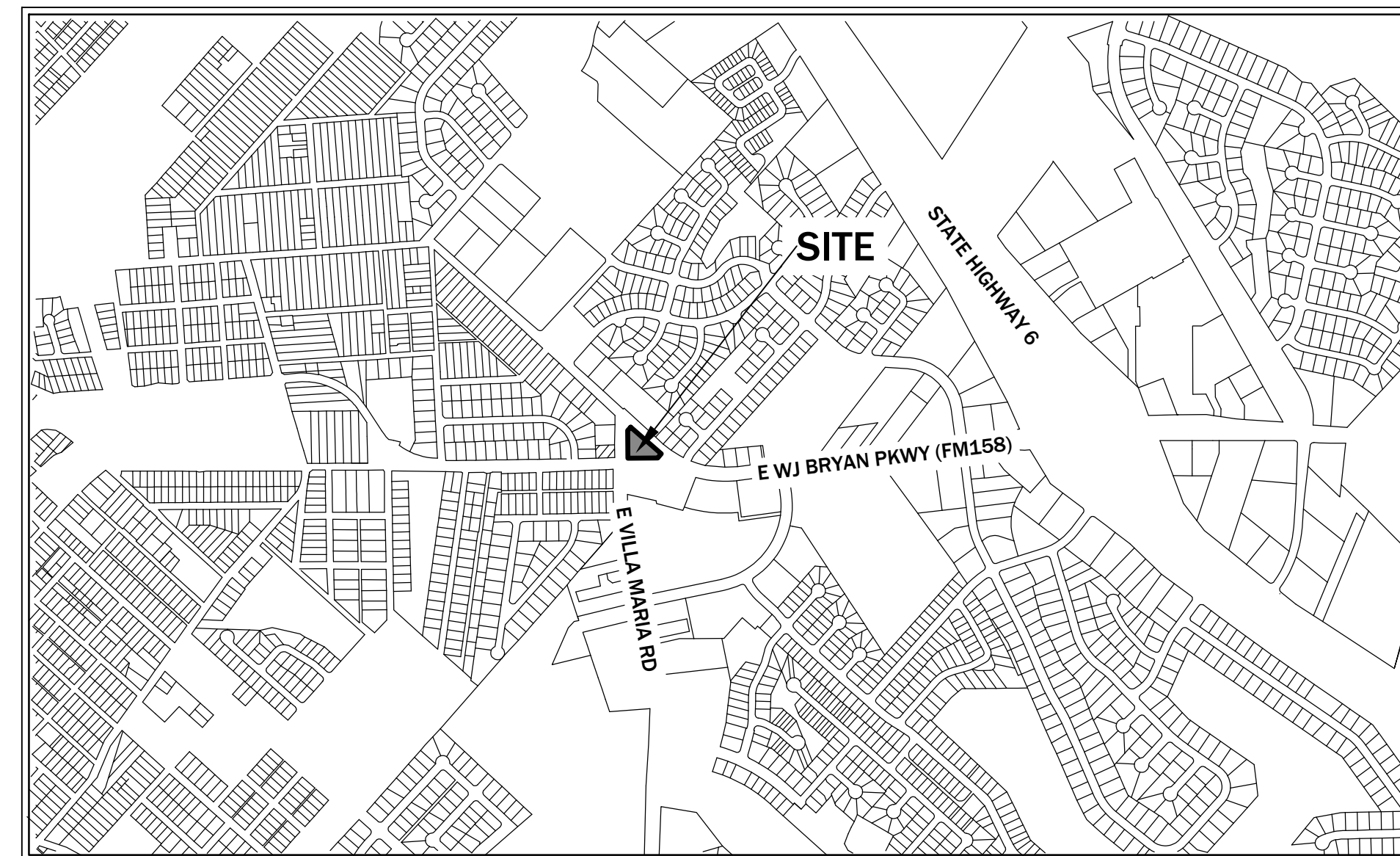


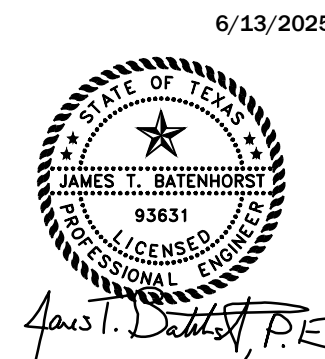
LA BONTANA DRIVE THRU

1819 SAN ANTONIO ST TX
BRYAN, TEXAS
JUNE 2025

ENGINEER:
MITCHELL & MORGAN, L.L.P.
3204 EARL RUDDER FWY. S.
COLLEGE STATION, TEXAS 77845
(979) 260-6963

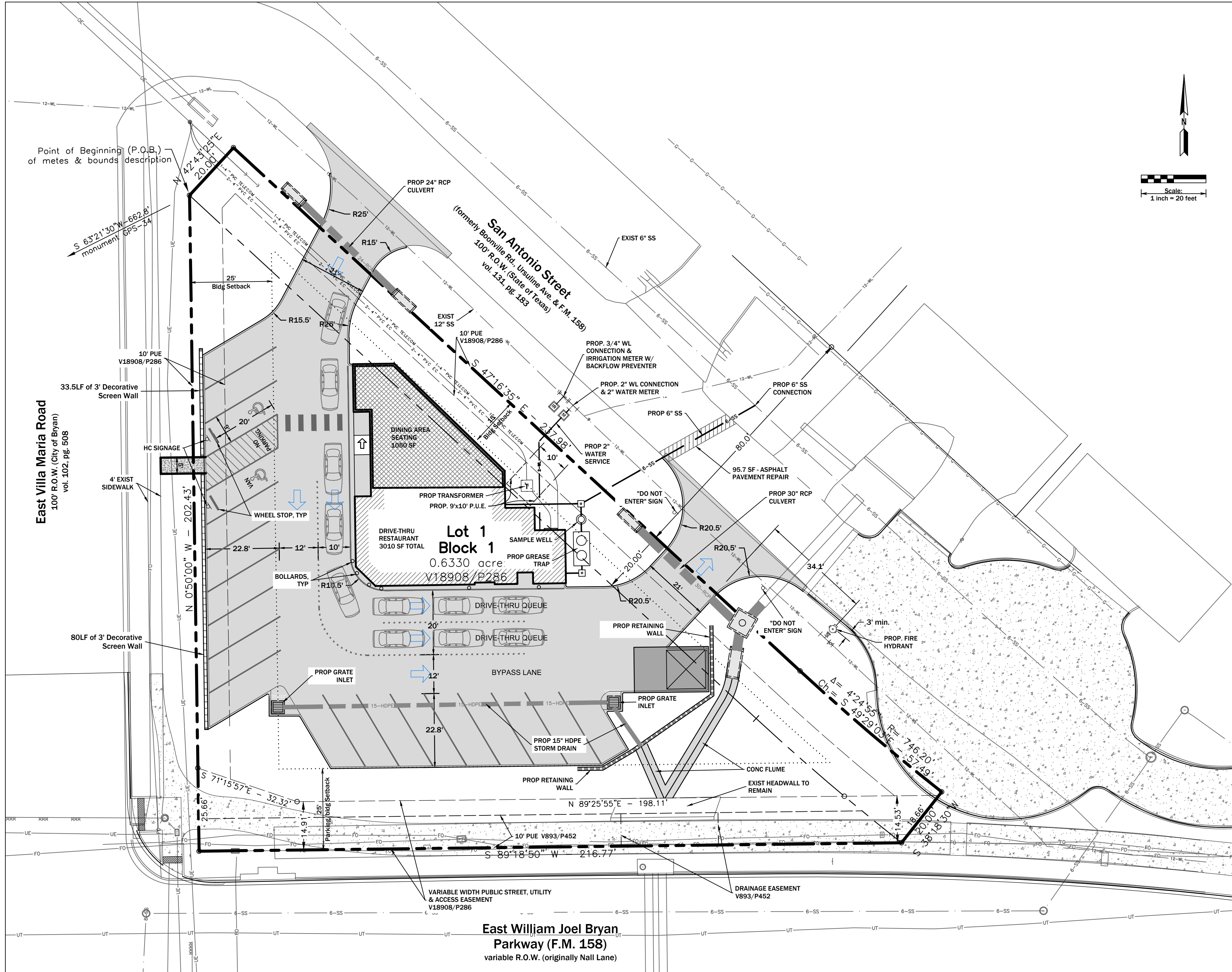


OWNER:
JORGE LUIS & MARTHA M DIAZ
2307 LONG DR
BRYAN, TEXAS 77802



INDEX OF SHEETS

- 01 - SITE PLAN
- 02 - GRADING PLAN
- 03 - PAVING PLAN
- 04 - UTILITY PLAN
- 05 - EROSION CONTROL PLAN
- 06 - EMBEDMENT & TRENCH SAFETY
- 07 - MISCELLANEOUS DETAILS
- 08 - LANDSCAPE PLAN
- 09 - TRAFFIC CONTROL PLAN
- SWPP - B/CS STANDARD STORM WATER POLLUTION PREVENTION DETAILS



GENERAL CONSTRUCTION NOTES:

- The contractor is responsible for obtaining all applicable permits for work contemplated on these plans.
- It is the responsibility of the contractor to schedule a pre-construction meeting with the engineer of record and the regulatory agency inspector prior to commencing construction.
- It shall be the responsibility of the Contractor to verify the exact location of ALL existing underground utilities. Furthermore, the Contractor shall contact all utility company representatives a minimum of 48 hours in advance of any excavation.
 - Contact Dig Toss @ 1-800-344-8377
 - Contact Nicholas Hopkins @ ATMS 979-774-2406
 - Contact Dan Augsburger @ Optimum Communications 979-204-8263
 - Contact Brandon Charanza @ BTU 979-821-6770
 - Contact Mac Ortiz @ Frontier 972-365-9198
 - Contact Rachel Morales @ MetroNet: Rachel.morales@metronet.com
 - Contact Jayson Barknecht @ COB (Water/Wastewater) 979-209-5959
- All construction shall be in accordance with the current City of Bryan Standard Specifications for Street Construction, B/CS Unified Technical Specifications, Water and Sewer and Generals, 2012, and BCS Unified Design Details. All inspection shall be performed by the staff of the City Engineer of Bryan. All construction shall be coordinated with the City of Bryan City Engineer.
- In lieu of using the construction materials indicated in these plans, the Contractor shall obtain written approval from the Engineer & Architect for any substitution prior to construction. Requests for changes should include product information and an engineer's seal where applicable. The contractor shall be financially responsible for the engineer's time spent reviewing changes and redesigning based on contractor's requests.
- Trench Safety Requirements shall be in accordance with O.S.H.A. Standard 29 CFR Part 1926 Subpart P and all federal, state and local regulations.
- TRENCHING AND BACKFILLING: All trenching and backfilling shall conform to the specifications set out herein. Testing shall be provided by a certified laboratory, at the Owner's expense, to verify these standards. Any retesting due to substandard work shall be at the expense of the Contractor. Structural areas shall include all sidewalks and shall extend 5' beyond the curb lines of all streets, alleys and parking areas.
- It is the responsibility of the contractor to comply with all State and Federal Regulations regarding construction activities near energized overhead power lines. Additionally, the contractor shall coordinate all proposed work and procedures with Bryan Texas Utility (BTU).
- All materials & labor not identified as a Separate Bid Item shall be considered subsidiary to the item in which it is used. All materials and equipment shall be both furnished and installed unless otherwise noted.
- The Contractor must provide construction staking from the information provide on these plans.
- All soil exposed by construction shall receive hydromulch or seed in accordance with the landscape plan.
- Trenches may not be left open overnight.
- Adjustment of Water Meters, Valves, Manholes, Irrigation Systems, and any other Public or Private Utility, etc. are not separate pay items. The Price of the adjustment shall be subsidiary to the construction of Sewer Line, Force Main, etc.
- The contractor shall coordinate with Atmos, Sudnetlink Communications, BTU, CSU, and Frontier to adjust the location of existing facilities.
- Temporary spoil areas will be identified on site by owner.
- All materials storage and staging shall NOT be within the FEMA Floodplain.
- Contractor shall provide parking lot striping in accordance with the layout shown on this plans.
- All storm sewer, sanitary sewer and waterline being constructed with this site plan will be private.
- All roof and ground mounted mechanical equipment shall be screened from view or isolated so as not to be visible from any public right-of-way or residential district within 150' of the subject.
- All backflow devices must be installed and tested upon installation as per City Ordinance 2394.
- Outdoor lighting shall not exceed 1 lumen at all property lines. Light fixtures in parking lot shall not exceed a maximum height of 24 feet and pedestrian walkway fixtures shall not exceed a maximum height of 12 feet. Outdoor lighting shall also be shielded and provided with cutoff fixtures that are designed to have a cutoff angle of no more than 90 degrees.
- Cross slope and running slope of curb ramps serving the Accessible Parking shall comply with ICC A117.1 - 2009 Accessibility Standards. Maximum cross slope 1.48 (2.08%) and maximum running slope 1:12 (8.33%).
- The subject property is within the FM 158 Corridor Overlay District as defined by Zoning Ordinance Section 130-28.
- Property owner shall have direct responsibility to operate, repair and maintain the private detention facilities. The City of Bryan shall not be responsible for any operation, repair or maintenance of these areas.
- Where electric facilities are installed, BTU has the right to install, operate, relocate, construct, reconstruct, add to, maintain, inspect, patrol, enlarge, repair, remove and replace said facilities upon, over, under, and across the property included in the PUE, and the right to ingress and egress on property adjacent to the PUE to access electric facilities.

SITE PLAN NOTES:

- Name of Project: La Botana Drive Thru
- Legal: Lot 1, Block 1 of the FORD TRI-MOTOR SUBDIVISION
- Address: 1819 San Antonio Street, Bryan, Texas 77802
- Owner: Jorge Luis & Martha M. Diaz, 2307 Long Dr, Bryan, Texas 77802
- Engineer: Mitchell & Morgan, L.L.P., 3204 Earl Rudder Fwy, S. College Station, Texas 77845 (979) 260-6963
- Zoning: Commercial District (C-3)
- Existing Use: Undeveloped-Vacant
- Proposed Use: Drive-thru Restaurant
- Setbacks: Per City of Bryan Ordinances
- Overall Site Area: 0.63 Acres
- Water Demands: Min. = xx gpm, Avg. = xx gpm, Peak = xxx gpm, Avg. = xxxxx GPD, MAX. = xxxxxxxx GPD
- Sanitary Demands: Min. = xx gpm, Avg. = xx gpm, Peak = xxx gpm, Avg. = xxxxx GPD, MAX. = xxxxxxxx GPD
- All pavement shall have a 6 inch curb unless otherwise noted.
- No part of this property lies within a 1% flood hazard area (100 YEAR FLOOD PLAIN), according to the Brazos County Flood Insurance Rate Map (FIRM) PANEL NO. 48041C0215F, REVISED DATE: 04-02-2014.
- Signage shall be permitted separately.
- Building will not be greater than 30' at eave height.
- Contours associated with construction plans are shown on the grading plan sheet.
- Contractor must contact City of Bryan Solid Waste @ 979-209-5900 prior to construction of dumpster enclosure. If any modifications to the dumpster enclosure are made during construction, the contractor shall notify the Solid Waste Department. All-weather access route must be maintained and repaired at the business owner's expense.

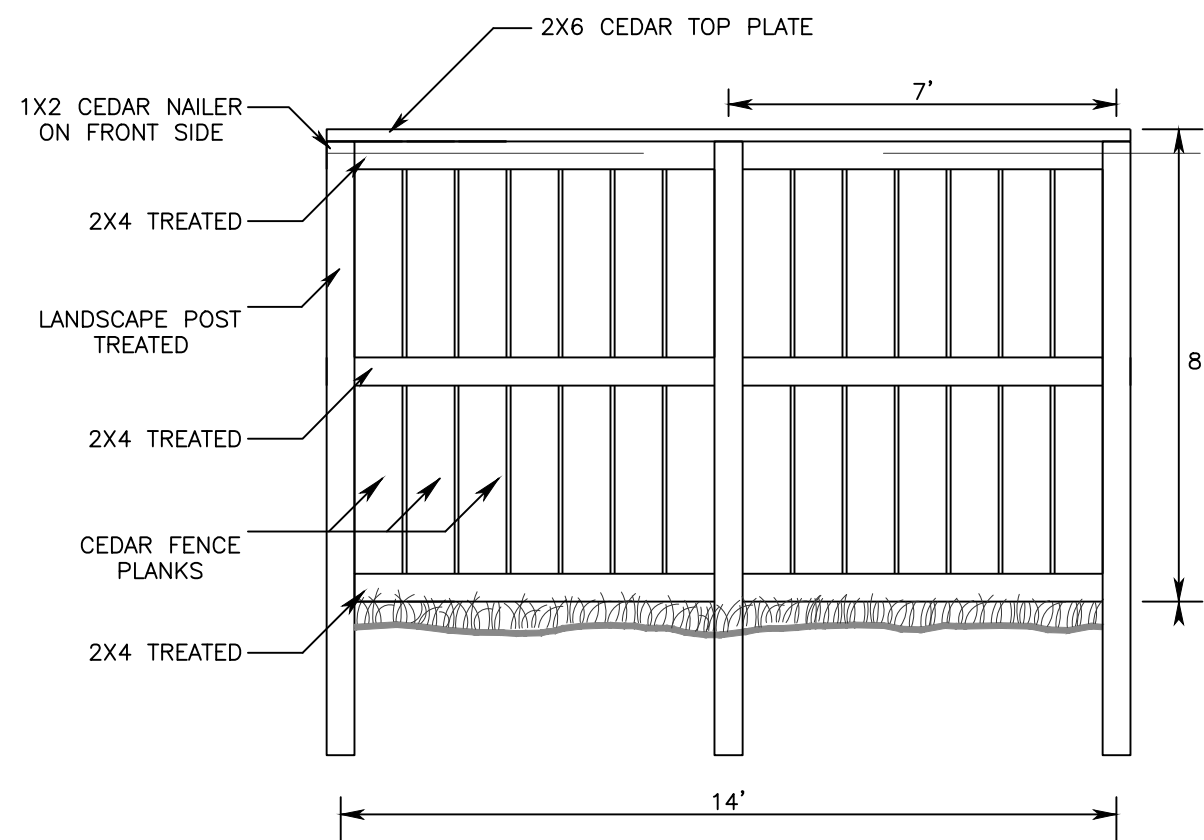
PARKING LEGEND:

PROPOSED PARKING:
PROPOSED BUILDING S.F. = 2810 S.F.
DINING AREA S.F. = 1050

PARKING REQD:

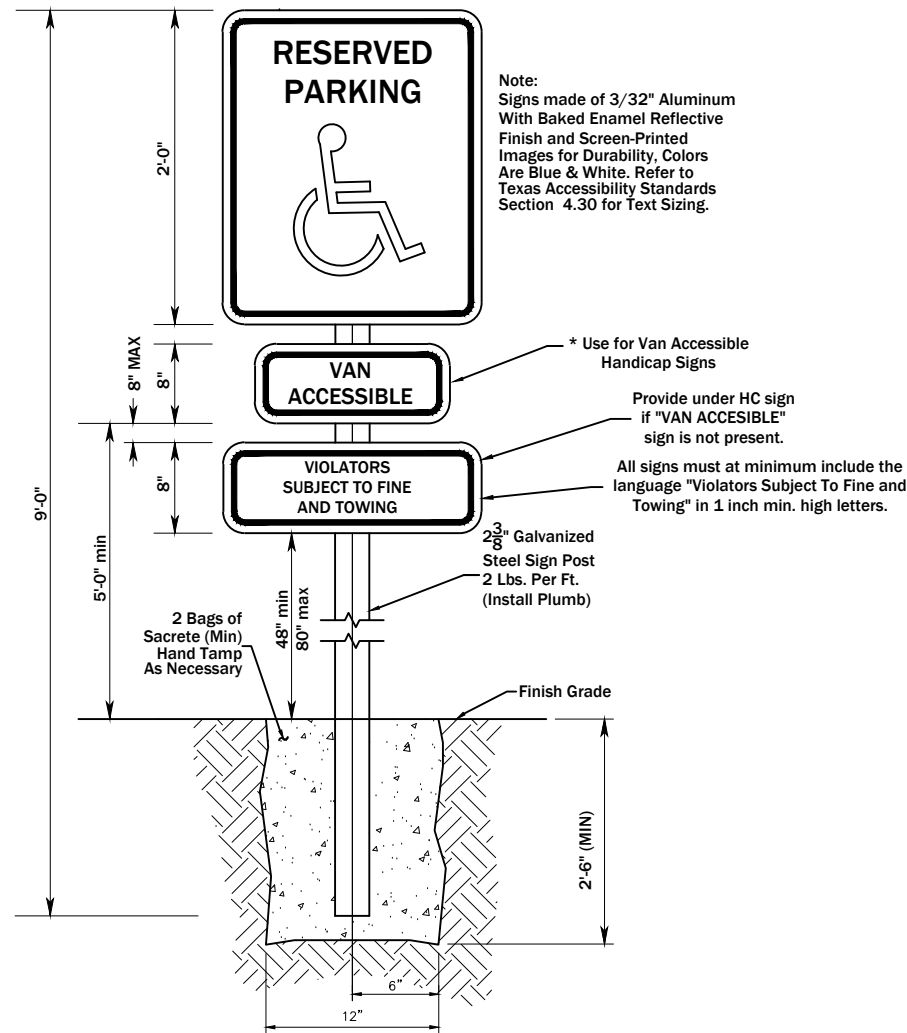
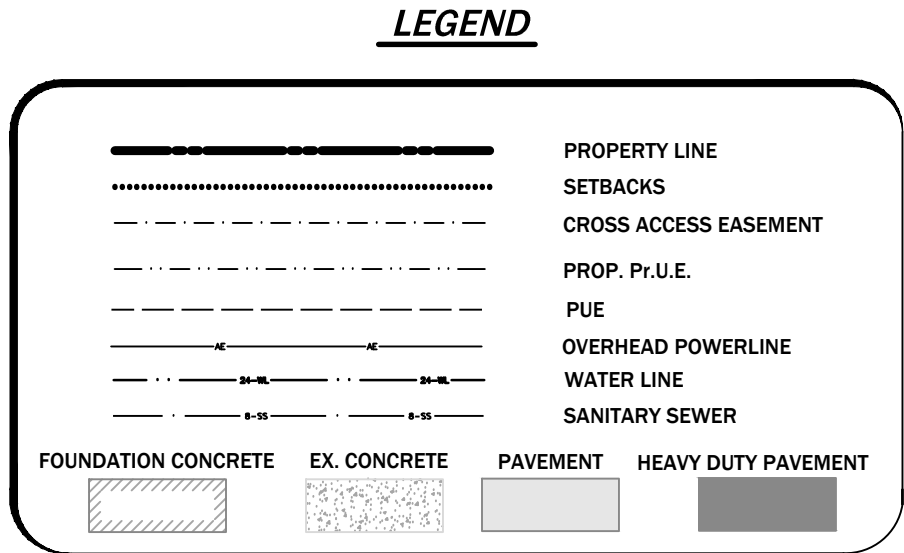
8 PARKS MIN + 1 SPACE PER 50 S.F. of DINING AREA
1050 S.F. / 50 S.F. = 21

PARKING SPACES REQUIRED = 29
PARKING SPACES PROVIDED = 30
(INCLUDING 2 ADA & 11 QUEUE SPACES)



DUMPSTER FENCE ELEVATION

NTS



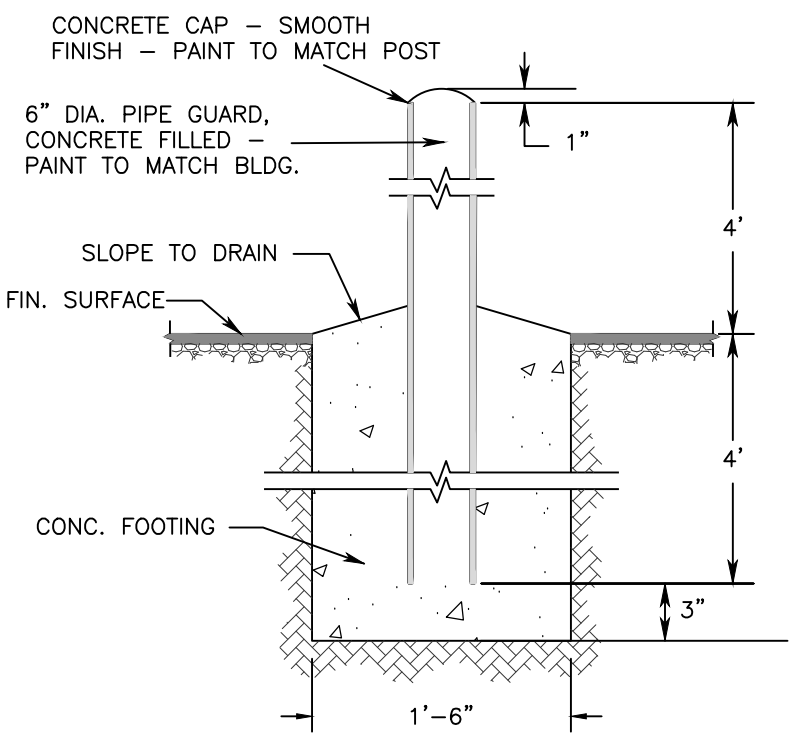
NOTE: INSTALL ONE SIGN PER LOCAL ORDINANCE. *UNAUTHORIZED VEHICLES PARK IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHED PLACARDS OR LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE FINED.

SIGN INSTALLATION NOTES:

- All signs shall maintain heights specified but shall be mounted to the building in lieu of the sign post.
- The signs shall be installed so that the bottom of each sign shall be at least four (4) feet above the ground at the base of the signpost or above an adjacent travelway. All signposts shall be installed 24 inches from the travelway.
- The hardware used to attach the signs to the signposts shall be the same as that currently used by the city.
- Signs shall be positioned facing perpendicular to the parking stall.

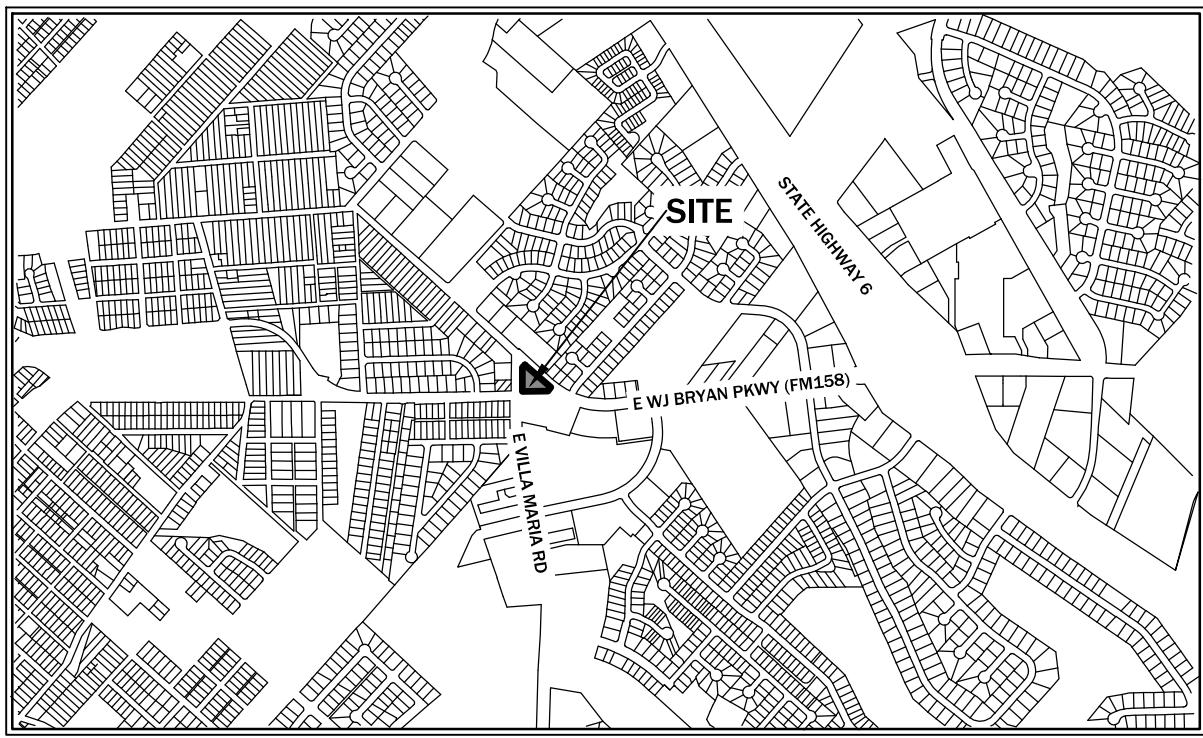
VAN ACCESSIBLE HANDICAP SIGN INSTALLATION DETAIL

6" DIA. PIPE GUARD, CONCRETE FILLED - PAINT TO MATCH BLDG.



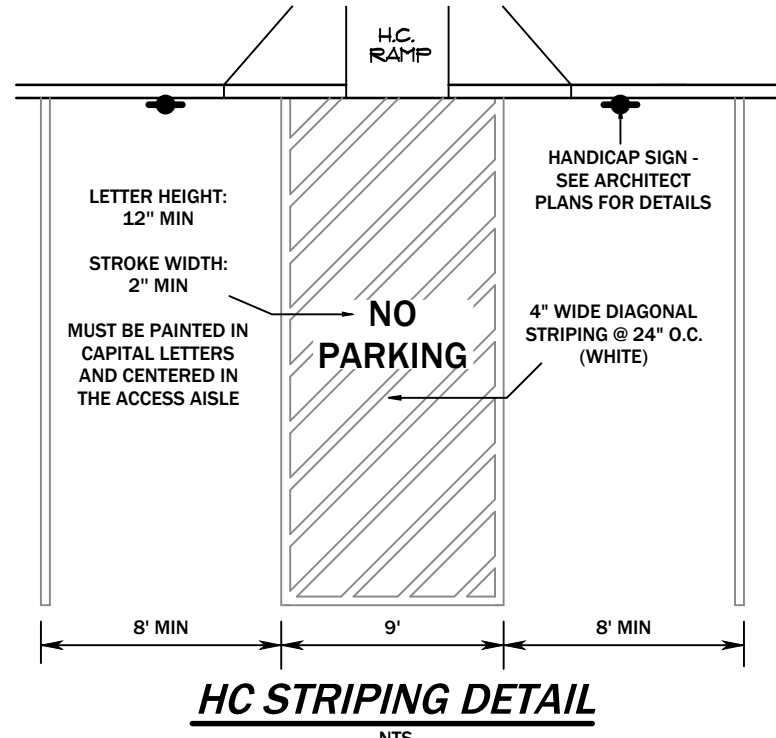
TYPICAL BOLLARD

NOT TO SCALE



VICINITY MAP

N.T.S.



FIRE LANE

DESIGNATED

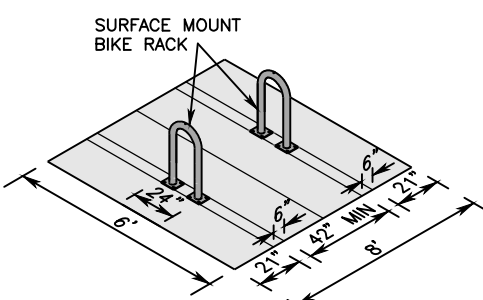
PARKING

ONLY

All curbs and curb ends designated as firelanes on plans shall be painted red with four inch (4") white lettering stating "FIRE LANE- NO PARKING - TOW AWAY ZONE". Wording may not be spaced for than fifteen feet (15') apart.
From the point the fire lane begins to the point the fire lane ends, including behind all adjacent parking spaces, the fire lane shall be marked with one continuous eight inch (8") red stripe painted on the drive surface behind the parking spaces. All curbing adjoining a fire lane must be painted red. Red stripes and curbs will contain the wording "FIRE LANE- NO PARKING - TOW AWAY ZONE", painted in four inch (4") white letters.

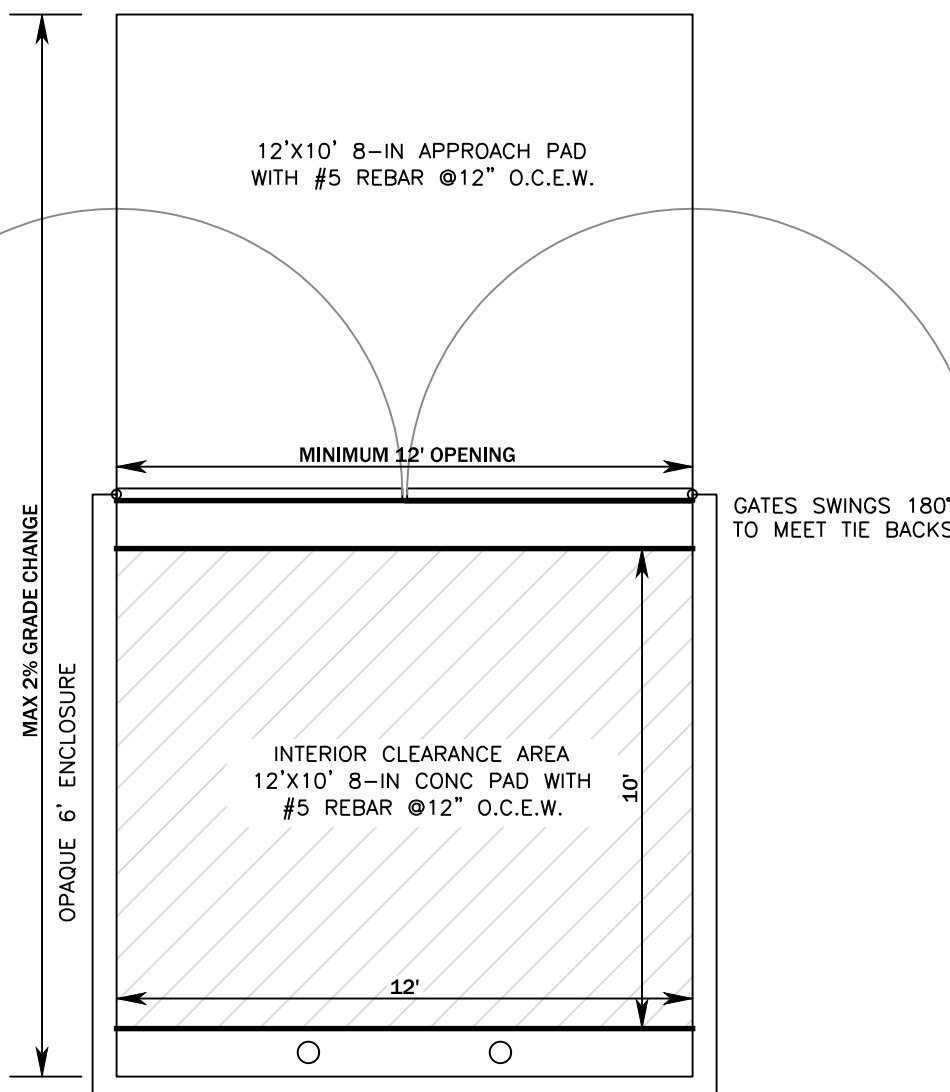


FIRE LANE MARKINGS



BIKE RACK DETAIL

NTS



DUMPSTER ENCLOSURE DETAIL

MITCHELL
MORGAN

T.979.260.6963

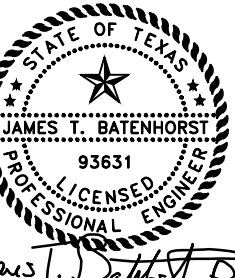
TX. FIRM # F-1443

3204 EARL RUDDER FWY. S.
COLLEGE STATION, TX 77845

PLAN & DESIGN SPECIALISTS IN
CIVIL ENGINEERING • HYDRAULICS
HYDROLOGY • UTILITIES • STREETS
SITE PLANS • SUBDIVISIONS

www.mitchellandmorgan.com

6/13/2025



JUNE 2025

Drawn By: JB, TF, SB
Checked By: JBM

Prepared For:

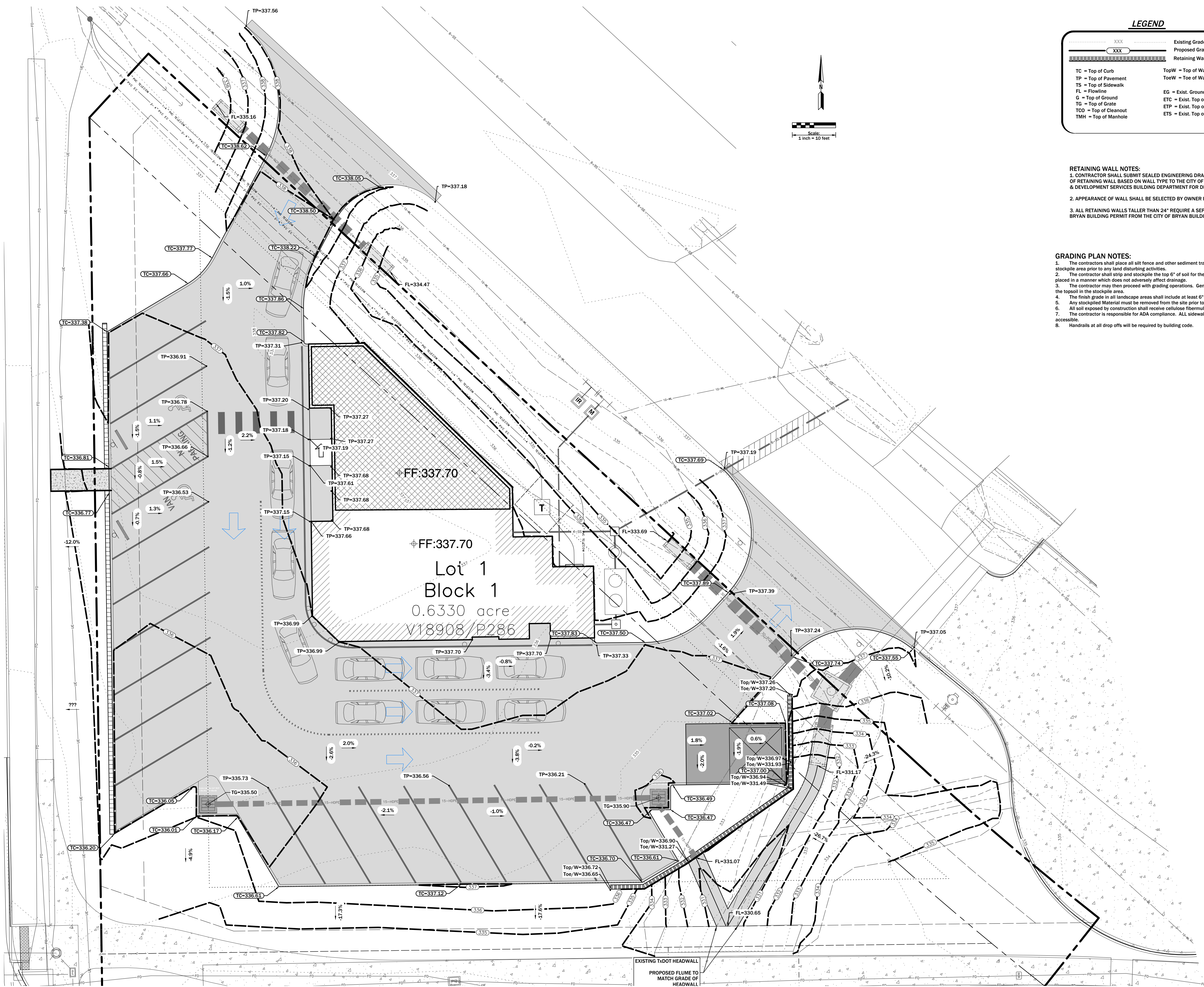
JORGE LUIS & MARTHA M DIAZ
2307 LONG DR
BRYAN, TX 77802

Revisions

SITE PLAN
LA BOTANA DRIVE THRU
EAST WJ BRYAN PKWY (FM 158)

01

PROJECT BENCHMARK:



LEGEND

XXXX	Existing Grade
XXX	Proposed Grade
XXXX	Retaining Wall
TC = Top of Curb	TopW = Top of Wall
TP = Top of Pavement	ToeW = Toe of Wall
TS = Top of Sidewalk	EG = Exist. Ground
FL = Flowline	ETC = Exist. Top of Curb
G = Top of Ground	ETP = Exist. Top of Pavement
TG = Top of Grate	ETS = Exist. Top of Sidewalk
TCO = Top of Cleanout	
TMH = Top of Manhole	

RETAINING WALL NOTES:
1. CONTRACTOR SHALL SUBMIT SEALED ENGINEERING DRAWINGS FOR DESIGN OF RETAINING WALL BASED ON WALL TYPE TO THE CITY OF BRYAN PLANNING & DEVELOPMENT SERVICES BUILDING DEPARTMENT FOR DESIGN APPROVAL
2. APPEARANCE OF WALL SHALL BE SELECTED BY OWNER PRIOR TO DESIGN
3. ALL RETAINING WALLS TALLER THAN 24" REQUIRE A SEPERATE CITY OF BRYAN BUILDING PERMIT FROM THE CITY OF BRYAN BUILDING OFFICIAL

GRADING PLAN NOTES:
1. The contractors shall place all silt fence and other sediment trapping devices for the graded area and stockpile area prior to any land disturbing activities.
2. The contractor shall strip and stockpile the top 6" of soil for the entire graded area. Stockpiles shall be placed in a manner which does not adversely affect drainage.
3. The contractor may then proceed with grading operations. General cut / fill soil shall be segregated from the topsoil in the stockpile area.
4. The finish grade in all landscape areas shall include at least 6" of topsoil.
5. Any stockpiled Material must be removed from the site prior to substantial completion.
6. All soil exposed by construction shall receive cellulose fibermulch seeding.
7. The contractor is responsible for ADA compliance. ALL sidewalks and buildings on the project shall be accessible.
8. Handrails at all drop offs will be required by building code.

MITCHELL
MM
MORGAN

T.979.260.6963

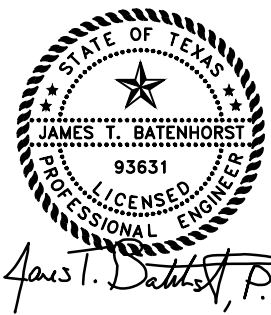
TX. FIRM # F-1443

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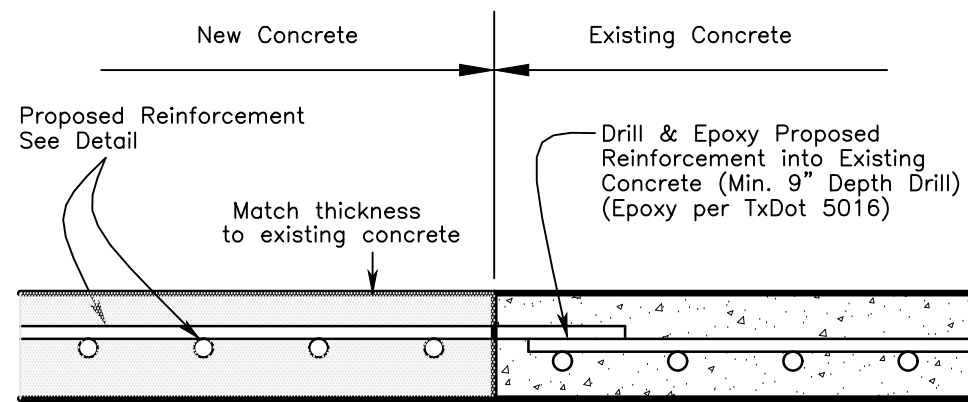
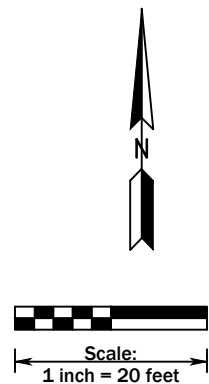
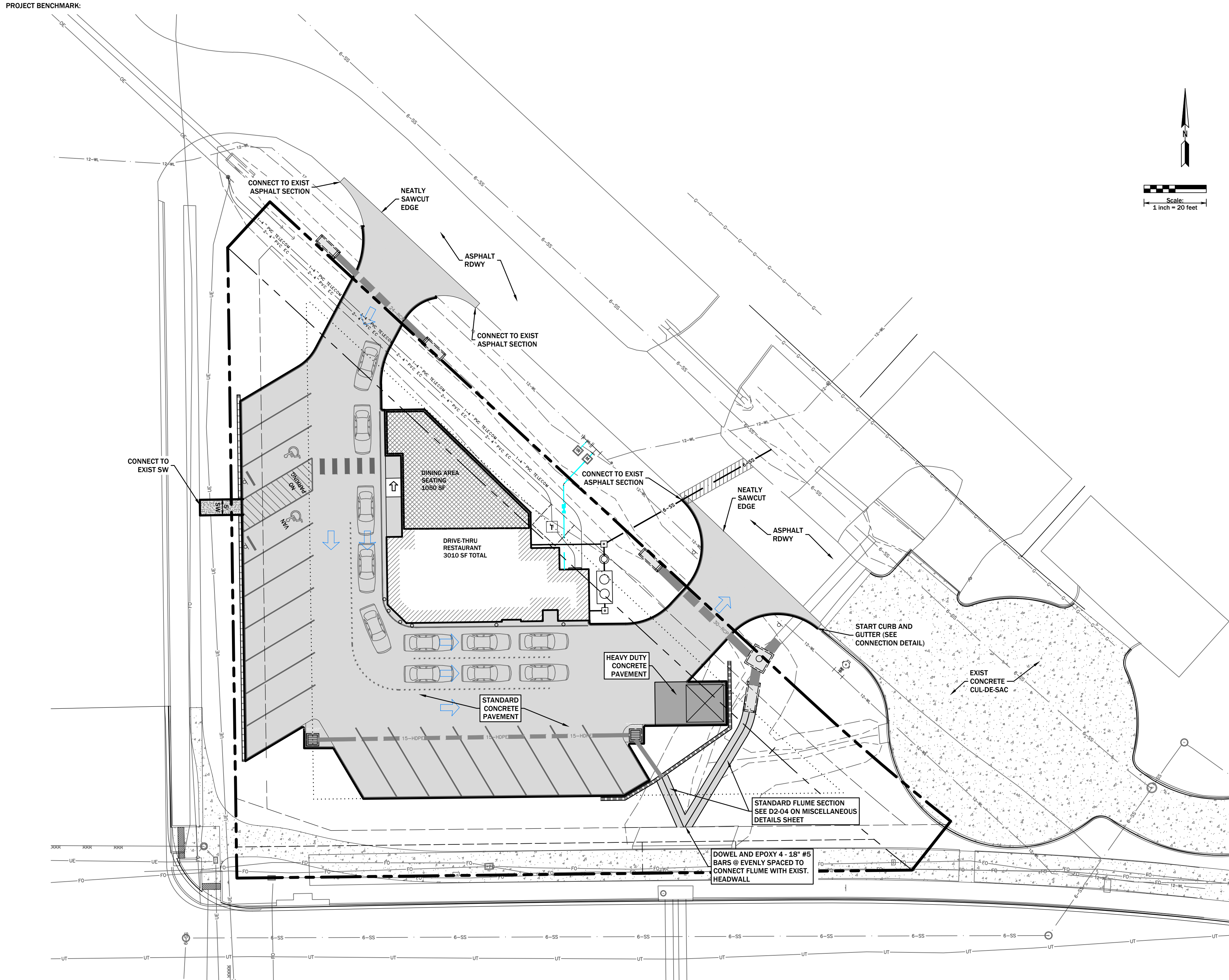
JUNE 2025
Drawn By: JB, TF, SB
Checked By: JBM

Prepared For:
JORGE LUIS & MARTHA M DIAZ
2307 LONG DR
BRYAN, TX 77802

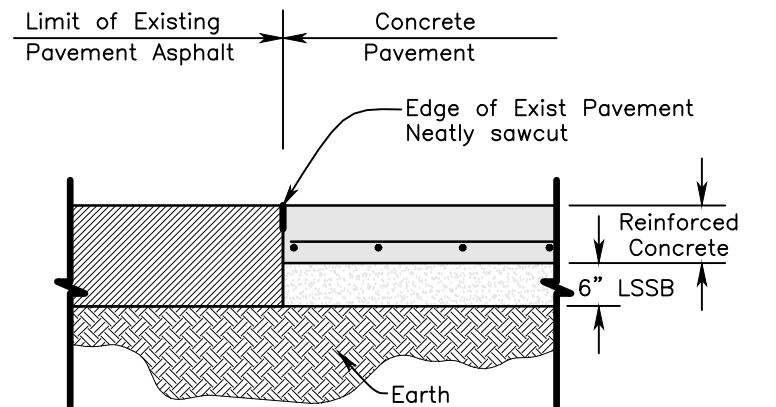
Revisions

GRADING PLAN
LA BOTANA DRIVE THRU
EAST WJ BRYAN PKWY (FM 158)

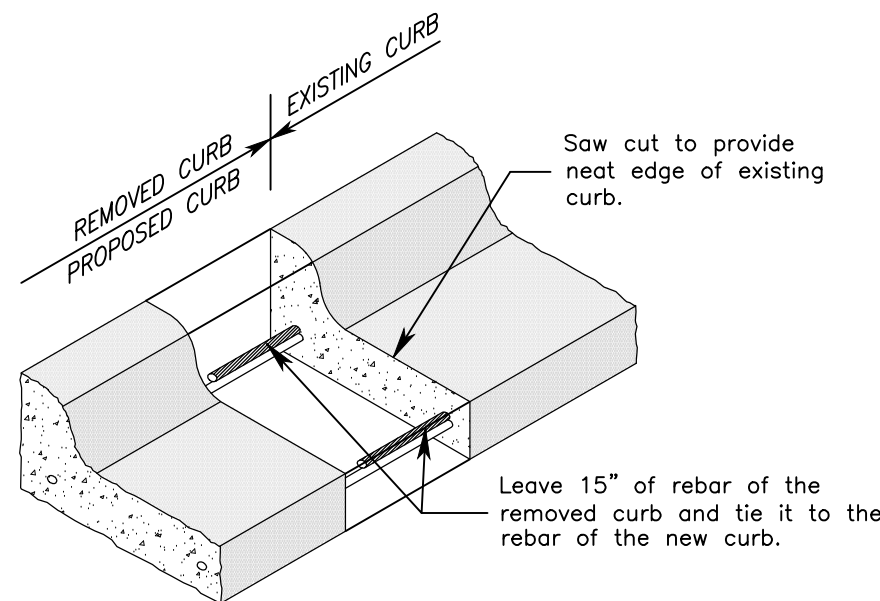
02



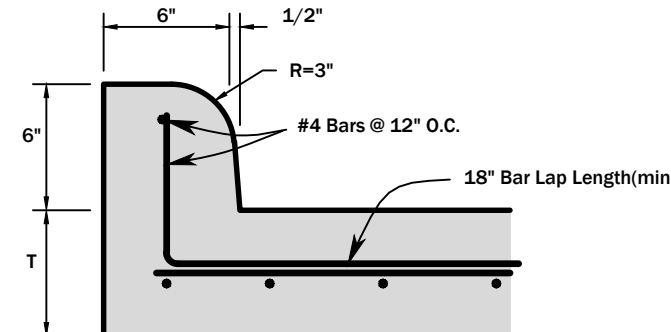
CONNECT TO EXISTING CONCRETE DETAIL
NTS



CONCRETE PAVEMENT TO EXISTING ASPHALT
NTS

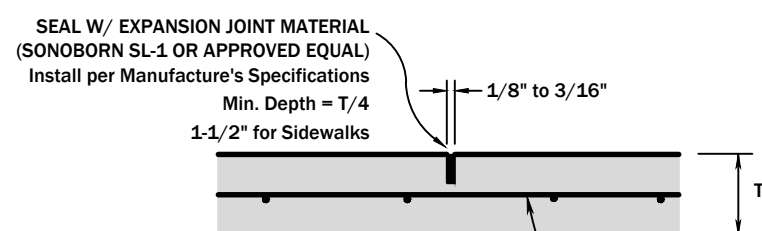


CONNECT TO EXISTING CURB DETAIL
NTS



TYPE II CURB

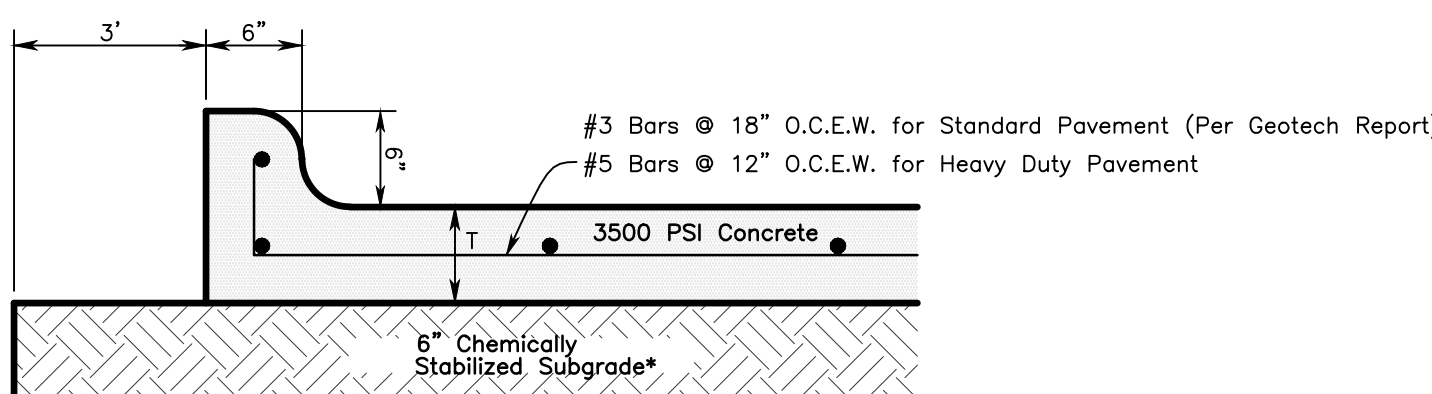
FOR USE WITH CONCRETE PAVEMENT OR APRON.
ALL CURBS SHALL BE CAST MONOLITHICALLY WITH CONCRETE PAVEMENT EXCEPT IN INTERSECTION RADI WHERE REBAR SHALL BE LEFT PROTRUDING FROM THIS INITIAL POUR.



CONTRACTION JOINT
15' spacing

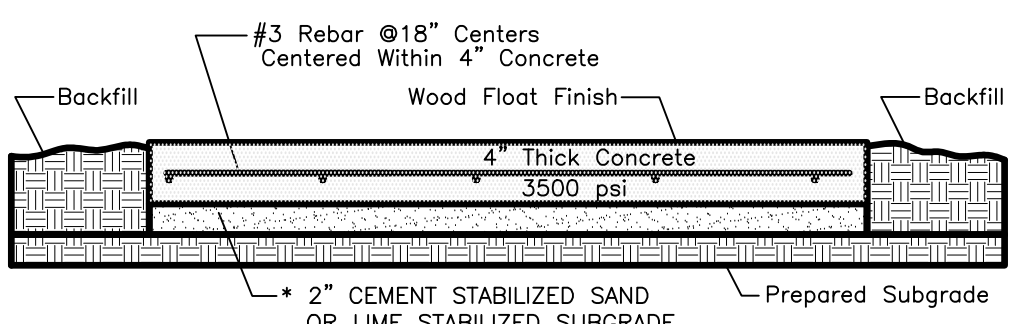
LEGEND:

- CONCRETE SIDEWALK
- STANDARD CONCRETE PAVEMENT (6" THICKNESS)
- HEAVY DUTY PAVEMENT (8" THICKNESS)
- FOUNDATION PAVEMENT
- RETAINING WALL



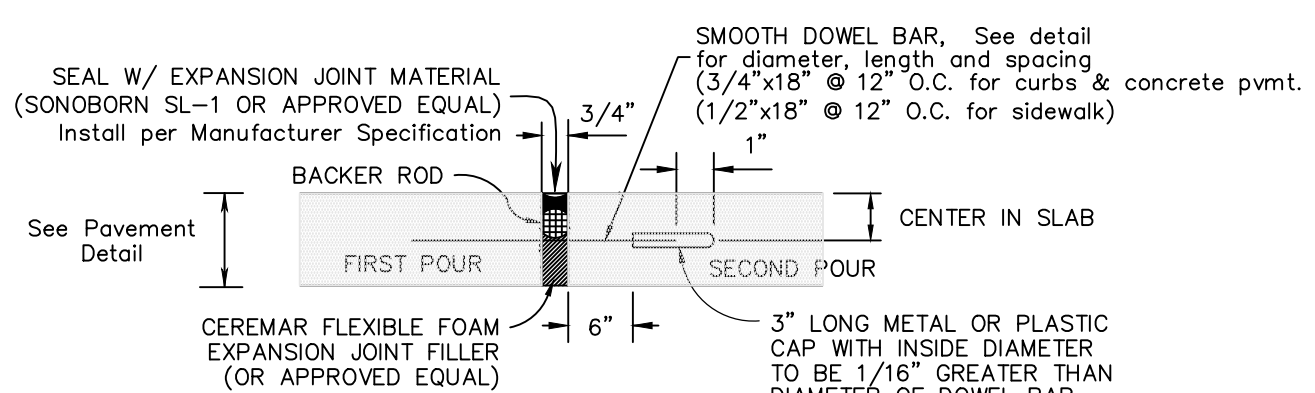
CONCRETE PAVEMENT DETAIL

T=6" FOR STANDARD PAVEMENT SECTION
T=8" FOR HEAVY DUTY PAVEMENT SECTION
Expansion Joints @ 60' o.c.
Contracting Joints @ 15' o.c.



STANDARD CONCRETE SIDEWALK DETAIL

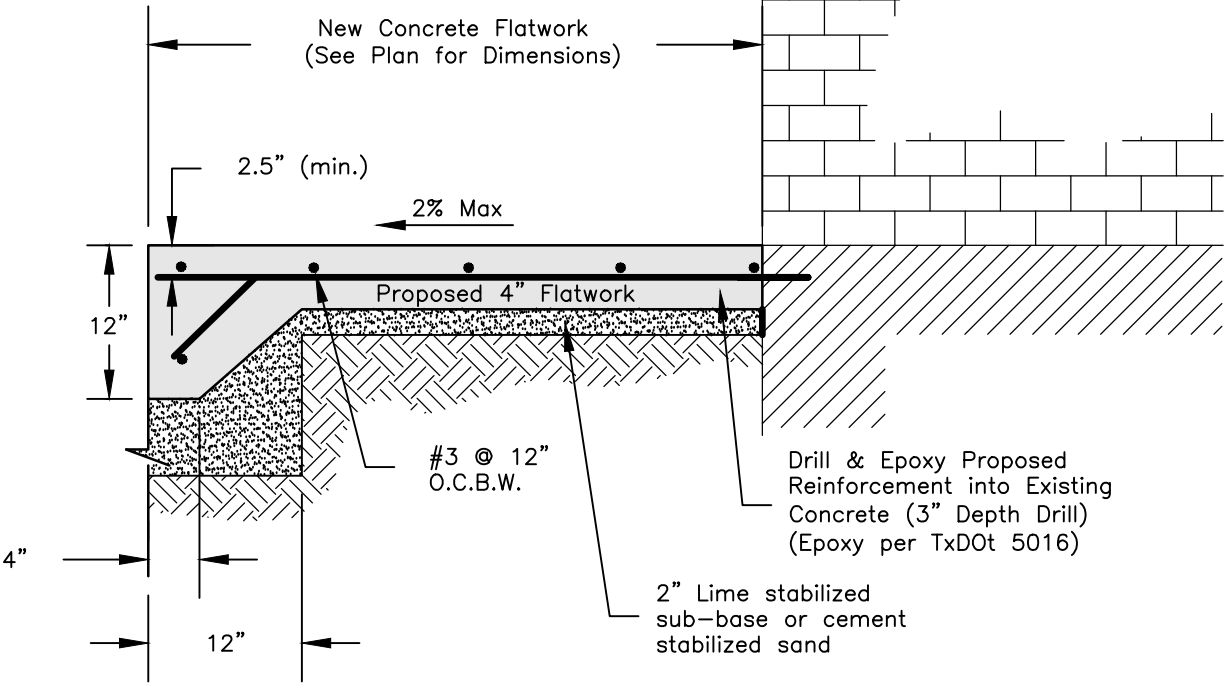
NOTE:
* 5" CONCRETE ON PREPARED SUBGRADE IS ACCEPTABLE.



- CAP MUST BE LONG ENOUGH TO COVER 2" OF THE DOWEL WITH ONE CLOSED END AND WITH A SUITABLE STOP TO HOLD THE END OF THE CAP AT LEAST 1" FROM THE END OF THE DOWEL BAR.
- EXPANSION JOINT WIDTH SHOWN IS THE MINIMUM. SHOULD THE SEALANT OR PLACEMENT CONDITIONS REQUIRE A GREATER WIDTH, THE GREATER WIDTH SHALL BE PROVIDED AT THE EXPENSE OF THE CONTRACTOR.
- G-SEAL 626 MODIFIED PVC MATERIAL AND WOLMANIZED LUMBER MAY BE SUBSTITUTED FOR SL-1 AND CEREMAR FOAM. INSTALL PER MANUFACTURERS RECOMMENDATIONS. THIS MATERIAL MAY ALSO BE USED IN CONTRACTION AND LONGITUDINAL JOINTS.

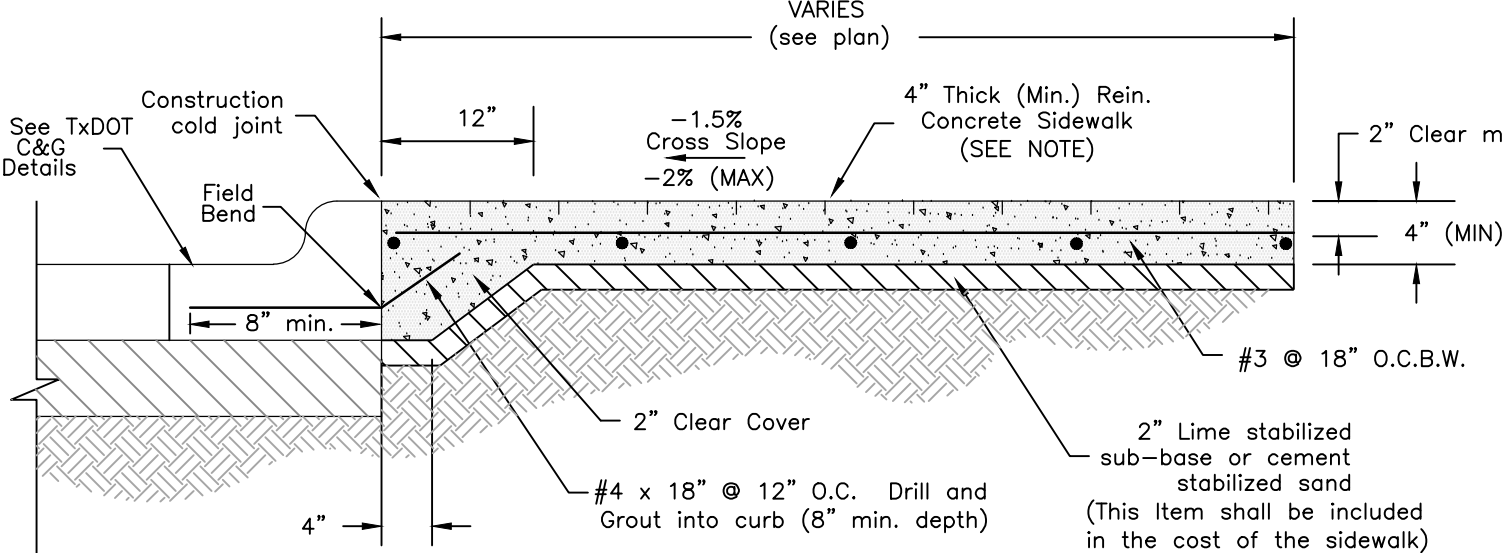
EXPANSION JOINT

(60' MAX. SPACING UNLESS OTHERWISE INDICATED IN PLANS)



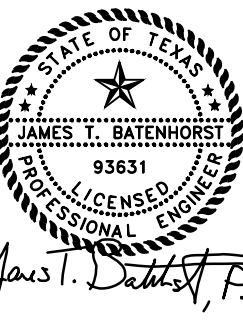
FLATWORK AT BUILDING DETAIL

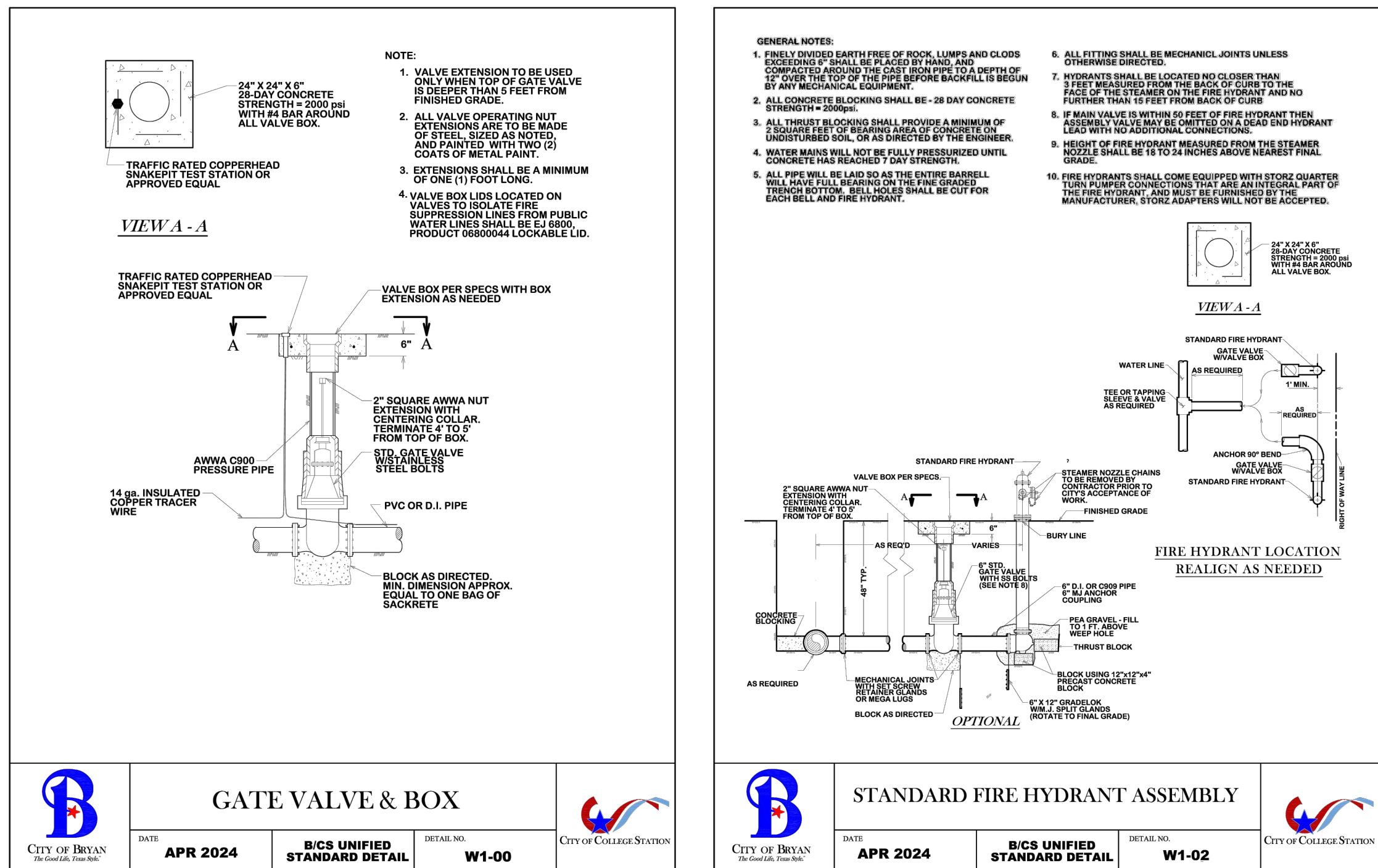
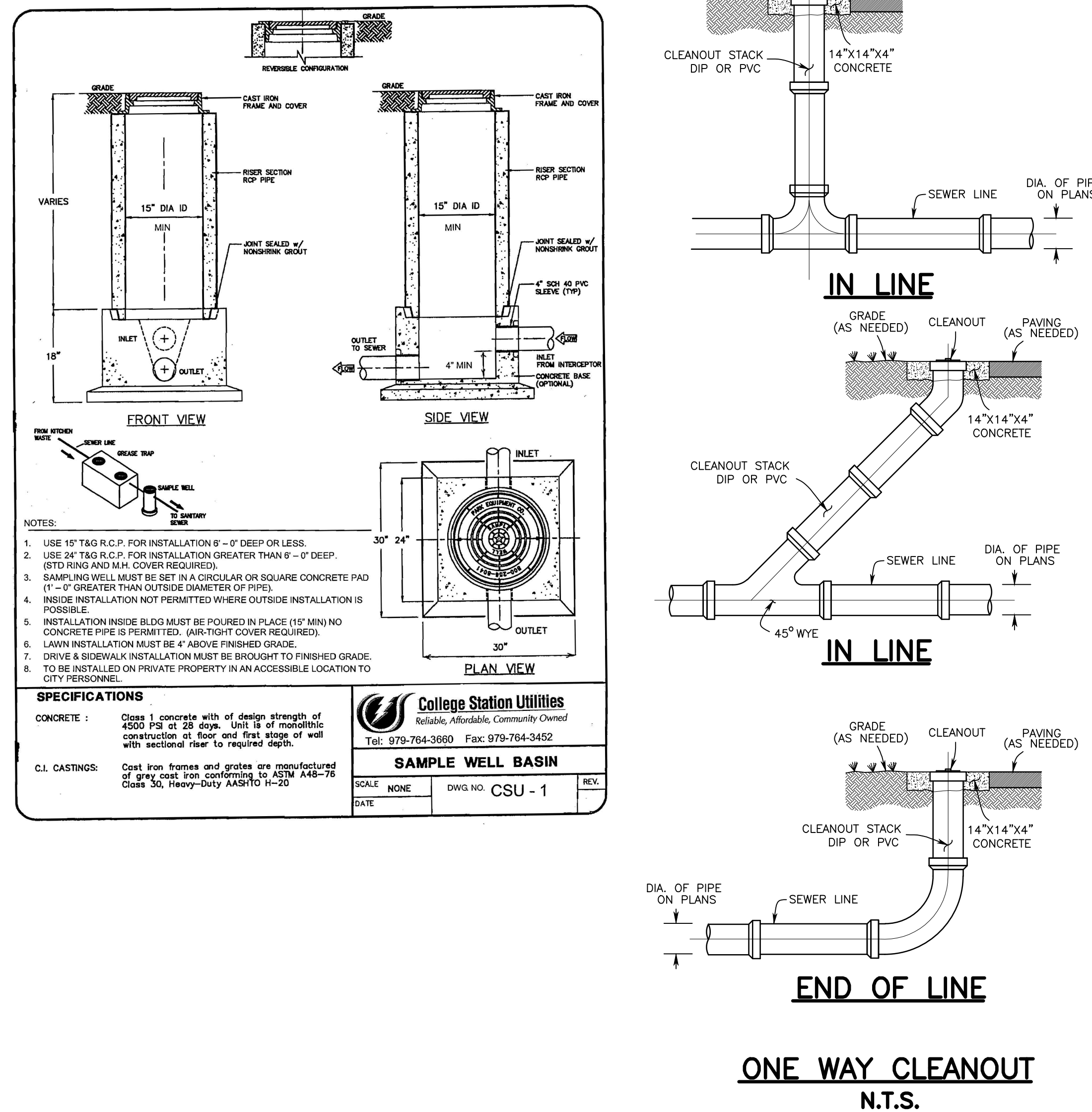
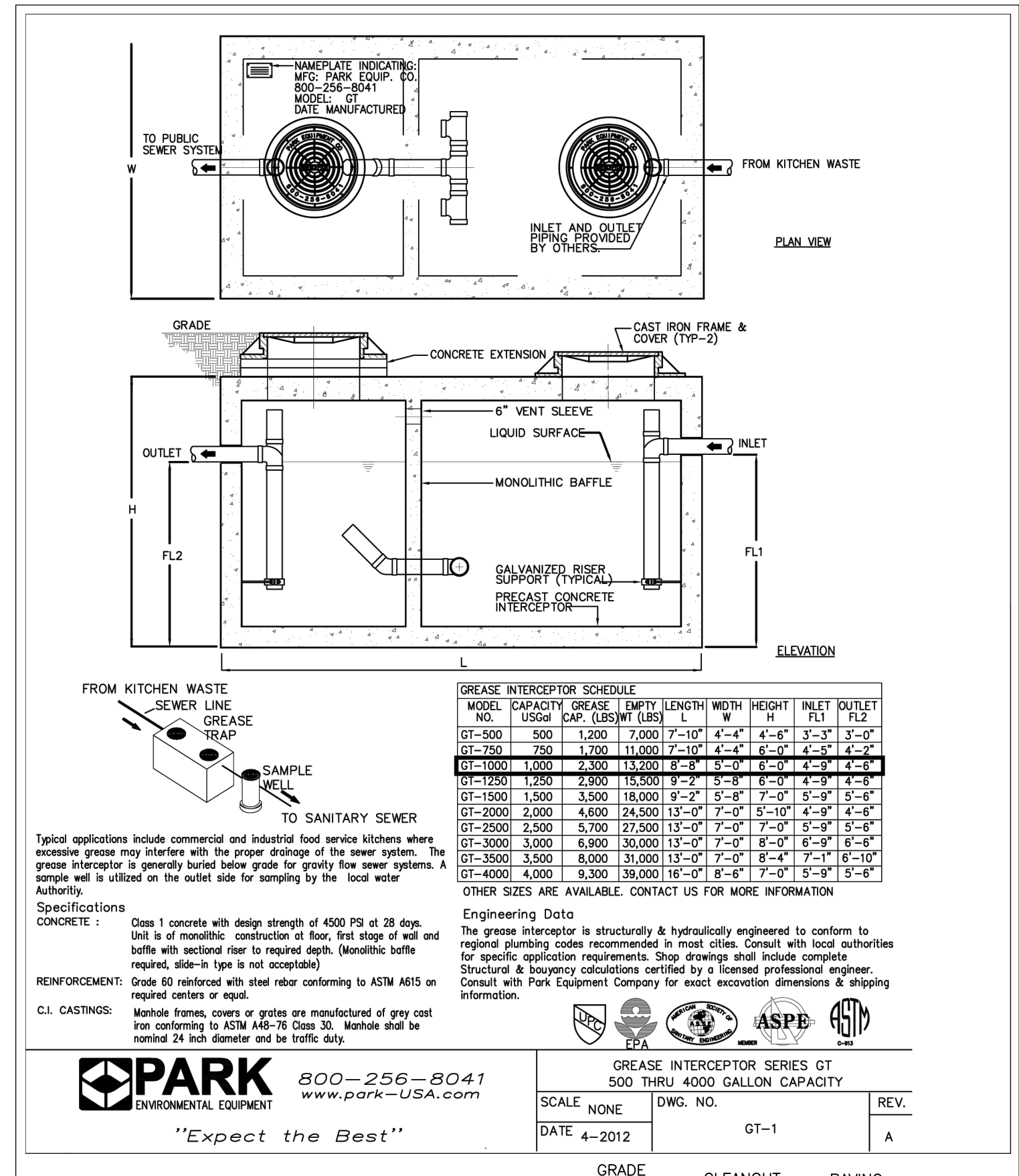
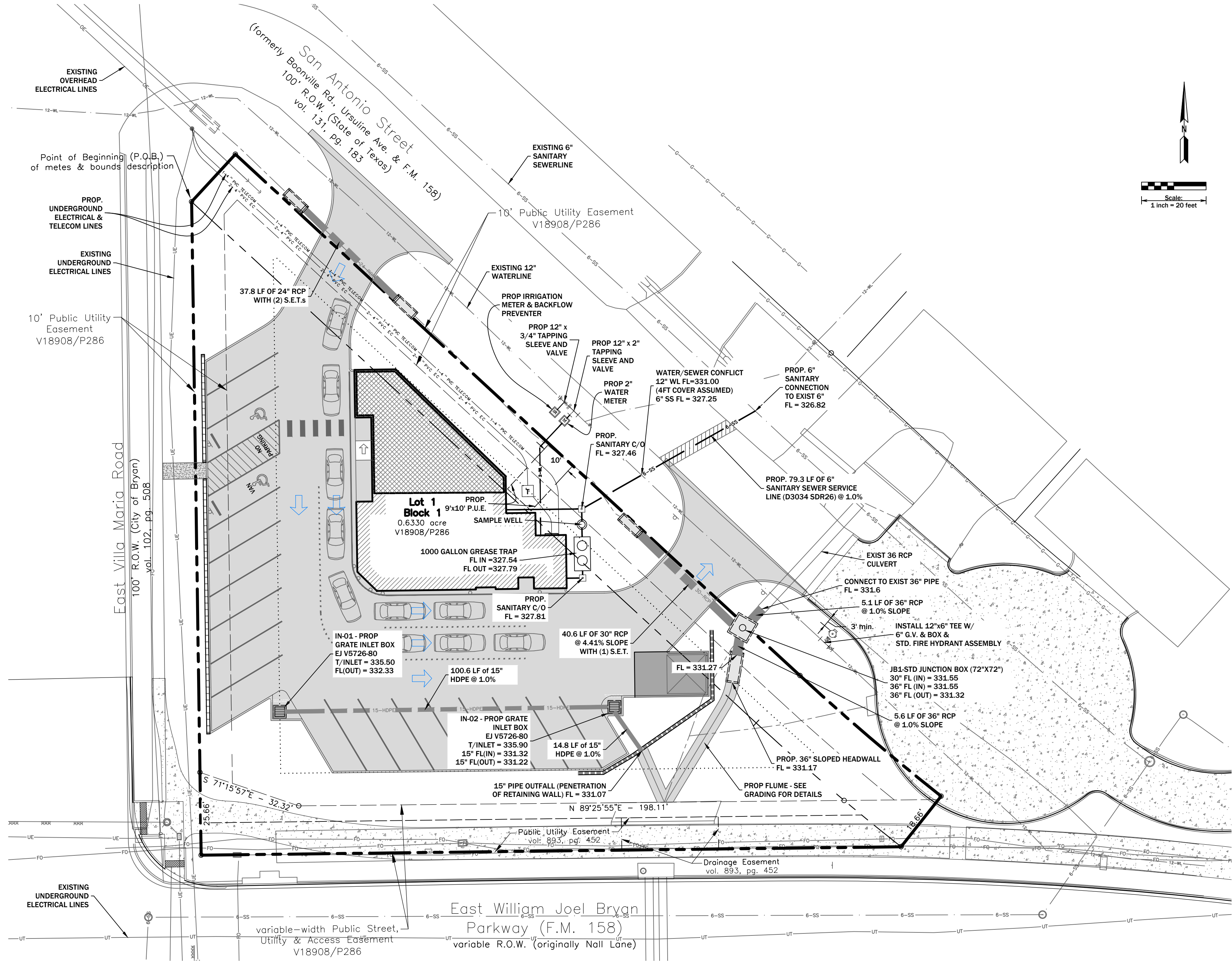
NTS



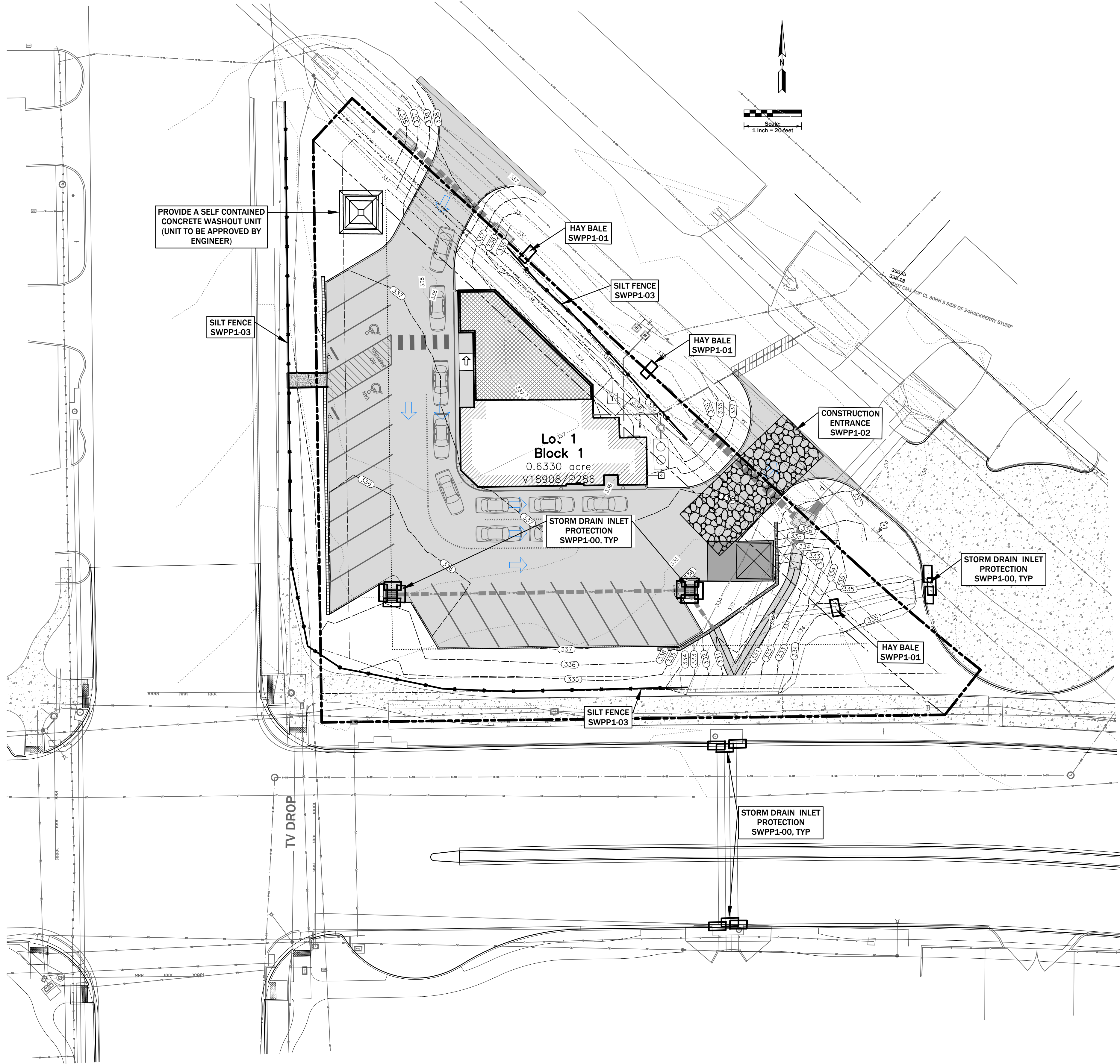
CONCRETE SIDEWALK NEXT TO CURB

NTS





PROJECT BENCHMARK:



- SWPP PLAN NOTES:**
1. All contractor vehicles, including employee's vehicles, shall park within the project site to minimize traffic on the public streets adjacent to the work site entrance. Contractor will provide sufficient parking areas to accommodate his vehicles. Any areas disturbed by vehicular parking will be repaired to original condition prior to completion of project.
 2. If required on the plans, the contractor shall maintain a vehicle wash down area of sufficient size and in a location to facilitate cleaning his vehicles prior to leaving the work site.
 3. All areas where existing vegetation and grass cover have been bared by construction shall be adequately block sodded or hydromulched and watered until growth is established. In developed areas where grass is present, block soil will be required. Bared areas shall be seeded or sodded within 14 calendars days of last disturbance. All erosion control measures shall remain in place until acceptable vegetative growth is established after construction is complete and then removed by contractor.
 4. Approved erosion control measures must be installed during the entire time earth has been bared by construction and shall stay in place until acceptable vegetative growth is established after construction is complete and then removed by the contractor.
 5. All erosion control measures should be cleaned of silt after every rain event.
 6. Approved erosion control measures must be installed during the entire time earth has been bared by construction.
 7. It is the responsibility of the contractor to use what ever means necessary to minimize erosion and prevent sediment from leaving the project site.
 8. The contractor is responsible for implementing, inspecting and maintaining the erosion and sediment control devices.
 9. Construction exit is to be dressed with additional rock as needed and maintain so as to prevent construction traffic from tracking mud onto adjacent public streets.
 10. Inspection shall be preformed every 14 days and every rainfall event of 1/2" or more. All erosion control devices shall be cleaned of silt (as needed) after every rain.
 11. Structural controls shall be installed as soon after clearing as practical and maintained in good working order until the site is stabilized. Alternate structural controls may be utilized if approved by Engineer.
 12. The contractor is responsible for complying with the TPDES General Permit No. TXR150000 requirements for construction sites.
 13. The contractor shall coordinate with the owner to determine a temporary spoils, earthwork, and topsoil area for the site.

SWPP Information:

Nature of Construction Activity:
Drainage, utility, and pavement improvements for building construction. Potential pollutants and sources - Sediment from excavation and equipment movement around the site.

- Schedule of Events:**
1. Install silt fencing.
 2. Install stabilized construction exit.
 3. Clear and grub.
 4. Install utilities.
 5. Install pavement.
 6. Complete grading and install permanent seeding.
 7. When all construction activity is completed the site is stabilized. Remove silt fence and re-seed any area disturbed during construction and assure a healthy ground cover.

Area of Disturbance:
During the construction of the pavement, drainage, and utility improvements the entire lot will be disturbed except for the existing structures and the grass area behind the existing building.

Structural Controls:
Temporary stabilization - areas where construction activity temporarily ceases for at least 21 days will be stabilized with temporary seed no later than 14 days from the last construction activity in that area all proposed fill material will be seeded.

Silt fence and/or hay bales will be installed at all outfalls, areas where water runs off the site.

Storm Water Management:
Storm water drainage will be controlled by existing grassed areas adjacent to the site. All areas affected by construction will be fine graded and have permanent seeding. The remainder of the area will remain in its natural state.

Offsite vehicle tracking:
A stabilized construction entrance will be provided to help reduce vehicle tracking of sediments. The paved street adjacent to the site entrance will be swept to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

Certification of Compliance with State and Local Regulations:
This storm water pollution prevention plan reflects the city's/state's requirements for storm water management, erosion, and sediment control. to ensure compliance, this plan was prepared in accordance with the city's drainage policy.

- Maintenance/Inspection Procedures:**
- These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls:
- All control measures will be inspected at least once every 14 days and following any storm event of 0.50 inches or greater.
 - All BMP's will be maintained in good working order: is a repair is necessary it will be initiated within 24 hours of the report.
 - Built up sediment will be removed from silt fence when it has reached one-half the height of the fence.
 - Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
 - Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
 - A maintenance inspection report will be made after each inspection. The inspection report form will be prepared by the site superintendent and filed for record.
 - A site superintendent will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report.

Non-storm Water Discharges:
It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Water from water line flushing

Site Description:

Project name and location:
LA BOTANA RESTAURANT
1819 San Antonio Street
Bryan, Texas 77802, BRAZOS COUNTY

Owner:
Jorge Luis & Martha M. Diaz
2307 Long Dr.
Bryan, Texas 77802

The site is not located on Indian lands.

Latitude: 30° 40' 19.57" N
Longitude: 96° 20' 54.20" W

MS4 operator name: City of Bryan, Texas
Receiving water body: Briar Creek Trib 3
Estimated area to be disturbed: 0.64 acres

The storm water pollution prevention plan shall be in compliance with state and local sediment and erosion plans.

Operator Requirements:
The operator shall submit a NOI to TCEQ (when applicable) and a copy to the operator and post a copy at the construction site in a location where it is readily available for viewing prior to commencing construction activities, and maintain the notice in that location until completion of the construction activity.

The operator shall provide a copy of NOI to the operator of the municipal separate storm sewer system receiving the discharge, at least two (2) days prior to commencing construction activities.

The operator shall submit a NOT to TCEQ (when applicable) and a copy to the operator of the municipal storm sewer system once the final stabilization has been achieved and the temporary erosion controls have been removed.

Controls must be developed to limit, to the extent practicable, offsite transport of litter, construction debris and construction materials.

Operator Inspection Requirements:
The following records must be maintained and either attached to or referenced in the storm water plan:

- The dates when major grading activities occur.
- The dates when construction activities temporarily or permanently cease on a portion of the site.
- The dates when stabilization measures are initiated.

A report summarizing the scope of the inspection, name and qualifications of personnel making the inspection, the dates of the inspection, and major observations must be made and retained with the storm water plan. Major observations should include:

- The locations of discharges of sediment or other pollutants from the site;
- Locations of BMP's that failed to operate as designed or proved inadequate for a particular location; and location where additional BMP's are needed.

Operator's Record Keeping:
The permittee must retain the following records for a minimum of 3 years from the date that a NOT is submitted:

A copy of the storm water plan and All reports and actions required by this permit, including a copy of the construction site notice all data used to complete the NOI.

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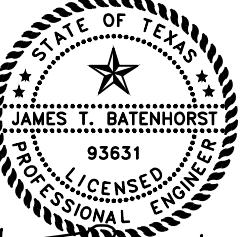
TX. FIRM # F-1443

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PLAN & DESIGN SPECIALISTS IN
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6/13/2025



James T. Battenhorst, P.E.

JUNE 2025

Drawn By: JB, TF, SB
Checked By: JBM

Prepared For:

JORGE LUIS & MARTHA M DIAZ
2307 LONG DR
BRYAN, TX 77802

Revisions

EROSION CONTROL PLAN
LA BOTANA DRIVE THRU
EAST WJ BRYAN PKWY (FM 158)

05

GENERAL REQUIREMENTS

OSHA STANDARD 29 CFR PART 1926, SUBPART P shall be used for design of trench safety requirements. Should there be any conflict between this drawing and OSHA 1926, SUBPART P, the OSHA Standard shall prevail.

Protection of employees in excavations against cave-ins and against falling rock, soil or material by use of an "adequate" system. An exception being when the excavation is in stable rock or when the excavation is less than 5 feet deep and examination by a competent person provides no evidence that a cave-in should be expected. Protection from falling rock, soil or material includes scaling or remove loose rock or soil. Installation of protective barricades and other "adequate" protection." Material of equipment which might fall or roll into an excavation must be kept at least two feet from the edge of excavations, or have restraining devices, or be prevented from falling with a combination of both precautions.

Daily inspections of excavations, adjacent areas, and protective systems by a competent person and the removal of exposed employees if evidence of possible cave-ins, failure of protective systems, hazardous atmospheres, or other hazardous conditions until necessary precautions have been taken.

A "competent person" should remain at the worksite continually while employees are within an open excavation where protective systems are being used.

Removal or neutralization of surface encumbrances which may create a hazard.

Estimate location of underground installations (sewer, telephone, electrical, fuel and other lines, storage tanks, etc.) prior to digging, report actual locations as estimated locations are approached.

Ramps, runways, ladders or stairs as means of access/egress must be within 25 feet of an employee work area if a trench is four feet or more deep.

Warning systems for mobile equipment including barricades, hand or mechanical signals, or stop logs.

Testing and Controls for hazardous atmosphere including emergency rescue equipment and daily inspections for potentially hazardous conditions by a "competent person." Controls include individually attended bellows drawing down bell-bottom pier holes or similar excavations.

Support systems such as shoring, bracing, or underpinning to ensure the stability of adjacent structures such as buildings, walls or sidewalks.

SOIL CLASSIFICATION

as per Appendix A to Subpart P, OSHA 29 CFR Part 1926

TYPE A

1) Type A means cohesive soils with an unconfined compressive strength of 1.5 tsf (144kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

1) The soil is fissured; or

2) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

3) The soil has been previously disturbed; or

4) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or

5) The material is subject to other factors that would require it to be classified as a less stable material.

TYPE B

1) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa); or

2) Granular cohesionless soil including angular gravel (similar to crushed rock), silt, silty loam, sandy loam and in some cases, silty clay loam and sandy clay loam.

3) Previously disturbed soils except those which would otherwise be classed as Type soil.

4) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or

5) Dry rock that is not stable; or

6) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

TYPE C

1) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or

2) Granular soils including gravel, sand and loamy sand; or

3) Submerged soil or soil from which water is freely seeping; or

4) Submerged rock that is not stable; or

5) Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

REQUIREMENT FOR PROTECTIVE SYSTEMS

SLOPING AND BENCHING SYSTEMS (FOUR OPTIONS)

1) A slope of 34 degrees or less, in lieu of soil classification. A slope of this gradation or less is considered safe for any type of soil.

2) Maximum allowable slopes and allowable configurations for sloping and benching systems will be determined through use of Appendices A (Soil classification) and B (Sloping and Benching) of 29CFR Part 1926, Subpart P.

3) Designs of sloping or benching shall be selected from, and be in accordance with, data provided in written form. The test to identify. Criteria that affect the selection, the limits of use of the data, and sufficient explanatory data as necessary to assist in making a correct choice of a protective system.

At least one copy of the tabulated data identifying the Registered Professional Engineer who approved the information shall be maintained at the jobsite during the time the work is being carried out.

4) Excavations can be designed by a Registered Professional Engineer, put in written form and kept at the worksite, but must include, at least, the magnitude and configuration of the slopes determined to be safe for the project and the name of the RPE who approved the plan.

SUPPORT SHIELD AND OTHER PROTECTIVE SYSTEMS (FOUR OPTIONS)

1) Designs for timber shoring in trenches set in accordance with the conditions and requirements determined by using Appendices A and C (timber shoring for trenches) of 29 CFR, Part 1926, Subpart P. For aluminum hydraulic shoring, Appendices A and D of 29 CFR, Part 1926, Subpart P, can be used if manufacturers' tabulated data is not available.

2) Designs of support systems, shield systems or other protective systems using manufacturers' tabulated data may be used, deviation allowed only with specific, written approval of the manufacturer.

3) Designs of support systems, shield systems or other protective systems using other tabulated data may be used provided the data is written and includes: Explanatory information to aid the user in making a selection, the criteria determining the selection, and the limits on the use of the data. At least one copy of the information, including the identity of the RPE, is to be kept at the worksite during construction of the protective system.

4) Design systems not using any of the three previously cited options must be approved by a Registered Professional Engineer, shall be in writing and include the identity of the RPE and details such as sizes, types and configurations of the materials to be used. At least one copy of the plan is to be at the job site during construction.

According to the new standard, information necessary for the safe installation, placement, use and removal of any trench support system must be available at the work site at all times.

TABLE OF MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V) FOR EXCAVATIONS LESS THAN 20 FEET DEEP
STABLE ROCK	VERTICAL (90 deg)
TYPE A	3/4 : 1 (53 deg)
TYPE B	1 : 1 (45 deg)
TYPE C	1 1/2 : 1 (34 deg)

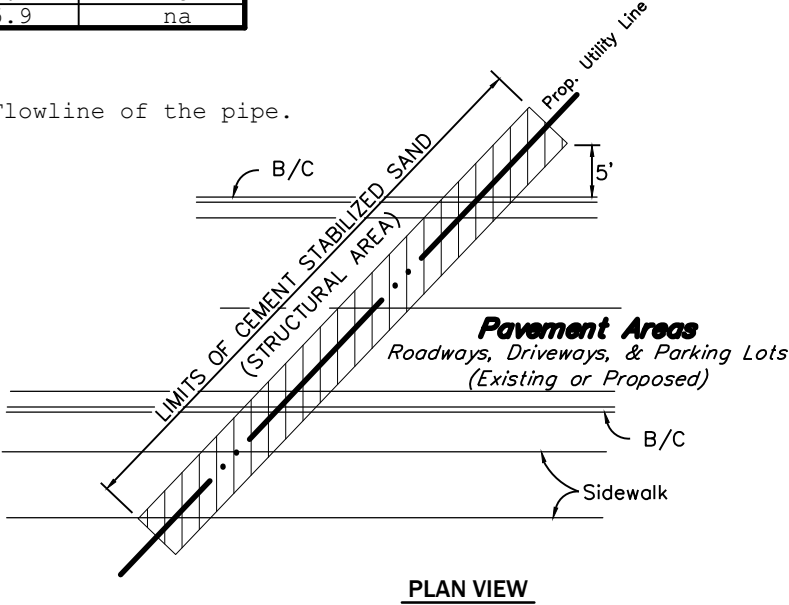
NOTES:

- Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.
- A short-term maximum allowable slope of 1/2 H:1V (63 deg.) is allowed in excavations in Type A soil that are 12 feet (3.67m) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67m) in depth shall be 3/4 H:1V (53 deg.).
- Sloping or benching for excavations greater than 20 feet deep shall be designed by a Registered Professional Engineer.
- For acceptable slope and benching configurations, see figure B-1 in OSHA Standard 29 CFR Part 1926, Subpart P.

Maximum Depth Chart Using Typical Water and Sewer Trench Detail

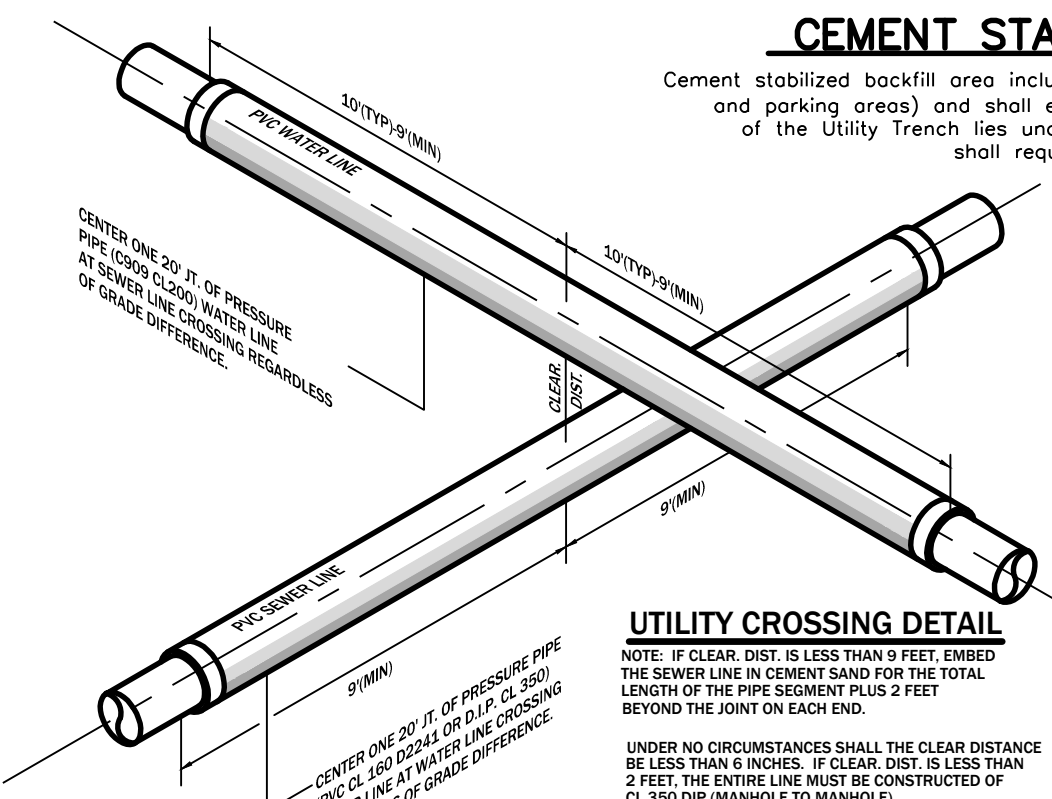
Spec.	D3034	D2231	C905	Water Line
SDR	26	26	16.5	34
Class	nc	160	16.5	200
Size	8" to 36"	8" to 36"	8" to 36"	8" to 36"
Max Depth	81.3	76.3	na	219.3
6"	34.5	31.5	na	152.5
8"	40.7	39.7	na	115.7
10"	33.5	32.8	na	95.8
12"	28.5	28	na	81
14"	na	25.7	24.7	na
15"	23.3	na	na	na
16"	na	na	21.8	na
18"	na	20.5	19.9	na
20"	na	na	18.2	na
24"	na	na	15.9	na

Depth of Bury in feet is measured to the Flowline of the pipe.
na = Not Available
nc = no pressure class



CEMENT STABILIZED BACKFILL AREA

Cement stabilized backfill area include all paved areas (sidewalks, streets, alleys, driveways and parking areas) and shall extend 5' beyond the curb line. Where any portion of the Utility Trench lies under a paved area, the entire width of the trench shall require cement stabilized backfill.



UTILITY CROSSING DETAIL

NOTE: IF CLEAR DIST IS LESS THAN 6 FEET, EMBED THE SEWER LINE IN CEMENT SAND FOR THE TOTAL LENGTH OF THE PIPE SEGMENT PLUS 2 FEET BEYOND THE JOINT ON EACH END.

UNDER NO CIRCUMSTANCES SHALL THE CLEAR DISTANCE BE LESS THAN 6 INCHES. IF CLEAR DIST IS LESS THAN 2 FEET, THE ENTIRE LINE MUST BE CONSTRUCTED OF CL 350 DIP (MANHOLE TO MANHOLE).

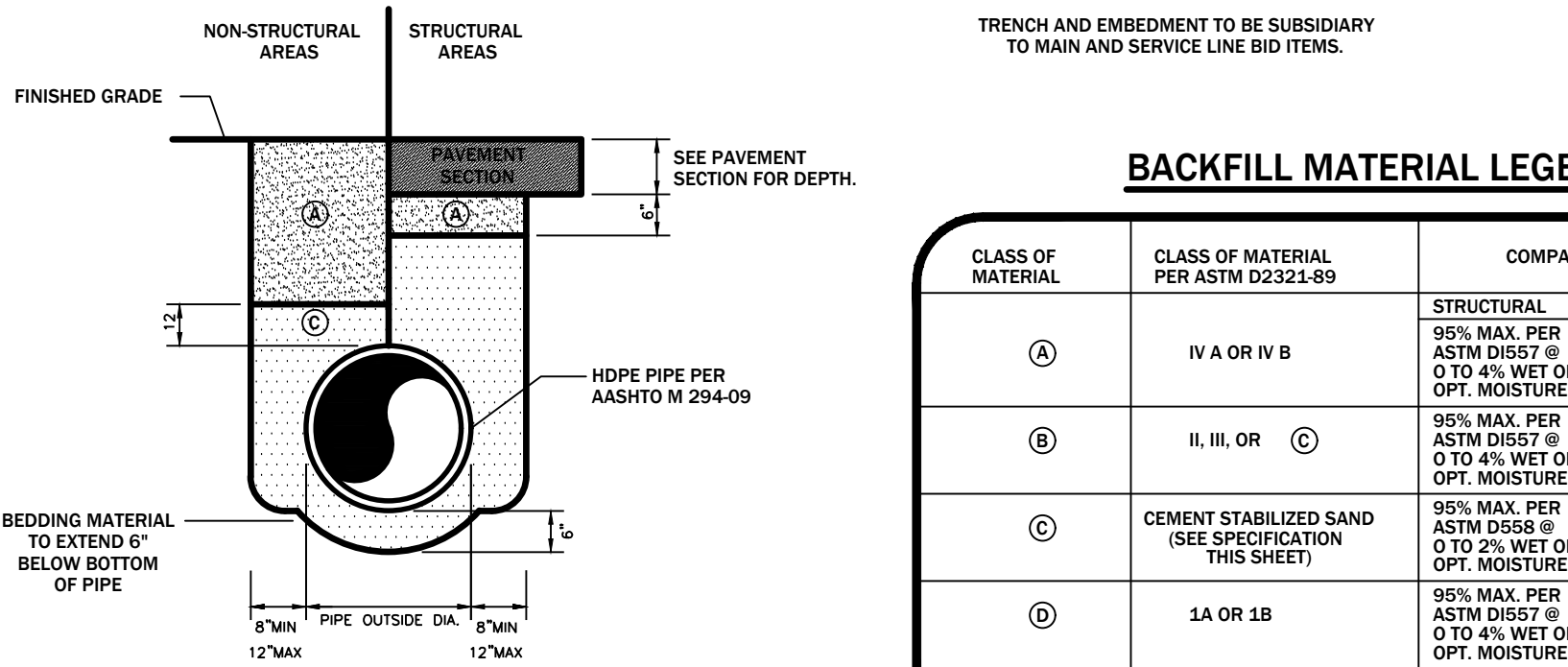
COMPACTION IN FINAL BACKFILL ZONE
COMPACTION OF ALL FILL SHALL BE AT A MOISTURE CONTENT EQUAL TO OPTIMUM AND UP TO A MAX 4% ABOVE OPTIMUM. EACH LIFT SHALL NOT EXCEED 6\"/>

COMPACTION IN INITIAL BACKFILL ZONE
USE HAND TAMPERS OR IMPACT TAMPERS TO ACHIEVE DENSITY. MAINTAIN MOISTURE CONTENT NEAR OPTIMUM TO MINIMIZE COMPACTIVE EFFORT. AVOID CONTACT WITH PIPE AND MAINTAIN A MINIMUM OF 6\"/>

INSTALL AND COMPACT IN 6\"/>

INSTALL AND COMPACT IN 6\"/>

TYPICAL WATER AND SEWER TRENCH DETAIL FOR PVC, DIP, CMP, AND TYPE K COPPER



TYPICAL HDPE STORM DRAIN TRENCH DETAIL

TRENCH AND EMBEDMENT TO BE SUBSIDIARY TO UNIT PRICE OF PIPE.

Mixed oak or equiv. w/ bending strength not less than 850 psi

Depth of Trench (feet)	SIZE (ACTUAL) AND SPACING OF MEMBERS **											
	Horizontal Spacing (feet)	Cross Braces					Wales		Uprights			
		Width of trench (feet)					Size (ft)	Vert. Spacing (ft)	Maximum allowable horizontal spacing (feet)			
		Up to 4	Up to 6	Up to 8	Up to 10	Up to 12			Close	4	6	8
5 Up to 10	Up to 6	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 8	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
10 Up to 15	Up to 8	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 10	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 12	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
15 Up to 20	Up to 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 12	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 14	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
20 Up to 25	Up to 12	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 14	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 16	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
25 Up to 30	Up to 14	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 16	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 18	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
30 Up to 35	Up to 16	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 18	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 20	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
35 Up to 40	Up to 18	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 20	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 22	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
40 Up to 45	Up to 20	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 22	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 24	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
45 Up to 50	Up to 22	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 24	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 26	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
50 Up to 55	Up to 24	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 26	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 28	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
55 Up to 60	Up to 26	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 28	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 30	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
60 Up to 65	Up to 28	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 30	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 32	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
65 Up to 70	Up to 30	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 32	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 34	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
70 Up to 75	Up to 32	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 34	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 36	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
75 Up to 80	Up to 34	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 36	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 38	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
80 Up to 85	Up to 36	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 38	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 40	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
85 Up to 90	Up to 38	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 40	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 42	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
90 Up to 95	Up to 40	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 42	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 44	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
95 Up to 100	Up to 42	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 44	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 46	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
100 Up to 105	Up to 44	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 46	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 48	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
105 Up to 110	Up to 46	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 48	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 50	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
110 Up to 115	Up to 48	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 50	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 52	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
115 Up to 120	Up to 50	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 52	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 54	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
120 Up to 125	Up to 52	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 54	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 56	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
125 Up to 130	Up to 54	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 56	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 58	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
130 Up to 135	Up to 56	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 58	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 60	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
135 Up to 140	Up to 58	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 60	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 62	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
140 Up to 145	Up to 60	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 62	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 64	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
145 Up to 150	Up to 62	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 64	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 66	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
150 Up to 155	Up to 64	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 66	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 68	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
155 Up to 160	Up to 66	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 68	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 70	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
160 Up to 165	Up to 70	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 72	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 74	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
165 Up to 170	Up to 72	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 74	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 76	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
170 Up to 175	Up to 74	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 76	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 78	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
175 Up to 180	Up to 76	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 78	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 80	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
180 Up to 185	Up to 80	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 82	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 84	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
185 Up to 190	Up to 82	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 84	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 86	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
190 Up to 195	Up to 84	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 86	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 88	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
195 Up to 200	Up to 86	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 88	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 90	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
200 Up to 205	Up to 90	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 92	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 94	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
205 Up to 210	Up to 92	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 94	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4	2 x 6		
	Up to 96	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4			

PROJECT BENCHMARK:

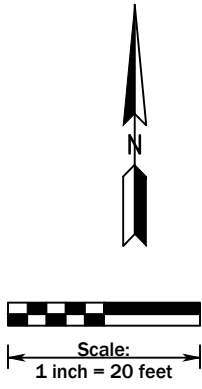
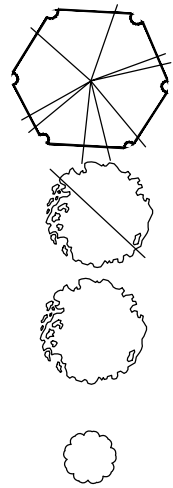
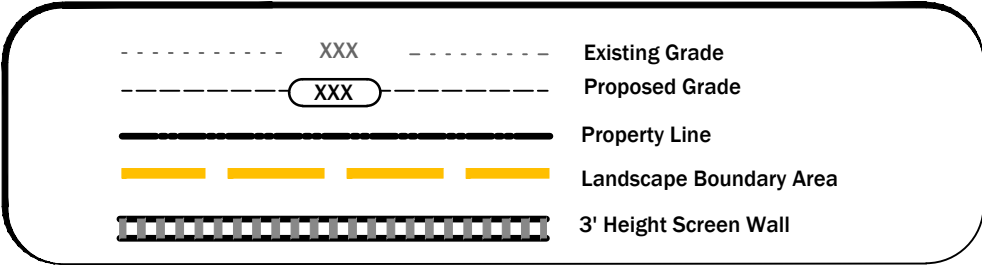


PHOTO EXAMPLE OF PARKING SCREEN WALL
COLOR AND STONE TO BE DETERMINED BY OWNER

NOTES:

1. AN IRRIGATION SYSTEM WILL BE INSTALLED FOR ALL LANDSCAPED AREAS.
2. NEW CANOPY TREES PLANTED FOR LANDSCAPE CREDIT SHALL BE AT LEAST 8' IN HEIGHT AND AT LEAST 3" IN CALIPER AND HAVE YEAR-ROUND FOLIAGE OR BE A FLOWERING DECIDUOUS SPECIES.
3. NEW NON-CANOPY TREES PLANTED FOR LANDSCAPE CREDIT SHALL BE AT LEAST 8' IN HEIGHT AND AT LEAST 1.5" IN CALIPER AND HAVE YEAR-ROUND FOLIAGE OR BE A FLOWERING DECIDUOUS SPECIES.
4. ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETED AND THEN REMOVED BY CONTRACTOR.
5. A SEPARATE SEALED IRRIGATION SPRINKLER PLAN IN COMPLIANCE WITH STATE REQUIREMENTS AND CITY PERMIT APPLICATION NEEDS TO BE SUBMITTED FOR REVIEW FOR IRRIGATION SYSTEMS. SEPARATE PLUMBING PERMIT IS REQUIRED.
6. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE A TEMPORARY SPOILS, EARTHWORK, AND TOPSOIL AREA FOR THE SITE.
7. THE CONTRACTOR SHALL USE 6" OF TOPSOIL IN LANDSCAPED AREAS.

LEGEND



LA BONTANA LANDSCAPE REQUIREMENTS				
SIZE	OFFICIAL NAME	#	SF VALUE	TOTAL SF
3"+ CALIPER	LIVE OAK QUERCUS VIRGINIANA CANOPY TREE	5	250	1,250
1.5" CALIPER	REDBUD CERCIS CANADENSIS NON-CANOPY	3	100	300
1.5" CALIPER	CHASTE TREE VITEX NEGUNDOS NON-CANOPY	6	100	600
5 GAL.	DWARF WAX MYRTLE MYRICA CERIFERA NANA SHRUB	48	20	960
TOTAL AREA PROVIDED:				3,110

LANDSCAPE REQUIREMENTS:
1) 17% OF DEVELOPED AREA 0.373 ACRES (16,244 SQ FT) = 2,762 SF LANDSCAPING
2) NO LESS THAN 50% OF RQD AREA SHALL BE TREES - 1,381 SF RQD; 2,150 SF PRVD
3) NO LESS THAN 50% OF TREES PLANTED SHALL BE CANOPY - 1075 SF RQD; 1,250 SF PRVD
4) ALL PARKING ISLANDS MUST HAVE A CANOPY TREE
TOTAL AREA REQUIRED: 2,762SF
LANDSCAPE AREA PROVIDED: 3,110 SF

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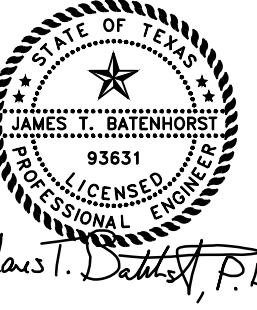
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TX. FIRM # F-1443

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6/13/2025



JUNE 2025
Drawn By: JB, TF, SB
Checked By: JBM

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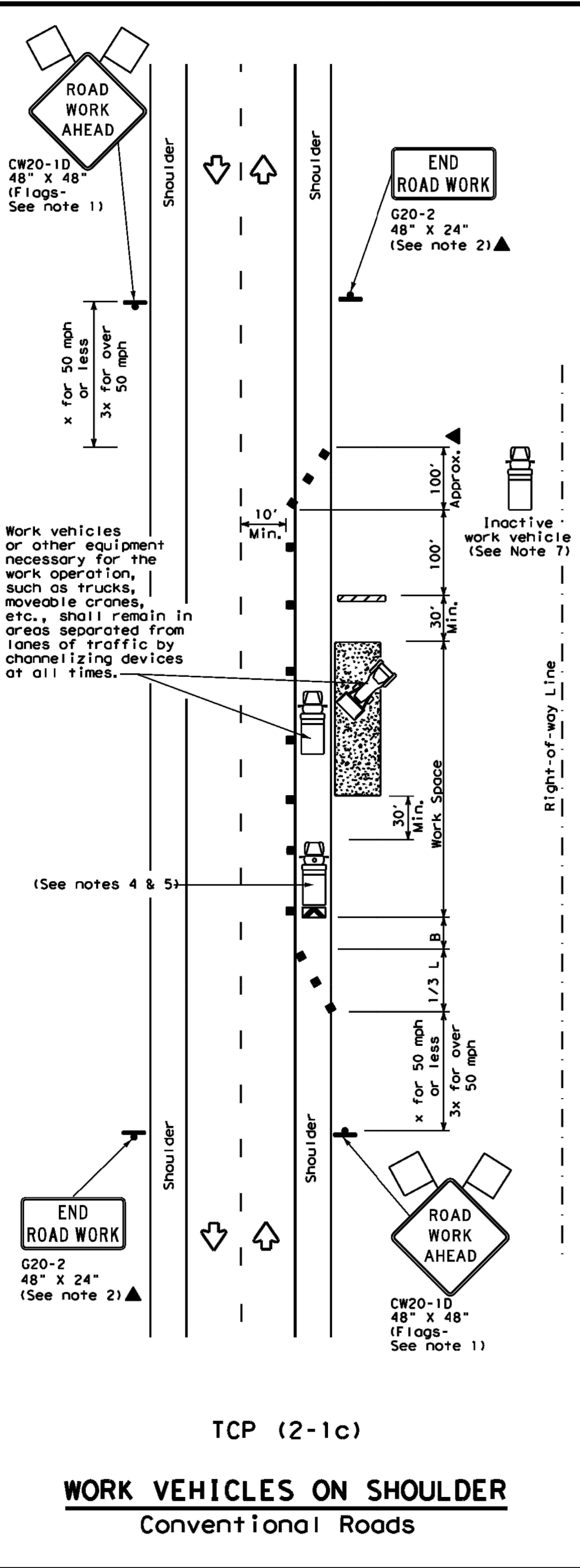
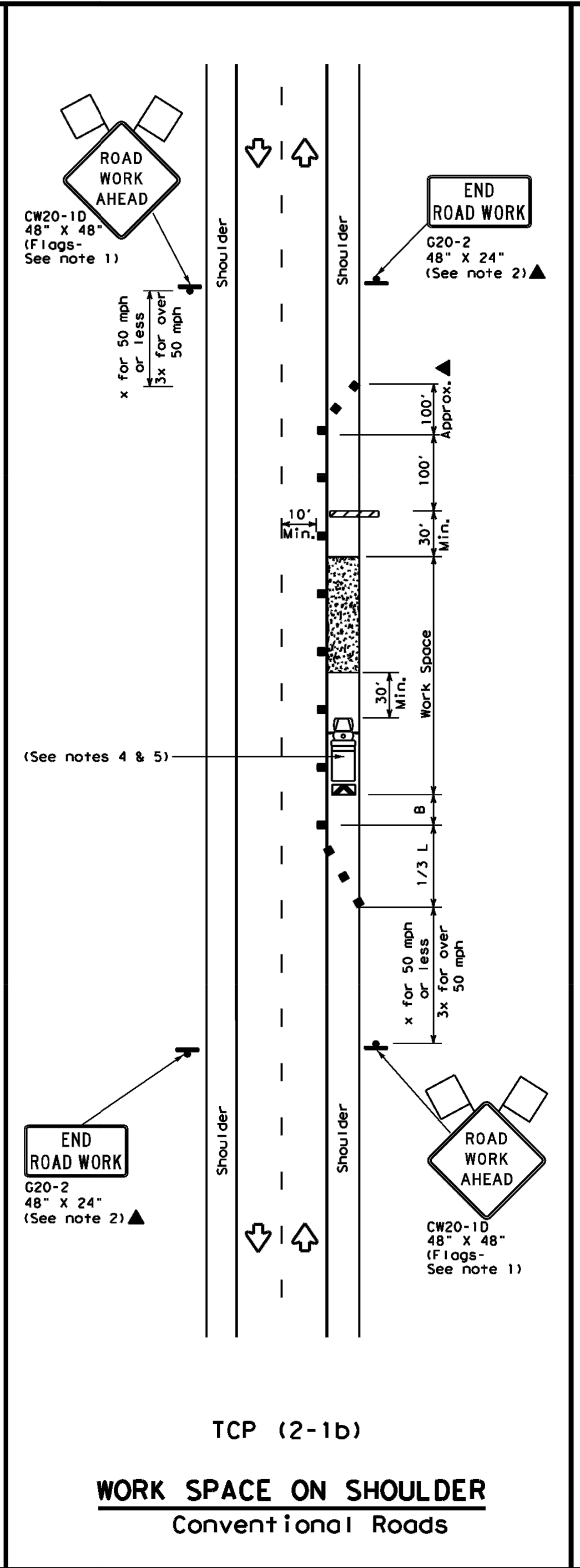
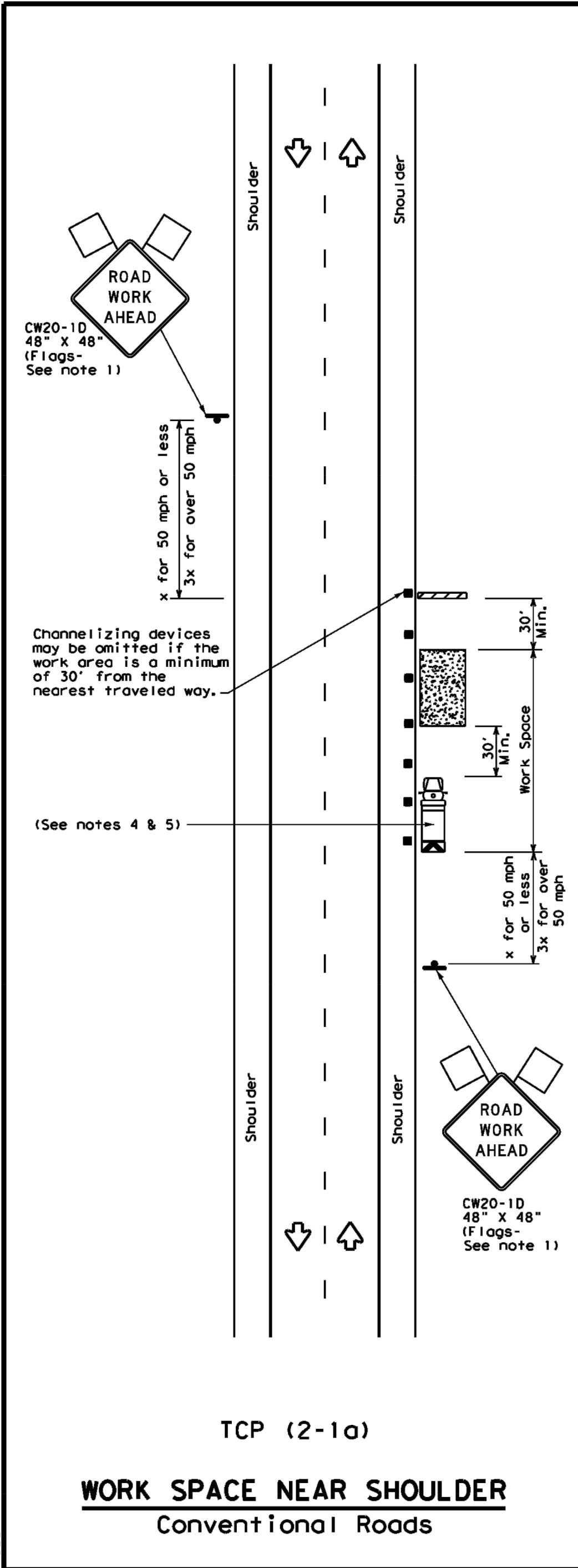
Revisions

LANDSCAPE PLAN
LA BOTANA DRIVE THRU
EAST WJ BRYAN PKWY (FM 158)

08

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DATE:
FILE:



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x"	Suggested Longitudinal Buffer Space "b"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
 - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
 - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
 - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
 - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
 - CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

FILE:	tcp2-1-18.dgn	DN:	CK:	DN:	CK:
© TxDOT	December 1985	CONT:	SECT:	JOB:	HIGHWAY:
REVISIONS		DIST:	COUNTY:	SHEET NO.	
2-94	4-98				
8-95	2-12				
1-97	2-18				
[18]					

Revisions

