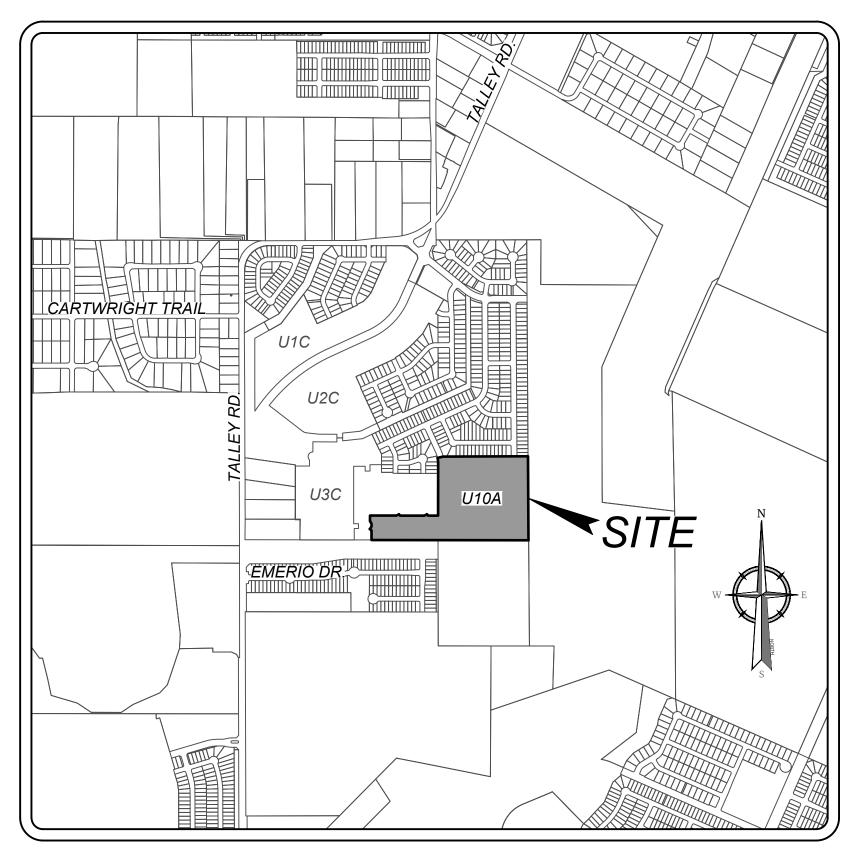
MORGAN MEADOWS, UNIT 10A

BEXAR COUNTY, TEXAS

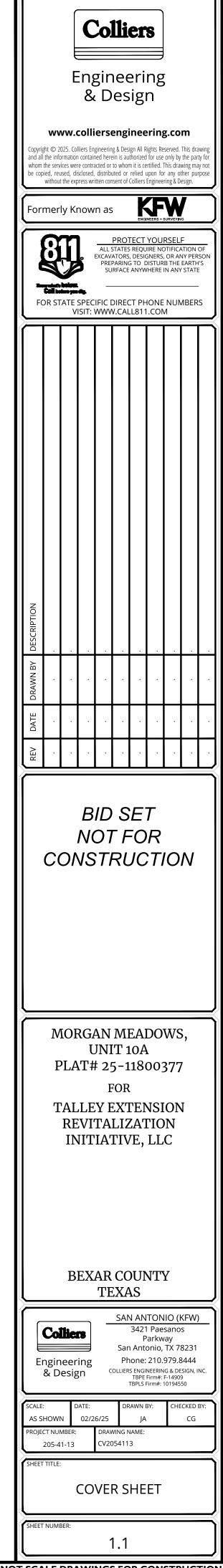
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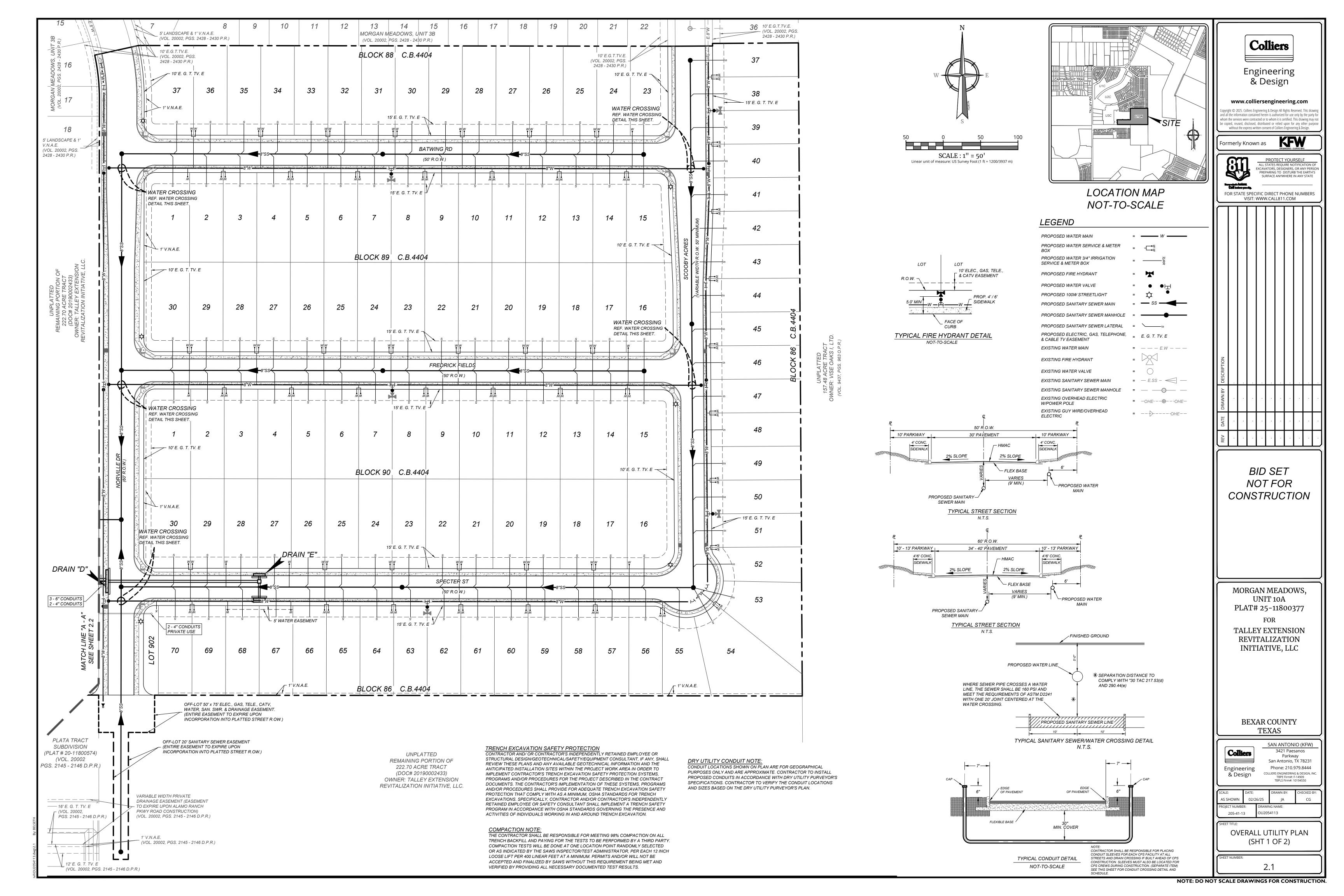


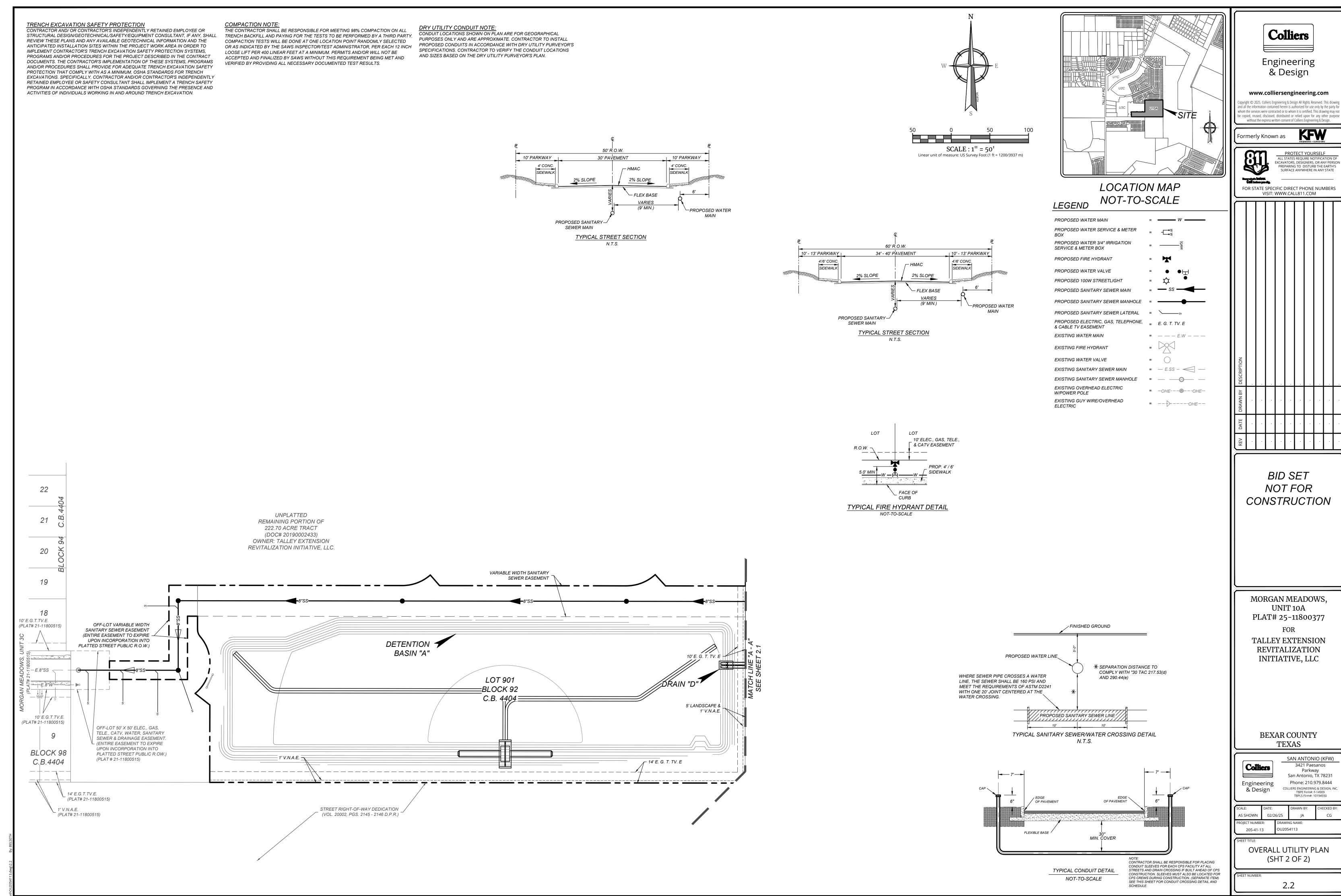
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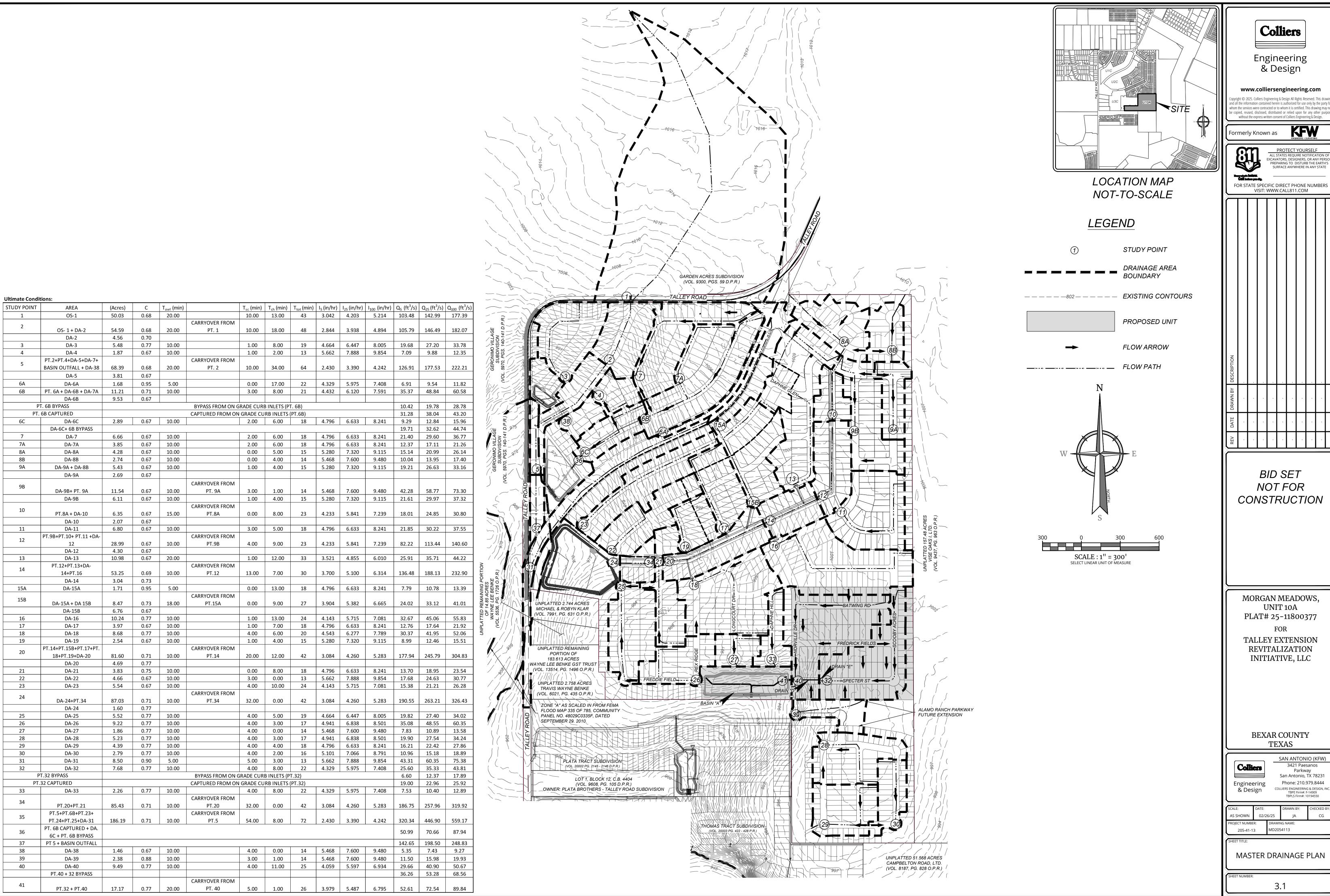
OWNER INFORMATION
TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC
5210 THOUSAND OAKS, SUITE 1318
SAN ANTONIO, TX 78233

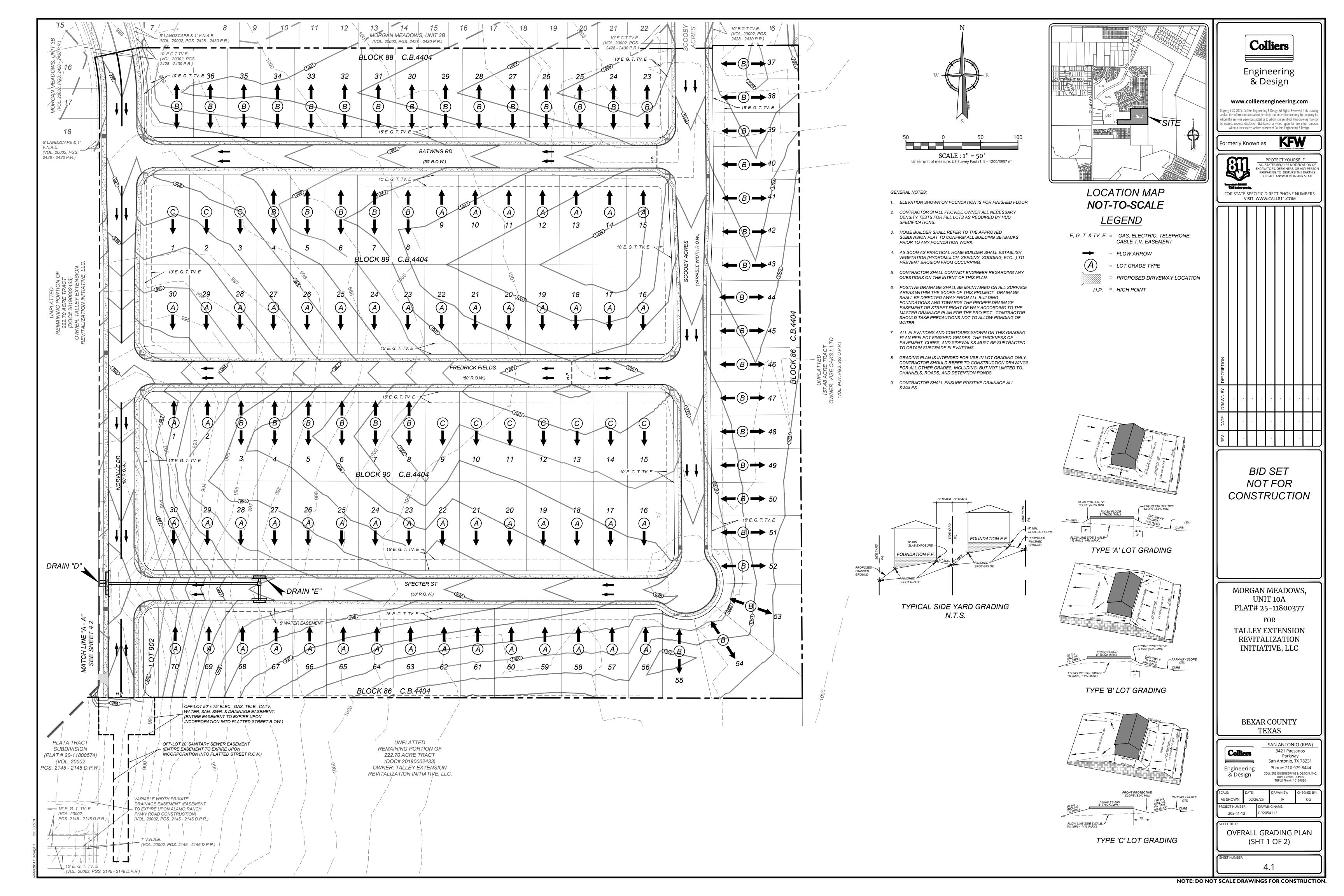
	Sheet List Table
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<u> </u>	OVERALL UTILITY PLAN (SHT 2 OF 2)
2.2 3.1	MASTER DRAINAGE PLAN
	OVERALL GRADING PLAN (SHT 1 OF 2)
7.1 — — - 4.2	OVERALL GRADING PLAN (SHT 2 OF 2)
	
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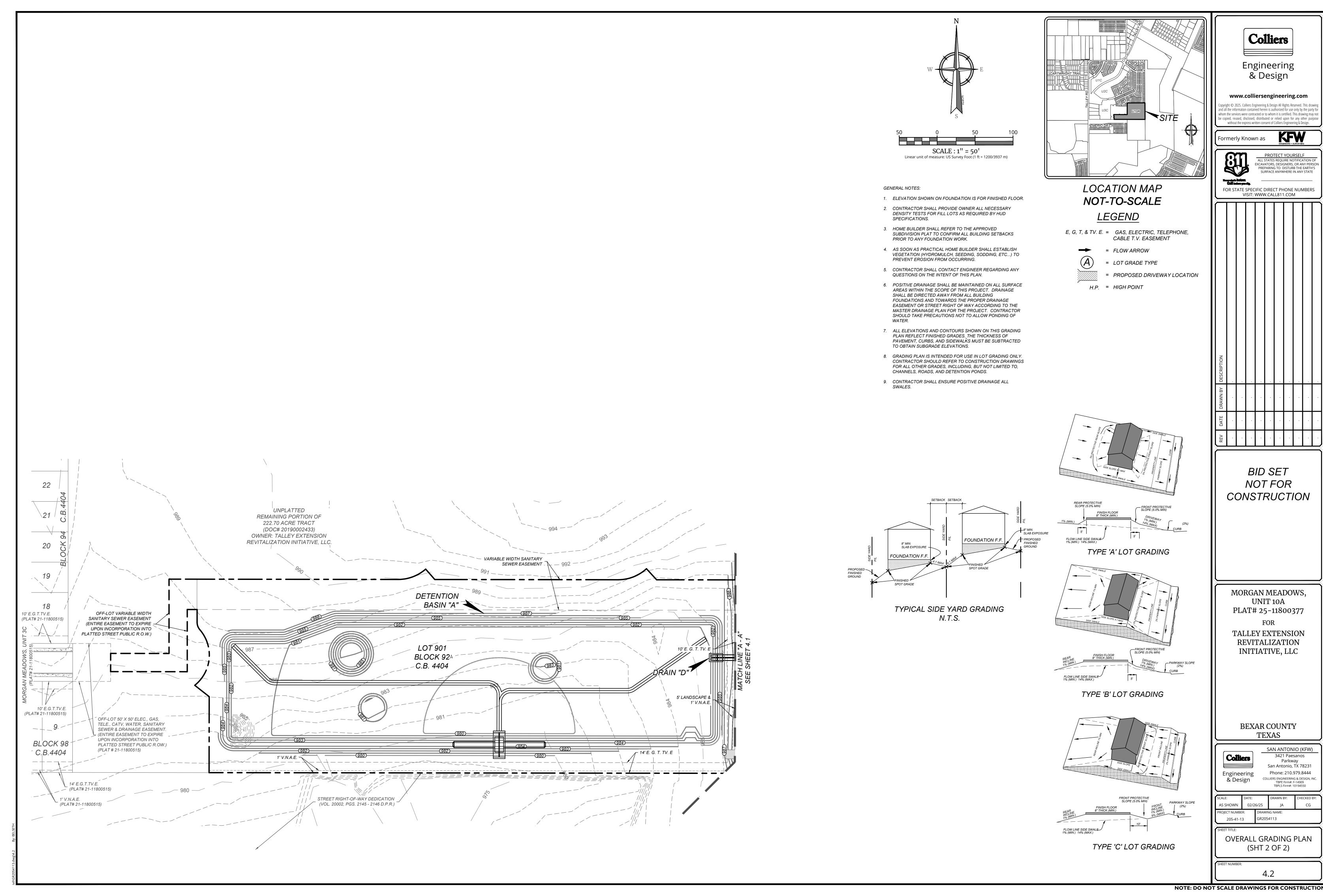


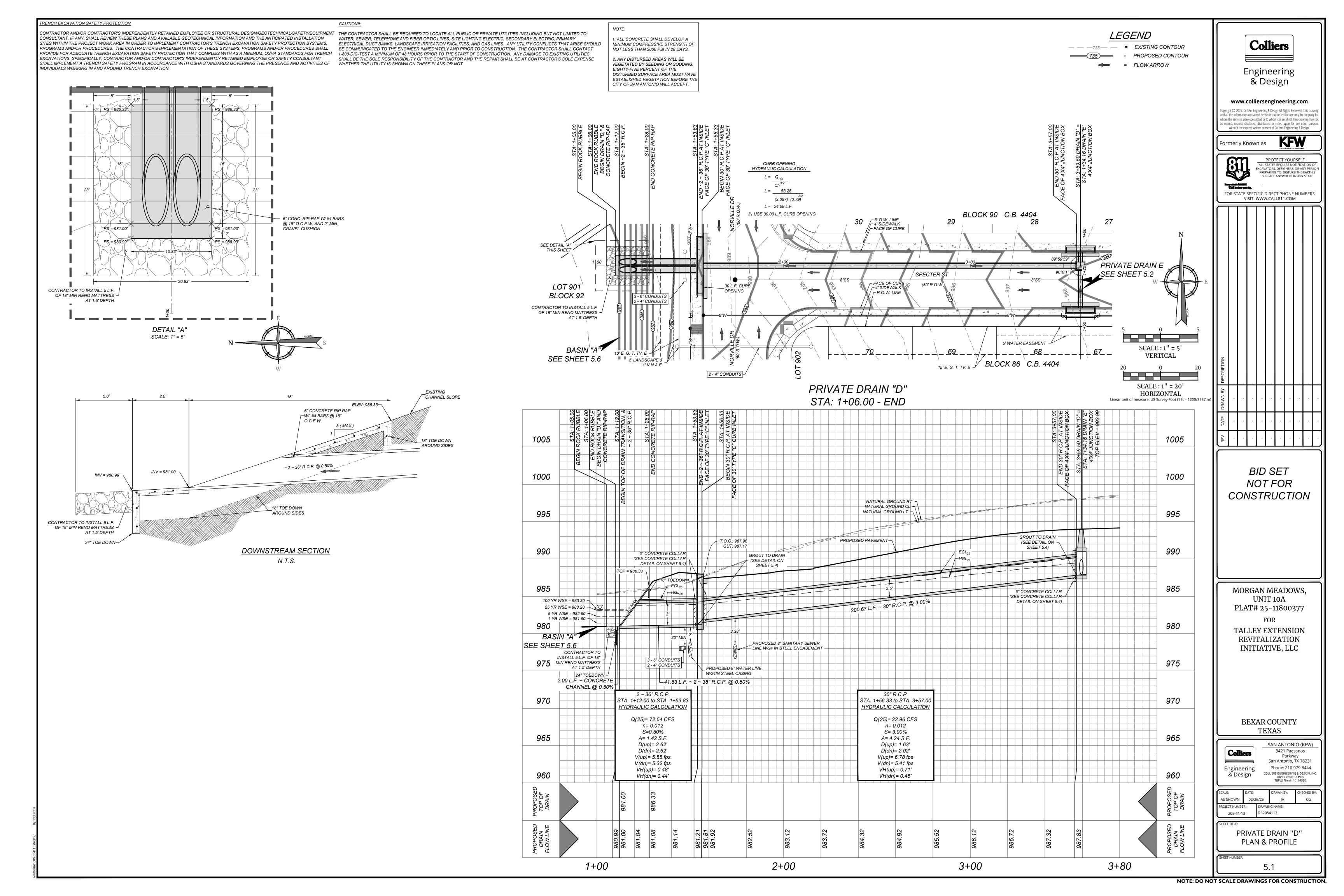




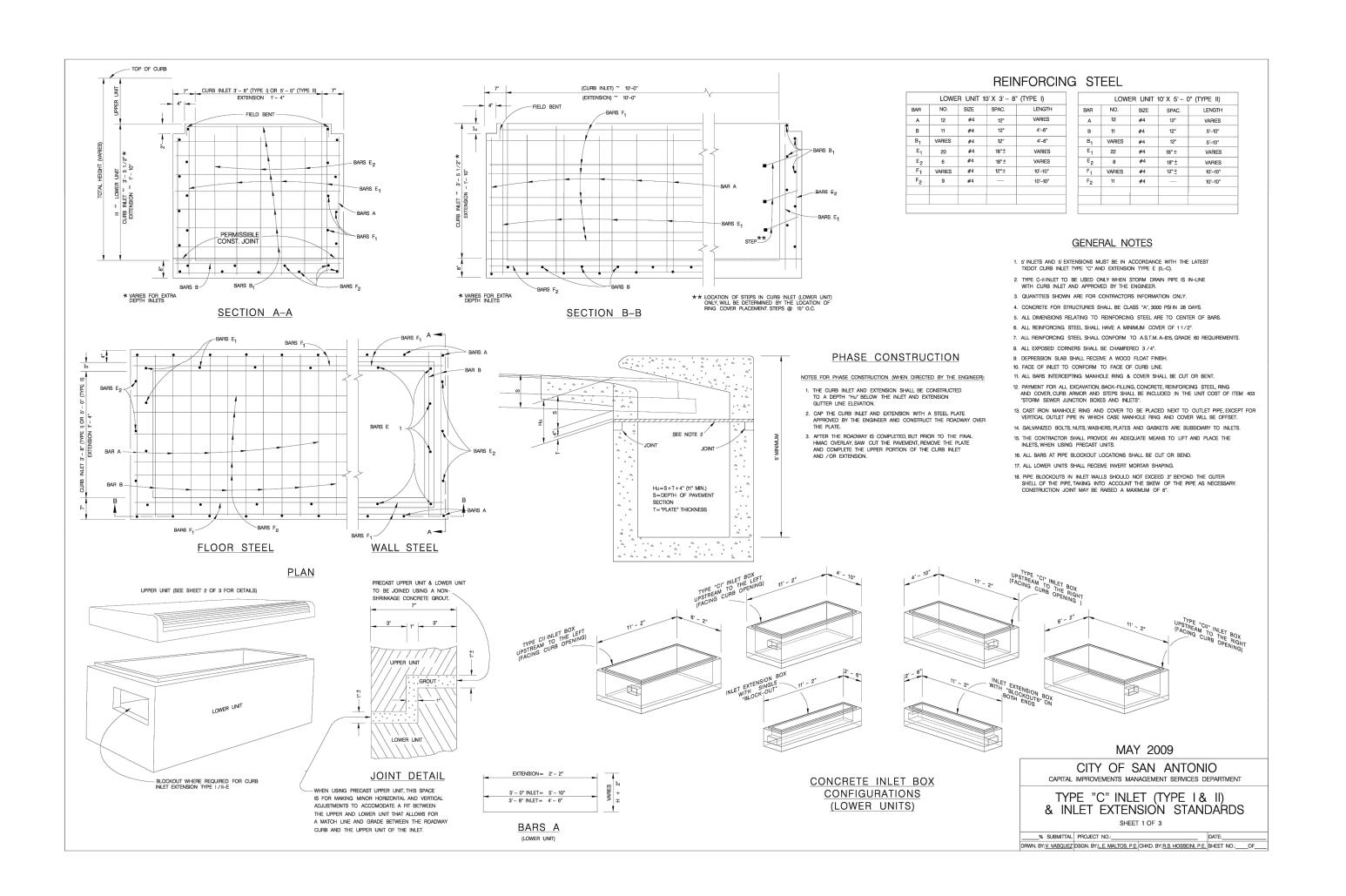


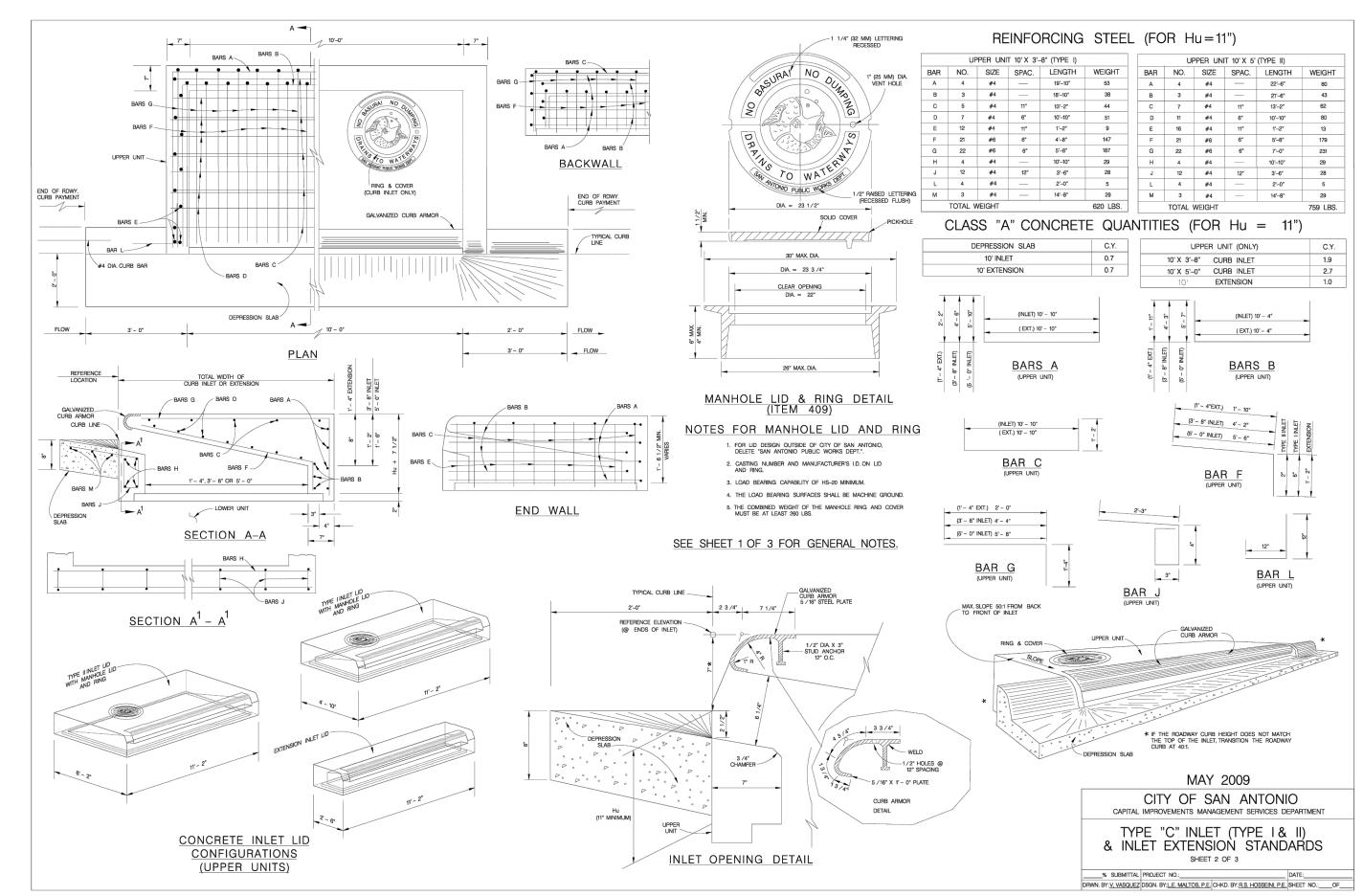


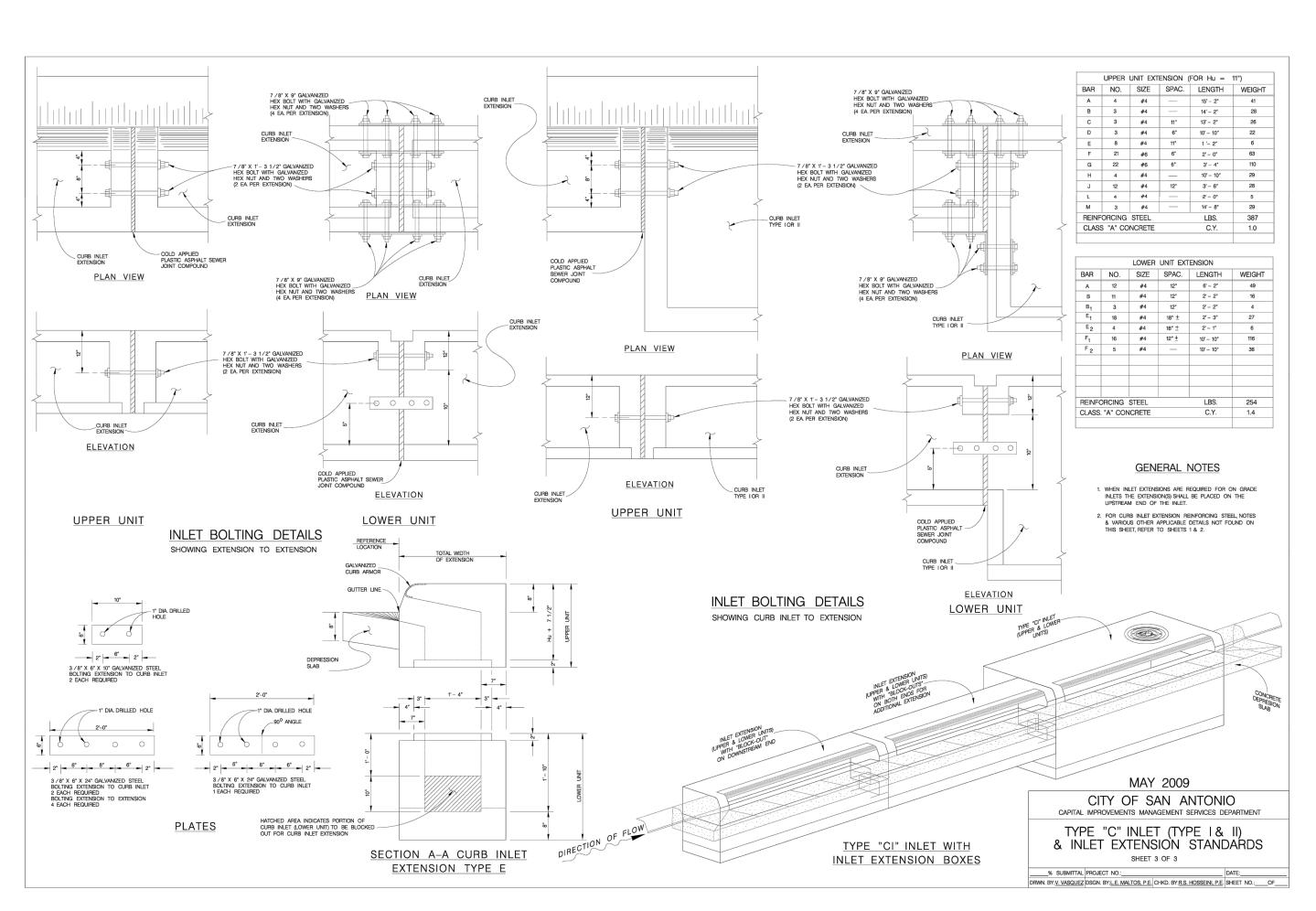


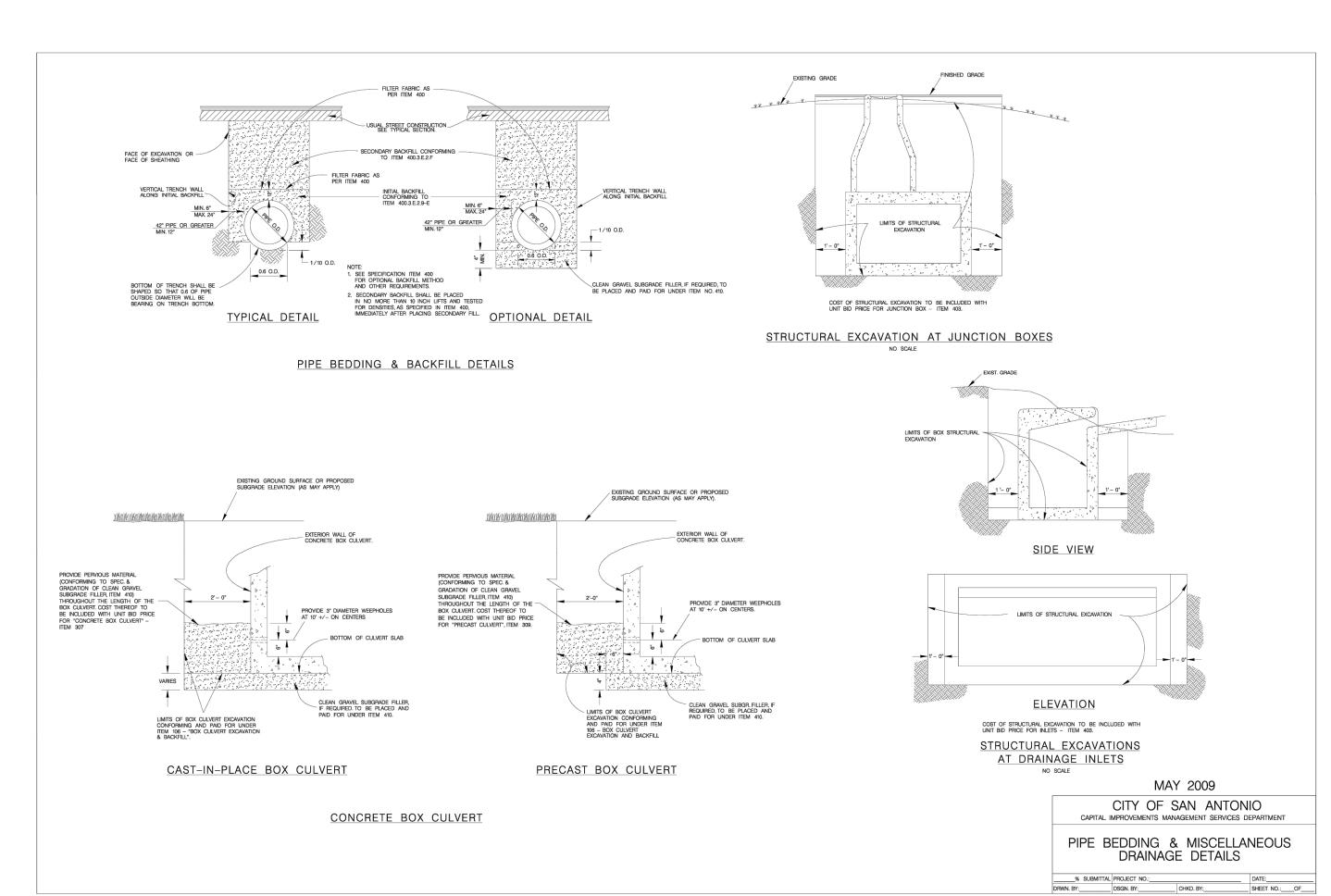


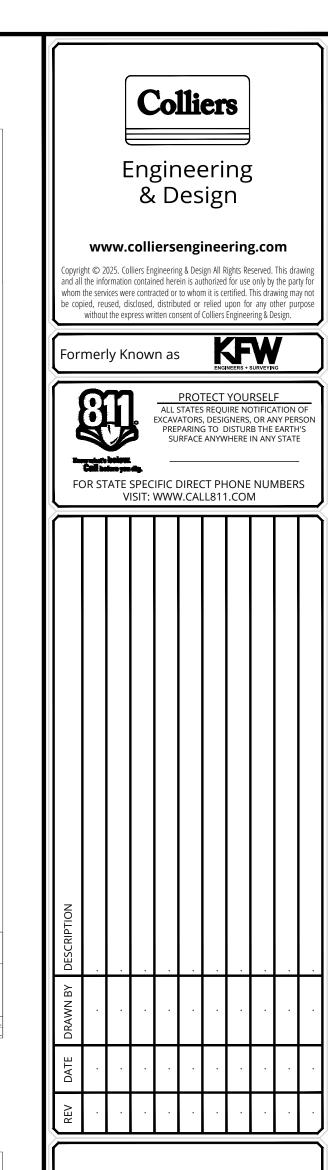
RENCH EXCAVATION SAFETY PROTECTION NOTE: CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: **LEGEND** CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY 1. ALL CONCRETE SHALL DEVELOP A **Colliers** SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD MINIMUM COMPRESSIVE STRENGTH OF — — —735— = EXISTING CONTOUR PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT NOT LESS THAN 3000 PSI IN 28 DAYS. PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH 1-800-DIG-TEST A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES = PROPOSED CONTOUR EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT 2. ANY DISTURBED AREAS WILL BE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF VEGETATED BY SEEDING OR SODDING. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT. = FLOW ARROW INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. EIGHTY-FIVE PERCENT OF THE Engineering DISTURBED SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE & Design CITY OF SAN ANTONIO WILL ACCEPT. www.colliersengineering.com opyright © 2025. Colliers Engineering & Design All Rights Reserved. This draw nd all the information contained herein is authorized for use only by the party f whom the services were contracted or to whom it is certified. This drawing may be copied, reused, disclosed, distributed or relied upon for any other purp without the express written consent of Colliers Engineering & Design. Formerly Known as PROTECT YOURSELF
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SURFACE ANYWHERE IN ANY STATE FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM **CURB OPENING** HYDRAULIC CALCULATION L = ____35.33 (3.087) (0.79) L = 16.30 L.F... USE (2) 15.00 L.F. CURB OPENINGS 15' E. G. T. TV. E → 5' WATER EASEMENT PRIVATE DRAIN D √4' SIDEWALK PRIVATE DRAIN "E" SCALE: 1" = 20' HORIZONTAL STA: 1+10.00 - END Linear unit of measure: US Survey Foot (1 ft = 1200/3937 BID SET NOT FOR CONSTRUCTION 7.0.C.: 994.42 995 GUT: 993.63 6" CONCRETE COLLAR (SEE CONCRETE COLLAR -(SEE CONCRETE COLLAR DETAIL ON SHEET 5.4) DETAIL ON SHEET 5.4) GROUT TO DRAIN (SEE DETAIL ON (SEE DETAIL ON MORGAN MEADOWS, SHEET 5.4) 5.00 L.F. ~ 24" R.C.P. @ -0.50% PROPOSED 8" SANITARY SEWER LINE W/24 IN STEEL CASING UNIT 10A PLAT# 25-11800377 TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC 24" R.C.P. 24" R.C.P. STA. 1+10.00 to STA. 1+15.00 STA. 1+20.00 to STA. 1+40.00 HYDRAULIC CALCULATION HYDRAULIC CALCULATION Q(25)= 11.48 CFS Q(25)= 11.48 CFS BEXAR COUNTY n = 0.012n= 0.012 S=0.50% S=0.50% **TEXAS** A= 1.95 S.F. A= 2.13 S.F. 965 D(up) = 1.28'D(up) = 1.21'SAN ANTONIO (KFW) D(dn) = 1.28'D(dn) = 1.19'3421 Paesanos Colliers V(up) = 5.39 fpsV(up)= 5.75 fps V(dn) = 5.40 fpsV(dn)= 5.89 fps San Antonio, TX 78231 VH(up) = 0.45'VH(up) = 0.51'Phone: 210.979.8444 Engineering VH(dn) = 0.45'VH(dn) = 0.54'960 COLLIERS ENGINEERING & DESIGN, INC. TBPE Firm#: F-14909 TBPLS Firm#: 10194550 & Design AS SHOWN 02/26/25 RAWING NAME: DR2054113 205-41-13 PRIVATE DRAIN "E" PLAN & PROFILE 1+00 1+60 5.2











BID SET NOT FOR CONSTRUCTION

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 FOR

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

> BEXAR COUNTY TEXAS

Colliers	-
Engineering & Design	

SAN ANTONIO (KFW)

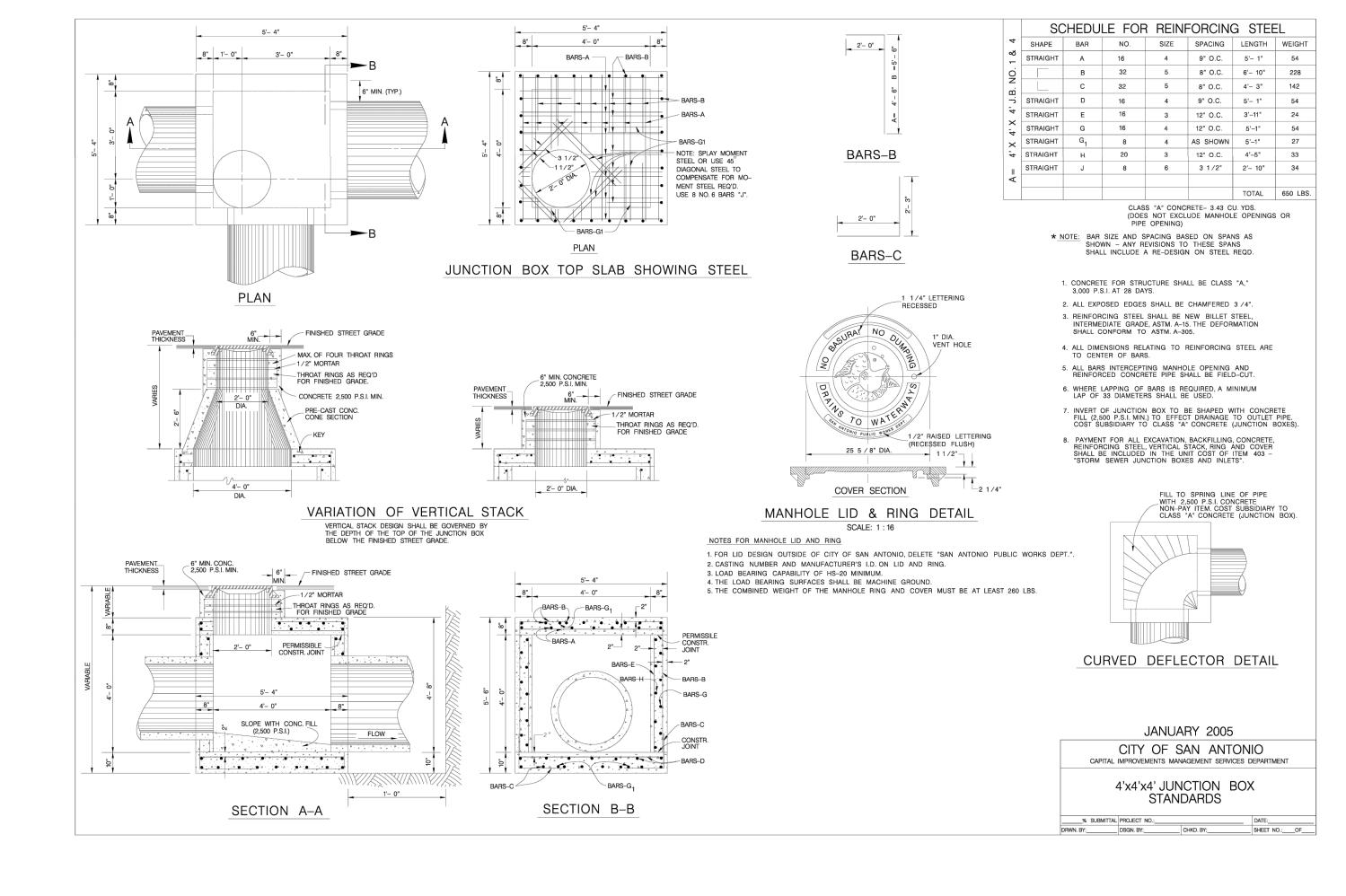
3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444
COLLIERS ENGINEERING & DESIGN, INC
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

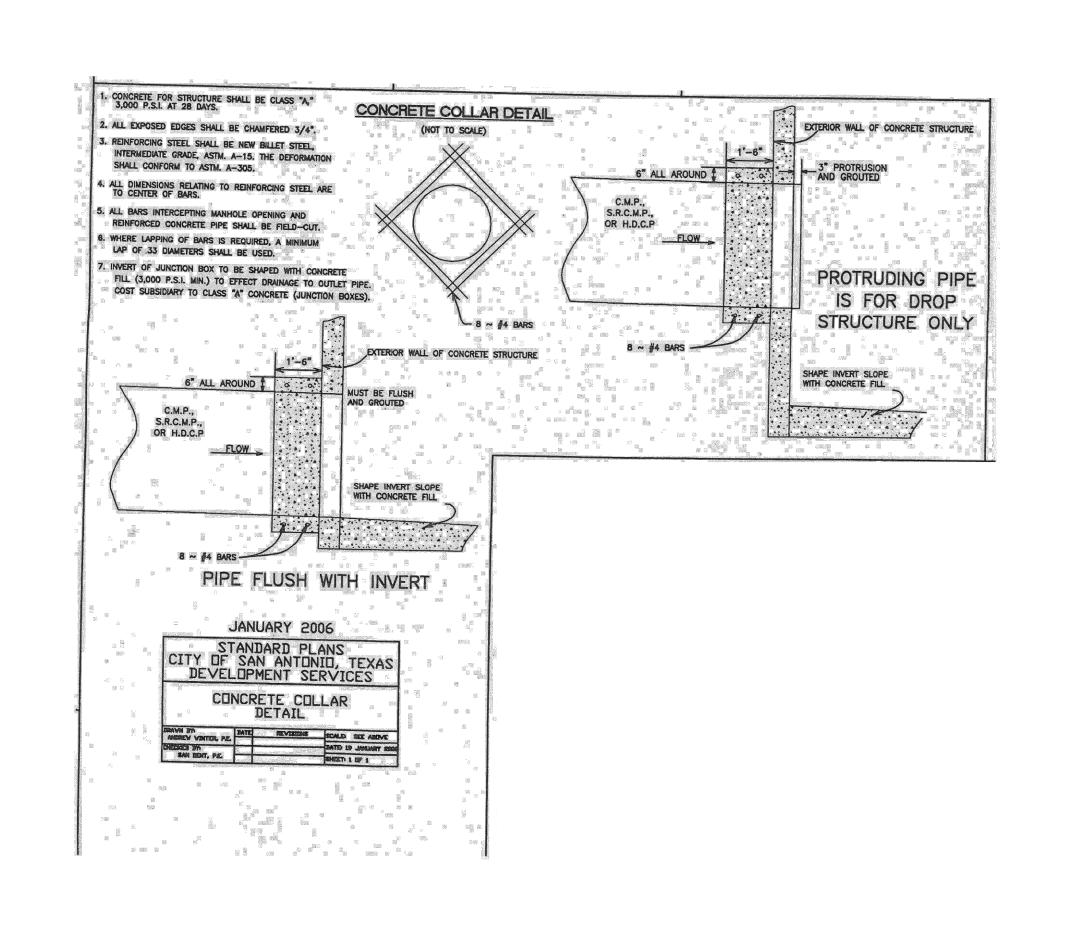
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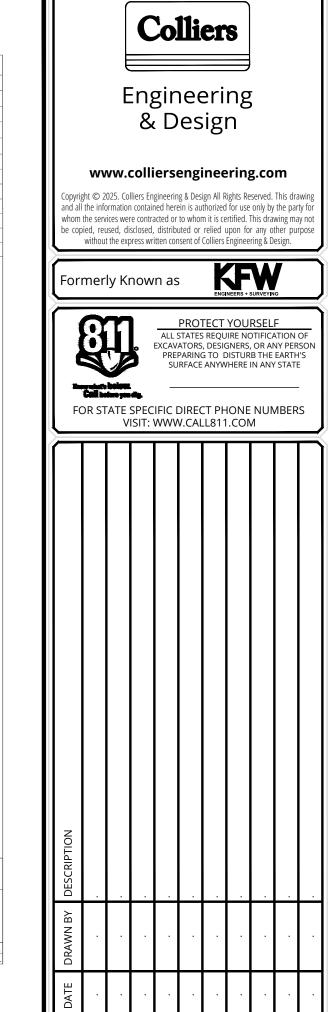
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ET TITLE: DRAIN DETAILS

(SHEET 1 OF 3)







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MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 FOR

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

BEXAR COUNTY TEXAS

Colliers

Engineering
& Design

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Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, INC
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

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 DATE:
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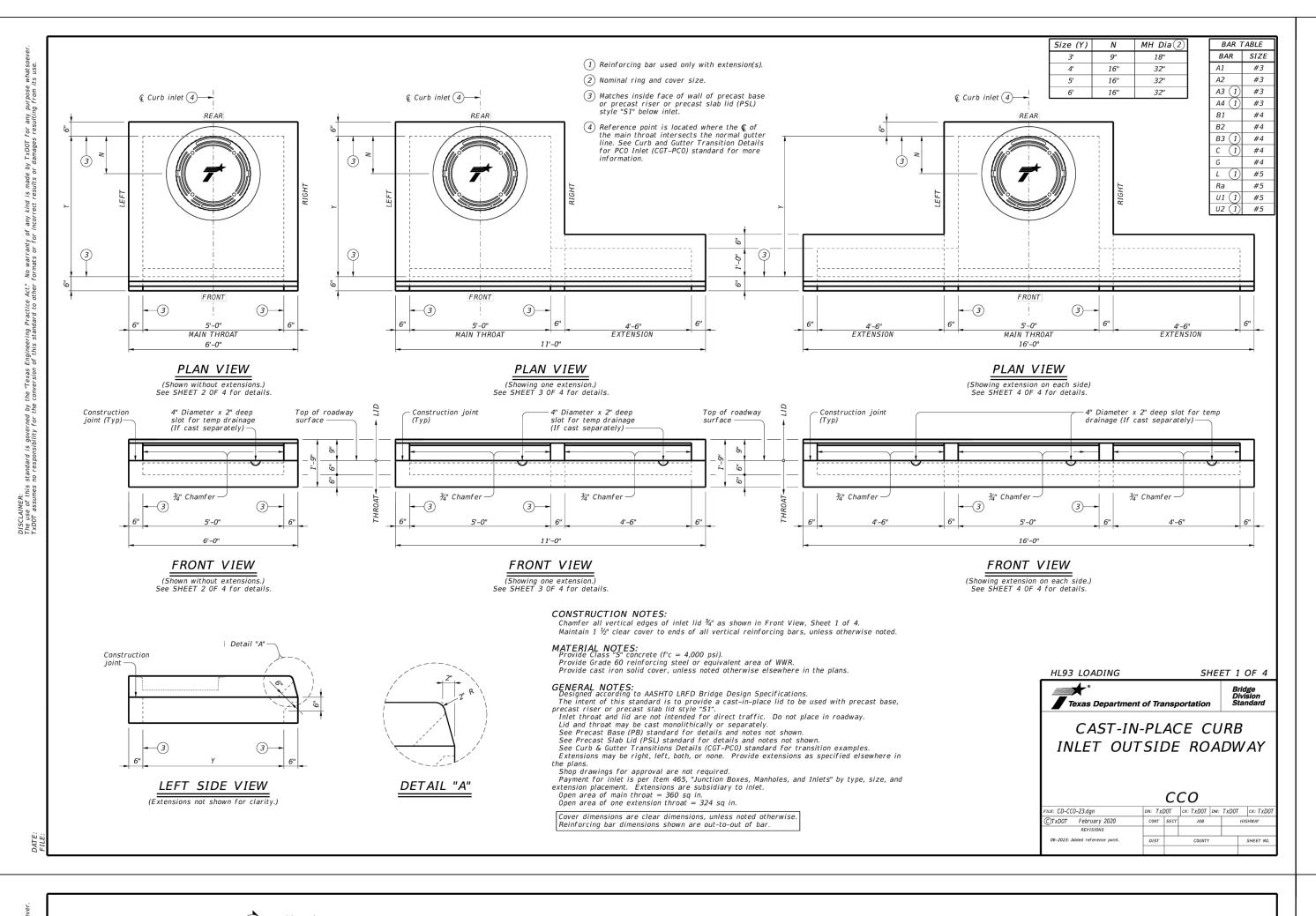
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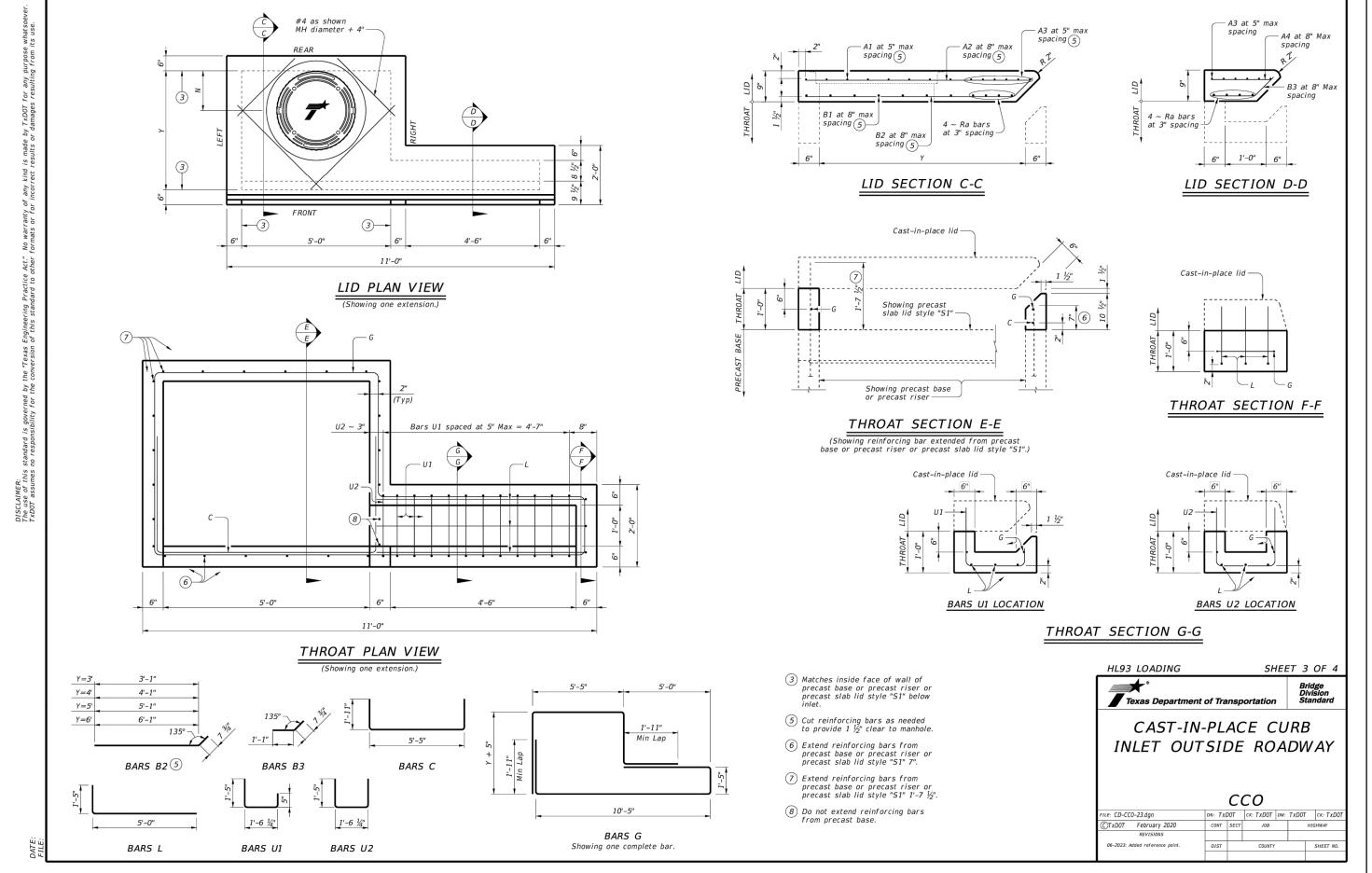
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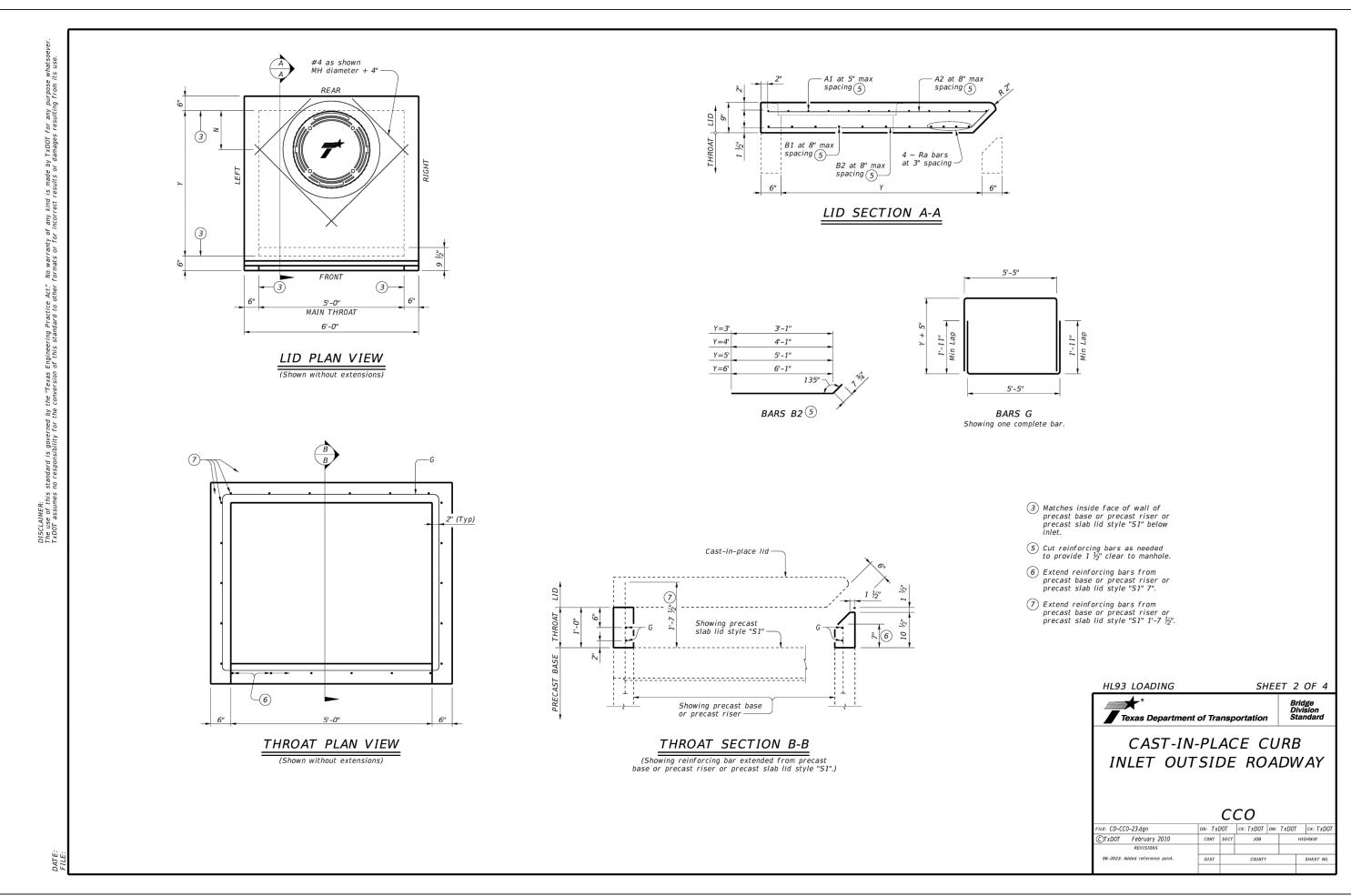
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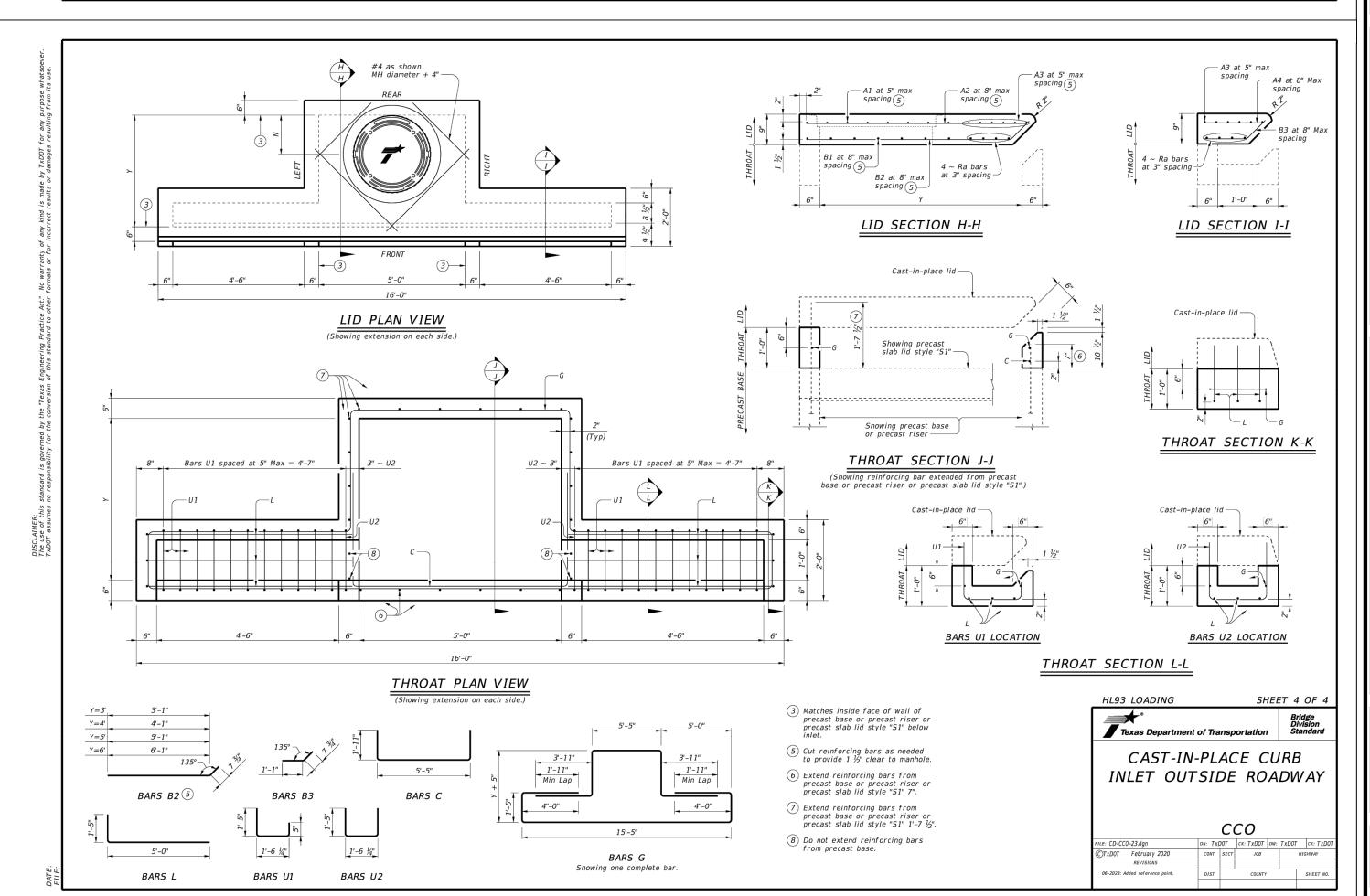
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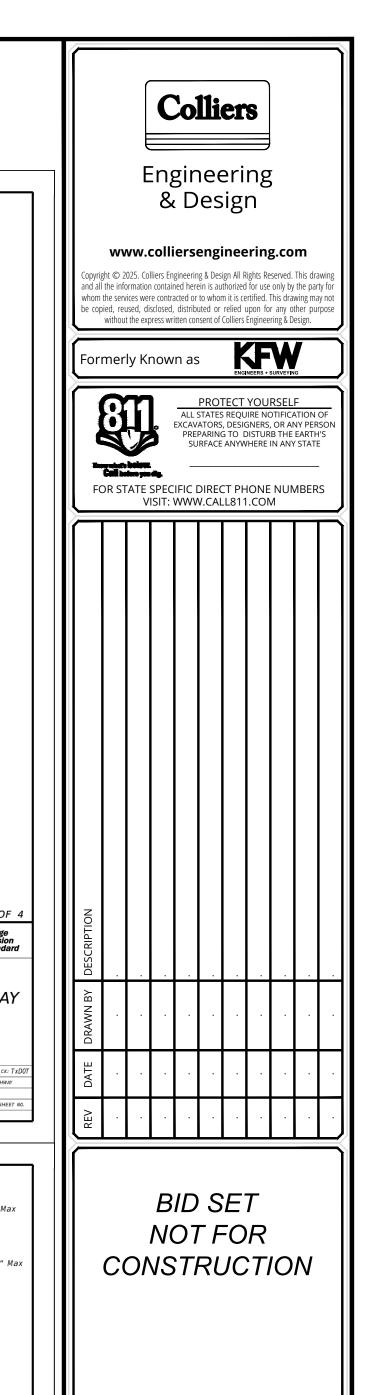
DRAIN DETAILS (SHEET 2 OF 3)











MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 FOR

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

> BEXAR COUNTY TEXAS

SAN ANTONIO (KFW)

3421 Paesanos
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Phone: 210.979.8444

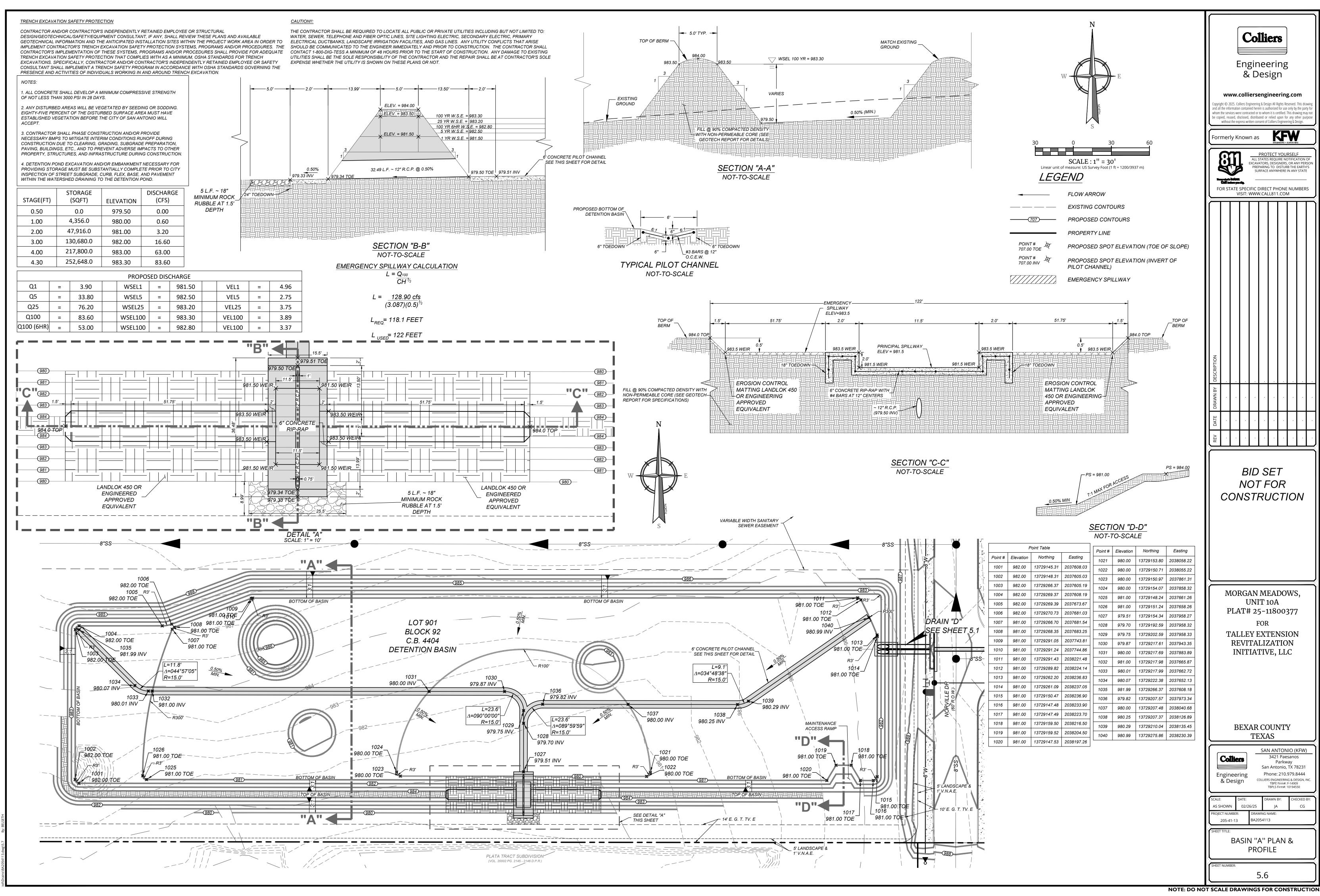
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TBPE Firm#: F-14909
TBPLS Firm#: 10194550

TBPE Firm#: F-14909
TBPLS Firm#: 10194550

CALE: DATE: DRAWN BY: CHECKED BY:
AS SHOWN 02/26/25 JA CG

ROJECT NUMBER: DRAWING NAME:
205-41-13 DRDT2054113

DRAIN DETAILS (SHEET 3 OF 3)





Landlok 450 is an engineered solution with a unique design for each specific project. While Propex has made every effort to ensure general validity, this information should not be used for a specific application without independent professional examination and verification of its suitability, applicability, and accuracy. The information provided herein is for general information only, and is intended to present installation guidance. Project specific contract documents take precedence when pin placements are different than what is represented in this document. Depending upon the critical nature of the structure to be armored, work restrictions may be in place such as limiting work based on growing seasons, weather patterns, etc. Work

applications. Please feel free to call our techincal support hotline at (423) 553-2450

BEFORE INSTALLATION BEGINS

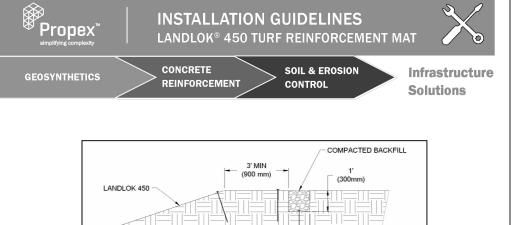
PREPARE THE SITE

• Coordinate with a Propex Representative: A pre-construction meeting is suggested with the construction team and a representative from Propex. This meeting should be scheduled by the contractor with at least a

should be performed under the provisions set forth for the specific project. Propex Engineering Services is

available for support during installation to consult for solving constructability issues encountered in specific

- Gather the Tools Needed: Tools that you will need to install Landlok 450 include a pair of industrial shears to cut Landlok 450, tape measure, and mallet or hammer.
- Determine how to Establish Vegetation: The method of vegetation establishment should be determined prior to the start of installation. Different vegetation establishment methods require different orders of installation. Refer to Establish Vegetation for further guidance.
- It is recommended during all stages of site preparation that disturbed soils remain unprotected for not more than a single day. Depending on project size this may require progressive site preparation during installation.
- 1. Grade and compact the area on the slope where Landlok 450 will be installed. The slope surface should be uniform and smooth, having all rocks, clods, vegetation or other objects removed so that during Landlok 450 Laydown, Landlok 450 comes in direct, intimate contact with the slope surface.
- 2. Prepare the area to be armored with Landlok 450 by loosening the topsoil to promote better vegetation establishment. This may be accomplished with a rotary tiller on slopes 3:1 or flatter. For slopes greater than 3:1, prepare topsoil in a safe manner.
- 3. Excavate a Crest of Slope (COS) trench 12 in x 12 in (300 mm x 300 mm) minimum at a distance of 3 ft (900 mm) from the crest of the slope. (Figure 1).



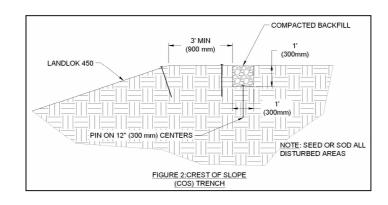


Figure 1: Crest of Slope (COS) Trench 4. Excavate a Toe of Slope (TOS) trench 12 in x 12 in (300 mm x 300 mm) minimum at a minimum distance

of 5 ft (1.5 m) from the toe of the slope. (Figure 2)

5. If seeding, refer to Vegetation Establishment for additional considerations during site preparation.

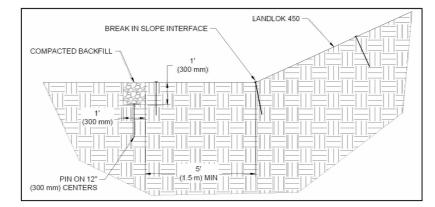


Figure 2: Toe of Slope (TOS) Trench

NSTALLATION GUIDELINES

LANDLOK 450 LAYDOWN

- Begin the Landlok 450 laydown process by starting with the downstream / downwind end of the site. To ensure proper pining of the overlapped areas the proceeding roll width must be laid out before the current roll width can be pinned with exception to the final roll width. For straight sections of a slope, Landlok 450 panel lengths should be long enough to construct COS and TOS trenches while also covering the surface of the slope being armored (Figure 12). Panel edges should rest approximately perpendicular to the slope center line. For best results, panels of Landlok 450 should be continuous and free from seams or roll end overlaps that are parallel to the centerline of the slope. Panel edge overlapping should follow a pattern of placing each proceeding panel's edge overtop the previous panel edge, shingling the panels in the direction of the water flow or prevailing wind.
- Starting at the COS trench, lay Landlok 450 roll so that the roll ends point towards the crest of the slope (Figure 3), with a 3 inch (75 mm) overlap created at adjacent panel edge locations. Ensure that adjacent panel edges maintain a minimum 3 inch overlap during Landlok 450 laydown. (Figure 8)

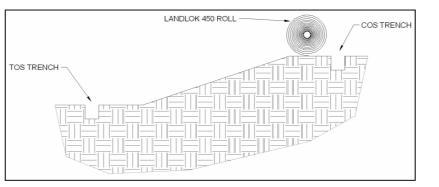


Figure 3: Crest of Slope (COS) Trench Alignment

Secure Landlok 450 with pins in the COS trench. Pins should be made of steel with a 0.20 in (5 mm) minimum diameter, having a 1.5 in (38mm) diameter washer at the head, and a length between 12 and 24 in (300-600 mm) with sufficient ground penetration to resist pullout (Figure 4). Longer pins may be required for looser soils. Heaver metal stakes may be required in rocky soils. Suggested placement of pins for the COS trench is along the bottom of the trench with pins on 12 in (300 mm) centers. Pins should also be installed on panel edge overlaps in the COS trench.

DIAMETER STEEL Figure 4: Securing Pin

STEEL WASHER

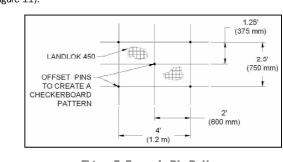
- 0.20" (5 mm)

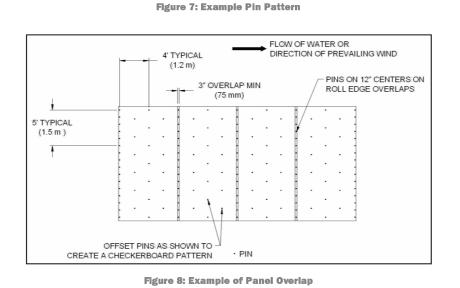
4. Backfill and compact the COS trench in the location of the first Landlok 450 panel only (Figure 5).

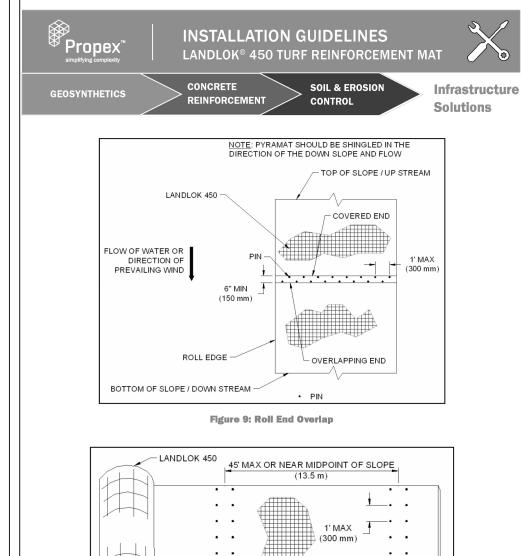


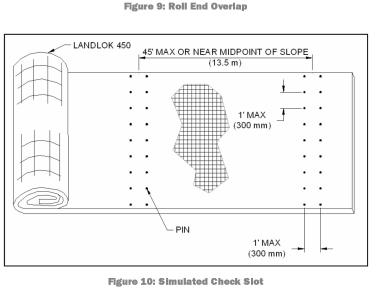
• For slope lengths greater than 45 ft (13.7 m), install simulated check slots. This method includes placing two rows of pins 12 in (300 mm) apart on 12 in (300 mm) centers at 45 ft (13.7 m) maximum intervals or across the midpoint of the slope for slope lengths less than 60 ft (18.2 m)

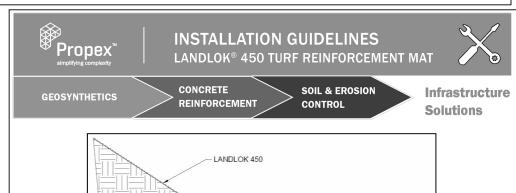
• At the break in slope interface towards the TOS, it is suggested that pins be installed on 4 ft (1.2 m) centers (Figure 11).

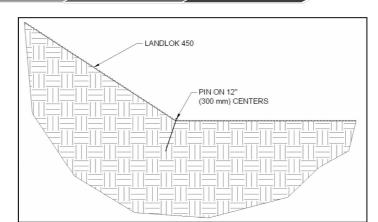












7. Secure Landlok 450 with pins in the TOS trench. Suggested placement of pins for the TOS trench is along the bottom of the trench with pins on 12 in (300 mm) centers (Figure 12).

Figure 11: Break in Slope Interface

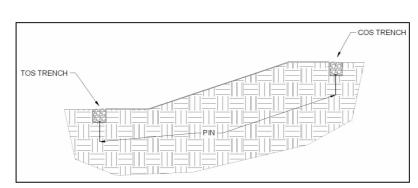


Figure 12: Crest of Slope (COS) Trench and Toe of Slope (TOS) Trench Complete

- 8. Backfill and compact the TOS trench. (Figure 12)
- 9. Continue to work down the length of the slope by repeating steps 1 through 8 overlapping each adjacent Landlok 450 panel by 3 inches (75 mm) (Figure 8). The last Landlok 450 panel should terminate on the Slope Armoring Edge (SAE) with pins on 12 in (300 mm) centers. At a minimum, Landlok 450 panels should be pinned entirely across the slope surface, pins should be installed in the trenches, and the trenches should be backfilled and compacted at the end of each day to minimize rework in the case of a major rain event. Specific project conditions may warrant further evaluation of installation order for ease.

INSTALLATION GUIDELINES Infrastructure

An example isometric view (Figure 13) of a slope armored with Landlok 450 can be seen below for overall

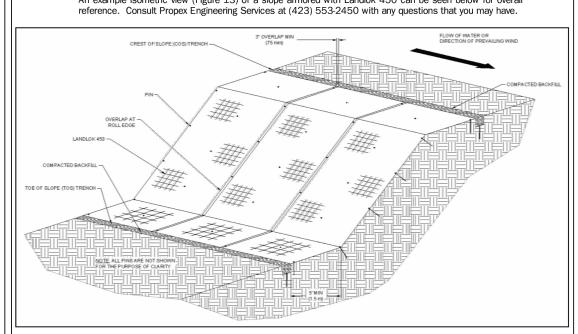


Figure 13: Completed Slope Isometric View



ESTABLISH VEGETATION

soil-filled Landlok 450.

Vegetation can be established with Landlok 450 by broadcast seeding, hydraulic seed application (hydroseeding), or sodding. Seed application rate, seed type, sod type, and irrigation rate should be selected based on local or site specific knowledge and time of year. For best results, consider having a site specific soil test performed to help determine what soil amendments, such as lime and fertilizer, need to be incorporated into the soil to promote healthy vegetation.

WITH SEED

- Determine the seed location. Seed can be placed entirely on top of soil filled Landlok 450, or alternatively 50% below Landlok 450 prior to pinning, with the remainder placed on top of soil filled Landlok 450. If a rain event occurs prior to vegetation establishment, having 50% of the seed below Landlok 450 ensures that some seed remains in place. Seed placed entirely on top of soil filled Landlok 450 will allow for faster vegetation establishment.
- 2. If seeding below Landlok 450, ensure 50% of the seed is placed prior to the installation of Landlok 450. Once Landlok 450 is in place, distribute soil on top by filling the pyramid like projections of Landlok 450. The proper amount can be visually measured by making the top ridges of the pyramid projections barely visible, or is approximately 1 inch thick when measured. Soil filling can be accomplished manually or by using a small piece of equipment. Do not place excessive soil above Landlok 450. See Consider Project
- Specific Needs for guidance on driving equipment across Landlok 450. After seed has been placed, for added protection, install a Landlok Erosion Control Blanket (ECB) above the
- Irrigate as necessary to establish and maintain vegetation until 75% of vegetation has established and has reached a height of 2 inches. Frequent, light irrigation will need to be applied to seeded areas if natural rain events have not occurred within two weeks of seeding. When watering seeded areas, use a fine spray to prevent erosion of seeds or soil. Do not over irrigate. Proper irrigation guidance is provided under the Maintenance portion of this document.

WITH SOD

- . Sod will be always placed on top of Landlok 450.
- 2. Sod staples should be used to secure the sod against Landlok 450. During the placement of the sod, ensure that Landlok 450 is 100% covered by tightly adjoining rolls or squares of sod along edges. Any voids in between sod pieces should be filled with clean loose soil.
- 3. Irrigate as necessary. Proper irrigation guidance is provided under the Maintenance portion of this
- 4. Monitor to identify areas where browned/dead sod emerges. These areas may need to be addressed to

BID SET CONSTRUCTION

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PREPARING TO DISTURB THE EARTH'

SURFACE ANYWHERE IN ANY STATE

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

> **BEXAR COUNTY** TEXAS



AS SHOWN 02/26/25 AWING NAME: BA2054113 205-41-13

BASIN DETAILS

NSTALLATION GUIDELINES Infrastructure

1. For applications that require special transitions (i.e. connections to riprap, concrete, T-walls, etc.), refer to

the project specific drawings or consult with Propex Engineering Services at (423) 553-2450. 2. A deeper terminal trench and/or hard armoring may be required when slopes have severe scour potential at

NSTALLATION GUIDELINES

3. For installing Landlok 450 panels around curved sections of a slope, trim panels at an angle so that no more than two layers of Landlok 450 overlap at any point in time. Additional pins may be needed to secure

panel edges towards the toe of the slope depending upon the radius of the curved slope. Install pins as

- necessary to securely fasten Landlok 450 to the ground. 4. Allowable Vehicle Traffic:
- A. If using equipment on Landlok 450, it should be of the rubber-tired type and should avoid sharp turns. Tracked equipment is not permitted to drive over the Landlok 450 without vegetation at any time. B. Avoid any traffic over Landlok 450 if loose or wet soil conditions exist.
- 5. Disturbed areas should be reseeded. If ruts or depressions develop for any reason, rework soil until smooth and reseed such areas.
- 6. Do not mulch areas where Landlok 450 is to be placed.

CONSIDER PROJECT SPECIFIC NEEDS

SHORT-TERM AND LONG-TERM MAINTENANCE OF LANDLOK

The purpose of this section is to provide some general guidelines for performing short-term and long-term maintenance of Landlok 450 with respect to maintaining vegetation reinforced with Landlok 450, and patching of Landlok 450 (in the event it needs to be removed or replaced). These procedures are to be considered minimum guidelines for proper maintenance, and further maintenance techniques may be appropriate considering

LANDLOK 450 PROTECTED SLOPES

local practices and procedures.

For Landlok 450 to be most effective, it is important to ensure that it is properly maintained both during construction and after construction. Identifying trouble areas is easy with Landlok 450, and it can make identifying potential threats much simpler and manageable. Look for areas with sparse, dying, or no vegetation as these are obvious signs that Landlok 450 is losing intimate contact with the slope surface. If loss of ground surface occurs, Landlok 450 will need to be removed and reinstalled as described in Patching and Repairs Section after the eroded area is backfilled with compacted soil that is similar to material of the slope. After Landlok 450 is reinstalled, re-establish vegetation on the newly installed Landlok 450 and disturbed areas. Monitor the sites to determine if frequent watering may be required to establish vegetation.

To minimize exposure to unwanted maintenance and repair. Landlok 450 armored slopes should be free of unauthorized vehicular traffic. Routine maintenance and slope inspections should be performed with rubber tired vehicles. Tracked equipment such as skid steers, excavators, or dozers should only be allowed to traffic over Landlok 450 in times of emergency after vegetation establishment is complete. Failure to control unauthorized traffic can result in Landlok 450 being damaged resulting in erosion below Landlok 450 during storm events. In addition, routine mowing maintenance should be used to keep the protected area free of unwanted brush, saplings, and trees. Selective herbicides that target only the unwanted plants can be used as long as the vegetation established with Landlok 450 is not impaired. Failure to control the sapling and tree growth can result in the trees being uprooted during a flood.

MAINTAINING VEGETATION

Good vegetative cover will ensure maximum performance of Landlok 450. Vegetative cover care starts before a project is complete and is ongoing until all Landlok 450 is installed. Vegetative cover should be given every opportunity to grow and establish well. This will require that a contractor periodically fertilize, water, and mow the grasses as needed until a project is complete in the short-term, with the owner of the slope fulfilling the maintenance of the slope in a similar fashion for the long-term. For the entire lifecycle of Landlok 450, every effort must be made to prevent unauthorized encroachments, grazing, vehicle traffic, the misuse of chemicals, or burning during inappropriate seasons.

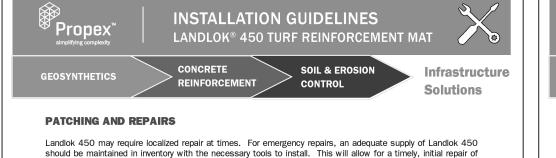
- 1. After the installation of vegetation is complete, immediately water and soak the entire area using a fine spray to prevent erosion and loss of seeds. A suggested amount of water is identified below. Prior to installation if using sod, the sod pads in storage should be kept moist at all times and not stored for more than 24 hours from site arrival to installation. Warmer weather will necessitate more frequent applications
- A. For each reach/segment of installed vegetation, watering shall be conducted immediately after each



- 1.0 inches per square foot per day (20,364 gallons minimum, 27,152 gallons maximum per acre per
- C. Second 30 days, the watering may be reduced to 0.50 inches per square foot per day (13,576 gallons maximum per acre per day) or as required based upon the condition of the sod. D. Avoid excessive application of water, so that surface runoff does not occur. Runoff should be prohibited.

However, additional watering may be required for repaired or damaged areas.

- 4. Initial fertilizing should be applied 14 days after vegetation is placed, using 25-lbs per acre ammonium nitrate or ammonium sulfate. Post-fertilization should be conducted 30 to 45 days after installation, using an application rate of 25-lbs per acre (ammonium nitrate or ammonium sulfate). Application example: in order to apply ammonium nitrate or ammonium sulfate at a rate of 25-lbs per acre, 75 lbs of 33-0-0 is required. 5. Implement best practices for mowing over Landlok 450. While Landlok 450 is designed to withstand non-
- hydraulic stresses such as mowing, there are procedures to minimize exposure to unwanted damage A. Immediately after installation, signage and post shall be installed stating that "Vehicles and Pedestrians are Prohibited from Access" on the slopes and the newly installed vegetation. Signage shall be posted every 1,500 lineal feet.
- B. Vegetated areas should be mowed to a height no less than 6 inches and no greater than 12 inches from natural ground after a period of 60 days of growth. The excessive grass clippings created from mowing shall be evenly spread on the slope section outside of the armored area. Periodic and final grass mowing should be performed until final inspection and acceptance of slope work. Monitor the vegetated areas throughout winter months and generate reports as needed, noting any issues that
- C. To prevent damage to the newly established vegetation, the mowing tractor should be fitted with 3-rib agriculture tires. Note that tractors with 8-foot flail mowers provide best results. Tractors with 15-foot brush hogs should avoid sharp turns up the slope to prevent damage to vegetation.
- D. Mowing should not take place for a minimum of 48 hours after a rainfall event of 2 inches or more to minimize the potential for rutting and/or damage to the slope surface. Maintenance mowing of the slope should be done on a consistent basis to prevent vegetation growing to more than 3 feet in height. This will minimize thatch thickness and potential damage to Landlok 450. If turn-around pads are present, operate mowing equipment utilizing the turn-around pads to the fullest extent. The mowing blade height over Landlok 450 should be a minimum of 8 inches. However, should vegetation grow to more than 3 feet in height, the mowing blade height for the condition should be a minimum of 12 inches.
- 6. Some special circumstances may exist. When mowing the crown of a slope with a crown or crest equal to or exceeding 20%, it should be mowed with an articulating arm mower to minimize the potential for the mower blades to catch Landlok 450 at the slope surface. The articulating arm mower should be level on the surface with the articulating arm extending over the crown. Pay close attention to areas where the slope changes. The mower blades should be set at a minimum height of 8 inches. If Landlok 450 is damaged by the mowing blades at any time, mowing should stop immediately and further direction should be obtained to continue activity. Repair the damaged area as described in the Patching and Repairs section
- 7. Landlok 450 protected slopes are not as susceptible to animal burrowing due the tenacity of the Landlok 450; however, inspections to detect the presence of burrowing animal activity are generally most effective immediately after the slope has been mowed. Animal burrows that are identified should be thoroughly excavated and inspected, backfilled with compacted soil that is similar to material of the slope, and vegetation re-established. This will avoid the possibility of water piping through unfilled portions of the purrows. Should Landlok 450 be damaged, it is to be repaired as described Patching and Repairs section



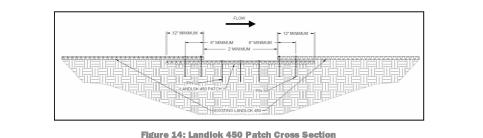
- 1. In order to identify areas in need of repair, the site should be patrolled immediately after mowing and after rain events of 2 inches or more. When patrolling look for areas of sparse vegetation, exposed edges of Landlok 450, and areas where direct contact between Landlok 450 and the slope surface is compromised. Landlok 450 should be rated as Acceptable, Minimally Acceptable, or Unacceptable during inspection.
- A. Acceptable (A) The rated area is in satisfactory, acceptable condition, and will function as designed and intended during the rain event. Landlok 450 has no exposed edges, is installed tightly by maintaining direct contact to the slope surface with no rilling beneath, and has over 90% vegetation
- deficiency will not seriously impair the functioning of the area during the next rain event; however, the overall reliability of the project will be lowered because of the minor deficiency. Landlok 450 has 75% vegetation cover with un-vegetated patches as large as one square yard. Edges of Landlok 450 are osed with noticeable damage. Minimal erosion has occurred underneath Landlok 45 C. Unacceptable (U) - The rated area is unsatisfactory. The deficiency is so serious that the area will not adequately function in the next rain event. Landlok 450 has been physically torn, ripped, or lifted from

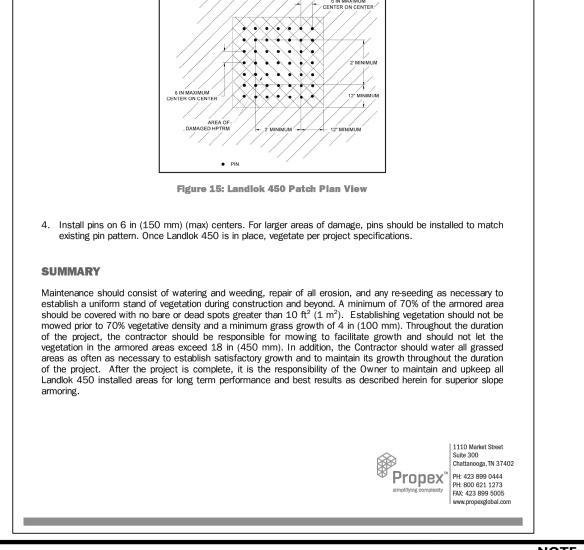
B. Minimally Acceptable (M) - The rated area has a minor deficiency that needs to be corrected. The minor

the slope surface. Less than 75% vegetation cover is present with un-vegetated patches being greater than 1 square yard, and there is evidence that erosion is occurring beneath Landlok 450. 2. Repair any raised or exposed edges of Landlok 450 by driving existing and additional pins along the edges as necessary to securely fasten to the ground. Inspect areas where the vegetation is not growing on top of Landlok 450. Many times this is an indicator that Landlok 450 has lost contact with the ground beneath. Check for voids beneath Landlok 450 and fill any holes, gullies, etc. with compacted fill material if possible.

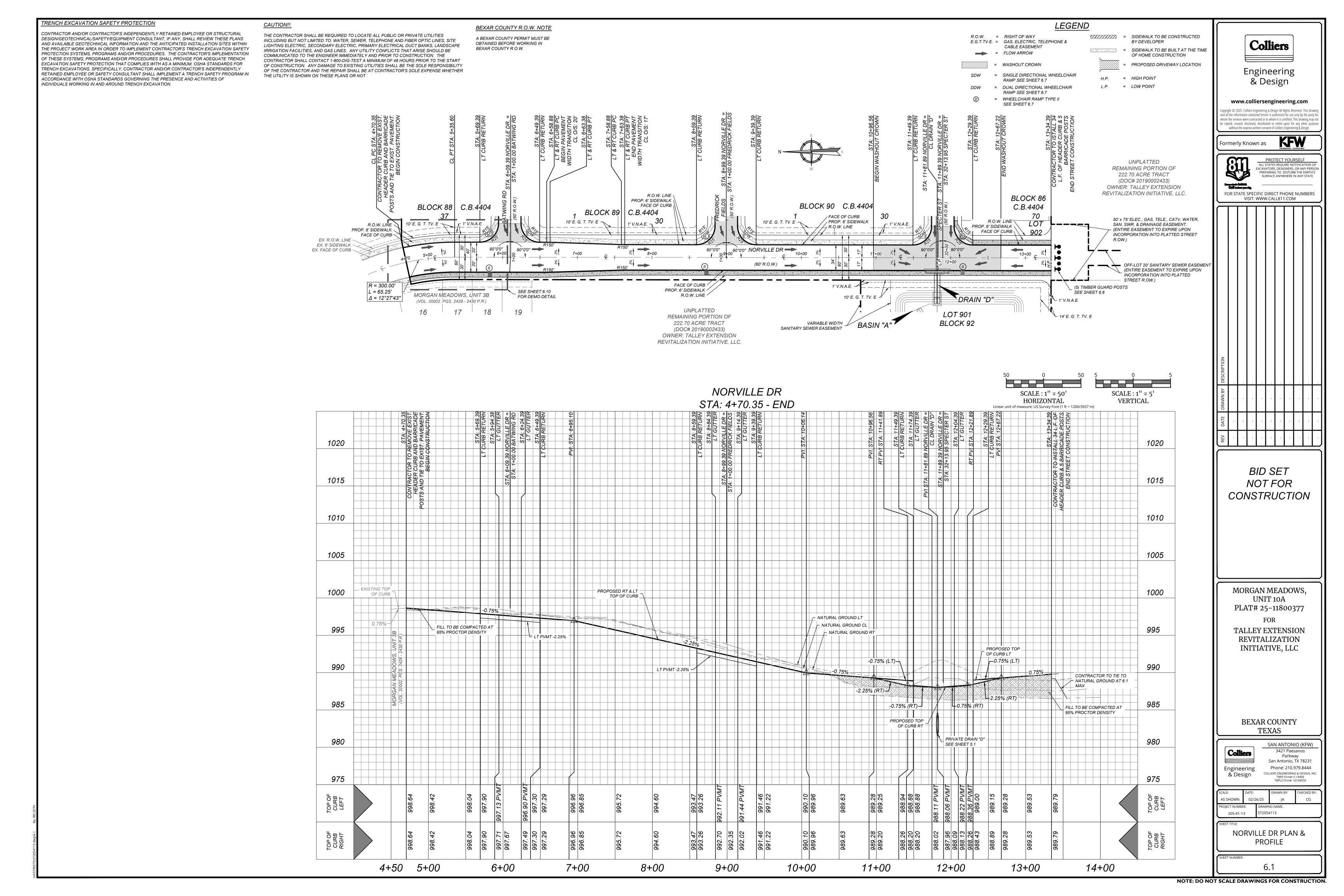
Replace Landlok 450 as described below.

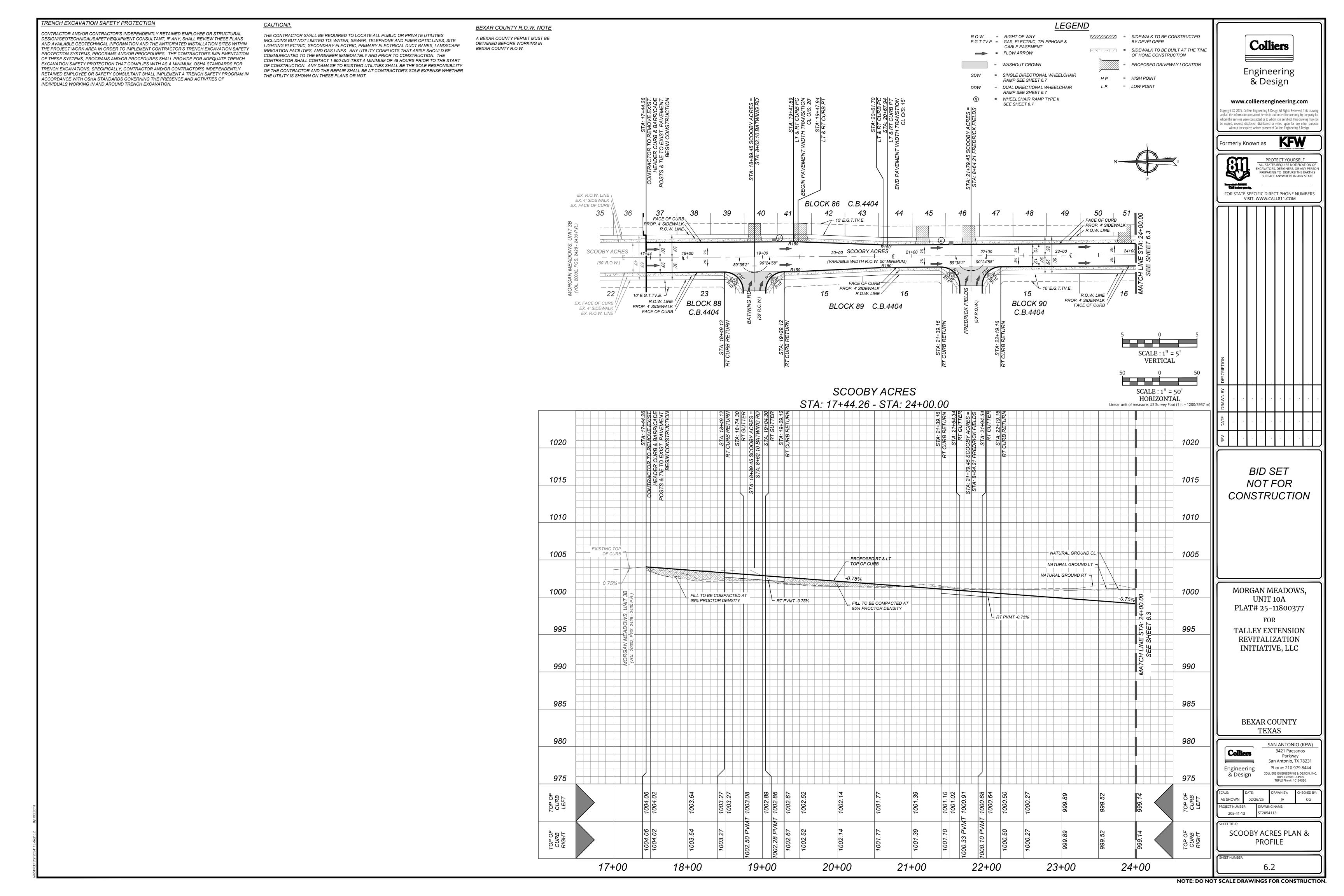
3. To repair Landlok 450, cut out and remove damaged areas in a square configuration a minimum size of 2 ft by 2 ft. Remove all vegetation and debris atop of Landlok 450. Loosen the top 1 to 2 in of soil in the patch area then seed. The subgrade of area to be patched shall be prepared to be smooth and uniform and transition smoothly into the in-situ area. Cut a square Landlok 450 patch a minimum of 12 in greater than the damaged area for all four sides of the patch. Overlap the patch area in all directions a minimum of 12 in. The patch overlaps shall be tucked under the existing damaged Landlok 450 material (Figure 14 and

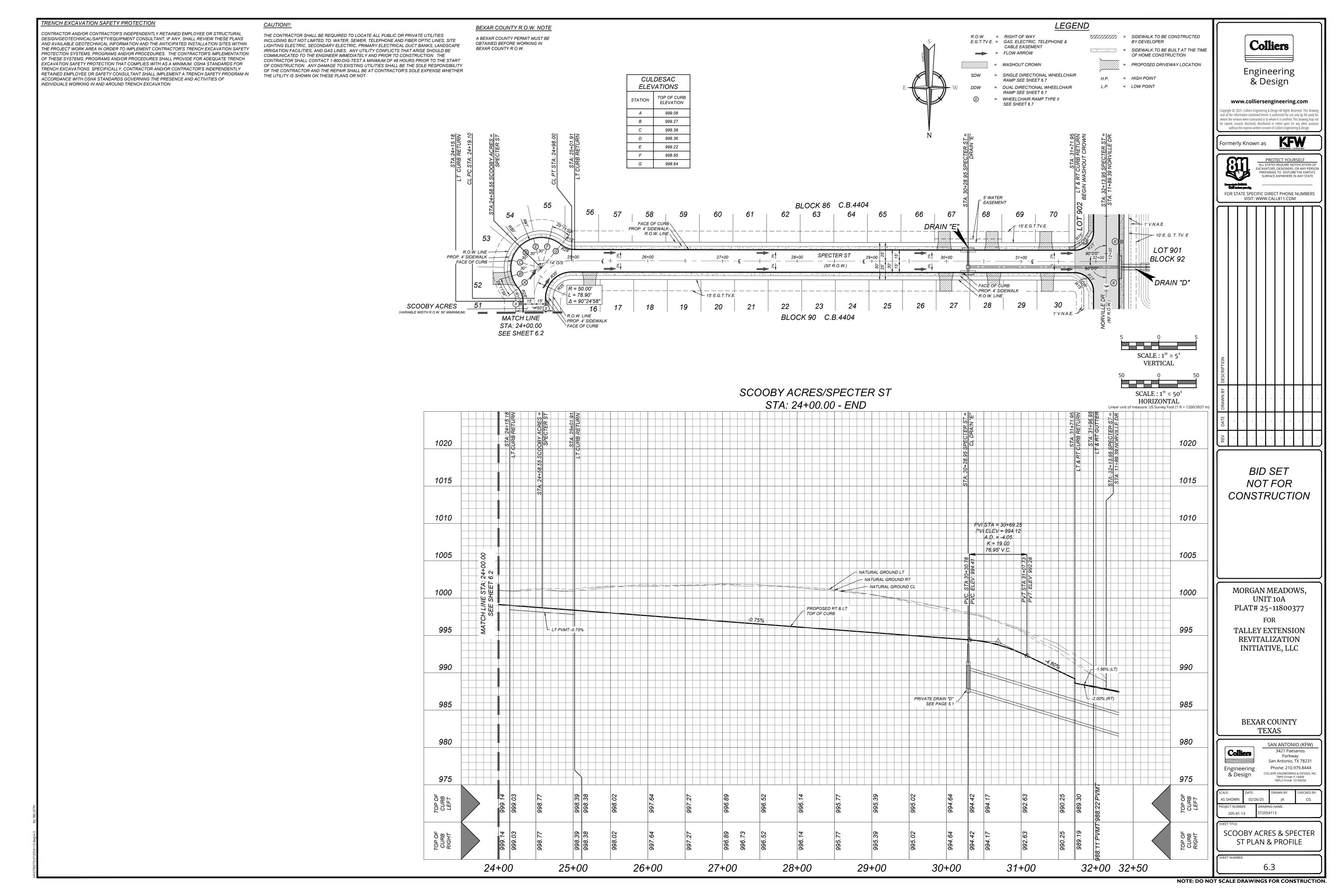


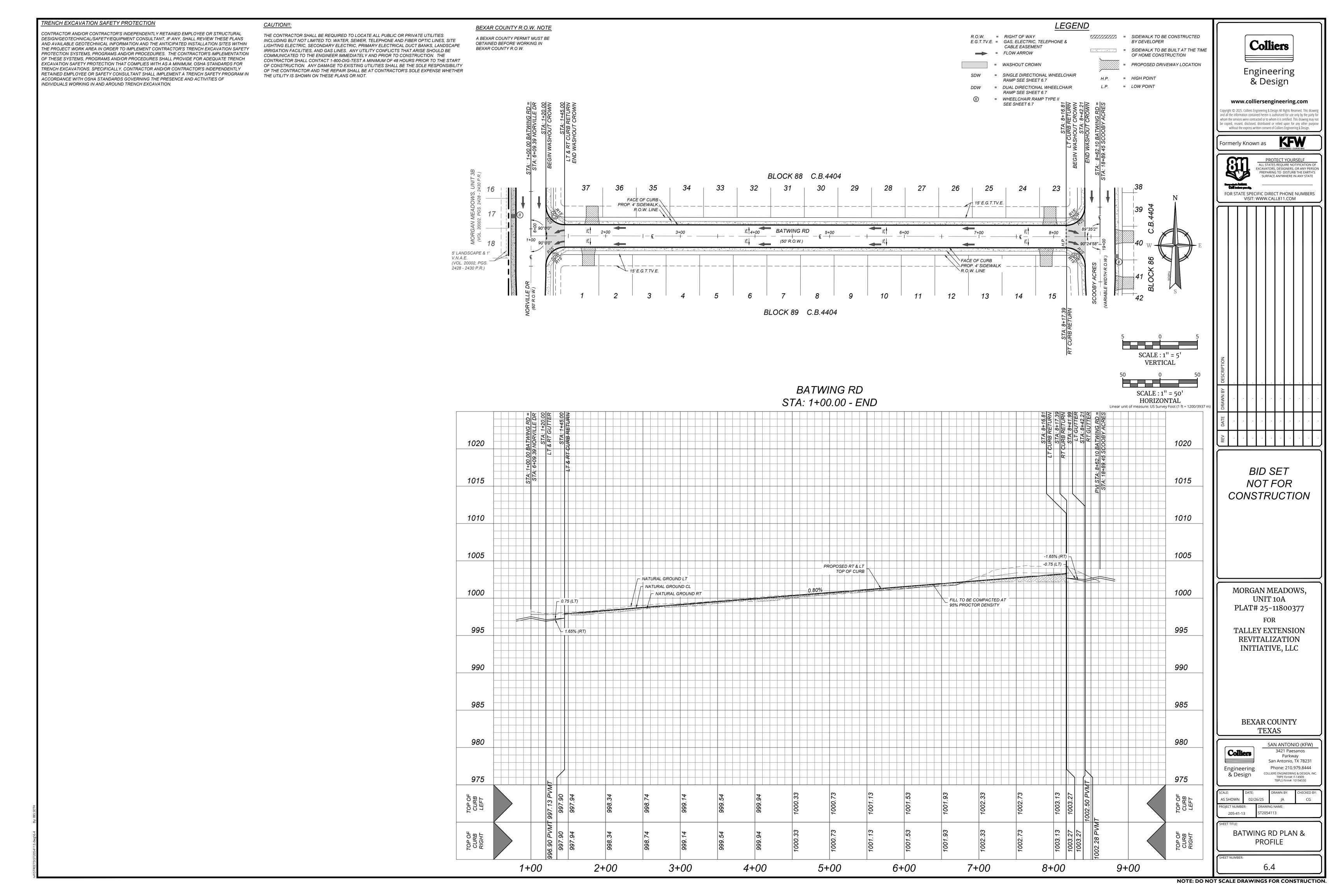


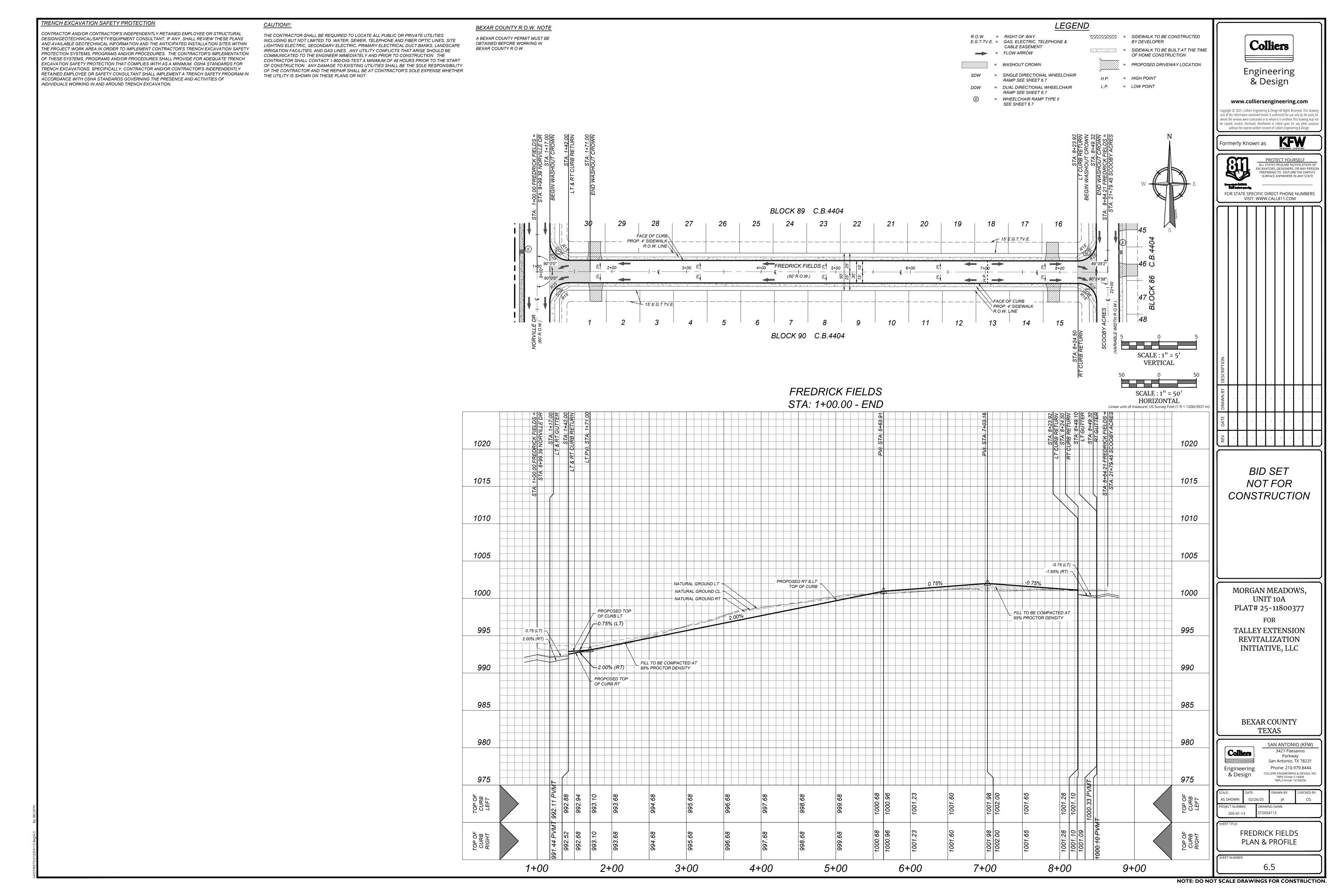
INSTALLATION GUIDELINES

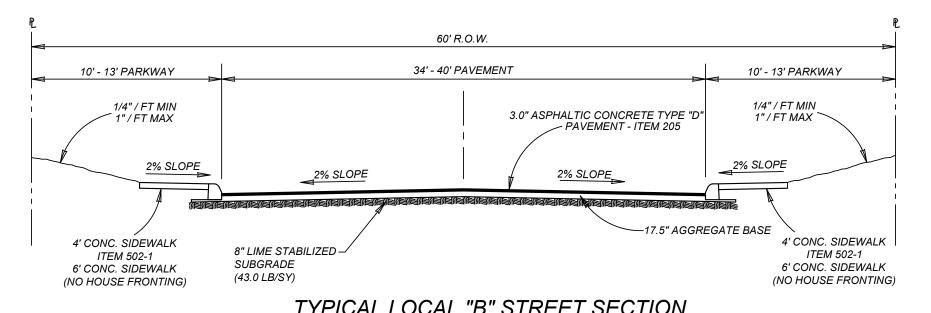








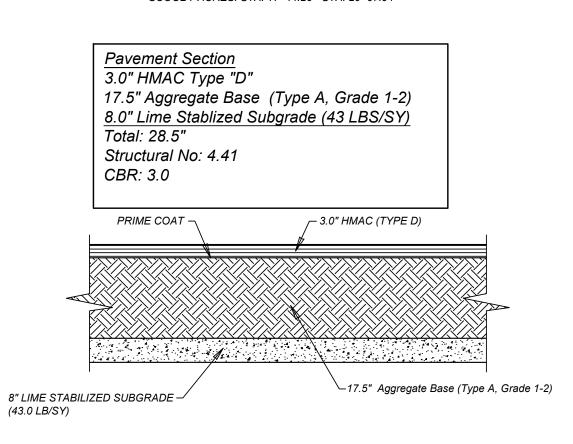




TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE USE LOCAL "B" STREET SECTION FOR STREETS BELOW:

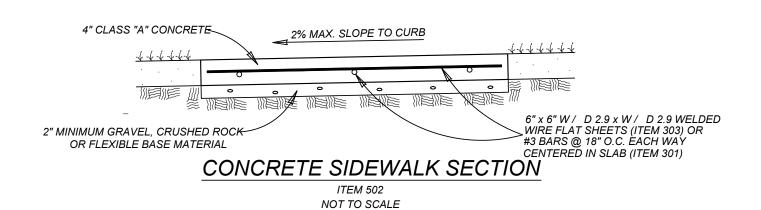
NORVILLE DR.: STA: 4+70.35 - 13+34.39 SCOOBY ACRES: STA: 17+44.26 - STA: 20+67.94

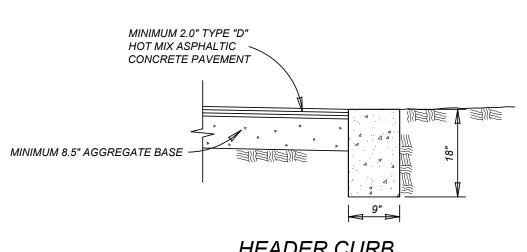


ASPHALT PAVEMENT DETAIL DETAIL FOR ALL LOCAL TYPE B

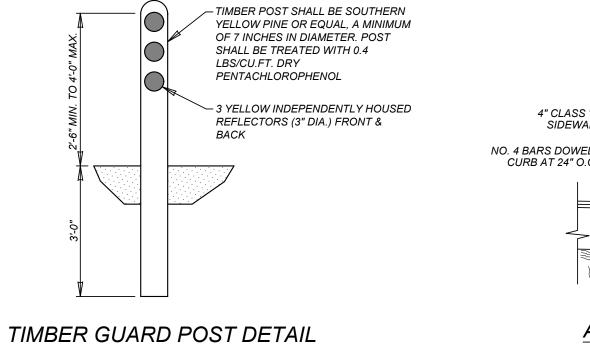
1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, LLC. PROJECT NO. S251018 DATED FEBRUARY 17, 2025. 2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS. 3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE

4. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.





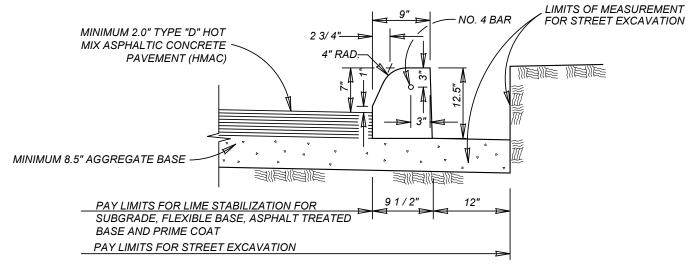
HEADER CURB ITEM 500 ON SAND OR GRAVEL NOT TO SCALE



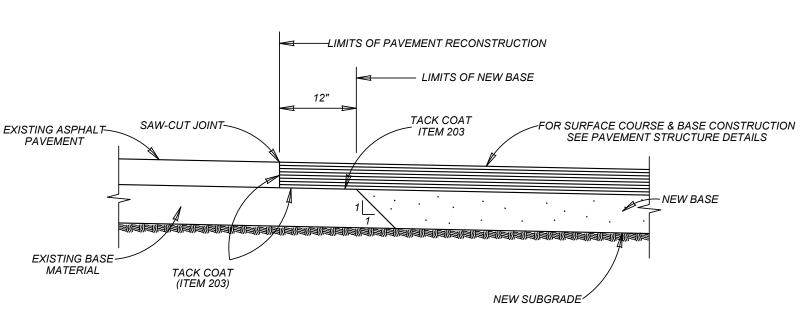
NOT-TO-SCALE

6" x 6" W / D 2.9 x W / D 2.9 WELDED WIRE FLAT SHEETS (ITEM 303) OR 4" CLASS "A" CONCRETE_ ∽#3 BARS @ 18" O.C. EACH WAY CENTERED IN SLAB (ITEM 301) SIDEWALK - ITEM 502 NO. 4 BARS DOWEL INTO~ CONCRETE SIDEWALK ABUTTING CURB SECTION

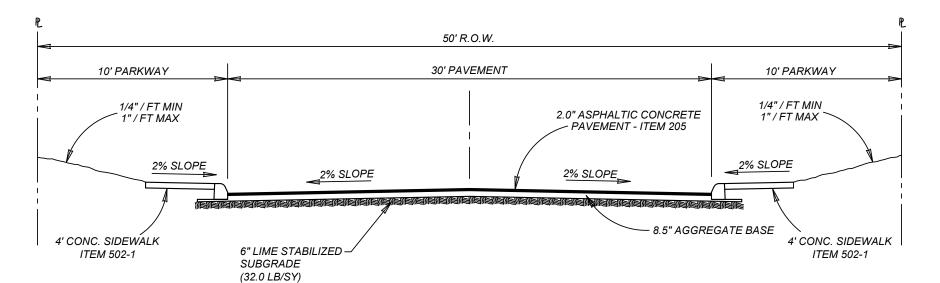
NOT TO SCALE



CONCRETE CURB ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE NOT TO SCALE



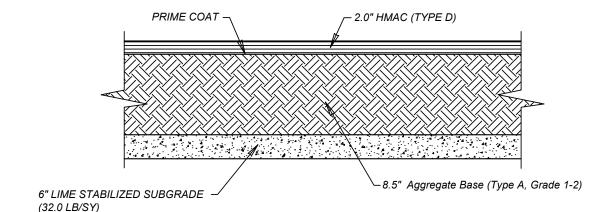
PAVEMENT JUNCTION DETAILS NOT TO SCALE



TYPICAL LOCAL "A" STREET SECTION

USE LOCAL "A" STREET SECTION FOR STREETS BELOW: SCOOBY ACRES: STA: 20+67.94 - 24+58.55 BATWING RD: STA: 1+00.00 - END FREDRICK FIELDS: STA: 1+00.00 - END SPECTER ST: STA: 24+58.55 - END

Pavement Section 2.0" HMAC Type "D" 8.5" Aggregate Base (Type A, Grade 1-2) 6.0" Lime Stablized Subgrade (32.0 LB/SY) Total: 16.5" Structural No: 2.55 CBR: 3.0



ASPHALT PAVEMENT DETAIL DETAIL FOR ALL LOCAL TYPE A

1. PAVEMENT DESIGN THICKNESS BASED ON GEOTECHNICAL REPORT BY INTEC, LLC. PROJECT NO. <u>S251018</u> DATED <u>FEBRUARY 17, 2025</u>.

2. REFERENCE PROJECT GEOTECHNICAL REPORT AND PROJECT SPECIFICATION FOR ADDITIONAL REQUIREMENTS AND ALTERNATE PAVEMENT SECTIONS.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING MATERIAL TESTING. TESTING TO BE PAID BY OWNER.

4. CONTRACTOR MAY LEAVE VERTICAL CUT BANKS AT R.O.W. LINE AND MEDIANS PROVIDED PROJECT GEOTECHNICAL ENGINEER DETERMINES ROCK IS COMPETENT TO STAND ON ITS OWN.

GENERAL NOTES:

1. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

2. THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES AN UNCONFINED COMPRESSIVE STRENGTH (UCS) AT 7-DAYS OF AT LEAST 160 PSI IN ACCORDANCE WITH ASTM D5102 STANDARD TEST METHODS FOR UNCONFINED COMPRESSIVE STRENGTH OF COMPACTED SOIL-LIME MIXTURES (PROCEDURE B) (IN ADDITION. CURING SHOULD OCCUR FOR 7 DAYS AT 40° AND SPECIMENS SHOULD BE SUBJECT TO 24-HR CAPILLARY SOAK PRIOR TO TESTING.

FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE

- 1. AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING;
- 2. AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 3/4 INCH SIEVE FROM THE SAMPLE): MINIMUM PASSING 1 3/4" SIEVE MINIMUM PASSING ¾" SIEVE MINIMUM PASSING NO. 4 SIEVE
- 3. SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- 4. COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED)
- 5. CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- 6. VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN ± 1.0 INCH.

NOTES:

- ANY FILL USED TO RAISE THE SUBGRADE:
- SHOUD NOT CONTAIN ANY DELETERIOUS MATERIAL.
- SHOULD HAVE A CBR VALUE OF 3.0 OR GREATER SHOULD HAVE THE "LIME PERCENTAGE/APPLICATION RATE" RE-EVALUATED
- AND TESTED PRIOR TO INSTALLATION PI SHOULD BE A MAXIMUM OF 60

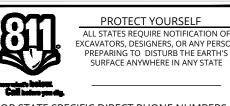


Engineering & Design

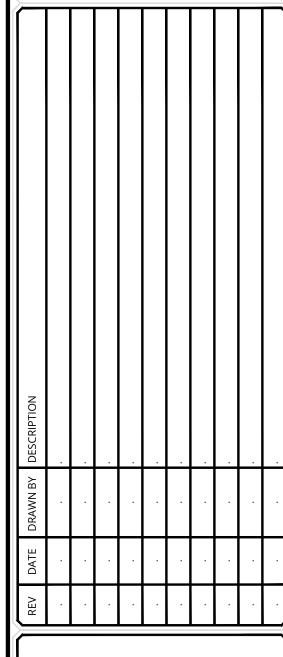
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BID SET CONSTRUCTION

MORGAN MEADOWS. UNIT 10A PLAT# 25-11800377

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

> **BEXAR COUNTY TEXAS**

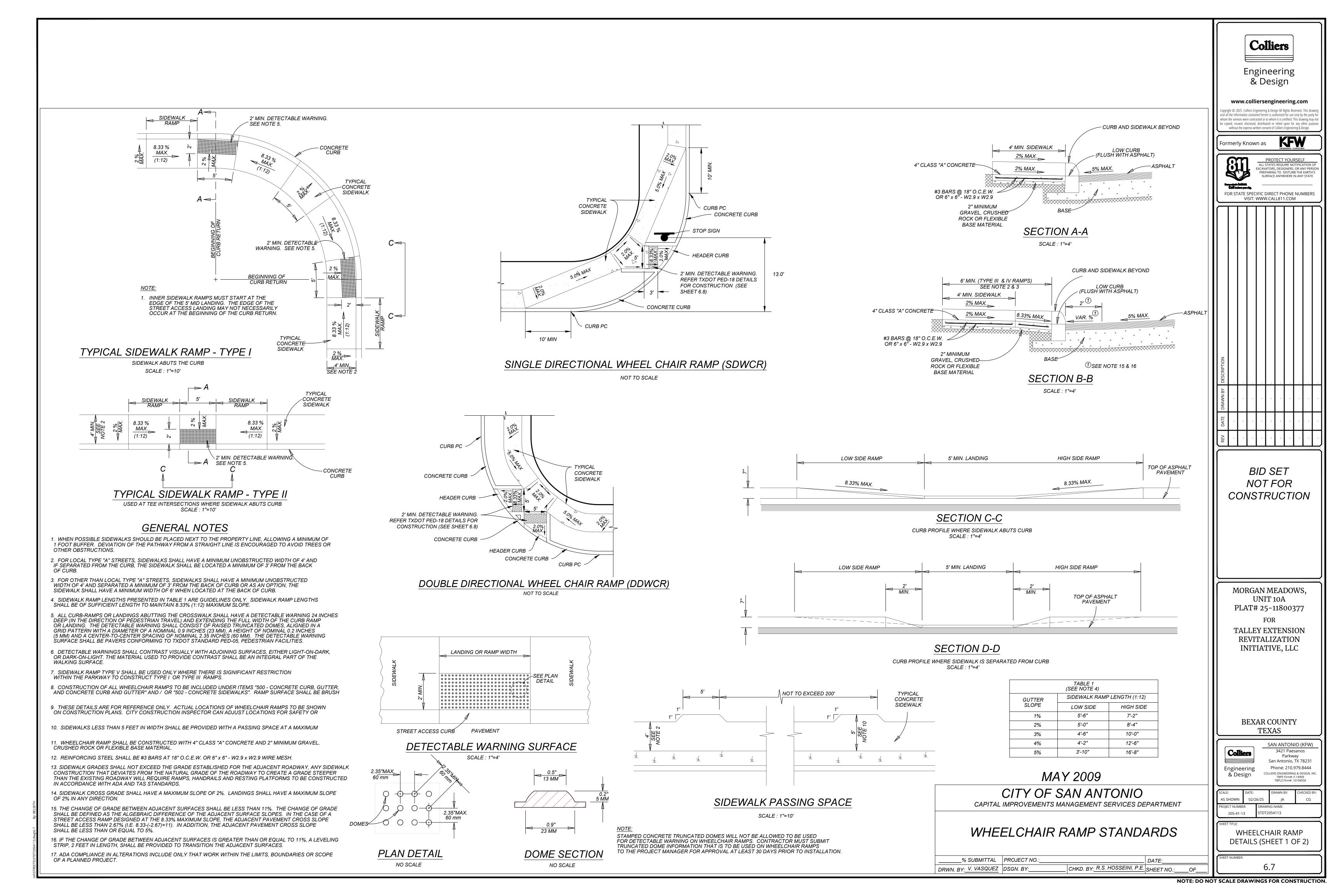
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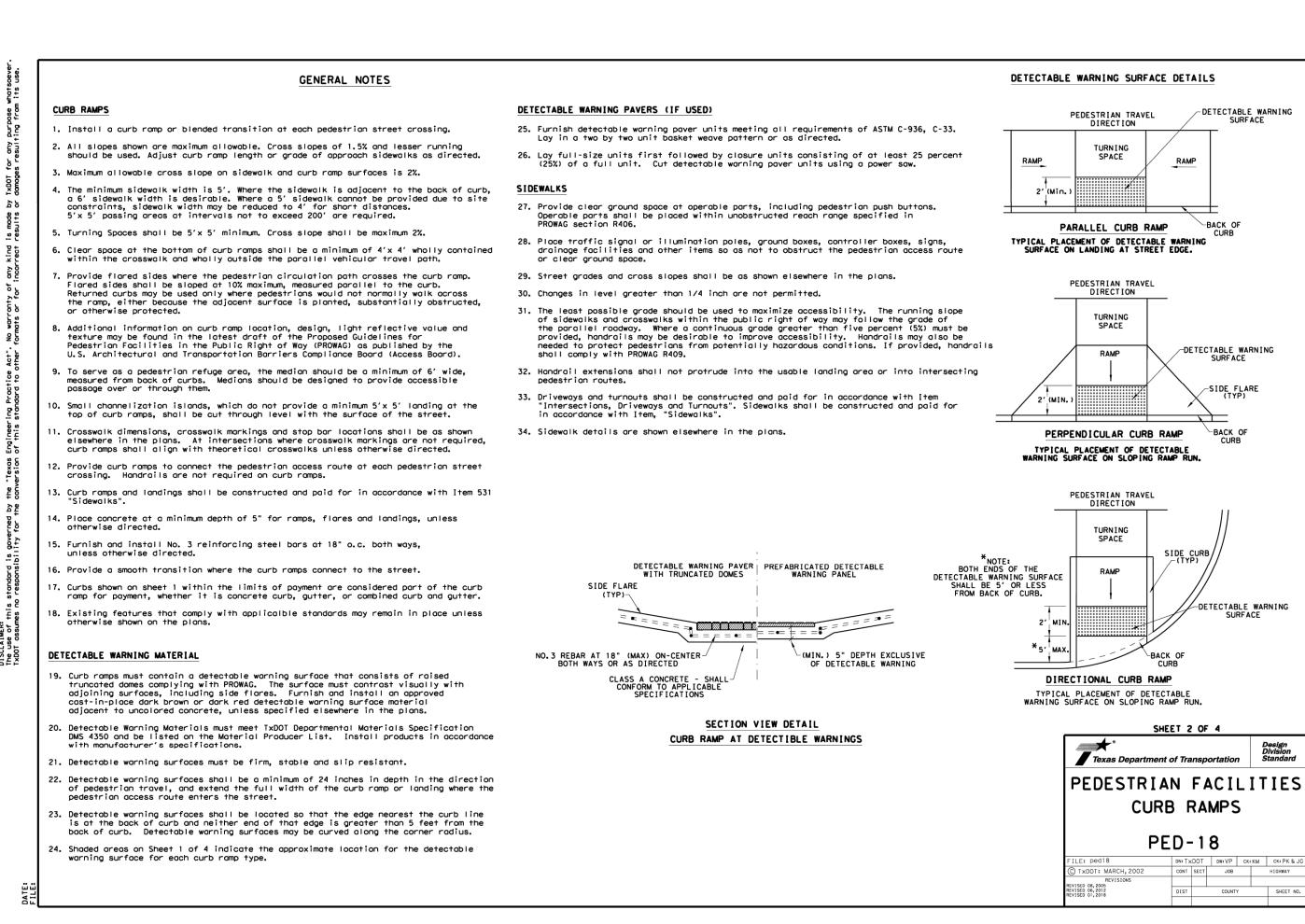
3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC TBPE Firm#: F-14909 TBPLS Firm#: 10194550

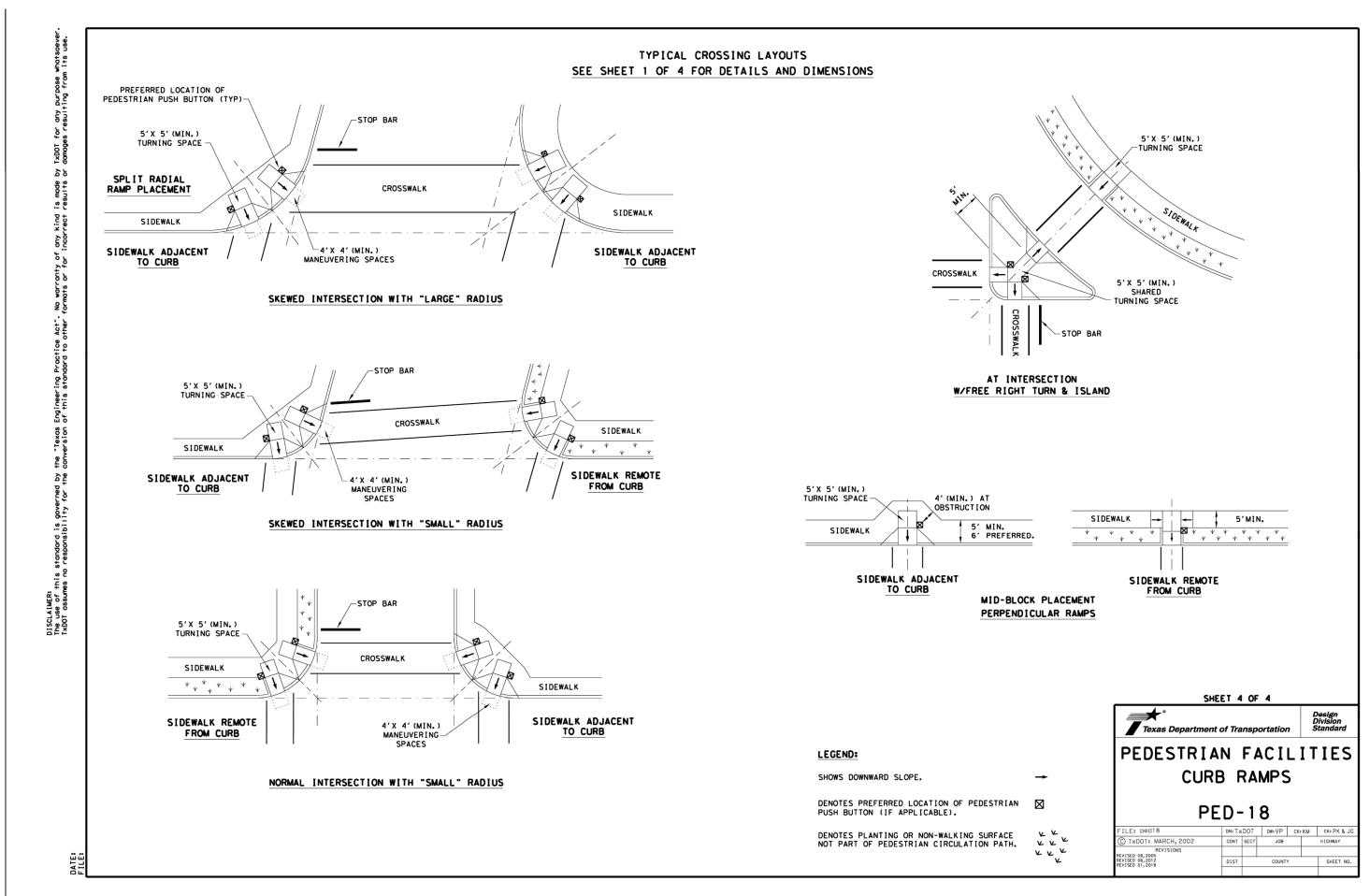
SAN ANTONIO (KFW)

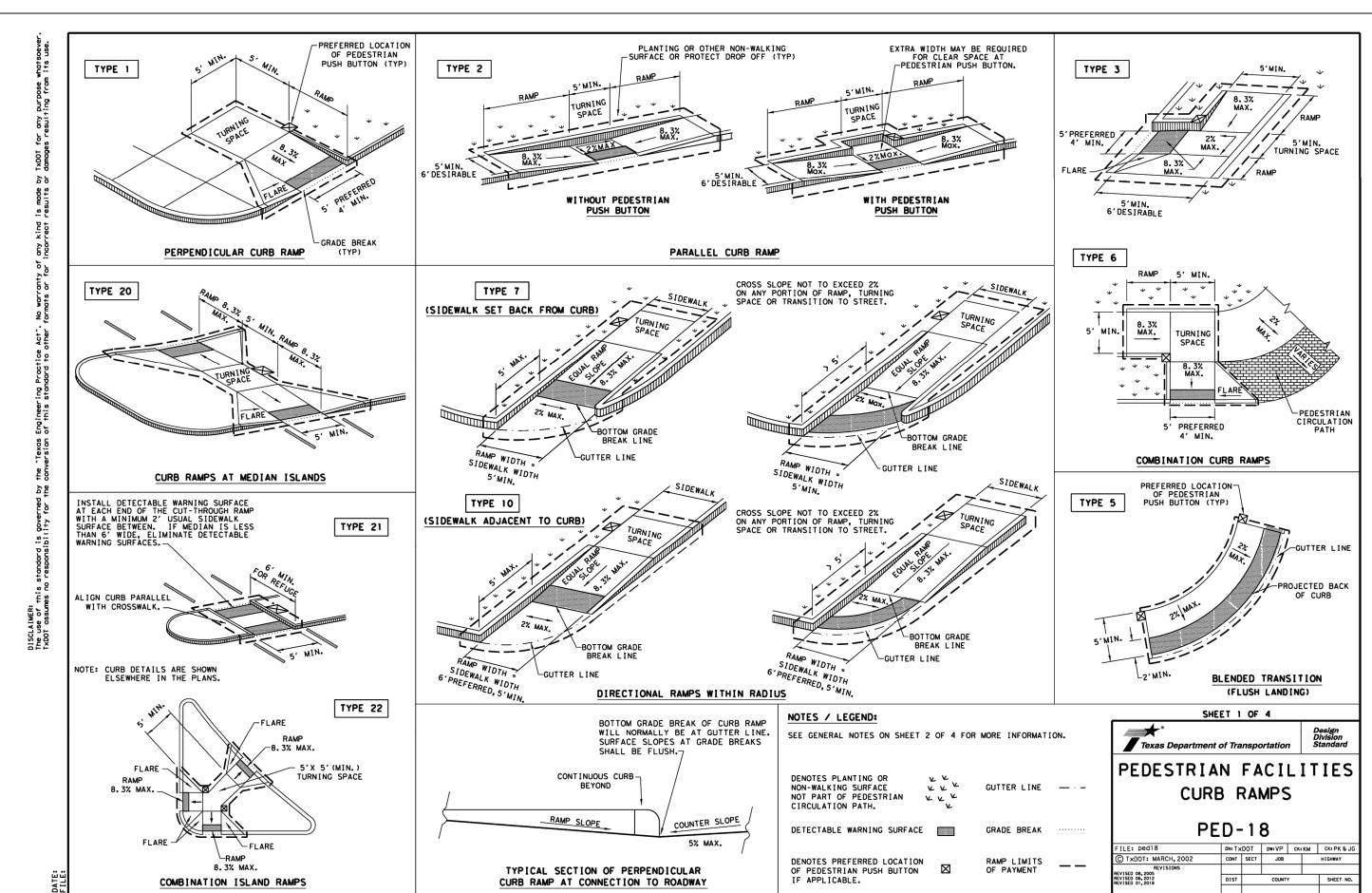
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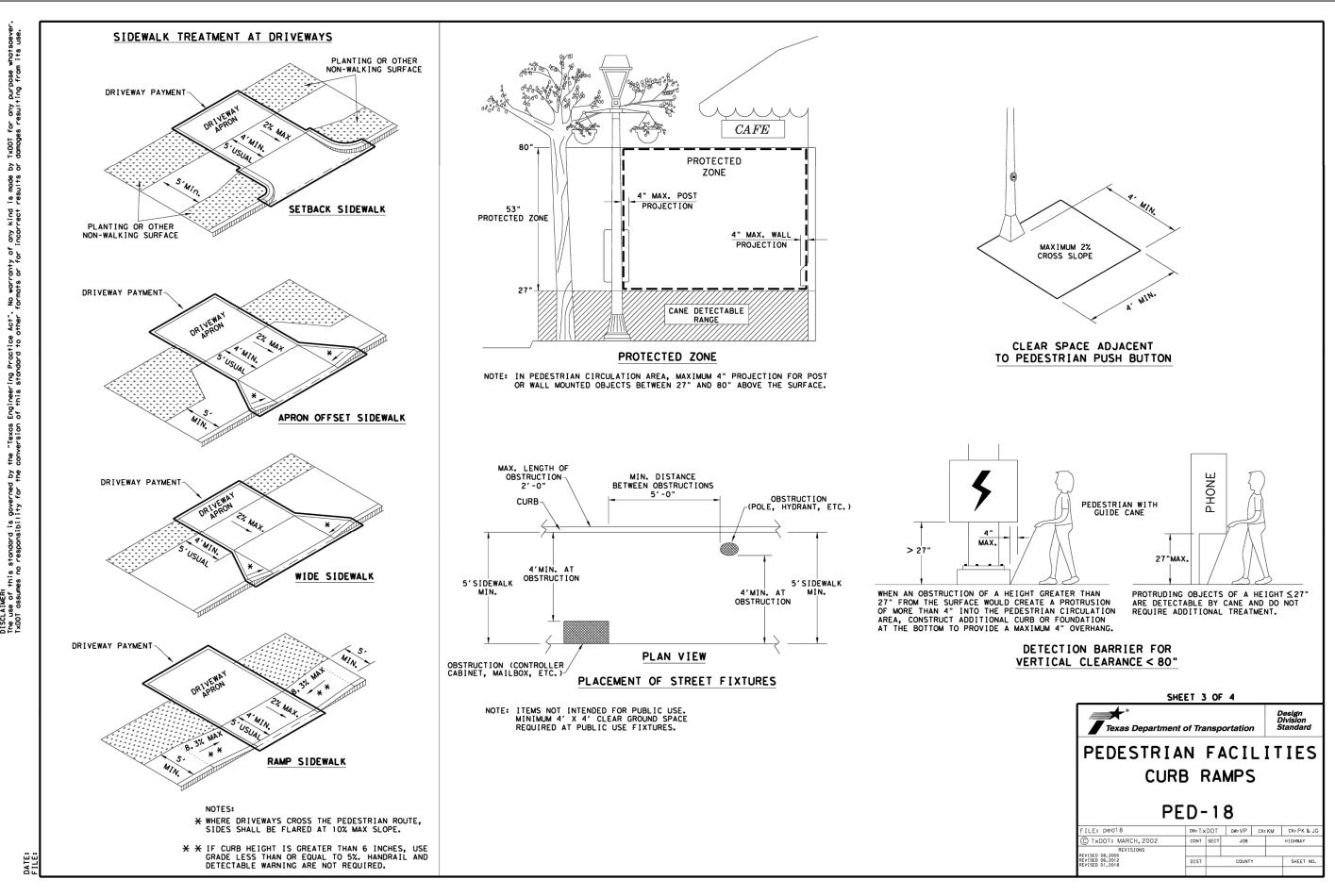
TYPICAL STREET DETAILS

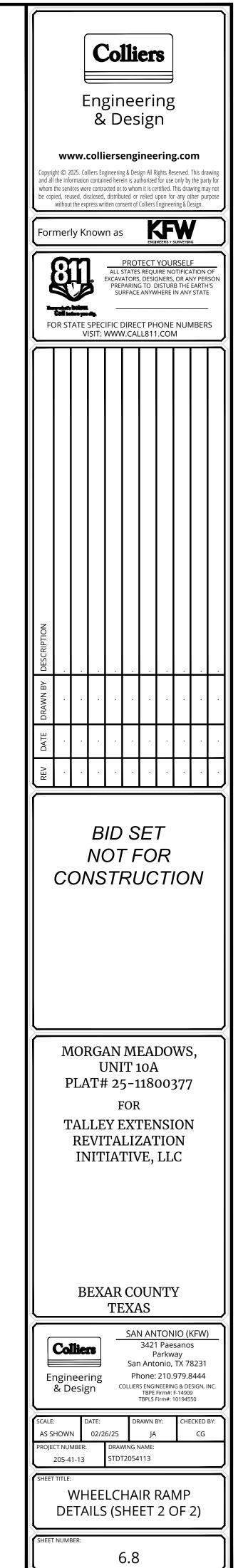


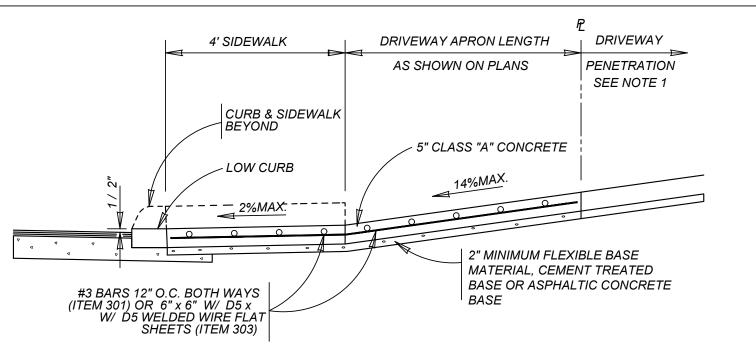






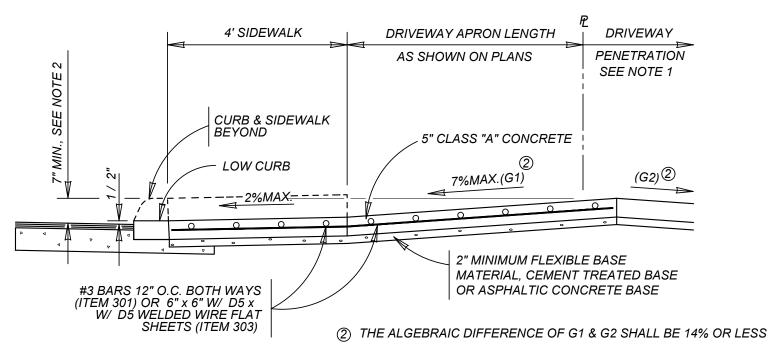






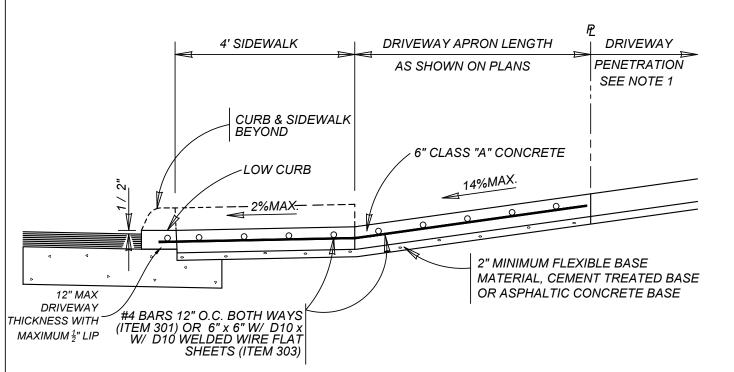
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB ITEM 503.1



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB ITEM 503.2

CONCRETE DRIVEWAY NOTES

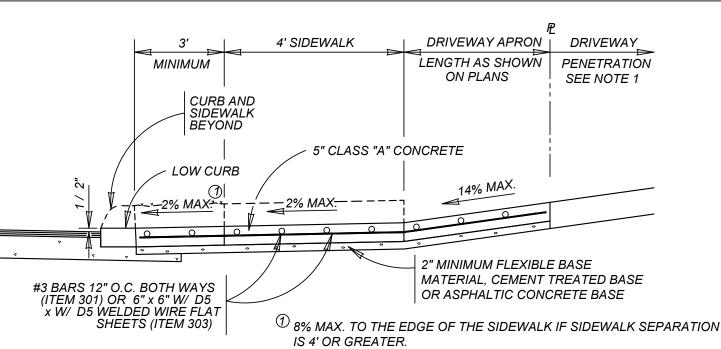
- 1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
- A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2. B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
- C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
- 2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
- 3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUN
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.

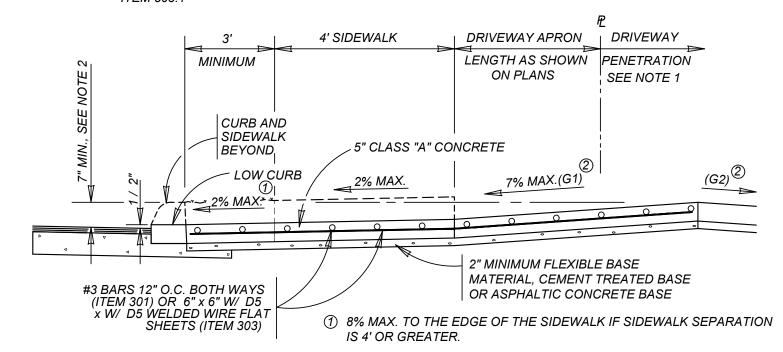
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB

- OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
- 6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
- 7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
- 8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE. WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- 9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



TYPICAL RESIDENTIAL DRIVEWAY SECTION

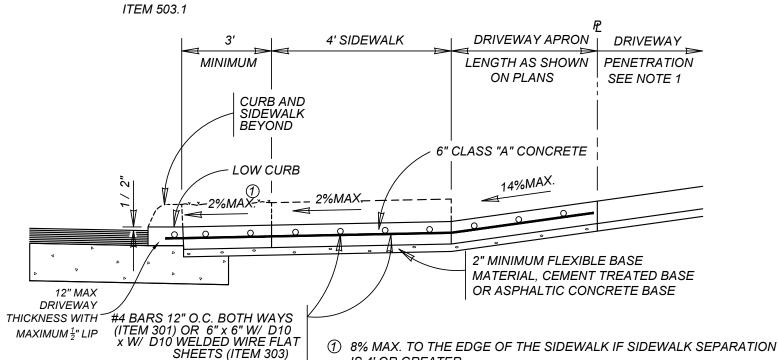
WITH SIDEWALK SEPARATED FROM CURB ITEM 503.1



2 THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

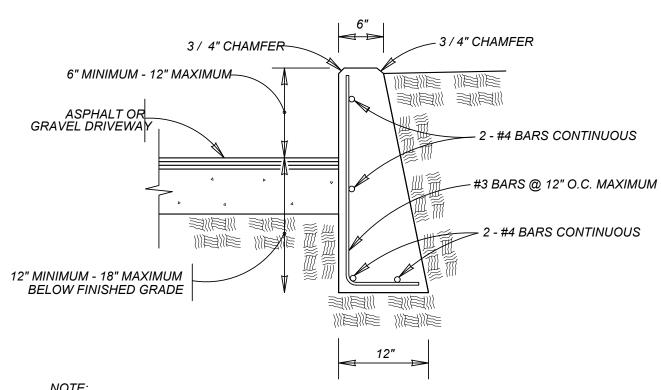
WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB



TYPICAL COMMERCIAL DRIVEWAY SECTION

IS 4' OR GREATER.

WITH SIDEWALK SEPARATED FROM CURB ITEM 503.2



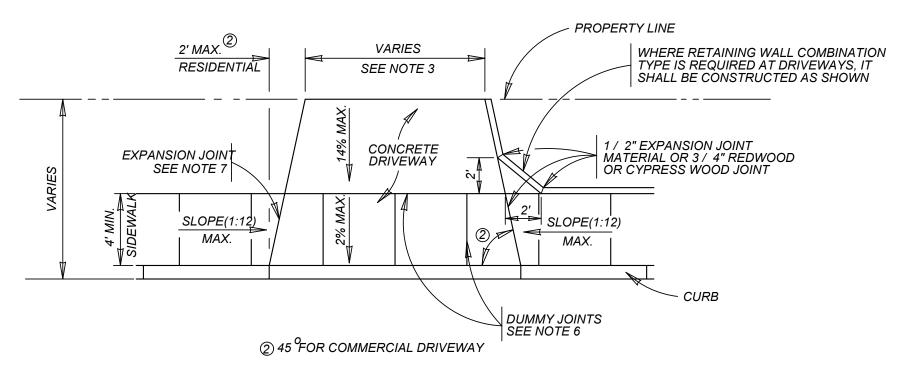
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1. 2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR

CONCRETE DRIVEWAYS.

ITEM 307.1

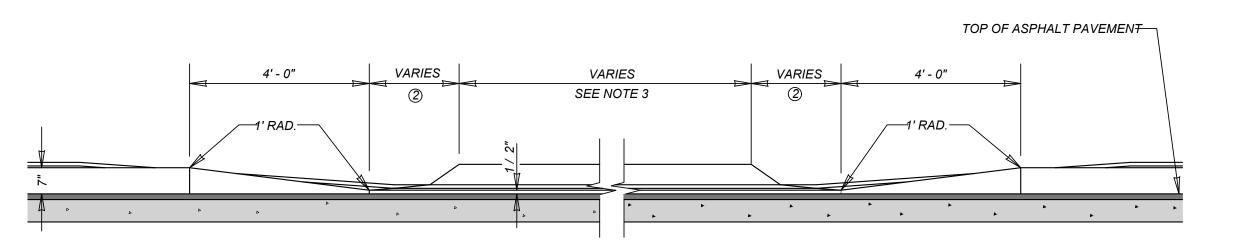
DRIVEWAY - CONCRETE RETAINING WALL ON COMPACTED SUBGRADE

SLOPE (1:12) **VARIES VARIES VARIES** SLOPE (1:12) MAXIMUM SEE NOTE 3 MAXIMUM 2 - 1' RAD. ② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW CURB PROFILE AT DRIVEWAY WITH SIDEWALK ABUTTING CURB



TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

WHERE RETAINING WALL COMBINATION TYPE IS REQUIRED AT DRIVEWAYS, IT SHALL BE CONSTRUCTED AS SHOWN 2' MAX. **VARIES** RESIDENTIÁL SEE NOTE 3 - PROPERTY LINE 1 / 2" EXPANSION JOINT **EXPANSION JOINT** MATERIAL OR 3 / 4" REDWOOD OR CYPRESS WOOD JOINT CONCRETE SLOPE (1:12) SLOPE (1:12) MAX. SEE NOTE 4 DUMMY JOINTS SEE NOTE 6 ① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

> ② 45 OFOR COMMERCIAL DRIVEWAY TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB

MAY 2009

CITY OF SAN ANTONIO CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

% SUBMITTAL | PROJECT NO.: DRWN. BY: <u>V. VASQUEZ</u> DSGN. BY: CHKD. BY: R.S. HOSSEINI, P.E. SHEET NO.:____OF__

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Colliers

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BID SET **NOT FOR** CONSTRUCTION

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377

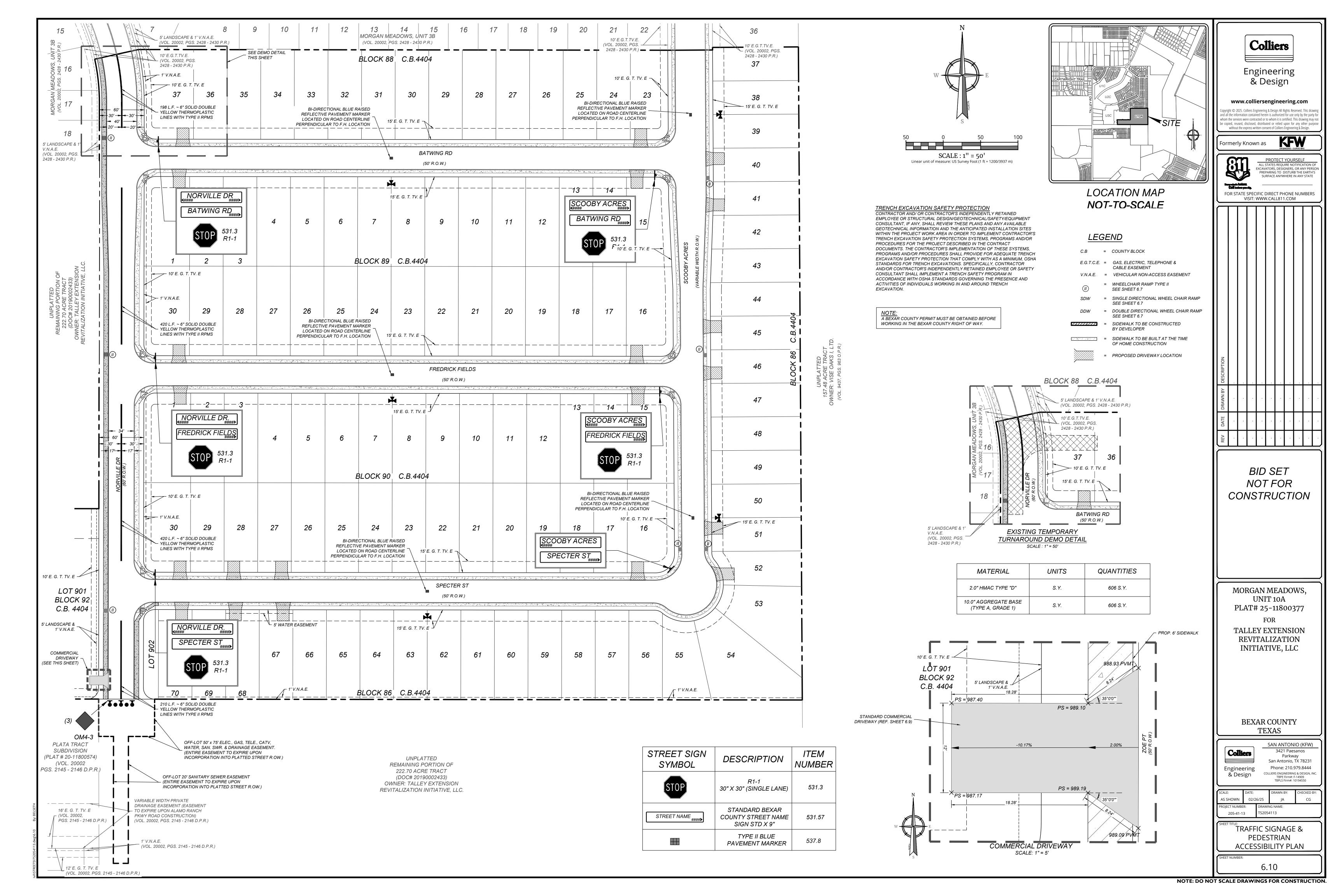
TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

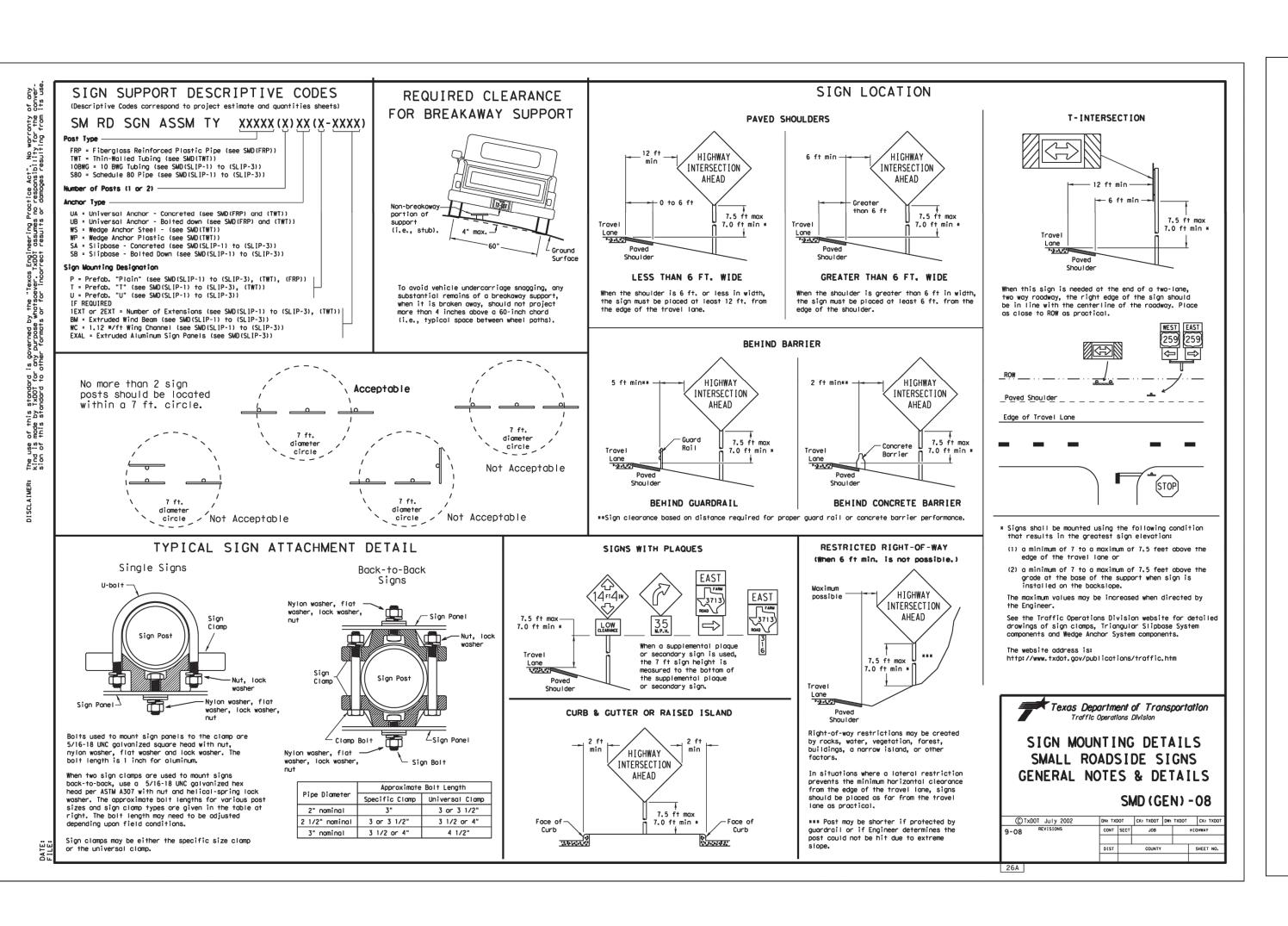
> **BEXAR COUNTY** TEXAS

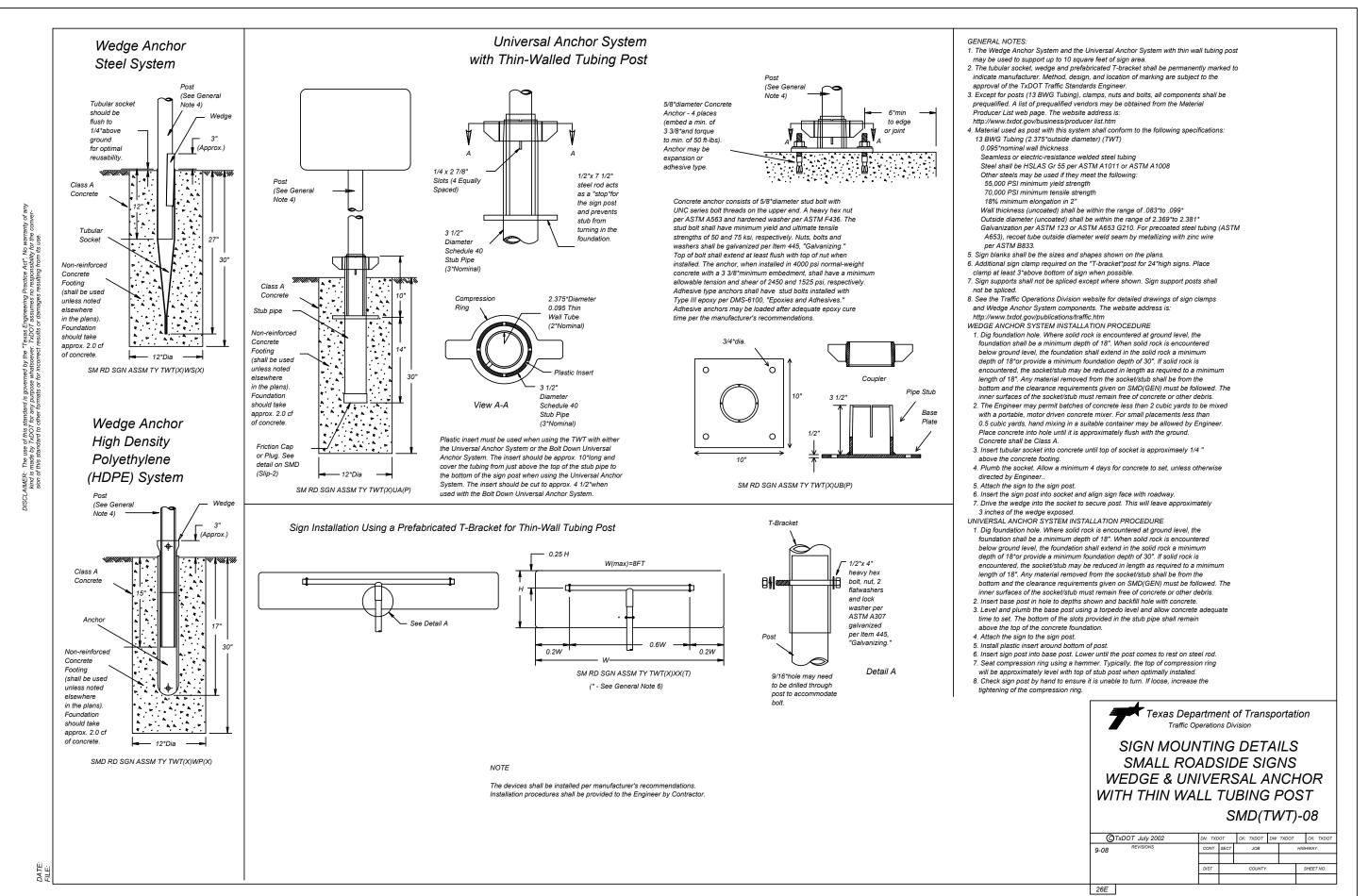
SAN ANTONIO (KFW) 3421 Paesanos Colliers San Antonio, TX 78231 Phone: 210.979.8444 Engineering OLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909 TBPLS Firm#: 10194550

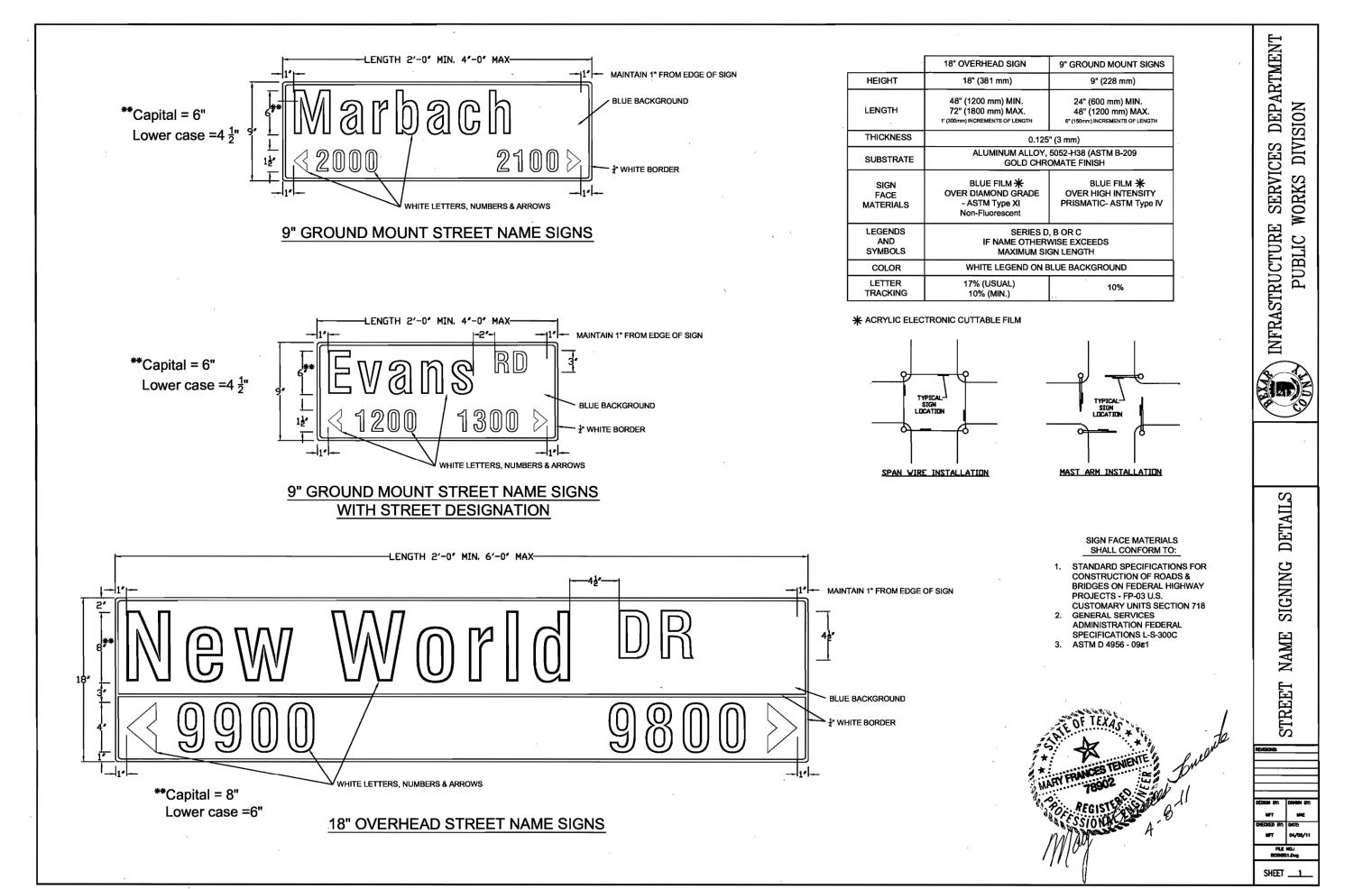
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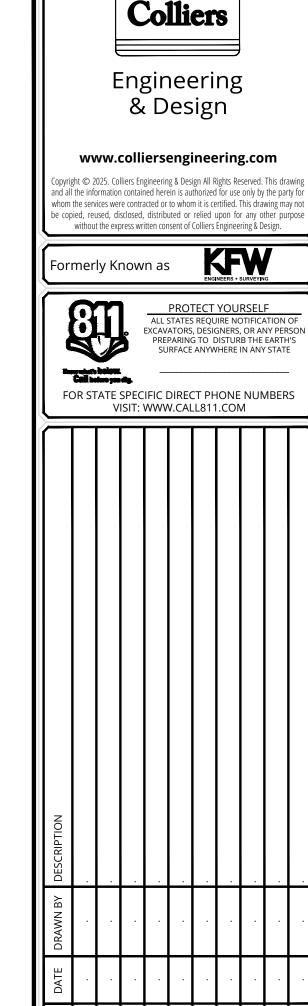
CONCRETE DRIVEWAY STANDARDS











BID SET NOT FOR CONSTRUCTION

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 FOR

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

> BEXAR COUNTY TEXAS

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& Design

SAN ANTONIO (KFW)

3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, INC
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

CALE: DATE: DRAWN BY: CHECKED BY:

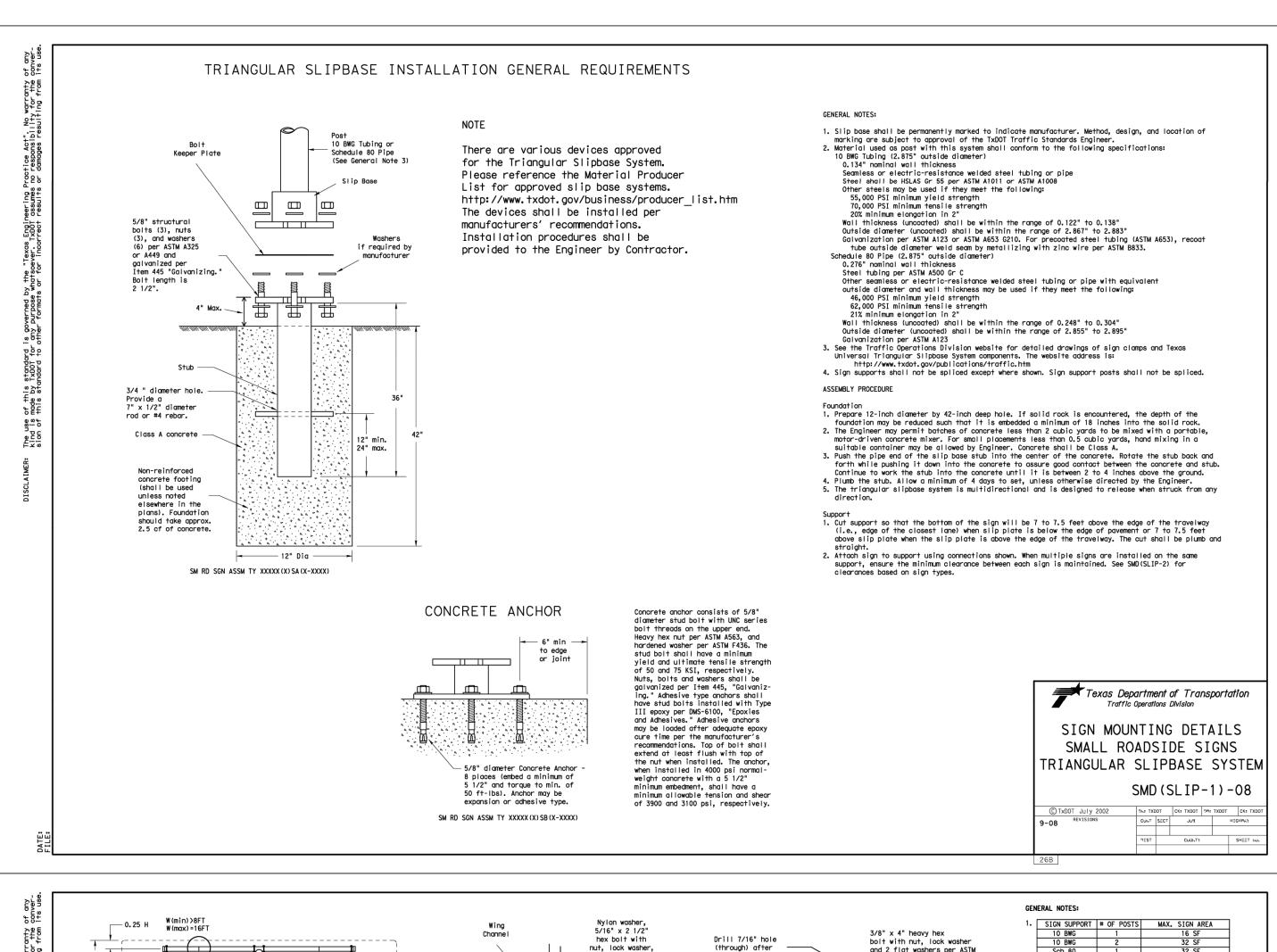
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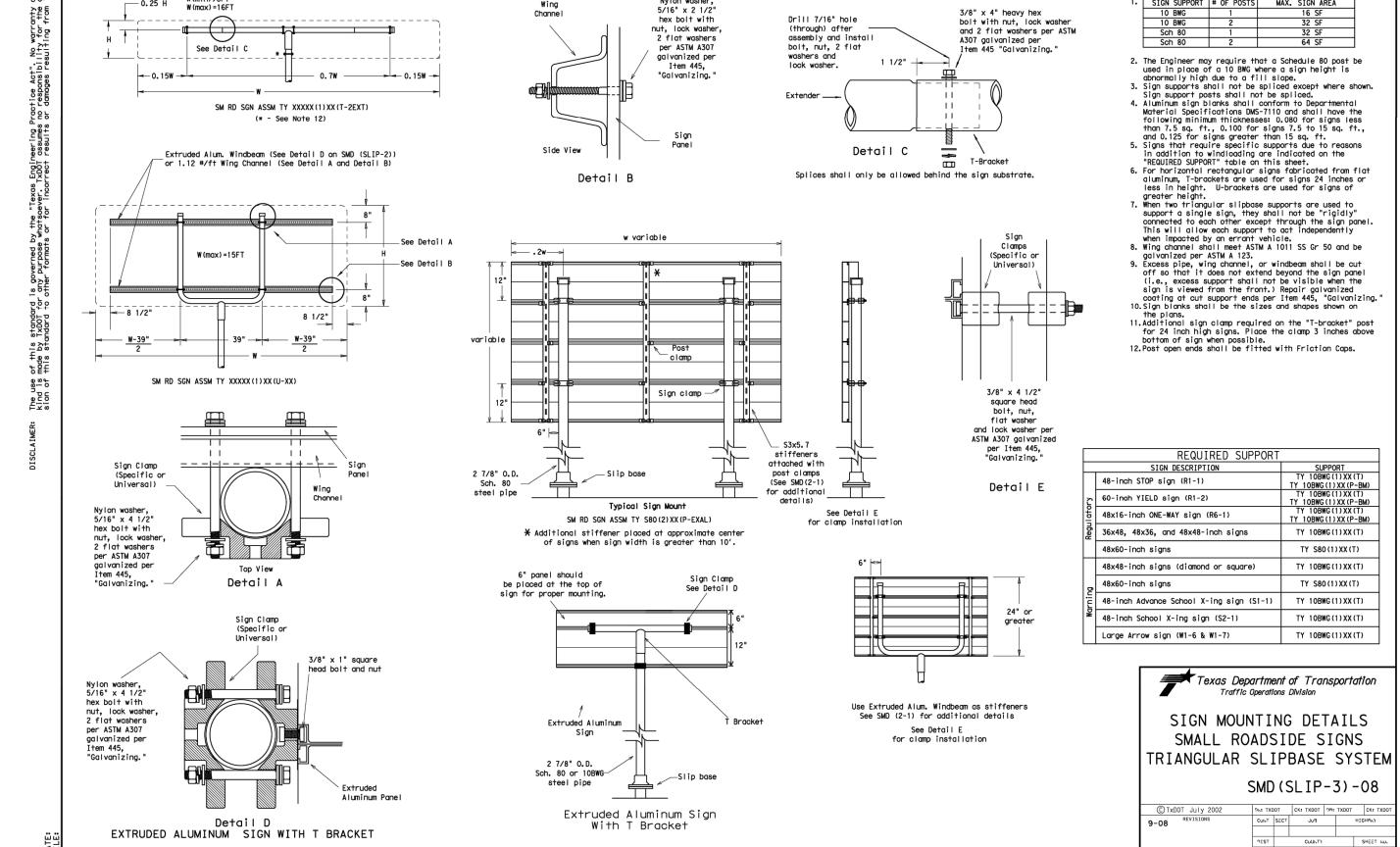
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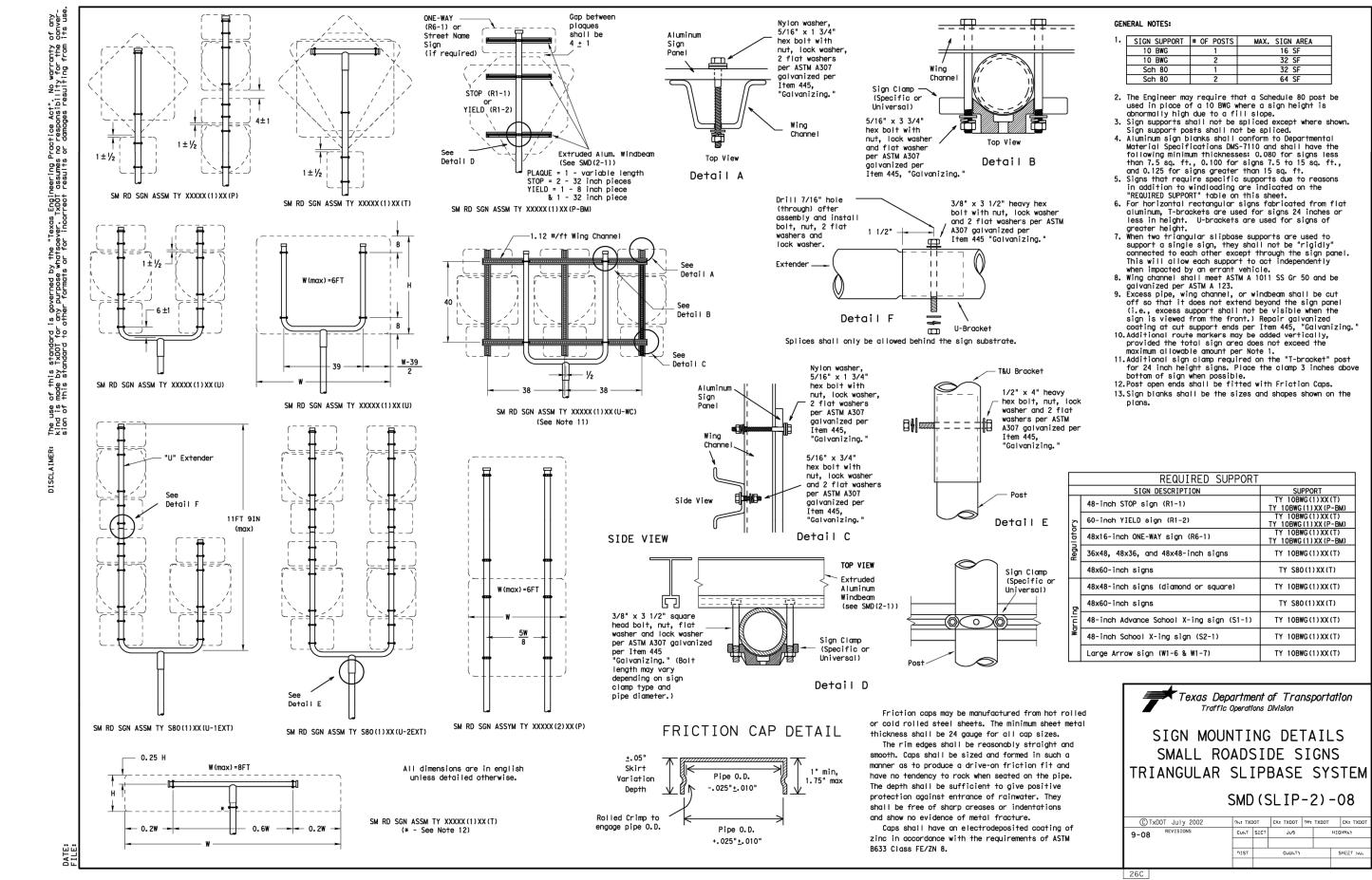
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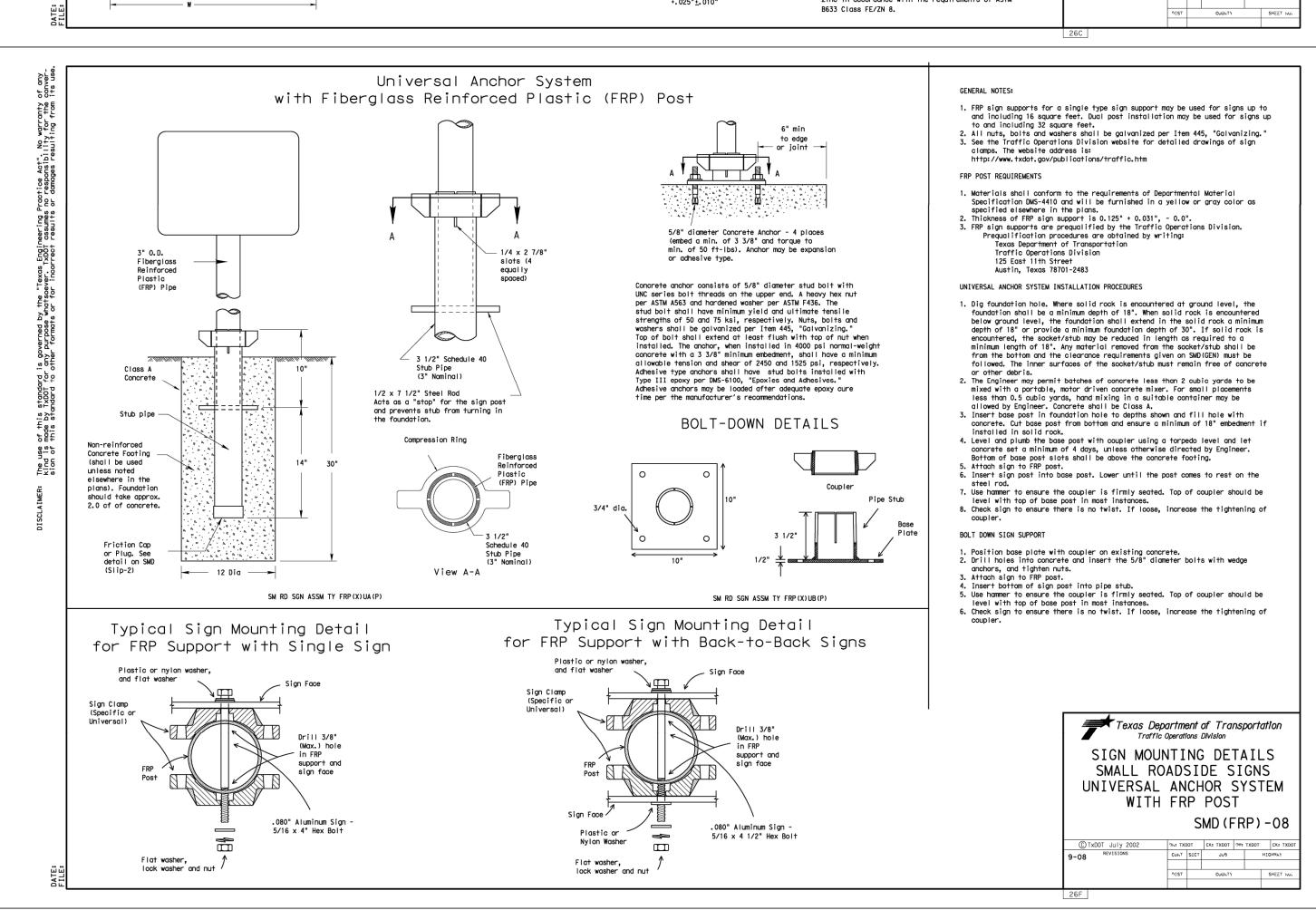
TRAFFIC SIGNAGE DETAILS
(SHEET 1 OF 2)

UMBER:











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VISIT: WWW CALL811 COM

BID SET NOT FOR CONSTRUCTION

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377

FOR
TALLEY EXTENSION
REVITALIZATION
INITIATIVE, LLC

BEXAR COUNTY TEXAS

Colliers

Engineering
& Design

3421 Paesanos Parkway San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC TBPE FIRM#: F-14909 TBPLS FIRM#: 10194550

SAN ANTONIO (KFW)

TBPLS Firm#: 10194550

CALE: DATE: DRAWN BY: CHECKED BY
AS SHOWN 02/26/25 JA CG

ROJECT NUMBER: DRAWING NAME:

205-41-13 TSDT2054113

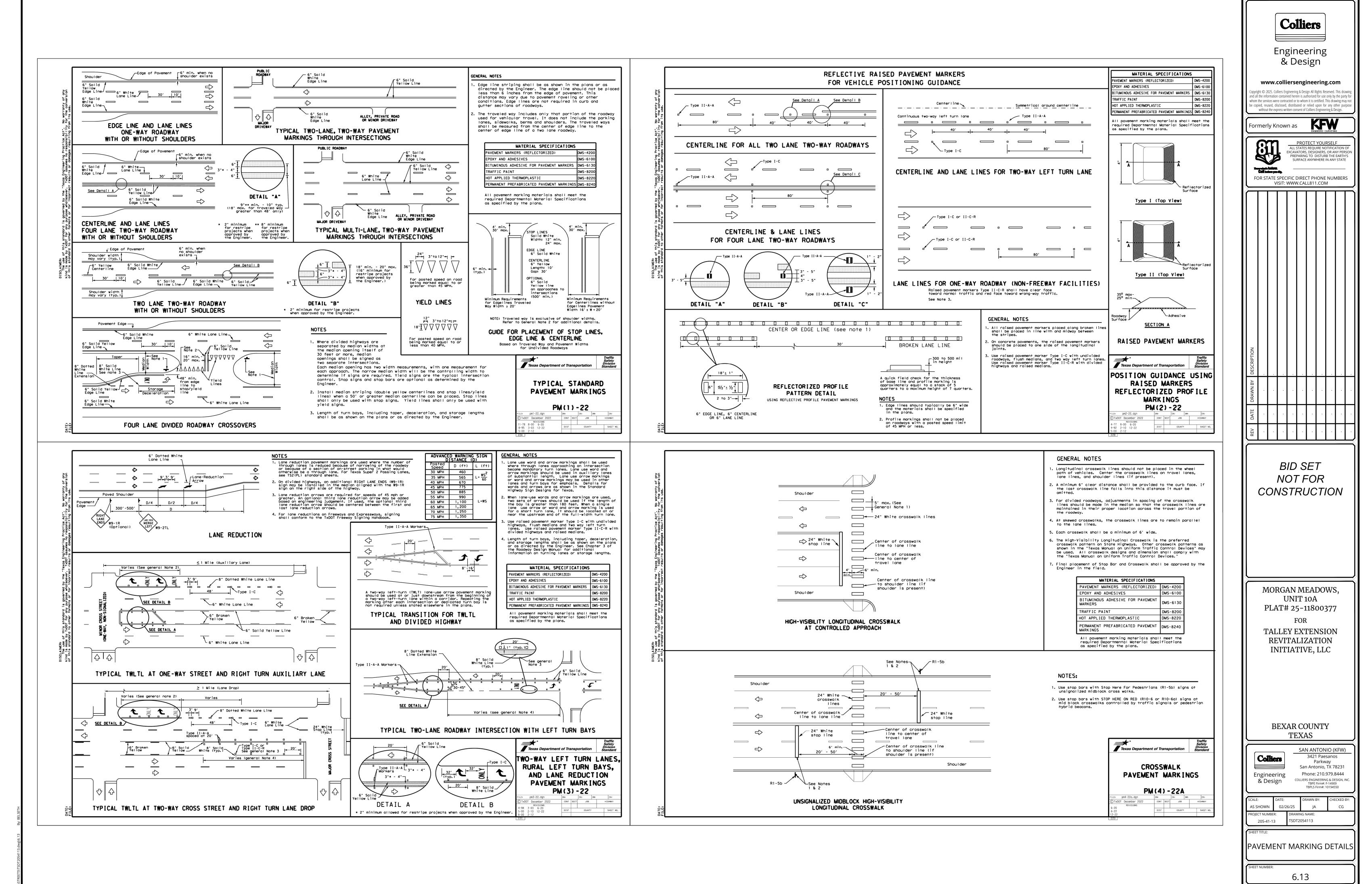
EET TITLE:

TRAFFIC SIGNAGE DETAILS

(SHEET 2 OF 2)

MBER:

6.12



MORGAN MEADOWS, UNIT 10A

BEXAR COUNTY, TEXAS SANITARY SEWER IMPROVEMENTS

SAWS STANDARD GENERAL CONSTRUCTION NOTES ASSOCIATED WITH 2021 SAWS STANDARD SPECS Updated December 14, 2021

General Section

- All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:
- A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Wastewater System", Texas Administrative Code (TAC) Title 30 Part 1
- Chapter 217 and "Public Drinking Water", TAC Title 30 Part 1 Chapter 290.

 B. Current TXDOT "Standard Specifications for Construction of Highways, Streets and
- C. Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
- D. Current City of San Antonio "Standard Specifications for Public Works Construction".

 E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).
- 2. The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction Inspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.
- The Contractor shall obtain the SAWS Standard Details from the SAWS website, http://www.saws.org/business_center/specs. Unless otherwise noted within the design plans.
- 4. The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.
- 5. Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate. Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS.
- 6. The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:

 SAWS Utility Locates: http://www.saws.org/Service/Locates
 COSA Drainage (210) 207-0724 or (210) 207-6026

COSA Traffic Signal Operations (210) 206-8480 COSA Traffic Signal Damages (210) 207-3951 Texas State Wide One Call Locator 1-800-545-6005 or 811

- The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.
- 8. All work in Texas Department of Transportation (TxDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.
- The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.
- 10. The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
- 11. Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should be sent to constworkreq@saws.org. Weekend Work: Contractors are required to notify the SAWS Inspection Construction Department 48 hours in advance to request weekend work. Request should be sent to constworkreq@saws.org. Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.
- 12. Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS Inspector and/or the test administrator, per each 12-inch loose lift per 400 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.
- 13. A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

Sewer Note

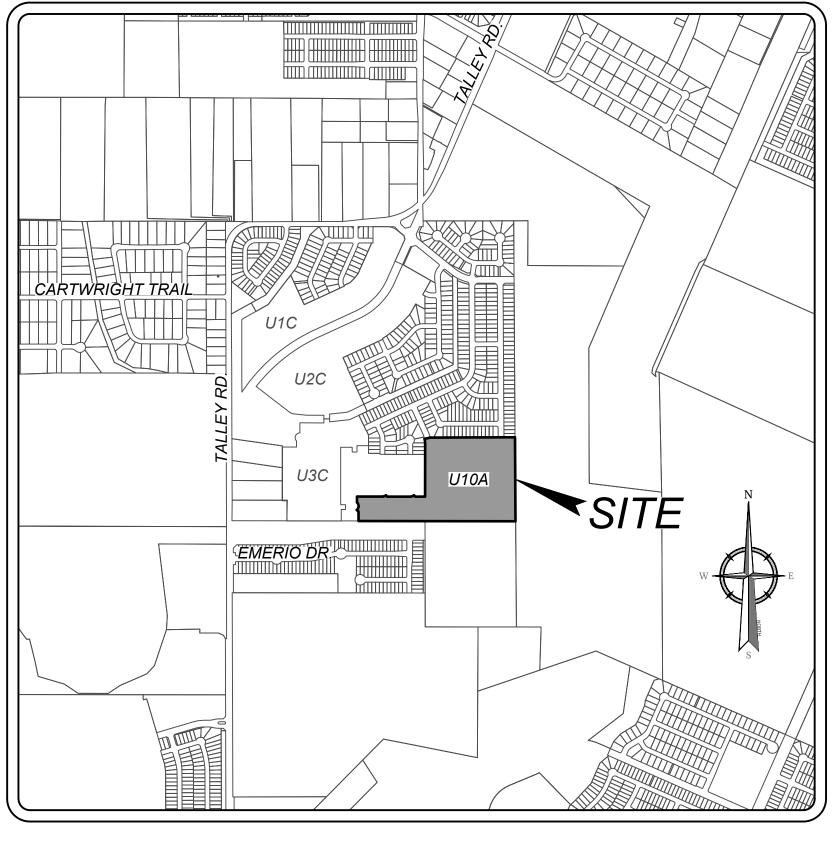
- 1. The Contractor is responsible for ensuring that no Sanitary Sewer Overflow (SSO) occurs as a result of their work. All contractor personnel responsible for SSO prevention and control shall be trained on proper response. Should an SSO occur, the contractor shall:
- A. Identify the source of the SSO and notify SAWS Emergency Operations Center (EOC) immediately at (210) 233-2014. Provide the address of the spill and an estimated volume or flow.
- B. Attempt to eliminate the source of the SSO.C. Contain sewage from the SSO to the extent of preventing a possible contamination of
- D. Clean up spill site (return contained sewage to the collection system if possible) and properly dispose of contaminated soil/materials.

by the TCEQ and SAWS.

E. Clean the affected sewer mains and remove any debris.
F. Meet all post-SSO requirements as per the EPA Consent Decree, including line cleaning and televising the affected sewer mains (at SAWS direction) within 24 hours. Should the Contractor fail to address an SSO immediately and to SAWS satisfaction, they will be responsible for all costs incurred by SAWS, including any fines from EPA, TCEQ and/or any other Federal, State or Local Agencies. No separate measurement or

payment shall be made for this work. All work shall be done according to guidelines set

- 2. If bypass pumping is required, the Contractor shall perform such work in accordance with SAWS Standard Specification for Water and Sanitary Sewer Construction, Item No. 864,
- 3. Prior to tie-ins, any shutdowns of existing force mains of any size must be coordinated with the SAWS Construction Inspection Division at (210) 233-2973 at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.
- Sewer pipe where water line crosses shall be 160 psi and meet the requirements of ASTM D2241, TAC 217.53 and TCEQ 290.44(e)(4)(B). Contractor shall center a 20' joint of 160 psi pressure rated PVC at the proposed water crossing.
- 5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: It shall be the responsibility of the Contractor to make allowances and adjustments for top of manholes to match the finished grade of the project's improvements. (NSPI)
- 6. Spills, Overflows, or Discharges of Wastewater: All spills, overflows, or discharges of wastewater, recycled water, petroleum products, or chemicals must be reported immediately to the SAWS Inspector assigned to the Counter Permit or General Construction Permit (GCP). This requirement applies to every spill, overflow, or discharge regardless of size.
- 7. Manhole and all pipe testing (including the TV inspection) must be performed and passed prior to Final Field Acceptance by SAWS Construction Inspection Division, as per the SAWS Specifications For Water and Sanitary Sewer Construction.
- 8. All PVC pipe over 14 feet of cover shall be extra strength with minimum pipe stiffness of 115 psi.

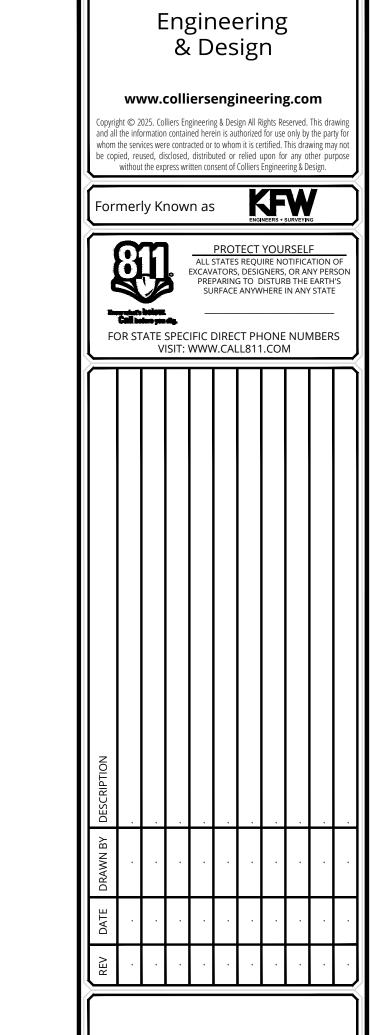


LOCATION MAP NOT-TO-SCALE

OWNER INFORMATION
TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC.
5210 THOUSAND OAKS, SUITE 1318
SAN ANTONIO, TX 78233

INDEX

INDLA	
SHEET TITLE	SHEET NUMBER
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OVERALL SANITARY SEWER PLAN (SHT 1 OF 2)	7.2
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LINE "A" PLAN & PROFILE (SHT 1 OF 2)	7.4
LINE "A" PLAN & PROFILE (SHT 2 OF 2)	7.5
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LINE "B" (SHT 2 OF 2) PLAN & PROFILE	- — — — — — — — —
LINE "C" PLAN & PROFILE	7.8
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BID SET NOT FOR CONSTRUCTION

MORGAN MEADOWS,
UNIT 10A
PLAT# 25-11800377
FOR
TALLEY EXTENSION

REVITALIZATION INITIATIVE, LLC

> BEXAR COUNTY TEXAS

ColliersEngineering & Design

SEWER: MEDIO CREEK WATERSHED - FAR WEST SEWERSHED - MEDIO CREEK W.R.C.

TOTAL ACREAGE: 23.16 AC.

TOTAL EDU'S: 114

PLAT NO.: 25-11800377

DEVELOPER'S NAME: TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS, SUITE 1318

TOTAL LINEAR FOOTAGE OF PIPE: 4,789.90 L.F. ~ 8" SDR 26

SAWS BLOCK MAP#: 068602, 068604,070604

CITY: SAN ANTONIO

NUMBER OF LOTS: 109

PHONE#:

SAN ANTONIO (KFW)

3421 Paesanos
Parkway
San Antonio, TX 78231
Phone: 210.979.8444

COLLIERS ENGINEERING & DESIGN, IN
TBPE Firm#: F-14909
TBPLS Firm#: 10194550

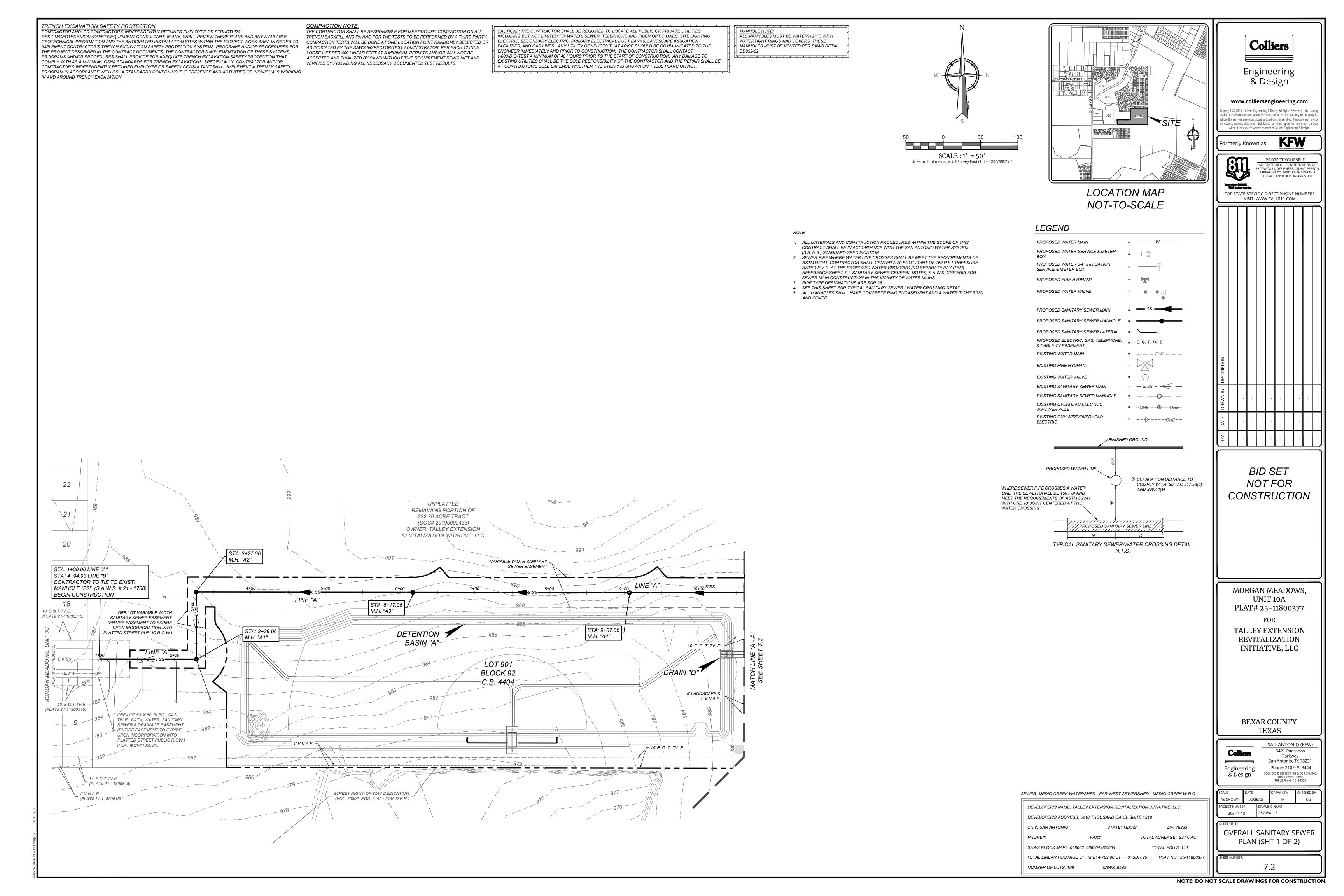
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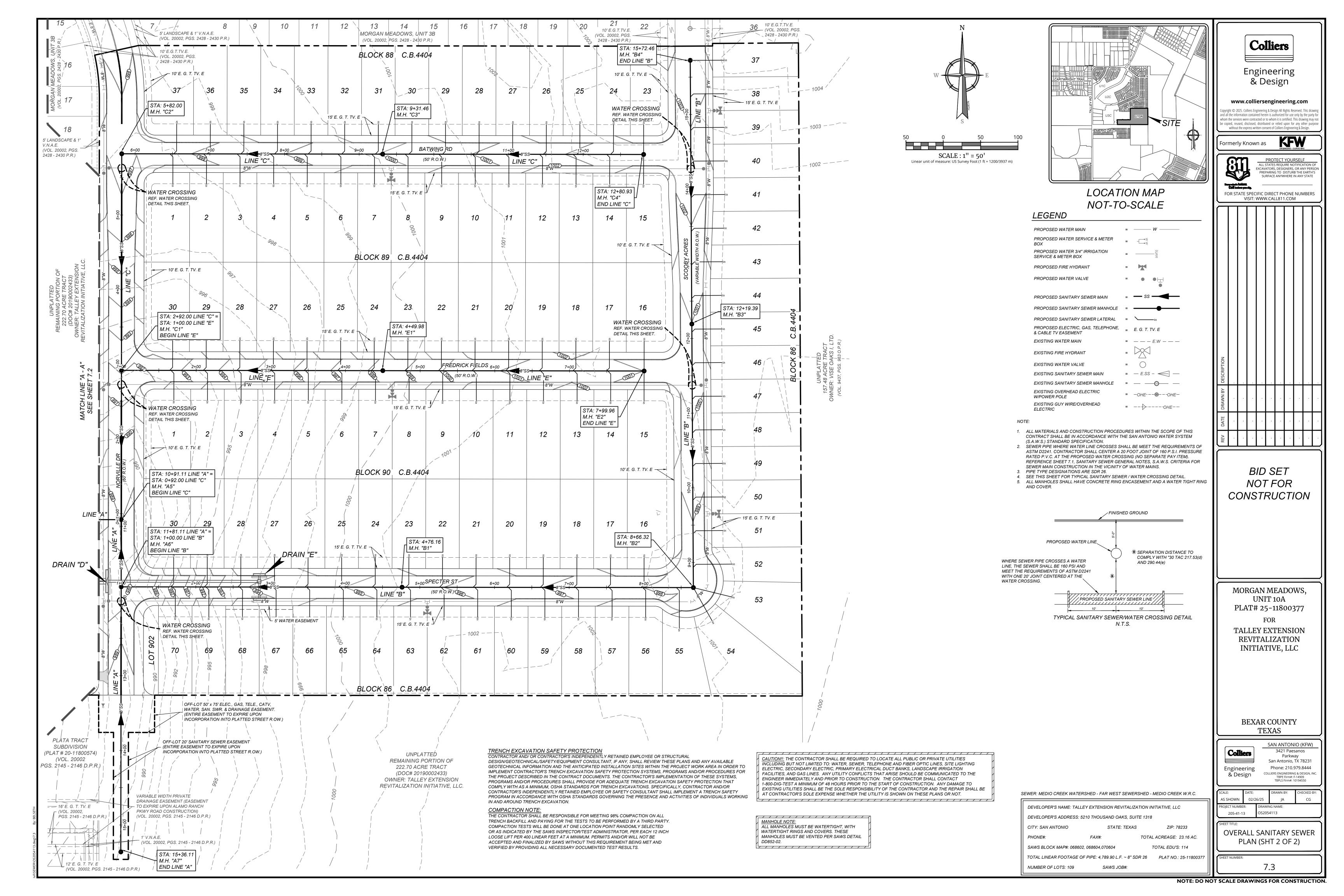
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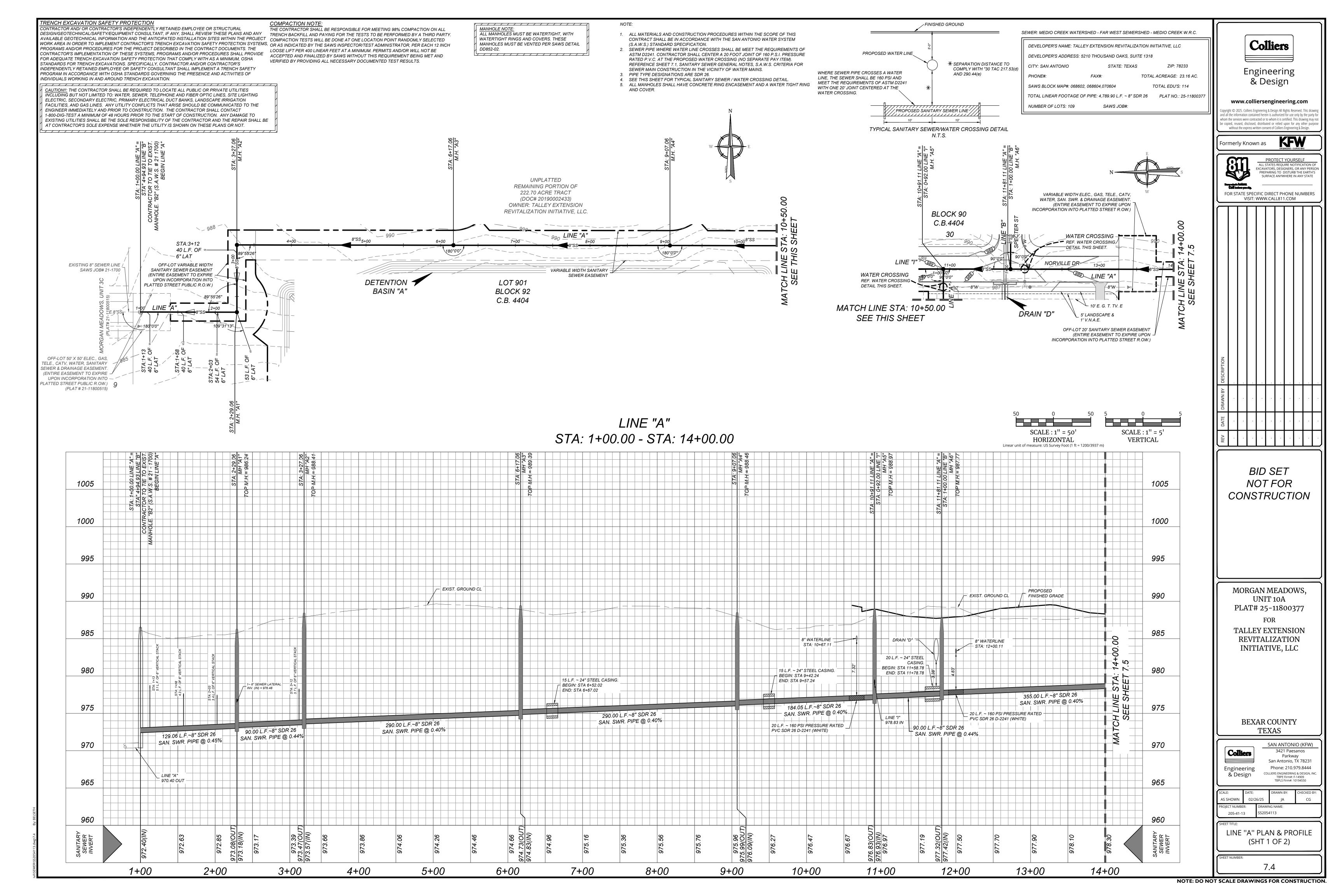
SANITARY SEWER

COVER SHEET

7.1







RENCH EXCAVATION SAFETY PROTECTION ONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL

DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF

INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

<u>CAUTION!!:</u> THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TEST A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE

AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

COMPACTION NOTE:

HE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND

VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

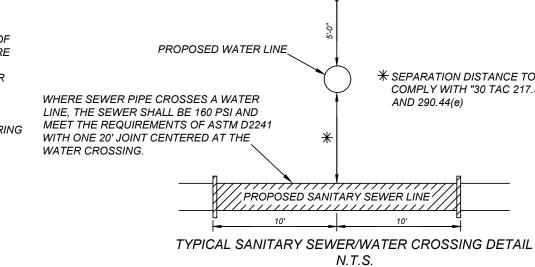
MANHOLE NOTE: ALL MANHOLES MUST BE WATERTIGHT, WITH WATERTIGHT RINGS AND COVERS. THESE MANHOLES MUST BE VENTED PER SAWS DETAIL DD852-02.

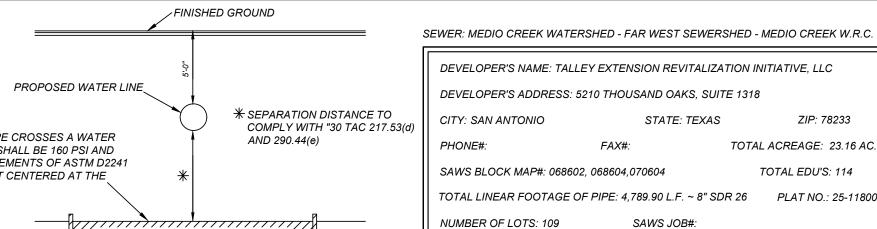
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM

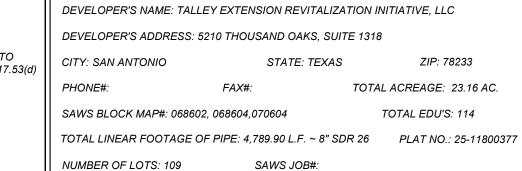
(S.A.W.S.) STANDARD SPECIFICATION. 2. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). REFERENCE SHEET 7.1, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS.

PIPE TYPE DESIGNATIONS ARE SDR 26. 4. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL. 5. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING

AND COVER.









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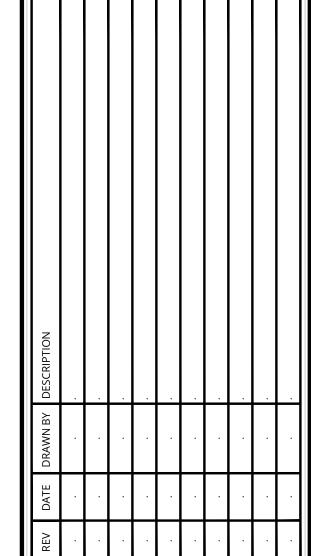
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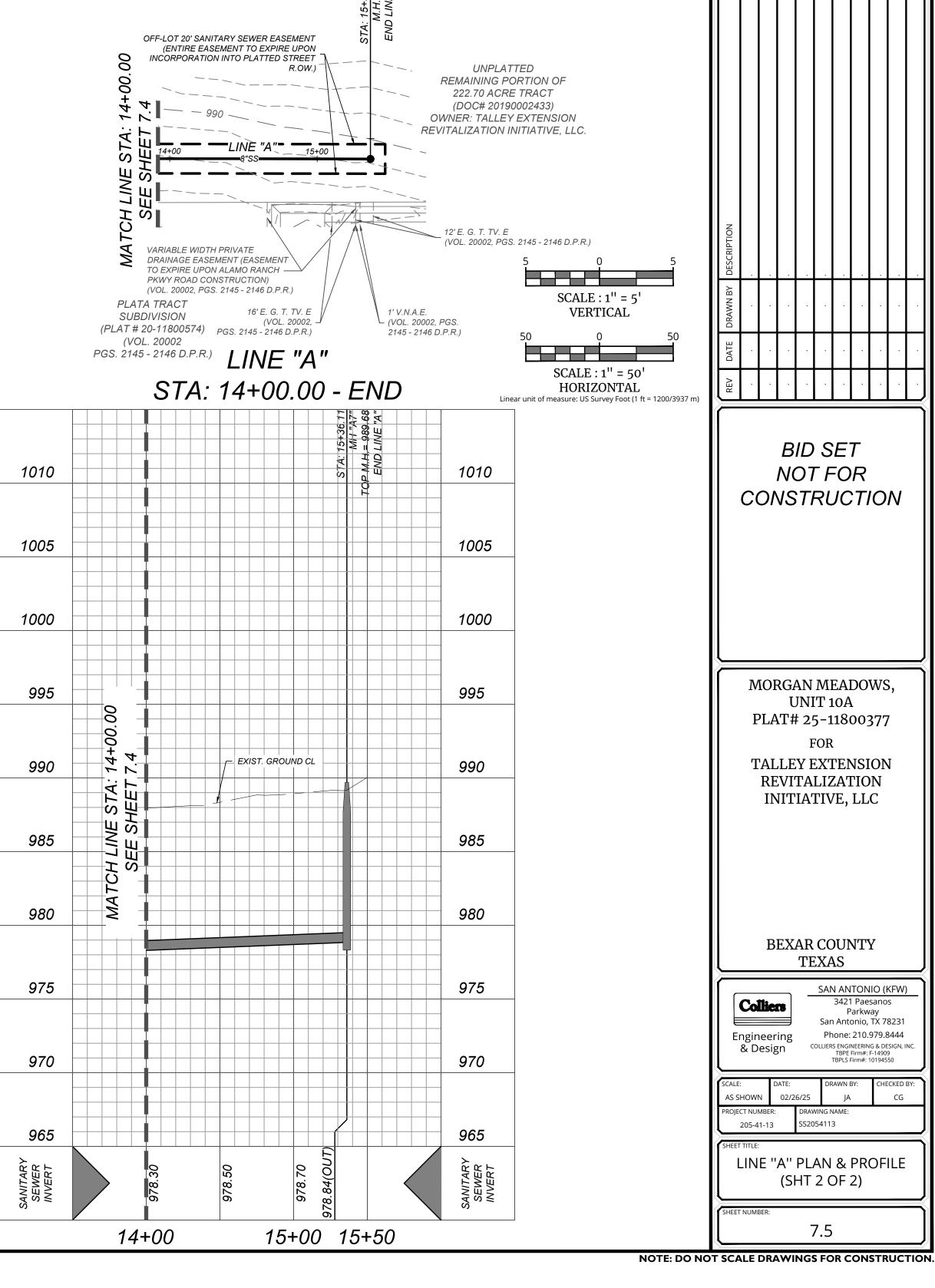


MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 FOR

REVITALIZATION INITIATIVE, LLC

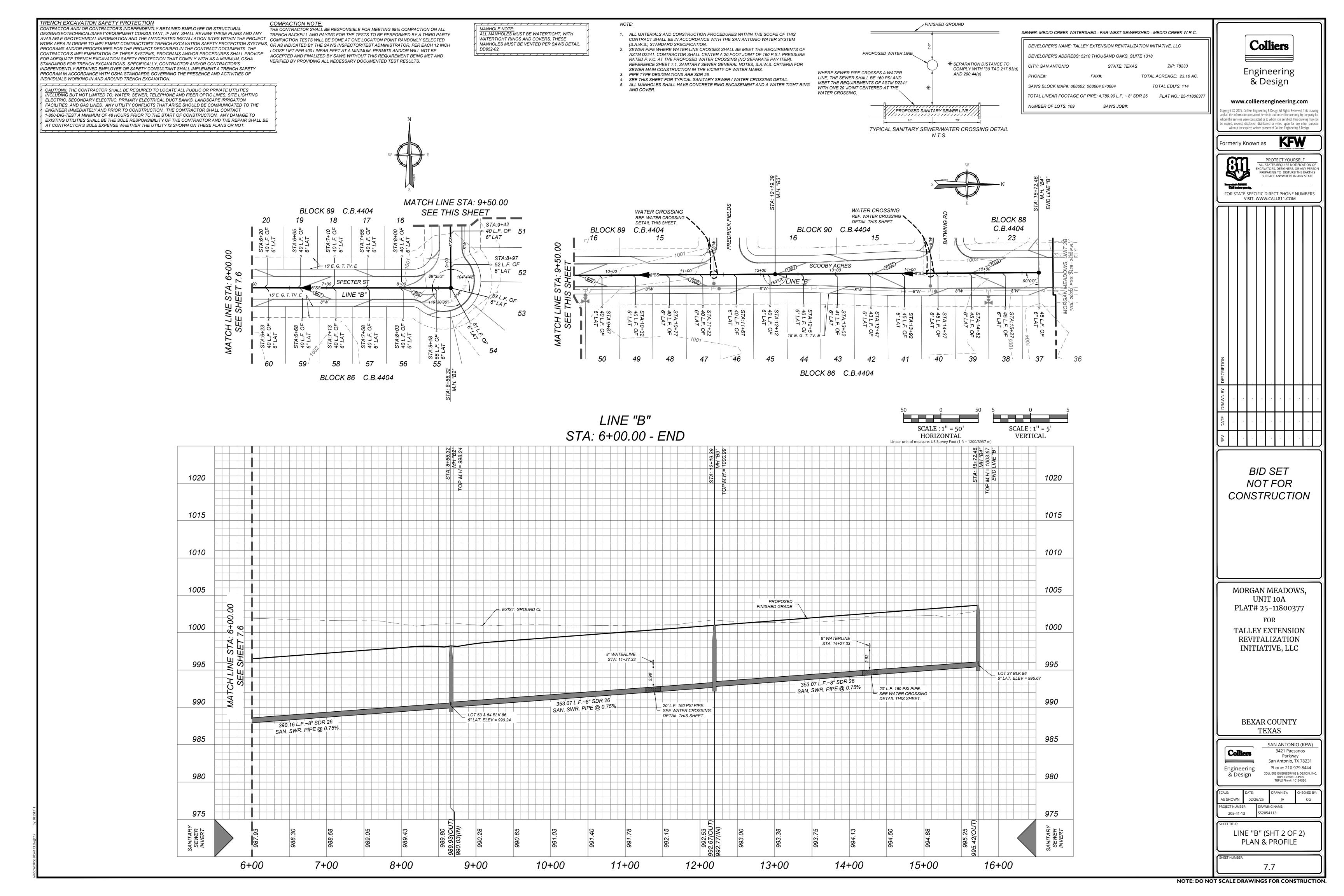
San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC. TBPE Firm#: F-14909 TBPLS Firm#: 10194550

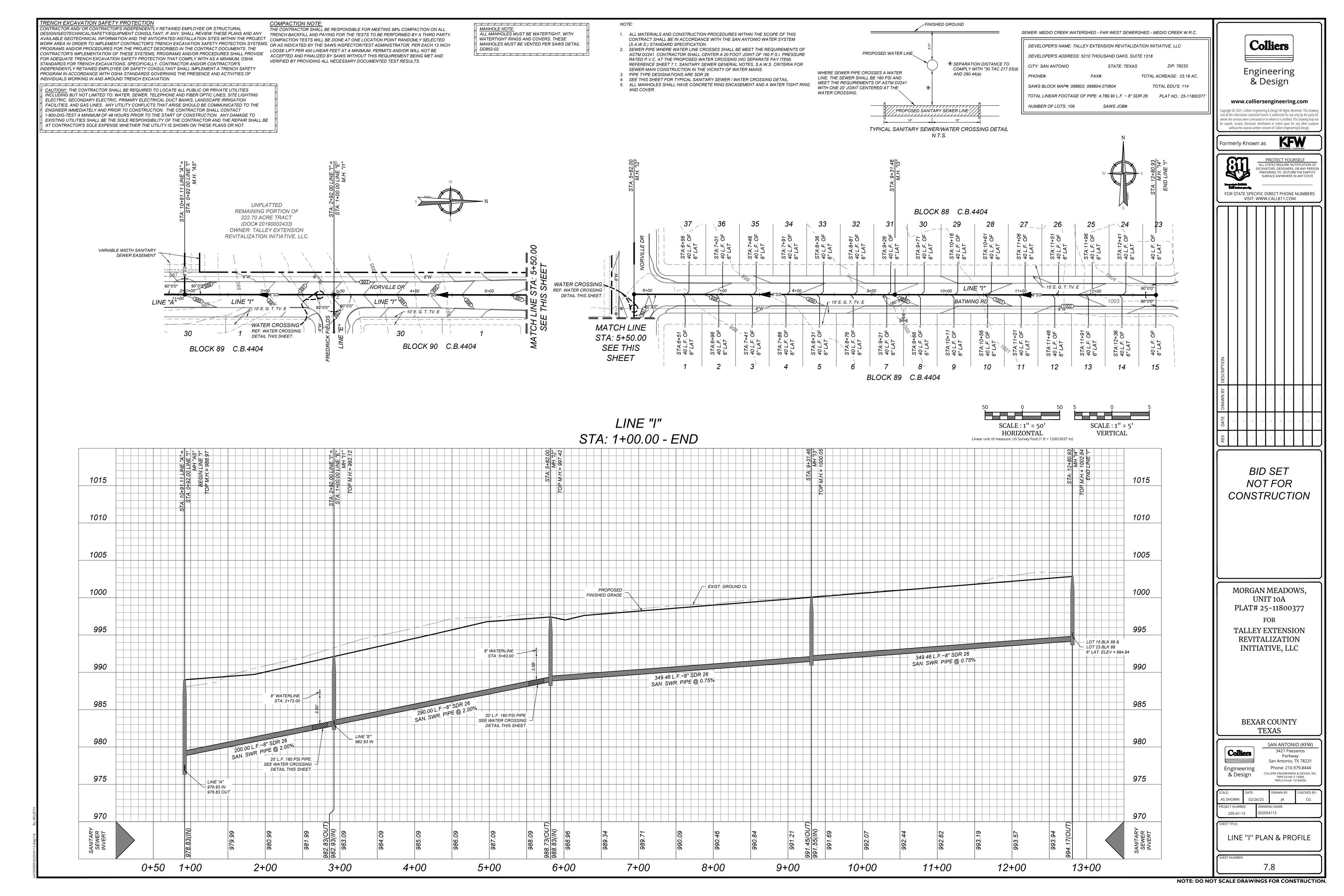
LINE "A" PLAN & PROFILE (SHT 2 OF 2)



ENCH EXCAVATION SAFETY PROTECTION **COMPACTION NOTE:** ∠FINISHED GROUND ONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL MANHOLE NOTE: SEWER: MEDIO CREEK WATERSHED - FAR WEST SEWERSHED - MEDIO CREEK W.R.C. DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY ALL MANHOLES MUST BE WATERTIGHT, WITH TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. 1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED WATERTIGHT RINGS AND COVERS. THESE CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH **Colliers** MANHOLES MUST BE VENTED PER SAWS DETAIL (S.A.W.S.) STANDARD SPECIFICATION. DEVELOPER'S NAME: TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE DD852-02. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE PROPOSED WATER LINE ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS, SUITE 1318 ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS. STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S REFERENCE SHEET 7.1, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR * SEPARATION DISTANCE TO CITY: SAN ANTONIO STATE: TEXAS ZIP: 78233 INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY COMPLY WITH "30 TAC 217.53(d) SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS. Engineering WHERE SEWER PIPE CROSSES A WATER PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF PIPE TYPE DESIGNATIONS ARE SDR 26. AND 290.44(e) TOTAL ACREAGE: 23.16 AC. PHONE#: LINE, THE SEWER SHALL BE 160 PSI AND INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL. & Design MEET THE REQUIREMENTS OF ASTM D2241 5. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING SAWS BLOCK MAP#: 068602, 068604,070604 TOTAL EDU'S: 114 WITH ONE 20' JOINT CENTERED AT THE <u>CAUTION!!:</u> THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING AND COVER. WATER CROSSING. TOTAL LINEAR FOOTAGE OF PIPE: 4,789.90 L.F. ~ 8" SDR 26 PLAT NO.: 25-11800377 ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION www.colliersengineering.com FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE NUMBER OF LOTS: 109 SAWS JOB#: ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT //PROPOSED SANITARY SEWER LINE/ 1-800-DIG-TEST A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO nd all the information contained herein is authorized for use only by the party f EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE whom the services were contracted or to whom it is certified. This drawing may pe copied, reused, disclosed, distributed or relied upon for any other purp AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT. without the express written consent of Colliers Engineering & Design. TYPICAL SANITARY SEWER/WATER CROSSING DETAIL N.T.S. **KFW** Formerly Known as PROTECT YOURSELF

ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSO PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE Thought below. BLOCK 90 C.B.4404 FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM 22 STA:5+ 40 L.F. 6" LAT STA:4+ 40 L.F. 6" LAT STA:4+ 40 L.F. 6" LAT DRAIN "D" 15' E.G.T.TV.E. DRAIN "É" | SPECTER ST LINE "Ŗ" - 15' E.G.T.TV.E. STA:1+ 40 L.F. 6" LAT STA:2+ 540 L.F. 6" LAT STA:2+ 40 L.F. 6" LAT STA:3+ 40 L.F. 6" LAT STA:5+ 40 L.F. 6" LAT STA:3+ 40 L.F. 6" LAT STA:4+ 40 L.F. 6" LAT 902 ST 40 6" ST 40 6". 107 5' WATER EASEMENT BLOCK 86 C.B.4404 SCALE: 1" = 5' VERTICAL LINE "B" SCALE: 1" = 50' STA: 1+00.00 - STA: 6+00.00 HORIZONTAL Linear unit of measure: US Survey Foot (1 ft = 1200/3937 BID SET 1010 NOT FOR CONSTRUCTION 1005 1005 EXIST. GROUND CL 1000 1000 PROPOSED . FINISHED GRADE 995 MORGAN MEADOWS, 995 UNIT 10A PLAT# 25-11800377 00 FOR 990 990 TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC 390.16 L.F.~8" SDR 26 SAN. SWR. PIPE @ 0.75% 985 985 980 20 L.F. ~ 24" STEEL CASING. BEGIN: STA 2+75.00 BEXAR COUNTY END: STA 2+95.00 **TEXAS** 975 975 SAN ANTONIO (KFW) 3421 Paesanos 977.42 IN 977.32 OUT San Antonio, TX 78231 Phone: 210.979.8444 Engineering COLLIERS ENGINEERING & DESIGN, INC. TBPE Firm#: F-14909 TBPLS Firm#: 10194550 & Design S2054113 205-41-13 LINE "B" (SHT 1 OF 2) PLAN & PROFILE 1+00 2+00 3+00 4+00 5+00 6+00





ENCH EXCAVATION SAFETY PROTECTION **COMPACTION NOTE:** ∠FINISHED GROUND ONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL HE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL MANHOLE NOTE: SEWER: MEDIO CREEK WATERSHED - FAR WEST SEWERSHED - MEDIO CREEK W.R.C. DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY ALL MANHOLES MUST BE WATERTIGHT, WITH TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. 1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED WATERTIGHT RINGS AND COVERS. THESE CONTRACT SHALL BE IN ACCORDANCE WITH THE SAN ANTONIO WATER SYSTEM WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTRATOR, PER EACH 12 INCH **Colliers** MANHOLES MUST BE VENTED PER SAWS DETAIL (S.A.W.S.) STANDARD SPECIFICATION. DEVELOPER'S NAME: TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE DD852-02. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE MEET THE REQUIREMENTS OF LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. PERMITS AND/OR WILL NOT BE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE PROPOSED WATER LINE ASTM D2241. CONTRACTOR SHALL CENTER A 20 FOOT JOINT OF 160 P.S.I. PRESSURE DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS, SUITE 1318 ACCEPTED AND FINALIZED BY SAWS WITHOUT THIS REQUIREMENT BEING MET AND FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA RATED P.V.C. AT THE PROPOSED WATER CROSSING (NO SEPARATE PAY ITEM). VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS. * SEPARATION DISTANCE TO STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S REFERENCE SHEET 7.1, SANITARY SEWER GENERAL NOTES, S.A.W.S. CRITERIA FOR CITY: SAN ANTONIO STATE: TEXAS ZIP: 78233 INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY COMPLY WITH "30 TAC 217.53(d) SEWER MAIN CONSTRUCTION IN THE VICINITY OF WATER MAINS. Engineering WHERE SEWER PIPE CROSSES A WATER PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF PIPE TYPE DESIGNATIONS ARE SDR 26. AND 290.44(e) TOTAL ACREAGE: 23.16 AC. PHONE#: LINE, THE SEWER SHALL BE 160 PSI AND INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION. 4. SEE THIS SHEET FOR TYPICAL SANITARY SEWER / WATER CROSSING DETAIL. & Design MEET THE REQUIREMENTS OF ASTM D2241 5. ALL MANHOLES SHALL HAVE CONCRETE RING ENCASEMENT AND A WATER TIGHT RING SAWS BLOCK MAP#: 068602, 068604,070604 TOTAL EDU'S: 114 WITH ONE 20' JOINT CENTERED AT THE <u>CAUTION!!:</u> THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING AND COVER. WATER CROSSING. TOTAL LINEAR FOOTAGE OF PIPE: 4,789.90 L.F. ~ 8" SDR 26 PLAT NO.: 25-11800377 ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION www.colliersengineering.com FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE NUMBER OF LOTS: 109 SAWS JOB#: ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT //PROPOSED SANITARY SEWER LINE/ 1-800-DIG-TEST A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO nd all the information contained herein is authorized for use only by the party f EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE whom the services were contracted or to whom it is certified. This drawing may be copied, reused, disclosed, distributed or relied upon for any other purp AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT. without the express written consent of Colliers Engineering & Design. TYPICAL SANITARY SEWER/WATER CROSSING DETAIL N.T.S. Formerly Known as PROTECT YOURSELF

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MORGAN MEADOWS, UNIT 10A

GENERAL WATER NOTES

All materials and construction procedures within the scope of this contract shall be approved by the San Antonio Water System (SAWS) and comply with the Plans, Specifications, General Conditions and with the following as applicable:

- A. Current Texas Commission on Environmental Quality (TCEQ) "Design Criteria for Domestic Waste water System", Texas Administrative Code (TAC) Title 30 Part 1 Chapter 217 and "Public Drinking"
- Water", TAC Title 30 Part 1 Chapter 290.

 B. Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
- Current TXDOT "Standard Specifications for Construction of Highways, Streets and Drainage".
 Current "San Antonio Water System Standard Specifications for Water and Sanitary Sewer Construction".
- D. Current City of San Antonio "Standard Specifications for Public Works Construction".
 E. Current City of San Antonio "Utility Excavation Criteria Manual" (UECM).

2. The contractor shall not proceed with any pipe installation work until they obtain a copy of the approved Counter Permit or General Construction Permit (GCP) from the consultant and has been notified by SAWS Construction I nspection Division to proceed with the work and has arranged a meeting with the inspector and consultant for the work requirements. Work completed by the contractor without an approved Counter Permit and/or a GCP will be subject to removal and replacement at the expense of the contractors and/or the developer.

3. The Contractor shall obtain the SAWS Standard Details from the SAWS website, http://www.saws.org/business_center/specs. Unless otherwise noted within the design plans.

4. The Contractor is to make arrangements with the SAWS Construction Inspection Division at (210) 233-2973, on notification procedures that will be used to notify affected home residents and/or property owners 48 hours prior to beginning any work.

5. Location and depth of existing utilities and service laterals shown on the plans are understood to be approximate.

Actual locations and depths must be field verified by the Contractor at least 1 week prior to construction. It shall be the Contractor's responsibility to locate utility service lines as required for construction and to protect them during construction at no cost to SAWS

6. The Contractor shall verify the exact location of underground utilities and drainage structures at least 1-2 weeks prior to construction whether shown on plans or not. Please allow up to 7 business days for locates requesting pipe location markers on SAWS facilities. The following contact information are supplied for verification purposes:

SAWS Utility Locates: http://www.saws.org/Service/Locates COSA Drainage (210) 207-0724 or (210) 207-6026 COSA Traffic Signal Operations (210) 206-8480 COSA Traffic Signal Damages (210) 207-3951 Texas State Wide One Call Locator 1-800-545-6005 or 811

7. The Contractor shall be responsible for restoring existing fences, curbs, streets, driveways, sidewalks, landscaping and structures to its original or better condition if damages are made as a result of the project's construction.

8. All work in Texas Department of Transportation (TxDOT) and/or Bexar County right-of-way shall be done in accordance with respective construction specifications and permit requirements.

9. The Contractor shall comply with City of San Antonio or other governing municipality's tree ordinances when excavating near trees.

10. The Contractor shall not place any waste materials in the 100-year Flood Plain without first obtaining an approved Flood Plain Permit.
11. Holiday Work: Contractors will not be allowed to perform SAWS work on SAWS recognized holidays. Request should

Weekend Work: Contractors are required to notify the SAWS Inspection Construction

Department 48 hours in advance to request weekend work. Request should be sent to constworkreq@saws.org.

Any and all SAWS utility work installed without holiday/weekend approval will be subject to be uncovered for proper inspection.

12. Compaction note (Item 804): The contractor shall be responsible for meeting the compaction requirements on all trench backfill and for paying for the tests performed by a third party. Compaction tests will be done at one location point randomly selected, or as indicated by the SAWS Inspector and/or the test administrator, per each 12-inch loose lift per 400 linear feet at a minimum. This project will not be accepted and finalized by SAWS without this requirement being met and verified by providing all necessary documented test results.

13. A copy of all testing reports shall be forwarded to SAWS Construction Inspection Division.

Water Section

be sent to constworkreq@saws.org.

1. Prior to tie-ins, any shutdowns of existing mains of any size must be coordinated with the SAWS Construction Inspection Division at least one week in advance of the shutdown. The Contractor must also provide a sequence of work as related to the tie-ins; this is at no additional cost to SAWS or the project and it is the responsibility of the Contractor to sequence the work accordingly.

■ For water mains 12" or higher: SAWS Emergency Operations Center (210) 233-2014

2. Asbestos Cement (AC) pipe, also known as transite pipe which is known to contain asbestos containing material (ACM), may be located within the project limits. Special waste management procedures and health and safety requirements will be applicable when removal and/or disturbance of this pipe occurs. Such work is to be made under Special Specification Item No. 3000, "Special Specification for Handling Asbestos Cement Pipe".

3. Valve removal: Where the contractor is to abandon a water main, the control valve located on the abandoning branch will be removed and replaced with a cap/plug. (NSPI)

4. Suitable anchorage/thrust blocking or joint restraint shall be provided at all of the following main locations: dead ends, plugs, caps, tees, crosses, valves, and bends, in accordance with the Standard Drawings DD-839 Series and Item No. 839, in the SAWS Standard Specifications for Construction.

5. All valves shall read "open right".

6. PRVs Required: Contractor to verify that no portion of the tract is below ground elevation of 985 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 985 feet, the Developer or Builder shall install at each lot, on the customer's side of the meter, an approved type pressure regulator in conformance with the Plumbing Code of the City of San Antonio. No dual services allowed for any lot(s) if *PRV is/are required for such lot(s), only single service connections shall be allowed. *Note: A pressure regulator is also known as a pressure reducing valve (PRV).

7. Pipe Disinfection with Dry HTH for Projects less than 800 linear feet. (Item No. 847.3): Mains shall be disinfected with dry HTH where shown in the contract documents or as directed by the Inspector, and shall not exceed a total length of 800 feet. This method of disinfection will also be followed for main repairs. The Contractor shall utilize all appropriate safety measure to protect his personnel during disinfection operations.

8. Backflow Prevention Devices:

All irrigation services within residential areas are required to have backflow prevention devices.
 All commercial backflow prevention devices must be approved by SAWS prior to installation.

9. Final connection to the existing water main shall not be made until the water main has been

pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

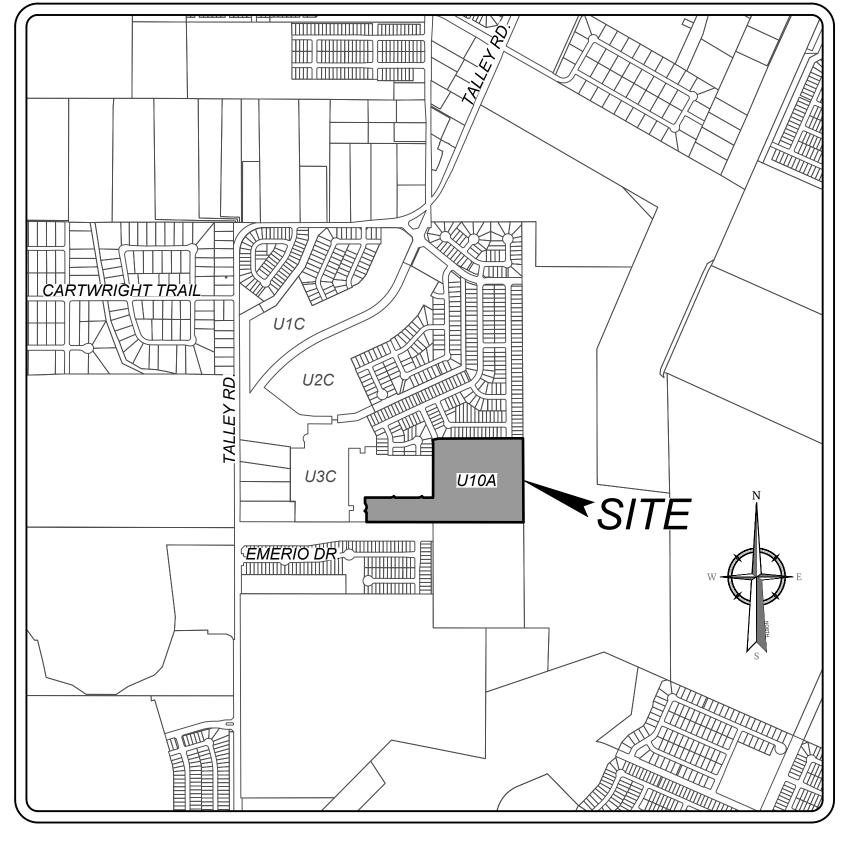
10. DIVISION VALVES: DIVISION VALVES SHOWN ON PLANS OR NOT SHOWN ON PLANS BUT FOUND IN THE FIELD SHALL ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF AND ONLY WITH PRIOR WRITTEN APPROVAL OF THE SAWS DIRECTOR OF PRODUCTION AND OPERATIONS AND PROPER COORDINATION WITH ALL SAWS DEPARTMENTS. CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE INSPECTOR A MINIMUM OF TWO WEEKS IN ADVANCE TO START THE COORDINATION PROCESS AND WILL BE INFORMED BY THE INSPECTOR WHEN THE DIVISION VALVE WILL BE OPERATED BY THE SAWS DISTRIBUTION AND COLLECTION STAFF. THE DIVISION VALVE CAN ONLY BE OPERATED BY SAWS DISTRIBUTION AND COLLECTION STAFF MEMBER NOT THE INSPECTOR OR THE CONTRACTOR. OPERATION OF A DIVISION VALVE WITHOUT THE EXPRESS PRIOR

WRITTEN APPROVAL OF THE SAWS DISTRIBUTION AND COLLECTION STAFF WILL CONSTITUTE A

MATERIAL BREACH OF ANY WRITTEN SAWS CONTRACT OR PERMIT IN ADDITION TO SUBJECTING THE

CONTRACTOR TO LIABILITY FOR ANY AND ALL FINES, FEES, OR OTHER DAMAGES, DIRECT OR
CONSEQUENTIAL, THAT MAY ARISE FROM OR BE CAUSED BY THE OPERATION OF THE VALVE WITHOUT
PRIOR WRITTEN PERMISSION. PLEASE BE INFORMED THAT THE APPROVAL OF THE OPERATION OR
OPENING OR CLOSING OF A DIVISION VALVE CAN TAKE SEVERAL WEEKS FOR APPROVAL. DIVISION
VALVES WILL ALSO HAVE A VALVE LID LABELED DIVISION VALVE AND A LOCKING MECHANISM INSTALLED WITH A
KEY, THE LOCK AND KEY MECHANISM WILL BE PAID FOR BY THE CONTRACTOR BUT WILL BE INSTALLED BY SAWS
DISTRIBUTION AND COLLECTION STAFF.

BEXAR COUNTY, TEXAS WATER DISTRIBUTION IMPROVEMENTS



LOCATION MAP NOT-TO-SCALE

OWNER INFORMATION
TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC
5210 THOUSAND OAKS, SUITE 1318
SAN ANTONIO, TX 78233

INDEX

SHEET TITLE	SHEET NUMBER	
WATER DISTRIBUTION COVER SHEET	8.1	
WATER DISTRIBUTION PLAN	8.2	

ALL STATES REQUIRE NOTIFICATION C EXCAVATORS, DESIGNERS, OR ANY PERS FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW CALL811 COM BID SET **NOT FOR** CONSTRUCTION MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377 TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC **BEXAR COUNTY** TEXAS SAN ANTONIO (KFW) 3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 Engineering & Design TBPLS Firm#: 10194550 PRESSURE ZONE 8 (HGL1770)

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ECT NUMBER: DRAWING NAME: CVOW2054113

ET TITLE: WATER DISTRIBUT

DEVELOPER'S NAME: TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

STATE: TEXAS

SAWS JOB#:

ZIP: 78233

TOTAL ACREAGE: 23.16 AC.

TOTAL EDU'S: 110.5

PLAT NO.: 25-11800377

DEVELOPER'S ADDRESS: 5210 THOUSAND OAKS, SUITE 1318

TOTAL LINEAR FOOTAGE OF PIPE: 4,009 L.F. ~ 8" C900 PVC

SAWS BLOCK MAP#: 068602, 068604,070604

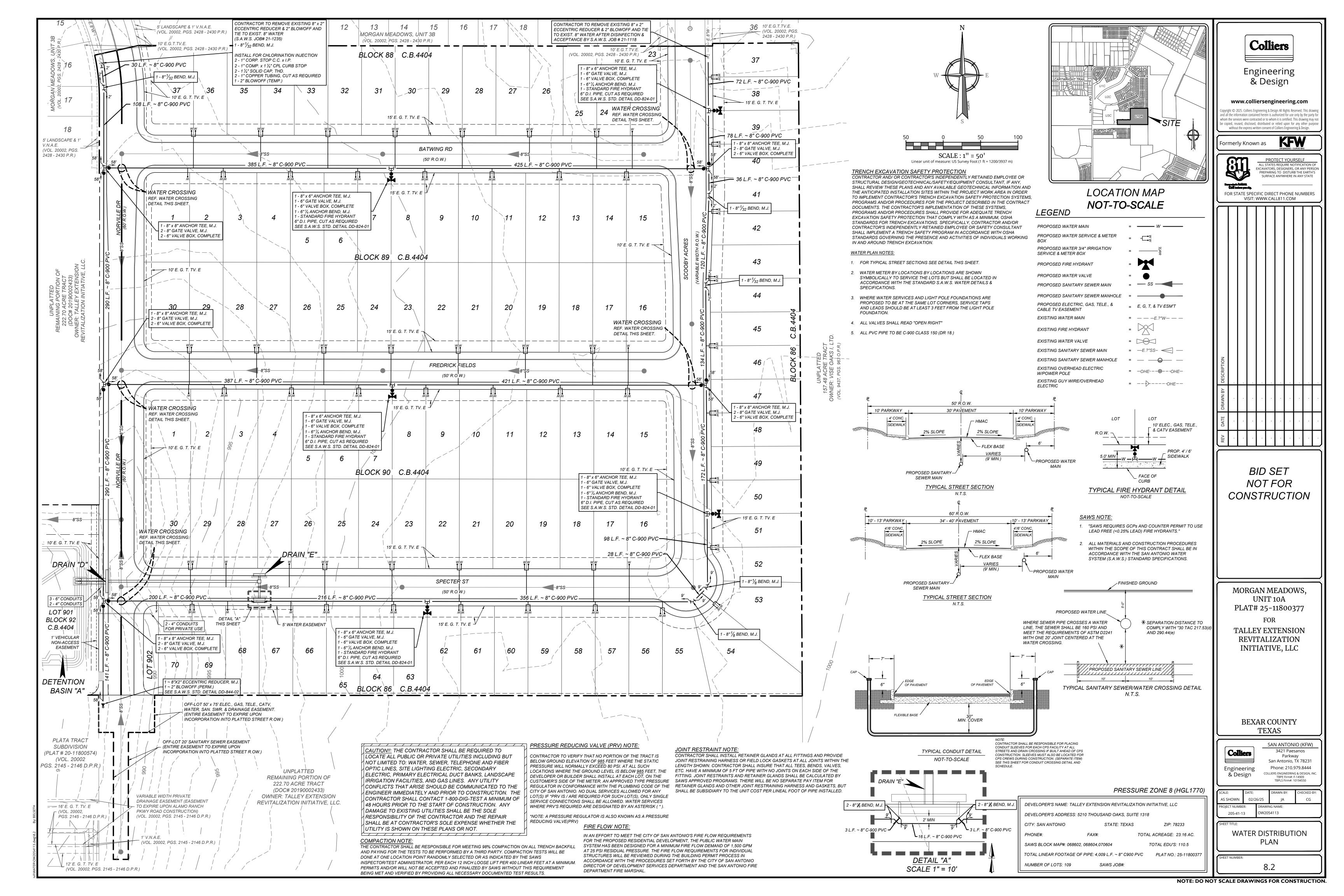
CITY: SAN ANTONIO

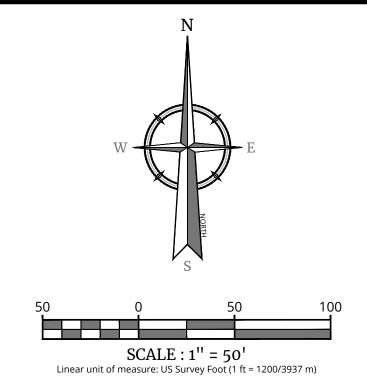
NUMBER OF LOTS: 109

PHONE#:

WATER DISTRIBUTION COVER SHEET

8.1





INSTALLATION:

OF THE SITE BOUNDARY.

RESPONSIBLE PARTY.

RESPONSIBLE PARTY.

UPDATED ON THIS PLAN.

MAINTENANCE AND INSPECTION:

SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

SIGNATURE AND DATE OF THE RESPONSIBLE PARTY.

STARTING CONSTRUCTION ACTIVITIES.

1. ALL OPERATORS SHALL SUBMIT A NOTICE OF INTENT (NOI) AT LEAST 48 HOURS IN

3. CONTRACTOR MAY INSTALL THE BEST MANAGEMENT PRACTICES IN PHASES THAT COINCIDE WITH THE DISTURBANCE OF UP GRADIENT AREAS. THIS PHASING SHOULD BE

2. CONTRACTOR TO ENSURE THAT STRUCTURAL BMP'S ARE INSTALLED WITHIN THE LIMITS

NOTED WITHIN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE

4. CONTRACTOR TO VERIFY SUFFICIENT VEGETATION IN AREAS DENOTED AS VEGETATED

TO BE DISTURBED ON THIS PLAN. IF ADDITIONAL VEGETATED AREAS ARE DISTURBED,

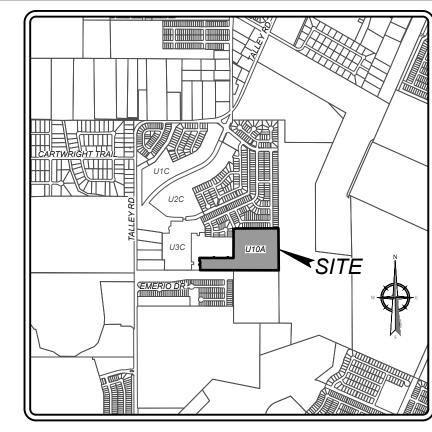
THE AREAS HAVE BEEN STABILIZED AS PER THE SPECIFICATIONS OF THE SWPPP. THE AREAS OF THIS ADDITIONAL SOIL DISTURBANCE AND THE MEASURES USED SHOULD BE SHOWN ON THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE

2. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF BMP'S AS PER

AND THE SITE PLAN AND NOTED WITHIN THE MODIFICATIONS SECTION WITH THE

3. LOCATION OF CONSTRUCTION ENTRANCE/EXIT, CONCRETE WASHOUT PIT, AND EQUIPMENT AND STORAGE ARE TO BE FIELD DETERMINED. LOCATIONS SHALL BE

DIFFERENT BEST MANAGEMENT PRACTICE AND WILL SHOW IT ON THIS PLAN WITH NOTATION IN THE MODIFICATIONS SECTION WITH THE SIGNATURE AND DATE OF THE



LOCATION MAP NOT-TO-SCALE

ADVANCE AND ALL BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE IN PLACE PRIOR TO — — 570 — — FILTER STRIP. IF INSUFFICIENT VEGETATION EXISTS, CONTRACTOR SHALL IMPLEMENT A 1. CONTRACTOR SHOULD LIMIT CONSTRUCTION ACTIVITIES TO ONLY THOSE AREAS SHOWN THEY SHOULD BE PROTECTED WITH APPROPRIATE BEST MANAGEMENT PRACTICES UNTIL THE SPECIFICATIONS OF THE SWPPP. THE CONTRACTOR MAY MODIFY THE CONTROLS AS NECESSARY TO PREVENT SEDIMENT RUNOFF. THESE MODIFICATIONS SHOULD BE SHOWN

CONSTRUCTION EXISTING CONTOURS

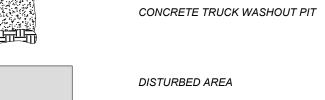
FLOW ARROW

PROPOSED CONTOURS

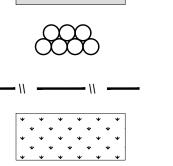
LEGEND

STABILIZED CONSTRUCTION ENTRANCE/EXIT CONSTRUCTION EQUIPMENT, VEHICLE &

MATERIALS STORAGE AREA.



ROCK BERM



SILT FENCE PHASE 1 (SILT FENCE PHASE 2 ALONG THE FRONT OF LOTS TO BE INSTALLED AFTER PAVING) NATURAL VEGETATIVE BUFFER

INLET WITH PROTECTION (GRAVEL FILTERS BAGS)

COORDINATION NOTE:

1. CONTACT TIME WARNER TO COORDINATE CABLE

FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

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PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSO

PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE

Formerly Known as

BID SET CONSTRUCTION

MORGAN MEADOWS, UNIT 10A PLAT# 25-11800377

TALLEY EXTENSION REVITALIZATION INITIATIVE, LLC

BEXAR COUNTY TEXAS

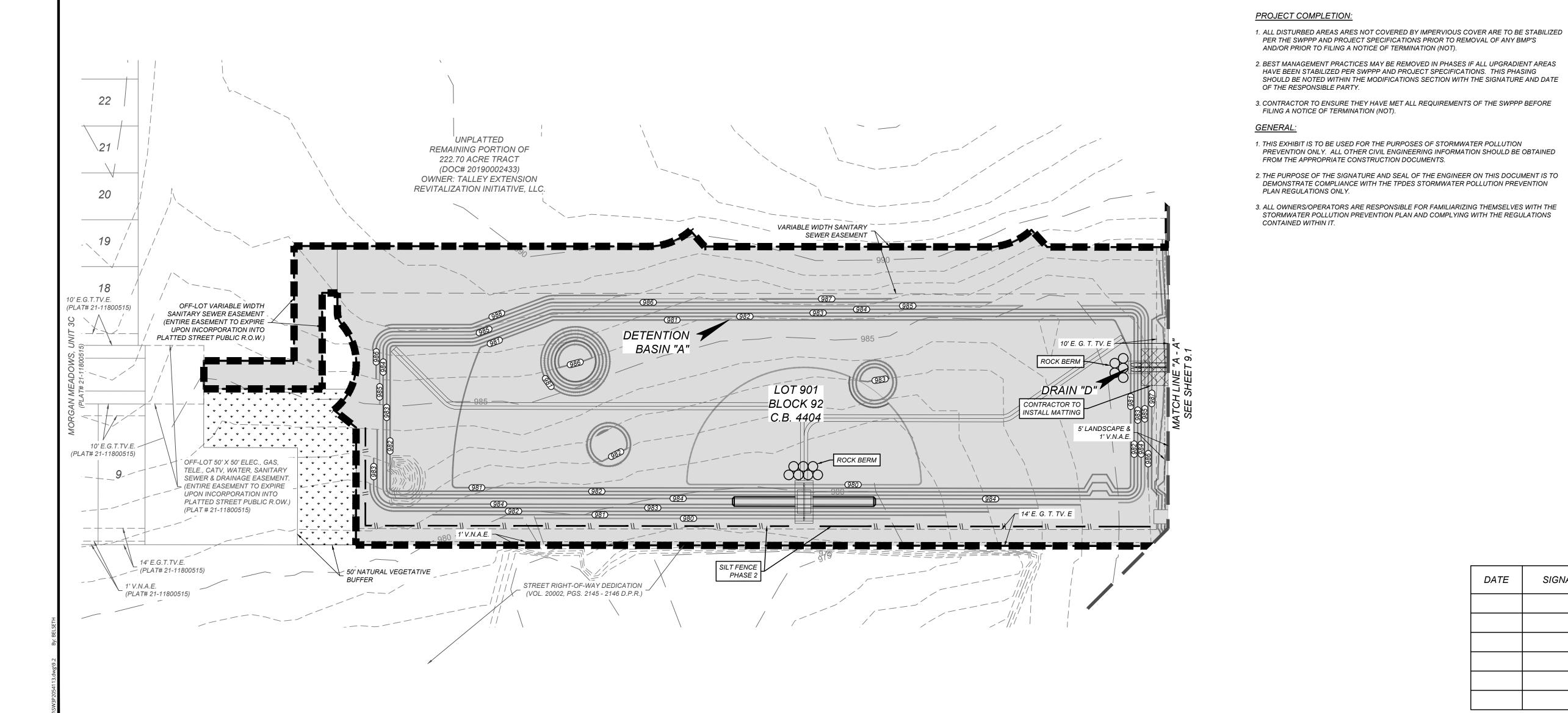
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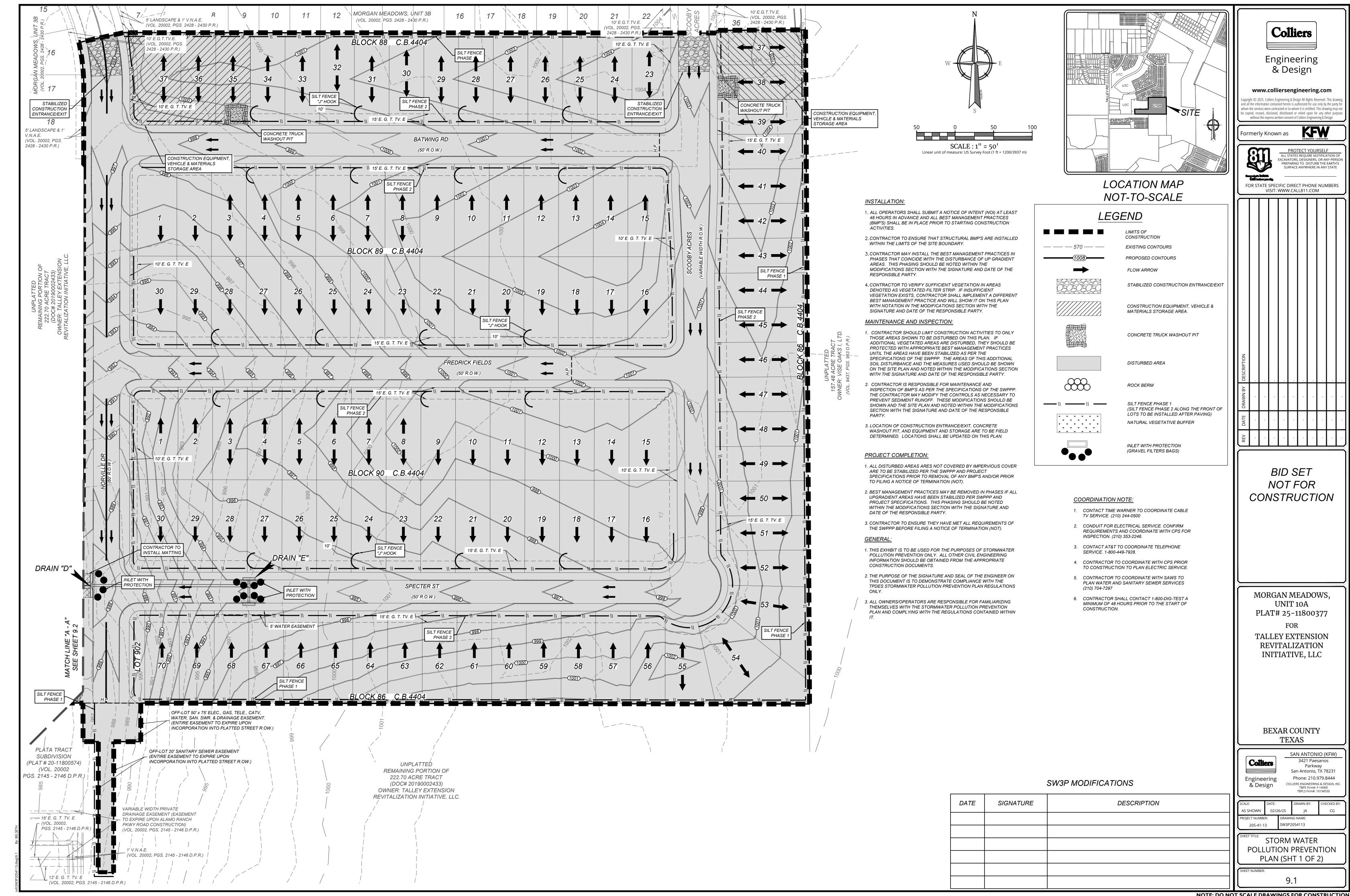
SAN ANTONIO (KFW) 3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 COLLIERS ENGINEERING & DESIGN, INC TBPE Firm#: F-14909 TBPLS Firm#: 10194550

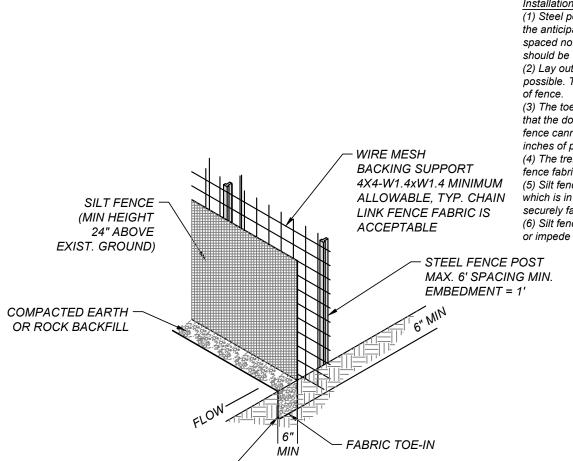
SW3P2054113 205-41-13 STORM WATER

POLLUTION PREVENTION PLAN (SHT 2 OF 2)

SW3P MODIFICATIONS SIGNATURE DESCRIPTION







ISOMETRIC PLAN VIEW

SECTION A-A

Inspection and Maintenance Guidelines:

(1) Inspect all fencing weekly, and after any rainfall.

(2) Remove sediment when buildup reaches 6 inches.

may be preferable to a silt fence at common vehicle access points.

(3) Replace any torn fabric or install a second line of fencing parallel to the torn section.

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

(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.

(4) Replace or repair any sections crushed or collapsed in the course of construction

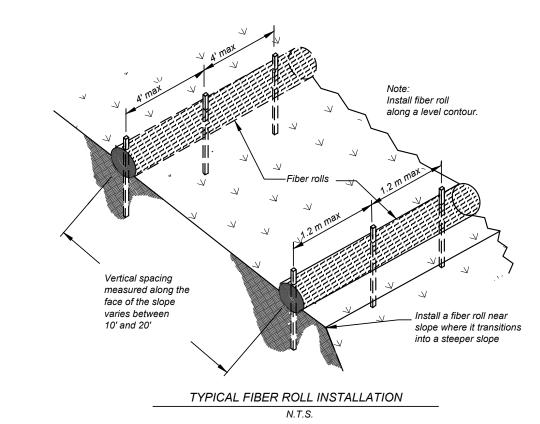
(1) Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No.

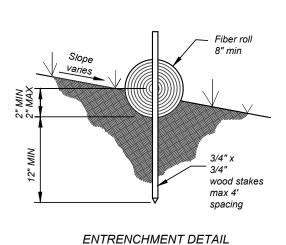
(2) Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/fl2, and (3) Woven wire backing to support the fabric should be galvanized 2" x 4" welded wire, 12

(1) Steel posts, which support the silt fence, should be installed on a slight angle toward the anticipated runoff source. Post must be embedded a minimum of 1- foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet. (2) Lay out fencing down-slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is 1/4 acre/i 00 feet

(3) The toe of the silt fence should be trenched in with a spade or mechanical trencher, so that the down- slope face of the trench is flat and perpendicular to the line of flow. Where fence cannot be trenched in (e.g., pavement or rock outcrop), weight fabric flap with 3 inches of pea gravel on uphill side to prevent flow from seeping under fence. (4) The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material. 4X4-W1.4xW1.4 MINIMUM (5) Silt fence should be securely fastened to each steel support post or to woven wire, ALLOWABLE, TYP. CHAIN which is in turn attached to the steel fence post. There should be a 3-foot overlap,

securely fastened where ends of fabric meet. (6) Silt fence should be removed when the site is completely stabilized so as not to block or impede stone flow or drainage.





THE MATERIAL, INSTALLATION, INSPECTION, AND MAINTENANCE OF FIBER ROLLS WILL BE PER THE MANUFACTURE'S SPECIFICATIONS AND SHALL ALSO COMPLY WITH THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY CURRENT "TECHNICAL GUIDANCE ON BEST MANAGEMENT PRACTICES" AS NOTED BELOW.

(1) Core material: Core material should be biodegradable or recyclable. Material may be compost, mulch, aspen wood fibers, chipped site vegetation, agricultural rice or wheat straw, coconut fiber, 100% recyclable fibers, or

similar materials. (2) Containment Mesh: Containment mesh should be 100% biodegradable, photodegradable or recyclable such as burlap, twine, UV photodegradable plastic, polyester, or similar material. When the fiber role will remain in place as part of a vegetative system use biodegradable or photodegradable mesh. For temporary installation recyclable mesh is recommended.

(1) Locate fiber rolls on level contours spaced as follows: Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft. Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).

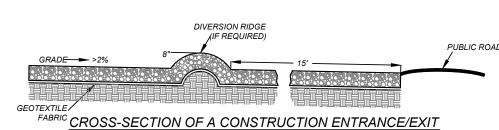
Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective). (2) Turn the ends of the fiber roll up slope to prevent runoff from going around the

(3) Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of

the fiber roll. (4) Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center. (5) Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in. (6) If more than one fiber roll is placed in a row, the rolls should be overlapped, not

Inspection and Maintenance Guidelines: (1) Inspect prior to forecast rain, daily during extended rain events, after rain events,

(2) Repair or replace split, torn, unraveling, or slumping fiber rolls. (3) If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates behind the role must be periodically removed in order to maintain its effectiveness. Sediment should be removed when the accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.



GEOTEXTILE FABRICA

TEMPORARY

CONSTRUCTION ENTRANCE/EXIT

TO STABILIZE FOUNDATION

Installation: (North Carolina, 1993)

any measures used to trap sediment.

trap or sediment basin.

area. Grade crown foundation for positive drainage.

(3) The construction entrance should be at least 50 feet long.

<u>Materials:</u>

(1) The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.

plans. Divert wastewater to a sediment trap or basin.

(1) Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation

(2) The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.

(5) Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.

) The entrance should be maintained in a condition, which will prevent tracking or flowing of sediment onto public

(5) All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

(3) When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair andlor cleanout of

(4) When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sedimen

(2) All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.

foundation approximately 15 feet from the entrance to divert runoff away from the public road.

(7) Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

(8) Install pipe under pad as needed to maintain proper public road drainage.

(6) Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.

(4) If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the

(2) The aggregate should be placed with a minimum thickness of 8 inches. (3) The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number (4) If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS

BID SET

CONSTRUCTION

MORGAN MEADOWS.

UNIT 10A PLAT# 25-11800377

TALLEY EXTENSION

REVITALIZATION INITIATIVE, LLC

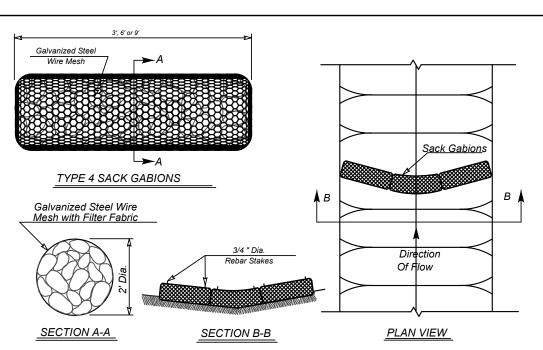
STABILIZED CONSTRUCTION ENTRANCE / EXIT

WOVEN WIRE ISOMETRIC PLAN VIEW

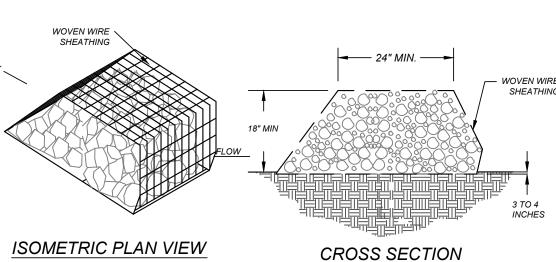
overlap at least 2 inches, airl the berm retains its shape when walked upon.

(5) Berm should be built along the contour at zero percent grade or as near as possible. (6) The ends of the berm should be tied into existing upslope grade and the berm should be buried in a

Inspection and Maintenance Guidelines:



TYPE 4 SACK GABIONS



(1) The berm structure should be secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings. (2) Clean, open graded 3- to 5-inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5- to 8-inch diameter rocks may be used.

(1) Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.

(2) Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter. (3) Place the rock along the sheathing as shown in the diagram Figure 1-28), to a height not less than (4) Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing

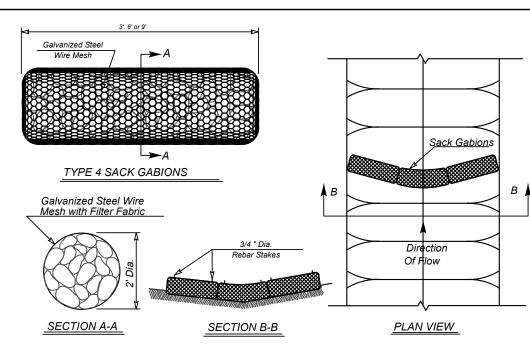
trench approximately 3 to 4 inches deep to prevent failure of the control.

(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

ROCK BERM



THE TOP OF THE SACK GABIONS SHOULD BE LEVEL AND ORIENTED PERPENDICULAR TO THE DIRECTION OF FLOW. FILTER FABRIC MATERIAL SHALL BE FASTENED TO WOVEN WIRE

GENERAL NOTES:

FILTER FABRIC MATERIAL SHOULD MEET THE FOLLOWING SPECIFICATIONS: RESISTANT TO ULTRAVIOLET LIGHT, FABRIC SHOULD BE NON-WOVEN GEOTEXTILE WITH MINIMUM WEIGHT OF 3.5 OUNCES PER SQUARE YARD, MINIMUM MULLEN BURST STRENGTH C 200 POUNDS PER SQUARE INCH AND A FLOW THRU RATE OF 120 GALLONS PER MINUTE PER SQUARE FOOT OF FRONTAL AREA. STONE SIZE: ±4"-8" OPEN GRADED CRUSHED LIMESTONE.

INSPECT WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACE AS NEEDED.

WHEN SILT REACHES A DEPTH OF 6 INCHES OR MORE ABOVE NATURAL GROUND, SILT SHALL BE REMOVED AND DISPOSED IN AN APPROVED MANNER THAT WILL NOT CONTRIBUTE TO RESILTATION CONTAMINATED SEDIMENT MUST BE REMOVED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS

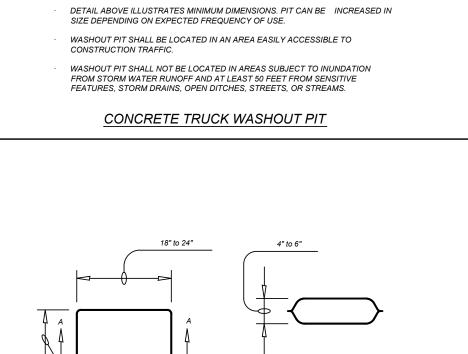
BEXAR COUNTY TEXAS SAN ANTONIO (KFW)

3421 Paesanos San Antonio, TX 78231 Phone: 210.979.8444 Engineering COLLIERS ENGINEERING & DESIGN, IN & Design TBPE Firm#: F-14909 TBPLS Firm#: 10194550

AS SHOWN AWING NAME: SW3PDT2054113 205-41-13

STORM WATER POLLUTION PREVENTION DETAILS

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



GENERAL NOTES:

12" to 18"

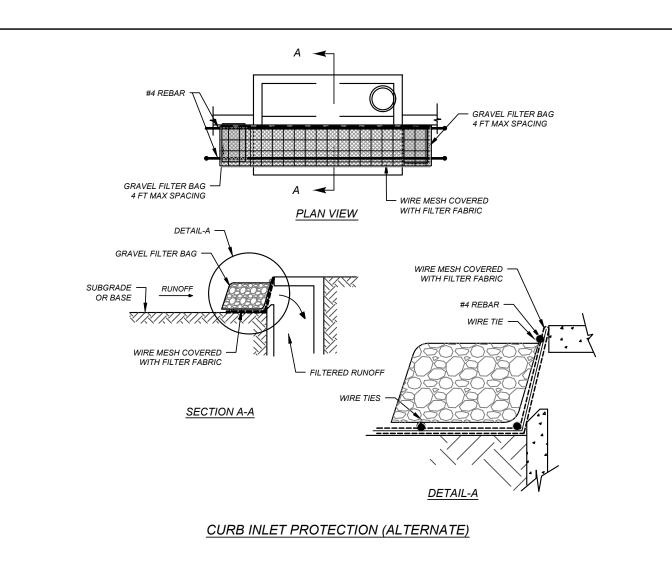
GENERAL NOTES:

THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE. OUNCES/SY, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET

THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

SECTION A-A

GRAVEL FILTER BAG DETAIL



- FILTERED RUNOFF

SECTION A-A

ALL STORM DRAINAGE SYSTEMS INLETS SHOULD FILTER RUNOFF BEFORE THE WATER IS DISCHARGED INTO STREAMS OR ONTO ADJACENT PROPERTIES,

IF NO ADDITIONAL DOWNSTREAM TREATMENT EXISTS, THE MAXIMUM DRAINAGE AREA TRIBUTARY TO AN AREA DRAIN INSTALLED WITH A GRAVEL FILTER SHOULD BE ONE ACRE.

ALL CURB INLET GRAVEL FILTERS SHOULD BE INSPECTED AND REPAIRED

MATERIAL IS WITHIN THREE INCHES OF THE TOP OF THE CONCRETE BLOCKS.
PERIODICALLY, THE GRAVEL SHOULD BE RAKED TO INCREASE INFILTRATION AND

CURB INLET PROTECTION GRAVEL FILTER BAGS

AFTER EACH RUNOFF EVENT. SEDIMENT SHOULD BE REMOVED WHEN

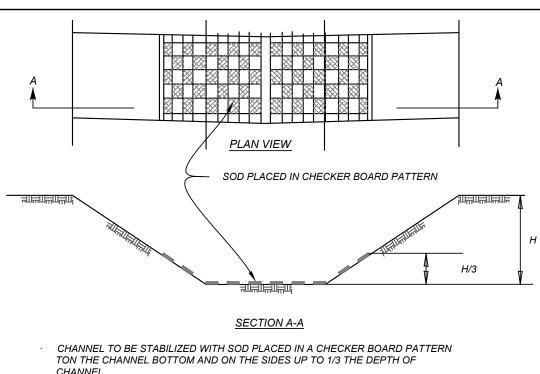
GENERAL NOTES:

UNLESS TREATMENT IS PROVIDED ELSEWHERE.

FILTERING OF RUNOFF WATERS.

CONSTRUCTION **EQUIPMENT** & VEHICLE STORAGE **MAINTENANCE** AREA CONSTRUCTION AND WASTE MATERIAL STORAGE AREA OFFICE /EXIT FLOW ARROWS

TYPICAL CONSTRUCTION STAGING AREA



CHANNEL.

CHANNEL LINING