AGENDA

PLANNING AND ZONING SPECIAL MEETING

JULY 20, 2023 @ 7:00 P.M.

Notice is hereby given: the Planning and Zoning Commission for the City of Parker will hold a Meeting on Thursday, July 20, 2023, at 7:00 P.M. at Parker City Hall, 5700 E. Parker Road, Parker, Texas 75002. The meeting will be open to the public and live streamed.

Pursuant to Texas Government Code § 551.127, notice is given that it is the intent of the Planning and Zoning Commission that a quorum of the Commission will be physically present for the above-referenced meeting at Parker City Hall, 5700 E. Parker Road, Parker Texas. Some Commissioners or City employees may participate in this meeting remotely by means of video conference call in compliance with state law.

CALL TO ORDER – Roll Call and Determination of a Quorum

PLEDGE OF ALLEGIANCE

AMERICAN PLEDGE: I pledge allegiance to the flag of the United States of America; and to the republic for which it stands, one nation under God, indivisible with liberty and justice for all.

TEXAS PLEDGE: Honor the Texas flag; I pledge allegiance to thee, Texas, one state under God, one and indivisible.

PUBLIC COMMENTS **The Commission invites any person with business before the Commission to speak. No formal action may be taken on these items at this meeting. Please keep comments to 3 minutes.**

INDIVIDUAL CONSIDERATION ITEMS

1. CONSIDERATION OF AND/OR ANY APPROPRIATE ACTION ON PANORAMA STREET PRELIMINARY PLAT, SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10 CITY OF PARKER, COLLIN COUNTY, TEXAS. [MACHADO]

ROUTINE ITEMS

FUTURE AGENDA ITEMS

ADJOURN

In addition to any specifically identified Executive Sessions, the Planning and Zoning Commission **may convene into Executive Session at any point during the open meeting to discuss any item posted on this Agenda. The Open Meetings Act provides specific exceptions to the requirement that a meeting be open. Should Commission elect to convene into Executive Session, those exceptions will be specifically identified and announced. Any subsequent action, as a result of this Executive Session, will be taken and recorded in open session.**

I certify that this Notice of Meeting was posted on or before July 14, 2023, by 5:00 p.m. at the Parker City Hall, and required by Texas Open Meetings Act (TOMA) is also posted to the City of Parker Website at www.parkertexas.us.

Date Notice Removed

Patti Scott Grey
City Secretary

The Parker City Hall is Wheelchair accessible. Sign interpretations or other special assistance for disabled attendees must be requested 48 hours in advance by contacting the City Secretary's Office at 972 442 6811.

Agenda Item

Budget Account Code:		Meeting Date:	See above.
Budgeted Amount:		Department/ Requestor:	P&Z Commission
Fund Balance-before expenditure:		Prepared by:	ACA/CS Scott Grey for Public Works Director Gary Machado
Estimated Cost:		Date Prepared:	July 14, 2023
Exhibits:	1. City Engineer John Birkhoff's letter, dated July 13, 2023 2. 2023.06.27_Panorama Street_Full Set 3. Panorama Street Preliminary Plat 4. Panorama Street Preliminary Plat App Notarized 06.28.2023 5. Metes & Bounds 6. 2022 Tax Certificate 7. Scan of Fee Check 8. 2023.06.27_Preliminary Plat App to City of Parker		

AGENDA SUBJECT

CONSIDERATION OF AND/OR ANY APPROPRIATE ACTION ON PANORAMA STREET PRELIMINARY PLAT, SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10 CITY OF PARKER, COLLIN COUNTY, TEXAS. [MACHADO]

SUMMARY

Please review the information provided for Panorama Street Preliminary Plat, situated in the Phillip Anderson Survey, Abstract No. 10 City of Parker, Collin County, Texas.

POSSIBLE ACTION

Planning and Zoning (P&Z) Commission may direct staff to take appropriate action.

Inter – Office Use			
Approved by:	Enter Text Here		
Department Head/ Requestor:	Patti Scott Grey	Date:	07/14/2023
City Attorney:	Amy J. Stanphill	Date:	07/14/2023 via Municode
Public Work Director	Gary Machado	Date:	07/14/2023

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS

11910 Greenville Ave., Suite 600 Dallas, Texas 75243 Phone (214) 361-7900 www.bhcllp.com

JOHN W. BIRKHOFF, P.E.
GARY C. HENDRICKS, P.E., R.P.L.S.
JOE R. CARTER, P.E.
ANDREW MATA, JR., P.E.

DEREK B. CHANEY, P.E., R.P.L.S.
CRAIG M. KERKHOFF, P.E, CFM
JUSTIN R. IVY, P.E.
COOPER E. REINBOLD, P.E

July 13, 2023

Mr. Gary Machado
City of Parker
5700 E. Parker Rd.
Parker, Texas 75002

Re: Panorama Street
Preliminary Plat and Engineering Plan Review

Dear Mr. Machado:

As you requested, we have reviewed the Preliminary Plat & Engineering Plans for the Panorama Street Addition prepared by LJA Engineering, Inc. These documents include a new street and is therefore considered a major subdivision under section 155.025 of subdivision ordinance.

Our review of the documents is for general compliance with the City of Parker's development requirements and good engineering practice and does not relieve the engineer of record of his responsibilities under the Texas Engineering Practice Act. Listed below are our review comments.

Adherence to Subdivision Ordinance:

1. 155.049 (B)(1)(b) Requires two means of access, a divided street or provisions to connect to future street extension. This has not been addressed for City action.
2. 155.049 (B)(2) All platted lots to be connected to water line, looped system. A water line is required along the roadway with provision to connect to extension of the water system.
3. 155.049(4) Drainage cannot adversely affect a joining property. Elevated roadway causes potential to back up water to property to the west. No channel design data proved to show water will not back up. Property to the east water is concentrated and not designed for overflow to pass through the adjoining property.
4. 155.049(D) (2) boundary iron pins must be 1 inch in diameter and have a length of 18 inches.
5. 155.049(F) No permanent benchmark is included in the design plans. Details of the benchmark are called for in this section of the subdivision ordinance.
6. 155.052(C)(4) Gregory Lane is required to be upgraded adjacent to this tract.
7. 155.052(18)(C)(b) Street sign is required at Gregory and Panaroma. Section 155.052(18)(a) requires the name to be approved by City P&Z.
8. 155.052(C)(13) Reserve strip is not allowed. Strip west side of ROW is not allowed.
9. 155.052(D) The reserve strip west of shown ROW must be Right of way and a drainage channel is required to be designed to convey storm water to point of concentration. Required water line will need to be in the right of way. Place the water line on the east side of shown Right of way.
10. 155.057 Private easement for electrical service (streetlights) is required.
11. 155.052 (15)(a) Streets shall be related approximately to the topography grade and shall conform toas closely as possible to the original topography. The elevated roadway is not acceptable.
12. 155.052(15)(b) Plans must show design speed for the vertical curves.

13. 155.054(A)(1) Provide source and calculations that established the 100-year water surface. Maxwell Creek to the east is a studied reach.
14. 155.054(A)(4) Provide calculations that roadway ditch in Gregory has adequate capacity and free board based on adding additional storm water to this channel. Improve the channel until capacity and freeboard can be achieved. Maxwell Creek is to the east of the proposed improvements.
15. 155.054(B)(1) Provide details of outlet structure that is designed for the 2, 25, 50 and 100 year storm. Include the structural details for a V-notch or stepped weir.
16. 155.054(B)(6) Provide maintenance plan for the retention pond. Address aquatic growth, silt removal plan, mosquito control mowing plan and permanent erosion control measures.
17. 155.051 Provide photometrics for street lights proposed and details for shield to keep light from adjoining properties.
18. 155.054(A)(3)(d) Include in erosion control methods requirements of this section of the subdivision ordinance including watering and fertilizing schedule.
19. 155.027(f)(v) Provide method to undercut rock if encountered place topsoil to establish vegetation.
20. 155.052 (17) Cul de Sac streets shall not be longer than 600 feet. The length of this street exceeds this requirement.

General Comments and Good Engineering Practice

21. Include in all reference to City standard "North Central Council of Governments Texas Standard Specifications for Public Works Construction".
22. Sheet numbering refences 35 sheets, but there are 39 sheets in the set of plans.
23. Sheet 1 add Note 5 for contractor to notify the City and City Inspector of all construction activities with a weekly look ahead.
24. Preliminary Plat needs to include all easements by plat and not by separate instruments.
25. Provide Lot and Block Number, appears it would be Block 1 Lot 1.
26. Call out Gregory Lane as a Private Road.
27. Call out Retention Ponds as North Retention Pond and South Retention Pond (throughout plan set).
28. The Collin County Municipal Utility District No. 7 does not exist. Remove reference from plat.
29. Sheet 4 Provide details of new fences being proposed. Add note how to protect livestock when existing fences are removed.
30. Provide TCEQ documents for the plugging of the water well. Provide notes to the method and requirements for the plugging of the water well.
31. Sheet 5 The contours do not reflect the roadway cross section. The 6-inch curbs are missing.
32. Sheet 5 All structural designs must be included in the construction plans. Your note by others is not acceptable. Designs must be completed by a Professional Engineer licensed in the State of Texas and be part of this set of construction plans.
33. Sheet 8 In order for lime treatment to be permanent you must specify optimum lime. Include in note to run lime series testing every 150 feet, adjust application rate and provide all test reports to the city inspector as the process proceeds.
34. Sheet 9 Do not taper reinforced concrete to zero, at return to Gregory, as it will prematurely fail. Cut into Asphalt 18 inches and have an 18-inch-wide section to end to the pavement section. Fill between existing asphalt pavement and new concrete (transition section) with minimum 6 inches of asphalt (Type D) mechanically compacted in 2-inch lifts. Alternatively butt up to existing asphalt pavement with the 18-inch-wide concrete section and then place the asphalt transition section 12 to 18 inches into Gregory.
35. Sheet 9 Taper 6-inch monolithic curb down to zero as it approaches the existing asphalt section that does not have curbs. Need to avoid a road hazard on Gregory Lane.
36. Sheet 9 the proposed grade (solid line) stops at station 16+39.72 about 30 feet short of the existing. paving shown as a dashed line.
37. Sheets 11 Cross section shows trapping water and a channel. Provide the channel grade sections and capacity on the west side of the roadway.

38. Sheet 14 shows overflows from the retention ponds that discharge through property with no designed channel to reach Maxwell Creek. Positive overflow channel must be paved. Drainage easement required. Appears the North Retention pond should overflow into Gregory drainage ditch (Improved) and not through the middle of the adjacent property owner's property.
39. The storm drainage calculations show inefficiency of the system and creates a large number of inlets that are not needed. Allow run by to minimize inlets.
40. Sheet 16 The storm sewer system must be self-cleaning. In order to accomplish this a minimum of 2 feet per second must be achieved in all pipe segments.
41. Sheet 19 Eliminate bends in the storm sewer system and utilize radius pipe. Eliminate 90 degree turns in the storm sewer system.
42. Sheet 19 Provide a handrail detail for the called pedestrian rail.
43. Sheet 19 Provide depth of the rock rip rap. Include geotextile fabric as the foundation for the rip rap. Call out type of fabric proposed. Detail calls out for grouted rip rap and that will be required. Provide method for contractor to complete the grouted rip rap. Last few projects the grouting was of poor workmanship and concrete rip rap was utilized to solve the poor workmanship.
44. Sheet 19 It is unclear how the outfall of Culvert 2 conveys storm water to the existing channel as the proposed and existing contours are not tied together.
45. Sheet 19 there appears to be footers at the outfall, but no dimensions or callouts are provided.
46. Sheet 19 Culvert 2 cross section shows a curb leave out that is not called out in the plan view.
47. Sheet 20 Show depth of rip rap and geotextile fabric as foundation.
48. Sheet 20 Culvert 3 section does not correspond to what is called out in the plan view.
49. Sheet 20 Provide ASTM call out for RCP.
50. Sheet 20 Utilize radius pipe and eliminate bends.
51. Sheet 20 show footer at end of SD6.
52. Sheet 20 The call out in plan view for SD6 and Lateral 6B appear reversed to correspond with the section.
53. Sheet 21 Provide ASTM call out for RCP.
54. Sheet 21 Utilize radius pipe and not bends.
55. Sheet 21 Provide footer on headwalls.
56. Sheet 22 Utilize radius pipe and not bends. Eliminate 90-degree configuration of storm sewer.
57. Sheet 22 Call out ASTM and Class of RCP pipe.
58. Sheet 22 Provide footers on headwalls.
59. Sheet 23 Call out ASTM and class of RCP pipe.
60. Sheet 23 Utilize radius pipe and eliminate bends.
61. Sheet 23 Utilize pipe wyes and not junction boxes for inlet laterals.
62. Sheet 24 SD4 reorientate to discharge normal to the flow of the channel it discharges into.
63. Sheet 24 SD5 Eliminate bends, utilize radius pie of orientate pipe at angle out of drop inlet to pond.
64. Sheet 24 Call out ASTM and class of RCP pipe.
65. Show footers on headwalls.
66. Sheet 29 Utilize radius pipe and eliminate bends in the storm sewer pipe.
67. Sheet 29 Explain how overflow functions. How can it be lower than the 100-year water surface you are detaining?
68. Sheet 29 Show the freeboard in the elevation sections of the pond.
69. Sheet 29 Show drainage easement on adjacent tract that is required to convey flow from the overflow. Provide calculations to contain flow from overflow structure.
70. Sheet 29 Show and dimension the keyway associated with the berm being constructed.
71. Sheet 29 Provide the outlet structure for the North Pond. Vee Notch or Stepped weir must be designed for the 1, 25, 50 and 100-year storms.
72. Sheet 29 Provide the depth of the rock rip rap and the geotextile fabric foundation.
73. Sheet 30 Utilize radius pipe and eliminate pipe bends in the storm sewer pipe.
74. Sheet 30 Provide the depth of the rock rip rap and the geotextile fabric as foundation.

75. Explain how overflow functions. How can it be lower than the 100-year water surface you are detaining?
76. Sheet 30 Show the freeboard in the in the elevation sections of the pond.
77. Sheet 30 Show and dimension the keyway associated with the berm being constructed.
78. Sheet 30 Provide the outlet structure for the South Pond. Vee Notch or Stepped Weir must be designed for the 1, 25, 50 and 100-year storm.
79. Sheet 30 Outlet pipe from the pond must be normal to the receiving channel.
80. Sheet 31 Remove fire lane markings as this is a city street.
81. Sheet 31 Provide Dead End street sign at Gregory Lane, having at end of the street is too late to advise the public.
82. Sheet 31 Provide detail of sign and post. Include setting post in concrete.
83. Sheet 31 Remove no parking signs along city street.
84. Sheet 31Provide street signs at the intersection of Gregory and Panorama. Include detail of sign and post. Set post in concrete.
85. Sheet 32 Provide in notes method to establish vegetation as set forth in subdivision comments. Provide notes on how to place curlex. Contractors without instructions continue to fail at this task.
86. Sheet 32 Provide note on what contractor is to do if they encounter rock in the excavation and how to undercut, import topsoil, compact and establish vegetation. Consider pinned solid sod on slopes.
87. Sheet 33 Acres stated in notes conflicts with Acres on plat.
88. Sheet 33 Note 5 needs to remove the engineering division and be replaced with Public Works and City Inspector.
89. Sheet 33 Provide rock check dams at outfalls from the ponds prior to flow being conveyed to adjoining property. Consider rock check dams at inlet to culverts to minimize desilting pond prior to acceptance by the city.
90. Sheet 34 Driveway approach and Street Headers at railroads do not apply. There are no driveways proposed off the street and there are no railroads in the City of Parker.
91. Sheet 36 Sloped headwall detail needs to include geotextile fabric under rock. This detail does not match what is called out in the plan set?
92. Sheet 36 Modify manhole detail to show City of Parker on manhole cover.

General Notes

93. General Note 3 include ATMOS Gas in list of franchise Utilities you want contractor to contact.
94. General Note 8 Specifically call out for repairs to the substandard street Gregory Lane and Gray Lane. Suggest you include haul route through city to this site. Include damage to Public property as part of this note.
95. General Note 11 Include that those documents be made available to the City Inspector at all times.
96. General Note 12 Include City of Parker as part of approval process for change order that change the construction plans and specifications.
97. General Note 13 Change City Engineer to City Public Works.
98. General Note 15 Remove as no buildings are being proposed.
99. General Note 20 Remove as no work is being proposed in TxDot ROW.
100. General Note 21 Add to note that City of Parker will determine damage and determine acceptability of repair method or replacement. Completed repair or replacement work shall be subject to approval of the City of Parker.
101. General Note 27 Provide the referenced Rone geotechnical report in your next submittal.
102. Paving Note 1 Include reference to North Texas Council of Governments Standard Specifications.
103. Paving Note 2 Provide the testing frequency and what test are expected to be completed. Indicate which ones the City Inspector needs to be present for.
104. Paving Note 7 Remove as there are no parking lots proposed.
105. Paving Note 10 Remove, no pavement marking on the public street is required or desired by the city.
106. Paving Note 11 Remove no sidewalks are proposed.

107. Paving Note 14 Remove no parking being provided. Construction plans show no parking signs.
108. Add to paving note timing to complete sawed dummy joints in the green concrete. Spalled sawed dummy joints will be rejected and slabs will need to be repoured. Add note that any new slabs that crack will be rejected, and new slabs will be required.
109. Grading Note 4 Revise note as no buildings are being proposed.
110. Grading Note 7 Provide the refenced Terracon geotechnical report in next submittal.
111. Grading Note 10 The plans are not clear on where fill comes from for the embankment. Provide clarification as this note requires the contractor to balance the cut and fill. The embankment requirements are unknown and if rock is encountered how does this work with the embankment.
112. Grading note 12 Modify note to remove building pads and include structural plans as called for in the plans by others.
113. Grading Note 12 Excess material excavated shall be removed from the site. Do not allow random spreading of spoil materials once design grades are established.
114. Grading Note 14 does not make sense if you are lime treating the subgrade. Lime should be used with clay material only.
115. Grading Note 16 Why would you remove rock to bring in clay material? What do the soil boring you referenced in the notes tell you what will be encountered. Most of the road you propose is in a fill section.
116. Grading Note 17 Modify note to clearly state compactive effort is my mechanical means.

Storm Sewer Notes

117. Drainage Note 2 The plans do not call out any laterals to be plugged. Why is a plumber required to plug the laterals?
118. Drainage Note 5 Revise note to include North Central Texas Council of Governments Standard Specifications for Public Works Construction.

Platting

119. 155.027 (1) (a) & 155.027 (m) Provide closure calculations.
120. 155.027 (1) (d) (3) Show all easements shown on plat. No separate instruments except for offsite easements.
121. 155.027 (i) Provide name of subdivision.
122. 155.027 (o) Entry easement required.
123. 155.027 (5) Show required waterline.

Draining Design

124. Maintenance ramps are required for all ponds. Minimum width of 10-feet with a maximum slope of 15%. Provide driveway along Panorama.
125. Standing water will create a nuisance and mosquito problem. Recommend an aerator for the retention ponds, maintained by other than the City.
126. Grading contours do not connect to existing.
127. Verify downstream capacity exists in the alignment of the proposed discharges.
128. Pond outfalls are not adequate as they are creating adverse conditions by establishing point discharge where one does not exist today. Provide a downstream assessment through the zone of influence.
129. Ponds are required to have a 10-foot crown width.
130. Install guard rail, or other safety device, where steep drop-off is proposed at the south headwall.

131. The proposed system shows submerged outlets, deeper than required. This will create large amounts of standing water in the pipes. Maintenance of the lines will be problematic for the City. Revise the design so as the system can be maintained.
132. Maximum discharge velocity is 8 feet-per-second.
133. Top of Wye Inlet on SD5 is below the normal pool elevation of the pond. The pond will drain via this inlet.
134. Clearly label what is considered the primary outlet of the ponds and the emergency.
135. A calculation summary for the pond hydrographs shall be provided on the plans. Submit a separate report to the City for review including routing calculations used to demonstrate that the stage volume and outlet structure configuration are adequate.
136. On the drainage area map, clearly show the pre-developed and post developed run-off rate at the point of discharge.
137. Cross-sections on sheets 29 and 30 are difficult to read. Provide additional detail and labels.
138. Revise the orientation of the southern retention pond to convey discharge in the direction of the flow and not at a 90-degree angle creating an erosive condition.
139. Provide a channel profile and cross-sections of the drainage to the west of the proposed roadway. The adjacent property cannot be utilized as part of the proposed channel without a drainage easement. Include hydraulic calculations on the profile and cross-sections.
140. Show the proposed drainage easements downstream until adequate outfall is determined. Easements shall extend 10-feet beyond the top of bank on each side.
141. Revise inlet calculations to show the required 50% reduction of capacity for a drop inlet.
142. (1) is shown as a notation on the storm pipe calculations but is not included in the legend.
143. For each culvert, extend the survey information on the profile 200-feet upstream and downstream of the culvert so that the channel alignment is evident.
144. Culverts that could become part of a closed pipe system are required to be designed to handle a fully developed drainage area. It is likely the large lot to the west will eventually be redeveloped.

We are available at your convenience to discuss our findings.

Sincerely,

John W. Birkhoff, P.E.

UTILS
P & G
✓

PANORAMA STREET

CONSTRUCTION PLANS
FOR
GRADING, PAVING, & DRAINAGE FACILITIES
TO SERVE

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

JUNE 2023

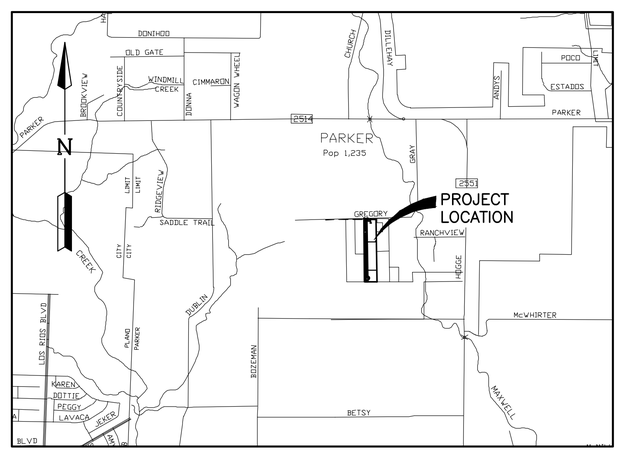
NOTES:

1. ALL CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE CITY OF PARKER STANDARDS AND SPECIFICATIONS.

2. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER, DEVELOPER, NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND /OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.

3. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO ANY EXISTING FACILITY RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS. ANY REMOVAL OR DAMAGE TO EXISTING FACILITIES SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

4. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH THE DEVELOPER.



VICINITY MAP
1" = 2000'

SHEET INDEX

1. COVER SHEET
2. PRELIMINARY PLAT
3. GENERAL NOTES

4. DEMOLITION PLAN
5. GRADING PLAN
6. GRADING PLAN
7. GRADING PLAN

8. PAVING PLAN & PROFILE – PANORAMA STREET
9. PAVING PLAN & PROFILE – PANORAMA STREET
10. OVERALL SECTIONS PLAN
11. CROSS SECTIONS – STA 0+00 TO 14+00
12. CROSS SECTIONS – STA 15+00 TO 16+50

13. EXISTING DRAINAGE AREA MAP
14. POST–DEVELOPMENT DRAINAGE AREA MAP
15. DRAINAGE CALCULATIONS
16. DRAINAGE CALCULATIONS
17. DRAINAGE CALCULATIONS
18. DRAINAGE CALCULATIONS
19. STORM DRAIN PLAN & PROFILE – CULVERT 1 & CULVERT 2
20. STORM DRAIN PLAN & PROFILE – CULVERT 3 & SD 6
21. STORM DRAIN PLAN & PROFILE – SD 1, LAT 1B, LAT 1C
22. STORM DRAIN PLAN & PROFILE – SD 2 & LAT 2B
23. STORM DRAIN PLAN & PROFILE – SD 3 & LAT 3B
24. STORM DRAIN PLAN & PROFILE – SD 4 & SD 5
25. STORM DRAIN PLAN & PROFILE – LAT 1D, 1E, 1F, 2C, 2D, 2E, 2F, & 2G
26. STORM DRAIN PLAN & PROFILE – LAT 2H, 2J, 2K, 2L, 2M, 3C, 3D, & 3E
27. STORM DRAIN PLAN & PROFILE – LAT 3F, 3G, 3H, 3J, 3K, 3L, 3M, & 3N
28. STORM DRAIN PLAN & PROFILE – LAT 3P, 3Q, & 3R
29. DETENTION PLAN – NORTH POND
30. DETENTION PLAN – SOUTH POND

31. STREET LIGHT AND SIGNAGE PLAN
32. EROSION CONTROL PLAN
33. EROSION CONTROL DETAILS
34. PAVING DETAILS
35. STORM DETAILS
36. STORM DETAILS
37. STORM DETAILS
38. STORM DETAILS
39. STORM DETAILS

OWNER/DEVELOPER:
GREGORY LANE , LLC
3510 DUBLIN RD
PARKER, TEXAS 75002-6516

ENGINEER:
LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

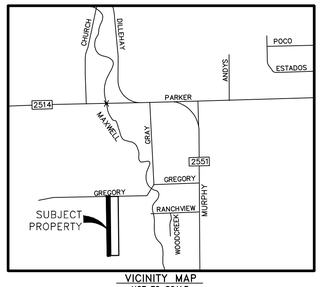
PRELIMINARY

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW
UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561–0133	
DATE:	JUN 2023
DESIGN:	MARTINEZ
DRAWN:	MARTINEZ
SCALE	
HORZ:	N/A
VERT:	N/A
SHEET	1
OF	35 SHEETS

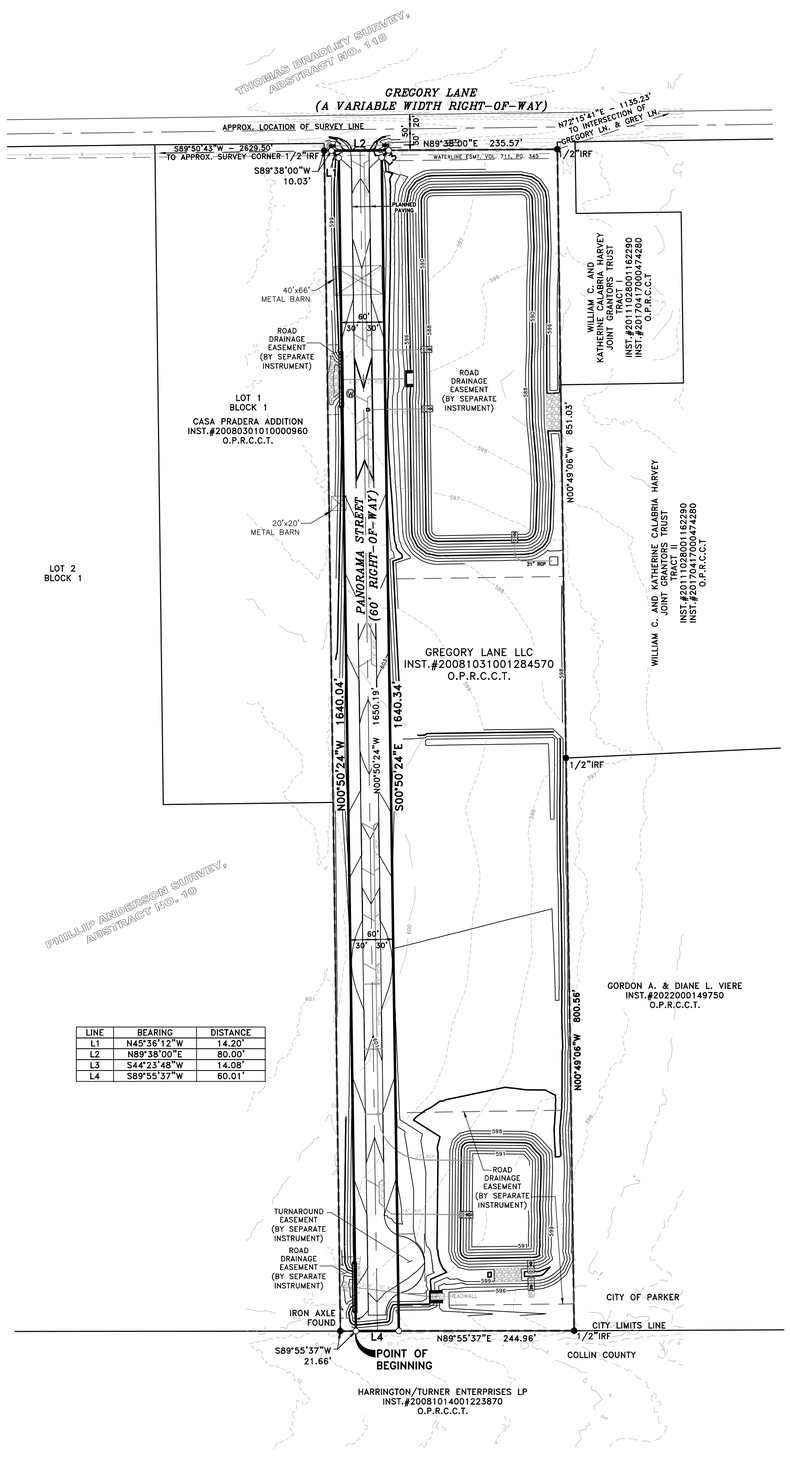
Date\Time : Tue, 27 Jun 2023 – 10:54am User Name : tmartinez
Path\Name : S:\NTX–LAND\0133\400 LAND\425 Design Files\Access Road\0133ROLC001.dwg

PANORAMA STREET



VICINITY MAP
NOT TO SCALE

100 0 100
1 INCH = 100 FT.



LINE	BEARING	DISTANCE
L1	N45°36'12"W	14.20'
L2	N89°38'00"E	80.00'
L3	S44°23'48"W	14.08'
L4	S89°55'37"W	60.01'

LEGEND

○	CAPPED IRON ROD SET
IRF	IRON ROD FOUND
Ⓦ	WATER WELL
O.P.R.C.C.T.	OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS
INST.#	INSTRUMENT NO.
(CM)	CONTROLLING MONUMENT
	EXISTING GRADE
	PROPOSED GRADE
	STORM DRAIN
	PROPOSED EASEMENTS
—W—	EXISTING 8" WATERLINE
	PROPOSED EROSION CONTROL

OWNER'S DEDICATION

STATE OF TEXAS)(

COUNTY OF COLLIN)(

WHEREAS GREGORY LANE LLC IS THE OWNER OF A 2.275 ACRE TRACT OF LAND SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10, CITY OF PARKER, COLLIN COUNTY, TEXAS, AND BEING PART OF A TRACT OF LAND CONVEYED TO GREGORY LANE LLC, AS RECORDED IN INSTRUMENT NO. 20081031001284570, OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEING 2.275 ACRES OF LAND SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT No. 10, CITY OF PARKER, COLLIN COUNTY, TEXAS, AND BEING A PORTION OF A TRACT OF LAND DESCRIBED TO GREGORY LANE LLC BY DEED RECORDED IN INSTRUMENT NO. 20081031001284570, OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A CAPPED IRON ROD SET ON THE SOUTH LINE OF SAID GREGORY LANE TRACT, FROM WHICH AN IRON AXLE FOUND FOR THE SOUTHEAST CORNER OF THE CASA PRADERA ADDITION, AN ADDITION TO THE CITY OF PARKER, COLLIN COUNTY, TEXAS BY PLAT RECORDED IN INSTRUMENT NO. 20080301010000960 OF SAID OFFICIAL PUBLIC RECORDS BEARS SOUTH 89°55'37" WEST, A DISTANCE OF 21.66 FEET;

THENCE NORTH 00°50'24" WEST, OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 1640.04 FEET TO A CAPPED IRON ROD SET;

THENCE NORTH 45°36'12" WEST, CONTINUING OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 14.20 FEET TO A CAPPED IRON ROD SET ON THE SOUTH RIGHT-OF-WAY LINE OF GREGORY LANE, A VARIABLE-WIDTH RIGHT-OF-WAY, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHWEST CORNER OF SAME TRACT BEARS SOUTH 89°38'00" WEST, A DISTANCE OF 10.03 FEET;

THENCE NORTH 89°38'00" EAST, WITH SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 80.00 FEET TO A CAPPED IRON ROD SET, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHEAST CORNER OF SAID GREGORY LANE TRACT BEARS NORTH 89°38'00" EAST, A DISTANCE OF 235.57 FEET;

THENCE SOUTH 44°23'48" WEST, OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 14.08 FEET TO A CAPPED IRON ROD SET;

THENCE SOUTH 00°50'24" EAST, CONTINUING OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 1640.34 FEET TO A CAPPED IRON ROD SET ON THE SOUTH LINE OF SAME TRACT, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE SOUTHEAST CORNER OF SAID GREGORY LANE TRACT BEARS NORTH 89°55'37" EAST, A DISTANCE OF 244.96 FEET;

THENCE SOUTH 89°55'37" WEST, WITH THE SOUTH LINE OF SAID GREGORY LANE TRACT, A DISTANCE OF 60.01 FEET TO THE POINT OF BEGINNING AND CONTAINING A CALCULATED AREA OF 2.275 ACRES (99,111 SQ. FEET) OF LAND.

TO BE KNOWN AS:

PANORAMA STREET

AN ADDITION TO THE CITY OF PARKER, COLLIN COUNTY, TEXAS AND DO HEREBY DEDICATE TO THE PUBLIC USE FOREVER THE EASEMENTS AND RIGHTS-OF-WAY AS SHOWN HEREON. AT THE CITY'S OPTION, PANORAMA STREET AND ALL DRAINAGE FACILITIES THAT SUPPORT IT WILL BE OWNED AND MAINTAINED BY THE CITY OR BY COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO. 7.

EXECUTED THIS ____ DAY OF _____, A.D. 2023.

GREGORY LANE, LLC
A TEXAS LIMITED LIABILITY COMPANY

BY: _____
NAME: MARGARET E. TURNER
TITLE: DIRECTOR

STATE OF TEXAS)(
COUNTY OF _____)(

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS, ON THIS DAY PERSONALLY APPEARED _____, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE ____ DAY OF _____, A.D. 2023

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES: _____

SURVEYOR'S CERTIFICATE

I, AARON C. BROWN, REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON DOES ACCURATELY REPRESENT THE PROPERTY AS DETERMINED BY AN ON THE GROUND SURVEY, MADE UNDER MY DIRECT SUPERVISION, AND THAT ALL CORNERS ARE AS SHOWN.

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

_____
AARON C. BROWN
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6702

DATE: _____

NOTES

1. HORIZONTAL DATUM: THE BEARING BASIS IS GRID NORTH, TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD83 (NAD83 (2011) EPOCH 2010), AS DETERMINED BY GPS OBSERVATIONS. ALL DISTANCES SHOWN HEREON ARE THE RESULT OF THE APPLICATION OF A COMBINED SCALE FACTOR OF 1.0001527100.
2. ALL SET CORNERS ARE 1 INCH IRON RODS WITH PLASTIC CAPS STAMPED "LJA SURVEYING" UNLESS OTHERWISE NOTED.
3. SUBJECT TRACT IS LOCATED WITHIN AN AREA HAVING ZONE DESIGNATION OF ZONE "X" (UNSHADED), BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), AS SCALED FROM FLOOD INSURANCE RATE MAP NO. 48085C0415J, DATED JUNE 2, 2009 IN COLLIN COUNTY, STATE OF TEXAS.
4. SUBJECT TRACT LIES WITHIN THE BOUNDS OF THE PLANO INDEPENDENT SCHOOL DISTRICT.
5. ROAD DRAINAGE EASEMENT BY SEPARATE INSTRUMENT TO BE PROVIDED AT THE TIME OF FINAL PLAT.

CITY APPROVAL CERTIFICATE

RECOMMENDED FOR APPROVAL:

_____ _____
CHAIRMAN, PLANNING AND ZONING COMMISSION DATE
CITY OF PARKER, TEXAS

APPROVED AND ACCEPTED:

_____ _____
MAYOR, CITY OF PARKER, TEXAS DATE

THE UNDERSIGNED, THE CITY SECRETARY OF THE CITY OF PARKER, HEREBY CERTIFIES THAT THE FOREGOING PRELIMINARY PLAT OF PANORAMA STREET, A SUBDIVISION OR ADDITION TO THE CITY OF PARKER WAS SUBMITTED TO THE CITY COUNCIL ON THIS __ DAY OF _____, 2023, AND THE CITY COUNCIL BY FORMAL ACTION THEN AND THERE ACCEPTED THE DEDICATION OF STREETS, ALLEYS, EASEMENTS AND PUBLIC PLACES, AS SHOWN AND SET FORTH IN AND UPON SAID MAP OR PLAT, AND SAID CITY COUNCIL FURTHER AUTHORIZED THE MAYOR TO NOTE THE APPROVAL THEREOF BY SIGNING HIS NAME HEREIN ABOVE SUBSCRIBED.

WITNESS MY HAND THIS __ DAY OF _____, 2023.

_____ _____
CITY SECRETARY DATE
CITY OF PARKER, TEXAS

A
PRELIMINARY PLAT
OF
PANORAMA STREET
2.275 ACRES
SITUATED IN THE
PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10
CITY OF PARKER, COLLIN COUNTY, TEXAS

OWNER/DEVELOPER:
GREGORY LANE, LLC
3510 DUBLIN RD
PARKER, TX 75002-6516

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
3017 W 7TH STREET, Phone 817.288.1900
Suite 300
Fort Worth, Texas 76107 T.B.E.P.L.S. Firm No. 10194382

THIS PLAT FILED IN _____

JUNE 2023

SHEET 1 OF 1

S:\ATX-LAND\01313\00 SURVEY\JRD Mapping\01313FA01.dwg 6/22/2023

PANORAMA STREET

GENERAL CONSTRUCTION NOTES

1. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF PARKER TEXAS COUNCIL OF GOVERNMENTS STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. IN THE EVENT THAT AN ITEM IS NOT COVERED IN THE CONSTRUCTION DOCUMENTS THE CITY'S DECISION WILL APPLY.

2. THE CONTRACTOR SHALL BE RESPONSIBLE TO FURNISH ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS.

3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE UNDERGROUND OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION. AN INFORMAL LIST OF UTILITY COMPANIES ARE AS FOLLOWS:
ONCOR ELECTRIC, ATTN: DANNY KILCREASE (903) 715-5589
COSERV, ATTN: ANDREW BAXTER, (940) 270-6846
CHARTER, ATTN: DILON SCOTT, (682) 308-7676

4. THE CONTRACTOR SHALL CONTACT ALL FRANCHISE UTILITY COMPANIES TO HAVE THEM LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION AND DEPTH OF ALL FRANCHISE UTILITY SERVICES AND ANY REQUIRED RELOCATION AND/OR EXTENSIONS. SERVICES SHOWN ON THE PLANS ARE CONCEPTUAL.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PUBLIC UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ALL MANHOLES, CLEANOUTS, VALVE BOXES, FIRE HYDRANTS, ETC., MUST BE ADJUSTED TO PROPER GRADE BY THE CONTRACTOR PRIOR TO AND AFTER PLACING OF PERMANENT PAVING. UTILITIES MUST BE MAINTAINED TO PROPER LINE AND GRADE DURING CONSTRUCTION OF THE PAVING FOR THIS PROJECT.

6. BRACING OF UTILITY POLES MAY BE REQUIRED BY UTILITY COMPANIES WHEN TRENCHING OR EXCAVATION IS IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR. THERE IS NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE VARIOUS PAY ITEMS FOR INSTALLATION OF PIPE.

7. THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES SHOWN ON THE PLANS WERE OBTAINED FROM AVAILABLE UTILITY COMPANY RECORDS AND PLANS AND ARE CONSIDERED APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES SUFFICIENTLY IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT THEIR EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADES.

8. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY, INCLUDING, BUT NOT LIMITED TO FENCES, WALLS, PAVEMENT, GRASS, TREES, AND LAWN SPRINKLER AND IRRIGATION SYSTEMS AT NO COST TO THE OWNER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT (UNLESS OTHERWISE NOTED) AND IS NOT A SEPARATE PAY ITEM.

9. THE CONTRACTOR SHALL REMOVE SURPLUS MATERIAL FROM THE PROJECT AREA. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM.

10. COMPLIANCE WITH LAWS: THE CONTRACTOR SHALL FULLY COMPLY WITH ALL LOCAL, STATE AND FEDERAL LAWS, INCLUDING ALL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS CONTRACT AND THE WORK TO BE DONE THEREUNDER, WHICH EXIST OR WHICH MAY BE ENACTED LATER BY GOVERNMENTAL BODIES HAVING JURISDICTION OR AUTHORITY FOR SUCH ENACTMENT. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, IMPACT AND INSPECTION FEES, ANY CITY FEES AND LICENSES NECESSARY FOR THE EXECUTION OF THE WORK AND SHALL FULLY COMPLY WITH ALL THEIR TERMS AND CONDITIONS. WHEREVER THE WORK UNDER THIS CONTRACT REQUIRES THE OBTAINING OF PERMITS FROM THE CITY OF PARKER OR OTHER PUBLIC AUTHORITIES, DUPLICATE COPIES OF SUCH PERMITS SHALL BE FURNISHED TO THE ENGINEER BY THE CONTRACTOR HEREUNDER BEFORE THE WORK COVERED THEREBY IS STARTED. NO WORK WILL BE ALLOWED TO PROCEED BEFORE SUCH PERMITS ARE OBTAINED. ALL WORK REQUIRED UNDER THIS CONTRACT SHALL COMPLY WITH ALL REQUIREMENTS OF LAW, REGULATION, PERMIT OR LICENSE. IF THE CONTRACTOR FINDS THAT THERE IS A VARIANCE, HE SHALL IMMEDIATELY REPORT THIS TO THE DEVELOPER FOR RESOLUTION.

11. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS, COPIES OF ANY REQUIRED CONSTRUCTION PERMITS, EROSION CONTROL PLANS, SWPPP AND INSPECTION REPORTS.

12. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER. NO CONSIDERATION WILL BE GIVEN TO CHANGE ORDERS FOR WHICH THE OWNER AND ENGINEER WERE NOT CONTACTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEM.

13. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE ARCHITECT, CIVIL ENGINEER AND CITY ENGINEER OF RECORD DIRECTLY FROM THE TESTING AGENCY.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE ENGINEER A CERTIFIED RECORD SURVEY SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF TEXAS DEPICTING THE ACTUAL FIELD LOCATION OF ALL CONSTRUCTED IMPROVEMENTS THAT ARE REQUIRED BY THE JURISDICTIONAL AGENCIES FOR THE CERTIFICATION PROCESS. ALL SURVEY COSTS WILL BE THE CONTRACTOR'S RESPONSIBILITY.

15. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES, JURISDICTIONAL AGENCIES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES.

16. CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUM PRIOR TO COMMENCING CONSTRUCTION OR STAKING OF IMPROVEMENTS.

17. CONTRACTOR SHALL THOROUGHLY CHECK COORDINATION OF CIVIL, LANDSCAPE, MEP, ARCHITECTURAL, AND OTHER PLANS PRIOR TO COMMENCING CONSTRUCTION. OWNER AND ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY PRIOR TO COMMENCING WITH CONSTRUCTION.

18. ALL HORIZONTAL DIMENSIONS GIVEN ARE TO BACK OF CURB AND TO PIPE CENTERLINES UNLESS OTHERWISE NOTED ON PLANS.

19. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE CIVIL ENGINEER A COPY OF AS-BUILT PLANS IDENTIFYING ALL DEVIATIONS OR VARIATIONS FROM THE ORIGINAL PLANS.

20. ALL WORK ON STATE RIGHT OF WAY (ROW) SHALL COMPLY WITH THE TXDOT PERMIT PROVISIONS AND TXDOT STANDARDS.

21. ALL EXISTING PAVEMENT, ADJACENT UTILITIES, STRUCTURES, ETC., DISTURBED AS A RESULT OF THE NEW CONSTRUCTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

22. ALL WORK REQUIRED BY THESE PLANS SHALL BE CONDUCTED IN CONFORMANCE WITH CURRENT SAFETY CODES AND STANDARDS WITH JURISDICTION OVER THIS PROJECT.

23. CLEAN-UP FOR FINAL ACCEPTANCE: THE CONTRACTOR SHALL MAKE A FINAL CLEAN-UP OF ALL PARTS OF THE WORK BEFORE ACCEPTANCE BY THE DEVELOPER OR HIS REPRESENTATIVE. THIS CLEAN-UP SHALL INCLUDE REMOVAL OF ALL OBJECTIONABLE MATERIALS AND, IN GENERAL, PREPARING THE SITE OF THE WORK IN AN ORDERLY MANNER OF APPEARANCE.

24. PROPERTY LINES AND MONUMENTS: THE CONTRACTOR SHALL PROTECT ALL PROPERTY CORNER MARKERS, AND WHEN ANY SUCH MARKERS OR MONUMENTS ARE IN DANGER OF BEING DISTURBED, THEY SHALL BE PROPERLY REFERENCED AND IF DISTURBED SHALL BE RESET AT THE EXPENSE OF THE CONTRACTOR.

25. THE CONTRACTOR SHALL SALVAGE AND PROTECT ALL EXISTING POWER POLES, SIGNS, MANHOLES, TELEPHONE RISERS, WATER VALVES, ETC. DURING ALL CONSTRUCTION PHASES UNLESS NOTED OTHERWISE.

26. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK: ALL WORK WHICH HAS BEEN REJECTED OR CONDEMNED SHALL BE REPAIRED; OR IF IT CANNOT BE REPAIRED SATISFACTORILY, IT SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. DEFECTIVE MATERIALS SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE. WORK DONE BEYOND THE LINE OR NOT IN CONFORMITY WITH THE GRADES SHOWN ON THE DRAWINGS OR AS PROVIDED, WORK DONE WITHOUT PROPER INSPECTION; OR ANY EXTRA OR UNCLASSIFIED WORK DONE WITHOUT WRITTEN AUTHORITY AND PRIOR AGREEMENT IN WRITING AS TO PRICES, SHALL BE AT THE CONTRACTOR'S RISK, AND WILL BE CONSIDERED UNAUTHORIZED, AND AT THE OPTION OF THE DEVELOPER MAY NOT BE MEASURED AND PAID FOR AND MAY BE ORDERED REMOVED AT THE CONTRACTOR'S EXPENSE. UPON FAILURE OF THE CONTRACTOR TO REPAIR SATISFACTORILY OR TO REMOVE AND REPLACE, IF SO DIRECTED, REJECTED, UNAUTHORIZED OR CONDEMNED WORK OR MATERIALS IMMEDIATELY AFTER RECEIVING NOTICE FROM THE DEVELOPER, THE DEVELOPER WILL, AFTER GIVING WRITTEN NOTICE TO THE CONTRACTOR, HAVE THE AUTHORITY TO CAUSE DEFECTIVE WORK TO BE REMEDIED OR REMOVED AND REPLACED, OR TO CAUSE UNAUTHORIZED WORK TO BE REMOVED AND TO DEDUCT THE COST THEREOF FROM ANY MONIES DUE OR TO BECOME DUE THE CONTRACTOR.

27. SUBSURFACE EXPLORATION: RONE ENGINEERING HAS MADE AN INVESTIGATION OF SUBSURFACE SOIL CONDITIONS FOR THE PROJECT SITE, THE RESULTS OF WHICH CAN BE FOUND IN THEIR REPORT NO. #23-27484 DATED 05/05/2023.

    TEST BORINGS HAVE BEEN MADE AT VARIOUS LOCATIONS WITHIN THE CONSTRUCTION AREA AND THE RESULTS OF SUCH BORINGS, INCLUDING THE COMPLETE SOIL REPORT, ARE INCLUDED IN THE SPECIFICATIONS.

    SOIL INVESTIGATION DATA IS PROVIDED ONLY FOR INFORMATION AND THE CONVENIENCE OF BIDDERS. THE DEVELOPER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY, TRUE LOCATION AND EXTENT OF THE SOILS INVESTIGATION THAT HAS BEEN PREPARED BY OTHERS. THEY FURTHER DISCLAIM RESPONSIBILITY FOR INTERPRETATION OF THAT DATA BY BIDDERS, AS IN PROJECTING SOIL BEARING VALUES, ROCK PROFILES, SOILS STABILITY AND THE PRESENCE, LEVEL AND EXTENT OF UNDERGROUND WATER.

    BIDDERS SHALL MAKE ANY INVESTIGATION OF EXISTING SUBSURFACE CONDITIONS AS DEEMED NECESSARY AT NO EXPENSE TO THE DEVELOPER.

    NEITHER THE DEVELOPER NOR ENGINEER WILL BE RESPONSIBLE IN ANY WAY FOR ADDITIONAL COMPENSATION FOR EXCAVATION WORK PERFORMED UNDER THIS CONTRACT DUE TO CONTRACTOR'S ASSUMPTIONS BASED ON SUBSOIL DATA PREPARED SOLELY FOR ENGINEER'S USE.

GAS, ELECTRIC, AND TELEPHONE NOTES

1. THE CONTRACTOR SHALL INSTALL 2-4" SCH 40 PVC CONDUITS FOR AREA TELEPHONE SERVICE PROVIDER. THE SERVICE PROVIDER WILL INSTALL THE WIRING. THE CONDUITS SHALL EXTEND FROM THE BUILDING TO THE ADJACENT R.O.W. CONTRACTOR SHALL COORDINATE LOCATION, ALIGNMENT AND INSTALLATION REQUIREMENTS WITH THE AREA TELEPHONE PROVIDER.

2. PULL BOXES SHALL BE INSTALLED AT ALL BENDS AND AT 1000-FOOT INCREMENTS ALONG ALL TELEPHONE AND COMMUNICATIONS CONDUITS. ALL PULL BOXES SHALL BE WATERPROOF, AND THOSE IN PAVED AREAS SHALL BE TRAFFIC RATED.

3. THE CONTRACTOR SHALL PROVIDE 4 WEEKS LEAD TIME FOR (TEMP. AND PERMANENT) TELEPHONE SERVICE INSTALLATION, AND 14-16 WEEK LEAD TIME FOR THREE-PHASE TRANSFORMERS. COORDINATE SERVICE WITH THE LOCAL ELECTRIC PROVIDER.

4. THE CONTRACTOR SHALL COORDINATE ALL ELECTRIC AND GAS SERVICE (TEMP. & PERMANENT) LOCATION, ALIGNMENT, INSTALLATION REQUIREMENTS AND COST SHARING ARRANGEMENTS WITH FRANCHISE UTILITY PROVIDER.

5. THE CONTRACTOR SHALL COORDINATE WITH FRANCHISE UTILITY PROVIDER TO EXTEND GAS SERVICE FROM THE ADJACENT R.O.W. TO THE PROPOSED BUILDING.

6. ALL FRANCHISE UTILITY LOCATIONS SHOWN ON THESE DRAWINGS ARE CONCEPTUAL IN NATURE. THE CONTRACTOR SHALL COORDINATE THE EXACT DESIGN, ALIGNMENT, INSTALLATION REQUIREMENTS AND COST SHARING ARRANGEMENTS WITH THE INDIVIDUAL UTILITY PROVIDERS. THE CONTRACTOR SHALL INCLUDE ALL ASSOCIATED COSTS TO INSTALL FRANCHISE UTILITY (GAS, ELECTRIC, PHONE, CABLE) SERVICE TO THE PROPOSED BUILDING, IN THE BASE BID.

PAVING AND STRIPING NOTES

1. ALL WORK AND MATERIALS ON SITE SHALL BE IN ACCORDANCE WITH THE CITY OF PARKER STANDARD PAVING SPECS AND DETAILS.

2. TESTING OF MATERIALS REQUIRED FOR THE CONSTRUCTION OF THE PAVING IMPROVEMENTS SHALL BE PERFORMED BY AN AGENCY, APPROVED BY THE OWNER, FOR TESTING MATERIALS. PROCUREMENT OF THE TESTING LABORATORY AND THE PAYMENT OF SUCH TESTING SERVICES SHALL BE MADE BY THE OWNER. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE, BY THE STANDARD TESTING PROCEDURES, THAT THE WORK CONSTRUCTED MEETS THE REQUIREMENTS OF THE CITY AND PROJECT SPECIFICATIONS.

3. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST VERSION OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

4. RAISED PAVEMENT MARKERS SHALL BE BONDED TO THE ROADWAY SURFACE WITH ADHESIVE CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.

5. THE PAVEMENT UPON WHICH THE LANE AND PAVEMENT MARKERS ARE TO BE PLACED SHALL BE PREPARED TO THE APPROVAL OF THE INSPECTOR TO ENSURE PROPER CLEANING OF THE PAVEMENT SURFACE.

6. SIGN LOCATIONS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE CITY. CONTRACTOR SHALL REVIEW ALL TRAFFIC CONTROL DEVICES WITH THE CITY PRIOR TO INSTALLATION.

7. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS FOR FIRE LANES, PARKING STALLS, HANDICAPPED PARKING SYMBOLS, AND MISCELLANEOUS STRIPING WITHIN PARKING LOT AND AROUND BUILDING AS SHOWN ON THE PLANS.

8. ALL STRIPING SHALL BE EXTRUDED THERMOPLASTIC MARKING MATERIAL.

9. CONTRACTOR TO REFERENCE IRRIGATION PLAN AND MEP PLANS FOR LOCATION OF PROPOSED SLEEVING AND CONDUITS.

10. THE ACCESS ROADWAY AND/OR FIRE LANE SHALL BE STRIPED ON A PAVED SURFACE, AND BE CLEARLY MARKED ON THE PAVEMENT WITH "RED" TRAFFIC PAINT SIX (6) INCHES IN WIDTH TO SHOW THE BOUNDARIES OF THE LANE. "NO PARKING FIRE LANE" SHALL APPEAR IN FOUR (4) INCH WHITE LETTERS AT INTERVALS OF 25 FEET ON THE RED BORDER MARKINGS ALONG BOTH SIDES OF THE FIRE LANES. WHERE A CURB IS AVAILABLE, THE STRIPING SHALL BE ON THE VERTICAL FACE OF THE CURB. ALL FIRE LANES SHALL CONNECT AT BOTH ENDS TO A DEDICATED STREET OR BE CONSTRUCTED WITH TURN-AROUND AREAS AT THE DEAD-END WITH A MINIMUM RADIUS OF FIFTY (50) FEET. ALL PAINT REFERRED TO SHALL BE TRAFFIC MARKING PAINT

11. THE WORDS "FIRE LANE" AND "NO PARKING" SHALL BE STENCILED IN FOUR (4) INCH HIGH WHITE LETTERS ALTERNATELY EVERY FIFTEEN (15) FEET ALONG THE RED FIRE LANE STRIPES IN THE FACE OF THE CURB.

12. ALL HANDICAP RAMPING, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT OF 1994 AND THE TEXAS ARCHITECTURAL BARRIERS ACT OF 1994.

13. ALL REGULAR PARKING SPACES ARE 9.0 FEET WIDE. ALL HANDICAP SPACES ARE 9.0 FEET WIDE WITH AN ADJACENT 5.0 FOOT WIDE STRIPED ZONE UNLESS NOTED OTHERWISE.

14. CONTRACTOR TO INSTALL CONSTRUCTION JOINTS IN CONCRETE PAVEMENT AT ALL PC'S AND AS CONVENIENT TO PHASING OF POURS. CONCRETE PAVEMENT TO BE CONSTRUCTED WITH EXPANSION JOINTS EVERY 150' IN BOTH DIRECTIONS AND SAWED DUMMY JOINTS EVERY 10'-12' IN BOTH DIRECTIONS.

15. CONTRACTOR TO SUBMIT A PAVEMENT JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO THE BEGINNING OF ANY CONCRETE PAVING WORK. PAVING CONTRACTOR TO COORDINATE WITH BUILDING CONTRACTOR ON THE CONSTRUCTION AND PAVING NEAR THE SCREENING WALLS AND THE DUMPSTER PADS.

16. ALL EXISTING CONCRETE OR ASPHALT SHOWN TO BE REMOVED SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR OFF SITE.

GRADING NOTES

1. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH. THE AREAS SHALL THEN BE SEEDED, IRRIGATED, AND STABILIZED AS SPECIFIED IN THE PLANS, AND MAINTAINED UNTIL SOIL IS STABILIZED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE STABILIZED AND MULCHED AS SHOWN ON THE LANDSCAPE, GRADING, AND EROSION CONTROL PLANS.

2. ALL CUT OR FILL SLOPES SHALL BE 4:1 OR FLATTER UNLESS OTHERWISE SHOWN.

3. CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES (SHOWN OR NOT SHOWN) WITHIN SCOPE OF CONSTRUCTION. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT HIS OWN EXPENSE.

4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS. CONTRACTOR ADJUSTMENTS TO SPOT GRADES TO MAINTAIN POSITIVE DRAINAGE IS ALLOWED WITH THE PRIOR APPROVAL OF THE ENGINEER. CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PAVING IF ANY AREAS OF POOR DRAINAGE ARE ENCOUNTERED.

5. THE CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES WHICH ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

6. ALL EXISTING CONCRETE PAVING, CHANNEL IMPROVEMENTS, SIDEWALK, STRUCTURES AND CURB DEMOLITION SHALL BE REMOVED IN THEIR ENTIRETY AND DISPOSED OF BY THE CONTRACTOR, OFFSITE UNLESS OTHERWISE DIRECTED BY THE OWNER OR ENGINEER.

7. BUILDING PAD PREPARATION SHALL BE CONSISTENT WITH THE GEOTECHNICAL REPORT BY TERRACON, DATED FEBRUARY 5, 2008 AND ALL ADDENDA. (TERRACON PROJECT NO. 94075497)

8. ALL CLEARING, GRADING, COMPACTION AND SUBGRADE PREPARATION SHALL BE IN ACCORDANCE TO THE RECOMMENDATIONS MADE IN THE SUBSURFACE EXPLORATION REPORT BY RONE ENGINEERING, PROJECT #23-27484 DATED 05/05/2023 AND ALL ADDENDA.

9. GRADING CONTRACTOR TO COORDINATE WITH THE FRANCHISE UTILITY COMPANIES FOR ANY REQUIRED UTILITY ADJUSTMENTS AND/OR RELOCATIONS.

10. THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES AND USE TO DETERMINE HIS BID ACCORDINGLY. ANY DEVIATION FROM A BALANCED CUT AND FILL SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ARCHITECT AND CIVIL ENGINEER AND ANY VARIANCE QUANTIFIED ON THE BID.

11. REFERENCE STRUCTURAL PLANS AND SPECIFICATIONS AND GEOTECHNICAL REPORT FOR ALL BUILDING PAD LAYOUT AND SOIL PREPARATION/COMPACTION.

12. EXCESS MATERIAL: SUITABLE EXCAVATED MATERIAL SHALL BE DISPOSED OF ON THE SITE AT LOCATIONS DIRECTED BY THE ENGINEER. UNSUITABLE MATERIAL IS DEFINED AS ROCKS MEASURING LARGER THAN 4" IN THE LARGEST DIMENSION. UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE.

13. WHERE SURFACE DRAINAGE CHANNELS ARE TEMPORARILY DISTURBED OR BLOCKED DURING CONSTRUCTION, THEY SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR GRADES AND CROSS SECTION AFTER THE CONSTRUCTION IS COMPLETED.

14. NO ROCK SHALL BE PLACED IN THE TOP 6 INCHES OF THE SUBGRADE.

15. GRADING CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OFF-SITE OF ALL EXCAVATED AND CLEARED MATERIAL WHICH SOILS LAB DECLARES UNSUITABLE FOR USE ON-SITE.

16. IF ROCK IS ENCOUNTERED IN THE PAVING SUBGRADE, THE ROCK SHALL BE EXCAVATED TO A DEPTH OF SIX INCHES, REMOVED FROM THE STREET, AND NON-ROCK MATERIAL SHALL BE REPLACED FOR THE STREET SUBGRADE. ROCK IN STREET PARKWAYS SHALL BE REMOVED AND REPLACED WITH SIX INCHES OF TOP SOIL. THIS SHALL BE ACCOMPLISHED BY THE EXCAVATION CONTRACTOR, SUBSIDIARY TO THIS CONTRACT.

17. PRIOR TO PLACING ANY FILL, THE AREAS TO RECEIVE FILL WILL NEED TO BE STRIPPED AND GRUBBED. THE EXPOSED SUBGRADE SHOULD BE PROOFROLLED WITH HEAVY PNEUMATIC EQUIPMENT. ANY SOFT OR PUMPING AREAS SHOULD BE EXCAVATED TO A FIRM SUBGRADE AND PROPERLY BACKFILLED. THE SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES AND UNIFORMLY COMPACTED TO A MINIMUM OF 95 PERCENT OF ASTM D698 AT OR ABOVE THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY THAT TEST. THE FILL MATERIALS SHALL BE SPREAD IN LOOSE LIFTS, LESS THAN 9 INCHES THICK, AND UNIFORMLY COMPACTED TO THE SAME CRITERIA.

18. REFERENCE EROSION CONTROL PLAN FOR ADDITIONAL EROSION CONTROL GENERAL NOTES AND SPECIFICATIONS.

STORM SEWER NOTES

1. CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS SHOWN, INCLUDING THE HORIZONTAL AND VERTICAL LOCATION OF CURB INLETS, GRATE INLETS, AND ALL UTILITIES CROSSING THE STORM SEWER. FLOW LINES AND RIMS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE PROPOSED GRADE PRIOR TO CONSTRUCTION.

2. THE END OF ALL STORM SEWER LATERALS THAT CONNECT TO WORK BY PLUMBER SHALL BE TIGHTLY PLUGGED OR CAPPED AND MARKED 5.0 FEET OUTSIDE THE BUILDING UNTIL FINAL CONNECTIONS ARE MADE BY PLUMBING CONTRACTOR. SEE M.E.P. AND ARCHITECTURAL PLANS FOR CONTINUATION.

3. THE SITE UTILITY CONTRACTOR SHALL PROVIDE ALL MATERIALS AND APPURTENANCES NECESSARY FOR COMPLETE INSTALLATION OF THE STORM SEWER.

4. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

5. REFERENCE CITY'S DESIGN STANDARDS AND SPECIFICATIONS FOR NEW STORM SEWER SYSTEMS.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND IMPLEMENTING A TRENCH PROTECTION PLAN FOR ALL OPEN TRENCH EXCAVATION.

7. EXISTING MANHOLE TOPS AND ALL OTHER DRAINAGE FACILITIES SHALL BE ADJUSTED AS REQUIRED TO MATCH FINAL GRADES AS SHOWN ON GRADING PLAN. NO SEPARATE PAY ITEM.

8. ALL STORM SEWER PIPE SHALL BE CLASS III RCP, OR AS SHOWN BELOW.
DEPTH OF COVER:
LESS THAN 10 FEET - CLASS III
BETWEEN 10 AND 15 FEET - CLASS IV
GREATER THAN 15 FEET - CLASS V

9. EXISTING WATER AND SANITARY SEWER LINES ARE SHOWN ON PLANS FOR REFERENCE ONLY. CONTRACTOR SHALL LOCATE ALL LINES IN THE AREA PRIOR TO DIGGING.

10. ALL CURVED STORM DRAIN IS TO BE CONSTRUCTED WITH RADIUS PIPE OR IS TO HAVE ALL JOINTS GROUTED AS NECESSARY. IT SHALL BE THE CONTRACTORS OPTION AS TO WHICH METHOD TO USE. THERE SHALL BE NO SEPARATE PAY.

11. ALL STORM SEWER MANHOLES AND INLETS TO BE CONSTRUCTED WITH 30" CAST IRON FRAME AND COVERS

STORM SEWER DISCHARGE AUTHORIZATION NOTES

1. A NOTICE OF INTENT (N.O.I.) SHALL BE SUBMITTED BY THE CONTRACTOR TO THE TCEQ NO LESS THAN 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

2. ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN A CONTRACTOR CERTIFICATION STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP.

3. A COPY OF THE SWPPP, INCLUDING CONTRACTOR CERTIFICATIONS AND ANY REVISIONS, SHALL BE SUBMITTED TO THE CITY AND FILED WITH THE CONSTRUCTION PLANS, AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION.

4. A NOTICE OF TERMINATION (N.O.T.) SHALL BE SUBMITTED TO THE TCEQ BY THE CONTRACTOR WHEN THE SITE HAS 100% OF THE DISTURBED AREAS STABILIZED AND THE SITE NO LONGER HAS STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES (CONSTRUCTION), OR THE N.O.T. PERMITTEE OR CO-PERMITTEE NO LONGER HOLDS OPERATIONAL CONTROL OF THE CONSTRUCTION.

DATE	REVISION	BY

GENERAL NOTES

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
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PRELIMINARY

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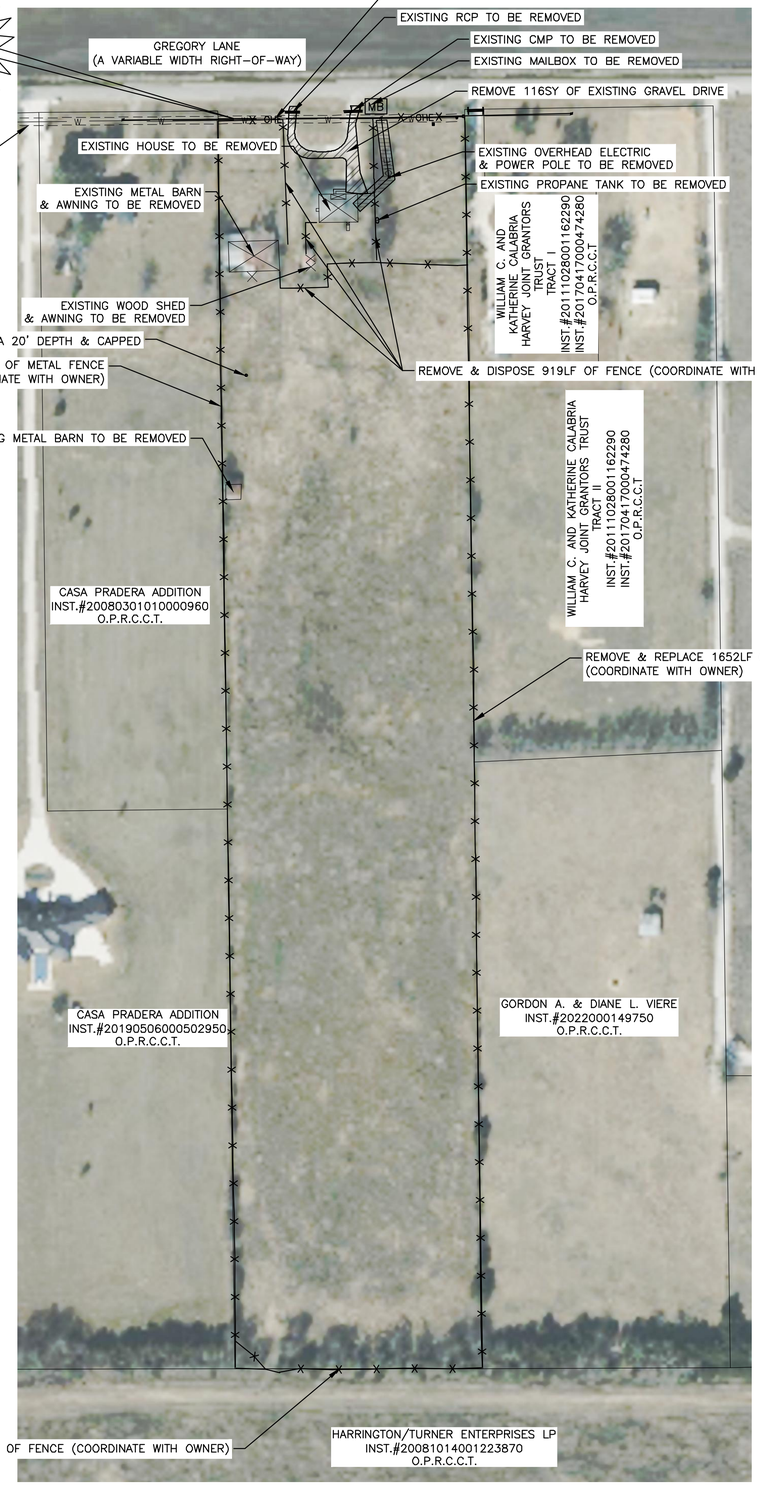
Date\Time : Tue, 27 Jun 2023 - 10:55am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\426 Design Files\Access Road\0133RDLN01.dwg

N

0 50 100 200

WARNING!!!
APPROXIMATE LOCATION EXISTING OVERHEAD ELECTRIC LINE & WATER LINE, CONTRACTOR TO VERIFY LOCATION PRIOR TO CONSTRUCTION



LEGEND

	EXISTING POWER POLE
OHE	EXISTING OVERHEAD ELECTRIC
X X	EXISTING FENCE TO BE REMOVED
OHE	EXISTING OVERHEAD ELECTRIC TO BE REMOVED

PANORAMA STREET

BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
ELEV 605.438

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DEMOLITION PLAN

PANORAMA STREET

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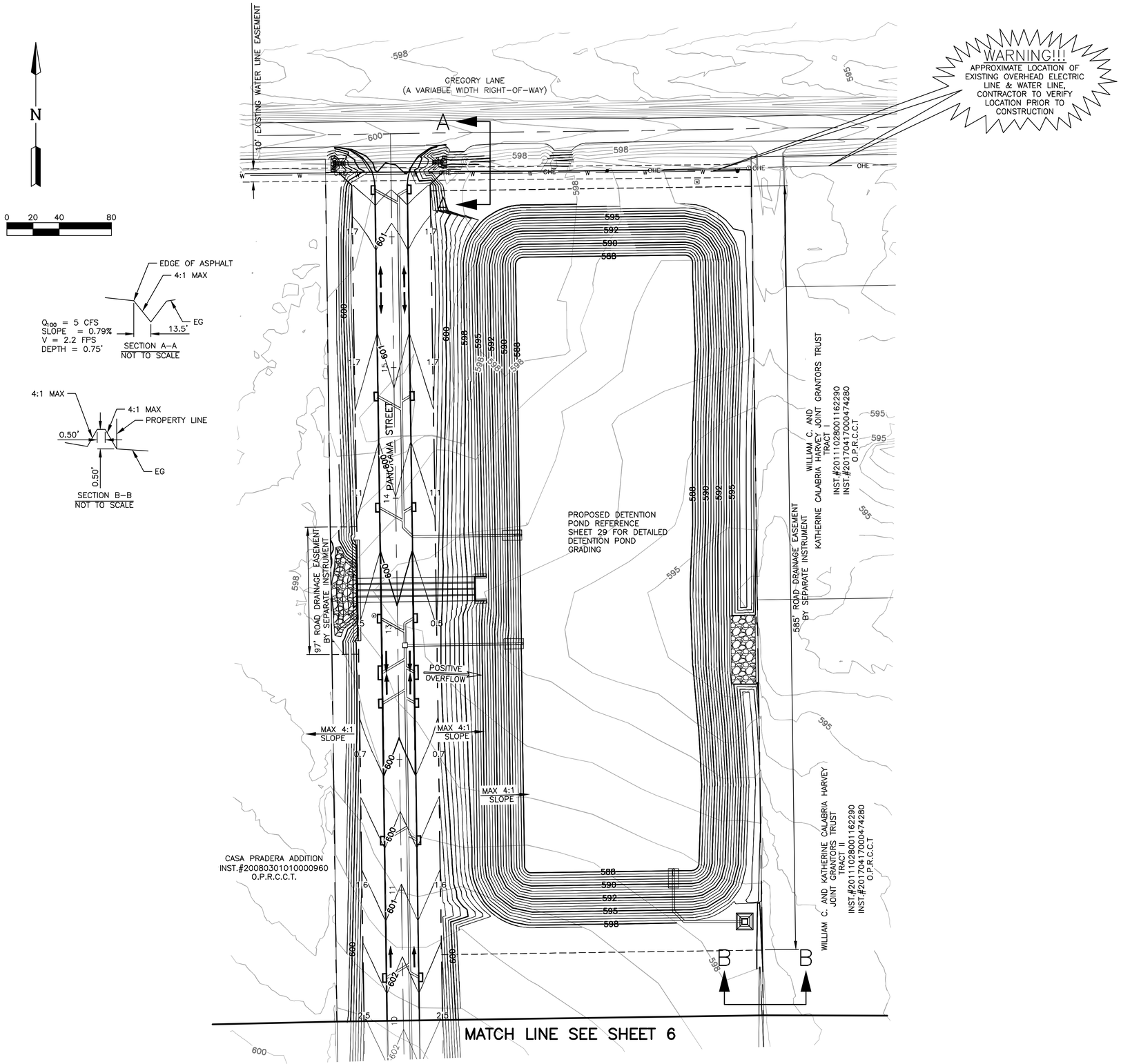
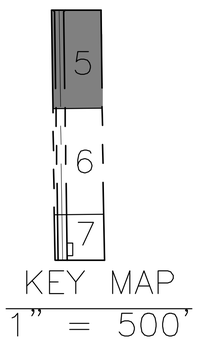


LEGEND

x 88.8	PROPOSED SPOT ELEVATIONS
←	PROPOSED FLOW DIRECTION
EP	EDGE OF PAVEMENT

NOTES:

1. STRUCTURAL DESIGN OF ALL RETAINING WALLS TO BE DONE BY OTHERS.



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GRADING PLAN

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PANORAMA STREET

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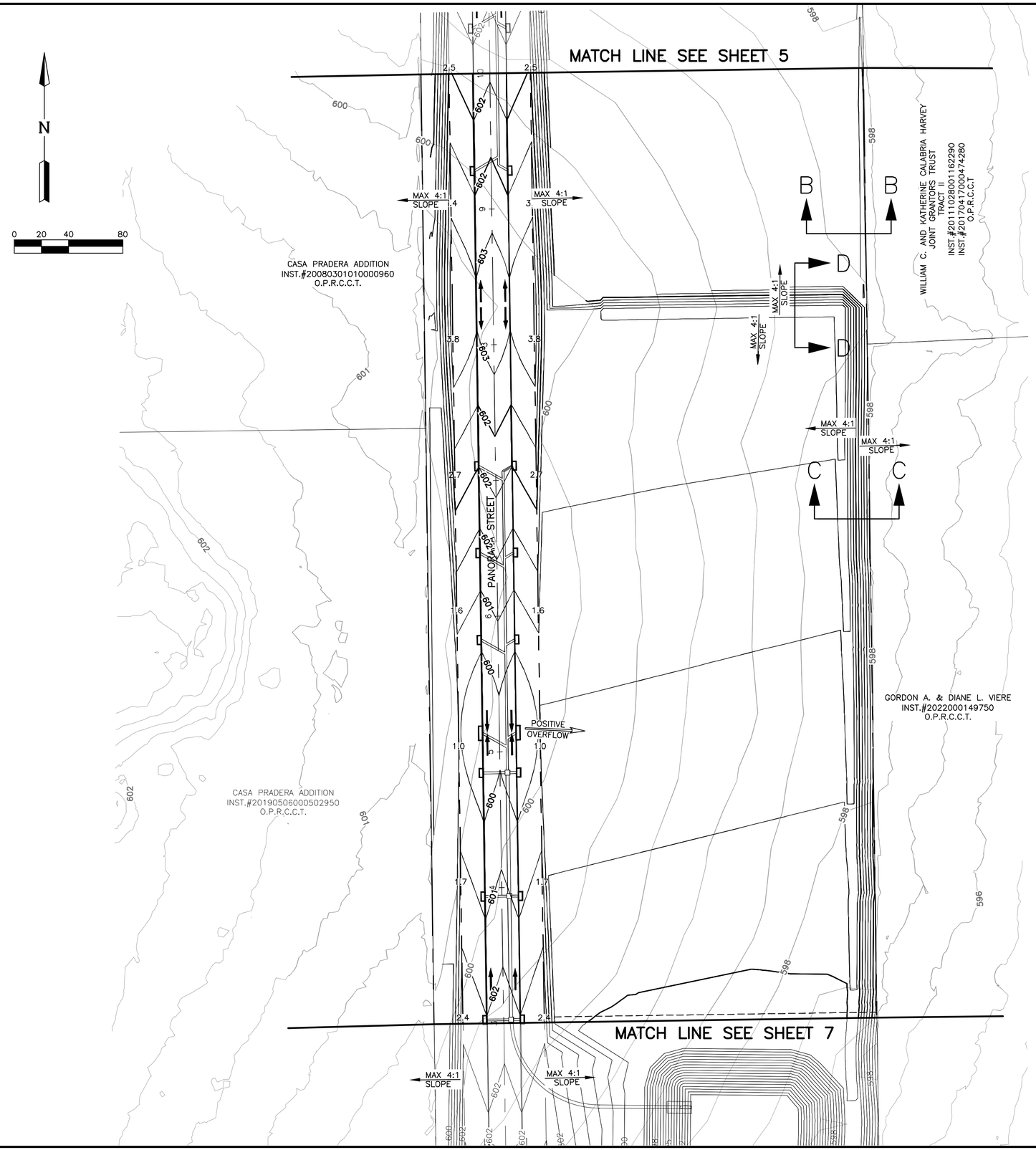

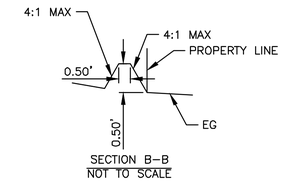

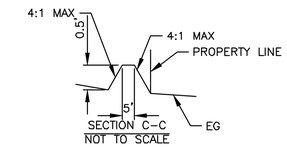

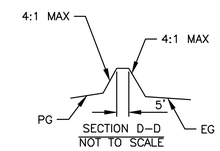

LEGEND

x 88.8	PROPOSED SPOT ELEVATIONS
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EP	EDGE OF PAVEMENT

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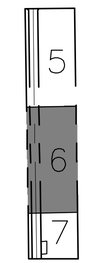

KEY MAP
1" = 500'

BENCHMARKS:

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ELEV 597.995

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GRADING PLAN

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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SHEET	6 OF 35 SHEETS

PANORAMA STREET

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PANORAMA STREET

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LEGEND

X 88.8	PROPOSED SPOT ELEVATIONS
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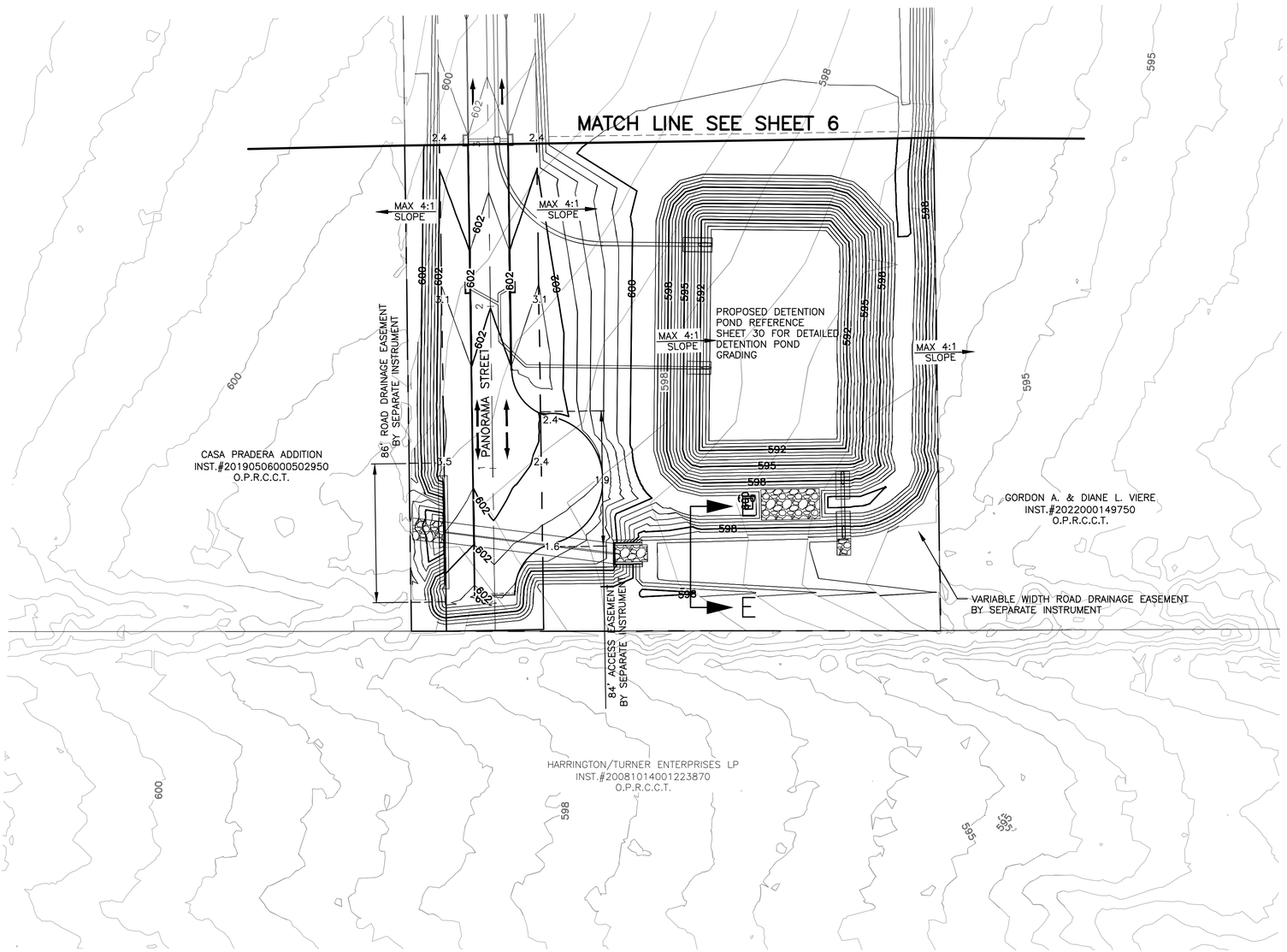

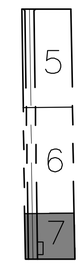

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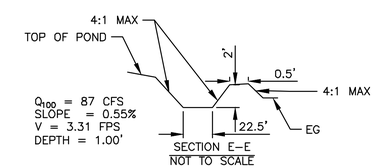

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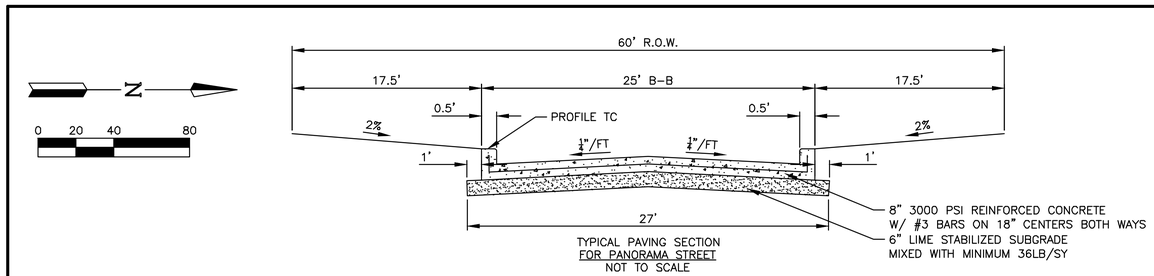
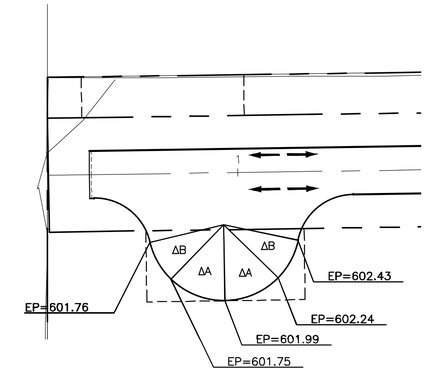


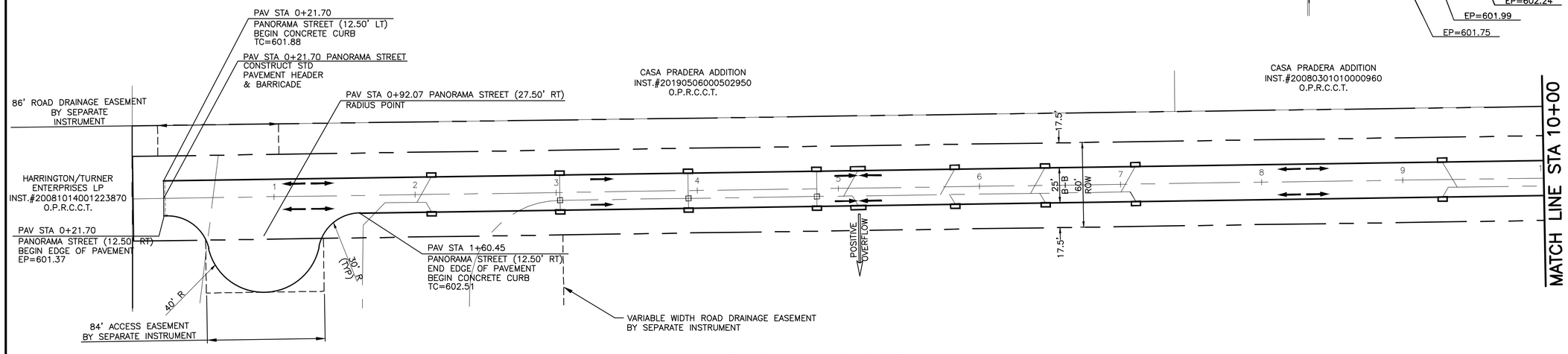
TYPICAL PAVING SECTION
FOR PANORAMA STREET
NOT TO SCALE

NOTE:
1. 30 MPH DESIGN SPEED



TURN AROUND DETAIL
1"=40'

DELTA CHART
ΔA = 45°00'00"
ΔB = 32°37'22"



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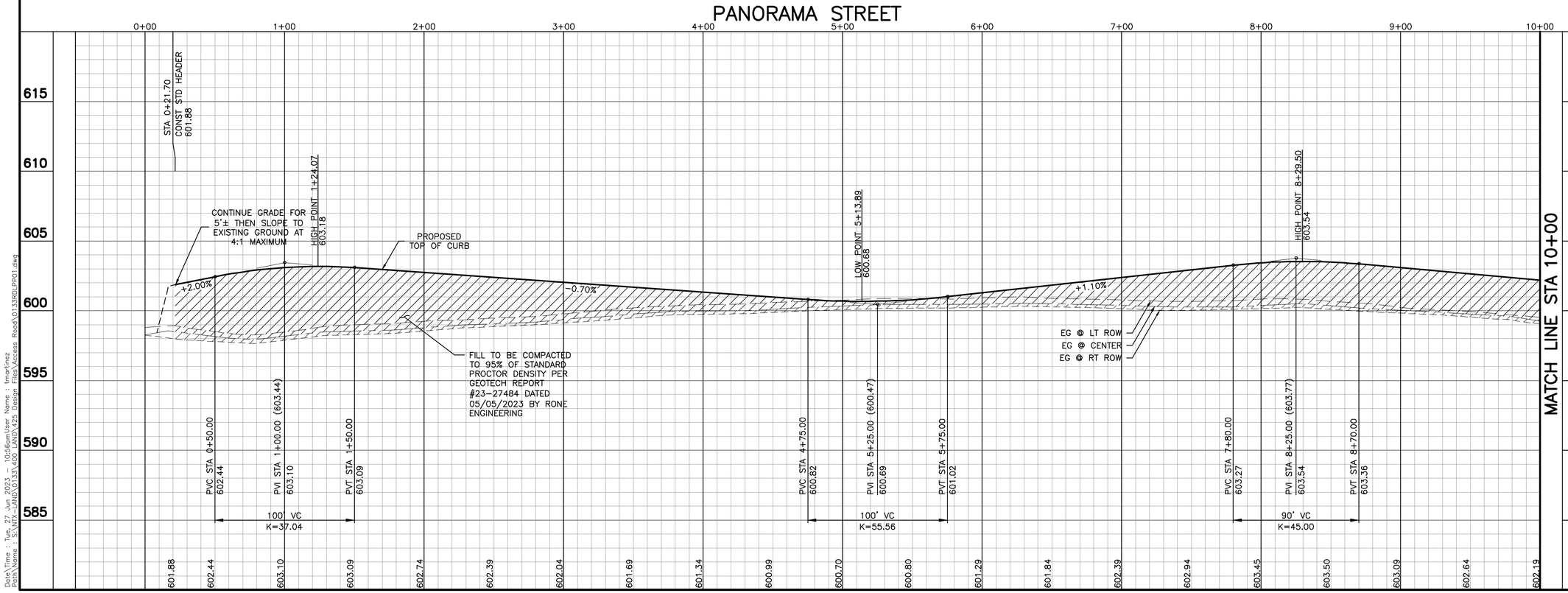

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PAVING PLAN & PROFILE
PANORAMA STREET

PANORAMA STREET

CITY OF PARKER
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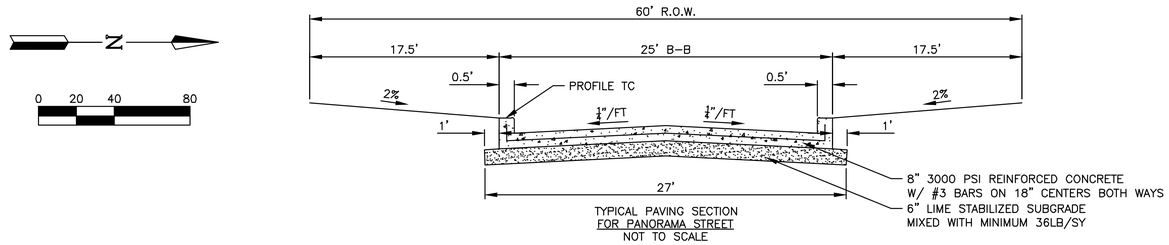

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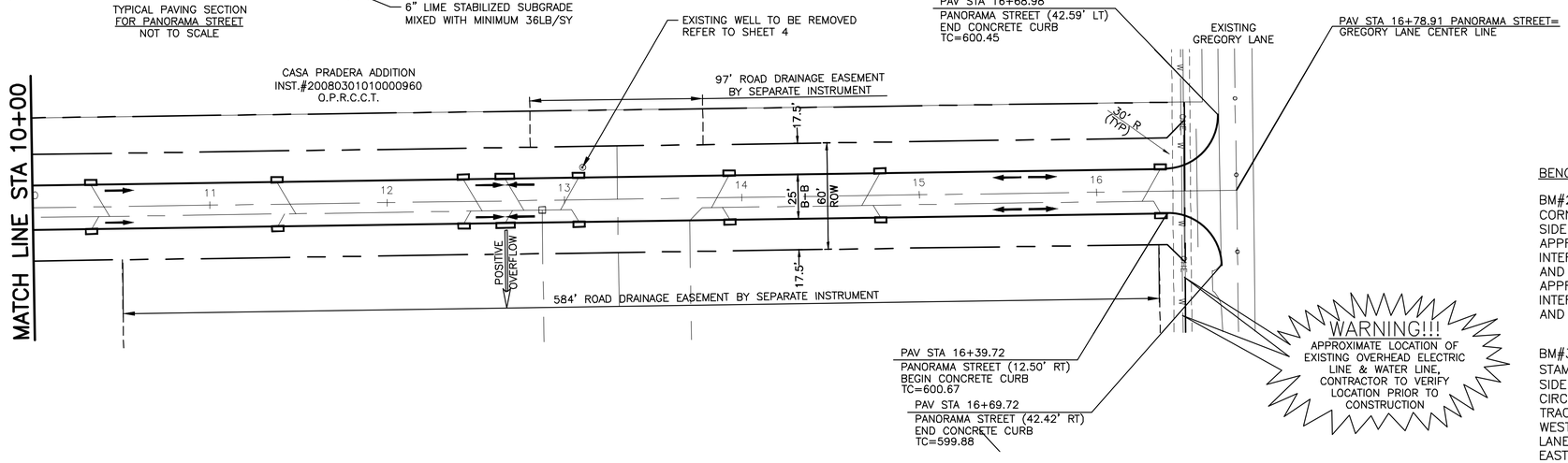

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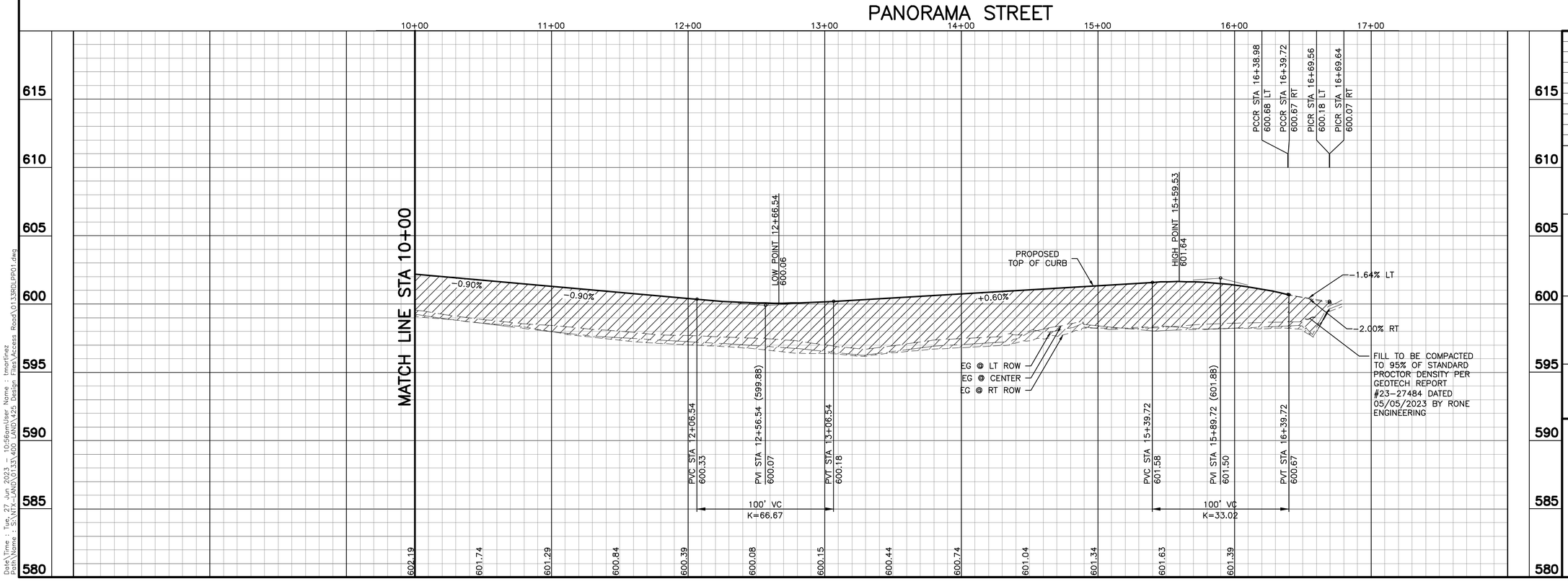
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.
ELEV 597.995



DATE	REVISION	BY

PAVING PLAN & PROFILE
PANORAMA STREET

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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06 27 2023
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LJA PROJECT ID
NT561-0133

DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ

SCALE
HORZ: 1" = 40'
VERT: 1" = 4'

SHEET
9
OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 - 10:56am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLPP01.dwg

N

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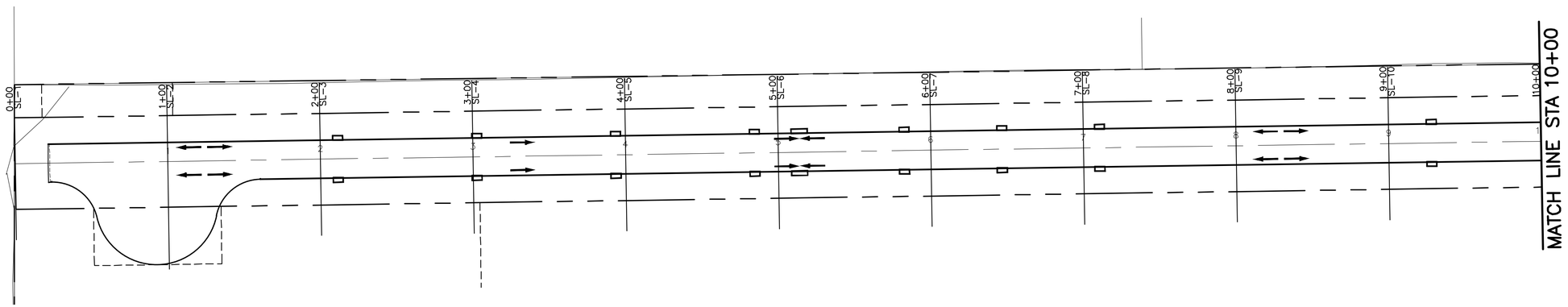

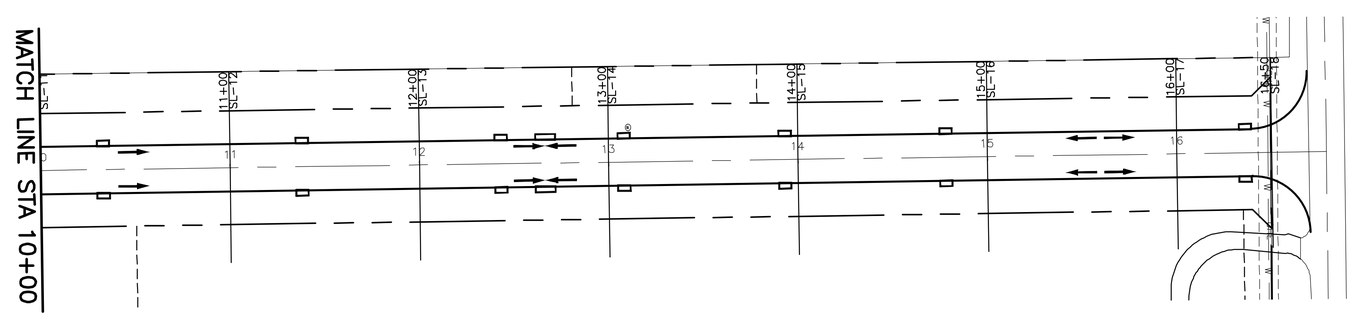

BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.

ELEV 605.438

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ELEV 597.995

DATE	REVISION	BY

OVERALL SECTIONS PLAN

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
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VERT: N/A
SHEET 10 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 - 10:57am User Name : tmartinez
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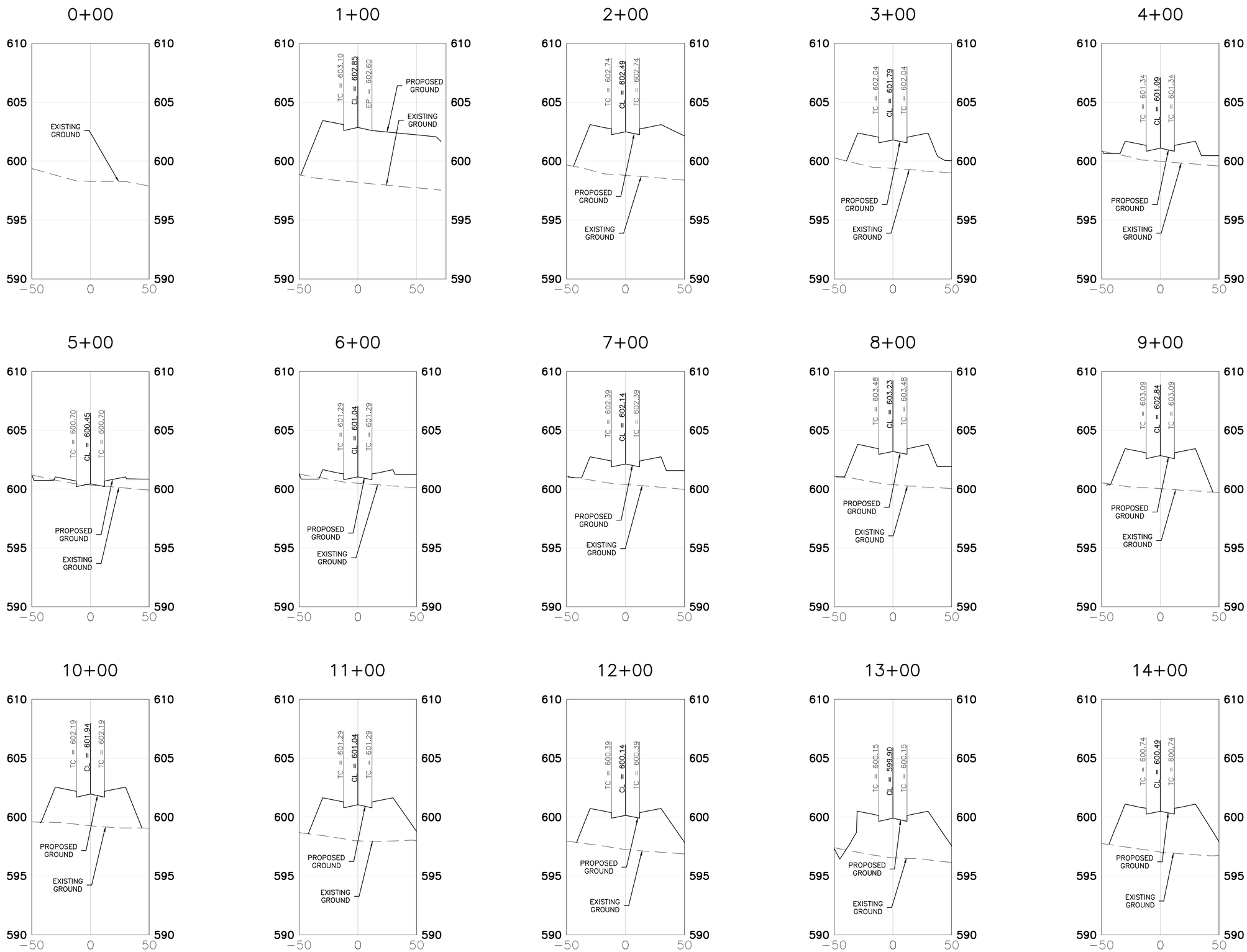
PANORAMA STREET



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ELEV 597.995

DATE	REVISION	BY

CROSS SECTIONS
STA 0+00 TO 14+00

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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SHEET 11 OF 35 SHEETS

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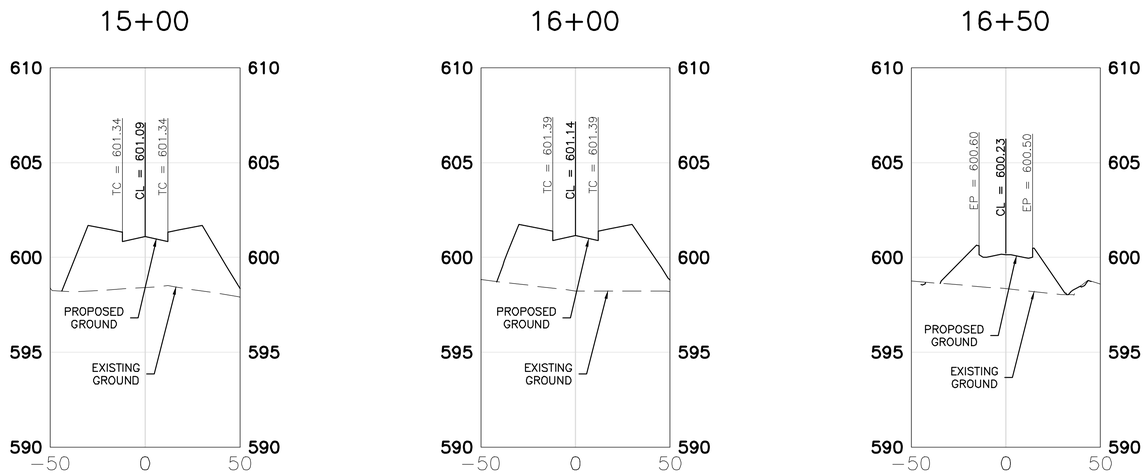

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ELEV 597.995

DATE	REVISION	BY

CROSS SECTIONS
STA 15+00 TO 16+50

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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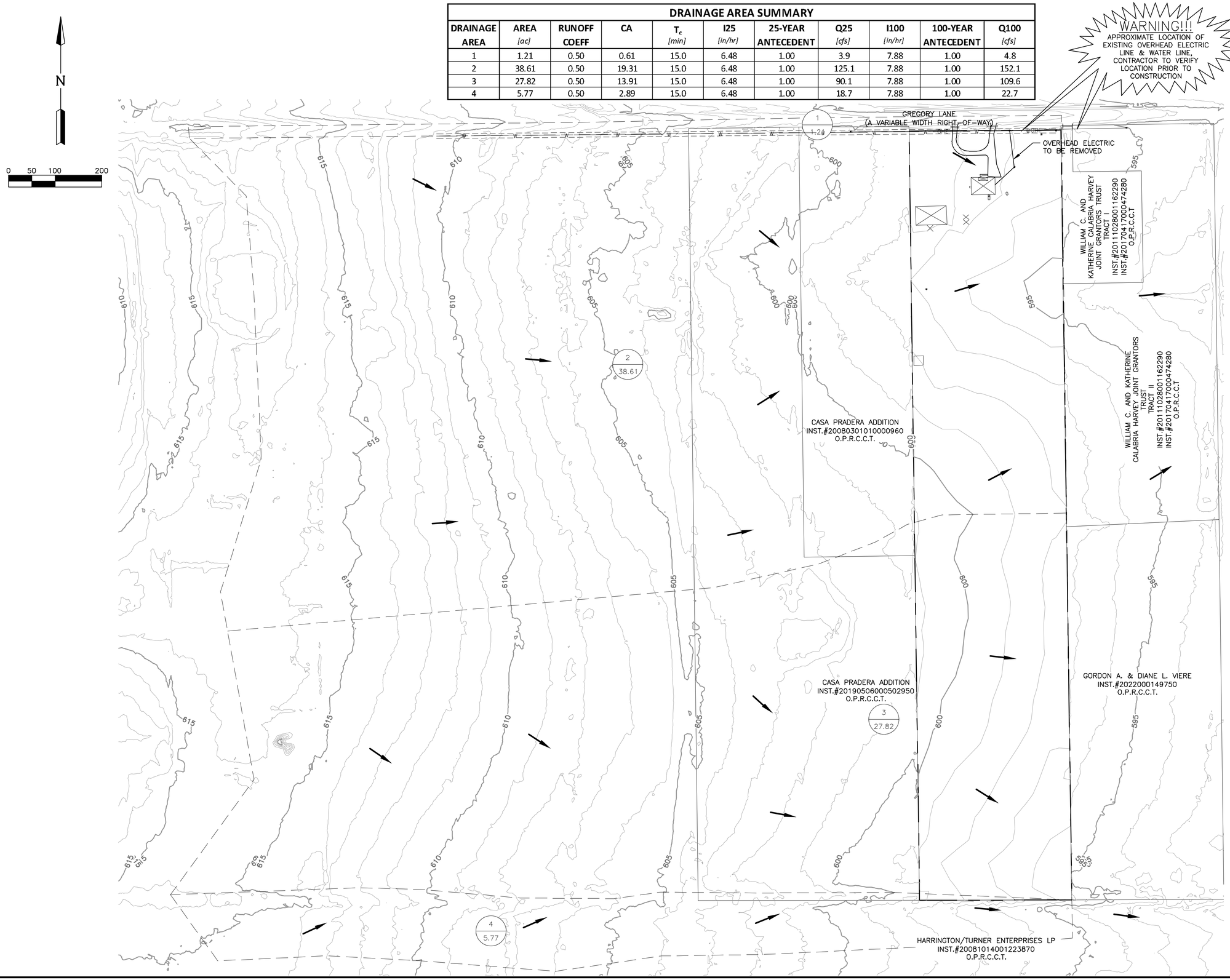
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLPP02.dwg

DRAINAGE AREA SUMMARY

DRAINAGE AREA	AREA [ac]	RUNOFF COEFF	CA	T_c [min]	I25 [in/hr]	25-YEAR ANTECEDENT	Q25 [cfs]	I100 [in/hr]	100-YEAR ANTECEDENT	Q100 [cfs]
1	1.21	0.50	0.61	15.0	6.48	1.00	3.9	7.88	1.00	4.8
2	38.61	0.50	19.31	15.0	6.48	1.00	125.1	7.88	1.00	152.1
3	27.82	0.50	13.91	15.0	6.48	1.00	90.1	7.88	1.00	109.6
4	5.77	0.50	2.89	15.0	6.48	1.00	18.7	7.88	1.00	22.7



LEGEND

- EXISTING STORM DRAIN WITH INLET
- DRAINAGE DIVIDE
- FLOW DIRECTION
- AREA DESIGNATION A / AREA ACREAGE 1.25 — DRAINAGE AREA

DRAINAGE DESIGN CRITERIA
RATIONAL METHOD
100 YEAR DESIGN

Q = C I A
Q – FLOW IN CUBIC FEET PER SECOND (CFS)
C – RUNOFF COEFFICIENT = 0.50 (LOW DENSITY RESIDENTIAL)
I – INTENSITY AT 15 MINUTES = 7.88
A – DRAINAGE AREA IN ACRES

BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
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ELEV 597.995

DATE	REVISION	BY

EXISTING DRAINAGE AREA MAP

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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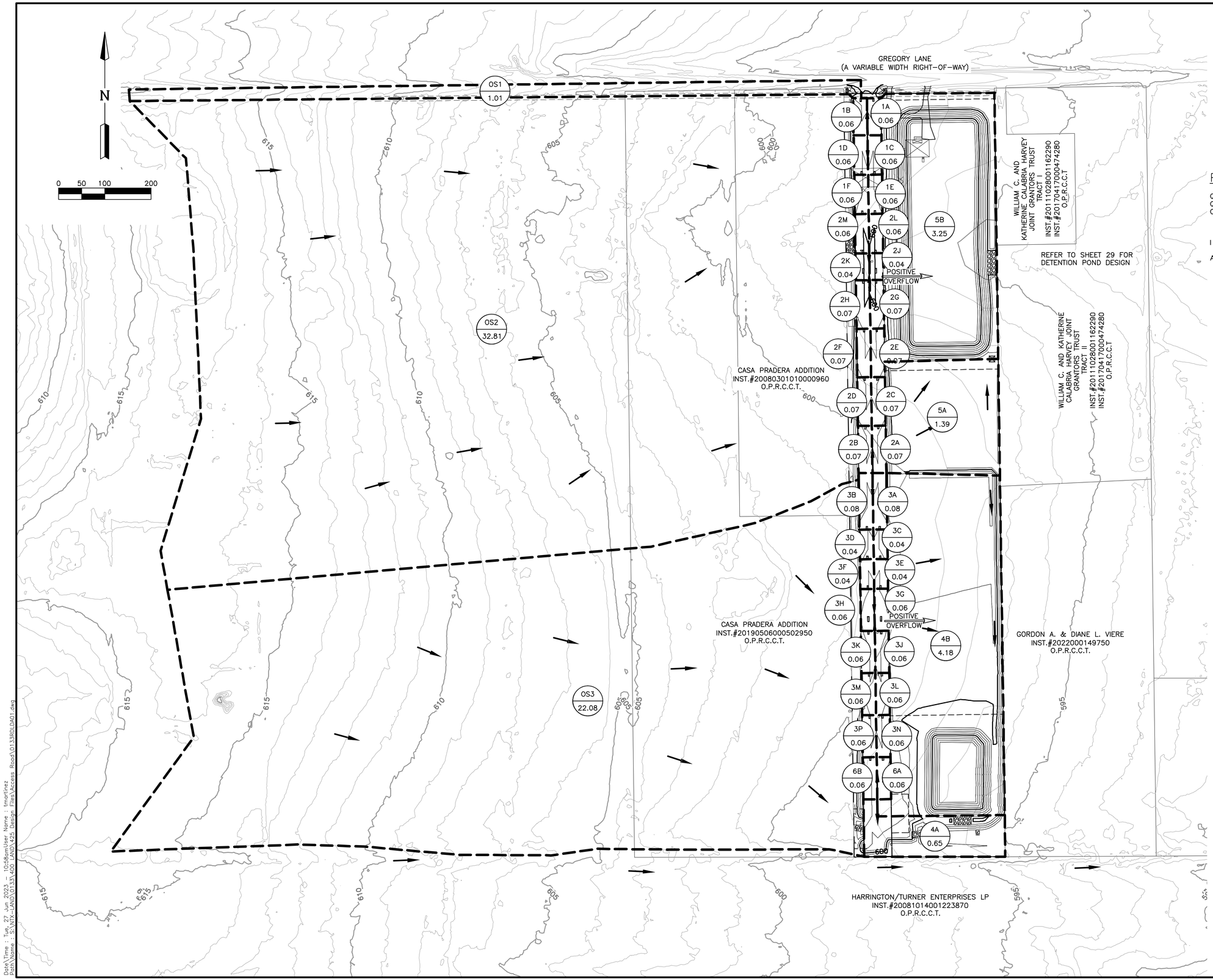
SHEET 13 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 – 10:57am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDAX1.dwg

PANORAMA STREET



LEGEND

- DRAINAGE DIVIDE
- PROPOSED STORM DRAIN SYSTEM
- EXISTING STORM DRAIN SYSTEM
- SURFACE FLOW DIRECTION
- 19A / 8.88 — DESIGNATION / ACREAGE — DRAINAGE AREA

DRAINAGE DESIGN CRITERIA
RATIONAL METHOD – 100 YEAR DESIGN

Q = CIA
Q – FLOW IN CUBIC FEET PER SECOND – CFS
C – RUNOFF COEFFICIENT
OPEN AREA = 0.40
LOW DENSITY RESIDENTIAL = 0.50
RETAIL = 0.90
I – INTENSITY IN INCHES PER HOUR
100 YEAR 15 MINUTE = 7.88
A – DRAINAGE AREA IN ACRES

n ROUGHNESS COEFFICIENT
0.013 (PIPES)
0.017 (STREETS)

BENCHMARKS:

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ELEV 597.995

DATE	REVISION	BY

POST-DEVELOPMENT DRAINAGE AREA MAP

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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VERT: N/A

Date\Time : Tue, 27 Jun 2023 – 10:58am User Name : tmartinez
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PANORAMA STREET

DRAINAGE AREA SUMMARY

DRAINAGE AREA	AREA [ac]	RUNOFF COEFF	CA	T_c [min]	I25 [in/hr]	25-YEAR ANTECEDENT	Q25 [cfs]	I100 [in/hr]	100-YEAR ANTECEDENT	Q100 [cfs]
1A	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
1B	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
1C	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
1D	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
1E	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
1F	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
2A	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2B	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2C	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2D	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2E	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2F	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2G	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2H	0.07	0.90	0.06	15.0	6.48	1.00	0.4	7.88	1.00	0.5
2J	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
2K	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
2L	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
2M	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3A	0.08	0.90	0.07	15.0	6.48	1.00	0.5	7.88	1.00	0.6
3B	0.08	0.90	0.07	15.0	6.48	1.00	0.5	7.88	1.00	0.6
3C	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
3D	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
3E	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
3F	0.04	0.90	0.04	15.0	6.48	1.00	0.2	7.88	1.00	0.3
3G	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3H	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3J	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3K	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3L	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3M	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3N	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3P	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3Q	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
3R	0.06	0.90	0.05	15.0	6.48	1.00	0.3	7.88	1.00	0.4
4A	0.16	0.90	0.14	15.0	6.48	1.00	0.9	7.88	1.00	1.1
4B	0.09	0.90	0.08	15.0	6.48	1.00	0.5	7.88	1.00	0.6
5A	1.39	0.50	0.70	15.0	6.48	1.00	4.5	7.88	1.00	5.5
6A	3.04	0.50	1.52	15.0	6.48	1.00	9.8	7.88	1.00	12.0
OS1	1.01	0.63	0.64	15.0	6.48	1.00	4.1	7.88	1.00	5.0
OS2	32.81	0.50	16.41	15.0	6.48	1.00	106.3	7.88	1.00	129.3
OS3	22.08	0.50	11.04	15.0	6.48	1.00	71.5	7.88	1.00	87.0

$C_{WEIGHTED}=[(AREA_1 * C_1)+(AREA_2 * C_2)]/AREA_{TOTAL}$

C=.63=[(.68*.5)+(.33*.9)]/1.01

DESIGN NODE	Kj	EQUATION
Inlet at end of line	1.25	$LOSS=Kj\frac{V_{OUT}^2}{2g}$
45° bend	0.35	$LOSS=\frac{V_{OUT}^2}{2g} - Kj\frac{V_{IN}^2}{2g}$
60° bend	0.43	
Pipe size change	N/A	
60° wye connection	0.60	
45° wye connection	0.75	
Manhole without inflow (90°)	0.25	
Manhole with inflow (90°)	0.25	

(◐) DENOTES PARTIAL FLOW VELOCITY/DEPTH
(◒) DENOTES NORMAL FLOW VELOCITY/DEPTH
(~) DENOTES HGL AT TOP OF PIPE (UPSTREAM PIPE IN FULL FLOW)
[--] DENOTES TIME OF CONCENTRATION SET SAME AS UPSTREAM JUNCTION.
^ DENOTES SUPERCRITICAL FLOW REGIME.

NOTE: IN A SUPERCRITICAL FLOW REGIME WITH PARTIAL FLOW CONDITIONS, HEAD LOSSES ARE NOT GENERATED AT UPSTREAM JUNCTIONS. JUNCTION HEAD LOSS HAS BEEN SET TO ZERO.

LOCATION Area No.	Inlet No.	STREET	Design Storm Freq (years)	AREA RUNOFF Q=CIA Time of Conc. (min)	Runoff Coeff. "C"	Coeff. Adjust Factor	100 YR Intensity (in/hr) "I"	Area (Acres) "A"	100 Yr Flow cfs	Carry-Over From Upstream Inlet (cfs)	Total Gutter Flow (cfs)	Street Width (feet)	Parab Crown Height (inches)	Gutter Slope (%)	Gutter Depth (feet)	Street Capacity (cfs)	SELECTED INLET Length "Ll" (feet)	Type	Capa-city (cfs)	Inter-cepted Flow (cfs)	Carry-Over To Dnstrm Inlet (cfs)
1A	1A1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	1.6	0.12	0.64	6	CI-ONG	0.4	0.4	0.0
1B	1B1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	1.6	0.12	0.64	6	CI-ONG	0.4	0.4	0.0
1C	1C1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
1D	1D1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
1E	1E1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
1F	1F1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
2A	2A1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2B	2B1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2C	2C1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2D	2D1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2E	2E1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2F	2F1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2G	2G1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2H	2H1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.07	0.5		0.5	25	3	0.9	0.12	0.48	6	CI-ONG	0.5	0.5	0.0
2J	2J1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	0.6	0.12	0.39	10	CI-SAG	1.6	0.3	0.0
2K	2K1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	0.6	0.12	0.39	10	CI-SAG	1.6	0.3	0.0
2L	2L1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
2M	2M1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.6	0.12	0.39	6	CI-ONG	0.4	0.4	0.0
3A	3A1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.08	0.6		0.6	25	3	1.1	0.12	0.53	6	CI-ONG	0.6	0.6	0.0
3B	3B1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.08	0.6		0.6	25	3	1.1	0.12	0.53	6	CI-ONG	0.6	0.6	0.0
3C	3C1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	1.1	0.11	0.53	6	CI-ONG	0.3	0.3	0.0
3D	3D1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	1.1	0.11	0.53	6	CI-ONG	0.3	0.3	0.0
3E	3E1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	1.1	0.11	0.53	6	CI-ONG	0.3	0.3	0.0
3F	3F1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.04	0.3		0.3	25	3	1.1	0.11	0.53	6	CI-ONG	0.3	0.3	0.0
3G	3G1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	10	CI-SAG	1.6	0.4	0.0
3H	3H1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	10	CI-SAG	1.6	0.4	0.0
3J	3J1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3K	3K1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3L	3L1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3M	3M1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3N	3N1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3P	3P1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3Q	3Q1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
3R	3R1	PANORAMA ROAD	100	15	0.90	1.00	7.88	0.06	0.4		0.4	25	3	0.7	0.12	0.42	6	CI-ONG	0.4	0.4	0.0
5A	5A1	PANORAMA ROAD	100	15	0.50	1.00	7.88	1.39	5.5		5.5				0.32		4X4	DROP	5.5	5.5	0.0

DATE	REVISION	BY

DRAINAGE CALCULATIONS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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LJA PROJECT ID NT561-0133
DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: N/A
VERT: N/A

Date\Time : Tue, 27 Jun 2023 - 10:58am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\426 Design Files\Access Road\0133RDLDC01.dwg

COMPUTATION SHEET
HYDRAULIC COMPUTATIONS FOR STORM DRAINS
STORM DRAIN HYDRAULIC CALCULATIONS TABLE

FROM	TO	PIPE LENGTH (FEET)	DRAINAGE AREA INCREMENTAL NO.	AREA	TOTAL AREA	RUNOFF "C"	CA INCR.	CA TOTAL	INCR. KCA 25-YEAR K = 1.00	INCR. KCA 100-YEAR K = 1.00	TOTAL KCA 25-YEAR	TOTAL KCA 100-YEAR	100-YEAR TIME OF CONCENTRATION INLET (MIN)	SYSTEM (MIN)	TRAVEL (MIN)	TOTAL (MIN)	25-YEAR INTENSITY (IN/HR)	100-YEAR INTENSITY (IN/HR)	Q25 RUNOFF (CFS)	Q100 RUNOFF (CFS)
1	2	3	4	5	6	7		8		8		9		10	11	12	13	14	15	16
SD1																				
4+97.99	5+06.07	8.08	INLET 1A1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.3	0.4
4+91.64	4+97.99	6.35	60 BEND		0.06		0.00	0.05	0.00	0.00	0.05	0.05		[15.0]	0.1	15.2	6.48	7.88	0.3	0.4
3+39.96	4+91.64	151.68	60 WYE/ LAT1B	0.06	0.12	0.90	0.05	0.10	0.05 (f)	0.05 (1)	0.10	0.10	15.2	→ 15.2	1.0	16.2	6.45	7.85	0.6	0.8
3+33.61	3+39.96	6.35	60 WYE/ LAT1C	0.06	0.18	0.90	0.05	0.15	0.05 (f)	0.05 (1)	0.15	0.15	15.0	16.2	0.2	16.4	6.32	7.68	0.9	1.2
2+54.96	3+33.61	78.65	60 WYE/ LAT1D	0.06	0.24	0.90	0.05	0.20	0.05 (f)	0.05 (1)	0.20	0.20	15.1	16.4	1.5	17.9	6.29	7.65	1.3	1.5
2+48.61	2+54.96	6.35	60 WYE/ LAT1E	0.06	0.30	0.90	0.05	0.25	0.05 (f)	0.05 (1)	0.25	0.25	15.0	17.9	0.1	18.0	6.09	7.41	1.5	1.9
2+43.47	2+48.61	5.14	60 WYE/ LAT1F	0.06	0.36	0.90	0.05	0.30	0.05 (f)	0.05 (1)	0.30	0.30	15.1	18.0	0.1	18.1	6.08	7.39	1.8	2.2
2+33.32	2+43.47	10.15	45 BEND		0.36		0.00	0.30	0.00	0.00	0.30	0.30		[18.0]	0.1	18.2	6.08	7.39	1.8	2.2
1+50.00	2+33.32	83.32	45 BEND		0.36		0.00	0.30	0.00	0.00	0.30	0.30		[18.0]	1.1	19.3	6.08	7.39	1.8	2.2
LAT1B																				
1+00.00	1+20.78	20.78	INLET 1B1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.2	15.2	6.48	7.88	0.3	0.4
LAT1C																				
1+00.00	1+08.08	8.08	INLET 1C1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	-	15.0	6.48	7.88	0.3	0.4
LAT1D																				
1+00.00	1+20.78	20.78	INLET 1D1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.3	0.4
LAT1E																				
1+00.00	1+08.08	8.08	INLET 1E1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	-	15.0	6.48	7.88	0.3	0.4
LAT1F																				
1+00.00	1+20.78	20.78	INLET 1F1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.3	0.4
SD2																				
5+95.66	6+03.75	8.09	INLET 2A1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	-	15.0	6.48	7.88	0.4	0.5
5+89.31	5+95.66	6.35	60 BEND		0.07		0.00	0.06	0.00	0.00	0.06	0.06		[15.0]	-	15.0	6.48	7.88	0.4	0.5
4+90.64	5+89.31	98.67	60 WYE/ LAT2B	0.07	0.14	0.90	0.06	0.12	0.06 (f)	0.06 (1)	0.12	0.12	15.1	→ 15.1	0.4	15.5	6.47	7.86	0.8	0.9
4+84.29	4+90.64	6.35	60 WYE/ LAT2C	0.07	0.21	0.90	0.06	0.18	0.06 (f)	0.06 (1)	0.18	0.18	15.0	15.5	-	15.5	6.41	7.80	1.2	1.4
3+85.64	4+84.29	98.65	60 WYE/ LAT2D	0.07	0.28	0.90	0.06	0.24	0.06 (f)	0.06 (1)	0.24	0.24	15.1	15.5	0.4	15.9	6.41	7.80	1.5	1.9
3+79.29	3+85.64	6.35	60 WYE/ LAT2E	0.07	0.35	0.90	0.06	0.30	0.06 (f)	0.06 (1)	0.30	0.30	15.0	15.9	-	15.9	6.36	7.73	1.9	2.3
2+80.64	3+79.29	98.65	60 WYE/ LAT2F	0.07	0.42	0.90	0.06	0.36	0.06 (f)	0.06 (1)	0.36	0.36	15.1	15.9	0.4	16.3	6.36	7.73	2.3	2.8
2+74.29	2+80.64	6.35	60 WYE/ LAT2G	0.07	0.49	0.90	0.06	0.42	0.06 (f)	0.06 (1)	0.42	0.42	15.4	16.3	0.1	16.4	6.31	7.67	2.6	3.2
2+57.20	2+74.29	17.09	60 WYE/ LAT2H	0.07	0.56	0.90	0.06	0.48	0.06 (f)	0.06 (1)	0.48	0.48	15.8	16.4	0.1	16.5	6.29	7.65	3.0	3.7
2+50.85	2+57.20	6.35	60 WYE/ LAT2J	0.04	0.60	0.90	0.04	0.52	0.04 (f)	0.04 (1)	0.52	0.52	15.4	16.5	-	16.5	6.28	7.64	3.3	4.0
2+40.50	2+50.85	10.35	60 WYE/ LAT2K	0.04	0.64	0.90	0.04	0.56	0.04 (f)	0.04 (1)	0.56	0.56	15.9	16.5	0.1	16.6	6.28	7.64	3.5	4.3
1+50.00	2+40.50	90.50	MH/ LAT 2L	0.12	0.76	0.90	0.11	0.67	0.11 (f)	0.11 (1)	0.67	0.67	15.8	16.6	0.5	17.1	6.27	7.62	4.2	5.1
LAT2B																				
1+00.00	1+20.78	20.78	INLET 2B1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.4	0.5
LAT2C																				
1+00.00	1+08.08	8.08	INLET 2C1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	-	15.0	6.48	7.88	0.4	0.5
LAT2D																				
1+00.00	1+20.78	20.78	INLET 2D1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.4	0.5
LAT2E																				
1+00.00	1+08.08	8.08	INLET 2E1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	-	15.0	6.48	7.88	0.4	0.5
LAT2F																				
1+00.00	1+20.78	20.78	INLET 2F1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	0.1	15.1	6.48	7.88	0.4	0.5
LAT2G																				
1+00.00	1+08.08	8.08	INLET 2G1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	0.4	15.4	6.48	7.88	0.4	0.5
LAT2H																				
1+00.00	1+20.78	20.78	INLET 2H1	0.07	0.07	0.90	0.06	0.06	0.06 (f)	0.06 (1)	0.06	0.06	15.0	→ 15.0	0.8	15.8	6.48	7.88	0.4	0.5
LAT2J																				
1+00.00	1+08.08	8.08	INLET 2J1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	0.4	15.4	6.48	7.88	0.3	0.3
LAT2K																				
1+00.00	1+20.78	20.78	INLET 2K1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	0.9	15.9	6.48	7.88	0.3	0.3
LAT2L																				
1+16.70	1+24.78	8.08	INLET 2L1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.2	15.2	6.48	7.88	0.3	0.4
1+10.35	1+16.70	6.35	45 BEND		0.06		0.00	0.05	0.00	0.00	0.05	0.05		[15.0]	0.3	15.5	6.48	7.88	0.3	0.4
1+00.00	1+10.35	10.35	60 WYE/ LAT2M	0.06	0.12	0.90	0.05	0.10	0.05 (f)	0.05 (1)	0.10	0.10	15.5	→ 15.5	0.3	15.8	6.41	7.80	0.6	0.8
LAT2M																				
1+00.00	1+20.08	20.08	INLET 2M1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.5	15.5	6.48	7.88	0.3	0.4
SD3																				
7+23.09	7+31.17	8.08	INLET 3A1	0.08	0.08	0.90	0.07	0.07	0.07 (f)	0.07 (1)	0.07	0.07	15.0	→ 15.0	0.4	15.4	6.48	7.88	0.5	0.6
7+16.74	7+23.09	6.35	60 BEND		0.08		0.00	0.07	0.00	0.00	0.07	0.07		[15.0]	0.3	15.7	6.48	7.88	0.5	0.6
6+59.10	7+16.74	57.64	60 WYE/ LAT3B	0.08	0.16	0.90	0.07	0.14	0.07 (f)	0.07 (1)	0.14	0.14	16.1	→ 16.1	1.6	17.7	6.33	7.70	0.9	1.1
6+52.74	6+59.10	6.36	60 WYE/ LAT3C	0.04	0.20	0.90	0.04	0.18	0.04 (f)	0.04 (1)	0.18	0.18	15.7	17.7	0.1	17.8	6.12	7.44	1.1	1.3
5+95.04	6+52.74	57.70	60 WYE/ LAT3D	0.04	0.24	0.90	0.04	0.22	0.04 (f)	0.04 (1)	0.22	0.22	16.9	17.8	1.0	18.8	6.11	7.42	1.3	1.6
5+88.69	5+95.04	6.35	60 WYE/ LAT3E	0.04	0.28	0.90	0.04	0.26	0.04 (f)	0.04 (1)	0.26	0.26	15.7	18.8	0.1	18.9	5.97	7.26	1.6	1.9
5+26.35	5+88.69	62.34	60 WYE/ LAT3F	0.04	0.32	0.90	0.04	0.30	0.04 (f)	0.04 (1)	0.30	0.30	16.9	18.9	0.8	19.7	5.96	7.25	1.8	2.2
5+20.00	5+26.35	6.35	60 WYE/ LAT3G	0.06	0.38	0.90	0.05	0.35	0.05 (f)	0.05 (1)	0.35	0.35	15.6	19.7	0.1	19.8	5.85	7.12	2.0	2.5
5+01.07	5+20.00	18.93	60 WYE/ LAT3H	0.06	0.44	0.90	0.05	0.40	0.05 (f)	0.05 (1)	0.40	0.40	16.6	19.8	0.2	20.0	5.84	7.10	2.3	2.8
4+10.07	5+01.07	91.00	MH/ LAT3K/ LAT3J	0.12	0.56	0.90	0.11	0.51	0.11 (f)	0.11 (1)	0.51	0.51	16.4	20.0	1.7	21.7	5.81	7.07	3.0	3.6
3+19.07	4+10.07	91.00	MH/ LAT3L/ LAT3M	0.12	0.68	0.90	0.11	0.62	0.11 (f)	0.11 (1)	0.62	0.62	16.4	21.7	1.4	23.1	5.59	6.79	3.5	4.2
2+18.61	3+19.07	100.46	PT/ MH/ LAT3P/ LAT3N	0.12	0.80	0.90	0.11	0.73	0.11 (f)	0.11 (1)	0.73	0.73	16.2	23.1	1.4	24.5	5.40	6.56	3.9	4.8
1+50.00	2+18.61	68.61	PC		0.80		0.00	0.73	0.00	0.00	0.73	0.73		[23.1]	1.0	25.5	5.40	6.56	3.9	4.8
LAT3B																				
1+00.00	1+20.78	20.78	INLET 3B1	0.08	0.08	0.90	0.07	0.07	0.07 (f)	0.07 (1)	0.07	0.07	15.0	→ 15.0	1.1	16.1	6.48	7.88	0.5	0.6
LAT3C																				
1+00.00	1+08.08	8.08	INLET 3C1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	0.7	15.7	6.48	7.88	0.3	0.3
LAT3D																				
1+00.00	1+20.78	20.78	INLET 3D1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	1.9	16.9	6.48	7.88	0.3	0.3
LAT3E																				
1+00.00	1+08.08	8.08	INLET 3E1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	0.7	15.7	6.48	7.88	0.3	0.3
LAT3F																				
1+00.00	1+20.78	20.78	INLET 3F1	0.04	0.04	0.90	0.04	0.04	0.04 (f)	0.04 (1)	0.04	0.04	15.0	→ 15.0	1.9	16.9	6.48	7.88	0.3	0.3
LAT3G																				
1+00.00	1+08.08	8.08	INLET 3G1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.6	15.6	6.48	7.88	0.3	0.4
LAT3H																				
1+00.00	1+20.78	20.78	INLET 3H1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	1.6	16.6	6.48	7.88	0.3	0.4
LAT3J																				
1+00.00	1+07.00	7.00	INLET 3J1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.5	15.5	6.48	7.88	0.3	0.4
LAT3K																				
1+00.00	1+18.00	18.00	INLET 3K1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	1.4	16.4	6.48	7.88	0.3	0.4
LAT3L																				
1+00.00	1+07.00	7.00	INLET 3L1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.5	15.5	6.48	7.88	0.3	0.4
LAT3M																				
1+00.00	1+18.00	18.00	INLET 3M1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	1.4	16.4	6.48	7.88	0.3	0.4
LAT3N																				
1+00.00	1+07.00	7.00	INLET 3N1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.4	15.4	6.48	7.88	0.3	0.4
LAT3P																				
1+00.00	1+18.00	18.00	INLET 3P1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	1.2	16.2	6.48	7.88	0.3	0.4
SD4																				
1+13.70	1+55.26	41.56	24" SLOPED END HEADWALL		0.00		0.00	0.00	0.00	0.00	0.00	0.00		[0.0]	0.1	0.1	11.70	14.26	0.0	0.0
SD5																				
1+90.21	2+36.45	46.24	INLET 5A1	1.39	1.39	0.50	0.70	0.70	0.70 (f)	0.70 (1)	0.70	0.70	15.0	→ 15.0	0.3	15.3	6.48	7.88	4.5	5.5
1+78.72	1+90.21	11.49	45 BEND		1.39		0.00	0.70	0.00	0.00	0.70	0.70		[15.0]	0.1	15.4	6.48	7.88	4.5	5.5
1+46.40	1+78.72	32.32	45 BEND		1.39		0.00	0.70	0.00	0.00	0.70	0.70		[15.0]	0.2	15.6	6.48	7.88	4.5	5.5
SD6																				
3+15.50	3+23.58	8.08	INLET 6A1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.4	15.4	6.48	7.88	0.3	0.4
3+09.15	3+15.50	6.35	60 BEND		0.06		0.00	0.05	0.00	0.00	0.05	0.05		[15.0]	0.4	15.8	6.48	7.88	0.3	0.4
2+86.59	3+09.15	22.56	60 WYE/ LAT6B	0.06	0.12	0.90	0.05	0.10	0.05 (f)	0.05 (1)	0.10	0.10	15.8	→ 15.8	0.8	16.6	6.37	7.75	0.6	0.8
2+64.33	2+86.59	22.26	45 BEND		0.12		0.00	0.10	0.00	0.00	0.10	0.10		[15.8]	0.8	17.4	6.37	7.75	0.6	0.8
1+50.00	2+64.33	114.33	45 BEND		0.12		0.00	0.10	0.00	0.00	0.10	0.10		[15.8]	4.3	21.7	6.37	7.75	0.6	0.8
LAT6B																				
1+00.00	1+20.78	20.78	INLET 6B1	0.06	0.06	0.90	0.05	0.05	0.05 (f)	0.05 (1)	0.05	0.05	15.0	→ 15.0	0.8	15.8	6.48	7.88	0.3	0.4

FROM	TO	100-YEAR INLET BYPASS NODE (CFS)	SYSTEM (CFS)	Q PIPE (CFS)	BARREL QTY	PIPE SIZE (IN)	BOX SIZE (FT) SPAN	RISE	n	Sf (FT/FT)	HGL D/S (ELEV)	HGL U/S (ELEV)	V_1 (IN) (FT/SEC)	V_2 (OUT) (FT/SEC)	$V_1^2/2G$ (FT)	$V_2^2/2G$ (FT)	Kj	$KjV_1^2/2G$ (FT)	Hk (FT)	DESIGN HGL (ELEV)	INVERT ELEV FROM (FT)	INVERT ELEV TO (FT)	PIPE SLOPE (FT/FT)	T/C ELEV (FT)	COMMENTS
1	2		17	18		19			20	21	22	23	24	25	26	27	28	29	30	31	32	33		34	
SD1																									
4+97.99	5+06.07	0.0	-	0.4		18			0.013	0.0000	◐ 596.67	◐ 596.67	0	^ 1.01	0.00	0.02	1.25	0	0.10	596.77	596.19	596.26	0.0090	600.76	
4+91.64	4+97.99		-	0.4		18			0.013	0.0000	◐ 596.57	◐ 596.57	^ 1.01	^ 1.11	0.02	0.02	0.43	0.01	0.10	596.67	596.12	596.19	0.0100	600.85	
3+39.96	4+91.64	0.0	-	0.8		18			0.013	0.0001	596.45	◐ 596.47	^ 1.11	^ 2.54	0.02	0.10	0.60	0.01	0.10	596.57	594.61	596.12	0.0100	600.98	
3+33.61	3+39.96	0.0	-	1.2		18			0.013	0.0001	596.35	596.35	^ 2.54	0.65	0.10	0.01	0.60	0.06	0.10	596.45	594.54	594.61	0.0100	601.19	
2+54.96	3+33.61	0.0	-	1.5		18			0.013	0.0002	596.23	596.25	0.65	0.87	0.01	0.01	0.60	0.01	0.10	596.35	593.76	594.54	0.0100	601.15	
2+48.61	2+54.96	0.0	-	1.9		18			0.013	0.0003	596.13	596.13	0.87	1.05	0.01	0.02	0.60	0.01	0.10	596.23	593.69	593.76	0.0100	600.68	
2+43.47	2+48.61	0.0	-	2.2		18			0.013	0.0004	596.03	596.03	1.05	1.25	0.02	0.02	0.60	0.01	0.10	596.13	593.64	593.69	0.0100	600.64	
2+33.32	2+43.47		-	2.2		18			0.013	0.0004	595.93	595.93	1.25	1.25	0.02	0.02	0.35	0.01	0.10	596.03	593.54	593.64	0.0100	600.62	
1+50.00	2+33.32		-	2.2		18			0.013	0.0004	595.80	595.83	1.25	1.25	0.02	0.02	0.35	0.01	0.10	595.93	587.10	593.54	0.0773	600.57	
												595.80													NORTH POND 100YR WSEL
LAT1B																									
1+00.00	1+20.78	0.0	-	0.4		18			0.013	0.0000	◐ 596.57	◐ 596.57	0	^ 1.49	0.00	0.03	1.25	0	0.10	596.67	596.12	596.26	0.0070	600.76	
												596.57													
LAT1C																									
1+00.00	1+08.08	0.0	-	0.4		18			0.013	0.0000	596.45	◒ 596.80	0	v 8.87	0.00	1.22	1.25	0	-	596.80	594.61	596.71	0.2600	601.21	
												596.45													
LAT1D																									
1+00.00	1+20.78	0.0	-	0.4		18			0.013	0.0000	596.35	◒ 596.82	0	v 6.44	0.00	0.64	1.25	0	-	596.82	594.54	596.71	0.1040	601.21	
												596.35													
LAT1E																									
1+00.00	1+08.08	0.0	-	0.4		18			0.013	0.0000	596.23	◒ 596.29	0	v 9.33	0.00	1.35	1.25	0	-	596.29	593.76	596.20	0.3020	600.70	
												596.23													
LAT1F																									
1+00.00	1+20.78	0.0	-	0.4		18			0.013	0.0000	596.13	◒ 596.31	0	v 6.78	0.00	0.71	1.25	0	-	596.31	593.69	596.20	0.1210	600.70	
												596.13													
SD2																									
5+95.66	6+03.75	0.0	-	0.5		18			0.013	0.0000	◐ 598.50	◒ 598.56	0	v 3.00	0.00	0.14	1.25	0	-	598.56	598.26	598.34	0.0100	602.84	
5+89.31	5+95.66		-	0.5		18			0.013	0.0000	◐ 598.50	◐ 598.50	v 3.00	v 2.65	0.14	0.11	0.43	0.06	-	598.50	598.20	598.26	0.0100	602.80	
4+90.64	5+89.31	0.0	-	0.9		18			0.013	0.0001	◐ 597.58	◒ 598.50	v 2.65	v 3.68	0.11	0.21	0.60	0.07	-	598.50	597.21	598.20	0.0100	602.75	
4+84.29	4+90.64	0.0	-	1.4		18			0.013	0.0002	◐ 597.58	◒ 597.58	v 3.68	v 4.14	0.21	0.27	0.60	0.13	-	597.58	597.15	597.21	0.0100	601.86	
3+85.64	4+84.29	0.0	-	1.9		18			0.013	0.0003	◐ 596.67	◒ 597.58	v 4.14	v 4.49	0.27	0.31	0.60	0.16	-	597.58	596.16	597.15	0.0100	601.80	
3+79.29	3+85.64	0.0	-	2.3		18			0.013	0.0005	◐ 596.67	◐ 596.67	v 4.49	v 4.41	0.31	0.30	0.60	0.19	-	596.67	596.10	596.16	0.0100	600.91	
2+80.64	3+79.29	0.0	-	2.8		18			0.013	0.0007	◐ 596.60	◐ 596.67	v 4.41	v 4.51	0.30	0.32	0.60	0.18	-	596.67	595.11	596.10	0.0100	600.86	
2+74.29	2+80.64	0.0	-	3.2		18			0.013	0.0009	◐ 596.49	◐ 596.50	v 4.51	^ 1.89	0.32	0.06	0.60	0.19	0.10	596.60	595.05	595.11	0.0100	600.09	
2+57.20	2+74.29	0.0	-	3.7		18			0.013	0.0012	◐ 596.37	◐ 596.39	^ 1.89	^ 2.20	0.06	0.08	0.60	0.04	0.10	596.49	594.88	595.05	0.0100	600.08	
2+50.85	2+57.20	0.0	-	4.0		18			0.013	0.0014	◐ 596.26	◐ 596.27	^ 2.20	^ 2.32	0.08	0.08	0.60	0.05	0.10	596.37	594.81	594.88	0.0100	600.06	
2+40.50	2+50.85	0.0	-	4.3		18			0.013	0.0017	◐ 596.14	◐ 596.16	^ 2.32	^ 2.56	0.08	0.10	0.60	0.05	0.10	596.26	594.71	594.81	0.0100	600.07	
1+50.00	2+40.50	0.0	-	5.1		18			0.013	0.0024	595.80	◐ 596.02	^ 2.56	^ 3.12	0.10	0.15	0.25	0.03	0.12	596.14	587.10	594.71	0.0841	600.10	
												595.80													NORTH POND 100YR WSEL
LAT2B																									
1+00.00	1+20.78	0.0	-	0.5		18			0.013	0.0000	◐ 598.50	◒ 598.58	0	v 2.65	0.00	0.11	1.25	0	-	598.58	598.20	598.34	0.0070	602.84	
												598.50													
LAT2C																									
1+00.00	1+08.08	0.0	-	0.5		18			0.013	0.0000	◐ 597.58	◐ 597.58	0	v 3.57	0.00	0.20	1.25	0	-	597.58	597.21	597.39	0.0220	601.89	
												597.58													
LAT2D																									
1+00.00	1+20.78	0.0	-	0.5		18			0.013	0.0000	◐ 597.58	◒ 597.60	0	v 3.20	0.00	0.16	1.25	0	-	597.60	597.15	597.39	0.0120	601.89	
												597.58													
LAT2E																									
1+00.00	1+08.08	0.0	-	0.5		18			0.013	0.0000	◐ 596.67	◐ 596.67	0	v 2.94	0.00	0.13	1.25	0	-	596.67	596.16	596.45	0.0360	600.95	
												596.67													
LAT2F																									
1+00.00	1+20.78	0.0	-	0.5		18			0.013	0.0000	◐ 596.67	◐ 596.67	0	v 2.94	0.00	0.13	1.25	0	-	596.67	596.10	596.45	0.0170	600.95	
												596.67													
LAT2G																									
1+00.00	1+08.08	0.0	-	0.5		18			0.013	0.0000	◐ 596.60	◐ 596.60	0	^ 0.38	0.00	0.00	1.25	0	0.10	596.70	595.11	595.60	0.0600	600.10	
												596.60													
LAT2H																									
1+00.00	1+20.78	0.0	-	0.5		18			0.013	0.0000	◐ 596.49	◐ 596.49	0	^ 0.43	0.00	0.00	1.25	0	0.10	596.59	595.05	595.60	0.0270	600.10	
												596.49													
LAT2J																									
1+00.00	1+08.08	0.0	-	0.3		18			0.013	0.0000	◐ 596.37	◐ 596.37	0	^ 0.32	0.00	0.00	1.25	0	0.10	596.47	594.88	595.56	0.0840	600.06	
												596.37													
LAT2K																									
1+00.00	1+20.78	0.0	-	0.3		18			0.013	0.0000	◐ 596.26	◐ 596.26	0	^ 0.39	0.00	0.00	1.25	0	0.10	596.36	594.81	595.56	0.0360	600.06	
												596.26													
LAT2L																									
1+16.70	1+24.78	0.0	-	0.4		18			0.013	0.0000	◐ 596.34	◐ 596.34	0	^ 0.54	0.00	0.00	1.25	0	0.10	596.44	595.37	595.69	0.0400	600.19	
1+10.35	1+16.70		-	0.4		18			0.013	0.0000	◐ 596.24	◐ 596.24	^ 0.54	^ 0.37	0.00	0.00	0.43	0	0.10	596.34	595.12	595.37	0.0395	600.17	
1+00.00	1+10.35	0.0	-	0.8		18			0.013	0.0001	◐ 596.14	◐ 596.14	^ 0.37	^ 0.61	0.00	0.01	0.60	0	0.10	596.24	594.71	595.12	0.0395	600.14	
												596.14													
LAT2M																									
1+00.00	1+20.08	0.0	-	0.4		18			0.013	0.0000	◐ 596.24	◐ 596.24	0	^ 0.67	0.00	0.01	1.25	0	0.10	596.34	595.12	595.69	0.0280	600.19	
												596.24													
SD3																									
7+23.09	7+31.17	0.0	-	0.6		18			0.013	0.0000	599.81	599.81	0	0.31	0.00	0.00	1.25	0	0.10	599.91	597.92	598.01	0.0110	602.51	
7+16.74	7+23.09		-	0.6		18			0.013	0.0000	599.71	599.71	0.31	0.31	0.00	0.00	0.43	0	0.10	599.81	597.85	597.92	0.0110	602.46	
6+59.10	7+16.74	0.0	-	1.1		18			0.013	0.0001	599.60	599.61	0.31	0.61	0.00	0.01	0.60	0	0.10	599.71	597.22	597.85	0.0110	602.39	
6+52.74	6+59.10	0.0	-	1.3		18			0.013	0.0002	599.50	599.50	0.61	0.76	0.01	0.01	0.60	0.01	0.10	599.60	597.15	597.22	0.0110	601.76	
5+95.04	6+52.74	0.0	-	1.6		18			0.013	0.0002	599.39	599.40	0.76	0.92	0.01	0.01	0.60	0.01	0.10	599.50	596.51	597.15	0.0110	601.69	
5+88.69	5+95.04	0.0	-	1.9		18			0.013	0.0003	599.29	599.29	0.92	1.07	0.01	0.02	0.60	0.01	0.10	599.39	596.44	596.51	0.0110	601.06	
5+26.35	5+88.69	0.0	-	2.2		18			0.013	0.0004	599.17	599.19	1.07	1.23	0.02	0.02	0.60	0.01	0.10	599.29	595.76	596.44	0.0110	600.99	
5+20.00	5+26.35	0.0	-	2.5		18			0.013	0.0006	599.07	599.07	1.23	1.41	0.02	0.03	1.00	0.02	0.10	599.17	595.69	595.76	0.0110	600.68	
5+01.07	5+20.00	0.0	-	2.8		18			0.013	0.0007	598.96	598.97	1.41	1.61	0.03	0.04	0.60	0.02	0.10	599.07	595.48	595.69	0.0110	600.69	
4+10.07	5+01.07	0.0	-	3.6		27			0.013	0.0001	598.85	598.86	1.61	0.91	0.04	0.01	0.25	0.01	0.10	598.96	595.12	595.48	0.0040	600.82	
3+19.07	4+10.07	0.0	-	4.2		27			0.013	0.0002	598.73	598.75	0.91	1.06	0.01	0.02	0.25	0.00	0.10	598.85	594.75	595.12	0.0040	601.39	
2+18.61	3+19.07	0.0	-	4.8		27			0.013	0.0002	598.61	598.63	1.06	1.2	0.02	0.02	0.25	0.01	0.10	598.73	592.40	594.75	0.0230	602.10	
1+50.00	2+18.61		-	4.8		27			0.013	0.0002	598.60	598.61	1.2	1.2	0.02	0.02	N/A	-	-	598.61	590.80	592.40	0.0230	603.01	
												598.60													SOUTH POND 100YR WSEL
LAT3B																									
1+00.00	1+20.78	0.0	-	0.6		18			0.013	0.0000	599.71	599.71	0	0.31	0.00	0.00	1.25	0	0.10	599.81	597.85	598.01	0.0080	602.51	
												599.71													
LAT3C																									
1+00.00	1+08.08	0.0	-	0.3		18			0.013	0.0000	599.60	599.60	0	0.18	0.00	0.00	1.25	0	0.10	599.70	597.22	597.31	0.0110	601.81	
												599.60													
LAT3D																									
1+00.00	1+20.78	0.0	-	0.3		18			0.013	0.0000	599.50	599.50	0	0.18	0.00	0.00	1.25	0	0.10	599.60	597.15	597.31	0.0080	601.81	
												599.50													
LAT3E																									
1+00.00	1+08.08	0.0	-	0.3		18			0.013	0.0000	599.39	599.39	0	0.18	0.00	0.00	1.25	0	0.10	599.49	596.51	596.60	0.0110	601.10	
												599.39													
LAT3F																									
1+00.00	1+20.78	0.0	-	0.3		18			0.013	0.0000	599.29	599.29	0	0.18	0.00	0.00	1.25	0	0.10	599.39	596.44	596.60	0.0080	601.10	
												599.29													
LAT3G																									
1+00.00	1+08.08	0.0	-	0.4		18			0.013	0.0000	599.17	599.17	0	0.22	0.00	0.00	1.25	0	0.10	599.27	595.76	596.18	0.0520	600.68	
												599.17													
LAT3H																									
1+00.00	1+20.78	0.0	-	0.4		18			0.013	0.0000	599.07	599.07	0	0.22	0.00	0.00	1.25	0	0.10	599.17	595.69	596.18	0.0240	600.68	
												599.07													
LAT3J																									
1+00.00	1+07.00	0.0	-	0.4		18			0.013	0.0000	598.96	598.96	0	0.22	0.00	0.00	1.25	0	0.10	599.06	595.48	596.26	0.1110	600.76	
												598.96													
LAT3K																									
1+00.00	1+18.00	0.0	-	0.4		18			0.013	0.0000	598.96	598.96	0	0.22	0.00	0.00	1.25	0	0.10	599.06	595.48	596.26	0.0430	600.76	
												598.96													
LAT3L																									
1+00.00	1+07.00	0.0	-	0.4		18			0.013	0.0000	598.85	598.85	0	0.22	0.00	0.00	1.25	0	0.10	598.95	595.12	596.89	0.2530	601.39	
												598.85													
LAT3M																									
1+00.00	1+18.00	0.0	-	0.4		18			0.013	0.0000	598.85	598.85	0	0.22	0.00	0.00	1.25	0	0.10	598.95	595.12	596.89	0.0980	601.39	
												598.85													
LAT3N																									
1+00.00	1+07.00	0.0	-	0.4		18			0.013	0.0000	598.73	◐ 598.73	0	^ 0.26	0.00	0.00	1.25	0	0.10	598.83	595.50	597.52	0.2890	602.02	
												598.73													
LAT3P																									
1+00.00	1+18.00	0.0	-	0.4		18			0.013	0.0000	598.73	◐ 598.73	0	^ 0.26	0.00	0.00	1.25	0	0.10	598.83	594.75	597.52	0.1540	602.02	
												598.73													
SD4																									
1+13.70	1+55.26	-16.0	(16.0)	16.0		18			0.013	0.0232	↬ 597.05	598.01	0	9.05	0.00	1.27	N/A	0	-	598.01	595.55	596.10	0.0130	596.10	
												596.41													
SD5																									
1+90.21	2+36.45	0.0	-	5.5		21			0.013	0.0012	596.05	596.11	0	2.29	0.00	0.08	1.25	0	0.10	596.21	589.64	592.20	0.0550	597.20	
1+78.72	1+90.21		-	5.5		21			0.013	0.0012	595.94	595.95	2.29	2.29	0.08	0.08	0.35	0.03	0.10	596.05	588.97	589.64	0.0580	597.24	
1+46.40	1+78.72		-	5.5		21			0.013	0.0012	595.80	595.84	2.29	2.29	0.08	0.08	0.35	0.03	0.10	595.94	587.10	588.97	0.0580	595.18	
												595.80													
SD6																									
3+15.50	3+23.58	0.0	-	0.4		18			0.013	0.0000	◐ 599.01	◐ 599.01	0	^ 0.38	0.00	0.00	1.25	0	0.10	599.11	597.82	598.16	0.0420	602.66	
3+09.15	3+15.50		-	0.4		18			0.013	0.0000	◐ 598.91	◐ 598.91	^ 0.38	^ 0.29	0.00	0.00	0.43	0	0.10	599.01	597.55	597.82	0.0424	602.69	
2+86.59	3+09.15	0.0	-	0.8		18			0.013	0.0001	598.81	◐ 598.81	^ 0.29	^ 0.49	0.00	0.00	0.60	0	0.10	598.91	596.59	597.55	0.0424	602.73	
2+64.33	2+86.59		-	0.8		18			0.013	0.0001	598.71	598.71	^ 0.49	0.44	0.00	0.00	0.35	0	0.10	598.81	595.65	596.59	0.0424	602.89	
1+50.00	2+64.33		-	0.8		18			0.013	0.0001	598.60	598.61	0.44	0.44	0.00	0.00	0.35	0	0.10	598.71	590.80	595.65	0.0424	603.00	
												598.60													
LAT6B																									
1+00.00	1+20.78	0.0	-	0.4		18			0.013	0.0000	◐ 598.91	◐ 598.91	0	^ 0.45	0.00	0.00	1.25	0	0.10	599.01	597.55	598.16	0.0290	602.66	
												598.91													

DESIGN NODE	Kj	EQUATION
Inlet at end of line	1.25	$LOSS = Kj \frac{V_{OUT}^2}{2g}$
45° bend	0.35	
60° bend	0.43	
Pipe size change	N/A	
60° wye connection	0.60	$LOSS = \frac{V_{OUT}^2}{2g} - Kj \frac{V_{IN}^2}{2g}$
45° wye connection	0.75	
Manhole without inflow (90°)	0.25	
Manhole with inflow (90°)	0.25	

(◐) DENOTES PARTIAL FLOW VELOCITY/DEPTH
(◒) DENOTES NORMAL FLOW VELOCITY/DEPTH
(↬) DENOTES HGL AT TOP OF PIPE (UPSTREAM PIPE IN FULL FLOW)
[--] DENOTES TIME OF CONCENTRATION SET SAME AS UPSTREAM JUNCTION.
^ DENOTES SUPERCRITICAL FLOW REGIME.

NOTE: IN A SUPERCRITICAL FLOW REGIME WITH PARTIAL FLOW CONDITIONS, HEAD LOSSES ARE NOT GENERATED AT UPSTREAM JUNCTIONS. JUNCTION HEAD LOSS HAS BEEN SET TO ZERO.

DATE	REVISION	BY

DRAINAGE CALCULATIONS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

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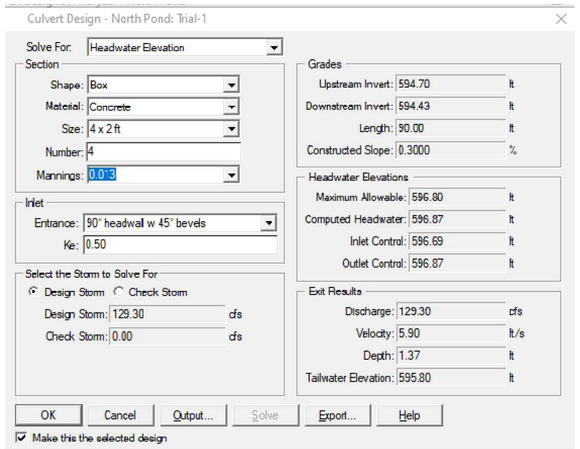
LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: N/A
VERT: N/A
SHEET 16 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 - 10:58amUser Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDC01.dwg

PANORAMA STREET



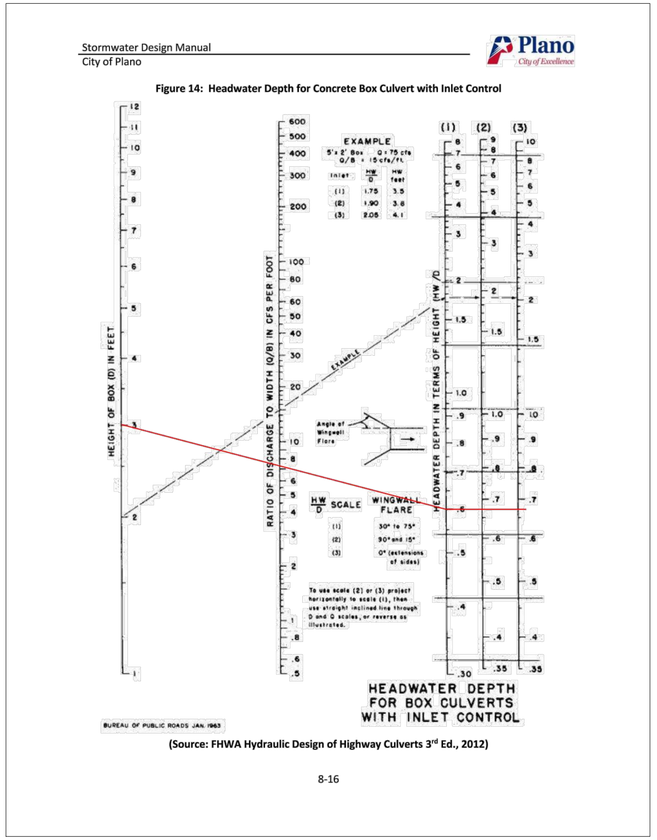

Stormwater Design Manual
City of Plano

Figure 14: Headwater Depth for Concrete Box Culvert with Inlet Control

(Source: FHWA Hydraulic Design of Highway Culverts 3rd Ed., 2012)

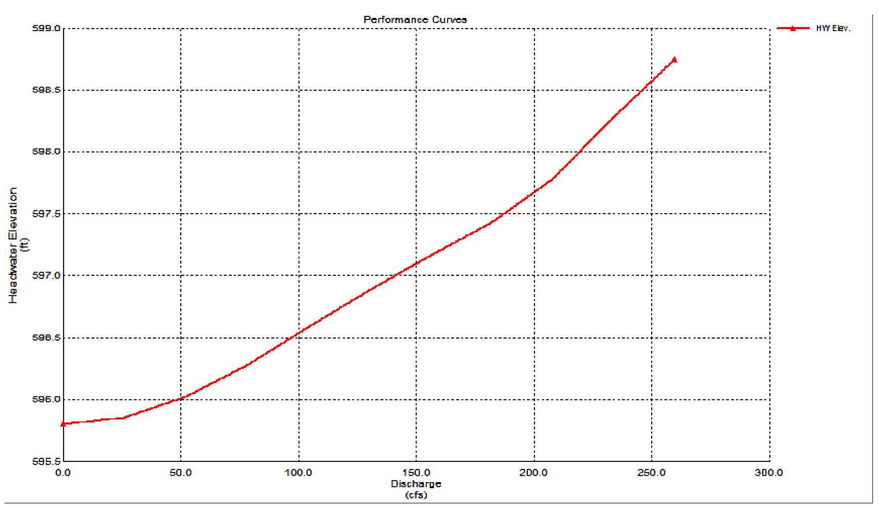
8-16

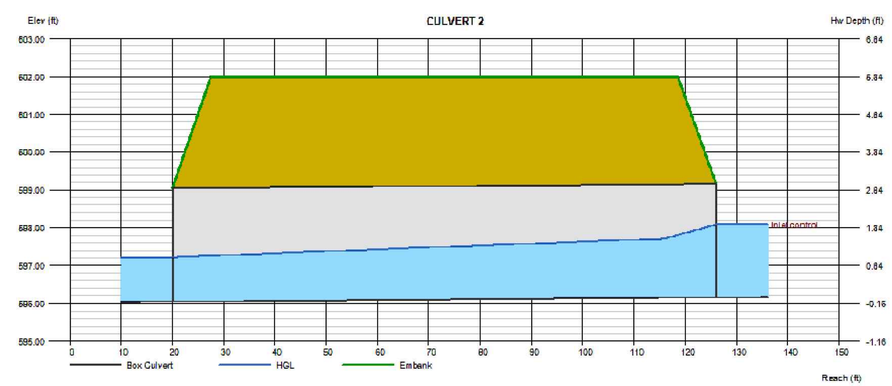
DESIGN NODE	Kj	EQUATION
Inlet at end of line	1.25	$LOSS=Kj\frac{V_{OUT}^2}{2g}$
45° bend	0.35	
60° bend	0.43	
Pipe size change	N/A	
60° wye connection	0.60	$LOSS=\frac{V_{OUT}^2}{2g} - Kj\frac{V_{IN}^2}{2g}$
45° wye connection	0.75	
Manhole without inflow (90°)	0.25	
Manhole with inflow (90°)	0.25	

(•) DENOTES PARTIAL FLOW VELOCITY/DEPTH
(•) DENOTES NORMAL FLOW VELOCITY/DEPTH
(•) DENOTES HGL AT TOP OF PIPE (UPSTREAM PIPE IN FULL FLOW)
[--] DENOTES TIME OF CONCENTRATION SET SAME AS UPSTREAM JUNCTION.
^ DENOTES SUPERCRITICAL FLOW REGIME.

NOTE: IN A SUPERCRITICAL FLOW REGIME WITH PARTIAL FLOW CONDITIONS, HEAD LOSSES ARE NOT GENERATED AT UPSTREAM JUNCTIONS. JUNCTION HEAD LOSS HAS BEEN SET TO ZERO.

CULVERT 1





Q			Veloc		Depth		HGL			
Total	Pipe	Over	Dn	Up	Dn	Up	Dn	Up	Hw	HwD
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)	
83.00	83.00	0.00	6.06	4.40	13.70	18.87	597.19	597.73	598.03	0.62
84.00	84.00	0.00	6.08	4.43	13.81	18.98	597.20	597.74	598.04	0.63
85.00	85.00	0.00	6.11	4.46	13.92	19.09	597.21	597.75	598.05	0.63
86.00	86.00	0.00	6.13	4.48	14.02	19.20	597.22	597.76	598.07	0.64
87.00	87.00	0.00	6.16	4.51	14.13	19.31	597.23	597.77	598.09	0.64

DATE	REVISION	BY

DRAINAGE CALCULATIONS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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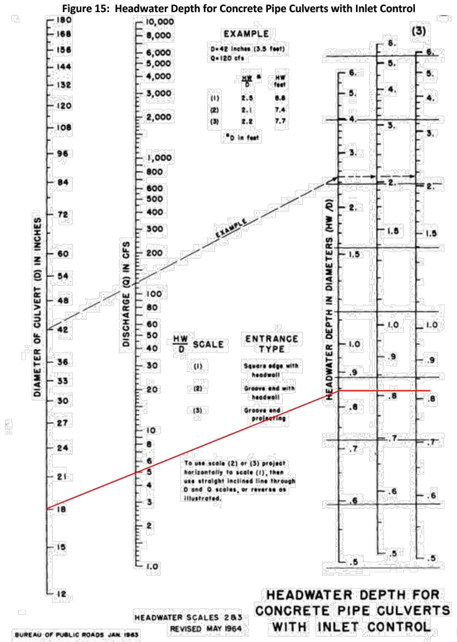
LJA PROJECT ID NT561-0133
DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: N/A
VERT: N/A
SHEET 17 OF 35 SHEETS

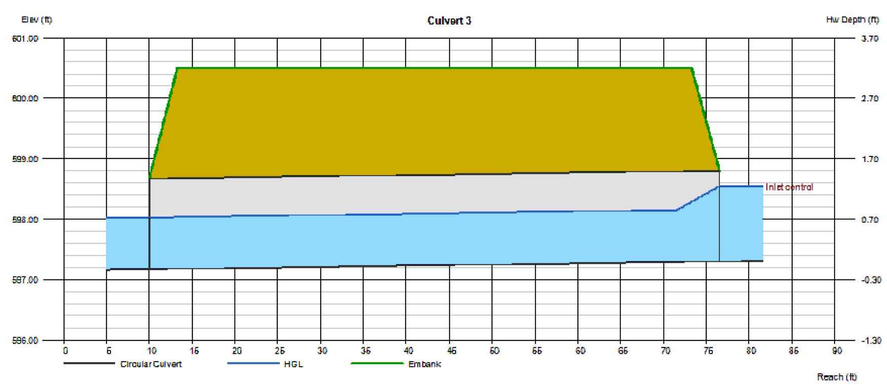
Date\Time : Tue, 27 Jun 2023 - 10:58am User Name : tmartinez
Path\Name : S:\MTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDC01.dwg

PANORAMA STREET

Figure 15: Headwater Depth for Concrete Pipe Culverts with Inlet Control



(Source: FHWA Hydraulic Design of Highway Culverts 3rd Ed., 2012)



Q			Veloc		Depth		HGL			
Total	Pipe	Over	Dn	Up	Dn	Up	Dn	Up	Hw	HwD
(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(in)	(in)	(ft)	(ft)	(ft)	
3.00	3.00	0.00	4.02	4.02	7.90	7.90	597.83	597.96	598.22	0.61
3.60	3.60	0.00	4.23	4.23	8.66	8.66	597.88	598.01	598.31	0.67
4.00	4.00	0.00	4.42	4.42	9.18	9.18	597.93	598.06	598.39	0.73
4.60	4.60	0.00	4.60	4.60	9.76	9.76	597.98	598.11	598.47	0.78
5.00	5.00	0.00	4.77	4.77	10.32	10.32	598.03	598.16	598.55	0.83

DESIGN NODE	Kj	EQUATION
Inlet at end of line	1.25	$LOSS=Kj\frac{V_{OUT}^2}{2g}$
45° bend	0.35	$LOSS=\frac{V_{OUT}^2}{2g}-Kj\frac{V_{IN}^2}{2g}$
60° bend	0.43	
Pipe size change	N/A	
60° wye connection	0.60	
45° wye connection	0.75	
Manhole without inflow (90°)	0.25	
Manhole with inflow (90°)	0.25	

(•) DENOTES PARTIAL FLOW VELOCITY/DEPTH
(•) DENOTES NORMAL FLOW VELOCITY/DEPTH
(~) DENOTES HGL AT TOP OF PIPE (UPSTREAM PIPE IN FULL FLOW)
[--] DENOTES TIME OF CONCENTRATION SET SAME AS UPSTREAM JUNCTION.
^ DENOTES SUPERCRITICAL FLOW REGIME.

NOTE: IN A SUPERCRITICAL FLOW REGIME WITH PARTIAL FLOW CONDITIONS, HEAD LOSSES ARE NOT GENERATED AT UPSTREAM JUNCTIONS. JUNCTION HEAD LOSS HAS BEEN SET TO ZERO.

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DRAINAGE CALCULATIONS

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CITY OF PARKER
COLLIN COUNTY, TEXAS

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6060 North Central Expressway
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Dallas, Texas 75206
Phone 469.621.0710
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SCALE
HORZ: N/A
VERT: N/A
SHEET 18 OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 - 10:58am User Name : tmartinez
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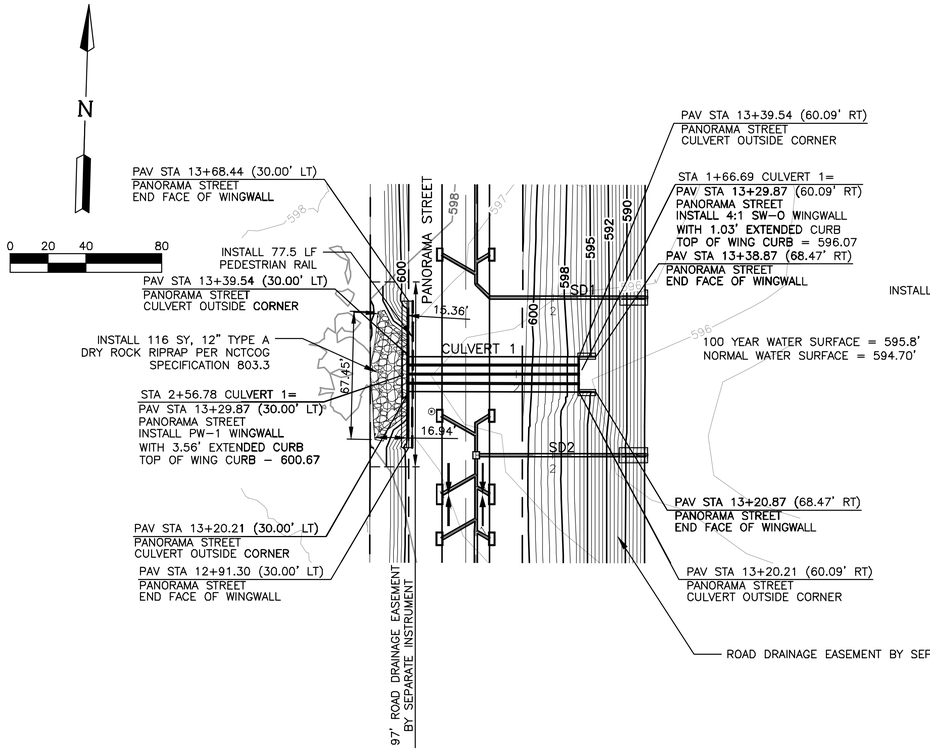
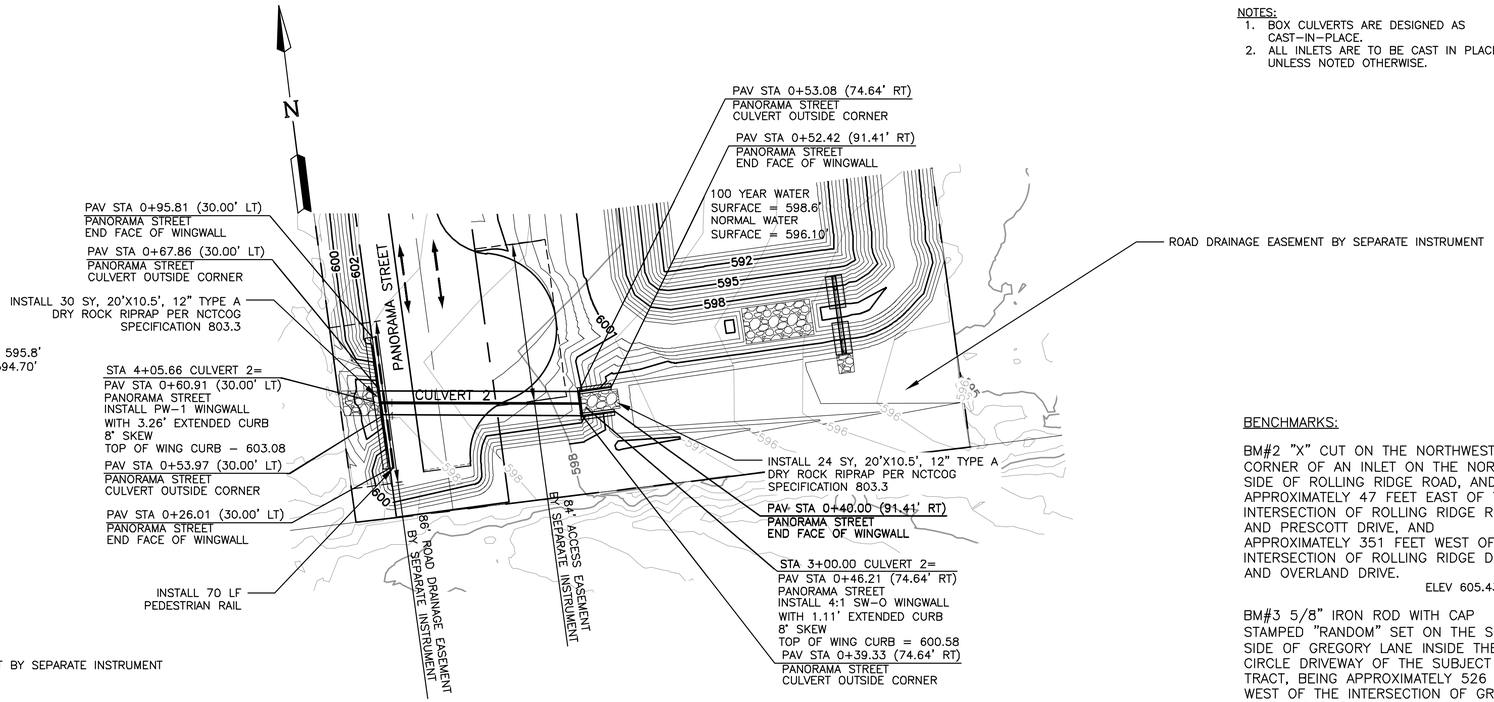


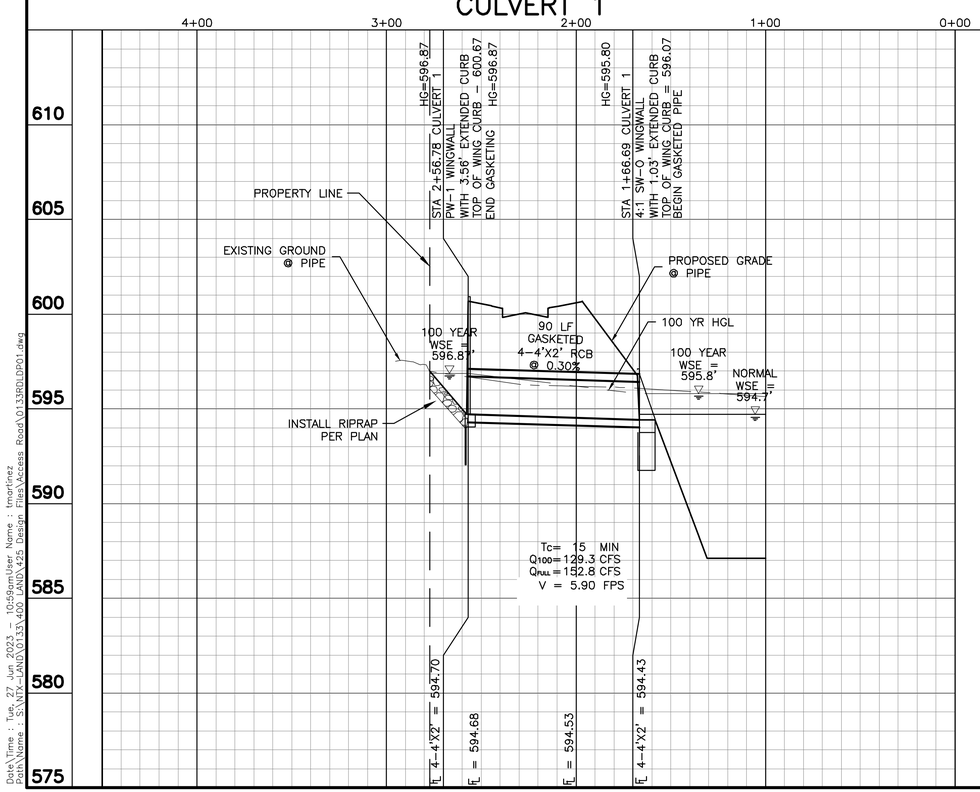


BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.
ELEV 597.995

CULVERT 1



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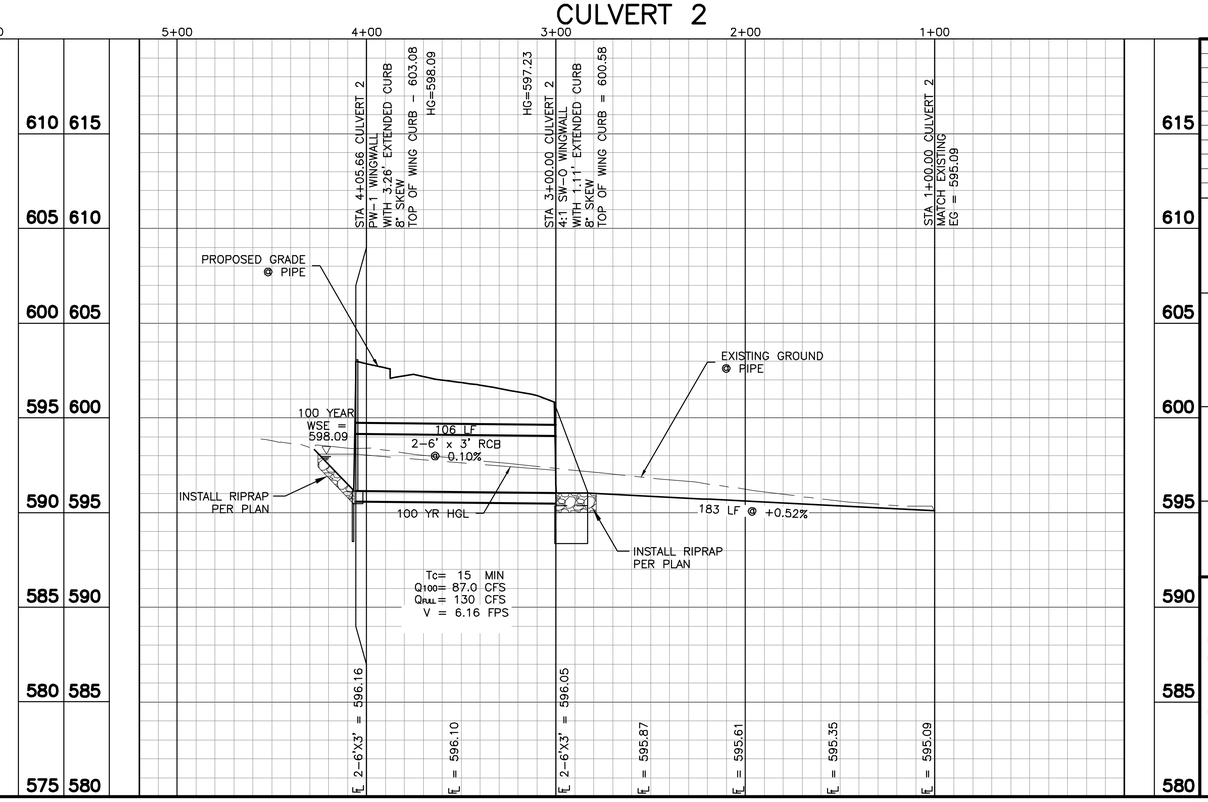

DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE
CULVERT 1 & CULVERT 2

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

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DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: 1" = 40'
VERT: 1" = 4'

Date\Time : Tue, 27 Jun 2023 - 10:59am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDP01.dwg

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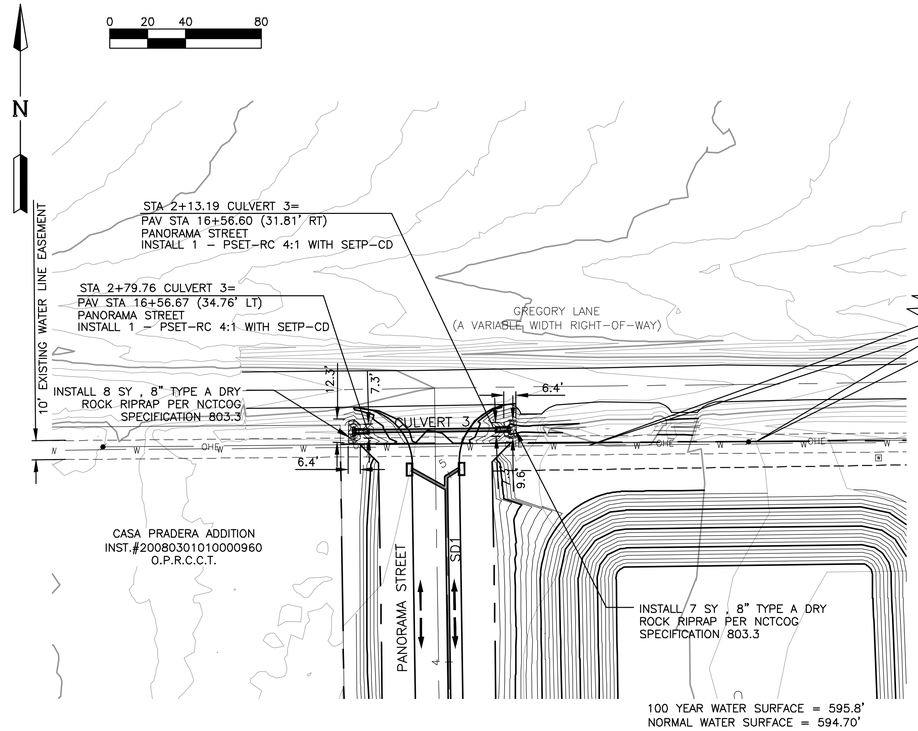

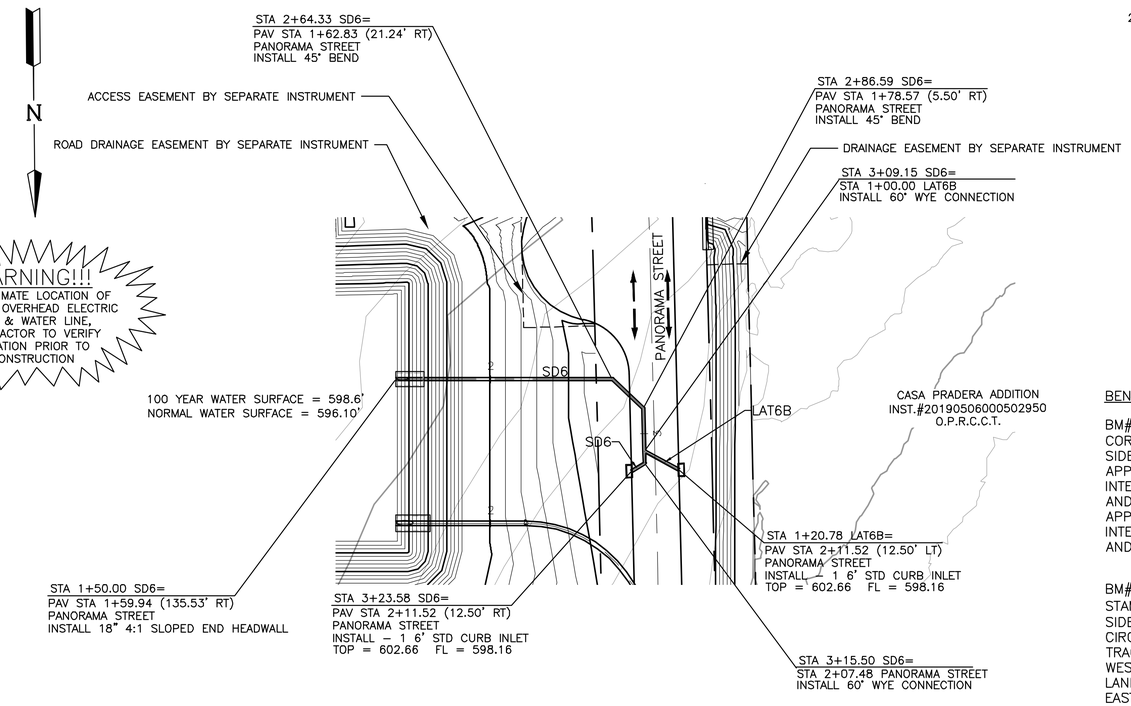

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BENCHMARKS:

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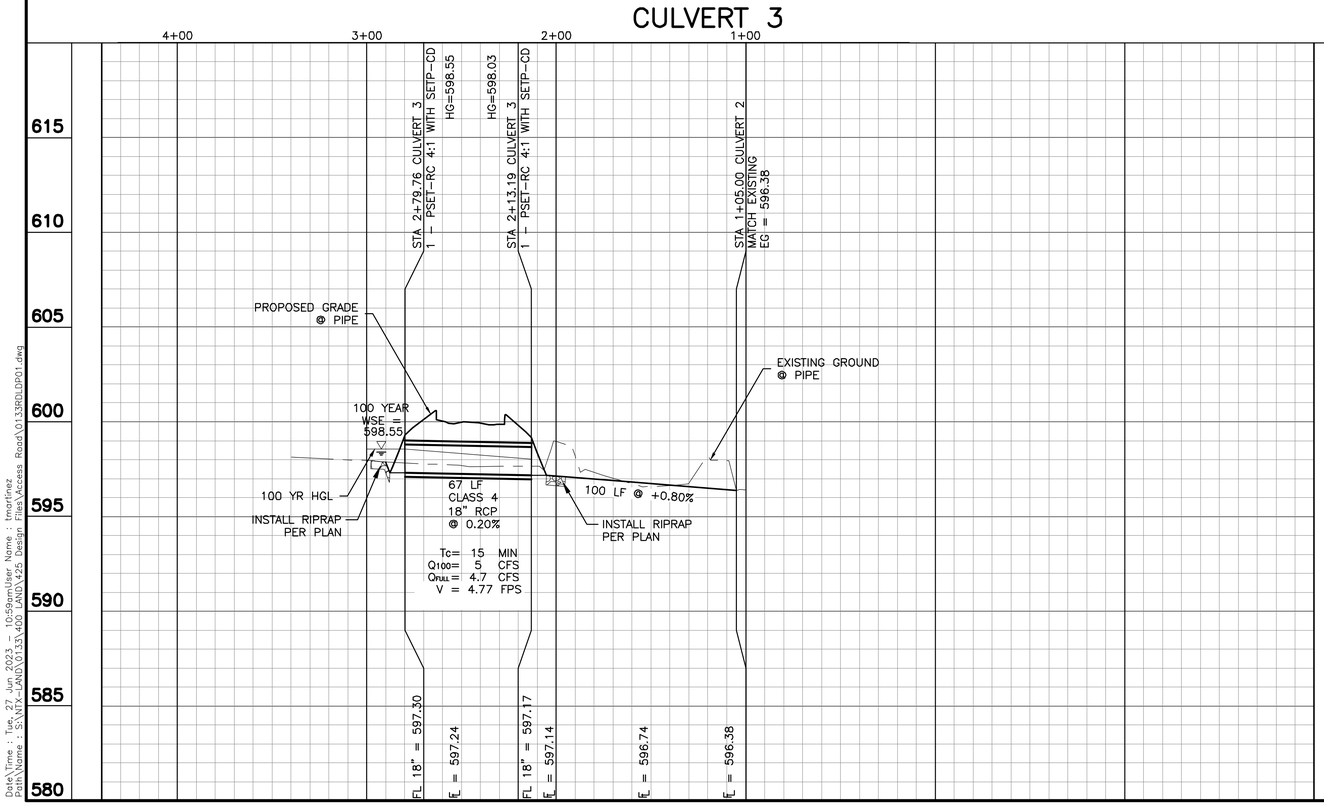
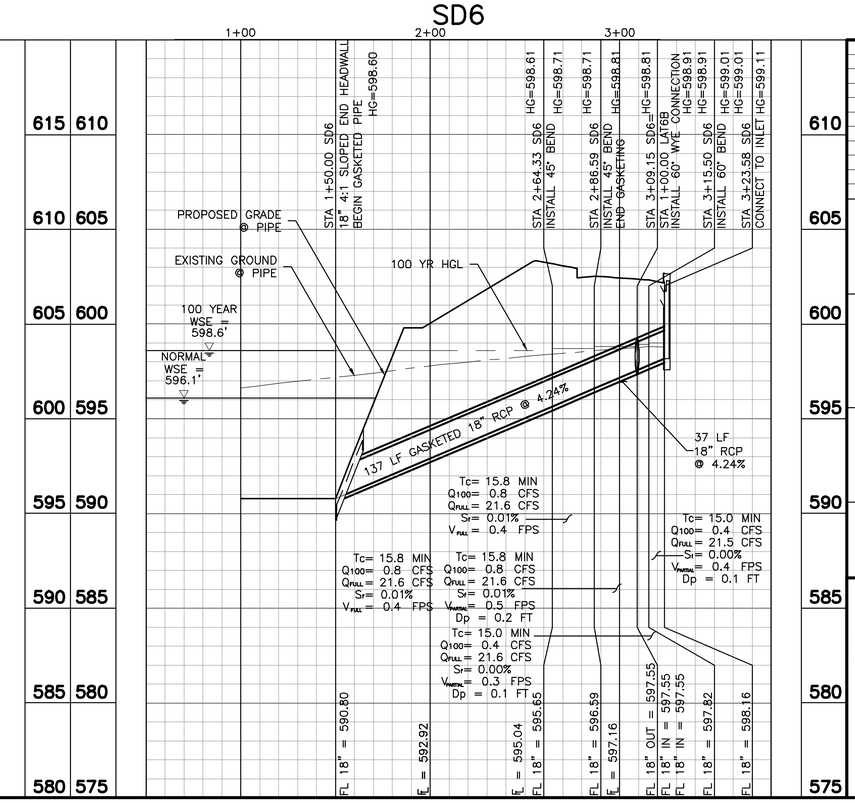
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.
ELEV 597.995





DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE
CULVERT 3 & SD 6

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
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NT561-0133

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SCALE
HORZ: 1" = 40'
VERT: 1" = 4'

SHEET
20
OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 - 10:59am\User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDP01.dwg

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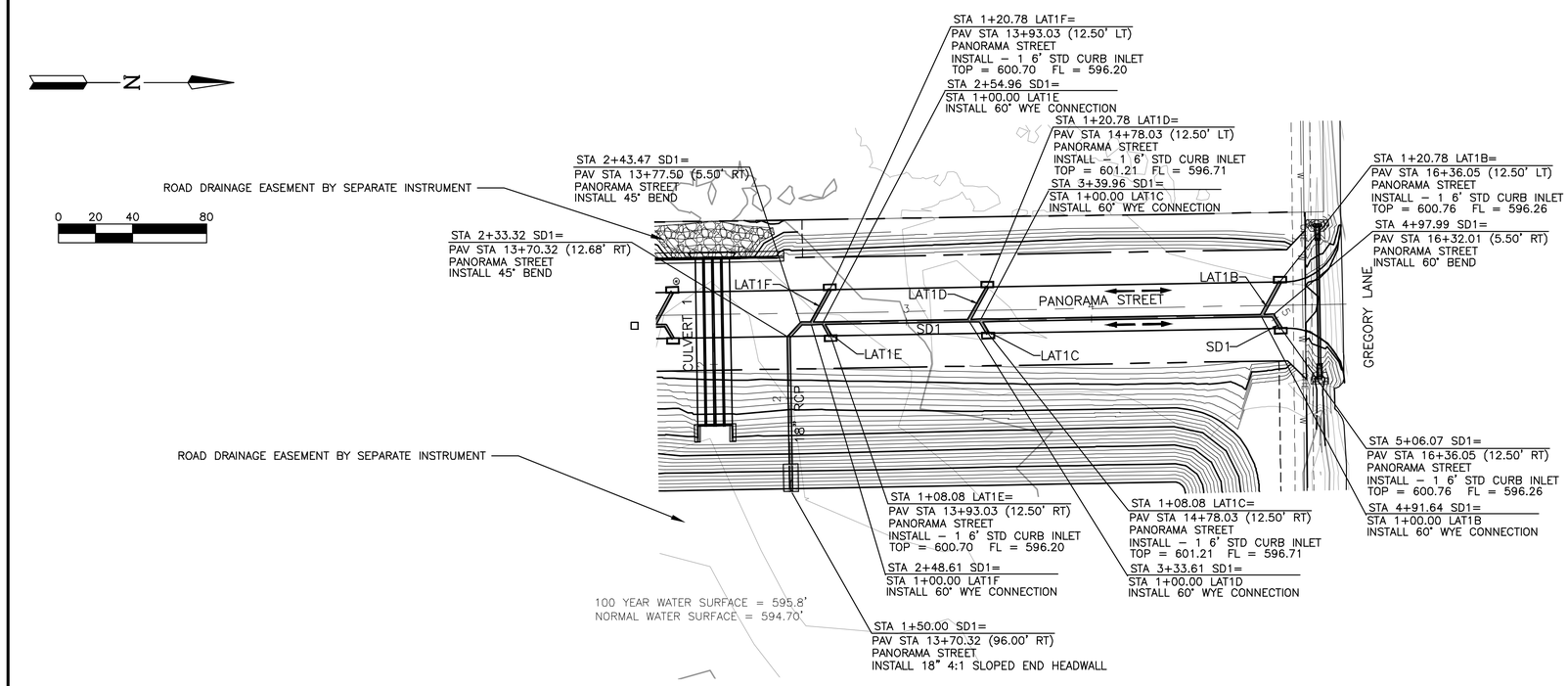
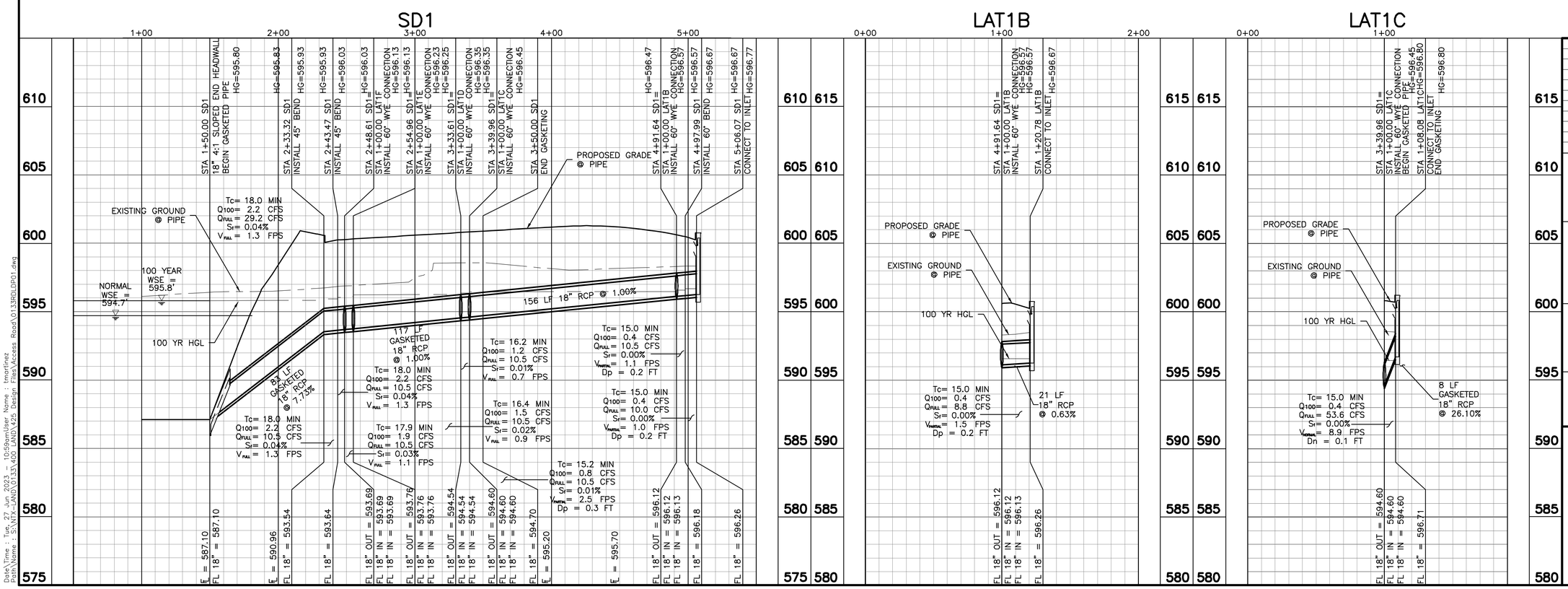
PANORAMA STREET



BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.
ELEV 597.995



DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE
SD 1, LAT 1B, LAT 1C

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
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LJA PROJECT ID NT561-0133
DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: 1" = 40'
VERT: 1" = 4'

Date\Time : Tue, 27 Jun 2023 - 10:59am User Name : tmartinez
PathName : S:\KTX-LAND\013\400 LAND\425 Design Files\Access Road\013RDLDP01.dwg

NOTES:
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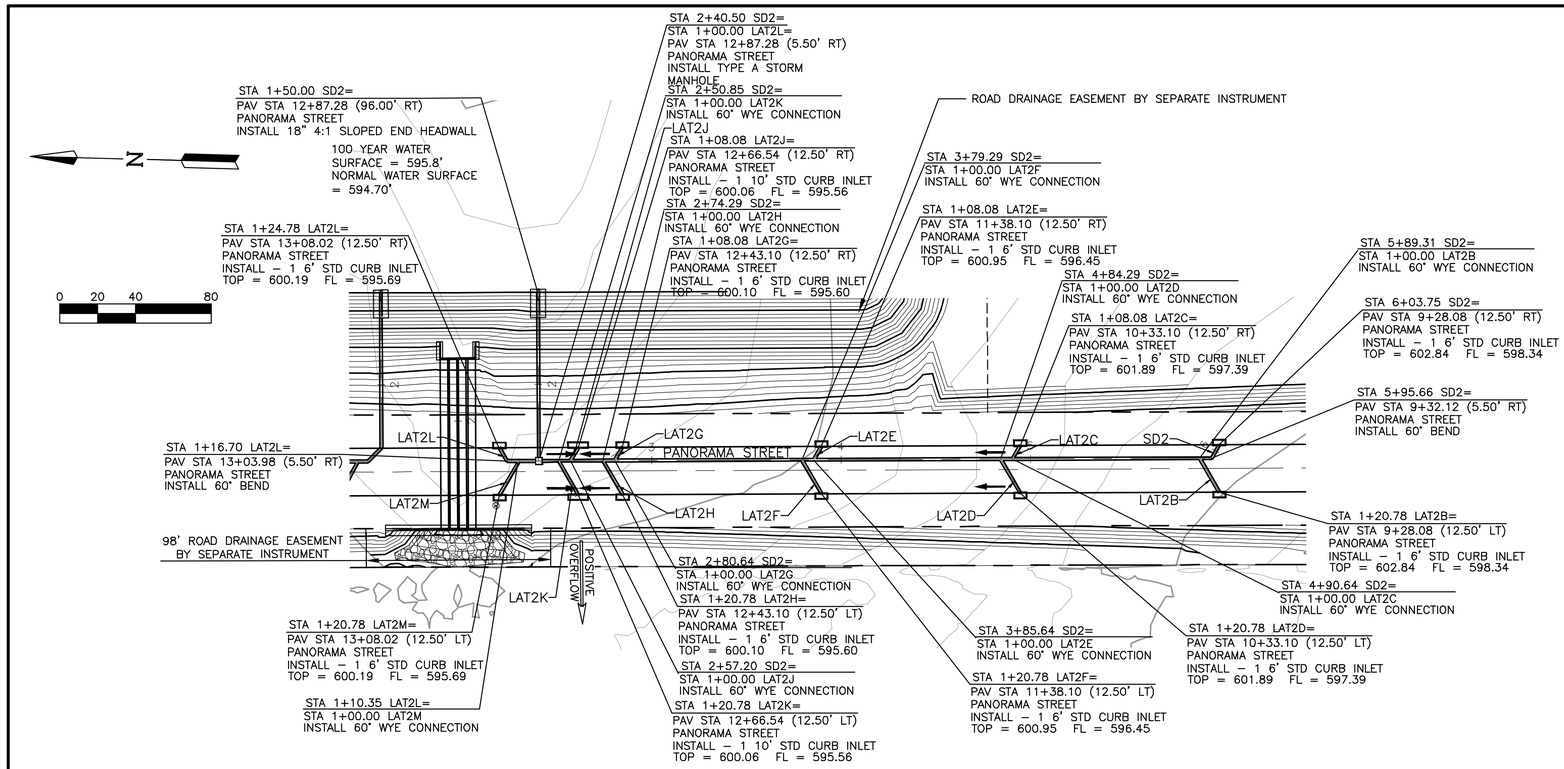

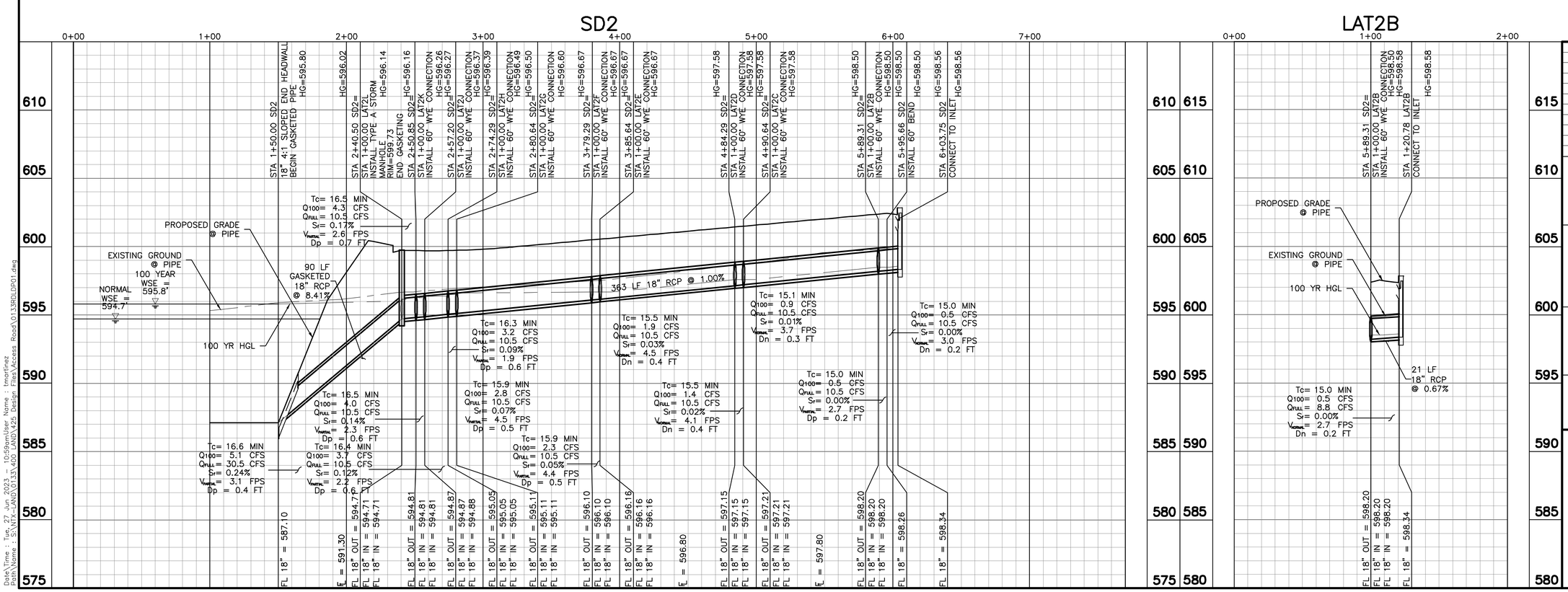

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ELEV 597.995

DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE
SD 2 & LAT 2B

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
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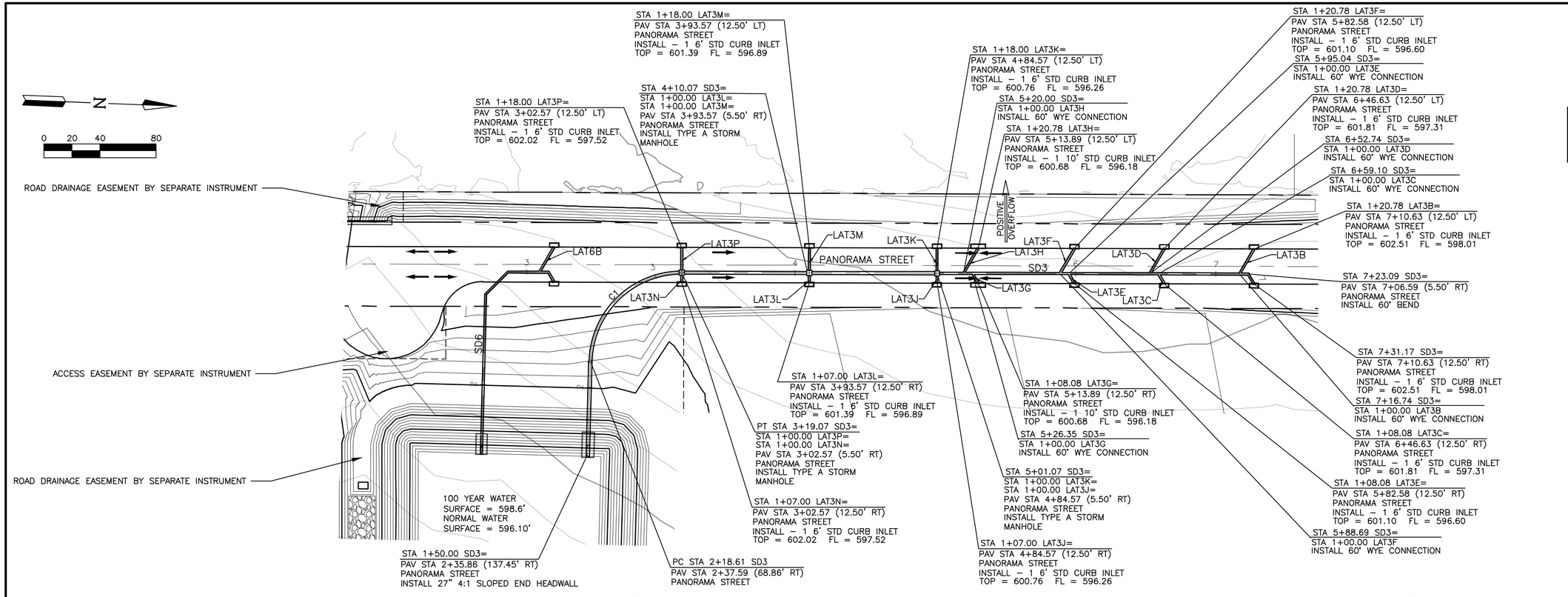
SHEET 22 OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 - 10:59am User Name : tmartinez
Path\Name : S:\NTX-LAND\013\v400 LAND\425 Design Files\Access Road\013RDLDP01.dwg

PANORAMA STREET



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CENTERLINE CURVE DATA					
CV#	DELTA	RADIUS	LENGTH	CHORD	C–L
C1	88°33'11"	65.00'	100.46'	N45°07'00"W	90.76'

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STORM DRAIN PLAN & PROFILE SD 3 & LAT 3B

PANORAMA STREET

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COLLIN COUNTY, TEXAS

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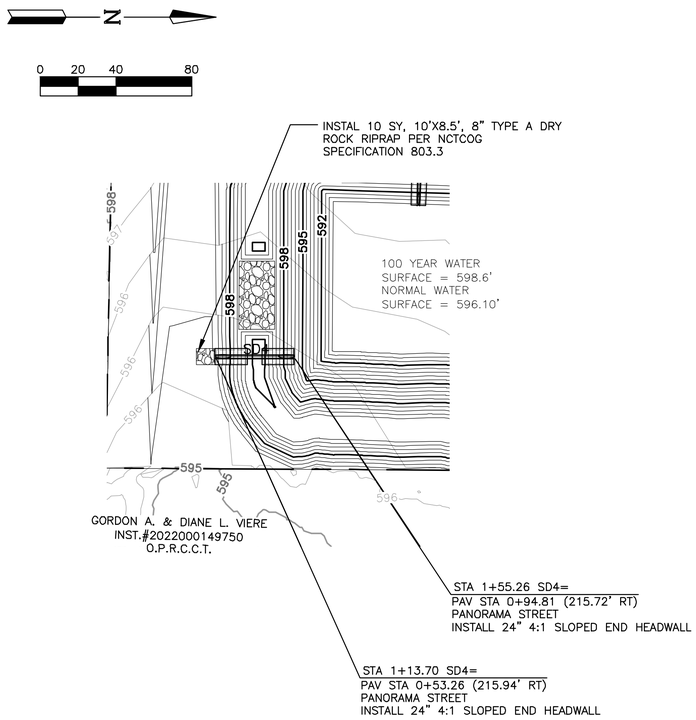

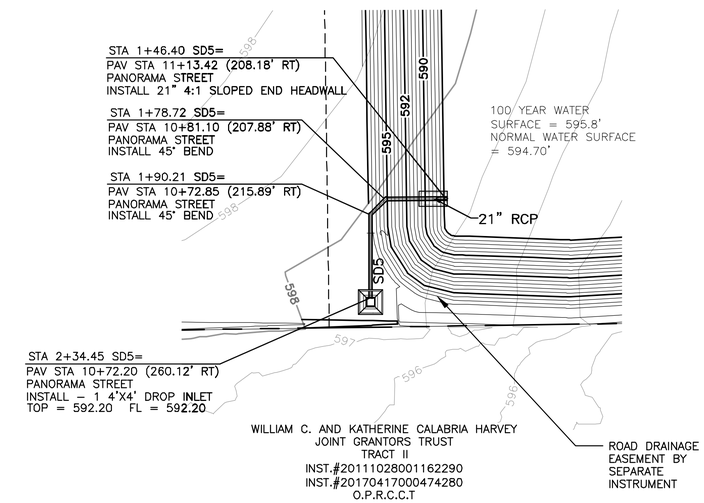

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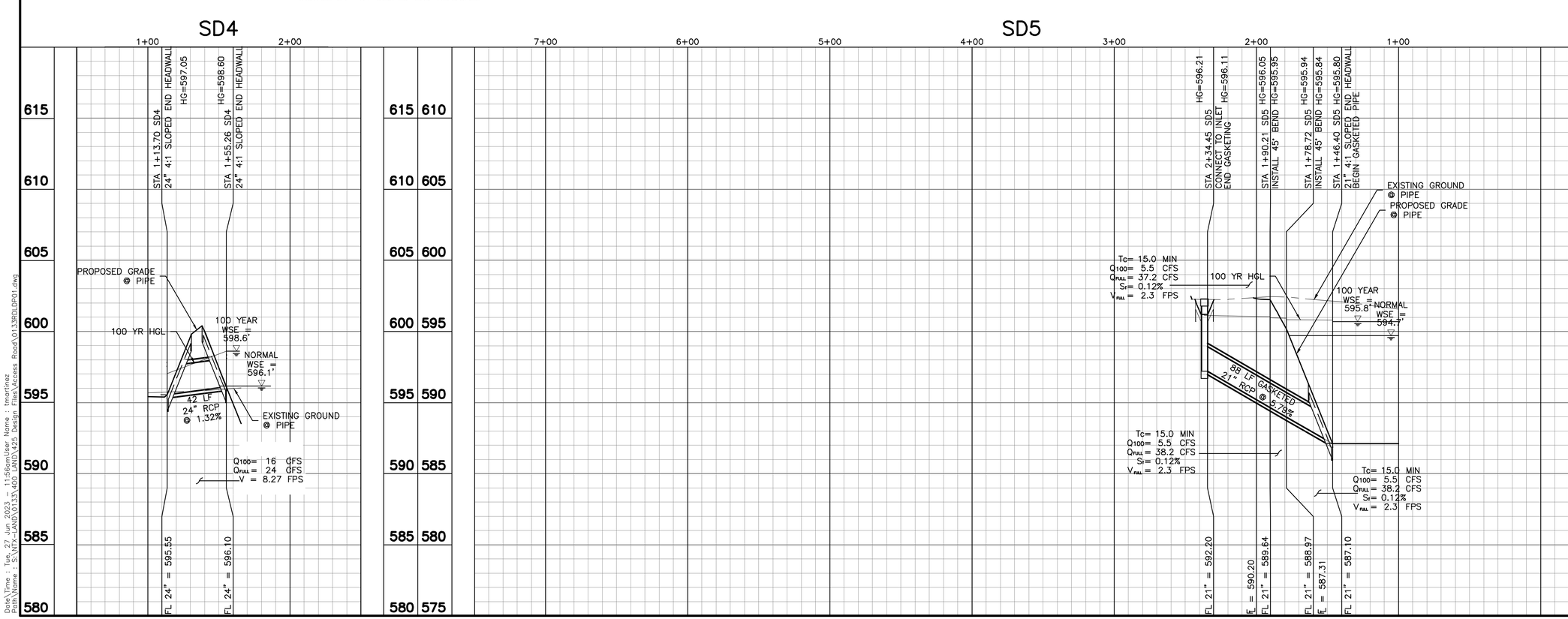

DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE SD 4 & SD 5

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
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SCALE
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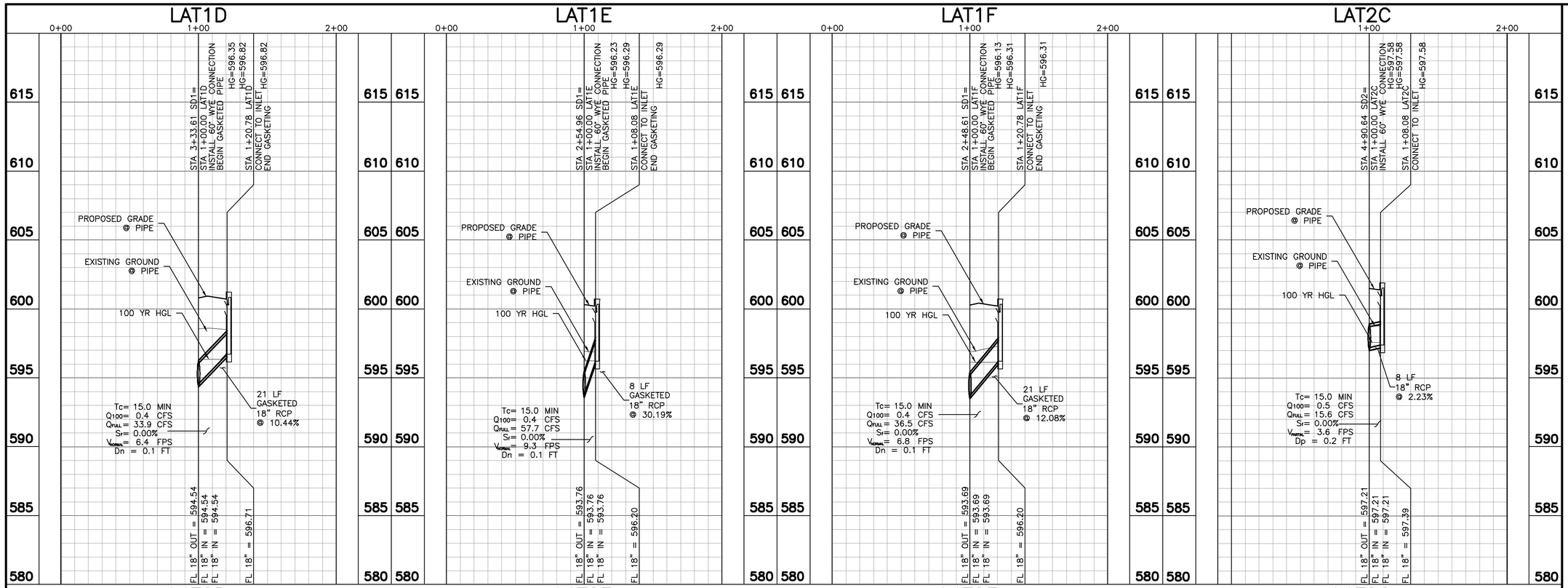
Date\Time : Tue, 27 Jun 2023 – 11:56am User Name : lmartinez
Plan\Name : S:\NT_LAN\0133\400 Design\Access Road\01133R01.DP01.dwg



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ELEV 597.995

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STORM DRAIN PLAN & PROFILE
LAT 1D, 1E, 1F, 2C, 2D, 2E, 2F, & 2G

PANORAMA STREET

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COLLIN COUNTY, TEXAS

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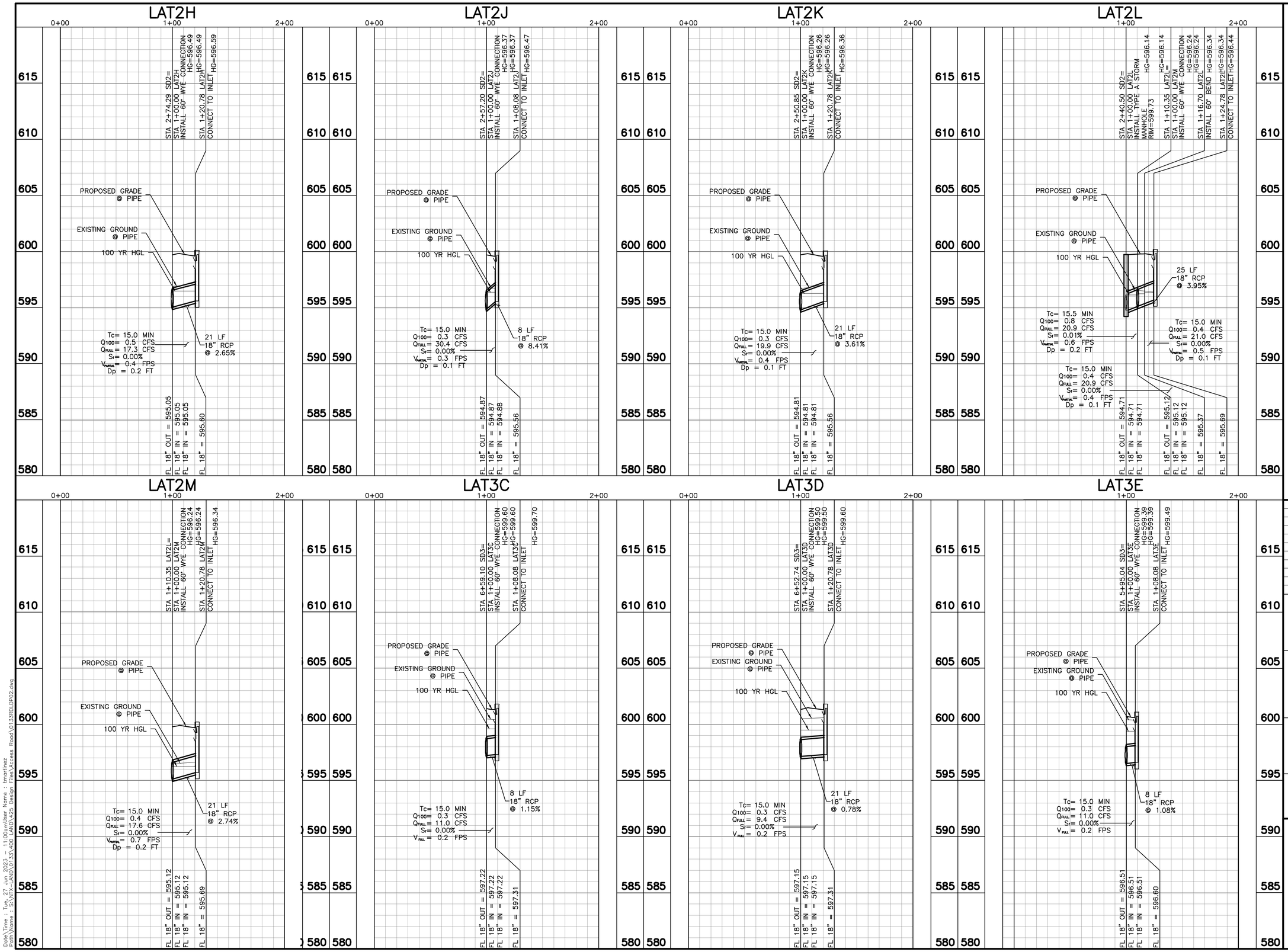
SHEET 25 OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 - 11:00am\User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDP02.dwg



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ELEV 597.995

DATE	REVISION	BY

STORM DRAIN PLAN & PROFILE
LAT 2H, 2J, 2K, 2L, 2M, 3C, 3D, & 3E

PANORAMA STREET

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COLLIN COUNTY, TEXAS

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SHEET 26 OF 35 SHEETS

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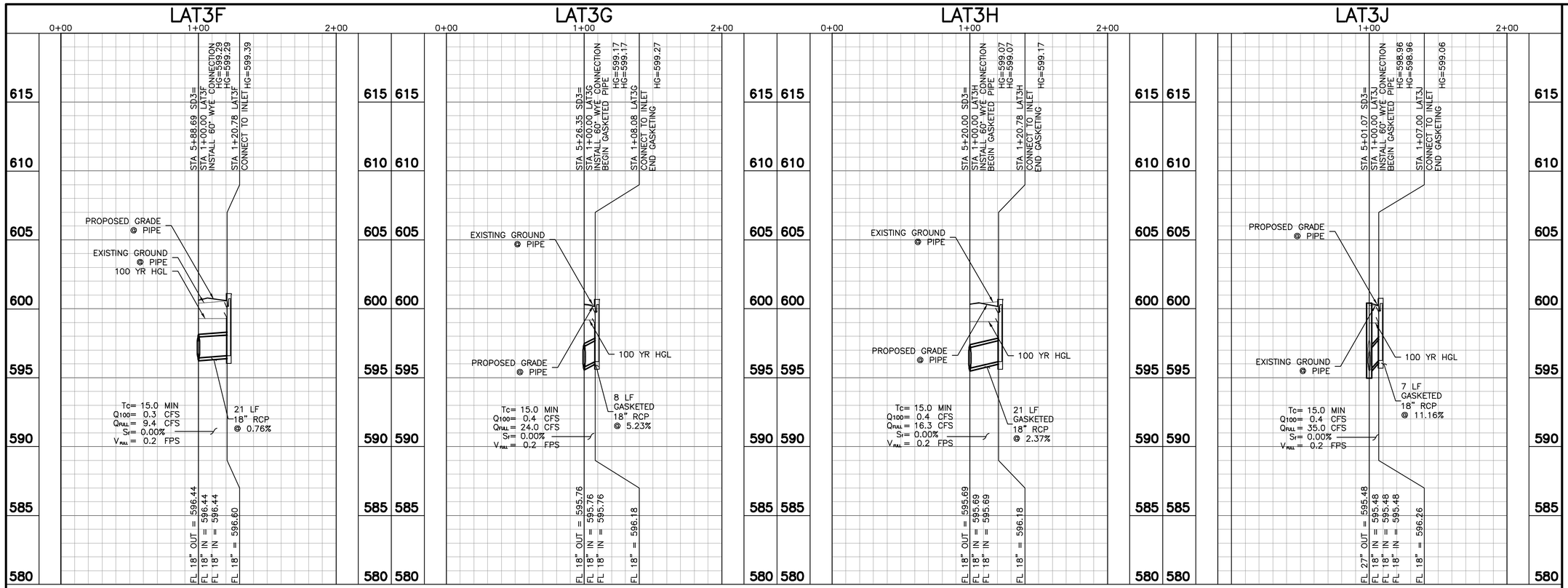

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ELEV 597.995

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STORM DRAIN PLAN & PROFILE
LAT 3F, 3G, 3H, 3J, 3K, 3L, 3M, & 3N

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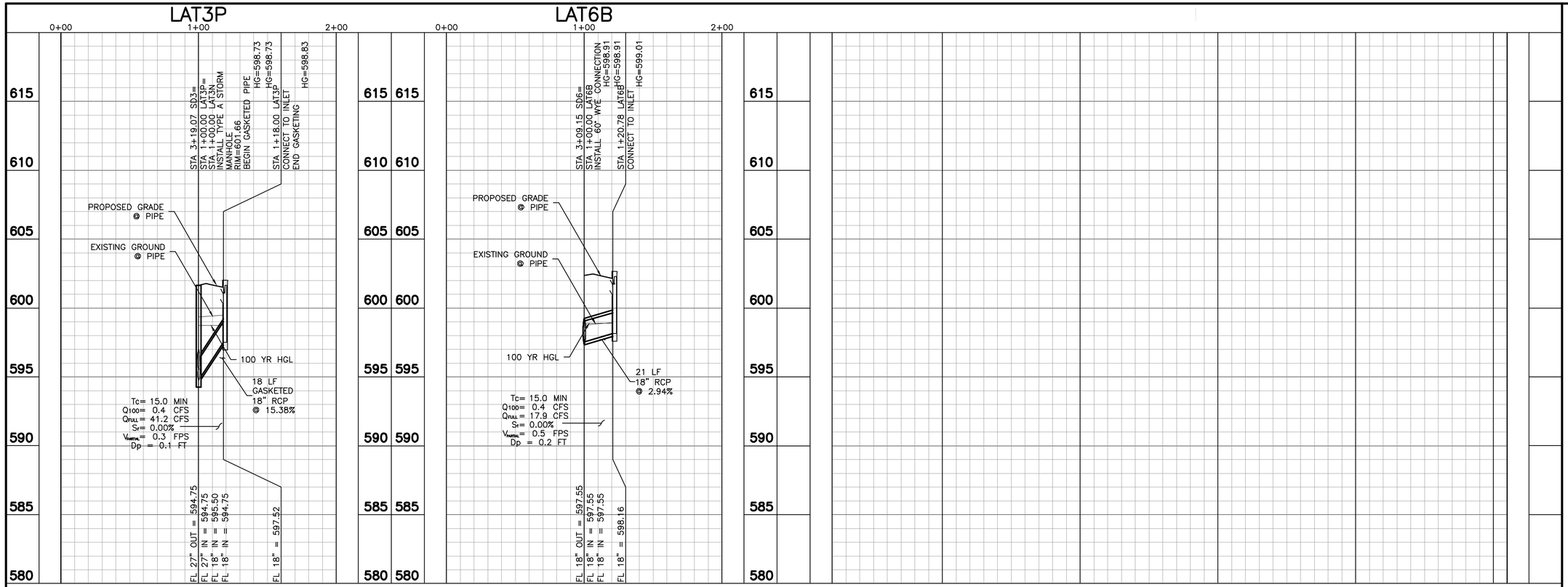

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ELEV 597.995

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STORM DRAIN PLAN & PROFILE
LAT 3P, 3Q, & 3R

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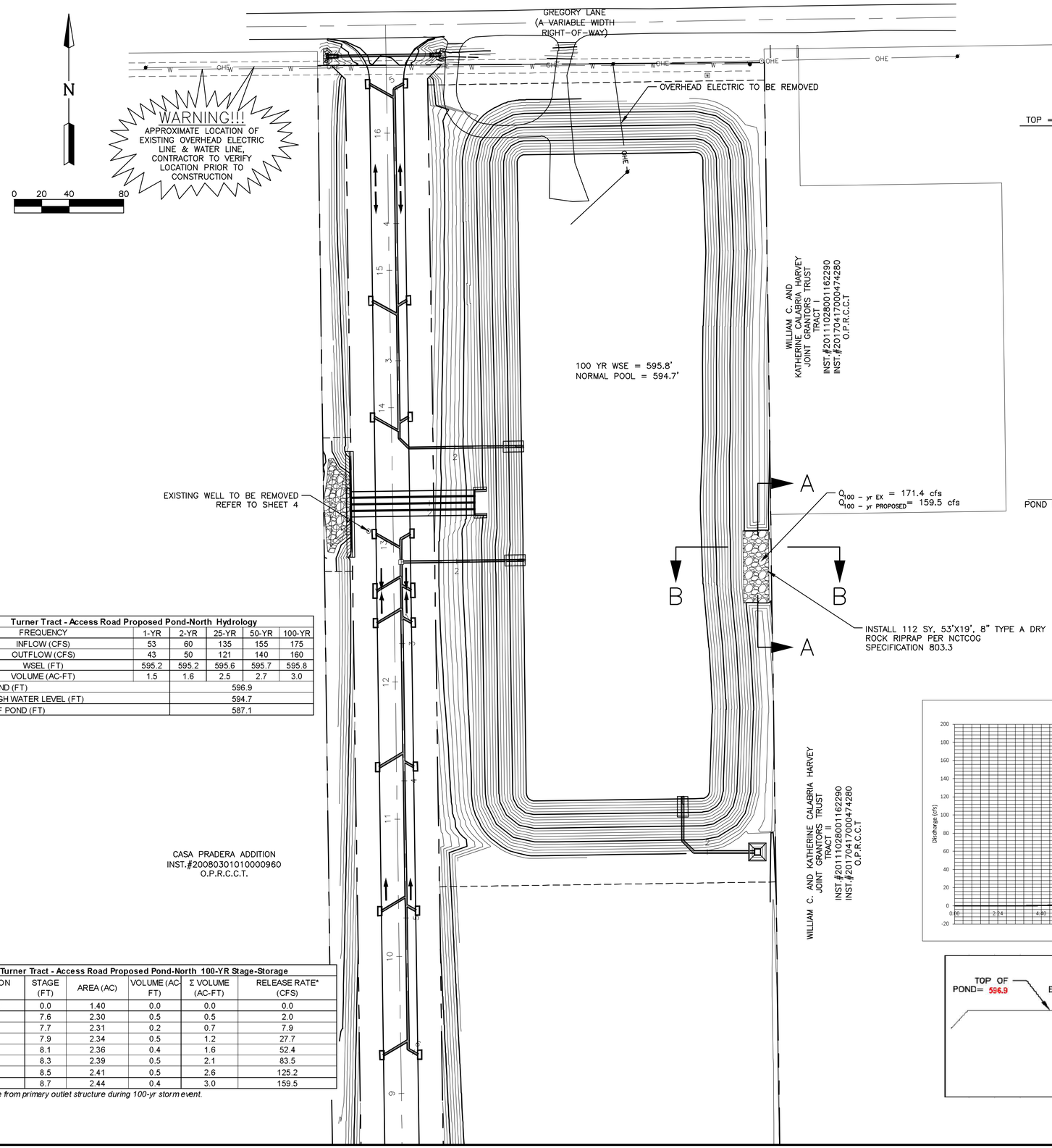
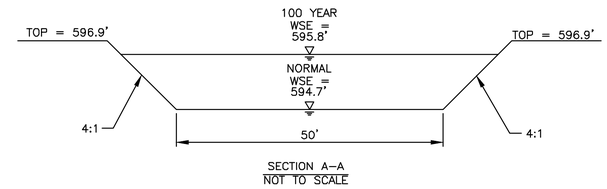
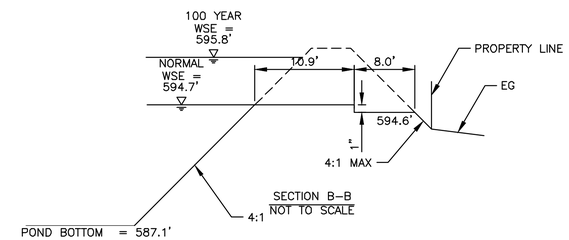




SECTION A–A
NOT TO SCALE



SECTION B–B
NOT TO SCALE

SPILLWAY DISCHARGE**		
WSEL (FT)	Q (CFS)	H (FT)
594.7	0.0	0.00
594.8	4.1	0.10
594.9	11.8	0.20
595	21.9	0.30
595.1	33.9	0.40
595.2	47.7	0.50
595.3	63.2	0.60
595.4	80.2	0.70
595.5	98.7	0.80
595.6	118.7	0.90
595.7	140.0	1.00
595.8	162.6	1.10
595.9	186.6	1.20
596	211.9	1.30
596.1	238.5	1.40
596.2	266.3	1.50
596.3	295.4	1.60
596.4	325.7	1.70
596.5	357.3	1.80
596.6	390.1	1.90
596.7	424.1	2.00
596.8	459.3	2.10
596.9	495.8	2.20

BENCHMARKS:

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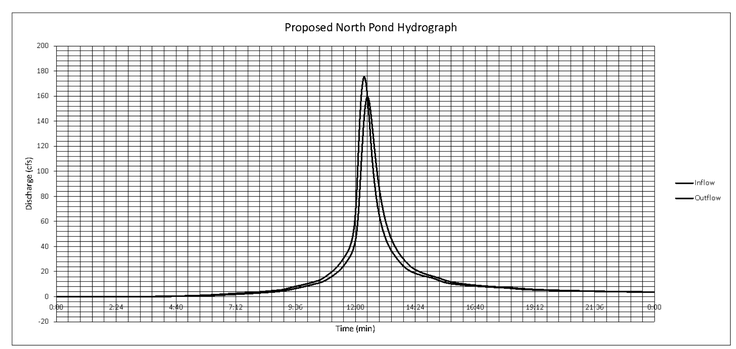
ELEV 597.995

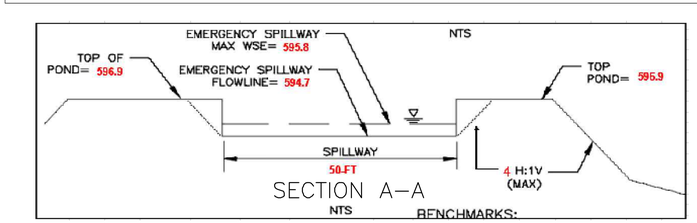
Turner Tract - Access Road Proposed Pond-North Hydrology					
FREQUENCY	1-YR	2-YR	25-YR	50-YR	100-YR
INFLOW (CFS)	53	60	135	155	175
OUTFLOW (CFS)	43	50	121	140	160
WSEL (FT)	595.2	595.2	595.6	595.7	595.8
VOLUME (AC-FT)	1.5	1.6	2.5	2.7	3.0
TOP OF POND (FT)	596.9				
NORMAL HIGH WATER LEVEL (FT)	594.7				
BOTTOM OF POND (FT)	587.1				

Turner Tract - Access Road Proposed Pond-North 100-YR Stage-Storage					
ELEVATION (FT)	STAGE (FT)	AREA (AC)	VOLUME (AC-FT)	Σ VOLUME (AC-FT)	RELEASE RATE* (CFS)
587.10	0.0	1.40	0.0	0.0	0.0
594.7	7.6	2.30	0.5	0.5	2.0
594.8	7.7	2.31	0.2	0.7	7.9
595.0	7.9	2.34	0.5	1.2	27.7
595.2	8.1	2.36	0.4	1.6	52.4
595.4	8.3	2.39	0.5	2.1	83.5
595.6	8.5	2.41	0.5	2.6	125.2
595.8	8.7	2.44	0.4	3.0	159.5

*Release rate from primary outlet structure during 100-yr storm event.

SPILLWAY DESIGN CALCULATIONS			
$Q = CLH^{1.5}$ Eqn 2.16, iSWM Technical Manual – Hydraulics			
C=	2.6		Per Table 2.4, iSWM Technical Manual - Hydraulics
L=	50	ft	Per construction drawings
Elev=	596.9	ft	Top of Pond
H=	1.1	ft	Design Spillway Depth
Elev=	595.8	ft	Maximum allowed Spillway WSEL
Elev=	594.7	ft	Spillway Crest
SS=	4	:1	Trapezoidal Side Slope
Q=	163	cfs	Spillway Capacity





SECTION A–A
NTS

BENCHMARKS:

DATE	REVISION	BY

DETENTION PLAN
NORTH POND

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON
06 27 2023
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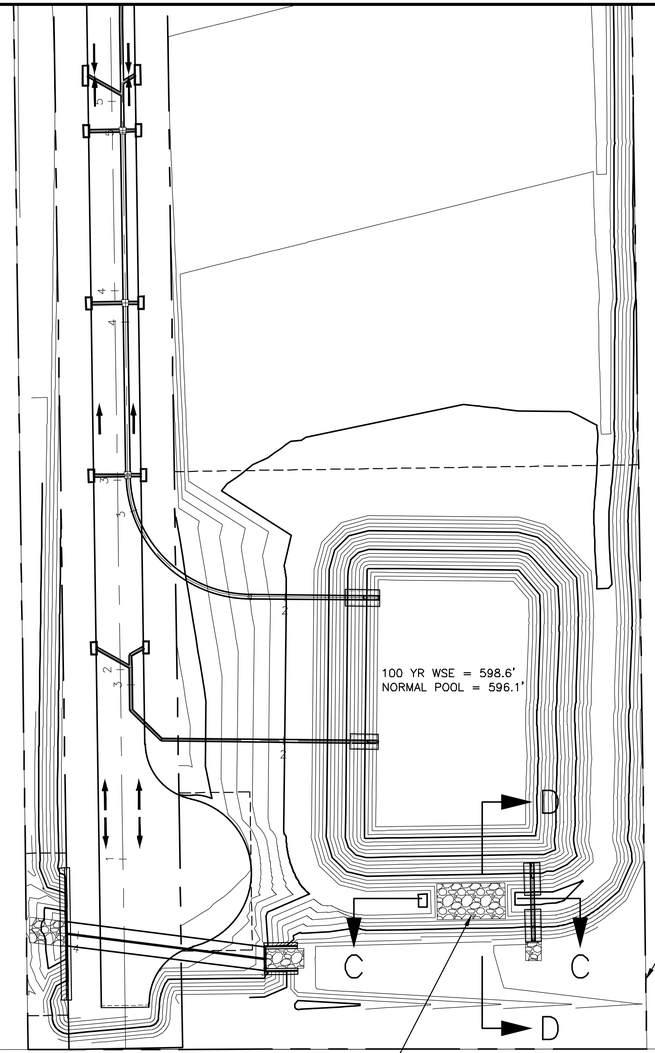
LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: MARTINEZ
DRAWN: MARTINEZ
SCALE
HORZ: 1" = 40'
VERT: N/A
SHEET
29
OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 – 11:01am\User Name : tmartinez
Path\Name : S:\NTX-LAND\013\400 LAND\425 Design Files\Access Road\013RDLDP03.dwg

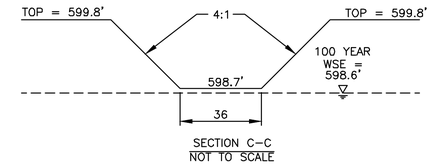
PANORAMA STREET

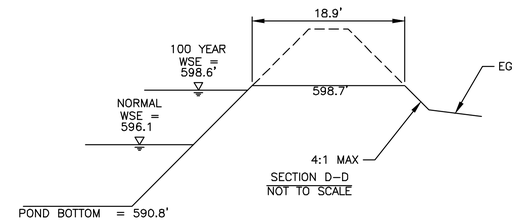
N

0 20 40 80



INSTALL 76 SY, 19'X36', 8" TYPE A DRY ROCK RIPRAP PER NCTCOG SPECIFICATION 803.3





Turner Tract - Access Road Proposed Pond-South Hydrology					
FREQUENCY	1-YR	2-YR	25-YR	50-YR	100-YR
INFLOW (CFS)	15	16	34	38	43
OUTFLOW (CFS)	4	5	12	14	16
WSEL (FT)	597.2	597.3	598.2	598.4	598.6
VOLUME (AC-FT)	0.4	0.5	1.0	1.1	1.2
TOP OF POND (FT)	599.8				
NORMAL HIGH WATER LEVEL (FT)	596.1				
BOTTOM OF POND (FT)	590.8				

EMERGENCY SPILLWAY DISCHARGE**		
WSEL (FT)	Q (CFS)	H (FT)
598.7	0.0	0.00
598.8	3.0	0.10
598.9	8.6	0.20
599	15.9	0.30
599.1	24.7	0.40
599.2	34.9	0.50
599.3	46.3	0.60
599.4	58.9	0.70
599.5	72.7	0.80
599.6	87.6	0.90
599.7	103.6	1.00
599.8	120.6	1.10

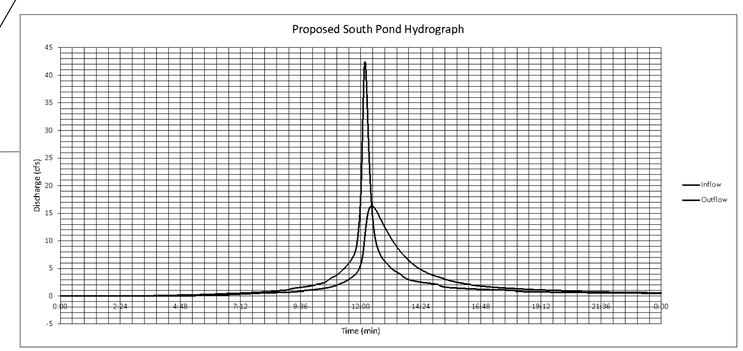
***Assuming 100% blockage of the primary outlet structure during 100-yr storm event.*

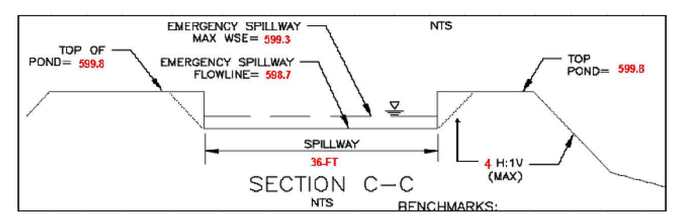
Turner Tract - Access Road Proposed South Pond 100-YR Stage-Storage					
ELEVATION (FT)	STAGE (FT)	AREA (AC)	VOLUME (AC-FT)	Σ VOLUME (AC-FT)	RELEASE RATE* (CFS)
590.80	0.0	0.23	0.0	0.0	0.0
596.1	5.3	0.46	0.0	0.0	0.0
596.5	5.7	0.48	0.1	0.1	0.7
597.0	6.2	0.51	0.3	0.4	3.1
597.5	6.7	0.53	0.2	0.6	6.7
598.4	7.6	0.58	0.5	1.1	15.0
598.6	7.8	0.60	0.1	1.2	16.4

**Release rate from primary outlet structure during 100-yr storm event.*

SPILLWAY DESIGN CALCULATIONS			
$Q = CLH^{1.5}$ Eqn 2.16, iSWM Technical Manual – Hydraulics			
C=	2.6		Per Table 2.4, iSWM Technical Manual - Hydraulics
L=	36	ft	Per construction drawings
Elev=	599.8	ft	Top of Pond
H=	0.6	ft	Design Spillway Depth
Elev=	599.3	ft	Spillway WSEL (0.5' min freeboard below pond top)
Elev=	598.7	ft	Spillway Crest (Minimum 100-yr WSEL + 0.03')
SS=	4	:1	Trapezoidal Side Slope
Q=	46	cfs	Spillway Capacity
Q=	16	cfs	Minimum required spillway discharge (100-YR Pond Outflow Q)

$Q_{100-yr\ EX}$ = 37.1 cfs
$Q_{100-yr\ PROPOSED}$ = 33.5 cfs





BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.
ELEV 597.995

DATE	REVISION	BY

DETENTION PLAN
SOUTH POND

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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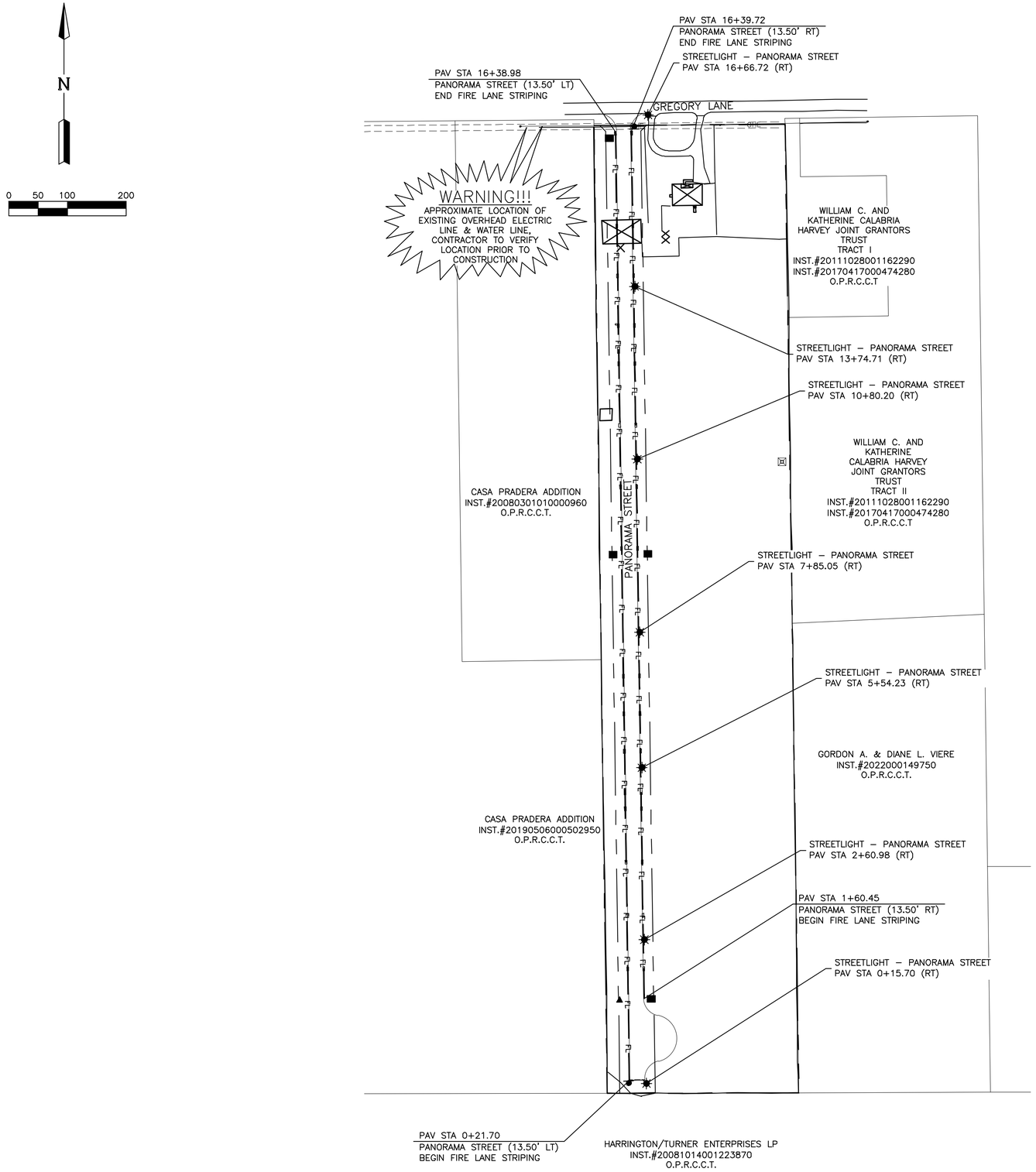
SCALE
HORZ: 1" = 40'
VERT: N/A
SHEET 30 OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 – 11:01am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDP03.dwg



LEGEND

- PROPOSED STREET LIGHT LOCATION
- PROPOSED DOUBLE STREET LIGHT LOCATION
- EXISTING DOUBLE STREET LIGHT LOCATION
- EXISTING STREET LIGHT LOCATION
- PROPOSED DEAD END SIGN
- PROPOSED NO PARKING SIGN
- PROPOSED STOP SIGN LOCATION
- FL FIRE LANE STRIPING

PANORAMA STREET

PAVEMENT MARKING TABLE	
TYPE	QUANTITY
FIRE LANE STRIPING	3097 LF

BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
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ELEV 597.995

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STREET LIGHT AND SIGNAGE PLAN

PANORAMA STREET

CITY OF PARKER

COLLIN COUNTY, TEXAS

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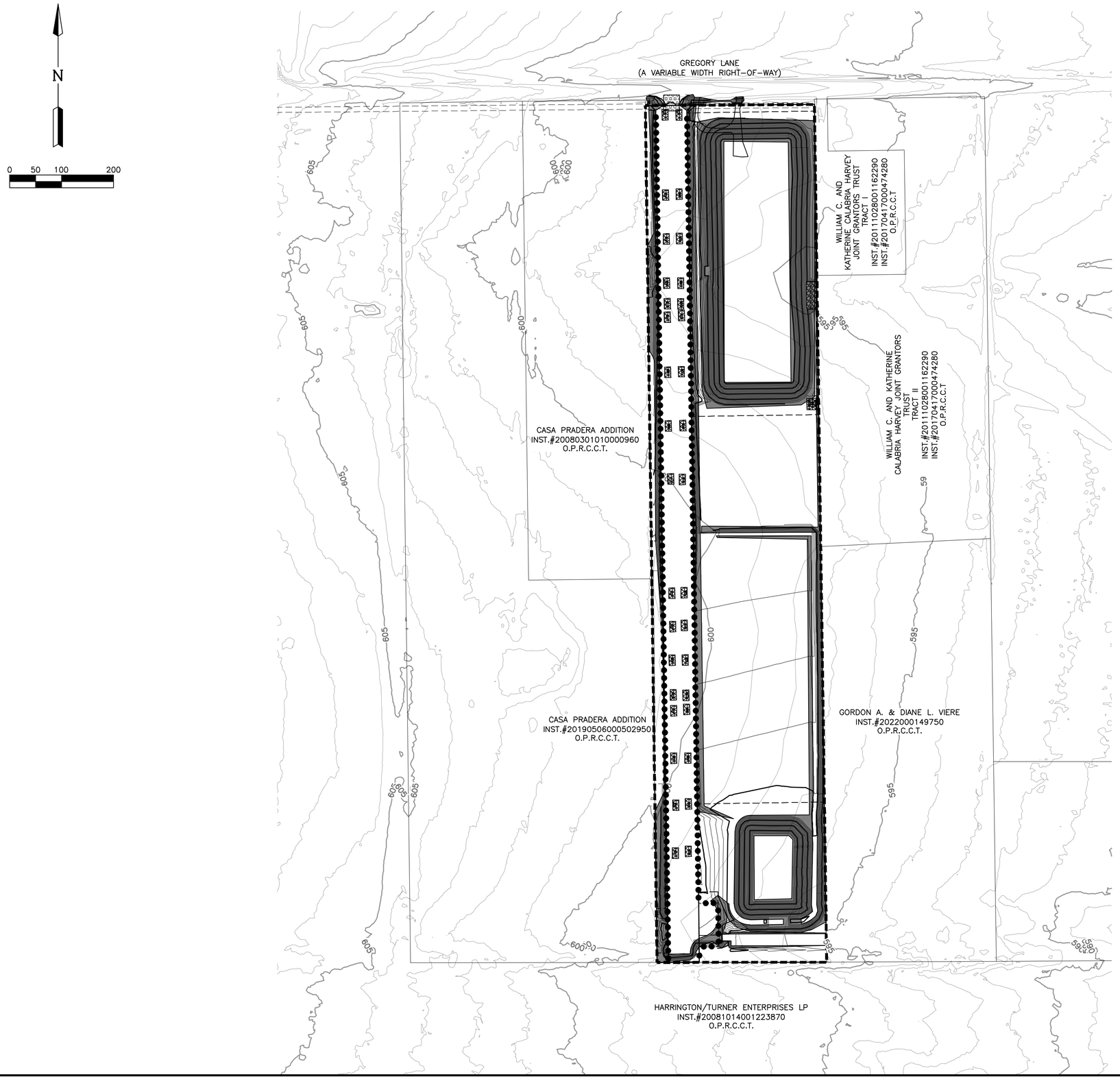

EROSION CONTROL MEASURES

- SILT FENCE EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO ANY LAND DISTURBANCE OR INITIAL GRADING. (BY GRADING CONTRACTOR.)
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION (POST CONSTRUCTION)
- CURLEX EROSION CONTROL DEVICES TO BE INSTALLED AFTER FINAL GRADING AND/OR AFTER PAVEMENT CONSTRUCTION AND CURB BACKFILL. (BY PAVING CONTRACTOR)
- EROSION CONTROL MAT
- INLET PROTECTION

BENCHMARKS:

BM#2 "X" CUT ON THE NORTHWEST CORNER OF AN INLET ON THE NORTH SIDE OF ROLLING RIDGE ROAD, AND APPROXIMATELY 47 FEET EAST OF THE INTERSECTION OF ROLLING RIDGE ROAD AND PRESCOTT DRIVE, AND APPROXIMATELY 351 FEET WEST OF THE INTERSECTION OF ROLLING RIDGE DRIVE AND OVERLAND DRIVE.
ELEV 605.438

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ELEV 597.995

DATE	REVISION	BY

EROSION CONTROL PLAN

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

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SCALE
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VERT: N/A
SHEET 32 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 - 11:01am User Name : tmartinez
Path\Name : S:\MTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133ROLEC01.dwg

PANORAMA STREET

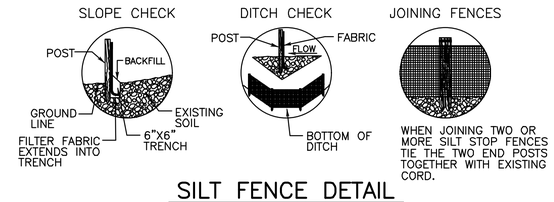
INSTRUCTIONS TO OPERATOR

OPERATOR SHALL:

1. ACTIVELY MAINTAIN THIS EROSION CONTROL PLAN AND THE ASSOCIATED STORM WATER POLLUTION PREVENTION PLAN (BY OTHERS).
2. POST SITE NOTICE AND/OR THE NOTICE OF INTENT (NOI) PROVIDED IN SWPPP AT OR NEAR THE CONSTRUCTION ENTRANCE.
3. WRITE NAME AND DATE AT EACH LOCATION WHERE EROSION CONTROL DEVICE IS INSTALLED.
4. SHOW ON THESE PLANS LOCATION AND WRITE NAME AND DATE OF INSTALLATION ON ALL CONSTRUCTION ENTRANCES, EQUIPMENT STORAGE LOCATIONS, MATERIAL STORAGE LOCATIONS, VEHICLE WASHES, AND SANITARY FACULTIES.
5. WITH A HIGHLIGHTER, MARK THOSE AREAS WHERE VEGETATION HAS BEEN STRIPPED OR WHERE SOIL HAS BEEN DISTURBED. DATE OF DISTURBANCE SHALL BE PLACED IN THESE AREAS. SEE LEGEND.
6. SOLID FILL, WITH A HIGHLIGHTER, THOSE AREAS WHERE CONSTRUCTION HAS CEASED AND PERMANENT VEGETATION IS BEING ESTABLISHED. SEE LEGEND.
7. DATE REMOVAL OF EROSION CONTROL DEVICES AND NOTE REASON FOR REMOVAL IN THE SWPPP.
8. CROSS OUT AND DATE ANY LOTS THAT HAVE BEEN TRANSFERRED TO A SEPARATE OPERATOR. A NOTICE OF CHANGE SHALL BE MAILED TO THE TCEQ. AND A COPY SHALL BE PLACED IN THE SWPPP.
9. NOTIFY ENGINEER IN WRITING WHOSE SEAL APPEARS ON THESE DOCUMENTS OF ALL MODIFICATIONS AS REQUIRED BY THE TEXAS STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS.
10. PRIOR TO BEGINNING OPERATOR SHALL MAKE COPIES OF PLAN. IF CURRENT PLAN BE COMES TOO CROWDED FOR USE, OPERATOR SHALL PLACE "SEE REVISED PLAN" WITH DATE ON CURRENT PLAN, AND BEGIN TO USE A COPY FOR NEW PLAN.

EROSION CONTROL NOTES:

1. APPROXIMATE AREA TO BE DISTURBED IS ±12.36 ACRES FOR PAVING, GRADING, AND DRAINAGE ON 1 COLLECTOR STREET.
2. CONSTRUCTION ENTRANCE LOCATION TO BE APPROVED BY THE OWNER, AND THE CITY OF PARKER.
3. ALL EROSION CONTROL DEVICES SHALL BE IN ACCORDANCE WITH CITY OF PARKER STANDARD DETAILS AND SPECIFICATIONS.
4. ALL EROSION CONTROL DEVICES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
5. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY OF PARKER ENGINEERING DIVISION.
6. IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
7. OFF-SITE SOIL BORROW AND SPOIL AREAS ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL OFF-SITE SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AN ECP AND SWPPP FOR OFFSITE AREAS.
8. INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO INSURE THAT THE DEVICES ARE FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN STONES OR MUD IS BEING TRACKED ONTO A PUBLIC ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF-SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF-SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.
9. CONTRACTOR SHALL HAVE A COPY OF THE CITY OF PARKER EROSION AND SEDIMENT CONTROL MANUAL ON SITE AT ALL TIMES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTAL OF N.O.I., N.O.T. AND ANY ADDITIONAL INFORMATION REQUIRED BY THE E.P.A. STORMWATER POLLUTION PREVENTION REQUIREMENTS.
11. ALL EROSION CONTROL MEASURES SHALL COMPLY WITH THE CITY OF PARKER REQUIREMENTS.
12. INSTALL 4' WIDE EROSION MAT (CURLEX) BEHIND CURB DURING THIS PHASE. LEAVE A 1" SOIL DEPRESSION BELOW STREET CURB & ALLEY FOR THIS INSTALLATION.
13. SEDIMENTATION BASIN SHALL REMAIN IN PLACE UNTIL THE TOTAL ACREAGE OF VACANT LOTS IS LESS THAN 5 ACRES, AT WHICH TIME IT SHALL BE REMOVED.

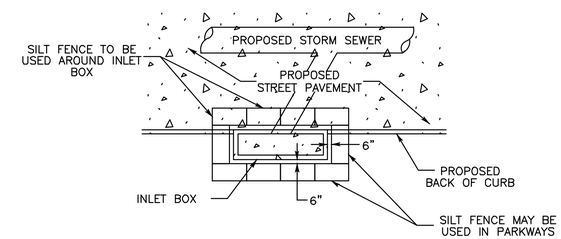


SILT FENCE DETAIL

(NOT TO SCALE)

NOTE:

1.) SILT FENCE FABRIC SHALL BE MIRAFI 100 X OR EQUAL.
2.) INSTALL SILT FENCES AT LOCATIONS DIRECTED BY OWNER.
3.) FENCE POSTS SHALL BE GALVANIZED STEEL AND MAY BE ROLL FORMED OR TUBULAR IN CROSS-SECTION. "T" POSTS MAY BE USED WHEN IN CONFORMANCE WITH SPECIFICATION.



TYPICAL DETAIL OF EROSION CONTROL AROUND INLETS

BENCHMARKS:

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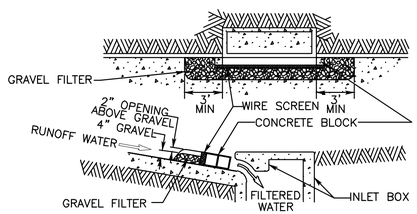
ELEV 605.438

BM#3 5/8" IRON ROD WITH CAP STAMPED "RANDOM" SET ON THE SOUTH SIDE OF GREGORY LANE INSIDE THE CIRCLE DRIVEWAY OF THE SUBJECT TRACT, BEING APPROXIMATELY 526 FEET WEST OF THE INTERSECTION OF GREGORY LANE AND THE FIRST SOUTHBOUND ROAD EAST OF THE SUBJECT TRACT. SAID POINT IS ALSO APPROXIMATELY 87 FEET NORTH OF THE NORTHWEST CORNER OF THE HOUSE LOCATED ON THE SITE, AND APPROXIMATELY 15 FEET SOUTH OF THE OVERHEAD POWER LINES.

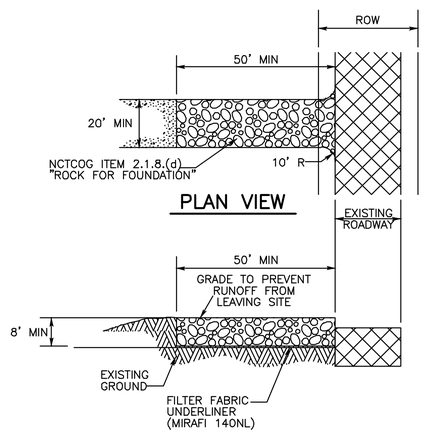
ELEV 597.995



SEDIMENT BARRIER AT INLETS

OR TYPE P-2 INLET FILTERS AFTER PAVEMENT CONSTRUCTION

(NOT TO SCALE)



CONSTRUCTION ENTRANCE DETAIL

(NOT TO SCALE)

IF APPLICABLE, A TRAFFIC RATED CATTLE GUARD MAY BE USED AS A SEDIMENT TRAPPING DEVICE, STRATEGICALLY PLACED ALONG THE CONSTRUCTION ENTRANCE

DATE	REVISION	BY

EROSION CONTROL DETAILS

PANORAMA STREET

CITY OF PARKER

COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
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SHEET 33 OF 35 SHEETS

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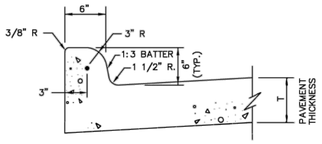
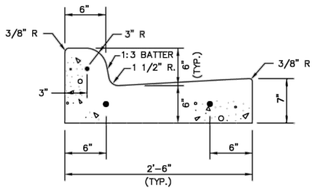
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLEC01.dwg

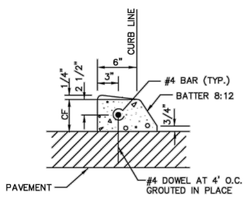
PANORAMA STREET



INTEGRAL CURB & GUTTER
N.T.S.



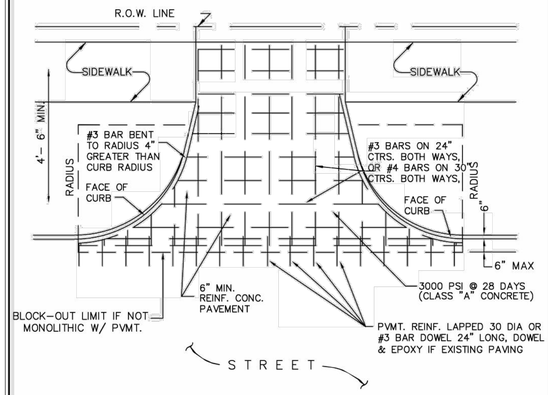
SEPARATE CURB & GUTTER
N.T.S.



DOWELED CURB
N.T.S.

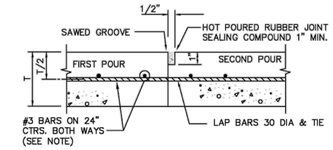
NOTES:
1. REINFORCEMENT SHALL BE NO. 4 BARS, UNLESS OTHERWISE SPECIFIED.
2. CONCRETE SHALL BE CLASS "C" OR "PC".
3. "CF" IS 6" UNLESS OTHERWISE SPECIFIED.
4. ALL CURBS ARE CONSTRUCTED OF PORTLAND CEMENT CONCRETE UNLESS OTHERWISE SHOWN.
5. GRADE SHALL BE MEASURED AT BACK OF CURB.

CONCRETE CURB & GUTTER INTEGRAL, SEPARATE, & DOWELED	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 305.1	DATE OCT. '04	STANDARD DRAWING NO. 2120

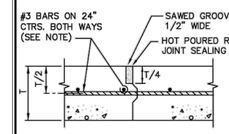


PLAN VIEW
N.T.S.

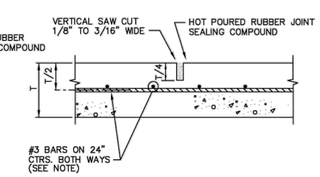
DRIVEWAY APPROACH RADIUS RETURN TYPE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 305.2*	DATE OCT. '04	STANDARD DRAWING NO. 2155



CONSTRUCTION JOINT
N.T.S.

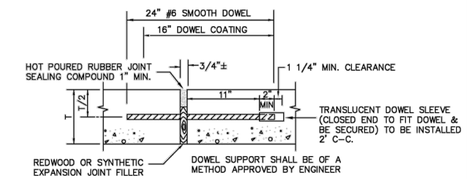


KEYWAY JOINT
(FOR PAVEMENT THICKNESS > 6")
N.T.S.



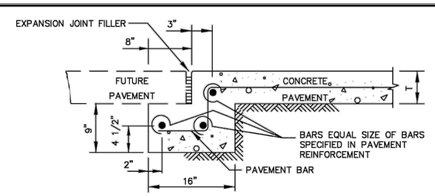
SAWED CONTRACTION JOINT
N.T.S.

NOTE:
ALTERNATE REINFORCEMENT
#4 BARS ON 30" CTRS.
BOTH WAYS.

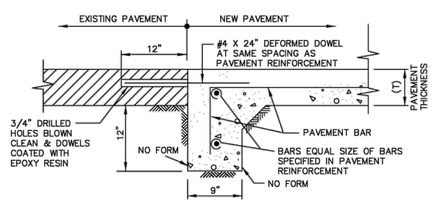


EXPANSION JOINT
(SPACED 600 FT. MAXIMUM; LOCATE AT STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)
N.T.S.

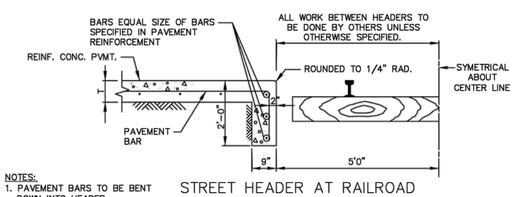
REINFORCED CONCRETE PAVEMENT JOINTS	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 303.5.4.	DATE OCT. '04	STANDARD DRAWING NO. 2050



STREET HEADER FOR FUTURE PAVEMENT
N.T.S.



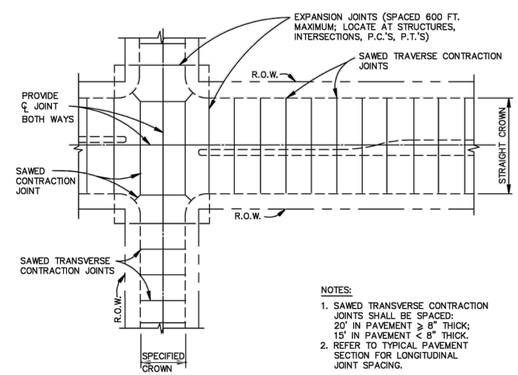
STREET HEADER AT EXISTING PAVEMENT
N.T.S.



NOTES:
1. PAVEMENT BARS TO BE BENT DOWN INTO HEADER.
2. HEADER AND PAVEMENT TO BE MONOLITHIC.

STREET HEADER AT RAILROAD
N.T.S.

REINFORCED CONCRETE PAVEMENT STREET HEADERS	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 305.4	DATE OCT. '04	STANDARD DRAWING NO. 2070



NOTES:
1. SAWED TRANSVERSE CONTRACTION JOINTS SHALL BE SPACED: 20' IN PAVEMENT ≥ 8" THICK; 15' IN PAVEMENT < 8" THICK.
2. REFER TO TYPICAL PAVEMENT SECTION FOR LONGITUDINAL JOINT SPACING.

SPACING DIAGRAM FOR TRANSVERSE JOINTS
N.T.S.

REINFORCED CONCRETE PAVEMENT TRANSVERSE JOINT SPACING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 303.5.4.	DATE OCT. '04	STANDARD DRAWING NO. 2060

DATE	REVISION	BY

PAVING DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

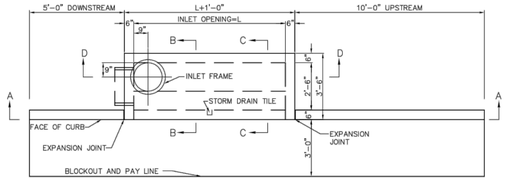
LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

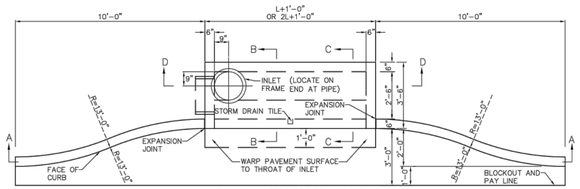
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW
UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561-0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE
SHEET 34 OF 35 SHEETS

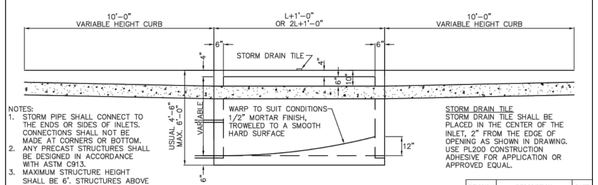
Date\Time : Tue, 27 Jun 2023 - 11:01amUser Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDT01.dwg



PLAN – STANDARD INLET



PLAN – RECESSED INLET



NOTES:
1. STORM PIPE SHALL CONNECT TO THE ENDS OR SIDES OF INLETS. CONNECTIONS SHALL NOT BE MADE AT CORNERS OR BOTTOM.
2. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
3. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
4. CONCRETE STRUCTURES SHALL BE MINIMUM 4200 PSI CONCRETE (CLASS F).

STORM DRAIN TILE
STORM DRAIN TILE SHALL BE PLACED IN THE CENTER OF THE INLET, 2" FROM THE EDGE OF OPENING AS SHOWN IN DRAWING. USE PL200 CONSTRUCTION ADHESIVE FOR APPLICATION OR APPROVED EQUAL.

SECTION A–A RECESSED AND STANDARD INLETS

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

4, 6, 8, AND 10 FOOT INLETS

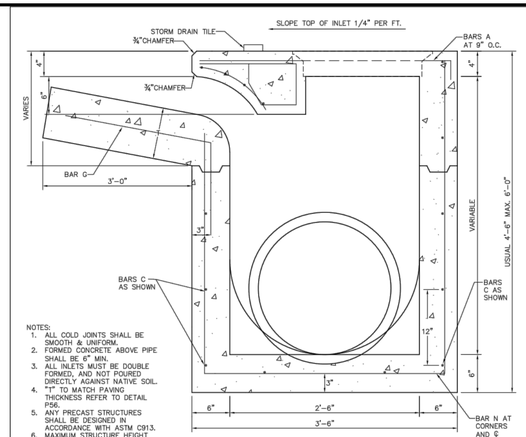
Plano ENGINEERING STANDARD DETAILS

STORM INLET

STORM DETAILS

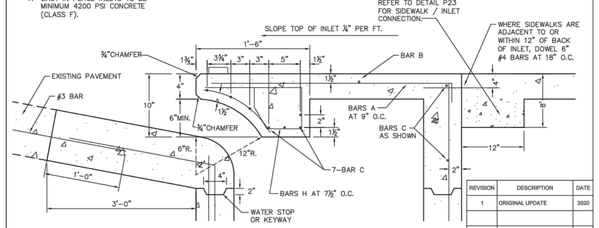
6/1/20

SD01



NOTES:
1. ALL COLD JOINTS SHALL BE SMOOTH & UNIFORM.
2. FORMED CONCRETE ABOVE PIPE SHALL BE 6" MIN.
3. ALL INLETS MUST BE DOUBLE FORMED, AND NOT POURED DIRECTLY AGAINST NATIVE SOIL.
4. "T" TO MATCH PAVING THICKNESS REFER TO DETAIL P56.
5. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
6. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
7. CAST IN PLACE INLETS TO BE MINIMUM 4200 PSI CONCRETE (CLASS F).

SECTION B–B



SECTION C–C

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

4, 6, 8, AND 10 FOOT INLET SECTIONS

STORM DETAILS

6/1/20

SD03

REINFORCING STEEL SCHEDULE
4', 6', 8' AND 10' INLETS

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS A	B	C
4 FT.	A	3	6	3'–2"	0'–3"	–
	B	3	1	2'–10"	–	–
	C	4	15	4'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	E	4	1	3'–2"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	3	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
6 FT.	A	3	9	3'–2"	0'–3"	–
	B	3	1	4'–10"	–	–
	C	4	15	6'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	E	4	1	3'–2"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	3	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
8 FT.	A	3	12	3'–2"	0'–3"	–
	B	3	1	6'–10"	–	–
	C	4	15	8'–8"	0'–6"	–
	D	4	5	4'–8"	–	–
	E	4	1	3'–2"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	4	*	*	*
	N	3	3	3'–2"	3'–2"	3'–2"
10 FT.	A	3	10	3'–2"	0'–3"	–
	B	3	2	8'–10"	–	–
	C	4	16	10'–8"	0'–6"	–
	D	4	4	4'–8"	–	–
	E	5	6	10'–8"	–	–
	G	3	5	2'–0"	1'–3"	–
	H	3	15	*	*	*
	I	4	8	4'–8"	3'–2"	3'–2"
	L	4	5	4'–3"		

* SEE DIAGRAM FOR DIMENSIONS.

ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913

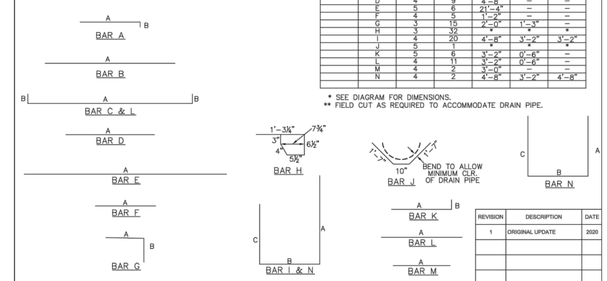
REINFORCING STEEL SCHEDULE
DOUBLE INLETS
12', 14', 16' AND 20' INLETS

DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS A	B	C
6 FT.	A	3	15	3'–2"	0'–6"	–
	B	3	2	11'–8"	–	–
	C	4	16	13'–4"	0'–6"	–
	D	4	9	4'–8"	–	–
	E	5	6	13'–4"	–	–
	F	4	5	1'–2"	–	–
	G	3	12	2'–0"	1'–3"	–
	H	3	26	*	*	*
	I	4	12	4'–8"	3'–2"	3'–2"
	J	5	1	*	*	*
	K	5	6	3'–2"	0'–6"	–
	L	4	11	3'–2"	0'–6"	–
	M	4	2	3'–0" **	–	–
	N	4	2	4'–8"	3'–2"	4'–8"
7 FT.	A	3	17	3'–2"	0'–6"	–
	B	3	2	13'–8"	–	–
	C	4	16	15'–4"	0'–6"	–
	D	4	9	4'–8"	–	–
	E	5	6	15'–4"	–	–
	F	4	5	1'–2"	–	–
	G	3	15	2'–0"	1'–3"	–
	H	3	32	*	*	*
	I	4	14	4'–8"	3'–2"	3'–2"
	J	5	1	*	*	*
	K	5	6	3'–2"	0'–6"	–
	L	4	11	3'–2"	0'–6"	–
	M	4	2	3'–0" **	–	–
	N	4	2	4'–8"	3'–2"	4'–8"
8 FT.	A	3	19	3'–2"	0'–6"	–
	B	3	2	15'–8"	–	–
	C	4	16	17'–4"	0'–6"	–
	D	4	9	4'–8"	–	–
	E	5	6	17'–4"	–	–
	F	4	5	1'–2"	–	–
	G	3	12	2'–0"	1'–3"	–
	H	3	26	*	*	*
	I	4	16	4'–8"	3'–2"	3'–2"
	J	5	1	*	*	*
	K	5	6	3'–2"	0'–6"	–
	L	4	11	3'–2"	0'–6"	–
	M	4	2	3'–0" **	–	–
	N	4	2	4'–8"	3'–2"	4'–8"
10 FT.	A	3	23	3'–2"	0'–6"	–
	B	3	2	19'–8"	–	–
	C	4	16	21'–4"	0'–6"	–
	D	4	9	4'–8"	–	–
	E	5	6	21'–4"	–	–
	F	4	5	1'–2"	–	–
	G	3	15	2'–0"	1'–3"	–
	H	3	32	*	*	*
	I	4	20	4'–8"	3'–2"	3'–2"
	J	5	1	*	*	*
	K	5	6	3'–2"	0'–6"	–
	L	4	11	3'–2"	0'–6"	–
	M	4	2	3'–0" **	–	–
	N	4	2	4'–8"	3'–2"	4'–8"

* SEE DIAGRAM FOR DIMENSIONS.
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE.

BAR DIAGRAMS



REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

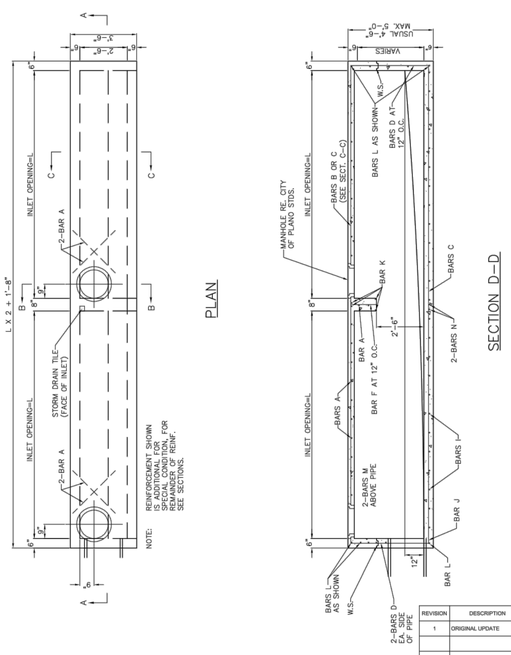
Plano ENGINEERING STANDARD DETAILS

STORM INLET REINFORCEMENT BAR DETAIL

STORM DETAILS

6/1/20

SD02



REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

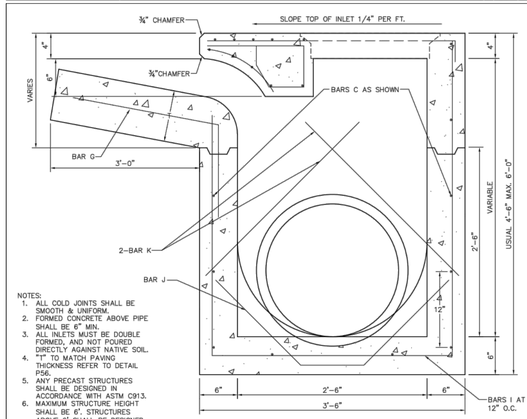
Plano ENGINEERING STANDARD DETAILS

12, 14, 16, AND 20 FOOT INLETS

STORM DETAILS

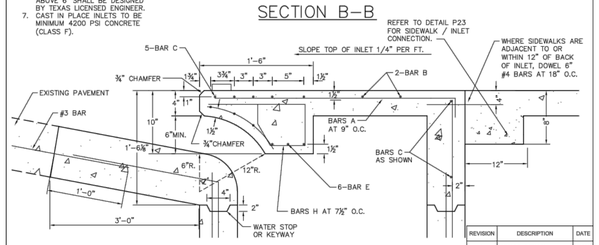
6/1/20

SD04



NOTES:
1. ALL COLD JOINTS SHALL BE SMOOTH & UNIFORM.
2. FORMED CONCRETE ABOVE PIPE SHALL BE 6" MIN.
3. ALL INLETS MUST BE DOUBLE FORMED, AND NOT POURED DIRECTLY AGAINST NATIVE SOIL.
4. "T" TO MATCH PAVING THICKNESS REFER TO DETAIL P56.
5. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
6. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
7. CAST IN PLACE INLETS TO BE MINIMUM 4200 PSI CONCRETE (CLASS F).

SECTION B–B



SECTION C–C

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

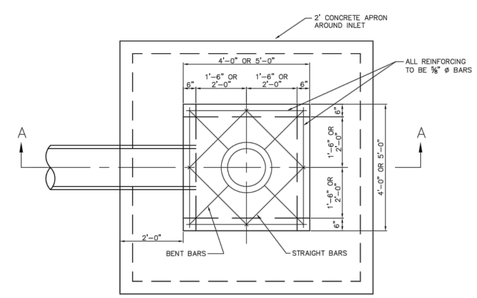
Plano ENGINEERING STANDARD DETAILS

12, 14, 16, AND 20 FOOT INLET SECTIONS

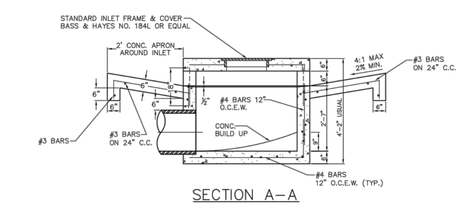
STORM DETAILS

6/1/20

SD05



PLAN



SECTION A–A

DROP INLET NOTES

1. ALL LAPS AND EXTENSIONS OF REINFORCING BARS SHALL BE 30 BAR DIAMETERS UNLESS NOTED OTHERWIS.
2. A "4' DROP INLET" REFERS TO THE OUTSIDE DIMENSION.
3. STORM PIPE SHALL CONNECT TO THE ENDS OR SIDES OF INLETS. CONNECTIONS SHALL NOT BE MADE AT CORNERS OR BOTTOM.
4. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
5. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
6. CONCRETE STRUCTURES SHALL BE MINIMUM 4200 PSI CONCRETE (CLASS F).

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

DROP INLET SECTIONS

STORM DETAILS

6/1/20

SD15

DATE	REVISION	BY

STORM DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

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THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE
SHEET 35 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 – 11:01amUser Name : tmartinez
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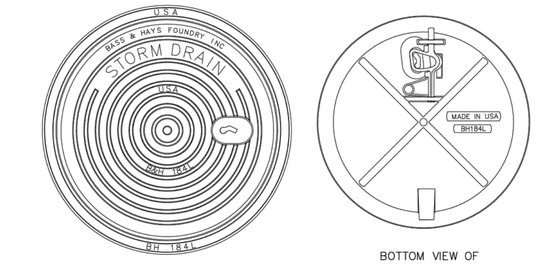
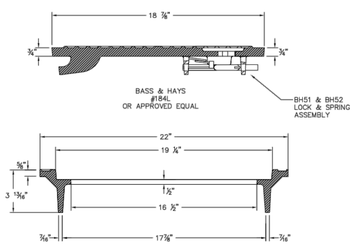


BOTTOM VIEW OF COVER



MINIMUM WEIGHTS

RING WEIGHT	–50 LBS.
COVER WEIGHT	–50 LBS.
SET WEIGHT	–100 LBS.

SECTION VIEW

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

STORM SEWER INLET COVER

STORM DETAILS SD06

6/1/20

(1) THE FLOOR OF THE EXCAVATION MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.

(2) A MINIMUM OF 6 INCHES OF 1" DIAMETER (MAXIMUM) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR IN LIEU OF THIS, AT LEAST 6 INCHES OF 2-SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE. CEMENT STABILIZED-SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.

(3) AFTER CASTING HAS BEEN INSTALLED ON THE PROPER BEDDING, THE BACKFILL MATERIAL, WHICH IS FREE FLOWING AND CLEAR OF ROCKS, IN EXCESS OF 4" DIAMETER AND OTHER LUMPS WHICH WOULD PROHIBIT PROPER COMPACTION, SHALL BE COMMENCED IN LIFTS OF NO MORE THAN 18". THE MATERIAL USED FOR BACKFILL SHOULD BE OF A TYPE SUITABLE TO OBTAIN THE DENSITY REQUIREMENTS FOR THE SPECIFIC JOB.

(4) PRECAST INLETS MUST BE APPROVED BY CITY ENGINEER.

(5) LOCKING DEVICE IS REQUIRED ON ALL STORM SEWER LIDS.

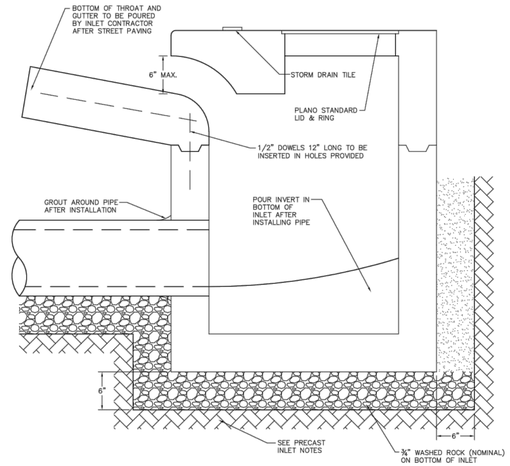
(6) "NO DUMPING" WARNING PLAQUE TO BE INSTALLED ON ALL STANDARD AND RECESSED INLETS.

(7) STORM PIPES SHALL CONNECT TO THE ENDS OR SIDES OF INLETS. CONNECTION SHALL NOT TO BE MADE AT CORNERS OR BOTTOM.

(8) ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.

(9) MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.

(10) CAST IN PLACE INLETS TO BE MINIMUM 4200 PSI CONCRETE (CLASS F).



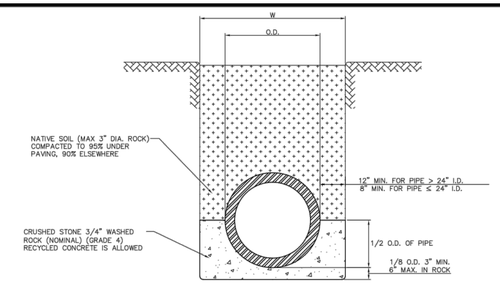
REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

INSTALLATION FOR PRECAST 5' AND 10' CURB INLETS

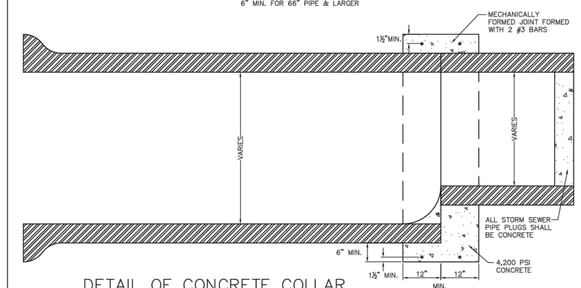
STORM DETAILS SD07

6/1/20



STORM SEWER PIPE BEDDING DETAIL (CLASS "B")

DEPTH OF TRENCH BELOW PIPE:
3" MIN. FOR 27" PIPE & SMALLER
4" MIN. FOR 30" TO 60" PIPE
6" MIN. FOR 66" PIPE & LARGER



DETAIL OF CONCRETE COLLAR FOR PIPE CONNECTIONS

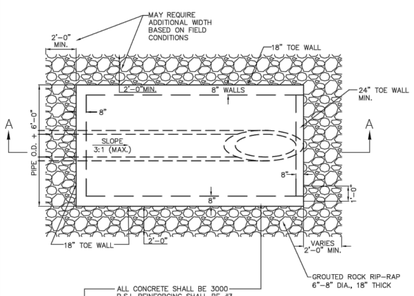
REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

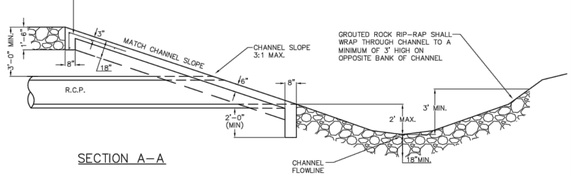
STORM SEWER EMBEDMENT AND CONCRETE COLLAR DETAILS

STORM DETAILS SD20

6/1/20



ALL CONCRETE SHALL BE 3000 P.S.I. REINFORCING SHALL BE #3 BARS 18" CENTERS EACH WAY



SECTION A–A

CAN BE MODIFIED WITH PERMISSION OF CITY ENGINEER

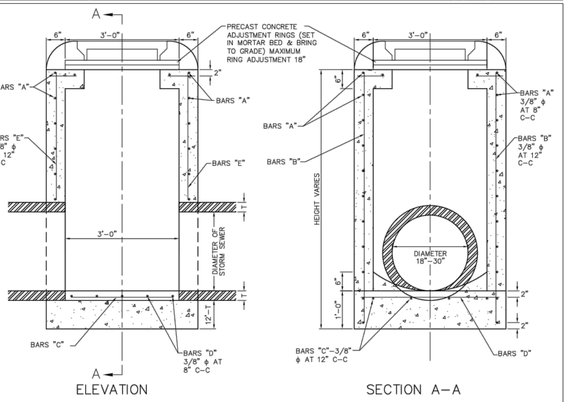
REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

SLOPED HEADWALL

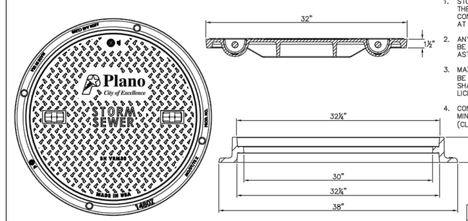
STORM DETAILS SD21

6/1/20



TYPE A STORM SEWER MANHOLE

(FOR PIPE 18" TO 30" IN DIAMETER)



NOTES:
1. STORM PIPE SHALL CONNECT TO THE ENDS OR SIDES OF INLETS. CONNECTIONS SHALL NOT BE MADE AT CORNERS OR BOTTOM.
2. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
3. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
4. CONCRETE STRUCTURES SHALL BE MINIMUM 4200 PSI CONCRETE (CLASS F).

NOTE: FRAME AND COVER SHALL BE BASS & HAYES VRM-30 "PLANO STORM SEWER" OR APPROVED EQUAL (REFER TO CITY OF PLANO APPROVED MATERIALS LIST) AND SHALL BE OF GRAY CAST IRON CONFORMING TO A.S.T.M. SPEC. A-48 FOR CLASS 30 CAST IRON.

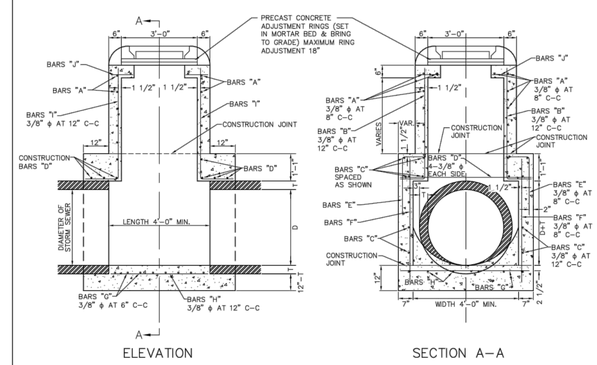
REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

TYPE A STORM SEWER MANHOLE

STORM DETAILS SD17

6/1/20



TYPE B STORM SEWER MANHOLE

(FOR PIPE 33" TO 78" IN DIAMETER)

NOTES:
1. FRAME AND COVER SHALL BE BASS & HAYES VRM-30 "PLANO STORM SEWER" OR APPROVED EQUAL (REFER TO CITY OF PLANO APPROVED MATERIALS LIST) AND SHALL BE OF GRAY CAST IRON CONFORMING TO A.S.T.M. SPEC. A-48 FOR CLASS 30 CAST IRON.
2. ANY PRECAST STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C913.
3. MAXIMUM STRUCTURE HEIGHT SHALL BE 6'. STRUCTURES ABOVE 6' SHALL BE DESIGNED BY TEXAS LICENSED ENGINEER.
4. CONCRETE STRUCTURES SHALL BE MINIMUM 4200 PSI CONCRETE (CLASS F).

REVISION	DESCRIPTION	DATE
1	ORIGINAL UPDATE	2020

Plano ENGINEERING STANDARD DETAILS

TYPE B STORM SEWER MANHOLE

STORM DETAILS SD18

6/1/20

PANORAMA STREET

DATE	REVISION	BY

STORM DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

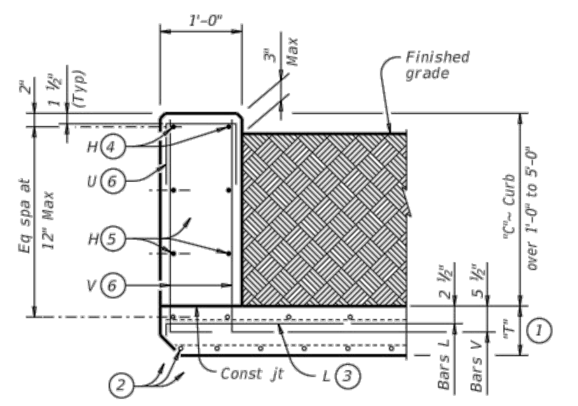
PRELIMINARY

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW
UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE

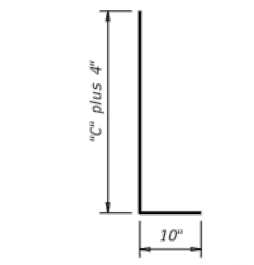
SHEET 36 OF 35 SHEETS

Date\Time : Tue, 27 Jun 2023 – 11:01amUser Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDT01.dwg

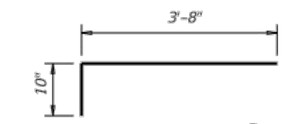


TYPICAL SECTION

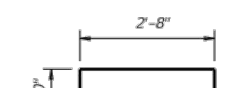
Used for curbs over 1'-0" to 5'-0"



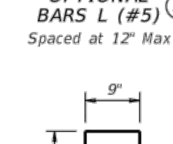
BARS V (#5) (6)
Spaced at 12" Max



BARS L (#5) (3)
Spaced at 12" Max



OPTIONAL BARS L (#5) (3)(7)
Spaced at 12" Max



BARS U (#4) (6)
Spaced at 12" Max

(1) "T" is equal to the culvert top slab thickness. For precast boxes with slabs less than 8" thick, see SCP-MD standard for additional details.

(2) Adjust normal culvert slab bars as necessary to clear obstructions.

(3) Place bars L as shown. Tilt hook as necessary to maintain cover.

(4) Place normal culvert curb bars H(#4) as shown. Adjust as necessary to clear obstructions.

(5) Additional bars H(#4) as required to maintain 12" Max spacing.

(6) Replace normal culvert curb bars K with one bar U and two bars V as shown spaced at 12" Max. Adjust length of bars V as necessary to maintain clear cover.

(7) Optional bars L are to be used only for precast box culverts with 3'-0" closure pour.

(8) Quantities shown are for Contractor's information only. Quantities are per linear foot of curb length. The value in table can be interpolated for intermediate values of curb height, "C". Quantity includes bars K (when applicable).

TABLE OF ESTIMATED CURB QUANTITIES (8)

Curb Height "C"	Conc (CY/LF)	Reinf Steel (Lb/LF)
1'-0"	0.037	10.4
1'-6"	0.056	14.5
2'-0"	0.074	15.6
2'-6"	0.093	18.0
3'-0"	0.111	19.0
3'-6"	0.130	21.3
4'-0"	0.148	22.4
4'-6"	0.167	24.8
5'-0"	0.185	25.9

CONSTRUCTION NOTES:
Adjust reinforcing steel as necessary to provide 1 ¼" cover.
For vehicle safety, top of the curb must not project more than 3" above the finished grade.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class "C" concrete (f'c = 3,600 psi) minimum for curbs.
Provide bar laps, where required, as follows:
- Uncoated or galvanized ~ #4 = 1'-8" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
These extended curb details have sufficient strength to allow for future retrofit of Type T631 or T631LS railing. These details are suitable for use with PR11, PR22 and PR3 type rails. These details are not suitable for the mounting of other rail types. For new construction using T631 or T631LS railing, use the T631-CM standard.
This Curb is considered as part of the Box Culvert for payment.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

Texas Department of Transportation — Bridge Division Standard

EXTENDED CURB DETAILS
FOR BOX CULVERTS WITH CURBS OVER 1'-0" TO 5'-0" TALL

ECD

FILE: ecdstde1-20.dgn | DN: GAF | CK: TxDOT | DW: TxDOT | CK: GAF
©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.

BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

Number of Spans	S	H	T	U	Bars B No.	Bars B Size	Bars B Spa	Bars B Length	Bars B Wt	Bars C & D No.	Bars C & D Size	Bars C & D Spa	Bars C Length	Bars C Wt	Bars D Length	Bars D Wt	Bars E No.	Bars E Size	Bars E Spa	Bars E Length	Bars E Wt	Bars F1 ~ #4 No.	Bars F1 Spa	Bars F1 Length	Bars F1 Wt	Bars F2 ~ #4 No.	Bars F2 Spa	Bars F2 Length	Bars F2 Wt	Bars M ~ #4 No.	Bars M Spa	Bars M Length	Bars M Wt	Bars Y & Z ~ #4 No.	Bars Y & Z Spa	Bars Y Length	Bars Y Wt	Bars Z Length	Bars Z Wt	Bars H 4 ~ #4 Length	Bars H Wt	Bars K No.	Bars K Wt	Per Foot of Barrel Conc (CY)	Per Foot of Barrel Reinf (Lb)	Curb Conc (CY)	Curb Reinf (Lb)	Total Conc (CY)	Total Reinf (Lb)
2	6' - 0"	2' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	44	18"	39' - 9"	1,168	108	9"	2' - 0"	144	54	9"	4' - 9"	171	5' - 5"	195	13' - 6"	36	30	84	0.894	182.4	1.0	120	36.8	7,414
3	6' - 0"	2' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	63	18"	39' - 9"	1,673	108	9"	2' - 0"	144	108	9"	4' - 9"	343	5' - 5"	391	20' - 1"	54	44	122	1.302	260.9	1.5	176	53.6	10,611
4	6' - 0"	2' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	82	18"	39' - 9"	2,177	108	9"	2' - 0"	144	162	9"	4' - 9"	514	5' - 5"	586	26' - 8"	71	56	156	1.711	339.4	2.0	227	70.4	13,801
5	6' - 0"	2' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	101	18"	39' - 9"	2,682	108	9"	2' - 0"	144	216	9"	4' - 9"	685	5' - 5"	782	33' - 3"	89	70	195	2.120	417.9	2.5	284	87.3	16,999
6	6' - 0"	2' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	120	18"	39' - 9"	3,186	108	9"	2' - 0"	144	270	9"	4' - 9"	857	5' - 5"	977	39' - 10"	106	82	228	2.529	496.4	3.0	334	104.1	20,189
2	6' - 0"	3' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	50	18"	39' - 9"	1,328	108	9"	3' - 0"	216	54	9"	4' - 9"	171	7' - 5"	268	13' - 6"	36	30	84	0.958	192.8	1.0	120	39.3	7,832
3	6' - 0"	3' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	71	18"	39' - 9"	1,885	108	9"	3' - 0"	216	108	9"	4' - 9"	343	7' - 5"	535	20' - 1"	54	44	122	1.389	274.4	1.5	176	57.1	11,152
4	6' - 0"	3' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	92	18"	39' - 9"	2,443	108	9"	3' - 0"	216	162	9"	4' - 9"	514	7' - 5"	803	26' - 8"	71	56	156	1.819	356.1	2.0	227	74.7	14,469
5	6' - 0"	3' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	113	18"	39' - 9"	3,000	108	9"	3' - 0"	216	216	9"	4' - 9"	685	7' - 5"	1,070	33' - 3"	89	70	195	2.250	437.7	2.5	284	92.5	17,790
6	6' - 0"	3' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	134	18"	39' - 9"	3,558	108	9"	3' - 0"	216	270	9"	4' - 9"	857	7' - 5"	1,338	39' - 10"	106	82	228	2.681	519.3	3.0	334	110.2	21,107
2	6' - 0"	4' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	50	18"	39' - 9"	1,328	108	9"	4' - 0"	289	54	9"	4' - 9"	171	9' - 5"	340	13' - 6"	36	30	84	1.023	199.2	1.0	120	41.9	8,089
3	6' - 0"	4' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	71	18"	39' - 9"	1,885	108	9"	4' - 0"	289	108	9"	4' - 9"	343	9' - 5"	679	20' - 1"	54	44	122	1.475	282.6	1.5	176	60.5	11,481
4	6' - 0"	4' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	92	18"	39' - 9"	2,443	108	9"	4' - 0"	289	162	9"	4' - 9"	514	9' - 5"	1,019	26' - 8"	71	56	156	1.927	366.1	2.0	227	79.1	14,870
5	6' - 0"	4' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	113	18"	39' - 9"	3,000	108	9"	4' - 0"	289	216	9"	4' - 9"	685	9' - 5"	1,359	33' - 3"	89	70	195	2.380	449.5	2.5	284	97.7	18,264
6	6' - 0"	4' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	134	18"	39' - 9"	3,558	108	9"	4' - 0"	289	270	9"	4' - 9"	857	9' - 5"	1,698	39' - 10"	106	82	228	2.832	533.0	3.0	334	116.2	21,652
2	6' - 0"	5' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	56	18"	39' - 9"	1,487	108	9"	5' - 0"	361	54	9"	4' - 9"	171	11' - 5"	412	13' - 6"	36	30	84	1.088	209.6	1.0	120	44.5	8,505
3	6' - 0"	5' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	79	18"	39' - 9"	2,098	108	9"	5' - 0"	361	108	9"	4' - 9"	343	11' - 5"	824	20' - 1"	54	44	122	1.562	296.2	1.5	176	64.0	12,024
4	6' - 0"	5' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	102	18"	39' - 9"	2,708	108	9"	5' - 0"	361	162	9"	4' - 9"	514	11' - 5"	1,235	26' - 8"	71	56	156	2.035	382.7	2.0	227	83.4	15,536
5	6' - 0"	5' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	125	18"	39' - 9"	3,319	108	9"	5' - 0"	361	216	9"	4' - 9"	685	11' - 5"	1,647	33' - 3"	89	70	195	2.509	469.3	2.5	284	102.8	19,056
6	6' - 0"	5' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	148	18"	39' - 9"	3,930	108	9"	5' - 0"	361	270	9"	4' - 9"	857	11' - 5"	2,059	39' - 10"	106	82	228	2.983	555.9	3.0	334	122.3	22,570
2	6' - 0"	6' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	62	18"	39' - 9"	1,646	108	9"	6' - 0"	433	54	9"	4' - 9"	171	13' - 5"	484	13' - 6"	36	30	84	1.153	220.0	1.0	120	47.1	8,921
3	6' - 0"	6' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	87	18"	39' - 9"	2,310	108	9"	6' - 0"	433	108	9"	4' - 9"	343	13' - 5"	968	20' - 1"	54	44	122	1.648	309.7	1.5	176	67.4	12,565
4	6' - 0"	6' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	112	18"	39' - 9"	2,974	108	9"	6' - 0"	433	162	9"	4' - 9"	514	13' - 5"	1,452	26' - 8"	71	56	156	2.144	399.4	2.0	227	87.7	16,204
5	6' - 0"	6' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	137	18"	39' - 9"	3,638	108	9"	6' - 0"	433	216	9"	4' - 9"	685	13' - 5"	1,936	33' - 3"	89	70	195	2.639	489.1	2.5	284	108.0	19,849
6	6' - 0"	6' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	162	18"	39' - 9"	4,302	108	9"	6' - 0"	433	270	9"	4' - 9"	857	13' - 5"	2,420	39' - 10"	106	82	228	3.134	578.9	3.0	334	128.3	23,488

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS
CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

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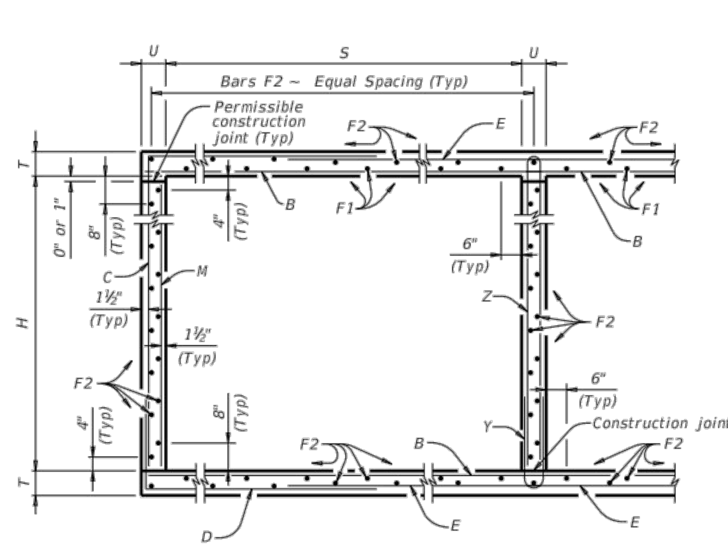
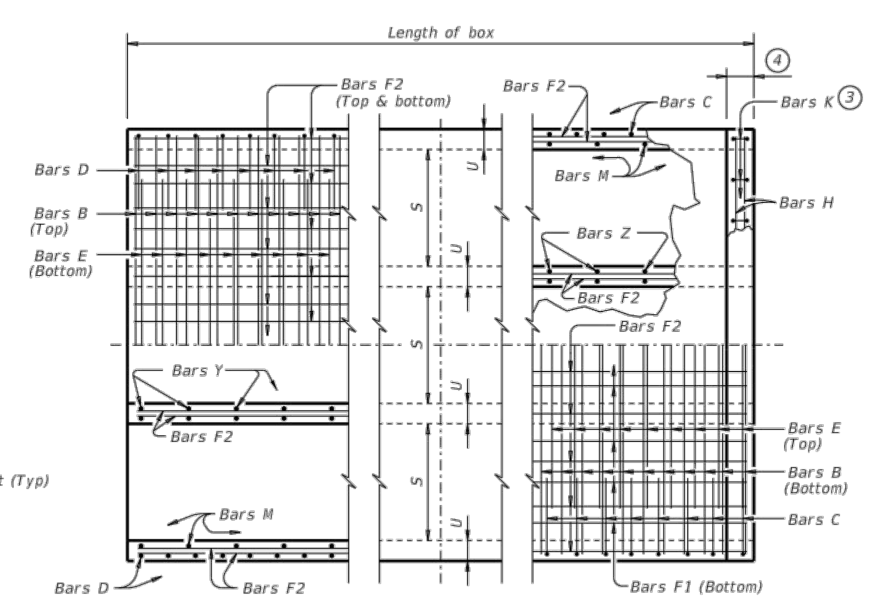
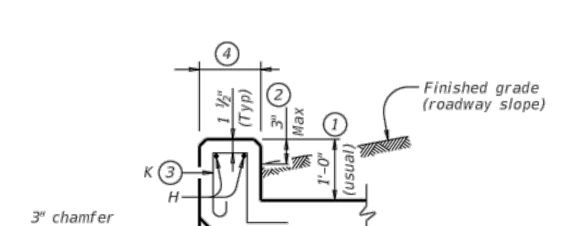


TYPICAL SECTION



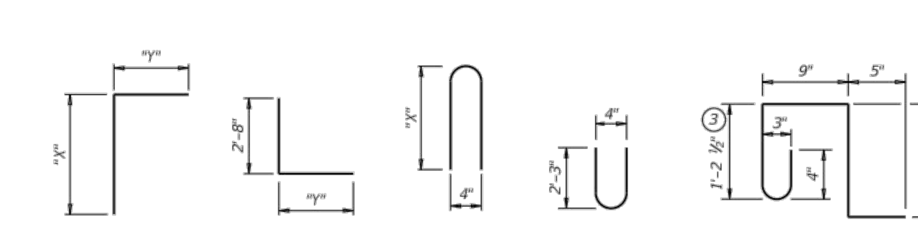
BOTTOM SLAB   PART PLANS   TOP SLAB



SECTION THRU CURB

TABLE OF BAR DIMENSIONS

H	"X"	"Y"
2'-0"	2'-7 ½"	4'-1"
3'-0"	3'-7 ½"	4'-1"
4'-0"	4'-7 ½"	4'-1"
5'-0"	5'-7 ½"	4'-1"
6'-0"	6'-7 ½"	4'-1"



BARS C   BARS D   BARS Z   BARS Y   BARS K (#4)
(Spa = 1'-0" Max)
(Length = 4'-2")

(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, and Bars Y and Z may be reversed.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
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:
- 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
- Uncoated or galvanized ~ #6 = 2'-6" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-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.

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS
CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

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PANORAMA STREET

DATE	REVISION	BY

STORM DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

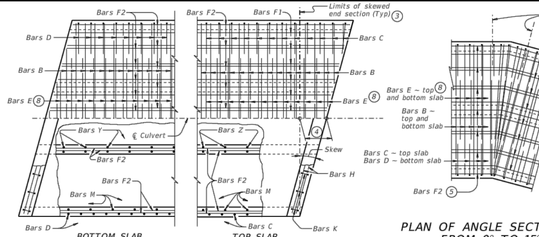
LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

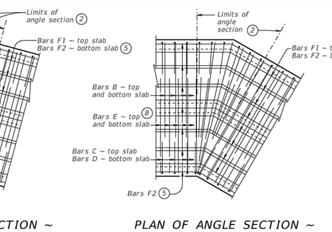
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE
SHEET 37 OF 35 SHEETS

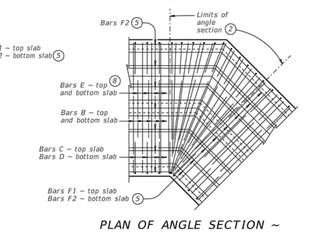
Date\Time : Tue, 27 Jun 2023 - 11:01amUser Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDT01.dwg



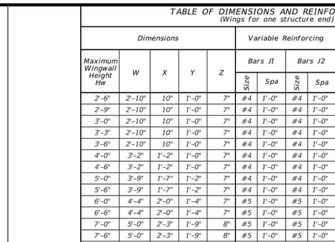
PLAN OF SKEWED ENDS ~ FROM 0° TO 15° 7



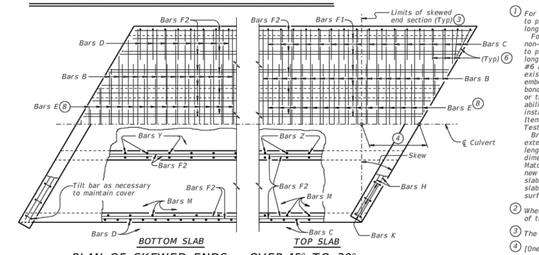
PLAN OF ANGLE SECTION ~ FROM 0° TO 15°



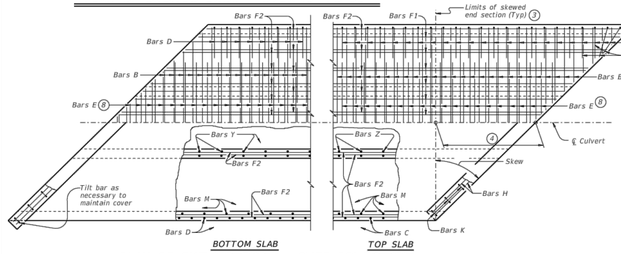
PLAN OF ANGLE SECTION ~ OVER 15° TO 30°



PLAN OF ANGLE SECTION ~ OVER 30° TO 45°



PLAN OF SKEWED ENDS ~ OVER 15° TO 30°



PLAN OF SKEWED ENDS ~ OVER 30° TO 45°

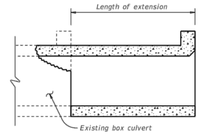
1. For skewed box culverts with less than 2'-0" of fill, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension.
   For non-skewed box culverts with less than 2'-0" of fill and for skewed or non-skewed culverts with a fill depth of 2'-0" or greater, break back the top slab to provide a 1'-10" minimum lap of the existing longitudinal bars with the longitudinal bars in the extension. Alternatively, if the box is non-skewed, embed #6 anchor bars with a Type III, Class C, D, E, or F anchor adhesive into the existing walls, top and bottom slab at 1'-6" center-to-center spacing. Minimum embedment depth is 8". Anchor adhesive chosen must be able to achieve a basic bond strength in tension, N_{ba}, of 26.4 kips. Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Item 450, "Railing." Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.
   Break back wings and apron as necessary to install the extension. Clean and extend the exposed wingwall and apron reinforcing into the extension. When lengthening existing box culverts with dimensions different than current standard dimensions, form horizontal and vertical transitions as directed by the Engineer. Match bottom slabs to maintain an uninterrupted flow line. Field bend existing and new reinforcing into transitions and maintain specified cover requirements. For top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface, adjust the "H" dimension to provide a smooth riding surface.
2. When the spacing between Bars B or Bars E becomes less than half of the normal spacing, cut bars to avoid conflict.
3. The length of Bars B and Bars E will vary in the skewed end sections.
4. [One half of overall width] x [tangent of the skew angle]
5. Place Bars F1 and F2 continuously through the angle section. Bend Bars F1 and F2 to remain parallel to the walls of the box culvert.
6. When necessary to avoid conflict in acute corners, shorten the slab extension leg of Bars C and Bars D to a minimum of 1'-6" for skews of 30° thru 45°.
7. At the Contractor's option, for skews of 15° or less, place Bars B, C, D, and E parallel to the skewed end while maintaining spacing along centerline of box. Increase lengths of Bars B and Bars E shown on the Multiple Box Culverts Cast-In-Place (MC) standard sheets to accommodate the skew.
8. Extend Bars E as shown on the MC standard sheet for direct traffic culverts.

CONSTRUCTION NOTES:
Do not use permanent forms.
When required, lap Bars H 1'-8" for uncoated or galvanized bars.
Provide a minimum of 1 ½" clear cover.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel, if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) with these exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of culverts with overlay, with 1-to-2 course surface treatment, or with the top slab as the final riding surface.
The length of Bars B and Bars E will vary in the skewed end sections.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for details of straight sections of culvert.
For skewed sections and angle sections, refer to Multiple Box Culverts Cast-in-Place (MC) standard sheets for slab and wall dimensions, bar sizes, maximum bar spacing, and any other details not shown.
For skewed ends with curbs, adjust length of Bars H, number of Bars K, curb concrete volume, and reinforcing steel weight by dividing the values shown on the Multiple Box Culverts Cast-In-Place (MC) standard sheets by the cosine of the skew angle.

Cover dimensions are clear dimensions, unless noted otherwise.



LENGTHENING DETAIL 1

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS CAST-IN-PLACE MISCELLANEOUS DETAILS

MC-MD

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TABLE OF DIMENSIONS AND REINFORCING STEEL (Wings for one structure end)

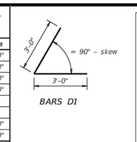
Dimensions: Maximum Wingwall Height Hw	W	X	Y	Z	Variable Reinforcing: Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of wing (2-wings) 4: Reinf (Lb/Ft)	Conc (CY/Ft)	Estimated Quantities per ft of Toewall (1-toewall): Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-0"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-0"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-0"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-0"	7'-9"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-0"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-0"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-0"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING (2-wings)

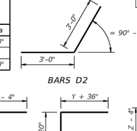
Bar	Size	No.	Spa
D1	#6	–	1'-0"
D2	#6	–	1'-0"
E1	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	–	8"
M1	#4	4	–
P	#4	–	1'-0"
V	#4	–	1'-0"

TABLE OF TOEWALL REINFORCING

Bar	Size	No.	Spa
J3	#4	–	1'-0"
M2	#4	2	–
E2	#4	–	1'-0"



BARS D1



BARS D2

WING DIMENSION FORMULAS:

(All values are in feet.)

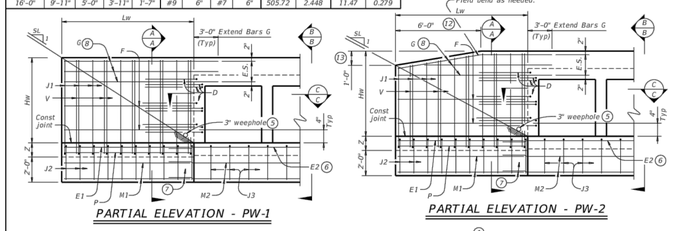
Hw = H + T + C
Lw = (Hw) (SL) + cosine (θ) for Type PW-1
= (Hw - 1') (SL) + cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) + cosine (θ) for Type PW-2 and Hw < 4'

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] + cosine (θ)

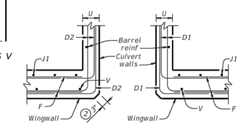
For precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5)] + cosine (θ)
Total Wingwall Area (two wings ~ SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw < 4'

Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
SL:1 = Channel slope ratio. (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

See applicable box culvert standard sheet for S, H, T, and U values.

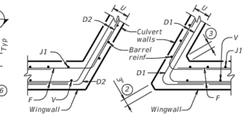


BARS J1 BARS J2 BARS J3 BARS V



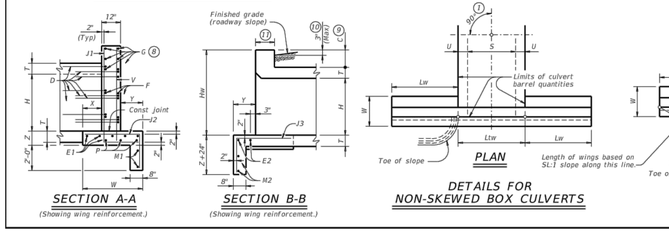
SECTION C-C - PW-1

PARTIAL ELEVATION - PW-1



SECTION C-C - PW-2

PARTIAL ELEVATION - PW-2



SECTION A-A (Showing wing reinforcement.) | SECTION B-B (Showing wing reinforcement.) | PLAN | PLAN

DETAILS FOR NON-SKEWED BOX CULVERTS | DETAILS FOR SKEWED BOX CULVERTS (Showing 30° skew.)

1. Skew = 0°
2. At discharge end, chamfer may be ¾" minimum.
3. For 15° skew ~ 1"
   For 30° skew ~ 2"
   For 45° skew ~ 3"
4. Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.
5. Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.
6. Extend Bars E2 1'-6" minimum into the wingwall footing.
7. Lap Bars M1 1'-6" minimum with Bars M2.
8. Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.
9. 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 Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.
10. 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.
11. 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elsewhere in the plans.
12. 3'-0" for Hw < 4'.
13. 6" for Hw < 4'.

DESIGNER NOTES:
Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

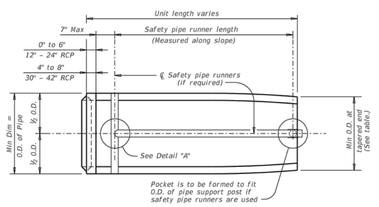
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2

PW

FILE: pwstlw01-20.dgn	DN: GAF	CK: CRT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST		COUNTY	SHEET NO.



PLAN VIEW
(Showing spigot end connection.)

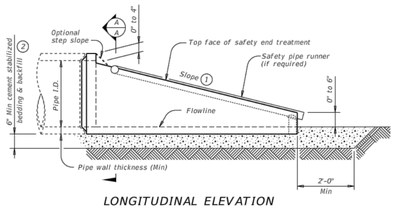
MAX SAFETY PIPE RUNNER LENGTHS AND REQUIRED SAFETY PIPE RUNNER SIZES

Max Safety Pipe Runner Length	Required Pipe Runner Size: Pipe Size	Pipe O.D.	Pipe I.D.
11' - 2"	3" STD	3.500"	3.068"
15' - 6"	3 ½" STD	4.000"	3.548"
20' - 10"	4" STD	4.500"	4.026"
35' - 4"	5" STD	5.563"	5.047"

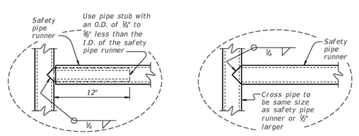
1. Slope as shown elsewhere in the plans. Slope of 3:1 or flatter is required for vehicle safety.
2. Provide cement stabilized bedding and backfill in accordance with the Item, "Excavation and Backfill for Structures". Bedding and backfill is considered subsidiary to the Item "Safety End Treatment". When concrete riprap is specified around the safety end treatment, backfill as directed by Engineer.
3. Fill the top 4" of void between precast end treatments with concrete riprap. Concrete riprap be considered subsidiary to the Item "Safety End Treatment".
4. Adjust clear distance between pipes to provide for the minimum distance between safety end treatments.

REQUIREMENTS FOR CULVERT PIPES AND SAFETY PIPE RUNNERS

Pipe I.D.	Min Wall Thickness	Min O.D.	Min O.D. at Tapered End	Min Reinf Requirements (sq. in. / ft. of pipe)	Slope	Minimum Length of Unit	Single Pipe: Skew	Single Pipe: Pipe Runners Required	Multiple Pipe: Skew	Multiple Pipe: Pipe Runners Required
12"	2"	16"	16"	0.07 Circ.	3:1	2'-0"	≤ 45°	No	≤ 45°	No
					4:1	2'-8"				
					6:1	4'-0"				
15"	2 ½"	19 ½"	19"	0.07 Circ.	3:1	2'-10"	≤ 45°	No	≤ 45°	No
					4:1	3'-9"				
					6:1	5'-8"				
18"	2 ½"	23"	21 ½"	0.07 Circ.	3:1	3'-8"	≤ 45°	No	≤ 45°	No
					4:1	4'-10"				
					6:1	7'-3"				
24"	3"	30"	27"	0.07 Circ.	3:1	5'-3"	≤ 45°	No	≤ 30°	No
					4:1	7'-0"			> 30°	Yes
					6:1	10'-6"				
30"	3 ½"	37"	31"	0.18 Circ.	3:1	6'-3"	≤ 15°	No	≤ 15°	No
					4:1	8'-2"	> 15°	Yes	> 15°	Yes
					6:1	12'-1"				
36"	4"	44"	36"	0.19 Ellip.	3:1	7'-10"	= 0°	No	≥ 0°	Yes
					4:1	10'-4"	> 0°	Yes		
					6:1	15'-4"				
42"	4 ½"	51"	41 ½"	0.23 Ellip.	3:1	9'-6"	≥ 0°	Yes	≥ 0°	Yes
					4:1	12'-6"				
					6:1	18'-7"				



LONGITUDINAL ELEVATION
(Showing spigot end connection.)

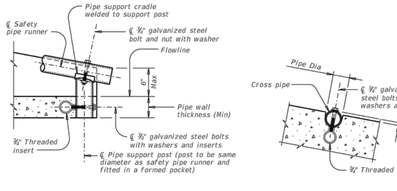


OPTION A | OPTION B

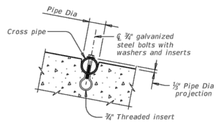
DETAIL A

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 safety pipe runners, cross pipes, pipe support posts, and pipe stubs meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5L X52.
Galvanize all steel components except reinforcing steel after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

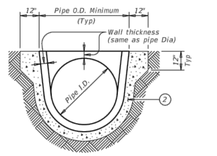
GENERAL NOTES:
Precast safety end treatment for reinforced concrete pipe (CRP) may be used for TYPE II end treatment as specified in Item 467, "Safety End Treatment".
When precast safety end treatment is used as a Contractor's alternate to mitered RCP, riprap will not be required unless noted otherwise on the plans.
Manufacture precast concrete end sections in accordance with Item 464, "Reinforced Concrete Pipe" and in accordance with ASTM Specification C-76, Class III, Wall B for circular pipe.
Provide precast concrete end sections with a spigot or bell end for compatibility to upstream or downstream end conditions with sufficient annular space to allow for grout, mortar, cold applied asphalt joint compound or pre-formed plastic gasket material.
Methods of lifting shall be provided by the manufacturer for ease of loading, unloading, and installation.
Pipe runners are designed for a traversing load of 1,800 Lbs at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.



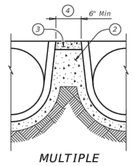
END DETAIL FOR INSTALLATION OF SAFETY PIPE RUNNERS
(If required)



INSTALLATION DETAIL FOR SAFETY PIPE RUNNERS
(If required)



SECTION A-A



MULTIPLE PIPE INSTALLATION

Texas Department of Transportation — Bridge Division Standard

PRECAST SAFETY END TREATMENT
TYPE II ~ CROSS DRAINAGE

PSET-RC

FILE: psetrcsa-20.dgn	DN: RLB	CK: KLR	DW: JTR	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST		COUNTY	SHEET NO.

DATE	REVISION	BY

STORM DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

PRELIMINARY

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561-0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE
SHEET 38 OF 35 SHEETS

PANORAMA STREET

Date\Time : Tue, 27 Jun 2023 - 11:01am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDT01.dwg

PANORAMA STREET

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing length (2-wings) ③	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1		Bars J2			
					Size	Spa	Size	Spa	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2-wings)

Bar	Size	No.	Spa
D	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
M	#4	4	–
P	#4	–	1'-0"
R	#5	6	–
V	#4	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	–	1'-0"
Q	#4	1	–
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

$Hw = H + T + C - 0.250'$
$Lw = (Hw - 0.333') (SL)$

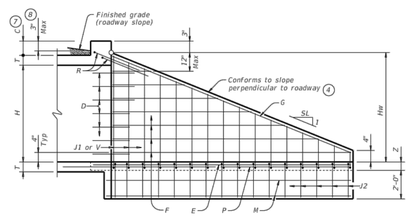
For cast-in-place culverts:
$Ltw = (N) (S) + (N + 1) (U)$

For precast culverts:
$Ltw = (N) (2U + S) + (N - 1) (0.5')$

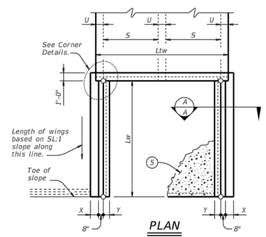
Total Wingwall Area (two wings – SF) = $(Hw + 0.333') (Lw)$

Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

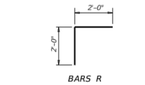
See applicable box culvert standard sheet for H, S, T, and U values.



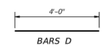
INSIDE ELEVATION



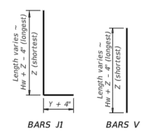
PLAN
(Showing dimensions.)



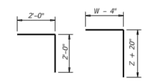
BARS R



BARS D



BARS J1 BARS V



BARS L BARS J2

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ 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 Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

⑧ 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.

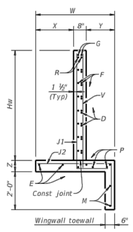
MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

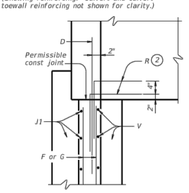
Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

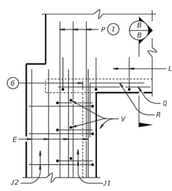


SECTION A-A

(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

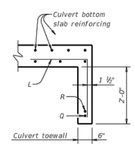


WINGWALL



FOOTING AND TOEWALL

CORNER DETAILS



SECTION B-B ⑤

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

SW-0

FILE: sw-0slde-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
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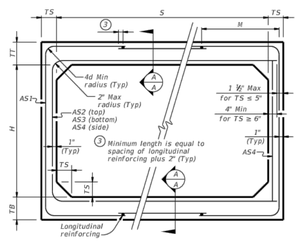
REVISIONS				
	DIST		COUNTY	SHEET NO.

BOX DATA

SECTION DIMENSIONS					Fill Height	H Min	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
4	2	7.5	6	5	< 2	–	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.5
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	–	–	–	3.6
4	2	5	5	5	3 – 5	38	0.13	0.13	0.13	0.12	–	–	–	3.6
4	2	5	5	5	10	38	0.12	0.12	0.12	0.12	–	–	–	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	–	–	–	3.6
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	–	–	–	3.6
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	–	–	–	3.6
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	–	–	–	3.6
4	3	7.5	6	5	< 2	–	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.0
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	–	–	–	4.1
4	3	5	5	5	3 – 5	38	0.12	0.16	0.16	0.12	–	–	–	4.1
4	3	5	5	5	10	38	0.12	0.14	0.14	0.12	–	–	–	4.1
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	–	–	–	4.1
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	–	–	–	4.1
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	–	–	–	4.1
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	–	–	–	4.1
4	4	7.5	6	5	< 2	–	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.5
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	–	–	–	4.6
4	4	5	5	5	3 – 5	38	0.12	0.18	0.18	0.12	–	–	–	4.6
4	4	5	5	5	10	38	0.12	0.15	0.15	0.12	–	–	–	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	–	–	–	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	–	–	–	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	–	–	–	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	–	–	–	4.6

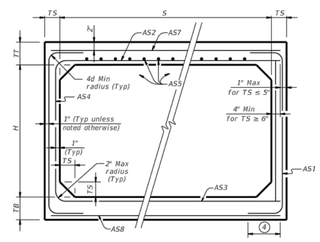
① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.



CORNER OPTION "A" CORNER OPTION "B"

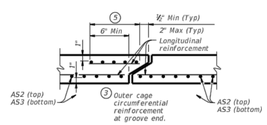
FILL HEIGHT 2 FT AND GREATER



CORNER OPTION "A" CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)



SECTION A-A
(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f'c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

SINGLE BOX CULVERTS PRECAST 4'-0" SPAN

SCP-4

FILE: scp04ds-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST		COUNTY	SHEET NO.

DATE	REVISION	BY

STORM DETAILS

PANORAMA STREET

CITY OF PARKER
COLLIN COUNTY, TEXAS

LJA Engineering, Inc.
6060 North Central Expressway
Suite 400
Dallas, Texas 75206
Phone 469.621.0710
FRN - F-1386

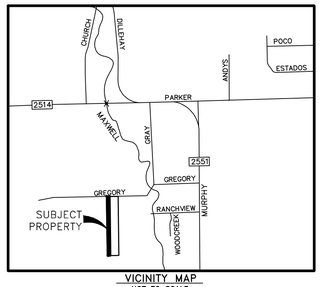
PRELIMINARY

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF VERONICA B. HADLEY, TEXAS P.E. #143748 ON 06 27 2023
THIS DOCUMENT IS NOT TO BE USED FOR THE PURPOSES OF CONSTRUCTION.

LJA PROJECT ID NT561–0133
DATE: JUN 2023
DESIGN: N/A
DRAWN: MARTINEZ
SCALE
HORZ: NOT TO SCALE
VERT: NOT TO SCALE

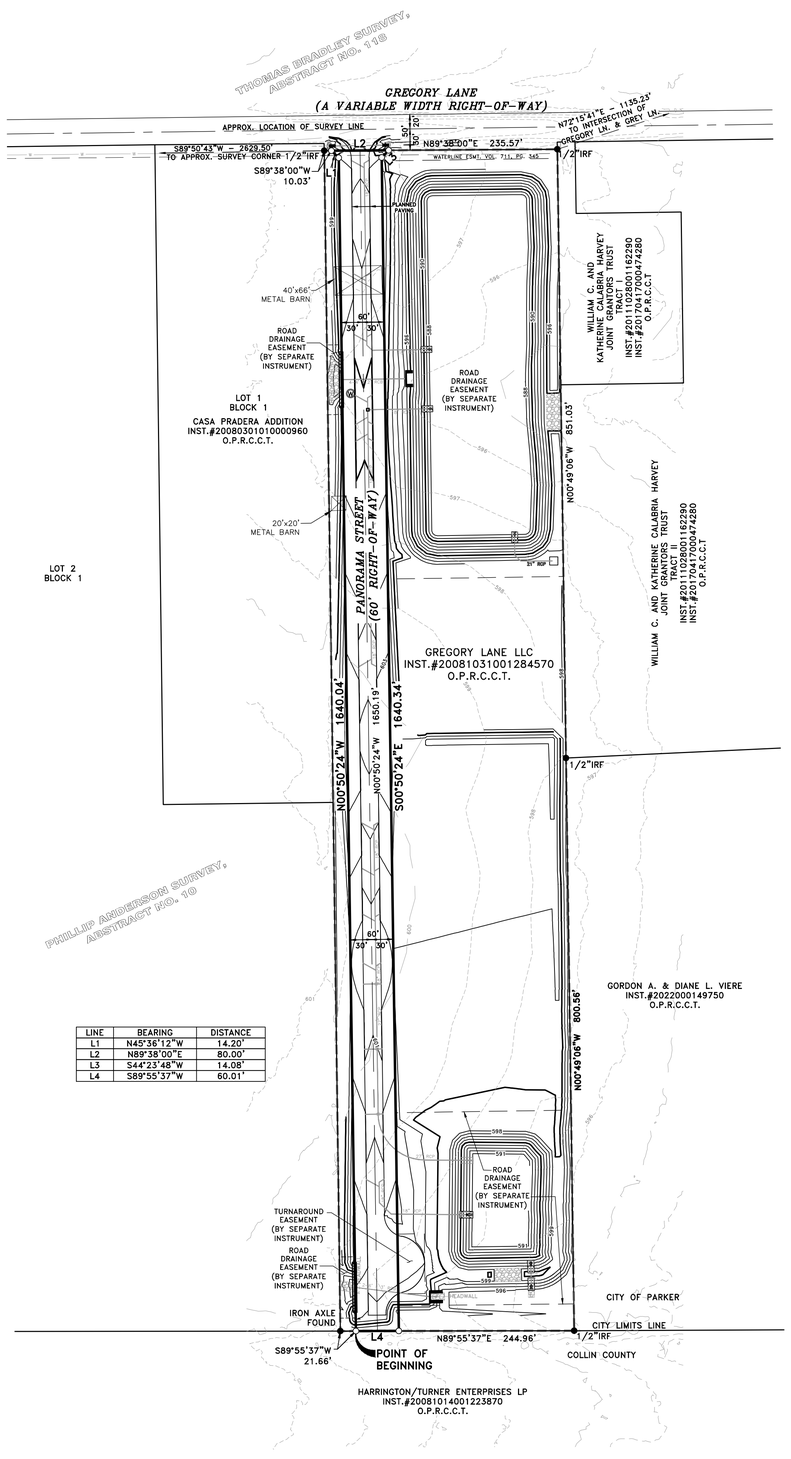
Date\Time : Tue, 27 Jun 2023 – 11:02am User Name : tmartinez
Path\Name : S:\NTX-LAND\0133\400 LAND\425 Design Files\Access Road\0133RDLDT01.dwg

PANORAMA STREET



VICINITY MAP
NOT TO SCALE

100 0 100
1 INCH = 100 FT.



LINE	BEARING	DISTANCE
L1	N45°36'12"W	14.20'
L2	N89°38'00"E	80.00'
L3	S44°23'48"W	14.08'
L4	S89°55'37"W	60.01'

LEGEND

○	CAPPED IRON ROD SET
IRF	IRON ROD FOUND
Ⓦ	WATER WELL
O.P.R.C.C.T.	OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS
INST.#	INSTRUMENT NO.
(CM)	CONTROLLING MONUMENT
	EXISTING GRADE
	PROPOSED GRADE
	STORM DRAIN
	PROPOSED EASEMENTS
—W—	EXISTING 8" WATERLINE
	PROPOSED EROSION CONTROL

OWNER'S DEDICATION

STATE OF TEXAS)(

COUNTY OF COLLIN)(

WHEREAS GREGORY LANE LLC IS THE OWNER OF A 2.275 ACRE TRACT OF LAND SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10, CITY OF PARKER, COLLIN COUNTY, TEXAS, AND BEING PART OF A TRACT OF LAND CONVEYED TO GREGORY LANE LLC, AS RECORDED IN INSTRUMENT NO. 20081031001284570, OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEING 2.275 ACRES OF LAND SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT No. 10, CITY OF PARKER, COLLIN COUNTY, TEXAS, AND BEING A PORTION OF A TRACT OF LAND DESCRIBED TO GREGORY LANE LLC BY DEED RECORDED IN INSTRUMENT NO. 20081031001284570, OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A CAPPED IRON ROD SET ON THE SOUTH LINE OF SAID GREGORY LANE TRACT, FROM WHICH AN IRON AXLE FOUND FOR THE SOUTHEAST CORNER OF THE CASA PRADERA ADDITION, AN ADDITION TO THE CITY OF PARKER, COLLIN COUNTY, TEXAS BY PLAT RECORDED IN INSTRUMENT NO. 20080301010000960 OF SAID OFFICIAL PUBLIC RECORDS BEARS SOUTH 89°55'37" WEST, A DISTANCE OF 21.66 FEET;

THENCE NORTH 00°50'24" WEST, OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 1640.04 FEET TO A CAPPED IRON ROD SET;

THENCE NORTH 45°36'12" WEST, CONTINUING OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 14.20 FEET TO A CAPPED IRON ROD SET ON THE SOUTH RIGHT-OF-WAY LINE OF GREGORY LANE, A VARIABLE-WIDTH RIGHT-OF-WAY, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHWEST CORNER OF SAME TRACT BEARS SOUTH 89°38'00" WEST, A DISTANCE OF 10.03 FEET;

THENCE NORTH 89°38'00" EAST, WITH SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 80.00 FEET TO A CAPPED IRON ROD SET, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHEAST CORNER OF SAID GREGORY LANE TRACT BEARS NORTH 89°38'00" EAST, A DISTANCE OF 235.57 FEET;

THENCE SOUTH 44°23'48" WEST, OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 14.08 FEET TO A CAPPED IRON ROD SET;

THENCE SOUTH 00°50'24" EAST, CONTINUING OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 1640.34 FEET TO A CAPPED IRON ROD SET ON THE SOUTH LINE OF SAME TRACT, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE SOUTHEAST CORNER OF SAID GREGORY LANE TRACT BEARS NORTH 89°55'37" EAST, A DISTANCE OF 244.96 FEET;

THENCE SOUTH 89°55'37" WEST, WITH THE SOUTH LINE OF SAID GREGORY LANE TRACT, A DISTANCE OF 60.01 FEET TO THE POINT OF BEGINNING AND CONTAINING A CALCULATED AREA OF 2.275 ACRES (99,111 SQ. FEET) OF LAND.

TO BE KNOWN AS:

PANORAMA STREET

AN ADDITION TO THE CITY OF PARKER, COLLIN COUNTY, TEXAS AND DO HEREBY DEDICATE TO THE PUBLIC USE FOREVER THE EASEMENTS AND RIGHTS-OF-WAY AS SHOWN HEREON. AT THE CITY'S OPTION, PANORAMA STREET AND ALL DRAINAGE FACILITIES THAT SUPPORT IT WILL BE OWNED AND MAINTAINED BY THE CITY OR BY COLLIN COUNTY MUNICIPAL UTILITY DISTRICT NO. 7.

EXECUTED THIS ____ DAY OF _____, A.D. 2023.

GREGORY LANE, LLC
A TEXAS LIMITED LIABILITY COMPANY

BY: _____
NAME: MARGARET E. TURNER
TITLE: DIRECTOR

STATE OF TEXAS)(
COUNTY OF _____)(

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS, ON THIS DAY PERSONALLY APPEARED _____, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE ____ DAY OF _____, A.D. 2023

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES: _____

SURVEYOR'S CERTIFICATE

I, AARON C. BROWN, REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON DOES ACCURATELY REPRESENT THE PROPERTY AS DETERMINED BY AN ON THE GROUND SURVEY, MADE UNDER MY DIRECT SUPERVISION, AND THAT ALL CORNERS ARE AS SHOWN.

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

_____
AARON C. BROWN
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6702

DATE: _____

NOTES

1. HORIZONTAL DATUM: THE BEARING BASIS IS GRID NORTH, TEXAS STATE PLANE COORDINATE SYSTEM, NORTH CENTRAL ZONE, NAD83 (NAD83 (2011) EPOCH 2010), AS DETERMINED BY GPS OBSERVATIONS. ALL DISTANCES SHOWN HEREON ARE THE RESULT OF THE APPLICATION OF A COMBINED SCALE FACTOR OF 1.0001527100.
2. ALL SET CORNERS ARE 1 INCH IRON RODS WITH PLASTIC CAPS STAMPED "LJA SURVEYING" UNLESS OTHERWISE NOTED.
3. SUBJECT TRACT IS LOCATED WITHIN AN AREA HAVING ZONE DESIGNATION OF ZONE "X" (UNSHADED), BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), AS SCALED FROM FLOOD INSURANCE RATE MAP NO. 48085C0415J, DATED JUNE 2, 2009 IN COLLIN COUNTY, STATE OF TEXAS.
4. SUBJECT TRACT LIES WITHIN THE BOUNDS OF THE PLANO INDEPENDENT SCHOOL DISTRICT.
5. ROAD DRAINAGE EASEMENT BY SEPARATE INSTRUMENT TO BE PROVIDED AT THE TIME OF FINAL PLAT.

CITY APPROVAL CERTIFICATE

RECOMMENDED FOR APPROVAL:

_____ _____
CHAIRMAN, PLANNING AND ZONING COMMISSION DATE
CITY OF PARKER, TEXAS

APPROVED AND ACCEPTED:

_____ _____
MAYOR, CITY OF PARKER, TEXAS DATE

THE UNDERSIGNED, THE CITY SECRETARY OF THE CITY OF PARKER, HEREBY CERTIFIES THAT THE FOREGOING PRELIMINARY PLAT OF PANORAMA STREET, A SUBDIVISION OR ADDITION TO THE CITY OF PARKER WAS SUBMITTED TO THE CITY COUNCIL ON THIS __ DAY OF _____, 2023, AND THE CITY COUNCIL BY FORMAL ACTION THEN AND THERE ACCEPTED THE DEDICATION OF STREETS, ALLEYS, EASEMENTS AND PUBLIC PLACES, AS SHOWN AND SET FORTH IN AND UPON SAID MAP OR PLAT, AND SAID CITY COUNCIL FURTHER AUTHORIZED THE MAYOR TO NOTE THE APPROVAL THEREOF BY SIGNING HIS NAME HEREIN ABOVE SUBSCRIBED.

WITNESS MY HAND THIS __ DAY OF _____, 2023.

_____ _____
CITY SECRETARY DATE
CITY OF PARKER, TEXAS

A
PRELIMINARY PLAT
OF
PANORAMA STREET
2.275 ACRES
SITUATED IN THE
PHILLIP ANDERSON SURVEY, ABSTRACT NO. 10
CITY OF PARKER, COLLIN COUNTY, TEXAS

OWNER/DEVELOPER:
GREGORY LANE, LLC
3510 DUBLIN RD
PARKER, TX 75002-6516

ENGINEER/SURVEYOR:
LJA Surveying, Inc.
3017 W 7TH STREET, Phone 817.288.1900
Suite 300
Fort Worth, Texas 76107 T.B.E.P.L.S. Firm No. 10194382

THIS PLAT FILED IN _____

JUNE 2023

SHEET 1 OF 1

S:\ATX-LAND\01313\00 SURVEY\JRD Mapping\01313FA01.dwg 6/22/2023

DEVELOPMENT APPLICATION
City of Parker, Texas

Proposed Name of Subdivision: Panorama Street

Plat Approval Requested

	Filing Fee		Filing Fee
☑ Preliminary Plat	$800.00 + $30/acre	☐ Final Plat	$800.00 + $30/acre
☐ Site Plan	$300.00 + $25/acre	☐ Minor Plat (5 acres or less)	$500.00 + $100/lot
☐ Replat/Amended	$500.00 plus $15/lot	☐ Development Plat	$300.00 + $30/acre

Physical Location of Property: 5710 Gregory Lane, Parker, TX 75002 (Approx. 2700ft West of the intersection of North Murphy Road and Gregory Lane)
(Address and General Location – Approximate distance to the nearest existing street corner)

Brief Legal description of Property (must attach accurate metes and bound description to application):
2.275 Acre tract situated in the Phillip Anderson Survey, Abstract No. 10 City of Parker, Collin County, Texas
(**Survey/Abstract** No. and Tracts: or platted Subdivision Name with **Lot/Block**)

Acreage: 2.275 Existing # of Lots/Tracts: N/A Existing Zoning: Single Family Residential
(If a PD, include the Ordinance with application)

Property Owner's Name: Gregory Lane, LLC Phone Number: 214-802-0011
Applicant/Contact Person: Margaret Turner Title: President
Company Name: Gregory Lane, LLC
Street/Mailing Address: 3510 Dublin Road City: Parker State: TX Zip: 75002
Phone: 214-802-0011 Fax: _____ Email Address: margaretet16@yahoo.com
Engineering Company: LJA Engineering
Contact Person: Michelle Tilotta, P.E. Title: Project Manager
Street/Mailing Address: 6060 N. Central Expy. Suite 400 **City:** Dallas **State:** TX **Zip:** 75206
Phone: 214-451-0862 Fax: _____ Email Address: mtilotta@lja.com

** **READ BEFORE SIGNING BELOW:** If there is more than one property owner, complete a separate sheet with the same wording as below. The City requires all Original Signatures. If applicant is other than the property owner, a "Power of Attorney" with original, notarized signatures is required.

STATE OF TEXAS)(
COUNTY OF COLLIN)(

BEFORE ME, a Notary Public, on this day personally appeared Margaret Turner the undersigned applicant, who, under oath, stated the following "I herby certify that I am the owner, or duly authorized agent of the owner, **(Proof must be attached, e.g. "Power of Attorney")** for the purposes of this application; that all information submitted herein is true and correct. I understand that submitting this application does not constitute approval, and incomplete application will result in delays and possible denial."

Margaret Turner
Owner / Agent (circle one)

SUBSCRIBED AND SWORN TO before me, this the 28th day of June, 2023.

Notary Public in and for the State of Texas: Leslie D. Pulliam

Over

LESLIE D. PULLIAM
Notary Public, State of Texas
Comm. Expires 08-22-2026
Notary ID 131693247

SUBMITTAL DEADLINES: Twenty eight (28) days prior to the Planning and Zoning Commission Meeting Date. Planning and Zoning Commission meets the second and fourth Thursday of each month.

SUBMISSIONS. Failure to submit all materials (including three sets of bound engineering plans) to the City with this application will result in delays scheduling the agenda date. Submit twelve (12) FOLDED to 8 ½" X 11" copies of 24" X 36" prints [1"=100' scale] + electronic version in .jpeg, .tiff, or .pdf format. Applicant is to submit a complete copy of this application and drawings to the City Engineer

ALL APPLICATIONS MUST BE COMPLETE BEFORE THEY WILL BE PLACED ON A CITY AGENDA. It is the applicant's responsibility to be familiar with and to comply with, all City submittal requirements in the Zoning and Subdivision Ordinance (**www.parkertexas.us**), and any separate submittal policies, requirements and/or checklists that may be obtained from City staff)

NOTICE OF PUBLIC RECORDS: The submission of plans/drawings/etc. with this application makes such items public record, and the applicant understands that these items may be viewed by the general public. Unless the applicant expressly states otherwise in writing, submission of this application (with associated plans/drawings/etc.) will be considered consent by the applicant that the general public may view and/or reproduce (i.e. copy) such documents.

SUBMITTAL FEES: All fees are due and payable at the time of application, except inspection, engineering and legal fees, which are due at the time of pre-Construction meeting with the City. No construction shall take place prior to the pre-construction meeting and submission of certified construction cost bid(s) by the contractor(s) and Owner. No hearing will be scheduled nor will any reviews be made until payment of required filing fees has been accomplished. Fees are non-refundable regardless of outcome of request.

City Contact Information:

Public Workers Superintendent
City of Parker, Texas
5700 E. Parker Road * Parker, Texas 75002
Phone 972-442-6811 * Fax 972-442-2894 * www.parkertexas.us

OFFICE USE ONLY This submittal meets the City of Parker's requirements per City ordinances for processing.

_____ [ ]
Signature Title OFFICIAL SUBMISSION DATE

Fees Paid __$_____ Check # _____ From : _____

P&Z Agenda Date: _____ Action: _____ CC Agenda Date: _____ Action: _____

Current Zoning:_____ Ordinance Number:_____ Date Approved:_____

Staff Comments forwarded to applicant on: _____ Revisions Due no later than:_____

Plans routed for review on _____, to:
- ☐ Public Works Director
- ☐ City Engineer
- ☐ Building Official
- ☐ Fire Department

Public Hearing Required: ☐ Yes ☐ No
Paper Notice _____ (date)
Written Notice _____ (date)

METES AND BOUNDS DESCRIPTION
2.275 ACRES

BEING 2.275 ACRES OF LAND SITUATED IN THE PHILLIP ANDERSON SURVEY, ABSTRACT No. 10, CITY OF PARKER, COLLIN COUNTY, TEXAS, AND BEING A PORTION OF A TRACT OF LAND DESCRIBED TO GREGORY LANE LLC BY DEED RECORDED IN INSTRUMENT NO. 20081031001284570, OFFICIAL PUBLIC RECORDS, COLLIN COUNTY, TEXAS, AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

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THENCE NORTH 45°36’12” WEST, CONTINUING OVER AND ACROSS SAID GREGORY LANE TRACT, A DISTANCE OF 14.20 FEET TO A CAPPED IRON ROD SET ON THE SOUTH RIGHT-OF-WAY LINE OF GREGORY LANE, A VARIABLE-WIDTH RIGHT-OF-WAY, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHWEST CORNER OF SAME TRACT BEARS SOUTH 89°38’00” WEST, A DISTANCE OF 10.03 FEET;

THENCE NORTH 89°38’00” EAST, WITH SAID SOUTH RIGHT-OF-WAY LINE, A DISTANCE OF 80.00 FEET TO A CAPPED IRON ROD SET, FROM WHICH A 1/2-INCH IRON ROD FOUND FOR THE NORTHEAST CORNER OF SAID GREGORY LANE TRACT BEARS NORTH 89°38’00” EAST, A DISTANCE OF 235.57 FEET;

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THENCE SOUTH 89°55’37” WEST, WITH THE SOUTH LINE OF SAID GREGORY LANE TRACT, A DISTANCE OF 60.01 FEET TO THE **POINT OF BEGINNING** AND CONTAINING A CALCULATED AREA OF 2.275 ACRES (99,111 SQ. FEET) OF LAND.

PRELIMINARY, THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED, VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

DUPLICATE RECEIPT

1

DATE: **6/27/23**
ACCOUNT: **R601000000201**
OWNER: GREGORY LANE LLC
PARCEL ADDRESS: 0005710 GREGORY LN
EXEMPTION CODES: AG002
LAWSUIT:
BKRPTCY:

LEGAL: ABS A0010 PHILLIP ANDERSON SURVEY
TRACT 2
12.357 ACRES

PIDN: 2117133
ACRES: 12.357

GREGORY LANE LLC
3510 DUBLIN RD
ALLEN TX 75002-6516

RECEIPT #: 46950938 CHECK #: 1002 DEPOSIT #: 202212068829-2022/lockbox

YEAR	TAXING ENTITIES	TAXABLE VALUE	TAX RATE PER $100	PAY TYPE	DATE PAID	BASE TAX PAID	PENALTY & INTEREST PAID
2022	COLLIN COUNTY	$170,753.00	0.152443	L	12/5/22	$260.30	$0.00
2022	PARKER CITY	$170,753.00	0.329289	L	12/5/22	$562.27	$0.00
2022	COLLIN COLLEGE	$170,753.00	0.081220	L	12/5/22	$138.69	$0.00
2022	PLANO ISD	$170,753.00	1.259750	L	12/5/22	$2,151.06	$0.00

AMOUNT TENDERED **$3,112.32**
AMOUNT PAID
BASE TAX **$3,112.32**
TOTAL PAID **$3,112.32**

PAYER: GREGORY LANE LLC
3510 DUBLIN RD
ALLEN TX 75002-6516

REMAINING AMOUNT DUE
AS OF 6/27/23
0.00

Collin County
Kenneth L. Maun
P.O. Box 8046
McKinney, Texas 75070
972-547-5020

OWNER: GREGORY LANE LLC

2117133

*** * * THIS IS A RECEIPT * * ***

ACCOUNT: R601000000201

REMAINING AMOUNT DUE
AS OF 6/27/23
0.00

1051

LJA ENGINEERING

LJA Engineering, Inc.
NORTH TEXAS OFFICE
6060 North Central Expressway, Suite 400
Dallas, Texas 75206

35-1125/1130

DATE June 28, 2023

PAY TO THE ORDER OF City of Parker $ 868.25

Eight Hundred Sixty Eight Dollars & 25/100 DOLLARS

AmegyBank.
P.O. Box 27468
Houston, Texas 77227-7468
amegybank.com • 713-235-8810

FOR Prelim Plat App Fee

LJA ENGINEERING

6060 N Central Expy, Suite 440, Dallas, TX 75206
t 469.621.0710 www.ljaengineering.com

LETTER OF TRANSMITTAL

	Date: 06.28.2023
To: Luke Olson	LJA Job No. NT561-0133
City of Parker	From: Michelle Tilotta, P.E.
5700 E Parker Rd	LJA Engineering
Parker, Texas 75002	
	RE: Panorama Street

WE ARE SENDING YOU the following items:

☐ Shop Drawings ☐ Prints ☒ Plans ☐ Samples ☐ Specifications

☐ Copy of Letter ☐ Change Order ☐ Contract ☒ Other:

Copies	Date	Description
1	June 2023	Preliminary Plat Application
5	June 2023	24”x36” Panorama Street Preliminary Plat - Bond
12	June 2023	11”x17” Panorama Street Preliminary Plat
3	June 2023	Panorama Street Construction Plans
1	June 2023	8.5”x11” Property Metes and Bounds
1	June 2023	Tax Certificate
1	June 2023	Check in the amount of $868.25
1	June 2023	CD Containing Preliminary Plat Application, Preliminary Plat, Construction Plans, Metes and Bounds, Tax Certificate, and Copy of Check

THESE ARE TRANSMITTED as checked below:

☐ For approval
☐ For your use
☐ As requested
☒ For review & comment
☐ Approved as submitted
☐ Approved as noted
☐ Returned for corrections
☐ For signatures
☐ Resubmit _ copies for approval
☐ Submit ___ copies for distribution
☐ Return ___ executed agreement
☐ _____

REMARKS: Please see the attached Preliminary Plat Application, Preliminary Plats, Construction Plans, Property Metes and Bounds, and Tax Certificate.

-CC
Misty Ventura,
Shupe Ventura, PLLC

c: _____ SIGNED: _____

S:\NTX-LAND\0133\NT561\700 COMMUNICATIONS\730 Transmittal\2023.06.27_Preliminary Plat App to City of Parker.docx