Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

1. Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

   To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.

2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.

3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.

4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

   An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.

6. If the geologic assessment was completed before October 1, 2004 and the site contains “possibly sensitive” features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.

2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.

4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Marx Multifamily					**2. Regulated Entity No.:**			
3. Customer Name: OHT Parnters, LLC					**4. Customer No.: 604107656**			
5. Project Type: **(Please circle/check one)**	New		Modification		Extension		Exception	
6. Plan Type: **(Please circle/check one)**	WPAP	CZP	SCS	UST / AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures
7. Land Use: **(Please circle/check one)**	Residential		Non-residential		**8. Site (acres):**		59.9 Acres	
9. Application Fee:	$8,000		**10. Permanent BMP(s):**		Three Retention / Irrigation Ponds			
11. SCS (Linear Ft.):	N/A		**12. AST/UST (No. Tanks):**		N/A			
13. County:	Travis		**14. Watershed:**		Williamson Creek			

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region			
County:	**Hays**	**Travis**	**Williamson**
Original (1 req.)	__	X	__
Region (1 req.)	__	X	__
County(ies)	__	X	__
Groundwater Conservation District(s)	__Edwards Aquifer Authority __Barton Springs/ Edwards Aquifer __Hays Trinity __Plum Creek	X Barton Springs/ Edwards Aquifer	NA
City(ies) Jurisdiction	__Austin __Buda __Dripping Springs __Kyle __Mountain City __San Marcos __Wimberley __Woodcreek	X Austin __Bee Cave __Pflugerville __Rollingwood __Round Rock __Sunset Valley __West Lake Hills	__Austin __ Cedar Park __Florence __Georgetown __Jerrell __Leander __Liberty Hill __Pflugerville __Round Rock

San Antonio Region					
County:	**Bexar**	**Comal**	**Kinney**	**Medina**	**Uvalde**
Original (1 req.)	__	__	__	__	__
Region (1 req.)	__	__	__	__	__
County(ies)	__	__	__	__	__
Groundwater Conservation District(s)	__ Edwards Aquifer Authority __Trinity-Glen Rose	__Edwards Aquifer Authority	__Kinney	__EAA __Medina	__EAA __Uvalde
City(ies) Jurisdiction	__Castle Hills __Fair Oaks Ranch __Helotes __Hill Country Village __Hollywood Park __San Antonio (SAWS) __Shavano Park	__Bulverde __Fair Oaks Ranch __Garden Ridge __New Braunfels __Schertz	NA	__San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.
Scott J. Foster, P.E. Print Name of Customer/Authorized Agent
Signature of Customer/Authorized Agent — Date: 9/8/25

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:		Date Administratively Complete:		
Received From:		Correct Number of Copies:		
Received By:		Distribution Date:		
EAPP File Number:		Complex:		
Admin. Review(s) (No.):		No. AR Rounds:		
Delinquent Fees (Y/N):		Review Time Spent:		
Lat./Long. Verified:		SOS Customer Verification:		
Agent Authorization Complete/Notarized (Y/N):		Fee Check:	Payable to TCEQ (Y/N):	
Core Data Form Complete (Y/N):			Signed (Y/N):	
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):	

Contributing Zone Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Contributing Zone to the Edwards Aquifer and Relating to 30 TAC §213.24(1), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Contributing Zone Plan Application** is hereby submitted for TCEQ review and Executive Director approval. The application was prepared by:

Print Name of Customer/Agent: Scott J. Foster, P.E.

Date: 9/8/25

Signature of Customer/Agent:

Regulated Entity Name: Marx Multifamily

Project Information

1. County: Travis
2. Stream Basin: Williamson Creek
3. Groundwater Conservation District (if applicable): Barton Springs Zone
4. Customer (Applicant):

   Contact Person: Ben Browder
   Entity: OHT Partners, LLC
   Mailing Address: 901 S Mopac Expressway, Building 3, Suite 500
   City, State: Austin, Texas Zip: 78746
   Telephone: (512) 813-7119 Fax: _____
   Email Address: ben@ohtpartners.com

5. Agent/Representative (If any):

Contact Person: Scott J. Foster, P.E.
Entity: 360 Professional Services, Inc.
Mailing Address: P.O. Box 3639
City, State: Cedar Park, TX Zip: 78630
Telephone: (512) 354-4682 Fax: (512) 900-7962
Email Address: scott.foster@360psinc.com

6. Project Location:

☒ The project site is located inside the city limits of Austin.
☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of _____.
☐ The project site is not located within any city's limits or ETJ.

7. ☒ The location of the project site is described below. Sufficient detail and clarity has been provided so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.

The site consists of approximately 60 acres located near the northwest corner of State Highway 71 and Midwood Parkway in Austin, Texas in Travis County.

8. ☒ **Attachment A - Road Map**. A road map showing directions to and the location of the project site is attached. The map clearly shows the boundary of the project site.

9. ☒ **Attachment B - USGS Quadrangle Map**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') is attached. The map(s) clearly show:

☒ Project site boundaries.
☒ USGS Quadrangle Name(s).

10. ☒ **Attachment C - Project Narrative**. A detailed narrative description of the proposed project is attached. The project description is consistent throughout the application and contains, at a minimum, the following details:

☒ Area of the site
☒ Offsite areas
☒ Impervious cover
☒ Permanent BMP(s)
☒ Proposed site use
☒ Site history
☒ Previous development
☒ Area(s) to be demolished

11. Existing project site conditions are noted below:

☐ Existing commercial site
☐ Existing industrial site

☐ Existing residential site
☐ Existing paved and/or unpaved roads
☐ Undeveloped (Cleared)
☒ Undeveloped (Undisturbed/Not cleared)
☐ Other: _____

12. The type of project is:

☐ Residential: # of Lots: _____
☒ Residential: # of Living Unit Equivalents: 402
☐ Commercial
☐ Industrial
☐ Other: _____

13. Total project area (size of site): 59.9 Acres

    Total disturbed area: 43.6 Acres

14. Estimated projected population: 556 (# of bedrooms)

15. The amount and type of impervious cover expected after construction is complete is shown below:

Table 1 - Impervious Cover

Impervious Cover of Proposed Project	*Sq. Ft.*	*Sq. Ft./Acre*	*Acres*
Structures/Rooftops	204,087	÷ 43,560 =	4.7
Parking	295,623	÷ 43,560 =	6.8
Other paved surfaces	79,845	÷ 43,560 =	1.8
Total Impervious Cover	579,554	÷ 43,560 =	13.3

Total Impervious Cover 13.3 **÷ Total Acreage** 59.9 **X 100 =** 22**% Impervious Cover**

16. ☒ **Attachment D - Factors Affecting Surface Water Quality**. A detailed description of all factors that could affect surface water quality is attached. If applicable, this includes the location and description of any discharge associated with industrial activity other than construction.

17. ☒ Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

For Road Projects Only

Complete questions 18 - 23 if this application is exclusively for a road project.

☒ N/A

18. Type of project:

- ☐ TXDOT road project.
- ☐ County road or roads built to county specifications.
- ☐ City thoroughfare or roads to be dedicated to a municipality.
- ☐ Street or road providing access to private driveways.

19. Type of pavement or road surface to be used:

- ☐ Concrete
- ☐ Asphaltic concrete pavement
- ☐ Other: _____

20. Right of Way (R.O.W.):

Length of R.O.W.: _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

21. Pavement Area:

Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = _____% impervious cover.

22. ☐ A rest stop will be included in this project.

☐ A rest stop will not be included in this project.

23. ☐ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

Stormwater to be generated by the Proposed Project

24. ☒ **Attachment E - Volume and Character of Stormwater**. A detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

Wastewater to be generated by the Proposed Project

25. ☐ Wastewater is to be discharged in the contributing zone. Requirements under 30 TAC §213.6(c) relating to Wastewater Treatment and Disposal Systems have been satisfied.

☒ N/A

26. Wastewater will be disposed of by:

☐ On-Site Sewage Facility (OSSF/Septic Tank):

☐ **Attachment F - Suitability Letter from Authorized Agent**. An on-site sewage facility will be used to treat and dispose of the wastewater from this site. The appropriate licensing authority's (authorized agent) written approval is attached. It states that the land is suitable for the use of private sewage facilities and will meet or exceed the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285 relating to On-site Sewage Facilities.

☐ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

☒ Sewage Collection System (Sewer Lines):

The sewage collection system will convey the wastewater to the Williamson Creek Wastewater (name) Treatment Plant. The treatment facility is:

☒ Existing.
☐ Proposed.

☐ N/A

Permanent Aboveground Storage Tanks(ASTs) ≥ 500 Gallons

Complete questions 27 - 33 if this project includes the installation of AST(s) with volume(s) greater than or equal to 500 gallons.

☒N/A

27. Tanks and substance stored:

Table 2 - Tanks and Substance Storage

AST Number	*Size (Gallons)*	*Substance to be Stored*	*Tank Material*
1			
2			
3			
4			
5			

Total x 1.5 = _____ Gallons

28. ☐ The AST will be placed within a containment structure that is sized to capture one and one-half (1 1/2) times the storage capacity of the system. For facilities with more than

one tank system, the containment structure is sized to capture one and one-half (1 1/2) times the cumulative storage capacity of all systems.

☐ **Attachment G - Alternative Secondary Containment Methods**. Alternative methods for providing secondary containment are proposed. Specifications showing equivalent protection for the Edwards Aquifer are attached.

29. Inside dimensions and capacity of containment structure(s):

Table 3 - Secondary Containment

Length (L)(Ft.)	*Width(W)(Ft.)*	*Height (H)(Ft.)*	*L x W x H = (Ft3)*	*Gallons*

Total: _____ Gallons

30. Piping:

☐ All piping, hoses, and dispensers will be located inside the containment structure.
☐ Some of the piping to dispensers or equipment will extend outside the containment structure.
☐ The piping will be aboveground
☐ The piping will be underground

31. ☐ The containment area must be constructed of and in a material impervious to the substance(s) being stored. The proposed containment structure will be constructed of: _____.

32. ☐ **Attachment H - AST Containment Structure Drawings**. A scaled drawing of the containment structure is attached that shows the following:

☐ Interior dimensions (length, width, depth and wall and floor thickness).
☐ Internal drainage to a point convenient for the collection of any spillage.
☐ Tanks clearly labeled
☐ Piping clearly labeled
☐ Dispenser clearly labeled

33. ☐ Any spills must be directed to a point convenient for collection and recovery. Spills from storage tank facilities must be removed from the controlled drainage area for disposal within 24 hours of the spill.

☐ In the event of a spill, any spillage will be removed from the containment structure within 24 hours of the spill and disposed of properly.

☐ In the event of a spill, any spillage will be drained from the containment structure through a drain and valve within 24 hours of the spill and disposed of properly. The drain and valve system are shown in detail on the scaled drawing.

Site Plan Requirements

Items 34 - 46 must be included on the Site Plan.

34. ☒ The Site Plan must have a minimum scale of 1" = 400'.

    Site Plan Scale: 1" = 120'.

35. 100-year floodplain boundaries:

    ☐ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

    ☒ No part of the project site is located within the 100-year floodplain.

    The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) panel number 48453C0420J, dated January 22, 2020.

36. ☒ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.

    ☐ The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot contour intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, etc. are shown on the site plan.

37. ☒ A drainage plan showing all paths of drainage from the site to surface streams.

38. ☒ The drainage patterns and approximate slopes anticipated after major grading activities.

39. ☒ Areas of soil disturbance and areas which will not be disturbed.

40. ☒ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

41. ☒ Locations where soil stabilization practices are expected to occur.

42. ☒ Surface waters (including wetlands).

    ☐ N/A

43. ☒ Locations where stormwater discharges to surface water.

    ☐ There will be no discharges to surface water.

44. ☐ Temporary aboveground storage tank facilities.

    ☒ Temporary aboveground storage tank facilities will not be located on this site.

45. ☐ Permanent aboveground storage tank facilities.

☒ Permanent aboveground storage tank facilities will not be located on this site.

46. ☒ Legal boundaries of the site are shown.

Permanent Best Management Practices (BMPs)

Practices and measures that will be used during and after construction is completed.

47. ☒ Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

☐ N/A

48. ☒ These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

☒ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

☒ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is: City of Austin Environmental Criteria Manual.

☐ N/A

49. ☒ Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

☐ N/A

50. Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

☐ The site will be used for low density single-family residential development and has 20% or less impervious cover.

☐ The site will be used for low density single-family residential development but has more than 20% impervious cover.

☒ The site will not be used for low density single-family residential development.

51. The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

    ☐ **Attachment I - 20% or Less Impervious Cover Waiver**. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached.
    ☒ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
    ☐ The site will not be used for multi-family residential developments, schools, or small business sites.

52. ☒ **Attachment J - BMPs for Upgradient Stormwater**.

    ☒ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached.
    ☐ No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached.
    ☐ Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.

53. ☒ **Attachment K - BMPs for On-site Stormwater**.

    ☒ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached.
    ☐ Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.

54. ☒ **Attachment L - BMPs for Surface Streams**. A description of the BMPs and measures that prevent pollutants from entering surface streams is attached.

    ☐ N/A

55. ☒ **Attachment M - Construction Plans**. Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. Construction plans for the proposed permanent BMPs and measures are

attached and include: Design calculations, TCEQ Construction Notes, all proposed structural plans and specifications, and appropriate details.

☐ N/A

56. ☒ **Attachment N - Inspection, Maintenance, Repair and Retrofit Plan**. A site and BMP specific plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan fulfills all of the following:

☒ Prepared and certified by the engineer designing the permanent BMPs and measures
☒ Signed by the owner or responsible party
☒ Outlines specific procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofit.
☒ Contains a discussion of record keeping procedures

☐ N/A

57. ☐ **Attachment O - Pilot-Scale Field Testing Plan**. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.

☒ N/A

58. ☒ **Attachment P - Measures for Minimizing Surface Stream Contamination**. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that result in water quality degradation.

☐ N/A

Responsibility for Maintenance of Permanent BMPs and Measures after Construction is Complete.

59. ☒ The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

60. ☒ A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development,

or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

Administrative Information

61. ☒ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions.

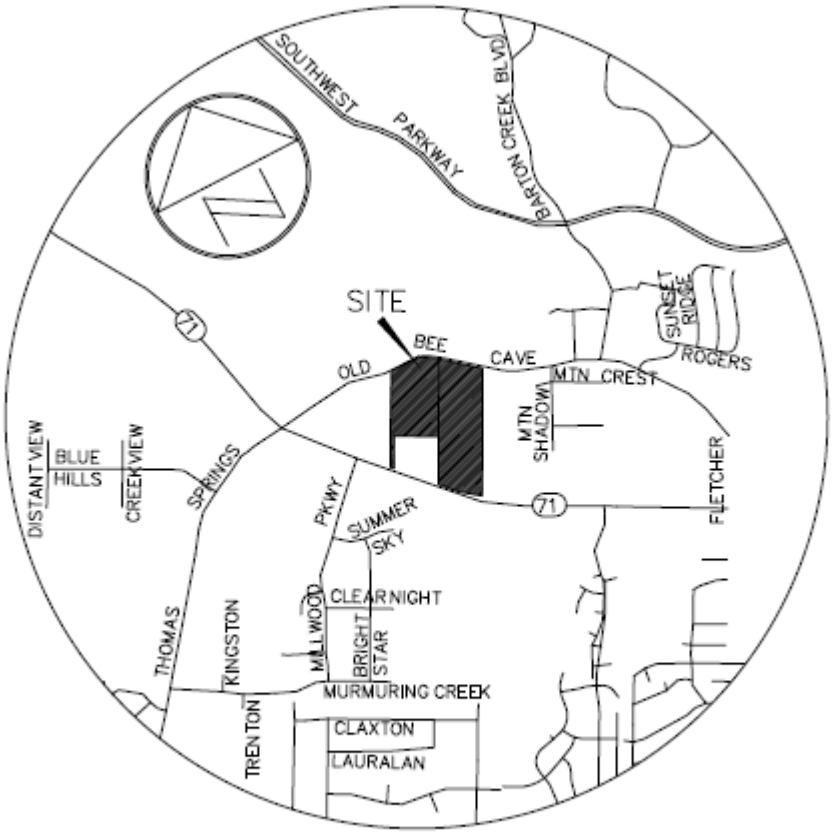
62. ☒ Any modification of this Contributing Zone Plan may require TCEQ review and Executive Director approval prior to construction, and may require submission of a revised application, with appropriate fees.

63. ☐ The site description, controls, maintenance, and inspection requirements for the storm water pollution prevention plan (SWPPP) developed under the EPA NPDES general permits for stormwater discharges have been submitted to fulfill paragraphs 30 TAC §213.24(1-5) of the technical report. All requirements of 30 TAC §213.24(1-5) have been met by the SWPPP document.

☒ The Temporary Stormwater Section (TCEQ-0602) is included with the application.

ATTACHMENT A

Road Map



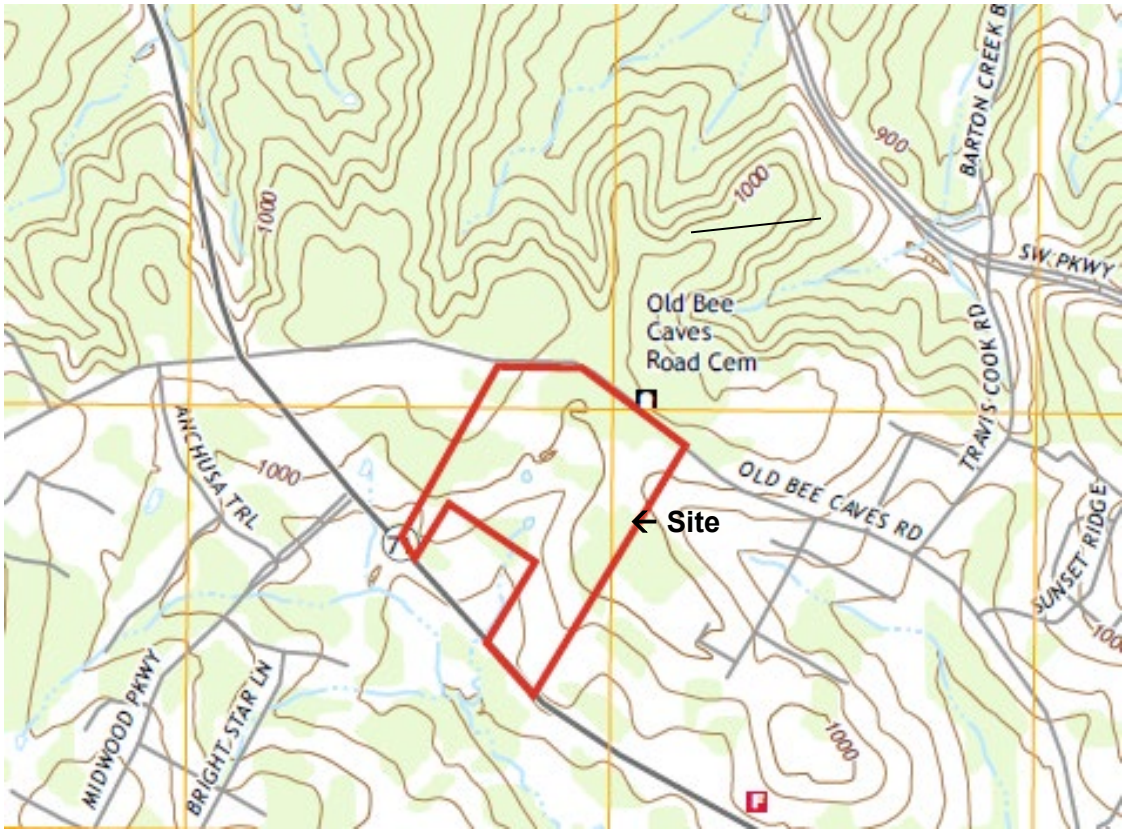
LOCATION MAP
NOT TO SCALE
CITY GRID: A21

Driving Directions from Downtown Austin:

1. Head **south** on **TX 1 Loop S/Mopac Expressway (2.5 mi.)**
2. Merge onto **TX-71W/US-290 W**
3. Turn **right** on **TX-71W**
4. The Destination will be on the **right (2.4 mi.)**

ATTACHMENT B

USGS Quadrangle Map



Bee Cave Quadrangle

Texas

7.5 Minute Series (Topographic)

20220811

ATTACHMENT C

Project Narrative

The Marx Multifamily project site is located at 8900 W State Highway 71 and 9119 Old Bee Caves Road within the full purpose limits of the City of Austin in Travis County, Texas. The project is located in the Barton Springs Zone within the Williamson Creek Watershed. No portion of this site lies within the 100-Year Floodplain, as identified by the Federal Emergency Management Agency, National Flood Insurance Program, as shown on map no. 48453C0420J, dated January 22, 2020, for Travis County, Texas and incorporated areas. The site is located in the Edwards Contributing Zone and it is the intent of this application to be reviewed and approved under the requirements of TCEQ's Technical Guidance Manual.

The total site area is 59.9 aces and is currently undeveloped agricultural land. There is no existing impervious cover. The planned improvements include the construction of 402 multifamily units with associated driveway, utilities, landscaping, and drainage/water quality improvements. It also includes the construction of turn lane into the site within SH 71 ROW (TXDOT owned). The proposed impervious cover is 13.3 acres (22%).

On-site water quality and detention facilities are proposed. The water quality improvements consist of three (3) retention/irrigation ponds and associated re-irrigation areas. The retention/irrigation improvements are designed to treat 14.0 acres of impervious cover.

This project is being permitted with The City of Austin which has requirements that exceed TCEQ requirements.

ATTACHMENT D

Factors Affecting Surface Water Quality

Potential Sources of Contamination during the construction of this project:

- Oil and Grease: from runoff pollutants associated with paving operations
- Asphalt: emulsion from the streets just after construction is complete
- Construction Phase Pollutants: hydraulic fluid, machine oil, and sediment.

Potential Sources of Contamination after completion of this project:

- Oil, Grease, Coolant from Vehicles
- Fertilizers, Pesticides from Landscaping
- Accidental Spills

ATTACHMENT E

Volume and Character of Stormwater

Detention and water quality controls for the project are proposed to be provided by three (3) grass detention ponds and three (3) retention-irrigation ponds. The detention pond analysis consists of the comparison of existing and proposed conditions of the ±60-acre lot at multiple analysis points. Hydrologic modeling of the project was performed using SCS Methodology and Pond Pack modeling software. Note that City of Austin Atlas 14 Zone 1 Depth-Duration Frequency values were used within this model.

In existing conditions, there are existing topographic ridges throughout the site that divert stormwater to several analysis points along the perimeter of the project. The majority of the storm water is conveyed to a tributary of Williamson Creek that bisects the site. Analysis Point 2 is where the north portion of the site drains into the creek that is then is conveyed through the property to the south towards SH 71. Analysis Point 1 is the location where the south portion of the site's drainage leaves the property. Both analysis points ultimately end up in aforementioned tributary of Williamson Creek which is conveyed under SH 71 in an existing box culvert. The remainder of the site sheets flows off the east and west property lines.

In proposed conditions, the site grading was designed so that all multifamily project's impervious cover will be conveyed to the proposed detention and water quality facilities. The three (3) detention ponds have been designed to limit the proposed storm water flows to levels at or below existing conditions at Analysis Points 1 and 2 for the 2, 10, 25, and 100-year storm events. The remaining analysis points receive less stormwater due to reduced drainage area sizes and all proposed conditions flows are less than or equal to existing conditions.

Three (3) retention/irrigation ponds will provide water quality treatment to this project. The runoff entering the splitter boxes will enter the water quality ponds until the required water quality volume is met. The runoff in excess of the water quality volume will spill over the proposed weir within the splitter boxes into the detention ponds. The retention ponds and re-irrigation area were designed using The City of Austin Code of Ordinances and Criteria Manuals, including Barton Springs Zone criteria (SLAT worksheet) and TCEQ Criteria. The ponds have been sized and designed to treat 14.0 acres of impervious cover. The proposed impervious cover is 13.3 acres of impervious cover.

Additional information can be found with the construction documents provided with this application.

ATTACHMENT F, G, H, AND I

Not applicable to this project

ATTACHMENT J

BMPs for Upgradient Stormwater

Approximately 12 acres north of Old Bee Caves Road is conveyed through the subject tract within the aforementioned tributary of Williamson Creek. This area is noted as OS within the drainage area maps. The tributary will remain predominantly undisturbed and will convey the upgradient stormwater to Analysis Point 2 on the drainage area map. A drainage easement will be dedicated around this tributary with the City's site development permit to ensure it will not be obstructed. The off-site stormwater will not be directed through the proposed improvements and therefore BMPs are not proposed or required.

ATTACHMENT K

BMPs for On-site Stormwater

Three (3) retention/irrigation ponds are proposed for water quality control on this project. The ponds and re-irrigation area were designed using The City of Austin's Land Development Code and Environmental Criteria Manual and TCEQ's TSS Removal Calculations.

The water quality ponds and re-irrigation areas have been verified per the City of Austin Environmental Criteria Manual and RG-349 TCEQ requirements. The table below summarizes the required and provided designs of the three BMPs. Please note, The City of Austin requirements exceed TCEQ requirements.

COA and TCEQ Water Quality Summary 1								
	Pond 1 (Drainage Area P1A)		**Pond 2 (Drainage Area P2B1)**		**Pond 3 (Drainage Area P2B2)**		**TOTAL**	
Drainage Area	8.71	Acres	8.77	Acres	3.92	Acres	21.40	Acres
Pond Design Impervious Cover	5.22	Acres	5.79	Acres	2.94	Acres	13.95	Acres
	60%		66%		75%		65%	
COA WQ Volume Required	51,522	Cubic Feet	60,801	Cubic Feet	29,764	Cubic Feet	142,087	Cubic Feet
TCEQ WQ Volume Required	15,928	Cubic Feet	17,892	Cubic Feet	9,562	Cubic Feet	46,214	Cubic Feet
WQ Volume Provided	**60,801**	**Cubic Feet**	**62,746**	**Cubic Feet**	**29,820**	**Cubic Feet**	**153,366**	**Cubic Feet**
COA Irrigation Area Required	2.79	Acres	2.88	Acres	1.37	Acres	7.04	Acres
TCEQ Irrigation Area Required	0.73	Acres	0.82	Acres	0.44	Acres	2.12	Acres
Irrigation Area Provided	**2.80**	**Acres**	**2.99**	**Acres**	**1.67**	**Acres**	**7.46**	**Acres**

Because this project provides public improvements (Old Bee Caves Road sidewalk and SH 71 turn lane) that the City of Austin does not require water quality treatment for, the following table has been created. It confirms adequate load removal is being provided for the 0.48 acres of impervious cover that do not directly drain to a BMP. As shown, TCEQ requirements are being exceeded.

TCEQ Water Quality TSS Removal Summary		
Total TSS Generated	12,142	lbs
TCEQ TSS Required Load Removal (80%)	9,714	lbs
Treated Impervious Cover TSS Removed	11,724	lbs
Untreated Impervious Cover TSS	418	lbs
Total TSS Percentage Removed	96.6%	

Also please refer to the attached TCEQ water quality pond calculations and construction drawings for additional information.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Marx Multifamily - Overall
Date Prepared: 9/8/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Travis	
Total project area included in plan * =	59.93	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	13.95	acres
Total post-development impervious cover fraction * =	0.23	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	12142	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 3

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. =

Total drainage basin/outfall area =	21.40	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	13.47	acres
Post-development impervious fraction within drainage basin/outfall area =	0.63	
$L_{M\ THIS\ BASIN}$ =	11724	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	21.40	acres
A_I =	13.47	acres
A_P =	7.93	acres
L_R =	15051	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = 12142 lbs.

F = 0.81

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.12	inches
Post Development Runoff Coefficient =	0.44	
On-site Water Quality Volume =	38512	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	7702	
Total Capture Volume (required water quality volume(s) x 1.20) =	46214	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = 46214 cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.2	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	92428	square feet	
	2.12	acres	

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Marx Multifamily (Pond 1)
Date Prepared: 9/8/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Travis	
Total project area included in plan * =	59.93	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	13.95	acres
Total post-development impervious cover fraction * =	0.23	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	12142	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 3

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 1

Total drainage basin/outfall area =	8.71	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	5.22	acres
Post-development impervious fraction within drainage basin/outfall area =	0.60	
$L_{M\ THIS\ BASIN}$ =	4543	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: L_R = (BMP efficiency) x P x (A_I x 34.6 + A_P x 0.54)

where:

A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	8.71	acres
A_I =	5.22	acres
A_P =	3.49	acres
L_R =	5840	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ =	4543	lbs.
F =	0.78	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.00	inches
Post Development Runoff Coefficient =	0.42	
On-site Water Quality Volume =	13274	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	2655	
Total Capture Volume (required water quality volume(s) x 1.20) =	15928	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin =	15928	cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate =	0.2	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	31857	square feet	
	0.73	acres	

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Marx Multifamily (Pond 2)
Date Prepared: 9/8/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
Characters shown in red are data entry fields.
Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Travis	
Total project area included in plan * =	59.93	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	13.95	acres
Total post-development impervious cover fraction * =	0.23	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	12142	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 3

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 2

Total drainage basin/outfall area =	8.77	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	5.79	acres
Post-development impervious fraction within drainage basin/outfall area =	0.66	
$L_{M\ THIS\ BASIN}$ =	5040	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	8.77	acres
A_I =	5.79	acres
A_P =	2.98	acres
L_R =	6462	lbs

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ = **5040** lbs.

F = **0.78**

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth = **1.00** inches
Post Development Runoff Coefficient = **0.47**
On-site Water Quality Volume = **14910** cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP = **0.00** acres
Off-site Impervious cover draining to BMP = **0.00** acres
Impervious fraction of off-site area = **0**
Off-site Runoff Coefficient = **0.00**
Off-site Water Quality Volume = **0** cubic feet

Storage for Sediment = **2982**
Total Capture Volume (required water quality volume(s) x 1.20) = **17892** cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin = **17892** cubic feet

Irrigation Area Calculations:

Soil infiltration/permeability rate = **0.2** in/hr **Enter determined permeability rate or assumed value of 0.1**
Irrigation area = **35783** square feet
0.82 acres

8. Extended Detention Basin System Designed as Required in RG-348 Pages 3-46 to 3-51

Required Water Quality Volume for extended detention basin = **NA** cubic feet

9. Filter area for Sand Filters Designed as Required in RG-348 Pages 3-58 to 3-63

9A. Full Sedimentation and Filtration System

Water Quality Volume for sedimentation basin = **NA** cubic feet

Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet **For minimum water depth of 2 feet**
Minimum sedimentation basin area = **NA** square feet **For maximum water depth of 8 feet**

9B. Partial Sedimentation and Filtration System

Water Quality Volume for combined basins = **NA** cubic feet

Minimum filter basin area = **NA** square feet

Maximum sedimentation basin area = **NA** square feet **For minimum water depth of 2 feet**
Minimum sedimentation basin area = **NA** square feet **For maximum water depth of 8 feet**

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Marx Multifamily (Pond 3)
Date Prepared: 9/8/2025

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell.
Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348.
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Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project: Calculations from RG-348 Pages 3-27 to 3-30

Page 3-29 Equation 3.3: $L_M = 27.2(A_N \times P)$

where:

$L_{M\ TOTAL\ PROJECT}$ = Required TSS removal resulting from the proposed development = 80% of increased load
A_N = Net increase in impervious area for the project
P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project

County =	Travis	
Total project area included in plan * =	59.93	acres
Predevelopment impervious area within the limits of the plan * =	0.00	acres
Total post-development impervious area within the limits of the plan * =	13.95	acres
Total post-development impervious cover fraction * =	0.23	
P =	32	inches
$L_{M\ TOTAL\ PROJECT}$ =	12142	lbs.

* The values entered in these fields should be for the total project area.

Number of drainage basins / outfalls areas leaving the plan area = 3

2. Drainage Basin Parameters (This information should be provided for each basin):

Drainage Basin/Outfall Area No. = 3

Total drainage basin/outfall area =	3.92	acres
Predevelopment impervious area within drainage basin/outfall area =	0.00	acres
Post-development impervious area within drainage basin/outfall area =	2.94	acres
Post-development impervious fraction within drainage basin/outfall area =	0.75	
$L_{M\ THIS\ BASIN}$ =	2559	lbs.

3. Indicate the proposed BMP Code for this basin.

Proposed BMP = Retention / Irrigation
Removal efficiency = 100 percent

Aqualogic Cartridge Filter
Bioretention
Contech StormFilter
Constructed Wetland
Extended Detention
Grassy Swale
Retention / Irrigation
Sand Filter
Stormceptor
Vegetated Filter Strips
Vortechs
Wet Basin
Wet Vault

4. Calculate Maximum TSS Load Removed (L_R) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7: $L_R = (\text{BMP efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$

where:

A_C = Total On-Site drainage area in the BMP catchment area
A_I = Impervious area proposed in the BMP catchment area
A_P = Pervious area remaining in the BMP catchment area
L_R = TSS Load removed from this catchment area by the proposed BMP

A_C =	3.92	acres
A_I =	2.94	acres
A_P =	0.98	acres
L_R =	3272	lbs

9/10/25

Meredith Kizewski, P.E.

5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired $L_{M\ THIS\ BASIN}$ =	2559	lbs.
F =	0.78	

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area. Calculations from RG-348 Pages 3-34 to 3-36

Rainfall Depth =	1.00	inches
Post Development Runoff Coefficient =	0.56	
On-site Water Quality Volume =	7969	cubic feet

Calculations from RG-348 Pages 3-36 to 3-37

Off-site area draining to BMP =	0.00	acres
Off-site Impervious cover draining to BMP =	0.00	acres
Impervious fraction of off-site area =	0	
Off-site Runoff Coefficient =	0.00	
Off-site Water Quality Volume =	0	cubic feet
Storage for Sediment =	1594	
Total Capture Volume (required water quality volume(s) x 1.20) =	9562	cubic feet

The following sections are used to calculate the required water quality volume(s) for the selected BMP.
The values for BMP Types not selected in cell C45 will show NA.

7. Retention/Irrigation System Designed as Required in RG-348 Pages 3-42 to 3-46

Required Water Quality Volume for retention basin =	9562	cubic feet	
Irrigation Area Calculations:			
Soil infiltration/permeability rate =	0.2	in/hr	**Enter determined permeability rate or assumed value of 0.1**
Irrigation area =	19125	square feet	
	0.44	acres	

ATTACHMENT L

Best Management Practices for Surface Streams

As described in attachment J and K, the majority of storm water runoff will be treated by the retention/irrigation ponds.

ATTACHMENT M

Construction Plans

1. Marx Multifamily Site Development Permit Plans dated 08/28/2025
2. SH 71 Highway Improvement Plans dated 08/13/2025

REVISIONS/CORRECTIONS

No.	DESCRIPTION	REVISE (R) DELETE (D) ADD (A)	NET CHANGE IMPERV. COVER	SITE IMPERV. COVER	% IMP. COVER	APPROVAL DATE

CONSOLIDATED SITE PLAN FOR MARX MULTIFAMILY

DATE OF FORMAL SUBMITTAL: 04/23/2025

OWNER NAME AND ADDRESS
MARX FAMILY PROPERTY, LLC
8801 W HWY 71
AUSTIN, TEXAS 78735

DEVELOPER NAME AND ADDRESS
OHT PARTNERS, LLC
901 S. MOPAC EXPRESSWAY
BUILDING 3, SUITE 500
AUSTIN, TEXAS 78746

LEGAL DESCRIPTION
MARX SUBDIVISION, A SUBDIVISION RECORDED IN DOCUMENT NO. 200800088 OF THE PLAT RECORDS OF TRAVIS COUNTY, TEXAS.

Legal Documents	Recordation No.
Drainage Easement	
Water Lines Easement	
Wastewater Easement	
Right-of-Way Deed	
Detention and Water Quality Control Easement	

RELATED CASES:
C14-2024-0032
C8-2024-0180.0A

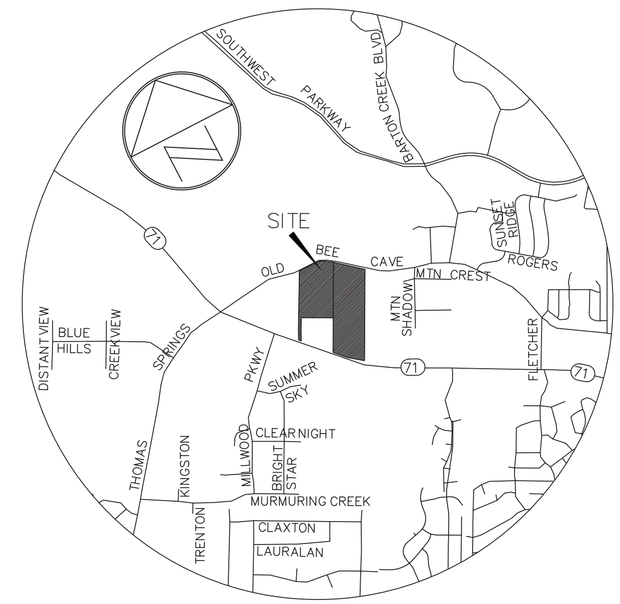
SITE AREA: 60.7 ACRES

ZONING: MF-4-NP

WATERSHED: WILLAMSON CREEK (BARTON SPRINGS ZONE)

GENERAL PLAN NOTES:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE REGISTERED PROFESSIONAL ENGINEER WHO PREPARED THEM. IN REVIEWING THESE PLANS THE CITY OF AUSTIN MUST RELY UPON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. NO PORTION OF THIS SITE LIES WITHIN THE 100-YEAR FLOODPLAIN, AS IDENTIFIED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO. 48453C0460K, DATED JANUARY 16, 2016, FOR TRAVIS COUNTY, TEXAS AND INCORPORATED AREAS.
3. WATER AND WASTEWATER SERVICE TO BE PROVIDED BY THE CITY OF AUSTIN.
4. THIS SITE IS LOCATED OVER THE EDWARD'S AQUIFER CONTRIBUTING ZONE.
5. RELEASE OF THE APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICANT IS REVIEWED FOR CODE COMPLIANCE BY CITY ENGINEERS.
6. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. APPROVAL BY OTHER GOVERNMENTAL ENTITIES MAY BE REQUIRED PRIOR TO THE START OF CONSTRUCTION. THE APPLICANT IS RESPONSIBLE FOR DETERMINING WHAT ADDITIONAL APPROVALS MAY BE NECESSARY. OTHER GOVERNMENTAL ENTITIES MAY INCLUDE BUT ARE NOT LIMITED TO THE COUNTY, TXDOT, TCEQ, COUNTY FIRE MARSHAL (OR APPLICABLE ESD), MUDS, ETC.
7. COMPLIANCE WITH THE UNIVERSAL RECYCLING ORDINANCE IS MANDATORY FOR MULTI-FAMILY COMPLEXES, BUSINESSES AND OFFICE BUILDINGS.
8. A FEE-IN-LIEU OF PARKLAND DEDICATION MUST BE PAID FOR 402 RESIDENTIAL PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. NO CERTIFICATE OF OCCUPANCY MAY BE ISSUED FOR THIS DEVELOPMENT UNTIL RECEIPT OF PAYMENT. CONTACT THE PARKS AND RECREATION DEPARTMENT PRIOR TO REQUESTING INSPECTIONS.
9. CONTRACTOR SHALL NOTIFY THE CITY OF AUSTIN – SITE & SUBDIVISION DIVISION TO SUBMIT REQUIRED DOCUMENTATION, PAY CONSTRUCTION INSPECTION FEES, AND TO SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS MEETING MUST BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W. OR PUBLIC EASEMENTS. PLEASE VISIT HTTP://AUSTINTEXAS.GOV/PAGE/COMMERCIAL-SITE-AND-SUBDIVISION-INSPECTIONS FOR A LIST OF SUBMITTAL REQUIREMENTS, FEE CALCULATIONS, AND TO ARRANGE PAYMENT OF INSPECTION FEES.
10. THIS NOTE IS BEING PLACED ON THE PLAN SET IN THE ABSENCE OF A TEMPORARY TRAFFIC CONTROL STRATEGY (TCP) WITH THE FULL UNDERSTANDING THAT AN ENGINEERED TCP SHALL BE REVIEWED AND APPROVED BY THE RIGHT OF WAY MANAGEMENT DIVISION. FUTHERMORE, A TCP SHALL BE SUBMITTED TO THE TCP PORTAL FOR REVIEW A MINIMUM OF 6 WEEKS PRIOR TO THE START OF CONSTRUCTION. THE APPLICANT/PROJECT REPRESENTATIVE FURTHER RECOGNIZES THAT A TCP REVIEW FEE IS REQUIRED FOR THE INITIAL REVIEW AND ALL RE-REVIEWS, AS PRESCRIBED BY THE MOST CURRENT VERSION OF THE CITY'S FEE ORDINANCE,
11. IF AT ANY TIME DURING CONSTRUCTION OF THIS PROJECT AN UNDERGROUND STORAGE TANK (UST) IS FOUND, CONSTRUCTION IN THAT AREA MUST STOP UNTIL A CITY OF AUSTIN UST CONSTRUCTION PERMIT IS APPLIED FOR AND APPROVED. ANY UST REMOVAL WORK MUST BE CONDUCTED BY A UST CONTRACTOR THAT IS REGISTERED WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ). CONTACT ELIZABETH SIMMONS AT ELIZABETH.SIMMONS@AUSTINTEXAS.GOV IF YOU HAVE ANY QUESTIONS.
12. DEVELOPMENT OF STRUCTURES THAT REQUIRE A BUILDING PERMIT WITHIN THIS SITE PLAN, OR REVISIONS THEREOF, ARE REQUIRED TO COMPLY WITH THE CITY OF AUSTIN STREET IMPACT FEE ORDINANCES, AS APPLICABLE, AND MUST BE PAID UPON COMPLETION OF THE BUILDING PERMIT PLAN REVIEW FOR EACH BUILDING.
13. RETAINING WALLS OVER FOUR FEET IN HEIGHT, MEASURED FROM THE BOTTOM OF THE FOOTING TO THE TOP OF THE WALL, SHALL BE ENGINEERED AND WILL REQUIRE A SEPARATE PERMIT (UNIFORM BUILDING CODE 106.2.5).
14. FOR INTEGRATED PEST MANAGEMENT PLAN, SEE AGREEMENT FILED IN DOCUMENT NO. ____________, OFFICIAL PUBLIC RECORDS, TRAVIS COUNTY, TEXAS.
15. THIS PROJECT IS SUBJECT TO THE VOID AND WATER FLOW MITIGATION RULE (COA ECM 1.12.0 AND COA ITEM NO. 658S OF THE SSM) PROVISION THAT ALL TRENCHING GREATER THAN 5 FEET DEEP MUST BE INSPECTED BY A GEOLOGIST (TEXAS P.G.) OR A GEOLOGIST'S REPRESENTATIVE.
16. PER ECM 1.6.9.2.E, THE MAXIMUM PORTION OF ANY COMMERCIAL, MULTI-FAMILY, OR SINGLE FAMILY/DUPLEX LOT THAT MAY BE ESTABLISHED AS TURF OR LANDSCAPED IS 15 PERCENT. HOWEVER, NO LOT SHALL BE RESTRICTED TO LESS THAN 2000 SQUARE FEET OF TURF OR LANDSCAPED AREA. FOR THE PURPOSES OF THIS RULE, UNDISTURBED NATURAL AREAS OR AREAS RESTORED TO NATURAL CONDITIONS SHALL NOT BE CONSIDERED LANDSCAPING OR TURF.
17. CRITICAL ENVIRONMENTAL FEATURES (CEF) ARE PRESENT ON SITE. ALL ACTIVITIES WITHIN THE CEF SETBACK MUST COMPLY WITH THE CITY OF AUSTIN CODE AND CRITERIA



LOCATION MAP
NOT TO SCALE

CITY GRID: A21
MAPSCO: 611B, 611F

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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED
PROFESSIONAL ENGINEER
8/28/2025

LICENSED PROFESSIONAL ENGINEER
REGISTRATION NO.84652
360 PROFESSIONAL SERVICES, INC.
P.O. BOX 3639
CEDAR PARK, TEXAS 78630

ENGINEER'S CERTIFICATION:

I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND IN COMPLIANCE WITH CHAPTER 25-8, SUBCHAPTER A OF THE LAND DEVELOPMENT CODE.

8900 W STATE HIGHWAY 71 AND 9119 OLD BEE CAVES ROAD AUSTIN, TX 78735 APRIL 2025

APPROVED BY:

DEVELOPMENT SERVICES DEPARTMENT ________ DATE

AUSTIN WATER ________ DATE

CITY OF AUSTIN FIRE DEPARTMENT ________ DATE

APPLICABLE WATERSHED ORDINANCE ________

OPERATING PERMIT ________

WHERE APPLICABLE UNDER 25-8-233 ________

WPDR SIGN-OFF DATE ________

Austin Fire Department	
Fire Design Standards	*2021 International Fire Code with City of Austin Local Amendments*
Fire Flow Demand @ 20 psi	*3,500 gpm (38,579 SF Sprinklered Type VA Clubhouse)* *2,500 gpm (8,953 Unsprinklered Type VB Clubhouse)*
Occupancy Classification	*Multi-Family Residential (R2) and Clubhouse (A-3)*
Construction Classification	*Type VA (Multi-Family) & VB (Clubhouse)*
Total Building Size in Square Feet (Most Restrictive):	*38,579 SF (Type VA) and 8,953 SF (Type VB)*
Automatic Fire Sprinkler System	*Yes - NFPA 13R (Multi-Family) & No (Clubhouse)*
Reduced Fire Flow Demand @ 20 psi	*1,500 gpm (38,579 SF Sprinklered Type VA Clubhouse)* *2,500 gpm (8,953 Unsprinklered Type VB Clubhouse)*
AFD Fire Hydrant Flow Test	*12/22/2024*
AFD Fire Hydrant Flow Test Location	*8600 Block W SH 71*
Available Fire Flow Calcs at 20 PSI:	*11,892 gpm*
City of Austin Pipeline Ordinance	*No*
High-Rise	*No*
Wildland Urban Interface	*2015 International Wildland-Urban Interface Code (IWUIC) with City of Austin Local Amendments*
Alternative Method of Compliance	*No*

CITY OF AUSTIN
WATER AND WASTEWATER UTILITY
SPECIAL SERVICES DIVISION
(512) 972-1060

THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH AUSTIN FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED, AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE. THIS PROJECT HAS 21 PRIVATE HYDRANTS.

SITE PLAN APPROVAL

CASE NUMBER SP-2025-0080C APPLICATION DATE 04/23/2025
APPROVED ON __________ ☐ADMINISTRATIVELY ☐BY COMMISSION
UNDER SECTION ☐112 ☐142 OF CHAPTER 25-5 OF THE CITY OF AUSTIN CODE
EXPIRATION DATE (25-5-81 LDC) __________ CASE MANAGER J. GOBEL

DEVELOPMENT SERVICES DEPARTMENT
RELEASED FOR GENERAL COMPLIANCE: __________ ZONING MF-4-NP

APPROVAL STAMPS

PREPARED BY:

CIVIL ENGINEER (APPLICANT):

360 PROFESSIONAL SERVICES, INC.
TEXAS FIRM REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
CONTACT: SCOTT J. FOSTER, P.E.

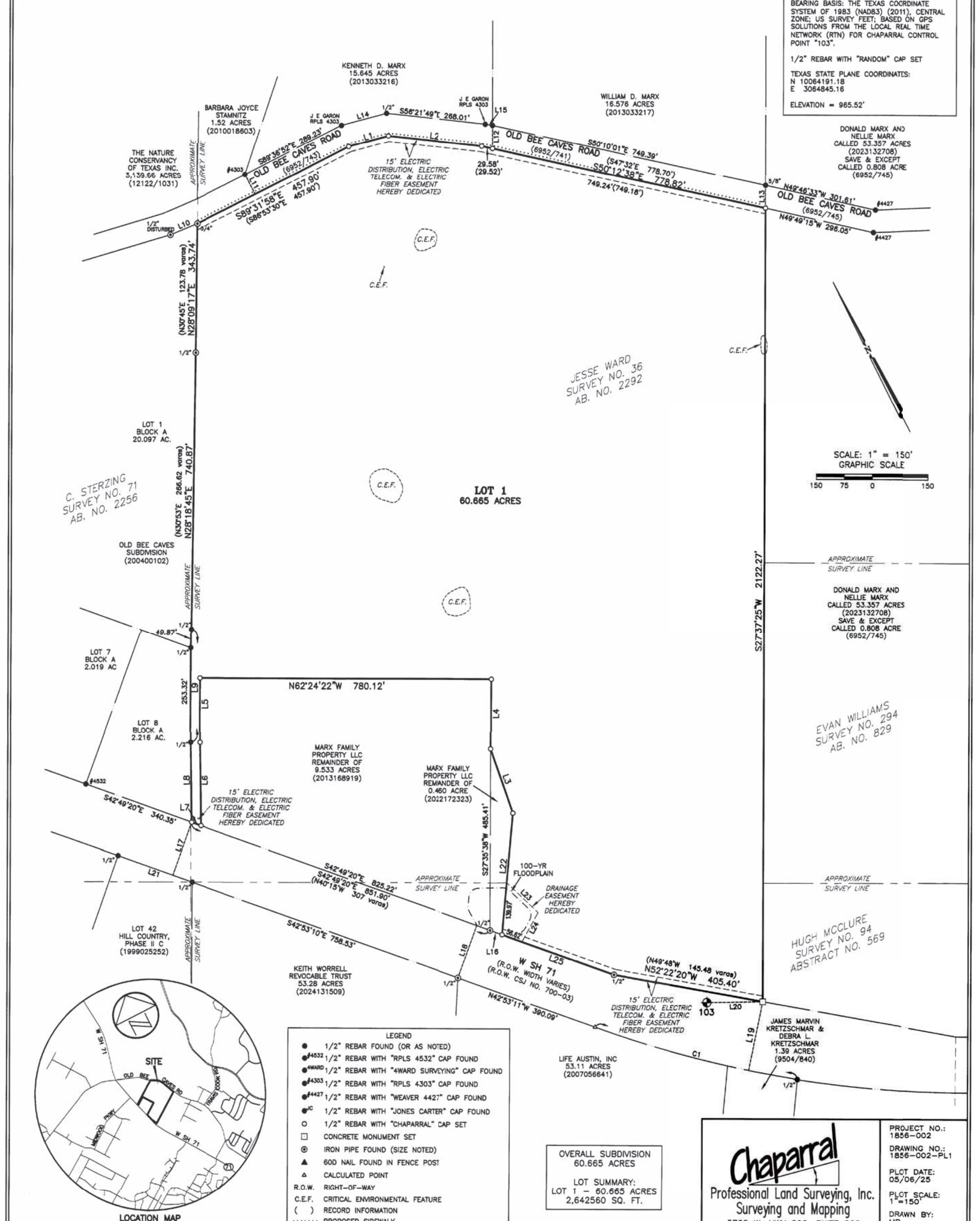
SURVEYOR:
CHAPARRAL LAND SURVEYING, LLC
5725 W. HWY 290, SUITE 202
AUSTIN, TX 78749
PHONE (512) 443-1724
CONTACT: PAUL FLUGEL., R.P.L.S. 5096

ARCHITECT:
MEEKS PARTNERS
1600 MEMORIAL DRIVE
HOUSTON, TX 77079
PHONE: (281) 558-8787
CONTACT: TREVOR MEEKS, AIA

LANDSCAPE ARCHITECT:
KFM ENGINEERING & DESIGN
3501 OLYMPUS BLVD., SUITE 100
DALLAS, TX 75019
PHONE (469) 899-0539
CONTACT: BEN LEVY

$101.00 06/18/2025 202500088

MARX SUBDIVISION



C8-2024-0180.0A

Chaparral Professional Land Surveying, Inc. Surveying and Mapping
5725 W. HWY 290, SUITE 202
Austin, Texas 78749
512-443-1724
T.B.P.E.L.S. Firm No. 10124500

PROJECT NO.: 1856-002
DRAWING NO.: 1856-002-PL1
PLOT DATE: 05/06/25
PLOT SCALE: 1"=150'
DRAWN BY: MB
SHEET 01 OF 03

202500088

MARX SUBDIVISION

THE STATE OF TEXAS
COUNTY OF TRAVIS

KNOW ALL MEN BY THESE PRESENTS:

THAT MARX FAMILY PROPERTY, LLC, BEING OWNERS OF 70.666 ACRES SITUATED IN THE JESSE WARD SURVEY NO. 36, ABSTRACT NO. 2292, THE HUGH MCCLURE SURVEY NO. 94, ABSTRACT NO. 569, AND THE EVAN WILLIAMS SURVEY NO. 294, ABSTRACT NO. 829, IN TRAVIS COUNTY, TEXAS, CONSISTING OF A 34.995 ACRE TRACT CONVEYED IN SPECIAL WARRANTY DEED RECORDED IN DOCUMENT NO. 2013168919, OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS, AND A 35.671 ACRE TRACT CONVEYED IN SPECIAL WARRANTY DEED RECORDED IN DOCUMENT NO. 2022172323, OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS, DOES HEREBY SUBDIVIDE 60.665 ACRES IN ACCORDANCE WITH THE MAP OR PLAT ATTACHED HERETO, PURSUANT TO CHAPTER 212 OF THE TEXAS LOCAL GOVERNMENT CODE, TO BE KNOWN AS:

MARX SUBDIVISION

AND DOES HEREBY DEDICATE TO THE CITY OF AUSTIN THE USE OF THE STREETS, RIGHTS-OF-WAY, EASEMENTS, AND PUBLIC PLACES SHOWN HEREON, FOR SUCH PUBLIC PURPOSES AS THE CITY OF AUSTIN MAY DEEM APPROPRIATE

WITNESS MY HAND THIS THE 2nd DAY OF June, 2025 A.D.

BY: Betty Fickel
BETTY FICKEL, MANAGING MEMBER

BY: Kenneth Marx
KENNETH MARX, MANAGING MEMBER

BY: William Marx
WILLIAM MARX, MANAGING MEMBER

BY: Sandra Jones
SANDRA JONES, MANAGING MEMBER

BY: [signature]
KEITH WORRELL, MANAGING MEMBER

BY: James Kretzschmar
JAMES KRETZSCHMAR, MANAGING MEMBER

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR Betty Fickel, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

[signature] 06/02/2025
NOTARY PUBLIC – STATE OF Texas Date

Walter Batla, My Commission Expires 9/4/2028, Notary ID 12010842

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR Kenneth Marx, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

Tybresha Lashawn Drisdale 6/2/2025
NOTARY PUBLIC – STATE OF Texas Date

TYBRESHA LASHAWN DRISDALE, Notary Public, State of Texas, Comm. Expires 01-09-2027, Notary ID 131847126

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR William Marx, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

Tybresha Lashawn Drisdale 6/2/2025
NOTARY PUBLIC – STATE OF Texas Date

TYBRESHA LASHAWN DRISDALE, Notary Public, State of Texas, Comm. Expires 01-09-2027, Notary ID 131847126

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR Sandra Jones, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

[signature] 06/02/2025
NOTARY PUBLIC – STATE OF Texas Date

Walter Batla, My Commission Expires 9/4/2028, Notary ID 12010842

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR Keith Worrell, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

Tybresha Lashawn Drisdale 06/02/2025
NOTARY PUBLIC – STATE OF Travis Date

TYBRESHA LASHAWN DRISDALE, Notary Public, State of Texas, Comm. Expires 01-09-2027, Notary ID 131847126

STATE OF Texas §
COUNTY OF Travis §

BEFORE ME, THE UNDERSIGNED AUTHORITY, A NOTARY PUBLIC IN AND FOR THE STATE OF Texas, ON THIS DAY DID PERSONALLY APPEAR James Kretzschmar, KNOWN TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND HAS ACKNOWLEDGED TO ME THAT THEY HAVE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

[signature] 6/2/2025
NOTARY PUBLIC – STATE OF Texas Date

Walter Batla, My Commission Expires 9/4/2028, Notary ID 12010842

LINE TABLE			
LINE	BEARING	DISTANCE	RECORD
L1	S77°43'28"E	107.33'	(S75°05'E 107.33')
L2	S56°24'28"E	253.39'	(S53°46'E 253.39')
L3	N08°16'54"E	182.14'	
L4	N27°35'38"E	186.33'	
L5	S27°48'45"W	171.95'	
L6	S26°44'51"W	223.21'	
L7	N42°49'20"W	26.68'	
L8	N26°44'51"E	214.13'	(N29°22'E 76.23 varas)
L9	N27°48'45"E	303.19'	(N30°22'E 110.02 varas)
L10	N85°09'42"W	77.79'	(N82°37'41"W 78.03')
L11	S00°28'02"W	59.47'	
L12	N27°35'38"E	61.97'	
L13	S27°37'25"W	61.38'	(S30°08'W 61.40')
L14	S77°43'45"E	124.70'	
L15	S52°35'39"E	19.71'	
L16	N42°49'20"W	34.21'	
L17	S46°53'43"W	150.42'	
L18	N47°10'40"E	149.30'	
L19	S38°59'22"W	187.92'	
L20	S63°30'21"E	149.65'	
L21	S43°06'17"E	210.24'	
L22	N32°31'10"E	326.19'	
L23	S18°49'39"E	116.16'	
L24	S56°15'23"W	89.29'	
L25	N42°49'20"W	318.21'	(N40°15'W 126.81 varas)

CURVE TABLE					
CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	2955.00'	10°51'55"	560.37'	S48°08'41"E	559.53'

C8-2024-0180.0A

Chaparral Professional Land Surveying, Inc. Surveying and Mapping
5725 W. HWY 290, SUITE 202
Austin, Texas 78749
512-443-1724
T.B.P.E.L.S. Firm No. 10124500

PROJECT NO.: 1856-002
DRAWING NO.: 1856-002-PL1
PLOT DATE: 05/06/25
PLOT SCALE: 1"=150'
DRAWN BY: MB
SHEET 02 OF 03

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3529
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

FINAL PLAT
SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 02 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\02 FINAL PLAT.dwg LAYOUT: 1 PLOT DATE:
XREFS: x2436 IMAGES: 1856-002-TOPO2_2025-01-08_Page_1.jpg 1856-002-TOPO2_2025-0

202500088

MARX SUBDIVISION

GENERAL SURVEY NOTES:

1. UTILITY PROVIDERS FOR THIS DEVELOPMENT ARE:
   - WATER: AUSTIN WATER UTILITY
   - WASTEWATER: AUSTIN WATER UTILITY
   - ELECTRIC: AUSTIN ENERGY

2. NO LOT SHALL BE OCCUPIED UNTIL THE STRUCTURE IS CONNECTED TO THE CITY OF AUSTIN WATER AND WASTEWATER UTILITY SYSTEM.

3. THE WATER AND WASTEWATER SYSTEMS SERVING THIS SUBDIVISION MUST BE IN ACCORDANCE WITH THE CITY OF AUSTIN UTILITY DESIGN CRITERIA. THE WATER AND WASTEWATER UTILITY PLAN MUST BE REVIEWED AND APPROVED BY AUSTIN WATER. ALL WATER AND WASTEWATER CONSTRUCTION MUST BE INSPECTED BY THE CITY OF AUSTIN. THE LANDOWNER MUST PAY THE CITY INSPECTION FEE WITH THE UTILITY CONSTRUCTION.

4. NO BUILDINGS, FENCES, LANDSCAPING OR OTHER OBSTRUCTIONS ARE PERMITTED IN DRAINAGE EASEMENTS EXCEPT AS APPROVED BY THE CITY OF AUSTIN OR TRAVIS COUNTY.

5. ALL EASEMENTS ON PRIVATE PROPERTY SHALL BE MAINTAINED BY THE PROPERTY OWNER AND HIS/HER ASSIGNS.

6. PROPERTY OWNER AND HIS/HER ASSIGNS SHALL PROVIDE FOR ACCESS TO DRAINAGE EASEMENTS AS MAY BE NECESSARY AND SHALL NOT PROHIBIT ACCESS BY GOVERNMENTAL AUTHORITIES.

7. ALL STREETS, DRAINAGE, SIDEWALKS, WATER AND WASTEWATER LINES, AND EROSION CONTROLS SHALL BE CONSTRUCTED TO CITY OF AUSTIN STANDARDS.

8. PUBLIC SIDEWALKS, BUILT TO CITY OF AUSTIN STANDARDS, ARE REQUIRED ALONG OLD BEE CAVE ROAD AND ARE SHOWN BY A DOTTED LINE ON THE FACE OF THE PLAT: THESE SIDEWALKS SHALL BE IN PLACE PRIOR TO THE LOT BEING OCCUPIED. FAILURE TO CONSTRUCT THE REQUIRED SIDEWALKS MAY RESULT IN THE WITHHOLDING OF CERTIFICATES OF OCCUPANCY, BUILDING PERMITS, OR UTILITY CONNECTIONS BY THE GOVERNING BODY OR UTILITY COMPANY. LDC, 25-6-351

9. BUILDING SETBACK LINES SHALL BE IN CONFORMANCE WITH CITY OF AUSTIN ZONING ORDINANCE REQUIREMENTS.

10. THE OWNER OF THIS SUBDIVISION AND THE OWNER'S SUCCESSORS AND ASSIGNS ARE RESPONSIBLE FOR CONSTRUCTION OF SUBDIVISION IMPROVEMENTS THAT COMPLY WITH CITY OF AUSTIN REGULATIONS. THE OWNER UNDERSTANDS THAT PLAT VACATION OR REPLATTING MAY BE REQUIRED, AT THE OWNER'S EXPENSE, IF PLANS TO CONSTRUCT THIS SUBDIVISION DO NOT COMPLY WITH THE REGULATIONS. APPROVAL OF THIS SUBDIVISION DOES NOT GUARANTEE FUTURE APPROVAL OF VARIANCES TO THE CITY OF AUSTIN REGULATIONS THAT MAY BE REQUIRED AT LATER STAGES OF DEVELOPMENT.

11. BY APPROVING THIS PLAT, THE CITY OF AUSTIN ASSUMES NO OBLIGATION TO CONSTRUCT ANY INFRASTRUCTURE IN CONNECTION WITH THIS SUBDIVISION. ANY SUBDIVISION INFRASTRUCTURE REQUIRED FOR THE DEVELOPMENT OF THE LOTS IN THIS SUBDIVISION IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR THE OWNERS OF THE LOTS. FAILURE TO CONSTRUCT ANY REQUIRED INFRASTRUCTURE TO CITY STANDARDS MAY BE JUST CAUSE FOR THE CITY TO DENY APPLICATIONS FOR CERTAIN DEVELOPMENT PERMITS INCLUDING BUILDING PERMITS, SITE PLAN APPROVALS, AND/OR CERTIFICATES OF OCCUPANCY.

12. PRIOR TO CONSTRUCTION ON LOTS IN THIS SUBDIVISION, DRAINAGE PLANS WILL BE SUBMITTED TO THE CITY OF AUSTIN FOR REVIEW. RAINFALL RUNOFF SHALL BE HELD TO THE AMOUNT EXISTING AT UNDEVELOPED STATUS BY PONDING OR OTHER APPROVED METHODS.

13. AUSTIN ENERGY HAS THE RIGHT TO PRUNE AND/OR REMOVE TREES, SHRUBBERY AND OTHER OBSTRUCTIONS AS NECESSARY TO KEEP THE EASEMENTS CLEAR. AUSTIN ENERGY WILL PERFORM ALL TREE WORK IN COMPLIANCE WITH THE CITY OF AUSTIN DEVELOPMENT CODE.

14. THE OWNER/DEVELOPER OF THIS SUBDIVISION/LOT SHALL PROVIDE THE CITY OF AUSTIN ELECTRIC UTILITY DEPARTMENT WITH ANY EASEMENT AND/OR ACCESS REQUIRED, IN ADDITION TO THOSE INDICATED, FOR THE INSTALLATION AND ONGOING MAINTENANCE OF OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES. THESE EASEMENTS AND/OR ACCESS ARE REQUIRED TO PROVIDE ELECTRIC SERVICE TO THE BUILDING, AND WILL NOT BE LOCATED SO AS TO CAUSE THE SITE TO BE OUT OF COMPLIANCE WITH THE CITY OF AUSTIN LAND DEVELOPMENT CODE.

15. THE OWNER SHALL BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY EROSION CONTROL, REVEGETATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY INITIAL TREE PRUNING AND TREE REMOVAL THAT IS WITHIN TEN FEET OF THE CENTERLINE OF THE PROPOSED OVERHEAD ELECTRICAL FACILITIES DESIGNED TO PROVED ELECTRIC SERVICE TO THIS PROJECT. THE OWNER SHALL INCLUDE AUSTIN ENERGY'S WORK WITHIN THE LIMITS OF CONSTRUCTION FOR THIS PROJECT. ANY RELOCATIONS OR OUTAGES CAUSED BY THIS PROJECT WILL BE CHARGED TO THE CONTRACTOR/OWNER. PROPERTY OWNER IS TO PROVIDE FREE AND EASY ACCESS 24 HOURS A DAY TO THE TRANSMISSION EASEMENT. ON THE SITE PLAN, DO NOT PLAT SINGLE FAMILY LOTS INTRO TRANSMISSION EASEMENT DUE TO SAFETY, ACCESS AND MAINTENANCE ISSUES.

16. EROSION/SEDIMENTATION CONTROLS AREA REQUIRED FOR ALL CONSTRUCTION IN THIS SUBDIVISION PURSUANT TO THE LAND DEVELOPMENT CODE AND THE ENVIRONMENTAL CRITERIA MANUAL.

17. PRIOR TO CONSTRUCTION, EXCEPT DETACHED SINGLE FAMILY ON ANY LOT IN THIS SUBDIVISION, A SITE DEVELOPMENT PERMIT MUST BE OBTAINED FROM THE CITY OF AUSTIN.

18. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN RULES AND REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCES WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD POWER LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES ARE MAINTAINED. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCES WILL BE CHARGED TO THE OWNER.

19. WATER QUALITY CONTROLS ARE REQUIRED FOR ALL DEVELOPMENT PURSUANT TO THE LAND DEVELOPMENT CODE.

20. ANY RELOCATION OF ELECTRIC FACILITIES SHALL BE AT LANDOWNER'S/DEVELOPER'S EXPENSE.

21. PLEASE NOTE, DEVELOPMENT OF STRUCTURES THAT REQUIRE A BUILDING PERMIT, ON THIS PLAT, AND SUBSEQUENT RE-PLATS OF THIS SUBDIVISION WILL BE SUBJECT TO THE CITY OF AUSTIN STREET IMPACT FEE ORDINANCES 20201220-061 AND 20201210-062, AS APPLICABLE PRIOR TO ACQUIRING THE BUILDING PERMIT. THE CITY SHALL START COLLECTING STREET IMPACT FEES WITH ALL BUILDING PERMITS ISSUED ON OR AFTER JUNE 21, 2022. FOR MORE INFORMATION, PLEASE VISIT THE STREET IMPACT FEE WEBSITE [AUSTINTEXAS.GOV/STREETIMPACTFEE]

22. ALL DRAINAGE EASEMENTS ARE HEREBY DEDICATED TO THE CITY OF AUSTIN.

23. EACH LOT IN THIS SUBDIVISION SHALL HAVE SEPARATE SEWER TAPS, SEPARATE WATER METERS AND THEIR RESPECTIVE PRIVATE WATER AND SEWER SERVICE LINES SHALL BE POSITIONED OR LOCATED IN A MANNER THAT WILL NOT CROSS LOT LINES.

24. THIS PLAT CONTAINS INFORMATION SHOWN ON FIRST AMERICAN TITLE INSURANCE COMPANY TITLE COMMITMENT G.F. NO. 202301457, ISSUED NOVEMBER 22, 2024 WITH AN EFFECTIVE DATE OF NOVEMBER 12, 2024.

25. PARKLAND DEDICATION IS REQUIRED PER CITY CODE §25-1-601, AS AMENDED, PRIOR TO APPROVAL OF A SITE PLAN IN THIS SUBDIVISION FOR ANY APPLICABLE USES.

26. DEVELOPMENT OF STRUCTURES THAT REQUIRE A BUILDING PERMIT ON THIS PLAT WILL BE SUBJECT TO THE CITY OF AUSTIN STREET IMPACT FEE AS APPLICABLE PRIOR TO ACQUIRING A BUILDING PERMIT. LDC 25-6-662

27. NO STRUCTURE SHALL BE OCCUPIED UNTIL THE WATER QUALITY CONTROL AND DETENTION FACILITY HAVE BEEN CONSTRUCTED, INSPECTED, AND ACCEPTED BY THE CITY OF AUSTIN.

28. THIS PROJECT IS LOCATED WITHIN THE EDWARDS AQUIFER CONTRIBUTING ZONE. DEVELOPMENT RESTRICTIONS MAY APPLY.

29. THE PRESENCE OF A CRITICAL ENVIRONMENTAL FEATURE ON OR NEAR THE PROPERTY MAY AFFECT DEVELOPMENT. ALL ACTIVITIES WITHIN THE CRITICAL ENVIRONMENTAL FEATURES (CEF) SETBACK MUST COMPLY WITH THE CITY OF AUSTIN CODE AND CRITERIA. THE NATURAL VEGETATIVE COVER MUST BE RETAINED TO THE MAXIMUM EXTENT PRACTICABLE; CONSTRUCTION IS PROHIBITED; AND WASTEWATER DISPOSAL OR IRRIGATION IS PROHIBITED.

30. WATER QUALITY CONTROLS ARE REQUIRED FOR ALL DEVELOPMENT PURSUANT TO THE LAND DEVELOPMENT CODE.

31. THE 100 YEAR FLOOD PLAIN IS CONTAINED WITHIN THE DRAINAGE EASEMENTS SHOWN HEREON. NO PORTION OF THIS TRACT IS WITHIN THE BOUNDARIES OF THE 100 YEAR FLOOD OF A WATERWAY THAT IS WITHIN THE FEDERAL EMERGENCY MANAGEMENT AGENCY, NATIONAL FLOOD INSURANCE PROGRAM, AS SHOWN ON MAP NO. 48491C0610F, DATED DECEMBER 20, 2019, FOR WILLIAMSON COUNTY, TEXAS AND INCORPORATED AREAS.

SURVEYOR'S CERTIFICATION

I, PAUL J. FLUGEL, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY CERTIFY THAT THIS PLAT COMPLIES WITH THE SURVEYING RELATED PORTIONS OF TITLE 25 OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE, AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE, AND WAS PREPARED FROM AN ACTUAL ON THE GROUND SURVEY OF THE PROPERTY MADE UNDER MY DIRECTION AND SUPERVISION.

Paul J. Flugel 5-20-2025

PAUL J. FLUGEL, R.P.L.S. 5096 DATE
SURVEYING BY:
CHAPARRAL PROFESSIONAL LAND SURVEYING, INC.
5725 WEST HWY 290, SUITE 103
AUSTIN, TEXAS 78735-7822
(512) 443-1724

STATE OF TEXAS — REGISTERED — PAUL J. FLUGEL — 5096 — PROFESSIONAL — LAND SURVEYOR

ENGINEER'S CERTIFICATION:

I, SCOTT J. FOSTER, AM AUTHORIZED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF ENGINEERING AND HEREBY CERTIFY THAT THIS PLAT IS FEASIBLE FROM AN ENGINEERING STANDPOINT AND COMPLIES WITH THE ENGINEERING RELATED PORTIONS OF (TITLE 25) OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

6/11/25

SCOTT J. FOSTER, P.E. DATE
REGISTERED PROFESSIONAL ENGINEER NO. 84652

ENGINEERING BY:
360 PROFESSIONAL SERVICES, INC.
T.B.P.E.L.S. FIRM NO. 4932
PO BOX 3639
CEDAR PARK, TEXAS 78630
(512) 354-4682

STATE OF TEXAS — SCOTT J. FOSTER — 84652 — LICENSED — PROFESSIONAL ENGINEER

THE STATE OF TEXAS
COUNTY OF TRAVIS

THIS SUBDIVISION PLAT IS LOCATED WITHIN THE FULL PURPOSE JURISDICTION OF THE CITY OF AUSTIN ON THIS, THE 18th DAY OF JUNE, 2025, AD.

APPROVED, ACCEPTED AND AUTHORIZED FOR RECORD BY THE DIRECTOR, DEVELOPMENT SERVICES DEPARTMENT, CITY OF AUSTIN, COUNTY OF TRAVIS, THIS THE 18th DAY OF JUNE, 2025, AD.

Angela Gallegos

ANGELA GALLEGOS FOR:
~~JOSE ROIG, DIRECTOR~~ Keith Mars Interim Director
DEVELOPMENT SERVICES DEPARTMENT

THE STATE OF TEXAS
COUNTY OF TRAVIS

I, DYANA LIMON-MERCADO, CLERK OF TRAVIS COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING, WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE

ON THE 18 DAY OF June, 2025 A.D., AT 4:33 O'CLOCK P M., AND DULY

RECORDED ON THE 18 DAY OF June, 2025 A.D., AT 4:33 O'CLOCK P M., IN SAID COUNTY

AND STATE, IN DOCUMENT NUMBER 202500088 OF THE OFFICIAL PUBLIC RECORDS OF TRAVIS COUNTY, TEXAS,

WITNESS MY HAND AND SEAL OF OFFICE OF THE COUNTY CLERK, THE 18 DAY OF June, 2025 A.D.

DYANA LIMON-MERCADO, COUNTY CLERK, TRAVIS COUNTY, TEXAS

BY JN
DEPUTY

SEAL OF COUNTY COURT — TRAVIS COUNTY, TEXAS

C8-2024-0180.0A

Chaparral
Professional Land Surveying, Inc.
Surveying and Mapping
5725 W. HWY 290, SUITE 202
Austin, Texas 78749
512-443-1724
T.B.P.E.L.S. Firm No. 10124500

PROJECT NO.: 1856-002
DRAWING NO.: 1856-002-PL1
PLOT DATE: 05/06/25
PLOT SCALE: 1"=150'
DRAWN BY: MB
SHEET 03 OF 03

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

FINAL PLAT
SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 03 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\02 FINAL PLAT.dwg LAYOUT: 2 PLOT DATE: 8/27/2025 9:03am PLOTTED BY: mered
XREFS: x2436 IMAGES: 1856-002-TOPO2_2025-01-08_Page_1.jpg 1856-002-TOPO2_2025-01-08_Page_2.jpg SJF Sign.tif

CITY OF AUSTIN GENERAL CONSTRUCTION NOTES:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, AS APPLIES, WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF AUSTIN MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
2. CONTRACTOR SHALL CALL TEXAS 811 (811 OR 1-800-344-8377) FOR UTILITY LOCATIONS PRIOR TO ANY WORK IN CITY EASEMENTS OR STREET R.O.W
3. CONTRACTOR SHALL NOTIFY THE CITY OF AUSTIN -SITE & SUBDIVISION DIVISION TO SUBMIT REQUIRED DOCUMENTATION, PAY CONSTRUCTION INSPECTION FEES, AND TO SCHEDULE THE REQUIRED SITE AND SUBDIVISION PRE-CONSTRUCTION MEETING. THIS MEETING MUST BE HELD PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE R.O.W. OR PUBLIC EASEMENTS. PLEASE VISIT HTTP://AUSTINTEXAS.GOV/PAGE/COMMERCIAL-SITE-AND-SUBDIVISION-INSPECTIONS FOR A LIST OF SUBMITTAL REQUIREMENTS, INFORMATION CONCERNING FEES, AND CONTACT INFORMATION.
4. FOR SLOPES OR TRENCHES GREATER THAN FIVE (5) FEET IN DEPTH, A NOTE MUST BE ADDED STATING: "ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION." (OSHA STANDARDS MAY BE PURCHASED FROM THE GOVERNMENT PRINTING OFFICE; INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 611 EAST 6TH STREET, AUSTIN TEXAS.)
5. ALL SITE WORK MUST COMPLY WITH ENVIRONMENTAL REQUIREMENTS.
6. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE FOLLOWING, THE ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE, FILTRATION, AND DETENTION FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
   - 6.1. RELEASE OF THE CERTIFICATE OF OCCUPANCY BY THE DEVELOPMENT SERVICES DEPARTMENT (INSIDE THE CITY LIMITS); OR
   - 6.2. INSTALLATION OF AN ELECTRIC OR WATER METER (IN THE FIVE-MILE ETJ)

DEVELOPER INFORMATION:

OHT PARTNERS, LLC — (512) 813-7119
OWNER — PHONE #

OHT PARTNERS, LLC (BEN BROWDER) — (512) 813-7119
DEVELOPER — PHONE #

901 S. MOPAC EXPRESSWAY, BUILDING 3, SUITE 500, AUSTIN, TEXAS 78746
OWNER ADDRESS

360 PROFESSIONAL SERVICES, INC. (SCOTT J. FOSTER, P.E.) — (512) 354-4682
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS — PHONE #

OHT PARTNERS, LLC — (512) 813-7119
PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE — PHONE #

OHT PARTNERS, LLC — (512) 813-7119
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE — PHONE #

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS, AS AMENDED BY SPECIAL PROVISION. CURRENT AT THE TIME OF BIDDING.
2. CONTRACTOR TO TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
3. CONTRACTOR TO GIVE NOTICE TO ALL AUTHORIZED INSPECTORS. SUPERINTENDENTS OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION PERMITS THAT CAN ONLY BE ISSUED TO THE CONTRACTOR HAVE BEEN OBTAINED BY THE CONTRACTOR AT ITS EXPENSE PRIOR TO COMMENCEMENT OF WORK.
4. CONTRACTOR TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIAL. INCLUDING METHODS OF HANDLING AND DISPOSAL.
5. IF REQUIRED, CONTRACTOR TO COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.
6. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS WAS COMPILED FROM RECORD INFORMATION. NO WARRANTY IS IMPLIED AS TO THE ACTUAL LOCATION OF EXISTING UTILITIES.
7. WHEN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING, OR A BREAK LOCATED IN THE LINE, OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING SITE WORK OPERATIONS, NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. COOPERATE WITH THE APPLICABLE UTILITY COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.
8. CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS, AND PROJECT ENGINEERING REFERENCE POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO OWNER.
9. CONTRACTOR TO CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF GOVERNING AUTHORITIES. (NO SEPARATE PAY)
10. THROUGHOUT THE CONSTRUCTION, AND AT THE COMPLETION OF CONSTRUCTION. THE CONTRACTOR TO ENSURE THAT DRAINAGE OF STORM WATER RUNOFF IS NOT BLOCKED.
11. THESE PLANS, PREPARED BY 360 PROFESSIONAL SERVICES, INC. DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF 360 PROFESSIONAL SERVICES, INC.'S LICENSED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR IS TO PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY HOUSE BILLS 662 AND 665 ENACTED BY THE TEXAS LEGISLATURE IN THE 70TH LEGISLATURE, REGULAR SESSION.
12. TRAFFIC CONTROLS TO BE CONTRACTOR'S RESPONSIBILITY AND INSTALLED IN ACCORDANCE WITH THE CITY OF AUSTIN. ADDITIONALLY, THE CONTRACTOR IS TO SCHEDULE THE WORK AND TRAFFIC CONTROLS TO ACHIEVE THE FOLLOWING TRAFFIC GUIDELINES:

    ATTN: MINIMUM OF ONE ACCESS POINT TO THE SITE TO REMAIN OPEN AT ALL TIMES.
    MINIMUM OF ONE LANE WITHIN THE ADJACENT ACCESS EASEMENTS TO REMAIN OPEN AT ALL TIMES.
    CONTRACTOR IS RESPONSIBLE FOR COORDINATING LANE CLOSURES WITH OWNER.
13. CONTRACTOR TO EXERCISE CAUTION DURING CONSTRUCTION NEAR AND AROUND GAS LINES. NOTIFY GAS COMPANY 24 HOURS PRIOR TO CONSTRUCTION.
14. NO BLASTING IS ALLOWED ON THIS PROJECT.
15. BURNING IS NOT ALLOWED ON THIS PROJECT.
16. CONTRACTOR TO INSTALL 1/2-INCH-DIAMETER BY 12-INCH-LONG REBAR VERTICALLY, WITH TWO (2) FEET OF SURVEYOR'S RIBBON ATTACHED AT END OF ALL PIPE STUBS. TOP OF BAR TO BE NOT LESS THAN 12 INCHES ABOVE THE FINISHED GRADE.

A. BLUE RIBBON – WATER LINE
B. GREEN RIBBON – WASTEWATER LINE
C. YELLOW RIBBON – GAS LINE
D. ORANGE RIBBON – TELECOM DUCT BANK
E. RED RIBBON – ELECTRICAL DUCT BANK

24. MAKE CONNECTION BETWEEN NEW AND EXISTING ASPHALT STREETS BY REMOVING EXISTING ASPHALT FROM END BACK UNTIL FULL DEPTH BASE AND HMAC ARE ENCOUNTERED AND HMAC APPEARS TO BE IN SOUND CONDITION. PROVIDE EXPANSION JOINT AND DOWELS WHERE CONNECTING EXISTING CURB TO NEW CURB.
25. A CURB LAYDOWN IS REQUIRED AT ALL POINTS WHERE THE PROPOSED SIDEWALK INTERSECTS THE CURB.
26. UNLESS OCCURRING AT AN EXPANSION JOINT, MAKE CONNECTION BETWEEN NEW AND EXISTING SIDEWALK BY EXPOSING AND CLEANING A ONE-FOOT LENGTH OF WELDED WIRE REINFORCEMENT AND LAPPING NEW REINFORCEMENT ONTO THIS LENGTH.
27. CONCRETE FOR SITE WORK, OTHER THAN CONCRETE PAVEMENT AND STRUCTURES, TO BE CLASS "A" (5 SACK, 3000 PSI @ 28-DAYS) AND ALL REINFORCING STEEL TO BE ASTM A615 60, UNLESS OTHERWISE NOTED. REFER TO GEOTECHNICAL REPORT AND ARCHITECTURAL DRAWINGS FOR PAVEMENT STRUCTURAL SPECIFICATIONS.
28. TREE SURVEY, CONTOURS, AND BENCHMARK INFORMATION SUPPLIED BY OTHERS. ACTUAL LOCATION OF TREES AND ELEVATION OF NATURAL GROUND ON THE PROJECT SITE MAY VARY FROM WHAT IS DEPICTED ON THE PLAN SHEETS. 360 PROFESSIONAL SERVICES, INC., IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION REGARDING SURVEYS OR BENCHMARK LOCATIONS.

    BENCHMARKS ARE AS FOLLOWS: SEE EXISTING CONDITIONS AND DEMOLITION PLAN
29. DEMOLITION PERMITS (IF NEEDED) ARE TO BE OBTAINED BY THE CONTRACTOR AT THEIR EXPENSE.
30. CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE GEOTECHNICAL REPORT AND SHALL FOLLOW THE RECOMMENDATIONS SPECIFIED THEREIN INCLUDING, BUT NOT LIMITED TO, PAVING RECOMMENDATIONS, SUBGRADE PREPARATIONS, PILE INSTALLATION PROCEDURES, GROUND WATER MANAGEMENT AND STEEP SLOPE BEST MANAGEMENT PRACTICES
31. CONTRACTOR TO FIELD VERIFY LOCATION AND FLOWLINES OF EXISTING UTILITIES PRIOR TO INSTALLATION OF PROPOSED UTILITY. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
32. PUMPING OF STORM WATER FROM EXCAVATIONS IS PROHIBITED UNLESS THE STORM WATER IS DISCHARGED TO ENCOURAGE SHEET/OVERLAND FLOW. ADDITIONAL EROSION AND SEDIMENTATION CONTROLS MAY BE REQUIRED, AT NO ADDITIONAL COST TO THE OWNER.
33. UNLESS OTHERWISE NOTED, STORM SEWERS TO BE: 6"-15" SDR 35 PVC, 18" AND GREATER, RCP ASTM-C76 CLASS III. ALL PUBLIC STORM SEWER TO BE RCP ASTM-C76 CLASS III.
34. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS ONE SQUARE FOOT IN TOTAL AREA, BLOWS AIR FROM WITHIN THE SUBSTRATE, AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMMEDIATELY CONTACT A CITY OF AUSTIN INSPECTOR FOR FURTHER INVESTIGATION.
35. UPON COMPLETION OF THE PROPOSED SITE IMPROVEMENTS AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF OCCUPANCY OR FINAL INSPECTION RELEASE BY THE CITY, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED DRAINAGE FACILITIES WERE CONSTRUCTED IN CONFORMANCE WITH APPROVED PLANS.

ECM APPENDIX P-1 – EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTIVE FENCING, AND CONDUCT "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR EXCAVATION).
2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE ENVIRONMENTAL CRITERIA MANUAL AND THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN. THE COA ESC PLAN SHALL BE CONSULTED AND USED AS THE BASIS FOR A TPDES REQUIRED SWPPP. IF A SWPPP IS REQUIRED, IT SHALL BE AVAILABLE FOR REVIEW BY THE CITY OF AUSTIN ENVIRONMENTAL INSPECTOR AT ALL TIMES DURING CONSTRUCTION, INCLUDING AT THE PRE-CONSTRUCTION MEETING. THE CHECKLIST BELOW CONTAINS THE BASIC ELEMENTS THAT SHALL BE REVIEWED FOR PERMIT APPROVAL BY COA EV PLAN REVIEWERS AS WELL AS COA EV INSPECTORS.
3. THE PLACEMENT OF TREE/NATURAL AREA PROTECTIVE FENCING SHALL BE IN ACCORDANCE WITH THE CITY OF AUSTIN STANDARD NOTES FOR TREE AND NATURAL AREA PROTECTION AND THE APPROVED GRADING/TREE AND NATURAL AREA PLAN.
4. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD ON-SITE WITH THE CONTRACTOR, DESIGN ENGINEER/PERMIT APPLICANT AND ENVIRONMENTAL INSPECTOR AFTER INSTALLATION OF THE EROSION/SEDIMENTATION CONTROLS, TREE/NATURAL AREA PROTECTION MEASURES AND "PRE-CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE) PRIOR TO BEGINNING ANY SITE PREPARATION WORK. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOTIFY THE DEVELOPMENT SERVICES DEPARTMENT, 512-974-2278 OR BY EMAIL AT ENVIRONMENTAL.INSPECTIONS@AUSTINTEXAS.GOV, AT LEAST THREE DAYS PRIOR TO THE MEETING DATE. COA APPROVED ESC PLAN AND TPDES SWPPP (IF REQUIRED) SHOULD BE REVIEWED BY COA EV INSPECTOR AT THIS TIME.
5. ANY MAJOR VARIATION IN MATERIALS OR LOCATIONS OF CONTROLS OR FENCES FROM THOSE SHOWN ON THE APPROVED PLANS WILL REQUIRE A REVISION AND MUST BE APPROVED BY THE REVIEWING ENGINEER, ENVIRONMENTAL SPECIALIST OR CITY ARBORIST AS APPROPRIATE. MAJOR REVISIONS MUST BE APPROVED BY AUTHORIZED COA STAFF. MINOR CHANGES TO BE MADE AS FIELD REVISIONS TO THE EROSION AND SEDIMENTATION CONTROL PLAN MAY BE REQUIRED BY THE ENVIRONMENTAL INSPECTOR DURING THE COURSE OF CONSTRUCTION TO CORRECT CONTROL INADEQUACIES.
6. THE CONTRACTOR IS REQUIRED TO PROVIDE A CERTIFIED INSPECTOR THAT IS EITHER A LICENSED ENGINEER (OR PERSON DIRECTLY SUPERVISED BY THE LICENSED ENGINEER) OR CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL (CPESC OR CPESC – IT), CERTIFIED EROSION, SEDIMENT AND STORMWATER – INSPECTOR (CESSWI OR CESSWI – IT) OR CERTIFIED INSPECTOR OF SEDIMENTATION AND EROSION CONTROLS (CISEC OR CISEC – IT) CERTIFICATION TO INSPECT THE CONTROLS AND FENCES AT WEEKLY OR BI-WEEKLY INTERVALS AND AFTER ONE-HALF (½) INCH OR GREATER RAINFALL EVENTS TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. THE PERSON(S) RESPONSIBLE FOR MAINTENANCE OF CONTROLS AND FENCES SHALL IMMEDIATELY MAKE ANY NECESSARY REPAIRS TO DAMAGED AREAS. SILT ACCUMULATION AT CONTROLS MUST BE REMOVED WHEN THE DEPTH REACHES SIX (6) INCHES OR ONE-THIRD (⅓) OF THE INSTALLED HEIGHT OF THE CONTROL WHICHEVER IS LESS.
7. PRIOR TO FINAL ACCEPTANCE BY THE CITY, HAUL ROADS AND WATERWAY CROSSINGS CONSTRUCTED FOR TEMPORARY CONTRACTOR ACCESS MUST BE REMOVED, ACCUMULATED SEDIMENT REMOVED FROM THE WATERWAY AND THE AREA RESTORED TO THE ORIGINAL GRADE AND REVEGETATED. ALL LAND CLEARING DEBRIS SHALL BE DISPOSED OF IN APPROVED SPOIL DISPOSAL SITES.
8. ALL WORK MUST STOP IF A VOID IN THE ROCK SUBSTRATE IS DISCOVERED WHICH IS; ONE SQUARE FOOT IN TOTAL AREA; BLOWS AIR FROM WITHIN THE SUBSTRATE AND/OR CONSISTENTLY RECEIVES WATER DURING ANY RAIN EVENT. AT THIS TIME IT IS THE RESPONSIBILITY OF THE PROJECT MANAGER TO IMMEDIATELY CONTACT A CITY OF AUSTIN ENVIRONMENTAL INSPECTOR FOR FURTHER INVESTIGATION.
9. TEMPORARY AND PERMANENT EROSION CONTROL: ALL DISTURBED AREAS SHALL BE RESTORED AS NOTED BELOW:
   - A. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO PLACE A MINIMUM OF SIX (6) INCHES OF TOPSOIL [SEE STANDARD SPECIFICATION ITEM NO. 601S.3(A)]. DO NOT ADD TOPSOIL WITHIN THE CRITICAL ROOT ZONE OF EXISTING TREES.
     - TOPSOIL SALVAGED FROM THE EXISTING SITE IS ENCOURAGED FOR USE, BUT IT SHOULD MEET THE STANDARDS SET FORTH IN 601S.
     - AN OWNER/ENGINEER MAY PROPOSE USE OF ONSITE SALVAGED TOPSOIL WHICH DOES NOT MEET THE CRITERIA OF STANDARD SPECIFICATION 601S BY PROVIDING A SOIL ANALYSIS AND A WRITTEN STATEMENT FROM A QUALIFIED PROFESSIONAL IN SOILS, LANDSCAPE ARCHITECTURE, OR AGRONOMY INDICATING THE ONSITE TOPSOIL WILL PROVIDE AN EQUIVALENT GROWTH MEDIA AND SPECIFYING WHAT, IF ANY, SOIL AMENDMENTS ARE REQUIRED.
     - SOIL AMENDMENTS SHALL BE WORKED INTO THE EXISTING ONSITE TOPSOIL WITH A DISC OR TILLER TO CREATE A WELL-BLENDED MATERIAL.

THE VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE AS FOLLOWS:

TEMPORARY VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING SHALL BE WITH OR INCLUDE A COOL SEASON COVER CROP: (WESTERN WHEATGRASS (PASCOPYRUM SMITHII) AT 5.6 POUNDS PER ACRE, OATS (AVENA SATIVA) AT 4.0 POUNDS PER ACRE, CEREAL RYE GRAIN (SECALE CEREALE) AT 45 POUNDS PER ACRE. CONTRACTOR MUST ENSURE THAT ANY SEED APPLICATION REQUIRING A COOL SEASON COVER CROP DOES NOT UTILIZE ANNUAL RYEGRASS (LOLIUM MULTIFLORUM) OR PERENNIAL RYEGRASS (LOLIUM PERENNE). COOL SEASON COVER CROPS ARE NOT PERMANENT EROSION CONTROL.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE OR A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.
   - A. FERTILIZER SHALL BE APPLIED ONLY IF WARRANTED BY A SOIL TEST AND SHALL CONFORM TO ITEM NO. 606S, FERTILIZER. FERTILIZATION SHOULD NOT OCCUR WHEN RAINFALL IS EXPECTED OR DURING SLOW PLANT GROWTH OR DORMANCY. CHEMICAL FERTILIZER MAY NOT BE APPLIED IN THE CRITICAL WATER QUALITY ZONE.
   - B. HYDROMULCH SHALL COMPLY WITH TABLE 1, BELOW.
   - C. TEMPORARY EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95% TOTAL COVERAGE SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR TEMPORARY STABILIZATION ARE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.
   - D. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, AND STANDARD SPECIFICATION 604S OR 609S.

TABLE 1: HYDROMULCHING FOR TEMPORARY VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATIONS RATES
100% OR ANY BLEND OF WOOD, CELLULOSE, STRAW, AND/OR COTTON PLANT MATERIAL (EXCEPT NO MULCH SHALL EXCEED 30% PAPER)	70% OR GREATER WOOD/STRAW 30% OR LESS PAPER OR NATURAL FIBERS	0--3 MONTHS	MODERATE SLOPES; FROM FLAT TO 3:1	1,500 TO 2,000 LBS PER ACRE

PERMANENT VEGETATIVE STABILIZATION:

1. FROM SEPTEMBER 15 TO MARCH 1, SEEDING IS CONSIDERED TO BE TEMPORARY STABILIZATION ONLY. IF COOL SEASON COVER CROPS EXIST WHERE PERMANENT VEGETATIVE STABILIZATION IS DESIRED, THE GRASSES SHALL BE MOWED TO A HEIGHT OF LESS THAN ONE-HALF (½) INCH AND THE AREA SHALL BE RE-SEEDED IN ACCORDANCE WITH TABLE 2 BELOW. ALTERNATIVELY, THE COOL SEASON COVER CROP CAN BE MIXED WITH BERMUDAGRASS OR NATIVE SEED AND INSTALLED TOGETHER, UNDERSTANDING THAT GERMINATION OF WARM-SEASON SEED TYPICALLY REQUIRES SOIL TEMPERATURES OF 60 TO 70 DEGREES.
2. FROM MARCH 2 TO SEPTEMBER 14, SEEDING SHALL BE WITH HULLED BERMUDA AT A RATE OF 45 POUNDS PER ACRE WITH A PURITY OF 95% AND A MINIMUM PURE LIVE SEED (PLS) OF 0.83. BERMUDA GRASS IS A WARM SEASON GRASS AND IS CONSIDERED PERMANENT EROSION CONTROL. PERMANENT VEGETATIVE STABILIZATION CAN ALSO BE ACCOMPLISHED WITH A NATIVE PLANT SEED MIX CONFORMING TO ITEM 604S OR 609S.
   - A. FERTILIZER USE SHALL FOLLOW THE RECOMMENDATION OF A SOIL TEST. SEE ITEM 606S, FERTILIZER. APPLICATIONS OF FERTILIZER (AND PESTICIDE) ON CITY-OWNED AND MANAGED PROPERTY REQUIRES THE YEARLY SUBMITTAL OF A PESTICIDE AND FERTILIZER APPLICATION RECORD, ALONG WITH A CURRENT COPY OF THE APPLICATOR'S LICENSE. FOR CURRENT COPY OF THE RECORD TEMPLATE CONTACT THE CITY OF AUSTIN'S IPM COORDINATOR.
   - B. HYDROMULCH SHALL COMPLY WITH TABLE 2, BELOW.
   - C. WATER THE SEEDED AREAS IMMEDIATELY AFTER INSTALLATION TO ACHIEVE GERMINATION AND A HEALTHY STAND OF PLANTS THAT CAN ULTIMATELY SURVIVE WITHOUT SUPPLEMENTAL WATER. APPLY THE WATER UNIFORMLY TO THE PLANTED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS OR SOIL. MAINTAIN THE SEEDBED IN A MOIST CONDITION FAVORABLE FOR PLANT GROWTH. ALL WATERING SHALL COMPLY WITH CITY CODE CHAPTER 6-4 (WATER CONSERVATION), AT RATES AND FREQUENCIES DETERMINED BY A LICENSED IRRIGATOR OR OTHER QUALIFIED PROFESSIONAL, AND AS ALLOWED BY THE AUSTIN WATER UTILITY AND CURRENT WATER RESTRICTIONS AND WATER CONSERVATION INITIATIVES.
   - D. PERMANENT EROSION CONTROL SHALL BE ACCEPTABLE WHEN THE GRASS HAS GROWN AT LEAST 1½ INCHES HIGH WITH A MINIMUM OF 95 PERCENT FOR THE NON-NATIVE MIX, AND 95 PERCENT COVERAGE FOR THE NATIVE MIX SO THAT ALL AREAS OF A SITE THAT RELY ON VEGETATION FOR STABILITY MUST BE UNIFORMLY VEGETATED, AND PROVIDED THERE ARE NO BARE SPOTS LARGER THAN 10 SQUARE FEET.
   - E. WHEN REQUIRED, NATIVE PLANT SEEDING SHALL COMPLY WITH REQUIREMENTS OF THE CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL, ITEMS 604S AND 609S.

TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION

MATERIAL	DESCRIPTION	LONGEVITY	TYPICAL APPLICATIONS	APPLICATION RATES
BONDED FIBER MATRIX (BFM)	80% ORGANIC DEFIBRATED FIBERS			
10% TACKIFIER	6 MONTHS	ON SLOPES UP TO 2:1 AND EROSIVE SOIL CONDITIONS	2,500 TO 4,000 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)	
FIBER REINFORCED MATRIX (FRM)	65% ORGANIC DEFIBRATED FIBERS 25% REINFORCING FIBERS OR LESS 10% TACKIFIER	UP TO 12 MONTHS	ON SLOPES UP TO 1:1 AND EROSIVE SOIL CONDITIONS	3,000 TO 4,500 LBS PER ACRE (SEE MANUFACTURERS RECOMMENDATIONS)

10. DEVELOPER INFORMATION

OHT PARTNERS, LLC (BEN BROWDER)
DEVELOPER
(512) 813-7119
PHONE #
901 S. MOPAC EXPRESSWAY, BUILDING 3, SUITE 500, AUSTIN, TEXAS 78746
ADDRESS
360 PROFESSIONAL SERVICES, INC. (SCOTT J. FOSTER, P.E.)
OWNER'S REPRESENTATIVE RESPONSIBLE FOR PLAN ALTERATIONS
(512) 354-4682
PHONE #
OHT PARTNERS, LLC
PERSON OR FIRM RESPONSIBLE FOR EROSION/SEDIMENTATION CONTROL MAINTENANCE
(512) 813-7119
PHONE #

OHT PARTNERS, LLC
PERSON OR FIRM RESPONSIBLE FOR TREE/NATURAL AREA PROTECTION MAINTENANCE
(512) 813-7119
PHONE #

ECM APPENDIX P-4: – STANDARD SEQUENCE OF CONSTRUCTION

1. TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSTALLED AS INDICATED ON THE APPROVED SITE PLAN OR SUBDIVISION CONSTRUCTION PLAN AND IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) THAT IS REQUIRED TO BE POSTED ON THE SITE. INSTALL TREE PROTECTION, INITIATE TREE MITIGATION MEASURES AND CONDUCT "PRE – CONSTRUCTION" TREE FERTILIZATION (IF APPLICABLE).
2. THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR MUST CONTACT THE DEVELOPMENT SERVICES DEPARTMENT, ENVIRONMENTAL INSPECTION, AT 512-974-2278, 72 HOURS PRIOR TO THE SCHEDULED DATE OF THE REQUIRED ON-SITE PRECONSTRUCTION MEETING.
3. THE ENVIRONMENTAL PROJECT MANAGER, AND/OR SITE SUPERVISOR, AND/OR DESIGNATED RESPONSIBLE PARTY, AND THE GENERAL CONTRACTOR WILL FOLLOW THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE REVISED, IF NEEDED, TO COMPLY WITH CITY INSPECTORS' DIRECTIVES, AND REVISED CONSTRUCTION SCHEDULE RELATIVE TO THE WATER QUALITY PLAN REQUIREMENTS AND THE EROSION PLAN.
4. ROUGH GRADE THE WATER QUALITY PONDS AT 100% PROPOSED CAPACITY. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUST BE CONSTRUCTED PRIOR TO DEVELOPMENT OF EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A SUMP PIT OUTLET AND AN EMERGENCY SPILLWAY MEETING THE REQUIREMENTS OF THE DRAINAGE CRITERIA MANUAL AND/OR THE ENVIRONMENTAL CRITERIA MANUAL, AS REQUIRED. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION TO PROTECT THE EXISTING WATER QUALITY POND.
   - 4.1. A DEWATERING SKIMMER WILL BE USED FOR DEWATERING DURING CONSTRUCTION AS SHOWN ON SHEET 06.
   - 4.2. PRIOR TO PERMANENT STORM DRAINS BEING INSTALLED, SITE SHALL BE ROUGH GRADED TO CONVEY STORM WATER TO THE ROUGH GRADED PONDS.
5. TEMPORARY EROSION AND SEDIMENTATION CONTROLS WILL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE EROSION SEDIMENTATION CONTROL PLAN (ESC) AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) POSTED ON THE SITE.
6. BEGIN SITE CLEARING/CONSTRUCTION (OR DEMOLITION) ACTIVITIES.
7. IN THE BARTON SPRINGS ZONE, THE ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR WILL SCHEDULE A MID-CONSTRUCTION CONFERENCE TO COORDINATE CHANGES IN THE CONSTRUCTION SCHEDULE AND EVALUATE EFFECTIVENESS OF THE EROSION CONTROL PLAN AFTER POSSIBLE CONSTRUCTION ALTERATIONS TO THE SITE. PARTICIPANTS SHALL INCLUDE THE CITY INSPECTOR, PROJECT ENGINEER, GENERAL CONTRACTOR AND ENVIRONMENTAL PROJECT MANAGER OR SITE SUPERVISOR. THE ANTICIPATED COMPLETION DATE AND FINAL CONSTRUCTION SEQUENCE AND INSPECTION SCHEDULE WILL BE COORDINATED WITH THE APPROPRIATE CITY INSPECTOR.
8. PERMANENT WATER QUALITY PONDS OR CONTROLS WILL BE CLEANED OUT AND FILTER MEDIA WILL BE INSTALLED PRIOR TO/CONCURRENTLY WITH REVEGETATION OF SITE.
9. COMPLETE CONSTRUCTION AND START REVEGETATION OF THE SITE AND INSTALLATION OF LANDSCAPING.
10. UPON COMPLETION OF THE SITE CONSTRUCTION AND REVEGETATION OF A PROJECT SITE, THE DESIGN ENGINEER SHALL SUBMIT AN ENGINEER'S LETTER OF CONCURRENCE BEARING THE ENGINEER'S SEAL, SIGNATURE, AND DATE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT CONSTRUCTION, INCLUDING REVEGETATION, IS COMPLETE AND IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
11. UPON COMPLETION OF LANDSCAPE INSTALLATION OF A PROJECT SITE, THE LANDSCAPE ARCHITECT SHALL SUBMIT A LETTER OF CONCURRENCE TO THE DEVELOPMENT SERVICES DEPARTMENT INDICATING THAT THE REQUIRED LANDSCAPING IS COMPLETE AND IN SUBSTANTIAL CONFORMITY WITH THE APPROVED PLANS. AFTER RECEIVING THIS LETTER, A FINAL INSPECTION WILL BE SCHEDULED BY THE APPROPRIATE CITY INSPECTOR.
12. AFTER A FINAL INSPECTION HAS BEEN CONDUCTED BY THE CITY INSPECTOR AND WITH APPROVAL FROM THE CITY INSPECTOR, REMOVE THE TEMPORARY EROSION AND SEDIMENTATION CONTROLS AND COMPLETE ANY NECESSARY FINAL REVEGETATION RESULTING FROM REMOVAL OF THE CONTROLS. CONDUCT ANY MAINTENANCE AND REHABILITATION OF THE WATER QUALITY PONDS OR CONTROLS.

ECM APPENDIX P-6 – REMEDIAL TREE CARE NOTES AERATION AND SUPPLEMENTAL NUTRIENT REQUIREMENTS FOR TREES WITHIN CONSTRUCTION AREAS

AS A COMPONENT OF AN EFFECTIVE REMEDIAL TREE CARE PROGRAM PER ENVIRONMENTAL CRITERIA MANUAL SECTION 3.5.4, PRESERVED TREES WITHIN THE LIMITS OF CONSTRUCTION MAY REQUIRE SOIL AERATION AND SUPPLEMENTAL NUTRIENTS. SOIL AND/OR FOLIAR ANALYSIS SHOULD BE USED TO DETERMINE THE NEED FOR SUPPLEMENTAL NUTRIENTS. THE CITY ARBORIST MAY REQUIRE THESE ANALYSES AS PART OF A COMPREHENSIVE TREE CARE PLAN. SOIL PH SHALL BE CONSIDERED WHEN DETERMINING THE FERTILIZATION COMPOSITION AS SOIL PH INFLUENCES THE TREE'S ABILITY TO UPTAKE NUTRIENTS FROM THE SOIL. IF ANALYSES INDICATE THE NEED FOR SUPPLEMENTAL NUTRIENTS, THEN HUMATE/NUTRIENT SOLUTIONS WITH MYCORRHIZAE COMPONENTS ARE HIGHLY RECOMMENDED. IN ADDITION, SOIL ANALYSIS MAY BE NEEDED TO DETERMINE IF ORGANIC MATERIAL OR BENEFICIAL MICROORGANISMS ARE NEEDED TO IMPROVE SOIL HEALTH. MATERIALS AND METHODS ARE TO BE APPROVED BY THE CITY ARBORIST (512-974-1876) PRIOR TO APPLICATION. THE OWNER OR GENERAL CONTRACTOR SHALL SELECT A FERTILIZATION CONTRACTOR AND IENSURE COORDINATION WITH THE CITY ARBORIST.

PRE-CONSTRUCTION TREATMENT SHOULD BE APPLIED IN THE APPROPRIATE SEASON, IDEALLY THE SEASON PRECEDING THE PROPOSED CONSTRUCTION. MINIMALLY, AREAS TO BE TREATED INCLUDE THE ENTIRE CRITICAL ROOT ZONE OF TREES AS DEPICTED ON THE CITY APPROVED PLANS. TREATMENT SHOULD INCLUDE, BUT NOT LIMITED TO, FERTILIZATION, SOIL TREATMENT, MULCHING, AND PROPER PRUNING.

POST-CONSTRUCTION TREATMENT SHOULD OCCUR DURING FINAL REVEGETATION OR AS DETERMINED BY A QUALIFIED ARBORIST AFTER CONSTRUCTION. CONSTRUCTION ACTIVITIES OFTEN RESULT IN A REDUCTION IN SOIL MACRO AND MICRO PORES AND AN INCREASE IN SOIL BULK DENSITY. TO AMELIORATE THE DEGRADED SOIL CONDITIONS, AERATION VIA WATER AND/OR AIR INJECTED INTO THE SOIL IS NEEDED OR BY OTHER METHODS AS APPROVED BY THE CITY ARBORIST. THE PROPOSED NUTRIENT MIX SPECIFICATIONS AND SOIL AND/OR FOLIAR ANALYSIS RESULTS NEED TO BE PROVIDED TO AND APPROVED BY THE CITY ARBORIST PRIOR TO APPLICATION (FAX # 512-974-3010). CONSTRUCTION WHICH WILL BE COMPLETED IN LESS THAN 90 DAYS MAY USE MATERIALS AT ½ RECOMMENDED RATES. ALTERNATIVE ORGANIC FERTILIZER MATERIALS ARE ACCEPTABLE WHEN APPROVED BY THE CITY ARBORIST. WITHIN 7 DAYS AFTER FERTILIZATION IS PERFORMED, THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE WORK PERFORMED TO THE CITY ARBORIST, PLANNING AND DEVELOPMENT REVIEW DEPARTMENT. P.O. BOX 1088, AUSTIN, TX 78767. THIS NOTE SHOULD BE REFERENCED AS ITEM #1 IN THE SEQUENCE OF CONSTRUCTION.

TREE AND NATURAL AREA PROTECTION NOTES (ECM 3.6.1 & 3.6.2)

ECM 3.6.1 TREE PROTECTION REQUIREMENTS

A. DURATION OF TREE PROTECTION
   1. INSTALLATION
   TREE PROTECTION SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE WORK, INCLUDING DEMOLITION OR SITE PREPARATION, AND MAINTAINED CONTINUOUSLY THROUGHOUT THE PROJECT.
   2. REMOVAL
   TREE PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AFTER ALL CONSTRUCTION AND FINAL GRADING IS COMPLETE, BUT BEFORE FINAL INSPECTION. ANY PREMATURE REMOVAL OR FAILURE OF TREE PROTECTION CAN LEAD TO CRITICAL ROOT ZONE IMPACTS AS DESCRIBED IN ECM 3.5.2 AND MAY REQUIRE REMEDIAL TREE CARE. IT IS THE PERMIT HOLDER'S RESPONSIBILITY TO AVOID DAMAGE TO PRESERVED TREES WHERE TREE PROTECTION HAS BEEN REMOVED OR NOT INSTALLED.

B. FENCING SPECIFICATIONS
   1. MATERIAL REQUIREMENTS
   FENCING IS THE PRIMARY METHOD OF TREE PROTECTION. FENCING IS INTENDED TO PREVENT ACCESS TO THE CRITICAL ROOT ZONE. TREE FENCING SHALL BE CHAIN-LINK MESH WITH A MINIMUM HEIGHT OF 5 FEET. FENCING SHALL BE INSTALLED ON STEEL T-POSTS WITH A MAXIMUM SPACING OF 10 FEET BETWEEN THE POSTS. MORE ROBUST OR EXISTING PERMANENT FENCING MAY BE APPROVED AS AN ALTERNATIVE TO CHAIN-LINK FENCING. PLASTIC FENCING MATERIAL SHALL NOT BE USED AS TREE PROTECTION.
   2. LOCATION OF FENCING
   FENCING SHALL BE INSTALLED AROUND OR BEYOND THE CRITICAL ROOT ZONE OF ALL PRESERVED TREES OR ANY NATURAL AREAS DESIGNATED FOR PRESERVATION. FENCING MUST BE CONTINUOUS AND CREATE A CLOSED, INACCESSIBLE AREA OF ROOT ZONE PROTECTION.
   3. MAINTENANCE OF FENCED AREAS
   FENCING SHALL NOT BE TEMPORARILY MOVED OR REMOVED DURING DEVELOPMENT WITHOUT PRIOR AUTHORIZATION. THERE SHALL BE MINIMAL SLACK OR SAGGING IN THE FENCE. THE FENCED CRITICAL ROOT ZONE SHALL NOT BE USED FOR TOOL OR MATERIAL STORAGE OF ANY KIND AND SHALL BE KEPT FREE OF LITTER.
   4. EXCEPTIONS TO FENCING REQUIREMENTS
   ANY SECTION OF THE CRITICAL ROOT ZONE NOT PROTECTED BY FENCING OR COVERED BY EXISTING HARDSCAPE REQUIRES MULCH (SEE ECM 3.6.1.C). EXCEPTIONS TO THE CRZ FENCING REQUIREMENT SHALL BE JUSTIFIED BY SITE-SPECIFIC CONSIDERATIONS. SOME EXCEPTIONS ARE FOR AREAS:
      - i. THAT HAVE BEEN APPROVED FOR IMPACTS, SUCH AS THE FOOTPRINT OF A BUILDING;
      - ii. COVERED BY EXISTING HARDSCAPE, SUCH AS A PATIO OR DRIVEWAY (NOTE: IF HARDSCAPE IS REMOVED THE EXPOSED SOIL BENEATH BECOMES SUBJECT TO TREE PROTECTION REQUIREMENTS);
      - iii. REQUIRED FOR ACCESS TO THE WORK AREA; AND
      - iv. APPROVED FOR USE AS A STAGING AREA.

      WITHIN THE HALF CRZ, FENCING REQUIREMENTS WILL ONLY BE MODIFIED FOR EXISTING HARDSCAPE OR TO ALLOW AN ACCESS PATH ADJACENT TO APPROVED STRUCTURES (SEE ECM 3.6.1.C.3). CRZ FENCING MODIFICATIONS SHALL BE SHOWN ON THE DEVELOPMENT PLANS OR APPROVED BY THE INSPECTOR.

C. MULCH SPECIFICATIONS
   1. MATERIAL REQUIREMENTS
   MULCH IS REQUIRED IN ANY SECTION OF THE CRITICAL ROOT ZONE THAT IS NOT PROTECTED BY FENCING OR UNDER EXISTING HARDSCAPE AND HAS NOT BEEN APPROVED FOR IMPACTS (SUCH AS BUILDING FOOTPRINT OR DRIVEWAY). MULCH USED FOR TREE PROTECTION SHALL BE ANY NATURAL WOOD TYPE. ROUGH SINGLE GRIND MULCH, WHICH RESISTS COMPACTION BETTER THAN DOUBLE GRIND AND IS USUALLY LESS EXPENSIVE IS PREFERRED BUT ANY NATURAL WOOD TYPE IS ACCEPTABLE. DYED MULCH OR MULCH MADE FROM NON-BIOLOGICAL MATERIAL SUCH AS RUBBER OR STONE SHALL NOT BE USED AS TREE PROTECTION.
   2. DEPTH OF MULCH
   MULCH SHALL BE INSTALLED TO A MINIMUM DEPTH OF 8 INCHES. MULCH MAY NEED TO BE PERIODICALLY REPLENISHED DEPENDING ON THE DURATION OF THE PROJECT. SINCE EXCESSIVE MULCH IS HARMFUL TO TREES, MULCH SHALL NOT BE INSTALLED TO A DEPTH GREATER THAN 12 INCHES. MULCH USED FOR TREE PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT. MULCH SHALL NEVER BE PILED AGAINST TREE TRUNKS.
   3. MULCH WITHIN THE HALF CRZ
   WHEN MULCH IS USED AS ALTERNATIVE PROTECTION WITHIN THE HALF CRITICAL ROOT ZONE IT SHALL BE TOPPED BY DECKING TO PROVIDE ADDITIONAL PROTECTION AGAINST COMPACTION.
   4. EXCEPTIONS TO MULCH REQUIREMENTS
   MULCH IS NOT REQUIRED WITHIN FENCED SECTIONS OF THE CRITICAL ROOT ZONE WHERE EXISTING TURF OR GROUND COVER IS PRESENT AND UNDISTURBED. SECTIONS OF BARE OR DISTURBED DIRT WITHIN THE FENCED CRZ SHALL BE COVERED BY A THREE-INCH LAYER OF MULCH.

D. TRUNK AND BRANCH WRAPPING
   1. TRUNK WRAP
   WRAPPING IS NOT REQUIRED OR RECOMMENDED FOR MOST PRESERVED TREES. WHEN NECESSARY, TRUNK WRAP SHALL BE INSTALLED TO PROTECT THE FIRST 8 FEET OF TREE HEIGHT WHENEVER PROTECTIVE FENCING IS LOCATED 5 FEET OR LESS FROM THE TRUNK OR WHEN FENCING CANNOT BE PLACED AROUND THE TREE. THIS WILL USUALLY ONLY BE THE CASE WHEN EXISTING HARDSCAPE PROVIDES HALF CRITICAL ROOT ZONE PROTECTION OR A STRUCTURE HAS BEEN APPROVED FOR CONSTRUCTION WITHIN THE HALF CRZ USING AN EXISTING HISTORICAL FOOTPRINT. THESE CIRCUMSTANCES CAN RESULT IN FENCING CLOSER TO THE TRUNK THAN WOULD OTHERWISE BE ALLOWED. BECAUSE TREES VARY IN FORM, 8 FEET IS A GENERAL GUIDELINE RATHER THAN AN ABSOLUTE STANDARD. MORE OR LESS HEIGHT OF PROTECTION MAY BE APPROPRIATE.
   2. BRANCH WRAP
   BRANCH WRAP MAY BE REQUIRED WHEN A MAJOR LIMB IS OVER AN ACCESS ROUTE OR CLOSE TO A PROPOSED STRUCTURE. PROXIMITY OF SCAFFOLDING OR OTHER NECESSARY CONSTRUCTION EQUIPMENT NEEDS TO BE CONSIDERED.
   3. MATERIAL REQUIREMENTS
   DIMENSIONAL LUMBER, SUCH AS 2X4S, SHALL BE ORIENTED PARALLEL TO AND CONTINUOUSLY AROUND THE TRUNK OR BRANCH AND SECURED IN PLACE BY TIGHTENING WIRES RUN AROUND THE OUTSIDE OF THE LUMBER. WRAPPING SHALL NEVER BE SECURED DIRECTLY TO THE TREE BY SCREWS OR OTHER MEANS. WRAPPING SHALL BE LOOSENED AND RETIGHTENED EVERY SIX MONTHS TO PREVENT THE TREE FROM BEING DAMAGED AS IT GROWS OUTWARDS.

E. PROTECTION FOR NATURAL AREAS
   NATURAL AREAS INDICATED FOR PRESERVATION ON PLANS SHALL BE PROTECTED BY FENCING THAT MEETS THE STANDARDS FOR TREE FENCING IN THIS SECTION. ALTERNATIVE PROTECTION ALLOWED FOR TREES IS NOT ACCEPTABLE FOR NATURAL AREA PRESERVATION. FENCING SHALL BE INSTALLED AT THE LIMIT OF CONSTRUCTION LINE SHOWN ON PLANS.

ECM 3.6.2 STANDARD PLAN NOTE

THE FOLLOWING PLAN NOTE SUMMARIZES THE CONTENTS OF THE ENVIRONMENTAL CRITERIA MANUAL AS IT RELATES TO TREE PROTECTION ON SITES WITH ACTIVE PERMITS:

BEFORE CONSTRUCTION
1. ALL TREES AND NATURAL AREAS SHOWN ON PLAN TO BE PRESERVED SHALL BE PROTECTED PER ECM 3.6.1.
2. TREE PROTECTION SHALL BE INSTALLED PRIOR TO THE START OF ANY SITE WORK, INCLUDING DEMOLITION OR SITE PREPARATION. REFER TO ECM 3.6.1.A.
3. FENCING FOR TREE PROTECTION SHALL BE CHAIN-LINK MESH WITH A MINIMUM HEIGHT OF 5 FEET AND SHALL BE INSTALLED AROUND OR BEYOND THE CRITICAL ROOT ZONE EXCEPT AS ALLOWED IN ECM 3.6.1.B.4.
4. UNFENCED SECTIONS OF THE CRITICAL ROOT ZONE SHALL BE COVERED WITH MULCH AT A MINIMUM DEPTH OF 8 INCHES AND A MAXIMUM DEPTH OF 12 INCHES PER ECM 3.6.1.C.
5. WHERE FENCING IS LOCATED 5 FEET OR LESS FROM THE TRUNK OF A PRESERVED TREE, TRUNK WRAPPING SHALL BE INSTALLED PER ECM 3.6.1.D.
6. EROSION AND SEDIMENTATION CONTROLS SHALL BE INSTALLED AND MAINTAINED SO AS NOT TO CAUSE IMPACTS THAT EXCEED PRESERVATION CRITERIA LISTED IN ECM 3.5.3.D.

DURING CONSTRUCTION
1. TREES APPROVED FOR REMOVAL SHALL BE REMOVED IN A MANNER THAT DOES NOT EXCEED PRESERVATION CRITERIA FOR THE TREES TO REMAIN. REFER TO ECM 3.5.2 A.
2. FENCING MAY NOT BE TEMPORARILY MOVED OR REMOVED DURING DEVELOPMENT WITHOUT PRIOR AUTHORIZATION. THE FENCED CRITICAL ROOT ZONE SHALL NOT BE USED FOR TOOL OR MATERIAL STORAGE OF ANY KIND AND SHALL BE KEPT FREE OF LITTER. REFER TO ECM 3.6.1.B.3.
3. PRUNING SHALL BE IN COMPLIANCE WITH THE CURRENT ANSI A300 STANDARD FOR TREE CARE.

AFTER CONSTRUCTION
1. TREE PROTECTION SHALL BE REMOVED AT THE END OF THE PROJECT AFTER ALL CONSTRUCTION AND FINAL GRADING IS COMPLETE, BUT BEFORE FINAL INSPECTION. REFER TO ECM 3.6.1.A.
2. LANDSCAPE INSTALLATION WITHIN THE CRZ OF PRESERVED TREES, INCLUDING IRRIGATION, SOIL AND PLANTINGS, SHALL NOT EXCEED PRESERVATION CRITERIA LISTED IN ECM 3.5.2.
3. DOCUMENTATION OF TREE WORK PERFORMED MUST BE PROVIDED TO INSPECTOR PER ECM APPENDIX P-6.

THIS LIST IS NOT EXHAUSTIVE.
REFER TO APPROPRIATE ECM SECTIONS FOR FULL REQUIREMENTS.

PUBLIC WORKS STANDARD STREET AND BRIDGE NOTES:

1. STREET REPAIR NOTES (UCM 5.9)
   - A. TRENCH REPAIR:

     USE THE APPROPRIATE 1100S SERIES DETAILS FOR TRENCH REPAIRS; 1100S-2 (FLEXIBLE BASE WITH AN ASPHALT SURFACE), 1100S-3 (CONCRETE OR ASPHALT OVERLAID CONCRETE), AND 1100S-5 (FULL DEPTH ASPHALT STREETS. CLSM SHALL BE SUBSTITUTED FOR BACKFILL AND FLEXIBLE BASE REPLACEMENT PER THE DETAIL NOTES.
   - B. SUBSURFACE RESTORATION:

     SURFACE PAVEMENT RESTORATION IS REQUIRED WHEN CUTS 1) OCCUR WITHIN THE DAPCZ, 2) OCCUR WITHIN PROTECTED STREET SEGMENTS, OR 3) ARE OVER 300 LINEAR FEET IN LENGTH. USE DETAIL 1100S-7 FOR DETERMINING AREAS REQUIRING SURFACE REMOVAL AND REPLACEMENT. THE REPLACEMENT ASPHALTIC CONCRETE SURFACE LAYER THICKNESS SHALL BE A MINIMUM 2 INCHES HMAC TYPE D FOR LOCAL OR RESIDENTIAL STREETS AND A MINIMUM 3 INCHES HMAC TYPE C FOR COLLECTOR OR ARTERIAL STREETS (SEE ITEM 340S, SECTION 340S.4).
   - C. CONCRETE AND COMPOSITE PAVEMENTS:

     IN CONCRETE STREETS, ACTUAL RESTORATION LIMITS ARE DETERMINED BY JOINT LOCATIONS. IN COMPOSITE PAVEMENTS CONSTRUCTED OF CONCRETE WITH A HMAC OVERLAY, USE 1100S-3 FOR TRENCH REPAIR (USING CLASS 360 CONCRETE) AND 1100S-7 FOR AREA OF SURFACE RESTORATION.
2. SIDEWALK REPAIR NOTES (UCM 5.10)
   - A. DAMAGED CONCRETE SIDEWALK SHALL BE REMOVED AND REPLACED IN FULL SECTIONS (JOINT TO JOINT).
   - B. IN AREAS WITH SIDEWALK PAVERS, CONTRACTOR TO CAREFULLY REMOVE, SOTRE AND REPLACE PAVERS TO MATCH EXISTING CONDITIONS OR BETTER.
3. HAND HOLES AND PULL BOXES, ETC
   - A. AVOID PLACING VALVES, HAND HOLES, ETC. WITHIN SIDEWALKS. IF UNAVOIDABLE, PLACE THEM OUT OF THE PRIMARY ADA ROUTE. ADD APPLICABLE AE APPROVED DETAILS AND SPECIFY APPROPRIATE LOAD RATINGS AND ADA REQUIREMENTS INCLUDING SLIP RESISTANT LID AND THE ABILITY TO BE PLACED FLUSH WITH THE SURROUNDING WALKING SURFACE CROSS SLOPE.

LANDSCAPE/IRRIGATION NOTES:

1. THESE REQUIREMENTS SHALL BE NOTED ON THE SITE DEVELOPMENT PERMIT AND SHALL BE IMPLEMENTED AS PART OF THE LANDSCAPE INSPECTION:
   - 1.1. THE SYSTEM MUST PROVIDE A MOISTURE LEVEL ADEQUATE TO SUSTAIN GROWTH OF THE PLANT MATERIALS;
   - 1.2. THE SYSTEM DOES NOT INCLUDE SPRAY IRRIGATION ON AREAS LESS THAN TEN (10) FEET WIDE (SUCH AS MEDIANS, BUFFER STRIPS, AND PARKING LOT ISLANDS);
   - 1.3. CIRCUIT REMOTE CONTROL VALVES HAVE ADJUSTABLE FLOW CONTROLS;
   - 1.4. SERVICEABLE IN-HEAD CHECK VALVES AREA ADJACENT TO PAVED AREAS WHERE ELEVATION DIFFERENCES MAY CAUSE LOW HEAD DRAINAGE;
   - 1.5. A MASTER VALVE INSTALLED ON THE DISCHARGE SIDE OF THE BACKFLOW PREVENTER;
   - 1.6. ABOVE-GROUND IRRIGATION EMISSION DEVICES ARE SET BACK AT LEAST SIX (6) INCHES FROM IMPERVIOUS SURFACES;
   - 1.7. AN AUTOMATIC RAIN SHUT-OFF DEVICE SHUTS OFF THE IRRIGATION SYSTEM AUTOMATICALLY AFTER MORE THAN A ONE-HALF INCH (½") RAINFALL; AND
   - 1.8. NEWLY PLANTED TREES SHALL HAVE PERMANENT IRRIGATION CONSISTING OF DRIP OR BUBBLERS.
2. THE IRRIGATION INSTALLER SHALL DEVELOP AND PROVIDE AN AS-BUILT DESIGN PLAN TO THE CITY AT THE TIME THE FINAL IRRIGATION INSPECTION IS PERFORMED;
   - 2.1. UNLESS FISCAL SECURITY IS PROVIDED TO THE CITY FOR THE INSTALLATION OF THE SYSTEM, IT MUST BE OPERATIONAL AT THE TIME OF THE FINAL LANDSCAPE INSPECTION.
3. THE IRRIGATION INSTALLER SHALL ALSO PROVIDE EXHIBITS TO BE PERMANENTLY INSTALLED INSIDE OR ATTACHED TO THE IRRIGATION CONTROLLER, INCLUDING:
   - 3.1. A LAMINATED COPY OF THE WATER BUDGET CONTAINING ZONE NUMBERS, PRECIPITATION RATE, GALLONS PER MINUTE AND THE LOCATION OF THE ISOLATION VALVE; AND AN AS BUILT PLAN.
4. THE IRRIGATION INSTALLER SHALL PROVIDE A REPORT TO THE CITY ON A FORM PROVIDED BY AUSTIN WATER CERTIFYING COMPLIANCE WITH SUBSECTION 1. WHEN THE FINAL PLUMBING INSPECTION IS PERFORMED BY THE CITY.

FIRE DEPARTMENT NOTES:

1. THE AUSTIN FIRE DEPARTMENT REQUIRES FINAL ASPHALT OR CONCRETE PAVEMENT ON REQUIRED ACCESS ROADS PRIOR TO THE START OF COMBUSTIBLE CONSTRUCTION. ANY OTHER METHOD OF PROVIDING "ALL-WEATHER DRIVING CAPABILITIES" SHALL BE REQUIRED TO BE DOCUMENTED AND APPROVED AS AN ALTERNATIVE METHOD OF CONSTRUCTION IN ACCORDANCE WITH APPLICABLE RULES FOR TEMPORARY ROADS OUTLINED IN THE CITY OF AUSTIN FIRE PROTECTION CRITERIA MANUAL.
2. FIRE HYDRANTS SHALL BE INSTALLED WITH THE CENTER OF THE FOUR (4) INCH OPENING (STEAMER) LOCATED AT LEAST 18 INCHES ABOVE FINISHED GRADE. THE STEAMER OPENING OF FIRE HYDRANTS SHALL FACE THE APPROVED FIRE ACCESS DRIVEWAY OR PUBLIC STREET AND SET BACK FROM THE CURB LINE(S) AN APPROVED DISTANCE, TYPICALLY THREE (3) TO SIX (6) FEET. THE AREA WITHIN THREE (3) FEET IN ALL DIRECTIONS FROM ANY FIRE HYDRANT SHALL BE FREE OF OBSTRUCTIONS, AND THE AREA BETWEEN THE STEAMER OPENING AND THE STREET OR DRIVEWAY GIVING EMERGENCY VEHICLE ACCESS SHALL BE FREE OF OBSTRUCTIONS.
3. TIMING OF INSTALLATIONS: WHEN FIRE PROTECTION FACILITIES ARE INSTALLED BY THE CONTRACTOR, SUCH FACILITIES SHALL INCLUDE SURFACE ACCESS ROADS. EMERGENCY ACCESS ROADS OR DRIVES SHALL BE INSTALLED AND MADE SERVICEABLE PRIOR TO AND DURING THE TIME OF CONSTRUCTION. WHEN THE FIRE DEPARTMENT APPROVES AN ALTERNATE METHOD OF PROTECTION, THIS REQUIREMENT MAY BE MODIFIED AS DOCUMENTED IN THE APPROVAL OF THE ALTERNATE METHOD.
4. ALL EMERGENCY ACCESS ROADWAYS AND FIRE LANES, INCLUDING PERVIOUS/DECORATIVE PAVING, SHALL BE ENGINEERED AND INSTALLED AS REQUIRED TO SUPPORT THE AXLE LOADS OF EMERGENCY VEHICLES. A LOAD CAPACITY SUFFICIENT TO MEET THE REQUIREMENTS FOR HS-20 LOADING (16KIPS/WHEEL) AND A TOTAL VEHICLE LIVE LOAD OF 80,000 POUNDS IS CONSIDERED COMPLIANT WITH THIS REQUIREMENT.
5. FIRE LANES DESIGNATED ON SITE PLANS SHALL BE REGISTERED WITH THE CITY OF AUSTIN FIRE DEPARTMENT AND INSPECTED FOR FINAL APPROVAL.
6. THE MINIMUM VERTICAL CLEARANCE REQUIRED FOR EMERGENCY VEHICLES ACCESS ROADS OR DRIVES IS 14 FEET FOR THE FULL WIDTH OF THE ROADWAY OR DRIVEWAY.

AUSTIN ENERGY NOTES:

1. AUSTIN ENERGY HAS THE RIGHT TO PRUNE AND/OR REMOVE TREES, SHRUBBERY AND OTHER OBSTRUCTIONS ON THE EXTENT NECESSARY TO KEEP THE EASEMENTS CLEAR. AUSTIN ENERGY WILL PERFORM ALL TREE WORK IN COMPLIANCE WITH CHAPTER 25-8, SUBCHAPTER B OF THE CITY OF AUSTIN LAND DEVELOPMENT CODE.
2. THE OWNER/DEVELOPER OF THIS SUBDIVISION/LOT SHALL PROVIDE AUSTIN ENERGY WITH ANY EASEMENT AND/OR ACCESS REQUIRED, IN ADDITION TO THOSE INDICATED, FOR THE INSTALLATION AND ONGOING MAINTENANCE OF OVERHEAD AND UNDERGROUND ELECTRIC FACILITIES. THESE EASEMENTS AND/OR ACCESS ARE REQUIRED TO PROVIDE ELECTRIC SERVICE TO THE BUILDING AND WILL NOT BE LOCATED SO AS TO CAUSE THE SITE TO BE OUT OF COMPLIANCE WITH CHAPTER 25-8 OF THE CITY OF AUSTIN LDC.
3. THE OWNER SHALL BE RESPONSIBLE FOR ANY INSTALLATION OF TEMPORARY EROSION CONTROL, REVEGATATION AND TREE PROTECTION. IN ADDITION, THE OWNER SHALL BE RESPONSIBLE FOR ANY TREE PRUNING AND TREE REMOVAL THAT IS WITHIN TEN FEET OF THE CENTER LINE OF THE OVERHEAD ELECTRICAL FACILITIES DESIGNED TO PROVIDE ELECTRIC SERVICE TO THIS PROJECT. AUSTIN ENERGY WORK SHALL ALSO BE INCLUDED WITHIN THE LIMITS OF CONSTRUCTION FOR THIS PROJECT.
4. THE OWNER OF THE PROPERTY IS RESPONSIBLE FOR MAINTAINING CLEARANCES REQUIRED BY THE NATIONAL ELECTRIC SAFETY CODE, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS, CITY OF AUSTIN REGULATIONS AND TEXAS STATE LAWS PERTAINING TO CLEARANCE WHEN WORKING IN CLOSE PROXIMITY TO OVERHEAD LINES AND EQUIPMENT. AUSTIN ENERGY WILL NOT RENDER ELECTRIC SERVICE UNLESS REQUIRED CLEARANCES ARE MAINTAINED. ALL COSTS INCURRED BECAUSE OF FAILURE TO COMPLY WITH THE REQUIRED CLEARANCE WILL BE CHARGED TO THE OWNER.
5. ANY RELOCATION OF ELECTRIC FACILITIES SHALL BE AT OWNER'S EXPENSE.

AMERICANS WITH DISABILITIES ACT:

THE CITY OF AUSTIN HAS REVIEWED THIS PLAN FOR COMPLIANCE WITH CITY DEVELOPMENT REGULATIONS ONLY. THE APPLICANT, PROPERTY OWNER, AND OCCUPANT OF THE PREMISES ARE RESPONSIBLE FOR DETERMINING WHETHER THE PLAN COMPLIES WITH ALL OTHER LAWS, REGULATIONS, AND RESTRICTIONS WHICH MAY BE APPLICABLE TO THE PROPERTY AND ITS USE.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

SCOTT J. FOSTER
84652
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

GENERAL NOTES

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
04
OF 113

SP-2025-0080C

GENERAL NOTES

ALL RESPONSIBILITY FOR THE ADEQUECY OF THESE PLANS REMAINS WITH THE ENGINEER. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN DOES NOT REMOVE THESE RESPONSIBILITIES.

"REVIEWED BY AUSTIN WATER" APPLIES ONLY TO AW PUBLIC INFRASTRUCTURE, ALL OTHER WATER AND WASTEWATER INFRASTRUCTURE INSIDE PRIVATE PROPERTY ARE UNDER THE JURISDICTION OF BUILDING INSPECTIONS.

USE OF ELECTRONIC FILES GENERAL DISCLAIMER: USE OF THE ATTACHED FILES IN ANY MANNER INDICATES YOUR ACCEPTANCE OF TERMS AND CONDITIONS AS SET FORTH BELOW. IF YOU DO NOT AGREE TO ALL OF THE TERMS AND CONDITIONS, PLEASE CONTACT AUSTIN WATER PIPELINE ENGINEERING, PROJECT COORDINATOR PRIOR TO USE OF THE REFERENCED INFORMATION. PLEASE BE ADVISED THAT THE ATTACHED FILES ARE IN A FORMAT THAT CAN BE ALTERED BY THE USER. DUE TO THIS FACT, ANY REUSE OF THE DATA WILL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE CITY OF AUSTIN AND USER SHALL INDEMNIFY AND HOLD HARMLESS THE CITY OF AUSTIN FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING FROM USING THE DIGITAL FILE. IN ADDITION, IT IS THE RESPONSIBILITY OF THE USER TO COMPARE ALL DATA WITH THE PDF VERSION OF THIS DRAWING. IN THE EVENT THERE IS A CONFLICT BETWEEN THE PDF VERSION DRAWING AND THE ELECTRONIC FILE, THE PDF VERSION DRAWING SHALL PREVAIL.

AW INFRASTRUCTURE INFORMATION

PROPOSED PRODUCT TYPE (TO BE INSTALLED)	LENGTH OF PIPE (L.F.)	SIZE OF PIPE (INCH)	NO. OF METERED SERVICES
WATER MAIN	32 16	12 6	
WASTEWATER MAIN	584	8	
RECLAIMED WATER MAIN	0	0	
WATER SERVICE	NA	NA	2 domestic & 1 Irrigation
WASTEWATER SERVICE	NA	NA	1
RECLAIMED WATER SERVICE	NA	NA	0

AUTOMATED METERING INFRASTRUCTURE: EFFECTIVE MARCH 2022, NEW WATER METERS INSTALLED SHALL BE IN CONFORMANCE WITH AW'S AUTOMATED METERING INFRASTRUCTURE TECHNOLOGY, AND WITH THE APPLICABLE STANDARD PRODUCT LIST. APPLICANTS FILING A SITE PLAN OR SUBDIVISION PLAN WILL BE REQUIRED TO COORDINATE WITH THE AUSTIN WATER PLAN REVIEWER FOR DETAILS ON APPROVAL AND INSTALLATION.

PRIOR TO THE HANDLING AND DISPOSAL OF ASBESTOS PIPE, THE CONTRACTOR'S WORK PLAN WILL BE REVIEWED AND COORDINATED THROUGH COA BUILDING SERVICES DEPARTMENT - ASBESTOS, LEAD AND MOLD MANAGEMENT GROUP MANAGER WHO CAN BE REACHED AT 512-974-7137. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE A TRAINED, CERTIFIED AND LICENSED ASBESTOS ABATEMENT CONTRACTOR IN ACCORDANCE WITH THE FEDERAL, STATE AND LOCAL REGULATIONS.

MODIFICATIONS TO AUSTIN WATER SIGNED AND STAMPED SHEETS ARE NOT PERMITTED. ALL DESIGN MODIFICATIONS WILL NEED TO BE SUBMITTED VIA THE ABC PORTAL FOR A PLAN CORRECTION OR REVISION. ALL UNETHICAL ENGINEERING PRACTICES, INCLUDING MODIFYING CITY STAMPED PLAN SHEETS, SHALL BE REPORTED TO THE TEXAS BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS (PELS).
REFERENCE: TEXAS ENGINEERING PRACTICE ACT AND RULES, SUBCHAPTER C: PROFESSIONAL CONDUCT AND ETHICS

THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL LOCATIONS OF EXISTING UTILITIES, BELOW GROUND AND OVERHEAD, PRIOR TO STARTING ONSITE UTILITY WORK.

INSPECTION NOTES

PLEASE CONTACT DEVELOPMENT SERVICES DEPARTMENT, SITE AND SUBDIVISION INSPECTION AT SITESUBINTAKE@AUSTINTEXAS.GOV FOR ARRANGEMENTS FOR PAYMENT OF INSPECTION FEES AND JOB ASSIGNEMENT FOR INSPECTION OF THE PUBLIC UTILITIES TO THIS SITE. INSPECTION FEES MUST BE PAID BEFORE ANY PRE-CONSTRUCTION MEETING CAN BE CALLED.

STANDARD CONSTRUCTION NOTES REVISED FEBRUARY 7, 2025

1. THE CITY STANDARD CONSTRUCTION SPECIFICATIONS CURRENT AT THE TIME OF BIDDING SHALL COVER MATERIALS AND METHODS USED TO DO THIS WORK.
2. CONTRACTOR MUST OBTAIN A ROW PERMIT FROM AUSTIN TRANSPORTATION AND PUBLIC WORKS DEPARTMENT, RIGHT OF WAY MANAGEMENT DIVISION BEFORE BEGINNING CONSTRUCTION WITHIN THE RIGHT-OF-WAY OF A PUBLIC STREET OR ALLEY. ACTIVITY WITHIN RIGHT-OF-WAY SHALL COMPLY WITH APPROVED TRAFFIC CONTROL PLAN (TCP).
3. AT LEAST 48 HOURS PRIOR TO BEGINNING ANY UTILITY CONSTRUCTION ACTIVITY IN PUBLIC ROW OR PUBLIC EASEMENT, THE CONTRACTOR SHALL NOTIFY THE APPLICABLE CITY OF AUSTIN INSPECTION GROUP (AUSTIN TRANSPORTATION AND PUBLIC WORKS DEPARTMENT (TPW), OR DEVELOPMENT SERVICES). SEE CURRENT NOTIFICATION REQUIREMENTS AT WWW.AUSTINTEXAS.GOV.
4. THE CONTRACTOR SHALL CONTACT THE AUSTIN AREA "ONE CALL" SYSTEM AT 1-800-344-8377 FOR EXISTING UTILITY LOCATIONS PRIOR TO ANY EXCAVATION IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES TO BE EXTENDED, TIED TO, OR ALTERED, OR SUBJECT TO DAMAGE/INCONVENIENCE BY THE CONSTRUCTION OPERATIONS. THE CITY OF AUSTIN WATER AND WASTEWATER MAINTENANCE RESPONSIBILITY ENDS AT R.O.W./EASEMENT LINES.
5. NO OTHER UTILITY SERVICE/APPURTENANCES SHALL BE PLACED NEAR THE PROPERTY LINE, OR OTHER ASSIGNED LOCATION DESIGNATED FOR WATER AND WASTEWATER UTILITY SERVICE THAT WOULD INTERFERE WITH THE WATER AND WASTEWATER SERVICES.
6. MINIMUM TRENCH SAFETY MEASURES SHALL BE PROVIDED, AS REQUIRED BY OSHA, CITY SPECIFICATION 509S, AND CITY/COUNTY CONSTRUCTION INSPECTORS.
7. PRESSURE TAPS WILL ONLY BE ALLOWED ON A CASE BY CASE BASIS, AS DETERMINED BY THE DIRECTOR'S DESIGNEE. NORMALLY PRESSURE TAPS 4 INCHES AND LARGER SHALL BE ALLOWED IN THE FOLLOWING CASES: A) A TEST SHUT OUT INDICATES AN ADEQUATE SHUT OUT TO PERFORM THE WORK IS NOT FEASIBLE B) MORE THAN 30 CUSTOMERS OR A SINGLE CRITICAL CUSTOMER (AS DEFINED BY AUSTIN WATER) WOULD BE IMPACTED BY THE SHUT OUT OR C) THE EXISTING WATER LINE WARRANTS IT.
8. WATER LINE TESTING AND STERILIZATION SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEMS 510.3 (27)-(29). FORCE MAIN PRESSURE TESTING SHALL BE CONDUCTED AND FALL UNDER THE SPECIFICATIONS AS WATER LINES (PRESSURE PIPE) OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
9. ALL MATERIAL USED ON THIS PROJECT MUST BE LISTED ON THE STANDARD PRODUCTS LISTING. ANY MATERIAL NOT LISTED HAS TO GO THROUGH THE REVIEW OF THE STANDARDS COMMITTEE FOR REVIEW AND APPROVAL PRIOR TO START OF PROJECT. TESTING AND EVALUATION OF PRODUCTS ARE REQUIRED BEFORE APPROVAL WILL BE GIVEN ANY CONSIDERATION.
10. WHEN WATER SERVICES ARE DAMAGED AND THE SERVICE MATERIAL IS POLYETHYLENE (PE), THE LINE SHALL BE REPAIRED ONLY BY HEAT FUSION WELD, AT BRASS FITTINGS, OR THE FULL LENGTH SHALL BE REPLACED PER CURRENT STANDARD DETAIL(S). WHEN POLYBUTYLENE (PB) TUBING IS DAMAGED OR TAMPERED WITH IN ANY WAY, THE FULL LENGTH OF SERVICE LINE SHALL BE REPLACED. (NOTE: FULL LENGTH IS FROM THE CORPORATION STOP TO THE METER.) REPAIR COUPLINGS ARE NOT ALLOWED FOR ANY WATER OR WASTEWATER SERVICE LINE REPAIR, RECONNECT, OR REPLACEMENT.
11. WHEN AN EXISTING WATERLINE SHUT OUT IS NECESSARY AND POSSIBLE, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTOR WHO WILL THEN NOTIFY AUSTIN WATER DISPATCH AND THE AFFECTED CUSTOMERS A MINIMUM OF FORTY-EIGHT (48) HOURS IN ADVANCE.
12. THE INSPECTOR SHALL NOTIFY AUSTIN WATER AT 972-1000 AT A MINIMUM OF 72 HOURS PRIOR TO RELOCATING ANY DOMESTIC OR FIRE DEMAND WATER METERS.
13. PROJECT-SPECIFIC SHOP DRAWINGS SHALL BE SUBMITTED FOR AW APPROVAL FOR PRE-CAST CIRCULAR VERTICAL MANHOLE SECTIONS LARGER THAN 48" DIAMETER. THE SHOP DRAWINGS SHALL INCLUDE THE FLOWLINE ELEVATION OF ALL CONNECTING PIPES; ELEVATIONS OF TRANSITIONS FROM LARGE DIAMETER SECTIONS TO 48" DIAMETER SECTIONS; TOP OF MANHOLE AND SURROUNDING GROUND ELEVATIONS; AND DETAILS OF SPECIAL CONSTRUCTION CONSIDERATIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
14. WHEN CONCRETE MANHOLES LARGER THAN 48 INCH DIAMETER ARE USED, DRAWINGS THAT ARE SEALED BY A PROFESSIONAL ENGINEER SHALL BE SUBMITTED FOR BASE SLABS, FLAT TOP LIDS (IF USED), AND FLAT TYPE CONCRETE PIECES USED TO TRANSITION FROM LARGER TO SMALLER DIAMETER MANHOLE SECTIONS.
15. ALL FIRE HYDRANTS AND VALVES THAT ARE TO BE ABANDONED SHALL BE REMOVED, SALVAGED AND RETURNED TO AUSTIN WATER. NOTICE SHOULD BE GIVEN 48 HOURS PRIOR, TO PIPELINE OPERATIONS DISTRIBUTION SYSTEM -VALVES AND HYDRANT SERVICES SUPERVISOR AT AWDSM-ASSET-RECOVERY@CITYOFAUSTIN.ONMICROSOFT.COM.
16. ALL EXISTING WATER METERS IDENTIFIED TO BE RELOCATED OR ABANDONED AT THE DEVELOPMENT SHALL BE REMOVED FROM THE METER BOX PRIOR TO CONSTRUCTION AND GIVEN IMMEDIATELY TO THE CITY OF AUSTIN INSPECTOR.
17. THE ENGINEER SHALL CALL OUT THE SIZE, TYPE AND USE (DOMESTIC, IRRIGATION OR RECLAIM) OF ALL EXISTING WATER METERS TO BE RELOCATED OR REPURPOSED. WATER METER NUMBERS WILL NOT BE REQUIRED TO BE PLACED ON THE PLAN SHEET. A SEPARATE UTILITY PERMITTING OFFICE FORM CAN BE USED TO PROVIDE RELEVANT DATA FOR THE EXISTING INFORMATION ON EXISTING METERS TO RECEIVE APPROPRIATE CREDITS. THIS FORM SHALL BE DIRECTLY SUBMITTED TO UTILITY PERMITTING OFFICE FOR REVIEW AND PROCESSING.
18. NO CONNECTION MAY BE MADE BETWEEN THE PRIVATE PLUMBING AND AUSTIN WATER INFRASTRUCTURE UNTIL A CITY APPROVED WATER METER HAS BEEN INSTALLED.
19. METER BOXES AND CLEAN OUTS SHALL NOT BE LOCATED WITHIN PAVED AREAS SUCH AS DRIVEWAYS AND SIDEWALKS.
20. NO SOIL COMPACTION EQUIPMENT SHALL COME WITHIN 24-INCHES FROM THE TOP OF THE WATER OR WASTEWATER PIPE. BETWEEN 24-36 INCHES FROM TOP OF THE PIPE, ONLY LIGHT SOIL COMPACTION EQUIPMENT (E.G., RAMMERS OR "WHACKER PACKERS", VIBRATING PLATE COMPACTORS, WALK-BEHIND HAND-GUIDED ROLLERS) OR SMOOTH ROLLER COMPACTION EQUIPMENT WEIGHING LESS THAN 5,000 LBS. WILL BE ALLOWED. WHERE SOIL COMPACTION EQUIPMENT WILL BE 36-INCHES OR GREATER FROM THE TOP OF THE PIPE, HS20 LOADS SHALL NOT BE EXCEEDED. PIPE DEPTHS SHALL BE VERIFIED THROUGH POTHOLING, LEVEL A SUE OR BY MH INVERT DATA.
21. THE DESIGN AND CONSTRUCTION OF RETAINING WALLS, BRIDGES, CULVERTS, HEADWALLS, JUNCTION STRUCTURES, SCREENING WALLS, AND STORMWATER DRAINAGE PIPE WITHIN THE VICINITY OF AW UTILITIES SHALL BE IN COMPLIANCE WITH SECTION 13 OF THE COA'S TRANSPORTATION CRITERIA MANUAL.
22. THRUST RESTRAINT SHALL BE IN ACCORDANCE WITH CITY STANDARD SPECIFICATION ITEM 510.3(22) AND SPL WW-27A, WW-27A-01, WW-27A-02 AND WW-27F.
23. ALL WATERLINE BRANCH CONNECTIONS SHALL HAVE AN MJ GATE VALVE POSITIVELY RESTRAINED TO THE MJ TEE BY USING A SWIVEL TEE, FOSTER ADAPTOR, OR SWIVEL X SOLID HYDRANT ADAPTOR (WITH SWIVEL GLAND).

* ON CITY SPONSORED PROJECTS, WHERE CONFLICTS ARE IDENTIFIED BETWEEN THESE CONSTRUCTION NOTES AND THE PROJECT CONTRACT DOCUMENTS, THE CONTRACT DOCUMENTS WILL TAKE PRECEDENCE.

UTILITY CRITERIA MANUAL WAIVER SUMMARY

WAIVER #	LINE	SHEET #	STATION(S)	WAIVER FOR	UCM #	JUSTIFICATION	AW SIGNATURE	DATE APPROVED
EXAMPLE ROW								

METER NOTICE

METER NOTICE NOTES:

1. CHECK APPROPRIATE BOXES AND COMPLETE THE INFORMATION FOR METERS THAT WILL BE REQUIRED BY THIS PROJECT DESIGN.
2. FOR "LOOPED" PRIVATE WATER SYSTEMS THAT ARE UTILIZING MULTIPLE METERS, SERVICE UNITS WILL BE ASSESSED FOR ONLY ONE METER. THE SERVICE UNITS ASSESSED WILL BE CALCULATED USING TOTAL DOMESTIC DEMAND. REFERENCE AUSTIN WATER'S METER SIZING CHART (AWWA OPERATING CHARACTERISTICS FOR COLD WATER METERS) FOR FURTHER INFORMATION.
3. FOR WATER METERS THAT WILL HAVE NO WASTEWATER SERVICE ASSOCIATED WITH THEM, SPECIFY THE METER TYPE WITH THE INTENDED USE AND"WATER ONLY" DESIGNATION. "WATER ONLY" METER MAY INCLUDE OUTDOOR DRINKING FOUNTAINS, DECORATIVE FOUNTAINS, SWIMMING POOLS, ETC.
4. ADDRESSING FOR METERS IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD. FOLLOW 911 ADDRESSING LETTER GUIDELINES. ACCURATE ADDRESS REQUIRED FOR EACH METER PURCHASED.

POTABLE METER(S)

N/A ☒
ADDRESS: 8900 W STATE HWY 71
SOURCE AND USE: POTABLE DOMESTIC (FUTURE RECLAIMED)
METER TYPE: COMPOUND
SIZE: 3" MAX GPM: 350
SERVICE UNITS: 17.5

☒
ADDRESS: 8900 W STATE HWY 71
SOURCE AND USE: COMBINATION POTABLE DOMESTIC & FIRE
METER TYPE: OMNI SENSUS FIRELINE METER
SIZE: 8" MAX GPM: 3,500
SERVICE UNITS: 67.5

☒
ADDRESS: 8900 W STATE HWY 71
SOURCE AND USE: IRRIGATION METER (FUTURE RECLAIMED)
METER TYPE: COMPOUND
SIZE: 3" MAX GPM: 350
SERVICE UNITS: 17.5

N/A ☐
ADDRESS:
SOURCE AND USE:
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS:

RECLAIMED METER(S)

N/A ☐
ADDRESS:
SOURCE AND USE: RECLAIMED IRRIGATION
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS: 0 (No service units assessed for reclaimed connections)

N/A ☐
ADDRESS:
SOURCE AND USE: RECLAIMED DOMESTIC (Toilet flushing etc.)
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS: 0 (No service units assessed for reclaimed connections)

N/A ☐
ADDRESS:
SOURCE AND USE:
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS:

POTABLE BACKUP TO OWRS (NP METERS)

N/A ☐
ADDRESS:
SOURCE AND USE: POTABLE BACK-UP NP METER
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS: 0 (No service units assessed for OWRS connections)

N/A ☐
ADDRESS:
SOURCE AND USE:
METER TYPE:
SIZE: MAX GPM:
SERVICE UNITS: 0 (No service units assessed for reclaimed connections)

ADDITIONAL REVIEW ACKNOWLEDGEMENT

ONSITE WATER REUSE & AW RECLAIMED INFORMATION

DOES THIS DEVELOPMENT HAVE A TOTAL GROSS FLOOR BUILDING AREA OF 250,000 SQ.FT. OR MORE.

☒ YES
☐ NO

DISTANCE TO NEAREST EXISTING AW RECLAIMED MAIN?

☐ 250' OR LESS
☐ 251' TO 500'
☒ GREATER THAN 500'

AUTOMATED METERING INFORMATION

IS THIS PROJECT WITHIN THE CURRENT SERVICE AREA OF AWs DATA COLLECTION UNIT (DCUs), (REFER TO AUTOMATED METERING INFRASTRUCTURE NOTE UNDER GENERAL NOTES, FOR CLARIFICATION)

☒ YES
☐ NO

DOES THIS PROJECT REQUIRE A DEDICATED EASEMENT FOR DCU INFRASTRUCTURE?

☐ YES
☒ NO

AULCC REQUIREMENT

DOES THIS PROJECT REQUIRE AULCC REVIEW? (>300 LF OF W/WW PIPING IN ROW)

☒ YES
☐ NO

IF YES, PLEASE PROVIDE UCC# UCC-240314-01-01

PROJECT INFORMATION

FIRE, DOMESTIC AND IRRIGATION DEMAND DATA

AUSTIN WATER PRESSURE IN PSI		118 PSI
STATIC PRESSURE AT HIGHEST LOT SERVED IN PSI		92 PSI
STATIC PRESSURE AT LOWEST LOT SERVED IN PSI		111 PSI
BUILDING SIZE IN SQUARE FEET (LARGEST BUILDING)		8,953 SQ.FT.
BUILDING TYPE PER IFC TABLE B105.1(2)		V-B
BUILDING HEIGHT (LARGEST BUILDING)		43'-6"
AVAILABLE FIRE FLOW CALCS AT 20 PSI		11,892 PSI
REQUIRED BUILDING FIRE FLOW PER IFC TABLE B105.1(2)		3,500 GPM
REDUCED BUILDING FIRE FLOW PER __% FIRE SPRINKLER (REDUCTION PER IFC TABLE B105.2)		2,500 GPM
MINIMUM FIRE FLOW (SEE NOTE 2 BELOW)*		2,500 GPM
WATER FIXTURE UNITS (WSFU) --CIRCLE ONE-- FLUSH TANKS (circled) OR FLUSHOMETERS		7,244 WSFU
DOMESTIC WATER DEMAND IN GPM		900 GPM
MAXIMUM IRRIGATION DEMAND IN GPM OR WAIVER LETTER		230 GPM
DOMESTIC LINE VELOCITY: 12" SIZE OF DOMESTIC LINE (ADDITIONAL LINES MAY BE ADDED AS NECESSARY)	5,776 POTABLE WSFU	2.1 FPS / 750 GPM **
DOMESTIC LINE VELOCITY: 6" SIZE OF DOMESTIC LINE (ADDITIONAL LINES MAY BE ADDED AS NECESSARY)	1,468 NON-POTABLE WSFU	3.1 FPS / 270 GPM **
FIRE LINE VELOCITY: 12" SIZE OF DOMESTIC LINE (ADDITIONAL LINES MAY BE ADDED AS NECESSARY)	750 DOM + 2,250 FIRE	9.2 FPS / 3,250 GPM ***
LIVING UNIT EQUIVALENTS (LUEs)		201 LUEs

*NOTE: LOTS WITH 65 PSI OR GREATER REQUIRE A PRV TO BE INSTALLED ON THE PROPERTY OWNERS SIDE OF THE DOMESTIC WATER METER.
1. WITH THE EXCEPTION OF PROVIDING THE REQUIRED INFORMATION, DO NOT REVISE THESE TABLES IN ANYWAY.
2. MINIMUM FIRE FLOW: DESIGN ENGINEER MUST INDICATE VALUES WHICH COMPLY WITH IFC TABLES B105.1(2) OR B105.2 (REQUIRED OR REDUCED FIRE FLOWS). MINIMUM FIRE FLOW VALUE SHALL BE NO LESS THAN 1000 GPM FOR NFPA 13 SYSTEMS OR 1500 GPM FOR NFPA 13 R SYSTEMS (FOOTNOTES a AND b FOR TABLE B105.2)
3. IF DEMAND, OTHER THAN MINIMUM FIRE FLOW, IS UTILIZED IN FIRE LINE VELOCITY DETERMINATION, ENGINEERING JUSTIFICATION SHALL BE SHOWN ON THIS SHEET WITH APPLICABLE DATA AND CALCULATIONS.
** GPM TOTAL OF ALL CONNECTIONS TO THE DOMESTIC LINE.
*** GPM TOTAL OF ALL CONNECTIONS TO THE FIRE LINE.

BUILDING AND UNIT SUMMARY - MARX MULTIFAMILY (7/03/2025)

	8900 W SH 71 SP BLDG #S	9119 OLD BEE CAVES SP BLDG #S	BUILDING USE	HEIGHT (FT)	BUILDING COVERAGE (SF)	GROSS AREA (SF)	CONSTRUCTION TYPE	SPRINKLER TYPE	REQ. FIRE FLOW (GPM)	REDUCED FIRE FLOW (GPM)	Water Supply Fixture Units	NonPotable Fixutre Unit	Drainage Fixture Units
Club			REC/LEASING	27'-1"	9,901	8,953	V-B	None	2,500	2,500	13.5	32.5	55.0
Maintenance			REC/AMENITY	15'-0"	1,138	1,416	V-B	None	1,500	1,500	12.0		22.0
Type I	9, 10	3	MULTI-FAMILY	38'-2"	13,961	38,582	V-A	NFPA 13R	3,500	1,500	503.5	120.0	543.0
Type IA	12	4	MULTI-FAMILY	38'-2"	13,936	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type IB	15		MULTI-FAMILY	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type IC	6		MULTI-FAMILY	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type II	1, 5, 7		MULTI-FAMILY	38'-6"	9,186	24,946	V-A	NFPA 13R	2,750	1,500	335.5	75.0	357.0
Type IIA	4, 8	2	MULTI-FAMILY	38'-6"	9,186	24,992	V-A	NFPA 13R	2,750	1,500	335.5	75.0	357.0
Type TH-I	2, 3, 11		MULTI-FAMILY	28-6"	5,407	8,781	V-A	NFPA 13R	1,750	1,500	73.5	30.0	103.0
TypeTH-II	13, 14	1	MULTI-FAMILY	28'-9"	8,036	13,218	V-A	NFPA 13R	2,250	1,500	109.5	45.0	151.0
TOTAL	17	4			204,087	496,006					5,776.0	1,467.5	6,414.0

TOTAL WSFU: 7244

AW EXPIRATION STAMP

AUSTIN WATER REVIEW BLOCK

CITY OF AUSTIN
AUSTIN WATER
FEBRUARY 7, 2025

VERSION 2.0
STANDARD NO.
1 OF 2

AUSTIN WATER GENERAL INFORMATION
CONSTRUCTION NOTES FOR COMMERCIAL SITES
AND SUBDIVISION PLANS

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

AUSTIN WATER GENERAL INFORMATION AND CONSTRUCTION NOTES
SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
05
OF 113

SP-2025-0080C

SERVICE EXTENSION REQUEST: WASTEWATER NO. 5925

WATER AND WASTEWATER SERVICE EXTENSION REQUEST FOR CONSIDERATION

Name: 8900 W SH 71		Service Requested: **Wastewater**
SER-5925	Infor (IPS) Service Request Number: 1281198	Date Received: 12/21/2023
Location: 8900 W SH 71 AUSTIN TX 78735		
Acres: 61.50	Land Use: MULTI FAMILY	LUE: 300
Alt. Utility Service or S.E.R. Number: City of Austin Water SER- 5924		
Quad(s): A21	Reclaimed Pressure Zone: N/A	DDZ: NO
Drainage Basin: WILLIAMSON	Pressure Zone: SOUTHWEST C	DWPZ: YES
Flow (Estimated Peak Wet Weather): 225 GPM		COA Wastewater CCN (20636): NO
Cost Participation: N/A	% Within City Limits: 100	% Within Limited Purpose: 0

Description of Improvements:
Applicant shall construct approximately 1,325 feet of 8-inch gravity wastewater main (minimum 1.0% slope) from the existing 8-inch gravity wastewater main (Project No. 93-0012; MH #118796) located in Old Bee Caves Rd, and extend west to the subject tract, as approximately shown on the attached map.

NOTES: 1) Wastewater flow based on engineering calculations received from Meredith L. Kizewski, P.E. of 360 Professional Services, Inc. on 1/23/2025. 2) Private pumping system will be required within the subject tract.

Approval of this Service Extension Request is subject to completion and acceptance of the improvements described above and the conditions set forth below:
1) Construction of all Service Extensions is subject to all environmental and planning ordinances.
2) Service Extensions are subject to the guidelines established in the Land Development Code, Chapter 25-9, Water and Wastewater Utility Service.
3) An approved Service Extension is not a reservation of capacity in the system, but it is an acknowledgment of the intent to serve. Available capacity shall be confirmed at the time a development application is submitted.
4) The level of service approved by this document does not imply commitment for land use.
5) Public utility mains must meet City of Austin Design and Construction Criteria and must be approved by Austin Water Engineering Review. Actual length and location of staff proposed utility mains shall be finalized during the plan review process.
6) Proposed public wastewater improvements will be dedicated to the City of Austin for ownership, operation, and maintenance.
7) Proposed public wastewater improvements must be placed in the public right-of-way or approved utility easements. Utility easements must be approved by Austin Water Engineering Review and must be in place prior to construction plan approval.
8) The approved Service Extension will automatically expire 180 days after date of approval unless a development application has been accepted by the Development Services Department. The Service Extension expires on the date the development expires, or if approved, on the date the development application approval expires.

[signature] Project Manager, Utility Development Services	Date 2/26/2025	[signature] Supervisor, Utility Development Services	Date 2/27/25
[signature] Assistant Director, Austin Water	Date 03/08/2025	[signature] Director, Austin Water	Date 3/12/2025

FIRE FLOW TEST DATA & MAP

AUSTIN FIRE DEPARTMENT
FIRE PREVENTION DIVISION
6310 Wilhelmina Delco Dr., Austin, Texas 78752
afd.hydrants@austintexas.gov

Hydrant Flow Test Report

TEST DATE	12/22/2024	FIRE BOX	3701	COMPANY	PREVENTION
TIME	710 HRS	MAP GRID ID	B21	AFD STAFF	SANTIAGO, JESUS

RESIDUAL HYDRANT

RESIDUAL HYDRANT #	690015	MAIN SIZE (in.)	16
BLK #	DIRECTION	STREET NAME	TYPE
8600	W	SH 71	
STATIC PRESSURE (PSI)	118	RESIDUAL PRESSURE (PSI)	116

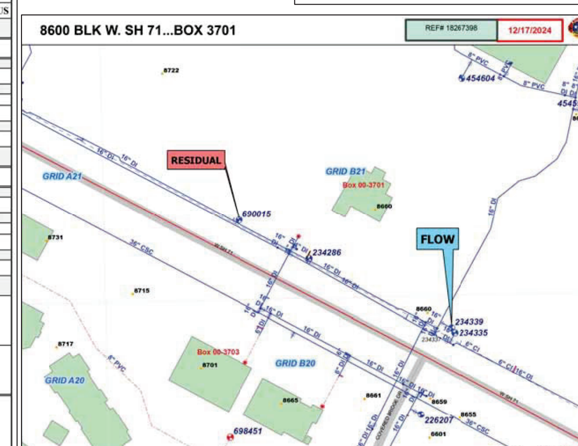
FLOW HYDRANT

FLOW HYDRANT #	234339	MAIN SIZE (in.)	16
BLK #	DIRECTION	STREET NAME	TYPE
8600	W	SH 71	
STATIC PRESSURE (PSI)	120	RESIDUAL PRESSURE (PSI)	108

Comments	dc = discharge coefficient straight 2½" butt = 0.9 w/ 45° elbow = 0.75	0.75
	FLOW RATE (GPM) =	1454

NOTE: This information represents the water supply characteristics in the immediate area on the date and time tested. The City of Austin does not guarantee this data will be representative of the water supply characteristics at any time in the future. It is the requesting party's responsibility to ensure that this test information is appropriate to the location of the project in question and that any differences in elevation between the test location and project are accounted for and included in the hydraulic calculations.

8600 BLK W. SH 71...BOX 3701



SERVICE EXTENSION REQUEST: WATER NO. 5924

City of Austin | Austin Water
6310 Wilhelmina Delco Drive, Suite 3100
Austin, Texas 78752
http://www.austintexas.gov/SER
SER@austintexas.gov

Meredith L. Kizewski, P.E.
360 Professional Services, Inc.
P.O. Box 3639
Cedar Park, Texas 78630

Re: **Letter of Suitable and Sufficient Existing Service**
8900 W. SH 71 Service Extension Request for Water (SER-5924)
8900 W. SH 71, Austin, Texas 78735

Dear Ms. Kizewski:

Austin Water has reviewed your submittal for the above referenced Service Extension Request (SER) project and is issuing this letter of Suitable and Sufficient Existing Service in keeping with all current rules and regulations.

Submitted project specifications:
428 Multi-Family Units
Living Unit Equivalent (LUE): 300
Subject Tract Area: 61.5 Acres
Water Demand (Estimated Peak Hour): 656 gpm
Fire flow requirement of 2,500 gpm and water demand submitted in the engineering calculations received from Meredith L. Kizewski, P.E. of 360 Professional Services, Inc. on February 14, 2025.

Based on the submitted project specifications and the results of the Service Extension Request review, it has been determined that the existing 12-inch (Project No. 2014-0539) and 16-inch (Project No. 2012-0547) water mains in W. SH 71 are suitable and sufficient to provide service to the subject tract.

Due to the existing suitable and sufficient water mains at the subject tract, a water main extension/improvement is not required for this project.

Water service for this project can be provided based upon plan approval within the Austin Water plan review process. It is suggested that this letter be submitted with your site development plans.

This letter will automatically expire 180 days after its date of issue unless a development application has been accepted by the Development Services Department (DSD). If a development application has been accepted by DSD, then this letter expires on the date the development application, or its approval, expires.

If we can provide additional information, please call me at (512) 972-0187.

Sincerely,

[signature]
Brett Ueno, P.E.
Austin Water
Utility Development Services Division

DATE 2/26/2025

TABLE 610.3

Austin Water — Reclaimed Water and Onsite Water Reuse System Meter Demand Sheet

Site Plan Case Number: SP-2025-0080C — Project Address: 8900 W State HWY 71, Austin TX 78735

Step 1. Will this project use reclaimed or onsite water indoors? No — **Will this project apply for OWRS fee in lieu?** Yes

Step 2. Fill out the "Total Number of Fixtures" column for your project and indicate the Water Supply Type in the table to get a total water supply fixture unit count by supply type (potable vs. non-potable). Fee in lieu projects must select "Potable/Future Reclaimed" for urinals and water closets as well as irrigation.

Fixture Type		Total Number of Fixtures		Water Supply Fixture Units (WSFU) hot and cold		Total WSFU	Water Supply Type
Bathtub or Combination Bath/Shower		402	x	4.0	=	1608.0	Potable
Bathtub with 3/4" fill valve			x	10.0	=	0.0	Potable
Bidet			x	1.0	=	0.0	Potable
Clothes Washer		402	x	4.0	=	1608.0	Potable
Dishwasher, domestic		404	x	1.5	=	606.0	Potable
Drinking Fountain or Water Cooler		1	x	0.5	=	0.5	Potable
Lavatory		954	x	1.0	=	954.0	Potable
Sinks							
Bar	Public		x	2.0	=	0.0	Potable
	Private		x	1.0	=	0.0	Potable
Kitchen, domestic		404	x	1.5	=	606.0	Potable
Laundry			x	1.5	=	0.0	Potable
Service or mop basin	Public	2	x	3.0	=	6.0	Potable
	Private		x	1.5	=	0.0	Potable
Washup basin			x	2.0	=	0.0	Potable
Shower, per head		142	x	2.0	=	284.0	Potable
Urinal, 1.0 GPF flushometer valve		1	x	20,15,10,8,5	=	20.0	Potable/Future Reclaimed
Water Closet, 1.6 GPF	Flushometer Valve		x	40,30,20,15,10	=	0.0	Potable/Future Reclaimed
	Tank Type	579	x	2.5	=	1447.5	Potable/Future Reclaimed
First Hose Bibb		21	x	2.5	=	52.5	Potable
Hose Bibb, each additional		51	x	1.0	=	51.0	Potable
			x		=	0.0	
			x		=	0.0	
			x		=	0.0	
			x		=	0.0	
				Total Fixture Units (WSFU)		5776.0	Potable
				Total Fixture Units (WSFU)		0.0	Potable/Future Reclaimed

Step 3. Convert WSFU to gpm for each supply type using Chart A 103.1 from the 2021 UPC.

Potable WSFU	=	5776.0	->	750 gpm
Potable/Future Reclaimed	=	0.0	->	270 gpm

Step 4. Specify additional peak demands from water use by supply type (select Supply Type). F.

Additional Water Use	Peak Demand	Flow Rate	Supply Type
Process water or special use water		gpm	Non-potable
Cooling tower makeup water		gpm	Non-potable
Irrigation system	230	gpm	Potable/Future Re

Note: It is the applicant's responsibility to report accurate peak demand in order to get appropriate meter sizing recommendations. AW will not confirm numbers provided.

Step 5. Select the type of non-potable water supply system to add the demands for each required meter (select Yes or No).

Reclaimed Water System: No — *OR* — Fee in Lieu: Yes

Required Meter Types	Recommended minimum meter capacity (GPM)
Domestic potable water meter	applicant to size meter
Reclaimed domestic meter	0
Reclaimed irrigation meter	0

Required Meter Types	Recommended minimum meter capacity (GPM)
Domestic potable meter	applicant to size meter
Domestic potable meter (to serve NP fixtures)	270
Potable irrigation meter	230
Reclaimed main size needed for OWRS fee in lieu	8

Step 6. Please email complete sheet to AW_ONSITEREUSE@austintexas.gov for approval
Step 7. Determine the appropriate sized meters to meet the demands and add them to the Meter Notice Table on the AW Standard Notes sheet along with a printout of this sheet.

Austin Water Staff Review
Signature: Rebecca Batchelder — Date:

NO NONPOTALBE METER REQUESTED FOR THIS PROJECT — Fee inlieu $ 160,640

For Utility Permitting Office, reach out to AW_onsitereuse@austintexas.gov with questions at time of meter purchase

IN LIEU OF INSTALLING AN ONSITE WATER REUSE SYSTEM, THE PROJECT HAS OPTED TO BE DESIGNED AS "RECLAIMED READY" PER CITY CODE SECTION 25-9-414(C):

THE SITE PLAN AND BUILDING PLANS WILL INCLUDE SEPARATE DISTRIBUTION PLUMBING TO ALL REQUIRED NON-POTABLE FIXTURES, COOLING SYSTEMS, AND IRRIGATION SYSTEMS WITHIN THE PROJECT. RECLAIMED READY PROJECTS WILL ALLOW THE PROJECT TO BE CONNECTED TO THE RECLAIMED WATER SYSTEM WHEN A CENTRALIZED RECLAIMED WATER MAIN BECOMES AVAILABLE TO THE PROJECT. THIS RECLAIMED WATER CONNECTION FOR THE PROJECT WILL TAKE PLACE WHEN AUSTIN WATER SWITCHES THE PUBLIC POTABLE WATER SERVICE LINE(S) AND THE POTABLE WATER METER(S) SERVING THE PROJECT'S NON-POTABLE FIXTURES AND SYSTEMS TO RECLAIMED WATER SERVICES AND METERS IN ACCORDANCE WITH THE UTILITIES CRITERIA MANUAL. THE PROPERTY OWNER WILL BE REQUIRED TO UTILIZE RECLAIMED WATER FOR ALL NON-POTABLE FIXTURES AND SYSTEMS AFTER THE CONNECTION TO THE RECLAIMED WATER SYSTEM IS MADE

PRINT

Austin Water — REQUEST FOR MODIFICATION FROM CODE OR ALTERNATE METHOD OF COMPLIANCE

ILLEGIBLE OR INCOMPLETE REPORTS WILL NOT BE ACCEPTED.

APPLICANT INFORMATION – PLEASE PRINT

Name: Barrett Chambers
Company: OHT Highway 71, LP
Mailing Address: 901 S Mopac, Building 3, Suite 500
City: Austin State: TX Zip: 78746
Phone: 512-813-7125 Email: bchambers@ohtpartners.com

PROPERTY INFORMATION:

Austin Water Account #:
Property Address: 8900 W STATE HIGHWAY 71 AND 9119 OLD BEE CAVES ROAD
City: Austin State: Texas Zip: 78735
Type of Property: ☐ Single Family ☐ Duplex ☐ Townhouse ☐ Business Office ☑ Apartment ☐ Restaurant ☐ Medical Building ☐ Other, Please be specific:

Project Name and Scope: Marx Multifamily - irrigation cross contamination testing			☑Commercial ☐Residential Date: 07/25/25	
Permit/Plan Review or Case Number: SP-2025-0029C	Type of Const: Multi-family development		Building Name:	
Applicable Codes → ☑BUILDING 2021	☑PLUMBING 2021	☑FIRE 2021	☑TCEQ, rules/regs	☐OTHER(please specify)

Need or Hardship: This is a multi-building residential site. The ordinanced prescribed CCT would create a hardship to the tenants and would not be feasible. We are requesting a 1.5 CCT between the underground potable water distribution system and the alternative water irrigation system.

Revised: 10/28/16 — AustinWater.org | Page 1

Austin Water — REQUEST FOR MODIFICATION FROM CODE OR ALTERNATE METHOD OF COMPLIANCE

Proposal Description: The 1.5 CCT prescribed in the Water Protection SOP will be followed. This will allow for only an hour shut down of the potable distribution system without draining down the system. All buildings have building isolation valves that will allow for this test to be performed.

ADDITIONAL INFORMATION:

Signatures for City of Austin Approval:
Approved by:

Print Name	Signature	Title	Date
Nathan Edmundson	Nathan Edmundson	WP Specialist	7/28/25
Charles Deatherage	Charles Deatherage	WP Program Mgr	7/28/25
Jay Porter	Jay Porter	SSD Program Dir	7/28/25

Forward this report to:
City of Austin
Special Services Division
3907 South Industrial Drive, Ste. 100
Austin, TX 78744-1070
Phone # (512) 972-1060
Fax # (512) 972-1260
www.austintexas.gov/department/special-services-water-protection

Revised: 10/28/16 — AustinWater.org | Page 2

PRINT

Austin Water — REQUEST FOR MODIFICATION FROM CODE OR ALTERNATE METHOD OF COMPLIANCE

ILLEGIBLE OR INCOMPLETE REPORTS WILL NOT BE ACCEPTED.

APPLICANT INFORMATION – PLEASE PRINT

Name: Barrett Chambers
Company: OHT Highway 71, LP
Mailing Address: 901 S Mopac, Building 3, Suite 500
City: Austin State: TX Zip: 78754
Phone: 512-813-7125 Email: bchambers@ohtpartners.com

PROPERTY INFORMATION:

Austin Water Account #:
Property Address: 8900 W STATE HIGHWAY 71 AND 9119 OLD BEE CAVES ROAD
City: Austin State: Texas Zip: 78735
Type of Property: ☐ Single Family ☐ Duplex ☐ Townhouse ☐ Business Office ☑ Apartment ☐ Restaurant ☐ Medical Building ☐ Other, Please be specific:

Project Name and Scope: Marx Multifamily - potable fixtures cross contamination testing			☑Commercial ☐Residential Date: 07/25/25	
Permit/Plan Review or Case Number: SP-2025-0080C	Type of Const: Multi-family development		Building Name:	
Applicable Codes → ☑BUILDING 2021	☑PLUMBING 2021	☑FIRE 2021	☑TCEQ, rules/regs	☐OTHER(please specify)

Need or Hardship: This is a mutli-building residential site with alternative water toilet/urinal flushing. The ordinanced prescribed CCT w ould create a hardship to tenants and would not be feasible. For the CCT between the toilet flushing system and the potable water, a dye test is proposed.

Revised: 10/28/16 — AustinWater.org | Page 1

Austin Water — REQUEST FOR MODIFICATION FROM CODE OR ALTERNATE METHOD OF COMPLIANCE

Proposal Description: Appurtenances necessary for the dye test will be installed during construction. Dye will be introduced into the alternative vater system and each toilet/urinal will be checked for visible presence of dye. Each outlet on the potable water system,hot and cold, will be checked for fluorescence under UV light in a white styrofoam cup.

ADDITIONAL INFORMATION:

Signatures for City of Austin Approval:
Approved by:

Print Name	Signature	Title	Date
Nathan Edmundson	Nathan Edmundson	WP Specialist	7/28/25
Charles Deatherage	Charles Deatherage	WP Project Mgr	7/28/25
Jay Porter	Jay Porter	SSD Program Dir	7/28/25

Forward this report to:
City of Austin
Special Services Division
3907 South Industrial Drive, Ste. 100
Austin, TX 78744-1070
Phone # (512) 972-1060
Fax # (512) 972-1260
www.austintexas.gov/department/special-services-water-protection

Revised: 10/28/16 — AustinWater.org | Page 2

AW EXPIRATION STAMP

AUSTIN WATER REVIEW BLOCK

AUSTIN WATER GENERAL INFORMATION CONSTRUCTION NOTES FOR COMMERCIAL SITES AND SUBDIVISION PLANS

VERSION 2.0
STANDARD NO. 2 OF 2

CITY OF AUSTIN
AUSTIN WATER
FEBRUARY 7, 2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

AUSTIN WATER GENERAL INFORMATION AND CONSTRUCTION NOTES SHEET 2

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

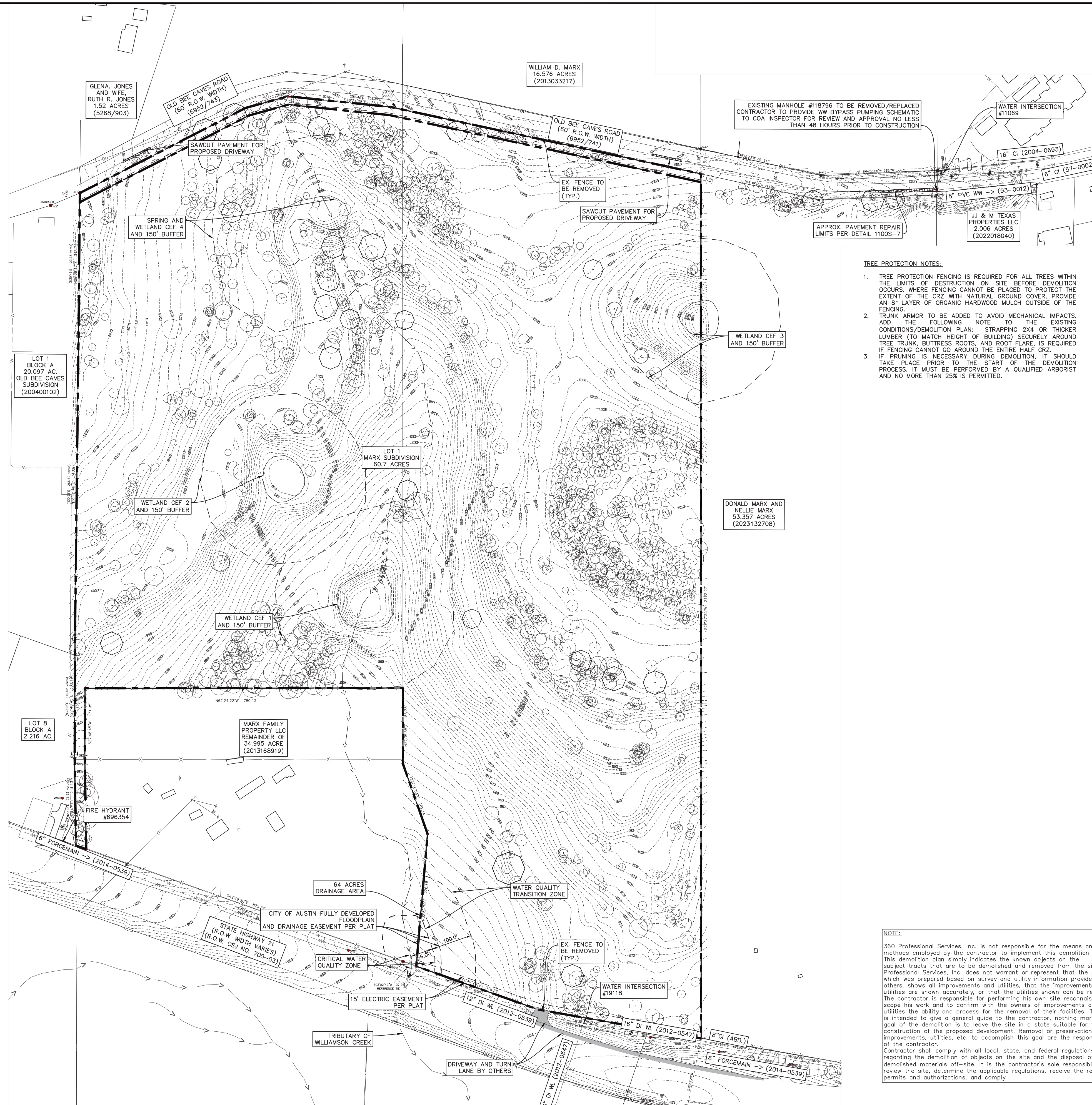
SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

No. | Date | Revisions | App.

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 06 OF 113

SP-2025-0080C



LEGEND

- SUBJECT PROPERTY
- PROPOSED DEMOLITION
- TREE PROTECTION

SCALE IN FEET: 120 60 0 120

SURVEY LEGEND

- 1/2" REBAR FOUND (OR AS NOTED)
- #4532 1/2" REBAR WITH "RPLS 4532" CAP FOUND
- 4WARD 1/2" REBAR WITH "4WARD SURVEYING" CAP FOUND
- 1/2" REBAR WITH "CHAPARRAL" CAP SET
- IRON PIPE FOUND (SIZE NOTED)
- CALCULATED POINT
- CONTROL POINT/BENCHMARK LOCATION
- W WATER METER
- WATER VALVE
- FIRE HYDRANT
- WWMH WASTEWATER MANHOLE
- FMH FORCE MAIN MANHOLE
- W WELL LOCATION
- V 2" VENT PIPE
- UTILITY POLE
- GUY WIRE
- —OU— OVERHEAD UTILITIES
- M MAILBOX
- SIGN
- BOLLARD
- EDGE OF ASPHALT PAVEMENT
- —X— BARB WIRE FENCE
- —o— CHAIN LINK FENCE
- ( ) RECORD INFORMATION

TREE PROTECTION NOTES:

1. TREE PROTECTION FENCING IS REQUIRED FOR ALL TREES WITHIN THE LIMITS OF DESTRUCTION ON SITE BEFORE DEMOLITION OCCURS. WHERE FENCING CANNOT BE PLACED TO PROTECT THE EXTENT OF THE CRZ WITH NATURAL GROUND COVER, PROVIDE AN 8" LAYER OF ORGANIC HARDWOOD MULCH OUTSIDE OF THE FENCING.
2. TRUNK ARMOR TO BE ADDED TO AVOID MECHANICAL IMPACTS. ADD THE FOLLOWING NOTE TO THE EXISTING CONDITIONS/DEMOLITION PLAN: STRAPPING 2X4 OR THICKER LUMBER (TO MATCH HEIGHT OF BUILDING) SECURELY AROUND TREE TRUNK, BUTTRESS ROOTS, AND ROOT FLARE, IS REQUIRED IF FENCING CANNOT GO AROUND THE ENTIRE HALF CRZ.
3. IF PRUNING IS NECESSARY DURING DEMOLITION, IT SHOULD TAKE PLACE PRIOR TO THE START OF THE DEMOLITION PROCESS. IT MUST BE PERFORMED BY A QUALIFIED ARBORIST AND NO MORE THAN 25% IS PERMITTED.

NOTES:

1. INFORMATION SHOWN HEREON IS BASED UPON INFORMATION PROVIDED BY CHAPARRAL LAND SURVEYING, INC. DATED MARCH AND OCTOBER 2024. NO WARRANTY IS EXPRESSED OR IMPLIED TO ITS ACCURACY. NO WARRANTY IS EXPRESSED OR IMPLIED TO ITS ACCURACY. CONTRACTOR TO NOTIFY ENGINEER IF DISCREPANCIES ARE FOUND.
2. A PRE CONSTRUCTION MEETING WITH THE ENVIRONMENTAL INSPECTOR IS REQUIRED PRIOR TO ANY SITE DISTURBANCE.
3. LOCATIONS OF PUBLIC AND FRANCHISE UTILITIES SHOWN ARE APPROXIMATE AND MAY NOT BE COMPLETE. CONTRACTOR SHALL CALL THE ONE CALL CENTER (811) AT LEAST 48 HOURS PRIOR TO COMMENCING DEMOLITION OR CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL CONTACT ANY OTHER UTILITY COMPANIES WHO DO NOT SUBSCRIBE TO THE ONE CALL PROGRAM FOR LINE MARKINGS. THE CONTRACTOR BEARS SOLE RESPONSIBILITY FOR VERIFYING LOCATIONS OF EXISTING UTILITIES, SHOWN OR NOT SHOWN, AND FOR ANY DAMAGE DONE TO THESE FACILITIES.
4. REMOVAL OR RELOCATION OF EXISTING PUBLIC AND PRIVATE FRANCHISE UTILITIES (WATER, ELECTRIC, AND GAS ETC.) WITHIN THE LIMITS OF THE SITE DEMOLITION SHALL BE COORDINATED WITH THE APPLICABLE UTILITY AGENCIES AND IN ACCORDANCE WITH LOCAL CODES
5. ALL EXISTING UTILITY SERVICES TO BE TURNED OFF BY UTILITY FRANCHISE TECHNICIAN TO ALLOW FOR EXISTING SERVICE LINES TO BE CUT/PLUGGED AT MAIN PER UCM SECTION 2.8.
6. ALL UTILITIES IN STREET RIGHT-OF-WAY TO REMAIN IN PLACE UNLESS NOTED OTHERWISE.
7. SURFACE PAVEMENT INDICATED HEREON (SUCH AS ASPHALT OR CONCRETE) MAY OVERLAY HIDDEN STRUCTURES (SUCH AS OTHER LAYERS OF PAVEMENT, BUILDING SLAB, ETC.) THAT ARE ALSO TO BE REMOVED.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL OF EXISTING PAVEMENT SECTION, STRUCTURAL SUBGRADE, STRUCTURAL FOUNDATION, AND UTILITIES WITHIN THE SITE. CONTRACTOR TO DISPOSE ALL DEMOLITION SPOILS OFF-SITE IN A LEGAL MANNER.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING UTILITIES, IRRIGATION LINES, PAVEMENT, ETC., TO REMAIN RESULTING FROM DEMOLITION ACTIVITIES AND REPAIR AT HIS OWN EXPENSE.
10. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
11. ALL ITEMS TO BE REMOVED SHALL BE DISPOSED OFF-SITE IN A MANNER ACCEPTABLE TO ALL APPLICABLE REGULATIONS.
12. PERIMETER EROSION CONTROL DEVICES AND TREE PROTECTION FOR TREES SHALL BE IN PLACE PRIOR TO DEMOLITION. REFERENCE EROSION CONTROL PLAN AND DETAILS FOR TYPE AND LOCATION.
13. CONTRACTOR TO ADJUST RIMS OF ALL EXISTING VALVES, SPRINKLER HEADS, MANHOLES, ETC. TO MATCH PROPOSED/FINAL GRADES.
14. ON-SITE OVERHEAD UTILITY AND POLES TO BE REMOVED. CONTRACTOR TO COORDINATE WITH UTILITY COMPANY.
15. ANY EXISTING WATER METERS AND VAULTS FOR THE SITE TO THE REMOVED AND TURNED INTO AWU FOR CREDIT TO THE DEVELOPER.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S77°43'28"E	107.33'
(L1)	(S75°05'E)	(107.33')
L2	S27°37'25"W	61.38'
(L2)	(S30°08'W)	(61.40')
L3	N85°09'42"W	77.79'
(L3)	(N82°37'41"W)	(78.03')
L4	N42°49'20"W	26.68'
L5	S42°49'20"E	34.21'

THIS IS A GRID DRAWING.

BEARING BASIS: THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83) (2011), CENTRAL ZONE; US SURVEY FEET; BASED ON GPS SOLUTIONS FROM THE LOCAL REAL TIME NETWORK (RTN) FOR CHAPARRAL CONTROL POINT "103".

1/2" REBAR WITH "RANDOM" CAP SET

TEXAS STATE PLANE COORDINATES:
N 10064191.18
E 3064845.16

ELEVATION = 965.52'

BENCHMARK INFORMATION:

BM #1: MAG NAIL WITH "CHAPARRAL" WASHER SET IN THE TOP OF A CONCRETE CULVERT HEADWALL LOCATED ON THE NORTH SIDE OF HWY 71, +/- 9' NORTH OF EDGE OF ASPHALT, +/- 37' SOUTH OF THE COMMON CORNER OF BOTH CALLED 53.357 ACRE TRACTS.

ELEVATION = 965.52'
VERTICAL DATUM: NAVD 88 (GEOID 18)

NOTE:

360 Professional Services, Inc. is not responsible for the means and methods employed by the contractor to implement this demolition plan. This demolition plan simply indicates the known objects on the subject tracts that are to be demolished and removed from the site. 360 Professional Services, Inc. does not warrant or represent that the plan, which was prepared based on survey and utility information provided by others, shows all improvements and utilities, that the improvements and utilities are shown accurately, or that the utilities shown can be removed. The contractor is responsible for performing his own site reconnaissance to scope his work and to confirm with the owners of improvements and utilities the ability and process for the removal of their facilities. This plan is intended to give a general guide to the contractor, nothing more. The goal of the demolition is to leave the site in a state suitable for the construction of the proposed development. Removal or preservation of improvements, utilities, etc. to accomplish this goal are the responsibility of the contractor.
Contractor shall comply with all local, state, and federal regulations regarding the demolition of objects on the site and the disposal of the demolished materials off-site. It is the contractor's sole responsibility to review the site, determine the applicable regulations, receive the required permits and authorizations, and comply.

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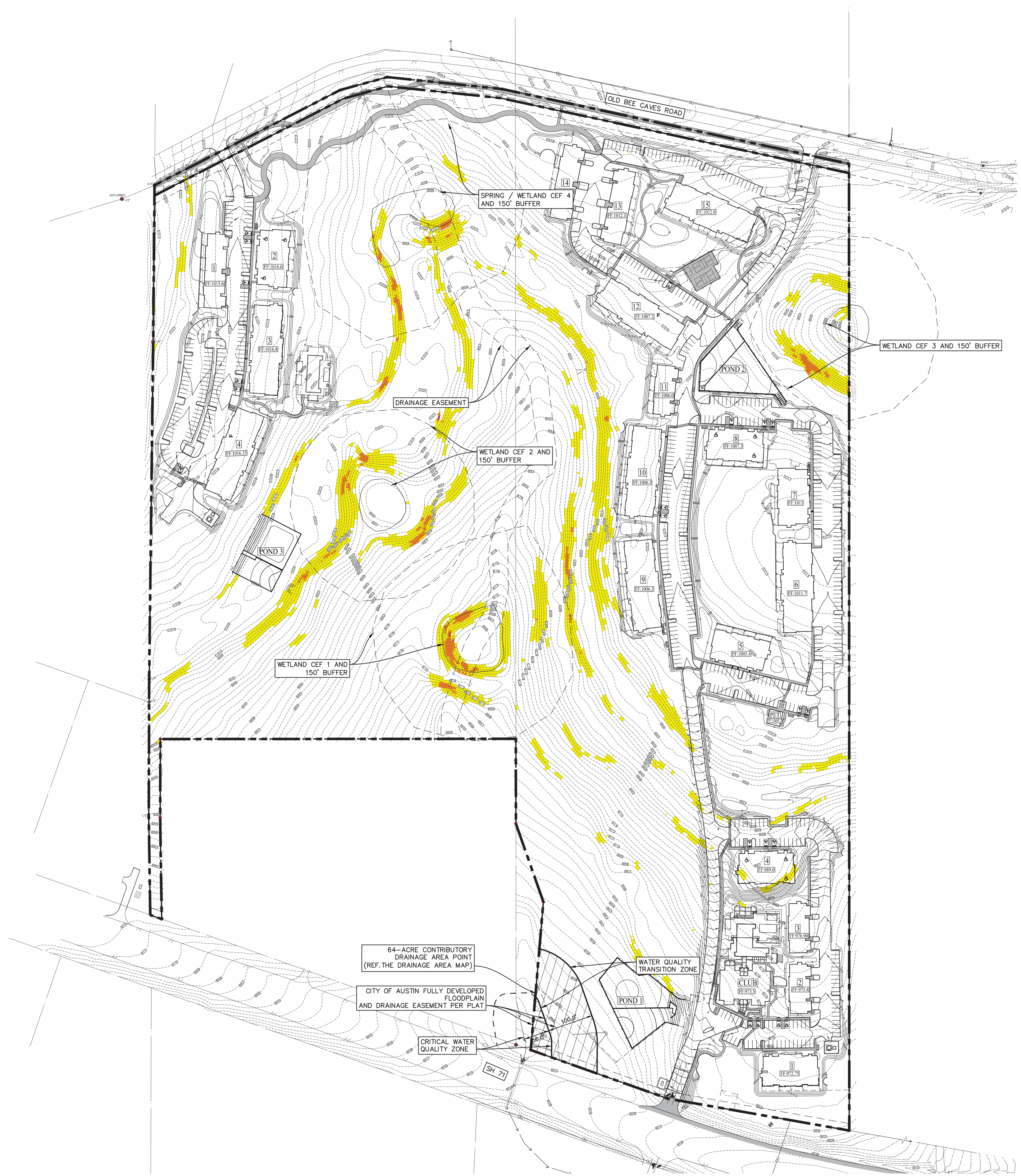
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS — SCOTT J. FOSTER — 84652 — LICENSED PROFESSIONAL ENGINEER — 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EXISTING CONDITIONS AND DEMOLITION PLAN

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.



SLOPE LEGEND

(white)	0%-15% SLOPE
(yellow)	15%-25% SLOPE
(orange)	25%-35% SLOPE
(red)	>35% SLOPE

N E S W

SCALE IN FEET

120 60 0 120

LEGEND

- SUBJECT PROPERTY
- PROPERTY LINES
- CWQZ
- WQTZ

APPENDIX Q-1: IMPERVIOUS COVER FOR BARTON SPRINGS ZONE				
1. Gross Site Area			**59.93**	**Acres**
Site Deductions				
2. Critical Water Quality Zone (CWQZ)			0.08	Acres
3. Water Quality Transition Zone (WQTZ)			0.54	Acres
4. Wastewater Irrigation Areas			0.00	Acres
5. Deduction Subtotal			**0.62**	**Acres**
6. Upland Area (Gross Site Area - Deduction Subtotal)			**59.31**	**Acres**
Net Site Area Calculations				
7. Area of Uplands Slopes 0-15%	56.28	x100%	56.28	Acres
8. Area of Uplands Slopes 15-25%	2.85	x40%	1.14	Acres
9. Area of Uplands Slopes 25-35%	0.18	x20%	0.04	Acres
10. Area of Uplands Slopes >35%	0.002	x0%	0.00	Acres
11. Net Site Area			**57.45**	**Acres**

APPENDIX Q-2: IMPERVIOUS COVER					
Water Quality Transition Zone (WQTZ)					
1. WQTZ Outside of 100-Year Floodplain (Non-FP WQTZ)				**0.54**	**Acres**
Allowable Impervious Cover					
2. Impervious Cover allowed at	0% X		0.54	0.00	Acres
3. Impervious Cover allowed at	25% X		57.45	14.36	Acres
			4. Total Allowable Impervious Cover	**14.36**	**Acres**
Proposed Impervious Cover					
5. Impervious Cover in Non-FP WQTZ					Acres
5a. Existing to Remain				0.00	Acres
5b. Proposed New				0.00	Acres
			5c. Subtotal	**0.00**	**Acres**
6. Impervious Cover in Uplands Zone					
6a. Existing to Remain				0.00	Acres
6b. Proposed New				12.82	Acres
			6c. Subtotal	**12.82**	**Acres**
			7. Total Proposed Impervious Cover	**12.82**	**Acres**
Allowable Impervious Cover Breakdown by Slope Category					
8. Total Acreage 15-25%=	1.14	Acres x 10%=		0.11	Acres
Proposed Impervious Cover on Slopes					
		Impervious Cover			
		Bldg./Other			Drives
Slope Categories	Acres	Acres	% of Category		Ac.
9. 0-15%	56.28	9.20	16%		3.60
10. 15-25%	1.14	0.02	0%		0.01
11. 25-35%	0.04	0.00	0%		0.00
12. Over 35%	0.00	0.00	0%		0.00
13. Gross Site Area	**57.45**	**9.22**			**3.60**

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AUSTIN, TX 78735

SLOPE MAP

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

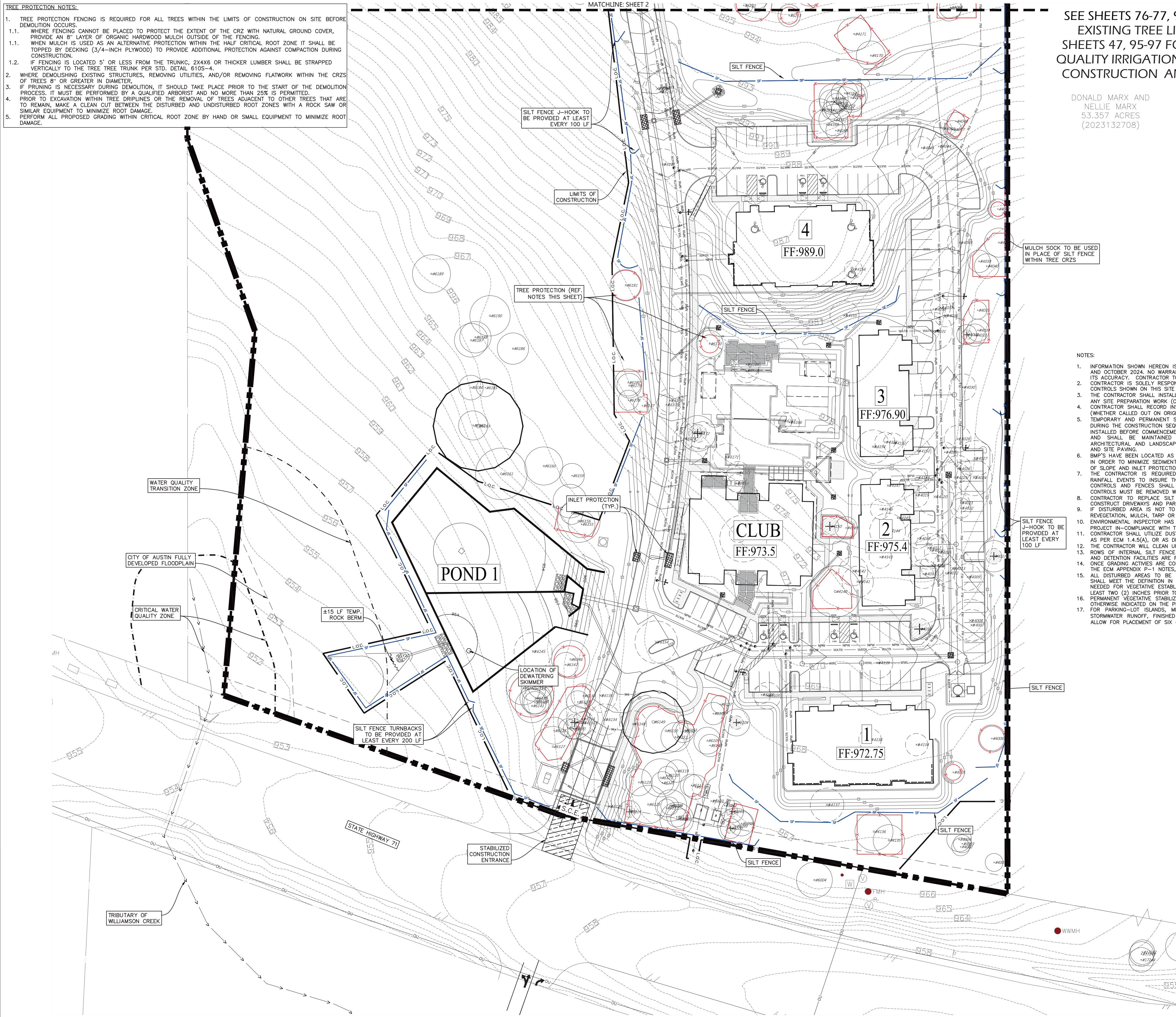
SHEET
08
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\08 SLOPE MAP.dwg LAYOUT: Sheet
XREFS: x2436 xgis xgis_topo xsurvey_360PSI xsite xsite_contours xLA xtrees

TREE PROTECTION NOTES:

1. TREE PROTECTION FENCING IS REQUIRED FOR ALL TREES WITHIN THE LIMITS OF CONSTRUCTION ON SITE BEFORE DEMOLITION OCCURS.
   1.1. WHERE FENCING CANNOT BE PLACED TO PROTECT THE EXTENT OF THE CRZ WITH NATURAL GROUND COVER, PROVIDE AN 8" LAYER OF ORGANIC HARDWOOD MULCH OUTSIDE OF THE FENCING.
   1.1. WHEN MULCH IS USED AS AN ALTERNATIVE PROTECTION WITHIN THE HALF CRITICAL ROOT ZONE IT SHALL BE TOPPED BY DECKING (3/4-INCH PLYWOOD) TO PROVIDE ADDITIONAL PROTECTION AGAINST COMPACTION DURING CONSTRUCTION.
   1.2. IF FENCING IS LOCATED 5' OR LESS FROM THE TRUNKC, 2X4X6 OR THICKER LUMBER SHALL BE STRAPPED VERTICALLY TO THE TREE TREE TRUNK PER STD. DETAIL 610S-4.
2. WHERE DEMOLISHING EXISTING STRUCTURES, REMOVING UTILITIES, AND/OR REMOVING FLATWORK WITHIN THE CRZS OF TREES 8" OR GREATER IN DIAMETER,
3. IF PRUNING IS NECESSARY DURING DEMOLITION, IT SHOULD TAKE PLACE PRIOR TO THE START OF THE DEMOLITION PROCESS. IT MUST BE PERFORMED BY A QUALIFIED ARBORIST AND NO MORE THAN 25% IS PERMITTED.
4. PRIOR TO EXCAVATION WITHIN TREE DRIPLINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
5. PERFORM ALL PROPOSED GRADING WITHIN CRITICAL ROOT ZONE BY HAND OR SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.



SEE SHEETS 76-77, 92-94 FOR EXISTING TREE LIST AND SHEETS 47, 95-97 FOR WATER QUALITY IRRIGATION LIMITS OF CONSTRUCTION AND NOTES

DONALD MARX AND NELLIE MARX
53.357 ACRES
(2023132708)

SCALE IN FEET
40 20 0 40

LEGEND

TREE TO BE REMOVED
TREE TO REMAIN BUT MITIGATION PROVIDED
TREE TO BE SAVED
INLET PROTECTION (TYP.)
TREE PROTECTION
SILT FENCE
ROCK BERM
LIMITS OF CONSTRUCTION
MULCH SOCK
INLET PROTECTION (TYP.)

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8. CONTRACTOR TO REPLACE SILT FENCE – PROVIDE TURNBACKS EVERY 200' WITH TRIANGULAR FILTER DIKE AS NEEDED TO CONSTRUCT DRIVEWAYS AND PARKING SPACES.
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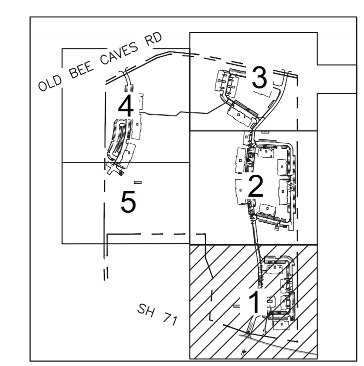
KEY MAP



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SCOTT J. FOSTER
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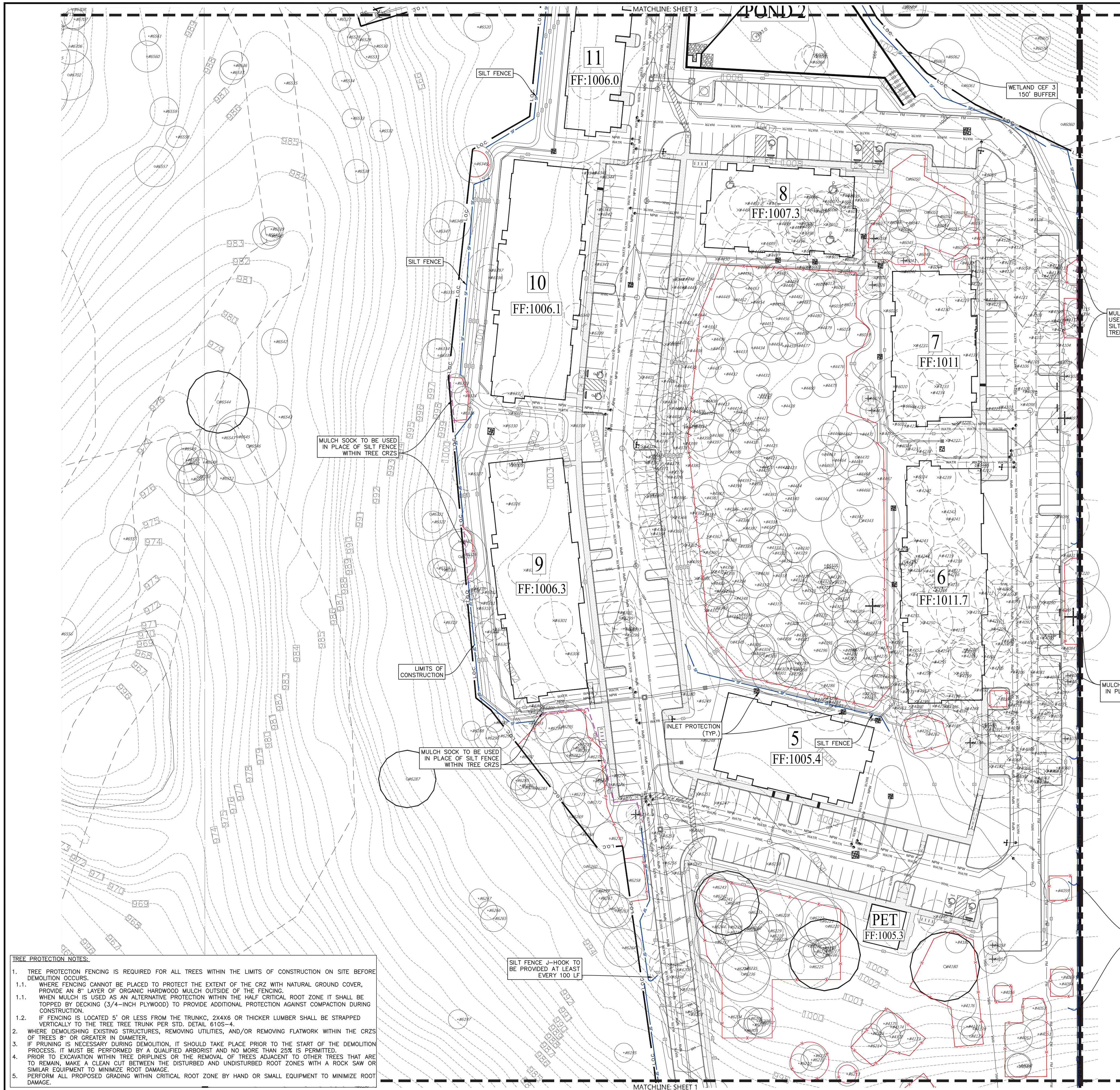
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.



SEE SHEETS 76-77, 92-94 FOR EXISTING TREE LIST AND SHEETS 47, 95-97 FOR WATER QUALITY IRRIGATION LIMITS OF CONSTRUCTION AND NOTES

SCALE IN FEET: 40 20 0 40

LEGEND

- TREE TO BE REMOVED
- TREE TO REMAIN BUT MITIGATION PROVIDED
- TREE TO BE SAVED
- INLET PROTECTION (TYP.)
- TREE PROTECTION
- SILT FENCE
- ROCK BERM
- LIMITS OF CONSTRUCTION
- MULCH SOCK
- INLET PROTECTION (TYP.)

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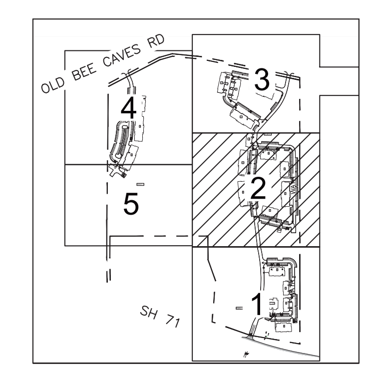

TREE PROTECTION NOTES:

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4. PRIOR TO EXCAVATION WITHIN TREE DRIPLINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
5. PERFORM ALL PROPOSED GRADING WITHIN CRITICAL ROOT ZONE BY HAND OR SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.

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No. | Date | Revisions | App.

SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 10 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\09 ESC.dwg
XREFS: x2436 xgis xaerial TNRIS 2022 xgis_topo 1856-002-10 AC xsurv

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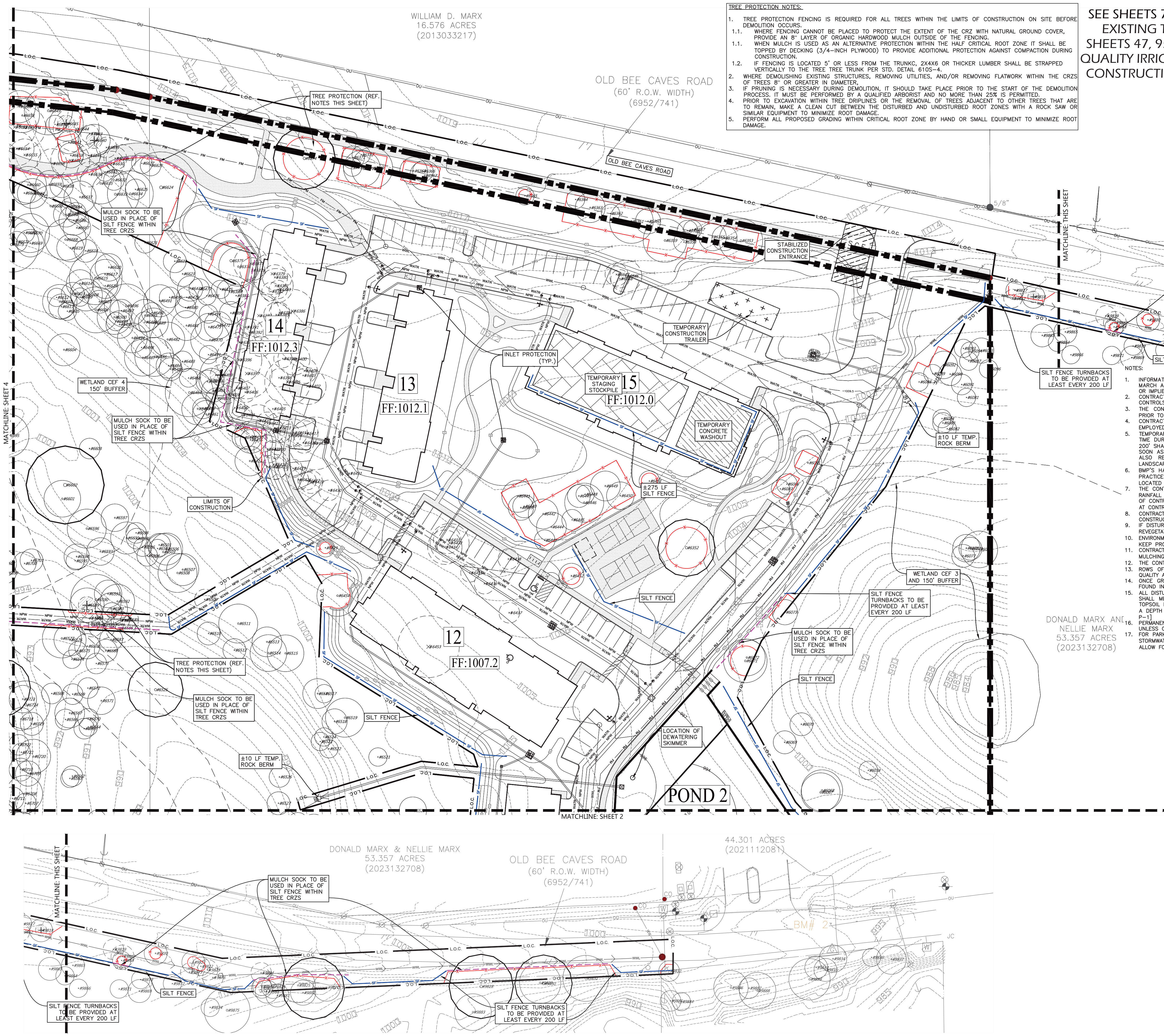
SEE SHEETS 76-77, 92-94 FOR EXISTING TREE LIST AND SHEETS 47, 95-97 FOR WATER QUALITY IRRIGATION LIMITS OF CONSTRUCTION AND NOTES



SCALE IN FEET

40 20 0 40

LEGEND

- TREE TO BE REMOVED
- TREE TO REMAIN BUT MITIGATION PROVIDED
- TREE TO BE SAVED
- INLET PROTECTION (TYP.)
- TREE PROTECTION
- SILT FENCE
- ROCK BERM
- LIMITS OF CONSTRUCTION
- MULCH SOCK
- INLET PROTECTION (TYP.)

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5. TEMPORARY AND PERMANENT STABILIZATION PRACTICES AND BMP'S SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS AN EXAMPLE, PERIMETER SILT FENCE – PROVIDE TURNBACKS EVERY 200' SHALL BE INSTALLED BEFORE COMMENCEMENT OF ANY GRADING ACTIVITIES. OTHER BMP'S SHALL BE INSTALLED AS SOON AS PRACTICABLE AND SHALL BE MAINTAINED UNTIL FINAL SITE STABILIZATION IS ATTAINED. CONTRACTOR SHALL ALSO REFERENCE ARCHITECTURAL AND LANDSCAPE PLANS SINCE PERMANENT STABILIZATION IS PROVIDED BY LANDSCAPING, THE BUILDING(S), AND SITE PAVING.
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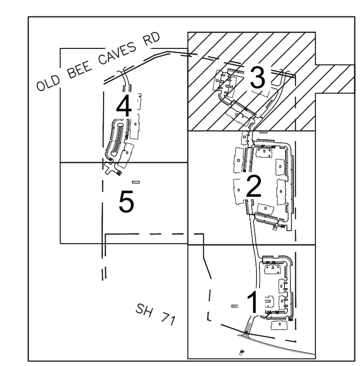
KEY MAP



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SCOTT J. FOSTER
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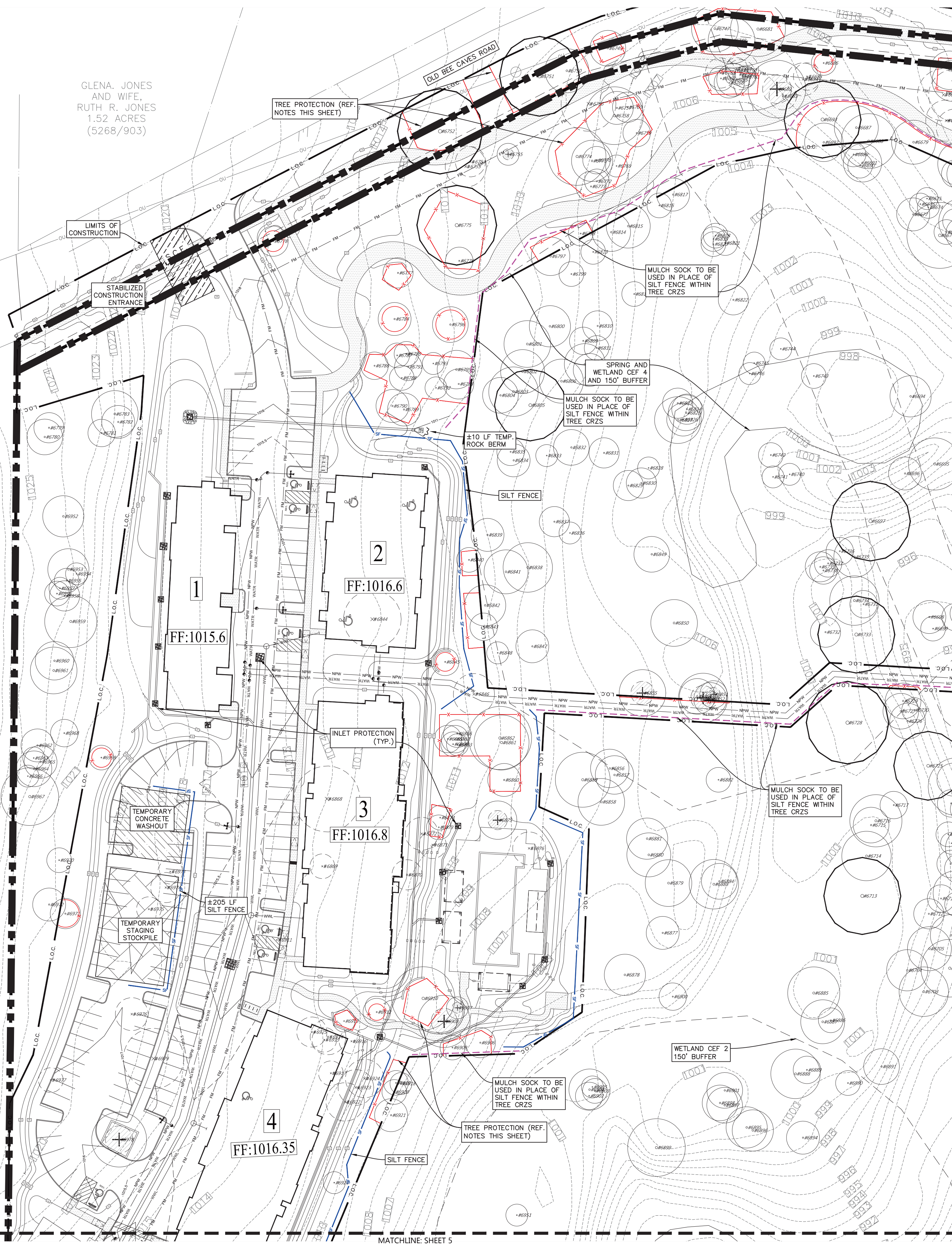
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN SHEET 3

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP–2025–0080C



SEE SHEETS 76-77, 92-94 FOR EXISTING TREE LIST AND SHEETS 47, 95-97 FOR WATER QUALITY IRRIGATION LIMITS OF CONSTRUCTION AND NOTES

N E S W

SCALE IN FEET

40 20 0 40

LEGEND

	TREE TO BE REMOVED
	TREE TO REMAIN BUT MITIGATION PROVIDED
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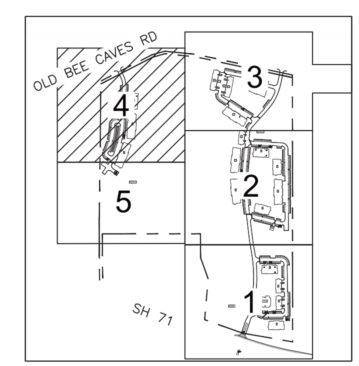

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AUSTIN, TX 78735

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN SHEET 4

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP–2025–0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\09 ESC.dwg LAYOUT: 4 PLOT DATE:
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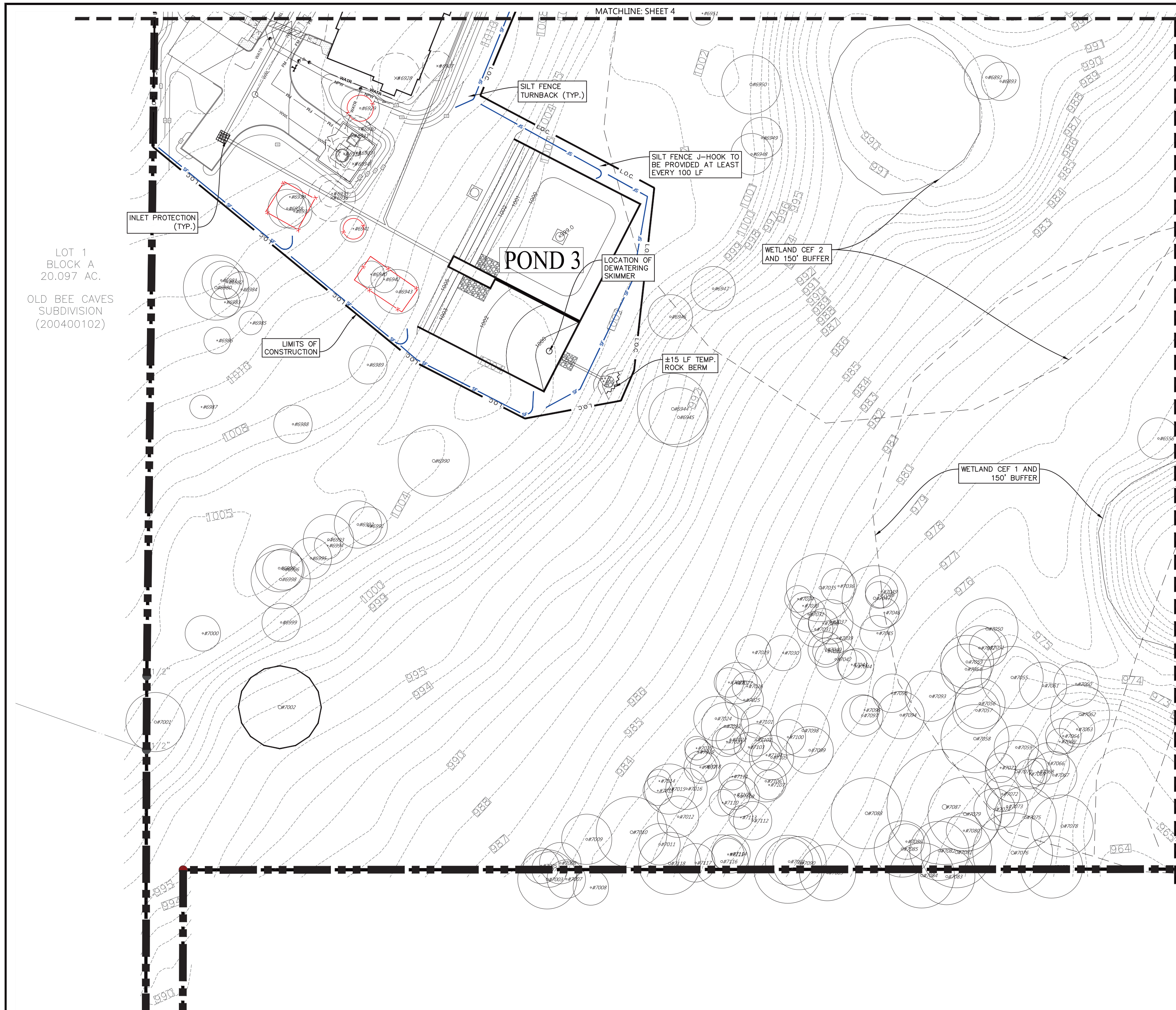

SEE SHEETS 76-77, 92-94 FOR EXISTING TREE LIST AND SHEETS 47, 95-97 FOR WATER QUALITY IRRIGATION LIMITS OF CONSTRUCTION AND NOTES

SCALE IN FEET 40 20 0 40

LEGEND

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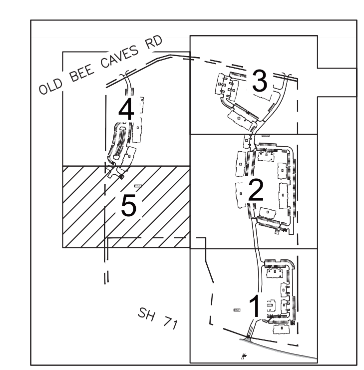
11. CONTRACTOR SHALL UTILIZE DUST CONTROL MEASURES DURING SITE CONSTRUCTION SUCH AS IRRIGATION TRUCKS AND MULCHING AS PER ECM 1.4.5(A), OR AS DIRECTED BY THE ENVIRONMENTAL INSPECTOR.
12. THE CONTRACTOR WILL CLEAN UP SPOILS THAT MIGRATE ONTO THE ROADS A MINIMUM OF ONCE DAILY. [ECM 1.4.4.D.4]
13. ROWS OF INTERNAL SILT FENCE MAY BE REMOVED ONCE PAVEMENT/ STORM INLETS ARE INSTALLED AND THE WATER QUALITY AND DETENTION FACILITIES ARE FUNCTIONING.
14. ONCE GRADING ACTIVIES ARE COMPLETE, REVEGETATION SHALL OCCUR IMMEDIATELY ACCORDING TO THE REQUIREMENTS FOUND IN THE ECM APPENDIX P-1 NOTES, TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION.
15. ALL DISTURBED AREAS TO BE REVEGETATED ARE REQUIRED TO HAVE A MINIMUM OF SIX (6) INCHES OF TOPSOIL. TOPSOIL SHALL MEET THE DEFINITION IN STANDARD SPECIFICATION 601S.3. IN AREAS WHERE NO TOPSOIL EXISTS, OR WHERE TOPSOIL IS NEEDED FOR VEGETATIVE ESTABLISHMENT, THE SUBGRADE SHALL BE LOOSENED BY DISCING OR SCARIFYING TO A DEPTH OF AT LEAST TWO (2) INCHES PRIOR TO PLACEMENT OF SIX (6) INCHES OF TOPSOIL. [ECM 1.4.7, APPENDIX P-1]
16. PERMANENT VEGETATIVE STABILIZATION OF AREAS DISTURBED BY CONSTRUCTION SHALL BE PER ECM APPENDIX P-1, UNLESS OTHERWISE INDICATED ON THE PLAN
17. FOR PARKING-LOT ISLANDS, MEDIANS, PENINSULAS, AND SIMILAR LANDSCAPE AREAS THAT ARE TO RECEIVE PARKING-LOT STORMWATER RUNOFF, FINISHED ELEVATION MUST BE AT LEAST SIX (6) INCHES BELOW THE FINISHED CURB ELEVATION TO ALLOW FOR PLACEMENT OF SIX (6) INCHES OF TOPSOIL [ECM 1.4.7]."

KEY MAP



TREE PROTECTION NOTES:

1. TREE PROTECTION FENCING IS REQUIRED FOR ALL TREES WITHIN THE LIMITS OF CONSTRUCTION ON SITE BEFORE DEMOLITION OCCURS.
   - 1.1. WHERE FENCING CANNOT BE PLACED TO PROTECT THE EXTENT OF THE CRZ WITH NATURAL GROUND COVER, PROVIDE AN 8" LAYER OF ORGANIC HARDWOOD MULCH OUTSIDE OF THE FENCING.
   - 1.1. WHEN MULCH IS USED AS AN ALTERNATIVE PROTECTION WITHIN THE HALF CRITICAL ROOT ZONE IT SHALL BE TOPPED BY DECKING (3/4-INCH PLYWOOD) TO PROVIDE ADDITIONAL PROTECTION AGAINST COMPACTION DURING CONSTRUCTION.
   - 1.2. IF FENCING IS LOCATED 5' OR LESS FROM THE TRUNKC, 2X4X6 OR THICKER LUMBER SHALL BE STRAPPED VERTICALLY TO THE TREE TREE TRUNK PER STD. DETAIL 610S-4.
2. WHERE DEMOLISHING EXISTING STRUCTURES, REMOVING UTILITIES, AND/OR REMOVING FLATWORK WITHIN THE CRZS OF TREES 8" OR GREATER IN DIAMETER,
3. IF PRUNING IS NECESSARY DURING DEMOLITION, IT SHOULD TAKE PLACE PRIOR TO THE START OF THE DEMOLITION PROCESS. IT MUST BE PERFORMED BY A QUALIFIED ARBORIST AND NO MORE THAN 25% IS PERMITTED.
4. PRIOR TO EXCAVATION WITHIN TREE DRIPLINES OR THE REMOVAL OF TREES ADJACENT TO OTHER TREES THAT ARE TO REMAIN, MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT TO MINIMIZE ROOT DAMAGE.
5. PERFORM ALL PROPOSED GRADING WITHIN CRITICAL ROOT ZONE BY HAND OR SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION

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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EROSION AND SEDIMENTATION CONTROL AND TREE PROTECTION PLAN SHEET 5

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 13 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\09 ESC.dwg LAYOUT: 5 PLOT DATE:
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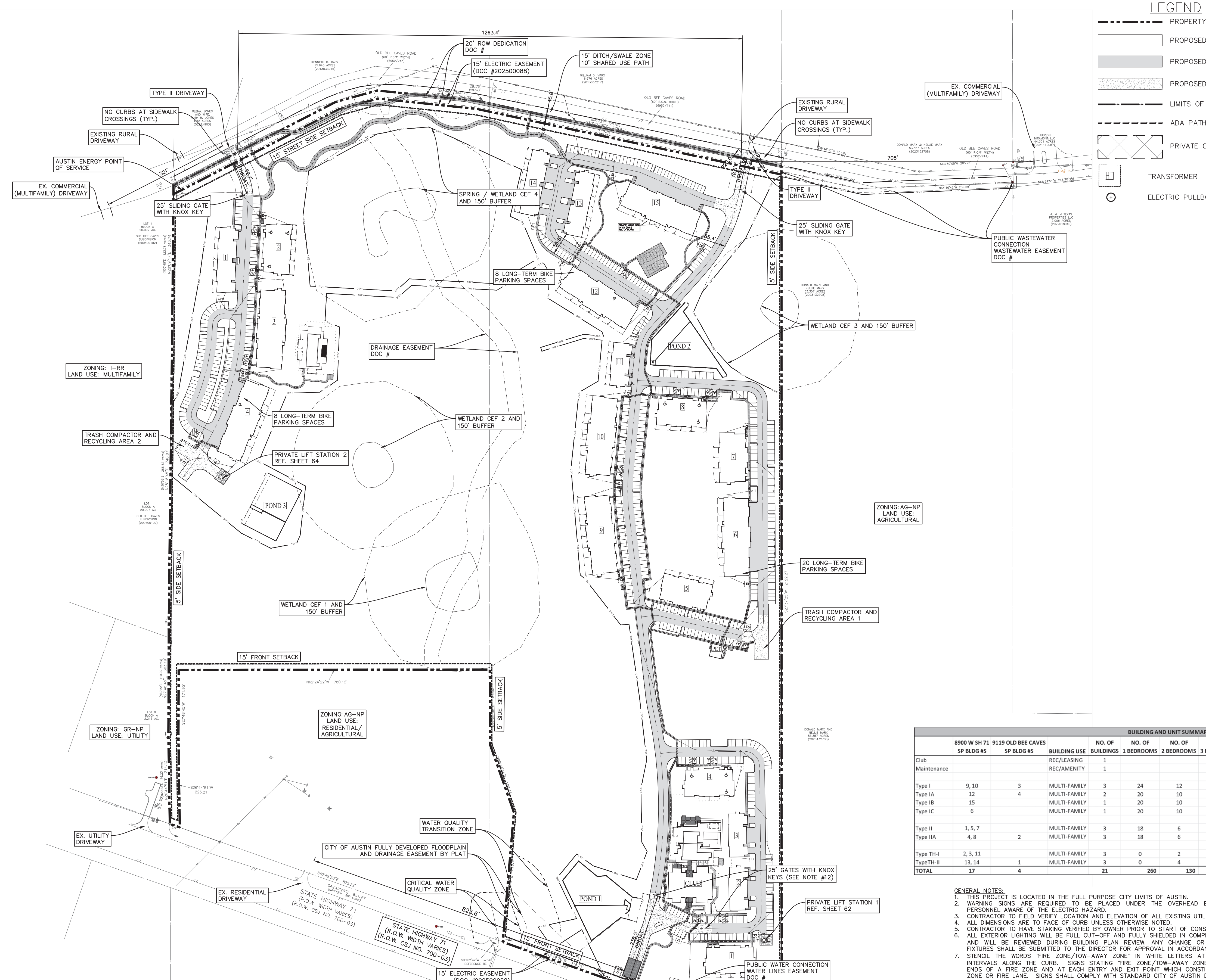

SITE DATA SUMMARY TABLE		
ZONING	MF-4-NP	
PROPERTY AREA	2,642,560	SF
	60.7	AC
20' ROW DEDICATION (OLD BEE CAVES RD)	31,958	SF
	0.73	AC
GROSS SITE AREA (GSA)	2,610,601	SF
	59.9	AC
NET SITE AREA (NSA)	57.5	AC
LIMITS OF CONSTRUCTION	43.6	AC
WATERSHED	WILLIAMSON CREEK	
WATERSHED TYPE	BARTON SPRINGS ZONE	
BUILDING USE	MF RESIDENTIAL	
BUILDING COVERAGE	204,087	SF
BUILDING COVERAGE (60% MAX)	8%	
TOTAL BUILDING GROSS SQUARE FOOTAGE	496,006	SF
BUILDING FAR (.75:1 MAX)	.19:1	
FOUNDATION TYPE	SLAB ON GRADE	
NO. OF UNITS	**402**	
1 BEDROOM	260	UNITS
2 BEDROOM	130	UNITS
3 BEDROOM	12	UNITS
TOTAL # OF BEDROOMS	556	
DENSITY	6.7	UNITS/ACRE
OPEN SPACE REQUIRED (5% GSA)	130,530	SF
	3.0	ACRES
OPEN SPACE PROVIDED (2.7.3.A.1, 2, 6 & 9)	193,379	SF
	4.4	ACRES
	7%	
PROPOSED IMPERVIOUS COVER	**558,560**	**SF**
	12.8	**AC**
	21%	
BUILDING COVERAGE (+ Roof Overhang)	204,087	SF
PAVING	290,187	SF
SIDEWALKS / PEDESTRIAN HARDSCAPE	53,775	SF
POOL HARDSCAPE	10,512	SF
ALLOWABLE IC (25% NSA)	**14.36**	**AC**
REMAINING ALLOWABLE IC	**67,121**	**SF**
PUBLIC SIDEWALK*	15,558	SF
SH 71 TURN LANE*	5,436	SF
*Public IC not counted in total per LDC 25-8-63(C)		
PARKING PROVIDED	**683**	**SPOTS**
	549	STANDARD
	111	GARAGE - STD
	2	GARAGE - ADA
	21	ADA
PARKING WITH ADJACENT SIDEWALK (50% MIN)	455	67%
BICYCLE REQUIRED (10% OF PROVIDED PARKING)	69	
SHORT TERM BICYCLE PROVIDED (30%-50% REQ)	64	93%
LONG TERM BICYCLE PROVIDED (50%-70% REQ)*	36	52%
TOTAL BICYCLE PROVIDED	**100**	
***SEE SHEETS 81-83 FOR LONG-TERM PARKING DETAILS**		
SITE AREA DENSITY REQUIREMENTS:		
1,000 SF SITE AREA/1 BEDROOMS (260):	260,000	SF
1,200 SF SITE AREA/2+ BEDROOMS (142):	170,400	SF
TOTAL SITE AREA REQUIRED	430,400	SF
TOTAL SITE AREA PROVIDED	2,610,601	SF
CONNECTIVITY PROVIDED (§2.3.1.B)		
1) Limit Curb cuts		
2) Provide secure indoor bicycle storage in building or parking structure.		

BUILDING AND UNIT SUMMARY - MARX MULTIFAMILY (6/25/2025)

	8900 W SH 71 SP BLDG #S	9119 OLD BEE CAVES SP BLDG #S	BUILDING USE	NO. OF BUILDINGS	NO. OF 1 BEDROOMS	NO. OF 2 BEDROOMS	NO. OF 3 BEDROOMS	TOTAL UNITS	HEIGHT (FT)	BUILDING COVERAGE (SF)	GROSS AREA (SF)	CONSTRUCTION TYPE	SPRINKLER TYPE	REQ. FIRE FLOW (GPM)	REDUCED FIRE FLOW (GPM)
Club			REC/LEASING	1					27'-1"	9,901	8,953	V-B	None	2,500	2,500
Maintenance			REC/AMENITY	1					15'-0"	1,138	1,416	V-B	None	1,500	1,500
Type I	9, 10	3	MULTI-FAMILY	3	24	12	0	108	38'-2"	13,961	38,582	V-A	NFPA 13R	3,500	1,500
Type IA	12	4	MULTI-FAMILY	2	20	10	0	60	38'-2"	13,936	38,520	V-A	NFPA 13R	3,500	1,500
Type IB	15		MULTI-FAMILY	1	20	10	0	30	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500
Type IC	6		MULTI-FAMILY	1	20	10	0	30	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500
Type II	1, 5, 7		MULTI-FAMILY	3	18	6	0	72	38'-6"	9,186	24,946	V-A	NFPA 13R	2,750	1,500
Type IIA	4, 8	2	MULTI-FAMILY	3	18	6	0	72	38'-6"	9,186	24,992	V-A	NFPA 13R	2,750	1,500
Type TH-I	2, 3, 11		MULTI-FAMILY	3	0	2	2	12	28-6"	5,407	8,781	V-A	NFPA 13R	1,750	1,500
TypeTH-II	13, 14	1	MULTI-FAMILY	3	0	4	2	18	28'-9"	8,036	13,218	V-A	NFPA 13R	2,250	1,500
TOTAL	**17**	**4**		**21**	**260**	**130**	**12**	**402**		**204,087**	**496,006**				

GENERAL NOTES:

1. THIS PROJECT IS LOCATED IN THE FULL PURPOSE CITY LIMITS OF AUSTIN.
2. WARNING SIGNS ARE REQUIRED TO BE PLACED UNDER THE OVERHEAD ELECTRIC LINES TO MAKE ALL PERSONNEL AWARE OF THE ELECTRIC HAZARD.
3. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO HAVE STAKING VERIFIED BY OWNER PRIOR TO START OF CONSTRUCTION.
6. ALL EXTERIOR LIGHTING WILL BE FULL CUT-OFF AND FULLY SHIELDED IN COMPLIANCE WITH SUBCHAPTER E 2.5 AND WILL BE REVIEWED DURING BUILDING PLAN REVIEW. ANY CHANGE OR SUBSTITUTION OF LAMP/LIGHT FIXTURES SHALL BE SUBMITTED TO THE DIRECTOR FOR APPROVAL IN ACCORDANCE WITH SECTION 2.5.2.E.
7. STENCIL THE WORDS "FIRE ZONE/TOW-AWAY ZONE" IN WHITE LETTERS AT LEAST 3" HIGH AT 35 FOOT INTERVALS ALONG THE CURB. SIGNS STATING "FIRE ZONE/TOW-AWAY ZONE" SHALL BE POSTED AT BOTH ENDS OF A FIRE ZONE AND AT EACH ENTRY AND EXIT POINT WHICH CONSTITUTES A PORTION OF THE FIRE ZONE OR FIRE LANE. SIGNS SHALL COMPLY WITH STANDARD CITY OF AUSTIN DETAIL 901S-6.
8. SCREENING FOR SOLID WASTE COLLECTION AND LOADING AREAS SHALL BE THE SAME AS, OR OF EQUAL QUALITY TO, PRINCIPAL BUILDING MATERIALS
9. CONTRACTOR SHALL NOT PAVE OVER ANY AW SURFACE FEATURES (MANHOLE COVERS, VALVES, ETC.) WHICH WOULD HINDER LONG-TERM OPERATIONS & MAINTENANCE OF SAID FACILITIES.
10. APPROVAL OF THESE PLANS BY THE CITY OF AUSTIN INDICATES COMPLIANCE WITH APPLICABLE CITY REGULATIONS ONLY. COMPLIANCE WITH ACCESSIBILITY STANDARDS SUCH AS THE 2010 STANDARDS FOR ACCESSIBLE DESIGN OR THE 2012 TEXAS ACCESSIBILITY STANDARDS WAS NOT VERIFIED. THE APPLICANT IS RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE ACCESSIBILITY STANDARDS.
11. THE USE OF HIGHLY REFLECTIVE SURFACES, SUCH AS REFLECTIVE GLASS AND REFLECTIVE METAL ROOFS, WHOSE PITCH IS MORE THAN A RUN OF SEVEN (7) TO A RISE OF TWELVE (12), WILL BE PROHIBITED.
12. MOTOR-OPERATED GATES OR BARRICADES INSTALLED ACROSS FIRE ACCESS ROADWAYS SHALL BE EQUIPPED WITH GATE OPERATORS COMPLYING WITH UL 325. GATES OR BARRICADES SHALL COMPLY WITH ASTM F2200. AN APPROVED MEANS OF OPENING THE MOTOR-OPERATED GATE IN THE EVENT UTILITY POWER IS LOST OR DISCONNECTED IS REQUIRED. AN APPROVED FIRE DEPARTMENT KEY SWITCH, INSTALLED AT AN APPROVED LOCATION, SHALL BE PROVIDED TO OVERRIDE ANY ACCESS CONTROL FEATURE. THE GATE SHALL OPEN THE FULL WIDTH OF THE FIRE LANE AND SHALL REMAIN OPEN UNTIL THE KEY SWITCH HAS BEEN DEACTIVATED.

CITY OF AUSTIN SITE PLAN RELEASE NOTES:

a. ALL IMPROVEMENTS SHALL BE MADE IN ACCORDANCE WITH THE RELEASED SITE PLAN. ANY ADDITIONAL IMPROVEMENTS WILL REQUIRE SITE PLAN AMENDMENT AND APPROVAL OF THE DEVELOPMENT SERVICES DEPARTMENT.
b. APPROVAL OF THIS SITE PLAN DOES NOT INCLUDE BUILDING CODE AND FIRE CODE APPROVAL NOR BUILDING PERMIT APPROVAL.
c. ALL SIGNS MUST COMPLY WITH REQUIREMENTS OF THE LAND DEVELOPMENT CODE (CHAPTER 25-10).
d. ADDITIONAL ELECTRIC EASEMENTS MAY BE REQUIRED AT A LATER DATE.
e. WATER AND WASTEWATER SERVICE WILL BE PROVIDED BY THE CITY OF AUSTIN.
f. ALL EXISTING STRUCTURES SHOWN TO BE REMOVED WILL REQUIRE A DEMOLITION PERMIT FROM THE CITY OF AUSTIN DEVELOPMENT SERVICES DEPARTMENT.
e. A DEVELOPMENT PERMIT MUST BE ISSUED PRIOR TO AN APPLICATION FOR BUILDING PERMIT FOR NON-CONSOLIDATED (A) OR PLANNING COMMISSION APPROVED SITE PLANS.
f. FOR DRIVEWAY CONSTRUCTION: THE OWNER IS RESPONSIBLE FOR ALL COSTS FOR RELOCATION OF, OR DAMAGE TO UTILITIES.
g. FOR CONSTRUCTION WITHIN THE RIGHT-OF-WAY, A ROW EXCAVATION PERMIT IS REQUIRED.

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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

SITE PLAN

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\14 SITE PLAN.dwg LAYOUT: SITE PLOT DATE: 9/2/2025 11:10am PLOTTED BY: mered
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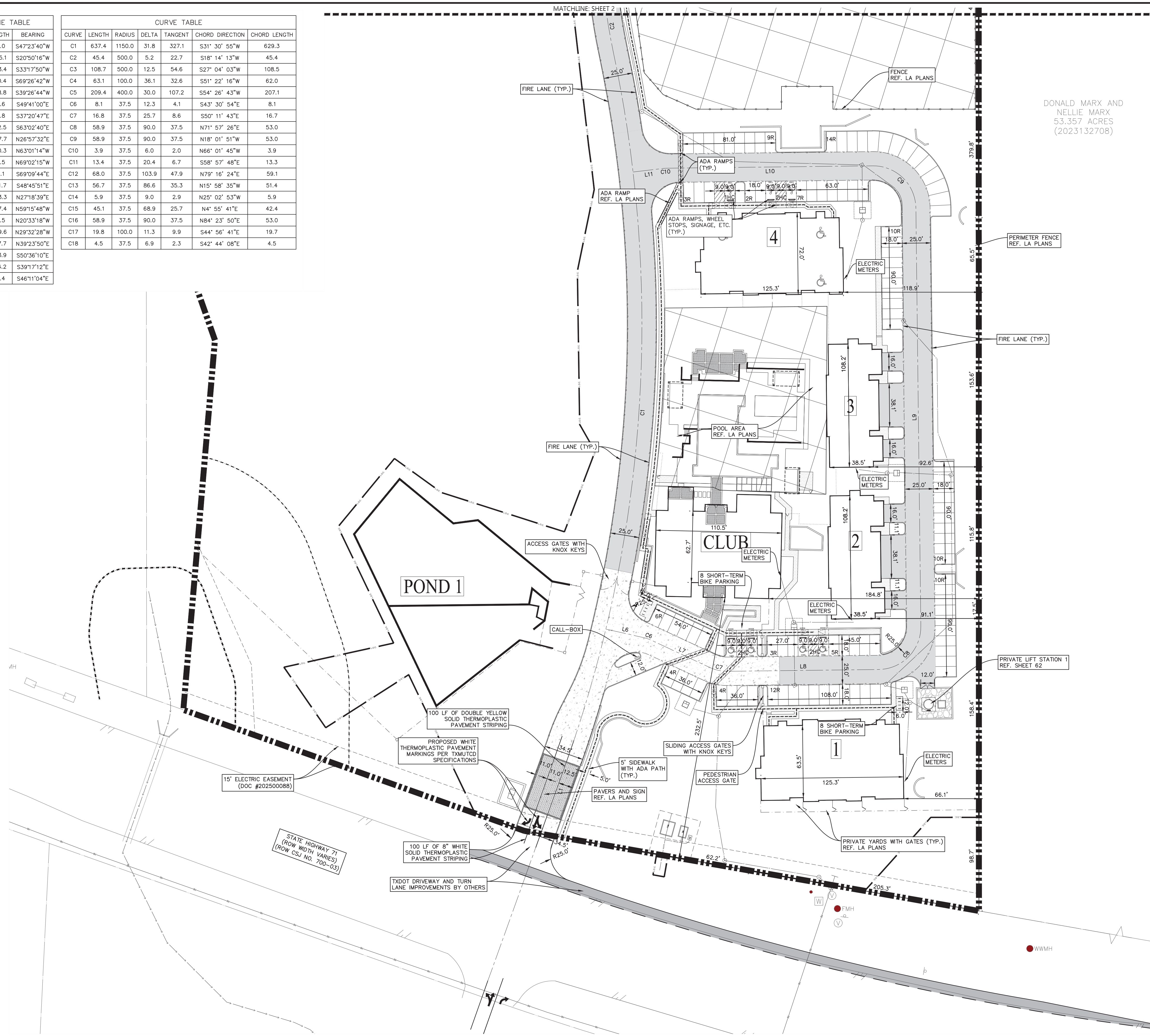
SITE AND DIMENSION CONTROL PLAN SHEET 1

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

LINE TABLE		
LINE	LENGTH	BEARING
L1	63.0	S47°23'40"W
L2	455.1	S20°50'16"W
L3	303.4	S33°17'50"W
L4	190.4	S69°26'42"W
L5	128.8	S39°26'44"W
L6	33.6	S49°41'00"E
L7	55.8	S37°20'47"E
L8	132.5	S63°02'40"E
L9	367.7	N26°57'32"E
L10	180.3	N63°01'14"W
L11	26.5	N69°02'15"W
L12	31.1	S69°09'44"E
L13	221.7	S48°45'51"E
L14	553.3	N27°18'39"E
L15	277.4	N59°15'48"W
L16	37.5	N20°33'18"W
L17	279.6	N29°32'28"W
L18	137.7	N39°23'50"E
L19	143.9	S50°36'10"E
L20	164.2	S39°17'12"E
L21	79.4	S46°11'04"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	637.4	1150.0	31.8	327.1	S31° 30' 55"W	629.3
C2	45.4	500.0	5.2	22.7	S18° 14' 13"W	45.4
C3	108.7	500.0	12.5	54.6	S27° 04' 03"W	108.5
C4	63.1	100.0	36.1	32.6	S51° 22' 16"W	62.0
C5	209.4	400.0	30.0	107.2	S54° 26' 43"W	207.1
C6	8.1	37.5	12.3	4.1	S43° 30' 54"E	8.1
C7	16.8	37.5	25.7	8.6	S50° 11' 43"E	16.7
C8	58.9	37.5	90.0	37.5	N71° 57' 26"E	53.0
C9	58.9	37.5	90.0	37.5	N18° 01' 51"W	53.0
C10	3.9	37.5	6.0	2.0	N66° 01' 45"W	3.9
C11	13.4	37.5	20.4	6.7	S58° 57' 48"E	13.3
C12	68.0	37.5	103.9	47.9	N79° 16' 24"E	59.1
C13	56.7	37.5	86.6	35.3	N15° 58' 35"W	51.4
C14	5.9	37.5	9.0	2.9	N25° 02' 53"W	5.9
C15	45.1	37.5	68.9	25.7	N4° 55' 41"E	42.4
C16	58.9	37.5	90.0	37.5	N84° 23' 50"E	53.0
C17	19.8	100.0	11.3	9.9	S44° 56' 41"E	19.7
C18	4.5	37.5	6.9	2.3	S42° 44' 08"E	4.5



SCALE IN FEET
40 20 0 40

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE
- PROPOSED MEDIUM DUTY CONCRETE
- PROPOSED HEAVY DUTY CONCRETE
- LIMITS OF CONSTRUCTION
- ADA PATH
- PRIVATE COMMON OPEN SPACE
- TRANSFORMER
- ELECTRIC PULLBOX

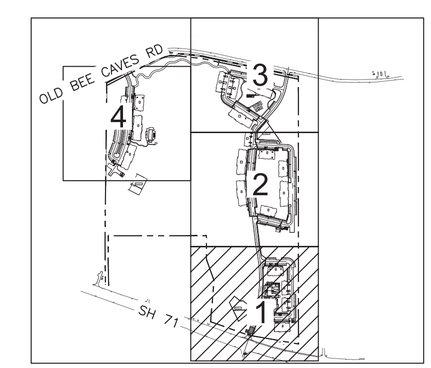
GENERAL NOTES:

1. ALL PARKING SPACES SHALL HAVE MINIMUM 7'–0" VERTICAL CLEARANCE.
2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14'–0" VERTICAL CLEARANCE.
4. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS TO BE 5' WIDE FROM FACE OF CURB UNLESS OTHERWISE NOTED.
6. SEE PROJECT SITE PLAN SHEET FOR ADDITIONAL NOTES.

PARKING TERMS:

R REGULAR SPOT 9.0'x18'
HC HANDICAP ACCESSIBLE

KEY MAP



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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

Scale: AS SHOWN
Designed by:
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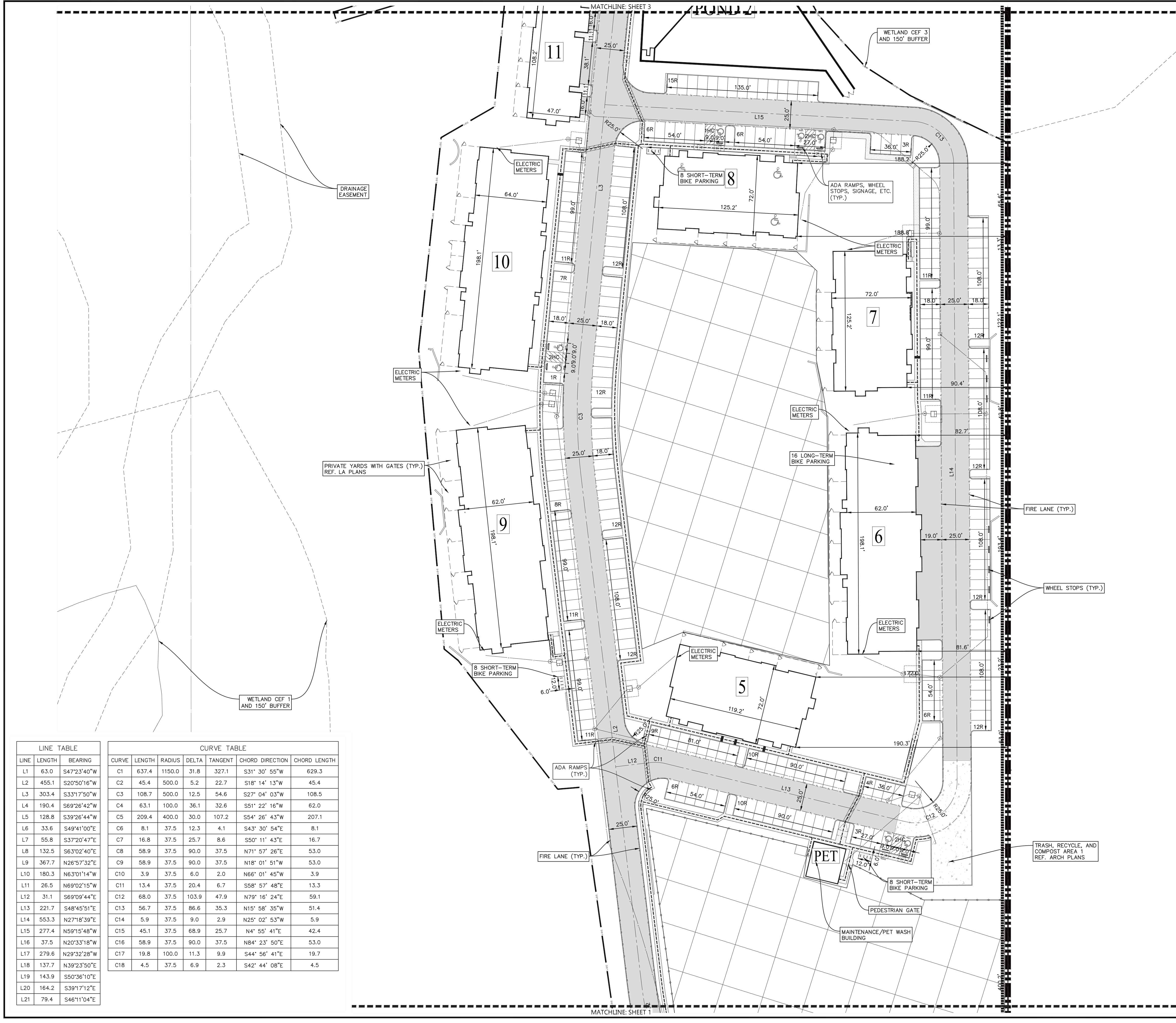
SHEET 15 OF 113

SP-2025-0080C



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C6	8.1	37.5	12.3	4.1	S43° 30' 54"E	8.1
C7	16.8	37.5	25.7	8.6	S50° 11' 43"E	16.7
C8	58.9	37.5	90.0	37.5	N71° 57' 26"E	53.0
C9	58.9	37.5	90.0	37.5	N18° 01' 51"W	53.0
C10	3.9	37.5	6.0	2.0	N66° 01' 45"W	3.9
C11	13.4	37.5	20.4	6.7	S58° 57' 48"E	13.3
C12	68.0	37.5	103.9	47.9	N79° 16' 24"E	59.1
C13	56.7	37.5	86.6	35.3	N15° 58' 35"W	51.4
C14	5.9	37.5	9.0	2.9	N25° 02' 53"W	5.9
C15	45.1	37.5	68.9	25.7	N4° 55' 41"E	42.4
C16	58.9	37.5	90.0	37.5	N84° 23' 50"E	53.0
C17	19.8	100.0	11.3	9.9	S44° 56' 41"E	19.7
C18	4.5	37.5	6.9	2.3	S42° 44' 08"E	4.5

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE
- PROPOSED MEDIUM DUTY CONCRETE
- PROPOSED HEAVY DUTY CONCRETE
- LIMITS OF CONSTRUCTION
- ADA PATH
- PRIVATE COMMON OPEN SPACE
- TRANSFORMER
- ELECTRIC PULLBOX

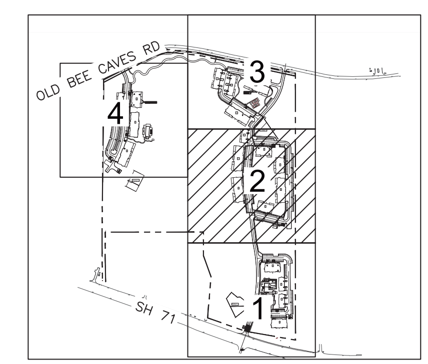
GENERAL NOTES:

1. ALL PARKING SPACES SHALL HAVE MINIMUM 7'–0" VERTICAL CLEARANCE.
2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
3. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14'–0" VERTICAL CLEARANCE.
4. ALL RADII TO BE 3' UNLESS OTHERWISE NOTED.
5. ALL SIDEWALKS TO BE 5' WIDE FROM FACE OF CURB UNLESS OTHERWISE NOTED.
6. SEE PROJECT SITE PLAN SHEET FOR ADDITIONAL NOTES.

PARKING TERMS:

R REGULAR SPOT 9.0'x18'
HC HANDICAP ACCESSIBLE

KEY MAP



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PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

SITE AND DIMENSION CONTROL PLAN
SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

LINE TABLE		
LINE	LENGTH	BEARING
L1	63.0	S47°23'40"W
L2	455.1	S20°50'16"W
L3	303.4	S33°17'50"W
L4	190.4	S69°26'42"W
L5	128.8	S39°26'44"W
L6	33.6	S49°41'00"E
L7	55.8	S37°20'47"E
L8	132.5	S63°02'40"E
L9	367.7	N26°57'32"E
L10	180.3	N63°01'14"W
L11	26.5	N69°02'15"W
L12	31.1	S69°09'44"E
L13	221.7	S48°45'51"E
L14	553.3	N27°18'39"E
L15	277.4	N59°15'48"W
L16	37.5	N20°33'18"W
L17	279.6	N29°32'28"W
L18	137.7	N39°23'50"E
L19	143.9	S50°36'10"E
L20	164.2	S39°17'12"E
L21	79.4	S46°11'04"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C1	637.4	1150.0	31.8	327.1	S31° 30' 55"W	629.3
C2	45.4	500.0	5.2	22.7	S18° 14' 13"W	45.4
C3	108.7	500.0	12.5	54.6	S27° 04' 03"W	108.5
C4	63.1	100.0	36.1	32.6	S51° 22' 16"W	62.0
C5	209.4	400.0	30.0	107.2	S54° 26' 43"W	207.1
C6	8.1	37.5	12.3	4.1	S43° 30' 54"E	8.1
C7	16.8	37.5	25.7	8.6	S50° 11' 43"E	16.7
C8	58.9	37.5	90.0	37.5	N71° 57' 26"E	53.0
C9	58.9	37.5	90.0	37.5	N18° 01' 51"W	53.0
C10	3.9	37.5	6.0	2.0	N66° 01' 45"W	3.9
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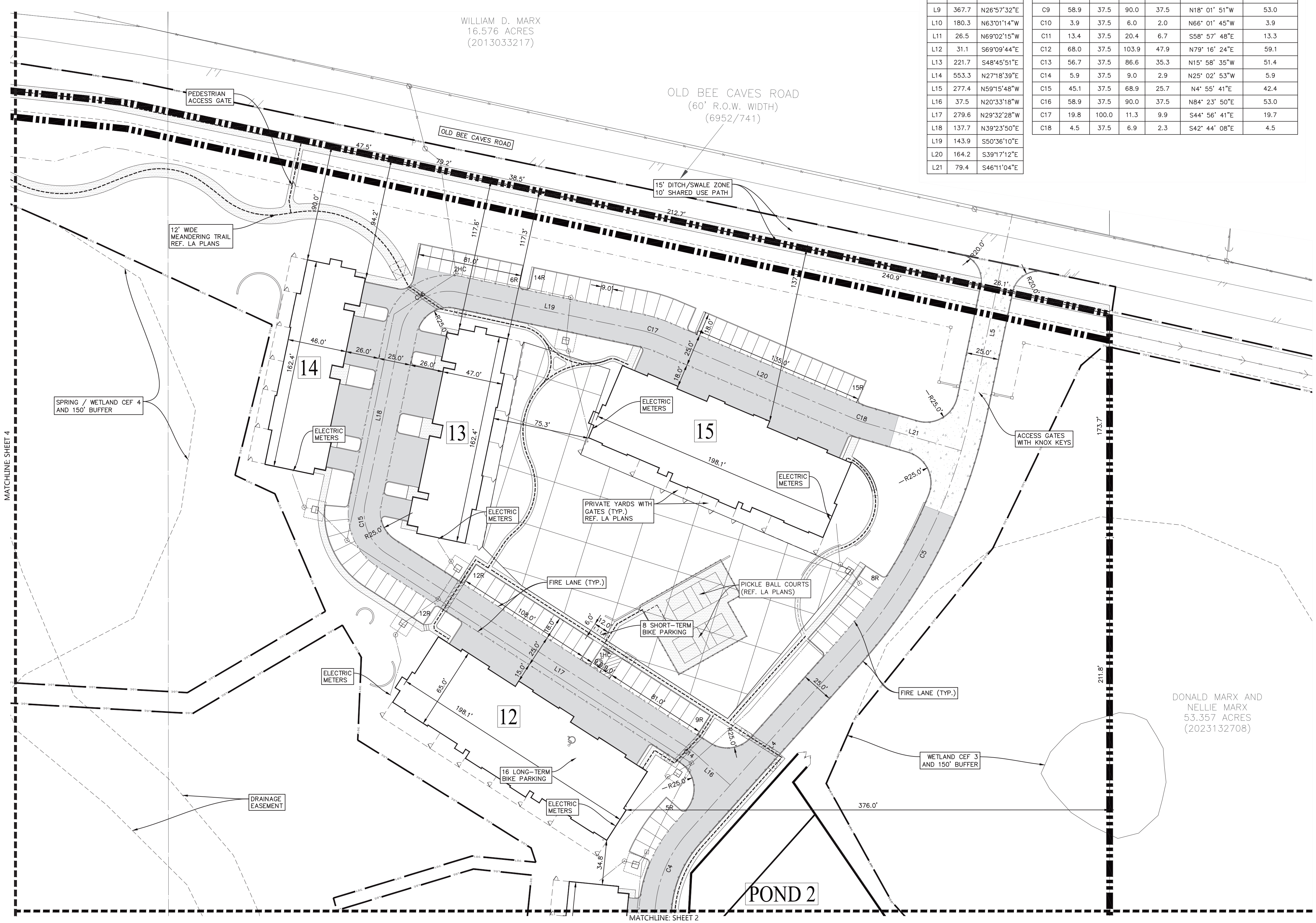
C17	19.8	100.0	11.3	9.9	S44° 56' 41"E	19.7
C18	4.5	37.5	6.9	2.3	S42° 44' 08"E	4.5



SCALE IN FEET
40 20 0 40

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE
- PROPOSED MEDIUM DUTY CONCRETE
- PROPOSED HEAVY DUTY CONCRETE
- LIMITS OF CONSTRUCTION
- ADA PATH
- PRIVATE COMMON OPEN SPACE
- TRANSFORMER
- ELECTRIC PULLBOX

GENERAL NOTES:

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3. ALL FIRE DEPARTMENT ACCESS DRIVES/ROADS TO HAVE A MINIMUM 14'–0" VERTICAL CLEARANCE.
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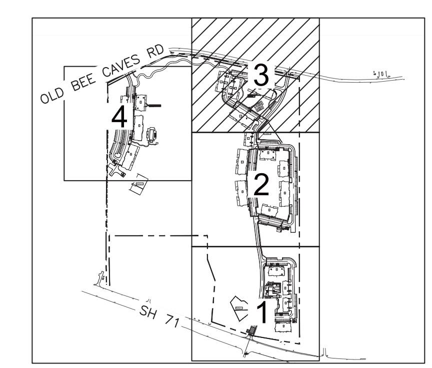
6. SEE PROJECT SITE PLAN SHEET FOR ADDITIONAL NOTES.

KEY MAP



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LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
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AUSTIN, TX 78735

SITE AND DIMENSION CONTROL PLAN
SHEET 3

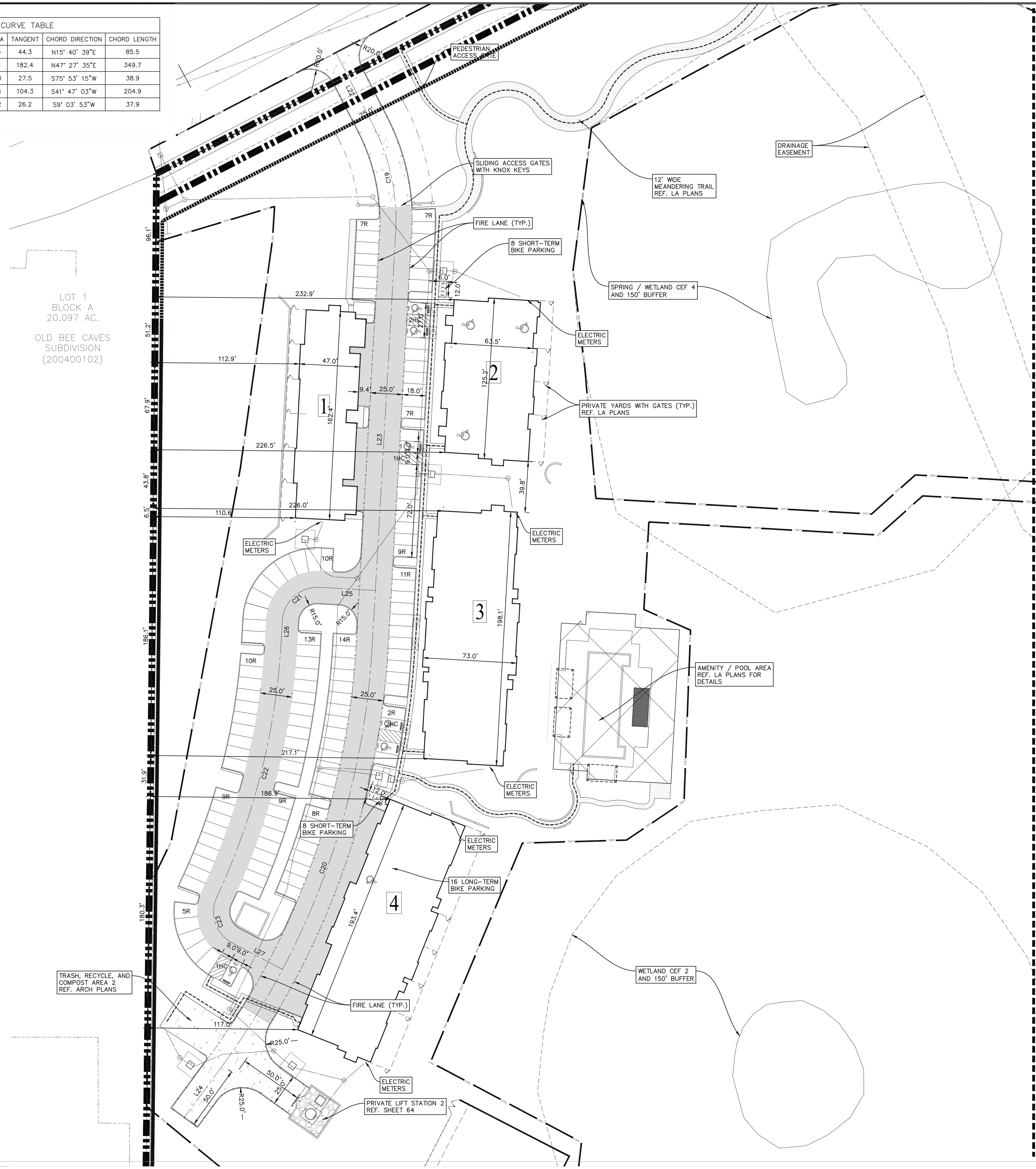
Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
17
OF 113

SP-2025-0080C

LINE TABLE		
LINE	LENGTH	BEARING
L22	63.2	N0°28'02"E
L23	323.7	N30°53'15"E
L24	46.6	N64°01'55"E
L25	43.5	N59°06'45"W
L26	16.5	S30°53'15"W
L27	44.2	S34°33'05"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD DIRECTION	CHORD LENGTH
C19	86.5	163.0	30.4	44.3	N15° 40' 39"E	85.5
C20	354.6	613.0	33.1	182.4	N47° 27' 35"E	349.7
C21	43.2	27.5	90.0	27.5	S75° 53' 15"W	38.9
C22	206.2	542.0	21.8	104.3	S41° 47' 03"W	204.9
C23	41.9	27.5	87.2	26.2	S9° 03' 53"W	37.9



SCALE IN FEET

40 20 0 40

LEGEND

- PROPERTY BOUNDARY
- PROPOSED LIGHT DUTY CONCRETE
- PROPOSED MEDIUM DUTY CONCRETE
- PROPOSED HEAVY DUTY CONCRETE
- LIMITS OF CONSTRUCTION
- ADA PATH
- PRIVATE COMMON OPEN SPACE
- TRANSFORMER
- ELECTRIC PULLBOX

GENERAL NOTES:

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2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
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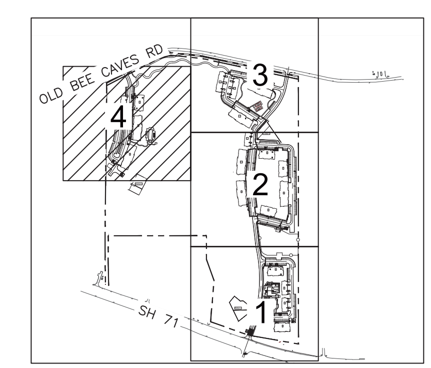
6. SEE PROJECT SITE PLAN SHEET FOR ADDITIONAL NOTES.

KEY MAP



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MARX MULTIFAMILY
8900 W STATE HWY 71
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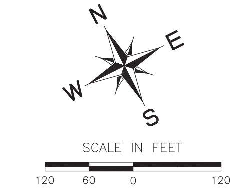
SITE AND DIMENSION CONTROL PLAN SHEET 4

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C



PHASING NOTES:

1. PUBLIC WASTEWATER EXTENSIONS IN OLD BEE CAVES ROAD, POND 1 AND 2 DETENTION / WATER QUALITY FACILITIES, LIFT STATION 1, AND ALL PHASE 1–16 FIRE LANES WITH THEIR UNDERGROUND PRIVATE STORM, WASTEWATER AND WATER IMPROVEMENTS (INCLUDING FIRE HYDRANTS) SHALL BE CONSTRUCTED IN PHASE 1.
2. POND 3 DETENTION / WATER QUALITY FACILITIES, LIFT STATION 2, AND ALL PHASE 17–20 FIRE LANES WITH THEIR UNDERGROUND PRIVATE STORM, WASTEWATER AND WATER IMPROVEMENTS (INCLUDING FIRE HYDRANTS) SHALL BE CONSTRUCTED IN PHASE 17.
3. ALL PARKING, INCLUDING ADA, SHALL BE COMPLETED IN THE PHASE AS SHOWN.
4. ALL REQUIRED LANDSCAPING TREES/SCREENING SHOWN WITHIN THE LANDSCAPE PLANS SHALL BE INSTALLED IN THE PHASE WHICH THEY ARE LOCATED.

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8/28/2025

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PHASING PLAN

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
19
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\19 PHASING.dwg LAYOUT: SITE PLOTTED BY: meted
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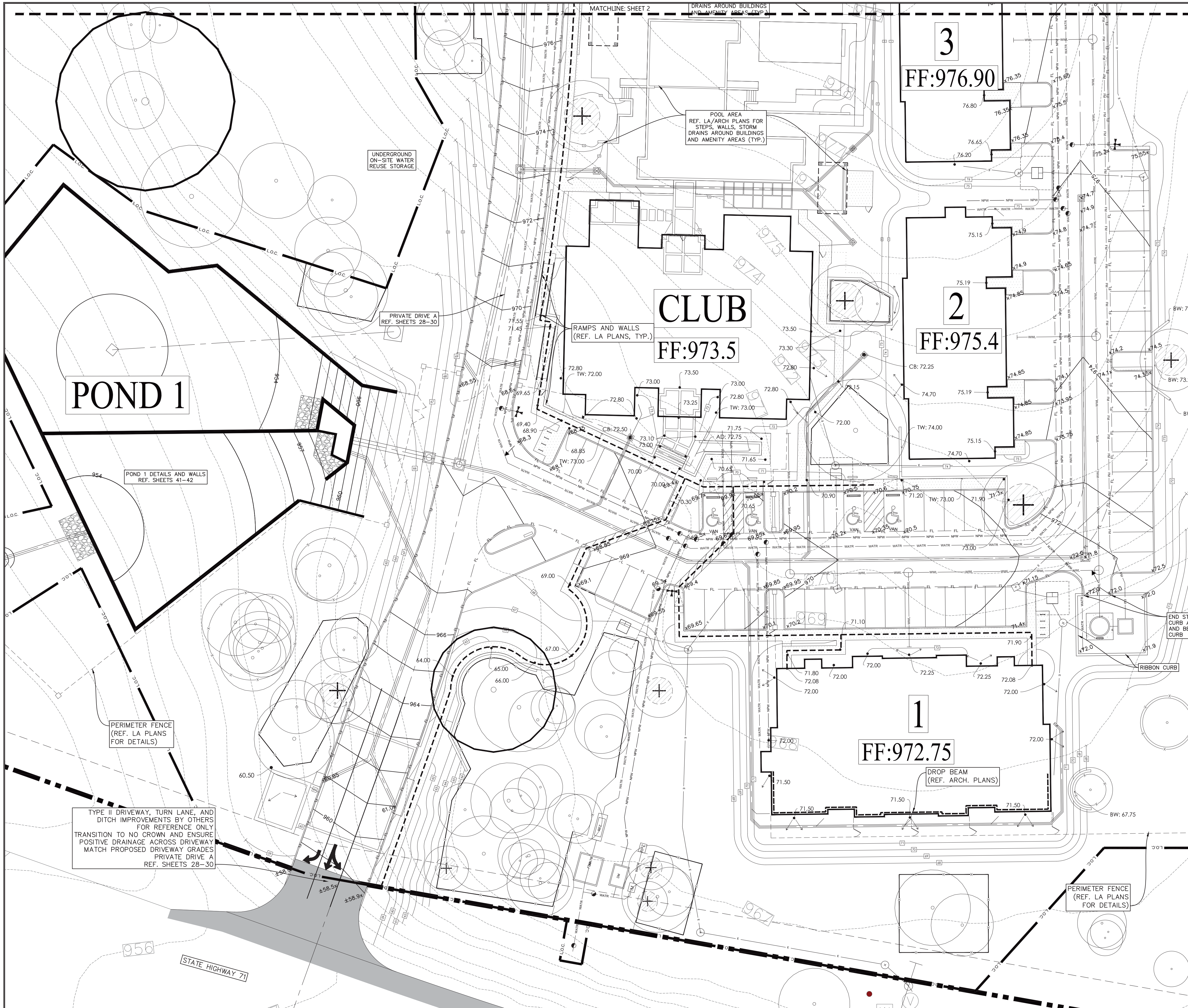

N E S W

SCALE IN FEET

20 10 0 20

LEGEND

	PROPERTY BOUNDARY
	ADA PATH
520	EXISTING CONTOUR
520	PROPOSED CONTOUR
x27.1	PROPOSED SPOT GRADE
HP	PROPOSED HIGH POINT
	TREE PROTECTION
W	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
WW	EXIST. WASTEWATER MAIN
WATR	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
WWL	PROP. WASTEWATER
FM	PROP. FORCE MAIN
	PROP. STORM LINE
E	PROP. UNDERGROUND ELECTRIC
	PROP. ELECTRIC PULLBOX
	ELECTRIC TRANSFORMER

NOTES:

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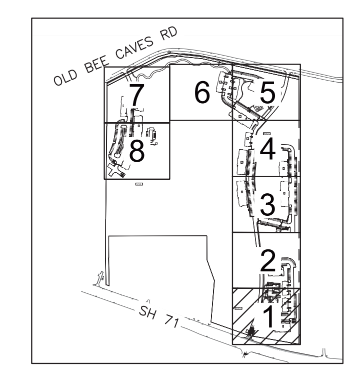
2. SLOPES ON ACCESSIBLE ROUTES MAY NOT EXCEED 1:20 UNLESS DESIGNED AS A RAMP.
3. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION IS 1:12. THE MAXIMUM RISE FOR ANY RAMP RUN IS 30 INCHES.
4. GROUND SURFACES ALONG ACCESSIBLE ROUTES MUST BE STABLE, FIRM, AND SLIP RESISTANT.
5. CONTRACTOR TO MATCH EXISTING GRADE, GUTTER, AND ASPHALT WHEN TYING IN TO EXISTING ROADWAYS.
6. ALL SLOPES WITHIN ACCESSIBLE PARKING AREAS SHALL NOT EXCEED 2.0% (1:50) IN ALL DIRECTIONS. ALL SLOPES ALONG ACCESSIBLE ROUTES SHALL NOT EXCEED 5.0% LONGITUDINALLY AND 2.0% IN CROSS-SLOPE.
7. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION AND TO ENSURE AC PADS DO NOT BLOCK DRAINAGE.
8. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING WITHIN HARDSCAPE AND LANDSCAPING AROUND BUILDINGS.
9. CONTRACTOR TO COORDINATE FINAL HARDSCAPE PLANS WITH LANDSCAPE PLANS.
10. CONTRACTOR TO REFER TO STRUCTURAL AND LANDSCAPE DRAWINGS FOR WALL DETAILS.
11. CONTRACTOR TO INCLUDE HAND RAILS AS NEEDED AND DETAILED BY LANDSCAPE OR ARCHITECT DRAWINGS.
12. ONCE GRADING ACTIVES ARE COMPLETE, REVEGETATION SHALL OCCUR IMMEDIATELY ACCORDING TO THE REQUIREMENTS FOUND IN THE ECM APPENDIX P-1 NOTES, TABLE 2: HYDROMULCHING FOR PERMANENT VEGETATIVE STABILIZATION.

KEY MAP



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8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
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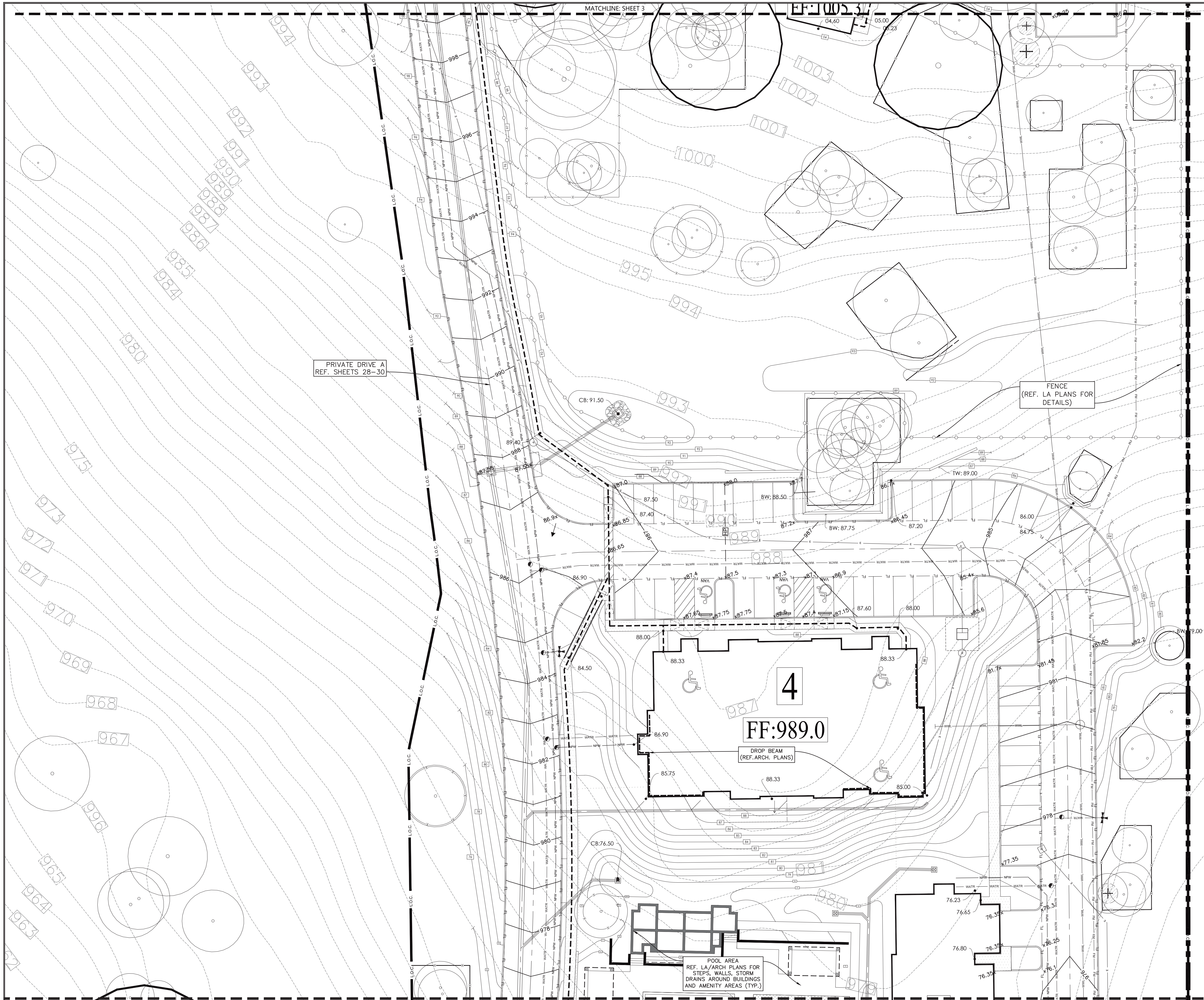
GRADING PLAN
SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C



SCALE IN FEET

20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- ADA PATH
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- PROPOSED HIGH POINT
- TREE PROTECTION
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE
- PROP. UNDERGROUND ELECTRIC
- PROP. ELECTRIC PULLBOX
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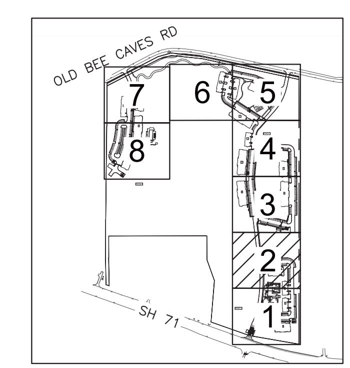
KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
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LICENSED PROFESSIONAL ENGINEER

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

GRADING PLAN
SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 21 OF 113

SP–2025–0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\20 GRADING.dwg LAYOUT: 02 PLOT DATE: 8/
XREFS: x2436 xgis xgis_topo 1856–002–10 AC xsurvey_360PSI xsite xLA xtrees xsite_contours xarch

SCALE IN FEET

20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- ADA PATH
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT GRADE
- PROPOSED HIGH POINT
- TREE PROTECTION
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
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- ELECTRIC TRANSFORMER

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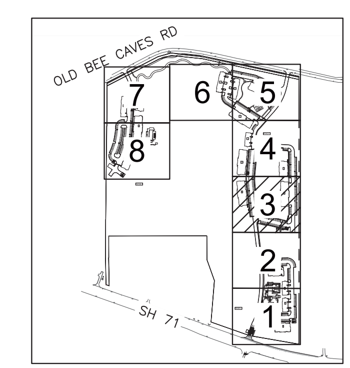
KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

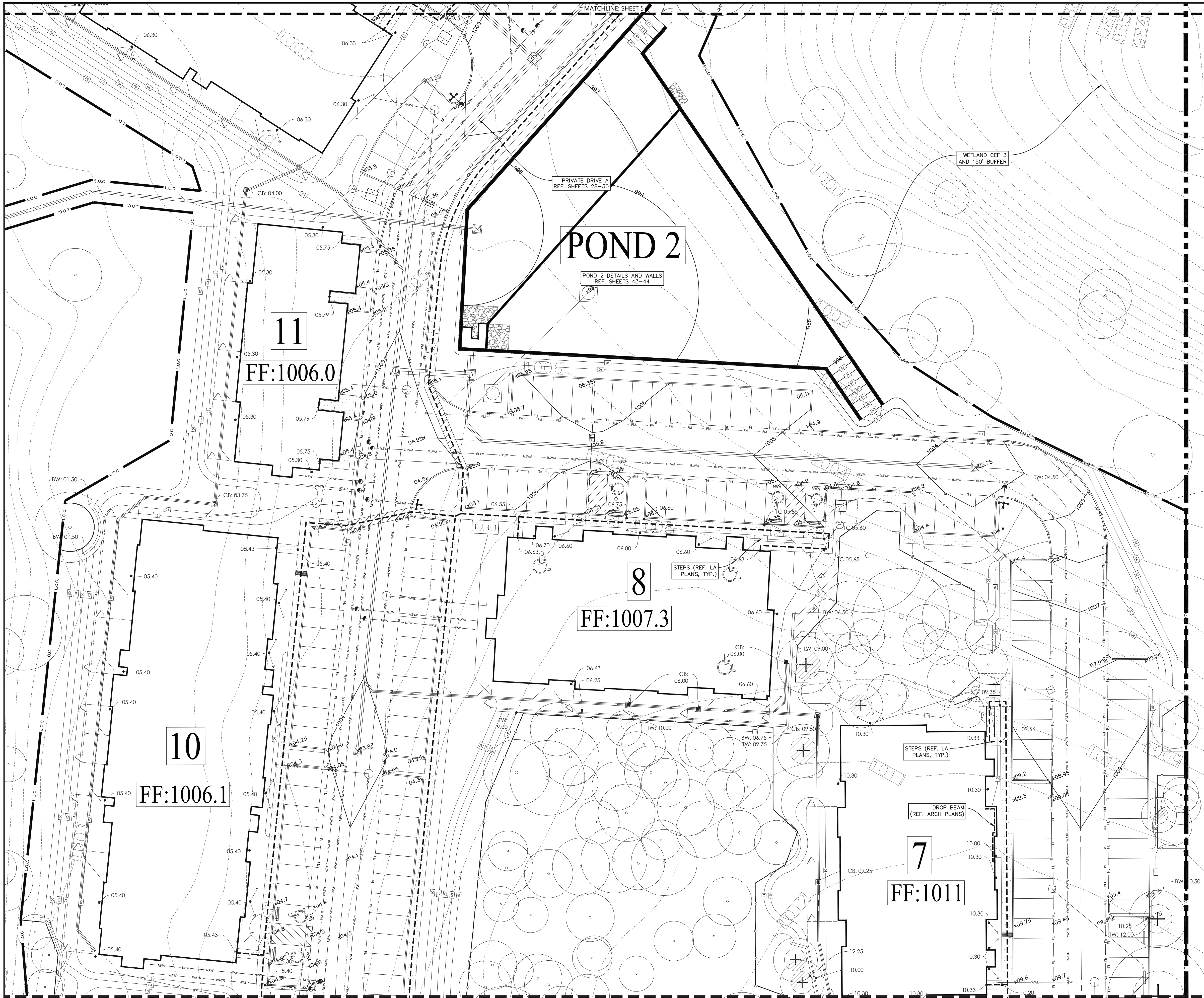
GRADING PLAN
SHEET 3

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 22 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\20 GRADING...
XREFS: x2436 xgis xgis_topo 1856-002-10 AC xsurvey_360PSI xsite xLA xt...



SCALE IN FEET

20 10 0 20

LEGEND

	PROPERTY BOUNDARY
	ADA PATH
520	EXISTING CONTOUR
520	PROPOSED CONTOUR
x27.1	PROPOSED SPOT GRADE
HP	PROPOSED HIGH POINT
	TREE PROTECTION
W	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
WW	EXIST. WASTEWATER MAIN
WATR	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
WWL	PROP. WASTEWATER
FM	PROP. FORCE MAIN
	PROP. STORM LINE
E	PROP. UNDERGROUND ELECTRIC
	PROP. ELECTRIC PULLBOX
	ELECTRIC TRANSFORMER

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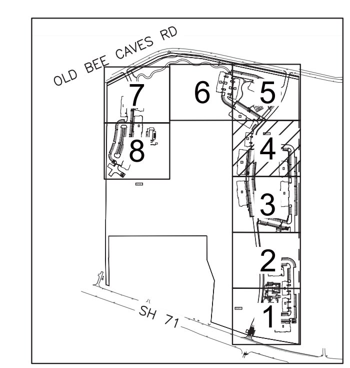
KEY MAP



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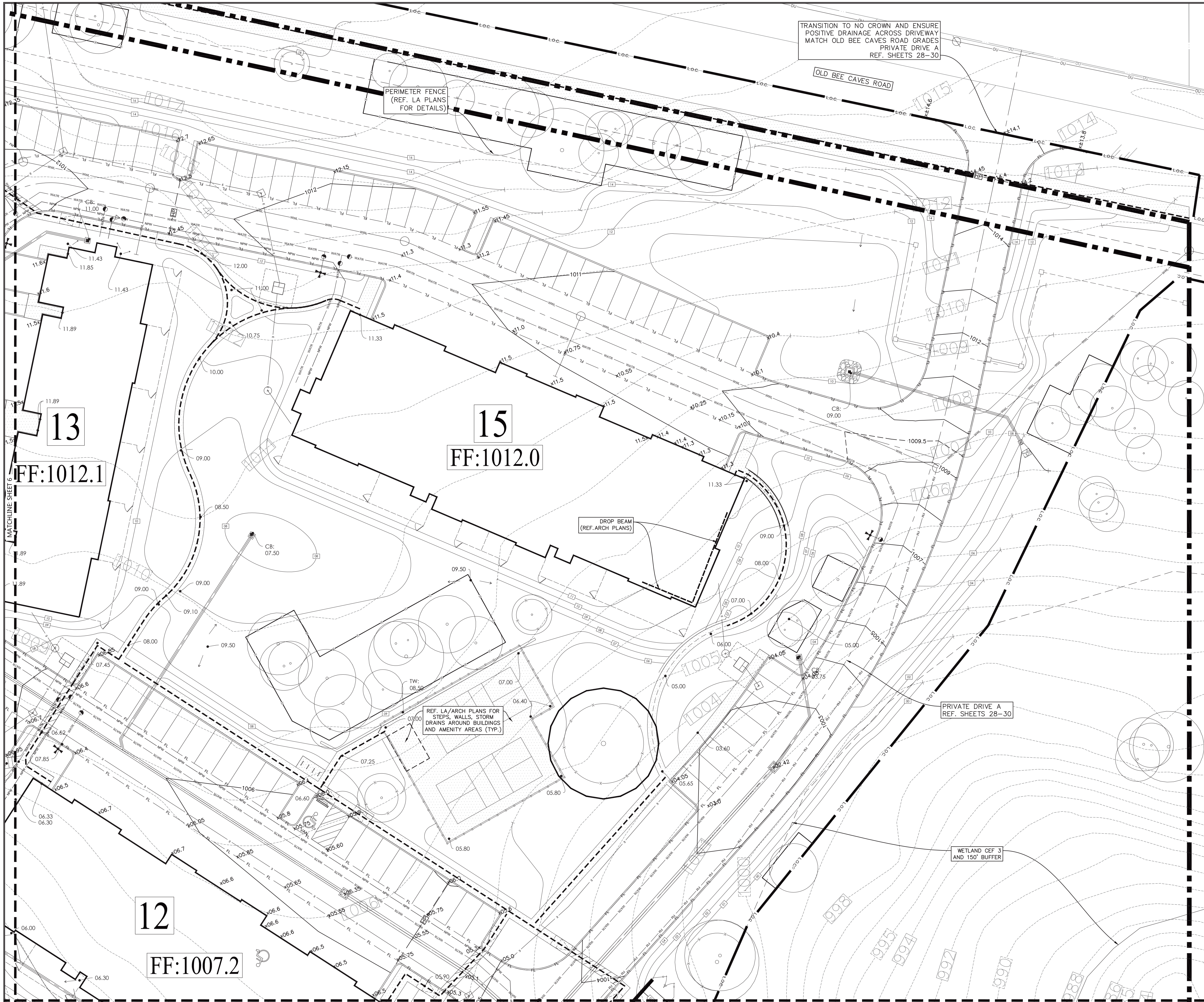
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

GRADING PLAN
SHEET 4

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C



N
E
W
S

SCALE IN FEET

20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- ADA PATH
- EXISTING CONTOUR (520)
- PROPOSED CONTOUR (520)
- PROPOSED SPOT GRADE (x27.1)
- PROPOSED HIGH POINT (HP)
- TREE PROTECTION
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
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- ELECTRIC TRANSFORMER

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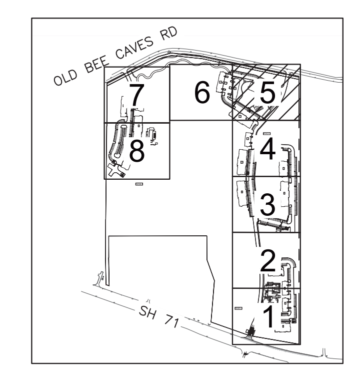
KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

GRADING PLAN
SHEET 5

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
24
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\20 GRADING.dwg LAYOUT: 05 PLOT
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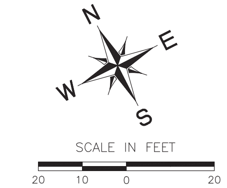

LEGEND

	PROPERTY BOUNDARY
	ADA PATH
520	EXISTING CONTOUR
520	PROPOSED CONTOUR
x27.1	PROPOSED SPOT GRADE
HP	PROPOSED HIGH POINT
	TREE PROTECTION
W	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
WW	EXIST. WASTEWATER MAIN
WATR	PROP. WATER MAIN
	PROP. FIRE HYDRANT
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WWL	PROP. WASTEWATER
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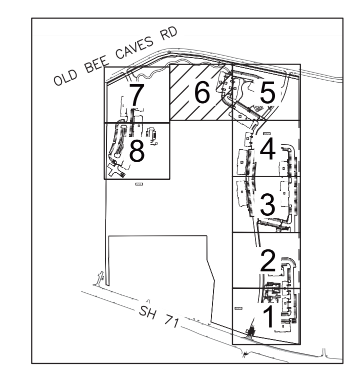

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SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

GRADING PLAN SHEET 6

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\20 GRADING.dwg LAYOUT: 06 PLOT DATE: 8/27/2025 4:07pm PLOTTED BY: mered
XREFS: x2436 xgis xgis_topo 1856-002-10 AC xsurvey_360PSI xsite xLA xtrees xsite_contours xarch IMAGES: SJF Sign.tif

SCALE IN FEET

20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- ADA PATH
- 520 EXISTING CONTOUR
- 520 PROPOSED CONTOUR
- x27.1 PROPOSED SPOT GRADE
- HP PROPOSED HIGH POINT
- TREE PROTECTION
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
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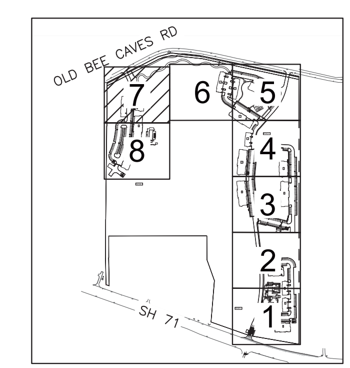

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8/28/2025

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8900 W STATE HWY 71
AUSTIN, TX 78735

GRADING PLAN
SHEET 7

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

SCALE IN FEET

20 10 0 20

LEGEND

- PROPERTY BOUNDARY
- ADA PATH
- EXISTING CONTOUR (520)
- PROPOSED CONTOUR (520)
- PROPOSED SPOT GRADE (x27.1)
- PROPOSED HIGH POINT (HP)
- TREE PROTECTION
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
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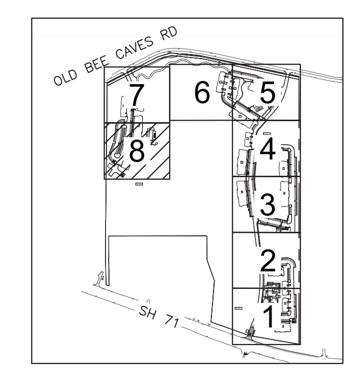

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GRADING PLAN
SHEET 8

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\20 GRADING.dwg LAYOUT: 08 PLOT
XREFS: x2436 xgis xgis_topo 1856-002-10 AC xsurvey_360PSI xsite xLA xtrees xsite_contours xarch

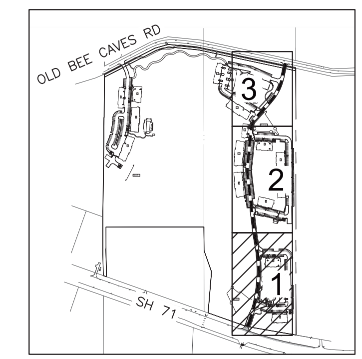
SCALE IN FEET

40 20 0 40

NOTES:

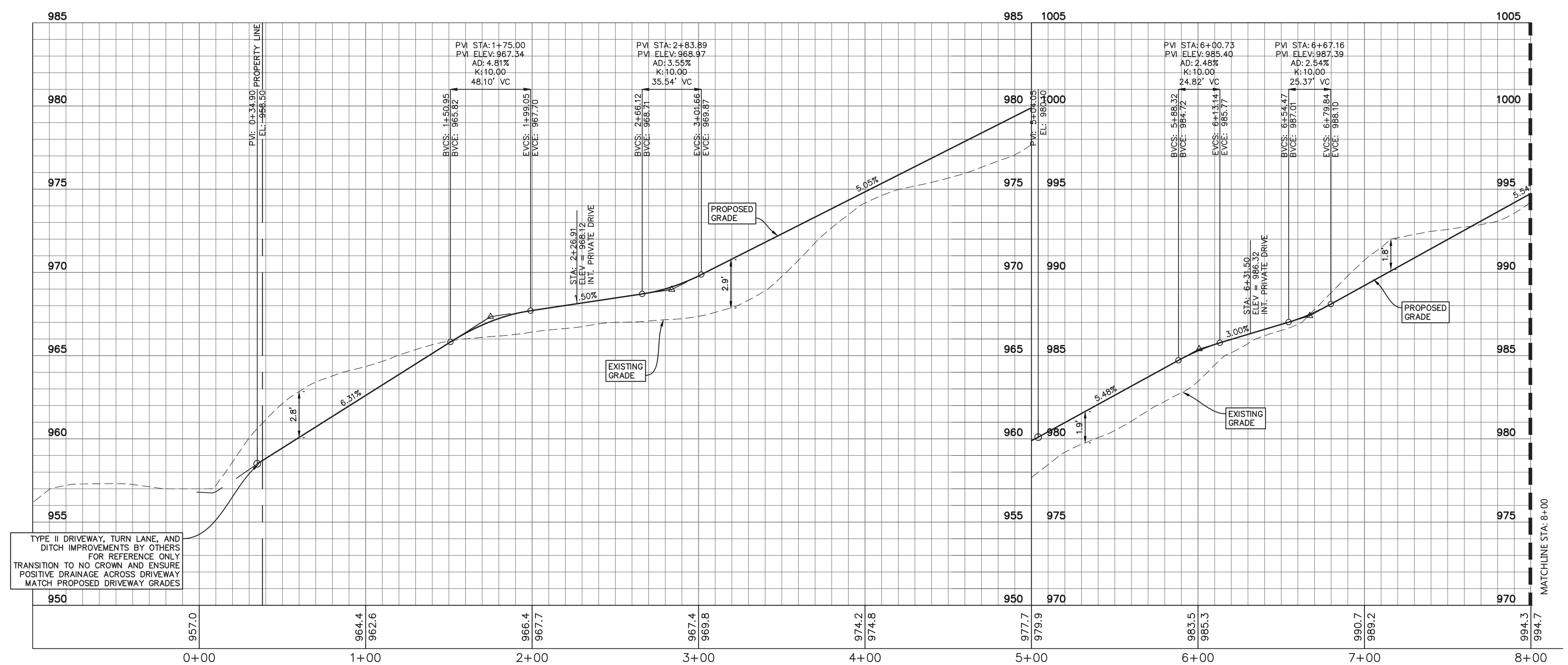
1. CONTRACTOR TO REFERENCE GRADING SHEETS FOR DETAILED GRADING.
2. ROADWAYS/DRIVES 10% SLOPE SHALL BE GROOVED PAVEMENT.

KEY MAP



DRIVE A (PRIVATE)
STA: 0+00 - 8+00

SCALE: H: 1"=40'
V: 1"=4'



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TEXAS REGISTRATION F4932
P.O. BOX 3629
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

PRIVATE DRIVE A PLAN AND PROFILE SHEET 1

Scale: AS SHOWN
Designed by:
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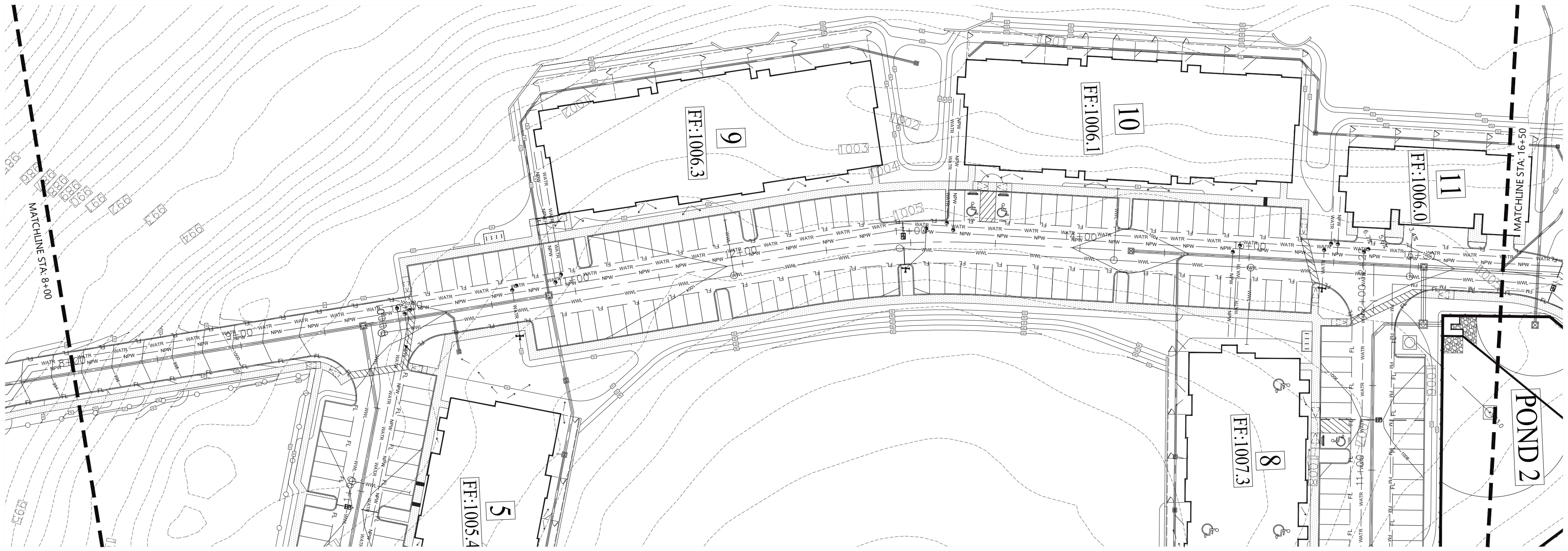
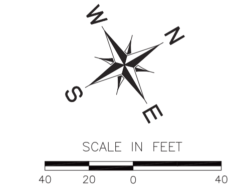
Checked by:
Date: AUGUST 2025
Project No.

SHEET 28 OF 113

SP-2025-0080C





NOTES:

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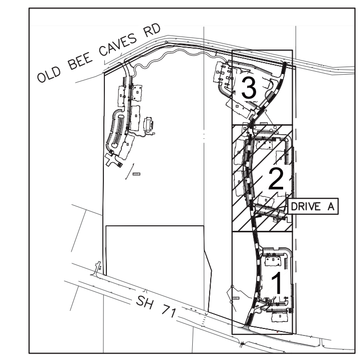
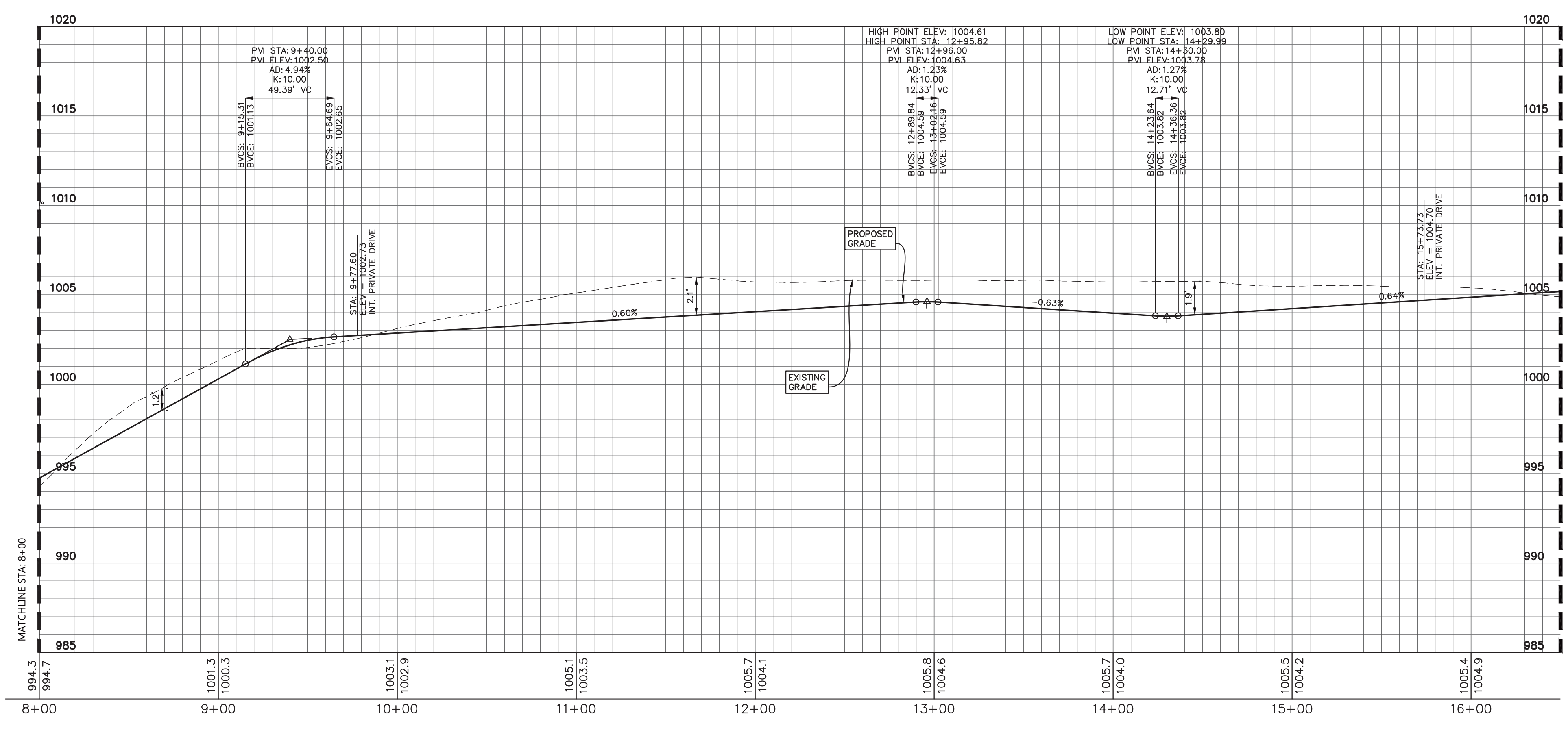
2. ROADWAYS/DRIVES 10% SLOPE SHALL BE GROOVED PAVEMENT.

KEY MAP



DRIVE A (PRIVATE)
STA: 8+00 - 16+50

SCALE: H: 1"=40'
V: 1"=4'



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED
PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

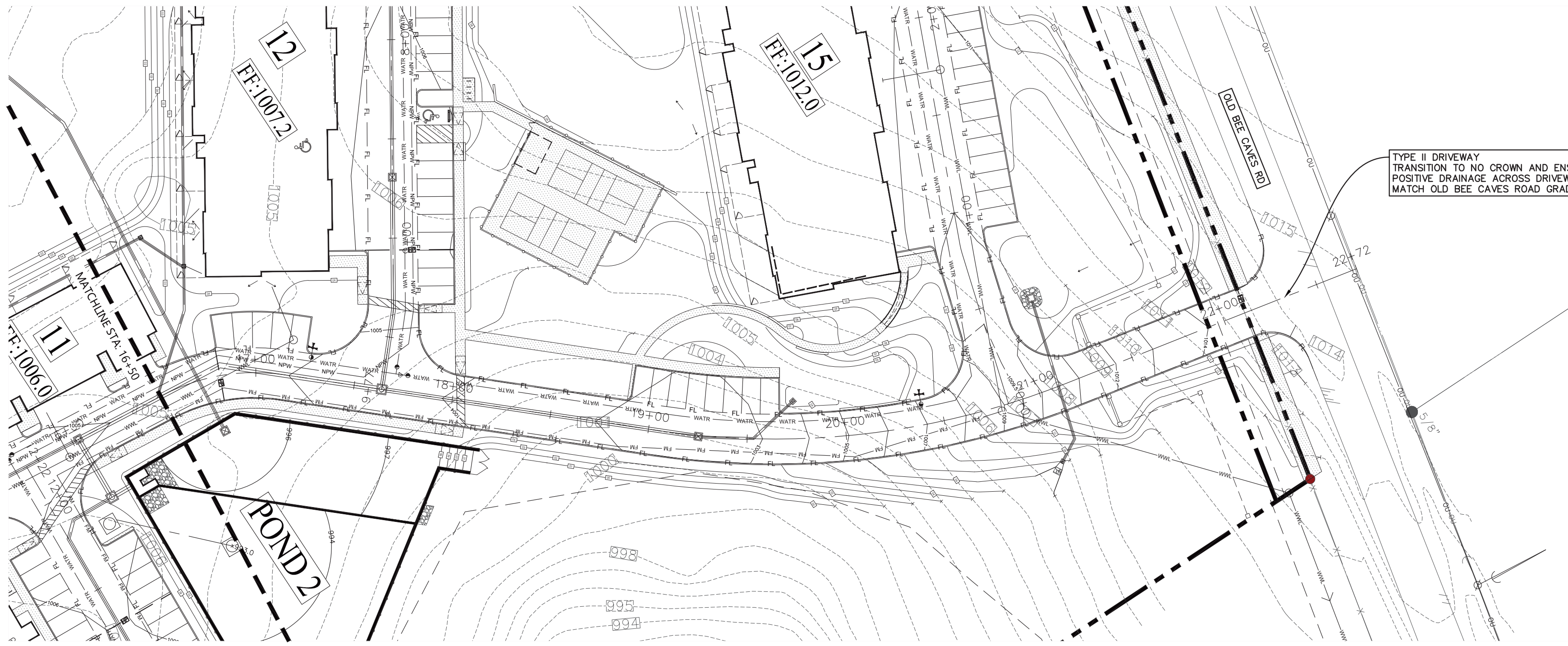
PRIVATE DRIVE A PLAN AND PROFILE SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
29
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STREET PLAN AND PROFILES Marx.dwg
XREFS: xsurvey_360PSI xarch x2436 xaerial TNRIS 2022 xsite xsite_contours xLA xtrees xgis



SCALE IN FEET

40 20 0 40

NOTES:

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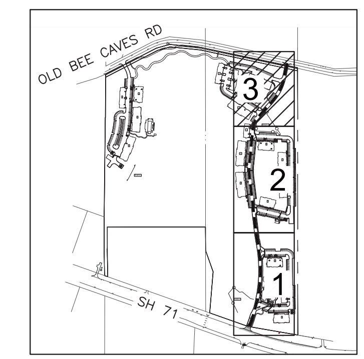
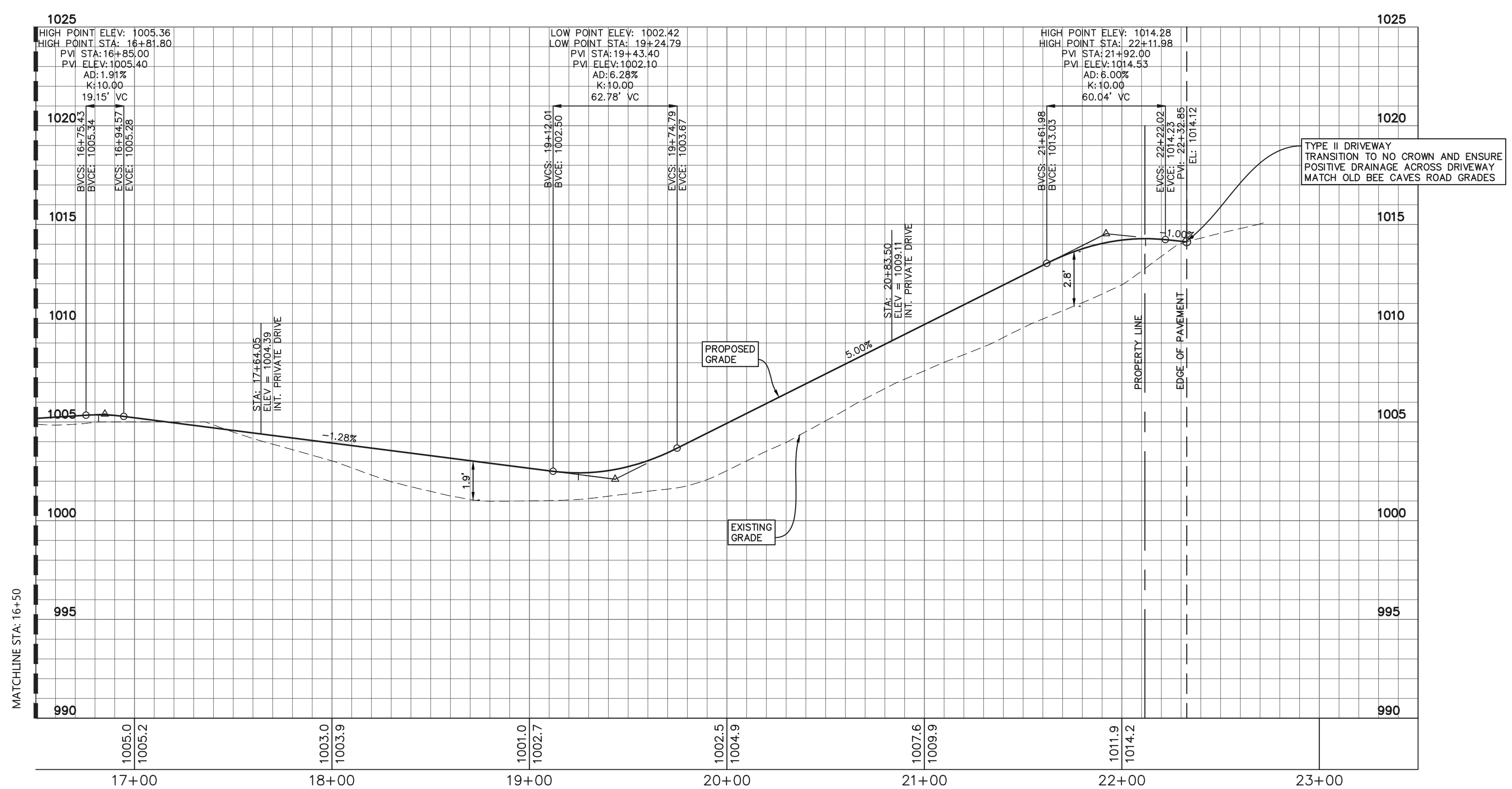
2. ROADWAYS/DRIVES 10% SLOPE SHALL BE GROOVED PAVEMENT.

KEY MAP



DRIVE A (PRIVATE)
STA: 16+50 - 22+33

SCALE: H: 1"=40' V: 1"=4'



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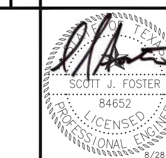

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

PRIVATE DRIVE A
PLAN AND PROFILE
SHEET 3

Scale: AS SHOWN
Designed by:
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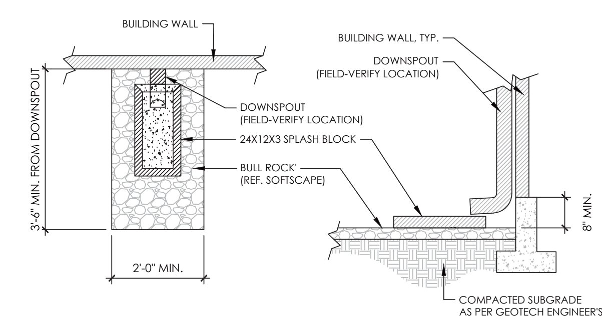
Date: AUGUST 2025
Project No.

SHEET
30
OF 113

SP-2025-0080C

Marx MF Runoff Calculations - Rational Method			Date:	7/1/2025	100-Year Storm Event			25-Year Storm Event			10-Year Storm Event			2-Year Storm Event		
System I.D.	Time of Concentration	Drainage Area	% Impervious Cover	Acres Impervious Cover	Intensity "I"	Runoff Coefficient	Design Flow	Intensity "I"	Runoff Coefficient	Design Flow	Intensity "I"	Runoff Coefficient	Design Flow	Intensity "I"	Runoff Coefficient	Design Flow
	(Minutes)	(Acres)			(in/hr)	C	(cfs)	(in/hr)	C	(cfs)	(in/hr)	C	(cfs)	(in/hr)	C	(cfs)
1	5.0	0.15	64%	0.10	15.42	0.80	1.8	11.79	0.72	1.2	9.61	0.67	1.0	6.31	0.60	0.6
2	10.0	1.06	77%	0.82	12.25	0.86	11.2	9.40	0.78	7.7	7.66	0.73	5.9	5.05	0.66	3.5
3	5.0	0.28	94%	0.27	15.42	0.94	4.1	11.79	0.85	2.8	9.61	0.80	2.2	6.31	0.73	1.3
4	8.0	0.98	70%	0.68	13.31	0.82	10.7	10.20	0.74	7.4	8.31	0.69	5.6	5.48	0.62	3.3
5	8.0	0.48	66%	0.32	13.31	0.80	5.2	10.20	0.72	3.6	8.31	0.67	2.7	5.48	0.61	1.6
6	5.0	0.16	75%	0.12	15.42	0.85	2.1	11.79	0.76	1.4	9.61	0.72	1.1	6.31	0.64	0.7
7	8.0	0.39	90%	0.36	13.31	0.92	4.8	10.20	0.83	3.4	8.31	0.79	2.6	5.48	0.71	1.5
8	5.0	1.08	73%	0.79	15.42	0.84	14.0	11.79	0.76	9.6	9.61	0.71	7.4	6.31	0.64	4.3
9	8.0	0.25	55%	0.14	13.31	0.75	2.5	10.20	0.67	1.7	8.31	0.63	1.3	5.48	0.56	0.8
10	6.0	1.02	74%	0.76	14.63	0.85	12.6	11.20	0.76	8.7	9.13	0.71	6.6	6.00	0.64	3.9
L1	12.0	0.91	55%	0.51	11.39	0.76	7.9	8.73	0.67	5.4	7.11	0.63	4.1	4.70	0.56	2.4
L2	12.0	0.70	5%	0.04	11.39	0.52	4.1	8.73	0.44	2.7	7.11	0.40	2.0	4.70	0.35	1.2
L3	12.0	1.24	27%	0.34	11.39	0.62	8.8	8.73	0.54	5.9	7.11	0.50	4.4	4.70	0.44	2.6
TOTAL POND 1		***8.7***	***60%***	***5.2***												
11	12.0	1.96	61%	1.20	11.39	0.78	17.5	8.73	0.70	12.0	7.11	0.65	9.1	4.70	0.59	5.4
12	10.0	1.96	70%	1.37	12.25	0.83	19.8	9.40	0.74	13.7	7.66	0.70	10.4	5.05	0.62	6.2
13	8.0	1.31	89%	1.16	13.31	0.92	16.0	10.20	0.83	11.1	8.31	0.78	8.5	5.48	0.70	5.1
14	10.0	1.96	74%	1.45	12.25	0.84	20.3	9.40	0.76	14.0	7.66	0.71	10.7	5.05	0.64	6.3
15	10.0	0.58	71%	0.42	12.25	0.83	6.0	9.40	0.75	4.1	7.66	0.70	3.1	5.05	0.63	1.9
L4	8.0	0.64	28%	0.18	13.31	0.62	5.3	10.20	0.55	3.6	8.31	0.51	2.7	5.48	0.45	1.6
TOTAL POND 2		***8.8***	***66%***	***5.8***												
16	10.0	0.77	75%	0.57	12.25	0.85	8.0	9.40	0.76	5.5	7.66	0.72	4.2	5.05	0.64	2.5
17	5.0	0.53	93%	0.49	15.42	0.94	7.7	11.79	0.85	5.3	9.61	0.80	4.1	6.31	0.72	2.4
18	10.0	0.95	66%	0.63	12.25	0.81	9.4	9.40	0.73	6.4	7.66	0.68	4.9	5.05	0.61	2.9
19	10.0	1.67	73%	1.23	12.25	0.84	17.3	9.40	0.76	11.9	7.66	0.71	9.1	5.05	0.64	5.4
TOTAL POND 3		***3.9***	***75%***	***2.9***												
Intensity Duration-Frequency parameters from Table 2-2B (Atlas 14 Zone 1)																

NOTES:
1. CONTRACTOR TO FIELD VERIFY ALL BUILDING DOWNSPOUTS AND PROVIDE BULL ROCK AND SPLASH BLOCK AT THE END OF GUTTER.
2. CONTRACTOR TO ADJUST PLANTINGS AS NECESSARY.



DOWNSPOUT SCHEMATIC

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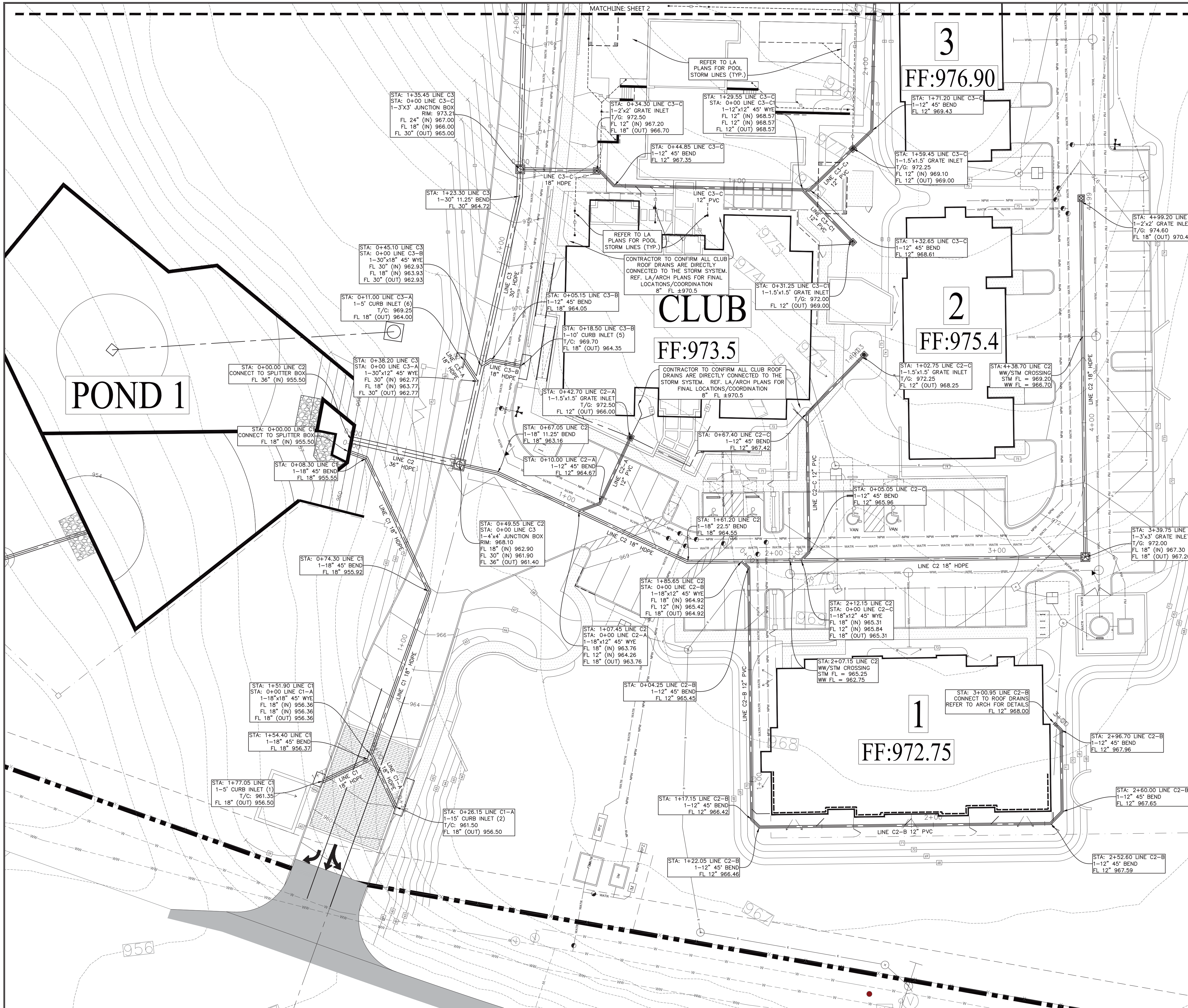
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

ON-SITE DRAINAGE AREA MAP AND CALCULATIONS

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.



N
E
S
W

SCALE IN FEET

20 10 0 20

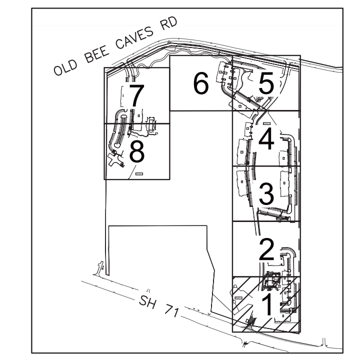
LEGEND

EXIST. WATER MAIN
EXIST. FIRE HYDRANT
EXIST. WASTEWATER MAIN
PROP. WATER MAIN
PROP. FIRE HYDRANT
PROP. VALVE
PROP. WASTEWATER
PROP. FORCE MAIN
PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
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LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

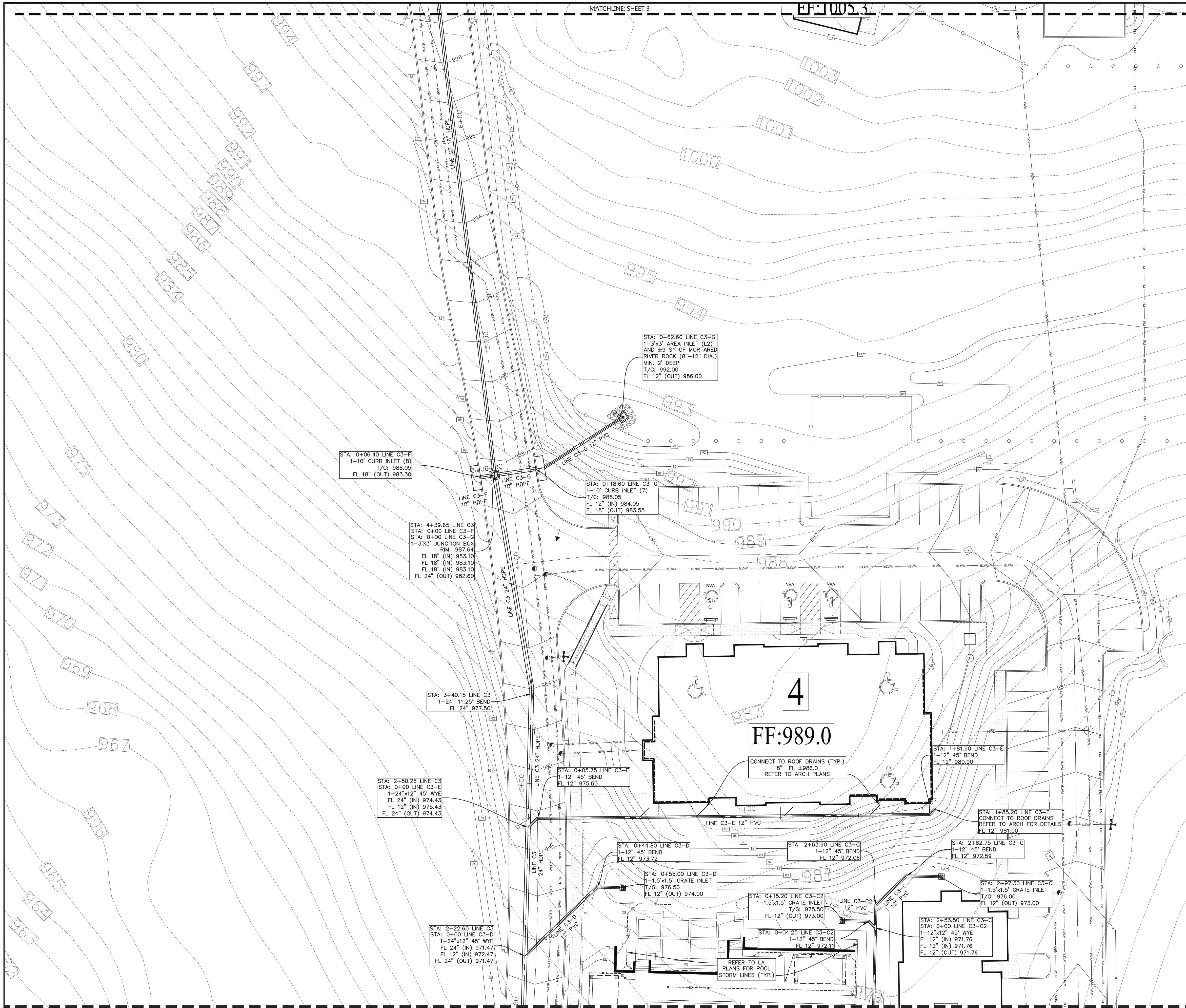
STORM PLAN SHEET 1 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 32 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND
XREFS: xsurvey_360PSI x2436 xsite xsite_contours xLA xtrees xgis xarch



N E S W

SCALE IN FEET

20 10 0 20

LEGEND

—— W ——	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
—— WW ——	EXIST. WASTEWATER MAIN
—— WATR ——	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
—— WWL ——	PROP. WASTEWATER
—— FM ——	PROP. FORCE MAIN
	PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
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3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
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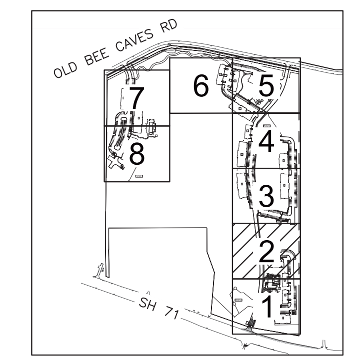
KEY MAP



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LICENSED PROFESSIONAL ENGINEER
8/28/2025

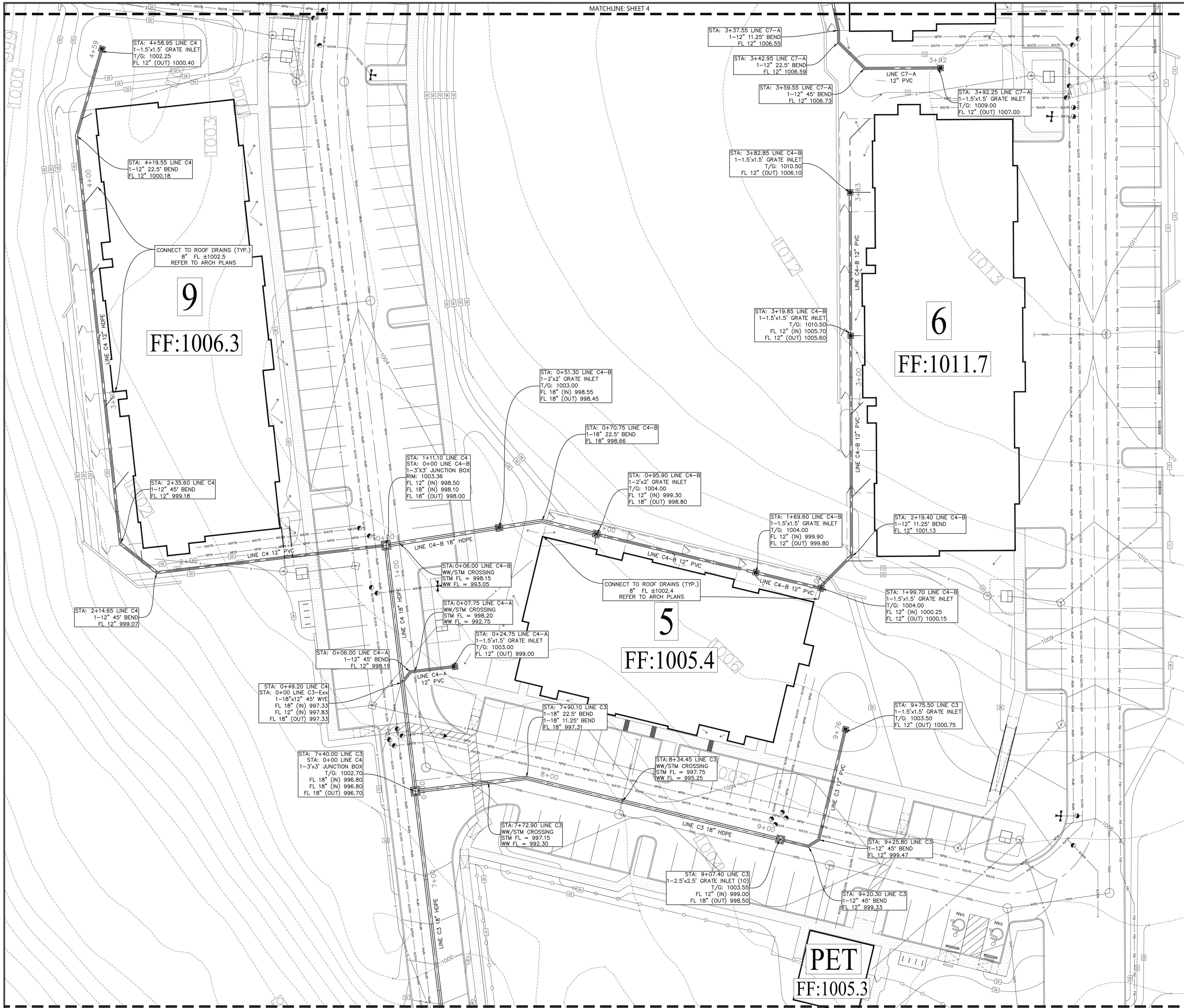
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN SHEET 2 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

MATCHLINE: SHEET 4



MATCHLINE: SHEET 2

SCALE IN FEET
20 10 0 20

LEGEND

EXIST. WATER MAIN	
EXIST. FIRE HYDRANT	
EXIST. WASTEWATER MAIN	
PROP. WATER MAIN	
PROP. FIRE HYDRANT	
PROP. VALVE	
PROP. WASTEWATER	
PROP. FORCE MAIN	
PROP. STORM LINE	

NOTES:

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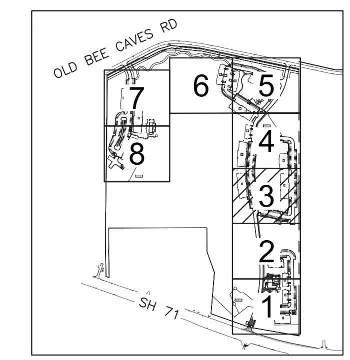
KEY MAP



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MARX MULTIFAMILY
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AUSTIN, TX 78735

STORM PLAN SHEET 3 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
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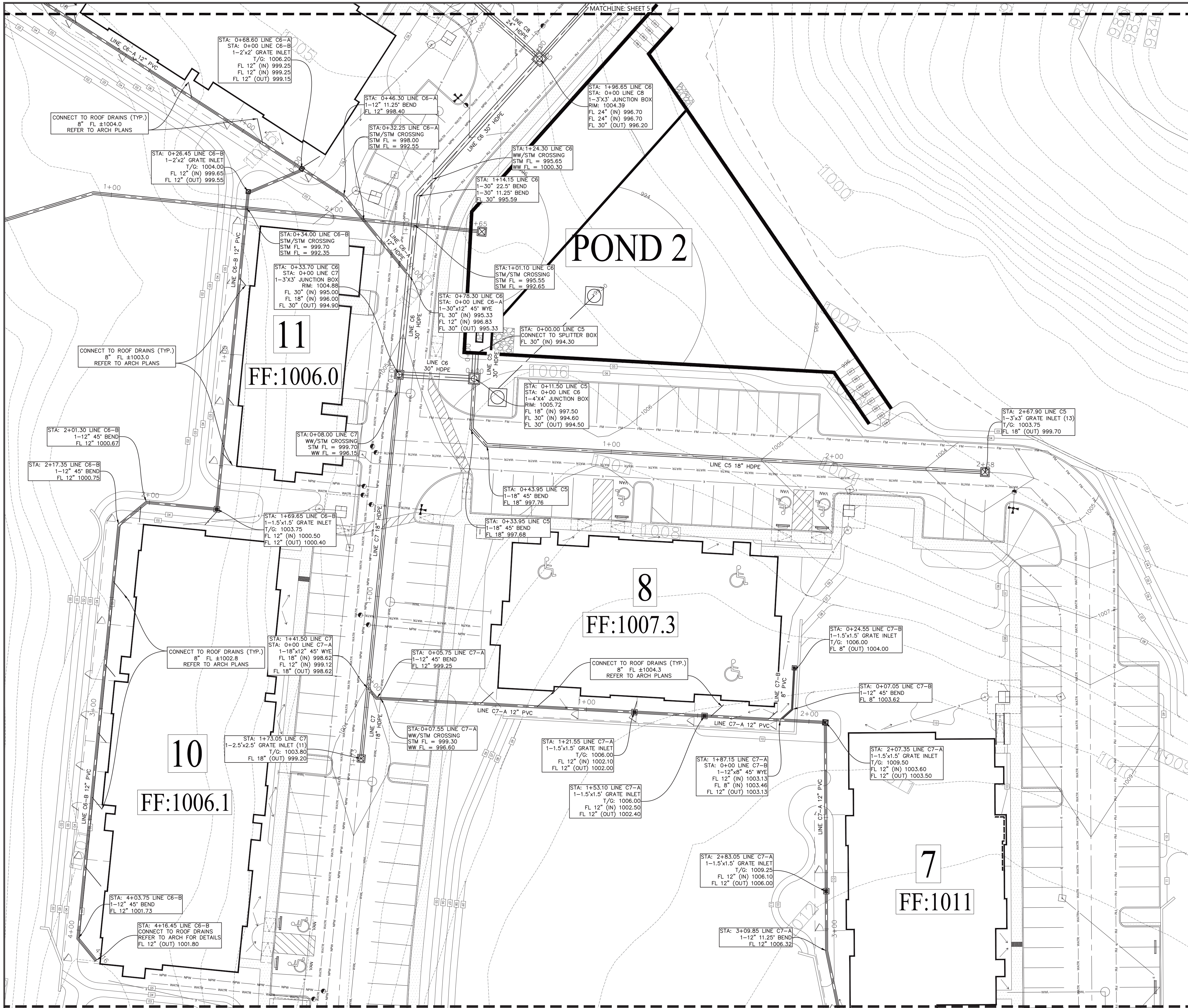
Date: AUGUST 2025
Project No.

SHEET
34
OF 113

SP-2025-0080C


MATCHLINE: SHEET 5
POND 2
11
FF:1006.0
8
FF:1007.3
10
FF:1006.1
7
FF:1011
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1004.0
REFER TO ARCH PLANS
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1003.0
REFER TO ARCH PLANS
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1002.8
REFER TO ARCH PLANS
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1004.3
REFER TO ARCH PLANS
STA: 0+68.60 LINE C6-A
STA: 0+00 LINE C6-B
1-2'x2' GRATE INLET
T/G: 1006.20
FL 12" (IN) 999.25
FL 12" (IN) 999.25
FL 12" (OUT) 999.15
STA: 0+46.30 LINE C6-A
1-12" 11.25° BEND
FL 12" 998.40
STA: 0+32.25 LINE C6-A
STM/STM CROSSING
STM FL = 998.00
STM FL = 992.55
STA: 1+96.65 LINE C6
STA: 0+00 LINE C8
1-3'x3' JUNCTION BOX
RIM: 1004.39
FL 24" (IN) 996.70
FL 24" (IN) 996.70
FL 30" (OUT) 996.20
STA: 1+24.30 LINE C6
WW/STM CROSSING
STM FL = 995.65
WW FL = 1000.30
STA: 1+14.15 LINE C6
1-30" 22.5° BEND
1-30" 11.25° BEND
FL 30" 995.59
STA: 0+26.45 LINE C6-B
1-2'x2' GRATE INLET
T/G: 1004.00
FL 12" (IN) 999.65
FL 12" (OUT) 999.55
STA: 0+34.00 LINE C6-B
STM/STM CROSSING
STM FL = 999.70
STM FL = 992.35
STA: 0+33.70 LINE C6
STA: 0+00 LINE C7
1-3'X3' JUNCTION BOX
RIM: 1004.88
FL 30" (IN) 995.00
FL 18" (IN) 996.00
FL 30" (OUT) 994.90
STA: 1+01.10 LINE C6
STM/STM CROSSING
STM FL = 995.55
STM FL = 992.65
STA: 0+78.30 LINE C6
STA: 0+00 LINE C6-A
1-30"x12" 45° WYE
FL 30" (IN) 995.33
FL 12" (IN) 996.83
FL 30" (OUT) 995.33
STA: 0+00.00 LINE C5
CONNECT TO SPLITTER BOX
FL 30" (IN) 994.30
STA: 0+11.50 LINE C5
STA: 0+00 LINE C6
1-4'X4' JUNCTION BOX
RIM: 1005.72
FL 18" (IN) 997.50
FL 30" (IN) 994.60
FL 30" (OUT) 994.50
STA: 0+08.00 LINE C7
WW/STM CROSSING
STM FL = 999.70
WW FL = 996.15
STA: 2+67.90 LINE C5
1-3'x3' GRATE INLET (13)
T/G: 1003.75
FL 18" (OUT) 999.70
STA: 2+01.30 LINE C6-B
1-12" 45° BEND
FL 12" 1000.67
STA: 2+17.35 LINE C6-B
1-12" 45° BEND
FL 12" 1000.75
STA: 0+43.95 LINE C5
1-18" 45° BEND
FL 18" 997.76
STA: 0+33.95 LINE C5
1-18" 45° BEND
FL 18" 997.68
STA: 1+69.65 LINE C6-B
1-1.5'x1.5' GRATE INLET
T/G: 1003.75
FL 12" (IN) 1000.50
FL 12" (OUT) 1000.40
LINE C5 18" HDPE
STA: 0+24.55 LINE C7-B
1-1.5'x1.5' GRATE INLET
T/G: 1006.00
FL 8" (OUT) 1004.00
STA: 1+41.50 LINE C7
STA: 0+00 LINE C7-A
1-18"x12" 45° WYE
FL 18" (IN) 998.62
FL 12" (IN) 999.12
FL 18" (OUT) 998.62
STA: 0+05.75 LINE C7-A
1-12" 45° BEND
FL 12" 999.25
STA: 0+07.05 LINE C7-B
1-12" 45° BEND
FL 8" 1003.62
LINE C7-A 12" PVC
STA: 1+73.05 LINE C7
1-2.5'x2.5' GRATE INLET (11)
T/G: 1003.80
FL 18" (OUT) 999.20
STA: 0+07.55 LINE C7-A
WW/STM CROSSING
STM FL = 999.30
WW FL = 996.60
STA: 1+21.55 LINE C7-A
1-1.5'x1.5' GRATE INLET
T/G: 1006.00
FL 12" (IN) 1002.10
FL 12" (OUT) 1002.00
STA: 1+87.15 LINE C7-A
STA: 0+00 LINE C7-B
1-12"x8" 45° WYE
FL 12" (IN) 1003.13
FL 8" (IN) 1003.46
FL 12" (OUT) 1003.13
STA: 2+07.35 LINE C7-A
1-1.5'x1.5' GRATE INLET
T/G: 1009.50
FL 12" (IN) 1003.60
FL 12" (OUT) 1003.50
STA: 1+53.10 LINE C7-A
1-1.5'x1.5' GRATE INLET
T/G: 1006.00
FL 12" (IN) 1002.50
FL 12" (OUT) 1002.40
STA: 2+83.05 LINE C7-A
1-1.5'x1.5' GRATE INLET
T/G: 1009.25
FL 12" (IN) 1006.10
FL 12" (OUT) 1006.00
STA: 3+09.85 LINE C7-A
1-12" 11.25° BEND
FL 12" 1006.32
STA: 4+03.75 LINE C6-B
1-12" 45° BEND
FL 12" 1001.73
STA: 4+16.45 LINE C6-B
CONNECT TO ROOF DRAINS
REFER TO ARCH FOR DETAILS
FL 12" (OUT) 1001.80
MATCHLINE: SHEET 3

SCALE IN FEET

20 10 0 20

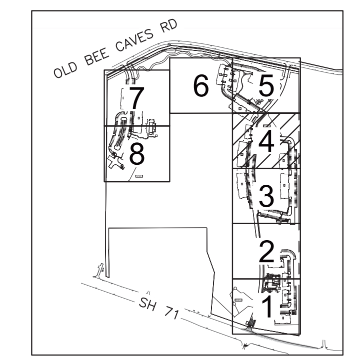
LEGEND

- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



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TEXAS REGISTRATION F4932
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PHONE (512) 354-4682
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No. | Date | Revisions | App.

SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

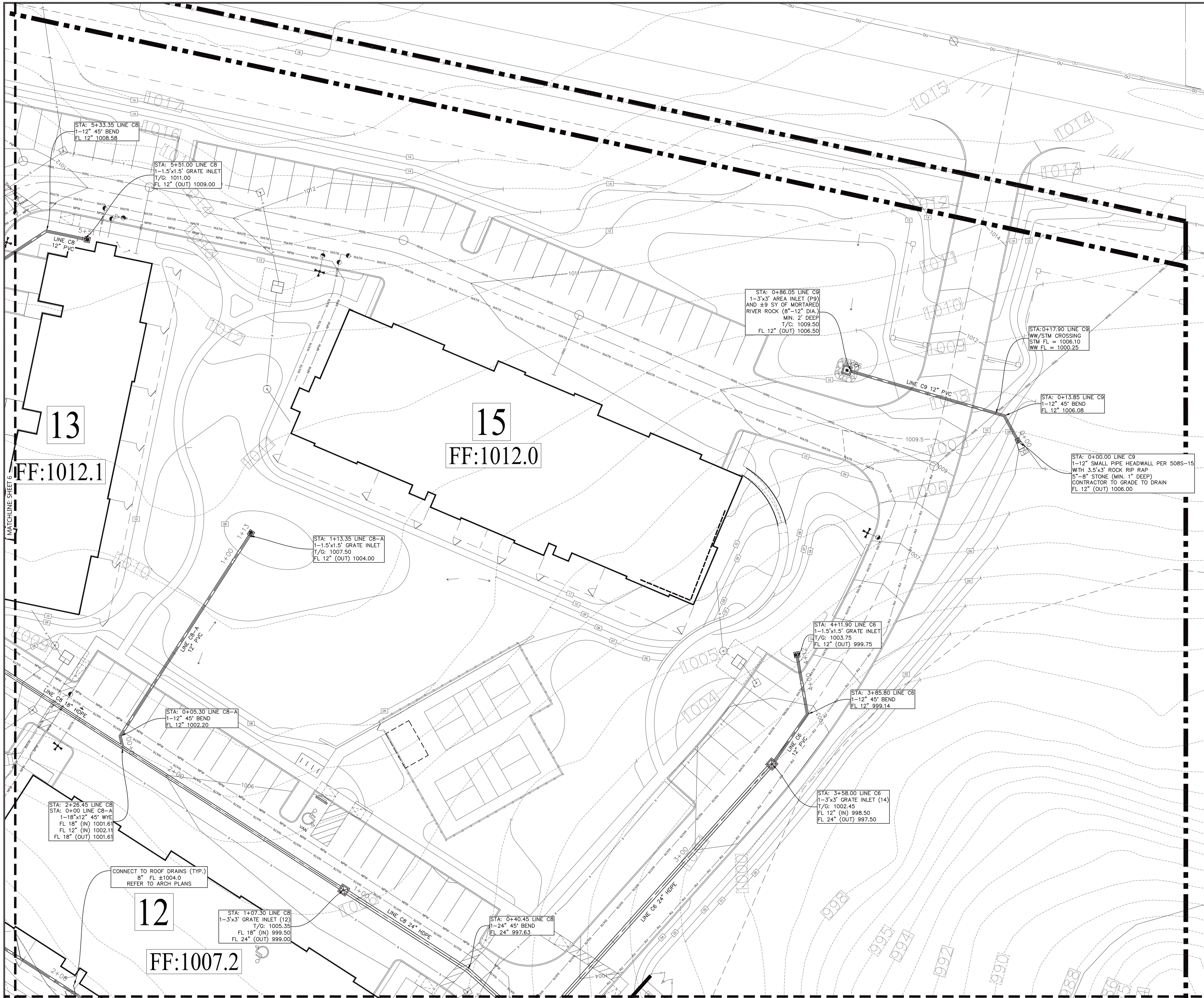
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN
SHEET 4
(PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
35
OF 113

SP-2025-0080C



N E S W

SCALE IN FEET

20 10 0 20

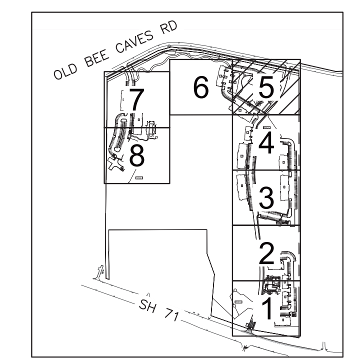
LEGEND

— W —	EXIST. WATER MAIN
(symbol)	EXIST. FIRE HYDRANT
— WW —	EXIST. WASTEWATER MAIN
— WATR — WATR —	PROP. WATER MAIN
(symbol)	PROP. FIRE HYDRANT
(symbol)	PROP. VALVE
— WWL —	PROP. WASTEWATER
— FM — FM — FM —	PROP. FORCE MAIN
(double line)	PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

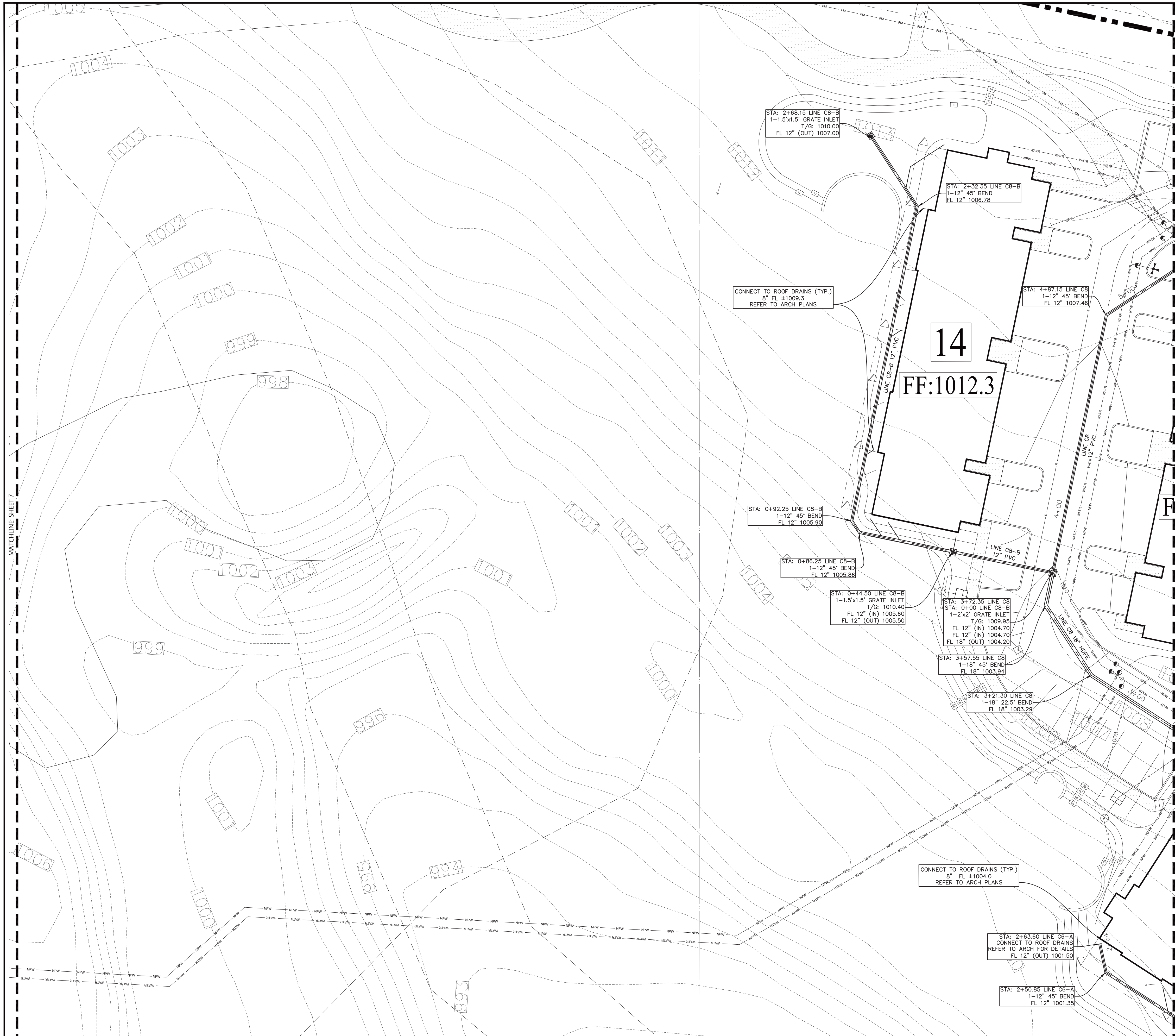
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN SHEET 5 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND WW.dwg LAYOUT: 05 STRM PLOT
XREFS: xsurvey_360PSI x2436 xsite xsite_contours xLA xtrees xgis xarch IMAGES: SJF Sign.tif



N E S W

SCALE IN FEET

20 10 0 20

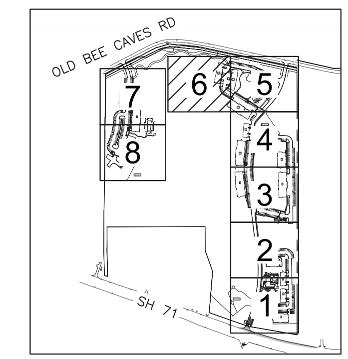
LEGEND

- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED
PROFESSIONAL ENGINEER
8/28/2025

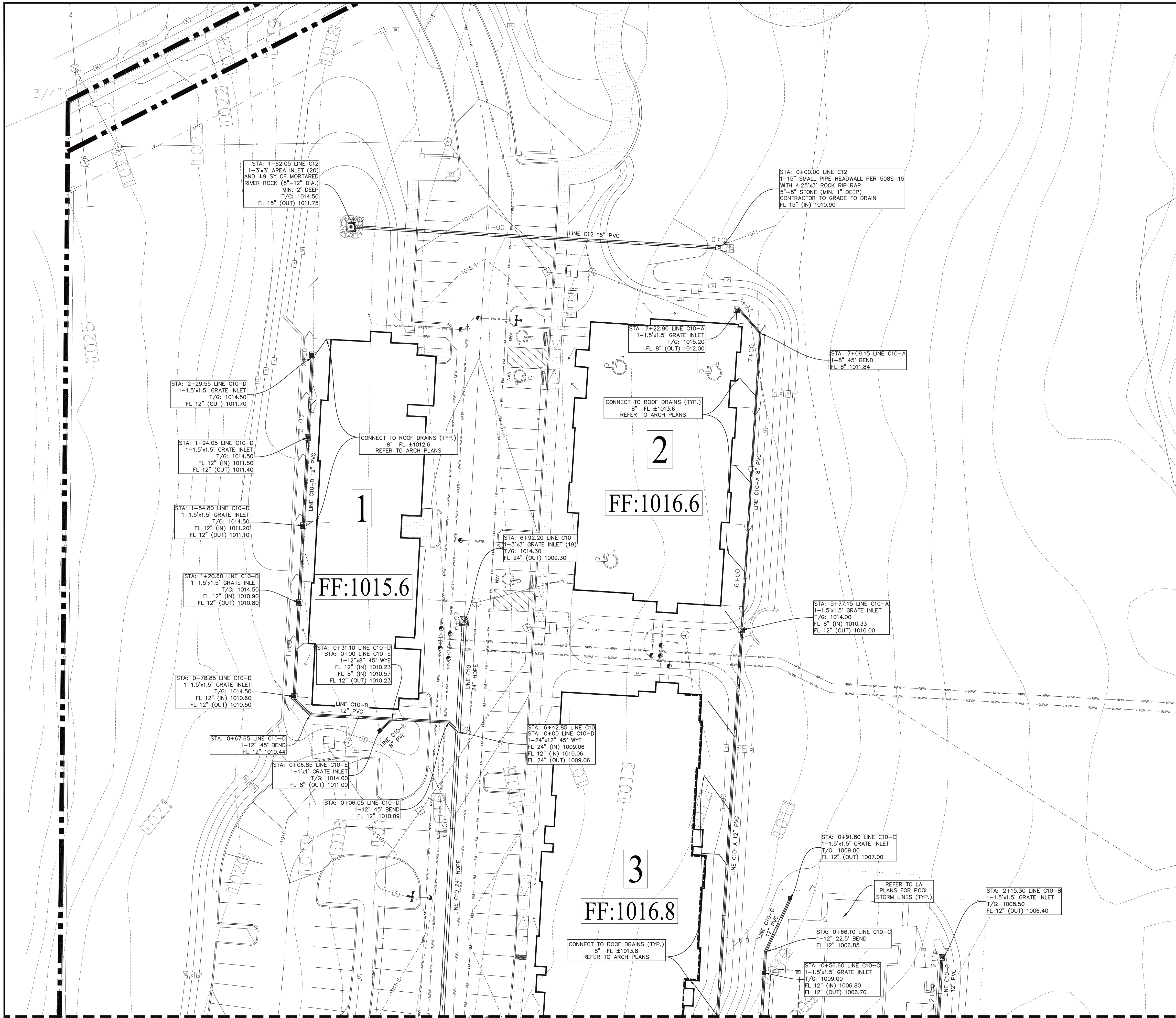
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN SHEET 6 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
37
OF 113

SP-2025-0080C



N E S W

SCALE IN FEET

20 10 0 20

LEGEND

EXIST. WATER MAIN

EXIST. FIRE HYDRANT

EXIST. WASTEWATER MAIN

PROP. WATER MAIN

PROP. FIRE HYDRANT

PROP. VALVE

PROP. WASTEWATER

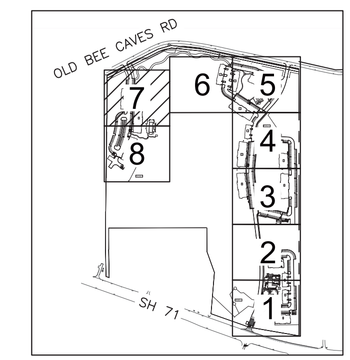
PROP. FORCE MAIN

PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



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SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

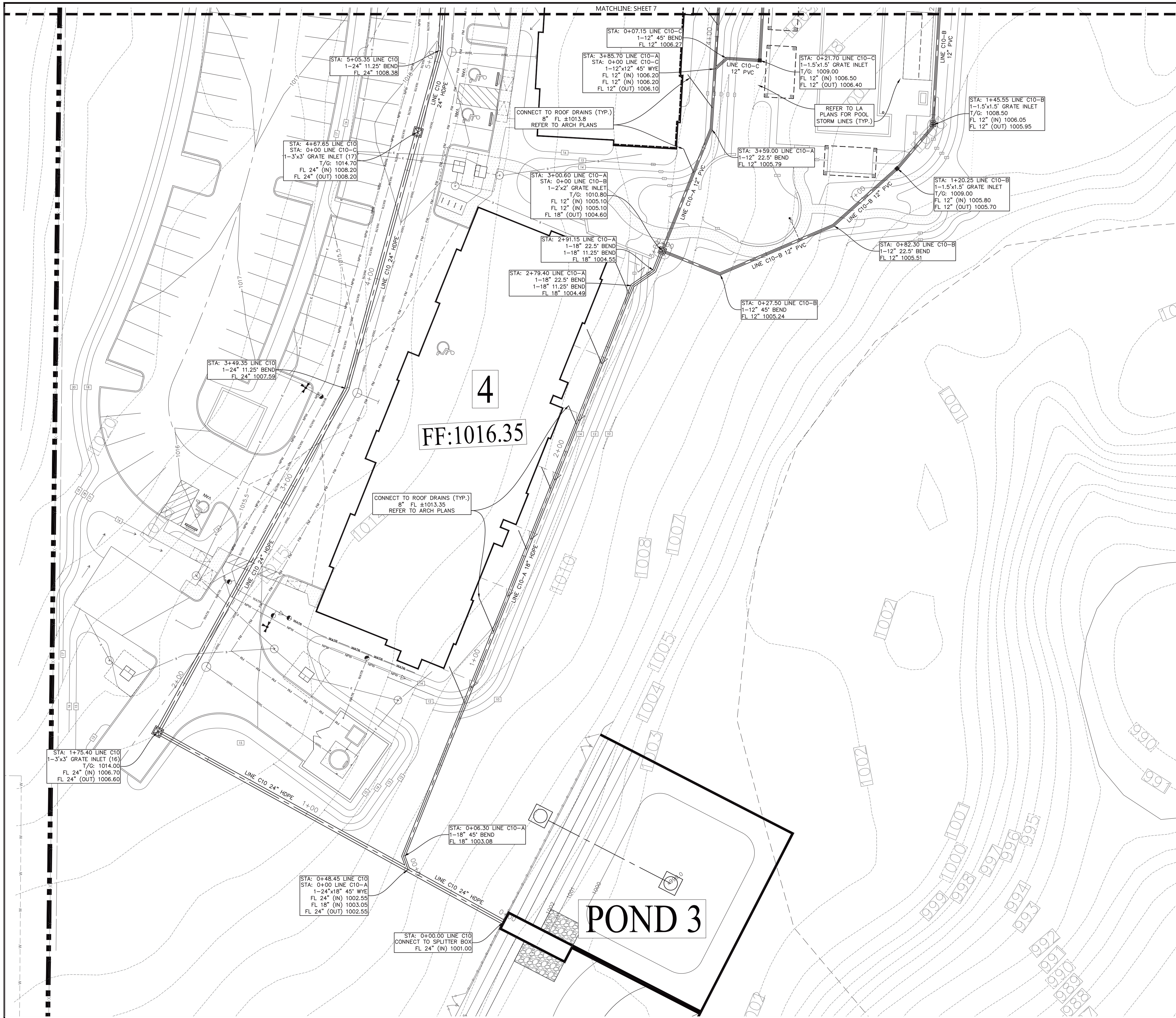
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN
SHEET 7
(PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND WW.dwg
XREFS: xsurvey_360PSI x2436 xsite xsite_contours xLA xtrees xgis xarch
LAYOUT: 07


MATCHLINE: SHEET 7
STA: 0+07.15 LINE C10-C
1-12" 45° BEND
FL 12" 1006.27
STA: 3+85.70 LINE C10-A
STA: 0+00 LINE C10-C
1-12"x12" 45° WYE
FL 12" (IN) 1006.20
FL 12" (IN) 1006.20
FL 12" (OUT) 1006.10
STA: 5+05.35 LINE C10
1-24" 11.25° BEND
FL 24" 1008.38
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1013.8
REFER TO ARCH PLANS
LINE C10-C 12" PVC
STA: 0+21.70 LINE C10-C
1-1.5'x1.5' GRATE INLET
T/G: 1009.00
FL 12" (IN) 1006.50
FL 12" (OUT) 1006.40
REFER TO LA PLANS FOR POOL STORM LINES (TYP.)
LINE C10-B 12" PVC
STA: 1+45.55 LINE C10-B
1-1.5'x1.5' GRATE INLET
T/G: 1008.50
FL 12" (IN) 1006.05
FL 12" (OUT) 1005.95
STA: 4+67.65 LINE C10
STA: 0+00 LINE C10-C
1-3'x3' GRATE INLET (17)
T/G: 1014.70
FL 24" (IN) 1008.20
FL 24" (OUT) 1008.20
STA: 3+59.00 LINE C10-A
1-12" 22.5° BEND
FL 12" 1005.79
STA: 3+00.60 LINE C10-A
STA: 0+00 LINE C10-B
1-2'x2' GRATE INLET
T/G: 1010.80
FL 12" (IN) 1005.10
FL 12" (IN) 1005.10
FL 18" (OUT) 1004.60
STA: 1+20.25 LINE C10-B
1-1.5'x1.5' GRATE INLET
T/G: 1009.00
FL 12" (IN) 1005.80
FL 12" (OUT) 1005.70
LINE C10-A 12" PVC
LINE C10-B 12" PVC
STA: 2+91.15 LINE C10-A
1-18" 22.5° BEND
1-18" 11.25° BEND
FL 18" 1004.55
STA: 0+82.30 LINE C10-B
1-12" 22.5° BEND
FL 12" 1005.51
STA: 2+79.40 LINE C10-A
1-18" 22.5° BEND
1-18" 11.25° BEND
FL 18" 1004.49
STA: 0+27.50 LINE C10-B
1-12" 45° BEND
FL 12" 1005.24
LINE C10 24" HDPE
STA: 3+49.35 LINE C10
1-24" 11.25° BEND
FL 24" 1007.59
4
FF:1016.35
CONNECT TO ROOF DRAINS (TYP.)
8" FL ±1013.35
REFER TO ARCH PLANS
LINE C10-A 18" HDPE
STA: 1+75.40 LINE C10
1-3'x3' GRATE INLET (16)
T/G: 1014.00
FL 24" (IN) 1006.70
FL 24" (OUT) 1006.60
LINE C10 24" HDPE
STA: 0+06.30 LINE C10-A
1-18" 45° BEND
FL 18" 1003.08
STA: 0+48.45 LINE C10
STA: 0+00 LINE C10-A
1-24"x18" 45° WYE
FL 24" (IN) 1002.55
FL 18" (IN) 1003.05
FL 24" (OUT) 1002.55
STA: 0+00.00 LINE C10
CONNECT TO SPLITTER BOX
FL 24" (IN) 1001.00
POND 3

N
E
S
W

SCALE IN FEET
20 10 0 20

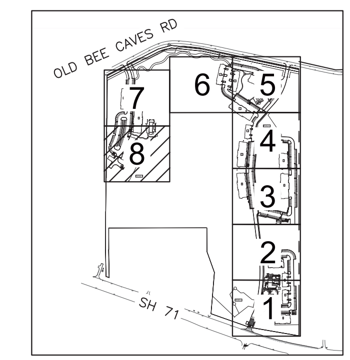
LEGEND

W	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
WW	EXIST. WASTEWATER MAIN
WATR	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
WWL	PROP. WASTEWATER
FM	PROP. FORCE MAIN
	PROP. STORM LINE

NOTES:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATION.
2. CONTRACTOR TO COORDINATE WITH LANDSCAPE ARCHITECTURAL PLANS FOR GRADING AND LANDSCAPING AROUND BUILDINGS AND STREETSCAPE.
3. CONTRACTOR TO ADJUST MANHOLE RIMS, VALVES, ETC. TO PROPOSED GRADES.
4. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).

KEY MAP



No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
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SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

STORM PLAN SHEET 8 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND WW.dwg LAYOUT: 08 STRM PLOT DATE: 8/28/2025 8:19am PLOTTED BY: lesli
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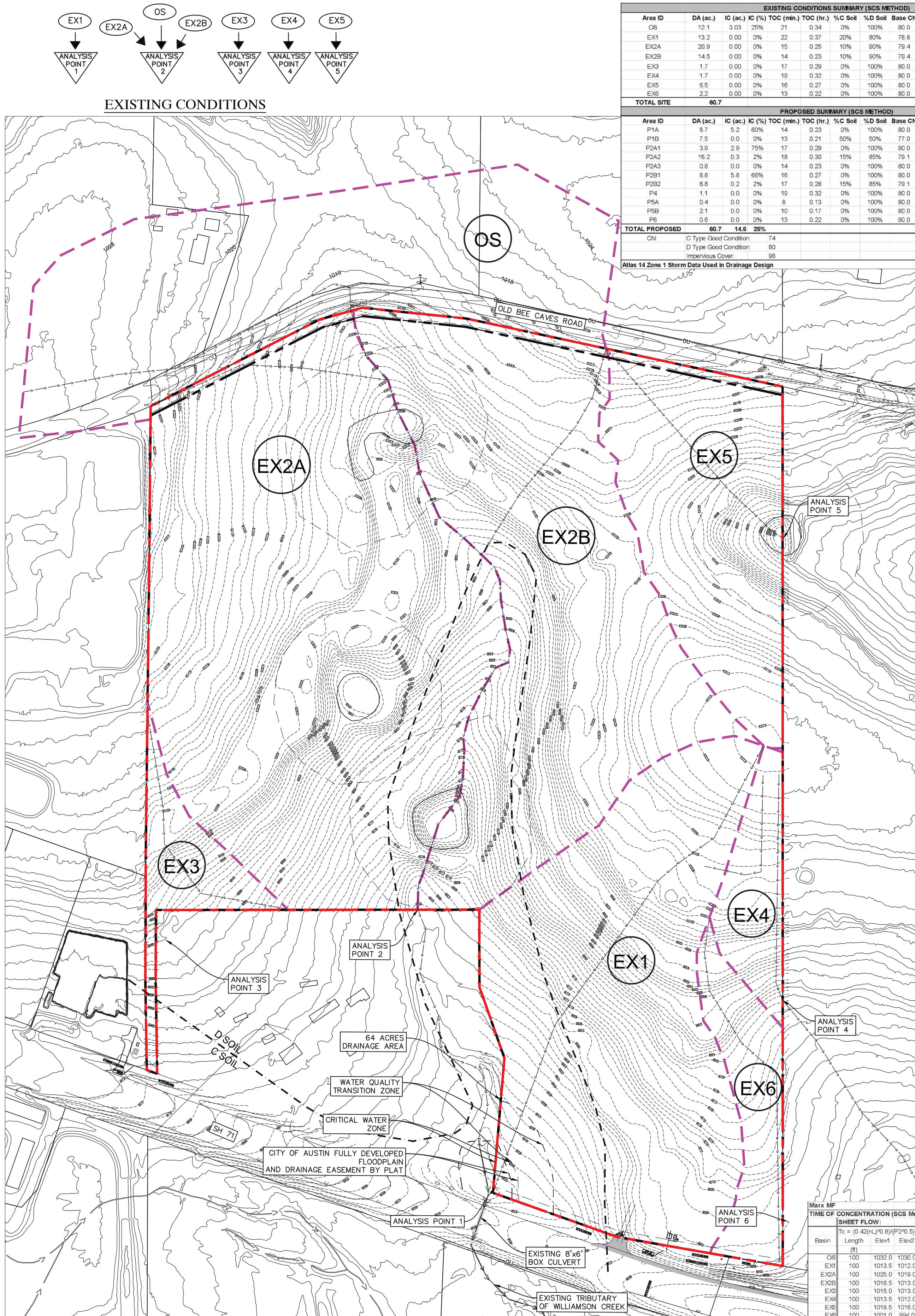
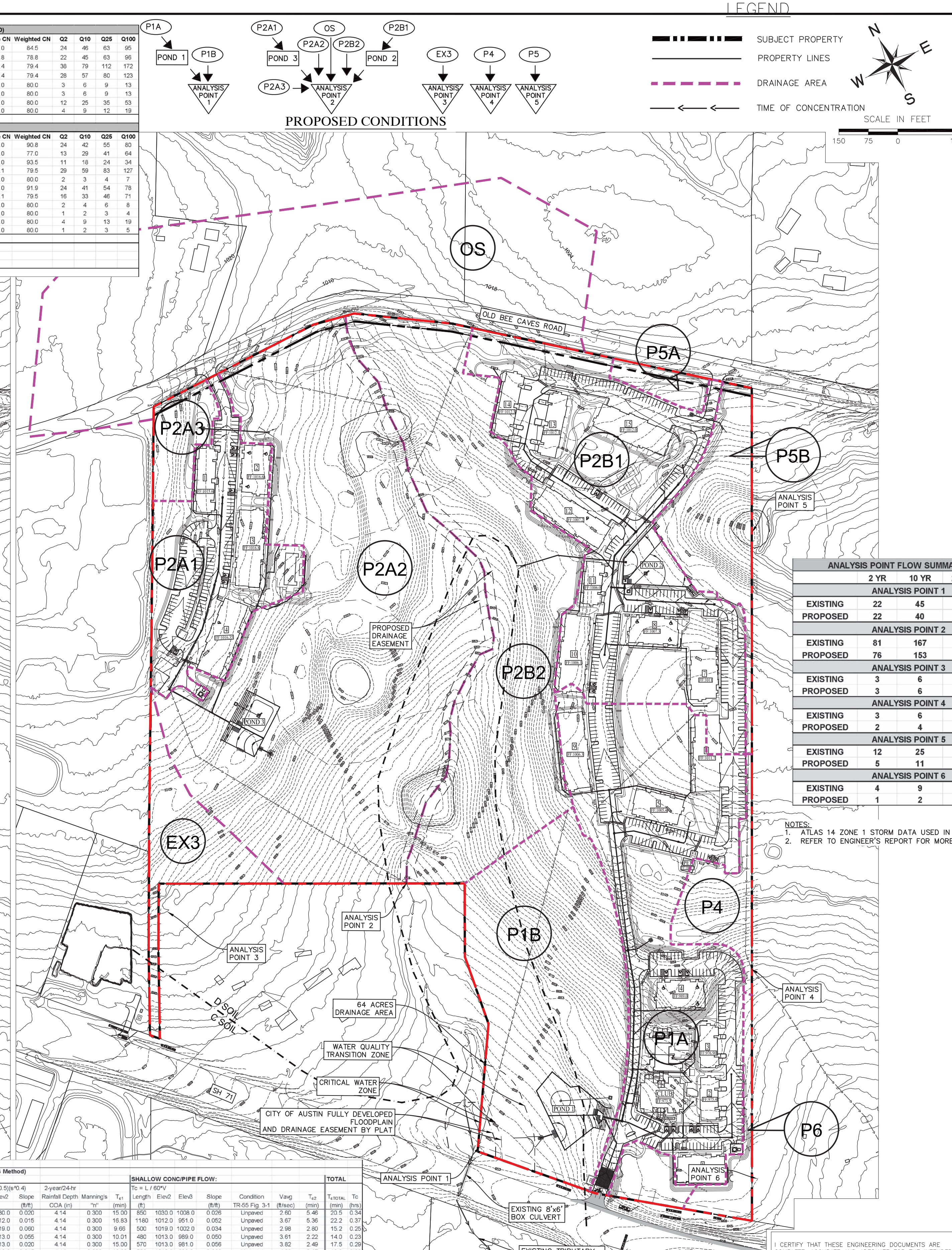


EXISTING CONDITIONS SUMMARY (SCS METHOD)													
Area ID	DA (ac.)	IC (ac.)	IC (%)	TOC (min.)	TOC (hr.)	%C Soil	%D Soil	Base CN	Weighted CN	Q2	Q10	Q25	Q100
OS	12.1	3.03	25%	21	0.34	0%	100%	80.0	84.5	24	46	63	95
EX1	13.2	0.00	0%	22	0.37	20%	80%	78.8	78.8	22	45	63	96
EX2A	20.9	0.00	0%	15	0.25	10%	90%	79.4	79.4	38	79	112	172
EX2B	14.5	0.00	0%	14	0.23	10%	90%	79.4	79.4	28	57	80	123
EX3	1.7	0.00	0%	17	0.29	0%	100%	80.0	80.0	3	6	9	13
EX4	1.7	0.00	0%	19	0.32	0%	100%	80.0	80.0	3	6	9	13
EX5	6.5	0.00	0%	16	0.27	0%	100%	80.0	80.0	12	25	35	53
EX6	2.2	0.00	0%	13	0.22	0%	100%	80.0	80.0	4	9	12	19
TOTAL SITE	60.7												
PROPOSED SUMMARY (SCS METHOD)													
Area ID	DA (ac.)	IC (ac.)	IC (%)	TOC (min.)	TOC (hr.)	%C Soil	%D Soil	Base CN	Weighted CN	Q2	Q10	Q25	Q100
P1A	8.7	5.2	60%	14	0.23	0%	100%	80.0	90.8	24	42	55	80
P1B	7.5	0.0	0%	13	0.21	50%	50%	77.0	77.0	13	29	41	64
P2A1	3.9	2.9	75%	17	0.29	0%	100%	80.0	93.5	11	18	24	34
P2A2	16.2	0.3	2%	18	0.30	15%	85%	79.1	79.5	29	59	83	127
P2A3	0.8	0.0	0%	14	0.23	0%	100%	80.0	80.0	2	3	4	7
P2B1	8.8	5.8	66%	16	0.27	0%	100%	80.0	91.9	24	41	54	78
P2B2	8.8	0.2	2%	17	0.28	15%	85%	79.1	79.5	16	33	46	71
P4	1.1	0.0	0%	19	0.32	0%	100%	80.0	80.0	2	4	6	8
P5A	0.4	0.0	0%	8	0.13	0%	100%	80.0	80.0	1	2	3	4
P5B	2.1	0.0	0%	10	0.17	0%	100%	80.0	80.0	4	9	13	19
P6	0.6	0.0	0%	13	0.22	0%	100%	80.0	80.0	1	2	3	5
TOTAL PROPOSED	60.7	14.5	25%										
CN:	C Type Good Condition:		74										
	D Type Good Condition:		80										
	Impervious Cover:		98										
Atlas 14 Zone 1 Storm Data Used in Drainage Design													



ANALYSIS POINT FLOW SUMMARY (CFS)				
	2 YR	10 YR	25 YR	100 YR
ANALYSIS POINT 1				
EXISTING	22	45	63	96
PROPOSED	22	40	55	96
ANALYSIS POINT 2				
EXISTING	81	167	237	366
PROPOSED	76	153	227	361
ANALYSIS POINT 3				
EXISTING	3	6	9	13
PROPOSED	3	6	9	13
ANALYSIS POINT 4				
EXISTING	3	6	9	13
PROPOSED	2	4	6	8
ANALYSIS POINT 5				
EXISTING	12	25	35	53
PROPOSED	5	11	15	23
ANALYSIS POINT 6				
EXISTING	4	9	12	19
PROPOSED	1	2	3	5

NOTES:
1. ATLAS 14 ZONE 1 STORM DATA USED IN DRAINAGE MODELING.
2. REFER TO ENGINEER'S REPORT FOR MORE INFORMATION.

Marx MF

TIME OF CONCENTRATION (SCS Method)

	SHEET FLOW:							SHALLOW CONC/PIPE FLOW:							TOTAL	
	Tc = (0.42(nL)^0.8)/(P2^0.5)(s^0.4)				2-year/24-hr			Tc = L / 60*V								
Basin	Length (ft)	Elev1	Elev2	Slope (ft/ft)	Rainfall Depth COA (in)	Manning's "n"	T_{c1} (min)	Length (ft)	Elev2	Elev3	Slope (ft/ft)	Condition TR-55 Fig. 3-1	Vavg (ft/sec)	T_{c2} (min)	T_{cTOTAL} (min)	Tc (hrs)
OS	100	1032.0	1030.0	0.020	4.14	0.300	15.00	850	1030.0	1008.0	0.026	Unpaved	2.60	5.46	20.5	0.34
EX1	100	1013.5	1012.0	0.015	4.14	0.300	16.83	1180	1012.0	951.0	0.052	Unpaved	3.67	5.36	22.2	0.37
EX2A	100	1025.0	1019.0	0.060	4.14	0.300	9.66	500	1019.0	1002.0	0.034	Unpaved	2.98	2.80	15.2	0.25
EX2B	100	1018.5	1013.0	0.055	4.14	0.300	10.01	480	1013.0	989.0	0.050	Unpaved	3.61	2.22	14.0	0.23
EX3	100	1015.0	1013.0	0.020	4.14	0.300	15.00	570	1013.0	981.0	0.056	Unpaved	3.82	2.49	17.5	0.29
EX4	100	1013.5	1012.0	0.015	4.14	0.300	16.83	520	1012.0	980.0	0.062	Unpaved	4.00	2.17	19.0	0.32
EX5	100	1018.5	1016.0	0.025	4.14	0.300	13.72	530	1016.0	984.0	0.060	Unpaved	3.96	2.23	15.9	0.27
EX6	100	1001.0	994.0	0.070	4.14	0.300	9.09	790	994.0	966.0	0.035	Unpaved	3.04	4.33	13.4	0.22
P1A	55	1011.5	1010.0	0.027	4.14	0.300	8.21	1390	1010.0	955.0	0.040	Paved	4.04	5.73	13.9	0.23
P1B	100	1000.0	993.0	0.070	4.14	0.300	9.09	800	993.0	951.0	0.053	Unpaved	3.70	3.61	12.7	0.21
P2A1	100	1025.0	1018.0	0.070	4.14	0.300	9.09	1000	1018.0	1008.0	0.010	Paved	2.03	8.20	17.3	0.29
P2A2	100	1016.0	1013.0	0.030	4.14	0.300	12.75	420	1013.0	999.0	0.033	Unpaved	2.95	2.38	17.8	0.30
P2B1	50	1012.0	1011.0	0.020	4.14	0.300	8.61	1100	1011.0	985.0	0.024	Unpaved	2.48	7.39	16.0	0.27
P2B2	100	1018.5	1015.0	0.035	4.14	0.300	11.99	490	1015.0	996.0	0.039	Unpaved	3.18	2.57	16.8	0.28
P4	100	1013.5	1012.0	0.015	4.14	0.300	16.83	520	1012.0	980.0	0.062	Unpaved	4.00	2.17	19.0	0.32
P5A	50	1017.0	1015.5	0.030	4.14	0.300	7.32	140	1015.5	1010.0	0.039	Unpaved	3.20	0.73	8.1	0.13
P5B	50	1012.0	1011.0	0.020	4.14	0.300	8.61	375	1011.0	987.0	0.064	Unpaved	4.08	1.53	10.1	0.17
P6	100	1001.0	994.0	0.070	4.14	0.300	9.09	790	994.0	966.0	0.035	Unpaved	3.04	4.33	13.4	0.22

I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.

NOTE:
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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

OVERALL DRAINAGE AREA MAPS

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\40 DAM.dwg LAYOUT: Sheet PLOT DATE: 8/27/2025 3:25pm PLOTTED BY: mered
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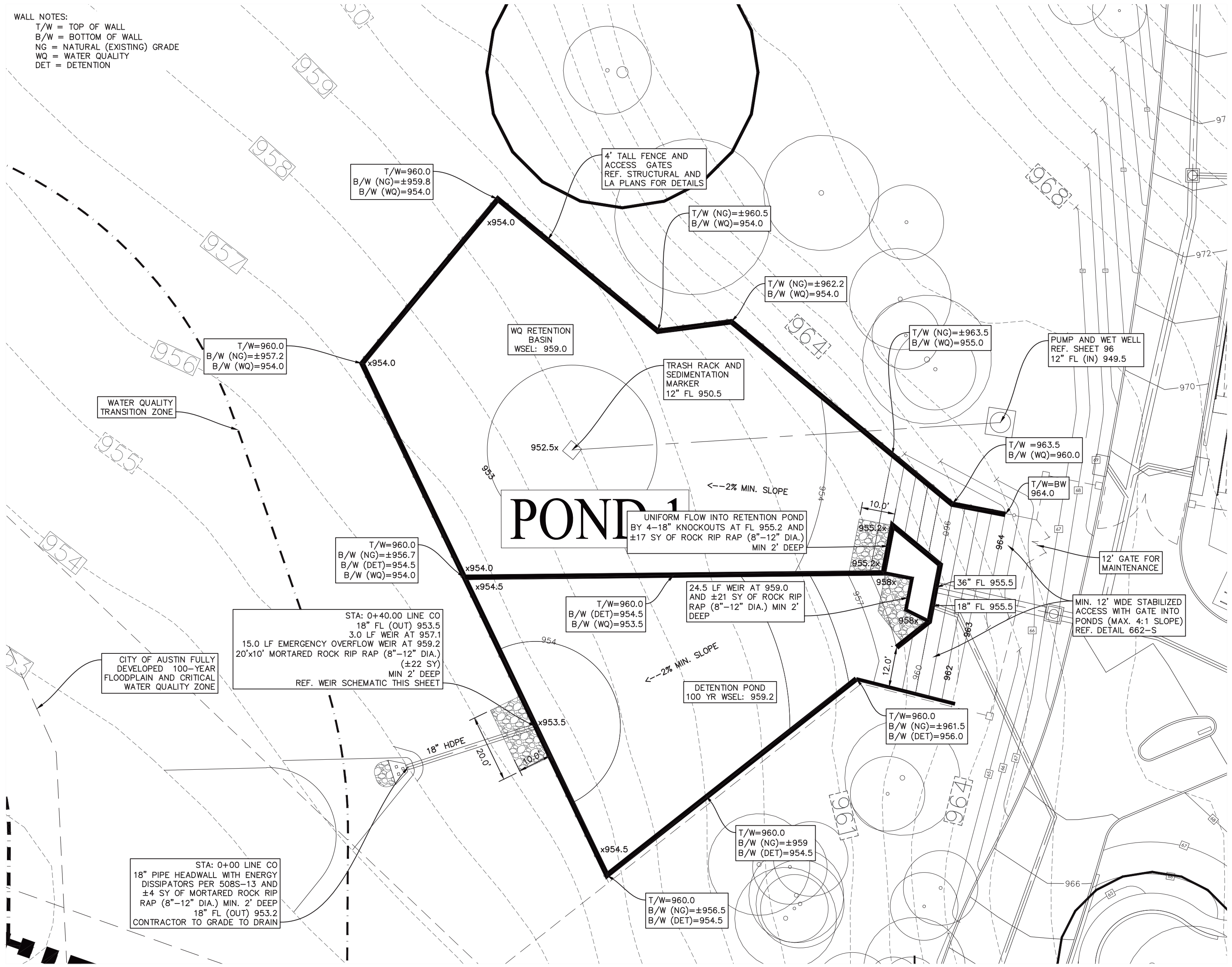


WATER QUALITY POND 1					
CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL (APPENDIX R-5)					
RETENTION/IRRIGATION POND CALCULATIONS FOR DEVELOPMENT PERMITS					
DRAINAGE AREA DATA:					
Drainage Area to Control (DA):		8.7	ac		
Drainage Area Impervious Cover		5.2	ac		
Drainage Area Impervious Cover		60.0	%		
Capture Depth (CD)		0.136	ft	(Per SLAT)	
WATER QUALITY CONTROL CALCULATIONS:		**Required**		**Provided**	
25-year Peak Flow Rate Control (Q25)		55.4	cfs		
100-year Peak Flow Rate Control (Q100)		79.8	cfs		
Water Quality Volume	(CDxAreax3630)	51,522	cf	60,801	cf
Retention Pond Volume	(=WQV)	51,522	cf	60,801	cf
Water Quality Elevation				959.00	ft
Elevation of Splitter/Overflow Weir	(min. WQ WSEL)			959.00	ft
Length of Splitter Weir				24.5	ft
Required Head To Pass Q100	(max. 1.0 ft)			1.0	ft
Pond Freeboard Provided	(min. 0.25 ft)			1.0	ft

RETENTION POND:

Stage(ft msl)	Area (sf)	Storage (cf)	
952.50	0	0	
953.00	1963	491	
954.00	9301	6123	
955.00	10939	16243	
956.00	11074	27250	
957.00	11147	38361	
958.00	11220	49545	
959.00	11293	60801	Water Quality Elevation
960.00	11366	72131	

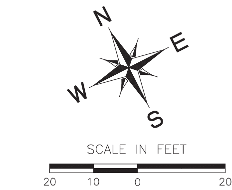
IRRIGATION AREA CALCULATIONS		Required		Provided	
Soil Permeability (Rate)	(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time	(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)				30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)	2.79	ac	2.80	ac

Detention Pond 1 Stage/Volume/Discharge

STAGE (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	CONICAL AREA (SF)	INCREMENTAL VOLUME (ac-ft)	CUMULATIVE VOLUME (ac-ft)	CUMULATIVE VOLUME (CF)	Orifice #1 size (in) 18"@953.5 Q (cfs)	Weir #1 length (ft) 3'@957.1 Q (cfs)	Orifice TOTAL Q (cfs)
953.5	0	0.00	0	0.00	0.00	0	0.0	0.0	0.0
954.0	10283	0.24	10283	0.08	0.08	3424	3.6	0.0	3.6
955.0	16216	0.37	39412	0.30	0.38	16548	9.5	0.0	9.5
956.0	17098	0.39	49965	0.38	0.76	33187	11.3	0.0	11.3
957.0	17501	0.40	51898	0.40	1.16	50469	14.1	0.0	14.1
958.0	17769	0.41	52905	0.40	1.56	68086	16.5	7.7	24.2
959.0	18069	0.41	53757	0.41	1.97	85987	18.5	23.6	42.1
960.0	18220	0.42	54434	0.42	2.39	104113	20.4	44.5	64.9

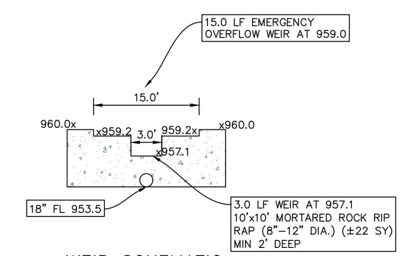
DETENTION POND 1 ROUTING SUMMARY

STORM EVENT	INFLOW	OUTFLOW	WSEL
2-YEAR	24	10	955.7
10-YEAR	42	15	957.2
25-YEAR	55	25	958.1
100-YEAR	80	47	959.2



Diversion Structure Calculations:

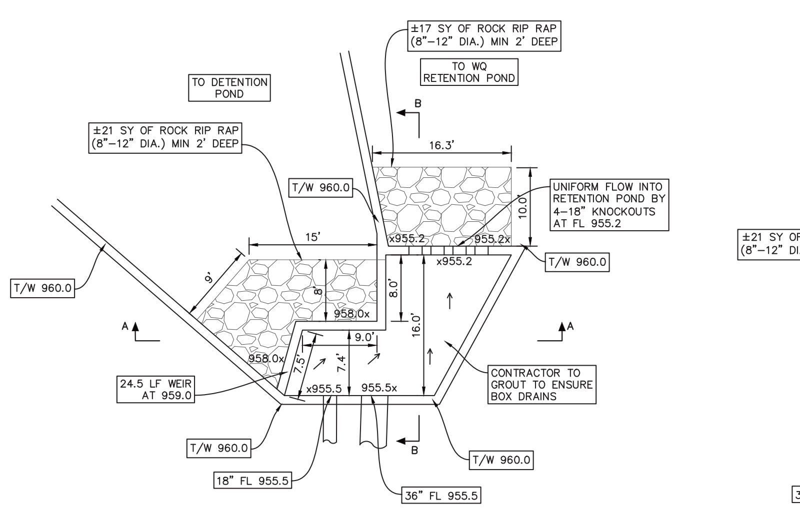
Flow into WQ Pond:				
(Orfice Equation Used)	Q(25)=	**55**		
Pipe Size	1.5	ft		
Q(allow)=	**14.9**	**C.F.S.**		
***4-18" dia. knockouts into WQ pond**	**59**	**C.F.S.**	**Total**	
Q = A*(1.49/n)*R^(2/3)*S^0.5 where n=0.013	h =	3.05		
Splitter Weir to Detention Pond:				
(Weir Equation Used)	Q(100)=	**80**		
Opening Height=	1.0	ft	Length=	24.5
Q(allow)=	**82**	**C.F.S.**		
Q = C*L*H^1.5 where C = 3.36				



WEIR SCHEMATIC

N.T.S.

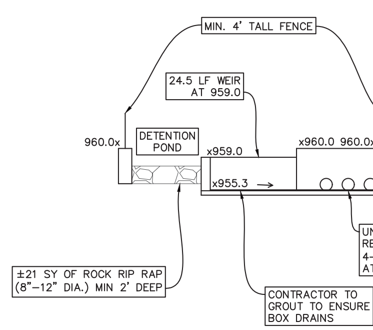
Overflow Weir:				
(Weir Equation Used)		Q(100)in-Q(100)out =		**32.5**
Opening Height=		0.8	Length=	15.0
Q(allow)=	**33.4**	**C.F.S.**		
Q = C*L*H^1.5 where C = 3.36				



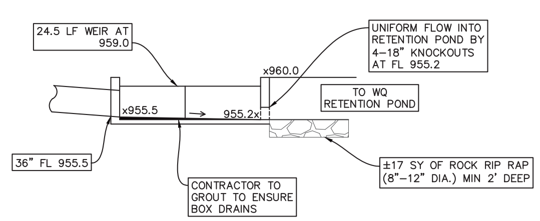
SPLITTER BOX SCHEMATIC

N.T.S.

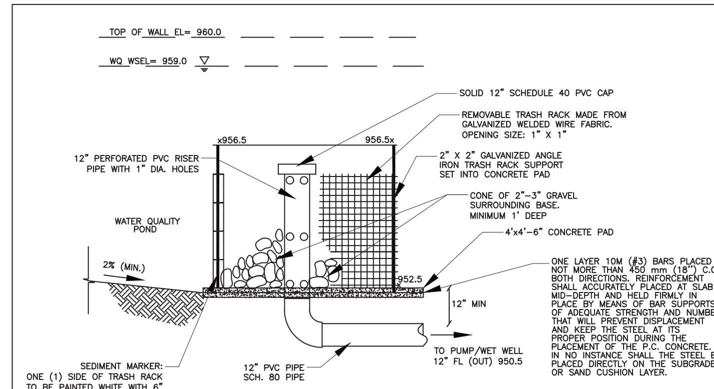
*CONTRACTOR TO PROVIDE CIVIL ENGINEER DETAILED DRAWINGS FROM STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION



SECTION A–A



SECTION B–B



TRASH RACK DETAIL

N.T.S.

NOTES:

1. ALL POND BOTTOM, SIDE SLOPES, AND EARTHERN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH COA STANDARD SPECIFICATION.
2. EARTHERN EBANKMENT SIDE SLOPES SHALL BE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.
3. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).
4. REFER TO SHEET 46 FOR POND MAINTENANCE NOTES.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION

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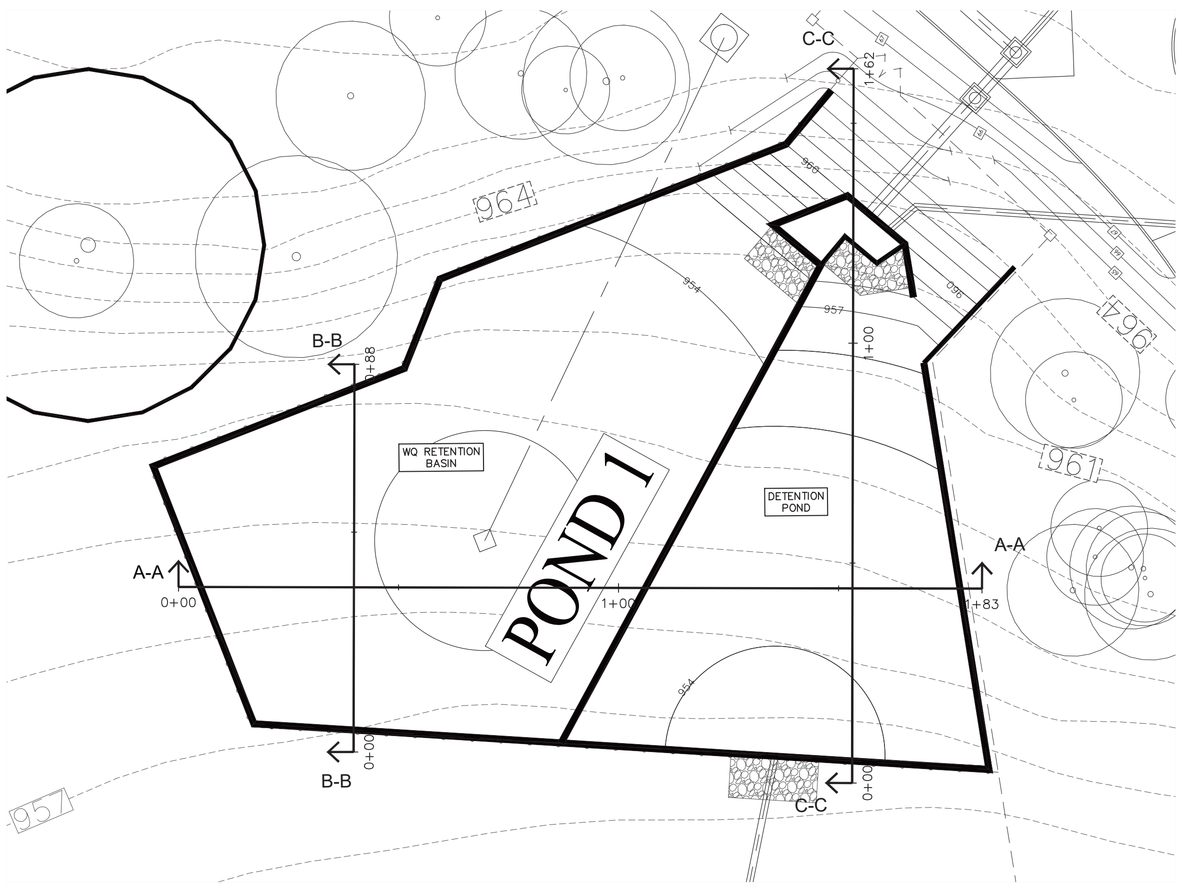
SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

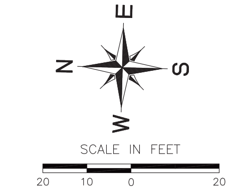
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

DETENTION AND WATER QUALITY POND 1 PLAN (PRIVATE)

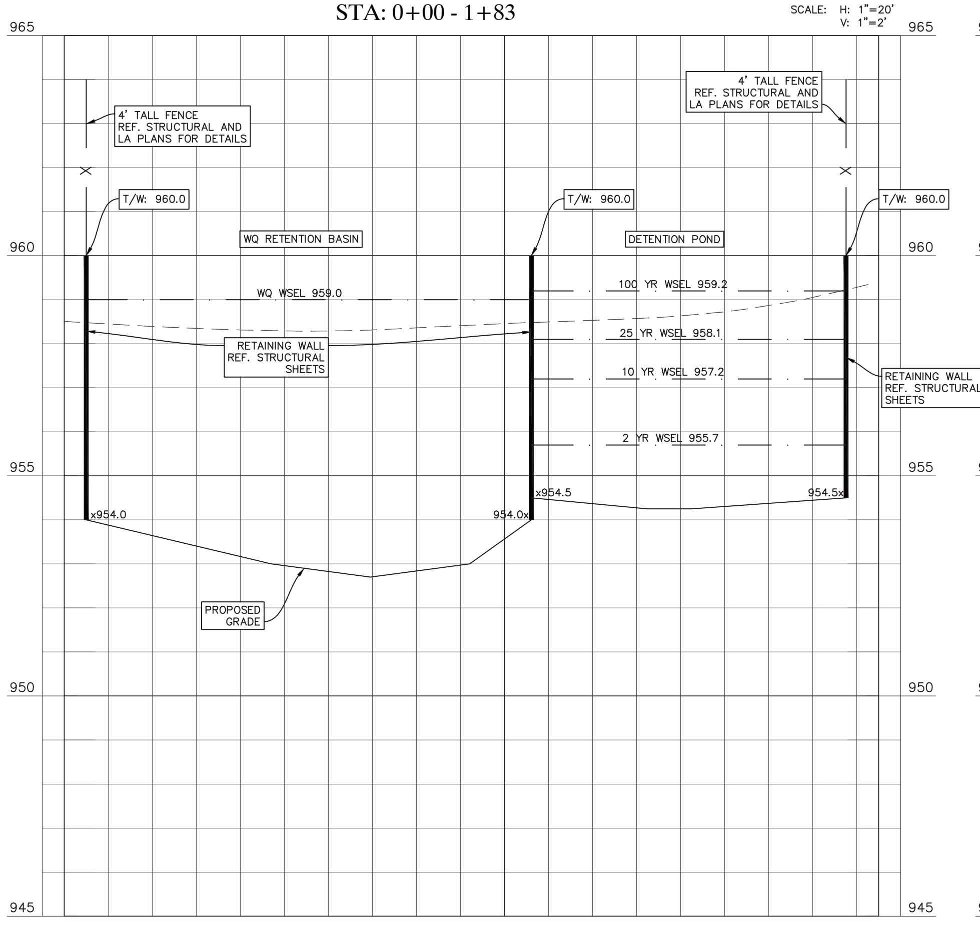
Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

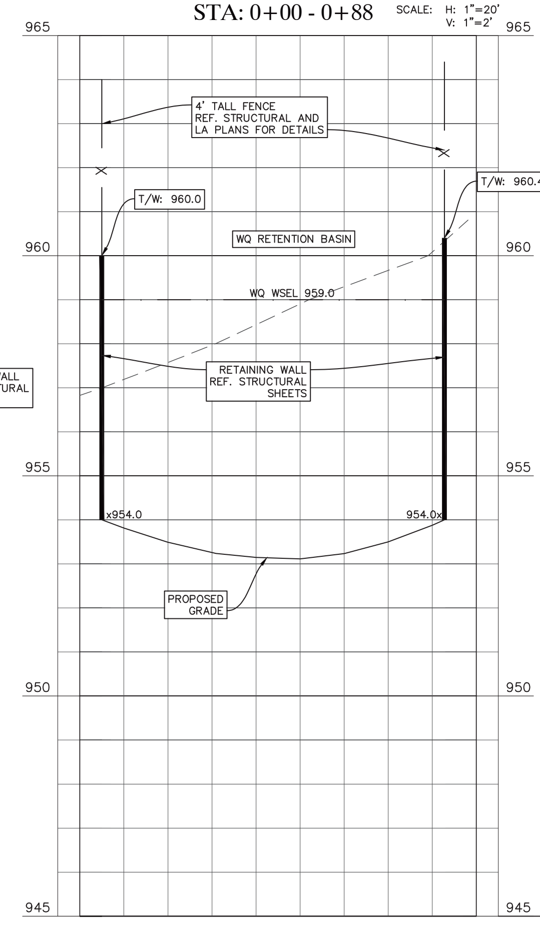




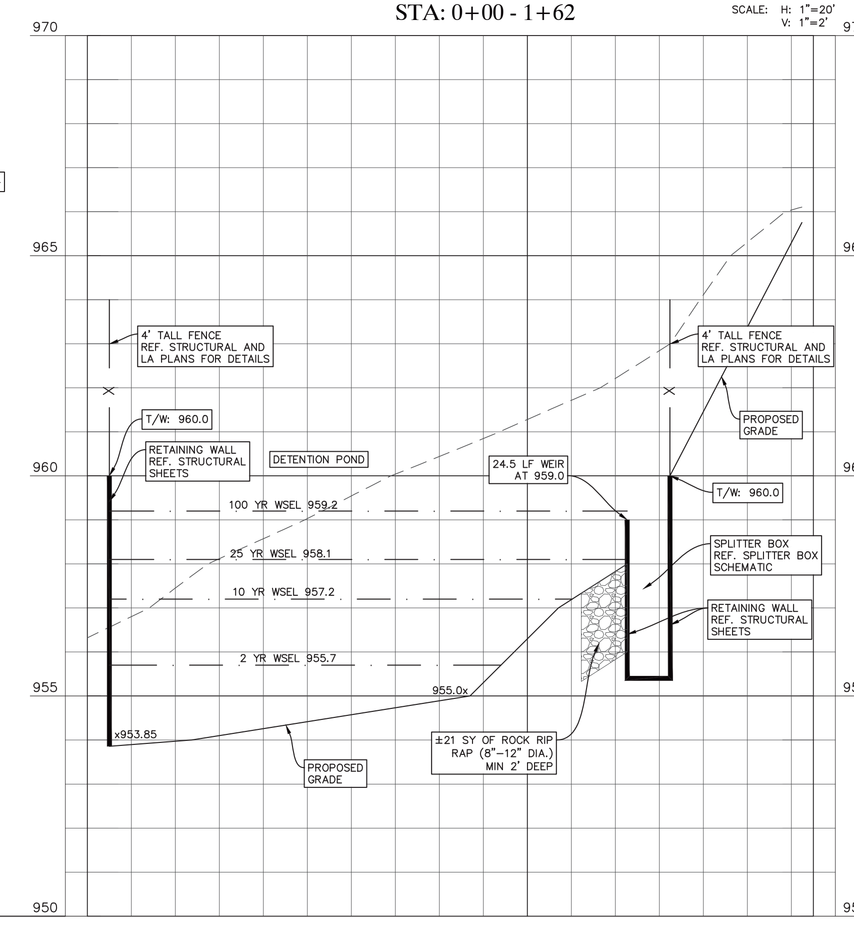
POND 1 CROSS SECTION A-A
STA: 0+00 - 1+83



POND 1 CROSS SECTION B-B
STA: 0+00 - 0+88



POND 1 CROSS SECTION C-C
STA: 0+00 - 1+62



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84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

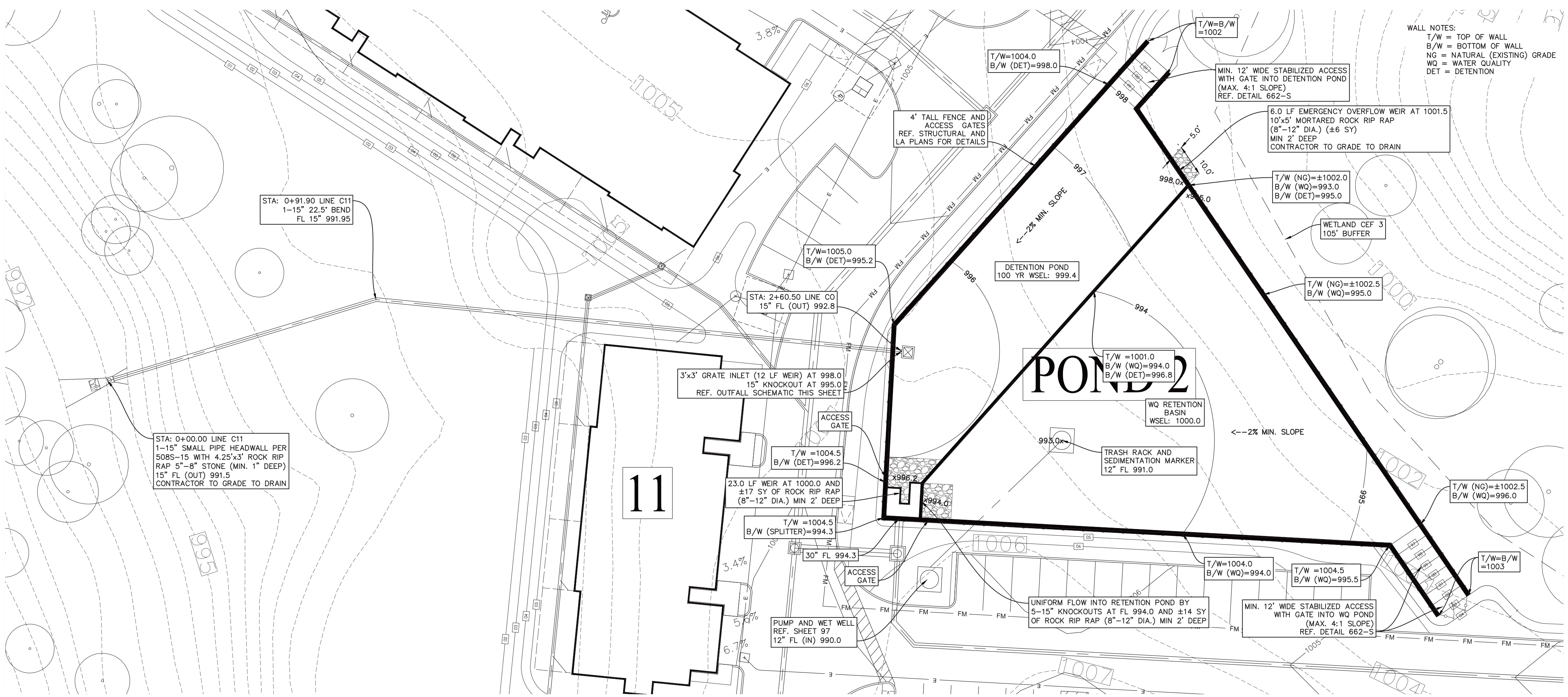
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

DETENTION AND WATER QUALITY POND 1 CROSS-SECTIONS

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
42
OF 113

SP-2025-0080C



DETENTION POND 2 ROUTING SUMMARY

STORM EVENT	INFLOW	OUTFLOW	WSEL
2-YEAR	24	9	997.8
10-YEAR	41	29	998.6
25-YEAR	54	45	999.0
100-YEAR	78	72	999.4

WATER QUALITY POND 2
CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL (APPENDIX R-5)
RETENTION/IRRIGATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:						
Drainage Area to Control (DA):			8.8	ac		
Drainage Area Impervious Cover			5.8	ac		
Drainage Area Impervious Cover			66.0	%		
Capture Depth (CD)			0.151	ft	(Per SLAT)	
WATER QUALITY CONTROL CALCULATIONS:			**Required**		**Provided**	
25-year Peak Flow Rate Control (Q25)			53.9	cfs		
100-year Peak Flow Rate Control (Q100)			77.7	cfs		
Water Quality Volume		(CDxAreax3630)	57,604	cf	62,746	cf
Retention Pond Volume		(=WQV)	57,604	cf	62,746	cf
Water Quality Elevation					1000.00	ft
Elevation of Splitter/Overflow Weir		(min. WQ WSEL)			1000.00	ft
Length of Splitter Weir					23.0	ft
Required Head To Pass Q100		(max. 1.0 ft)			1.0	ft
Pond Freeboard Provided		(min. 0.25 ft)			1.0	ft
RETENTION POND:						
Stage(ft msl)	**Area (sf)**	**Storage (cf)**				
993.00	0	0				
994.00	5059	5044				
995.00	9723	12435				
996.00	10100	22346				
997.00	10100	32446				
998.00	10100	42546				
999.00	10100	52646				
1000.00	10100	62746	Water Quality Elevation			
1001.00	10100	72845				
IRRIGATION AREA CALCULATIONS			**Required**		**Provided**	
Soil Permeability (Rate)		(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time		(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)					30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)		2.88	ac	2.99	ac

NOTES:
1. ALL POND BOTTOM, SIDE SLOPES, AND EARTHERN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH COA STANDARD SPECIFICATION.
2. EARTHERN EBANKMENT SIDE SLOPES SHALL BE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.
3. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).
4. REFER TO SHEET 46 FOR POND MAINTENANCE NOTES.

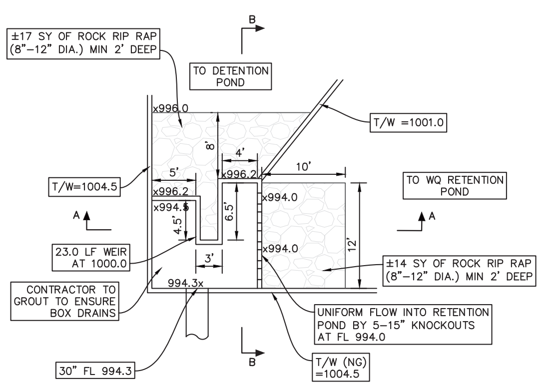
Detention Pond 2 Stage/Volume/Discharge

STAGE (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	CONICAL AREA (SF)	INCREMENTAL VOLUME (ac-ft)	CUMULATIVE VOLUME (ac-ft)	CUMULATIVE VOLUME (CF)	Orifice #1 size (in) 15"@993.0 Q (cfs)	Weir #1 length (ft) 12'@996.0 Q (cfs)	Orifice TOTAL Q (cfs)
995.0	0	0.00	0	0.00	0.00	0	0.0	0.0	0.0
996.0	11778	0.27	11778	0.09	0.09	3922	3.1	0.0	3.1
997.0	14372	0.33	39160	0.30	0.39	16962	6.9	0.0	6.9
998.0	15508	0.36	44809	0.34	0.73	31884	9.1	0.0	9.1
999.0	15508	0.36	46524	0.36	1.09	47376	10.9	36.0	46.9
1000.0	15508	0.36	46524	0.36	1.44	62869	12.4	101.8	114.2

Diversion Structure Calculations:

Flow into WQ Pond:				
(Orfice Equation Used)	Q(25)=	**54**	CFS	
Pipe Size	1.3	ft		
Q(allow)=	**13.7**	**C.F.S.**		
***6-15" dia. knockouts into WQ pond**	**68**	**C.F.S.**	**Total**	
Q = A*(1.49/n)*R^(2/3)*S^0.5 where n=0.013	h =	5.38	ft	
Weir within Splitter to Detention Pond:				
(Weir Equation Used)	Q(100)=	**78**	CFS	
Opening Height=	1.0	ft	Length=	23.0
Q(allow)=	**78**	**C.F.S.**		
Q = C*L*H^1.5 where C = 3.36				

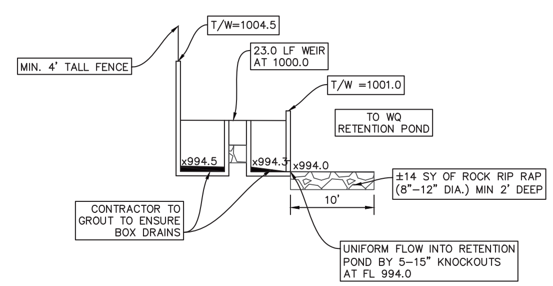
Overflow Weir:				
(Weir Equation Used)		Q(100)in-Q(100)out =		**5.5**
Opening Height=		0.5	Length=	6.0
Q(allow)=	**7.1**	**C.F.S.**		
Q = C*L*H^1.5 where C = 3.36				



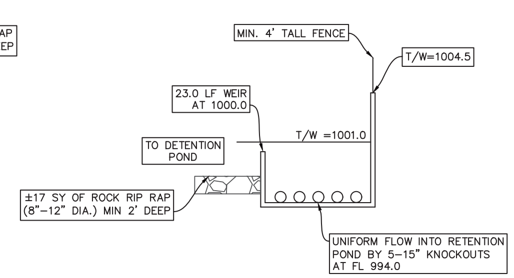
SPLITTER BOX SCHEMATIC

N.T.S.

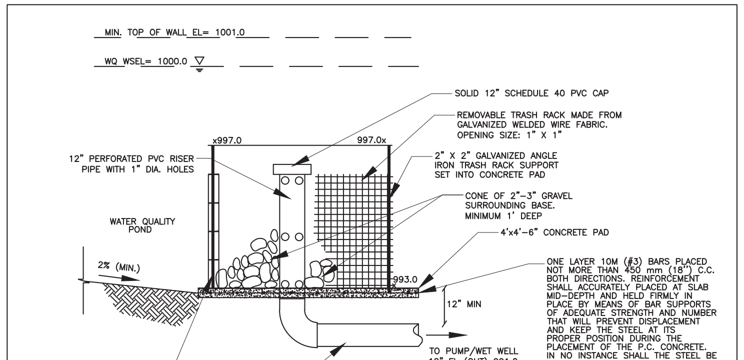
*CONTRACTOR TO PROVIDE CIVIL ENGINEER DETAILED DRAWINGS FROM STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION



SECTION A–A

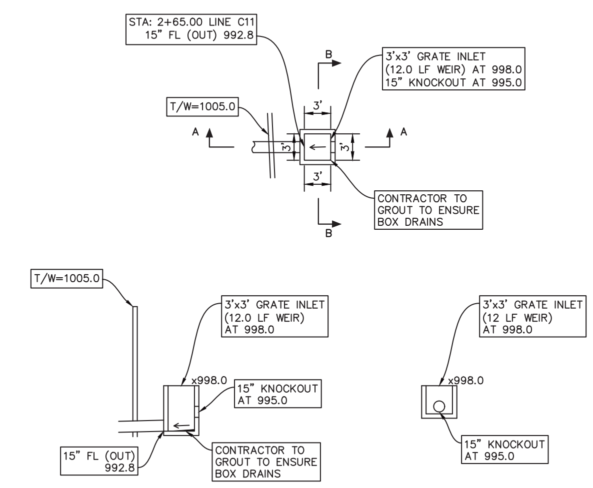


SECTION B–B



TRASH RACK DETAIL

N.T.S.



OUTFALL SCHEMATIC

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No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
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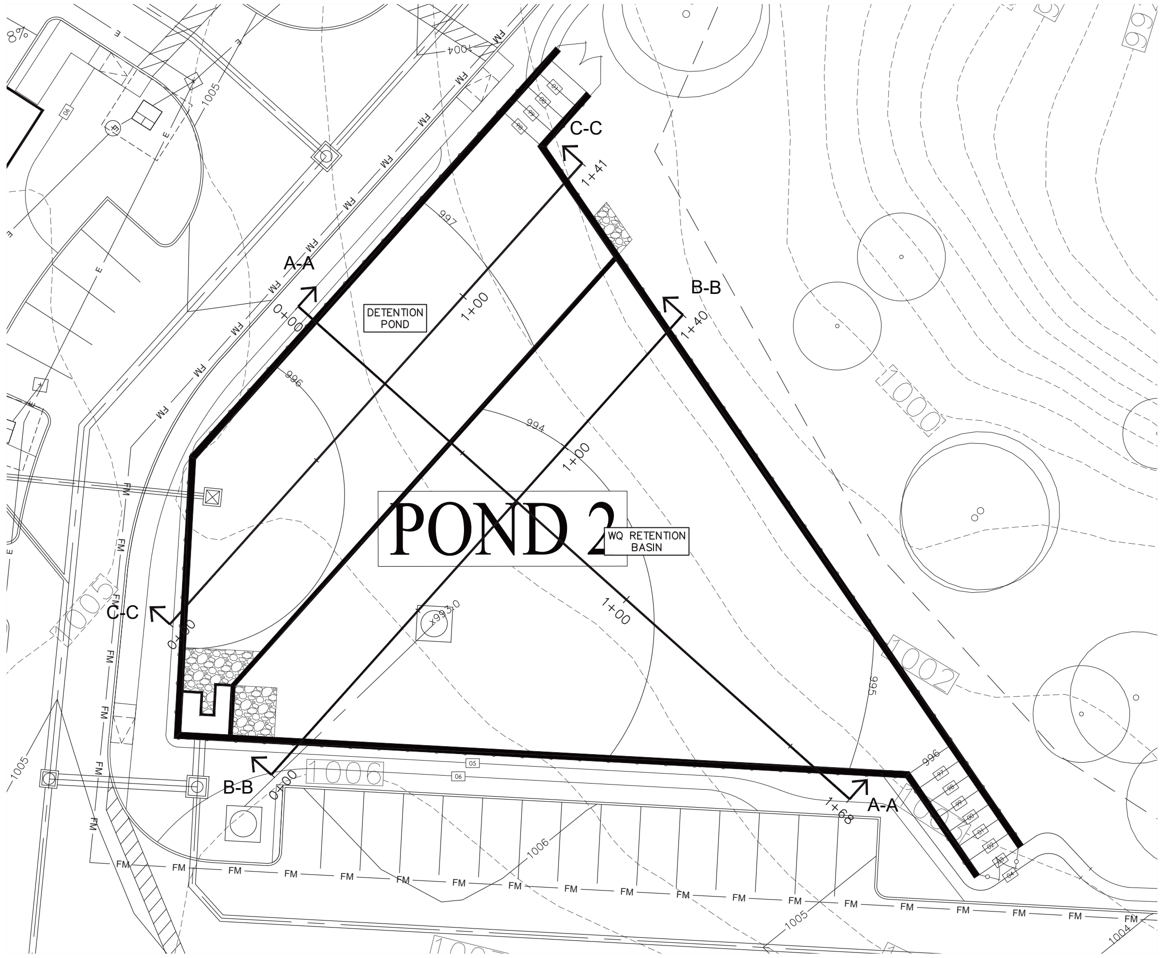
SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

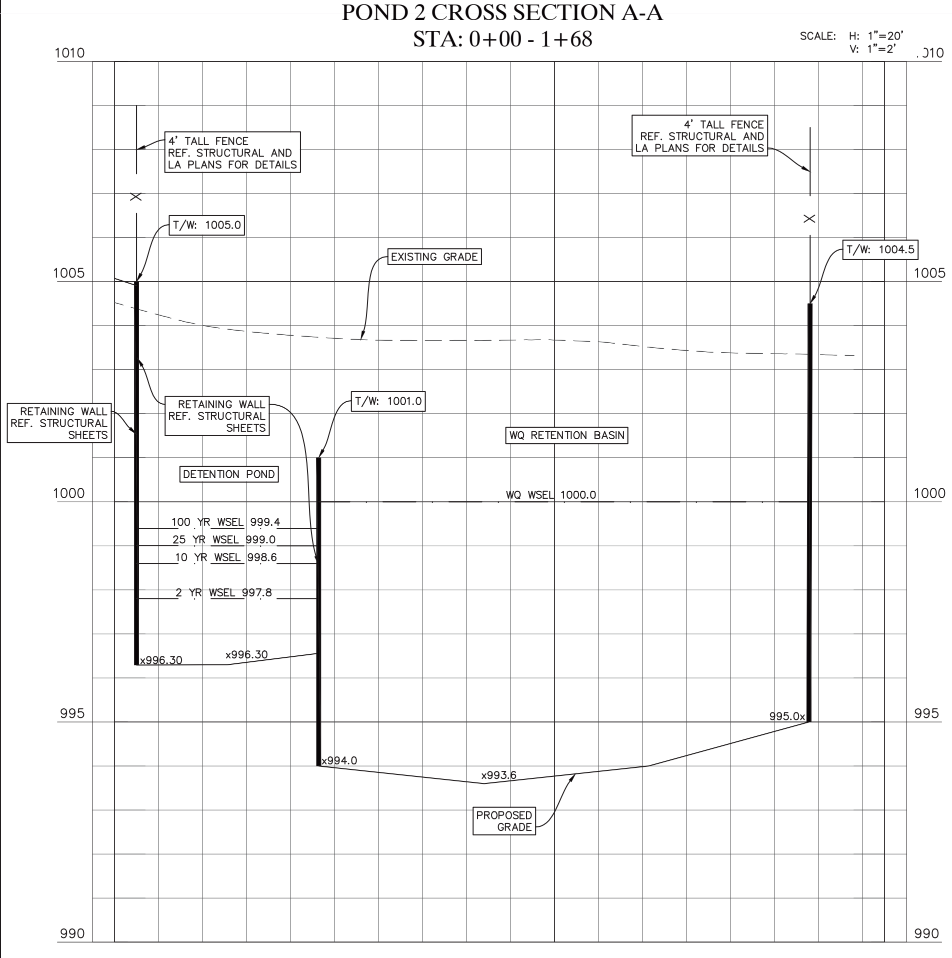
DETENTION AND WATER QUALITY POND 2 PLAN (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

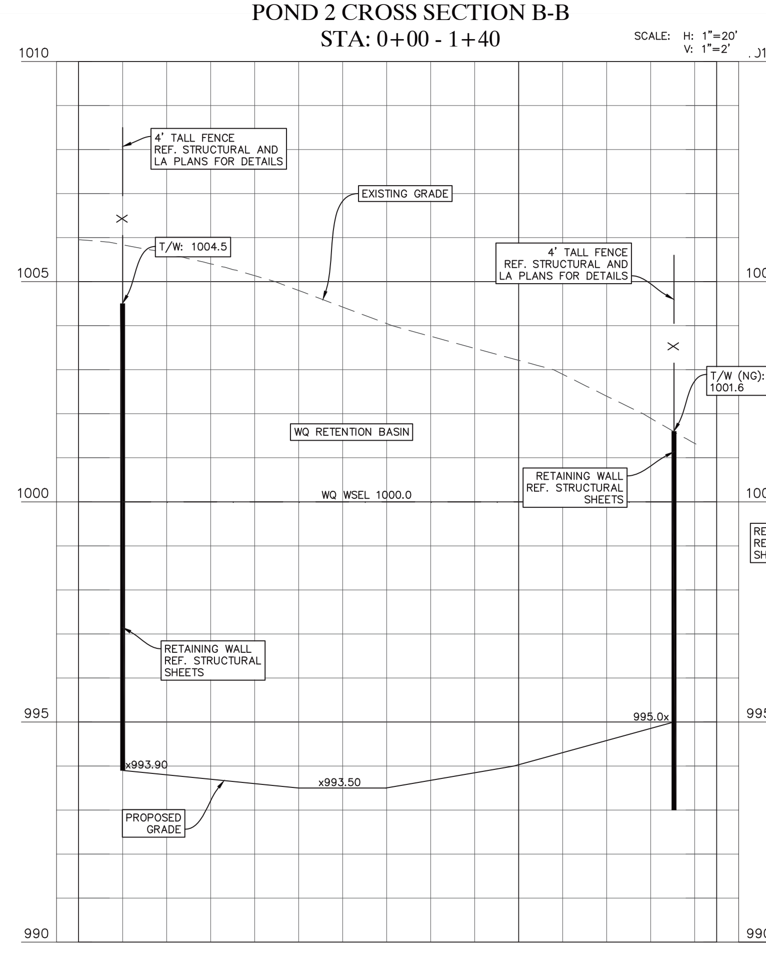
SP-2025-0080C



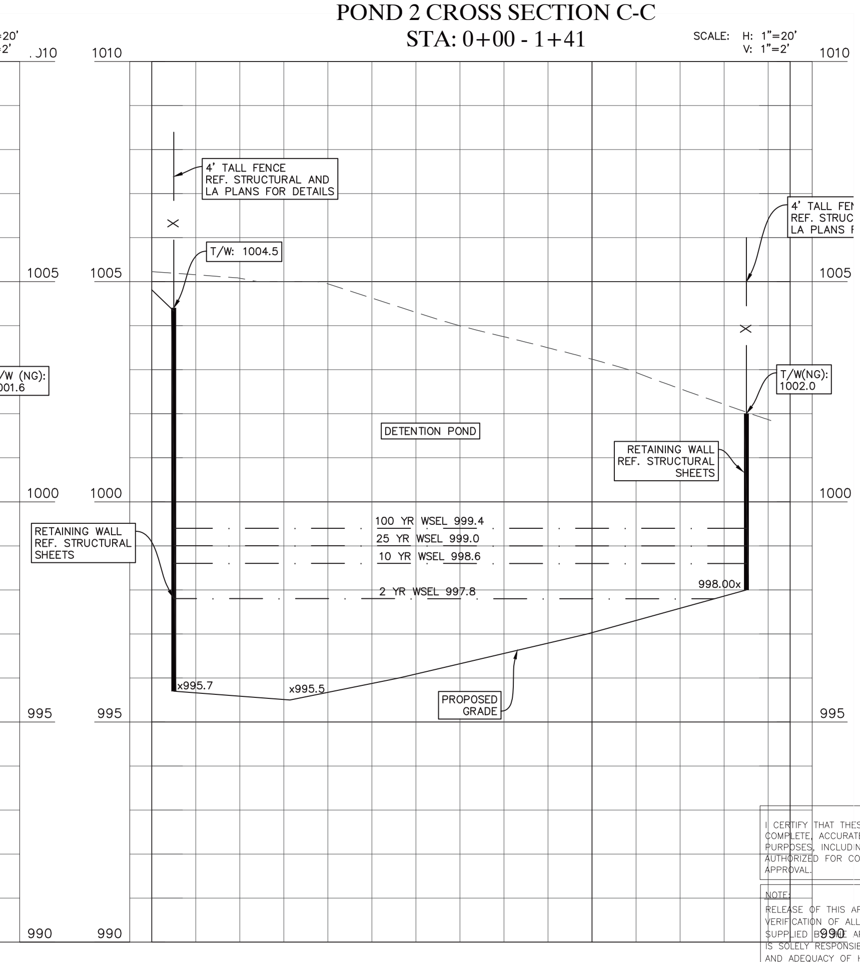
POND 2 CROSS SECTION A-A
STA: 0+00 - 1+68



POND 2 CROSS SECTION B-B
STA: 0+00 - 1+40



POND 2 CROSS SECTION C-C
STA: 0+00 - 1+41



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84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

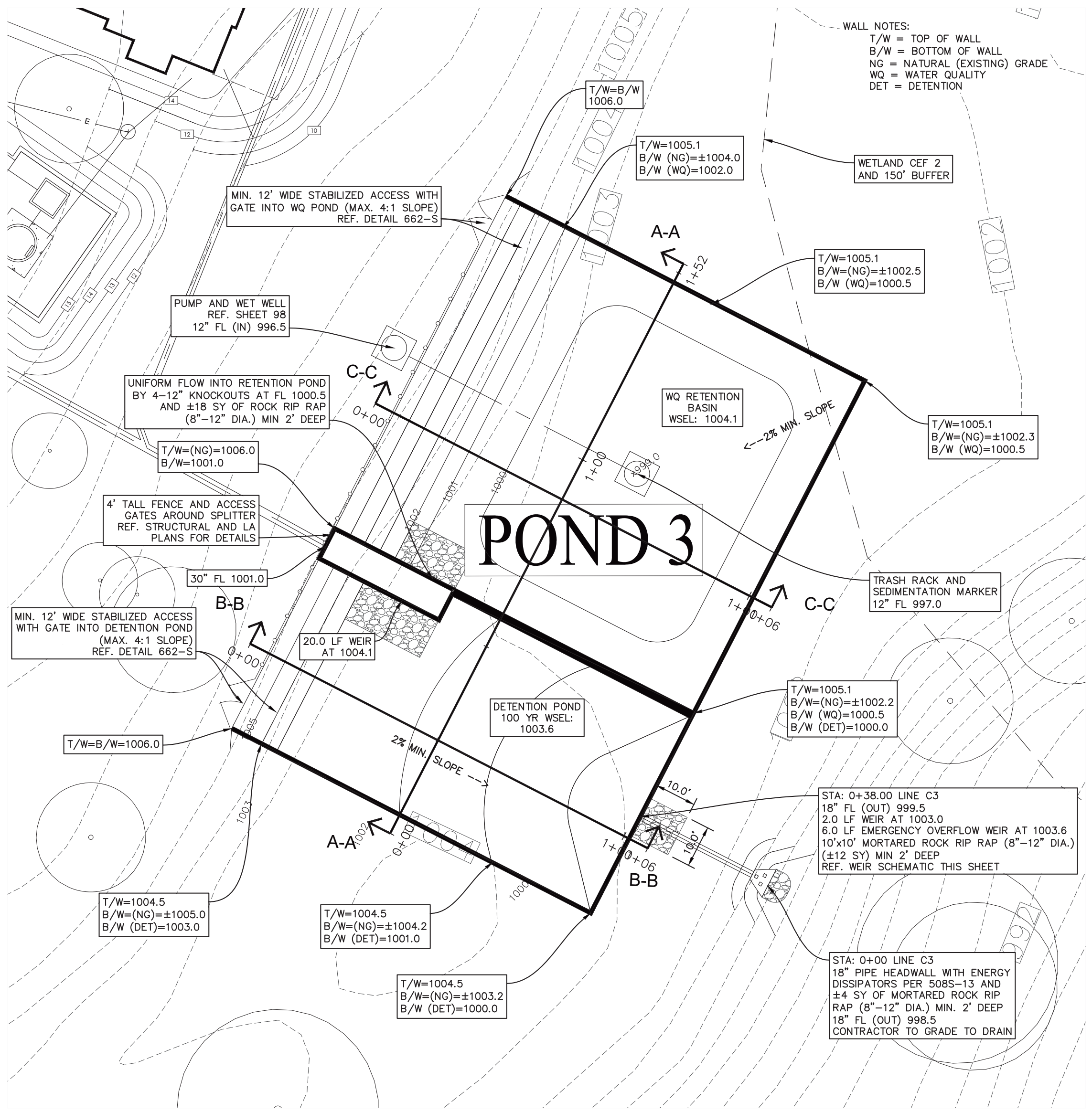
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

DETENTION AND WATER QUALITY POND 2 CROSS-SECTIONS

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
44
OF 113

SP-2025-0080C



WATER QUALITY POND 3

CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL (APPENDIX R-5)

RETENTION/IRRIGATION POND CALCULATIONS FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA:					
Drainage Area to Control (DA):		3.9	ac		
Drainage Area Impervious Cover		2.9	ac		
Drainage Area Impervious Cover		75.0	%		
Capture Depth (CD)		0.174	ft	(Per SLAT)	
WATER QUALITY CONTROL CALCULATIONS:		**Required**		**Provided**	
25-year Peak Flow Rate Control (Q25)		23.6	cfs		
100-year Peak Flow Rate Control (Q100)		33.8	cfs		
Water Quality Volume	(CDxAreax3630)	29,764	cf	29,820	cf
Retention Pond Volume	(=WQV)	29,764	cf	29,820	cf
Water Quality Elevation				1004.10	ft
Elevation of Splitter/Overflow Weir	(min. WQ WSEL)			1004.10	ft
Length of Splitter Weir				20.0	ft
Required Head To Pass Q100	(max. 1.0 ft)			1.0	ft
Pond Freeboard Provided	(min. 0.25 ft)			1.0	ft

RETENTION POND:

Stage(ft msl)	Area (sf)	Storage (cf)	
999.00	0	0	
1000.00	3778	1889	
1001.00	6764	7160	
1002.00	7120	14102	
1003.00	7476	21400	
1004.10	7832	29820	Water Quality Elevation
1005.10	8188	37830	

IRRIGATION AREA CALCULATIONS		Required		Provided	
Soil Permeability (Rate)	(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time	(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)				30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)	1.37	ac	1.67	ac

Overflow Weir:

(Weir Equation Used)		Q(100)in-Q(100)out =	**14.9**
Opening Height=	0.9	Length=	6.0
Q(allow)= **15.3**	**C.F.S.**		

Q = C*L*H^1.5 where C = 3.2

Detention Pond 3 Stage/Volume/Discharge

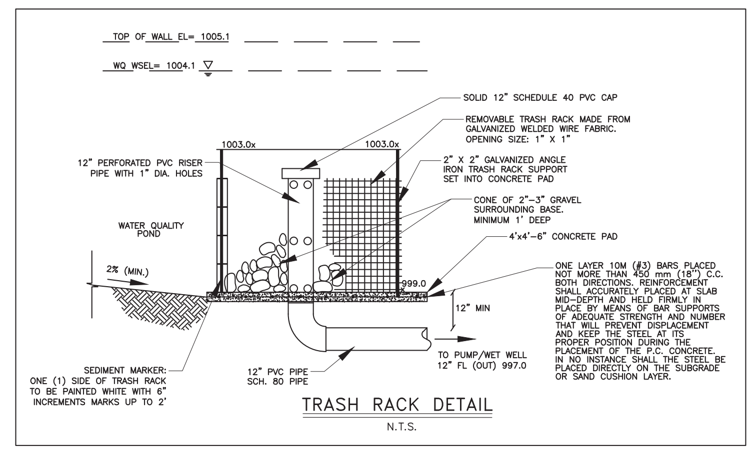
STAGE (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	CONICAL AREA (SF)	INCREMENTAL VOLUME (ac-ft)	CUMULATIVE VOLUME (ac-ft)	CUMULATIVE VOLUME (CF)	Orifice #1 size (in) 18"@999.5 Q (cfs)	Weir #1 length (ft) 2'@1003 Q (cfs)	Orifice TOTAL Q (cfs)
999.5	0	0.00	0	0.00	0.00	0	0.0	0.0	0.0
1000.0	541	0.01	541	0.00	0.00	180	1.0	0.0	1.0
1001.0	5529	0.13	7798	0.06	0.06	2777	7.4	0.0	7.4
1002.0	9616	0.22	22436	0.17	0.24	10248	11.3	0.0	11.3
1003.0	11444	0.26	31550	0.24	0.48	20754	14.1	0.0	14.1
1004.0	12006	0.28	35171	0.27	0.75	32466	16.5	6.0	22.5
1004.5	12568	0.29	36857	0.14	0.89	38603	18.5	17.0	35.5

Diversion Structure Calculations:

Flow into WQ Pond:				
(Orfice Equation Used)	Q(25)=	**24**		
Pipe Size	1.0			
Q(allow)=	**7.7**	**C.F.S.**		
***4-12" dia. knockouts into WQ pond**	**31**	**C.F.S.**	**Total**	
Q = A*(1.49/n)*R^(2/3)*S^0.5 where n=0.013	h =	4.10		
Weir within Splitter to Detention Pond:				
(Weir Equation Used)	Q(100)=	**34**		
Opening Height=	1.0		Length=	20.0
Q(allow)=	**67**	**C.F.S.**		
Q = C*L*H^1.5 where C = 3.36				

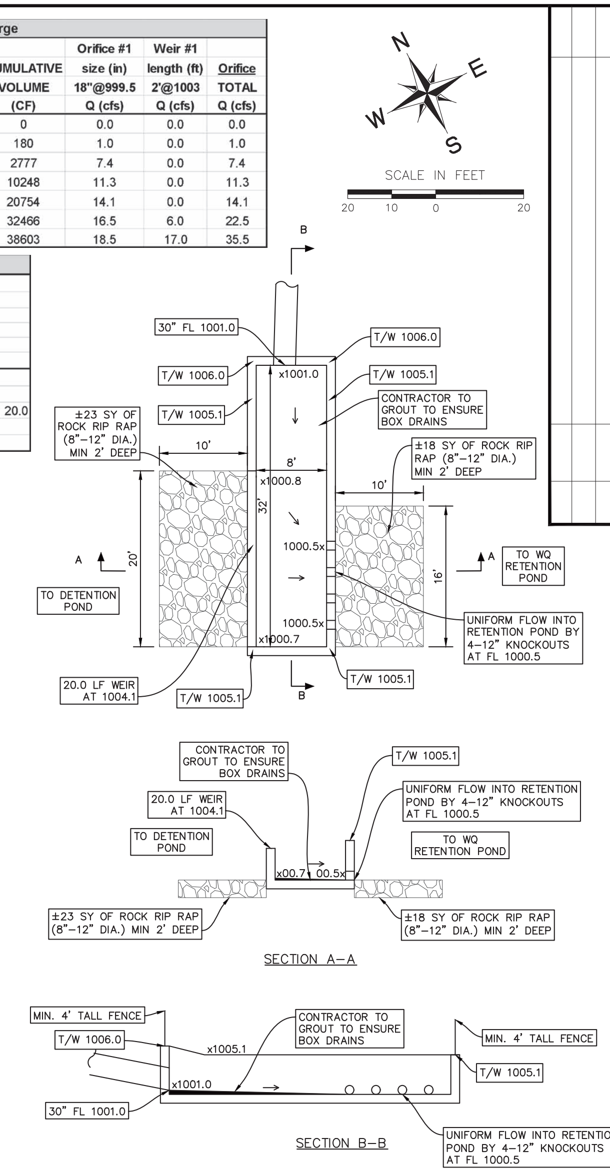
DETENTION POND 3 ROUTING SUMMARY

STORM EVENT	INFLOW	OUTFLOW	WSEL
2-YEAR	11	8	1001.2
10-YEAR	18	11	1002.0
25-YEAR	24	13	1002.6
100-YEAR	34	19	1003.6



TRASH RACK DETAIL

N.T.S.



SPLITTER BOX SCHEMATIC

N.T.S.

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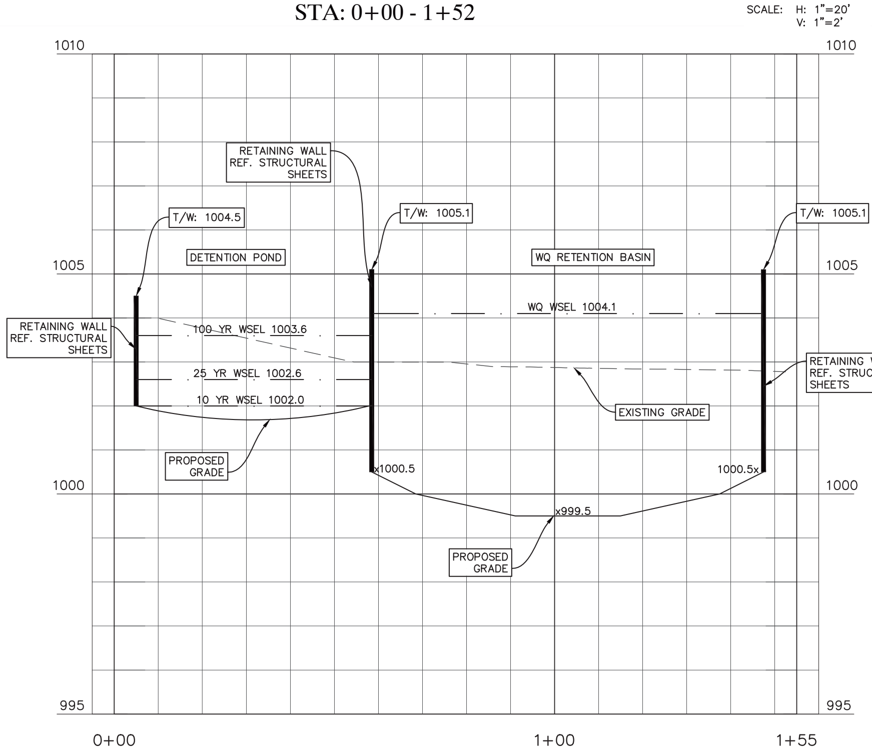
POND 3 CROSS SECTION A-A
STA: 0+00 - 1+52



POND 3 CROSS SECTION B-B
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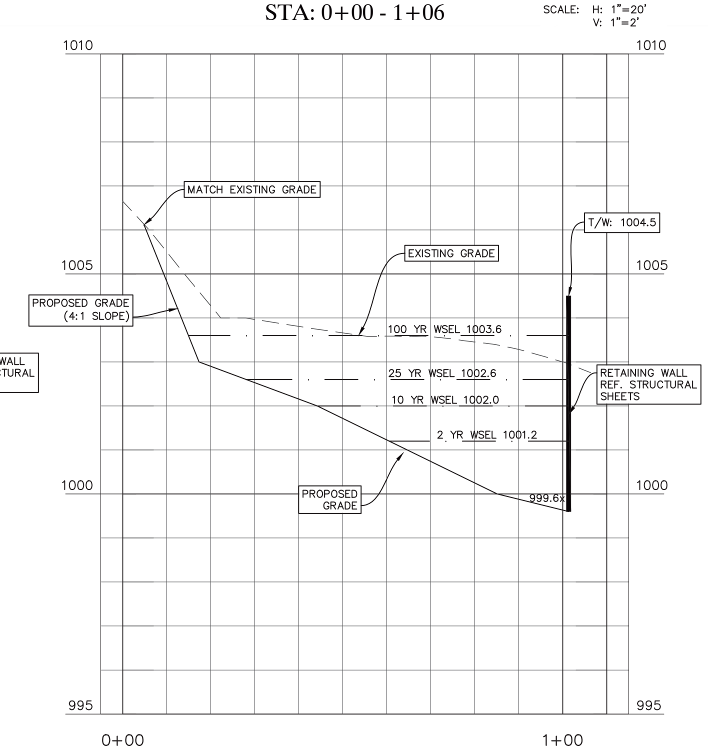
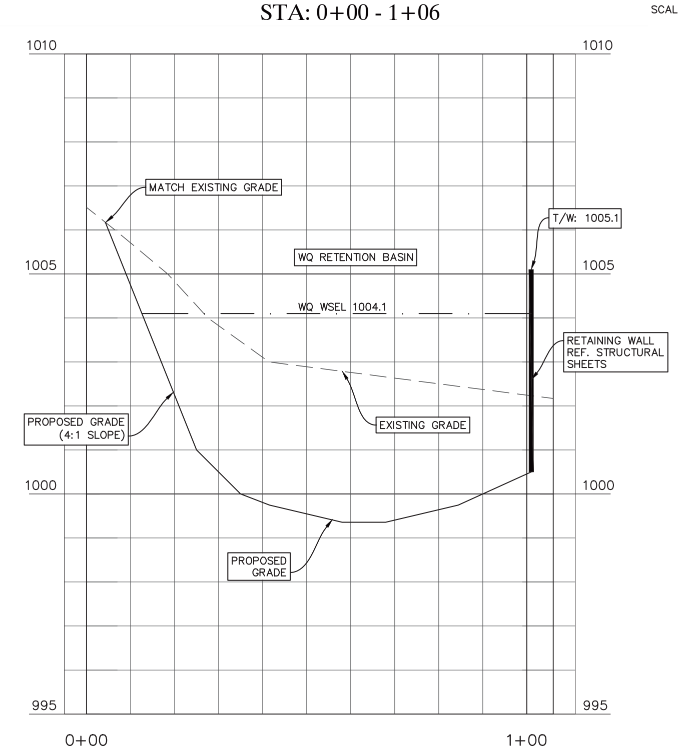
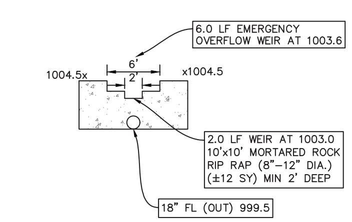


POND 3 CROSS SECTION C-C
STA: 0+00 - 1+06





WEIR SCHEMATIC

N.T.S.

NOTES:
1. ALL POND BOTTOM, SIDE SLOPES, AND EARTHERN EMBANKMENTS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH COA STANDARD SPECIFICATION.
2. EARTHERN EBANKMENT SIDE SLOPES SHALL BE NO STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL.
3. ALL SUBMERGED INLETS AND STORM SEWERS IN THE BARTON SPRINGS ZONE ARE REQUIRED TO BE WATERTIGHT. ACCEPTABLE WATERTIGHT PIPING INCLUDES GASKETED RCP, PVC, AND WASTEWATER GRADE HDPE. PLEASE ENSURE THAT ALL SUBMERGED PIPING IS DESIGNED ACCORDINGLY (ECM 1.6.2.C).
4. REFER TO SHEET 46 FOR POND MAINTENANCE NOTES.

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STATE OF TEXAS SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

DETENTION AND WATER QUALITY POND 3 PLAN (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\41 PONDS.dwg LAYOUT: 3 PLOT DATE: 8/27/2025 4:50pm PLOTTED BY: mered
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ECM 1.6.7.A – RETENTION/IRRIGATION SYSTEMS.

2. MINIMUM DESIGN CRITERIA FOR THE RETENTION BASIN. INFORMATION ON WATER QUALITY VOLUME, DIVERSION STRUCTURES, AND LINING REQUIREMENTS CAN BE FOUND IN SECTION 1.6.2 (GENERAL DESIGN GUIDELINES). IN ADDITION, APPLICABLE REQUIREMENTS OF SECTION 1.6.3 (MAINTENANCE AND CONSTRUCTION REQUIREMENTS) AND DRAINAGE CRITERIA MANUAL SECTION 1.2.4 (DRAINAGE SYSTEM) MUST BE INCORPORATED IN THE DESIGN.
   a. RETENTION BASIN VOLUME. THE BASIN MUST BE OF SUFFICIENT SIZE TO CAPTURE AND HOLD THE REQUIRED CAPTURE VOLUME. RETENTION BASINS ARE DESIGNED TO CAPTURE AND HOLD THE WATER QUALITY VOLUME ROUTED TO THEM VIA DIVERSION STRUCTURES. ALL STRUCTURAL ELEMENTS & PIPING BELOW THE WATER QUALITY ELEVATION SHALL BE WATERTIGHT. FOR DEVELOPMENT IN THE BARTON SPRINGS ZONE, REFER TO SECTION 1.6.9.3. OF THIS MANUAL FOR THE REQUIRED CAPTURE VOLUME.
   b. ONE–HUNDRED YEAR STORM. A BYPASS CAPABLE OF CONVEYING THE 100–YEAR STORM AROUND THE BASIN MUST BE PROVIDED.
   c. LINING. A LINER WILL BE REQUIRED FOR A RETENTION BASIN IF THE BASIN IS LOCATED IN THE EDWARDS AQUIFER RECHARGE ZONE IN ACCORDANCE WITH SECTION 1. THE LINER MUST BE DESIGNED IN ACCORDANCE WITH SECTION 1.6.2C (BASIN LINERS). ALL RETENTION BASINS ARE SUBJECT TO SECTION 1.6.3.C.4 (MAINTENANCE AND CONSTRUCTION REQUIREMENTS).
   d. EROSION PREVENTION. THE INLETS TO THE RETENTION BASIN MUST BE DESIGNED TO PREVENT EROSION OF THE SOIL AND LINER. ROCK RIP–RAP OR OTHER EROSION PREVENTION SYSTEMS MUST BE PLACED AT THE BASIN INLET TO REDUCE VELOCITIES TO LESS THAN THREE FEET PER SECOND.
3. MINIMUM DESIGN CRITERIA FOR WET WELL AND PUMPS.
   a. PUMPS.
      (1) THE RETENTION BASIN MUST BE EMPTIED WITHIN 72–HOURS AFTER A RAIN EVENT ENDS. EMPTYING OF THE RETENTION BASIN MUST NOT BEGIN SOONER THAN 12 HOURS (LAG TIME) AFTER THE END OF THE RAINFALL EVENT. THE FLOW RATE OF THE PUMPS (GPM) SHALL BE DESIGNED TO EMPTY THE RETENTION BASIN IN 30 HOURS OR 60 HOURS (30 HOURS FOR SINGLE ZONE AND 60 HOURS FOR MULTI–ZONE IRRIGATION SYSTEMS).
      (2) PUMPS MUST BE CAPABLE OF DELIVERING THE REQUIRED VOLUME OF WATER AT THE NECESSARY RATE AND PRESSURE TO THE IRRIGATION SYSTEM IN THE DESIGNATED TIME PERIOD. PUMPS AND WET WELL MUST BE SIZED TO MINIMIZE THE NUMBER OF ON– AND OFF–CYCLES OF THE PUMPS. THE RATE (Q_I) OF INFLOW FROM THE RETENTION POND INTAKE RISER (SEE SECTION 1.6.7(A)(3)(C)) TO THE WET WELL MUST EXCEED THE PUMP RATE (Q_P).
      (3) A DUAL PUMP SYSTEM MUST BE PROVIDED, WITH EACH PUMP CAPABLE OF DELIVERING 100 PERCENT OF THE DESIGN CAPACITY.
         (a) PLUG VALVES MUST BE LOCATED OUTSIDE THE WET WELL ON THE DISCHARGE SIDE OF EACH PUMP TO ISOLATE THE PUMPS FOR MAINTENANCE AND FOR THROTTLING IF NECESSARY. BUTTERFLY VALVES AND GATE VALVES MUST NOT BE USED.
         (b) CHECK VALVE(S) MUST BE PROVIDED TO PREVENT BACKFLOW FROM THE IRRIGATION SYSTEM BACK INTO THE PUMP WELL.
         (c) PUMPS MUST BE SELECTED TO OPERATE WITHIN 20% OF THEIR BEST OPERATING EFFICIENCY.
      (4) PUMP OPERATION.
         (a) THE PUMPS MUST ALTERNATE ON START UP. THE CONTROL LOGIC MUST ALLOW THE SYSTEM TO OPERATE NORMALLY WITH ONLY ONE PUMP IN SERVICE.
         (b) A MANUAL CONTROL MUST BE PROVIDED SO BOTH PUMPS CAN BE TURNED ON IF NECESSARY.
         (c) A HIGH/LOW–PRESSURE PUMP SHUT OFF SYSTEM (TO DETECT LINE CLOGGING OR BREAKING) SHALL BE INSTALLED IN THE PUMP DISCHARGE PIPING. AS AN ALTERNATIVE, AN AMP DRAW (OVERLOADS) OR OTHER EQUIVALENT MONITORING DEVICE MAY BE USED.
      (5) FLOAT CONTROLS OR SUBMERSIBLE TRANSDUCERS MUST BE PROVIDED TO CONTROL OPERATION OF THE PUMPS. THREE CONTROL SETTINGS MUST BE USED: (1) ONE FOR STARTING THE PUMP, (2) ONE FOR SHUTTING OFF THE PUMP AT THE NORMAL LOW WATER LEVEL, AND (3) ONE FOR BACK UP SHUT OFF OF THE PUMP IN CASE THE FIRST SHUT–OFF FAILS.
      (6) AN ALARM SYSTEM SHALL BE PROVIDED CONSISTING OF A RED LIGHT LOCATED AT A HEIGHT OF AT LEAST FIVE FEET ABOVE THE GROUND LEVEL AT THE WET WELL. THE ALARM SHALL ACTIVATE WHEN:
         (a) THE WATER LEVEL IS BELOW THE PRIMARY SHUTOFF FLOAT AND THE PUMP HAS NOT TURNED OFF.
         (b) THE HIGH/LOW–PRESSURE PUMP SHUT OFF SWITCH HAS BEEN ACTIVATED.
         (c) ANY OTHER PUMP FAILURES OR SYSTEM SHUT DOWN INDICATED BY CONTROL PANEL.

      THE ALARM MUST BE VANDAL PROOF AND WEATHER RESISTANT. IF THE SYSTEM IS TO BE PRIVATELY MAINTAINED, A SIGN MUST BE PLACED AT THE WET WELL CLEARLY DISPLAYING THE NAME AND PHONE NUMBER OF A RESPONSIBLE PARTY THAT MAY BE CONTACTED IF THE ALARM IS ACTIVATED.
      (7) A GREEN "PUMP RUN LIGHT" SHALL BE PROVIDED WHICH IS ACTIVATED ANY TIME A PUMP IS RUNNING. THE GREEN LIGHT SHOULD BE LOCATED DIRECTLY ADJACENT TO THE RED ALARM LIGHT.
   b. WET WELL.
      (1) A SEPARATE WET WELL OUTSIDE OF THE BASIN MUST BE PROVIDED FOR THE PUMPS. THE WET WELL MUST BE CONSTRUCTED OF PRECAST OR CAST IN PLACE CONCRETE. COMPLETE ACCESS TO THE PUMPS AND OTHER INTERNAL COMPONENTS OF THE WET WELL FOR MAINTENANCE MUST BE PROVIDED THROUGH A LOCKABLE HATCH COVER. AN ISOLATION PLUG VALVE TO PREVENT FLOW FROM THE RETENTION BASIN TO THE WET WELL DURING MAINTENANCE ACTIVITIES MUST BE PROVIDED.
      (2) CALCULATIONS MUST BE PROVIDED WITH THE DESIGN SHOWING THAT THE WET WELL WILL NOT FLOAT UNDER SATURATED–SOIL CONDITIONS. THE TOP ELEVATION OF THE WELL MUST BE HIGHER THAN THE WATER QUALITY ELEVATION. THE WET WELL, LATERAL INFLOW PIPE, AND PUMP MUST BE DESIGNED TO COMPLETELY EVACUATE THE RETENTION POND. A SPACE OF AT LEAST TWO FEET MUST BE AVAILABLE BELOW THE BOTTOM OF THE PUMP INTAKE. THE TWO–FOOT MINIMUM SPACE BELOW THE BOTTOM OF THE PUMP MAY BE WAIVED IF THE APPLICANT DEMONSTRATES THAT ADEQUATE FILTRATION OF THE WATER QUALITY VOLUME IS PROVIDED.
      (3) THE PUMP INSTALLATION IN THE WET WELL AND ACCESS TO THE WET WELL MUST BE DESIGNED TO ALLOW THE PUMPS TO BE REMOVED USING TRUCK–MOUNTED HYDRAULIC HOIST EQUIPMENT OR A PORTABLE "A–FRAME." A SYSTEM MUST BE PROVIDED TO ALLOW PUMP REMOVAL WITHOUT ENTERING THE WET WELL. IF RAILS ARE USED THEY MUST BE STAINLESS STEEL.
   c. INTAKE RISER. PRIOR TO ENTERING THE WET WELL, STORMWATER MUST PASS THROUGH AN APPROPRIATE INTAKE RISER WITH A SCREEN TO REDUCE THE POTENTIAL FOR CLOGGING OF DISTRIBUTION PIPES AND SPRINKLERS BY LARGER DEBRIS (E.G. CUPS, CANS, STICKS). THE INTAKE RISER AND SCREEN SHOULD BE DESIGNED SIMILARLY TO FIGURE 1–54 IN THE APPENDICES OF THIS MANUAL. ALTERNATIVE DESIGNS WILL BE CONSIDERED.
4. MINIMUM DESIGN CRITERIA FOR THE IRRIGATION SYSTEM OR INFILTRATION FIELD.
   a. IRRIGATION TIMING.
      (1) THE RETENTION BASIN MUST BE EMPTIED WITHIN 72–HOURS AFTER A RAIN EVENT ENDS.
      (2) IRRIGATION MUST BE INITIATED NO SOONER THAN 12 HOURS AFTER THE RAIN EVENT CEASES.
      (3) THE IRRIGATION CONTROLLER MUST BE SET TO PROVIDE ALTERNATING, EQUIVALENT IRRIGATION AND REST PERIODS UNTIL THE BASIN IS EMPTIED.
      (4) THE TIME OF IRRIGATION ON ANY AREA MUST NOT EXCEED THE REST TIME. CONTINUOUS APPLICATION ON ANY AREA MUST NOT EXCEED TWO HOURS.
      (5) AN ADJUSTABLE RAIN SENSOR MUST BE PROVIDED WHICH WILL NORMALLY BE SET TO TEMPORARILY HALT IRRIGATION DURING RAINFALLS EXCEEDING ONE HALF INCH. THE RAIN SENSOR MUST BE ABLE TO INTERRUPT IRRIGATION (STOP PUMPS) IN THE EVENT OF SUBSEQUENT RAIN EVENTS PRIOR TO EMPTYING BASIN. THE 12 HOUR PUMP DELAY MAY INITIATE AFTER THE RAIN SENSOR SENSES THE RAIN EVENT HAS TERMINATED.
      (6) DIVISION OF THE IRRIGATION AREA INTO TWO OR MORE SECTIONS SUCH THAT IRRIGATION OCCURS ALTERNATELY IN EACH SECTION IS AN ACCEPTABLE WAY TO MEET THE REQUIREMENT FOR A REST PERIOD.
   b. IRRIGATION RATE. THE INFILTRATION RATE AT WHICH THE SOIL CAN ACCEPT THE IRRIGATED STORM WATER MUST BE DERIVED FROM THE INFILTRATION RATE LISTED IN THE U.S. DEPARTMENT OF AGRICULTURE NATIONAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL SURVEY FOR THE COUNTY, LOCATION, AND SOIL TYPE VERIFIED TO BE PRESENT AT THE IRRIGATION SITE. IF A RANGE IS GIVEN, THE LOWER VALUE OF THE RANGE IS TO BE USED. THE DESIGN IRRIGATION RATE IS NOT TO EXCEED 0.20 INCHES PER HOUR EVEN IF THE LOWER VALUE OF THE RANGE EXCEEDS THAT RATE. CITY OF AUSTIN FIELD EXPERIENCE HAS SHOWN THAT INFILTRATION RATES ABOVE 0.20 INCHES PER HOUR DO NOT FUNCTION AS DESIGNED AND GENERATE SIGNIFICANT NUISANCE PONDING AND RUNOFF ISSUES. THE APPLICATION RATE MAY NOT EXCEED THE INFILTRATION RATE ON ANY PORTION OF THE IRRIGATION AREA.
   c. IRRIGATION AREA OR INFILTRATION FIELD. CALCULATIONS MUST BE PROVIDED WHICH DEMONSTRATE THAT AN ADEQUATE IRRIGATION AREA OR INFILTRATION FIELD WILL BE PROVIDED BASED ON THE SOIL INFILTRATION RATE, WATER QUALITY VOLUME, AND, FOR IRRIGATION AREAS, THE APPLICATION RATE AND ACTUAL IRRIGATION TIME. THE IRRIGATION AREA OR INFILTRATION FIELD SYSTEM MUST BE INCLUDED WITHIN THE WATER QUALITY EASEMENT.
   d. IRRIGATION AREA SLOPE. IRRIGATION MUST NOT OCCUR ON LAND WITH SLOPES GREATER THAN 10%.
   e. PIPING AND VALVES.
      (1) ALL IRRIGATION SYSTEM DISTRIBUTION AND LATERAL PIPING (I.E. FROM THE PUMPS TO THE SPRAY HEADS) MUST BE SCHEDULE 40 PURPLE PVC. ALL PIPES AND ELECTRICAL BUNDLES PASSING BENEATH DRIVEWAYS OR PAVED AREAS MUST BE SLEEVED WITH PVC CLASS 200 PIPE WITH SOLVENT WELDED JOINTS. SLEEVE DIAMETER MUST EQUAL TWICE THAT OF THE PIPE OR ELECTRICAL BUNDLE. BURIED PIPING MUST BE MARKED WITH DETECTABLE MARKING TAPE LABELED "CAUTION: BURIED NON–POTABLE WATER LINE BELOW".
      (2) VALVES. ALL VALVES MUST BE DESIGNED SPECIFICALLY FOR SEDIMENT BEARING WATER, AND BE OF APPROPRIATE DESIGN FOR THE INTENDED PURPOSE. ALL REMOTE CONTROL, GATE, AND QUICK COUPLING VALVES MUST BE LOCATED IN TEN–INCH OR LARGER PLASTIC VALVE BOXES WITH PURPLE CAPS. ALL PIPES AND VALVES MUST BE MARKED TO INDICATE THAT THEY CONTAIN NON–POTABLE WATER. ALL PIPING MUST BE BURIED TO PROTECT IT FROM WEATHER AND VANDALISM. THE DEPTH AND METHOD OF BURIAL MUST BE ADEQUATE TO PROTECT THE PIPE FROM VEHICULAR TRAFFIC SUCH AS MAINTENANCE EQUIPMENT. VELOCITIES IN ALL PIPELINES SHOULD BE SUFFICIENT TO PREVENT SETTLING OF SOLIDS. THE IRRIGATION DESIGN AND LAYOUT MUST BE INTEGRATED WITH THE TREE PROTECTION PLAN AND PRESENTED AS PART OF THE SITE PLAN OR SUBDIVISION CONSTRUCTION PLAN.
      (3) SYSTEMS MUST INCLUDE A PLUG VALVE TO ALLOW FLUSHING AT THE END OF EVERY LINE.
   f. SPRINKLERS. ALL SPRINKLER HEADS MUST HAVE FULL OR PARTIAL CIRCLE ROTOR POP–UP HEADS AND MUST BE CAPABLE OF DELIVERING THE REQUIRED RATE OF IRRIGATION OVER THE DESIGNATED AREA IN A UNIFORM MANNER. SPRINKLER HEADS SHOULD HAVE PURPLE CAPS TO INDICATE NON–POTABLE WATER. IRRIGATION MUST NOT OCCUR BEYOND THE LIMITS OF THE DESIGNATED IRRIGATION AREA AND SPRINKLER HEADS SHOULD BE LOCATED AT LEAST TWICE THE CALCULATED SPRAY RADIUS FROM ANY RESIDENTIAL LOT. PARTIAL CIRCLE SPRINKLER HEADS MUST BE USED AS NECESSARY TO PREVENT IRRIGATION BEYOND THE DESIGNATED LIMITS. SPRINKLER HEADS MUST BE CAPABLE OF PASSING SOLIDS THAT MAY PASS THROUGH THE INTAKE. SPRINKLER HEADS MUST BE FLUSH MOUNTED AND ENCASED WITHIN A 2 FEET × 2 FEET CONCRETE HOUSING CAPABLE OF PROTECTING THE HEAD FROM MOWING AND SERVICE EQUIPMENT (SEE APPENDIX V, FIGURE 1–59F FOR AN EXAMPLE).
   g. VEGETATION. THE IRRIGATION AREA MUST HAVE NATIVE VEGETATION OR BE RESTORED OR RE–ESTABLISHED WITH NATIVE VEGETATION, UNLESS APPROVED BY THE DIRECTOR. THESE AREAS MUST NOT RECEIVE ANY FERTILIZERS, PESTICIDES, OR HERBICIDES. IF LANDSCAPED AREAS ARE USED FOR IRRIGATION, FERTILIZERS, PESTICIDES, OR HERBICIDES MUST NOT BE APPLIED TO THOSE AREAS AND THIS LIMITATION MUST BE OUTLINED IN THE INTEGRATED PEST MANAGEMENT (IPM) PLAN. FOR PUBLICLY MAINTAINED SYSTEMS, FENCING OR SIGNS MUST BE INSTALLED TO LIMIT UNAUTHORIZED USE OF THE IRRIGATION AREA. IF SIGNS ARE INSTALLED, THEY MUST INCLUDE THE PHRASE "STORMWATER IRRIGATION AREA – NO TRESPASSING."
   h. SOIL. THE IRRIGATION AREA MUST CONTAIN A MINIMUM OF 12 INCHES OF NATIVE OR ENHANCED SOIL WITH THE APPROPRIATE PERMEABILITY RATES. A SOILS REPORT MUST BE PROVIDED AND MUST INCLUDE AT A MINIMUM A SOILS MAP VERIFYING SOIL TYPES IN THE IRRIGATION AREA, PERMEABILITY RATES, SOIL DEPTHS, PERCENT OF COARSE FRAGMENTS GRAVEL SIZE (2.0 MM DIAMETER) AND LARGER, FOUND ON THE SOIL SURFACE AND IN THE SUBSURFACE SOILS, DEPTH OF ROOTS, LOCATIONS OF BORINGS OR TRENCHES, PHOTOGRAPHS OF EXPOSED SOILS, LOCATION AND TYPE OF SOIL ENHANCEMENT PERFORMED, SOILS TESTING RESULTS, ETC. A SITE VISIT MAY BE CONDUCTED BY THE CITY TO CONFIRM SOIL CONDITIONS, INCLUDING WHEN REPRESENTATIVE TRENCHES HAVE BEEN OPENED OR BORINGS ARE BEING CONDUCTED. CITY STAFF MUST BE GIVEN AT LEAST 72 HOURS NOTICE OF WHEN BORINGS OR TRENCHES ARE TO BE BACKFILLED.

      IF SOIL IS ENHANCED, TOPSOIL OR AMENDED TOPSOIL SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION 601S, SALVAGING AND PLACING TOPSOIL. THE CONDITION, TYPE, STRUCTURE, AND QUALITY OF THE SOIL SHALL BE CONDUCIVE TO INFILTRATION AND TO PLANT GROWTH. IF ALTERNATIVE METHODS OF AMENDING SOIL CAN BE DEMONSTRATED TO INCREASE THE INFILTRATION CAPACITY BY AT LEAST A FACTOR OF THREE, THESE METHODS MAY BE USED WITH APPROVAL FROM THE DIRECTOR OF WPD.
   i. GEOLOGICAL FEATURES. THE IRRIGATION AREA MUST NOT CONTAIN ANY CRITICAL ENVIRONMENTAL FEATURE BUFFER ZONES.
   j. IRRIGATION AREA BUFFER. A BUFFER AREA OF UN–IRRIGATED VEGETATION MUST BE PROVIDED DOWNSTREAM OF THE IRRIGATION AREA TO TREAT ANY RUNOFF THAT MAY OCCUR FROM THE IRRIGATION AREA DURING HEAVY RAINFALL OR FROM EXCESSIVE IRRIGATION. THIS AREA MUST BE A MINIMUM OF 50 FEET IN LENGTH (IN THE DIRECTION OF FLOW) AND BE ADJACENT TO ALL DOWNSTREAM EDGES OF THE IRRIGATION AREA. AS AN OPTION, A DIVERSION SYSTEM (E.G. A SWALE OR BERM) MAY BE PROVIDED TO ROUTE ANY RUNOFF TO THE RETENTION BASIN. THIS DIVERSION SYSTEM MUST BE DESIGNED TO CARRY THE RUNOFF FROM THE TWO–YEAR STORM. ALTERNATIVELY, THE IRRIGATION AREA MAY BE LOCATED UPSTREAM FROM THE DEVELOPMENT SUCH THAT ANY RUNOFF WILL BE ROUTED TO THE RETENTION POND.
5. MANUALS AND AS–BUILT PLANS.
   a. THE APPLICANT MUST PROVIDE TWO COMPLETE COPIES OF AN OPERATIONS MANUAL FOR THE PUMPS AND IRRIGATION SYSTEM, WHICH MUST INCLUDE:
      (1) PUMP CURVES, ELECTRICAL SCHEMATICS, PUMP AND INSTRUMENT TECHNICAL INFORMATION, COMPONENTS OF THE CONTROL PANEL, PUMP MAINTENANCE RECOMMENDATIONS WITH REQUIRED FREQUENCIES, IRRIGATION CONTROLLER OPERATION INSTRUCTIONS AND A WRITTEN WARRANTY.
      (2) AS–BUILT PLANS OF THE RETENTION BASIN, WET WELL, PUMPS, PIPING AND IRRIGATION SYSTEM. THE PLANS MUST SHOW THE LOCATION, SIZE, AND TYPE OF ALL PIPES, VALVES, WIRING, WIRING JUNCTIONS, AND SPRINKLER HEADS.

      FOR RETENTION–IRRIGATION SYSTEMS THAT ARE TO BE MAINTAINED BY THE CITY OF AUSTIN, BOTH SETS OF PLANS AND MANUALS SHALL BE SUBMITTED TO THE FIELD OPERATIONS DIVISION OF THE WATERSHED PROTECTION AND DEVELOPMENT REVIEW DEPARTMENT.

      FOR SYSTEMS THAT ARE TO BE MAINTAINED PRIVATELY, ONE SET OF PLANS AND ONE MANUAL SHALL BE INCLUDED WITH THE OPERATING PERMIT APPLICATION AND THE SECOND SET OF PLANS AND ONE MANUAL SHALL BE RETAINED ON SITE AT ALL TIMES.

SLAT STORMWATER LOAD ANALYSIS TOOL 2.1

Quick Guide
1. Enable Macros in the worksheet.
2. Click "Restore Defaults" button to the right.
3. Fill all **yellow cells** with project specifics, moving from top to bottom.
4. Click "View Full Results" button.
5. Project Passes if Green "COMPLIANT" button appears.

Find the **Full User Manual** at austintexas.gov/department/stormwater-management

Questions? **Email** SLAT@austintexas.gov

Click Here To **Restore Defaults** For a New Analysis | Click Here To **View Results**

KEY: Required User Input | **Key User Input** | Internal Calculation | Error | Calculator Output | Does Not Apply

Step 1: Input site characteristics in yellow highlighted cells

Marx Multifamily | Meredith Kizewski, P.E. | 4/17/2025 | SLAT 2.1 - 08/2022

Is your site within the Barton Springs Zone (BSZ)?	**Yes**		
How many drainage areas, n_{max}, does your site have?	**3**		
	Drainage Area A	*Drainage Area B*	*Drainage Area C*
Drainage area to the control, A_n (acres)	**8.70**	**8.80**	**3.90**
Base impervious cover of the drainage area, IC_B (%)	0.0	0.0	0.0
Developed impervious cover of the drainage area, IC_D (%)	**60.0**	**66.0**	**75.0**

Step 2: Input SCM characteristics in yellow highlighted cells

	Drainage Area A	*Drainage Area B*	*Drainage Area C*
SCM 1 (First in Series)	*SCM A1*	*SCM B1*	*SCM C1*
SCM Type	Retention Basin	Retention Basin	Retention Basin
Is SCM 1 **off-line**?	Yes (Off-Line)	Yes (Off-Line)	Yes (Off-Line)
What is the Water Quality Volume, *WQV* (inches) [aka Capture Depth]	**1.63**	**1.81**	**2.09**
Minimum water quality volume allowed (in)	0.90	0.96	1.05
SCM 1 Actual Volume (ft^3)	51477	57819	29588
Do you know the **drawdown time** or the **flow rate**?	Drawdown Time	Drawdown Time	Drawdown Time
Drawdown Time, *DDT* (hrs) [tot. time to empty full SCM 1	**60**	**60**	**60**
Flow Rate (gpm) [use only for "alternative" controls]			
Treatment Rate, Ω (in/hr)	0.027	0.030	0.035
Do you already know the **runoff capture efficiency**?	No	No	No
User Entered Runoff Capture Efficiency, RCE (%)			
Runoff Capture Efficiency, RCE (%)	**95.6%**	**95.7%**	**95.7%**
Conveyance			
How is effluent from SCM 1 discharged?	Pumped	Pumped	Pumped
Delay after end of rainfall before discharging SCM 1 (hrs)	12	12	12
SCM 2 (Second in Series)	*SCM A2*	*SCM B2*	*SCM C2*
SCM Type	Infiltration Field	Infiltration Field	Infiltration Field
Do you know the infiltrated or reused water quantity?	No; infiltrate all routed water	No; infiltrate all routed water	No; infiltrate all routed water
User-entered infilt. water quality volume, WQV_{inf} (in)			
-OR- Percent of yearly runoff infiltrated, RCE_{inf} (%)			
Soil infiltration rate (in/hr)	0.2	0.2	0.2
Ratio of drawdown time / irrigation time, for any zone	2	2	2
Approximate Minimum Field Area (Ac)	**2.36**	**2.65**	**1.36**

ENVIRONMENTAL CRITERIA MANUAL MAINTENANCE REQUIREMENTS: (ECM 1.6.3)

C. MAJOR MAINTENANCE REQUIREMENTS.
1. THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE PERFORMED ON ALL SCMS, IN ADDITION TO THE REQUIREMENTS LISTED FOR THE INDIVIDUAL SCM TYPES, TO ENSURE PROPER FUNCTION:
   a) ACCUMULATED PAPER, TRASH AND DEBRIS SHALL BE REMOVED EVERY SIX (6) MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.
   b) STRUCTURAL INTEGRITY SHALL BE MAINTAINED AT ALL TIMES. BASINS AND ALL APPURTENANCES SHALL BE INSPECTED ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED, AND REPAIRS SHALL BE MADE IF NECESSARY. WHEN MAINTENANCE OR REPAIRS ARE PERFORMED, THE SCM SHALL BE RESTORED TO THE ORIGINAL LINES AND GRADES.
   c) CORRECTIVE MAINTENANCE SHALL OCCUR:
      i. ANY TIME DRAWDOWN OF THE WATER QUALITY VOLUME DOES NOT OCCUR WITHIN NINETY–SIX (96) HOURS (I.E., NO STANDING WATER IS ALLOWED), UNLESS A GREATER MAXIMUM DRAWDOWN TIME IS SPECIFIED IN THE PLANS.
      ii. FOR DETENTION PONDS ONLY, ANY TIME DRAWDOWN DOES NOT OCCUR WITHIN TWENTY–FOUR (24) HOURS.
   d) THE INLET AND OUTLET OF SCMS SHALL BE MAINTAINED UNIMPEDED IN ORDER TO CONVEY FLOW AT ALL TIMES. OBSERVED BLOCKAGES TO THE INLET AND OUTLET, DUE TO VEGETATION, SEDIMENT, DEBRIS, OR ANY OTHER CAUSE, SHALL BE REMOVED.
   e) NO UNVEGETATED AREA SHALL EXCEED TEN (10) SQUARE FEET. THIS PERFORMANCE REQUIREMENT APPLIES TO THE ENTIRE POND INCLUDING THE POND BOTTOM, SIDE SLOPES, AND AREAS ADJACENT TO THE POND, AND IS INTENDED TO LIMIT EROSION.
   f) INTEGRATED PEST MANAGEMENT SHALL BE PERFORMED AND SHALL ADHERE TO SECTION 1.6.2.F, INTEGRATED PEST MANAGEMENT GUIDELINES.
   g) THE MINIMUM VEGETATION HEIGHT SHALL BE FOUR (4) INCHES IN THE SCM AND ALL APPURTENANCES, INCLUDING THE TOE OF THE BERM OR WALL OUTSIDE THE SCM, WHERE APPLICABLE.
   h) SEDIMENT BUILD–UP SHALL BE REMOVED:
      ij. WHEN THE ACCUMULATION EXCEEDS SIX (6) INCHES IN SPLITTER BOXES, WET WELLS AND BASINS.
      ii. WHEN SEDIMENT TRAPS ARE FULL.
      iii. WHEN SEDIMENT, OF ANY AMOUNT, CAUSES STANDING WATER CONDITIONS OR REDUCES BASIN STORAGE BY MORE THAN 10%.
   i) WHEN SEDIMENT IS REMOVED, THE FOLLOWING REQUIREMENTS APPLY:
      i. IRRIGATION SHALL BE PROVIDED, AS NEEDED, UNTIL VEGETATION IS ESTABLISHED (WELL ROOTED). SEE SECTION 1.6.3.D, IRRIGATION GUIDELINES.
      ii. THE DESIGN DEPTH OF THE FILTRATION MEDIA SHALL BE VERIFIED. SEE SECTION 1.6.3.B.5.
      iii. TILLING OF THE FILTRATION MEDIUM IS NOT ALLOWED.
   j) FOR SUBSURFACE PONDS MAINTENANCE PLAN REQUIREMENTS, REFER TO ECM SECTION 1.6.2(E).

5. RETENTION–IRRIGATION SYSTEMS (SECTION 1.6.7.A).
   a. BASINS. STRUCTURAL INTEGRITY OF BASINS SHALL BE MAINTAINED AT ALL TIMES. WOODY VEGETATION SHOULD BE CONTROLLED/REMOVED TO PREVENT BASIN LEAKAGE. THE ABILITY OF THE BASIN TO RETAIN THE WATER QUALITY VOLUME SHALL BE EVALUATED BY THE COA.
   b. IRRIGATION AREAS. TO THE GREATEST EXTENT PRACTICABLE, IRRIGATION AREAS ARE TO REMAIN IN THEIR NATURAL STATE. HOWEVER, VEGETATION MUST BE MAINTAINED IN THE IRRIGATION AREA SUCH THAT IT DOES NOT IMPEDE THE SPRAY OF WATER FROM THE IRRIGATION HEADS. TREE AND SHRUB TRIMMINGS AND OTHER LARGE DEBRIS MUST BE REMOVED FROM THE IRRIGATION AREA. SEE REQUIREMENTS IN SECTION 1.6.7.A.3.(G) AND (H) REGARDING REQUIREMENTS FOR SOIL AND VEGETATION IN IRRIGATION AREAS.
   c. PUMPS AND IRRIGATION SYSTEM. THE PUMPS AND IRRIGATION SYSTEM MUST BE INSPECTED OR TESTED A MINIMUM OF SIX (6) TIMES PER YEAR TO SHOW ALL COMPONENTS ARE OPERATING AS INTENDED. TWO (2) OF THESE SIX (6) INSPECTIONS SHOULD BE AFTER RAIN EVENTS TO ENSURE THAT THE IRRIGATION SYSTEM AND ALL OF ITS COMPONENTS PERFORM AS DESIGNED. THIS INCLUDES CONTROLS SUCH AS WEATHER STATIONS OR RAIN SENSORS, DELAYS, VALVES, ALARM SYSTEM, DISTRIBUTION LINES, OR OTHER COMPONENTS AS SPECIFIED IN THE SYSTEM DESIGN. SPRINKLER HEADS MUST BE CHECKED TO DETERMINE IF ANY ARE BROKEN, CLOGGED, OR NOT SPRAYING PROPERLY. ALL INSPECTION AND TESTING REPORTS MUST BE KEPT ON SITE AND ACCESSIBLE TO THE CITY OF AUSTIN.
   d. THE OVERALL SYSTEM SHALL BE INSPECTED FOR THE ABILITY TO RETAIN THE WATER QUALITY VOLUME ON SITE PER ECM SECTION 1.6.7.A.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION

I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.

NOTE:
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No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS — SCOTT J. FOSTER — 84652 — LICENSED PROFESSIONAL ENGINEER — 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

DETENTION POND AND WATER QUALITY POND NOTES

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP–2025–0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\41 PONDS.dwg LAYOUT: NOTES PLOT DATE: 8/27/2025 8:05am PLOTTED BY: mered
XREFS: x2436 xgis xsurvey_360PSI xsite xLA xtrees xarch xsite_contours IMAGES: SJF Sign.tif

SLOPE LEGEND

(white)	0%-10% SLOPE
(grey)	>10% SLOPE

SCALE IN FEET: 120 60 0 120

L.O.C. — LIMITS OF CONSTRUCTION

WATER QUALITY POND 1					
WATER QUALITY CONTROL CALCULATIONS:		**Required**		**Provided**	
Retention Pond Volume	(=WQV)	51,522	cf	60,801	cf
IRRIGATION AREA CALCULATIONS		**Required**		**Provided**	
Soil Permeability (Rate)	(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time	(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)				30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)	2.79	ac	2.80	ac

WATER QUALITY POND 2					
WATER QUALITY CONTROL CALCULATIONS:		**Required**		**Provided**	
Retention Pond Volume	(=WQV)	57,604	cf	62,746	cf
IRRIGATION AREA CALCULATIONS		**Required**		**Provided**	
Soil Permeability (Rate)	(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time	(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)				30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)	2.88	ac	2.99	ac

WATER QUALITY POND 3					
WATER QUALITY CONTROL CALCULATIONS:		**Required**		**Provided**	
Retention Pond Volume	(=WQV)	29,764	cf	29,820	cf
IRRIGATION AREA CALCULATIONS		**Required**		**Provided**	
Soil Permeability (Rate)	(min. 0.03 in/hr)	0.20		0.20	in/hr
Pond Drawdown Time	(max 72 hours)	72.0		60.0	hrs
Active Irrigation Time (2 Zones)				30.0	hrs
Irrigation Area	= (12*WQV) / ([Rate]*[Time]*43,560)	1.37	ac	1.67	ac

NOTES:
1. IRRIGATION AREAS SHALL BE LOCATED OUTSIDE OF 10% SLOPES AND GREATER.
2. ADDITIONAL SOIL AMENDMENTS AND/OR BERMS MAY BE NECESSARY IN THE IRRIGATION FIELD AT THE DISCRETION OF THE WPD OP INSPECTION STAFF. SOIL AMENDMENTS SHOULD COMPLY WITH STANDARD SPECIFICATION 601S, SALVAGING AND PLACING TOPSOIL.
3. REFER TO SHEETS 95–108 FOR IRRIGATIONS SHEETS / DESIGN AND CONSTRUCTION NOTES.

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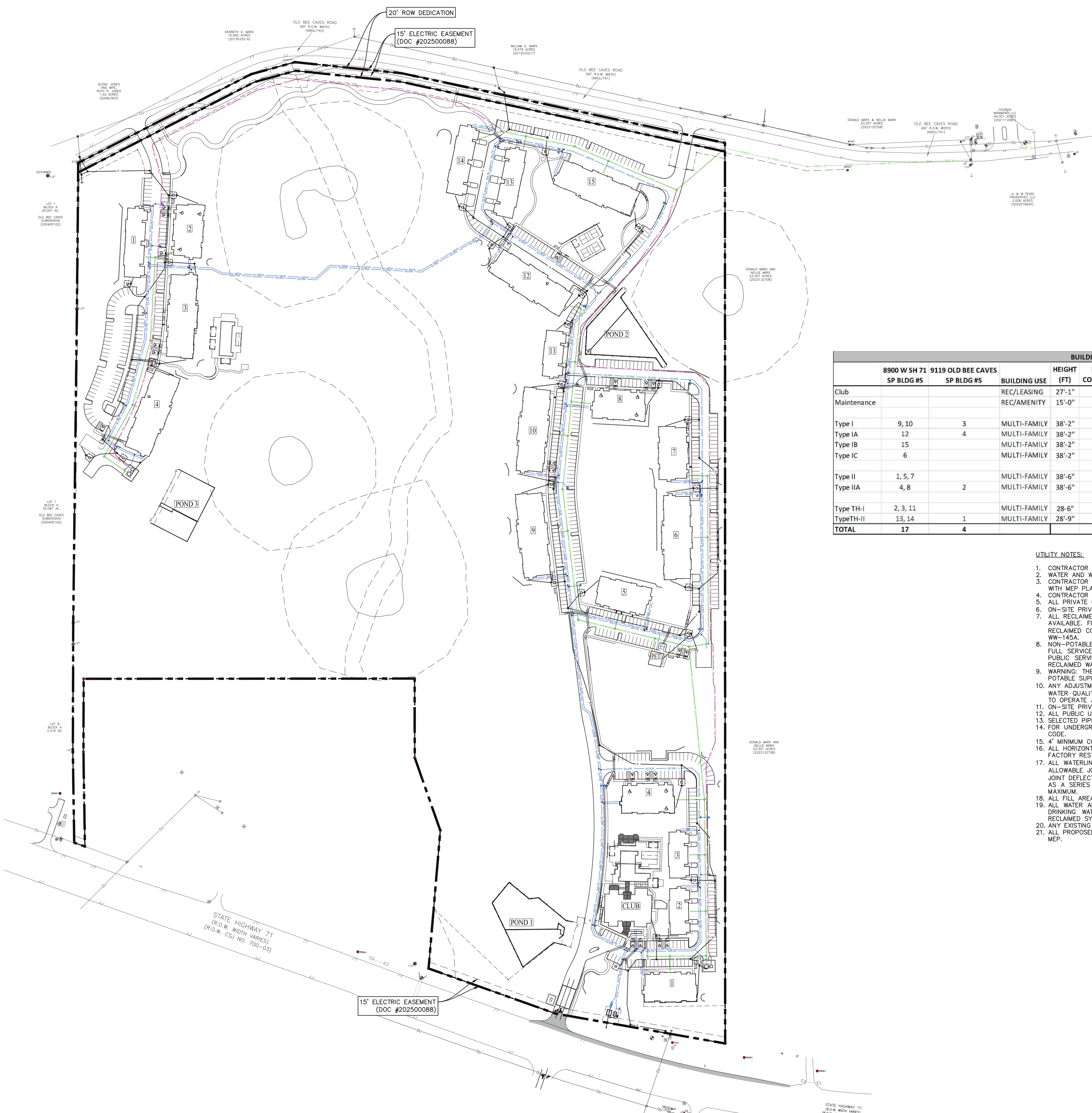
SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

WATER QUALITY REIRRIGATION MAP

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.



SCALE IN FEET

120 60 0 120

LEGEND

- PROPERTY BOUNDARY
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. NON-POTABLE WATER
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE
- PROP. UNDERGROUND ELECTRIC
- PROP. ELECTRIC PULLBOX
- PWR CO PAD MTD XFMR, VERIFY EXACT LOCATION PROVIDE PROTECTION FROM CAR DAMAGE WITH STEEL/CONCRETE BOLLARDS AROUND TRANSFORMERS PER POWER CO'S SPECIFICATIONS." 5'-0"X5'-0"

BUILDING AND UNIT SUMMARY - MARX MULTIFAMILY (7/03/2025)

	8900 W SH 71 SP BLDG #S	9119 OLD BEE CAVES SP BLDG #S	BUILDING USE	HEIGHT (FT)	BUILDING COVERAGE (SF)	GROSS AREA (SF)	CONSTRUCTION TYPE	SPRINKLER TYPE	REQ. FIRE FLOW (GPM)	REDUCED FIRE FLOW (GPM)	Water Supply Fixture Units	NonPotable Fixutre Unit	Drainage Fixture Units
Club			REC/LEASING	27'-1"	9,901	8,953	V-B	None	2,500	2,500	13.5	32.5	55.0
Maintenance			REC/AMENITY	15'-0"	1,138	1,416	V-B	None	1,500	1,500	12.0		22.0
Type I	9, 10	3	MULTI-FAMILY	38'-2"	13,961	38,582	V-A	NFPA 13R	3,500	1,500	503.5	120.0	543.0
Type IA	12	4	MULTI-FAMILY	38'-2"	13,936	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type IB	15		MULTI-FAMILY	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type IC	6		MULTI-FAMILY	38'-2"	13,927	38,520	V-A	NFPA 13R	3,500	1,500	419.5	100.0	451.0
Type II	1, 5, 7		MULTI-FAMILY	38'-6"	9,186	24,946	V-A	NFPA 13R	2,750	1,500	335.5	75.0	357.0
Type IIA	4, 8	2	MULTI-FAMILY	38'-6"	9,186	24,992	V-A	NFPA 13R	2,750	1,500	335.5	75.0	357.0
Type TH-I	2, 3, 11		MULTI-FAMILY	28-6"	5,407	8,781	V-A	NFPA 13R	1,750	1,500	73.5	30.0	103.0
TypeTH-II	13, 14	1	MULTI-FAMILY	28'-9"	8,036	13,218	V-A	NFPA 13R	2,250	1,500	109.5	45.0	151.0
TOTAL	**17**	**4**			**204,087**	**496,006**					**5,776.0**	**1,467.5**	**6,414.0**

UTILITY NOTES:

1. CONTRACTOR TO FIELD VERIFY LOCATION AND FLOWLINES OF ALL EXISTING UTILITIES.
2. WATER AND WASTEWATER TO BE PROVIDED BY THE CITY OF AUSTIN.
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6. ON-SITE PRIVATE WATER LINES (DOMESTIC AND FIRE) TO BE C900 PVC AND FIRE HYDRANTS LEADS TO BE DUCTILE IRON CLASS 350.
7. ALL RECLAIMED TUBING SHALL BE MANUFACTURED SOLID PURPLE, SPL WW-65A. ALL APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. UPON RECLAIMED CONNECTION, ALL RECLAIMED METER BOX LIDS SHALL BE PAINTED PURPLE AND HAVE "RECLAIMED WATER" CAST INTO THEM, SPL WW-145A.
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11. ON-SITE PRIVATE WASTEWATER LINES TO BE SDR 26 PVC.
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14. FOR UNDERGROUND MAINS FEEDING HYDRANTS ONLY, THE MAIN MUST BE INSTALLED AND TESTED IN COMPLIANCE WITH NFPA 24, AND THE FIRE CODE.
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21. ALL PROPOSED ELECTRICAL ROUTING AND IMPROVEMENTS ARE FOR REFERENCE ONLY. FINAL DESIGN TO BE PROVIDED BY AUSTIN ENERGY AND MEP.

CITY OF AUSTIN
WATER AND WASTEWATER UTILITY
SPECIAL SERVICES DIVISION
(512) 972-1060

THIS PROJECT HAS PRIVATE HYDRANTS LOCATED WITHIN THE PROPERTY. THE PROPERTY OWNER IS REQUIRED TO COMPLY WITH AUSTIN FIRE CODE. FAILURE TO COMPLY MAY RESULT IN CIVIL AND/OR CRIMINAL REMEDIES AVAILABLE TO THE CITY. THE PERFORMANCE OF THIS OBLIGATION SHALL ALWAYS REST WITH THE OWNER OF RECORD. FIRE HYDRANTS ON PRIVATE PROPERTY ARE REQUIRED TO BE SERVICED, MAINTAINED, AND FLOWED ANNUALLY, USING A CONTRACTOR REGISTERED WITH THE CITY TO PROVIDE THE SERVICE. THIS PROJECT HAS 21 PRIVATE HYDRANTS.

WARNING: CONTRACTOR IS TO VERIFY PRESENCE AND EXACT LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION

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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

OVERALL UTILITY PLAN

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 48 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\48 WATER.dwg LAYOUT: Overall PLOT DATE: 8/29/2025 11:28am PLOTTED BY: mered
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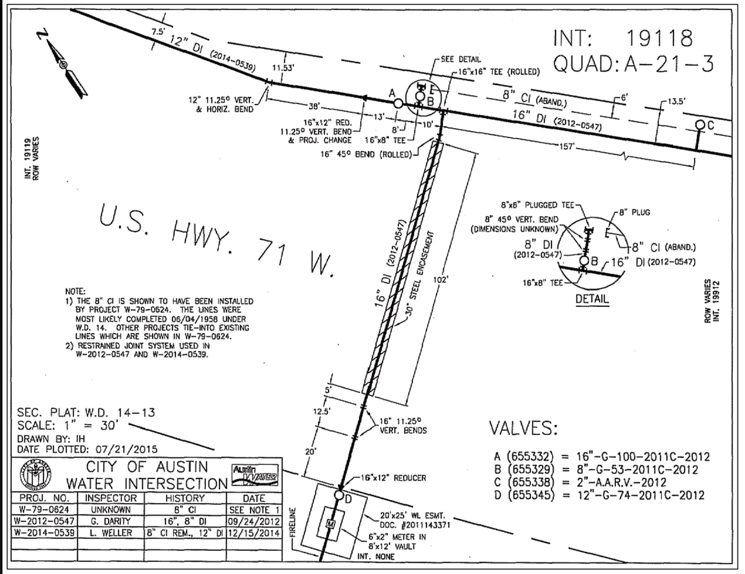
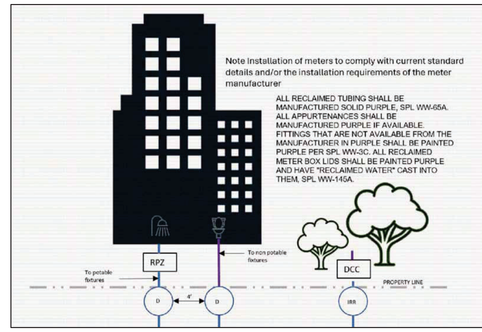
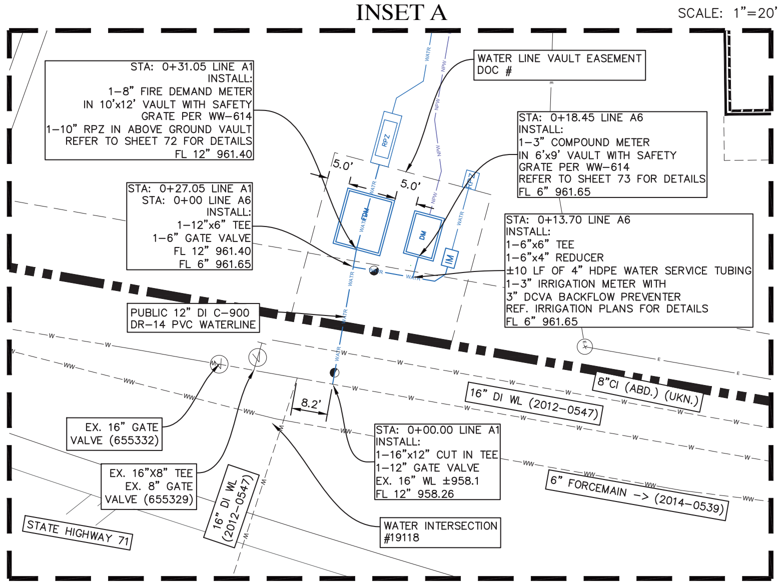




INSET A

SCALE: 1"=20'

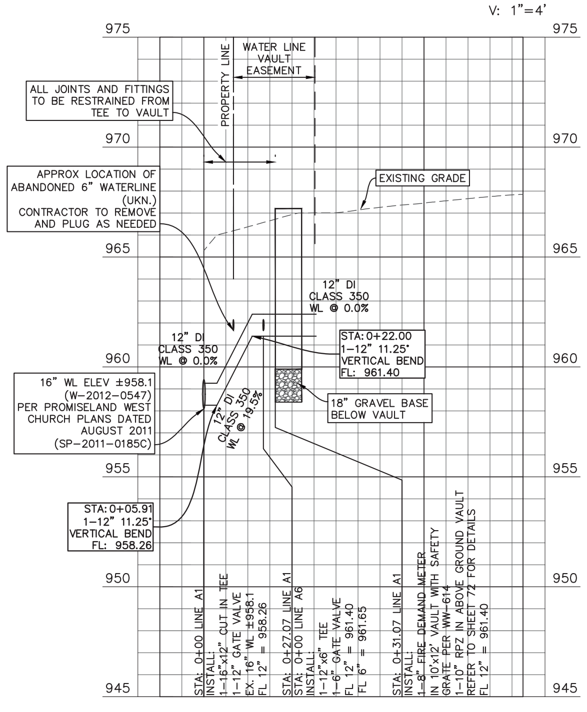


PUBLIC WATER UTILITY NOTES:

1. REFER TO CONSTRUCTION DETAILS (AW WATER), SHEET 72-74 FOR STANDARD DETAILS.

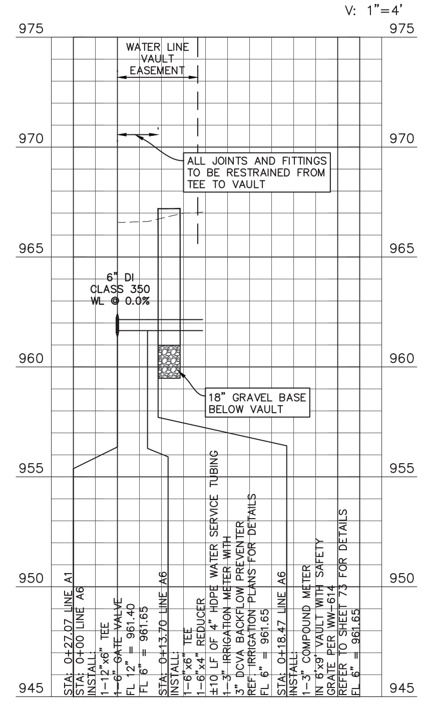
PUBLIC WATER LINE A1
STA: 0+00 - 0+31

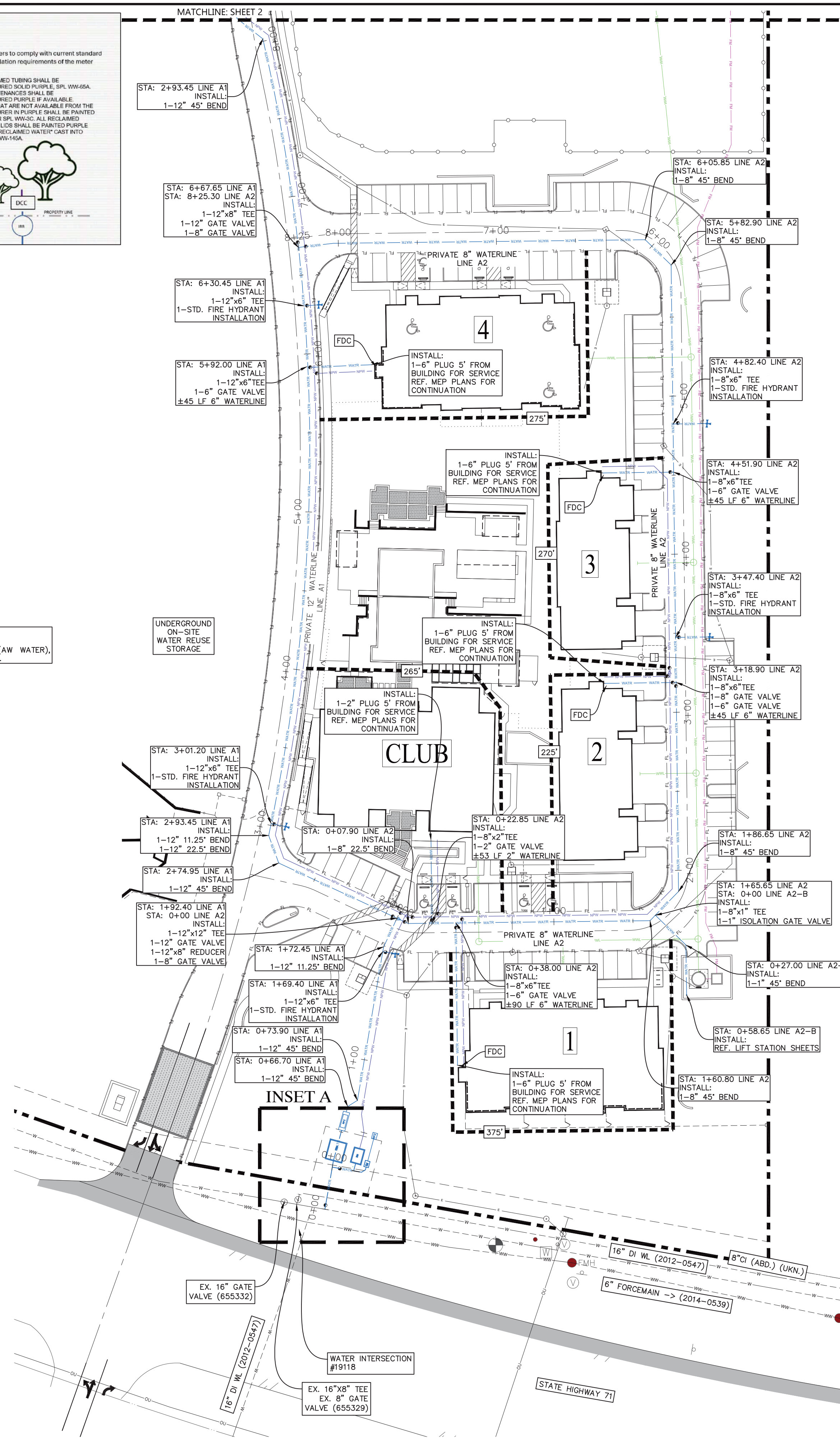
SCALE: H: 1"=40' V: 1"=4'

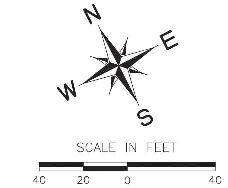


PUBLIC WATER LINE A6
STA: 0+00 - 0+18

SCALE: H: 1"=40' V: 1"=4'







LEGEND

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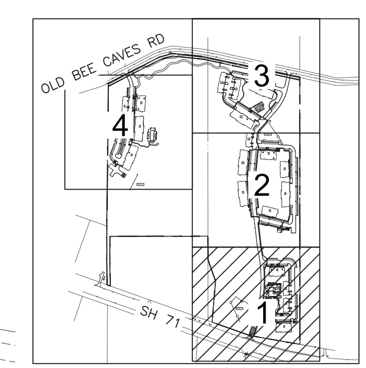
KEY MAP



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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

POTABLE WATER PLAN SHEET 1 AND PUBLIC CONNECTION

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 49 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\48 WATER.dwg
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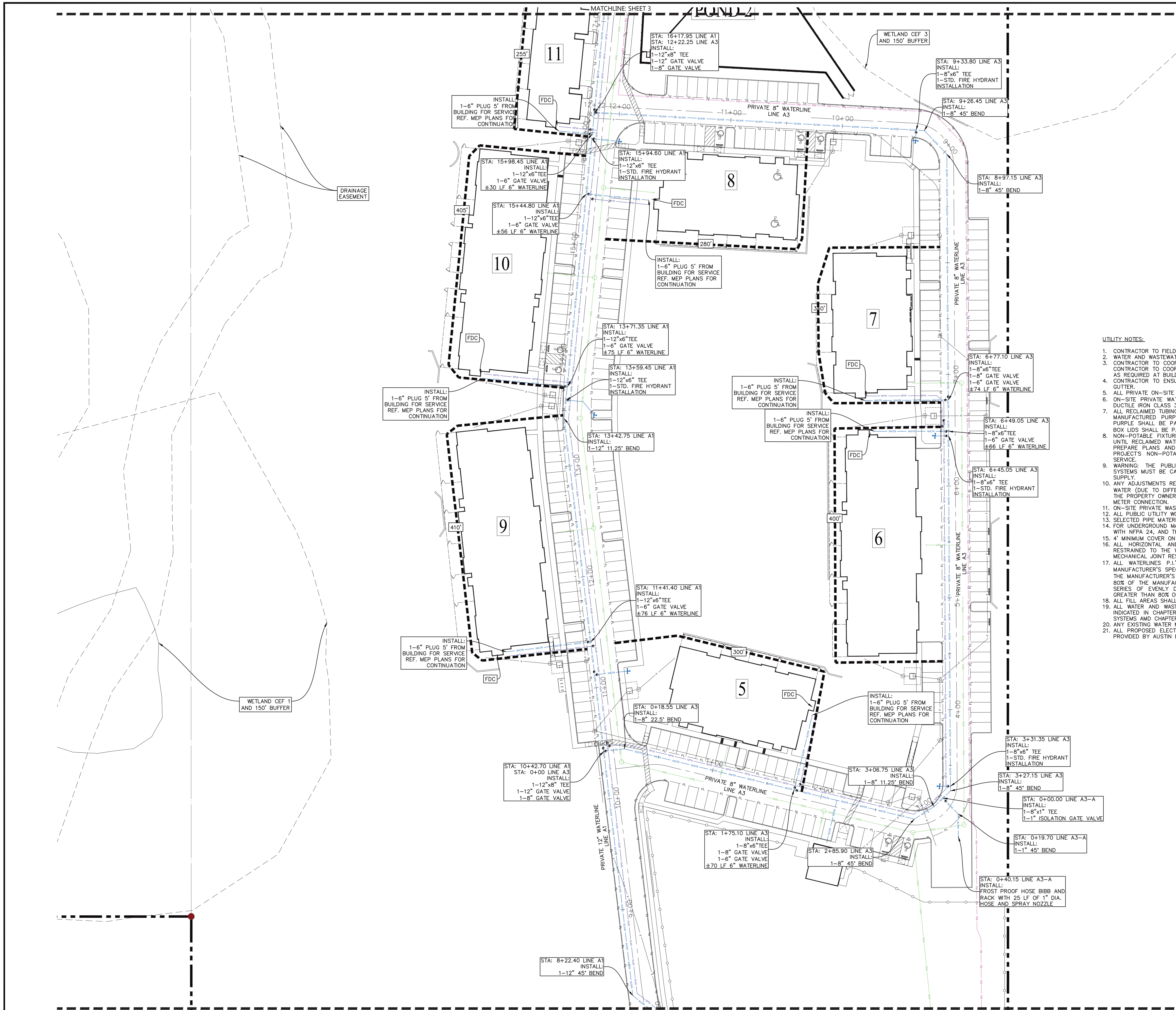

SCALE IN FEET

40 20 0 40

LEGEND

— · — · —	PROPERTY BOUNDARY
— W —	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
— WW —	EXIST. WASTEWATER MAIN
— WTR —	PROP. WATER MAIN
— RW —	PROP. NON-POTABLE WATER
	PROP. FIRE HYDRANT
	PROP. VALVE
— WW —	PROP. WASTEWATER
— FM —	PROP. FORCE MAIN
═══	PROP. STORM LINE
— E —	PROP. UNDERGROUND ELECTRIC
	PROP. ELECTRIC PULLBOX
	PROP. ELECTRIC TRANSFORMER
■■■■■	HOSE LAY

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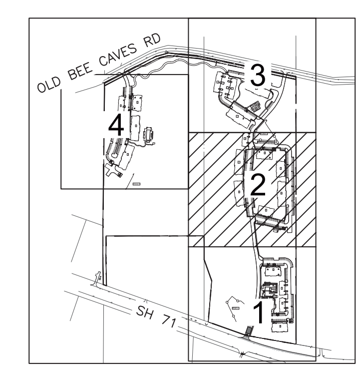

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SCOTT J. FOSTER
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LICENSED PROFESSIONAL ENGINEER
8/28/2025

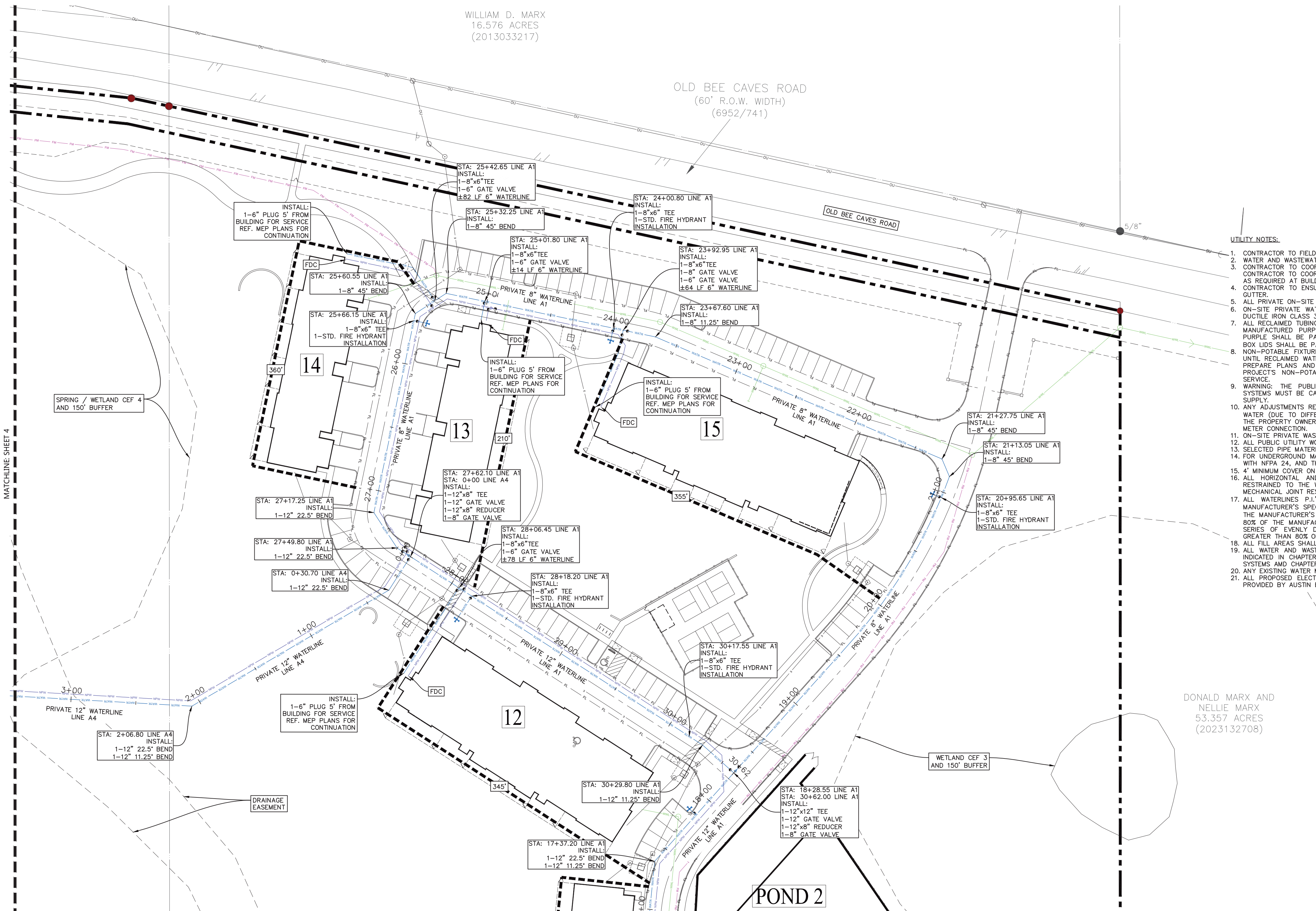
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

POTABLE WATER PLAN
SHEET 2
(PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
50
OF 113

SP-2025-0080C



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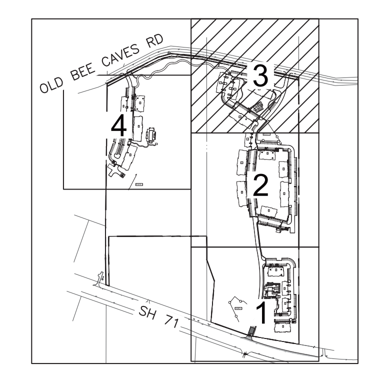
KEY MAP



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FAX (512) 900-7962

SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

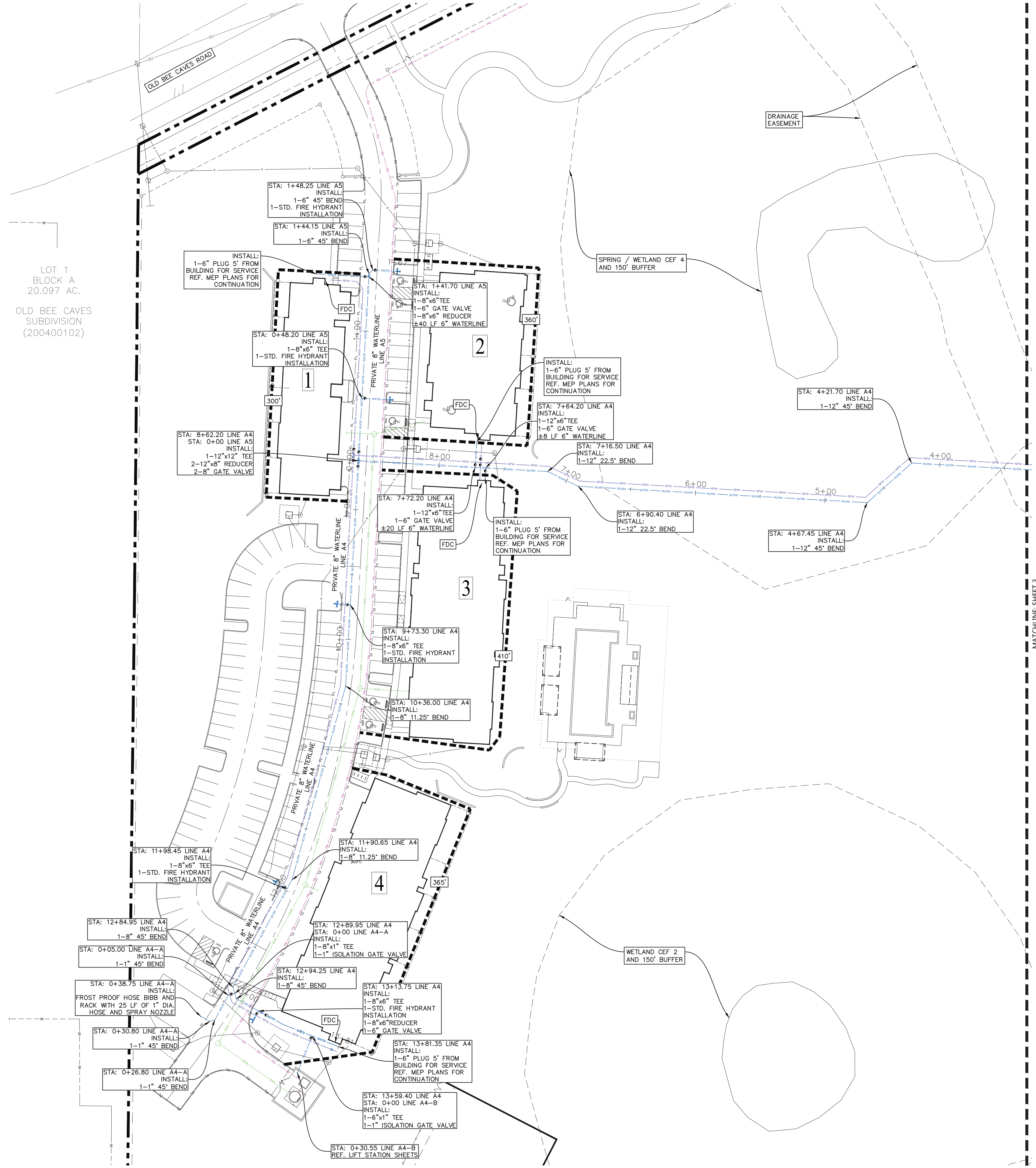
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

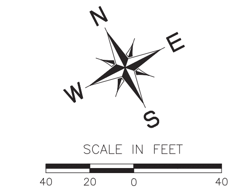
POTABLE WATER PLAN SHEET 3 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 51 OF 113

SP-2025-0080C





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- PROP. ELECTRIC TRANSFORMER
- HOSE LAY

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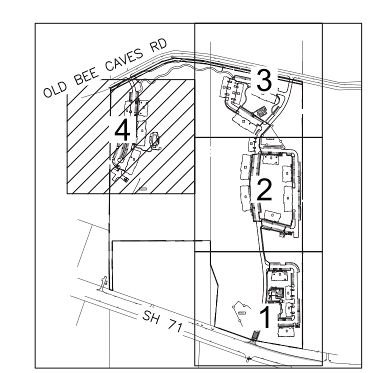

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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

POTABLE WATER PLAN SHEET 4 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\48 WATER.dw
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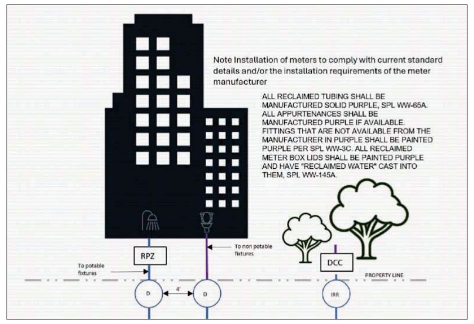

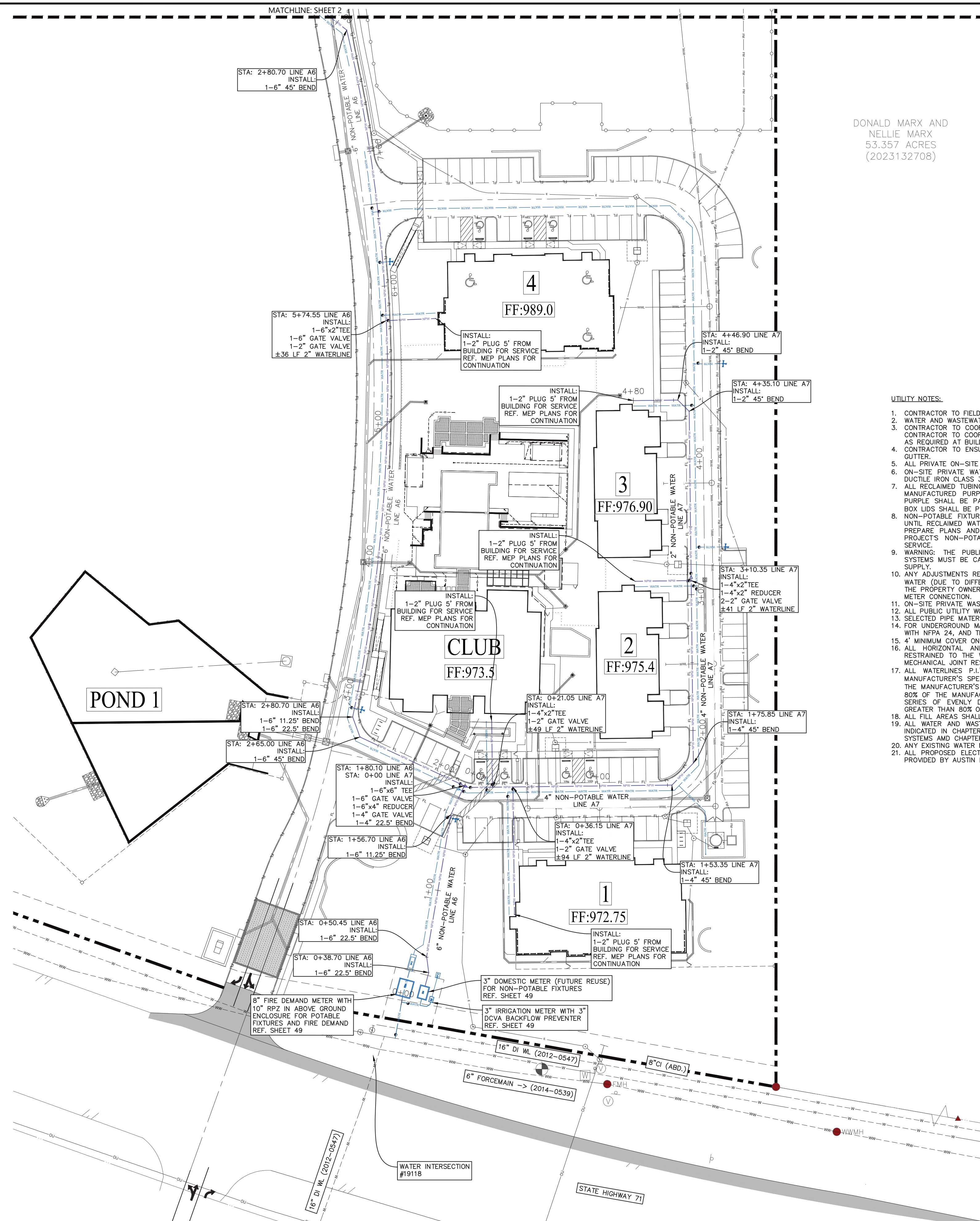

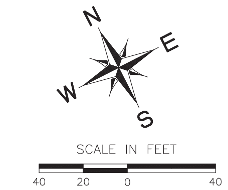

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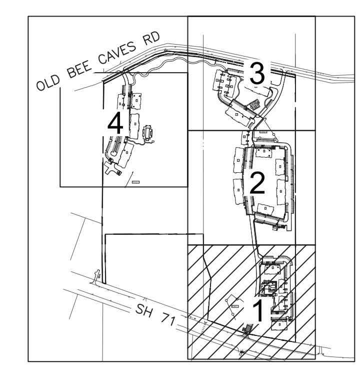

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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

MARX MULTIFAMILY
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AUSTIN, TX 78735

NON-POTABLE WATER SHEET 1 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 53 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\53 WATER REUSE.dwg
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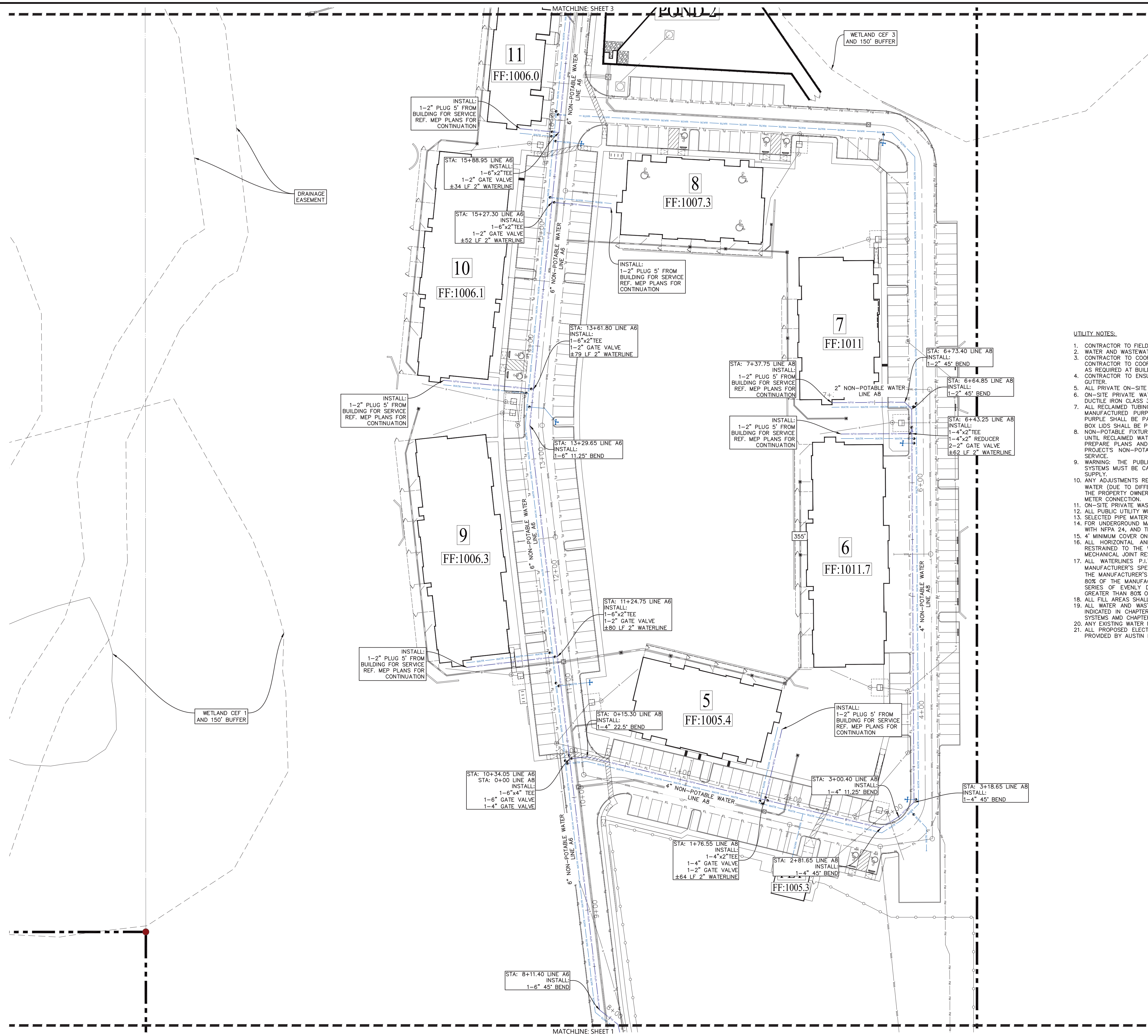

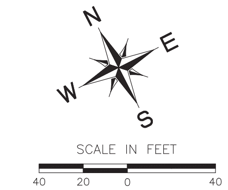

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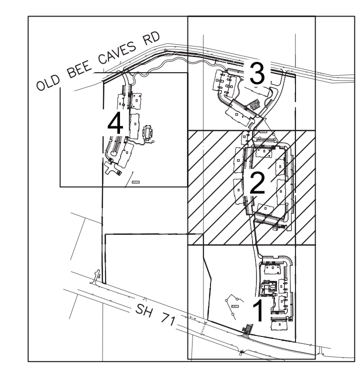

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8/28/2025

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NON-POTABLE WATER SHEET 2 (PRIVATE)

Scale: AS SHOWN
Designed by:
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Checked by:
Date: AUGUST 2025
Project No.

SHEET
54
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\53 WATER REUSE.dwg
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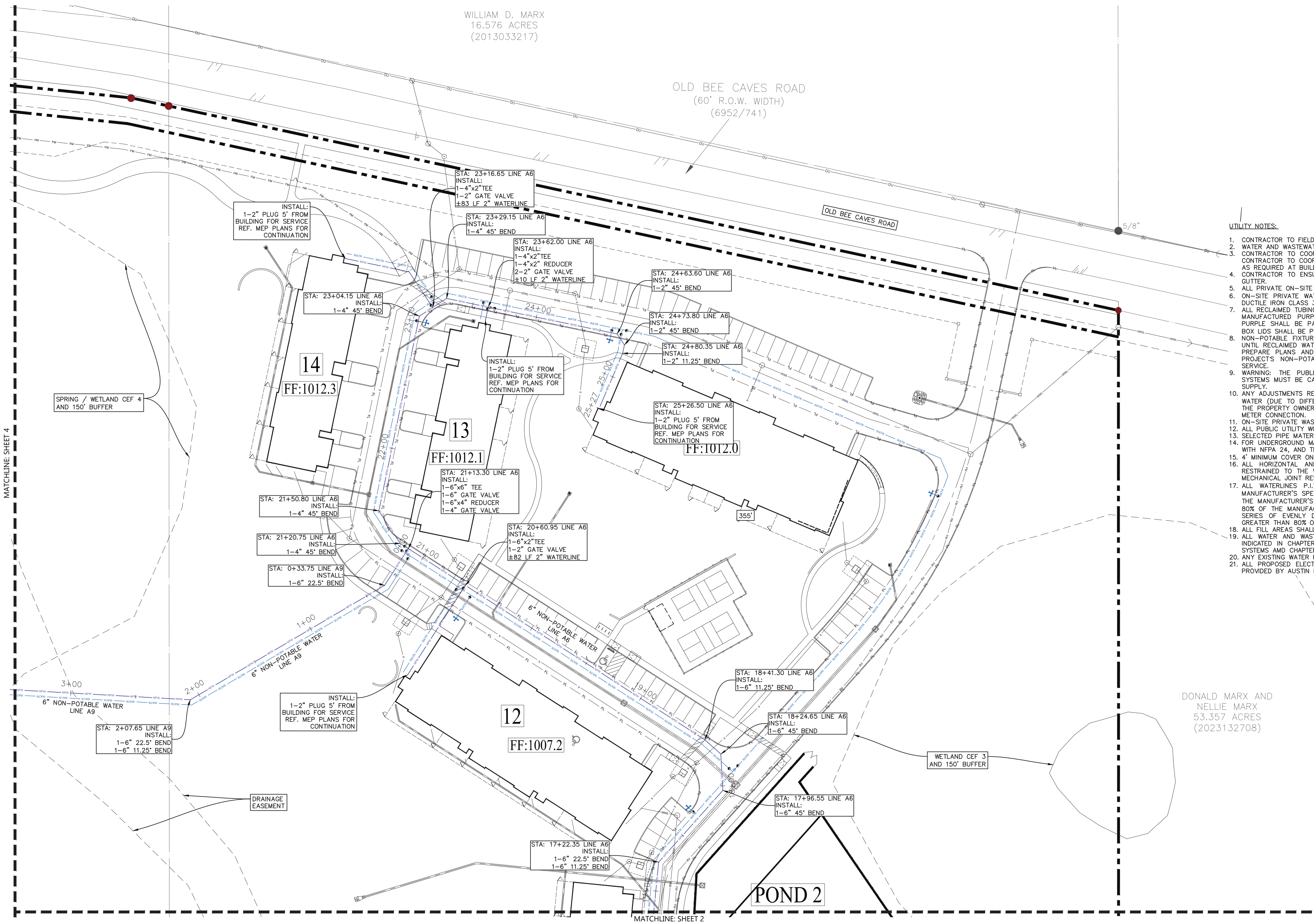

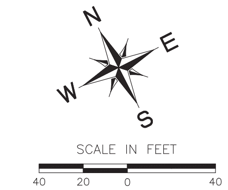

LEGEND

- PROPERTY BOUNDARY
- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. NON-POTABLE WATER
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE
- PROP. UNDERGROUND ELECTRIC
- PROP. ELECTRIC PULLBOX
- PROP. ELECTRIC TRANSFORMER

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4. CONTRACTOR TO ENSURE NO FIRE HYDRANTS, METERS OR VALVES ARE PLACED IN SIDEWALKS OR CURB AND GUTTER.
5. ALL PRIVATE ON–SITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.
6. ON–SITE PRIVATE WATER LINES (DOMESTIC AND FIRE) TO BE C900 PVC AND FIRE HYDRANTS LEADS TO BE DUCTILE IRON CLASS 350.
7. ALL RECLAIMED TUBING SHALL BE MANUFACTURED SOLID PURPLE, SPL WW–65A. ALL APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW–3C. UPON RECLAIMED CONNECTION, ALL RECLAIMED METER BOX LIDS SHALL BE PAINTED PURPLE AND HAVE "RECLAIMED WATER" CAST INTO THEM, SPL WW–145A.
8. NON–POTABLE FIXTURES AND COOLING AND IRRIGATION SYSTEMS TO BE PROVIDED BY POTABLE WATER TAP UNTIL RECLAIMED WATER IS IN FULL SERVICE AND APPROVED FOR USE BY AUSTIN WATER. AUSTIN WATER WILL PREPARE PLANS AND MANAGE THE CONVERSION OF THE PUBLIC SERVICE LINES AND METERS SERVING THE PROJECT'S NON–POTABLE FIXTURES AND SYSTEMS FROM POTABLE WATER SERVICE TO RECLAIMED WATER SERVICE.
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18. ALL FILL AREAS SHALL BE COMPACTED TO 95% PROCTOR DENSITY PRIOR TO UTILITY INSTALLMENT.
19. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290 – DRINKING WATER STANDARDS, CHAPTER 217 – DESIGN CRITERIA FOR SEWERAGE SYSTEMS AMD CHAPTER 210 – DESIGN CRITERIA FOR RECLAIMED SYSTEMS OF TCEQ RULES.
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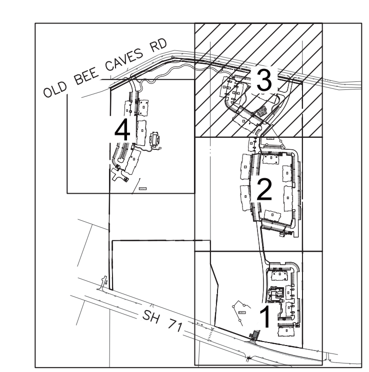
21. ALL PROPOSED ELECTRICAL ROUTING AND IMPROVEMENTS ARE FOR REFERENCE ONLY. FINAL DESIGN TO BE PROVIDED BY AUSTIN ENERGY AND MEP.

KEY MAP



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No.	Date	Revisions	App.

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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

NON-POTABLE WATER SHEET 3 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
55
OF 113

SP–2025–0080C

LAYOUT: 3
FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\53 WATER REUSE.dwg
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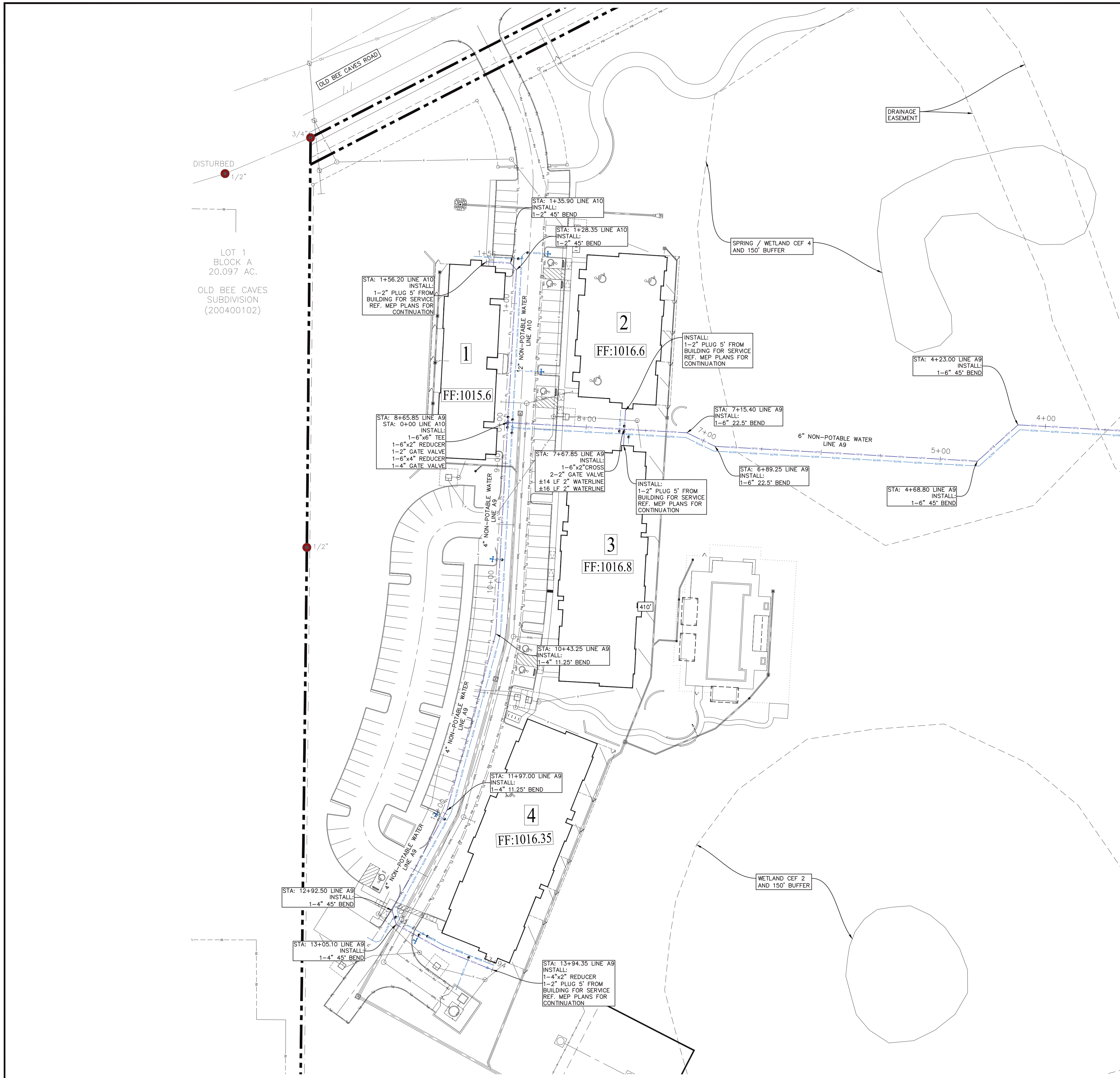

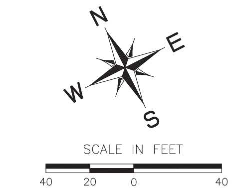

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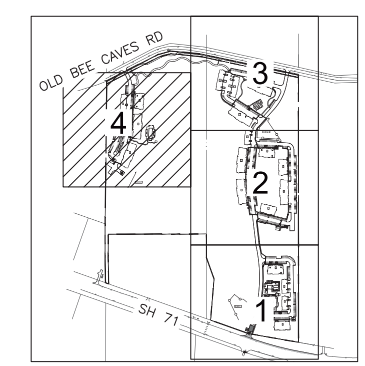
KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED
PROFESSIONAL ENGINEER
8/28/2025

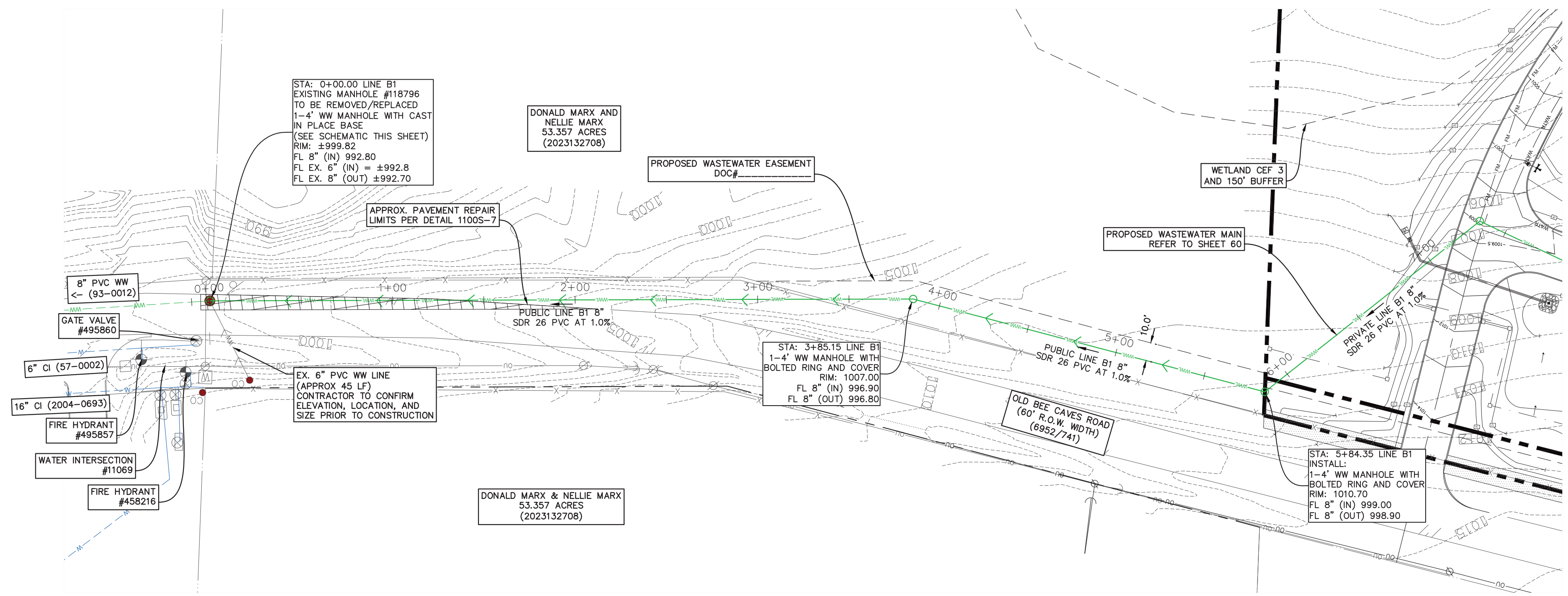
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

NON-POTABLE WATER SHEET 4 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\53 WATER REUSE.dwg LAYOUT: 4
XREFS: x2436 xgis_topo 1856-002-10 AC xsurvey_360PSI xLA xtrees xarch xgis xsite



LEGEND

	PROPERTY BOUNDARY
	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
	EXIST. WASTEWATER MAIN
	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
	PROP. WASTEWATER
	PROP. FORCE MAIN
	PROP. STORM LINE

SCALE IN FEET
40 20 0 40

WASTEWATER NOTES:

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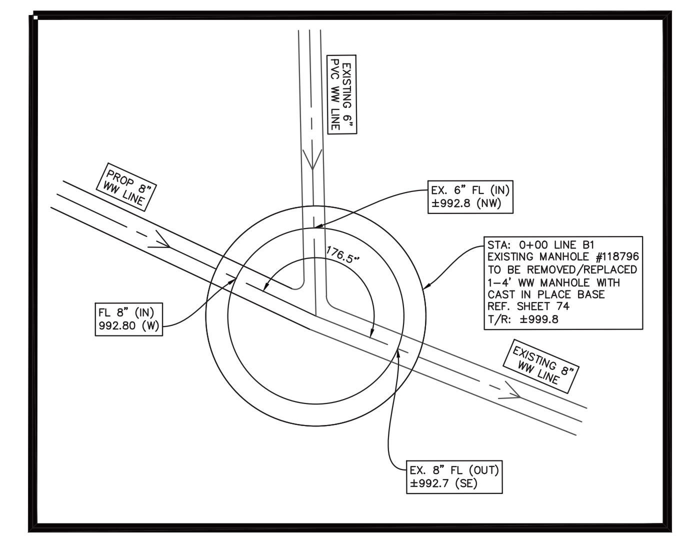
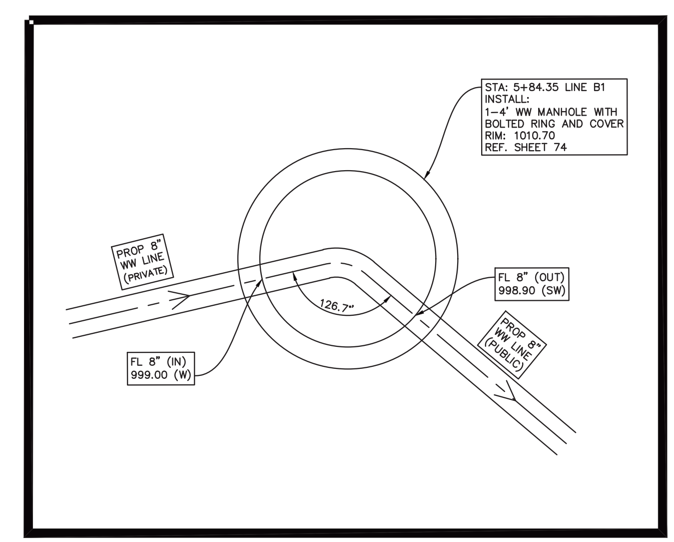
STA: 0+00 LINE B1
WW MH SCHEMATIC (1"=2')

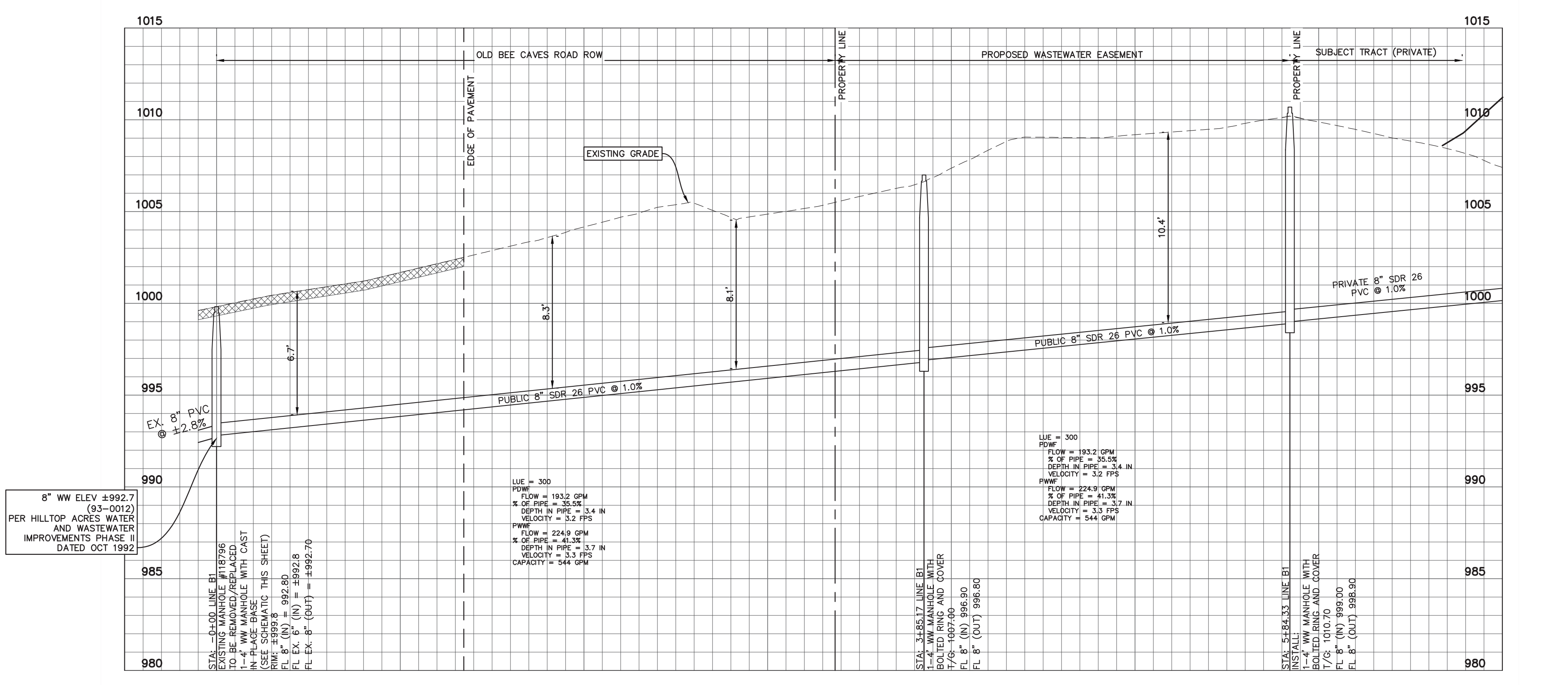


STA: 5+84.35 LINE B1
WW MH SCHEMATIC (1"=2')



PUBLIC WASTEWATER LINE B1
STA: 0+00 - 5+84

SCALE: H: 1"=40'
V: 1"=4'



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No.	Date	Revisions	App.

SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

PUBLIC WASTEWATER LINE B1 PLAN AND PROFILE

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
57
OF 113

SP-2025-0080C

N E S W

SCALE IN FEET

40 20 0 40

LEGEND

— W —	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
— WW —	EXIST. WASTEWATER MAIN
— WATR —	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
— WWL —	PROP. WASTEWATER
— FM —	PROP. FORCE MAIN
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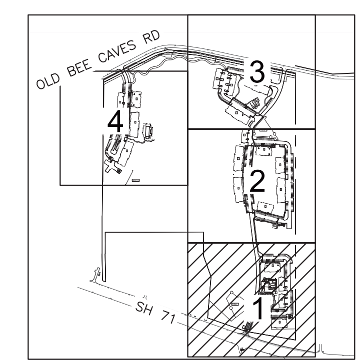

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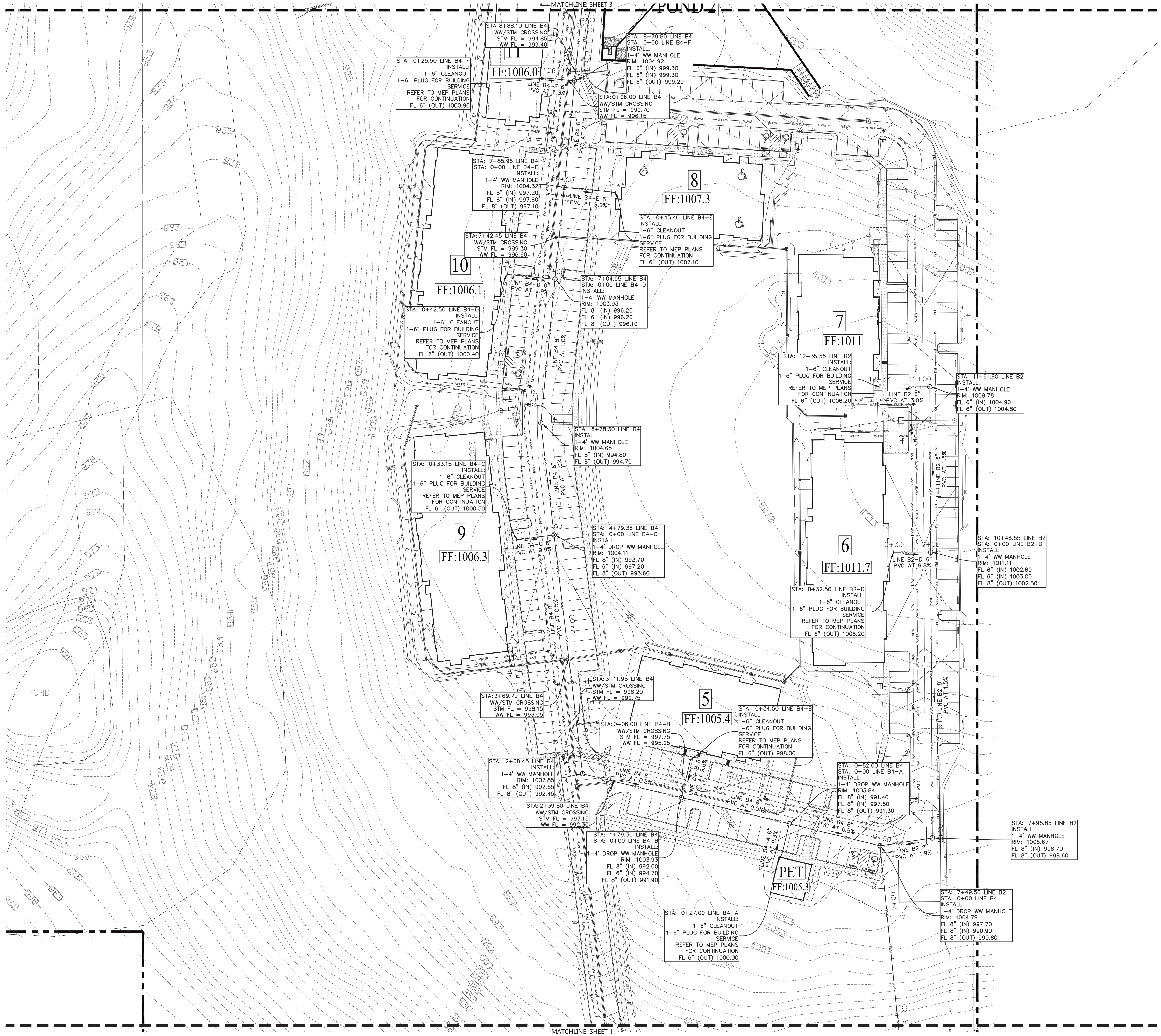
WASTEWATER PLAN SHEET 1 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 58 OF 113

SP–2025–0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM A
XREFS: xsurvey_360PSI x2436 xsite xsite_contours xLA xtrees xgis xarch



N E S W

SCALE IN FEET

40 20 0 40

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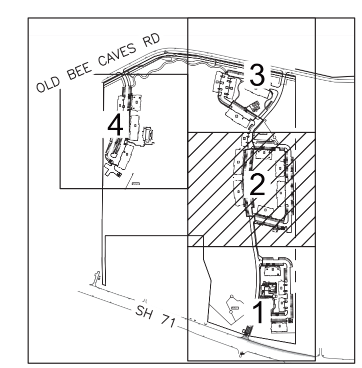
10. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290 – DRINKING WATER STANDARDS, CHAPTER 217 – DESIGN CRITERIA FOR SEWERAGE SYSTEMS AMD CHAPTER 210 – DESIGN CRITERIA FOR RECLAIMED SYSTEMS OF TCEQ RULES.

KEY MAP



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STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED
PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

WASTEWATER PLAN SHEET 2 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
59
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND WW.dwg LAYOUT: 02 WW PLOT DATE: 8/27/2025 10:30pm PLOTTED BY: lesli
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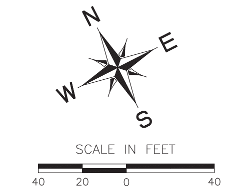
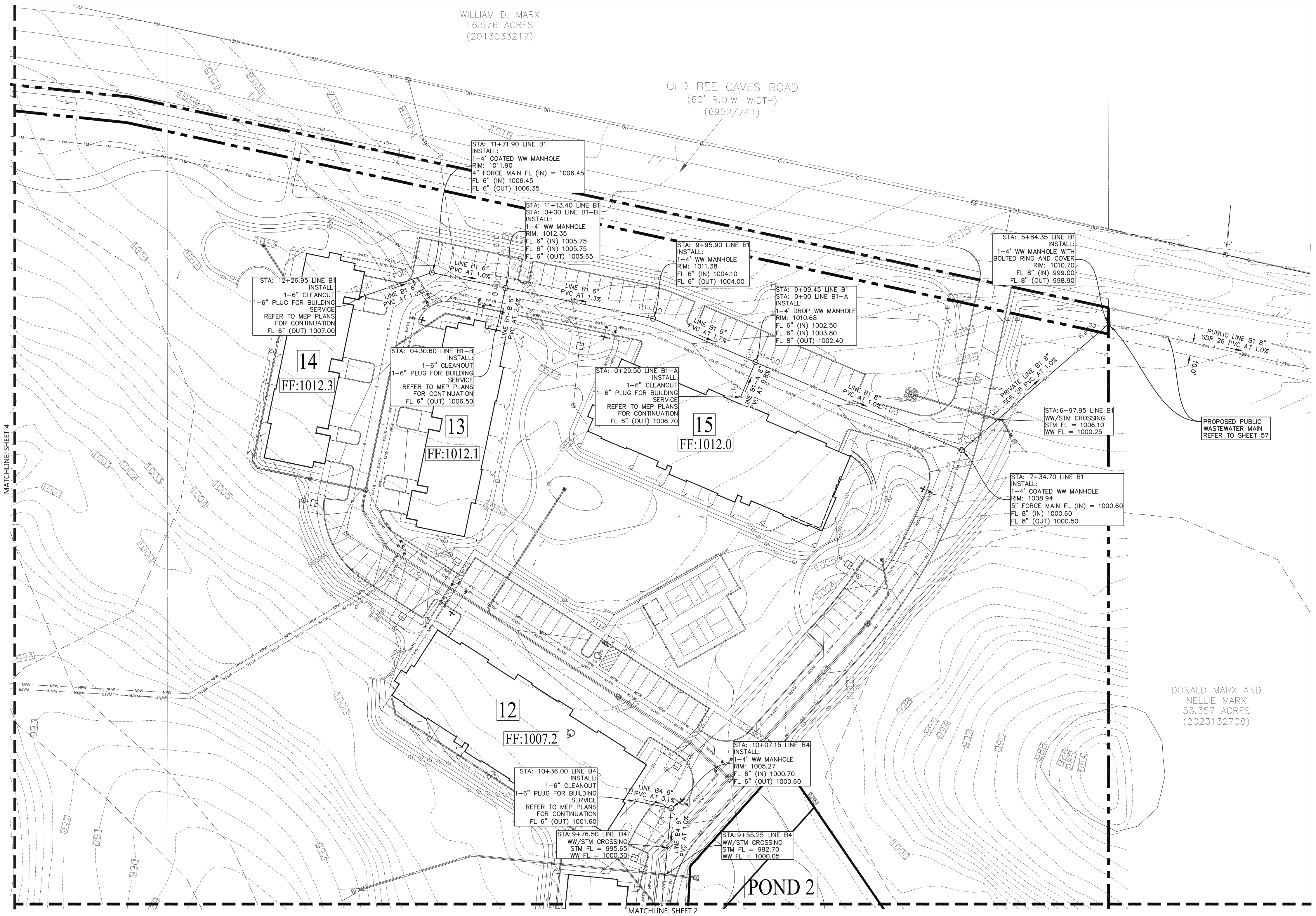


LEGEND

W	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
WW	EXIST. WASTEWATER MAIN
WATR	PROP. WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
WWL	PROP. WASTEWATER
FM	PROP. FORCE MAIN
	PROP. STORM LINE

COATED MANHOLES

1. THE INTERIOR CONCRETE SURFACES OF COATED CONCRETE MANHOLES SHALL BE COATED WITH RAVEN 405, SPRAYWALL, OR APPROVED EQUAL WITH A UNIFORM THICKNESS OF 124 MILS AND A MINIMUM THICKNESS OF 100 MILS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST.
2. THE EXTERIOR CONCRETE JOINT OF COATED CONCRETE MANHOLE SHALL BE WRAPPED WITH A 6-INCH EXTRUDED BUTYL ADHESIVE TAPE TO ENSURE WATER TIGHTNESS, APPLIED AFTER MANHOLE HAS PASSED THE VACUUM TEST.



WASTEWATER NOTES:

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2. WATER AND WASTEWATER TO BE PROVIDED BY THE CITY OF AUSTIN.
3. CONTRACTOR TO COORDINATE WITH MEP PLANS AT ALL UTILITY STUBOUTS.
4. ALL PRIVATE ON-SITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.
5. ALL PUBLIC UTILITY WORK SHALL CONFORM TO CITY OF AUSTIN STANDARDS AND SPECIFICATIONS.
6. ON-SITE PRIVATE WASTEWATER LINES TO BE SDR 26 PVC.
7. ALL WATERLINES P.I.'S BOTH HORIZONTAL AND VERTICAL, SHALL BE ACHIEVED BASED UPON THE PIPE MANUFACTURER'S SPECIFIED MAXIMUM ALLOWABLE JOINT DEFLECTION. P.I.'S LESS THAN OR EQUAL TO 80% OF THE MANUFACTURER'S MAXIMUM SHALL BE CONSTRUCTED AS A SINGLE JOINT DEFLECTION. P.I.'S IN EXCESS OF 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE JOINT DEFLECTION ANGLE SHALL BE CONSTRUCTED AS A SERIES OF EVENLY DISTRIBUTED DEFLECTIONS OVER MULTIPLE JOINTS, SO THAT NO SINGE DEFLECTION IS GREATER THAN 80% OF THE MAXIMUM.
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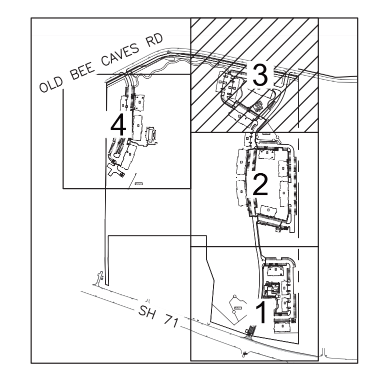

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LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
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AUSTIN, TX 78735

WASTEWATER PLAN
SHEET 3
(PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
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Project No.

SHEET
60
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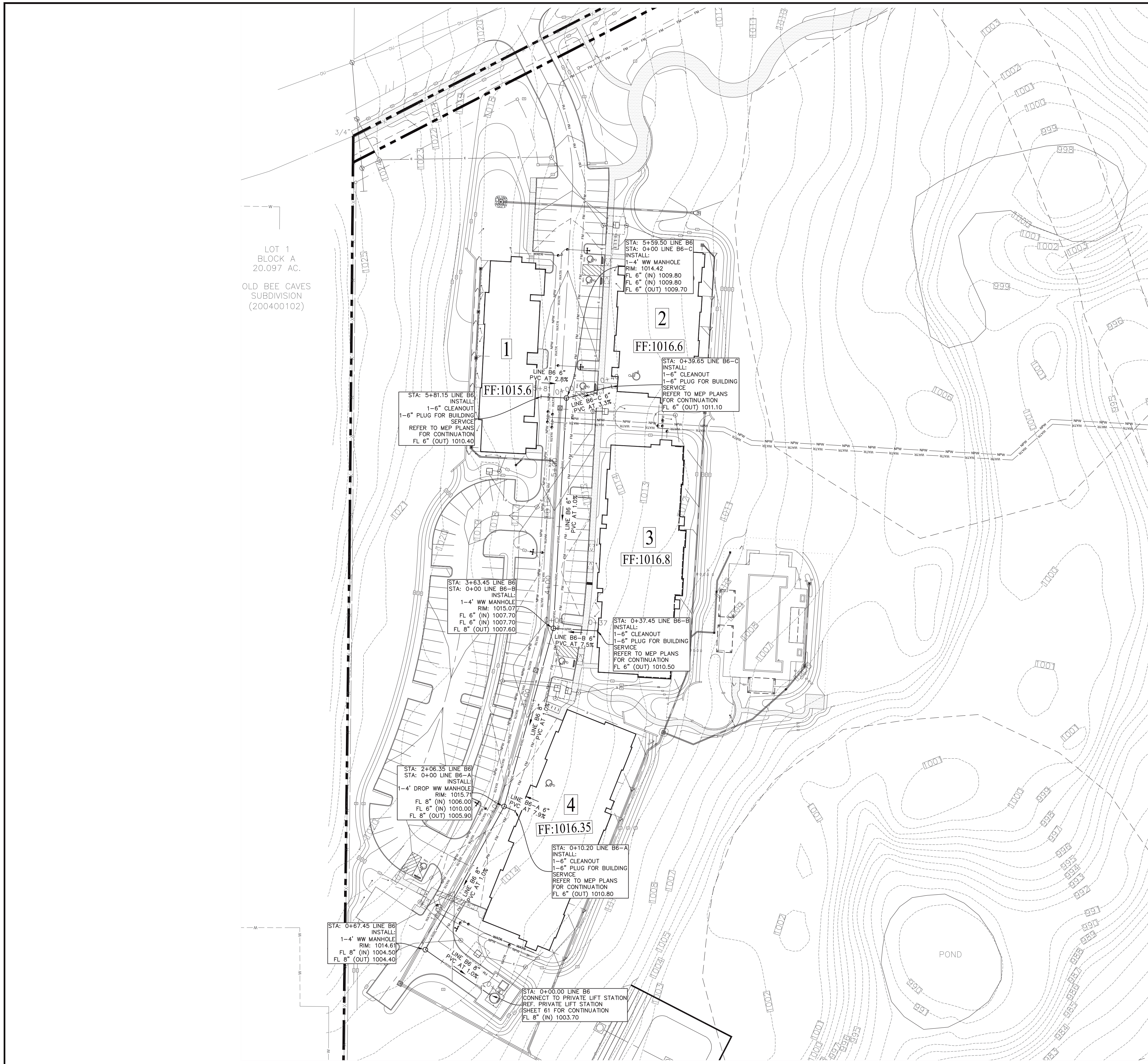

N E S W

SCALE IN FEET

40 20 0 40

LEGEND

— W —	EXIST. WATER MAIN
	EXIST. FIRE HYDRANT
— WW —	EXIST. WASTEWATER MAIN
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	PROP. VALVE
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— FM — FM — FM —	PROP. FORCE MAIN
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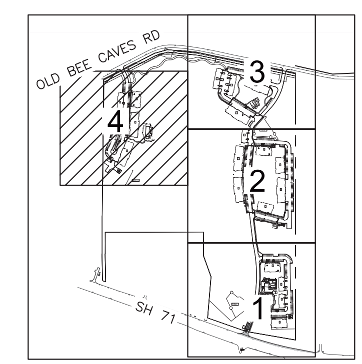

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WASTEWATER PLAN
SHEET 4
(PRIVATE)

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Designed by:
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Checked by:
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Project No.

SHEET
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FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\STORM AND WW.dwg
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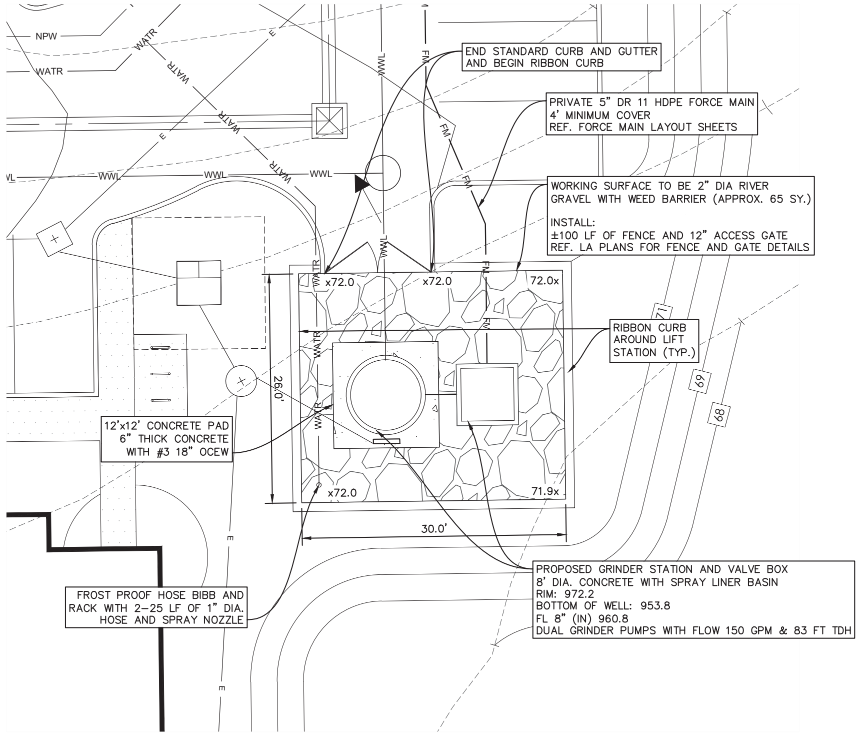
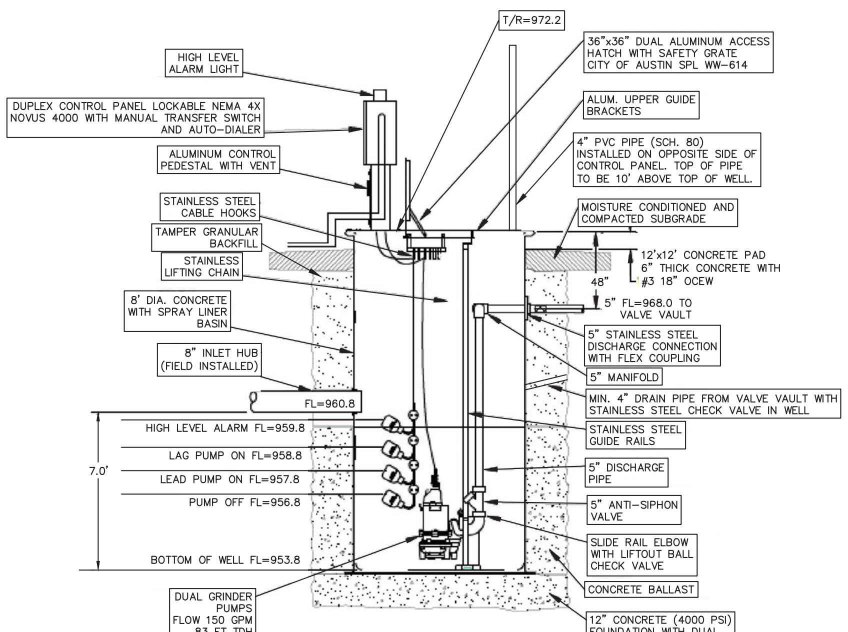




TYPICAL SECTION

DUPLEX GRINDER PUMP UNIT INSTALLATION

N.T.S.

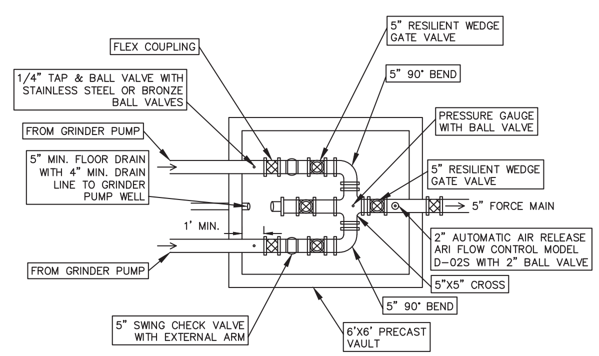
LIFT STATION INFORMATION	
SERVICE AREA SIZE (ACRES)	17.6
SERVICE AREA (UNITS)	264
LUE CONVERSION: CONDO OR APARTMENT UNIT (6–24 UNITS PER ACRE)	0.7
SERVICE AREA SIZE (LUEs)	185
PEAK DRY WEATHER FLOW (GPM)	141
PEAK WET WEATHER FLOW (DESIGN FLOW) (GPM)	150
WET WELL DIAMETER (FT)	8.0
REQUIRED WET WELL OPERATING VOLUME (GAL)	1,128
ACTIVE VOLUME (GAL)	1,128
MINIMUM PUMP CYCLE TIME (MIN)	30.1
FORCE MAIN SIZE (IN)	5" HDPE DR 11
FORCE MAIN DIAMETER (IN)	4.49
FORCE MAIN LENGTH (LF)	2,200
FLOW VELOCITY (FPS)	3.0
TOTAL STATIC HEAD (FT)	50
FRICTION LOSS (FT)	33
TOTAL DYNAMIC HEAD (FT) (LOSS COEFFICIENT = 100)	83

GENERAL NOTES

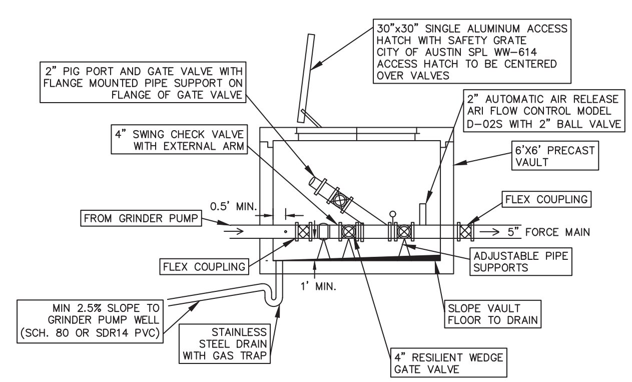
1. CONTRACTOR TO INSTALL TWO NP 3127 SH3–249 SUBMERSIBLE WASTE WATER PUMPS 11HP, 230–VOLT, SINGLE PHASE (CAPABLE OF PRODUCING 150 GPM AT 83' TDH). REFER TO MEP PLANS FOR ADDITIONAL INFORMATION. PHASE INVERTERS FOR 230–VOLT, THREE PHASE CAN BE PROVIDED, HOWEVER, ADDITIONAL VENTILATION AND/OR FANS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
2. CONTRACTOR TO INSTALL WET WELL WITH ANTI–FLOATATION COLLAR, RAIL PACKAGE, AND PARALLEL DISCHARGE MANIFOLD.
3. CONTRACTOR TO INSTALL 230–VOLT, SINGLE PHASE DUPLEX LIFT STATION ELECTRICAL CONTROL SYSTEM. REFER TO MEP PLANS FOR ADDITIONAL INFORMATION.
4. ALL PUMPS, CONTROLS, AND APPURTENANCES OF THIS SYSTEM SHALL MEET THE CURRENT MANUFACTURE'S WASTEWATER SYSTEM SERVICE CONNECTION REQUIREMENTS.
5. CONTROL PANEL AND ELECTRIC CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURE'S PUBLISHED INSTALLATION INSTRUCTIONS.
6. A CELLULAR AUTO DIALER SHALL BE PROVIDED IN ACCORDANCE WITH PANEL MANUFACTURE'S RECOMMENDATIONS
7. THE LIFT STATION SHALL BE EQUIPPED WITH A QUICK CONNECT POWER TRANSFER SWITCH DESIGNED TO TRANSFER POWER TO AN ALTERNATE POWER SOURCE IN THE EVENT OF POWER OUTAGE. GENERATOR SHALL BE RATED AT 100 KW.
8. FLOATS MUST BE INSTALLED OUT OF THE INFLUENT FLOW TO AVOID TURBULENCE.
9. LEVEL CONTROLS SHALL BE:
   a. PRIMARY: "MILTRONICS" MULTIRANGER PLUS ULTRASONIC LEVEL CONTROLLER OR "BIRDCAGE" SUBMERSIBLE LEVEL SENSOR, OR APPROVED EQUAL
   b. BACK–UP: MECHANICAL FLOAT SWITCHED (SET ABOVE PRIMARY) LEVEL CONTROLS SHALL INSURE ACCURATE MEASUREMENT AND A LOW LEVEL LOCKOUT SWITCH SHALL BE INSTALLED TO INTERRUPT POWER TO THE PUMPS AT THE ELEVATION SHOWN.
10. A HIGH LEVEL ALARM SHALL PROVIDED AND ACTIVATE A FLASHING RED LIGHT TO BE MOUNTED AT THE LIGHT POLE AND A 85db (MIN) OUTDOOR ALARM HORN.
11. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER FOR REVIEW.
12. ELECTRICAL CONDUIT & FITTINGS ACCORDING TO STATE AND LOCAL CODES.
13. THE WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH THE CITY OF AUSTIN SPECIFICATIONS.
14. O & M MANUALS SHALL BE SUBMITTED FOR EACH PIECE OF MECHANICAL AND ELECTRICAL EQUIPMENT FURNISHED.
15. START–UP PROCEDURES FOR THE LIFT STATION, INCLUDING BUT NOT LIMITED TO PUMP RUNS, CURRENT READINGS AND MILTRONICS TESTING SHALL COMPLY WITH MANUFACTURER'S REQUIREMENTS.
16. THE PUMP MANUFACTURER SHALL PROVIDE ALL REQUIRED LABOR, MATERIALS AND EQUIPMENT AS NECESSARY TO PERFORM VIBRATION TESTING FOR THE SUBMERSIBLE PUMPS. THE PUMP MANUFACTURER SHALL PROVIDE ACCEPTABLE FIELD VIBRATION LIMITS AND METHODS OF TESTING WITH THE PUMP SHOP DRAWINGS. THE PUMP MANUFACTURER SHALL PROVIDE WRITTEN CERTIFICATION THAT THE PUMPS HAVE BEEN INSTALLED PROPERLY.

CONSTRUCTION NOTES

1. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION AND CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ELECTRIC SERVICE TO THE SITE.
3. CONCRETE FOR FOUNDATION SHALL BE CLASS S. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
4. PROVIDE A MINIMUM OF 4 VERTICAL FEET OF CONCRETE BALLAST WITH 1' MINIMUM ANNULAR SPACE AROUND WET WELL BASE (80 CUBIC FEET).
5. THE EDGE OF EXPOSED CONCRETE SLABS SHALL RECEIVE A ¾" CHAMFER.
6. REINFORCED STEEL SHALL BE GRADE 60.
7. BACK FILLING OF THE WET WELL SHALL COMPLY WITH CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 401 AND PER MANUFACTURER'S REQUIREMENTS.
8. 120" USCP POLYMER WET WELL JOINTS TO BE WRAPPED ON EXTERIOR OF CONCRETE WET WELLS.
9. DUCTILE IRON PIPING AND FITTINGS SHALL HAVE A NON–CORROSIVE LINING, WITH A WORKING PRESSURE RATING OF NOT LESS THAN 350 PSI. JOINTS SHALL HAVE FULL FACE GASKETS WITH A MIN. THICKNESS OF 1/8". FLANGES SHALL BE DUCTILE IRON – CLASS 350, INSTALLED BY THE PIPE MANUFACTURER.
10. ALL PENETRATIONS SHALL BE SEALED WATER AND GAS TIGHT PER APPROVED METHODS. CONTRACTOR SHALL PROVIDE PIPE DRAWINGS FOR ALL PIPE PENETRATIONS SEALS FOR DISCHARGE LINES ENTERING WET WELL OR VALVE VAULT.
11. THE ACCESS COVERS WHICH INCLUDE SAFETY GRATES SHALL BE A MINIMUM SIZE AS INDICATED ON PLANS. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF ACCESS COVER TO THE WET WELL TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
12. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF THE GUIDE RAILS TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT. THE PUMP SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE. PERSONNEL SHALL HAVE NO REASON TO ENTER WET WELL. GUIDE RAILS SHALL BE SUPPORTED EVERY 10 FEET WITH STAINLESS STEEL SUPPORTS.
13. THE GUIDE BRACKETS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL. GUIDE BRACKETS FOR EACH PUMP MUST BE SUPPLIED BY THE PUMP MANUFACTURER TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
14. EACH PUMPING UNIT SHALL BE PROVIDED WITH A STAINLESS STEEL LIFTING CHAIN OR CABLE. LIFTING CHAIN SHALL EXTEND AT LEAST 3–4 FEET ABOVE WET WELL.
15. A 316 STAINLESS STEEL FLOAT MOUNTING ASSEMBLY SHALL BE PROVIDED. THE FLOATS SHALL BE MOUNTED AWAY FROM THE WET WELL INLET, ANY CONTROL WIRING, AND THE PUMPS TO MINIMIZE DISTURBANCE BECAUSE OF TURBULENCE. LEVEL SETTINGS SHOWN ARE FOR REFERENCE ONLY AND SHALL BE CALIBRATED IN THE FIELD.
16. ALL STATIONARY PIPING USED IN THE LIFT STATION AND VALVE VAULT SHALL BE LINED DUCTILE IRON OR 300 SERIES STAINLESS STEEL. ALL HARDWARE MUST BE 316 STAINLESS STEEL. ALL MATERIALS SHALL COMPLY WITH CITY OF AUSTIN STANDARD PRODUCTS LIST.
17. THE VALVE VAULT SHALL BE SIZED LARGE ENOUGH TO PROVIDE AT LEAST 1 FOOT OF CLEARANCE AROUND ALL VALVES AND ALL FLANGES.
18. THE VALVE VAULT SHALL HAVE A DRAIN TO THE WET WELL. THE DRAIN SHALL HAVE A 4 INCH MINIMUM DIAMETER AND BE FITTED WITH A FLAP VALVE OR BACK–FLOW PREVENTER AND A TRAP TO PREVENT GASES OR WATER FROM ENTERING THE VALVE VAULT. THE OPENING TO THE DRAIN SHALL BE COVERED WITH A STAINLESS STEEL SCREEN.
19. THE VALVE VAULT SHALL HOUSE A SURGE RELIEF VALVE WITH A DISCHARGE RETURN LINE INTO THE WET WELL AS REQUIRED BY DESIGN.
20. PUMP DISCHARGE LINES SHALL HAVE ¼ INCH TAPS WITH STAINLESS STEEL OR BRONZE BALL VALVES.
21. ALL DISCHARGE LINES SHALL HAVE ADEQUATE THRUST SUPPORT MEMBERS OR RESTRAINTS AT EACH FITTING. WHERE POSSIBLE, LONG RADIUS 90 DEGREE BENDS SHALL BE USED.
22. THE DISCHARGE LINE ROM EACH PUMP SHALL BE FITTED WITH A CHECK VALVE AND AN ECCENTRIC PLUG VALVE, WITH THE CHECK VALVE ON THE PUMP SIDE OF THE ECCENTRIC PLUG VALVE. WHEN NECESSARY, AIR RELEASE VALVES(S) SHALL BE INSTALLED DOWNSTREAM OF THE ECCENTRIC PLUG VALVES.
23. VENT SHALL BE A STAINLESS STEEL TEE FITTED WITH STAINLESS STEEL SCREENS A MINIMUM OF 2 FEET ABOVE THE WET WELL. SCREENS INSTALLED ON VENTS SHALL BE 304 STAINLESS STEEL – 16 MESH. NOTE: THE CITY OF AUSTIN PRIVATE PLUMBING CODE REQUIRES A PVC VENT TO BE INSTALLED 10 FEET ABOVE THE WET WELL OR CONNECTED TO A BUILDING ROOF VENT.
24. PROVIDE PIPE DRAWINGS FOR ALL PIPE PENETRATIONS SEALS FOR DISCHARGE LINES ENTERING WET WELL OR VALVE VAULT.
25. ALL BURIED PIPE SHALL COMPLY WITH CITY OF AUSTIN SPECIFICATIONS INCLUDING STANDARD PRODUCTS LIST.



PLAN VIEW



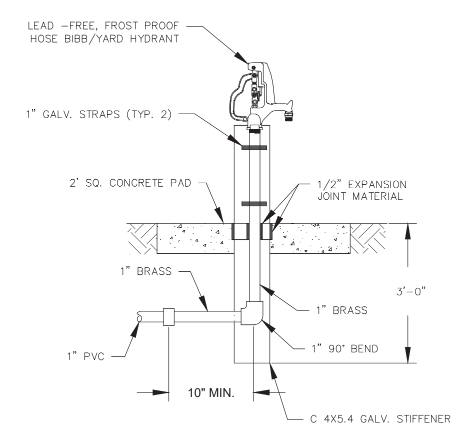
PROFILE VIEW

VALVE VAULT

SCALE: N.T.S.

GENERAL NOTES

1. CONTRACTOR TO SUBMIT FINAL SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.

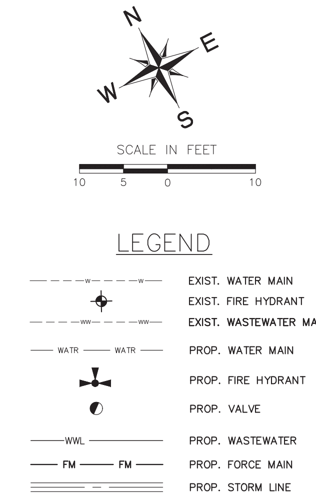


FROST PROOF HOSE BIBB DETAIL

SCALE: N.T.S.

HOSE BIBB NOTES:

1. HOSE BIBB ASSEMBLY TO INCLUDE FROST PROOF FAUCET, STAINLESS STEEL HOSE RACK, AND 2–25 LF OF 1" DIA. HIGH PRESSURE RATED WATER HOSE AND ADJUSTABLE BRONZE SPRAY NOZZLE.
2. FROST PROOF FAUCET SHALL BE LEAD FREE, 3/4", AND RATE FOR A MIN. 125 PSI WORKING PRESSURE.



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LIFT STATION 1 (PRIVATE)

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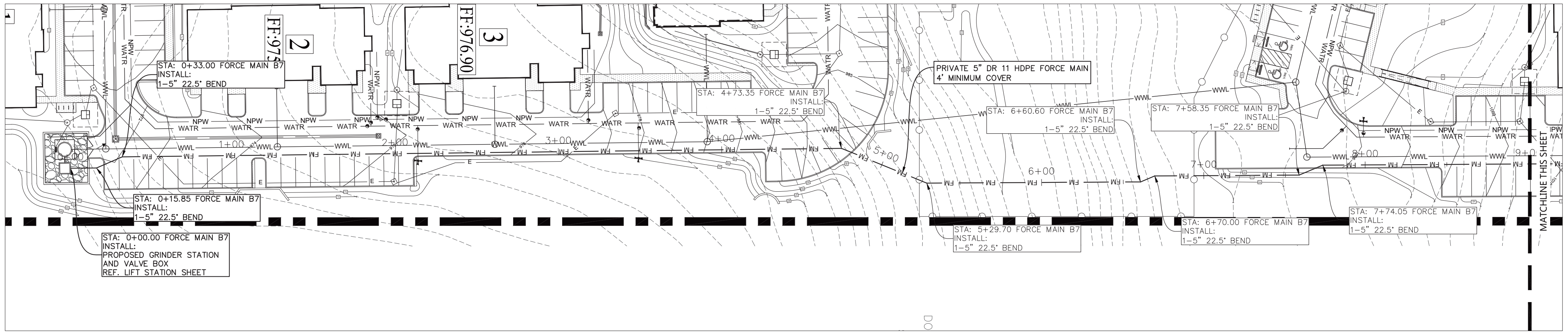

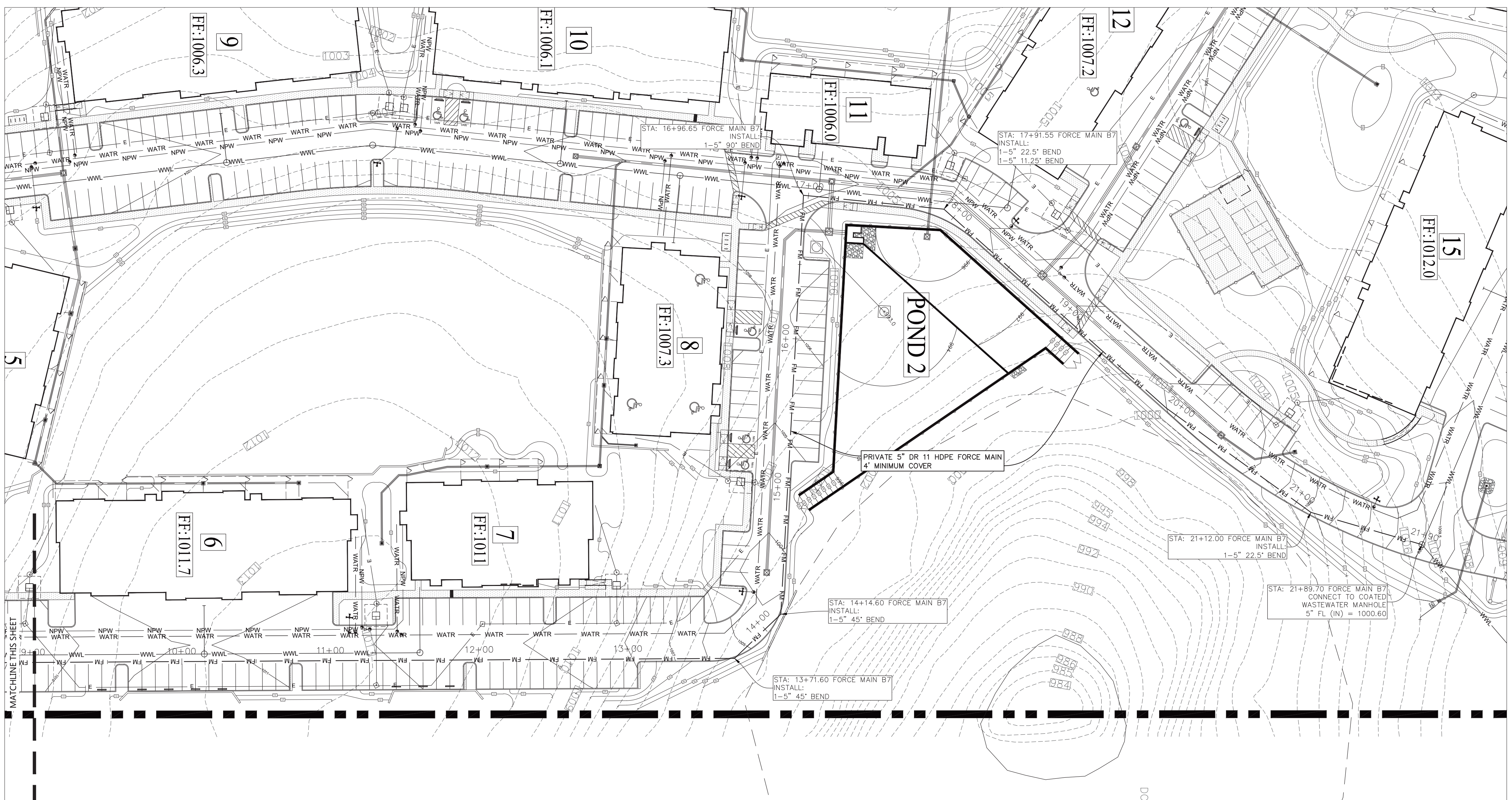

SCALE IN FEET

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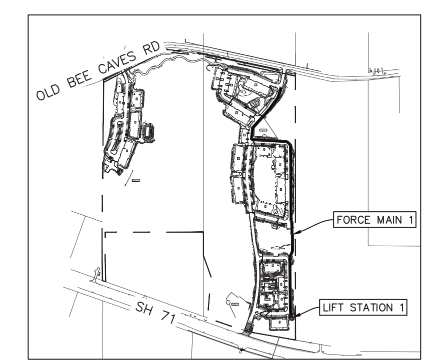
4. CONTRACTOR TO ENSURE NO FIRE HYDRANTS, METERS OR VALVES ARE PLACED IN SIDEWALKS OR CURB AND GUTTER.
5. ALL PRIVATE ON–SITE UTILITY MATERIALS AND WORK SHALL CONFORM TO THE CURRENT PLUMBING CODE.
6. ON–SITE PRIVATE WATER LINES (DOMESTIC AND FIRE) TO BE C900 PVC AND FIRE HYDRANTS LEADS TO BE DUCTILE IRON CLASS 350.
7. ON–SITE PRIVATE WASTEWATER LINES TO BE SDR 26 PVC.
8. ALL PUBLIC UTILITY WORK SHALL CONFORM TO CITY OF AUSTIN STANDARDS AND SPECIFICATIONS.
9. SELECTED PIPE MATERIALS AND DESIGN SPECIFICATIONS SHALL COMPLY WITH NFPA 24–2010 EDITION. (2012 IFC SECTION)
10. 4' MINIMUM COVER ON ALL WATER MAINS EXCEPT WHERE NOTED ON THE PLANS.
11. ALL HORIZONTAL AND VERTICAL WATER LINE BENDS, TEES, GATE VALVES AND DEAD ENDS SHALL BE RESTRAINED TO THE WATER MAIN USING FACTORY RESTRAINED JOINT PIPE AS APPROVED IN SPL WW 27F OR MECHANICAL JOINT RESTRAINT DEVICES AS APPROVED IN SPL WW–27A.
12. ALL WATERLINES P.I.'S BOTH HORIZONTAL AND VERTICAL, SHALL BE ACHIEVED BASED UPON THE PIPE MANUFACTURER'S SPECIFIED MAXIMUM ALLOWABLE JOINT DEFLECTION. P.I.'S LESS THAN OR EQUAL TO 80% OF THE MANUFACTURER'S MAXIMUM SHALL BE CONSTRUCTED AS A SINGLE JOINT DEFLECTION. P.I.'S IN EXCESS OF 80% OF THE MANUFACTURER'S MAXIMUM ALLOWABLE JOINT DEFLECTION ANGLE SHALL BE CONSTRUCTED AS A SERIES OF EVENLY DISTRIBUTED DEFLECTIONS OVER MULTIPLE JOINTS, SO THAT NO SINGE DEFLECTION IS GREATER THAN 80% OF THE MAXIMUM.
13. ALL FILL AREAS SHALL BE COMPACTED TO 95% PROCTOR DENSITY PRIOR TO UTILITY INSTALLMENT.
14. ALL WATER AND WASTEWATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH THE SEPARATION DISTANCES INDICATED IN CHAPTER 290 – DRINKING WATER STANDARDS, CHAPTER 217 – DESIGN CRITERIA FOR SEWERAGE SYSTEMS AMD CHAPTER 210 – DESIGN CRITERIA FOR RECLAIMED SYSTEMS OF TCEQ RULES.
15. ANY EXISTING WATER METERS AND VAULTS FOR THE SITE TO THE REMOVED AND TURNED INTO AWU FOR CREDIT.
16. ALL PROPOSED ELECTRICAL ROUTING AND IMPROVEMENTS ARE FOR REFERENCE ONLY. FINAL DESIGN TO BE PROVIDED BY AUSTIN ENERGY AND MEP.

KEY MAP



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8/28/2025

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FORCE MAIN 1 (PRIVATE)

Scale: AS SHOWN
Designed by:
Drawn by:
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Date: AUGUST 2025
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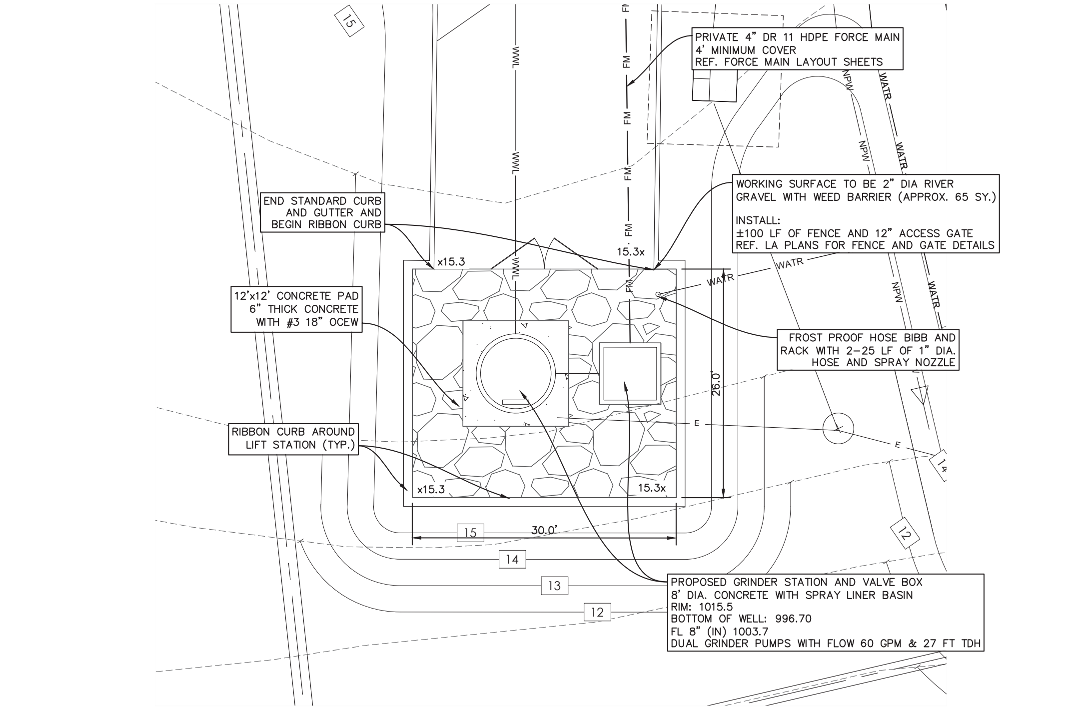
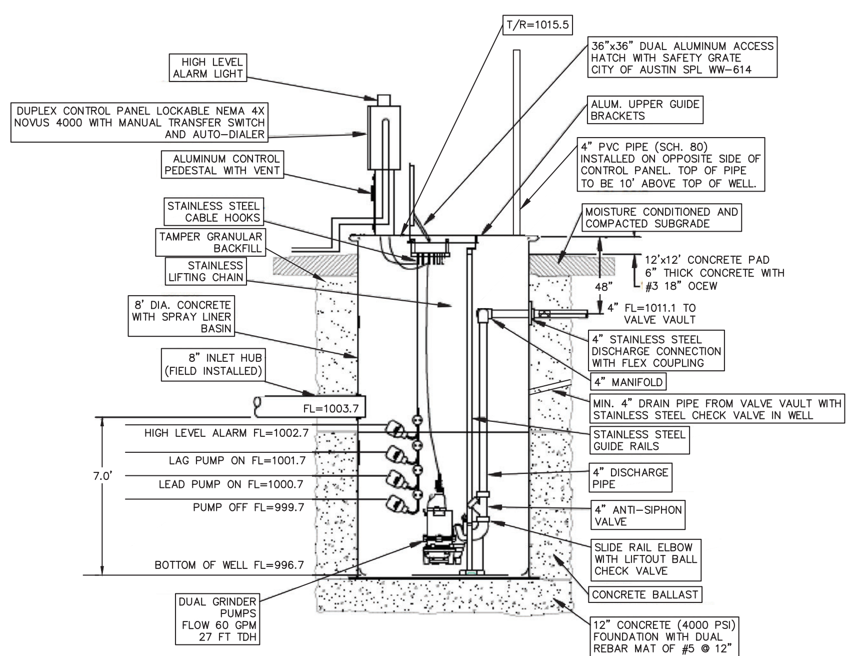
SHEET 63 OF 113

SP–2025–0080C





TYPICAL SECTION

DUPLEX GRINDER PUMP UNIT INSTALLATION

N.T.S.

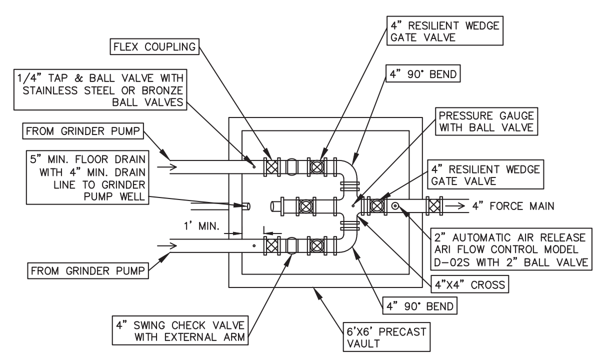
LIFT STATION INFORMATION	
SERVICE AREA SIZE (ACRES)	3.9
SERVICE AREA (UNITS)	96
LUE CONVERSION: CONDO OR APARTMENT UNIT (6-24 UNITS PER ACRE)	0.7
SERVICE AREA SIZE (LUEs)	67
PEAK DRY WEATHER FLOW (GPM)	54
PEAK WET WEATHER FLOW (DESIGN FLOW) (GPM)	60
WET WELL DIAMETER (FT)	8.0
REQUIRED WET WELL OPERATING VOLUME (GAL)	1,128
ACTIVE VOLUME (GAL)	1,128
MINIMUM PUMP CYCLE TIME (MIN)	75.2
FORCE MAIN SIZE (IN)	4" HDPE DR 11
FORCE MAIN DIAMETER (IN)	3.63
FORCE MAIN LENGTH (LF)	1,699
FLOW VELOCITY (FPS)	1.9
TOTAL STATIC HEAD (FT)	14
FRICTION LOSS (FT)	13
TOTAL DYNAMIC HEAD (FT) (LOSS COEFFICIENT = 100)	27

GENERAL NOTES

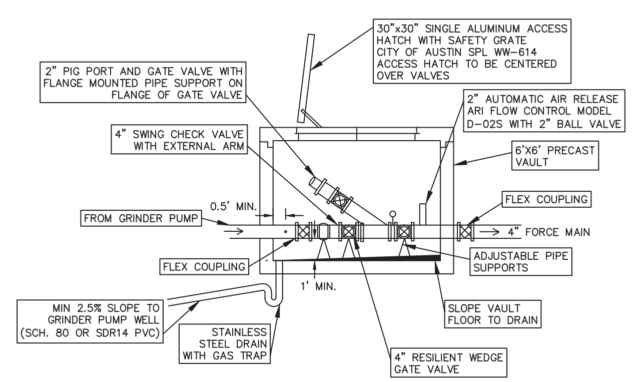
1. CONTRACTOR TO INSTALL TWO MP 3069 HT 3-254 SUBMERSIBLE WASTE WATER PUMPS 4HP, 230-VOLT, SINGLE PHASE (CAPABLE OF PRODUCING 60 GPM AT 27' TDH). REFER TO MEP PLANS FOR ADDITIONAL INFORMATION. PHASE INVERTERS FOR 230-VOLT, THREE PHASE CAN BE PROVIDED, HOWEVER, ADDITIONAL VENTILATION AND/OR FANS SHALL BE PROVIDED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
2. CONTRACTOR TO INSTALL WET WELL WITH ANTI-FLOATATION COLLAR, RAIL PACKAGE, AND PARALLEL DISCHARGE MANIFOLD.
3. CONTRACTOR TO INSTALL 230-VOLT, SINGLE PHASE DUPLEX LIFT STATION ELECTRICAL CONTROL SYSTEM. REFER TO MEP PLANS FOR ADDITIONAL INFORMATION.
4. ALL PUMPS, CONTROLS, AND APPURTENANCES OF THIS SYSTEM SHALL MEET THE CURRENT MANUFACTURE'S WASTEWATER SYSTEM SERVICE CONNECTION REQUIREMENTS.
5. CONTROL PANEL AND ELECTRIC CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURE'S PUBLISHED INSTALLATION INSTRUCTIONS.
6. A CELLULAR AUTO DIALER SHALL BE PROVIDED IN ACCORDANCE WITH PANEL MANUFACTURE'S RECOMMENDATIONS
7. THE LIFT STATION SHALL BE EQUIPPED WITH A QUICK CONNECT POWER TRANSFER SWITCH DESIGNED TO TRANSFER POWER TO AN ALTERNATE POWER SOURCE IN THE EVENT OF POWER OUTAGE. GENERATOR SHALL BE RATED AT 100 KW.
8. FLOATS MUST BE INSTALLED OUT OF THE INFLUENT FLOW TO AVOID TURBULENCE.
9. LEVEL CONTROLS SHALL BE:
   a. PRIMARY: "MILTRONICS" MULTIRANGER PLUS ULTRASONIC LEVEL CONTROLLER OR "BIRDCAGE" SUBMERSIBLE LEVEL SENSOR, OR APPROVED EQUAL
   b. BACK-UP: MECHANICAL FLOAT SWITCHED (SET ABOVE PRIMARY) LEVEL CONTROLS SHALL INSURE ACCURATE MEASUREMENT AND A LOW LEVEL LOCKOUT SWITCH SHALL BE INSTALLED TO INTERRUPT POWER TO THE PUMPS AT THE ELEVATION SHOWN.
10. A HIGH LEVEL ALARM SHALL PROVIDED AND ACTIVATE A FLASHING RED LIGHT TO BE MOUNTED AT THE LIGHT POLE AND A 85db (MIN) OUTDOOR ALARM HORN.
11. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER FOR REVIEW.
12. ELECTRICAL CONDUIT & FITTINGS ACCORDING TO STATE AND LOCAL CODES.
13. THE WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH THE CITY OF AUSTIN SPECIFICATIONS.
14. O & M MANUALS SHALL BE SUBMITTED FOR EACH PIECE OF MECHANICAL AND ELECTRICAL EQUIPMENT FURNISHED.
15. START-UP PROCEDURES FOR THE LIFT STATION, INCLUDING BUT NOT LIMITED TO PUMP RUNS, CURRENT READINGS AND MILTRONICS TESTING SHALL COMPLY WITH MANUFACTURER'S REQUIREMENTS.
16. THE PUMP MANUFACTURER SHALL PROVIDE ALL REQUIRED LABOR, MATERIALS AND EQUIPMENT AS NECESSARY TO PERFORM VIBRATION TESTING FOR THE SUBMERSIBLE PUMPS. THE PUMP MANUFACTURER SHALL PROVIDE ACCEPTABLE FIELD VIBRATION LIMITS AND METHODS OF TESTING WITH THE PUMP SHOP DRAWINGS. THE PUMP MANUFACTURER SHALL PROVIDE WRITTEN CERTIFICATION THAT THE PUMPS HAVE BEEN INSTALLED PROPERLY.

CONSTRUCTION NOTES

1. CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION AND CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ELECTRIC SERVICE TO THE SITE.
3. CONCRETE FOR FOUNDATION SHALL BE CLASS S. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
4. PROVIDE A MINIMUM OF 4 VERTICAL FEET OF CONCRETE BALLAST WITH 1' MINIMUM ANNULAR SPACE AROUND WET WELL BASE (80 CUBIC FEET).
5. THE EDGE OF EXPOSED CONCRETE SLABS SHALL RECEIVE A ¾" CHAMFER.
6. REINFORCED STEEL SHALL BE GRADE 60.
7. BACK FILLING OF THE WET WELL SHALL COMPLY WITH CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 401 AND PER MANUFACTURER'S REQUIREMENTS.
8. 120" USCP POLYMER WET WELL JOINTS TO BE WRAPPED ON EXTERIOR OF CONCRETE WET WELLS.
9. DUCTILE IRON PIPING AND FITTINGS SHALL HAVE A NON-CORROSIVE LINING, WITH A WORKING PRESSURE RATING OF NOT LESS THAN 350 PSI. JOINTS SHALL HAVE FULL FACE GASKETS WITH A MIN. THICKNESS OF 1/8". FLANGES SHALL BE DUCTILE IRON - CLASS 350, INSTALLED BY THE PIPE MANUFACTURER.
10. ALL PENETRATIONS SHALL BE SEALED WATER AND GAS TIGHT PER APPROVED METHODS. CONTRACTOR SHALL PROVIDE PIPE DRAWINGS FOR ALL PIPE PENETRATIONS SEALS FOR DISCHARGE LINES ENTERING WET WELL OR VALVE VAULT.
11. THE ACCESS COVERS WHICH INCLUDE SAFETY GRATES SHALL BE A MINIMUM SIZE AS INDICATED ON PLANS. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF ACCESS COVER TO THE WET WELL TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
12. PUMP SUPPLIER SHALL PROVIDE DIMENSIONS OF THE GUIDE RAILS TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT. THE PUMP SHALL BE EASILY REMOVED FOR INSPECTION OR SERVICE. PERSONNEL SHALL HAVE NO REASON TO ENTER WET WELL. GUIDE RAILS SHALL BE SUPPORTED EVERY 10 FEET WITH STAINLESS STEEL SUPPORTS.
13. THE GUIDE BRACKETS SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL. GUIDE BRACKETS FOR EACH PUMP MUST BE SUPPLIED BY THE PUMP MANUFACTURER TO ENSURE COMPATIBILITY WITH SUPPLIED EQUIPMENT.
14. EACH PUMPING UNIT SHALL BE PROVIDED WITH A STAINLESS STEEL LIFTING CHAIN OR CABLE. LIFTING CHAIN SHALL EXTEND AT LEAST 3-4 FEET ABOVE WET WELL.
15. A 316 STAINLESS STEEL FLOAT MOUNTING ASSEMBLY SHALL BE PROVIDED. THE FLOATS SHALL BE MOUNTED AWAY FROM THE WET WELL INLET, ANY CONTROL WIRING, AND THE PUMPS TO MINIMIZE DISTURBANCE BECAUSE OF TURBULENCE. LEVEL SETTINGS SHOWN ARE FOR REFERENCE ONLY AND SHALL BE CALIBRATED IN THE FIELD.
16. ALL STATIONARY PIPING USED IN THE LIFT STATION AND VALVE VAULT SHALL BE LINED DUCTILE IRON OR 300 SERIES STAINLESS STEEL. ALL HARDWARE MUST BE 316 STAINLESS STEEL. ALL MATERIALS SHALL COMPLY WITH CITY OF AUSTIN STANDARD PRODUCTS LIST.
17. THE VALVE VAULT SHALL BE SIZED LARGE ENOUGH TO PROVIDE AT LEAST 1 FOOT OF CLEARANCE AROUND ALL VALVES AND ALL FLANGES.
18. THE VALVE VAULT SHALL HAVE A DRAIN TO THE WET WELL. THE DRAIN SHALL HAVE A 4 INCH MINIMUM DIAMETER AND BE FITTED WITH A FLAP VALVE OR BACK-FLOW PREVENTER AND A TRAP TO PREVENT GASES OR WATER FROM ENTERING THE VALVE VAULT. THE OPENING TO THE DRAIN SHALL BE COVERED WITH A STAINLESS STEEL SCREEN.
19. THE VALVE VAULT SHALL HOUSE A SURGE RELIEF VALVE WITH A DISCHARGE RETURN LINE INTO THE WET WELL AS REQUIRED BY DESIGN.
20. PUMP DISCHARGE LINES SHALL HAVE ¼ INCH TAPS WITH STAINLESS STEEL OR BRONZE BALL VALVES.
21. ALL DISCHARGE LINES SHALL HAVE ADEQUATE THRUST SUPPORT MEMBERS OR RESTRAINTS AT EACH FITTING. WHERE POSSIBLE, LONG RADIUS 90 DEGREE BENDS SHALL BE USED.
22. THE DISCHARGE LINE ROM EACH PUMP SHALL BE FITTED WITH A CHECK VALVE AND AN ECCENTRIC PLUG VALVE, WITH THE CHECK VALVE ON THE PUMP SIDE OF THE ECCENTRIC PLUG VALVE. WHEN NECESSARY, AIR RELEASE VALVES(S) SHALL BE INSTALLED DOWNSTREAM OF THE ECCENTRIC PLUG VALVES.
23. VENT SHALL BE A STAINLESS STEEL TEE FITTED WITH STAINLESS STEEL SCREENS A MINIMUM OF 2 FEET ABOVE THE WET WELL. SCREENS INSTALLED ON VENTS SHALL BE 304 STAINLESS STEEL - 16 MESH. NOTE: THE CITY OF AUSTIN PRIVATE PLUMBING CODE REQUIRES A PVC VENT TO BE INSTALLED 10 FEET ABOVE THE WET WELL OR CONNECTED TO A BUILDING ROOF VENT.
24. PROVIDE PIPE DRAWINGS FOR ALL PIPE PENETRATIONS SEALS FOR DISCHARGE LINES ENTERING WET WELL OR VALVE VAULT.
25. ALL BURIED PIPE SHALL COMPLY WITH CITY OF AUSTIN SPECIFICATIONS INCLUDING STANDARD PRODUCTS LIST.



PLAN VIEW



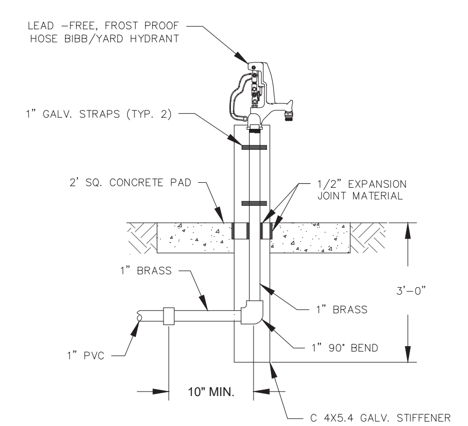
PROFILE VIEW

VALVE VAULT

SCALE: N.T.S.

GENERAL NOTES

1. CONTRACTOR TO SUBMIT FINAL SHOP DRAWINGS FOR REVIEW PRIOR TO CONSTRUCTION.

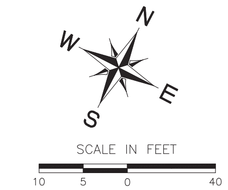


FROST PROOF HOSE BIBB DETAIL

SCALE: N.T.S.

HOSE BIBB NOTES:

1. HOSE BIBB ASSEMBLY TO INCLUDE FROST PROOF FAUCET, STAINLESS STEEL HOSE RACK, AND 2-25 LF OF 1" DIA. HIGH PRESSURE RATED WATER HOSE AND ADJUSTABLE BRONZE SPRAY NOZZLE.
2. FROST PROOF FAUCET SHALL BE LEAD FREE, 3/4", AND RATE FOR A MIN. 125 PSI WORKING PRESSURE.



LEGEND

- EXIST. WATER MAIN
- EXIST. FIRE HYDRANT
- EXIST. WASTEWATER MAIN
- PROP. WATER MAIN
- PROP. FIRE HYDRANT
- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE

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LIFT STATION 2
(PRIVATE)

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SHEET
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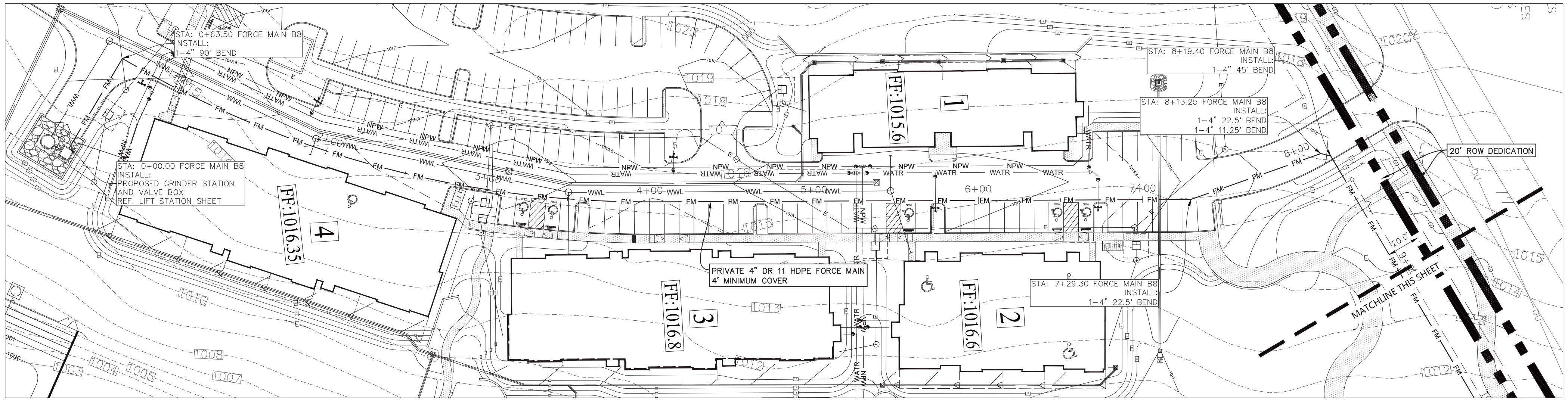

SCALE IN FEET

40 20 0 40

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- EXIST. WASTEWATER MAIN
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- PROP. VALVE
- PROP. WASTEWATER
- PROP. FORCE MAIN
- PROP. STORM LINE

UTILITY NOTES:

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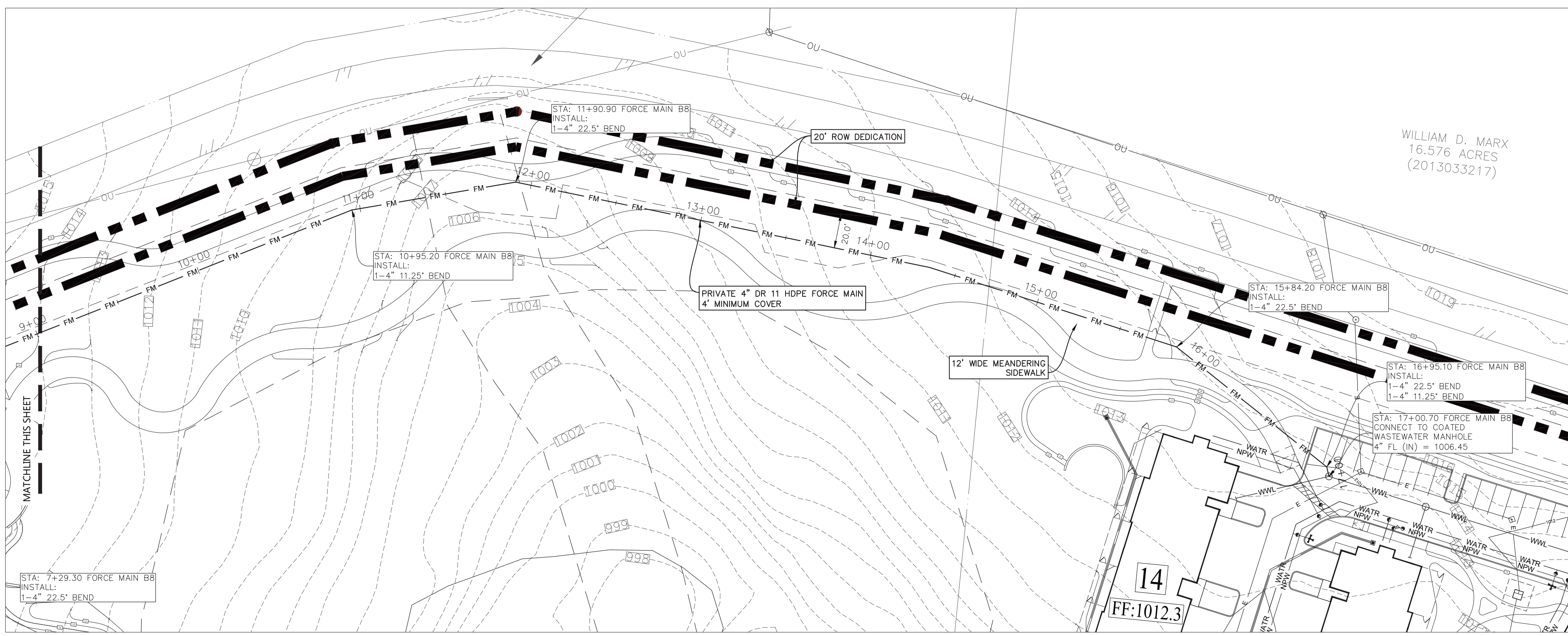

SCALE IN FEET

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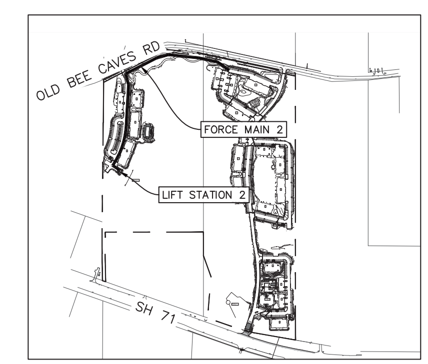
KEY MAP



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FORCE MAIN 2 (PRIVATE)

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SHEET 65 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\62 LIFT STATION AND FORCE MAIN.dwg
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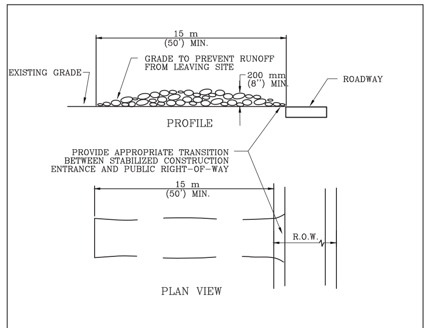
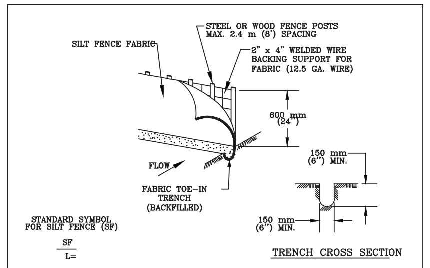


NOTES:
1. STONE SIZE: 75–125 mm (3–5'') OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 15 m (50').
3. THICKNESS: NOT LESS THAN 200 mm (8'').
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AND DRAINS INTO AN APPROVED TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.
6. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — STABILIZED CONSTRUCTION ENTRANCE
RECORD COPY SIGNED BY J. PATRICK MURPHY 5/23/00 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 641S-1



1. STEEL OR WOOD POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 300 mm (12 INCHES). IF WOOD POSTS CANNOT ACHIEVE 300 mm (12 inches) DEPTH, USE STEEL POSTS.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW.

3. THE TRENCH MUST BE A MINIMUM OF 150 mm (6 inches) DEEP AND 150 mm (6 inches) WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

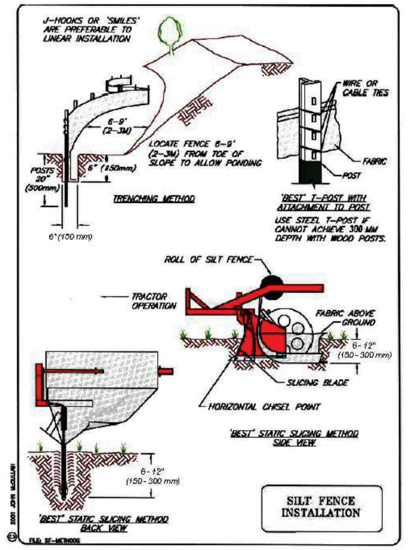
4. SILT FENCE FABRIC SHOULD BE SECURELY FASTENED TO EACH STEEL OR WOOD SUPPORT POST OR TO WOVEN WIRE , WHICH IS IN TURN ATTACHED TO THE STEEL OR WOOD FENCE POST.

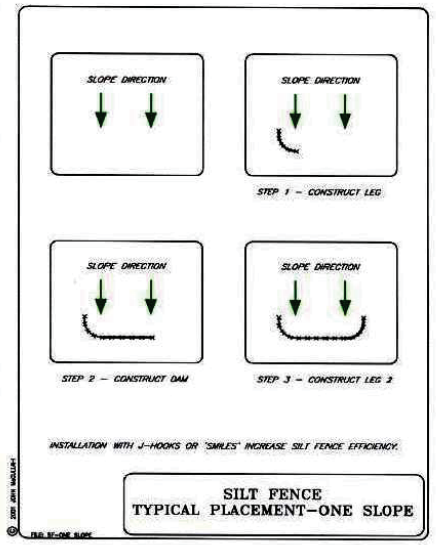
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTY AS NEEDED.

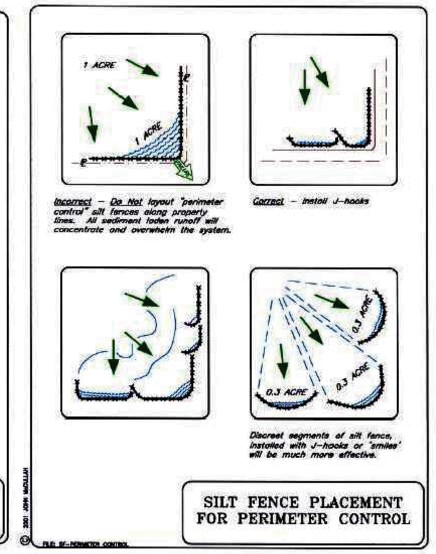
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

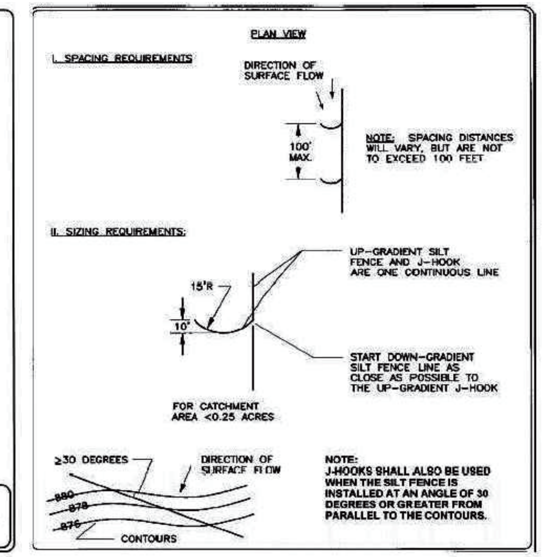
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — SILT FENCE
RECORD COPY SIGNED BY MORGAN BYARS 09/01/2011 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 642S-1



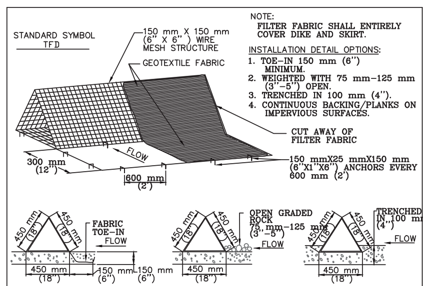






SILT FENCE

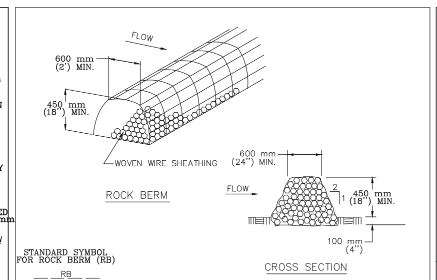
SCALE: N.T.S.



NOTE:
FILTER FABRIC SHALL ENTIRELY COVER DIKE AND SKIRT.
INSTALLATION DETAIL OPTIONS:
1. TOE-IN 150 mm (6") MINIMUM.
2. WEIGHTED WITH 75 mm–125 mm (3"–5") OPEN.
3. TRENCHED IN 100 mm (4").
4. CONTINUOUS BACKING/PLANKS ON IMPERVIOUS SURFACES.

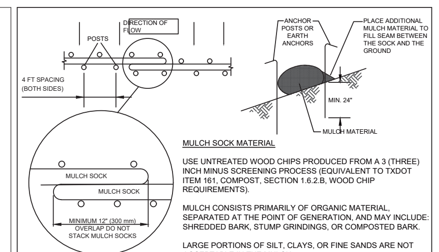
GENERAL NOTES
1. DIKES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT DIKE.
2. THE FABRIC COVER AND SKIRT SHALL BE A CONTINUOUS WRAPPING OF GEOTEXTILE. THE SKIRT SHALL BE A CONTINUOUS EXTENSION OF THE FABRIC ON THE UPSTREAM FACE.
3. THE SKIRT SHALL BE WEIGHTED WITH A CONTINUOUS LAYER OF 75–125 mm (3–5'') OPEN GRADED ROCK OR TOED-IN 150 mm (6'') WITH MECHANICALLY COMPACTED MATERIAL. OTHERWISE, THE ENTIRE STRUCTURE SHALL BE TRENCHED IN 100 mm (4'').
4. DIKES AND SKIRT SHALL BE SECURELY ANCHORED IN PLACE USING 150 mm (6'') WIRE STAPLES ON 600 mm (2') CENTERS ON BOTH EDGES AND SKIRT, OR STAKE USING 10M (3/8 '') DIAMETER RE-BAR WITH TEE ENDS.
5. FILTER MATERIAL SHALL BE LAPPED OVER ENDS 150 mm (6'') TO COVER DIKE TO DIKE JOINTS. JOINTS SHALL BE FASTENED WITH GALVANIZED SHOAT RINGS.
6. THE DIKE STRUCTURE SHALL BE MW40–150 mmX150 mm (6 GA. 6''X6'') WIRE MESH, 450 mm (18'') ON A SIDE.
7. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.
8. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150 mm (6'') AND DISPOSED OF IN A MANNER WHICH WILL NOT CAUSE ADDITIONAL SILTATION.
9. AFTER THE DEVELOPMENT SITE IS COMPLETLY STABILIZED, THE DIKES AND ANY REMAINING SILT SHALL BE REMOVED. SILT SHALL BE DISPOSED OF AS INDICATED IN GENERAL NOTE 8 ABOVE.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TRIANGULAR SEDIMENT FILTER DIKE
RECORD COPY SIGNED BY J. PATRICK MURPHY 3/27/00 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 628S



NOTES:
1. USE ONLY OPEN GRADED ROCK 75 to 125 mm (3 to 5'') DIAMETER FOR ALL CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 25 mm (1'') OPENING AND MINIMUM WIRE DIAMETER OF 12.9 mm (20 GAUGE).
3. THE ROCK BERM SHALL BE INSPECTED DAILY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SEDIMENT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. IF SEDIMENT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 150 mm (6''), WHICHEVER IS LESS, THE SEDIMENT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SEDIMENTION PROBLEM.
5. WHEN THE SITE IS COMPLETELY STABILIZED,THE BERM AND ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — ROCK BERM
RECORD COPY SIGNED BY MORGAN BYARS 8/24/2010 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 639S-1



MULCH SOCK MATERIAL

USE UNTREATED WOOD CHIPS PRODUCED FROM A 3 (THREE) INCH MINUS SCREENING PROCESS (EQUIVALENT TO TXDOT ITEM 161, COMPOST, SECTION 1.6.2.B, WOOD CHIP REQUIREMENTS).

MULCH CONSISTS PRIMARILY OF ORGANIC MATERIAL, SEPARATED AT THE POINT OF GENERATION, AND MAY INCLUDE: SHREDDED BARK, STUMP GRINDINGS, OR COMPOSTED BARK.

LARGE PORTIONS OF SILT, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MULCH.

NOTES:

1. STEEL OR WOOD POSTS WHICH SUPPORT THE MULCH SOCK SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 600mm (24 inches). IF WOOD POSTS CANNOT ACHIEVE 600mm (24 inches) DEPTH, USE STEEL POSTS. EARTH ANCHORS ARE ALSO ACCEPTABLE.

2. THE TOE OF THE MULCH SOCK SHALL BE PLACED SO THAT THE MULCH SOCK IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. IN ORDER TO PREVENT WATER FROM FLOWING BETWEEN THE JOINTS OF ADJACENT ENDS OFMULCH SOCKS, LAP THE ENDS OF ADJACENT MULCH SOCKS A MINIMUM OF 300mm (12 inches).

3. MULCH MATERIAL MUST BE FREE OF REFUSE, PHYSICAL CONTAMINANTS, AND MATERIAL TOXIC TO PLANT GROWTH; IT IS NOT ACCEPTABLE FOR THE MULCH MATERIAL TO CONTAIN GROUND CONSTRUCTION DEBRIS, BIOSOLIDS, OR MANURE.

4. SOCK MATERIAL WILL BE 100% BIODEGRADABLE, PHOTODEGRADABLE, OR RECYCLABLE SUCH AS BURLAP, TWINE, UV PHOTOBIODEGRADABLE PLASTIC, POLYESTER, OR ANY OTHER ACCEPTABLE MATERIAL.

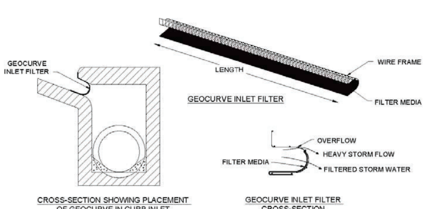
5. MULCH SOCKS SHOULD BE USED AT THE BASE OF SLOPES NO STEEPER THAN 2:1 AND SHOULD NOT EXCEED THE MAXIMUM SPACING CRITERIA PROVIDED IN CITY OF AUSTIN ENVIRONMENTAL CRITERIA MANUAL TABLE 1.4.5.F.1 FOR A GIVEN SLOPE CATEGORY.

6. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 150mm (6 inches). THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — MULCH SOCK
RECORD COPY SIGNED BY MORGAN BYARS 08/24/2010 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 648S-1

GeoSolutions, Inc. — Product Data Sheet — GeoCurve Inlet Filter

The GeoCurve Inlet Filter is a stormwater filter for placement into a stormwater curb inlet for the purpose of capturing debris and sediment that is transported by stormwater runoff. The device is comprised of a filter media (woven monofilament filter fabric) affixed to the lower portion of a "C" shaped 12 gauge welded wire frame (2" x 4" openings) with an upper retention flange. The device effectively filters stormwater, can easily be removed for maintenance and cleaning and incorporates an overflow window for heavy storm events.

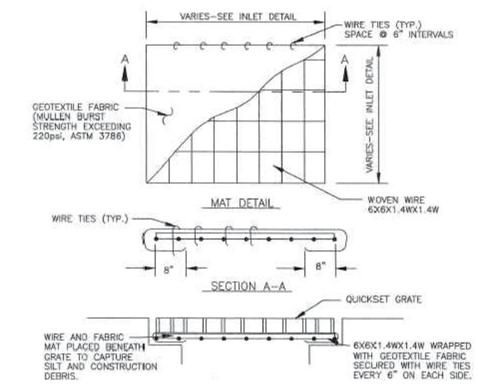


FILTER MEDIA PROPERTIES: Mono-filament Woven Filter Fabric

PROPERTY	ASTM TEST METHOD	VALUE	C.O.A. REQ'T
Fabric Weight	D 3776	4.5 oz/sy	3 oz/sy
Grab Tensile Strength	D 4632	170 lbs	----
Mullen Burst Strength	D 3786	410 lbs/sq in	120 lbs/sq in
UV Stability	D 4355	80 %	70 %
Water Flow Rate	D 4491	325 gal/min/sf	275 gal/min/sf

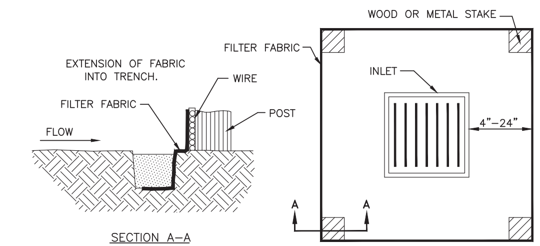
GeoSolutions, Inc. 4417 Burleson Road Austin, Texas 78744 512-330-0796

CURB INLET PROTECTION DETAIL



GRATE INLET PROTECTION MAT

SCALE: N.T.S.



GRATE INLET PROTECTION

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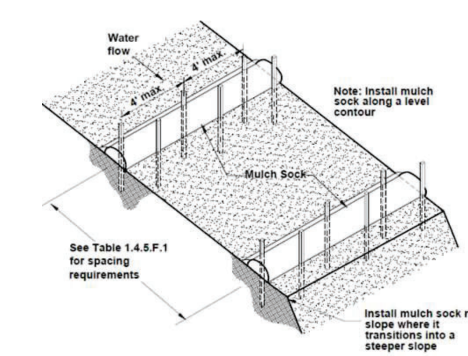
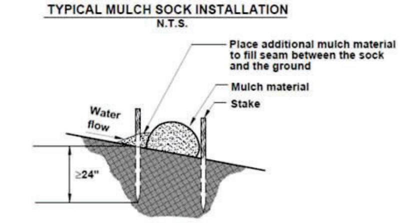
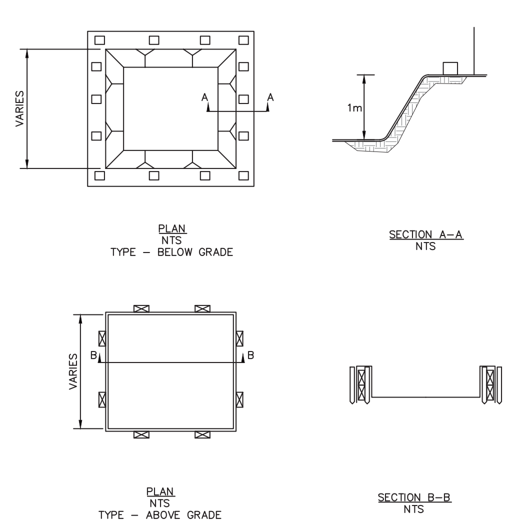


TYPICAL MULCH SOCK INSTALLATION
N.T.S.



MULCH SOCK
N.T.S.



CONCRETE WASHOUT SCHEMATIC

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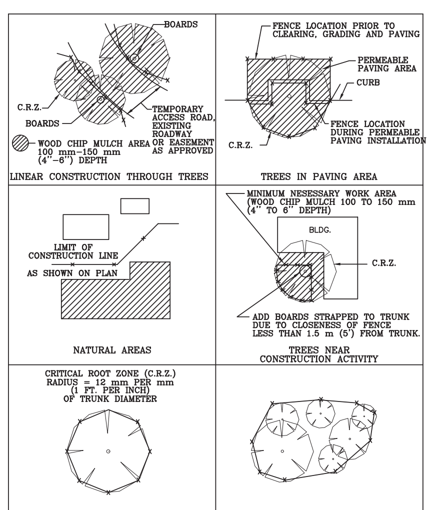
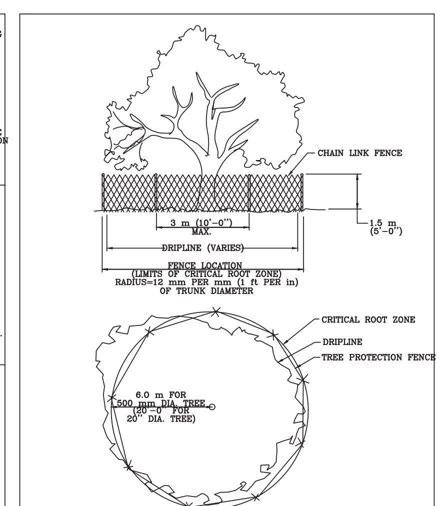


CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TREE PROTECTION FENCE LOCATIONS
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 610S-1



CITY OF AUSTIN — WATERSHED PROTECTION DEPARTMENT — TREE PROPTECTION FENCE TYPE A – CHAIN LINK
RECORD COPY SIGNED BY J. PATRICK MURPHY 11/15/99 ADOPTED — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 610S-2

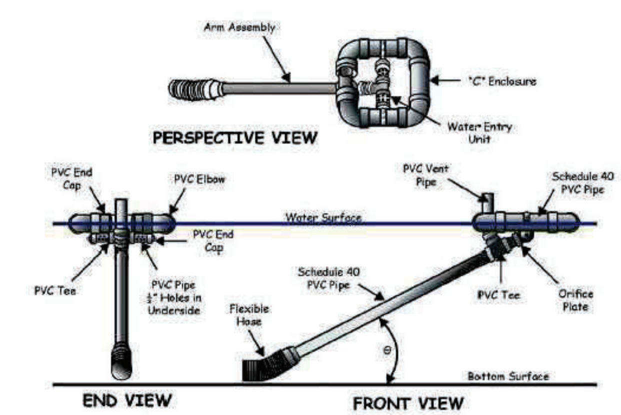


Figure 6.64a Schematic of a skimmer, from Pennsylvania Erosion and Sediment Pollution Control Manual, March, 2000.

DEWATERING SKIMMER

SCALE: N.T.S.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.

TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS — SCOTT J. FOSTER — 84652 — LICENSED PROFESSIONAL ENGINEER — 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 66 OF 113

SP-2025-0080C

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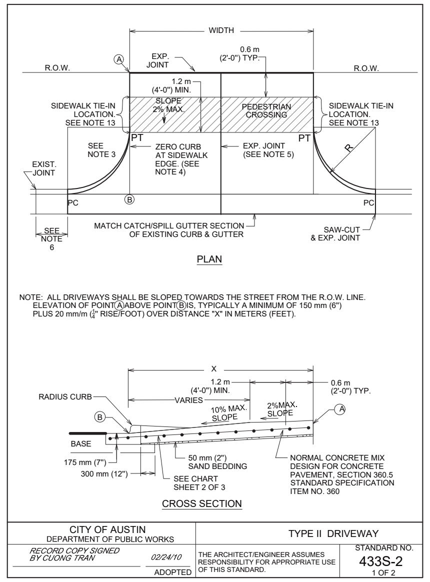
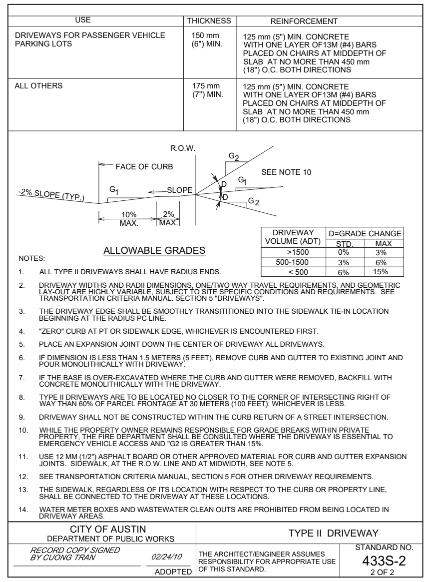
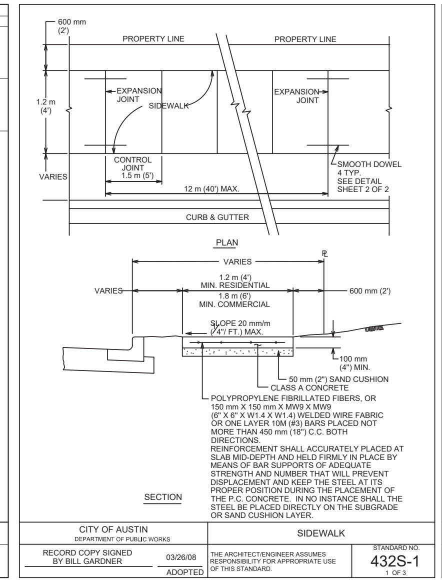
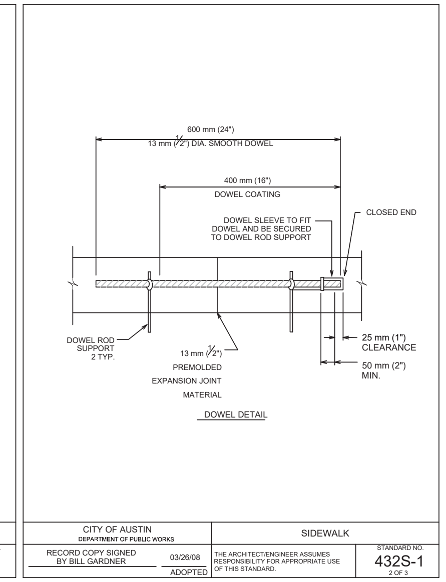
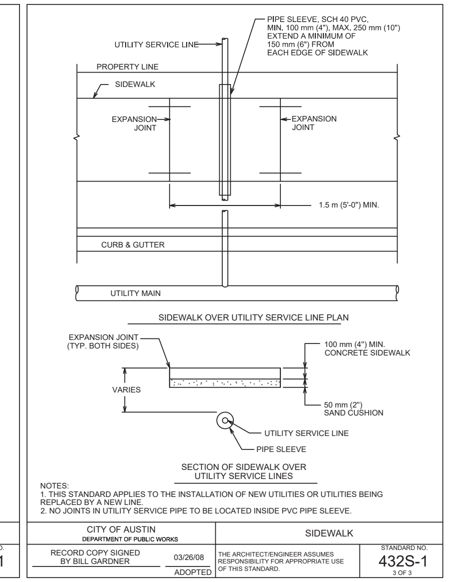
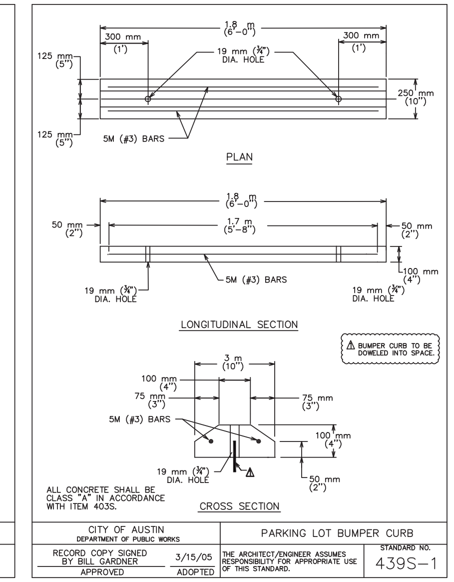


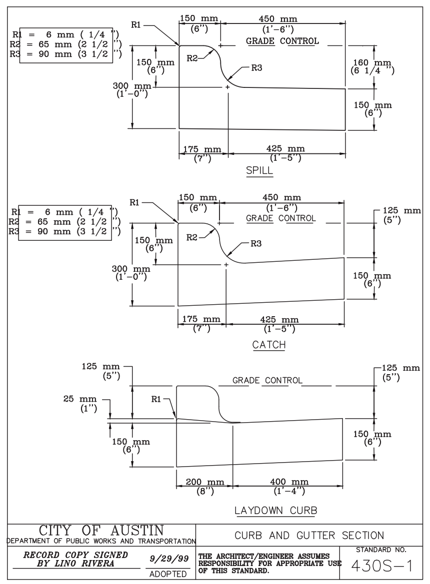


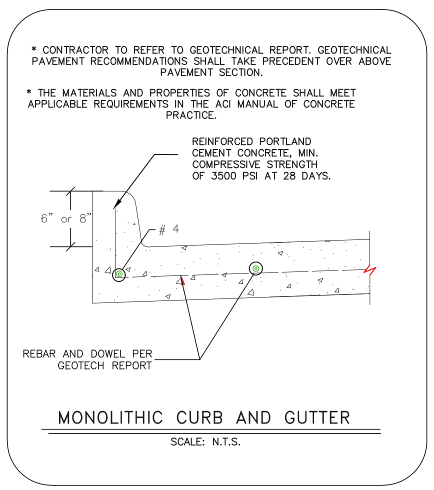


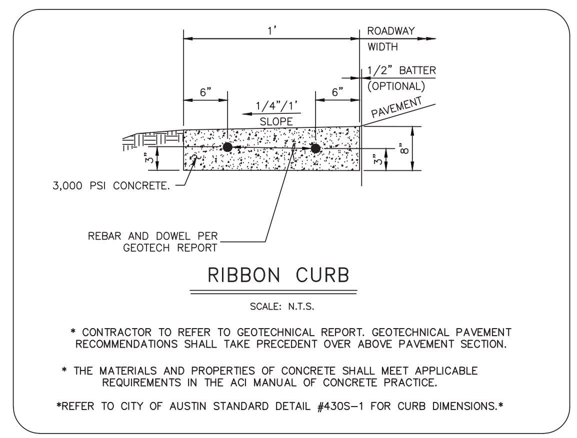


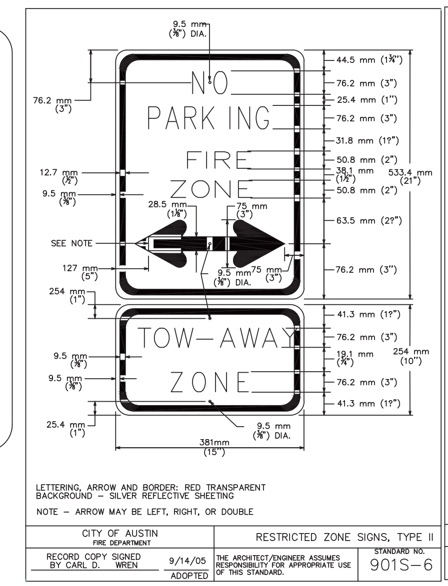


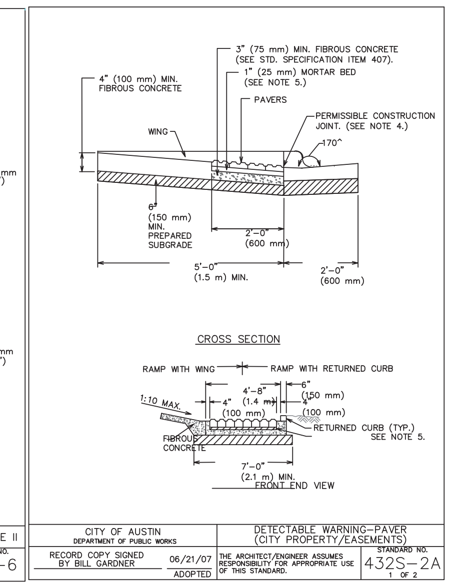








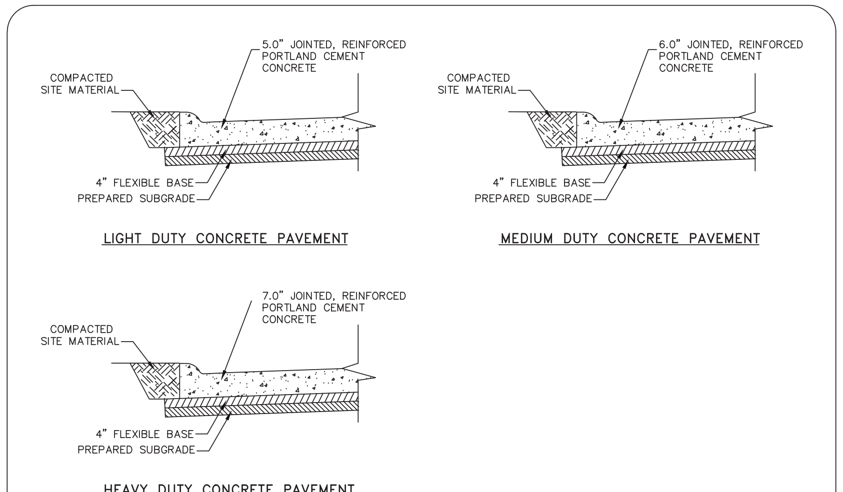




GENERAL NOTES:

1. THIS STANDARD IS APPLICABLE FOR RAMP CONSTRUCTION ON CITY PROPERTY AND EASEMENT AREAS ONLY.
2. PAVERS ARE REQUIRED FOR ALL CURB RAMP INSTALLATIONS.
3. PAVERS WILL HAVE DETECTABLE WARNING THAT CONSISTS OF RAISED TRUNCATED DOMES WITH A DIAMETER OF 0.9" (23 mm), A NOMINAL HEIGHT OF 0.2" (5 mm) AND A NOMINAL CENTER TO CENTER SPACING OF 2.35" (60 mm) AND SHALL CONSTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT–ON–DARK OR DARK–ON–LIGHT (Re: ADAAG SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. PAVER PATTERN SHALL BE BASKET WEAVE UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
4. TYPICAL SIDEWALK WIDTHS AND CURB RADII ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE TRANSPORTATION CRITERIA MANUAL FOR SIDEWALK WIDTHS, CURB RADII AND CURB BASIS.
5. THE PERMISSIBLE CONSTRUCTION JOINT BETWEEN THE PAVERS AND THE ADJOINING SURFACE SHALL BE LIMITED TO ¼" (6 mm) JOINT SIZE. GAPS LARGER THAN ¼" (6 mm) MUST BE APPROVED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. ALL JOINTS BETWEEN BRICKS AND ADJOINING SURFACE SHALL BE MORTAR FILLED UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
6. MORTAR SHALL CONFORM TO STD. SPECIFICATION ITEM SECTION 403S.3.5, MORTAR AND GROUT. ALL OTHER CONCRETE SHALL CONFORM TO STD. SPECIFICATION ITEM 403S, CONCRETE FOR STRUCTURES, UNLESS OTHERWISE NOTED.
7. CURB RAMPS WITH RETURNED CURB MAY ONLY BE USED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK DIAGONALLY ACROSS THE RAMP.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS	DETECTABLE WARNING–PAVER (CITY PROPERTY/EASMENTS)	
RECORD COPY SIGNED BY BILL GARDNER — 06/21/07 ADOPTED	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 432S–2A 2 OF 2

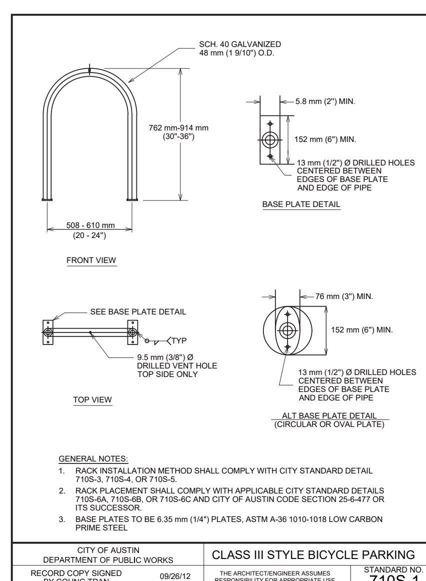


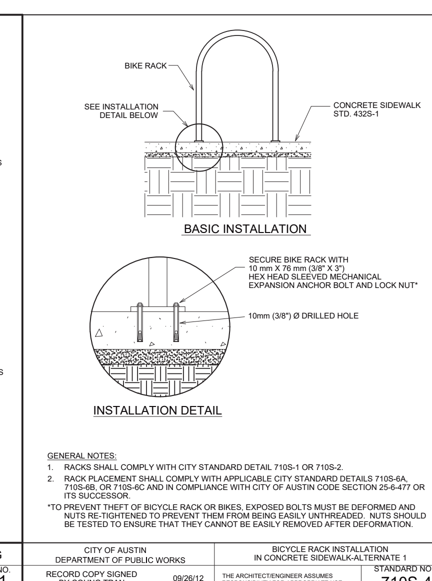
NOTES:

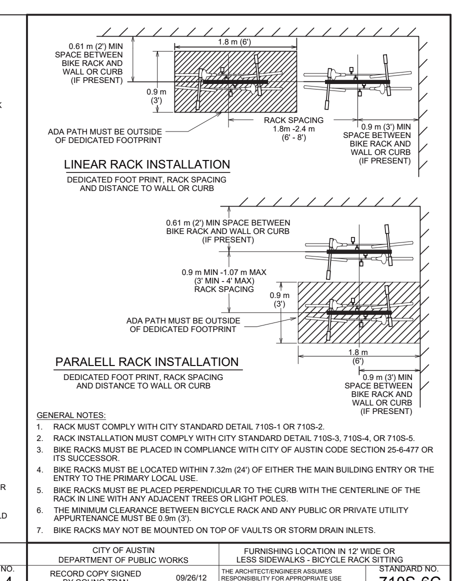
1. CONTRACTOR TO REFER TO GEOTECHNICAL REPORT BY RABA KISTNER DATED JANUARY 2025 FOR MORE INFORMATION AND EXPANSION/CONTROL JOINT SPECIFICATIONS.
2. GEOTECHNICAL PAVEMENT RECOMMENDATIONS SHALL TAKE PRECEDENT OVER SHOWN PAVEMENT SECTION.
3. THE CONTRACTOR SHALL REFERENCE THE MEP AND LANDSCAPE PLANS FOR THE SIZE AND LOCATIONS OF PROPOSED ELECTRIC, TELEPHONE, CABLE CONDUITS, AND IRRIGATION SLEEVES.

PAVING SECTION

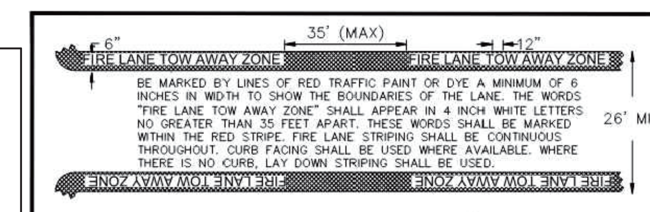
SCALE: N.T.S.







* OR APPROVED EQUAL



FIRE LANE MARKINGS

SCALE: N.T.S.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
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FAX (512) 900-7962

STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SP-2025-0080C

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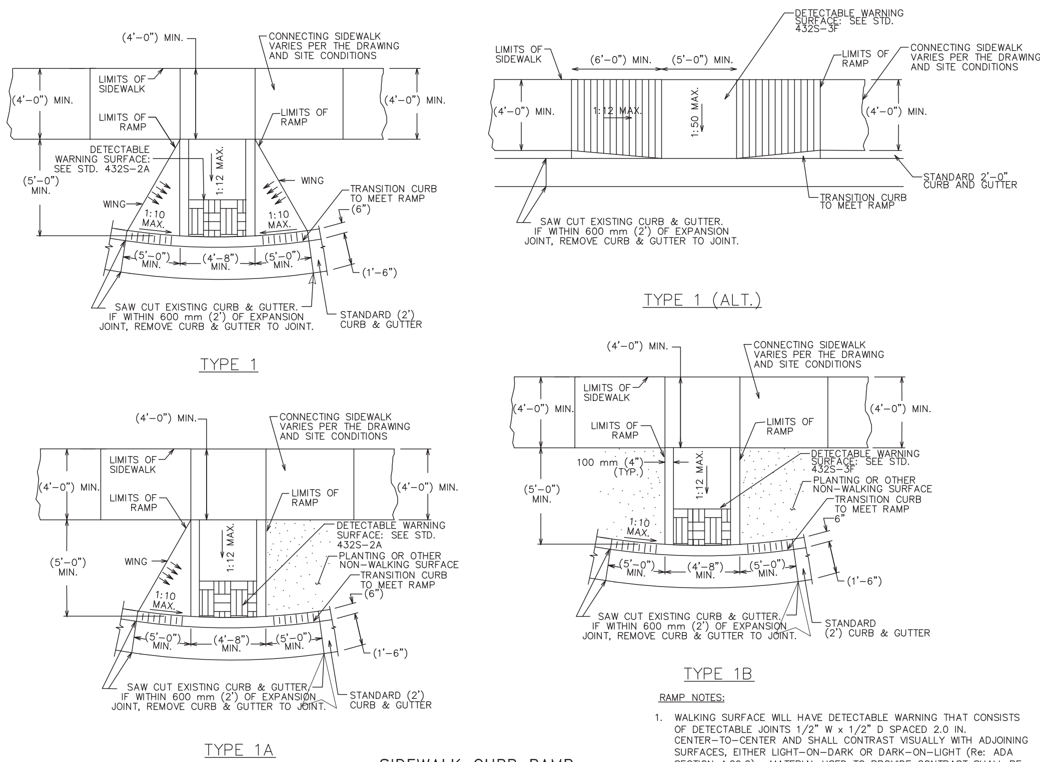
** ALL ACCESSIBLE PARKING AND RAMPS
SHALL MEET 2017 ANSI CODE

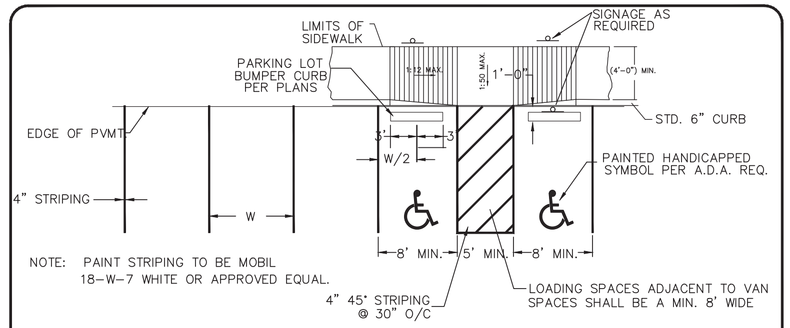


SIDEWALK CURB RAMP WITH DETECTABLE JOINTS

SCALE: N.T.S.

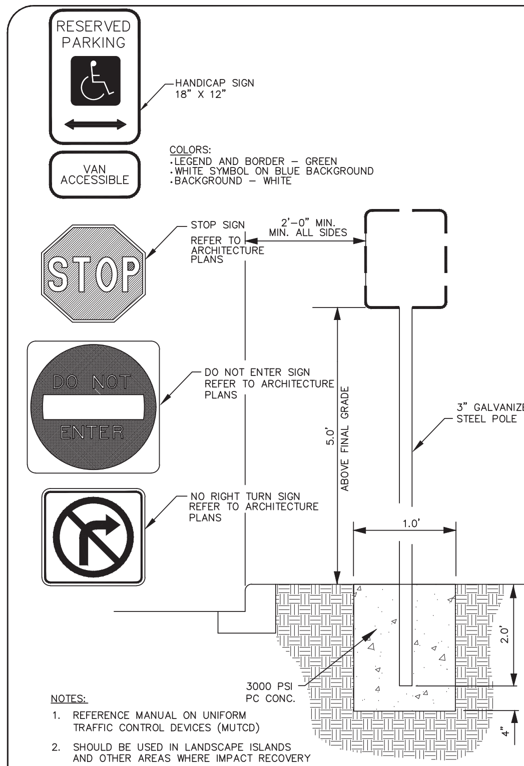
RAMP NOTES:

1. WALKING SURFACE WILL HAVE DETECTABLE WARNING THAT CONSISTS OF DETECTABLE JOINTS 1/2" W x 1/2" D SPACED 2.0 IN. CENTER-TO-CENTER AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT (Re: ADA SECTION 4.29.2). MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
2. AREA OF RAMP TO INCLUDE CONTRASTING COLOR DOES NOT HAVE TO INCLUDE THE WINGS, UNLESS THE WINGS ARE PART OF THE WALKING SURFACE.
3. TYPICAL SIDEWALK WIDTHS AND CURB RADII SHOWN FOR ILLUSTRATION REFER TO TRANSPORTATION MANUAL FOR SIDEWALK WIDTHS AND RADII.
4. REFER TO PLANS FOR RAMP CONFIGURATIONS AND LOCATIONS.
5. REFER TO ARCHITECTURAL PLANS FOR CONTRASTING COLOR RECOMMENDATIONS.



PARKING SPACE DETAIL

SCALE: N.T.S.

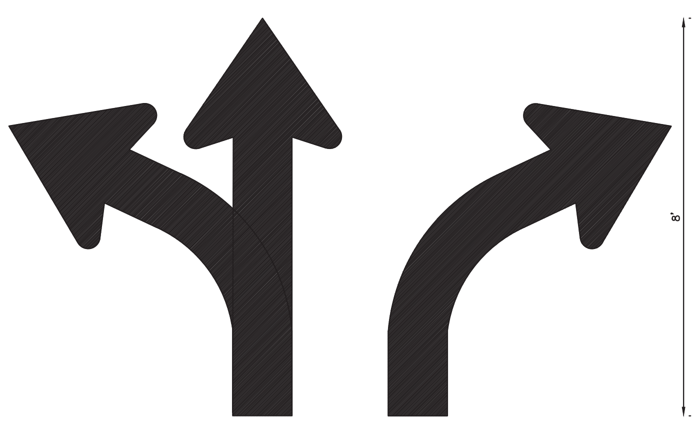


NOTES:

1. REFERENCE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
2. SHOULD BE USED IN LANDSCAPE ISLANDS AND OTHER AREAS WHERE IMPACT RECOVERY SIGNS DO NOT APPLY.
3. PROVIDE "FINE" SIGN WHEN REQUIRED BY MUNICIPALITY.
3. CONTRACTOR TO COORDINATE WITH ARCHITECTURE PLANS FOR ON-SITE SIGN SPECIFICATION.

FIXED SIGN

SCALE: N.T.S.



NOTE:

1. ALL TRAFFIC MARKINGS TO BE 4" WIDE WHITE REFLECTIVE PAINT AS PER DIMENSIONS SHOWN.
2. ALL STRIPING TO BE THERMOPLASTIC AND TXMUTCD COMPLIANT.
3. FOR REFERENCE ONLY, REFER TO TXMUTCD SPECIFICATION FOR DETAILS.

DIRECTIONAL ARROW

SCALE: N.T.S.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
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SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

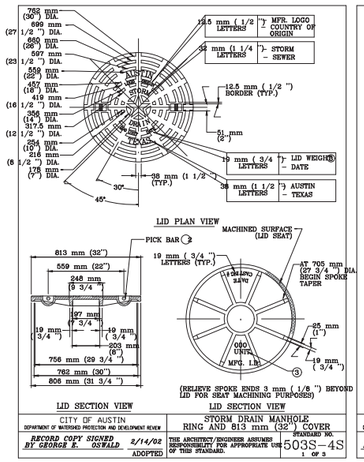
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

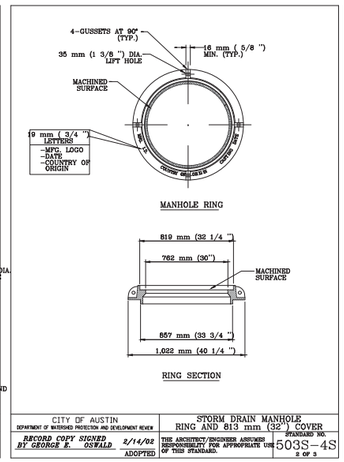
CONSTRUCTION DETAILS
SHEET 3

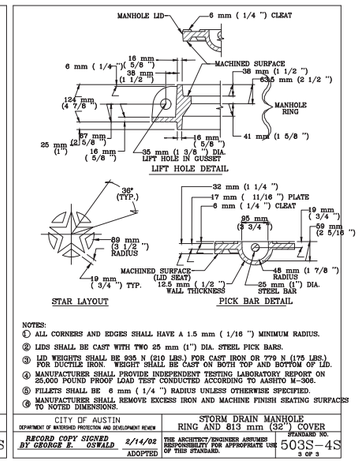
Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

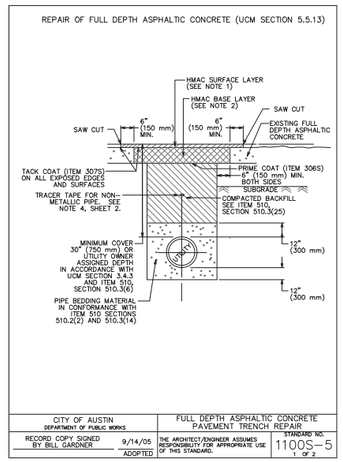
SHEET
68
OF 113

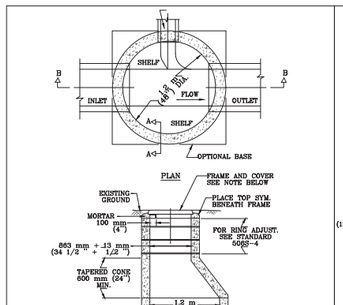
SP-2025-0080C

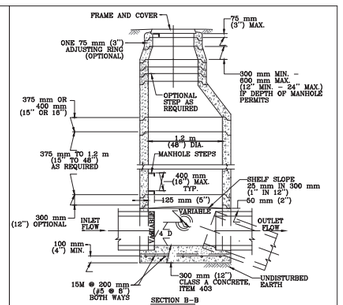


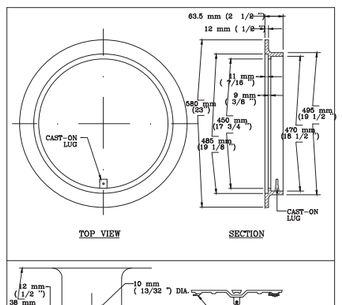


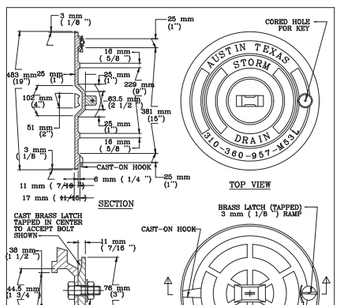


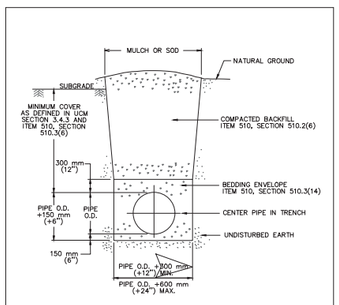












CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-4S 1 OF 3

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-4S 2 OF 3

NOTES:

① ALL CORNERS AND EDGES SHALL HAVE A 1.5 mm (1/16 ") MINIMUM RADIUS.

② LIDS SHALL BE CAST WITH TWO 25 mm (1") DIA. STEEL PICK BARS.

③ LID WEIGHTS SHALL BE 935 N (210 LBS.) FOR CAST IRON OR 779 N (175 LBS.) FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF LID.

④ MANUFACTURER SHALL PROVIDE INDEPENDENT TESTING LABORATORY REPORT ON 25,000 POUND PROOF LOAD TEST CONDUCTED ACCORDING TO AASHTO M-306.

⑤ FILLETS SHALL BE 6 mm (1/4 ") RADIUS UNLESS OTHERWISE SPECIFIED.

⑥ MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-4S 3 OF 3

REPAIR OF FULL DEPTH ASPHALTIC CONCRETE (UCM SECTION 5.5.13)

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

FULL DEPTH ASPHALTIC CONCRETE
PAVEMENT TRENCH REPAIR

RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 1100S-5 1 OF 2

NOTES:

1. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
   a) MIN. 2" (50 mm) HMAC TYPE "D" FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS.
   b) MIN. 3" (75 mm) HMAC TYPE "C" FOR TRENCH REPAIR IN COLLECTOR/ARTERIAL STREETS.
   SEE ITEM 340S, SECTION 340S.4.
2. THE COMBINED THICKNESS OF THE REPLACEMENT AC SURFACE AND BASE LAYERS SHALL MATCH THE THICKNESS OF EXISTING FULL DEPTH AC LAYER. HOWEVER, THE REPLACEMENT AC BASE LAYER SHALL BE A MINIMUM THICKNESS OF 6" (150 mm) OF TYPE A OR B HMA. A BASE LAYER TYPE THAT MATCHES THE NEW HMA SURFACE LAYER (SEE NOTE 1) MAY BE USED, IF THE TOTAL REPAIR AREA IS LESS THAN 300 SQUARE YARDS (250 SQUARE METERS).
3. CLASS "J" PC CONCRETE (ITEM 403S) OR CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE SUBSTITUTED IN THESE REPAIRS FOR THE FLEXIBLE BASE AND COMPACTED BACKFILL. PC CONCRETE GREATER THAN A 2 SACK MIX WILL NOT BE ALLOWED.
4. AS PER CITY OF AUSTIN STANDARD SPECIFICATION 510, SECTION 510.2(8)(K)5, FOR ALL NON-METALLIC PIPE, DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND A MINIMUM OF 12" (300 mm) BELOW THE SUBGRADE, OR A MINIMUM OF 18" (450 mm) BELOW FINISHED GRADE ON AREAS OUTSIDE THE LIMITS OF PAVEMENT, SHALL BE PLACED INDUCTIVE TRACER TAPE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

FULL DEPTH ASPHALTIC CONCRETE
PAVEMENT TRENCH REPAIR

RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 1100S-5 2 OF 2

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

BOLTED STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-5S 1 OF 3

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

BOLTED STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-5S 2 OF 3

NOTES:

① ALL CORNERS AND EDGES SHALL HAVE A 1.5 mm (1/16 ") MINIMUM RADIUS.

② LIDS SHALL BE CAST WITH TWO 25 mm (1") DIA. STEEL PICK BARS.

③ LID WEIGHTS SHALL BE 935 N (210 LBS.) FOR CAST IRON OR 779 N (175 LBS.) FOR DUCTILE IRON. WEIGHT SHALL BE CAST ON BOTH TOP AND BOTTOM OF LID.

④ MANUFACTURER SHALL PROVIDE INDEPENDENT TESTING LABORATORY REPORT ON 25,000 POUND PROOF LOAD TEST CONDUCTED ACCORDING TO AASHTO M-306.

⑤ FILLETS SHALL BE 6 mm (1/4 ") RADIUS UNLESS OTHERWISE SPECIFIED.

⑥ MANUFACTURER SHALL REMOVE EXCESS IRON AND MACHINE FINISH SEATING SURFACES TO NOTED DIMENSIONS.

⑦ BOLTS SHALL BE 16 mm X 44 mm (5/8 " x 1 3/4 " x 11 N.C.) STAINLESS STEEL HEX HEAD (TYPE 316).

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

BOLTED STORM DRAIN MANHOLE
RING AND 813 mm (32") COVER

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-5S 3 OF 3

1. BOX WALLS MUST BE FORMED INSIDE AND OUTSIDE WITH APPROVED MATERIALS.
2. USE CLASS "A" CONCRETE. SEE ITEM 403.
3. TYPICAL CAST IN PLACE BOX FOR 760 mm (30") OR LARGER PIPE.
4. REINFORCING STEEL SHALL MEET ITEM 406, REINFORCING STEEL.

CITY OF AUSTIN
WATER AND WASTEWATER UTILITY

TYPICAL BOX MANHOLE
760 mm (30") & LARGER PIPE

RECORD COPY SIGNED BY KATHI L. FLOWERS 2/17/00 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 506S-5

NOTE:
USE 800 mm (32") FRAME AND COVER.

MINIMUM MANHOLE DIA.	MINIMUM PIPE SIZE
1.2 m (4')	450 TO 600 mm (18 TO 24")
1.5 m (5')	750 mm TO 1.1 m (30 TO 42")
1.8 m (6')	1.2 TO 1.4 m (48 TO 54")
2.1 m (7')	1.5 TO 1.7 m (60 TO 66")

SIZE TO BE USED IS DEPENDENT ON DRAIN ANGLES.

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

PRE-CAST CONCRETE
STORM DRAIN MANHOLE

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 506S-3 1 OF 2

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

PRE-CAST CONCRETE
STORM DRAIN MANHOLE

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 506S-3 2 OF 2

375 mm (15") MIN. PROOF COIL, CARBON STEEL CHAIN 7 mm (0.281") DIA. MANUFACTURED TO ASTM-A413 SPECIFICATIONS. ATTACH TO THE CAST-ON EYE.

CAST-ON LUG AND COVER CHAIN DETAIL

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

457 mm (18") COVER AND FRAME

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-1 1 OF 2

CITY OF AUSTIN
DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW

457 mm (18") COVER AND FRAME

RECORD COPY SIGNED BY GEORGE E. OSWALD 2/14/02 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 503S-1 2 OF 2

REFERENCES:

1. UTILITY CRITERIA MANUAL SECTION 3.4.3, "FINAL DESIGN"
2. STANDARD SPECIFICATION MANUAL ITEM 510,
   SECTION 510.2(6), "SELECT BACKFILL OR BORROW";
   SECTION 510.3(6), "TRENCH DEPTH AND DEPTH OF COVER";
   SECTION 510.3(14), "PIPE BEDDING ENVELOPE"

CITY OF AUSTIN
DEPARTMENT OF PUBLIC WORKS

TYPICAL TRENCH DETAIL
WITH UNFINISHED SURFACE

RECORD COPY SIGNED BY BILL GARDNER 03/13/06 ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 510S-5

No.	Date	Revisions	App.

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SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 4

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
69
OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\66 CONSTRUCTION DETAILS.dwg LAYOUT: 4 STM PLOT DATE: 8/27/2025 8:06am PLOTTED BY: mered
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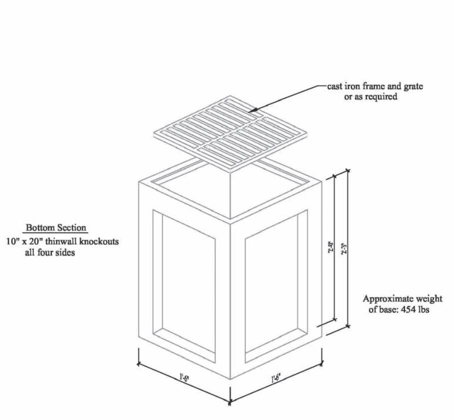
12" x 12" x var Grate Inlet

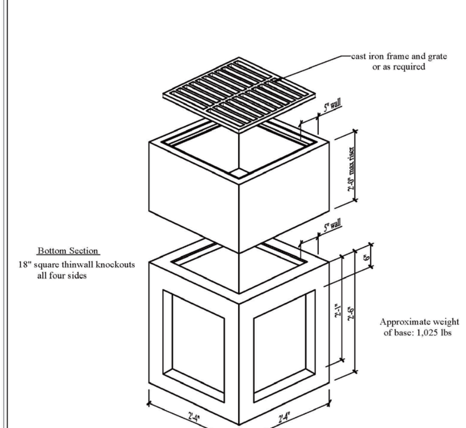


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 12" x 12" x var Grate Inlet — SHEET 1 of 1

18" x 18" x var Grate Inlet

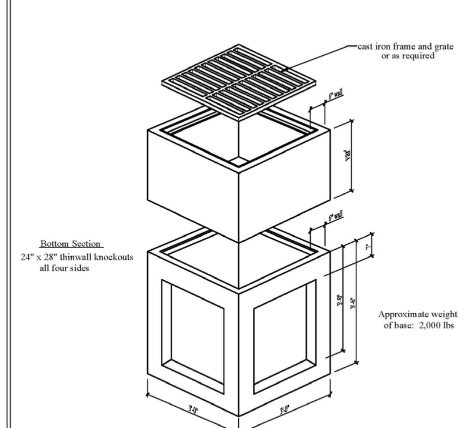


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 18" x 18" x var Grate Inlet — SHEET 1 of 1

24" x 24" x var Grate Inlet

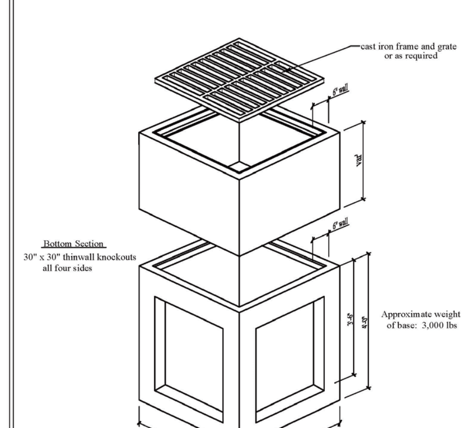


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 24" x 24" x var Grate Inlet — SHEET 1 of 1

30" x 30" x var Grate Inlet

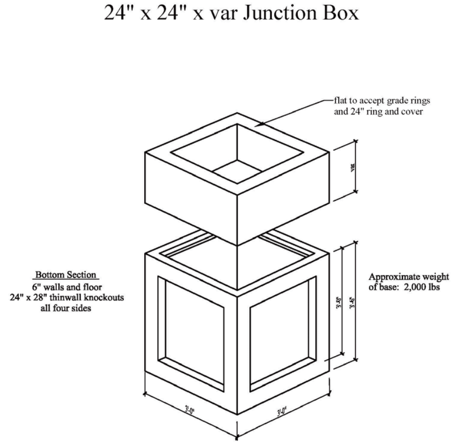


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 30" x 30" x var Grate Inlet — SHEET 1 of 1

24" x 24" x var Junction Box

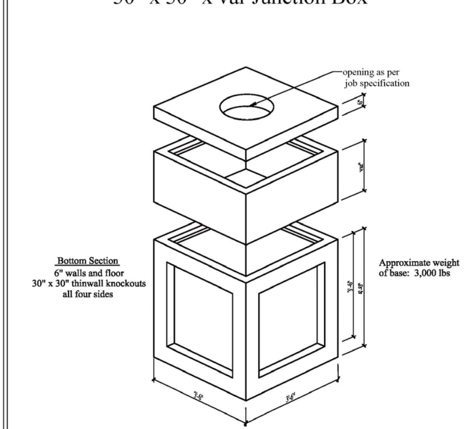


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 24" x 24" x var Junction Box — SHEET 1 of 1

30" x 30" x var Junction Box

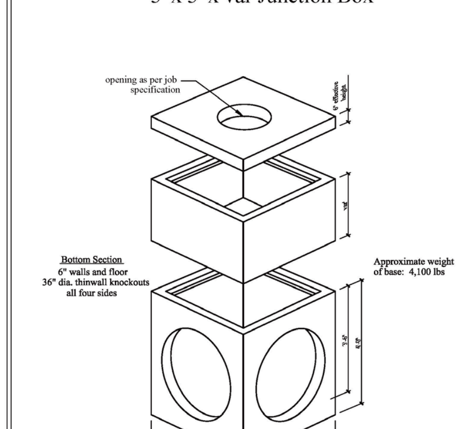


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 30" x 30" x var Junction Box — SHEET 1 of 1

3' x 3' x var Junction Box

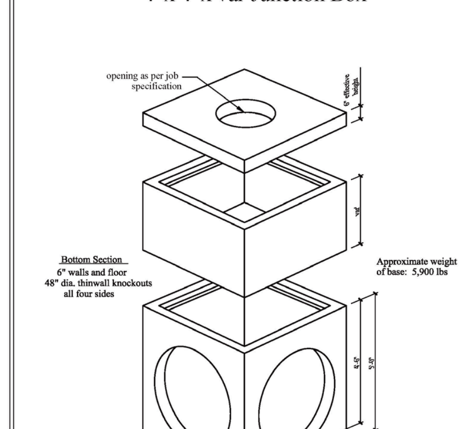


Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. — FOR: 3' x 3' x var Junction Box — SHEET 1 of 1

4' x 4' x var Junction Box



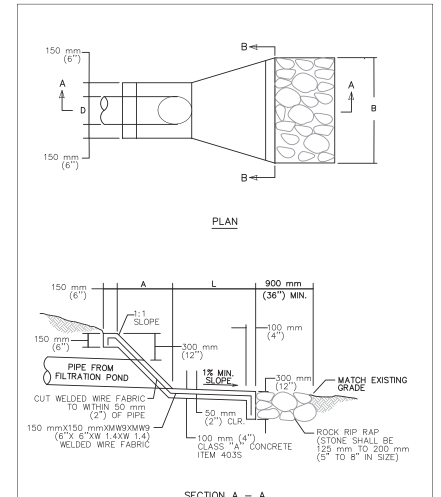
Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

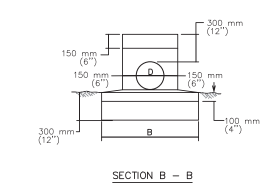
CAPITAL PRECAST, INC. — FOR: 4' x 4' x var Junction Box — SHEET 1 of 1

NOTES:
1. OR APPROVED EQUAL.

Headwall for Filtration Ponds w/Outfall Pipe



CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW — RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05 ADOPTED — HEADWALL FOR FILTRATION PONDS W/OUTFALL PIPE 150 mm (6") TO 375 mm (15") DIA. — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 508S-15, 1 OF 2



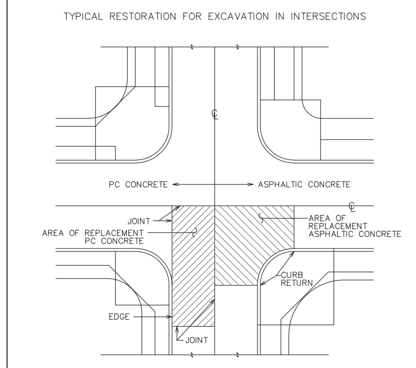
A	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	675 mm (27")
B	750 mm (30")	800 mm (32")	850 mm (34")	1.05 m (42")	1.27 m (51")
D	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	375 mm (15")
L	600 mm (24")	600 mm (24")	750 mm (30")	900 mm (36")	1.2 m (48")

CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW — RECORD COPY SIGNED BY GEORGE E. OSWALD 3/15/05 ADOPTED — HEADWALL FOR FILTRATION PONDS W/OUTFALL PIPE 150 mm (6") TO 375 mm (15") DIA. — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 508S-15, 2 OF 2

Street Repair Requirements

REPAIR OF NEW STREETS and ARTERIAL STREETS in GOOD CONDITION (UCM SECTION 5.3.3 and 5.3.4)

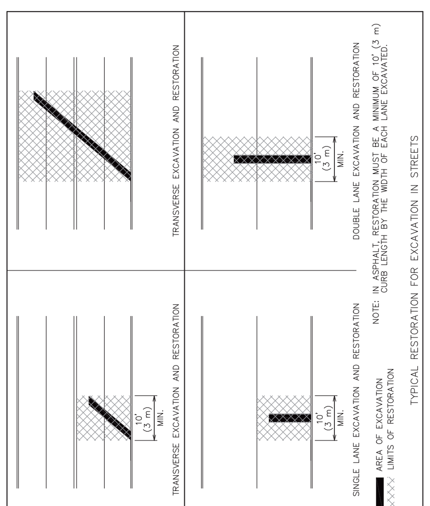
TYPICAL RESTORATION FOR EXCAVATION IN INTERSECTIONS



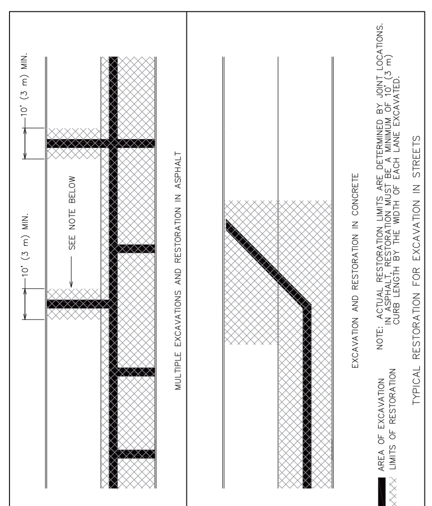
TRENCH REPAIRS WITHIN PORTLAND CEMENT CONCRETE PAVEMENTS NOTE:
IF ANY PART OF THE TRENCH REPAIR FALLS WITHIN AN INTERSECTION, THEN THE ENTIRE CONCRETE SLAB FROM JOINT TO JOINT AND JOINT TO EDGE SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED IN WRITING BY THE DIRECTOR.

TRENCH REPAIRS WITHIN ASPHALTIC CONCRETE PAVEMENTS NOTES:
1. IF ANY PART OF THE TRENCH REPAIR FALLS WITHIN AN INTERSECTION, DEFINED FROM CURB RETURN TO CURB RETURN, THE ENTIRE QUADRANT OF THE EXISTING SURFACE SHALL BE REPLACED, UNLESS OTHERWISE DIRECTED IN WRITING BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.
2. A QUADRANT IS DEFINED AS THE CROSS-HATCHED AREA IN THE ABOVE DETAIL.

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS — RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED — STREET REPAIR REQUIREMENTS — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 1100S-7, 1 OF 3

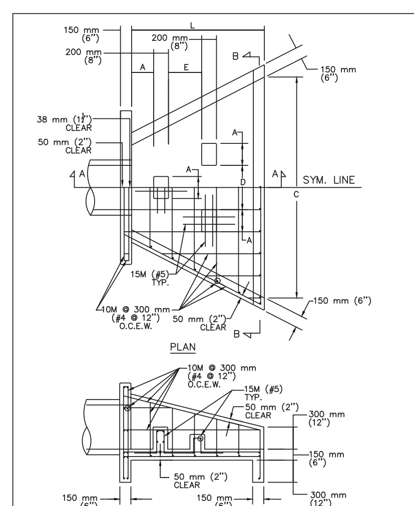


CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS — RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED — STREET REPAIR REQUIREMENTS — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 1100S-7, 2 OF 3

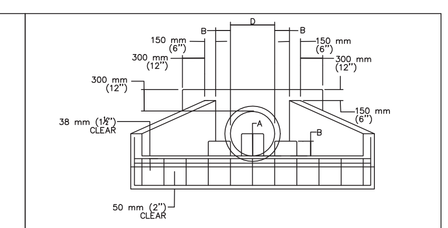


CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS — RECORD COPY SIGNED BY BILL GARDNER 9/14/05 ADOPTED — STREET REPAIR REQUIREMENTS — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 1100S-7, 3 OF 3

Standard Headwall and Energy Dissipators



CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW — RECORD COPY SIGNED BY BILL GARDNER 08/20/07 ADOPTED — STANDARD HEADWALL AND ENERGY DISSIPATORS — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 508S-13, 1 OF 2



NOTES:
1. ALL CONCRETE SHALL BE TYPE "C" AS PER SPEC. 403S, CONCRETE FOR STURCTURES.
2. CHAMFER ALL EXTERNAL VISIBLE CORNERS.
3. DISSIPATOR BLOCKS REQUIRED ON DISCHARGE HEADWALLS ONLY.

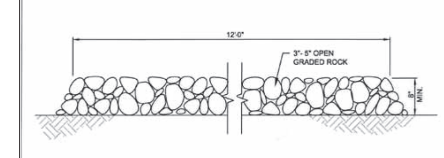
D	457 mm (18")	533 mm (21")	610 mm (24")	685 mm (27")	765 mm (30")	838 mm (33")	914 mm (36")	1.067 m (42")	1.219 m (48")	1.372 m (54")	1.524 m (60")
A	225 mm (9")	250 mm (10")	300 mm (12")	350 mm (14")	375 mm (15")	400 mm (16")	450 mm (18")	525 mm (21")	600 mm (24")	675 mm (27")	750 mm (30")
B	150 mm (6")	175 mm (7")	200 mm (8")	225 mm (9")	250 mm (10")	275 mm (11")	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")
C	2.29 m (90")	2.67 m (105")	3.05 m (120")	3.43 m (135")	3.81 m (150")	4.19 m (165")	4.57 m (180")	5.33 m (210")	6.10 m (240")	6.86 m (270")	7.62 m (300")
L	1.37 m (54")	1.60 m (63")	1.83 m (72")	2.06 m (81")	2.29 m (90")	2.51 m (99")	2.74 m (108")	3.20 m (126")	3.66 m (144")	4.11 m (162")	4.57 m (180")
E	300 mm (12")	350 mm (14")	400 mm (16")	450 mm (18")	500 mm (20")	550 mm (22")	600 mm (24")	700 mm (28")	800m (32")	900 mm (36")	1000 mm (40")

DIMENSIONS IN MILLIMETERS, METERS AND (INCHES).

DISCHARGE VELOCITIES GREATER THAN 3 METERS/SECOND (10 fps) REQUIRE ROCK OUTLET PROTECTION.

CITY OF AUSTIN — DEPARTMENT OF WATERSHED PROTECTION AND DEVELOPMENT REVIEW — RECORD COPY SIGNED BY BILL GARDNER 08/20/07 ADOPTED — STANDARD HEADWALL AND ENERGY DISSIPATORS — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 508S-13, 2 OF 2

Pond Maintenance Road Cross Section



NOTES:
1. STONE SIZE: 75-125 mm (3-5") OPEN GRADED ROCK.
2. THICKNESS: NOT LESS THAN 200 mm (8").
3. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.

CITY OF AUSTIN — DEPARTMENT OF PUBLIC WORKS — ADOPTED 1/4/2006 — POND MAINTENANCE ROAD CROSS SECTION — THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. — STANDARD NO. 662S-2

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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

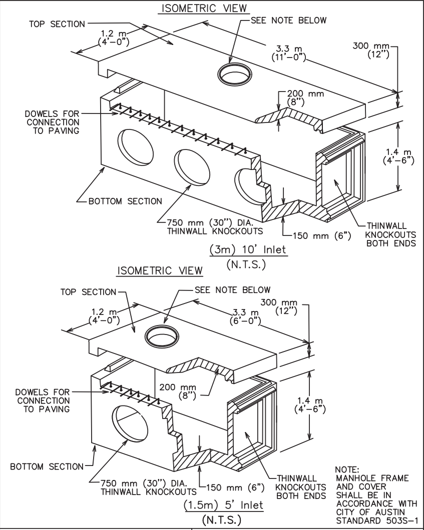
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 5

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 70 OF 113

SP-2025-0080C



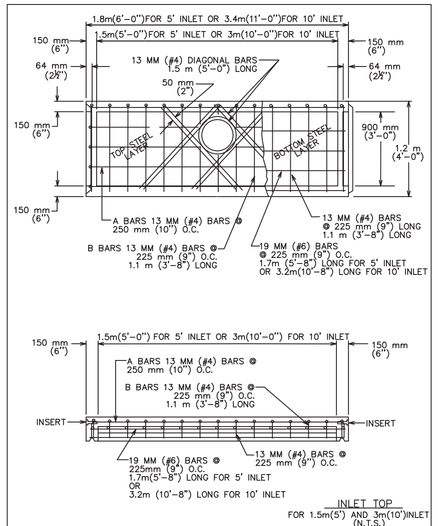
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 1 OF 7



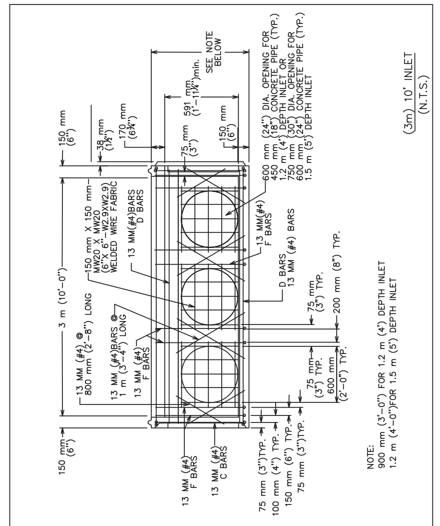
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 2 OF 7



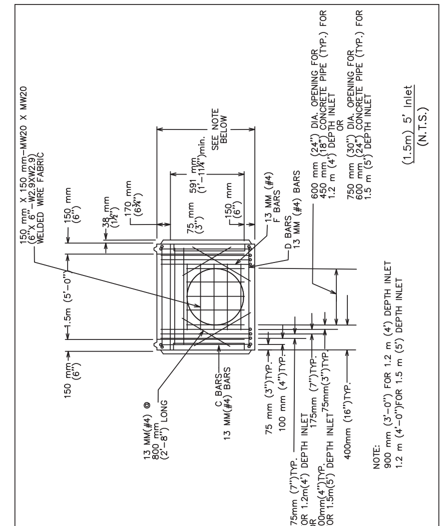
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 3 OF 7



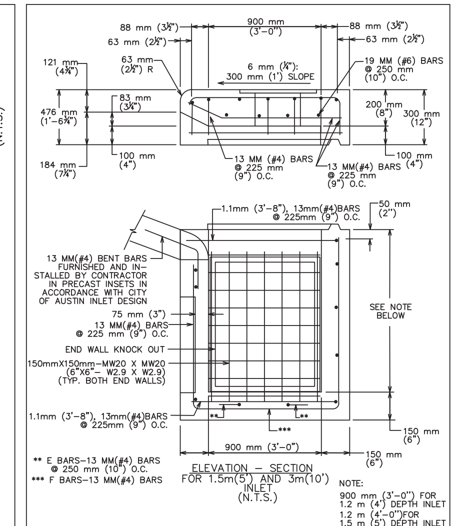
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 4 OF 7



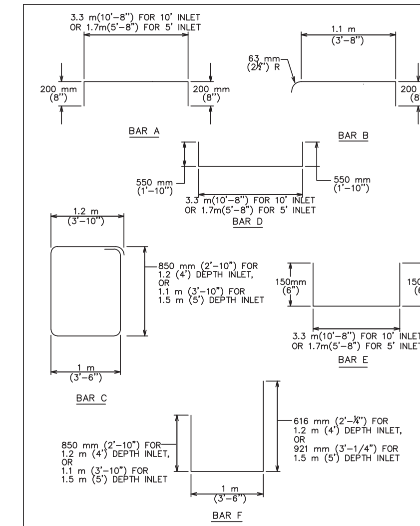
CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 5 OF 7



CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 6 OF 7

NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" AS PER ITEM 403S.
2. ALL REINFORCING STEEL SHALL BE GRADE 60
3. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
4. IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
5. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB, IN ACCORDANCE WITH CITY OF AUSTIN STANDARD INLET DESIGN.
6. INVERT OF INLET SHALL BE SLOPED 1:20 WITH FILL CONCRETE BY CONTRACTOR, SHAPED AS "V" SECTION
7. THIS STANDARD COMPLIES WITH THE CITY OF AUSTIN STANDARD SPECIFICATIONS ITEM NO. 508S.
8. WHEN PLACING PRECAST INLETS IN SERIES TO CREATE A 15'-0" OR 20'-0" CURB INLET, THE CONNECTION BETWEEN INLET BOXES SHALL BE SOIL TIGHT AND FULLY CONVEY THE PEAK DESIGN FLOW FROM THE UPSTREAM INLET(S). THE 1:20 INVERT SLOPE DESCRIBED IN NOTE 6 OF THIS DETAIL SHALL EXTEND FROM THE MOST DOWNSTREAM POINT TO THE MOST UPSTREAM OF THE CONNECTED INLET BOXES. AT NO TIME CAN MORE THAN 20-LF OF CURB OPENING BE CONNECTED TO A MAIN STORM DRAIN LINE WITH ONE LATERAL STORM DRAIN CONNECTION.

CITY OF AUSTIN
WATERSHED PROTECTION DEPARTMENT

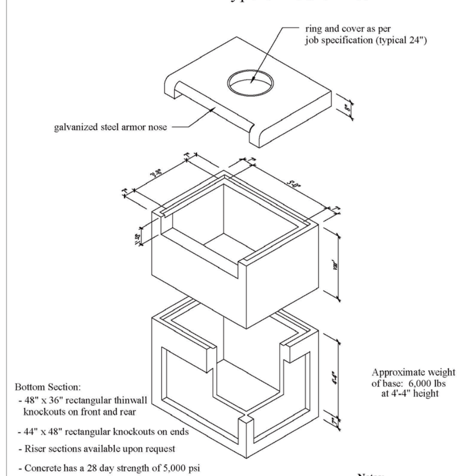
CURB INLET 1.5m(5')AND3m(10')PRECAST TYPE 1 OR TYPE 1-R

ADOPTED

THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.

STANDARD NO. 508S-4 7 OF 7

3'-8" x 5'-0" Type C-1 Curb Inlet

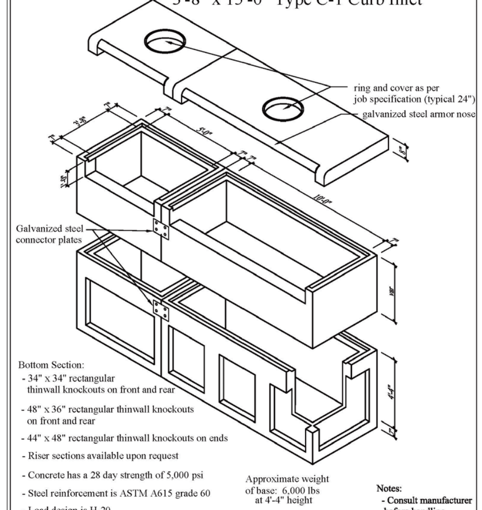


Bottom Section:
- 48" x 36" rectangular thinwall knockouts on front and rear
- 44" x 48" rectangular knockouts on ends
- Riser sections available upon request
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. 6995 SOUTH OLD BASTROP HWY SAN MARCOS, TEXAS 78666 PH. (830) 606-6200 — FOR 3'-8" x 5'-0" Type C-1 Curb Inlet — SHEET 1 of 1

3'-8" x 15'-0" Type C-1 Curb Inlet

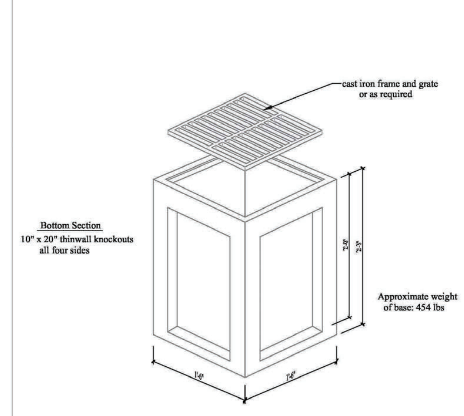


Bottom Section:
- 34" x 34" rectangular thinwall knockouts on front and rear
- 48" x 36" rectangular thinwall knockouts on front and rear
- 44" x 48" rectangular thinwall knockouts on ends
- Riser sections available upon request
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. 6995 SOUTH OLD BASTROP HWY SAN MARCOS, TEXAS 78666 PH. (830) 606-6200 — FOR 3'-8" x 15'-0" Type C-1 Curb Inlet — SHEET 1 of 1

12" x 12" x var Grate Inlet



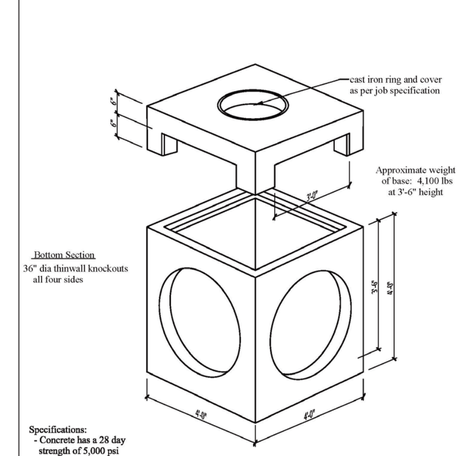
Bottom Section
10" x 20" thinwall knockouts all four sides

Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. 6995 SOUTH OLD BASTROP HWY SAN MARCOS, TEXAS 78666 PH. (830) 606-6200 — FOR 12" x 12" x var Grate Inlet — SHEET 1 of 1

3' x 3' x var 4-Way Inlet



Bottom Section
36" dia thinwall knockouts all four sides

Specifications:
- Concrete has a 28 day strength of 5,000 psi
- Steel reinforcement is ASTM A615 grade 60
- Load design is H-20

Notes:
- Consult manufacturer before handling

CAPITAL PRECAST, INC. 6995 SOUTH OLD BASTROP HWY SAN MARCOS, TEXAS 78666 PH. (830) 606-6200 — FOR 3' x 3' x var 4-Way Inlet — SHEET 1 of 1

NOTES:
1. OR APPROVED EQUAL.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
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STATE OF TEXAS — SCOTT J. FOSTER — 84652 — LICENSED PROFESSIONAL ENGINEER — 8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 6

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 71 OF 113

SP-2025-0080C

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\66 CONSTRUCTION DETAILS.dwg LAYOUT: 6 STM PLOT DATE: 8/27/2025 8:06am PLOTTED BY: mered
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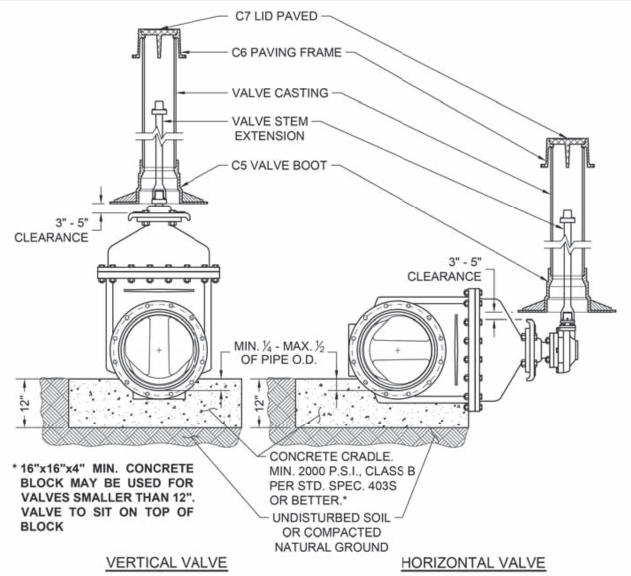
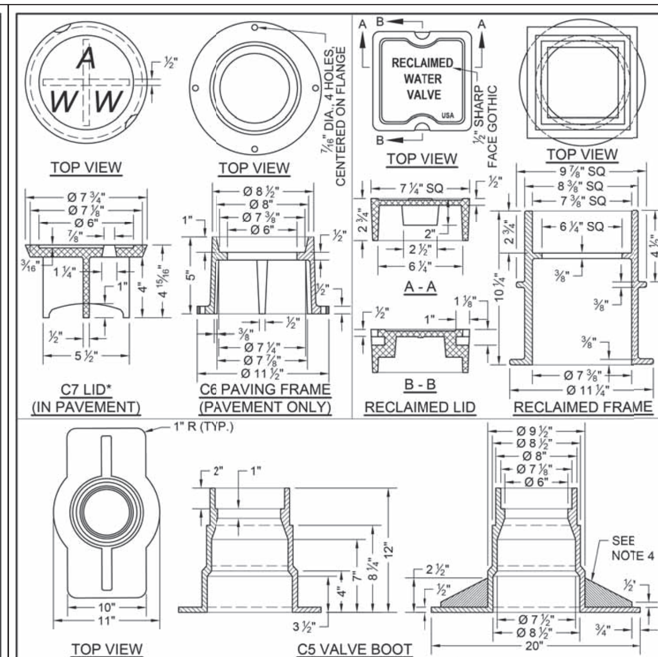


NOTES:

1. WELD SOCKET 2½" x 2" DEEP TO 1" SCH. 40 CARBON STEEL ROUND STEM EXTENSION, FITTED ON OPERATING NUT, [SCH. 80 FOR LENGTHS OVER 10'.]
2. VALVE CASTING SHALL BE 6" DI PIPE WITH BELL OR COLLAR CENTERED OVER VALVE BOOT.
3. NUT AT TOP OF VALVE EXTENSION ROD SHALL BE SQUARE 2" LONG WELDED TO TOP OF ROD.
4. VALVE STEM EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3' DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 12" AND 18" FROM FINISHED GRADE.

RECLAIMED WATER: ALL RECLAIMED PVC PIPE SHALL BE MANUFACTURED PURPLE PIPE. HDPE PIPE SHALL BE MANUFACTURED WITH PURPLE STRIPES. ALL OTHER PIPE AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL PIPE AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-01 1 OF 4



NOTES:

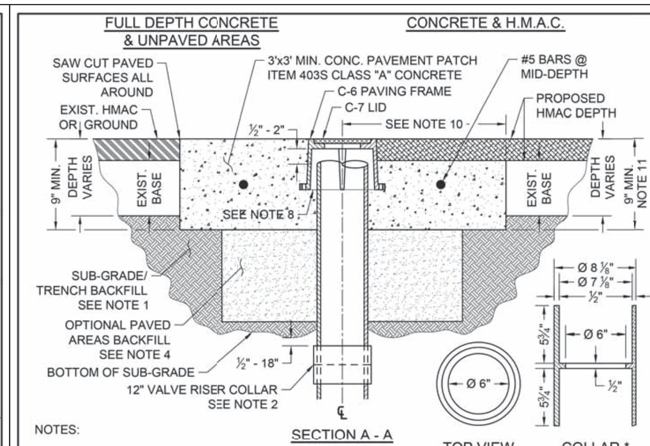
1. MATERIAL SHALL BE GRAY CAST IRON, ASTM A48, GRADE 30B.
2. THE MANUFACTURER'S IDENTIFICATION AND CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID, FRAME, COLLAR AND BASE.
3. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
4. CASTING FINISH BY MANUFACTURER SHALL INCLUDE REMOVAL OF FINS AND FLASHING, AND PAINT WITH BLACK ASPHALT COATING.

WEIGHTS:

C7 LID: 13 LBS
RECLAIMED LID: 15 LBS
C6 FRAME: 23 LBS
RECLAIMED FRAME: 33 LBS
C5 BASE: 78 LBS

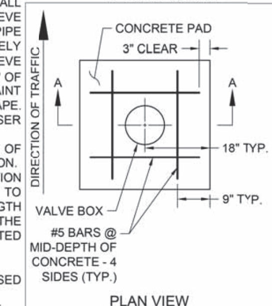
* LETTERING SHALL BE 1 ½" 2 PICK BAR SLOTS REQUIRED

CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-01 2 OF 4



NOTES:

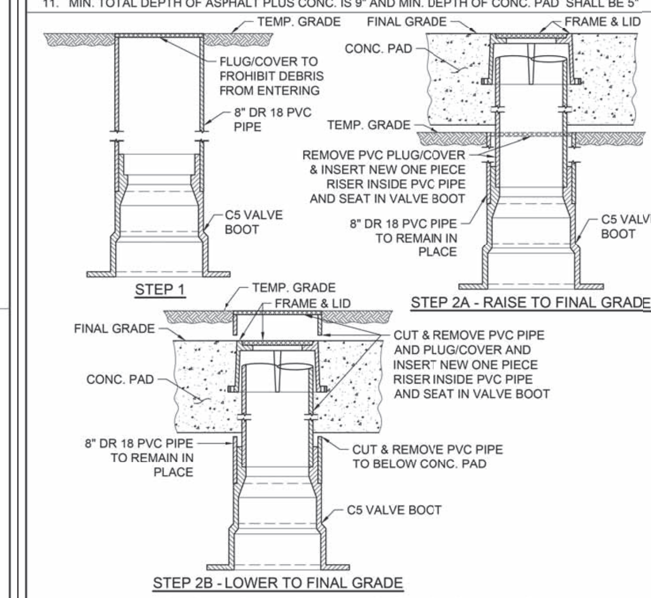
1. SUB-GRADE/TRENCH BACKFILL SHALL BE COMPACTED AS PER ITEM 201S, SUB-GRADE PREPARATION.
2. TO ADJUST VALVE CASTINGS TO FINAL GRADE, REMOVE RISER PIPE BELOW SUB-GRADE AND INSTALL APPROPRIATE LENGTH OF NEW RISER PIPE TO ACHIEVE FINAL GRADE. CONNECT THE TWO PIECES OF RISER PIPE WITH A 6" COLLAR MIN. 12" LENGTH APPROXIMATELY CENTERED ON THE JOINT WITH THE TOP OF SLEEVE LOCATED ½" - 18" BELOW SUB-GRADE. THE INSIDE "LIP" OF COLLAR TO BE PAINTED WITH FLUORESCENT WHITE PAINT OR COVERED WITH FLUORESCENT WHITE TAPE. ALTERNATE: FOR OPTIONAL SINGLE PIECE RISER INSTALLATION SEE SHEET 4 OF 4.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE NUT OF THE VALVE; NUT SHALL OPERATE WITH NO OBSTRUCTION.
4. WHERE CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL (SPEC. ITEM 402S) TO THE UNDERSIDE OF THE CONCRETE. PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
5. REINFORCING STEEL SHALL MEET SPEC. ITEM 406S.7.
6. NO MORE THAN 2 SECTIONS OF PIPE SHALL BE USED FROM VALVE TO FINAL GRADE.
7. BELL AND SPIGOT IS ACCEPTABLE FOR DEPTH OVER 18'.



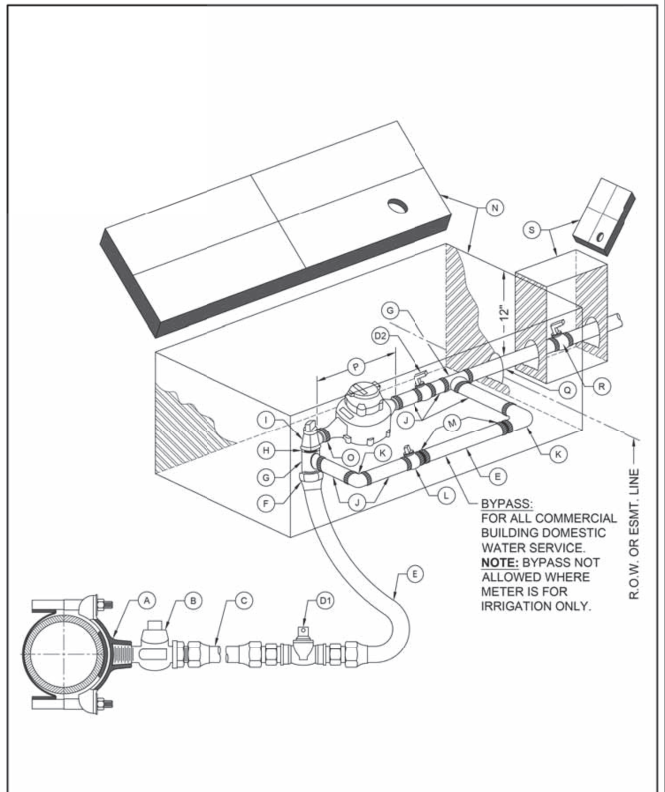
CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-01 3 OF 4

NOTES (CON'T):

8. PAVING FRAME SHALL BE FLUSH WITH THE CONC. PAD AND PLACED ½" - 2" ABOVE RISER PIPE (FRAME SHALL NOT REST ON RISER.)
9. IN UNPAVED AREAS, INSTALL ONE DELINEATOR STAKE IMMEDIATELY ADJACENT TO THE EDGE OF THE CONCRETE PAD. DELINEATOR SHALL BE BLUE FOR POTABLE WATER AND PURPLE FOR RECLAIMED WATER AND SHALL EXTEND AT LEAST 60" ABOVE GROUND. DELINEATORS SHALL HAVE 2" WIDE, WHITE IN COLOR, TYPE I REFLECTIVE TAPE MOUNTED DIAGONALLY AT 12" SPACING ON BOTH SIDES.
10. VALVE SHALL TYPICALLY BE CENTERED IN CONCRETE DIAMOND BUT MAY BE OFFSET WITH A MIN. OF 12" FROM CENTER OF VALVE LID TO EDGE OF CONCRETE IN ALL DIRECTIONS.
11. MIN. TOTAL DEPTH OF ASPHALT PLUS CONC. IS 9" AND MIN. DEPTH OF CONC. PAD SHALL BE 5"



CITY OF AUSTIN AUSTIN WATER	TYPICAL GATE VALVE 4" - 16"	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-01 4 OF 4



CITY OF AUSTIN AUSTIN WATER	1 ½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 520-AW-04 1 OF 2

MATERIALS LIST:

A. 2" SERVICE CLAMP
B. 2" CORPORATION STOP MALE THREAD INLET BY COMPRESSION OUTLET
C. 2" COPPER WATER SERVICE TUBING EXTENDED BEYOND PAVEMENT
D1. 2" BALL VALVE, SPL WW-275
D2. 2" BALL VALVE, SPL WW-275
E. 2" COPPER SERVICE TUBING
F. 2" BRASS COUPLING - COMPRESSION TO MALE IPT
G. 2" BRASS TEE
H. 2" BRASS CLOSE-NIPPLE
I. 2" ANGLE METER STOP; SERVICE TUBING INLET x FLANGED OUTLET
J. 2" BRASS NIPPLE
K. 2" BRASS ELBOW
L. 2" LOCKABLE CURB STOP - FEMALE IPT INLET BY COMPRESSION OUTLET
M. 2" BRASS COUPLING - SERVICE TUBING TO MALE IPT
N. RECTANGULAR METER BOX AND COVER, SPL WW-145A
O. BRASS ADAPTER (2" x 1 ½") FOR 1 ½" METER ONLY
P. WATER METER. LENGTH 13", (PURCHASED FROM AUSTIN WATER)
Q. 2" COPPER SERVICE TUBING (PRIVATE PLUMBING PER CODE)
R. CUSTOMER CUT-OFF VALVE
S. CUSTOMER VALVE BOX AND LID

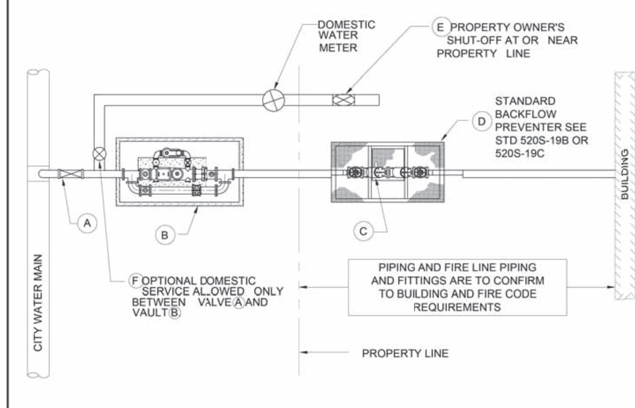
NOTES:

1. SERVICE CLAMP SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. BRANCH CONNECTIONS AND ALL ANGLE METER STOPS MUST BE INSTALLED PRIOR TO ANY METER INSTALLATION.
3. TOP OF BOXES SHOULD BE 1" ABOVE GROUND.
4. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS; BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
5. BOX MUST BE BEHIND CURB NEXT TO PROPERTY LINE OR EASEMENT AND OUT OF VEHICULAR TRAFFIC AREA AND SIDEWALK.
6. BALL VALVE "D1" SHALL NOT BE LOCATED UNDER SIDEWALK, CURB, OR PAVEMENT, AND NOT BE LOCATED MORE THAN 24" HORIZONTALLY FROM METER BOX OR 36" BELOW FINAL GRADE.
7. COPPER SERVICE SHALL BE COPPER TUBING SIZE ANNEALED SEAMLESS TYPE "K" MEETING ASTM B88 WITH NO SWEAT OR SOLDERED JOINTS.

RECLAIMED WATER:

FOR RECLAIMED WATER SERVICES AND METERS, ALL RECLAIMED TUBING SHALL BE MANUFACTURED PURPLE TUBING. ALL OTHER TUBING AND APPURTENANCES SHALL BE MANUFACTURED PURPLE IF AVAILABLE. ALL TUBING AND FITTINGS THAT ARE NOT AVAILABLE FROM THE MANUFACTURER IN PURPLE SHALL BE PAINTED PURPLE PER SPL WW-3C. ALL BURIED DI AND CI PIPE AND FITTINGS SHALL ALSO BE WRAPPED IN PURPLE POLYETHYLENE PER SPL WW-27D. ALL COVERS SHALL HAVE "RECLAIMED WATER" CAST INTO THEM.

CITY OF AUSTIN AUSTIN WATER	1 ½" - 2" METER INSTALLATION SHOWING OPTIONAL BYPASS	
RECORD COPY SIGNED BY KATHI L FLOWERS 05/18/2016 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 520-AW-04 2 OF 2



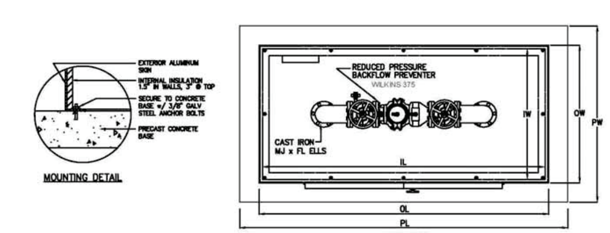
MATERIALS:

A. TAPPING, RESTRAINED OR FLANGED VALVE (GATE, IRON BODY WITH MJ OUTLET). SEE SPL WW-243, WW-27, WW-27A, AND/OR WW-27B.
B. FIRELINE OR MASTER METER, SEE STD. DETAIL 520S-17.
C. CUSTOMERS BACKFLOW PREVENTION ASSEMBLY AS REQUIRED BY CROSS CONNECTION ORDINANCES. SEE SPL WW-293 OR APPROVEL EQUAL.
D. VAULT AND ACCESS DOOR SHALL BE PER SPL WW-298 OR SPL WW-614, RESPECTIVELY, OR APPROVED EQUAL. SEE STD. DETAIL 520S-19B OR 19C. VAULT SHALL NOT BE LOCATED IN A TRAFFIC AREA.
E. CUSTOMER'S SHUT-OFF VALVE ON DOMESTIC WATER LINE.
F. DOMESTIC WATER SERVICE LINE VALVE.

NOTES:

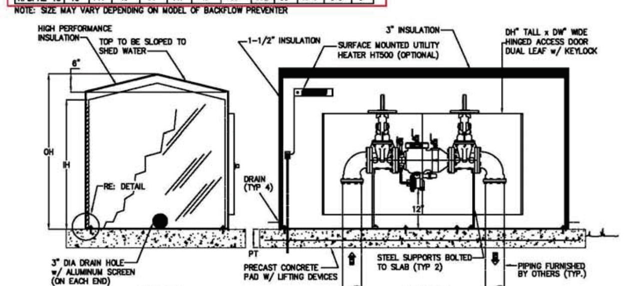
1. FIRE LINE SHALL BE A MINIMUM OF 150 mm (6") & GREATER THAN OR EQUAL TO METER SIZE IN THE STREET RIGHT-OF-WAY. PLANS SHALL BE PREPARED BY A LICENSED ENGINEER.
2. ALL BURIED PIPE SHALL BE WRAPPED COMPLETELY WITH A MINIMUM OF 0.2 mm (8 MIL) POLYETHYLENE FILM.
3. PIPING AND TUBING IN STREET RIGHT-OF-WAY SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED BY SECTION 510.3 (14) OF THE CITY OF AUSTIN STANDARD SPECIFICATIONS: BACKFILL ABOVE GRANULAR BEDDING AS REQUIRED BY SECTION 510.3 (25).
4. FOR STD. DETAILS 520S-19A, 19B, AND 19C, MASTER METER MEANS METER FOR FIRE AND DOMESTIC SERVICE. 5. THE TOP OF THE METER VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATION SUCH AS CONNECTION OF VAULT TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL BED OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.

CITY OF AUSTIN AUSTIN WATER UTILITY	STANDARD FIRE LINE INSTALLATION WITH OR WITHOUT MASTER METER	
RECORD COPY SIGNED BY KATHI L FLOWERS 08/31/2011 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 520S-19A 1 OF 1



MODEL NO.	BFP SIZE	INSIDE DIMENSIONS IL	IW	IH	OUTSIDE DIMENSIONS OL	OW	OH	DOOR SIZE DH	DW	PAD DIMENSIONS PL	PW	PT
RPBPAE-03	3"	69"	33"	45"	72"	36"	48"	36"	70"	7'-10"	4'-4"	6"
RPBPAE-04	4"	69"	33"	45"	72"	36"	48"	36"	70"	7'-10"	4'-4"	6"
RPBPAE-06	6"	105"	45"	57"	108"	48"	60"	36"	70"	10'-0"	5'-0"	6"
RPBPAE-08	8"	105"	45"	57"	108"	48"	60"	36"	70"	10'-0"	5'-0"	6"
RPBPAE-10	10"	144"	40"	80"	147"	43"	83"	38"	80"	13'-0"	6'-0"	6"

NOTE: SIZE MAY VARY DEPENDING ON MODEL OF BACKFLOW PREVENTER



Specifications

GENERAL
The Model ERP aluminum enclosure is pre engineered to provide protection to backflow preventers, meters, pumps, and other devices installed above ground. These water conveying devices are subject to freezing and vandalism. The enclosure is designed to be installed over the equipment after installation. The enclosure is equipped with access doors to provide adequate access to the equipment.

CONSTRUCTION
The enclosure shall be manufactured from all new materials. The exterior shall be fabricated with 0.090 aluminum, continuously welded. The access door(s) shall be of like material and hinged with a continuous hinge. The door shall be equipped with a 3-point locking mechanism. The interior of the enclosure shall be structurally lined with high performance, non-wicking insulation.

HEATER
Interior heaters (if required) shall be thermostatically controlled and be mounted to the interior wall of the enclosure. A GFI receptacle shall be provided by others to provide power to the electric heater.

AWWA UL UPC FM

REV	DATE	BY	DESCRIPTION
A	.	.	. TCL/KP

PROJECT: DESSAU MULTIFAMILY
CUSTOMER: 360 PROFESSIONAL SERVICES, INC
ENGINEER: .
ORDER #: . PROJ #: .
DATE: JAN 22, 2025 LOCATION: AUSTIN, TEXAS

PARK USA
www.parkusa.com 888-611-PARK

REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY W/ WEATHERPROOF ENCLOSURE ON CONCRETE PAD

PM . PC . DRN CB ENG GE DATE 2021 RPBP 10" (OS&Y) REV. A

No. | Date | Revisions | App.

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P.O. BOX 3659
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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

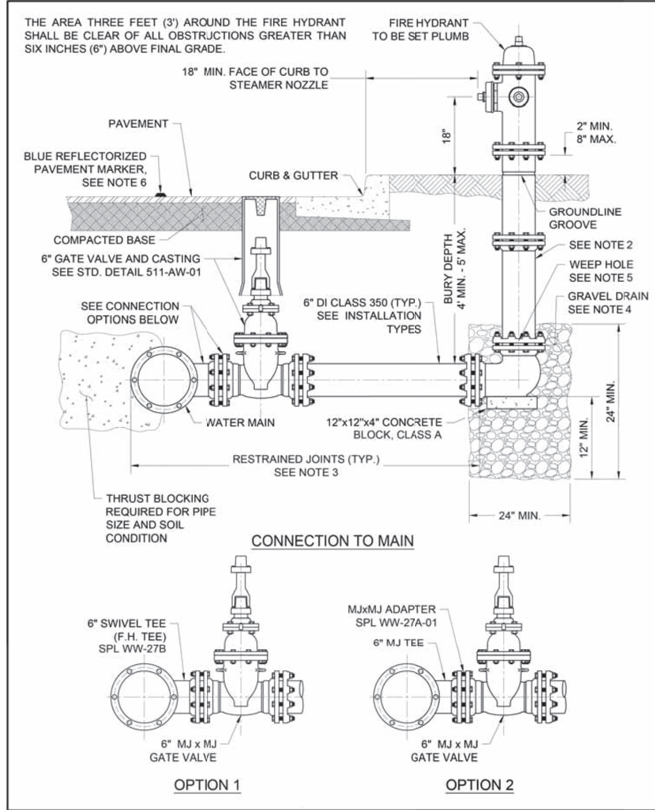
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS SHEET 7 (AW WATER)

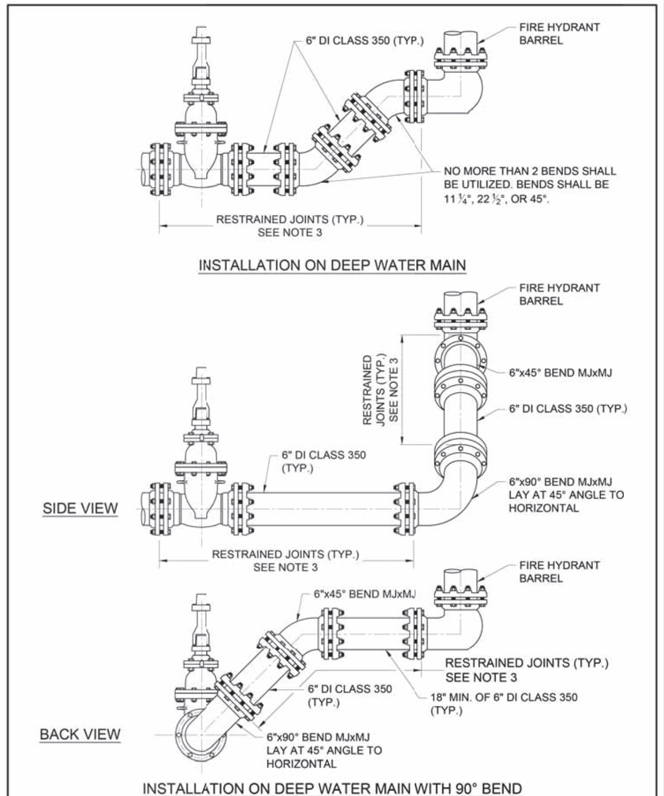
Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 72 OF 113

SP-2025-0080C



CITY OF AUSTIN AUSTIN WATER		FIRE HYDRANT ASSEMBLY	
JEFF A. KYLE	11/06/2023 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-02 1 OF 3

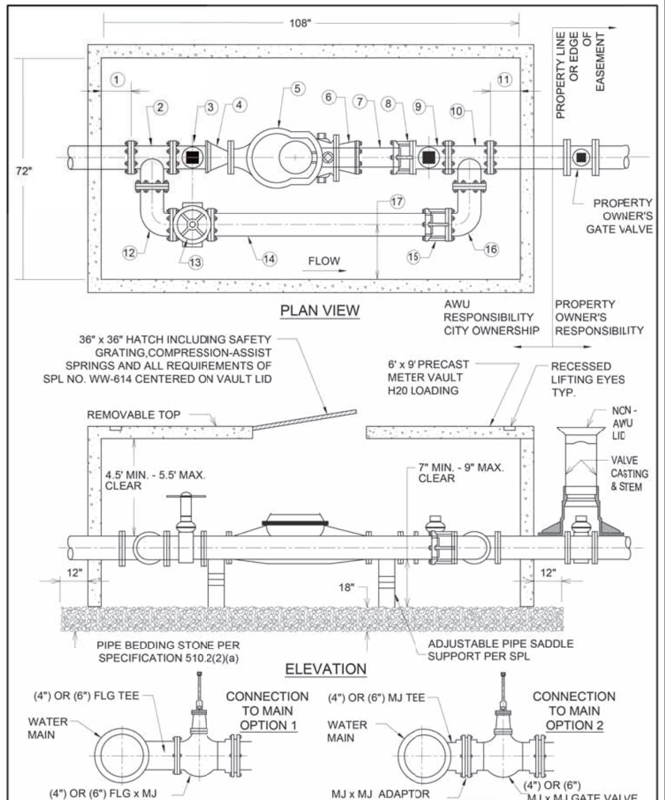


CITY OF AUSTIN AUSTIN WATER		FIRE HYDRANT ASSEMBLY	
JEFF A. KYLE	11/06/2023 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-02 2 OF 3

NOTES: APPLICABLE TO ALL INSTALLATION TYPES.

1. NO PART OF A HYDRANT OR ITS NOZZLE CAPS SHALL BE WITHIN 6" OF ANY SIDEWALK OR PEDESTRIAN RAMP. ANY FIRE HYDRANT PLACED NEAR A STREET CORNER SHALL BE LOCATED OUTSIDE THE CURVE RADIUS AND A MINIMUM OF 4' FROM RAMPS.
2. ONE BARREL EXTENSION NOT EXCEEDING 2' LENGTH MAY BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT IN ORDER TO MEET THE REQUIRED BURY DEPTH OF 4' - 5'. BREAK AWAY BOLTS (SHOE TYPES) SHALL BE PROPERLY SPACED AND PLACED.
3. FIRE LINE SHALL HAVE ALL JOINTS RESTRAINED FROM MAIN TO FIRE HYDRANT INCLUDING MJ RESTRAINT OF TEE AT THE MAIN. JOINTS SHOWN MAY VARY. SEE SPL WW-27A, WW-27A-01, AND WW-27B FOR RESTRAINT OPTIONS.
4. BELOW EACH HYDRANT, A DRAINAGE PIT 24" IN DIAMETER AND 12" DEEP SHALL BE EXCAVATED AND FILLED WITH COMPACTED COARSE GRAVEL OR BROKEN STONE MIXED WITH COARSE SAND UNDER AND AROUND THE BOWL OF THE HYDRANT, AND TO A LEVEL 12" ABOVE THE HYDRANT DRAIN OPENING (SEE STD. SPEC. 510). THE HYDRANT DRAINAGE PIT SHALL NOT BE CONNECTED TO A SANITARY SEWER. THE DRAIN GRAVEL SHALL BE COVERED WITH FILTER FABRIC PER STD. SPEC. 620.
5. WRAP 8 MIL. POLY-FILM WRAP ON ALL BURIED PIPE AND FITTINGS. CUT SLITS IN POLY-FILM WRAP AT BOOT TO ALLOW WATER TO ESCAPE FROM WEEP HOLES AND POLY-WRAP.
6. A BLUE TYPE II-B-B REFLECTORIZED PAVEMENT MARKER, CONFORMING TO STANDARD SPECIFICATION ITEM NO. 863S, SHALL BE PLACED 2 TO 3 FEET OFFSET FROM THE CENTERLINE OF PAVED STREETS, ON THE SIDE OF AND IN LINE WITH ALL NEWLY INSTALLED FIRE HYDRANTS.

CITY OF AUSTIN AUSTIN WATER		FIRE HYDRANT ASSEMBLY	
JEFF A. KYLE	11/06/2023 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 511-AW-02 3 OF 3



CITY OF AUSTIN AUSTIN WATER UTILITY		3", 4" AND 6" COMPOUND & TURBINE METER INSTALLATIONS	
RECORD COPY SIGNED BY KATHI L. FLOWERS	11/19/2015 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 520-AW-06 1 OF 2

LARGE METER INSTALLATIONS

DIMENSIONS IN INCHES		3" TURBINE	3" COMPOUND	4" TURBINE	4" COMPOUND	6" TURBINE	6" COMPOUND
No.	METER LINE	4" BYPASS	4" BYPASS	4" BYPASS	4" BYPASS	6" BYPASS	6" BYPASS
1	CLEARANCE FROM VALVE WALL TO TEE	8"	8"	12"	12"	6"	6"
2	FLANGED TEE	13"	13"	13"	13"	16"	16"
3	COA GATE VALVE SQUARE NUT	9"	9"	9"	9"	10 1/2"	10 1/2"
4	3" X 4" FLANGED REDUCER (3" METER ONLY)	7"	7"	—	—	—	—
5	METER	17"	19"	20"	23"	24"	27"
6	3" X 4" FLANGED REDUCER (3" METER ONLY)	7"	7"	—	—	—	—
7+8	(7) FLANGED X PLAIN END DI PIPE + (8) RESTRAINED FLANGE COUPLING ADAPTER (RFCA) OR (7) FLANGE X DI PIPE + (8) DISMANTLING JOINT (DJ)	17"	15"	20"	17"	19"	16"
9	COA GATE VALVE SQUARE NUT	9"	9"	9"	9"	10 1/2"	10 1/2"
10	FLANGED TEE	13"	13"	13"	13"	16"	16"
11	CLEARANCE FROM INSIDE WALL TO TEE	8"	8"	12"	12"	6"	6"
	TOTAL (INCHES)	108.0"	108.0"	108.0"	108.0"	108.0"	108.0"
	BYPASS LINE						
1	CLEARANCE FROM INSIDE WALL TO TEE	8"	8"	12"	12"	6"	6"
	1/2 TEE	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
12	FLANGED 90° ELBOW	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
13	BYPASS GATE VALVE WITH HAND WHEEL	9"	9"	9"	9"	10 1/2"	10 1/2"
14+15	(14) FLANGED X PLAIN END DI PIPE + (15) RESTRAINED FLANGE COUPLING ADAPTOR (RFCA) OR (14) FLANGE X FLANGE DI PIPE + (15) DISMANTLING JOINT (DJ)	57"	57"	49"	49"	53 1/2"	53 1/2"
16	FLANGED 90° ELBOW	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
	1/2 TEE	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"	8"
11	CLEARANCE FROM VALVE WALL TO TEE	8"	8"	12"	12"	6"	6"
	TOTAL (INCHES)	108.0"	108.0"	108.0"	108.0"	108.0"	108.0"
17	CLEARANCE FROM INSIDE WALL TO CENTER OF BYPASS LINE	23"	23"	23"	23"	20"	20"

NOTES:

1. METER VAULT MUST BE PLACED AT THE PROPERTY LINE WITHIN PUBLIC RIGHT-OF-WAY OR WITHIN A DEDICATED WATER METER EASEMENT. METER SHALL NOT BE PLACED IN THE PATH OF VEHICULAR TRAFFIC INCLUDING ROADWAYS, DRIVEWAYS AND PARKING LOTS. METERS MAY NOT BE PLACED IN SIDEWALKS UNLESS SPECIFICALLY APPROVED BY AUSTIN WATER. METERS MUST BE ACCESSIBLE TO SERVICE VEHICLES AND SHALL NOT BE ENCLOSED WITHIN PROPERTY FENCES.
2. ALL PIPE AND FITTINGS FROM MAIN TO CUSTOMER VALVE SHALL BE RESTRAINED.
3. FACTORY NOTCHES WHERE PIPING GOES THROUGH VAULT WALL SHALL BE FILLED WITH NON-SHRINK GROUT PER SPL NO. WW-704A.

CITY OF AUSTIN AUSTIN WATER UTILITY		3", 4" AND 6" COMPOUND & TURBINE METER INSTALLATIONS	
RECORD COPY SIGNED BY KATHI L. FLOWERS	11/19/2015 ADOPTED	THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.	STANDARD NO. 520-AW-06 2 OF 2

No.	Date	Revisions	App.

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8/28/2025

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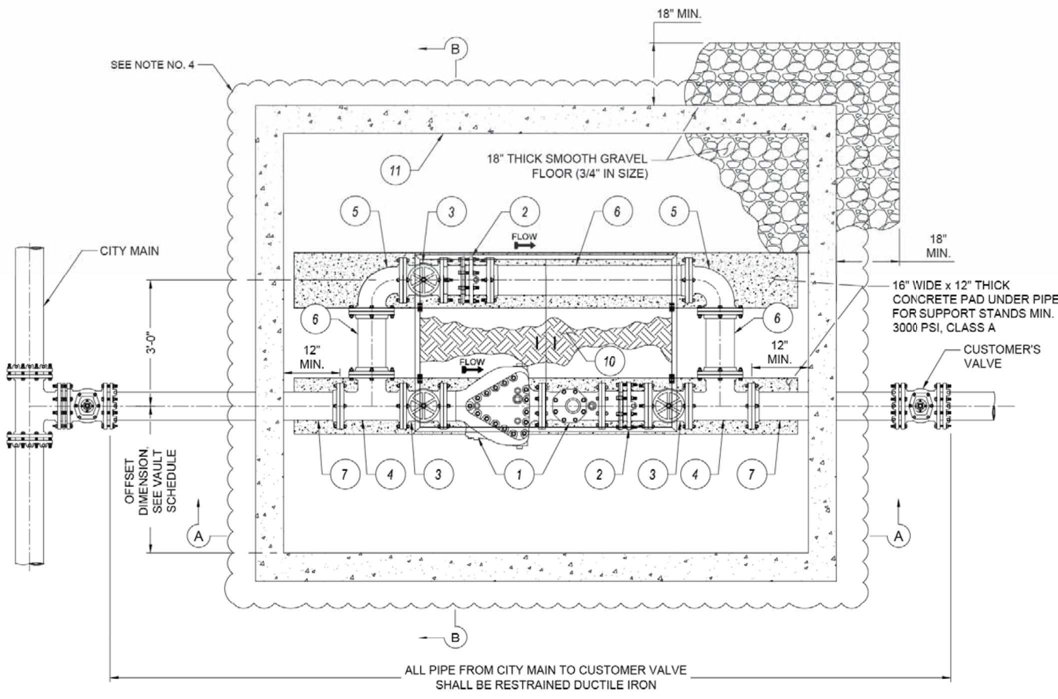
CONSTRUCTION DETAILS
SHEET 8
(AW WATER)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
73
OF 113

SP-2025-0080C



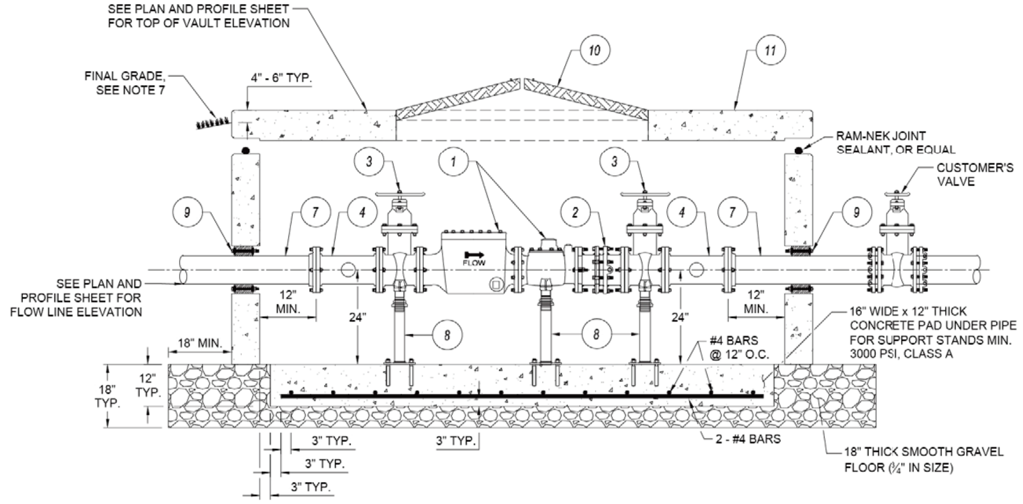
PLAN VIEW

ITEM	DESCRIPTION	SIZE	TYPE
1	FIRE LINE METER AND STRAINER (PROVIDED BY AUSTIN WATER)	6", 8" OR 10"	FLG x FLG
2	DISMANTLING JOINT PER COA SPL WW-27J	6", 8" OR 10"	FLG x FLG
3	RESILIENT-SEATED GATE VALVE (w/HAND WHEEL) PER COA SPL WW-700	6", 8" OR 10"	FLG x FLG
4	TEE PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
5	90° BEND PER COA SPL WW-27C	6", 8" OR 10"	FLG x FLG
6	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x FLG
7	DUCTILE IRON CLASS 53 PIPE PER COA SPL WW-27E	6", 8" OR 10"	FLG x PE
8	PIPE SADDLE SUPPORT AND STANCHION PER COA SPL WW-614B (USE 5/8" DIA. x 6" LONG STAINLESS STEEL WEDGE-ALL ANCHOR, TYP.)	NA	NA
9	LINK-SEAL MODULAR SEALS SERIES LS-525 FOR 6" PIPE, LS-500 FOR 8" PIPE AND LS-650 FOR 10" PIPE w/STAINLESS STEEL HARDWARE, OR EQUAL	NA	NA
10	48" x 72" ACCESS HATCH PER COA SPL WW-614A	NA	NA
11	CONCRETE VAULT PER COA SPL WW-298 (SEE VAULT SCHEDULE)	NA	NA

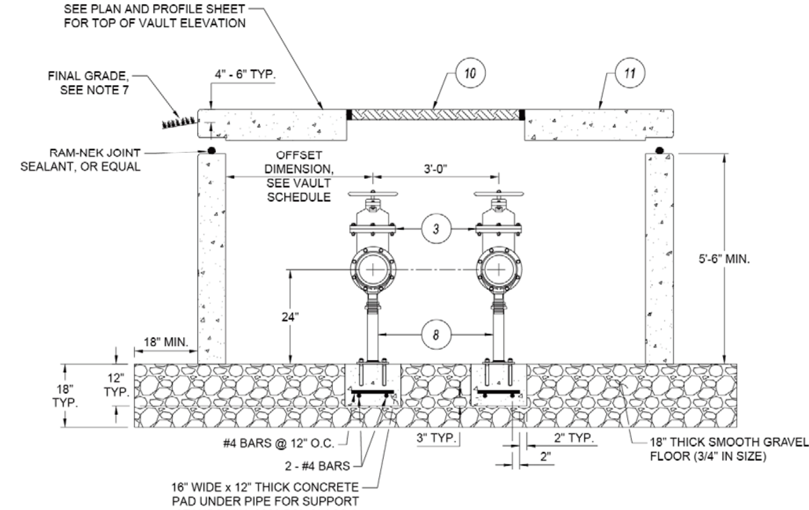
Table title: 6", 8" OR 10" SENSUS OMNI F2 FIRE LINE METER MATERIAL LIST

VAULT SCHEDULE

FIRE LINE METER SIZE	VAULT SIZE (INSIDE DIMENSION)	OFFSET DIMENSION
6"	8' x 12'	3'-0"
8"	10' x 12'	3'-6"
10"	10' x 15'	3'-6"



SECTION A-A VIEW



SECTION B-B VIEW

NOTES:

1. CONCRETE VAULT SHALL NOT BE INSTALLED IN A TRAFFIC AREA.
2. HIGH STRENGTH LOW ALLOY (HSLA) BOLTS AND NUTS USED THROUGHOUT ASSEMBLY.
3. FULL FACE 1/8" THICK RED RUBBER GASKETS USED THROUGHOUT ASSEMBLY.
4. ALL ITEMS IN MATERIAL LIST, INCLUDING VAULT AND ALL COMPONENTS WITHIN VAULT, TO BE IN COMPLIANCE WITH ITEM No. 512, PRE-CAST WATER UTILITY VAULTS. ALL PIPING, VALVES AND APPURTENANCES OUTSIDE VAULT TO BE SHOWN IN PLAN AND PROFILE SHEET, AND SHALL BE IN COMPLIANCE WITH ITEM Nos. 510 AND 511.
5. IF NECESSARY, WALL PENETRATION LOCATION IS ALLOWED TO MOVE HORIZONTALLY IN ACCORDANCE WITH SPL WW-298. MINIMUM 18" CLEARANCE SHALL BE PROVIDED BETWEEN VAULT WALL AND BYPASS PIPING OR FIRE LINE METER COMPONENTS, UNLESS NOTED OTHERWISE.
6. ALL BURIED PIPE AND FITTINGS SHALL BE BEDDED, BACKFILLED, AND WRAPPED IN POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH COA STANDARDS.
7. THE TOP OF THE VAULT SHALL BE AT AN ELEVATION SUCH THAT THE SURROUNDING GROUND SLOPES AWAY FROM THE VAULT. ADDITIONAL DRAINAGE CONSIDERATIONS SUCH AS CONNECTION OF VAULT DRAINAGE TO STORM SEWER, LATERAL DRAIN LINES FROM GRAVEL FLOOR, OR OTHER MEANS SHALL BE REQUIRED IF CONDITIONS CAUSE WATER TO COLLECT IN VAULT.
8. BYPASS AND MAIN PIPE SHALL BE SAME DIAMETER.

USE OF THIS STANDARD

THIS STANDARD DRAWING ONLY APPLIES TO FIRE LINE METER VAULTS SATISFYING BOTH OF THE FOLLOWING STIPULATIONS; OTHERWISE, A PROJECT-SPECIFIC DESIGN MUST BE PREPARED. THE VAULT ITSELF MUST BE DESIGNED BY A TEXAS-LICENSED PROFESSIONAL ENGINEER (STRUCTURAL).

1. THE CONDITIONS AT THE SITE OF THE PROPOSED FIRE LINE METER, THE LOADS AFFECTING A PRE-CAST CONCRETE VAULT AT THAT SITE, AND THE COMPONENTS AND PHYSICAL FEATURES OF THE VAULT FOR THAT SITE ARE ALL ADEQUATELY AND RELIABLY REPRESENTED BY THE STRUCTURAL DESIGN CRITERIA, DESIGN LOADS, AND DETAILS INCLUDED WITH SPL WW-298.
2. THE PIPING AND VALVES FOR THE PROPOSED FIRE LINE METER ARE THE SAME MATERIAL, TYPE, SIZE, AND ORIENTATION AS THOSE SHOWN IN THIS STANDARD.

CITY OF AUSTIN
AUSTIN WATER

JEFF A. KYLE — 11/07/2022 ADOPTED

6", 8" AND 10" FIRE LINE METER

THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. MODIFICATIONS TO THIS STANDARD ARE PROHIBITED.

STANDARD NO. 512-AW-02
1 OF 1

No.	Date	Revisions	App.

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SCOTT J. FOSTER 84652 LICENSED PROFESSIONAL ENGINEER 8/28/2025

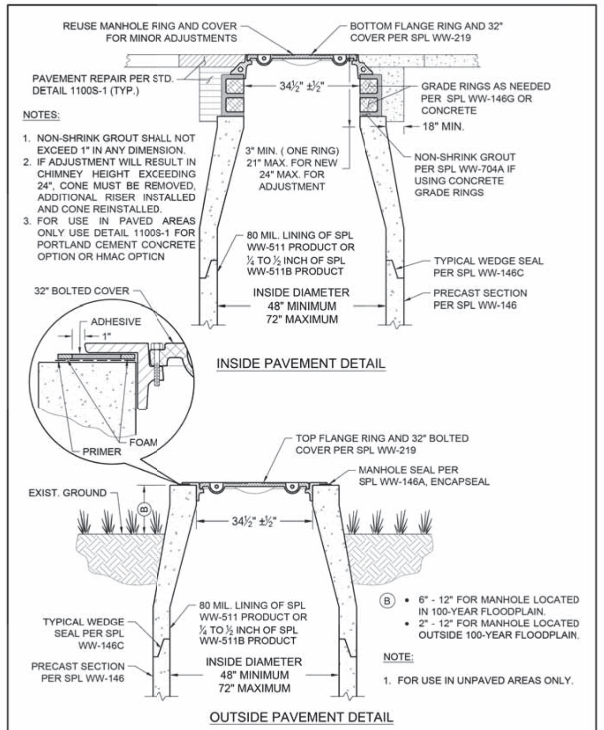
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 9
(AW WATER)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 74 OF 113

SP-2025-0080C



NOTES:

1. NON-SHRINK GROUT SHALL NOT EXCEED 1" IN ANY DIMENSION.
2. IF ADJUSTMENT WILL RESULT IN CHIMNEY HEIGHT EXCEEDING 24", CONE MUST BE REMOVED, ADDITIONAL RISER INSTALLED AND CONE REINSTALLED.
3. FOR USE IN PAVED AREAS ONLY USE DETAIL 1100S-1 FOR PORTLAND CEMENT CONCRETE OPTION OR HMAC OPTION

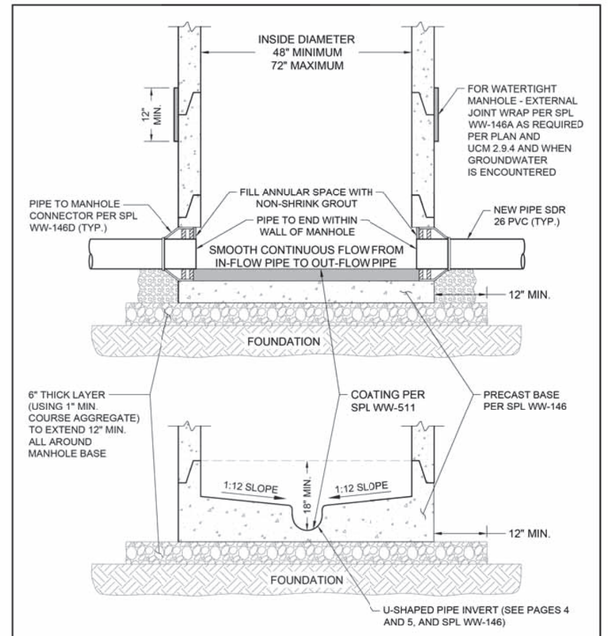
(B) • 6" - 12" FOR MANHOLE LOCATED IN 100-YEAR FLOODPLAIN.
• 2" - 12" FOR MANHOLE LOCATED OUTSIDE 100-YEAR FLOODPLAIN.

NOTE:

1. FOR USE IN UNPAVED AREAS ONLY.

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
1 OF 5

USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.



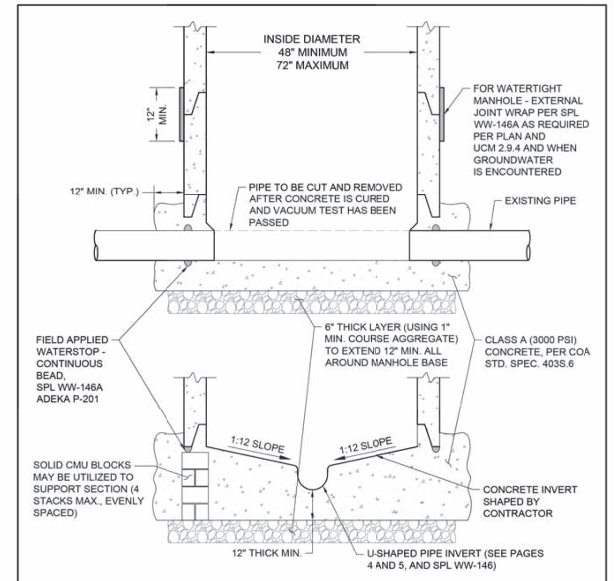
NOTES:

1. THE CONTRACTOR SHALL LEVEL AND PLUMB THE BASE PRIOR TO SETTING THE PRECAST MANHOLE RISER SECTIONS ON THE PRECAST CONCRETE BASE.
2. MANHOLE FOUNDATION SHALL MEET OR EXCEED COA STD. SPEC. 506.5B.

TYPICAL PRECAST BASE

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
2 OF 5

USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.



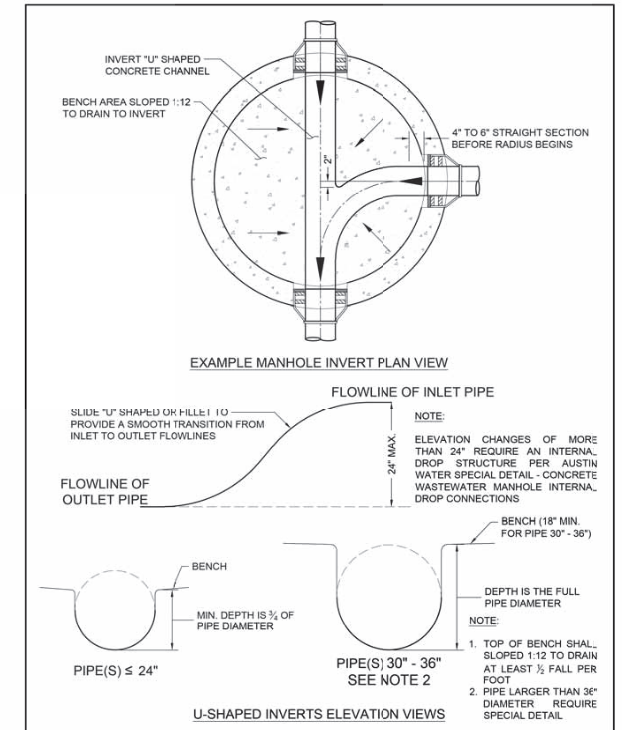
NOTES:

1. FOR USE ONLY WHEN MANHOLE IS INSTALLED ON EXISTING MAIN.
2. ALL PVC PIPE SHALL BE REMOVED FROM INVERT.
3. CIP SECTION SHALL BE PLACED PLUMB, LEVEL, AND CONCRETE HAS ADEQUATELY CURED PRIOR TO SETTING ANY ADDITIONAL RISER SECTIONS.
4. MANHOLE FOUNDATION SHALL MEET OR EXCEED COA STD. SPEC. 506.5B.
5. DOGHOUSE MANHOLES NOT ALLOWED.

TYPICAL CAST IN PLACE BASE

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
3 OF 5

USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.



NOTE:

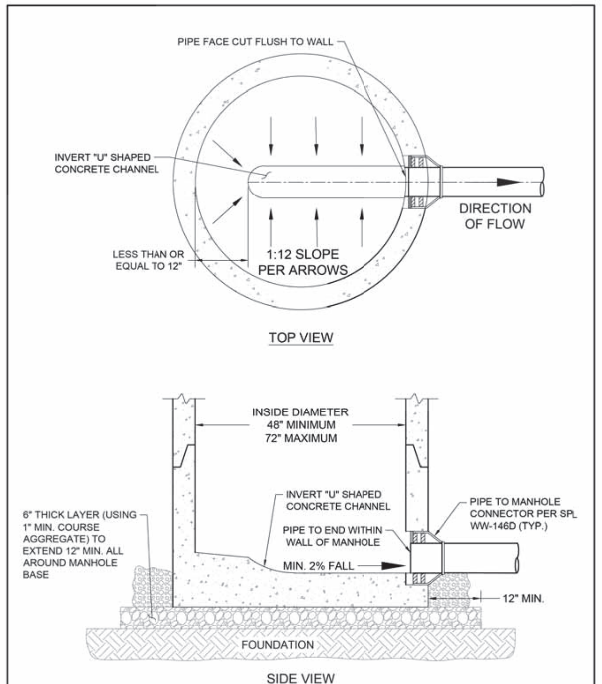
ELEVATION CHANGES OF MORE THAN 24" REQUIRE AN INTERNAL DROP STRUCTURE PER AUSTIN WATER SPECIAL DETAIL - CONCRETE WASTEWATER MANHOLE INTERNAL DROP CONNECTIONS

NOTE:

1. TOP OF BENCH SHALL SLOPED 1:12 TO DRAIN AT LEAST ½ FALL PER FOOT
2. PIPE LARGER THAN 36" DIAMETER REQUIRE SPECIAL DETAIL

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
4 OF 5

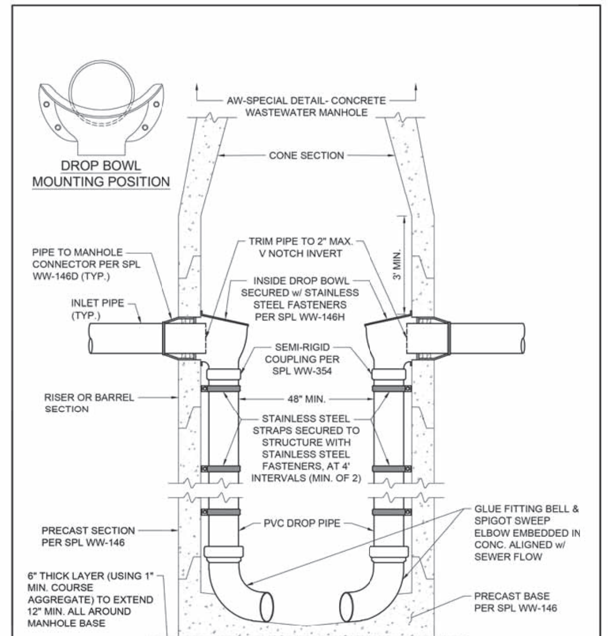
USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.



END MANHOLE ON PRECAST BASE

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
5 OF 5

USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.



NOTES:

1. DROP PIPE DIAMETER TO EQUAL INLET PIPE DIAMETER
2. MANHOLE DIAMETER SHALL ALLOW 48" MIN. CLEARANCE AS SHOWN
3. DROP MANHOLES IN EXCESS OF 15' DEEP MUST BE DESIGNED WITH AN INTERNAL DROP AND MUST BE A MIN. SIZE OF 5' DIAMETER

SINGLE OR MULTIPLE INTERNAL DROP CONNECTIONS

AUSTIN WATER SPECIAL DETAIL (10/11/24)
CONCRETE WASTEWATER MANHOLE
INTERNAL DROP CONNECTIONS
1 OF 1

USE OF THIS SPECIAL DETAIL
1. THE ENGINEER/ARCHITECT ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS SPECIAL DETAIL. MODIFICATIONS TO THIS SPECIAL DETAIL ARE PROHIBITED.
2. THIS SPECIAL DETAIL IS TEMPORARY AND IS TO BE USED UNTIL A NEW STANDARD DETAIL IS ADOPTED TO REPLACE IT.

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3828
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

CONSTRUCTION DETAILS
SHEET 10
(AW WASTEWATER)

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

A BOUNDARY, TOPOGRAPHIC, AND TREE SURVEY OF 60.665 ACRES OUT OF THE JESSE WARD SURVEY NO. 36, ABSTRACT NO. 2292, THE EVAN WILLIAMS SURVEY NO. 294, ABSTRACT NO. 824, AND THE HUGH McCLURE SURVEY NO. 94, ABSTRACT NO. 569, ALL IN TRAVIS COUNTY, TEXAS, BEING ALL OF THE REMAINDER OF A CALLED 53.357 ACRE TRACT CONVEYED TO HARRY MARX RECORDED IN VOLUME 3792, PAGE 62, OF THE DEED RECORDS OF TRAVIS COUNTY, TEXAS, AND ALSO BEING ALL OF THAT REMAINDER OF A CALLED 53.357 ACRE TRACT CONVEYED TO PAUL MARX RECORDED IN VOLUME 3792, PAGE 55, OF THE DEED RECORDS OF TRAVIS COUNTY, TEXAS

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S77°43'28"E	107.33'
(L1)	(S75°05'E)	(107.33')
L2	S27°37'25"W	61.38'
(L2)	(S30°08'W)	(61.40')
L3	N85°09'42"W	77.79'
(L3)	(N82°37'41"W)	(78.03')
L4	N42°49'20"W	26.68'
L5	N42°49'20"W	34.21'
L6	S00°28'02"W	59.47'
L7	N27°35'38"E	61.97'

BENCHMARK INFORMATION:

BM #1: MAG NAIL WITH "CHAPARRAL" WASHER SET IN THE TOP OF A CONCRETE CULVERT HEADWALL LOCATED ON THE NORTH SIDE OF HWY 71, +/- 9' NORTH OF EDGE OF ASPHALT, +/- 37' SOUTH OF THE COMMON CORNER OF BOTH CALLED 53.357 ACRE TRACTS.

ELEVATION = 965.52'
VERTICAL DATUM: NAVD 88 (GEOID 18)

BM #2: MAG NAIL WITH "CHAPARRAL" WASHER SET ON CONCRETE DRAINAGE STRUCTURE LOCATED ON THE NORTH SIDE OF OLD BEE CAVES ROAD, EAST OF A CONCRETE DRIVEWAY, +/- 707' EAST OF THE NORTHEAST CORNER OF THE SUBJECT TRACT.

ELEVATION = 996.67'
VERTICAL DATUM: NAVD 88 (GEOID 18)

THIS IS A GRID DRAWING.

BEARING BASIS: THE TEXAS COORDINATE SYSTEM OF 1983 (NAD83) (2011), CENTRAL ZONE; US SURVEY FEET; BASED ON GPS SOLUTIONS FROM THE LOCAL REAL TIME NETWORK (RTN) FOR CHAPARRAL CONTROL POINT "103".

1/2" REBAR WITH "RANDOM" CAP SET

TEXAS STATE PLANE COORDINATES:
N 10064191.18
E 3064845.16

ELEVATION = 965.52'

Paul J. Flugel R.P.L.S. No. 5096

Chaparral Professional Land Surveying, Inc. Surveying and Mapping
5725 W. HWY 290, SUITE 202
Austin, Texas 78749
512-443-1724
T.B.P.E.L.S. Firm No. 10124500

PROJECT NO.: 1856-002
DRAWING NO.: 1856-002-TOPO2
PLOT DATE: 04/09/25
PLOT SCALE: 1"=100'
DRAWN BY: DHO & MB
SHEET 01 OF 02

No.	Date	Revisions	App.

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

TREE AND TITLE SURVEY
SHEET 1

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

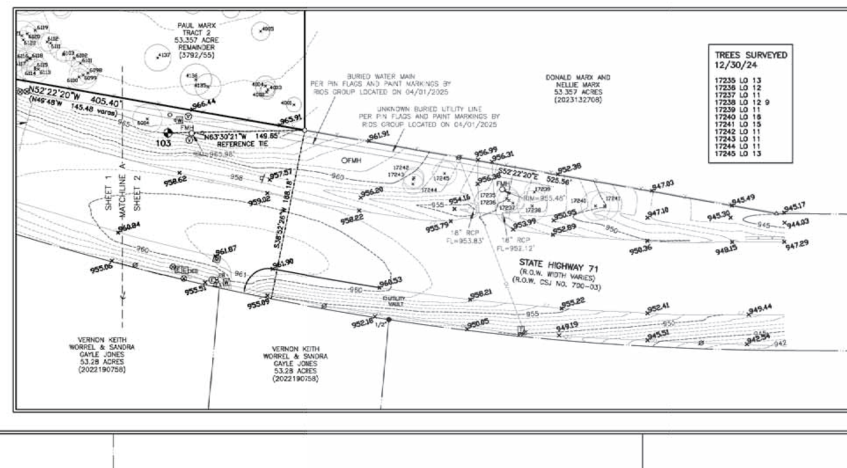
FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\02 FINAL PLAT.dwg LAYOUT: 76 PLOT DATE: 8/27/2025 9:34am PLOTTED BY: mered
XREFS: x2436 IMAGES: 1856-002-TOPO2_2025-01-08_Page_1.jpg 1856-002-TOPO2_2025-01-08_Page_2.jpg SJF Sign.tif

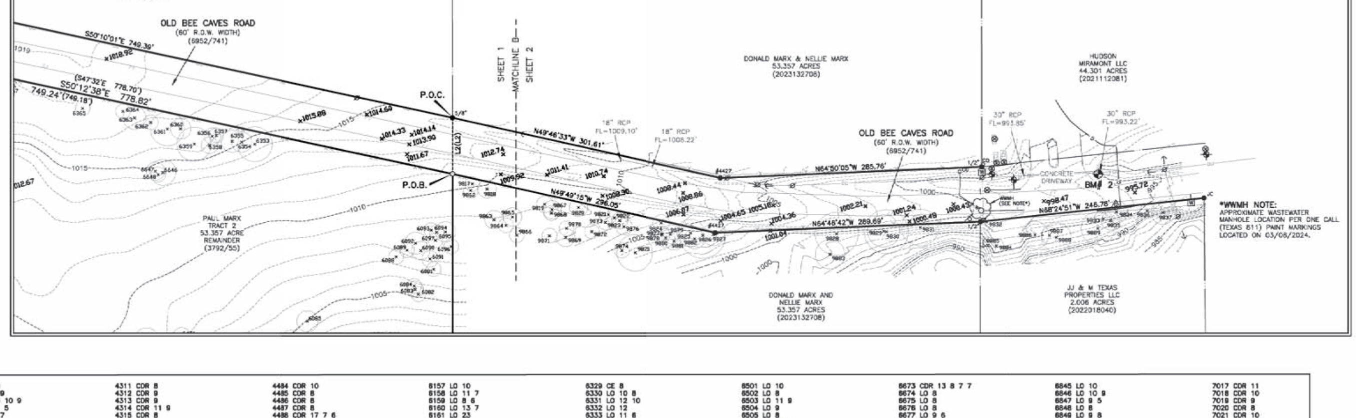
A BOUNDARY, TOPOGRAPHIC, AND TREE SURVEY OF 60.665 ACRES OUT OF THE JESSE WARD SURVEY NO. 36, ABSTRACT NO. 2292, THE EVAN WILLIAMS SURVEY NO. 294, ABSTRACT NO. 824, AND THE HUGH McCLURE SURVEY NO. 94, ABSTRACT NO. 569, ALL IN TRAVIS COUNTY, TEXAS, BEING ALL OF THE REMAINDER OF A CALLED 53.357 ACRE TRACT CONVEYED TO HARRY MARX RECORDED IN VOLUME 3792, PAGE 62, OF THE DEED RECORDS OF TRAVIS COUNTY, TEXAS, AND ALSO BEING ALL OF THAT REMAINDER OF A CALLED 53.357 ACRE TRACT CONVEYED TO PAUL MARX RECORDED IN VOLUME 3792, PAGE 55, OF THE DEED RECORDS OF TRAVIS COUNTY, TEXAS

SCALE: 1" = 60'
GRAPHIC SCALE

LEGEND
- 1/2" REBAR FOUND (OR AS NOTED)
- 1/2" REBAR WITH "RPLS 4532" CAP FOUND
- 1/2" REBAR WITH "KIMARD SURVEYING" CAP FOUND
- 1/2" REBAR WITH "RPLS 4303" CAP FOUND
- 1/2" REBAR WITH "BOWER 4427" CAP FOUND
- 1/2" REBAR WITH "JONES CARTER" CAP FOUND
- 1/2" REBAR WITH "CHAPARRAL" CAP SET
- IRON PIPE FOUND (SIZE NOTED)
- 80D NAIL FOUND IN FENCE POST
- CALCULATED POINT
- CONTROL POINT/BENCHMARK LOCATION
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- WASTEWATER MANHOLE
- FORCE MAIN MANHOLE
- WELL LOCATION
- 2" VENT PIPE
- UTILITY POLE
- GUY WIRE
- OVERHEAD UTILITIES
- MAILBOX
- SIGN
- BOLLARD
- EDGE OF ASPHALT PAVEMENT
- BARB WIRE FENCE
- CHAIN LINK FENCE
- R.O.W. RIGHT-OF-WAY
- ( ) RECORD INFORMATION

LOCATION MAP
NOT TO SCALE





TREES SURVEYED
12/30/24

17235 LO 13
17236 LO 12
17237 LO 11
17238 LO 12 9
17239 LO 11
17240 LO 18
17241 LO 15
17242 LO 11
17243 LO 11
17244 LO 11
17245 LO 13

TREE INDEX

TAG NO. – TYPE – INDICATES MULTI TRUNK (example: 514 LO 17 14 11)
INDIVIDUAL TRUNK DIA. (IN INCHES)

CRITICAL ROOT ZONES (TREE CIRCLES) ARE SHOWN USING THE COA FORMULA FOR SINGLE AND MULTI TRUNK TREES.

LO – LIVE OAK
CDR – CEDAR
PEC – PECAN
CE – CEDAR ELM
AE – AMERICAN ELM
HB – HACKBERRY

*=TREE SIZE UPDATED PER BARTLETT TREE EXPERTS REPORT DATED JANUARY 23, 2025.

THE SPECIES OF TREES SHOWN WERE DETERMINED TO THE BEST OF OUR ABILITIES BY ON THE GROUND SURVEY CREW, NOT A CERTIFIED ARBORIST. CONSULT A CERTIFIED ARBORIST FOR FINAL DETERMINATION OF SPECIES.

TREES SURVEYED 03/08/24

4001 LO 8
4002 LO 8
4003 LO 8
4004 LO 11
4005 LO 10
4006 LO 8 6
4007 LO 14
4008 LO 14 10
4009 LO 12
4010 LO 19
4011 LO 13
4012 LO 8
4013 LO 10 8 8
4014 LO 11
4015 LO 8 9
4016 LO 11 8
4017 LO 19
4018 LO 9
4019 LO 11
4020 LO 12 5 5
4021 LO 8
4022 LO 9
4023 LO 10 7
4024 LO 16
4025 LO 14
4026 LO 12
4027 LO 12 7
4028 LO 12
4029 LO 9
4030 LO 8 7
4031 LO 17
4032 LO 9
4033 LO 10
4034 LO 10
4035 LO 8
4036 LO 10
4037 LO 9
4038 LO 9
4039 LO 10
4040 LO 11
4041 LO 13
4042 LO 9
4043 LO 11
4044 LO 8
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4047 LO 8
4048 LO 8
4049 LO 11
4050 LO 10
4051 LO 12
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4053 LO 10
4054 LO 10
4055 LO 9
4056 LO 8
4057 LO 12
4058 LO 8
4059 LO 11
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4061 LO 10
4062 CDR 9 8 7 6 6
4063 LO 8
4064 CDR 9
4065 LO 10
4066 CDR 11
4067 LO 9
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4070 CDR 11
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4072 CDR 11
4073 CDR 9
4074 CDR 9
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4076 CDR 10
4077 CDR 8
4078 CDR 15
4079 CDR 10 9 8 8 8
4080 CDR 9
4081 CDR 8
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4086 CDR 9
4087 CDR 13
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4089 CDR 9
4090 CDR 17 11 9 7 7 7
4091 CDR 10
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4093 CDR 10
4094 CDR 10 9 6 6 6
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4096 CDR 9 8 6 7 7 7
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4098 CDR 8 7
4099 CDR 8
4100 CDR 10
4101 CDR 11
4102 CDR 9 7
4103 CDR 9
4104 CDR 12 7 6
4105 CDR 10
4106 CDR 9 7
4107 CDR 9
4108 CDR 10
4109 CDR 9 6
4110 CDR 8 7
4111 LO 8
4112 CDR 8
4113 CDR 9
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4117 LO 11
4118 LO 9
4119 CDR 9
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4122 LO 9
4123 CDR 11
4124 CDR 9
4125 LO 8
4126 LO 11
4127 CDR 11
4128 CDR 9 7 7
4129 LO 9
4130 CDR 8 7
4131 CDR 11
4132 CDR 8
4133 CDR 9 6
4134 LO 10
4135 CDR 14
4136 CDR 17
4137 LO 8 7 6

4138 LO 10
4139 LO 9 9
4140 LO 13 10 9
4141 LO 11 5
4142 LO 9 7
4143 LO 10
4144 LO 11 9
4145 LO 11
4146 LO 9
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4184 CDR 11 6 5
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4191 CDR 12
4192 CDR 12
4193 CDR 11
4194 CDR 10
4195 CDR 10
4196 CDR 10
4197 CDR 9
4198 CDR 8
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4206 CDR 9
4207 CDR 9
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4243 CDR 9 8 6
4244 CDR 10 6
4245 CDR 8 7
4246 CDR 8
4247 CDR 8
4248 LO 8
4249 CDR 10
4250 CDR 15 8 7 6
4251 CDR 9
4252 CDR 11
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4320 LO 10
4321 CDR 13
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4325 CDR 9
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4428 CDR 8
4429 CDR 8
4430 CDR 9
4431 CDR 11
4432 CDR 8
4433 CDR 11
4434 CDR 13
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4436 CDR 9
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4439 CDR 9
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6001 CDR 8
6002 CDR 8 4
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6006 LO 8
6007 LO 9
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7012 CDR 14
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7134 CDR 9
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NEW TREES
(SURVEYED 10/29/24)

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9836 CDR 8
9837 LO 9 8
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9863 LO 10
9864 LO 8
9865 LO 10
9866 LO 8
9867 LO 10
9868 LO 8
9869 LO 7 6
9870 LO 8
9871 CE 8
9872 LO 8
9873 LO 8
9874 LO 8
9875 LO 20
9876 LO 9
9877 LO 8
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9879 LO 10
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TITLE COMMITMENT NOTE:

This survey includes information contained in First American Title Insurance Company title commitment G.F. No. 202301457, issued February, 15, 2024, with an effective Date 2/06/24.

The surveyor has relied upon the referenced Commitment for Title regarding easements, restrictions, and other matters affecting this property. No additional research was done for the purpose of this survey. Items listed are worded according to the commitment, followed by surveyor's notes and/or observations.

Schedule "B" items contained therein and re-listed below were considered:

10a. Telephone easement granted to Southwestern Bell Telephone Company, by instrument dated April 14, 1954, recorded in Volume 1465, Page 13 of the Deed Records of Travis County, Texas.
--May affect these tracts within a 10-foot wide area adjacent to and parallel with State Highway 71. Unable to read Deed to determine beginning and ending point--

10b. Telephone easement granted to Southwestern Bell Telephone Company, by instrument dated April 14, 1954, recorded in Volume 1465, Page 14 of the Deed Records of Travis County, Texas.
--May affect these tracts within a 10-foot wide area adjacent to and parallel with State Highway 71. Unable to read Deed to determine beginning and ending point--

10c. Electric utility easement granted to the City of Austin, by instrument dated December 17, 2001, recorded under Document No. 2002000053 of the Official Public Records of Travis County, Texas.
--Unable to Plot--Blanket Easement--

FLOOD-PLAIN NOTE:

The tract shown hereon lies within Zone "X" (areas determined to be outside the 0.2% annual chance floodplain), as identified by the Federal Emergency Management Agency, National Flood Insurance Program, as shown on map no. 48453C0420J, dated January 22, 2020, for Travis County, Texas and incorporated areas. If this site is not within an identified special flood hazard area, this flood statement does not imply that the property and/or the structures thereon will be free from flooding or flood damage. This flood statement shall not create liability on the part of the surveyor.

GENERAL SURVEY NOTES:

1) PROPOSED 10.0 ACRE TRACT TO BE RETAINED BY OWNER.
2) IMPROVEMENTS AND UTILITIES MAY EXIST ON PROPOSED 10.0 ACRE TRACT THAT ARE NOT SHOWN HEREON.
3) PROPERTY ADDRESS: 8956 W. STATE HWY 71, AUSTIN, TEXAS, 78735
4) DATE OF SURVEY: DECEMBER 30, 2024
5) SURVEY UPDATED ON APRIL 8, 2025 WITH UNDERGROUND UTILITY LINES MARKED ON THE GROUND WITH PIN FLAGS AND PAINT MARKINGS BY RIOS GROUP AND REVISED TRUNK SIZES FOR TREE 6337 PER BARTLETT TREE EXPERTS REPORT DATED JANUARY 23, 2025.

SURVEYOR'S CERTIFICATE:

I hereby certify that a survey of the property shown hereon was actually made upon the ground under my direction and supervision on the date shown.

This survey substantially complies with the current Texas Society of Professional Surveyors Manual of Practice for a Category 1B, Condition 4 Standard Land Survey. Effective December 31, 2020.

Paul J. Flugel — Date 04/09/2025
Registered Professional Land Surveyor
State of Texas No. 5096

STATE OF TEXAS — PAUL J. FLUGEL — 5096 — LAND SURVEYOR
Paul J. Flugel
R.P.L.S. No. 5096

Chaparral
Professional Land Surveying, Inc.
Surveying and Mapping
5725 W. HWY 290, SUITE 202
Austin, Texas 78749
512-443-1724
T.B.P.E.L.S. Firm No. 10124500

PROJECT NO.: 1856-002
DRAWING NO.: 1856-002-TOPO2
PLOT DATE: 04/09/25
PLOT SCALE: 1"=100'
DRAWN BY: END & MB
SHEET 02 OF 02

No.	Date	Revisions	App.

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET 77 OF 113

SP-2025-0080C

TREE AND TITLE SURVEY
SHEET 2

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\02 FINAL PLAT.dwg LAYOUT: 77 PLOT DATE: 8/27/2025 9:34am PLOTTED BY: mered
XREFS: x2436 IMAGES: 1856-002-TOPO2_2025-01-08_Page_1.jpg 1856-002-TOPO2_2025-01-08_Page_2.jpg SJF Sign.tif

UNIT ADDRESS LEGEND

APARTMENT NUMBERING:

X X XX
- INDICATES APT. NUMBER
- INDICATES FLOOR LEVEL
- INDICATES BUILDING NUMBER

TOWNHOME NUMBERING:

X 1 XX
- INDICATES TH UNIT NUMBER
- INDICATES BUILDING NUMBER

2 ADDRESSING PLAN

1"=50'-0"

ADDRESS:
9119 OLD BEE CAVES ROAD
AUSTIN, TEXAS 78735

MATCHLINE
RE: SHEET #80

1 ADDRESSING PLAN

1"=50'-0"

ADDRESS:
8900 W STATE HWY 71
AUSTIN, TEXAS 78735

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.

TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

RYAN MEEKS
21751
08/28/2025

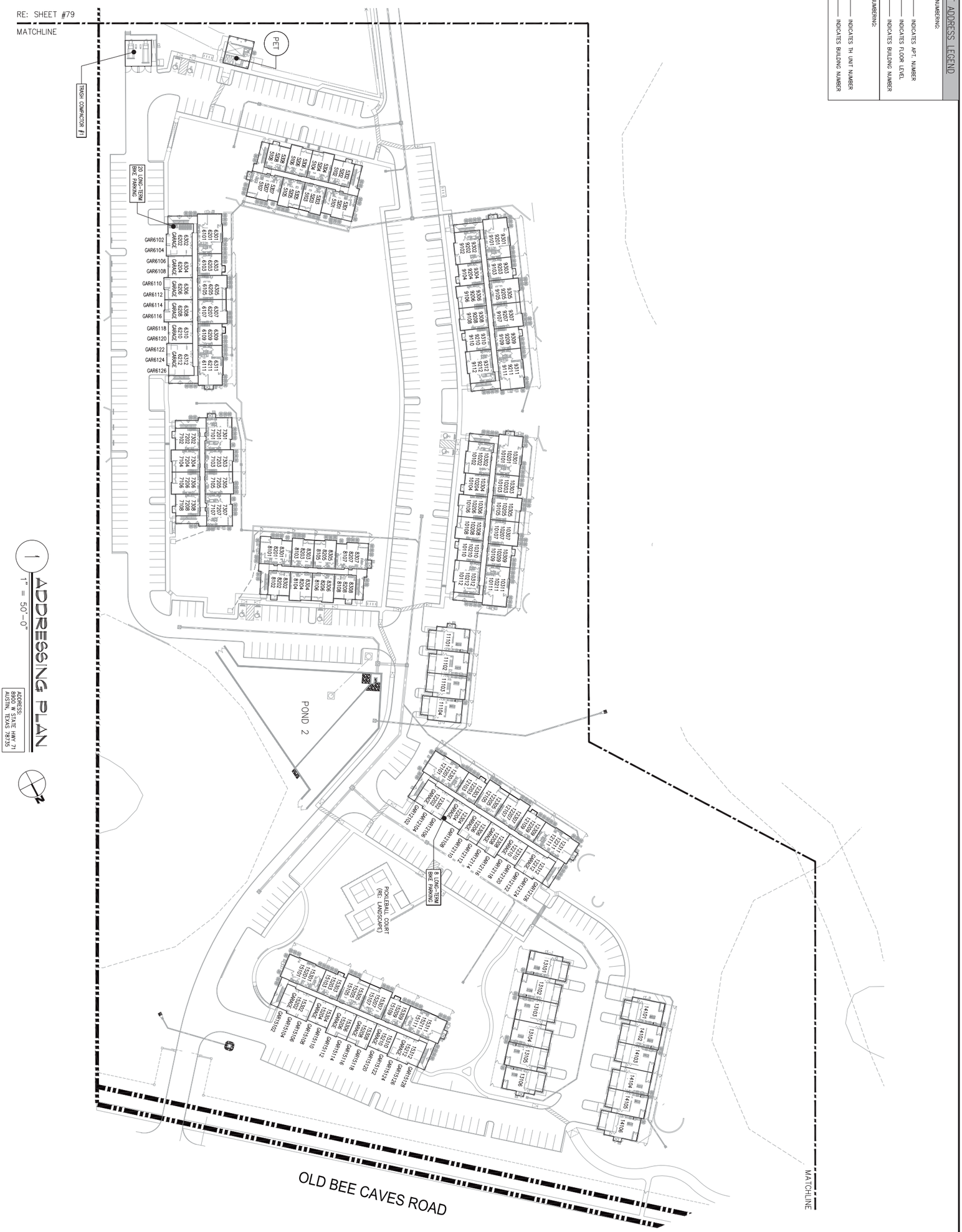
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

ADDRESSING PLAN
SHEET 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
79
OF 113

SP-2025-0080C



1 ADDRESSING PLAN
1" = 50'-0"

ADDRESS:
8900 W STATE HWY 71
AUSTIN, TEXAS 78735

No.	Date	Revisions	App.

SP-2025-0080C

SHEET 80 OF 113

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

ADDRESSING PLAN
SHEET 2

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REGISTERED ARCHITECT
STATE OF TEXAS
08/29/2025

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

FILE: J:\23531.NEW\23031\SDP\2025.08.28\Sheet 80 of 107 - ADDRESSING PLAN SHEET 2.dwg LAYOUT: Model PLOT DATE: 8/28/2025 12:37pm PLOTTED BY: psirlko
XREFS: A-Site L-Site C-Site IA-1FL I-1FL IIA-1FL II-1FL TYPE II TH - 1ST TYPE I TH - 1ST CH-FLT UT-B2 UT-A1A UT-B2B UT-A3 UT-A1 UT-A2 UT-B1 UT-B1A UT-B1B UT-C1-1ST UT-B1-1ST UT-B2A UT-B1_Gar UT-A1_Gar UT-A2_Gar Bldg Type I Stair 1 - Lvl 1 Bldg Type I Stair 2 - Lvl 1 UT-B1-TA UT-A1-TA Bldg Type II Stair 2 - Lvl 1 Bldg Type II Stair 1 - Lvl 1 UT-A1C UT-C1A-1ST IC-1FL IB-1FL UT-A1_Gar HC x243E_xferout Lgnd-Unit Addressing Notes-Exit Analysis

NOTE:
THIS IRRIGATION SYSTEM IS DESIGNED FOR RECLAIMED WATER USE. ALL COMPONENTS OF THE SYSTEM ARE TO BE NP (NON-POTABLE PURPLE) COMPLIANT AS SUPPLIED BY THE MANUFACTURER. THE COMPONENTS SHALL MEET ALL TCEQ (TEXAS DEPARTMENT OF ENVIRONMENTAL QUALITY) AND LOCAL GOVERNING AUTHORITY CODES FOR RECLAIMED WATER USE IN LANDSCAPE IRRIGATION SYSTEMS. SIGNAGE AS REQUIRED BY LOCAL AUTHORITY/TCEQ SHALL BE PROVIDED.

NOTE:
ALL POTABLE WATER CROSSINGS SLEEVES SHALL EXTEND 9' HORIZONTALLY FROM THE CENTER LINE OF THE POTABLE PIPE ON BOTH SIDES OF THE CROSSING AND BE PROPERLY IDENTIFIED.

NOTE:
RECLAIMED CROSSINGS TO BE BELOW POTABLE WATER LINES.

NOTE:
CONTRACTOR TO FOLLOW CHAPTER 290 SUBCHAPTER D TAC 30 FOR POTABLE WATER AND CHAPTER 210 RULES AND REGULATIONS FOR RECLAIMED WATER - CONTRACTOR TO CHECK WITH AUTHORITY HAVING JURISDICTION FOR ALL PIPE LABELING AND SEPARATIONS.

NOTE:
PHOTOGRAPH AND GPS LOCATE ALL RECLAIMED WATER LINES CROSSINGS UNDER DOMESTIC WATER LINES. COORDINATE DATA WITH CIVIL ENGINEER AND OWNER'S RECORDS. REFER TO DTL. 9/SHEET 104. WHERE POSSIBLE ADJUST MAINLINE LOCATION TO AVOID POTABLE WATER CROSSINGS.

NOTE:
THE IRRIGATION MAINLINE SHALL BE INSTALLED NO CLOSER THEN 9 FEET IN ALL DIRECTIONS FROM WATER/WASTEWATER/DRAIN COLLECTION FACILITIES. ALL SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES. ADJUST IRRIGATION MAINLINE AS NEEDED TO MAINTAIN ACCEPTABLE OFFSET.

NOTE:

Specifications for all equipment/components of the water quality control systems shall be submitted to the WPD Operating Permit (OP) Inspection Staff and Engineer of Record prior to the installation of pump stations and irrigation systems, and prior to the mid-construction meeting for review and approval. This is including but not limited to mechanical equipment such as pumps, panels, piping, distribution components and any other ancillary equipment. Final approval of submittal and equipment, and testing of all components of water quality system, is required by WPD OP Inspection Staff prior to CO. Final documentation of Operations/Maintenance manual and as-builts shall be submitted to WPD OP Inspection Staff after build out and must be approved by Staff prior to the end of the one year performance period.

3 BSZ WATER QUALITY NOTE

CONSTRUCTION NOTES:

1. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH THE SPECIFICATIONS AND ALL SUBMITTAL REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO NOTIFY THE OWNER'S REPRESENTATIVE FOR SITE INSPECTIONS AS SPECIFIED IN THE SPECIFICATIONS. FAILURE TO NOTIFY THE OWNER'S REPRESENTATIVE DOES NOT RELIEVE THE CONTRACTOR FROM INSPECTION APPROVAL AND WILL REQUIRE THE CONTRACTOR TO UNCOVER WORK AS REQUIRED FOR APPROVAL AT THE COST OF THE CONTRACTOR. IRRIGATION CONTRACTOR IS TO INFORM OWNER'S REPRESENTATIVE OF THE START DATE OF WORK.

2. THE IRRIGATION CONTRACTOR IS REQUIRED BY LAW TO NOTIFY TEXAS ONE CALL (800-245-4545) 72 HOURS PRIOR TO ANY EXCAVATION. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. IRRIGATION CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES WHETHER OR NOT TEXAS ONE CALL IS NOTIFIED.

3. DO NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.

4. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH OTHER CONTRACTORS AS REQUIRED TO ACCOMPLISH IRRIGATION INSTALLATION.

5. DUE TO SCALE OF DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS SLEEVES, ETC., WHICH MAY BE REQUIRED. IRRIGATION CONTRACTOR SHALL CAREFULLY INVESTIGATE THE STRUCTURAL AND FINISHED CONDITIONS AFFECTING ALL OF HIS WORK AND PLAN HIS WORK ACCORDINGLY, FURNISHING SUCH FITTINGS, ETC., AS MAY BE REQUIRED TO MEET SUCH CONDITIONS. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INDICATIVE OF THE WORK TO BE INSTALLED. THE WORK SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID CONFLICTS BETWEEN IRRIGATION SYSTEM, PLANTING AND ARCHITECTURAL FEATURES. THIS DESIGN IS DIAGRAMMATIC. ALL PIPING, VALVES, ETC., SHOWN WITHIN PAVED AREAS IS FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS AND WITHIN PROPERTY LINES.

6. NO MACHINE TRENCHING IS TO BE DONE WITHIN THE DRIPLINE OF EXISTING TREES. TRENCHING IS TO BE DONE BY HAND, AIR-SPADE OR BY TUNNELING UNDER ROOT SYSTEM BY METHOD APPROVED BY LANDSCAPE ARCHITECT. PIPING LAYOUT IS DIAGRAMMATIC AND PIPING SHALL BE ROUTED AROUND EXISTING TREES AS POSSIBLE TO AVOID DAMAGE TO THE ROOT SYSTEMS. DO NOT CUT ANY ROOT OVER 3/4" DIAMETER UNLESS APPROVAL FROM THE LANDSCAPE ARCHITECT IS FIRST OBTAINED. ANY CUTS MADE SHALL BE CLEAN AND WITHOUT FRAYED ENDS.

7. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR SLEEVES AND CHASES WHEREVER PIPING OR CONDUIT PASSES, UNDER ALL PAVING, THROUGH WALLS, ETC. ALL SLEEVE LOCATIONS MAY NOT BE SHOWN ON PLAN, COORDINATE WITH ARCHITECTURAL AND CIVIL DRAWINGS, GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS AS REQUIRED. ALL SLEEVE AND CHASE LOCATIONS ARE NOT NOTED ON PLAN. ALL SLEEVES SHALL BE CLASS-200 PVC. ALL SLEEVES TO BE SIZED TWICE THE DIAMETER OF PIPE OR COMBINATION OF PIPES ENCLOSED WITHIN THE SLEEVE.

8. IT IS THE IRRIGATION CONTRACTOR'S RESPONSIBILITY TO SECURE ALL REQUIRED PERMITS AND PAY ALL ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES CONTAINED IN THESE DOCUMENTS.

9. UNSLEEVED PIPES MAY BE SHOWN UNDER PAVEMENT FOR GRAPHIC CLARITY. INSTALL PIPES IN ADJACENT SLEEVES WITHIN LANDSCAPE AREAS.

10. 120 VAC ELECTRICAL POWER SOURCE AT CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. THE IRRIGATION CONTRACTOR SHALL MAKE THE FINAL CONNECTION FROM THE ELECTRICAL SOURCE TO THE CONTROLLER WITH A HARDWIRE CONNECTION APPROVED AND INSTALLED BY A LICENSED ELECTRICIAN.

11. ALL IRRIGATION WIRES SHALL BE UL LISTED FOR DIRECT UNDERGROUND BURIAL AND SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATIONS. 3M-DBY WATERPROOF CONNECTORS TO BE USED ON ALL WIRE CONNECTIONS. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT.

12. ALL PIPE CONNECTIONS SHALL BE PRIMED WITH AN APPROVED COLOR PRIMER BEFORE BEING CHEMICAL WELDED.

13. AFTER AWARD OF CONTRACT AND BEFORE ANY IRRIGATION SYSTEM MATERIALS ARE ORDERED FROM SUPPLIERS OR DELIVERED TO THE JOB SITE, SUBMIT TO THE OWNER A COMPLETE LIST OF ALL IRRIGATION SYSTEM MATERIALS, OR PROCESSES PROPOSED TO BE FURNISHED AND INSTALLED AS PART OF THIS CONTRACT. THE LANDSCAPE ARCHITECT OR OWNER'S AUTHORIZED REPRESENTATIVE WILL ALLOW NO SUBSTITUTIONS WITHOUT PRIOR WRITTEN ACCEPTANCE. MANUFACTURER'S WARRANTIES SHALL NOT RELIEVE THE CONTRACTOR OF HIS LIABILITY UNDER THE GUARANTEE. SUCH WARRANTIES SHALL ONLY SUPPLEMENT THE GUARANTEE.

2 NOTES

SYSTEM 1 EQUIPMENT

- (P) RE-IRRIGATION PUMP ASSEMBLY - DUAL SUBMERSIBLE PUMPS WITHIN WET WELL. SITEONE GREEN TECH MODEL PA46D-21T-231-PSR. REF DETAIL 1/SHEET 105.
- (PC) CUSTOM RE-IRRIGATION PUMP CONTROL PANEL BY SITEONE GREEN TECH. MODEL PA46D-RIP-15 REF. NOTE 3/SHEET 105 FOR PANEL CONTROL REQUIREMENTS.
- (W) WEATHER SENSOR - HUNTER RAIN-CLIK WEATHER SENSOR

SYSTEM 2 EQUIPMENT

- (P) RE-IRRIGATION PUMP ASSEMBLY - DUAL SUBMERSIBLE PUMPS WITHIN WET WELL. SITEONE GREEN TECH MODEL PA46D-21T-231-PSR. REF DETAIL 1/SHEET 106.
- (PC) CUSTOM RE-IRRIGATION PUMP CONTROL PANEL BY SITEONE GREEN TECH. MODEL PA46D-RIP-15 REF. NOTE 3/SHEET 106 FOR PANEL CONTROL REQUIREMENTS.
- (W) WEATHER SENSOR - HUNTER RAIN-CLIK WEATHER SENSOR

SYSTEM 3 EQUIPMENT

- (P) RE-IRRIGATION PUMP ASSEMBLY - DUAL SUBMERSIBLE PUMPS WITHIN WET WELL. SITEONE GREEN TECH MODEL PA43D-8Q-231-PSR. REF DETAIL 1/SHEET 107.
- (PC) CUSTOM RE-IRRIGATION PUMP CONTROL PANEL BY SITEONE GREEN TECH. MODEL PA43-RIP-5 REF. NOTE 3/SHEET 107 FOR PANEL CONTROL REQUIREMENTS.
- (W) WEATHER SENSOR - HUNTER RAIN-CLIK WEATHER SENSOR

GENERAL IRRIGATION EQUIPMENT

- FULL CIRCLE ROTOR HEAD, HUNTER I-25-04-SS-R, REF. PLAN FOR NOZZLE SELECTION
- PARTIAL CIRCLE ROTOR HEAD, HUNTER I-25-04-SS-R, REF. PLAN FOR NOZZLE SELECTION
- REMOTE CONTROL VALVE, HUNTER ICV-FS-R WITH ACCU-SYNC-ADJ PRESSURE REGULATOR, SIZE AS INDICATED ON PLANS, SET OUTLET PRESSURE AS INDICATED ON PLANS.
- MANUAL VALVE- SIZE OF MAINLINE
- #-# / #"/##: SYSTEM - ZONE IDENTIFICATION; ZONE SIZE IN GALLONS PER MINUTE; VALVE SIZE THIS ZONE
- MAIN LINE - USE SCH-40 PVC PURPLE PIPE, SIZE AS INDICATED ON PLANS
- 1-1/2": LATERAL LINE - USE SCH-40 PVC PURPLE PIPE. DO NOT DEVIATE ON SIZING WITHOUT CONSULTING WITH PROJECT DESIGNER.
- SLEEVE - USE DIAMETER 2 TIMES THAT OF SPRINKLER PIPE DESIGNATED FOR CROSSING PAVING ON ALL LATERAL LINES. USE CLASS 200 PVC PIPE, VALVE WIRING MAY BE RUN IN THE SAME SLEEVES.

NOTE: REFER TO SHEETS 104 to 107 FOR DETAILS

1 LEGEND

STATEMENT OF IRRIGATION DESIGN STANDARDS CONFORMITY:
This plan is complete and conforms to the design and installation parameters of the irrigation design and equipment standards set out by the City of Austin, TX and TCEQ (Texas Commission on Environmental Quality).

Wade O. Radlet TX LI # 22397

SPECIAL NOTES:

1. THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND CODES AND WILL SECURE ALL REQUIRED PERMITS.
2. ALL WIRES, CONTROL VALVES, AND PRESSURIZED WATER SUPPLY LINES SHALL NOT BE LOCATED WITHIN THE EXISTING ROW OR OUTSIDE PROPERTY BOUNDARIES.

"Irrigation in Texas is regulated by the Texas Commission on Environmental Quality (TCEQ), MC-178, PO Box 13087, Austin, Texas 78711-3087 TCEQ's website is: www.tceq.state.tx.us"

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4482
FAX (512) 900-7962

STATE OF TEXAS
WADE O. RADLET
22397
LICENSED IRRIGATOR
09.05.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION NOTES AND LEGEND

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
95
OF 113

SP-2025-0080C

NOTE:
THIS IRRIGATION SYSTEM IS DESIGNED FOR RECLAIMED WATER USE. ALL COMPONENTS OF THE SYSTEM ARE TO BE NP (NON-POTABLE PURPLE) COMPLIANT AS SUPPLIED BY THE MANUFACTURER. THE COMPONENTS SHALL MEET ALL TCEQ (TEXAS DEPARTMENT OF ENVIRONMENTAL QUALITY) AND LOCAL GOVERNING AUTHORITY CODES FOR RECLAIMED WATER USE IN LANDSCAPE IRRIGATION SYSTEMS. SIGNAGE AS REQUIRED BY LOCAL AUTHORITY/TCEQ SHALL BE PROVIDED.

NOTE:
ALL POTABLE WATER CROSSINGS SLEEVES SHALL EXTEND 9' HORIZONTALLY FROM THE CENTER LINE OF THE POTABLE PIPE ON BOTH SIDES OF THE CROSSING AND BE PROPERLY IDENTIFIED.

NOTE:
RECLAIMED CROSSINGS TO BE BELOW POTABLE WATER LINES.

NOTE:
CONTRACTOR TO FOLLOW CHAPTER 290 SUBCHAPTER D TAC 30 FOR POTABLE WATER AND CHAPTER 210 RULES AND REGULATIONS FOR RECLAIMED WATER - CONTRACTOR TO CHECK WITH AUTHORITY HAVING JURISDICTION FOR ALL PIPE LABELING AND SEPARATIONS.

NOTE:
PHOTOGRAPH AND GPS LOCATE ALL RECLAIMED WATER LINES CROSSINGS UNDER DOMESTIC WATER LINES. COORDINATE DATA WITH CIVIL ENGINEER AND OWNER'S RECORDS. REFER TO DTL. 9/SHEET 104. WHERE POSSIBLE ADJUST MAINLINE LOCATION TO AVOID POTABLE WATER CROSSINGS.

NOTE:
THE IRRIGATION MAINLINE SHALL BE INSTALLED NO CLOSER THEN 9 FEET IN ALL DIRECTIONS FROM WATER/WASTEWATER/DRAIN COLLECTION FACILITIES. ALL SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES. ADJUST IRRIGATION MAINLINE AS NEEDED TO MAINTAIN ACCEPTABLE OFFSET.

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 3-2	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	62.0 g.p.m.
Electric Valve Size:	2"
Static Pressure (PUMP SUPPLIED):	90.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	70 p.s.i.
Zone Pipe/Fitting Loss:	2.96 p.s.i.
2" Electric Valve Loss:	2.4 p.s.i.
Elevation Net Loss (+11 FT.):	4.76 p.s.i.
System Mainline Loss (3" Sch-40 Main):	2.98 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	13.10 p.s.i.
Design Pressure:	83.10 p.s.i.

Notes: System requires a minimum of 84 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

9 HYDRAULIC LOSS CHART
SYSTEM 3 - ZONE 2

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 2-2	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	131.0 g.p.m.
Electric Valve Size:	3"
Static Pressure (PUMP SUPPLIED):	100.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	75 p.s.i.
Zone Pipe/Fitting Loss:	4.18 p.s.i.
3" Electric Valve Loss:	2.5 p.s.i.
Elevation Net Loss (+31 FT.):	13.42 p.s.i.
System Mainline Loss (4" Sch-40 Main):	4.18 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	25.44 p.s.i.
Design Pressure:	95.44 p.s.i.

Notes: System requires a minimum of 96 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

6 HYDRAULIC LOSS CHART
SYSTEM 2 - ZONE 2

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 1-2	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	125.0 g.p.m.
Electric Valve Size:	3"
Static Pressure (PUMP SUPPLIED):	105.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	70 p.s.i.
Zone Pipe/Fitting Loss:	6.37 p.s.i.
3" Electric Valve Loss:	2.5 p.s.i.
Elevation Net Loss (+48 FT.):	20.78 p.s.i.
System Mainline Loss (4" Sch-40 Main):	3.03 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	32.69 p.s.i.
Design Pressure:	102.69 p.s.i.

Notes: System requires a minimum of 103 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

3 HYDRAULIC LOSS CHART
SYSTEM 1 - ZONE 2

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 3-1	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	62.0 g.p.m.
Electric Valve Size:	2"
Static Pressure (PUMP SUPPLIED):	90.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	70 p.s.i.
Zone Pipe/Fitting Loss:	1.18 p.s.i.
2" Electric Valve Loss:	2.4 p.s.i.
Elevation Net Loss (+24 FT.):	10.39 p.s.i.
System Mainline Loss (3" Sch-40 Main):	2.20 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	16.17 p.s.i.
Design Pressure:	86.17 p.s.i.

Notes: System requires a minimum of 87 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

8 HYDRAULIC LOSS CHART
SYSTEM 3 - ZONE 1

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 2-1	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	131.0 g.p.m.
Electric Valve Size:	3"
Static Pressure (PUMP SUPPLIED):	100.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	70 p.s.i.
Zone Pipe/Fitting Loss:	5.64 p.s.i.
3" Electric Valve Loss:	2.5 p.s.i.
Elevation Net Loss (+20 FT.):	8.66 p.s.i.
System Mainline Loss (4" Sch-40 Main):	2.42 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	19.22 p.s.i.
Design Pressure:	89.22 p.s.i.

Notes: System requires a minimum of 90 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

5 HYDRAULIC LOSS CHART
SYSTEM 2 - ZONE 1

PRESSURE REQUIREMENT CALCULATIONS @ ZONE No. 1-1	
DESIGN STATISTICS FOR CALCULATIONS	
Total Zone Flow:	129.0 g.p.m.
Electric Valve Size:	3"
Static Pressure (PUMP SUPPLIED):	105.0 p.s.i.
ACCUMULATIVE LOSSES FROM CITY MAIN TO FURTHEST HEAD	
Sprinkler head requirement:	70 p.s.i.
Zone Pipe/Fitting Loss:	4.60 p.s.i.
3" Electric Valve Loss:	2.5 p.s.i.
Elevation Net Loss (+34 FT.):	14.72 p.s.i.
System Mainline Loss (4" Sch-40 Main):	2.27 p.s.i.
Backflow Preventer Loss :	
Water Meter Loss :	
Master Electric Valve Loss :	
Type K Copper Service Loss:	
Total Net Loss:	24.09 p.s.i.
Design Pressure:	94.09 p.s.i.

Notes: System requires a minimum of 95 psi static pressure for system to operate properly. Irrigation Contractor shall conduct on site pressure test to verify site pressure prior to starting work. Contractor shall notify Owner's Representative of pressure deficiencies or any other on site problems that may alter the effectiveness of the system. Pipe has been size to insure that velocity does not exceed 5 FPS. do not change pipe size in the field without consulting system designer.

2 HYDRAULIC LOSS CHART
SYSTEM 1 - ZONE 1

STATION NO.	VALVE SIZE	ZONE GPM	TOTAL RUN TIME	GAL
3-1	2"	62.0	30.0 hr	111,527
3-2	2"	62.0	30.0 hr	111,527
TOTAL			60.0 hr	223,054 gal 29,820 CF

SCHEDULE IS BASED ON DISTRIBUTION OF TOTAL WATER QUALITY VOLUME

7 PROGRAM SCHEDULE & RUN TIMES
SYSTEM 3

STATION NO.	VALVE SIZE	ZONE GPM	TOTAL RUN TIME	GAL
2-1	3"	131.0	29.9 hr	232,707
2-2	3"	131.0	29.9 hr	232,707
TOTAL			59.8 hr	469,340 gal 62,746 CF

SCHEDULE IS BASED ON DISTRIBUTION OF TOTAL WATER QUALITY VOLUME

4 PROGRAM SCHEDULE & RUN TIMES
SYSTEM 2

STATION NO.	VALVE SIZE	ZONE GPM	TOTAL RUN TIME	GAL
1-1	3"	129.0	29.9 hr	230,977
1-2	3"	125.0	29.9 hr	223,815
TOTAL			59.7 hr	454,792 gal 60,801 CF

SCHEDULE IS BASED ON DISTRIBUTION OF TOTAL WATER QUALITY VOLUME

1 PROGRAM SCHEDULE & RUN TIMES
SYSTEM 1

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
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STATE OF TEXAS
WADE O. RADLET
22397
LICENSED
PROFESSIONAL ENGINEER
09.05.25

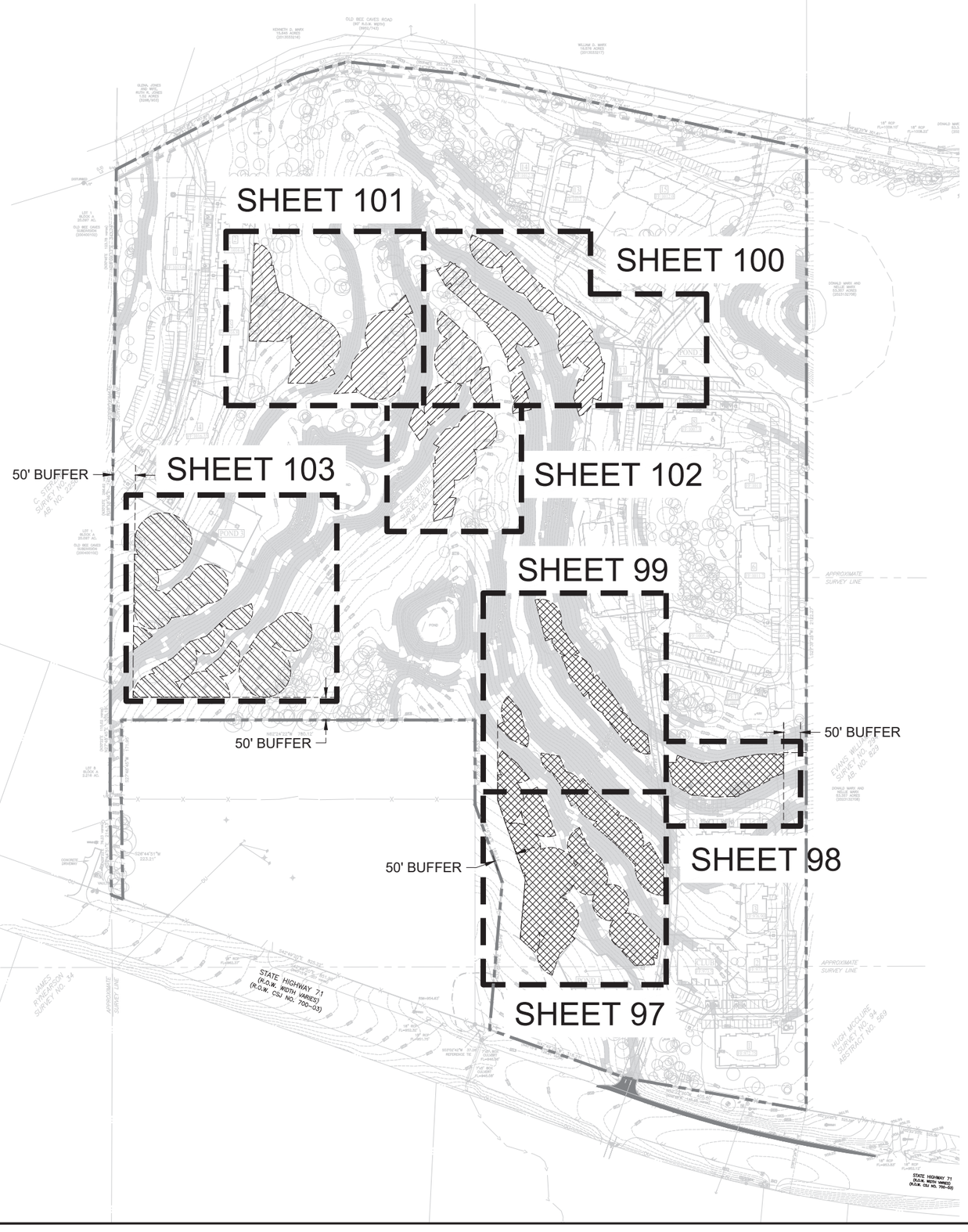
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION CALCULATIONS

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
96
OF 113

SP-2025-00800



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NOTE:
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NOTE:
RECLAIMED CROSSINGS TO BE BELOW POTABLE WATER LINES.

NOTE:
CONTRACTOR TO FOLLOW CHAPTER 290 SUBCHAPTER D TAC 30 FOR POTABLE WATER AND CHAPTER 210 RULES AND REGULATIONS FOR RECLAIMED WATER - CONTRACTOR TO CHECK WITH AUTHORITY HAVING JURISDICTION FOR ALL PIPE LABELING AND SEPARATIONS.

NOTE:
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SYSTEM 1 IRRIGATION AREA:
2.8 ACRES (121,808 SQFT)

SYSTEM 2 IRRIGATION AREA:
3.0 ACRES (130,346 SQFT)

SYSTEM 3 IRRIGATION AREA:
1.7 ACRES (72,541 SQFT)

1 REIRRIGATION AREA LEGEND

NOTE:
ADDITIONAL SOIL AMENDMENTS AND/OR BERMS MAY BE NECESSARY IN THE IRRIGATION FIELDS AT THE DISCRETION OG THE WPD OP INSPECTION STAFF. SOIL AMENDMENTS SHALL COMPLY WITH STANDARD SPECIFICATION 601S, SALVAGING AND PLACING TOPSOIL

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
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STATE OF TEXAS
WADE O. RADLET
22397
LICENSED LANDSCAPE ARCHITECT
09.05.25

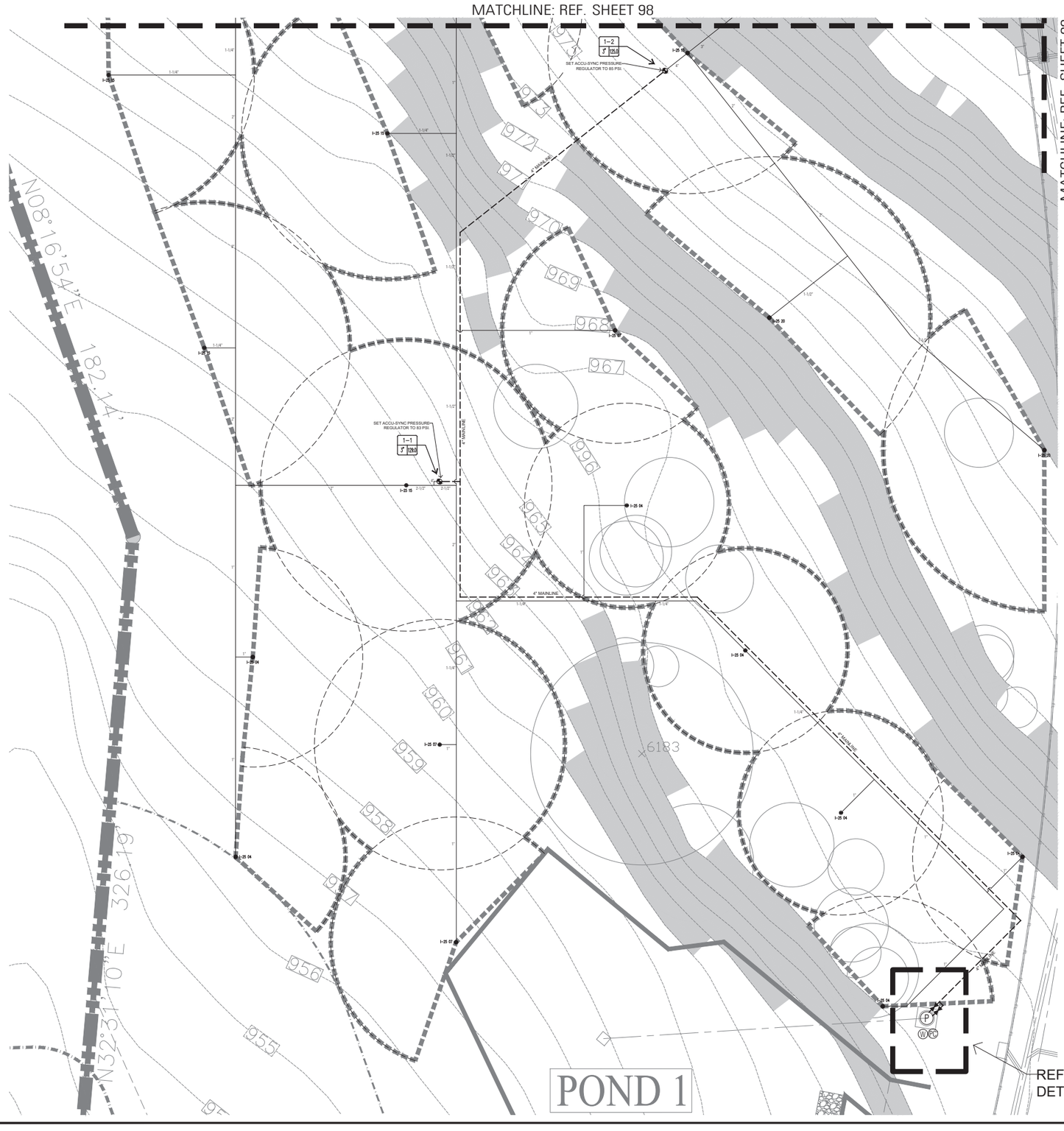
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION OVERALL
REFERENCE PLAN

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
97
OF 113

SP-2025-0080C



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NO MACHINE TRENCHING WITHIN THE DRIPLINE OF EXSITING TREES; REF. NOTE 2.7/SHEET 94

SCALE: 1"=20'

NORTH

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
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STATE OF TEXAS
WADE O. RADLET
22397
REGISTERED LANDSCAPE ARCHITECT
09.05.25

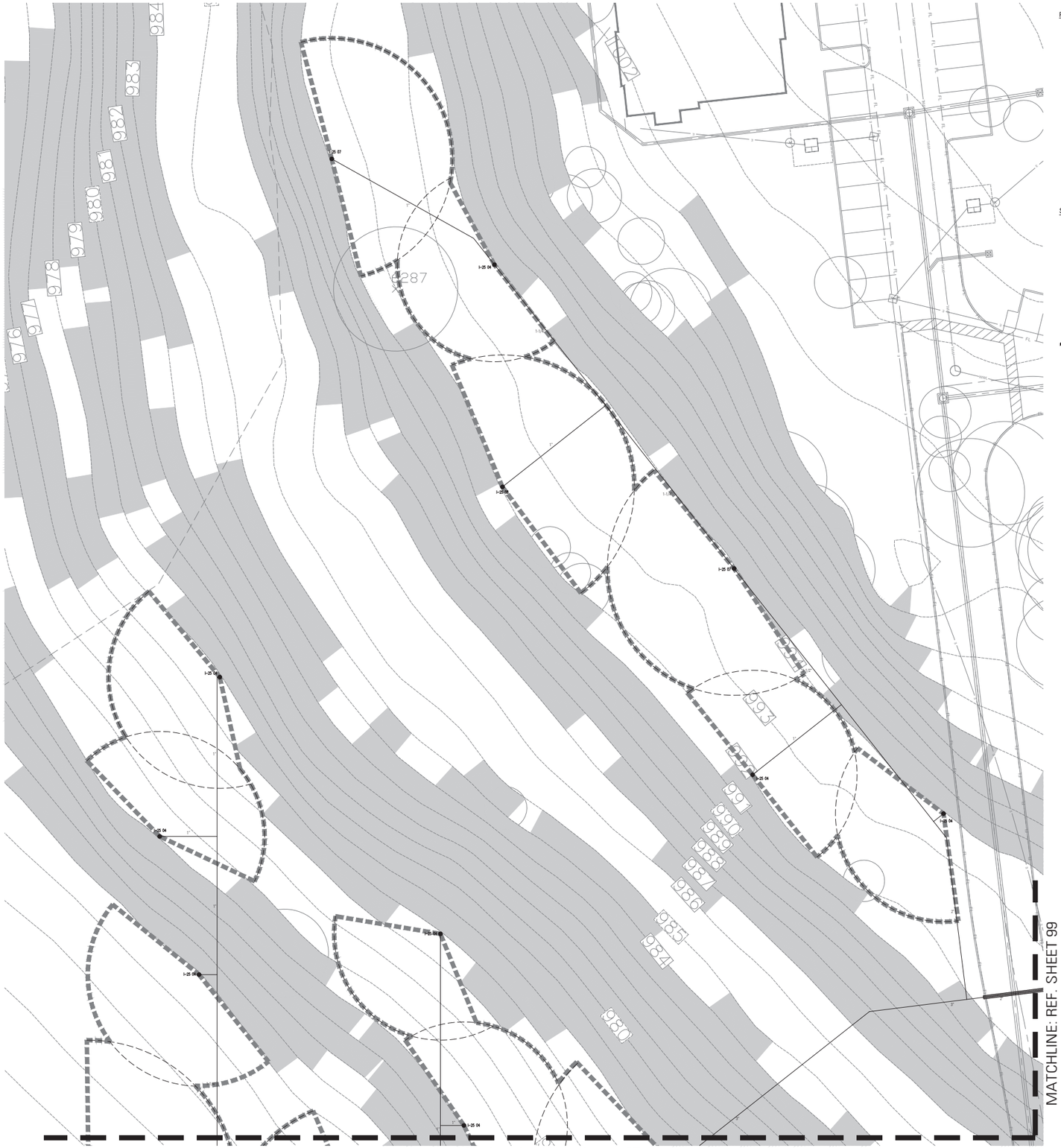
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
98
OF 113

SP-2025-00800



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0 5' 10' 20' 40'
SCALE: 1"=20'

NORTH

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
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GEORGETOWN, TEXAS 78630
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STATE OF TEXAS
WADE O. RADLET
22397
REGISTERED
PROFESSIONAL
ENGINEER
09.05.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 1

Scale:	AS SHOWN
Designed by:	
Drawn by:	
Checked by:	
Date:	AUGUST 2025
Project No.	

SHEET
99
OF 113

SP-2025-0080C

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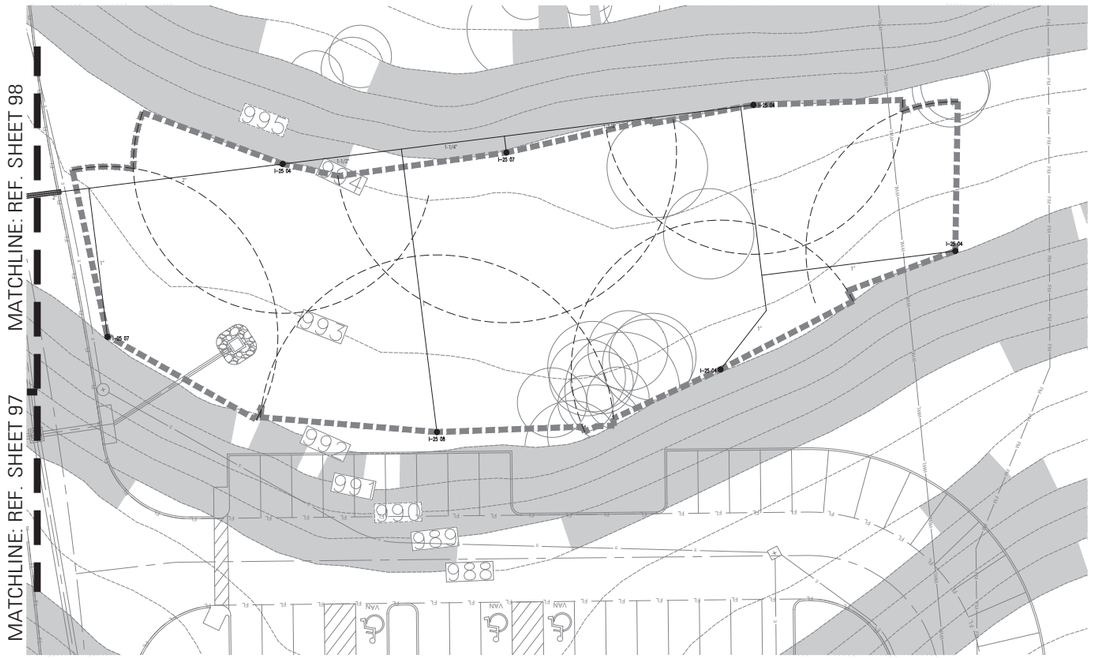

0 5' 10' 20' 40'
SCALE: 1"=20'

NORTH

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
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STATE OF TEXAS
WADE O. RADLET
22397
LICENSED
PROFESSIONAL
ENGINEER
09.05.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
100
OF 113

SP-2025-0080C

NOTE:
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1 REIRRIGATION NOTES

MATCHLINE: REF. SHEET 101

MATCHLINE: REF. SHEET 102

FF:1007.2

FF:1006.0

POND 2

11

REF. PUMP ENLARGEMENT. DETAIL 2/SHEET 106

SET ACCU-SYNC PRESSURE REGULATOR TO 82 PSI.

0 5' 10' 20' 40'
SCALE: 1"=20'

NORTH

No.	Date	Revisions	App.

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TEXAS REGISTRATION F4932
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STATE OF TEXAS
WADE O. RADLET
22397
LICENSED LANDSCAPE ARCHITECT
09.05.25

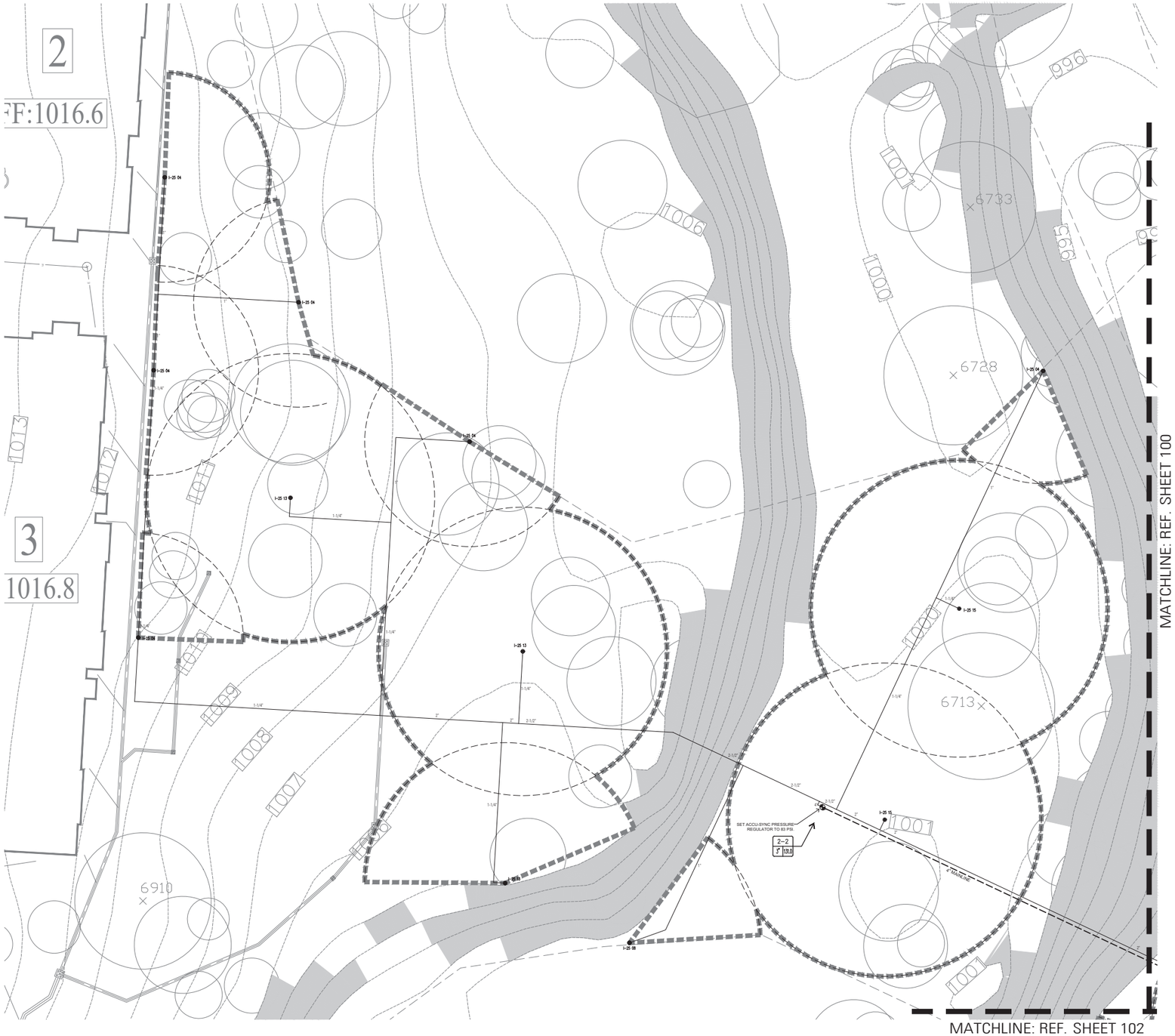
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 2

Scale:	AS SHOWN
Designed by:	
Drawn by:	
Checked by:	
Date:	AUGUST 2025
Project No.	

SHEET
101
OF 113

SP-2025-0080C



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PHOTOGRAPH AND GPS LOCATE ALL RECLAIMED WATER LINES CROSSINGS UNDER DOMESTIC WATER LINES. COORDINATE DATA WITH CIVIL ENGINEER AND OWNER'S RECORDS. REFER TO DTL. 9/SHEET 104. WHERE POSSIBLE ADJUST MAINLINE LOCATION TO AVOID POTABLE WATER CROSSINGS.

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NO MACHINE TRENCHING WITHIN THE DRIPLINE OF EXSITING TREES; REF. NOTE 2.7/SHEET 94

0 5' 10' 20' 40'
SCALE: 1"=20'

NORTH

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4482
FAX (512) 900-7962

STATE OF TEXAS
WADE O. RADLET
22397
REGISTERED
PROFESSIONAL
ENGINEER
09.05.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
102
OF 113

SP-2025-0080C

PIPING AND VALVES

1. All irrigation system distribution and lateral piping (i.e. from the pumps to the spray heads) must be Schedule 40 purple PVC. All pipes and electrical bundles passing beneath driveways or paved areas must be sleeved with PVC Class 200 pipe with solvent welded joints. Sleeve diameter must equal twice that of the pipe or electrical bundle. Buried piping must be marked with detectable marking tape labeled "CAUTION: BURIED NON-POTABLE WATER LINE BELOW".

2. Valves. All valves must be designed specifically for sediment bearing water, and be of appropriate design for the intended purpose. All remote control, gate, and quick coupling valves must be located in ten-inch or larger plastic valve boxes with purple caps. All pipes and valves must be marked to indicate that they contain non-potable water. All piping must be buried to protect it from weather and vandalism. The depth and method of burial must be adequate to protect the pipe from vehicular traffic such as maintenance equipment. Velocities in all pipelines should be sufficient to prevent settling of solids. The irrigation design and layout must be integrated with the tree protection plan and presented as part of the Site Plan or Subdivision Construction Plan.

3. Systems must include a plug valve to allow flushing at the end of every line

SPRINKLERS

1. All sprinkler heads must have full or partial circle rotor pop-up heads and must be capable of delivering the required rate of irrigation over the designated area in a uniform manner. Sprinkler heads should have purple caps to indicate non-potable water. Irrigation must not occur beyond the limits of the designated irrigation area and sprinkler heads should be located at least twice the calculated spray radius from any residential lot. Partial circle sprinkler heads must be used as necessary to prevent irrigation beyond the designated limits. Sprinkler heads must be capable of passing solids that may pass through the intake. Sprinkler heads must be flush mounted and encased within a 2 feet × 2 feet concrete housing capable of protecting the head from mowing and service equipment

1 REIRRIGATION NOTES

NOTE:
THIS IRRIGATION SYSTEM IS DESIGNED FOR RECLAIMED WATER USE. ALL COMPONENTS OF THE SYSTEM ARE TO BE NP (NON-POTABLE PURPLE) COMPLIANT AS SUPPLIED BY THE MANUFACTURER. THE COMPONENTS SHALL MEET ALL TCEQ (TEXAS DEPARTMENT OF ENVIRONMENTAL QUALITY) AND LOCAL GOVERNING AUTHORITY CODES FOR RECLAIMED WATER USE IN LANDSCAPE IRRIGATION SYSTEMS. SIGNAGE AS REQUIRED BY LOCAL AUTHORITY/TCEQ SHALL BE PROVIDED.

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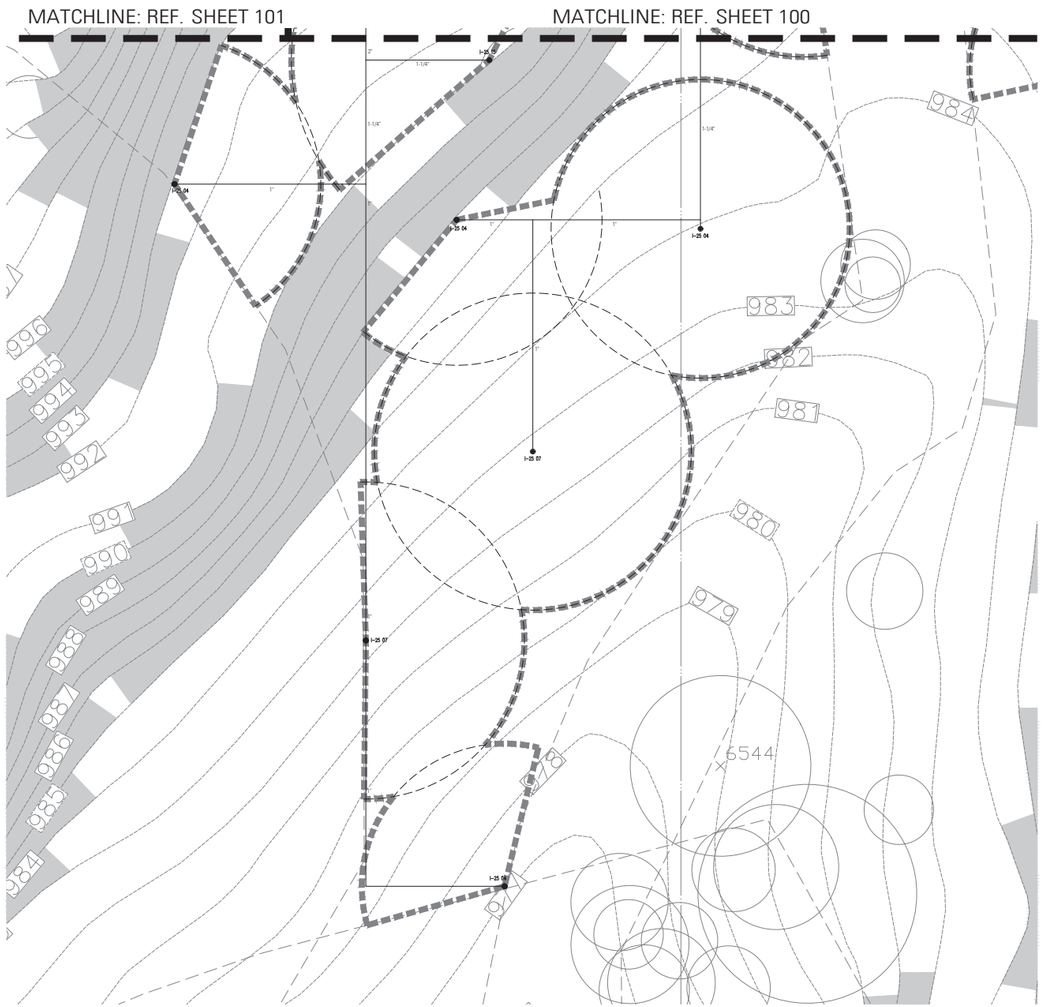

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WADE O. RADLET
22397
REGISTERED
PROFESSIONAL
LANDSCAPE
ARCHITECT
09.05.25

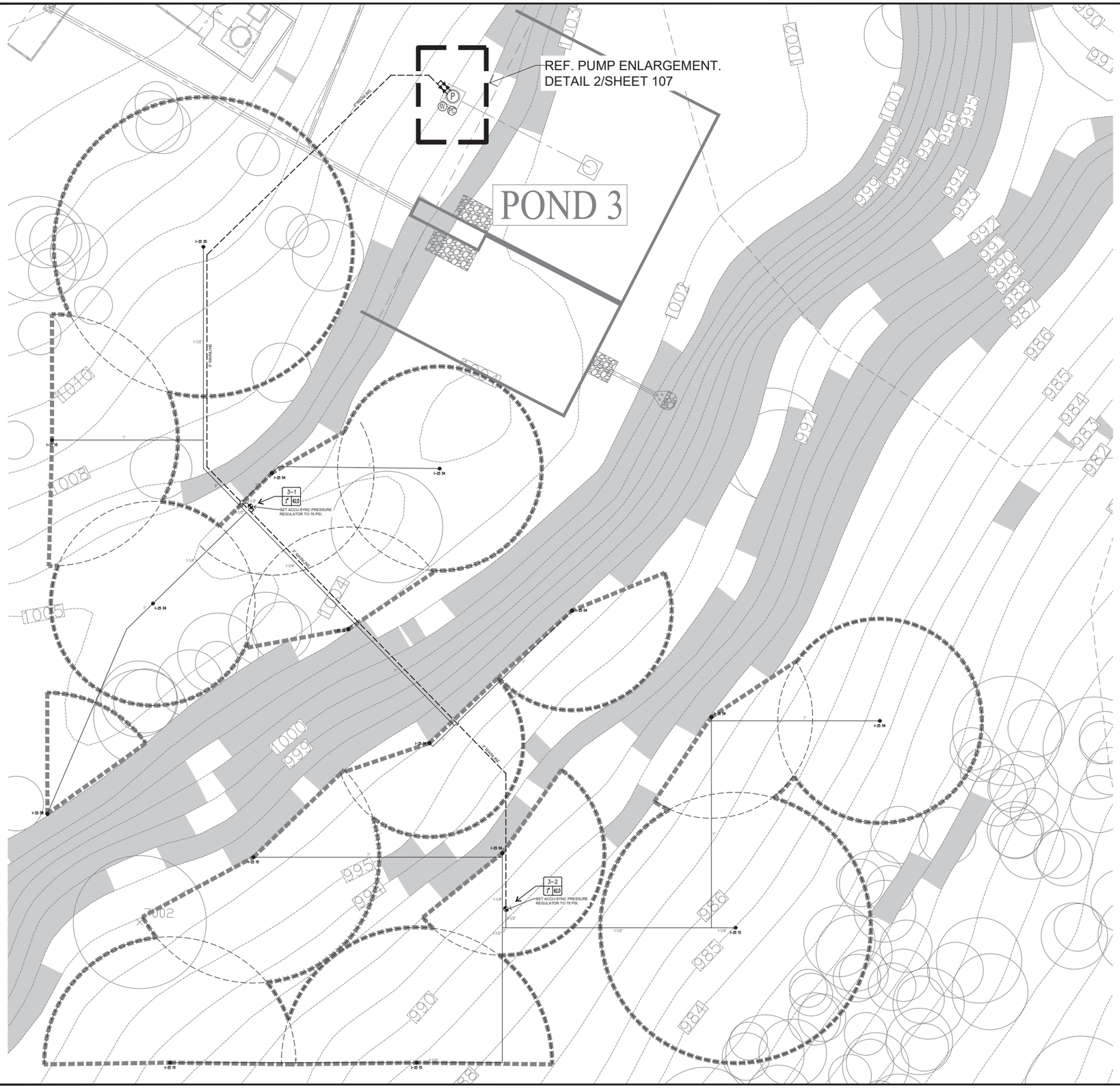
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
103
OF 113

SP-2025-0080C



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WADE O. RADLET
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Wade O. Radlet
09.03.25

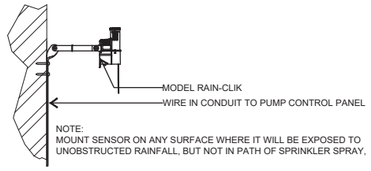
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PLAN
SYSTEM 3

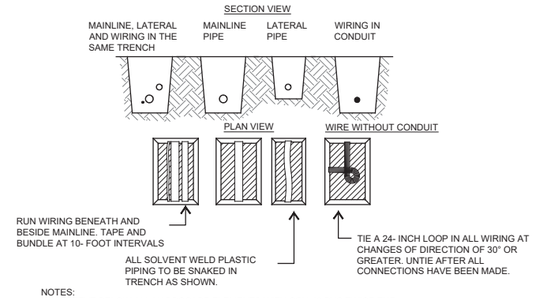
Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
104
OF 113

SP-2025-0080C



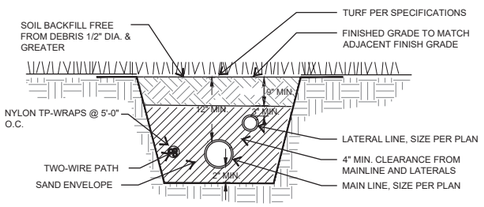
7 WEATHER SENSOR



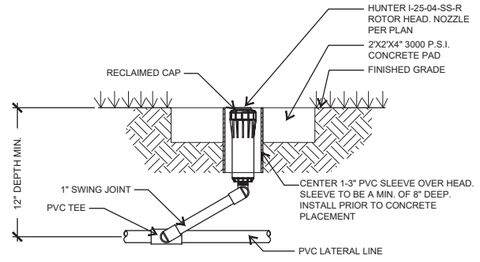
NOTES:
1. SLEEVE BELOW ALL HARDSCAPE ELEMENTS WITH SCH-40 PVC TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE WITHIN
2. FOR PIPE AND WIRE BURIAL DEPTHS SEE TRENCH PROFILE DETAIL

6 IRRIGATION TRENCH

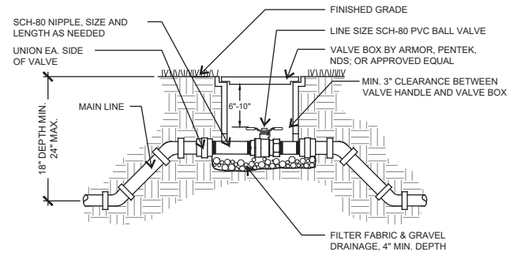
NOTE:
1. MAINLINE DEPTH MAY VARY BETWEEN 12" AND 24" WITH 12" MIN. AT TOP OF PIPE
2. LATERAL DEPTH MAY VARY BETWEEN 12" AND 18" WITH 12" MIN.
3. SAND ENVELOPE SHALL BE INSTALLED IF ROCK IS PRESENT



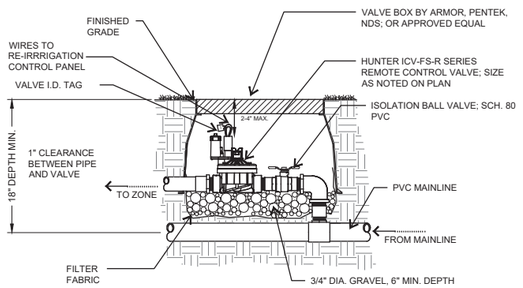
5 IRRIGATION TRENCH - PROFILE



3 TURF ROTOR



2 MANUAL ISOLATION VALVE

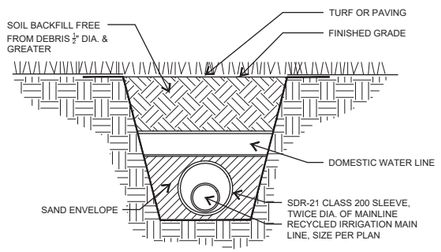


1 ZONE VALVE

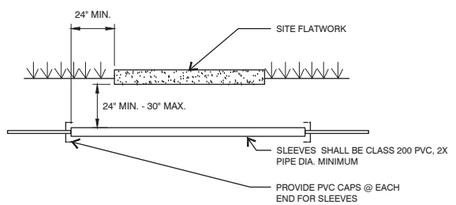
NOTES:
1. SIGNS MUST BE DISPLAYED AT ALL LOCATIONS REQUIRED PER TCEQ SPECIFICATIONS/REQUIREMENTS.
2. SIGNS MUST BE APPROVED FOR USE BY LOCAL GOVERNING AUTHORITY.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE LAWS AND ORDINACES GOVERNING THE USE OF RECYCLED WATER FOR IRRIGATION PURPOSES IN SAN ANTONIO AND TO ABIDE BY THOSE LAWS THROUGHOUT THE PROJECT.

9 RECLAIMED WATER USE SIGN

NOTE:
1. MAINLINE DEPTH MAY VARY WHEN CROSSING UNDER DOMESTIC WATER LINE.
2. NON-POTABLE IRRIGATION MAINLINE MUST BE ENCASED IN SLEEVING WHEN CROSSING UNDER DOMESTIC WATER LINES.
3. NON-POTABLE IRRIGATION MAIN MUST CROSS UNDER ALL DOMESTIC WATER LINES.
4. GPS LOCATE ALL CROSSINGS OF RECYCLED WATER LINE AND POTABLE WATER LINES. PROVIDE GPS COORDINATES ON AS-BUILD DRAWINGS AND INDICATE CLOSEST LOCATION ON PLANS.



8 POTABLE WATER CROSSING



NOTE:
1. PROVIDE DIMENSIONED LOCATIONS OF ALL SLEEVES ON RECORD DRAWINGS.
2. NEW SLEEVE INSTALLATIONS TO BE MARKED ON BOTH SIDES OF THE STREET WITH
3. ALL NEW SLEEVES INSTALLED SHALL BE TWICE THE DIAMETER OF PIPE TO BE ACCOMMODATED.
4. MAINLINE SLEEVES SHALL HAVE AN ADDITIONAL 2" SCH-40 PVC SLEEVE FOR WIRES.

4 IRRIGATION SLEEVE

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LICENSED IRRIGATION
09.05.25

MARX MULTIFAMILY
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REIRRIGATION DETAILS

Scale: AS SHOWN
Designed by:
Drawn by:
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Date: AUGUST 2025
Project No.

SHEET
105
OF 113

SP-2025-00800

WATER QUALITY POND 1				
REIRRIGATION CALCULATIONS				
			Provided	
Water Quality Volume		(=WQV)	60,801	cf
Soil Permeabilty			0.2	in/hr
Irrigation Flow Rate		(=Qi)	127	gal/min
Irrigation Area		(=A)	2.80	ac
Irrigation Zones		(=Z)	2	
Irrigation Time		= (7.48*WQV)/(Qi*60)	60	hr
Application Rate		=(96.25*Qi*Z)/(43,560*A)	0.20	in/hr

4 REIRRIGATION WATER DISTRIBUTION CALCULATIONS

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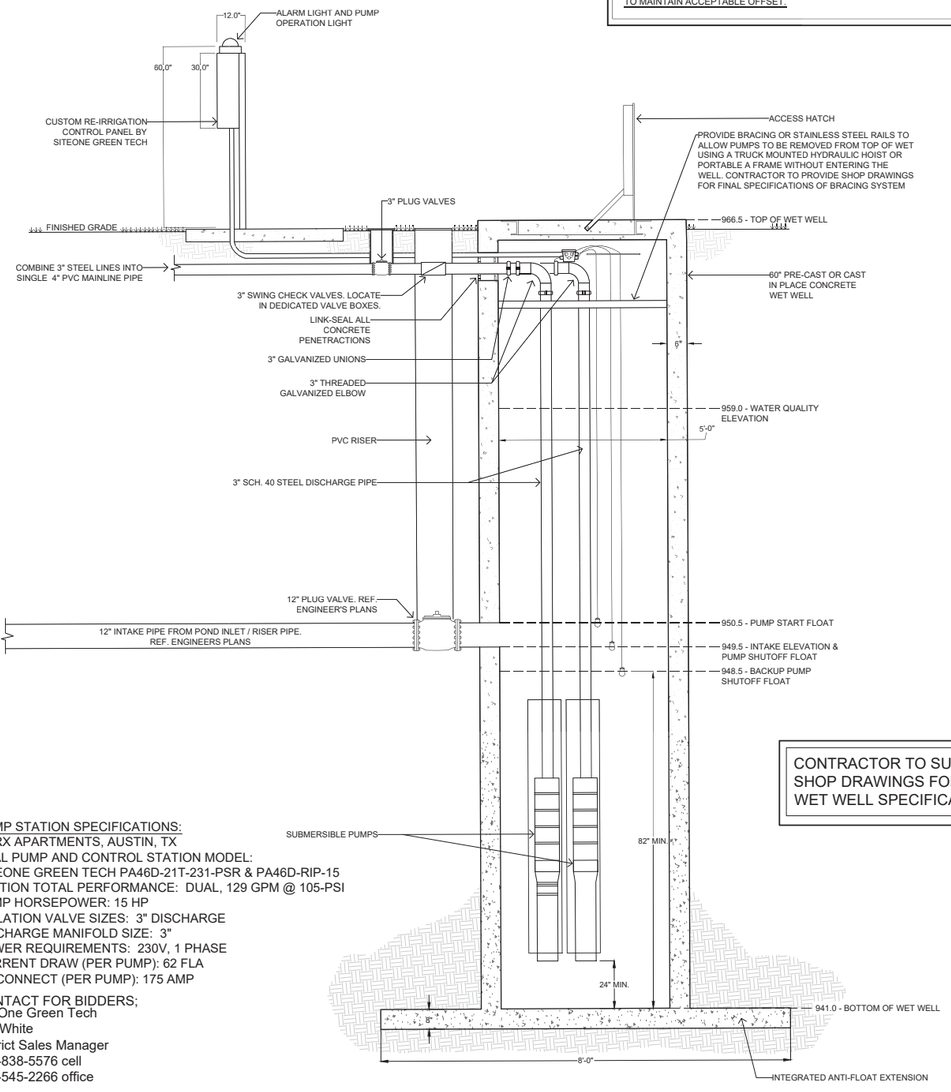


CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR FINAL WET WELL SPECIFICATIONS

PUMP STATION SPECIFICATIONS:
MARX APARTMENTS, AUSTIN, TX
DUAL PUMP AND CONTROL STATION MODEL:
SITEONE GREEN TECH PA46D-21T-231-PSR & PA46D-RIP-15
STATION TOTAL PERFORMANCE: DUAL, 129 GPM @ 105-PSI
PUMP HORSEPOWER: 15 HP
ISOLATION VALVE SIZES: 3" DISCHARGE
DISCHARGE MANIFOLD SIZE: 3"
POWER REQUIREMENTS: 230V, 1 PHASE
CURRENT DRAW (PER PUMP): 62 FLA
DISCONNECT (PER PUMP): 175 AMP

CONTACT FOR BIDDERS;
SiteOne Green Tech
Jim White
District Sales Manager
210-838-5576 cell
210-545-2266 office

1 REIRRIGATION PUMPS - SECTION

NOT TO SCALE

Buoyancy Calculations

Wet well Outide Dimensions	**6.00**	Feet
Wet well Inside Dimensions	5.00	Feet
Wet well Top Slab Elevation	966.50	Feet
Wet well Bottom Elevation	941.00	Feet
Extended Base Slab Diameter	**8.00**	Feet
Extended Base Slab Thickness	**0.67**	Feet
Top Slab Thickness	**0.67**	Feet

Calculate Total Volume of Wet well Structure

Volume of Wet well Riser Sections=	721	cf
Volume of Wet well Extended Base=	33	cf
Total Volume of Wet well Structure=	754	cf

Calculate Toal Volume of Water Displaced

H20 Displaced = (Volume of Wet well Structure) * (62.4 lbs/cf)

H20 Displaced= 47057 lbs

Calculate Weight of Wet well Components

Section	Total Ht	Weight
Top Slab Thickness (ft.)	0.67	2827
Riser - Total Vertical Ft.	25.50	33046
Base Slab Thickness (ft.)	0.67	5027
Totals=	26.83333	40900

Total Weight of Concrete in Wet well= 40900 lbs.

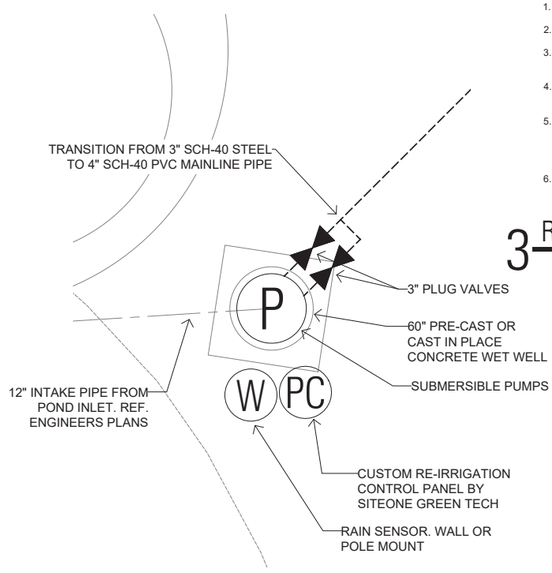
Calculate Submerged Weight of Soil Above Extended Base/Footing

Total Area of *Extended Base*	50	sf
Total Area of Wet well Riser	28	sf
Area of Extended Base less Wet well	22	sf
Height of Soil Above Extended Base	20	f
Volume of Soil Above Extended Base	440	cf
Weight of Soil Above Extended Base (estimated)	**50**	lbs/cf
Total Weight of Soil Above Extended Base	21991	lbs/cf

Flotation Protection Required?

Weight of Concrete and Weight of Soil Above Extended Base:	62891	lbs
Weight of Water Displaced By Wet Well:	47057	lbs
Flotation Protection Required?	NO	

5 WET WELL BUOYANCY CALCULATIONS



2 REIRRIGATION PUMPS - PLAN

NOT TO SCALE

PUMPS

1. The retention basin must be emptied within 72-hours after a rain event ends. Emptying of the retention basin must not begin sooner than 12 hours after the end of the rainfall event. The flow rate of the pumps (gpm) shall be designed with either a 30 hour or 60 hour drawdown time (30 hrs for single zone irrigation systems and 60 hrs for multi-zone).
2. Pumps must be capable of delivering the required volume of water at the necessary rate and pressure to the irrigation system in the designated time period. Pumps and wet well must be sized to minimize the number of on and off-cycles of the pumps. The rateof inflow from the retention pond Intake Riser (see 1.6.7(A)(3)(c)) to the wet well must exceed the pump rate.
3. A dual pump system must be provided, with each pump capable of delivering 100 percent of the design capacity.
   (a) Plug valves must be located outside the wet well on the discharge side of each pump to isolate the pumps for maintenance and for throttling if necessary. Butterfly valves and gate valves must not be used.
   (b) Check valve(s) must be provided to prevent backflow from the irrigation system back into the pump well.
   (c) Pumps must be selected to operate within 20% of their best operating efficiency.
4. Pump Operation.
   (a) The pumps must alternate on start up. The control logic must allow the system to operate normally with only one pump in service.
   (b) A manual control must be provided so both pumps can be turned on if necessary.
   (c) A high/low-pressure pump shut off system (to detect line clogging or breaking) shall be installed in the pump discharge piping. As an alternative, an amp draw (overloads) or other equivalent monitoring device may be used.
5. Float controls or submersible transducers must be provided to control operation of the pumps. Three control settings must be used: (1) one for starting the pump, (2) one for shutting off the pump at the normal low water level, and (3) one for back up shut off of the pump in case the first shut-off fails.
6. An alarm system shall be provided consisting of a red light located at a height of at least five feet above the ground level at the wet well. The alarm shall activate when:
   (a) The water level is below the primary shutoff float and the pump has not turned off.
   (b) The high/low-pressure pump shut off switch has been activated.
   (c) Any other pump failures or system shut down indicated by control panel.

   The alarm must be vandal proof and weather resistant. If the system is to be privately maintained, a sign must be placed at the wet well clearly displaying the name and phone number of a responsible party that may be contacted if the alarm is activated.
7. A green "pump run light" shall be provided which is activated any time a pump is running. The green light should be located directly adjacent to the red alarm light.

WET WELL

1. A separate wet well outside of the basin must be provided for the pumps. The wet well must be constructed of precast or cast in place concrete. Complete access to the pumps and other internal components of the wet well for maintenance must be provided through a lockable hatch cover. An isolation plug valve to prevent flow from the retention basin to the wet well during maintenance activities must be provided.
2. Calculations must be provided with the design showing that the wet well will not float under saturated-soil conditions. The top elevation of the well must be higher than the water quality elevation. The wet well, lateral inflow pipe, and pump must be designed to completely evacuate the retention pond. A space of at least two feet must be available below the bottom of the pump intake. The two-foot minimum space below the bottom of the pump may be waived if the applicant demonstrates that adequate filtration of the water quality volume is provided.
3. The pump installation in the wet well and access to the wet well must be designed to allow the pumps to be removed using truck-mounted hydraulic hoist equipment or a portable "A-frame." A system must be provided to allow pump removal without entering the wet well. If rails are used they must be stainless steel.

IRRIGATION TIMING

1. The retention basin must be emptied within 72-hours after a rain event ends.
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3. The irrigation controller must be set to provide alternating, equivalent irrigation and rest periods until the basin is emptied.
4. The time of irrigation on any area must not exceed the rest time. Continuous application on any area must not exceed two hours.
5. An adjustable rain sensor must be provided which will normally be set to temporarily halt irrigation during rainfalls exceeding one half inch. The rain sensor must be able to interrupt irrigation (stop pumps) in the event of subsequent rain events prior to emptying basin. The 12 hour pump delay may initiate after the rain sensor senses the rain event has terminated.
6. Division of the irrigation area into two or more sections such that irrigation occurs alternately in each section is an acceptable way to meet the requirement for a rest period

3 RE-IRRIGATION SYSTEM GUIDELINES

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
GEORGETOWN, TEXAS 78630
PHONE (512) 354-4482
FAX (512) 900-7962

STATE OF TEXAS
WADE O. RADLET
22397
LICENSED PROFESSIONAL ENGINEER
09.03.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PUMP DETAILS
SYSTEM 1

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
106
OF 113

SP-2025-0080C

WATER QUALITY POND 2				
REIRRIGATION CALCULATIONS				
			Provided	
Water Quality Volume		(=WQV)	62,746	cf
Soil Permeabilty			0.2	in/hr
Irrigation Flow Rate		(=Qi)	131	gal/min
Irrigation Area		(=A)	2.99	ac
Irrigation Zones		(=Z)	2	
Irrigation Time	= (7.48*WQV)/(Qi*60)		60	hr
Application Rate	=(96.25*Qi*Z)/(43,560*A)		0.19	in/hr

4 REIRRIGATION WATER DISTRIBUTION CALCULATIONS

NOTE:
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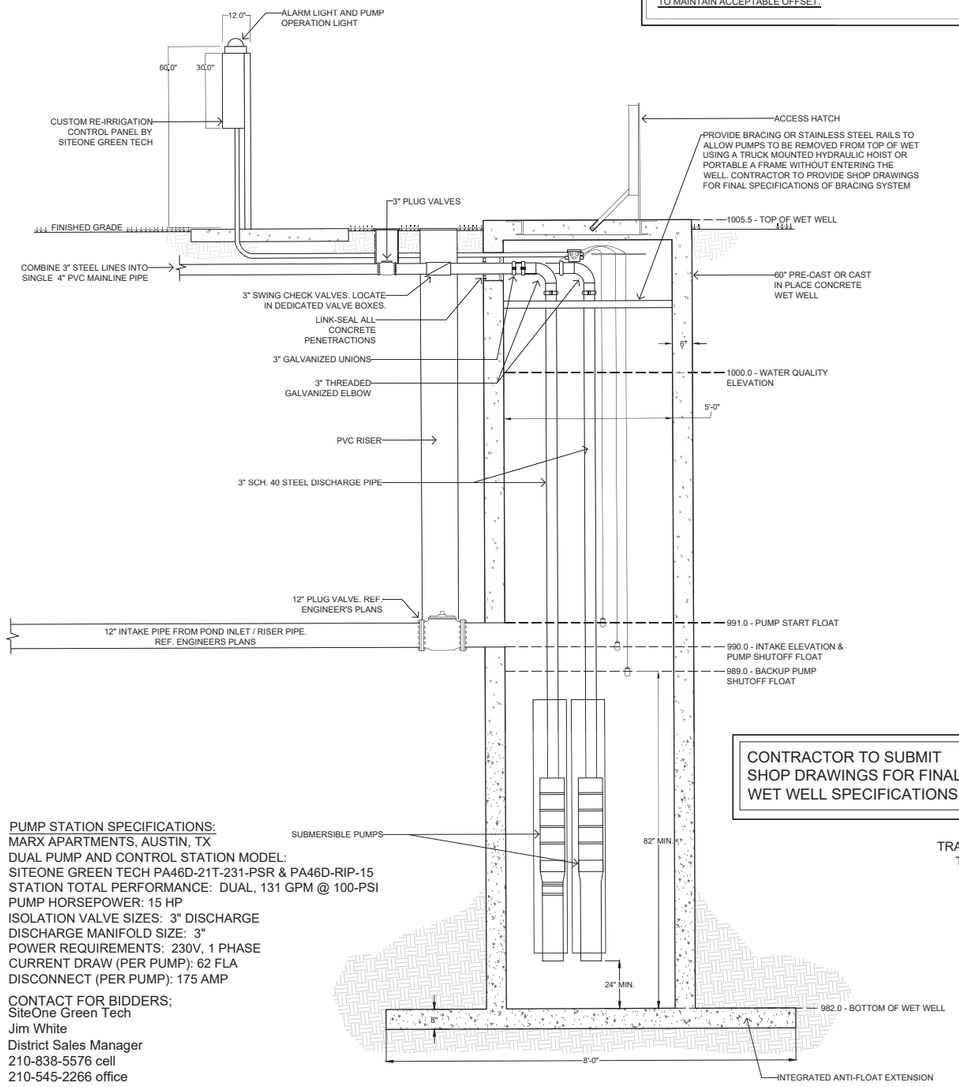
NOTE:
ALL POTABLE WATER CROSSINGS SLEEVES SHALL EXTEND 9' HORIZONTALLY FROM THE CENTER LINE OF THE POTABLE PIPE ON BOTH SIDES OF THE CROSSING AND BE PROPERLY IDENTIFIED.

NOTE:
RECLAIMED CROSSINGS TO BE BELOW POTABLE WATER LINES.

NOTE:
CONTRACTOR TO FOLLOW CHAPTER 290 SUBCHAPTER D TAC 30 FOR POTABLE WATER AND CHAPTER 210 RULES AND REGULATIONS FOR RECLAIMED WATER - CONTRACTOR TO CHECK WITH AUTHORITY HAVING JURISDICTION FOR ALL PIPE LABELING AND SEPARATIONS.

NOTE:
PHOTOGRAPH AND GPS LOCATE ALL RECLAIMED WATER LINES CROSSINGS UNDER DOMESTIC WATER LINES. COORDINATE DATA WITH CIVIL ENGINEER AND OWNER'S RECORDS. REFER TO DTL. 9/SHEET 104. WHERE POSSIBLE ADJUST MAINLINE LOCATION TO AVOID POTABLE WATER CROSSINGS.

NOTE:
THE IRRIGATION MAINLINE SHALL BE INSTALLED NO CLOSER THEN 9 FEET IN ALL DIRECTIONS FROM WATER/WASTEWATER/DRAIN COLLECTION FACILITIES. ALL SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES. ADJUST IRRIGATION MAINLINE AS NEEDED TO MAINTAIN ACCEPTABLE OFFSET.



CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR FINAL WET WELL SPECIFICATIONS

PUMP STATION SPECIFICATIONS:
MARX APARTMENTS, AUSTIN, TX
DUAL PUMP AND CONTROL STATION MODEL:
SITEONE GREEN TECH PA46D-21T-231-PSR & PA46D-RIP-15
STATION TOTAL PERFORMANCE: DUAL, 131 GPM @ 100-PSI
PUMP HORSEPOWER: 15 HP
ISOLATION VALVE SIZES: 3" DISCHARGE
DISCHARGE MANIFOLD SIZE: 3"
POWER REQUIREMENTS: 230V, 1 PHASE
CURRENT DRAW (PER PUMP): 62 FLA
DISCONNECT (PER PUMP): 175 AMP

CONTACT FOR BIDDERS;
SiteOne Green Tech
Jim White
District Sales Manager
210-838-5576 cell
210-545-2266 office

1 REIRRIGATION PUMPS - SECTION

NOT TO SCALE

Buoyancy Calculations

Wet well Outide Dimensions	**6.00**	Feet
Wet well Inside Dimensions	5.00	Feet
Wet well Top Slab Elevation	1005.50	Feet
Wet well Bottom Elevation	98[illegible].00	Feet
Extended Base Slab Diameter	**8.00**	Feet
Extended Base Slab Thickness	**0.67**	Feet
Top Slab Thickness	**0.67**	Feet

Calculate Total Volume of Wet well Structure

Volume of Wet well Riser Sections=	664	cf
Volume of Wet well Extended Base=	33	cf
Total Volume of Wet well Structure=	698	cf

Calculate Toal Volume of Water Displaced

H20 Displaced = (Volume of Wet well Structure) * (62.4 lbs/cf)

H20 Displaced= 43530 lbs

Calculate Weight of Wet well Components

Section	Total Ht	Weight
Top Slab Thickness (ft.)	0.67	2827
Riser - Total Vertical Ft.	23.50	30454
Base Slab Thickness (ft.)	0.67	5027
Totals=	24.83333	38308

Total Weight of Concrete in Wet well= 38308 lbs.

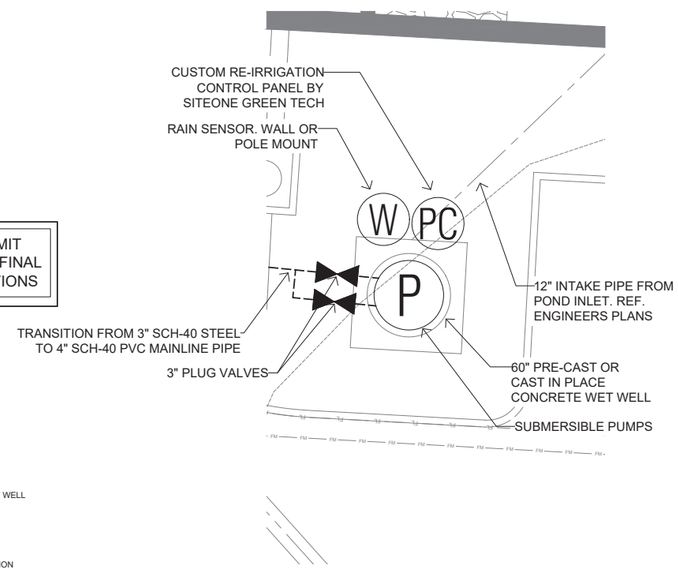
Calculate Submerged Weight of Soil Above Extended Base/Footing

Total Area of *Extended Base*	50	sf
Total Area of Wet well Riser	28	sf
Area of Extended Base less Wet well	22	sf
Height of Soil Above Extended Base	20	f
Volume of Soil Above Extended Base	440	cf
Weight of Soil Above Extended Base (estimated)	**50**	lbs/cf
Total Weight of Soil Above Extended Base	21991	lbs/cf

Flotation Protection Required?

Weight of Concrete and Weight of Soil Above Extended Base:	60299	lbs
Weight of Water Displaced By Wet Well:	43530	lbs
Flotation Protection Required?	NO	

5 WET WELL BUOYANCY CALCULATIONS



2 REIRRIGATION PUMPS - PLAN

NOT TO SCALE

PUMPS

1. The retention basin must be emptied within 72-hours after a rain event ends. Emptying of the retention basin must not begin sooner than 12 hours after the end of the rainfall event. The flow rate of the pumps (gpm) shall be designed with either a 30 hour or 60 hour drawdown time (30 hrs for single zone irrigation systems and 60 hrs for multi-zone).
2. Pumps must be capable of delivering the required volume of water at the necessary rate and pressure to the irrigation system in the designated time period. Pumps and wet well must be sized to minimize the number of on and off-cycles of the pumps. The rateof inflow from the retention pond Intake Riser (see 1.6.7(A)(3)(c)) to the wet well must exceed the pump rate.
3. A dual pump system must be provided, with each pump capable of delivering 100 percent of the design capacity.
   (a) Plug valves must be located outside the wet well on the discharge side of each pump to isolate the pumps for maintenance and for throttling if necessary. Butterfly valves and gate valves must not be used.
   (b) Check valve(s) must be provided to prevent backflow from the irrigation system back into the pump well.
   (c) Pumps must be selected to operate within 20% of their best operating efficiency.
4. Pump Operation.
   (a) The pumps must alternate on start up. The control logic must allow the system to operate normally with only one pump in service.
   (b) A manual control must be provided so both pumps can be turned on if necessary.
   (c) A high/low-pressure pump shut off system (to detect line clogging or breaking) shall be installed in the pump discharge piping. As an alternative, an amp draw (overloads) or other equivalent monitoring device may be used.
5. Float controls or submersible transducers must be provided to control operation of the pumps. Three control settings must be used: (1) one for starting the pump, (2) one for shutting off the pump at the normal low water level, and (3) one for back up shut off of the pump in case the first shut-off fails.
6. An alarm system shall be provided consisting of a red light located at a height of at least five feet above the ground level at the wet well. The alarm shall activate when:
   (a) The water level is below the primary shutoff float and the pump has not turned off.
   (b) The high/low-pressure pump shut off switch has been activated.
   (c) Any other pump failures or system shut down indicated by control panel.

   The alarm must be vandal proof and weather resistant. If the system is to be privately maintained, a sign must be placed at the wet well clearly displaying the name and phone number of a responsible party that may be contacted if the alarm is activated.
7. A green "pump run light" shall be provided which is activated any time a pump is running. The green light should be located directly adjacent to the red alarm light.

WET WELL

1. A separate wet well outside of the basin must be provided for the pumps. The wet well must be constructed of precast or cast in place concrete. Complete access to the pumps and other internal components of the wet well for maintenance must be provided through a lockable hatch cover. An isolation plug valve to prevent flow from the retention basin to the wet well during maintenance activities must be provided.
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IRRIGATION TIMING

1. The retention basin must be emptied within 72-hours after a rain event ends.
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3 RE-IRRIGATION SYSTEM GUIDELINES

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
GEORGETOWN, TEXAS 78630
PHONE (512) 354-4482
FAX (512) 900-7962

STATE OF TEXAS
WADE O. RADLET
22397
LICENSED PROFESSIONAL ENGINEER
09.03.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PUMP DETAILS
SYSTEM 2

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

SHEET
107
OF 113

SP-2025-0080C

WATER QUALITY POND 3				
REIRRIGATION CALCULATIONS				
			Provided	
Water Quality Volume		(=WQV)	29,820	cf
Soil Permeabilty			0.2	in/hr
Irrigation Flow Rate		(=Qi)	62	gal/min
Irrigation Area		(=A)	1.67	ac
Irrigation Zones		(=Z)	2	
Irrigation Time	= (7.48*WQV)/(Qi*60)		60	hr
Application Rate	=(96.25*Qi*Z)/(43,560*A)		0.16	in/hr

NOTE:
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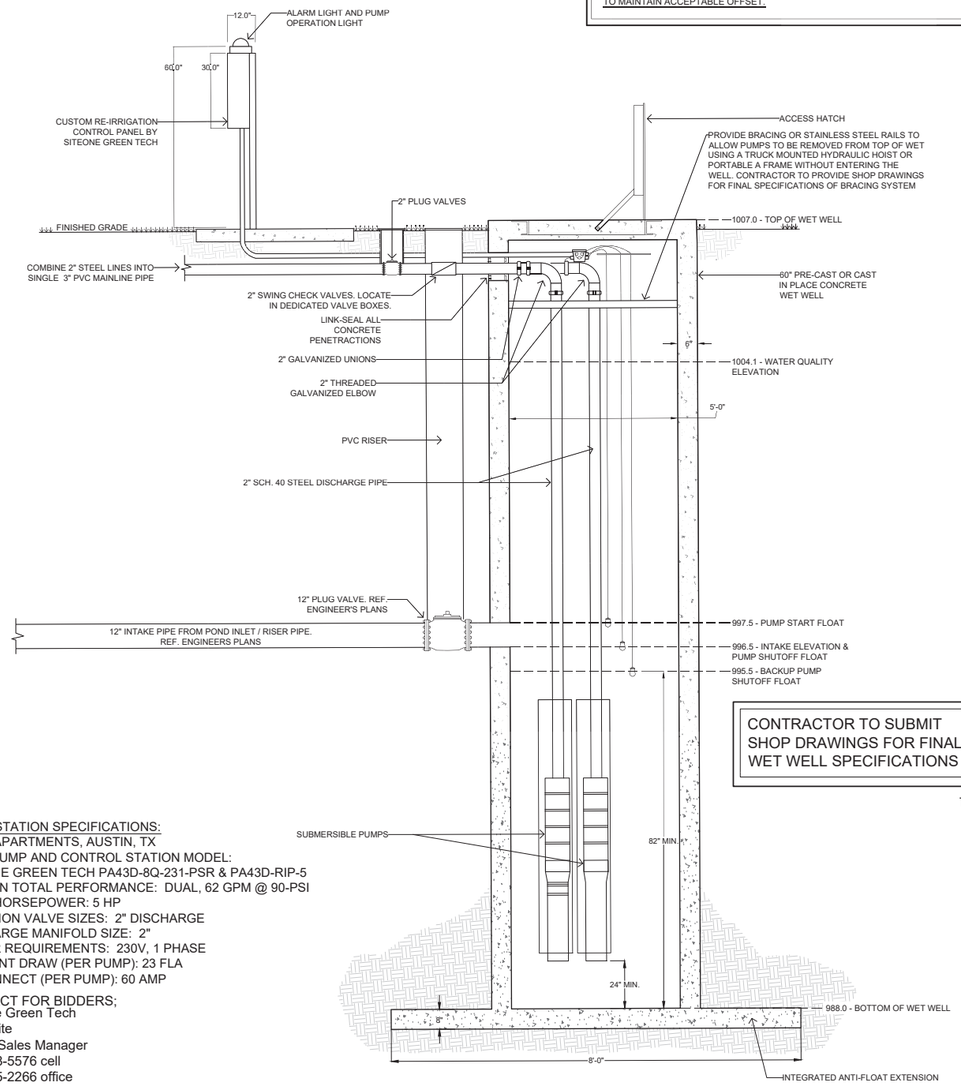
4 REIRRIGATION WATER DISTRIBUTION CALCULATIONS



CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR FINAL WET WELL SPECIFICATIONS

PUMP STATION SPECIFICATIONS:
MARX APARTMENTS, AUSTIN, TX
DUAL PUMP AND CONTROL STATION MODEL:
SITEONE GREEN TECH PA43D-8Q-231-PSR & PA43D-RIP-5
STATION TOTAL PERFORMANCE: DUAL, 62 GPM @ 90-PSI
PUMP HORSEPOWER: 5 HP
ISOLATION VALVE SIZES: 2" DISCHARGE
DISCHARGE MANIFOLD SIZE: 2"
POWER REQUIREMENTS: 230V, 1 PHASE
CURRENT DRAW (PER PUMP): 23 FLA
DISCONNECT (PER PUMP): 60 AMP

CONTACT FOR BIDDERS;
SiteOne Green Tech
Jim White
District Sales Manager
210-838-5576 cell
210-545-2266 office

1 REIRRIGATION PUMPS - SECTION
NOT TO SCALE

Buoyancy Calculations

Wet well Outside Dimensions	**6.00**	Feet
Wet well Inside Dimensions	5.00	Feet
Wet well Top Slab Elevation	1007.00	Feet
Wet well Bottom Elevation	988.00	Feet
Extended Base Slab Diameter	**8.00**	Feet
Extended Base Slab Thickness	**0.67**	Feet
Top Slab Thickness	**0.67**	Feet

Calculate Total Volume of Wet well Structure

Volume of Wet well Riser Sections=	537	cf
Volume of Wet well Extended Base=	33	cf
Total Volume of Wet well Structure=	570	cf

Calculate Toal Volume of Water Displaced

H20 Displaced = (Volume of Wet well Structure) * (62.4 lbs/cf)

H20 Displaced= 35595 lbs

Calculate Weight of Wet well Components

Section	Total Ht	Weight
Top Slab Thickness (ft.)	0.67	2827
Riser - Total Vertical Ft.	19.00	24622
Base Slab Thickness (ft.)	0.67	5027
Totals=	20.33333	32476

Total Weight of Concrete in Wet well= 32476 lbs.

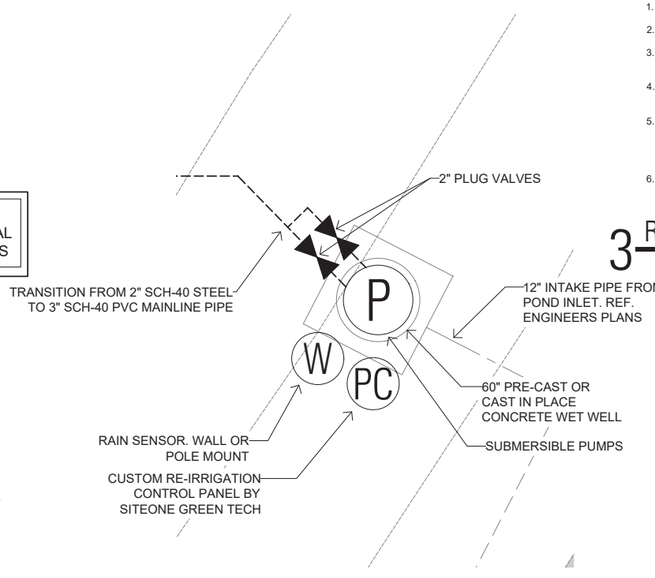
Calculate Submerged Weight of Soil Above Extended Base/Footing

Total Area of *Extended Base*	50	sf
Total Area of Wet well Riser	28	sf
Area of Extended Base less Wet well	22	sf
Height of Soil Above Extended Base	20	f
Volume of Soil Above Extended Base	440	cf
Weight of Soil Above Extended Base (estimated)	**50**	lbs/cf
Total Weight of Soil Above Extended Base	21991	lbs/cf

Flotation Protection Required?

Weight of Concrete and Weight of Soil Above Extended Base:	54467	lbs
Weight of Water Displaced By Wet Well:	35595	lbs
Flotation Protection Required?	NO	

5 WET WELL BUOYANCY CALCULATIONS



2 REIRRIGATION PUMPS - PLAN
NOT TO SCALE

PUMPS

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3 RE-IRRIGATION SYSTEM GUIDELINES

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
AUSTIN, TEXAS 78630
PHONE (512) 354-4482
FAX (512) 900-7962

STATE OF TEXAS
WADE O. RADLET
22397
LICENSED PROFESSIONAL ENGINEER
09.03.25

MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

REIRRIGATION PUMP DETAILS
SYSTEM 3

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

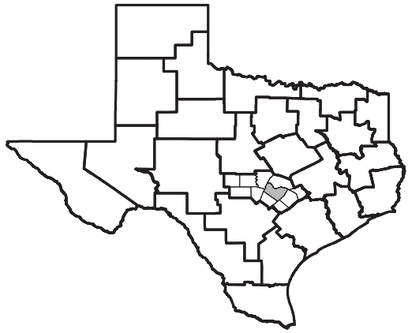
SHEET
108
OF 113

SP–2025–0080C

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		1

STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
STATE HIGHWAY IMPROVEMENT



POSTED SPEED: 55 MPH

FINAL PLANS

LETTING DATE: _____

DATE CONTRACTOR BEGAN WORK: _____

DATE WORK WAS COMPLETED & ACCEPTED: _____

FINAL CONTRACT COST: $_____

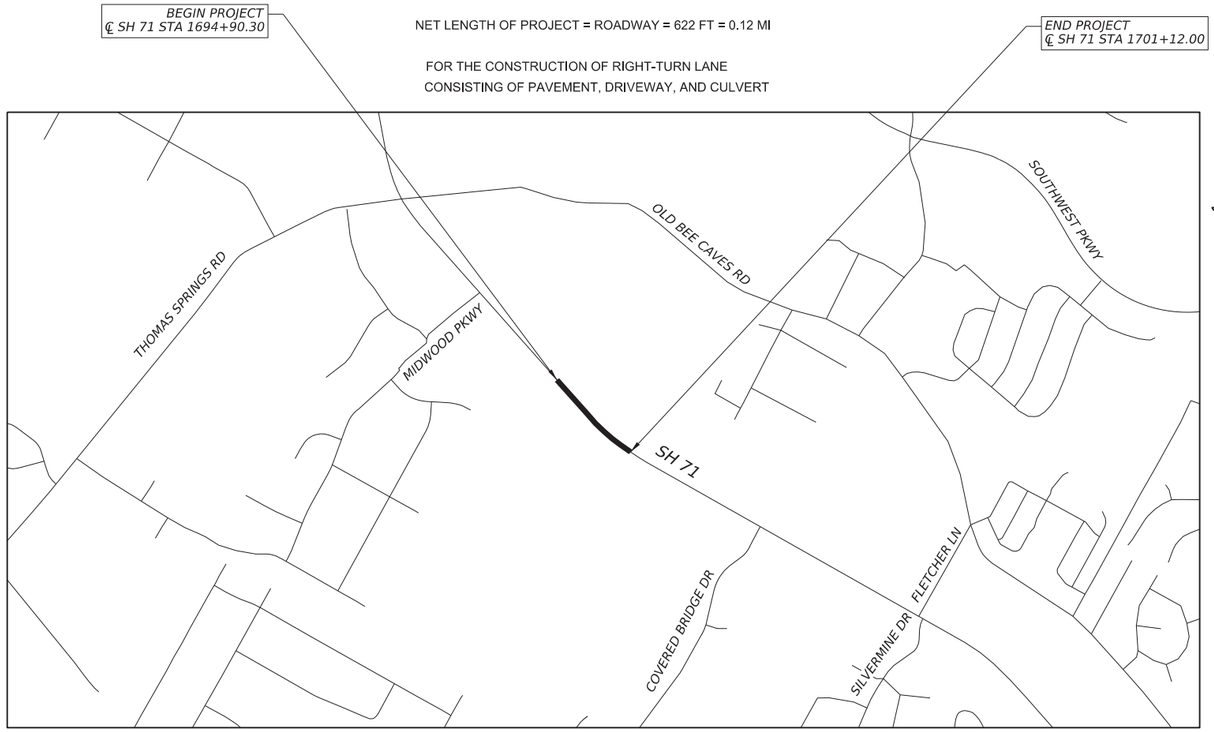
CONTRACTOR: _____

SH 71
TRAVIS *COUNTY*

FROM: 1728 FT EAST FROM MIDWOOD PKWY
TO: 2350 FT EAST FROM MIDWOOD PKWY

NET LENGTH OF PROJECT = ROADWAY = 622 FT = 0.12 MI

FOR THE CONSTRUCTION OF RIGHT-TURN LANE
CONSISTING OF PAVEMENT, DRIVEWAY, AND CULVERT



I CERTIFY THAT THIS PROJECT WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE FINAL AS-BUILT PLANS AND SPECIFICATIONS.

_____ *P.E.* _____
DATE

PLANS PREPARED BY:

Kimley»Horn
TX FIRM NO. F-928

SUBMITTED FOR LETTING

_____, P.E.
DESIGN ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.

RECOMMENDED FOR LETTING:

DISTRICT DESIGN ENGINEER

SUBMITTED FOR LETTING:

AREA ENGINEER

TDLR INSPECTION NOT REQUIRED

SPECIFICATIONS ADOPTED BY THE TEXAS DEPARTMENT OF TRANSPORTATION ON NOVEMBER 1, 2014 AND SPECIFICATION ITEMS LISTED AND DATED AS FOLLOWS, SHALL GOVERN ON THIS PROJECT: REQUIRED CONTRACT PROVISIONS FOR ALL FEDERAL-AID CONSTRUCTION CONTRACTS (FORM FHWA 1273, OCTOBER 23, 2023).

NOT TO SCALE
EXCEPTIONS: NONE
EQUATIONS: NONE
RAILROAD CROSSINGS: NONE

Texas Department of Transportation

DATE: 8/13/2025 8:15:37 AM
FILE: c:\pw\kh1\d0512178\SH71 GEN TITLE.dgn

SHEET			DESCRIPTION
I. GENERAL			
1			TITLE SHEET
2			INDEX OF SHEETS
3			TYPICAL SECTIONS
4A	-	4F	GENERAL NOTES
II. TRAFFIC CONTROL PLAN			
5			TRAFFIC CONTROL PLAN NARRATIVE
TRAFFIC CONTROL STANDARDS			
6	-	17	*BC(1) THRU (12)-21
18			*TCP(2-1)-18
19			*TCP(3-2)-13
20			*TCP(3-3)-14
III. ROADWAY DETAILS			
21			HORIZONTAL ALIGNMENT DATA
22			ROADWAY PLAN
23			DRIVEWAY PLAN AND PROFILE
ROADWAY STANDARDS			
24			*EDGECON-21
25			*TE(HMAC)-11
26			*DRWMB-22 (AUS)
IV. DRAINAGE DETAILS			
27			DRAINAGE AREA MAP
28			HYDRAULIC DATA
VI.TRAFFIC ITEMS			
29			SIGNING AND PAVEMENT MARKING LAYOUT
30			SUMMARY OF SMALL SIGNS
TRAFFIC STANDARDS			
31			*PM(1)-22
32			*PM(2)-22
33			*PM(3)-22
34			*SMD(GEN)-08
35			*SMD(SLIP-1)-08
36			*SMD(SLIP-2)-08
37			*SMD(SLIP-3)-08
VII.ENVIRONMENTAL			
38	-	39	STORMWATER POLLUTION PREVENTION PLAN (SW3P)
40			ENVIRONMENTAL PERMITS, ISSUES, AND COMMITMENTS (EPIC)
41			SW3P LAYOUT
ENVIRONMENTAL STANDARDS			
42			*EC(1)-16
43			*EC(2)-16
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Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

THE STANDARD SHEETS SPECIFICALLY IDENTIFIED WITH A " * " HAVE BEEN SELECTED BY ME OR UNDER MY SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

Kimley»Horn F-928

Texas Department of Transportation

SH 71

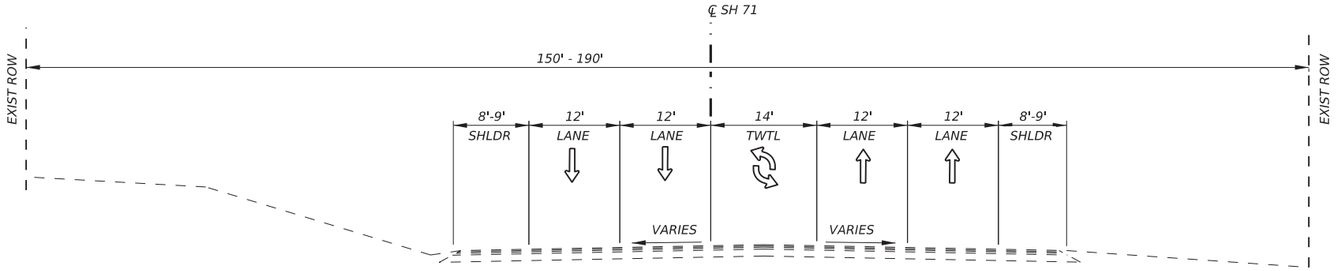
INDEX OF SHEETS

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		2

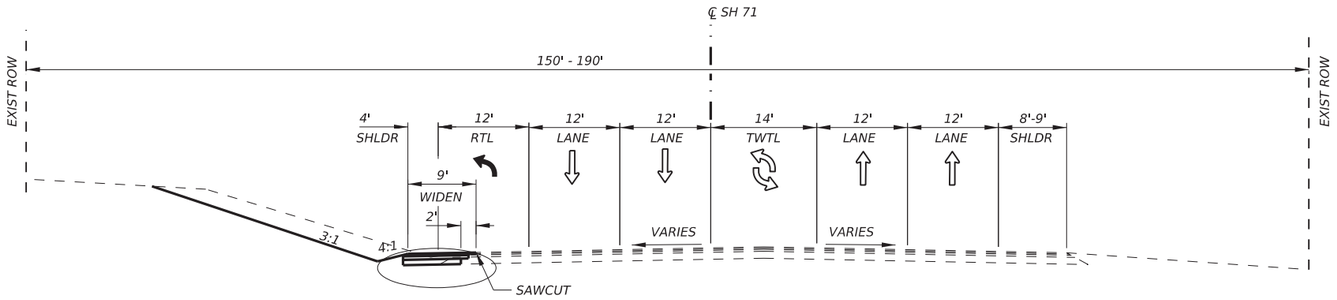
CK: DW: CK: DW:

DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/1. General/SH71_GEN_INDEX.dgn



EXIST SH 71 TYPICAL SECTION

N.T.S.



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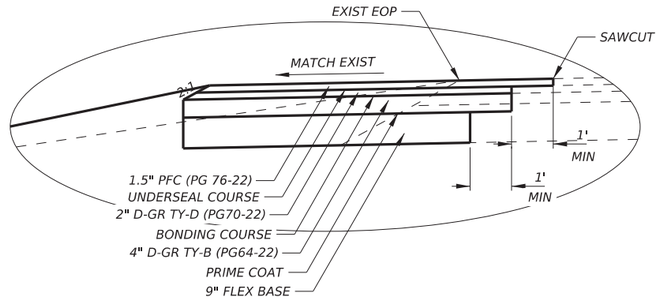

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Kimley»Horn

Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date: 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

TYPICAL SECTIONS

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		3

CK:
DW:
CK:
DW:

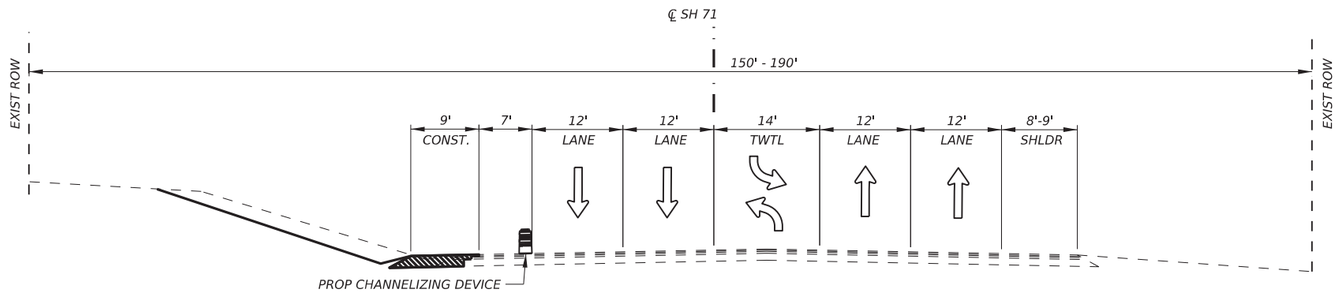
DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/1. General/SH71_GEN_TYP.dgn

GENERAL

1. CONSTRUCTION BARRICADES, WORKZONE STRIPING, CHANNELIZING DEVICES AND ADVANCED WARNING SIGNS SHALL BE INSTALLED AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH THE TMUTCD, BC(1 THRU 12)-21, AND/OR AS DIRECTED BY THE ENGINEER.
2. INSTALL ADVANCE WARNING SIGNS AS DIRECTED BY THE ENGINEER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE AT ALL TIMES FOR THE DURATION OF THE JOB. INSTALL APPROPRIATE SEDIMENT AND WATER POLLUTION CONTROL MEASURES AS SHOWN ON THE EROSION CONTROL PLAN AND STANDARDS, OR AS APPROVED BY THE ENGINEER.
4. DROP OFF CONDITIONS OF GREATER THAN 2" MUST HAVE A 3:1 SAFETY SLOPE AT THE END OF EACH DAY.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR ALL PROPERTY OWNERS AT ALL TIMES. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ACCESS WITH ADJOINING PROPERTY OWNERS DURING PHASE/STEP CHANGES. CONSIDER THIS WORK TO BE SUBSIDIARY TO PERTINENT ITEMS.
6. ADDITIONAL SIGNS, BARRICADES AND/OR OTHER CHANNELIZING DEVICES MAY BE NEEDED, REQUIRED AND/OR ADJUSTED TO MATCH FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
7. NO EQUIPMENT OR MATERIALS SHALL BE STORED WITHIN THE CLEAR ZONE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
8. THE CONTRACTOR'S ATTENTION IS DIRECTED TO OVERHEAD UTILITIES IN THE AREA. TAKE CAUTION WHEN OPERATING MACHINERY IN THE VICINITY OF ALL OVERHEAD UTILITIES.
9. THE CONTRACTOR MAY PROPOSE/RECOMMENT MODIFICATIONS TO THE SEQUENCE OF WORK FOR CONSIDERATION BY TXDOT. ANY MAJOR RECOMMENDED MODIFICATION BY THE CONTRACTOR SHALL INCLUDE ANY CHANGES TO THE VARIOUS BID ITEMS , IMPACT TO TRAFFIC, EFFECT OF OVERALL PROJECT IN TIME AND COST, ETC. IF THIS PROPOSAL IS IMPLEMENTED, THE CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPING DETAILED PLAN SHEETS TO BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER FOR INCLUSION WITH THE CHANGE ORDER. THE CONTRACTOR CANNOT PROCEED WITH ANY CONSTRUCTION OPERATIONS BASED ON A REVISED PHASE/SEQUENCE UNTIL WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. IF AT ANY TIME DURING CONSTRUCTION THE CONTRACTOR'S PROPOSED PLAN OF OPERATION FOR HANDLING TRAFFIC DOES NOT PROVIDE FOR SAFE AND COMFORTABLE MOVEMENT, THE CONTRACTOR WILL IMMEDIATELY CHANGE THEIR OPERATION TO CORRECT THE UNSATISFACTORY CONDITION.

SEQUENCE OF CONTRUCTION

1. INSTALL PROJECT LIMITS AND ADVANCED WARNING SIGNS IN ACCORDANCE WITH THE TMUTCD, BC(1 THRU 12)-21, AND/OR AS DIRECTED BY THE ENGINEER. THESE SIGNS SHALL BE ERECTED AND PLACED PRIOR TO COMMENCING ANY PROPOSED ROADWAY CONSTRUCTION AND SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT UNTIL COMPLETION AND ACCEPTANCE OF THE PROJECT BY TXDOT.
2. CLOSE WB SH 71 SHOULDER AND PLACE CHANNELIZING DEVICES IN ACCORDANCE WITH TXDOT STANDARD TCP(2-1)-18.
3. INSTALL TEMPORARY EROSION CONTROL DEVICES AS SHOWN IN THE SW3P LAYOUT.
4. SAWCUT MINIMUM 2' INSIDE EXISTING EDGE OF PAVEMENT AS SHOWN IN THE PLANS.
5. CONSTRUCT PAVEMENT WIDENING AS SHOWN IN THE PLANS.
6. CONSTRUCT PROPOSED DRIVEWAY AS SHOWN IN THE PLANS.
7. INSTALL PERMANENT EROSION CONTROL DEVICES AS SHOWN IN THE SW3P LAYOUT.
8. INSTALL FINAL PAVEMENT MARKINGS AND SIGNS AS SHOWN IN THE SIGNING AND PAVEMENT MARKING LAYOUT.
9. PERFORM FINAL CLEAN UP AND OPEN WB SH 71 SHOULDER.



TCP TYPICAL SECTION

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Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

TRAFFIC CONTROL PLAN NARRATIVE

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		5

CK: DW: CK: DW:

DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/2. TCP/SH71_TCP_NARR.dgn

BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:

1. The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).

2. The development and design of the Traffic Control Plan (TCP)is the responsibility of the Engineer.

3. The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.

4. The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.

5. Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.

6. When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.

7. The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.

8. All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.

9. The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.

10. Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.

11. Traffic control devices should be in place only while work is actually in progress or a definite need exists.

12. The Engineer has the final decision on the location of all traffic control devices.

13. Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

WORKER SAFETY NOTES:

1. Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.

2. Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES

1. Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.

2. Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT http://www.txdot.gov
COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)
DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)
MATERIAL PRODUCER LIST (MPL)
ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"
STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)
TRAFFIC ENGINEERING STANDARD SHEETS

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION GENERAL NOTES AND REQUIREMENTS

BC(1)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
4-03 7-13	DIST	COUNTY		SHEET NO.
9-07 8-14	AUS	TRAVIS		6
5-10 5-21				

DATE: 8/13/2025 8:17:09 AM
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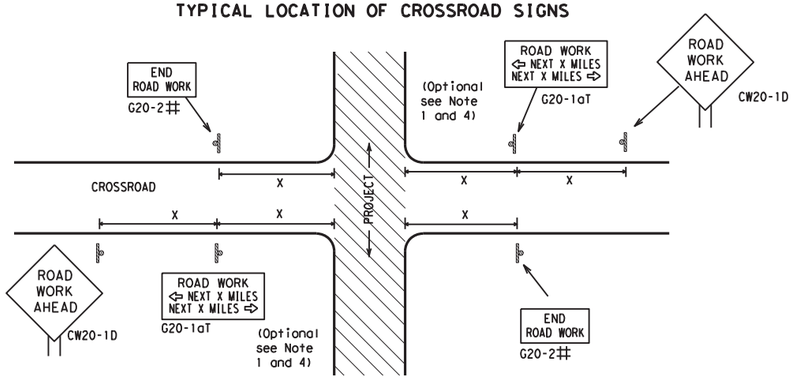
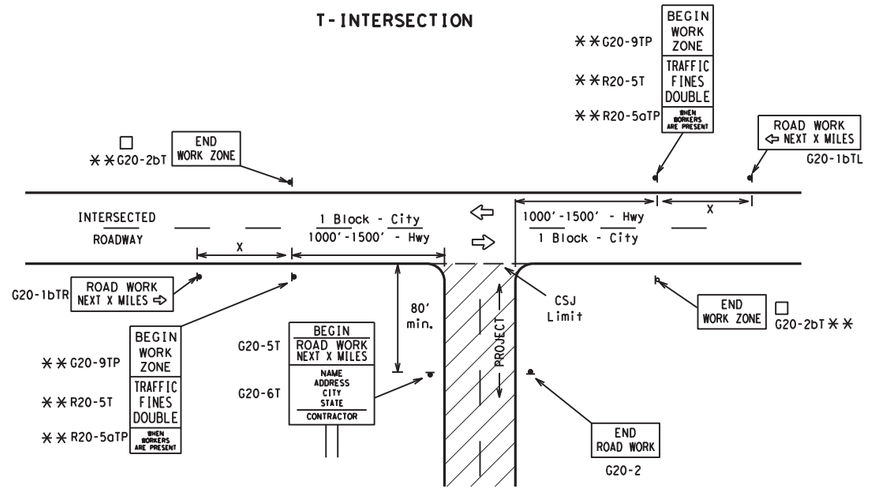
TYPICAL LOCATION OF CROSSROAD SIGNS



May be mounted on back of "ROAD WORK AHEAD"(CW20-1D) sign with approval of Engineer. (See note 2 below)

1. The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D)sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
2. The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK"(G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
3. Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
4. The "ROAD WORK NEXT X MILES"(G20-1aT)sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
5. Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
6. When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.

T-INTERSECTION



CSJ LIMITS AT T-INTERSECTION

1. The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
2. If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME"(G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow(G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR)" signs shall be replaced by the detour signing called for in the plans.

TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING[1,5,6]

SIZE

Sign Number or Series	Conventional Road	Expressway/ Freeway
CW20[4] CW21 CW22 CW23 CW25	48" x 48"	48" x 48"
CW1, CW2, CW7, CW8, CW9, CW11, CW14	36" x 36"	48" x 48"
CW3, CW4, CW5, CW6, CW8-3, CW10, CW12	48" x 48"	48" x 48"

SPACING

Posted Speed	Sign △ Spacing "X"
MPH	Feet (Apprx.)
30	120
35	160
40	240
45	320
50	400
55	500[2]
60	600[2]
65	700[2]
70	800[2]
75	900[2]
80	1000[2]
*	*[3]

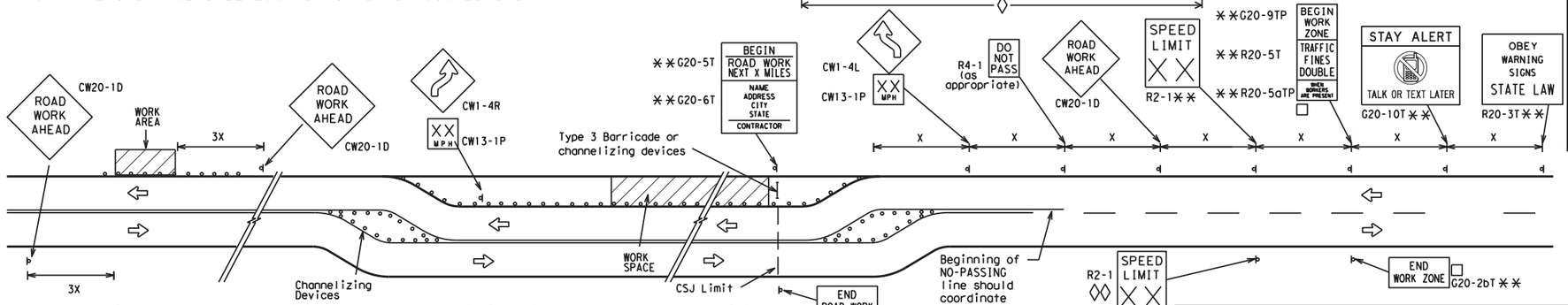
* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

GENERAL NOTES

1. Special or larger size signs may be used as necessary.
2. Distance between signs should be increased as required to have 1500 feet advance warning.
3. Distance between signs should be increased as required to have 1/2 mile or more advance warning.
4. 36" x 36" "ROAD WORK AHEAD" (CW20-1D)signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
5. Only diamond shaped warning sign sizes are indicated.
6. See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.

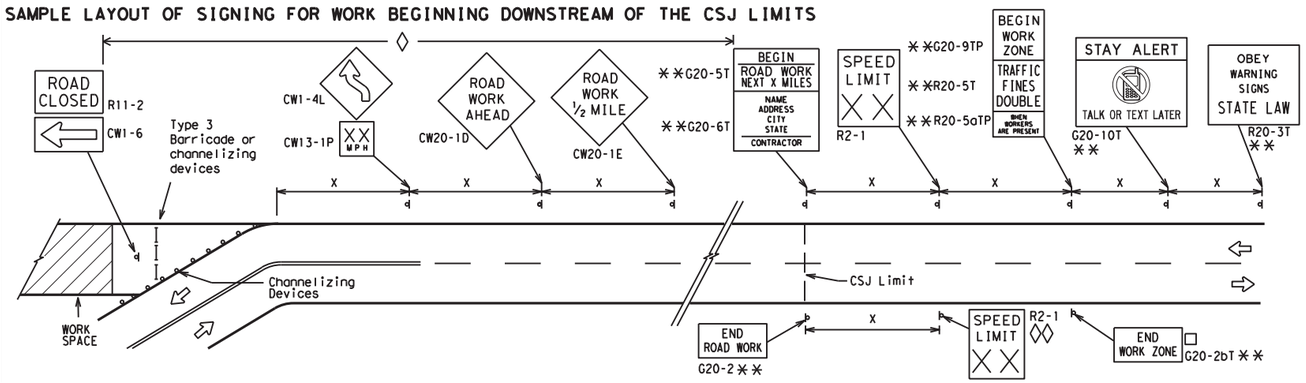
WORK AREAS IN MULTIPLE LOCATIONS WITHIN CSJ LIMITS



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD"(CW20-1D)signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING AT THE CSJ LIMITS

SAMPLE LAYOUT OF SIGNING FOR WORK BEGINNING DOWNSTREAM OF THE CSJ LIMITS



NOTES

The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES"(G20-5T)sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.

□ The "BEGIN WORK ZONE"(G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.

** CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.

◊ Area for placement of "ROAD WORK AHEAD" (CW20-1D)sign and other signs or devices as called for on the Traffic Control Plan.

◊◊ Contractor will install a regulatory speed limit sign at the end of the work zone.

LEGEND

⟼	Type 3 Barricade
○ ○ ○	Channelizing Devices
▬	Sign
X	See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PROJECT LIMIT

BC(2)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AUS	TRAVIS		7

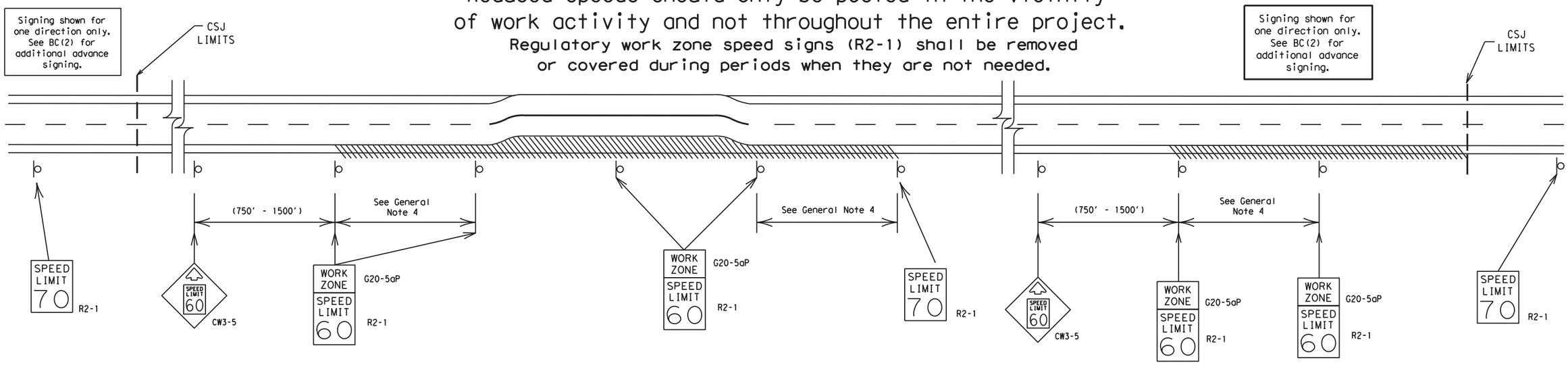
DATE: 8/13/2025 8:17:09 AM
FILE: c:\pw\kn1\d0538846\bc-21 (1).dgn

TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project.

Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



GUIDANCE FOR USE:

LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

a) rough road or damaged pavement surface
b) substantial alteration of roadway geometrics (diversions)
c) construction detours
d) grade
e) width
f) other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered.
(See Removing or Covering on BC(4)).

GENERAL NOTES

1. Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
2. Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
3. Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
4. Frequency of work zone speed limit signs should be:
   40 mph and greater 0.2 to 2 miles
   35 mph and less 0.2 to 1 mile
5. Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
6. Fabrication, erection and maintenance of the"ADVANCE SPEED LIMIT"(CW3-5)sign, "WORK ZONE"(G20-5aP) plaque and the "SPEED LIMIT"(R2-1)signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
7. Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
8. Techniques that may help reduce traffic speeds include but are not limited to:
   A. Law enforcement.
   B. Flagger stationed next to sign.
   C. Portable changeable message sign (PCMS).
   D. Low-power (drone) radar transmitter.
   E. Speed monitor trailers or signs.
9. Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
10. For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION WORK ZONE SPEED LIMIT

BC(3)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AUS	TRAVIS		8

DATE: 8/13/2025 8:17:10 AM
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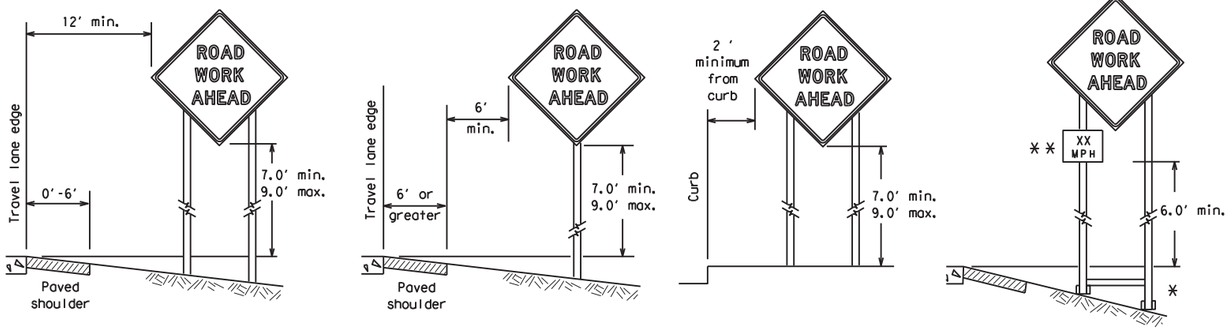
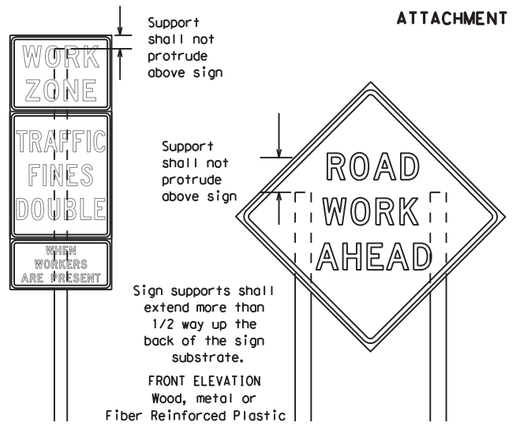
TYPICAL MINIMUM CLEARANCES FOR LONG TERM AND INTERMEDIATE TERM SIGNS

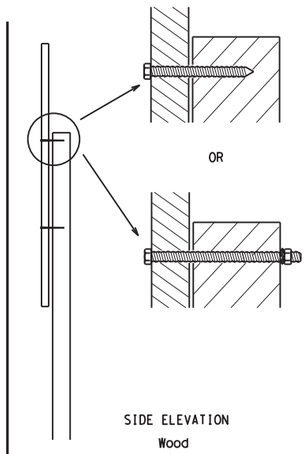


* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.

** When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.

ATTACHMENT FOR SIGN SUPPORTS





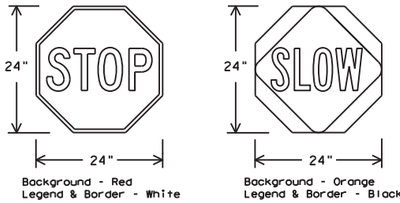
Attachment to wooden supports will be by bolts and nuts or screws. Use TxDOT's or manufacturer's recommended procedures for attaching sign substrates to other types of sign supports

Nails shall NOT be allowed. Each sign shall be attached directly to the sign support. Multiple signs shall not be joined or spliced by any means. Wood supports shall not be extended or repaired by splicing or other means.

Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the spice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

STOP/SLOW PADDLES

1. STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
2. STOP/SLOW paddles shall be retroreflectorized when used at night.
3. STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
4. Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMUTCD.



SHEETING REQUIREMENTS (WHEN USED AT NIGHT)		
USAGE	COLOR	SIGN FACE MATERIAL
BACKGROUND	RED	TYPE B OR C SHEETING
BACKGROUND	ORANGE	TYPE B_{FL} OR C_{FL} SHEETING
LEGEND & BORDER	WHITE	TYPE B OR C SHEETING
LEGEND & BORDER	BLACK	ACRYLIC NON-REFLECTIVE FILM

CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS

1. Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
2. When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
3. When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
4. If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
5. If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRS standard sheets or the CWZTCD list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
6. Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

GENERAL NOTES FOR WORK ZONE SIGNS

1. Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
2. Wooden sign posts shall be painted white.
3. Barricades shall NOT be used as sign supports.
4. All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
5. The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMUTCD but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
6. The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTCD) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
7. The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
8. Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
9. The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

DURATION OF WORK (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)

1. The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
   a. Long-term stationary - work that occupies a location more than 3 days.
   b. Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
   c. Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
   d. Short, duration - work that occupies a location up to 1 hour.
   e. Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

SIGN MOUNTING HEIGHT

1. The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
2. The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
3. Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
4. Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
5. Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

SIZE OF SIGNS

1. The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.

SIGN SUBSTRATES

1. The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTCD lists each substrate that can be used on the different types and models of sign supports.
2. "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
3. All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

REFLECTIVE SHEETING

1. All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(1).
2. White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
3. Orange sheeting, meeting the requirements of DMS-8300 Type B_{FL} or Type C_{FL}, shall be used for rigid signs with orange backgrounds.

SIGN LETTERS

1. All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and as published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

REMOVING OR COVERING

1. When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
2. Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
3. Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
4. When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
5. Burlap shall NOT be used to cover signs.
6. Duct tape or other adhesive material shall NOT be affixed to a sign face.
7. Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

SIGN SUPPORT WEIGHTS

1. Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
2. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
3. Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
4. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
5. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall NOT be used.
6. Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTCD list.
7. Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
8. Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

FLAGS ON SIGNS

1. Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES

BC(4)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AUS	TRAVIS		9

DATE: 8/13/2025 8:17:10 AM
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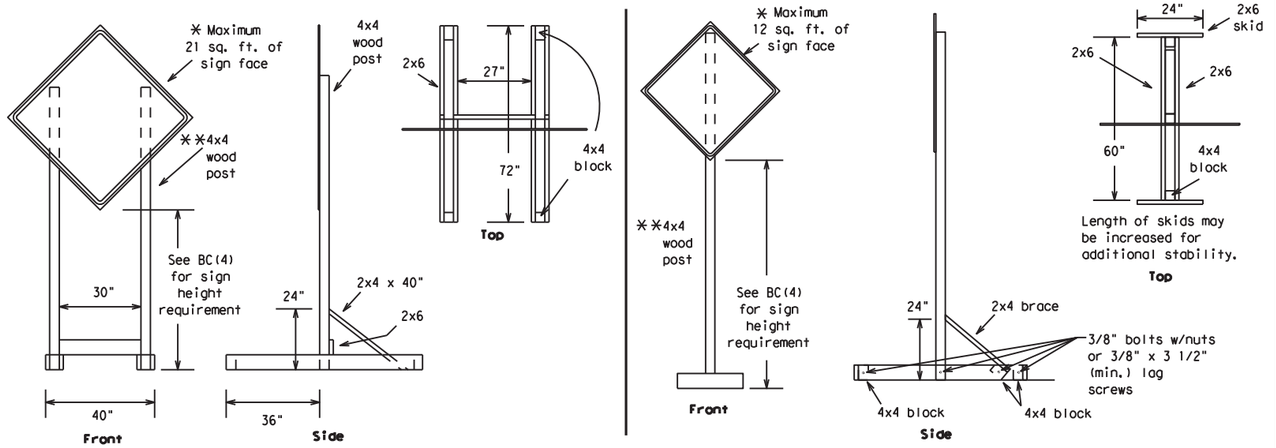
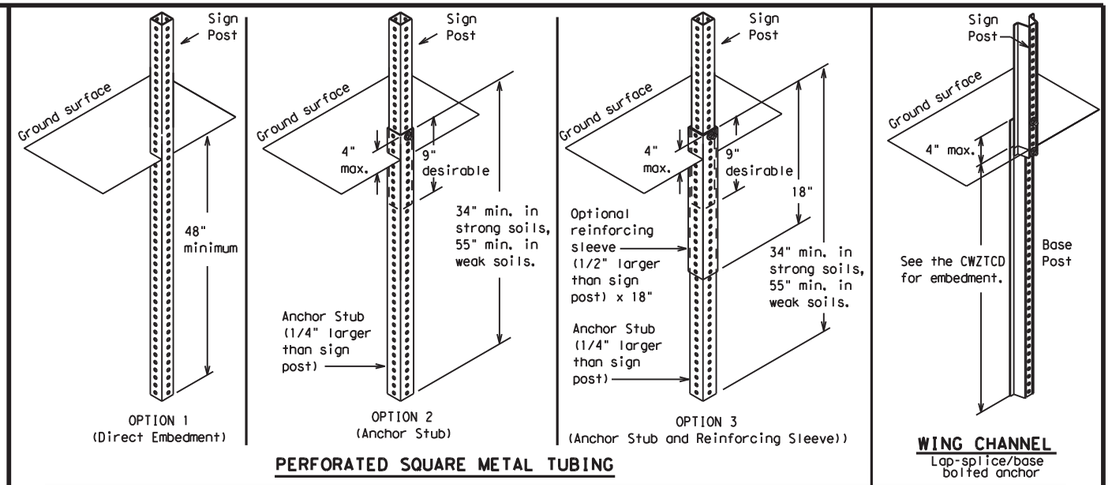


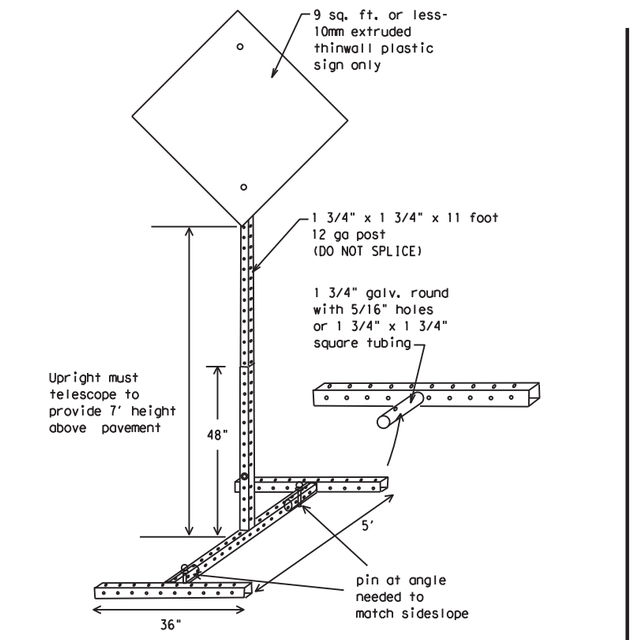
SKID MOUNTED WOOD SIGN SUPPORTS

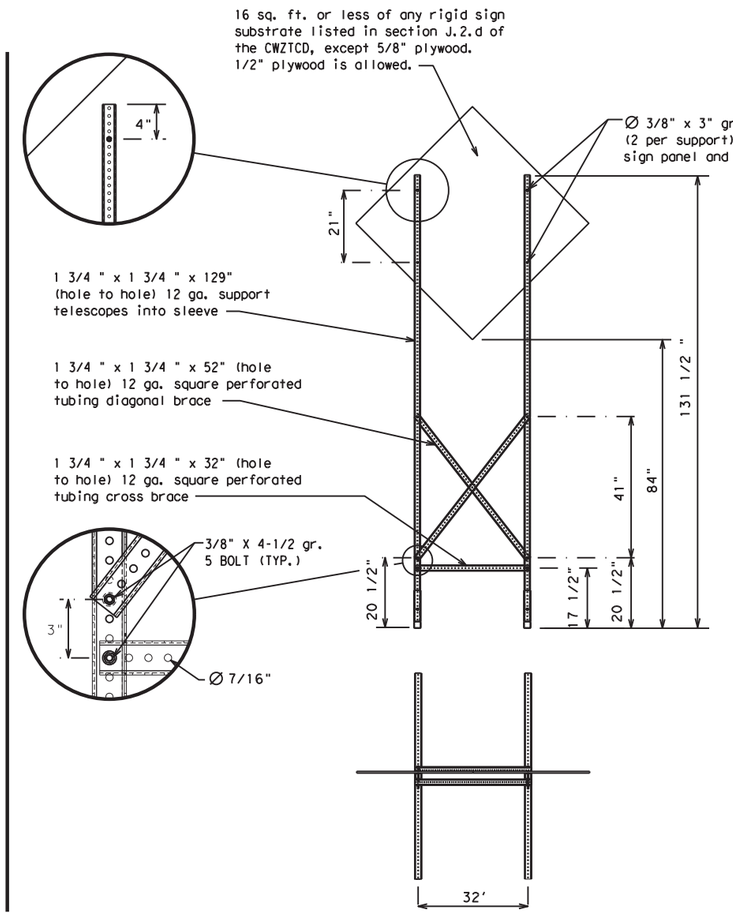
* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

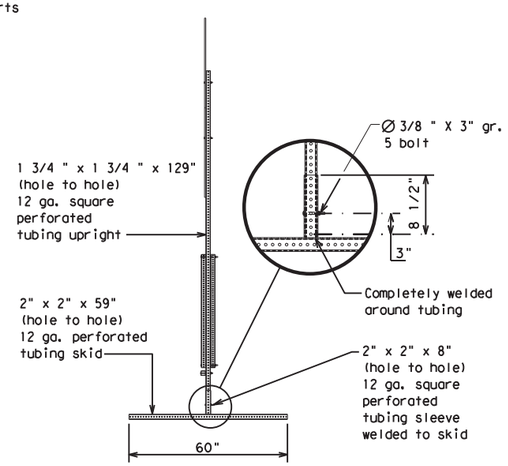


GROUND MOUNTED SIGN SUPPORTS

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support.
The maximum sign square footage shall adhere to the manufacturer's recommendation.
Two post installations can be used for larger signs.







SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS

* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

WEDGE ANCHORS

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

OTHER DESIGNS

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

GENERAL NOTES

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.

* See BC(4) for definition of "Work Duration."

** Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.

☐ See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT

BC(5)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT November 2002	CONT	SECT	JOB	HIGHWAY
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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AUS	TRAVIS		10

DATE: 8/13/2025 8:17:11 AM
FILE: c:\pw\knl\d0538646\bc-21 (1).dgn

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

1. The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
2. Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
3. Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
4. Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
5. Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
6. When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
7. The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
8. The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
9. Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
10. Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
11. Do not use the word "Danger" in message.
12. Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
13. Do not display messages that scroll horizontally or vertically across the face of the sign.
14. The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the TMUTCD.
15. PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
16. Each line of text should be centered on the message board rather than left or right justified.
17. If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

WORD OR PHRASE	ABBREVIATION
Access Road	ACCS RD
Alternate	ALT
Avenue	AVE
Best Route	BEST RTE
Boulevard	BLVD
Bridge	BRDG
Cannot	CANT
Center	CTR
Construction Ahead	CONST AHD
CROSSING	XING
Detour Route	DETOUR RTE
Do Not	DONT
East	E
Eastbound	(route) E
Emergency	EMER
Emergency Vehicle	EMER VEH
Entrance, Enter	ENT
Express Lane	EXP LN
Expressway	EXPWY
XXXX Feet	XXXX FT
Fog Ahead	FOG AHD
Freeway	FRWY, FWY
Freeway Blocked	FWY BLKD
Friday	FRI
Hazardous Driving	HAZ DRIVING
Hazardous Material	HAZMAT
High-Occupancy	HOV
Vehicle Highway	HWY
Hour(s)	HR, HRS
Information	INFO
It Is	ITS
Junction	JCT
Left	LFT
Left Lane	LFT LN
Lane Closed	LN CLOSED
Lower Level	LWR LEVEL
Maintenance	MAINT

WORD OR PHRASE	ABBREVIATION
Major	MAJ
Miles	MI
Miles Per Hour	MPH
Minor	MNR
Monday	MON
Normal	NORM
North	N
Northbound	(route) N
Parking	PKING
Road	RD
Right Lane	RT LN
Saturday	SAT
Service Road	SERV RD
Shoulder	SHLDR
Slippery	SLIP
South	S
Southbound	(route) S
Speed	SPD
Street	ST
Sunday	SUN
Telephone	PHONE
Temporary	TEMP
Thursday	THURS
To Downtown	TO DWNTN
Traffic	TRAF
Travelers	TRVLRS
Tuesday	TUES
Time Minutes	TIME MIN
Upper Level	UPR LEVEL
Vehicles (s)	VEH, VEHS
Warning	WARN
Wednesday	WED
Weight Limit	WT LIMIT
West	W
Westbound	(route) W
Wet Pavement	WET PVMT
Will Not	WONT

Roadway designation * IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES

(The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

- FREEWAY CLOSED X MILE
- FRONTAGE ROAD CLOSED
- ROAD CLOSED AT SH XXX
- SHOULDER CLOSED XXX FT
- ROAD CLSD AT FM XXXX
- RIGHT LN CLOSED XXX FT
- RIGHT X LANES CLOSED
- RIGHT X LANES OPEN
- CENTER LANE CLOSED
- DAYTIME LANE CLOSURES
- NIGHT LANE CLOSURES
- I-XX SOUTH EXIT CLOSED
- VARIOUS LANES CLOSED
- EXIT XXX CLOSED X MILE
- EXIT CLOSED
- RIGHT LN TO BE CLOSED
- MALL DRIVEWAY CLOSED
- X LANES CLOSED TUE - FRI
- XXXXXXXX BLVD CLOSED

Other Condition List

- ROADWORK XXX FT
- ROAD REPAIRS XXXX FT
- FLAGGER XXXX FT
- LANE NARROWS XXXX FT
- RIGHT LN NARROWS XXXX FT
- TWO-WAY TRAFFIC XX MILE
- MERGING TRAFFIC XXXX FT
- CONST TRAFFIC XXX FT
- LOOSE GRAVEL XXXX FT
- UNEVEN LANES XXXX FT
- DETOUR X MILE
- ROUGH ROAD XXXX FT
- ROADWORK PAST SH XXXX
- ROADWORK NEXT FRI-SUN
- BUMP XXXX FT
- US XXX EXIT X MILES
- TRAFFIC SIGNAL XXXX FT
- LANES SHIFT *

* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

- MERGE RIGHT
- FORM X LINES RIGHT
- DETOUR NEXT X EXITS
- USE XXXXX RD EXIT
- USE EXIT XXX
- USE EXIT I-XX NORTH
- STAY ON US XXX SOUTH
- USE I-XX E TO I-XX N
- TRUCKS USE US XXX N
- WATCH FOR TRUCKS
- WATCH FOR TRUCKS
- EXPECT DELAYS
- EXPECT DELAYS
- PREPARE TO STOP
- REDUCE SPEED XXX FT
- END SHOULDER USE
- USE OTHER ROUTES
- WATCH FOR WORKERS
- STAY IN LANE *

Location List

- AT FM XXXX
- BEFORE RAILROAD CROSSING
- NEXT X MILES
- PAST US XXX EXIT
- XXXXXXX TO XXXXXXX
- US XXX TO FM XXXX

Warning List

- SPEED LIMIT XX MPH
- MAXIMUM SPEED XX MPH
- MINIMUM SPEED XX MPH
- ADVISORY SPEED XX MPH
- RIGHT LANE EXIT
- USE CAUTION
- DRIVE SAFELY
- DRIVE WITH CARE

** Advance Notice List

- TUE-FRI XX AM- X PM
- APR XX-XX X PM-X AM
- BEGINS MONDAY
- BEGINS MAY XX
- MAY X-X XX PM - XX AM
- NEXT FRI-SUN
- XX AM TO XX PM
- NEXT TUE AUG XX
- TONIGHT XX PM- XX AM

** See Application Guidelines Note 6.

APPLICATION GUIDELINES

1. Only 1 or 2 phases are to be used on a PCMS.
2. The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
3. A 2nd phase can be selected from the "Action to Take/Effect on Travel, Location, General Warning, or Advance Notice Phase Lists".
4. A Location Phase is necessary only if a distance or location is not included in the first phase selected.
5. If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
6. For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

WORDING ALTERNATIVES

1. The words RIGHT, LEFT and ALL can be interchanged as appropriate.
2. Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
3. EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
4. Highway names and numbers replaced as appropriate.
5. ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
6. AHEAD may be used instead of distances if necessary.
7. FT and MI, MILE and MILES interchanged as appropriate.
8. AT, BEFORE and PAST interchanged as needed.
9. Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

1. When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
2. When symbol signs, such as the "Flagger Symbol"(CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
3. When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
4. A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

BC(6)-21

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9-07 8-14	DIST	COUNTY		SHEET NO.
7-13 5-21	AUS	TRAVIS		11

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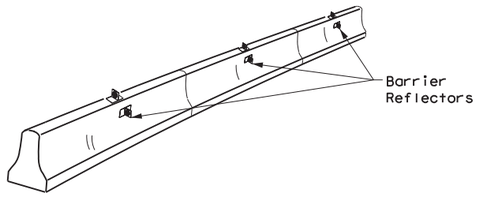
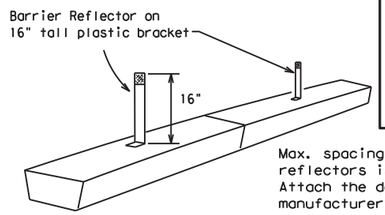
1. Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
2. Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



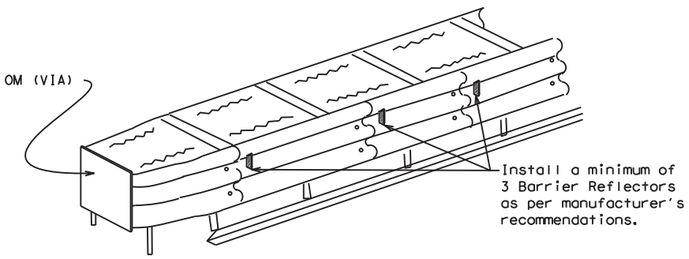
CONCRETE TRAFFIC BARRIER (CTB)

3. Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
4. Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional)while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
5. When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
6. Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
7. Maximum spacing of Barrier Reflectors is forty (40) feet.
8. Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
9. Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
10. Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
11. Single slope barriers shall be delineated as shown on the above detail.



Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

LOW PROFILE CONCRETE BARRIER (LPCB)



DELINEATION OF END TREATMENTS

LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

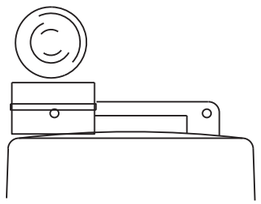
END TREATMENTS FOR CTB'S USED IN WORK ZONES

End treatments used on CTB's in work zones shall meet the apppropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS

WARNING LIGHTS

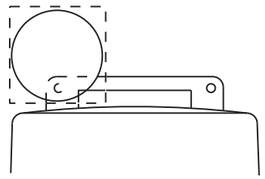
1. Warning lights shall meet the requirements of the TMUTCD.
2. Warning lights shall NOT be installed on barricades.
3. Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B_{FL} or C_{FL} Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
4. Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
5. The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
6. When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ITE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
7. When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
8. The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.

WARNING LIGHTS MOUNTED ON PLASTIC DRUMS

1. Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
2. Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
3. A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
4. Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
5. Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
6. Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
7. The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.



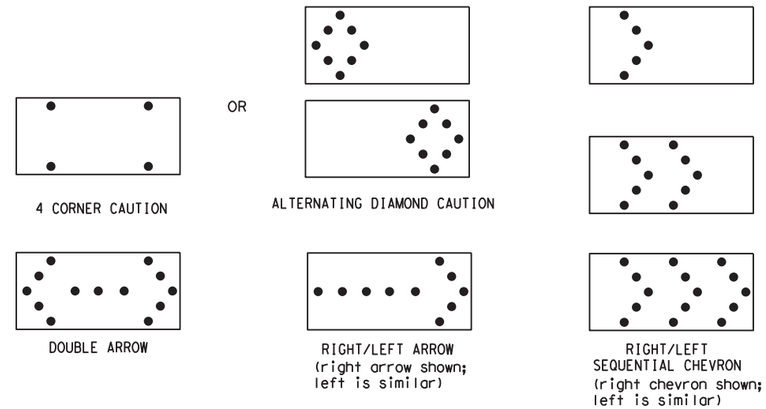
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS

1. A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
2. The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
3. The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
4. Round reflectors shall be fully reflectorized, including the area where attached to the drum.
5. Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
6. The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
7. When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
8. The warning reflector should be mounted on the side of the handle nearest approaching traffic.
9. The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

1. The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
2. Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
3. The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
4. The Flashing Arrow Board should be able to display the following symbols:



5. The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
6. The straight line caution display is NOT ALLOWED.
7. The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
8. Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
9. The sequential arrow display is NOT ALLOWED.
10. The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
11. The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
12. A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
13. A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
14. Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

REQUIREMENTS			
TYPE	MINIMUM SIZE	MINIMUM NUMBER OF PANEL LAMPS	MINIMUM VISIBILITY DISTANCE
B	30 x 60	13	3/4 mile
C	48 x 96	15	1 mile

ATTENTION

Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

FLASHING ARROW BOARDS

TRUCK-MOUNTED ATTENUATORS

1. Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
2. Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
3. Refer to the CWZTCD for a list of approved TMAs.
4. TMAs are required on freeways unless otherwise noted in the plans.
5. A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
6. The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation — Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR

BC(7)-21

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REVISIONS	0700	03		SH 71
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GENERAL NOTES

1. For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
2. For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
3. For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
4. Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
5. Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
6. The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

GENERAL DESIGN REQUIREMENTS

Pre-qualified plastic drums shall meet the following requirements:

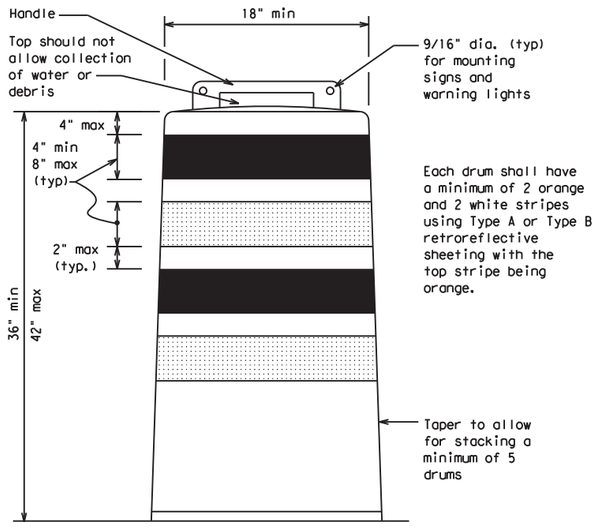
1. Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
2. The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
3. Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
4. Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
5. The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
6. The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectorized space between any two adjacent stripes shall not exceed 2 inches in width.
7. Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
8. Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
9. Drum body shall have a maximum unballasted weight of 11 lbs.
10. Drum and base shall be marked with manufacturer's name and model number.

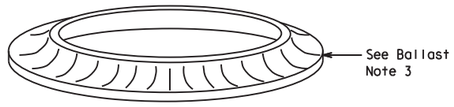
RETROREFLECTIVE SHEETING

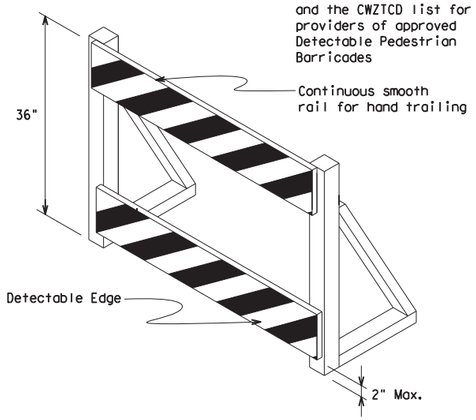
1. The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
2. The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

BALLAST

1. Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
2. Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
3. Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
4. The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
5. When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
6. Ballast shall not be placed on top of drums.
7. Adhesives may be used to secure base of drums to pavement.



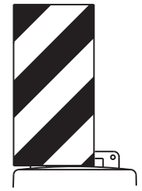




DETECTABLE PEDESTRIAN BARRICADES

1. When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
2. Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
3. Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
4. Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
5. Warning lights shall not be attached to detectable pedestrian barricades.
6. Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.

18" x 24" Sign
(Maximum Sign Dimension)
Chevron CW1-8, Opposing Traffic Lane Divider, Driveway sign D70a, Keep Right R4 series or other signs as approved by Engineer



12" x 24"
Vertical Panel
mount with diagonals sloping down towards travel way

Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS

1. Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
2. Chevrons and other work zone signs with an orange background shall be manufactured with Type B_{FL} or Type C_{FL} Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
3. Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
4. Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
5. Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
6. Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
7. Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than on every third drum. A minimum of three (3) should be used at each location called for in the plans.
8. R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(8)-21

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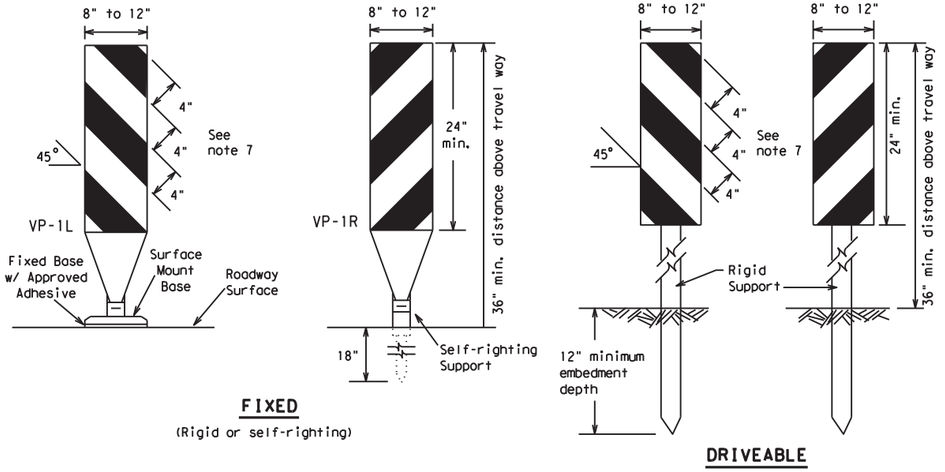
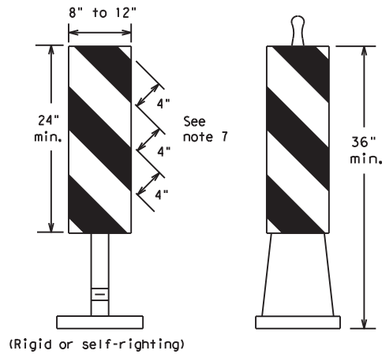


FIXED
(Rigid or self-righting)

DRIVEABLE

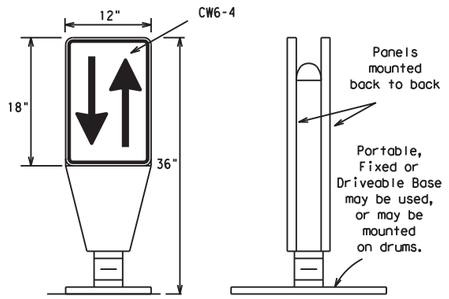


(Rigid or self-righting)

PORTABLE

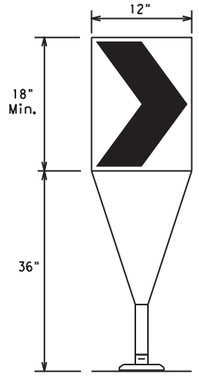
1. Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
2. VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
3. VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
4. VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
5. Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
6. Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
7. Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.

VERTICAL PANELS (VPs)



1. Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
2. The OTLD may be used in combination with 42" cones or VPs.
3. Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
4. The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.

OPPOSING TRAFFIC LANE DIVIDERS (OTLD)



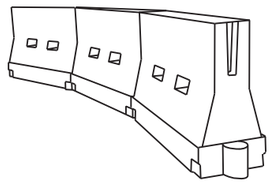
Fixed Base w/ Approved Adhesive (Driveable Base, or Flexible Support can be used)

1. The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
2. Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
3. Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
4. To be effective, the chevron should be visible for at least 500 feet.
5. Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B_{FL} or Type C_{FL} conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
6. For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.

CHEVRONS

GENERAL NOTES

1. Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
2. Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
3. Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
4. The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
5. Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
6. Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
7. The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.



LONGITUDINAL CHANNELIZING DEVICES (LCD)

1. LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
2. LCDs may be used instead of a line of cones or drums.
3. LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
5. LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
6. LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

WATER BALLASTED SYSTEMS USED AS BARRIERS

1. Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
2. Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
3. Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
4. Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
5. When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS

Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'
35		205'	225'	245'	35'	70'
40		265'	295'	320'	40'	80'
45	L = WS	450'	495'	540'	45'	90'
50		500'	550'	600'	50'	100'
55		550'	605'	660'	55'	110'
60		600'	660'	720'	60'	120'
65		650'	715'	780'	65'	130'
70		700'	770'	840'	70'	140'
75		750'	825'	900'	75'	150'
80		800'	880'	960'	80'	160'

** Taper lengths have been rounded off.
L=Length of Taper (FT.) W=Width of Offset (FT.)
S=Posted Speed (MPH)

SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS

SHEET 9 OF 12

Texas Department of Transportation | Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(9)-21

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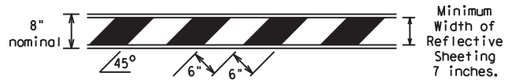
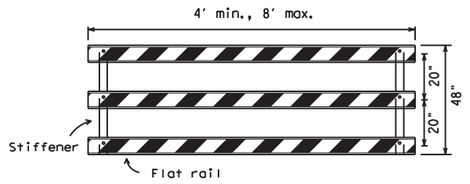
TYPE 3 BARRICADES

1. Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
2. Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
3. Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the center of roadway.
4. Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
5. Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
6. Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
7. Warning lights shall NOT be installed on barricades.
8. Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
9. Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

Barricades shall NOT be used as a sign support.



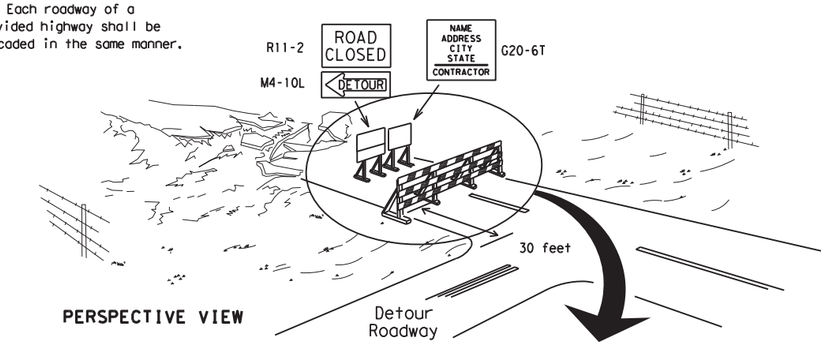
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



Stiffener may be inside or outside of support, but no more than 2 stiffeners shall be allowed on one barricade.

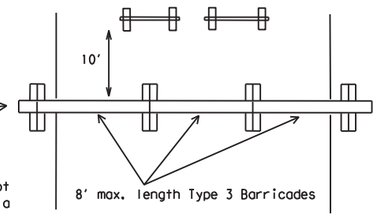
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES

Each roadway of a divided highway shall be barricaded in the same manner.



PERSPECTIVE VIEW

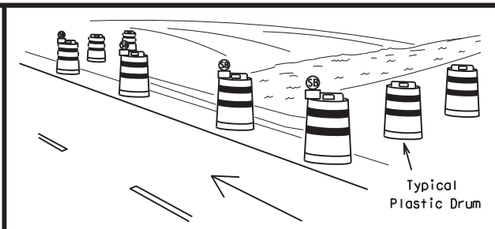
The three rails on Type 3 barricades shall be reflectorized orange and reflective white stripes on one side facing one-way traffic and both sides for two-way traffic.
Barricade striping should slant downward in the direction of detour.



PLAN VIEW

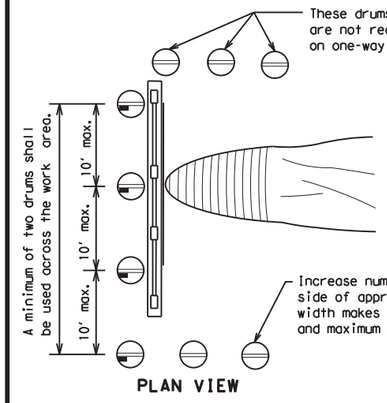
1. Signs should be mounted on independent supports at a 7 foot mounting height in center of roadway. The signs should be a minimum of 10 feet behind Type 3 Barricades.
2. Advance signing shall be as specified elsewhere in the plans.

TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



PERSPECTIVE VIEW

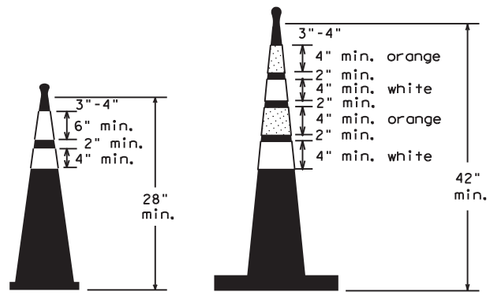
1. Where positive redirectional capability is provided, drums may be omitted.
2. Plastic construction fencing may be used with drums for safety as required in the plans.
3. Vertical Panels on flexible support may be substituted for drums when the shoulder width is less than 4 feet.
4. When the shoulder width is greater than 12 feet, steady-burn lights may be omitted if drums are used.
5. Drums must extend the length of the culvert widening.



PLAN VIEW

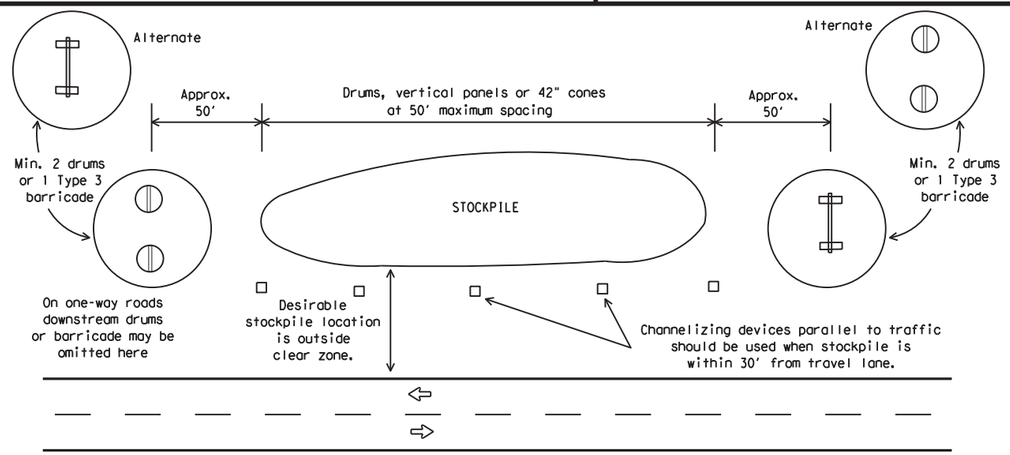
LEGEND	
	Plastic drum
	Plastic drum with steady burn light or yellow warning reflector
SB	Steady burn warning light or yellow warning reflector

CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS



28" Cones shall have a minimum weight of 9 1/2 lbs.
42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

1. Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
2. One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
3. Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
4. Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
5. 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
6. 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
7. Cones or tubular markers used on each project should be of the same size and shape.



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

SHEET 10 OF 12

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES

BC(10)-21

FILE: bc-21.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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7-13 5-21	AUS	TRAVIS		15

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WORK ZONE PAVEMENT MARKINGS

GENERAL

1. The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
2. Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
3. Additional supplemental pavement marking details may be found in the plans or specifications.
4. Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
5. When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
6. When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
7. All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

RAISED PAVEMENT MARKERS

1. Raised pavement markers are to be placed according to the patterns on BC(12).
2. All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

PREFABRICATED PAVEMENT MARKINGS

1. Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
2. Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

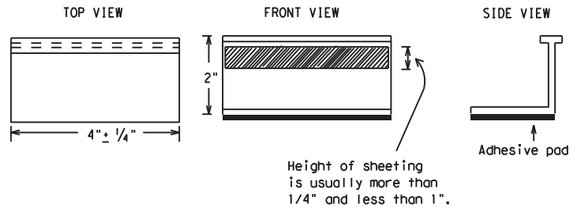
MAINTAINING WORK ZONE PAVEMENT MARKINGS

1. The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
2. Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
3. The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
4. Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

REMOVAL OF PAVEMENT MARKINGS

1. Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
2. The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
3. Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
4. The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
5. Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
6. Blast cleaning may be used but will not be required unless specifically shown in the plans.
7. Over-painting of the markings SHALL NOT BE permitted.
8. Removal of raised pavement markers shall be as directed by the Engineer.
9. Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
10. Black-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

1. Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
2. Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
   A. Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
   B. Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
3. Small design variances may be noted between tab manufacturers.
4. See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(7-1) for tab placement on seal coat work.

RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

1. Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
2. All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
3. Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

Guidemarks shall be designated as:
YELLOW - (two amber reflective surfaces with yellow body).
WHITE - (one silver reflective surface with white body).

DEPARTMENTAL MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
TRAFFIC BUTTONS	DMS-4300
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240
TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS	DMS-8241
TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS	DMS-8242

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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1-02 7-13	AUS	TRAVIS		16
11-02 8-14				

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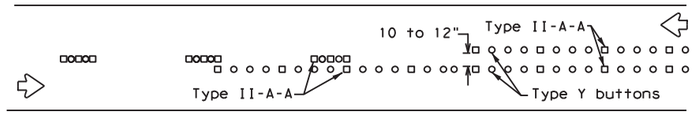
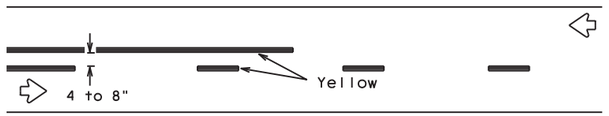
PAVEMENT MARKING PATTERNS

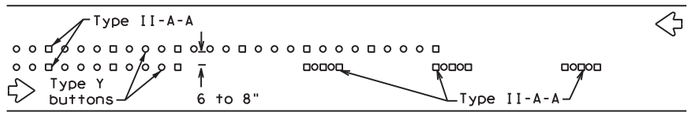
REFLECTORIZED PAVEMENT MARKINGS - PATTERN A



RAISED PAVEMENT MARKERS - PATTERN A



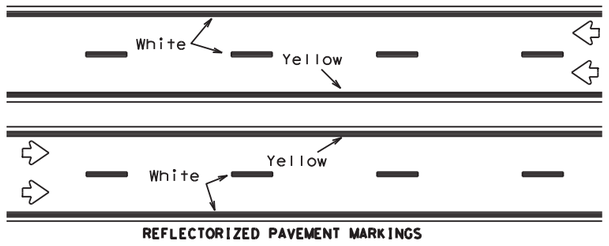
REFLECTORIZED PAVEMENT MARKINGS - PATTERN B



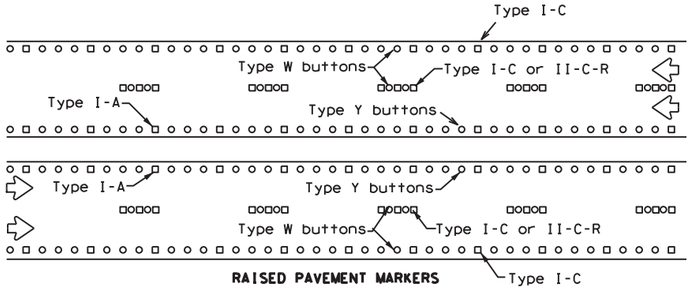
RAISED PAVEMENT MARKERS - PATTERN B

Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer.
Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



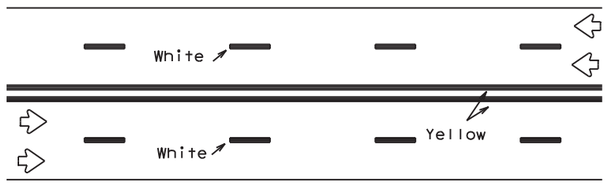
REFLECTORIZED PAVEMENT MARKINGS



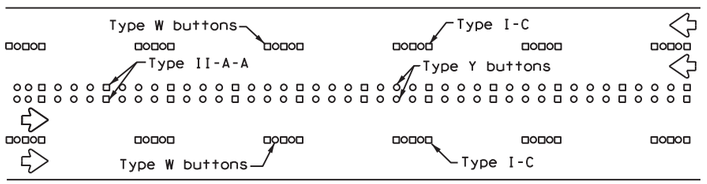
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



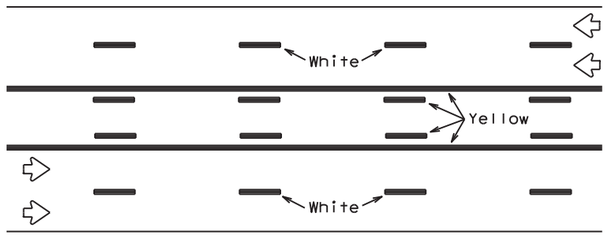
REFLECTORIZED PAVEMENT MARKINGS



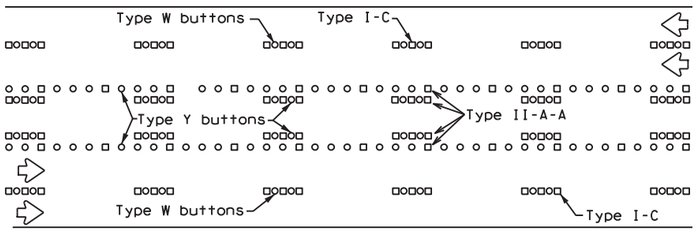
RAISED PAVEMENT MARKERS

Prefabricated markings may be substituted for reflectorized pavement markings.

LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



REFLECTORIZED PAVEMENT MARKINGS



RAISED PAVEMENT MARKERS

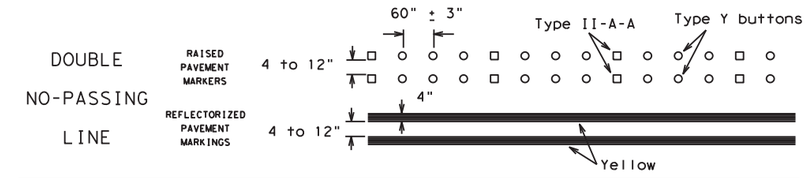
Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

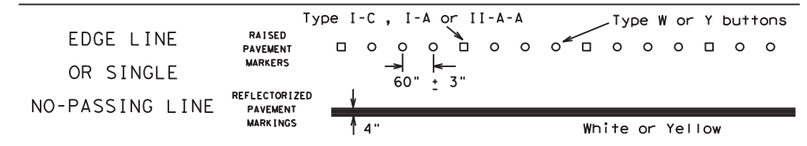
STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS

SOLID LINES

DOUBLE NO-PASSING LINE

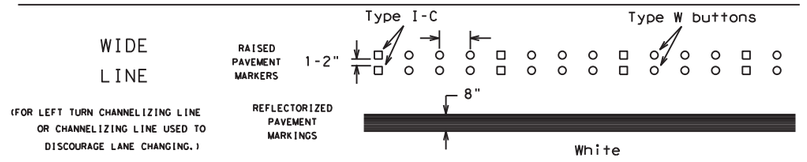


EDGE LINE OR SINGLE NO-PASSING LINE



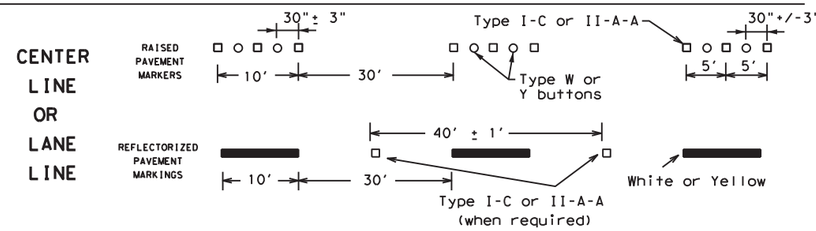
WIDE LINE

(FOR LEFT TURN CHANNELIZING LINE OR CHANNELIZING LINE USED TO DISCOURAGE LANE CHANGING.)

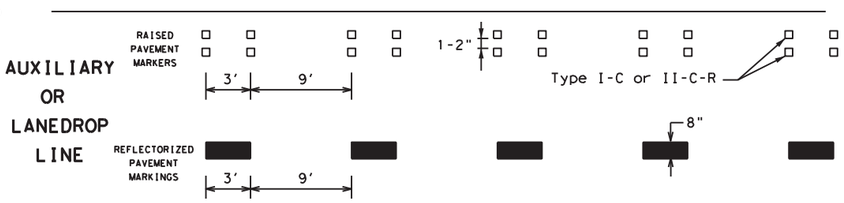


BROKEN LINES

CENTER LINE OR LANE LINE

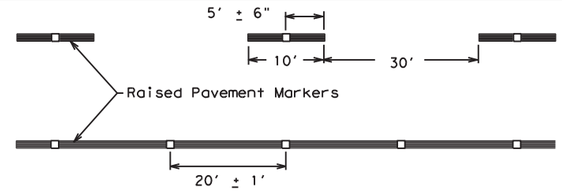


AUXILIARY OR LANEDROP LINE



REMOVABLE MARKINGS WITH RAISED PAVEMENT MARKERS

If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.



Centerline only - not to be used on edge lines

Raised pavement markers used as standard pavement markings shall be from the approved products list and meet the requirements of Item 672 "RAISED PAVEMENT MARKERS."

Texas Department of Transportation

Traffic Safety Division Standard

BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS

BC(12)-21

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	AUS	TRAVIS		17

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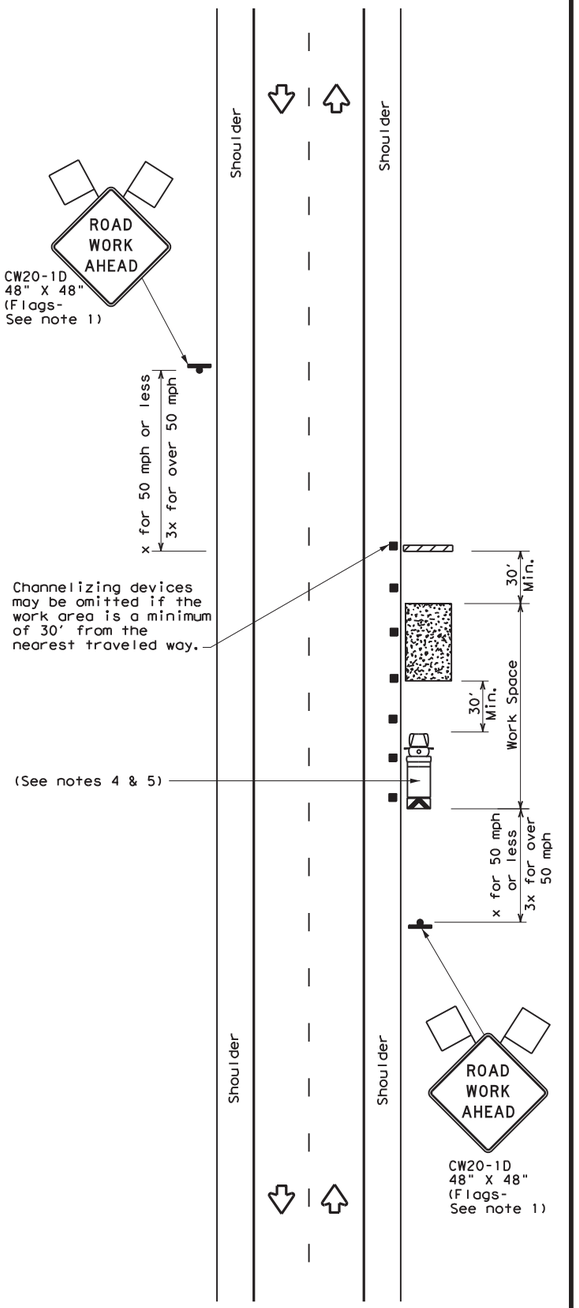
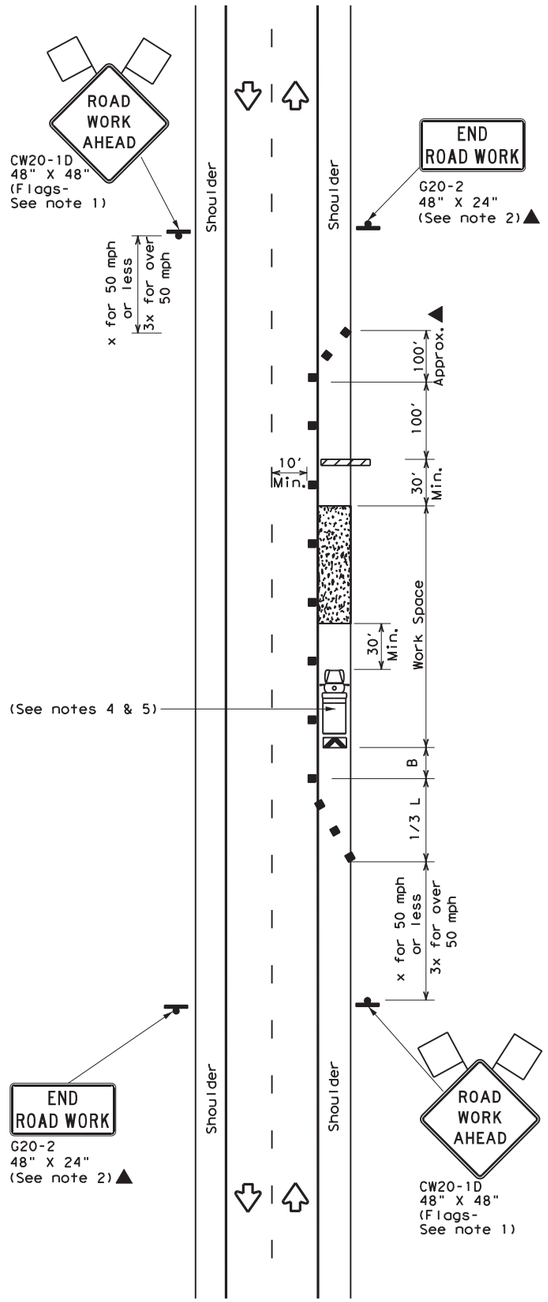


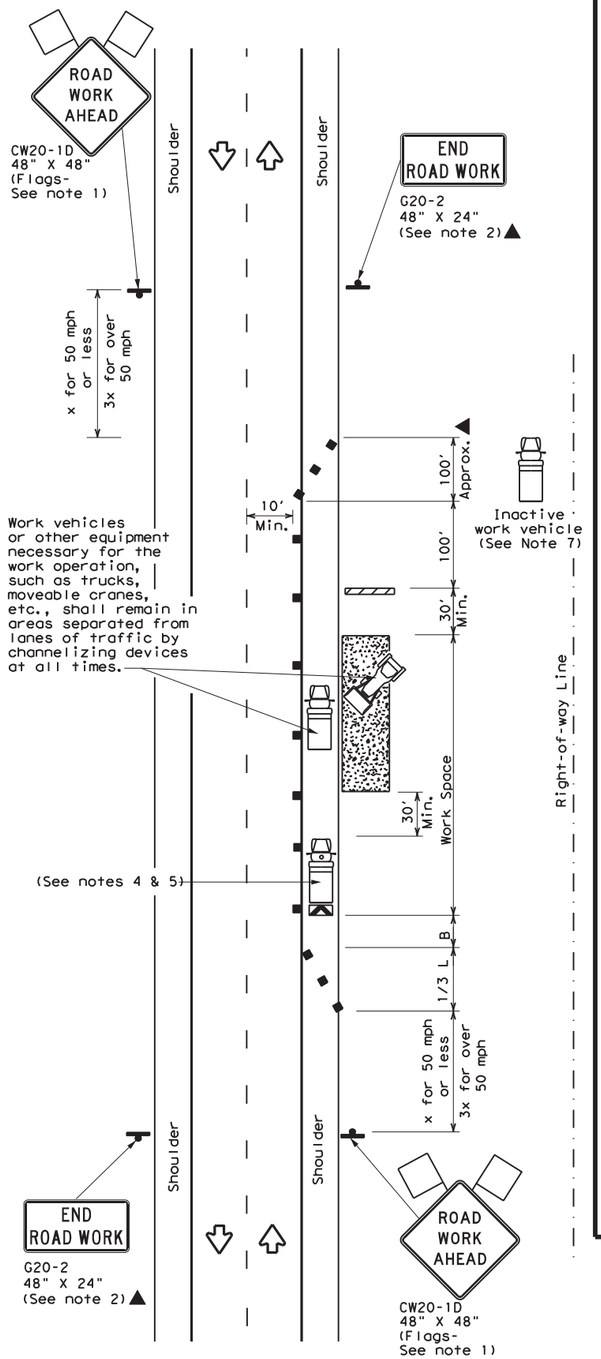
TCP (2-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (2-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

LEGEND

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices: On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only

** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

GENERAL NOTES

1. Flags attached to signs where shown, are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
3. Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
4. Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
6. See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
7. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
8. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

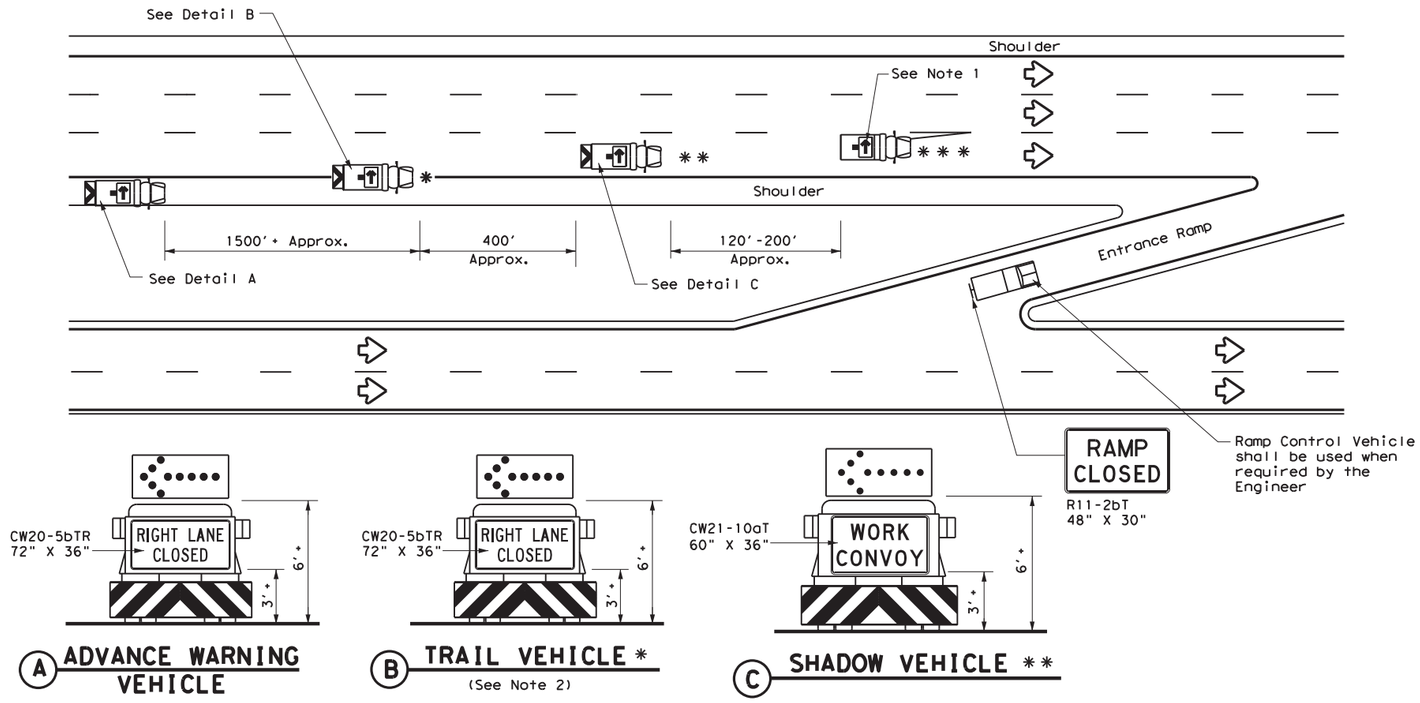
Texas Department of Transportation

Traffic Operations Division Standard

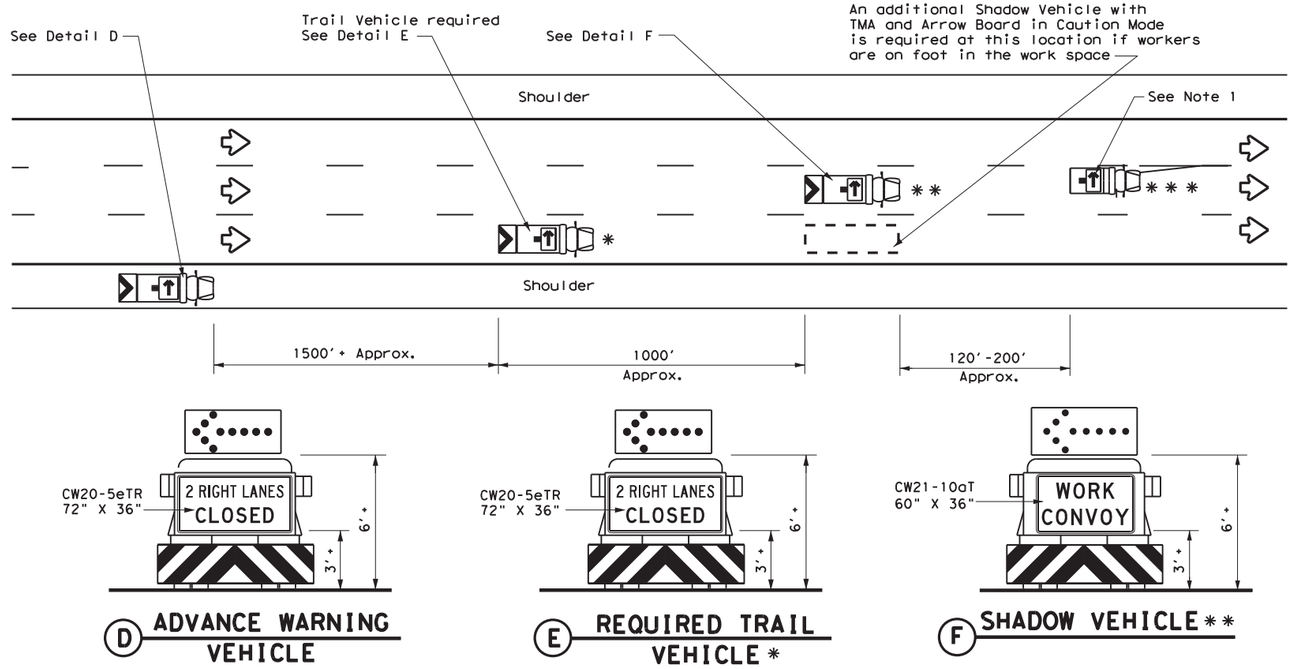
TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(2-1)-18

FILE: tcp2-1-18.dgn	DN:	CK:	DW:	CK:
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 2-12	AUS	TRAVIS		18
1-97 2-18				



RIGHT LANE CLOSURE ON DIVIDED HIGHWAY - TCP(3-2a)



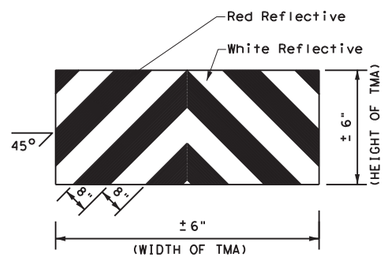
INTERIOR LANE CLOSURE ON MULTI-LANE DIVIDED HIGHWAY - TCP(3-2b)

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

GENERAL NOTES

1. ADVANCE WARNING, TRAIL and SHADOW vehicles shall be equipped with Type B or Type C flashing arrow boards as per the Barricade and Construction (BC) standards. Arrow boards on WORK vehicles will be optional based on the type of work being performed. The arrow boards shall be operated from inside the vehicle.
2. For TCP(3-2a) the Engineer will determine if the TRAIL VEHICLE is required based on prevailing roadway conditions, traffic volume, and sight distance restrictions. All other vehicles shown for both TCP(3-2a) and TCP(3-2b) are required.
3. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
4. The use of truck mounted attenuators (TMA) on the ADVANCE WARNING, SHADOW, and TRAIL vehicles are required.
5. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DMS 8300, Type A.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the work convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE may vary according to terrain, work activity and other factors.
9. Standard 48" X 48" diamond shaped warning signs with the same message as those shown may be used where adequate mounting space exists.
10. The signs shown should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or a truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board, must be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
12. The principles on this sheet may be used to close lanes from the left side of the roadway considering the number of lanes, shoulder width, sight distance, and ramp frequency.
13. Signs and flashing arrow board modes shall be appropriately altered when implementing left lane closures or interior closures which close the left lanes.
14. The Advance Warning Vehicle may straddle the edgeline when shoulder width makes it necessary.



STRIPING FOR TMA

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS DIVIDED HIGHWAYS

TCP(3-2)-13

FILE: tcp3-2.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	AUS	TRAVIS		19
1-97				

176

DATE: 8/13/2025 8:18:00 AM
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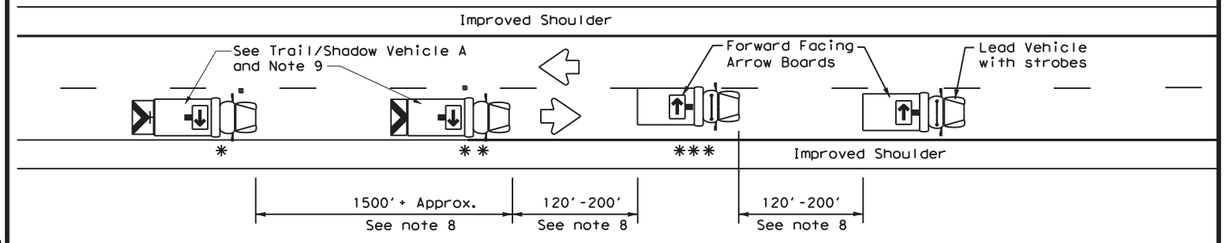
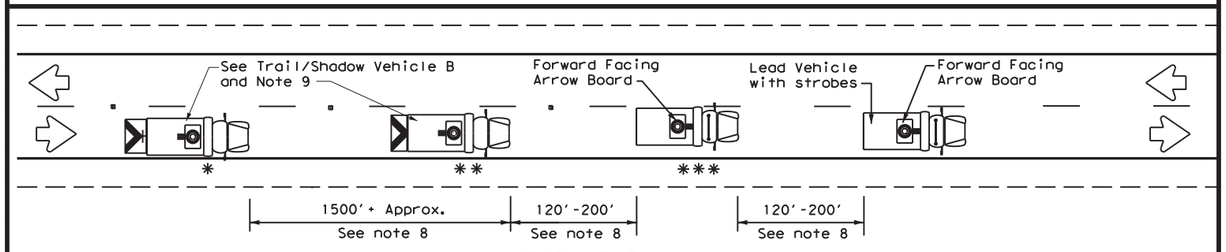


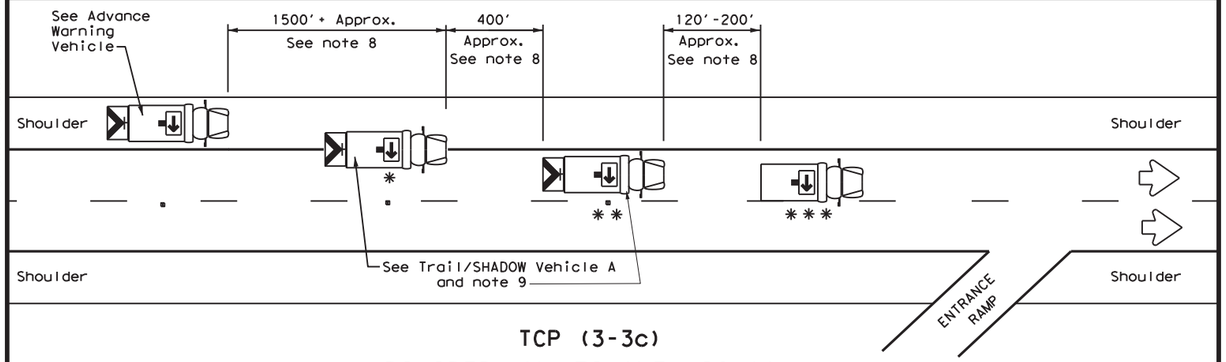
TCP (3-3a)

TWO LANE HIGHWAY WITH PAVED SHOULDERS (WORK ON TRAVEL LANE)



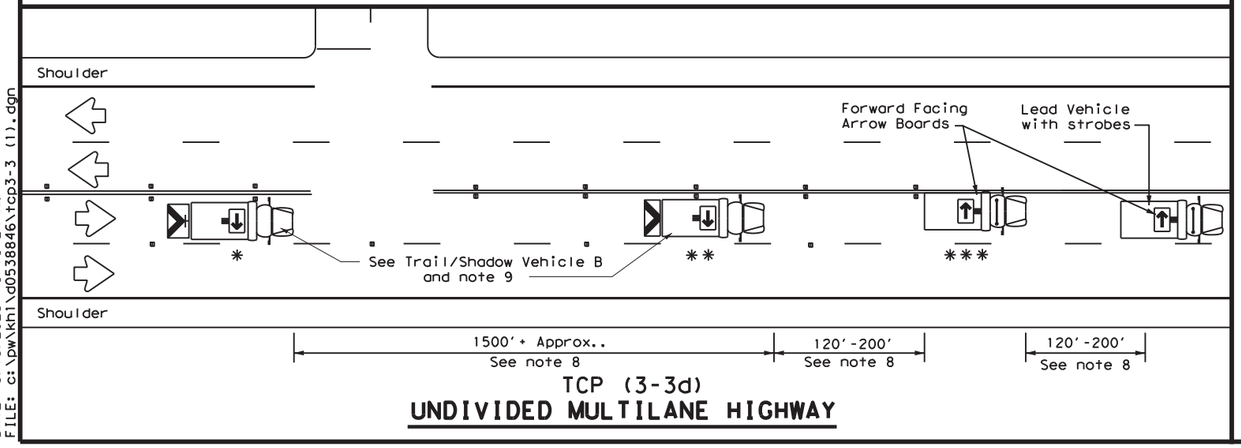
TCP (3-3b)

TWO LANE HIGHWAY WITHOUT PAVED SHOULDERS (WORK ON TRAVEL LANE)



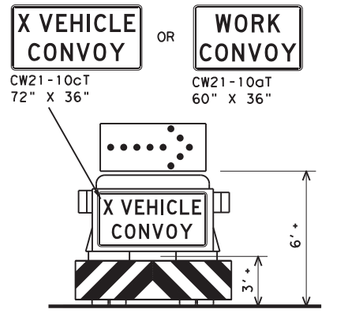
TCP (3-3c)

DIVIDED MULTILANE HIGHWAY



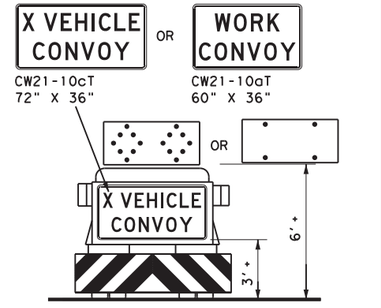
TCP (3-3d)

UNDIVIDED MULTILANE HIGHWAY



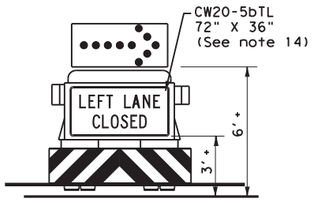
TRAIL/SHADOW VEHICLE A

with RIGHT Directional display
Flashing Arrow Board

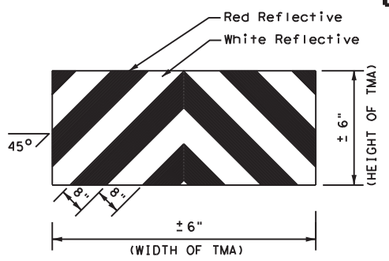


TRAIL/SHADOW VEHICLE B

with Flashing Arrow Board
in Caution Mode



ADVANCE WARNING VEHICLE



STRIPING FOR TMA

LEGEND			
*	Trail Vehicle	ARROW BOARD DISPLAY	
**	Shadow Vehicle		
***	Work Vehicle		RIGHT Directional
	Heavy Work Vehicle		LEFT Directional
	Truck Mounted Attenuator (TMA)		Double Arrow
	Traffic Flow		CAUTION (Alternating Diamond or 4 Corner Flash)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
✓				

GENERAL NOTES

1. TRAIL, SHADOW, and LEAD vehicles shall be equipped with arrow boards as illustrated. When a LEAD vehicle is not used on two way roads the WORK vehicle must have an arrow board. For divided roadways, the arrow board on the WORK vehicle is optional based on the type of work being performed. The Engineer will determine if the LEAD vehicle and/or TRAIL vehicle are required based on prevailing roadway conditions, traffic volume, and sight distance restrictions.
2. The use of amber high intensity rotating, flashing, oscillating, or strobe lights on vehicles are required. Blue high intensity rotating, flashing, oscillating, or strobe lights when mounted on the driver's side of the vehicle may be operated simultaneously with the amber beacons or strobe lights.
3. The use of truck mounted attenuators (TMA) on the SHADOW VEHICLE, ADVANCE WARNING and TRAIL VEHICLE are required.
4. Reflective sheeting on the rear of the TMA shall meet or exceed the reflectivity and color requirements of DEPARTMENTAL MATERIAL SPECIFICATION DMS 8300, Type A.
5. Flashing arrow boards shall be Type B or Type C as per the Barricade and Construction (BC) standards. The board shall be controlled from inside the vehicle.
6. Each vehicle shall have two-way radio communication capability.
7. When work convoys must change lanes, the TRAIL VEHICLE should change lanes first to shadow the other convoy vehicles.
8. Vehicle spacing between the TRAIL VEHICLE and the SHADOW VEHICLE will vary depending on sight distance restrictions. Motorists approaching the convoy should be able to see the TRAIL VEHICLE in time to slow down and/or change lanes as they approach the TRAIL VEHICLE. Vehicle spacing between the WORK VEHICLE and SHADOW VEHICLE and vehicle spacing between WORK VEHICLE and LEAD VEHICLE may vary according to terrain, work activity and other factors.
9. X VEHICLE CONVOY (CW21-10cT) or WORK CONVOY (CW21-10aT) signs shall be used on TRAIL VEHICLES and SHADOW VEHICLES as shown. As an option 48" x 48" diamond shaped WORK CONVOY (CW21-10T) or X VEHICLE CONVOY (CW21-10bT) signs may be used where adequate mounting space exists. When used, the X VEHICLE CONVOY sign shall have the number of the convoy vehicles displayed on the sign in the number designation "X" location. The X VEHICLE CONVOY sign shall not be used on the SHADOW VEHICLE if a TRAIL VEHICLE is used.
10. For divided highways with two or three lanes in one direction, the appropriate LEFT LANE CLOSED (CW20-5bTL), RIGHT LANE CLOSED (CW20-5bTR), or CENTER LANE CLOSED (CW20-5dT) sign should be used on the Advance Warning Vehicle. As an option, a portable changeable message sign (PCMS) or truck mounted changeable message sign (TMCMS) with a minimum character height of 12", and displaying the same legend may be substituted for these signs. An appropriate directional arrow display, simulating the size and legibility of the flashing arrow board may be used in the second phase of the PCMS/TMCMS message. When this is done, the arrow board will not be required on the Advance Warning Vehicle.
11. A double arrow shall not be displayed on the arrow board on the Advance Warning Vehicle.
12. For divided highways with three or four lanes in each direction, use TCP(3-2).
13. Standard diamond shape versions of the CW20-5 series signs may be used as an option if the rectangular signs shown are not available.
14. The Advance Warning Vehicle may straddle the edgeline when Shoulder width makes it necessary.
15. On two-lane two-way roadways, the work and protection vehicles should pull over periodically to allow motor vehicle traffic to pass. If motorists are not allowed to pass the work convoy, a DO NOT PASS (R4-1) sign should be placed on the back of the rearmost protection vehicle.

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN MOBILE OPERATIONS RAISED PAVEMENT MARKER INSTALLATION/ REMOVAL

TCP(3-3)-14

FILE: tcp3-3.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT September 1987	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
2-94 4-98	DIST	COUNTY		SHEET NO.
8-95 7-13	AUS	TRAVIS		20
1-97 7-14				

DATE: 8/13/2025 8:18:24 AM
FILE: c:\pw\kh1\d0538846\tcp3-3 (1).dgn

Alignment Name: CL SH 71
Alignment Description:
Alignment Style: Alignment\Baseline

	Station	Northing	Easting
Element: Linear			
POT	1667+67.02	10066346.98	3062734.389
PC	1695+58.88	10064299.5	3064632.368
Tangential Direction:	S42.830°E		
Tangential Length:	2791.863		
Element: Curve-1			
PC	1695+58.88	10064299.5	3064632.368
PI	1700+09.02	10063969.38	3064938.387
CC		10066067.05	3066539.141
PT	1704+50.33	10063761.35	3065337.578
Radius:	2600		
Delta:	19.645°	Left	
Degree of Curvature (Arc):	2.204°		
Length:	891.45		
Tangent:	450.144		
Chord:	887.09		
Middle Ordinate:	38.112		
External:	38.679		
Back Tangent Direction:	S42.830°E		
Back Radial Direction:	S47.170°W		
Chord Direction:	S52.652°E		
Ahead Radial Direction:	S27.525°W		
Ahead Tangent Direction:	S62.475°E		
Element: Linear			
PT	1704+50.33	10063761.35	3065337.578
PI	1709+91.37	10063511.32	3065817.374
Tangential Direction:	S62.475°E		
Tangential Length:	541.038		
Element: Linear			
PI	1709+91.37	10063511.32	3065817.374
POT	1745+55.90	10061836.48	3068963.933
Tangential Direction:	S61.975°E		
Tangential Length:	3564.534		

PRELIMINARY
FOR REVIEW ONLY
Not for construction, bidding, or permit purposes.
Kimley»Horn
Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

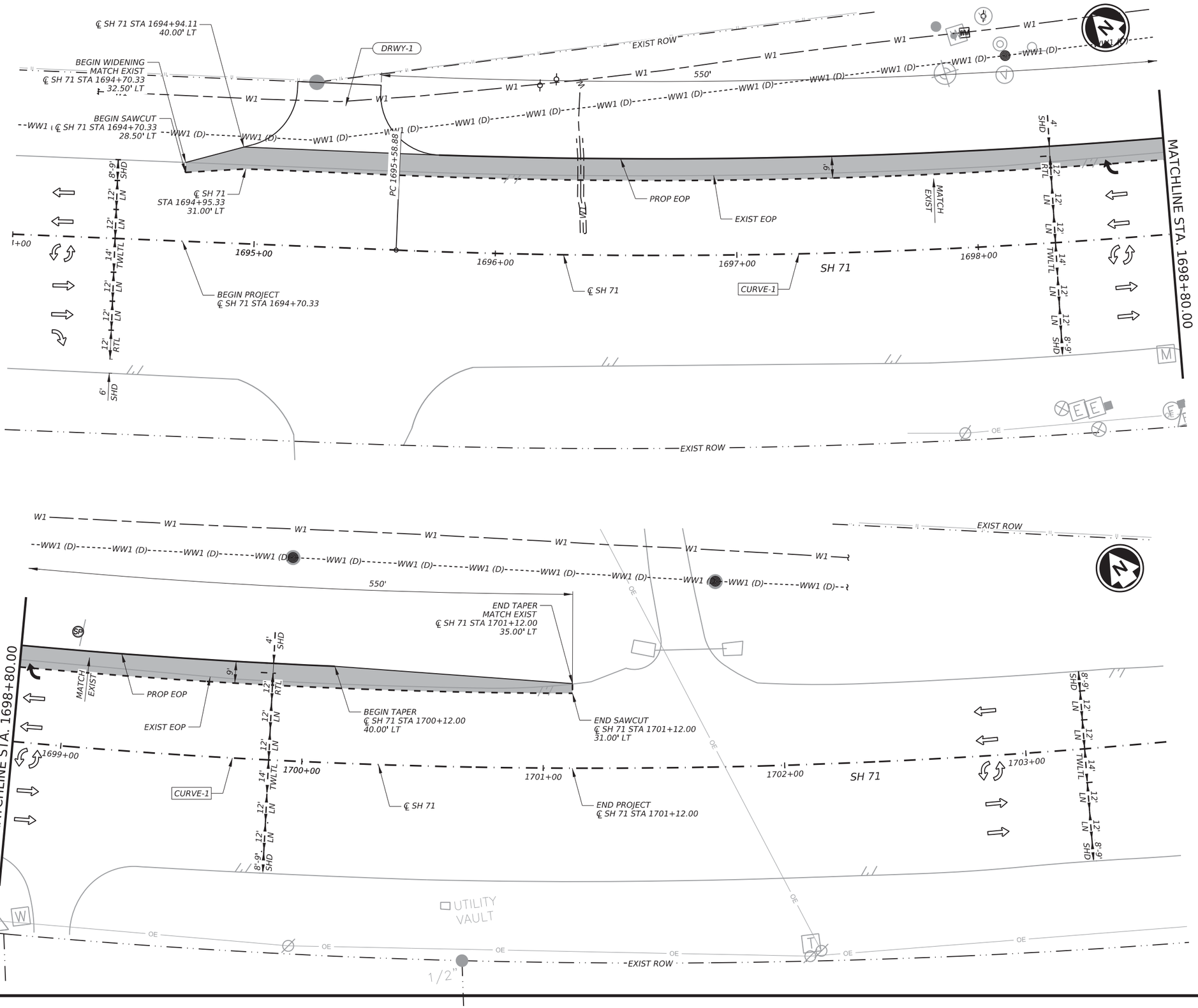
HORIZONTAL ALIGNMENT DATA

SHEET 1 OF 1

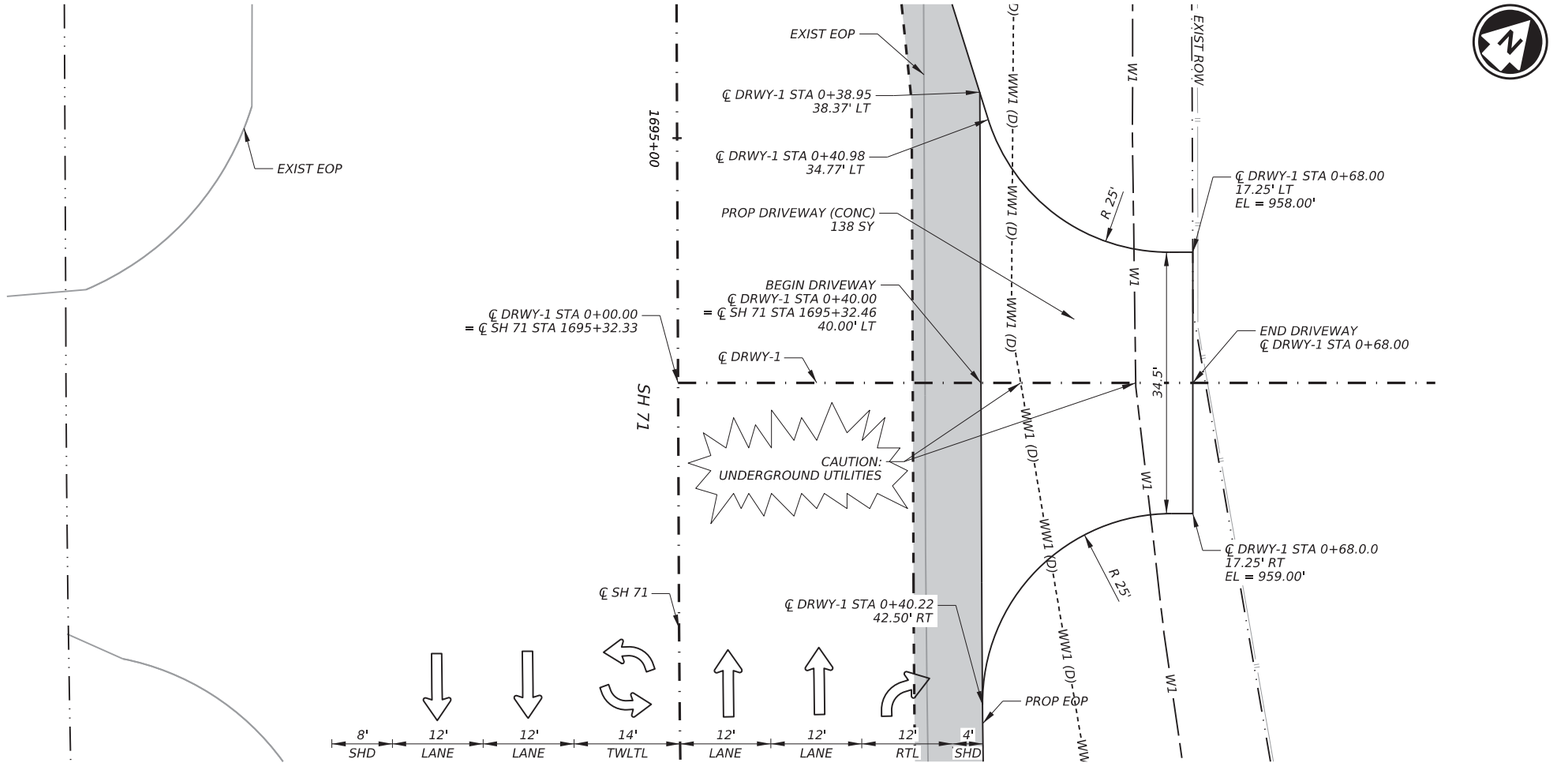
CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		21

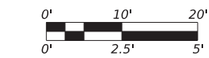
CK:
DW:
CK:
DW:

DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/3. Roadway/SH71_ROW_HAD.dgn



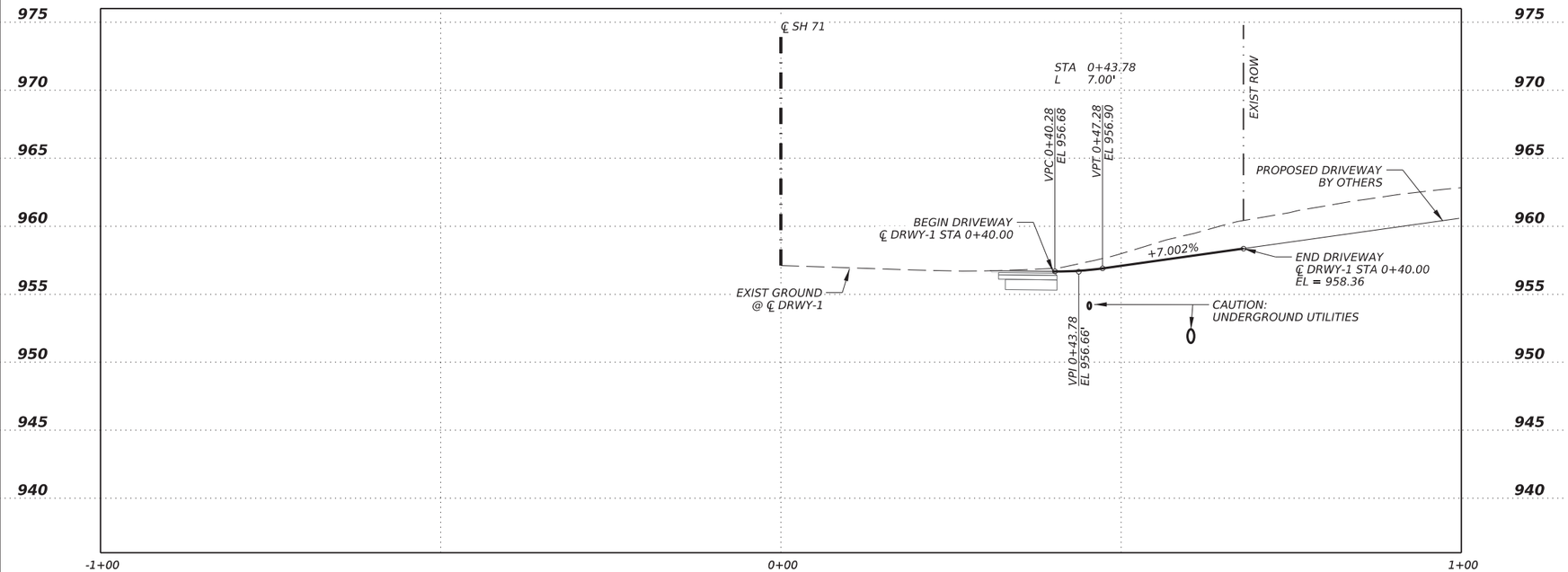
DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/3. Roadway/SH71 ROW PLAN.dgn





LEGEND

- EXIST RIGHT OF WAY
- PROP FEATURES
- EXIST FEATURES



PRELIMINARY
FOR REVIEW ONLY
Not for construction, bidding, or permit purposes.
Kimley»Horn
Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

DRIVEWAY PLAN AND PROFILE

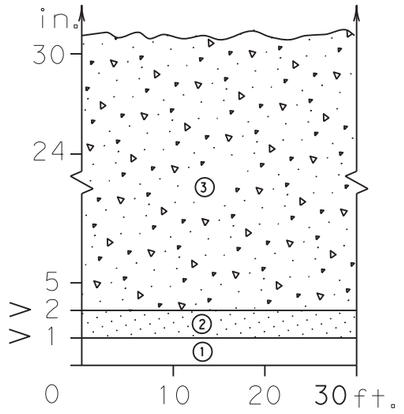
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		23

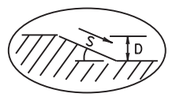
DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/3. Roadway/SH71 ROW DRWY PP.dgn

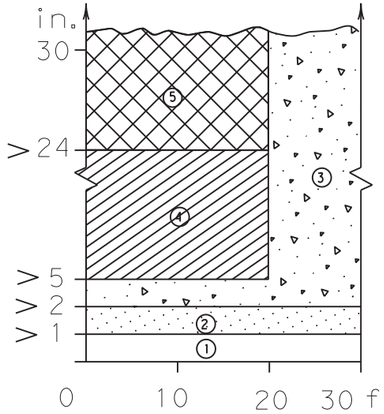
DEFINITION OF TREATMENT ZONES FOR VARIOUS EDGE CONDITIONS

Edge Height (D) in Inches versus Lateral Clearance (Y) in Feet

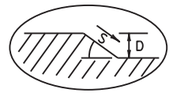


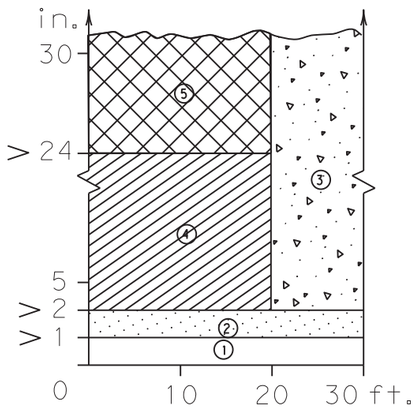
Edge Condition I
S = (3:1) (or flatter)



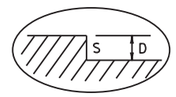


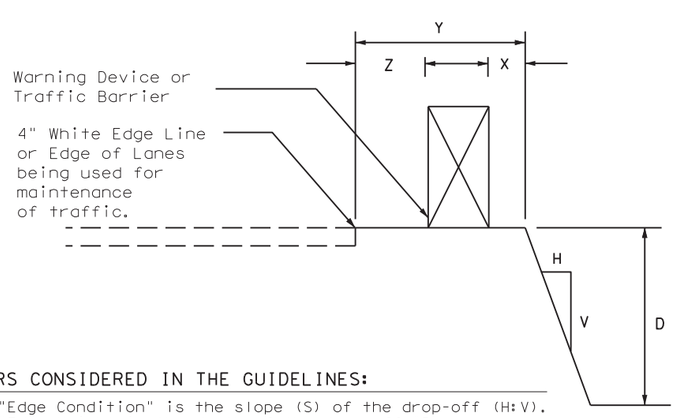
Edge Condition II
S = ((2.99):1) to (1:1)





Edge Condition III
S is steeper than (1:1)





FACTORS CONSIDERED IN THE GUIDELINES:

1. The "Edge Condition" is the slope (S) of the drop-off (H:V). The "Edge Height is the depth of the drop-off "D".

2. Distance "X" is to be the maximum practical under job conditions. Two feet minimum for high speed conditions. Distance "Y" is the lateral clearance from edge of travel lane to edge of dropoff. Distance "Z" does not have a minimum.

3. In addition to the factors considered in the guidelines, each construction zone drop-off situation should be analyzed individually, taking into account other variables, such as: traffic mix, posted speed in the construction zone, horizontal curvature, and the practicality of the treatment options.

4. The conditions for indicating the use of positive or protective barriers are given by Zone-5 and Figure-1. Traffic barriers are primarily applicable for high speed conditions. Urban areas with speeds of 30 mph or less may have a lesser need for signing, delineation, and barriers. Right-angled edges, however, with "D" greater than 2 inches and located within a lateral offset of 6 feet, may indicate a higher level of treatment.

5. If the distance "Y" must be less than 3 feet, the use of a positive barrier may not be feasible. In such a case, consider either: 1) narrowing the lanes to a desired 11 to 12 feet or 10 foot minimum (see CW20-8 sign), or 2) provide an edge slope such as Edge Condition I.

Zone	Treatment Types Guidelines:
①	No treatment
②	CW 8-11 "Uneven Lanes" signs.
③	CW 8-9a Shoulder Drop-Off" or CW 8-11 signs plus vertical panels.
④	CW8-9a or CW 8-11, signs plus drums. Where restricted space precludes the use of drums, use vertical panels. An edge slope to that of the profered Edge Condition I.
⑤	Check indications (Figure-1) for possitive barrier. Where positive barrier is not indicated, the treatment shown above for Zone-4 may be used after consideration of other applicable factors.

Edge Condition Notes:

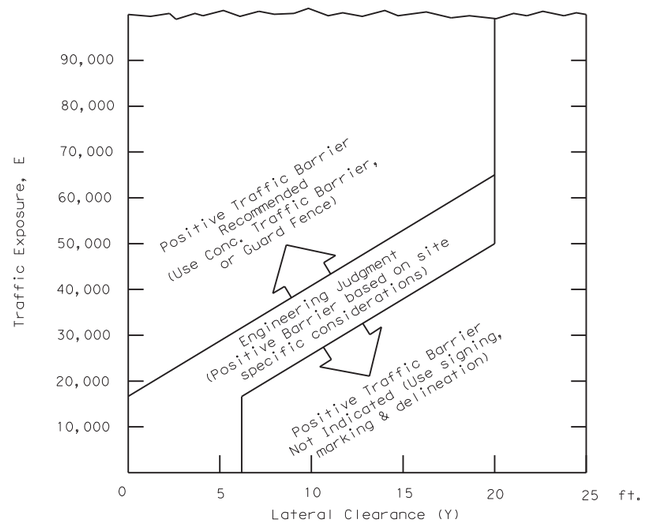
1. Edge Condition I: Most vehicles are able to traverse an edge condition with a slope rate of (3 to 1) or flatter. The slope must be constructed with a compacted material capable of supporting vehicles.

2. Edge Condition II: Most vehicles are able to traverse an edge condition with a slope between (2.99 to 1) and (1 to 1) so long as "D" does not exceed 5 inches. Under-carriage drag on most automobiles will occur when "D" exceeds 6 inches. As "D" exeeds 24 inches, the possibility for rollover is greater in most vehicles.

3. Edge Condition III: When slopes are greater than (1 to 1) and where "D" is greater than 2 inches, a more difficult control factor may exist for some vehicles, if not properly treated. For example, where "D" is greater than 2 inches and up to 24 inches different types of vehicles may experience different steering control at different edge heights. Automobiles might experience more steering control differential when "D" is greater than 2 inches and up to 5 inches. Trucks, particularly those with high loads, have more steering control differential when "D" is greater than 5 inches and up to 24 inches. When "D" exceeds 24 inches, the possibility of rollover is greater for most vehicles.

4. Milling or overlay operations that result in Edge Condition III should not be in place without appropriate warning treatments, and these conditions should not be left in place for extended periods of time.

FIGURE-1: CONDITIONS INDICATING USE OF POSITIVE BARRIER FOR ZONE 5 (▨)



1. E = ADT x T
   Where ADT is that portion of the average daily traffic volume traveling within 20 feet (generally two adjacent lanes) of the edge dropoff condition; and, T is the duration time in years of the dropoff condition.

2. Figure-1 provides a practical approach to the use of positive barriers for the protection of vehicles from pavement drop-offs. Other factors, such as the presence of heavy machinery, construction workers, or the mix and volume of traffic may make the use of positive barriers appropriate, even when the edge condition alone may not justify the use of a barrier.

3. An approved end treatment should be provided for any positive barrier end located within the clear zone.

These guidelines apply to temporary traffic control areas or work zones where continuous pavement edges or drop-offs exists parallel and adjacent to a lane used by traffic. The edge conditions may be present between shoulders and travel lanes, between adjacent or opposing travel lanes, or at intermediate points across the width of the paved surface. Due to the variability in construction operations, tolerances in the variables may be allowed by the engineer. These guidelines do not apply to short term operations. These guidelines do not constitute a rigid standard or policy; rather, they are guidance to be used in conjunction with engineering judgement. These guidelines may be updated on the Design Division's on-line manuals.

Engineer's Seal

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Kimley»Horn
Engineer DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Date _____

Texas Department of Transportation

Traffic Safety Division Standard

TREATMENT FOR VARIOUS EDGE CONDITIONS

FILE: edgecon.dgn	DN:	CK:	DW:	CK:
©TxDOT August 2000	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
03-01 08-01 9-21	DIST	COUNTY		SHEET NO.
	AUS	TRAVIS		24

DATE: 8/13/2025 8:20:14 AM
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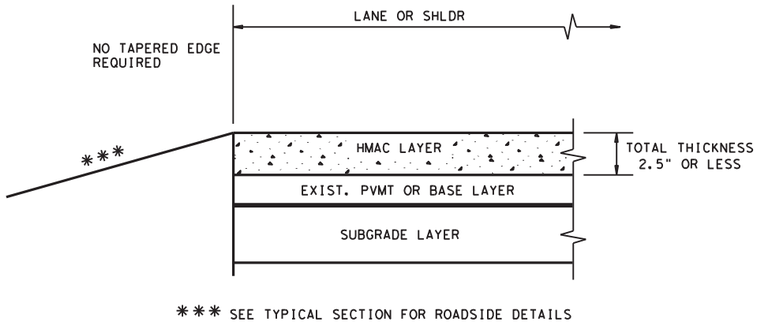
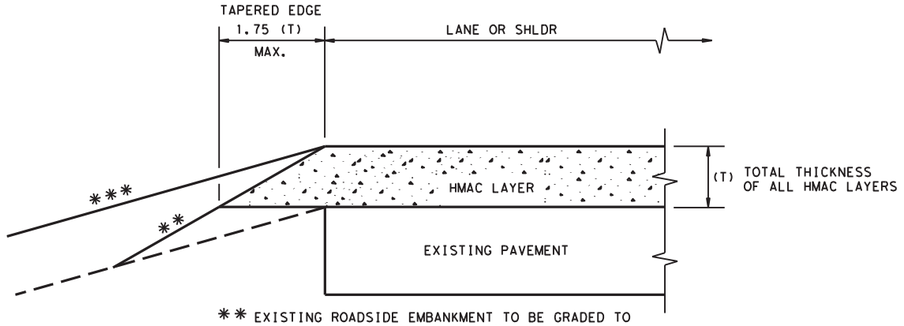


*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

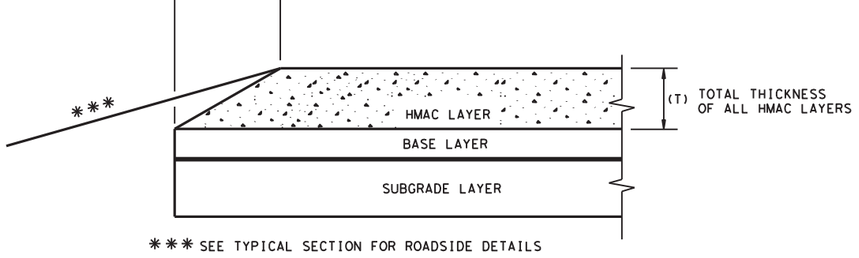
CONDITION - 1
THIN HMAC SURFACES OR HMAC OVERLAY WITH THICKNESS OF 2.5" OR LESS



** EXISTING ROADSIDE EMBANKMENT TO BE GRADED TO PRODUCE A SMOOTH LEVEL SURFACE FOR PLACEMENT OF TAPERED EDGE. THIS WORK IS SUBSIDIARY TO THE VARIOUS BID ITEMS.

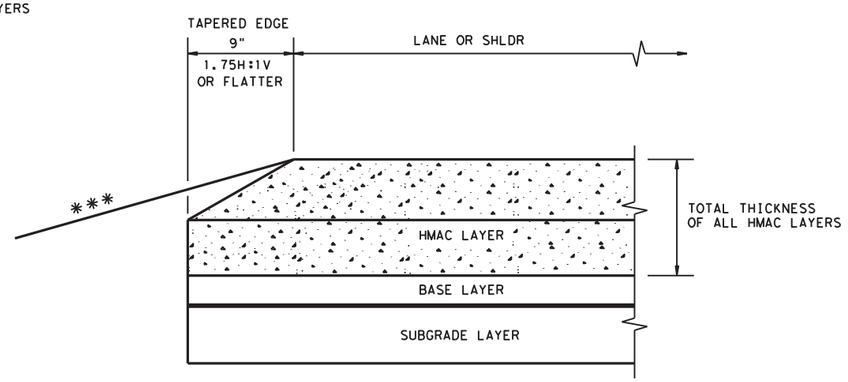
*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 2
OVERLAY OF EXISTING PAVEMENT HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 3
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 2.5" TO 5"



*** SEE TYPICAL SECTION FOR ROADSIDE DETAILS

CONDITION - 4
NEW OR RECONSTRUCTED PAVEMENT HMAC THICKNESS 5" OR GREATER

(NOT TO SCALE)

GENERAL NOTES

1. UNLESS OTHERWISE SHOWN IN THE PLANS, A VERTICAL EDGE IS PERMISSIBLE FOR HMAC PLACED GREATER THAN 5" BELOW THE EDGE OF PAVEMENT AND FOR THICKNESS OF HMAC LESS THAN 2.5".
2. FOR FURTHER INFORMATION REGARDING THE ROADSIDE AND PAVEMENT DETAILS, SEE TYPICAL SECTIONS.
3. PAYMENT FOR TAPERED EDGE WILL BE IN ACCORDANCE WITH APPLICABLE ITEMS IN THE CONTRACT.
4. THE SLOPE OF THE TAPERED EDGE SHALL BE 1.75H:1V OR FLATTER.
5. THE TAPERED EDGE SHALL BE PRODUCED BY USE OF A SCREED ATTACHMENT CAPABLE OF PRODUCING A SMOOTH COMPACTED SURFACE. ADDITIONAL COMPACTING EFFORT BEHIND THE SCREED IS NOT REQUIRED.

Texas Department of Transportation

Design Division Standard

TAPERED EDGE DETAILS HMAC PAVEMENT

TE(HMAC)-11

FILE: tehmac11.dgn	DN: TxDOT	CK: RL	DW: KB	CK:		
© TxDOT January 2011	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0700	03			SH 71	
	DIST	COUNTY			SHEET NO.	
	AUS	TRAVIS			25	

DATE: 8/13/2025
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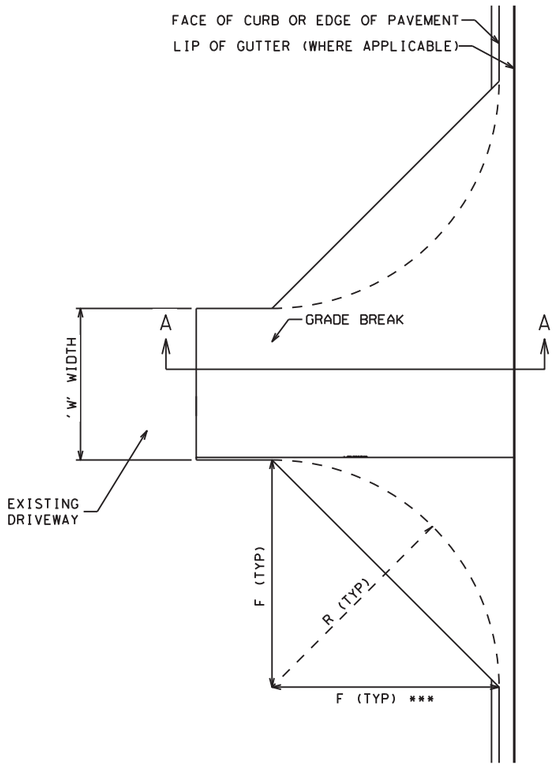


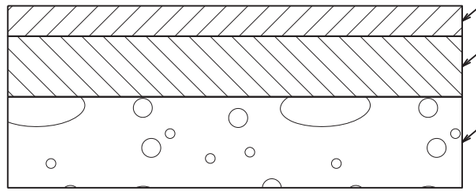
DRIVEWAY PLAN

FLARE OR RADIUS	FARM/RANCH	RESIDENTIAL	COMMERCIAL
"F" OR "R" (FT)	25	25	25

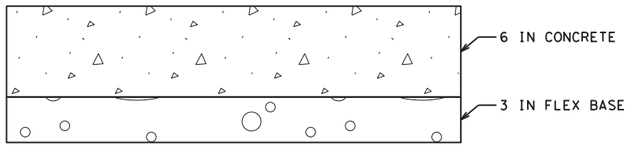
THESE ARE STANDARD DIMENSIONS UNLESS OTHERWISE SHOWN ELSEWHERE ON THE PLANS.

FLARES ARE TYPICALLY USED FOR SUBURBAN/URBAN (CURBED) ROADWAYS. RADII ARE TYPICALLY USED FOR RURAL OR UNCURBED ROADWAYS.

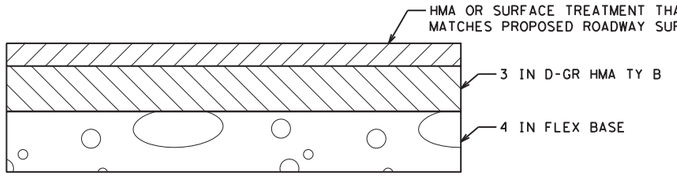
*** THIS 'F' DIMENSION MAY BE REDUCED TO KEEP WORK WITHIN THE ROW.



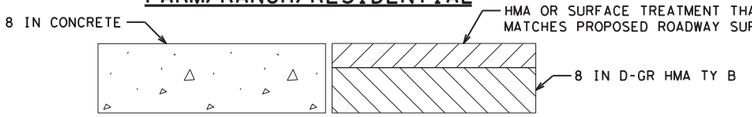
HMA OR SURFACE TREATEMENT - COMMERCIAL



CONCRETE - ALL DRIVEWAY TYPES

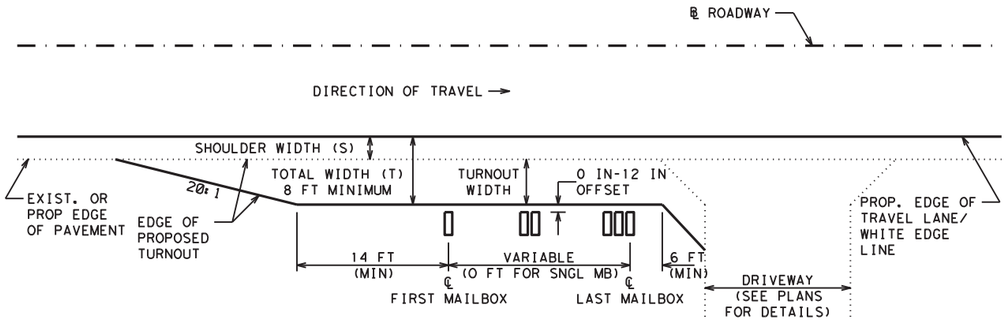


HMA OR SURFACE TREATMENT - FARM/RANCH/RESIDENTIAL

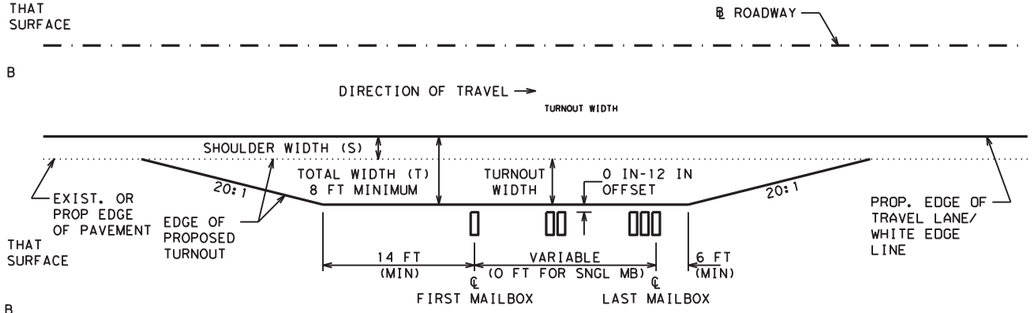


FAST TRACK ACP (TYPE 3) OR CONCRETE

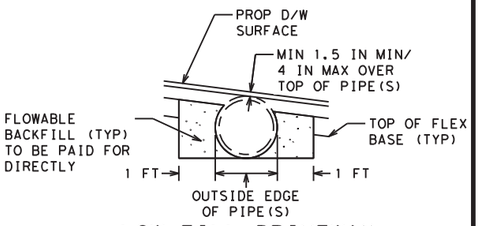
DRIVEWAY AND TURNOUT TYPICAL SECTIONS



MAILBOX TURNOUT PLAN WITH DRIVEWAY

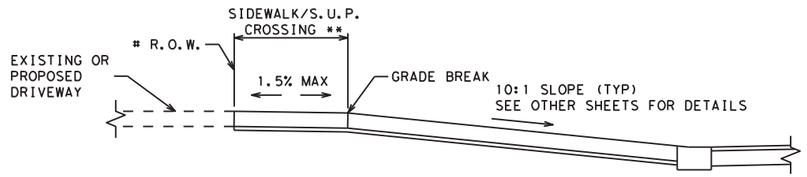


MAILBOX TURNOUT PLAN WITHOUT DRIVEWAY



LOW FILL DRIVEWAY

ONLY ONE PIPE SHOWN
SEE ELSEWHERE ON THE PLANS FOR SPECIFIC DRIVEWAY DETAILS



ACTUAL TIE-IN SHOWN ELSEWHERE IN PLANS OR AS DIRECTED

DRIVEWAY WITH GUTTER SECTION A-A

ENSURE GRADE BREAK DOES NOT EXCEED 8% UNLESS OTHERWISE DIRECTED. PROVIDE ABSOLUTE MINIMUM SIDEWALK CROSSING WIDTH OF 4' FOR DRIVEWAYS WIDTH OF 20' OR LESS

** LOCATE SIDEWALK CROSSING TO ALIGN WITH ADJACENT SIDEWALK; SIDEWALK/S.U.P. WIDTH AND LOCATION SHOWN ELSEWHERE ON THE PLANS.

GENERAL NOTES

PROVIDE EXPANSION 20 FT C-C FOR WIDTH OR LENGTH OVER 25 FT. EXPANSION JOINT PER AUS STANDARD FOR SIDEWALK (MCPSWMD).

REINFORCEMENT WILL BE IN ACCORDANCE WITH ITEM 432.3.1 USING NO. 3 OR NO. 4 BARS.

FIBER REINFORCEMENT IS NOT ALLOWED. CLASS A CONCRETE IS ALLOWED TO USE COARSE AGGREGATE GRADES 1-8.

IN LIEU OF PFC OR TOM, SURFACE MUST BE 1.5" D-GR HMA TY D. IF SURFACE IS A MULTIPLE COURSE SURFACE TREATEMENT, ALL COURSES MUST BE PLACED ON DRIVEWAY. SURFACE HMA IS PG 76-22. NON SURFACE HMA IS PG 64-22 AND MAY BE BLADE LAID.

FURNISH BASE MEETING THE REQUIREMENTS FOR ANY TYPE OR GRADE IN ACCORDANCE WITH ITEM 247. BASE COMPRESSIVE STRENGTHS ARE WAIVED.

THE BASE UNDER THE CONCRETE MAY BE REPLACED WITH CONCRETE AT A RATIO OF 3 INCHES OF BASE EQUALS 2 INCHES OF CONCRETE.

FAST TRACK DRIVEWAYS MUST BE CLOSED, CONSTRUCTED, AND REOPENED WITHIN 24 HOURS.

IF ROOTS ARE ENCOUNTERED VERIFY WITH THE ENGINEER PRIOR TO ACCOMMODATING OR REMOVING 2 IN. DIAMETER OR LARGER ROOTS. ROOT REMOVAL MUST BE IN ACCORDANCE WITH ITEM 752.4.2. ROOTS MAY REMAIN IN THE BASE. FOR IMPROVEMENTS WITHIN 6 IN. OF A ROOT, THE CONCRETE THICKNESS MAY BE REDUCED BY 1 IN. AND THE BASE INCREASED BY 1 IN. TO MINIMIZE IMPACTS TO THE ROOTS. ADJUST BASE AND SURFACE PROFILE TO PROVIDE A 1 IN. BASE CUSHION AROUND THE ROOTS. THE SURFACE PROFILE MAY BE ADJUSTED TO THE EXTENT ALLOWED BY ADA. THIS WORK IS SUBSIDIARY.

Texas Department of Transportation

Austin District Standard

DRIVEWAYS AND MAILBOX TURNOUTS

DWMB-22 (AUS)

REVISIONS
01/16: SHEET CREATED
04/19: APPROVED
11/20: TABLE REVISED, GN ADDED, PLAN & PROFILE MODIFIED
01/22: ADDED TURNOUT INFO

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		26

DATE: 8/13/2025 8:21:04 AM
FILE: c:\pw\kn1\d0538844\dwmb-22.dgn

LEGEND

- EXIST DRAINAGE AREA
- PROP DRAINAGE AREA
- 950 — EXIST 5' CONTOURS
- EXIST 1' CONTOURS
- FLOW ARROW
- xx-x / xx.xx AC — DRAINAGE AREA LABEL

NOTES:

1. RUNOFF VALUES CALCULATED USING RATIONAL METHOD IN ACCORDANCE WITH TXDOT 2019-1 HDM CHAPTER 4 SECTION 12.
2. RAINFALL DATA OBTAINED FROM TXDOT EBD LOOKUP FOR TRAVIS COUNTY ZONE 1 AMS.

NAME	FREQUENCY YEAR	AREA (ACRES)	WEIGHTED COEFFICIENT	TOC (MIN)	I (IN/HR)	Q (CFS)
DA-EXIST	2	2.26	0.41	15	3.87	3.25
	5				5.25	4.41
	10				6.35	5.33
DA-PROP	2	1.91	0.51	10	4.56	4.30
	5				6.16	5.81
	10				7.42	7.00

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Kimley»Horn
Engineer DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

DRAINAGE AREA MAP

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		27

CK: DW: CK: DW:

DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/5. Drainage/SH71_DRG_DAM.dgn

Site Data - Culvert 1
Site Data Option: Culvert Invert Data
Inlet Station: 0.00 ft
Inlet Elevation: 953.83 ft
Outlet Station: 33.00 ft
Outlet Elevation: 952.12 ft
Number of Barrels: 1

Table 1 - Culvert Summary Table

Discharge Names	Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth (ft)	Outlet Control Depth (ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocty (ft/s)
2 yr	4.30	4.30	955.07	1.24	0.0*	1-S2n	0.41	0.79	0.44	0.59	9.81	3.09
5 yr	5.81	5.81	955.34	1.51	0.0*	5-S2n	0.48	0.93	0.53	0.66	10.42	3.33
10 yr	7.00	7.00	955.59	1.76	0.0*	5-S2n	0.53	1.02	0.6	0.71	10.71	3.49

Culvert Data Summary - Culvert 1
Barrel Shape: Circular
Barrel Diameter: 1.50 ft
Barrel Material: Concrete
Embedment: 0.00 in
Barrel Manning's n: 0.0120
Culvert Type: Straight
Inlet Configuration: Mitered to Conform to Slope (Ke=0.7)
Inlet Depression: None

Table 2 - Summary of Culvert Flows at crossing

Headwater Elevation (ft)	Discharge Names	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
955.07	2 yr	4.30	4.30	0	1
955.34	5 yr	5.81	5.81	0	1
955.59	10 yr	7.00	7.00	0	1
956.00	Overtopping	8.63	8.63	0	Overtopping

Table 3 - Downstream Channel Rating Curve

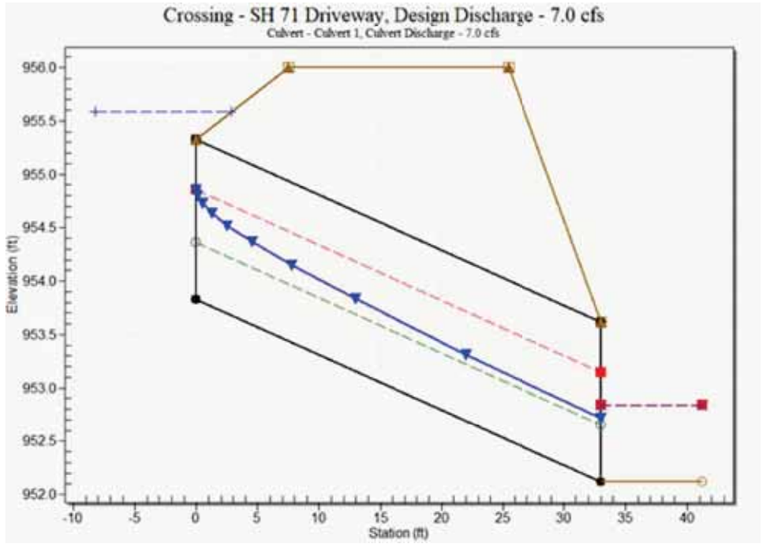
Flow (cfs)	Water Surface Elev (ft)	Depth (ft)	Velocity (ft/s)	Shear (psf)	Froude Number
4.30	952.71	0.59	3.09	1.35	1.00
5.81	952.78	0.66	3.33	1.51	1.02
7.00	952.83	0.71	3.49	1.62	1.03

Tailwater Channel Data
Tailwater Channel Option: Triangular Channel
Side Slope (H:V): 4.00 (_:1)
Channel Slope: 0.0366
Channel Manning's n: 0.0400
Channel Invert Elevation: 952.12 ft

Roadway Data for Crossing
Roadway Profile Shape: Irregular Roadway Shape (coordinates)
Irregular Roadway Cross-Section

Coord No.	Station (ft)	Elevation (ft)
0.00	-25.00	956.00
1.00	0.00	956.00
2.00	40.00	956.00

Roadway Surface: Paved
Roadway Top Width: 18.00 ft



PROPOSED DITCH ANALYSIS

STATION	FLOW LINE ELEVATION	CONTROLLING TOP DITCH ELEVATION	DITCH GRADE	LINING	FLAT BOTTOM WIDTH	DITCH DEPTH (FT)	NORMAL DEPTH (FT)	FRONT SLOPE (X:1)	BACK SLOPE (X:1)	CHANNEL n	HYDRAULIC AREA (SF)	DITCH CAPACITY (CFS)	DESIGN VELOCITY (FPS)	DESIGN Q(5) (CFS)	DELTA CAPACITY CAP - DES (CFS)
1695+75	957.48	958.19													
1696+00	957.36	958.01	0.49%	CLASS B	0	0.65	0.65	4	3	0.035	1.47	2.01	1.37	0.50	1.51
1696+50	957.11	957.96	0.49%	CLASS B	0	0.84	0.65	4	3	0.035	2.50	4.07	1.36	1.00	3.07
1697+00	956.87	957.69	0.49%	CLASS B	0	0.82	0.75	4	3	0.035	2.35	3.75	1.51	1.50	2.25
1697+50	956.62	957.62	0.49%	CLASS B	0	0.99	0.75	4	3	0.035	3.44	6.25	1.51	2.00	4.25
1698+00	956.38	958.10	0.49%	CLASS B	0	1.72	0.84	4	3	0.035	10.35	27.15	1.62	3.00	24.15
1698+50	956.13	958.50	0.49%	CLASS B	0	2.37	0.84	4	3	0.035	19.67	63.94	1.63	3.50	60.44
1699+00	955.89	958.25	0.49%	CLASS B	0	2.36	0.91	4	3	0.035	19.49	63.06	1.72	4.00	59.06
1699+50	955.64	958.12	0.49%	CLASS B	0	2.48	0.91	4	3	0.035	21.53	72.05	1.72	4.50	67.55
1700+00	955.39	957.80	0.50%	CLASS B	4	2.41	0.58	4	3	0.035	29.93	111.63	1.70	5.00	106.63
1700+50	955.14	957.08	0.50%	CLASS B	5	1.94	0.56	4	3	0.035	22.84	77.17	1.70	5.81	71.36
1701+00	954.89	956.10	0.50%	CLASS B	5	1.21	0.63	4	3	0.035	11.12	28.93	1.83	5.81	23.12

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Kimley»Horn
Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928
Texas Department of Transportation
SH 71
HYDRAULIC DATA
SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		28

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DATE: 8/13/2025
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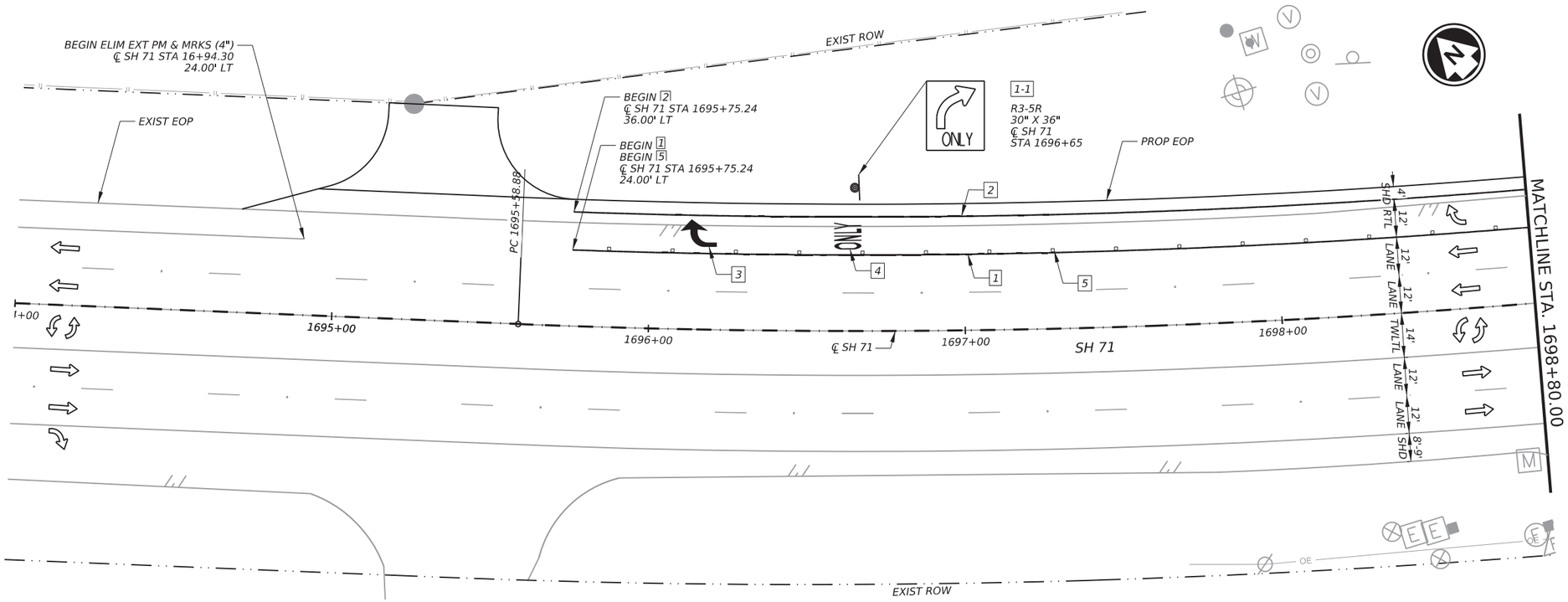

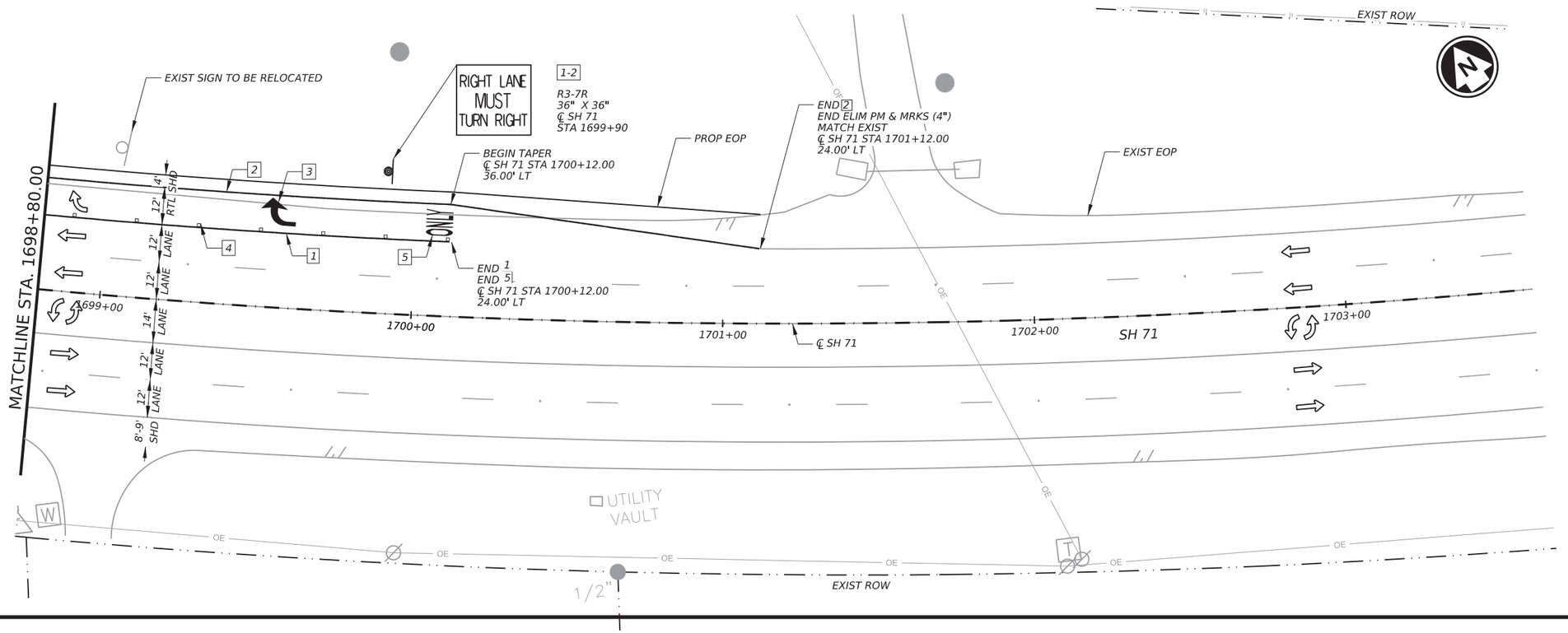

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Kimley»Horn
Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/13/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

SIGNING AND PAVEMENT MARKING LAYOUT

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		29

CK:
DW:
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DATE: 8/13/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/8. Traffic/SH71_TRF_SPMD.dgn

SUMMARY OF SMALL SIGNS

SM RD SGN ASSM TY XXXXX (X) XX (X-XXXX)

PLAN SHEET NO.	SIGN NO.	SIGN NOMENCLATURE	SIGN	DIMENSIONS	FLAT ALUMINUM (TYPE A)	EXAL ALUMINUM (TYPE G)	POST TYPE FRP = Fiberglass TWT = Thin-Wall 10BWG = 10 BWG S80 = Sch 80	POSTS 1 or 2	ANCHOR TYPE UA=Universal Conc UB=Universal Bolt SA=Slipbase-Conc SB=Slipbase-Bolt WS=Wedge Steel WP=Wedge Plastic	MOUNTING DESIGNATION PREFABRICATED P = "Plain" T = "T" U = "U"	1EXT or 2EXT = # of Ext BM = Extruded Wind Beam WC = 1.12 #/ft Wing Channel EXAL= Extruded Alum Sign Panels	BRIDGE MOUNT CLEARANCE SIGNS (See Note 2) TY = TYPE TY N TY S
29	1-1	R3-5R		30 x 36			10BWG	1	SA	P		
29	1-2	R3-7R		36 x 36			10BWG	1	SA	P		

ALUMINUM SIGN BLANKS THICKNESS	
Square Feet	Minimum Thickness
Less than 7.5	0.080"
7.5 to 15	0.100"
Greater than 15	0.125"

The Standard Highway Sign Designs for Texas (SHSD) can be found at the following website.

http://www.txdot.gov/

NOTE:

1. Sign supports shall be located as shown on the plans, except that the Engineer may shift the sign supports, within design guidelines, where necessary to secure a more desirable location or to avoid conflict with utilities. Unless otherwise shown on the plans, the Contractor shall stake and the Engineer will verify all sign support locations.
2. For installation of bridge mount clearance signs, see Bridge Mounted Clearance Sign Assembly (BMCS)Standard Sheet.
3. For Sign Support Descriptive Codes, see Sign Mounting Details Small Roadside Signs General Notes & Details SMD(GEN).

Texas Department of Transportation

Traffic Operations Division Standard

SUMMARY OF SMALL SIGNS

SOSS

FILE:	sums16.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT	May 1987	CONT	SECT	JOB	HIGHWAY
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4-16		DIST	COUNTY		SHEET NO.
8-16		AUS	TRAVIS		30

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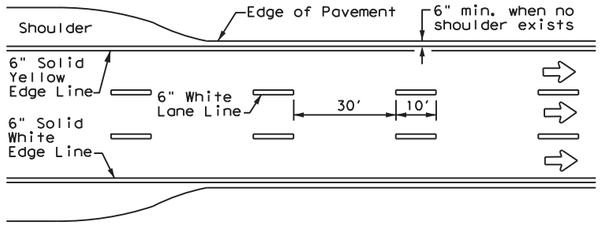
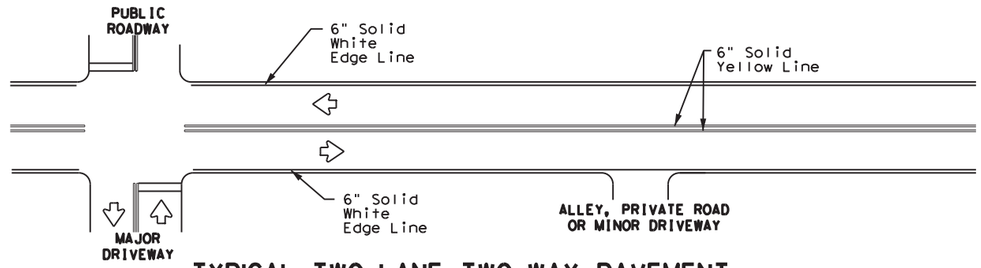
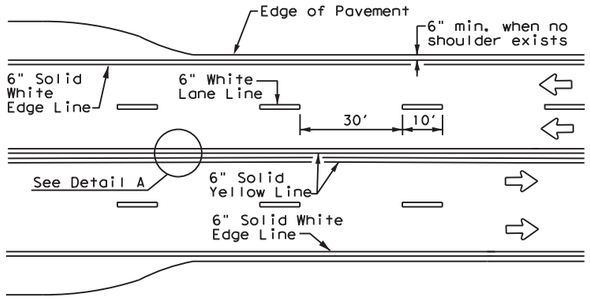
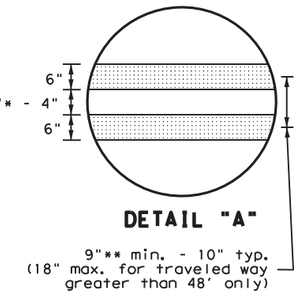


EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

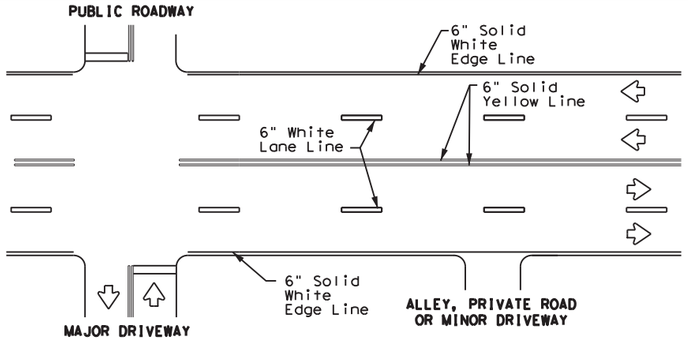




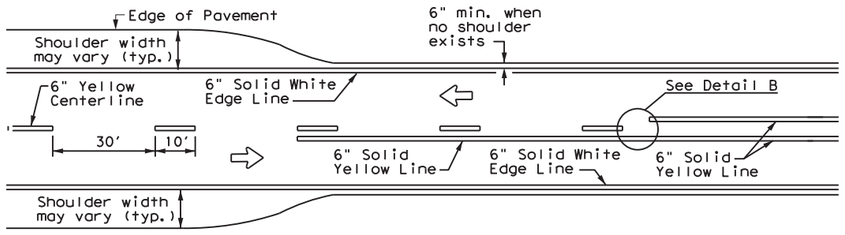
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS

* 2" minimum for restripe projects when approved by the Engineer.

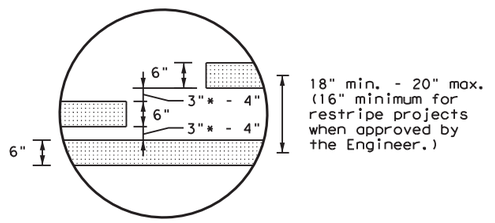
** 8" minimum for restripe projects when approved by the Engineer.



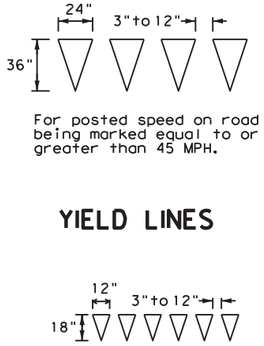
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS

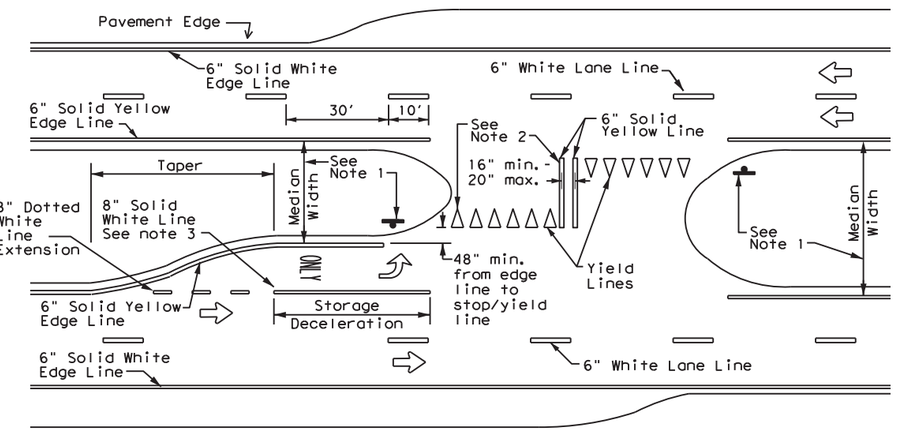


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



* 2" minimum for restripe projects when approved by the Engineer.





FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

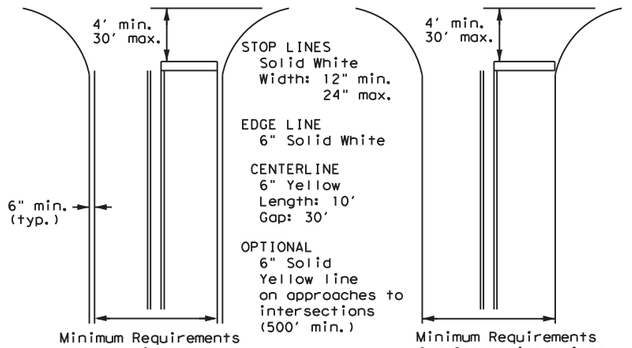
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections.
   Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs and stop bars are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop lines/yield lines) when a 50' or greater median centerline can be placed. Stop lines shall only be used with stop signs. Yield lines shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways

Texas Department of Transportation

Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

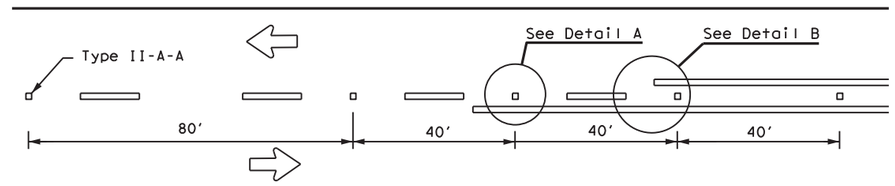
PM(1)-22

FILE: pm1-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
11-78 8-00 6-20	DIST	COUNTY		SHEET NO.
8-95 3-03 12-22	AUS	TRAVIS		31
5-00 2-12				

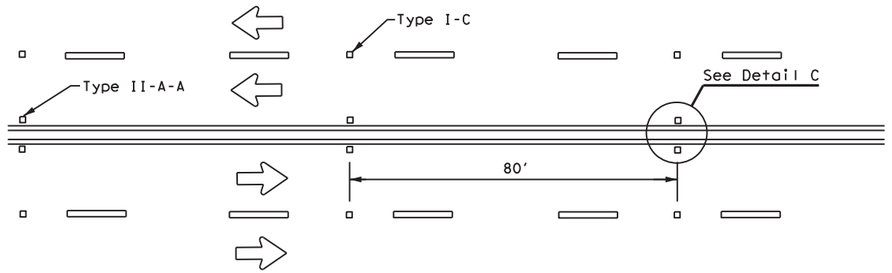
22A

DATE: 8/13/2025 8:23:10 AM
FILE: c:\pw\khl\d0538848\pm1-22.dgn

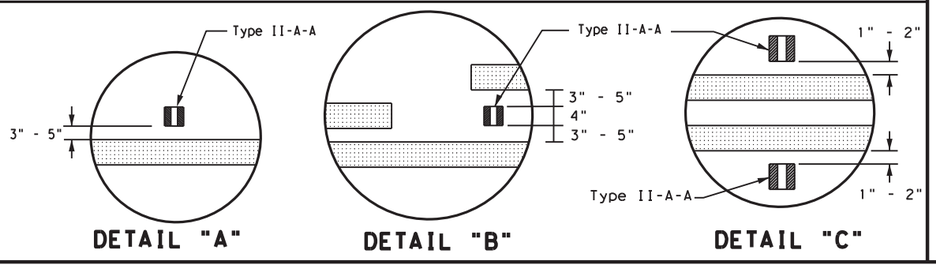
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

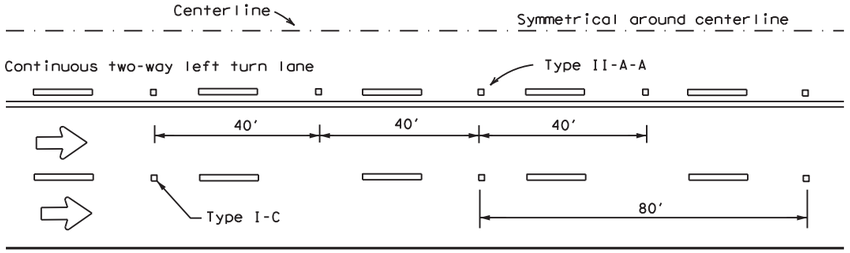


CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

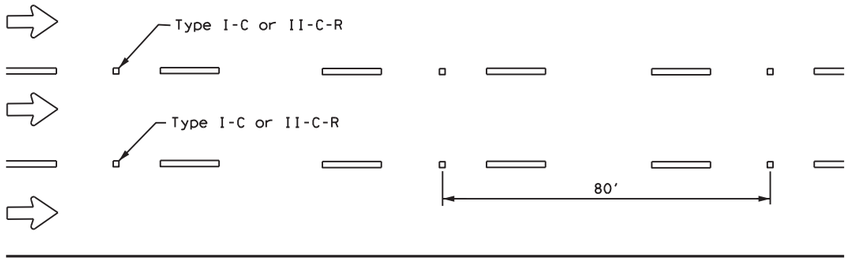


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS





CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



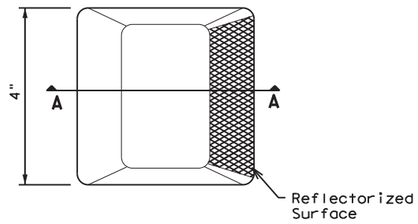
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

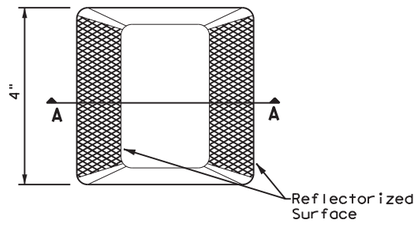
See Note 3.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

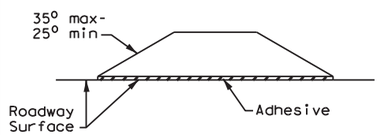
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)

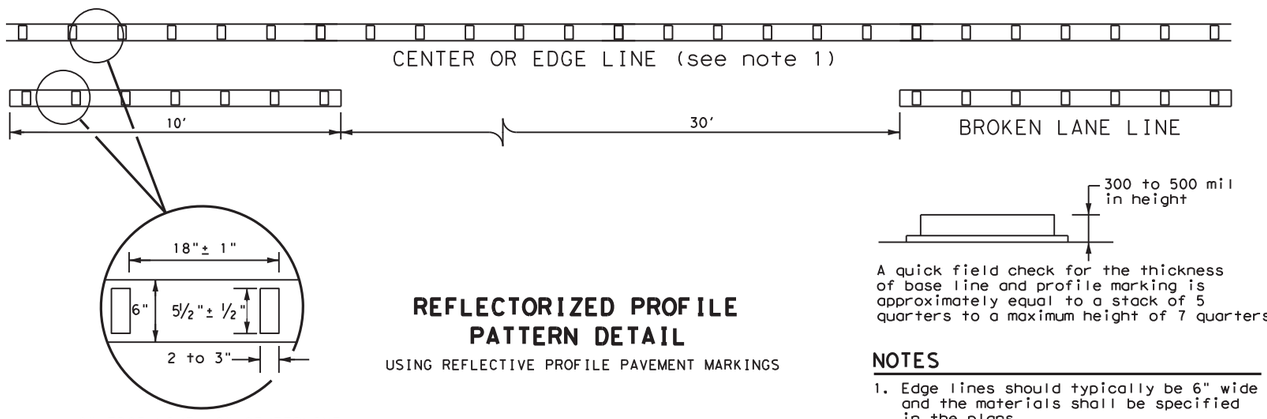


Type II (Top View)



SECTION A

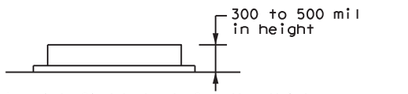
RAISED PAVEMENT MARKERS



6" EDGE LINE, 6" CENTERLINE OR 6" LANE LINE

REFLECTORIZED PROFILE PATTERN DETAIL

USING REFLECTIVE PROFILE PAVEMENT MARKINGS



A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 quarters to a maximum height of 7 quarters.

NOTES

1. Edge lines should typically be 6" wide and the materials shall be specified in the plans.
2. Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.

GENERAL NOTES

1. All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements, the raised pavement markers should be placed to one side of the longitudinal joints.
3. Use raised pavement marker Type I-C with undivided roadways, flush medians, and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

Texas Department of Transportation

Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2)-22

FILE: pm2-22.dgn	DN:	CK:	DW:	CK:
©TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
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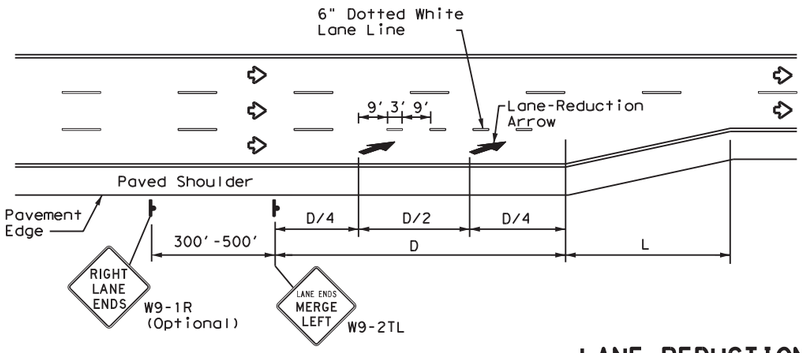
4-77 8-00 6-20	DIST	COUNTY		SHEET NO.
4-92 2-10 12-22	AUS	TRAVIS		32
5-00 2-12				

22B

DATE: 8/13/2025 8:23:33 AM
FILE: c:\pw\kn1\d0538848\pm2-22.dgn

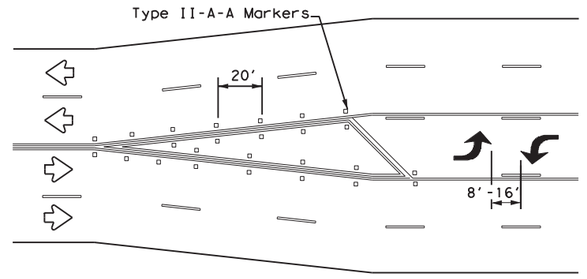


LANE REDUCTION

NOTES

1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

ADVANCED WARNING SIGN DISTANCE (D)		
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	



A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

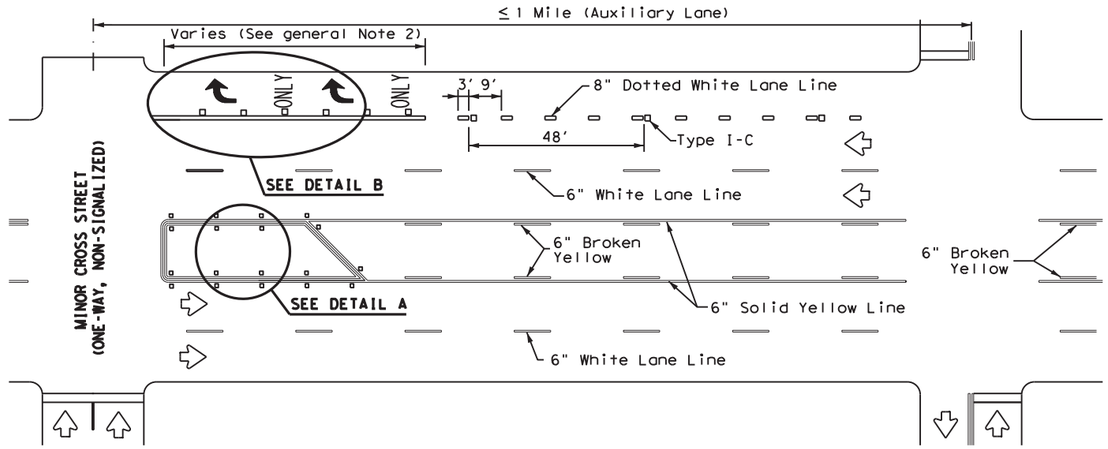
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

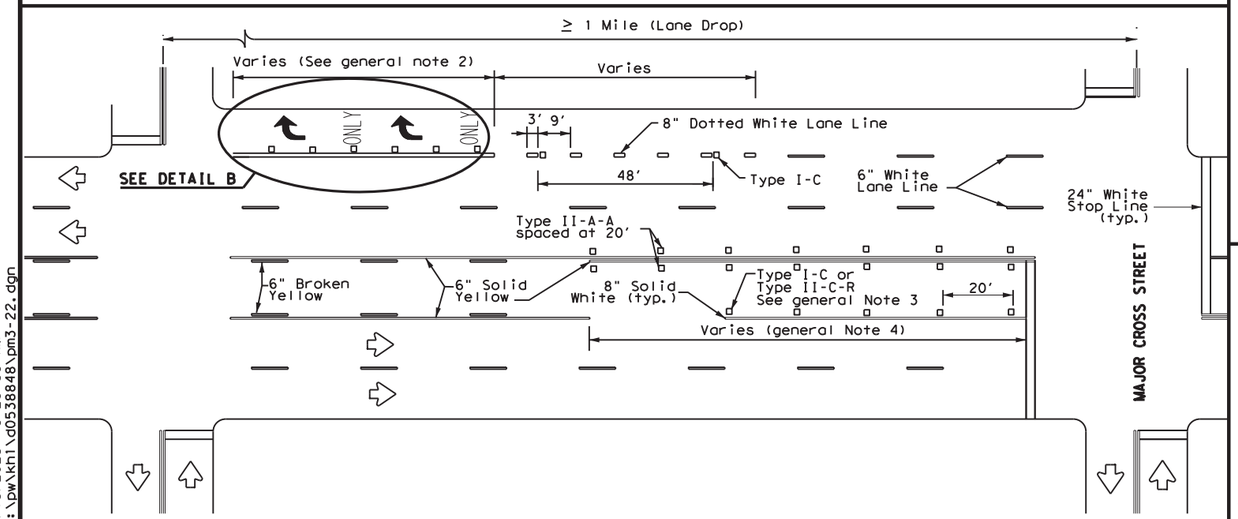
1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
3. Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

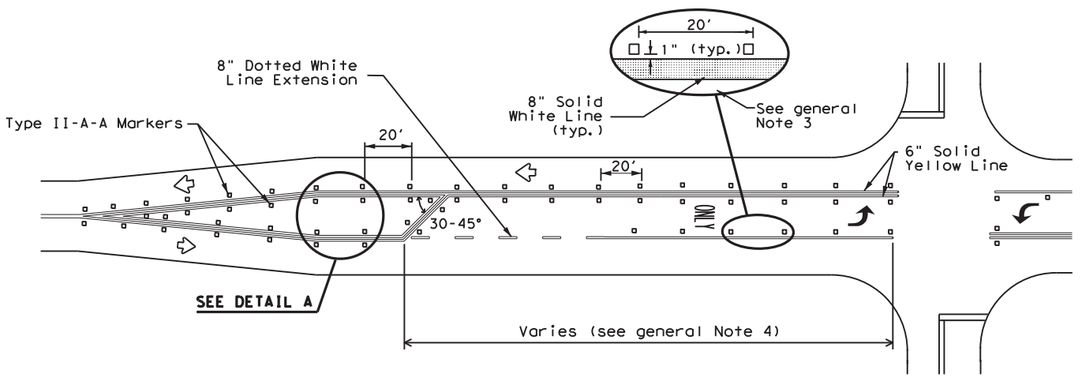
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



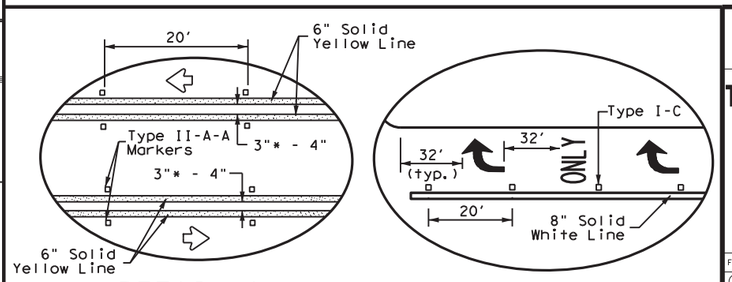
TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE



TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP



TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation

Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

PM(3)-22

FILE: pm3-22.dgn	DN:	CK:	DW:	CK:
© TxDOT December 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-98 3-03 6-20 5-00 2-10 12-22 8-00 2-12	0700	03		SH 71
	DIST	COUNTY		SHEET NO.
	AUS	TRAVIS		33

22C

DATE: 8/13/2025 8:23:59 AM
FILE: c:\pw\khl\d0538848\pm3-22.dgn

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

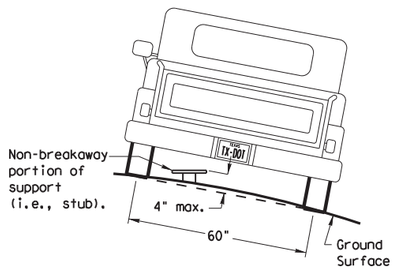
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

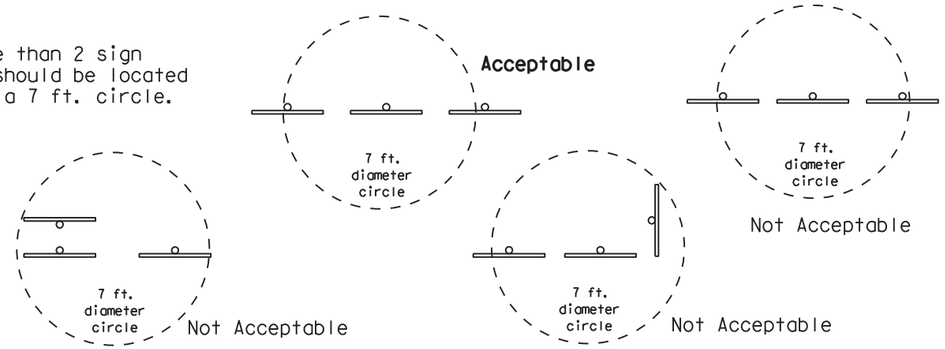
P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-1))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



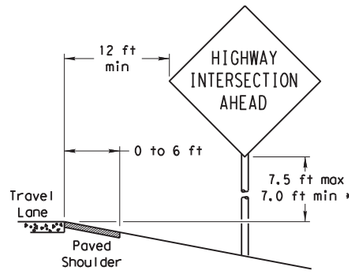
To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

No more than 2 sign posts should be located within a 7 ft. circle.



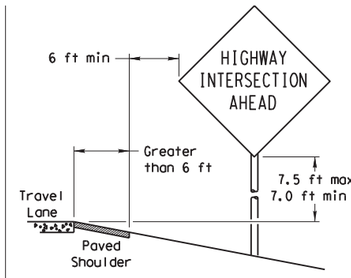
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

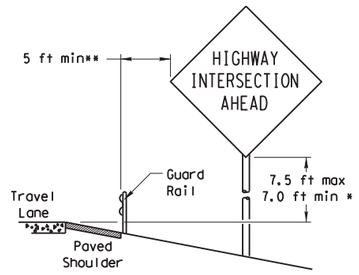
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



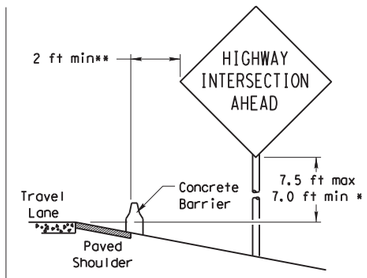
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

BEHIND BARRIER



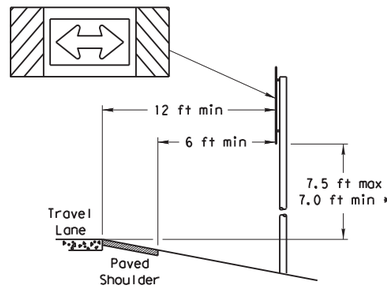
BEHIND GUARDRAIL



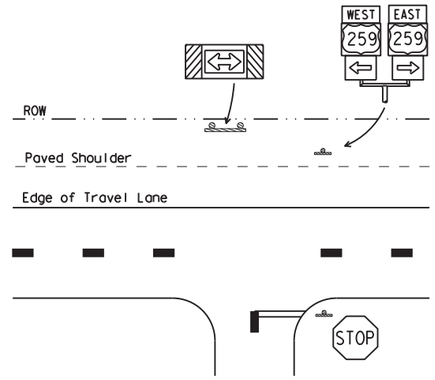
BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

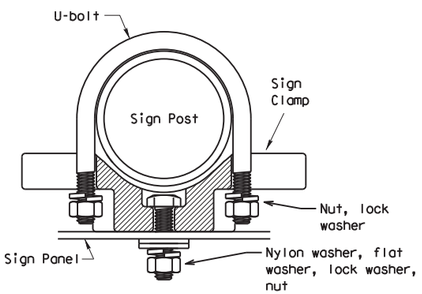
The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

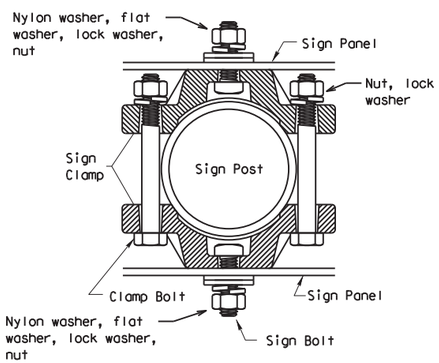


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

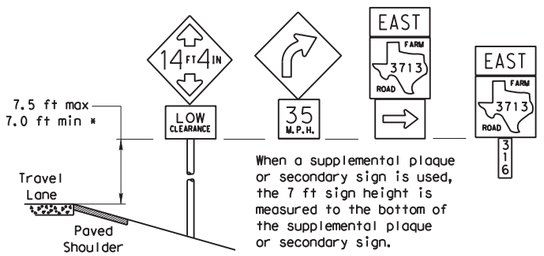
Sign clamps may be either the specific size clamp or the universal clamp.

Back-to-Back Signs



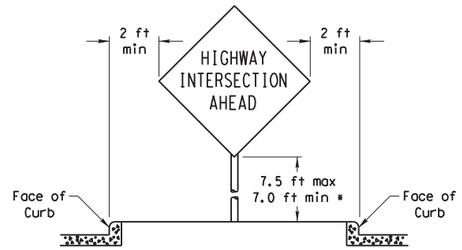
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



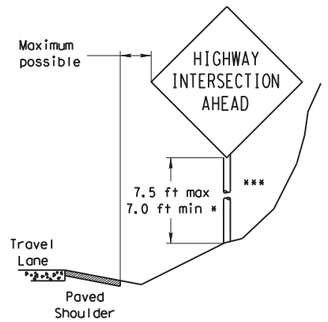
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

©TxDOT July 2002	DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	0700	03		SH 71
	DIST	COUNTY		SHEET NO.
	AUS	TRAVIS		34

26A

DATE: 8/13/2025 8:24:22 AM
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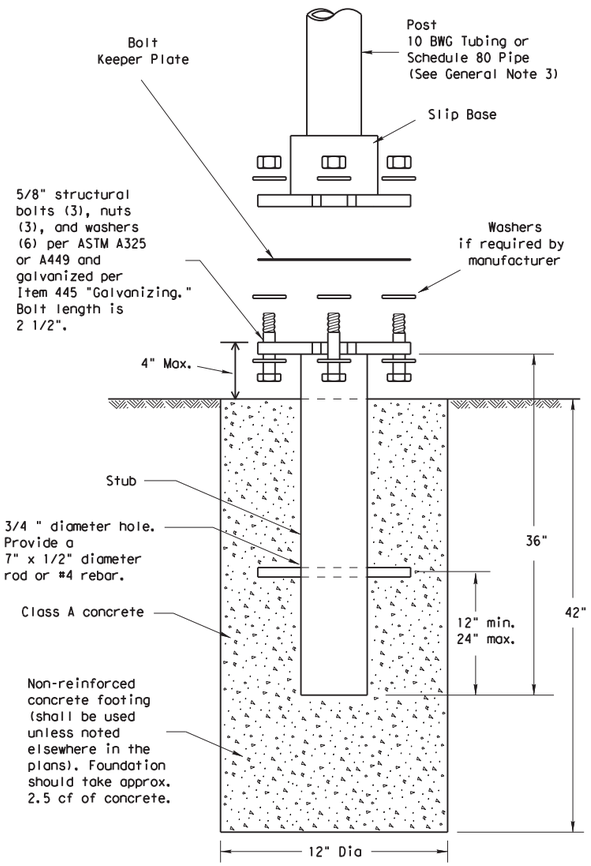
TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



SM RD SGN ASSM TY XXXXX(X)SA(X-XXXX)

NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   - 0.134" nominal wall thickness
   - Seamless or electric-resistance welded steel tubing or pipe
   - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   - Other steels may be used if they meet the following:
     - 55,000 PSI minimum yield strength
     - 70,000 PSI minimum tensile strength
     - 20% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.

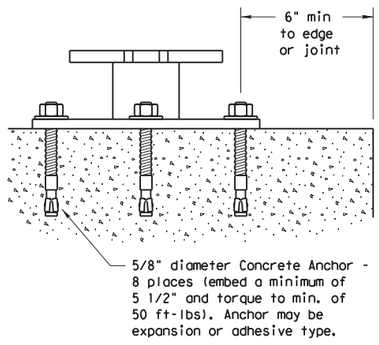
   Schedule 80 Pipe (2.875" outside diameter)
   - 0.276" nominal wall thickness
   - Steel tubing per ASTM A500 Gr C
   - Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
     - 46,000 PSI minimum yield strength
     - 62,000 PSI minimum tensile strength
     - 21% minimum elongation in 2"
   - Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   - Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   - Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



SM RD SGN ASSM TY XXXXX(X)SB(X-XXXX)

Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

REVISIONS 9-08

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	35

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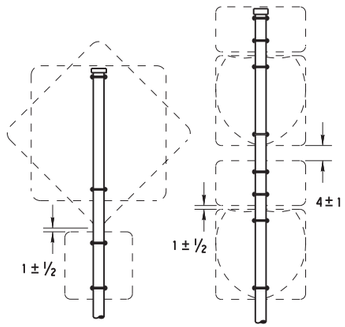
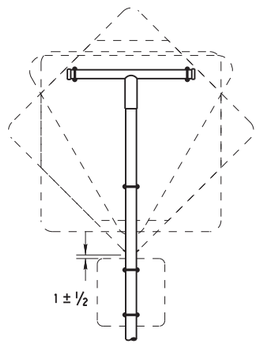


SM RD SGN ASSM TY XXXXX(1)XX(P)



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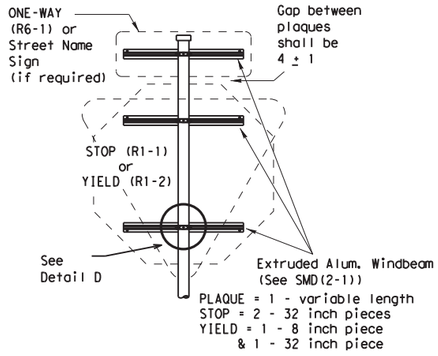

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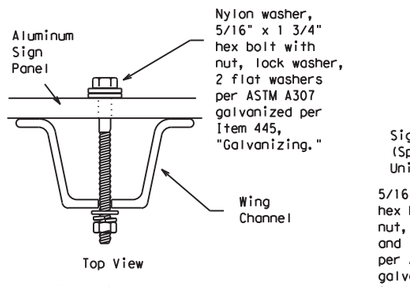

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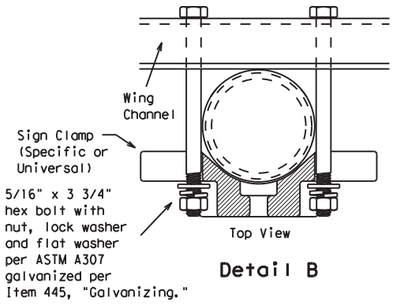
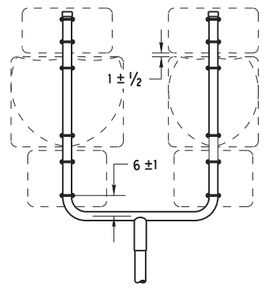


Detail B



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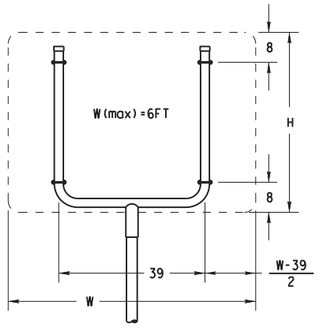

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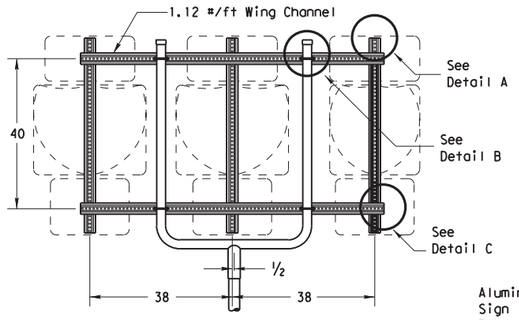
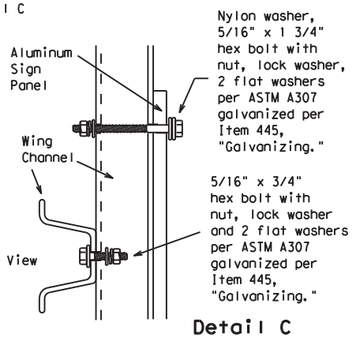
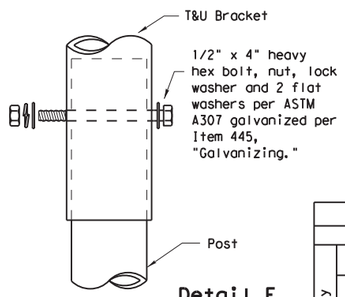


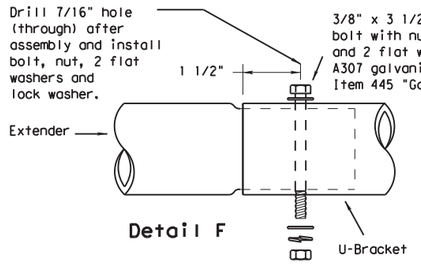
SM RD SGN ASSM TY XXXXX(1)XX(U-WC)
(See Note 11)



Detail C

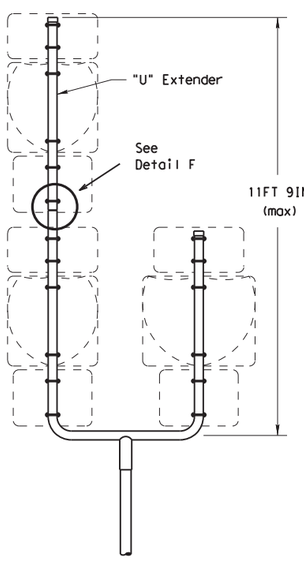


Detail E

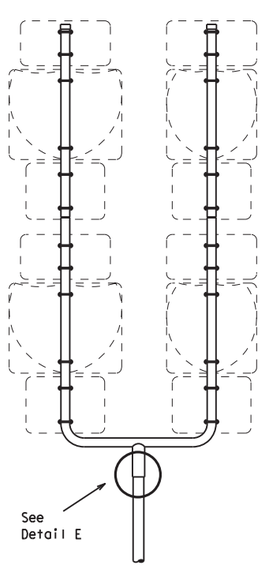


Detail F

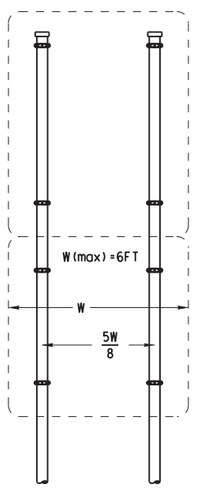
Splices shall only be allowed behind the sign substrate.



SM RD SGN ASSM TY S80(1)XX(U-1EXT)

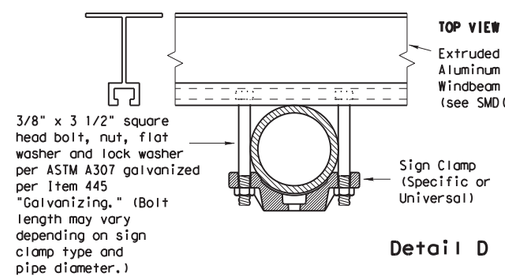


SM RD SGN ASSM TY S80(1)XX(U-2EXT)

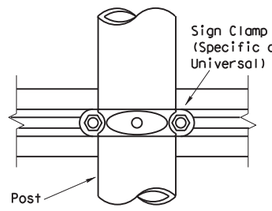


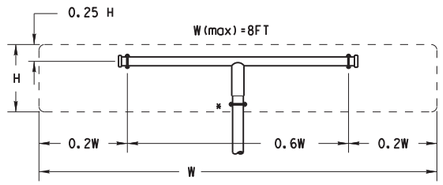
SM RD SGN ASSYM TY XXXXX(2)XX(P)

SIDE VIEW



Detail D

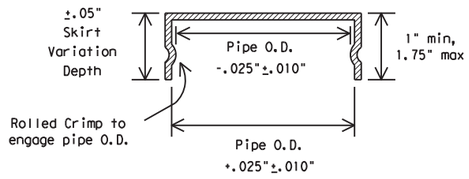




SM RD SGN ASSM TY XXXXX(1)XX(T)
(* - See Note 12)

All dimensions are in english unless detailed otherwise.

FRICTION CAP DETAIL



Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes.

The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. They shall be free of sharp creases or indentations and show no evidence of metal fracture.

Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71

DIST	COUNTY	SHEET NO.
AUS	TRAVIS	36

9-08 REVISIONS

26C

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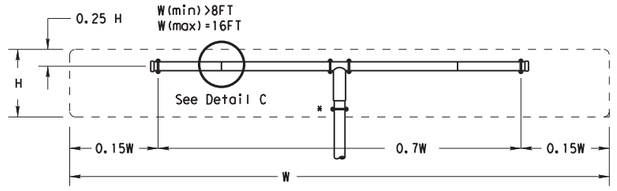
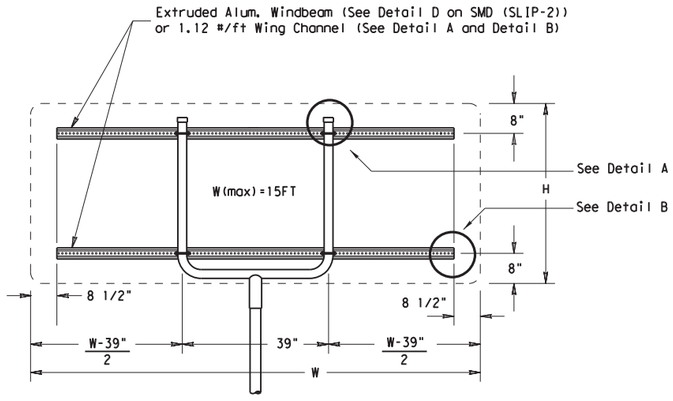
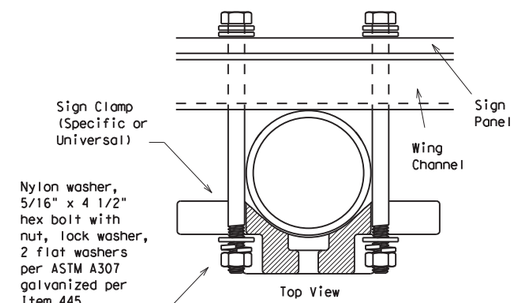


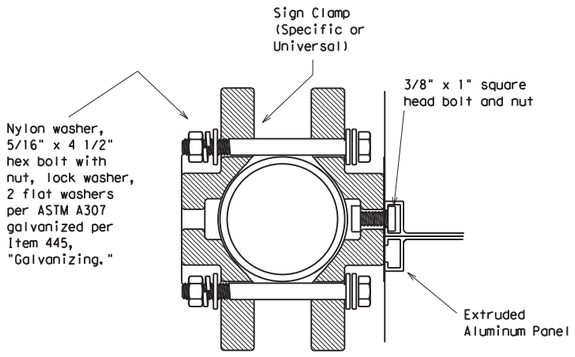
SM RD SGN ASSM TY XXXXX(1)XX(T-2EXT)
(* - See Note 12)



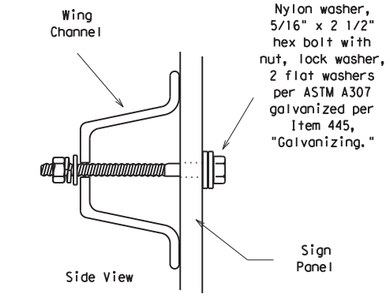
SM RD SGN ASSM TY XXXXX(1)XX(U-XX)



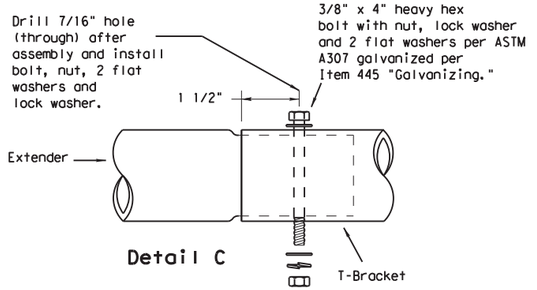
Detail A



Detail D
EXTRUDED ALUMINUM SIGN WITH T BRACKET

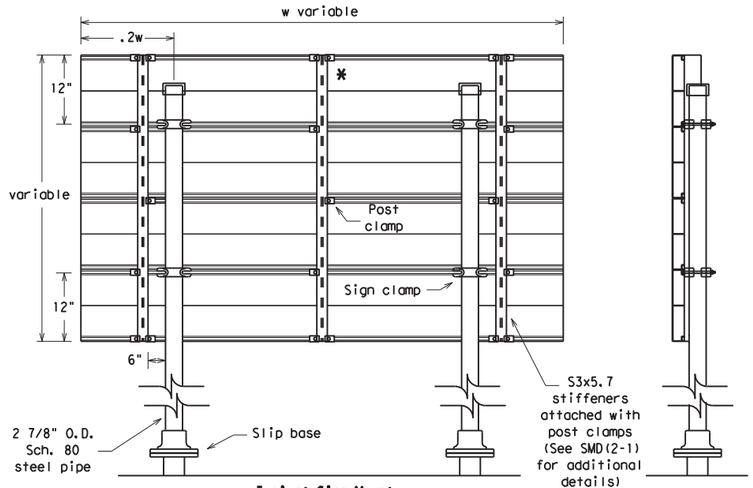


Detail B



Detail C

Splices shall only be allowed behind the sign substrate.

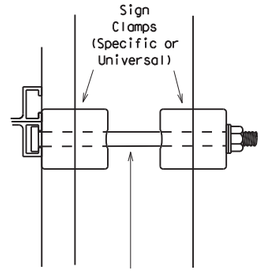


Typical Sign Mount

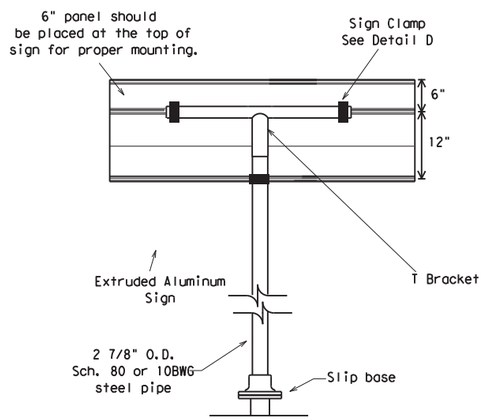
SM RD SGN ASSM TY S80(2)XX(P-EXAL)

* Additional stiffener placed at approximate center of signs when sign width is greater than 10'.

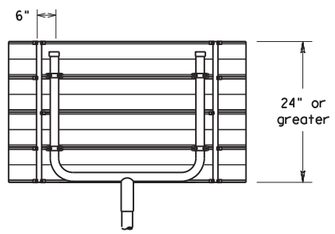
See Detail E
for clamp installation



Detail E



Extruded Aluminum Sign
With T Bracket



Use Extruded Alum. Windbeam as stiffeners
See SMD (2-1) for additional details

See Detail E
for clamp installation

GENERAL NOTES:

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

1. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
2. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
3. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
4. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
5. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
6. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
7. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
8. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
9. Sign blanks shall be the sizes and shapes shown on the plans.
10. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
11. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

REVISIONS
9-08

DN: TXDOT	CK: TXDOT	DW: TXDOT	CK: TXDOT
CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		37

DATE: 8/13/2025 8:25:34 AM
FILE: c:\pw\khl\d0538848\smds3.dgn

STORMWATER POLLUTION PRVENTION PLAN (SWP3):

This SWP3 has been developed in accordance with TxDOT policy for projects disturbing less than 1 acre of soil, and not part of a larger common plan of development.

For projects with less than one acre of soil disturbing activity and that have Environmental, Permits, Issues, and Commitments (EPICs) dependent on stormwater controls and water quality measures TxDOT will maintain a SWP3 with all pertinent records, correspondence, environmental documents, etc. at the project field office, Area Office, or electronically.

This SWP3 is consistent with requirements specified in applicable stormwater plans, and the project's environmental permits, issues, and commitments (EPICs).

1.0 SITE/PROJECT DESCRIPTION

1.1 PROJECT CONTROL SECTION JOB (CSJ):

0700-03-XX

1.2 PROJECT LIMITS:

From: 1728 FT East of Midwood Parkway

To: 2350 FT East from Midwood Parkway

1.3 PROJECT COORDINATES:

BEGIN: (Lat) 30.25350° (N) ,(Long) 97.90059° (W)

END: (Lat) 30.25246° (N) ,(Long) 97.89927° (W)

1.4 TOTAL PROJECT AREA (Acres): 1.01 Acres

1.5 TOTAL AREA TO BE DISTURBED (Acres): 0.55 Acres

1.6 NATURE OF CONSTRUCTION ACTIVITY:

Construction of right-turn lane consisting of pavement, driveway, drainage, and signing and pavement markings.

1.7 MAJOR SOIL TYPES:

Soil Type	Description
Eckrant cobbly clay, 1 to 8 percent slopes	100% cobbly clay, well drained, medium rate of runoff

1.8 PROJECT SPECIFIC LOCATIONS (PSLs):

PSLs must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. PSLs may be identified during preconstruction meetings or during the construction process. Please choose from the options below:

- ☐ PSLs determined during preconstruction meeting
- ☐ PSLs determined during construction
- ☐ No PSLs planned for construction

Type	Sheet #s

All off-ROW PSLs required by the Contractor are the Contractor's responsibility. The Contractor shall secure all permits required by local, state, federal laws for off-ROW PSLs. The contractor shall provide diagrams, areas of disturbance, acreage, and BMPs for all off-ROW PSLs within one mile of the project.

1.9 CONSTRUCTION ACTIVITIES:

(Use the following list as a starting point when developing the Construction Activity Schedule and Ceasing Record in Attachment 2.3.)

- ☒ Mobilization
- ☒ Install sediment and erosion controls
- ☐ Blade existing topsoil into windrows, prep ROW, clear and grub
- ☒ Remove existing pavement
- ☒ Grading operations, excavation, and embankment
- ☒ Excavate and prepare subgrade for proposed pavement widening
- ☐ Remove existing culverts, safety end treatments (SETs)
- ☐ Remove existing metal beam guard fence (MBGF), bridge rail
- ☒ Install proposed pavement per plans
- ☒ Install culverts, culvert extensions, SETs
- ☐ Install mow strip, MBGF, bridge rail
- ☒ Place flex base
- ☒ Rework slopes, grade ditches
- ☐ Blade windrowed material back across slopes
- ☒ Revegetation of unpaved areas
- ☒ Achieve site stabilization and remove sediment and erosion control measures
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.10 POTENTIAL POLLUTANTS AND SOURCES:

- ☐ Sediment laden stormwater from stormwater conveyance over disturbed area
- ☒ Fuels, oils, and lubricants from construction vehicles, equipment, and storage
- ☒ Solvents, paints, adhesives, etc. from various construction activities
- ☒ Transported soils from offsite vehicle tracking
- ☒ Construction debris and waste from various construction activities
- ☐ Contaminated water from excavation or dewatering pump-out water
- ☐ Sanitary waste from onsite restroom facilities
- ☐ Trash from various construction activities/receptacles
- ☐ Long-term stockpiles of material and waste
- ☐ Discharges from concrete washout activities, runoff from concrete cutting activities, and other concrete related activities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

1.11 RECEIVING WATERS:

Receiving waters must be depicted on the Environmental Layout Sheets in Attachment 1.2 of this SWP3. Include Segment # for receiving waters.

Tributaries	Classified Waterbody

* Add (*) for impaired waterbodies with pollutant in ().

1.12 ROLES AND RESPONSIBILITIES: TxDOT

- ☒ Development of plans and specifications
- ☒ Perform SWP3 inspections
- ☒ Maintain SWP3 records and update to reflect daily operations
- ☐ Other: _____
- ☐ Other: _____

1.13 ROLES AND RESPONSIBILITIES: CONTRACTOR

- ☒ Day To Day Operational Control
- ☒ Maintain schedule of major construction activities
- ☒ Install, maintain and modify BMPs
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

July 2023

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.	SHEET NO.
		38

STATE	STATE DIST.	COUNTY	
TEXAS	AUS	TRAVIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0700	03		SH 71

STORMWATER POLLUTION PRVENTION PLAN (SWP3):

2.0 BEST MANAGEMENT PRACTICES (BMPs) AND CONTROLS, INSPECTION, AND MAINTENANCE

The Contractor shall be the responsible party for implementing the BMPs described herein and for complying with the SWP3 for control of erosion and sedimentation during day-to-day operations. The Contractor shall implement changes to this SWP3 approved by TxDOT within the times specified in this SWP3 or the CGP.

2.1 EROSION CONTROL AND SOIL STABILIZATION BMPs:

T / P

- ☐ ☐ Protection of Existing Vegetation
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☒ Soil Retention Blankets
- ☐ ☐ Geotextiles
- ☐ ☐ Mulching/ Hydromulching
- ☐ ☐ Soil Surface Treatments
- ☐ ☐ Temporary Seeding
- ☐ ☒ Permanent Planting, Sodding or Seeding
- ☐ ☐ Biodegradable Erosion Control Logs
- ☒ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Vertical Tracking
- ☐ ☐ Interceptor Swale
- ☐ ☐ Riprap
- ☐ ☐ Diversion Dike
- ☐ ☐ Temporary Pipe Slope Drain
- ☐ ☐ Embankment for Erosion Control
- ☐ ☐ Paved Flumes
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

2.2 SEDIMENT CONTROL BMPs:

T / P

- ☐ ☐ Biodegradable Erosion Control Logs
- ☐ ☐ Dewatering Controls
- ☐ ☐ Inlet Protection
- ☒ ☐ Rock Filter Dams/ Rock Check Dams
- ☐ ☐ Sandbag Berms
- ☐ ☐ Sediment Control Fence
- ☐ ☐ Stabilized Construction Exit
- ☐ ☐ Floating Turbidity Barrier
- ☐ ☐ Vegetated Buffer Zones
- ☐ ☐ Vegetated Filter Strips
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____
- ☐ ☐ Other: _____

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.3 PERMANENT CONTROLS:

(Coordinate post-construction BMPs with appropriate TxDOT maintenance sections.)

BMPs To Be Left In Place Post Construction:

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.4 OFFSITE VEHICLE TRACKING CONTROLS:

- ☐ Excess dirt/mud on road removed daily
- ☐ Haul roads dampened for dust control
- ☐ Loaded haul trucks to be covered with tarpaulin
- ☒ Stabilized construction exit
- ☐ Daily street sweeping
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.5 POLLUTION PREVENTION MEASURES:

- ☐ Chemical Management
- ☐ Concrete and Materials Waste Management
- ☐ Debris and Trash Management
- ☐ Dust Control
- ☐ Sanitary Facilities
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____
- ☐ Other: _____

2.6 VEGETATED BUFFER ZONES:

Natural vegetated buffers shall be maintained as feasible to protect adjacent surface waters. If vegetated natural buffer zones are not feasible due to site geometry, the appropriate additional sediment control measures have been incorporated into this SWP3.

Type	Stationing	
	From	To

Refer to the Environmental Layout Sheets/ SWP3 Layout Sheets located in Attachment 1.2 of this SWP3

2.7 ALLOWABLE NON-STORMWATER DISCHARGES:

- ☒ Fire hydrant flushings
- ☒ Irrigation drainage
- ☒ Pavement washwater (where spills or leaks have not occurred, and detergents are not used)
- ☒ Potable water sources
- ☒ Springs
- ☒ Uncontaminated groundwater
- ☒ Water used to wash vehicles or control dust
- ☒ Other allowable non-stormwater discharges as allowed by TPDES GP TXR150000.

2.8 DEWATERING:

Dewatering discharges of accumulated stormwater, groundwater, and surface water including discharges from dewatering of trenches, excavations, foundations, vaults, and other points of accumulation are prohibited unless managed by appropriate controls to prevent and minimize the offsite discharge of sediment and other pollutants.

2.9 INSPECTIONS:

All disturbed areas and erosion and sediment control devices shall be inspected at least once every seven (7) days. Inspections shall be performed by TxDOT as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3 .

2.10 MAINTENANCE:

Control measures shall be properly installed according to specifications. If it is determined that a BMP or control measure is not operating effectively, maintenance must be accomplished as soon as possible and before the next anticipated rain event, but in no case later than 7 calendar days after being able to access the site. Maintenance shall be performed by the Contractor as indicated on the Field Inspection and Maintenance Report Form 2118 and retained in Attachment 2.3 of this SWP3.

STORMWATER POLLUTION PREVENTION PLAN (SWP3) (Less Than 1 Acre)

July 2023 Sheet 2 of 2

Texas Department of Transportation

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
			39
STATE	STATE DIST.	COUNTY	
TEXAS	AUS	TRAVIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0700	03		SH 71

DATE:
FILE:

I. STORMWATER POLLUTION PREVENTION-CLEAN WATER ACT SECTION 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres disturbed soil. Projects with any disturbed soil must protect for erosion and sedimentation in accordance with Item 506.

List MS4 Operator(s) that may receive discharges from this project. They may need to be notified prior to construction activities.

1.

2.

☐ No Action Required ☒ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000

2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.

3. Post Construction Site Notice (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.

4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

II. WORK IN OR NEAR STREAMS, WATERBODIES AND WETLANDS CLEAN WATER ACT SECTIONS 401 AND 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

☒ No Permit Required

☐ Nationwide Permit 14 - PCN not Required (less than 1/10th acre waters or wetlands affected)

☐ Nationwide Permit 14 - PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)

☐ Individual 404 Permit Required

☐ Other Nationwide Permit Required: NWP# _____

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post-project TSS.

1.

2.

3.

4.

The elevation of the ordinary high water marks of any areas requiring work to be performed in the waters of the US requiring the use of a nationwide permit can be found on the Bridge Layouts.

Best Management Practices:

Erosion	Sedimentation	Post-Construction TSS
☐ Temporary Vegetation	☐ Silt Fence	☐ Vegetative Filter Strips
☐ Blankets/Matting	☐ Rock Berm	☐ Retention/Irrigation Systems
☐ Mulch	☐ Triangular Filter Dike	☐ Extended Detention Basin
☐ Sodding	☐ Sand Bag Berm	☐ Constructed Wetlands
☐ Interceptor Swale	☐ Straw Bale Dike	☐ Wet Basin
☐ Diversion Dike	☐ Brush Berms	☐ Erosion Control Compost
☐ Erosion Control Compost	☐ Erosion Control Compost	☐ Mulch Filter Berm and Socks
☐ Mulch Filter Berm and Socks	☐ Mulch Filter Berm and Socks	☐ Compost Filter Berm and Socks
☐ Compost Filter Berm and Socks	☐ Compost Filter Berm and Socks	☐ Vegetation Lined Ditches
	☐ Stone Outlet Sediment Traps	☐ Sand Filter Systems
	☐ Sediment Basins	☐ Grassy Swales

III. CULTURAL RESOURCES

Refer to TxDOT Standard Specifications in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

IV. VEGETATION RESOURCES

Preserve native vegetation to the extent practical.
Contractor must adhere to Construction Specification Requirements Specs 162, 164, 192, 193, 506, 730, 751, 752 in order to comply with requirements for invasive species, beneficial landscaping, and tree/brush removal commitments.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

V. FEDERAL LISTED, PROPOSED THREATENED, ENDANGERED SPECIES, CRITICAL HABITAT, STATE LISTED SPECIES, CANDIDATE SPECIES AND MIGRATORY BIRDS.

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

4.

If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediate area, and contact the Engineer immediately.

LIST OF ABBREVIATIONS

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TxDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

VI. HAZARDOUS MATERIALS OR CONTAMINATION ISSUES

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on-site Material Safety Data Sheets (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on-site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:
* Dead or distressed vegetation (not identified as normal)
* Trash piles, drums, canister, barrels, etc.
* Undesirable smells or odors
* Evidence of leaching or seepage of substances

Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

☐ Yes ☒ No

If "No", then no further action is required.
If "Yes", then TxDOT is responsible for completing asbestos assessment/inspection.

Are the results of the asbestos inspection positive (is asbestos present)?

☐ Yes ☐ No

If "Yes", then TxDOT must retain a DSHS licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled demolition.

If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

In either case, the Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and asbestos consultant in order to minimize construction delays and subsequent claims.

Any other evidence indicating possible hazardous materials or contamination discovered on site. Hazardous Materials or Contamination Issues Specific to this Project:

☒ No Action Required ☐ Required Action

Action No.

1.

2.

3.

VII. OTHER ENVIRONMENTAL ISSUES

(includes regional issues such as Edwards Aquifer District, etc.)

☒ No Action Required ☐ Required Action

Action No.

1.

2.

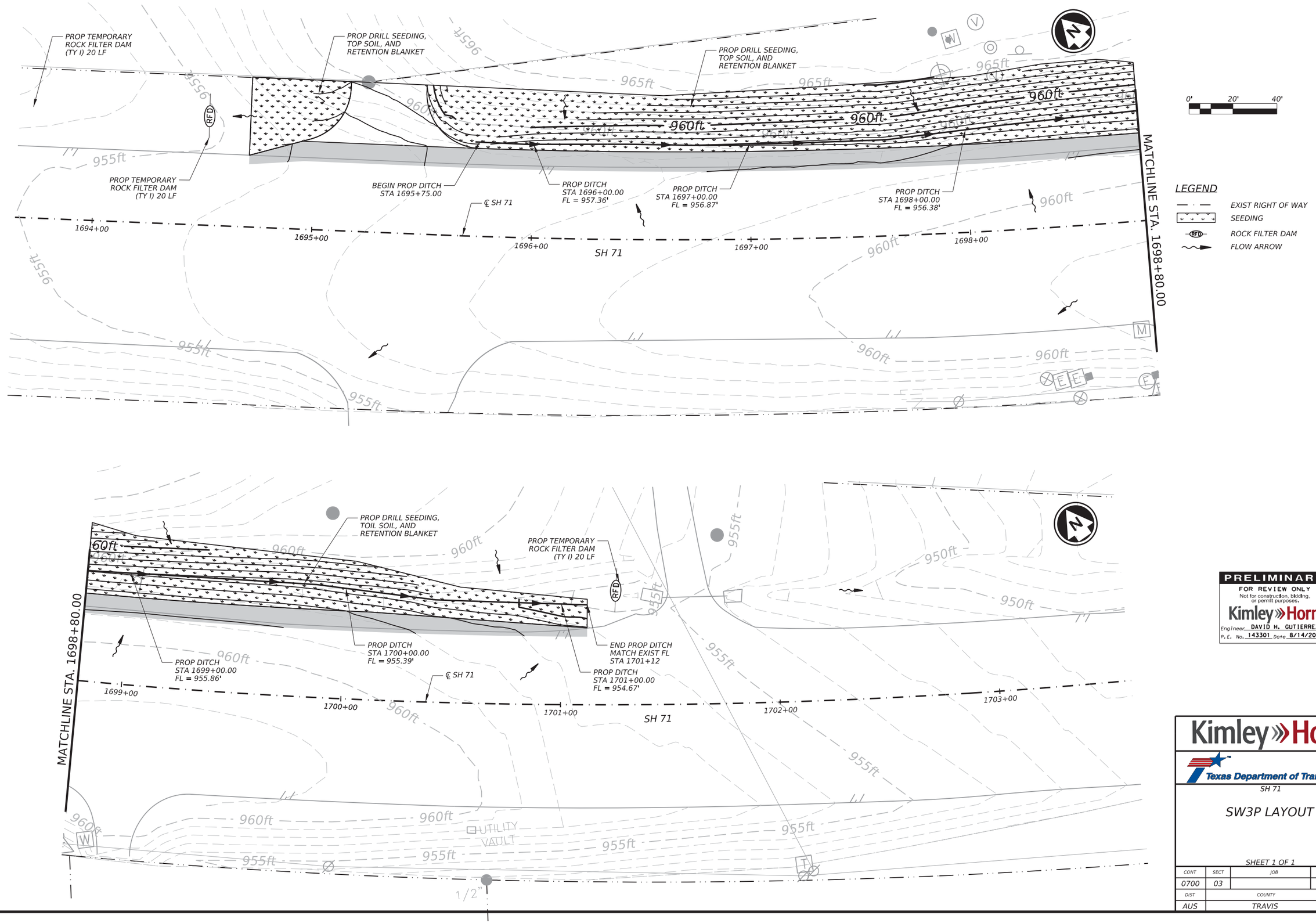
3.

Texas Department of Transportation — Design Division Standard

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS

EPIC

FILE: epic.dgn	DN: TxDOT	CK: RG	DW: VP	CK: AR	
	CONT	SECT	JOB	HIGHWAY	
REVISIONS 12-12-2011 (DS) 05-07-14 ADDED NOTE SECTION IV. 01-23-2015 SECTION I (CHANGED ITEM 1122 TO ITEM 506, ADDED GRASSY SWALES.	0700	03		SH 71	
	DIST	COUNTY		SHEET NO.	
	AUS	TRAVIS		40	



PRELIMINARY
FOR REVIEW ONLY
Not for construction, bidding, or permit purposes.
Kimley»Horn
Engineer: DAVID H. GUTIERREZ
P.E. No. 143301 Date 8/14/2025

Kimley»Horn F-928

Texas Department of Transportation

SH 71

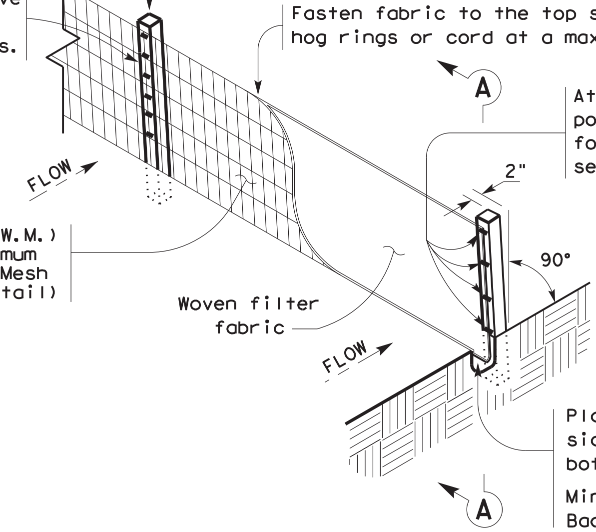
SW3P LAYOUT

SHEET 1 OF 1

CONT	SECT	JOB	HIGHWAY
0700	03		SH 71
DIST	COUNTY		SHEET NO.
AUS	TRAVIS		41

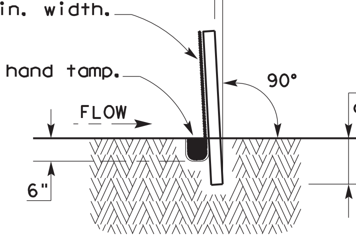
CK:
DW:
CK:
DW:

DATE: 8/14/2025
FILE: pw://kh-pw.bentley.com:kh-pw-01/Documents/01 Active Projects/TS-AUS-069268914 - SH 71 Turn Lane/4 - Design/Plan Set/9. Environmental/SH71_ENV_SW3P.dgn

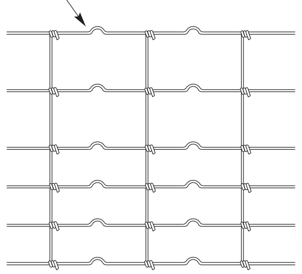


TEMPORARY SEDIMENT CONTROL FENCE

SCF



SECTION A-A



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT^2. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

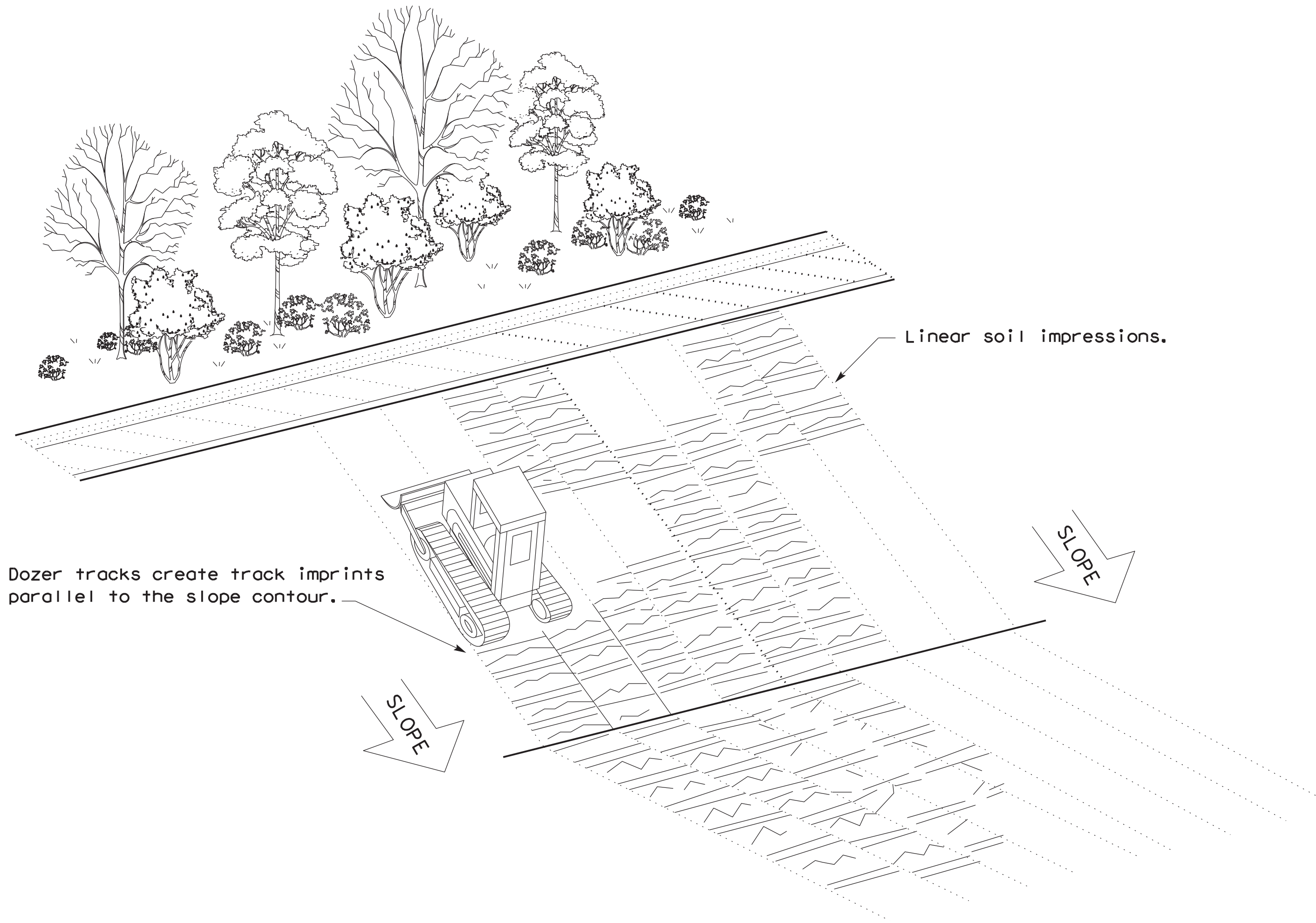
LEGEND

Sediment Control Fence

SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

FENCE & VERTICAL TRACKING

EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
	DIST		COUNTY	SHEET NO.
	AUS		TRAVIS	42

8/13/2025
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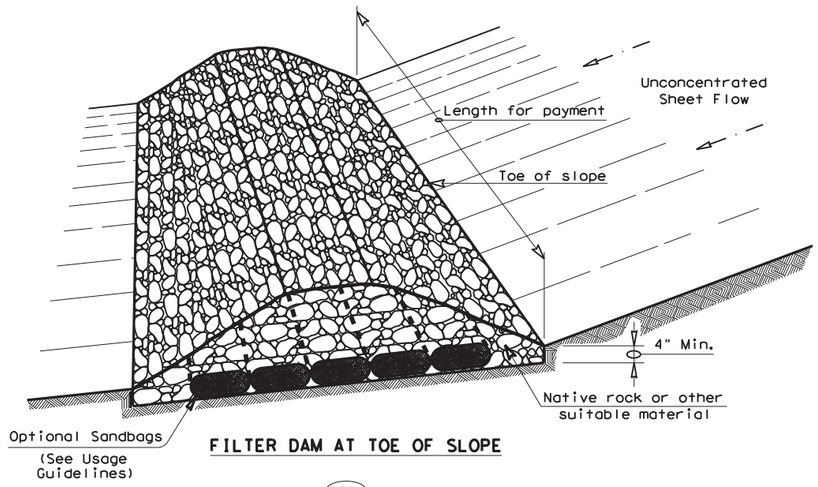
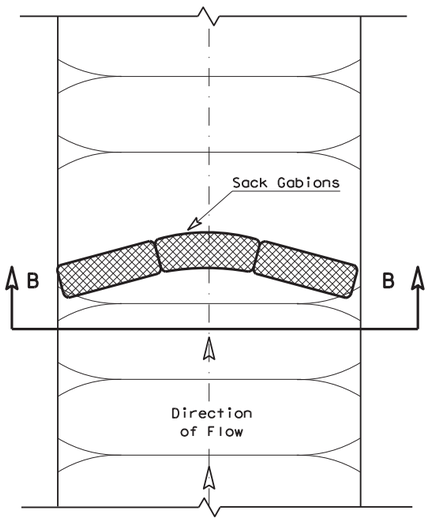
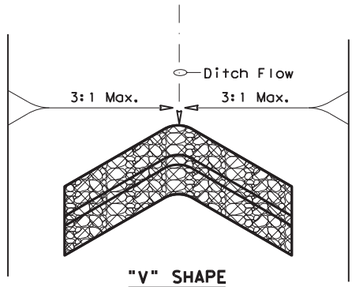


FILTER DAM AT TOE OF SLOPE

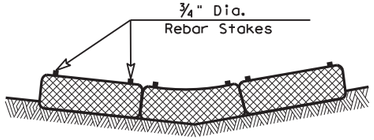
RFD1



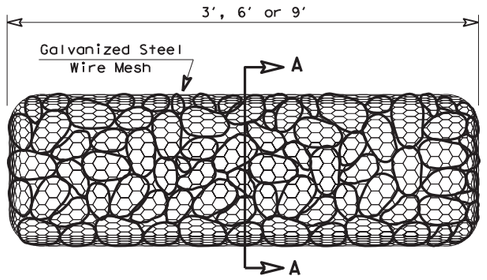
PLAN VIEW



"V" SHAPE
PLAN VIEW

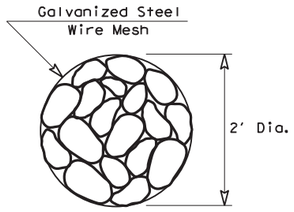


SECTION B-B

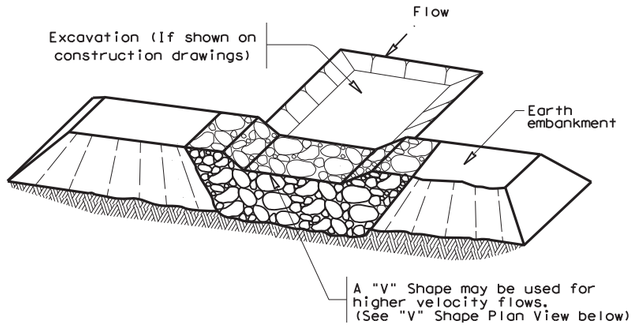


TYPE 4 (SACK GABIONS)

RFD4

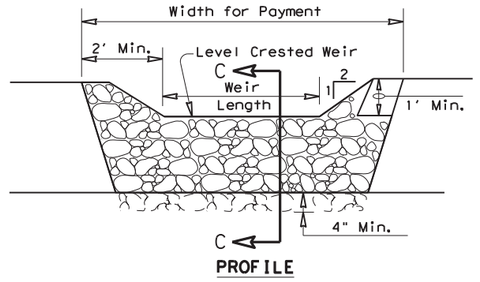


SECTION A-A

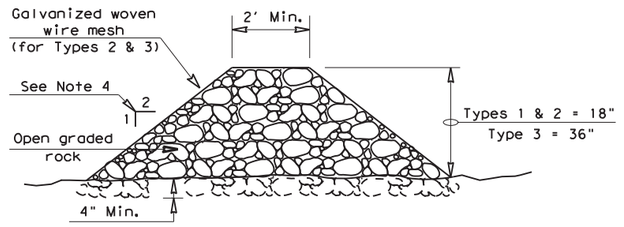


FILTER DAM AT SEDIMENT TRAP

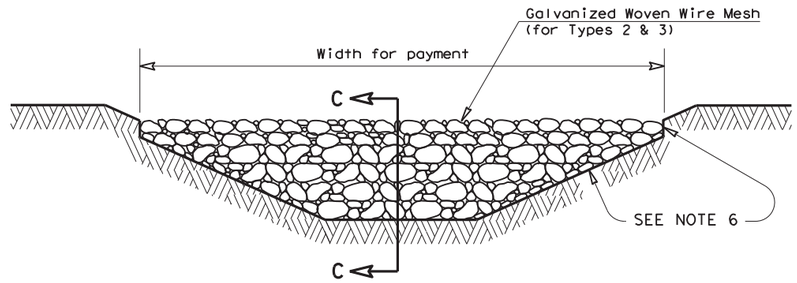
RFD1 — OR — RFD2



PROFILE



SECTION C-C



FILTER DAM AT CHANNEL SECTIONS

RFD1 — OR — RFD2 — OR — RFD3

ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT^2 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with ¾" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 ½" x 3 ¼"
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam	RFD1
Type 2 Rock Filter Dam	RFD2
Type 3 Rock Filter Dam	RFD3
Type 4 Rock Filter Dam	RFD4

Texas Department of Transportation

Design Division Standard

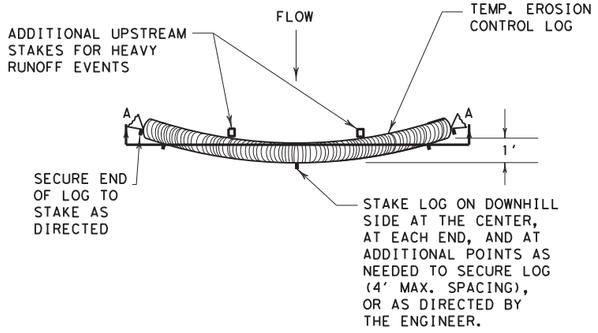
TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

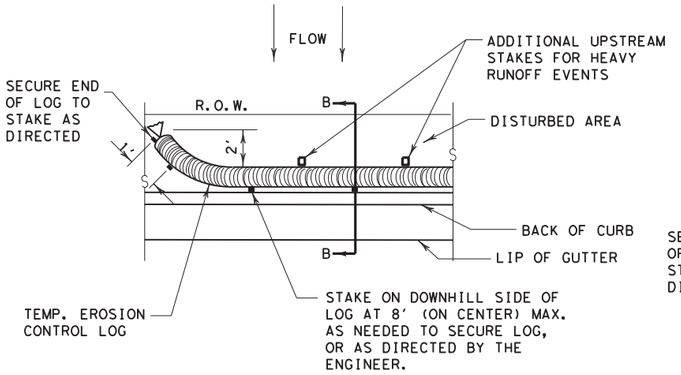
EC(2)-16

FILE: ec216	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0700	03		SH 71
	DIST	COUNTY		SHEET NO.
	AUS	TRAVIS		43

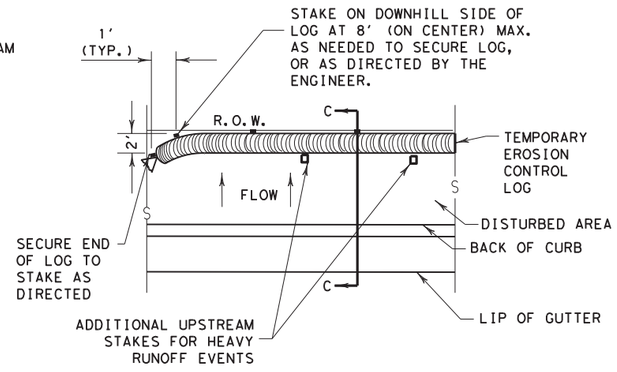
DATE: 8/13/2025
FILE: c:\pw\khi\d0538843\ec216.dgn



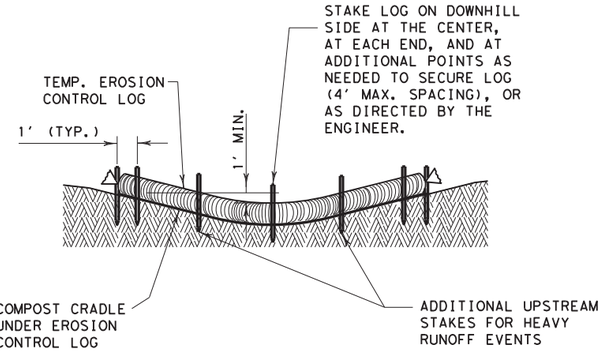
PLAN VIEW



PLAN VIEW



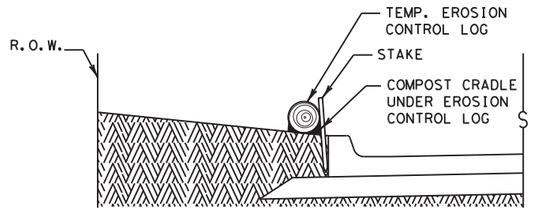
PLAN VIEW



SECTION A-A

EROSION CONTROL LOG DAM

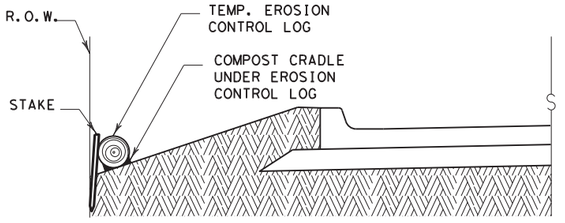
CL-D



SECTION B-B

EROSION CONTROL LOG AT BACK OF CURB

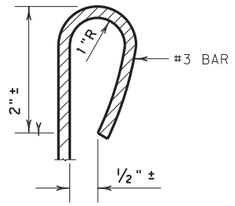
CL-BOC



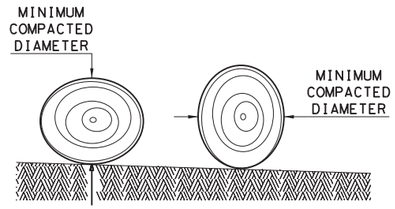
SECTION C-C

EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY

CL-ROW



REBAR STAKE DETAIL



DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

GENERAL NOTES:

1. EROSION CONTROL LOGS SHALL BE INSTALLED IN ACCORDANCE WITH MANFACTURER'S RECOMMENDATIONS, OR AS DIRECTED BY THE ENGINEER.
2. LENGTHS OF EROSION CONTROL LOGS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED FOR THE PURPOSE INTENDED.
3. UNLESS OTHERWISE DIRECTED, USE BIODEGRADABLE OR PHOTODEGRADABLE CONTAINMENT MESH ONLY WHERE LOG WILL REMAIN IN PLACE AS PART OF A VEGETATIVE SYSTEM. FOR TEMPORARY INSTALLATIONS, USE RECYCLABLE CONTAINMENT MESH.
4. FILL LOGS WITH SUFFICIENT FILTER MATERIAL TO ACHIEVE THE MINIMUM COMPACTED DIAMETER SPECIFIED IN THE PLANS WITHOUT EXCESSIVE DEFORMATION.
5. STAKES SHALL BE 2" X 2" WOOD OR #3 REBAR, 2'-4' LONG, EMBEDDED SUCH THAT 2" PROTRUDES ABOVE LOG, OR AS DIRECTED BY THE ENGINEER.
6. DO NOT PLACE STAKES THROUGH CONTAINMENT MESH.
7. COMPOST CRADLE MATERIAL IS INCIDENTAL & WILL NOT BE PAID FOR SEPARATELY.
8. SANDBAGS USED AS ANCHORS SHALL BE PLACED ON TOP OF LOGS & SHALL BE OF SUFFICIENT SIZE TO HOLD LOGS IN PLACE.
9. TURN THE ENDS OF EACH ROW OF LOGS UPSLOPE TO PREVENT RUNOFF FROM FLOWING AROUND THE LOG.
10. FOR HEAVY RUNOFF EVENTS, ADDITIONAL UPSTREAM STAKES MAY BE NECESSARY TO KEEP LOG FROM FOLDING IN ON ITSELF.

LEGEND

CL-D	EROSION CONTROL LOG DAM
CL-BOC	EROSION CONTROL LOG AT BACK OF CURB
CL-ROW	EROSION CONTROL LOG AT EDGE OF RIGHT-OF-WAY
CL-SST	EROSION CONTROL LOGS ON SLOPES STAKE AND TRENCHING ANCHORING
CL-SSL	EROSION CONTROL LOGS ON SLOPES STAKE AND LASHING ANCHORING
CL-DI	EROSION CONTROL LOG AT DROP INLET
CL-CI	EROSION CONTROL LOG AT CURB INLET
CL-GI	EROSION CONTROL LOG AT CURB & GRATE INLET

SEDIMENT BASIN & TRAP USAGE GUIDELINES

An erosion control log sediment trap may be used to filter sediment out of runoff draining from an unstabilized area.

Log Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Control logs should be placed in the following locations:
1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets or drain inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way
5. Just before the drainage leaves the construction limits where drainage flows away from the project.

The logs should be cleaned when the sediment has accumulated to a depth of 1/2 the log diameter.

Cleaning and removal of accumulated sediment deposits is incidental and will not be paid for separately.

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM		DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY		
REVISIONS	0700	03			SH 71		
	DIST	COUNTY			SHEET NO.		
	AUS	TRAVIS			44		

DATE: 8/13/2025
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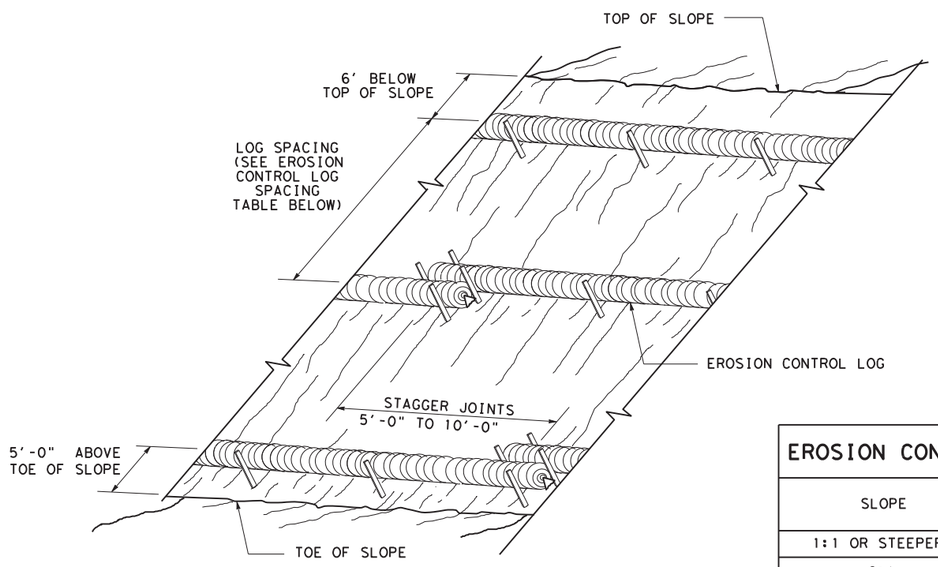
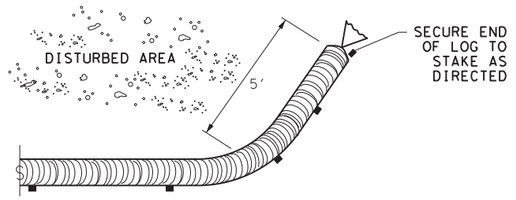


EROSION CONTROL LOGS ON SLOPES
STAKE AND TRENCHING ANCHORING

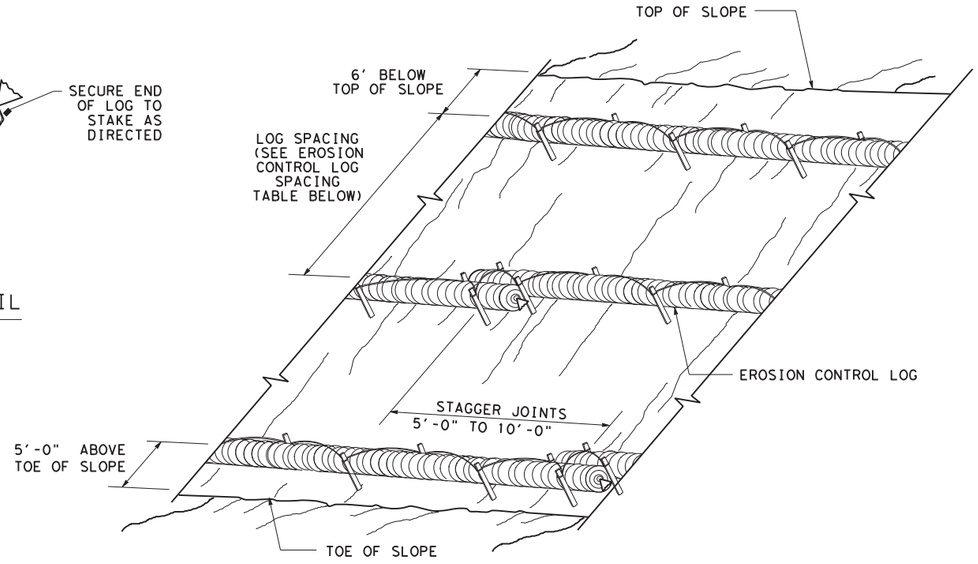
CL-SST



END SECTION RAP DETAIL

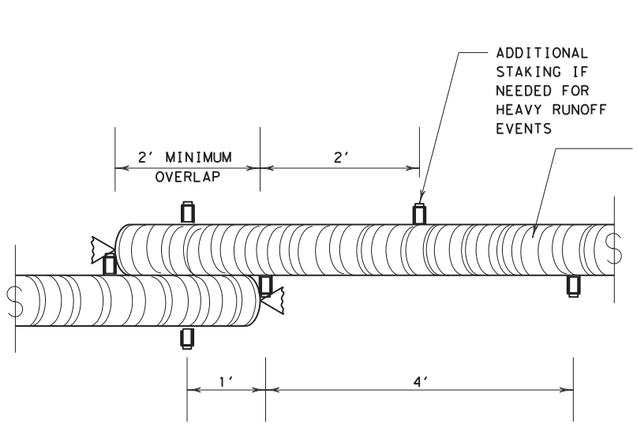
EROSION CONTROL LOG SPACING TABLE				
SLOPE	LOG DIAMETER			
	6"	8"	12"	18"
1:1 OR STEEPER	5'	10'	15'	20'
2:1	10'	20'	30'	40'
3:1	15'	30'	45'	60'
4:1 OR FLATTER	20'	40'	60'	80'

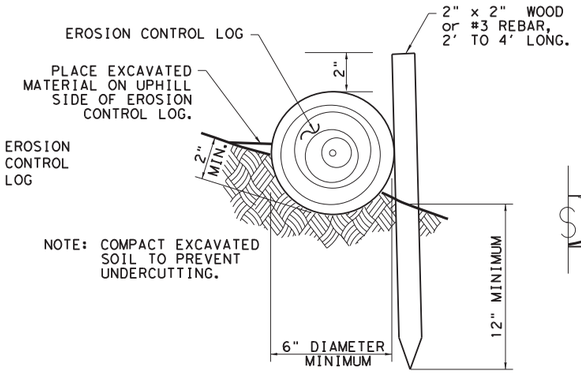
* ADJUSTMENTS CAN BE MADE FOR SOIL TYPE:
SOFT, LOAMY SOILS-ADJUST ROWS CLOSER TOGETHER;
HARD, ROCKY SOILS- ADJUST ROWS FARTHER APART



EROSION CONTROL LOGS ON SLOPES
STAKE AND LASHING ANCHORING

CL-SSL

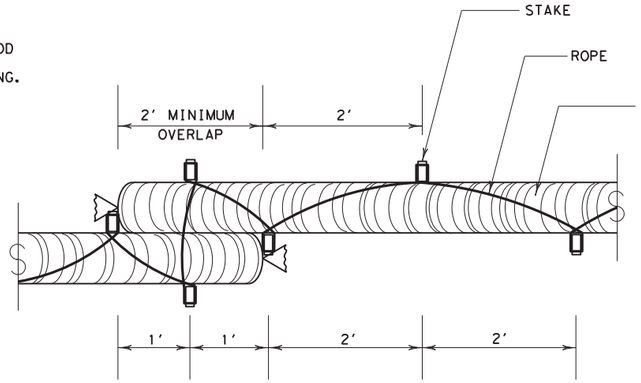


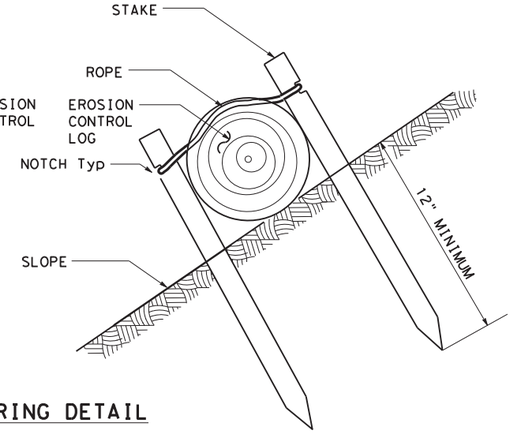


STAKE AND TRENCHING ANCHORING DETAIL

CL-SST

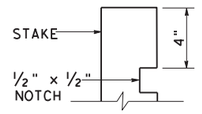
TRENCH DEPTH TABLE	
LOG DIAMETER	DEPTH
6"	2"
8"	3"
12"	4"
18"	5"





STAKE AND LASHING ANCHORING DETAIL

CL-SSL



STAKE NOTCH DETAIL

DATE: 8/13/2025
FILE: c:\pw\khi\d0538843\ec916.dgn

Texas Department of Transportation | Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES
EROSION CONTROL LOG
EC(9)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: LS/PT	CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
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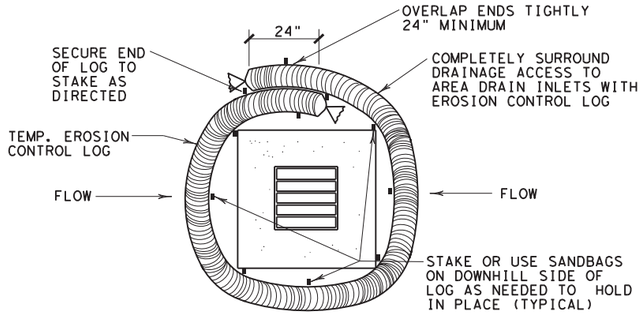
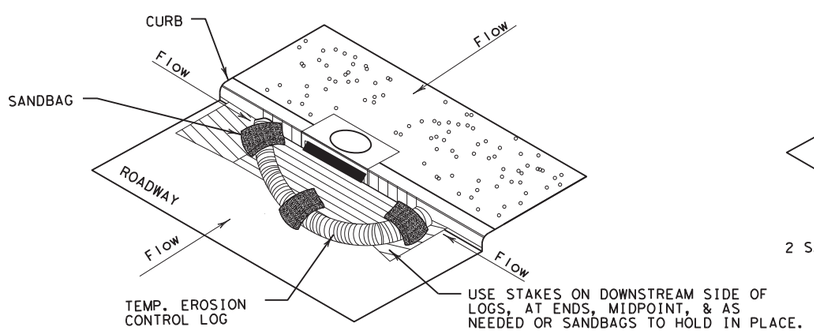
	DIST	COUNTY		SHEET NO.
	AUS	TRAVIS		45



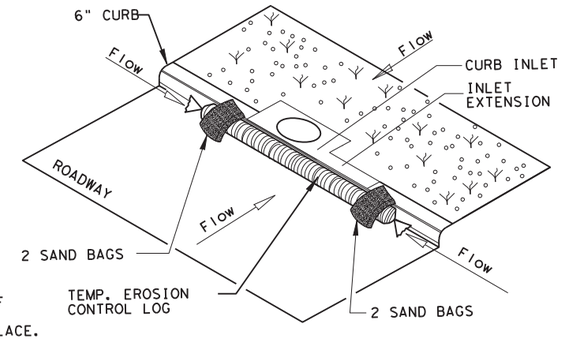
EROSION CONTROL LOG AT DROP INLET

CL-DI



EROSION CONTROL LOG AT CURB INLET

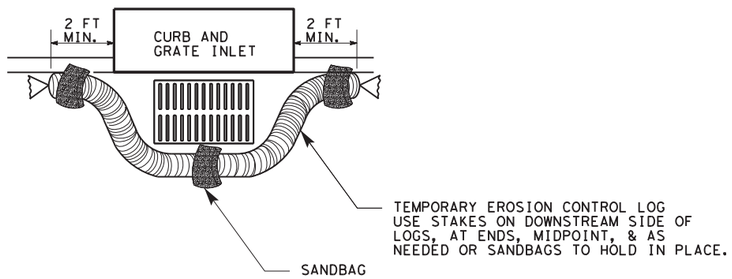
CL-CI



EROSION CONTROL LOG AT CURB INLET

CL-CI

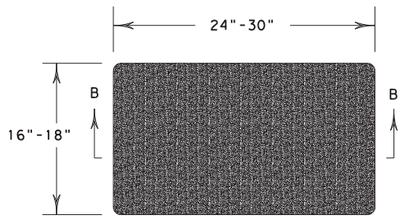
NOTE:
EROSION CONTROL LOGS USED AT CURB INLETS SHOULD ONLY BE USED IF THEY WILL NOT IMPEDE TRAFFIC OR FLOOD THE ROADWAY OR WHEN THE STORM SEWER SYSTEM IS NOT FULLY FUNCTIONAL.



EROSION CONTROL LOG AT CURB & GRADE INLET

CL-GI

SECTION B-B



SANDBAG DETAIL

SHEET 3 OF 3

Texas Department of Transportation

Design Division Standard

TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

EROSION CONTROL LOG

EC(9)-16

FILE: ec916	DN: TxDOT		CK: KM	DW: LS/PT		CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB		HIGHWAY	
REVISIONS	0700	03			SH 71	
	DIST	COUNTY				SHEET NO.
	AUS	TRAVIS				46

DATE: 8/13/2025
FILE: c:\pw\khi\d0538843\ec916.dgn

ATTACHMENT N

Inspection, Maintenance, Repair and Retrofit Plan

PROJECT NAME: **Marx Multifamily**

ADDRESS: **8900 W SH 71 and 9119 Old Bee Caves Road**

CITY, STATE: **Austin, TX**

RETENTION/ IRRIGATION SYSTEM

The following guidelines should be used to develop the maintenance plan for the retention/irrigation BMP:

- *Inspections*. The irrigation system, including pumps, should be inspected and tested (or observed while in operation) to assure proper operation at least 6 times annually. Two of these inspections should occur during or immediately following wet weather. Any leaks, broken spray heads, or other malfunctions with the irrigation system should be repaired immediately. In particular, sprinkler heads must be checked to determine if any are broken, clogged, or not spraying properly. All inspection and testing reports should be kept on site and accessible to inspectors.

- *Sediment Removal.* Remove sediment from splitter box, basin, and wet wells at least two times per year or when the depth reaches 3 inches.

- *Irrigation Areas.* To the greatest extent practicable, irrigation areas are to remain in their natural state. However, vegetation must be maintained in the irrigation area such that it does not impede the spray of water from the irrigation heads. Tree and shrub trimmings and other large debris should be removed from the irrigation area.

- *Mowing.* The upper stage, side slopes, and embankment of a retention basin must be mowed regularly to discourage woody growth and control weeds. Grass areas in and around basins must be mowed at least twice annually to limit vegetation height to 18 inches. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas. When mowing is performed, a mulching mower should be used, or grass clippings should be caught and removed.

- *Debris and Litter Removal.* Debris and litter will accumulate near the basin pump and should be removed during regular mowing operations and inspections. Particular attention should be paid to floating debris that can eventually clog the irrigation system.

- *Erosion Control.* The pond side slopes and embankment may periodically suffer from slumping and erosion, although this should not occur often if the soils are properly compacted during construction. Regrading and revegetation may be required to correct the problems.

- *Nuisance Control.* Standing water or soggy conditions in the retention basin can create nuisance conditions for nearby residents. Odors, mosquitoes, weeds, and litter are all

occasionally perceived to be problems. Most of these problems are generally a sign that regular inspections and maintenance are not being performed (e.g., mowing and debris removal).

- *Pump Alarm and Repair.* The pump system shall provide fault detection by the use of an amp draw sensor, probe type level sensor, and/or pump operating pressure sensor. The alarm system shall include a red light located at a height of at least 5 feet above ground level at the wet well and a sign shall be places within 5 feet of the alarm containing the contact information of the responsible party listed below. The red light alarm should activate when: the high water level has been maintained in excess of 72 hours; the water level is below the shut-off point and the pump has not turned off; or the high/low pressure pump shut off switch has been activated. The sensors shall detect bad bearings, pump bind-up, a locked rotor, etc. A flashing green light shall indicated that the pump and motor are running properly. The pump motor should be termally protected to shut down if "dead head" or dry pumping occurs, activating the warning light. Mainline blowout leaks shall be detected by a pressure sensor, shutting down the pump and activating warnings as noted above. In addition to standard thermal protection, the amp draw sensor must be capable of detecting slight changes in amp draw to protect the pump from impending failure. Any malfunctions or damaged parts shall be repaired within seven (7) days of discovery of the warning light.

All inspection and testing records shall be kept on-site for a period not less than three (3) years.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within thirty (30) days of any changes in the following information.

Responsible Party: OHT Partners, LLC

Mailing Address: 901 South Mopac Expressway, Building 2, Suite 500

City, State: Austin, Texas Zip: 78746

Telephone: (512) 813-7119 FAX: _____

Signature of Responsible Party _____ Date 9/3/25

CONTRIBUTING ZONE PLAN

INSPECTION AND MAINTENANCE REPORT

RETENTION / IRRIGATION INSPECTION FORM

INSPECTOR: _____

INSPECTION DATE	PUMP FUNCTIONING (WARNING LIGHT NOTED Y/N)?	BROKEN IRRIGATION HEADS?	DEBRIS IN POND?	APPROX. GRASS HEIGHT IN POND	SEDIMENT DEPTH MARKER VISIBLE?

MAINTENANCE REQUIRED FOR RETENTION/IRRIGATION POND:

_____
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

ATTACHMENT O

Not applicable to this project

ATTACHMENT P

Measures for Minimizing Surface Stream Contamination

All flow generated from development on the site is treated in water quality ponds prior to discharging the stormwater into the downstream waterways. The on-site retention/irrigation ponds satisfy TCEQ Criteria, thus providing adequate pollutant removal.

EXHIBIT I

Temporary Storm Water Section (TCEQ-0602)

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

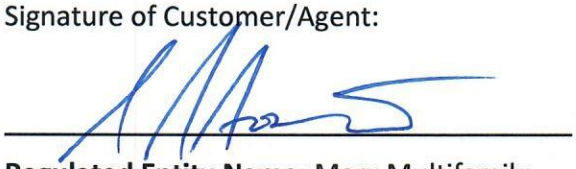
Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Scott J. Foster, P.E.

Date: 9/8/25

Signature of Customer/Agent:



Regulated Entity Name: Marx Multifamily

Project Information

Potential Sources of Contamination

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ☐ The following fuels and/or hazardous substances will be stored on the site: _____

   These fuels and/or hazardous substances will be stored in:

   ☐ Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

☐ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

☒ Fuels and hazardous substances will not be stored on the site.

2. ☒ **Attachment A - Spill Response Actions**. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.

3. ☒ Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ☒ **Attachment B - Potential Sources of Contamination**. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

Sequence of Construction

5. ☒ **Attachment C - Sequence of Major Activities**. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.

   ☒ For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

   ☒ For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. ☒ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Williamson Creek

Temporary Best Management Practices (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. All structural BMPs must be shown on the site plan.

7. ☒ **Attachment D – Temporary Best Management Practices and Measures**. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information is attached:

☒ A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

☒ A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

☒ A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

☒ A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. ☒ The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

☐ **Attachment E - Request to Temporarily Seal a Feature**. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

☒ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ☒ **Attachment F - Structural Practices**. A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.

10. ☒ **Attachment G - Drainage Area Map**. A drainage area map supporting the following requirements is attached:

☒ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

☐ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

☐ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

11. ☐ **Attachment H - Temporary Sediment Pond(s) Plans and Calculations**. Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are attached.

☒ N/A

12. ☒ **Attachment I - Inspection and Maintenance for BMPs.** A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.

13. ☒ All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ☒ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. ☒ Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ☒ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

Soil Stabilization Practices

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ☒ **Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices**. A schedule of the interim and permanent soil stabilization practices for the site is attached.

18. ☒ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ☒ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

20. ☒ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ☒ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ☒ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

ATTACHMENT A

Spill Response Actions

The attached practices shall be followed for spill prevention and cleanup.

(Pages 1-118 to 1-121 from Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices RG-348 Revised July 2005)

1.4.16 Spill Prevention and Control

The objective of this section is to describe measures to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

(1) Be aware that different materials pollute in different amounts. Make sure that each employee knows what a "significant spill" is for each material they use, and what is the appropriate response for "significant" and "insignificant" spills. Employees should also be aware of when spill must be reported to the TCEQ. Information available in 30 TAC 327.4 and 40 CFR 302.4.

(2) Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.

(3) Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).

(4) Establish a continuing education program to indoctrinate new employees.

(5) Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

(1) To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.

(2) Store hazardous materials and wastes in covered containers and protect from vandalism.

(3) Place a stockpile of spill cleanup materials where it will be readily accessible.

(4) Train employees in spill prevention and cleanup.

(5) Designate responsible individuals to oversee and enforce control measures.

(6) Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.

(7) Do not bury or wash spills with water.

(8) Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.

(9) Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.

(10) Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.

(11) Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.

(12) Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

(1) Clean up leaks and spills immediately.

(2) Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.

(3) Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

(1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.

(2) Use absorbent materials on small spills rather than hosing down or burying the spill.

(3) Absorbent materials should be promptly removed and disposed of properly.

(4) Follow the practice below for a minor spill:

(5) Contain the spread of the spill.

(6) Recover spilled materials.

(7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities.

Spills should be cleaned up immediately:

(1) Contain spread of the spill.

(2) Notify the project foreman immediately.

(3) If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.

(4) If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.

(5) If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

(1) Notify the TCEQ by telephone as soon as possible and within 24 hours at 512-339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.

(2) For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.

(3) Notification should first be made by telephone and followed up with a written report.

(4) The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

(5) Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc.

More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

(1) If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.

(2) Regularly inspect onsite vehicles and equipment for leaks and repair immediately

(3) Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.

(4) Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.

(5) Place drip pans or absorbent materials under paving equipment when not in use.

(6) Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.

(7) Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

(8) Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.

(9) Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

(1) If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.

(2) Discourage "topping off" of fuel tanks.

(3) Always use secondary containment, such as a drain pan, when fueling to catch spills/ leaks.

ATTACHMENT B

Potential Sources of Contamination

Potential Sources of Contamination during the construction of this project:

- Oil and Grease: from runoff pollutants associated with paving operations
- Asphalt: emulsion from the streets just after construction is complete
- Construction Phase Pollutants: hydraulic fluid, machine oil, and sediment.

Potential Sources of Contamination after completion of this project:

- Oil, Grease, Coolant from Vehicles
- Fertilizers, Pesticides from Landscaping
- Accidental Spills

ATTACHMENT C and D

Sequence of Major Activities and Temporary Best Management Practices and Measures

1. Temporary erosion and sedimentation controls are to be installed as indicated on the approved site plan and in accordance with the stormwater pollution prevention plan (SWPPP) that is required to be posted on the site. The following Temporary BMPs will be used during this construction: (43.6 Acres)

    a. Sediment Basin (proposed pond facilities with dewatering skimmers)

    b. Stabilized Construction Entrance

    c. Silt Fence and Mulch Socks

    d. Inlet Protection

    e. Rock Berm

    f. Concrete Washout Area(s)

2. The contractor or site supervisor shall arrange and coordinate an on-site pre-construction meeting with the owner, project engineer, relevant contractors, relevant utility representatives, and the city engineer/inspector.

3. The environmental project manager, and/or site supervisor, and/or designated responsible party, and the general contractor will follow the storm water pollution prevention plan (SWPPP) posted on the site. Temporary erosion and sedimentation controls will be revised, if needed, to comply with city inspectors' directives, and revised construction schedule relative to the water quality plan requirements and the erosion plan.

4. Temporary erosion and sedimentation controls will be inspected and maintained in accordance with the storm water pollution prevention plan (SWPPP)) posted on the site.

5. Begin site clearing/construction (or demolition) activities. (30 Acres)

6. Complete construction and start revegetation and installation of landscaping. (44 Acres)

7. Permanent water quality ponds or controls will be cleaned out concurrently with revegetation of site. (1.5 Acres)

8. Upon completion of the site construction and revegetation of a project site, the design engineer shall submit an engineer's letter of concurrence to the city indicating that construction, including revegetation, is complete and in substantial conformity with the approved plans. After receiving this letter, a final inspection will be scheduled by the appropriate city inspector.

9. After a final inspection has been conducted by the city inspector and with approval from the city inspector, remove the temporary erosion and sedimentation controls and complete any necessary final revegetation resulting from removal of the controls. Conduct any maintenance and rehabilitation of the water quality ponds or controls.

ATTACHMENT E

Not applicable to this project

ATTACHMENT F

Structural Practices

The project's stormwater runoff will be collected on-site and conveyed by underground storm sewer system to proposed water quality and detention facilities. The three water quality and detention ponds have been designed to treat the additional pollutants of the project's proposed impervious cover. The detention ponds have been designed to limit the proposed stormwater flows to levels at or below existing conditions for the 2, 10, 25, and 100-year storm events. No structural practices will be located within a floodplain.

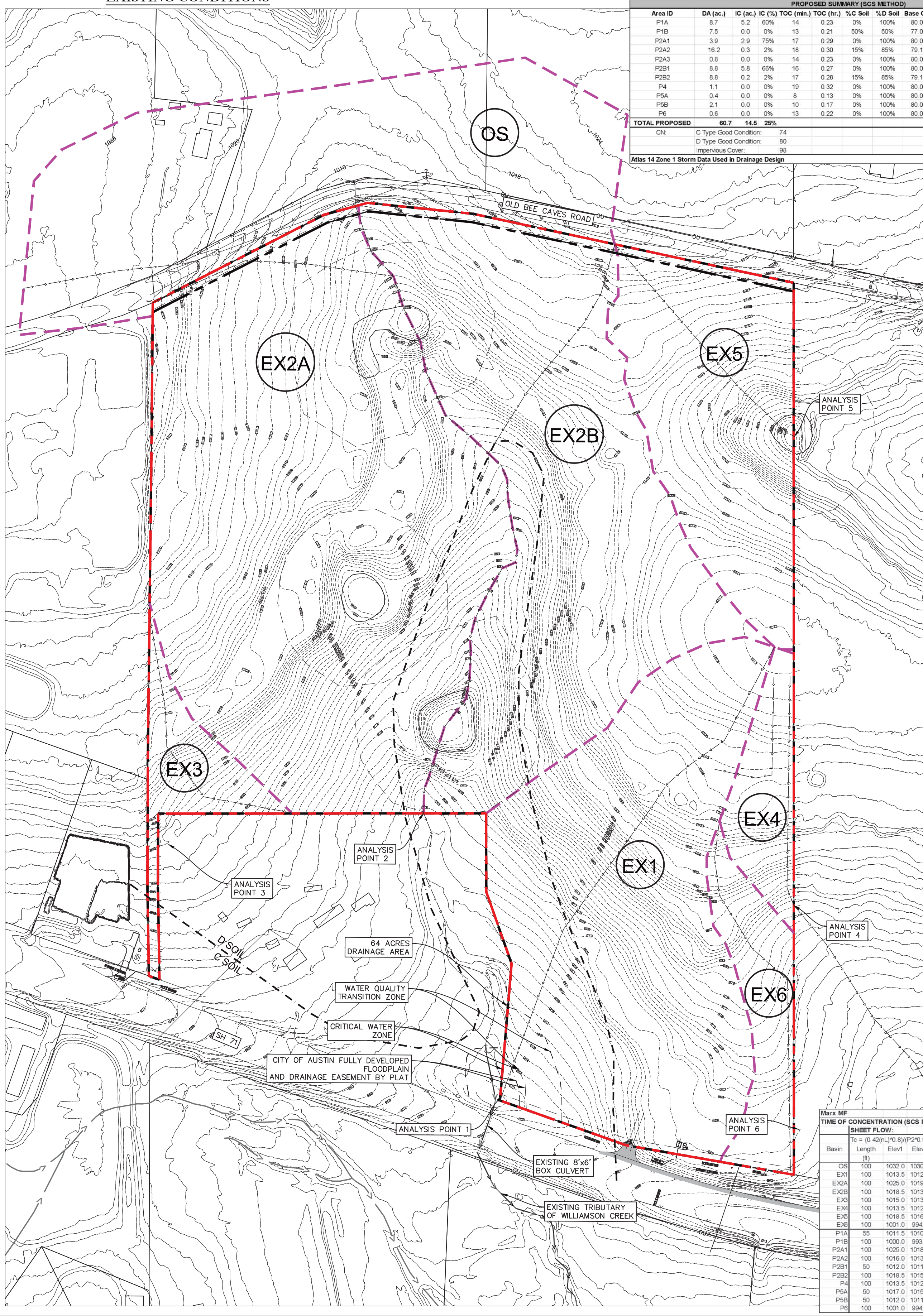
ATTACHMENT G

Drainage Area Map

OVERALL DRAINAGE AREA MAPS

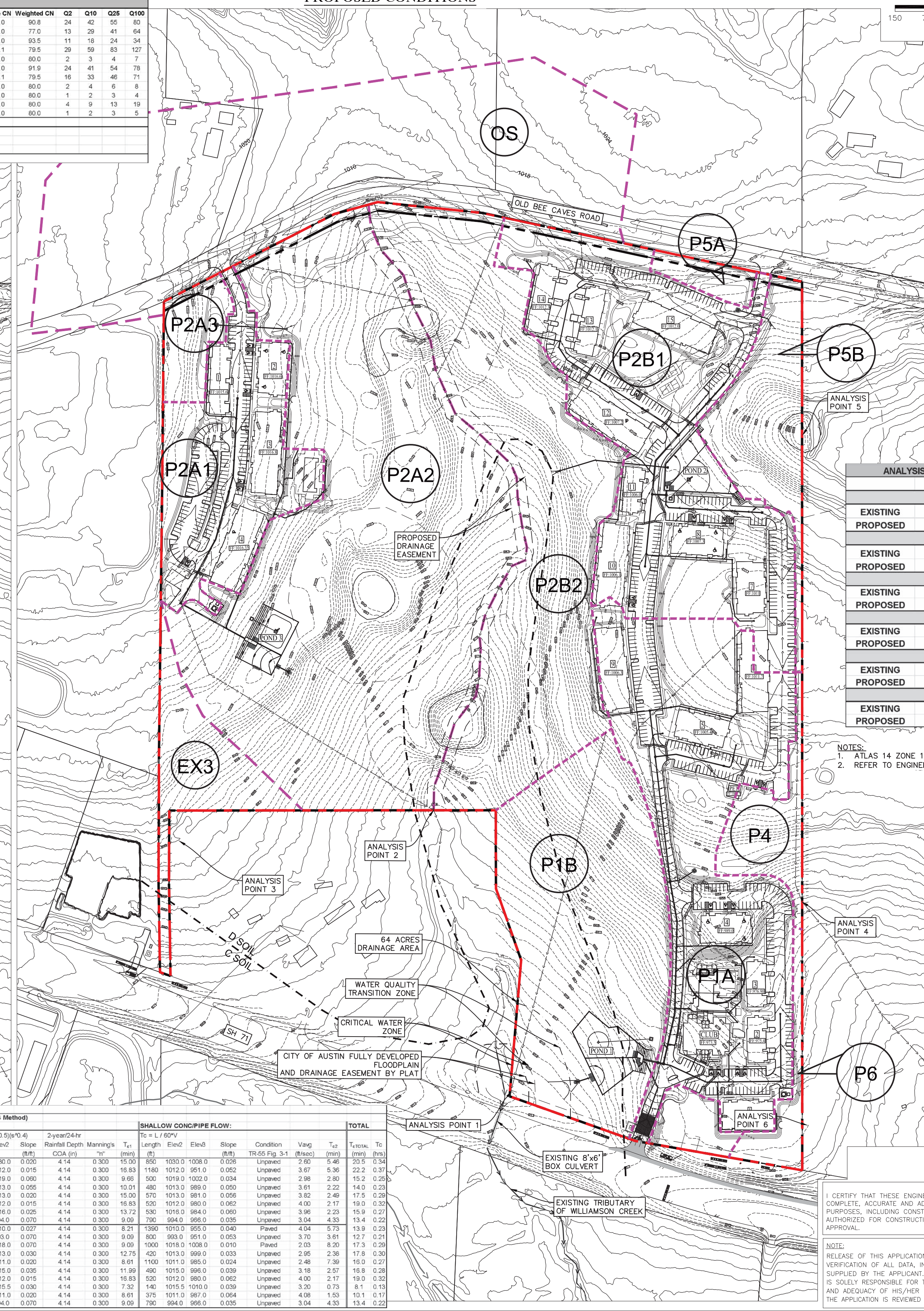
MARX MULTIFAMILY
8900 W STATE HWY 71
AUSTIN, TX 78735

EXISTING CONDITIONS



EXISTING CONDITIONS SUMMARY (SCS METHOD)													
Area ID	DA (ac.)	IC (ac.)	IC (%)	TOC (min.)	TOC (hr.)	%C Soil	%D Soil	Base CN	Weighted CN	Q2	Q10	Q25	Q100
OS	12.1	3.03	25%	21	0.34	0%	100%	80.0	84.5	24	46	63	95
EX1	13.2	0.00	0%	22	0.37	20%	80%	78.8	78.8	22	45	63	96
EX2A	20.9	0.00	0%	15	0.25	10%	90%	79.4	79.4	38	79	112	172
EX2B	14.5	0.00	0%	14	0.23	10%	90%	79.4	79.4	28	57	80	123
EX3	1.7	0.00	0%	17	0.29	0%	100%	80.0	80.0	3	6	9	13
EX4	1.7	0.00	0%	19	0.32	0%	100%	80.0	80.0	3	6	9	13
EX5	6.5	0.00	0%	16	0.27	0%	100%	80.0	80.0	12	25	35	53
EX6	2.2	0.00	0%	13	0.22	0%	100%	80.0	80.0	4	9	12	19
TOTAL SITE	60.7												
PROPOSED SUMMARY (SCS METHOD)													
Area ID	DA (ac.)	IC (ac.)	IC (%)	TOC (min.)	TOC (hr.)	%C Soil	%D Soil	Base CN	Weighted CN	Q2	Q10	Q25	Q100
P1A	8.7	5.2	60%	14	0.23	0%	100%	80.0	90.8	24	42	55	80
P1B	7.5	0.0	0%	13	0.21	50%	50%	77.0	77.0	13	29	41	64
P2A1	3.9	2.9	75%	17	0.29	0%	100%	80.0	93.5	11	18	24	34
P2A2	16.2	0.3	2%	18	0.30	15%	85%	79.1	79.5	29	59	83	127
P2A3	0.8	0.0	0%	14	0.23	0%	100%	80.0	80.0	2	3	4	7
P2B1	8.8	5.8	66%	16	0.27	0%	100%	80.0	91.9	24	41	54	78
P2B2	8.8	0.2	2%	17	0.28	15%	85%	79.1	79.5	16	33	46	71
P4	1.1	0.0	0%	19	0.32	0%	100%	80.0	80.0	2	4	6	8
P5A	0.4	0.0	0%	8	0.13	0%	100%	80.0	80.0	1	2	3	4
P5B	2.1	0.0	0%	10	0.17	0%	100%	80.0	80.0	4	9	13	19
P6	0.6	0.0	0%	13	0.22	0%	100%	80.0	80.0	1	2	3	5
TOTAL PROPOSED	60.7	14.5	25%										
CN:	C Type Good Condition:		74										
	D Type Good Condition:		80										
	Impervious Cover:		98										
Atlas 14 Zone 1 Storm Data Used in Drainage Design													

PROPOSED CONDITIONS



LEGEND

- SUBJECT PROPERTY
- PROPERTY LINES
- DRAINAGE AREA
- TIME OF CONCENTRATION

SCALE IN FEET: 150 75 0 150

ANALYSIS POINT FLOW SUMMARY (CFS)				
	2 YR	10 YR	25 YR	100 YR
ANALYSIS POINT 1				
EXISTING	22	45	63	96
PROPOSED	22	40	55	96
ANALYSIS POINT 2				
EXISTING	81	167	237	366
PROPOSED	76	153	227	361
ANALYSIS POINT 3				
EXISTING	3	6	9	13
PROPOSED	3	6	9	13
ANALYSIS POINT 4				
EXISTING	3	6	9	13
PROPOSED	2	4	6	8
ANALYSIS POINT 5				
EXISTING	12	25	35	53
PROPOSED	5	11	15	23
ANALYSIS POINT 6				
EXISTING	4	9	12	19
PROPOSED	1	2	3	5

NOTES:
1. ATLAS 14 ZONE 1 STORM DATA USED IN DRAINAGE MODELING.
2. REFER TO ENGINEER'S REPORT FOR MORE INFORMATION.

Marx MF
TIME OF CONCENTRATION (SCS Method)

	SHEET FLOW:							SHALLOW CONC/PIPE FLOW:							TOTAL	
	Tc = (0.42(nL)^0.8)/(P2^0.5)(s^0.4)				2-year/24-hr			Tc = L / 60*V								
Basin	Length (ft)	Elev1	Elev2	Slope (ft/ft)	Rainfall Depth COA (in)	Manning's "n"	T_{c1} (min)	Length (ft)	Elev2	Elev3	Slope (ft/ft)	Condition TR-55 Fig. 3-1	Vavg (ft/sec)	T_{c2} (min)	T_{cTOTAL} (min)	Tc (hrs)
OS	100	1032.0	1030.0	0.020	4.14	0.300	15.00	850	1030.0	1008.0	0.026	Unpaved	2.60	5.46	20.5	0.34
EX1	100	1013.5	1012.0	0.015	4.14	0.300	16.83	1180	1012.0	951.0	0.052	Unpaved	3.67	5.36	22.2	0.37
EX2A	100	1025.0	1019.0	0.060	4.14	0.300	9.66	500	1019.0	1002.0	0.034	Unpaved	2.98	2.80	15.2	0.25
EX2B	100	1018.5	1013.0	0.055	4.14	0.300	10.01	480	1013.0	989.0	0.050	Unpaved	3.61	2.22	14.0	0.23
EX3	100	1015.0	1013.0	0.020	4.14	0.300	15.00	570	1013.0	981.0	0.056	Unpaved	3.82	2.49	17.5	0.29
EX4	100	1013.5	1012.0	0.015	4.14	0.300	16.83	520	1012.0	980.0	0.062	Unpaved	4.00	2.17	19.0	0.32
EX5	100	1018.5	1016.0	0.025	4.14	0.300	13.72	530	1016.0	984.0	0.060	Unpaved	3.96	2.23	15.9	0.27
EX6	100	1001.0	994.0	0.070	4.14	0.300	9.09	790	994.0	966.0	0.035	Unpaved	3.04	4.33	13.4	0.22
P1A	55	1011.5	1010.0	0.027	4.14	0.300	8.21	1390	1010.0	955.0	0.040	Paved	4.04	5.73	13.9	0.23
P1B	100	1000.0	993.0	0.070	4.14	0.300	9.09	800	993.0	951.0	0.053	Unpaved	3.70	3.61	12.7	0.21
P2A1	100	1025.0	1018.0	0.070	4.14	0.300	9.09	1000	1018.0	1008.0	0.010	Paved	2.03	8.20	17.3	0.29
P2A2	100	1016.0	1013.0	0.030	4.14	0.300	12.75	420	1013.0	999.0	0.033	Unpaved	2.95	2.38	17.8	0.30
P2B1	50	1012.0	1011.0	0.020	4.14	0.300	8.61	1100	1011.0	985.0	0.024	Unpaved	2.48	7.39	16.0	0.27
P2B2	100	1018.5	1015.0	0.035	4.14	0.300	11.99	490	1015.0	996.0	0.039	Unpaved	3.18	2.57	16.8	0.28
P4	100	1013.5	1012.0	0.015	4.14	0.300	16.83	520	1012.0	980.0	0.062	Unpaved	4.00	2.17	19.0	0.32
P5A	50	1017.0	1015.5	0.030	4.14	0.300	7.32	140	1015.5	1010.0	0.039	Unpaved	3.20	0.73	8.1	0.13
P5B	50	1012.0	1011.0	0.020	4.14	0.300	8.61	375	1011.0	987.0	0.064	Unpaved	4.08	1.53	10.1	0.17
P6	100	1001.0	994.0	0.070	4.14	0.300	9.09	790	994.0	966.0	0.035	Unpaved	3.04	4.33	13.4	0.22

I CERTIFY THAT THESE ENGINEERING DOCUMENTS ARE COMPLETE, ACCURATE AND ADEQUATE FOR THE INTENDED PURPOSES, INCLUDING CONSTRUCTION, BUT ARE NOT AUTHORIZED FOR CONSTRUCTION PRIOR TO FORMAL CITY APPROVAL.

NOTE:
RELEASE OF THIS APPLICATION DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, AND ADEQUACY OF HIS/HER SUBMITTAL, WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY

No.	Date	Revisions	App.

360 PROFESSIONAL SERVICES, INC.
TEXAS REGISTRATION F4932
P.O. BOX 3639
CEDAR PARK, TEXAS 78630
PHONE (512) 354-4682
FAX (512) 900-7962

STATE OF TEXAS
SCOTT J. FOSTER
84652
LICENSED PROFESSIONAL ENGINEER
8/28/2025

Scale: AS SHOWN
Designed by:
Drawn by:
Checked by:
Date: AUGUST 2025
Project No.

FILE: Z:\Shared\Projects\Oden Hughes\Marx Tract\Cad\Sheets\40 DAM.dwg LAYOUT: Sheet PLOT DATE: 8/27/2025 3:25pm PLOTTED BY: mered
XREFS: x2436 xgis xaerial TNRIS 2022 xgis_topo xsurvey_360PSI xsite xslopes xsite_contours xLA xtrees IMAGES: SJF Sign.tif

ATTACHMENT H

Not applicable to this project

ATTACHMENT I

Inspection and Maintenance for Temporary BMPs

SILT FENCE

1. Inspect all fencing weekly, and after any rainfall.
2. Remove sediment when buildup reaches 6 inches.
3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
4. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

ROCK BERM

1. Inspection should be made weekly and after each rainfall by the responsible party. For installations in streambeds, additional daily inspections should be made.
2. Remove sediment and other debris when buildup reaches 6 inches and dispose of the accumulated silt in an approved manner that will not cause any additional siltation.
3. Repair any loose wire sheathing.
4. The berm should be reshaped as needed during inspection.
5. The berm should be replaced when the structure ceases to function as intended due to silt accumulation among the rocks, washout, construction traffic damage, etc.
6. The rock berm should be left in place until all upstream areas are stabilized and accumulated silt removed.

STORM DRAIN INLET PROTECTION

1. Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
3. Check placement of device to prevent gaps between device and curb.
4. Inspect filter fabric and patch or replace if torn or missing.
5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

SEDIMENT BASIN

1. Inspection should be made weekly and after each rainfall. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Repair should be made promptly as needed by the contractor.
2. Trash and other debris should be removed after each rainfall to prevent clogging of the outlet structure.
3. Accumulated silt should be removed and the basin should be re-graded to its original dimensions at such point that the capacity of the impoundment has been reduced to 75% of its original storage capacity. The removed sediment should be stockpiled or redistributed in areas that are protected from erosion.

STABILIZED CONSTRUCTION ENTRANCE

1. The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment.
2. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.
4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
5. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

CONCRETE WASHOUT AREAS

1. Locate washout area at least 50 feet from sensitive features, storm drains, open ditches, or water bodies. Do not allow runoff from this area by constructing a temporary pit or bermed area large enough for liquid and solid waste.
2. Wash out wastes into the temporary pit where the concrete can set, be broken up, and then disposed properly.
3. Concrete washout facilities should be inspected daily and after heavy rains to check for leaks, identify any plastic linings and sidewalls have been damaged by construction activities, and determine whether they have been filled to over 75 percent capacity. When the washout container is filled to over 75 percent of its capacity, the washwater should be vacuumed off or allowed to evaporate to avoid overflows. Then when the remaining cementitious solids have hardened, they should be removed and recycled. Damages to the container should be repaired promptly. Before heavy rains, the washout container’s liquid level should be lowered or the container should be covered to avoid an overflow during the rain storm.

ATTACHMENT J

Schedule of Interim and Permanent Soil Stabilization Practices

Temporary

1. The contractor shall install erosion/sedimentation controls and tree/natural area protective fencing prior to any site preparation work (clearing, grubbing or excavation). see construction details sheet for erosion/sedimentation control details. note: t posts are to be spaced 5' apart on center.

2. The placement of erosion/sedimentation controls and tree/natural area protective fencing shall be in accordance with the approved erosion and sedimentation control/tree protection plan. no erosion controls shall be placed beyond the property lines of the site unless written permission has been obtained from adjacent property owners.

3. The contractor is required to inspect the controls at weekly intervals and after significant rainfall events to ensure that they are functioning properly. the person(s) responsible for maintenance of controls shall immediately make any necessary repairs to damaged areas. silt accumulation at controls must be removed when the depth reaches six (6) inches.

4. Prior to final acceptance by the city, haul roads and waterway crossing constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. all land clearing debris shall be disposed of in approved spoil disposal sites.

5. Any dirt, mud, rocks, debris, etc., that is spilled, tracked, or otherwise deposited on any existing paved street shall be cleaned up immediately.

6. The code enforcement officer, city engineer or designated city inspector has the authority to require additional erosion/sedimentation controls or tree protection before or during construction.

7. Prior to construction all trees over roadways and construction areas may be trimmed to 13½-feet in height.

8. All fabric for erosion/sedimentation controls shall be a minimum of 6-oz per square foot.

Permanent

1. All disturbed areas shall be restored to the hard surface of the street as noted below.

2. Erosion control matting is required on all disturbed area that have a finished grade of 4:1 up to but not including 3:1. all disturbed areas 3:1 and greater must be stabilized by means approved by the city.

3. All disturbed areas on the entire project (such as areas that have been driven on, graded, used for storage of anything and are not in the exact condition that existed prior to construction) shall have a minimum of three (3) inches of topsoil placed prior to revegetation.

4. Topsoil shall be clean, friable, fertile soil with a relatively high erosion resistance, free of objectionable materials including roots and rocks larger than one (1) inch. topsoil shall not contain caliche or limestone. topsoil shall be readily able to support the growth of planting, seeding and sodding, as accepted by the city.

5. A minimum of three (3) inches of topsoil shall be placed in all drainage channels and high velocity erosion control matting shall be placed on the channel bottom and up the slope to an elevation of a minimum of 6" above the 100-year flood plain. all channel slopes above the 100-year flood plain that are greater than 5:1 slope shall have standard erosion control matting.

6. Prior to the placement of sod, seed, erosion control matting or hydromulch, the contractor shall contact the city and request an on-site inspection of the topsoil. failure to get this inspection/approval may cause the topsoil and vegetation to be replaced.

7. The seeding for permanent erosion control shall be applied over areas disturbed by construction as follows or as directed by the landscape architect:

8. From september 15 to march 1, seeding shall be with a combination of two (2) pound per 1000 square feet of unhulled bermuda and ten (10) pounds per 1000 square feet of winter rye with purity of 95% with 90% germination.

9. From march 2 to september 14, seeding shall be with hulled bermuda at a rate of eight (8) pounds per 1000 square feet with a purity of 95% with 85% germination.

10. Fertilize as recommended by landscape architect.

11. Immediately upon completion of hydromulching operations, the contractor shall furnish to the city or design engineer a copy of a written certification from the hydromulch applicator stating the amounts of seed and fertilizer applied. the certification shall contain the name, address and phone number of the applicator and be signed by the applicator. no certificate of acceptance shall be issued without the required certification.

12. The planted area shall be irrigated or sprinkled in a manner that will not erode the topsoil, but will sufficiently soak the soil to a depth of six inches. the irrigation shall occur at a minimum of seven (7) day intervals during the first two months. rainfall occurrences of ½ inch or more shall postpone the watering schedule for one week.

13. Mulch type used shall be either cellulose fiber, applied at a rate of 2,000 pounds per acre, or wood fiber mulch, applied at a rate of 2,500 pounds per acre.

14. Restoration shall be acceptable when the grass has grown at least 1½ inches high with 95% coverage, provided no bare spots larger than 9 square feet exist. grass must be deep green in color to be acceptable; brown grass is the same as no grass.

15. When required, native grass seeding shall comply with the requirements of the city of austin environmental criteria manual.

16. All constructed and altered drainage channels shall be stabilized and vegetated immediately after final grading.

EXHIBIT II

Copy of Notice of Intent (NOI)

(To be filled out on-line)

EXHIBIT III

Landowner Authorization Forms (TCEQ-21019)

Agent Authorization Form (TCEQ-0599)

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Betty Fickel of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Betty Fickel

Signature

Landowner Signature

Date

Date May 29th, 2025

THE STATE § OF State Texas

County § of County Travis

BEFORE ME, the undersigned authority, on this day personally appeared

Betty Fickel

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of May

Click or tap here to add ID

NOTARY PUBLIC

Tybresha Lashawn Drisdale

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: January 9, 2027

TYBRESHA LASHAWN DRISDALE
Notary Public, State of Texas
Comm. Expires 01-09-2027
Notary ID 131847126

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

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If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, James Kretzschmar of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature James Kretzschmar
Landowner Signature

Date 5-29-25
Date

THE STATE § OF State Texas

County § of County Travis

BEFORE ME, the undersigned authority, on this day personally appeared

James Kretzschmar

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of May

Click or tap here to add ID

NOTARY PUBLIC

Tybresha Lashawn Drisdale
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: January 9, 2027

TYBRESHA LASHAWN DRISDALE
Notary Public, State of Texas
Comm. Expires 01-09-2027
Notary ID 131847126

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Keith Worrell of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature
Landowner Signature

Date

Date May 29, 2025

THE STATE § OF State Texas

County § of County Travis

BEFORE ME, the undersigned authority, on this day personally appeared

~~Kenneth Marx~~ Keith Worrell

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of May

Click or tap here to add ID

NOTARY PUBLIC

Tybresha Lashawn Drisdale

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: January 9, 2027

TYBRESHA LASHAWN DRISDALE
Notary Public, State of Texas
Comm. Expires 01-09-2027
Notary ID 131847126

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Kenneth Marx of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature Kenneth Marx
Landowner Signature
Date 5/29/2025
Date

THE STATE § OF State Texas
County § of County Travis
BEFORE ME, the undersigned authority, on this day personally appeared
~~Keith Worrell~~ Kenneth Marx

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of May

Click or tap here to add ID

NOTARY PUBLIC
Tybresha Lashawn Drisdale
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date January 9, 2027

TYBRESHA LASHAWN DRISDALE
Notary Public, State of Texas
Comm. Expires 01-09-2027
Notary ID 131847126

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, Sandra Jones of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Sandra Jones

Signature

Landowner Signature

Date 5/30/2025

Date

THE STATE § OF State Texas

County § of County Travis

BEFORE ME, the undersigned authority, on this day personally appeared

Sandra Jones

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

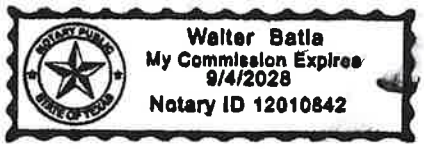
GIVEN under my hand and seal of office on this 30th day of Month May, 2025.

Click or tap here to add ID

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: Date



Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Owner Authorization Form

Edwards Aquifer Protection Program

Instructions

Complete the following form by adding the requested information in the fields below. The form must be notarized for it to be considered complete. Attach it to other programmatic submittals required by 30 Texas Administrative Code (30 TAC), Chapter 213, and provide it to TCEQ's Edwards Aquifer Protection Program (EAPP) as part of your application.

If you have questions on how to fill out this form or about EAPP, please contact us by phone at 512-339-2929 or by e-mail at eapp@tceq.texas.gov.

Landowner Authorization

I, William Marx of Marx Family Property, LLC

am the owner of the property located at:

Lot 1 Marx Subdivision

and am duly authorized in accordance with 30 TAC 213.4(c)(2) and 213.4(d)(1), or 30 TAC 213.23(c)(2) and 213.23(d), relating to the right to submit an application, signatory authority, and proof of authorized signatory.

I do hereby authorize OHT Partners, LLC
To conduct construction of a multi-family development
At 8900 W State Highway 71 and 9119 Old Bee Caves Road, Austin, TX 78735

Landowner Acknowledgement

I understand that Marx Family Property, LLC

Is ultimately responsible for the compliance with the approved or conditionally approved Edwards Aquifer protection plan and any special conditions of the approved plan through all phases of plan implementation even if the responsibility for compliance and the right to possess and control the property referenced in the application has been contractually assumed by another legal entity. I further understand that any failure to comply with any condition of the executive director's approval is a violation and subject to administrative rule or orders and penalties as provided under 30 TAC 213.10, relating to enforcement. Such violations may also be subject to civil penalties.

Landowner Signature

Signature William Marx
Landowner Signature

Date

Date 5-29-25

THE STATE § OF State Texas

County § of County Travis

BEFORE ME, the undersigned authority, on this day personally appeared

William Marx

known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 29 day of May

Click or tap here to add ID

NOTARY PUBLIC

Tybresha Lashawn Drisdale
Typed or Printed Name of Notary

MY COMMISSION EXPIRES: January 9, 2027

TYBRESHA LASHAWN DRISDALE
Notary Public, State of Texas
Comm. Expires 01-09-2027
Notary ID 131847126

Optional Attachments

Select All that apply:

☐ Lease Agreement

☐ Signed Contract

☐ Deed Restricted Easement

☐ Other legally binding documents

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I Ben Browder,
Print Name

Vice President of Development,
Title - Owner/President/Other

of OHT Partners, LLC,
Corporation/Partnership/Entity Name

have authorized Scott J. Foster, P.E.
Print Name of Agent/Engineer

of 360 Professional Services, Inc.
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

Date 9/3/25

THE STATE OF TEXAS §

County of Travis §

BEFORE ME, the undersigned authority, on this day personally appeared Ben Browder known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 3rd day of September, 2025.

NOTARY PUBLIC

Barrett Lee Chambers

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 3/29/2026

Barrett Lee Chambers
My Commission Expires
3/29/2026
Notary ID
133673274

EXHIBIT IV

Application Fee Form (TCEQ-0574)

Application Fee Form

Texas Commission on Environmental Quality
Name of Proposed Regulated Entity: Marx Multifamily
Regulated Entity Location: 8900 W SH 71 and 9119 Old Bee Caves Road
Name of Customer: OHT Partners, LLC
Contact Person: Ben Browder Phone: (512) 813-7119
Customer Reference Number (if issued):CN 604107656
Regulated Entity Reference Number (if issued):RN _____

Austin Regional Office (3373)

☐ Hays ☒ Travis ☐ Williamson

San Antonio Regional Office (3362)

☐ Bexar ☐ Medina ☐ Uvalde
☐ Comal ☐ Kinney

Application fees must be paid by check, certified check, or money order, payable to the **Texas Commission on Environmental Quality**. Your canceled check will serve as your receipt. **This form must be submitted with your fee payment.** This payment is being submitted to:

☒ Austin Regional Office
☐ Mailed to: TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ San Antonio Regional Office
☐ Overnight Delivery to: TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
(512)239-0357

Site Location (Check All That Apply):

☐ Recharge Zone ☒ Contributing Zone ☐ Transition Zone

Type of Plan	***Size***	***Fee Due***
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks	Acres	$
Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential	60 Acres	$ 8,000
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature: _____ Date: 9/8/25

TCEQ-0574 (Rev. 02-24-15)

Application Fee Schedule

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	*Project Area in Acres*	*Fee*
One Single Family Residential Dwelling	< 5	$650
Multiple Single Family Residential and Parks	< 5 5 < 10 10 < 40 40 < 100 100 < 500 ≥ 500	$1,500 $3,000 $4,000 $6,500 $8,000 $10,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 10 < 40 40 < 100 ≥ 100	$3,000 $4,000 $5,000 $6,500 $8,000 $10,000

Organized Sewage Collection Systems and Modifications

Project	*Cost per Linear Foot*	*Minimum Fee-Maximum Fee*
Sewage Collection Systems	$0.50	$650 - $6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	*Cost per Tank or Piping System*	*Minimum Fee-Maximum Fee*
Underground and Aboveground Storage Tank Facility	$650	$650 - $6,500

Exception Requests

Project	*Fee*
Exception Request	$500

Extension of Time Requests

Project	*Fee*
Extension of Time Request	$150

EXHIBIT V

Core Data Form (TCEQ-10400)

TCEQ Use Only

TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided.)*

☒ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application.)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)*

☐ Other

2. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	3. Regulated Entity Reference Number *(if issued)*
CN 604107656		RN

SECTION II: Customer Information

4. General Customer Information | **5. Effective Date for Customer Information Updates** (mm/dd/yyyy) 9/2/2025

☐ New Customer ☐ Update to Customer Information ☒ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State or Texas Comptroller of Public Accounts)

The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).

6. Customer Legal Name *(If an individual, print last name first: eg: Doe, John)* | *If new Customer, enter previous Customer below:*

OHT Partners, LLC

7. TX SOS/CPA Filing Number	8. TX State Tax ID (11 digits)	9. Federal Tax ID (9 digits)	10. DUNS Number *(if applicable)*
0801316869	32042607963	27-3419785	

11. Type of Customer: ☐ Corporation ☐ Individual Partnership: ☐ General ☒ Limited
Government: ☐ City ☐ County ☐ Federal ☐ Local ☐ State ☐ Other ☐ Sole Proprietorship ☐ Other:

12. Number of Employees
☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

13. Independently Owned and Operated?
☒ Yes ☐ No

14. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check one of the following*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ VCP/BSA Applicant ☐ Other:

15. Mailing Address:

901 South Mopac Expressway, Building 2, Suite 500							
City	Austin	**State**	TX	**ZIP**	78746	**ZIP + 4**	

16. Country Mailing Information *(if outside USA)*	17. E-Mail Address *(if applicable)*

18. Telephone Number	19. Extension or Code	20. Fax Number *(if applicable)*
(512) 813-7119		( ) -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information *(If 'New Regulated Entity" is selected, a new permit application is also required.)*

☒ New Regulated Entity ☐ Update to Regulated Entity Name ☐ Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).

22. Regulated Entity Name *(Enter name of the site where the regulated action is taking place.)*

Marx Multifamily

23. Street Address of the Regulated Entity: ***(No PO Boxes)***	8900 W State Highway 71 and 9119 Old Bee Caves Road							
	City	Austin	**State**	TX	**ZIP**	78735	**ZIP + 4**	
24. County								

If no Street Address is provided, fields 25-28 are required.

25. Description to Physical Location:					
26. Nearest City			**State**		**Nearest ZIP Code**

Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).

27. Latitude (N) In Decimal:			**28. Longitude (W) In Decimal:**		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

29. Primary SIC Code (4 digits)	**30. Secondary SIC Code** (4 digits)	**31. Primary NAICS Code** (5 or 6 digits)	**32. Secondary NAICS Code** (5 or 6 digits)
6513	1520	236116	531311

33. What is the Primary Business of this entity? *(Do not repeat the SIC or NAICS description.)*

Multifamily residential construction

34. Mailing Address:	**8900 W State Highway 71**							
	City	**Austin**	**State**	**TX**	**ZIP**	**78735**	**ZIP + 4**	
35. E-Mail Address:	**ben@ohtpartners.com**							

36. Telephone Number	**37. Extension or Code**	**38. Fax Number** *(if applicable)*
(512) 813-7119		( ) -

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Emissions Inventory Air	☐ Industrial Hazardous Waste
☐ Municipal Solid Waste	☐ New Source Review Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS
☐ Sludge	☒ Storm Water	☐ Title V Air	☐ Tires	☐ Used Oil
☐ Voluntary Cleanup	☐ Wastewater	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	Scott J. Foster, P.E.	**41. Title:**	Principal

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 354-4682		( ) -	scott.foster@360psinc.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	OHT Partners, LLC	**Job Title:**	Vice President of Development
Name *(In Print):*	Ben Browder	**Phone:**	(512) 813- **7119**
Signature:	Ben Browder	**Date:**	9/8/25