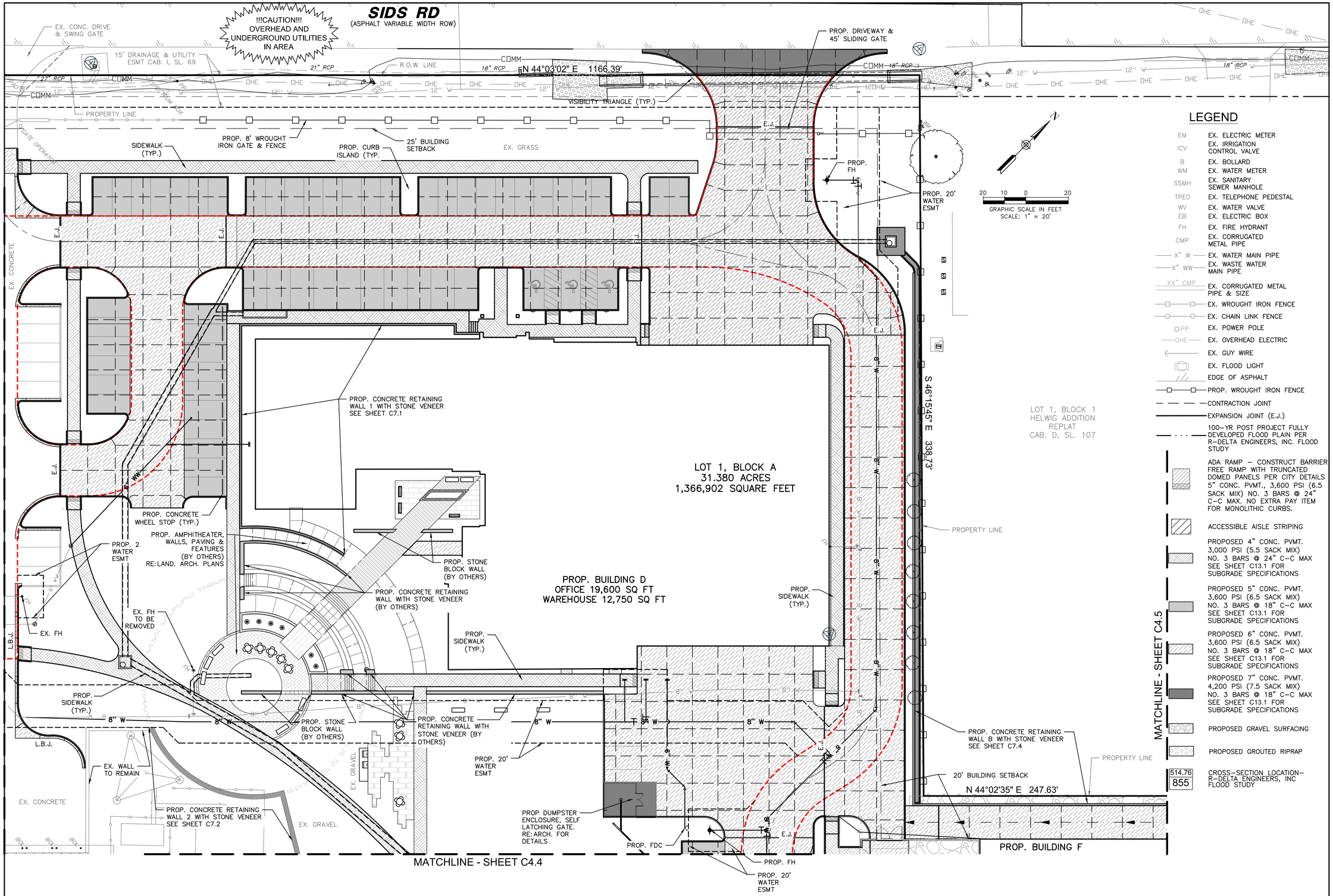
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
PAVING JOINT PLAN

CASE# E2023-007

SHEET NO.
C4.1



LEGEND

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	PROPOSED GROUTED RIPRAP
514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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06/20/2025
FRANK A. POLIMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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TBPE No. F-1515

REC RayburnElectric COOPERATIVE

REVISION
NO. DESCRIPTION DATE

PROJECT NUMBER
3036.21

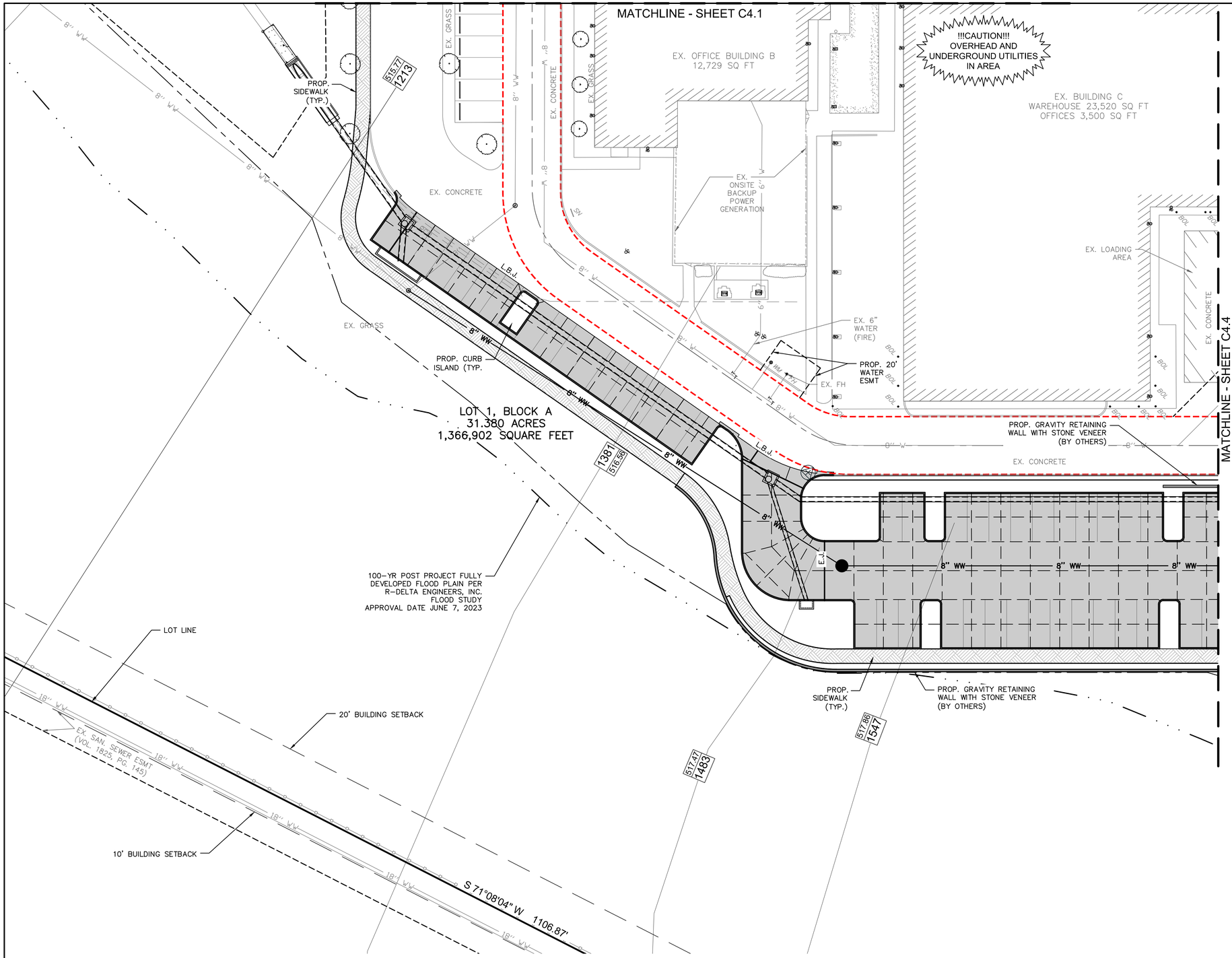
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
PAVING JOINT PLAN

CASE# E2023-007

SHEET NO.
C4.2



20 10 0 20

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
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514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

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HKS

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SUITE 100
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618 MAIN STREET
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TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
PAVING JOINT PLAN

CASE# E2023-007

SHEET NO.
C4.3

MATCHLINE - SHEET C4.2

MATCHLINE - SHEET C4.3

MATCHLINE - SHEET C4.5

!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA

PROP. CONCRETE RETAINING WALL 2 WITH STONE VENEER SEE SHEET C7.2

PROP. SIDEWALK (TYP.)

EX. BUILDING C
WAREHOUSE 23,520 SQ FT
OFFICES 3,500 SQ FT

PROP. FH

EX. FH TO BE REMOVED

EX. CONCRETE

EX. LOADING AREA

PROP. 20' WATER ESMT

L.B.J.

PROP. GRAVITY RETAINING WALL WITH STONE VENEER (BY OTHERS)

PROP. ACCESS DRIVE A

E.J.

PROP. OUTSIDE STORAGE W/ EMERG. GENERATORS & MASONRY SCREEN WALL, SELF LATCHING GATE RE: ARCH. FOR DETAILS

PROP. BUILDING F
WAREHOUSE
10,560 SQ FT

PROP. RELOCATED ABOVE GROUND FUEL TANKS W/CANOPY

PROP. OUTSIDE STORAGE

PROP. FDC

PROP. BUILDING E
OFFICE
23,000 SQ FT

LOT 1, BLOCK A
31.380 ACRES
1,366,902 SQUARE FEET

PROP. CURB ISLAND (TYP.)

PROP. STONE BLOCK WALL (BY OTHERS)

EX. GRASS

100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
APPROVAL DATE JUNE 7, 2023

PROPOSED AMENITY & DETENTION POND
MAX. WATER SURFACE ELEV. 528.00
NORMAL WATER SURFACE ELEV. 526.00

518.91 / 1733

519.66 / 1919

520.41 / 2107

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
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514.76 / 855	CROSS-SECTION LOCATION– R-DELTA ENGINEERS, INC FLOOD STUDY

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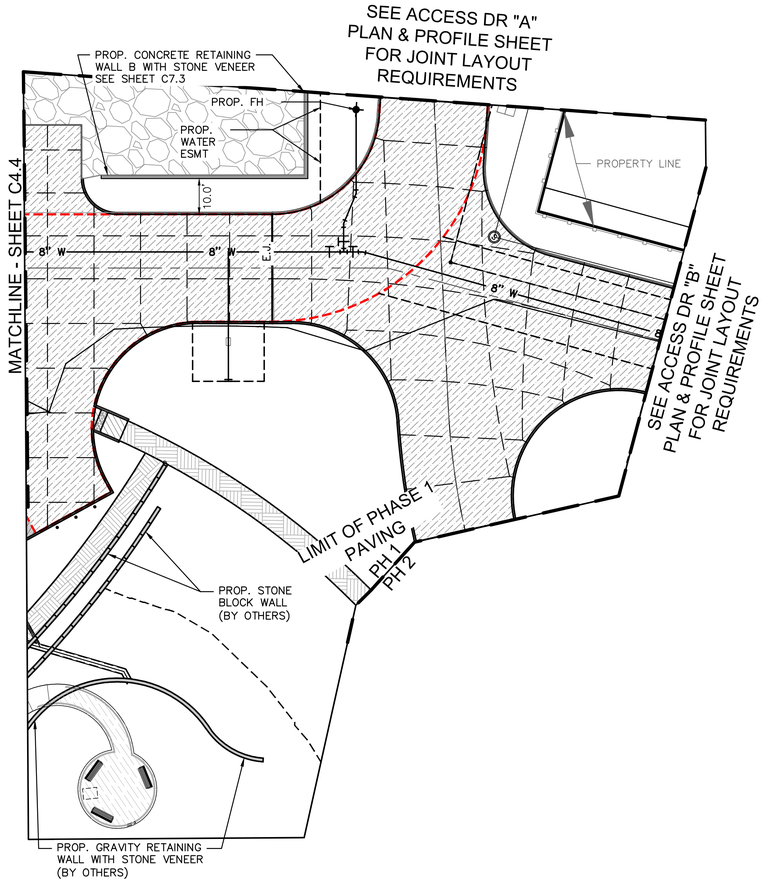
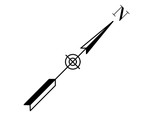
SHEET TITLE
PAVING JOINT PLAN

CASE# E2023-007

SHEET NO.
C4.4

!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA





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	CONTRACTION JOINT
	EXPANSION JOINT (E.J.)
	100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
	ADA RAMP - CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
	PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

1. MAXIMUM CONTROL JOINT SPACING IS 15' C-C. CONTRACTOR MAY ADJUST JOINTS IN THE FIELD AS NECESSARY.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

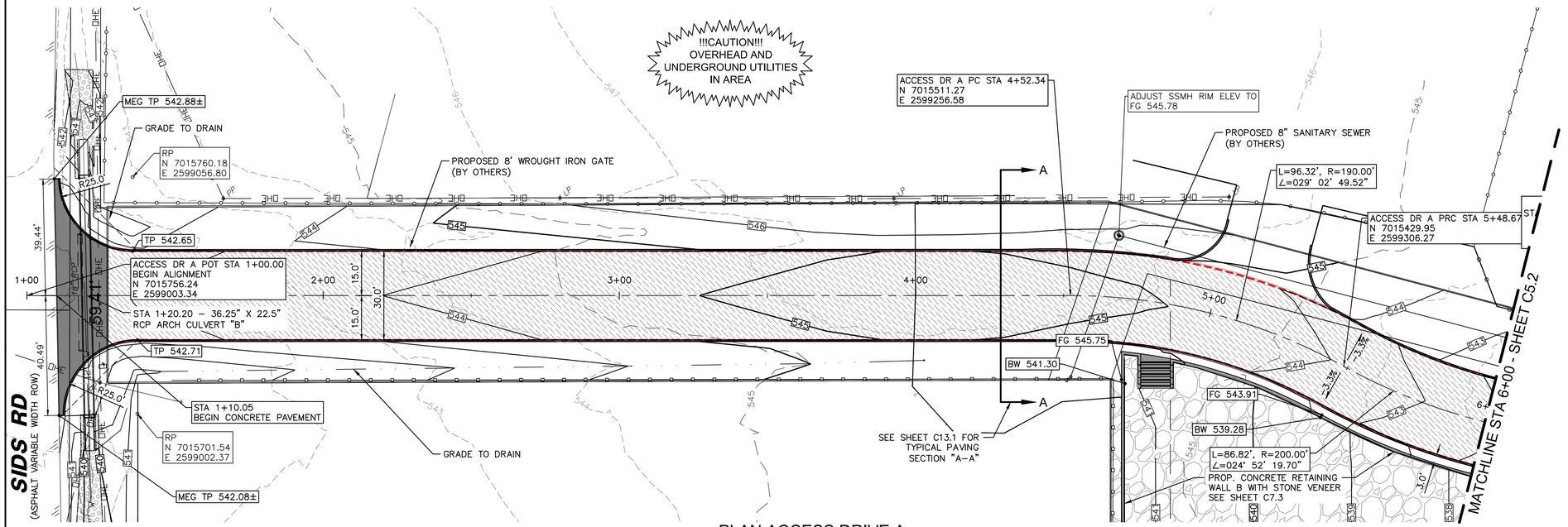
REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
PAVING JOINT PLAN
CASE# E2023-007
SHEET NO.
C4.5

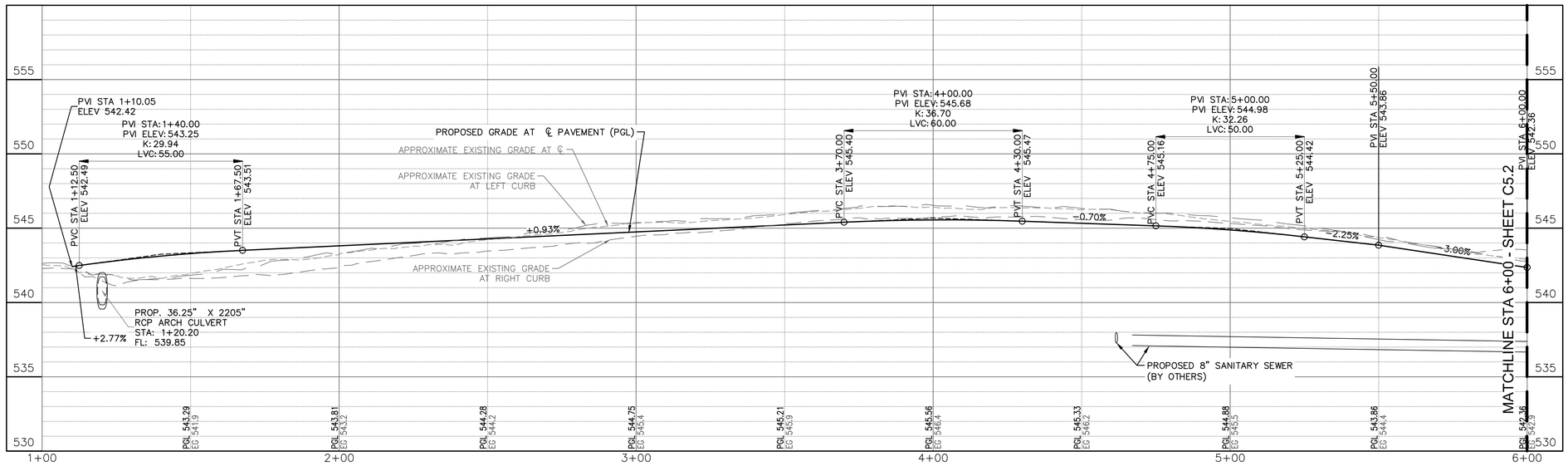
NOTES:

1. ALL SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL AND NOTES.
3. SEE SHEET C13.1 FOR PAVING SECTIONS & DETAILS.



PLAN ACCESS DRIVE A

SCALE: 1"=20'



PROFILE ACCESS DRIVE A

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
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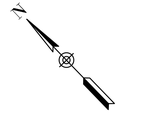


LEGEND

- PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 2" GRAVEL SURFACING ON 6" COMPACTED FLEXIBLE BASE
- PROPOSED GROUTED RIPRAP
- EXISTING WROUGHT IRON FENCE
- EXISTING CHAIN LINK FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- 3.3% PROPOSED PAVEMENT CROSS SLOPE
- 100–YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R–DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 CROSS–SECTION LOCATION– R–DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
BW	BOTTOM OF RETAINING WALL

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

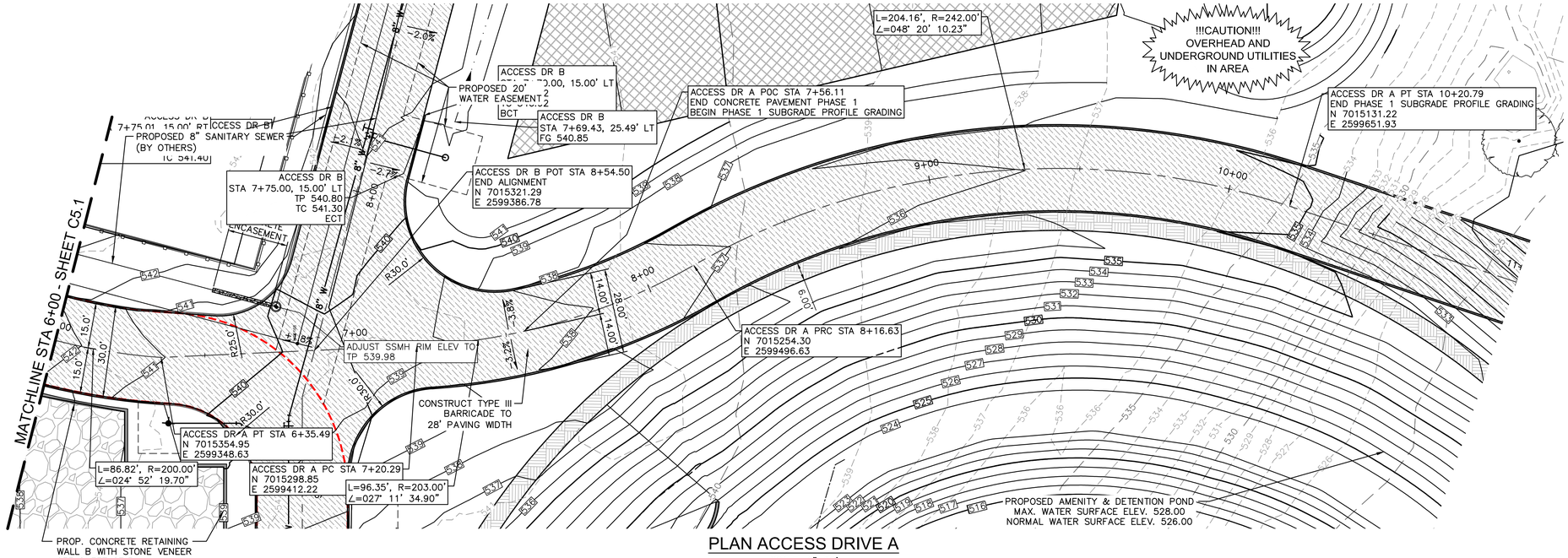
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
ACCESS DR A PAVING PLAN & PROFILE PH 1

CASE# E2023-007

SHEET NO.
C5.1

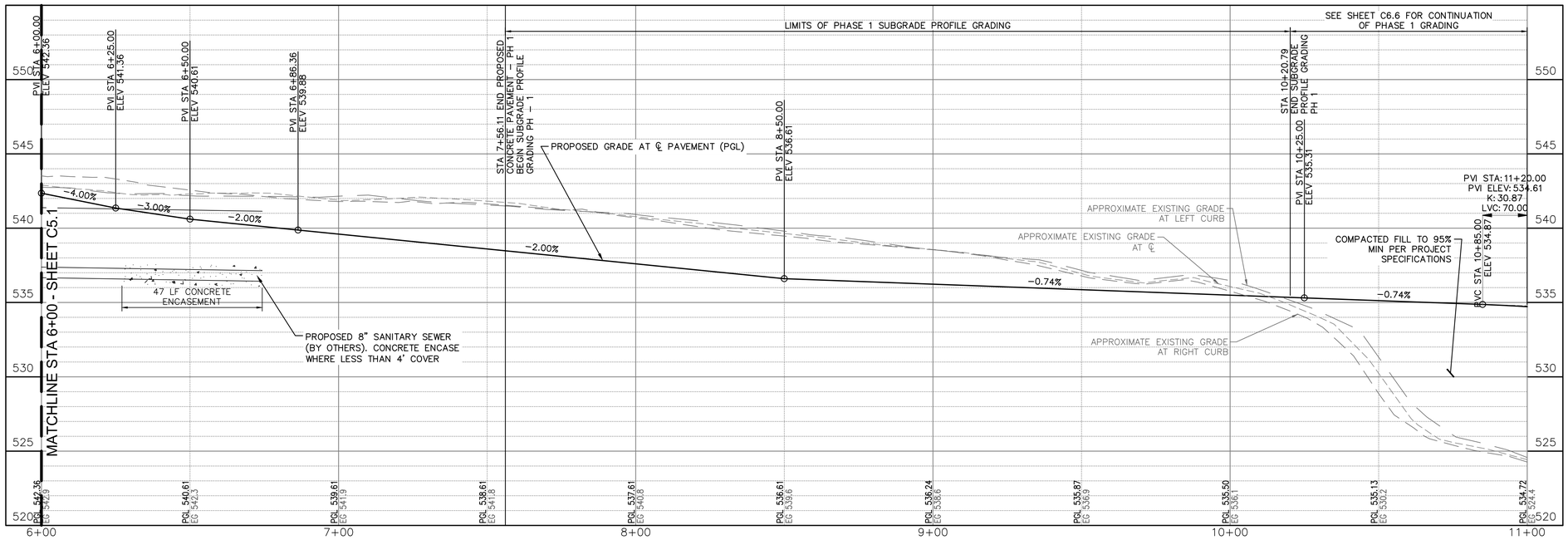
NOTES:

1. ALL SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL AND NOTES.
3. SEE SHEET C13.1 FOR PAVING SECTIONS & DETAILS.



PLAN ACCESS DRIVE A

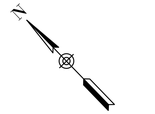
SCALE: 1"=20'



PROFILE ACCESS DRIVE A

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.



LEGEND

- PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 2" GRAVEL SURFACING ON 6" COMPACTED FLEXIBLE BASE
- EXISTING WROUGHT IRON FENCE
- EXISTING CHAIN LINK FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- 3.3% PROPOSED PAVEMENT CROSS SLOPE
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
BW	BOTTOM OF RETAINING WALL

RECORD DRAWING

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06/20/2025
FRANK A. POEMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

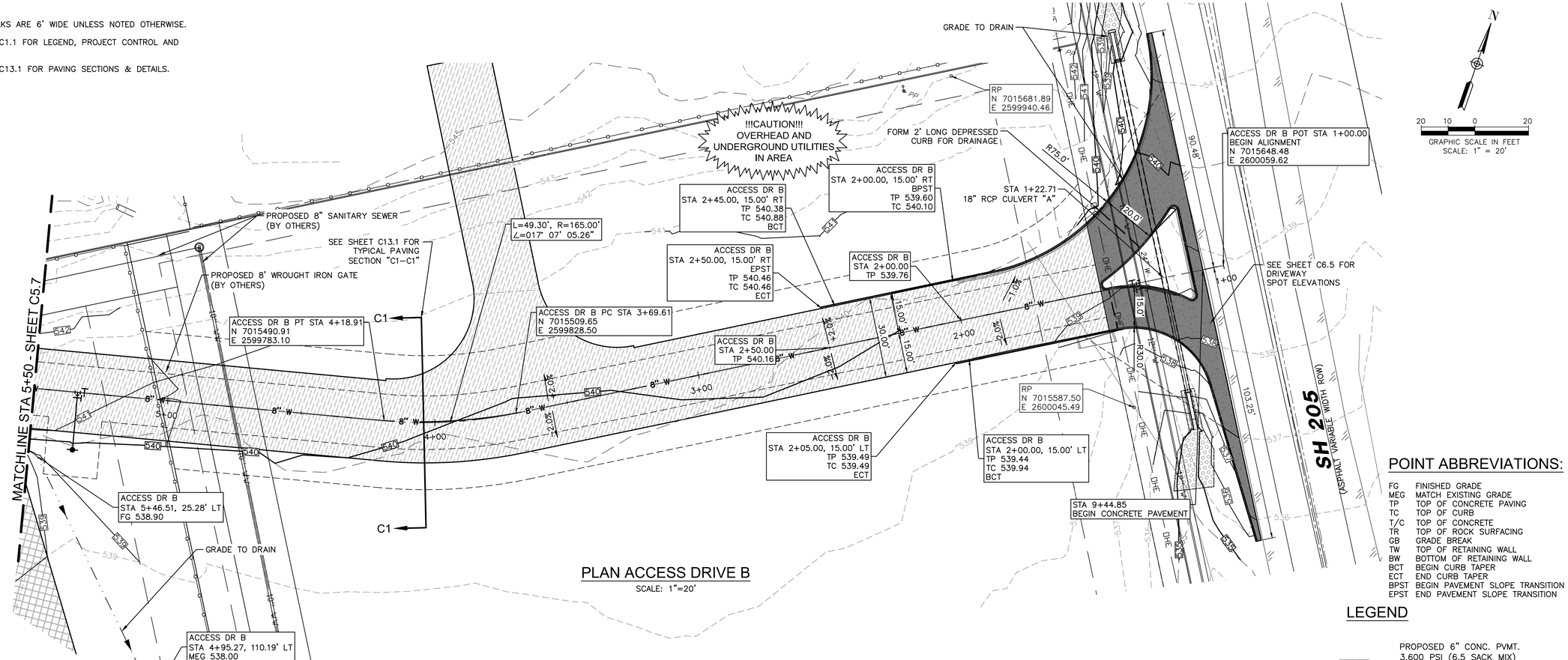
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
ACCESS DR A PAVING PLAN & PROFILE PH 1

CASE# E2023-007

SHEET NO.
C5.2

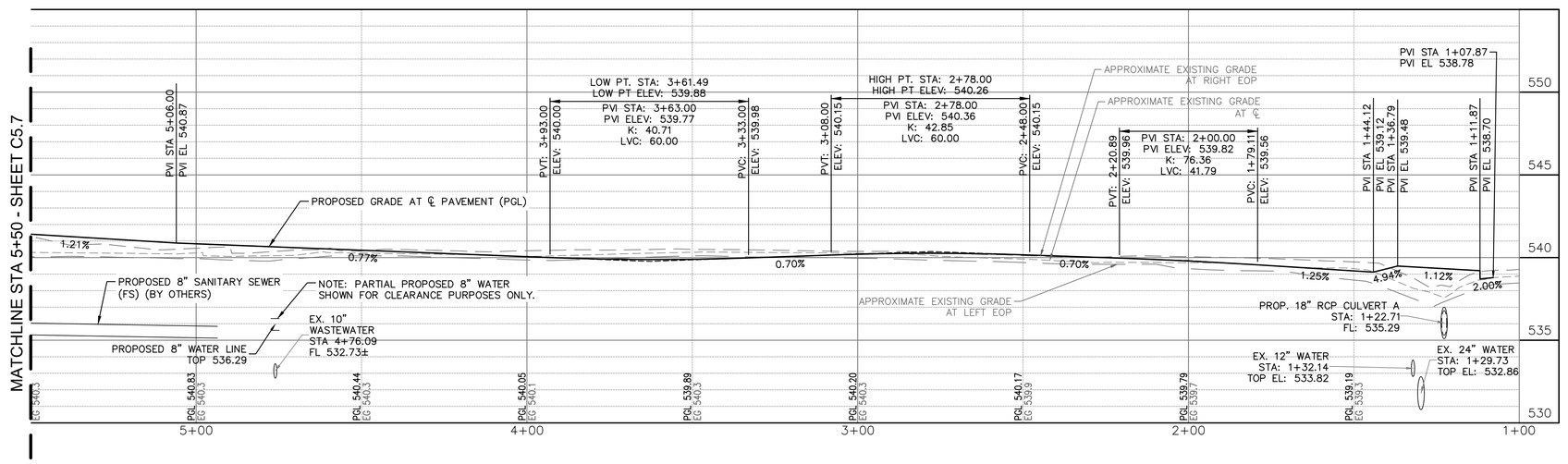
NOTES:

1. ALL SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL AND NOTES.
3. SEE SHEET C13.1 FOR PAVING SECTIONS & DETAILS.



PLAN ACCESS DRIVE B

SCALE: 1"=20'



PROFILE ACCESS DRIVE B

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
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BW	BOTTOM OF RETAINING WALL
BCT	BEGIN CURB TAPER
ECT	END CURB TAPER
BPST	BEGIN PAVEMENT SLOPE TRANSITION
EPST	END PAVEMENT SLOPE TRANSITION

LEGEND

- PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 10" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 4 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED GROUTED RIPRAP
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- 3.3% PROPOSED PAVEMENT CROSS SLOPE
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

NOTE:
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RECORD DRAWING

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06/20/2025
FRANK A. POEMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

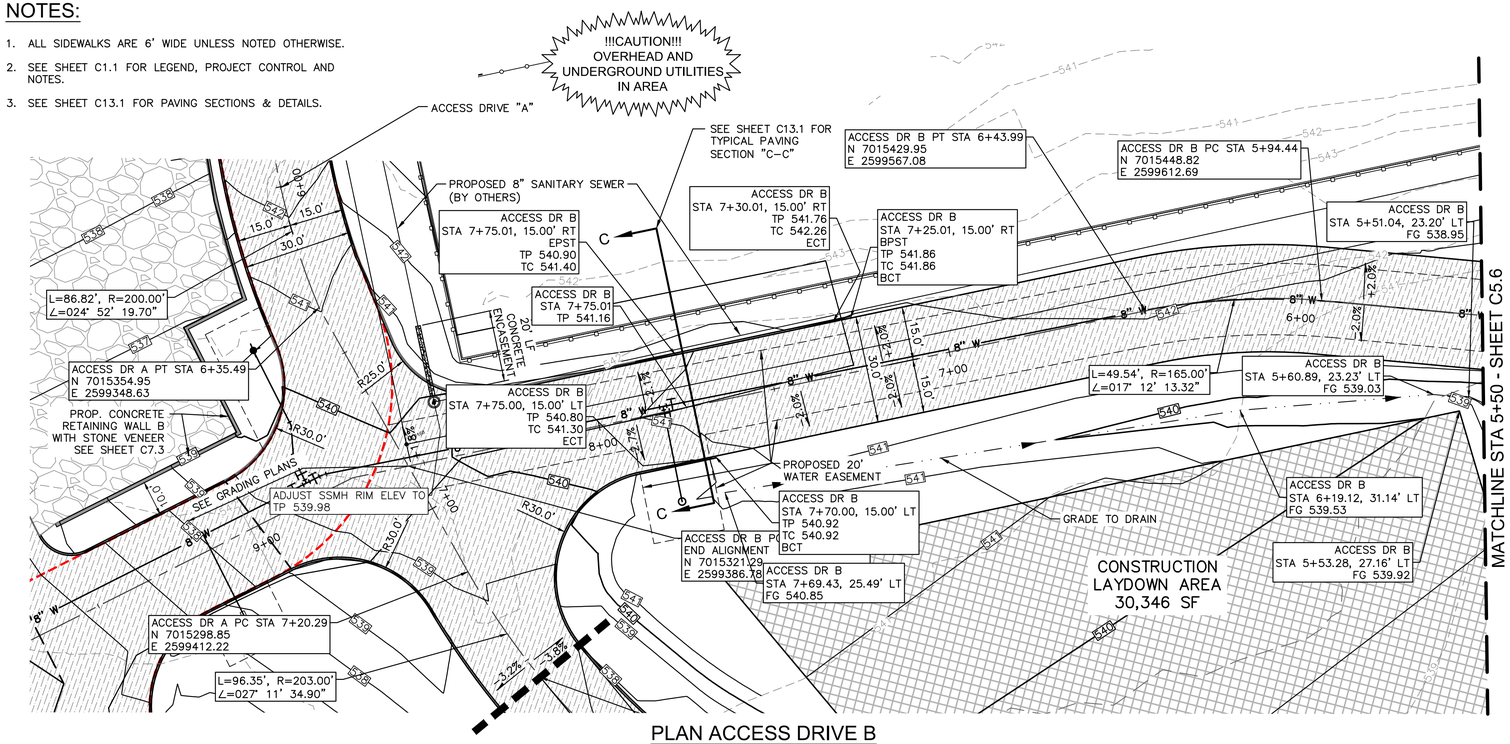
SHEET TITLE
ACCESS DR B PAVING PLAN & PROFILE

CASE# E2023-007

SHEET NO.
C5.6

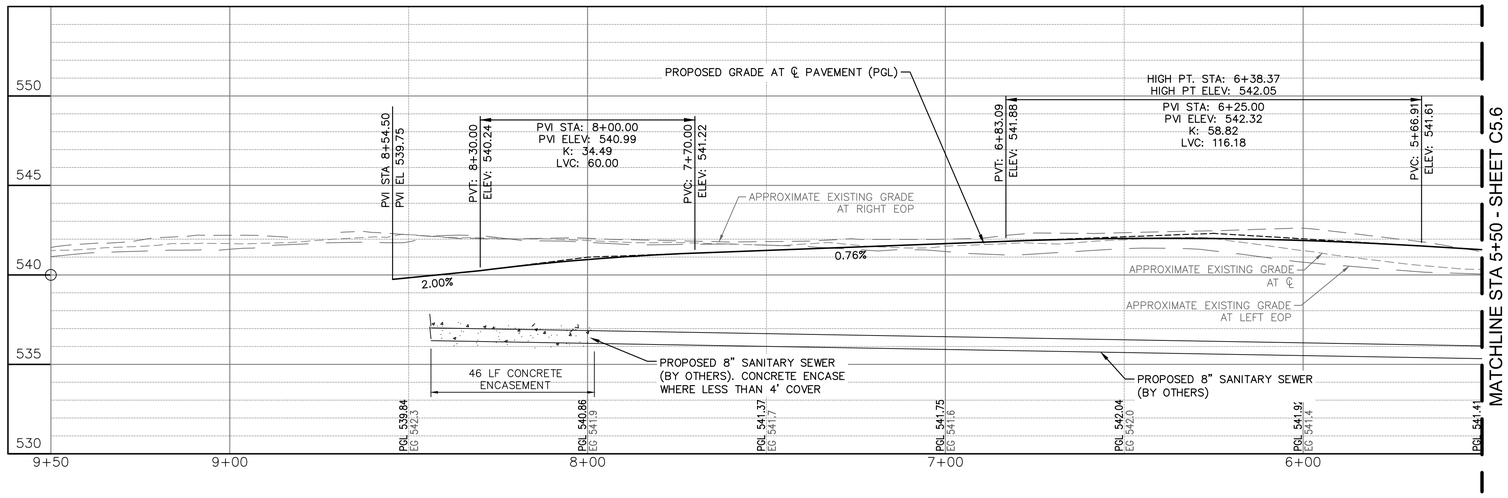
NOTES:

1. ALL SIDEWALKS ARE 6' WIDE UNLESS NOTED OTHERWISE.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL AND NOTES.
3. SEE SHEET C13.1 FOR PAVING SECTIONS & DETAILS.



PLAN ACCESS DRIVE B

SCALE: 1"=20'



PROFILE ACCESS DRIVE B

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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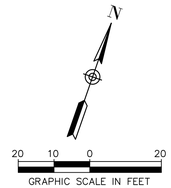

LEGEND

- PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 2" GRAVEL SURFACING ON 6" COMPACTED FLEXIBLE BASE
- EXISTING WROUGHT IRON FENCE
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- 550 EXISTING SURFACE CONTOUR MAJOR
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- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
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RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

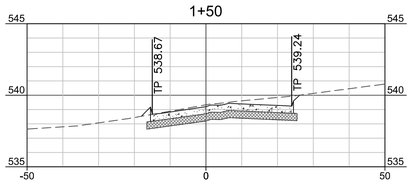
REC RayburnElectric COOPERATIVE

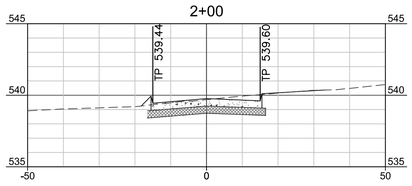
VICINITY MAP
NTS

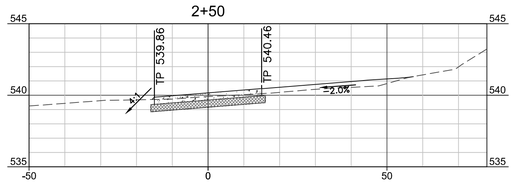
REVISION

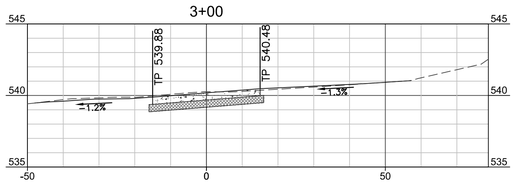
NO.	DESCRIPTION	DATE

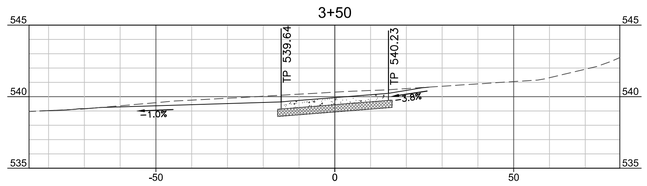
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
ACCESS DR B PAVING PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C5.7

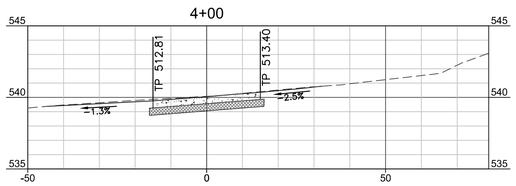


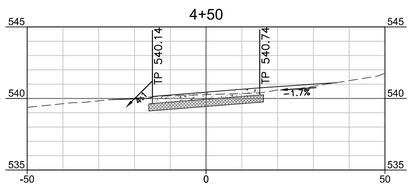


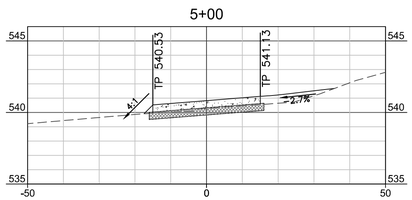












ACCESS DRIVE B
CROSS SECTIONS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
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LEGEND

PROPOSED 6 IN CONC PAVEMENT

PROPOSED 6 IN LIME STABILIZED SUBGRADE

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POEMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

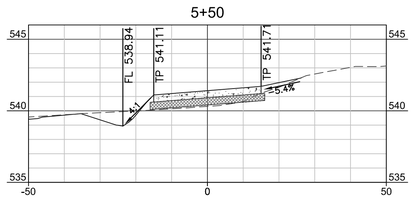
DATE
08/03/2023

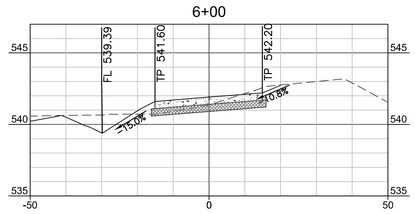
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

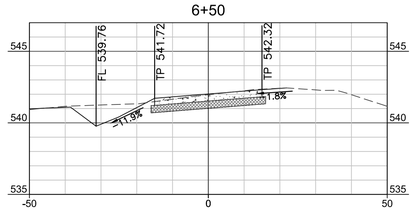
SHEET TITLE
ACCESS DRIVE B CROSS SECTIONS

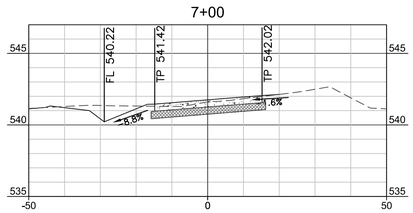
CASE# E2023-007

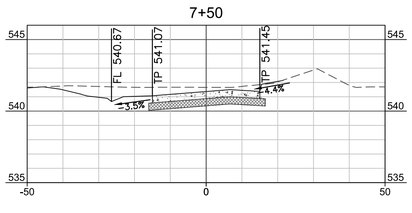
SHEET NO.
C5.7A

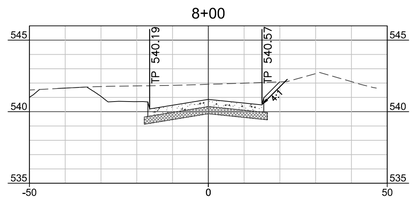












LEGEND

PROPOSED 6 IN CONC PAVEMENT

PROPOSED 6 IN LIME STABILIZED SUBGRADE

ACCESS DRIVE B CROSS SECTIONS

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
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RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

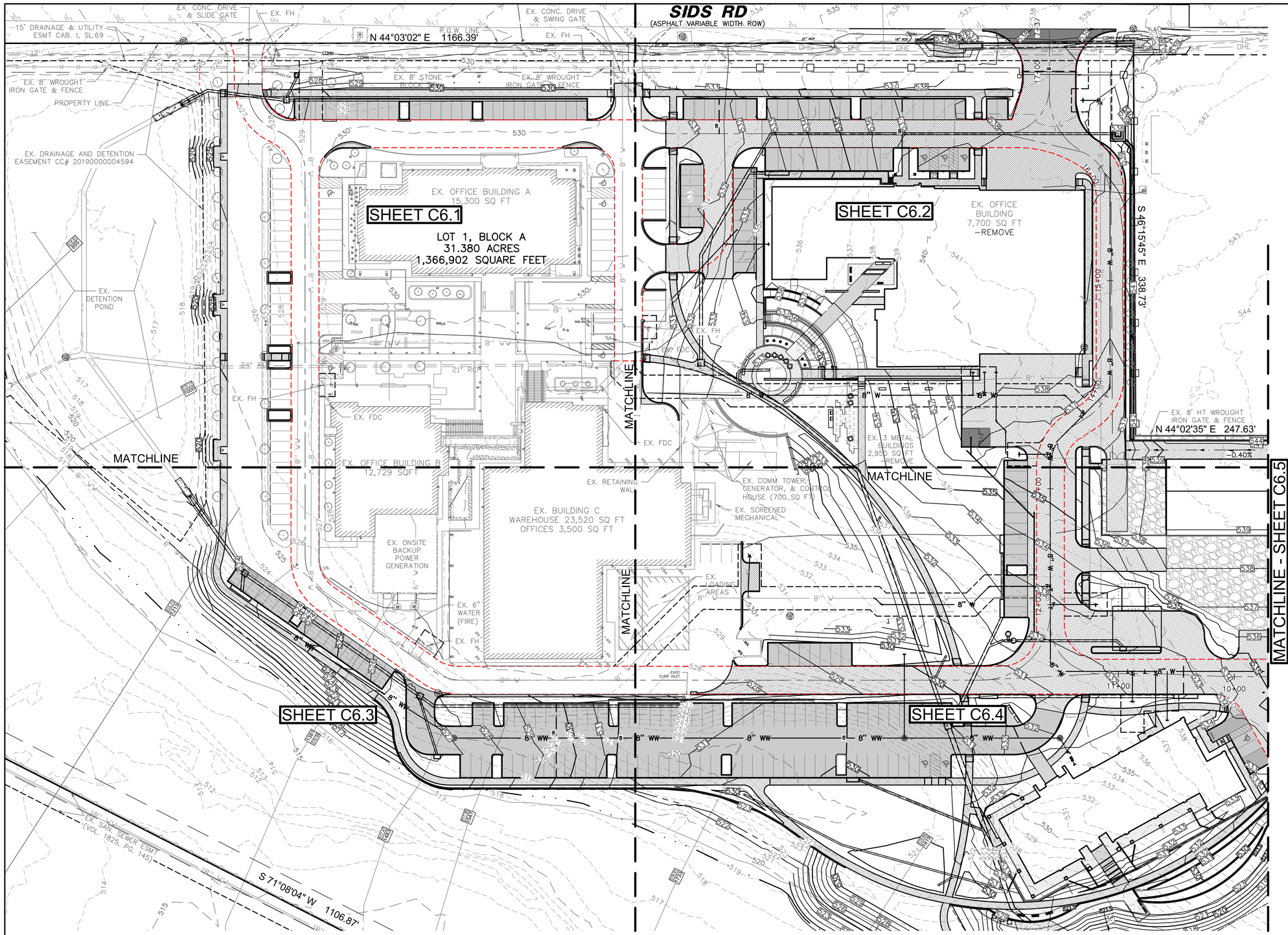
DATE
08/03/2023

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
ACCESS DRIVE B CROSS SECTIONS

CASE# E2023-007

SHEET NO.
C5.7B



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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. SEE SHEET SP (1 OF 2) FOR SITE INFORMATION AND PARKING INFORMATION.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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260 EAST DAVIS STREET, SUITE 100
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ROCKWALL, TX 75087
469-402-2100

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R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

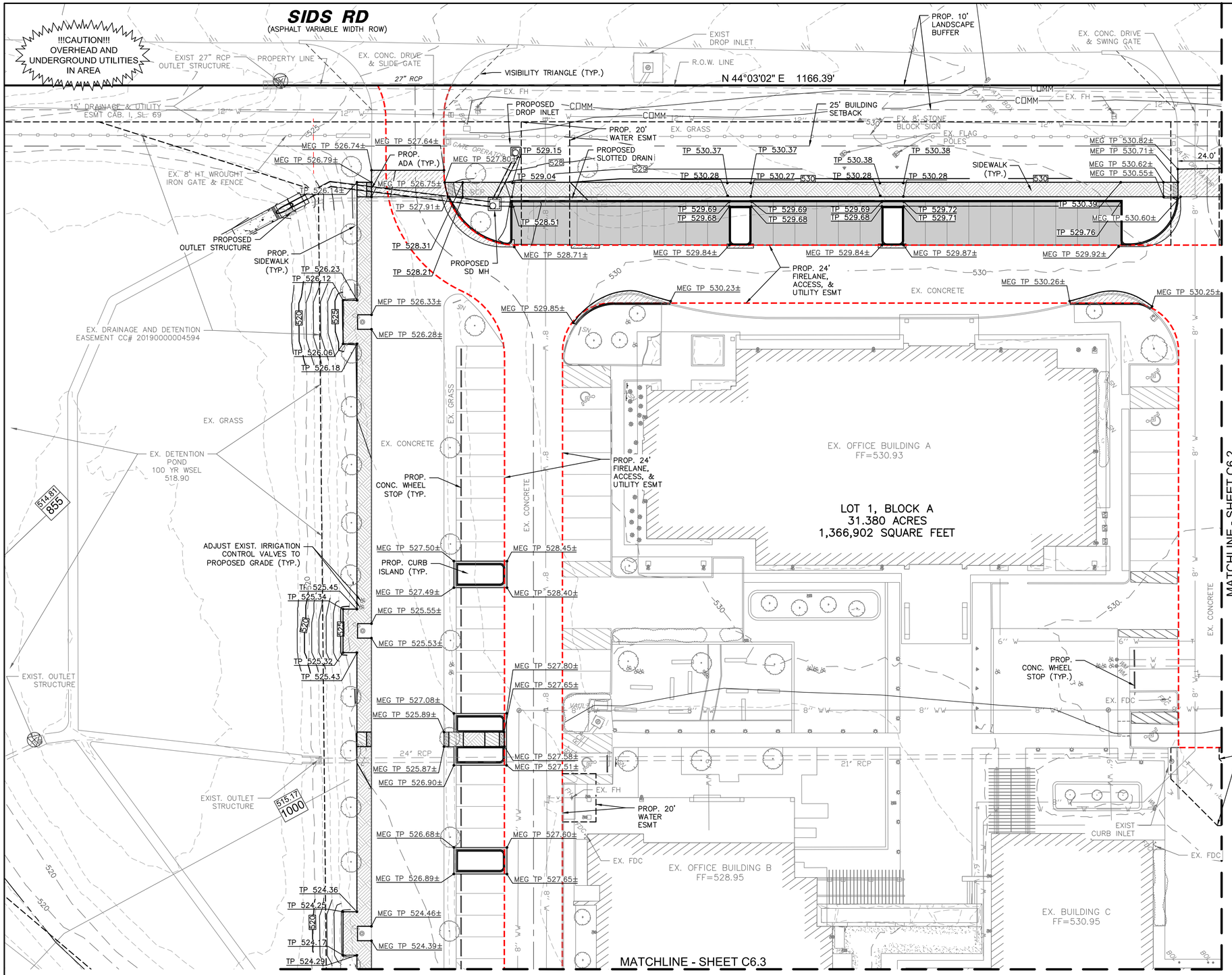
REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
GRADING KEY MAP

CASE# E2023-007

SHEET NO.
C6.0



20 10 0 20

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100–YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R–DELTA ENGINEERS, INC. FLOOD STUDY
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C–C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
	PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C–C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS–SECTION LOCATION– R–DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
BW	BOTTOM OF RETAINING WALL

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. CONSTRUCT A 10' VERTICAL CURVE AT GRADE BREAKS GREATER THAN 1% IN FIRE LANE AND PARKING AREAS.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. WALLS 3' AND TALLER MUST BE ENGINEERED.
7. WALLS 18" OR TALLER MUST BE ROCK OR STONE FACED. (NO SMOOTH CONCRETE)
8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R–DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

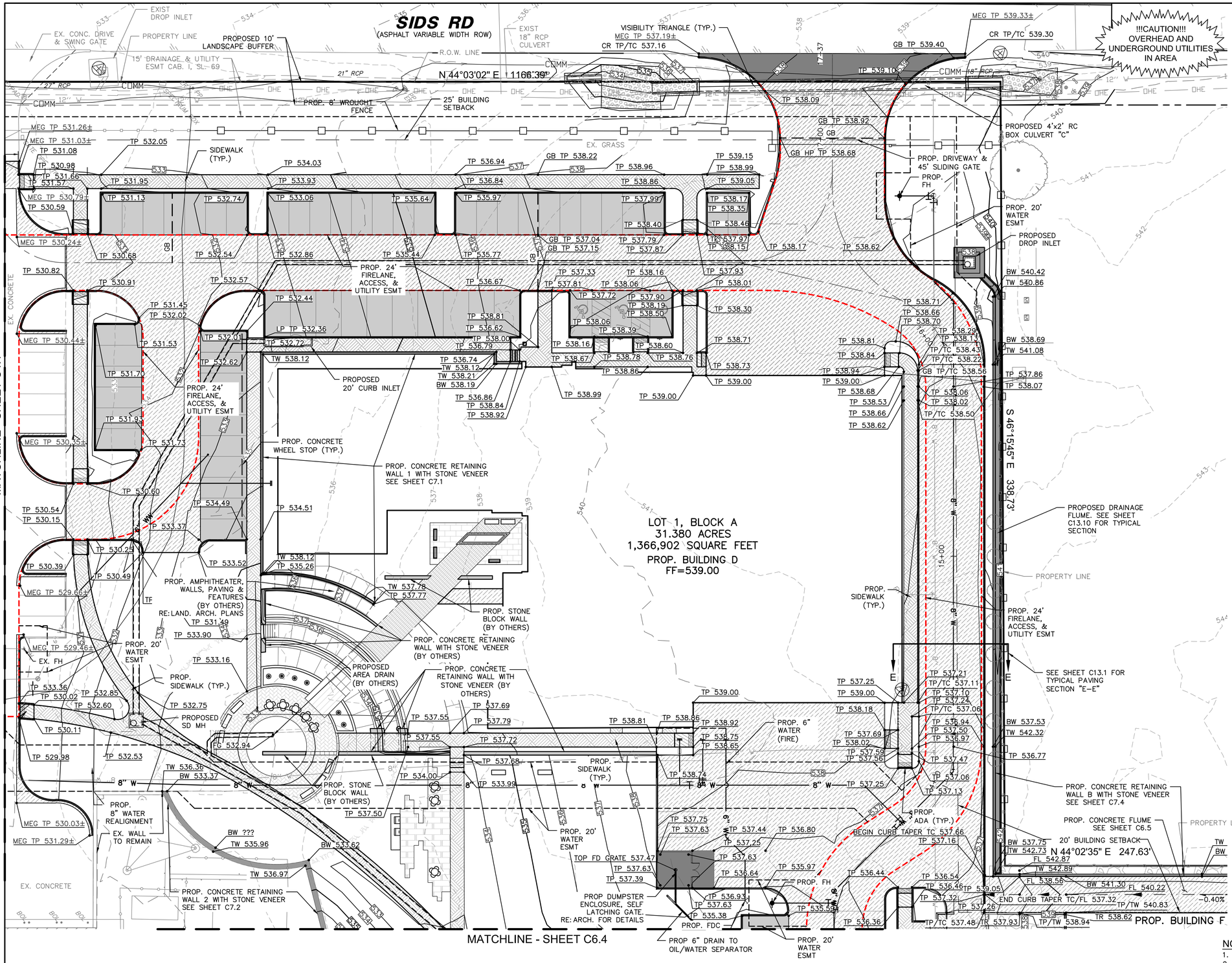
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.1



LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
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XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
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	PROPOSED GRAVEL SURFACING
	PROPOSED GROUTED RIPRAP
514.76 / 855	CROSS-SECTION LOCATION-R-DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
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NOTES:

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4. CONSTRUCT A 10' VERTICAL CURVE AT GRADE BREAKS GREATER THAN 1% IN FIRE LANE AND PARKING AREAS.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. WALLS 3' AND TALLER MUST BE ENGINEERED.
7. WALLS 18" OR TALLER MUST BE ROCK OR STONE FACED. (NO SMOOTH CONCRETE)
8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

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06/20/2025
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R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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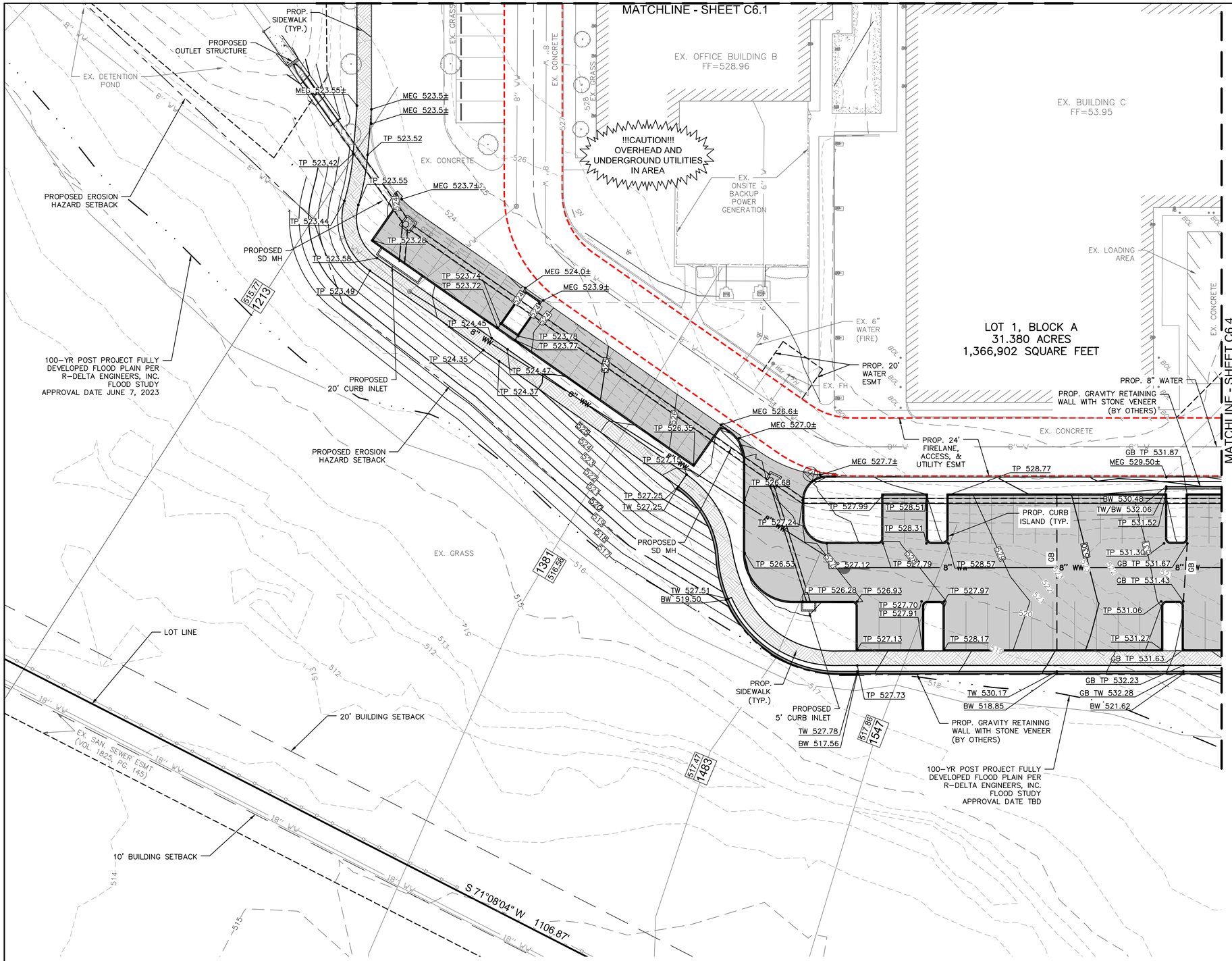
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

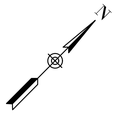
CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REVISION
NO. DESCRIPTION DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
GRADING PLAN

CASE# E2023-007
SHEET NO.
C6.2





LEGEND

- EM — EX. ELECTRIC METER
- ICV — EX. IRRIGATION CONTROL VALVE
- B — EX. BOLLARD
- WM — EX. WATER METER
- SSMH — EX. SANITARY SEWER MANHOLE
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- EX. GUY WIRE
- EX. FLOOD LIGHT
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- PROP. WROUGHT IRON FENCE
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
- ACCESSIBLE AISLE STRIPING
- PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
- PROPOSED GRAVEL SURFACING
- 514.76 / 855 — CROSS-SECTION LOCATION– R-DELTA ENGINEERS, INC FLOOD STUDY

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
BW	BOTTOM OF RETAINING WALL

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. CONSTRUCT A 10' VERTICAL CURVE AT GRADE BREAKS GREATER THAN 1% IN FIRE LANE AND PARKING AREAS.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. WALLS 3' AND TALLER MUST BE ENGINEERED.
7. WALLS 18" OR TALLER MUST BE ROCK OR STONE FACED. (NO SMOOTH CONCRETE)
8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

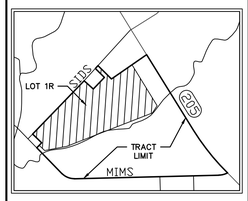
STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE



REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.3

MATCHLINE - SHEET C6.2

MATCHLINE - SHEET C6.3

MATCHLINE - SHEET C6.5

PROP. BUILDING F
3 SIDE OPEN WAREHOUSE

PROP. OUTSIDE STORAGE W/ EMERG. GENERATORS & MASONRY SCREEN WALL, SELF LATCHING GATE RE: ARCH. FOR DETAILS

PROP. BUILDING E
OFFICE
FF=534.00

EX. BUILDING C
FF=530.95

LOT 1, BLOCK A
31.380 ACRES
1,366,902 SQUARE FEET

!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA

PROP. 24' FIRELANE, ACCESS, & UTILITY ESMT

PROP. 20' WATER ESMT

PROP. FH

PROP. CONCRETE RETAINING WALL 2 WITH STONE VENEER SEE SHEET C7.2

PROP. SIDEWALK (TYP.)

PROPOSED DOME GRATE INLET

PROPOSED 15' CURB INLET

PROP. CURB ISLAND (TYP.

PROP. RELOCATED ABOVE GROUND FUEL TANKS W/CANOPY

PROPOSED 5' CURB INLET

PROPOSED 20' CURB INLET

PROPOSED OIL/WATER SEPARATOR

PROP. ADA (TYP.)

PROPOSED SD MH

PROPOSED 10' CURB INLET

PROPOSED FLAT GRATE INLET

PROP. FDC

EX. CONCRETE

EX. DUMPSTER ENCLOSURE TO REMAIN

PROP. GRAVITY RETAINING WALL WITH STONE VENEER (BY OTHERS)

SEE SHEET C13.1 FOR TYPICAL PAVING SECTION "D-D"

EXIST CURB INLET

PROP. STONE BLOCK WALL (BY OTHERS)

PROPOSED EROSION HAZARD SETBACK

100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
APPROVAL DATE JUNE 7, 2023

PROPOSED AMENITY & DETENTION POND
MAX. WATER SURFACE ELEV. 528.00
NORMAL WATER SURFACE ELEV. 526.00

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
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	EX. GUY WIRE
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	PROPOSED GRAVEL SURFACING
	PROPOSED GROUTED RIPRAP
514.76 / 855	CROSS-SECTION LOCATION– R-DELTA ENGINEERS, INC FLOOD STUDY

SURFACE ROCK GRADATION

SIEVE SIZE	PERCENT PASSING
2"	100
1 1/2"	95–100
1 1/4"	85–100
1"	50–80
3/4"	5–30
5/8"	0–10
3/8"	0–2

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RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
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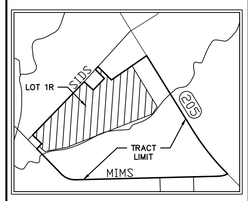
Rayburn Electric COOPERATIVE



REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

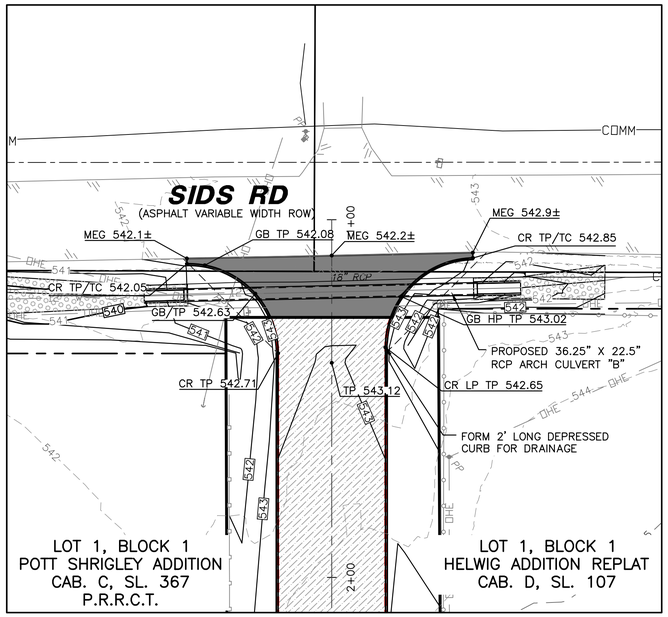
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.4



ACCESS DR "A" @ SIDS RD

!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA

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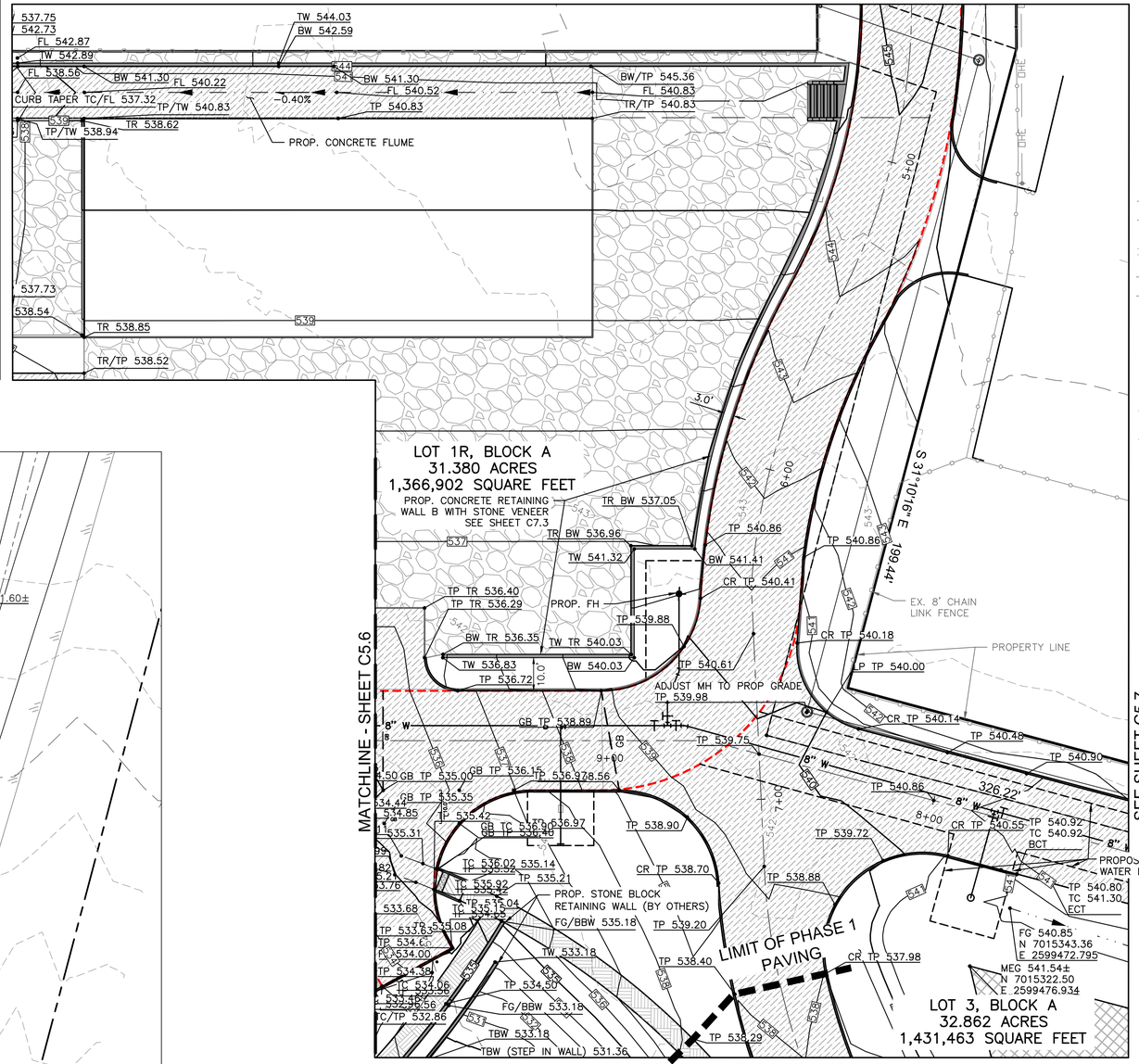
06/20/2025
FRANK A. POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'



ACCESS DR "A" @ ACCESS DR "B"

ACCESS DR "B" @ SH 2O5

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LEGEND

- EM — EX. ELECTRIC METER
- ICV — EX. IRRIGATION CONTROL VALVE
- B — EX. BOLLARD
- WM — EX. WATER METER
- SSMH — EX. SANITARY SEWER MANHOLE
- TPED — EX. TELEPHONE PEDESTAL
- WV — EX. WATER VALVE
- EB — EX. ELECTRIC BOX
- FH — EX. FIRE HYDRANT
- CMP — EX. CORRUGATED METAL PIPE
- X" W — EX. WATER MAIN PIPE
- X" WW — EX. WASTE WATER MAIN PIPE
- XX" CMP — EX. CORRUGATED METAL PIPE & SIZE
- EX. WROUGHT IRON FENCE
- EX. CHAIN LINK FENCE
- PP — EX. POWER POLE
- OHE — EX. OVERHEAD ELECTRIC
- EX. GUY WIRE
- EX. FLOOD LIGHT
- EDGE OF ASPHALT
- PROP. WROUGHT IRON FENCE
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
- ACCESSIBLE AISLE STRIPING
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- PROPOSED GROUTED RIPRAP
- 514.76 / 855 — CROSS-SECTION LOCATION— R-DELTA ENGINEERS, INC FLOOD STUDY

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GB	GRADE BREAK
TW	TOP OF RETAINING WALL
TBW	TOP OF BLOCK WALL
BW	BOTTOM OF RETAINING WALL
BBW	BOTTOM OF BLOCK WALL
BCT	BEGIN CURB TAPER
ECT	END CURB TAPER

NOTES:

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8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

HKS

ARCHITECT
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350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION
NO. DESCRIPTION DATE

PROJECT NUMBER
3036.21

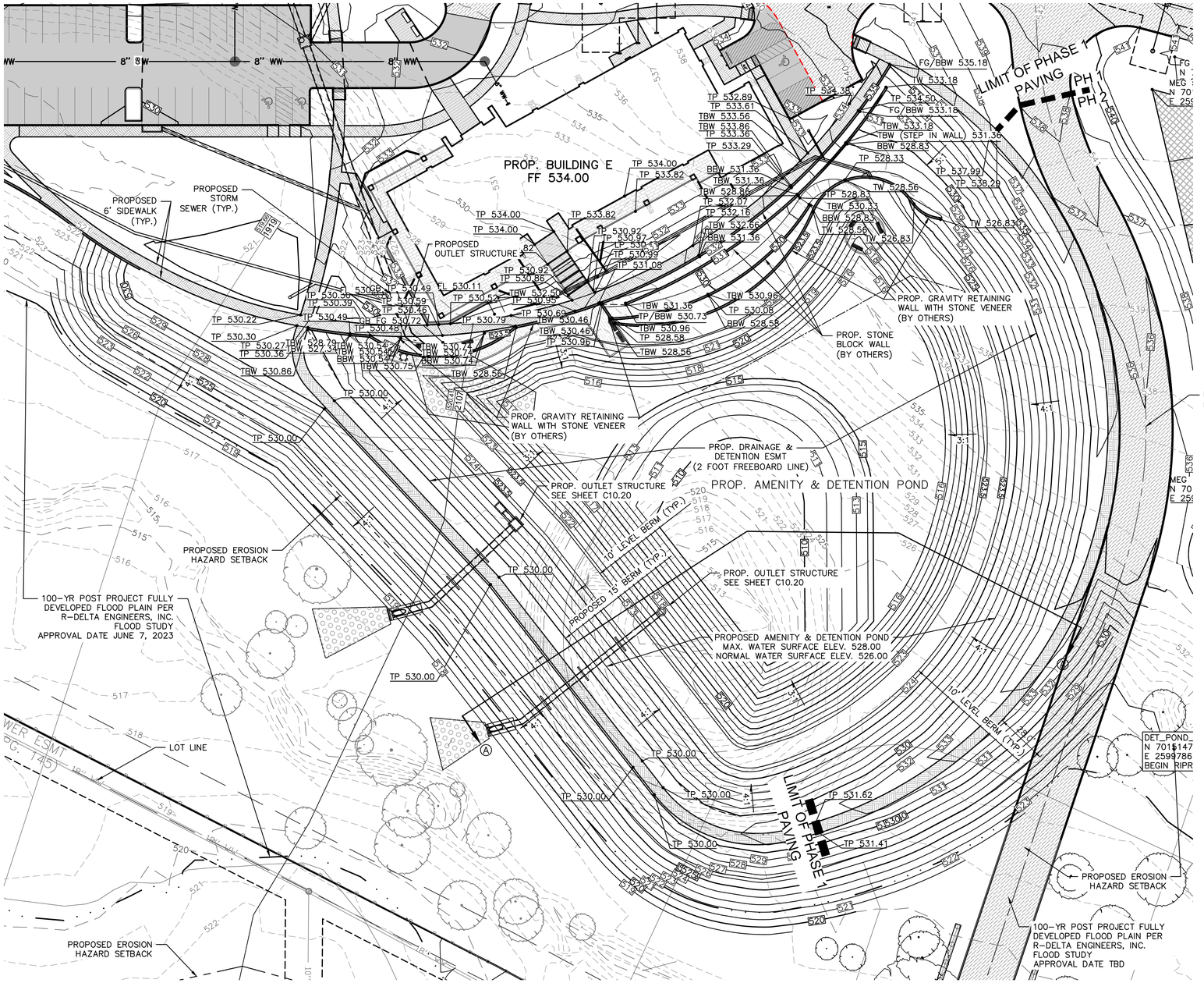
DATE
06/23/2025

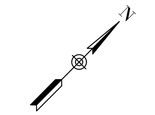
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.5





30 15 0 30

GRAPHIC SCALE IN FEET
SCALE: 1" = 30'

LEGEND

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514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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FRANK A. POLMA, P.E. TX #80274
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TBPE FIRM NO F-001515

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REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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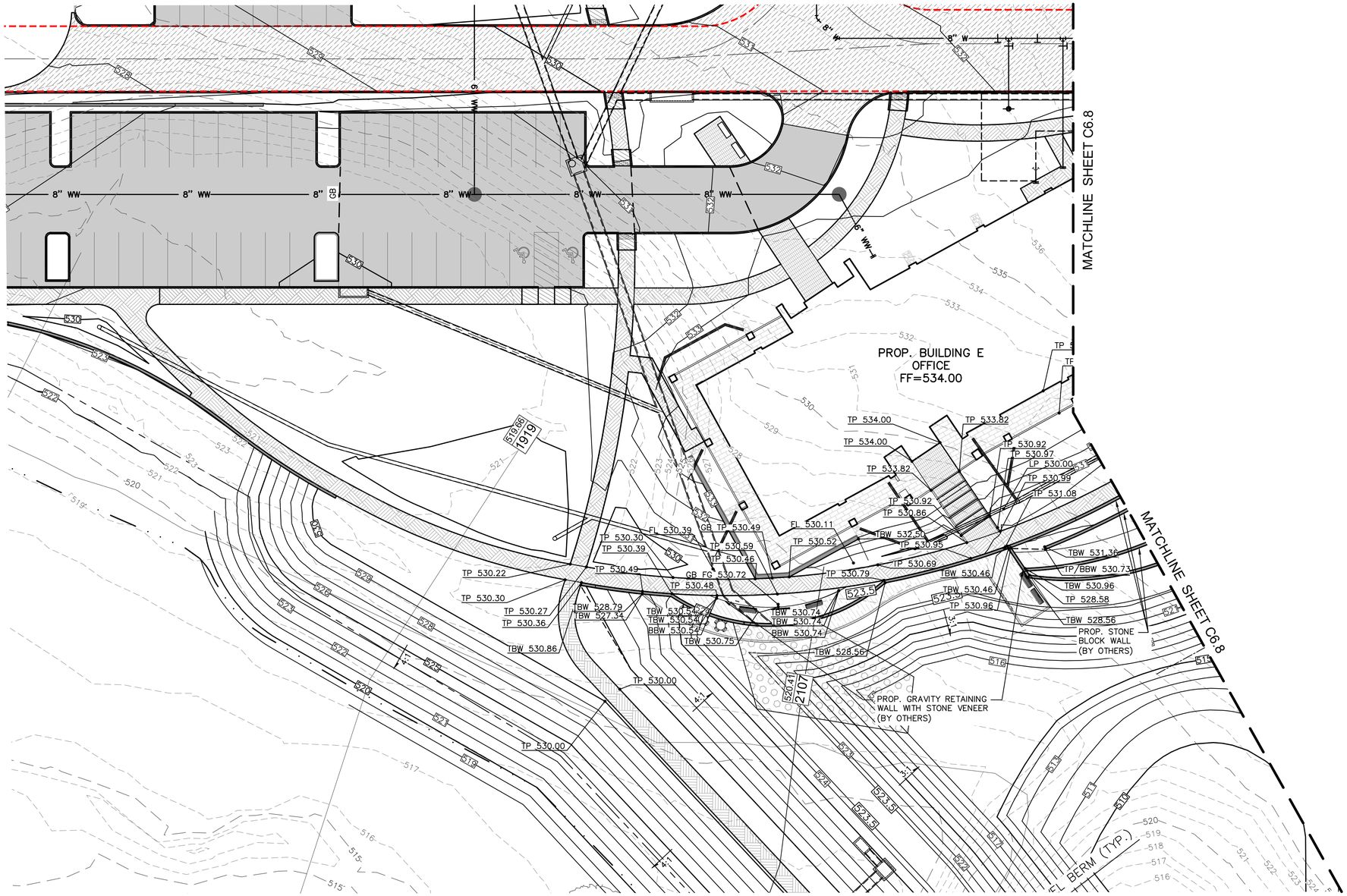
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
DETENTION POND GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.6



20 10 0 20

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
	PROPOSED EROSION HAZARD SETBACK
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
	PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS-SECTION LOCATION– R-DELTA ENGINEERS, INC FLOOD STUDY

NOTE:
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RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
TBW	TOP OF BLOCK WALL
BW	BOTTOM OF RETAINING WALL
BBW	BOTTOM OF BLOCK WALL

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. CONSTRUCT A 10' VERTICAL CURVE AT GRADE BREAKS GREATER THAN 1% IN FIRE LANE AND PARKING AREAS.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. WALLS 3' AND TALLER MUST BE ENGINEERED.
7. WALLS 18" OR TALLER MUST BE ROCK OR STONE FACED. (NO SMOOTH CONCRETE)
8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

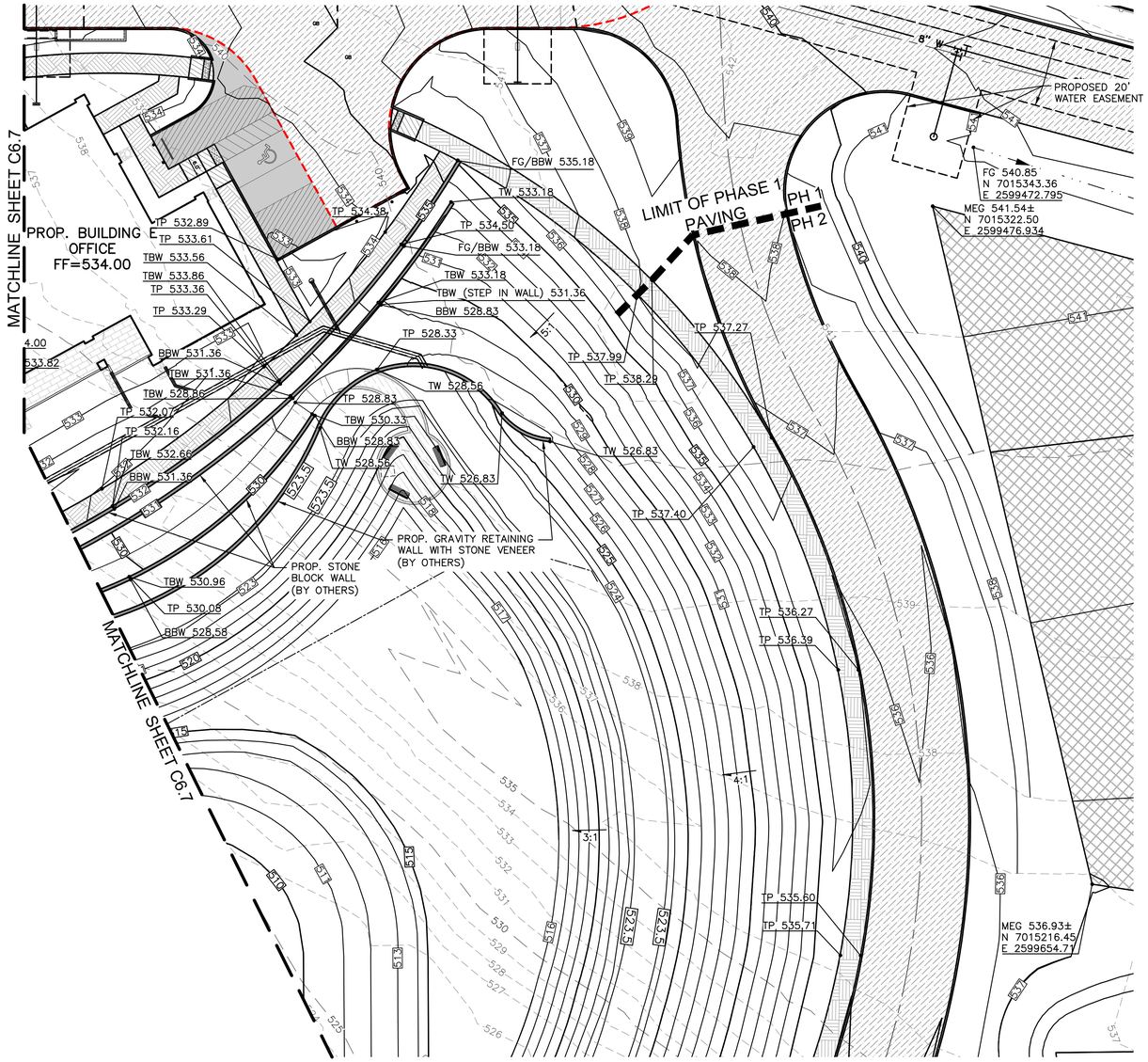
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DETENTION POND RW1 GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.7



20 10 0 20

GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

- EM — EX. ELECTRIC METER
- ICV — EX. IRRIGATION CONTROL VALVE
- B — EX. BOLLARD
- WM — EX. WATER METER
- SSMH — EX. SANITARY SEWER MANHOLE
- TPED — EX. TELEPHONE PEDESTAL
- WV — EX. WATER VALVE
- EB — EX. ELECTRIC BOX
- FH — EX. FIRE HYDRANT
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- X" W — EX. WATER MAIN PIPE
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- EX. GUY WIRE
- EX. FLOOD LIGHT
- EDGE OF ASPHALT
- PROP. WROUGHT IRON FENCE
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
- ACCESSIBLE AISLE STRIPING
- PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
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- PROPOSED GRAVEL SURFACING
- 514.76 / 855 — CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

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RECORD DRAWING

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06/20/2025
FRANKA. POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

POINT ABBREVIATIONS:

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R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

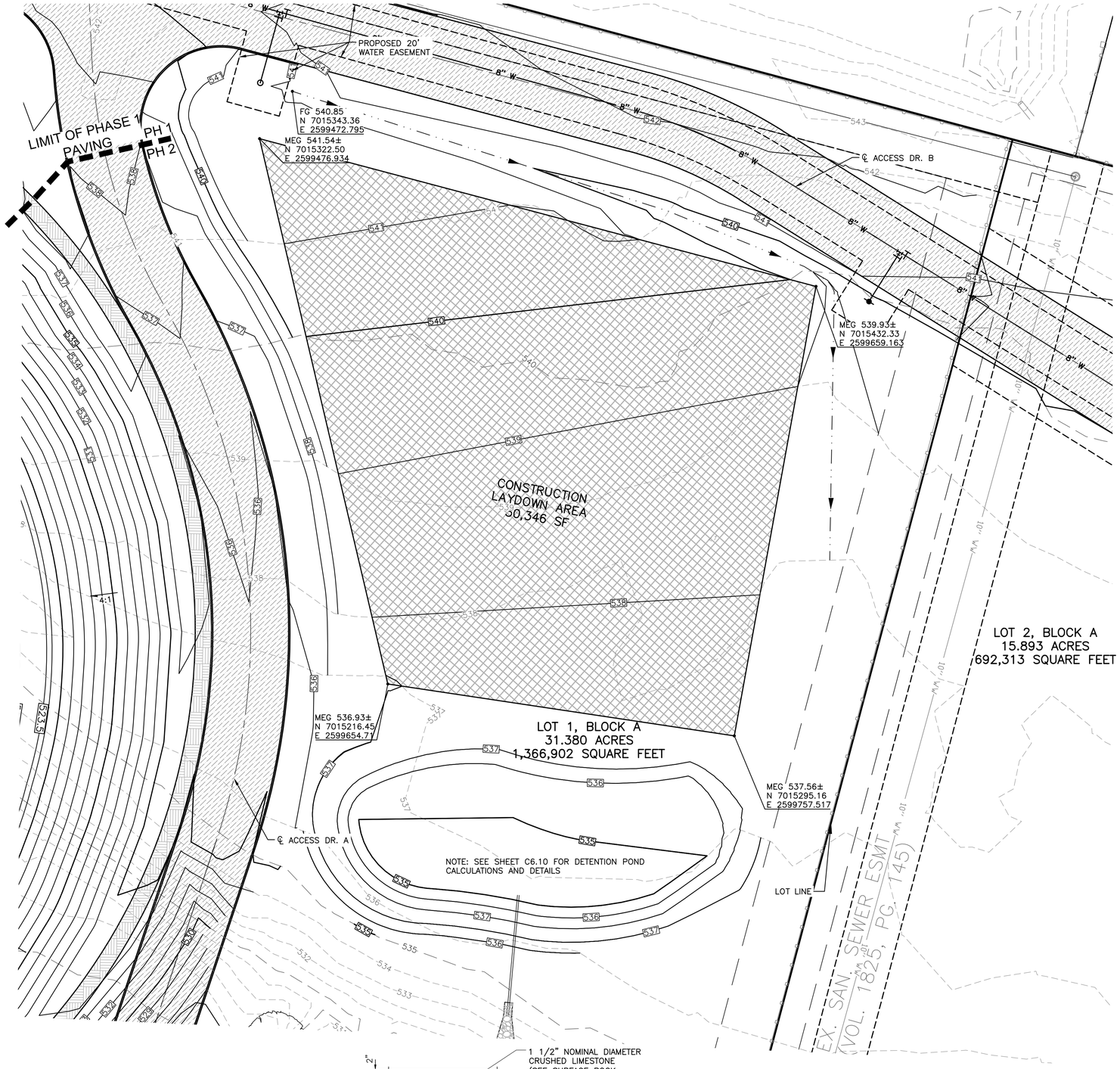
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DETENTION POND RW2 GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.8



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06/20/2025
FRANK A. POLMA, P.E. TX #80274
RDELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

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514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY
	PROPOSED 2" CRUSHED LIMESTONE SURFACING OVER 6" COMPACTED FLEXIBLE BASE

DRAINAGE AREA ID	AREA (ACRES) "A"	TIME (MIN.)	RUN-OFF COEF. "C"	100-YR INTENSITY (IPH) "I"	Q100=CIA (CFS)	COMMENT
HYDROLOGIC CALCULATIONS - PRE PROJECT CONDITIONS						
A	0.70	20	0.35	8.30	2.03	FLOW TO EXIST. FLOODWAY
HYDROLOGIC CALCULATIONS - POST PROJECT CONDITIONS						
A	0.70	10	0.90	9.80	6.17	FLOW TO EXIST. FLOODWAY
INCREASE					4.14	

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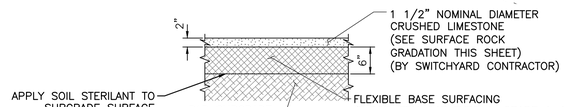

NOTE: CONTRACTOR SHALL SUBMIT CURRENT SIEVE ANALYSIS FOR APPROVAL PRIOR TO DELIVERY OF ROCK SURFACING & FLEXIBLE BASE MATERIALS.

TYPICAL YARD ROCK SURFACING SECTION

SCALE: N.T.S.

SURFACE ROCK GRADATION

SIEVE SIZE	PERCENT PASSING
2"	100
1 1/2"	95–100
1 1/4"	85–100
1"	50–80
3/4"	5–30
5/8"	0–10
3/8"	0–2

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8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

HKS

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LANDSCAPE ARCHITECT
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469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

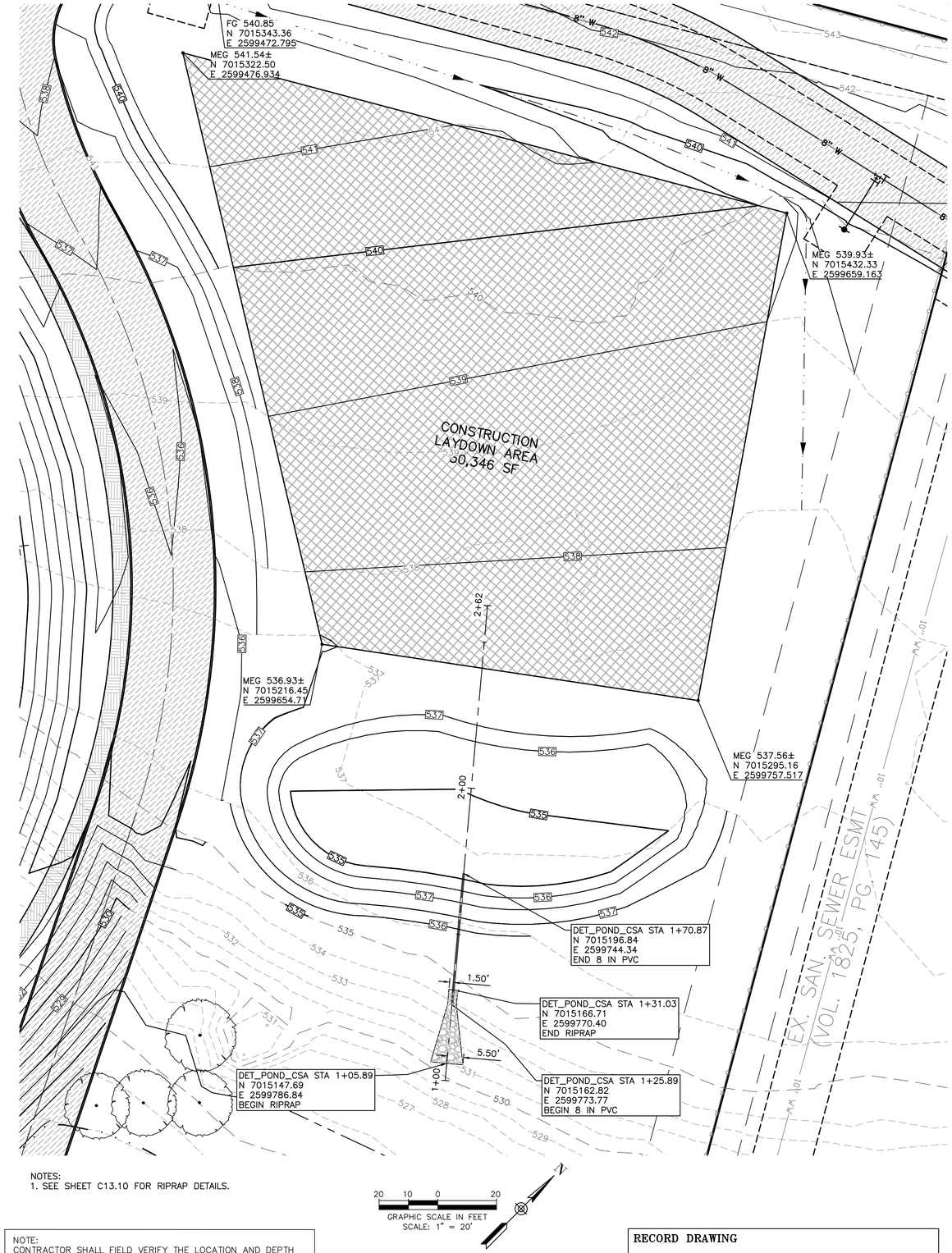
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
CONST. LAYDOWN AREA GRADING PLAN

CASE# E2023-007

SHEET NO.
C6.9



NOTES:
1. SEE SHEET C13.10 FOR RIPRAP DETAILS.

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

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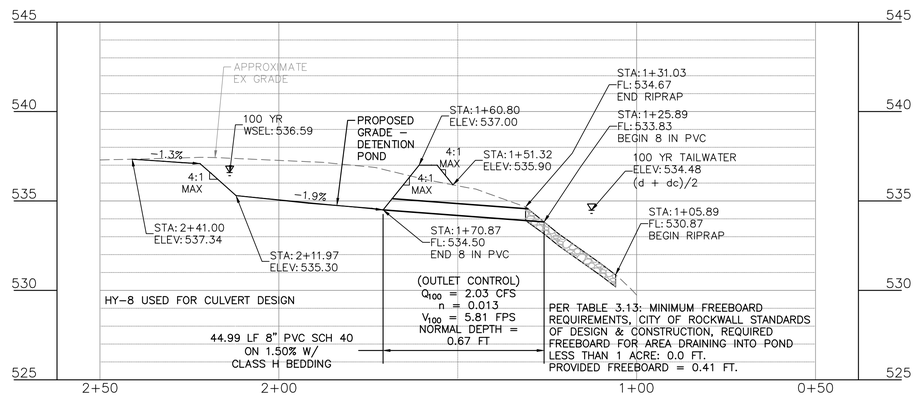
06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



PROFILE DET_POND_CSA LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

DETENTION POND FOR CONSTRUCTION STAGING AREA

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	8.30	in/hr
A	0.70	acres
Q100 =	2.03	cfs

Step 2 Future Conditions

C	0.9	dimensionless
tc	10.00	mins
i	9.80	in/hr
A	0.7	acres
Q100 =	6.17	cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	9	0.7	5.67
20	0.9	8.3	0.7	5.23
30	0.9	6.9	0.7	4.35
40	0.9	5.8	0.7	3.65
50	0.9	5	0.7	3.15
60	0.9	4.5	0.7	2.84
70	0.9	4	0.7	2.52
80	0.9	3.7	0.7	2.33
90	0.9	3.5	0.7	2.21
100	0.9	3.4	0.7	2.14
110	0.9	3.2	0.7	2.02

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	6.17	3,704.40	2.03	1,220.10	2,484.30
15	5.67	5,103.00	2.03	1,525.13	3,577.88
20	5.23	6,274.80	2.03	1,830.15	4,444.65
30	4.35	7,824.60	2.03	2,440.20	5,384.40
40	3.65	8,769.60	2.03	3,050.25	5,719.35
50	3.15	9,450.00	2.03	3,660.30	5,789.70
60	2.84	10,206.00	2.03	4,270.35	5,935.65
70	2.52	10,584.00	2.03	4,880.40	5,703.60
80	2.33	11,188.80	2.03	5,490.45	5,698.35
90	2.21	11,907.00	2.03	6,100.50	5,806.50
100	**2.14**	**12,852.00**	**2.03**	6,710.55	**6,141.45**
110	2.02	13,305.60	2.03	7,320.60	5,985.00

Maximum Volume Required is 6,141.45 cf at the 100 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
534.50	0.00		
		1,396.50	698.25
535.00	2,793.00		
		4,483.00	5,181.25
536.00	6,173.00		
		6,983.50	12,164.75
537.00	7,794.00		

Reqd 100 Yr Storage Volume =6,141.45 CF
Invert Elevation 534.50 feet
Top of Pond 537.00 feet

Outfall Structures

Pre development Condition
100-yr storm event
tc 20.00 mins

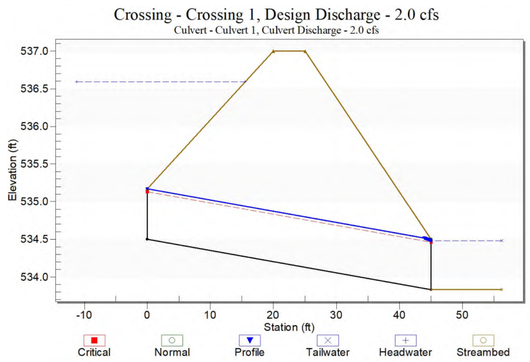
Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	8.30	0.35	0.7	2.03

Post Development Condition
100-yr storm event
tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	9.80	0.9	0.7	6.17

100 Yr WSE	536.14	ft	(Based on Storage Volume Required)
100 Yr WSE	536.59	ft	(Based on Outlet Control Depth)
Freeboard	0.41	ft	(Based on Outlet Control Depth)

HY-8 OUTPUT



HY-8 OUTPUT

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)
2.03	2.03	536.59	2.06	2.09	7-M2t	0.67	0.63	0.65	0.65	5.81

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DALLAS, TX 75206

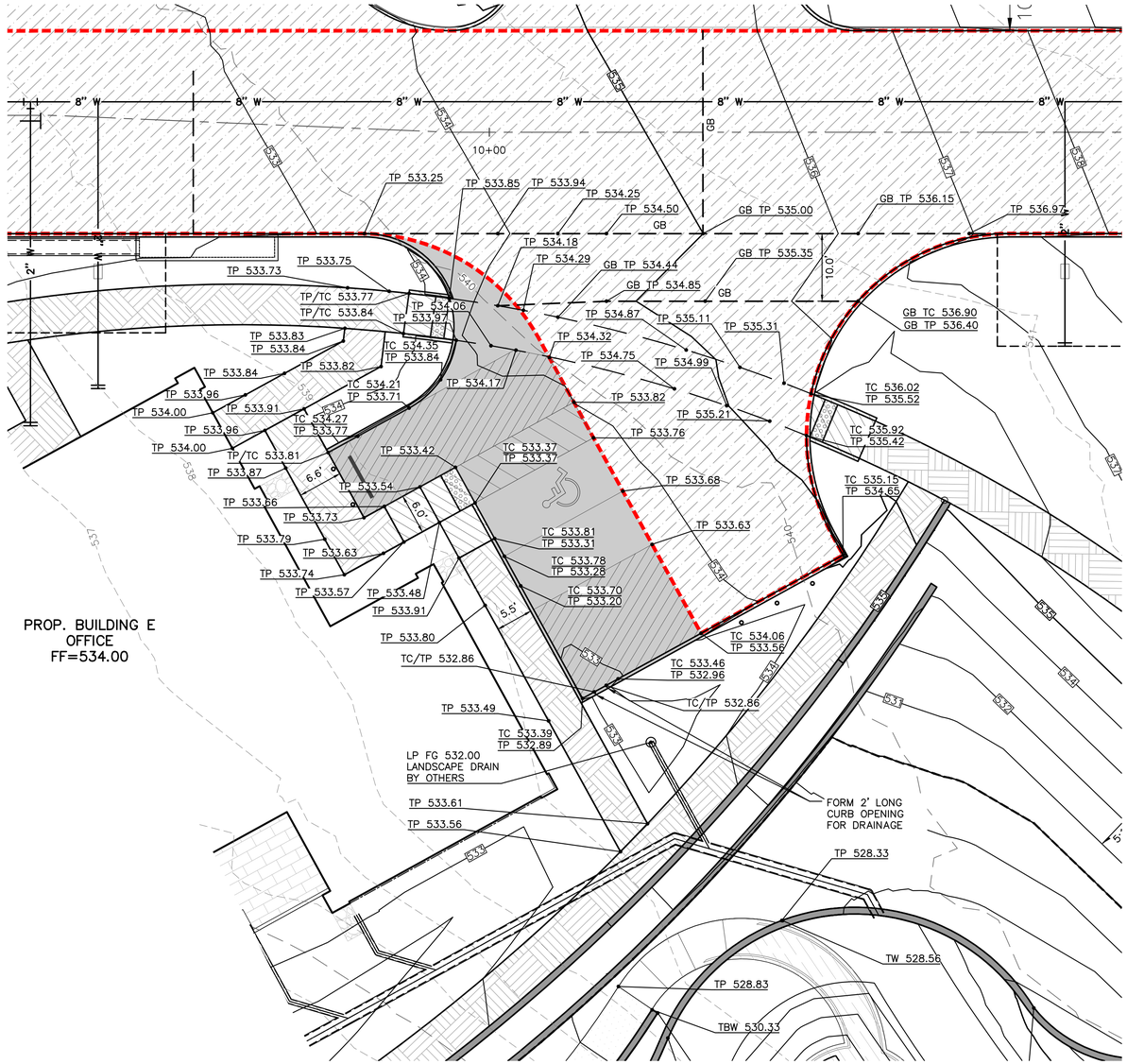
OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION
NO. DESCRIPTION DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CONST. LAYDOWN AREA - DET. POND
CASE# E2023-007
SHEET NO.
C6.10



10 5 0 10

GRAPHIC SCALE IN FEET
SCALE: 1" = 10'

LEGEND

EM	EX. ELECTRIC METER
ICV	EX. IRRIGATION CONTROL VALVE
B	EX. BOLLARD
WM	EX. WATER METER
SSMH	EX. SANITARY SEWER MANHOLE
TPED	EX. TELEPHONE PEDESTAL
WV	EX. WATER VALVE
EB	EX. ELECTRIC BOX
FH	EX. FIRE HYDRANT
CMP	EX. CORRUGATED METAL PIPE
X" W	EX. WATER MAIN PIPE
X" WW	EX. WASTE WATER MAIN PIPE
XX" CMP	EX. CORRUGATED METAL PIPE & SIZE
	EX. WROUGHT IRON FENCE
	EX. CHAIN LINK FENCE
PP	EX. POWER POLE
OHE	EX. OVERHEAD ELECTRIC
	EX. GUY WIRE
	EX. FLOOD LIGHT
	EDGE OF ASPHALT
	PROP. WROUGHT IRON FENCE
	100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
	PROPOSED EROSION HAZARD SETBACK
	ADA RAMP – CONSTRUCT BARRIER FREE RAMP WITH TRUNCATED DOMED PANELS PER CITY DETAILS 5" CONC. PVMT., 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX. NO EXTRA PAY ITEM FOR MONOLITHIC CURBS.
	ACCESSIBLE AISLE STRIPING
	PROPOSED 4" CONC. PVMT. 3,000 PSI (5.5 SACK MIX) NO. 3 BARS @ 24" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 5" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 6" CONC. PVMT. 3,600 PSI (6.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED 7" CONC. PVMT. 4,200 PSI (7.5 SACK MIX) NO. 3 BARS @ 18" C-C MAX SEE SHEET C13.1 FOR SUBGRADE SPECIFICATIONS
	PROPOSED GRAVEL SURFACING
514.76 / 855	CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC, STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

POINT ABBREVIATIONS:

FG	FINISHED GRADE
MEG	MATCH EXISTING GRADE
TP	TOP OF CONCRETE PAVING
TC	TOP OF CURB
T/C	TOP OF CONCRETE
TR	TOP OF ROCK SURFACING
GB	GRADE BREAK
TW	TOP OF RETAINING WALL
TBW	TOP OF BLOCK WALL
BW	BOTTOM OF RETAINING WALL
BBW	BOTTOM OF BLOCK WALL

NOTES:

1. ALL SIDEWALKS ARE 6' UNLESS OTHERWISE INDICATED.
2. ALL RADII ARE 2' UNLESS OTHERWISE INDICATED.
3. ALL DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT.
4. CONSTRUCT A 10' VERTICAL CURVE AT GRADE BREAKS GREATER THAN 1% IN FIRE LANE AND PARKING AREAS.
5. INSTALL 42" PEDESTRIAN RAILING ON WALLS OVER 30" HIGH (RE: ARCH. PLANS FOR DETAILS)
6. WALLS 3' AND TALLER MUST BE ENGINEERED.
7. WALLS 18" OR TALLER MUST BE ROCK OR STONE FACED. (NO SMOOTH CONCRETE)
8. SEE SHEET C13.1 FOR TYPICAL 5" PARKING PAVING SECTION.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

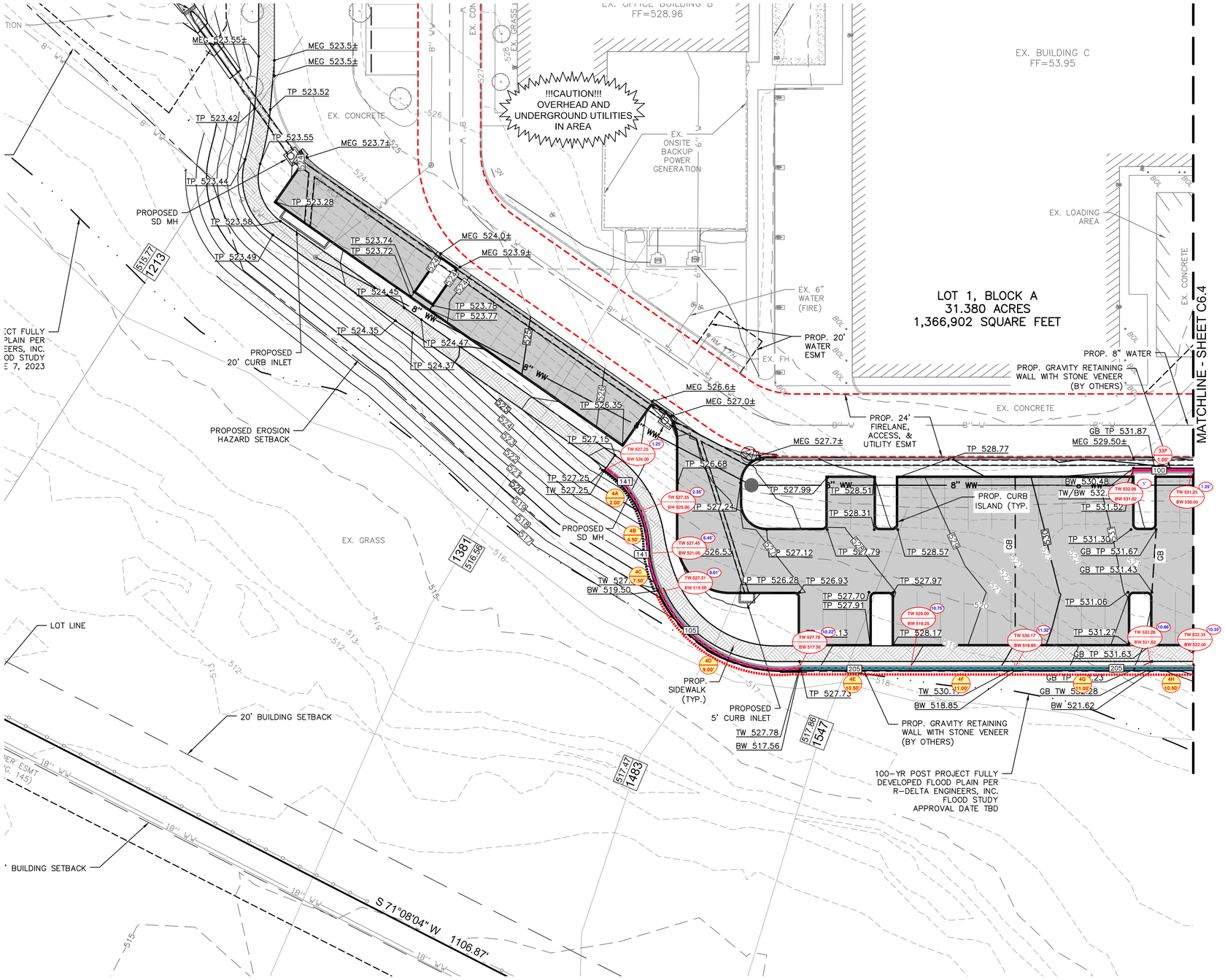
PROJECT NUMBER
3036.21

DATE
06/23/2025

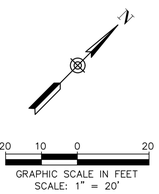
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
BUILDING E FIRELANE DETAILED GRADING

SHEET NO.
C6.11



WALL 10 FT. AND GREATER REQUIRE WWF
SEE DETAIL WS/1 ON SHEET 10 OF 11



THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

KEY

- WALL TYPE 1 1(H):6(V) SETBACK
- WALL TYPE 1 1(H):96(V) SETBACK
- WALL TYPE 2 1(H):96(V) SETBACK
- 4(H):1(V) FRONT SLOPE
- WATER APPLICATION WALL WITH MIN. 2' BURIED
- WALL W/CAP

DESIGNBUILD CONSULTING SERVICES LLC

P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

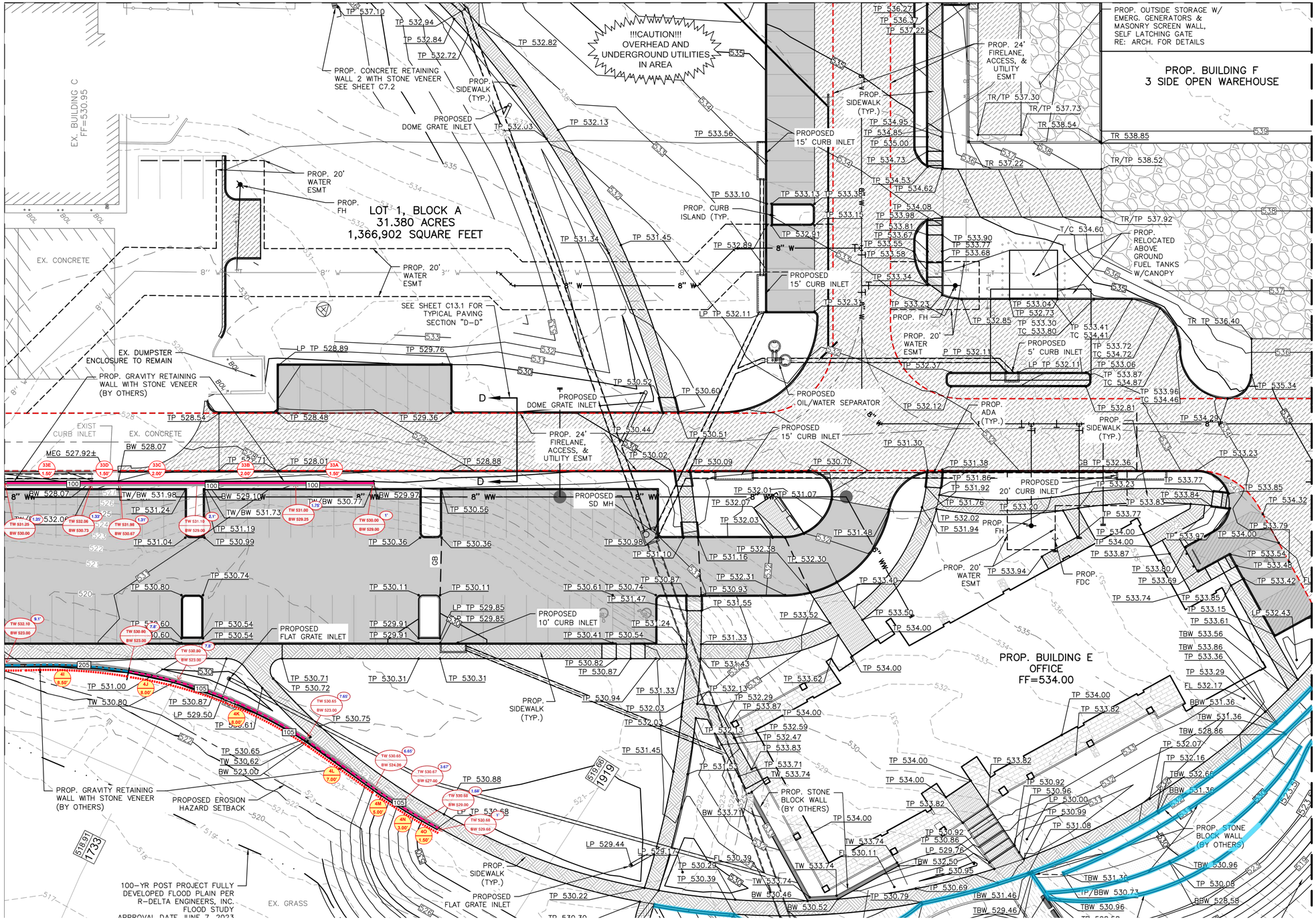
STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL LOCATION

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 1 OF 11



WALL 10 FT. AND GREATER REQUIRE WWF
SEE DETAIL WS/1 ON SHEET 10 OF 11

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

KEY

- WALL TYPE 1 1(H):6(V) SETBACK
- WALL TYPE 1 1(H):96(V) SETBACK
- WALL TYPE 2 1(H):96(V) SETBACK
- WATER APPLICATION WALL WITH MIN. 2' BURIED
- WALL W/CAP

DESIGNBUILD CONSULTING SERVICES LLC

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REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

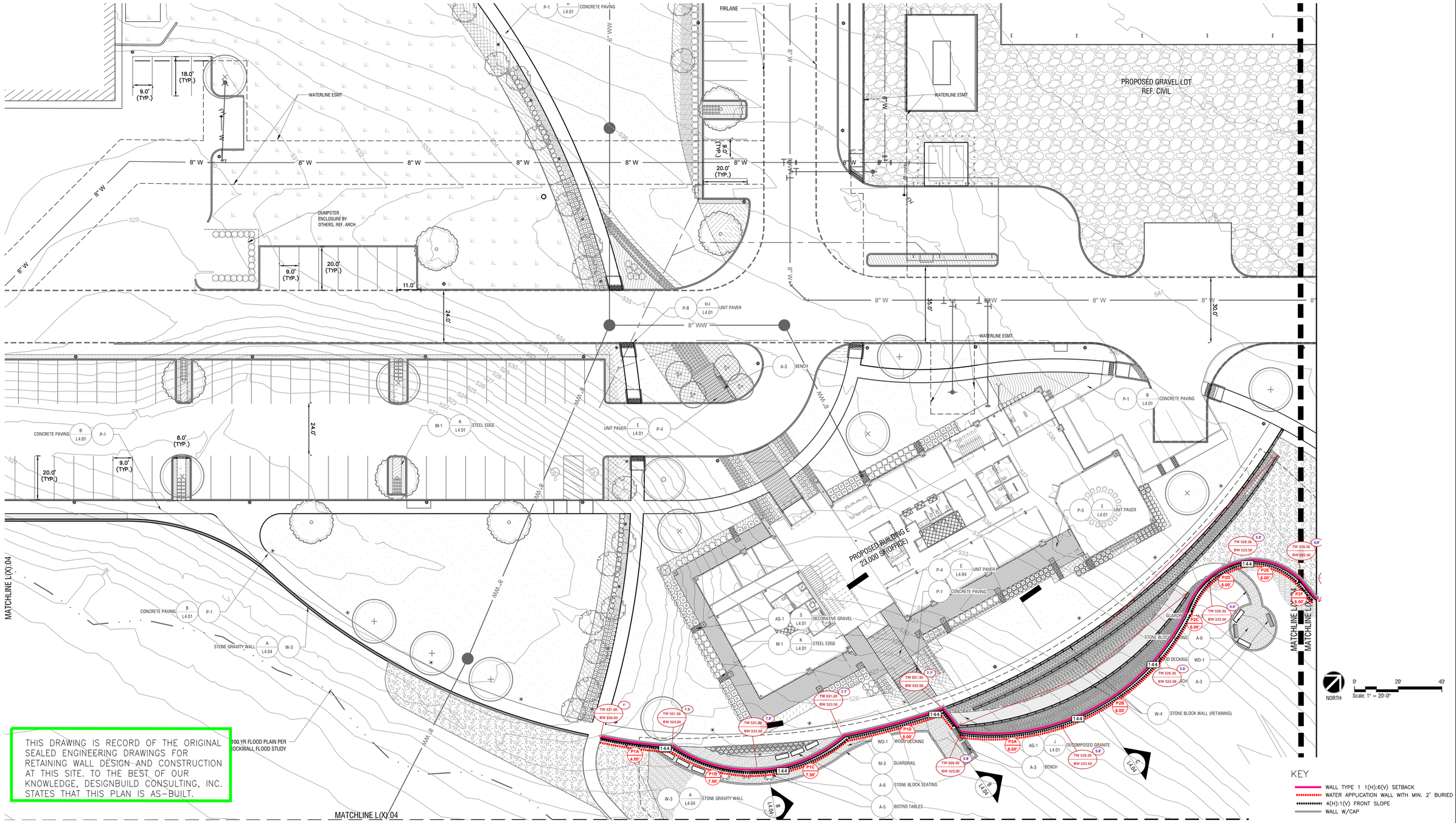
STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL LOCATION

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 2 OF 11



DESIGNBUILD CONSULTING SERVICES LLC

P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS		
01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

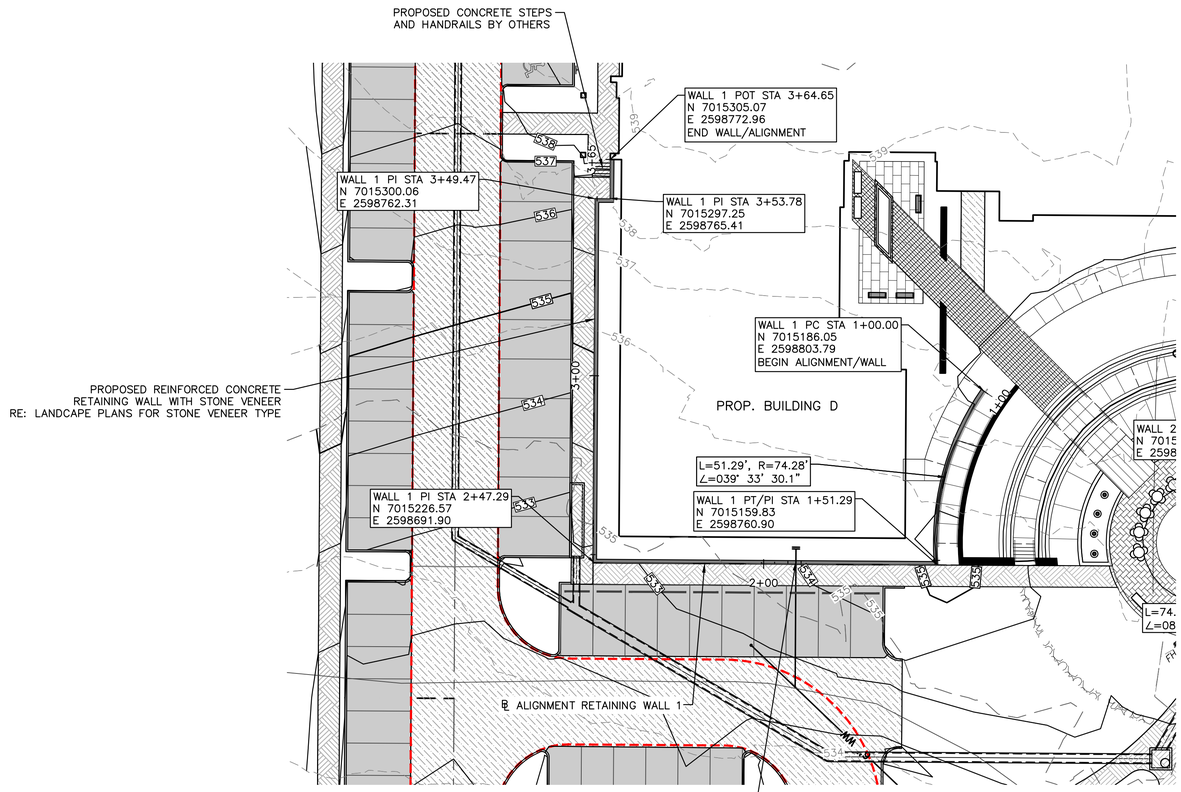
STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

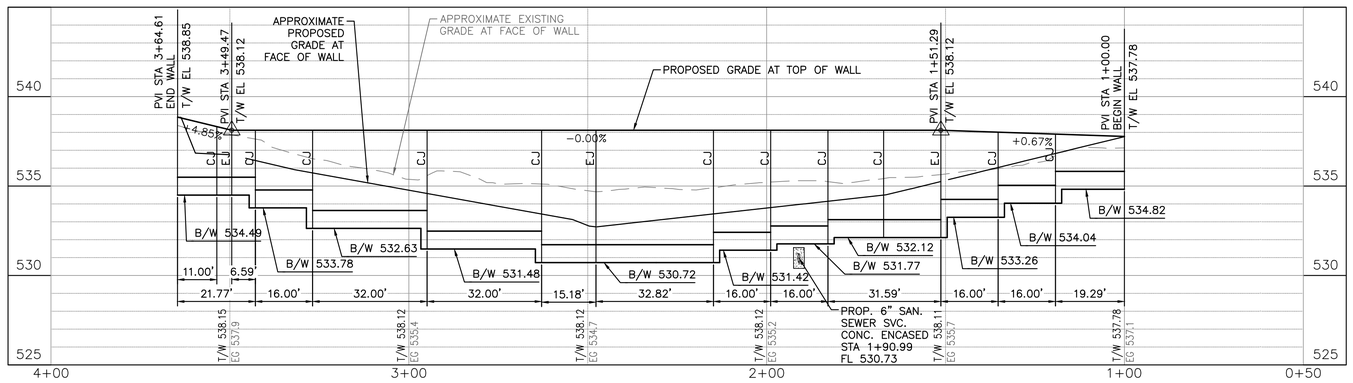
RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL LOCATION

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 3 OF 11



PLAN
SCALE: 1"=20'



PROFILE
SCALE(H): 1"=20'
SCALE(V): 1"=4'

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

	PROPOSED 4" CONCRETE SIDEWALK
	PROPOSED 5" CONCRETE PAVEMENT
	PROPOSED 6" CONCRETE PAVEMENT
530	EXISTING SURFACE CONTOUR MAJOR
531	EXISTING SURFACE CONTOUR MINOR
530	PROPOSED SURFACE CONTOUR MAJOR
531	PROPOSED SURFACE CONTOUR MINOR
CJ	WALL CONTRACTION JOINT
EJ	WALL EXPANSION JOINT

NOTES:

1. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
2. SEE SHEETS C7.5 & C7.6 FOR WALL PROPORTIONS, REINFORCEMENT, AND GENERAL NOTES.
3. RETAINING WALL ALIGNMENT IS ALONG THE FACE OF WALL.
4. HAND RAIL IS REQUIRED ON RETAINING WALLS WHERE THERE IS A 30" DROP OR GREATER.

ABBREVIATION TABLE:

T/W	TOP OF WALL STEM
B/W	BOTTOM OF WALL/FOOTING
CJ	CONTRACTION JOINT
EJ	EXPANSION JOINT

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
RETAINING WALL 1 PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C7.1

NOTE:
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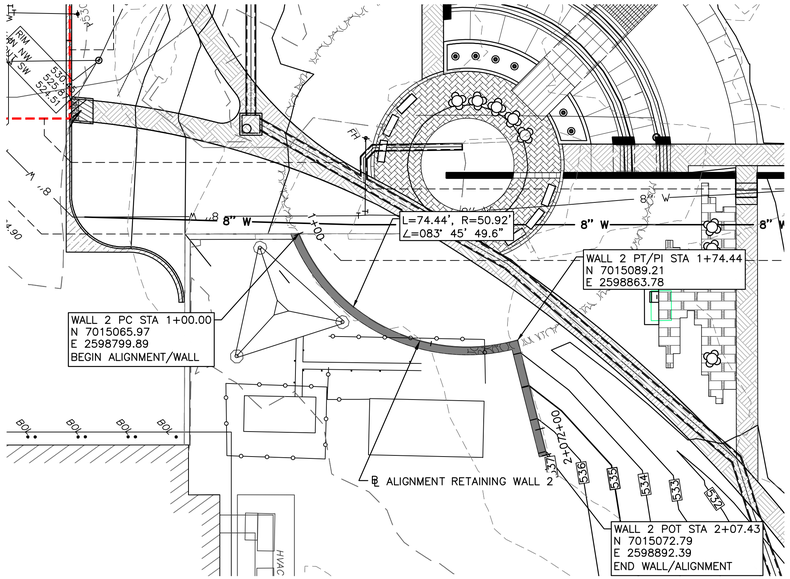
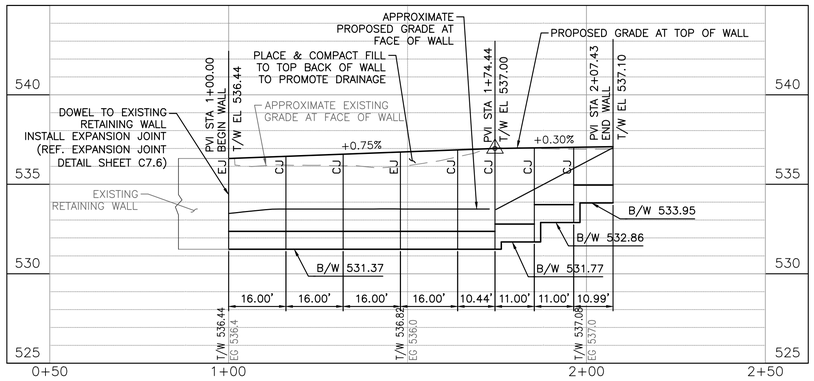
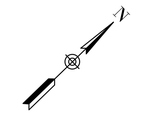


PLAN
SCALE: 1"=20'



PROFILE
SCALE(H): 1"=20'
SCALE(V): 1"=4'



LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 5" CONCRETE PAVEMENT
- 530 EXISTING SURFACE CONTOUR MAJOR
- 531 EXISTING SURFACE CONTOUR MINOR
- 530 PROPOSED SURFACE CONTOUR MAJOR
- 531 PROPOSED SURFACE CONTOUR MINOR
- CJ WALL CONTRACTION JOINT
- EJ WALL EXPANSION JOINT

NOTES:

1. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
2. SEE SHEETS C7.5 & C7.6 FOR WALL PROPORTIONS, REINFORCEMENT, AND GENERAL NOTES.
3. RETAINING WALL ALIGNMENT IS ALONG THE FACE OF WALL.
4. HAND RAIL IS REQUIRED ON RETAINING WALLS WHERE THERE IS A 30" DROP OR GREATER.

ABBREVIATION TABLE:

T/W	TOP OF WALL STEM
B/W	BOTTOM OF WALL/FOOTING
CJ	CONTRACTION JOINT
EJ	EXPANSION JOINT

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

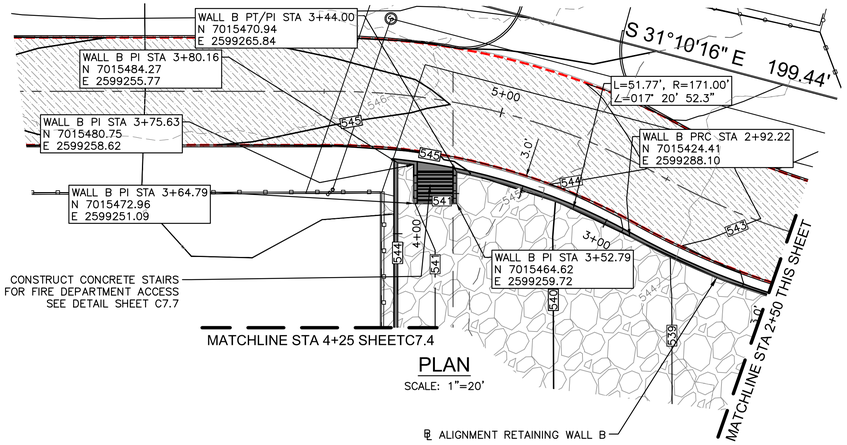
VICINITY MAP
NTS

REVISION

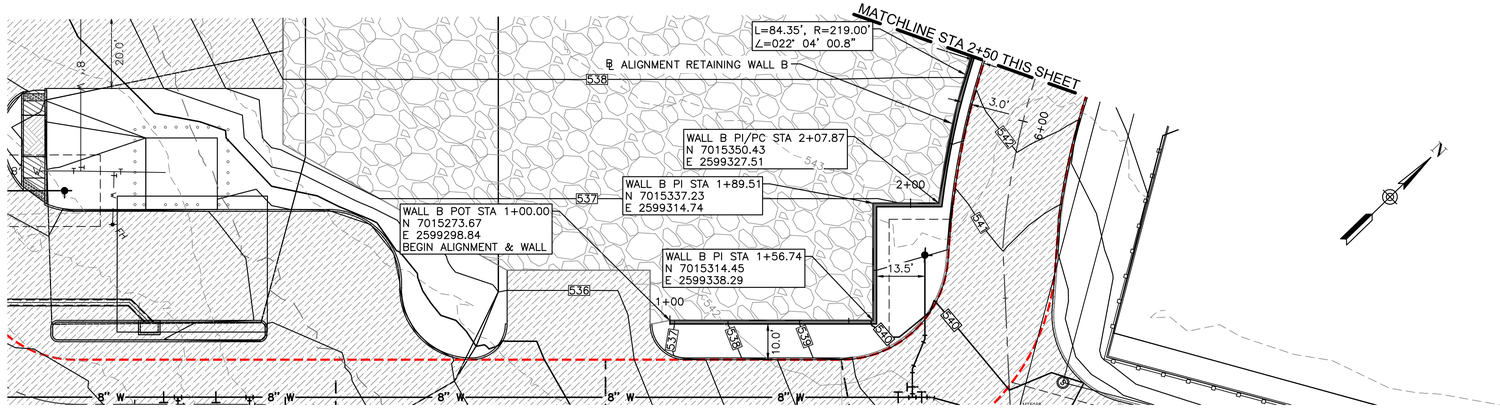
NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
RETAINING WALL 2 PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C7.2

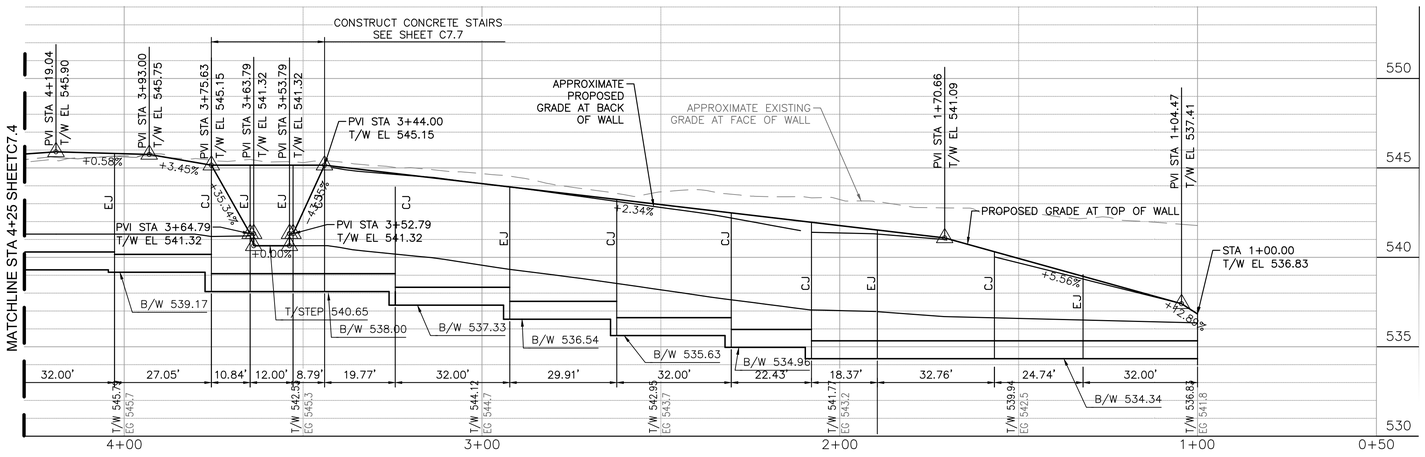
NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.



PLAN
SCALE: 1"=20'



PLAN
SCALE: 1"=20'



PROFILE
SCALE(H): 1"=20'
SCALE(V): 1"=4'

NOTE: SEE DRAWINGS BY DESIGNBUILD CONSULTING SERVICES FOR RETAINING WALL STRUCTURAL DETAILS

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- 530 EXISTING SURFACE CONTOUR MAJOR
- 531 EXISTING SURFACE CONTOUR MINOR
- 530 PROPOSED SURFACE CONTOUR MAJOR
- 531 PROPOSED SURFACE CONTOUR MINOR
- CJ WALL CONTRACTION JOINT
- EJ WALL EXPANSION JOINT

NOTES:

1. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
2. SEE SHEETS C7.5 & C7.6 FOR WALL PROPORTIONS, REINFORCEMENT, AND GENERAL NOTES.
3. RETAINING WALL ALIGNMENT IS ALONG THE FACE OF WALL.
4. HAND RAIL IS REQUIRED ON RETAINING WALLS WHERE THERE IS A 30" DROP OR GREATER.

ABBREVIATION TABLE:

T/W	TOP OF WALL STEM
B/W	BOTTOM OF WALL/FOOTING
CJ	CONTRACTION JOINT
EJ	EXPANSION JOINT

RECORD DRAWING

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
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DALLAS, TX 75201- 4240

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OWNER/ APPLICANT
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950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

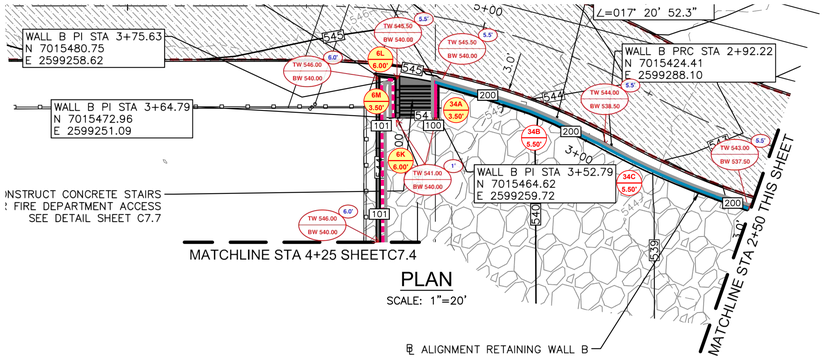
VICINITY MAP
NTS

REVISION
NO. DESCRIPTION DATE

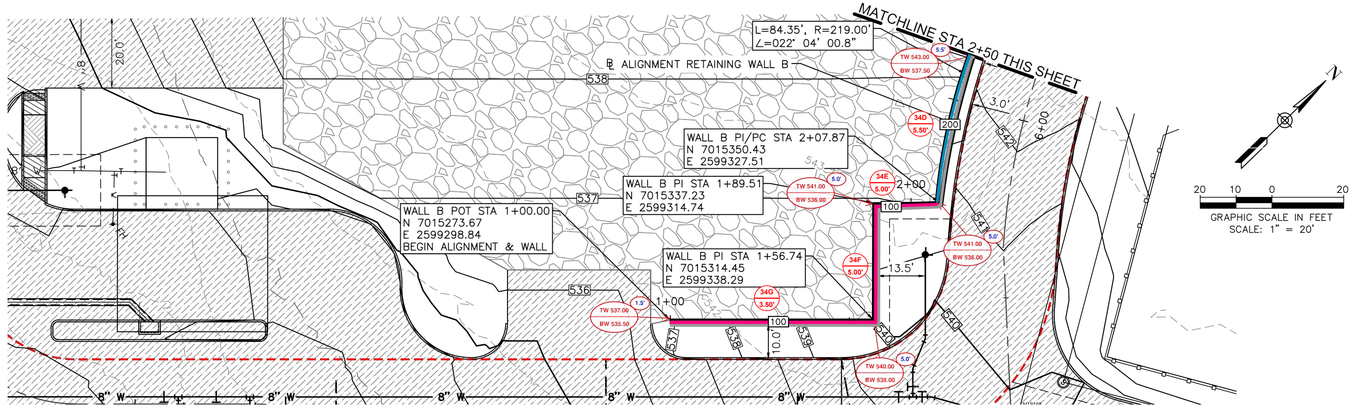
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
RETAINING WALL B PLAN & PROFILE SHT 1

CASE# E2023-007

SHEET NO.
C7.3



PLAN
SCALE: 1"=20'



PLAN
SCALE: 1"=20'

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

KEY
- WALL TYPE 1 1(H):6(V) SETBACK
- WALL TYPE 1 1(H):96(V) SETBACK
- WALL TYPE 2 1(H):6(V) SETBACK
- WALL W/CAP

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

DESIGNBUILD CONSULTING SERVICES LLC
P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED
PROFESSIONAL ENGINEER

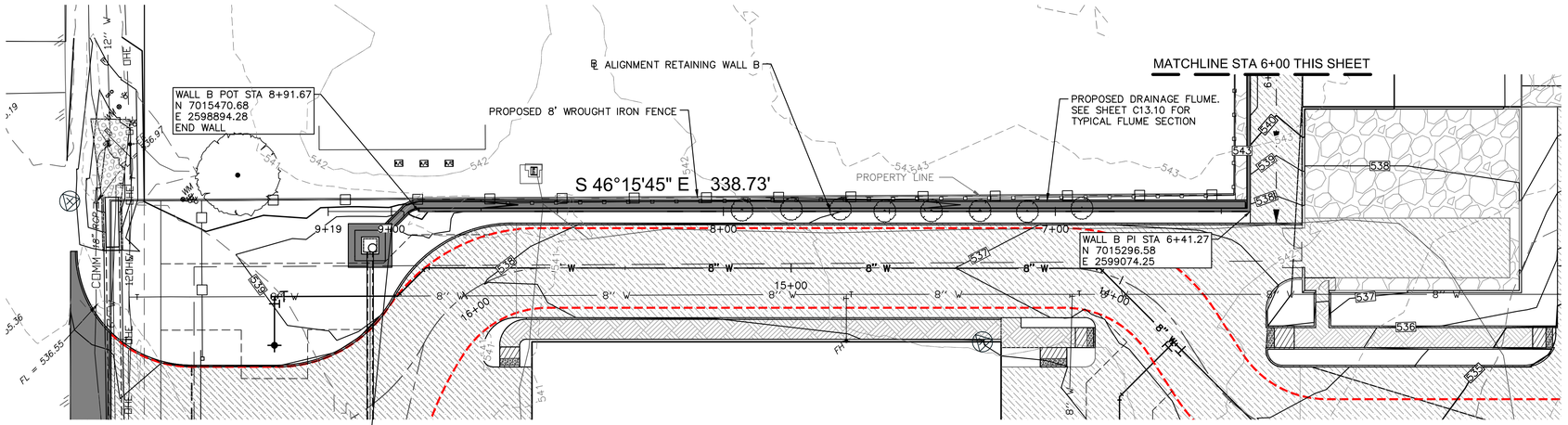
The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL LOCATIONS

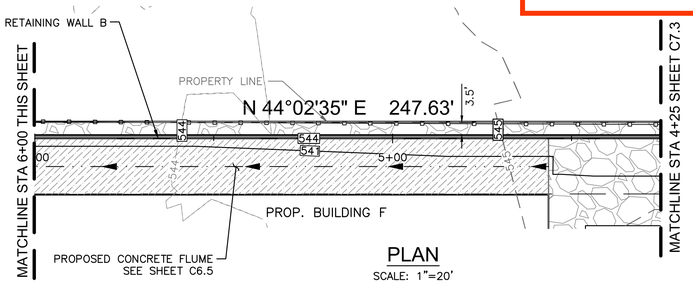
JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 4 OF 11

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

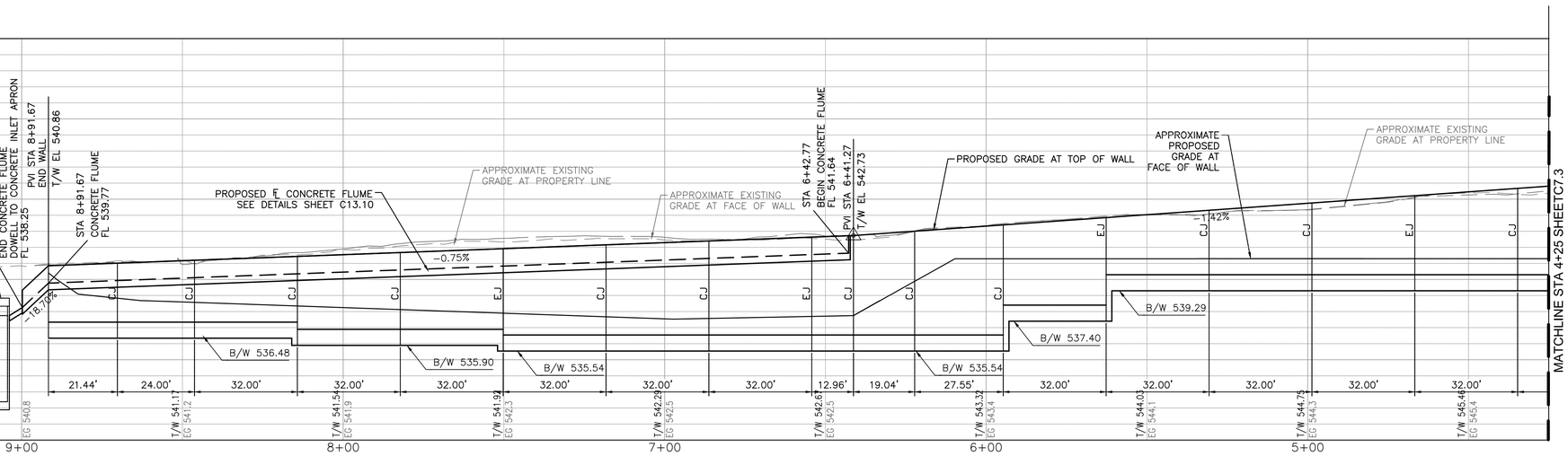


PLAN
SCALE: 1"=20'

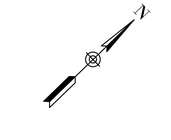
NOTE: SEE DRAWINGS BY DESIGNBUILD CONSULTING SERVICES FOR RETAINING WALL STRUCTURAL DETAILS



PLAN
SCALE: 1"=20'



PROFILE
SCALE(H): 1"=20'
SCALE(V): 1"=4'



LEGEND

- PROPOSED 4" CONCRETE SIDEWALK
- PROPOSED 6" CONCRETE PAVEMENT
- 530 EXISTING SURFACE CONTOUR MAJOR
- 531 EXISTING SURFACE CONTOUR MINOR
- 530 PROPOSED SURFACE CONTOUR MAJOR
- 531 PROPOSED SURFACE CONTOUR MINOR
- CJ WALL CONTRACTION JOINT
- EJ WALL EXPANSION JOINT

ABBREVIATION TABLE:

T/W	TOP OF WALL STEM
B/W	BOTTOM OF WALL/FOOTING
CJ	CONTRACTION JOINT
EJ	EXPANSION JOINT

NOTES:

1. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
2. SEE SHEETS C7.5 & C7.6 FOR WALL PROPORTIONS, REINFORCEMENT, AND GENERAL NOTES.
3. RETAINING WALL ALIGNMENT IS ALONG THE FACE OF WALL.
4. HAND RAIL IS REQUIRED ON RETAINING WALLS WHERE THERE IS A 30" DROP OR GREATER.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
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SYSKA HENNESSY GROUP
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OWNER/ APPLICANT
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950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
RETAINING WALL B PLAN & PROFILE SHT 2

CASE# E2023-007

SHEET NO.
C7.4

RECORD DRAWING

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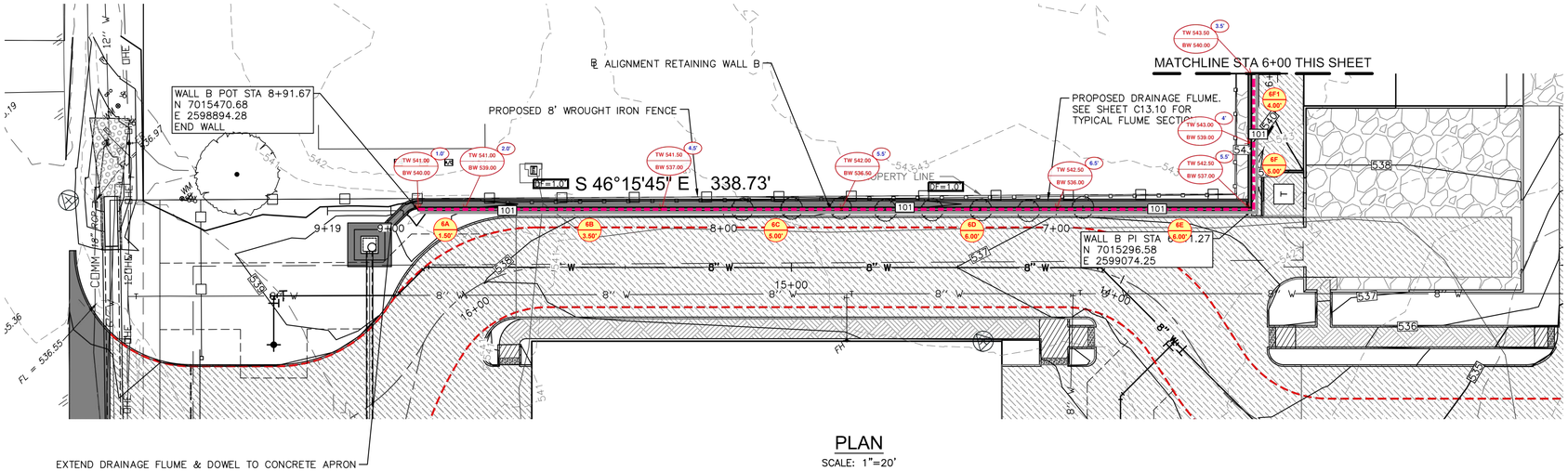
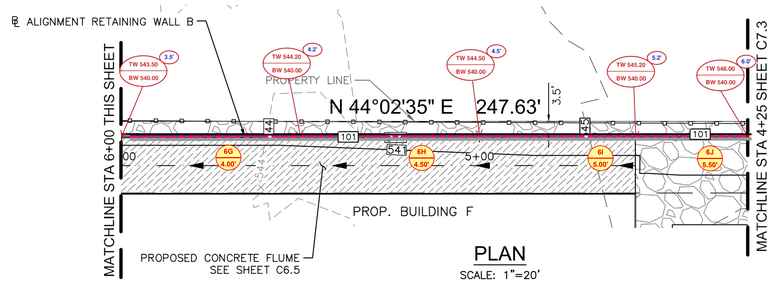
06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



PLAN
SCALE: 1"=20'

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'



PLAN
SCALE: 1"=20'

20 10 0 20
GRAPHIC SCALE IN FEET
SCALE: 1" = 20'

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KEY
- WALL TYPE 1 1(H):96(V) SETBACK
- WALL W/CAP

DESIGNBUILD CONSULTING SERVICES LLC
P.O. Box 185112 Fort Worth, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

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CHECKED BY: TAP

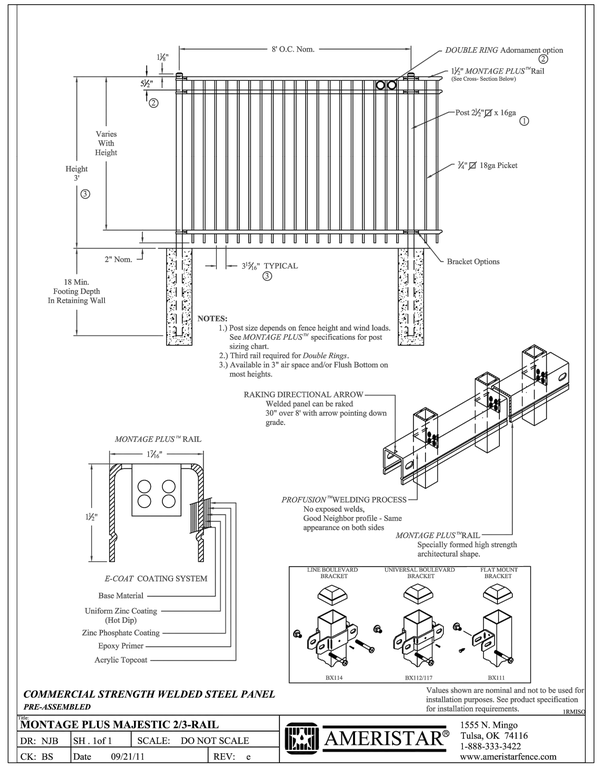
DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS
Zarek Y. Soufaghou
148784
LICENSED
PROFESSIONAL ENGINEER

RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL LOCATIONS

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 5 OF 11



COMMERCIAL STRENGTH WELDED STEEL PANEL
PRE-ASSEMBLED

Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

1RMISC

MONTAGE PLUS MAJESTIC 2/3-RAIL			
DR: NJB	SH . 1of 1	SCALE: DO NOT SCALE	
CK: BS	Date 09/21/11	REV: e	

AMERISTAR®
1555 N. Mingo
Tulsa, OK 74116
1-888-333-3422
www.ameristarfence.com

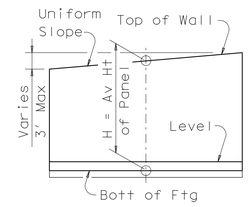
HAND RAIL DETAIL

N.T.S.

① Place vertical bars inside of horizontal bars (Typ both faces).

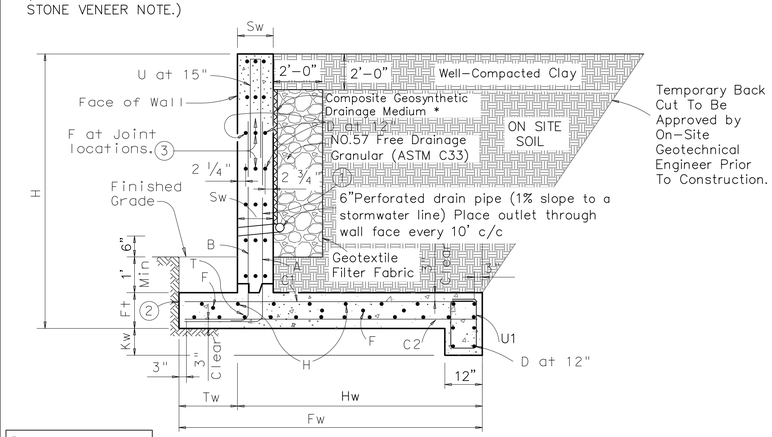
② Place footing toe against undisturbed soil.

③ See standard RW 2 for size.



H DEFINITION

(SEE RW-2 FOR STONE VENEER NOTE.)



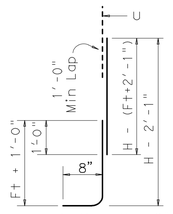
Place toe and key against undisturbed soil

H ≦ 8'

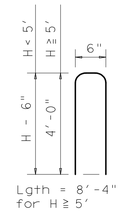
SECTION

Wall Height "H"	PROPERTIES						REINFORCING STEEL (INCLUDING 250 PSF TRAFFIC SURCHARGE AND 42-INCH HANDRAIL)																Wall Height "H"
	WALL DIMENSIONS						A 1		A 2		B		C 1 (TOP)		C 2 (BOT.)		D, H, T		DOWEL F (SEE RW2)		U, U1		U2		
(Ft)	Fw	Tw	Sw	Hw	Ft	Kw	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	SIZE	SP.	(Ft)
2	3'-0"	1'-0"	1'-0"	2'-0"	1'-0"	1'-0"	#5	15"			#5	15"	#5	15"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	2
3	3'-0"	1'-0"	1'-0"	2'-0"	1'-0"	1'-0"	#5	15"			#5	15"	#5	15"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	3
4	3'-0"	1'-0"	1'-0"	2'-0"	1'-0"	1'-0"	#5	15"			#5	15"	#5	15"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	4
5	3'-9"	1'-0"	1'-0"	2'-9"	1'-0"	1'-6"	#5	15"			#5	15"	#5	10"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	5
6	4'-0"	1'-0"	1'-0"	3'-0"	1'-0"	2'-0"	#5	15"	#6	15"	#5	15"	#6	10"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	6
7	5'-0"	1'-6"	1'-0"	3'-6"	1'-0"	2'-0"	#5	15"	#6	15"	#5	15"	#6	10"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	7
8	5'-5"	1'-6"	1'-0"	4'-0"	1'-0"	2'-6"	#5	15"	#6	15"	#5	15"	#7	10"	#5	15"	#5	12"	*	12"	#5	15"	#6	12"	8

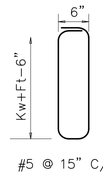
* BARS F: #8 @ 12" IN CONSTRUCTION JOINTS.
* BARS F: 1" DIA. SMOOTH DOWELS @ 12" IN EXPANSION JOINTS.



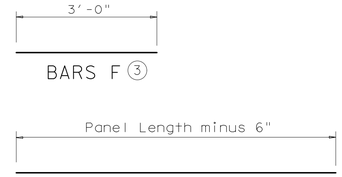
BARS B

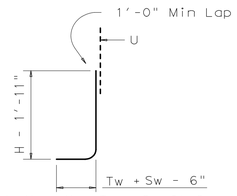


BARS U

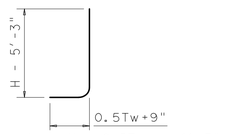


BARS U1

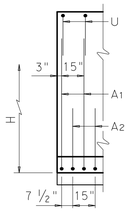




BARS A1



BARS A2



H > 5' ≦ 8'

PARTIAL WALL ELEVATION

(Showing vertical reinforcing pattern in back face)

RETAINING WALL DESIGN PARAMETERS:
(REFERENCE: Addendum 1 to Report ECS 19.8878)

- ALLOWABLE SOIL BEARING PRESSURE = 2,500 PSF
- ULTIMATE PASSIVE PRESSURE = 250 PSF/FT
- EQUIVALENT ACTIVE FLUID PRESSURE = 61 PCF
- BACKFILL MATERIAL = ON SITE FILL SOIL/IMPORTED SOIL
- COEFFICIENT OF FRICTION = 0.36
- HORIZONTAL HANDRAIL SURCHARGE = 50 PLF
- VERTICAL HEEL SURCHARGE = 250 PSF
- MINIMUM WALL EMBEDMENT IN TOE = 2 FEET
- ALL CONCRETE SHALL BE TxDOT CLASS C (3,600 PSI @ 28 DAYS)
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- SEE RW2 FOR NOTES AND DETAILS NOT SHOWN ON THIS SHEET.

*.THE MANUFACTURER SHOULD BE CONSULTED FOR INSTALLATION AND SPACING GUIDELINES OF THE COMPOSITE GEOSYNTHETIC DRAINAGE SYSTEMS.

FOUNDATION REMEDIATION AS REQUIRED BY THE ON-SITE GEOTECHNICAL ENGINEER TO OBTAIN THE STABLE WORKING PLATFORM MEETING THE DESIGN PARAMETERS. THE BEARING CAPACITY MUST BE VERIFIED PRIOR THE CONSTRUCTION.

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

RW 1

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

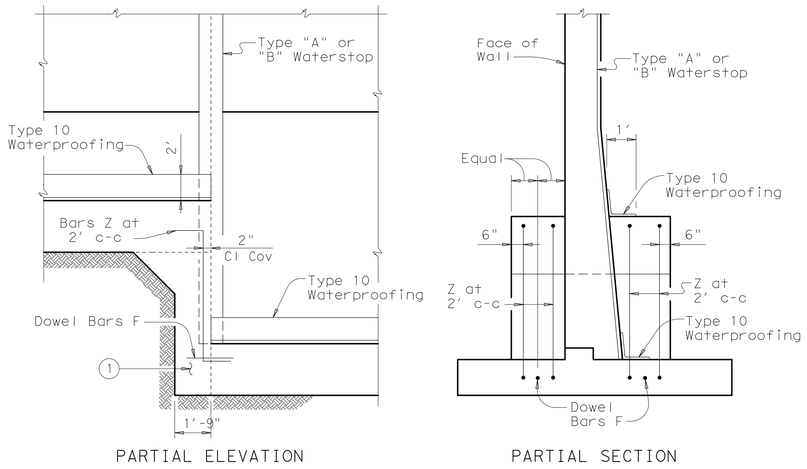
Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

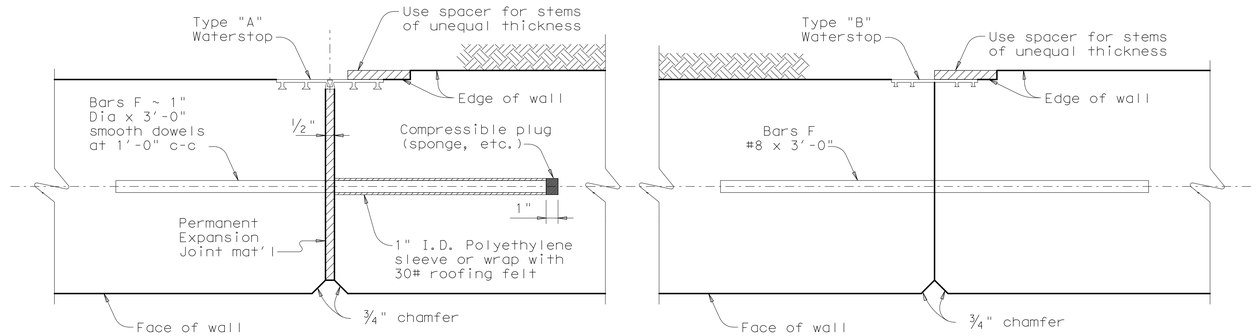
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
RETAINING WALL DETAILS SHT 1
CASE# E2023-007
SHEET NO.
C7.5



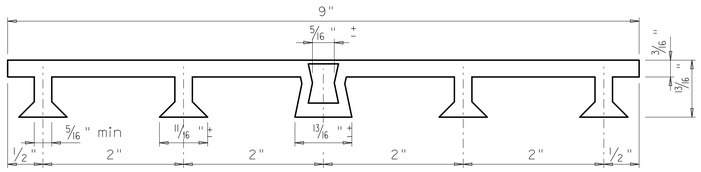
PARTIAL ELEVATION PARTIAL SECTION

SHOWING WATERSTOP AT FOOTING JOINT

(1) Unreinforced Class "C" Concrete when difference in top of footing elevations is less than 6'. Omit when Dowel Bars F can be placed between adjacent footings with 4" cover top and bottom.

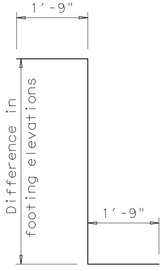


EXPANSION JOINT CONSTRUCTION JOINT



PVC WATERSTOP TYPE "A"

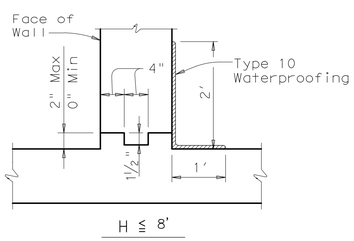
Note: Dimensions and shapes may vary slightly depending on manufacturer.



BARS Z (#5)

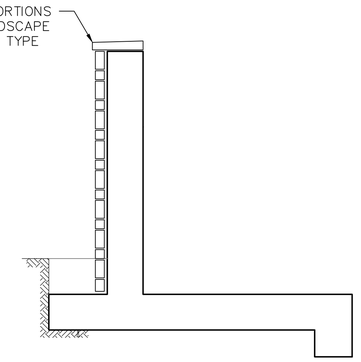
Omit Bars Z when difference in top of footing elevations is less than 6'.

PVC WATERSTOP TYPE "B"



JOINT AND WATERSTOP DETAILS

STONE VENEER AT ALL EXPOSED PORTIONS OF RETAINING WALL. REFERENCE LANDSCAPE PLANS FOR DETAILS INCLUDING STONE TYPE PATTERNS AND ANCHORAGE DETAILS.



TYPICAL WALL STONE VENEER

GENERAL NOTES:

Walls are designed assuming unit weight of soil = 125 pcf, and coefficient of horizontal earth pressure = 0.49 for on-site backfill soil.

Walls are designed to provide a minimum factor of safety against sliding of 1.5. The undisturbed or compacted soil depth in front of walls, from bottom of Key up, shall not be less than Kw + Ft + 1'.

Retaining walls are detailed to be placed on grades up thru 10% with footing level, with no changes in reinforcing steel. Steeper grades can be accommodated by shortening Bars A1 and B and increasing length of legs of Bars U by the same amount. No change in Quantities will be involved

Retaining walls may be placed on Horizontal Curves by adjusting lengths of footing Bars T and H. Minor revisions of Concrete Quantities may be required.

Designed in accordance with current AASHTO Standard and Interim Specifications.

All concrete to be Class "C".

All reinforcing steel to be Grade 60.

RECORD DRAWING

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

RW 2

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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260 EAST DAVIS STREET, SUITE 100
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STRUCTURAL ENGINEER
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CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

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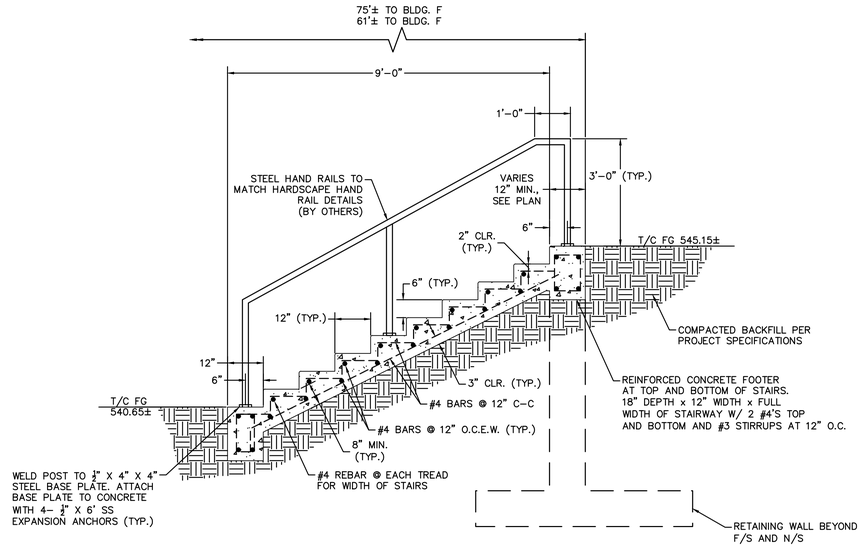
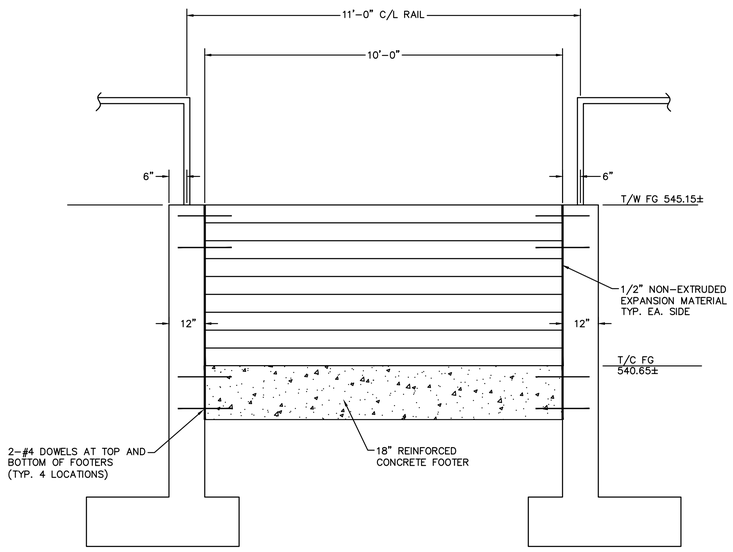
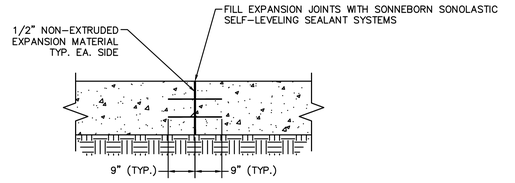
RETAINING WALL DETAILS SHT 2
CASE# E2023-007
SHEET NO.
C7.6



SOUTH ELEV. A
N.T.S.



WEST ELEV. B
N.T.S.



DOWELED EXPANSION JOINT

GENERAL NOTES
1. SLOPE TREAD @ 1.0% MAX FOR DRAINAGE.
2. UNLESS NOTED OTHERWISE, STAIR FINISH SHALL BE NON-SLIP HORIZONTAL BROOM FINISH.
3. ALL DIMENSIONS AND MATERIALS FOR STAIRS SHALL COMPLY WITH SECTIONS 504 AND 505 OF TEXAS ACCESSIBILITY STANDARDS (MARCH 2012).
4. POSTS SHALL BE SURFACE MOUNTED, CORED, SLEEVED OR SET IN POST FOOTERS- REFERENCE TECHNICAL SPECIFICATIONS AND/OR PROJECT SPECIFIC DETAIL FOR MOUNTING
5. 3600 PSI MINIMUM CONCRETE.

FOR INFORMATIONAL PURPOSES ONLY. TO BE PERMITTED BY THE BUILDING DEPARTMENT.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

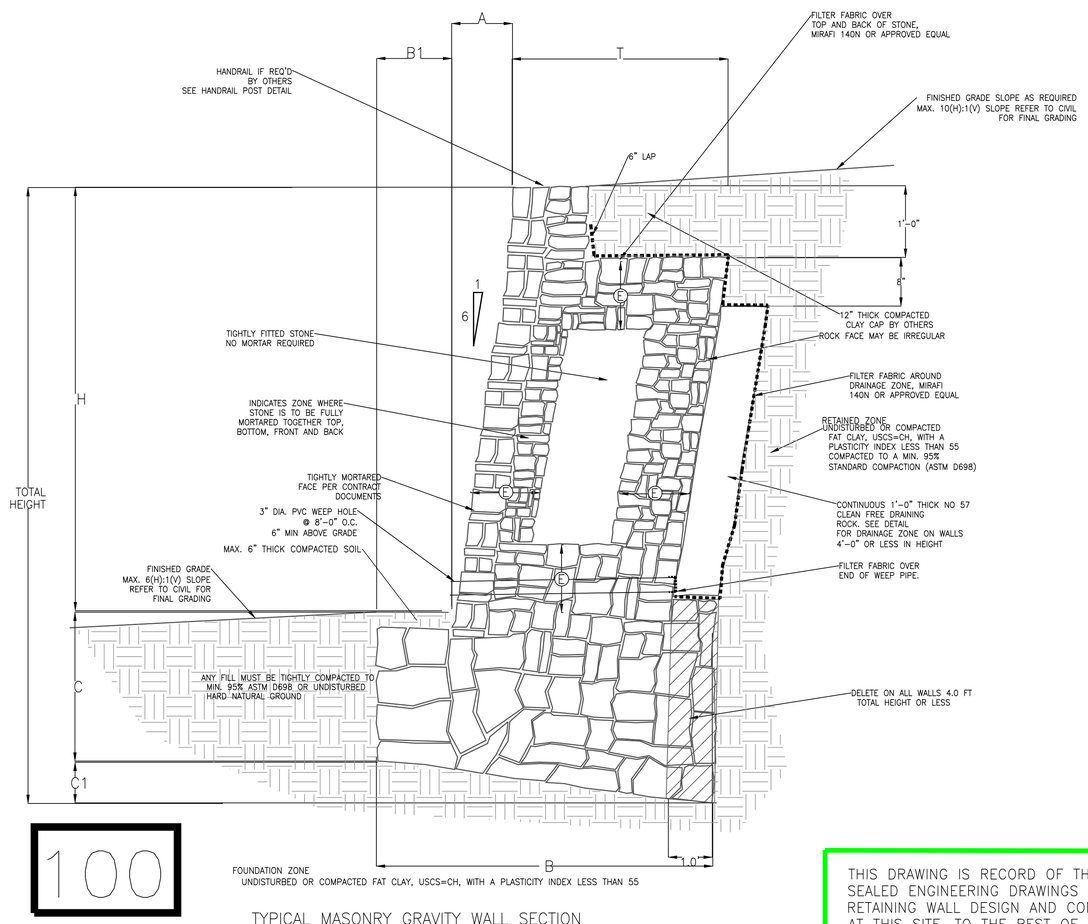
VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ENGINEERING PLAN SUBMITTAL
SHEET TITLE
RETAINING WALL B - STAIRS DETAIL
CASE# E2023-007
SHEET NO.
C7.7

WALL TYPE 1–A – LEVEL SLOPE BEHIND WALL, MAX. 100 PSF LIVE LOAD FOR MAINTENANCE BEHIND WALL, NO ADDITIONAL LOADS WITHIN 1.5X THE EXPOSED HT. OF WALL									
Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Setback A	Bearing Pressure PSF
2'	2' 9"	1' 6"	0' 0"	0' 6"	0' 3"	FULLY MORTARED	1' 6"	0' 4"	500
3'	3' 10"	1' 9"	0' 3"	0' 6"	0' 4"	FULLY MORTARED	1' 6"	0' 6"	600
4'	5' 2"	2' 2"	0' 6"	0' 9"	0' 5"	FULLY MORTARED	1' 8"	0' 8"	700
5'	6' 9"	3' 9"	0' 9"	1' 1"	0' 8"	0' 8"	2' 0"	0' 10"	900
6'	8' 3"	4' 4"	0' 10"	1' 6"	0' 9"	0' 9"	2' 6"	1' 0"	1000
7'	9' 9"	4' 9"	1' 0"	1' 11"	0' 10"	1' 0"	2' 9"	1' 2"	1200
8'	11' 1"	5' 4"	1' 1"	2' 2"	0' 11"	1' 0"	3' 3"	1' 4"	1400
9'	12' 6"	6' 0"	1' 3"	2' 6"	1' 0"	1' 3"	3' 9"	1' 6"	1600
10'	13' 10"	6' 5"	1' 5"	2' 9"	1' 1"	1' 3"	4' 0"	1' 8"	1700

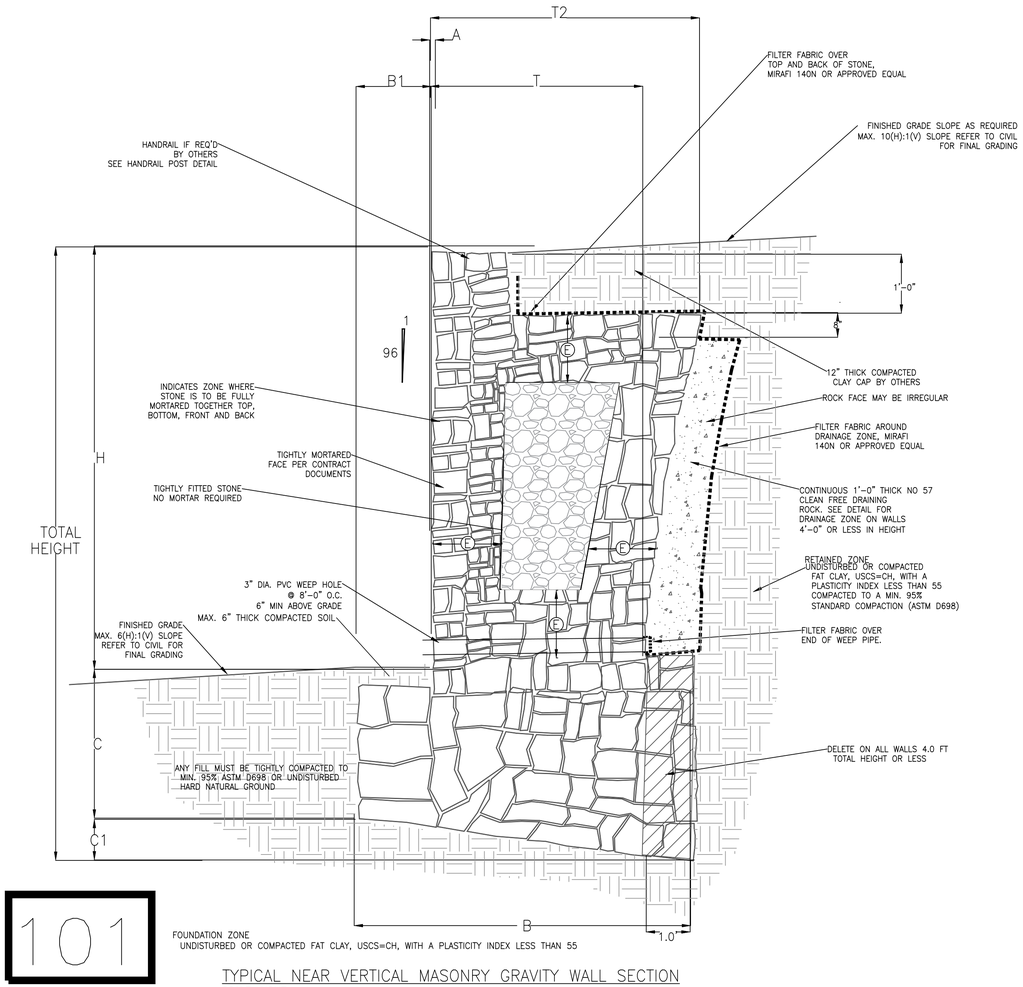


100

TYPICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS–BUILT.

WALL TYPE 1–A – LEVEL SLOPE BEHIND WALL, MAX. 100 PSF LIVE LOAD FOR MAINTENANCE BEHIND WALL, NO ADDITIONAL LOADS WITHIN 1.5X THE EXPOSED HT. OF WALL										
Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Thickness T2	Setback A	Bearing Pressure PSF
2'	2' 9"	1' 6"	0' 0"	0' 6"	0' 3"	FULLY MORTARED	1' 6"	1' 8"	0' 0.25"	500
3'	3' 10"	1' 9"	0' 3"	0' 6"	0' 4"	FULLY MORTARED	1' 6"	1' 10"	0' 0.38"	600
4'	5' 2"	2' 2"	0' 6"	0' 9"	0' 5"	FULLY MORTARED	1' 8"	2' 2"	0' 0.50"	700
5'	6' 9"	3' 9"	0' 9"	1' 1"	0' 8"	0' 8"	2' 0"	2' 8"	0' 0.62"	900
6'	8' 3"	4' 4"	0' 10"	1' 6"	0' 9"	0' 9"	2' 6"	3' 4"	0' 0.75"	1000
7'	9' 9"	4' 9"	1' 0"	1' 11"	0' 10"	1' 0"	2' 9"	3' 9"	0' 0.88"	1200
8'	11' 1"	5' 4"	1' 1"	2' 2"	0' 11"	1' 0"	3' 3"	4' 5"	0' 1.00"	1400
9'	12' 6"	6' 0"	1' 3"	2' 6"	1' 0"	1' 3"	3' 9"	5' 1"	0' 1.13"	1600
10'	13' 10"	6' 5"	1' 5"	2' 9"	1' 1"	1' 3"	4' 0"	5' 6"	0' 1.25"	1700



101

TYPICAL NEAR VERTICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

DESIGNBUILD CONSULTING SERVICES LLC
P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

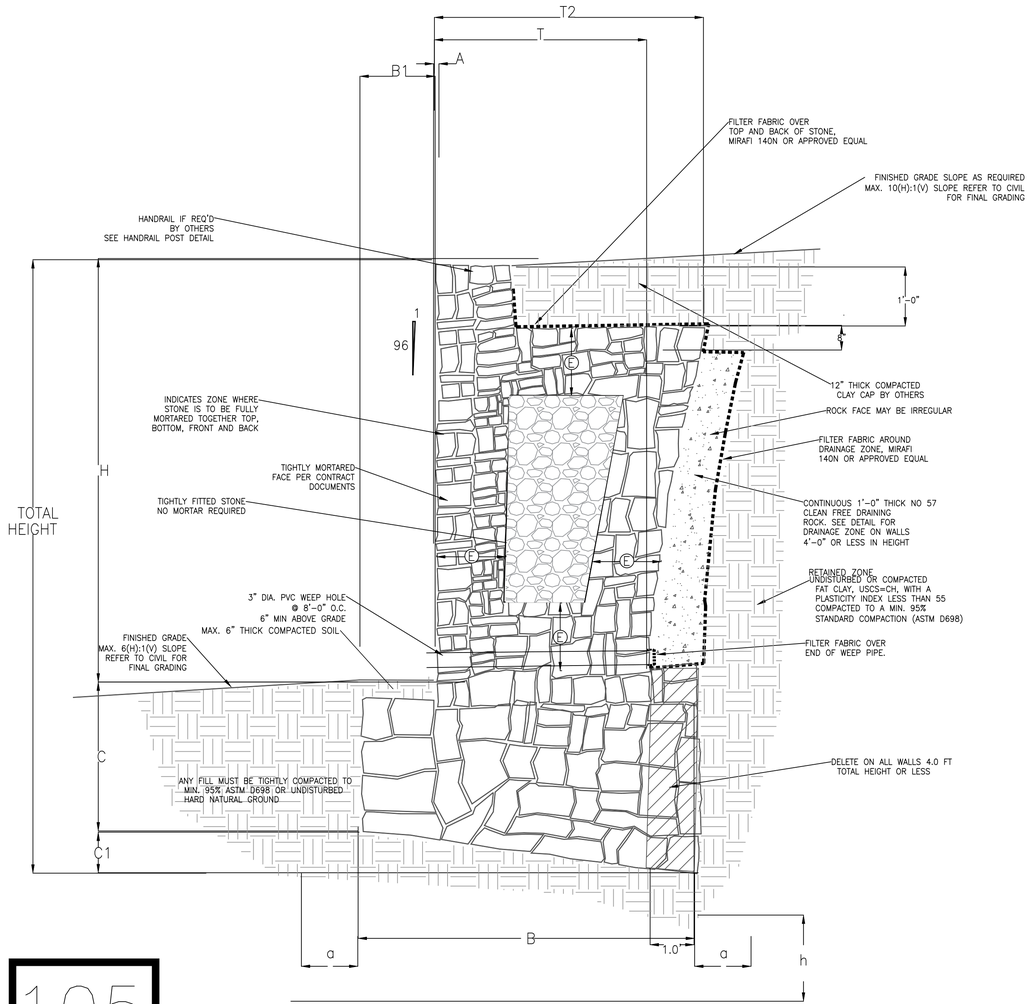
RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL SECTIONS

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 6 OF 11

WALL TYPE 1-A – LEVEL SLOPE BEHIND WALL, MAX. 100 PSF LIVE LOAD FOR MAINTENANCE BEHIND WALL, NO ADDITIONAL LOADS WITHIN 1.5X THE EXPOSED HT. OF WALL

Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Thickness T2	Setback A	Bearing Pressure PSF
2'	4' 3"	1' 6"	0' 0"	2' 0"	0' 3"	FULLY MORTARED	1' 6"	1' 8"	0' 0.25"	500
3'	5' 4"	1' 9"	0' 3"	2' 0"	0' 4"	FULLY MORTARED	1' 6"	1' 10"	0' 0.38"	600
4'	6' 5"	2' 2"	0' 6"	2' 0"	0' 5"	FULLY MORTARED	1' 8"	2' 2"	0' 0.50"	700
5'	7' 8"	3' 9"	0' 9"	2' 0"	0' 8"	0' 8"	2' 0"	2' 8"	0' 0.62"	900
6'	8' 9"	4' 4"	0' 10"	2' 0"	0' 9"	0' 9"	2' 6"	3' 4"	0' 0.75"	1000
7'	9' 10"	4' 9"	1' 0"	2' 0"	0' 10"	1' 0"	2' 9"	3' 9"	0' 0.88"	1200
8'	11' 1"	5' 4"	1' 1"	2' 2"	0' 11"	1' 0"	3' 3"	4' 5"	0' 1.00"	1400
9'	12' 6"	6' 0"	1' 3"	2' 6"	1' 0"	1' 3"	3' 9"	5' 1"	0' 1.13"	1600
10'	13' 10"	6' 5"	1' 5"	2' 9"	1' 1"	1' 3"	4' 0"	5' 6"	0' 1.25"	1700
11'	15' 2"	7' 0"	1' 6"	3' 0"	1' 2"	1' 6"	4' 6"	6' 2"	0' 1.37"	1800



105

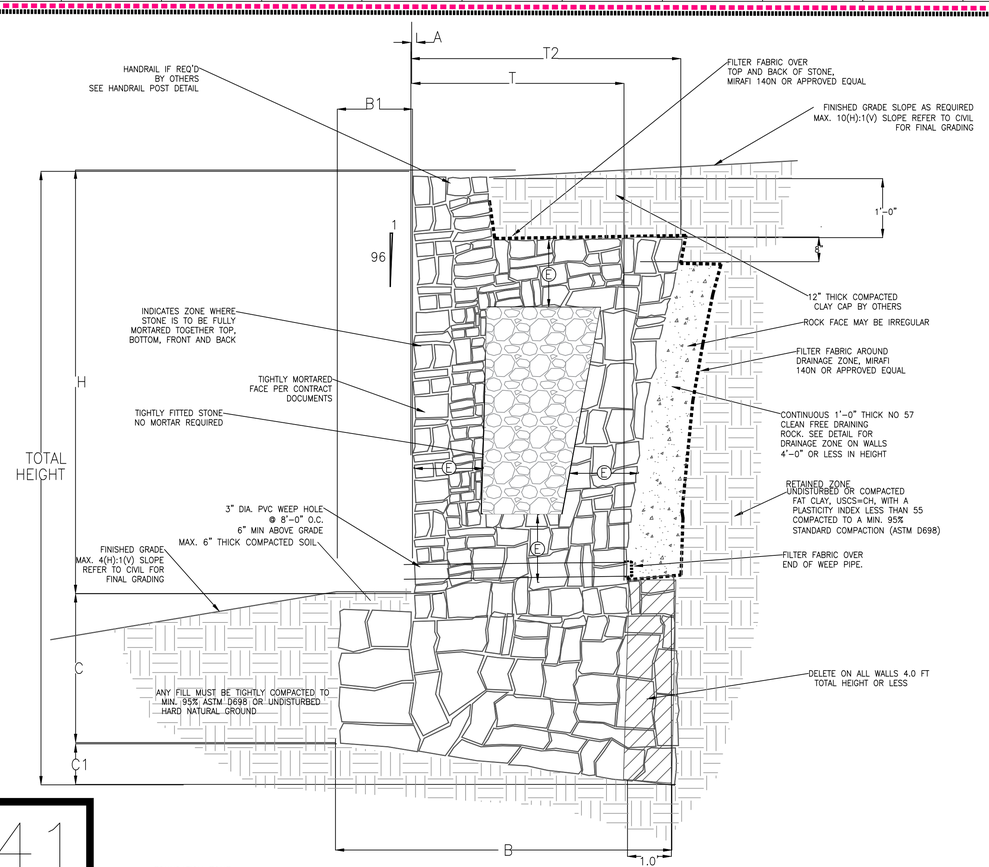
FOUNDATION ZONE
UNDISTURBED OR COMPACTED FAT CLAY, USCS=CH, WITH A PLASTICITY INDEX LESS THAN 55
OR COMPACTED TXDOT FLEXBASE TO MIN. 95% ASTM D698 FOR WALL HEIGHT > 10'

TYPICAL NEAR VERTICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

WALL TYPE 1-A – LEVEL SLOPE BEHIND WALL, MAX. 100 PSF LIVE LOAD FOR MAINTENANCE BEHIND WALL, NO ADDITIONAL LOADS WITHIN 1.5X THE EXPOSED HT. OF WALL W/ 4(H):1(V) SLOPE IN FRONT OF WALL

Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Thickness T2	Setback A	Bearing Pressure PSF
2'	3' 1"	1' 6"	0' 0"	0' 10"	0' 3"	FULLY MORTARED	1' 6"	1' 8"	0' 0.25"	500
3'	4' 4"	1' 9"	0' 3"	1' 0"	0' 4"	FULLY MORTARED	1' 6"	1' 10"	0' 0.38"	600
4'	5' 10"	2' 2"	0' 6"	1' 5"	0' 5"	FULLY MORTARED	1' 8"	2' 2"	0' 0.50"	700
5'	7' 7"	3' 9"	0' 9"	1' 11"	0' 8"	0' 8"	2' 0"	2' 8"	0' 0.62"	900
6'	9' 3"	4' 4"	0' 10"	2' 6"	0' 9"	0' 9"	2' 6"	3' 4"	0' 0.75"	1000
7'	10' 11"	4' 9"	1' 0"	3' 1"	0' 10"	1' 0"	2' 9"	3' 9"	0' 0.88"	1200
8'	12' 5"	5' 4"	1' 1"	3' 6"	0' 11"	1' 0"	3' 3"	4' 5"	0' 1.00"	1400
9'	14' 0"	6' 0"	1' 3"	4' 0"	1' 0"	1' 3"	3' 9"	5' 1"	0' 1.13"	1600
10'	15' 6"	6' 5"	1' 5"	4' 5"	1' 1"	1' 3"	4' 0"	5' 6"	0' 1.25"	1700



141

FOUNDATION ZONE
UNDISTURBED OR COMPACTED FAT CLAY, USCS=CH, WITH A PLASTICITY INDEX LESS THAN 55

TYPICAL NEAR VERTICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

DESIGNBUILD CONSULTING SERVICES LLC
P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS
Zarek Y. Boutaghou
148764
LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

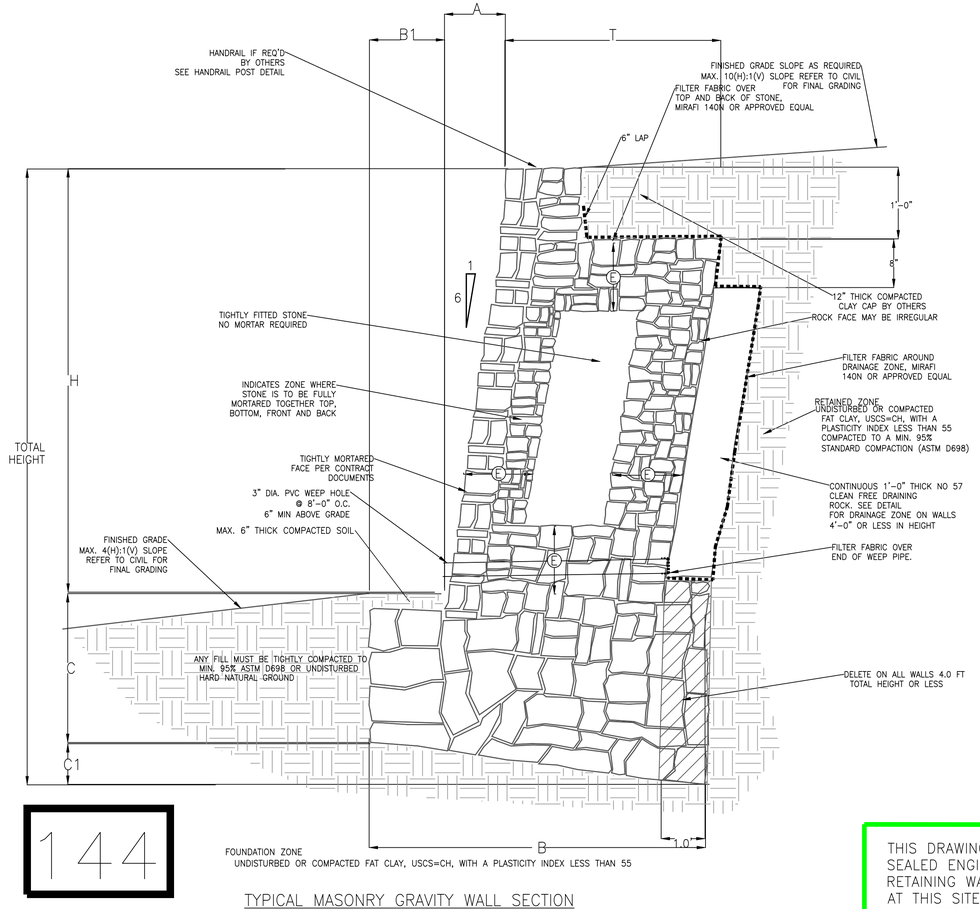
RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL SECTIONS

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 7 OF 11

WALL TYPE 1–A – LEVEL SLOPE BEHIND WALL, MAX. 100 PSF LIVE LOAD FOR MAINTENANCE BEHIND WALL, NO ADDITIONAL LOADS WITHIN 1.5X THE EXPOSED HT. OF WALL W/ 4(H):1(V) SLOPE IN FRONT OF WALL

Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Setback A	Bearing Pressure PSF
2'	4' 3"	1' 6"	0' 0"	2' 0"	0' 3"	FULLY MORTARED	1' 6"	0' 4"	500
3'	5' 4"	1' 9"	0' 3"	2' 0"	0' 4"	FULLY MORTARED	1' 6"	0' 6"	600
4'	6' 5"	2' 2"	0' 6"	2' 0"	0' 5"	FULLY MORTARED	1' 8"	0' 8"	700
5'	7' 8"	3' 9"	0' 9"	2' 0"	0' 8"	0' 8"	2' 0"	0' 10"	900
6'	9' 3"	4' 4"	0' 10"	2' 6"	0' 9"	0' 9"	2' 6"	1' 0"	1000
7'	10' 11"	4' 9"	1' 0"	3' 1"	0' 10"	1' 0"	2' 9"	1' 2"	1200
8'	12' 5"	5' 4"	1' 1"	3' 6"	0' 11"	1' 0"	3' 3"	1' 4"	1400
9'	14' 0"	6' 0"	1' 3"	4' 0"	1' 0"	1' 3"	3' 9"	1' 6"	1600
10'	15' 6"	6' 5"	1' 5"	4' 5"	1' 1"	1' 3"	4' 0"	1' 8"	1700



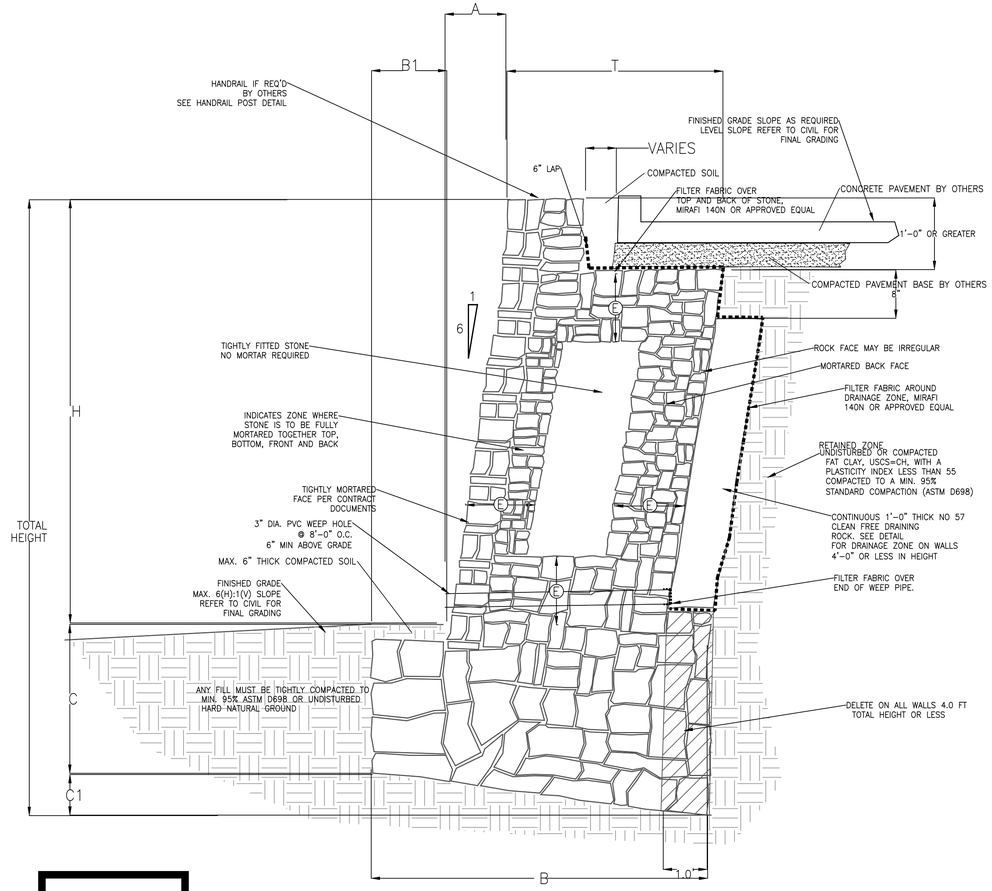
144

TYPICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS–BUILT.

WALL TYPE 2–A – LEVEL SLOPE BEHIND WALL MAX. 250 PSF LIVE OR DEAD LOAD AT LEAST 2.0 FT. BEHIND WALL

Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Setback A	Bearing Pressure PSF
2'	2' 9"	1' 6"	0' 0"	0' 6"	0' 3"	FULLY MORTARED	1' 6"	0' 4"	500
3'	3' 10"	1' 9"	0' 3"	0' 6"	0' 4"	FULLY MORTARED	1' 6"	0' 6"	700
4'	5' 2"	2' 2"	0' 6"	0' 9"	0' 5"	FULLY MORTARED	1' 8"	0' 8"	900
5'	6' 9"	3' 9"	0' 9"	1' 1"	0' 8"	0' 8"	2' 0"	0' 10"	1100
6'	8' 3"	4' 4"	0' 10"	1' 6"	0' 9"	0' 9"	2' 6"	1' 0"	1400
7'	9' 9"	4' 9"	1' 0"	1' 11"	0' 10"	1' 0"	2' 9"	1' 2"	1400
8'	11' 1"	5' 4"	1' 1"	2' 2"	0' 11"	1' 0"	3' 3"	1' 4"	1500



200

TYPICAL MASONRY GRAVITY WALL SECTION
SCALE: NONE

DESIGNBUILD CONSULTING SERVICES LLC
P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS
Zarek Y. Boutaghou
148784
LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

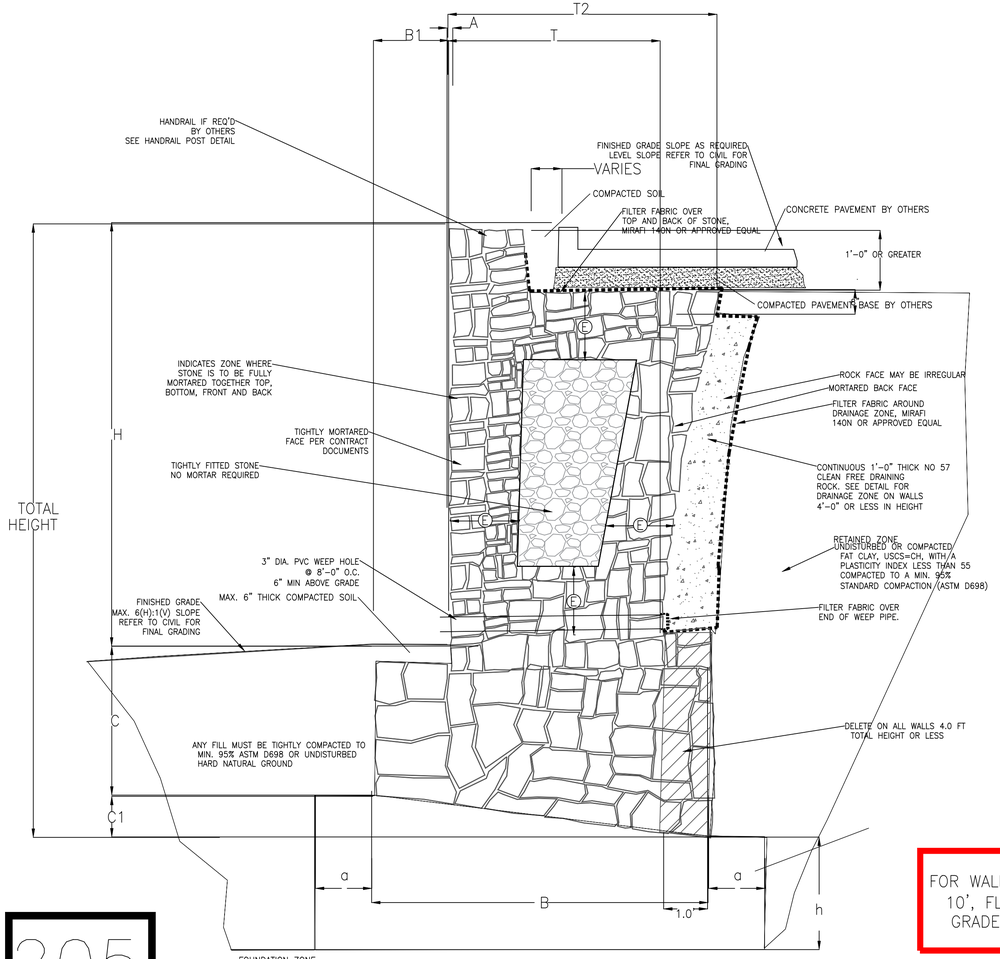
RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL SECTIONS

JOB#: CM–23–0031 | DATE: 06/23/23 | SHEET: 8 OF 11

WALL TYPE 2-A – LEVEL SLOPE BEHIND WALL MAX. 250 PSF LIVE OR DEAD LOAD AT LEAST 2.0 FT. BEHIND WALL

Wall Height H	Total Ht.	Base Width B	Toe B1	Base Depth (Toe) C	Base Depth (Heel) C1	Fully Mortared Zone E	Thickness T	Thickness T2	Setback A	Bearing Pressure PSF	Bearing Pressure PSF Seismic	Flexible Base Depth h	Flexible Base Extent Beyond Wall Footing a
2'	4' 3"	1' 6"	0' 0"	2' 0"	0' 3"	FULLY MORTARED	1' 6"	1' 8"	0' 0.25"	500			
3'	5' 4"	1' 9"	0' 3"	2' 0"	0' 4"	FULLY MORTARED	1' 6"	1' 10"	0' 0.38"	700			
4'	6' 5"	2' 2"	0' 6"	2' 0"	0' 5"	FULLY MORTARED	1' 8"	2' 2"	0' 0.50"	900			
5'	7' 8"	3' 9"	0' 9"	2' 0"	0' 8"	0' 8"	2' 0"	2' 8"	0' 0.62"	1100			
6'	8' 9"	4' 4"	0' 10"	2' 0"	0' 9"	0' 9"	2' 6"	3' 4"	0' 0.75"	1400			
7'	9' 10"	4' 9"	1' 0"	2' 0"	0' 10"	1' 0"	2' 9"	3' 9"	0' 0.88"	1400			
8'	11' 1"	5' 4"	1' 1"	2' 2"	0' 11"	1' 0"	3' 3"	4' 5"	0' 1.00"	1500			
9'	12' 6"	6' 0"	1' 3"	2' 6"	1' 0"	1' 3"	3' 9"	5' 1"	0' 1.13"	1700	2600	0' 3"	0' 3"
10'	13' 10"	6' 5"	1' 5"	2' 9"	1' 1"	1' 3"	4' 0"	5' 6"	0' 1.25"	1800	2800	0' 3"	0' 3"
11'	15' 2"	7' 0"	1' 6"	3' 0"	1' 2"	1' 6"	4' 6"	6' 2"	0' 1.37"	2000	3000	0' 6"	0' 5"
12'	16' 7"	7' 7"	1' 8"	3' 3"	1' 4"	1' 6"	4' 11"	6' 9"	0' 1.50"	2100	3300	1' 0"	0' 9"
13'	18' 0"	8' 4"	1' 10"	3' 7"	1' 5"	1' 9"	5' 6"	7' 6"	0' 1.63"	2300	3700	1' 6"	1' 2"
14'	19' 5"	9' 1"	1' 11"	3' 10"	1' 7"	1' 9"	6' 2"	8' 4"	0' 1.75"	2400	4000	1' 11"	1' 5"



TYPICAL NEAR VERTICAL MASONRY GRAVITY WALL SECTION

SCALE: NONE

205

FOR WALL SECTIONS WITH EXPOSED HEIGHTS GREATER THAN 10', FLEXIBLE BASE SHALL BE TXDOT ITEM 247 TYPE A GRADE 1–2 MODIFIED WITH WET BALL MAXIMUM OF 25

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

DESIGNBUILD CONSULTING SERVICES LLC

P.O. BOX 185112 FORT WORTH, TX 76181-0112

INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF

CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

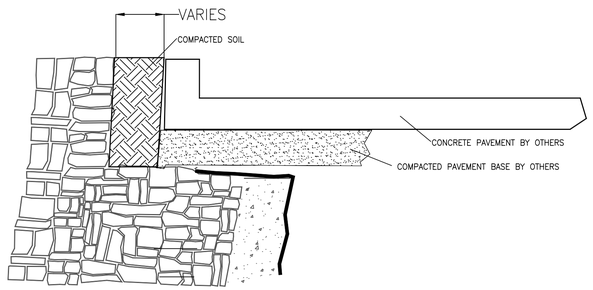
STATE OF TEXAS – Zarek Y. Boutaghou – 148784 – LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

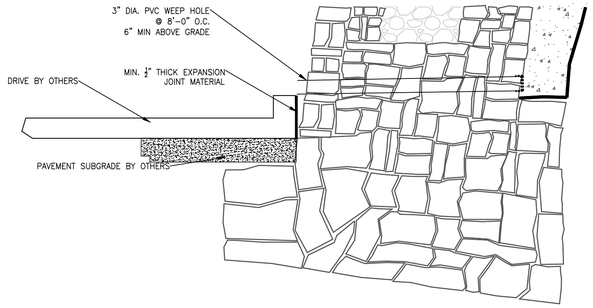
RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL SECTIONS

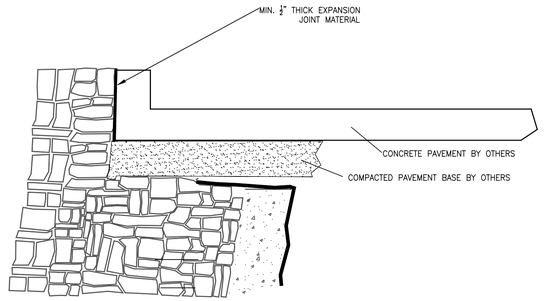
JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 9 OF 11



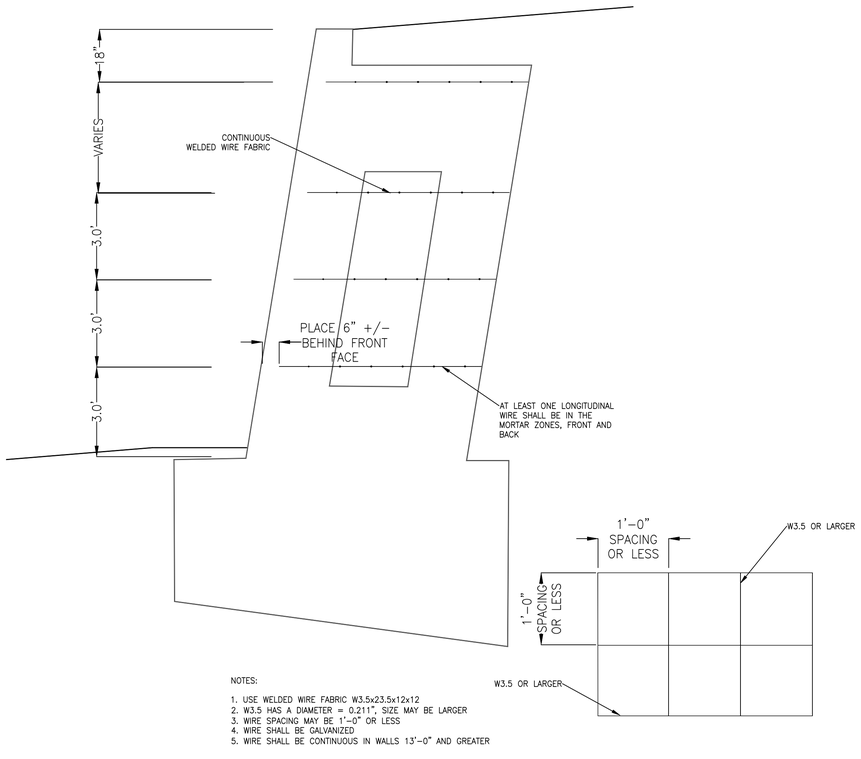
PAVEMENT BEHIND WALL DETAIL
SCALE: NONE



PAVEMENT BELOW WALL DETAIL
SCALE: NONE



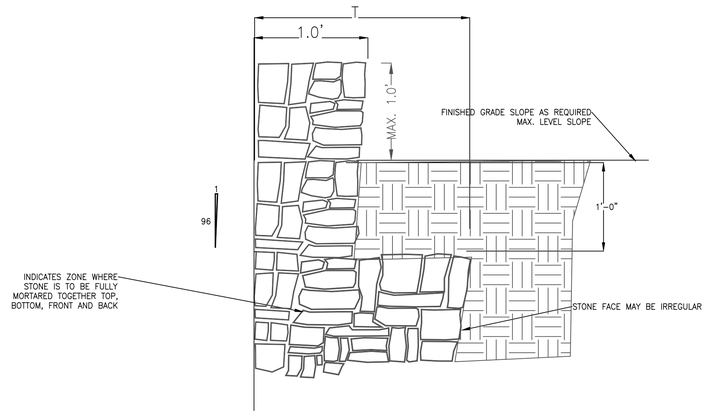
PAVEMENT BEHIND WALL DETAIL
SCALE: NONE



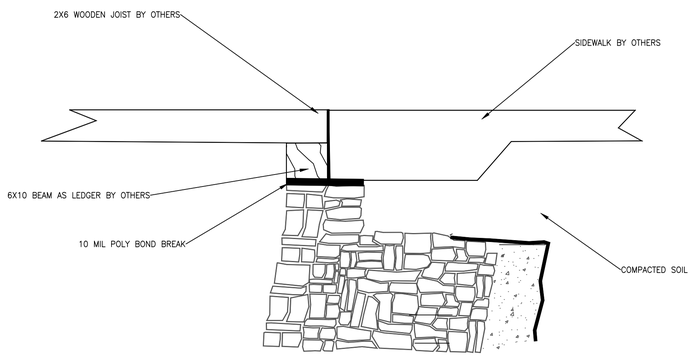
NOTES:

1. USE WELDED WIRE FABRIC W3.5x23.5x12x12
2. W3.5 HAS A DIAMETER = 0.211", SIZE MAY BE LARGER
3. WIRE SPACING MAY BE 1'-0" OR LESS
4. WIRE SHALL BE GALVANIZED
5. WIRE SHALL BE CONTINUOUS IN WALLS 13'-0" AND GREATER

WS/1 WIRE SPACING FOR WALLS 10'-0" AND GREATER
SCALE: NONE



TYPICAL TOP OF WALL DETAIL WITH PARAPET – WALL 6 ONLY
SCALE: NONE



TYPICAL SIDEWALK/WOOD DECK ON TOP OF WALL DETAIL
SCALE: NONE

THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.

DESIGNBUILD CONSULTING SERVICES LLC
P.O. BOX 185112 FORT WORTH, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

STATE OF TEXAS · Zarek Y. Boutaghou · 148784 · LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

RAYBURN ELECTRIC ROCKWALL, TEXAS

WALL DETAILS

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 10 OF 11

NOTES:

A. Design

1. Design Codes: IBC, 2018 Edition

2. Soils Report: A Geotechnical Report, along with addendums 5, & 8, by ECS Southwest, LLP, dated: October 4, 2022, July 21, 2023, & September 12, 2023 respectively was provided for the project and the soil properties used were correlated from the information in the geotechnical report.

3. Civil Plans: Sheets C6.3,C6.4, C7.2, C7.3 & C7.4 dated June 8, 2023 & L2.04 dated February 17, 2023 of the Project Plans by HKS, Inc.

4. Design Parameters

Soil Parameters:

Soil Type	Friction Angle	Cohesion(psf)	Unit Weight(pcf)
Retained Backfill	20 deg.	100 psf	125 pcf
Foundation Soils	20 deg.	100 psf	125 pcf

Factors of Safety

External Stability

a. Minimum Factor of Safety Against Base Sliding(Static Condition)	1.5
b. Minimum Factor of Safety Against Overturning	2.0
c. Minimum Factor of Safety for Bearing Capacity	2.0
d. Minimum Factor of Safety for Global Stability	1.3

Retaining Walls should not have solid fence (such as wood fence) placed on top of wall other than that shown on these plans. Retaining walls shall not have additional surcharge placed above wall other than that shown on these plans. Retaining walls shall not have slope at base or top of wall that exceed that which is shown on these plans.

Live Load Behind Walls	See wall locations and sections.
Dead Load	None
Seismic PGA Horiztonal	0.083g

Water is assumed to be greater than 10.0 ft below the bottom of walls with the following exceptions:
Wall 4 assumes water elevation up to base of wall.
Walls P1 & P2 assume the maximum water elevation to be elevation 528.0.

B. Materials

1. Soil Types
   a. Retained Backfill --Fat clay, USCS=CH, PI< 55, f = 20°, g=125 pcf, c=100 psf
   b. Foundation Soils -- Fat clay, USCS=CH, PI< 55, f = 20°, g=125 pcf, c=100 psf
   c. Drainage Material -- ASTM C33 No. 57 crushed stone.

2. Dimension Facing Stone
   a. Average Density of masonry wall varies from 130pcf to 140 pcf.
   b. Stone size varies from 8" tall, 4" deep with varying sizes.
   c. Face stone shall be coordinated between contractor and owner/developer.

3. Rebar/Welded Wire Fabric
   a. All steel reinforcement shall be new billet steel confirming to ASTM A-615, Grade 60 with fy=60 ksi
   b. All reinforcement shall not have deleterious material on it.
   c. All welded wire fabric shall have minimum fy=65 ksi and be hot dipped galvanized.

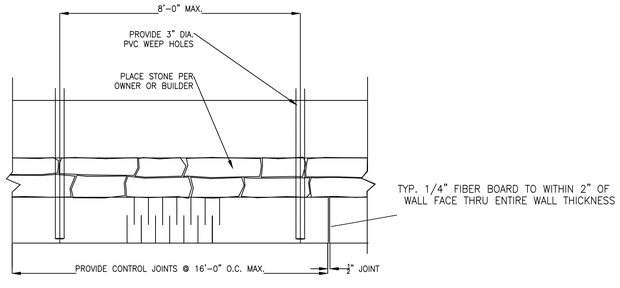
4. Drainage Materials
   a. Weep pipes shall be PVC SCH 40 min. 3" dia.
   b. Drainage zone shall be separated from retained backfill by Mirafi 140N filter fabric or approved equal.

5. Rock Infill
   a. All rock shall be hard, durable, angular stone with a maximum 8.0 particle size when placed. Any larger rocks may be split on site to be used in the wall.
   b. Mortared sections of wall shall be filled completely with mortar with no voids.
   c. Un-mortared center wall sections shall the have the rock hand placed, with the rocks tightly placed.
   d. No rock or mortar shall be placed by machine

6. Portland Cement Mortar for Retaining Wall Construction
   The portland cement mortar used for construction of the masonry stone retaining walls shall be provided with the following proportions per cubic yard of concrete. The portland cement mortar supplier shall provided "tickets" clearly indicting that the appropriate amount of materials are provided in each truck load. The tickets shall clearly indicate the amount batched, the date, the project name and shall be provided to DesignBuild Consulting Services LLC for review, documentation, and file.

Contents	Amount per cubic yard	Specific Gravity
Type 1 Portland cement:	451 lbs	3.15
Type F Fly Ash	113 lbs	2.93
Fine Aggregate (sand)	2746 lbs	2.59
Potable Water	367 lbs	44 Gallons
Sika Air (or equivalent)	(As Required) oz	4.5%

Note: The mortar supplier material weights may vary slightly based on the specific gravity of the materials used.



TYPICAL PLAN VIEW AT BASE
SCALE: NONE

C. Construction

1. Preparation Work

   a. Prior to grading or excavation of the site, confirm the location of the retaining walls and all underground features, including utility location with the area of construction. Ensure surrounding structures are protected from the effects of wall excavation, and construction.
   b. Coordinate installation of underground utilities and other improvements with wall installation.
   c. Coordinate wall location with batter of wall face. Confirm the top of wall location per the civil plans.

2. Excavation

   a. Fill over-excavated area in front of the wall footing with compacted on site soils or TXDOT Flex Base before the wall construction exceeds 4 feet in height.
   b. In areas where the walls are installed in a cut, the required excavation shall extend horizontally to the extent of the width of the retaining wall. The wall may be built to the cut. If the wall is over cut, the soil shall either be compacted or the draining zone may be widened.

3. Wall Construction

   a. The wall shall be constructed to the dimensions as shown on these plans.
   b. Face rock type shall be coordinated between the architect, owner, and retaining wall contractor.
   c. All wall construction shall be done when the air temperature is above 32° F and not scheduled to be below 32° F within 48 hours after wall placement.

4. Retained Backfill Placement

   a. Retained backfill shall be placed per the recommendations of the Geotechnical Engineer, but should not be less than 95% Standard Proctor Maximum Dry Density (ASTM D698).
   b. Fill should be placed in maximum 8" thick compacted lifts within 2% of optimum moisture content.
   c. Large compaction equipment (equipment heavier than 7,500 lb) shall remain a minimum of 1.5x the height of the wall away from the back of the wall for a period of 2 weeks from the time of the construction.
   d. After a period of 2 weeks from the time of construction large compaction equipment (greater than 7500 lb.) may be used behind the wall but shall stay a minimum of 5'-0" away from the back of the wall
   e. Soil placed within 5'-0" of the back of the wall shall be placed using small handheld compaction equipement.
   f. Compaction of all soil backfill shall be verified by the Testing Agency of Record with at least one test per per 5000 sq. ft. per lift of fill placed per day and at least 20% of test within 5.0 ft. behind the wall.

5. Retaining Wall Performance, Maintenance, and Other Comments

   a. Control joints are provided in the retaining wall to allow for minor movements due to settlement and shrink swell of the soils. Some cracking may occur in the face of the retaining wall. This cracking, if minor (less than 3/8") may be cosmetically repaired as desired.
   b. The retaining walls are designed to allow surface water to flow over the tops of the retaining walls. Care should be taken during and after construction to not allow water to pond behind the retaining walls, as this can have a negative impact on the stability of the retaining walls.
   c. If downspouts are located near the back of the retaining wall they should either be plumbed through the retaining wall to drain below the wall or collected and tied into the storm sewer system.
   d. Positive drainage over the top of the walls shall be maintained throughout the life of the structure. If swales are placed behind the wall they shall remain clean and free draining. If water is found to be ponding in the swale it shall be fixed to allow water to freely drain as soon as possible.
   e. Any broken sprinklers behind the retainined wall shall be turned off and repaired as soon as possible.

6. Cold Weather Construction of Retaining Walls

   Construction Requirements for temperatures between 40° F and 25° F:

   a. Water and aggregates used in mortar shall not be heated above 140°F.
   b. Mortar sand or mixing water shall be heated to produce mortar temperatures between 40°F and 120°F at the time of mixing.
   c. The mortar temperature shall be maintained above freezing until used in masonry stone retaining wall.
   d. Visible ice and snow shall be removed from the top surface of existing foundations and masonry to recieve new construction. These surfaces shall be heated to above freezing, using methods that do not result in damage.
   e. Newly constructed masonry shall be completely covered with weather-resistive membrane for 48 hours after being completed.
   f. No work shall be done when air temperatures are below 25°F.
   g. Do not construct walls when air temperatures are expected below 25°F within 72 hours.

   The above proceedures come from section 2104.3.2.1 2104.3.2.2, 2104.3.2.3, 2104.3.3.3 and 2104.3.3.4 of the international building code, and is in compliance with Masonry Standards Joint Committee recommendations for cold weather construction of masonry structures.

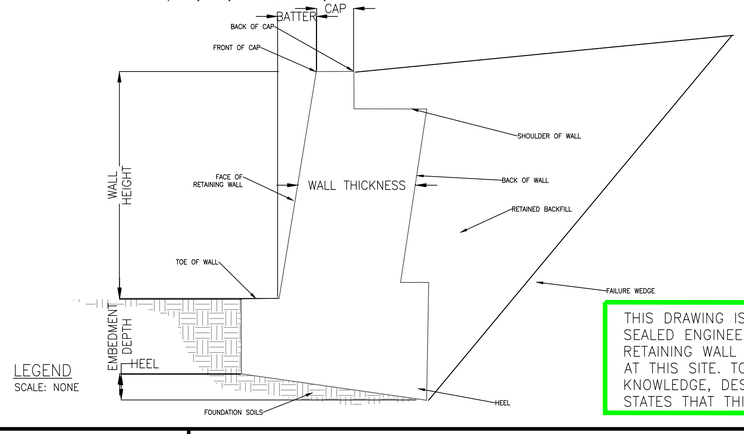
D. Construction Observations

1. Construction Observations by DesignBuild Consulting Services, LLC

   a. DesignBuild Consulting Services, LLC will perform construction observation, but only as a means of verification of the contractor's quality control performance.
   b. DesignBuild Consulting Services, LLC will act as the Special Inspector for this project. Contractor shall contact DesignBuild Consulting Services, LLC to set up the inspections, at least 1 day before construction starts.
   c. All required materials testing shall be performed by an approved materials testing laboratory.
   d. DesignBuild Consulting Services, LLC is not responsible for means, methods, and material furnished by the retaining wall contractor.

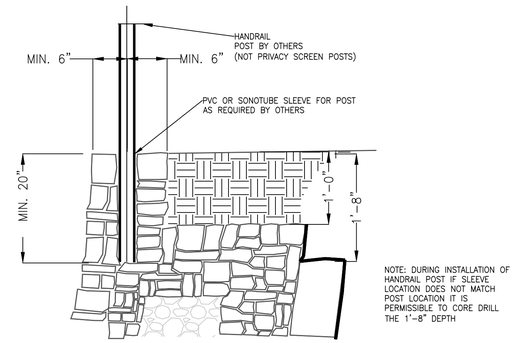
2. Construction Observations by Others

   a. Construction observations as required by the city shall be coordinated by the contractor.

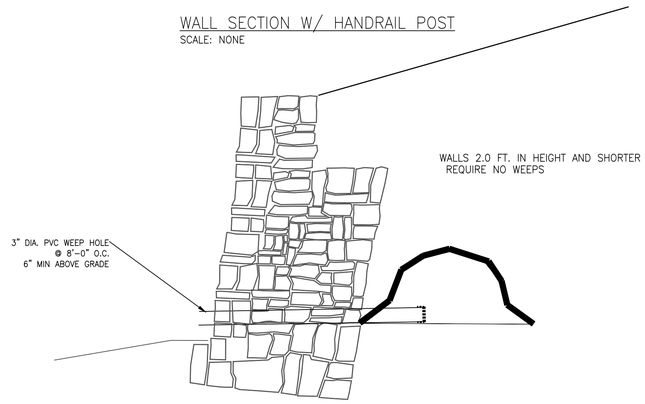


LEGEND
SCALE: NONE

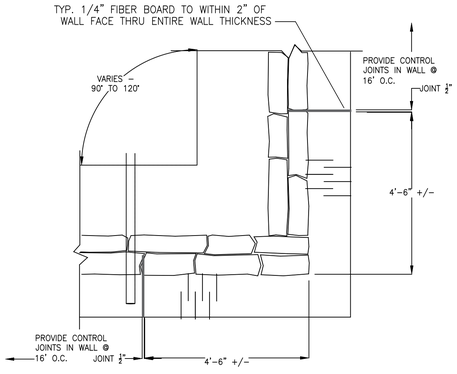
THIS DRAWING IS RECORD OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR RETAINING WALL DESIGN AND CONSTRUCTION AT THIS SITE. TO THE BEST OF OUR KNOWLEDGE, DESIGNBUILD CONSULTING, INC. STATES THAT THIS PLAN IS AS-BUILT.



WALL SECTION W/ HANDRAIL POST
SCALE: NONE



DRAINAGE PACKET ON WALLS 2' TO 4' TALL
SCALE: NONE



TYPICAL PLAN VIEW AT CORNERS
SCALE: NONE

DESIGNBUILD CONSULTING SERVICES LLC
P.O. Box 185112 Fort Worth, TX 76181-0112
INFO@DESIGNBUILDCONSULTING.NET

REVISIONS

01	07/29/23	REVISED PER RCO #1

DRAWN BY: EVF
CHECKED BY: TAP

DesignBuild Consulting Services LLC
Texas Registered Engineering Firm
F-21892

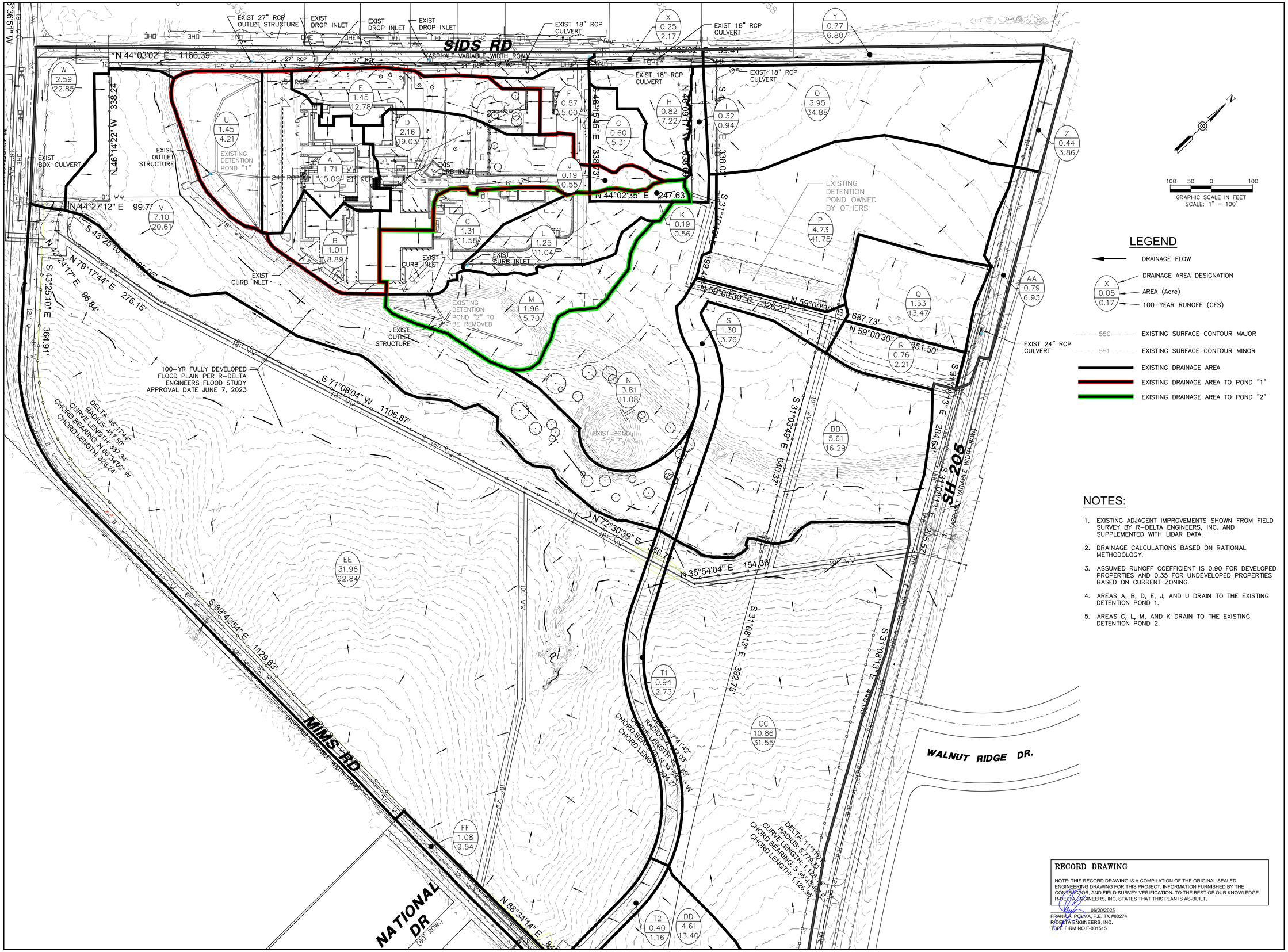
STATE OF TEXAS — Zarek Y. Boutaghou — 146784 — LICENSED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Zarek Y. Boutaghou on July 2, 2025

RAYBURN ELECTRIC
ROCKWALL, TEXAS

WALL NOTES & DETAILS

JOB#: CM-23-0031 | DATE: 06/23/23 | SHEET: 11 OF 11



LEGEND

- DRAINAGE FLOW
- X / 0.05 / 0.17 — DRAINAGE AREA DESIGNATION / AREA (Acre) / 100-YEAR RUNOFF (CFS)
- 550 — EXISTING SURFACE CONTOUR MAJOR
- 551 — EXISTING SURFACE CONTOUR MINOR
- EXISTING DRAINAGE AREA
- EXISTING DRAINAGE AREA TO POND "1"
- EXISTING DRAINAGE AREA TO POND "2"

NOTES:

1. EXISTING ADJACENT IMPROVEMENTS SHOWN FROM FIELD SURVEY BY R-DELTA ENGINEERS, INC. AND SUPPLEMENTED WITH LIDAR DATA.
2. DRAINAGE CALCULATIONS BASED ON RATIONAL METHODOLOGY.
3. ASSUMED RUNOFF COEFFICIENT IS 0.90 FOR DEVELOPED PROPERTIES AND 0.35 FOR UNDEVELOPED PROPERTIES BASED ON CURRENT ZONING.
4. AREAS A, B, D, E, J, AND U DRAIN TO THE EXISTING DETENTION POND 1.
5. AREAS C, L, M, AND K DRAIN TO THE EXISTING DETENTION POND 2.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
PRE PROJECT DRAINAGE AREA MAP

CASE# E2023-007

SHEET NO.
C8.1

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

PRE-DEVELOPMENT HYDRAULIC CALCULATIONS

HYDROLOGIC CALCULATIONS - PRE PROJECT CONDITIONS

DRAINAGE AREA ID	AREA (ACRES) "A"	TIME (MIN.)	RUN-OFF COEF. "C"	100-YR INTENSITY (IPH) "I"	Q100=CIA(CFS)	COMMENT
A	1.71	10	0.90	9.80	15.09	FLOW TO ON-SIGHT EXIST DETENTION POND
B	1.01	10	0.90	9.80	8.89	FLOW TO EXIST CURB INLET
C	1.31	10	0.90	9.80	11.58	FLOW TO EXIST CURB INLET
D	2.16	10	0.90	9.80	19.03	FLOW TO EXIST CURB INLET
E	1.45	10	0.90	9.80	12.78	FLOW TO EXIST DROP INLET
F	0.57	10	0.90	9.80	5.00	FLOW TO STREET CULVERT IN "SIDS ST"
G	0.60	10	0.90	9.80	5.31	FLOW TO STREET CULVERT IN "SIDS ST"
H	0.82	10	0.90	9.80	7.22	FLOW TO STREET CULVERT IN "SIDS ST"
I	0.32	20	0.35	8.30	0.94	FLOW TO STREET CULVERT IN "SIDS ST"
J	0.19	20	0.35	8.30	0.55	FLOW TO EXIST CURB INLET
K	0.19	20	0.35	8.30	0.56	FLOW TO EXIST CURB INLET
L	1.25	10	0.90	9.80	11.04	FLOW TO EXIST CURB INLET
M	1.96	20	0.35	8.30	5.70	FLOW TO ON-SIGHT EXIST DETENTION POND - TBR
N	3.81	20	0.35	8.30	11.08	FLOW SOUTH TO EXIST CREEK
O	3.95	10	0.90	9.80	34.88	FLOW TO STREET CULVERT IN "SIDS ST"
P	4.73	10	0.90	9.80	41.75	FLOW TO EXIST DETENTION POND "C" (BY OTHERS)
Q	1.53	10	0.90	9.80	13.47	FLOW SOUTH TO EXIST CREEK
R	0.76	20	0.35	8.30	2.21	FLOW TO STREET CULVERT IN "SH 205"
S	1.30	20	0.35	8.30	3.76	FLOW SOUTH TO EXIST CREEK
T1	0.94	20	0.35	8.30	2.73	FLOW NORTH TO EXIST CREEK
T2	0.40	20	0.35	8.30	1.16	FLOW NORTH TO EXIST CREEK
U	1.45	20	0.35	8.30	4.21	EXIST ON-SITE DETENTION POND
V	7.10	20	0.35	8.30	20.61	FLOOD PLAIN - FLOW EAST TO BOX CULVERT IN "MIMS RD"
W	2.59	10	0.90	9.80	22.85	FLOW TO BOX CULVERT IN "MIMS RD"
X	0.25	10	0.90	9.80	2.17	FLOW TO STREET CULVERT IN "SIDS ST"
Y	0.77	10	0.90	9.80	6.80	FLOW TO STREET CULVERT IN "SIDS ST"
Z	0.44	10	0.90	9.80	3.86	FLOW SOUTH TO STREET CULVERT IN "SH 205"
AA	0.79	10	0.90	9.80	6.93	FLOW SOUTH TO STREET CULVERT IN "SH 205"
BB	5.61	20	0.35	8.30	16.29	FLOW SOUTH TO EXIST CREEK
CC	10.86	20	0.35	8.30	31.55	FLOW NORTH TO EXIST CREEK
DD	4.61	20	0.35	8.30	13.40	FLOW NORTH TO EXIST CREEK
EE	31.96	20	0.35	8.30	92.84	FLOW NORTH TO EXIST CREEK
FF	1.08	20	0.90	9.80	9.54	FLOW TO EXIST CULVERT OUTFALL IN MIMS RD, THEN CREEK
TOTALS	98.47	-	-	-	445.78	

RECORD DRAWING

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06/20/2025
FRANK A. FOMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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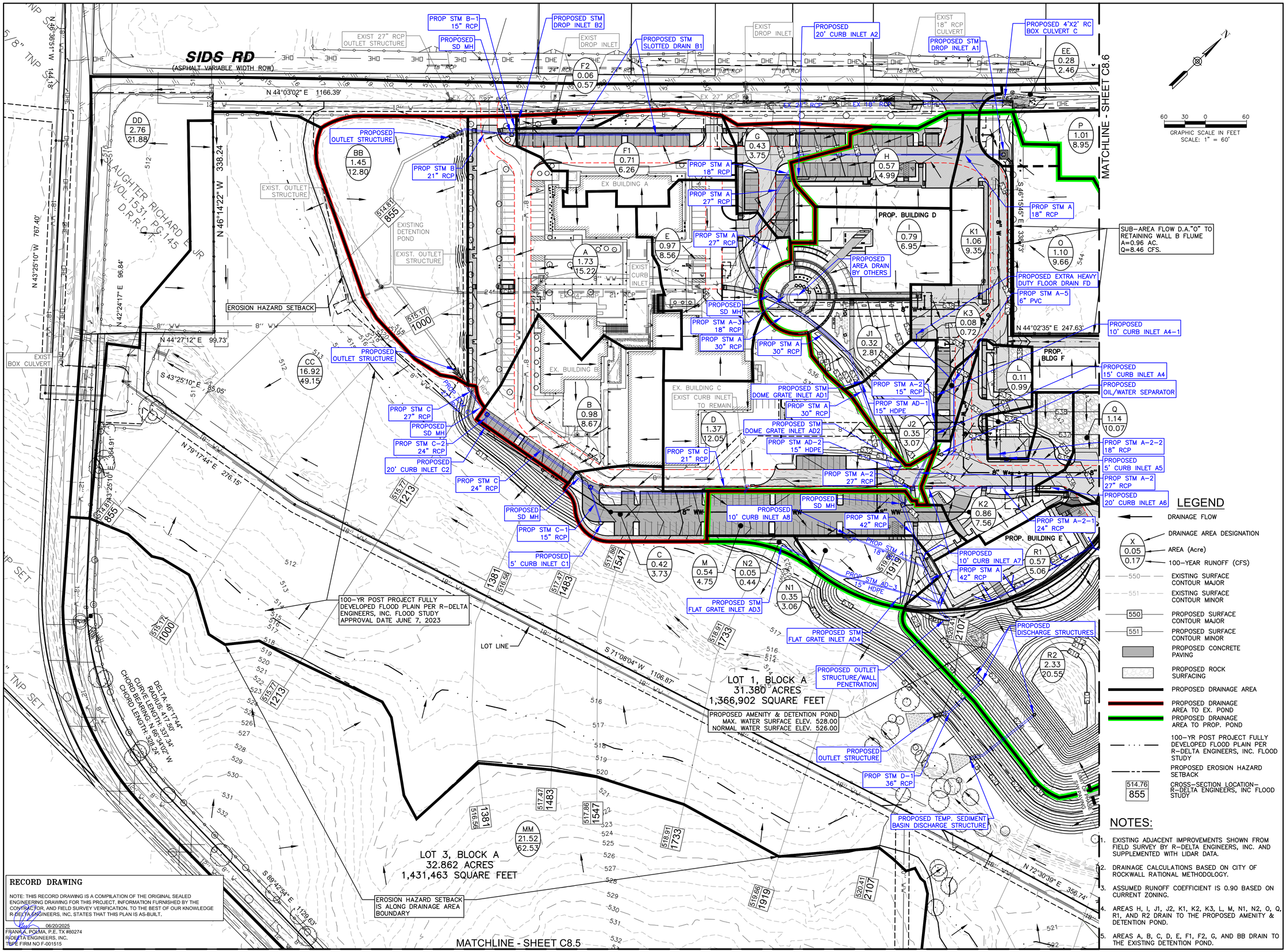
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
PRE PROJECT HYDROLOGIC CALCS
CASE# E2023-007
SHEET NO.
C8.2



LEGEND

- DRAINAGE FLOW
- DRAINAGE AREA DESIGNATION
- X / 0.05 / 0.17 — AREA (Acre) / 100-YEAR RUNOFF (CFS)
- 550 — EXISTING SURFACE CONTOUR MAJOR
- 551 — EXISTING SURFACE CONTOUR MINOR
- 550 — PROPOSED SURFACE CONTOUR MAJOR
- 551 — PROPOSED SURFACE CONTOUR MINOR
- PROPOSED CONCRETE PAVING
- PROPOSED ROCK SURFACING
- PROPOSED DRAINAGE AREA
- PROPOSED DRAINAGE AREA TO EX. POND
- PROPOSED DRAINAGE AREA TO PROP. POND
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 — CROSS-SECTION LOCATION-R-DELTA ENGINEERS, INC FLOOD STUDY

NOTES:

1. EXISTING ADJACENT IMPROVEMENTS SHOWN FROM FIELD SURVEY BY R-DELTA ENGINEERS, INC. AND SUPPLEMENTED WITH LIDAR DATA.
2. DRAINAGE CALCULATIONS BASED ON CITY OF ROCKWALL RATIONAL METHODOLOGY.
3. ASSUMED RUNOFF COEFFICIENT IS 0.90 BASED ON CURRENT ZONING.
4. AREAS H, I, J1, J2, K1, K2, K3, L, M, N1, N2, O, Q, R1, AND R2 DRAIN TO THE PROPOSED AMENITY & DETENTION POND.
5. AREAS A, B, C, D, E, F1, F2, G, AND BB DRAIN TO THE EXISTING DETENTION POND.

RECORD DRAWING

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06/20/2025
FRANK A. PIQUMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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260 EAST DAVIS STREET, SUITE 100
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STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

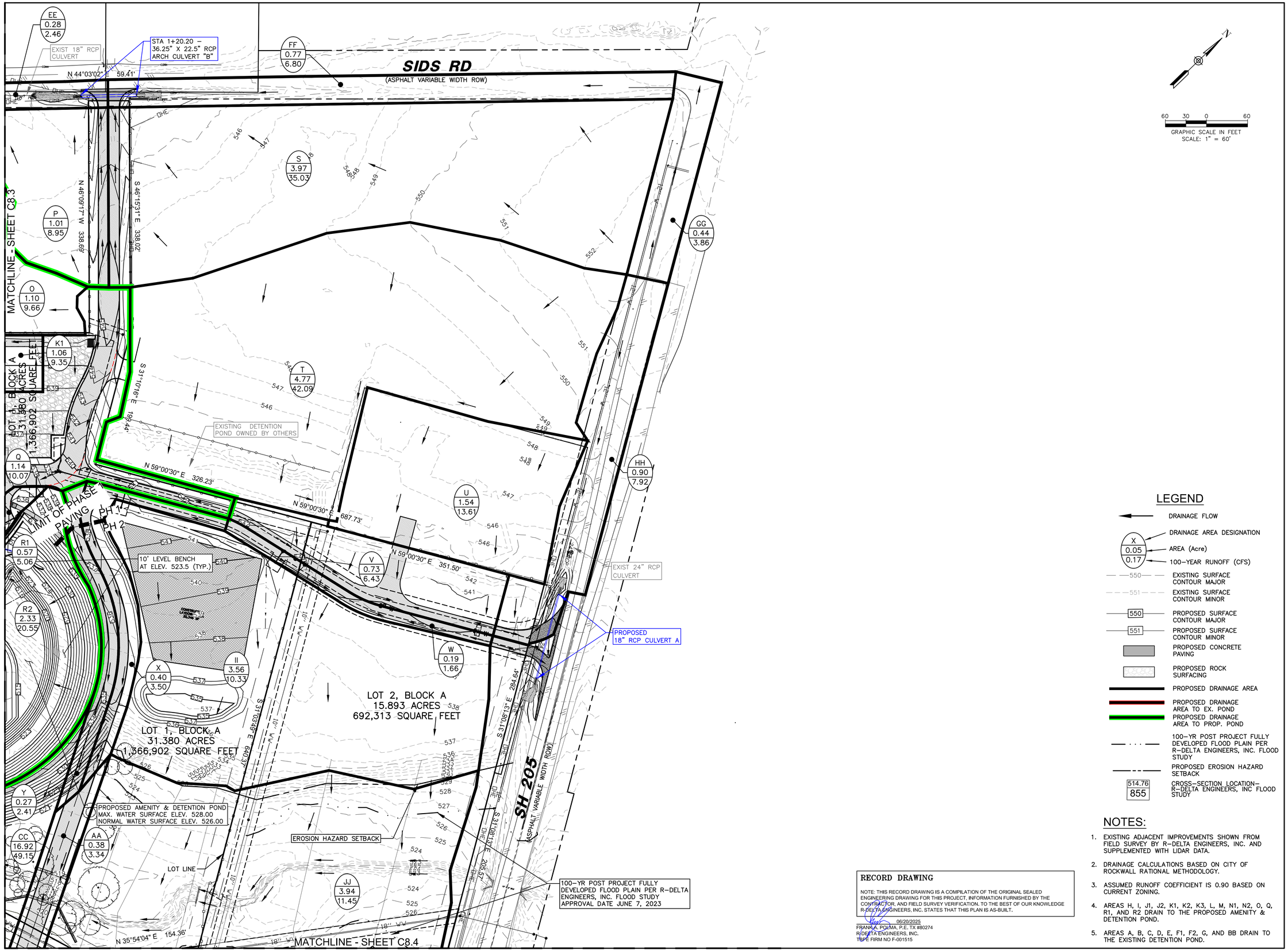
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
POST PROJECT DRAINAGE AREA MAP 1

CASE# E2023-007

SHEET NO.
C8.3



LEGEND

- DRAINAGE FLOW
- DRAINAGE AREA DESIGNATION
- AREA (Acre)
- 100–YEAR RUNOFF (CFS)
- EXISTING SURFACE CONTOUR MAJOR
- EXISTING SURFACE CONTOUR MINOR
- PROPOSED SURFACE CONTOUR MAJOR
- PROPOSED SURFACE CONTOUR MINOR
- PROPOSED CONCRETE PAVING
- PROPOSED ROCK SURFACING
- PROPOSED DRAINAGE AREA
- PROPOSED DRAINAGE AREA TO EX. POND
- PROPOSED DRAINAGE AREA TO PROP. POND
- 100–YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R–DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- CROSS–SECTION LOCATION– R–DELTA ENGINEERS, INC FLOOD STUDY

NOTES:

1. EXISTING ADJACENT IMPROVEMENTS SHOWN FROM FIELD SURVEY BY R–DELTA ENGINEERS, INC. AND SUPPLEMENTED WITH LIDAR DATA.
2. DRAINAGE CALCULATIONS BASED ON CITY OF ROCKWALL RATIONAL METHODOLOGY.
3. ASSUMED RUNOFF COEFFICIENT IS 0.90 BASED ON CURRENT ZONING.
4. AREAS H, I, J1, J2, K1, K2, K3, L, M, N1, N2, O, Q, R1, AND R2 DRAIN TO THE PROPOSED AMENITY & DETENTION POND.
5. AREAS A, B, C, D, E, F1, F2, G, AND BB DRAIN TO THE EXISTING DETENTION POND.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANKIA POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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Rayburn Electric COOPERATIVE

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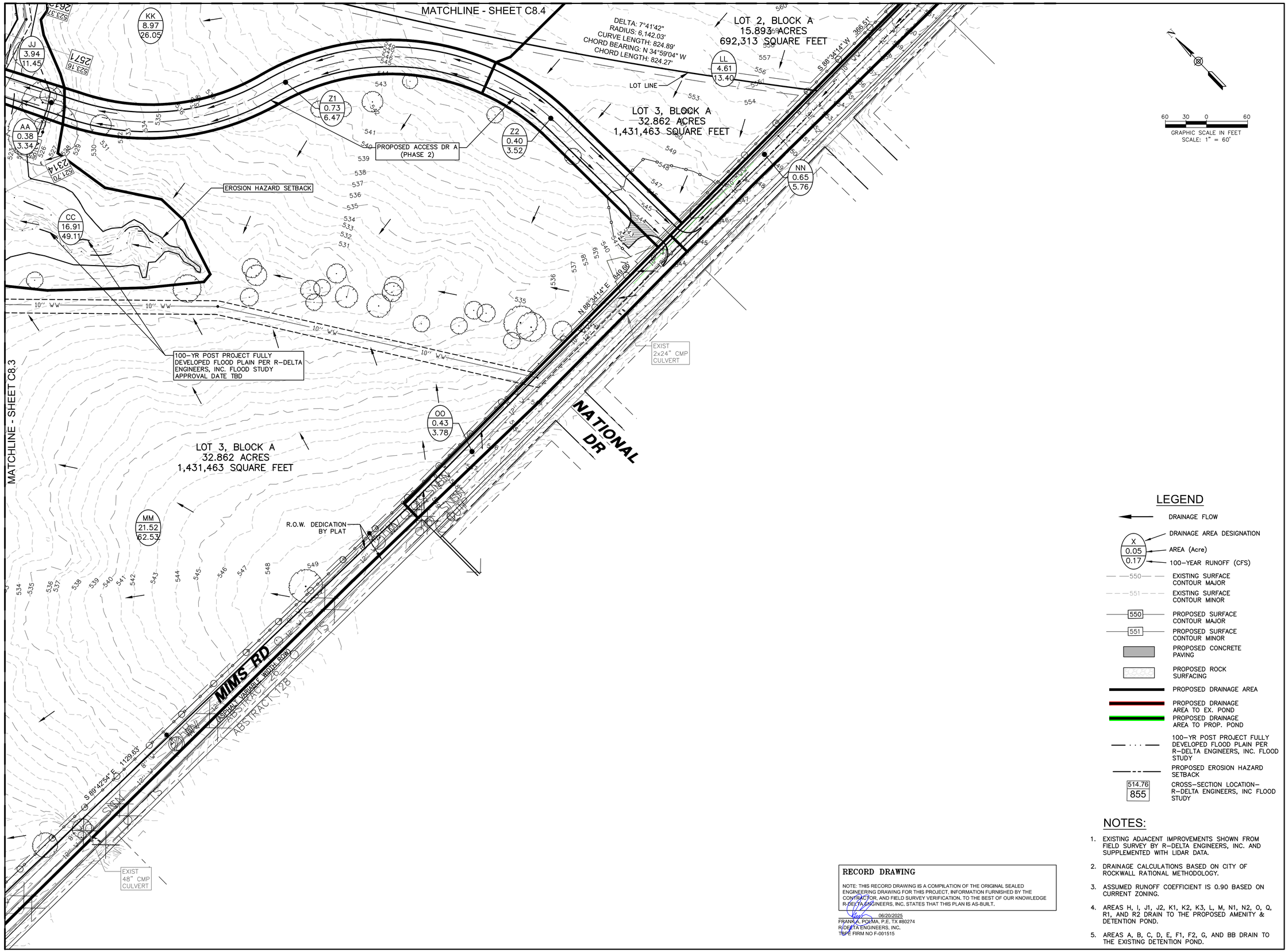
SHEET TITLE
POST PROJECT DRAINAGE AREA MAP 2

CASE# E2023-007

SHEET NO.
C8.4



LEGEND

- DRAINAGE FLOW
- DRAINAGE AREA DESIGNATION (X / 0.05 / 0.17)
- AREA (Acre)
- 100-YEAR RUNOFF (CFS)
- EXISTING SURFACE CONTOUR MAJOR
- EXISTING SURFACE CONTOUR MINOR
- PROPOSED SURFACE CONTOUR MAJOR
- PROPOSED SURFACE CONTOUR MINOR
- PROPOSED CONCRETE PAVING
- PROPOSED ROCK SURFACING
- PROPOSED DRAINAGE AREA
- PROPOSED DRAINAGE AREA TO EX. POND
- PROPOSED DRAINAGE AREA TO PROP. POND
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY (514.76 / 855)

NOTES:

1. EXISTING ADJACENT IMPROVEMENTS SHOWN FROM FIELD SURVEY BY R-DELTA ENGINEERS, INC. AND SUPPLEMENTED WITH LIDAR DATA.
2. DRAINAGE CALCULATIONS BASED ON CITY OF ROCKWALL RATIONAL METHODOLOGY.
3. ASSUMED RUNOFF COEFFICIENT IS 0.90 BASED ON CURRENT ZONING.
4. AREAS H, I, J1, J2, K1, K2, K3, L, M, N1, N2, O, Q, R1, AND R2 DRAIN TO THE PROPOSED AMENITY & DETENTION POND.
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06/20/2025
FRANK A. POLIMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

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HKS, INC.
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RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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06/23/2025

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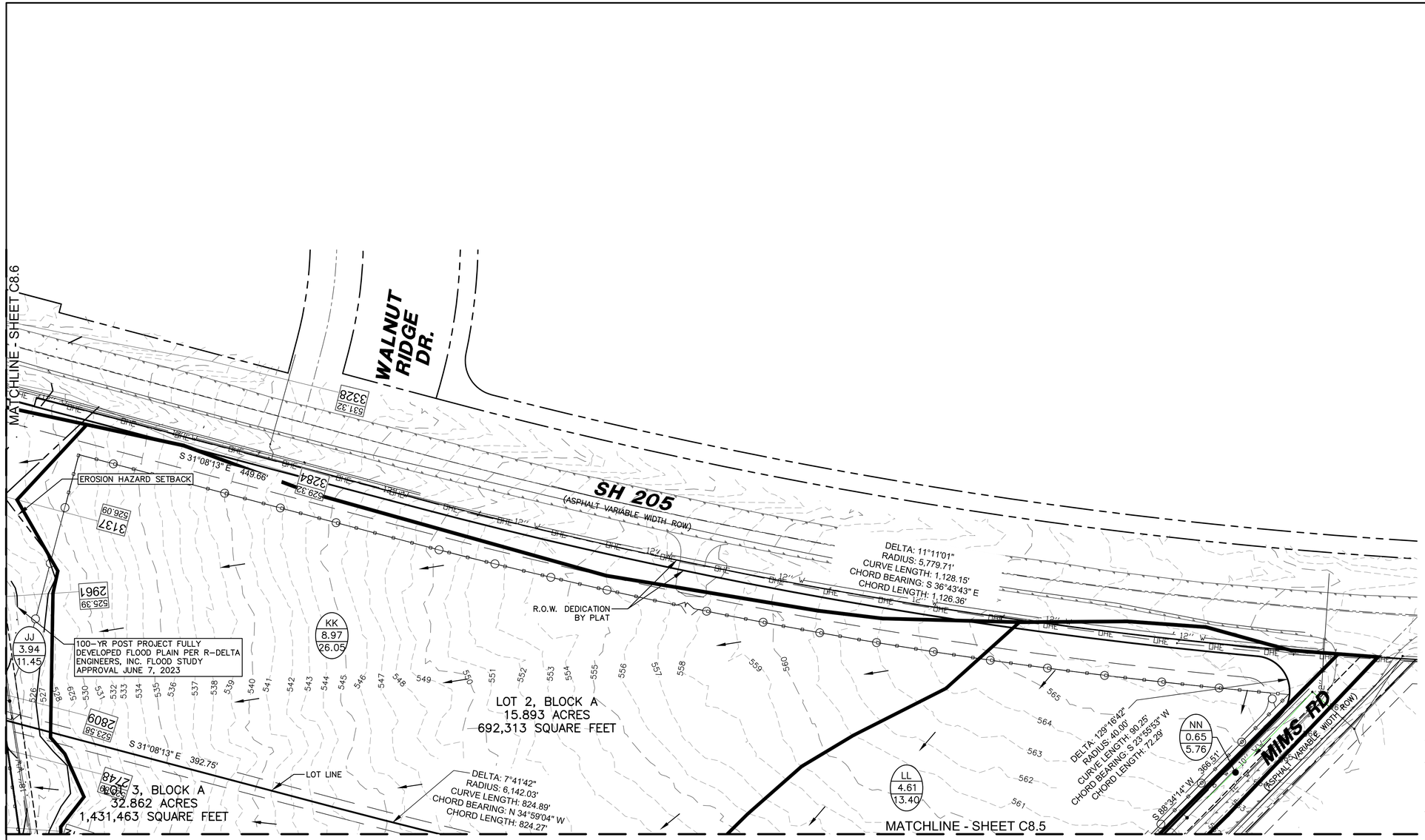
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
POST PROJECT DRAINAGE AREA MAP 3

CASE# E2023-007

SHEET NO.
C8.5



60 30 0 60

GRAPHIC SCALE IN FEET
SCALE: 1" = 60'

LEGEND

- DRAINAGE FLOW
- DRAINAGE AREA DESIGNATION (X)
- AREA (Acre) (0.05)
- 100-YEAR RUNOFF (CFS) (0.17)
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- PROPOSED CONCRETE PAVING
- PROPOSED ROCK SURFACING
- PROPOSED DRAINAGE AREA
- PROPOSED DRAINAGE AREA TO EX. POND
- PROPOSED DRAINAGE AREA TO PROP. POND
- 100-YR POST PROJECT FULLY DEVELOPED FLOOD PLAIN PER R-DELTA ENGINEERS, INC. FLOOD STUDY
- PROPOSED EROSION HAZARD SETBACK
- 514.76 / 855 CROSS-SECTION LOCATION- R-DELTA ENGINEERS, INC FLOOD STUDY

NOTES:

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06/20/2025
FRANKLA POLMA. P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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618 MAIN STREET
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TBPE No. F-1515

Rayburn Electric COOPERATIVE

REVISION

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SHEET TITLE
POST PROJECT DRAINAGE AREA MAP 4

CASE# E2023-007

SHEET NO.
C8.6

HYDROLOGIC CALCULATIONS - POST PROJECT CONDITIONS

DRAINAGE AREA ID	AREA (ACRES) "A"	TIME (MIN.)	RUN-OFF COEF. "C"	100-YR INTENSITY (IPH) "I"	Q100=CIA(CFS)	COMMENT	
A	1.73	10	0.90	9.80	15.22	FLOW TO ON-SITE EXIST DETENTION POND	TO EXIST DETENTION POND
B	0.98	10	0.90	9.80	8.67	FLOW TO PROP 20' CURB INLET	TO EXIST DETENTION POND
C	0.42	10	0.90	9.80	3.73	FLOW TO PROP 5' CURB INLET	TO EXIST DETENTION POND
D	1.37	10	0.90	9.80	12.05	FLOW TO EXIST CURB INLET	TO EXIST DETENTION POND
E	0.97	10	0.90	9.80	8.56	FLOW TO EXIST CURB INLET	TO EXIST DETENTION POND
F1	0.71	10	0.90	9.80	6.26	FLOW TO PROP 3'x3' DROP INLET	TO EXIST DETENTION POND
F2	0.06	10	0.90	9.80	0.57	FLOW TO PROP SLOTTED DRAIN	TO EXIST DETENTION POND
G	0.43	10	0.90	9.80	3.75	FLOW TO PROP SLOTTED DRAIN	TO EXIST DETENTION POND
H	0.57	10	0.90	9.80	4.99	FLOW TO PROP 20' CURB INLET	TO PROPOSED DETENTION POND
I	0.79	10	0.90	9.80	6.95	FLOW TO PROP INLETS AMPHITHEATER	TO PROPOSED DETENTION POND
J1	0.32	10	0.90	9.80	2.81	FLOW TO PROP AREA DRAIN	TO PROPOSED DETENTION POND
J2	0.35	10	0.90	9.80	3.07	FLOW TO PROP AREA DRAIN	TO PROPOSED DETENTION POND
K1	1.06	10	0.90	9.80	9.35	FLOW TO PROP 10' CURB INLET	TO PROPOSED DETENTION POND
K2	0.86	10	0.90	9.80	7.56	FLOW TO PROP 10' CURB INLET	TO PROPOSED DETENTION POND
K3	0.08	10	0.90	9.80	0.72	FLOW TO PROP 15' CURB INLET	TO PROPOSED DETENTION POND
L	0.11	10	0.90	9.80	0.99	FLOW TO PROP 5' CURB INLET	TO PROPOSED DETENTION POND
M	0.54	10	0.90	9.80	4.75	FLOW TO PROP 10' CURB INLET	TO PROPOSED DETENTION POND
N1	0.35	10	0.90	9.80	3.06	FLOW TO PROP AREA DRAINS	TO PROPOSED DETENTION POND
N2	0.05	10	0.90	9.80	0.44	FLOW TO PROP AREA DRAINS	TO PROPOSED DETENTION POND
O	1.10	10	0.90	9.80	9.66	FLOW TO PROP 4'x4' DROP INLET	TO PROPOSED DETENTION POND
P	1.01	10	0.90	9.80	8.95	FLOW TO PROP STREET CULVERT	SIDS BYPASS
Q	1.14	10	0.90	9.80	10.07	FLOW TO PROP 20' CURB INLET	TO PROPOSED DETENTION POND
R1	0.57	10	0.90	9.80	5.06	FLOW TO PROP AREA DRAINS	TO PROPOSED DETENTION POND
R2	2.33	10	0.90	9.80	20.55	PROP RETENTION POND	TO PROPOSED DETENTION POND
S	3.97	10	0.90	9.80	35.03	FLOW TO PROP STREET CULVERT	SIDS BYPASS
T	4.77	10	0.90	9.80	42.09	FLOW TO EXIST OFFSITE DETENTION POND OWNED BY OTHERS	BYPASS TO FLOODPLAIN
U	1.54	10	0.90	9.80	13.61	FLOW TO PROP 20' CURB INLET	BYPASS TO FLOODPLAIN
V	0.73	10	0.90	9.80	6.43	FLOW TO PROP 20' CURB INLET ACCESS DR "B"	BYPASS TO FLOODPLAIN
W	0.19	10	0.90	9.80	1.66	FLOW TO PROP 5' CURB INLET ACCESS DR "B"	BYPASS TO FLOODPLAIN
X	0.40	10	0.90	9.80	3.50	FLOW SOUTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
Y	0.27	10	0.90	9.80	2.41	FLOW SOUTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
Z1	0.73	10	0.90	9.80	6.47	FLOW NORTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
Z2	0.40	10	0.90	9.80	3.52	FLOW S. TO FUTURE CURB INLETS ACCESS DR "A"	BYPASS TO FLOODPLAIN
AA	0.38	10	0.90	9.80	3.34	FLOOD PLAIN - FLOW EAST TO BOX CULVERT IN "MIMS RD"	BYPASS TO FLOODPLAIN
BB	1.45	10	0.90	9.80	12.80	EXIST ONSITE DETENTION POND	TO EXIST DETENTION POND
CC	16.92	20	0.35	8.30	49.15	FLOOD PLAIN - FLOW EAST TO BOX CULVERT IN "MIMS RD"	BYPASS TO FLOODPLAIN
DD	2.76	10	0.90	9.80	21.88	FLOW TO BOX CULVERT IN "MIMS RD"	SIDS BYPASS
EE	0.28	10	0.90	9.80	2.46	FLOW TO PROP STREET CULVERT IN SIDS RD	SIDS BYPASS
FF	0.77	10	0.90	9.80	6.80	FLOW TO PROP STREET CULVERT IN SIDS RD	SIDS BYPASS
GG	0.44	10	0.90	9.80	3.86	FLOW NORTH TO EXIST STREET CULVERT IN SH 205	SH 205
HH	0.90	10	0.90	9.80	7.92	FLOW SOUTH TO PROP STREET CULVERT IN SH 205	SH 205
II	3.56	20	0.35	8.30	10.33	FLOW SOUTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
JJ	3.94	20	0.35	8.30	11.45	FLOOD PLAIN - FLOW EAST TO FUTURE CREEK CROSSING STRUCTURE	BYPASS TO FLOODPLAIN
KK	8.97	20	0.35	8.30	26.05	FLOW NORTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
LL	4.61	20	0.35	8.30	13.40	FLOW NORTHEAST TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
MM	21.52	20	0.35	8.30	62.52	FLOW NORTH TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
NN	0.65	10	0.90	9.80	5.76	FLOW NORTHEAST TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
OO	0.43	10	0.90	9.80	3.78	FLOW NORTHEAST TO EXIST FLOODWAY	BYPASS TO FLOODPLAIN
TOTALS	98.47	-	-	-	513.96		

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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SHEET TITLE
POST PROJECT HYDROLOGIC CALCS
CASE# E2023-007
SHEET NO.
C8.7

MODIFIED RATIONAL DETENTION CALCULATIONS - EX DETENTION POND 1

PRESENT CONDITIONS

Ex Detention Pond 1

Area Draining to Ex Detention Pond 1

Area	Acres	
J	0.19	
B	1.01	
D	2.16	
E	1.45	
A	1.71	
U	1.45	Location of Ex Detention Pond1
Total	**7.97**	

POST DEVELOPMENT CONDITION

Ex Detention Pond 1

Area Draining to Ex Detention Pond 1

Area	Acres
G	0.43
E	0.97
D	1.37
F1	0.71
F2	0.06
A	1.73
B	0.98
BB	1.45
C	0.42
Total	**8.12**

Ex Detention Pond 1

Return Period	Present Conditions Area	Post development Area	Present Conditions Rate(cfs)	Postdevelopment Rate(cfs)	Storage Volume Reqd (cf)	WSE (ft)	Provided Storage Volume (cf)	Top of Pond (feet)	Postdevelopment Discharge Rate (cfs)	Provided Freeboard (feet)
5 yr	7.97	8.12	13.66	44.57	43,789	517.31	124,562	520.20	3.36	2.89
10 yr	7.97	8.12	16.45	51.88	51,710	518.51	124,562	520.20	8.13	1.69
25 yr	7.97	8.12	18.40	60.65	59,053	518.69	124,562	520.20	8.93	1.51
100 yr	7.97	8.12	23.14	71.61	69,785	519.00	124,562	520.20	22.45	1.20

RECORD DRAWING

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06/20/2025

FRANK A. POLMA, P.E, TX #80274
R-DELTA ENGINEERS, INC.
TBPE FRM NO F-001515

EX DETENTION POND 1 CALCULATIONS

5 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	4.90	in/hr
A	7.97	acres

Q5 = 13.66 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10.00	mins
i	6.1	in/hr

A 8.12 acres

Q5 = 44.57 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	5.5	8.119221063	40.19
20	0.9	4.9	8.119221063	35.81
30	0.9	4.1	8.119221063	29.96
40	0.9	3.4	8.119221063	24.84
50	0.9	2.8	8.119221063	20.46
60	0.9	2.6	8.119221063	19.00
70	0.9	2.4	8.119221063	17.54
80	0.9	2.3	8.119221063	16.81
90	0.9	2.1	8.119221063	15.35
100	0.9	1.9	8.119221063	13.88
110	0.9	1.8	8.119221063	13.15

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	44.57	26,744.71	13.66	8,196.37	18,548.35
15	40.19	36,171.13	13.66	10,245.46	25,925.67
20	35.81	42,966.92	13.66	12,294.55	30,672.37
30	29.96	53,927.87	13.66	16,392.73	37,535.13
40	24.84	59,627.56	13.66	20,490.92	39,136.64
50	20.46	61,381.31	13.66	24,589.10	36,792.21
60	19.00	68,396.32	13.66	28,687.28	39,709.03
70	17.54	73,657.57	13.66	32,785.47	40,872.11
80	**16.81**	**80,672.58**	**13.66**	**36,883.65**	**43,788.93**
90	15.35	82,864.77	13.66	40,981.84	41,882.93
100	13.88	83,303.21	13.66	45,080.02	38,223.19
110	13.15	86,810.71	13.66	49,178.20	37,632.51

Maximum Volume Required is 43,788.93 cf at the 80 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
515.81	0		
		81.885	15.56
516.00	163.77		
		5,744.78	5,760.33
517.00	11,325.78		
		23,985.57	29,745.90
518.00	36,645.36		
		43,011.18	72,757.08
519.00	49,376.99		
		51,804.46	124,561.53
520.00	54,231.92		

Reqd 5 Yr Storage Volume = 43,788.93 CF

5 Yr WSE 517.31 feet

top of pond per R Delta Engineering, Inc. Topographic Survey at 520.20 feet

Invert Elevation 515.81 feet
Top of Weir1 518.55 feet

Outfall Structures

Present Conditions
5-yr storm event

tc 20.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
5-yr	4.90	0.35	7.97	13.66

Post Development Condition
5-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
5-yr	6.10	0.9	8.12	44.57

Outlet Structure Calculations

5 Yr Discharge @ Max Water Surface

Qtotal, cfs	13.66	Allowed
Q total, cfs	44.57	Post
Invert Elev	515.81	feet
Width of Weir1	0.55	feet

Broad Crested Weir Calculations:

Q = CL(H)^3/2

C	3.33	dimensionless
L	0.55	feet
H	1.50	feet
Q	3.36	cfs
5-yr WSE	517.31	feet

Provided flow is lower than Allowed Flow

EX DETENTION POND 1 CALCULATIONS

10 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	5.90	in/hr
A	7.97	acres

Q10 = 16.45 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10.00	mins
i	7.1	in/hr

A 8.12 acres

Q10 = 51.88 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	6.5	8.12	47.50
20	0.9	5.9	8.12	43.11
30	0.9	4.8	8.12	35.08
40	0.9	4	8.12	29.23
50	0.9	3.5	8.12	25.58
60	0.9	3	8.12	21.92
70	0.9	2.8	8.12	20.46
80	0.9	2.6	8.12	19.00
90	0.9	2.5	8.12	18.27
100	0.9	2.4	8.12	17.54
110	0.9	2.3	8.12	16.81
120	0.9	1.8	8.12	13.15

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	51.88	31,129.09	16.45	9,869.10	21,260.00
15	47.50	42,747.70	16.45	12,336.37	30,411.33
20	43.11	51,735.68	16.45	14,803.64	36,932.03
30	35.08	63,135.06	16.45	19,738.19	43,396.87
40	29.23	70,150.07	16.45	24,672.74	45,477.33
50	25.58	76,726.64	16.45	29,607.29	47,119.35
60	21.92	78,918.83	16.45	34,541.83	44,377.00
70	20.46	85,933.84	16.45	39,476.38	46,457.46
80	19.00	91,195.09	16.45	44,410.93	46,784.16
90	18.27	98,648.54	16.45	49,345.48	49,303.06
100	17.54	105,225.10	16.45	54,280.02	50,945.08
110	**16.81**	**110,924.80**	**16.45**	**59,214.57**	**51,710.23**
120	13.15	94,702.59	16.45	64,149.12	30,553.48

Maximum Volume Required is 51,710.23 cf at the 110 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
515.81	0		
		81.885	15.56
516.00	163.77		
		5,744.78	5,760.33
517.00	11,325.78		
		23,985.57	29,745.90
518.00	36,645.36		
		43,011.18	72,757.08
519.00	49,376.99		
		51,804.46	124,561.53
520.00	54,231.92		

Reqd 10 Yr Storage Volume = 51,710.23 CF

10 Yr WSE 518.51 feet

top of pond per R Delta Engineering, Inc. Topographic Survey at 520.20 feet

Invert Elevation 515.81 feet
Top of Weir1 518.55 feet

Outfall Structures

Present Conditions
10-yr storm event

tc 20.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
10-yr	5.90	0.35	7.97	16.45

Post Development Condition
10-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
10-yr	7.10	0.9	8.12	51.88

Outlet Structure Calculations

10 Yr Discharge @ Max Water Surface

Qtotal, cfs	16.45	Allowed
Q total, cfs	51.88	Post
Invert Elev	515.81	feet
Width of Weir1	0.55	feet

Broad Crested Weir Calculations:

Q = CL(H)^3/2

C	3.33	dimensionless
L	0.55	feet
H	2.70	feet
Q	8.13	cfs
5-yr WSE	518.51	feet

Provided flow is lower than Allowed Flow

EX DETENTION POND 1 CALCULATIONS

25 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	6.60	in/hr
A	7.97	acres

Q25 = 18.40 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10.00	mins
i	8.3	in/hr

A 8.12 acres

Q25 = 60.65 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	7.5	8.12	54.80
20	0.9	6.6	8.12	48.23
30	0.9	5.5	8.12	40.19
40	0.9	4.6	8.12	33.61
50	0.9	4	8.12	29.23
60	0.9	3.5	8.12	25.58
70	0.9	3.3	8.12	24.11
80	0.9	3.1	8.12	22.65
90	0.9	2.9	8.12	21.19
100	0.9	2.7	8.12	19.73
110	0.9	2.5	8.12	18.27

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	60.65	36,390.35	18.40	11,040.00	25,350.34
15	54.80	49,324.27	18.40	13,800.01	35,524.26
20	48.23	57,873.81	18.40	16,560.01	41,313.80
30	40.19	72,342.26	18.40	22,080.01	50,262.25
40	33.61	80,672.58	18.40	27,600.01	53,072.57
50	29.23	87,687.59	18.40	33,120.01	54,567.57
60	25.58	92,071.97	18.40	38,640.02	53,431.95
70	24.11	101,279.16	18.40	44,160.02	57,119.15
80	22.65	108,732.61	18.40	49,680.02	59,052.59
90	**21.19**	**114,432.30**	**18.40**	**55,200.02**	**59,232.28**
100	19.73	118,378.24	18.40	60,720.03	57,658.22
110	18.27	120,570.43	18.40	66,240.03	54,330.41

Maximum Volume Required is 59,232.28 cf at the 90 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
515.81	0		
		81.885	15.56
516.00	163.77		
		5,744.78	5,760.33
517.00	11,325.78		
		23,985.57	29,745.90
518.00	36,645.36		
		43,011.18	72,757.08
519.00	49,376.99		
		51,804.46	124,561.53
520.00	54,231.92		

Reqd 25 Yr Storage Volume = 59,232.28 CF

25 Yr WSE 518.69 feet

top of pond per R Delta Engineering, Inc. Topographic Survey at 520.20 feet

Invert Elevation 515.81 feet
Top of Weir1 518.55 feet

Outfall Structures

Present Conditions
25-yr 100-yr storm event

tc 20.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
25-yr	6.60	0.35	7.97	18.40

Post Development Condition
25-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
25-yr	8.30	0.9	8.12	60.65

Outlet Structure Calculations

25 Yr Discharge @ Max Water Surface

Qtotal, cfs	18.40	Allowed
Q total, cfs	60.65	Post
Invert Elev	515.81	feet
Width of Weir1	0.55	feet

Broad Crested Weir Calculations:

Q = CL(H)^3/2

C	3.33	dimensionless
L	0.55	feet
H	2.88	feet
Q	8.93	cfs
5-yr WSE	518.69	feet

Weir 2
Q = CL(H)^3/2

C	3.33	dimensionless
L	12	feet
H	0.14	feet
Q	1.99	cfs
100-yr WSE	518.69	feet

Total Q = From Weir 1 and Weir 2
Q 10.93 cfs

Provided flow is lower than Allowed Flow

EX DETENTION POND 1 CALCULATIONS

100 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	8.30	in/hr
A	7.97	acres

Q100 = 23.14 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10.00	mins
i	9.8	in/hr

A 8.12 acres

Q100 = 71.61 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	9	8.12	65.77
20	0.9	8.3	8.12	60.65
30	0.9	6.9	8.12	50.42
40	0.9	5.8	8.12	42.38
50	0.9	5	8.12	36.54
60	0.9	4.5	8.12	32.88
70	0.9	4	8.12	29.23
80	0.9	3.7	8.12	27.04
90	0.9	3.5	8.12	25.58
100	0.9	3.4	8.12	24.84
110	0.9	3.2	8.12	23.38

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	71.61	42,966.92	23.14	13,883.64	29,083.28
15	65.77	59,189.12	23.14	17,354.55	41,834.57
20	60.65	72,780.70	23.14	20,825.46	51,955.23
30	50.42	90,756.65	23.14	27,767.28	62,989.37
40	42.38	101,717.60	23.14	34,709.11	67,008.50
50	36.54	109,609.48	23.14	41,650.93	67,958.56
60	32.88	118,378.24	23.14	48,592.75	69,785.50
70	29.23	122,762.62	23.14	55,534.57	67,228.05
80	27.04	129,777.63	23.14	62,476.39	67,301.24
90	25.58	138,107.95	23.14	69,418.21	68,689.74
100	**24.84**	**149,068.90**	**23.14**	**76,360.03**	**72,708.87**
110	23.38	154,330.15	23.14	83,301.85	71,028.30

Maximum Volume Required is 72,708.87 cf at the 100 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)
515.81	0		
		81.885	15.56
516.00	163.77		
		5,744.78	5,760.33
517.00	11,325.78		
		23,985.57	29,745.90
518.00	36,645.36		
		43,011.18	72,757.08
519.00	49,376.99		
		51,804.46	124,561.53
520.00	54,231.92		

Reqd 100 Yr Storage Volume = 72,708.87 CF

100-Yr WSE 519.00 feet

top of pond per R Delta Engineering, Inc. Topographic Survey at 520.20 feet

Invert Elevation 515.81 feet
Top of Weir1 518.55 feet
Max Storage 519.00 feet

Outfall Structures

Present Conditions
100-yr storm event

tc 20.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	8.30	0.35	7.97	23.14

Post Development Condition
100-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	9.80	0.9	8.12	71.61

Outlet Structure Calculations

100 Yr Discharge @ Max Water Surface

Qtotal, cfs	23.14	Allowed
Invert Elev	515.81	feet
Width of Weir1	0.55	feet

Broad Crested Weir Calculations:
Weir 1
Q = CL(H)^3/2

C	3.33	dimensionless
L	0.55	feet
H	3.19	feet
Q	10.43	cfs
100-yr WSE	519.00	feet

Weir 2
Q = CL(H)^3/2

C	3.33	dimensionless
L	12	feet
H	0.45	feet
Q	12.02	cfs
100-yr WSE	519.00	feet

Total Q = From Weir 1 and Weir 2
Q 22.45 cfs

Provided flow is lower than Allowed Flow

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DETENTION POND CALCS. EX POND 1

CASE# E2023-007

SHEET NO.
C8.8

MODIFIED RATIONAL DETENTION CALCULATIONS - PROPOSED AMENITY & DETENTION POND 2

PRESENT CONDITIONS

Area Draining to Proposed Detention Pond 2

Area	Acres
C	1.31
L	1.25
K	0.19
M	1.96
N	3.81
Total	**8.53**

Location of Proposed Detention Pond 2

POST DEVELOPMENT CONDITION

Proposed Detention Pond 2

Area Draining to Proposed Detention Pond 2

Area	Acres
O	1.07
Q	1.37
R1	0.57
R2	2.33
K1	0.80
K2	0.66
K3	0.08
L	0.37
H	0.57
I	0.79
J1	0.32
J2	0.35
N1	0.35
N2	0.05
M	0.53
Total	**10.20**

Proposed Detention Pond 2

Return Period	Present Conditions Area	Post development Area	Present Conditions Rate(cfs)	Postdevelopment Rate(cfs)	Storage Volume Reqd (cf)	WSE (ft)	Provided Storage Volume (cf)	Top of Pond (feet)	Postdevelopment Discharge Rate (cfs)	Provided Freeboard (feet)
5 yr	8.53	10.20	14.63	56.02	61,885	526.93	135,772	530.00	8.92	3.07
10 yr	8.53	10.20	17.61	65.20	75,991	527.14	135,772	530.00	12.04	2.86
25 yr	8.53	10.20	19.70	76.22	84,698	527.26	135,772	530.00	14.08	2.74
100 yr	8.53	10.20	24.78	89.99	105,567	527.57	135,772	530.00	19.38	2.43

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

PROPOSED DETENTION POND 2 CALCULATIONS

5 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	4.90	in/hr
A	8.53	acres

Q5= 14.63 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10	mins
i	6.1	in/hr
A	10.20	acres

Q5 = 56.02 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	5.5	10.20	50.51
20	0.9	4.9	10.20	45.00
30	0.9	4.1	10.20	37.65
40	0.9	3.4	10.20	31.22
50	0.9	2.8	10.20	25.71
60	0.9	2.6	10.20	23.88
70	0.9	2.4	10.20	22.04
80	0.9	2.3	10.20	21.12
90	0.9	2.1	10.20	19.28
100	0.9	1.9	10.20	17.45
110	0.9	1.8	10.20	16.53

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	56.02	33,610.01	14.63	8,776.82	24,833.20
15	50.51	45,456.16	14.63	10,971.02	34,485.14
20	45.00	53,996.41	14.63	13,165.23	40,831.19
30	37.65	67,771.01	14.63	17,553.63	50,217.38
40	31.22	74,933.80	14.63	21,942.04	52,991.76
50	25.71	77,137.73	14.63	26,330.45	50,807.28
60	23.88	85,953.48	14.63	30,718.86	55,234.62
70	22.04	92,565.28	14.63	35,107.27	57,458.01
80	**21.12**	**101,381.02**	**14.63**	**39,495.68**	**61,885.35**
90	19.28	104,135.94	14.63	43,884.09	60,251.86
100	17.45	104,686.92	14.63	48,272.49	56,414.43
110	16.53	109,094.80	14.63	52,660.90	56,433.89

Maximum Volume Required is 61,888.95 cf at the 90 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)	
526	64,829.45			permanent pool elevation
		66,325.17	66,325.17	
527	67,820.88			
		69,446.34	135,771.50	
528	71,071.79			top of pond is at 530 feet, so 2 feet freeboard

Outfall Structures

Reqd 5 Yr Storage Volume = 61,885.35 CF
5 Yr WSE 526.93 feet

5-yr storm event
Present Conditions
tc 20 mins

A 8.53 acres

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
5-yr	4.90	0.35	8.53	14.63

Post Development Condition
5-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
5-yr	6.10	0.9	10.20	56.02

Design with a Weir

5 Yr Discharge @ Max Water Surface

Qtotal, cfs	14.63	Allowed
Q total, cfs	56.02	Post
Invert Elev	526.00	feet
Width of Weir	3	feet

Rectangular Notch Weir:

Q = CL(H)^3/2

C	3.3	dimensionless
L	3	feet
H	0.93	feet
Q	8.92	cfs
5-yr WSE	526.93	feet

Provided flow is lower than Allowed Flow

PROPOSED DETENTION POND 2 CALCULATIONS

10 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	5.90	in/hr
A	8.53	acres

Q10= 17.61 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10	mins
i	7.1	in/hr
A	10.20	acres

Q10 = 65.20 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	6.5	10.20	59.69
20	0.9	5.9	10.20	54.18
30	0.9	4.8	10.20	44.08
40	0.9	4	10.20	36.73
50	0.9	3.5	10.20	32.14
60	0.9	3	10.20	27.55
70	0.9	2.8	10.20	25.71
80	0.9	2.6	10.20	23.88
90	0.9	2.5	10.20	22.96
100	0.9	2.4	10.20	22.04
110	0.9	2.3	10.20	21.12
120	0.9	1.8	10.20	16.53

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	65.20	39,119.85	17.61	10,568.00	28,551.85
15	59.69	53,720.92	17.61	13,210.01	40,510.92
20	54.18	65,016.09	17.61	15,852.01	49,164.08
30	44.08	79,341.67	17.61	21,136.01	58,205.66
40	36.73	88,157.41	17.61	26,420.01	61,737.40
50	32.14	96,422.17	17.61	31,704.01	64,718.16
60	27.55	99,177.09	17.61	36,988.01	62,189.07
70	25.71	107,992.83	17.61	42,272.02	65,720.81
80	23.88	114,604.63	17.61	47,556.02	67,048.61
90	22.96	123,971.36	17.61	52,840.02	71,131.34
100	22.04	132,236.12	17.61	58,124.02	74,112.09
110	**21.12**	**139,398.91**	**17.61**	**63,408.02**	**75,990.88**
120	16.53	119,012.50	17.61	68,692.03	50,320.48

Maximum Volume Required is 75,972.61 cf at the 110 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)	
526	64,829.45			permanent pool elevation
		66,325.17	66,325.17	
527	67,820.88			
		69,446.34	135,771.50	
528	71,071.79			top of pond is at 530 feet, so 2 feet freeboard

Outfall Structures

Reqd 10 Yr Storage Volume = 75,990.88 CF
10 Yr WSE 527.14 feet

10-yr storm event
Present Conditions
tc 20 mins

A 8.53 acres

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
10-yr	5.90	0.35	8.53	17.61

Post Development Condition
10-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
10-yr	7.10	0.9	10.20	65.20

Design with a Weir

10 Yr Discharge @ Max Water Surface

Qtotal, cfs	17.61	Allowed
Q total, cfs	65.20	Post
Invert Elev	526.00	feet
Width of Weir	3	feet

Rectangular Notch Weir:

Q = CL(H)^3/2

C	3.3	dimensionless
L	3	feet
H	1.14	feet
Q	12.04	cfs
5-yr WSE	527.14	feet

Provided flow is lower than Allowed Flow

PROPOSED DETENTION POND 2 CALCULATIONS

25 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	6.60	in/hr
A	8.53	acres

Q25= 19.70 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10	mins
i	8.3	in/hr
A	10.20	acres

Q25 = 76.22 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	7.5	10.20340397	68.87
20	0.9	6.6	10.20340397	60.61
30	0.9	5.5	10.20340397	50.51
40	0.9	4.6	10.20340397	42.24
50	0.9	4	10.20340397	36.73
60	0.9	3.5	10.20340397	32.14
70	0.9	3.3	10.20340397	30.30
80	0.9	3.1	10.20340397	28.47
90	0.9	2.9	10.20340397	26.63
100	0.9	2.7	10.20340397	24.79
110	0.9	2.5	10.20340397	22.96

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	76.22	45,731.66	19.70	11,821.84	33,909.82
15	68.87	61,985.68	19.70	14,777.29	47,208.39
20	60.61	72,729.86	19.70	17,732.75	54,997.11
30	50.51	90,912.33	19.70	23,643.67	67,268.66
40	42.24	101,381.02	19.70	29,554.59	71,826.43
50	36.73	110,196.76	19.70	35,465.51	74,731.26
60	32.14	115,706.60	19.70	41,376.42	74,330.18
70	30.30	127,277.26	19.70	47,287.34	79,989.92
80	28.47	136,643.99	19.70	53,198.26	83,445.73
90	**26.63**	**143,806.78**	**19.70**	**59,109.18**	**84,697.60**
100	24.79	148,765.63	19.70	65,020.09	83,745.54
110	22.96	151,520.55	19.70	70,931.01	80,589.54

Maximum Volume Required is 84,681.06 cf at the 90 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)	
526	64,829.45			permanent pool elevation
		66,325.17	66,325.17	
527	67,820.88			
		69,446.34	135,771.50	
528	71,071.79			top of pond is at 530 feet, so 2 feet freeboard

Outfall Structures

Reqd 25 Yr Storage Volume = 84,697.60 CF
25 Yr WSE 527.26 feet

25-yr storm event
Present Conditions
tc 20 mins

A 8.53 acres

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
25-yr	6.60	0.35	8.53	19.70

Post Development Condition
25-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
25-yr	8.30	0.9	10.20	76.22

Design with a Weir

25 Yr Discharge @ Max Water Surface

Qtotal, cfs	19.70	Allowed
Q total, cfs	76.22	Post
Invert Elev	526.00	feet
Width of Weir	3	feet

Rectangular Notch Weir:

Q = CL(H)^3/2

C	3.3	dimensionless
L	3	feet
H	1.26	feet
Q	14.08	cfs
5-yr WSE	527.26	feet

Provided flow is lower than Allowed Flow

PROPOSED DETENTION POND 2 CALCULATIONS

100 YEAR STORM

Step 1 Present Conditions

Q = C * I * A

C	0.35	dimensionless
tc	20.00	mins
i	8.30	in/hr
A	8.53	acres

Q100 = 24.78 cfs

Step 2 Post Development Condition

C	0.9	dimensionless
tc	10	mins
i	9.8	in/hr
A	10.20	acres

Q100 = 89.99 cfs

Check various duration storms

tdur(mins)	C	i (in/hr)	Area (acres)	Q (cfs)
15	0.9	9	10.20340397	82.65
20	0.9	8.3	10.20340397	76.22
30	0.9	6.9	10.20340397	63.36
40	0.9	5.8	10.20340397	53.26
50	0.9	5	10.20340397	45.92
60	0.9	4.5	10.20340397	41.32
70	0.9	4	10.20340397	36.73
80	0.9	3.7	10.20340397	33.98
90	0.9	3.5	10.20340397	32.14
100	0.9	3.4	10.20340397	31.22
110	0.9	3.2	10.20340397	29.39

Required storage Volumes

tdur (mins)	Inflow		Outflow		Req Storage
	Q (cfs)	Volume (cf)	Q (cfs)	Volume (cf)	Volume (cf)
10	89.99	53,996.41	24.78	14,866.85	39,129.56
15	82.65	74,382.81	24.78	18,583.57	55,799.25
20	76.22	91,463.31	24.78	22,300.28	69,163.03
30	63.36	114,053.65	24.78	29,733.71	84,319.94
40	53.26	127,828.24	24.78	37,167.13	90,661.11
50	45.92	137,745.95	24.78	44,600.56	93,145.39
60	41.32	148,765.63	24.78	52,033.99	96,731.64
70	36.73	154,275.47	24.78	59,467.41	94,808.05
80	33.98	163,091.21	24.78	66,900.84	96,190.37
90	32.14	173,559.90	24.78	74,334.27	99,225.64
100	**31.22**	**187,334.50**	**24.78**	**81,767.69**	**105,566.80**
110	29.39	193,946.30	24.78	89,201.12	104,745.18

Maximum Volume Required is 105,543.51 cf at the 100 min duration

Detention Pond Volume Calculations

Contour Elevation	Surface Area (sf)	Average Area	Cumulative Volume (cf)	
526	64,829.45			permanent pool elevation
		66,325.17	66,325.17	
527	67,820.88			
		69,446.34	135,771.50	
528	71,071.79			top of pond is at 530 feet, so 2 feet freeboard

Outfall Structures

Reqd 100 Yr Storage Volume = 105,566.80 CF
100 Yr WSE 527.57 feet

100-yr storm event
Present Conditions
tc 20 mins

A 8.53 acres

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	8.30	0.35	8.53	24.78

Post Development Condition
100-yr storm event

tc 10.00 mins

Return Period	i, in/hr	C	Area (acres)	Q(cfs)
100-yr	9.80	0.9	10.20	89.99

Design with a Weir

100 Yr Discharge @ Max Water Surface

Qtotal, cfs	24.78	Allowed
Qpost, cfs	89.99	Post
Invert Elev	526.00	feet
Width of Weir	3	feet

Rectangular Notch Weir:

Q = CL(H)^3/2

C	3.3	dimensionless
L	3	feet
H	1.57	feet
Q	19.38	cfs
100-yr WSE	527.57	feet

Provided flow is lower than Allowed Flow

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
DETENTION POND CALCS. PROP POND 2

CASE# E2023-007

SHEET NO.
C8.9

SUMMARY OF DETENTION POND CALCULATIONS

BYPASS FLOWRATES

Pre-development
Ex Pond 1 and Ex Pond 2 Bypass

Area ID	Q100 (cfs)
N	11.08
S	3.76
T1	2.73
T2	1.16
H	7.22
I	0.94
R	2.21
Q	13.47
F	5.00
G	5.31
O	34.88
R	2.21
Total	**89.97**

Post-development
Ex Pond 1 and Proposed Pond 2 Bypass

Area ID	Q100 (cfs)
P	8.95
S	35.03
U	13.61
V	6.43
W	1.66
X	3.50
Y	2.41
AA	3.34
Z1	6.47
Z2	3.52
Total	**84.92**

SUMMARY OF RELEASE - 100 YEAR STORM

Pre-development

Ex Detention Pond 1 Discharge[1]	22.45	cfs
Ex Detention Pond 2 Discharge[2]	13.71	cfs
Subtotal Ponds Discharge	36.16	cfs
Subtotal Ex Pond 1 and Ex Pond 2 Bypass	89.97	cfs
Total Pre development Discharge	**126.13**	**cfs**

Notes:

1) Allowable Discharge from Ex Pond 1 Equal to Calculated Discharge from Outlet Structure from Ex Pond 1.

2) Allowable Discharge from Ex Pond 2 Equal to Pre development runoff from area draining into Ex Pond 2 (Sub Areas C,L,K,M) at time of concentration of 20 mins. This pond is being removed as part of the proposed development.

Post-development

Ex Detention Pond 1 Discharge[3]	22.45	cfs
Proposed Detention Pond 2 Discharge[4]	19.39	cfs
Subtotal Ponds Discharge	41.83	cfs
Subtotal Ex Pond 1 and Proposed Pond 2 Bypass	84.92	cfs
Total Post development Discharge	**126.75**	**cfs**
Net Increase/Decrease	**0.63**	**cfs**
Net % Increase/Decrease	**0.50%**	**%**

Notes:

3) Allowable Discharge from Ex Pond 1 Equal to Calculated Discharge from Outlet Structure from Ex Pond 1.

4) Allowable Discharge from Proposed Pond 2 Equal to Calculated Discharge from Outlet Structure from Proposed Pond 2.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R/DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
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CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REL RayburnElectric COOPERATIVE

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
SUMMARY DETENTION POND CALCULATIONS

CASE# E2023-007

SHEET NO.
C8.10

INLET DESIGN CALCULATIONS TABLE

Inlet ID	Location			Area Runoff									Gutter Flow												
	Alignment[1]	Station	Offset	Design Freq	C	Area ID	Time of Concentration, Tc (min)	Intensity I (in/hr)	Area A (acres)	Runoff Q cfs	Upstream Bypass , C*A (acres)	Total Gutter Flow Qa (cfs)	Thoroughfare Type	On Grade/Sag	Manning's n	Long Slope S (%)	Crown Type	Cross Slope Sx (%)	Depth a (ft)	Width w (ft)	Ponding Width/Spread		Depth of Gutter Flow		Maximum Allowable Flow Based on Max. Allowable Ponding Width Qallowgutter (cfs)
																					(allow) Tallow (ft)	(actual) Tactual (ft)[2]	(allow) Yallow (ft)	(actual) Yactual (ft)[3]	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
A1	A	12+07.80	No offset	100	0.9	O	10	9.8	1.10	9.66	0.000	9.66	Local	Drop	0.0175	NA	NA	NA	NA	NA	5.00	NA	0.5	0.34	17.46
A2	A-4	1+27.44	No offset	100	0.9	H	10	9.8	0.57	4.99	0.000	4.99	Local	Sag	0.0175	NA	NA	1.0%	NA	2	20.00	20.00	0.20	0.20	4.85
B1	B	2+33.21 to 4+84.71	No offset	100	0.9	F1 and G	10	9.8	1.14	10.01	0.014	10.15	Local	Slotted Drain	0.0175	Based on Information from Manufacturer, Length of Slot Required for Total Interception is 36.24 ft. Check Sag Condition: Length of Slot Required for Total Interception is 63.55 ft and 127.1 ft with a safety factor of 2.0. Provided slot length is 251.5 ft.									
A3	A-3	1+38.82	No offset	100	0.9	I	10	9.8	0.79	6.95	0.000	6.95	Local	Drop	0.0175	NA	NA	NA	NA	NA	5.00	NA	0.5	0.27	17.46
A4-1	A-2	2+69.67	No offset	100	0.9	K1	10	9.8	1.06	9.35	0.000	9.35	Local	On Grade	0.0175	2.5%	Straight	1.4%	0.5	2	28.00	18.10	0.39	0.25	29.70
A4	A-2	2+14.12	No offset	100	0.9	K3	10	9.8	0.08	0.72	0.270	3.36	Local	On Grade	0.0175	2.2%	Straight	1.0%	0.5	2	20.00	15.59	0.20	0.16	6.48
A5	A-2-2	2+24.31	No offset	100	0.9	L	10	9.8	0.11	0.99	0.000	0.99	Local	Sag	0.0175	NA	NA	1.0%	0.5	2	20.00	13.54	0.20	0.14	1.77
A6	A-2-1	2+96.17	No offset	100	0.9	Q	10	9.8	1.14	10.07	0.000	10.07	Local	On Grade	0.0175	2.4%	Straight	2.0%	0.5	2	25.00	15.06	0.50	0.30	38.58
A7	A-2-1	1+23.49	No offset	100	0.9	K2	10	9.8	0.86	7.56	0.000	7.56	Local	On Grade	0.0175	1.3%	Straight	2.0%	0.5	2	25.00	15.11	0.50	0.30	28.69
A8	A-1	2+22.91	No offset	100	0.9	M	10	9.8	0.54	4.75	0.000	4.75	Local	Sag	0.0175	NA	NA	1.0%	0.5	2	50.00	28.46	0.50	0.28	11.06
FD	A-5	3+05.69	No offset	100	0.9	Dumpster Drain	10	9.8	0.006	0.05	0.000	0.05	Local	Floor Drain	0.0175	NA	NA	NA	NA	NA	Refer to Orifice Calculation Spreadsheet Provided				
Ex Inlet	C	6+30.02	No offset	100	0.9	D	10	9.8	1.37	12.05	0.000	12.05	Local	Sag	0.0175	NA	NA	2.0%	0.5	2	35.00	26.47	0.70	0.53	18.32
C1	C1	1+64.51	No offset	100	0.9	C	10	9.8	0.42	3.73	0.000	3.73	Local	Sag	0.0175	NA	NA	2.0%	0.5	2	25.00	16.44	0.50	0.33	6.99
C2	C2	1+22.27	No offset	100	0.9	B	10	9.8	0.98	8.67	0.000	8.67	Local	Sag	0.0175	NA	NA	1.5%	0.5	2	20.00	19.63	0.30	0.29	8.92
E1	E	6+55.77	No offset	100	0.9	U and V	10	9.8	2.27	20.04	0.000	20.04	Local	Sag	0.0175	NA	NA	3.3%	0.5	2	15.00	14.97	0.50	0.50	19.19
E2	E	6+21.77	No offset	100	0.9	W	10	9.8	0.19	1.66	0.09	2.50	Local	Sag	0.0175	NA	NA	3.3%	0.5	2	15.00	7.55	0.50	0.25	6.99
B2	B-1	1+30.06	No offset	100	0.9	F2	10	9.8	0.06	0.57	0.00	0.57	Local	Drop	0.0175	NA	NA	NA	NA	NA	4.00	NA	0.5	0.06	13.10
AD1	AD1	1+06.84	No offset	100	0.9	J1	10	9.8	0.32	2.81	0.00	2.81	Local	Area Drain	0.0175	NA	NA	NA	NA	NA	Refer to Nyloplast Dome Grate Inlet Capacity Chart Provided				
AD2	AD2	1+25.73	No offset	100	0.9	J2	10	9.8	0.35	3.07	0.00	3.07	Local	Area Drain	0.0175	NA	NA	NA	NA	NA	Refer to Nyloplast Dome Grate Inlet Capacity Chart Provided				
AD3	AD3	3+41.61	No offset	100	0.9	N2	10	9.8	0.05	0.44	0.00	0.44	Local	Area Drain	0.0175	NA	NA	NA	NA	NA	Refer to Nyloplast Dome Grate Inlet Capacity Chart Provided				
AD4	AD4	1+15.52	No offset	100	0.9	N1	10	9.8	0.35	3.06	0.00	3.06	Local	Area Drain	0.0175	NA	NA	NA	NA	NA	Refer to Nyloplast Dome Grate Inlet Capacity Chart Provided				

NOTES:
1) Refer to Storm Drain Alignments on Sheets C10.6 to C10.19 for reference.
2) For on grade inlets, the ponding width is calculated using Equation 3.7 of Rockwall Standards of Design and Construction. For completeness, for sag inlets, actual ponding width is actual depth of flow/cross slope.
3) For on grade inlets, actual depth of flow is the product of Tactual and Cross Slope. For completeness, sag and drop inlets, actual depth of flow is calculated using Equation 3.7 and Equation 3.19, respectively based on Total Gutter Flow Rate.

INLET DESIGN CALCULATIONS TABLE

Inlet ID	Location			Inlets Capacity										Inlet Bypass			Remarks
	Alignment[1]	Station	Offset	Depressed Gutter Section		Section Beyond Depression		Conveyance				Inlet Length			Flow Qbypass (cfs)	C*A	To Inlet ID	
				Area Aw (ft^2)	Wetted Perimeter Pw (ft)	Area Ao (ft^2)	Wetted Perimeter Po (ft)	Depression Section Kw (cfs)	Section Beyond Depression Ko (cfs)	Ratio of Depression Flow to Total Flow Eo	Equivalent Cross-Slope, Se	Required Lreqd (ft)	Actual Lactual (ft)	Inlet Capacity Qc (cfs)				
(1)	(2)	(3)	(4)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)
A1	A	12+07.80	No offset	NA	NA	NA	NA	NA	NA	NA	NA	16.00	16	17.46	0.00	0.00		drop inlet 4x4 square
A2	A-4	1+27.44	No offset	NA	NA	NA	NA	NA	NA	NA	NA	20.66	20	4.85	0.13	0.01	B1	
B1	B	2+33.21 to 4+84.71	No offset	Based on Information from Manufacturer, Length of Slot Required for Total Interception is 36.24 ft. Check Sag Condition: Length of Slot Required for Total Interception is 63.55 ft and 127.1 ft with a safety factor of 2.0. Provided slot length is 251.5 ft.										>10.15	0.00	0.00		
A3	A-3	1+38.82	No offset	NA	NA	NA	NA	NA	NA	NA	NA	16.00	16	17.46	0.00	0.00		drop inlet 4x4 square
A4-1	A-2	2+69.67	No offset	0.98	2.07	1.814	16.10	50.46	35.928	0.584	0.160	17.25	15	6.70	2.65	0.27	A-4	
A4	A-2	2+14.12	No offset	0.79	2.07	0.923	13.59	35.47	13.054	0.731	0.193	9.67	15	9.55	0.00	0.00		
A5	A-2-2	2+24.31	No offset	NA	NA	NA	NA	NA	NA	NA	NA	5.00	5	1.77	0.00	0.00		
A6	A-2-1	2+96.17	No offset	1.06	2.07	1.707	13.06	57.81	37.307	0.608	0.172	16.73	20	15.30	0.00	0.00		
A7	A-2-1	1+23.49	No offset	1.06	2.07	1.720	13.11	58.00	37.700	0.606	0.172	12.44	15	11.80	0.00	0.00		
A8	A-1	2+22.91	No offset	NA	NA	NA	NA	NA	NA	NA	NA	10.00	10	11.06	0.00	0.00		
FD	A-5	3+05.69	No offset	Refer to Orifice Calculation Spreadsheet Provided										0.37	0.00	0.00		
Ex Inlet	C	6+30.02	No offset	NA	NA	NA	NA	NA	NA	NA	NA	10.00	10	18.32	0.00	0.00		
C1	C1	1+64.51	No offset	NA	NA	NA	NA	NA	NA	NA	NA	5.00	5	6.99	0.00	0.00		
C2	C2	1+22.27	No offset	NA	NA	NA	NA	NA	NA	NA	NA	20.00	20	8.92	0.00	0.00		
E1	E	6+55.77	No offset	NA	NA	NA	NA	NA	NA	NA	NA	21.04	20	19.19	0.84	0.09	E2	
E2	E	6+21.77	No offset	NA	NA	NA	NA	NA	NA	NA	NA	5.00	5	6.99	0.00	0.00		
B2	B-1	1+30.06	No offset	NA	NA	NA	NA	NA	NA	NA	NA	12.00	12	13.10	0.00	0.00		drop inlet 3x3 square
AD1	AD1	1+06.84	No offset															
AD2	AD2	1+25.73	No offset															
AD3	AD3	3+41.61	No offset															
AD4	AD4	1+15.52	No offset															

NOTES:
1) Refer to Storm Drain Alignments on Sheets C10.6 to C10.19 for reference.
2) For on grade inlets, the ponding width is calculated using Equation 3.7 of Rockwall Standards of Design and Construction. For completeness, for sag inlets, actual ponding width is actual depth of flow/cross slope.
3) For on grade inlets, actual depth of flow is the product of Tactual and Cross Slope. For completeness, sag and drop inlets, actual depth of flow is calculated using Equation 3.7 and Equation 3.19, respectively based on Total Gutter Flow Rate.

NOTES:
1) Refer to Storm Drain Alignments on Sheets C10.6 to C10.19 for reference.
2) For on grade inlets, the ponding width is calculated using Equation 3.7 of Rockwall Standards of Design and Construction. For completeness, for sag inlets, actual ponding width is actual depth of flow/cross slope.
3) For on grade inlets, actual depth of flow is the product of Tactual and Cross Slope. For completeness, sag and drop inlets, actual depth of flow is calculated using Equation 3.7 and Equation 3.19, respectively based on Total Gutter Flow Rate.

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC, STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

DUMPSTER DRAIN FLOWRATE CALCULATOR

Area (sf)	Area (acres)[1]	100 Yr Rainfall Intensity (in/hr)[2]	Runoff Coefficient[4]	Discharge Rate (cfs)[4]	Discharge Rate (gpm)[5]
228	0.00523	9.8	0.9	0.046	20.72

Notes:
1) Area in acres = Area(sf)/(43650 sqft/acre)
2) 100 Yr Rainfall Intensity from Page 126, Standards of Design and Construction, City of Rockwall Texas for tc = 10 mins
3) Table 3.2, Standards of Design and Construction, City of Rockwall Texas
4) Discharge Rate in cfs = Runoff Coefficient x 100 Yr Rainfall Intensity (in/hr) x Area (acres)
5) Discharge Rate in gpm = 448.8 x Discharge Rate in cfs

ORIFICE CALCULATION TO ESTIMATE FLOW RATE PROVIDED BY ZURN

Slope to Top of Drain	Length of Travel (ft)	Head (ft)	Grate Open Area (sq in)	Grate Open Area (sq ft)	Provided Flow Rate (cfs)[1]	Provided Flow Rate (gpm)	Is Provided > Required?
1%	10.62	0.11	34	0.236	0.37	166.27	Yes

Note:
1) Provided Flow Rate (cfs) = Cd x Area of Orifice x sqrt (2 x g x h)

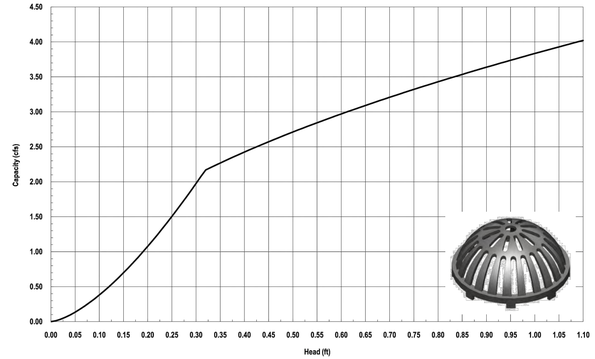
WEIR CALCULATION TO ESTIMATE FLOW RATE PROVIDED BY ZURN

Head (ft)	Perimeter of Weir (ft)	Weir Coefficient	Provided Flow Rate (cfs)[1]	Provided Flow Rate (gpm)	Is Provided >Required
0.11	3.11	3.33	0.36	160.72	Yes

Note:
1) Provided Flow Rate (cfs) = C1(H)^3/2
where L = Perimeter of Weir

AVERAGE DEPTH OF FLOW AT AREA DRAINS EXCEEDS 0.75 FT REQUIRED TO PROVIDE AN INLET CAPACITY OF 3.25 CFS, WHICH IS HIGHER THAN THE MAXIMUM FLOW RATE OF 3.06 CFS ESTIMATED FOR AD1 AND AD2

Nyloplast 15" Dome Grate Inlet Capacity Chart



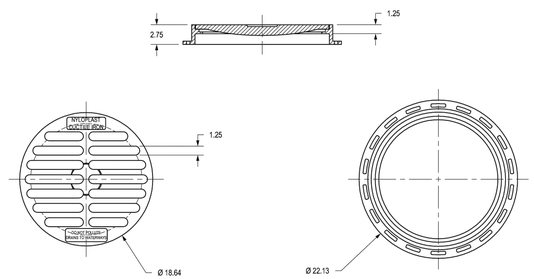
Nyloplast
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490
© Nyloplast Inlet Capacity Charts June 2012

AVERAGE DEPTH OF FLOW: 0.75 FT
ORIFICE CALCULATOR:
Cd x SQRT(2*g*Flow Depth)*DRAIN AREA
=3.15 CFS > MAX FLOW INTO AD3 AND AD4 OF 3.06 CFS

WEIR CALCULATOR:
C x Flow Depth^1.5
=9.49 CFS > MAX FLOW INTO AD3 AND AD4 OF 3.06 CFS

1899CGS

APPROX. DRAIN AREA = 116.72 SQ IN
APPROX. WEIGHT WITH FRAME = 65.50 LBS



DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-029

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DRAWN BY	EBC	MATERIAL	DUCTILE IRON
DATE	03-08-06		
REVISED BY	CCA	PROJECT NO./NAME	
DATE	09-30-13		
DWG SIZE	A	SCALE 1:10 SHEET 1 OF 1	

ADS Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

TITLE
18 IN STANDARD GRATE ASSEMBLY- TYPE C

DWG NO. 7001-110-213 REV D

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

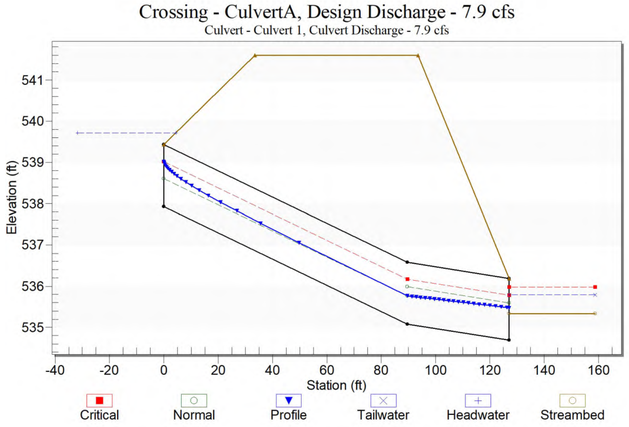
NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
INLET CALCULATIONS

CASE# E2023-007

SHEET NO.
C10.1

CULVERT A (18 IN RCP)



Upper Section

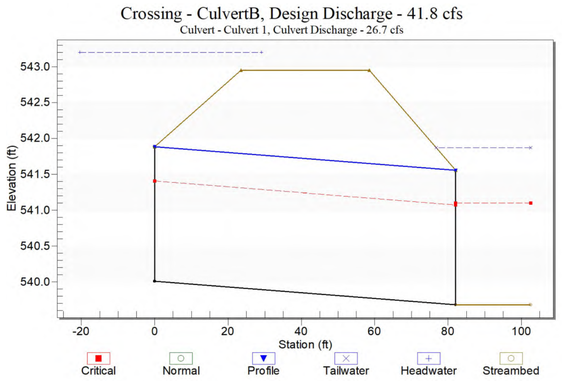
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Upstream Depth (ft)	Downstrea m Depth (ft)	Upstream Velocity (ft/s)	Downstream Velocity (ft/s)
7.91	7.91	539.72	1.79	0.0*	5-S2n	0.71	1.09	1.09	0.72	5.75	9.45

Runout Section

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Tailwater Depth (ft)	Tailwater Velocity (ft/s)	Upstream Depth (ft)	Downstream Depth (ft)	Upstream Velocity (ft/s)	Downstream Velocity (ft/s)
7.91	7.91	539.72	1.79	0.0*	7-M3t	1.50	1.09	0.45	6.08	0.72	0.95	9.45	6.67

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
539.72	7.91	7.91	0.00	1
541.60	14.55	14.55	0.00	Overtopping

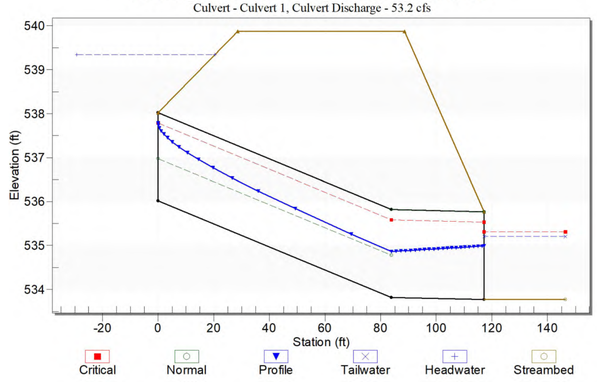
CULVERT B (36.25 IN WIDE X 22.5 IN RISE RC ARCH PIPE)



Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
41.83	26.67	543.20	2.74	3.19	4-FFf	1.88	1.40	1.88	2.19	6.03	2.37

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
543.20	41.83	26.67	15.14	5
542.95	27.62	27.62	0.00	Overtopping

CULVERT C (4 FT X 2 FT RC BOX CULVERT)



Upper Section

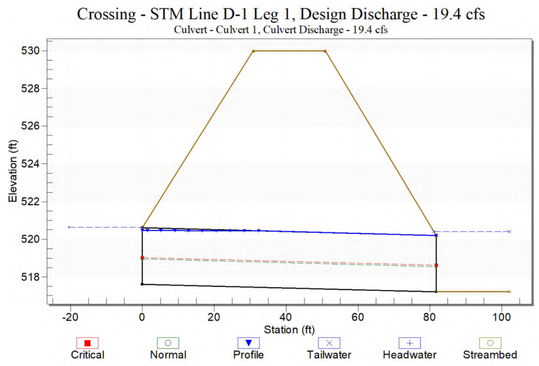
Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Upstream Depth (ft)	Downstream Depth (ft)	Upstream Velocity (ft/s)	Downstream Velocity (ft/s)
53.24	53.24	539.34	3.32	0.70	5-S2n	0.96	1.77	1.77	1.05	7.54	12.73

Runout Section

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Tailwater Depth (ft)	Tailwater Velocity (ft/s)	Upstrea m Depth (ft)	Downstream Depth (ft)	Upstream Velocity (ft/s)	Downstream Velocity (ft/s)
53.24	53.24	539.34	3.32	0.70	7-M3t	2.00	1.77	1.44	6.07	1.05	1.22	12.73	10.89

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
539.34	53.24	53.24	0.00	1
539.88	60.66	60.66	0.00	Overtopping

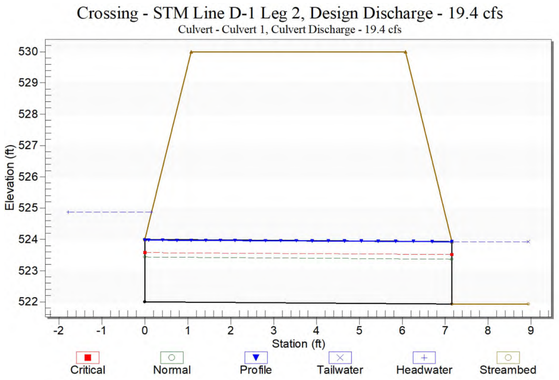
GRATE INLET TO DISCHARGE PIPE (36 IN RCP)



Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
19.38	19.38	520.65	2.06	3.04	1-S1f	1.35	1.41	3.00	3.20	2.74	
90.00	90.00	526.05	8.44**	8.06	4-FFf	3.00	2.85	3.00	3.20	12.73	

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
520.65	19.38	19.38	0.00	1
526.05	90.00	90.00	0.00	1
530.00	113.05	113.05	0.00	Overtopping

WEIR INLET TO GRATE INLET (24 IN RCP)



Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)
19.38	19.38	524.87	2.84	2.87	1-S1f	1.43	1.58	2.00	2.00	6.17

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
524.87	19.38	19.38	0.00	1
530.00	40.31	40.31	0.00	Overtopping

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
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LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
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950 SIDS ROAD
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CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CULVERT CALCULATIONS
CASE# E2023-007
SHEET NO.
C10.2

STORM PIPE A-1 — **STORM PIPE A-1**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	217.91		END PIPE STM-A-1, CONNECTION TO CURB INLET, AREA M	0.54	0.54	0.90	1.00	0.90	0.48	0.48	10.00	0.00	10.00	100	9.80	4.75	1	18	0	1.77	4.71				2.69	2.69	0.11		1.25	0.14					529.01	529.01	529.15	529.15
217.91	100.00	117.91	PIPE RUN	0.00	0.54	0.90	1.00	0.90	0.00	0.48	10.00	0.73	10.73	100	9.80	4.75	1	18	0	1.77	4.71	105.0	0.20	2.69	2.69	0.11	0.11	1.00	0.00	0.00	0.00	0.00	0.24	528.77	529.01	529.01	529.01
	Total	117.91	CONNECTION TO ST-A																															Pipe HGL El.			528.77

STORM PIPE A-2 — **STORM PIPE A-2**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
262.17	262.17	0.00	END PIPE STM-A-2, CONNECTION TO CURB INLET, AREA K1[1]	0.68	0.68	0.90	1.00	0.90	0.61	0.61	10.00	0.00	10.00	100	9.8	5.99	1	15	0	1.23	3.93	64.6	0.86	0	4.88	0.37	0.00	1.25	0.46		0	0.00	0.00	531.59	531.59	532.05	532.05
262.17	216.62	45.55	PIPE RUN	0.00	0.68	0.90	1.00	0.90	0.00	0.61	10.00	0.16	10.16	100	9.8	5.99	1	15	0	1.23	3.93	64.6	0.86	4.88	4.88	0.37	0.37	1.00	0.00	0.00	0	0.00	0.39	531.20	531.59	531.59	531.59
206.62	206.62	0.00	CONNECTION TO CURB INLET, AREA K3[2]	0.38	1.06	0.90	1.00	0.90	0.34	0.95	10.16	0.00	10.16	100	9.78	9.32	1	21	0	2.41	5.50	158.4	0.35	4.88	3.88	0.23	0.37	1.25	0.00	0.00	0.00	0.00	0.00	0.00	531.20	531.20	531.20	531.20
206.62	181.41	25.21	PIPE RUN	0.00	1.06	0.90	1.00	0.90	0.00	0.95	10.16	0.11	10.26	100	9.78	9.32	1	21	0	2.41	5.50	158.4	0.35	3.88	3.88	0.23	0.23	1.00	0.00	0.00	0.00	0.00	0.09	531.11	531.20	531.20	531.20
181.41	181.41	0.00	PIPE DIA CHANGE	0.00	1.06	0.90	1.00	0.90	0.00	0.95	10.16	0.00	10.26	100	9.78	9.32	1	27	0	3.98	7.07	309.7	0.09	3.88	2.34	0.09	0.23	1.00	0.00	0.86	0.00	0.00	0.00	530.25	530.25	530.25	531.11
181.41	178.37	3.04	PIPE RUN	0.00	1.06	0.90	1.00	0.90	0.00	0.95	10.16	0.02	10.29	100	9.78	9.32	1	27	0	3.98	7.07	309.7	0.09	2.34	2.34	0.09	0.09	1.00	0.00	0.00	0.00	0.00	0.00	530.25	530.25	530.25	530.25
178.37	178.37	0.00	CONNECTION FROM STM A-2-2, AREA L	0.11	1.17	0.90	1.00	0.90	0.10	1.05	12.87	0.00	10.29	100	9.34	9.85	1	27	0	3.98	7.07	309.7	0.10	2.34	2.48	0.10	0.09	0.50	0.05	0.00	0.00	0.00	0.00	530.20	530.20	530.25	530.25
178.37	130.91	47.46	PIPE RUN	0.00	1.17	0.90	1.00	0.90	0.00	1.05	12.87	0.32	10.61	100	9.34	9.85	1	27	0	3.98	7.07	309.7	0.10	2.48	2.48	0.10	0.10	1.00	0.00	0.00	0.00	0.00	0.05	530.15	530.20	530.20	530.20
130.91	130.91	0.00	CONNECTION FROM STM A-2-1, AREAS Q and K2	2.00	3.17	0.90	1.00	0.90	1.80	2.85	12.87	0.00	10.61	100	9.34	26.64	1	27	0	4.0	7.1	309.7	0.74	2.48	6.70	0.70	0.10	0.35	0.66	0.00	0.00	0.00	0.00	0.20	529.48	529.48	529.48	529.48
130.91	103.53	27.38	PIPE RUN	0.00	3.17	0.90	1.00	0.90	0.00	2.85	12.87	0.07	10.67	100	9.34	26.64	1	27	0	4.0	7.1	309.7	0.74	6.70	6.70	0.70	0.70	1.00	0.00	0.00	0.00	0.00	0.20	529.28	529.48	529.48	529.48
	Total	148.64	CONNECTION TO ST-A																															Pipe HGL El.			529.28

Notes:
1) AREA ADJUSTED TO REFLECT CAPACITY OF CURB INLET. REFER TO SHEET C10.1 FOR FLOW RATE CAPACITY OF INLET. TOTAL FLOW RATE FROM AREA K3 LESS CAPACITY OF INLET ADDED TO THE D/S INLET ON LINE.
2) AREA ADJUSTED TO INCLUDE EXCESS FLOWRATE (TOTAL FLOW RATE FROM AREA K3 LESS CAPACITY OF U/S INLET)

STORM PIPE A-2-1 — **STORM PIPE A-2-1**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	286.17		END PIPE STM-A-2-1, CONNECTION TO CURB INLET, AREA Q	1.14	1.14	0.90	1.00	0.90	1.03	1.03	10.00	0.00	10.00	100	9.80	10.07	1	24	0	3.14	6.28				3.20	3.20	0.16		1.25	0.20					530.62	530.62	530.82	530.82
286.17	118.49	167.68	PIPE RUN	0.00	1.14	0.90	1.00	0.90	0.00	1.03	10.00	0.87	10.87	100	9.80	10.07	1	24	0	3.14	6.28	226.2	0.20	3.20	3.20	0.16	0.16	1.00	0.00	0.00	0.00	0.00	0.33	530.29	530.62	530.62	530.62
118.49	118.49	0.00	CONNECTION TO CURB INLET, AREA K2	0.86	2.00	0.90	1.00	0.90	0.77	1.80	10.87	0.00	10.87	100	9.66	17.37	1	27	0	3.98	7.07	309.7	0.31	3.20	4.37	0.30	0.16	1.25	0.10	0.00	0.00	0.00	0.00	530.19	530.19	530.29	530.29
118.49	105.04	13.45	PIPE RUN	0.00	2.00	0.90	1.00	0.90	0.00	1.80	10.87	0.05	10.92	100	9.66	17.37	1	27	0	3.98	7.07	309.7	0.31	4.37	4.37	0.30	0.30	1.00	0.00	0.00	0.00	0.00	0.04	530.15	530.19	530.19	530.19
	Total	181.13	CONNECTION TO STM A-2																															Pipe HGL El.			530.15

STORM PIPE A-2-2 — **STORM PIPE A-2-2**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	222.81		END PIPE STM-A-2-2, CONNECTION TO CURB INLET, AREA L	0.11	0.11	0.90	1.00	0.90	0.10	0.10	10.00	0.00	10.00	100	9.80	0.99	1	18	0	1.77	4.71				0.56	0.00			1.25	0.01					530.47	530.47	530.48	530.48
222.81	215.03	7.78	PIPE RUN	0.00	0.11	0.90	1.00	0.90	0.00	0.10	10.00	0.23	10.23	100	9.80	0.99	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.47	530.47	530.47	530.47
215.03	215.03	0.00	22.5 DEG BEND	0.00	0.11	0.90	1.00	0.90	0.00	0.10	10.00	0.00	10.23	100	9.80	0.99	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.00	530.47	530.47	530.47	530.47
215.03	139.82	75.21	PIPE RUN	0.00	0.11	0.90	1.00	0.90	0.00	0.10	10.00	2.25	12.48	100	9.80	0.99	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.01	530.46	530.47	530.47	530.47
139.82	139.82	0.00	CONNECTION FROM STM A-5, DUMPSTER DRAIN	0.006	0.12	0.90	1.00	0.90	0.01	0.11	12.48	0.00	12.48	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.46	530.46	530.46	530.46
139.82	128.37	11.45	PIPE RUN	0.00	0.12	0.90	1.00	0.90	0.00	0.11	12.48	0.34	12.82	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.46	530.46	530.46	530.46
128.37	117.35	11.02	BAY SEPARATOR*	0.00	0.12	0.90	1.00	0.90	0.00	0.11	12.48	0.33	13.14	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.21	530.25	530.46	530.46	530.46
117.35	116.35		PIPE RUN	0.00	0.12	0.90	1.00	0.90	0.00	0.11	12.48	0.00	13.14	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.25	530.25	530.25	530.25
116.35	116.35	0.00	45 DEG BEND	0.00	0.12	0.90	1.00	0.90	0.00	0.11	12.48	0.00	12.48	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.50	0.00	0.00	530.25	530.25	530.25	530.25
116.35	102.95	13.40	PIPE RUN	0.00	0.12	0.90	1.00	0.90	0.00	0.11	12.48	0.40	12.87	100	9.40	1.00	1	18	0	1.77	4.71	105.0	0.01	0.56	0.56	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.25	530.25	530.25	530.25
	Total	118.86	CONNECTION TO STM A-2																															Pipe HGL El.			530.25

*) HEAD LOSS PROVIDED BY VENDOR

STORM PIPE A-3 — **STORM PIPE A-3**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	138.82		END PIPE STM-A-3, CONNECTION TO CURB INLET, AREA I	0.79	0.79	0.90	1.00	0.90	0.71	0.71	10.00	0.00	10.00	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44		3.93	0.24		1.25	0.30					531.55	531.55	531.85	531.85
138.82	113.94	24.88	PIPE RUN	0.00	0.79	0.90	1.00	0.90	0.00	0.71	10.00	0.11	10.11	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44	3.93	3.93	0.24	0.24	1.00	0.00	0.00	0.00	0.00	0.11	531.44	531.55	531.55	531.55
113.94	113.94	0.00	45 DEG BEND	0.00	0.79	0.90	1.00	0.90	0.00	0.71	10.00	0.00	10.11	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44	3.93	3.93	0.24	0.24	1.00	0.00	0.00	0.37	0.09	0.00	531.35	531.35	531.44	531.44
113.94	110.00	3.94	PIPE RUN	0.00	0.79	0.90	1.00	0.90	0.00	0.71	10.00	0.02	10.12	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44	3.93	3.93	0.24	0.24	1.00	0.00	0.00	0.00	0.00	0.02	531.33	531.35	531.35	531.35
110.00	110.00	0.00	45 DEG BEND	0.00	0.79	0.90	1.00	0.90	0.00	0.71	10.00	0.00	10.12	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44	3.93	3.93	0.24	0.24	1.00	0.00	0.00	0.37	0.09	0.00	531.24	531.24	531.33	531.33
110.00	103.00	7.00	PIPE RUN	0.00	0.79	0.90	1.00	0.90	0.00	0.71	10.00	0.03	10.15	100	9.80	6.95	1	18	0	1.77	4.71	105.0	0.44	3.93	3.93	0.24	0.24	1.00	0.00	0.00	0.00	0.00	0.03	531.21	531.24	531.24	531.24
	Total	35.82	CONNECTION TO STM A																															Pipe HGL El.			531.21

STORM PIPE A-4 — **STORM PIPE A-4**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	117.44		END PIPE STM-A-4, CONNECTION TO CURB INLET, AREA H	0.57	0.57	0.90	1.00	0.90	0.51	0.51	10.00	0.00	10.00	100	9.80	4.99	1	18	0	1.77	4.71				2.82	2.82	0.12		1.25	0.15					532.08	532.08	532.23	532.23
117.44	102.69	14.75	PIPE RUN	0.00	0.57	0.90	1.00	0.90	0.00	0.51	10.00	0.09	10.09	100	9.80	4.99	1	18	0	1.77	4.71	105.0	0.23	2.82	2.82	0.12	0.12	1.00	0.00	0.00	0.00	0.00	0.03	532.05	532.08	532.08	532.08
	Total	14.75	CONNECTION TO STM A																															Pipe HGL El.			532.05

STORM PIPE A-5 — **STORM PIPE A-5**

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	305.80		END PIPE STM-A-5, CONNECTION TO FLOOR DRAIN, AREA DUMPSTER DRAIN	0.006	0.006	0.90	1.00	0.90	0.01	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57				2.45	2.45	0.09		1.25	0.12					532.47	532.47	532.58	532.58
305.80	242.09	63.71	PIPE RUN, OPEN CHANNEL FLOW	0.000	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57	5.6	3.0	2.45	2.45	0.09	0.09	NA	NA	NA	NA	NA	NA	530.56			532.47
242.09	213.81	28.28	PIPE RUN	0.000	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57	5.6	0.00890	2.45	0.27	0.00	0.09	1.00	0.00	0.00	0.00	0.00	0.00	530.47	530.48	530.48	530.48
213.81	213.81	0.00	45 DEG HORIZONTAL BEND	0.000	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57	5.6	0.00890	0.27	0.27	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.47	530.47	530.47	530.47
213.81	111.89	101.92	PIPE RUN	0.000	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57	5.6	0.00890	0.27	0.27	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.01	530.46	530.47	530.47	530.47
111.89	111.89	0.00	45 DEG HORIZONTAL BEND	0.000	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.00	10.00	100	9.80	0.05	1	6	0	0.20	1.57	5.6	0.00890	0.27	0.27	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	530.46	530.46	530.46	530.46
111.89	106.23	5.66	PIPE RUN	0.00	0.006	0.90	1.00	0.90	0.00	0.005	10.00	0.35	10.35	100	9.80	0.05	1	6	0	0.20	1.57	5.6	0.00890	2.45	0.27	0.00	0.09	1.00	0.00	0.00	0.00	0.00	0.00	530.46	530.46	530.46	530.46
	Total	199.57	CONNECTION TO STM A-2-2																															Pipe HGL El.			530.46

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLIMA, P.E, TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM SEWER HYDRAULIC CALCULATIONS
SHEET NO.
C10.3

STORM PIPE ST-A

STORM PIPE ST-A

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND kV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
1205.50	1205.50	0.00	END PIPE STM LINE A, CONNECTION TO DRAIN INLET, AREA O	1.10	1.10	0.90	1.00	0.90	0.99	0.99	10.00	0.00	10.00	100	9.80	9.66	1	18	0	1.77	4.71				5.47	0.46		1.25	0.58						535.87	535.87	536.45	536.45
1205.50	908.62	296.88	PIPE RUN	0.00	1.10	0.90	1.00	0.90	0.00	0.99	10.00	0.91	10.91	100	9.80	9.66	1	18	0	1.77	4.71	105.0	0.85	5.47	5.47	0.46	0.46	1.00	0.00	0.00	0.00	0.00	2.51	533.36	535.87	535.87	535.87
908.62	908.62	0.00	60 DEG BEND	0.00	1.10	0.90	1.00	0.90	0.00	0.99	10.00	0.00	10.91	100	9.80	9.66	1	18	0	1.77	4.71	105.0	0.85	5.47	5.47	0.46	0.46	1.00	0.00	0.00	0.43	0.20	0.00	533.16	533.16	533.36	533.36
908.62	871.53	37.09	PIPE RUN	0.00	1.10	0.90	1.00	0.90	0.00	0.99	10.00	0.11	11.02	100	9.80	9.66	1	18	0	1.77	4.71	105.0	0.85	5.47	5.47	0.46	0.46	1.00	0.00	0.00	0.00	0.00	0.31	532.84	533.16	533.16	533.16
871.53	871.53	0.00	PIPE DIA CHANGE	0.00	1.10	0.90	1.00	0.90	0.00	0.99	10.00	0.00	11.02	100	9.80	9.66	1	27	0	3.98	7.07	309.7	0.10	5.47	2.43	0.09	0.46	1.00	0.00	0.00	0.79	0.00	0.00	532.05	532.05	532.05	532.84
871.53	869.34	2.19	PIPE RUN	0.00	1.10	0.90	1.00	0.90	0.00	0.99	10.00	0.02	11.03	100	9.80	9.66	1	27	0	3.98	7.07	309.7	0.10	2.43	2.43	0.09	0.09	1.00	0.00	0.00	0.00	0.00	0.00	532.05	532.05	532.05	532.05
869.34	869.34	0.00	CONNECTION FROM STM A-4, AREA H	0.57	1.66	0.90	1.00	0.90	0.51	1.49	11.03	0.00	11.03	100	9.63	14.40	1	27	0	3.98	7.07	309.7	0.22	2.43	3.62	0.20	0.09	0.35	0.17	0.00	0.00	0.00	0.00	0.00	531.87	531.87	532.05	532.05
869.34	787.67	81.67	PIPE RUN	0.00	1.66	0.90	1.00	0.90	0.00	1.49	11.03	0.38	11.41	100	9.63	14.40	1	27	0	3.98	7.07	309.7	0.22	2.43	3.62	0.20	0.09	1.00	0.00	0.00	0.00	0.00	0.18	531.72	531.87	531.87	531.87
787.67	787.67	0.00	30 DEG BEND	0.00	1.66	0.90	1.00	0.90	0.00	1.49	11.03	0.00	11.41	100	9.63	14.40	1	27	0	3.98	7.07	309.7	0.22	3.62	3.62	0.20	0.20	1.00	0.00	0.00	0.25	0.05	0.00	531.65	531.65	531.70	531.70
787.67	697.28	90.39	PIPE RUN	0.00	1.66	0.90	1.00	0.90	0.00	1.49	11.03	0.42	11.82	100	9.63	14.40	1	27	0	3.98	7.07	309.7	0.22	3.62	3.62	0.20	0.20	1.00	0.00	0.00	0.00	0.00	0.20	531.45	531.65	531.65	531.65
692.28	692.28	0.00	MANHOLE	0.00	1.66	0.90	1.00	0.90	0.00	1.49	11.03	0.00	11.82	100	9.63	14.40	1	30	0	4.91	7.86	410.1	0.12	3.62	2.93	0.13	0.20	0.00	0.13	0.00	0.48	0.06	0.00	531.25	531.25	531.45	531.45
692.28	658.67	33.41	PIPE RUN	0.00	1.66	0.90	1.00	0.90	0.00	1.49	11.03	0.19	12.01	100	9.63	14.40	1	30	0	4.91	7.86	410.1	0.12	2.93	2.93	0.13	0.13	1.00	0.00	0.00	0.00	0.00	0.04	531.21	531.25	531.25	531.25
658.67	658.67	0.00	STM A-3 AND DRAIN INLET, AREA I	0.79	2.45	0.90	1.00	0.90	0.71	2.20	12.01	0.00	12.01	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	2.93	4.33	0.29	0.13	0.50	0.22	0.00	0.00	0.00	0.00	0.00	530.99	530.99	531.21	531.21
658.67	612.75	46.12	PIPE RUN	0.00	2.45	0.90	1.00	0.90	0.00	2.20	12.01	0.18	12.19	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	4.33	4.33	0.29	0.29	1.00	0.00	0.00	0.00	0.00	0.12	530.87	530.99	530.99	530.99
612.75	612.75	0.00	11.25 DEG BEND	0.00	2.45	0.90	1.00	0.90	0.00	2.20	12.01	0.00	12.19	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	4.33	4.33	0.29	0.29	1.00	0.00	0.00	0.25	0.07	0.00	530.79	530.79	530.87	530.87
612.75	528.65	84.10	PIPE RUN	0.00	2.45	0.90	1.00	0.90	0.00	2.20	12.01	0.32	12.52	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	4.33	4.33	0.29	0.29	1.00	0.00	0.00	0.00	0.00	0.23	530.57	530.79	530.79	530.79
528.65	528.65	0.00	30 DEG BEND	0.00	2.45	0.90	1.00	0.90	0.00	2.20	12.01	0.00	12.52	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	4.33	4.33	0.29	0.29	1.00	0.00	0.00	0.25	0.07	0.00	530.49	530.49	530.57	530.57
528.65	480.13	48.52	PIPE RUN	0.00	2.45	0.90	1.00	0.90	0.00	2.20	12.01	0.19	12.70	100	9.63	21.23	1	30	0	4.91	7.86	410.1	0.27	4.33	4.33	0.29	0.29	1.00	0.00	0.00	0.00	0.00	0.13	530.36	530.49	530.49	530.49
480.13	480.13	0.00	CONNECTION FROM STM A D-1, AREA J1	0.32	2.77	0.90	1.00	0.90	0.29	2.49	12.70	0.00	12.70	100	9.37	23.33	1	30	0	4.91	7.86	410.1	0.32	4.33	4.75	0.35	0.29	0.50	0.21	0.00	0.00	0.00	0.00	0.00	530.16	530.16	530.36	530.36
480.13	334.71	145.42	PIPE RUN	0.00	2.77	0.90	1.00	0.90	0.00	2.49	12.70	0.51	13.21	100	9.37	23.33	1	30	0	4.91	7.86	410.1	0.32	4.75	4.75	0.35	0.35	1.00	0.00	0.00	0.00	0.00	0.47	529.69	530.16	530.16	530.16
334.71	334.71	0.00	CONNECTION FROM STM A D-2, AREA J2	0.35	3.11	0.90	1.00	0.90	0.31	2.80	13.21	0.00	13.21	100	9.29	26.03	1	30	0	4.91	7.86	410.1	0.40	4.75	5.30	0.44	0.35	0.50	0.26	0.00	0.00	0.00	0.00	0.00	529.43	529.43	529.69	529.69
334.71	298.41	36.30	PIPE RUN	0.00	3.11	0.90	1.00	0.90	0.00	2.80	13.21	0.11	13.33	100	9.29	26.03	1	30	0	4.91	7.86	410.1	0.40	5.30	5.30	0.44	0.44	1.00	0.00	0.00	0.00	0.00	0.15	529.28	529.43	529.43	529.43
293.41	293.41	0.00	MANHOLE/CONNECTION FROM STM A-2, AREAS L, Q, K1, K2, AND K3	3.25	6.37	0.90	1.00	0.90	2.93	5.73	13.33	0.00	13.33	100	9.27	53.09	1	42	0	9.62	11.00	1006.0	0.28	5.30	5.52	0.47	0.44	0.50	0.25	0.00	0.00	0.00	0.00	0.00	529.03	529.03	529.28	529.28
293.41	199.43	93.98	PIPE RUN	0.00	6.37	0.90	1.00	0.90	0.00	5.73	13.33	0.28	13.61	100	9.27	53.09	1	42	0	9.62	11.00	1006.0	0.28	5.52	5.52	0.47	0.47	1.00	0.00	0.00	0.00	0.00	0.26	528.77	529.03	529.03	529.03
199.43	199.43	0.00	CONNECTION FROM STM A-1, AREA M	0.54	6.90	0.90	1.00	0.90	0.48	6.21	13.61	0.00	13.61	100	9.22	57.30	1	42	0	9.62	11.00	1006.0	0.32	5.52	5.96	0.55	0.47	0.50	0.31	0.00	0.00	0.00	0.00	0.00	528.45	528.45	528.77	528.77
199.43	145.26	54.17	PIPE RUN	0.00	6.90	0.90	1.00	0.90	0.00	6.21	13.61	0.15	13.76	100	9.22	57.30	1	42	0	9.62	11.00	1006.0	0.32	5.96	5.96	0.55	0.55	1.00	0.00	0.00	0.00	0.00	0.18	528.27	528.45	528.45	528.45
145.26	145.26	0.00	CONNECTION FROM STM A D-3, AREAS N1 AND N2	0.40	7.30	0.90	1.00	0.90	0.36	6.57	19.42	0.00	13.76	100	9.22	60.59	1	42	0	9.62	11.00	1006.0	0.36	5.96	6.30	0.62	0.55	0.35	0.42	0.00	0.00	0.00	0.00	0.00	527.85	527.85	528.27	528.27
145.26	128.82	16.44	PIPE RUN	0.00	7.30	0.90	1.00	0.90	0.00	6.57	19.42	0.04	13.81	100	9.22	60.59	1	42	0	9.62	11.00	1006.0	0.36	6.30	6.30	0.62	0.62	1.00	0.00	0.00	0.00	0.00	0.06	527.79	527.85	527.85	527.85
128.82	128.82	0.00	30 DEG BEND	0.00	7.30	0.90	1.00	0.90	0.00	6.57	19.42	0.00	13.81	100	9.22	60.59	1	42	0	9.62	11.00	1006.0	0.36	6.30	6.30	0.62	0.62	1.00	0.00	0.00	0.25	0.15	0.00	527.64	527.64	527.79	527.79
128.82	110.00	18.82	PIPE RUN	0.00	7.30	0.90	1.00	0.90	0.00	6.57	19.42	0.05	13.81	100	9.22	60.59	1	42	0	9.62	11.00	1006.0	0.36	6.30	6.30	0.62	0.62	1.00	0.00	0.00	0.00	0.00	0.07	527.57	527.64	527.64	527.64
	Total	1085.50																																Assumed Starting Pipe HGL El.	=	527.57

STORM PIPE B

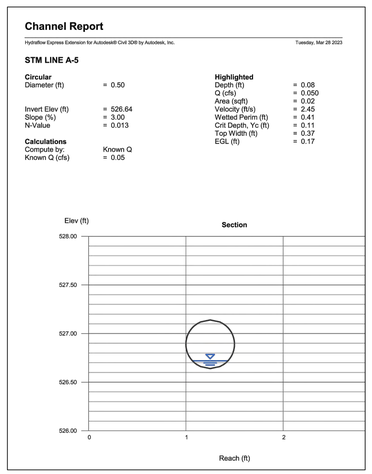
CHANNEL STATION FROM STA	CHANNEL STATION TO STA	DISTANCE ft	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	DES FREQ YRS	I IN/HR	CHANNEL TYPE	FLOW Q (cfs)[3]	ROUGHNESS COEFFICIENT n	SLOPE S	S^(1/2)	Qxn/(1.486 X S^1/2)	WIDTH b	DEPTH d, ft²	SIDE SLOPE	AREA A	PERIMETER WIDTH	HYDRAULIC RADIUS R	R^2/3	A x R^2/3	VELOCITY =Q/A	VELOCITY HEAD V^2/2g	HGL U/S (ft)	FRICTION LOSS (ft)[1]	Kb	MINOR LOSS (ft)	HGL D/S (ft)
484	484.29		END PIPE STM-B, SLOTTED DRAIN, AREAS F1 and G	1.14	1.140	0.90	1.00	0.90	1.03	1.03	100.00	9.80	CIRCULAR	10.18	0.013																			
484.29	227.63	256.66	PIPE RUN	0.00	1.140	0.90	1.00	0.90	0.00	1.03	100.00	9.80	CIRCULAR	10.18	0.013	0.005	0.07	0.0063003	1.75	1.31	N/A	SEE HYDRAFLOW EXPRESS PRINTOUTS						5.26	0.43	528.07	1.28			526.79
223.63	223.63	0.00	MANHOLE	0.00	1.140	0.90	1.00	0.90	0.00	1.03	100.00	9.80	CIRCULAR	10.18	0.013		0.00				N/A							6.37	0.63	520.92	0.00	0.05	0.03	520.89
223.63	132.95	90.68	PIPE RUN	0	1.140	0.90	1.00	0.90	0.00	1.03	100.00	9.80	CIRCULAR	10.18	0.013	0.0080	0.09	0.0079693	1.75	1.1	N/A	SEE HYDRAFLOW EXPRESS PRINTOUTS						6.37	0.63	520.89	0.73			520.16
132.95	132.95	0.00	HEADWALL	0.00	1.140	0.90	1.00	0.90	0.00	1.03	100.00	9.80	CIRCULAR	10.18	0.013		0.00		1.75	1.1								6.37	0.63	520.16	0.00	1.00	0.63	519.53
																														FL AT BEGIN OF PIPE			518.43

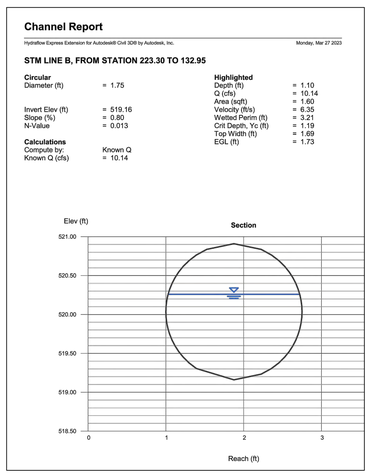
NOTES:
1) FRICTION LOSS SLOPE ASSUMED TO BE EQUAL TO SLOPE OF PIPE
2) NORMAL DEPTH FROM OPEN CHANNEL USING AUTODESK EXPRESS (SEE PRINTOUT)
3) INCLUDES 0.13 CFS BYPASS FROM AREA H

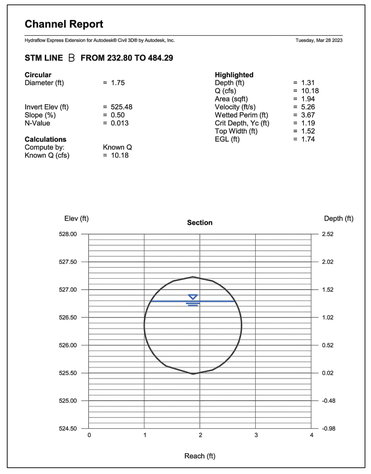
STORM PIPE B-1

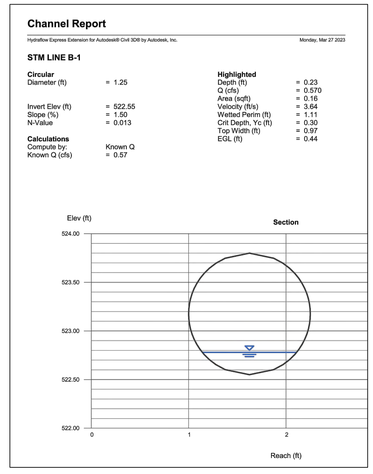
CHANNEL STATION FROM STA	CHANNEL STATION TO STA	DISTANCE ft	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA Cf	CUMUL. CA Cf	DES FREQ YRS	I IN/HR	CHANNEL TYPE	FLOW Q (cfs)	ROUGHNESS COEFFICIENT n	SLOPE	S^(1/2)	Qxn/(1.486 X S^1/2)	WIDTH b	DEPTH d, ft²	SIDE SLOPE	AREA A	PERIMETER WIDTH	HYDRAULIC RADIUS R	R^2/3	A x R^2/3	VELOCITY =Q/A	VELOCITY HEAD V^2/2g	HGL U/S (ft)	FRICTION LOSS (ft)[1]	Inlet Head Required[3]	Kb	MINOR LOSS (ft)	HGL D/S (ft)
128.57	128.57	0.00	CONNECTION TO STM LINE B-1, AREA F2	0.06	0.06	0.90	1.00	0.90	0.06	0.06	100.00	9.80	CIRCULAR	0.57	0.013														523.36		523.36			522.77
128.57	108.48	20.09	PIPE RUN	0.00	0.06	0.90	1.00	0.90	0.00	0.06	100.00	9.80	CIRCULAR	0.57	0.013	0.015	0.12	0.04	24	0.23	N/A	SEE HYDRAFLOW EXPRESS PRINTOUTS						3.64	0.21	522.77	0.301		0.00	0.00	522.47
	Total	20.09	END AT MANHOLE																											FL AT BEGIN OF PIPE			522.24

NOTES:
1) FRICTION LOSS SLOPE ASSUMED TO BE EQUAL TO SLOPE OF PIPE
2) NORMAL DEPTH FROM OPEN CHANNEL USING AUTODESK EXPRESS (SEE PRINTOUT)
3 HIGHER VALUE FROM Hw/D TO ACCOMMODATE FOR HEAD IS THE HGL AT THE U/S END OF THE PIPE
4) PIPE FL PLUS NORMAL DEPTH OF FLOW ASSUMED AS HGL AT D/S END









RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT. INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM SEWER HYDRAULIC CALCULATIONS

SHEET NO.
C10.4

STORM PIPE C

STORM PIPE C

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	639.69		END PIPE STM-C, CONNECTION TO CURB INLET, AREA D	1.37	1.37	0.90	1.00	0.90	1.23	1.23	10.00	0.00	10.00	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39		1.25	0.49						524.90	524.90	525.39	525.39
639.69	631.73	7.96	PIPE RUN	0.00	1.37	0.90	1.00	0.90	0.00	1.23	10.00	0.03	10.03	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39	0.39	1.00	0.00	0.00	0.00	0.00	0.05	524.86	524.90	524.90	524.90
631.73	631.73	0.00	60 DEG BEND	0.00	1.37	0.90	1.00	0.90	0.00	1.23	10.00	0.00	10.03	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39	0.39	1.00	0.00	0.00	0.43	0.17	0.00	524.69	524.69	524.86	524.86
631.73	419.79	211.94	PIPE RUN	0.00	1.37	0.90	1.00	0.90	0.00	1.23	10.00	0.71	10.73	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39	0.39	1.00	0.00	0.00	0.00	0.00	1.23	523.46	524.69	524.69	524.69
419.79	419.79	0.00	30 DEG BEND	0.00	1.37	0.90	1.00	0.90	0.00	1.23	10.00	0.00	10.73	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39	0.39	1.00	0.00	0.00	0.37	0.14	0.00	523.32	523.32	523.46	523.46
419.79	406.87	12.92	PIPE RUN	0.00	1.37	0.90	1.00	0.90	0.00	1.23	10.00	0.04	10.77	100	9.80	12.05	1	21	0	2.41	5.50	158.4	0.58	5.01	5.01	0.39	0.39	1.00	0.00	0.00	0.00	0.00	0.07	523.24	523.32	523.32	523.32
402.83	402.83	0.00	MANHOLE, CONNECTION TO STM LINE C-1, AREA C	0.42	1.79	0.90	1.00	0.90	0.38	1.61	10.77	0.00	10.77	100	9.68	15.55	1	24	0	3.14	6.28	226.2	0.47	5.01	4.95	0.38	0.39	0.35	0.24	0.00	0.05	0.02	0.00	522.98	522.98	523.24	523.24
402.83	222.30	180.53	PIPE RUN	0.00	1.79	0.90	1.00	0.90	0.00	1.61	10.77	0.61	11.38	100	9.68	15.55	1	24	0	3.14	6.28	226.2	0.47	4.95	4.95	0.38	0.38	1.00	0.00	0.00	0.00	0.00	0.85	522.13	522.98	522.98	522.98
218.21	218.21	0.00	MANHOLE, CONNECTION TO STM LINE C-2, AREA B	0.98	2.77	0.90	1.00	0.90	0.88	2.49	11.38	0.00	11.38	100	9.58	23.84	1	27	0	3.98	7.07	309.7	0.59	4.95	6.00	0.56	0.38	0.50	0.37	0.00	0.05	0.03	0.00	521.73	521.73	522.13	522.13
218.21	138.79	79.42	PIPE RUN	0.00	2.77	0.90	1.00	0.90	0.00	2.49	11.38	0.22	11.60	100	9.58	23.84	1	27	0	3.98	7.07	309.7	0.59	6.00	6.00	0.56	0.56	1.00	0.00	0.00	0.00	0.00	0.47	521.26	521.73	521.73	521.73
138.79	138.79	0.00	HEADWALL[1]	0.00	2.77	0.90	1.00	0.90	0.00	2.49	11.38	0.00	11.60	100	9.58	23.84	1	27	0	3.98	7.07	309.7	0.59	6.00	6.00	0.56	0.56	1.00	0.00	0.00	1.00	0.56	0.00	520.70	520.70	521.26	521.26
	Total	492.77	END AT ENDWALL																															Starting HGL El.			520.70

Notes:

1) BECAUSE THE SECTION OF PIPE FLOWS FULL AND IS PRESSURIZED, HGL IS ASSUMED TO BE AT PIPE SOFFIT AT THE U/S END OF THE HEADWALL.

STORM PIPE C-1

STORM PIPE C-1

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	161.23		END PIPE STM C-1, CONNECTION TO CURB INLET, AREA C	0.42	0.42	0.90	1.00	0.90	0.38	0.38	10.00	0.00	10.00	100	9.80	3.73	1	15	0	1.23	3.93					3.04	0.14		1.25	0.18					523.44	523.44	523.61	523.61
161.23	110.00	51.23	PIPE RUN	0.00	0.42	0.90	1.00	0.90	0.00	0.38	10.00	0.28	10.28	100	9.80	3.73	1	15	0	1.23	3.93	64.6	0.33	3.04	3.04	0.14	0.14	1.00	0.00	0.00	0.15	0.02	0.17	523.24	523.41	523.44	523.44
	Total	51.23	CONNECTION TO STM C																															Pipe HGL El.			523.24

STORM PIPE C-2

STORM PIPE C-2

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	124.39		END PIPE STM C-2 CONNECTION TO CURB INLET, AREA B	0.98	0.98	0.90	1.00	0.90	0.88	0.88	10.00	0.00	10.00	100	9.80	8.67	1	24	0	3.14	6.28					2.78	0.12		1.25	0.15					522.17	522.17	522.31	522.31
124.39	110.00	14.39	PIPE RUN	0.00	0.98	0.90	1.00	0.90	0.00	0.88	10.00	0.09	10.09	100	9.80	8.67	1	24	0	3.14	6.28	226.2	0.15	2.76	2.76	0.12	0.12	1.00	0.00	0.00	0.15	0.02	0.02	522.13	522.15	522.17	522.17
	Total	14.39	CONNECTION TO STM C																															Pipe HGL El.			522.13

STORM PIPE E

STORM PIPE E

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
654.27	654.27	0.00	END PIPE STM-E, DRAIN INLET, AREAS U and V[1]	2.18	2.18	0.90	1.00	0.90	1.96	1.96	10.00	0.00	10.00	100	9.80	19.19	1	21	0	2.41	5.50	158.4	1.47	0.00	7.98	0.99		1.25	1.23		0.00	0.00	0.00	537.45	537.45	538.69	538.69
654.27	623.27	31.00	PIPE RUN	0.00	2.18	0.90	1.00	0.90	0.00	1.96	10.00	0.06	10.06	100	9.80	19.19	1	21	0	2.41	5.50	158.4	1.47	7.98	7.98	0.99	0.99	1.00	0.00	0.00	0.00	0.00	0.00	537.00	537.45	537.45	537.45
620.27	620.27	0.00	DRAIN INLET, AREA W[2]	0.28	2.46	0.90	1.00	0.90	0.26	2.21	10.06	0.00	10.06	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	7.98	9.01	1.26	0.99	1.25	0.03	0.00	0.00	0.00	0.00	536.97	536.97	537.00	537.00
620.27	459.33	160.94	PIPE RUN	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.30	10.36	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.00	0.00	0.00	536.97	536.97	536.97	536.97
455.33	455.33	0.00	MANHOLE	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.00	10.36	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.00	0.00	0.00	533.43	533.43	533.96	533.96
455.33	325.61	129.72	PIPE RUN	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.24	10.60	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.00	0.00	0.00	531.00	533.43	533.43	533.43
321.61	321.61	0.00	MANHOLE	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.00	10.60	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.05	0.06	0.00	530.94	530.94	531.00	531.00
321.61	159.90	161.71	PIPE RUN	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.30	10.90	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.00	0.00	0.03	525.94	528.96	528.96	528.96
159.90	159.90	0.00	22.5 DEG BEND	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.00	10.90	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.25	0.32	0.00	525.62	525.62	525.94	525.94
159.90	118.09	41.81	PIPE RUN	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.05	10.68	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	0.00	0.00	0.78	524.84	525.62	525.62	525.62
118.09	118.09	0.00	HEADWALL	0.00	2.46	0.90	1.00	0.90	0.00	2.21	10.06	0.00	10.68	100	9.79	21.67	1	21	0	2.41	5.50	158.4	1.87	9.01	9.01	1.26	1.26	1.00	0.00	0.00	1.00	1.26	0.00	523.58	523.58	524.84	524.84
	Total	525.18	END AT SAFETY END TREATMENT																															Pipe HGL El.[3]			523.58

NOTES:

1) TO ACCOMMODATE FOR CHANGE IN SOFFIT ELEVATION OF PIPE AT MANHOLE, HGL AT MANHOLE TAKEN AS CROWN OF PIPE AT MANHOLE ON UPSTREAM END
2) 100 YR FLOOD PLAIN ELEVATION USED FOR TAILWATER HGL
3) AREA ADJUSTED TO REFLECT CAPACITY OF CURB INLET. REFER TO SHEET C10.1 FOR FLOW RATE CAPACITY OF INLET. TOTAL FLOW RATE FROM AREA K3 LESS CAPACITY OF INLET ADDED TO THE D/S INLET ON LINE.
4) AREA ADJUSTED TO INCLUDE EXCESS FLOWRATE (TOTAL FLOW RATE FROM AREA K3 LESS CAPACITY OF U/S INLET)

AREA DRAIN LINES

STORM PIPE AD-1

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
			END PIPE, CONNECT TO AREA INLET, AREA J2	0.32	0.32	0.90	1.00	0.90	0.29	0.29	10	0	10	100	9.8	2.81	1	15	0	1.23	3.93								1.25	0.10					530.38	530.36	530.46	530.46
106.31	103	3.31	PIPE RUN	0.03	0.32	0.90	1.00	0.90	0.00	0.29	10	0.02	10.02	100	9.8	2.81	1	15	0	1.23	3.93	64.593	0.19	2.29	2.29	0.081	0.081	1.00	0.00	0.000	0.150	0.012	0.006	530.36	530.37	530.38	530.38
	Total	3.31	CONNECTION TO STM A																															Pipe HGL El.			530.36

STORM PIPE AD-2

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
			END PIPE, CONNECT TO AREA INLET, AREA J2	0.35	0.35	0.90	1.00	0.90	0.31	0.31	10	0	10	100	9.8	3.07	1	15	0	1.23	3.93								1.25	0.12					529.76	529.76	529.88	529.88
125.21	100	25.21	PIPE RUN	0.03	0.35	0.90	1.00	0.90	0.00	0.31	10	0.17	10.17	100	9.8	3.07	1	15	0	1.23	3.93	64.593	0.23	2.50	2.50	0.097	0.097	1.00	0.00	0.000	0.150	0.015	0.057	529.69	529.75	529.76	529.76
	Total	25.21	CONNECTION TO STM A																															Pipe HGL El.			529.69

STORM PIPE AD-3

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	341.09		NEW AREA INLET, AREA N2	0.050	0.050	0.90	1.00	0.90	0.04	0.04	10.00	0.00	10.00	100	9.8	0.44	1	15	0	1.23	3.93								1.25	0.002					528.51	528.51	528.51	528.51
341.09	247.07	94.02	PIPE RUN	0.000	0.050	0.90	1.00	0.90	0.00	0.04	10.00	4.39	14.39	100	9.8	0.44	1	15	0	1.23	3.93	64.59	0.005	0.36	0.36	0.00	0.00	1.00	0.000	0.0	0.0	0.000	0.004	528.50	528.51	528.51	528.51
247.07	247.07	0	BEND	0.000	0.050	0.9	1	0.9	0.00	0.04	10.00	0.00	14.39	100	9.8	0.44	1	15	0	1.23	3.93	64.59	0.005	0.36	0.36	0.00	0.00	1.00	0.000	0	0.5	0.001	0.000	528.50	528.50	528.50	528.50
247.07	146.28	100.79	PIPE RUN	0.000	0.050	0.9	1	0.9	0.00	0.04	10.00	4.70	19.09	100	9.8	0.44	1	15	0	1.23	3.93	64.59	0.005	0.36	0.36	0.00	0.00	1.00	0.000	0	0	0.000	0.005	528.50	528.50	528.50	528.50
146.28	146.28	0	CONNECTION TO STM AD-4	0.347	0.396	0.9	1	0.9	0.31	0.36	19.09	0.00	19.09	100	8.15	2.91	1	15	0	1.23	3.93	64.59	0.20	0.36	2.37	0.09	0.00	1.00	0.085	0	0.5	0.044	0.000	528.37	528.37	528.50	528.50
146.28	100.00	46.28	PIPE RUN	0.000	0.396	0.9	1	0.9	0.00	0.36	19.09	0.33	19.42	100	8.15	2.91	1	15	0	1.23	3.93	64.59	0.20	2.37	2.37	0.09	0.09	1.00	0.000	0	0	0.000	0.094	526.27	526.37	526.37	526.37
	Total	241.09	CONNECTION TO STM -A																															Pipe HGL El.			526.27

STORM PIPE AD-4

FROM STA.	TO STA.	DIST. FT.	AREA DESIGNATION	AREA ENTERING SYSTEM AC.	TOTAL AREA AC	RUN-OFF C	FREQ FACT Cf	C x Cf	INC CA/Cf	CUMUL. CA/Cf	INLET TIME MIN	TIME IN SWR MIN	TOTAL TIME MIN	DES FREQ YRS	I IN/HR	Q CFS	NO. OF BARRELS IN SYSTEM	D" OR W'	H'	PIPE AREA FT^2	FULL FLOW WET PERIM FT	TOTAL CONVEY FACTOR	SLOPE OF FRICT GRAD (%)	V1 FPS	V2 FPS	V2^2 2g FT	V1^2 2g FT	Ki	LAT hi FT	PIPE CHNG HEAD LOSS FT	Kb	BEND KV2^2 2g FT	PIPE FRICT LOSS FT	HGL ELEV @ D/S POINT FT	HGL ELEV @ U/S DESIGN POINT FT	HGL ELEV U/S OF LAT, JNC, BND FT	HGL ELEV U/S OF PIPE CHNG FT
	115		END PIPE , CONNECTION TO AREA DRAIN, AREA N1	0.347	0.347	0.9	1	0.9	0.312	0.3119	10	0	10	100	9.8	3.06	1	15	0	1.227	3.928								1.250	0.120					528.53	528.53	528.65	528.65
115	100	15	PIPE RUN	0	0.347	0.9	1	0.9	0	0.3119	10	0.10	10.10	100	9.8	3.06	1	15	0	1.227	3.928	64.593	0.224	2.491	2.491	0.096	0.096	1.250	0.000	0.000	0.000	0.000	0.034	528.50	528.53	528.53	528.53
	Total	15	CONNECTION TO STM AD-3																															Pipe HGL El.			526.50

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
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DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM SEWER HYDRAULIC CALCULATIONS

SHEET NO.
C10.5

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC, STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

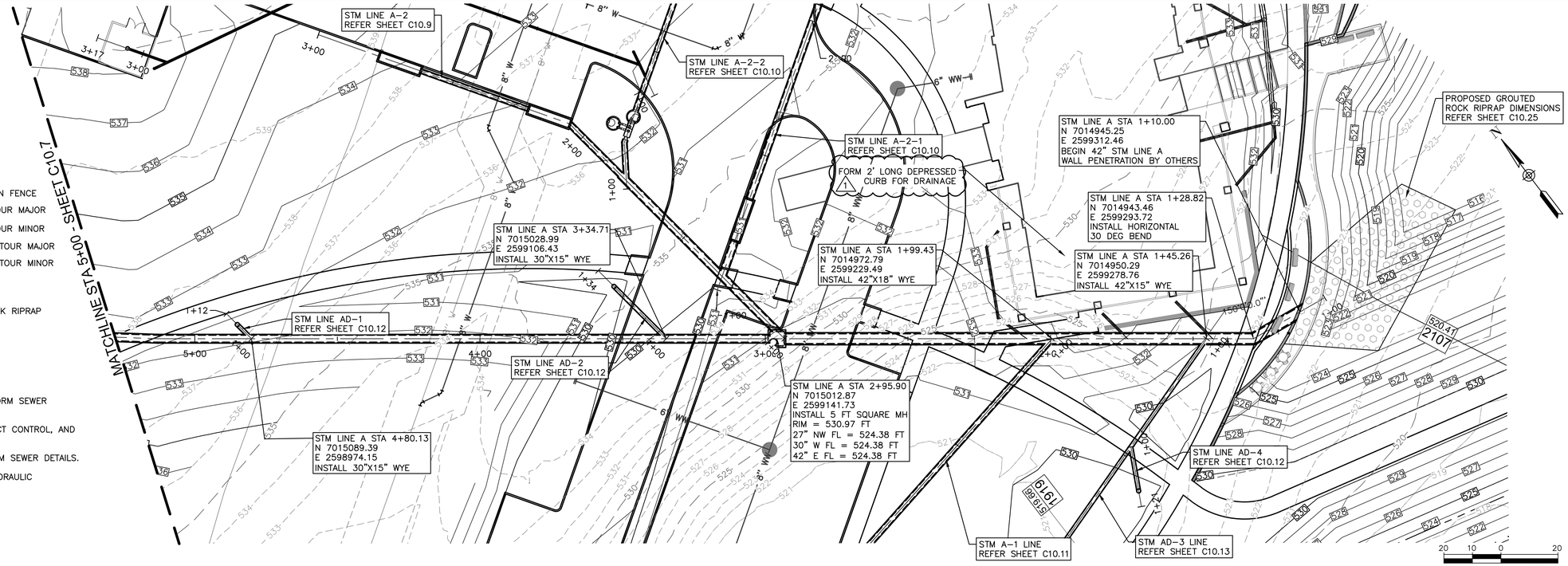
!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

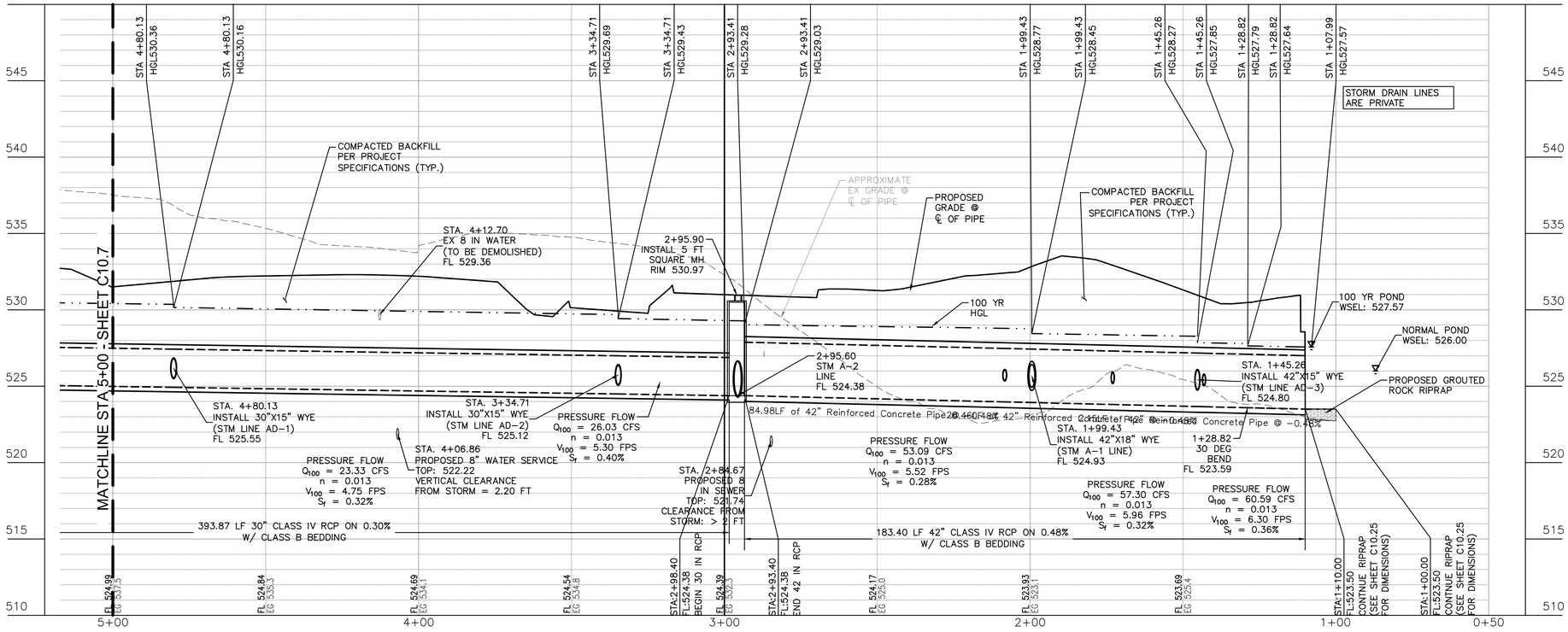
NOTES:

1. TRENCH SAFETY IS REQUIRED FOR STORM SEWER CONSTRUCTION.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
3. SEE SHEET C13.3 FOR GENERAL STORM SEWER DETAILS.
4. SEE SHEET C10.3 AND C10.4 FOR HYDRAULIC CALCULATIONS.



PLAN STM-A LINE

SCALE: 1"=20'



PROFILE STM-A LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E, TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

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R - DELTA ENGINEERS, INC.
618 MAIN STREET
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Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM LINE A PLAN & PROFILE SHT1 OF 3
CASE# E2023-007
SHEET NO.
C10.6

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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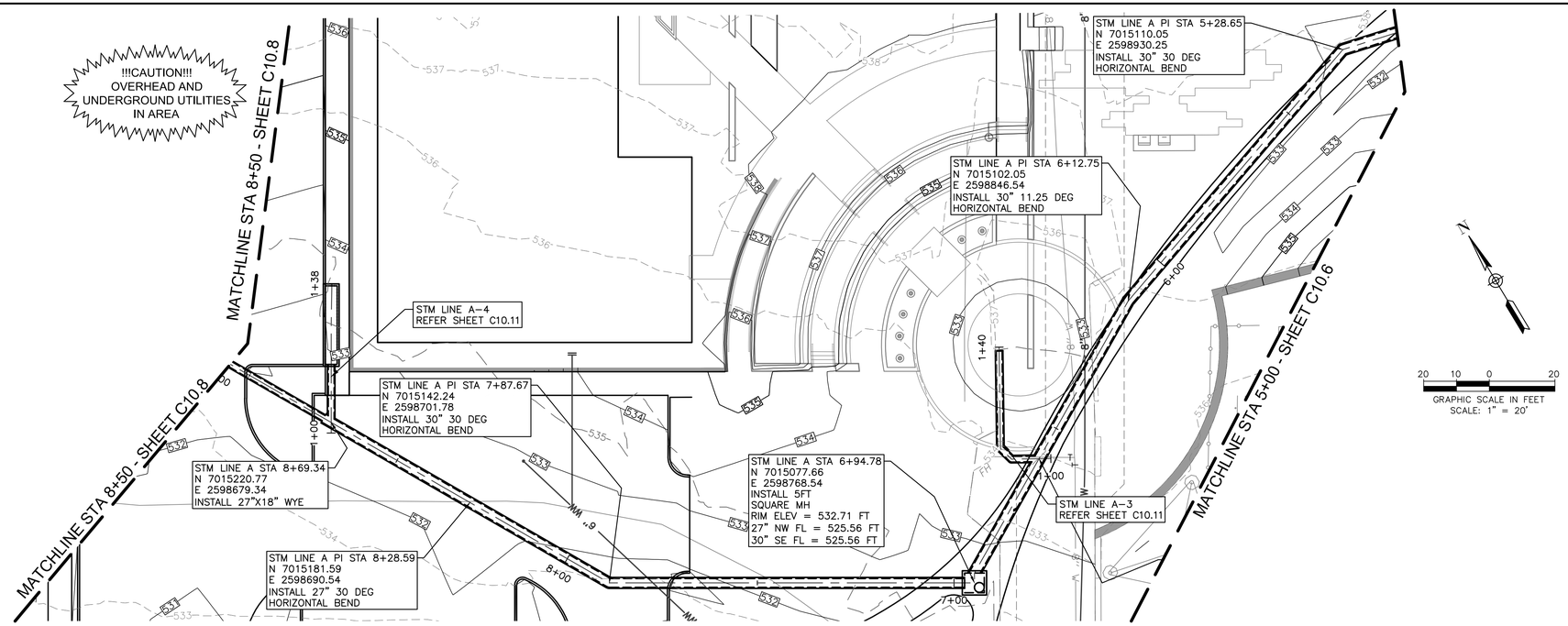
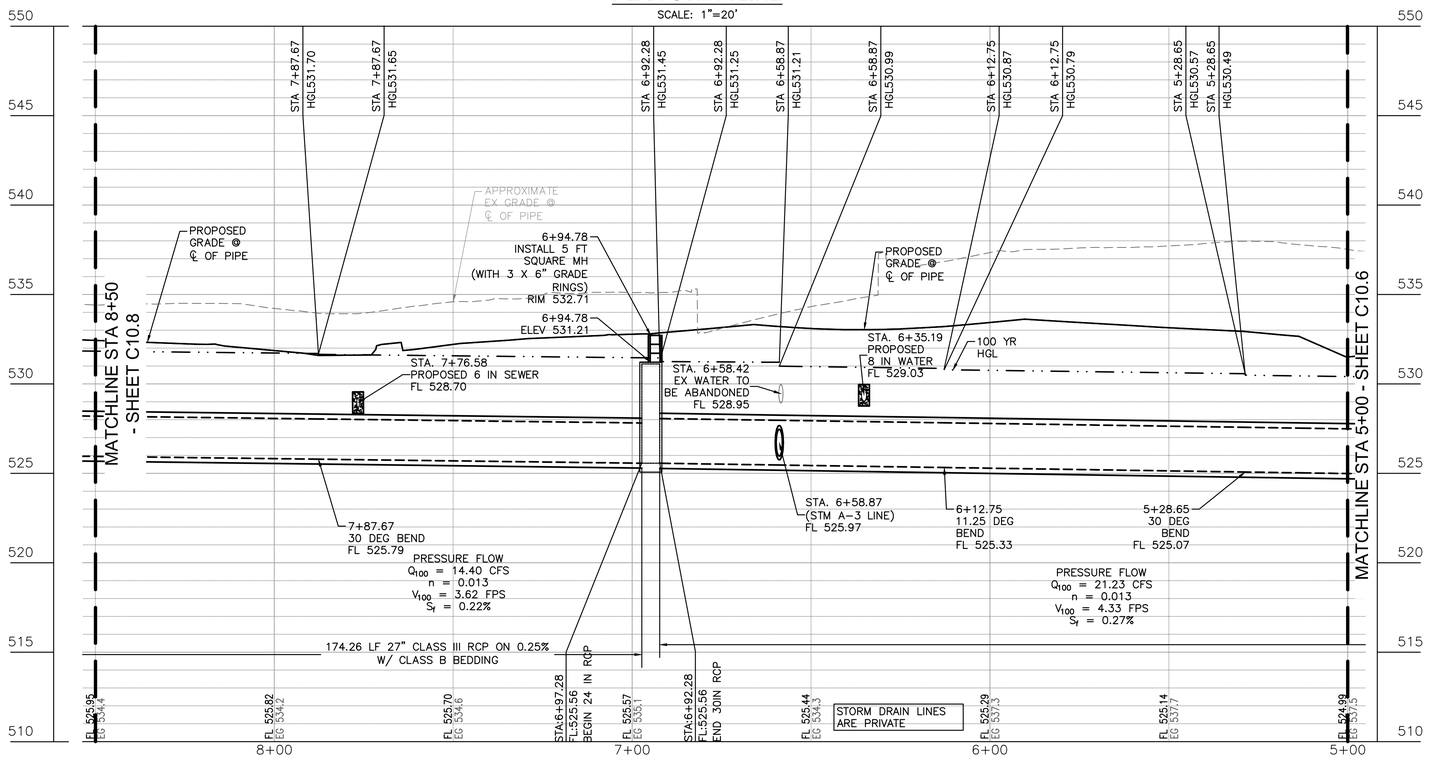


PLAN STM-A LINE

SCALE: 1"=20'



PROFILE STM-A LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE A PLAN & PROFILE, SHT 2 OF 3

CASE# E2023-007

SHEET NO.
C10.7

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

1. TRENCH SAFETY IS REQUIRED FOR STORM SEWER CONSTRUCTION.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
3. SEE SHEET C13.3 FOR GENERAL STORM SEWER DETAILS.
4. SEE SHEET C10.3 AND C10.4 FOR HYDRAULIC CALCULATIONS.

NOTE:
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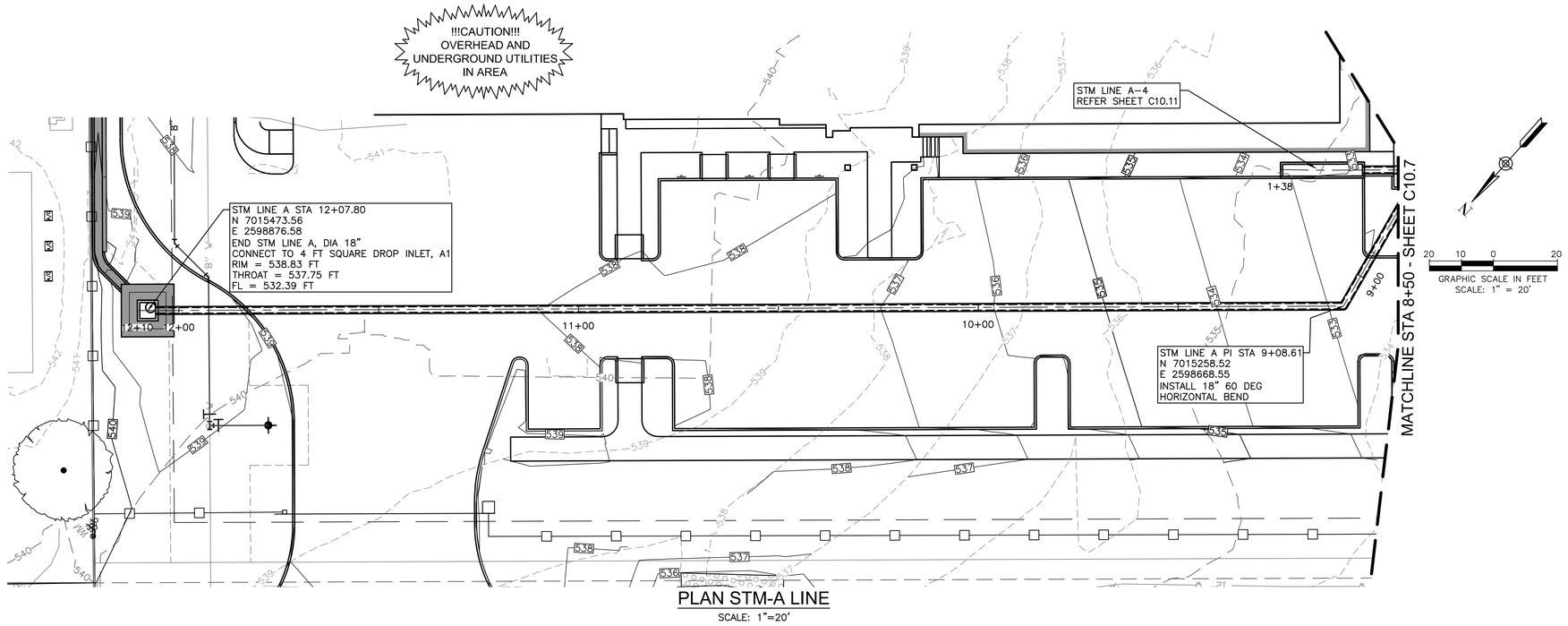
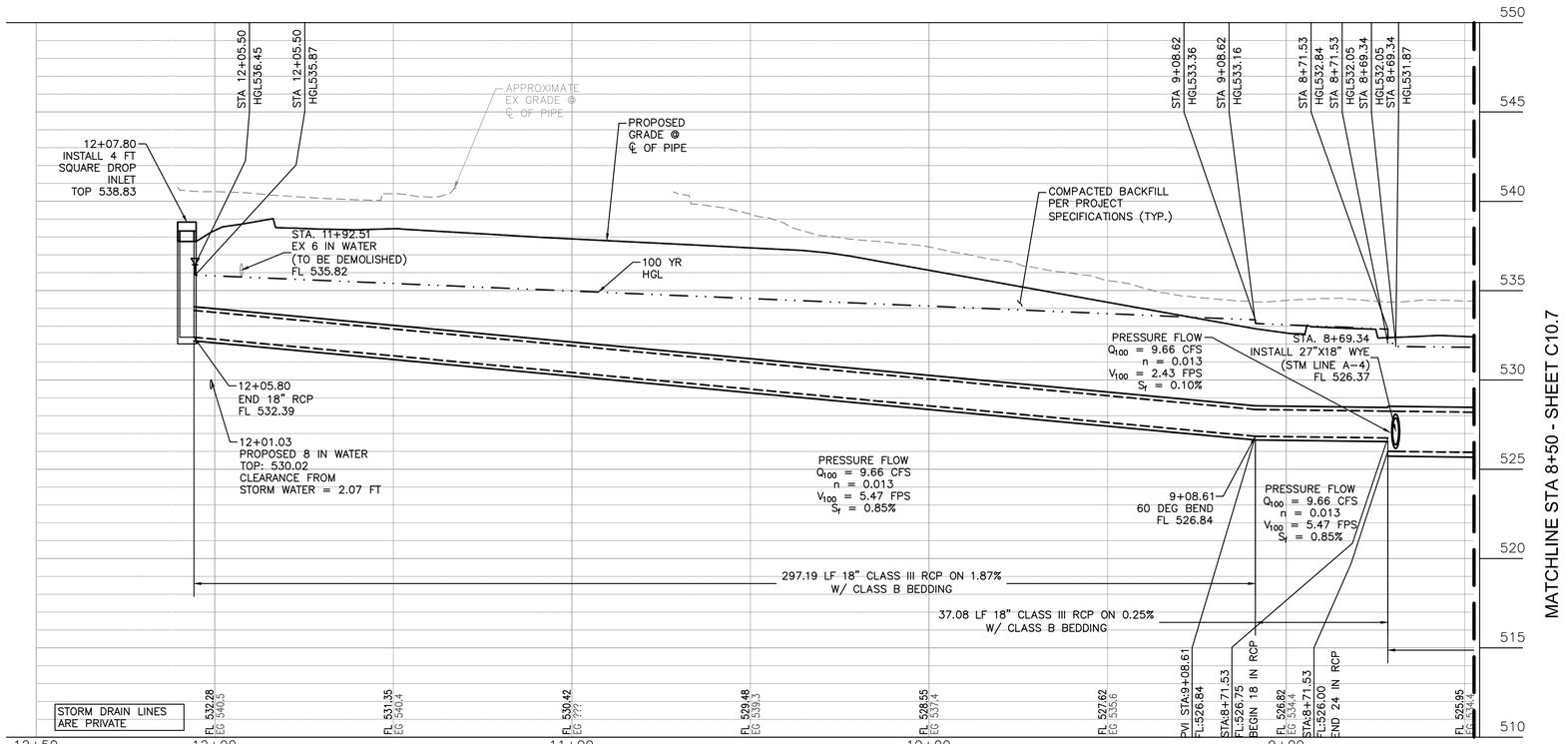


PLAN STM-A LINE
SCALE: 1"=20'



PROFILE STM-A LINE
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT. INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
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469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM LINE A PLAN & PROFILE, SHT 3 OF 3
CASE# E2023-007
SHEET NO.
C10.8

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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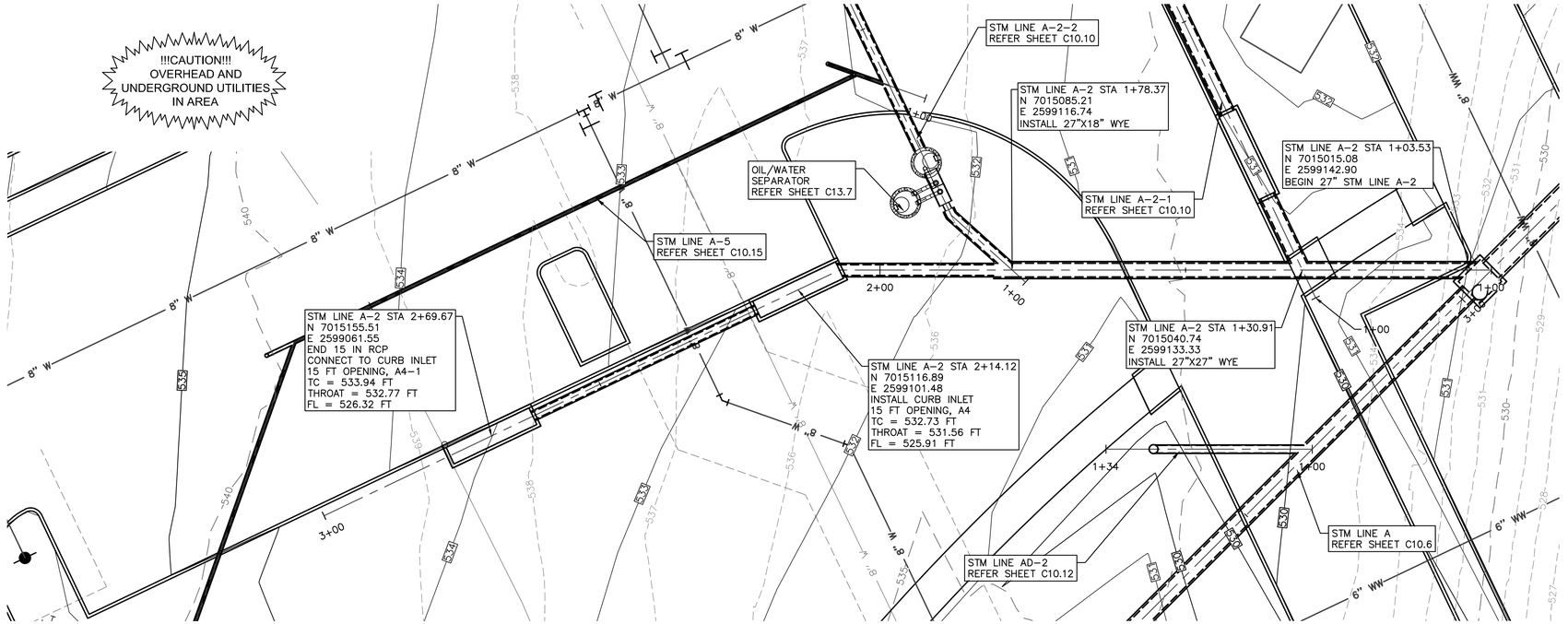
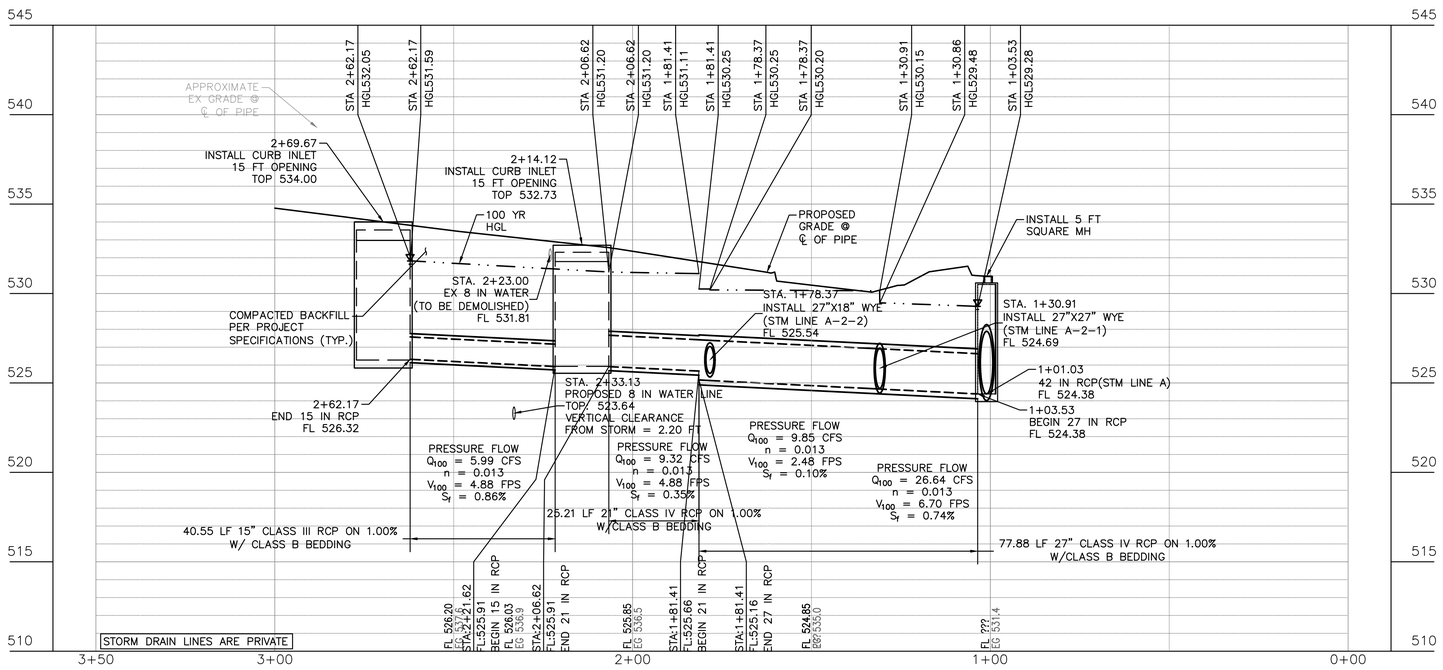


PLAN STM-A-2 LINE

SCALE: 1"=20'



PROFILE STM-A-2 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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OWNER/ APPLICANT
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469-402-2100

CIVIL ENGINEER
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GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
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ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE A-2 PLAN & PROFILE

CASE# E2023-007

SHEET NO.
C10.9

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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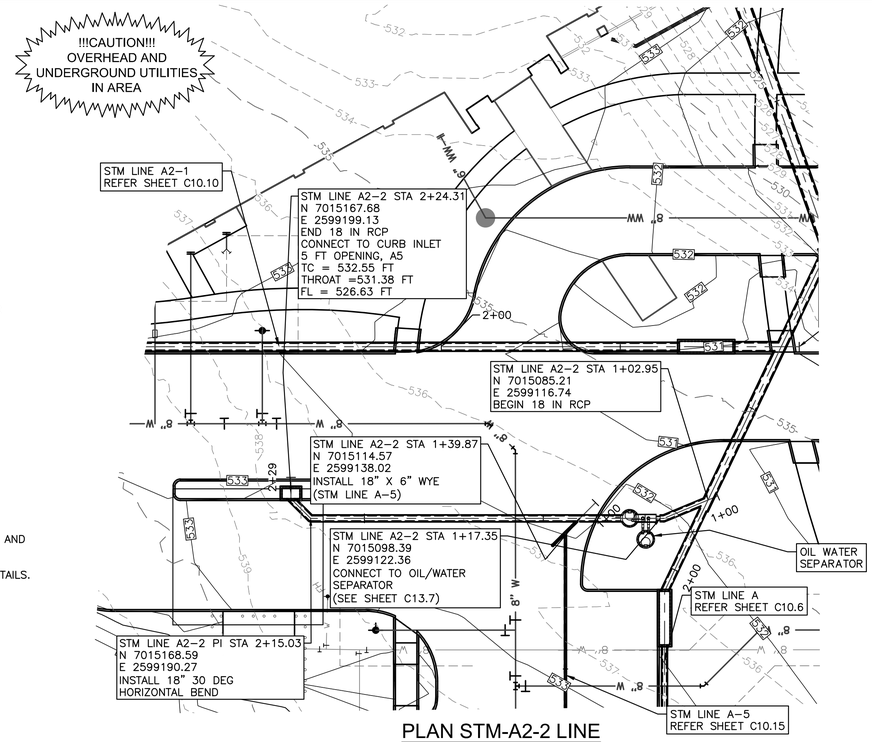
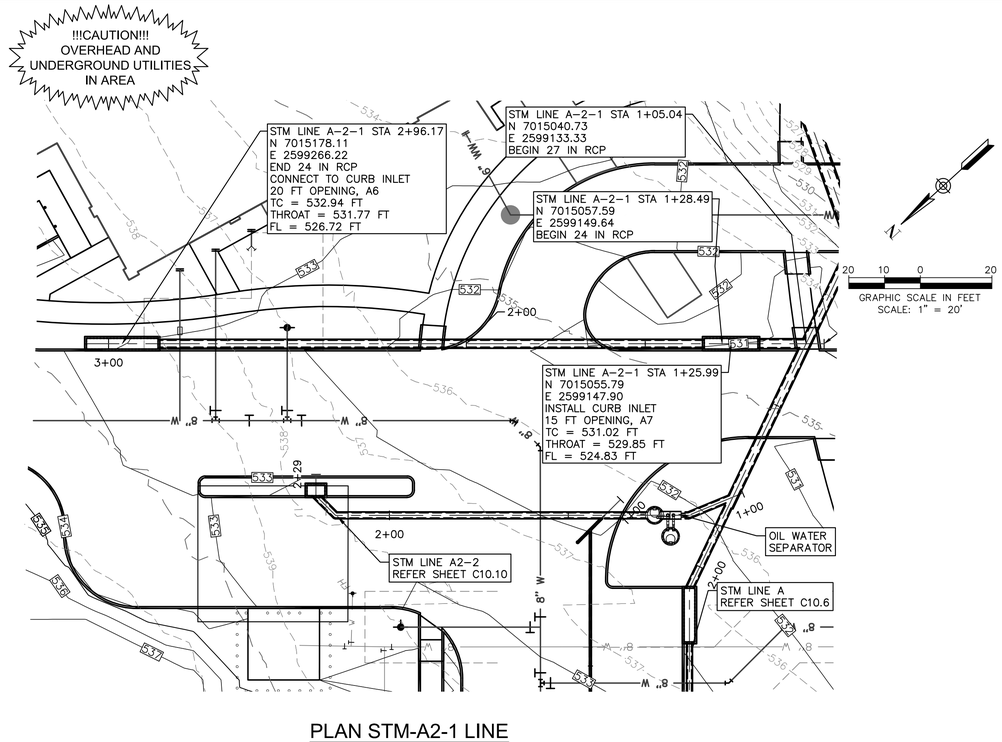


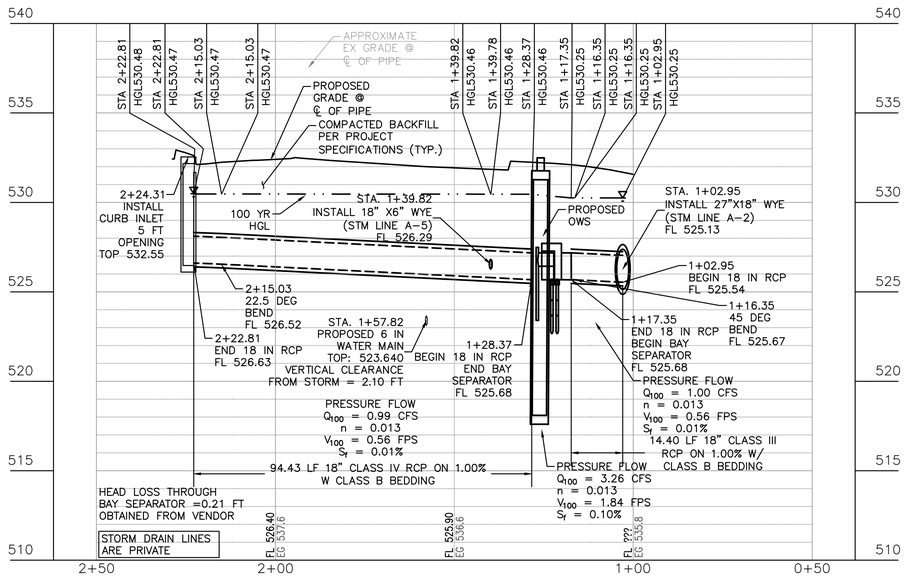
PLAN STM-A2-2 LINE

SCALE: 1"=20'



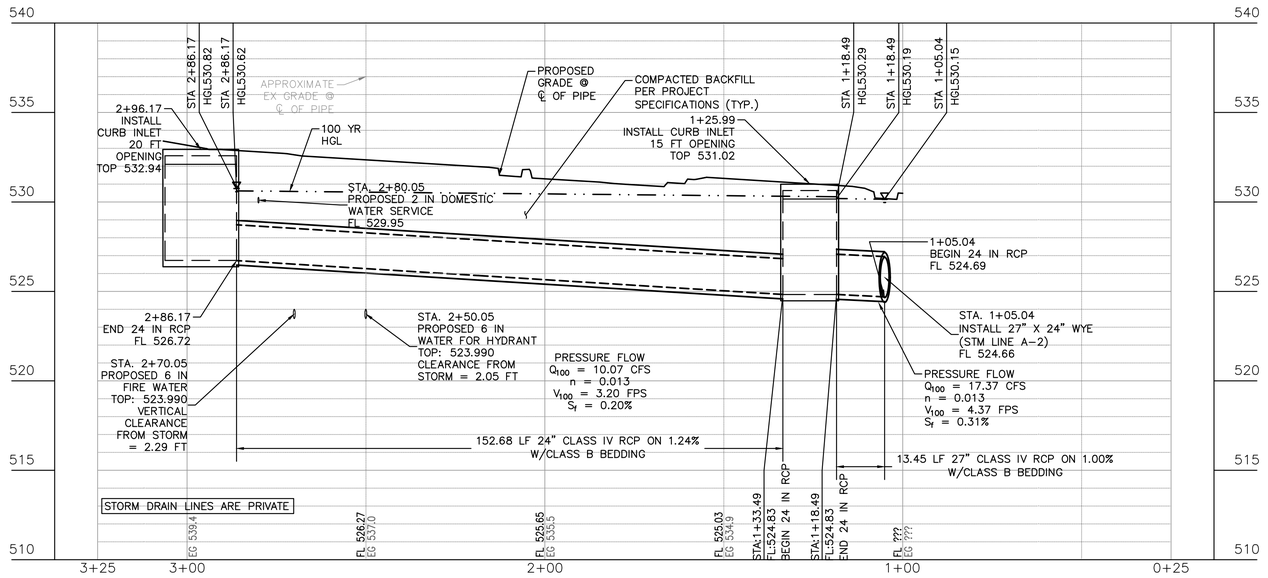
PLAN STM-A2-1 LINE

SCALE: 1"=20'



PROFILE STM-A2-2 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM-A2-1 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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RECORD DRAWING

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06/20/2025
FRANKLIN POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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MEP ENGINEERS
SYSKA HENNESSY GROUP
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OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE A-2 LATERALS PLAN & PROFILE

SHEET NO.
C10.10

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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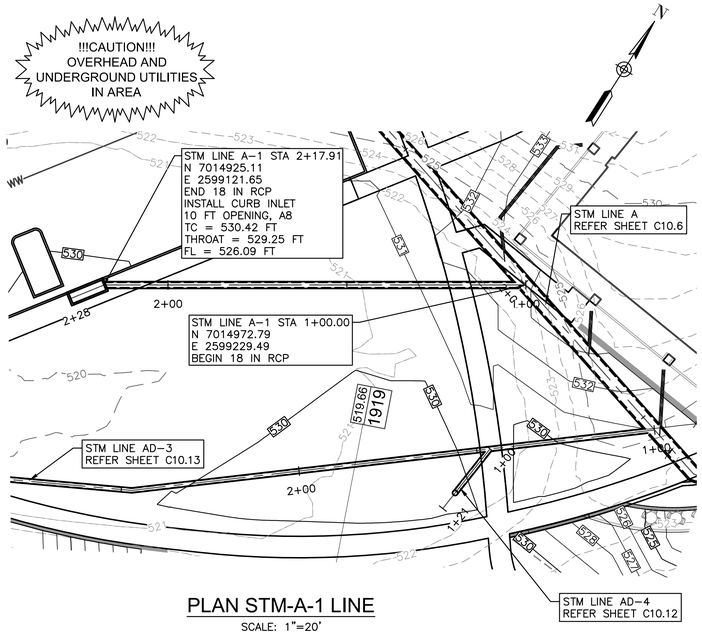
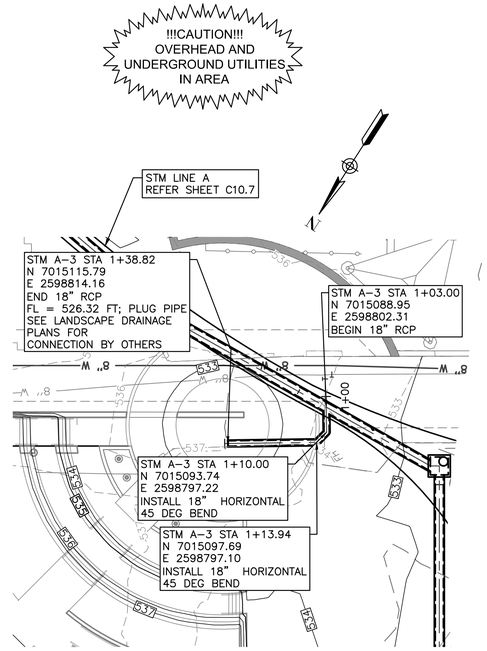


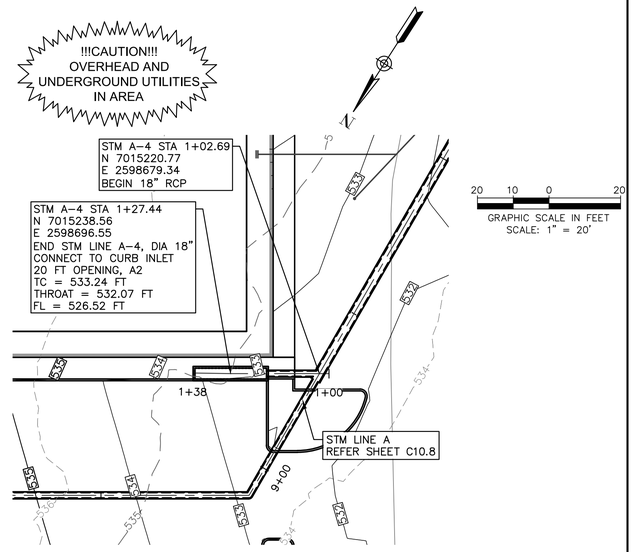
PLAN STM-A-1 LINE

SCALE: 1"=20'



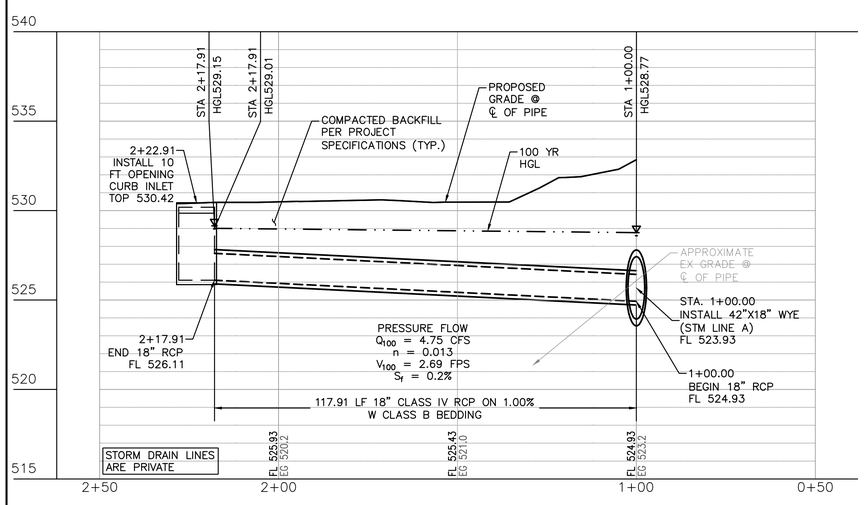
PLAN STM-A-3 LINE

SCALE: 1"=20'



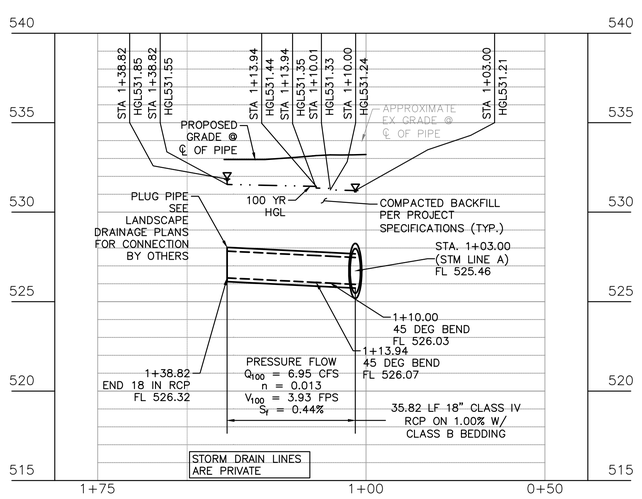
PLAN STM-A-4 LINE

SCALE: 1"=20'



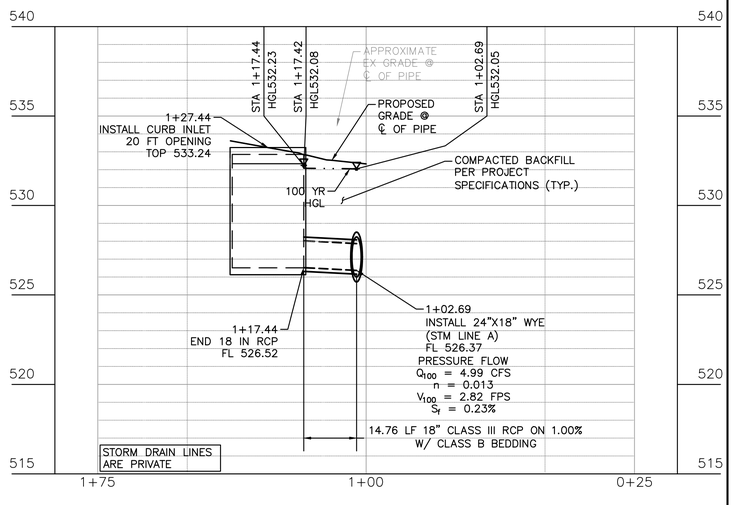
PROFILE STM-A-1 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM-A-3 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM-A-4 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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06/20/2025
FRANK A. POLMA, P.E, TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
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STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

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950 SIDS ROAD
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469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

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ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE A-1, A-3, A-4 PLAN & PROFILE

CASE# E2023-007

SHEET NO.
C10.11

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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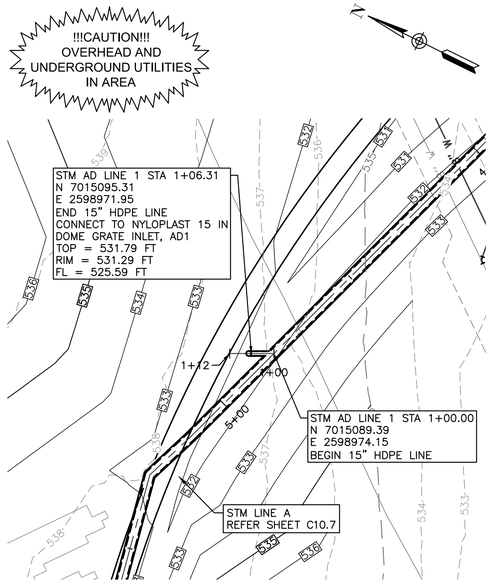
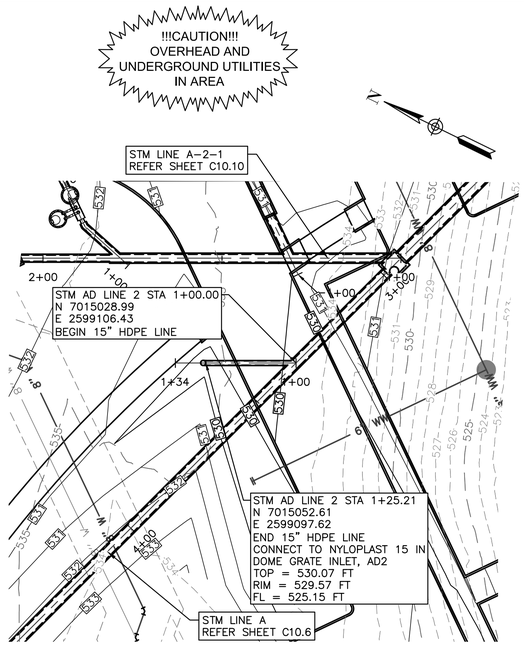


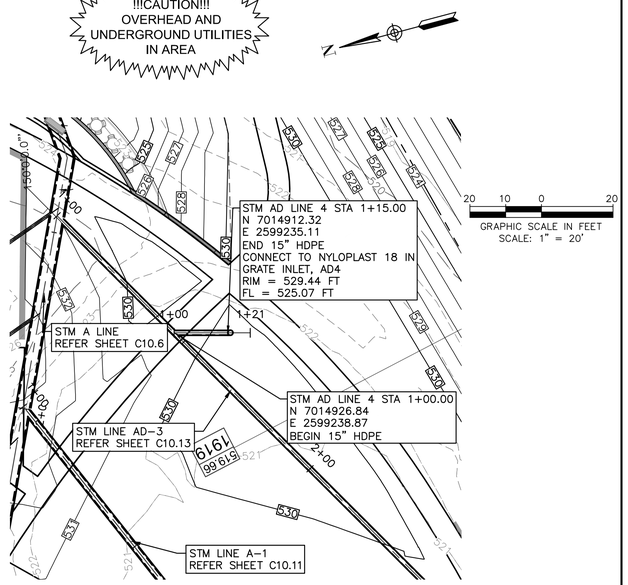
PLAN STM AD-1 LINE

SCALE: 1"=20'



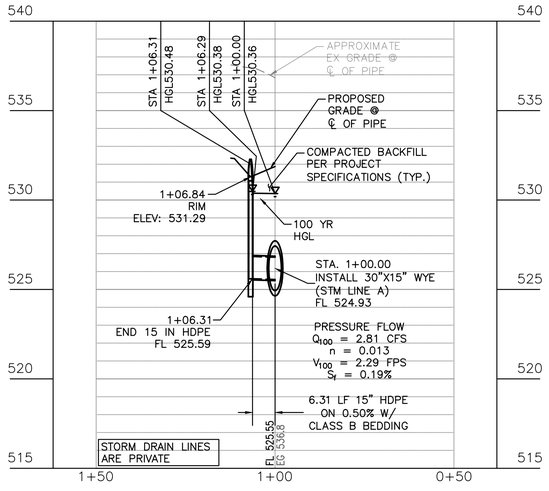
PLAN STM AD-2 LINE

SCALE: 1"=20'



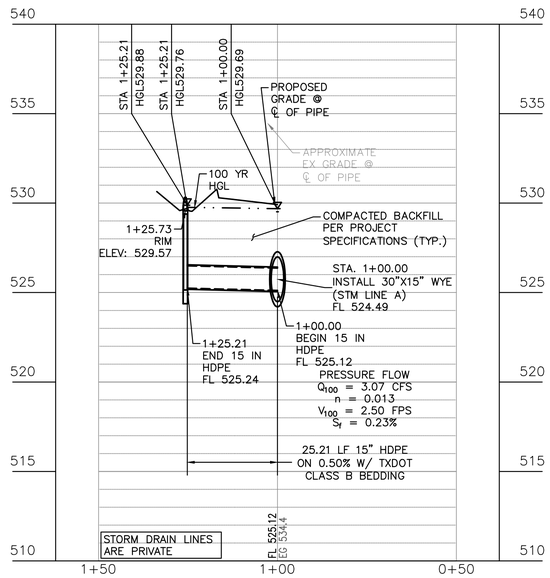
PLAN STM AD-4 LINE

SCALE: 1"=20'



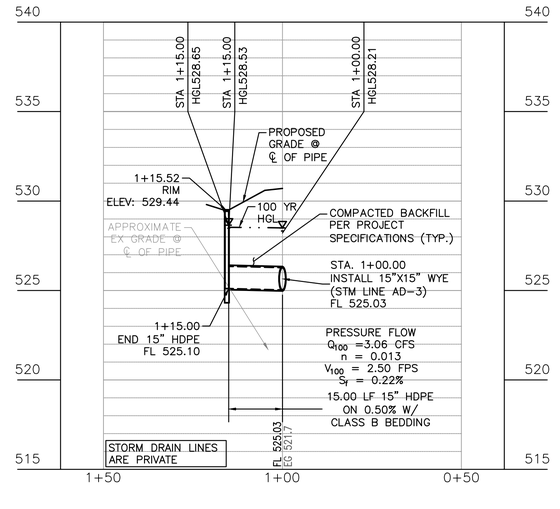
PROFILE STM AD-1 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM AD-2 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM AD-4 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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618 MAIN STREET
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TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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DATE
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ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE AD-1, AD-2, AD-4 PLAN & PROFILE

SHEET NO.
C10.12

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
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NOTES:

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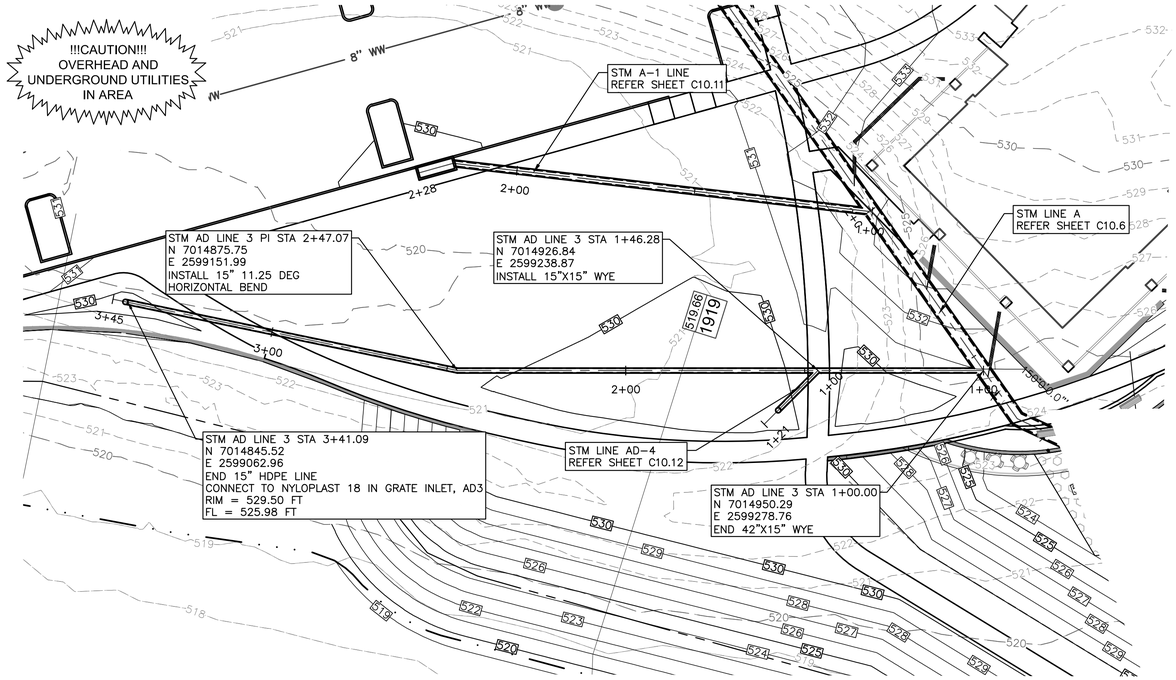
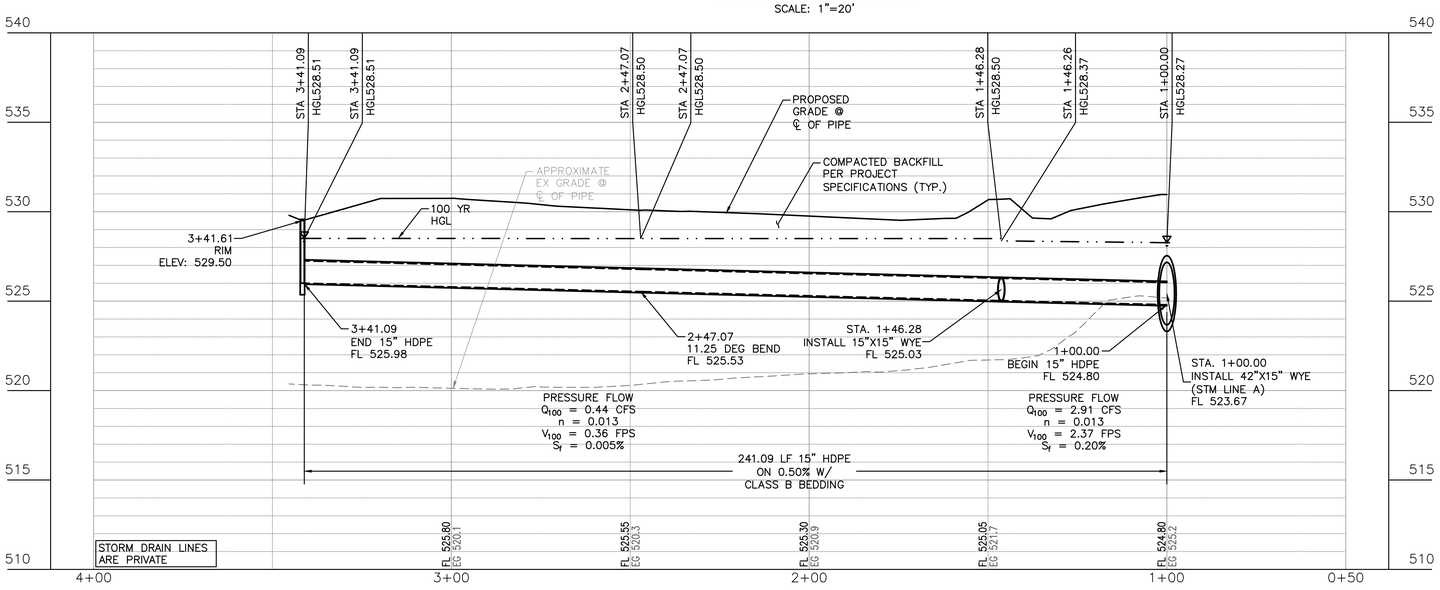


PLAN STM AD-3 LINE

SCALE: 1"=20'



PROFILE STM AD-3 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
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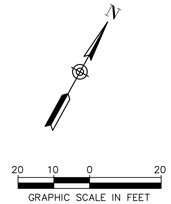

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM LINE AD-3 PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C10.13

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

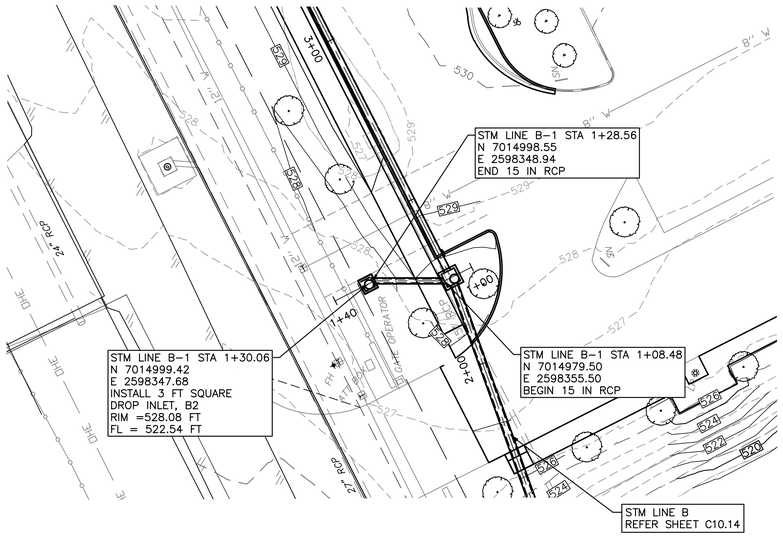
LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

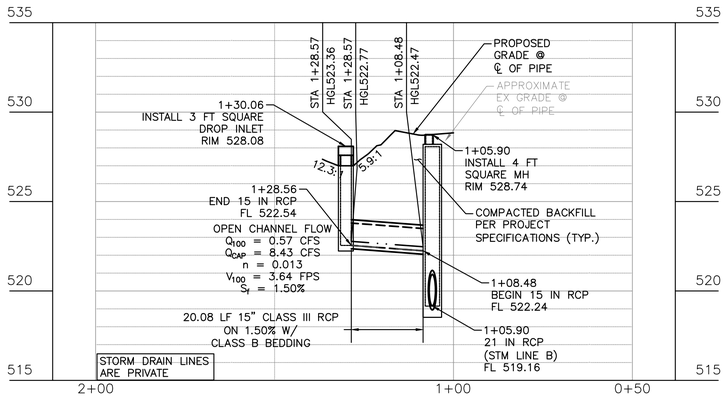
1. TRENCH SAFETY IS REQUIRED FOR STORM SEWER CONSTRUCTION.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
3. SEE SHEET C13.3 FOR GENERAL STORM SEWER DETAILS.
4. SEE SHEETS C10.3 AND C10.4 FOR HYDRAULIC CALCULATIONS.

!!!CAUTION!!!
OVERHEAD AND
UNDERGROUND UTILITIES
IN AREA



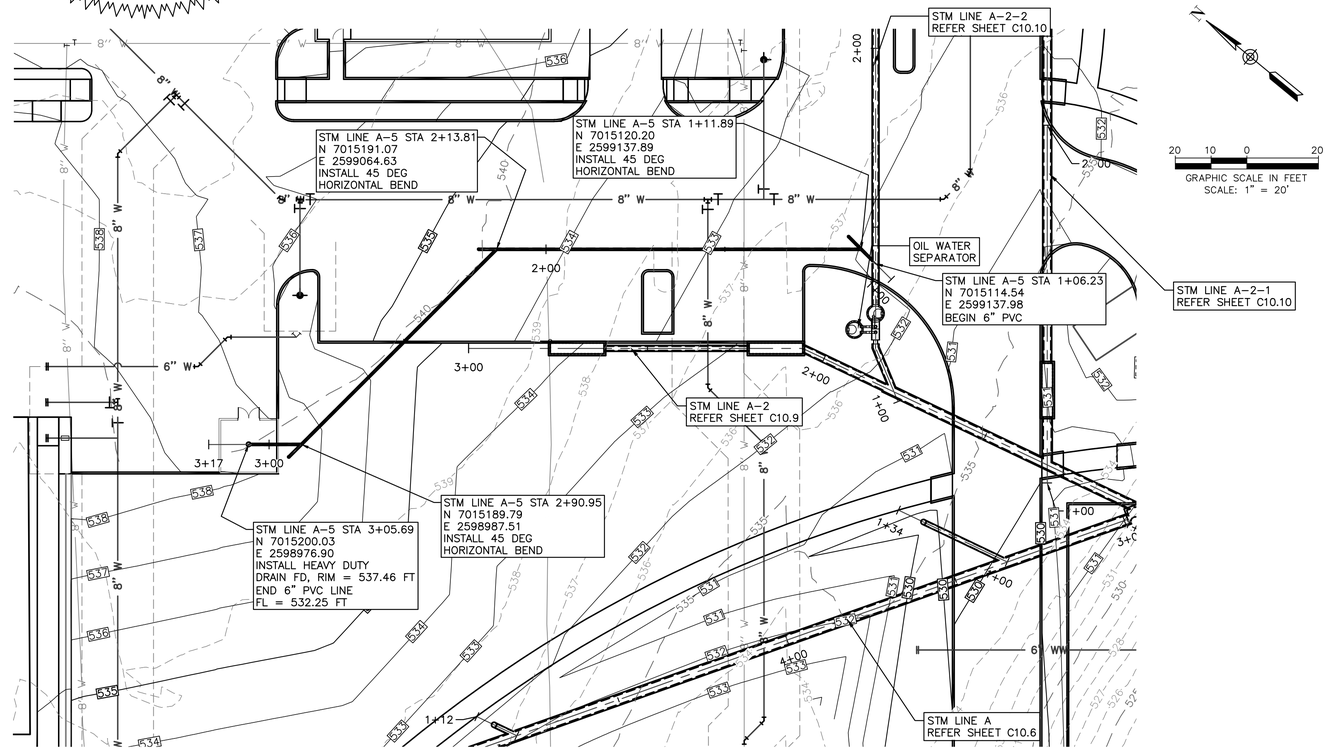
PLAN STM-B-1 LINE

SCALE: 1"=20'



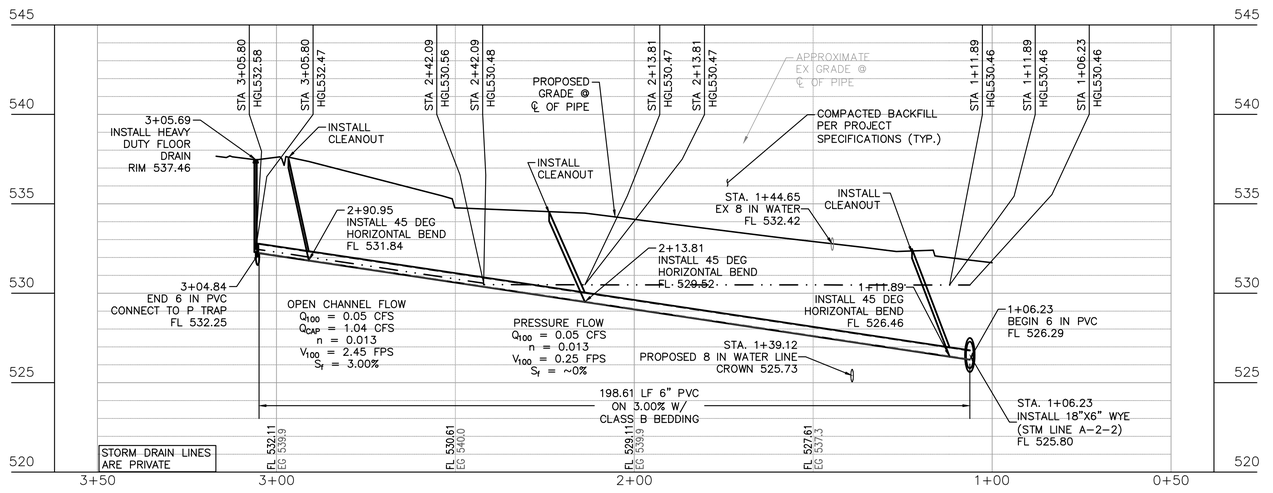
PROFILE STM-B-1 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PLAN STM-A-5 LINE

SCALE: 1"=20'



PLAN STM-A-5 LINE

SCALE: 1"=20'

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TBPE FIRM NO F-001515

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469-402-2100

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE A-5 & B-1 PLAN & PROFILE

CASE# E2023-007

SHEET NO.
C10.14

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
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- 551 PROPOSED SURFACE CONTOUR MINOR
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- PROPOSED GROUTED ROCK RIPRAP

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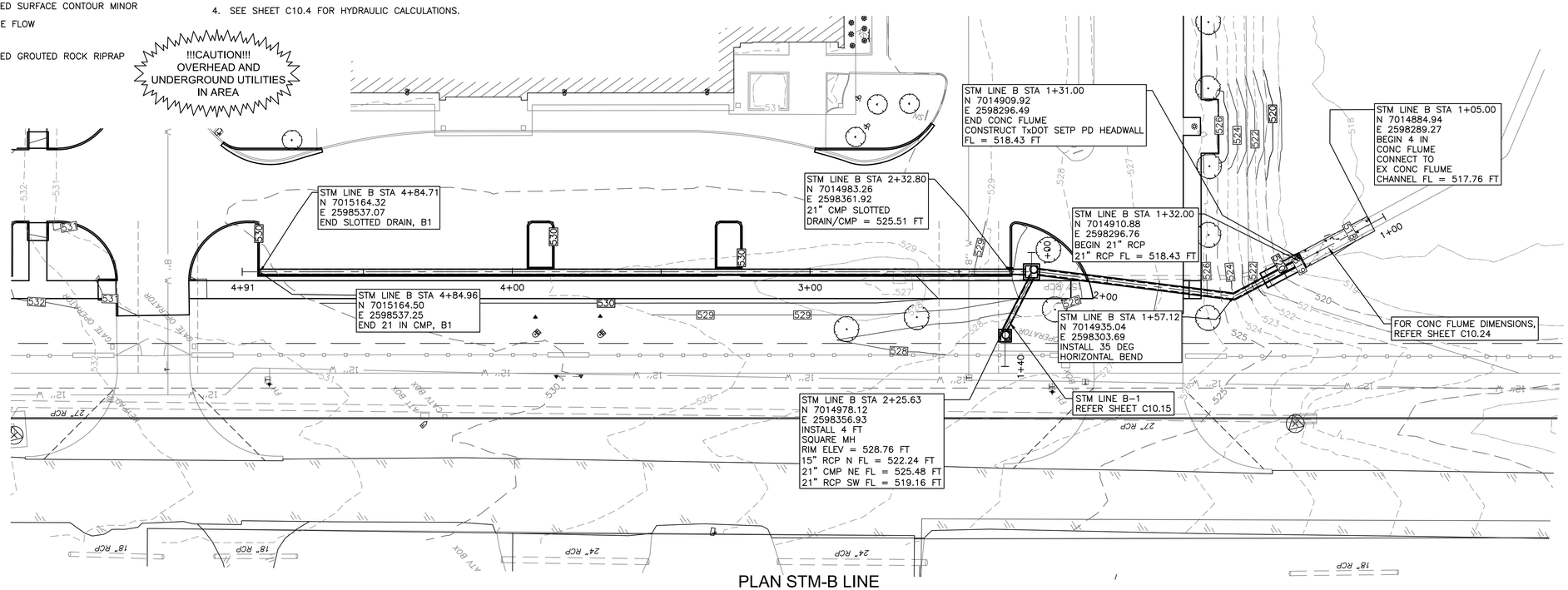
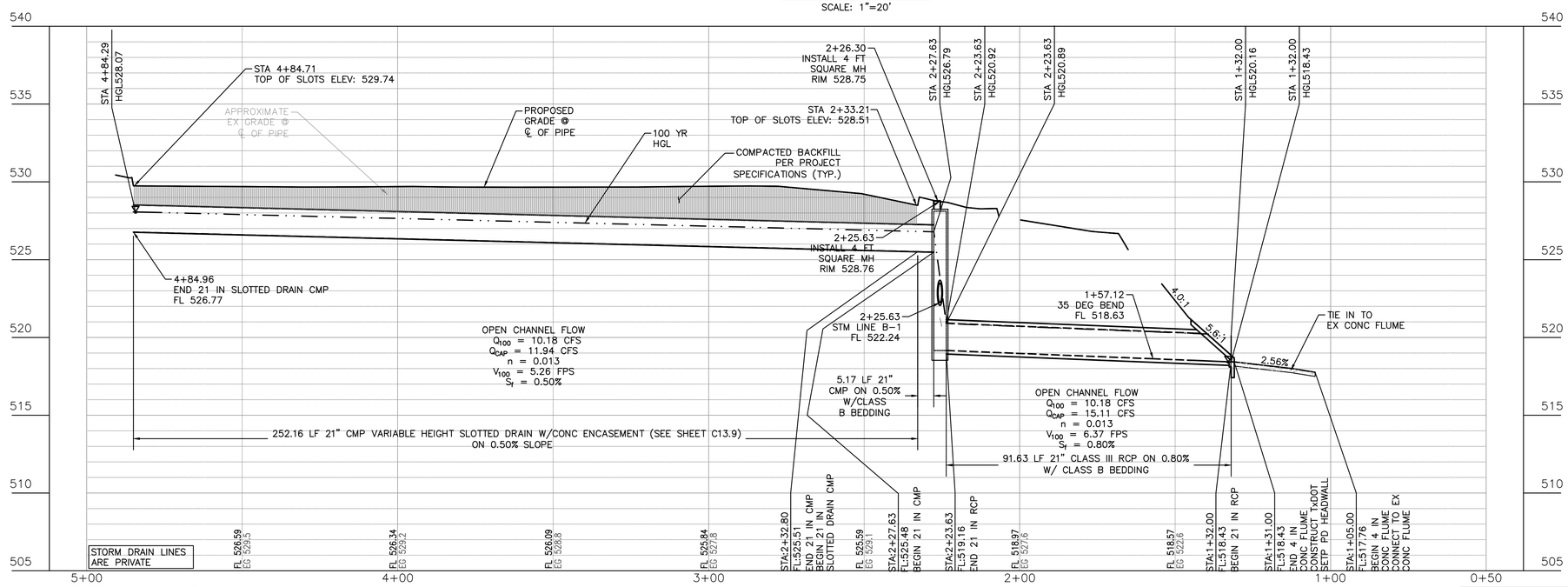


PLAN STM-B LINE

SCALE: 1"=20'



PROFILE STM-B LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM LINE B PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C10.15

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
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- 551 PROPOSED SURFACE CONTOUR MINOR
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- PROPOSED GROUTED ROCK RIPRAP

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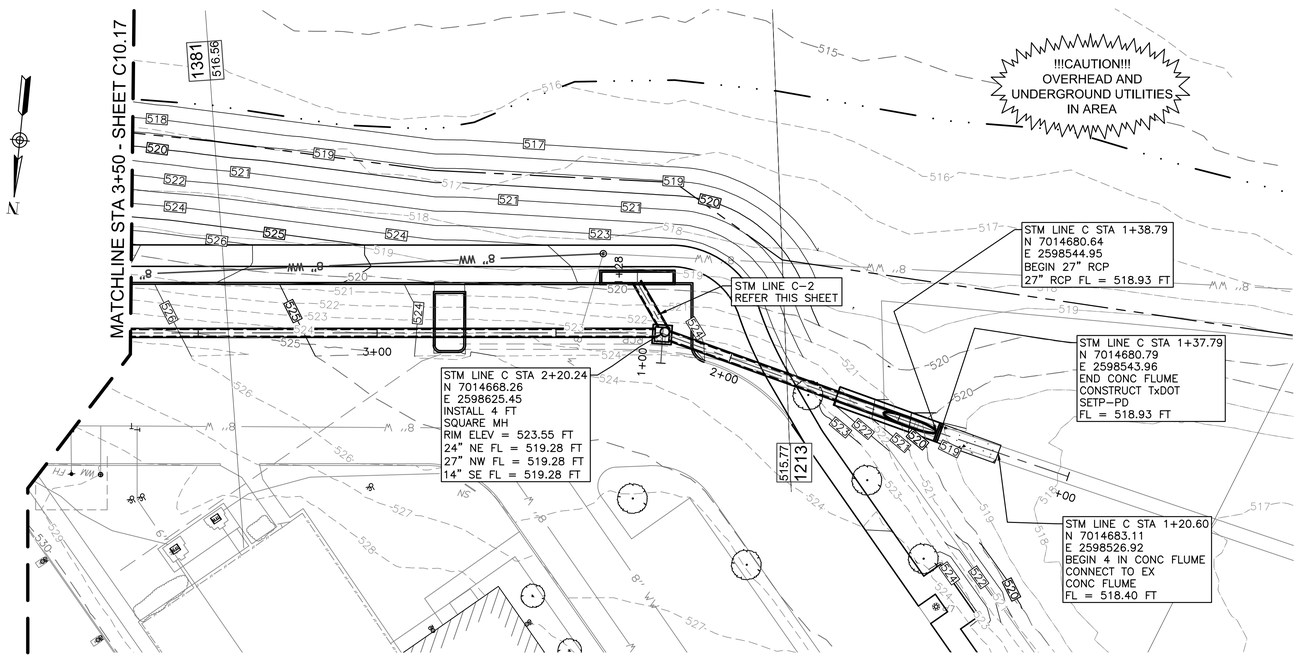
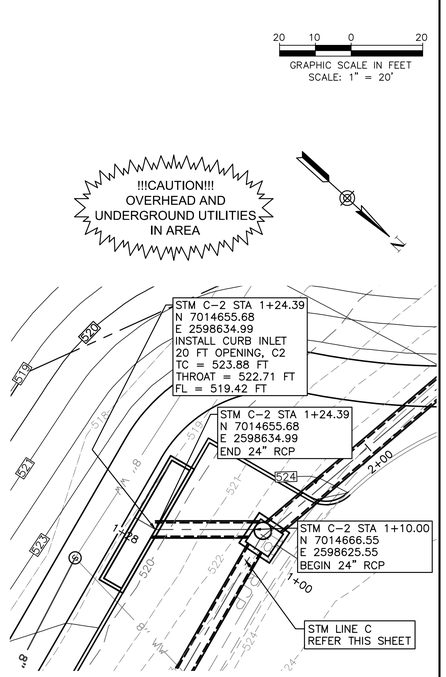


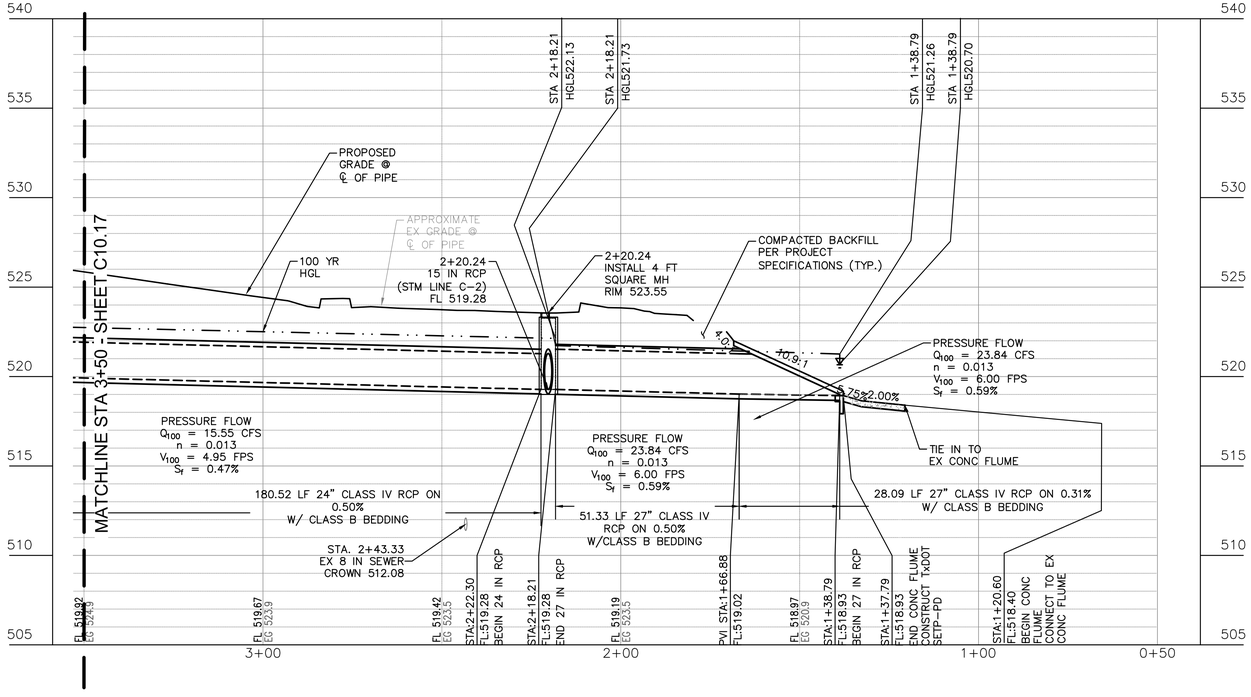
PLAN STM-C LINE

SCALE: 1"=20'



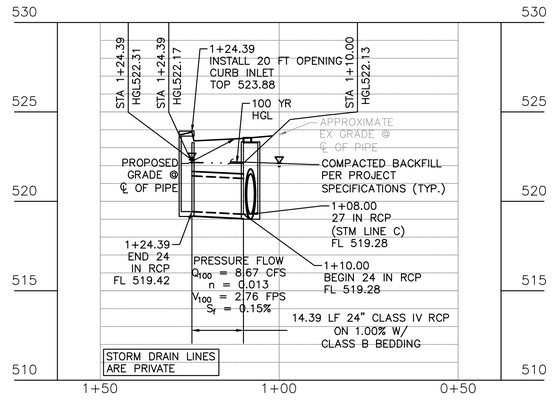
PLAN STM-C-2 LINE

SCALE: 1"=20'



PROFILE STM-C LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM-C-2 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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06/20/2025
FRANKA POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
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MEP ENGINEERS
SYSKA HENNESSY GROUP
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DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE C PLAN & PROFILE SHT 1 OF 2

CASE# E2023-007

SHEET NO.
C10.16

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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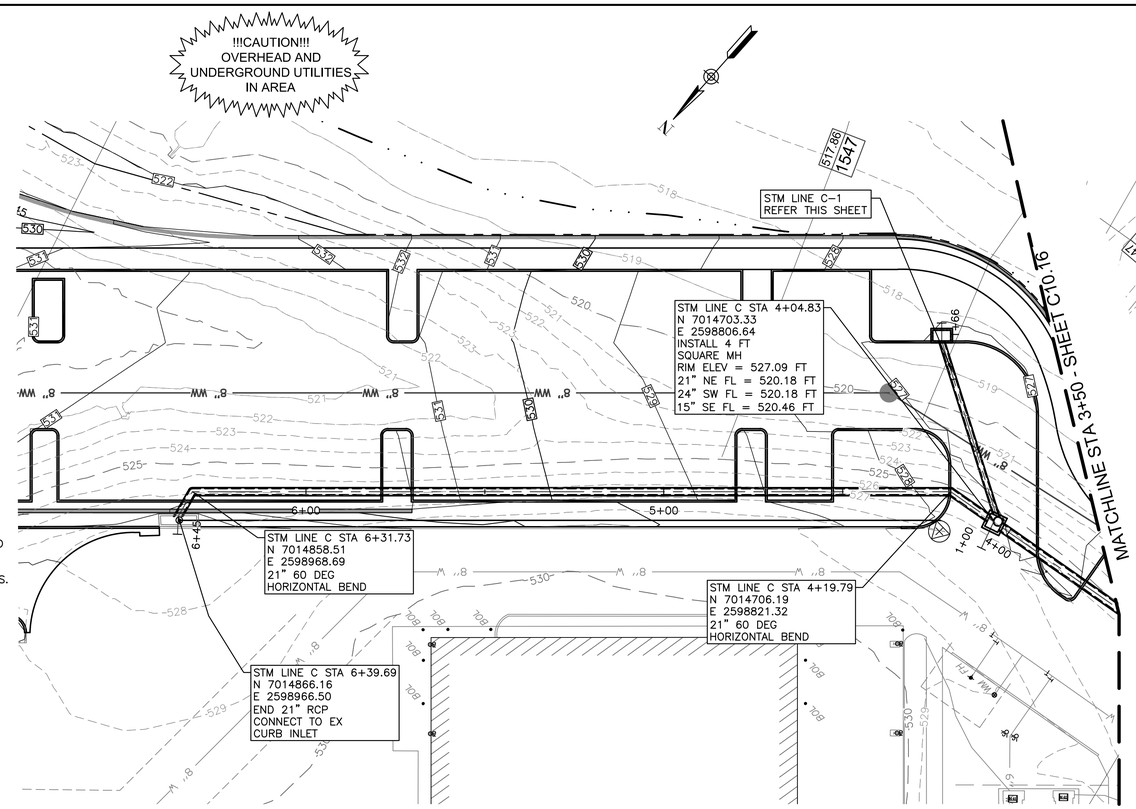
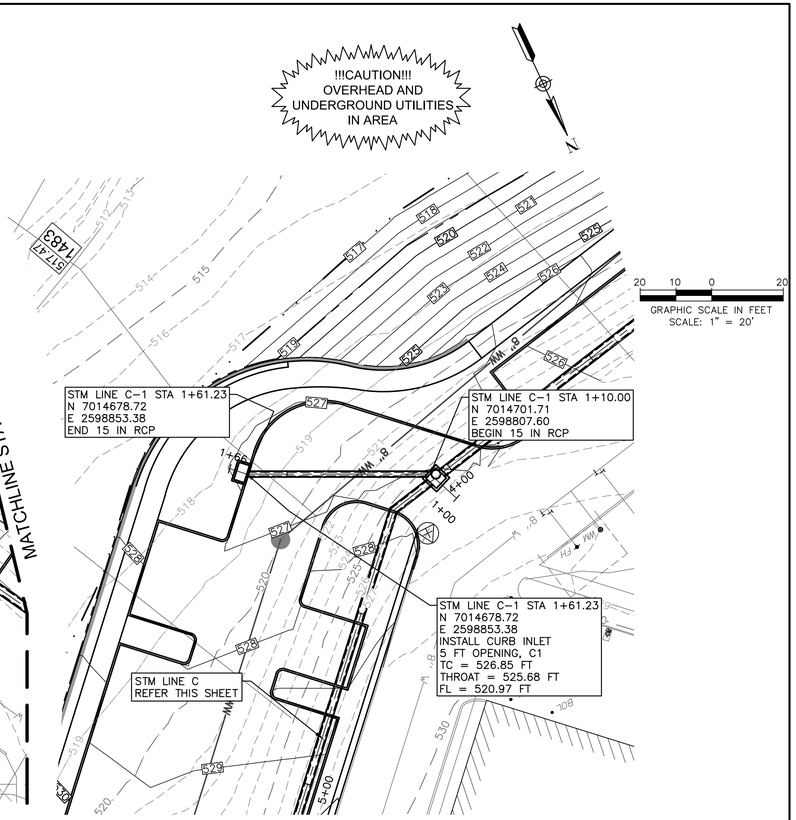


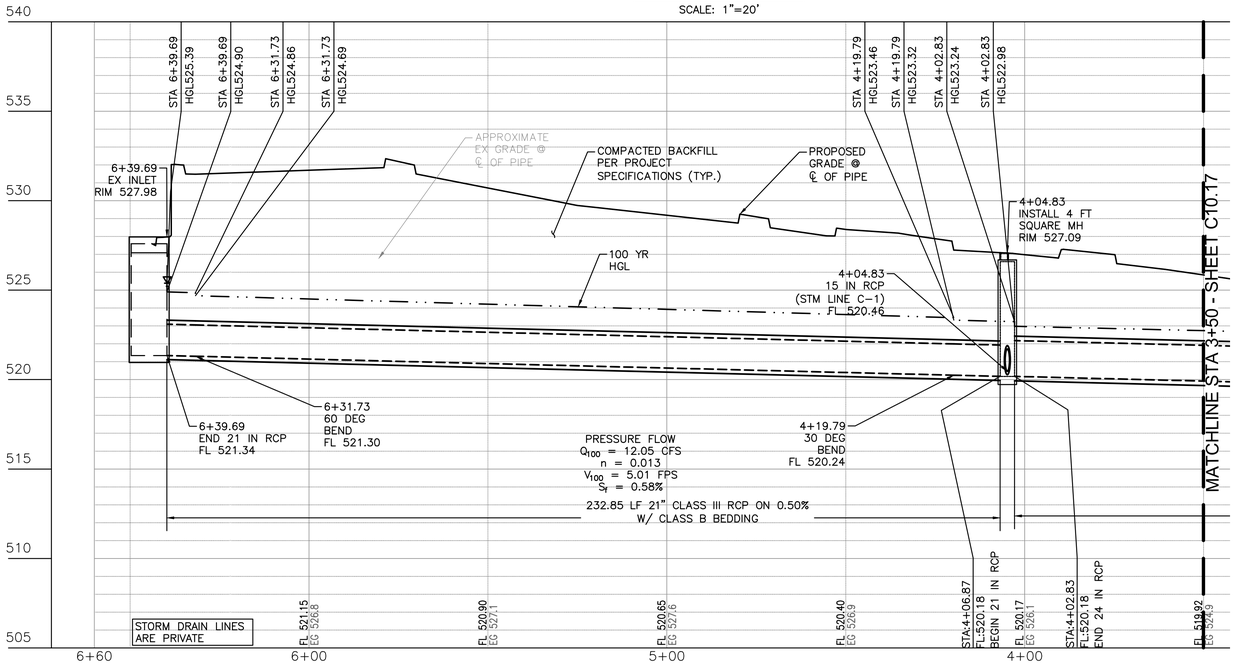
PLAN STM-C LINE

SCALE: 1"=20'



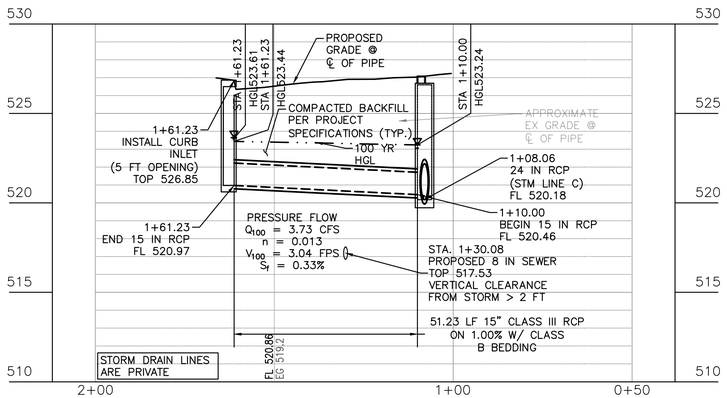
PLAN STM-C-1 LINE

SCALE: 1"=20'



PROFILE STM-C LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'



PROFILE STM-C-1 LINE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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FRANK A. POEMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

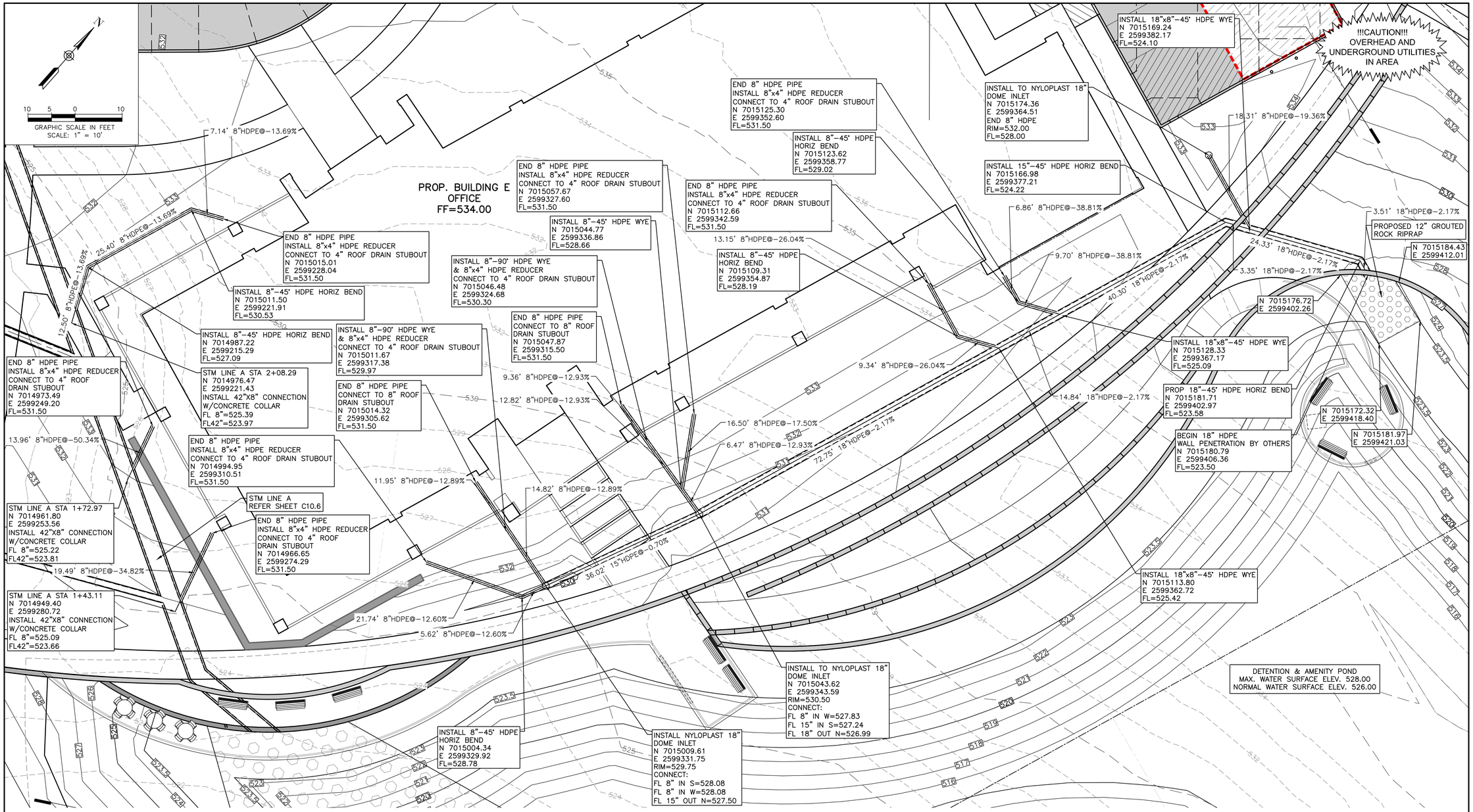
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM LINE C PLAN & PROFILE, SHT 2 OF 2

CASE# E2023-007

SHEET NO.
C10.17



RIPRAP GRADATION

SIZE: 12"
MAXIMUM SIZE: 200 LB
90% SIZE: 80–180 LB
50% SIZE: 30–75 LB
8% SIZE: 3 LB MINIMUM

RIPRAP SIZE

SIZE: 12 IN
Dmax: 13.76 IN
D90: 10.14–13.29 IN
D50: 7.31–9.92 IN
D8: 3.39 IN

TYPICAL GROUTED ROCK RIPRAP GRADATION & SIZE

SCALE: N.T.S.

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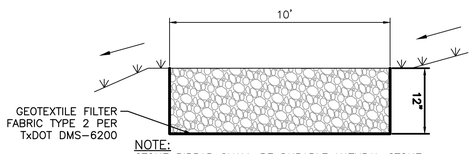


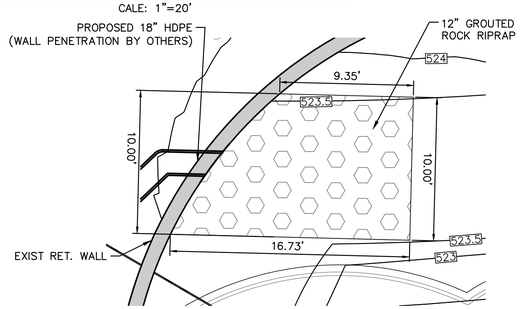
NOTE:
STONE RIPRAP SHALL BE DURABLE NATURAL STONE WITH A MINIMUM BULK SPECIFIC GRAVITY OF 2.50 AS DETERMINED BY TxDOT TEST PROCEDURE TEX-403-A. CONSTRUCT RIPRAP AND BEDDING IN ACCORDANCE WITH TxDOT ITEM 432.3.2.3. DRY COMMON GROUTING. PROVIDE GROUT IN ACORDANCE WITH TxDOT ITEM 421, HYDRAULIC CEMENT CONCRETE.

TYPICAL GROUTED ROCK RIPRAP SECTION R-R

SCALE: N.T.S.

BLDG E ROOF DRAIN COLLECTION PLAN

CALE: 1"=20'



DISCHARGE RIPRAP PLAN

SCALE: N.T.S.

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
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LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
STORM DRAINAGE PLAN BLDG E ROOF DRAIN COLLECTION

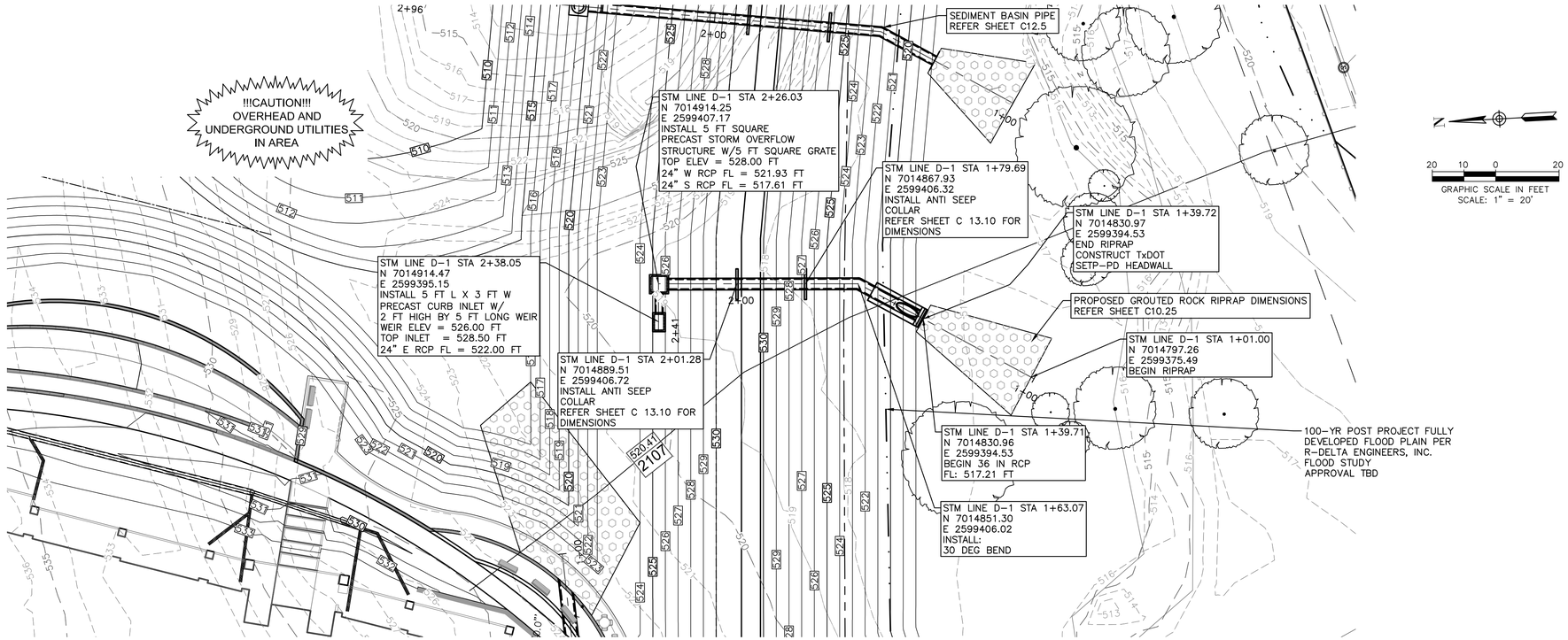
SHEET NO.
C10.18A

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

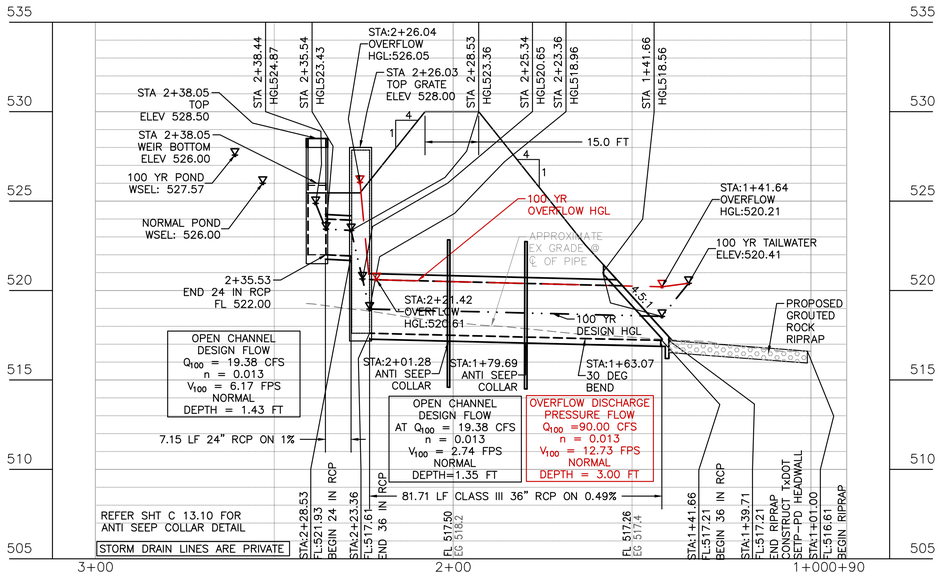
NOTES:

1. TRENCH SAFETY IS REQUIRED FOR STORM SEWER CONSTRUCTION.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
3. SEE SHEET C13.3 FOR GENERAL STORM SEWER DETAILS.
4. SEE SHEET C10.3 AND C10.4 FOR HYDRAULIC CALCULATIONS.



PLAN POND OUTLET

SCALE: 1"=20'



PROFILE POND OUTLET

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

NOTE:
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HKS

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HKS, INC.
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SUITE 100
DALLAS, TX 75201

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950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

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R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
STORM LINE D-1 PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C10.20

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 — EXISTING SURFACE CONTOUR MAJOR
- 551 — EXISTING SURFACE CONTOUR MINOR
- 550 — PROPOSED SURFACE CONTOUR MAJOR
- 551 — PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

NOTES:

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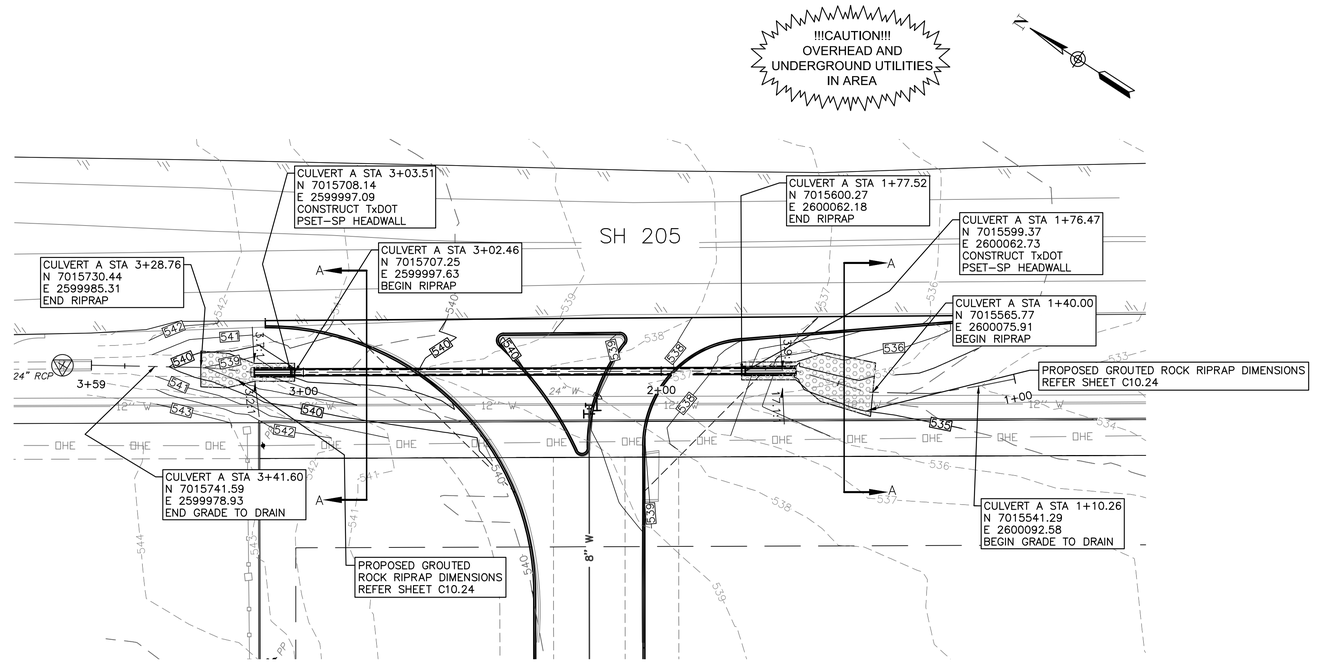
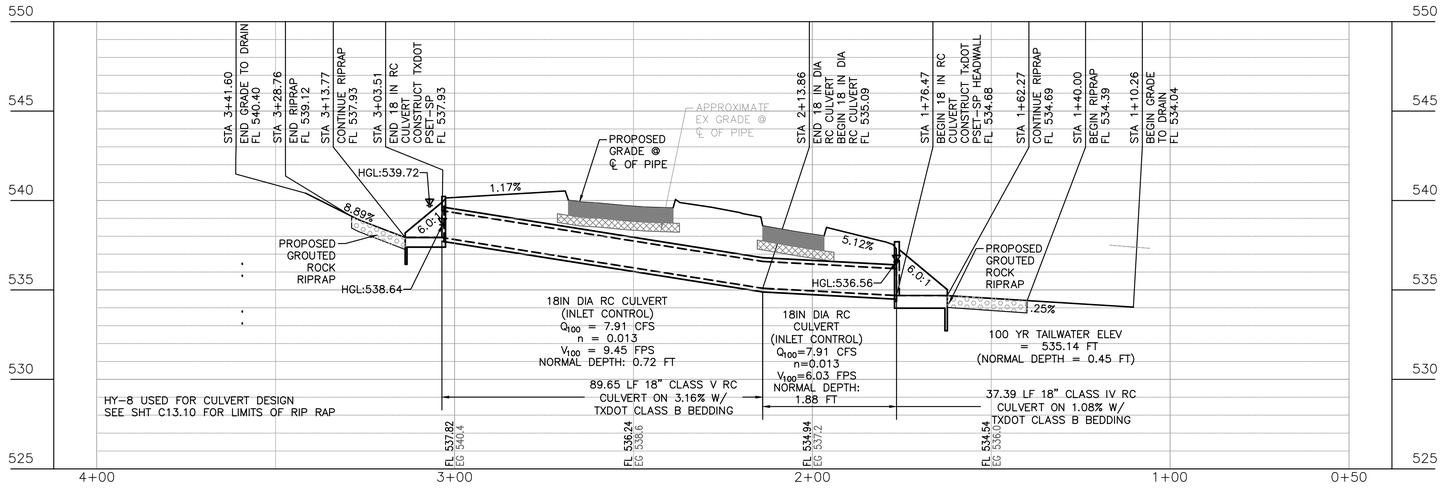


PLAN CULVERT A

SCALE: 1"=20'



PROFILE CULVERT A

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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469-402-2100

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CULVERT A PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C10.21

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E, TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
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- 551 PROPOSED SURFACE CONTOUR MINOR
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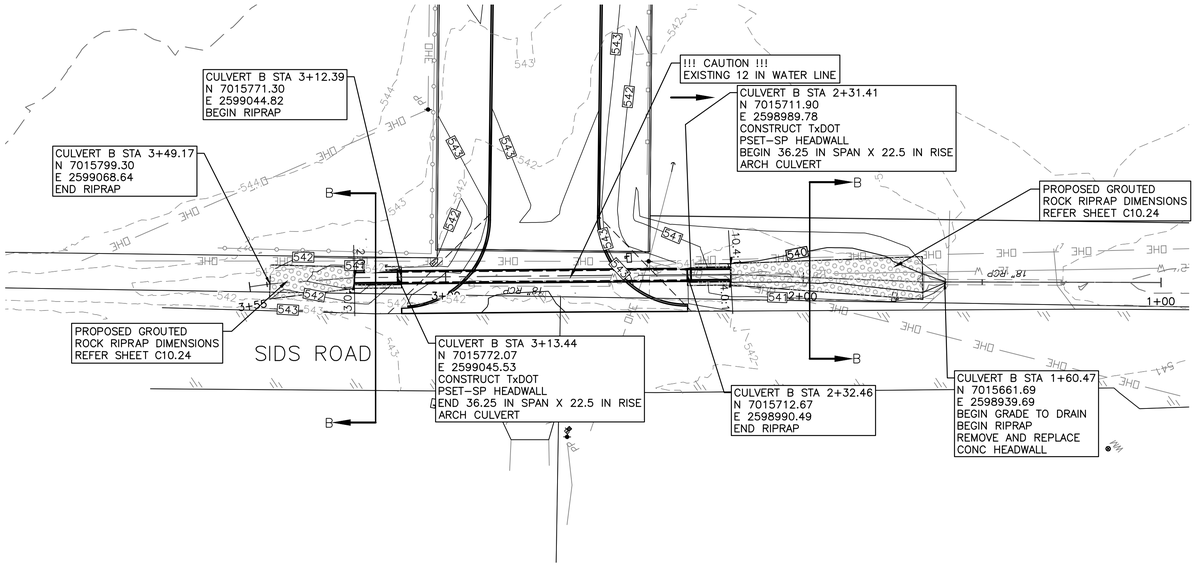
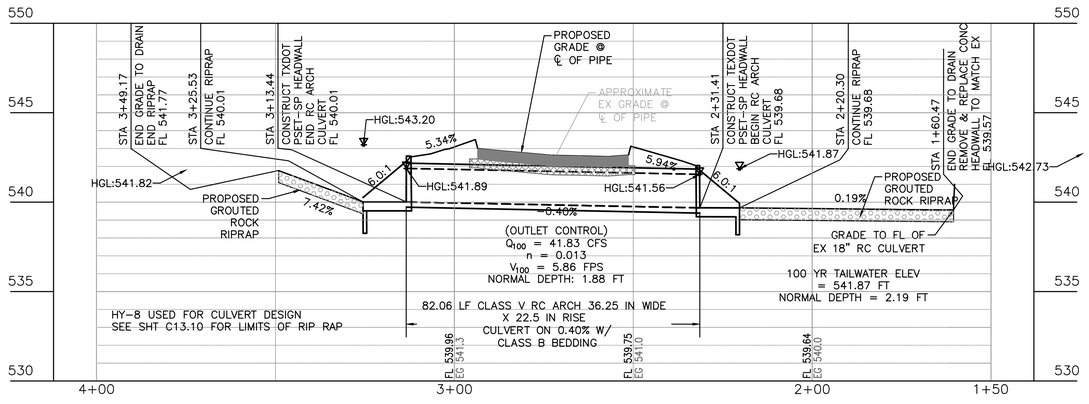


PLAN CULVERT B

SCALE: 1"=20'



PROFILE CULVERT B

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE 1"=5'

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
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ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CULVERT B PLAN & PROFILE

CASE# E2023-007

SHEET NO.
C10.22

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
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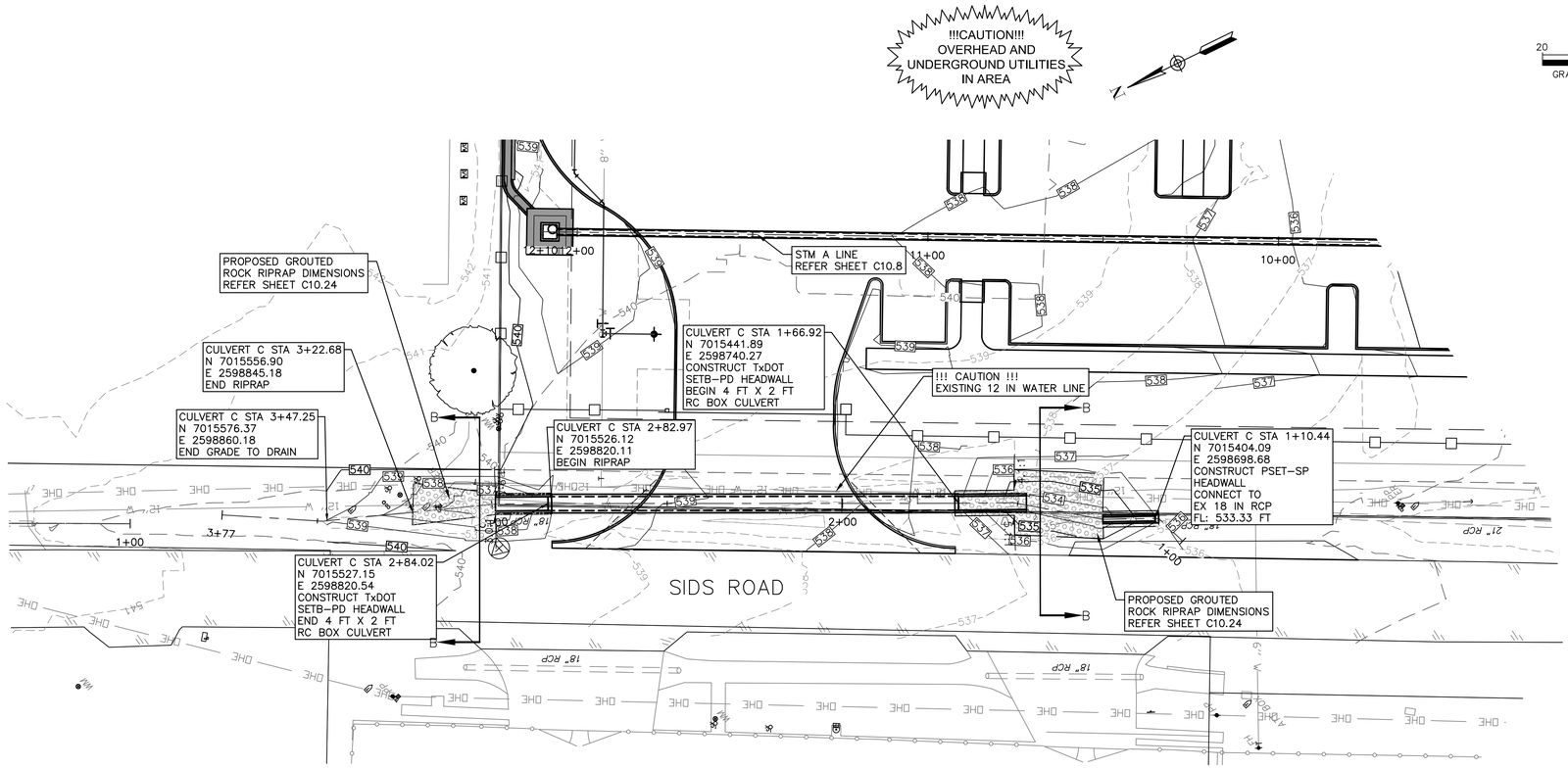
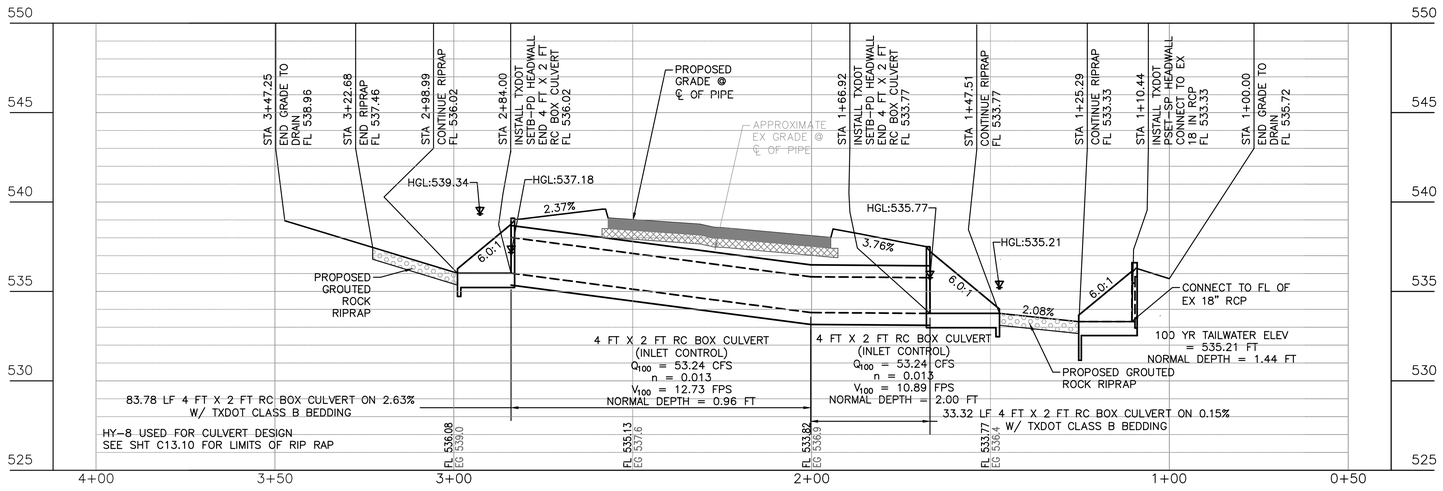


PLAN CULVERT C

SCALE: 1"=20'



PROFILE CULVERT C

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

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469-402-2100

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618 MAIN STREET
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TBPE No. F-1515

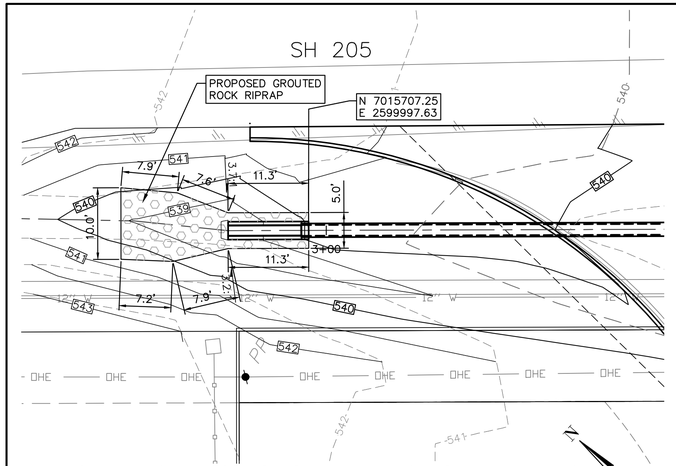
RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

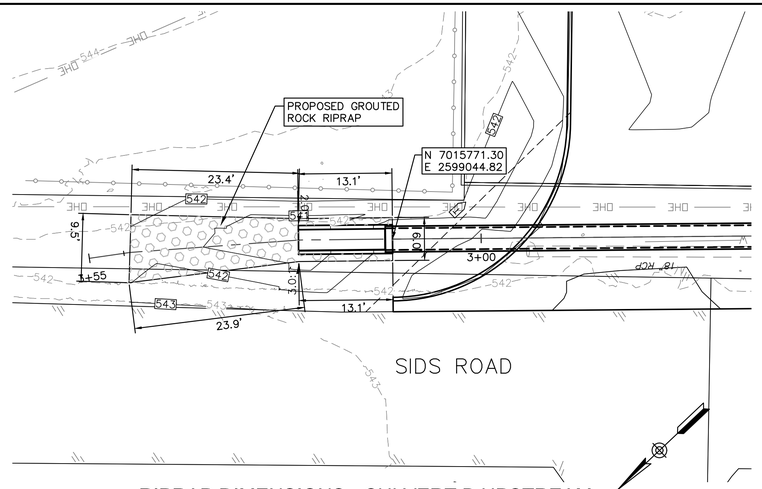
NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CULVERT C PLAN & PROFILE
CASE# E2023-007
SHEET NO.
C10.23



RIPRAP DIMENSIONS - CULVERT A (UPSTREAM END) HEADWALL

SCALE: 1 INCH = 10 FT



RIPRAP DIMENSIONS - CULVERT B UPSTREAM END HEADWALL

SCALE: 1 INCH = 10 FT

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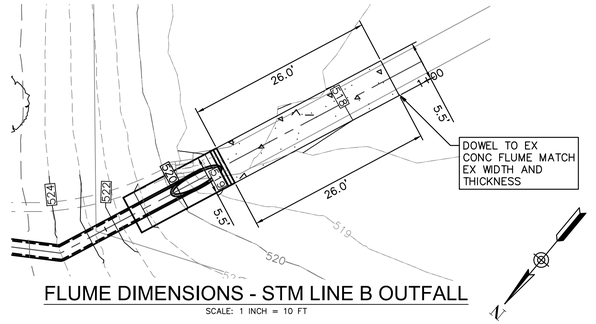
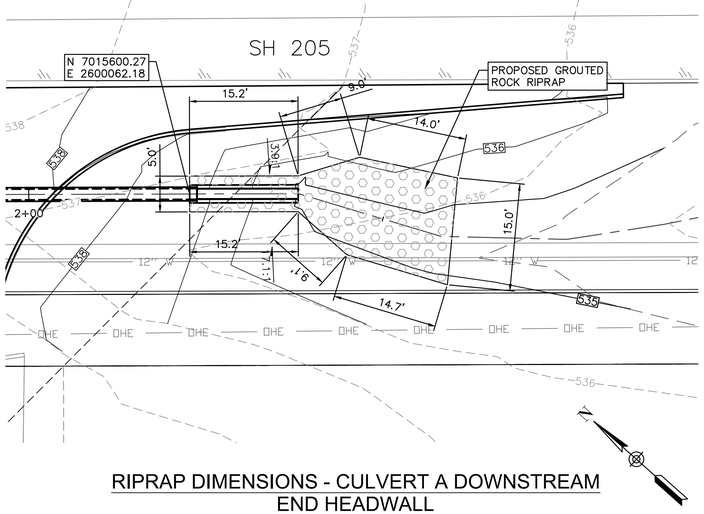


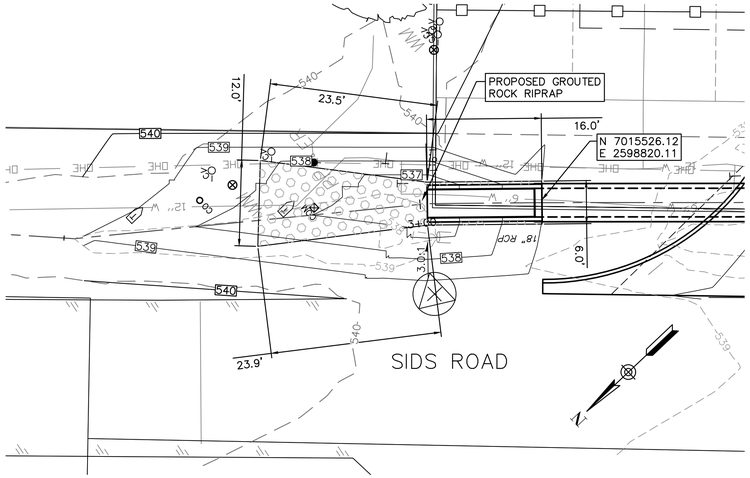
FLUME DIMENSIONS - STM LINE B OUTFALL

SCALE: 1 INCH = 10 FT



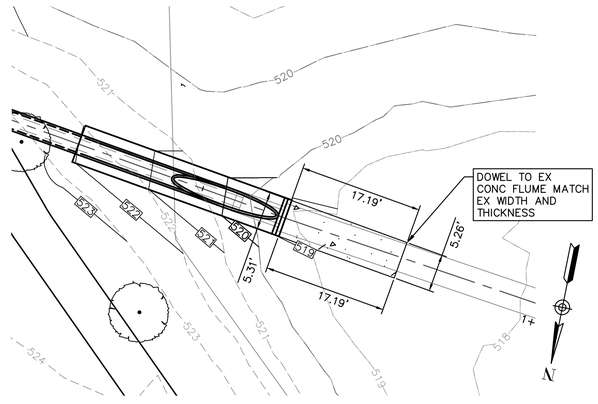
RIPRAP DIMENSIONS - CULVERT A DOWNSTREAM END HEADWALL

SCALE: 1 INCH = 10 FT



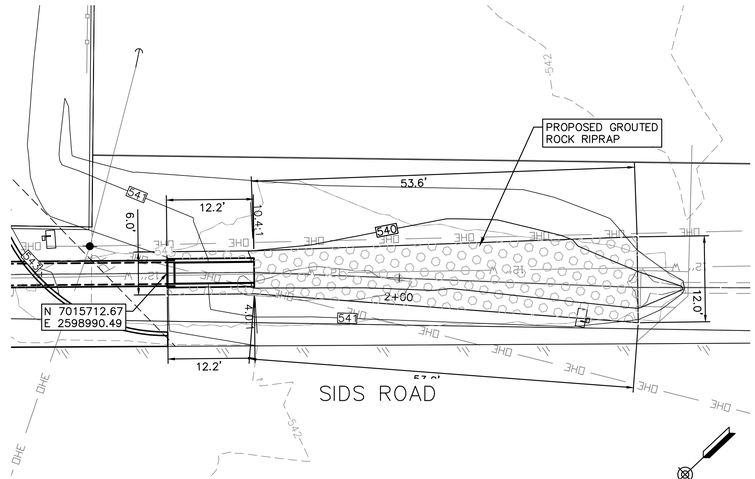
RIPRAP DIMENSIONS - CULVERT C UPSTREAM END HEADWALL

SCALE: 1 INCH = 10 FT



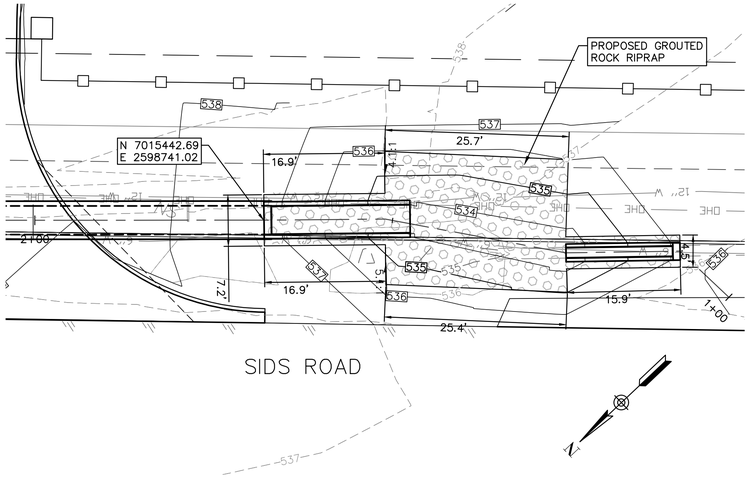
FLUME DIMENSIONS - STM LINE C OUTFALL

SCALE: 1 INCH = 10 FT



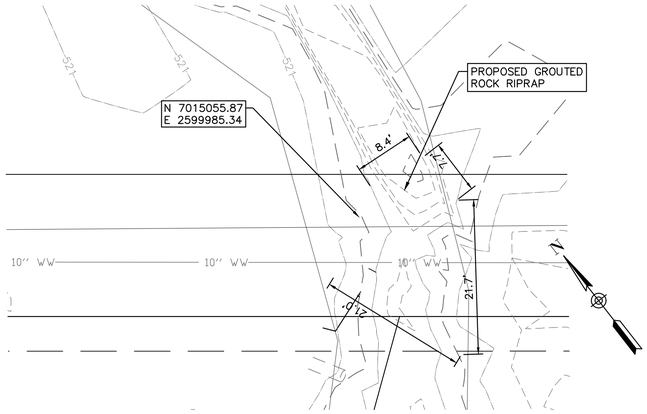
RIPRAP DIMENSIONS - CULVERT B DOWNSTREAM END HEADWALL

SCALE: 1 INCH = 10 FT



RIPRAP DIMENSIONS - CULVERT C DOWNSTREAM END HEADWALL

SCALE: 1 INCH = 10 FT



RIPRAP DIMENSIONS - STM LINE E OUTFALL

SCALE: 1 INCH = 10 FT

LEGEND

10 5 0 10

GRAPHIC SCALE IN FEET
SCALE: 1" = 10'

PROPOSED GROUTED ROCK RIPRAP

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

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REC RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

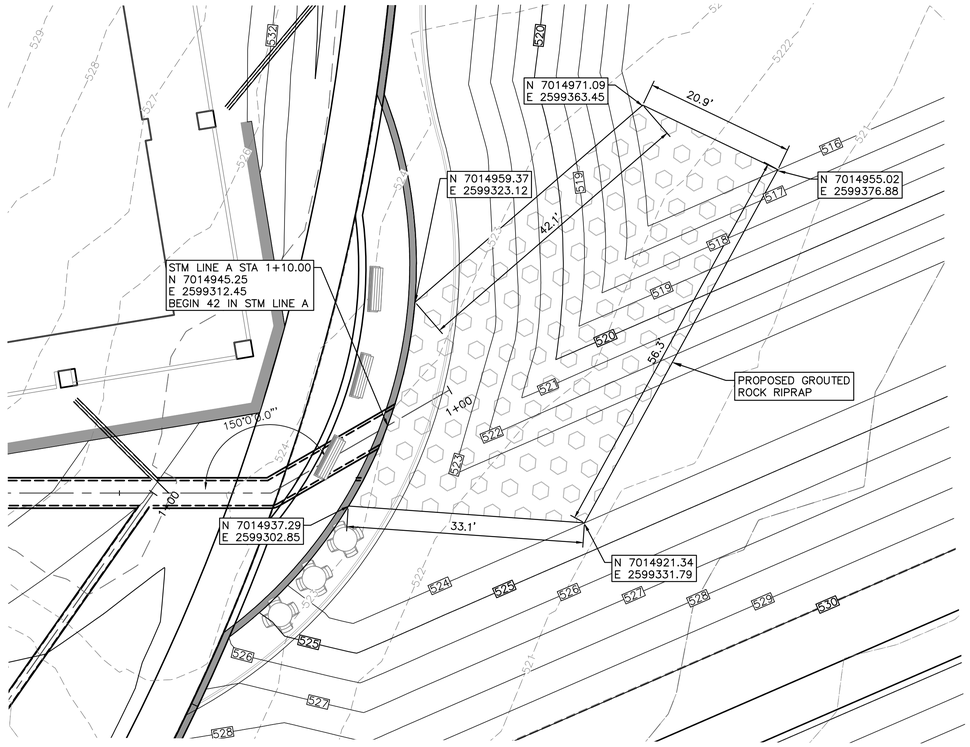
PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

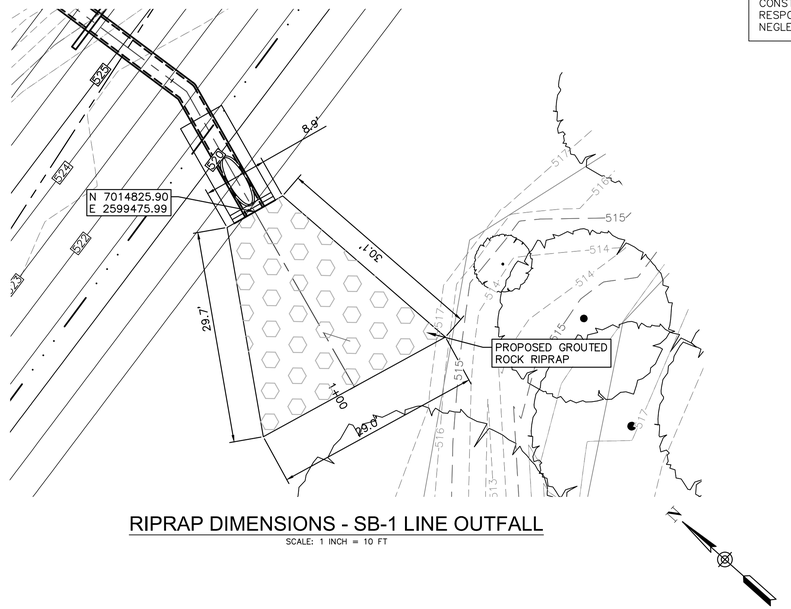
SHEET TITLE
RIPRAP AND FLUME LAYOUT AND DIMENSIONS, SHT 1 OF 2

C10.24



RIPRAP DIMENSIONS - STM LINE A OUTFALL

SCALE: 1 INCH = 10 FT



RIPRAP DIMENSIONS - SB-1 LINE OUTFALL

SCALE: 1 INCH = 10 FT

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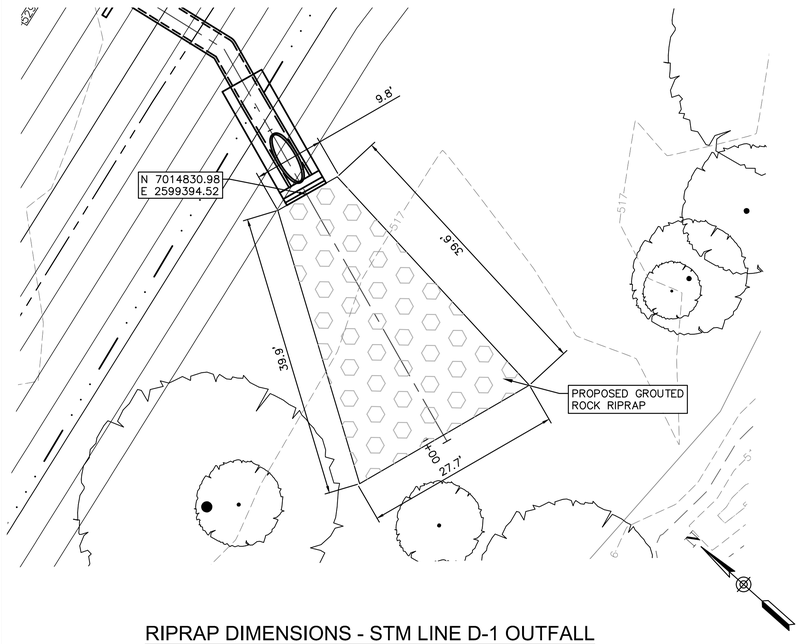
10 5 0 10

GRAPHIC SCALE IN FEET
SCALE: 1" = 10'



RIPRAP DIMENSIONS - STM LINE D-1 OUTFALL

SCALE: 1 INCH = 10 FT

LEGEND

PROPOSED GROUTED ROCK RIPRAP

RECORD DRAWING

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MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

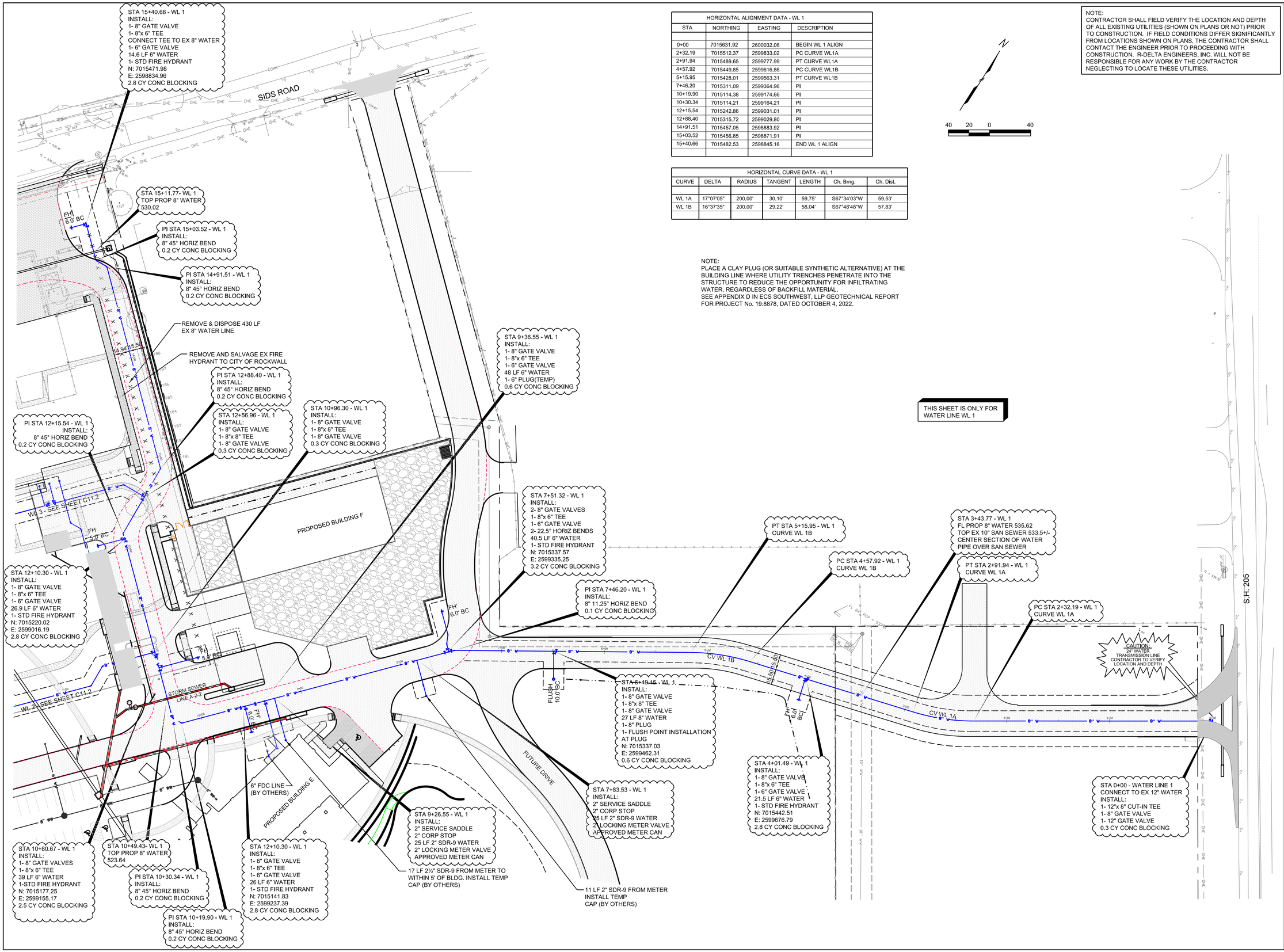
PROJECT NUMBER
3036.21

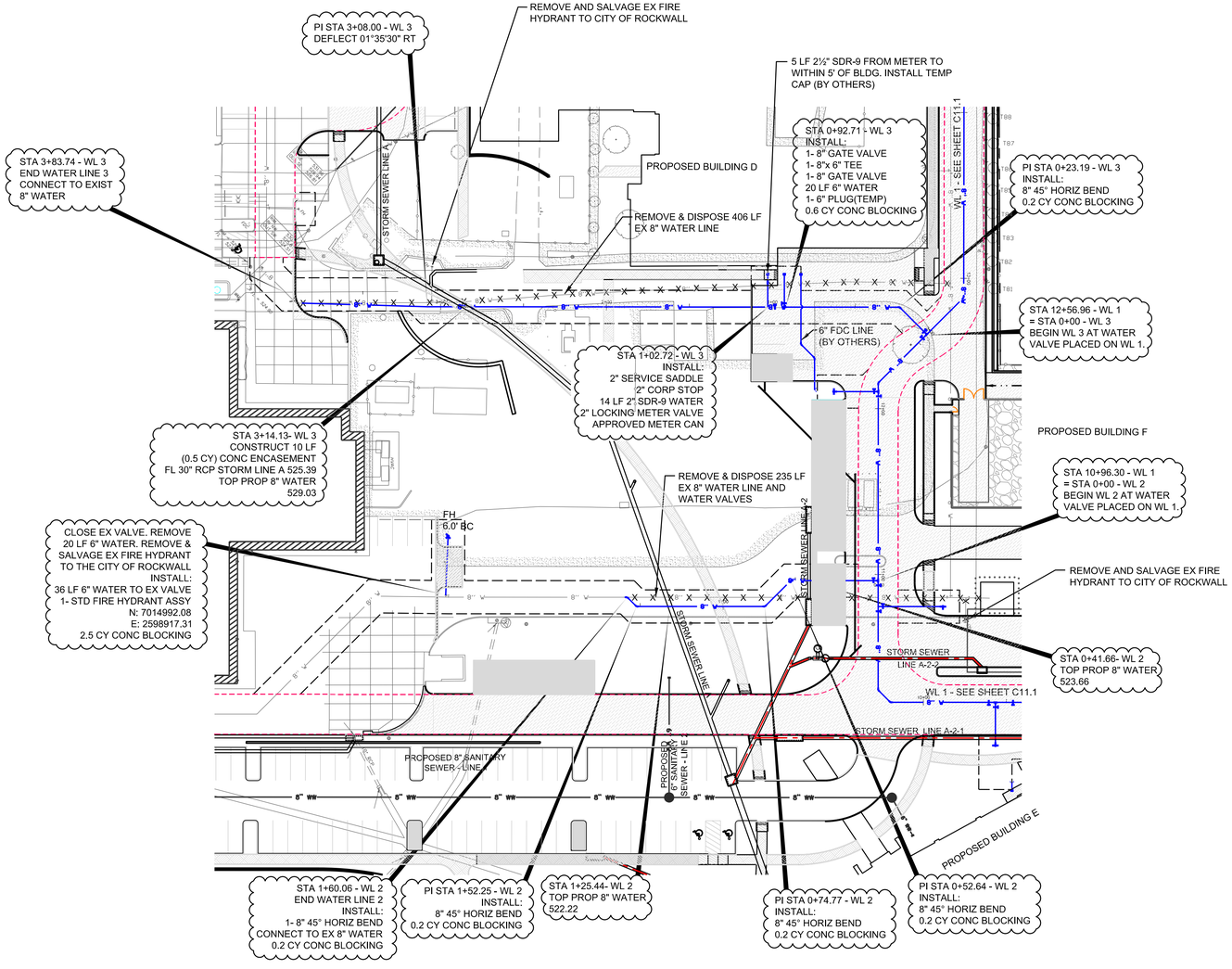
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
RIPRAP AND FLUME LAYOUT AND DIMENSIONS, SHT 2 OF 2

C10.25


STA 15+40.66 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 6" TEE
CONNECT TEE TO EX 8" WATER
1- 6" GATE VALVE
14.6 LF 6" WATER
1- STD FIRE HYDRANT
N: 7015471.98
E: 2598834.96
2.8 CY CONC BLOCKING
SIDS ROAD
STA 15+11.77- WL 1
TOP PROP 8" WATER
530.02
PI STA 15+03.52 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
PI STA 14+91.51 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
REMOVE & DISPOSE 430 LF
EX 8" WATER LINE
REMOVE AND SALVAGE EX FIRE
HYDRANT TO CITY OF ROCKWALL
PI STA 12+88.40 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
STA 12+56.96 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 8" TEE
1- 8" GATE VALVE
0.3 CY CONC BLOCKING
PI STA 12+15.54 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
STA 10+96.30 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 8" TEE
1- 8" GATE VALVE
0.3 CY CONC BLOCKING
STA 9+36.55 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 6" TEE
1- 6" GATE VALVE
48 LF 6" WATER
1- 6" PLUG(TEMP)
0.6 CY CONC BLOCKING
STA 7+51.32 - WL 1
INSTALL:
2- 8" GATE VALVES
1- 8"x 6" TEE
1- 6" GATE VALVE
2- 22.5° HORIZ BENDS
40.5 LF 6" WATER
1- STD FIRE HYDRANT
N: 7015337.57
E: 2599335.25
3.2 CY CONC BLOCKING
PT STA 5+15.95 - WL 1
CURVE WL 1B
PC STA 4+57.92 - WL 1
CURVE WL 1B
STA 3+43.77 - WL 1
FL PROP 8" WATER 535.62
TOP EX 10" SAN SEWER 533.5+/-
CENTER SECTION OF WATER
PIPE OVER SAN SEWER
PT STA 2+91.94 - WL 1
CURVE WL 1A
PC STA 2+32.19 - WL 1
CURVE WL 1A
S.H. 205
CAUTION:
24" WATER
TRANSMISSION LINE
CONTRACTOR TO VERIFY
LOCATION AND DEPTH
PI STA 7+46.20 - WL 1
INSTALL:
8" 11.25° HORIZ BEND
0.1 CY CONC BLOCKING
STA 12+10.30 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 6" TEE
1- 6" GATE VALVE
26.9 LF 6" WATER
1- STD FIRE HYDRANT
N: 7015220.02
E: 2599016.19
2.8 CY CONC BLOCKING
WL 3 - SEE SHEET C11.2
WL 2 - SEE SHEET C11.2
PROPOSED BUILDING F
STORM SEWER
LINE A-2-2
CV WL 1B
CV WL 1A
FLUSH
10.0' BC
STA 6+49.15 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 8" TEE
1- 8" GATE VALVE
27 LF 8" WATER
1- 8" PLUG
1- FLUSH POINT INSTALLATION
AT PLUG
N: 7015337.03
E: 2599462.31
0.6 CY CONC BLOCKING
STA 4+01.49 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 6" TEE
1- 6" GATE VALVE
21.5 LF 6" WATER
1- STD FIRE HYDRANT
N: 7015442.51
E: 2599676.79
2.8 CY CONC BLOCKING
STA 0+00 - WATER LINE 1
CONNECT TO EX 12" WATER
INSTALL:
1- 12"x 8" CUT-IN TEE
1- 8" GATE VALVE
1- 12" GATE VALVE
0.3 CY CONC BLOCKING
STA 7+83.53 - WL 1
INSTALL:
2" SERVICE SADDLE
2" CORP STOP
25 LF 2" SDR-9 WATER
2" LOCKING METER VALVE
APPROVED METER CAN
STA 9+26.55 - WL 1
INSTALL:
2" SERVICE SADDLE
2" CORP STOP
25 LF 2" SDR-9 WATER
2" LOCKING METER VALVE
APPROVED METER CAN
17 LF 2½" SDR-9 FROM METER TO
WITHIN 5' OF BLDG. INSTALL TEMP
CAP (BY OTHERS)
11 LF 2" SDR-9 FROM METER
INSTALL TEMP
CAP (BY OTHERS)
6" FDC LINE
(BY OTHERS)
PROPOSED BUILDING E
FUTURE DRIVE
STA 10+80.67 - WL 1
INSTALL:
1- 8" GATE VALVES
1- 8"x 6" TEE
39 LF 6" WATER
1-STD FIRE HYDRANT
N: 7015177.25
E: 2599155.17
2.5 CY CONC BLOCKING
STA 10+49.43- WL 1
TOP PROP 8" WATER
523.64
PI STA 10+30.34 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
STA 12+10.30 - WL 1
INSTALL:
1- 8" GATE VALVE
1- 8"x 6" TEE
1- 6" GATE VALVE
26 LF 6" WATER
1- STD FIRE HYDRANT
N: 7015141.83
E: 2599237.39
2.8 CY CONC BLOCKING
PI STA 10+19.90 - WL 1
INSTALL:
8" 45° HORIZ BEND
0.2 CY CONC BLOCKING
FH
6.0' BC
5.0' BC
6.0' BC
5.0' BC
6.0' BC
6.0' BC
FH
6.0' BC
FH
6.0' BC
FH



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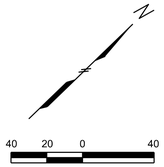

THIS SHEET IS ONLY FOR WATER LINE WL 2 & WL 3

NOTE:
PLACE A CLAY PLUG (OR SUITABLE SYNTHETIC ALTERNATIVE) AT THE BUILDING LINE WHERE UTILITY TRENCHES PENETRATE INTO THE STRUCTURE TO REDUCE THE OPPORTUNITY FOR INFILTRATING WATER, REGARDLESS OF BACKFILL MATERIAL.
SEE APPENDIX D IN ECS SOUTHWEST, LLP GEOTECHNICAL REPORT FOR PROJECT No. 19:8878, DATED OCTOBER 4, 2022.

HORIZONTAL ALIGNMENT DATA - WL 2

STA	NORTHING	EASTING	DESCRIPTION
0+00	7015160.03	2599116.77	BEGIN WL 2 ALIGN
0+52.64	7015122.19	2599080.17	PI
0+74.77	7015100.06	2599080.55	PI
1+52.25	7015044.36	2599026.70	PI
1+60.06	7015044.23	2599018.88	PI, END WL 2 ALIGN

HORIZONTAL ALIGNMENT DATA - WL 3

STA	NORTHING	EASTING	DESCRIPTION
0+00	7015284.28	2599030.32	BEGIN WL 3 ALIGN
0+23.19	7015283.89	2599007.14	PI
3+03.01	7015079.20	2598809.09	PI
3+08.00	7015079.20	2598809.09	PI
3+83.74	7015026.26	2598754.94	END WL 3 ALIGN

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

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HKS, INC.
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DALLAS, TX 75201- 4240

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DALLAS, TX 75206

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CIVIL ENGINEER
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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

RayburnElectric COOPERATIVE

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE, R-DELTA ENGINEERS, INC. STATES THAT THE PLAN IS AS-BUILT.

06/20/2025

FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/08/2023

ISSUE
ISSUED FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
WATER PLAN SHEET 2 OF 2

CASE# E2023-007

SHEET NO.
C11.2

STA 0+00 - BEGIN WW 1
REMOVE AND DISPOSE OF EX MANHOLE
CONSTRUCT NEW 6.0' DIA MANHOLE
N: 7014649.51
E: 2598645.89

NOTE:
PLACE A CLAY PLUG (OR SUITABLE SYNTHETIC ALTERNATIVE) AT THE BUILDING LINE WHERE UTILITY TRENCHES PENETRATE INTO THE STRUCTURE TO REDUCE THE OPPORTUNITY FOR INFILTRATING WATER, REGARDLESS OF BACKFILL MATERIAL.
SEE APPENDIX D IN ECS SOUTHWEST, LLP GEOTECHNICAL REPORT FOR PROJECT No. 19:8878, DATED OCTOBER 4, 2022.

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"ALL WASTEWATER WORK DESIGNATED AS "PRIVATE" IN THIS SET OF PLANS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE, PERMITTED AND INSPECTED BY THE CITY BUILDING INSPECTION DEPARTMENT AND INSTALLED BY A LICENSED PLUMBER."

20 10 0 20

8" WW
LINE C
LINE C-1
PROPOSED 18" RCP
FL 18" 520.66
MATCH LINE - STA 5+50
PI STA 2+13.18 - WW 1
CONSTRUCT STD 4.0' MANHOLE
N: 7014699.34
E: 2598853.16

STA 0+00 - BEGIN WW 1
CONSTRUCT NEW 6' DIA MANHOLE
RIM = TP 523.81
PROPOSED 18" RCP
STORM LINE LINE C-1
FL 18" 520.66
PI STA 2+13.18 - WW 1
CONSTRUCT 4.0' MANHOLE
RIM = TP 527.10
PROPOSED GRADE AT CL PIPE
EX GRADE AT CL PIPE
2.88'
8" ON 3.25%
8" ON 0.50%
208.18 LF 8" SDR-26 PVC WASTEWATER (PRIVATE)
334.82 LF 8" SDR-26 PVC WASTEWATER (PRIVATE)
FL EX (OUT) 510.53
FL EX (IN) 510.57
FL (IN) 511.00
FL 8" 514.15
FL 8" 517.40
FL (OUT) 517.76
FL (IN) 517.96
FL 8" 518.38
FL 8" 518.88
FL 8" 519.38
FL 8" 519.63

WASTEWATER LINE 1
SCALE: 1" - 20' HORIZ
1" - 5' VERT

0+00 1+00 2+00 3+00 4+00 5+00

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
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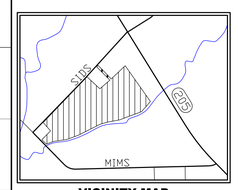
06/20/2025
FRANK A. POLLOM, P.E., TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

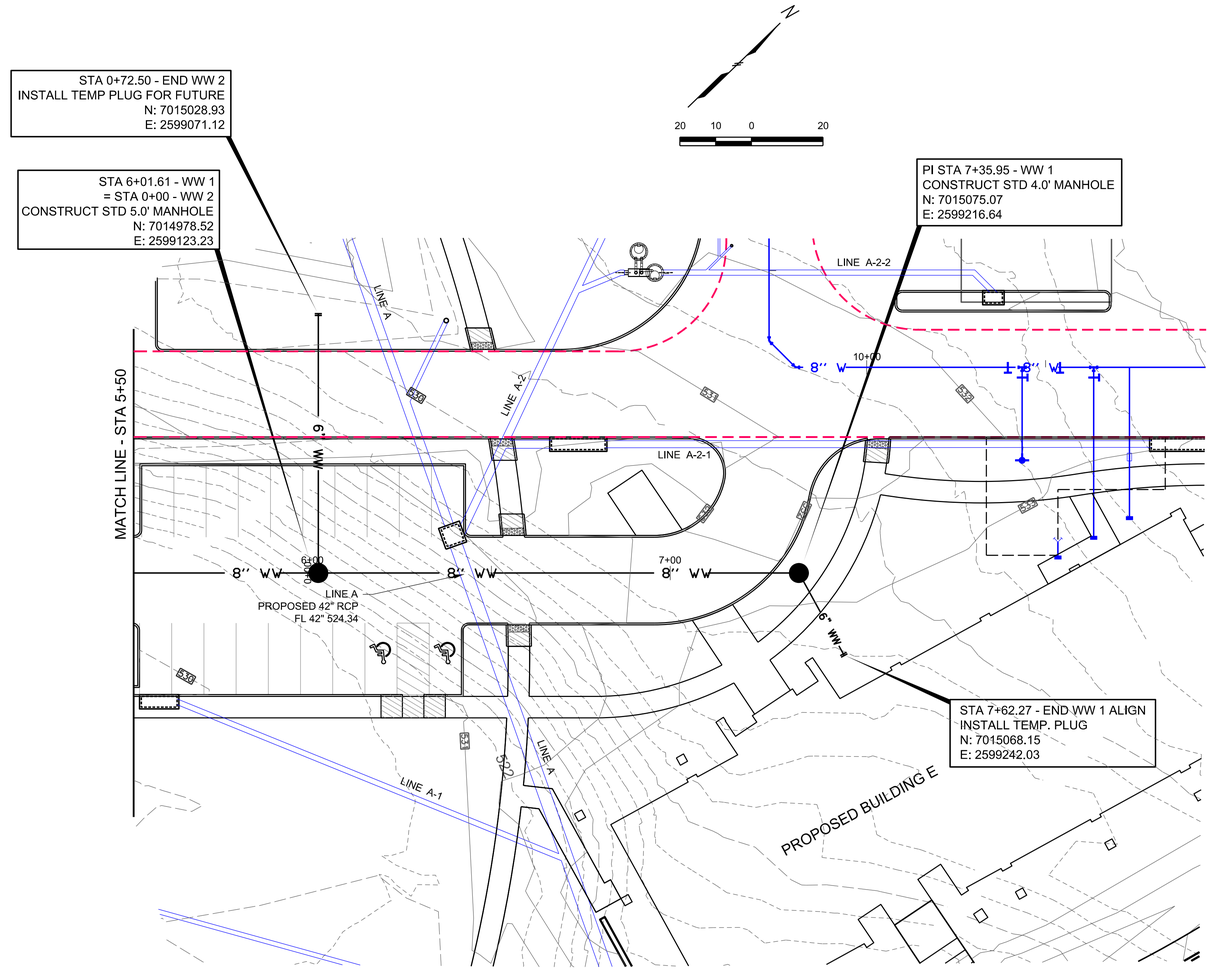


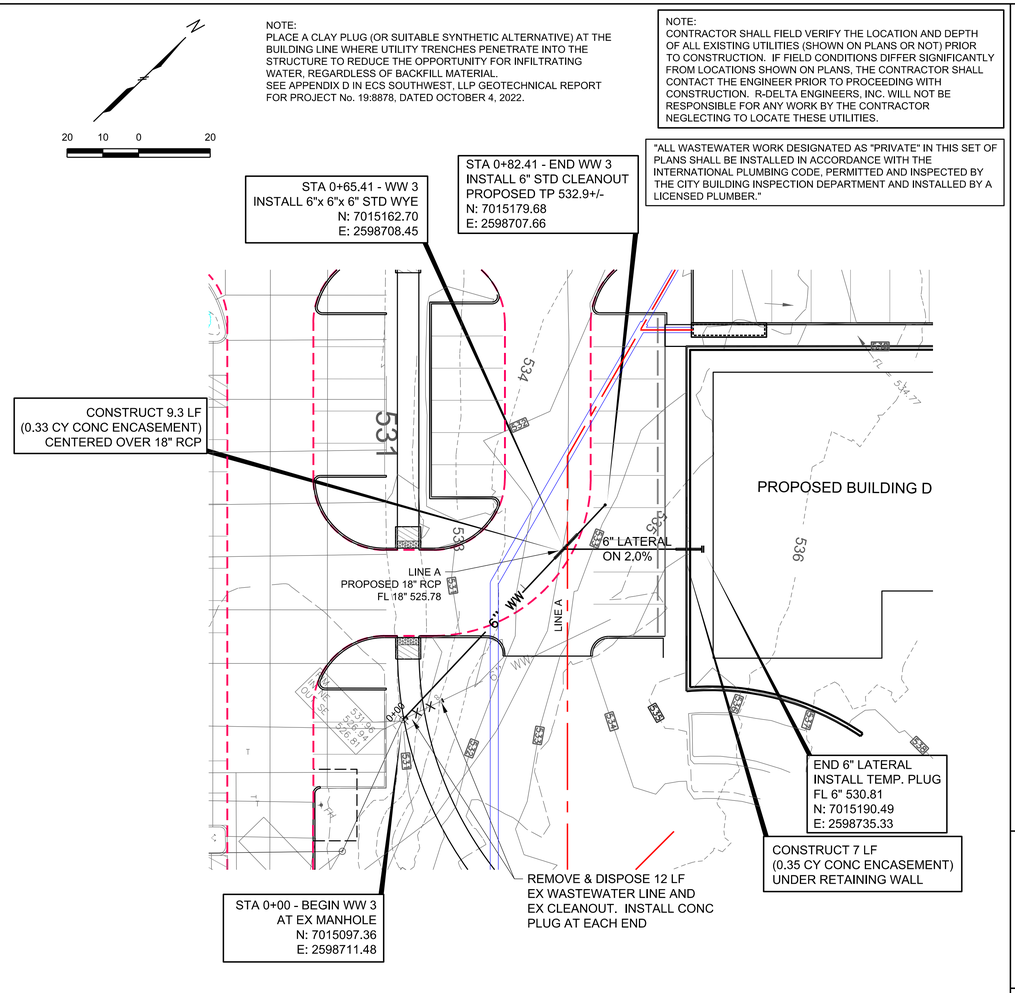
VICINITY MAP
NTS

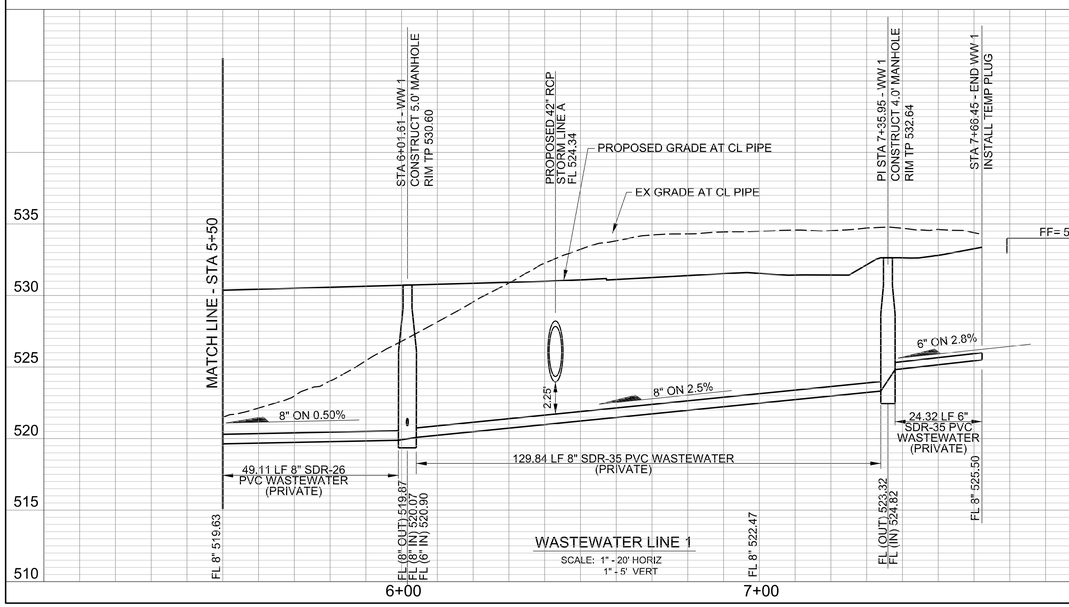
REVISION

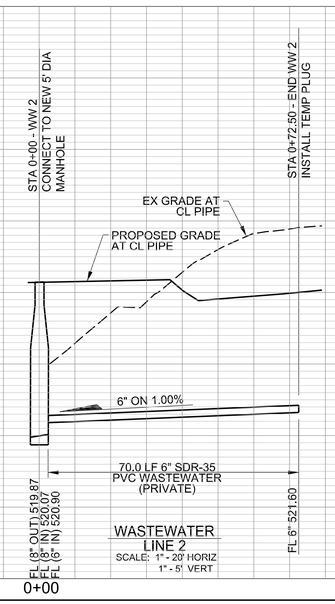
NO.	DESCRIPTION	DATE

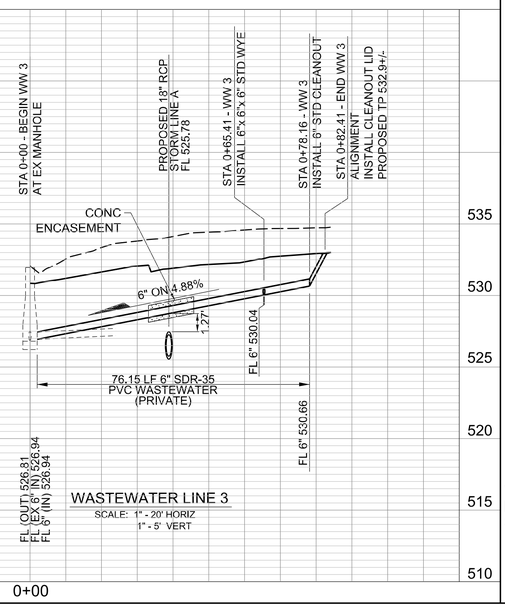
PROJECT NUMBER
3036.21
DATE
06/08/2023
ISSUE
ISSUED FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
WASTEWATER LINE WW 1 PLAN & PROFILE SHEET 1 OF 2
CASE# E2023-007
SHEET NO.
C11.3











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TBPE No. F-1515

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06/20/2025

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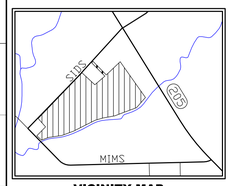
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



VICINITY MAP
NTS

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SHEET TITLE
WASTEWATER PLAN & PROFILE- LINE WW 1, 2 & 3
SHEET 2 OF 2
CASE# E2023-007
SHEET NO.
C11.4

SITE DESCRIPTION

PROJECT LOCATION:

RAYBURN ELECTRIC COOPERATIVE CAMPUS
950 SIDS ROAD
ROCKWALL TEXAS 75032

IS THIS A SHARED SWPPP ? ____YES __X__ NO

IF YES, AREAS OF RESPONSIBILITY OF EACH OPERATOR SHALL BE INDICATED IN SWPPP.

OPERATORS NAME & ADDRESS:

RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL TEXAS 75032

CONTRACTOR NAME & ADDRESS:

PULLIAM CONSTRUCTION
303 S. JACKSON ST., SUITE 100
WYLIE, TEXAS 75098

PROJECT DESCRIPTION: CONSTRUCTION OF CIVIL SITE IMPROVEMENTS INCLUDING GRADIND, DRAINAGE, UTILITIES, FENCING, BUILDINGS, AND PAVING

SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES:

1. *INSTALL EROSION CONTROL DEVICES.*
2. *REMOVE AND DISPOSE OF EXISTING IMPROVEMENTS PER DEMOLITION PLAN.*
3. *STRIP SITE OF VEGETATION/ORGANICS.*
4. *INSTALL DRAINAGE AND UTILITIES, PLACE AND COMPACT FILL, CONSTRUCT BUILDINGS, FENCING, SUBGRADE AND CONSTRUCT PAVING AND SIDEWALKS.*
5. *ESTABLISH PERMANENT VEGETATION IN UNPAVED DISTURBED AREAS*
7. *REMOVE EROSION CONTROL DEVICES.*

DESCRIPTION OF POTENTIAL POLLUTANTS:

POTENTIAL POLLUTANTS MAY INCLUDE: STOCKPILED SOILS, CHEMICALS, FERTILIZERS, CONCRETE AND ASPHALT WASTE FLUIDS, OILS, GREASE FROM TRUCKS AND EQUIPMENT, CONSTRUCTION DEBRIS (INCLUDING GARBAGE), SEDIMENT FROM STORM WATER RUNOFF, AND SLURRY FROM CONCRETE SAW CUTTING.

PRE-DEVELOPMENT RUNOFF COEFFICIENT: 0.35

FINAL RUNOFF COEFFICIENT AFTER CONSTRUCTION: 0.90

TOTAL PROJECT AREA: 80.6 ACRES

TOTAL AREA TO BE DISTURBED, INCLUDING OFF-SITE MATERIAL STORAGE AREAS, OVERBURDEN AND STOCKPILES OF DIRT, AND BORROW AREAS THAT ARE AUTHORIZED UNDER THE PERMITTEE'S NOI: 21.2 ACRES

DESCRIPTION OF EXISTING SOIL:

HOUSTON BLACK CLAY, 1 to 3% SLOPES	*(55%)*
FERRIS-HEIDEN COMPLEX, 2 TO 5% SLOPES	*(45%)*
	(100%)

DESCRIPTION OF STABILIZATION OF EXISTING DRAINAGE WAYS:

CONCRETE PAVING, ROCK RIPRAP AND RE-ESTABLISHING VEGETATION

DESCRIPTION OF LOCATIONS WHERE STORMWATER DISCHARGES FROM PROJECT DRAIN DIRECTLY TO SURFACE WATER BODIES (WATERS OF THE U.S. OR SURFACE WATERS IN THE STATE), OR INTO MS4:

*STORMWATER DISCHARGES OVERLAND AND ALONG BAR DITCHES, STORM SYSTEMS TO ON-SITE DETENTION PONDS, THEN TO BUFFALO CREEK TRIBUTARY *3, THEN INTO BUFFALO CREEK, THEN FINALLY INTO LAKE RAY HUBBARD*

NAME OF RECEIVING WATERS: *LAKE RAY HUBBARD WATERSHED*

ESTIMATED PROJECT START DATE: *JULY 2023*

ESTIMATED PROJECT END DATE: *JULY 2024*

GENERAL PERMIT AUTHORIZATION *: *TXR150000*

DATE NOTICE OF INTENT SENT TO TCEQ :

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES

TEMPORARY:

- X ESTABLISHED VEGETATION (SEED OR SOD @ 70% DENSITY)
- N/A MULCHING
- N/A TACKIFIER
- N/A EROSION CONTROL BLANKETS

PERMANENT:

- X ESTABLISHED PERENNIAL VEGETATION (SEED OR SOD @ 70% DENSITY)
- X ESTABLISHED VEGETATION OTHER THAN SEED OR SOD (LANDSCAPING)
- X PAVING
- X RIPRAP, GABIONS OR GEOTEXTILES

DISTURBED AREAS INCLUDING HOUSE LOTS OR PROPOSED HOUSE LOTS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

BEST MANAGEMENT (EROSION & SEDIMENT CONTROL) PRACTICES:

INDICATE SELECTION WITH AN "X", IF NOT APPLICABLE, INDICATE N/A.
ALL BMPs SELECTED SHALL BE INDICATED ON THE EROSION CONTROL PLAN.

X	SILT FENCE	**(BMP ID S-1)**
N/A	ORGANIC FILTER BERM	**(BMP ID S-2)**
N/A	TRIANGULAR SEDIMENT FILTER DIKE	**(BMP ID S-3)**
X	INLET PROTECTION	(BMP ID S-4)
X	STONE OUTLET SEDIMENT TRAP	(BMP ID S-5)
X	SEDIMENT BASIN*	(BMP ID S-6)
N/A	CHECK DAM	(BMP ID S-7)
N/A	TEMPORARY SEDIMENT TANK	(BMP ID S-8)
X	STABILIZED CONSTRUCTION ENTRANCE	(BMP ID S-9)
X	WHEEL WASH	(BMP ID S-10)
N/A	INTERCEPTOR SWALE	(BMP ID E-1)
X	DIVERSION DIKE	(BMP ID E-2)
N/A	PIPE SLOPE DRAIN	(BMP ID E-3)
X	ESTABLISHED VEGETATION (SEED OR SOD @ 70% DENSITY)**	(BMP ID E-4)
N/A	MULCHING	(BMP ID E-5)
N/A	EROSION CONTROL BLANKETS	(BMP ID E-6)
N/A	CHANNEL PROTECTION	(BMP ID E-7)
X	DUST CONTROL	(BMP ID E-8)
N/A	TREE PRESERVATION	(APPROVED BY PLANNING DEPT)

*1) SEDIMENT BASIN(S) CALCULATIONS SHALL BE INCLUDED IN SWPPP
2) REQUIRED FOR 10 ACRES OR LARGER IF FEASIBLE, WRITTEN EXPLANATION REQUIRED IF DECLARED NOT FEASIBLE
** INCLUDING PRESERVATION OF EXISTING VEGETATION

POST DEVELOPMENT STORMWATER MANAGEMENT FEATURES

- X ESTABLISHED PERENNIAL VEGETATION (SEED OR SOD @ 70% DENSITY)
- X ESTABLISHED VEGETATION OTHER THAN SEED OR SOD (LANDSCAPING)
- X CURB & GUTTER
- X STORM SEWER
- X STORM SEWER INLETS
- X CULVERTS
- N/A GABIONS
- X VELOCITY DISSIPATION DEVICES
- X DETENTION, RETENTION, OR AMENITY POND:

IF A DETENTION OR RETENTION FACILITY OR AMENITY POND WILL BE PART OF A DEVELOPMENT, THE DEVELOPER SHALL CONSTRUCT THE FACILITY DURING THE INITIAL PHASES OF DEVELOPMENT, AND SHALL ENSURE THAT THE FACILITY IS FULLY FUNCTIONAL AS DESIGNED INCLUDING THE ESTABLISHMENT OF A STABILIZED COVER, WHICH SHALL BE MAINTAINED THROUGHOUT THE REMAINING PHASES OF CONSTRUCTION.

THE FOLLOWING INDICATED HOUSEKEEPING PRACTICES SHALL BE FOLLOWED

X	DEBRIS AND TRASH MANAGEMENT	(BMP ID M-1)
X	CHEMICAL MANAGEMENT	(BMP ID M-2)
X	CONCRETE WASTE MANAGEMENT	(BMP ID M-3)
X	CONCRETE SAW CUTTING WASTE MANAGEMENT	(BMP ID M-4)
N/A	SANDBLASTING WASTE MANAGEMENT	(BMP ID M-5)
X	LIME STABILIZATION WASTE MANAGEMENT	(BMP ID M-6)
X	SANITARY FACILITIES *	(BMP ID M-7)

* INDICATE PROPOSED LOCATION(S) OF SANITARY FACILITIES ON EROSION CONTROL PLAN.

(ALL SELECTED BMPs FROM MOST CURRENT NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS BEST MANAGMENT PRACTICES FOR CONSTRUCTION ACTIVITIES MANUAL SHALL BE ATTACHED TO THIS SWPPP. THE MANUAL IS FREE FOR DOWNLOAD IN PDF FORMAT AT:
http://www.dfwstormwater.com/construction/

ARE SURFACE WATERS (INCLUDING WETLANDS) EITHER AT, ADJACENT, OR IN CLOSE PROXIMITY TO THE SITE IDENTIFIED? __X__YES _____ NO

IF YES, INDICATE LOCATION ON EROSION CONTROL PLAN

WILL THIS PROJECT HAVE A BATCH PLANT? __YES __X__NO

IF YES, INDICATE PROPOSED LOCATION OF BATCH PLANT ON EROSION CONTROL PLAN

NOTE: TCEQ REQUIRES STORMWATER RUNOFF SAMPLE ANALYSIS FOR BATCH PLANT OPERATIONS

WILL THIS PROJECT HAVE OFF-SITE CONSTRUCTION SUPPORT ACTIVITIES THAT ARE AUTHORIZED UNDER THE PERMITTEE'S NOI, INCLUDING MATERIAL, WASTE, BORROW, FILL, OR EQUIPMENT STORAGE AREAS? _____ YES __X__ NO

IF YES, INDICATE LOCATION ON EROSION CONTROL PLAN

WILL STORMWATER DISCHARGES FROM THIS PROJECT EFFECT PROPERTY LISTED OR ELIGIBLE FOR LISTING ON THE NATIONAL REGISTER OF HISTORIC PLACES. _____YES __X__NO

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

RECORD DRAWING

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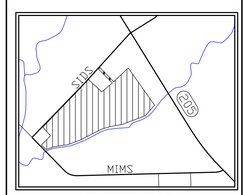
06/20/2025

FRANK A. POLMA, P.E., TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
01/18/2024
ISSUE
ISSUED FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
SWPPP NARRATIVE 1

CASE# E2023-007
SHEET NO.
C12.1

SEQUENCE AND TIMING OF INDICATED EROSION CONTROL PRACTICES AND/OR FEATURES

(INCLUDE TREATMENT OF STOCKPILED DIRT FOR FUTURE USE)

(1) INSTALL PERIMETER CONTROLS	DAYS	0 - 5
(2) INSTALL STABILIZED CONSTRUCTION ENTRANCES	DAYS	0 - 5
(3) INSTALL STAKED PORTABLE TOILET	DAYS	0 - 5
(4) INSTALL INTERIOR CONTROLS	DAYS	5 - 15
(5) STRIP SITE OF VEGETATION/ORGANICS, STOCKPILE TOPSOIL; (STOCKPILED SOIL SHALL BE STABILIZED WITHIN 14 DAYS, UNLESS ACTIVITIES TO REUSE IT BEGIN WITHIN 21 DAYS)	DAYS	15 - 30
(6) INSTALL AND MAINTAIN CONCRETE WASHOUT AREAS	DAYS	30 - 294
(7) FINAL STABILIZATION COMPLETION	DAYS	294 - 299
(8) REMOVE TEMPORARY BMP'S	DAYS	299 - 304

NOTE:
ALL BMP'S SHALL BE MAINTAINED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PROCESS

DETAILED DESCRIPTION OF BMP MAINTENANCE PROTOCOLS

INSPECTION OF BMP'S SHALL BE PERFORMED BY THE OPERATOR DESIGNATED INSPECTOR REFERENCED IN THE STORMWATER POLLUTION PREVENTION PLAN LOCATED AT THE ON-SITE CONSTRUCTION OFFICE. INSPECTION MUST BE CONDUCTED PER THE TPDES GENERAL PERMIT NUMBER TXR150000 AS REFERENCED IN PART 3, SECTION F, NUMBER 8.

DESCRIPTION OF METHODS USED TO MODIFY STORM WATER POLLUTION CONTROLS IF EXISTING CONTROLS ARE DETERMINED INADEQUATE

THE PERMITTED MUST REVISE OR UPDATE THE STORM WATER POLLUTION PREVENTION PLAN WHENEVER:

1. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS AND THAT HAS NOT BEEN PREVIOUSLY ADDRESSED IN THE STORM WATER POLLUTION PREVENTION PLAN; OR

2. RESULTS OF INSPECTION OR INVESTIGATIONS BY SITE INSPECTORS, OPERATORS OF MUNICIPAL SEPARATE STORM SEWER SYSTEMS RECIEVING THE DISCHARGE, AUTHORIZED TCEQ PERSONNEL, OR A FEDERAL, STATE OR LOCAL AGENCY APPROVING SEDIMENT AND EROSION PLANS INDICATE THE STORM WATER POLLUTION PREVENTION PLAN IS PROVING INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS IN DISCHARGES AUTHORIZED UNDER THIS GENERAL PERMIT.

NOTE:

1.) THE NOTICE OF INTENT (NOI) AND ACKNOWLEDGEMENT CERTIFICATE FOR PRIMARY OPERATORS OF LARGE CONSTRUCTION SITES, AND THE SITE NOTICE FOR SMALL CONSTRUCTION SITES AND FOR SECONDARY OPERATORS OF LARGE CONSTRUCTION SITES SHALL BE POSTED AT THE SITE.

2.) A COPY OF THE TPDES GENERAL PERMIT TXR150000 SHALL BE ATTACHED TO THIS SWPPP.

EROSION AND SEDIMENT CONTROLS

MAINTENANCE/INSPECTION PROCEDURES

1. QUALIFIED PERSONNEL SHALL BE EMPLOYED BY THE OPERATOR TO CONDUCT REQUIRED INSPECTIONS.
2. THE OPERATOR SHALL PROVIDE AND MAINTAIN A RAIN GAUGE UTILIZING MIN. 0.1 INCH INCREMENTS AT THE PROJECT SITE.
3. CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 7 CALENDAR DAYS. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST PRACTICABLE DATE.
4. INSPECTION SHALL BE PERFORMED BY THE OPERATOR'S REPRESENTATIVE. AN INSPECTION AND MAINTENANCE REPORT SHALL BE MADE FOR EACH INSPECTION AND KEPT AT 950 SIDS ROAD, ROCKWALL, TEXAS 75032. THE INSPECTOR SHALL USE THE OPERATOR INSPECTION FORM IN THE NCTCOG CONSTRUCTION BMP MANUAL OR OTHER FORM APPROVED BY THE OWNER.
5. THE FOLLOWING RECORDS SHALL BE MAINTAINED IN THE PROJECT INSPECTOR'S DAILY LOG:
   A. DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.
   B. DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE.
   C. DATES WHEN STABILIZATION MEASURES ARE INITIATED.
6. THE OPERATOR SHALL SIGN AND POST ON-SITE THE APPROPRIATE TCEQ SITE NOTICE.
7. THE OPERATOR SHALL SIGN AND POST ON-SITE A COPY OF THE TCEQ NOI (FOR PROJECTS THAT DISTURB 5 ACRES OR MORE).
8. THE OPERATOR SHALL PROVIDE THE OWNER WITH A COPY OF ANALYSIS OF STORM WATER RUNOFF SAMPLES REQUIRED BY TCEQ FOR BATCH PLANT OPERATIONS.

OTHER (DESCRIBE) N/A

THE FOLLOWING NON-STORM WATER DISCHARGES FROM SITES AUTHORIZED UNDER THE GENERAL PERMIT ARE ALSO ELIGIBLE FOR AUTHORIZATION UNDER THE GENERAL PERMIT:

. DISCHARGES FROM FIRE FIGHTING ACTIVITIES (FIRE FIGHTING ACTIVITIES DO NOT INCLUDE WASHING OF TRUCKS, RUN-OFF WATER FROM TRAINING ACTIVITIES, TEST WATER FROM FIRE SUPPRESSION SYSTEMS, AND SIMILAR ACTIVITIES);

. * UNCONTAMINATED FIRE HYDRANT FLUSHINGS (EXCLUDING DISCHARGES OF HYPERCHLORINATED WATER, UNLESS THE WATER IS FIRST DECHLORINATED AND DISCHARGES ARE NOT EXPECTED TO ADVERSELY AFFECT AQUATIC LIFE), WHICH INCLUDE FLUSHINGS FROM SYSTEMS THAT UTILIZE POTABLE WATER, SURFACE WATER, OR GROUNDWATER THAT DOES NOT CONTAIN ADDITIONAL POLLUTANTS (UNCONTAMINATED FIRE HYDRANT FLUSHINGS DO NOT INCLUDE SYSTEMS UTILIZING RECLAIMED WASTEWATER AS A SOURCE WATER);

. WATER FROM THE ROUTINE EXTERNAL WASHING OF VEHICLES, THE EXTERNAL PORTION OF BUILDINGS OR STRUCTURES, AND PAVEMENT, WHERE DETERGENTS AND SOAPS ARE NOT USED AND WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS SPILLED MATERIALS HAVE BEEN REMOVED; AND IF LOCAL STATE, OR FEDERAL REGULATIONS ARE APPLICABLE, THE MATERIALS ARE REMOVED ACCORDING TO THOSE REGULATIONS), AND WHERE THE PURPOSE IS TO REMOVE MUD, DIRT, OR DUST;

. UNCONTAMINATED WATER USED TO CONTROL DUST;

. * POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS (EXCLUDING DISCHARGES OF HYPERCHLORINATED WATER, UNLESS THE WATER IS FIRST DECHLORINATED AND DISCHARGES ARE NOT EXPECTED TO ADVERSELY AFFECT AQUATIC LIFE);

. UNCONTAMINATED AIR CONDITIONING CONDENSATE;

. UNCONTAMINATED GROUND WATER OR SPRING WATER, INCLUDING FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH INDUSTRIAL MATERIALS SUCH AS SOLVENTS; AND

. LAWN WATERING AND SIMILAR IRRIGATION DRAINAGE.

* HYPERCHLORINATED WATER (3.5 MG/L OR GREATER OF FREE CHLORINE) RESULTING FROM WATERLINE STERILIZATION SHALL BE DECHLORINATED AND NOT EXPECTED TO ADVERSELY AFFECT AQUATIC LIFE.

SIGNATORY REQUIREMENTS

THE OWNER HAS ADOPTED THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) CONSTRUCTION BMP MANUAL. THIS DOCUMENT WAS DEVELOPED AS AN AID FOR THOSE PREPARING STORM WATER POLLUTION PREVENTION PLANS (SW3P'S) FOR VARIOUS CONSTRUCTION ACTIVITIES. THEIR USE DOES NOT RELIEVE THE DESIGN ENGINEER OR OPERATOR(S) FROM COMPLYING WITH THE NCTCOG BMP MANUAL OR THE TEXAS POLLUTION DISCHARGE ELIMINATION SYSTEM (TPDES) GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION SITES.

THE SW3P SHALL BE SEALED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED BY THE OPERATOR THAT THE INFORMATION IS TRUE AND THAT THEY ASSUME RESPONSIBILITY FOR THE PLAN. ADDITIONALLY, THEY SHALL CERTIFY THAT THE PLAN MEETS STATE AND LOCAL REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL AND STORM WATER QUALITY. IN ALL CASES, A DULY AUTHORIZED REPRESENTATIVE AS INDICATED IN THE GENERAL PERMIT MAY CERTIFY THIS PLAN.

PRIOR TO THE COMMENCEMENT OF WORK ON PROJECTS 5 ACRES OR LARGER THE OPERATOR SHALL SUBMIT NOTICES OF INTENT (NOI) TO DISCHARGE STORM WATER FROM A CONSTRUCTION SITE UNDER THE TPDES PERMIT. NO WORK WILL BE ALLOWED UNTIL COPIES OF ALL APPROPRIATE NOI'S AND CERTIFICATIONS ARE RECEIVED BY THE CITY.

EROSION CONTROL BEST MANAGEMENT PRACTICES DETAILED IN THIS PLAN REDUCE STORMWATER POLLUTION DURING CONSTRUCTION TO THE MAXIMUM EXTENT PRACTICABLE.

CONSULTING ENGINEER: _____ DATE: _____

OWNER'S PROJECT MANAGER: _____ DATE: _____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. I CERTIFY THAT THE STORM WATER POLLUTION PREVENTION PLAN REFLECTS THE CITY OF ROCKWALL REQUIREMENTS FOR STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL AS ESTABLISHED IN THE NCTCOG BMP MANUAL.

PRINTED NAME: _____ TITLE: _____

SIGNATURE: _____ DATE: _____
(OPERATOR)

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE THOROUGHLY REVIEWED THIS STORMWATER POLLUTION PREVENTION PLAN (SW3P) AND THAT I UNDERSTAND AND AGREE TO COMPLY WITH THE TERMS AND CONDITIONS OF THE SW3P INCLUDING BMP INSTALLATION AND MAINTENANCE. I ALSO UNDERSTAND THAT IT IS UNLAWFUL FOR ANY PERSON TO CAUSE OR CONTRIBUTE TO A VIOLATION OF WATER QUALITY STANDARDS.

PRINTED NAME: _____ TITLE: _____

SIGNATURE: _____ DATE: _____
CONTRACTOR

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

RECORD DRAWING

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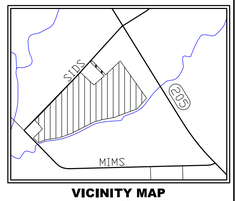
06/20/2025

FRANK A. POLOMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
01/18/2024

ISSUE
ISSUED FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
SWPPP NARRATIVE 2

CASE# E2023-007

SHEET NO.
C12.2

LEGEND

- SOS — STONE OUTLET SEDIMENT TRAP
- SF — SILT FENCE
- DD — DIVERSION DIKE
- DRAINAGE FLOW ARROW
- SC — STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED PAVING RECONSTRUCTION
- S — PROPOSED SANITARY FACILITY
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- EXISTING PAVEMENT TO REMAIN
- 100 YR FLOOD PLAIN

N

50 25 0 50

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R-DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

MATCH LINE A
SEE SHEET C-12.4

SIDS ROAD

PROPOSED CURB INLET
INLET PROTECTION

PROP BUILDING D

PROP BUILDING F

PROP BUILDING E

PROPOSED CURB INLET
INLET PROTECTION

PROPOSED CURB INLET
INLET PROTECTION

PROPOSED CURB INLET
INLET PROTECTION

EX CURB INLET
INLET PROTECTION

SEE SHEETS C12.5 - C12.6 FOR
TEMPORARY SEDIMENT BASIN
DELINEATION, DETAILS AND CAPACITY

CONCRETE WASHOUT AREA

S.H. 205

BUFFALO CREEK TRIBUTARY-3

LITTLE ROGERS ROAD

100-YR POST PROJECT
FULLY DEVELOPED FLOOD PLAIN
PER R-DELTA ENGINEERS, INC
FLOOD STUDY. APPROVED JUNE 7, 2023

NOTE:
SEE SHEET C-12.4 FOR EROSION CONTROL NOTES

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
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TBPE No. F-1515

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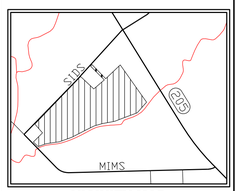
FRANK A. PORRAS, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

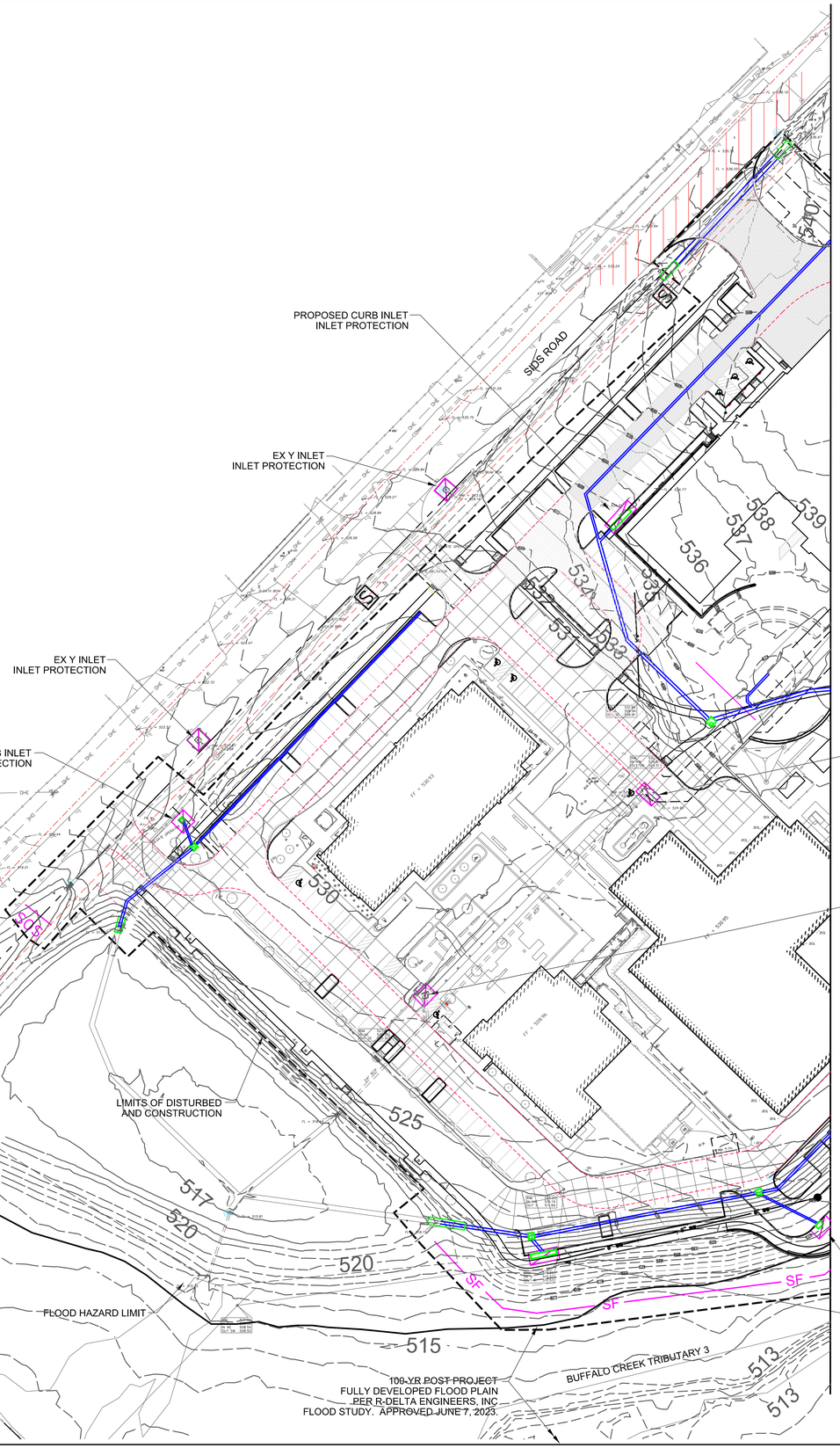
PROJECT NUMBER
3036.21

DATE
06/08/2023

ISSUE
ENGINEERING PLAN SUBMITTAL

SHEET TITLE
EROSION CONTROL PLAN
SHEET 1 OF 2
CASE# E2023-007

SHEET NO.
C12.3



MATCH LINE A
SEE SHEET C-12.3

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N

50 25 0 50

LEGEND

- SOS — STONE OUTLET SEDIMENT TRAP
- SF — SILT FENCE
- DD — DIVERSION DIKE
- DRAINAGE FLOW ARROW
- SC — STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED PAVING RECONSTRUCTION
- S — PROPOSED SANITARY FACILITY
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- EXISTING PAVEMENT TO REMAIN
- 100 YR FLOOD PLAIN

EROSION AND SEDIMENTATION CONTROL NOTES

1) EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK AND SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

2) EROSION CONTROL MEASURES SHALL BE INSPECTED AND REPAIRED, IF NECESSARY, AT THE EARLIEST POSSIBLE DATE BUT NO LATER THAN SEVEN (7) CALENDAR DAYS AFTER EACH RAIN. ANY ITEM DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED.

3) SURFACE WATER RUNOFF SHALL BE KEPT FROM ENTERING INTO ANY EXCAVATED AREAS AND UTILITY TRENCHES AT ALL TIMES.

4)THE CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND WILL CLEAN ANY DEBRIS AND SEDIMENT CAUSED BY CONSTRUCTION.

5) THE CONTRACTOR SHALL PREVENT EROSION OF THE SITE AND PROTECT ALL DRAINAGE STRUCTURES BY THE USE OF SILT FENCING, OR OTHER APPROVED EROSION CONTROL PRODUCTS, AS NEEDED. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY THE CITY ENGINEER'S OFFICE DURING ON-SITE INSPECTIONS.

6) ALL POLLUTION PREVENTION CONTROL DEVICES SHALL CONFORM TO NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) MANUAL OF "STORM WATER QUALITY BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES" (BMP MANUAL).

7) THE EXISTING STORM SEWER SYSTEM SHALL BE PROTECTED FROM UNFILTERED STORM WATER RUNOFF AT ALL TIMES.

8) INLET PROTECTION BARRIERS SHALL BE INSTALLED ON ALL EXISTING INLETS AS PAVING RECONSTRUCTION OCCURS IN AN AREA DRAINING TO THE INLET. THE INLET PROTECTION BARRIER SHALL REMAIN IN PLACE UNTIL ALL PAVING DRAINING TO THE INLET HAS BEEN RECONSTRUCTED.

9) THE LOCATIONS OF EROSION CONTROL DEVICES SHOWN ON THIS PLAN ARE APPROXIMATE UNFILTERED STORMWATER FROM EXITING CONSTRUCTION AREAS.

10) STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGH THE DURATION OF THE PROJECT. THE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ANY OTHER POINT OF ENTRY/EXIT TO THE PROJECT AS APPROVED BY THE CITY ENGINEER'S OFFICE. ALL CONSTRUCTION VEHICLES SHALL ENTER AND LEAVE THE PROJECT AREA VIA THESE STABILIZED CONSTRUCTION ENTRANCES.

HKS

ARCHITECT
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SUITE 100
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06/20/2025

FRANK A. POLOMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
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06/08/2023

ISSUE
ENGINEERING PLAN SUBMITTAL

SHEET TITLE
EROSION CONTROL PLAN
SHEET 2 OF 2
CASE# E2023-007

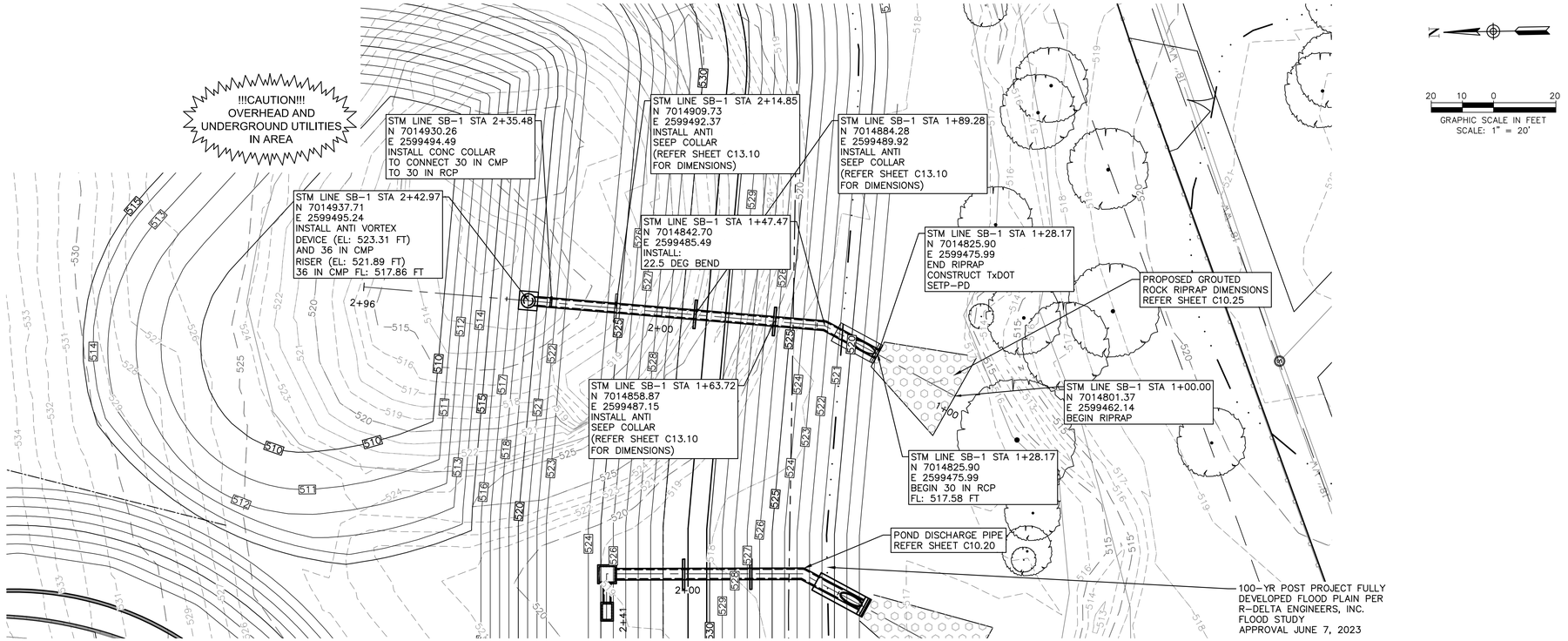
SHEET NO.
C12.4

LEGEND

- PROPOSED WROUGHT IRON FENCE
- 550 EXISTING SURFACE CONTOUR MAJOR
- 551 EXISTING SURFACE CONTOUR MINOR
- 550 PROPOSED SURFACE CONTOUR MAJOR
- 551 PROPOSED SURFACE CONTOUR MINOR
- DRAINAGE FLOW
- PROPOSED GROUTED ROCK RIPRAP

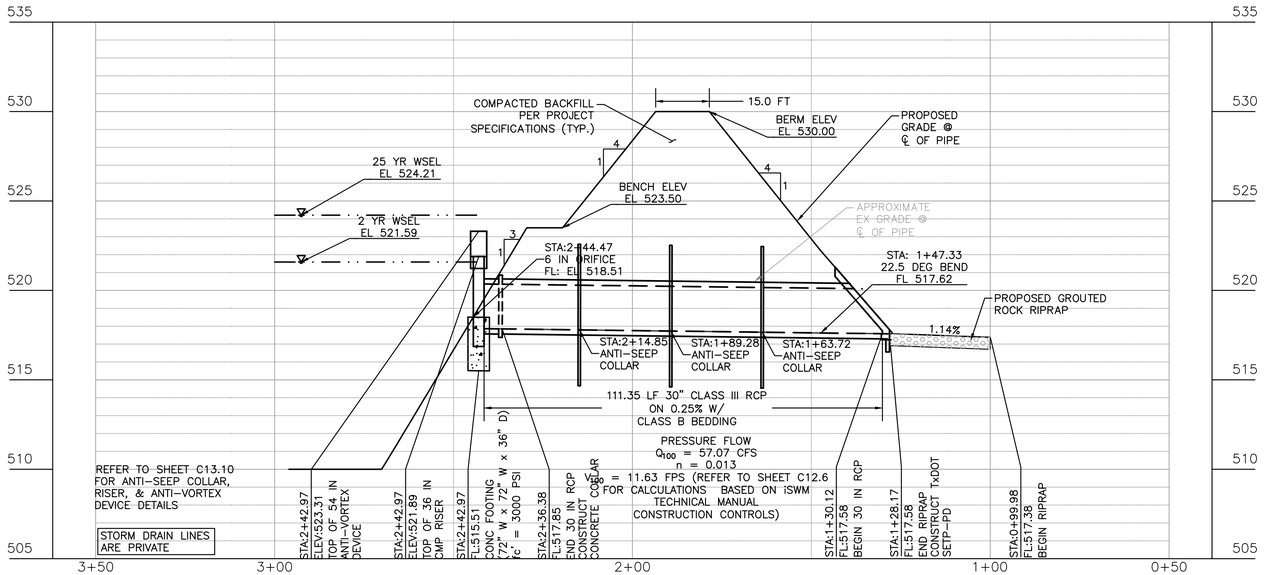
NOTES:

1. TRENCH SAFETY IS REQUIRED FOR STORM SEWER CONSTRUCTION.
2. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
3. SEE SHEET C13.3 FOR GENERAL STORM SEWER DETAILS.
4. SEE SHEET C10.3 AND C10.4 FOR HYDRAULIC CALCULATIONS.



PLAN SEDIMENT BASIN DISCHARGE PIPE

HORIZONTAL SCALE: 1"= 20'



PROFILE SEDIMENT BASIN DISCHARGE PIPE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE 1"=5'

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
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TBPE FIRM NO F-001515

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Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

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ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
SEDIMENT BASIN DISCHARGE PIPE PLAN & PROFILE

SHEET NO.
C12.5

iSWMTM Technical Manual Construction Controls

3.9.8 Design Form
Note: This design form is for basins designed with a riser as its primary outlet. It is provided as an example of the type of documentation required for a sediment basin. Different calculations will be needed for other types of outlets.

Project: Rayburn Electric Cooperative Campus Expansion

Basin #

Location: Sids and Mims Road

Total area draining to basin: **10.21** acres.
Total disturbed area draining to basin: **10.21** acres.

Basin Volume Design

1.
Minimum required volume is the lesser of
a.) (3600 cu. ft. x total drainage acres) / 27 = cu. yds.
1,361.33 CY

b.) 2 yr, 24 hr storm volume in cubic yards = cu. yds.

4,150 CY

2. Total available basin volume at crest of riser* = cu. yds. at elevation

(From Storage -Elevation Curve): See Pond Capacity Schedule

* Minimum = Lesser of 3600 cubic feet/acre of Total Drainage Area or 2yr. 24 hr. storm volume from Disturbed Area drained

3. Excavate cu yds to obtain required volume*.
*Elevation corresponding to required volume = invert of the dewatering orifice.
517.75 ft is invert of dewatering orifice

4. Diameter of dewatering orifice = 6 in.

5. Diameter of flexible tubing = in. (diameter of dewatering orifice plus 2 inches). NA

Preliminary Design Elevations
6. Crest of Riser = 521.89 ft
Top of Dam = 530 ft
Design High Water = 524.41 ft
Upstream Toe of Dam = NA

iSWMTM Technical Manual Construction Controls

Basin Shape

7.
Length of Flow L = 230 ft
Effective Width We = 250 ft

If > 2, baffles are not required

If < 2, baffles are required
CONTRACTOR SHALL INSTALL BAFFLES, AS REQUIRED TO PROMOTE SEDIMENT SILTATION IN BASIN.
Runoff

8. Q2 = 26.53 cfs (From TR-55)

9. Q25 = 57.07 cfs (From TR-55)

Basin Outlet Design
10. With emergency spillway, required basin outlet capacity Qp = Q2 = cfs. (riser and outfall)

Without emergency spillway, required basin outlet capacity Qp = Q25 = cfs. (riser and outfall)

11. With emergency spillway:
Assumed available head (h) = NA ft. (Using Q2)
h = Crest of Emergency Spillway Elevation -Crest of Riser Elevation
Without emergency spillway:
h = Design High Water Elevation -Crest of Riser Elevation, 2.34 ft

12. Riser diameter (Dr) = 36 in. Actual head (h) = **2.35 ft.**
(Figure 3.23)

Note: Avoid orifice flow conditions.

13. Barrel length (l) = **114.67 ft.**
Head (H) on outfall through embankment = **6.34 ft**.
(Figure 3.24)
14. Barrel Diameter = **30 in**. (**From Table 3.5 [concrete pipe]** or Table 3.6 [corrugated pipe]).

iSWMTM Technical Manual Construction Controls

15. Trash rack and anti-vortex device
Diameter = 54 inches.
Height = 17 inches.
(From Table 3.8).

Final Design Elevations

18. Top of Dam = 530 ft
Design High Water = 524.21 ft
Emergency Spillway Crest = NA
Basin Riser Crest = 521.89 ft
Dewatering Orifice Invert = 517.75 ft

Elevation of Upstream Toe of Dam (if excavation was performed) = **NA**

SEDIMENT BASIN DESIGN CALCULATIONS

Disturbed Area Contributing to Proposed Pond 10.21 acres

SEE SHEET C8.7

2 yr 24 hr Precipitation 4.09 in (from Table 3.5a, Page 64, City of Rockwall Standards of Design and Construction)

25 yr 24 hr Precipitation 7.67 in (from Table 3.5a, Page 64, City of Rockwall Standards of Design and Construction)

1 a.) iSWM Technical Manual

(3600 cu.ft x 10.21 total drainage area)/27 = 1,361.3 cu yds

Estimate Runoff from SCS Runoff Curve Number Method, Chapter 2, TR-55 Manual

1 b.) iSWM Technical Manual
2-yr 24 Hr Runoff Volume Estimation
Per City of Rockwall, use wet antecedent soil moisture conditions (AMC-III)

NRCS CN_2, Open Space, Hydrologic Soil Group D 80 dimensionless (from Table 3.5b, Page 65, City of Rockwall Standards of Design and Construction)

Antecedent Soil Moisture Conditions (AMC-III), CN_3 = $\frac{23 \times CN_2}{10 + 0.13 \times CN_2}$ (Eqn3.4a, City of Rockwall Standards of Design and Construction)

CN_3 = 90.20 dimensionless

$Q = \frac{(P-Ia)^2}{(P-Ia)+S}$ (Eq 2-1, TR-55 Manual)

Q runoff (in)
P rainfall (in)
S potential maximum retention after rainfall begins (in)
Ia initial abstratction (in)

Ia = 0.2S (Eq 2-2, TR-55 Manual)

$S = \frac{1000}{CN} - 10$ (Eq 2-4, TR-55 Manual)

S = 1.09 in

Ia = 0.217 in

P = 4.09 in

Q = 3.02 in

Area = 10.21 acres

Runoff Volume = 112,071.7 cf
4,150.8 cy

25-yr 24 Hr Runoff Volume Estimation
Per City of Rockwall, use wet antecedent soil moisture conditions (AMC-III)

NRCS CN_2, Open Space, Hydrologic Soil Group D 80 dimensionless (from Table 3.5b, Page 65, City of Rockwall Standards of Design and Construction)

Antecedent Soil Moisture Conditions (AMC-III), CN_3 = $\frac{23 \times CN2}{10 + 0.13 \times CN2}$ (Eqn3.4a, City of Rockwall Standards of Design and Construction)

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Q runoff (in)
P rainfall (in)
S potential maximum retebtion after rainfall begins (in)
Ia initial abstratction (in)

Ia = 0.2S (Eq 2-2, TR-55 Manual)

$S = \frac{1000}{CN} - 10$ (Eq 2-4, TR-55 Manual)

S = 1.09 in

Ia = 0.217 in

P = 7.67 in

Q = 6.50 in

Area = 10.21 acres

Runoff Volume = 241,053.39 cf
8,927.90 cy

Basin Outlet Design

Top of Embankment	530.00	ft	
Design High Water Elev	524.21	ft	
Riser Crest Elev	521.89	ft	
Head over Riser Crest	2.32	ft	
Length of Pipe Through Embankment	78.3	ft	
Qp	57.07	cfs	
Riser Diameter	36.0	in	(from Figure 3.24, iSWM Technical Manual Construction Controls)
Head on Pipe Through Embanklment	6.34	ft	
Diameter of Outflow Pipe	30.0	in	
Provided Flow by Pipe w/o Correction	66.89	cfs	(RCP Discharge Pipe, from Table 3.5, iSWM Technical Manual Construction Controls)

Pond Capacity

Elev (ft)	Area (ft^2)	Available Vol(ft3)	Cumulative Vol (ft3)	Cumulative Volume Without Sediment Storage(ft3), Elev 510-518.75 Assumed Unvailable for Storm Storage
510	6522			
511	9,488	8,005.00	8,005.00	
512	11,831	10,659.50	18,664.50	
513	14,227	13,029.00	31,693.50	
514	16,150	15,188.38	46,881.88	
515	17,645	16,897.38	63,779.26	
516	29,373	23,509.00	87,288.26	
517	31,686	30,529.50	117,817.76	
518	33,979	32,832.50	150,650.26	
518.75	35,748	26,147.72	176,797.98	
519	36,338	9,010.78	185,808.76	9,010.78
520	38,885	37,611.50	223,420.26	46,622.28
521	41,418	40,151.50	263,571.76	86,773.78
522	44,140	42,779.00	306,350.76	129,552.78
523	46,926	45,533.00	351,883.76	175,085.78
524	59,238.41	53,082.21	404,965.97	228,167.99
525	62,078.95	60,658.68	465,624.65	288,826.67
526	64,932.00	63,505.48	529,130.12	352,332.14
527	67,892.75	66,412.38	595,542.50	418,744.52
528	71,142.27	69,517.51	665,060.01	488,262.03
529	75,991.78	73,567.03	738,627.03	561,829.05
530	81,129.00	78,560.39	817,187.42	640,389.44
	Total	817,187.42		

WSEL Computations Based on Rqeuired Storage

2yr 24 hr storm Reqd Storage	112,071.71	ft3
2 yr WSEL (ft)	521.59	ft

25 yr 24 hr storm Storage	241,053.39	ft3
25 yr WSEL (ft)	524.21	ft

Orifice Design for Dewatering

Dewatering Time: 36 hrs
Dewatering Rate: 0.00 ft3/hr
Avg Dewatering Rate: 0.000 ft3/sec
Max Dewatering Rate: 0.00 ft3/sec (Using Method 1: Maximum Hydraulic Head with Routing, iSWM Hydraulics Technical Manual)

Q = CA(2gH)^0.5 Eqn 2.9, iSWM Hydraulics Technical Manual
dia 0.5 ft
center of orifice
elev 518.75 ft
2 yr WSEL 521.59 ft

C dicharge coefficient 0.6
A cross-sectional area 0.196 ft2
g accel due to gravity 32.2 ft/sec2
H effective head on orifice 2.84 ft

Q 1.59 ft3/sec

Estimation of Peak Discharge, TR-55

2yr Storm
Worksheet from TR-55
Drainage Area = Am 0.0160 mi2 (acres/640)
Runoff Curve Number, CN_2 90.20 dimensionless
Time of Conc 0.167 hrs
Rainfall distribution III

Frequency 2 yr
Rainfall (24 hr) 4.09 in
Initial Abstraction 0.217 in
Ia/P 0.053
Unit Peak Discharge, qu 550 csm/in
Runoff Q 3.02 in
Pond and Swamp Adjustment factor, Fp 1.0

Peak Discharge, Qp 26.53 cfs

25yr Storm
Worksheet from TR-55
Drainage Area = Am 0.0160 mi2 (acres/640)
Runoff Curve Number, CN_2 90.20 dimensionless
Time of Conc 0.167 hrs
Rainfall distribution III

Frequency 25 yr
Rainfall (24 hr) 7.67 in
Initial Abstraction 0.217 in
Ia/P 0.028
Unit Peak Discharge, qu 550 csm/in
Runoff Q 6.50 in
Pond and Swamp Adjustment factor, Fp 1.0
Peak Discharge, Q25 57.07 cfs

RECORD DRAWING

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06/20/2025
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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469-402-2100

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
SEDIMENT BASIN CALCULATIONS

CASE# E2023-007

SHEET NO.
C12.6

LEGEND

- SOS — STONE OUTLET SEDIMENT TRAP
- SF — SILT FENCE
- DD — DIVERSION DIKE
- DRAINAGE FLOW ARROW
- SC — STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED PAVING RECONSTRUCTION
- S — PROPOSED SANITARY FACILITY
- CONCRETE WASHOUT AREA
- INLET PROTECTION
- SEEDING/SOD REVEGETATION PER LANDSCAPE PLANS
- EXISTING PAVEMENT TO REMAIN
- 100 YR FLOOD PLAIN

N

50 25 0 50

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MATCH LINE A
SEE SHEET C-12.8

SIDS ROAD

PROP BUILDING D

PROP BUILDING F

PROP BUILDING E

CONCRETE WASHOUT AREA

S.H. 205

BUFFALO CREEK TRIBUTARY-3

FLOW RECEIVING

100-YR POST PROJECT
FULLY DEVELOPED FLOOD PLAIN
PER R-DELTA ENGINEERS, INC
FLOOD STUDY. APPROVED JUNE 7, 2023

NOTES:
1. SEE SHEET C-12.4 FOR EROSION CONTROL NOTES

2. SEE SHEETS C12.5 AND C12.6 FOR TEMPORARY DETENTION BASIN AND CALCULATIONS

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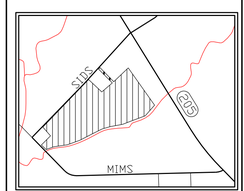

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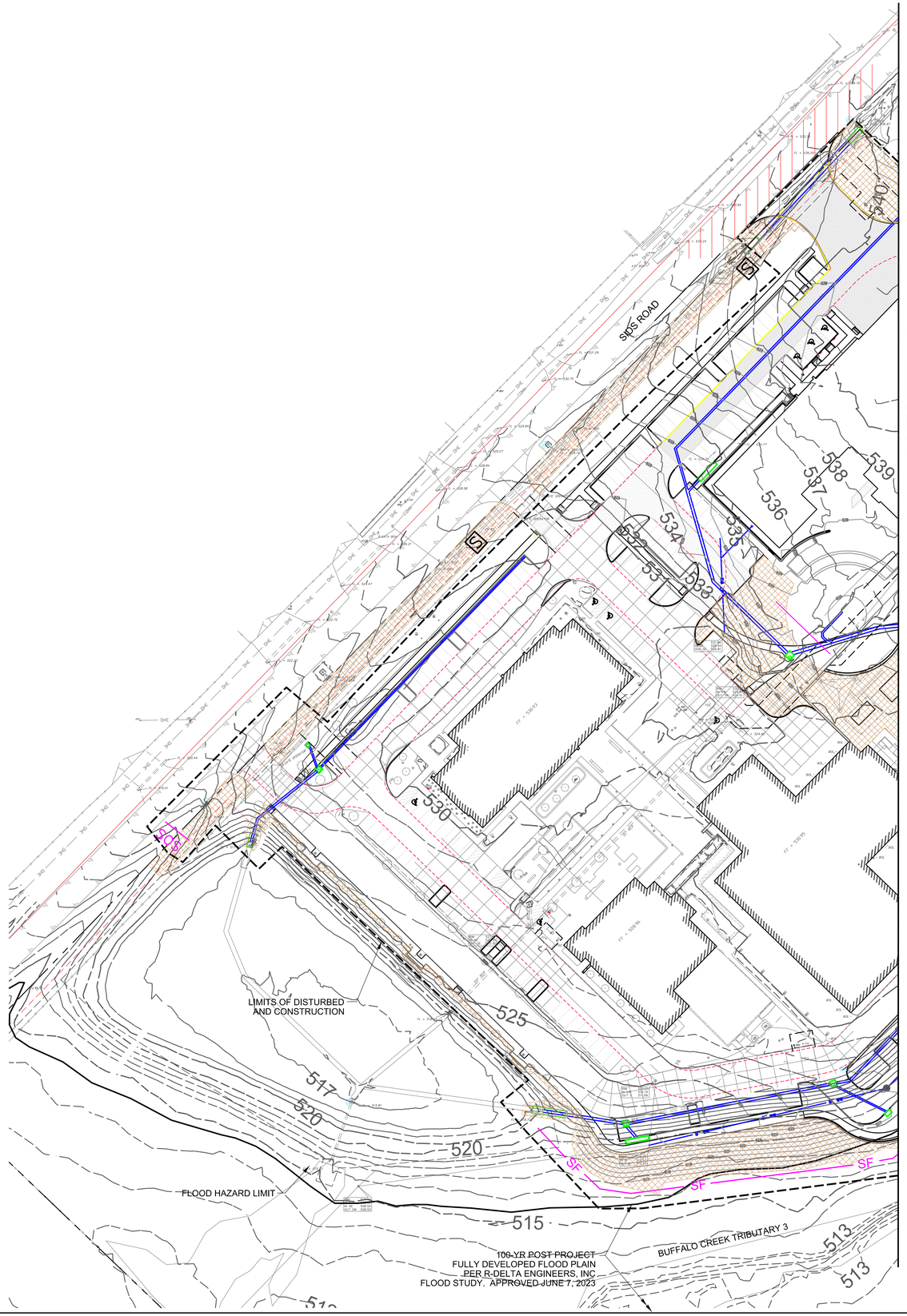
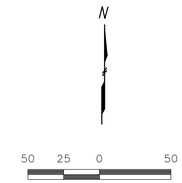
SHEET TITLE
FINAL STABILIZATION PLAN
SHEET 1 OF 2
CASE# E2023-007

SHEET NO.
C12.7





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- EXISTING PAVEMENT TO REMAIN
- 100 YR FLOOD PLAIN

EROSION AND SEDIMENTATION CONTROL NOTES

1) EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE PREPARATION WORK AND SHALL BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED.

2) EROSION CONTROL MEASURES SHALL BE INSPECTED AND REPAIRED, IF NECESSARY, AT THE EARLIEST POSSIBLE DATE BUT NO LATER THAN SEVEN (7) CALENDAR DAYS AFTER EACH RAIN. ANY ITEM DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED.

3) SURFACE WATER RUNOFF SHALL BE KEPT FROM ENTERING INTO ANY EXCAVATED AREAS AND UTILITY TRENCHES AT ALL TIMES.

4)THE CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND WILL CLEAN ANY DEBRIS AND SEDIMENT CAUSED BY CONSTRUCTION.

5) THE CONTRACTOR SHALL PREVENT EROSION OF THE SITE AND PROTECT ALL DRAINAGE STRUCTURES BY THE USE OF SILT FENCING, OR OTHER APPROVED EROSION CONTROL PRODUCTS, AS NEEDED. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY THE CITY ENGINEER'S OFFICE DURING ON-SITE INSPECTIONS.

6) ALL POLLUTION PREVENTION CONTROL DEVICES SHALL CONFORM TO NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) MANUAL OF "STORM WATER QUALITY BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES" (BMP MANUAL).

7) THE EXISTING STORM SEWER SYSTEM SHALL BE PROTECTED FROM UNFILTERED STORM WATER RUNOFF AT ALL TIMES.

8) INLET PROTECTION BARRIERS SHALL BE INSTALLED ON ALL EXISTING INLETS AS PAVING RECONSTRUCTION OCCURS IN AN AREA DRAINING TO THE INLET. THE INLET PROTECTION BARRIER SHALL REMAIN IN PLACE UNTIL ALL PAVING DRAINING TO THE INLET HAS BEEN RECONSTRUCTED.

9) THE LOCATIONS OF EROSION CONTROL DEVICES SHOWN ON THIS PLAN ARE APPROXIMATE UNFILTERED STORMWATER FROM EXITING CONSTRUCTION AREAS.

10) STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGH THE DURATION OF THE PROJECT. THE STABILIZED CONSTRUCTION ENTRANCES SHALL BE PLACED AT ANY OTHER POINT OF ENTRY/EXIT TO THE PROJECT AS APPROVED BY THE CITY ENGINEER'S OFFICE. ALL CONSTRUCTION VEHICLES SHALL ENTER AND LEAVE THE PROJECT AREA VIA THESE STABILIZED CONSTRUCTION ENTRANCES.

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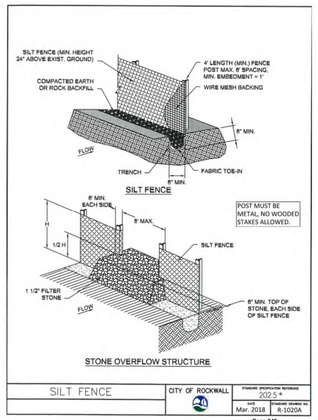
SHEET TITLE
FINAL STABILIZATION PLAN
SHEET 2 OF 2
CASE# E2023-007

SHEET NO
C12.8



SILT FENCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.5 *
		DATE Mar. 2018 / STANDARD DRAWING NO. R-1020A

Page 249

SILT FENCE GENERAL NOTES:

1. 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 IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES 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 SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

8. FILTER STONE SHALL BE WRAPPED IN FILTER FABRIC AND BURIED SIX (6") INCHES MINIMUM.

SILT FENCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.5 *
		DATE Mar. 2018 / STANDARD DRAWING NO. R-1020B

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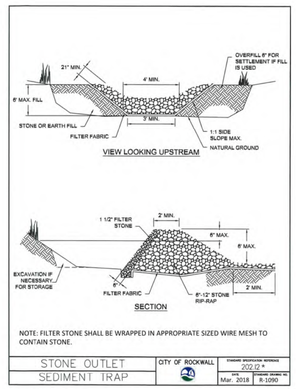

NOTE: FILTER STONE SHALL BE WRAPPED IN APPROPRIATE SIZED WIRE MESH TO CONTAIN STONE.

STONE OUTLET SEDIMENT TRAP	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.12 *
		DATE Mar. 2018 / STANDARD DRAWING NO. R-1090

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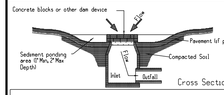
December 2003

Inlet Protection

Concrete blocks or other dam device



DESCRIPTION
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 water.

PRIMARY USE
Inlet protection should be considered a secondary defense in silt 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 with limited effectiveness.

APPLICATIONS
Different inlet protection variations are used for different conditions as follows:

- ☐ Filter barrier protection (similar to a silt fence barrier around the inlet) is appropriate when the drainage area is less than one acre and the basin slope is less than five (5) percent. This type of protection is not applicable in paved areas.
- ☐ Block and gravel (crushed stone, recycled concrete as 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 inlet 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 1000 to 3600 cubic feet per acre of disturbed area entering the inlet for full effectiveness.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
○ Sediment
◒ Nutrients Toxic Materials
○ Oil & Grease
◒ Floatable Materials
○ Other Construction Wastes

Implementation Requirements
● Capital Costs
● Maintenance
○ Training
○ Suitability for Slopes > 5%

Legend
● Significant Impact
◒ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

Varies
S-4

North Central Texas Council of Governments

December 2003

Inlet Protection

DESIGN CRITERIA
- ☐ Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.
- ☐ Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- ☐ Where applicable, filter fabrics, posts, and wire backing shall meet the material requirements specified in BMP Fact Sheet S-1, Silt Fence.
- ☐ Filter gravel shall be ⅜ inch Block and Gravel Protection or 1-1/2 to 2 inch Excavated Impoundment Protection washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- ☐ Concrete blocks shall be standard 8" x 8" x 16" concrete masonry units.
- ☐ Maximum depth of flow shall be eight (8) inches or less.
- ☐ Positive drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, excess flows shall be routed through established swales, streets, or other watercourses to minimize damage due to flooding.
- ☐ Filter Barrier Protection
  Silt fence shall consist of nylon geotextile supported by wire mesh, W.I.F. Y W.I.A. and galvanized steel posts set a minimum of 1 foot depth and spaced not more than 6 feet on center. A 6 inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
- ☐ Block and Gravel Protection Curb and Drop Inlets
  Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting. Openings in the blocks should face outward, not upward. ½" x ½" wire mesh shall then be placed over the outside face of the blocks covering the holes. Filter stone shall then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18 inches from the blocks. Alternatively, where loose stone is a concern (streets, etc.), the filter stone may be placed in appropriately sized geotextile fabric bags. Periodically, when the stone filter becomes clogged, the stone must be removed and cleaned in a proper manner or replaced with new stone and piled back against the wire mesh.
- ☐ Excavated Impoundment Protection
  An excavated impoundment shall be sized to provide a storage volume of between 1000 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 of in a proper manner.
- ☐ Inlet inserts are commercially available to remove sediment, constituents (pollutants) adsorbed 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 high flow.

LIMITATIONS
Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.

Inlet protection is only viable at low point inlets. Inlets that are on a slope cannot be effectively protected because storm water will bypass the inlet and continue downstream, causing an overload condition at inlets downstream.

December 2003

Inlet Protection

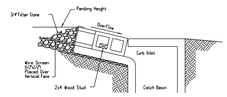
MAINTENANCE REQUIREMENTS
Inlet protection should be inspected regularly, at least as often as required by the TPDES Construction General Permit, Appendix 4A. When silt fence is used and the fabric becomes clogged, it should be cleaned or, if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the inlet protection device. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

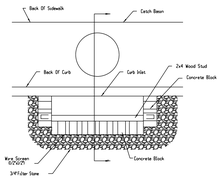
For systems using filter stone, when the filter stone becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of stone at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the inlet.

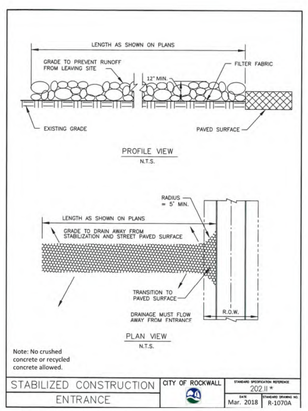
SPECIFICATION
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction - North Central Texas Council of Governments, Section 2815 Inlet Protection.

December 2003

Inlet Protection - Curb







Note: No crushed concrete or recycled concrete allowed.

STABILIZED CONSTRUCTION ENTRANCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.11 *
		DATE Mar. 2018 / STANDARD DRAWING NO. R-1070A

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STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 4 TO 6 INCH DIAMETER COARSE AGGREGATE.

2. MINIMUM LENGTH SHALL BE 50 FEET AND WIDITH SHALL BE 20 FEET.

3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.

4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

5. 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.

6. 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.

7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

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

9. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

10. NO CRUSHED OR RECYCLED CONCRETE ALLOWED.

STABILIZED CONSTRUCTION ENTRANCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.11 *
		DATE Mar. 2018 / STANDARD DRAWING NO. R-1070B

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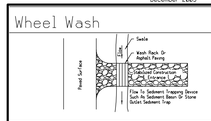
December 2003

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 on a grate over a swale. Wash water from hand held pressure washers or fixed nozzles is collected and drained to a sediment-trapping device such as a stone outlet sediment trap or sediment basin to provide for removal of sediment prior to discharge.

PRIMARY USE
Wheel washes should be used on large jobs where there is significant truck traffic, or those sites where site conditions cause the stabilized construction entrance to be overloaded with sediment and become ineffectives, and in those instances where contaminated solids might be present on site. They provide added protection and reduce the need to remove sediment from streets.

APPLICATIONS
Wheel washes should be considered an ancillary component to the stabilized construction entrance.

DESIGN CRITERIA
- ☐ 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.
- ☐ Suggested designs:
  - ○ 6-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.

LIMITATIONS
Sediment trapping BMPs used in conjunction with wheel wash facilities must be carefully designed for the anticipated amount of wash water to be treated.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
◒ Sediment
○ Nutrients Toxic Materials
○ Oil & Grease
○ Floatable Materials
○ Other Construction Wastes

Implementation Requirements
◒ Capital Costs
◒ Maintenance
◒ Training
○ Suitability for Slopes > 5%

Legend
● Significant Impact
◒ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

Fe=N/A
S-10

North Central Texas Council of Governments

December 2003

Wheel Wash

MAINTENANCE REQUIREMENTS
wash facilities should be inspected regularly, at least as often as required by the TPDES Construction General Permit, Appendix 4A. The surface of the wheel wash should be cleaned between vehicles as necessary. Sediment that has accumulated in the wash water sedimentation BMP (sediment trap, sediment basin, etc.) must be removed when it reaches a depth of approximately 1/3 the design depth of the device or 12", whichever is less. The removed sediment shall be stockpiled or redistributed in areas that are protected from erosion.

SPECIFICATION
specification for construction of this item is currently available on the Standard Specifications for Public Works Construction - North Central Texas Council of Governments.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT. INFORMATION FURNISHED BY THE CONTRACTOR AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE, R-DELTA ENGINEERS, INC. STATES THAT THE PLAN IS AS-BUILT.

06/20/2025

FRANK A. POLOMA, P.E., TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

DATE
01/18/2024

ISSUE
ISSUED FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
SWPPP - EROSION & SEDIMENT CONTROL DETAILS

CASE# E2023-007

SHEET NO.
C12.9

December 2003

Debris and Trash

DESCRIPTION
Large volumes of debris and trash are often generated at construction sites including packaging,pallets,wood waste, concrete waste, soil, electrical wiring,cuttings, and a variety of other materials. There are several techniques and procedures to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices. Recycling of construction debris also reduces the volume of material to be disposed of and associated costs.

PRIMARY USE
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.

APPLICATIONS
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:

- ☐ Construction (and Demolition) Debris
  - Dimensional Lumber
  - Miscellaneous wood (pallets, plywood, etc)
  - Copper type and electrical wiring
  - Miscellaneous metal (studs,pipe, conduit, sheathing, nails, etc)
  - Insulation
  - Concrete, brick, and mortar
  - Shingles
  - Roofing materials
  - Gypsum board
- ☐ Trash
  - Paper and cardboard (packaging, containers, wrappers)
  - Plastic (packaging, bottles, containers)
  - Styrofoam (cups, packing, and forms)
  - Food and beverage containers
  - Food waste

Storage Procedures
- ☐ Wherever possible, minimize production of debris and trash.
- ☐ Designate a foreman or supervisor to oversee and enforce proper debris and trash procedures.
- ☐ Instruct construction workers in proper debris and trash storage and handling procedures.
- ☐ Segregate potentially hazardous waste from non-hazardous construction site debris.
- ☐ Segregate recyclable construction debris from other non-recyclable materials.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ● Maintenance; ● Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-1

North Central Texas Council of Governments

December 2003

Debris and Trash Management

- ☐ Keep debris and trash under cover in either 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.
- ☐ 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.

Storage Procedures
- ☐ If feasible, recycle construction and demolition debris such as wood, metal, and concrete.
- ☐ General construction debris may be hauled to a licensed construction debris landfill (typically, less expensive than a sanitary landfill).
- ☐ Use waste and recycling haulers/facilities approved by the local jurisdiction.

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 debris and trash 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
- ☐ Job-site waste handling and disposal education and awareness program.
- ☐ Compliance by workers.
- ☐ Sufficient and appropriate waste storage containers.
- ☐ Timely removal of stored solid waste materials.
- ☐ Training workers and monitoring compliance.

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

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ● Maintenance; ● Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-2

North Central Texas Council of Governments

December 2003

Chemical Management

DESCRIPTION
Chemical management addresses the problem of storm water polluted with chemical pollutants through spills or other forms of contact. The objective of the chemical management is to minimize the potential of storm water contamination from construction chemicals through appropriate recognition, handling, storage, and disposal practices.

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 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 that use or generate hazardous wastes.Many chemicals such as fuel, oil, grease, fertilizer, and pesticide are present at most construction sites.

INSTALLATION, APPLICATION AND DISPOSAL CRITERIA
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:

- ☐ Targeted Chemical Materials
  - Paints
  - Solvents
  - Stains
  - Wood preservatives
  - Cutting oils
  - Greases
  - Roofing tar
  - Pesticides, herbicides, & fertilizer
  - Fuels & lube oils
  - Antifreeze

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 chemicals in appropriate containers (closed drums or similar) and under cover.
- ☐ Store chemicals away from drainage ditches, swales and catch basins.
- ☐ Use containment berms in fueling and maintenance areas and where the potential for spills is high.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ◒ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-2

North Central Texas Council of Governments

December 2003

Chemical Management

Waste Handling
- ☐ 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.
- ☐ 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.

Education
- ☐ Instruct workers on safety procedures for construction site chemical storage.
- ☐ Instruct workers in identification of chemical pollutants.
- ☐ Ensure that workers are trained in procedures for spill prevention and response.
- ☐ Educate workers of potential dangers to humans and the environment from chemical pollutants.
- ☐ Educate all workers on chemical storage and disposal procedures.
- ☐ Have regular meetings to discuss and reinforce identification, handling, and 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 chemical 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 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.
- ☐ Timely removal of stored hazardous waste materials.

Cost
- ☐ 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.

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 lead and asbestos, are not addressed by this program. Site-specific information on plans is necessary.

Contaminated soils are not addressed.

December 2003

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.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.

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 disposal practices listed above.
- ☐ Develop pre-determined, safe concrete disposal areas.
- ☐ Provide a washout area with a minimum of 5 cubic feet of containment area volume for every 10 cubic yards of concrete poured.
- ☐ Never dump waste concrete illicitly or without property owner's 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 standards.

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 handled concrete waste.

Enforcement
- ☐ The construction site manager or foreman must ensure that employees and premix companies follow proper procedures for concrete disposal and equipment washing.
- ☐ Employees violating disposal or equipment cleaning directives must be re-educated 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.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ◒ Training; ○ Suitability for Slopes) 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-3

North Central Texas Council of Governments

December 2003

Concrete Waste Management

Requirements
- ☐ ☐ ☐ Use pre-determined disposal sites for waste concrete.
- ☐ ☐ ☐ Prohibit dumping waste concrete anywhere but pre-determined areas.
- ☐ ☐ ☐ Assign pre-determined 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
Concrete waste management is one part of a comprehensive construction site waste management program.

December 2003

Concrete Sawcutting Waste Management

DESCRIPTION
Sawcutting of concrete pavement is a routine practice,necessary to control shrinkage cracking immediately following placement of plastic concrete. It is also used to remove curb sections and pavement sections for pavement repairs, utility trenches, and driveways. Sawcutting for joints involves sawing a narrow, shallow groove in the concrete, while sawcutting for removals is usually done full depth through the slab. Water is used to control saw blade temperature and to flush the detritus from the sawed groove. The resulting slurry of process water and fine particles and high pH must be properly managed.

A number of water quality parameters can be affected by introduction of concrete fines. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life. Suspended solids in the form of saw fines are also generated from sawcutting operations.

DESIGN CRITERIA
Slurry Collection
- ☐ During saw cutting operations, the slurry and cuttings shall be continuously vacuumed to control the flow of water from the operations site.
- ☐ The slurry and cuttings shall not be allowed to drain to the storm drain system, swales, stream or other water body.
- ☐ The slurry and cuttings shall not be allowed to remain on the pavement to dry out.

Slurry Disposal
- ☐ Develop pre-determined, 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 quality standards.
- ☐ Never dump waste illicitly or without property owner's knowledge and consent.
- ☐ Slurry may be disposed of in facilities designated for washdown of concrete trucks (see M-3, Concrete Waste Management).

MAINTENANCE
Project personnel should inspect the operations to assure that operators are diligent in controlling the water produced by the saw cutting activities. Following operations the pavement should be inspected to ensure that waste removal has been adequately performed.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ○ Nutrients/Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ○ Maintenance; ○ Training; ○ Suitability for Slopes > 5%

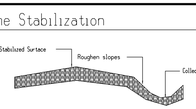
Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-4

North Central Texas Council of Governments

December 2003

Lime Stabilization



DESCRIPTION
Lime stabilization is used extensively in the North Central Texas region to stabilize pavement subbases for roadways, parking lots, and 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 off site, where it may impact aquatic life by changing the pH balance of streams, ponds, and other water bodies.

PRIMARY USE
This BMP should be implemented when lime is required for soil stabilization.

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 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.

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 0.25 gallons per sq. yd. of surface can be used to protect the base.
- ☐ Use of sediment basins with a significant 0.30 hour drawdown time is encouraged for large areas to be stabilized (see S-16, 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 moving along with avoiding applications when there is a significant probability of rain will reduce lime

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ● Maintenance; ○ Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-6

North Central Texas Council of Governments

December 2003

Sanitary Facilities

DESCRIPTION
Facilities for collection and disposal of sanitary waste must be provided and properly managed to minimize the potential contamination of surface water with septic wastes. Location of portable facilities away from storm drain systems and surface waters or containment is necessary in case of spills.

PROCEDURES
- ☐ Sanitary Facilities must be provided on the site in close proximity to areas where people are working.
- ☐ Portable toilets must be provided if no permanent facilities are available.
- ☐ Locate portable toilets a minimum of 20 feet away from storm drain inlets, conveyance channels, or surface waters
- ☐ If unable to meet 20-foot distance requirement, provide containment for portable toilets.
- ☐ Portable toilets should be regularly serviced.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; **Waste Management**; **Housekeeping Practices**

Targeted Constituents: ○ Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ◒ Maintenance; ◒ Training; ○ Suitability for Slopes > 5%

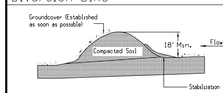
Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

M-7

North Central Texas Council of Governments

December 2003

Diversion Dike



DESCRIPTION
A diversion dike is a compacted soil mound, which redirects runoff to a desired location. The dike is typically stabilized with natural grass for low velocities or with stone armor on erosion control mats for higher velocities.

PRIMARY USE
The diversion dike is normally used to intercept offsite flow upstream of the construction area and direct the flow around the disturbed soils. It can also be used downstream of the construction area to direct flow into a sediment reduction device such as a sediment basin or protected inlet. The diversion dike serves the same purpose as an interceptor swale and is based on the topography of the site, can be used in combination with an interceptor swale.

APPLICATIONS
By intercepting runoff before it has the chance to cause erosion, diversion dikes are very effective in reducing erosion at a reasonable cost. They are applicable to a large variety of projects including site developments and linear projects such as roadways and pipeline construction. Diversion dikes are normally used as perimeter controls for construction sites with large amounts of offsite flow from neighboring properties. Used in combination with swales, the diversion dike can be quickly installed with a minimum of equipment and cost, using the swale excavation material to construct the dike. No sediment removal /recharge is required if the dike is properly stabilized and the runoff is intercepted prior to crossing disturbed areas.

Significant savings in structural controls can be realized by using diversion dikes to direct sheet flow to a central area such as a sediment basin or other sediment-reduction structure if the runoff crosses disturbed areas

DESIGN CRITERIA
- ☐ The maximum contributing drainage area should be 5 acres or less depending on site conditions.
- ☐ Maximum depth of flow at the dike shall be 1 foot based on a 2-year return period design storm peak flow.
- ☐ Side slopes of the diversion dike shall be 3:1 or flatter.
- ☐ Minimum width of the embankment at the top shall be 2 feet.
- ☐ Minimum embankment height shall be 18 inches as measured from the toe of slope on the upgrade side of the berm.

Applications: Perimeter Control; **Slope Protection**; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; Waste Management; Housekeeping Practices

Targeted Constituents: ● Sediment; ○ Nutrients Toxic Materials; ○ Oil & Grease; ● Floatable Materials; ● Other Construction Wastes

Implementation Requirements: ◒ Capital Costs; ◒ Maintenance; ◒ Training; ◒ Suitability for Slopes) 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

Fe=1.00

E-2

North Central Texas Council of Governments

December 2003

Diversion Dike

- ☐ For grades less than 2 percent and velocities less than 6 feet per second, the minimum required channel stabilization shall be grass, erosion control nets or mulching. For grades in excess of 2 percent or velocities exceeding 6 feet per second, stabilization is required in the form of turf reinforcement mats (or a layer of crushed stone or riprap with appropriate size, gradation, and thickness depending on flow conditions). Velocities greater than 8 feet per second will require approval by the local jurisdiction and is discouraged.
- ☐ The dikes shall remain in place until all disturbed areas, which are protected by the dike are permanently stabilized unless other controls are put into place to protect the disturbed area.
- ☐ The flow line at the dike shall have a positive grade to drain to a controlled outlet.
- ☐ Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment-trapping device.
- ☐ Soil used in construction of the dike can be on-site materials. It should be free of rocks larger than three inches in diameter and should be clay, silty clay or sandy clay with a plasticity index greater than 25. If only low PI material is available, it will be necessary to armor the slopes with stone or geotextile to prevent erosion of the dike.

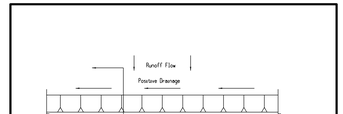
LIMITATIONS
Compacted earth dikes require stabilization immediately upon placement so as not to contribute to the problem they are addressing.

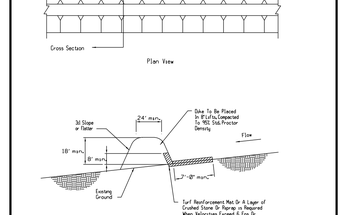
The diversion dikes can be a hindrance to construction equipment moving on the site; therefore their locations must be carefully planned prior to installation.

MAINTENANCE REQUIREMENTS
Dikes should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A) to ensure that soil is adequately packed behind the dike, or if erosion is occurring on the face of the dike. Soil shall be removed on a timely manner. If erosion is occurring on the face of the dike, the face of the slopes shall either be stabilized through mulch or seeding or the slopes shall be flattened.

SPECIFICATIONS
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction - North Central Texas Council of Governments, Section 2817 Diversion Dike.

December 2003



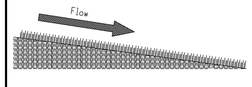


Cross Section

DIVERSION DIKE

December 2003

Vegetation



DESCRIPTION
Vegetation, as a Best Management Practice, is the sowing or sodding of annual grasses, small grains, or legumes to provide interim and permanent vegetative stabilization for disturbed areas.

PRIMARY USE
Vegetation is used as a temporary or permanent stabilization technique for areas disturbed by construction. As a temporary control, vegetation is used to stabilize stockpiles and barren areas that are inactive for long periods of time. As a permanent control, grasses and other vegetation provide good protection from erosion along with some filtering for overland runoff. Subjected to acceptable runoff velocities, vegetation can provide a positive method of permanent storm water management as well as a visual amenity to the site.

Other BMPs may be required to assist during the establishment of vegetation. These other techniques include erosion control matting, swales, and dikes to direct flow around newly seeded areas and proper grading to limit runoff velocities during construction.

APPLICATIONS
Vegetation effectively reduces erosion on swales, stockpiles, berms, mild to medium slopes, and along roadways. Vegetative strips can provide some protection when used as a perimeter control for utility and site development construction.

In many cases, the initial cost of temporary seeding may be high compared to tarps or covers for stockpiles or other barren areas subject to erosion. This initial cost should be weighed with the amount of time the area is to remain inactive, since maintenance cost for vegetated areas is much less than most structural controls.

DESIGN CRITERIA
Surface Preparation
- ☐ Interim or final grading must be completed prior to seeding or sodding.
- ☐ Install all necessary erosion structures such as dikes, swales, diversions, etc. prior to seeding or sodding.
- ☐ When establishing vegetation from seed, groove or furrow slopes steeper than 3:1 on the contour line before seeding.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; Waste Management; Housekeeping Practices

Targeted Constituents: ● Sediment; ● Nutrients Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ● Maintenance; ○ Training; ● Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

Fe=0.90

E-4

North Central Texas Council of Governments

December 2003

Vegetation

- ☐ Provide 4-6 inches of topsoil over rock, gravel or otherwise unsuitable soils. Poor quality topsoil should be amended with compost before applying seed or sod. Amendment should be three parts of topsoil to one part compost by volume thoroughly blended.
- ☐ Seed bed should be well pulverized, loose and uniform.

Plant Selection, Fertilization and seeding
- ☐ Use only high quality, USDA certified seed.
- ☐ Use an appropriate species or species mixture adapted to local climate, soil conditions and season as shown below, or consult with the local office of the Natural Resource Conservation Service (NRCS) or Engineering Extension service as necessary for selection of 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 services.
- ☐ Fertilizer shall be applied according to the manufacturer's recommendation with proper spreader equipment, typical application rate for 10-10-10 grade fertilizer is 18 lbs. per 1,000 ft.
- ☐ 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, cultipacker, terra-seeding, or hydroseeder.
- ☐ Provide adequate water to aid in establishment of vegetation.
- ☐ Use appropriate mulching techniques where necessary, especially during cold periods of the year.

Sodding
- ☐ Sod shall be St. Augustine grass, common bermudagrass, buffalograss, an approved hybrid of common Bermudagrass or an approved zoysiagrass.
- ☐ The sod should be mowed prior to sod cutting so that the height of the grass shall not exceed 2-inches and should not be harvested or planted when its moisture condition is so excessively wet or dry that its survival shall be affected.
- ☐ Sod shall be planted within 3-days after it is excavated.
- ☐ In areas subject to direct sunlight, pre-moisten prepared sod bed by watering immediately prior to placing sod.
- ☐ Sodded areas shall be thoroughly watered immediately after they are installed.

ADDITIONAL GUIDANCE
- ☐ 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 use sod, rather than seeding, to establish an erosion resistant surface to accommodate rainfall runoff flows.
- ☐ Where vegetation is used for perimeter control, the use of sod is necessary for a fifteen-foot width.
- ☐ Mulch should be used to enhance vegetative growth, in that mulch protects seeds from heat, prevents soil moisture loss, and provides 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 fertilizer. Organic fertilizers are generally preferred over chemical fertilizers from the standpoint of environmental conditions.
- ☐ Steep slopes represent a problem for establishing vegetation. Bonded Fiber Matrix or Mechanically Bonded Fiber Matrix products applied with a tackifier are useful for establishing vegetation on slopes.

TEMPORARY VEGETATION
The table on the following page lists recommended plant species for the North Central Texas region depending on the season for planting.

December 2003

Vegetation

RECOMMENDED GRASS MIXTURE FOR TEMPORARY EROSION CONTROL:

SEASON	COMMON NAME	RATE (LBS/ACRE)
Aug 15 - Nov 30	Tall Fescue	40
	Western Wheat Grass	5.0
	Wheat (Red, Winter)	30.0
May 1 - Aug 31	Foxtail Millet	30.0
Feb 15 - May 31	Annual Rye	20.0
Sep 1 - Dec 31		

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. Buffalo 609, for example, as 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
Buffalo 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 establishment. Alternate erosion control techniques, including sodding, vegetative strips, etc. should be used until vegetation can be established.

Vegetation is not appropriate for rock, gravel or coarse-grained soils unless 4 to 6 inches of topsoil is applied.

MAINTENANCE REQUIREMENTS
Protect newly seeded areas from excessive runoff and traffic until vegetation is established. A watering and fertilizing schedule will be required as part of the SWPPP to assist in the establishment of the vegetation. Vegetation should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A) to ensure that the plant material is established properly and remains healthy. Bare spots shall be reseeded and/or protected from erosion by mulch 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.

DUST CONTROL

DESCRIPTION
Dust control includes those measures necessary to prevent wind transport of dust from disturbed soil surfaces onto roadways, drainage ways, and surface waters.

PRIMARY USE
Dust control is applied in areas (including roadways) subject to surface and air movement to dust where on-site and off-site impacts to roadways, drainage ways, or surface waters are likely.

DESIGN CRITERIA
- ☐ Vegetate or mulch areas that will not receive vehicle traffic. In areas where planting, mulching, or paving is impractical, apply gravel or landscaping rock.
- ☐ Limit dust generation by clearing only those areas where immediate activity will take place, leaving the remaining area(s) in the original condition, if stable. Maintain the original cover as long as practicable.
- ☐ Construct natural or artificial windbreaks or windscreens. These may be designed as enclosures for small dust sources.
- ☐ Sprinkle the site with water until dampened sufficiently to prevent dust and repeat as needed. Do not apply water in quantities to cause runoff.
- ☐ Irrigation water can be used for dust control. Irrigation systems should be installed as a first step on sites where dust control is a concern.

SPECIFICATIONS
No specification for construction of this item is currently available in the Standard Specifications for Public Works Construction - North Central Texas Council of Governments.

Applications: Perimeter Control; Slope Protection; Sediment Trapping; Channel Protection; Temporary Stabilization; Permanent Stabilization; Waste Management; Housekeeping Practices

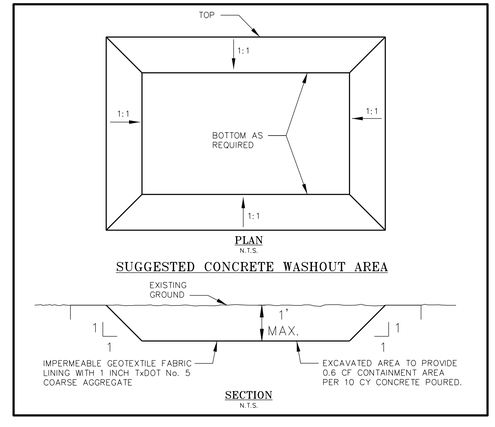
Targeted Constituents: ● Sediment; ○ Nutrients/Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

Implementation Requirements: ○ Capital Costs; ○ Maintenance; ● Training; ○ Suitability for Slopes > 5%

Legend: ● Significant Impact; ◒ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

E-8

North Central Texas Council of Governments



PLAN
N.T.S.

SUGGESTED CONCRETE WASHOUT AREA

SECTION
N.T.S.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

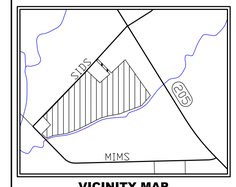
RayburnElectric COOPERATIVE

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWINGS FOR THIS PROJECT. INFORMATION FURNISHED BY THE CONTRACTOR(S) NOTED SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE, R-DELTA ENGINEERS, INC. STATES THAT THE PLAN IS AS-BUILT.

06/20/2025

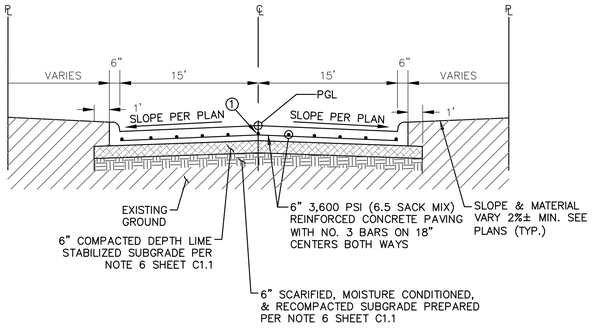
FRANK A. POMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515



VICINITY MAP
NTS

REVISION

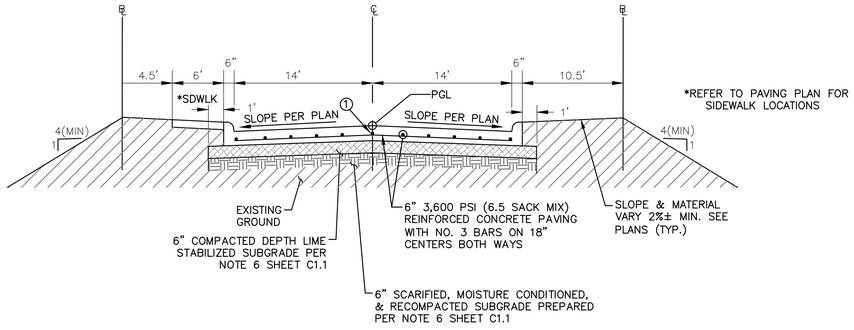
NO.	DESCRIPTION	DATE



① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

SECTION A-A - ACCESS DRIVE "A" PAVING

NO SCALE



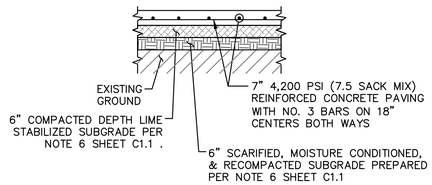
*REFER TO PAVING PLAN FOR SIDEWALK LOCATIONS

① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

SECTION B-B - ACCESS DRIVE "A" PAVING

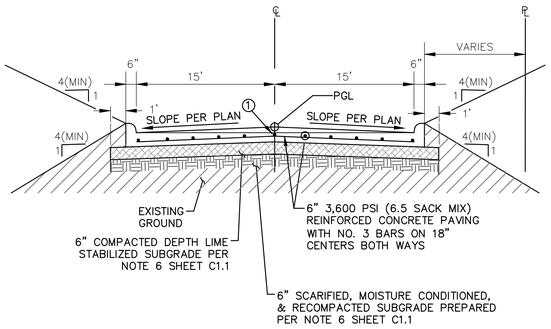
NO SCALE

NOTE: 7" PAVING REQUIRED FOR DUMPSTER PAD ALSO.



TYPICAL 7" PAVING SECTION

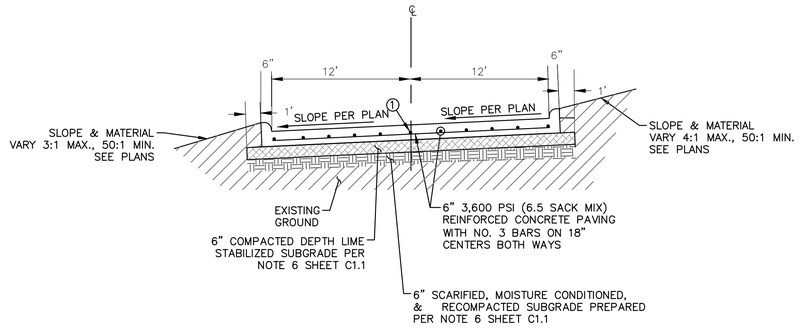
SCALE: N.T.S.



① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

SECTION C-C - ACCESS DRIVE "B" PAVING

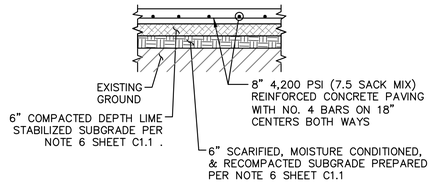
NO SCALE



① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

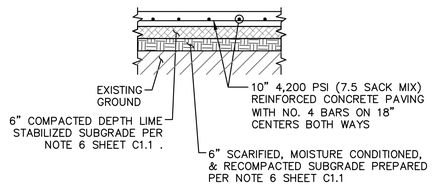
SECTION D-D - FIRE LANE PAVING

NO SCALE



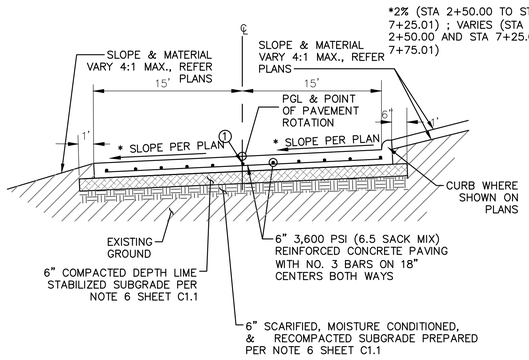
TYPICAL 8" PAVING SECTION

SCALE: N.T.S.



TYPICAL 10" PAVING SECTION

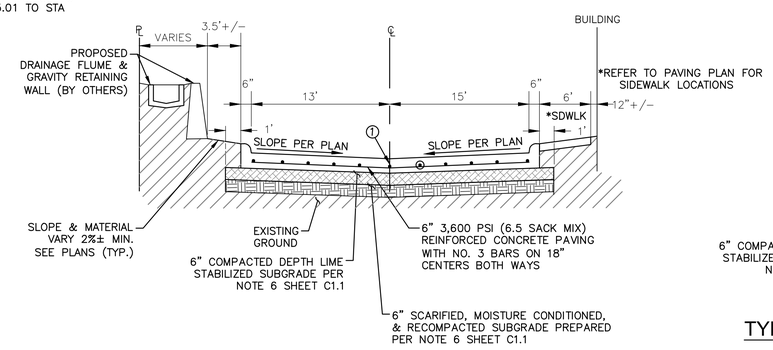
SCALE: N.T.S.



① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

SECTION C1-C1 - ACCESS DRIVE "B" PAVING

NO SCALE

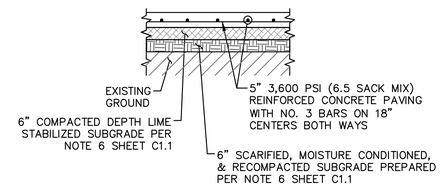


*REFER TO PAVING PLAN FOR SIDEWALK LOCATIONS

① INDICATES SAWED & SEALED LONGITUDINAL CONTRACTION OR CONSTRUCTION JOINT

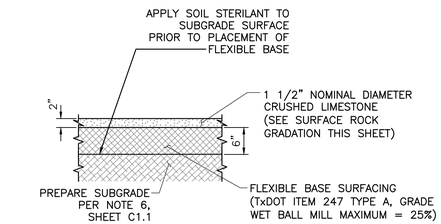
SECTION E-E - FIRE LANE PAVING

NO SCALE



TYPICAL 5" PARKING PAVING SECTION

SCALE: N.T.S.



NOTE: CONTRACTOR SHALL SUBMIT CURRENT SIEVE ANALYSIS FOR APPROVAL PRIOR TO DELIVERY OF ROCK SURFACING & FLEXIBLE BASE MATERIALS.

TYPICAL YARD ROCK SURFACING SECTION

SCALE: N.T.S.

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:

1. SEE SHEET C1.1 FOR LEGEND, PROJECT CONTROL, AND PROJECT NOTES.
2. PROVIDE SAWED & SEALED TRANSVERSE CONTRACTION JOINTS EVERY 15' APART. DEPTH OF JOINTS TO BE 1.5" FOR 6" THICK CONCRETE PAVING.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
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LANDSCAPE ARCHITECT
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260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REL RayburnElectric COOPERATIVE

VICINITY MAP
NTS

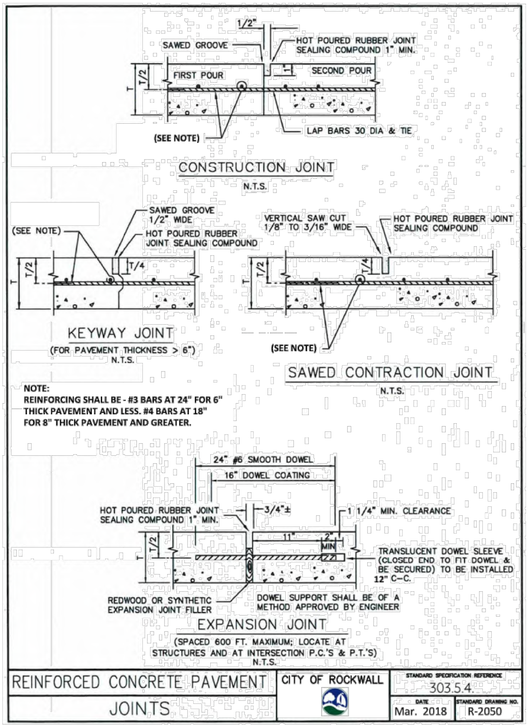
REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
TYPICAL PAVING SECTIONS

CASE# E2023-007

SHEET NO.
C13.1



REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 303.5.4
JOINTS		DATE Mar. 2018 / STANDARD DRAWING NO. R-2050

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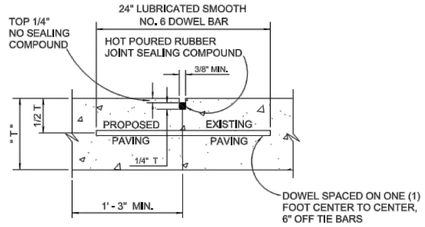

NOTES: T = PAVEMENT

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

LONGITUDINAL BUTT JOINT
NOT TO SCALE

REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	
LONGITUDINAL BUTT JOINT		DATE OCT. '17 / DRAWING NO. R-2051

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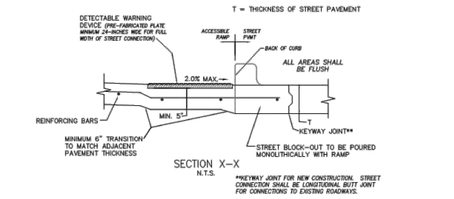

NOTE: ALL SIDEWALK CURB RAMPS WILL BE 3,600 PSI (6.5 SACK/CY) CONCRETE.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	
		DATE MAR. '17 / DRAWING NO. R-2125C

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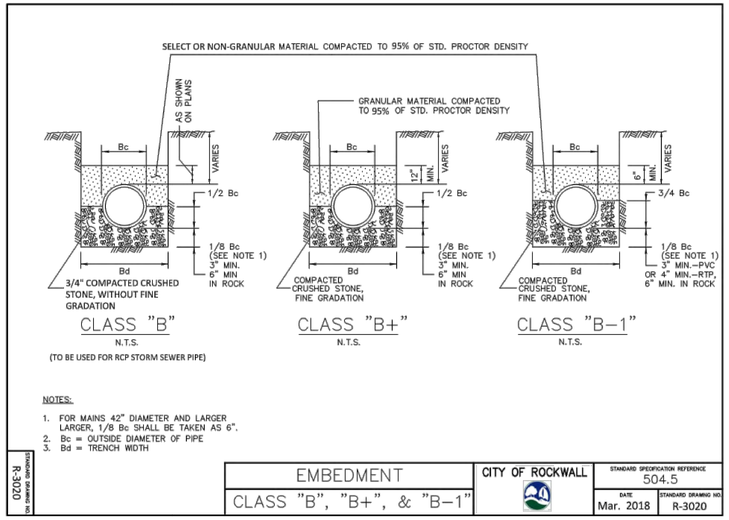
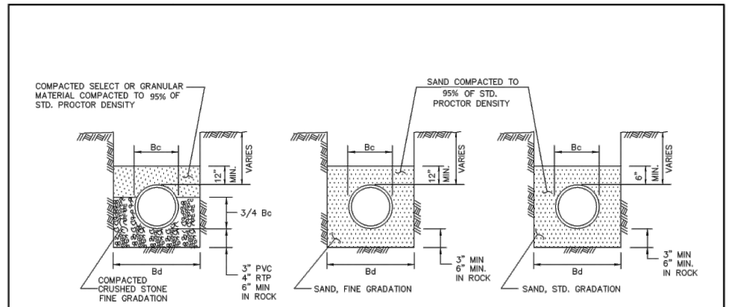


NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

EMBEDMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 504.5
CLASS "B", "B+", & "B-1"		DATE Mar. 2018 / STANDARD DRAWING NO. R-3020

Page 301



NOTES:

1. Bc = OUTSIDE DIAMETER OF PIPE
2. Bd = TRENCH WIDTH
3. NO GRANULAR MATERIAL ABOVE ROCK OR STONE EMBEDMENT

EMBEDMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 504.5
CLASS "B-2","B-3", & "B-4"		DATE AUG. '19 / STANDARD DRAWING NO. R-3030

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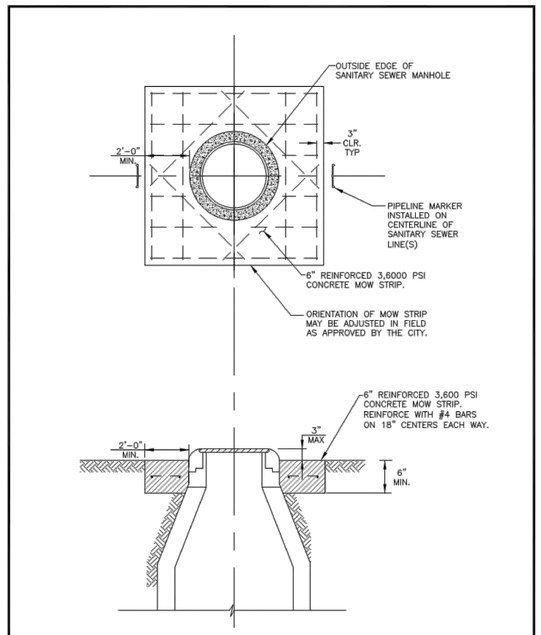

MANHOLE AND VALVE VAULT	CITY OF ROCKWALL	
MOW STRIP		DATE AUG '19 / DRAWING NO. R-5180

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RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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469-402-2100

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

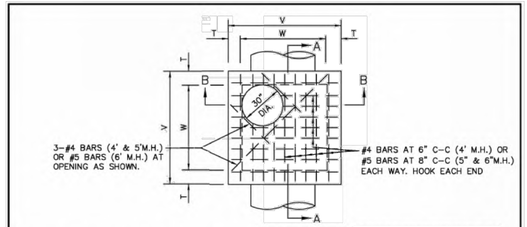
REL Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CITY STANDARD DETAILS
CASE# E2023-007
SHEET NO.
C13.2

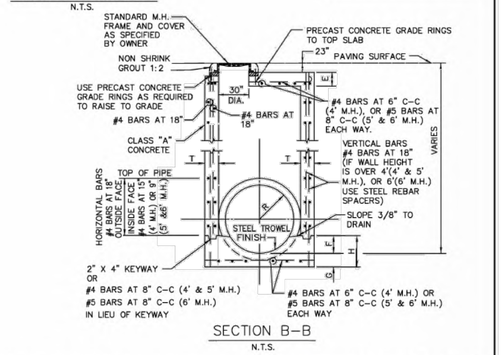


PLAN
N.T.S.

M.H. SIZE(W)	V	T	E	F	G	H
4'	5'–4"	8"	6"	9"	6"	1'–3"
5'	6'–4"	8"	6"	12"	8"	1'–8"
6'	7'–6"	9"	9"	16"	10"	2'–2"

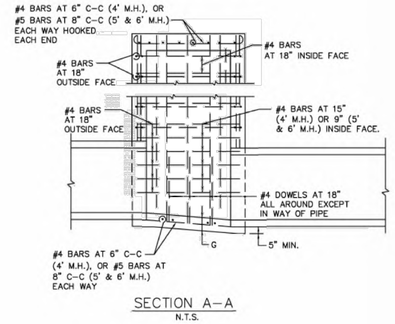
TABLE OF DIMENSIONS
N.T.S.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

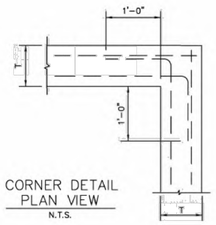


SECTION B–B
N.T.S.

STORM WATER MANHOLE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.1.4.1*	
4', 5', OR 6' SQUARE		DATE Mar. 2018	STANDARD DRAWING NO. R-6010A



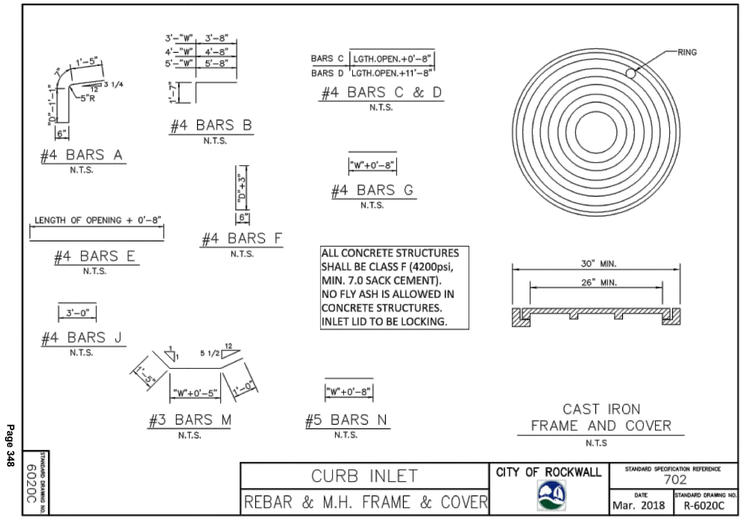
SECTION A–A
N.T.S.



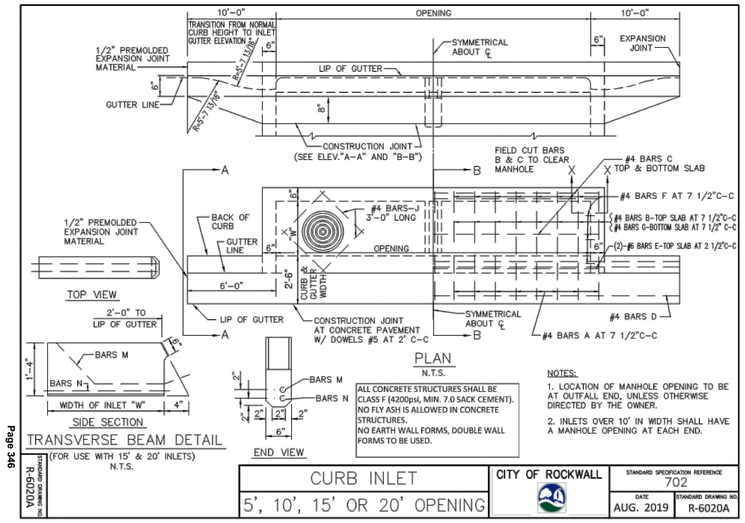
CORNER DETAIL
PLAN VIEW
N.T.S.

NOTES:
1. SLOPE INVERT OF MANHOLE AS INDICATED ON PLAN–PROFILE SHEET.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACE SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT).
4. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

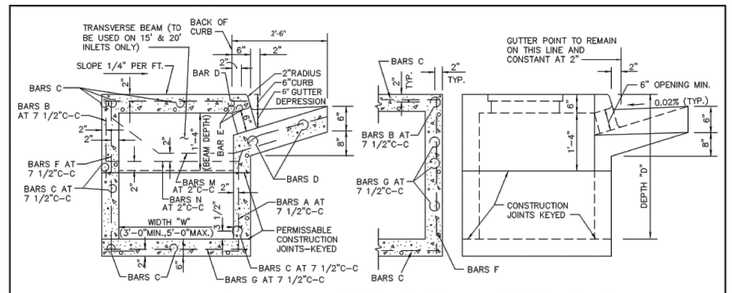
STORM WATER MANHOLE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.1.4.1*	
4', 5', OR 6' SQUARE		DATE Mar. 2018	STANDARD DRAWING NO. R-6010B



STANDARD DRAWING NO. 6020C	CURB INLET REBAR & M.H. FRAME & COVER	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702	
			DATE Mar. 2018	STANDARD DRAWING NO. R-6020C



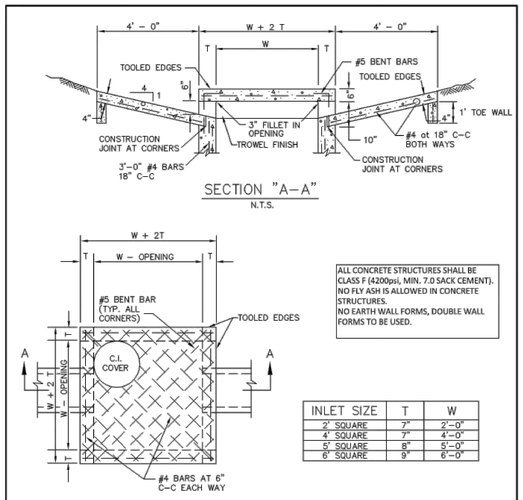
STANDARD DRAWING NO. R-6020A	CURB INLET 5', 10', 15' OR 20' OPENING	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702	
			DATE AUG. 2019	STANDARD DRAWING NO. R-6020A



GENERAL NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" CONCRETE.
2. REINFORCING BARS SHALL BE STANDARD GRADE STEEL, DEFORMED REINFORCING BARS OF A DIAMETER AND LENGTH AS SHOWN.
3. CHAMFER ALL EXPOSED CORNERS 3/4" EXCEPT WHERE OTHERWISE NOTED.
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
5. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMODATE STORM SEWER PIPE.
6. RING AND COVER SHALL BE APPROVED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES. NO EARTH WALL FORMS, DOUBLE WALL FORMS TO BE USED.

STANDARD DRAWING NO. R-6020B	CURB INLET CROSS SECTION & INLET THROAT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702	
			DATE AUG. 2019	STANDARD DRAWING NO. R-6020B



INLET SIZE	T	W
2' SQUARE	7"	2'–0"
4' SQUARE	7"	4'–0"
5' SQUARE	8"	5'–0"
6' SQUARE	9"	6'–0"

NOTES:
1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES. MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REINFORCED SAME AS 4' SQUARE MANHOLE.

DROP INLET 2', 4', 5' OR 6' SQUARE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702	
		DATE Mar. 2018	STANDARD DRAWING NO. R-6040

RECORD DRAWING

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

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CITY STANDARD DETAILS
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SHEET NO.
C13.3

BILL OF REINFORCING STEEL

DEPTH "D"	ALL WIDTHS AND LENGTHS	OPENING LENGTH "L" = 5ft Widths "W" 3ft 4ft 5ft								OPENING LENGTH "L" = 10ft Widths "W" 3ft 4ft 5ft						OPENING LENGTH "L" = 15 ft Widths "W" 3ft 4ft 5ft							OPENING LENGTH "L" = 20 ft Widths "W" 3ft 4ft 5ft							
	BARS C	BARS D	BARS E	BARS J	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS F	BARS F	BARS A	BARS B	BARS G	BARS F	BARS F	BARS A	BARS B	BARS G	BARS M	BARS N	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS M	BARS N
3'–6"	17	3	2	4	20	24	28	10	10	20	28	32	36	18	18	28	36	40	44	26	26	36	2	2	44	48	52	34	34	44	2	2
3'–9"	18	"	"	"	"	"	"	"	"	20	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"
4'–0"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"
4'–3"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"
4'–6"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
4'–9"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
5'–0"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
5'–3"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"
5'–6"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"
5'–9"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–0"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–3"	26	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–6"	27	"	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	56	"	"
6'–9"	27	"	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	56	"	"
7'–0"	29	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–3"	29	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–6"	30	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–9"	31	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–0"	31	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–3"	32	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–6"	33	"	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	54	"	"	"	"	"	"	"	62	"	"
8'–9"	34	"	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	54	"	"	"	"	"	"	"	62	"	"
9'–0"	35	"	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	56	"	"	"	"	"	"	"	64	"	"
9'–3"	36	"	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	56	"	"	"	"	"	"	"	64	"	"
9'–6"	37	"	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	58	"	"	"	"	"	"	"	66	"	"
10'–0"	38	"	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	58	"	"	"	"	"	"	"	66	"	"

NOTE:
FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

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STANDARD DRAWING NO.	CURB INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
R-6020D	BILL OF REINFORCING STEEL		DATE Mar. 2018 / STANDARD DRAWING NO. R-6020D

SUMMARY OF QUANTITIES FOR CURB INLETS

DEPTH "D"	5'–0" OPENING						10'–0" OPENING						15'–0" OPENING						20'–0" OPENING					
	WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"	
	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.
3'–6"	2.62	306	2.95	332	3.28	373	4.12	479	4.64	521	5.20	564	5.69	667	6.40	721	7.10	775	7.20	846	8.11	909	9.03	976
3'–9"	2.70	309	3.04	341	3.39	373	4.25	494	4.78	536	5.34	579	5.87	687	6.58	741	7.30	796	7.42	874	8.34	937	9.27	1010
4'–0"	2.78	328	3.14	364	3.49	399	4.38	518	4.92	565	5.49	610	6.05	718	6.77	776	7.49	835	7.64	909	8.58	976	9.51	1046
4'–3"	2.87	334	3.23	370	3.59	406	4.51	526	5.06	573	5.64	619	6.22	729	6.95	787	7.69	847	7.87	922	8.81	990	9.75	1061
4'–6"	2.95	356	3.32	394	3.69	431	4.64	558	5.20	607	5.79	656	6.40	770	7.14	830	7.88	891	8.09	973	9.04	1043	9.99	1115
4'–9"	3.03	361	3.41	410	3.79	438	4.77	566	5.34	616	5.94	665	6.57	780	7.32	841	8.07	903	8.31	986	9.27	1056	10.23	1129
5'–0"	3.12	367	3.51	416	3.90	445	4.90	574	5.47	624	6.09	674	6.75	791	7.51	853	8.27	915	8.53	999	9.50	1070	10.47	1144
5'–3"	3.20	383	3.60	424	4.00	465	5.03	600	5.61	652	6.23	704	6.93	827	7.69	890	8.46	955	8.76	1044	9.73	1118	10.71	1194
5'–6"	3.28	389	3.69	430	4.10	472	5.16	608	5.75	661	6.38	713	7.11	837	7.88	901	8.66	967	8.98	1057	9.97	1131	10.95	1208
5'–9"	3.37	405	3.78	451	4.20	495	5.29	635	5.89	690	6.53	744	7.28	874	8.07	940	8.85	1007	9.20	1102	10.22	1178	11.19	1258
6'–0"	3.45	415	3.88	460	4.30	504	5.42	646	6.03	702	6.68	757	7.45	888	8.25	954	9.05	1022	9.42	1119	10.43	1196	11.43	1276
6'–3"	3.53	425	3.97	470	4.41	515	5.55	661	6.17	718	6.83	773	7.63	908	8.44	975	9.24	1044	9.64	1147	10.66	1223	11.67	1305
6'–6"	3.62	437	4.06	486	4.51	532	5.68	681	6.31	739	6.97	797	7.81	935	8.62	1005	9.43	1057	9.87	1178	10.89	1258	11.92	1340
6'–9"	3.70	441	4.15	490	4.61	537	5.81	688	6.45	747	7.12	806	7.98	945	8.81	1015	9.63	1066	10.09	1191	11.12	1272	12.15	1355
7'–0"	3.78	460	4.25	510	4.71	560	5.94	716	6.59	777	7.27	837	8.16	981	8.99	1053	9.82	1126	10.31	1237	11.35	1319	12.40	1404
7'–3"	3.86	465	4.34	516	4.81	567	6.07	724	6.72	785	7.42	846	8.33	992	9.18	1065	10.02	1138	10.53	1249	11.59	1333	12.64	1418
7'–6"	3.95	477	4.43	529	4.91	570	6.20	742	6.86	804	7.57	866	8.51	1016	9.36	1089	10.21	1163	10.75	1290	11.82	1365	12.88	1451
7'–9"	4.03	491	4.53	544	5.02	597	6.33	762	7.00	826	7.71	890	8.67	1040	9.55	1116	10.41	1193	10.98	1313	12.05	1399	13.12	1498
8'–0"	4.12	496	4.62	550	5.12	604	6.46	770	7.14	834	7.86	899	8.86	1051	9.73	1129	10.60	1205	11.20	1325	12.28	1412	13.36	1510
8'–3"	4.20	504	4.71	559	5.22	613	6.59	784	7.28	849	8.01	915	9.04	1069	9.92	1149	10.80	1228	11.42	1353	12.51	1440	13.60	1529
8'–6"	4.28	519	4.80	576	5.32	632	6.71	804	7.42	871	8.16	938	9.21	1107	10.10	1176	10.99	1257	11.64	1385	12.74	1474	13.84	1565
8'–9"	4.37	528	4.90	586	5.42	643	6.84	819	7.56	886	8.31	954	9.39	1119	10.29	1199	11.18	1280	11.87	1410	12.97	1500	14.08	1592
9'–0"	4.45	545	4.99	605	5.53	664	6.97	842	7.70	912	8.46	982	9.56	1148	10.47	1231	11.38	1313	12.09	1447	13.21	1539	14.32	1631
9'–3"	4.53	554	5.08	614	5.63	674	7.10	858	7.84	929	8.60	999	9.74	1169	10.66	1252	11.57	1335	12.31	1474	13.44	1563	14.56	1660
9'–6"	4.62	568	5.17	630	5.73	692	7.23	878	7.97	950	8.75	1022	9.92	1195	10.84	1280	11.77	1365	12.53	1505	13.67	1600	14.80	1696
10'–0"	4.78	582	5.36	645	5.93	708	7.49	900	8.11	974	9.05	1048	10.27	1227	11.21	1312	12.16	1399	12.98	1546	14.13	1642	15.29	1739

NOTE:
FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

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STANDARD DRAWING NO.	CURB INLET	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
R-6020E	SUMMARY OF QUANTITIES		DATE Mar. 2018 / STANDARD DRAWING NO. R-6020E

GENERAL NOTES:

1. IN GENERAL, REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLAB. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE STRUCTURES SHALL BE CLASS F (4200psi, MIN. 7.0 SACK CEMENT). ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
5. 10'–0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'–0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 95% STANDARD PROCTOR DENSITY.
7. NO FLY ASH IS ALLOWED IN CONCRETE STRUCTURES.

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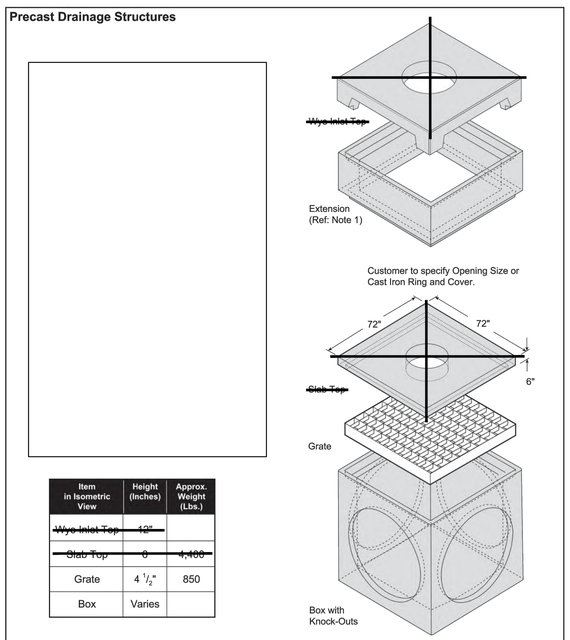
STANDARD DRAWING NO.	CURB INLET RECESSED	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 702
R-6030D	GENERAL NOTES		DATE Mar. 2018 / STANDARD DRAWING NO. R-6030D

NOTE: THE MODIFIED FORTERRA PRECAST DRAINAGE STRUCTURE SHOWN BELOW IS FOR THE STM LINE D–1 OVERFLOW STRUCTURE AND IS NOT A CITY STANDARD DETAIL.

Precast Drainage Structures



Item in Isometric View	Height (Inches)	Approx. Weight (Lbs.)
~~Wye Inlet Top~~	~~42"~~	
~~Slab Top~~	~~6~~	~~4,400~~
Grate	4 1/2"	850
Box	Varies	

Isometric View

NOTE: 5000 PSI CONCRETE.

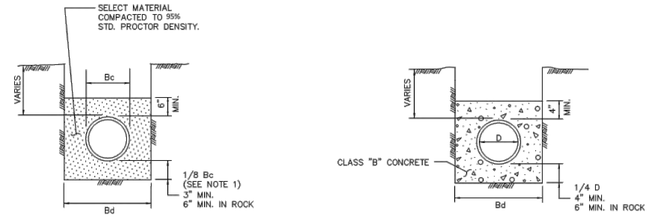
Note:
1.) For information on extensions contact your Forterra Representative.

-No Scale-
All dimensions subject to allowable specification tolerances.

TITLE	PLANT	STATE	SECTION,PAGE	DATE
5' x 5' Precast Box	Grand Prairie	TX	9.3	Feb 2016

FORTERRA

NOTE: 5'x5' GRATE AND FRAME SHALL BE GALVANIZED STEEL, RATED FOR 100 PSF LOADING, AND SECURED TO DRAINAGE STRUCTURE. GRATE SHALL HAVE A MINIMUM CLEAR OPENING OF 15.78 SQ FT.



NOTES:
1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH
4. D = INSIDE DIAMETER OF PIPE

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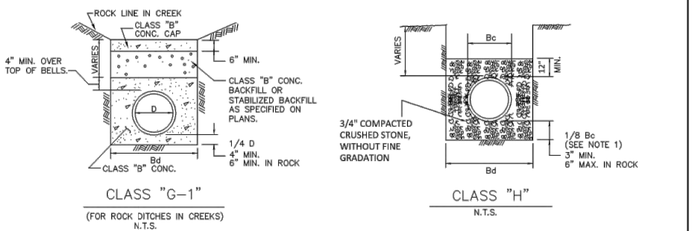
STANDARD DRAWING NO.	EMBEDMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 504.5
R-3050	CLASS "D+" & "G"		DATE Mar. 2018 / STANDARD DRAWING NO. R-3050



NOTES:
1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bd = TRENCH WIDTH
3. Bc = OUTSIDE DIAMETER OF PIPE
4. D = INSIDE DIAMETER OF PIPE

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STANDARD DRAWING NO.	EMBEDMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 504.5
R-3060	CLASS "G–1" & "H"		DATE AUG. '19 / STANDARD DRAWING NO. R-3060

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION, TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21

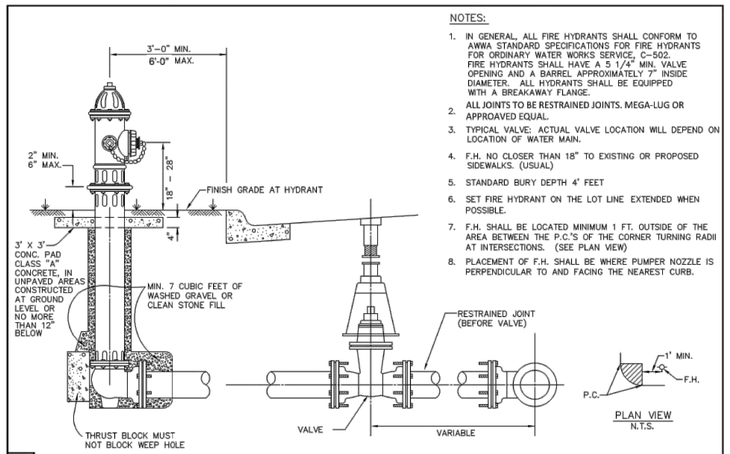
DATE
06/23/2025

ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL

SHEET TITLE
CITY STANDARD DETAILS

CASE# E2023-007

SHEET NO.
C13.4

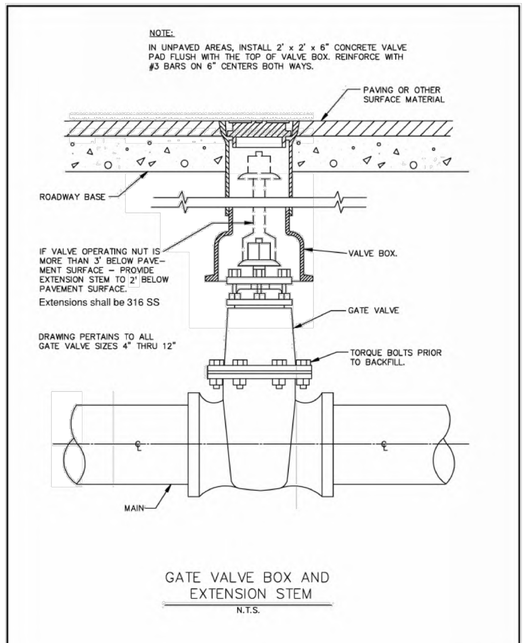


NOTES:

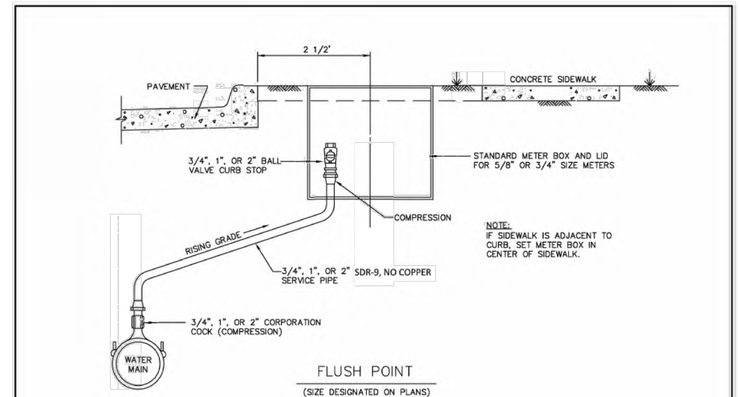
1. IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-502. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
2. ALL JOINTS TO BE RESTRAINED JOINTS. MEGA-LUG OR APPROAVED EQUAL.
3. TYPICAL VALVE; ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
4. F.H. NO CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS. (USUAL)
5. STANDARD BURY DEPTH 4' FEET
6. SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.
7. F.H. SHALL BE LOCATED MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADII AT INTERSECTIONS. (SEE PLAN VIEW)
8. PLACEMENT OF F.H. SHALL BE WHERE PUMPER NOZZLE IS PERPENDICULAR TO AND FACING THE NEAREST CURB.

FIRE HYDRANT INSTALLATION	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.3	
		DATE Aug. 2019	STANDARD DRAWING NO. R-4120

STANDARD DRAWING NO. R-4120

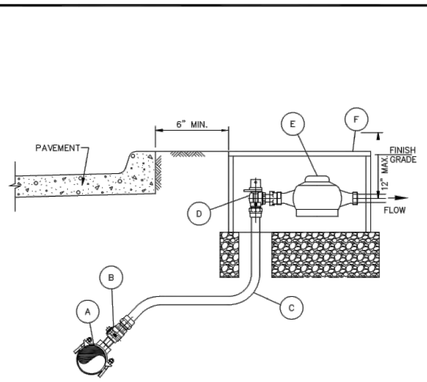


GATE VALVE 4" TO 12" BOX & EXTENSION STEM	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.6.6*	
		DATE AUG. '19	STANDARD DRAWING NO. R-4050



FLUSH POINT INSTALLATION TYPE "1"	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.10.3*	
		DATE Mar. 2018	STANDARD DRAWING NO. R-4110

STANDARD DRAWING NO. R-4110



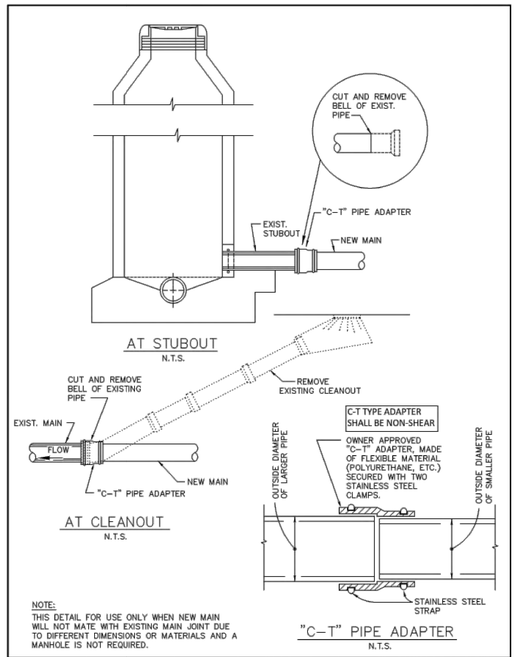
NOTES:

1. SERVICE PIPE SHALL BE 1" OR 2" SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR 9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
2. TOP OF METER BOXES SHALL BE 1" ABOVE FINISHED GRADE.
3. METER BOX SHALL HAVE A MINIMUM OF 6" OF GRAVEL BENEATH METER BOX AS ILLUSTRATED.
4. LOCATION OF THE METER BOX SHALL BE LOCATED TO ALLOW 6" CLEARANCE FROM CURB.

MATERIAL LIST:

A. SERVICE SADDLE SHALL BE BRASS WITH DOUBLE BRONZE FLATTENED STRAPS OR STAINLESS STEEL DOUBLE BOLT WIDE STRAPS. NO BANDED OR HINGED STRAPS SHALL BE ALLOWED. SERVICE SADDLES SHALL MEET AWWA/CC TAPPING OUTLET (TAPERED THREADS) REQUIREMENTS. ALL SERVICE SADDLES SHALL BE PER APPROVED WATER MATERIALS LIST.
B. 1" OR 2" CORPORATION STOP PER APPROVED WATER MATERIALS LIST.
C. 1" OR 2" SERVICE PIPE SHALL BE SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
D. 1" OR 2" LOCKING ANGLE METER VALVE (STOP) PER APPROVED WATER MATERIALS LIST.
E. WATER METERS CENTERED IN BOX AS ILLUSTRATED.
F. ROUND METER BOX PER APPROVED WATER MATERIALS LIST.

WATER SERVICE INSTALLATION 1" OR 2" LINE	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-4130



NOTE:
THIS DETAIL FOR USE ONLY WHEN NEW MAIN WILL NOT MATE WITH EXISTING MAIN JOINT DUE TO DIFFERENT DIMENSIONS OR MATERIALS AND A MANHOLE IS NOT REQUIRED.

WASTEWATER MAIN TIE-IN AT CLEANOUT OR M.H. STUBOUT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.10	
		DATE Mar. 2018	STANDARD DRAWING NO. R-5010

NOTES:

1. FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG.
2. IF FALSE M.H. ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.
3. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STD. DWG. NO. R-7005.
4. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS, MANHOLE JOINTS AND ON OUTSIDE OF STRUCTURE.
5. REFER TO STD. DWG. NO. R-5032 FOR CORROSION PROTECTION.
6. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
7. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
8. INSTALL GREEN EMS DISK AT ALL MANHOLES.
9. LIP TO BE PRECAST.

WASTEWATER MANHOLE PRECAST	CITY OF ROCKWALL		
		DATE AUG '19	DRAWING NO. R-5020

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R/DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER/ APPLICANT
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087
469-402-2100

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

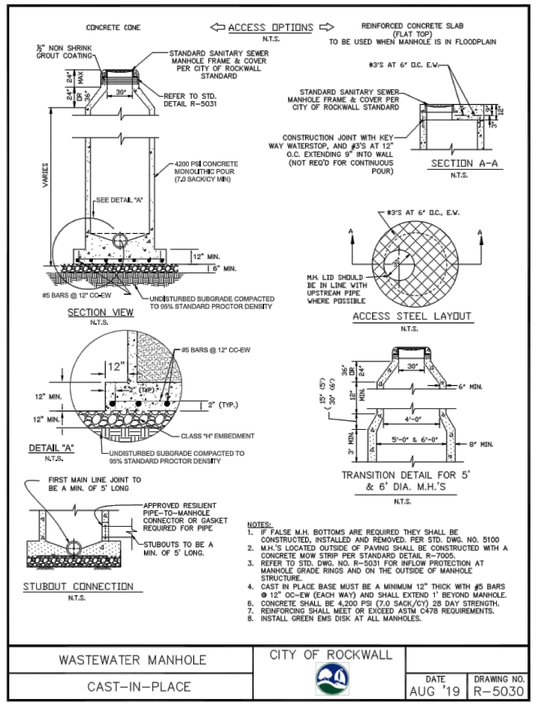
Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
CITY STANDARD DETAILS
CASE# E2023-007
SHEET NO.
C13.5



NOTES:
1. 0" FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED. PER STD. DWG. NO. 5100
2. M.H.'S LOCATED OUTSIDE OF PAVING SHALL BE CONSTRUCTED WITH A CONCRETE MOW STRIP PER STANDARD DETAIL R-7005.
3. REFER TO STD. DWG. NO. R-5031 FOR INFLOW PROTECTION AT MANHOLE GRADE RINGS AND ON THE OUTSIDE OF MANHOLE STRUCTURE.
4. CAST IN PLACE BASE MUST BE A MINIMUM 12" THICK WITH #5 BARS @ 12" OC-EW (EACH WAY) AND SHALL EXTEND 1' BEYOND MANHOLE.
6. CONCRETE SHALL BE 4,200 PSI (7.0 SACK/CY) 28 DAY STRENGTH.
7. REINFORCING SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
8. INSTALL GREEN EMS DISK AT ALL MANHOLES.

WASTEWATER MANHOLE	CITY OF ROCKWALL		
CAST-IN-PLACE		DATE AUG '19	DRAWING NO. R-5030

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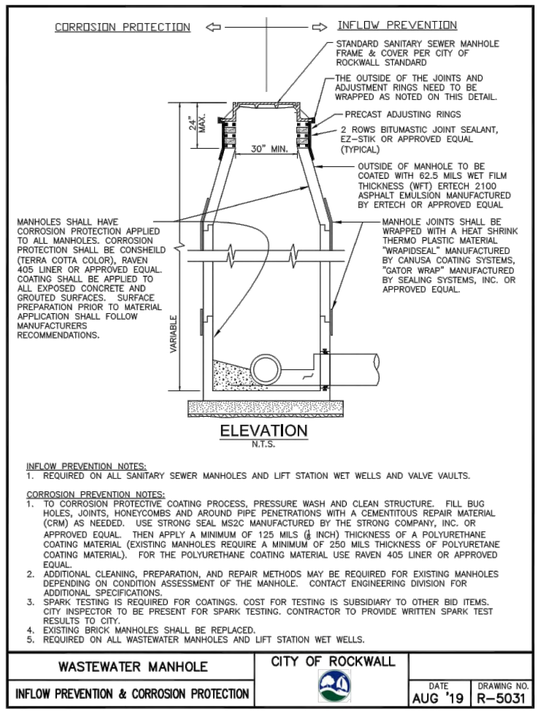

INFLOW PREVENTION NOTES:
1. REQUIRED ON ALL SANITARY SEWER MANHOLES AND LIFT STATION WET WELLS AND VALVE VAULTS.

CORROSION PREVENTION NOTES:
1. TO CORROSION PROTECTIVE COATING PROCESS, PRESSURE WASH AND CLEAN STRUCTURE. FILL BUG HOLES, JOINTS, HONEYCOMBS AND AROUND PIPE PENETRATIONS WITH A CEMENTITOUS REPAIR MATERIAL (CRM) AS NEEDED. USE STRONG SEAL MS2C MANUFACTURED BY THE STRONG COMPANY, INC. OR APPROVED EQUAL. THEN APPLY A MINIMUM OF 125 MILS (⅛ INCH) THICKNESS OF A POLYURETHANE COATING MATERIAL (EXISTING MANHOLES REQUIRE A MINIMUM OF 250 MILS THICKNESS OF POLYURETANE COATING MATERIAL). FOR THE POLYURETHANE COATING MATERIAL USE RAVEN 405 LINER OR APPROVED EQUAL.
2. ADDITIONAL CLEANING, PREPARATION, AND REPAIR METHODS MAY BE REQUIRED FOR EXISTING MANHOLES DEPENDING ON CONDITION ASSESSMENT OF THE MANHOLE. CONTACT ENGINEERING DIVISION FOR ADDITIONAL SPECIFICATIONS.
3. SPARK TESTING IS REQUIRED FOR COATINGS. COST FOR TESTING IS SUBSIDIARY TO OTHER BID ITEMS. CITY INSPECTOR TO BE PRESENT FOR SPARK TESTING. CONTRACTOR TO PROVIDE WRITTEN SPARK TEST RESULTS TO CITY.
4. EXISTING BRICK MANHOLES SHALL BE REPLACED.
5. REQUIRED ON ALL WASTEWATER MANHOLES AND LIFT STATION WET WELLS.

WASTEWATER MANHOLE	CITY OF ROCKWALL		
INFLOW PREVENTION & CORROSION PROTECTION		DATE AUG '19	DRAWING NO. R-5031

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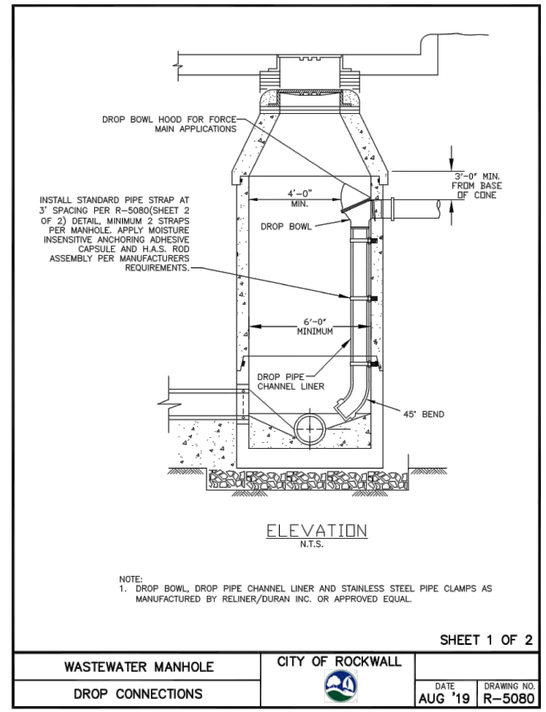
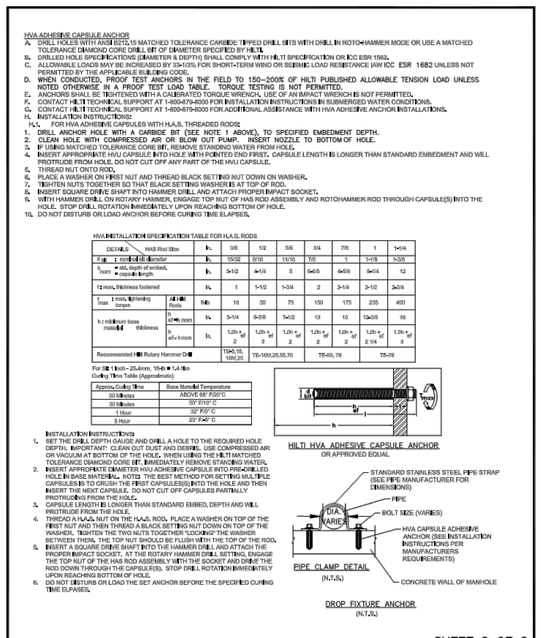


NOTE:
1. DROP BOWL, DROP PIPE CHANNEL LINER AND STAINLESS STEEL PIPE CLAMPS AS MANUFACTURED BY RELINER/DURAN INC. OR APPROVED EQUAL.

SHEET 1 OF 2

WASTEWATER MANHOLE	CITY OF ROCKWALL		
DROP CONNECTIONS		DATE AUG '19	DRAWING NO. R-5080

Page 331



SHEET 2 OF 2

WASTEWATER MANHOLE	CITY OF ROCKWALL		
DROP CONNECTIONS		DATE AUG '19	DRAWING NO. R-5080

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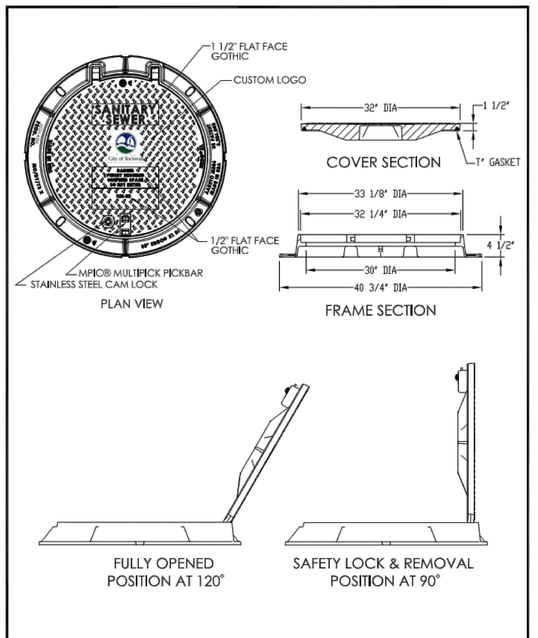

WASTEWATER MANHOLE	CITY OF ROCKWALL		
HINGED RIM AND COVER		DATE AUG '19	DRAWING NO. R-5101

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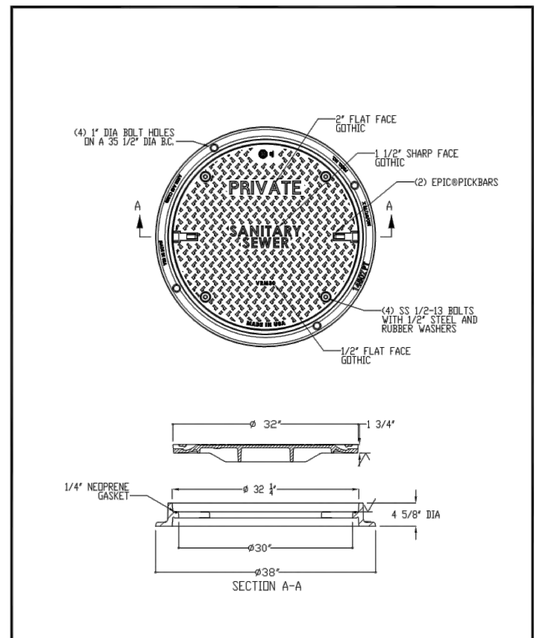

WASTEWATER MANHOLE	CITY OF ROCKWALL		
PRIVATE RIM AND COVER		DATE AUG '19	DRAWING NO. R-5103

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RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R. DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POEMA, P.E. TX #80274
R. DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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TBPE No. F-1515

Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

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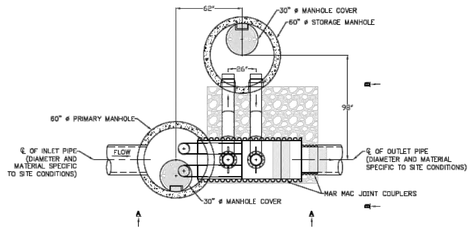
CITY STANDARD DETAILS
CASE# E2023-007
SHEET NO.
C13.6

BaySeparator K units
Installation Guide

This installation guide is reference for installing the BaySeparator water quality units K models into a precast concrete structures in the field. The components of the BaySeparator concrete package are as follows:

CAD image of a BaySeparator



Please check that all components are on site. When installing a standard "K" model, the separator component will be shipped to the job site in a "wrapped" pallet with all the parts and this instruction sheet included. The appropriate concrete manholes or structures may be shipped separately to the job site, but both internal components and concrete structures are required to complete the installation. Do not proceed until all components are at the given site.

Below is a list of tools that may be required for installation:

- 1/2" Diameter Carbide Tipped Concrete Bit (for XK units)
- Hammer Drill
- Adjustable Wrench
- Marker for writing on the concrete wall
- Hammer Drill for Concrete (Fits the 1/2" Diameter Concrete Drill Bit)
- Driver or deep socket set (English) for installation of provided 1/2" Concrete Wedge Anchors.
- Hammer
- Level
- Ladder that will extend to bottom of the manhole structures
- Safety Glasses
- Hard Hat
- Protective Gloves
- Site Drawings
- ADS Design Layout

adspipe.com
1-800-821-6710

Standard Installation Methods

1. Contact utility locator to mark any nearby underground utilities and make sure it is safe to excavate.
2. Reference the site plan and stake out the location of the BaySeparator unit to be installed.
3. Excavate the hole, providing any sheeting and shoring necessary to comply with all federal, state and local safety regulations.
4. Level the subgrade to the proper elevation. Verify the elevation against the BaySeparator system's dimensions, the invert elevations, and the site plans. Adjust the base aggregate, if necessary.
5. Have the soil bearing capacity verified by a licensed engineer for the required load bearing capacity.
6. Proceed to the appropriate installation instructions below.

Standard BaySeparator "K" series installation instructions

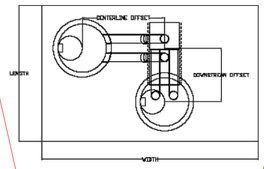
Determine the separator configuration (right-handed or left-handed) and compare it to the configuration specified on the site plan. To determine the configuration, look at the plans and imagine standing upstream and looking downstream through the system. If the storage manhole is located on the right then the unit is "right-handed", and vice versa. If the unit is not properly configured, the stub pipes, located on the bottom or belly of the BaySeparator that feed into the secondary manhole, must be repositioned by unbolting the two bottom flange sections and swinging the stubs 180 degrees from its original configuration (see Figure 1 Flange view). Remember, the bolts must be retightened to the appropriate torque using a crisscross pattern for tightening, similar to putting an automobile tire back on to a car.

See table 1 and diagram 1 for the approximate excavation limits and BaySeparator Unit layout.

Table 1

Unit	Footprint Length	Footprint Width
½ K	132" (3.4 m)	130" (3.3 m)
1K	132" (3.4 m)	151" (3.8 m)
3K	169" (4.3 m)	170" (4.3 m)
5K	176" (4.5 m)	178" (4.5 m)
10K	254" (6.5 m)	252" (6.4 m)

Diagram 1



SELECTED UNIT

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06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

NOTES:
1. CONTACT MANUFACTURER FOR COMPLETE BAYSEPARATOR DESIGN, SPECIFICATIONS, AND OPERATION INFORMATION.

HKS

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Rayburn Electric COOPERATIVE

VICINITY MAP
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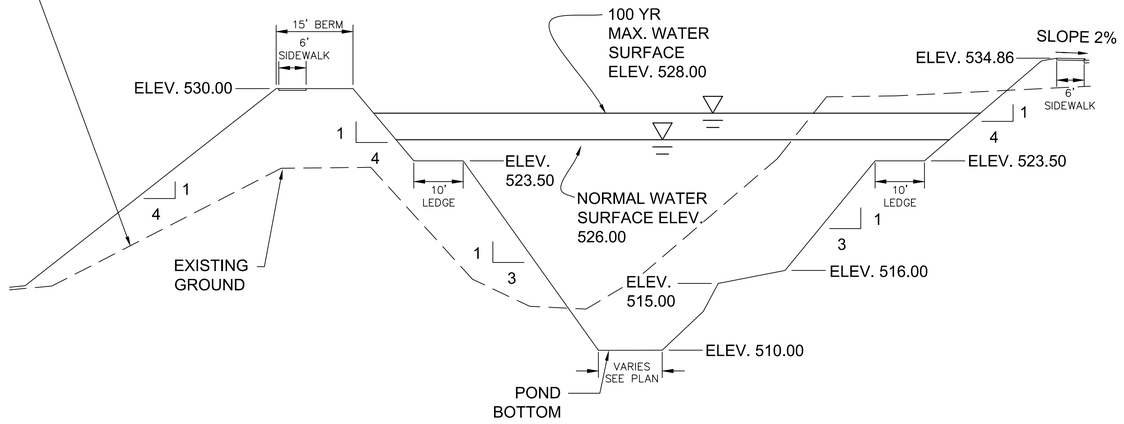
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
BAYSEPARATOR DETAILS

CASE# E2023-007

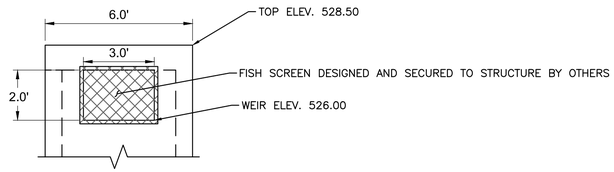
SHEET NO.
C13.7

PREPARE SUBGRADE FOR THE POND EMBANKMENT PER ADDENDUM 2 TO THE PROJECT GEOTECHNICAL REPORT DATED JANUARY 24, 2023 AND RESTATED BELOW FOR CONVENIENCE. THE SUBGRADE IN AREAS TO BE FILLED FOR THE EMBANKMENT SHOULD BE STRIPPED OF VEGETATION, MAJOR ROOT SYSTEMS, SOFT OR YIELDING MATERIALS, AND ANY DEBRIS PRESENT. THE SOFT OR YIELDING MATERIALS SHOULD BE EXCAVATED TO FIRM GROUND. PRIOR TO EMBANKMENT FILL PLACEMENT, THE SUBGRADES SHOULD BE EVALUATED BY A QUALIFIED TECHNICIAN. THE EXPOSED SUBGRADE SHOULD BE PROOFROLLED WITH CONSTRUCTION EQUIPMENT HAVING A MINIMUM AXLE LOAD OF 10 TONS [E.G., FULLY LOADED TANDEM–AXLE DUMP TRUCK]. PROOFROLLING SHOULD BE TRAVERSED IN TWO PERPENDICULAR DIRECTIONS WITH OVERLAPPING PASSES OF THE VEHICLE UNDER THE OBSERVATION OF A QUALIFIED TECHNICIAN. WHERE PROOFROLLING IDENTIFIES AREAS THAT ARE YIELDING OR PUMPING SHOULD BE REPAIRED PRIOR TO THE PLACEMENT OF SUBSEQUENT FILL. STRIPPED SURFACES SHOULD BE SCARIFIED AND COMPACTED PRIOR TO THE PLACEMENT OF THE FILLS TO PROVIDE A GOOD CONTACT BETWEEN THE EXISTING SOILS AND FILLS. BENCHING OF EXISTING SLOPES STEEPER THAN ABOUT 6 HORIZONTAL TO 1 VERTICAL MAY BE NECESSARY SO THAT RELATIVELY HORIZONTAL LIFTS CAN BE PLACED, AND GOOD CONTACT IS MADE BETWEEN THE NATURAL SOILS AND FILLS. THE ON–SITE SOILS CAN BE USED AS FILL MATERIALS. IMPORTED EMBANKMENT FILL SHOULD HAVE A PLASTICITY INDEX LESS THAN 40. THEY SHOULD BE FREE OF VEGETATION, MAJOR ROOTS, DEBRIS, AND ROCK GREATER THAN 4 INCHES IN MAXIMUM DIMENSION. THE FILL MATERIALS SHOULD BE SPREAD IN LOOSE RELATIVELY HORIZONTAL LIFTS, LESS THAN 8 INCHES THICK, AND UNIFORMLY COMPACTED TO A MINIMUM OF 95 PERCENT OF ASTM D698 AT A MINIMUM OF 2 PERCENTAGE POINTS OR ABOVE THE SOIL'S OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST. FIELD DENSITY AND MOISTURE TESTS SHOULD BE PERFORMED ON EACH LIFT AS NECESSARY TO VERIFY THAT ADEQUATE COMPACTION IS ACHIEVED. SURFACES TO RECEIVE FILLS SHOULD BE ROUGHENED IN ORDER TO HAVE A GOOD BOND BETWEEN EACH LAYER OF COMPACTED SOIL. SUCCEEDING LIFTS OF SOILS SHOULD BE PLACED IN AN EXPEDITIOUS MANNER TO PREVENT DRYING OF THE ALREADY PLACED SOILS. IF SIGNIFICANT DRYING DOES OCCUR, IT WILL BE NECESSARY TO SCARIFY, WET AND RECOMPACT THE SURFACE PRIOR TO PLACING A SUCCEEDING LIFT. EMBANKMENT FILLS SHOULD BE CONSTRUCTED BEYOND FINISHED SLOPE SURFACES AND CUT BACK TO THE DESIGN SLOPE. NO FILL SHOULD BE PLACED PARALLEL TO A SLOPE.



SECTION A-A THROUGH DETENTION POND

SCALE: N.T.S



PARTIAL FRONT ELEVATION

STM LINE D-1 MODIFIED PRECAST 5' X 3'
CURB INLET PRIMARY DISCHARGE STRUCTURE

SCALE: N.T.S.

NOTE: 5000 PSI CONCRETE.

NOTE:
CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (SHOWN ON PLANS OR NOT) PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM LOCATIONS SHOWN ON PLANS, THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. R–DELTA ENGINEERS, INC. WILL NOT BE RESPONSIBLE FOR ANY WORK BY THE CONTRACTOR NEGLECTING TO LOCATE THESE UTILITIES.

RECORD DRAWING

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VICINITY MAP
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SHEET TITLE
DETENTION POND DETAILS

CASE# E2023-007

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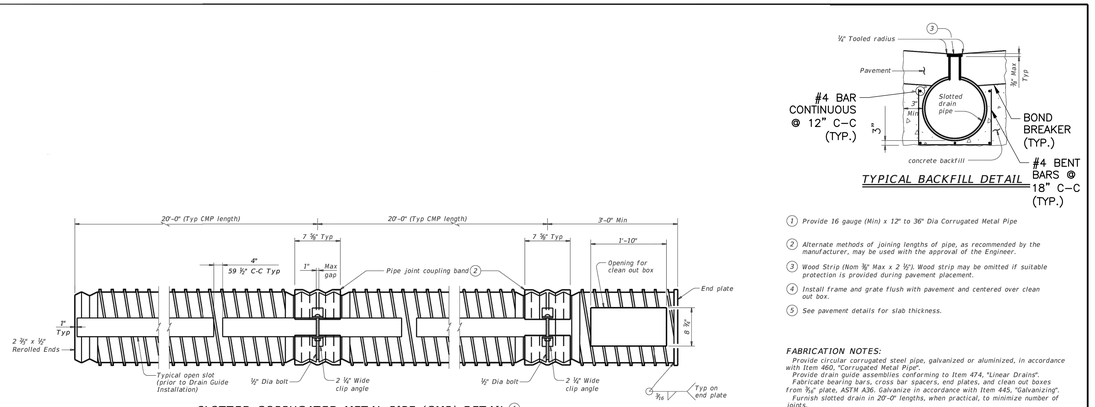
C13.8



SLOTTED CORRUGATED METAL PIPE (CMP) DETAIL (1)

Showing Type IR pipe

TYPICAL BACKFILL DETAIL

(1) *Provide 16 gauge (Min) x 12" to 36" Dia Corrugated Metal Pipe*

(2) *Alternate methods of joining lengths of pipe, as recommended by the manufacturer, may be used with the approval of the Engineer.*

(3) *Wood Strip (Nom ¾" Max x 2 ½"). Wood strip may be omitted if suitable protection is provided during pavement placement.*

(4) *Install frame and grate flush with pavement and centered over clean out box.*

(5) *See pavement details for slab thickness.*

FABRICATION NOTES:

Provide circular corrugated steel pipe, galvanized or aluminized, in accordance with Item 460, "Corrugated Metal Pipe".

Provide drain guide assemblies conforming to Item 474, "Linear Drains".

Fabricate bearing bars, cross bar spacers, end plates, and clean out boxes from ⅜" plate, ASTM A36. Galvanize in accordance with Item 445, "Galvanizing".

Furnish slotted drain in 20'-0" lengths, when practical, to minimize number of joints.

Furnish pedestrian cap when specified in the plans.

INSTALLATION NOTES:

Backfill trenches for slotted drains and outfall pipe with low strength concrete (minimum 2 sacks or cement per cubic yard) or cement stabilized backfill as shown or directed by the Engineer.

Place suitable compressible material in the outfall connection slip joint, to retain grout during curing.

Provide heavy duty frame and grate from one of the following, or approved equal (clear opening 22" x 8 ⅝" Min, 25 ½" x 12 Max).

Neenah R-3471
E J V-4374
USF 4621 frame and 6296 grate

GENERAL NOTES:

Unless otherwise shown on the plans, the Contractor may furnish any of the designs as shown.

Frame and grate is subsidiary to Slotted Drain.

SHEET 1 OF 2

Texas Department of Transportation | Bridge Division Standard

ROADWAY LINEAR DRAIN (SLOTTED DRAIN)

SD (MOD)

FILE: sdsdd01-20.dgn	DN: TxDOT	CK: TxDOT	DW: DKC	CK: AES
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REVISIONS	DIST	COUNTY		SHEET NO.

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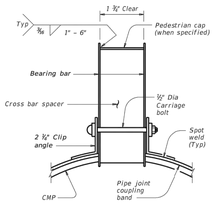
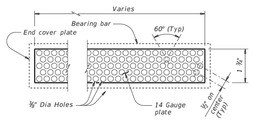
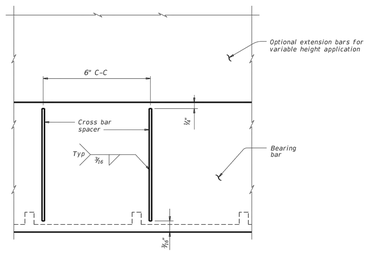


PIPE JOINT CONNECTION TRANSVERSE SECTION

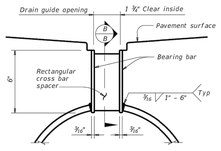


PEDESTRIAN CAP DETAIL



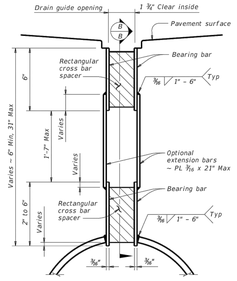
SECTION B-B (WITH RECTANGULAR SPACERS)

Showing installation of cross bar spacers in longitudinal section.



STANDARD HEIGHT

Showing rectangular spacers.



VARIABLE HEIGHT

Showing rectangular spacers and extension.

TYPICAL SECTIONS THRU DRAIN GUIDE INSTALLATION

SHEET 2 OF 2

Texas Department of Transportation | Bridge Division Standard

ROADWAY LINEAR DRAIN (SLOTTED DRAIN)

SD (MOD)

FILE: sdsdd01-20.dgn	DN: TxDOT	CK: TxDOT	DW: DKC	CK: AES
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REVISIONS	DIST	COUNTY		SHEET NO.

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NOTES:

1. CONCRETE SHALL BE 3600 PSI.
2. FURNISH AND INSTALL ALUMINIZED STEEL TYPE 2 (ASTM A760).
3. PRICE BID FOR SLOTTED DRAIN STORM SEWER SHALL INCLUDE ALL EXCAVATION, PIPE, REINFORCEMENT, 3000 PSI CONCRETE EMBEDMENT, REINFORCING STEEL, BACKFILL, FLEXIBLE EXPANSION JOINT FILLER AND ALL NECESSARY INCIDENTALS.

THESE DETAILS APPLY TO STORM B LINE (SEE SHEET C10.14).

RECORD DRAWING

NOTE: THIS RECORD DRAWING IS A COMPILATION OF THE ORIGINAL SEALED ENGINEERING DRAWING FOR THIS PROJECT, INFORMATION FURNISHED BY THE CONTRACTOR, AND FIELD SURVEY VERIFICATION. TO THE BEST OF OUR KNOWLEDGE R-DELTA ENGINEERS, INC. STATES THAT THIS PLAN IS AS-BUILT.

06/20/2025
FRANK A. POLMA, P.E. TX #80274
R-DELTA ENGINEERS, INC.
TBPE FIRM NO F-001515

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260 EAST DAVIS STREET, SUITE 100
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RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

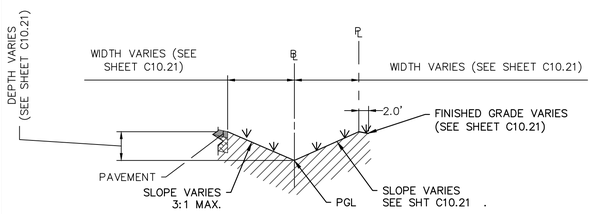
REL Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

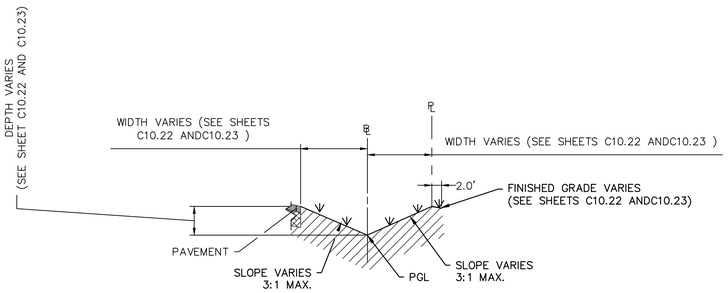
REVISION

NO.	DESCRIPTION	DATE

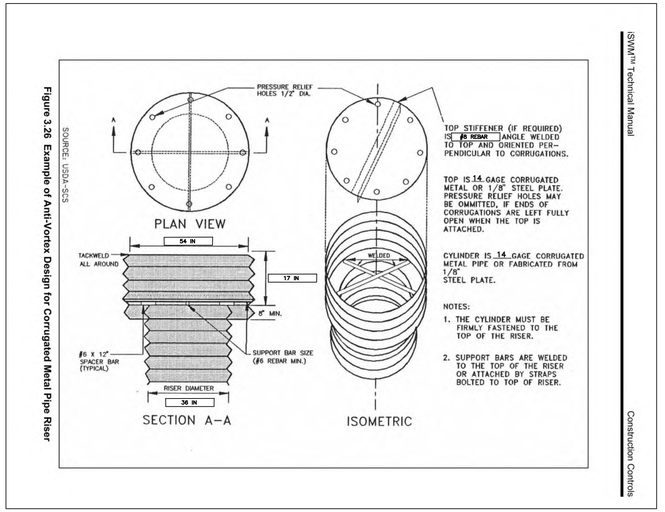
PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
SLOTTED DRAIN DETAILS
CASE# E2023-007
SHEET NO.
C13.9



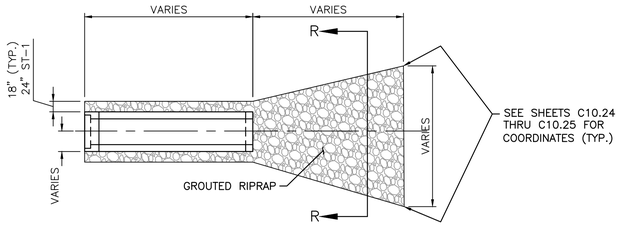
DITCH SECTION A-A
SCALE: N.T.S.



DITCH SECTION B-B
SCALE: N.T.S.



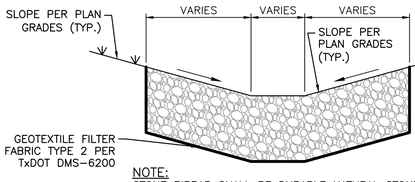
ANTI VORTEX DEVICE - SEDIMENT BASIN RISER
SCALE: N.T.S.



TYPICAL PSET-SP CONCRETE HEADWALL GROUTED ROCK RIPRAP DETAIL
SCALE: N.T.S.

LINE ID	DIA OF PIPE (IN)	DIMENSIONS OF ANTISEEP COLLAR		
		LENGTH	WIDTH	DEPTH
STM LINE D-1	36	9' 8"	8"	REFER DETAIL, THIS SHEET
STM LINE SB-1	30	9' 2"	8"	REFER DETAIL, THIS SHEET

ANTI SEEP COLLAR DIMENSIONS SCHEDULE



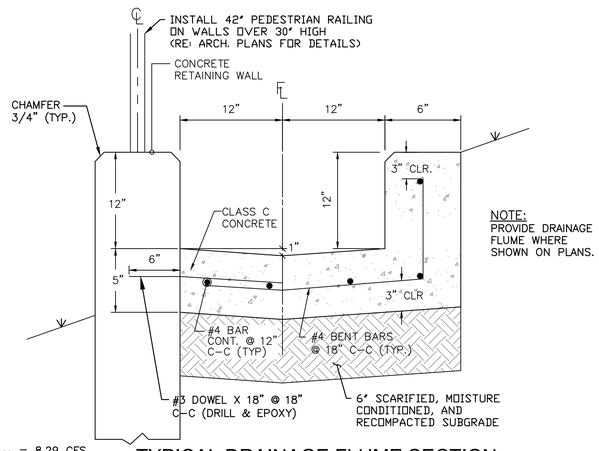
NOTE:
STONE RIPRAP SHALL BE DURABLE NATURAL STONE WITH A MINIMUM BULK SPECIFIC GRAVITY OF 2.50 AS DETERMINED BY TxDOT TEST PROCEDURE TEX-403-A. CONSTRUCT RIPRAP AND BEDDING IN ACCORDANCE WITH TxDOT ITEM 432.3.2.3. DRY COMMON GROUTING. PROVIDE GROUT IN ACORDANCE WITH TxDOT ITEM 421, HYDRAULIC CEMENT CONCRETE.

TYPICAL GROUTED ROCK RIPRAP SECTION R-R
SCALE: N.T.S.

RIPRAP GRADATION
SIZE: 12"
MAXIMUM SIZE: 200 LB
90% SIZE: 80-180 LB
50% SIZE: 30-75 LB
8% SIZE: 3 LB MINIMUM

RIPRAP SIZE
SIZE: 12 IN
Dmax: 13.76 IN
D90: 10.14-13.29 IN
D50: 7.31-9.92 IN
D8: 3.39 IN

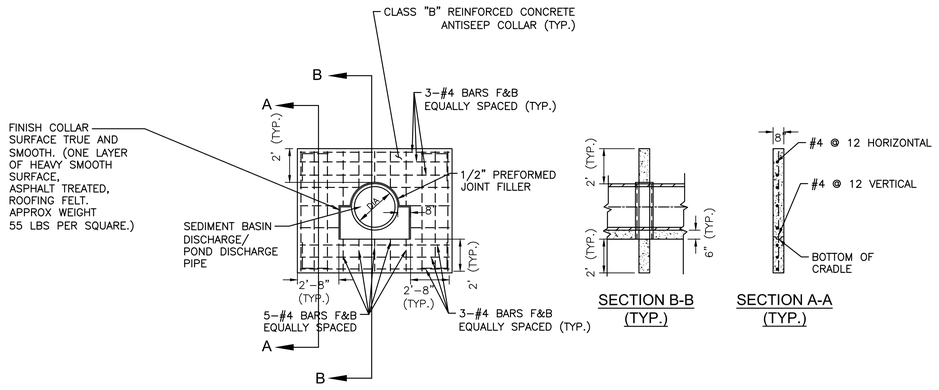
TYPICAL GROUTED ROCK RIPRAP GRADATION & SIZE
SCALE: N.T.S.



NOTE:
PROVIDE DRAINAGE FLUME WHERE SHOWN ON PLANS.

Q_{100} = 8.29 CFS
(n=0.0175)
Dn = 0.97'
V_{100} = 4.5 FPS
S = 0.75%

TYPICAL DRAINAGE FLUME SECTION
SCALE: N.T.S.



ELEVATION CONCRETE ANTISEEP COLLAR
SCALE: N.T.S.

NOTES:

1. CONCRETE ANTISEEP COLLARS SHALL LOCATED AS SHOWN IN PROFILES STM-D & SB-1 ON SHEETS C10.20 & C12.6, RESPECTIVELY ; COLLARS SHALL BE PLACED A MINIMUM OF 2' FROM BOX CULVERT JOINTS. COMPACTION OF BACKFILL AROUND ANTISEEP COLLARS SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN ON SHEET C13.8 "SECTION A-A THROUGH DETENTION POND".
2. ALL CONCRETE SHALL BE CLASS "C" (3,600 PSI). ALL REINFORCING STEEL SHALL BE GRADE 60. ALL REINFORCING STEEL SHALL HAVE A MINIMUM CONCRETE COVER OF 3".

RECORD DRAWING

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618 MAIN STREET
GARLAND, TEXAS 75040
TBPE No. F-1515

REC Rayburn Electric COOPERATIVE

VICINITY MAP
NTS

REVISION

NO.	DESCRIPTION	DATE

PROJECT NUMBER
3036.21
DATE
06/23/2025
ISSUE
ISSUE FOR CONSTRUCTION SUBMITTAL
SHEET TITLE
DRAINAGE DETAILS

CASE# E2023-007

SHEET NO.
C13.10

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DATE:
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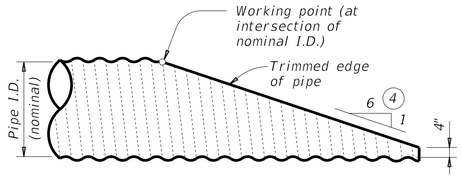
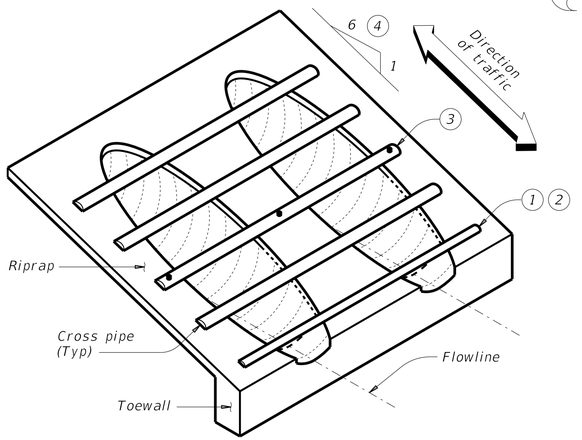


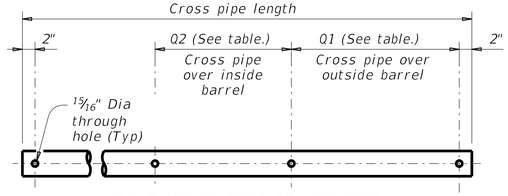
NOTE: All cross pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

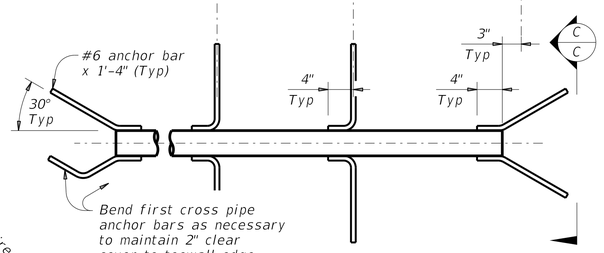
(Showing corrugated metal pipe (CMP) culvert Details at reinforced concrete pipe (RCP) culvert are similar.)



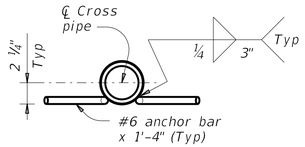
ISOMETRIC VIEW OF TYPICAL INSTALLATION



PIPE WITH BOLTED ANCHOR

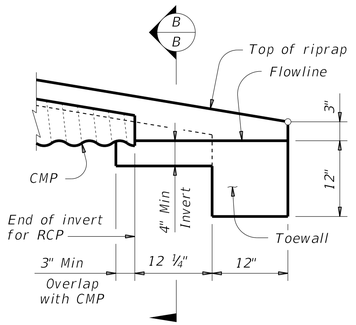


PIPE WITH ANCHOR BARS



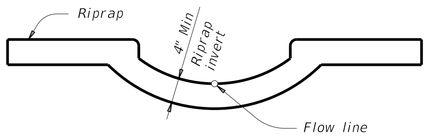
SECTION C-C

CROSS PIPE DETAILS



DETAIL "A"

(Showing invert with corrugated metal pipe (CMP) culvert. Reinforced concrete pipe (RCP) culvert details are similar. Cross pipes not shown for clarity.)



SECTION B-B

(Cross pipes not shown for clarity.)

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' – 9"	N/A	2' – 1"	1' – 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' – 11"	N/A	2' – 5"	2' – 2"		
18"	0.8	1' – 2"	N/A	2' – 10"	2' – 8"		
21"	0.9	1' – 4"	N/A	3' – 2"	3' – 1"		
24"	0.9	1' – 7"	N/A	3' – 6"	3' – 7"		
27"	1.0	1' – 8"	N/A	3' – 10"	3' – 11"	3 or more pipe culverts	3 ½" Std (4.000" O.D.)
30"	1.1	1' – 10"	N/A	4' – 2"	4' – 4"	2 or more pipe culverts	
33"	1.2	1' – 11"	4' – 2"	4' – 5"	4' – 8"	All pipe culverts	
36"	1.3	2' – 1"	4' – 5"	4' – 9"	5' – 1"	All pipe culverts	4" Std (4.500" O.D.)
42"	1.5	2' – 4"	4' – 11"	5' – 5"	5' – 10"		
48"	1.7	2' – 7"	5' – 5"	6' – 0"	6' – 7"	All pipe culverts	5" Std (5.563" O.D.)
54"	2.0	3' – 0"	5' – 11"	6' – 9"	7' – 6"		
60"	2.2	3' – 3"	6' – 5"	7' – 4"	8' – 3"		
66"	2.4	3' – 3"	6' – 11"	7' – 10"	8' – 9"		
72"	2.7	3' – 4"	7' – 5"	8' – 5"	9' – 4"		

(1) The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.

(2) Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.

(3) Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.

(4) Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.

(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

(6) Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52.

Provide ASTM A307 bolts and nuts.

Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

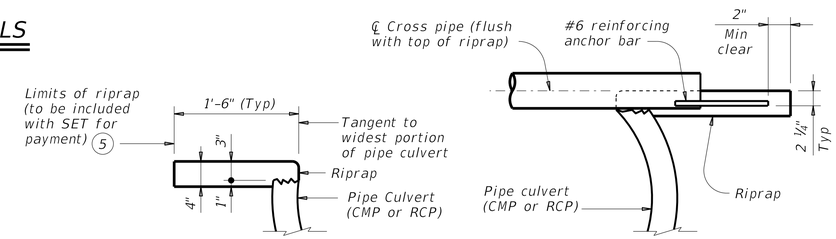
GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.

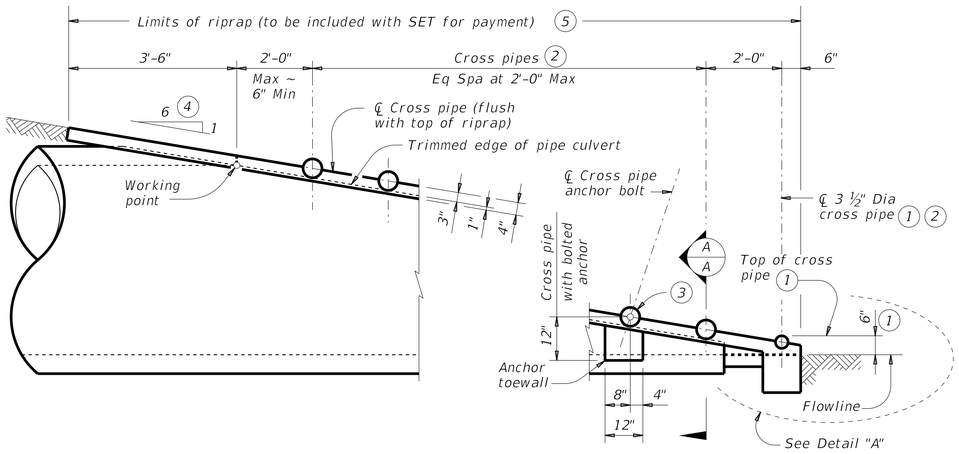
Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.



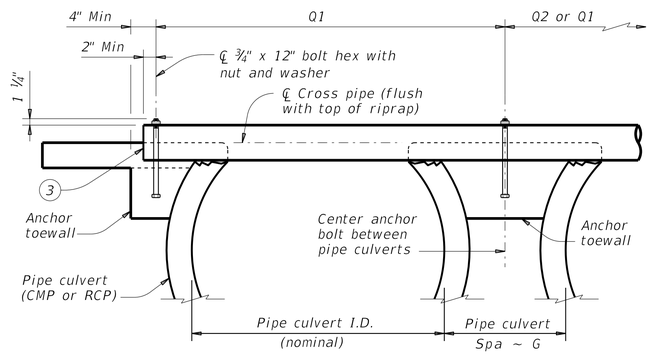
SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing reinforced concrete pipe (RCP) culvert. Details at corrugated metal pipe (CMP) culvert are similar.)



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

SETP-PD

FILE: setppdse-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
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REVISIONS				
	DIST	COUNTY		SHEET NO.

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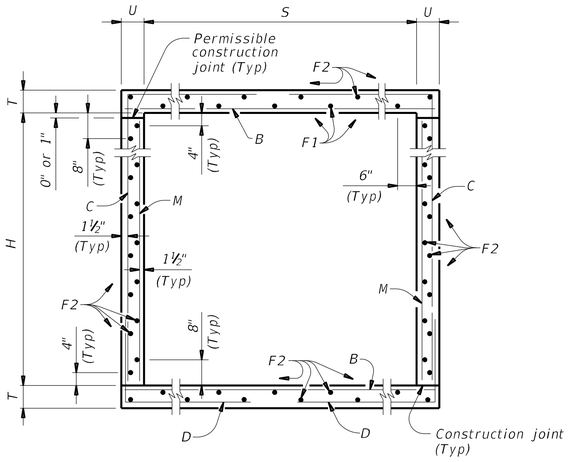
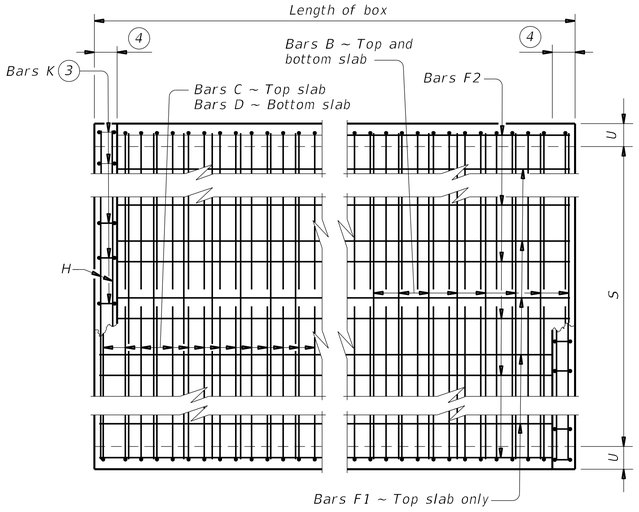
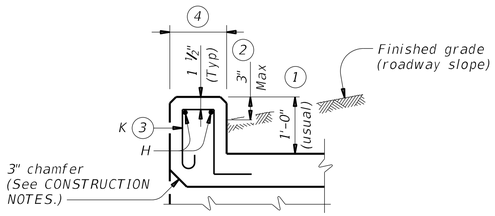


TYPICAL SECTION



PLAN OF REINF STEEL



SECTION THRU CURB

1 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

2 For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

3 For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3" high, Bars K may be omitted.

4 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR.
Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:

Do not use permanent forms.
Chamfer the bottom edge of the top slab 3" at the entrance.
Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed.

MATERIAL NOTES:

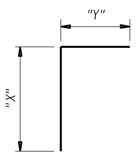
Provide Grade 60 reinforcing steel. 4200 psi
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (f'c = ~~3,600~~ psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = ~~4,000~~ psi) for top slabs of: 4200 psi
- culverts with overlay,
- culverts with 1-to-2 course surface treatment, or
- culverts with the top slab as the final riding surface.

Provide bar laps, where required, as follows:
- Uncoated or galvanized ~ #4 = 1'-8" Min
- Uncoated or galvanized ~ #5 = 2'-1" Min

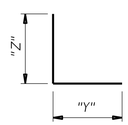
GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Single Box Culverts Cast-In-Place Miscellaneous Detail (SCC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

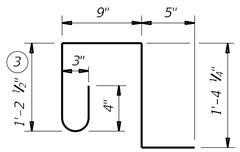
Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.



BARS C



BARS D



BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE (MOD)

0' TO 30' FILL

SCC-3 & 4

FILE: scc34ste-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST	COUNTY		SHEET NO.
04/2021 Updated X values.				

SECTION DIMENSIONS				FILL HEIGHT (5)	BILLS OF REINFORCING STEEL (For Box Length = 40 feet)																										QUANTITIES					
					Bars B					Bars C							Bars D							Bars M ~ #4				Bars F1 ~ #4 at 18" Spa			Bars F2 ~ #4 at 18" Spa			Bars H 4 ~ #4		Bars K		Per Foot of Barrel		Curb		Total	
S	H	T	U		No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	" X "	" Y "	No.	Size	Spa	Length	Weight	" Y "	" Z "	No.	Spa	Length	Weight	No.	Length	Wt	No.	Length	Weight	Length	Wt	No.	Wt	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)	Conc (CY)	Reinf (Lb)
3' – 0"	2' – 0"	8"	7"	30'	108	#5	9"	3' – 11"	441	108	#4	9"	5' – 4"	385	2' – 6"	2' – 10"	108	#4	9"	5' – 1"	367	2' – 10"	2' – 3"	108	9"	2' – 0"	144	3	39' – 9"	80	19	39' – 9"	505	3' – 11"	10	10	28	0.292	48.1	0.3	38	12.0	1,960
3' – 0"	3' – 0"	8"	7"	30'	108	#5	9"	3' – 11"	441	108	#4	9"	6' – 4"	457	3' – 6"	2' – 10"	108	#4	9"	5' – 1"	367	2' – 10"	2' – 3"	108	9"	3' – 0"	216	3	39' – 9"	80	23	39' – 9"	611	3' – 11"	10	10	28	0.335	54.3	0.3	38	13.7	2,210
4' – 0"	2' – 0"	8"	7"	30'	108	#5	9"	4' – 11"	554	162	#4	6"	5' – 8"	613	2' – 6"	3' – 2"	162	#4	6"	5' – 5"	586	3' – 2"	2' – 3"	108	9"	2' – 0"	144	3	39' – 9"	80	21	39' – 9"	558	4' – 11"	13	12	33	0.342	63.4	0.4	46	14.1	2,581
4' – 0"	3' – 0"	8"	7"	30'	108	#5	9"	4' – 11"	554	162	#4	6"	6' – 8"	721	3' – 6"	3' – 2"	162	#4	6"	5' – 5"	586	3' – 2"	2' – 3"	108	9"	3' – 0"	216	3	39' – 9"	80	25	39' – 9"	664	4' – 11"	13	12	33	0.385	70.5	0.4	46	15.8	2,867
4' – 0"	4' – 0"	8"	7"	30'	108	#5	9"	4' – 11"	554	162	#4	6"	7' – 8"	830	4' – 6"	3' – 2"	162	#4	6"	5' – 5"	586	3' – 2"	2' – 3"	108	9"	4' – 0"	289	3	39' – 9"	80	25	39' – 9"	664	4' – 11"	13	12	33	0.428	75.1	0.4	46	17.5	3,049

(5) For direct traffic culverts (fill height ≤ 2 ft.), identify the required box size and select the option with the minimum fill height.

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HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation

Bridge Division Standard

SINGLE BOX CULVERTS CAST-IN-PLACE
0' TO 30' FILL

SCC-3 & 4

FILE: scc34ste-21.dgn	DN: TBE	CK: BMP	DW: TxDOT	CK: TxDOT
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REVISIONS				
04/2021 Updated X values.	DIST	COUNTY		SHEET NO.

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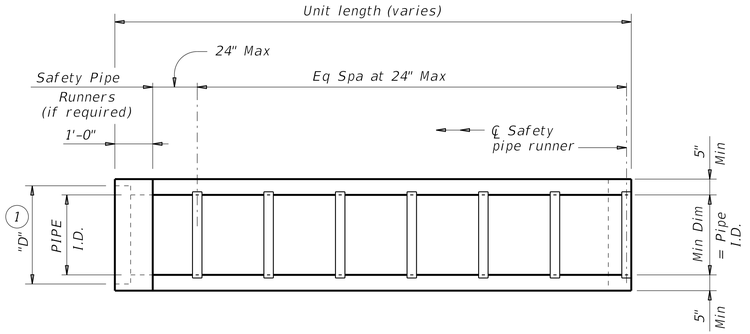
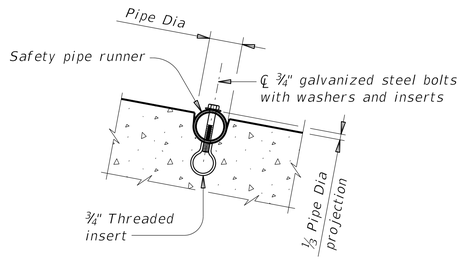


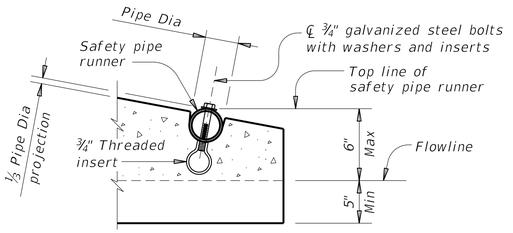
PLAN

(Showing bell end connection.)

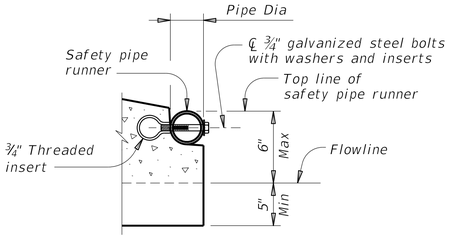


INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS

(If required)



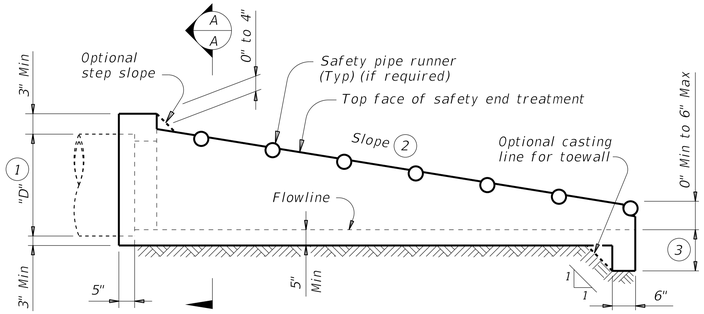
OPTION A



OPTION B

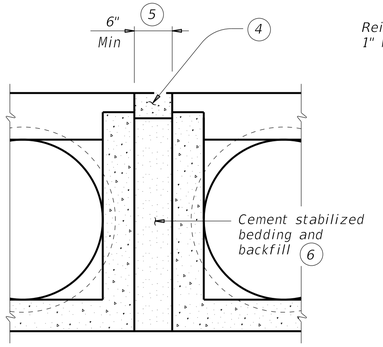
END DETAILS FOR INSTALLATION OF SAFETY PIPE RUNNERS

(If required)

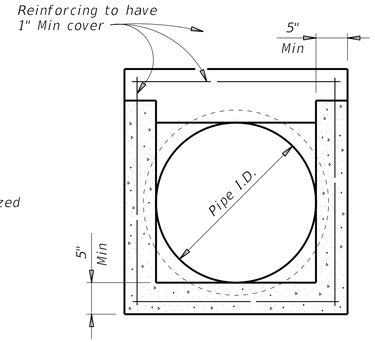


LONGITUDINAL ELEVATION

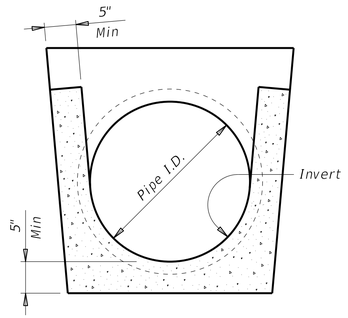
(Showing bell end connection.)



MULTIPLE PIPE INSTALLATION

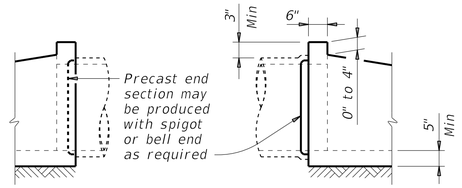


OPTION WITH SQUARE BOTTOM



OPTION WITH INVERT BOTTOM

SECTION A-A



OPTIONAL JOINT FOR RCP

(Showing joint between RCP and precast safety end treatment.)

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	RCP Wall "B" Thickness	TP Wall Thickness (7)	"D" (1)	Slope	Min Length	Pipe Runners Required		Required Pipe Runner Size		
						Single Pipe	Multiple Pipe	Nominal Dia.	O.D.	I.D.
12"	2"	1.15"	17.00"	6:1	4' – 9"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
15"	2 ¼"	1.30"	20.50"	6:1	6' – 5"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
18"	2 ½"	1.60"	24.00"	6:1	8' – 0"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
24"	3"	1.95"	31.00"	6:1	11' – 3"	No	Yes, for > 2 pipes	3" STD	3.500"	3.068"
30"	3 ½"	2.65"	38.50"	6:1	14' – 8"	No	Yes	4" STD	4.500"	4.026"
36"	4"	2.75"	45.50"	6:1	17' – 11"	Yes	Yes	4" STD	4.500"	4.026"
42"	4 ½"	2.7"	52.50"	6:1	21' – 2"	Yes	Yes	4" STD	4.500"	4.026"

(1) Dimension "D" is based on reinforced concrete pipe (RCP) meeting the requirements of ASTM C–76, Class III, (RCP Wall "B" thickness). Adjust "D" for any other wall thickness used. For thermoplastic pipe (TP) take into account the annular space requirements for grouted connections.

(2) Slope as shown elsewhere in the plans. Slope of 6:1 or flatter is required for vehicle safety.

(3) Toewall to be used only when dimension is shown elsewhere in the plans.

(4) Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap is considered subsidiary to the Item 467, "Safety End Treatment".

(5) Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

(6) Provide cement stabilized bedding and backfill in accordance with the Item 400, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item 467, "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.

(7) Thermoplastic pipe wall thickness may vary. Adjust accordingly. Thermoplastic pipe requires the safety end treatments to have a bell end for grouted connections.

GENERAL NOTES:

Precast safety end treatment for reinforced concrete pipe (RCP), and thermoplastic pipe (TP) may be used for TYPE II end treatment as specified in Item "Safety End Treatment".

When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.

Manufacture this product in accordance with Item 467, "Safety End Treatment" except as noted below :

A. Provide minimum reinforcing of #4 at 6" (Grade 40) or #4 at 9" (Grade 60) each way or 6"x6" – D12 x D12 or 5"x5" – D10 x D10 welded wire reinforcement (WWR).

B. For precast (steel formed) sections, provide Class "C" concrete (f'c = ~~3,600~~ psi). 4200 psi

At the option and expense of the Contractor the next larger size of safety end treatment may be furnished; as long as the "D" dimension cast is that of the required size of pipe.

Pipe runners are designed for a traversing load of 10,000 Lbs at yield as recommended by Research Report 280–2F, "Safety Treatment of Roadside Parallel–Drainage Structures", Texas Transportation Institute, March 1981.

Provide pipe runners meeting the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

Connect RCP using the Optional Joint for RCP detail shown or in accordance with Item 464, "Reinforced Concrete Pipe". Connect TP by grouting. See Pipe and Box Grouted Connections (PBGC) standard for grouted connections with TP and precast safety end treatment.

Texas Department of Transportation

Bridge Division Standard

PRECAST SAFETY END TREATMENT

TYPE II ~ PARALLEL DRAINAGE

PSET-SP

FILE: psetspss-21.dgn	DN: RLW	CK: KLR	DW: JTR	CK: GAF
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REVISIONS 12-21: Added 42" TP	DIST	COUNTY		SHEET NO.

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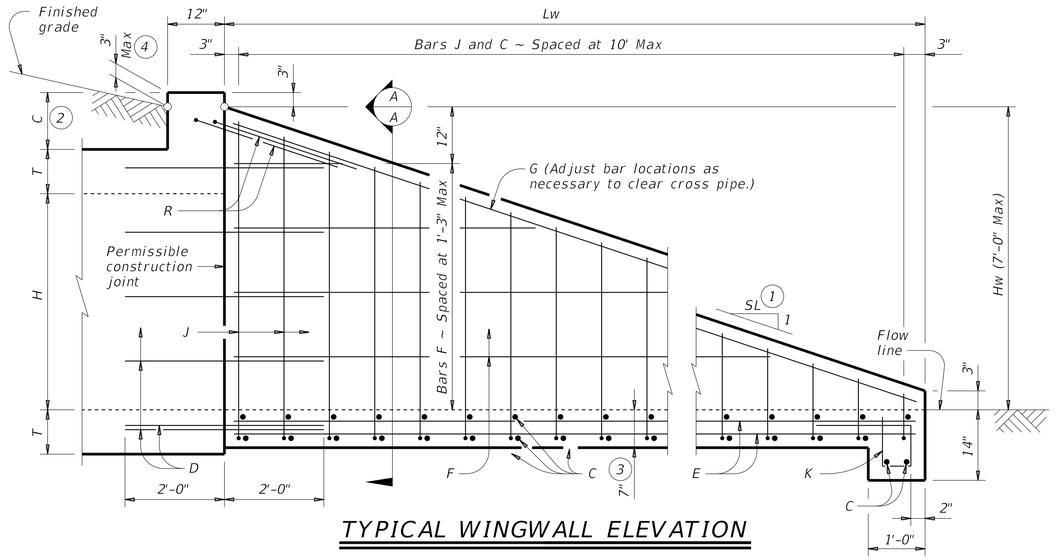
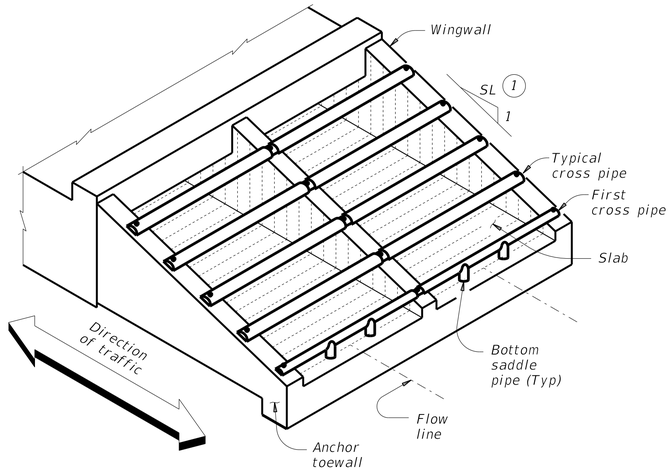


TYPICAL WINGWALL ELEVATION

(Cross pipes not shown for clarity.)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing bolted anchor option.)

WING DIMENSION CALCULATIONS:

$Hw = H + T + C - 0.250'$

$Lw = (Hw - 0.250')\ (SL)$

For cast-in-place culverts:

$Atw = (N)\ (S) + (N + 1)\ (U)$

For precast culverts:

$Atw = (N)\ (2U + S) + (N - 1)\ (0.500')$

Total Wingwall Area (SF)
$= (0.5)\ (Hw + 0.250')\ (Lw)\ (N - 1)$

Total Concrete Volume (CY)
$= [(\text{Wingwall Area})\ (0.583') +$
$(Lw)\ (Atw)\ (0.583') +$
$(Atw)\ (1.000')\ (1.167' - 0.583')] \div (27)$

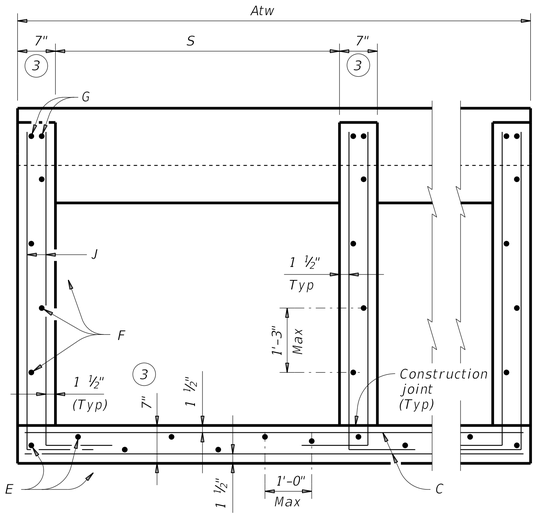
Total Reinforcing (Lb)
$= (1.55)\ (Lw)\ (Atw) +$
$(4.43)\ (Atw) +$
$(K)\ (Hw)\ (N + 1)\ (\sqrt{Lw})$

C = Height of curb above top of top slab (feet)
Hw = Height of wingwall (feet)
K = Constant value for use in formulas

Slope SL:1	K
6:1 ~	10.41

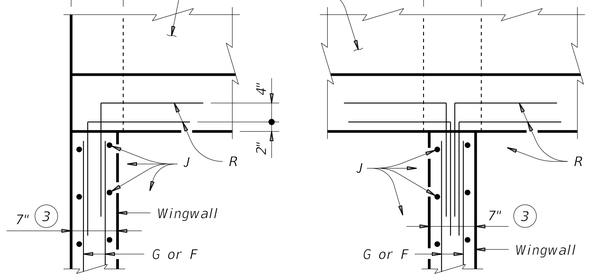
Atw = Anchor toewall length (feet)
Lw = Length of wingwall (feet)
N = Number of culvert barrels
SL:1 = Side slope ratio (horizontal : 1 vertical)

See applicable box culvert standard for H, S, T, and U values.



SECTION A-A

(Showing typical wingwall and wing slab reinforcing. Pipe runners not shown for clarity.)

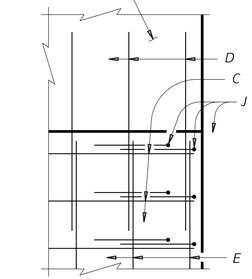


AT TOP OF EXTERIOR WINGWALL

(Cast-in-place culvert)

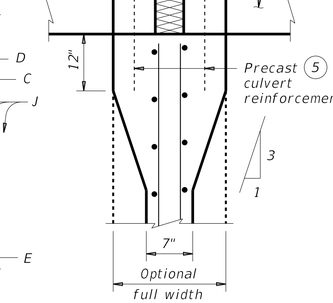
AT TOP OF INTERIOR WINGWALL

(Cast-in-place culvert)



AT OUTSIDE OF BOTTOM SLAB

(Cast-in-place culvert)



AT INTERIOR WINGWALL

(Precast culvert)

PLAN VIEWS OF CORNER DETAILS

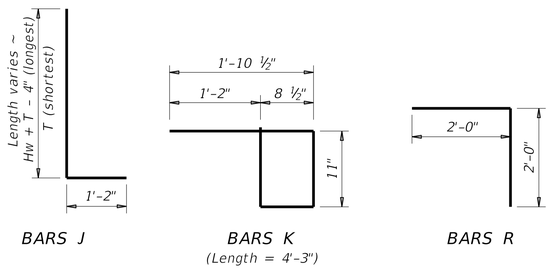


TABLE OF REINFORCING BAR SIZES AND SPACING

Bar	Size	Spacing
C	#4	10" Max
D	#4	Match F and E
E	#4	1'- 0" Max
F	#4	1'- 3" Max
G	#6	As shown
J	#4	10" Max
K	#4	1'- 0" Max
R	#4	As shown

(1) Provide 6:1 or flatter slope.

(2) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to Extended Curb Details the Extended Curb Details (ECD) standard sheet.

(3) Wingwall and slab thicknesses may be the same as the adjacent culvert wall and slab thicknesses (7" Minimum). If thicknesses greater than the minimum (7") are used, no changes will be made in quantities and no additional compensation will be allowed.

(4) For vehicle safety, reduce height, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.

(5) For culverts with C = 0", the precast culvert reinforcing may extend 1'-0" minimum into wingwall. Wingwall bars D and R may be omitted. Otherwise, refer to the Wingwall Connection detail on the Box Culvert Precast Miscellaneous Details (SCP-MD) standard sheet.

MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Adjust reinforcing as necessary to provide a minimum clear cover of 1½".
Provide Class "C" concrete (f`c = ~~3,600~~ psi). 4200 psi
Provide pipe runners, cross pipes, and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5LX52.
Provide ASTM A307 bolts.
Galvanize all steel components, except the concrete reinforcing, unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with Item 445, "Galvanizing."

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
The quantities for concrete, reinforcing steel, and cross pipes resulting from the formulas given herein are for Contractor's information only.
See the Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the safety end treatments.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ PARALLEL DRAINAGE

SETB-PD (MOD)

FILE: setbpdse-22.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 06-2022 ~ Wing dimesions	DIST	COUNTY		SHEET NO.

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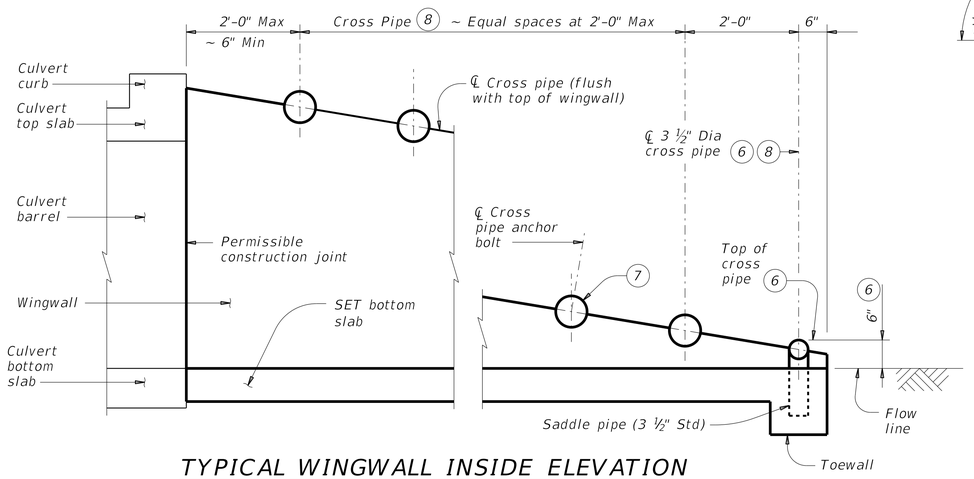
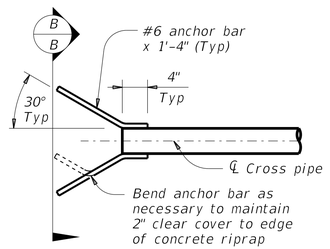
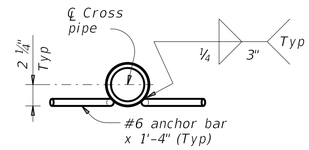


TYPICAL WINGWALL INSIDE ELEVATION

(Showing installation of cross pipes.)

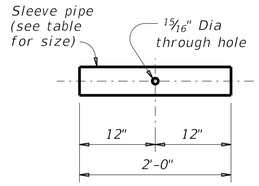


PART PLAN



SECTION B-B

OPTIONAL ANCHOR BAR DETAILS



SLEEVE PIPE DETAILS (9)

REQUIRED PIPE SIZES (8)		
Culvert Span Sizes	Cross Pipe Size	Sleeve Pipe Size (9)
First Pipe	3 ½" STD	2 ½" STD
30" to 42"	4" STD	3" STD
48" to 72"	5" STD	4" STD
78" to 120"	6" STD	5" STD

STANDARD PIPE SIZES		
Pipe Size	Pipe O.D.	Pipe I.D.
2 ½" STD	2.875"	2.469"
3" STD	3.500"	3.068"
3 ½" STD	4.000"	3.548"
4" STD	4.500"	4.026"
5" STD	5.563"	5.047"
6" STD	6.625"	6.065"

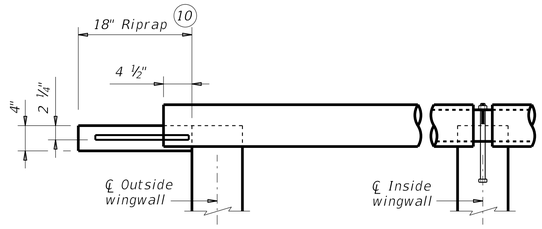
(6) The proper installation of the first cross pipe is critical for vechicle saftey. Place the top of the first cross pipe at no more than 6" above the flow line.

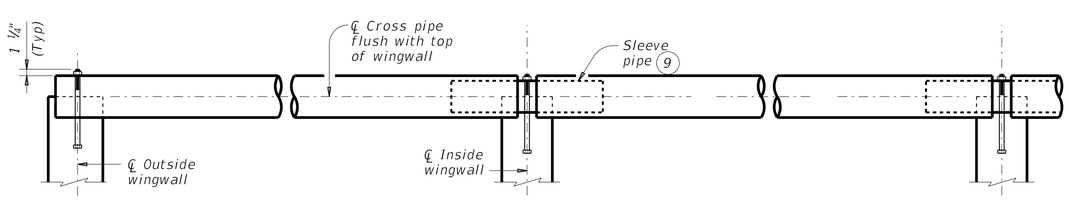
(7) Always install the third cross pipe from the bottom of the culvert using a bolted connection. Take care to ensure that concrete does not flow into this cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(8) Provide cross pipes and sleeve pipes (if required) as shown in the Required Pipe Sizes table. Provide 3 1#2" saddle pipes for the 3 1#2" first cross pipe.

(9) At Contractor's option, make the cross pipe continuous across the inside wingwalls. If this option is selected, omit the sleeve pipe and make a 15#16" diameter throughhole in the cross pipe to accept the anchor bolt at the centerline of each interior wingwall.

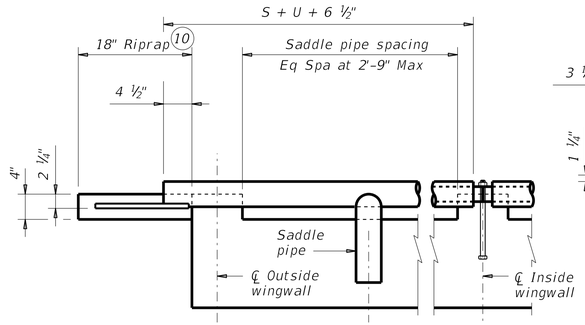
(10) Provide riprap when using the Optional Anchor Bar details. Riprap is included in the bid price for Safety End Treatment. Provide riprap in accordance with Item 432, "Riprap".

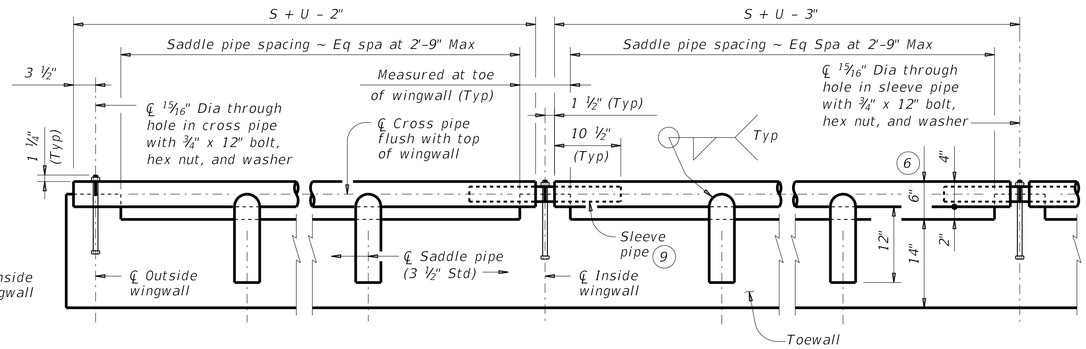




SECTION THROUGH INSTALLATION OF TYPICAL FULL CROSS PIPE

(Anchor details and dimensions are similar to those shown below in Section Through Installation of 3 ½" First Cross Pipe detail.)





SECTION THROUGH INSTALLATION OF 3 ½" FIRST CROSS PIPE

OUTSIDE CULVERT BARREL WITH OPTIONAL ANCHOR BARS & RIPRAP

OUTSIDE CULVERT BARREL WITH BOLTED ANCHOR

INSIDE CULVERT BARREL

CROSS PIPE INSTALLATION DETAILS

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR BOX CULVERTS
(MAXIMUM Hw = 7'-0")
TYPE I ~ PARALLEL DRAINAGE

SETB-PD

FILE: setbpdse-22.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 06-2022 ~ Wing dimesions	DIST	COUNTY		SHEET NO.

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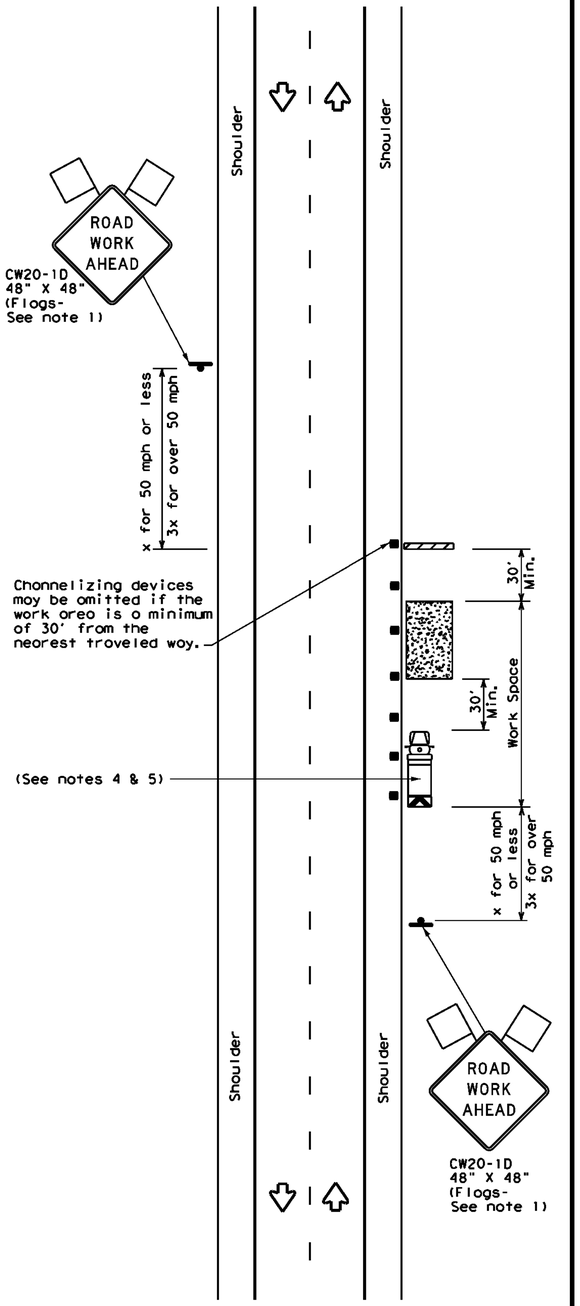
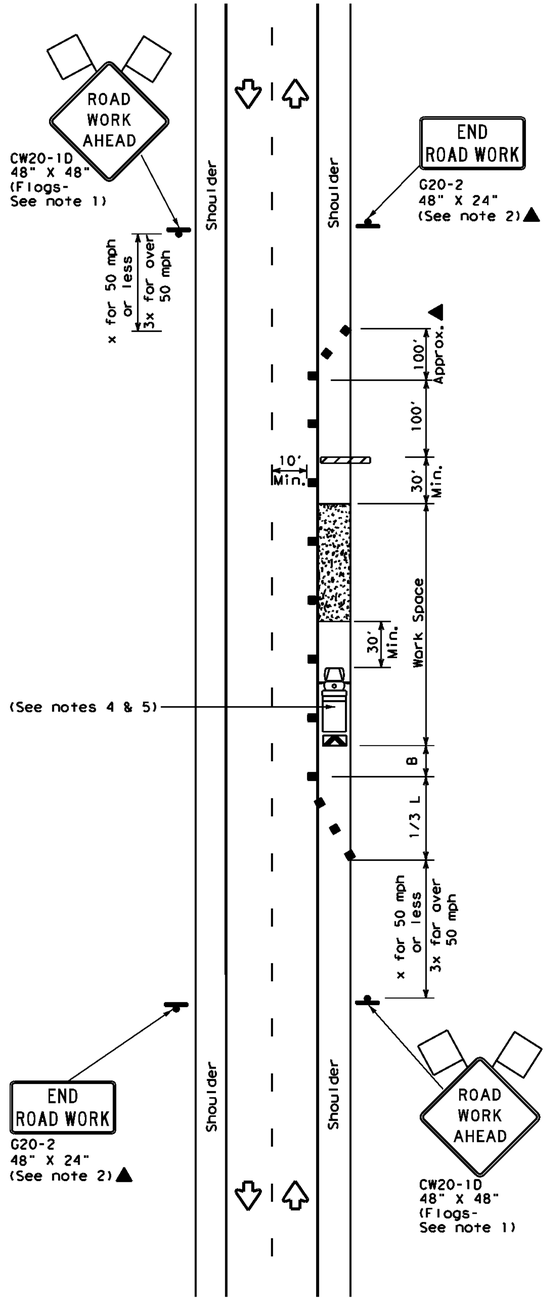
DATE:
FILE:



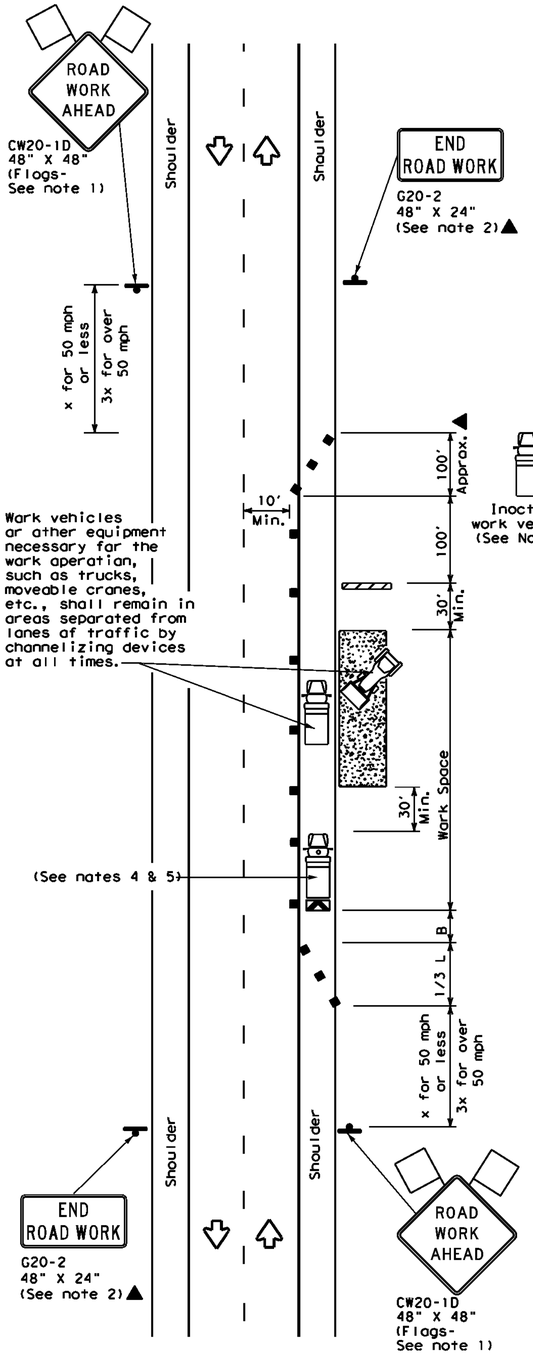
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 8-95 2-12 1-97 2-18	DIST	COUNTY		SHEET NO.

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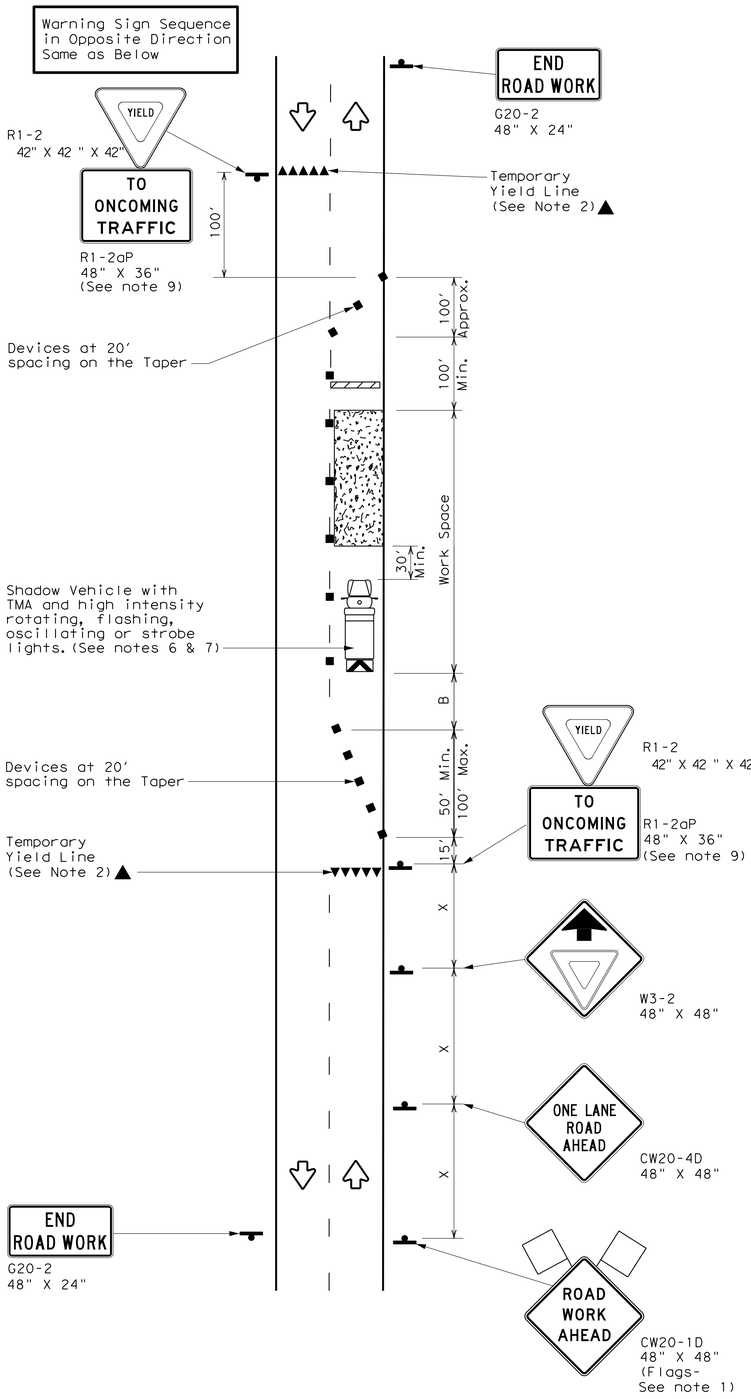
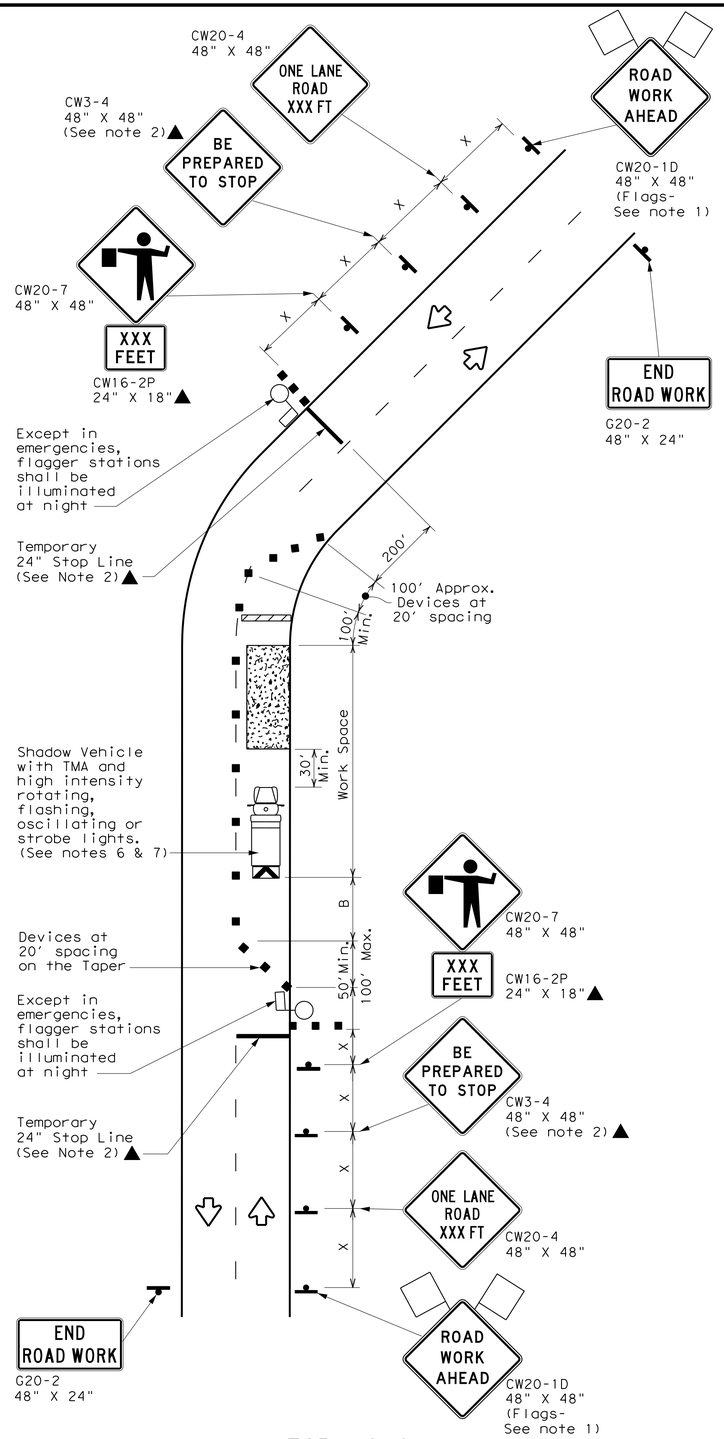
FILE:



TCP (2-2a)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See Note 9)



TCP (2-2b)
2-LANE ROADWAY WITHOUT PAVED SHOULDERS
ONE LANE TWO-WAY
CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
4. Flaggers should use two-way radios or other methods of communication to control traffic.
5. Length of work space should be based on the ability of flaggers to communicate.
6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

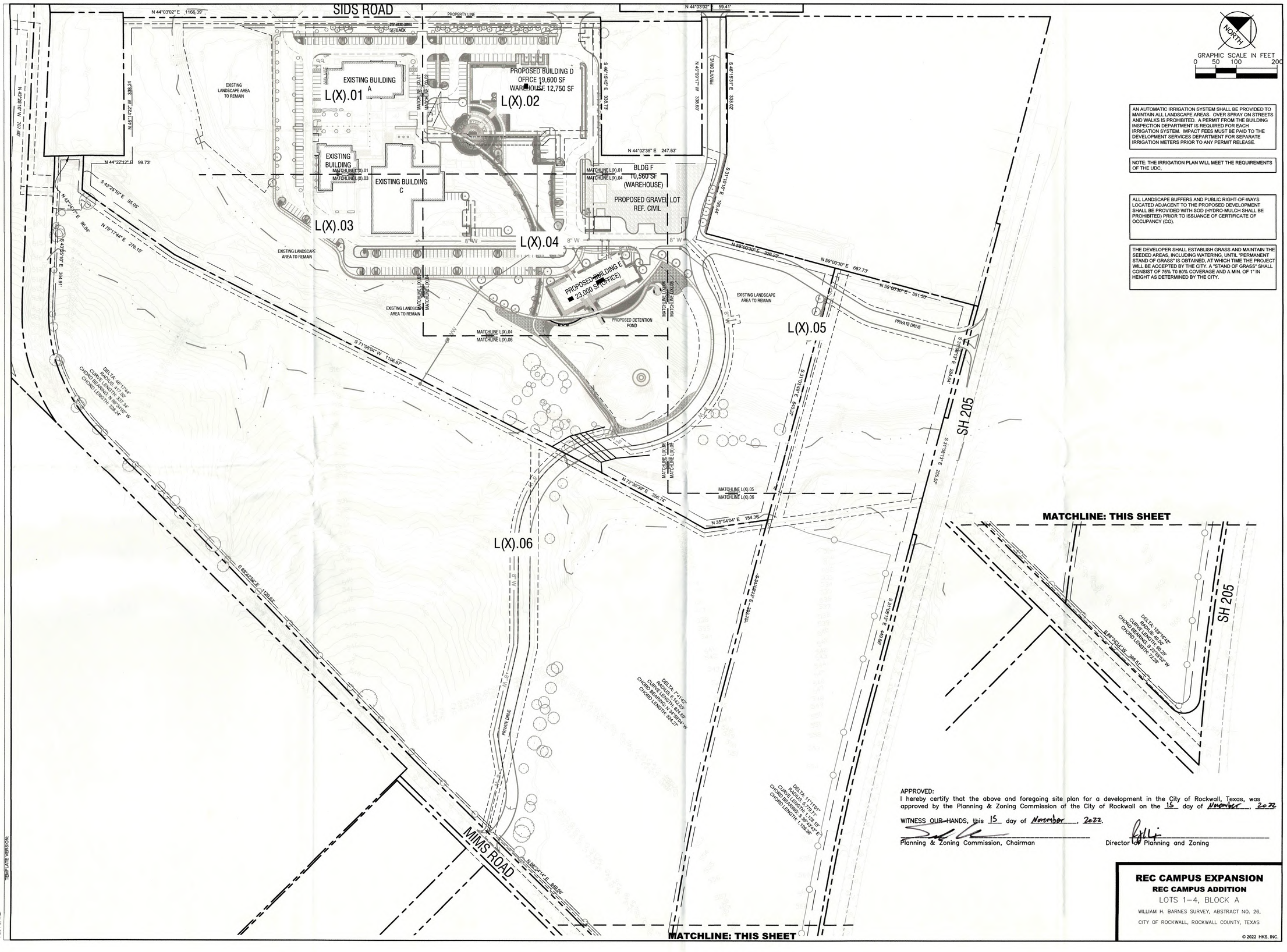
10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
12. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

Texas Department of Transportation
Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(2-2)-18

FILE: tcp2-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 8-95 3-03 1-97 2-12 4-98 2-18	DIST	COUNTY		SHEET NO.



GRAPHIC SCALE IN FEET
0 50 100 200

AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED TO MAINTAIN ALL LANDSCAPE AREAS. OVER SPRAY ON STREETS AND WALKS IS PROHIBITED. A PERMIT FROM THE BUILDING INSPECTION DEPARTMENT IS REQUIRED FOR EACH IRRIGATION SYSTEM. IMPACT FEES MUST BE PAID TO THE DEVELOPMENT SERVICES DEPARTMENT FOR SEPARATE IRRIGATION METERS PRIOR TO ANY PERMIT RELEASE.

NOTE: THE IRRIGATION PLAN WILL MEET THE REQUIREMENTS OF THE UDC,

ALL LANDSCAPE BUFFERS AND PUBLIC RIGHT-OF-WAYS LOCATED ADJACENT TO THE PROPOSED DEVELOPMENT SHALL BE PROVIDED WITH SOD (HYDRO-MULCH SHALL BE PROHIBITED) PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO).

THE DEVELOPER SHALL ESTABLISH GRASS AND MAINTAIN THE SEEDED AREAS, INCLUDING WATERING, UNTIL "PERMANENT STAND OF GRASS" IS OBTAINED, AT WHICH TIME THE PROJECT WILL BE ACCEPTED BY THE CITY. A "STAND OF GRASS" SHALL CONSIST OF 75% TO 80% COVERAGE AND A MIN. OF 1" IN HEIGHT AS DETERMINED BY THE CITY.

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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PLOT DATE:
TEMPLATE VERSION:

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040

RayburnElectric COOPERATIVE

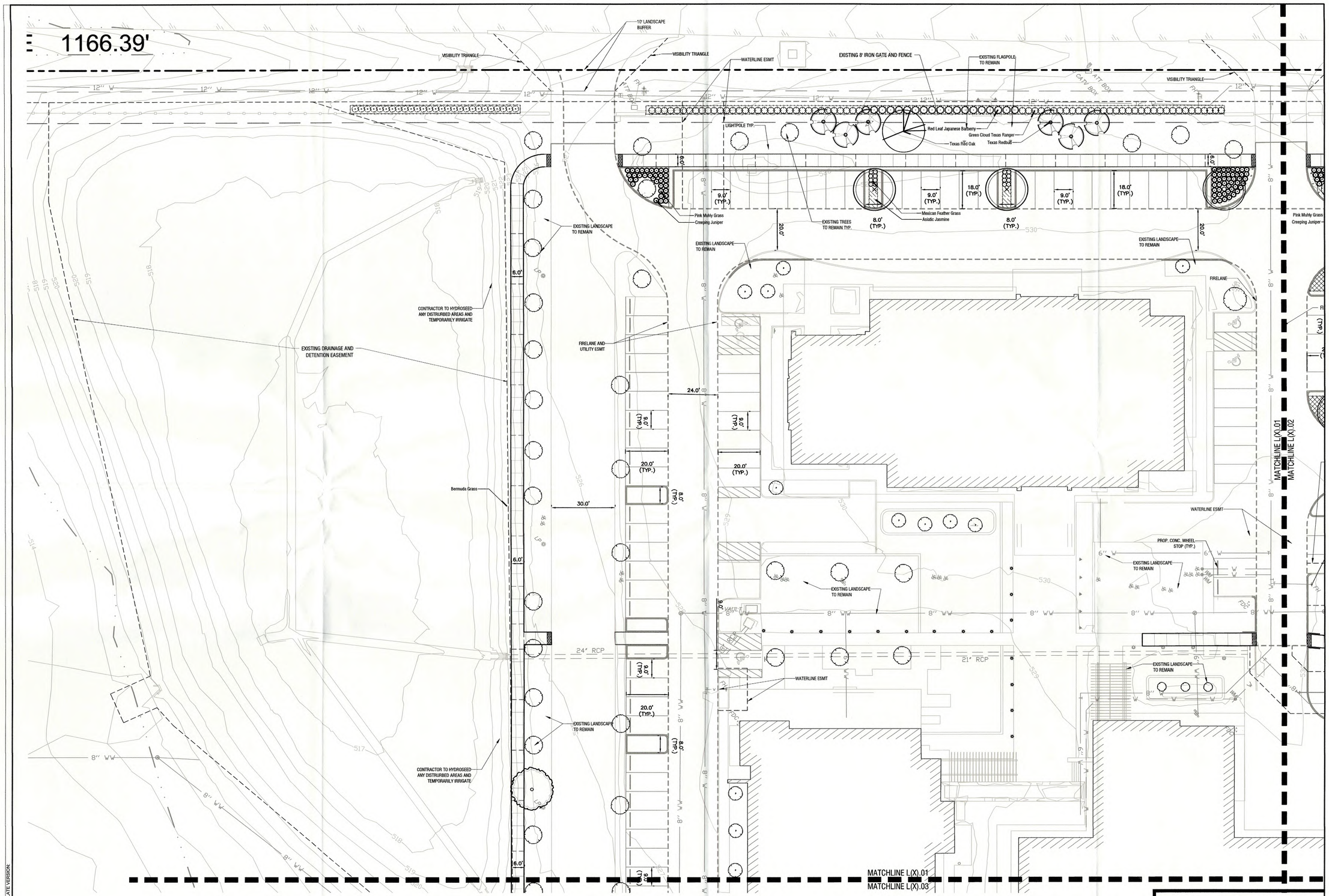
FOR REVIEW ONLY
Not for construction or permit purposes.
Kimley»Horn
P.E.A. ____ LANDON R. HUCKINS
L.A. No. 5480 Date 10/28/2022

KEY PLAN

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
OVERALL PLAN

CASE# SP2022-058
SHEET NO.
L1.01



NORTH

0' 20' 40'

Scale: 1" = 20'-0"

Landscape Plan

Scale: 1" = 20' - 0"

A

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Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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NO.	DESCRIPTION	DATE

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DATE
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ISSUE
CITY SITE PLAN SUBMITTAL

SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058

SHEET NO.
L5.01

SIDS ROAD

VISIBILITY TRIANGLE
EXISTING 8' IRON GATE AND FENCE
PROPOSED 8' IRON GATE AND FENCE
10' LANDSCAPE BUFFER
VISIBILITY TRIANGLE
VISIBILITY TRIANGLE
45.0'
139.8'
WATERLINE ESMT
FIRELANE
FIRELANE
S 46°15'45" E 338.73'
Texas Redbud
Texas Red Oak
Live Oak
5.0'
9.0' (TYP.)
18.0' (TYP.)
DECOMPOSED GRANITE TYP.
18.0' (TYP.)
9.0' (TYP.)
18.0' (TYP.)
Pink Muhly Grass
Creeping Juniper
Purple Wintercreeper
Asiatic Jasmine
8.0' (TYP.)
Lacebark Elm
DECOMPOSED GRANITE TYP.
Mexican Feather Grass
Texas Sedge
24.0'
Cedar Elm
Purple Wintercreeper
11.0'
11.0'
Little Spire Russian Sage
Creeping Juniper
Texas Sedge
DECOMPOSED GRANITE TYP.
26.3'
FIRELANE
9.0' (TYP.)
9.0' (TYP.)
Little Spire Russian Sage
Switch Grass
Pink Muhly Grass
Yaupon Holly
20.0' (TYP.)
20.0' (TYP.)
Texas Sedge
Creeping Juniper
6.0'
Dwarf Yaupon
Purple Wintercreeper
Brakelights Red Yucca
Texas Sedge
Duraheat River Birch Multi-Trunk
Mahonia Soft Caress
Fountain Grass
Autumn Sage
WATERLINE ESMT
PROP. 20' WATER ESMT
Bermuda Grass
DECOMPOSED GRANITE TYP.
30.0'
Texas Sedge
Creeping Juniper
Specimen Live Oak Tree
Texas Sedge
Pink Muhly Grass
Brakelights Red Yucca
Common Boxwood
Pink Muhly Grass
Texas Sedge
Purple Wintercreeper
Mahonia Soft Caress
Autumn Sage
80.0'
Texas Sedge
Mountain Pea
Texas Sedge
Autumn Sage
Little Bluestem Grass
Lacebark Elm
Lacebark Elm
11.0'
50.0'
DUMPSTER ENCLOSURE BY OTHERS, REF. ARCH
Green Cloud Texas Ranger
Mexican Feather Grass
Brakelights Red Yucca
Purple Wintercreeper
Creeping Juniper
Mexican Feather Grass
Mexican Feather Grass
Asiatic Jasmine
Cedar Elm
20' BUILDING SETBACK
N 44°02'35" E 24
41.4'
Mountain Pea
Little Spire Russian Sage
Switch Grass
Autumn Sage
Fountain Grass
EX. COMM TOWER, GENERATOR, & CONTROL HOUSE
MATCHLINE L(X).01
MATCHLINE L(X).02
MATCHLINE L(X).01
MATCHLINE L(X).04

NORTH
0' 20' 40'
Scale: 1" = 20'-0"

Landscape Plan
Scale: 1" = 20' - 0"

A

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Director of Planning and Zoning

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L.A. No 3480 Date 12/28/2022

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DATE
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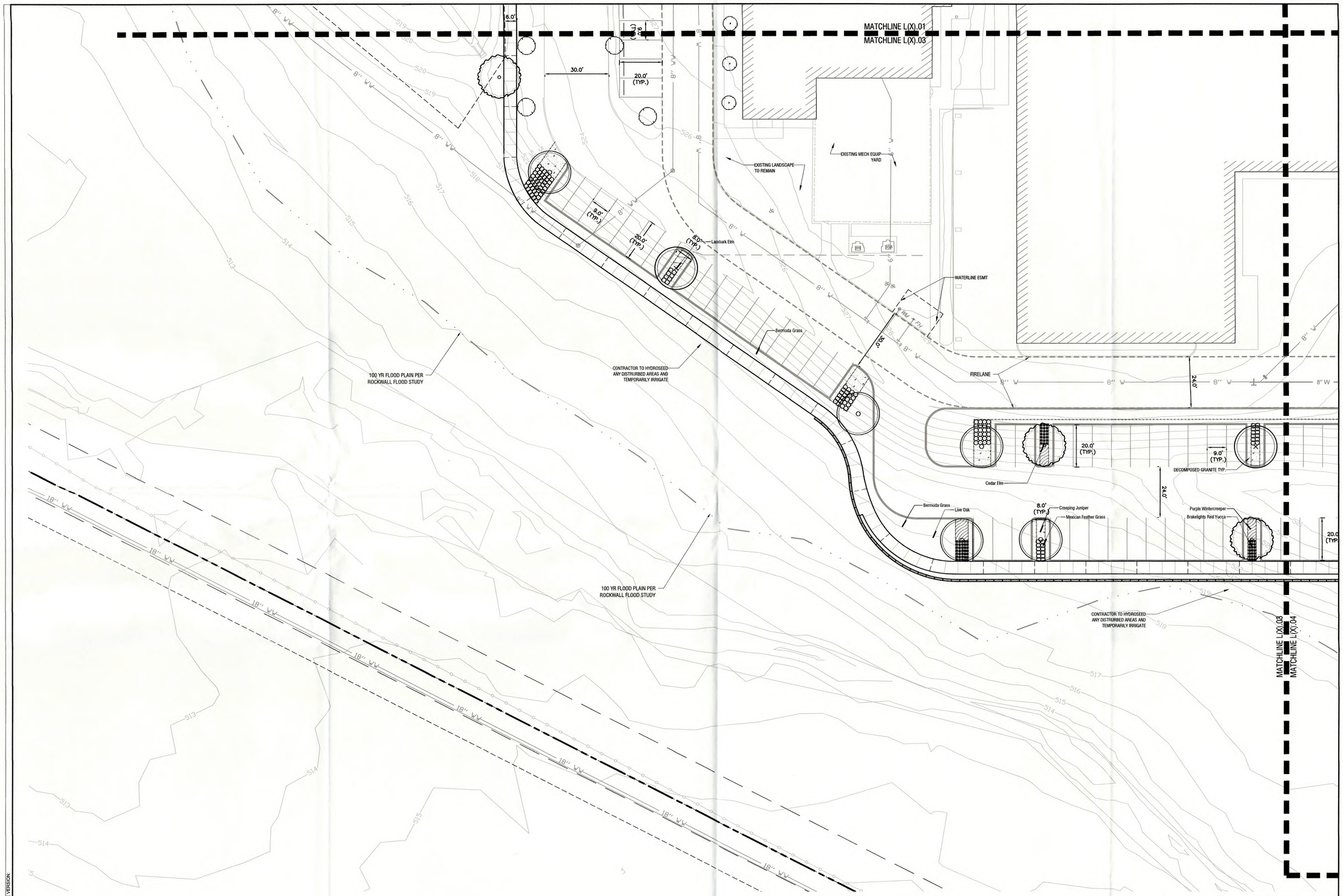
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058
SHEET NO.
L5.02



NORTH

0' 20' 40'

Scale: 1" = 20'-0"

Landscape Plan

Scale: 1" = 20' - 0"

A

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REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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KEY PLAN

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000

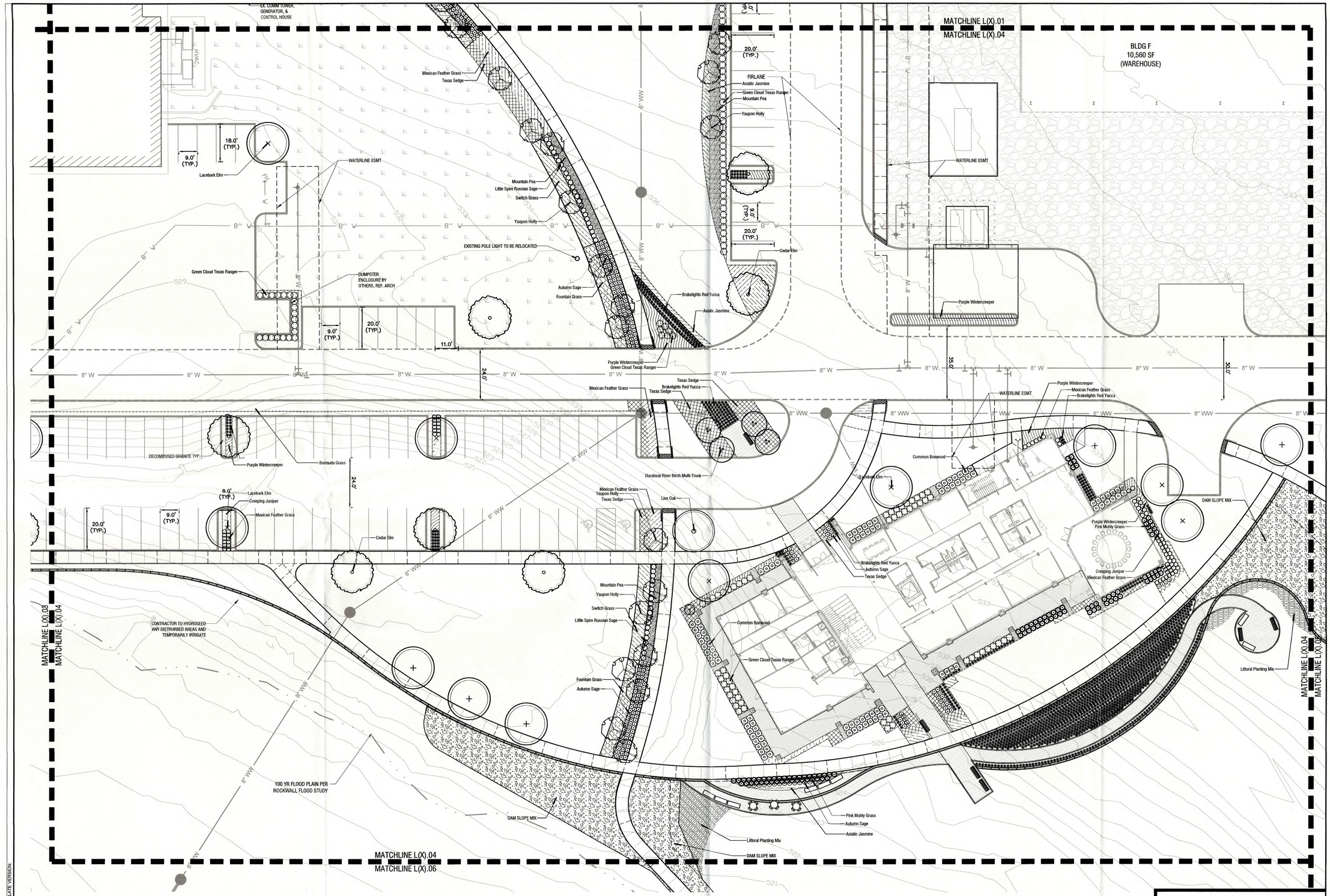
DATE
12/28/22

ISSUE
CITY SITE PLAN SUBMITTAL

SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058

SHEET NO.
L5.03



Landscape Plan

Scale: 1" = 20' - 0"

A

APPROVED:
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WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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PLOT DATE:
TEMPLATE VERSION:

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040

RayburnElectric COOPERATIVE

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Kimley»Horn
P.E.A. LANDON R. HUCKINS
L.A. No. 3480 Date 12/28/2022

KEY PLAN

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000

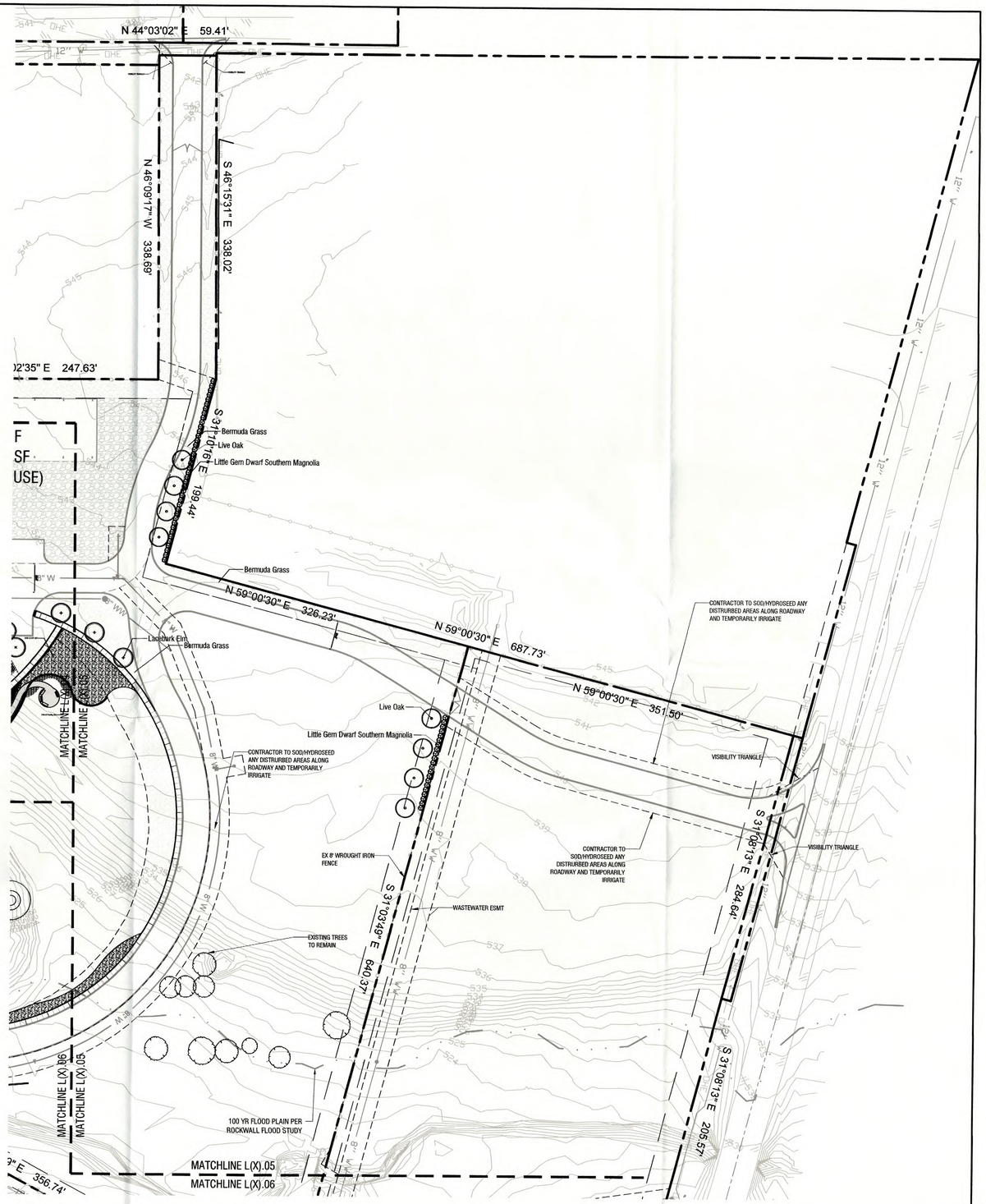
DATE
12/28/22

ISSUE
CITY SITE PLAN SUBMITTAL

SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058

SHEET NO.
L5.04



PLOT DATE:

TEMPLATE VERSION:

NORTH

0' 60' 120'

Scale: 1" = 60'-0"

Landscape Plan

Scale: 1" = 60' - 0"

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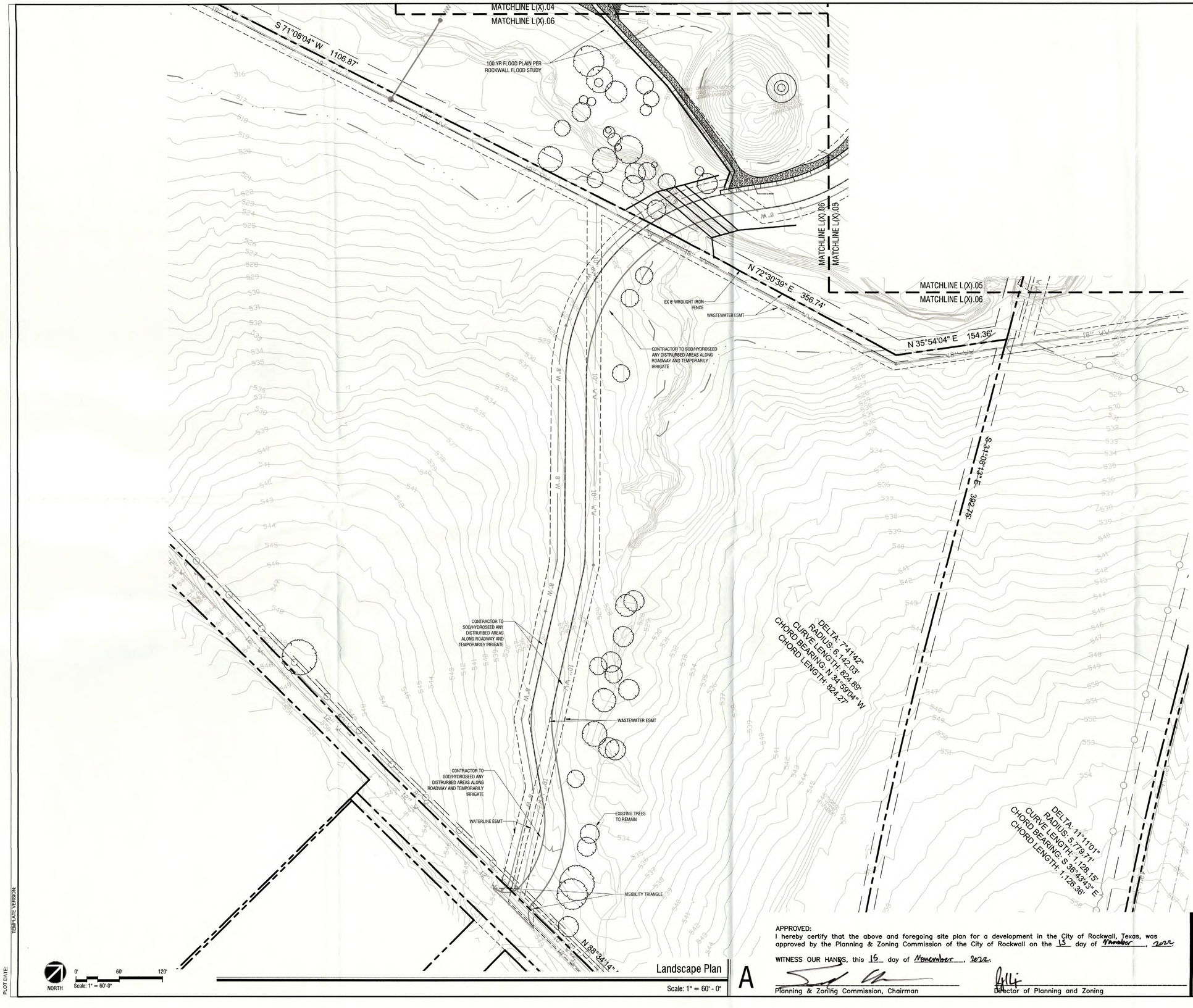
SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058

SHEET NO.
L5.05



Landscape Plan

Scale: 1" = 60' - 0"

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DATE
12/28/22
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CITY SITE PLAN SUBMITTAL
SHEET TITLE
LANDSCAPE PLAN

CASE# SP2022-058

SHEET NO.
L5.06

PLANT SCHEDULE

TREES	COMMON / BOTANICAL NAME	CONT.	SIZE	SPACING	QTY	REMARKS
	Cedar Elm / Ulmus crassifolia	4" cal	12`-14`	As Shown	13	B&B, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, STRONG CENTRAL LEADER
	Duraheat River Birch Multi-Trunk / Betula nigra `Duraheat`	4" cal	10`-12` ht	As Shown	16	CONTAINER, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, MULTI-TRUNK (3-5 TRUNKS)
	Lacebark Elm / Ulmus parvifolia	4" cal	14`-16`	As Shown	26	B&B, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, STRONG CENTRAL LEADER
	Live Oak / Quercus virginiana	4" cal	12`-14` ht	As Shown	20	B&B, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, STRONG CENTRAL LEADER
	Specimen Live Oak Tree / Quercus virginiana	5" cal	18`-20` ht.	As Shown	8	B&B, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, MULTI-TRUNK (3-5 TRUNKS)
	Texas Red Oak / Quercus texana	5" cal	16`-18`	As Shown	9	B&B, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, STRONG CENTRAL LEADER
ORNAMENTAL TREES	**COMMON / BOTANICAL NAME**	**CONT.**	**SIZE**	**SPACING**	**QTY**	**REMARKS**
	Little Gem Dwarf Southern Magnolia / Magnolia grandiflora `Little Gem`	65 gal	5`-6`	As Shown	62	CONTAINER, NURSERY GROWN, MATCHED, FULL TO BASE, WELL-BRANCHED, STRONG CENTRAL LEADER
	Texas Redbud / Cercis canadensis texensis	65 gal	8`-10`	As Shown	16	CONTAINER, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED
	Yaupon Holly / Ilex vomitoria	65 gal	6`-8`	As Shown	25	CONTAINER, NURSERY GROWN, MATCHED, FULL, WELL-BRANCHED, MULTI-TRUNK (3 MIN.), TREE FORM
SHRUBS	**COMMON / BOTANICAL NAME**	**CONT.**	**SIZE**	**SPACING**	**QTY**	**REMARKS**
	Autumn Sage / Salvia greggii	5 gal	12" h X 18" w	24" OC	398	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Brakelights Red Yucca / Hesperaloe parviflora `Brakelights` TM	5 gal	12" h X 12" w	18" OC	2,841	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Common Boxwood / Buxus sempervirens	5 gal	24" h x 24" w	36" OC	138	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Dwarf Yaupon / Ilex vomitoria `Nana`	5 gal	24" h x 24" w	36" OC	77	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Green Cloud Texas Ranger / Leucophyllum frutescens `Green Cloud` TM	7 gal	36" h X 30" w	36" OC	348	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Little Spire Russian Sage / Perovskia atriplicifolia `Little Spire`	5 gal	12" h X 12" w	24" OC	109	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Mahonia Soft Caress / Mahonia eurybracteata `Soft Caress`	5 gal	18" h X 18" w	24" OC	35	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Mexican Feather Grass / Nassella tenuissima	5 gal	12" h X 12" w	24" OC	344	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Pink Muhly Grass / Muhlenbergia capillaris	5 gal	18" h X 18" w	30" OC	614	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Red Leaf Japanese Barberry / Berberis thunbergii 'Atropurpurea'	7 gal	36" h X 36" w	36" OC	49	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Tuscan Blue Rosemary / Rosmarinus officinalis `Tuscan Blue`	5 gal	20" h x 18" w	30" OC	110	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
SHRUB AREAS	**COMMON / BOTANICAL NAME**	**CONT.**	**SIZE**	**SPACING**	**QTY**	**REMARKS**
	DAM SLOPE MIX	HYDROMULCH			12,602 sf	CONTACT NATIVE AMERICAN SEED
	Fountain Grass / Cenchrus advena	3 gal	12" Ht. x 12" W	24" OC	309	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Switch Grass / Panicum virgatum	3 gal	18" Ht. 12" Spr.	36" O.C.	101	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
GROUND COVERS	**COMMON / BOTANICAL NAME**	**CONT.**	**SIZE**	**SPACING**	**QTY**	
	Hydroseed	HYDROMULCH			27,620 sf	REFER TO SPECIFICATIONS
	Littoral Planting Mix	HYDROMULCH			826 sf	PLANTING TO BE SPECIFIED BY OTHERS CONTACT STEVEN BARDIN @ TEXASPRIOLAKEMANAGEMENT.COM
	Asiatic Jasmine / Trachelospermum asiaticum	1 gal	8"h x 8"w	18" o.c.	547	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Bermuda Grass / Cynodon dactylon	sod			131,532 sf	REFER TO SPECIFICATIONS
	Creeping Juniper / Juniperus horizontalis	1 gal	8"h x 8"w	18" o.c.	528	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Giant Liriope / Liriope gigantea	1 gal	12" h x 12" w	18" o.c.	973	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Little Bluestem Grass / Schizachyrium scoparium	3 gal	24" h x 18" w	24" o.c.	25	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Mexican Feather Grass / Nassella tenuissima	flat			1,011 sf	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Mountain Pea / Orbexilum pedunculatum	1 gal	12" h x 12" w	18" o.c.	427	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Purple Wintercreeper / Euonymus fortunei 'Coloratus'	1 gal	8"h x 8"w	18" o.c.	970	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED
	Texas Sedge / Carex texensis	1 gal	12" h x 12" w	18" o.c.	1,790	CONTAINER, NURSERY GROWN, MATCHED AND WELL ROOTED

NOTE: PLANT QUANTITIES ARE PROVIDED FOR CONVENIENCE ONLY. IN THE CASE OF A DISCREPANCY, THE DRAWING SHALL TAKE PRECEDENCE.

NOTE: PLANTS ARE SPECIFIED BY HEIGHT, SPREAD AND CONTAINER SIZE. ALL PLANTINGS ARE EXPECTED TO MEET ALL SPECIFICATIONS PROVIDED.

Rayburn Co-Op - Rockwall Code Calculations Chart		
Site Data	**AC**	**SF**
Total Site Area	31.38	1,366,902
Surface Parking Spaces	271	
Site Landscape Area	**Required (% / SF)**	**Provided (% / SF)**
15% of site to be landscaped (Heavy Commercial zoning district)*	15%	16%
**Developed area only*	205,035	214,086
Street Frontage	**Required**	**Provided**
Sids Road - 832 LF(773 LF Frontage + 59.41 LF of Drive connection)		
10` Buffer	YES	YES
1 Canopy Tree/ 50 LF (Min. 4" Cal.)	17	17 (8 Existing)
1 Accent Tree/ 50LF (4' ht. Min.)	17	17
Continuous row of shrubs (min. 36" ht.- 3 Gal.)	YES	YES*
SH 205 - Drive connection 200LF		
1 Canopy Tree/ 50 LF (Min. 4" Cal.)	N/A	N/A
Mims Road - Drive connection 78 LF		
1 Canopy Tree/ 50 LF (Min. 4" Cal.)	N/A	N/A
*36" tall shrubs provided in lieu of berm and 5" cal. trees		
Parking Lot	**Required**	**Provided**
1 Large Canopy Tree/ 10 parking spaces	27	35
One tree within 80' of each parking space	YES	YES
Headlight Screening (min. 2' ht. berm with evergreen shrubs)	YES	YES
Total Trees	**Required**	**Provided**
Total Canopy Trees		95
Total Trees Existing (within parking areas)		36
Total Trees (Canopy Trees only)		131

EXISTING SITE PARKING DATA

PUBLIC SPACES	ACCESSIBLE SPACES	TOTAL
125	5	130

PROPOSED SITE PARKING DATA

PUBLIC SPACES	ACCESSIBLE SPACES	TOTAL
262	9	271

SITE INFORMATION:

EXISTING ZONING: HEAVY COMMERCIAL (HC), COMMERCIAL (C), & AGRICULTURAL (AG)

PROPOSED ZONING: NO CHANGE

PROPOSED USE: EXPANSION OF EXISTING SITE TO INCLUDE 2 NEW OFFICE BUILDINGS, TRUCK WAREHOUSE, AND LAYDOWN STORAGE WAREHOUSE

TOTAL AREA LOT 1: 1,366,902 SQ FT 31.38 AC
TOTAL AREA LOTS 1-4: 4,146,392 SQ FT 95.19 AC

LOT 1 "HC" ZONING

MAXIMUM BUILDING HEIGHT: 60 FT
MAXIMUM LOT COVERAGE: 60%
MAXIMUM FLOOR AREA RATIO: 4:1
MAXIMUM IMPERVIOUS PARKING: 90-95%

PROPOSED MAX. BUILDING D HEIGHT: 40'
PROPOSED MAX. BUILDING E HEIGHT: 46'-4"
PROPOSED MAX. BUILDING F HEIGHT: 26'-8"
PROPOSED LOT COVERAGE: 106,281/1,366,902 = 7.8%
PROPOSED FLOOR AREA RATIO: 113,260/1,366,902 = 0.08:1
PROPOSED IMPERVIOUS PARKING: 65,088/1,366,902 = 4.8%

EXISTING PARKING:
EXISTING WAREHOUSE 23,520 SQ FT (1:1000) = 24 SPACES
EXISTING OFFICE 31,530 SQ FT (1:300) = 106 SPACES
REMOVED OFFICE 7,700 SQ FT (1:300) = -26 SPACES

EXISTING REQUIRED PARKING = 104 SPACES

REQUIRED PARKING:
PROPOSED WAREHOUSE D 12,750 SQ FT (1:1000) = 13 SPACES
PROPOSED OFFICE D 19,600 SQ FT (1:300) = 66 SPACES
PROPOSED OFFICE E 23,000 SQ FT (1:300) = 77 SPACES
PROPOSED WAREHOUSE F 10,560 SQ FT (1:1000) = 11 SPACES

TOTAL REQUIRED PARKING = 271 SPACES
TOTAL PROVIDED PARKING = 271 SPACES

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Planning & Zoning Commission, Chairman

Director of Planning and Zoning

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REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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L.A. No. 3480 Date 12/28/2022

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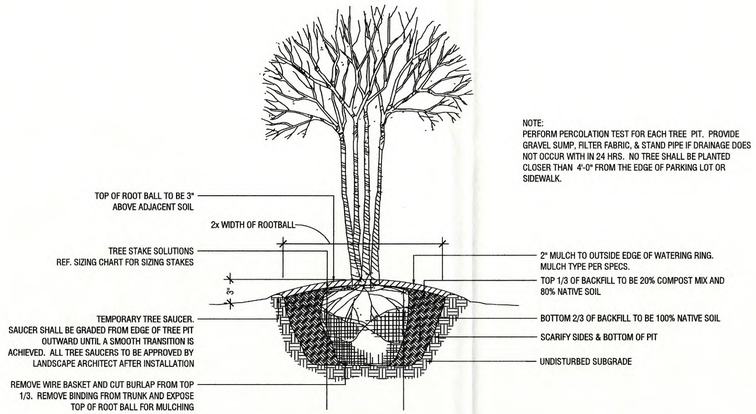
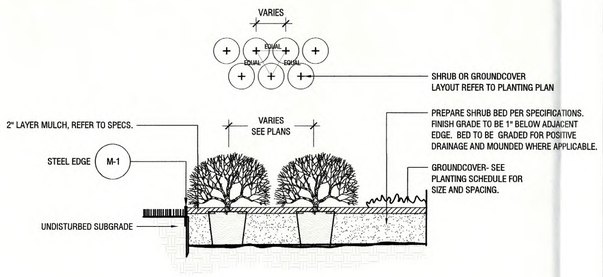
HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
PLANTING SCHEDULE
CASE# SP2022-058
SHEET NO.
L5.07

PLOT DATE:
TEMPLATE VERSION:



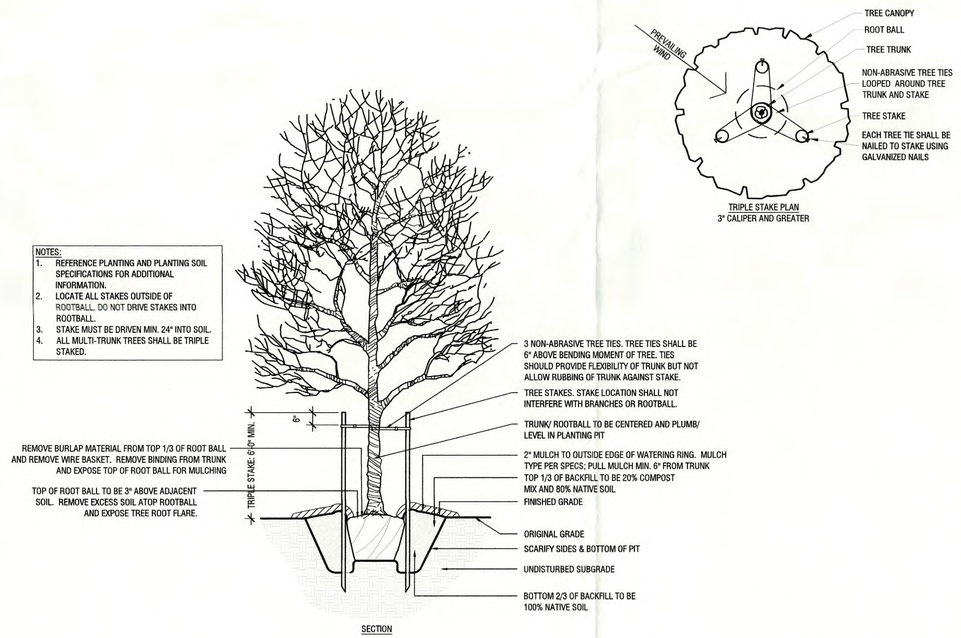
Multi-trunk / Ornamental Tree **B**

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



Shrubs & Groundcover **D**

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



Canopy Tree (Above Grade Stakes) **A**

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

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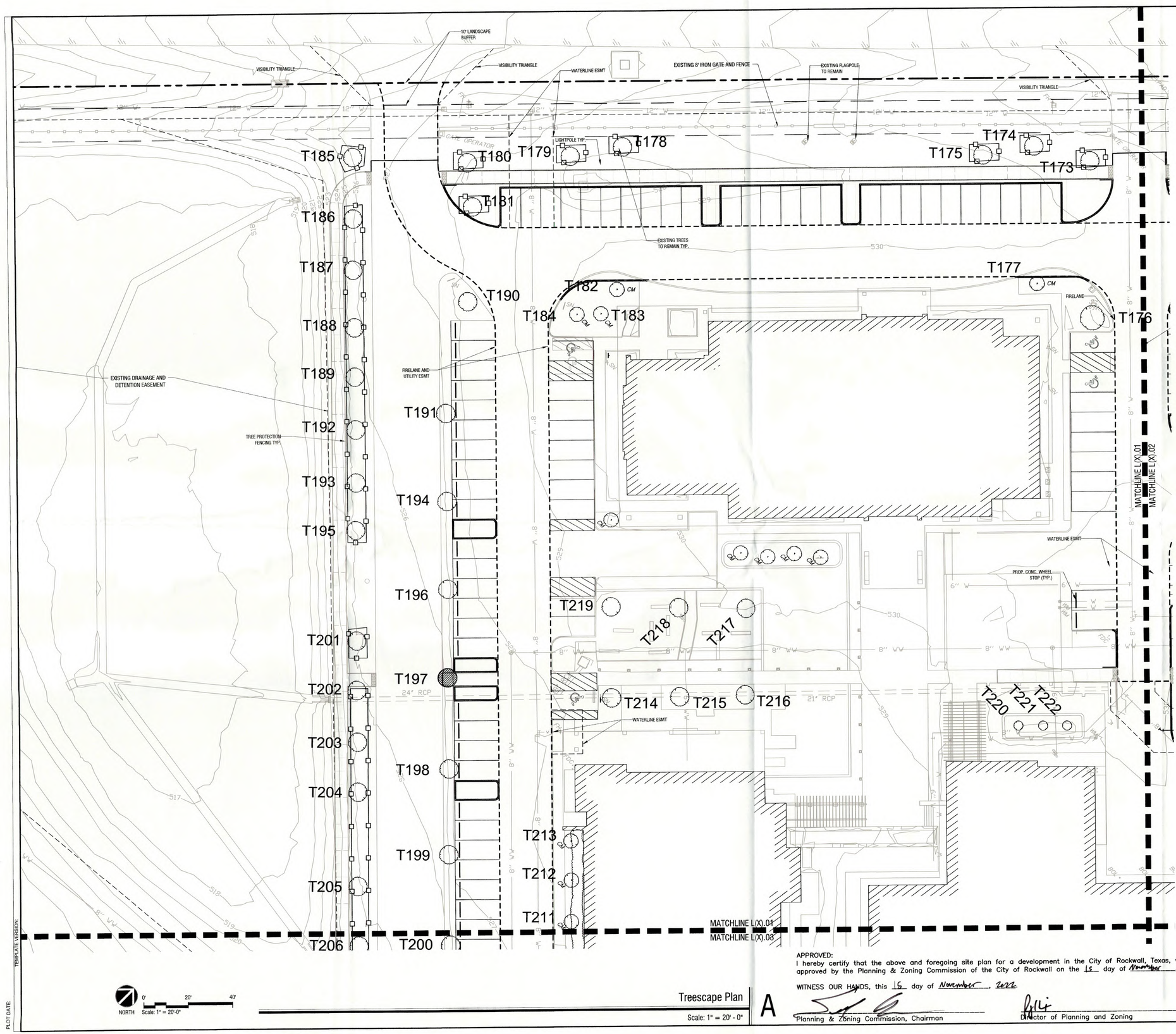
SHEET TITLE
PLANTING DETAILS

CASE# SP2022-058

SHEET NO.
L5.08



LEGEND

T40	EXISTING TREE TAG NUMBER
	EXISTING TREE TO REMAIN
	EXISTING TREE TO BE REMOVED
	TREE PROTECTION FENCING

NORTH Scale: 1" = 20'-0" (0', 20', 40')

Treescape Plan

Scale: 1" = 20' - 0"

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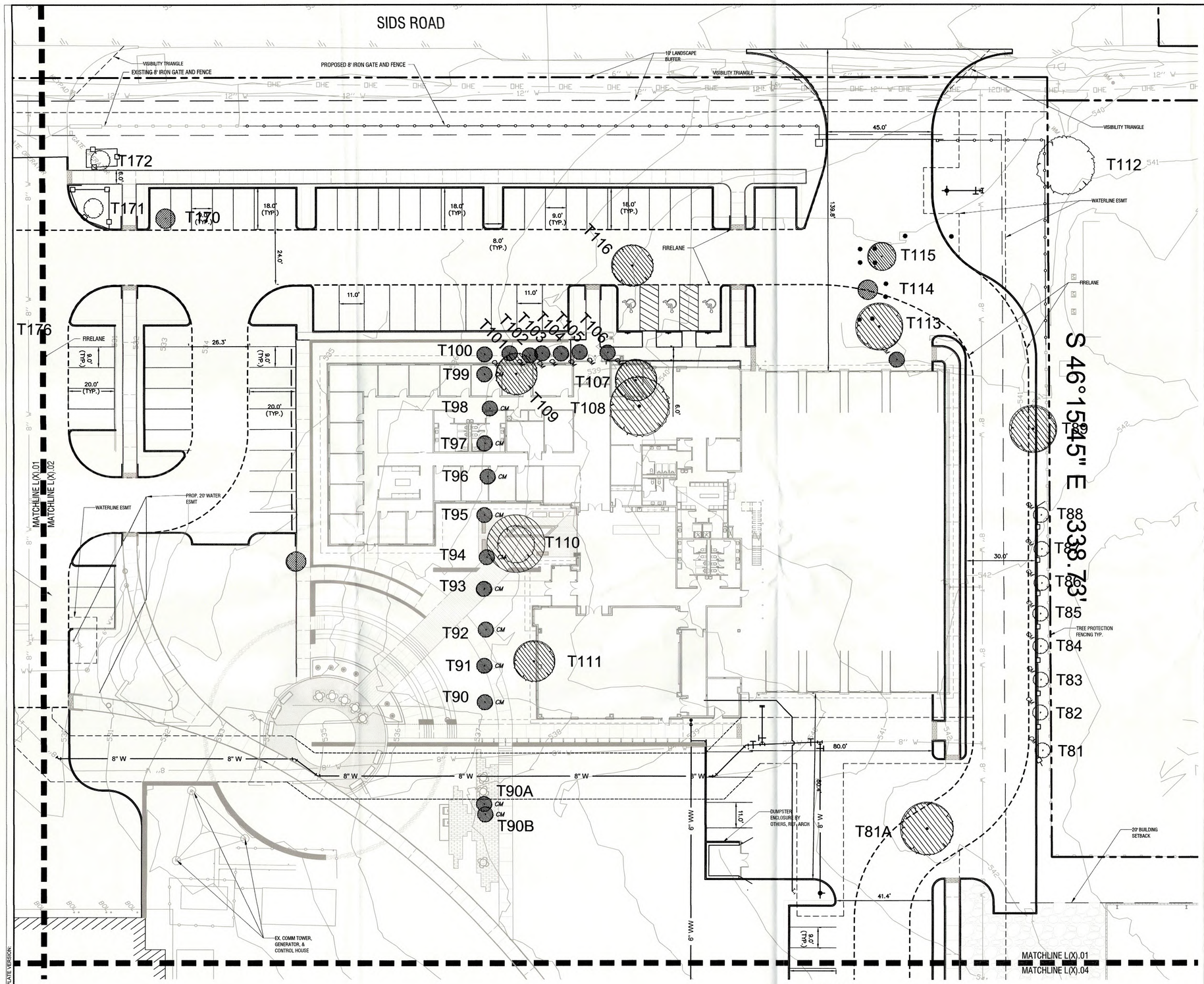
SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058

SHEET NO.
L7.01

PLOT DATE:
TEMPLATE VERSION:



Treescape Plan

Scale: 1" = 20' - 0"

A

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WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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LEGEND

- T40 — EXISTING TREE TAG NUMBER
- EXISTING TREE TO REMAIN
- EXISTING TREE TO BE REMOVED
- TREE PROTECTION FENCING

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

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KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
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DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040

RayburnElectric COOPERATIVE

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Kimley»Horn
P.E.A. ____ LANDON R. HUCKINS
L.A. No. 3480 Date 12/28/2022

KEY PLAN

REVISION

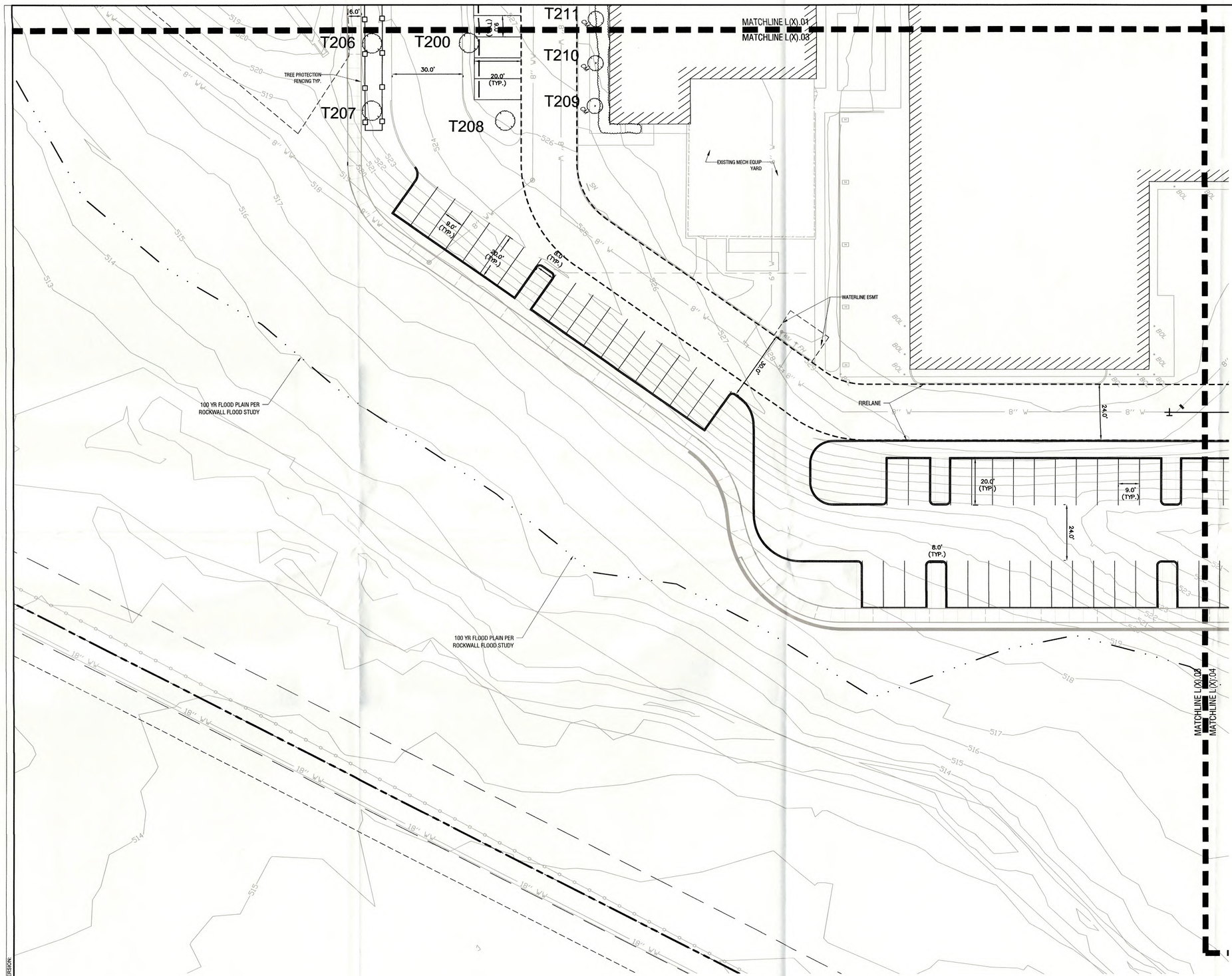
NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058

SHEET NO.
L7.02

PLOT DATE:
TEMPLATE VERSION:



Treescape Plan

Scale: 1" = 20' - 0"

A

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- EXISTING TREE TO REMAIN
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REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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L.A. No. 3480 Date 12/28/2022

KEY PLAN

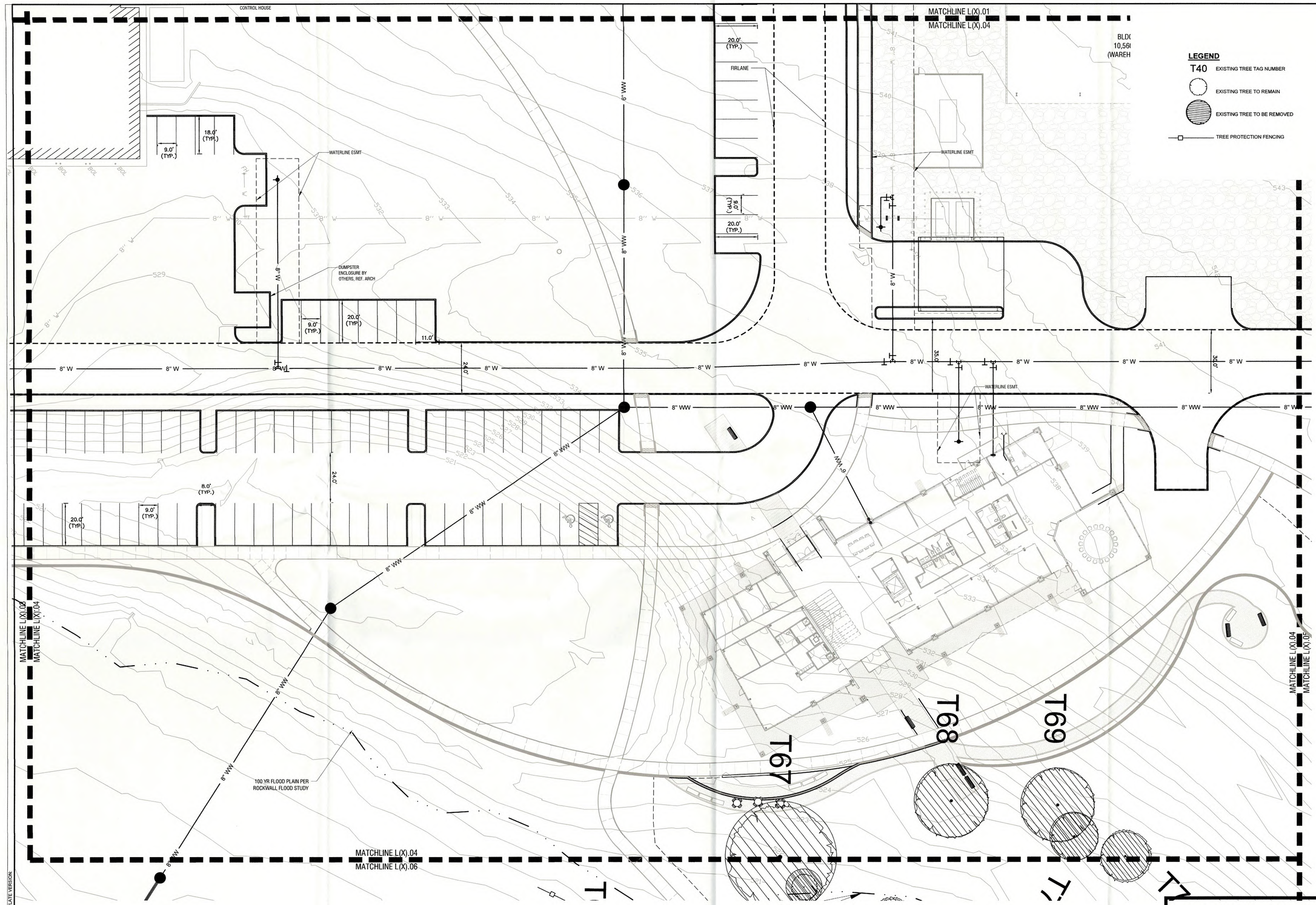
REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058

SHEET NO.
L7.03



PLOT DATE:

TEMPLATE VERSION:

NORTH Scale: 1" = 20'-0" (0' 20' 40')

Treescape Plan

Scale: 1" = 20' - 0"

A

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Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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KEY PLAN

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000

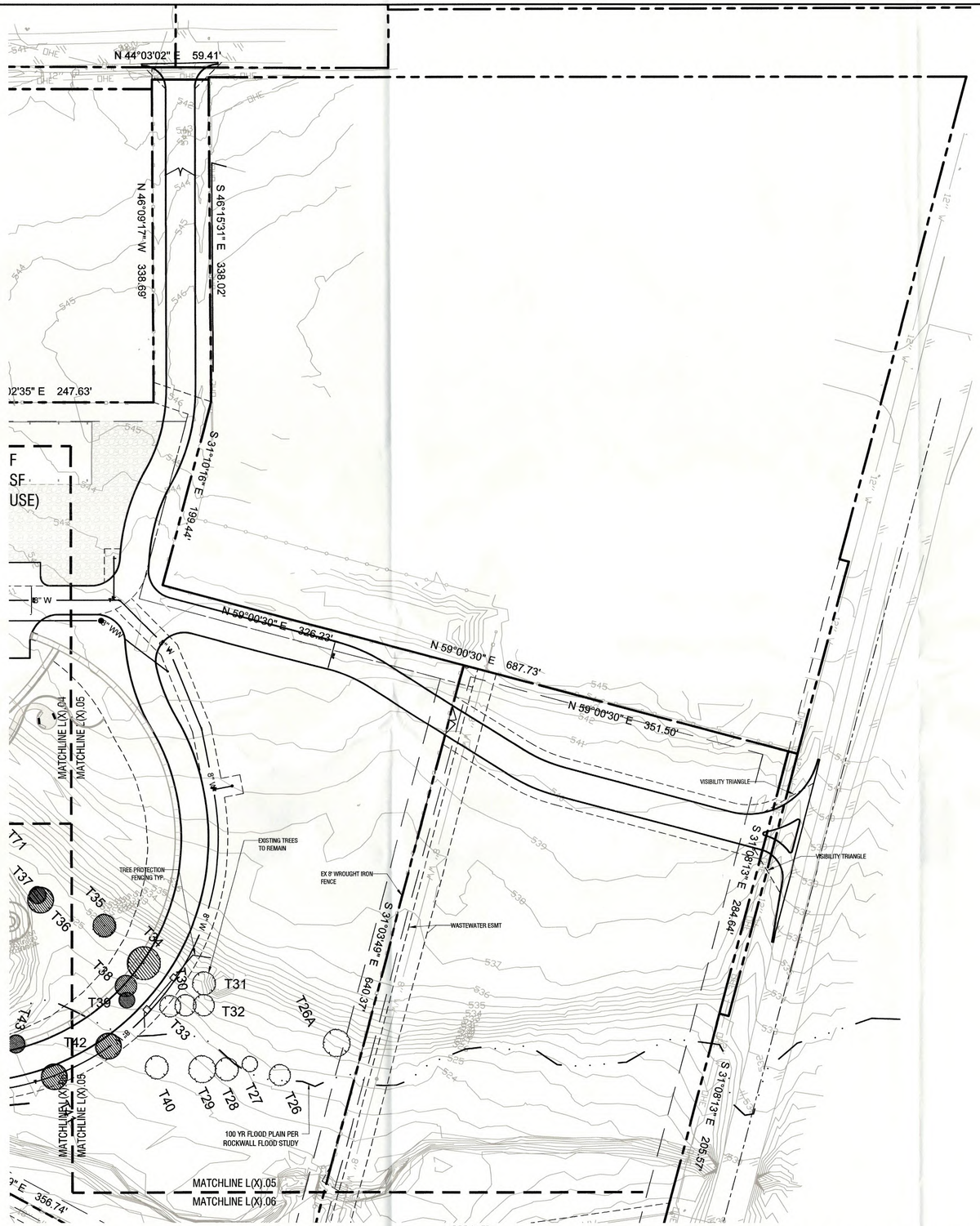
DATE
12/28/22

ISSUE
CITY SITE PLAN SUBMITTAL

SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058

SHEET NO.
L7.04



LEGEND

T40	EXISTING TREE TAG NUMBER
	EXISTING TREE TO REMAIN
	EXISTING TREE TO BE REMOVED
	TREE PROTECTION FENCING

NORTH
0' 60' 120'
Scale: 1" = 60'-0"

Landscape Plan

Scale: 1" = 60' - 0"

A

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PLOT DATE:
TEMPLATE VERSION:

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REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
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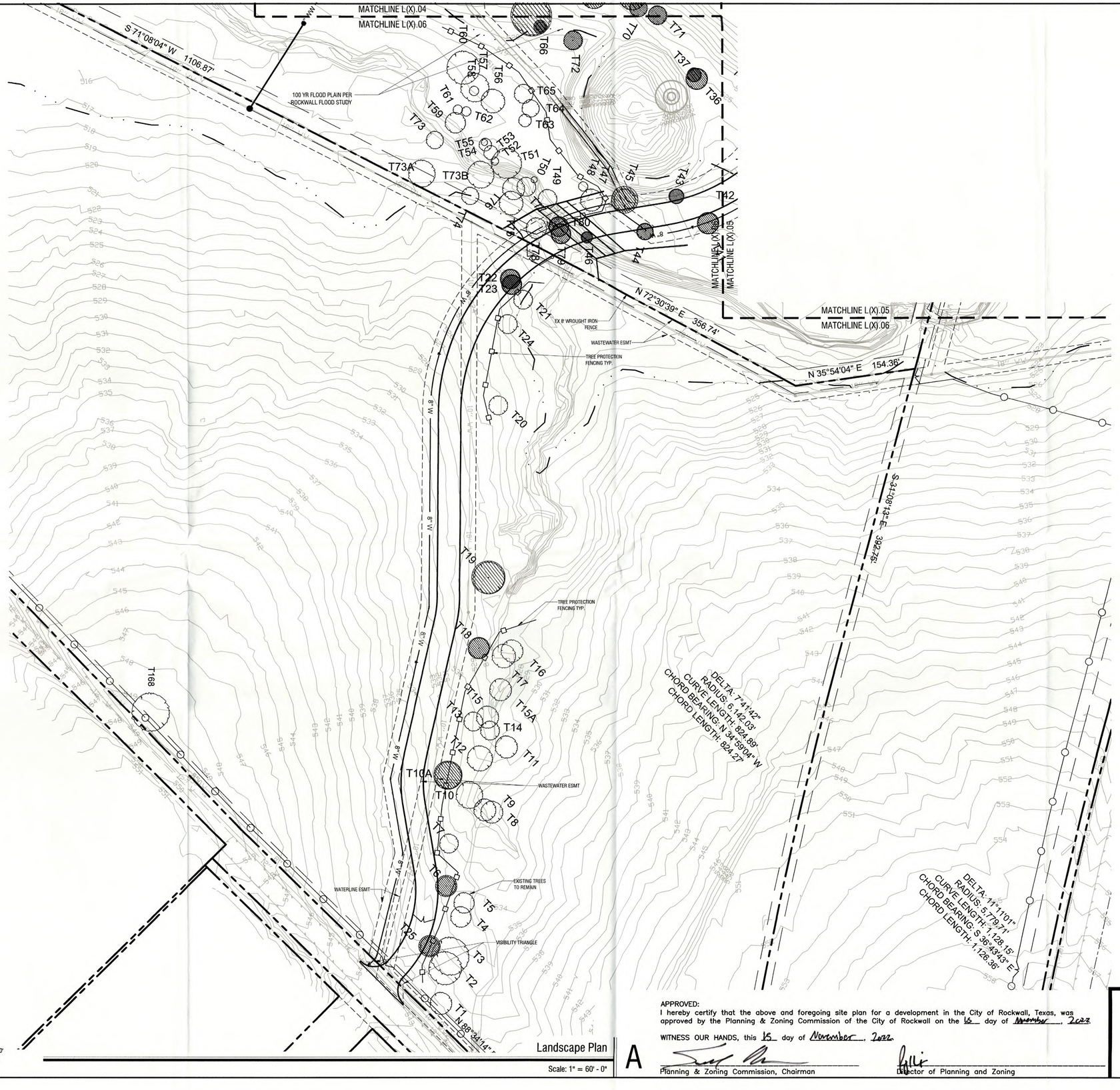
KEY PLAN

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058
SHEET NO.
L7.05



0' 60' 120'
NORTH Scale: 1" = 60'-0"

Landscape Plan

Scale: 1" = 60' - 0"

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REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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PLOT DATE:
TEMPLATE VERSION:

LEGEND

T40	EXISTING TREE TAG NUMBER
	EXISTING TREE TO REMAIN
	EXISTING TREE TO BE REMOVED
	TREE PROTECTION FENCING

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KEY PLAN

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
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12/28/22
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CITY SITE PLAN SUBMITTAL
SHEET TITLE
TREESCAPE PLAN

CASE# SP2022-058

SHEET NO.
L7.06

Location Key	Size DBH (Inches)	Description	Common Name	Comments	Tree Designation				Removal Status	Replacement Caliper Inches
					Feature	Primary	Secondary	Non-Protected		
T1	14	M.T.	Bois D'Arc					X		
T2	24	M.T.	Bois D'Arc					X		
T3	24		Bois D'Arc					X		
T4	16	M.T.	Hackberry				X			
T5	13		American Elm			X				
T6	12		Eastern Red Cedar				X		Removed	6
T7	12		Eastern Red Cedar				X			
T8	14		Hackberry				X			
T9	15	M.T.	Bois D'Arc					X		
T10	18	M.T.	American Elm			X				
T10A	30		Cottonwood					X	Removed	60
T11	14		Black Willow					X		
T12	16		Black Willow					X		
T13	12		Eastern Red Cedar				X			
T14	15	M.T.	Hackberry	Dying and Covered with Poison Ivy			X			
T15	14		Hackberry	Diseased Crown			X			
T15A	14	M.T.	Hackberry				X			
T16	14		Hackberry				X			
T17	15		American Elm			X				
T18	13		Hackberry				X		Removed	6.5
T19	14	M.T.	Bois D'Arc	Tagged as "20"				X	Removed	
T20	12		Eastern Red Cedar				X			
T21	13	M.T.	Eastern Red Cedar				X			
T22	12		Eastern Red Cedar				X		Removed	6
T23	12		Eastern Red Cedar				X		Removed	6
T24	12		Eastern Red Cedar				X			
T25	12		Eastern Red Cedar				X		Removed	6
T26A	9		Cedar Elm			X				
T26	11		Eastern Red Cedar				X			
T27	8		White Ash			X				
T28	13	M.T.	Eastern Red Cedar				X			
T29	14	M.T.	Eastern Red Cedar				X			
T30	11		Eastern Red Cedar				X			
T31	12		Eastern Red Cedar				X			
T32	11		Eastern Red Cedar	Branched to Ground			X			
T33	11		Eastern Red Cedar				X			
T34	17		White Ash			X			Removed	17
T35	12		Eastern Red Cedar	Only Top 1/4 of Tree is Alive.			X		Removed	6
T36	13		Eastern Red Cedar	Entirely Dead			X		Removed	6.5
T37	9		White Ash			X			Removed	9
T38	11		Hackberry				X		Removed	5.5
T39	8		Slippery Elm	Entire Tree is Wilted.		X			Removed	8
T40	12		Hackberry				X			
T41	13		Hackberry				X		Removed	6.5
T42	14	M.T.	Eastern Red Cedar				X		Removed	7
T43	8		Hackberry					X	Removed	
T44	10"		Bois D'Arc					X	Removed	
T45	14		American Elm			X			Removed	14
T46	7		Slippery Elm			X			Removed	7
T47	14		White Ash			X				
T48	6		Cedar Elm			X				
T49	12		Eastern Red Cedar				X			
T50	4		Bois D'Arc					X		
T51	19		Bois D'Arc					X		
T52	5		Persimmon			X				
T53	9		Persimmon			X				
T54	8		Black Willow					X		
T55	4		Persimmon			X				
T56	15		White Ash			X				
T57	18		Bois D'Arc					X		
T58	6		Bois D'Arc					X		
T59	14	M.T.	Bois D'Arc					X		
T60	21	M.T.	Bois D'Arc					X		
T61	6		Bois D'Arc	Tagged as "62"				X		
T62	6		Bois D'Arc	Tagged as "63"				X		
T63	8		American Elm			X				
T64	8	M.T.	Hackberry					X		
T65	12		White Ash			X				
T66	6		Bois D'Arc					X	Removed	
T67	24	M.T.	Bois D'Arc					X	Removed	
T68	17	M.T.	Hackberry				X		Removed	8.5
T69	15	M.T.	Hackberry				X		Removed	7.5
T70	11		Hackberry				X		Removed	5.5
T71	12		Bois D'Arc					X	Removed	
T72	14		Hackberry				X		Removed	7
T73	11		Cedar Elm			X				
T73A	8		American Elm			X				
T73B	12		Eastern Red Cedar				X			
T74	15		Eastern Red Cedar				X			
T75	15		Eastern Red Cedar				X			
T76	14		Eastern Red Cedar				X			
T77	12		Black Willow					X		
T78	13		Eastern Red Cedar				X			
T79	12		Eastern Red Cedar				X		Removed	6
T80	12		Eastern Red Cedar				X		Removed	6
T81	12	M.T.	'Natchez' Crape Myrtle					X		
T81A	18		Live Oak			X			Removed	18
T82	7	M.T.	'Natchez' Crape Myrtle					X		
T83	6	M.T.	'Natchez' Crape Myrtle					X		
T84	11	M.T.	'Natchez' Crape Myrtle					X		
T85	16	M.T.	'Natchez' Crape Myrtle					X		
T86	18	M.T.	'Natchez' Crape Myrtle					X		
T87	15	M.T.	'Natchez' Crape Myrtle					X		
T88	11	M.T.	'Natchez' Crape Myrtle					X		
T89	15		Bradford Pear			X			Removed	15
T90	11	M.T.	'Natchez' Crape Myrtle					X	Removed	
T90A	20	M.T.	'Natchez' Crape Myrtle					X	Removed	
T90B	9	M.T.	'Watermelon Red' Crape Myrtle					X	Removed	
T91	11	M.T.	'Natchez' Crape Myrtle					X	Removed	
T92	11	M.T.	'Natchez' Crape Myrtle					X	Removed	
T93	15	M.T.	'Natchez' Crape Myrtle					X	Removed	
T94	9	M.T.	'Natchez' Crape Myrtle					X	Removed	
T95	19	M.T.	'Natchez' Crape Myrtle					X	Removed	
T96	7	M.T.	'Watermelon Red' Crape Myrtle					X	Removed	
T97	19	M.T.	'Natchez' Crape Myrtle					X	Removed	
T98	9	M.T.	'Watermelon Red' Crape Myrtle					X	Removed	
T99	13	M.T.	'Natchez' Crape Myrtle					X	Removed	
T100	8	M.T.	'Natchez' Crape Myrtle					X	Removed	
T101	11	M.T.	'Natchez' Crape Myrtle					X	Removed	
T102	7	M.T.	'Natchez' Crape Myrtle					X	Removed	
T103	10	M.T.	'Natchez' Crape Myrtle					X	Removed	
T104	7	M.T.	'Natchez' Crape Myrtle					X	Removed	
T105	11	M.T.	'Natchez' Crape Myrtle					X	Removed	
T106	6	M.T.	'Natchez' Crape Myrtle					X	Removed	
T107	18		Red Oak			X			Removed	18
T108	22		Bradford Pear			X			Removed	22
T109	12		Bradford Pear	Diseased		X			Removed	12
T110	15		Bradford Pear	Wind Damaged		X			Removed	15
T111	15		Live Oak			X			Removed	15
T112	17		Live Oak			X				
T113	13		Live Oak	Bad Freeze Damaged Trunk		X			Removed	13
T114	5		Magnolia			X			Removed	5
T115	9		Live Oak	Bad Freeze Damaged Trunk		X			Removed	9
T116	12		Texas Red Oak	Substantial Trunk Damage with Borer Infestation		X			Removed	12
T138	18	M.T.	Hackberry				X			
T141	12		Eastern Red Cedar				X			
T142	14		Eastern Red Cedar				X			
T143	17	M.T.	Eastern Red Cedar				X			
T144	4		Cedar Elm			X				
T145	16		Eastern Red Cedar				X			
T146	11		Eastern Red Cedar				X			
T147	14		Eastern Red Cedar				X			
T148	12		Eastern Red Cedar				X			
T149	12		Eastern Red Cedar				X			
T150	12		Eastern Red Cedar				X			
T151	12	M.T.	Eastern Red Cedar				X			
T152	15		Eastern Red Cedar				X			
T153	11		Eastern Red Cedar				X			
T155	18		Eastern Red Cedar				X			
T156	12		Eastern Red Cedar				X			
T157	14		Eastern Red Cedar				X			
T158	8		Cedar Elm			X				
T158A	7		Cedar Elm			X				
T159	8		Locust					X		
T160	5		White Ash			X				
T161	5		Cedar Elm			X				
T162	4		White Ash			X				
T163	4		Cedar Elm			X				
T164	8		Cedar Elm			X				
T164A	7		Cedar Elm			X				
T164B	10	M.T.	Cedar Elm			X				
T164C	6		Cedar Elm			X				
T165	7		Black Willow					X		
T166	20		Black Willow					X		
T168	19	M.T.	Eastern Red Cedar				X			
T168A	23	M.T.	Eastern Red Cedar				X			
T170	6		Live Oak			X			Removed	6
T171	6		Live Oak			X				
T172	6		Bur Oak			X				
T173	6		Bur Oak			X				
T174	6		Bur Oak			X				
T175	6		Bur Oak			X				
T176	7		Live Oak			X				
T177	8	M.T.	'Natchez' Crape Myrtle					X		
T178	6		Bur Oak			X				
T179	6		Bur Oak			X				
T180	6		Bur Oak			X				
T181	6		Live Oak	Stunted- Old Sapsucker Damage		X				
T182	10	M.T.	'Natchez' Crape Myrtle					X		
T183	7.5	M.T.	'Natchez' Crape Myrtle					X		
T184	7	M.T.	'Natchez' Crape Myrtle					X		
T185	6		Bald Cypress			X				
T186	6		Bald Cypress			X				
T187	6		Bald Cypress			X				
T188	6		Bald Cypress			X				
T189	6		Bald Cypress			X				
T190	6		Live Oak	Stunted- Old Sapsucker Damage		X				
T191	6		Live Oak			X				
T192	6		Bald Cypress			X				
T193	6		Bald Cypress			X				
T194	6		Live Oak			X				
T195	6		Bald Cypress			X				
T196	6		Live Oak			X				
T197	6		Live Oak			X			Removed	6
T198	6		Live Oak			X				
T199	6		Live Oak			X				
T200	6		Live Oak			X				
T201	6		Bald Cypress			X				
T202	6		Bald Cypress			X				
T203	6		Bald Cypress			X				
T204	6		Bald Cypress			X				
T205	6		Bald Cypress			X				
T206	6		Bald Cypress			X				
T207	6		Bald Cypress			X				
T208	6		Live Oak			X				
T209	-		Crape Myrtle	Dead, Coming Back From Roots						
T210	3.5	M.T.	'Natchez' Crape Myrtle					X		
T211	2.5	M.T.	'Natchez' Crape Myrtle					X		
T212	2.5	M.T.	'Natchez' Crape Myrtle					X		
T213	3	M.T.	'Natchez' Crape Myrtle					X		
T214	6		Live Oak	Weeping Habit		X				
T215	6		Live Oak	Weeping Habit		X				
T216	6		Live Oak	Weeping Habit		X				
T217	6		Live Oak	Weeping Habit		X				
T218	6		Live Oak	Weeping Habit		X				
T219	6		Live Oak	Weeping Habit		X				
T223	14		Black Willow					X		
TOTAL	2,210									

TOTAL REPLACEMENT INCHES REQUIRED:	383.5
MITIGATION INCHES PROVIDED ON SITE:	390
MITIGATION INCHES (CREDITS) REMAINING:	-6.5

SITE INFORMATION:

EXISTING ZONING: HEAVY COMMERCIAL (HC), COMMERCIAL (C), & AGRICULTURAL (AG)

PROPOSED ZONING: NO CHANGE

PROPOSED USE: EXPANSION OF EXISTING SITE TO INCLUDE 2 NEW OFFICE BUILDINGS, TRUCK WAREHOUSE, AND LAYDOWN STORAGE WAREHOUSE

TOTAL AREA LOT 1: 1,366,902 SQ FT 31.38 AC
TOTAL AREA LOTS 1–4: 4,146,392 SQ FT 95.19 AC

LOT 1 "HC" ZONING

MAXIMUM BUILDING HEIGHT: 60 FT
MAXIMUM LOT COVERAGE: 60%
MAXIMUM FLOOR AREA RATIO: 4:1
MAXIMUM IMPERVIOUS PARKING: 90–95%

PROPOSED MAX. BUILDING D HEIGHT: 40'
PROPOSED MAX. BUILDING E HEIGHT: 46'–4"
PROPOSED MAX. BUILDING F HEIGHT: 26'–8"
PROPOSED LOT COVERAGE: 106,281/1,366,902 = 7.8%
PROPOSED FLOOR AREA RATIO: 113,260/1,366,902 = 0.08:1
PROPOSED IMPERVIOUS PARKING: 65,088/1,366,902 = 4.8%

EXISTING PARKING:
EXISTING WAREHOUSE 23,520 SQ FT (1:1000) = 24 SPACES
EXISTING OFFICE 31,530 SQ FT (1:300) = 106 SPACES
REMOVED OFFICE 7,700 SQ FT (1:300) = –26 SPACES

EXISTING REQUIRED PARKING = 104 SPACES

REQUIRED PARKING:
PROPOSED WAREHOUSE D 12,750 SQ FT (1:1000) = 13 SPACES
PROPOSED OFFICE D 19,600 SQ FT (1:300) = 66 SPACES
PROPOSED OFFICE E 23,000 SQ FT (1:300) = 77 SPACES
PROPOSED WAREHOUSE F 10,560 SQ FT (1:1000) = 11 SPACES

TOTAL REQUIRED PARKING = 271 SPACES
TOTAL PROVIDED PARKING = 271 SPACES

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

© 2022 HKS, INC.

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
MCKINNEY, TX 75069

STRUCTURAL ENGINEER
HKS, INC.
350 N SAINT PAUL ST, SUITE 100
DALLAS, TX 75201- 4240

MEP ENGINEERS
SYSKA HENNESSY GROUP
4925 GREENVILLE AVENUE, SUITE 415
DALLAS, TX 75206

OWNER
RAYBURN ELECTRIC COOPERATIVE
950 SIDS ROAD
ROCKWALL, TX 75087

CIVIL ENGINEER
R - DELTA ENGINEERS, INC.
618 MAIN STREET
GARLAND, TEXAS 75040

RAYBURN ELECTRIC COOPERATIVE

DO NOT RECORD

FOR REVIEW ONLY.
Not for construction or permit purposes.
Kimley»Horn
P.E.A. ____ LANDON R. HUCKINS
L.A. No. 3480 Date 12/28/2022

KEY PLAN

REVISION

NO.	DESCRIPTION	DATE

HKS PROJECT NUMBER
25370.000
DATE
12/28/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
TREESCAPE TABLE

CASE# SP2022-058

SHEET NO.
L7.07

PLOT DATE:
TEMPLATE VERSION:

EXTERIOR MATERIALS LEGEND

ST01:
a. STONE TYPE: LIMESTONE
b. STONE NAME: LEUDERS CHOPPED BUFF
c. GROUT/SEALANT COLOR: MATCH EXISTING
d. LOCATION: EXTERIOR STONE MASONRY VENEER

AMF01:
a. MATERIAL TYPE: ALUMINUM
b. FINISH TYPE: ANODIZED
c. ANODIZED COLOR: DARK BRONZE
d. COATING COLOR: MATCH EXISTING
e. LOCATION: MULLIONS

AMF02:
a. MATERIAL TYPE: STEEL
b. FINISH TYPE: HIGH-PERFORMANCE ORGANIC FLUOROPOLYMER
c. COATING COLOR: MATCH PT02
d. LOCATION: EXPOSED TRELLIS COLUMNS

AMF03:
a. MATERAL TYPE: STEEL
b. COATING COLOR: MATCH EXISTING ROOF, BERRIDGE PREWEATHERED GALVALUME
c. MATTE FINISH
d. LOCATION: STANDING SEAM METAL ROOF

WD01:
a. SPECIES AND CUT: WESTERN RED CEDAR
b. FINISH: CLEAR MATTE FINISH
c. LOCATION: WOOD BEAM CLADDING. EXTERIOR SOFFITS, INTERIOR CEILINGS AND TRIM.

CSM01:
a. MATERIAL TYPE: CAST STONE
b. COLOR: NATURAL
c. AGGREGATE:
d. EXPOSED TEXTURE FINISH: [SMOOTH] [HONED] [SAND TEXTURE]
e. LOCATION: WAINSCOT SILL @ STONE, PARAPET CAP

PCP01:
a. MATERIAL TYPE: PORTLAND CEMENT PLASTER
b. COLOR: MATCH SW 9111 ANTLER VELVET

PC01:
a. MATERIAL TYPE: TILT UP CONCRETE PANELS
b. COLOR: MATCH SW 9111 ANTLER VELVET

PT01:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: GUTTERS AND DOWNSPOUTS

PT02:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: EXPOSED STRUCTURAL STEEL & ENTRY CANOPIES

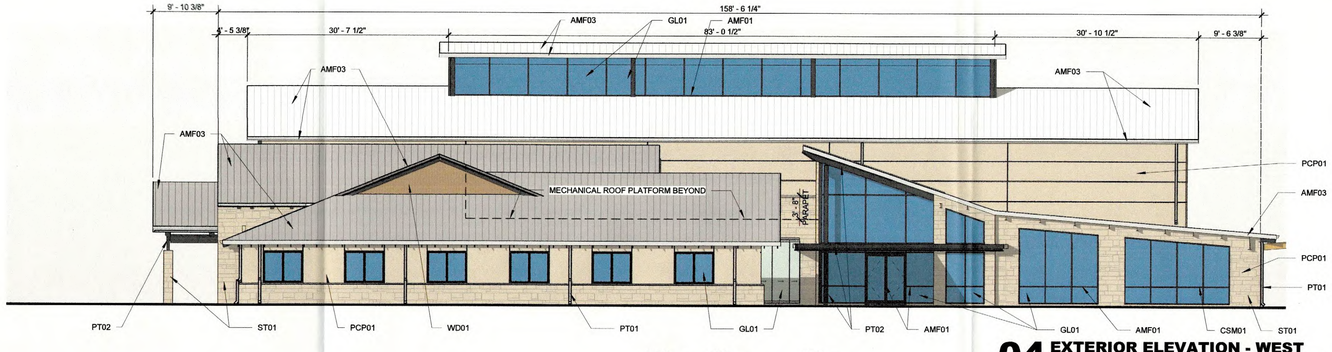
GL01: INSULATING COATED GLASS - VISION
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: CLEAR HS; 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE.
3) AIR SPACE: 1/2"; ALUMINIUM BLACK, ARGON
4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS

GL02: INSULATING COATED GLASS - SPANDREL
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: SPANDREL 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE.
3) AIR SPACE: 1/2"; ALUMINIUM BLACK, ARGON
4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS
COLOR: V908 GRAY

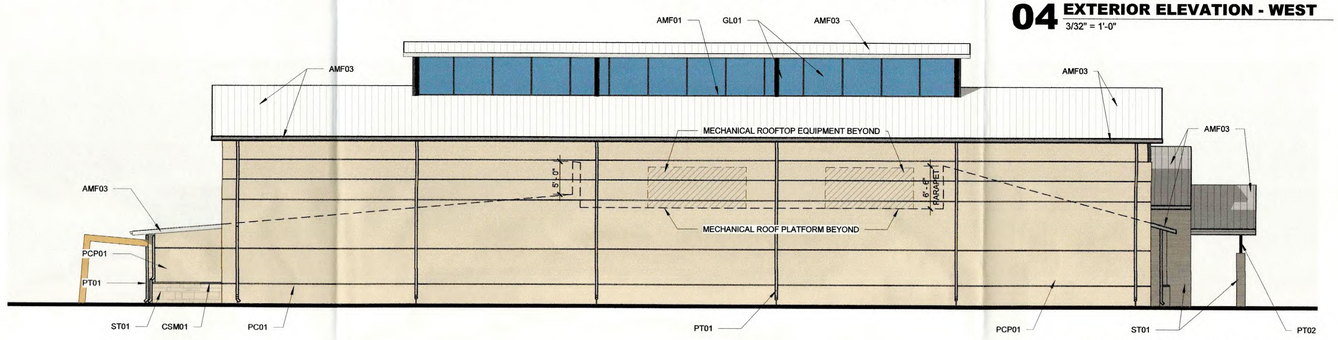
CMU01:
a. MANUFACTURER: FEATHERLITE
b. SPLIT FACE MASONRY BLOCK
c. COLOR: CREAM

Building "D" Elevation Material Calculations

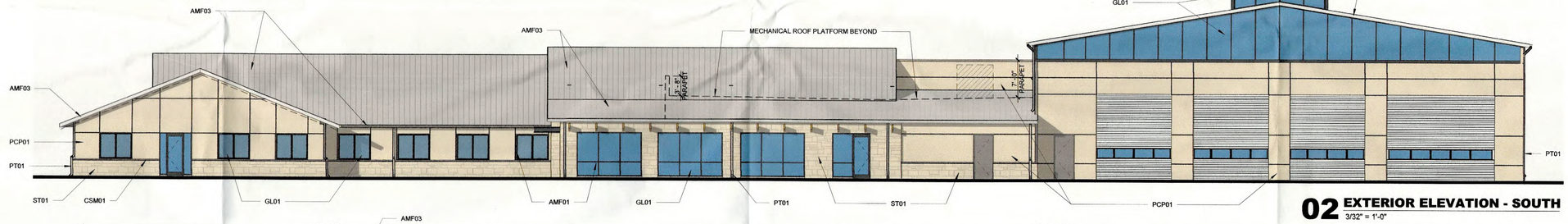
	MATERIAL	AMOUNT (SF)	AMOUNT (%)
NORTH			
	PORTLAND CEMENT PLASTER (PCP01)	460	21%
	WOOD SIDING (WD01)	160	7%
	STONE VENEER (ST01)	607	28%
	TILT UP CONCRETE PANELS (PC01)	975	44%
		2202	100%
SOUTH			
	PORTLAND CEMENT PLASTER (PCP01)	547	21%
	WOOD SIDING (WD01)	0	0%
	STONE VENEER (ST01)	635	24%
	TILT UP CONCRETE PANELS (PC01)	1,457	55%
		2639	100%
EAST			
	PORTLAND CEMENT PLASTER (PCP01)	54	1%
	WOOD SIDING (WD01)	0	0%
	STONE VENEER (ST01)	120	3%
	TILT UP CONCRETE PANELS (PC01)	3540	95%
		3714	100%
WEST			
	PORTLAND CEMENT PLASTER (PCP01)	1465	37%
	WOOD SIDING (WD01)	154	4%
	STONE VENEER (ST01)	680	17%
	TILT UP CONCRETE PANELS (PC01)	1,629	41%
		3928	100%



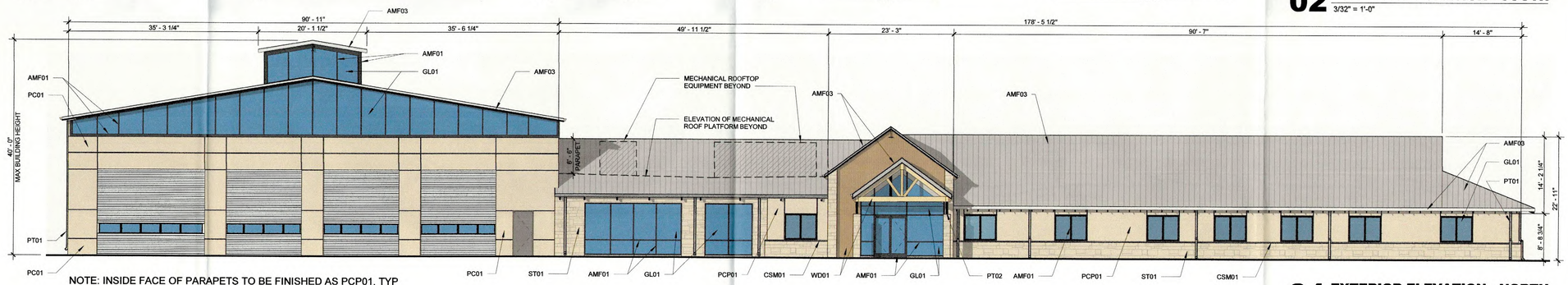
04 EXTERIOR ELEVATION - WEST
3/32" = 1'-0"



03 EXTERIOR ELEVATION - EAST
3/32" = 1'-0"



02 EXTERIOR ELEVATION - SOUTH
3/32" = 1'-0"



01 EXTERIOR ELEVATION - NORTH
3/32" = 1'-0"

NOTE: INSIDE FACE OF PARAPETS TO BE FINISHED AS PCP01, TYP

APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022.

WITNESS OUR HANDS, this 15 day of November, 2022

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

HKS

ARCHITECT
HKS, INC.
350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

LANDSCAPE ARCHITECT
KIMLEY-HORN AND ASSOCIATE, INC.
260 EAST DAVIS STREET, SUITE 100
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618 MAIN STREET
GARLAND, TEXAS 75040

Rayburn Electric COOPERATIVE

INTERIM REVIEW ONLY
These documents are incomplete, and are released for interim review only and are not intended for regulatory approval, permit, or construction purposes.
Architect:
Arch. Reg. No.:
Date:

KEY PLAN

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
25370.000
DATE
11/01/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
BLDG ELEVATIONS - D
CASE# SP2022-058
SHEET NO.
PA5.01

EXTERIOR MATERIALS LEGEND

ST01:
a. STONE TYPE: LIMESTONE
b. STONE NAME: LEUDERS CHOPPED BUFF
c. GROUT/SEALANT COLOR: MATCH EXISTING
d. LOCATION: EXTERIOR STONE MASONRY VENEER

AMF01:
a. MATERIAL TYPE: ALUMINUM
b. FINISH TYPE: ANODIZED
c. ANODIZED COLOR: DARK BRONZE
d. COATING COLOR: MATCH EXISTING
e. LOCATION: MULLIONS

AMF02:
a. MATERIAL TYPE: STEEL
b. FINISH TYPE: HIGH-PERFORMANCE ORGANIC FLUOROPOLYMER.
c. COATING COLOR: MATCH PT02
d. LOCATION: EXPOSED TRELLIS COLUMNS

AMF03:
a. MATERIAL TYPE: STEEL
b. COATING COLOR: MATCH EXISTING ROOF, BERRIDGE PREWEATHERED GALVALUME
c. MATTE FINISH
d. LOCATION: STANDING SEAM METAL ROOF

WD01:
a. SPECIES AND CUT: WESTERN RED CEDAR
b. FINISH: CLEAR MATTE FINISH
c. LOCATION: WOOD BEAM CLADDING. EXTERIOR SOFFITS, INTERIOR CEILINGS AND TRIM.

CSM01:
a. MATERIAL TYPE: CAST STONE
b. COLOR: NATURAL
c. AGGREGATE:
d. EXPOSED TEXTURE FINISH: [SMOOTH] [HONED] [SAND TEXTURE]
e. LOCATION: WAINSCOT SILL @ STONE, PARAPET CAP

PCP01:
a. MATERIAL TYPE: PORTLAND CEMENT PLASTER
b. COLOR: MATCH SW 9111 ANTLER VELVET

PC01:
a. MATERIAL TYPE: TILT UP CONCRETE PANELS
b. COLOR: MATCH SW 9111 ANTLER VELVET

PT01:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: GUTTERS AND DOWNSPOUTS

PT02:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: EXPOSED STRUCTURAL STEEL & ENTRY CANOPIES

GL01: INSULATING COATED GLASS - VISION
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: CLEAR HS; 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE.
3) AIR SPACE: 1/2"; ALUMINUM BLACK, ARGON
4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS

GL02: INSULATING COATED GLASS - SPANDREL
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: SPANDREL 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE.
3) AIR SPACE: 1/2"; ALUMINUM BLACK, ARGON
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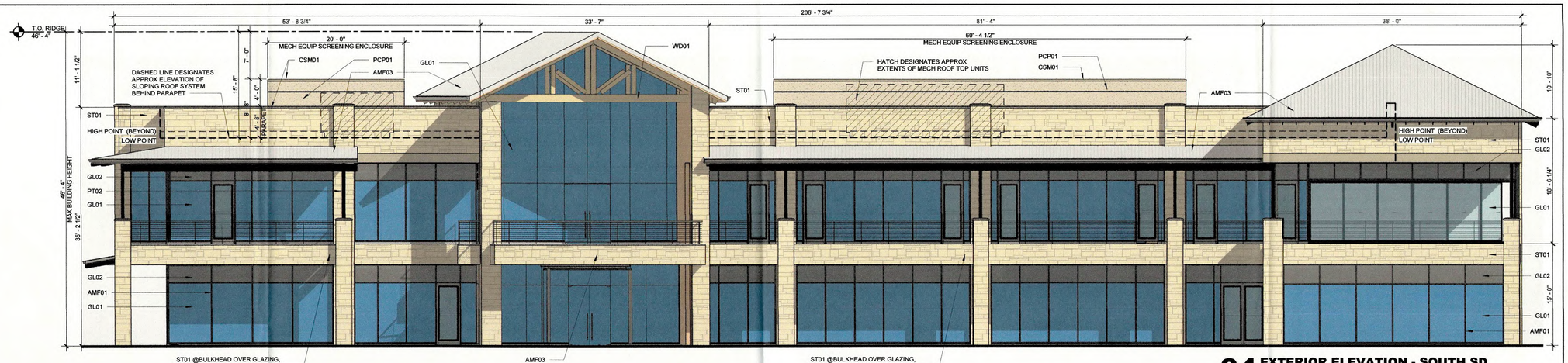
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS
COLOR: V908 GRAY

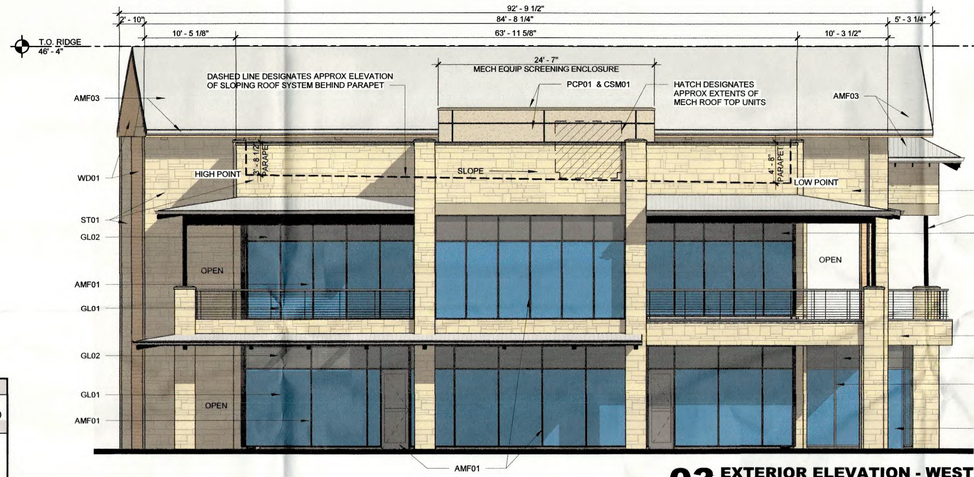
CMU01:
a. MANUFACTURER: FEATHERLITE
b. SPLIT FACE MASONRY BLOCK
c. COLOR: CREAM

Building "E" Elevation Material Calculations

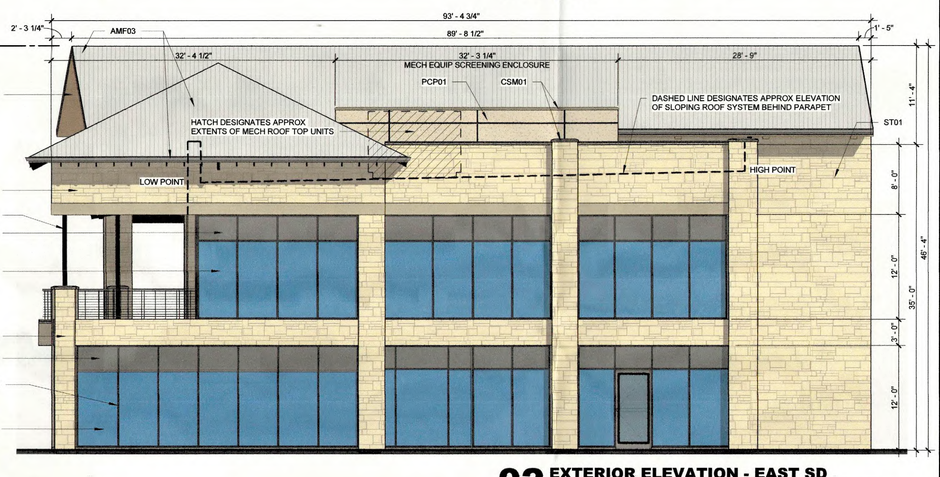
	MATERIAL	AMOUNT (SF)	AMOUNT (%)
NORTH			
	PORTLAND CEMENT PLASTER (PCP01)	190	6%
	WOOD SIDING (WD01)	150	4%
	STONE VENEER (ST01)	3020	90%
		3360	100%
SOUTH			
	PORTLAND CEMENT PLASTER (PCP01)	190	5%
	WOOD SIDING (WD01)	93	3%
	STONE VENEER (ST01)	3410	92%
		3693	100%
EAST			
	PORTLAND CEMENT PLASTER (PCP01)	110	6%
	WOOD SIDING (WD01)	56	3%
	STONE VENEER (ST01)	1683	91%
		1849	100%
WEST			
	PORTLAND CEMENT PLASTER (PCP01)	110	6%
	WOOD SIDING (WD01)	56	3%
	STONE VENEER (ST01)	1750	91%
		1916	100%



04 EXTERIOR ELEVATION - SOUTH SD
1/8" = 1'-0"



03 EXTERIOR ELEVATION - WEST SD
1/8" = 1'-0"



02 EXTERIOR ELEVATION - EAST SD
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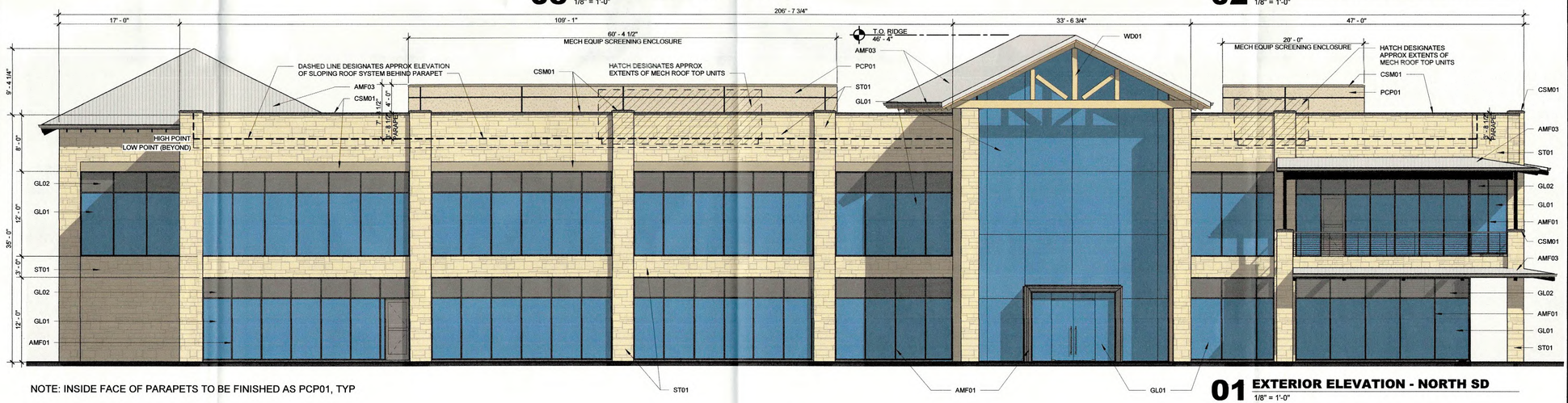

01 EXTERIOR ELEVATION - NORTH SD
1/8" = 1'-0"

NOTE: INSIDE FACE OF PARAPETS TO BE FINISHED AS PCP01, TYP

APPROVED:
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WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

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REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
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Arch. Reg. No.:
Date:

KEY PLAN

REVISION NO. | DESCRIPTION | DATE

HKS PROJECT NUMBER
25370.001
DATE
11/01/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
BLDG ELEVATIONS - E
CASE# SP2022-058
SHEET NO.
PA5.02

EXTERIOR MATERIALS LEGEND

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d. LOCATION: EXPOSED TRELLIS COLUMNS

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d. LOCATION: STANDING SEAM METAL ROOF

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b. FINISH: CLEAR MATTE FINISH
c. LOCATION: WOOD BEAM CLADDING. EXTERIOR SOFFITS, INTERIOR CEILINGS AND TRIM.

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b. COLOR: NATURAL
c. AGGREGATE:
d. EXPOSED TEXTURE FINISH: [SMOOTH] [HONED] [SAND TEXTURE]
e. LOCATION: WAINSCOT SILL @ STONE, PARAPET CAP

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a. MATERIAL TYPE: PORTLAND CEMENT PLASTER
b. COLOR: MATCH SW 9111 ANTLER VELVET

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a. MATERIAL TYPE: TILT UP CONCRETE PANELS
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b. NUMBER: SW9111
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COLOR: V908 GRAY

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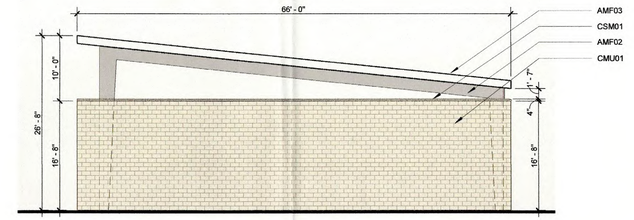
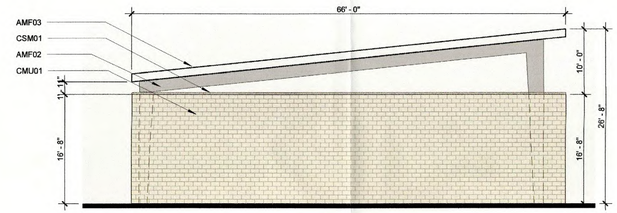
a. MANUFACTURER: FEATHERLITE
b. SPLIT FACE MASONRY BLOCK
c. COLOR: CREAM

Building "F" Elevation Material Calculations

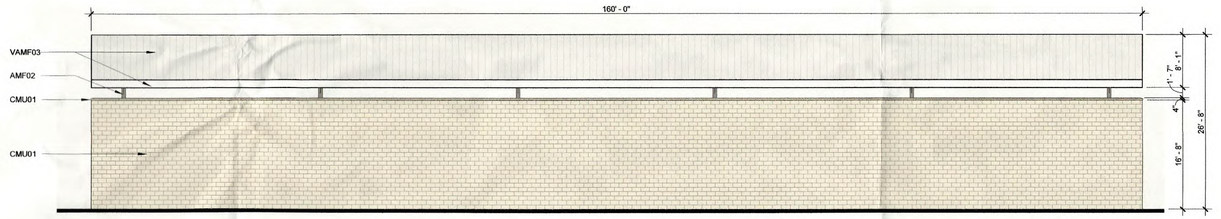
	MATERIAL	AMOUNT (SF)	AMOUNT (%)
NORTH			
	CMU SPLIT FACE (CMU01)	2667	100%
		2667	100%
SOUTH			
	CMU SPLIT FACE (CMU01)	22	100%
		22	100%
EAST			
	CMU SPLIT FACE (CMU01)	1090	100%
		1090	100%
WEST			
	CMU SPLIT FACE (CMU01)	1090	100%
		1090	100%



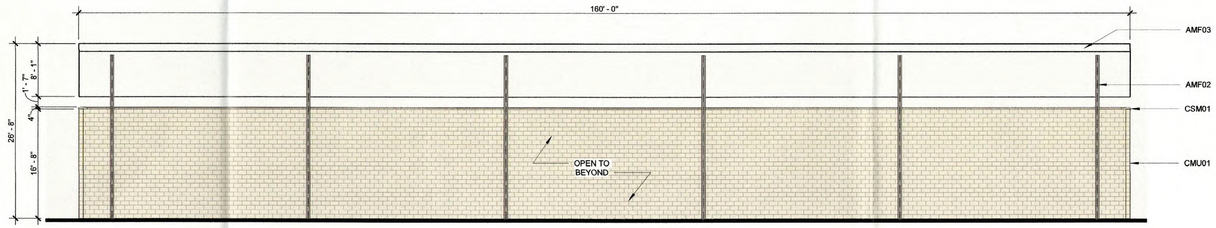
04 EXTERIOR ELEVATION - BUILDING F EAST
3/32" = 1'-0"



03 EXTERIOR ELEVATION - BUILDING F WEST
3/32" = 1'-0"



02 EXTERIOR ELEVATION - BUILDING F NORTH
3/32" = 1'-0"



01 EXTERIOR ELEVATION - BUILDING F SOUTH
3/32" = 1'-0"

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WITNESS OUR HANDS, this 15 day of November, 2022.

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

HKS

ARCHITECT
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350 N SAINT PAUL ST
SUITE 100
DALLAS, TX 75201

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950 SIDS ROAD
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618 MAIN STREET
GARLAND, TEXAS 75040

Rayburn Electric COOPERATIVE

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Date:

KEY PLAN

REVISION
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
25370.000
DATE
11/01/2022
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
BLDG ELEVATIONS - F
CASE# SP2022-058
SHEET NO.
PA5.03

EXTERIOR MATERIALS LEGEND

ST01:
a. STONE TYPE: LIMESTONE
b. STONE NAME: LEUDERS CHOPPED BUFF
c. GROUT/SEALANT COLOR: MATCH EXISTING
d. LOCATION: EXTERIOR STONE MASONRY VENEER

AMF01:
a. MATERIAL TYPE: ALUMINIUM
b. FINISH TYPE: ANODIZED
c. ANODIZED COLOR: DARK BRONZE
d. COATING COLOR: MATCH EXISTING
e. LOCATION: MULLIONS

AMF02:
a. MATERIAL TYPE: STEEL
b. FINISH TYPE: HIGH-PERFORMANCE ORGANIC FLUOROPOLYMER
c. COATING COLOR: MATCH PT02
d. LOCATION: EXPOSED TRELLIS COLUMNS

AMF03:
a. MATERIAL TYPE: STEEL
b. COATING COLOR: MATCH EXISTING ROOF, BERRIDGE PREWEATHERED GALVALUME
c. MATTE FINISH
d. LOCATION: STANDING SEAM METAL ROOF

WD01:
a. SPECIES AND CUT: WESTERN RED CEDAR
b. FINISH: CLEAR MATTE FINISH
c. LOCATION: WOOD BEAM CLADDING. EXTERIOR SOFFITS, INTERIOR CEILINGS AND TRIM.

CSM01:
a. MATERIAL TYPE: CAST STONE
b. COLOR: NATURAL
c. AGGREGATE:
d. EXPOSED TEXTURE FINISH: [SMOOTH] [HONED] [SAND TEXTURE]
e. LOCATION: WAINSCOT SILL @ STONE, PARAPET CAP

PCP01:
a. MATERIAL TYPE: PORTLAND CEMENT PLASTER
b. COLOR: MATCH SW 9111 ANTLER VELVET

PC01:
a. MATERIAL TYPE: TILT UP CONCRETE PANELS
b. COLOR: MATCH SW 9111 ANTLER VELVET

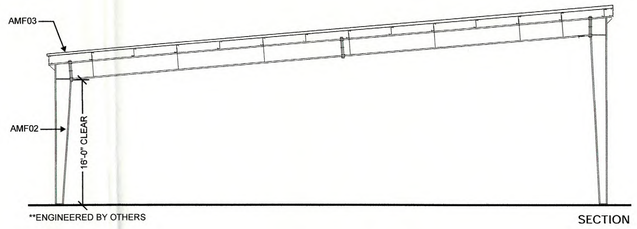
PT01:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: GUTTERS AND DOWNSPOUTS

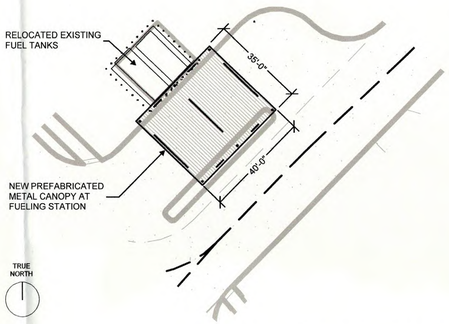
PT02:
a. MANUFACTURER: SHERWIN WILLIAMS
b. NUMBER: SW9111
c. COLOR: ANTLER VELVET
d. SHEEN: SEMIGLOSS
e. LOCATION: EXPOSED STRUCTURAL STEEL & ENTRY CANOPIES

GL01: INSULATING COATED GLASS - VISION
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: CLEAR HS; 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE
3) AIR SPACE: 1/2"; ALUMINIUM BLACK, ARGON
4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS

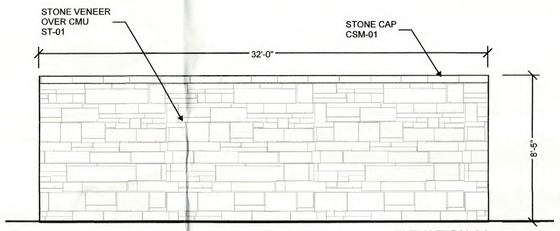
GL02: INSULATING COATED GLASS - SPANDREL
1) OVERALL THICKNESS: 1 IN NOMINAL
2) OUTBOARD LITE: SPANDREL 1/4" THICK GLASS WITH COATING ON NO.2 SURFACE
3) AIR SPACE: 1/2"; ALUMINIUM BLACK, ARGON
4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
5) BASIS OF DESIGN MANUFACTURER AND PRODUCT: VIRACON 1" INSULATED LOW-E GLASS
COLOR: V908 GRAY

CMU01:
a. MANUFACTURER: FEATHERLITE
b. SPLIT FACE MASONRY BLOCK
c. COLOR: CREAM

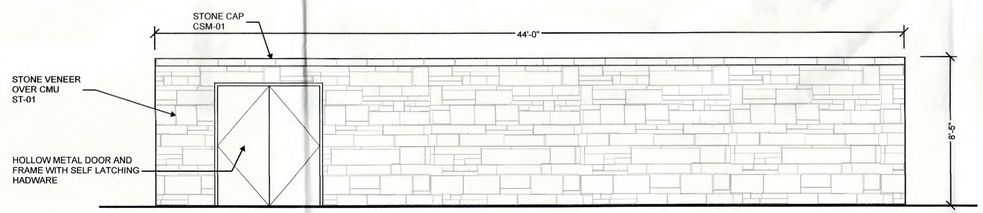




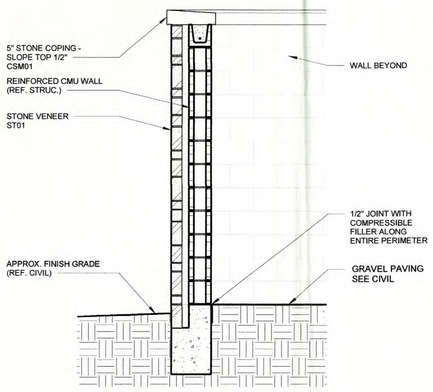
03 FUEL STATION CANOPY



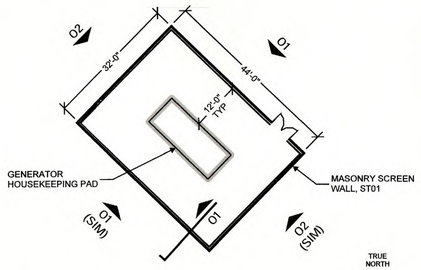
ELEVATION 02



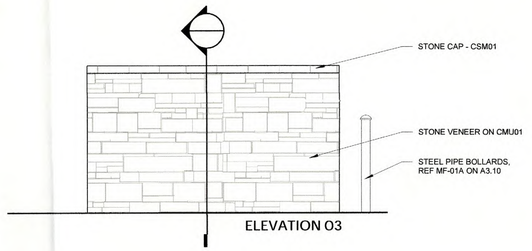
ELEVATION 01



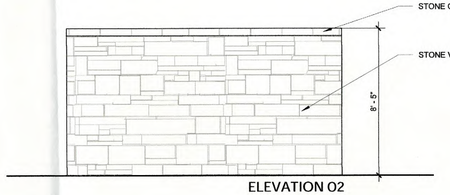
SECTION 01



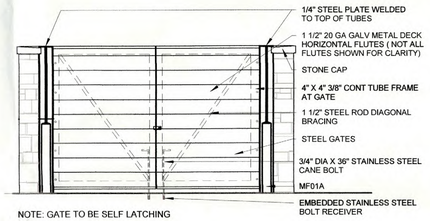
02 GENERATOR ENCLOSURE



ELEVATION 03

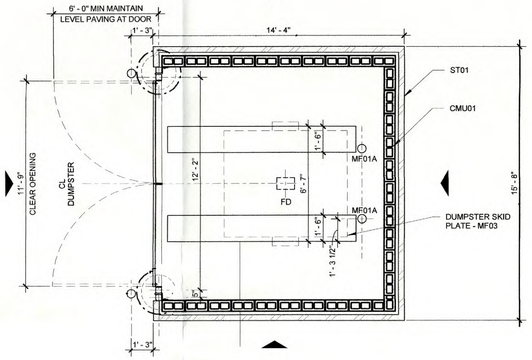


ELEVATION 02



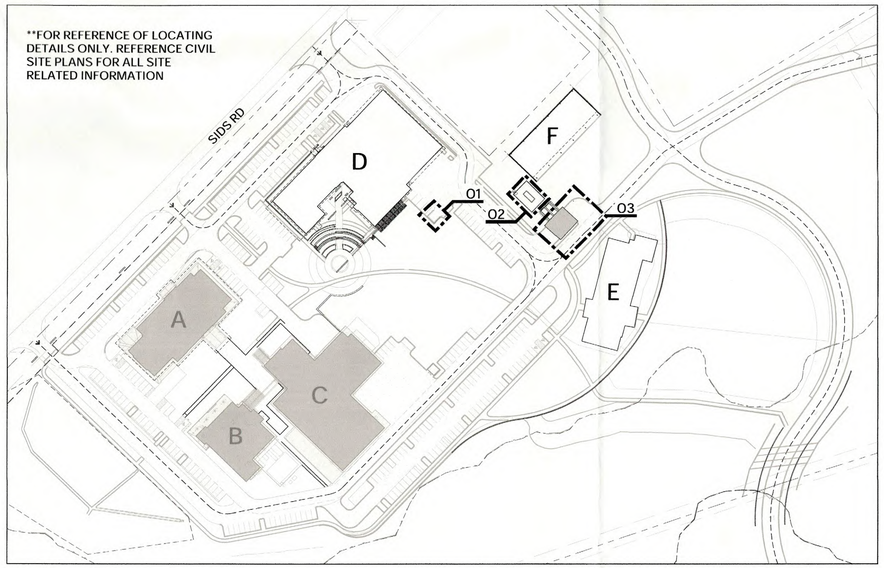
NOTE: GATE TO BE SELF LATCHING

ELEVATION 01



NOTE: PAVEMENT AT DUMPSTER PAD TO BE FLAT.

01 TRASH ENCLOSURE DETAILS



ACCESSORY SITE STRUCTURES - KEY PLAN

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REC CAMPUS ADDITION
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KEY PLAN

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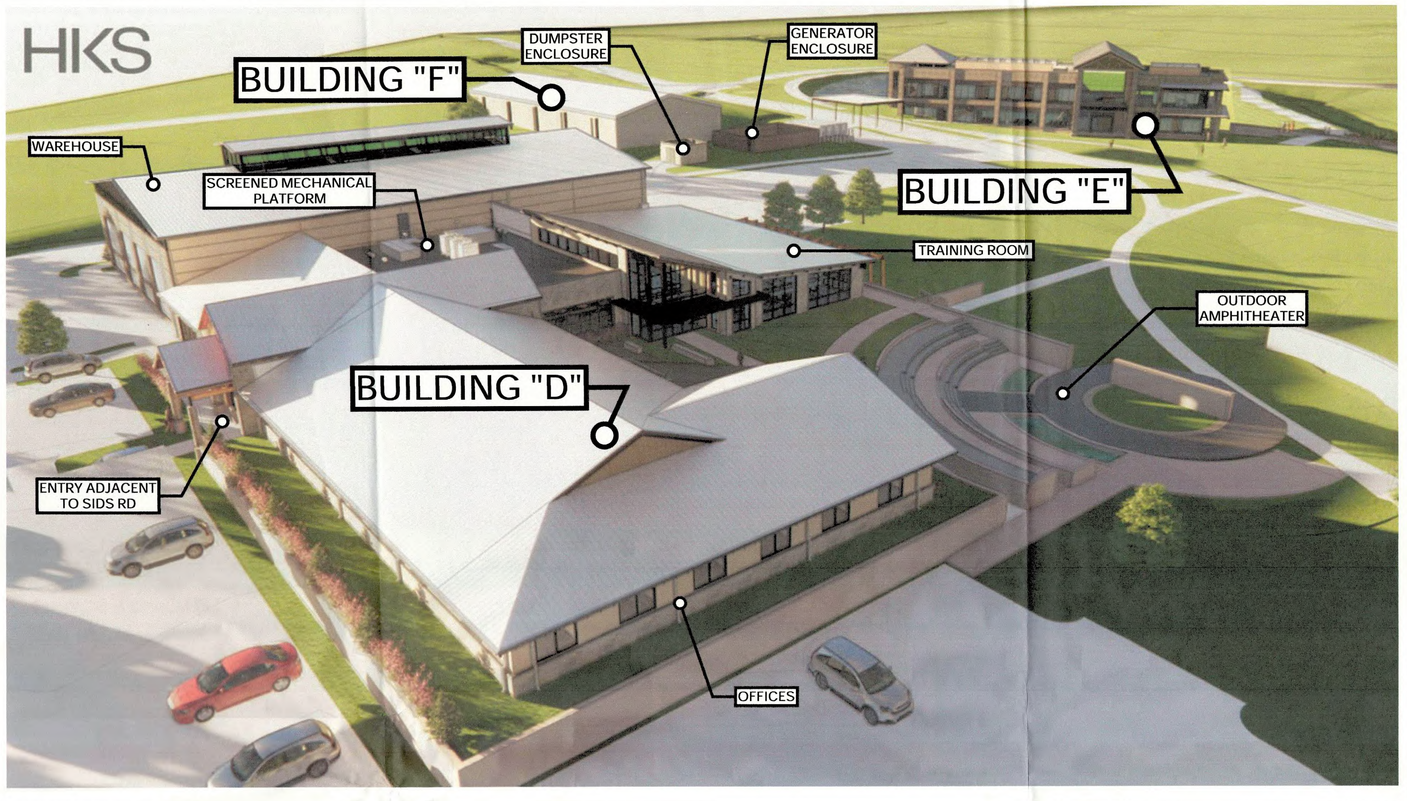
NO. DESCRIPTION DATE

HKS PROJECT NUMBER
25370.001
DATE
11/01/22
ISSUE
CITY SITE PLAN SUBMITTAL
SHEET TITLE
SITE DETAILS
CASE# SP2022-058
SHEET NO.
PA5.04



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4) INBOARD LITE: CLEAR HS; 1/4" THICK GLASS
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GL02: INSULATING COATED GLASS - SPANDREL
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COLOR: V908 GRAY

CMU01:
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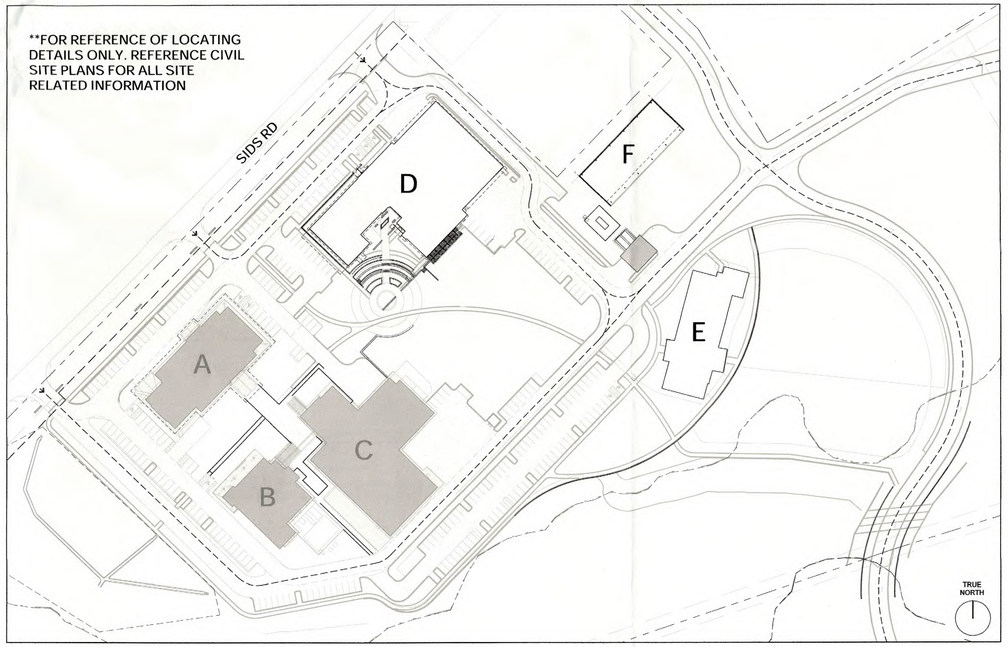
**FOR REFERENCE OF LOCATING DETAILS ONLY. REFERENCE CIVIL SITE PLANS FOR ALL SITE RELATED INFORMATION



KEY PLAN

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Planning & Zoning Commission, Chairman

Director of Planning and Zoning

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1-4, BLOCK A
WILLIAM H. BARNES SURVEY, ABSTRACT NO. 26,
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

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CITY SITE PLAN SUBMITTAL
SHEET TITLE
3D IMAGES
CASE# SP2022-058
SHEET NO.
PA5.05

Luminaire Schedule

Symbol	Type	Qty	Manufacturer / Catalog Number	Total Lumen Output	Total Input Watts	Ballast Factor	Light Lost Factor	User Defined Factor
	AA	51	LITHONIA CSX1 LED 60C 700 40K T4M HS	12377	134	1.000	0.900	1.000
	BB	40	LITHONIA KBD8 LED 12C 350 40K ASY MVOLT	809	16	1.000	0.900	1.000
	CC	2	LITHONIA DSXW2 LED 20C 350 40K T2S MVOLT	2988	25	1.000	0.900	1.000

Calculation Summary

Calculation Grid Location	Calc. Height (Ft.)	Units	Avg	Max	Min	Avg/Min
GROUND_Planar	0	Fc	0.76	5.2	0.0	N.A.
PARKING LOT 1		Fc	2.69	4.2	1.4	1.92
PARKING LOT 2 & ROADWAY		Fc	2.91	5.1	0.8	3.64

AA

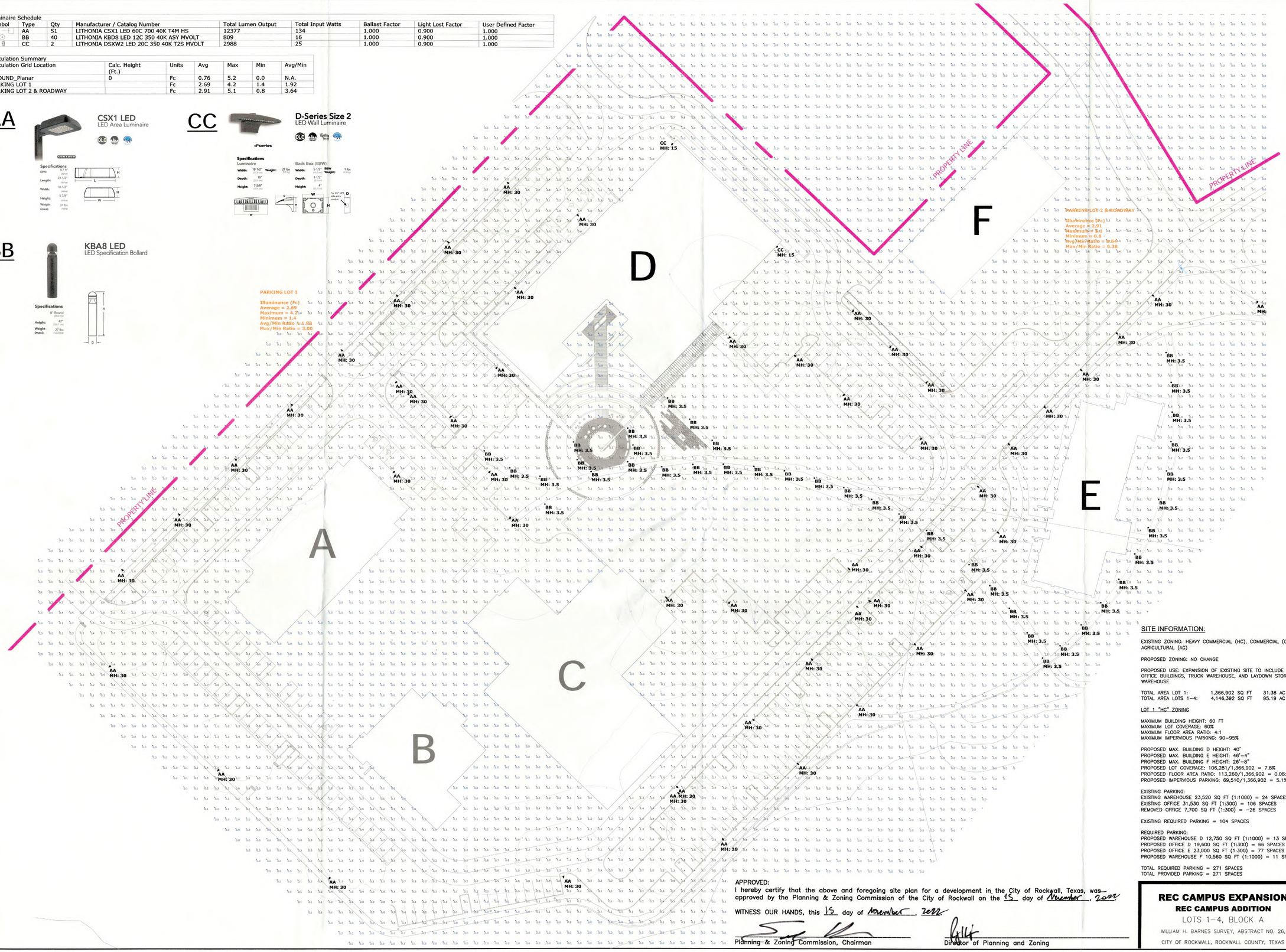
CSX1 LED
LED Area Luminaire

CC

D-Series Size 2
LED Wall Luminaire

BB

KBA8 LED
LED Specification Bollard



APPROVED:
I hereby certify that the above and foregoing site plan for a development in the City of Rockwall, Texas, was—approved by the Planning & Zoning Commission of the City of Rockwall on the 15 day of November, 2022

WITNESS OUR HANDS, this 16 day of November, 2022

Planning & Zoning Commission, Chairman

Director of Planning and Zoning

SITE INFORMATION:

EXISTING ZONING: HEAVY COMMERCIAL (HC), COMMERCIAL (C), & AGRICULTURAL (AG)

PROPOSED ZONING: NO CHANGE

PROPOSED USE: EXPANSION OF EXISTING SITE TO INCLUDE 2 NEW OFFICE BUILDINGS, TRUCK WAREHOUSE, AND LAYDOWN STORAGE WAREHOUSE

TOTAL AREA LOT 1:	1,366,902 SQ FT	31.38 AC
TOTAL AREA LOTS 1–4:	4,146,392 SQ FT	95.19 AC

LOT 1 "HC" ZONING

MAXIMUM BUILDING HEIGHT: 60 FT
MAXIMUM LOT COVERAGE: 60%
MAXIMUM FLOOR AREA RATIO: 4:1
MAXIMUM IMPERVIOUS PARKING: 90–95%

PROPOSED MAX. BUILDING D HEIGHT: 40'
PROPOSED MAX. BUILDING E HEIGHT: 46'–4"
PROPOSED MAX. BUILDING F HEIGHT: 26'–8"
PROPOSED LOT COVERAGE: 106,281/1,366,902 = 7.8%
PROPOSED FLOOR AREA RATIO: 113,260/1,366,902 = 0.08:1
PROPOSED IMPERVIOUS PARKING: 69,510/1,366,902 = 5.1%

EXISTING PARKING:
EXISTING WAREHOUSE 23,520 SQ FT (1:1000) = 24 SPACES
EXISTING OFFICE 31,530 SQ FT (1:300) = 106 SPACES
REMOVED OFFICE 7,700 SQ FT (1:300) = -26 SPACES

EXISTING REQUIRED PARKING = 104 SPACES

REQUIRED PARKING:
PROPOSED WAREHOUSE D 12,750 SQ FT (1:1000) = 13 SPACES
PROPOSED OFFICE D 19,600 SQ FT (1:300) = 66 SPACES
PROPOSED OFFICE E 23,000 SQ FT (1:300) = 77 SPACES
PROPOSED WAREHOUSE F 10,560 SQ FT (1:1000) = 11 SPACES

TOTAL REQUIRED PARKING = 271 SPACES
TOTAL PROVIDED PARKING = 271 SPACES

REC CAMPUS EXPANSION
REC CAMPUS ADDITION
LOTS 1–4, BLOCK A
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