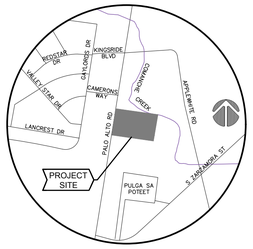


LOCATION MAP
N.T.S.

CONSTRUCTION PLAN
for
SA SOUTH BUSINESS PARK

LEGEND

WASHOUT CROWN	
SIDEWALK TO BE BUILT BY DEVELOPER	
TOP OF PVMT. ELEVATION	940.00
EXISTING STREET LIGHT	•ELP
PROPOSED STREET LIGHT (100 WATT)	LP
PROPOSED POWER POLE	PP
PROPOSED FIRE HYDRANT	
EXISTING FIRE HYDRANT	

GENERAL NOTES

1. All materials and construction procedures within the scope of this project shall, be approved by the City of San Antonio Public Works and comply with the following as applicable:
A. Reference to Current "San Antonio Water System Utility Specifications"
B. Reference to Current City of San Antonio "Standard Specifications for Public Works Construction"

2. The locations and depths of existing utilities, including service laterals, and drainage structures shown on the plans are approximate only. The Contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction. Texas State Wide One Call Locator 1-800-545-6005 City Public Service AT&T Time Warner Valero Energy Co.

3. The Contractor shall notify the City prior to the start of each phase of street construction and call for inspections with a minimum of 24 hours notice.

4. Testing will be paid for by Developer, coordinated by Contractor, and witnessed by City.

5. Minimum Testing Schedule:

Densities - Subgrade	1 Per 500 Foot Minimum
Densities - Base	1 Per 500 Foot Minimum
Proctors - Subgrade	1 Per Material Per Subdivision
Proctors - Base	1 Per 5,000 C.Y.
Lime Series - Subgrade	1 Per Material Per Subdivision
Concrete - Structures	1 Set (3) Per 50 C.Y.

6. Transition washout crown to normal crown in 25'.

7. No extra payment shall be allowed for work called for on the plans, but not included in the bid proposal. This incidental work will be required and shall be included in the pay item to which it relates.

8. The contractor shall be responsible for restoring to its original or better condition any damage done to existing fences, concrete islands, street paving, curbs, shrubs, bushes or driveways. (No separate pay item).

9. Due to federal regulations Title 49, Part 192.171 CPS must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.

10. Contractor shall notify the city inspector twenty four (24) hours prior to backfill of any utility trenches to schedule for density test as required.

11. All waste material shall become property of the contractor and shall be his sole responsibility to dispose of this material off the limits of the project. No waste material shall be placed in existing lows that will block or alter flow limits of existing artificial or natural drainage.

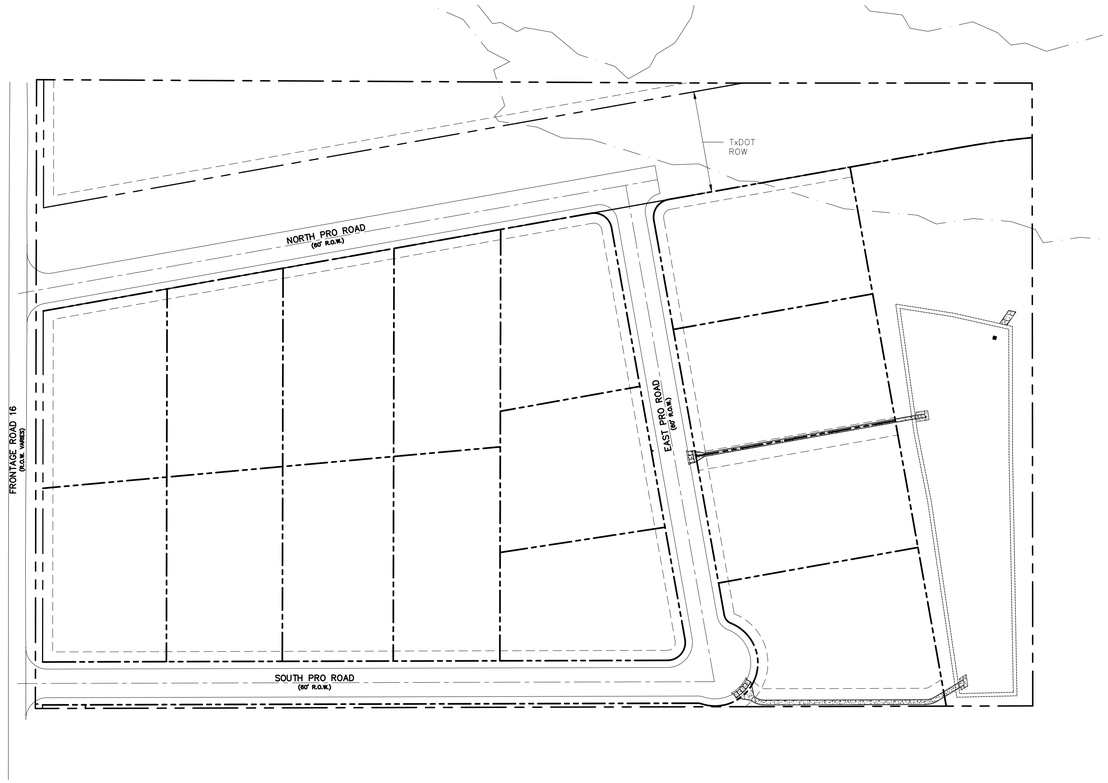
12. The contractor shall not place any waste material in the 100-year flood plain without first obtaining an approved Flood Plain Development Permit.

13. The contractor shall maintain all adjoining streets and traveled routes free from spilled and/or tracked construction materials and/or debris.

14. It is the contractor's responsibility to see that all signs and barricades are properly installed and maintained. All locations and distances will be decided upon in the field by the contractor, using the "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". The City's construction inspector will only be responsible to inspect barricades and signs. If, in the opinion of the construction inspector, the barricades and signs do not conform to established standards or are incorrectly placed or are insufficient in quantity to protect the general public, the inspector shall have the option to stop operations until such time as the conditions are corrected.

TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall. review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies 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.



LOCATION MAP
SCALE: 1"=100'

Sheet List Table

Know what's below. Call before you dig.

IF YOU DIG IN TEXAS
CALL US FIRST, IT'S THE LAW
1-800-344-8377

OWNER:
SA SOUTH BUSINESS PARK LP
828 MEYER RD
KINGSBURY, TEXAS 78638

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
COVER SHEET

SHEET NO.
100

GENERAL NOTES

1. CONTRACTOR SHALL COORDINATE WITH GAS AGENCY PRIOR TO COMMENCING WORK.
2. CONTRACTOR SHALL COORDINATE WITH CPS AGENCY PRIOR TO COMMENCING WORK.

LEGEND

- EXISTING FIRE HYDRANT
- SITE PROPERTY LINE
- 777 EXISTING CONTOURS
- EXISTING VARIABLE EASEMENTS
- EXISTING TREES TO BE REMOVED.
- EXISTING TREES TO BE PROTECTED.

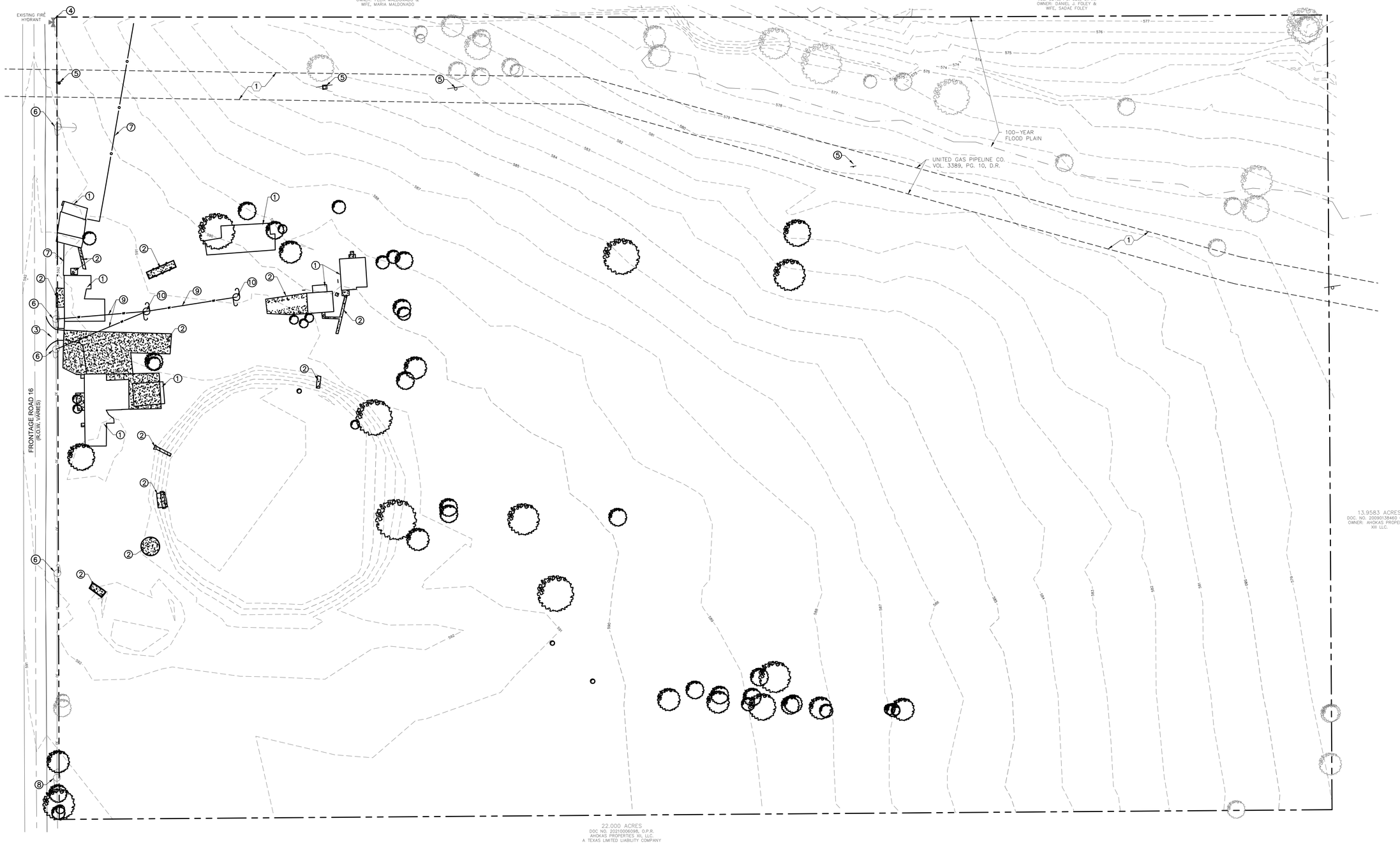
PLAN NOTES

1. REMOVE EXISTING BUILDING
2. REMOVE EXISTING CONCRETE PAD.
3. REMOVE EXISTING DRIVEWAY.
4. EXISTING FIRE HYDRANT TO BE PROTECTED.
5. SIGN TO BE PROTECTED.
6. UTILITY POLES TO BE PROTECTED.
7. REMOVE EXISTING FENCE.
8. POWER POLE TO BE RELOCATED BY CPS.
9. POWER LINES TO BE REMOVED BY CPS.
10. POWER POLES TO BE REMOVED BY CPS.

NOTE:
(1) NO GRADING OR CONSTRUCTION ACTIVITIES SHALL TAKE PLACE WITHIN GAS EASEMENT WITHOUT PRIOR WRITTEN APPROVAL FROM GAS AGENCY

N

0 50' 100'
1" = 50'



DESIGNED BY:	JFC
DRAWN BY:	LC
DATE:	10/2022
JOB NO.:	E0685501

CIVIL ENGINEERING CONSULTANTS
CEC GROUP, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. #93639

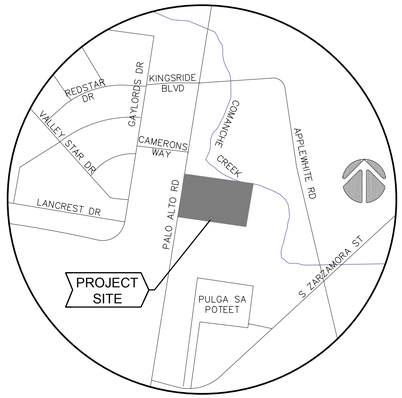
ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
EXISTING AND DEMOLITION PLAN

SHEET NO.
101

UTILITY CONSTRUCTION PLAN
for
SA SOUTH BUSINESS PARK



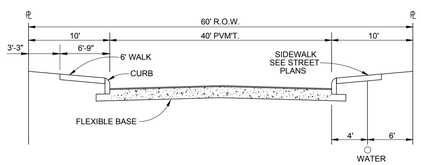
LOCATION MAP

N.T.S.

NOTE:

1. 6" P.V.C. SCHEDULE 80 CONDUIT WILL BE REQUIRED FOR C.P.S. UTILITY CROSSING FROM ROW TO ROW AT A DEPTH OF 36" BELOW FINAL GRADE, WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION.
2. 4" P.V.C. SCHEDULE 40 CONDUIT WILL BE REQUIRED FOR UNDERGROUND TELEPHONE AND CABLE T.V. FROM ROW TO ROW AT A DEPTH OF 36" BELOW FINAL GRADE, WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION.
3. P.V.C. CONDUIT SHALL HAVE 90° SWEEPS/BENDS TO 6" ABOVE GRADE WITH CAP. IF CONDUIT IS NOT INSTALLED 6" ABOVE FINAL GRADE IT SHALL BE CONTRACTORS RESPONSIBILITY TO UNDERCOVER CONDUIT ENDS FOR EACH UTILITY PROVIDER AS NECESSARY.
4. IF OWNER ELECTS TO HAVE DRY UTILITIES INSTALLED PRIOR TO STREET CONSTRUCTION NO CONDUIT FOR CPS & CABLE TV WILL BE INDICATED ON THIS PLAN. IF CONTRACTOR ELECTS TO PROCEED WITH ANY PORTION OF DRAIN CONSTRUCTION PRIOR TO UTILITY INSTALLATION, THEN CONTRACTOR WILL BE REQUIRED TO INSTALL ALL DRY UTILITY CONDUIT REQUIRED AT EACH DRAIN CROSSING AT NO EXTRA PAY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY THE SAWS INSPECTOR/TEST ADMINISTER, 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.



TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

Sheet List Table

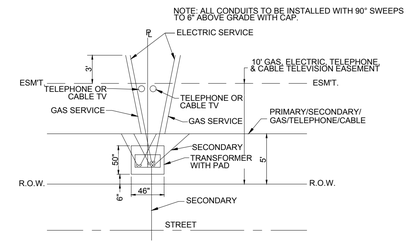
LEGEND

EXISTING LIGHT POLE	
EXISTING OVERHEAD ELECTRIC	OT
EXISTING WATER MAIN	Wx
EXISTING FIRE HYDRANT	
EXISTING GAS LINE	Gx
EXISTING GAS LINE SIGN	
PROPOSED WATER MAIN	P8"PVC
PROPOSED LIGHT POLE (RELOCATION)	
PROPOSED FIRE HYDRANT	
PROPOSED LIGHT POST	
PROPOSED POWER POLE	PP

OWNER:
SA SOUTH BUSINESS PARK LP
828 MEYER RD
KINGSBURY, TEXAS 78638

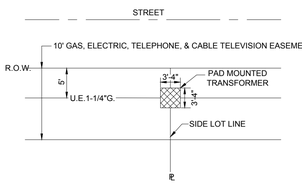
CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

NOTE: ALL CONDUITS TO BE INSTALLED WITH 90° SWEEPS TO 6" ABOVE GRADE WITH CAP.



TYPICAL TRANSFORMER DETAIL

NOT TO SCALE



EASEMENT DETAILS

NOT TO SCALE

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. 93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK

UTILITY COVER SHEET

SHEET NO.

200

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/ EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

NOTE:

1. 6" P.V.C. SCHEDULE 80 CONDUIT WILL BE REQUIRED FOR C.P.S. UTILITY CROSSING FROM ROW TO ROW AT A DEPTH OF 36" BELOW FINAL GRADE, WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION.
2. 4" P.V.C. SCHEDULE 40 CONDUIT WILL BE REQUIRED FOR UNDERGROUND TELEPHONE AND CABLE T.V. FROM ROW TO ROW AT A DEPTH OF 36" BELOW FINAL GRADE, WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION.
3. P.V.C. CONDUIT SHALL HAVE 90° SWEEPS/BENDS TO 6" ABOVE GRADE WITH CAP. IF CONDUIT IS NOT INSTALLED 6" ABOVE FINAL GRADE IT SHALL BE CONTRACTORS RESPONSIBILITY TO UNDERCOVER CONDUIT ENDS FOR EACH UTILITY PROVIDER AS NECESSARY.
4. IF OWNER ELECTS TO HAVE DRY UTILITIES INSTALLED PRIOR TO STREET CONSTRUCTION NO CONDUIT FOR CPS & CABLE TV WILL BE INDICATED ON THIS PLAN. IF CONTRACTOR ELECTS TO PROCEED WITH ANY PORTION OF DRAIN CONSTRUCTION PRIOR TO UTILITY INSTALLATION, THEN CONTRACTOR WILL BE REQUIRED TO INSTALL ALL DRY UTILITY CONDUIT REQUIRED AT EACH DRAIN CROSSING AT NO EXTRA PAY.

GENERAL NOTE

CONTRACTOR TO COORDINATE WITH CLIENT AND CPS PRIOR TO COMMENCING ANY WORK.

PLAN NOTES

1. UTILITY POLES TO BE REMOVED BY CPS.
2. UTILITY LINES TO BE REMOVED BY CPS.
3. UTILITY POLE TO BE RELOCATED BY CPS.
4. PROPOSED UTILITY POLE RELOCATION.
5. PROPOSED UTILITY POLE.
6. PROPOSED LIGHT POLE.

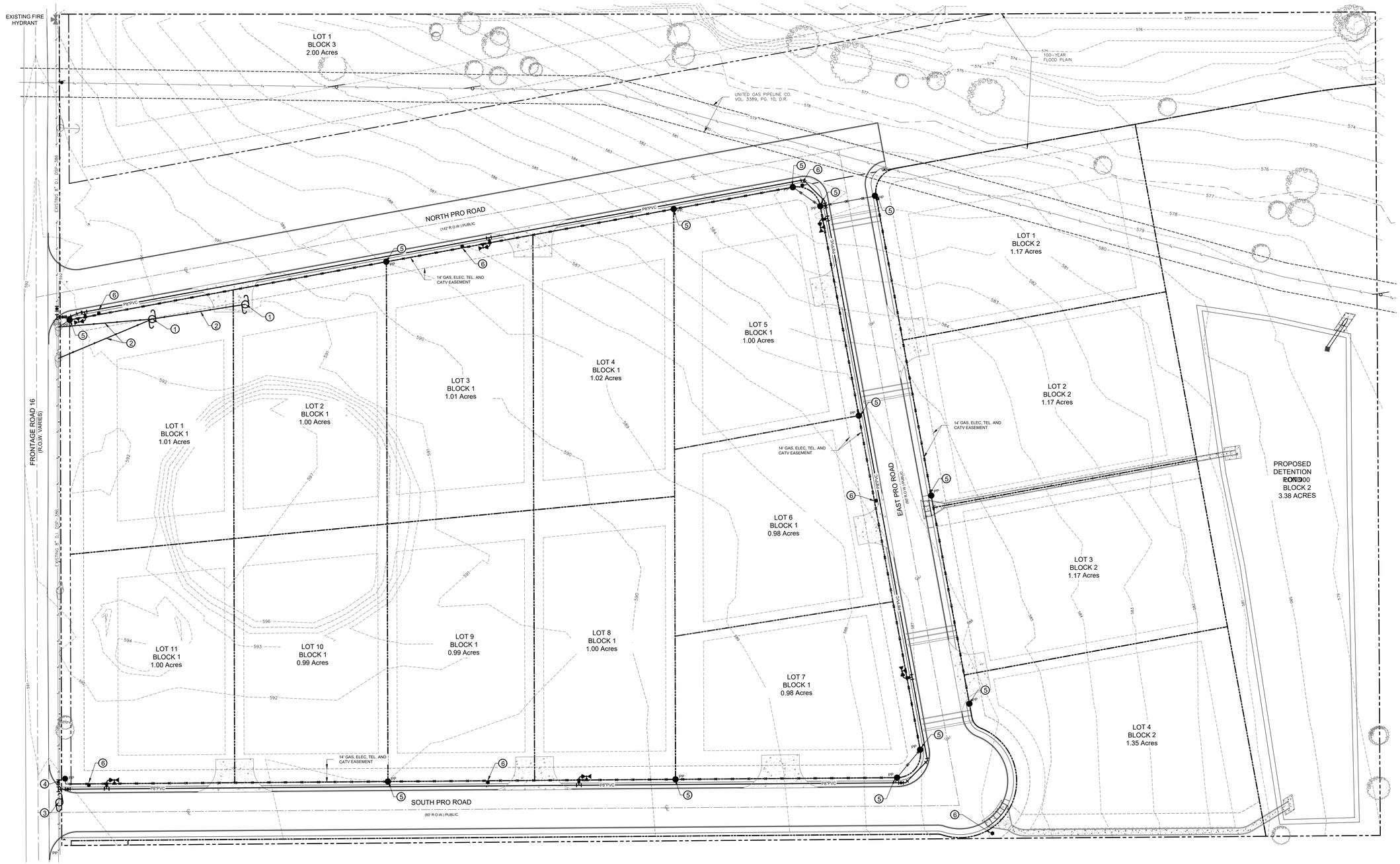
LEGEND

EXISTING LIGHT POLE	
EXISTING OVERHEAD ELECTRIC	OT
EXISTING WATER MAIN	Wx
EXISTING FIRE HYDRANT	
EXISTING GAS LINE	Gx
EXISTING GAS LINE SIGN	
PROPOSED WATER MAIN	P8"PVC
PROPOSED POWER POLE	PP
PROPOSED FIRE HYDRANT	
PROPOSED LIGHT POST	LP
SIDEWALK TO BE BUILT BY DEVELOPER	

N

0 50' 100'

1" = 50'



CIVIL ENGINEERING CONSULTANTS
4155 DIEHL LANE, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #100410000

CEC

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. 93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0085501

SA SOUTH BUSINESS PARK
OVERALL UTILITY PLAN

SHEET NO.
201

WATERLINE CONSTRUCTION PLAN
for
SA SOUTH BUSINESS PARK

SAWS CONSTRUCTION NOTES
Revised July 2017

General Section Notes

1. 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 Drainage".
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.

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 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.

Water Notes

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 1215 feet where the static pressure will normally exceed 80 PSI. At all such locations where the ground level is below 1215 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.

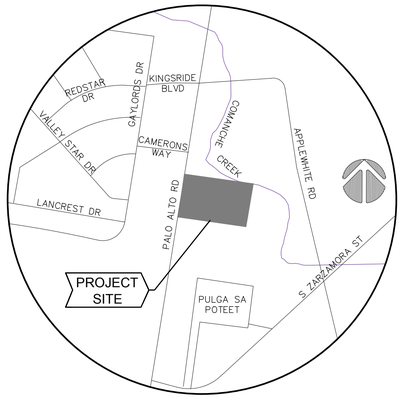
9. Final connection to the existing water main shall not be made until the water main has been pressure tested, chlorinated, and SAWS has released the main for tie-in and use.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL, REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

RESIDENTIAL FIRE FLOW:

THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1500 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING THE BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICES AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.



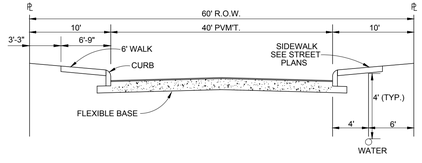
LOCATION MAP
N.T.S.

Sheet List Table

Sheet Number	Sheet Title
300	WATER COVER SHEET
301	OVERALL WATER PLAN
302	WATER DETAILS
303	WATER DETAILS

SIDEWALK NOTE:
SIDEWALKS AND FIRE HYDRANTS SHALL BE INSTALLED PER CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR CONSTRUCTION AND SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.

NOTES:
1) SAWS REQUIRES GCPs AND COUNTER PERMITS TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS.
2) ANCHORAGE/THRUST BLOCKING AND JOINT RESTRAINTS SHALL BE DONE IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION. (ITEM NO. 839)
3) ALL 8" PVC WATER PIPE BEING USED FOR THIS PROJECT IS C-900, CLASS 235 (DR-18).
4) THE SAN ANTONIO WATER SYSTEM IS HEREBY GRANTED THE RIGHT OF INGRESS AND EGRESS ACROSS GRANTOR'S ADJACENT PROPERTY TO ACCESS THE WATER AND/OR WASTEWATER EASEMENTS SHOWN.



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE

OWNER:
SA SOUTH BUSINESS PARK LP
828 MEYER RD
KINGSBURY, TEXAS 78638

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

WATER QUANTITIES

Onsite Water

Item No:	Description	Unit	Quantity
550.0	Trench Protection	L.F.	2361
818.0	8" Pipe, P.V.C. C-900, Class 235 (DR-18)	L.F.	2361
834.1	Standard Fire Hydrant	EA.	6
836.0	D.I. MJ Compact Fittings (C153)	TON	1.4
840.0	8" PVC Water Tie-In To Existing 8" PVC	EA.	2
841.0	Hydrostatic Test	EA.	1
844.0	2" Blowoff (Temporary)	EA.	2
847.0	Disenfection	EA.	1

LEGEND

EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED LIGHT POLE (100 WATT LED)
PROPOSED POWER POLE
PROPOSED FIRE HYDRANT
E8"PVC
P8"PVC
PP

PRESSURE ZONE: 790

Developer's Name PALACE WAY MANAGEMENT, LLC
Developer's Address 6531 FOX RUN
City SAN ANTONIO State TEXAS Zip 78233
Phone #(210) 210.413.7230 Fax #( )
SAWS Block Map# 140534 Total EDU's 0 Total Acreage 27.94 AC
Total Linear Footage of Pipe: 8": 2,370 LF Plat No. PLAT No. 22-11800197
Number of Lots: 16 SAWS JOB NO. XXXX

ALL WATER PIPE TO BE C-900, CLASS 235 (DR-18) UNLESS OTHERWISE NOTED

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. *93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
WATER COVER SHEET

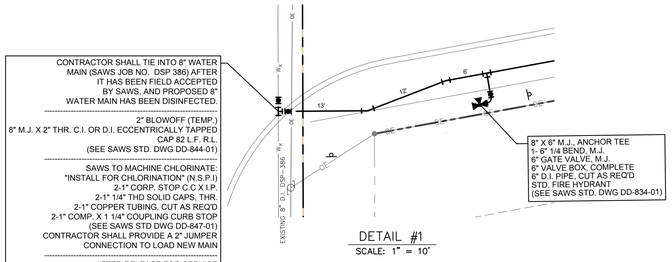
SHEET NO.
300

CONTRACTOR SHALL TIE INTO 8" WATER MAIN (SAWS JOB NO. DSP 386) AFTER IT HAS BEEN FIELD ACCEPTED BY SAWS, AND PROPOSED 8" WATER MAIN HAS BEEN DISINFECTED.

2" BLOWOFF (TEMP.)
8" M.J. X 2" THR. C.I. OR D.I. ECCENTRICALLY TAPPED CAP 82 L.F. R.L.
(SEE SAWS STD. DWG DD-844-01)

SAWS TO MACHINE CHLORINATE:
"INSTALL FOR CHLORINATION" (N.S.P.I)
2-1" CORP. STOP C.C X I.P.
2-1" 1/4" THD SOLID CAPS, THR.
2-1" COPPER TUBING, CUT AS REQ'D
2-1" COMP. X 1 1/4" COUPLING CURB STOP
(SEE SAWS STD DWG DD-847-01)
CONTRACTOR SHALL PROVIDE A 2" JUMPER CONNECTION TO LOAD NEW MAIN

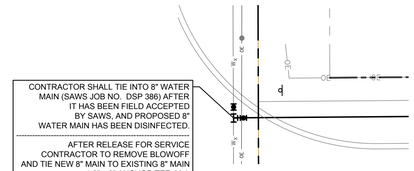
AFTER RELEASE FOR SERVICE
CONTRACTOR TO REMOVE BLOWOFF ASSEMBLY AND TIE NEW 8" PVC MAIN TO EXISTING 8" D.I. MAIN
1-8" x 8" ANCHOR TEE, M.J.
2-8" GATE VALVE, M.J.
2-6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY
2- 8" CAST COUPLINGS, M.J.
15 L.F. 8" PVC PIPE (CUT AS REQUIRED)



DETAIL #1
SCALE: 1" = 10'

CONTRACTOR SHALL TIE INTO 8" WATER MAIN (SAWS JOB NO. DSP 386) AFTER IT HAS BEEN FIELD ACCEPTED BY SAWS, AND PROPOSED 8" WATER MAIN HAS BEEN DISINFECTED.

AFTER RELEASE FOR SERVICE
CONTRACTOR TO REMOVE BLOWOFF AND TIE NEW 8" MAIN TO EXISTING 8" MAIN
1-8" x 8" ANCHOR TEE, M.J.
2-8" GATE VALVE, M.J.
2-6" VALVE BOX, COMPLETE
58 L.F. R.L. EACH WAY



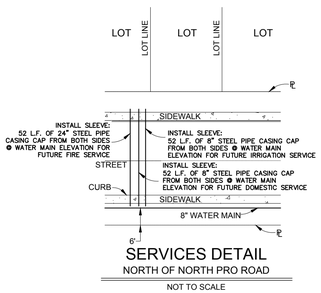
DETAIL #2
SCALE: 1" = 10'

LEGEND

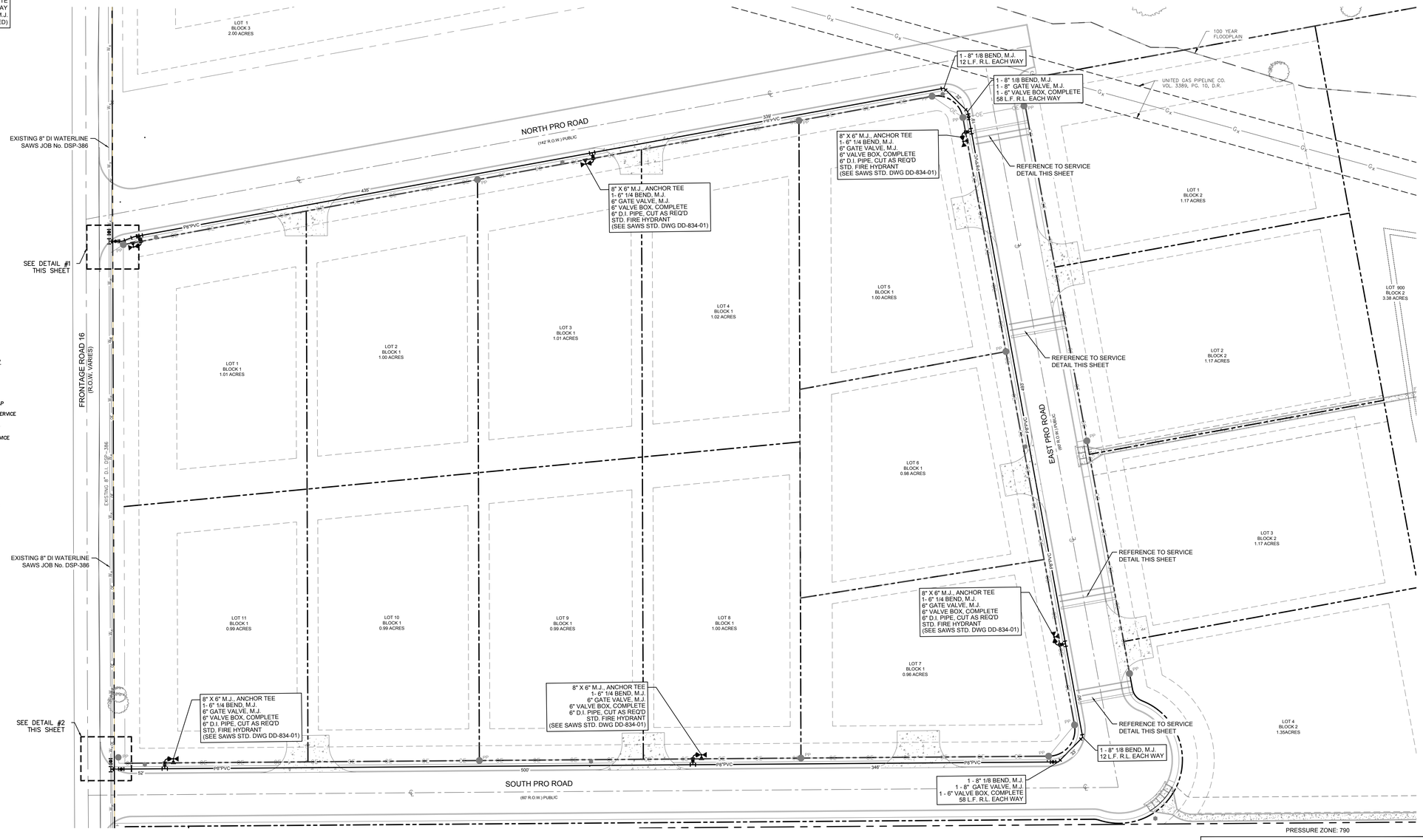
EXISTING LIGHT POLE	
EXISTING OVERHEAD ELECTRIC	OT
EXISTING WATER MAIN	Wx
EXISTING FIRE HYDRANT	
EXISTING GAS LINE	Gx
EXISTING GAS LINE SIGN	
PROPOSED WATER MAIN	P8"PVC
PROPOSED POWER POLE	P.P.
PROPOSED FIRE HYDRANT	
PROPOSED LIGHT POST	

N

0 50' 100'
1" = 50'



SERVICES DETAIL
NORTH OF NORTH PRO ROAD
NOT TO SCALE



PRESSURE ZONE: 790

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL: REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

Developer's Name PALACE WAY MANAGEMENT, LLC
Developer's Address 6531 FOX RUN
City SAN ANTONIO State TEXAS Zip 78233
Phone #(210) 210.413.7230 Fax #( )
SAWS Block Map# 140534 Total EDU's 0 Total Acreage 27.94 AC
Total Linear Footage of Pipe: 8": 2,370 LF Plat No. PLAT No. 22-11800197
Number of Lots: 16 SAWS JOB NO. XXXX

ALL WATER PIPE TO BE C-900, CLASS 235 (DR-18)
UNLESS OTHERWISE NOTED

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
4155 DIEZ ROAD, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. *93639

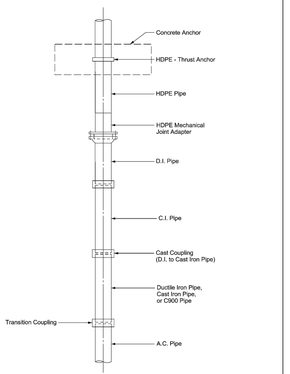
ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

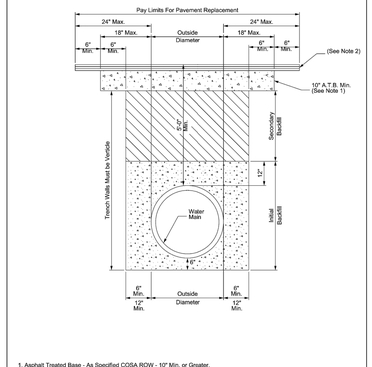
SA SOUTH BUSINESS PARK

OVERALL WATER PLAN

SHEET NO.
301



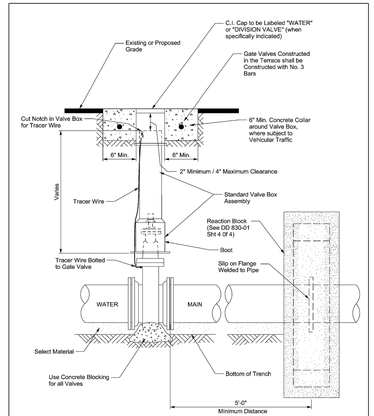
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	PIPE COUPLINGS	MARCH 2008	AUG 2019
		DD-812-01	SHEET 1 of 9



1. Asphalt Treated Base - As Specified COSA ROW - 10" Min. or Greater.
2 Replacement of Surface Layer Shall be of the Type and Thickness Base On Functional Classification:
   a. Min 2" HMAC Type "D" for Trench Repair in Local / Residential Streets.
   b. Min. 3" HMAC Type "C" for Trench Repair in Collector / Arterial Streets.

* Asphalt Treated Base (ATB)
* Hot Mix Asphalt Concrete (HMAC)

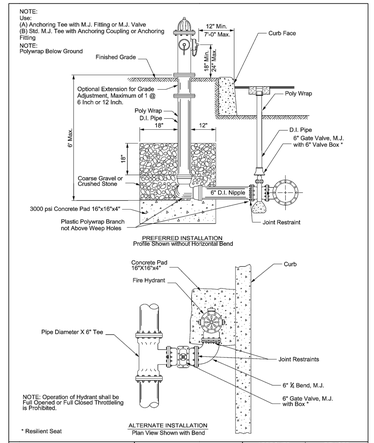
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	POTABLE AND RECYCLED WATER MAIN DETAIL	MARCH 2008	AUG 2019
		DD-812-01	SHEET 2 of 9



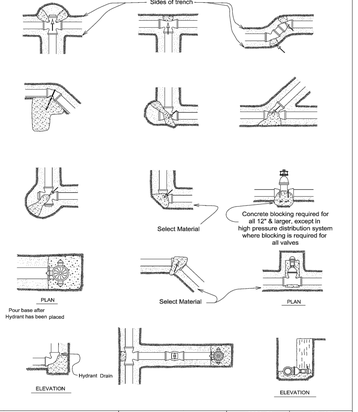
NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

Note: For all work associated with Recycled Water Valves, refer to DD 110-10, Sht. 1 of 1

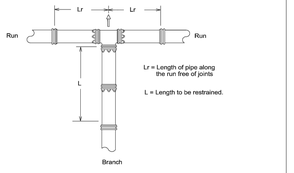
PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION	MARCH 2008	AUG 2019
		DD 828-01	SHEET 1 of 1



PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	FIRE HYDRANT INSTALLATION (JOINT RESTRAINT)	MAY 2013	AUG 2019
		DD-834-01	SHEET 1 of 3



PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	THRUST BLOCKS FOR FITTINGS (WATER ONLY)	March 2008	AUG 2019
		DD-839-01	SHEET 1 of 2



RESTRAINED LENGTH FOR TEES

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	0	42	31
6	4	5	7	1
6	4	10	1	1
6	6	0	59	44
6	6	5	35	20
6	6	10	11	1
8	4	0	42	31
8	4	5	7	1
8	6	0	59	44
8	6	5	28	13
8	6	10	1	1
8	8	0	77	58
8	8	5	53	34
8	8	10	30	11
8	8	15	6	1

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe.The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	March 2008	AUG 2019
		DD-839-04	SHEET 1 of 2

RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe.The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provide for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	MARCH 2008	AUG 2019
		DD-839-05	SHEET 1 of 1

L=LENGTH TO BE RESTRAINED

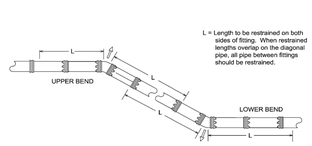
PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS VERTICAL OFFSETS	MARCH 2008	AUG 2019
		DD-839-06	SHEET 1 of 1



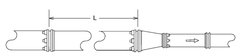
PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	29	6	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	3	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	7	2	5	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	18	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	19	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	MARCH 2008	AUG 2019
		DD-839-07	SHEET 1 of 1



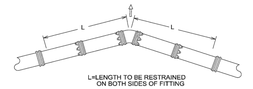
L=Length to be restrained

PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity.

Note:
These calculations are provided for reference. Th restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	MARCH 2008	AUG 2019
		DD-839-07	SHEET 1 of 1



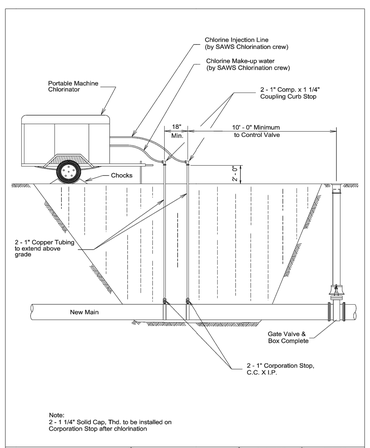
L=LENGTH TO BE RESTRAINED ON BOTH SIDES OF FITTING

PIPE SIZE (inch)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

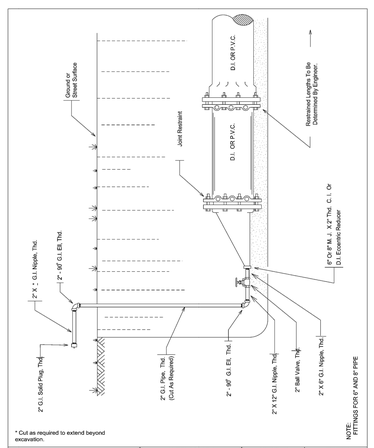
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	MARCH 2008	AUG 2019
		DD-839-08	SHEET 1 of 1



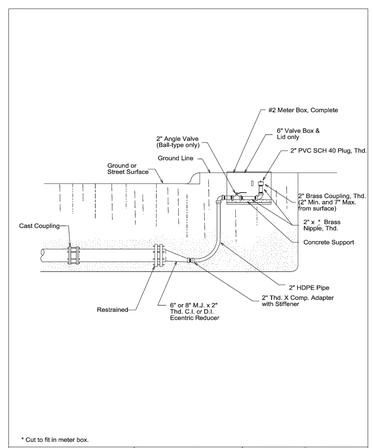
Note:
2 - 1 1/4" Solid Cap, Thd. to be installed on Corporation Stop after chlorination

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	STANDARD CHLORINATION INSTALLATION	March 2008	AUG 2019
		DD-847-01	SHEET 1 of 1



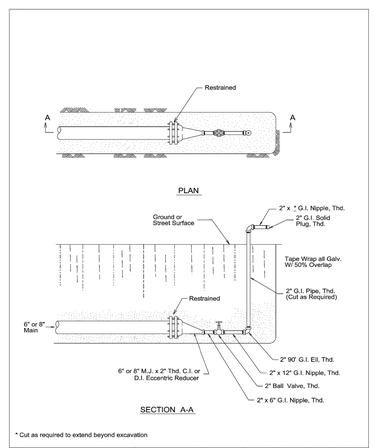
* Cut as required to extend beyond excavation.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" (TEMPORARY) BLOW-OFF ASSEMBLY ON 6" & 8" MAINS (JOINT RESTRAINT)	March 2008	AUG 2019
		DD-844-01	SHEET 3 of 4



* Cut to fit in meter box.

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	MARCH 2008	AUG 2019
		DD-844-02	SHEET 3 of 5



* Cut as required to extend beyond excavation

PROPERTY OF		APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	MARCH 2008	AUG 2019
		DD-844-01	SHEET 1 of 4

NOTES:

1. SAWS REQUIRES GCPs AND COUNTER PERMITS TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS.
2. ANCHORAGE/THRUST BLOCKING AND JOINT RESTRAINTS SHALL BE DONE IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION. (ITEM NO. 839)
3. THE SAN ANTONIO WATER SYSTEM IS HEREBY GRANTED THE RIGHT OF INGRESS AND EGRESS ACROSS GRANTOR'S ADJACENT PROPERTY TO ACCESS THE WATER AND/OR WASTEWATER EASEMENTS SHOWN.

PRESSURE ZONE: 790

Developer's Name PALACE WAY MANAGEMENT, LLC
Developer's Address 6531 FOX RUN
City SAN ANTONIO State TEXAS Zip 78233
Phone #(210) 210.413.7230 Fax #( )
SAWS Block Map# 140534 Total EDU's 0 Total Acreage 27.94 AC
Total Linear Footage of Pipe: 8": 2,370 LF Plat No. PLAT No. 22-11800197
Number of Lots: 16 SAWS JOB NO. XXXX

ALL WATER PIPE TO BE C-900, CLASS 235 (DR-18)
UNLESS OTHERWISE NOTED

CIVIL ENGINEERING CONSULTANTS
4150 I.H. 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. *93639

ON 10/12/2022
DATE

REV	DATE	DESCRIPTION

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0085501

SA SOUTH BUSINESS PARK
WATER DETAILS

SHEET NO.
302

RESTRAINED LENGTH FOR TEES (Cont'd)

PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5	86	59
12	12	10	63	35
12	12	15	39	12

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe.The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR TEES	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 2 OF 2
		DD-839-04		

L=LENGTH TO BE RESTRAINED

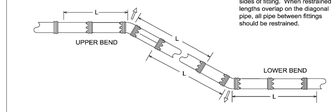
PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provide for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR DEAD ENDS / INLINE VALVES	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 1 OF 1
		DD-839-05		

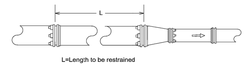


PIPE SIZE (inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 200psi	UPPER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi	LOWER BEND RESTRAINED LENGTH IN FEET TEST PRESSURE = 150 psi
6	45	5	24	8	18	6
6	22.5	5	12	4	9	3
6	11.25	5	6	2	4	1
6	45	10	24	5	18	4
6	22.5	10	12	2	9	2
6	11.25	10	6	1	4	1
8	45	5	32	11	24	8
8	22.5	5	15	5	11	4
8	11.25	5	8	3	6	2
8	45	10	32	7	24	5
8	22.5	10	15	3	11	2
8	11.25	10	8	2	6	1
12	45	5	45	18	34	12
12	22.5	5	22	7	16	6
12	11.25	5	11	4	8	3
12	45	10	45	10	34	7
12	22.5	10	22	5	16	3
12	11.25	10	11	2	8	2

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	RESTRAINED LENGTHS VERTICAL OFFSETS	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 1 OF 1
		DD-839-06		



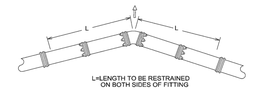
L=Length to be restrained

PIPE SIZE (inch)	SMALL SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	4	30	23
8	4	55	42
8	6	32	24
12	4	95	71
12	6	80	60
12	8	58	43

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C. pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity. Depth of bury is assumed to be 4 feet.

Note:
These calculations are provided for reference. Th restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR REDUCERS	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 1 OF 1
		DD-839-07		



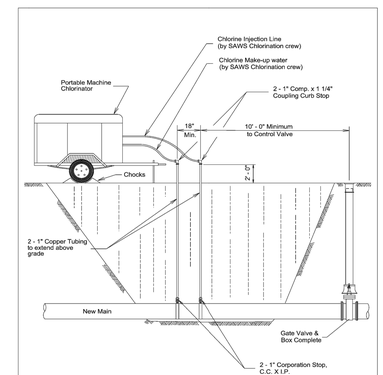
L=LENGTH TO BE RESTRAINED ON BOTH SIDES OF FITTING

PIPE SIZE (INCH)	BEND ANGLE (deg)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	90	23	17
6	45	9	7
6	22.5	5	3
6	11.25	2	2
8	90	30	22
8	45	12	9
8	22.5	6	4
8	11.25	3	2
12	90	43	32
12	45	18	13
12	22.5	8	6
12	11.25	4	3

RESTRAINED LENGTH DESIGN
Restrained length calculations are for P.V.C pipe bedded in compacted granular material extending to the top of the pipe. The native soil material is assumed to be inorganic clay of high plasticity.
Depth of bury is assumed to be 4 feet.

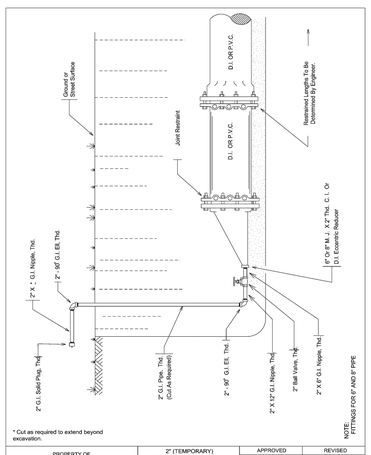
Note:
These calculations are provided for reference. The restrained length shall be designed based upon the conditions encountered during the installation.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 1 OF 1
		DD-839-08		



Note:
2 - 1 1/4" Solid Cap, Thd. to be installed on Corporation Stop after chlorination

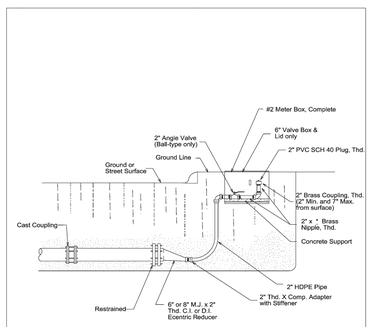
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	STANDARD CHLORINATION INSTALLATION	APPROVED: March 2008	REVISED: AUG 2019	SHEET: 1 OF 1
		DD-847-01		



* Cut as required to extend beyond excavation.

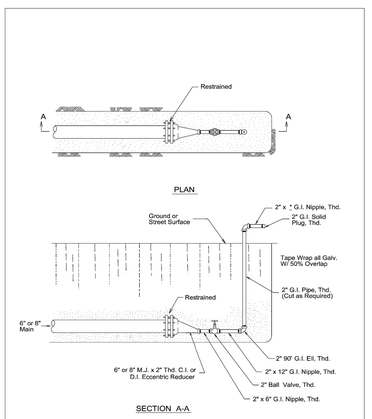
NOTE: FITTINGS FOR 8" AND 6" PIPE

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	2" (TEMPORARY) BLOW-OFF ASSEMBLY ON 6" & 8" MAINS (JOINT RESTRAINT)	APPROVED: March 2008	REVISED: AUG 2019	SHEET: 3 OF 4
		DD-844-01		



* Cut to fit in meter box.

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	2" PERMANENT BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 3 OF 5
		DD-844-02		



* Cut as required to extend beyond excavation

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS	2" TEMPORARY BLOW-OFF ASSEMBLY ON 6" & 8" MAINS	APPROVED: MARCH 2008	REVISED: AUG 2019	SHEET: 1 OF 4
		DD-844-01		

NOTES:

1. SAWS REQUIRES GCPs AND COUNTER PERMITS TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS.
2. ANCHORAGE/THRUST BLOCKING AND JOINT RESTRAINTS SHALL BE DONE IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION. (ITEM NO. 839)
3. THE SAN ANTONIO WATER SYSTEM IS HEREBY GRANTED THE RIGHT OF INGRESS AND EGRESS ACROSS GRANTOR'S ADJACENT PROPERTY TO ACCESS THE WATER AND/OR WASTEWATER EASEMENTS SHOWN.

PRESSURE ZONE: 790

Developer's Name PALACE WAY MANAGEMENT, LLC
Developer's Address 6531 FOX RUN
City SAN ANTONIO State TEXAS Zip 78233
Phone #(210) 210.413.7230 Fax #( )
SAWS Block Map# 140534 Total EDU's 0 Total Acreage 27.94 AC
Total Linear Footage of Pipe: 8": 2,370 LF Plat No. PLAT No. 22-11800197
Number of Lots: 16 SAWS JOB NO. XXXX

ALL WATER PIPE TO BE C-900, CLASS 235 (DR-18)
UNLESS OTHERWISE NOTED

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
d b a . D O N D U R D E N , I N C .
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-9440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: JESSE F. CANTU II, P.E. NO. 93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

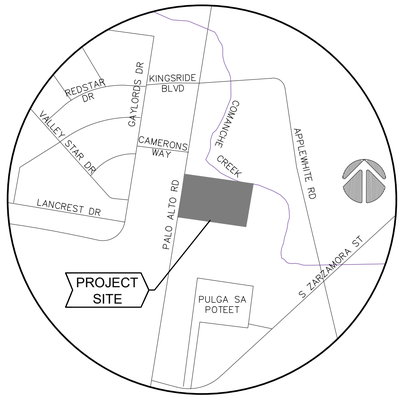
SA SOUTH BUSINESS PARK

WATER DETAILS

SHEET NO.
303

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARD COPY MATERIALS BEARING THE ORIGINAL SIGNATURE AND SEAL.

STREET & DRAIN CONSTRUCTION PLANS
for
SA SOUTH BUSINESS PARK



LOCATION MAP
N.T.S.

GENERAL NOTES

1. All materials and construction procedures within the scope of this project shall, be approved by the City of San Antonio Public Works and comply with the following as applicable:
A. Reference to Current "San Antonio Water System Utility Specifications"
B. Reference to Current City of San Antonio "Standard Specifications for Public Works Construction"

2. The locations and depths of existing utilities, including service laterals, and drainage structures shown on the plans are approximate only. The Contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction. Texas State Wide One Call Locator 1-800-545-6005 City Public Service AT&T Time Warner Valero Energy Co.

3. The Contractor shall notify the City prior to the start of each phase of street construction and call for inspections with a minimum of 24 hours notice.

4. Testing will be paid for by Developer, coordinated by Contractor, and witnessed by City.

5. Minimum Testing Schedule:

Densities - Subgrade	1 Per 500 Foot Minimum
Densities - Base	1 Per 500 Foot Minimum
Proctors - Subgrade	1 Per Material Per Subdivision
Proctors - Base	1 Per 5,000 C.Y.
Lime Series - Subgrade	1 Per Material Per Subdivision
Concrete - Structures	1 Set (3) Per 50 C.Y.

6. Transition washout crown to normal crown in 25'.

7. No extra payment shall be allowed for work called for on the plans, but not included in the bid proposal. This incidental work will be required and shall be included in the pay item to which it relates.

8. The contractor shall be responsible for restoring to its original or better condition any damage done to existing fences, concrete islands, street paving, curbs, shrubs, bushes or driveways. (No separate pay item).

9. Due to federal regulations Title 49, Part 192.171 CPS must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.

10. Contractor shall notify the city inspector twenty four (24) hours prior to backfill of any utility trenches to schedule for density test as required.

11. All waste material shall become property of the contractor and shall be his sole responsibility to dispose of this material off the limits of the project. No waste material shall be placed in existing lows that will block or alter flow limits of existing artificial or natural drainage.

12. The contractor shall not place any waste material in the 100-year flood plain without first obtaining an approved Flood Plain Development Permit.

13. The contractor shall maintain all adjoining streets and traveled routes free from spilled and/or tracked construction materials and/or debris.

14. It is the contractor's responsibility to see that all signs and barricades are properly installed and maintained. All locations and distances will be decided upon in the field by the contractor, using the "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". The City's construction inspector will only be responsible to inspect barricades and signs. If, in the opinion of the construction inspector, the barricades and signs do not conform to established standards or are incorrectly placed or are insufficient in quantity to protect the general public, the inspector shall have the option to stop operations until such time as the conditions are corrected.

Sheet List Table

LEGEND

WASHOUT CROWN	
SIDEWALK TO BE BUILT BY DEVELOPER	
TOP OF PVMT. ELEVATION	940.00
EXISTING STREET LIGHT	•ELP
PROPOSED STREET LIGHT (100 WATT)	
PROPOSED POWER POLE	● PP
PROPOSED FIRE HYDRANT	
EXISTING FIRE HYDRANT	

Texas 811
Know what's below. Call before you dig.

IF YOU DIG IN TEXAS
CALL US FIRST, IT'S THE LAW
1-800-344-8377

OWNER:
SA SOUTH BUSINESS PARK LP
828 MEYER RD
KINGSBURY, TEXAS 78638

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall. review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies 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.

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
STREET & DRAIN
COVER SHEET

SHEET NO.
400

TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall. review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies 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.

GENERAL NOTES

1. FILL MATERIALS: MATERIALS SHALL CONSIST OF SOILS APPROVED BY THE ENGINEER FROM SOURCES IDENTIFIED AND APPROVED. THE SOIL SHALL BE FREE OF VEGETABLE MATTER AND OTHER DELETERIOUS SUBSTANCE AND SHALL NOT CONTAIN ROCKS OR LUMPS HAVING A DIAMETER GREATER THAN SIX INCHES (6").
2. DEPTH AND MIXING OF FILL LAYERS: THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO REQUIRED AMOUNT OF COMPACTION. EACH LAYER SHALL BE THOROUGHLY BLADE MIXED DURING THE SPREADING TO INSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS NORMALLY WILL BE SIX INCHES (6"), HOWEVER, IT MAY BE INCREASED TO TWELVE INCHES (12") IF COMPACTION EQUIPMENT OF DEMONSTRATED CAPABILITY WILL BE USED.
3. ROCK: WHEN FILL MATERIAL INCLUDES ROCK; THE MAXIMUM ROCK SIZE ACCEPTABLE SHALL BE SIX INCHES (6"). NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE CAREFULLY FILLED WITH SMALL STONES OR EARTH, AND PROPERLY COMPACTED. NO LARGE ROCKS WILL BE ALLOWED WITHIN TWELVE INCHES (12") OF THE FINISHED SURFACE.
4. MOISTURE CONTENT: THE FILL MATERIAL SHALL BE COMPACTED AT THE APPROPRIATE MOISTURE CONTENT SPECIFIED FOR THE SOILS BEING USED AND IDENTIFIED IN SOIL AND LABORATORY REPORTS. MOISTURE CONTENT TOLERANCES SHALL BE PLUS OR MINUS 3% FROM OPTIMUM.
5. AMOUNT OF COMPACTION: AFTER EACH LAYER (LIFT) HAS BEEN PLACED, MIXED AND SPREAD EVENLY, IT SHALL BE COMPACTED TO THE SPECIFIED DENSITY. THE SPECIFIED DENSITY SHALL BE STATED AS A PERCENTAGE OF THE MAXIMUM DENSITY ATTAINABLE USING CURRENT ASTM D 698 TO 95 PERCENT DENSITY.
6. COMPACTION OF FILL LAYER: COMPACTION EQUIPMENT SHALL BE OF SUCH DESIGN THAT IT WILL COMPACT THE FILL TO THE APPROPRIATE SPECIFIED DENSITY AT THE OPTIMUM MOISTURE CONTENT. COMPACTION EFFORT SHALL BE CONTINUOUS OVER EACH LAYER UNTIL DENSITY HAS BEEN ACHIEVED.
7. DENSITY TESTS: FIELD DENSITY TESTS SHALL BE MADE BY THE SOILS ENGINEER AFTER THE COMPACTION OF EACH LAYER. WHEN TEST INDICATE THAT THE DENSITY OF ANY LAYER OR PORTION IS BELOW REQUIRED DENSITY, THE AREA SHALL BE REWORKED UNTIL DENSITY IS OBTAINED. THE NUMBER OF TESTS SHALL BE ESTABLISHED BY THE SOIL ENGINEER TO CERTIFY TO THE REQUIRED 79G LETTER REQUIREMENTS.

LEGEND

- (740) PROPOSED FINISHED CONTOUR
- 740 EXISTING CONTOUR

N

0 50' 100'

1" = 50'

6.426 ACRES
VOL. 17236, PG. 1350, O.P.R.
OWNER: FELIX MALDONADO &
WIFE, MARIA MALDONADO

32.3807 ACRES
VOL. 3243, PG. 526, O.P.R.
OWNER: DANIEL J. FOLEY &
WIFE, SADAE FOLEY

UNITED GAS PIPELINE CO.
VOL. 3389, PG. 10, D.R.

100-YEAR
FLOOD PLAIN

NORTH PRO ROAD
(TXDOT R.O.W.) PUBLIC

FRONTAGE ROAD 16
(R.O.W. VARIES)

EAST PRO ROAD
(60' R.O.W.) PUBLIC

SOUTH PRO ROAD
(60' R.O.W.) PUBLIC

P/P PVC

22.000 ACRES
DOC NO. 20210006098, O.P.R.
AHOKAS PROPERTIES XII, LLC,
A TEXAS LIMITED LIABILITY COMPANY

DESIGNED BY:	JFC
DRAWN BY:	LC
DATE:	10/2022
JOB NO.:	E0685501

CIVIL ENGINEERING CONSULTANTS
4155 DIEZ LEE, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. #93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
OVERALL GRADING PLAN

SHEET NO.
401

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL: REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

STREETLIGHT NOTE

STREETLIGHT POLES PLACED BETWEEN PROPERTY LINE AND SIDEWALK. POLES TO BE 1' MINIMUM CLEAR FROM SIDEWALK.

DRIVEWAY NOTE

DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON LOT SELECTION AND FINAL LOT DESIGN.

BEXAR COUNTY PERMIT NOTE:

BEXAR COUNTY RIGHT OR WAY PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY RIGHT OF WAY

SIDEWALK NOTE

CONTRACTOR IS TO MATCH EXISTING CONCRETE CURB, CONCRETE SIDEWALK, AND PAVEMENT ELEVATIONS.

CLEAR VISION NOTE:

CLEAR VISION AREAS MUST BE FREE OF VISUAL OBSTRUCTION IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, OR LATEST VERSION THEREOF.

Line Table		
Line	Length	Direction
L1	862.56'	N88°20'12"E
L2	45.00'	N88°20'12"E

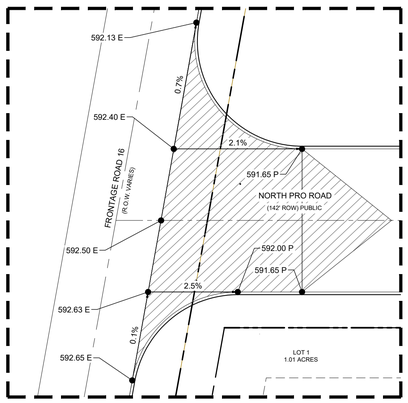
LEGEND

- WASHOUT CROWN
- SIDEWALK TO BE BUILT BY DEVELOPER
- TOP OF CURB ELEVATION — 940
- EXISTING STREET LIGHT — ELP
- PROPOSED STREET LIGHT (100 WATT) — LP

N

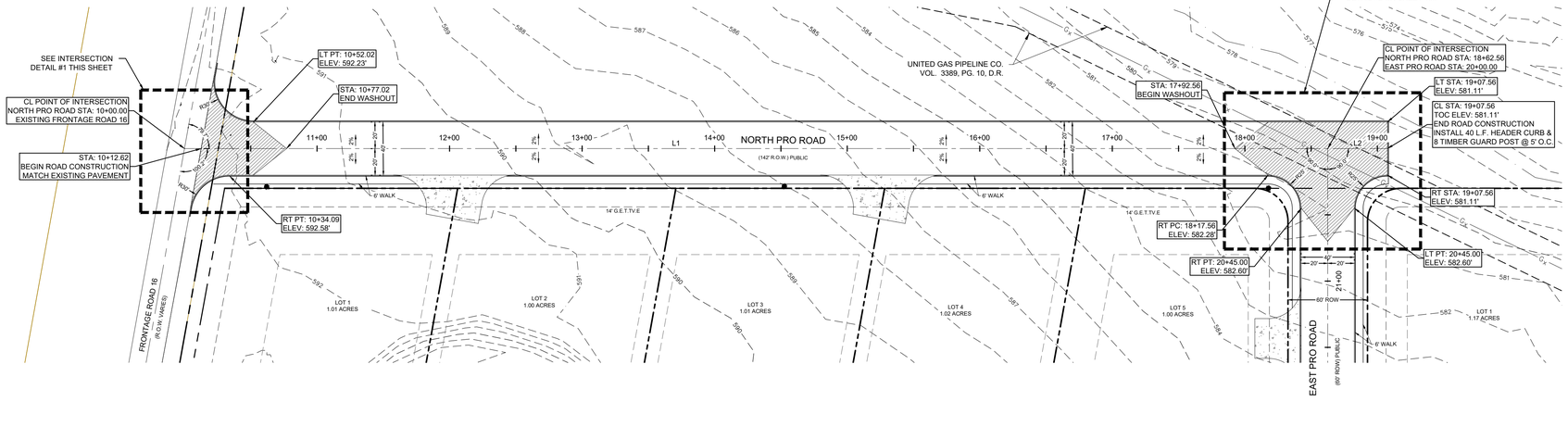
0 50' 100'

1" = 50'



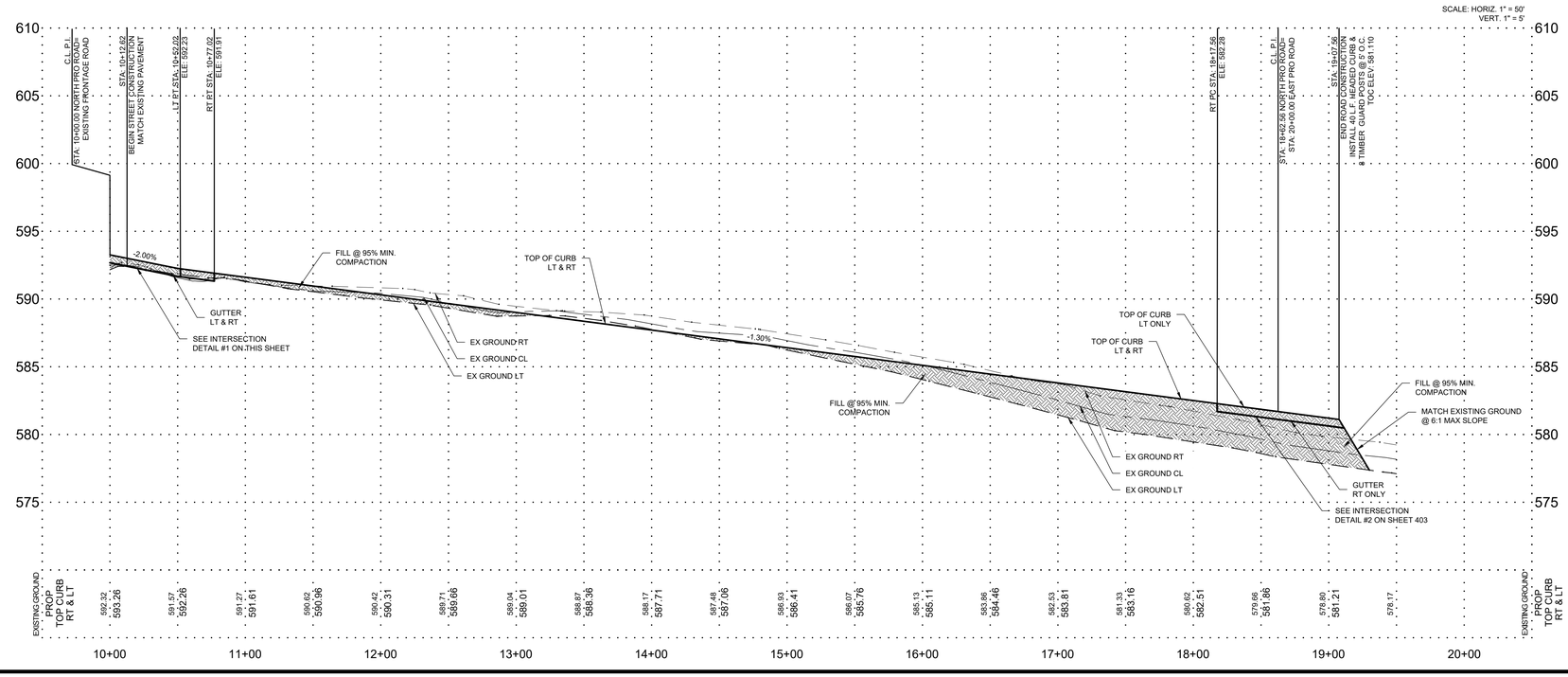
INTERSECTION DETAIL #1

SCALE: 1" = 20'



NORTH PRO ROAD

STA. 10+00.00 THRU STA. 19+07.56



THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. REVIEW ONLY ON FINAL HARD COPY MATERIALS BEARING THE ORIGINAL SIGNATURE AND SEAL

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-9440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
STREET NORTH PRO ROAD
PLAN & PROFILE

SHEET NO.
402

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

STREETLIGHT NOTE

STREETLIGHT POLES PLACED BETWEEN PROPERTY LINE AND SIDEWALK. POLES TO BE 1' MINIMUM CLEAR FROM SIDEWALK.

DRIVEWAY NOTE

DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON LOT SELECTION AND FINAL LOT DESIGN.

BEXAR COUNTY PERMIT NOTE:

BEXAR COUNTY RIGHT OR WAY PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY RIGHT OF WAY

SIDEWALK NOTE

CONTRACTOR IS TO MATCH EXISTING CONCRETE CURB, CONCRETE SIDEWALK, AND PAVEMENT ELEVATIONS.

CLEAR VISION NOTE:

CLEAR VISION AREAS MUST BE FREE OF VISUAL OBSTRUCTION IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, OR LATEST VERSION THEREOF.

Line Table		
Line	Length	Direction
L1	679.33'	S01°39'48"E
L2	5.36'	N88°20'12"E
L3	25.46'	S01°39'48"E

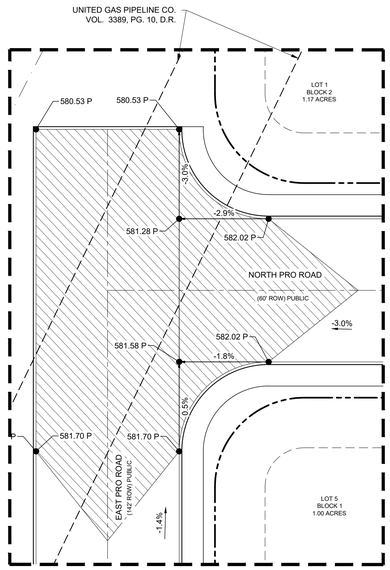
LEGEND

- WASHOUT CROWN
- SIDEWALK TO BE BUILT BY DEVELOPER
- TOP OF CURB ELEVATION — 940
- EXISTING STREET LIGHT — ELP
- PROPOSED STREET LIGHT (100 WATT) — LP

N

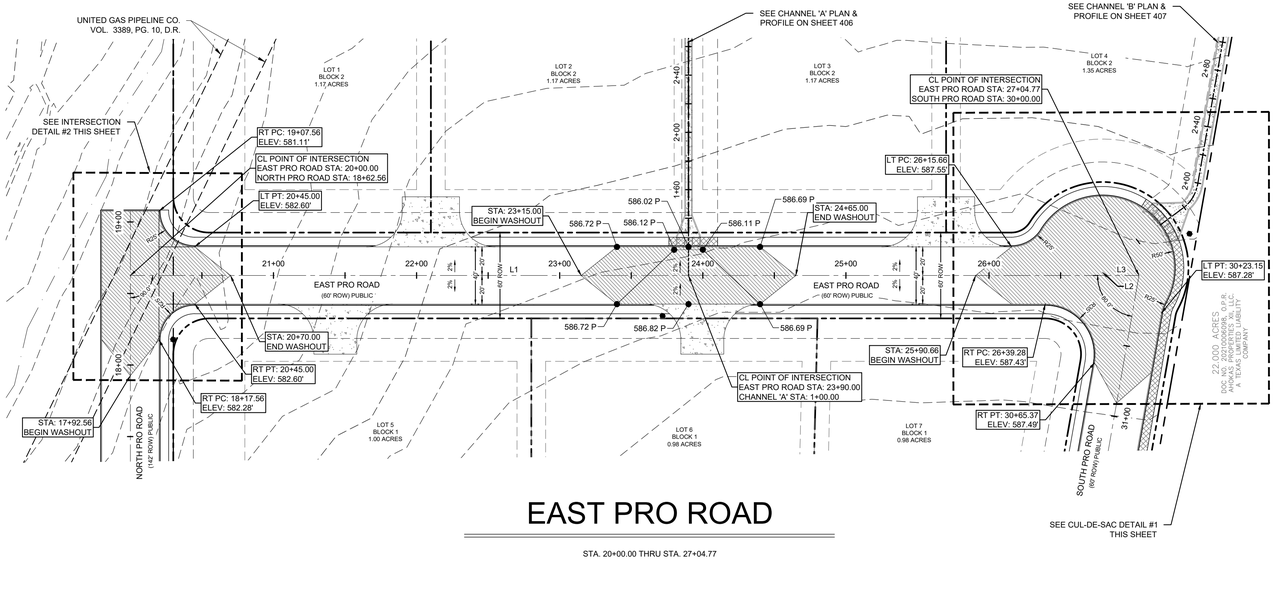
0 50' 100'

1" = 50'



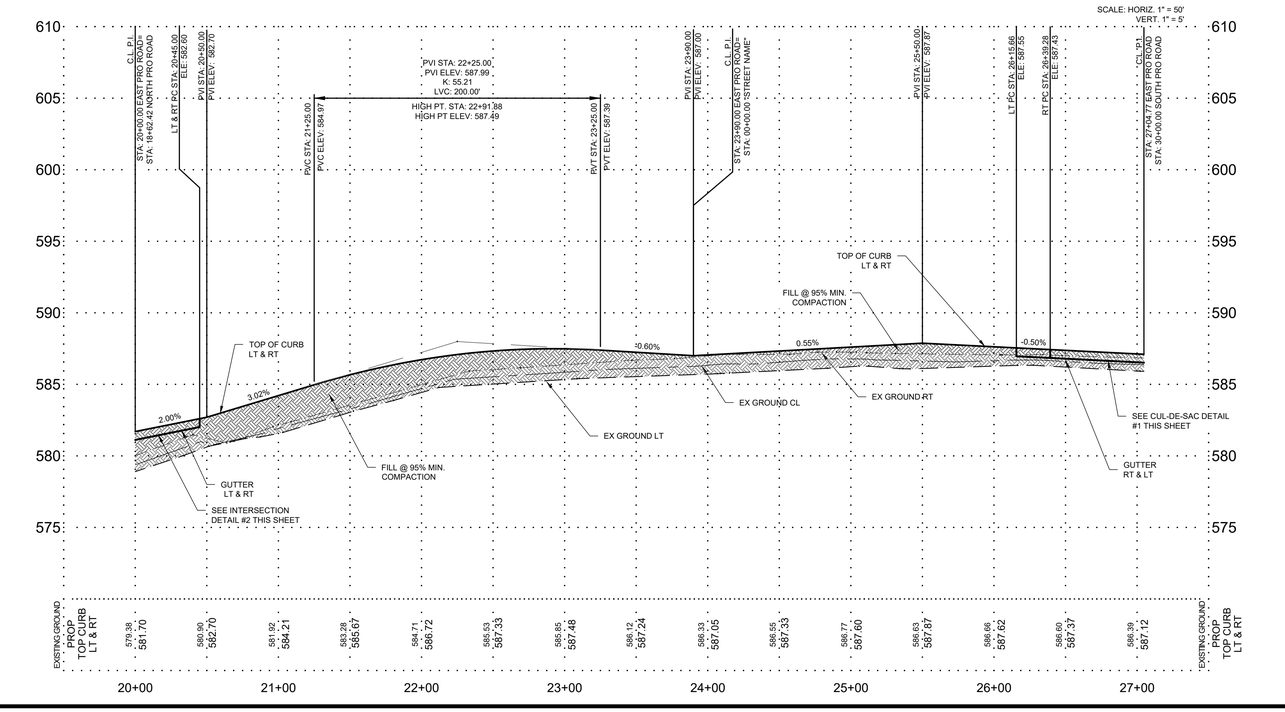
INTERSECTION DETAIL #2

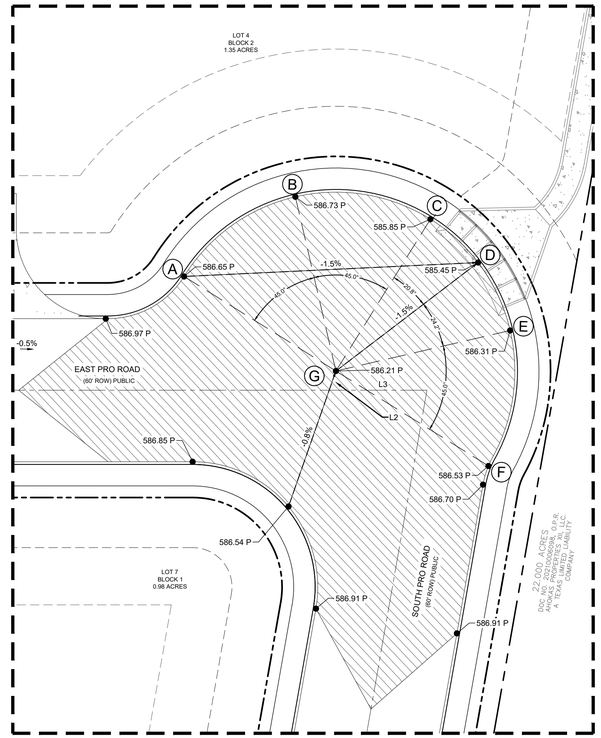
SCALE: 1" = 20'



EAST PRO ROAD

STA. 20+00.00 THRU STA. 27+04.77





CUL-DE-SAC DETAIL #1

SCALE: 1" = 20'

POINT	CURB ELEV.	PVMT ELEV.
LT PC	587.55	586.97
A	587.23	586.65
B	587.31	586.73
C	586.43	585.85
D	586.03	585.45
E	586.89	586.31
F	587.11	586.53
G		586.21
LT PT	587.28	586.70

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. REVIEW ONLY OR FINAL HARD COPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL.

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
d b a . D O N D U R D E N , I N C .
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-9440
REGISTRATION #F-2214 / #10041000

CEC

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: JESSE F. CANTU II, P.E. NO. 93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
STREET EAST PRO ROAD
PLAN & PROFILE

SHEET NO.
403

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION, SAFETY PROTECTION THAT COMPLIES 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.

STREETLIGHT NOTE

STREETLIGHT POLES PLACED BETWEEN PROPERTY LINE AND SIDEWALK. POLES TO BE 1' MINIMUM CLEAR FROM SIDEWALK.

DRIVEWAY NOTE

DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON LOT SELECTION AND FINAL LOT DESIGN.

BEXAR COUNTY PERMIT NOTE:

BEXAR COUNTY RIGHT OR WAY PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY RIGHT OF WAY

SIDEWALK NOTE

CONTRACTOR IS TO MATCH EXISTING CONCRETE CURB, CONCRETE SIDEWALK, AND PAVEMENT ELEVATIONS.

CLEAR VISION NOTE:

CLEAR VISION AREAS MUST BE FREE OF VISUAL OBSTRUCTION IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, OR LATEST VERSION THEREOF.

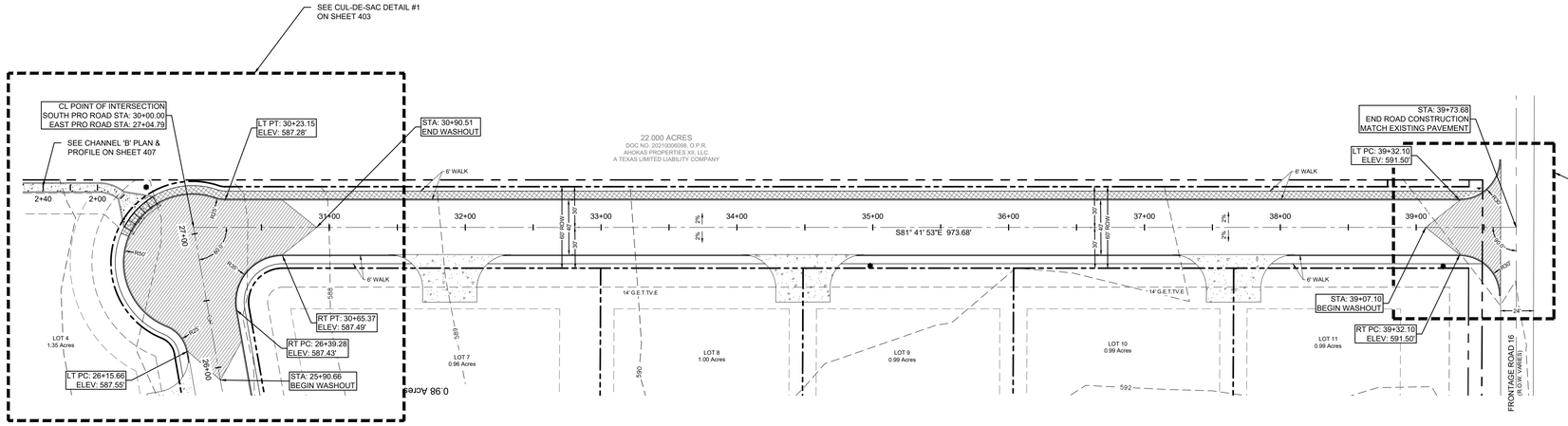
LEGEND

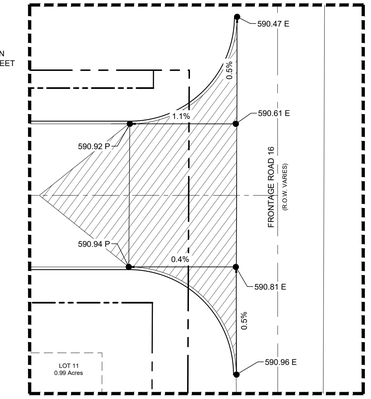
- WASHOUT CROWN
- SIDEWALK TO BE BUILT BY DEVELOPER
- TOP OF CURB ELEVATION — 940
- EXISTING STREET LIGHT — ELP
- PROPOSED STREET LIGHT (100 WATT) — LP

N

0 50' 100'

1" = 50'



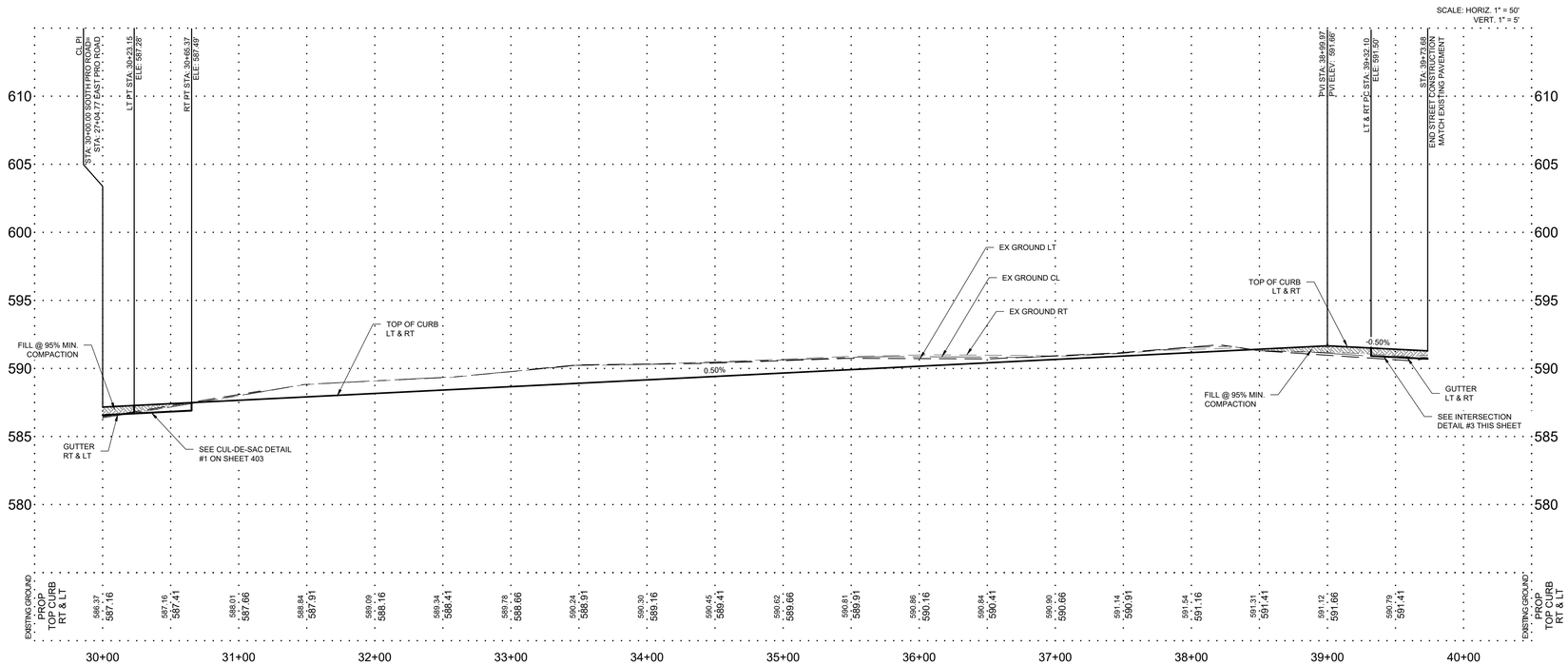


SOUTH PRO ROAD

STA. 30+00.00 THRU STA. 39+73.68

INTERSECTION DETAIL #3

SCALE: 1" = 20'



DESIGNED BY:	JFC
DRAWN BY:	LC
DATE:	10/2022
JOB NO.:	E0685501

CIVIL ENGINEERING CONSULTANTS
CEC GROUP, LLC
1155 DAIRY ASHFORD, SUITE 325
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

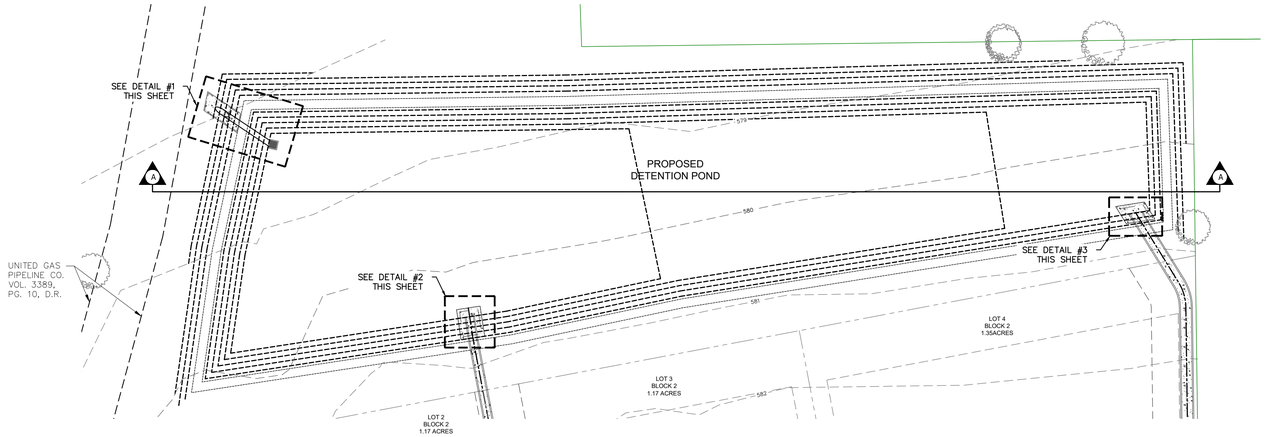
ON: 10/12/2022 DATE

REV/	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
STREET SOUTH PRO ROAD
PLAN & PROFILE

SHEET NO.

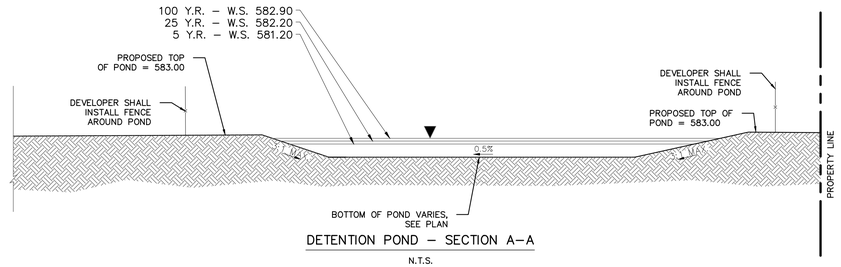
404



DETENTION POND

SCALE: 1" = 40'

REFERENCE THIS SHEET FOR OUTLET DETAILS



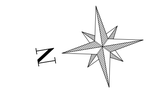
DETENTION POND – SECTION A–A

N.T.S.

NOTE:

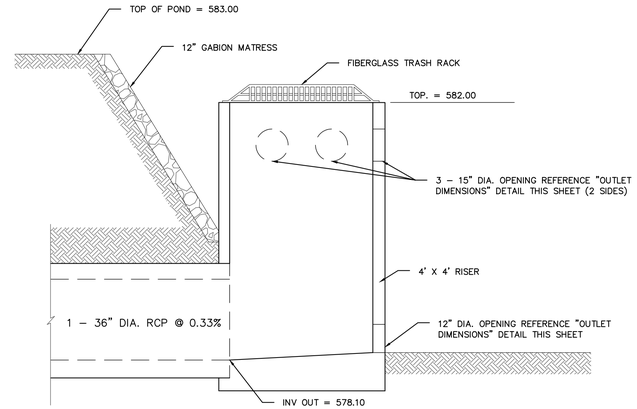
CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT UPSTREAM & DOWNSTREAM ENDS OF DRAINS AND THAT NO PONDING WILL OCCUR.

DETENTION POND ELEVATION, STORAGE, DISCHARGE TABLE		
ELEVATION	STORAGE (FT)	DISCHARGE (CFS)
578.10	0	0
579.00	9583	2.7 +/–
580.00	35284	6.7 +/–
581.00	81021	24.3 +/–
581.60	118047	26.6 +/– (Q10)
582.00	138956	32.4 +/–
582.60	172062	31.7 +/–(Q50)
582.90	187743	46 +/– (Q100)
583.00	196455	



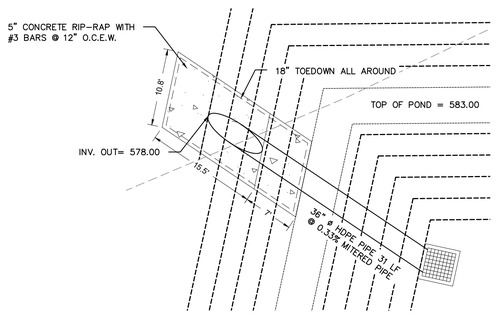
LEGEND

- W.S. ELEV. = XXX.XX — WATER SURFACE ELEVATION
- 6' FENCE
- XXXX — EXISTING CONTOURS
- XXXX — PROPOSED CONTOURS
- PROPERTY LINE



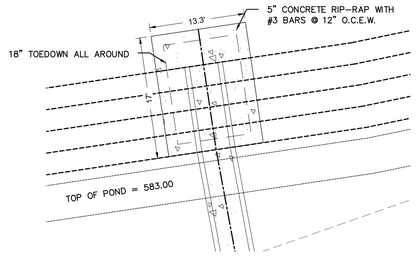
4'X4' GRATE INLET RISER BOX

N.T.S.



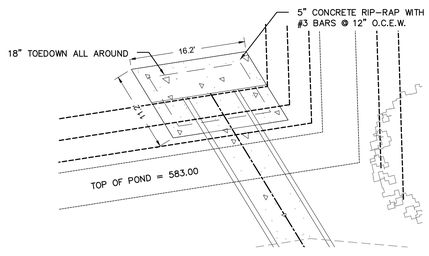
DETAIL #1

SCALE: 1" = 10'



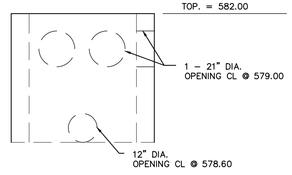
DETAIL #2

SCALE: 1" = 10'



DETAIL #3

SCALE: 1" = 10'



OUTLET DIMENSIONS

N.T.S.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, OR SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROJECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACTOR'S 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.

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0085501

CIVIL ENGINEERING CONSULTANTS
4150 DAIY WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
REGISTERED PROFESSIONAL ENGINEER

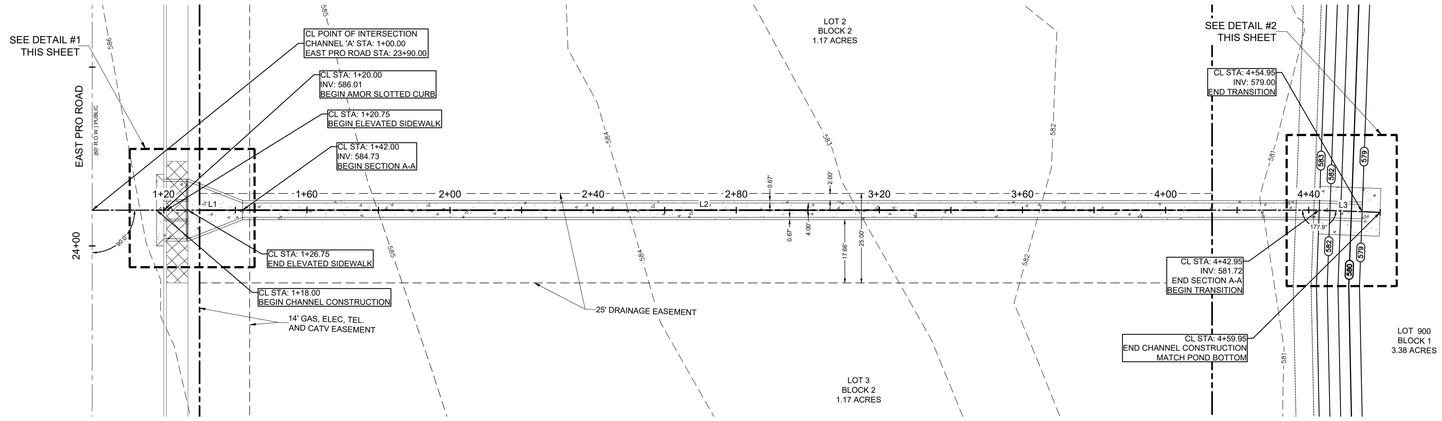
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
DETENTION POND PLAN

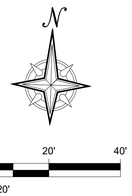
SHEET NO.
405

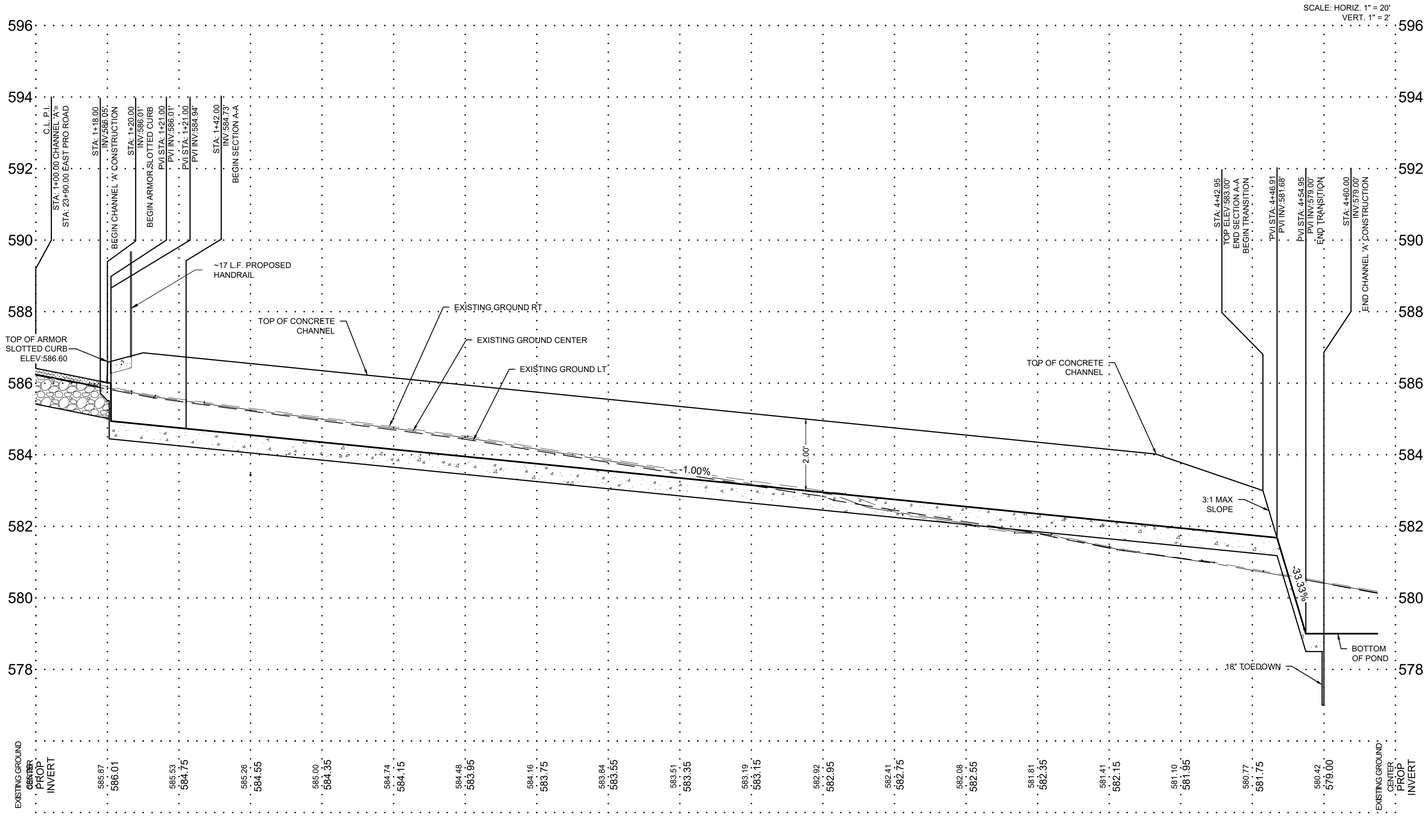


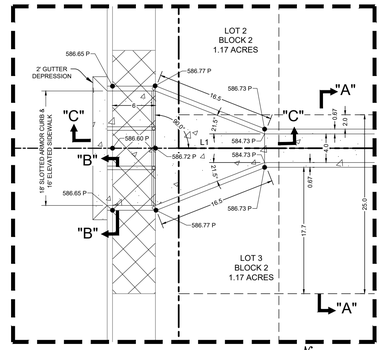
CHANNEL "A" PLAN & PROFILE

STA. 1+18.00 THRU STA. 4+60.00

Line Table		
Line	Length	Direction
L1	22.00'	N88°20'12"E
L2	300.95'	N88°20'12"E
L3	12.00'	S89°36'16"E

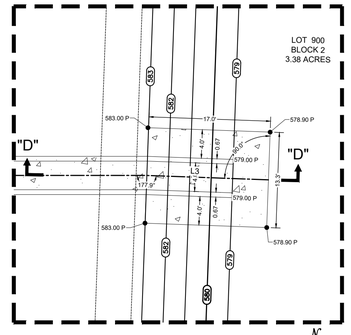






DETAIL #1

SCALE: 1" = 10'



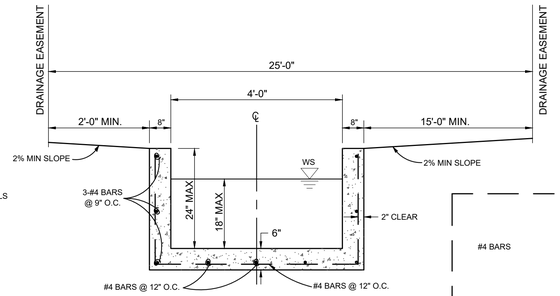
DETAIL #2

SCALE: 1" = 10'

NOTES:

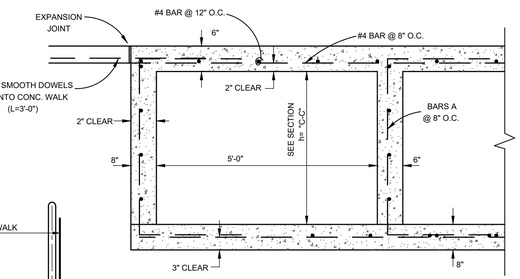
1. Cover for reinforceing steel is 2" unless noted.
2. All concrete shall be class "C" 3600 psi. @ 28 day with Course Aggregate Grade 2-5.
3. Minimum bar development length for splice and bends shall be 24 inches.
4. Transition from standard curb to elevated walk. No separate pay item.

NOTE: SEE STREET DETAILS FOR HANDRAIL DETAILS



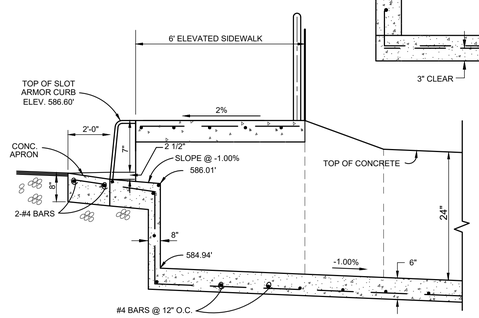
SECTION "A-A"

NOT TO SCALE
STA: 1+42.00 TO STA: 4+42.95



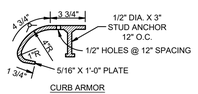
SECTION "B-B"

NOT TO SCALE



SECTION "C-C"

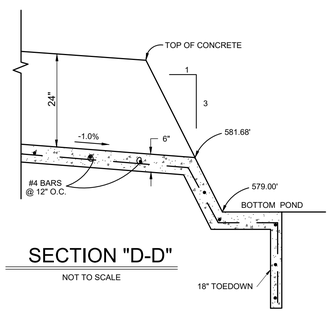
NOT TO SCALE



CURB ARMOR
DETAIL

CURB ARMOR NOTE:
Curb armor located on a curve shall be provided by SC Welding or approved equivalent.

SC Welding
521 Frio City Road
San Antonio, TX
Phone: 210-226-9237



SECTION "D-D"

NOT TO SCALE

NOTE:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT UPSTREAM & DOWNSTREAM ENDS OF DRAINS AND THAT NO PONDING WILL OCCUR.
2. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,600 PSI IN 28 DAYS.

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
COLE & GUNSLEY
1155 LOOP 410 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

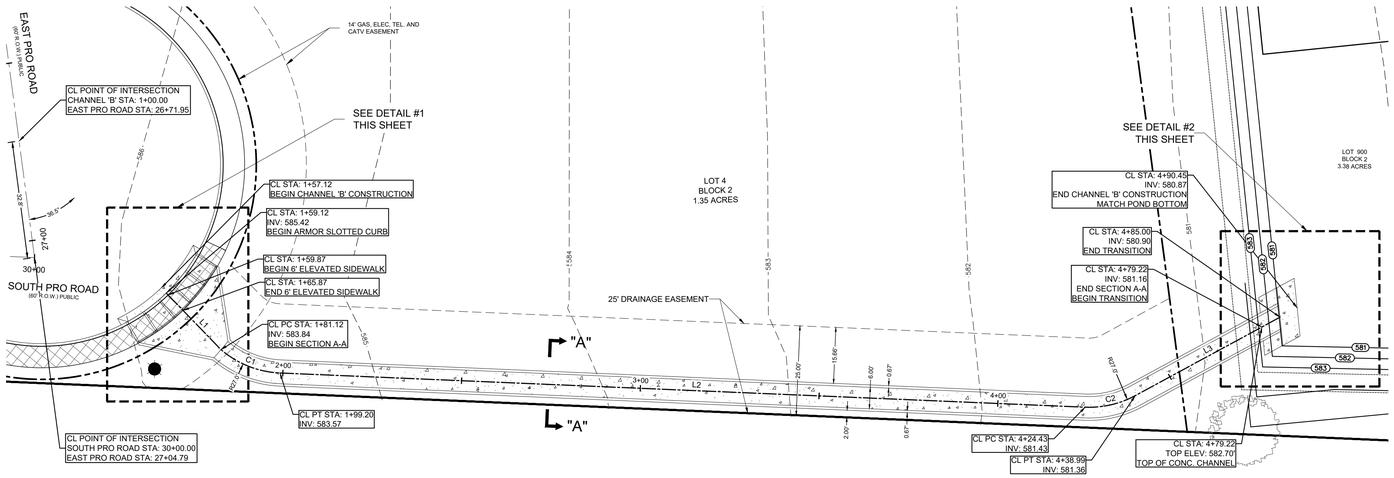
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. 93639

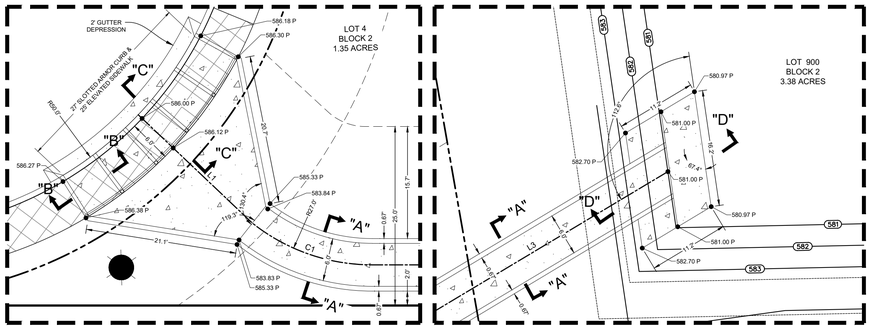
ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
CHANNEL 'A'
PLAN & PROFILE

SHEET NO.
406





DETAIL #1

SCALE: 1" = 10'

DETAIL #2

SCALE: 1" = 10'

CHANNEL 'B' PLAN & PROFILE

STA. 1+57.12 THRU STA. 4+90.45

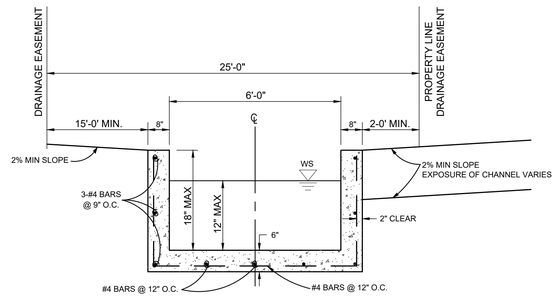
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	18.08'	27.00'	38°22'11"	S62°30'47"E	17.75'
C2	14.56'	27.00'	30°53'41"	N82°51'17"E	14.38'

Line Table		
Line	Length	Direction
L1	22.00'	S38°11'29"E
L2	225.23'	S81°41'33"E
L3	51.46'	N67°24'26"E

NOTES:

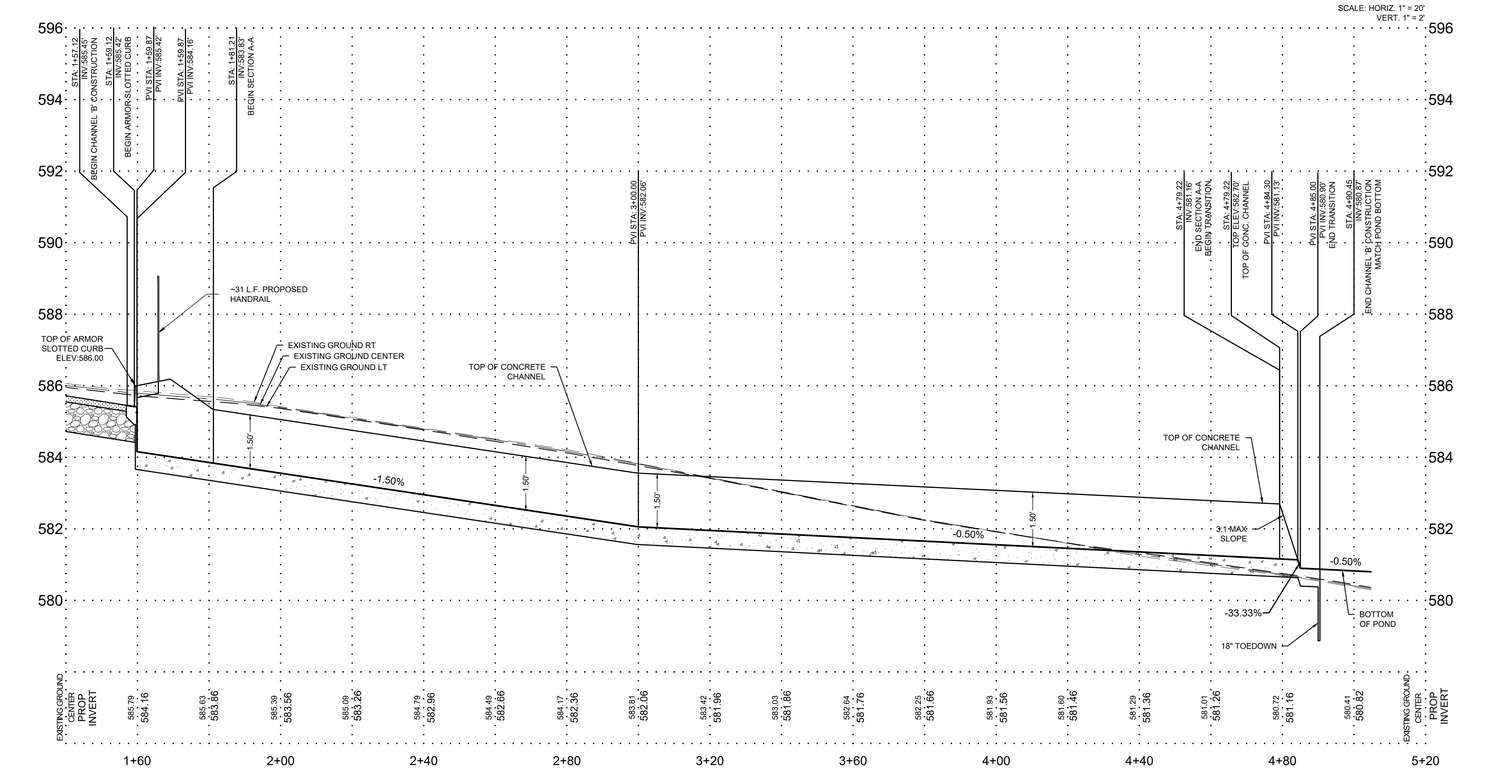
1. Cover for reinforceing steel is 2" unless noted.
2. All concrete shall be class "C" 3600 psi. @ 28 day with Course Aggregate Grade 2-5.
3. Minimum bar development length for splice and bends shall be 24 inches.
4. Transition from standard curb to elevated walk. No separate pay item.

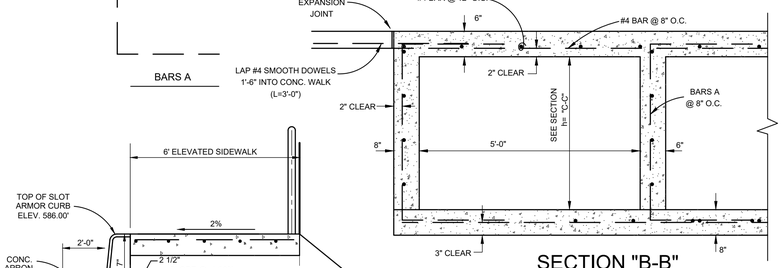
NOTE: SEE STREET DETAILS FOR HANDRAIL DETAILS



SECTION "A-A"

NOT TO SCALE
STA: 1+81.12 TO STA: 4+79.22



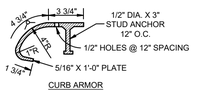


SECTION "B-B"

NOT TO SCALE

SECTION "C-C"

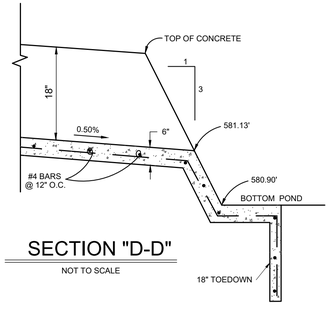
NOT TO SCALE



CURB ARMOR
DETAIL

CURB ARMOR NOTE:
Curb armor located on a curve shall be provided by SC Welding or approved equivalent.

SC Welding
521 Frio City Road
San Antonio, TX
Phone: 210-226-9237



SECTION "D-D"

NOT TO SCALE

NOTE:

1. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT UPSTREAM & DOWNSTREAM ENDS OF DRAINS AND THAT NO PONDING WILL OCCUR.
2. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,600 PSI IN 28 DAYS.

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
1155 DAIRY ASHFORD SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

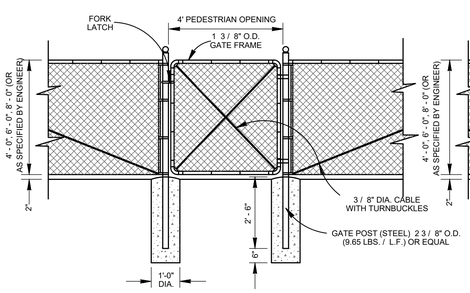
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

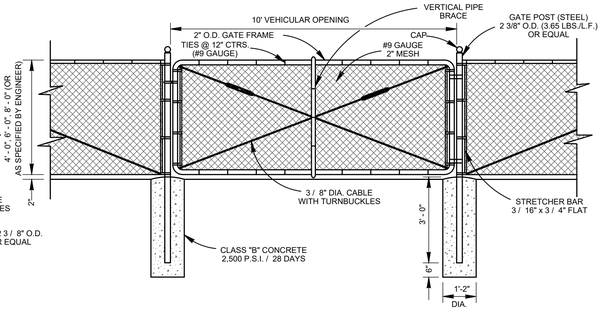
SA SOUTH BUSINESS PARK
CHANNEL 'B'
PLAN & PROFILE

SHEET NO.
407



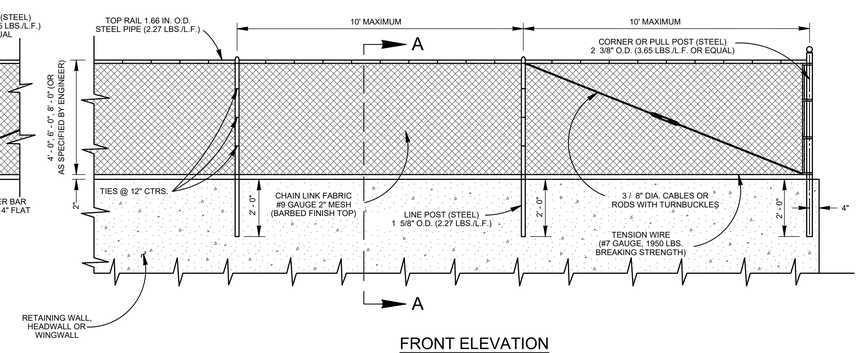
PEDESTRIAN GATE

ITEM 507.4
SCALE : 1" = 4'



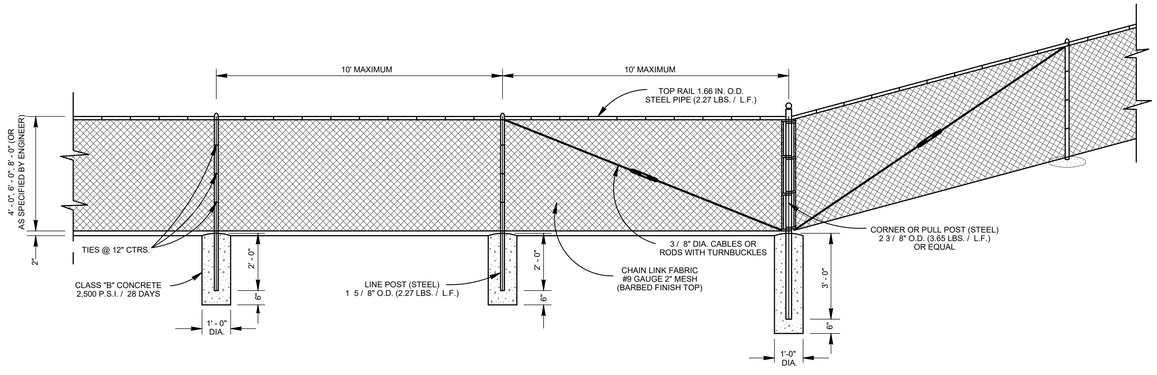
VEHICULAR GATE

ITEM 507.5
SCALE : 1" = 4'



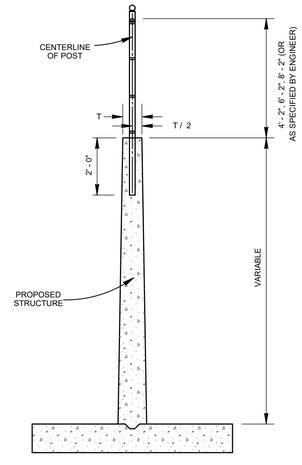
FRONT ELEVATION

SCALE : 1" = 4'



TYPICAL FENCE DETAIL

SCALE : 1" = 4'



SECTION VIEW "A-A"

SCALE : 1" = 4'

TYPICAL FOR FENCING IN RETAINING WALLS, HEADWALLS & WINGWALLS

GENERAL NOTES

1. ALL CONCRETE FOOTINGS SHALL BE CROWNED A MINIMUM OF 1" ABOVE THE EXISTING GROUND, WHERE FOOTINGS ARE REQUIRED ONLY.
2. FENCING SHALL BE LOCATED IN RETAINING WALLS, HEADWALLS & WINGWALLS AT LOCATIONS SHOWN ON THE PLANS.
3. CORNER OR PULL POSTS WILL BE REQUIRED AT ALL END POINTS AND ANGLE POINTS.
4. CONCRETE FOR SEPARATE POST FOOTINGS SHALL BE IN ACCORDANCE WITH ITEM 300-B CLASS B CONCRETE.
5. PAYMENT SHALL BE MADE AS SPECIFIED IN ITEM NO. 507 "CHAIN LINK WIRE FENCE OF CITY OF SAN ANTONIO" STANDARD SPECIFICATIONS FOR CONSTRUCTION.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CHAIN LINK WIRE FENCE STANDARDS

% SUBMITTAL	PROJECT NO.:		DATE:
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI	SHEET NO.: OF

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
CEC GROUP, LLC
1155 DAIRY ASHFORD, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. 93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
DETENTION POND
DETAILS - FENCE

SHEET NO.
408

LOCAL B PRIMARY PAVEMENT DESIGN

PAVEMENT DESIGN WAS PREPARED BY FROST GEOSCIENCES

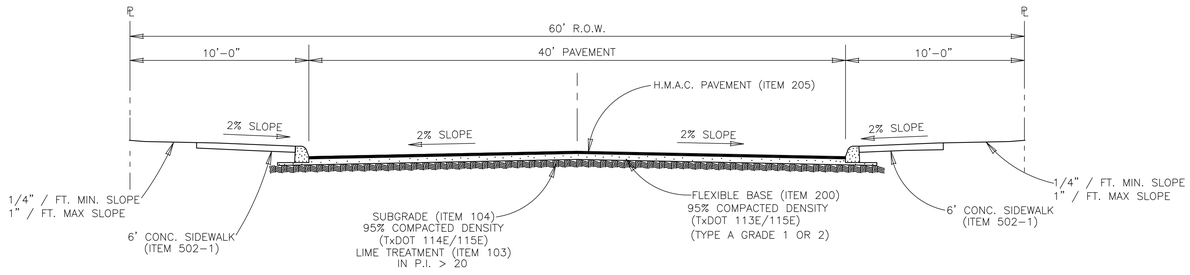
PAVEMENT STRUCTURE (DESIGN CBR=5)
3" HOT MIX ASPHALT TYPE D
13.25" FLEXIBLE BASE (TYPE A, GRADE 1 OR 2)
LIME TREATED SUBGRADE (* SEE GEOTECH REPORT)

NORTH PRO ROAD: STA. 10+00.00 TO STA. 19+07.56
EAST PRO ROAD: STA. 20+00.00 TO STA. 27+04.77
SOUTH PRO ROAD: STA. 30+00.00 TO STA. 39+73.68

GEOTECHNICAL ENGINEERING STUDY

SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS
VERANDAS AT THE RIM

BY: FROST GEOSCIENCES, INC.
PROJECT NO: FGS-G 22107
DATE: AUGUST 1, 2022



TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

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

FILL MATERIAL NOTE:
IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL UNDERNEATH THE PAVEMENT SHOULD BE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH MAXIMUM PLASTICITY INDEX VALUE OF 60 AND A MINIMUM CBR VALUE OF 2.5. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME OR CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY AND/OR COUNTY GUIDELINES.

SUBGRADE MATERIAL NOTE:
1. SUBGRADE SOIL PLASTICITY INDEX SHOULD BE LESS THAN OR EQUAL TO 20 FOR PRIMARY PAVEMENT DESIGN.

2. IF THE SUBGRADE SOIL PLASTICITY INDEX VALUE IS GREATER THAN 20, THEN ONE OF THE FOLLOWING OPTIONS SHOULD BE FOLLOWED:
   2.a. THE SUBGRADE SHOULD BE STABILIZED TO A DEPTH OF 6 INCHES (SEE ALTERNATE PAVEMENT DESIGN).
   2.b. THE EXPANSIVE CLAYS SHOULD BE REMOVED AND REPLACED WITH SOILS WITH A PLASTICITY INDEX VALUE OF 20 OR LESS.

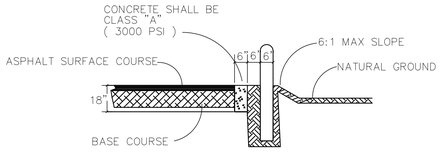
3. GEOTECHNICAL ENGINEER SHALL BE ON SITE TO MAKE SUBGRADE DETERMINATION AND PROVIDE/SUBMIT LETTER INDICATING STATION TO STATION FOR PLACEMENT OF EACH PVM'T. DESIGN SECTION TO BE APPROVED BY ENGINEER PRIOR TO PLACEMENT OF BASE.

FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
- AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ¾ INCH SIEVE FROM THE SAMPLE):
  - -MINIMUM PASSING 1 ½" SIEVE 100
  - -MINIMUM PASSING ¾" SIEVE 85
  - -MINIMUM PASSING NO. 4 SIEVE 60
- 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 WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

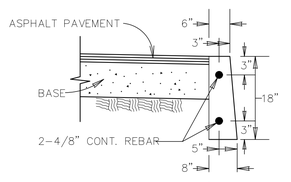
LIME STABILIZATION
TO INCLUDE A LIME STABILIZED LAYER AS PART OF THE STRUCTURAL PAVEMENT SYSTEM, THE APPLICATION RATE OF LIME SHALL BE DETERMINED BASED ON LABORATORY TESTING AND SHALL BE THE LOWEST PERCENTAGE OF LIME THAT PROVIDES:.

• A PH OF 12.4 OR THE HIGHEST PH ACHIEVED IN ACCORDANCE WITH ASTM D6276 STANDARD TEST METHOD FOR USING PH TO ESTIMATE THE SOIL-LIME PROPORTION REQUIREMENT FOR SOIL STABILIZATION,
• A PI OF LESS THAN 20 IN ACCORDANCE WITH ASTM D4318 STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS,
• 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°C AND SPECIMENS SHOULD BE SUBJECTED TO 24-HR CAPILLARY SOAK PRIOR TO TESTING), AND
• [OPTIONAL CRITERIA FOR EXPANSIVE SOILS] A THREE DIMENSIONAL EXPANSION OF LESS THAN 1% (OR MAYBE 2%).

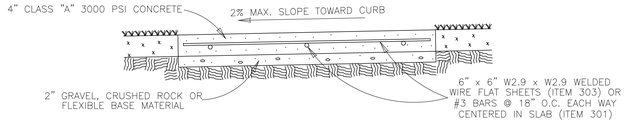


CONCRETE FLUSH CURB
& BARRICADE POST

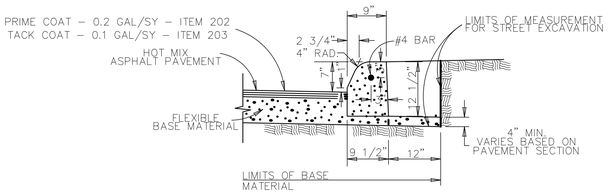
NOTE:
1. ALLOW FOR REFLECTION BUTTONS ON BARRICADE POST USE ONE 3" BUTTON PER POST.
2. POST SHALL RECEIVE TWO COATS OF ALUMINUM PAINT.
3. 6" X 5'-6" BARRICADE POST PLACED 6" BACK OF CURB WITH 2'-4" ABOVE GROUND & 3'-2" BELOW GROUND. (5'-0" o.c. TYP.)



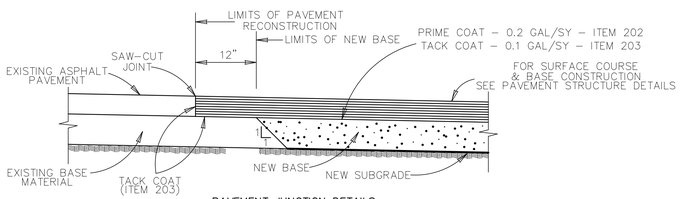
HEADER CURB DETAIL W/ REBAR
N.T.S.



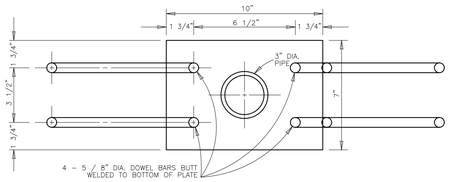
CONCRETE SIDEWALK SECTION
ITEM 502.1

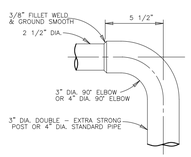


MACHINE LAID CURB
ITEM 501 ON FLEXIBLE BASE MATERIAL



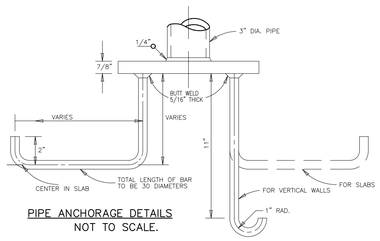
PAVEMENT JUNCTION DETAILS
NOT TO SCALE



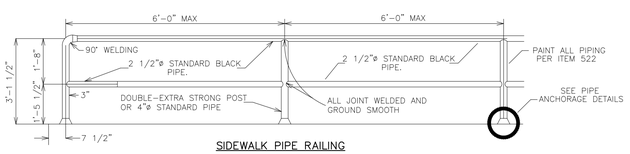


DETAIL OF 90° WELDING ELBOWS

• A NEAT END SECTION, SATISFACTORY TO THE ENGINEER, FROM SUBMITTED SHOP DRAWINGS, MAY BE USED IN LIEU OF THE 90° WELDING ELBOW SHOWN.
NOT TO SCALE



PIPE ANCHORAGE DETAILS
NOT TO SCALE.



SIDEWALK PIPE RAILING
NOT TO SCALE
ITEM 522.1

LEGEND

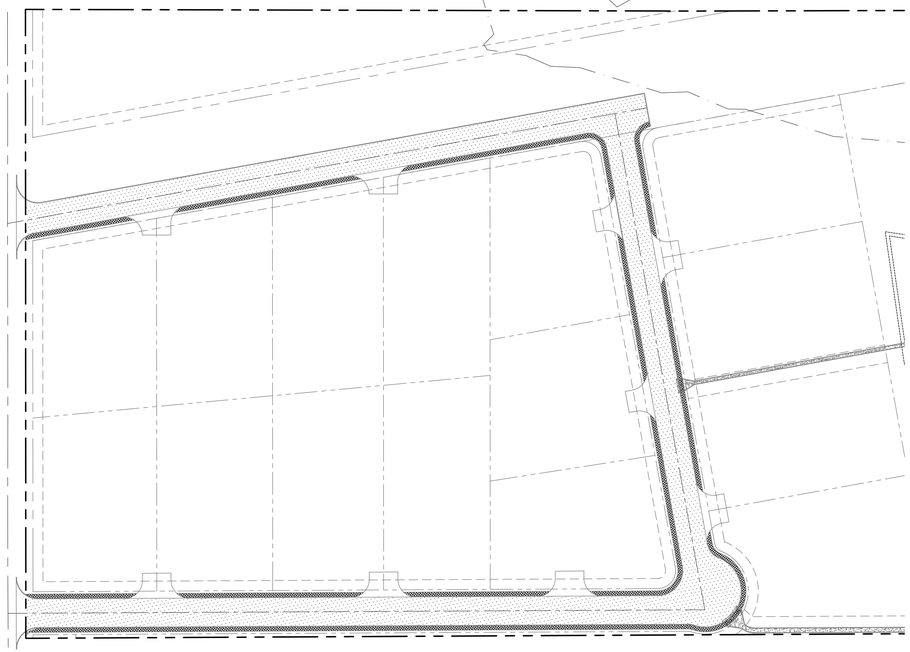
LOCAL "B"

SIDEWALK BY DEVELOPER

N

0 100' 200'

1" = 100'



CIVIL ENGINEERING CONSULTANTS
4155 DAVIS HILL BLVD, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #100410000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

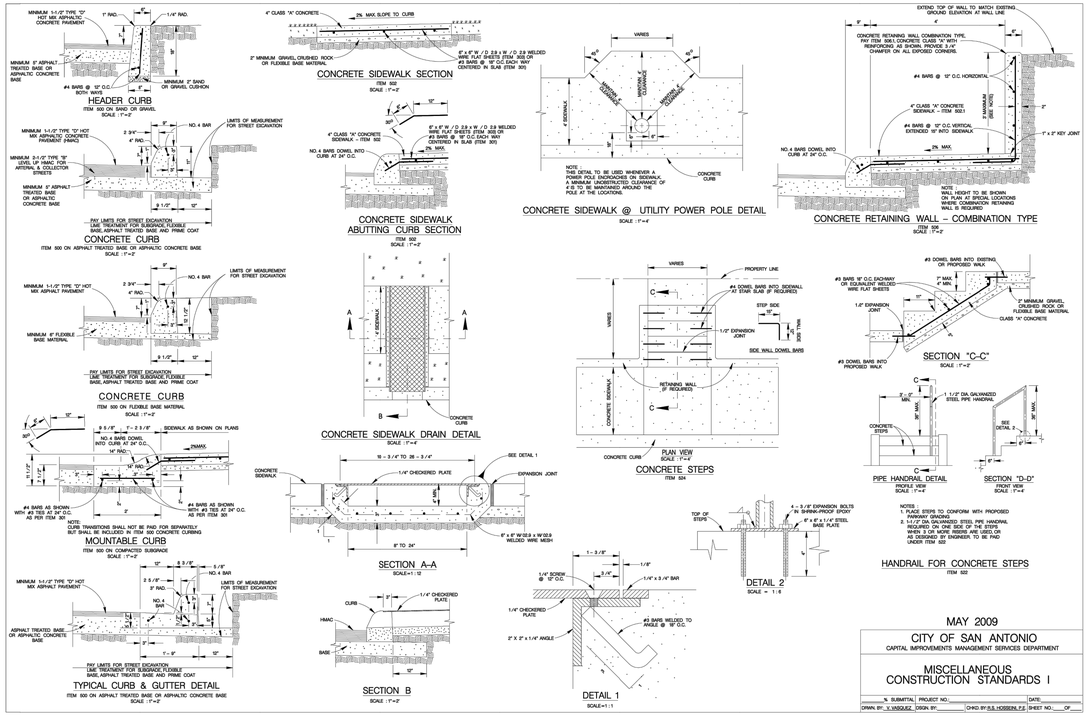
ON: 10/12/2022
DATE

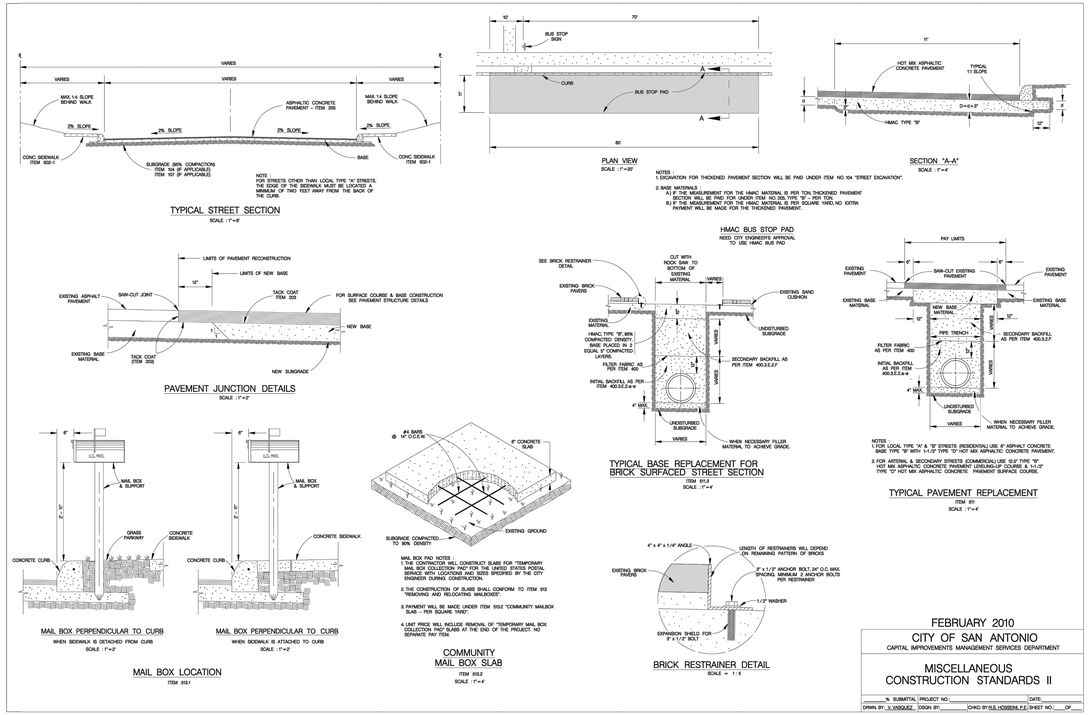
REV	DATE	DESCRIPTION

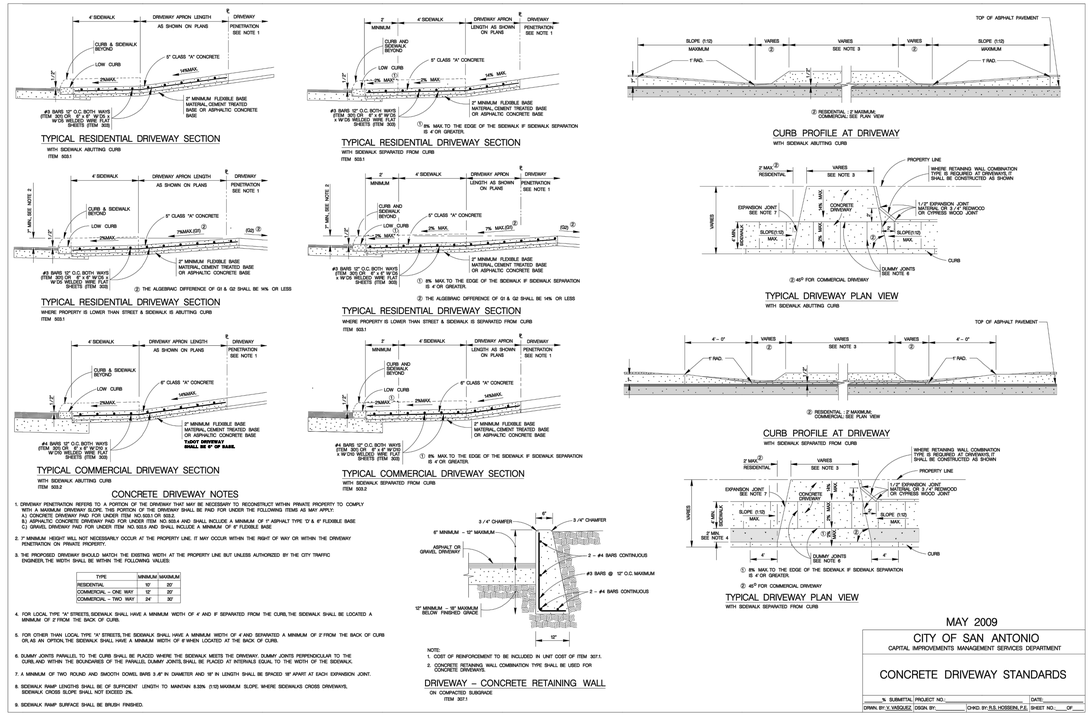
DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

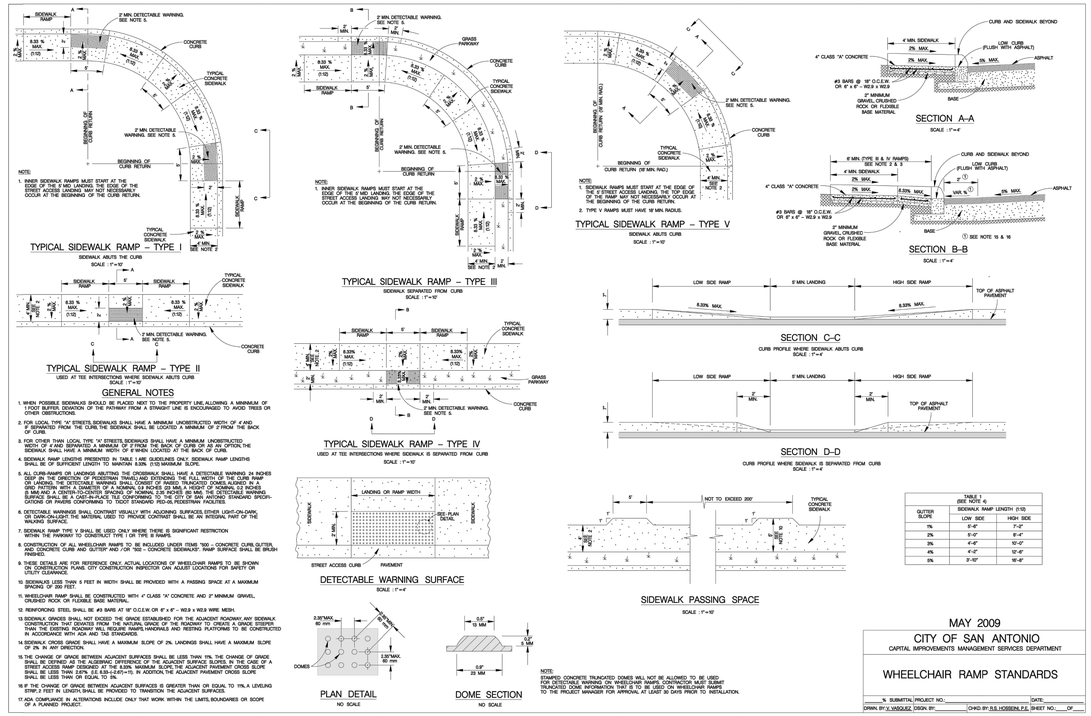
SA SOUTH BUSINESS PARK
STREET DETAILS

SHEET NO.
409









DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
1150 LOU UTT WEST, SUITE 395
SAN ANTONIO, TEXAS 78220-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 #T10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
STREET DETAILS

SHEET NO.
410

STREETLIGHT NOTE
STREETLIGHT POLES PLACED BETWEEN PROPERTY LINE AND SIDEWALK. POLES TO BE 1' MINIMUM CLEAR FROM SIDEWALK.

DRIVEWAY NOTE
DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON LOT SELECTION AND FINAL LOT DESIGN.

SIDEWALK NOTE
CONTRACTOR IS TO MATCH EXISTING CONCRETE CURB, CONCRETE SIDEWALK, AND PAVEMENT ELEVATIONS.

BEXAR COUNTY PERMIT NOTE:
BEXAR COUNTY RIGHT OR WAY PERMIT MUST BE OBTAINED PRIOR TO WORKING IN EXISTING BEXAR COUNTY RIGHT OF WAY

N

0 50' 100'
1" = 50'

LOT 1
BLOCK 3
2.00 Acres

100-YEAR
FLOOD PLAIN

UNITED GAS PIPELINE CO.
VOL. 3389, PG. 10, D.R.

R2-1
(24" X 33")
(ITEM 531.06)
SPEED LIMIT 35

D3-1 STREET NAME
"EAST PRO ROAD"
9"
ITEM NO. 531.57

R1-1 STOP SIGN
"STOP"
30"X30"
ITEM NO. 531.3

3 ~ OM-4P
END OF
ROAD
MARKERS
ITEM NO.
531.56

D3-1 STREET NAME
"FRONTAGE ROAD 16"
9"
ITEM NO. 531.57

R1-1 STOP SIGN
"STOP"
36"X36"
ITEM NO. 531.3

NORTH PRO ROAD
(142' R.O.W.) PUBLIC

TWO-WAY BLUE
REFLECTIVE MARKER
CENTERED IN STREET,
REFLECTORS ALIGNED
WITH FLOW OF TRAFFIC

D3-1 STREET NAME
"NORTH PRO ROAD"
9"
ITEM NO. 531.57

R1-1 STOP SIGN
"STOP"
30"X30"
ITEM NO. 531.3

LOT 1
BLOCK 2
1.17 Acres

R2-1
(24" X 33")
(ITEM 531.06)
SPEED LIMIT 35

LOT 5
BLOCK 1
1.00 Acres

D3-1 STREET NAME
"NORTH PRO ROAD"
9"
ITEM NO. 531.57

FRONTAGE ROAD 16
(R.O.W. VARIES)

LOT 1
BLOCK 1
1.01 Acres

LOT 2
BLOCK 1
1.00 Acres

LOT 3
BLOCK 1
1.01 Acres

LOT 4
BLOCK 1
1.02 Acres

LOT 2
BLOCK 2
1.17 Acres

EAST PRO ROAD
(60' R.O.W.) PUBLIC

LOT 900
BLOCK 2
3.38 ACRES

LOT 6
BLOCK 1
0.98 Acres

R2-1
(24" X 33")
(ITEM 531.06)
SPEED LIMIT 35

LOT 3
BLOCK 2
1.17 Acres

LOT 11
BLOCK 1
1.00 Acres

LOT 10
BLOCK 1
0.99 Acres

LOT 9
BLOCK 1
0.99 Acres

LOT 8
BLOCK 1
1.00 Acres

TWO-WAY BLUE
REFLECTIVE MARKER
CENTERED IN STREET,
REFLECTORS ALIGNED
WITH FLOW OF TRAFFIC

LOT 7
BLOCK 1
0.98 Acres

D3-1 STREET NAME
"SOUTH PRO ROAD"
9"
ITEM NO. 531.57

D3-1 STREET NAME
"FRONTAGE ROAD 16"
9"
ITEM NO. 531.57

R1-1 STOP SIGN
"STOP"
36"X36"
ITEM NO. 531.3

R2-1
(24" X 33")
(ITEM 531.06)
SPEED LIMIT 35

R2-1
(24" X 33")
(ITEM 531.06)
SPEED LIMIT 35

LOT 4
BLOCK 2
1.35 Acres

SOUTH PRO ROAD
(60' R.O.W.) PUBLIC

TWO-WAY BLUE
REFLECTIVE MARKER
CENTERED IN STREET,
REFLECTORS ALIGNED
WITH FLOW OF TRAFFIC

D3-1 STREET NAME
"SOUTH PRO ROAD"
9"
ITEM NO. 531.57

TWO-WAY BLUE
REFLECTIVE MARKER
CENTERED IN STREET,
REFLECTORS ALIGNED
WITH FLOW OF TRAFFIC

D3-1 STREET NAME
"EAST PRO ROAD"
9"
ITEM NO. 531.57

DESIGNED BY:	JFC
DRAWN BY:	LC
DATE:	10/2022
JOB NO.:	E0685501

CIVIL ENGINEERING CONSULTANTS
CEC GROUP, LLC
1155 LOU WELL, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED
PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
SIGNAGE PLAN

SHEET NO.
411

GENERAL NOTES

1.) THE EXISTING SIGNS LOCATED ON THE JOBSITE ARE THE PROPERTY OF THE CITY OF SAN ANTONIO. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY. SUCH PROTECTION SHALL INCLUDE THE PERIOD AFTER SIGNS ARE REMOVED FROM INSTALLATION AND STORED BY THE CONTRACTOR OR DELIVERED TO TRAFFIC OPERATIONS. THE ASSISTANT TRAFFIC SUPERINTENDENT (207-7765) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO DELIVERY.

2.) AFTER SIGNS ARE REMOVED FROM INSTALLATION AND ARE BEING STORED BY THE CONTRACTOR, THE CONTRACTOR SHALL CONTACT THE TRAFFIC OPERATIONS SECTION OF THE PUBLIC WORKS DEPARTMENT (207-7765) AND ARRANGE FOR A CONVENIENT TIME TO DELIVER CITY SIGNS AND POLES.

3.) PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE TRAFFIC ENGINEERING (207-7720) CONSTRUCTION INSPECTION AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC. THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE PROJECTS COMPLETION.

4.) ALL GROUND MOUNTED SIGNS SHALL USE HIGH INTENSITY REFLECTIVE SHEETING.

5.) ALL OVERHEAD SIGNS SHALL USE DIAMOND GRADE REFLECTIVE SHEETING.

6.) ALL BLANKS TO BE ALUMINUM ALLOY NO. 5052-H38.

7.) "T" DENOTES THICKNESS OF SIGN BLANKS.

8.) ALL HOLES SHALL BE 3 /8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND /OR ROUGH EDGES.

9.) SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON EACH DETAIL.

10.) ALL SIGN BLANK TO BE ETCHED, DEGREASED, AND HAVE AN ALODINE FINISH PRIOR TO APPLICATION OF LEGENDS.

11.) ALL DETAILS ARE NOT TO SCALE.

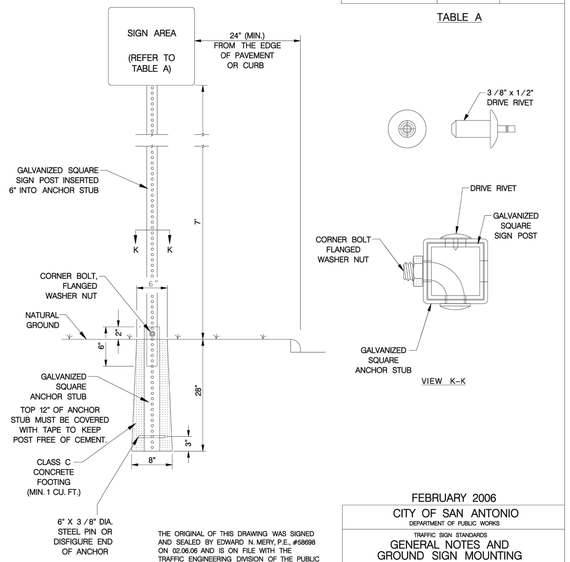
12.) ALL DIMENSIONS ARE IN INCHES.

13.) ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND STANDARD HIGHWAY SIGNS (FHWA) LATEST EDITION.

14.) REINSTALLATION OF PREVIOUSLY EXISTING SIGNS, WHERE REQUIRED BY THE CITY TRAFFIC ENGINEER, SHALL BE AT THE CONTRACTOR'S EXPENSE.

TYPICAL GROUND SIGN INSTALLATION

TYPE "U" MOUNT
PERFORATED SQUARE METAL TUBING (DRIVEABLE)



VIEW K-K

METAL TUBING	SIGN AREA	
	< 10 SQ. FT.	> 10 SQ. FT.
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3 /4" x 1-3 /4" (14 GAUGE)	2" x 2" (12 GAUGE)
GALVANIZED SQUARE ANCHOR STUB (PERFORATED)	2" X 2" (14 GAUGE)	2-1 /4" x 2-1 /4" (14 GAUGE)

TABLE A

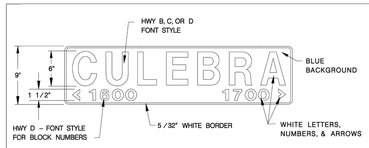
THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY EDWARD N. MERY, P.E., #58698 ON 02.06.06 AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

FEBRUARY 2006

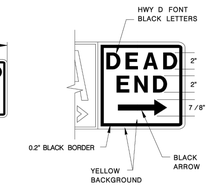
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS
GENERAL NOTES AND GROUND SIGN MOUNTING
SHEET 1 OF 4

% SUBMITTAL | PROJECT NO.: | DATE:
DRWN BY: A.F.S. | DSGN BY: E.N.M. | CHKD BY: J.D.F./E.N.M. | SHEET NO.: | OF:



9" D3 – STREET NAME SIGN



NEW 9" D3 W / DEAD END OR NO OUTLET SIGNAGE

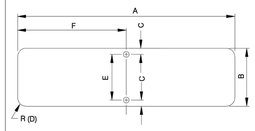
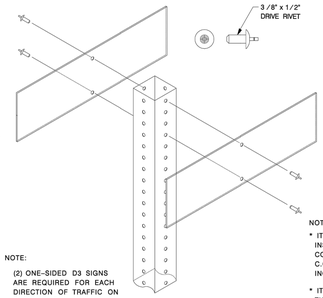


TABLE – D3 SIGNS

A	B	C	D	E	F	T
24"	9"	1 /2"	3 /4"	8"	12"	0.125"
30"	9"	1 /2"	3 /4"	8"	15"	0.125"
36"	9"	1 /2"	3 /4"	8"	18"	0.125"
42"	9"	1 /2"	3 /4"	8"	21"	0.125"
48"	9"	1 /2"	3 /4"	8"	24"	0.125"
54"	9"	1 /2"	3 /4"	8"	27"	0.125"

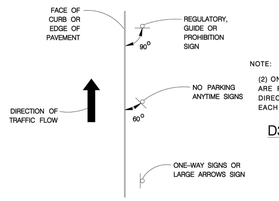
NOTE: A 30" LONG OR GREATER PLATE SHALL BE USED WHEN A "DEAD END" OR "NO OUTLET" SUPPLEMENT IS REQUIRED.



D3 SIGN TO POLE INSTALLATION

NOTE:
(2) ONE-SIDED D3 SIGNS ARE REQUIRED FOR EACH DIRECTION OF TRAFFIC ON EACH POLE.

HEIGHT	9" (228 mm)
LENGTH	24" (600 MM) MIN. 54 (1350 MM) MAX. 6" (150 MM) INCREMENTS OF LENGTH
THICKNESS	0.125" (3MM)
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209) GOLD CHROMATE FINISH
SIGN FACE MATERIALS	BLUE FILM OVER HIGH INTENSITY FP-85, SECTION 718 AND L-S-300C
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON BLUE BACKGROUND
LETTER TRACKING	10%



TYPICAL GROUND MOUNTED SIGN PLACEMENT

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY EDWARD N. MERY, P.E., #58698 ON 02.06.06 AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

JULY 2010

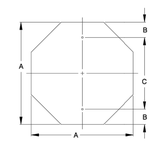
CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS
D3 STREET NAME SIGN AND SIGN MOUNTING
SHEET 2 OF 4

% SUBMITTAL | PROJECT NO.: | DATE:
DRWN BY: A.F.S. | DSGN BY: E.N.M. | CHKD BY: J.D.F./E.N.M. | SHEET NO.: | OF:

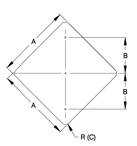
STREET SIGN ASSEMBLY EXAMPLES	PAY ITEMS			
	ITEM	UNIT	DESCRIPTION	QUANTITY
STOP SIGN WITH 2 STREET NAMES	531.3	EA.	R1-1 STOP	1
	531.57-P	EA.	9-IN STREET NAME PLATE (4 PLATES)	2
YIELD SIGN WITH 1 STREET NAME	531.4	EA.	R1-2 YIELD	1
	531.57-P	EA.	9-IN STREET NAME PLATE (2 PLATES)	1
2 STREET SIGNS	531.57	EA.	9-IN STREET NAME SIGN (2 PLATES)	1
	531.57-P	EA.	9-IN STREET NAME PLATE (2 PLATES)	1

NOTE:
* ITEM 531.57 "9-INCH STREET NAME" SIGN (1-EA.) INCLUDES THE INSTALLATION OF (2) ONE-SIDED D3 SIGNS. THIS SHALL BE FULL COMPENSATION FOR MATERIALS AND LABOR AS DESCRIBED IN C.O.S.A. STANDARD SPECIFICATIONS AND GROUND SIGN MOUNTING STANDARD DETAIL.
* ITEM 531.57-P "9-INCH STREET NAME PLATE" (1-EA.) INCLUDES THE INSTALLATION OF (2) ONE-SIDED D3 SIGNS ON TOP OF EXISTING SIGN (I.E., STOP SIGN OR YIELD SIGN), EXTRA LENGTH POLE AND APPURTENANCES REQUIRED TO MEET SPECIFICATIONS.



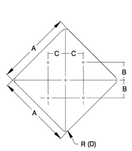
OCTAGONAL

A	B	C	T
24	3	18	0.080
30	3	24	0.080
36	3	30	0.100



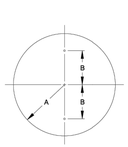
DIAMOND (A)

A	B	C	T
18	9	1 1/2	0.080
24	12	1 1/2	0.080
30	15	1 7 /8	0.080
36	18	2 1/4	0.100



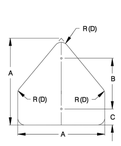
DIAMOND (B)

A	B	C	D	T
48	15	15	3	0.100



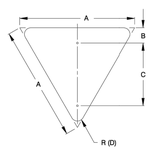
CIRCLE

A	B	T
18	15	0.100



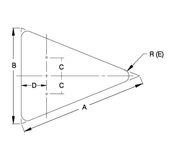
PENTAGON (SCHOOL)

A	B	C	D	T
36	24	3	2 1/4	0.100



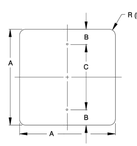
EQUILATERAL TRIANGLE

A	B	C	D	T
36	2	24	2	0.100



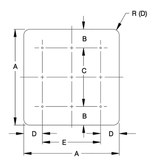
ISOSCELES TRIANGLE

A	B	C	D	E	T
40	30	7 1/2	12	1 7 /8	0.100
48	36	9	15	2 1/4	0.100



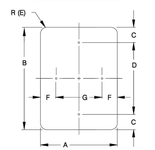
SQUARE (A)

A	B	C	D	T
18	1 1/2	15	1 1/2	0.080
24	3	18	1 1/2	0.080
30	3	24	1 7 /8	0.080



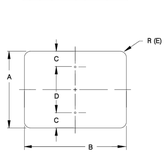
SQUARE (B)

A	B	C	D	E	F	T
48	6	36	9	30	3	0.100



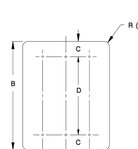
VERTICAL / HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
12	18	1 1/2	15	1 1/2	1 1/2	9	0.080
12	36	3	30	1 1/2	1 1/2	9	0.080
18	24	1 1/2	21	1 1/2	1 1/2	15	0.080
24	30	3	24	1 1/2	3	18	0.080
24	36	3	30	1 1/2	3	18	0.080
24	48	6	36	1 7 /8	3	18	0.080
30	36	3	30	1 7 /8	3	24	0.080



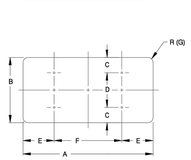
HORIZONTAL RECTANGLE

A	B	C	D	E	T
6	12	1	4	1/4	0.080
6	18	1	4	1/4	0.080
20	36	1 1/2	17	1 1/2	0.080



VERTICAL RECTANGLE

A	B	C	D	E	F	G	T
5	7 3/4	1 1/2	6 3 /4	1 1/2	4	1 1/4	0.100
48	60	6	48	9	30	3	0.100



HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
48	24	2	20	2	44	1 7 /8	0.100
48	36	3	30	3	42	2 1/4	0.100
60	24	2	20	2	56	1 1/2	0.100
60	36	3	30	3	54	2 1/4	0.100
48	30	3	24	3	42	1 7 /8	0.100
60	30	3	24	3	54	1 7 /8	0.100

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY EDWARD N. MERY, P.E., #58698 ON 02.06.06 AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

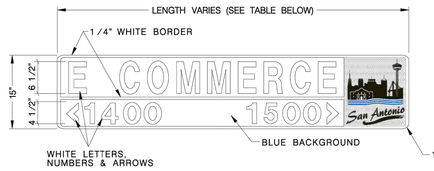
FEBRUARY 2006

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

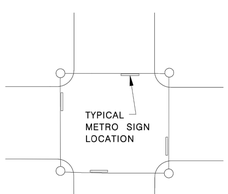
TRAFFIC SIGN STANDARDS
GROUND MOUNTED SIGN SIZES
SHEET 3 OF 4

% SUBMITTAL | PROJECT NO.: | DATE:
DRWN BY: A.F.S. | DSGN BY: E.N.M. | CHKD BY: J.D.F./E.N.M. | SHEET NO.: | OF:

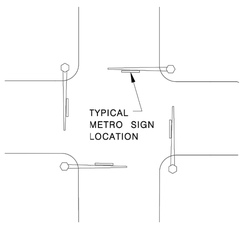
TYPICAL METRO SIGN PLACEMENT



15" METRO – STREET NAME SIGNS

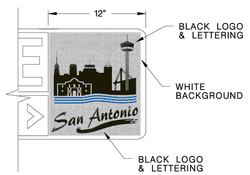


SPAN WIRE INSTALLATION



MAST ARM INSTALLATION

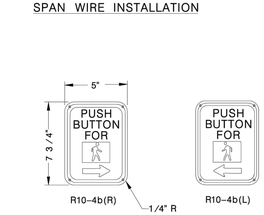
15" METRO w/CITY SKY LINE



HEIGHT	15" (381 MM)
LENGTH	48" (1200 MM) MIN. 72" (1800 MM) MAX.** 1" (300 MM) INCREMENTS OF LENGTH
THICKNESS	0.125" (3 MM)
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209) GOLD CHROMATE FINISH
SIGN FACE MATERIALS	BLUE FILM OVER DIAMOND GRADE FP-85, SECTION 718 AND L-S-300C
LEGENDS AND SYMBOLS	SERIES D (USUAL) SERIES C OR B FOR MAXIMUM LENGTH SIGN BLANK, IF NECESSARY
COLOR	WHITE LEGEND ON BLUE BACKGROUND
LETTER TRACKING	17% (USUAL) 10% (MIN.)

** SIGN PLATE LONGER THAN 72" MUST BE APPROVED BY THE CITY TRAFFIC ENGINEER

* DIAMOND GRADE SHEETING 5052-H38 ALUMINUM SUBSTRATE



PEDESTRIAN PUSHBUTTON SIGNS

LEFT TURN SIGNS

THE ORIGINAL OF THIS DRAWING WAS SIGNED AND SEALED BY EDWARD N. MERY, P.E., #58698 ON 02.06.06 AND IS ON FILE WITH THE TRAFFIC ENGINEERING DIVISION OF THE PUBLIC WORKS DEPARTMENT, CITY OF SAN ANTONIO.

FEBRUARY 2006

CITY OF SAN ANTONIO
DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGN STANDARDS
METRO STREET NAME SIGN AND SIGN PLACEMENT
SHEET 4 OF 4

% SUBMITTAL | PROJECT NO.: | DATE:
DRWN BY: A.F.S. | DSGN BY: E.N.M. | CHKD BY: J.D.F./E.N.M. | SHEET NO.: | OF:

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
4155 DAVIS HWY, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #100410-00

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

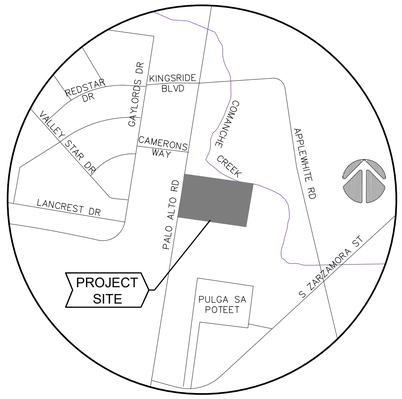
ON: 10/12/2022
DATE

REV/	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
SIGNAGE DETAILS

SHEET NO.
412

SEDIMENTATION & EROSION CONTROL PLANS
for
SA SOUTH BUSINESS PARK



LOCATION MAP
N.T.S.

GENERAL NOTES

1. All materials and construction procedures within the scope of this project shall, be approved by the City of San Antonio Public Works and comply with the following as applicable:
A. Reference to Current "San Antonio Water System Utility Specifications"
B. Reference to Current City of San Antonio "Standard Specifications for Public Works Construction"

2. The locations and depths of existing utilities, including service laterals, and drainage structures shown on the plans are approximate only. The Contractor shall verify the exact location and depths of underground utilities at least 48 hours prior to construction whether shown on plans or not, and to protect the same during construction. Texas State Wide One Call Locator 1-800-545-6005 City Public Service AT&T Time Warner Valero Energy Co.

3. The Contractor shall notify the City prior to the start of each phase of street construction and call for inspections with a minimum of 24 hours notice.

4. Testing will be paid for by Developer, coordinated by Contractor, and witnessed by City.

5. Minimum Testing Schedule:

Densities - Subgrade	1 Per 500 Foot Minimum
Densities - Base	1 Per 500 Foot Minimum
Proctors - Subgrade	1 Per Material Per Subdivision
Proctors - Base	1 Per 5,000 C.Y.
Lime Series - Subgrade	1 Per Material Per Subdivision
Concrete - Structures	1 Set (3) Per 50 C.Y.

6. Transition washout crown to normal crown in 25'.

7. No extra payment shall be allowed for work called for on the plans, but not included in the bid proposal. This incidental work will be required and shall be included in the pay item to which it relates.

8. The contractor shall be responsible for restoring to its original or better condition any damage done to existing fences, concrete islands, street paving, curbs, shrubs, bushes or driveways. (No separate pay item).

9. Due to federal regulations Title 49, Part 192.171 CPS must maintain access to gas valves at all times. The contractor must protect and work around any gas valves that are in the project area.

10. Contractor shall notify the city inspector twenty four (24) hours prior to backfill of any utility trenches to schedule for density test as required.

11. All waste material shall become property of the contractor and shall be his sole responsibility to dispose of this material off the limits of the project. No waste material shall be placed in existing lows that will block or alter flow limits of existing artificial or natural drainage.

12. The contractor shall not place any waste material in the 100-year flood plain without first obtaining an approved Flood Plain Development Permit.

13. The contractor shall maintain all adjoining streets and traveled routes free from spilled and/or tracked construction materials and/or debris.

14. It is the contractor's responsibility to see that all signs and barricades are properly installed and maintained. All locations and distances will be decided upon in the field by the contractor, using the "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". The City's construction inspector will only be responsible to inspect barricades and signs. If, in the opinion of the construction inspector, the barricades and signs do not conform to established standards or are incorrectly placed or are insufficient in quantity to protect the general public, the inspector shall have the option to stop operations until such time as the conditions are corrected.

TRENCH EXCAVATION SAFETY PROTECTION

Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall. review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies 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.

Sheet List Table

SEDIMENT & EROSION CONTROL

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
540.1	TEMPORARY ROCK FILTER DAM "TYPE 2"	LF	100
540.6	TYPE I CONSTRUCTION EXIT	EA	1
540.9	SILT CONTROL FENCE (INCLUDES J-HOOKS)	LF	4,010
540.10	GRAVEL FILTER BAGS	LF	50
-	CONCRETE WASHOUT PIT	EA	1

LEGEND

SCF — TEMPORARY SEDIMENT CONTROL FENCE

TYPE 1 CONSTRUCTION EXIT

CONCRETE WASHOUT PIT

GRAVEL FILTER BAGS

OWNER:
SA SOUTH BUSINESS PARK LP
828 MEYER RD
KINGSBURY, TEXAS 78638

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
dba. DON DURDEN, INC.
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

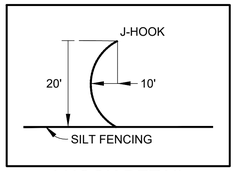
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
SEDIMENTATION & EROSION
COVER SHEET

SHEET NO.
500



J-HOOK DETAIL

SCALE: NTS

S.W.P.P.P. GENERAL NOTES

1. THE CONTROL MEASURES CONTAINED HEREON (AND AS FURTHER DESCRIBED BY THE STANDARD SPECIFICATIONS) SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE CONSTRUCTION CONTRACT TO ASSURE EFFECTIVE AND CONTINUOUS WATER POLLUTION CONTROL DURING CONSTRUCTION AND POST CONSTRUCTION PERIODS.

2. A RAIN GAUGE SHALL BE PROVIDED BY THE CONTRACTOR AND LOCATED AT THE PROJECT SITE. THE CONTRACTOR AND INSPECTOR WILL INSPECT THE ENTIRE PROJECT TO DETERMINE THE CONDITION OF THE CONTROL MEASURES. SEDIMENT WILL BE REMOVED AND DEVICES REPAIRED AS SOON AS PRACTICABLE BUT NO LATER THAN 7 DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE BEING CAUSED BY REPAIR OPERATIONS.

3. THE CONTRACTOR SHALL CLEAN PAVED SURFACES (ADJACENT TO THE CONSTRUCTION AREAS) AS NECESSARY TO REMOVE SEDIMENT WHICH HAS ACCUMULATED ON THE ROADWAY DUE TO STORMWATER FLOWS AND VEHICULAR TRAFFIC THROUGH AND ACROSS THE CONSTRUCTION SITE.

4. IN CASE OF FAILURE ON THE PART OF THE CONTRACTOR TO PREVENT AND CONTROL SOIL EROSION, SEDIMENTATION AND WATER POLLUTION WHICH MAY DEGRADE RECEIVING WATERS, THE DEVELOPER/OWNER RESERVES THE RIGHT TO EMPLOY OUTSIDE ASSISTANCE OR USE OTHER FORCES TO PROVIDE THE NECESSARY CORRECTIVE MEASURES. ALL COST (INCLUDING ENGINEERING) COST WILL BE DEDUCTED FROM ANY MONEYS DUE TO OR TO BECOME DUE TO THE CONTRACTOR.

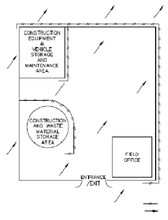
5. UPON COMPLETION OF CONSTRUCTION AND THE INSTALLATION OF PERMANENT EROSION CONTROL METHODS, A FINAL EROSION CONTROL INSPECTION WILL BE PERFORMED AS PART OF ACCEPTANCE OF THE PROJECT BY THE DEVELOPER/OWNER. IN THE EVENT THAT THE PERMANENT EROSION CONTROL IS INADEQUATE DUE TO IMPROPER DESIGN OR INSTALLATION. THE PERMANENT EROSION CONTROL MEASURES MUST BE CORRECTED OR REDESIGNED TO FUNCTION PROPERLY.

6. THE NOTICE OF INTENT (N.O.I.) SHALL BE SIGNED AND SUBMITTED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO THE CONTRACTOR MOVING ONTO THE SITE.

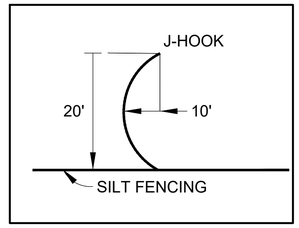
7. THE CONTRACTOR SHALL SUBMIT A SIGNED NOTICE OF TERMINATION (N.O.T.)

NOTE:

CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT UPSTREAM & DOWNSTREAM ENDS OF PROJECT AND THAT NO PONDING WILL occur.



1 SCALE: NONE **CONSTRUCTION STAGING AREA**



J-HOOK DETAIL

LEGEND

- SCF — TEMPORARY SEDIMENT CONTROL FENCE
- TYPE 1 CONSTRUCTION EXIT
- CONCRETE WASHOUT PIT
- GRAVEL FILTER BAGS
- RFD — TEMPORARY ROCK FILTER DAM

N

0 50' 100'

1" = 50'

6.426 ACRES
VOL. 17236, PG. 1350, O.P.R.
OWNER: FELIX MALDONADO & WIFE, MARIA MALDONADO

32.3807 ACRES
VOL. 3243, PG. 526, O.P.R.
OWNER: DANIEL J. FOLEY & WIFE, SADAE FOLEY

100-YEAR FLOOD PLAIN

60 L.F. ROCK FILTER DAM TYPE 2

1288 L.F TEMPORARY SEDIMENT CONTROL FENCE

SEE J-HOOK DETAIL 30 L.F.

CONSTRUCTION EXIT

NORTH PRO ROAD (142 R.O.W.) PUBLIC

CONCRETE WASHOUT PIT

SEE J-HOOK DETAIL 30 L.F.

FRONTAGE ROAD 16 (R.O.W. VARIES)

460 L.F TEMPORARY SEDIMENT CONTROL FENCE

SEE J-HOOK DETAIL 30 L.F.

1338 L.F TEMPORARY SEDIMENT CONTROL FENCE

SOUTH PRO ROAD (60' R.O.W.) PUBLIC

22.000 ACRES
DOC NO. 20210006098, O.P.R.
AHOKAS PROPERTIES XII, LLC.
A TEXAS LIMITED LIABILITY COMPANY

UNITED GAS PIPELINE CO.
VOL. 3389, PG. 10, D.R.

862 L.F TEMPORARY SEDIMENT CONTROL FENCE

EAST PRO ROAD (60' R.O.W.) PUBLIC

20 LF GRAVEL FILTER BAGS

30 LF GRAVEL FILTER BAGS

40 L.F. ROCK FILTER DAM TYPE 2

13.9583 ACRES
DOC. NO. 20090138460 O.P.R.
OWNER: AHOKAS PROPERTIES XIII LLC.

DESIGNED BY:	JFC
DRAWN BY:	LC
DATE:	10/2022
JOB NO.:	E60885501

CIVIL ENGINEERING CONSULTANTS
4155 DIO KIZ SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #100410000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. #93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK SEDIMENTATION & EROSION CONTROL PLAN

SHEET NO.

501

SITE DESCRIPTION

PROJECT LIMITS: 27.940 acre unit located south of the intersection of Camerons Way and Palo Alto Road, San Antonio, Texas.

LATITUDE 29.302651 LONGITUDE -98.555710

PROJECT DESCRIPTION: Construction of subdivision improvements including: streets, water lines, and drainage improvements.

MAJOR SOIL DISTURBING ACTIVITIES: Soil disturbing activities will include preparing right-of-way clearing, and grubbing, grading, excavation and embankment for the street, excavation for water, storm sewer, and structures. Erosion and sediment controls.

TOTAL PROJECT AREA: 27.940 AC

TOTAL AREA TO BE DISTURBED: 24.59 AC out of 27.940 AC (88%)

WEIGHTED RUNOFF COEFFICIENT (PRE-CONSTRUCTION): 0.70

WEIGHTED RUNOFF COEFFICIENT (POST-CONSTRUCTION): 0.95

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: The existing topsoil is Brayon Clay, Lewis Silty Clay, Tinn and Frio Soils, and Willacy Loam.

NAME OF RECEIVING WATERS: The storm water will flow into the Leon Creek Watershed.

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- ____ TEMPORARY SEEDING
- √ PERMANENT PLANTING, SODDING, OR SEEDING
- ____ MULCHING
- ____ SOIL RETENTION BLANKET
- ____ BUFFER ZONES
- ____ PRESERVATION OF NATURAL RESOURCES

OTHER: Disturbed areas on which construction activity has ceased (temporarily or permanently) shall be stabilized within 14 days unless activities are scheduled to resume and do within 21 days.

STRUCTURAL PRACTICES:

- √ SILT FENCES
- ____ HAY BALES
- √ ROCK BERMS
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- ____ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- ____ DIVERSION DIKE AND SWALE COMBINATIONS
- √ PIPE SLOPE DRAINS
- √ PAVED FLUMES
- √ ROCK BEDDING AT CONSTRUCTION EXIT
- ____ TIMBER MATTING AT CONSTRUCTION EXIT
- √ CHANNEL LINERS
- ____ SEDIMENT TRAPS
- √ SEDIMENT BASINS
- √ STORM INLET SEDIMENT TRAP
- ____ STONE OUTLET STRUCTURES
- √ CURBS AND GUTTERS
- ____ STORM SEWERS
- √ VELOCITY CONTROL DEVICES

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

The order of activities will be as follows:

1. Install temporary control, establish limits of construction, install silt fence, construction entrance/exit, and concrete wash out area.
2. Clear and grub.
3. Excavate and Embank for Channels/Drains/Pond/Utilities.
4. Construct storm drain.
5. Install berm controls/BMP's.
6. Construct water lines.
7. Construct streets.
8. Follow up with developer on BMP removal sequence.
9. When all construction activity is complete and the site is stabilized and approved by the project engineer, remove all temporary structural controls and stabilize areas disturbed by their removal.
10. The contractor is responsible for implementing and maintaining the storm water pollution prevention plan.

STORM WATER MANAGEMENT: Storm water drainage will be conveyed by existing drainage structures, storm sewer, and streets.

NON-STORM WATER DISCHARGE: Any water discharged on the site for approved non-storm water discharges, shall be per permit conditions. The source of the non-storm water water is from the San Antonio Water System and should have no detrimental effect on the site or downstream from the site.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to creeks and drainage ways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: An inspection will be performed by a designated inspector every week as well as after every half inch or more of rain (as recorded on a non-freezing rain gauge to be located at the Project Site). An inspection and Maintenance Report will be made per each Inspection. Based on the inspection results, the controls shall be located at the Project Site). An inspection and Maintenance Report will be made per each revised per the inspection report.

WASTE MATERIALS: All waste materials will be collected and stored in a secured metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulations and the trash will be hauled to a local dump. No construction waste material will be buried on site.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization or concrete curing compounds and additives. In the event of a hazardous material spill, the spill coordinator shall be contacted immediately.

SANITARY WASTE: All sanitary waste will be collected from portable units as necessary, or as required by local regulations by a Licensed Sanitary Waste Management Contractor.

OFFSITE VEHICLE TRACKING:

- ____ HAUL ROADS DAMPENED FOR DUST CONTROL
- ____ LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN
- √ EXCESS DIRT ON ROAD REMOVED DAILY
- √ STABILIZED CONSTRUCTION ENTRANCE

PERMITS:

REMARKS: Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

OWNERS CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____ _____
SIGNATURE DATE

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I understand the terms and conditions of the general Texas Pollutant Discharge Elimination System (TPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification plan.

_____ _____
SIGNATURE (CONTRACTOR) DATE

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
1150 LOU UTLEY DRIVE, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #10041000

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY, JESSE F. CANTU II, P.E. NO. 93639

ON, 10/12/2022 DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NO.
502

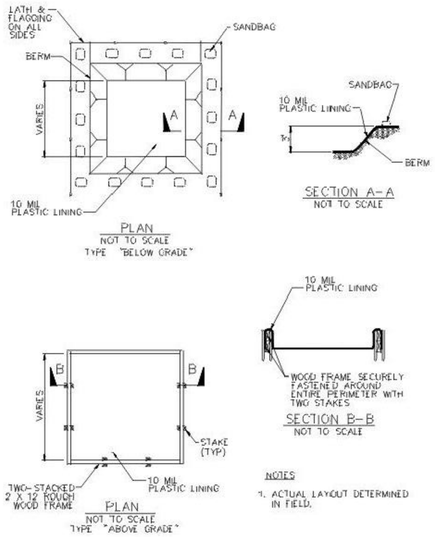


Figure 1-43 Schematics of Concrete Washout Areas

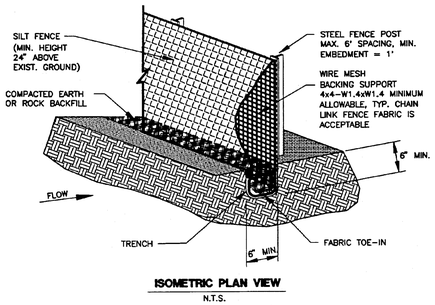


Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

GENERAL NOTES:

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. 30.
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/ft2, and Brindell hardness exceeding 140. Rebar (either #5 or #6) may also be used to anchor the berm.
3. Woven wire backing to support the fabric should be galvanized 2"x 4" welded wire, 12 gauge minimum.
4. 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.
5. 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.

Installation:

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. Install the silt fence along the center of the proposed berm placement, as with a normal silt fence described in Section 2.4.3.
3. Place the rock along the sheathing on both sides of the silt fence as shown in the diagram (Figure 1–29), to a height not less than 24 inches. Clean, open graded 3 – 5"diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5– to 8– inch diameter rock may be used.
4. Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and the berm retains its shape when walked upon.
5. The high service rock berm should be removed when the site is revegetated or otherwise stabilized or it may remain in place as a permanent BMP if drainage is adequate.

SILT FENCE

1.4.6 High Service Rock Berms

A high service rock berm should be designated in areas of important environmental significance such as in steep canyons or above permanent springs, pools, recharge features, or other environmentally sensitive areas that may require a higher level of protection. This type of sediment barrier combines the characteristics of a silt fence and a rock berm to provide a substantial level of sediment reduction and a sturdy enough barrier to withstand higher flows. The drainage area to this device should not exceed 5 acres and the slope should be less than 30%.

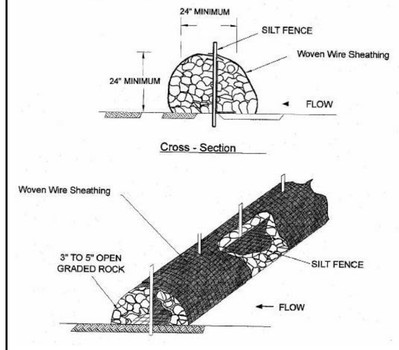


Figure 1-29 Schematic Diagram of High Service Rock Berm (LCRA, 1998)

1. The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
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 50 sieve.
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 plans. Divert wastewater to a sediment trap or basin.

Installation:

1. Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
2. The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
3. The construction entrance should be at least 50 feet long.
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 foundation approximately 15 feet from the entrance to divert runoff away from the public road.
5. Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
6. Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
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.

Washing: When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public roadway, when washing is required, it shall be done on an area stabilized basin. all sediment shall be prevented from entering any storm drain, ditch, or watercourse using approved methods.

Maintenance: The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public roadways. This may require periodic top dressing with additional stone as conditions demand, and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public roadway must be removed immediately.

HIGH SERVICE ROCK BERM

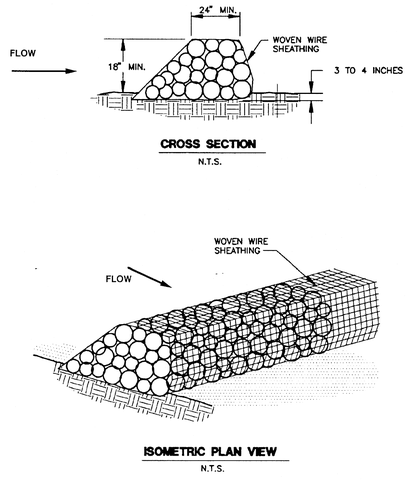


Figure 1-28 Schematic Diagram of a Rock Berm (NCTCOG, 1993)

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.

Installation:

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 18".
4. Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and 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 trench approximately 3 to 4 inches deep to prevent failure of the control.

ROCK BERM

FOR EROSION AND SEDIMENT CONTROL OVER THE EDWARDS AQUIFER CONTRIBUTING ZONE, THE RESPECTIVE BMP DETAILS HAVE BEEN SHOWN ON THIS SHEET AND SW1. THE DETAILS ARE EXCERPTS FROM THE EDWARDS AQUIFER TECHNICAL GUIDANCE MANUAL; RG–348, JULY 2005.

REFER TO THE EROSION CONTROL PLAN (SW1), FOR USE LOCATIONS / PARAMETERS OF THE DETAILS SHOWN IN THE PLAN SET.

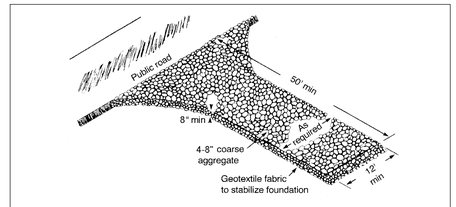


Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

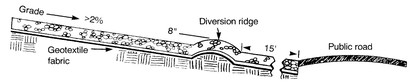


Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

CONSTRUCTION EXIT

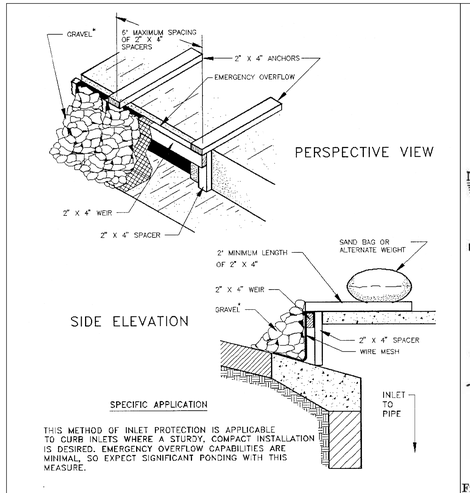


Figure 1-37 Wooden Weir Curb Inlet Protection (VA Dept of Conservation, 1992)

GENERAL NOTES:

1. Attach a continuous piece of wire mesh (30–inch minimum width x inlet throat length plus 4 feet) to the 2–inch x 4–inch wooden weir (with a total length of throat length plus 2 feet) as shown in Figure 1–37. Wood should be "construction grade" lumber.
2. Place a piece of approved filter cloth of the same dimensions as the wire mesh over the wire mesh and securely attach to the 2–inch x 4– inch weir.
3. Securely nail the 2–inch x 4–inch weir to the 9–inch long vertical spacers which are to be located between the weir and inlet face at a maximum 6– foot spacing.
4. Place the assembly against the inlet throat and nail 2–foot (minimum) lengths of 2–inch x 4– inch board to the top of the weir at spacer locations. These 2– inch x 4– inch anchors should extend across the inlet tops and be held in place by sandbags or alternate weight.
5. The assembly should be placed so that the end spacers are a minimum 1 foot beyond both ends of the throat opening.
6. Form the wire mesh and filter cloth to the concrete gutter and against the face of curb on both sides of the inlet. Place coarse aggregate over the wire mesh and filter fabric in such a manner as to prevent water from entering the inlet under or around the filter cloth.
7. This type of protection should be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass inlet by installing temporary earth or asphalt dikes directing flow into inlet.

CURB INLET PROTECTION (WEIR)

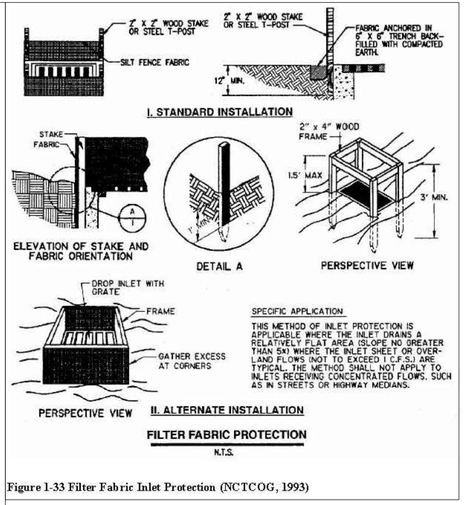


Figure 1-33 Filter Fabric Inlet Protection (NCTCOG, 1993)

GENERAL NOTES:

NOTE THAT THE DETAIL ABOVE, ONLY METAL POSTS / STAKES SHOULD BE USED. WOOD POSTS / STAKES ARE NOT ALLOWED

1. Filter fabric should be a nylon reinforced polypropylene fabric which meets the following minimum criteria: Tensile Strength, 90 lbs.; Puncture Rating, 60 lbs.; Mullen Burst Rating, 280 psi; Apparent Opening Size, U.S. Sieve No. 70.
2. Posts for fabric should be galvanized steel, tubular in cross–section or they may be standard fence "T"posts.
3. Concrete blocks should be standard 8"x 8"x 16"concrete masonry units.
4. Wire mesh should be standard hardware cloth or comparable wire mesh with an opening size not to exceed 1/2 inch.

Guidelines for installation:

Silt Fence Drop Inlet Protection

1. Silt fence should conform to the specifications listed above and should be cut from a continuous roll to avoid joints.
2. For posts, use metal ones with a minimum length of 3 feet.
3. Space stakes evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely drive them into the ground, approximately 18 inches deep (Figure 1–33).
4. To provide needed stability to the installation, a frame with 2 x 4–inch wood strips around the crest of the overflow area at a maximum of 1½ feet above the drop inlet crest should be provided.

INLET PROTECTION (FABRIC)

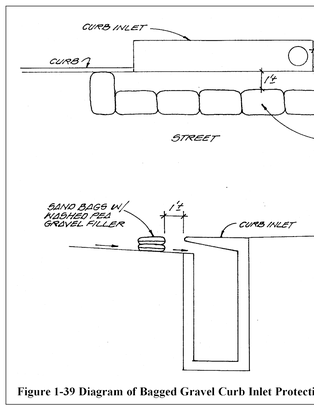


Figure 1-39 Diagram of Bagged Gravel Curb Inlet Protection (Pape-Dawson).

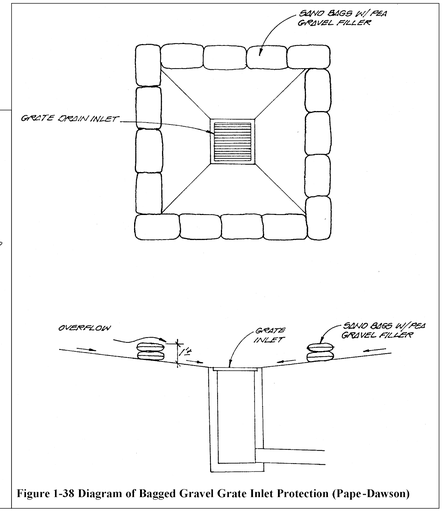


Figure 1-38 Diagram of Bagged Gravel Grate Inlet Protection (Pape-Dawson)

GENERAL NOTES:

1. Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
3. Check placement of device to prevent gaps between device and curb.
4. Inspect filter fabric and patch or replace if torn or missing.
5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

INLET PROTECTION (GRAVEL FILTER BAGS)

DESIGNED BY: JFC
DRAWN BY: LC
DATE: 10/2022
JOB NO.: E0685501

CIVIL ENGINEERING CONSULTANTS
4150 DAVIS HWY, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214 / #100410000

CEC

STATE OF TEXAS
JESSE F. CANTU II
93639
LICENSED PROFESSIONAL ENGINEER

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY; JESSE F. CANTU II, P.E. NO. •93639

ON: 10/12/2022
DATE

REV	DATE	DESCRIPTION

SA SOUTH BUSINESS PARK
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NO.
503