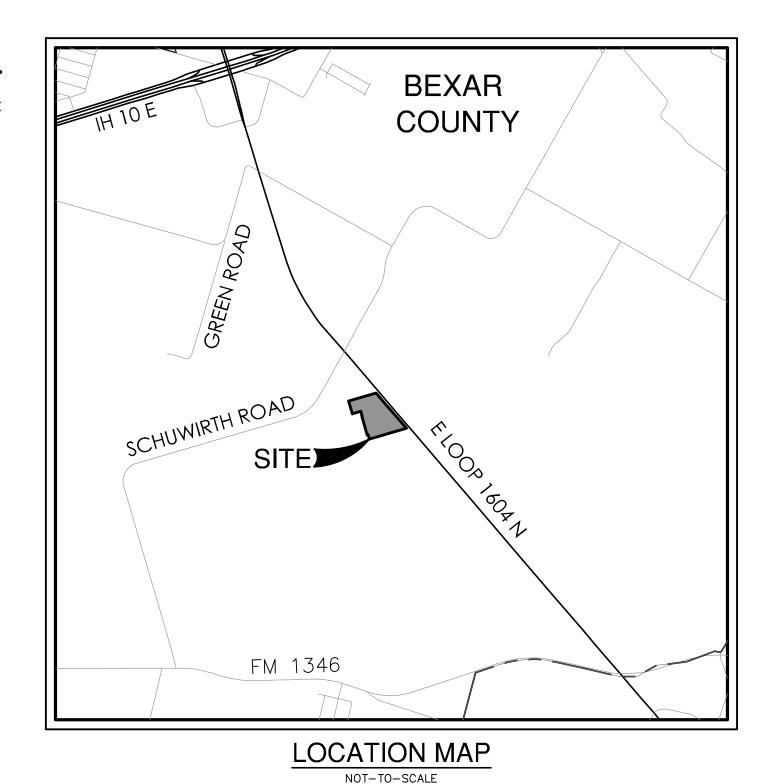
## SERENO SPRINGS - UNIT 1

## BEXAR COUNTY, TEXAS

### CIVIL CONSTRUCTION PLANS

Sheet List Table

Sheet Title	Sheet Description	Sheet No.
COVER SHEET		C0.00
MASTER DRAINAGE PLAN	PROPOSED/ULTIMATE CONDITIONS	C1.01
DRAIN A	PLAN AND PROFILE	C1.02
DRAIN B	PLAN AND PROFILE	C1.03
INTERCEPTOR CHANNEL C	PLAN AND PROFILE (STA. 8+03.81 TO STA. 15+50.00)	C1.04
INTERCEPTOR CHANNEL C	PLAN AND PROFILE (STA. 15+50.00 TO END)	C1.05
DRAIN D	PLAN AND PROFILE	C1.06
DRAIN E	PLAN AND PROFILE	C1.07
DRAINAGE DETAILS	(SHEET 1 OF 3)	C1.10
DRAINAGE DETAILS	(SHEET 2 OF 3)	C1.20
DRAINAGE DETAILS	(SHEET 3 OF 3)	C1.30
DENALI PRESERVE	PLAN AND PROFILE	C2.00
CAPITOL REEF	PLAN AND PROFILE (STA. 10+50.00 TO STA. 17+50.00)	C2.01
CAPITOL REEF	PLAN AND PROFILE (STA. 17+50.00 TO END)	C2.02
LASSEN PARK	PLAN AND PROFILE	C2.03
SEQUOIA PARK	PLAN AND PROFILE	C2.04
RAINBOW FOREST	PLAN AND PROFILE	C2.05
LOOP 1604 DECELERATION LANE	PAVING, STRIPING, & GRADING PLAN (SHEET 1 OF 2)	C2.06
LOOP 1604 DECELERATION LANE	PAVING, STRIPING, & GRADING PLAN (SHEET 2 OF 2)	C2.07
STREET DETAILS	SHEET 1 OF 3	C2.10
STREET DETAILS	SHEET 2 OF 3	C2.20
STREET DETAILS	SHEET 3 OF 3	C2.30
OVERALL SIGNAGE PLAN		C3.00
SIGNAGE DETAILS	SHEET 1 OF 3	C3.10
SIGNAGE DETAILS	SHEET 2 OF 3	C3.20
SIGNAGE DETAILS	SHEET 3 OF 3	C3.30



**Sheet Title Sheet Description** Sheet No. (SHEET 1 OF 2) **OVERALL SANITARY SEWER PLAN** C4.00 (SHEET 2 OF 2) C4.01 OVERALL SANITARY SEWER PLAN PLAN AND PROFILE (STA. 1+00.00 TO 7+50.00) SANITARY SEWER LINE A C4.02 PLAN AND PROFILE (STA. 7+50.00 TO END) SANITARY SEWER LINE A C4.03 PLAN AND PROFILE (STA: 1+00.00 TO 9+50.00) SANITARY SEWER LINE B C4.04 PLAN AND PROFILE (STA: 9+50.00 TO END) SANITARY SEWER LINE B C4.05 SANITARY SEWER LINE C C4.06 PLAN AND PROFILE PLAN AND PROFILE C4.07 SANITARY SEWER LINE D SANITARY SEWER LINE E PLAN AND PROFILE (SHEET 1 OF 2) SANITARY SEWER NOTES (SHEET 2 OF 2) C4.11 SANITARY SEWER NOTES SANITARY SEWER DETAILS C4.20 (SHEET 1 OF 2) **OVERALL WATER DISTRIBUTION PLAN** C5.00 OVERALL WATER DISTRIBUTION PLAN (SHEET 2 OF 2) C5.01 12 INCH WATER MAIN PLAN AND PROFILE C5.02 (SHEET 1 OF 3) WATER DISTRIBUTION DETAILS (SHEET 2 OF 3) WATER DISTRIBUTION DETAILS C5.20 (SHEET 3 OF 3) C5.30 WATER DISTRIBUTION DETAILS OVERALL UTILITY PLAN C6.00 C7.00 **OVERALL GRADING PLAN** 

Sheet List Table

PREPARED FOR:

CONTINENTAL HOMES OF TEXAS, L.P.
5419 N LOOP 1604 E
SAN ANTONIO, TEXAS 78247

**APRIL 2024** 

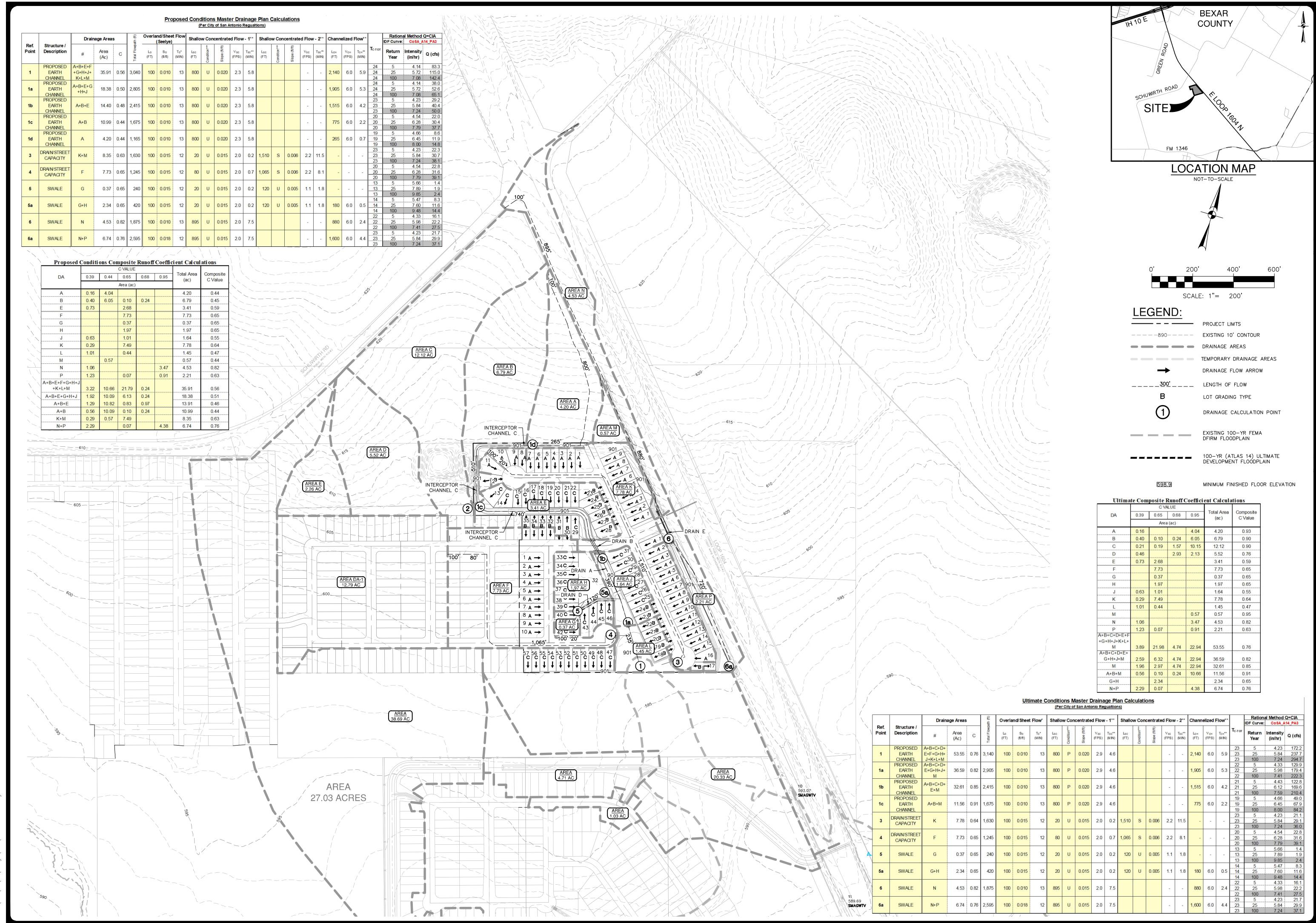


STORMWATER POLLUTION PREVENTION PLAN

STORMWATER POLLUTION PREVENTION PLAN DETAILS



C8.00

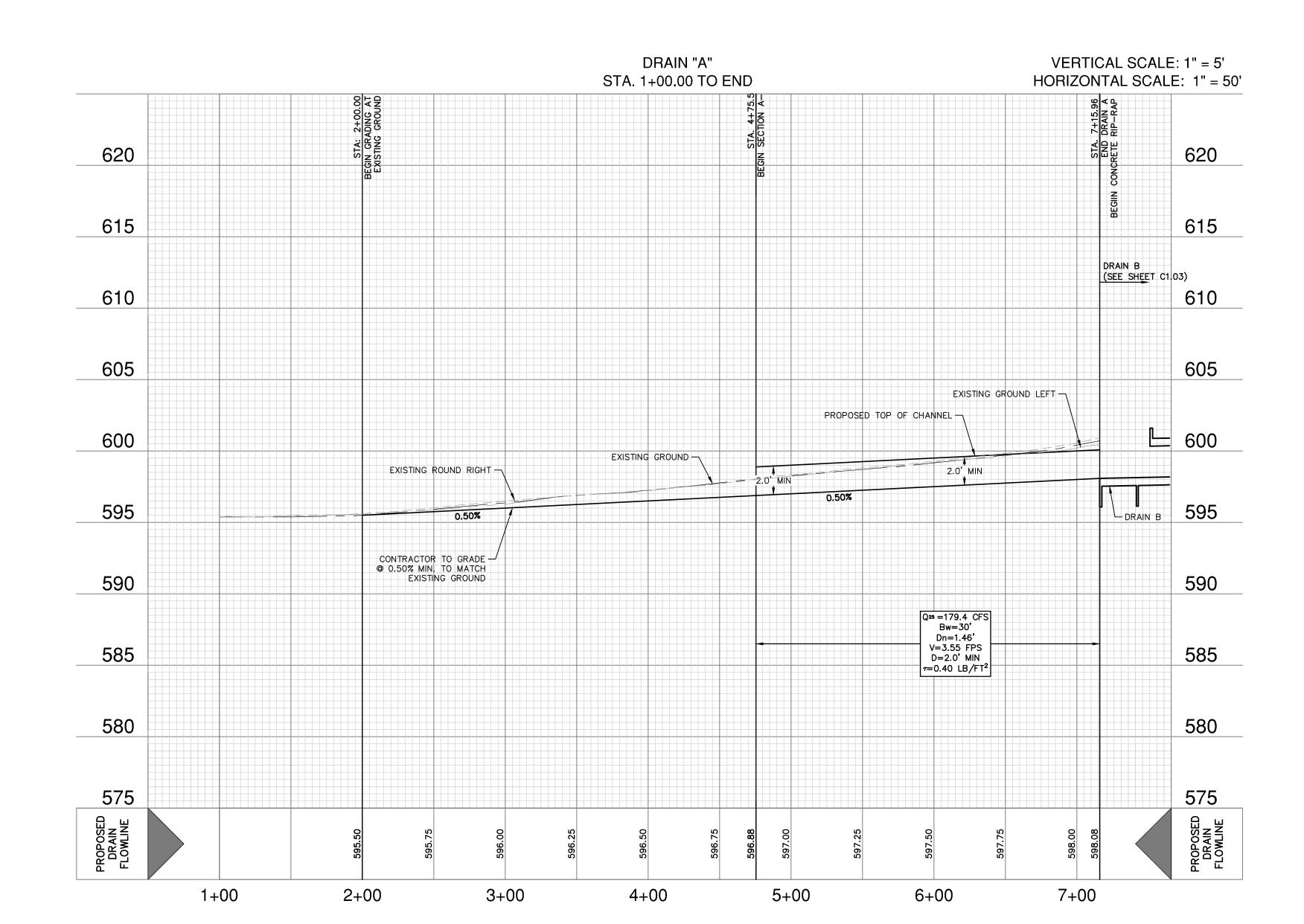


04/24/2024

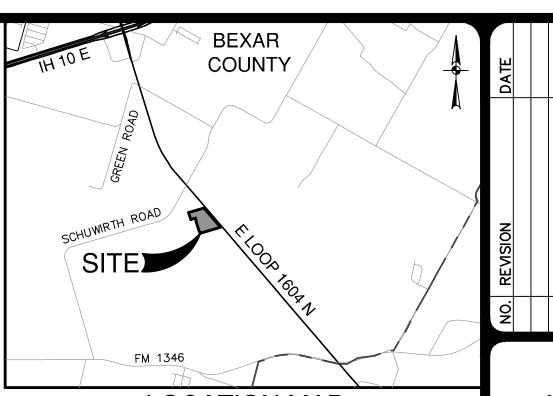
SERENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

MASTER DRAINAGE PLAN PROPOSED/ULTIMATE CONDITIONS

DRAWN AR C1.01

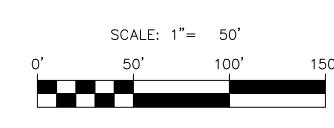


HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.



**LOCATION MAP** NOT-TO-SCALE





#### DRAINAGE LEGEND

PROJECT LIMITS EXISTING CONTOUR — — — — -690- — — — -PROPOSED WATER PROPOSED SEWER EXISTING WATER EXISTING SEWER 

#### **DRAINAGE & GRADING NOTES:**

- 1. THE CONTRACTOR WILL BE RESPONSIBLE DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE. GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OF SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /O PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

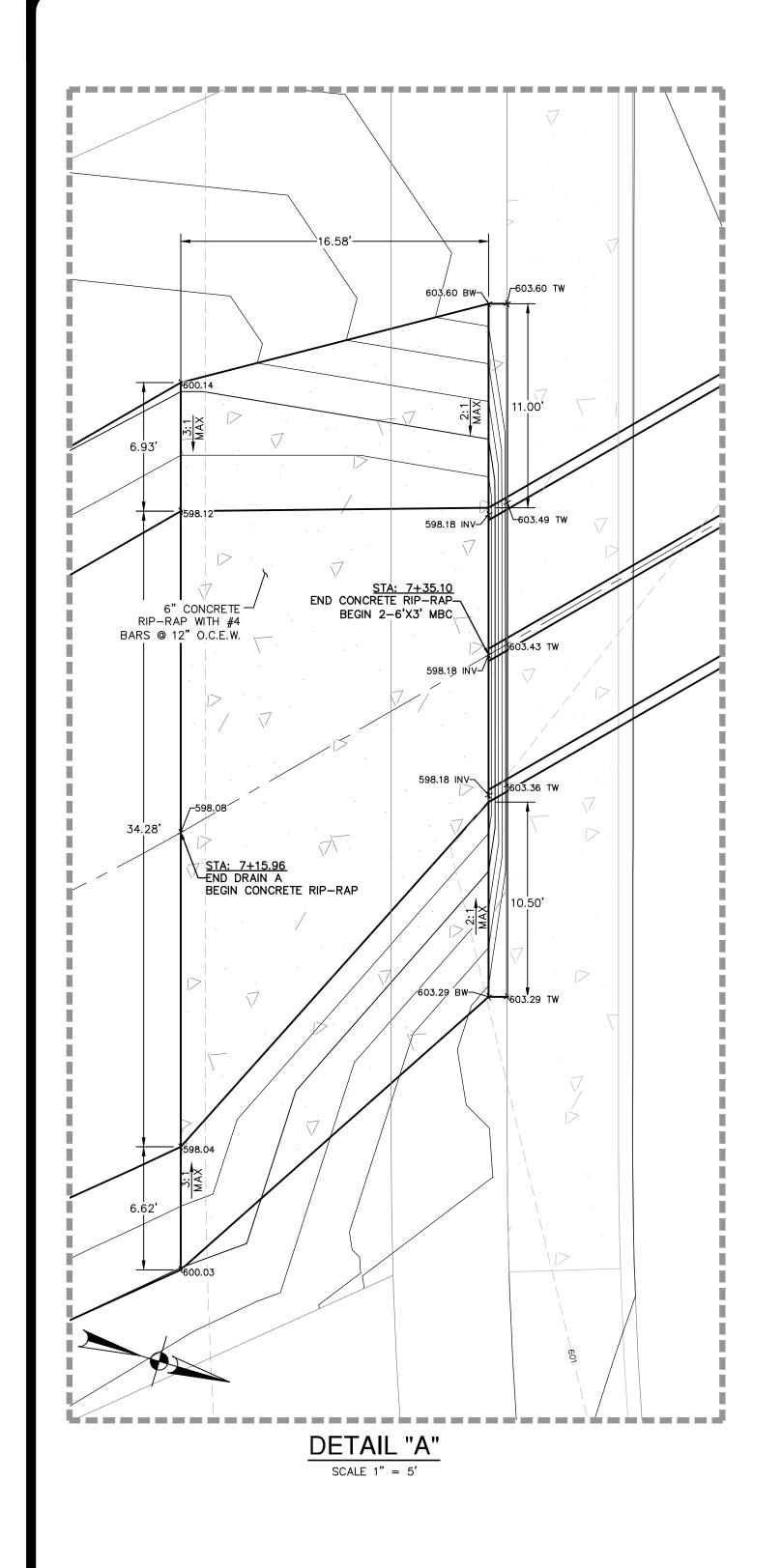
#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OF PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

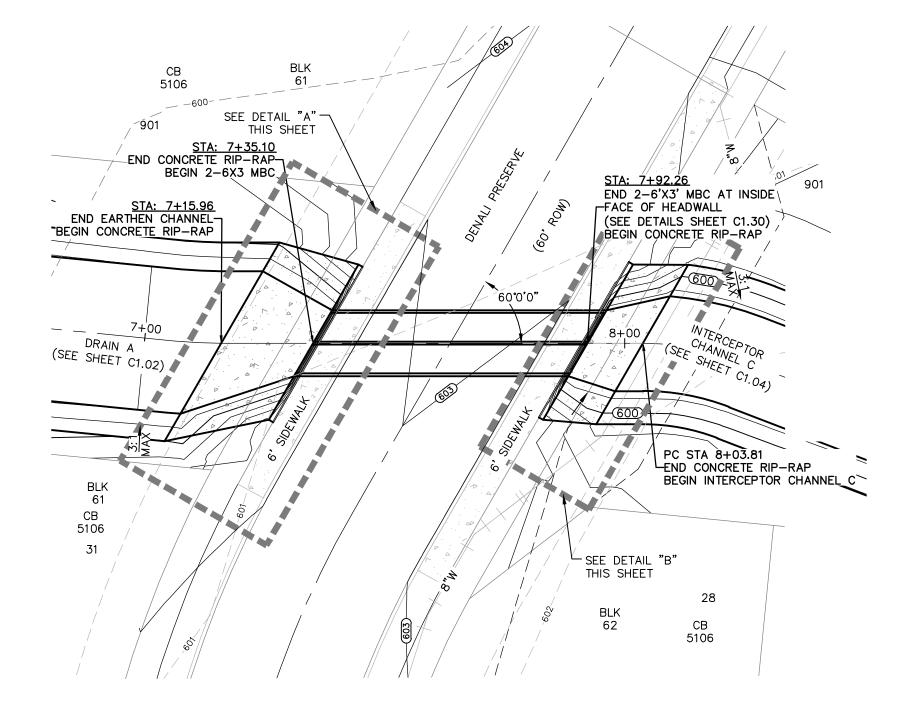
04/23/2024

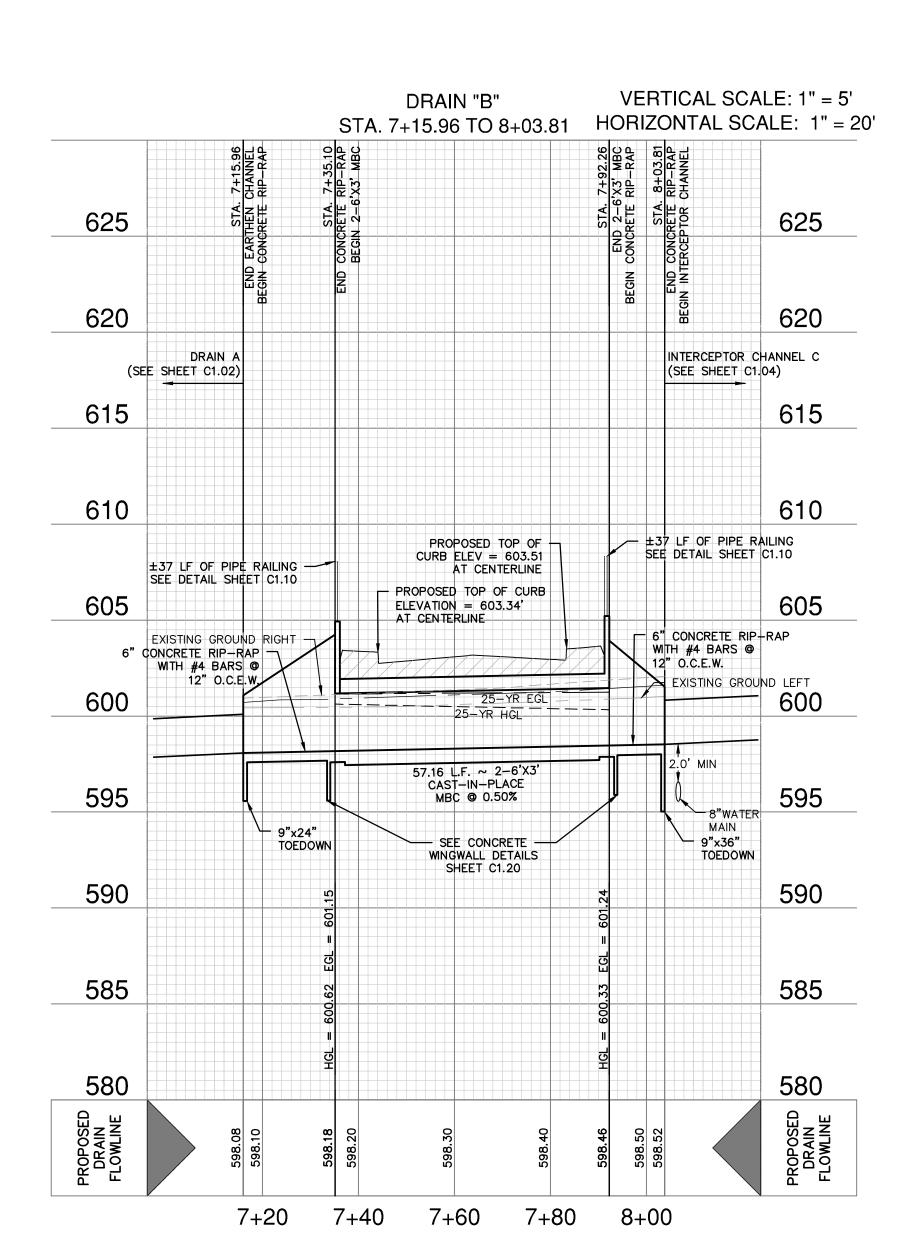
<sub>r NO.</sub> 24-11800078 JOB NO. 12733-12 APRIL 2024

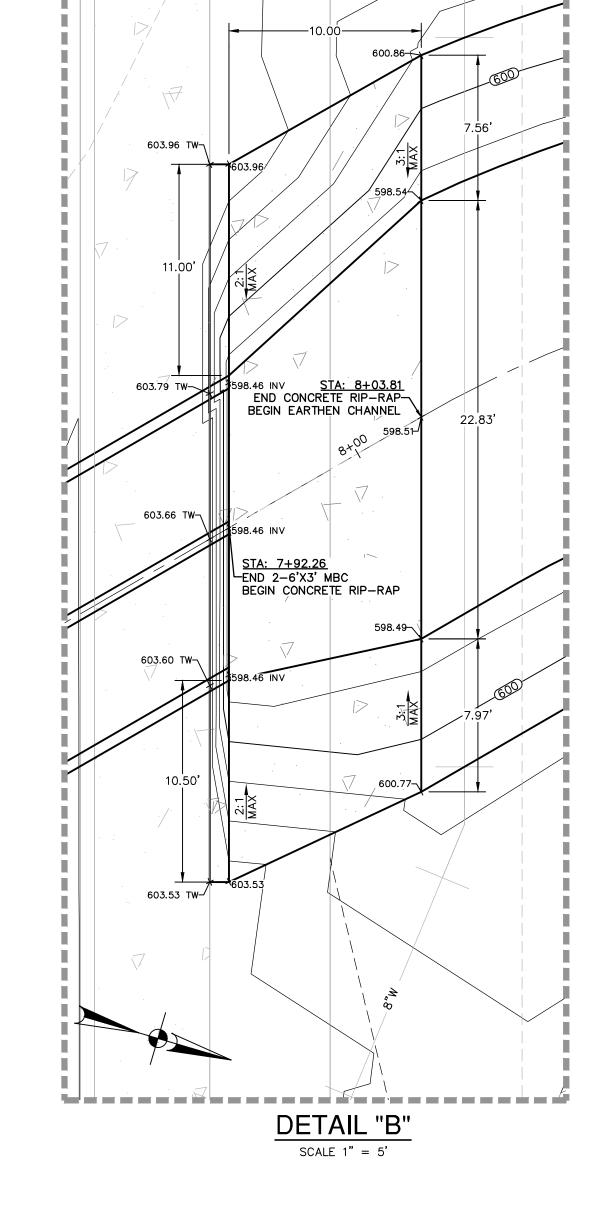
ESIGNER CHECKED DRAWN AR



IS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016, CAPCOG, Digital Globe, Texas Orthormagery Program, USDA Farm Service Agency.







\_\_\_\_\_\_\_\_\_\_\_\_\_

#### 2 - 6'X3' CAST-IN-PLACE M.B.C. HYDRAULIC CALCULATION

 $Q_{25} = 169.6 \text{ CFS}$ n = 0.012

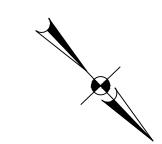
S = 0.50%

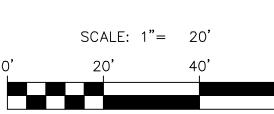
dn (DOWNSTREAM) = 2.42'dn (UPSTREAM) = 1.84

Vn (DOWNSTREAM) = 5.84 FPSVn (UPSTREAM) = 7.69 FPS

COUNTY







#### DRAINAGE LEGEND

PROJECT LIMITS	 	
EXISTING CONTOUR	 690- <b>-</b>	
PROPOSED WATER	W	
PROPOSED SEWER	 —SS	-
EXISTING WATER	 - w	
EXISTING SEWER	 -ss	
100-YEAR LOMR DFIRM FLOODPLAIN	 	

#### **DRAINAGE & GRADING NOTES:**

- 1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /O PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD E COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

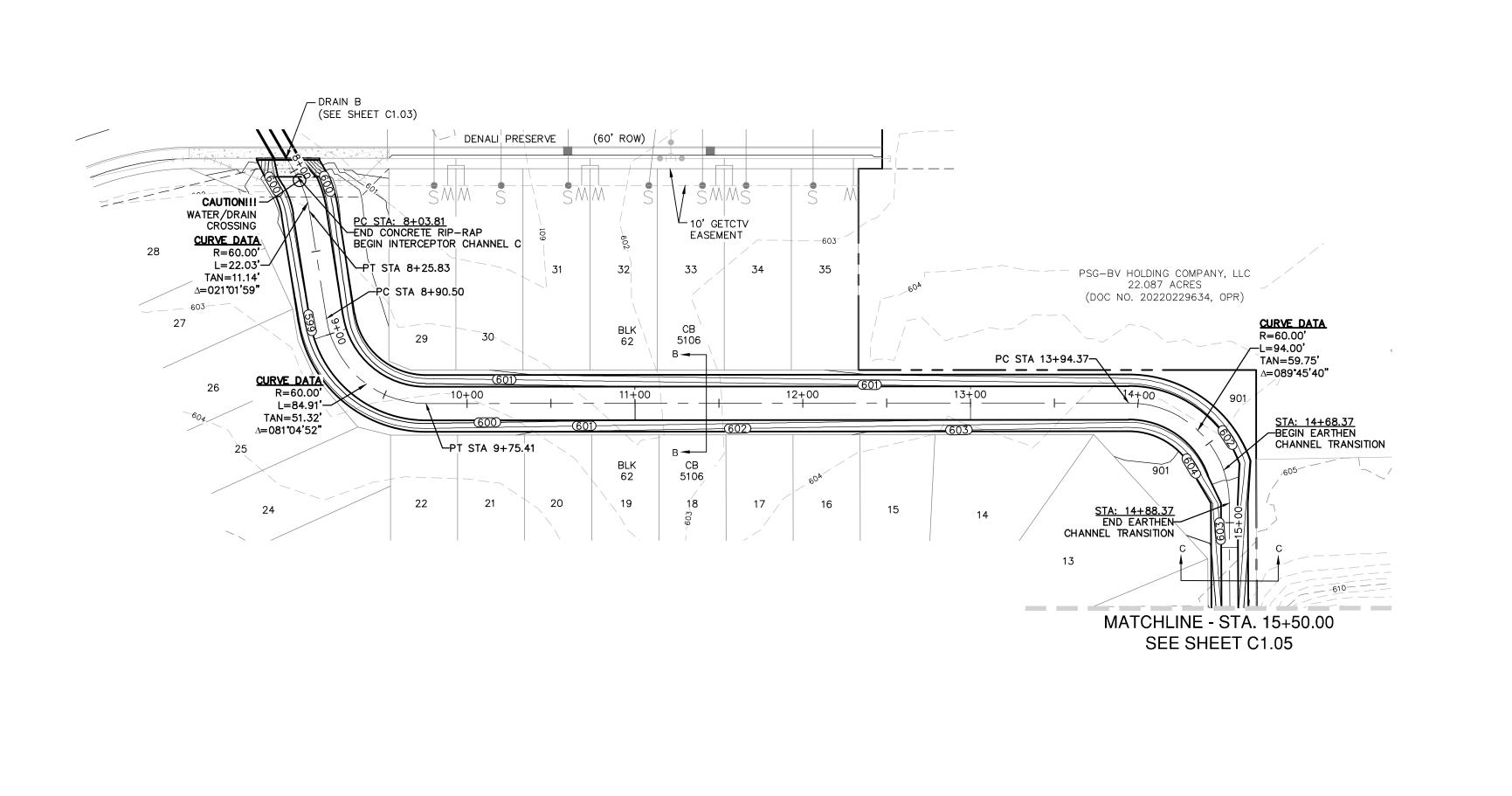
04/24/2024

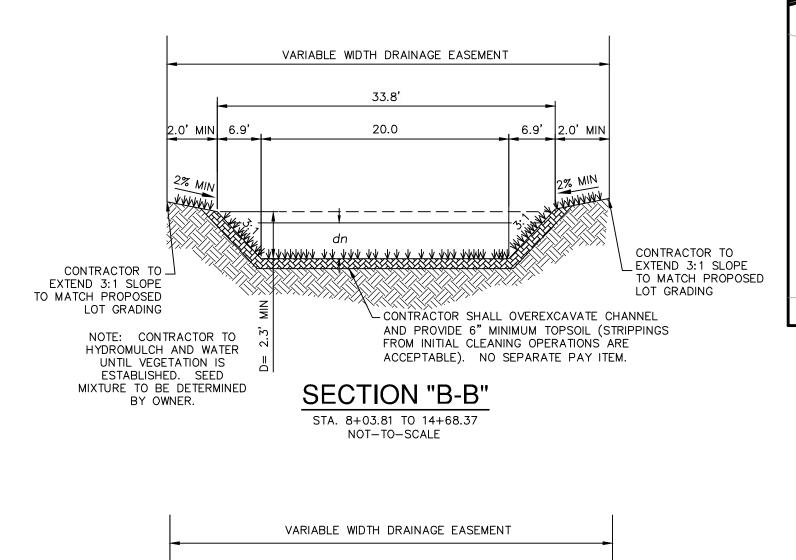
DRAIN B AND PROFILE

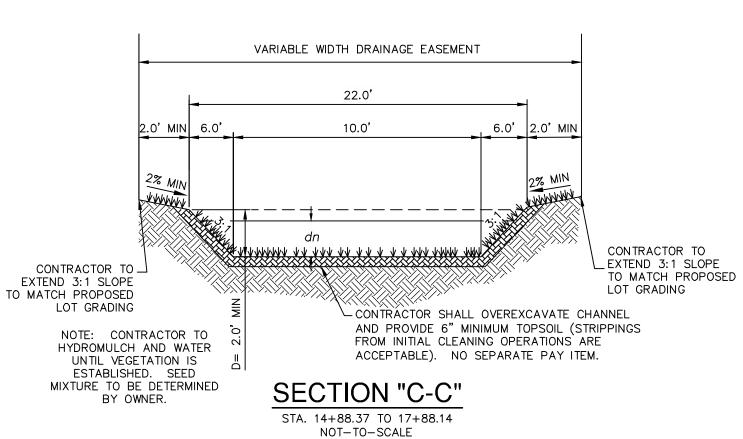
<sub>r NO.</sub> 24-11800078 JOB NO. 12733-12 APRIL 2024

ESIGNER CHECKED DRAWN AR

C1.03

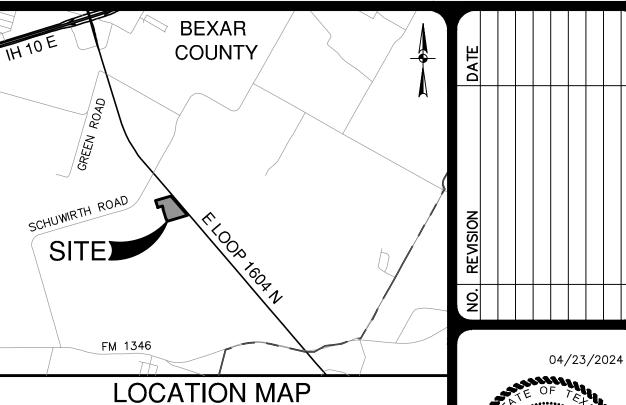






VERTICAL SCALE: 1" = 5'

HORIZONTAL SCALE: 1" = 20'



\_ \_ \_ \_ \_ -690- \_ \_ \_ -



**DRAINAGE & GRADING NOTES:** 

NOT-TO-SCALE

SCALE: 1"= 50'

DRAINAGE LEGEND

PROJECT LIMITS

EXISTING CONTOUR

PROPOSED WATER

PROPOSED SEWER

EXISTING WATER

EXISTING SEWER

- 1. THE CONTRACTOR WILL BE RESPONSIBLE DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE. GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OF SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### TRENCH EXCAVATION SAFETY PROTECTION:

AND EXCAVATION LIMITS.

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /O PROCEDURES FOR THE PROJECT DESCRIBED IN TH CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYÉE 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.

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OF

PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1—800—DIG—TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

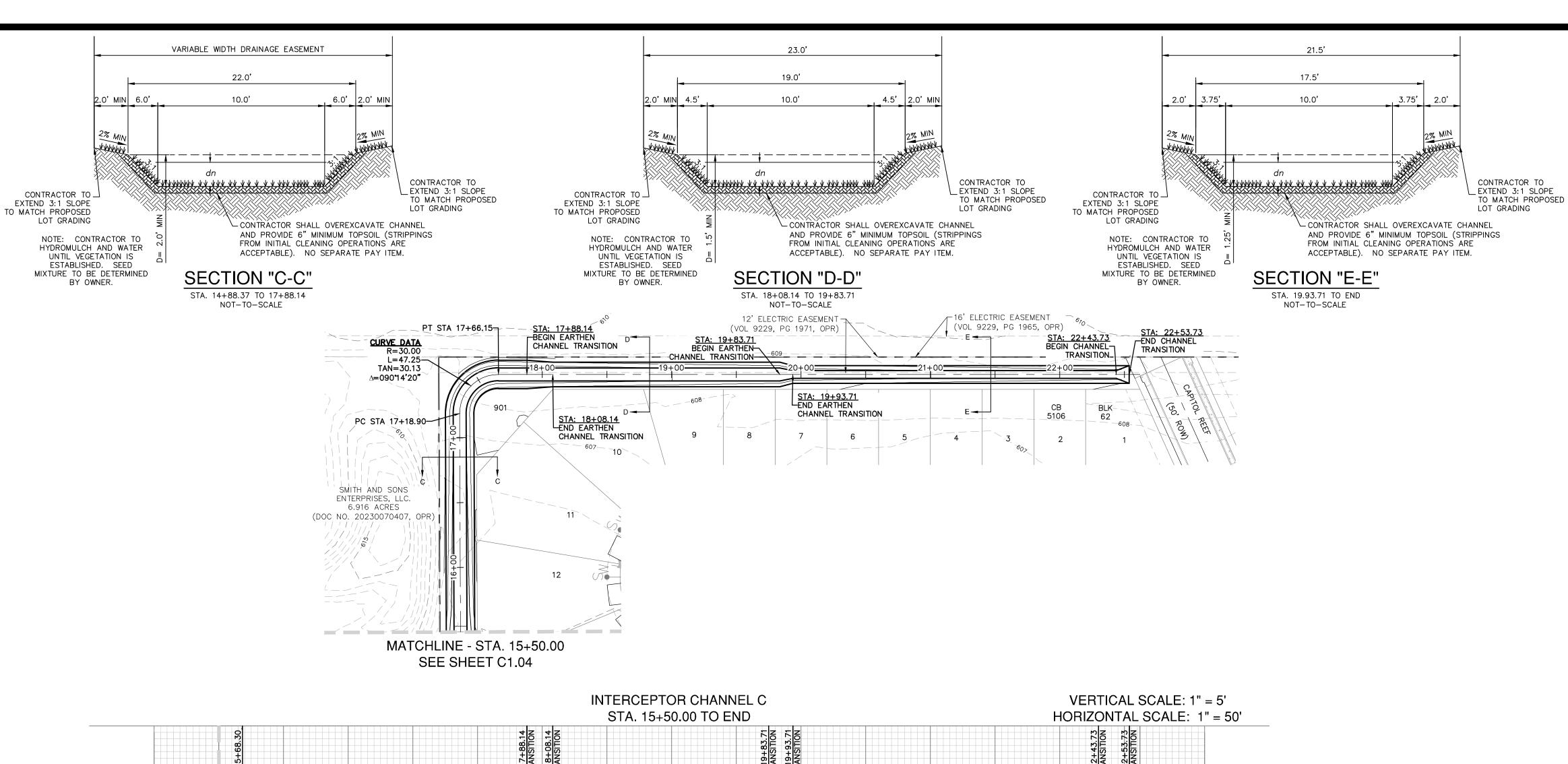
<sub>r NO.</sub> 24-1180007 JOB NO. 12733-12 APRIL 2024

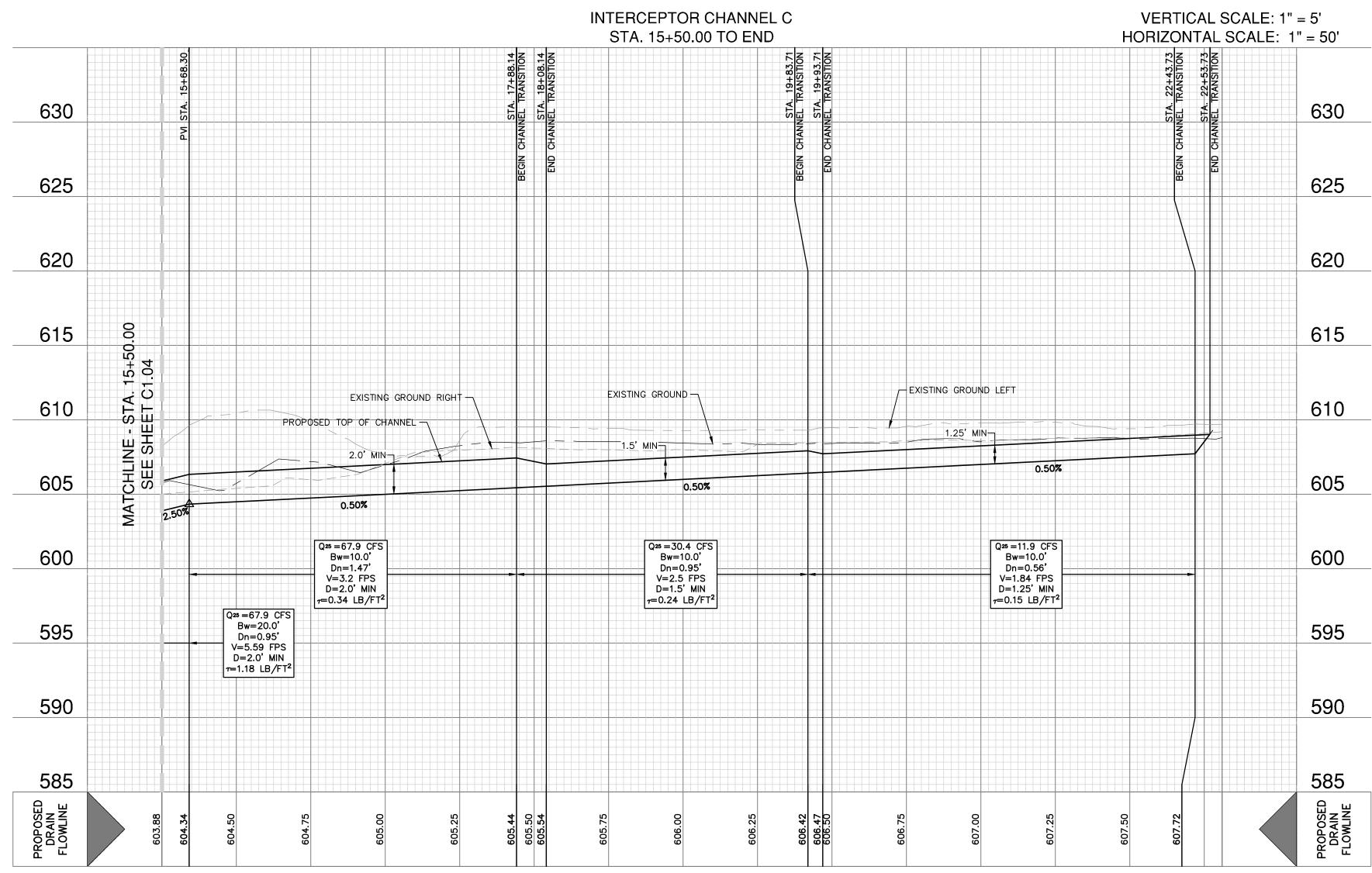
ESIGNER CHECKED DRAWN AR

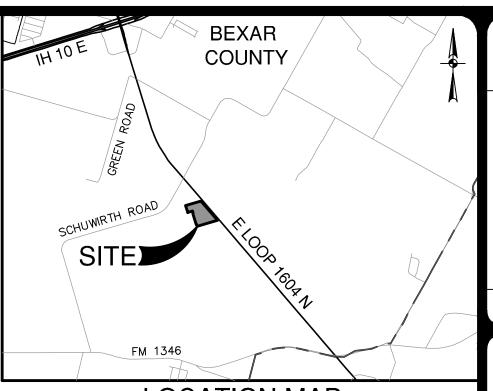
620 615 615 610 610 5+50.00 (SEE SHEET C1.03) EXISTING GROUND -EXISTING GROUND RIGHT -MATCHLINE - STA. 1 SEE SHEET C1. PROPOSED TOP OF CHANNEL -EXISTING GROUND LEFT -2.3' MIN 600 Q25 = 169.6 CFS Q25 = 67.9 CFS 8" WATER -Bw = 20.0'Bw = 20.0'Dn=1.76' Dn=0.95' V=5.59 FPS V=3.81 FPS D=2.25' MIN D=2.0' MIN τ=0.45 LB/FT<sup>2</sup> ||*τ*=1.18 LB/FT<sup>2</sup>| 585 585 9+00 10+00 15+00 11+00 12+00 13+00 14+00

INTERCEPTOR CHANNEL C

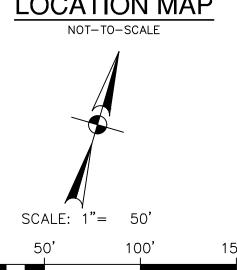
STA. 8+03.81 TO 15+50.00











#### DRAINAGE LEGEND

PROJECT LIMITS EXISTING CONTOUR — — — — -690- — — — -PROPOSED WATER PROPOSED SEWER EXISTING WATER EXISTING SEWER 

#### **DRAINAGE & GRADING NOTES:**

- 1. THE CONTRACTOR WILL BE RESPONSIBLE DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE. GRADE, AND LOCATION. THE CONTRACTOR SHAL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OF THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OF SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /O PROCEDURES FOR THE PROJECT DESCRIBED IN TH CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYÉE 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.

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OF PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1—800—DIG—TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

04/23/2024 REBECCA ANN CARRO

<sub>r NO.</sub> 24-1180007 JOB NO. 12733-12

APRIL 2024 ESIGNER

CHECKED DRAWN AR

16+00 17+00 18+00 19+00

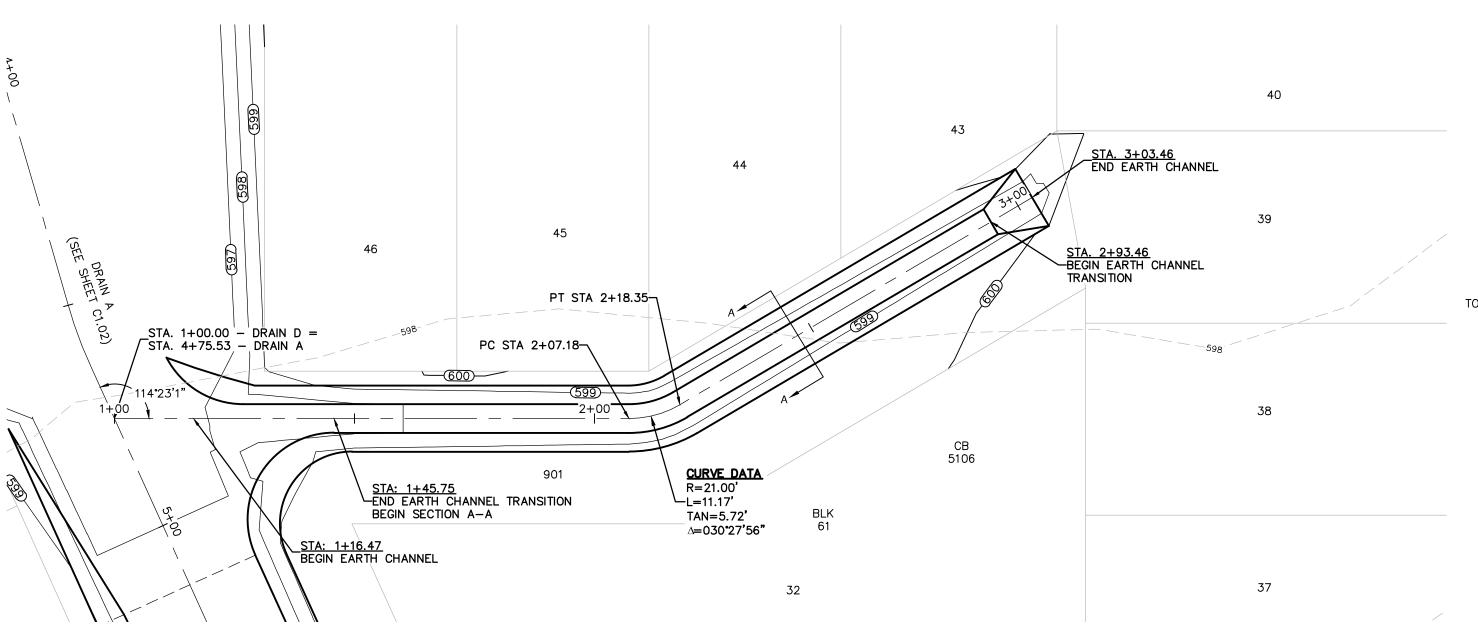
S DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

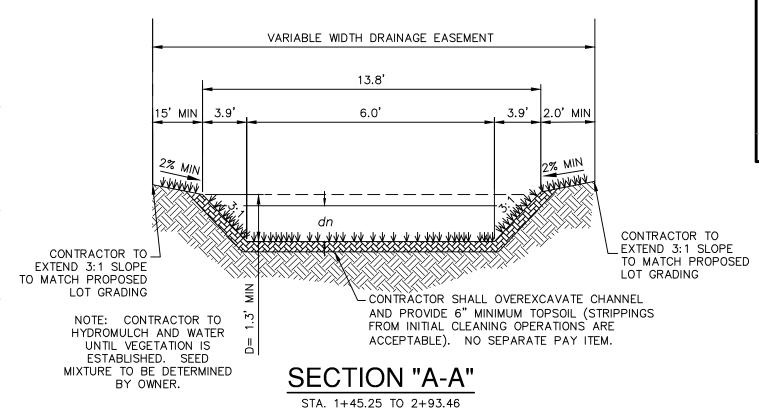
20+00

21+00

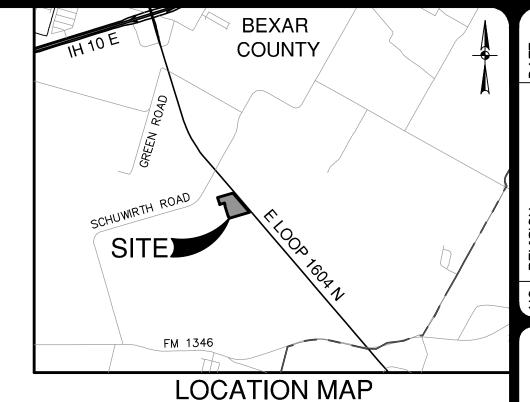
22+62

22+00





NOT-TO-SCALE



NOT-TO-SCALE

04/23/2024



#### DRAINAGE LEGEND

PROJECT LIMITS EXISTING CONTOUR — — — — -690- — — — -PROPOSED WATER PROPOSED SEWER EXISTING WATER EXISTING SEWER 

SCALE: 1"= 20'

#### DRAINAGE & GRADING NOTES:

- 1. THE CONTRACTOR WILL BE RESPONSIBLE DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- 2. ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- 3. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### TRENCH EXCAVATION SAFETY PROTECTION:

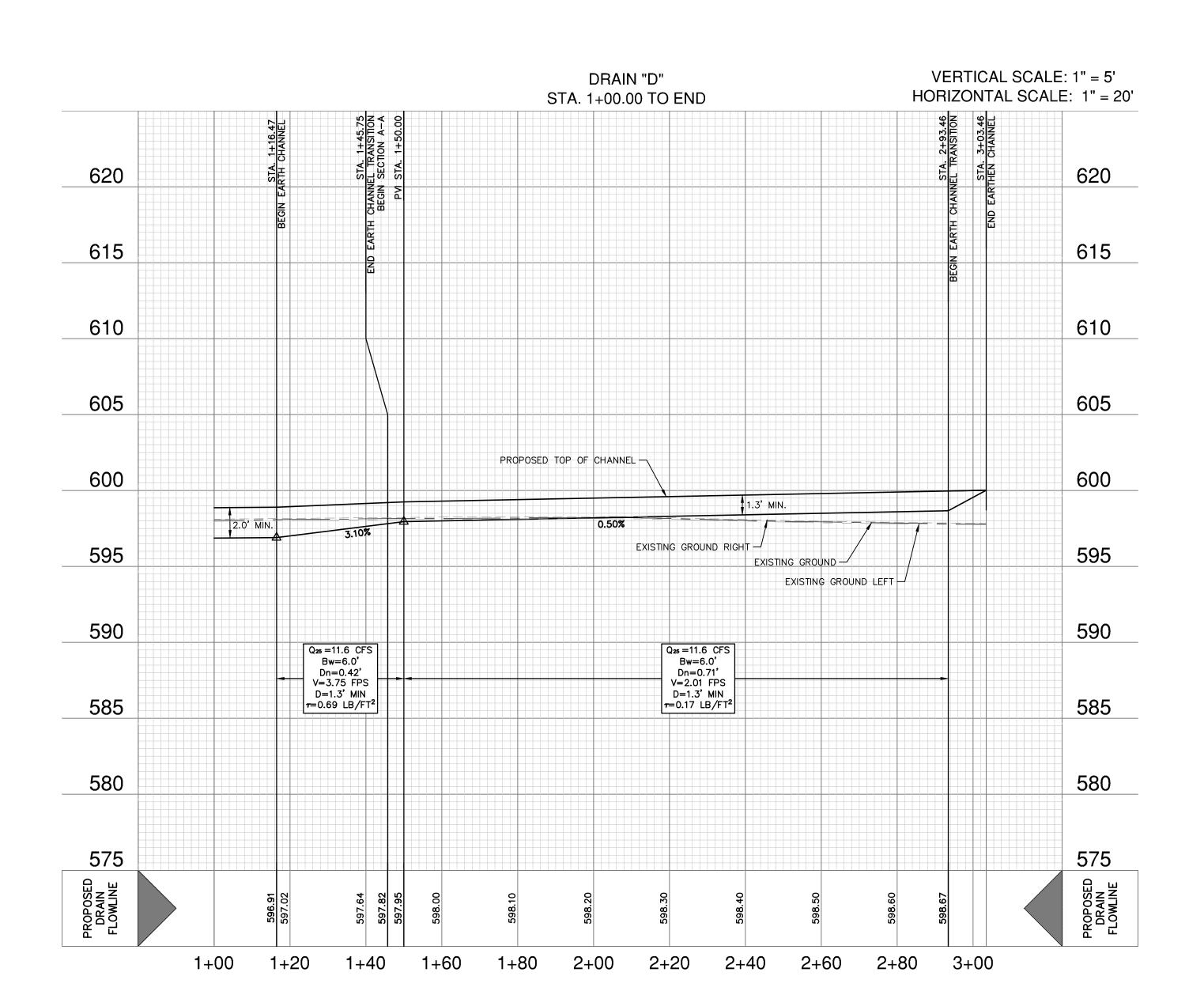
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY SHALL REVIÉW THESÉ PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OF PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD E COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

<sub>r NO</sub> 22-11800769 APRIL 2024

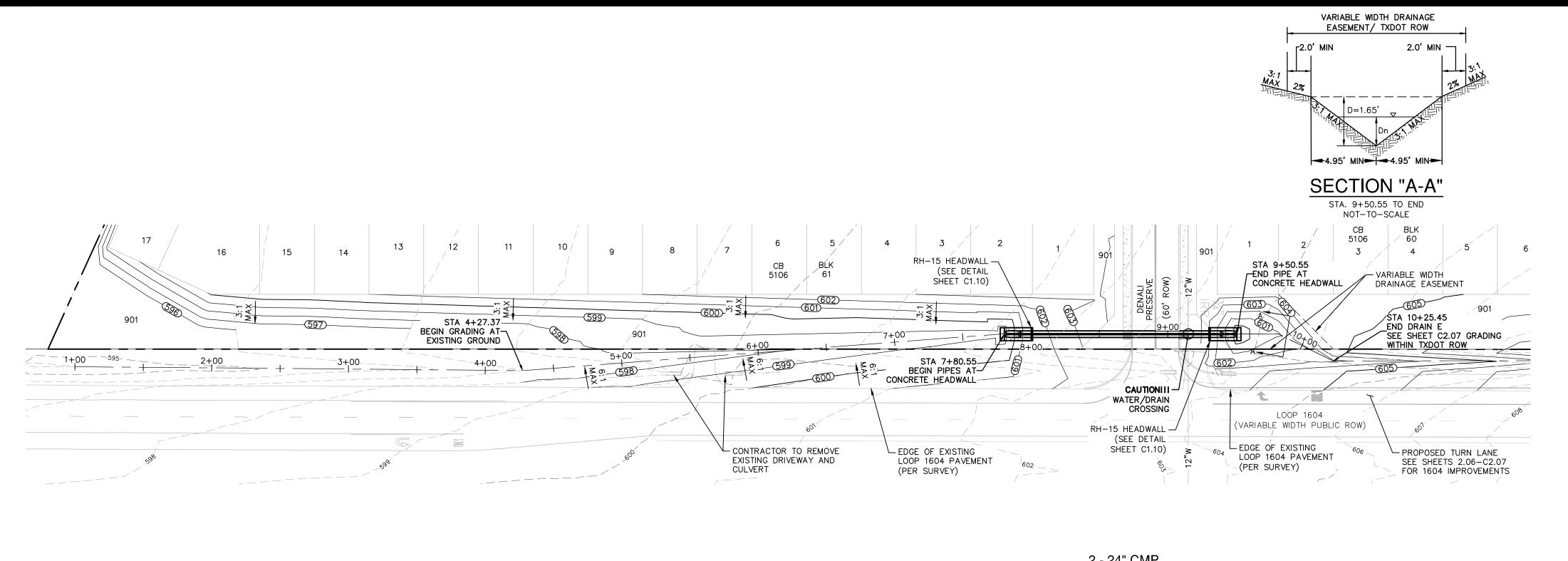
DRAIN D I AND PROFILE



IIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

JOB NO. 12093-11 DESIGNER

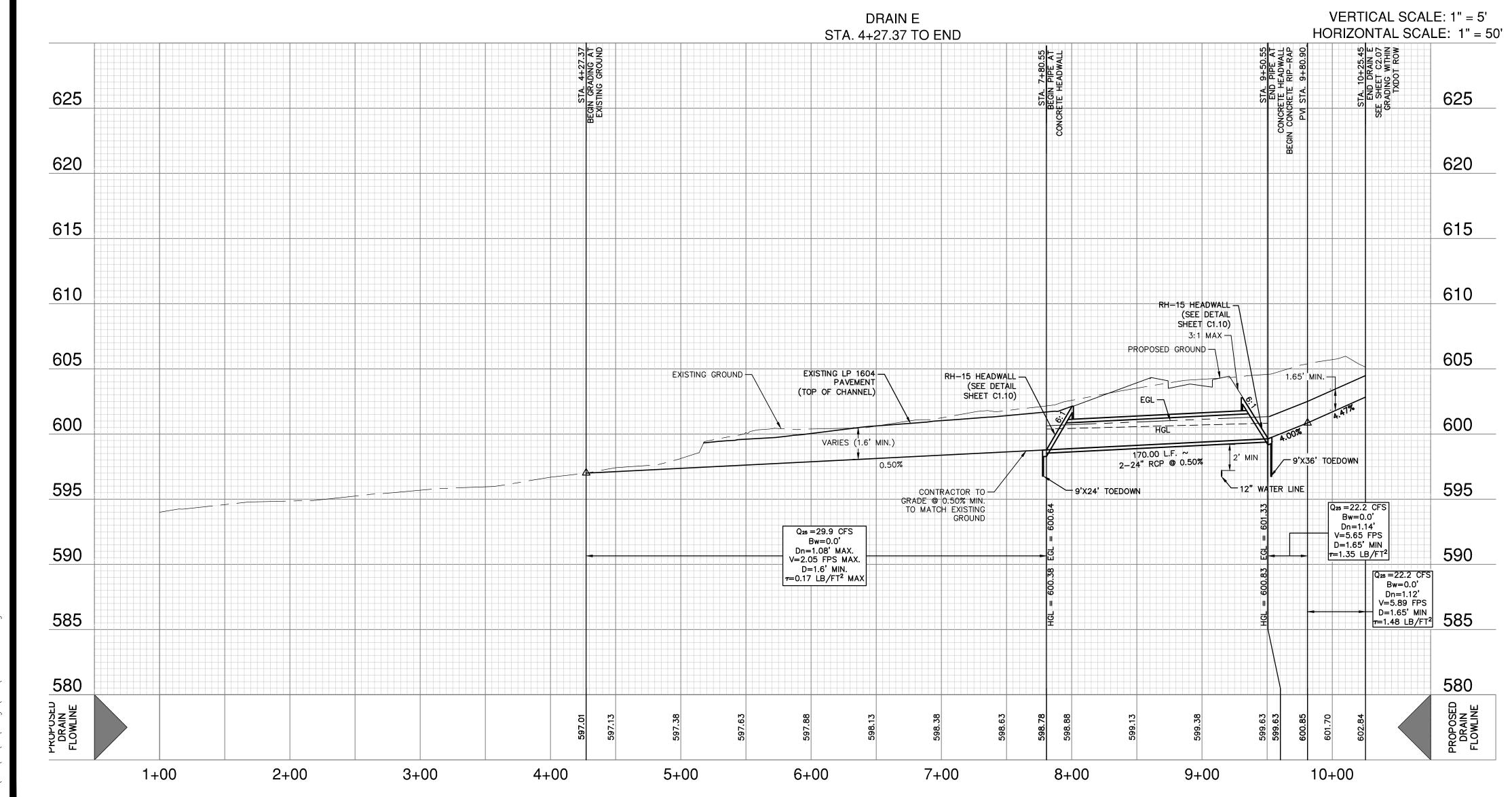
CHECKED DRAWN AR C1.06



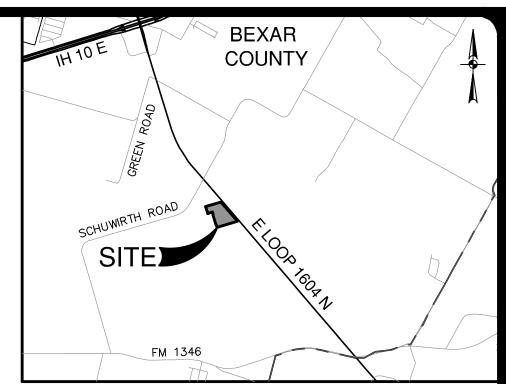
#### 2 - 24" CMP HYDRAULIC CALCULATION STA 7+80.55 TO 9+50.55

 $Q^{25} = 22.2 \text{ CFS}$  n = 0.012 S = 0.50% Sf = 0.82%dn = 1.60'

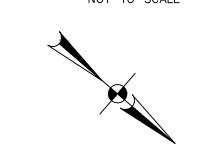
Vn = 5.65 FPS

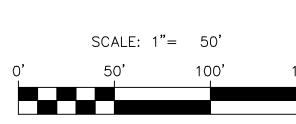


HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.



#### LOCATION MAP NOT-TO-SCALE





#### DRAINAGE LEGEND

PROJECT LIMITS	
EXISTING CONTOUR	— — — — -690- — — — —
PROPOSED WATER	W
PROPOSED SEWER	SS
EXISTING WATER	w
EXISTING SEWER	ss

#### DRAINAGE & GRADING NOTES

- 1. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE FOR TXDOT DRAINAGE STRUCTURES SHALL MEET TXDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- 4. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- 5. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
- 6. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS

O4/23/2024

O4/23/2024

REBECCA ANN CARROLL

92666

CENSE

OAM

PROBLEM

OF TEXAS

OF

W LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.900

EXAR COUNTY, TEXAS
DRAIN E
PLAN AND PROFILE

PLAT NO. 24-11800078

JOB NO. 12733-12

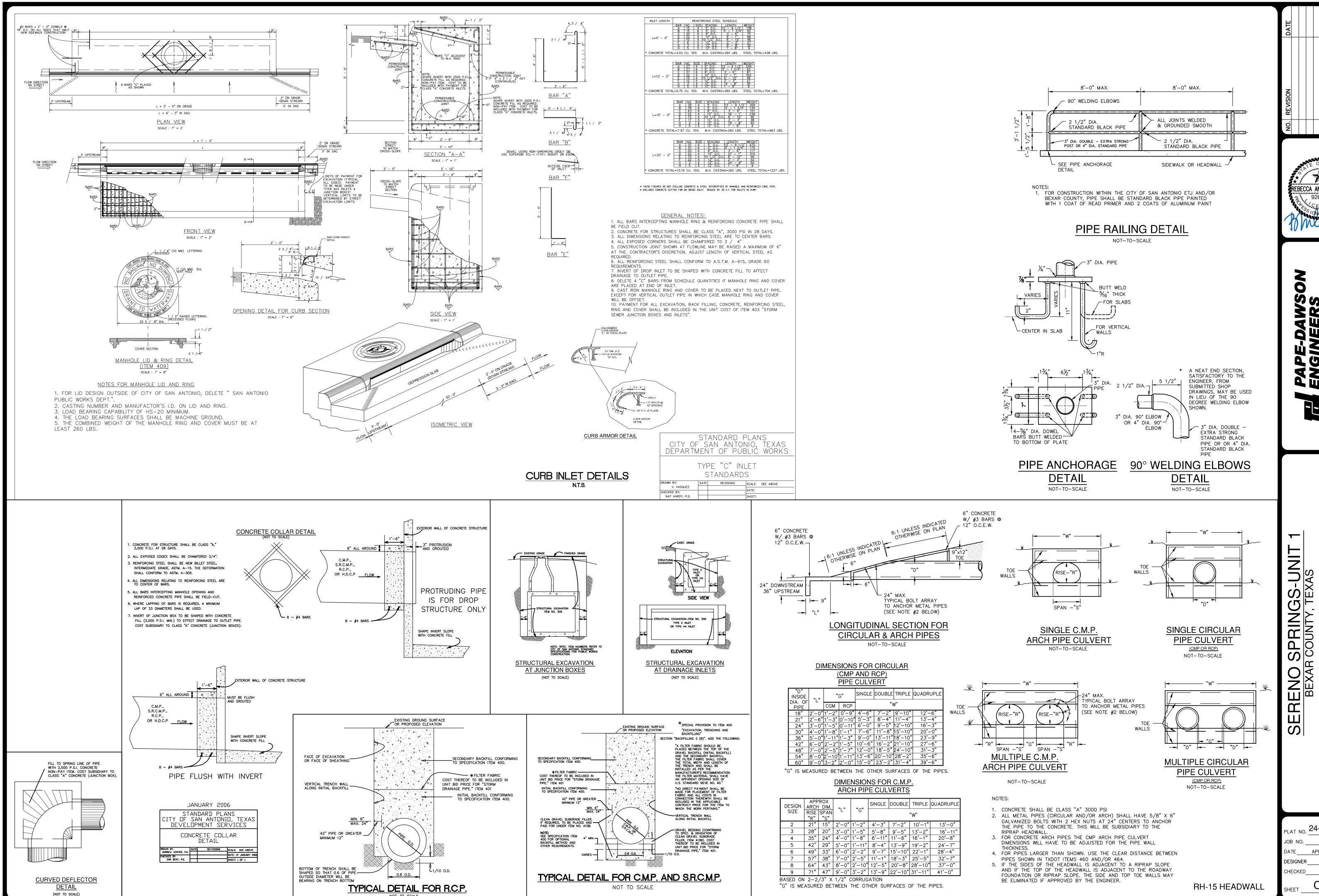
DATE APRIL 2024

DESIGNER JP

CHECKED DRAWN AR

cked drawn ar

C1.07



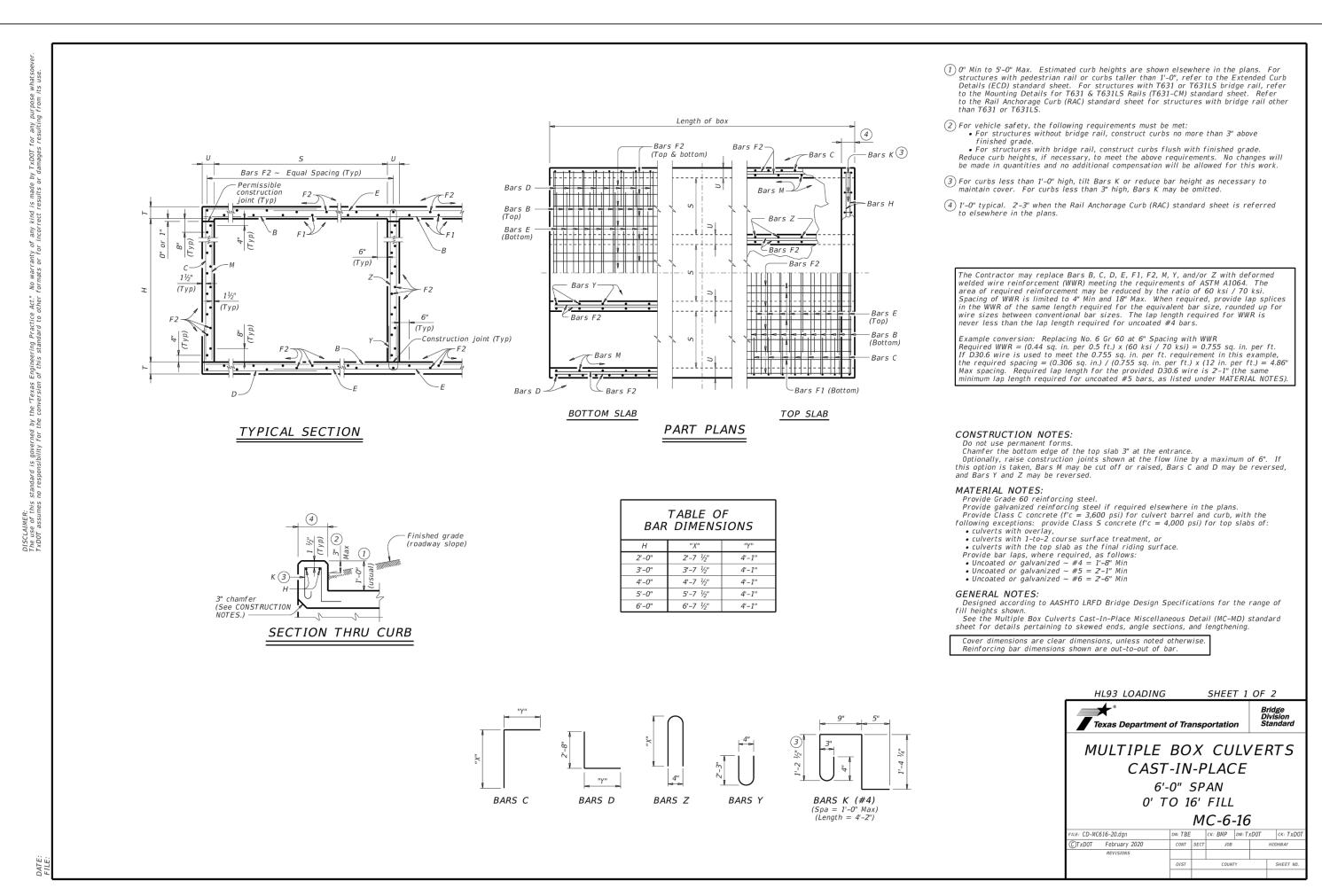
HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

NO 24-1180007 12733-12 DRAWN AR

3) A

DRAINAGE (SHEET 1

04/22/2024

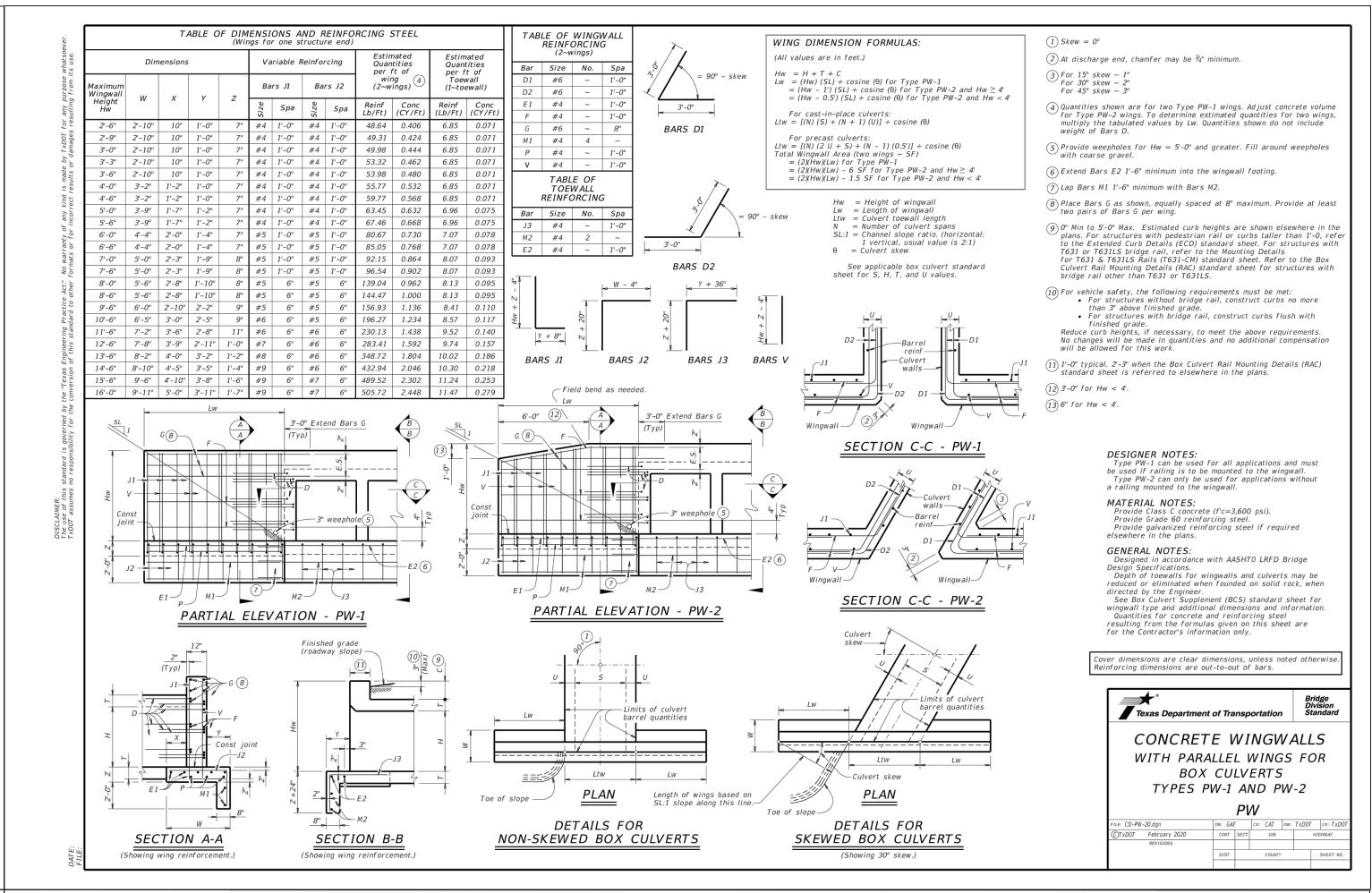


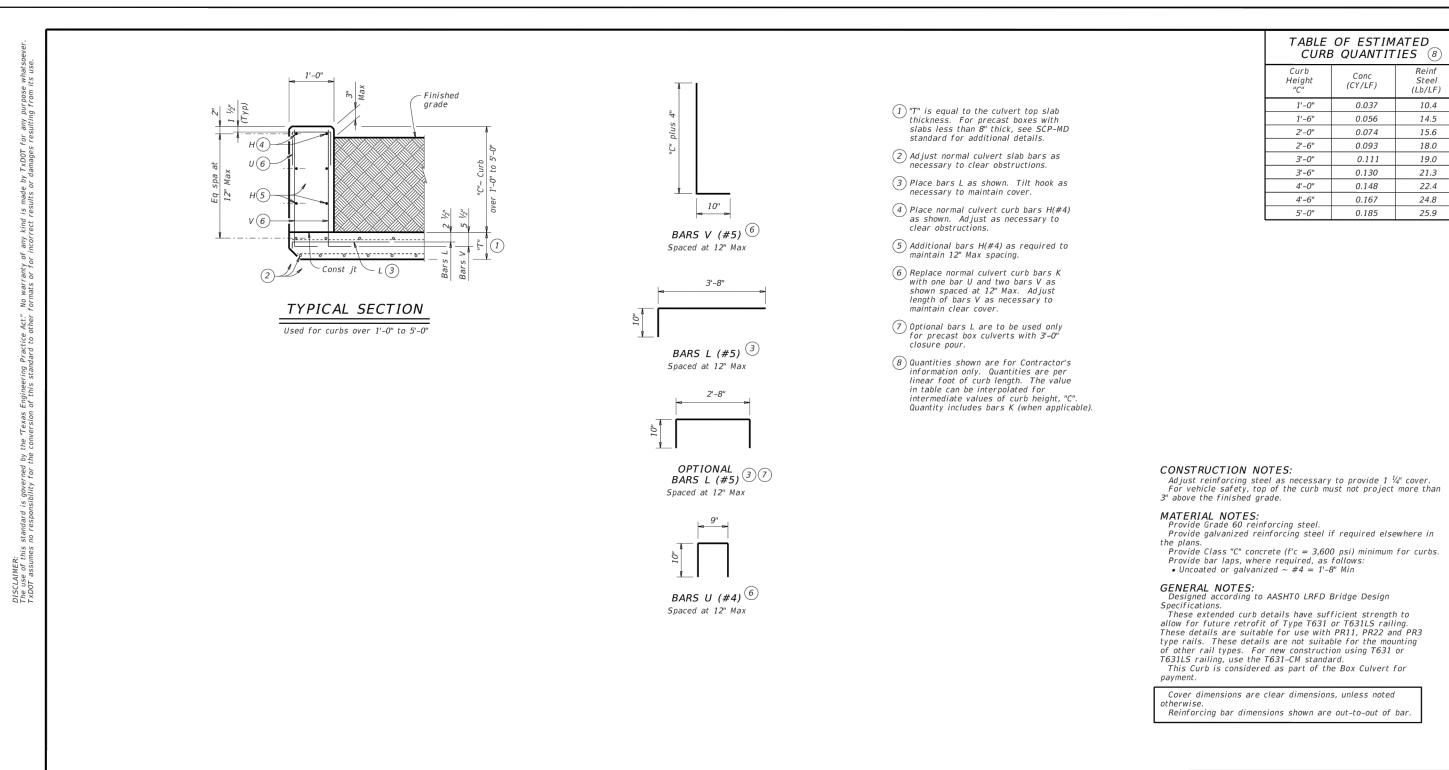
2	9 –								E	Bars B	3				Bars	C & I	ס			Bars	s E		Ba	ars F1 ~	#4	E	Bars F2	~ #4	Ва	ars M	~ #4		Bars	Y & Z	#4		Bars 4 ~	#4	Bars	K Per	· Foot Barrel	Curb	To
3	NUMBER	5	Н		Т	U	٨	size	Spa	Leng	gth	Wt	No.	Size Spa					so. Size	Spa	Length	Wt	No.	ed S Lengtl	h Wt	No.	S Leng	gth Wt	No.	Leng	gth Wt	No.	9				Length	Wt	No. W	It Conc (CY)	Renf (Lb)	Conc Rei (CY) (LI	of Conc (CY)
	<u>?</u>	6' - 0"	2' -	0"	9"	7"	_		_		-		108	#5 9"	6' - 8"	751	6' - 9"	760	108 #6	9" 1	10' - 2"	1,649	10 1	18" 39' - 9'	" 266	_		_	108	9" 2'-	0" 144							36	30 84				
	-			-	-	-	_	_	_		_		_			_						-		_		_		_										_					
6-0" 3-0" 9" 7" 108 #6 9" 37-10 8.46 20 18-4 9" 57-108 #6 9" 37-10 6.66 20 18-5 9" 57-8" 864 6-9" 760 108 #6 9" 18-9" 18-9" 18-8 108 9" 18-9" 18-8 108 9" 3-0" 18-8 108 9" 18-9" 18-8 108 9" 3-0" 18-8 10-8 9" 18-9" 18-8 10-8 9" 3-0" 18-8 10-8 9" 18-9" 18-8 10-8 9" 3-0" 18-8 10-8 9" 3	+			_	-	-		_	-	_	_		_	_		_		_		-		_			_	_					_	-	_	_				-	_				
	-				_	_		-	-		-		_	_				_		_		_			_	_			_	_	_	-	_	_				-	_				_
4 6 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0 -0	2	6' - 0"	3' -	0"	9"	7"	_		_	_	_		_	_	7' - 8"	864	6' - 9"			_					_				108	9" 3'-	0" 216	+	_	_	7' - 5'	268	13' - 6"	36	30 84	4 0.958	192.8		
5 6 6 -0" 3 -0" 9" 7" 108 #6 9" 37 3 -3" 53.94 108 #5 9" 7 -8" 864 6 -9" 76 108 #6 9" 37 -3" 884 108 #5 9" 7 -8" 864 6 -9" 76 108 #6 9" 37 -3"	-			_	_	-	-	_	_	_	_		_			_	_	_				-	_		_	_			_		_	_	_	_	_								_
6 6 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	_			_	-	-		_	_		_									_				_	_	_					_	-		_				_	_				
2 6 6 0 4 0 9 7 7 108 86 9 7 7 108 86 9 13 6 0 108 85 9 8 8 8 9 7 7 108 86 9 13 6 0 108 85 9 8 8 8 9 7 7 108 86 9 13 6 0 108 85 9 8 8 8 9 7 7 108 86 9 13 6 0 108 85 9 8 8 8 9 7 10 108 86 9 10 0 108	_			_	_	_		_	_		_													_									_										
4 6 6 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0	_			_	9"	7"	-	_	_	_	-		-	_	_			_	_			_	-		-	_	-			_	_	_	_	_	_			_	_	_	_		
5 6 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3	6' - 0"	4' -	0"	9"	7"	1	08 #6	6 9"	20' -	1"	3,258	108	#5 9"	8' - 8"	976	6' - 9"	760	108 #6	9" 1	16' - 9"	2,717	15 1	18" 39' - 9'	" 398	8 71	18" 39' -	9" 1,885	108	9" 4'-	0" 289	-			9' - 5'	679	20' - 1"	54	44 12	2 1.475	282.6	1.5 176	60.5
6 6 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-			-	-	_	-	_	-	_	-		_	_		_						_	_	_	_	_		_				-	_	_				-	_				
2 6 - 0 0 5 - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-			_		_	-	_	-	_	_		_	_						-		_	-	_	_	_		_	_	_	_												
3 6 6 0 7 5 0 9 9 7 108 8 6 9 20 1 1 3,258 108 8 5 9 9 9 8 108 8 5 9 9 9 8 108 8 5 9 9 8 108 8 5 9 9 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 5 9 9 8 8 1,88 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_	-		_	_	7"	_	_	$\overline{}$	_	_		_	_	_	_	+	_				_			_	_		_	_	_		_			_			+	_		_		
5 6 6 0 0 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-				_	7"	-	_	-	_	-		_	_						_		_	_	_	_	_				_		_						_					_
6 6 6 6 7 7 7 8 9 7 7 8 8 6 6 6 7 8 5 7 8 9 7 8 9 8 7 8 9 8 7 8 9 8 7 8 9 8 9	4	6' - 0"	5' -	0"	9"	7"	1	08 #6	6 9"	26' -	8"	4,326	108	#5 9"	9' - 8"	1,089	6' - 9''	760	108 #6	9" 2	23' - 4"	3,785	20 1	18" 39' - 9'	" 531	1 102	18" 39' -	9" 2,708	108	9" 5' -			9" 4' - 9	" 514	11' - 5'	1,235	26' - 8''	71	56 15	6 2.035	382.7	2.0 22	83.4
2 6 - 0" 6' - 0" 9" 7" 108 #6 9" 13' - 6" 2,190 108 #5 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 2" 164 9 10 18 #6 9" 13' - 6" 2,190 108 #5 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 2" 1,649 10 18 #6 9" 1,202 6' - 9" 760 108 #6 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1,202 6' - 9" 1	-			_	-	_		_	_							<u> </u>							_		_	_		_		_			_					_		_			_
3 6' - 0" 6' - 0" 9" 7" 108 #6 9" 20' - 1" 3,258 108 #5 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 23' - 4" 3,785 20 18" 39' - 9" 510 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 23' - 4" 3,785 20 18" 39' - 9" 510 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 760 108 #6 9" 10' - 8" 1,202 6' - 9" 10' - 8" 1,2	_		_	_	-	-	-	_	_	_	-		_	-		_	_	_	_	_		_			_	_				_		-	_	_	_			-	_	_	_		
4 6' - 0" 6' - 0" 9" 7" 108 #6 9" 26' - 8" 4,326 108 #5 9" 10' - 8" 1,02 6' - 9" 70' 108 #6 9" 10' - 8" 1,202 6' - 9" 10' - 8" 1,202 6' - 9" 10' 10' 10' 10' 10' 10' 10' 10' 10' 10'	_			-	-	_	_															_		_		_		_			_	_		_									
	-					_	-		_	_	_		_			_	_					_	_		_	_	-	_				_								_			_
6   6 - 0"   6 - 0"   9"   7"   108   #6   9"   39 - 10"   6.462   108   #5   9"   10" - 8"   1.202   6 - 9"   760   108   #6   9"   36" - 6"   5.921   30   18"   39" - 9"   797   162   18"   39" - 9"   4.302   108   9"   6" - 0"   433   270   9"   4" - 9"   857   13" - 5"   2.420   39" - 10"   106   82   228   3.134   578.9   3.0   334   128	5	6' - 0"	6' -	0"	9"	7"	-		_							_		760	108 #6	9" 2	29' - 11"	4,853	25 1	18" 39' - 9'	" 664	_				_				_	13' - 5'	1,936	33' - 3"	89	70 19	5 2.639	489.1	2.5 284	108.0
	5	6' - 0"	6' -	0"	9"	7"	1	08 #6	6 9"	39' -	10"	6,462	108	#5 9"	10' - 8"	1,202	6' - 9"	760	108 #6	9" 3	36' - 6"	5,921	30 1	18"   39' - 9'	" 797	7   162	18"   39' -	9" 4,302	108	9"   6' -	0" 433	270	9"   4' - 9	" 857	13' - 5'	2,420	39' - 10'	106	82 22	8 3.134	578.9	3.0 334	128.
																																						н	L93 LC	OADING	,	SHEET	2 OF
Texas Department of Transportation St.																																						Tex	* xas Dep	partment	of Trans	portation	Bi Di St
MULTIPLE BOX CULVER  CAST-IN-PLACE																																						Tex	┢° xas Dep JLT I	oartment PLE CAST	e of Trans BΟλ	CULPLAC	VEI
■ Texas Department of Transportation   St.  MULTIPLE BOX CULVER																																						Tex	┢° xas Dep JLT I	PLE CAST 6'-	BOX IN- -0" SI -0 16'	COUL PLAC PAN FILL	VEF

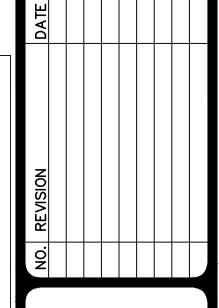
BILLS OF REINFORCING STEEL (For Box Length = 40 feet)

SECTION

**DIMENSIONS** 









APE-DAWSON
NGINEERS
1 SAN ANTONIO, TX 78213 I 210.375.9000

PAPELL PAPELL SON ON JOB A10 I SAN ANTONIO

SERENO SPRINGS-UNIT 1
BEXAR COUNTY, TEXAS

Texas Department of Transportation

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

TILE: CD-ECD-20.dgn DN: GAF CK: TXDOT DW: TXDOT CK: GAF

)TXDOT February 2020 CONT SECT JOB HIGHWAY

REVISIONS

BEXAR COUNTY, DRAINAGE DET, (SHEET 2 OF

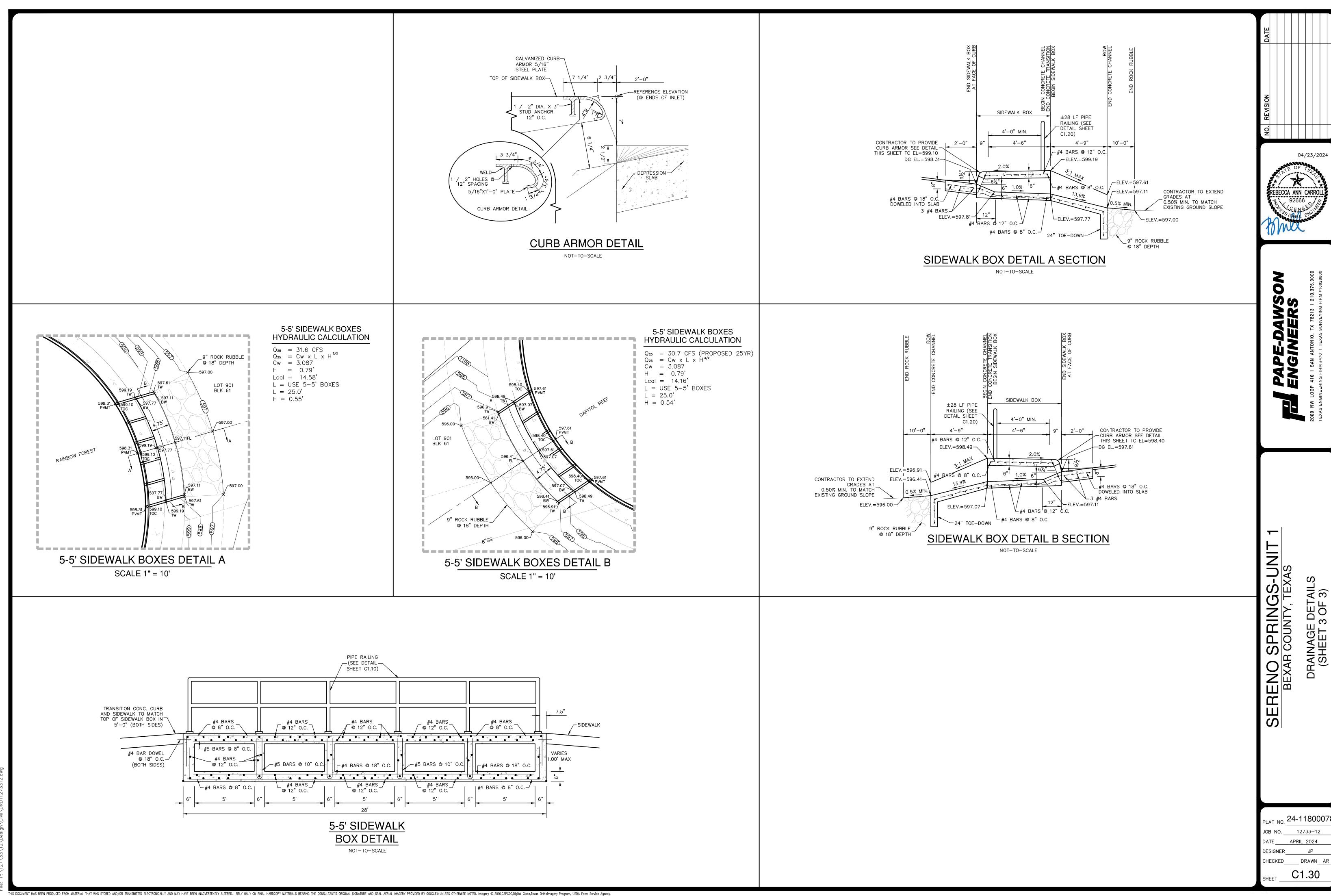
PLAT NO. 24-11800078

JOB NO. 12733-12

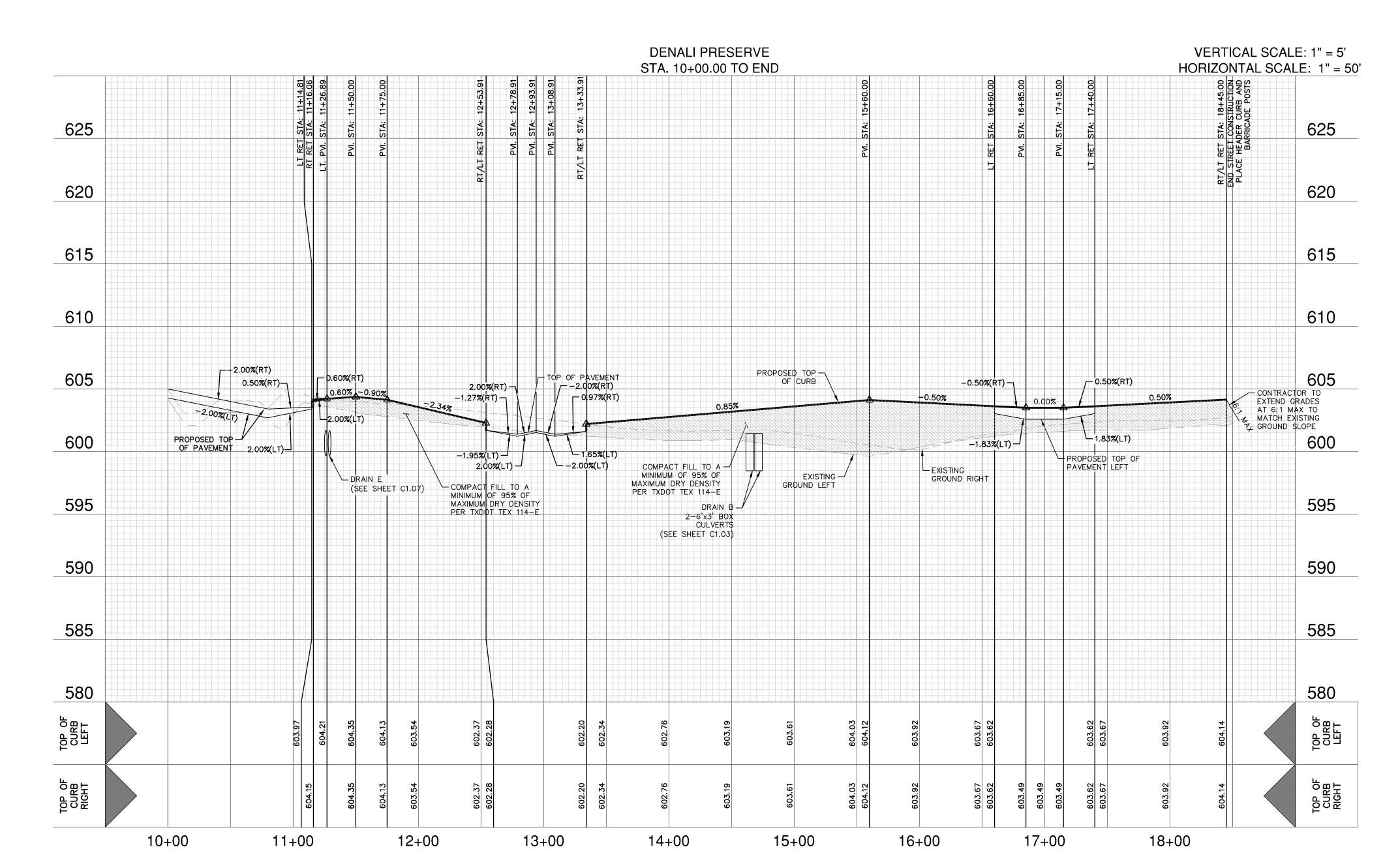
DATE APRIL 2024

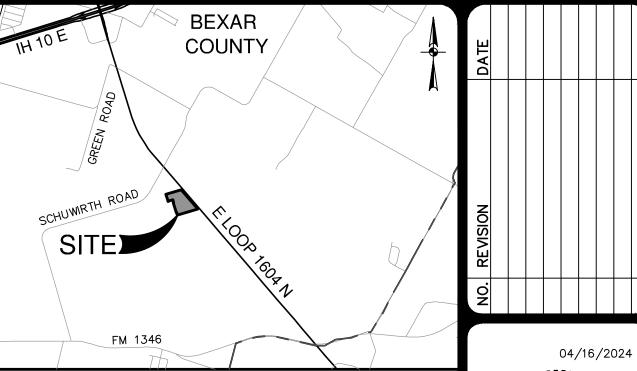
DESIGNER JP

CHECKED DRAWN AR

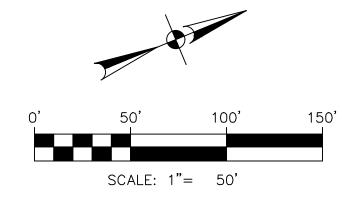


12733-12 CHECKED\_\_\_\_ DRAWN\_ AR









#### STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	0
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	चित्रपूरी द्वार संबद्धीत संबद्धार से देश
DRIVEWAY	

## REBECCA ANN CARROLL 92666 CENSE OF TENDER OF T

2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.5

ENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

Ш

DENALI PRESERVE PLAN AND PROFILE

#### STREET NOTES:

- 1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- 2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3—FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- 5. 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 HOME SELECTION AND FINAL LOT DESIGN.
- 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

PLAT NO. 24-11800078

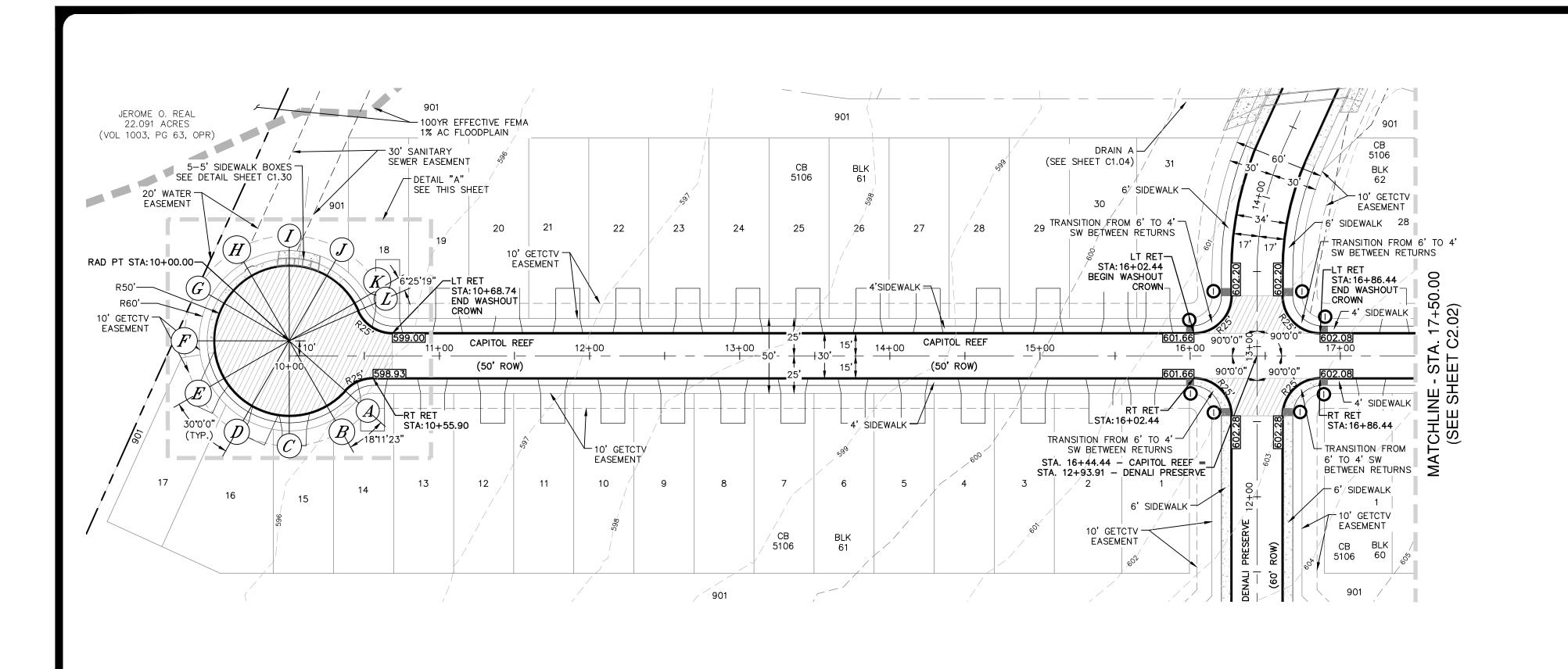
JOB NO. 12733-12

DATE APRIL 2024

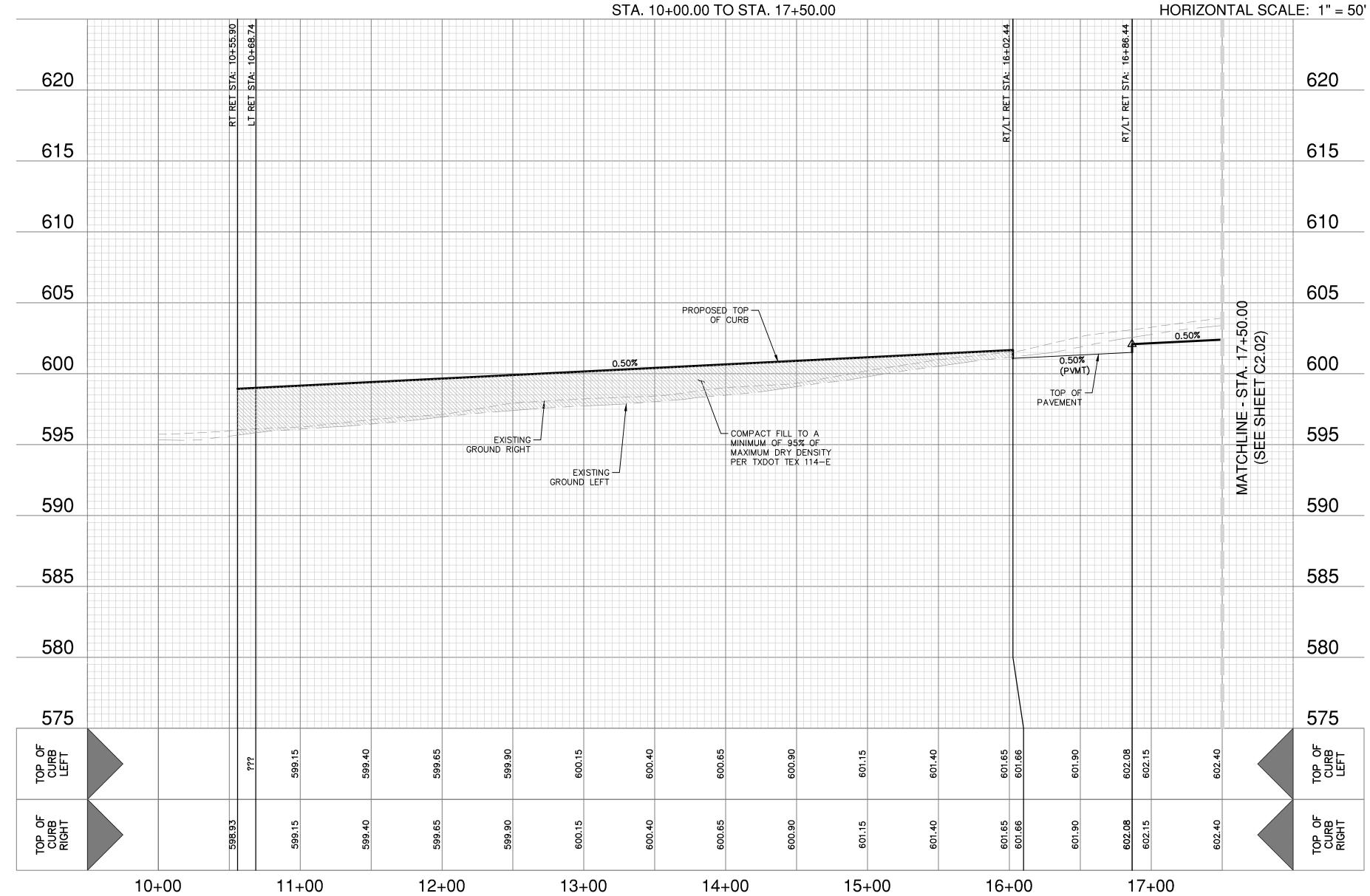
DESIGNER JP

CHECKED DRAWN AR

SHEET C2.00



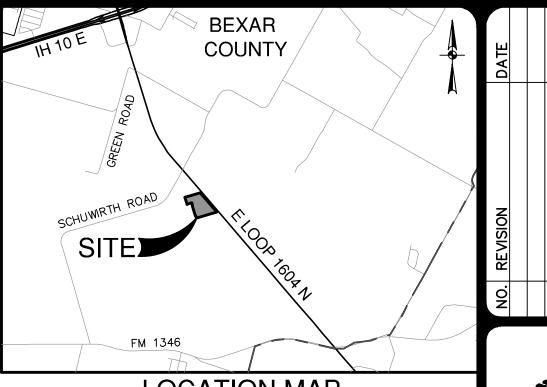
**CAPITOL REEF** 



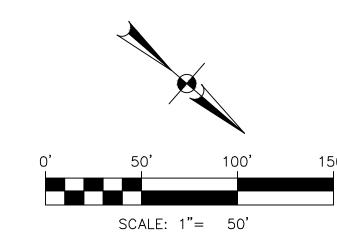
#### STREET NOTES:

VERTICAL SCALE: 1" = 5'

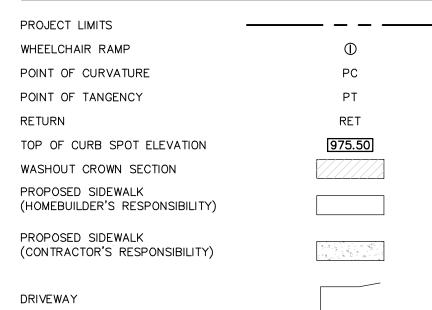
- 1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- 2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- 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 HOME SELECTION AND FINAL LOT DESIGN.
- 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.



**LOCATION MAP** NOT-TO-SCALE



#### STREET LEGEND



-30' SANITARY SEWER EASEMENT 20' WATER EASEMENT 5-5' SIDEWALK BOXES SEE DETAIL SHEET C1.30 598.40 (TOP OF INLET) — (1) E — 597.61 (PVMT) SW PASSING SPACE SEE SHEET C2.30 -10' GETCTV EASEMENT JEROME O. REAL 22.091 ACRES (VOL 1003, PG 63, OPR) T RET STA: 10+68.74 CAPITOL REEF (50' ROW) 4' SIDEWALK -VRT RET STA: 10+55.90 DETAIL "A"

SCALE: 1" = 20'

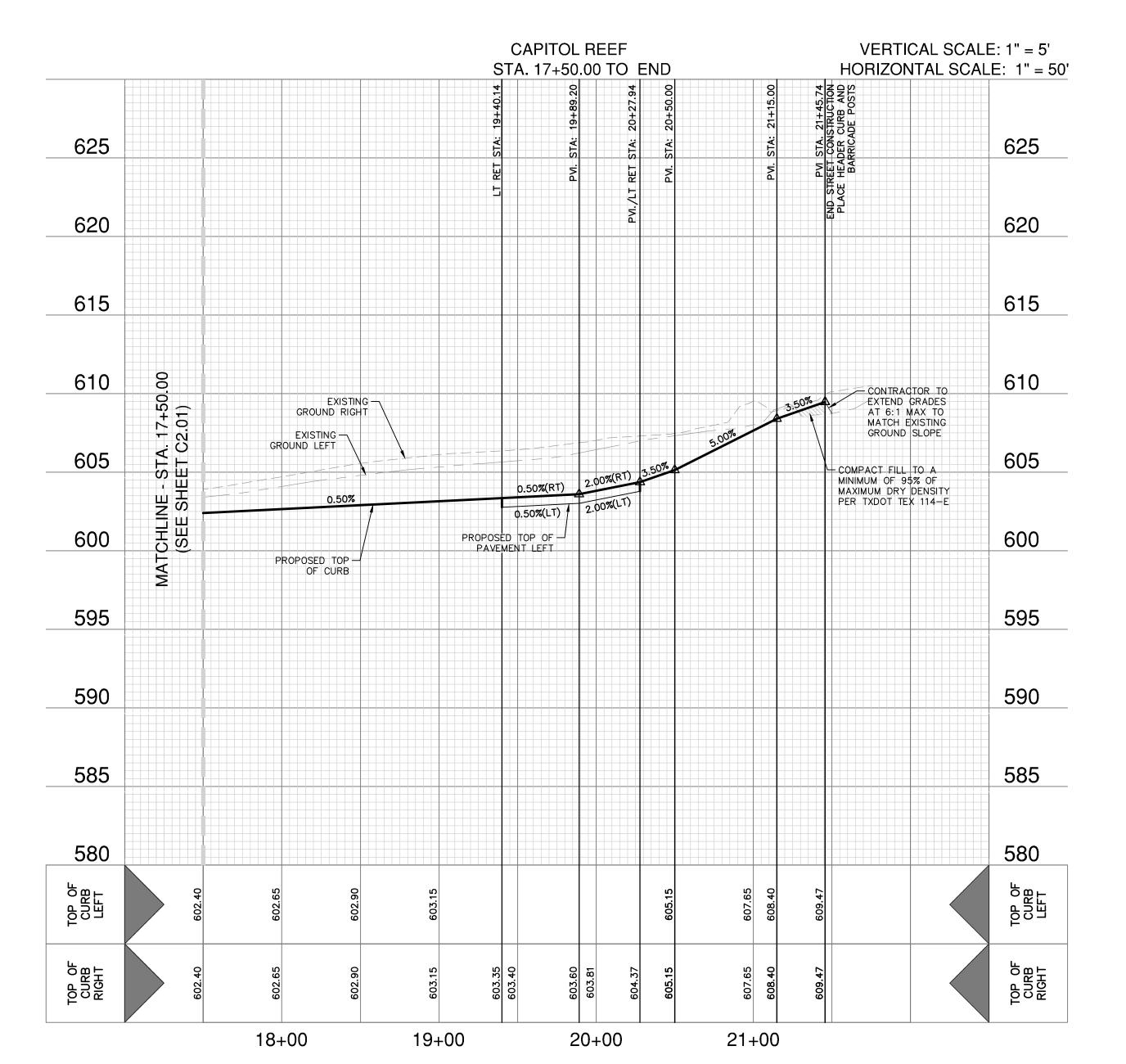
SERENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

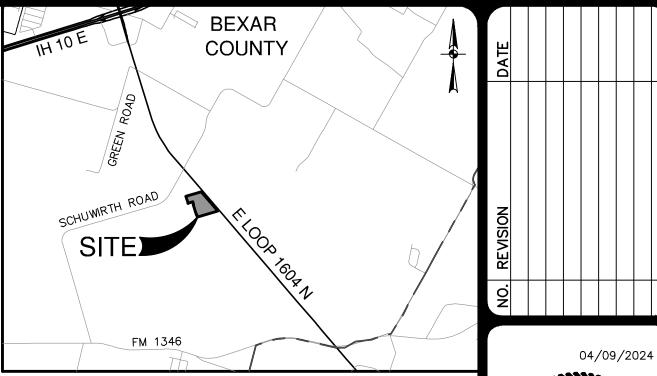
CAPITOL REEF PROFILE (STA. 10+50.00 TO

04/15/2024

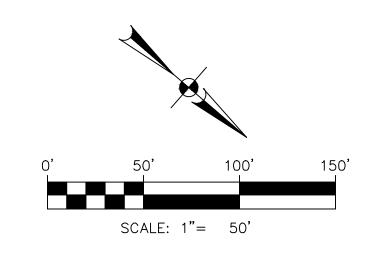
REBECCA ANN CARRO

PLAT NO. 24-1180007 12733-12









#### STREET LEGEND

PROJECT LIMITS —	
WHEELCHAIR RAMP	0
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

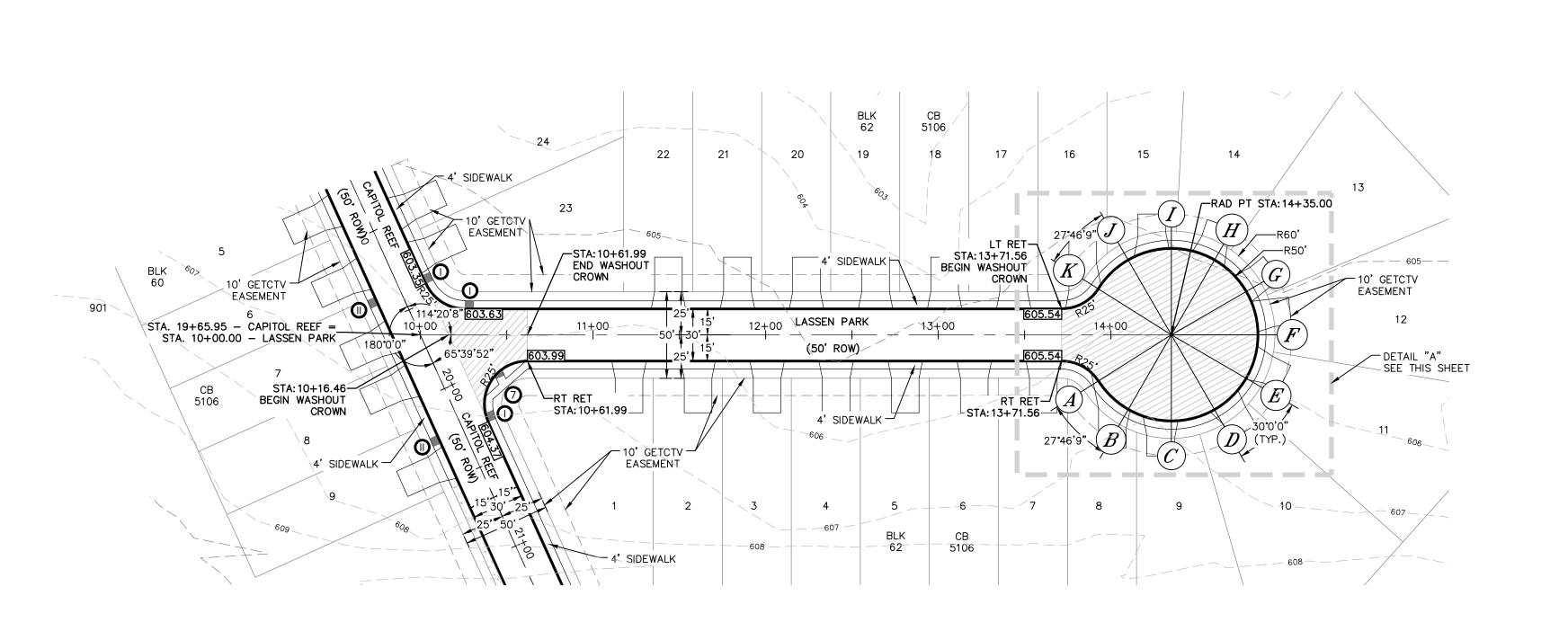
#### STREET NOTES:

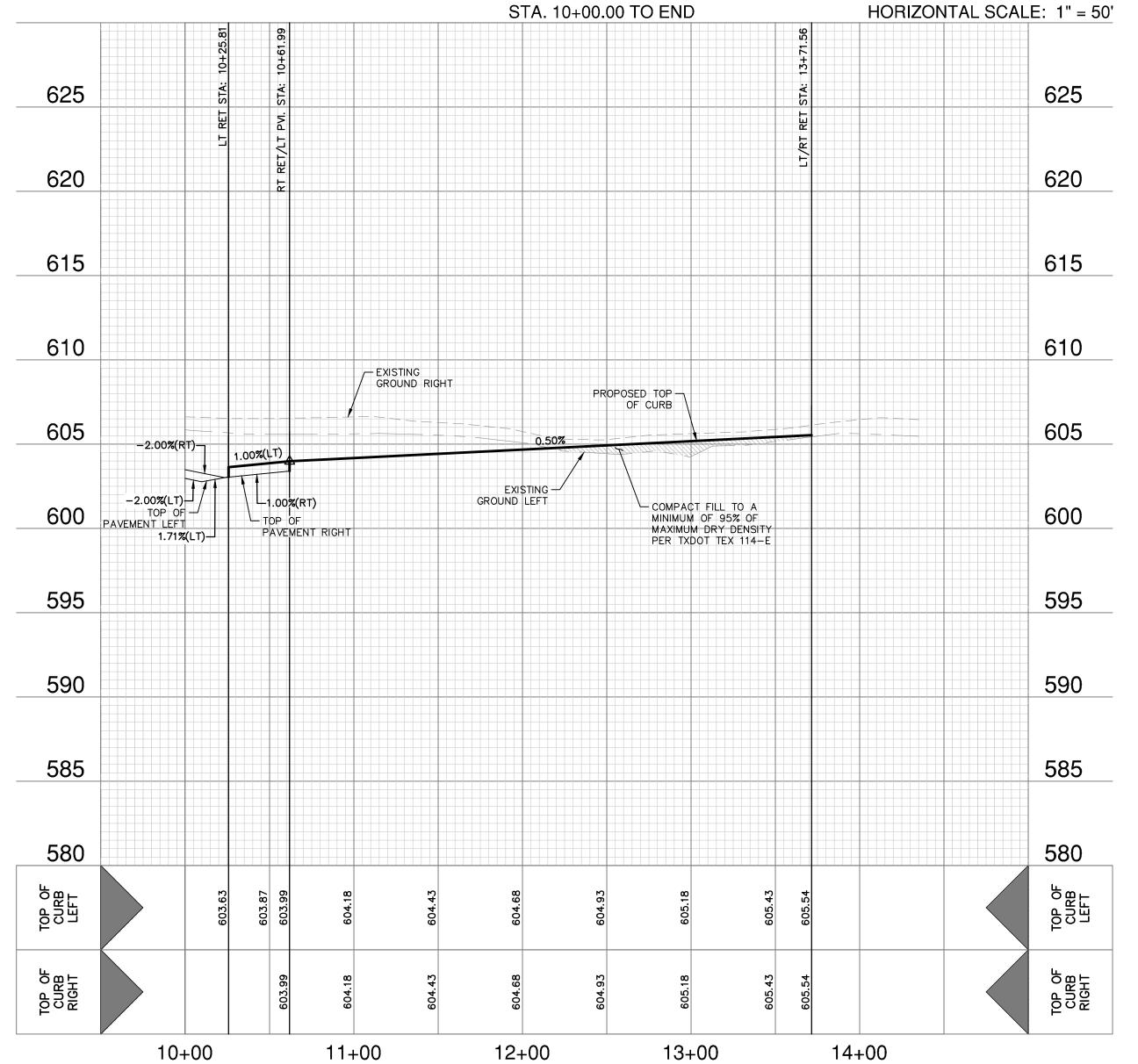
- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- 2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- 5. 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 HOME SELECTION AND FINAL LOT DESIGN.
- 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

ENO SPRINGS-UNIT BEXAR COUNTY, TEXAS Ш

> PLAT NO. 24-11800078 OB NO. 12733-12 APRIL 2024 DESIGNER HECKED\_\_\_\_ DRAWN\_ AR C2.02

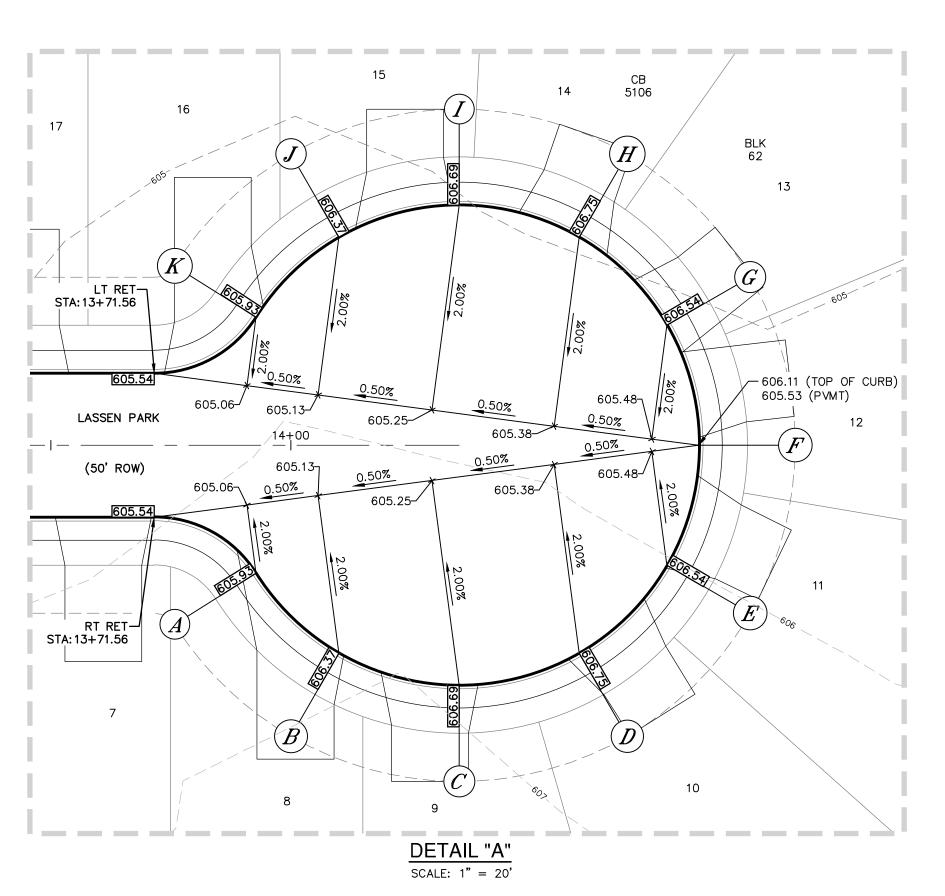
AND

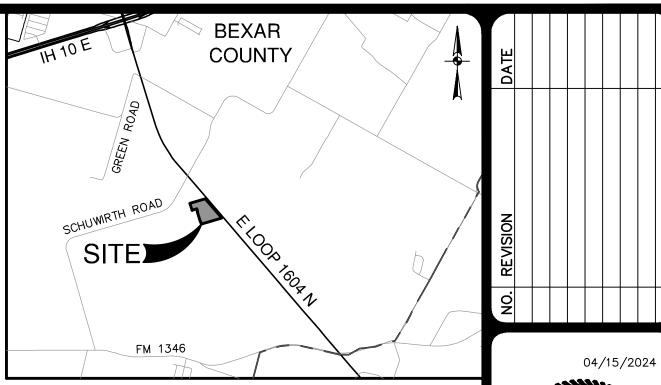




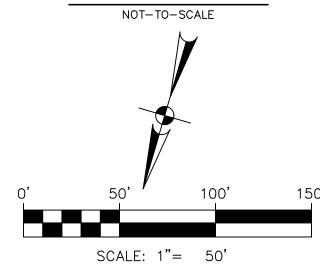
LASSEN PARK

VERTICAL SCALE: 1" = 5'





**LOCATION MAP** NOT-TO-SCALE



#### STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	•
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

RENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

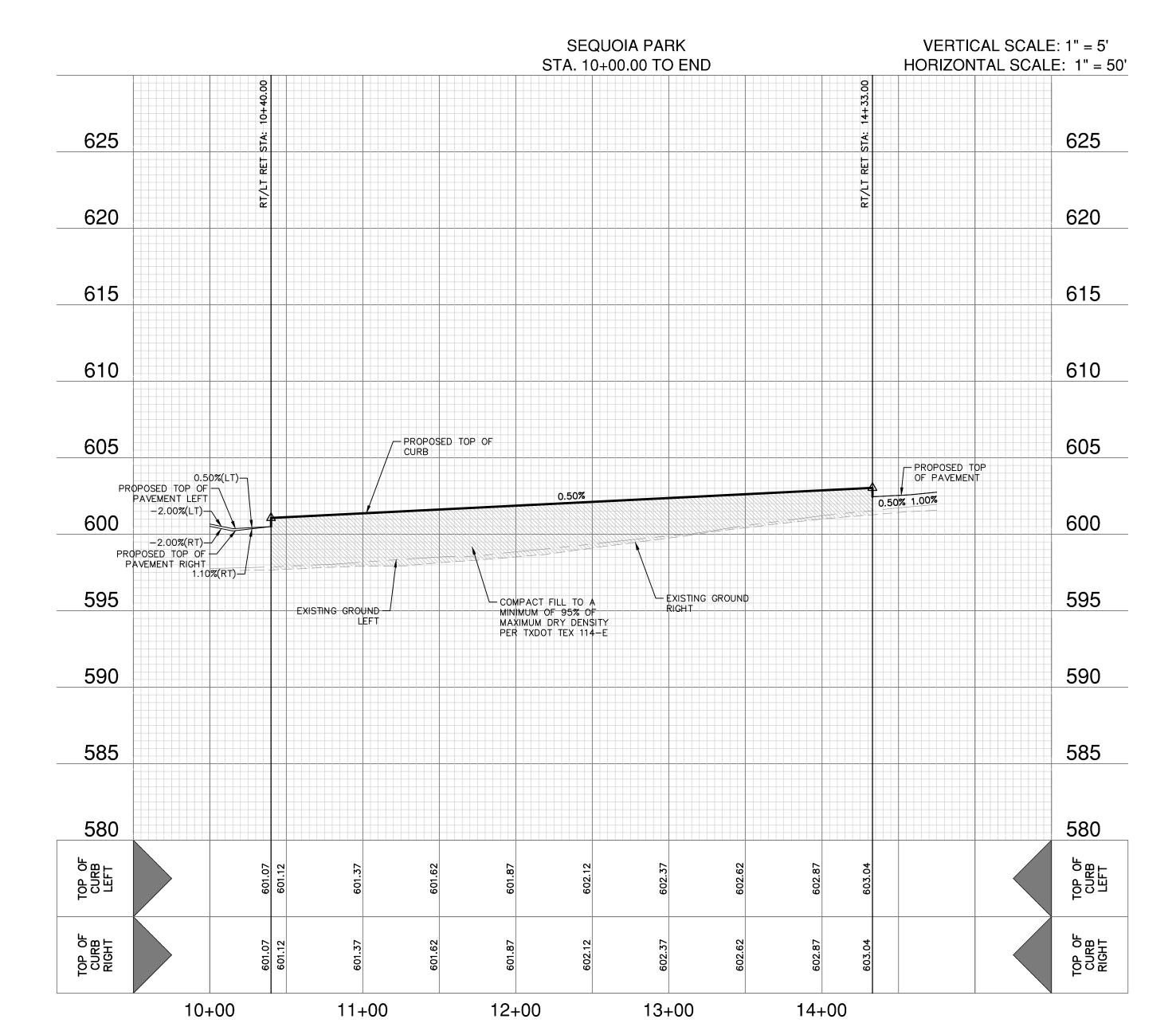
Ш

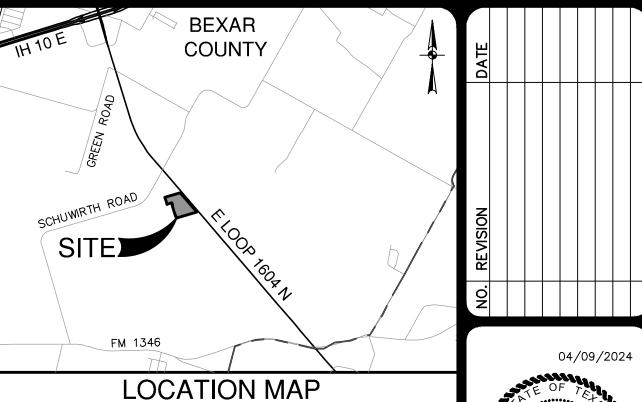
LASSEN PARK PLAN AND PROFILE

#### **STREET NOTES:**

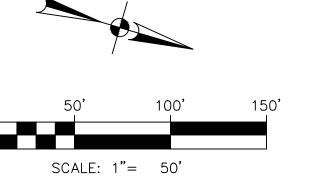
- 1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE—IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE
- ADJACENT TOP OF PAVEMENT. 5. 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 HOME SELECTION AND FINAL LOT DESIGN. 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR
- UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6). 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

- <sub>NO.</sub> 24-11800078 12733-12 APRIL 2024 DESIGNER HECKED\_\_\_\_ DRAWN\_ AR C2.03









NOT-TO-SCALE

#### STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	•
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

## PAPELD FNGINE SOOD NW LOOP 410 I SAN ANTONIO,

# RENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

Ш

#### STREET NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- 2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE—IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- 5. 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 HOME SELECTION AND FINAL LOT DESIGN.
- 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

PLAT NO. 24-11800078

JOB NO. 12733-12

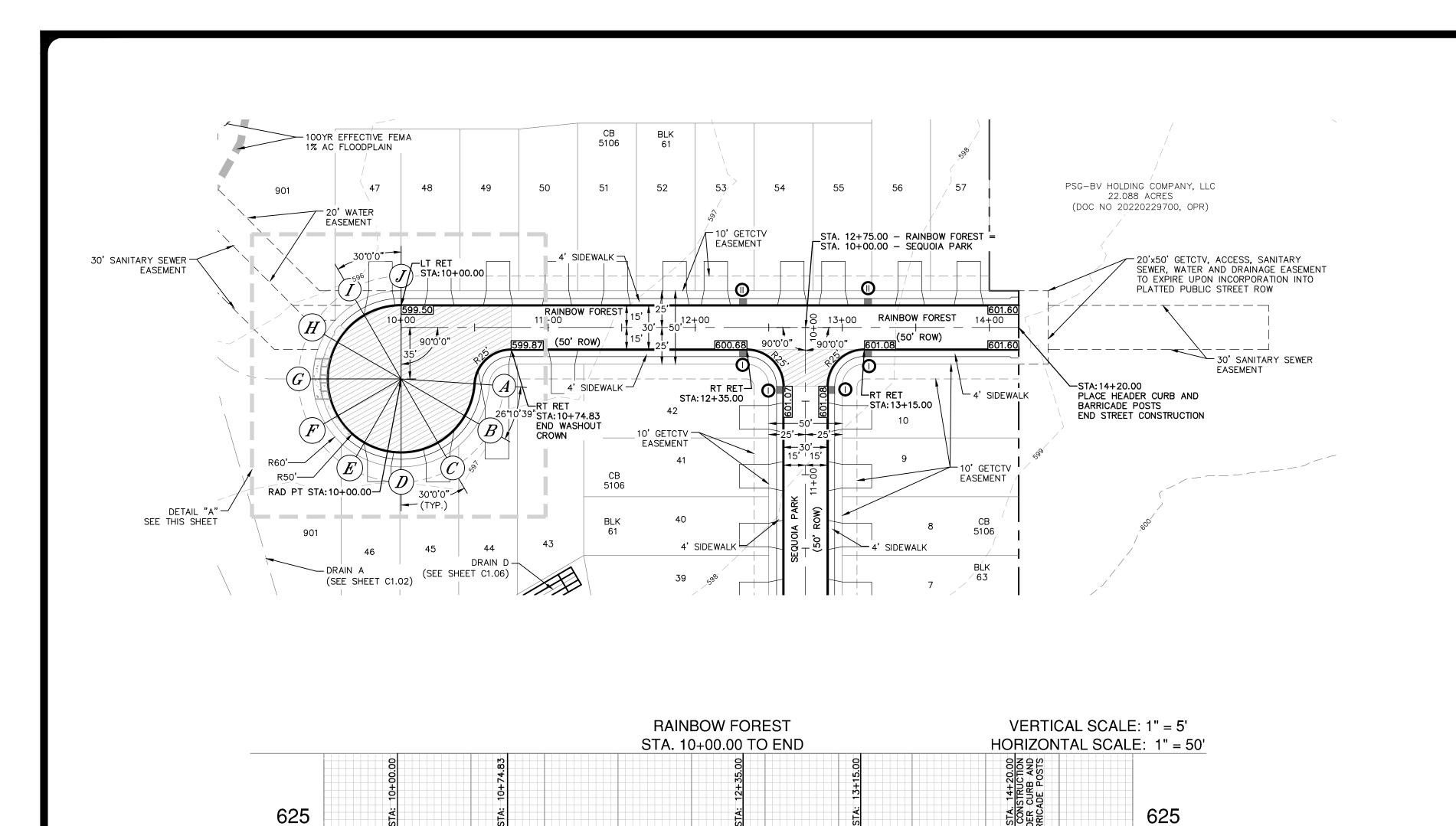
DATE APRIL 2024

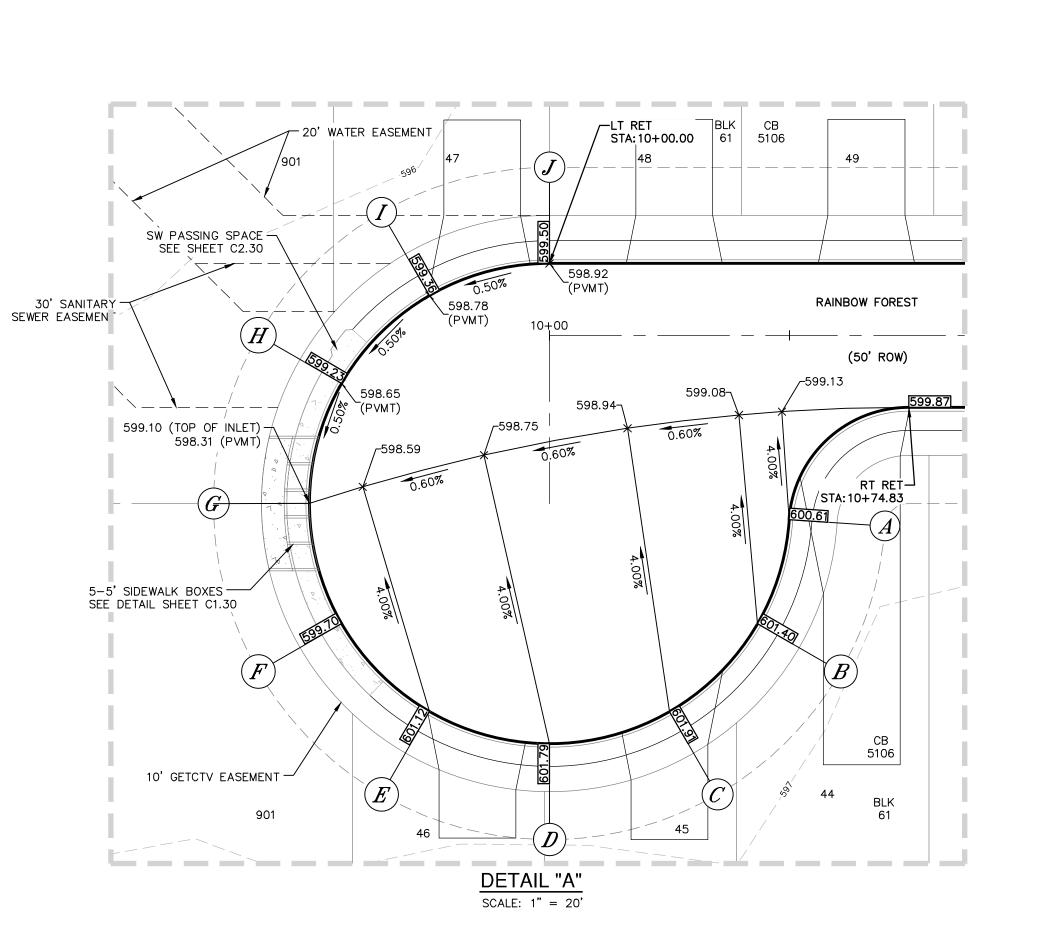
DESIGNER JP

CHECKED DRAWN AR

SHEET C2.04

Date: April 9, 2024, 5:19 PM — User ID: iarroyo File: P:\127\33\12\Design\Civil\ST-SEQUOIA PARK 1273312—





615

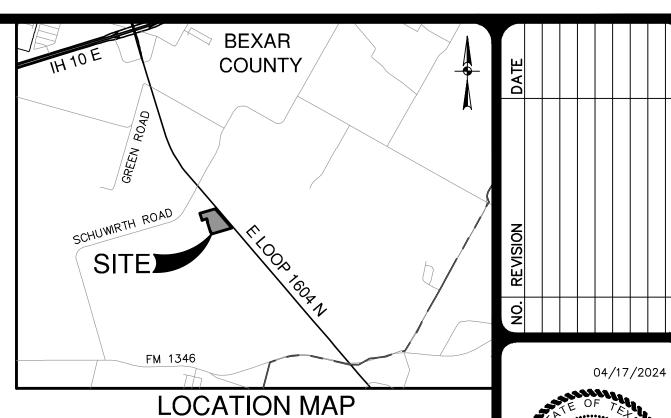
610

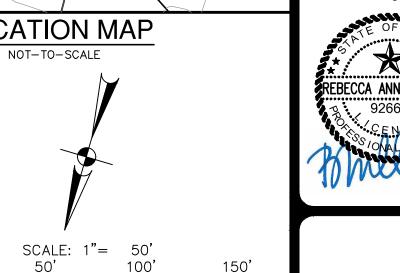
EXTEND GRADES
AT 6:1 MAX TO
MATCH EXISTING

GROUND SLOPE

EXISTING GROUND RIGHT -

OF PAVEMENT





#### STREET LEGEND

PROJECT LIMITS	
WHEELCHAIR RAMP	lacktriangle
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
TOP OF CURB SPOT ELEVATION	975.50
WASHOUT CROWN SECTION	
PROPOSED SIDEWALK (HOMEBUILDER'S RESPONSIBILITY)	
PROPOSED SIDEWALK (CONTRACTOR'S RESPONSIBILITY)	
DRIVEWAY	

PAPE-DAN FILL ENGINEER

RENO SPRINGS-UNIT 1 BEXAR COUNTY, TEXAS

Ш

RAINBOW FORES PLAN AND PROFIL

<sub>r NO.</sub> 24-11800078

APRIL 2024

DESIGNER

12733-12

\_\_\_\_ DRAWN\_AR

#### STREET NOTES:

- 1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- 2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE—IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- 3. SIDEWALKS SHALL BE CONSTRUCTED 3—FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- 4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- 5. 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 HOME SELECTION AND FINAL LOT DESIGN.
- 6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).
- 7. THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN.

le: April 17, 2024, 4:17 PM — User ID: iarroyo :: P:\127\33\12\Design\Civil\ST—RAINBOW FOREST 1273312—U1.dwg 620

615

610

605

600

595

590

580

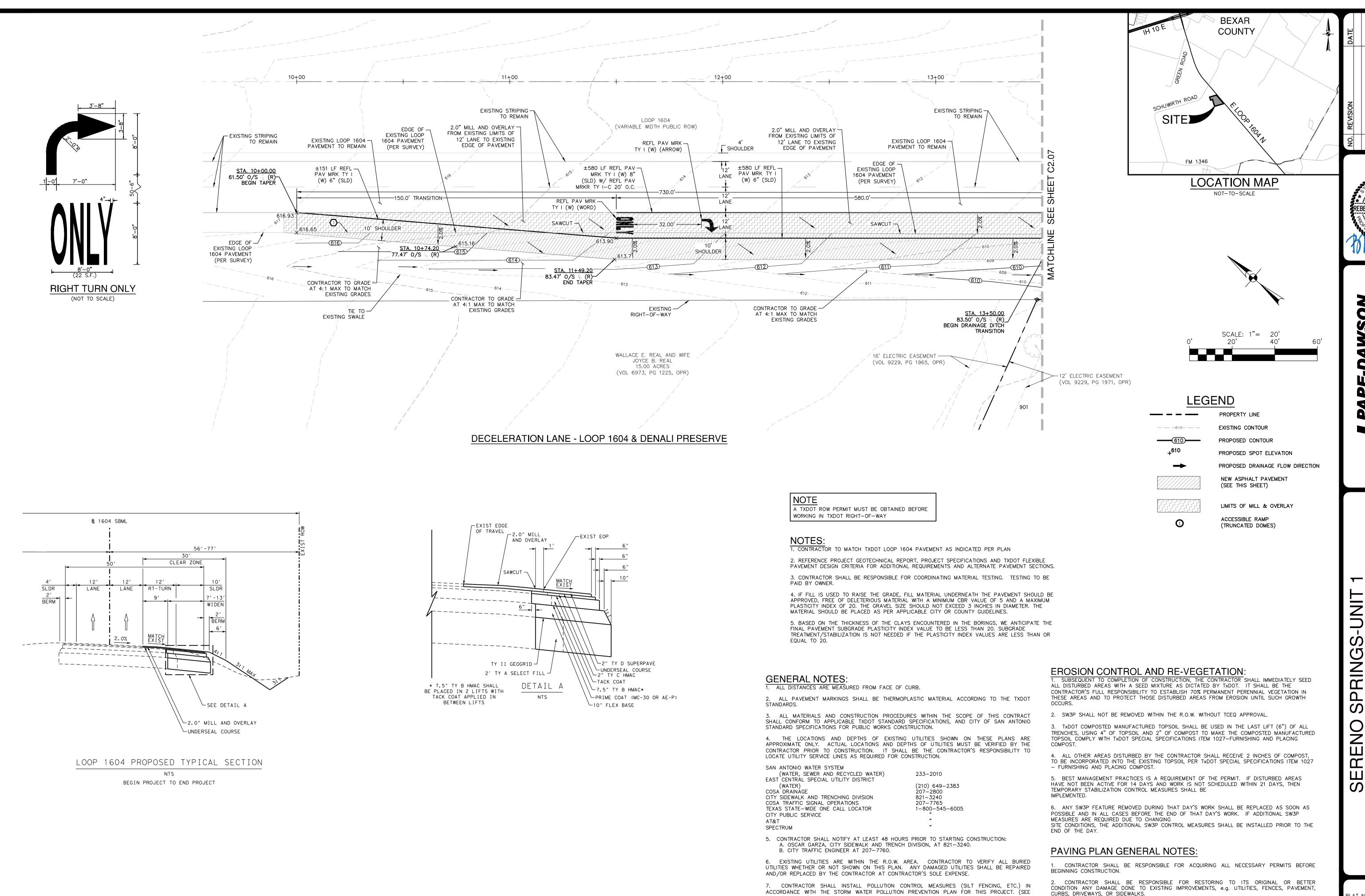
10+00 11+00 12+00 13+00 14+00

This document has been produced from material that was stored and/or transmitted electronically and may have been inadvertently altered. Rely only on final hardcopy materials bearing the consultant's original signature and seal. Aerial imagery provided by Google® unless otherwise noted. Imagery © 2016, CAPCOG, Digital Globe, Texas Orthoimagery Program, USDA Farm Service Agency.

PROPOSED TOP OF CURB-

MINIMUM DENSITY OF 95%
OF MAXIMUM DRY DENSITY
PER TXDOT TEX 114-E

EXISTING GROUND LEF



24-11800078

DB NO. 12733-12

ATE APRIL 2024

ESIGNER JP

HECKED DRAWN AR

HEFT C2.06

04/15/2024

OF

5. CONTRACTOR SHALL MAINTAIN MAXIMUM 2% CROSS SLOPE ACROSS SIDEWALKS.

SHEET \_\_\_\_\_

CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW

PAVEMENT, CURB AND SIDEWALK JUNCTURES. NO JAGGED OR IRREGULAR CUTS WILL BE

4. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY

ARISE CONCERNING THE INTENT, ALIGNMENT, PLACEMENT, LIMITS, DIMENSIONS OR GRADES

NECESSARY FOR CONSTRUCTION OF THIS PROJECT.

8. CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH THE TRAFFIC DEPARTMENT FOR

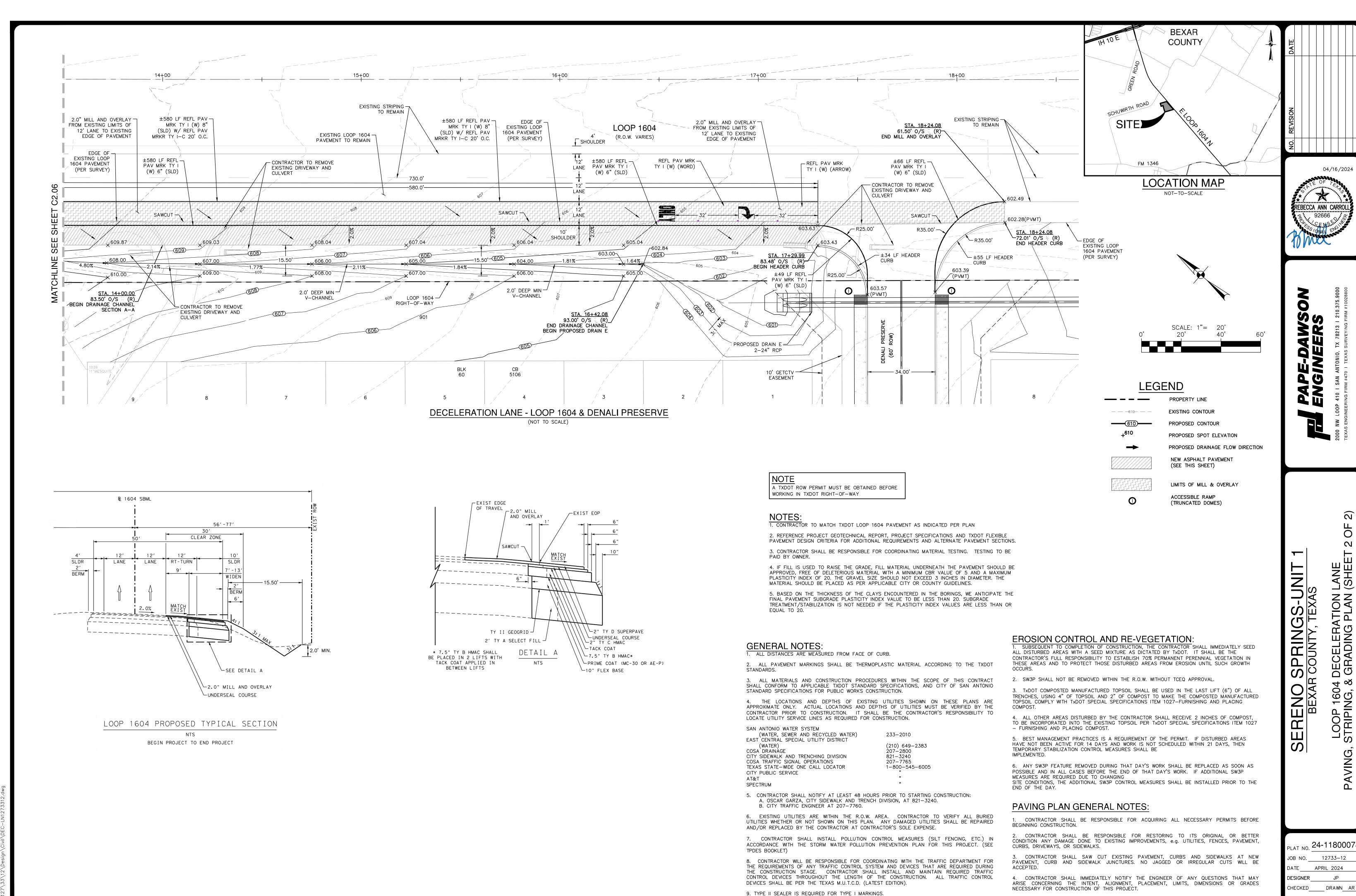
THE REQUIREMENTS OF ANY TRAFFIC CONTROL SYSTEM AND DEVICES THAT ARE REQUIRED DURING

THE CONSTRUCTION STAGE. CONTRACTOR SHALL INSTALL AND MAINTAIN REQUIRED TRAFFIC CONTROL DEVICES THROUGHOUT THE LENGTH OF THE CONSTRUCTION. ALL TRAFFIC CONTROL

10. NOTIFY THE INSPECTION SECTION AT 210-335-6700 WITH PERMIT NUMBER AT LEAST 24 HOURS BEFORE STARTING THE ACTIVITY. NO INSPECTION SHALL BE MADE WITHOUT A PERMIT.

DEVICES SHALL BE PER THE TEXAS M.U.T.C.D. (LATEST EDITION).

9. TYPE II SEALER IS REQUIRED FOR TYPE I MARKINGS.



5. CONTRACTOR SHALL MAINTAIN MAXIMUM 2% CROSS SLOPE ACROSS SIDEWALKS.

10. NOTIFY THE INSPECTION SECTION AT 210-335-6700 WITH PERMIT NUMBER AT LEAST 24 HOURS BEFORE STARTING THE ACTIVITY. NO INSPECTION SHALL BE MADE WITHOUT A PERMIT.

OF

C2.07

			PAVEMENT SE	CTION DETAIL				
STREET NAME	STATION	TYPE "D" HMAC SURFACE TXDOT ITEM 340, in	TYPE "C" HMAC SURFACE TXDOT ITEM 340, in	AGGREGATE BASE, in (TXDOT ITEM 247 TYPE A GRADE 1 OR 2)	LIME TREATED SUBGRADE	GEOGRID (TENSAR TRIAX TX5)	CBR	STRUCTURAL NUMBER
DENALI PRESERVE	10+80.50 TO 14+68.31 14+84.19 TO END	1.5"	2.5"	18.5"	8"	NO	2.0	4.99
DENALI PRESERVE	14+68.31 TO 14+84.19 (ABOVE 2~6'X3' CULVERT ONLY)	3"	3"	-	*	NO	20.0	2.64
CAPITOL REEF	10+00.00 TO END	2"	_	10"	8"	NO	2.0	2.92
LASSEN PARK	10+00.00 TO END	2"	_	10"	8"	NO	2.0	2.92
SEQUOIA PARK	10+00.00 TO END	2"	-	10"	8"	NO	2.0	2.92
RAINBOW FOREST	10+00.00 TO END	2"	-	10"	8"	NO	2.0	2.92

#### **GENERAL NOTES:**

- 1. CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT PREPARED BY INTEC of SAN ANTONIO DATED FEBRUARY 29, 2024.
- 2. CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
- 3. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
- 4. THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- 5. THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
- 6. IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE
- 7. WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2-FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.
- 8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.
- 9. FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2 AND A PI WITHIN RANGE OF 5 AND 20. 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 OR COUNTY GUIDELINES. CONTRACTOR TO VERIFY EXACT SPECIFICATIONS WITH PROJECT GEOTECHNICAL ENGINEERING REPORT.
- 10. A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN THE BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

#### STREET SUBGRADE NOTES:

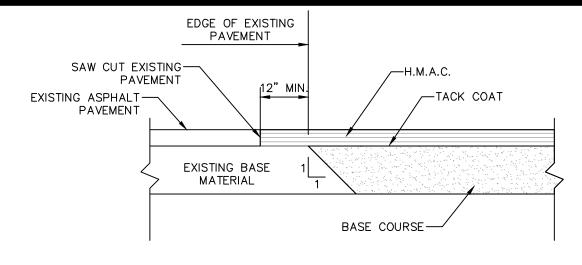
- 1. IF THE STREET SUBGRADE PLASTICITY INDEX VALUE IS GREATER THAN 20, SUBGRADE STABILIZATION IS NEEDED AS PER CITY OF SAN ANTONIO REQUIREMENTS.
- 2. IF THE SUBGRADE PLASTICITY INDEX VALUE IS 20 OR LESS. SUBGRADE STABILIZATION IS NOT NEEDED. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED (COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MINIMUM MOISTURE CONTENT OF OPTIMUM PLUS 2 PERCENT (TEX114E)).
- 3. THE SUBGRADE SHOULD BE STABILIZED USING 6 PERCENT LIME TO A DEPTH OF 6 INCHES AS NOTED
- 4. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO STABILIZATION. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE / RECOMMENDATION WILL BE NEEDED.
- 5. LIME APPLICATION RATE OF 27.5 LBS PER SQ YARD FOR 6 INCH DEPTH OF STABILIZATION IS RECOMMENDED.
- 6. APPROVED FILL MATERIAL SHOULD BE USED TO RAISE THE GRADE. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 2.5. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
- 7. THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE STABILIZATION.

#### LIME NOTES:

- FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:

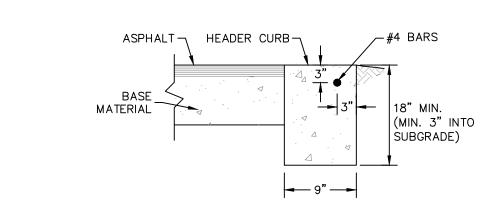
  1. AFTER INITIAL MIXING THE SOIL—LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3)
  DAYS. MAINTAIN MOISTURE DURING MELLOWING.
- 2. AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ₹ INCH SIEVE FROM THE SAMPLE):

   MINIMUM PASSING 1¾ SIEVE 100
- MINIMUM PASSING <sup>3</sup> SIEVE
  MINIMUM PASSING NO. 4 SIEVE
- 3. SAMPLE SOIL—LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE BEXAR COUNTY FLEXIBLE PAVEMENT DESIGN CRITERIA GUIDE FOR MIXTURE DESIGN.
- 4. COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
- 5. CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST
- 6. VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN  $\pm 1.0$  INCH.



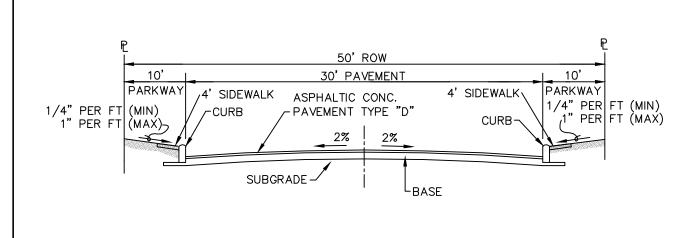
#### ASPHALT/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE

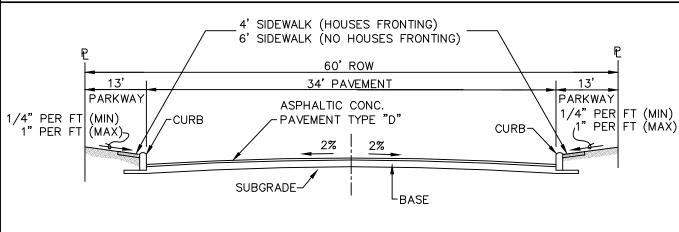


HEADER CURB DETAIL

NOT-TO-SCALE



#### LOCAL A STREET SECTION NOT-TO-SCALE



LOCAL B STREET SECTION

NOT-TO-SCALE

NOT-TO-SCALE

CONCRETE CURB DETAIL

**ASPHALT** 

THICKNESS-

THICKNESS

SUBGRADE -

PAY LIMITS FOR STREET EXCAVATION LIME -

TREATMENT FOR SUBGRADE, FLEXIBLE BASE,

ASPHALT TREATED BASE AND PRIME COAT

MEASUREMENT

-BACK FILL PER PROJECT

\*THICKNESS OF BASE IN

OVER EXCAVATION AREA IS EQUAL TO TOTAL PAVEMENT

SECTIONS THICKNESS MINUS

04/09/2024

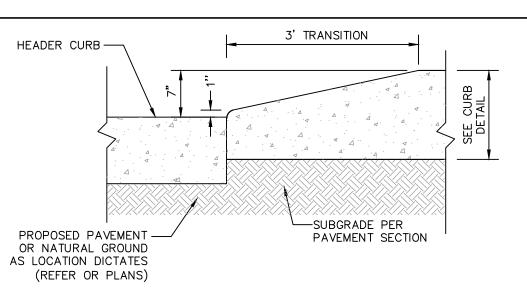
REBECCA ANN CARRO

5.5", OR 4" MINIMUM

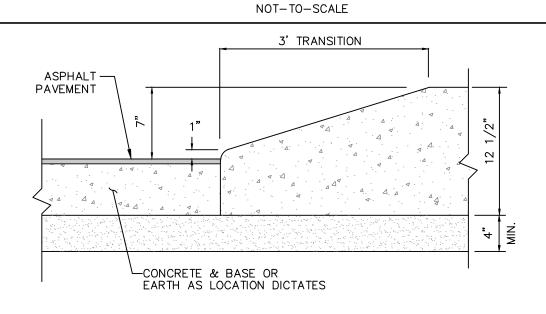
SPECIFICATIONS.

MAINTAIN POSITIVE DRAINAGE

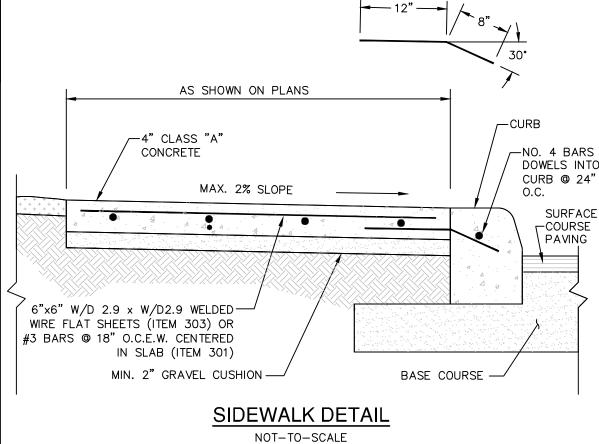
FOR STREET EXCAVATION

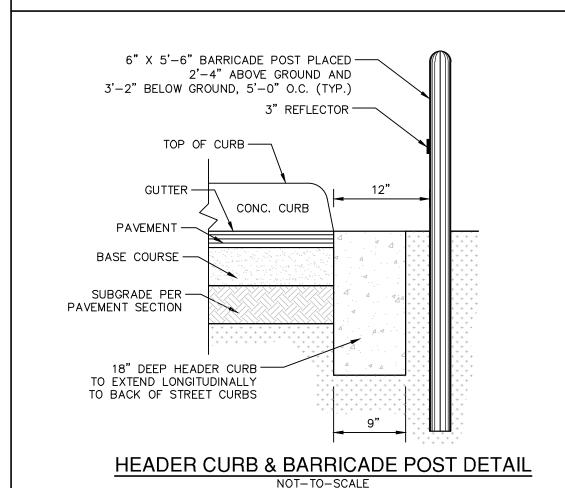


CURB TRANSITION DETAIL
(FROM HEADER CURB TO STANDARD CURB



### CURB TRANSITION DETAIL (FROM PAVEMENT TO STANDARD CURB) NOT-TO-SCALE





ERENO SPRINGS-UNIT 1
BEXAR COUNTY, TEXAS

PLAT NO. 24-1180007

JOB NO. 12733-12

DATE APRIL 2024

DESIGNER JP

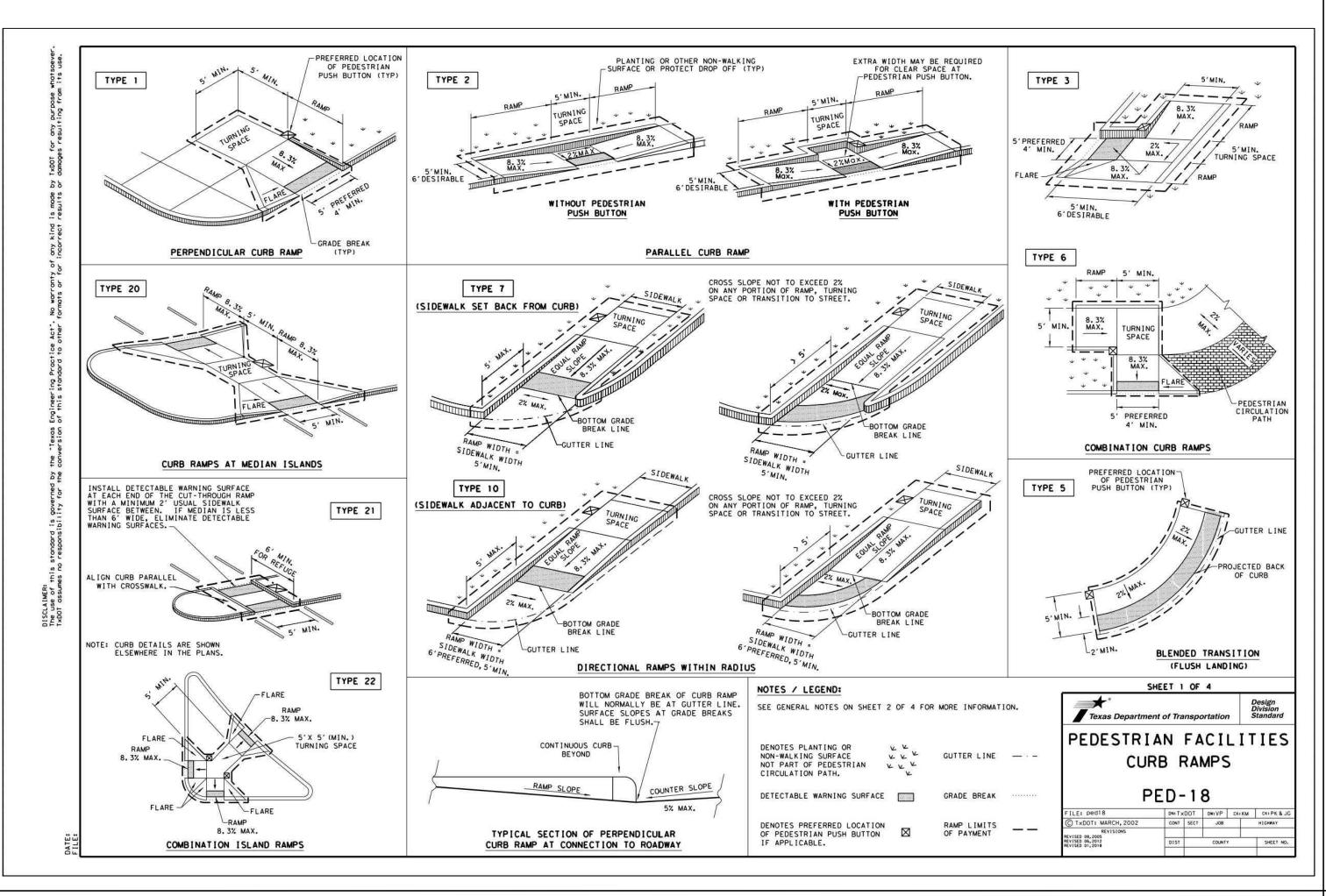
CHECKED DRAWN AR

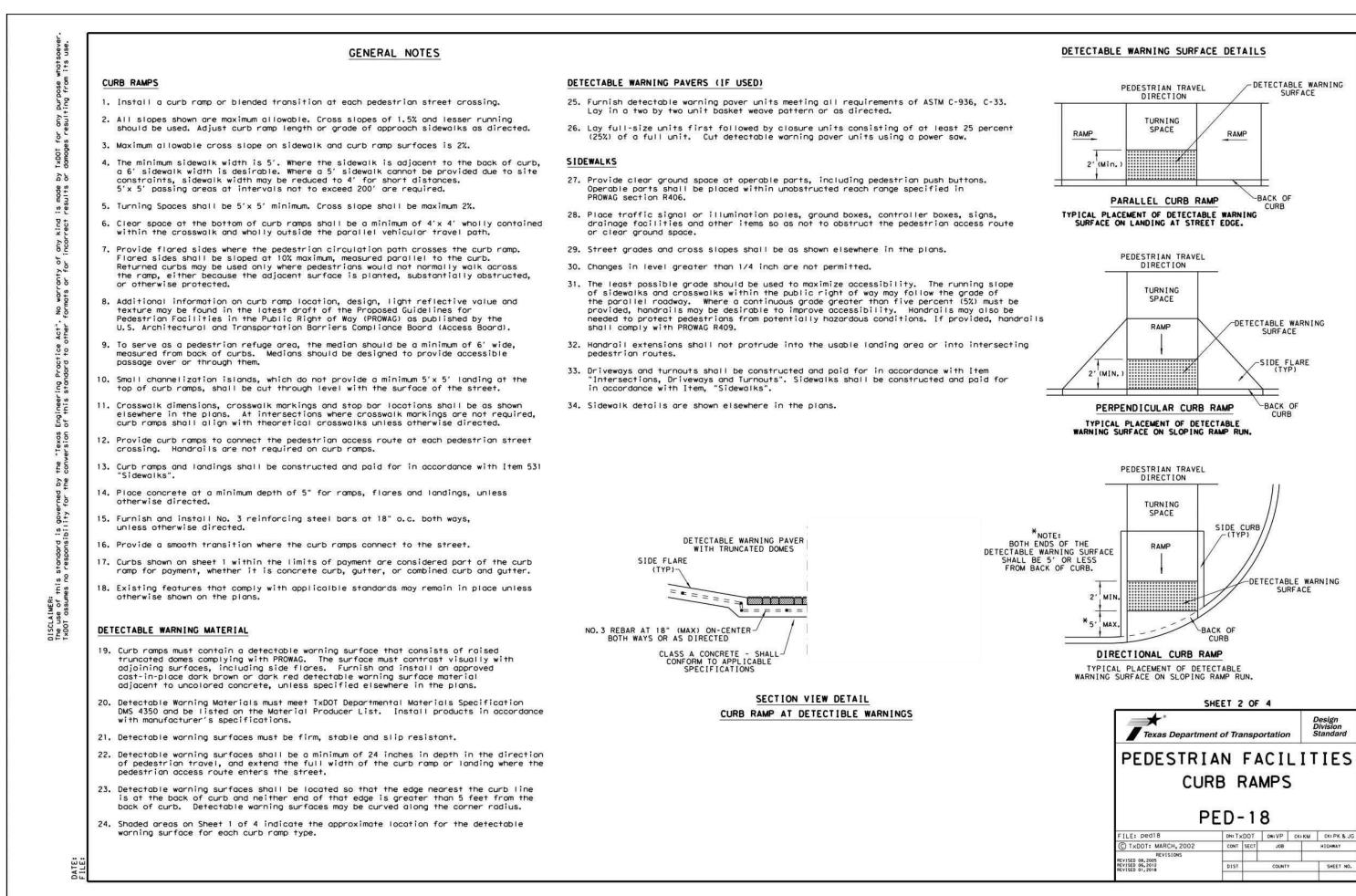
C2.10

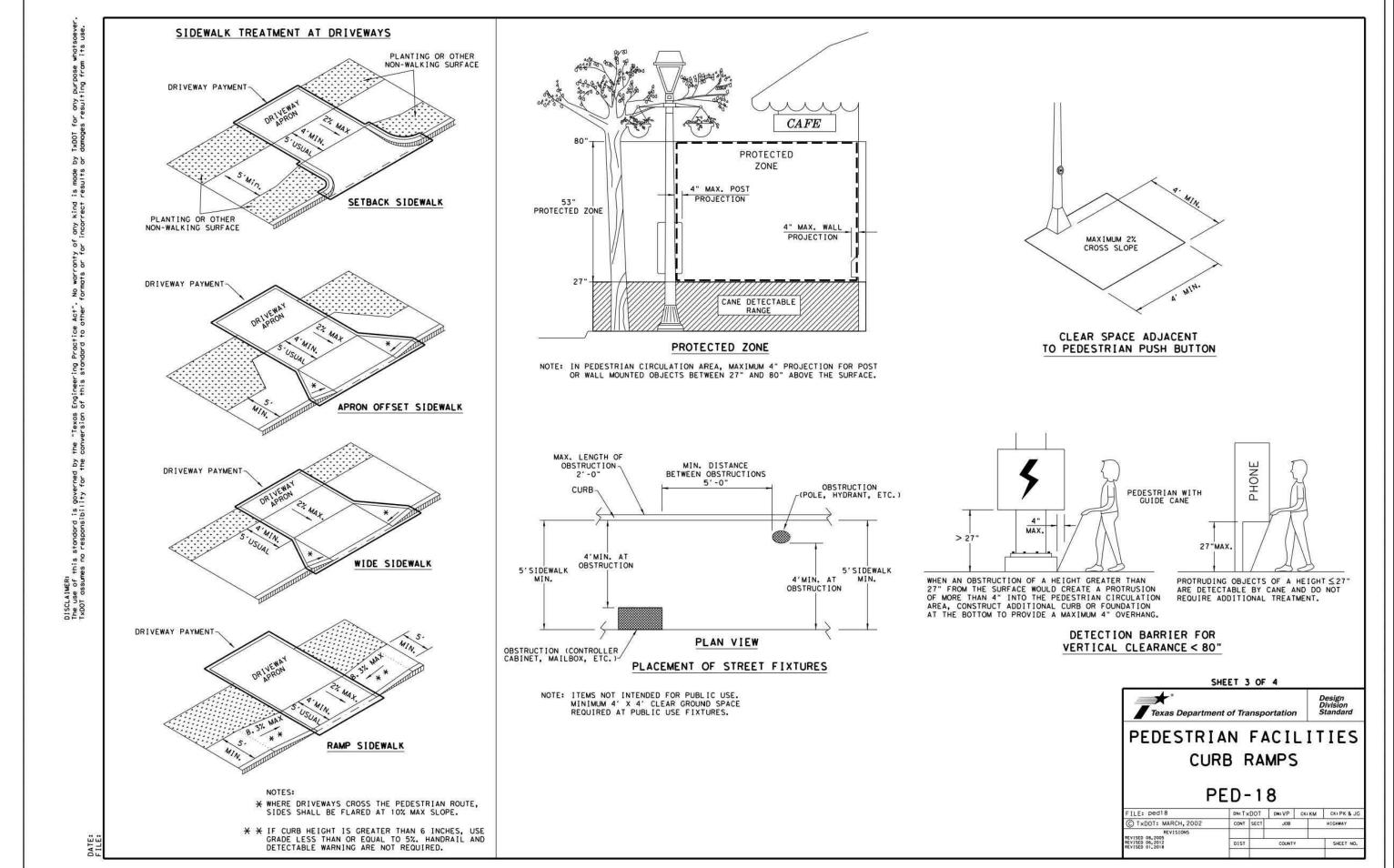
5 DAYS).

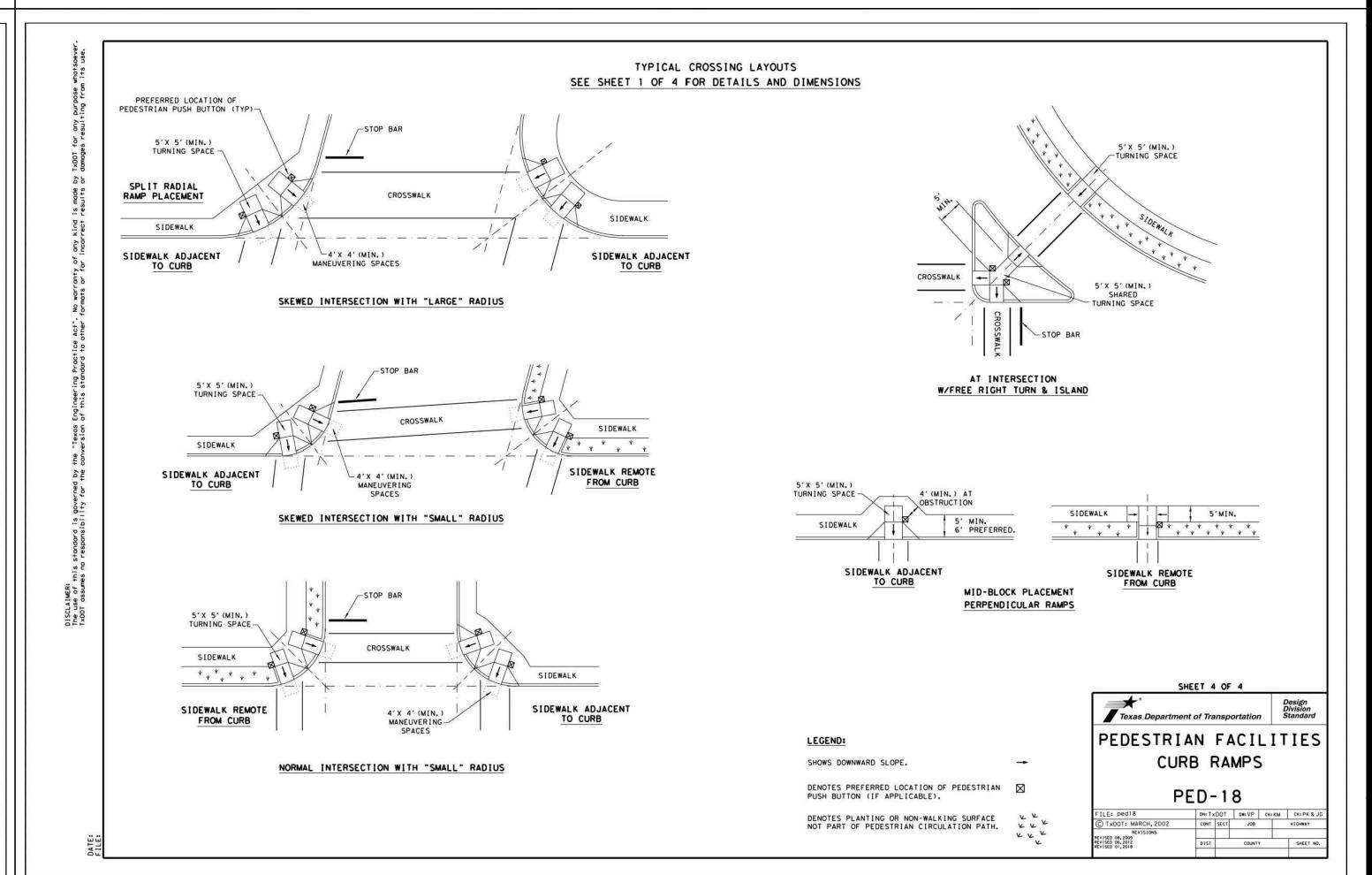
5 DAYS).

6. VERIFY DEPTH OF LIME STABILIZED LAYER









SERENO SPRINGS-UNIT 1
BEXAR COUNTY, TEXAS

TREET DETAILS SHEET 2 OF 3

04/09/2024

PLAT NO. 24-11800078

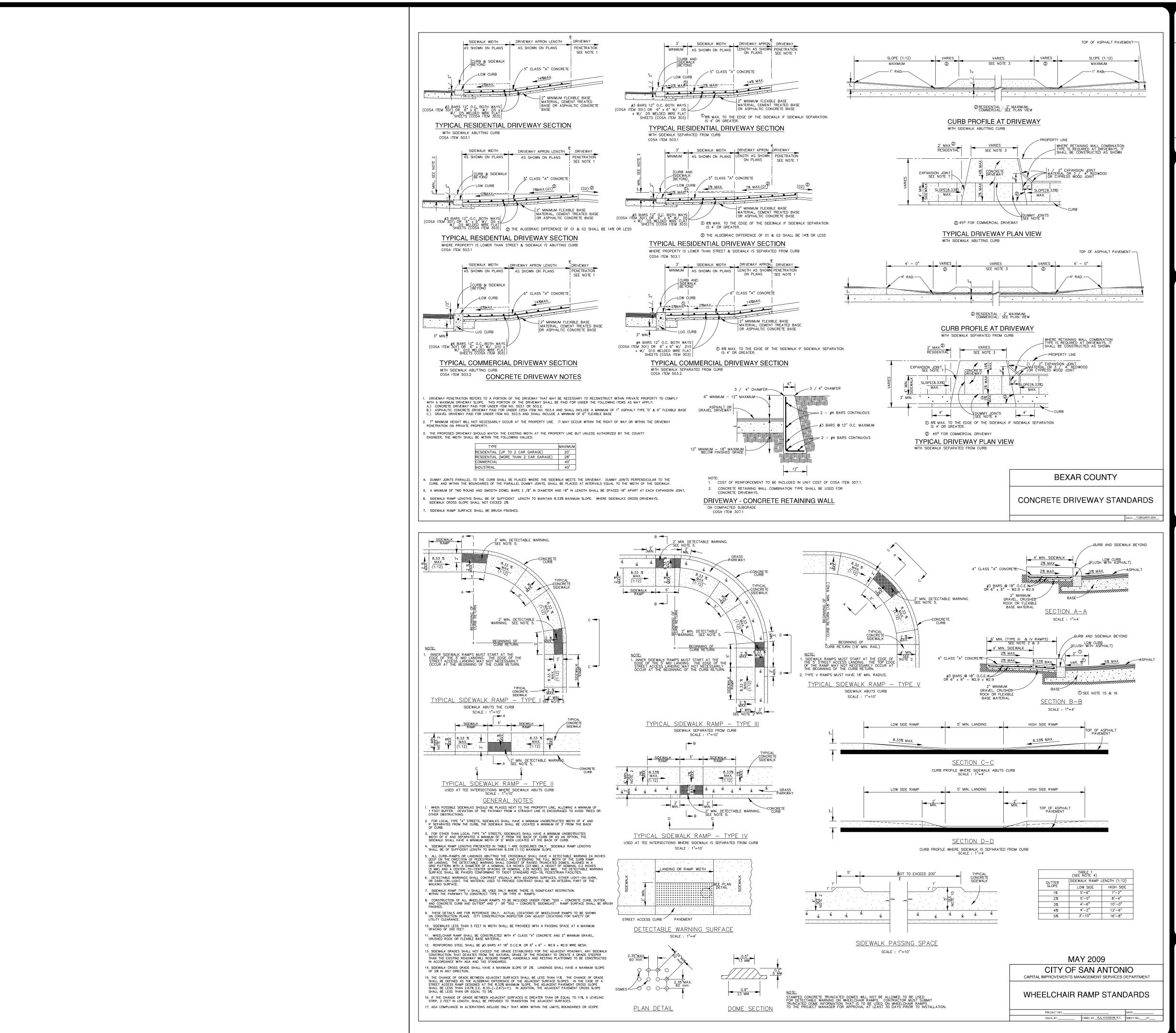
JOB NO. 12733-12

DATE APRIL 2024

DESIGNER JP

CHECKED DRAWN AR

SHFFT C2.20



THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

04/09/2024



45000 45000 13 | 210.375.9000 ING FIRM #10028800

PAPE-DAWSON

ENGINEERS

2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000

TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

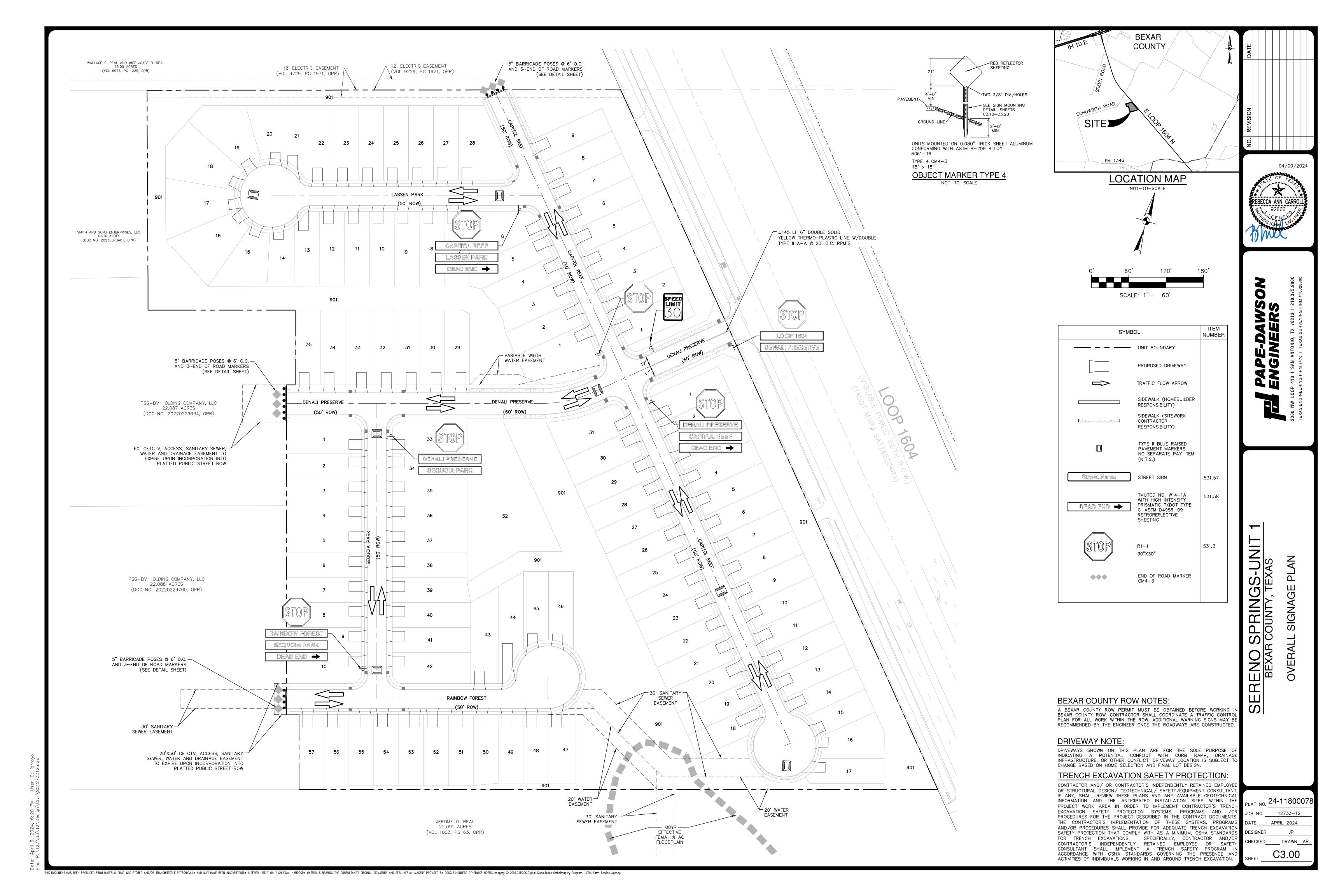
SERENO SPRINGS-UNIT 1
BEXAR COUNTY, TEXAS

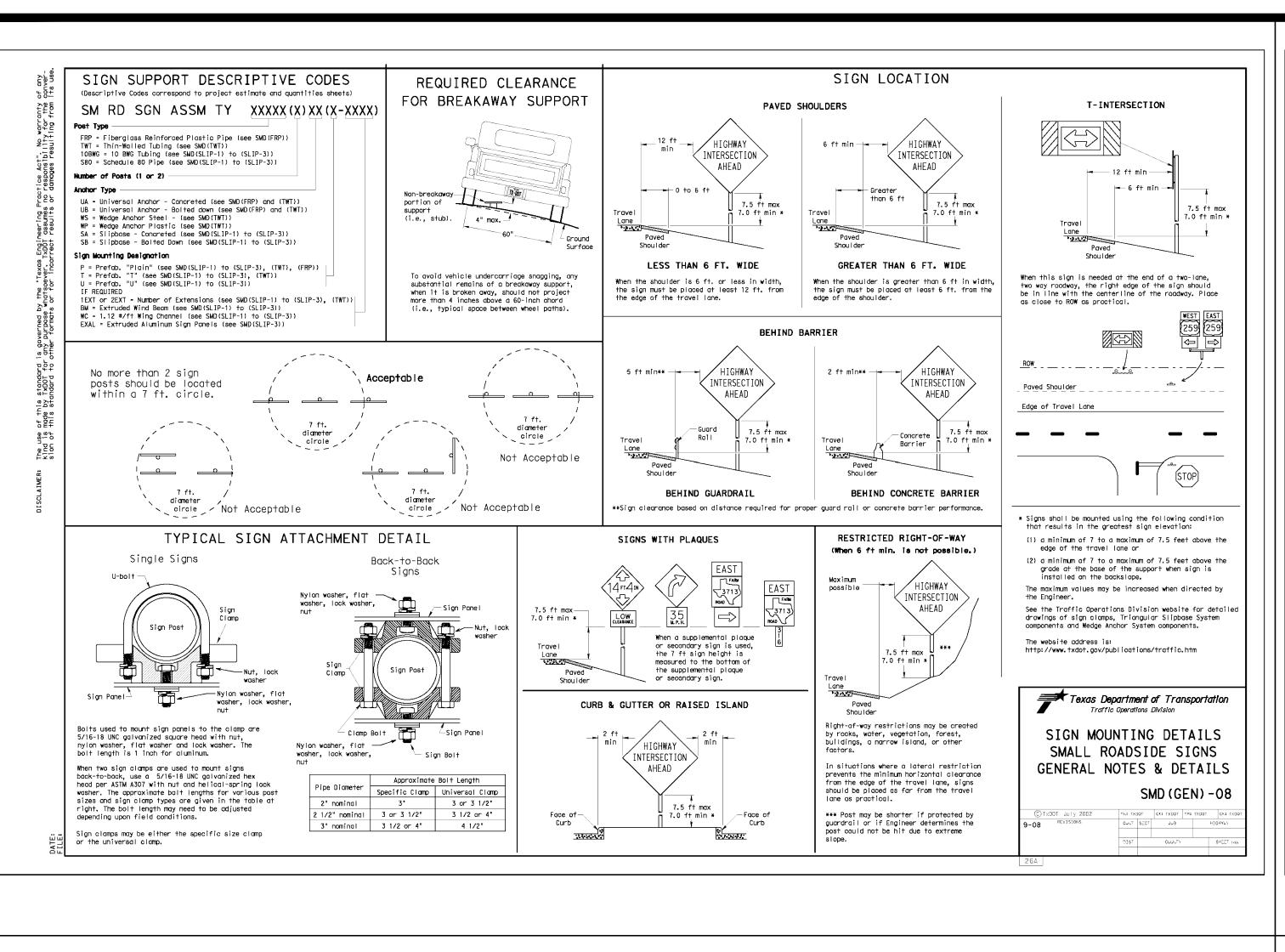
ETAI OF

NO. 12733-12

DATE APRIL 2024
DESIGNER JP
CHECKED DRAWN AR

CHECKED C2.30





Aluminum

Detail A

Sign Panel

(See SMD(2-1)) PLAQUE = 1 - variable length

& 1 - 32 inch piece

—1.12 #/ft Wing Channel

SM RD SGN ASSM TY XXXXX(1)XX(U-WC)

SIDE VIEW

3/8" x 3 1/2" square

per ASTM A307 galvanized

Pipe O.D.

-.025"±.010"

"Galvanizing." (Bolt

head bolt, nut, flat

er Item 445

length may vary depending on sign clamp type and

pipe diameter.

Variation

(See Note 11)

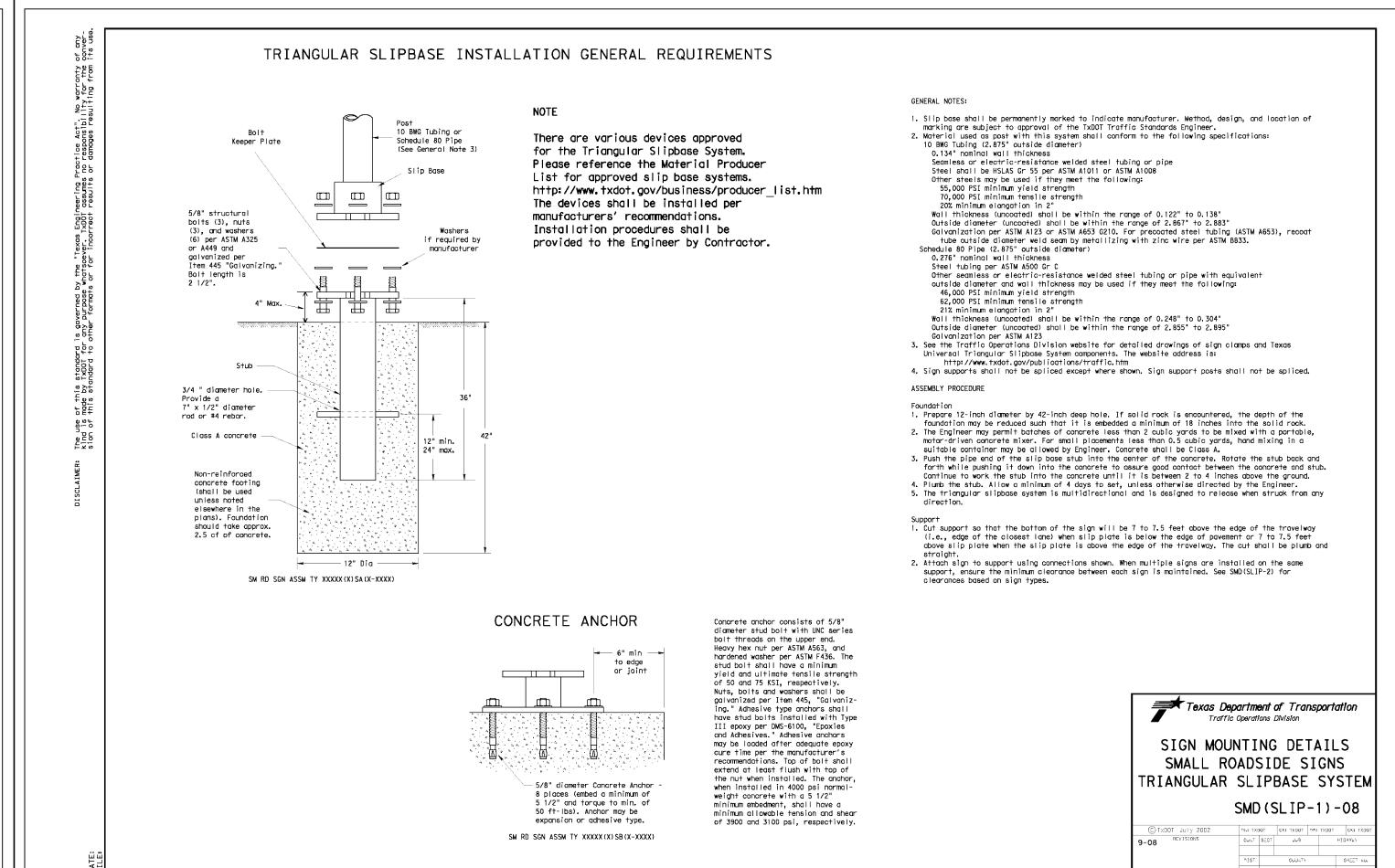
SM RD SGN ASSYM TY XXXXX(2)XX(P)

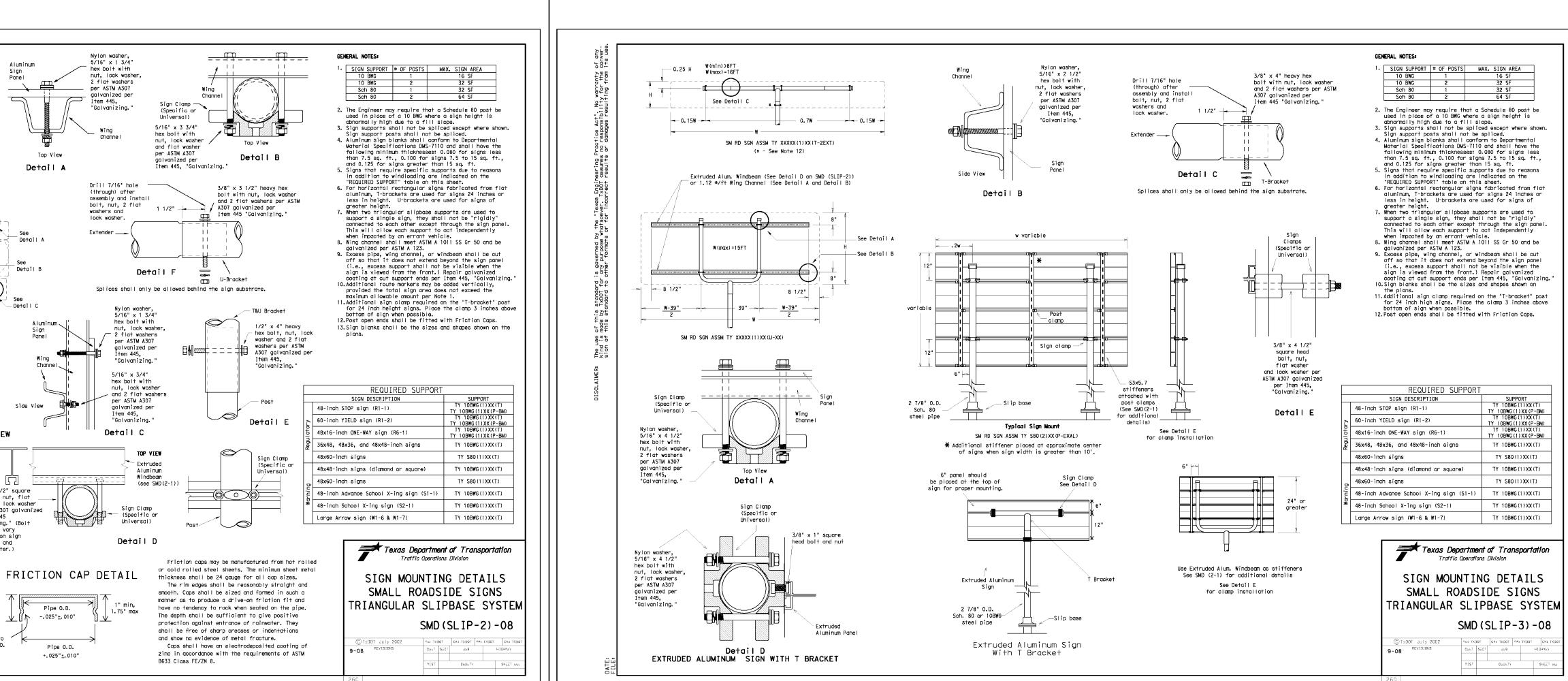
All dimensions are in english

unless detailed otherwise.

SM RD SGN ASSM TY XXXXX(1)XX(P-BM)

8 Inch piece







ШΘ

 $\Box$   $\leftarrow$ 

GNAGE SHEET

04/09/2024

EBECCA ANN CARRO

NO 24-1180007 12733-12 DESIGNER DRAWN AF

C3.10

Rolled Crimp to SM RD SGN ASSM TY XXXXX(1)XX(T) 0.6W -- 0.2W -Pipe O.D. +.025"±.010"

Sign (if required)

SM RD SGN ASSM TY XXXXX(1)XX(T)

SM RD SGN ASSM TY XXXXX(1)XX(U)

SM RD SGN ASSM TY S80(1)XX(U-2EXT)

W(max)=6FT

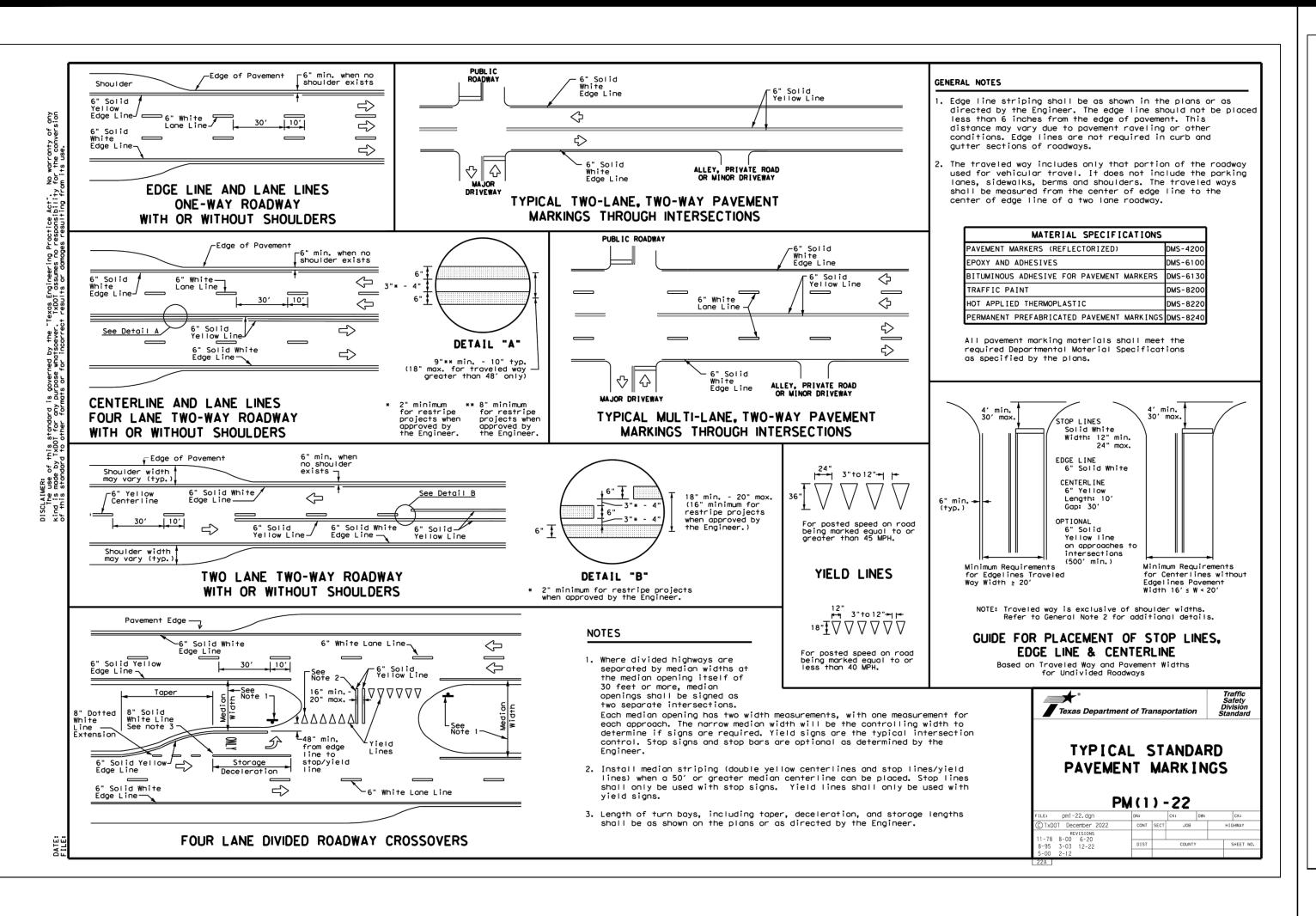
1 ± 1/2

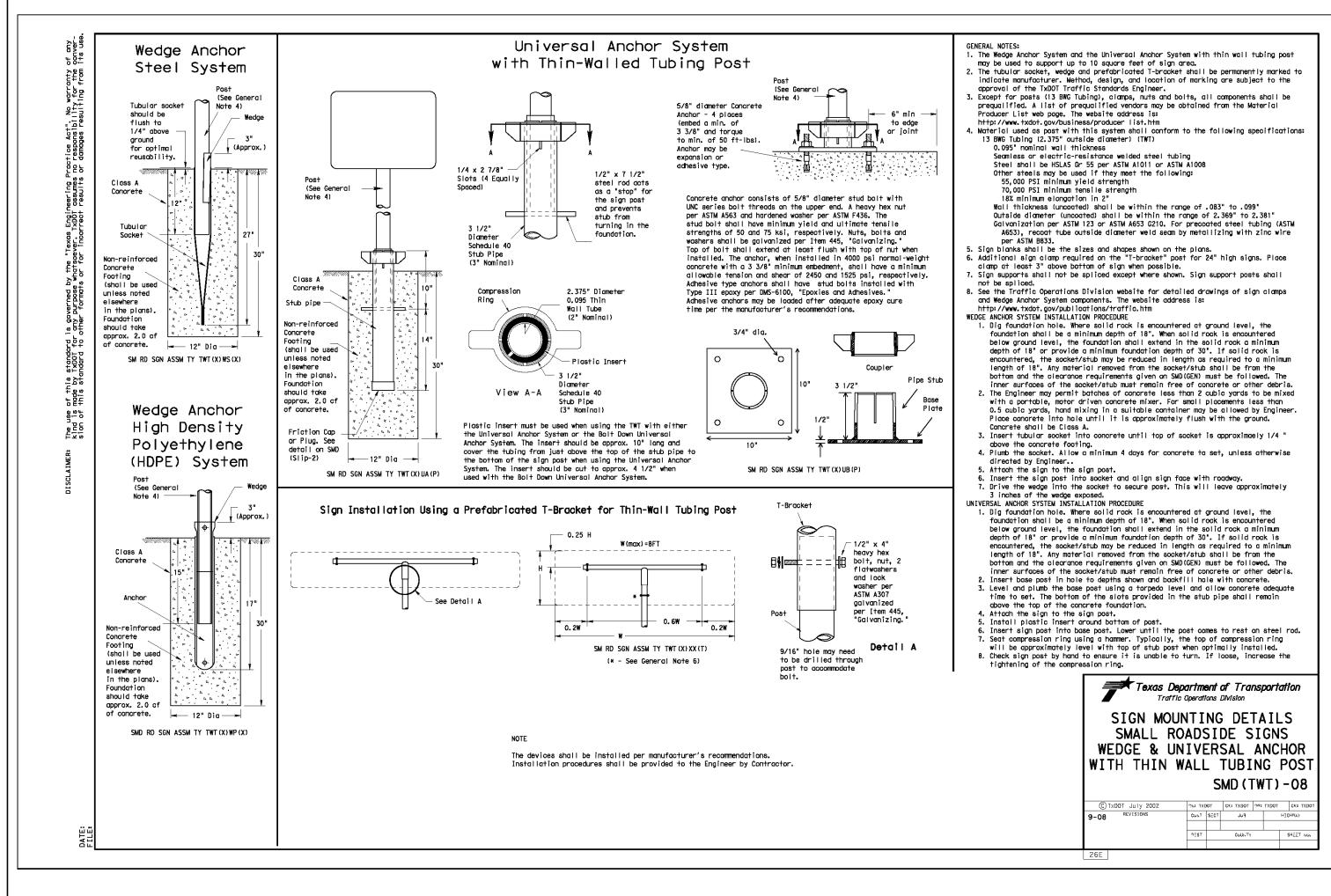
SM RD SGN ASSM TY XXXXX(1)XX(U)

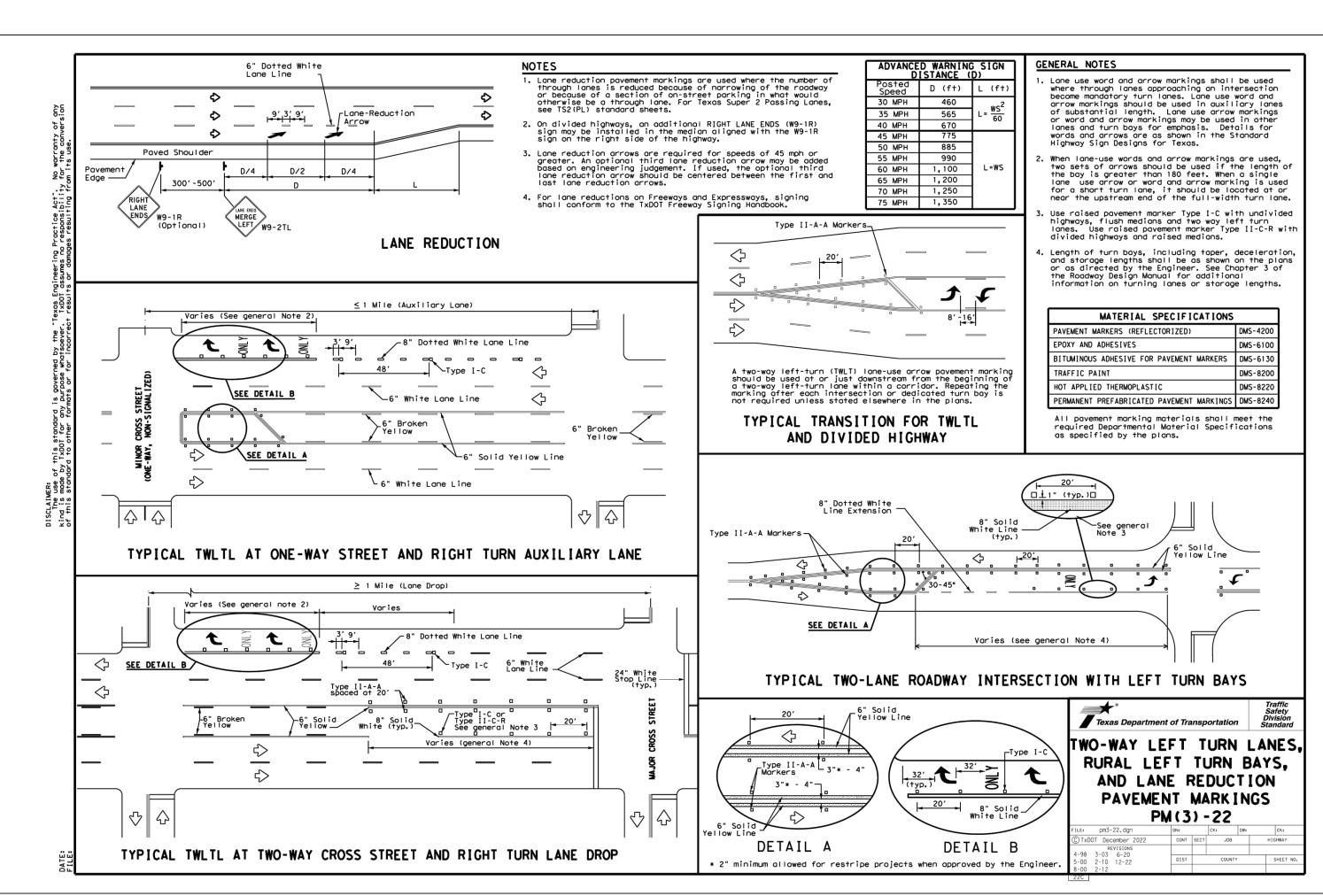
SM RD SGN ASSM TY S80(1)XX(U-1EXT)

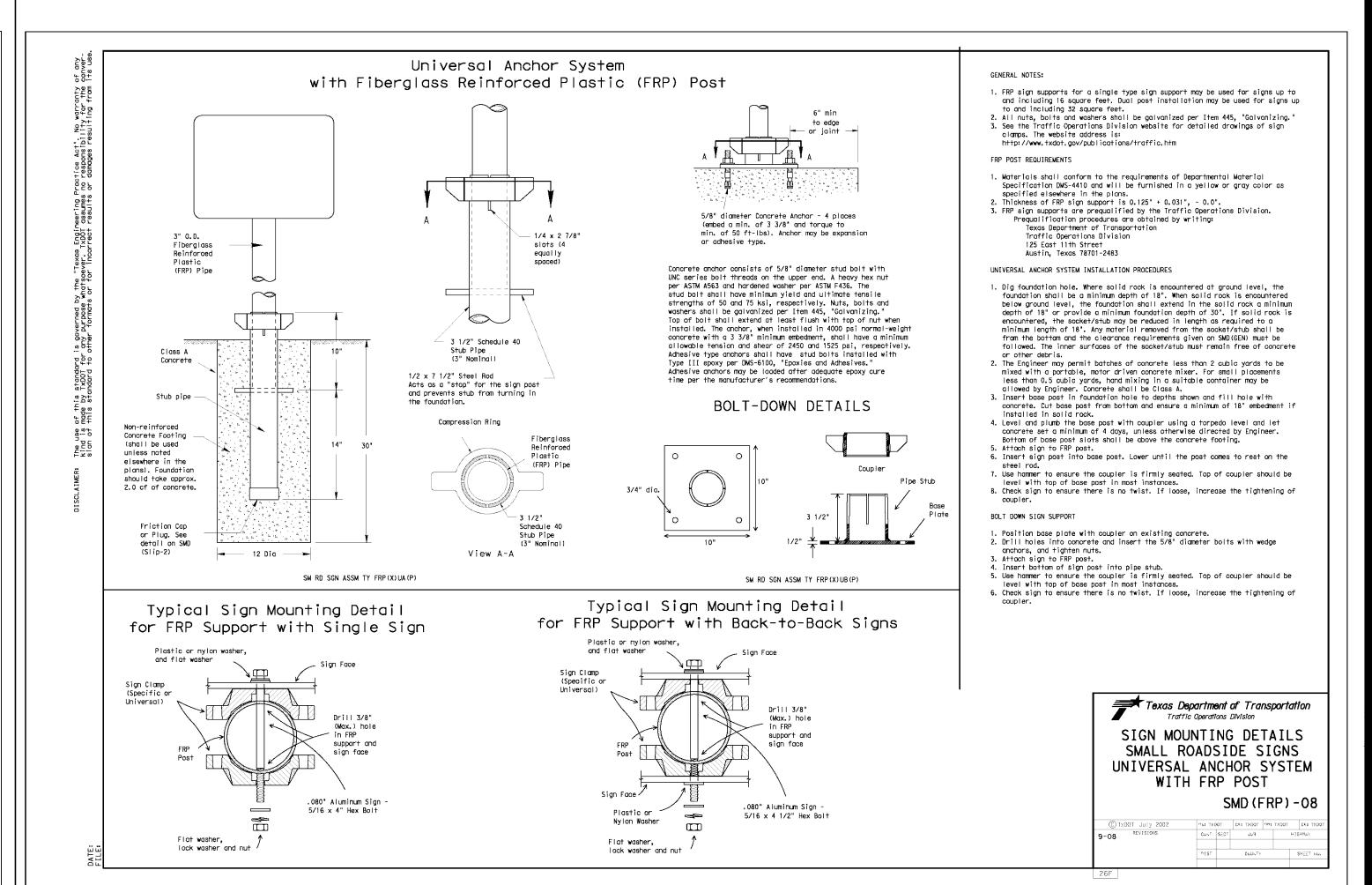
W(max)=8FT

— 0.25 H









Inchor System with thin wall tubing post of sign area.

To-tracket shall be permanently marked to location of marking are subject to the ineer.

Its and bolts, all components shall be a may be obtained from the Material is:

Is:
Inth
I conform to the following specifications:

WT)

Steel tubing
In or ASTM A1008
The following:

In the range of .083" to .099\*
Thin the range of 2.369" to 2.381"

G210. For precoated steel tubing (ASTM eld seam by metallizing with zinc wire nown on the plans.



ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

ERENO SPRINGS-UNIT 1
BEXAR COUNTY, TEXAS

ШΘ

2

IGNAGE SHEE

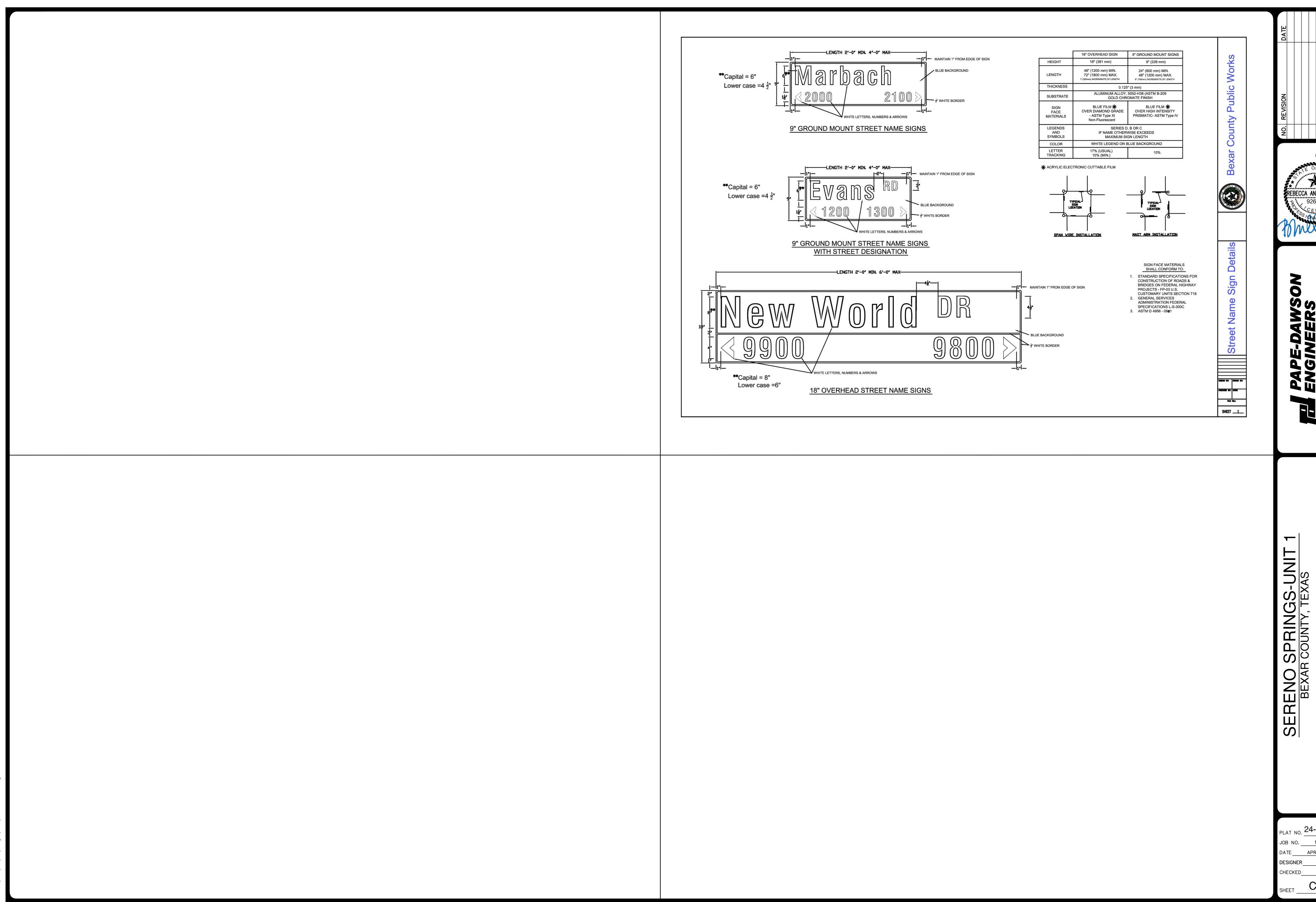
PLAT NO. 24-11800078

JOB NO. 12733-12

DATE APRIL 2024

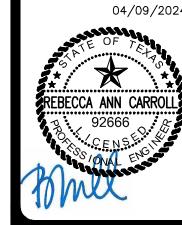
DESIGNER JP

CHECKED DRAWN AR



THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

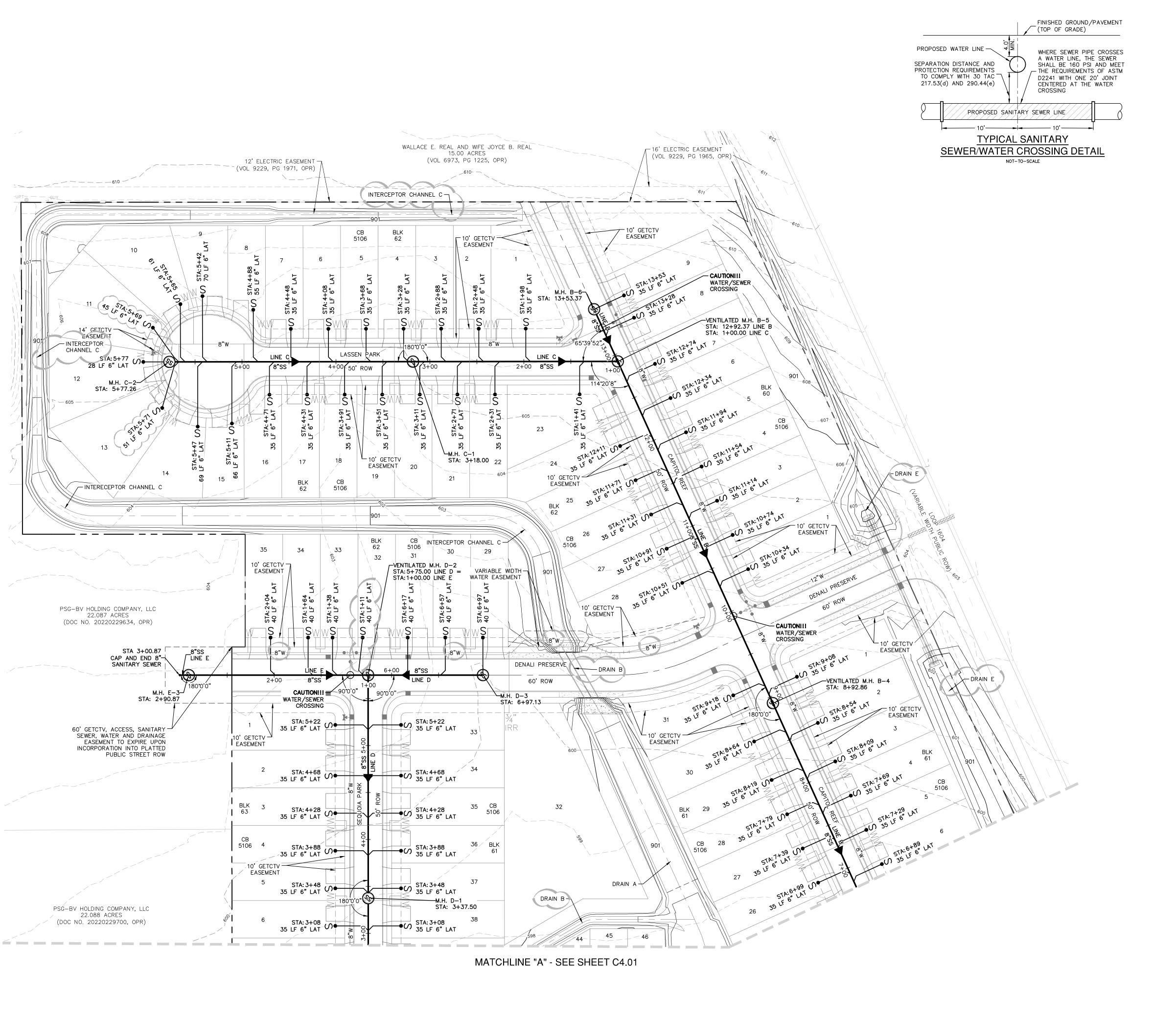
04/09/2024

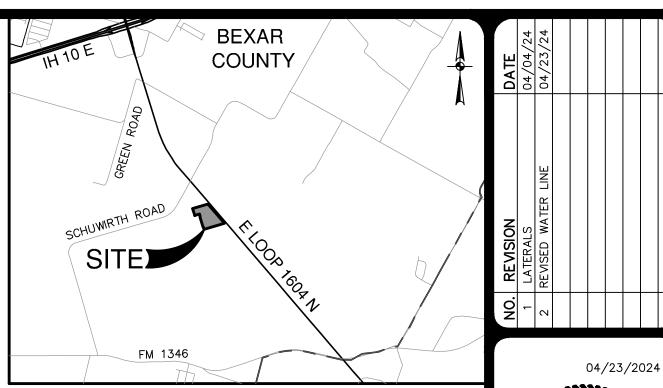


PAPE-DAWSON ENGINEERS

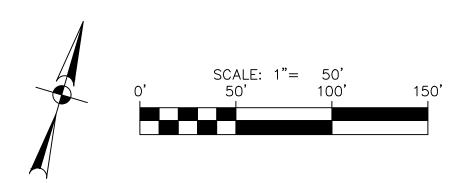
SIGNAGE DETAILS SHEET 3 OF 3

PLAT NO. 24-11800078 JOB NO. 12733-12

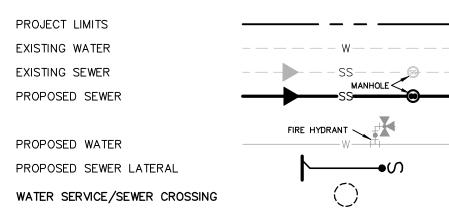




LOCATION MAP



#### SEWER LEGEND



CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1—800—DIG—TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

#### FINISHED FLOOR NOTES:

- 1. THE FINISHED FLOOR ELEVATIONS (FF) REPRESENT THE MINIMUM POSSIBLE FLOOR ELEVATION TO PROVIDE SANITARY SEWER SERVICE TO EACH LOT. ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT ARE TO BE DETERMINED BY THE BUILDER AND SHALL TAKE INTO CONSIDERATION AS—BUILT CONDITIONS FOR FOUND SEWER SERVICES AND ACTUAL LATERAL PLACEMENT. IT IS THE BUILDER'S SOLE RESPONSIBILITY TO DETERMINE ACTUAL FINISHED FLOOR ELEVATIONS FOR EACH LOT PRIOR TO THE START OF HOME FOUNDATION CONSTRUCTION TAKING INTO CONSIDERATION SITE DRAINAGE, STREET ACCESS AND SANITARY SEWER SERVICE ELEVATIONS.
- 2. THE MINIMUM SANITARY SEWER LATERAL GRADES WERE BASED UPON THE MINIMUM FINISHED FLOOR ELEVATIONS FOR THE LOTS LOCATED ON THE DOWNHILL SIDES OF THE PROPOSED ROADWAYS.

#### ROW PERMIT NOTE:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS—OF—WAY.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

PLAT NO. 24-11800078

JOB NO. 12733-12

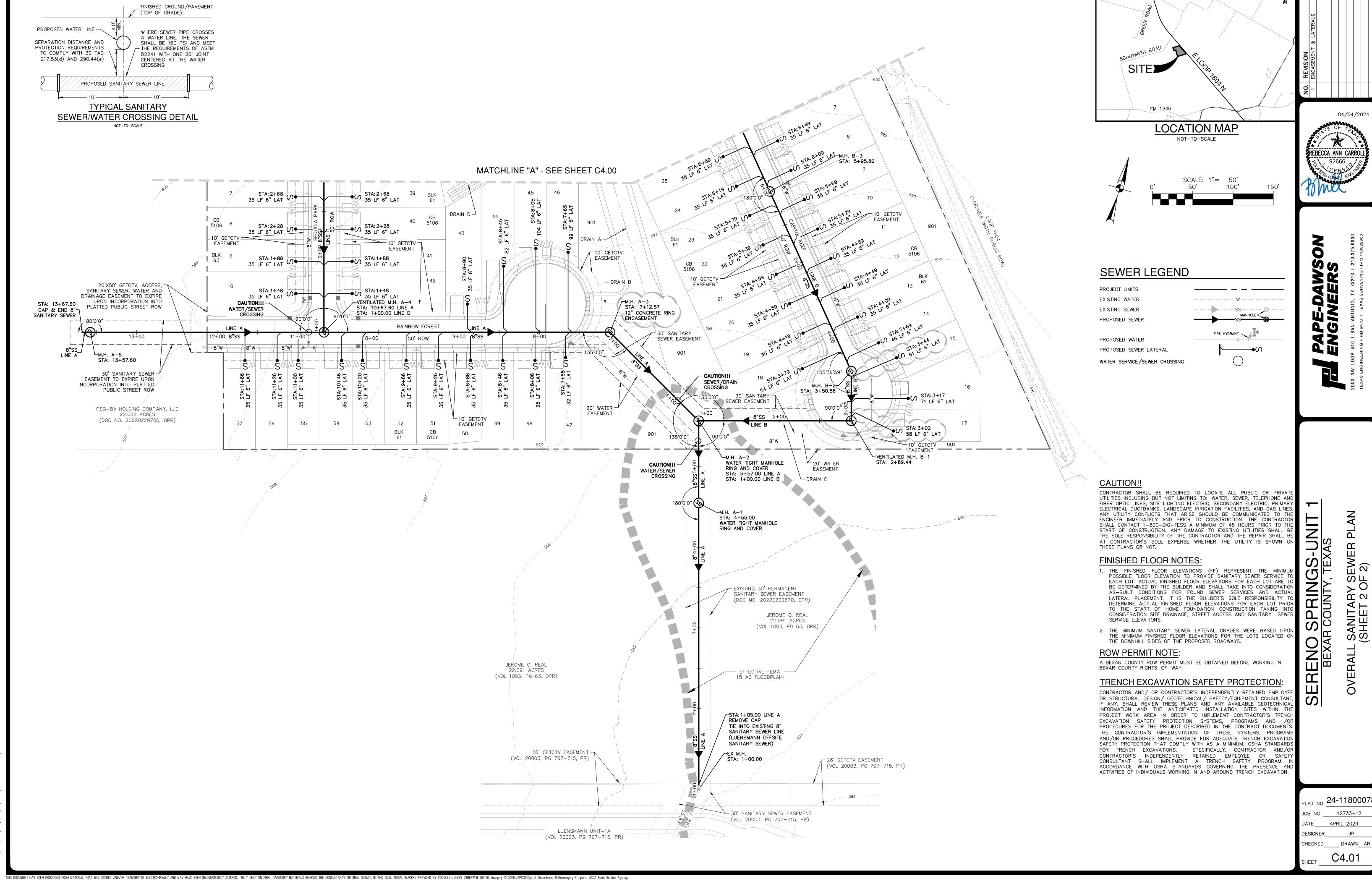
DATE APRIL 2024

DESIGNER JP

CHECKED DRAWN AR

SHEET \_\_\_\_\_ **C4.0**(

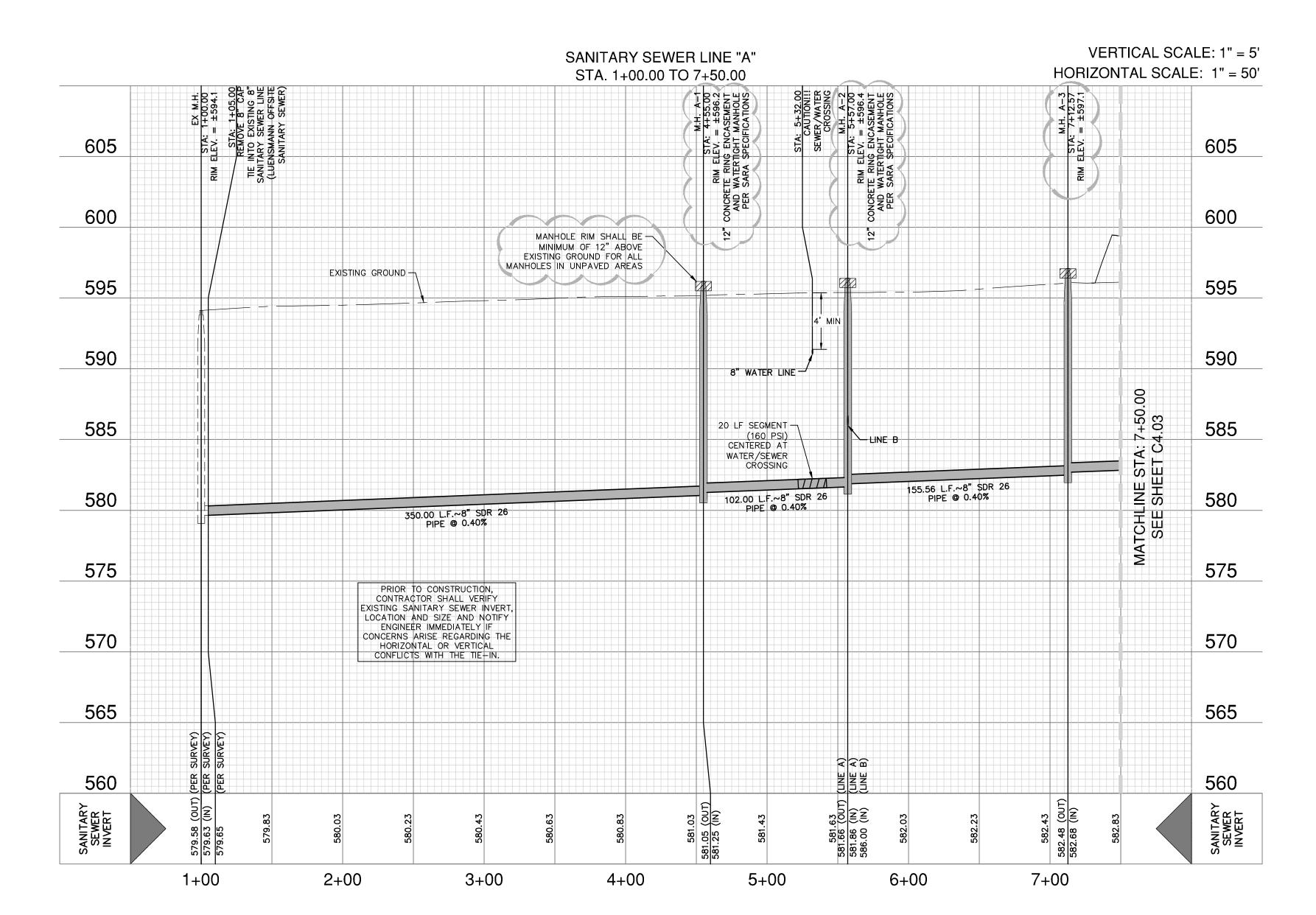
Date: April 23, 2024, 11:11 AM — User ID: jpo

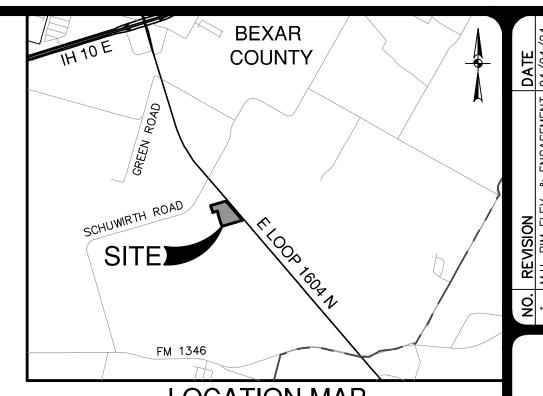


12733-12 APRIL 2024

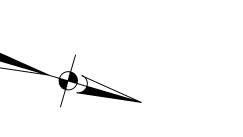
COUNTY

CHECKED DRAWN AR

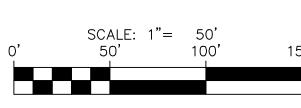




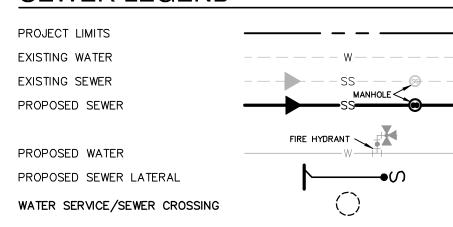


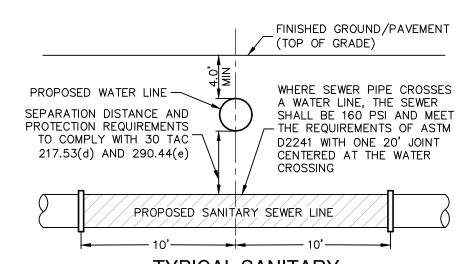


04/04/2024



#### SEWER LEGEND





#### TYPICAL SANITARY SEWER/WATER CROSSING DETAIL NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL B THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN O

#### TRENCH EXCAVATION SAFETY PROTECTION:

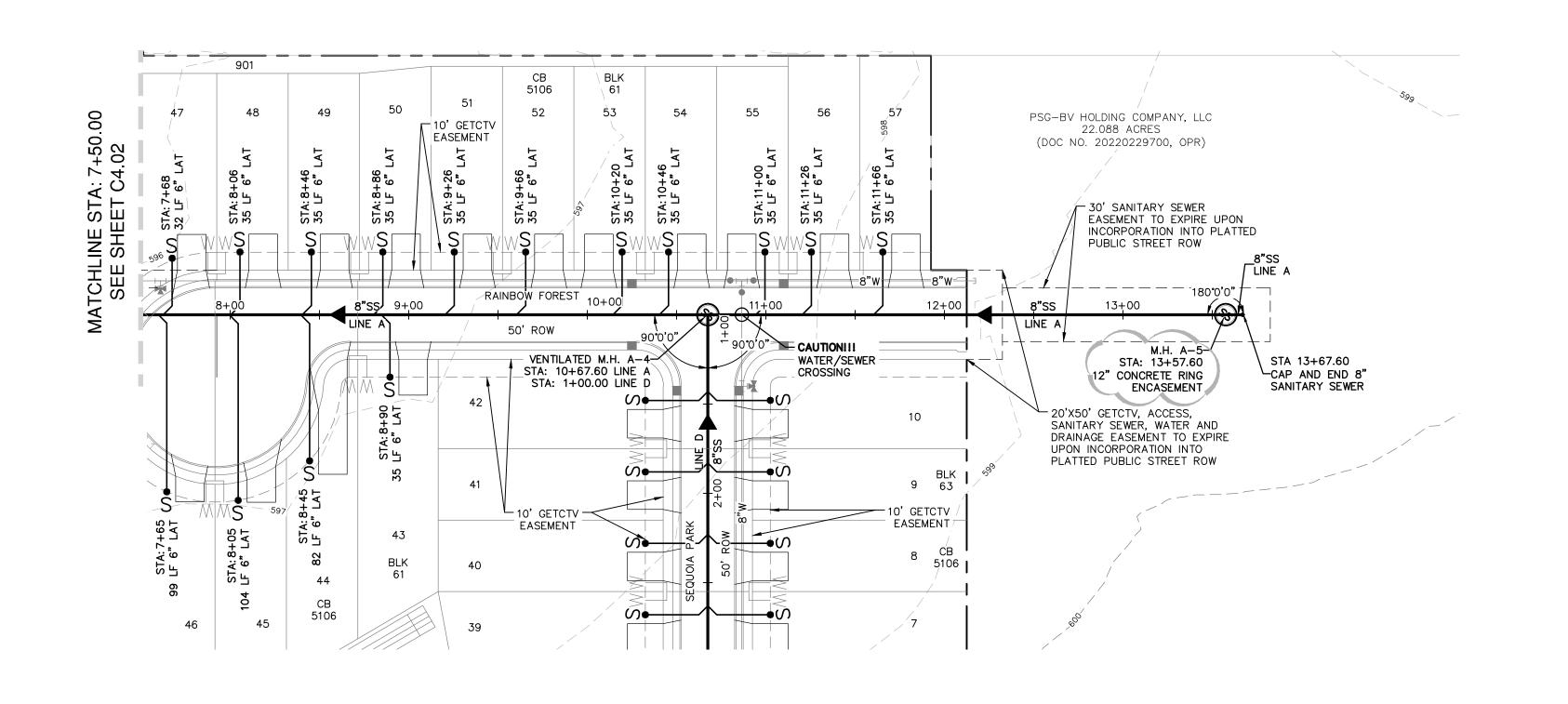
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN TH PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 I ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AN ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

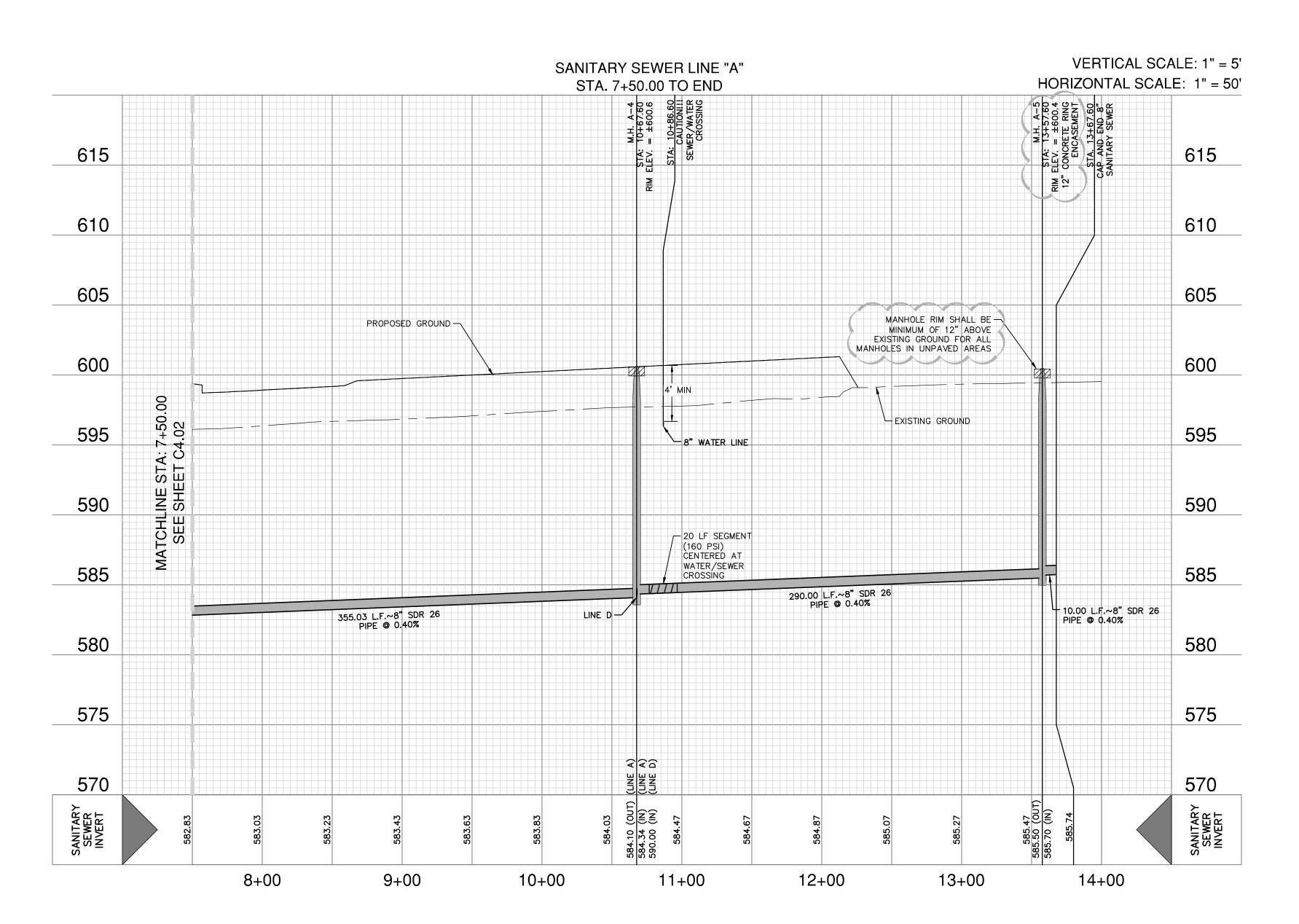
PLAT NO. 24-11800078 JOB NO. 12733-12 APRIL 2024 DESIGNER CHECKED DRAWN AR

Y SEWER LINE /: (STA. 1+00.00 <sup>-</sup>

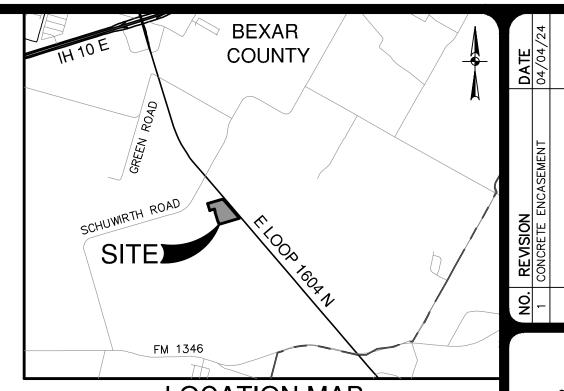
SANITARY PROFILE (

AND

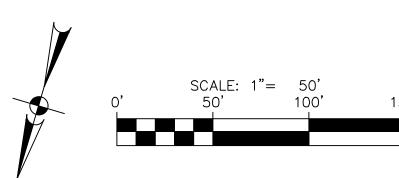




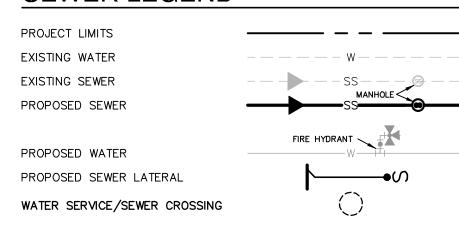
HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

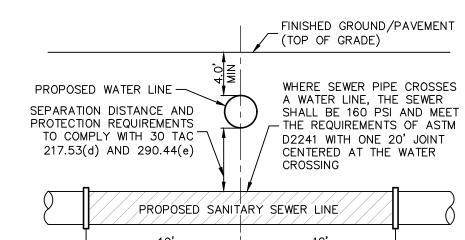






#### SEWER LEGEND





TYPICAL SANITARY

SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SERENO SPRINGS-UNIT

A I

END)

10

SANITARY SEWER LINE A AND PROFILE (STA. 7+50.00

04/04/2024

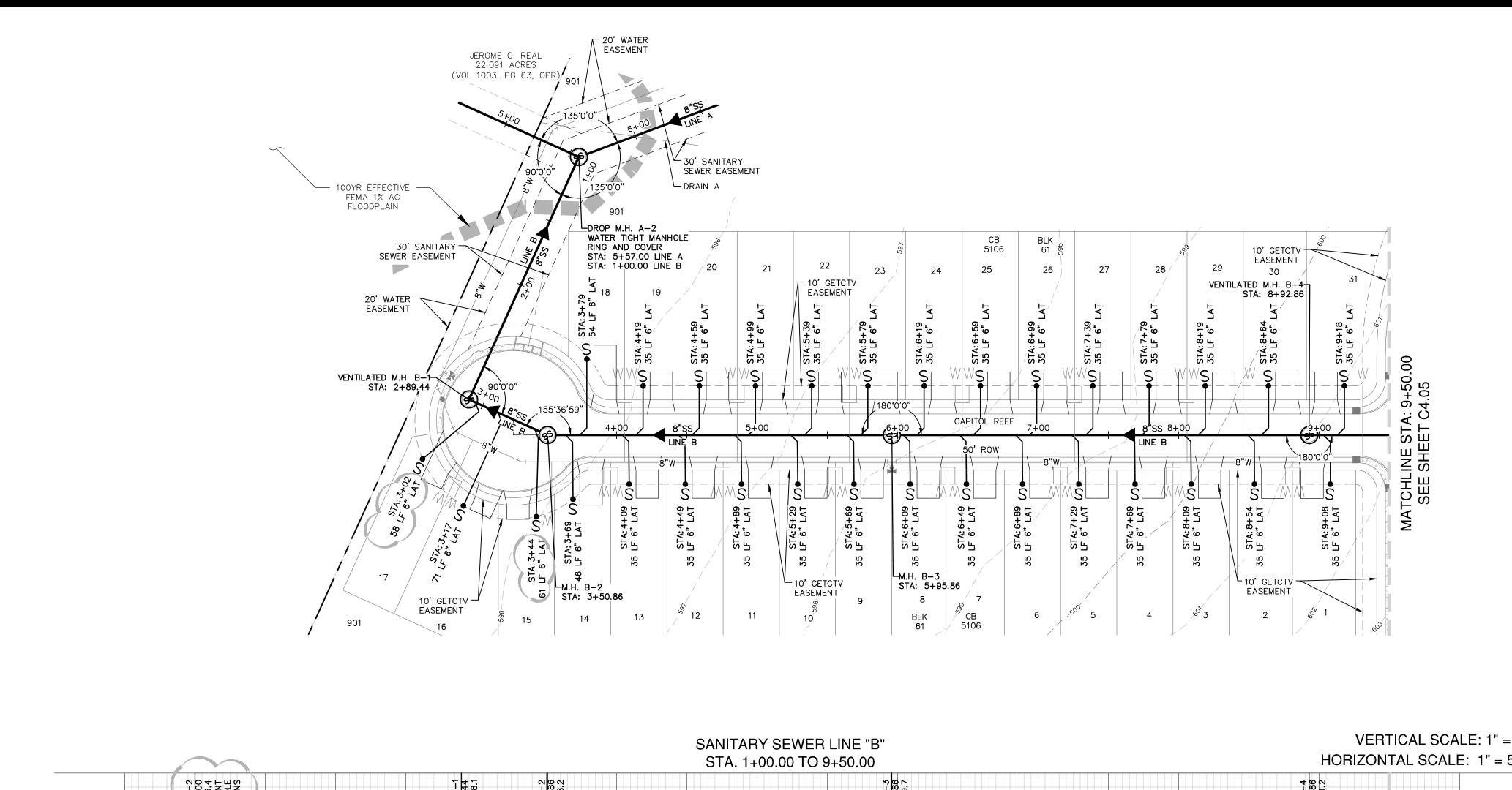
PLAT NO. 24-1180007

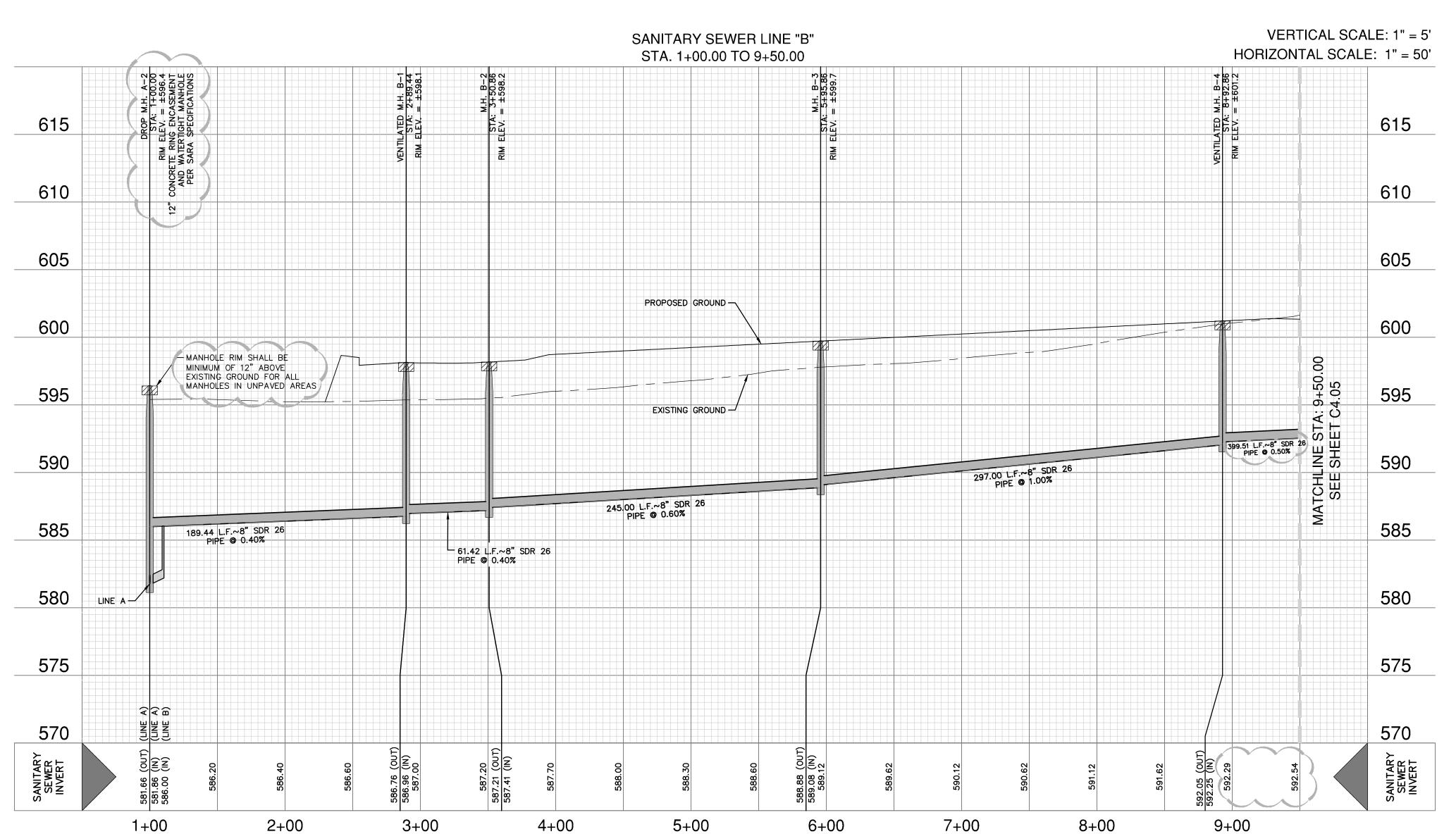
JOB NO. 12733-12

DATE APRIL 2024

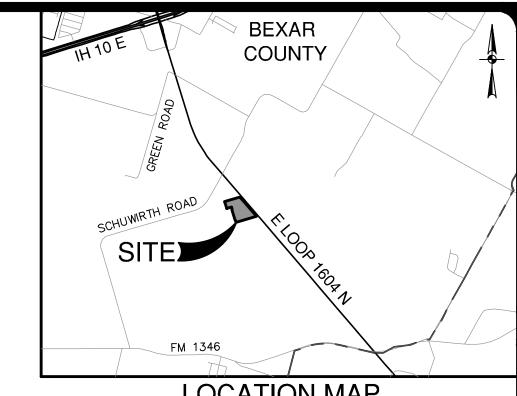
DESIGNER JP

CHECKED DRAWN AR
SHEET C4.03

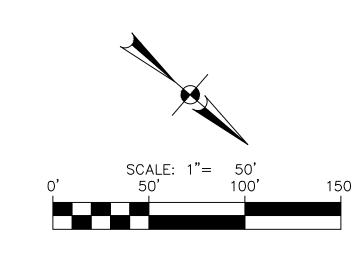




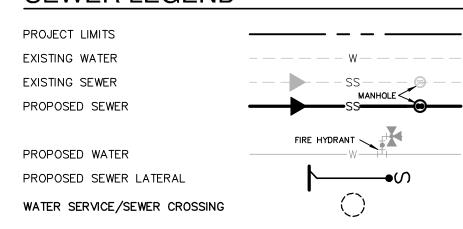
HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.



LOCATION MAP



#### SEWER LEGEND



PROPOSED WATER LINE

WHERE SEWER PIPE CROSSES
A WATER LINE, THE SEWER
SEPARATION DISTANCE AND
PROTECTION REQUIREMENTS
TO COMPLY WITH 30 TAC
217.53(d) AND 290.44(e)

PROPOSED SANITARY SEWER LINE

FINISHED GROUND/PAVEMENT

WHERE SEWER PIPE CROSSES
A WATER LINE, THE SEWER
SHALL BE 160 PSI AND MEET
THE REQUIREMENTS OF ASTM
D2241 WITH ONE 20' JOINT
CENTERED AT THE WATER
CROSSING

TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

#### 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 ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

SERENO SPRINGS-UNIT

0

SANITARY SEWER LINE AND PROFILE (STA: 1+00.00

04/04/2024

PLAT NO. 24-11800078

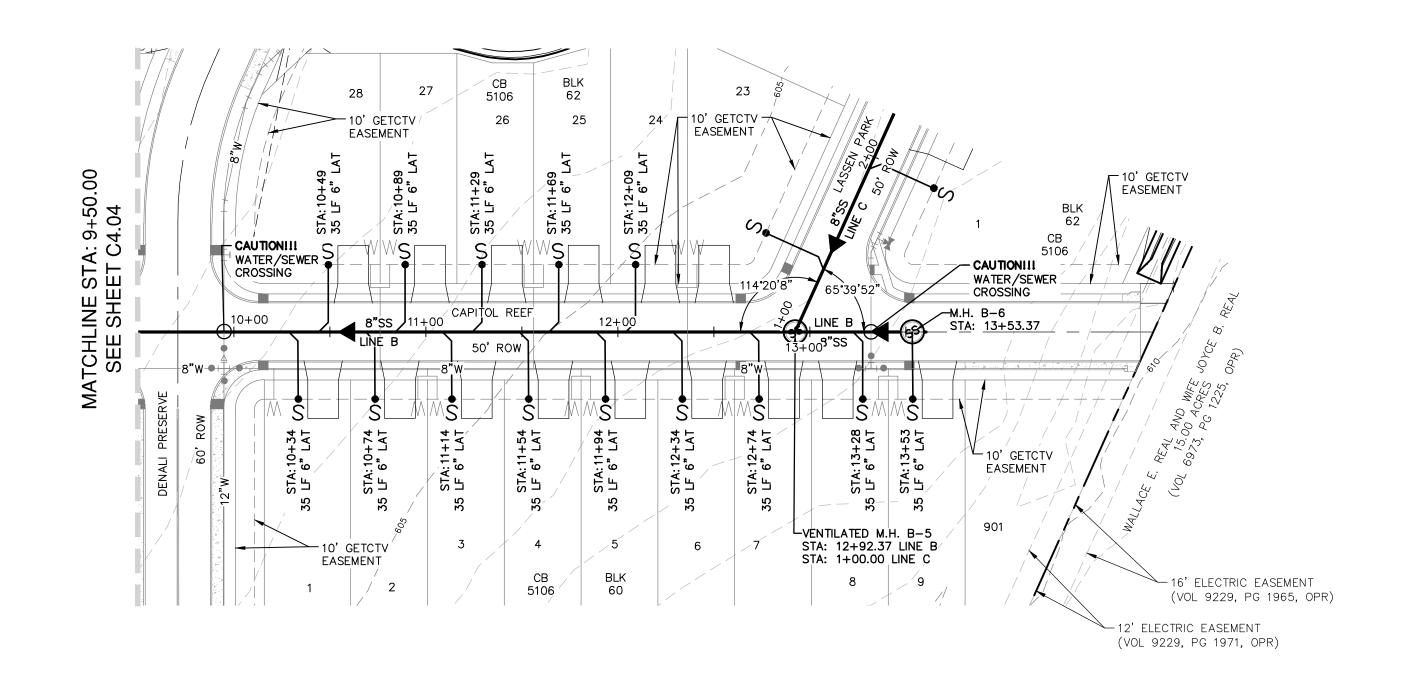
JOB NO. 12733-12

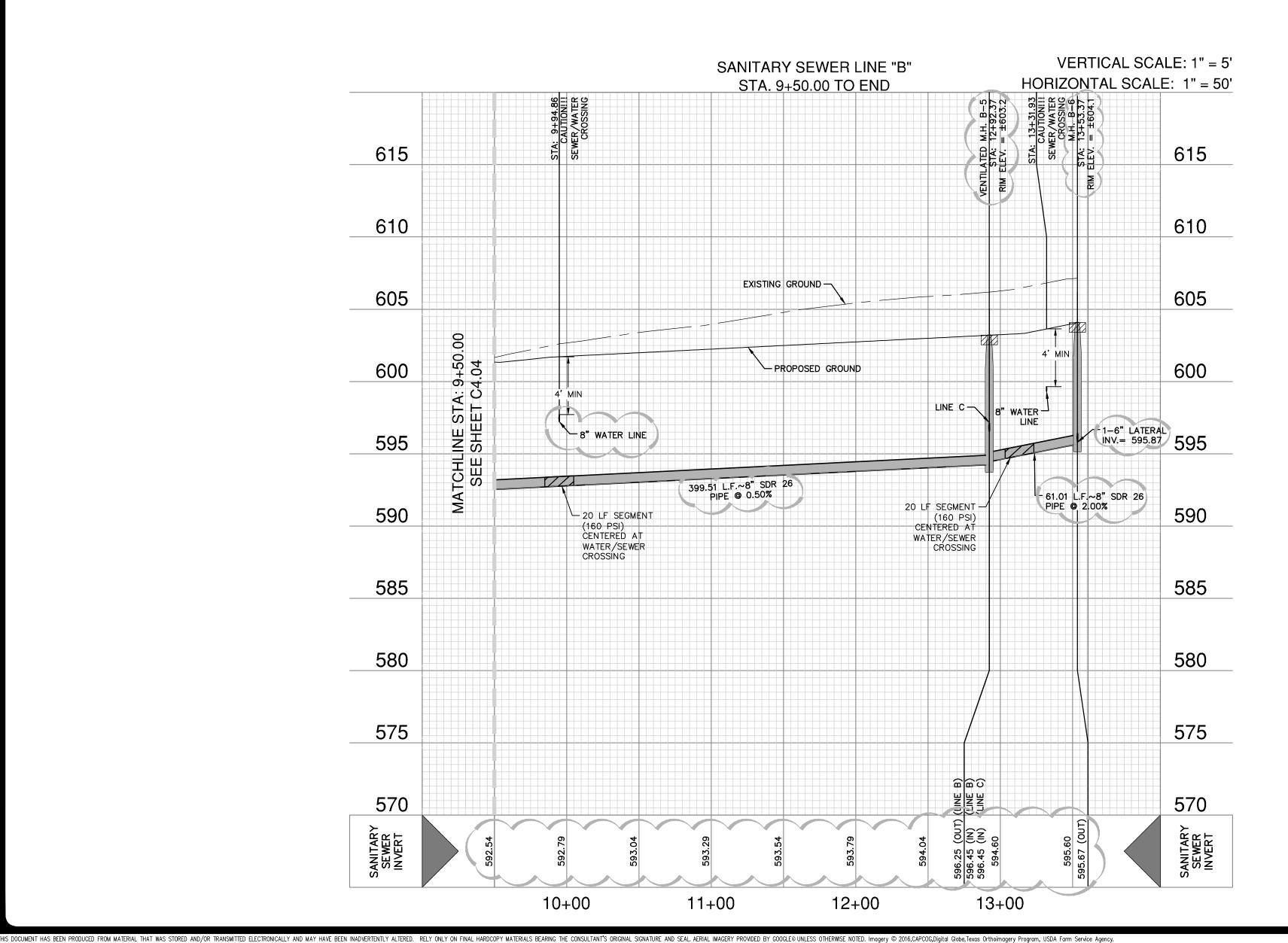
DATE APRIL 2024

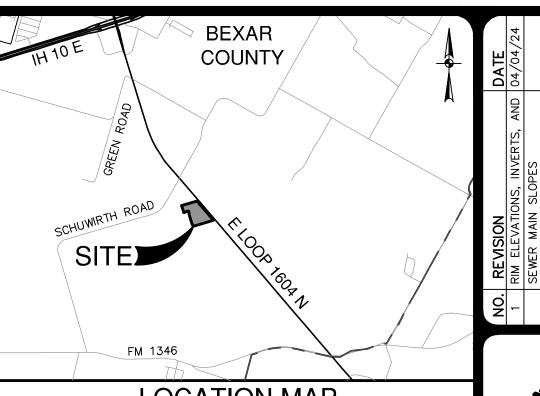
DESIGNER JP

CHECKED DRAWN AR
SHEET C4.04

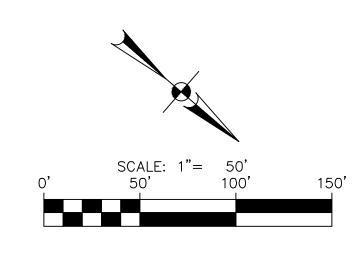
e: February 5, 2024, 2:10 PM — User ID: iar : P:\127\33\12\Design\Civil\SNB1273312.dwg

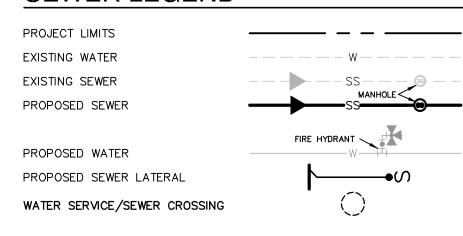


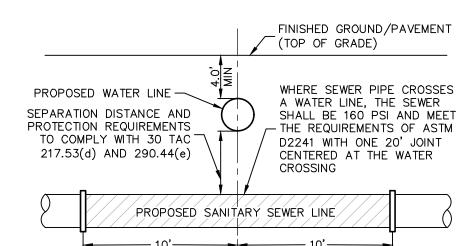












TYPICAL SANITARY SEWER/WATER CROSSING DETAIL NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES.
ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE
ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL B THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL B AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN O THESE PLANS OR NOT.

#### TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN TH PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AN ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

ENO SPRINGS-BEXAR COUNTY, TEXA

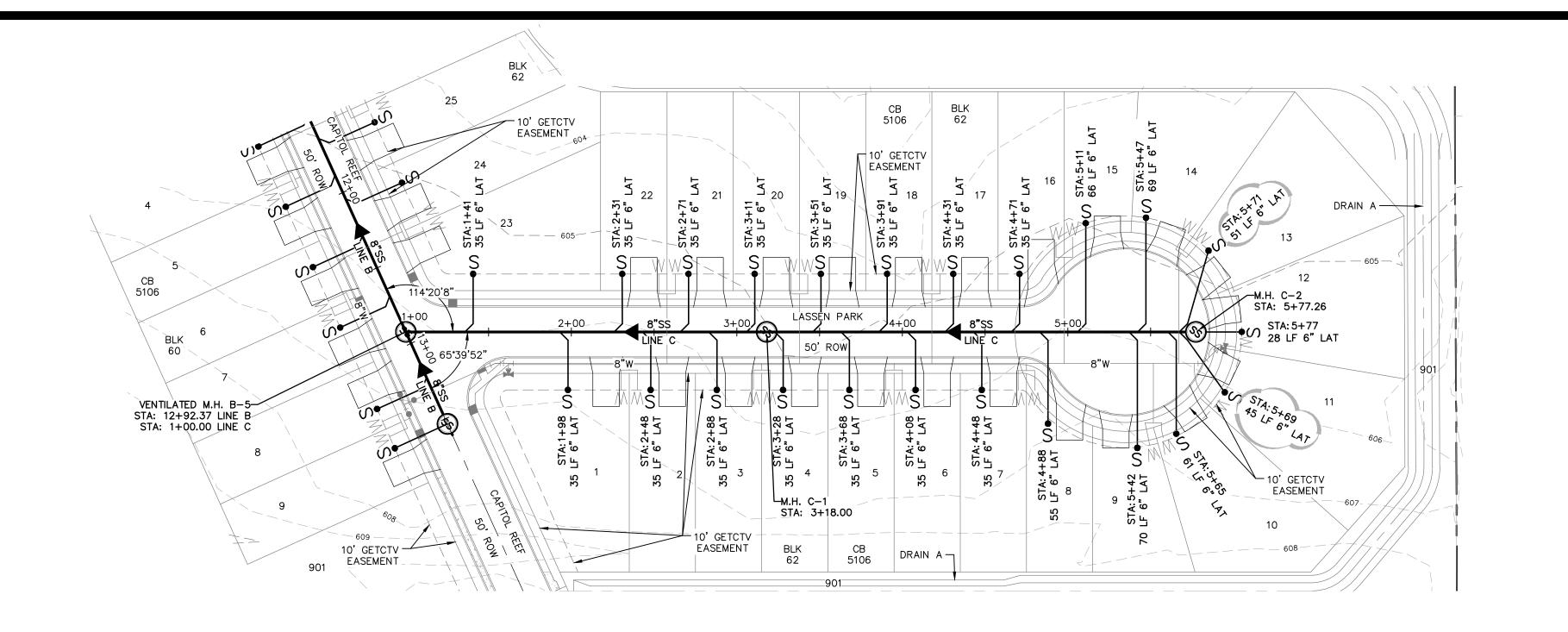
END)

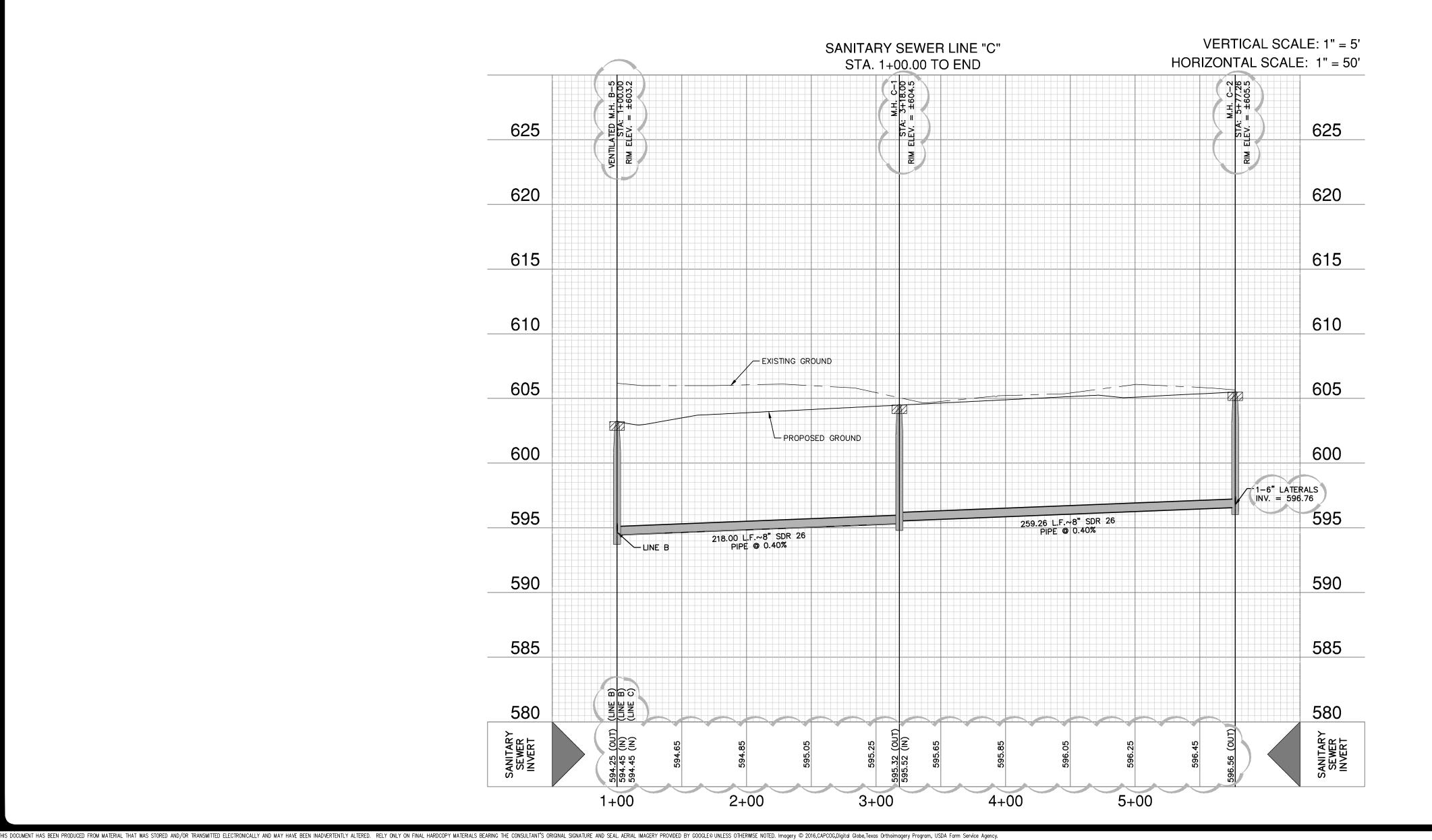
0

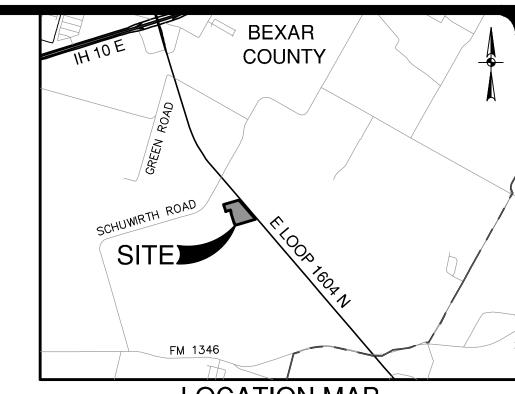
SANITARY SEWER LINE B AND PROFILE (STA: 9+50.00

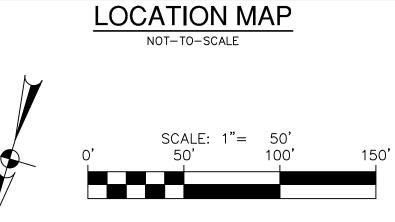
04/23/2024

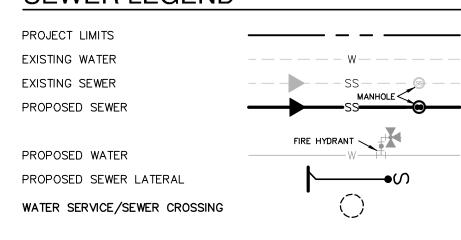
PLAT NO. 24-11800078 JOB NO. 12733-12 APRIL 2024 DESIGNER CHECKED\_\_\_\_\_DRAWN\_AR

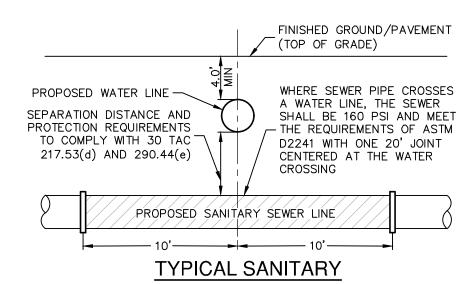












#### SEWER/WATER CROSSING DETAIL NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES.
ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE
ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL B THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

#### TRENCH EXCAVATION SAFETY PROTECTION:

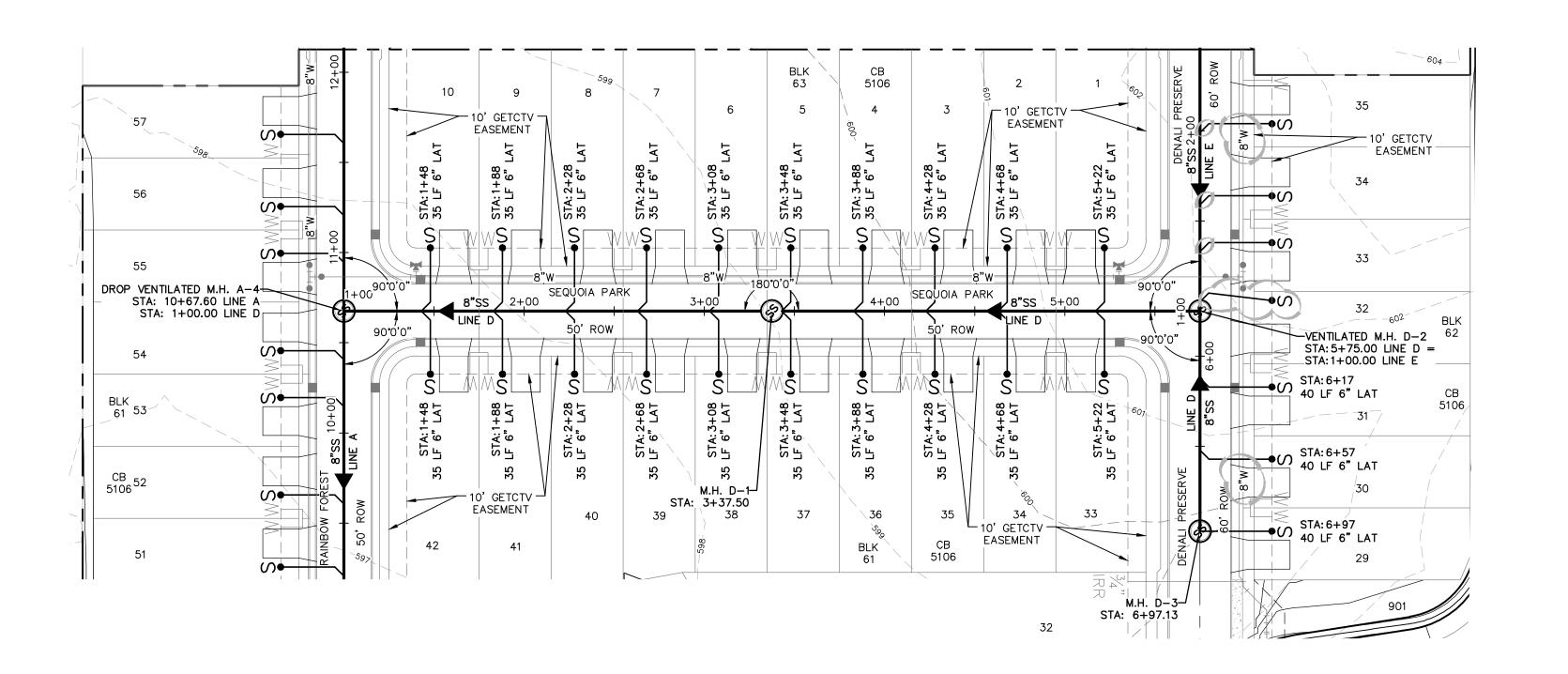
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN TH PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 I ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

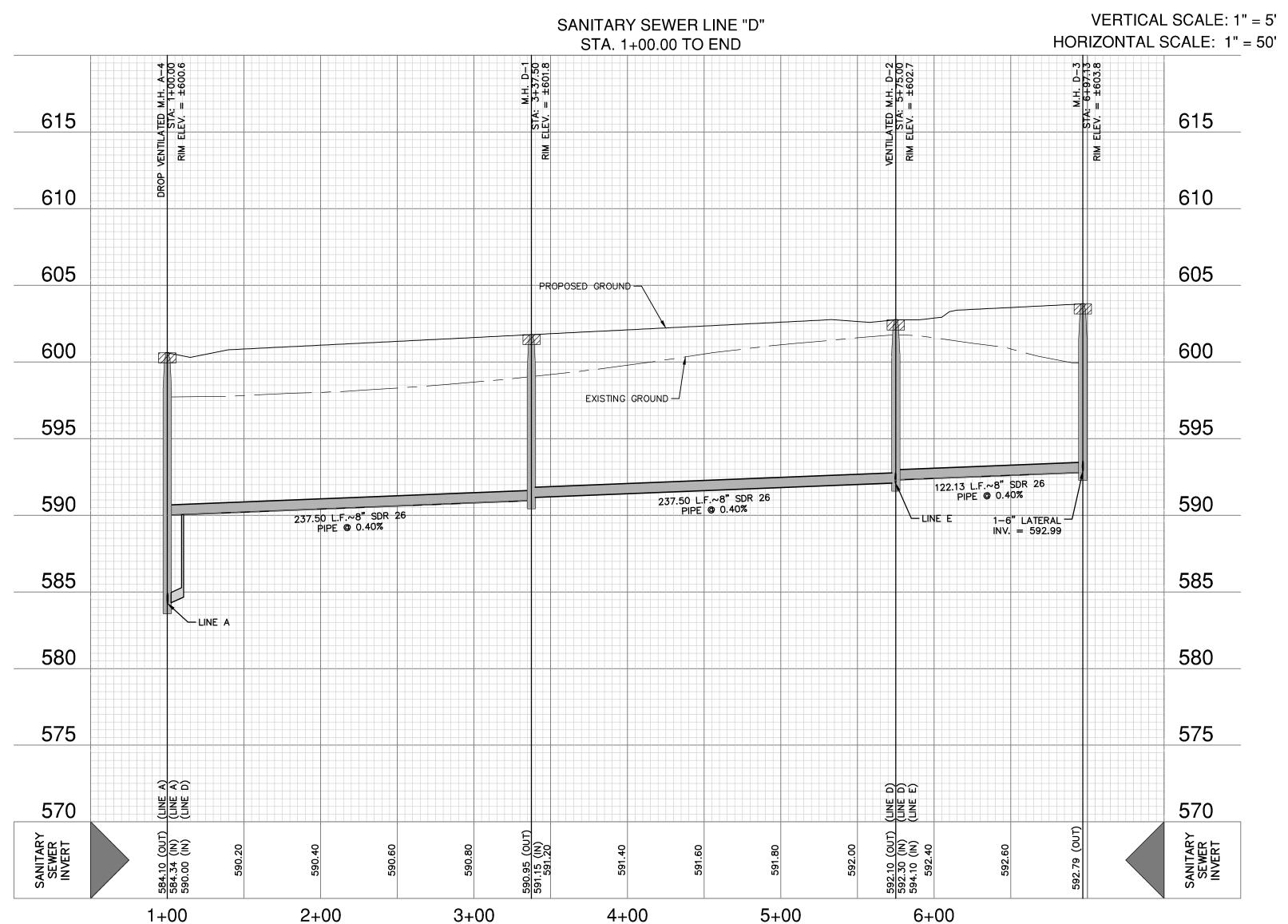
ENO SPRINGS-UNIT BEXAR COUNTY, TEXAS

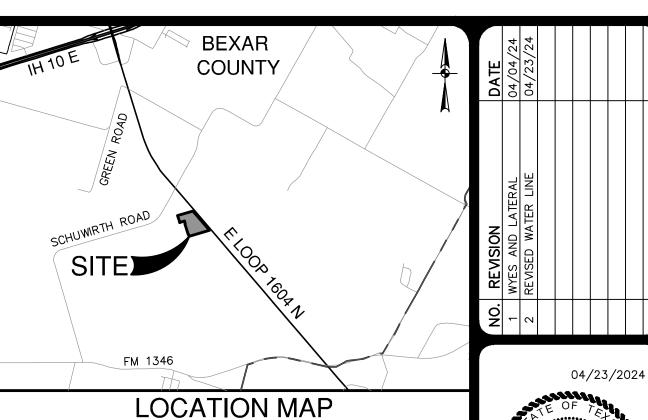
ANITARY SEWER LINE PLAN AND PROFILE

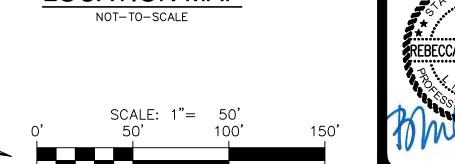
04/04/2024

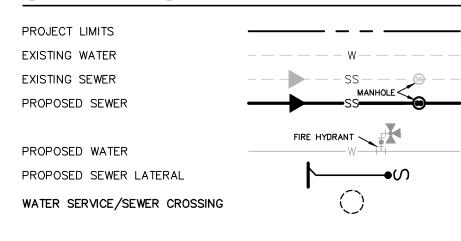
PLAT NO.	24-11800078
JOB NO	12733–12
DATE	APRIL 2024
DESIGNER	JP
CHECKED_	DRAWNAR_
l	

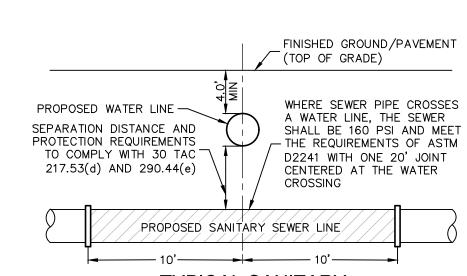












TYPICAL SANITARY SEWER/WATER CROSSING DETAIL NOT-TO-SCALE

#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL B THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL B AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN O

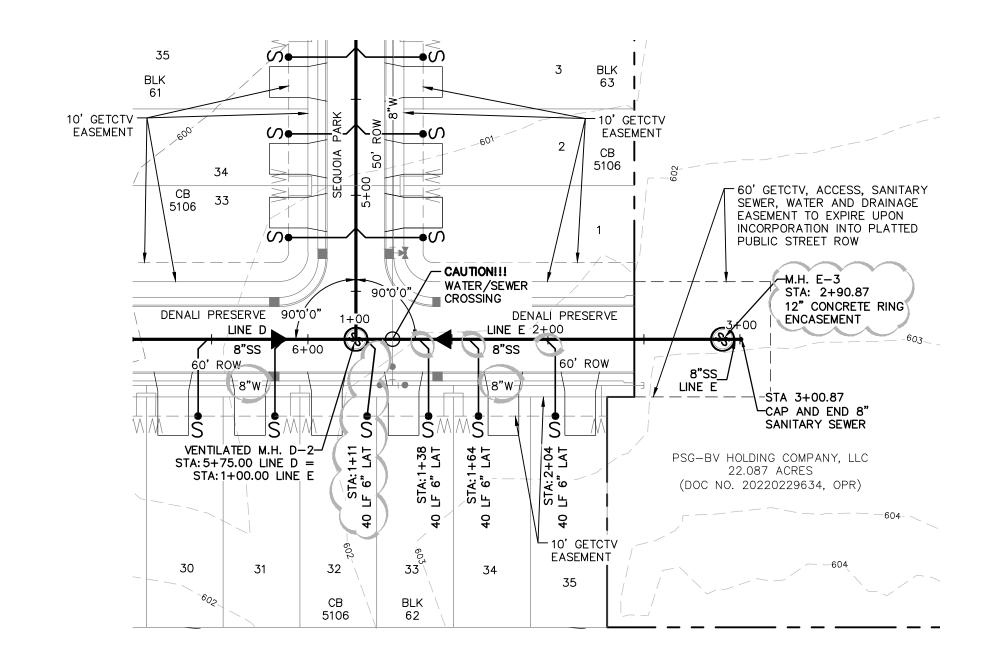
#### TRENCH EXCAVATION SAFETY PROTECTION:

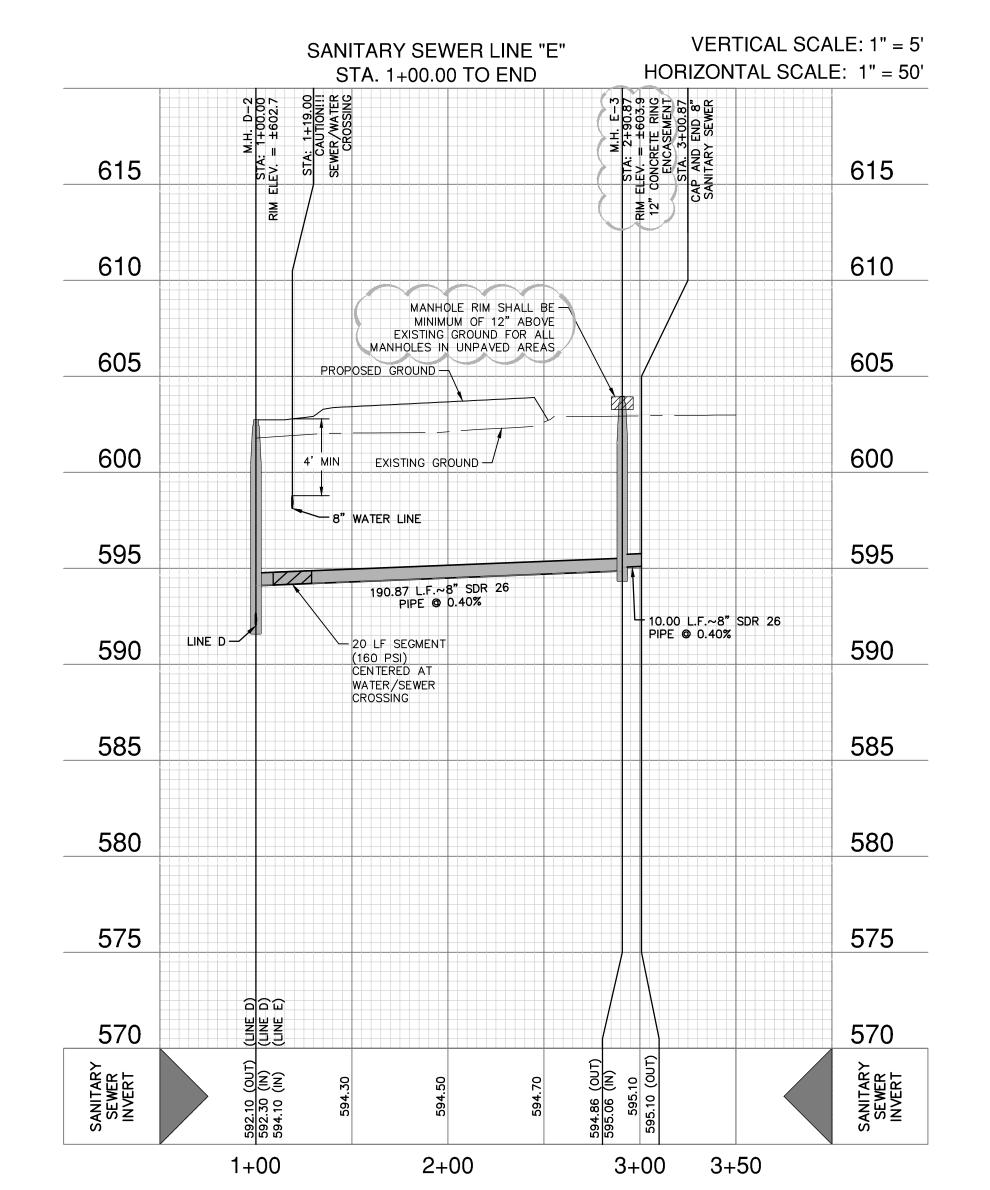
CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN TH PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 I ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

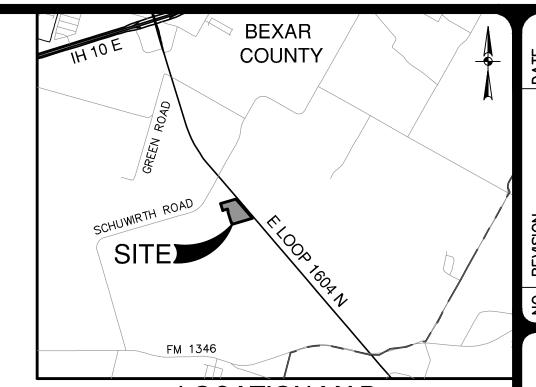
ENO SPRINGS-UNI BEXAR COUNTY, TEXAS

ANITARY SEWER LINE PLAN AND PROFILE

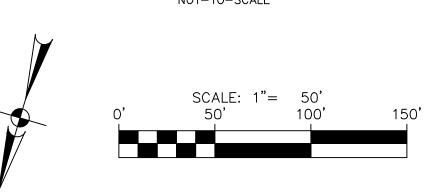
PLAT NO. 24-11800078 JOB NO. 12733-12 APRIL 2024 DESIGNER CHECKED\_\_\_\_ DRAWN AR

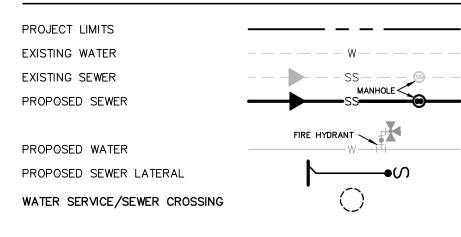


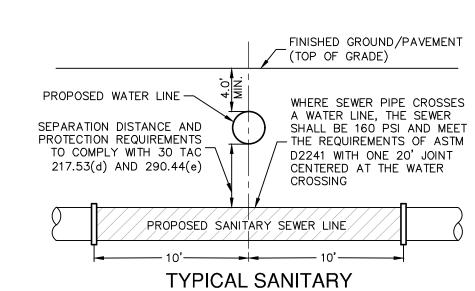












#### CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO TH START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL B THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

SEWER/WATER CROSSING DETAIL NOT-TO-SCALE

#### TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN TH PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AN ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

ENO SPRINGS-UNI BEXAR COUNTY, TEXAS

ANITARY SEWER LINE PLAN AND PROFILE

04/23/2024

PLAT NO. 24-11800078 JOB NO. 12733-12 APRIL 2024 DESIGNER CHECKED\_\_\_\_\_ DRAWN\_ AR

- 2. AT ANY TIME, THESE STANDARD SPECIFICATIONS AND DETAILS MAY BE ALTERED OR SUPERSEDED BY THE GENERAL CONDITIONS, SUPPLEMENTAL CONDITIONS, PLANS OR PROJECT SPECIFICATIONS WITHIN THE CONTRACT DOCUMENT PER DIRECTION FROM THE RIVER AUTHORITY.
- 3. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY RIVER AUTHORITY AND COMPLY WITH THE CONTRACT DOCUMENTS AND THE FOLLOWING AS APPLICABLE:
- 3.1. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) 'DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM", TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30, PART 1, CHAPTER 217.
- 3.2. CURRENT TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT), "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE".
- 3.3. CURRENT RIVER AUTHORITY "STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION".
- 3.4. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL".
- 4. THE CONTRACTOR IS TO NOTIFY AND MAKE ARRANGEMENTS WITH THE RIVER AUTHORITY INSPECTIONS DIVISION AT (210) 302-4200 FORTY EIGHT (48) HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL ALSO PROVIDE PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO ANY EXCAVATION OR CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD BEFORE ANY EXCAVATION OR START OF PROJECT.

- 5. WORK SHALL NOT BE PERFORMED ON SATURDAYS, SUNDAYS, FEDERAL HOLIDAYS, RIVER AUTHORITY HOLIDAYS, BEFORE 7:30 AM, OR AFTER 4:30 PM, UNLESS PRIOR APPROVAL IS GRANTED BY THE RIVER AUTHORITY ENGINEER. REQUEST TO PERFORM WORK DURING THESE TIMES MUST BE EMAILED 48 HOURS IN ADVANCE
- 6. NO EXTRA PAYMENT SHALL BE ALLOWED FOR

UTILITIESDEVELOPMENT@SARIVERAUTHORITY.ORG

- WORK CALLED FOR IN THE PLANS BUT NOT INCLUDED IN THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM WHICH IT RELATES TO.
- WORK COMPLETED BY CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR THE CONSENT OF RIVER AUTHORITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTOR.
- 8. LOCATIONS AND DEPTHS 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 48 HOURS PRIOR TO CONSTRUCTION REGARDLESS OF ILLUSTRATION ON THE PLANS. 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 RIVER AUTHORITY. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING UTILITIES AND REPAIRS WILL BE AT CONTRACTOR'S EXPENSE.

THE FOLLOWING CONTACT INFORMATION IS SUPPLIED FOR VERIFICATION PURPOSES:

EAST CENTRAL SPECIAL UTILITY DISTRICT

210-649-2383

- CITY OF SAN ANTONIO DRAINAGE 210-207-5048
- CITY PUBLIC SERVICE (CPS) 210-973-3500
- CITY OF CONVERSE (PUBLIC WORKS) 210-659-9513
- TIME WARNER 210-352-4872
- VALERO ENERGY CO. 210-349-7555

- RIVER AUTHORITY INSPECTIONS 210-302-4200
- TEXAS 811 800-344-8377
- SAN ANTONIO WATER SYSTEM (SAWS) 210-233-3500
- CERTAIN PORTIONS OF THE PROJECT MAY PARALLEL AND/OR CROSS EXISTING UTILITIES, AND CONTRACTOR IS REQUIRED TO PROTECT THESE UTILITIES. ADDITIONAL SUPPORTIVE SHORING MAY BE REQUIRED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT HIS WORKERS, EXISTING UTILITIES, AND FINISHED WORK THROUGHOUT THE PROJECT. CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGES AND REPAIRS WILL BE AT CONTRACTORS EXPENSE.
- 10. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE LESS THAN 9 FEET (I.E. WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES OR WATER LINES NEXT TO MANHOLES), THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC 217 AND 30 TAC 290.
- DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.161, CPS MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND VALVES THAT ARE IN THE PROJECT AREAS.
- 12. AN APPROPRIATELY SAFE OVERHEAD CLEARANCE MUST BE MAINTAINED BETWEEN ALL OVERHEAD EQUIPMENT AND PERSONNEL. THE CONTRACTOR SHALL NOTIFY CPS AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION IN THE VICINITY OF CPS OVERHEAD LINES. CONTRACTOR SHALL MAINTAIN CPS RECOMMENDED CLEARANCE REQUIREMENTS.
- 13. ALL WORK IN THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) RIGHT-OF-WAY SHALL PROCEED DURING WORKING HOURS AGREED UPON BY RIVER AUTHORITY AND TXDOT INSPECTORS.
- 14. BEFORE THE START OF ANY CONSTRUCTION, THE PROJECT SITE MUST BE VIDEO RECORDED BY THE CONTRACTOR WITH ONE COPY SUBMITTED TO RIVER AUTHORITY. THE PRE-CON SITE VIDEO WILL PROVIDE ACCURATE DOCUMENTATION OF EXISTING CONDITIONS.

- 15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ORIGINAL OR BETTER CONDITION AS A RESULT OF DAMAGE DONE DURING THE PROJECT CONSTRUCTION.
- 16. ANY AND ALL FENCING, INCLUDING ELECTRIC FENCE, WHETHER OR NOT IDENTIFIED ON THE PLANS, MUST BE MAINTAINED AT ALL TIMES. ANY AND ALL DAMAGES DIRECTLY ATTRIBUTED TO THE CONTRACTOR MUST BE REPLACED TO EQUAL OR BETTER CONDITIONS AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY THE RIVER AUTHORITY INSPECTOR. GAPS IN THE FENCING MUST BE PROVIDED AT ALL LOCATIONS WHERE THE SEWER LINE EASEMENT CROSSES FENCING. FENCING REQUIRED TO MAINTAIN LIVESTOCK MUST BE MAINTAINED AT ALL TIMES.
- 17. CONTRACTOR MUST AVOID DAMAGE TO ADJACENT LAND OUTSIDE THE IDENTIFIED CONSTRUCTION LIMITS. ANY CLAIMS DIRECTLY ATTRIBUTED TO THE CONTRACTOR RESULTING FROM HIS STRAYING BEYOND THE CONSTRUCTION LIMITS MUST BE SETTLED BY THE CONTRACTOR TO THE SATISFACTION OF RIVER AUTHORITY AND THE APPROPRIATE LANDOWNER.
- 18. CONTRACTOR MUST MAINTAIN ACCESS FOR PRIVATE INDIVIDUALS AND BUSINESSES AT ALL TIMES. IF NORMAL ACCESS IS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR MUST REPLACE THE ACCESS TO EQUAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE AND AS APPROVED BY RIVER AUTHORITY.
- 19. CONTRACTOR MUST COMPLY WITH TEXAS GOVERNMENT CODE SECTION 2166.303 UNIFORM TRENCH SAFETY CONDITIONS.
- 20. CONTRACTOR SHALL BACKFILL ALL OPEN TRENCHES AT THE END OF THE DAY. CONTRACTOR SHALL NOT INSTALL MORE PIPE THAN CAN BE COVERED. NO OPEN TRENCHES WILL BE PERMITTED OVERNIGHT. ALL ENDS OF OPEN PIPE SHALL BE PLUGGED OVERNIGHT.
- 21. NO TREES SHALL BE REMOVED AS PART OF THIS PROJECT UNLESS OTHERWISE SPECIFIED IN THE PLANS.

- 22. FOR PORTIONS OF THE CONSTRUCTION THAT ARE WITHIN THE LIMITS OF THE 100-YEAR FLOODPLAIN, THE CONTRACTOR IS REQUIRED TO KEEP THE CHANNEL CLEAR OF POTENTIAL OBSTRUCTIONS TO FLOOD FLOWS. POTENTIAL OBSTRUCTIONS INCLUDE HEAVY CONSTRUCTION EQUIPMENT, TEMPORARY ROADS ACROSS CHANNEL, EXCAVATED MATERIAL STOCKPILED DEBRIS, AND ALL OTHER ITEMS DEEMED UNACCEPTABLE BY RIVER AUTHORITY. UNDER THREATENING WEATHER CONDITIONS AND WHERE FLOODING IS LIKELY, OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED BY THE CONTRACTOR AT NO ADDITIONAL COST TO RIVER AUTHORITY. THE CONTRACTOR ASSUMES ALL RISK FOR UNFINISHED WORK. NO EQUIPMENT OR MATERIALS SHALL BE STOCKPILED IN THE 100-YEAR FLOODPLAIN.
- 23. NO WASTE MATERIAL SHALL BE PLACED IN EXISTING DRAINAGE LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS, NATURAL DRAINAGE, OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.
- 24. IF A THREATENED OR ENDANGERED PLANT OR ANIMAL SPECIES AND/OR CULTURAL/ARCHAEOLOGICAL RESOURCES ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL STOP WORK IMMEDIATELY AND NOTIFY THE APPROPRIATE PERSONNEL.

#### **SEWER NOTES:**

- 25. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THE WORK. ALL PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON THE PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:
- 25.1. IDENTIFY THE SOURCE OF THE SSO AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE.

25.2. NOTIFY RIVER AUTHORITY CONSTRUCTION

- INSPECTIONS DIVISION AT 210-302-4216 OR 210-219-0130. 25.3. ATTEMPT TO ELIMINATE THE SOURCE OF THE
- 25.4. CONTAIN SEWAGE FROM THE SSO TO PREVENT CONTAMINATION OF WATERWAYS.
- 25.5. CLEAN UP THE SPILL SITE AND REMOVE CONTAMINATED MATERIALS. 25.6. DISINFECT THE AREA OF THE SPILL WITH A
- MIXTURE OF HTH CHLORINE AND WATER. 25.7. CLEAN THE AFFECTED SEWER LINE AND REMOVE ANY DEBRIS. 25.8. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE
- FOR SPILLAGE PREVENTION AND CONTROL. 25.9. NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES

SET BY THE TCEQ AND RIVER AUTHORITY.

- 26. TIE-INS OR SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE RIVER AUTHORITY INSPECTOR AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN CONTRACTOR SHALL PROVIDE A SEQUENCE OF WORK AS RELATED TO TIE-INS AT NO ADDITIONAL COST TO RIVER AUTHORITY OR THE PROJECT.
- 27. ELEVATIONS OF THE TOP OF MANHOLES AND INVERTS ARE FOR REFERENCE ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR THE TOPS OF MANHOLES AND INVERTS TO MATCH THE FINISHED GRADE OF THE PROJECT IMPROVEMENTS
- 28. THE CONTRACTOR SHALL PROVIDE BYPASS PUMPING OF SEWAGE AROUND EACH SEGMENT OF PIPE TO BE REPLACED. CONTRACTOR SHALL HAVE STANDBY PUMPS AVAILABLE TO BYPASS FLOW IN CASE PRIMARY PUMP FAILS. THE CONTRACTOR SHALL PROVIDE A SEQUENCE OF BYPASS PUMPING FOR REVIEW AND APPROVAL BY RIVER AUTHORITY. THE CONTRACTOR SHALL ALSO PROVIDE A DETAILED SKETCH SHOWING THE LOCATION OF BYPASS PUMPING; SPECIFICATIONS FOR THE PUMPING EQUIPMENT; AND TYPE, SIZE, CAPACITY AND NUMBER OF PUMPS REQUIRED TO HANDLE THE PEAK WET WEATHER FLOW.

- 29. CONTRACTOR WILL MAINTAIN SERVICE TO ALL EXISTING SANITARY SEWERS AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR WILL CLEAN ALL DEBRIS, GRAVEL, DIRT, ETC. OUT OF MANHOLES AND FIX ANY STOPPAGES CAUSED BY DEBRIS DURING CONSTRUCTION AT CONTRACTOR'S EXPENSE. ANY DAMAGE TO EXISTING MANHOLES OR SEWER MAIN WILL BE CORRECTED AT CONTRACTOR'S EXPENSE. CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT DAMAGE TO EXISTING OR NEW RINGS, COVERS, OR CONES FROM EQUIPMENT AND MATERIALS USED OR TAKEN THROUGH THE WORK AREA. IF AN EXISTING OR NEW MANHOLE COVER. RING. OR CONE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE REPLACED AS DIRECTED BY THE RIVER AUTHORITY INSPECTOR. MANHOLES WILL NEED TO BE RESEALED WITH RIVER AUTHORITY APPROVED SEALANT. IF SEAL COATING IS COMPROMISED, CONTRACTOR WILL HAVE MANHOLE RECOATED. CONTRACTOR SHALL RESEAL ALL LEAKS AT CONTRACTOR EXPENSE.
- 30. CONTRACTOR TO ENSURE ALL PLUGS USED TO PLUG SEWER LINES WHILE TESTING THE PROJECT (SUCH AS AIR PLUGS, SCREW TYPE PLUGS, ETC.) ARE LABELED, MARKED OR TAGGED. THE CONTRACTOR SHALL RECORD HOW MANY PLUGS ARE BEING USED, AS WELL AS THE LOCATION AND IDENTIFICATION OF EACH PLUG. CONTRACTOR WILL REPORT TO PROJECT INSPECTOR OF ANY LOST OR UNRESTRAINED PLUGS.
- 31. CONTRACTOR WILL BE HELD LIABLE FOR ANY DAMAGE TO SEWER COLLECTION SYSTEM, STOPPAGES, OVER-FLOWS, OR BACKUPS INTO HOMES CAUSED BY LOST OR RUNAWAY SEWER
- 32. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO WASTEWATER TREATMENT EQUIPMENT CAUSED BY LOST OR RUNAWAY SEWER PLUGS. CONTRACTOR WILL BE HELD LIABLE FOR REPAIRS.
- 33. RIVER AUTHORITY IS NOT RESPONSIBLE FOR ANY ABNORMALITIES ON STUB OUT, INVERT, GRADE OR SLOPE FOR ANY EXISTING MANHOLE TIE-IN OR SERVICE LATERAL

#### MANHOLE NOTES:

- 34. THERE SHALL BE 400 FEET MAXIMUM SPACE BETWEEN MANHOLES TO PROVIDE ACCESS FOR CLEANING. A 16-FOOT WIDE GATE WITH A LOCK SHALL ALSO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR FOR ACCESSING THE SANITARY SEWER LINE IN EASEMENTS.
- 35. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS AT LEAST FOUR (4)

- INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND IN UNPAVED AREAS. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH THE PAVEMENT.
- 36. EVERY THIRD MANHOLE COVER WILL HAVE A 1" HOLE FOR A VENT. VENTING SHALL COMPLY WITH TAC 217.55.
- 37. FACH MANHOLF SHALL HAVE TWO LOCKS INSTALLED TO PREVENT REMOVAL
- 38. ALL MANHOLES SHALL HAVE A 30" OPENING, WATERTIGHT RINGS AND COVERS, WITH THE RIVER AUTHORITY LOGO AND I/I BARRIER.
- 39. NEW MANHOLE PROTECTIVE COATING LINER MUST BE APPLIED TO ALL MANHOLES. APPLICATION PROCEDURES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND PER THE FOLLOWING SPECIFICATIONS:
- 39.1. CONTRACTOR WILL BE RESPONSIBLE FOR MANHOLE SAFETY AND CONFINED SPACE ENTRY SET BY OCCUPATIONAL SAFETY AND HEALTH STANDARDS, 29 CFR 1910.146 APP. E. 39.2. THE CONTRACTOR SHALL NOTIFY THE RIVER
- AUTHORITY UTILITIES INSPECTIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THE START OF ANY FIELD SURFACE PREPARATION WORK FOR MANHOLES. 39.3. ALL NEW MANHOLES AND THE EXISTING
- MANHOLE THAT THE PROPOSED SEWER LINE WILL TIE-IN TO SHALL HAVE THE INTERIOR WALL PREPPED AS PER MANUFACTURER'S RECOMMENDATIONS AND COATED WITH A RIVER AUTHORITY APPROVED PRODUCT.
- 39.4. FOR ALL MANHOLES, APPLY THE CEMENTITIOUS COATING FIRST, FOLLOWED BY THE EPOXY COATING. LAFARGE SEWPERCOAT 200 HR PRODUCT IS THE ONLY APPROVED PRODUCT WHICH COMBINES THE CEMENTITIOUS AND EPOXY COATINGS, UNLESS OTHERWISE LISTED IN THE APPROVED PRODUCT LIST.
- 39.5. CEMENTITIOUS COATING WITH REQUIRED ONE-INCH-THICK APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT SHEET. 39.6. EPOXY COATING: WITH SPECIFIED THICKNESS
- APPLICATION: SEE RIVER AUTHORITY APPROVED PRODUCT SHEET. 39.7. SPRAY WALL POLYURETHANE SYSTEM
- REQUIRED THICKNESS 150 MILS 39.8. CONTRACTOR SHALL SUBMIT WARRANTY LETTER ON MANHOLE PROTECTIVE COATING FOR 10 YEARS AFTER FINAL ACCEPTANCE OF PROTECTIVE COATINGS.
- 40. ANY CONNECTIONS TO EXISTING MANHOLES WILL REQUIRE A CRADLE TO SUPPORT THE INCOMING PIPE. A RUBBER GASKET WILL ALSO BE REQUIRED (CENTERED AT MANHOLE WALL) WITH GROUTING AT INTERIOR AND EXTERIOR PENETRATIONS.

- 41. PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. IF EXISTING SEWER MANHOLE SEAL COATING IS COMPROMISED, ALL OF THE MANHOLE WILL BE RESEALED.
- 42. IF ANY EXISTING MANHOLES CONNECTED WITH THIS PROJECT ARE FOUND TO HAVE INFILTRATION. THE MANHOLES SHALL BE SEALED AND TESTED AT CONTRACTORS EXPENSE.
- 43. MANHOLES WITH STUB-OUTS 8-INCH OR LARGER MUST BE LOCATED AT THE END OF ALL SEWER LINES THAT MAY BE EXTENDED IN THE FUTURE. STUB-OUTS SHALL BE PLUGGED.
- 44. MANHOLE COVER INSERTS ARE SHOWN IN RIVER AUTHORITY APPROVED PRODUCT SHEET. INSERTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING THE NECESSARY FIELD MEASUREMENTS FOR THE MANUFACTURER PRIOR TO PRODUCTION.
- 45. BEFORE BACK FILLING/COMPACTION/CONCRETE ENCASEMENT, ALL MANHOLE JOINT SECTION RISERS, CONE SECTIONS AND GRADE RING SHALL BE WRAPPED WITH INFI-SHIELD GATOR WRAP SEALING SYSTEMS, BUTYL ADHESIVE SEALANT WITH A MINIMUM THICKNESS OF 30 MILS. JOINT SEALANT MUST MEET ASTM C923. MASTIC MUST MEETS ASTM C 990 OR BE APPROVED BY THE RIVER AUTHORITY ENGINEER.
- 46. IF CONCRETE THROAT RINGS ARE TO BE INSTALLED THEY MUST BE USED IN CONJUNCTION WITH A UV STABILIZED POLYETHYLENE LINER AND I/I BARRIER. I/I BARRIER MUST MEET THE FOLLOWING ASTM STANDARDS: ASTM D-790/1505 DENSITY OF POLYETHYLENE MATERIALS, ASTM D-1238 MELT FLOW INDEX, ASTM 638 TENSILE STRENGTH@ YIELD (50 mm/mm), ASTM 790 FLEXURAL MODULUS, ASTM 648 HEAT DEFLECTION TEMPERATURE @IGEPAL, ASTM 1693 EsCR,100% IGEPAL /10% IGEPAL.
- 47. A MINIMUM OF TWO AND A MAXIMUM OF FOUR THROAT RINGS WILL BE USED AT EACH MANHOLE FOR ADJUSTMENT.
- 48. DROP MANHOLES SHALL BE REQUIRED WHEN THE INFLOW ELEVATION IS MORE THAN 24 INCHES ABOVE THE OUTFLOW ELEVATION. DROP SHALL BE LOCATED OUTSIDE THE MANHOLE WITH THE FLOWLINE ELEVATION LOCATED BETWEEN THE CENTER LINE AND TOP OF SEWER LINE.
- 49. THERE SHALL BE CONCRETE ENCASEMENT 18 INCHES AROUND MANHOLE RING, AND 28 INCHES AROUND THE GATOR WRAP SEALING SYSTEM

- CONCRETE ENCASEMENT SHALL BE CIRCULAR, FORMED LEVEL, AND HAVE A SMOOTH OR BROOM FINISH. SEE SPECIFICATIONS.
- 50. SEWER PIPE CONNECTIONS TO PRECAST MANHOLES SHALL BE APPROVED BY RIVER AUTHORITY. REFER TO APPROVED PRODUCT LIST. SEWER PIPE CONNECTIONS TO MONOLITHIC MANHOLES WILL BE AS SHOWN ON THE STANDARD DETAIL SHEET. ANY CHANGES IN THESE METHODS MUST BE APPROVED BY RIVER AUTHORITY ENGINEER.
- 51. ALL PIPE TRENCHING, BEDDING AND BACKFILL SHALL BE DONE IN ACCORDANCE WITH APPROPRIATE ASTM/ANSI SPECIFICATIONS [REFERENCE 30 TAC 217.54; ASTM C-12 (ANSI A106.2) OR ASTM D-2321 (ANSI K65.171)]. ALL COMPACTION SHALL BE TO 98% DENSITY. THERE SHALL BE ONE RANDOM DENSITY TEST PER LIFT FOR EVERY 400 FEET. ALL TESTING SHALL BE IN COMPLIANCE WITH CURRENT TXDOT SPECIFICATIONS.
- 52. A SAND MIGRATION PREVENTION COLLAR SHALL BE INSTALLED WHEN TRANSITIONING FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A 2-FOOT LONG CLASS B CONCRETE ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

ZQ

ШО

CHECKED DRAWN AR

DESIGNER

#### SANITARY SEWER PIPING:

- 54. THE TYPE AND DESCRIPTION OF THE PIPE CONDUIT IS SHOWN ON THE PLANS. REFER TO RIVER AUTHORITY SPECIFICATIONS FOR MATERIALS, STIFFNESS, AND TYPE.
- 55. THE USE OF ASBESTOS CEMENT PIPE WILL BE PROHIBITED UNDER THIS CONTRACT.
- 56. ALL DUCTILE IRON PIPE USED IN THIS SYSTEM SHALL BE CORROSION PROTECTED ON BOTH THE INTERIOR AND EXTERIOR SURFACES. ALL CORROSION PROTECTION SHALL BE APPLIED AND INSTALLED IN SUCH A MANNER AS TO MAINTAIN A CONTINUOUSLY PROTECTED SURFACE AFTER FINAL PIPE INSTALLATION.
- 57. SEE SPECIFICATIONS FOR PVC SEWER PIPE WITH OVER 14 FEET OF COVER.
- 58. ALL SEWER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS.
- 59. SAND MIGRATION PREVENTION COLLAR WHEN CHANGING THE INITIAL BACKFILL FROM SELECT INITIAL BACKFILL TO OPTIONAL SELECT INITIAL BACKFILL. A TWO (2) FOOT LONG CLASS B CONCRETE ENCASEMENT OR FIRMLY COMPACTED. CONSOLIDATED CLAY ENCASEMENT BETWEEN THE TWO SHALL BE PROVIDED FOR THE ENTIRE HEIGHT OF THE INITIAL BACKFILL, EVERY 180 FEET ALONG PIPE AND 20 FEET FROM WALL OF MANHOLE IN EACH DIRECTION.

#### SEWER LINE LOCATION:

- 60. SEWER LINES SHALL BE SIZED AND EXTENDED THROUGH THE LIMITS OF A DEVELOPMENT TO SERVE ADJACENT PROPERTY, WITH MANHOLE AND STUB-OUT AT END OF SEWER LINE.
- 61. IN PHASED CONSTRUCTION OF THOROUGHFARES, THE SEWER LINE SHALL BE EXTENDED THE ENTIRE LENGTH OF PROPOSED THOROUGHFARE.
- 62. ALL SANITARY SEWER LINES SHALL BE LOCATED A MINIMUM OF FIVE (5) FEET FROM ANY TREE.
- 63. SIZES AND GRADES FOR SANITARY SEWER SHALL BE AS REQUIRED BY THE RIVER AUTHORITY ENGINEER AND CONSIDERATION SHALL BE GIVEN AS TO POSSIBLE EXTENSIONS FOR FUTURE DEVELOPMENT. NO SANITARY SEWERS, OTHER THAN LATERALS AND FORCE MAINS, SHALL BE

### LESS THAN EIGHT (8) INCH IN DIAMETER.

## SEWER SERVICE LATERALS

- 64. WHEN SEWER LATERALS ARE TO BE CONNECTED TO EXISTING SEWER MAINS AND NO STUB-OUT HAS BEEN EARLIER PROVIDED, THE CONNECTION MUST BE CONDUCTED PER THE RIVER AUTHORITY STANDARD DETAILS AND APPROVED PRODUCT
- 65. REFER TO THE RIVER AUTHORITY APPROVED PRODUCTS LIST FOR ACCEPTABLE FITTINGS AND CONNECTIONS.
- 66. ALL RESIDENTIAL SERVICE LATERALS SHALL BE SDR 26 PVC WITH RATING OF 115 PSI OR 160 PSI, DETERMINED BY RIVER AUTHORITY SPECIFICATION. LINE SHALL BE EXTENDED TO THE PROPERTY LINE AT  $(6 \times 6)$  CAPPED AND SEALED. ATTACH SEWER BURIAL TAPE TO THE END OF ALL SEWER LATERALS AND BRING UP TO THE GROUND LEVEL FOR MARKER (GREEN). (SEE HOUSE LATERALS DETAILS).
- 67. THE SIZES AND LOCATIONS OF LATERALS SHALL BE DESIGNATED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE RIVER AUTHORITY ENGINEER:
- 68. IN GENERAL, FOR SINGLE FAMILY DWELLING, THE LATERAL SIZE SHALL BE A SIX (6) INCH MINIMUM. HOUSE LATERALS SHALL BE INSTALLED SO THAT CLEANOUTS SHALL HAVE A TWO (2) FOOT SEPARATION FROM DRIVEWAYS, AND SHALL HAVE A NINE (9) FOOT SEPARATION FROM THE WATER SERVICE. THE SERVICE SHALL THEN BE EXTENDED AT A FORTY-FIVE (45) DEGREE ANGLE TO FOUR (4) FEET ABOVE THE FINISHED GRADE AND CAPPED. USE SEWER BURIAL TAPE TO MARK ALL SEWER SERVICE LATERALS.
- 69. MULTIPLE UNITS, APARTMENTS, LOCAL RETAIL AND COMMERCIAL SIX (6) INCH MINIMUM, MANUFACTURING AND INDUSTRIAL - EIGHT (8) INCH MINIMUM, OR LARGER AS REQUIRED.

### TRAPS AND INTERCEPTORS (FOG - TECQ)

- 70. UNIFORM PLUMBING CODE, CITY OF SAN ANTONIO BUILDING INSPECTIONS DEPARTMENT. ALL COMMERCIAL BUILINGS WILL HAVE TRAPS (FOG - TECQ).
- OIL SEPARATORS
- 71. WHICH INCLUDE OIL SEPARATOR— GASOLINE SERVICE STATIONS, CAR WASHES, GARAGES, DRY

CLEANERS, CHEMICAL PLANTS, GAS PLANTS, HIDE PROCESSORS, TESTING LABORATORIES, OR ANY PLACE WHERE OIL OR SOLVENTS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM.THE SIZING CRITERIA FOR OIL SEPARATORS SHALL BE BASED ON THE G.P.M. RATE OF ALL FIXTURES, APPLIANCE OR APPURTENANCE, DRAINING INTO SEWER SYSTEM.

#### SAND INTERCEPTORS

72. SAND INTERCEPTORS SHALL BE INSTALLED IN THE SEWER SYSTEM OF THE FOLLOWING ESTABLISHMENTS, GARAGES, CAR WASHES, SERVICE STATIONS, OR ANY PLACE OF BUSINESS WHERE HEAVY SOLIDS MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM. THE SIZING CRITERIA FOR A SAND INTERCEPTOR SHALL BE BASED ON THE REQUIRED G.P.M. x 12 MINUTE RETENTION TIMES TO OBTAIN THE TANK SIZE IN GALLONS CAPACITY.

#### AUTOMATIC CAR WASHES

73. WITH HIGH PRESSURE SPRAYS AND /OR BRUSHES INSTALL A 50 G.P.M. INTERCEPTOR.MINIMUM, FOR A 4-BAY VEHICLE WASH, THE SIZE OF THE INTERCEPTOR SHALL INCREASE 10 G.P.M. FOR EACH ADDITIONAL WASH BAY OVER 4. SINGLE BAY OR PORTABLE WASHER TYPE VEHICLE WASHES SHALL INSTALL A 20 GPM INTERCEPTOR MINIMUM.

#### NEUTRALIZING DEVICES

74. IN NO CASE SHALL CORROSIVE LIQUIDS, SPENT ACIDS, OR OTHER HARMFUL CHEMICALS WHICH MIGHT DESTROY OR INJURE A DRAIN, SEWER. SOIL, OR WASTE PIPE, OR WHICH MIGHT CREATE NOXIOUS OR TOXIC FUMES, DISCHARGE INTO THE SANITARY SEWER SYSTEM WITHOUT BEING THOROUGHLY NEUTRALIZED BY PASSING THROUGH A PROPERLY CONSTRUCTED AND ACCEPTABLE NEUTRALIZING DEVICE. SUCH DEVICE SHALL BE PROVIDED WITH A SUFFICIENT INTAKE OF NEUTRALIZING MEDIUM, CONSISTING OF LIMESTONE OR MARBLE CHIPS, SO AS TO MAKE ITS CONTENTS NON-INJURIOUS BEFORE BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM.

### LINT TRAPS

75. PUBLIC AND PRIVATE LAUNDROMATS AND COMMERCIAL LAUNDRIES SHALL INSTALL A LINT TRAP EQUIPPED WITH A CONVENIENTLY LOCATED AND EASILY REMOVABLE WIRE BASKET OR OTHER SIMILAR DEVICE THAT WILL PREVENT THE STRINGS, RAGS, BUTTONS, OR OTHER PROHIBITED MATERIAL FROM ENTERING THE SANITARY SEWER SYSTEM. THE BASKET OR OTHER SIMILAR DEVICE SHALL PREVENT PASSAGE TO THE SANITARY SEWER SYSTEM OF SOLIDS GREATER THAN 1/2" INCH IN DIAMETER. THE LINT TRAP SIZE SHALL BE BASED ON THE TOTAL G.P.M. OF ALL FIXTURES, APPLIANCES AND APPURTENANCES DRAINING TO IT IN LIEU OF A LINT TRAP, A LINT INTERCEPTOR MAY BE INSTALLED. THE INTERCEPTOR SHALL BE SIZED AND DESIGNED BY A TEXAS REGISTERED ENGINEER WITH HIS SEAL AND SIGNATURE ON THE DRAWINGS.

## SILVER RECOVERY UNITS

76. SILVER RECOVERY UNITS SHALL BE INSTALLED IN WASTE LINE(S) LEADING FROM X- RAY PROCESSING, PHOTOGRAPHIC PROCESSING, AND OR ANY PROCEDURES IN ESTABLISHMENT SUCH AS MEDICAL LABS, DENTAL LABS, PHOTO FINISHERS, PRINTERS, GRAPHIC ARTS PRODUCTION FACILITIES, HOSPITAL, FACILITIES, VETERINARY HOSPITALS, OR OTHER ESTABLISHMENTS WHERE SILVER MAY BE INTRODUCED INTO THE SANITARY SEWER SYSTEM.

#### SOLIDS INTERCEPTORS

77. SOLIDS INTERCEPTORS SHALL BE INSTALLED WHEN PRE-TREATMENT OF WASTE STREAMS IS NECESSARY TO PREVENT SOLIDS GREATER THAN 1/2" IN DIAMETER. WHICH MAY CAUSE LINE STOPPAGE FROM ENTERING THE SANITARY SEWER SYSTEM.

#### INTERCEPTORS

- 78. INTERCEPTORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE SAN ANTONIO RIVER AUTHORITY CONSISTING OF A MINIMUM OF TWO COMPARTMENTS WITH FITTINGS DESIGNED FOR GREASE RETENTION AND PROVIDE FOR A MINIMUM OF TWELVE (12) MINUTES RETENTION.
- 79. THERE SHALL BE AN ADEQUATE NUMBER OF MANHOLES TO PROVIDE ACCESS FOR CLEANING ALL AREAS OF AN INTERCEPTOR, ONE MANHOLE PER TRAP COMPARTMENT. MANHOLE COVERS SHALL BE GAS TIGHT IN CONSTRUCTION HAVING A MINIMUM OPENING DIMENSION OF 20 INCH INCHES (0.5 M).
- 80. IN AREAS WHERE TRAFFIC MAY EXIST THE INTERCEPTOR SHALL BE DESIGNED TO HAVE ADEQUATE REINFORCEMENT AND COVER.

- 81. ALL INTERCEPTORS SHALL HAVE THE SIZE OF THE INTERCEPTOR (IN GALLON PER MINUTE OR GALLON CAPACITY) PERMANENTLY AFFIXED TO THE DEVICE.
- 82. ALL CONCRETE UTILIZED IN THE CONSTRUCTION OF INTERCEPTOR SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
- 83. AN EFFLUENT SAMPLING WELL ON ALL INTERCEPTORS SHALL BE REQUIRED. THE SAMPLE WELL SHALL HAVE A RISER A MINIMUM OF 6" INCHES IN DIAMETER AND SHALL BE INSTALLED AFTER THE CONFLUENCE OF ALL WASTE STREAMS FROM THE FACILITY AND PRIOR TO DISCHARGING INTO SANITARY SEWER COLLECTION SYSTEM. THE WELL SHALL BE PERPENDICULAR TO THE EFFLUENT LATERAL TO ALLOW VISUAL OBSERVATION OF THE FLOW STREAM AND PROVIDE FOR SAMPLING OF WASTEWATER.

# WATERTIGHT TESTING (24 HOURS):

- 84. ALL INTERCEPTORS SHALL BE WATER TESTED OUT AT JOB SITE AFTER BEING INSTALLED (PLUG BOTH ENDS AND FILL TO TOP OF INTERCEPTOR). INTERCEPTOR SHALL SHOW NO LEAKAGE FROM SECTION SEAMS, PINHOLES, OR OTHER IMPERFECTIONS. ANY LEAKAGE IS CAUSE FOR REJECTION. WHEN LEAKAGE OCCURS, ADDITIONAL WATER TESTING SHALL BE MADE. AFTER CORRECTING MEASURE TEST, REPORTS SHALL SHOW TOTAL NUMBER OF INTERCEPTERS TESTED. WHEN LEAKAGE OCCURS, CORRECTIVE MEASURES TAKEN SHALL BE REPORTED BY THE RIVER AUTHORITY INSPECTORS. RIVER AUTHORITY INSPECTORS SHALL RECORD IN DAILY LOG WITH PROJECT NAME, DATE IT WAS TESTED AND COMPLETED.
- 84.1. MANHOLES WILL BE REQUIRED ON SIX (6) INCH AND LARGER LATERALS WHERE THEY CONNECT TO THE MAIN.
- 84.2. LATERALS WILL NOT BE ATTACHED TO SEWER MAINS THAT ARE DEEPER THAN TWELVE (12)
- 84.3. FITTINGS ARE NOT PERMITTED ON LATERALS BETWEEN THE WYE AND THE PROPERTY
- 84.4. DEEP CUT OR DROP CONNECTIONS SHALL NOT BE PERMITTED. 84.5. A MINIMUM OF ONE (1) LATERAL PER
- BUILDING SHALL BE REQUIRED. ALSO, A MINIMUM OF ONE (1) LATERAL PER RESIDENTIAL LOT SHALL BE REQUIRED. DUPLEXES SHALL HAVE TWO (2) LATERALS THAT SHALL BE INDEPENDENTLY ATTACHED TO THE MAIN.
- 84.6. ALL SEWER LATERAL CROSSING WATER MAINS OR WATER SERVICE LINES SHALL CONFORM TO THE SAME REQUIREMENTS OF TAC CHAPTER 217.53, LATEST REVISION, SDR 26 150 PSI, OR DUCT IRON PIPE, CONCRETE ENCASMENT.
- 85. WHERE REQUIRED CONCRETE ENCASEMENT SHALL BE PLACED FOR FULL WIDTH OF THE TRENCH TO A PLAIN SIX (6) INCHES ABOVE THE TOP OF THE PIPE WITH PAY UNITS AS SHOWN ON THE STANDARD DETAIL SHEET.
- 86. A MINIMUM OF FOUR (4) FEET OF COVER IS TO BE MAINTAINED OVER THE SANITARY SEWER MAIN AND LATERALS AT GRADE, OTHERWISE CONCRETE

# ENCASEMENT IS REQUIRED.

87. WHERE POROUS MATERIAL INCLUDING "SUBGRADE FILLER" IS USED FOR BACKFLL IN THE BEDDING AND INITIAL BACKFILL ZONES, REFER TO SPECIFICATIONS SEC. 33-05-05 FOR SPACING OF SEEPAGE RETAINERS. RETAINERS SHALL CONSIST OF CLASS "D" CONCRETE ENCASEMENT OR FIRMLY COMPACTED. CONSOLIDATED CLAY ENCASEMENT. THE RETAINERS SHALL EXTEND FROM THE BOTTOM OF THE TRENCH TO THE TOP OF THE GRANULAR MATERIAL FOR THE ENTIRE TRENCH WIDTH. ENCASEMENT SHALL BE 24 INCHES LONG. NO EXTRA PAY ITEM.

# BLASTING

88. BLASTING SHALL NOT BE ACCEPTABLE.

- 89. TESTING SHALL NOT BE CONDUCTED UNTIL ALL OTHER UTILITIES WITHIN THE VICINITY OF THE SANTIARY SEWER ARE FULLY INSTALLED.
- THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
- A. PULL MANDREL AFTER 30 DAYS OF INSTALLATION B. PERFORM AIR TEST
- C. PULL WIPER (AFTER STREET HAS BEEN
- ASPHALTED), AS APPLICABLE D. VACUUM TEST ALL MANHOLES WITHIN THE PROJECT
- E. CCTV- ALL OF THE NEW LINES AND PAN/TILT ALL SERVICE LATERALS TO 6"X6" CLEAN OUT. CONTRACTOR SHALL FLOOD ALL LINES BEFORE
- AT END OF PROJECT, CONTRACTOR SHALL SUBMIT FIELD COPY PLAN AND PROFILES SHOWING AS-BUILT WORK, CCTV DVD, AND COMPACTION DENSITY REPORTS FOR MAIN SEWER LINES AND ALL SERVICE LATERALS. CONTRACTOR SHALL ALSO ISSUE WARRANTY LETTERS FOR MATERIAL AND WORKMANSHIP FOR 12 MONTHS AFTER FINAL ACCEPTANCE.
- 90. ALL SEWER LINES MUST BE TESTED IN ACCORDANCE WITH THE FOLLOWING:

- A. 217.57; DEFLECTION TEST FOR FLEXIBLE AND SEMI-RIGID PIPE CONDUCTED AFTER FINAL BACKFILL HAS BEEN IN PLACED AT LEAST 30
- B. 217.57, OR RIVER AUTHORITY SPECIFICATIONS INFILTRATION AND OR EXFILTRATION AND OR LOW-PRESSURE AIR TEST.
- C. 217.58 OR RIVER AUTHORITY SPECIFICATIONS: ALL MANHOLES AND WET WELLS MUST BE TESTED SEPARATELY AND INDEPENDENTLY OF THE COLLECTION LINES.
- D. IN THE EVENT THAT TESTING REQUIREMENTS CONFLICT, THE LATEST TCEQ DESIGN CRITERIA SHALL BE USED.
- 91. SEWER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
- 92. SANITARY SEWER CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WHICH REQUIRE PENETRATION INTO THE MANHOLE WILL BE CORE DRILLED. ANY DAMAGE TO EXISTING MANHOLE WILL BE REPLACED AT CONTRACTOR'S EXPENSE AND WILL REQUIRE SUCCESSFUL TESTING OF THE EXISTING MANHOLE IN ACCORDANCE WITH THE RIVER AUTHORITY SPECIFICATIONS. THEY MUST HAVE A PROTECTIVE COATING SPECIFIED IN THE RIVER AUTHORITY APPROVED PRODUCTS LIST, COATING WILL BE MINIMUM OF 200 MILS THICKNESS DEPENDING ON EXISTING CONDITIONS, TO PREVENT INFRASTRUCTURE INFILTRATION, FOLLOW MANUFACTURER'S RECOMMENDATION ON PROTECTIVE COATING.
- 93. AFTER CONSTRUCTION, TESTING WILL BE DONE BY PAN/TILT TV CAMERA BY THE CONTRACTOR AND OBSERVED BY THE INSPECTOR, WASTEWATER ENGINEERING PERSONNEL AND CONTRACTOR AS CAMERA IS RUN THROUGH THE LINES. PAN/TILT ALL 6" SERVICE LATERALS TO 6"X6" STUB-OUT. VIDEOS MUST INCLUDE SUBDIVISION NAME, MANHOLE NUMBER, SERVICE LATERAL STATION NUMBER, FLOW DIRECTION, LOCATION ANY ABNORMALITIES, SUCH AS BROKEN PIPE OR MISALIGNED, JOINT, GRAVEL, DIRT, MUST BE CLEANED OUT, REPLACE AT CONTRACTOR'S EXPENSE. NEW SEWER SYSTEM WILL BE FLOODED WITH H20 BEFORE BEING TV. ALL SEWER LINES MUST BE PRESSURE CLEANED TO INCLUDE SERVICE LATERALS 6"INCH TO

STUB-OUT. ALL VIDEOS SHALL BE SUBMITTED IN DVD FORMAT WITH WRITTEN REPORTS.

- 94. A COPY OF ALL TESTING REPORTS INCLUDING BACKFILL COMPACTION TESTS SHALL BE FORWARDED TO THE RIVER AUTHORITY.
- 95. DENSITY TEST WILL BE REQUIRED ON ALL SANITARY SEWER TRENCHES INCLUDING SERVICE LATERALS. SERVICE LATERALS TO BE CHOSEN RANDOMLY BY FIELD INSPECTOR. DENSITIES ON SERVICE LATERAL SHALL NOT EXCEED 25% OF TOTAL NUMBER OF SERVICE.

# EXCAVATION

- 96. 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 CONTRACTORS 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. SPECIALLY, CONTRACTOR AND/OR CONTRACTORS 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.
- 97. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT STOCKPILE ANY WASTE MATERIAL IN THE 100 YEAR FLOODPLAIN.

0

03/25/2024

REBECCA ANN CARRO

UN RING UNTY, T ШО S ' Ш |Ш

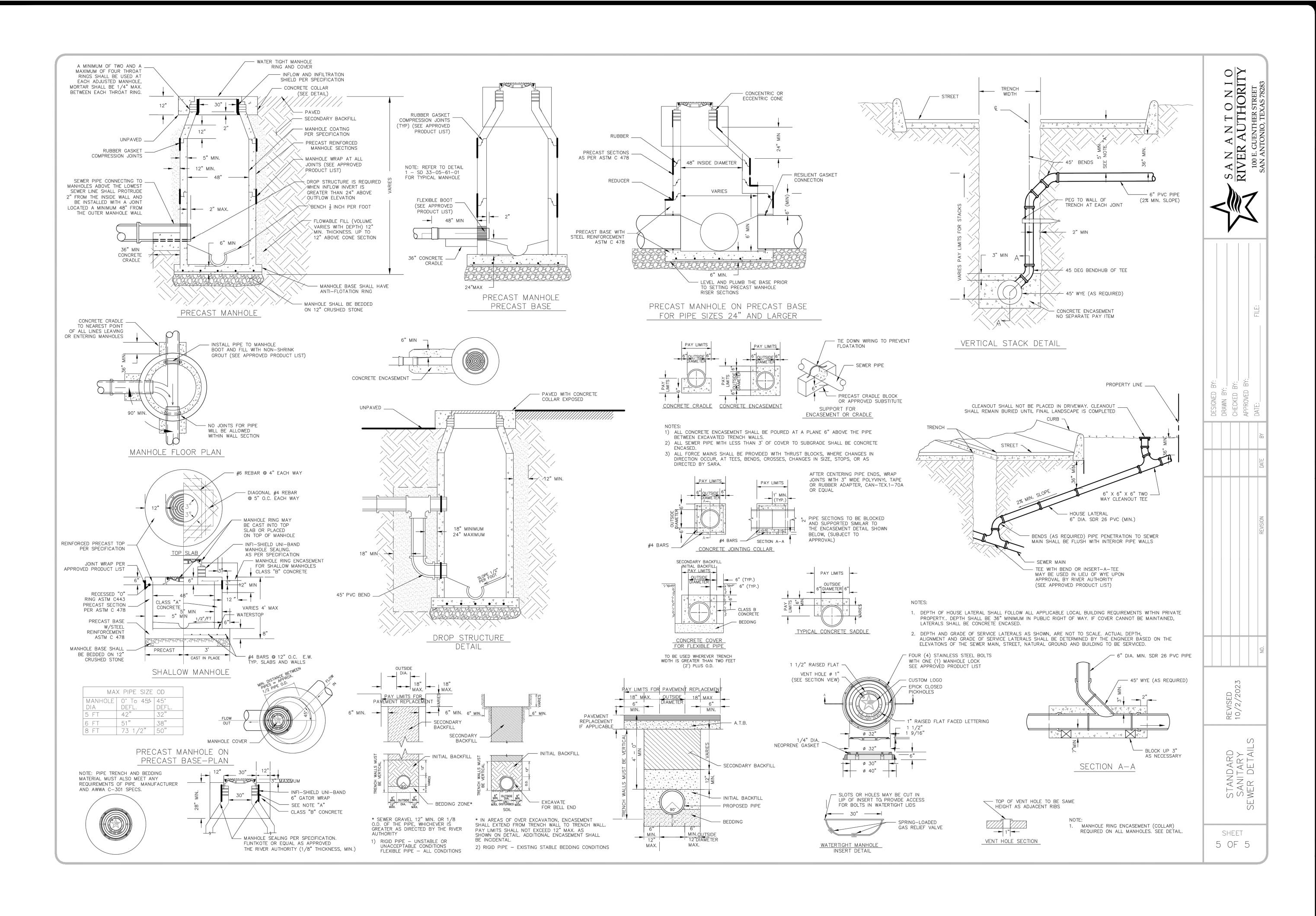
ட

Ž

Ш

PLAT NO. 24-1180007 12733-12 DATE JANUARY 2024 DESIGNER CHECKED DRAWN AR

IOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.



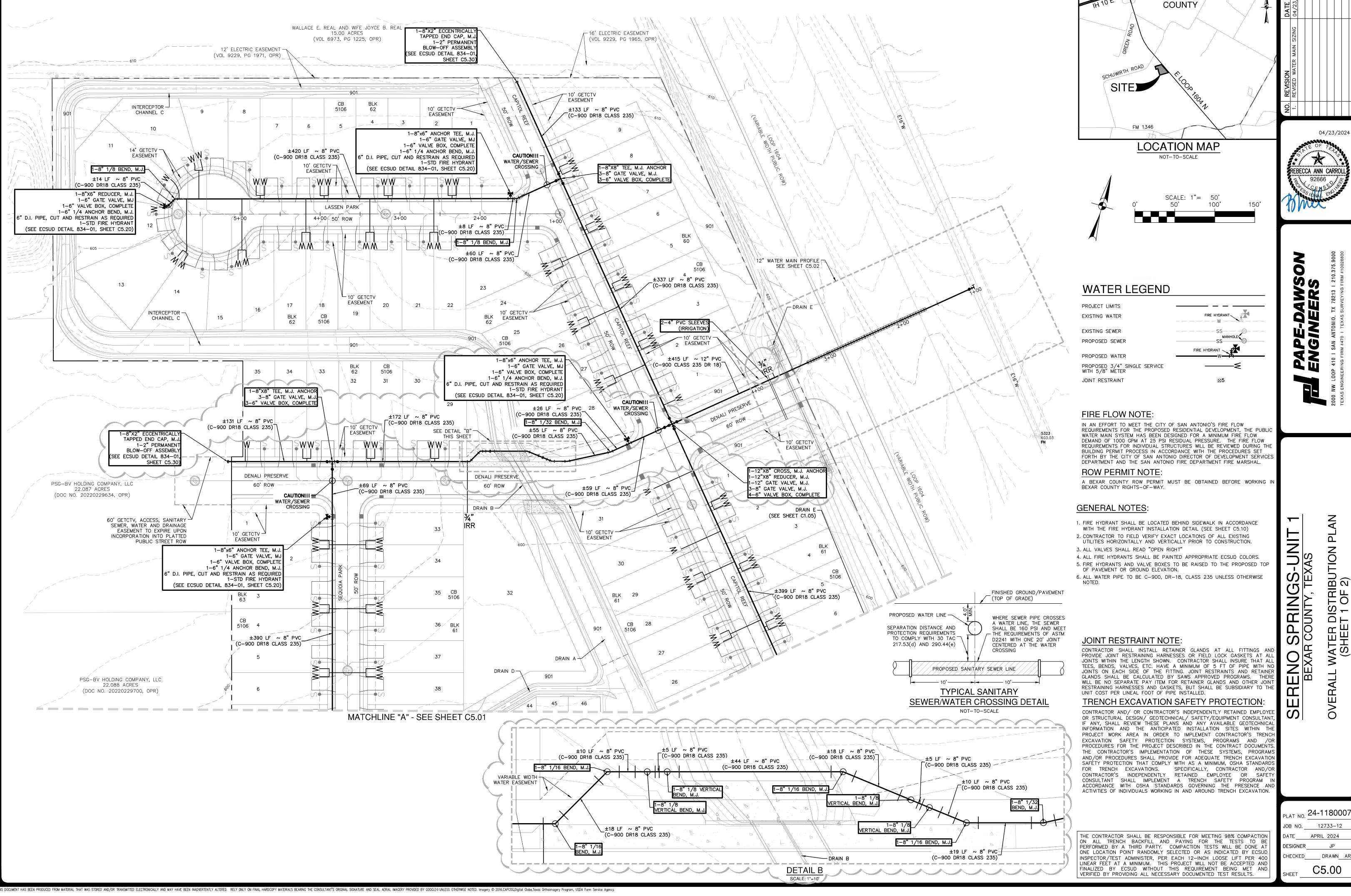
S-UNITEXAS SPRINGS R COUNTY, TE 回 B  $\overline{\mathbb{Z}}$ Ш

S

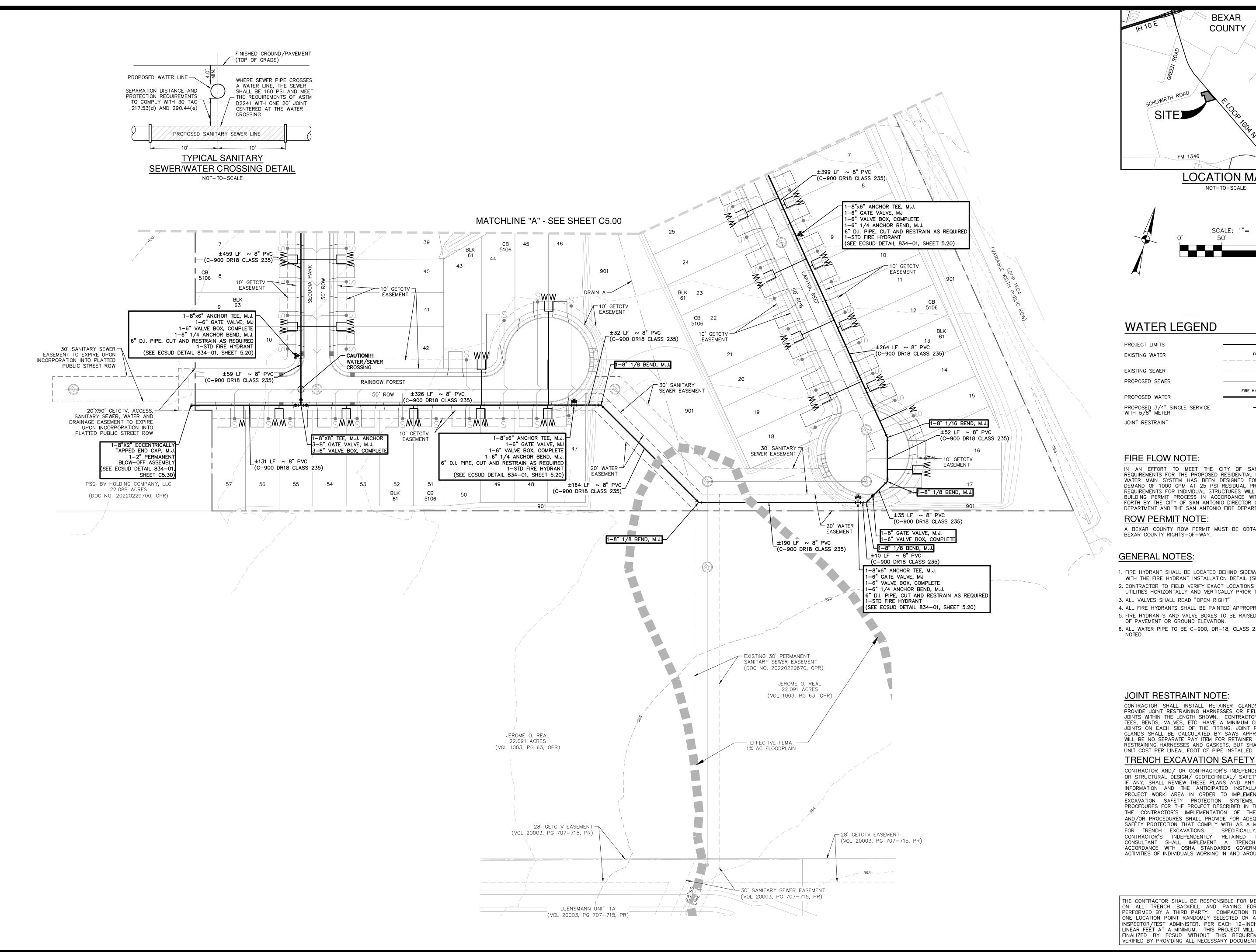
03/25/2024

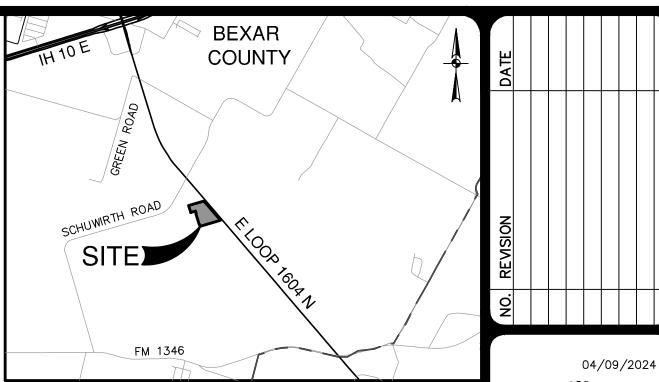
PLAT NO. 24-1180007 12733-12 JANUARY 2024 DESIGNER CHECKED DRAWN AR

HIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

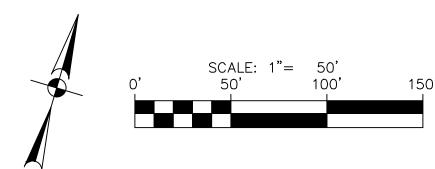


NO 24-1180007





**LOCATION MAP** NOT-TO-SCALE



# WATER LEGEND

PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER

## FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING TH BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SE FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICE: DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

# ROW PERMIT NOTE:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

- 1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL (SEE SHEET C5.10)
- 2. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
- 3. ALL VALVES SHALL READ "OPEN RIGHT"
- 4. ALL FIRE HYDRANTS SHALL BE PAINTED APPROPRIATE ECSUD COLORS. 5. FIRE HYDRANTS AND VALVE BOXES TO BE RAISED TO THE PROPOSED TOP
- OF PAVEMENT OR GROUND ELEVATION. 6. ALL WATER PIPE TO BE C-900, DR-18, CLASS 235 UNLESS OTHERWISE

# **JOINT RESTRAINT NOTE:**

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AN PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE

# TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND / OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENC EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFET CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM I ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AN ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

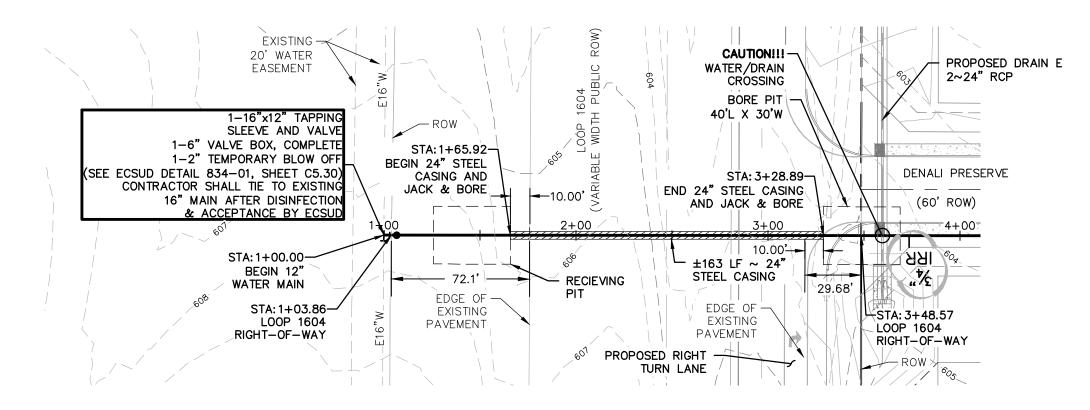
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY ECSUD INSPECTOR/TEST ADMINISTER, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY ECSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

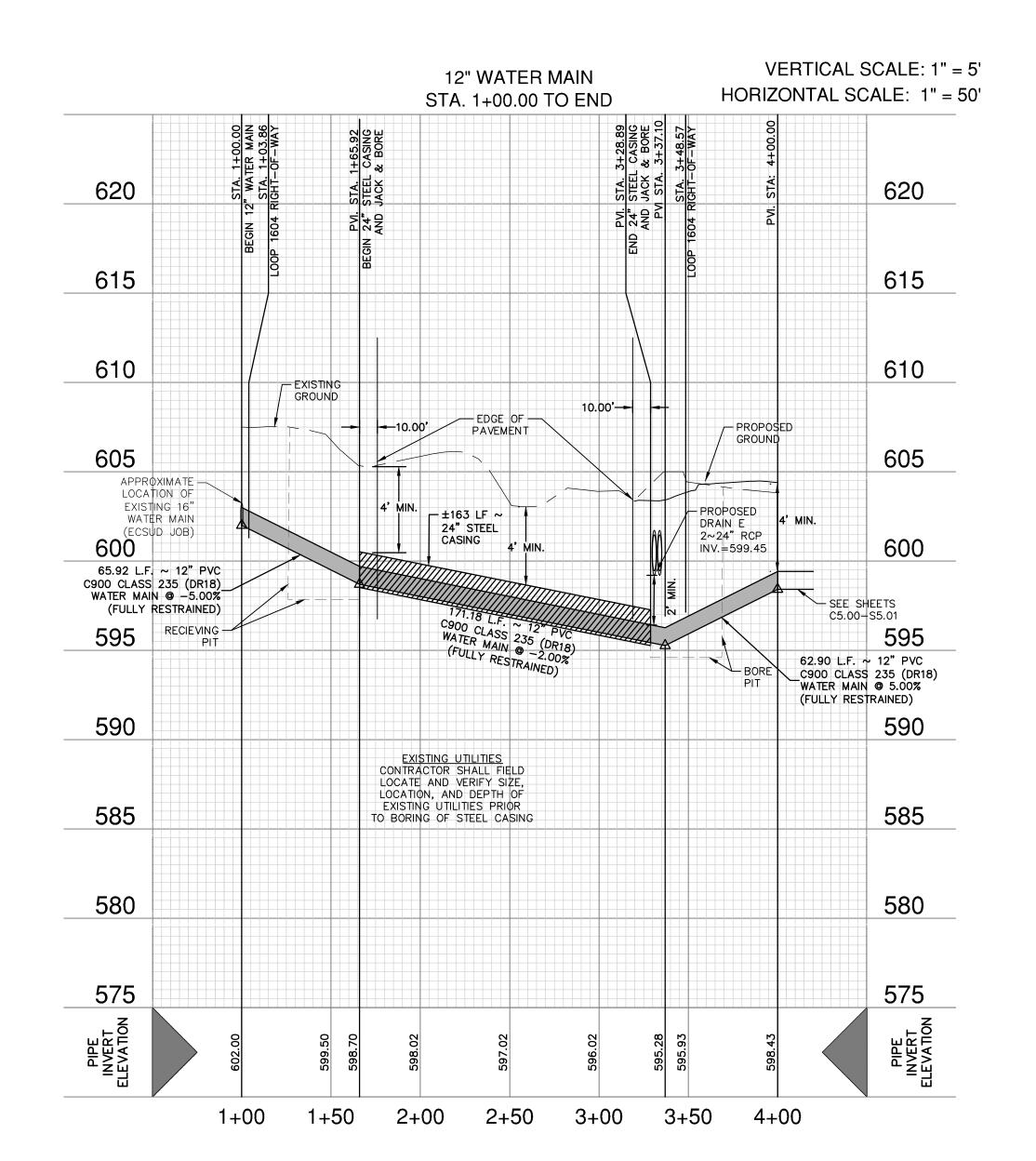
NO 24-1180007 OB NO. 12733-12 APRIL 2024 DESIGNER

DRAWN AR C5.01

DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

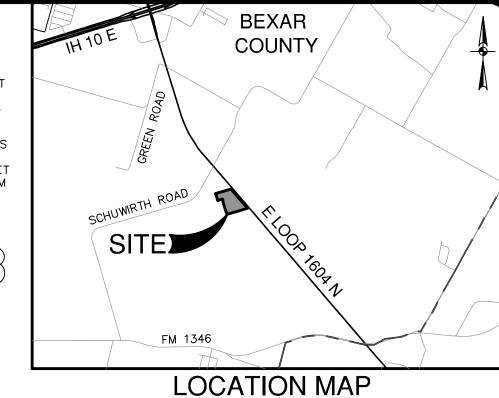
EXISTING UTILITIES
CONTRACTOR SHALL FIELD
LOCATE AND VERIFY SIZE, LOCATION, AND DEPTH OF EXISTING UTILITIES PRIOR TO BORING OF STEEL CASING



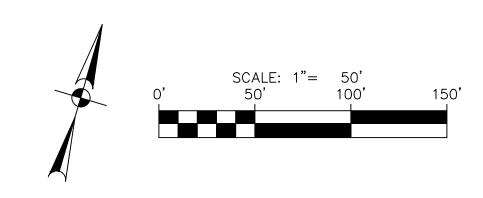


DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016, CAPCOG, Digital Globe, Texas Orthorimagery Program, USDA Farm Service Agency.

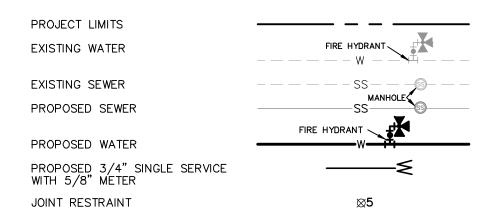
FINISHED GROUND/PAVEMENT (TOP OF GRADE) PROPOSED WATER LINE -WHERE SEWER PIPE CROSSES A WATER LINE, THE SEWER SHALL BE 160 PSI AND MEET SEPARATION DISTANCE AND PROTECTION REQUIREMENTS
TO COMPLY WITH 30 TAC THE REQUIREMENTS OF ASTM D2241 WITH ONE 20' JOINT 217.53(d) AND 290.44(e) CENTERED AT THE WATER CROSSING PROPOSED SANITARY SEWER LINE TYPICAL SANITARY SEWER/WATER CROSSING DETAIL NOT-TO-SCALE



NOT-TO-SCALE



# WATER LEGEND



## FIRE FLOW NOTE:

IN AN EFFORT TO MEET THE CITY OF SAN ANTONIO'S FIRE FLOW REQUIREMENTS FOR THE PROPOSED RESIDENTIAL DEVELOPMENT, THE PUBLIC WATER MAIN SYSTEM HAS BEEN DESIGNED FOR A MINIMUM FIRE FLOW DEMAND OF 1000 GPM AT 25 PSI RESIDUAL PRESSURE. THE FIRE FLOW REQUIREMENTS FOR INDIVIDUAL STRUCTURES WILL BE REVIEWED DURING TH BUILDING PERMIT PROCESS IN ACCORDANCE WITH THE PROCEDURES SET FORTH BY THE CITY OF SAN ANTONIO DIRECTOR OF DEVELOPMENT SERVICE: DEPARTMENT AND THE SAN ANTONIO FIRE DEPARTMENT FIRE MARSHAL.

# ROW PERMIT NOTE:

A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY RIGHTS-OF-WAY.

# **GENERAL NOTES:**

- 1. FIRE HYDRANT SHALL BE LOCATED BEHIND SIDEWALK IN ACCORDANCE WITH THE FIRE HYDRANT INSTALLATION DETAIL (SEE SHEET C5.10)
- 2. CONTRACTOR TO FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO CONSTRUCTION.
- 3. ALL VALVES SHALL READ "OPEN RIGHT"
- 4. ALL FIRE HYDRANTS SHALL BE PAINTED APPROPRIATE ECSUD COLORS. 5. FIRE HYDRANTS AND VALVE BOXES TO BE RAISED TO THE PROPOSED TOP
- OF PAVEMENT OR GROUND ELEVATION. 6. ALL WATER PIPE TO BE C-900, DR-18, CLASS 235 UNLESS OTHERWISE

# **JOINT RESTRAINT NOTE:**

CONTRACTOR SHALL INSTALL RETAINER GLANDS AT ALL FITTINGS AN PROVIDE JOINT RESTRAINING HARNESSES OR FIELD LOCK GASKETS AT ALL JOINTS WITHIN THE LENGTH SHOWN. CONTRACTOR SHALL INSURE THAT ALL TEES, BENDS, VALVES, ETC. HAVE A MINIMUM OF 5 FT OF PIPE WITH NO JOINTS ON EACH SIDE OF THE FITTING. JOINT RESTRAINTS AND RETAINER GLANDS SHALL BE CALCULATED BY SAWS APPROVED PROGRAMS. THERE WILL BE NO SEPARATE PAY ITEM FOR RETAINER GLANDS AND OTHER JOINT RESTRAINING HARNESSES AND GASKETS, BUT SHALL BE SUBSIDIARY TO THE UNIT COST PER LINEAL FOOT OF PIPE INSTALLED.

# TRENCH EXCAVATION SAFETY PROTECTION:

CONTRACTOR AND/ OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENC EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /C PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFÉTY 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 I ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AN ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

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 ECSUD 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 ECSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

NO 24-1180007 OB NO. 12733-12 APRIL 2024 DESIGNER HECKED DRAWN AR

C5.02

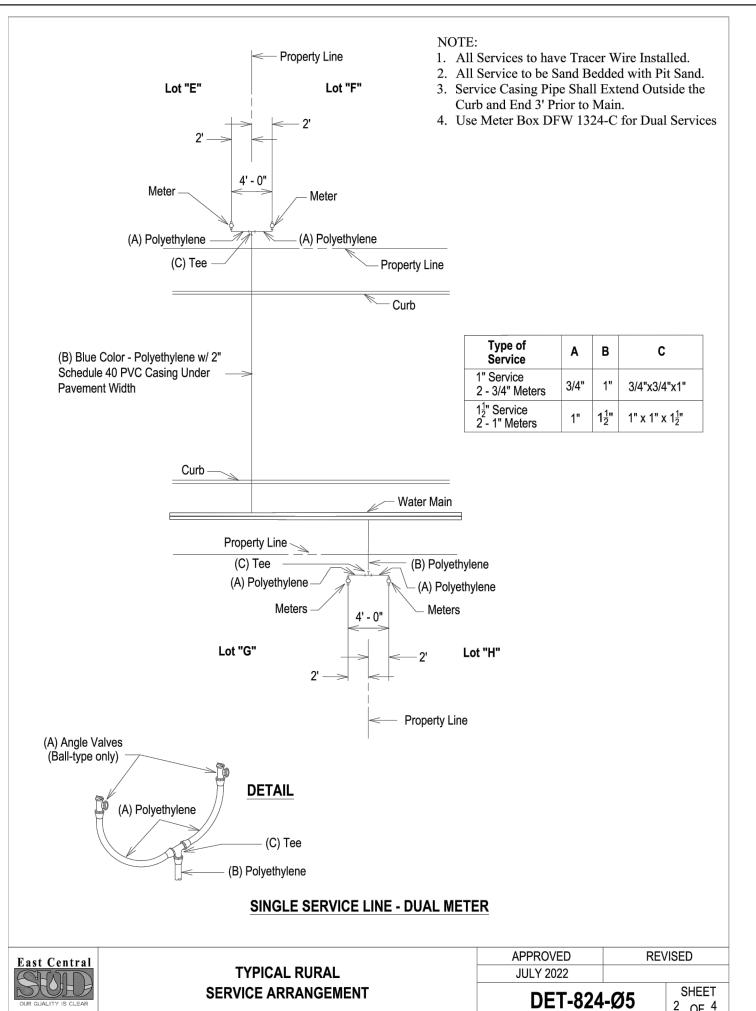
SPRINGS-UNIT COUNTY, TEXAS

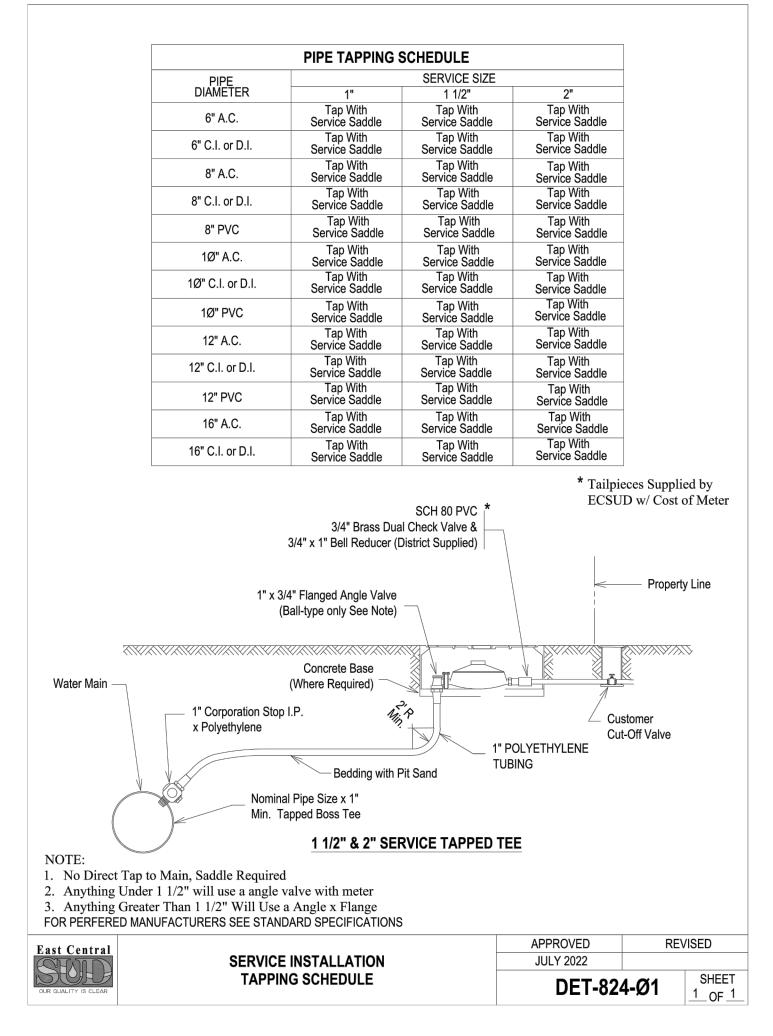
2 INCH WATER MAIN PLAN AND PROFILE

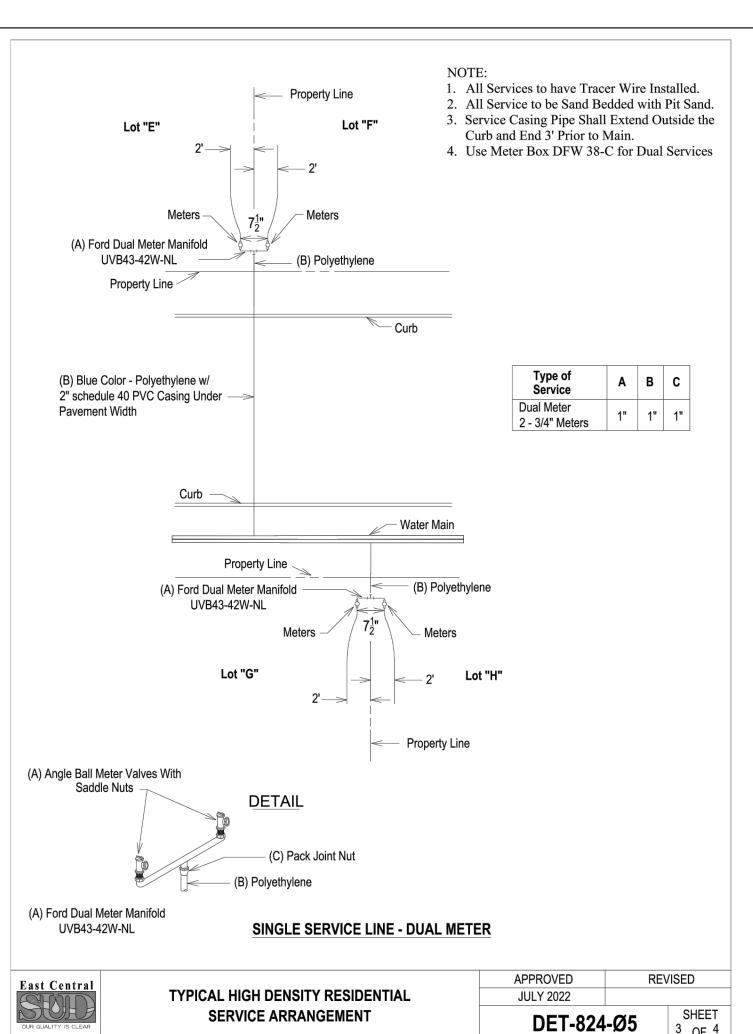
04/23/2024

REBECCA ANN CARROL

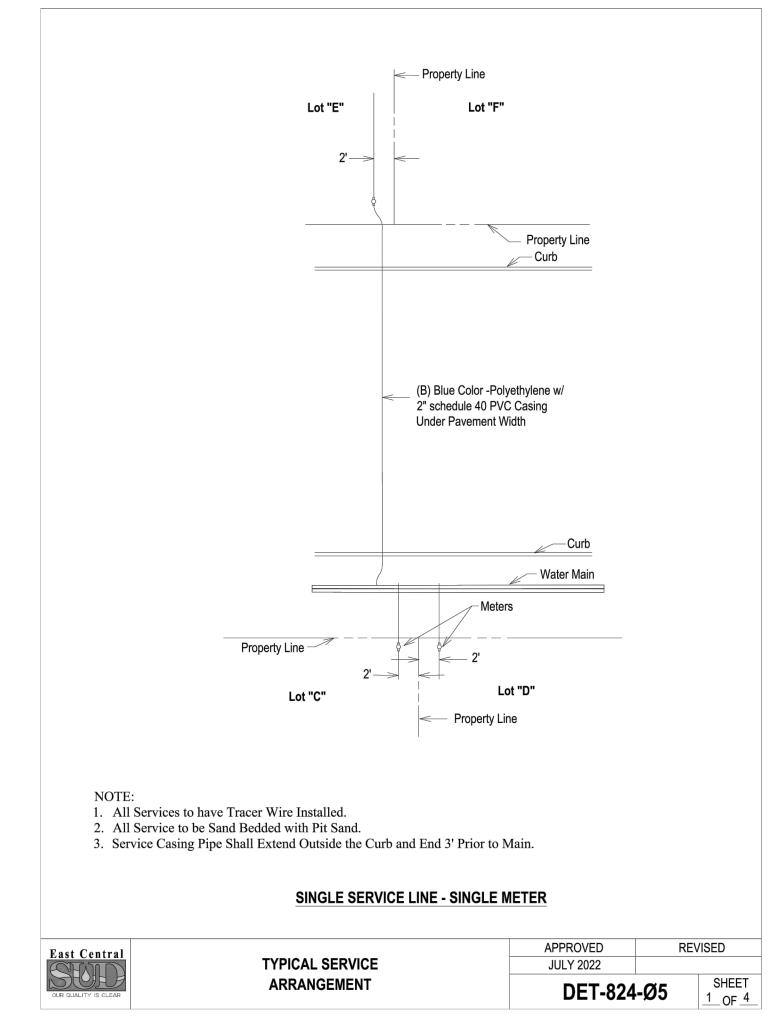


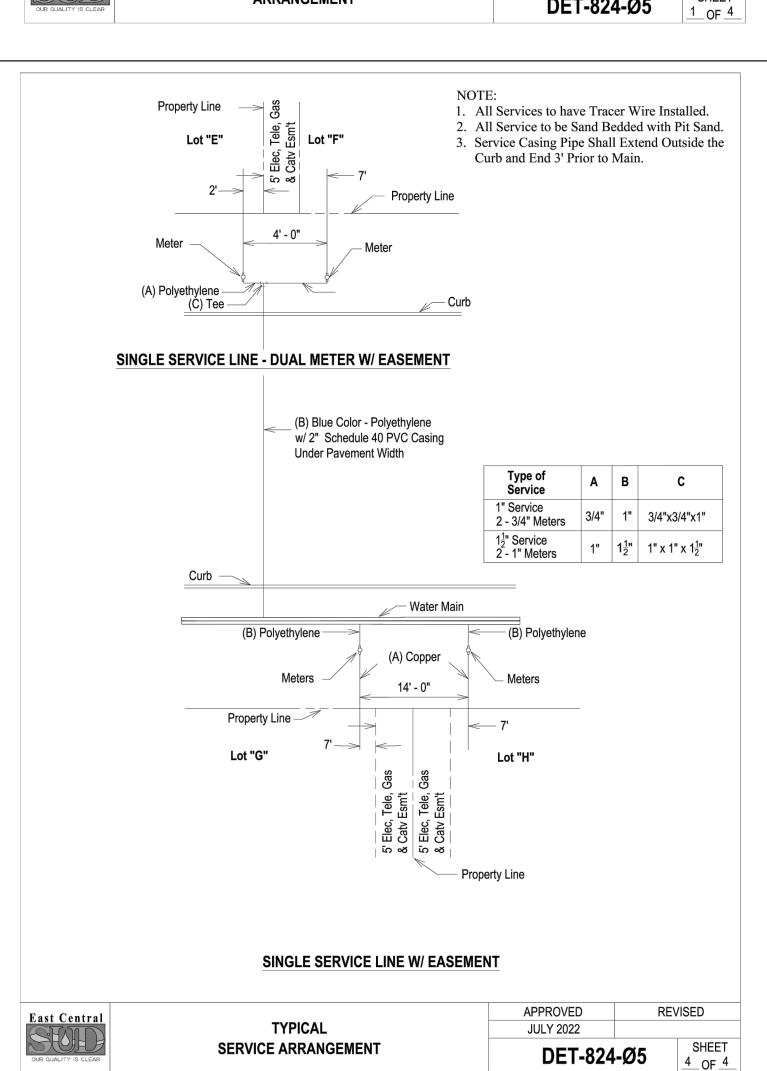


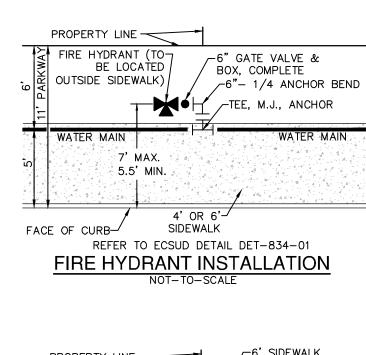


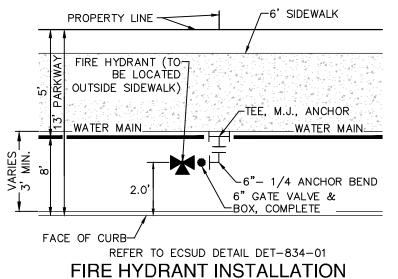


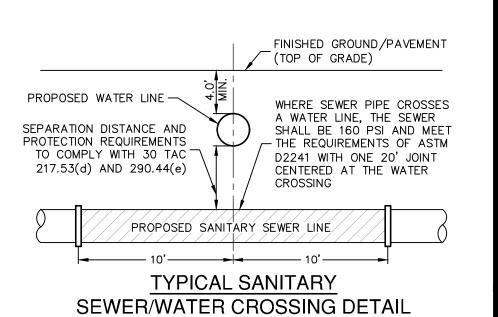
3\_OF\_4



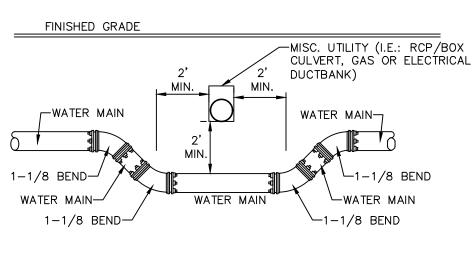


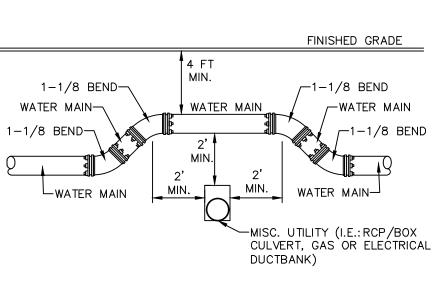






NOT-TO-SCALE





ALL JOINTS ARE FULLY RESTRAINED IN ACCORDANCE WITH ECSUD SPECIFICATIONS. TYPICAL UTILITY/WATER CROSSING DETAIL NOT-TO-SCALE

ENO SPRINGS BEXAR COUNTY, TE

S

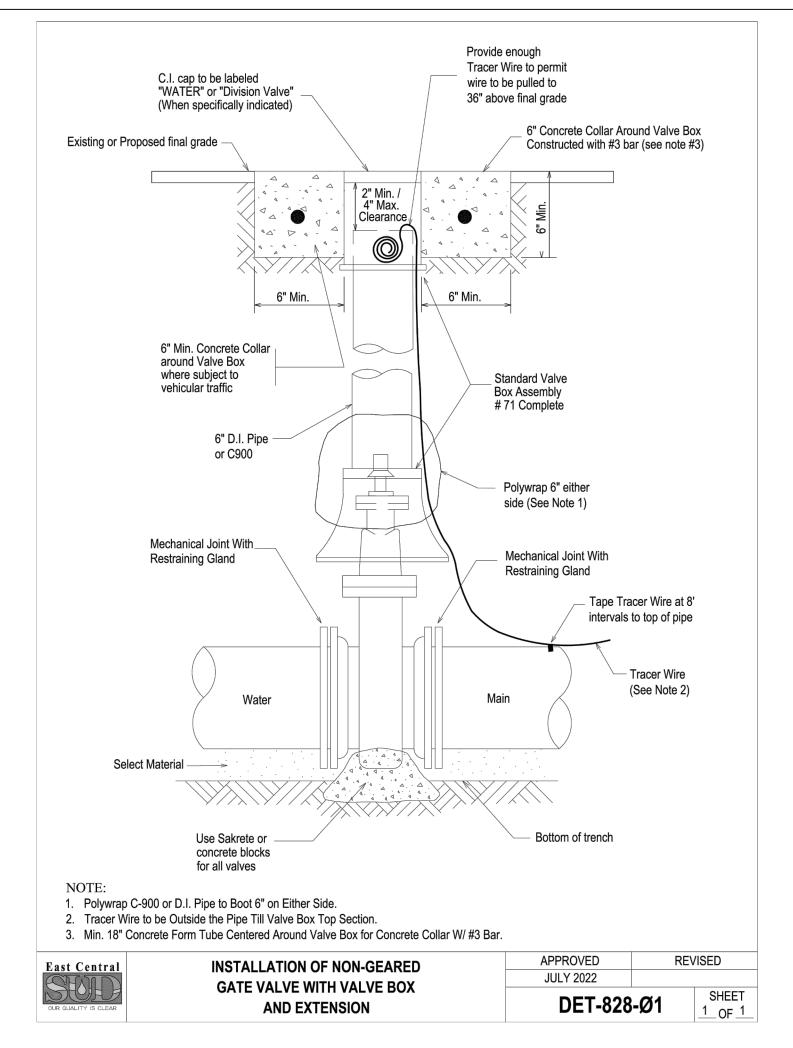
DISTRIBUTION DE (SHEET 1 OF 3)

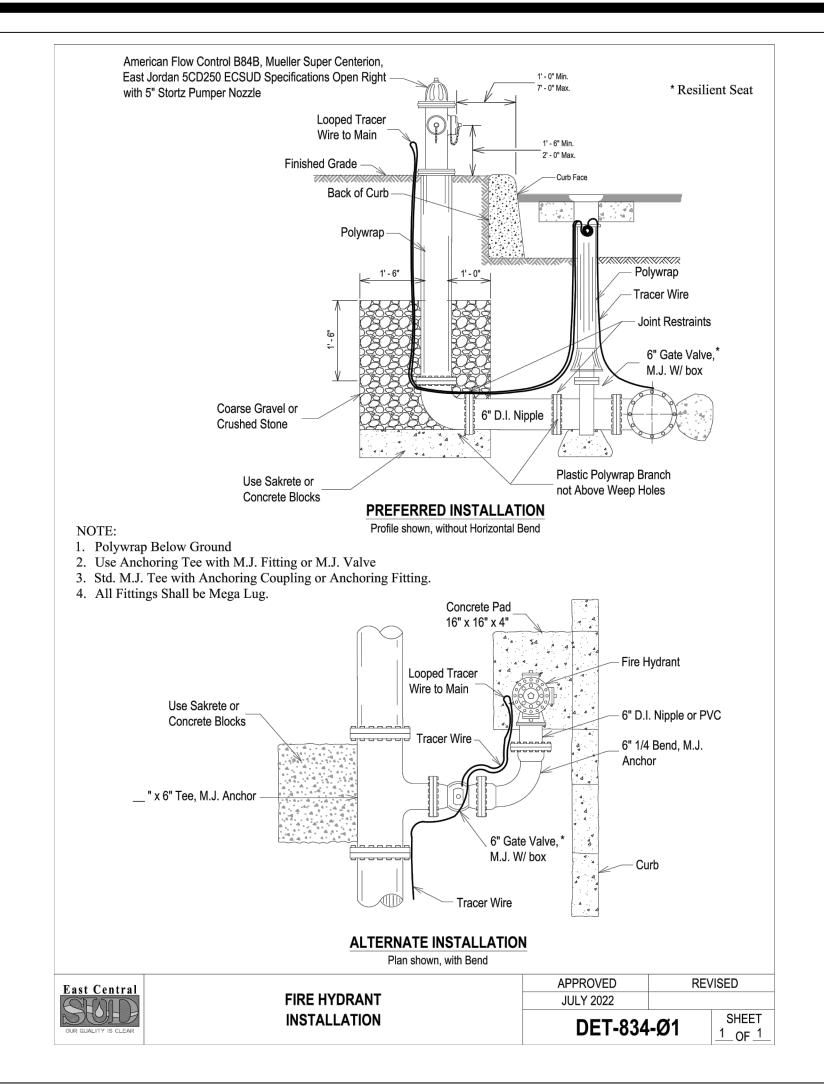
04/09/2024

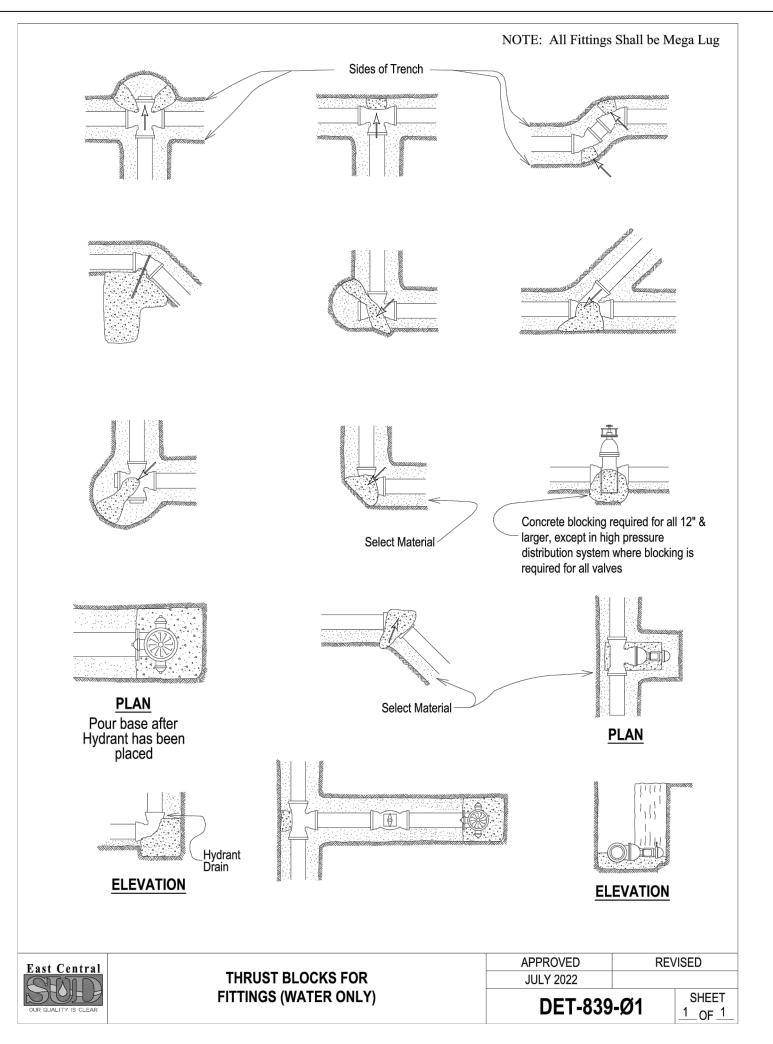
REBECCA ANN CARRO

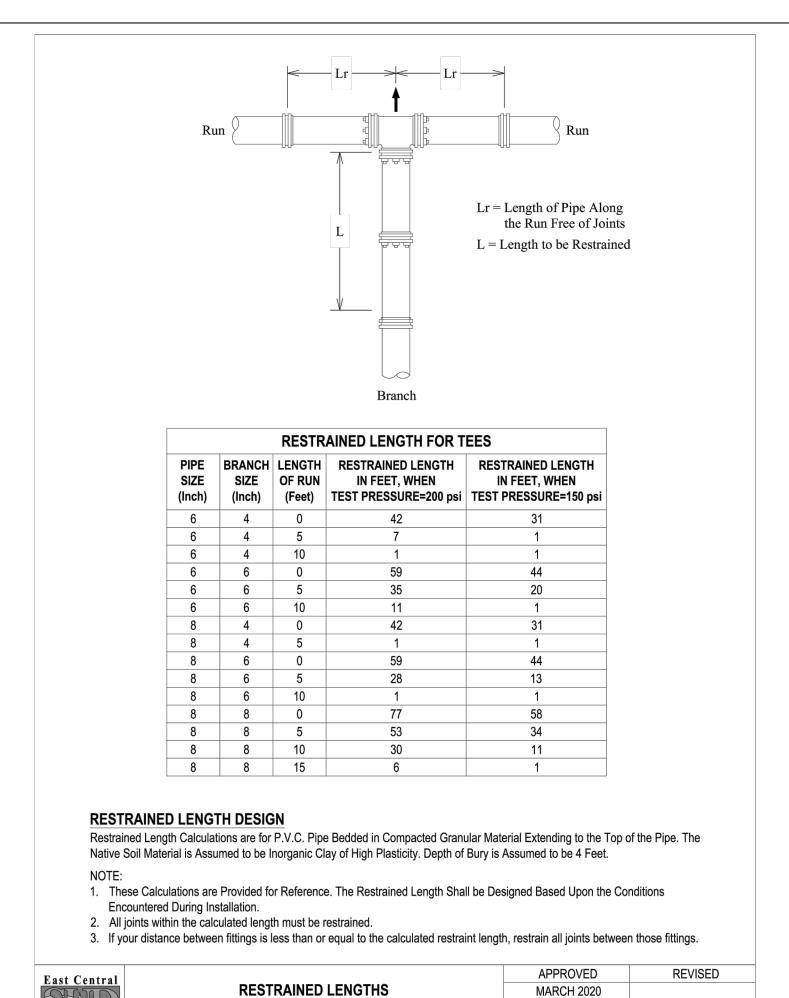
<sub>T NO.</sub> 24-1180007 JOB NO. 12733-12 APRIL 2024 DESIGNER DRAWN AR C5.10

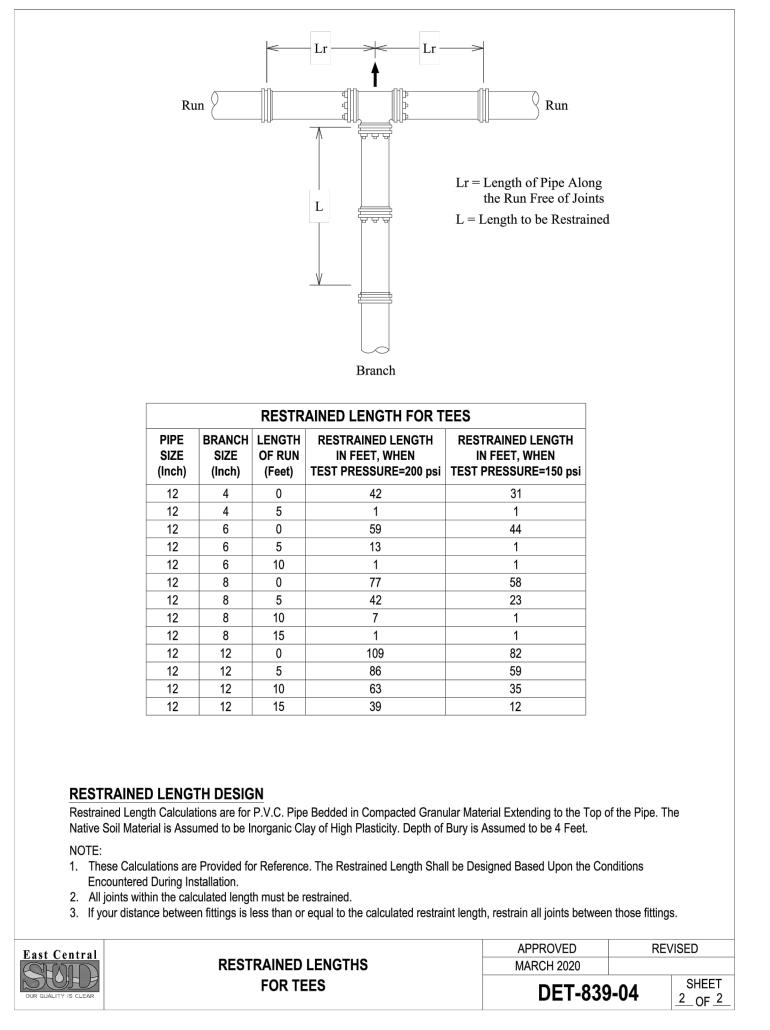
2\_OF\_4

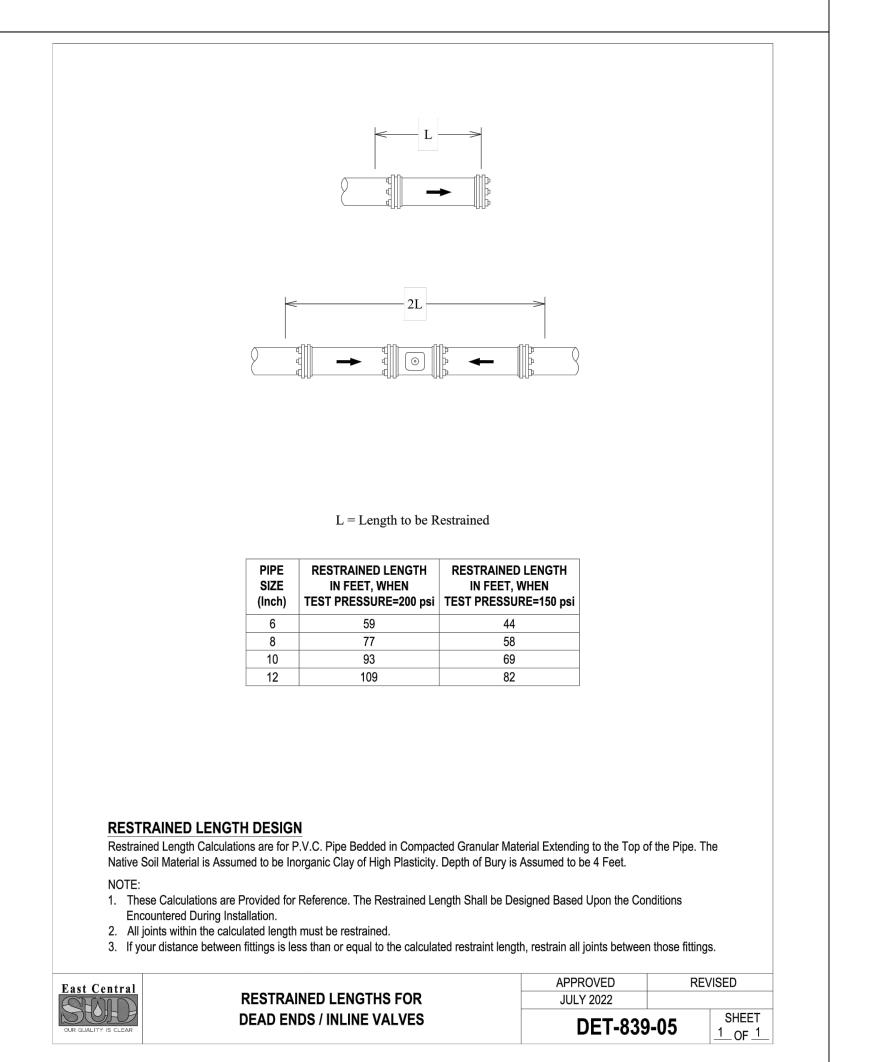


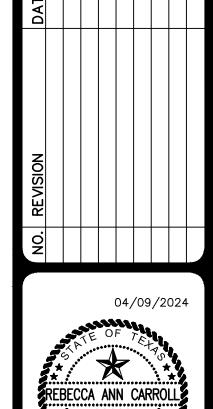














PAPE-DAWSON

ENGINEERS

2000 NW LOOP 410 I SAN ANTONIO, TX 78213 I 210.375.9000

TEXAS ENGINEERING FIRM #470 I TEXAS SURVEYING FIRM #10028800

SERENO SPRINGS-UNIT 1

BEXAR COUNTY, TEXAS

WATER DISTRIBUTION DETAILS
(SHEET 2 OF 3)

PLAT NO. 24-11800078

JOB NO. 12733-12

DATE APRIL 2024

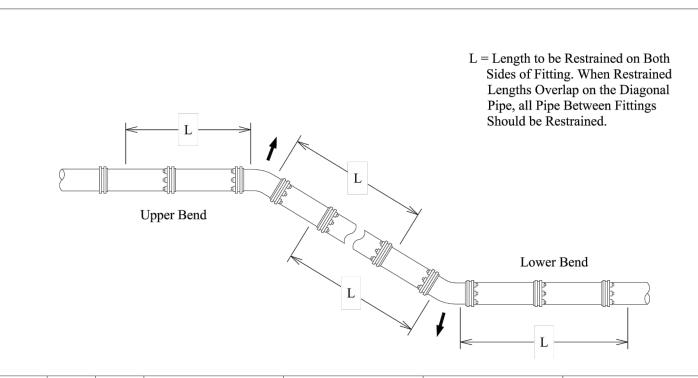
DESIGNER JP

CHECKED DRAWN AR

SHEET C5.20

1\_0F\_2\_

**DET-839-04** 



PIPE SIZE (Inch)	BEND ANGLE (deg.)	LOW SIDE DEPTH	UPPER BEND RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE=200 psi	LOWER BEND RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE=200 psi	UPPER BEND RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE=150 psi	LOWER BEND RESTRAINED LENGTH IN FEET, WHEN 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	16	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

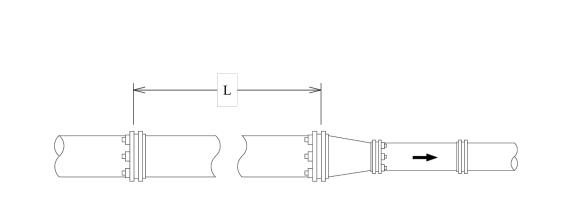
Restrained Length Calculations are for P.V.C. Pipe Bedded in Compacted Granular Material Extending to the Top of the Pipe. The Native Soil Material is Assumed to be Inorganic Clay of High Plasticity. Depth of Bury is Assumed to be 4 Feet.

1. These Calculations are Provided for Reference. The Restrained Length Shall be Designed Based Upon the Conditions

Encountered During Installation. 2. All joints within the calculated length must be restrained.

3. If your distance between fittings is less than or equal to the calculated restraint length, restrain all joints between those fittings.

East Contral	OUR QUALITY IS CLEAR	RESTRAINED LENGTHS VERTICAL OFFSETS	JULY 2022 <b>DET-839</b> -	SHEET
Fast Central APPROVED REVISED	East Central	RESTRAINED LENGTHS	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 p
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

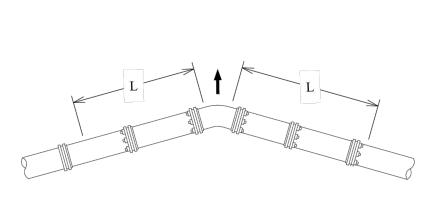
Restrained Length Calculations are for P.V.C. Pipe Bedded in Compacted Granular Material Extending to the Top of the Pipe. The Native Soil Material is Assumed to be Inorganic Clay of High Plasticity. Depth of Bury is Assumed to be 4 Feet.

1. These Calculations are Provided for Reference. The Restrained Length Shall be Designed Based Upon the Conditions Encountered During Installation.

2. All joints within the calculated length must be restrained.

3. If your distance between fittings is less than or equal to the calculated restraint length, restrain all joints between those fittings.

REVISED	
	REVISED



# 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

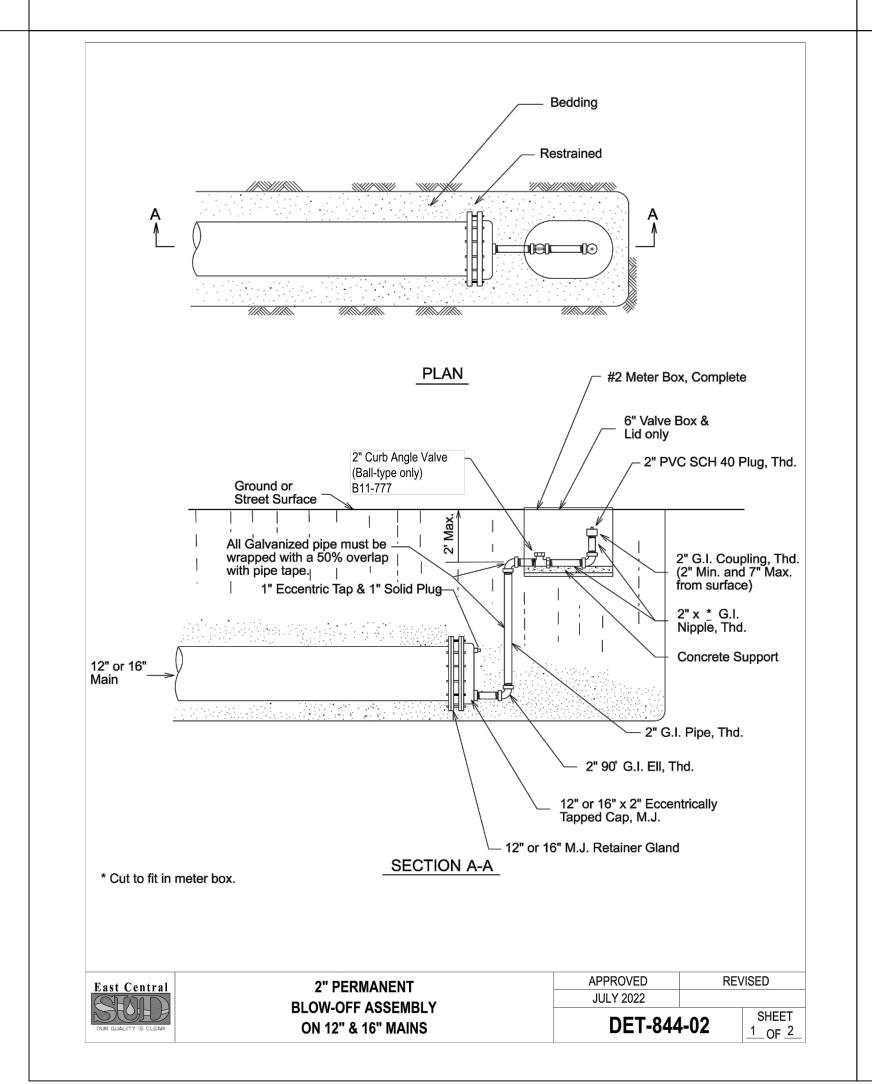
Restrained Length Calculations are for P.V.C. Pipe Bedded in Compacted Granular Material Extending to the Top of the Pipe. The Native Soil Material is Assumed to be Inorganic Clay of High Plasticity. Depth of Bury is Assumed to be 4 Feet.

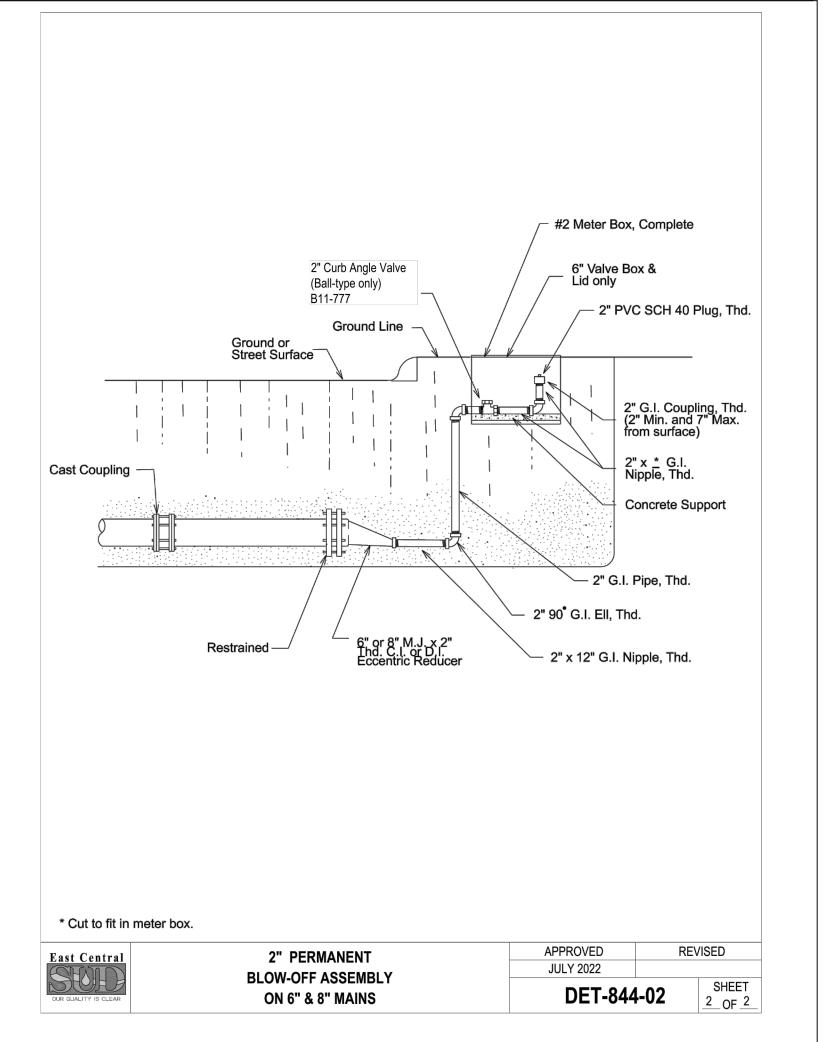
1. These Calculations are Provided for Reference. The Restrained Length Shall be Designed Based Upon the Conditions

Encountered During Installation. 2. All joints within the calculated length must be restrained.

3. If your distance between fittings is less than or equal to the calculated restraint length, restrain all joints between those fittings.

East Central	RESTRAINED LENGTHS FOR HORIZONTAL BENDS	JULY 2022	SHEET
OUR QUALITY IS CLEAR	TORTIONIZONTAL BENDO	DET-839	1 OF 1

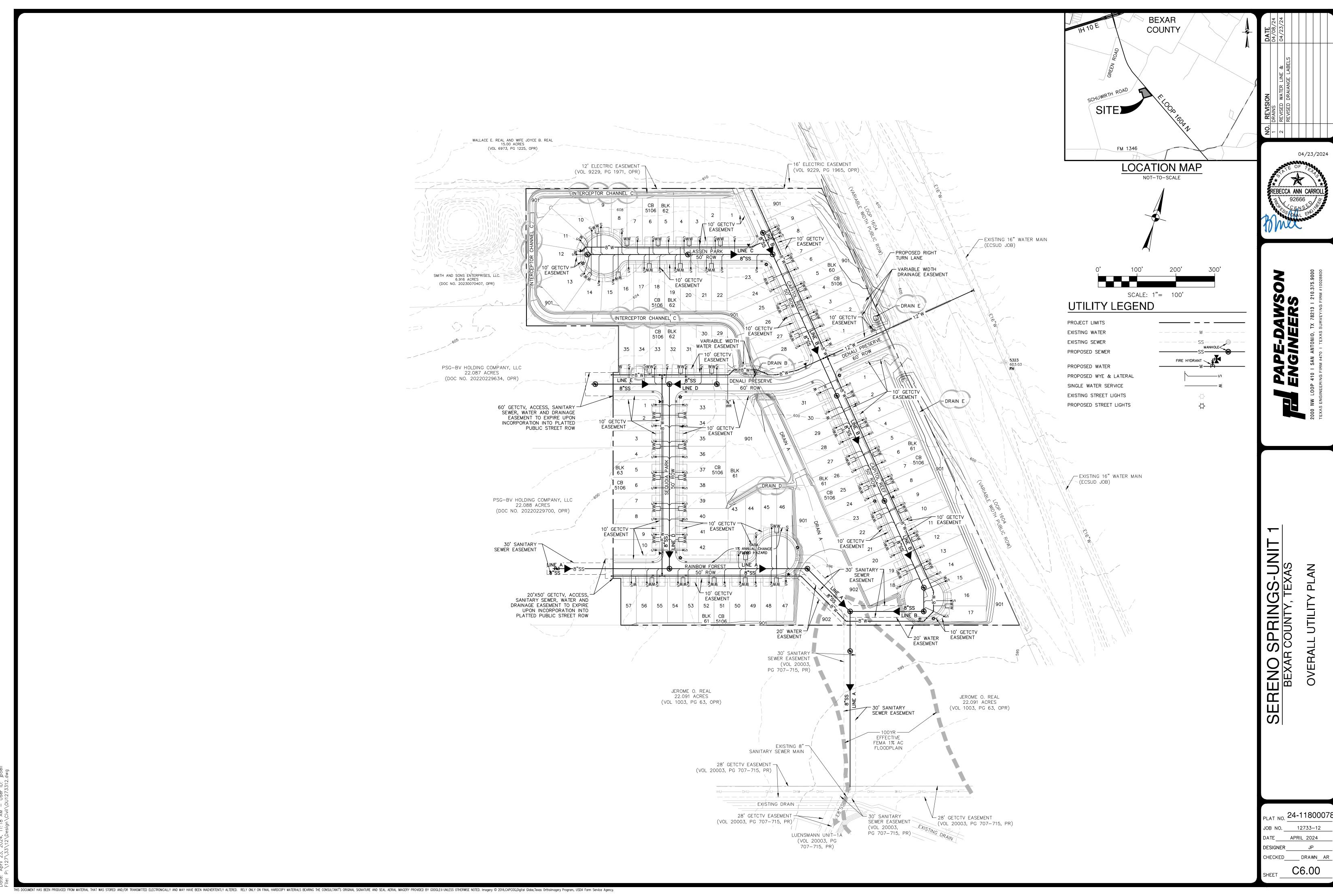




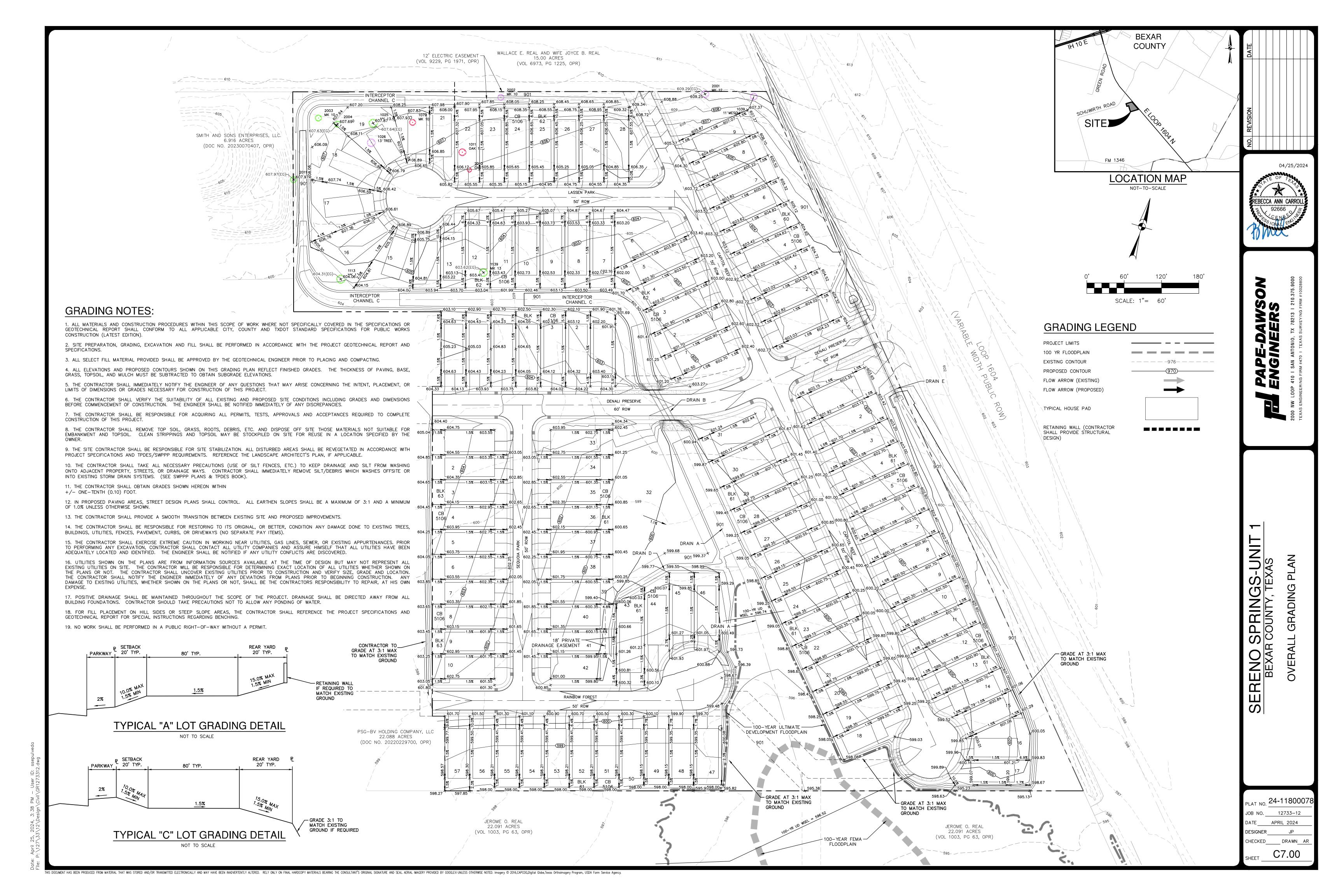
04/09/2024

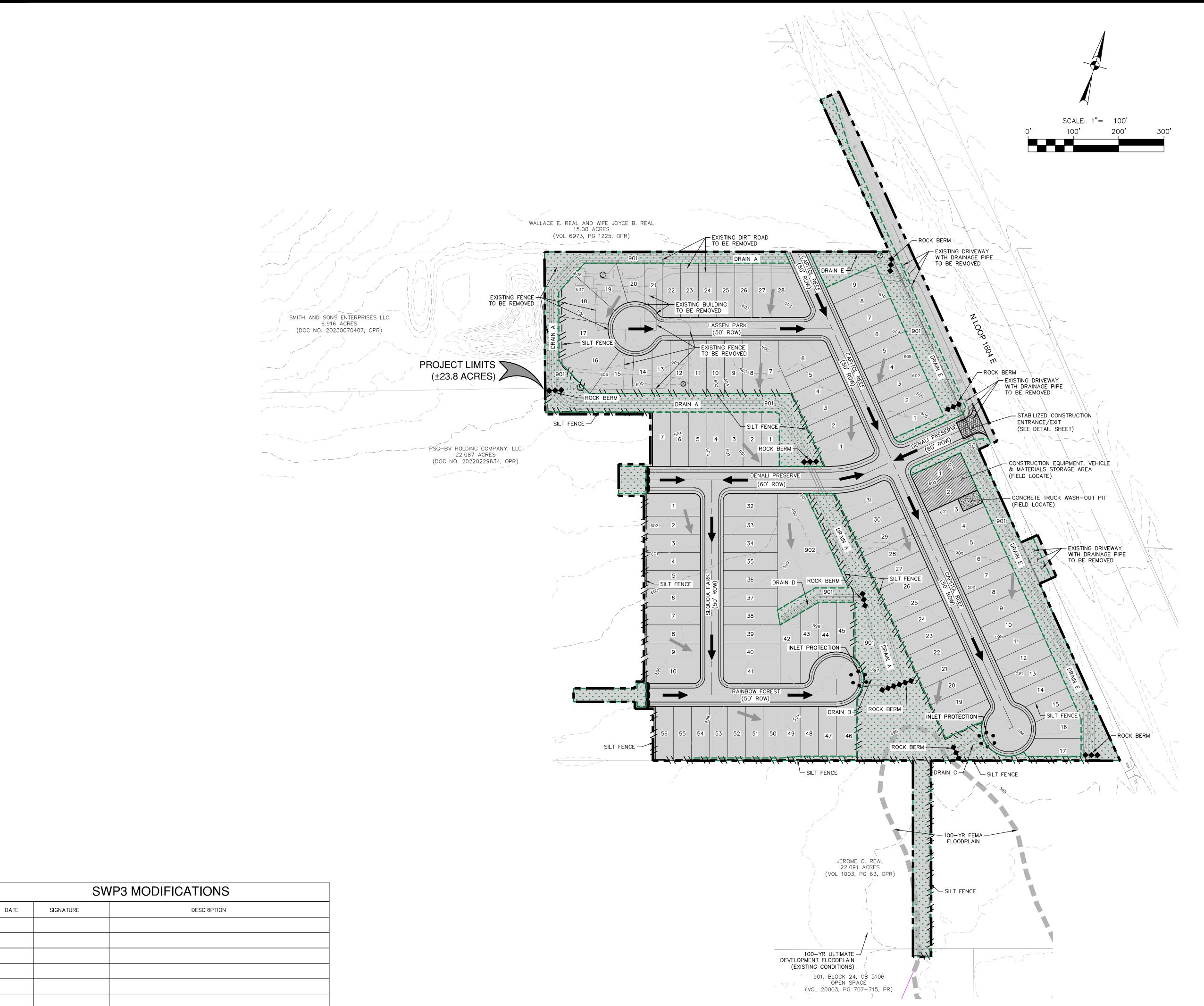
PLAT NO. 24-11800078 12733-12

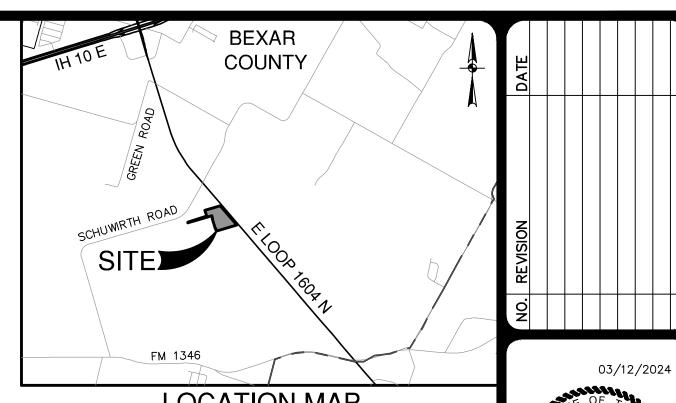
DESIGNER



ote: April 23, 2024, 11:18 AM — User ID: ji







**LOCATION MAP** NOT-TO-SCALE



# SWPPP LEGEND

PROJECT LIMITS EXISTING CONTOUR PROPOSED CONTOUR FLOW ARROW (EXISTING) FLOW ARROW (PROPOSED) -//-//-//-//-SILT FENCE ROCK BERM GRAVEL FILTER BAGS GRATE INLET PROTECTION • •

LIMITS OF DISTURBED AREA STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)

CONSTRUCTION EQUIPMENT, VEHICLE &

CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE) AREA TO BE REVEGETATED PER TPDES PERMIT REQUIREMENTS

MATERIALS STORAGE AREA

(FIELD LOCATE)

SEDIMENT CONTROL ROLLS

# **GENERAL NOTES**

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE

DETERMINED IN THE FIELD. 3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE

MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL

8. AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

13. SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES.

14. CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

15. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN ANY BEXAR COUNTY ROW.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR TH PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

**EXHIBIT 2** 

NO 24-11800078 12733-12 JANUARY 2024 DESIGNER CHECKED DRAWN AR C8.00

THIS DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016,CAPCOG,Digital Globe,Texas Orthoimagery Program, USDA Farm Service Agency.

SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT

#### MATERIALS 1. THE AGGREGATE SHOULD CONSIST OF 4-INCH 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

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 ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OF

### INSTALLATION

8-INCHES.

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-INCHES 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.

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

6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE

GEOTEXTILE FABRIC TO STABILIZE FOUNDATION

## SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

# COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD. . STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC—EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY. 4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING

TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD. 5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

#### INSPECTION AND MAINTENANCE GUIDELINES THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION. WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS

CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES LISED TO TRAP SEDIMENT 2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.

3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. 4. WHEN WASHING IS REQUIRED. IT SHOULD BE DONE ON AN AREA STABILIZED

SEDIMENT BASIN 5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

INCORRECT

SOD INSTALLATION

USE PEGS OR STAPLES TO FASTEN SOD

FIRMLY - AT THE ENDS OF STRIPS AND

WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR

**SECTION "A-A"** 

## ISOMETRIC PLAN VIEW

WOVEN WIRE

SHEATHING

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT—LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

### INSPECTION AND MAINTENANCE GUIDELINES . INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE

RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE. 2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES

AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION. 3. REPAIR ANY LOOSE WIRE SHEATHING.

WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

**ROCK BERMS** 

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION 5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO

FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS,

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

#### **MATERIALS** 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 2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF

FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE

WOVEN WIRE SHEATHING

# **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

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 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.

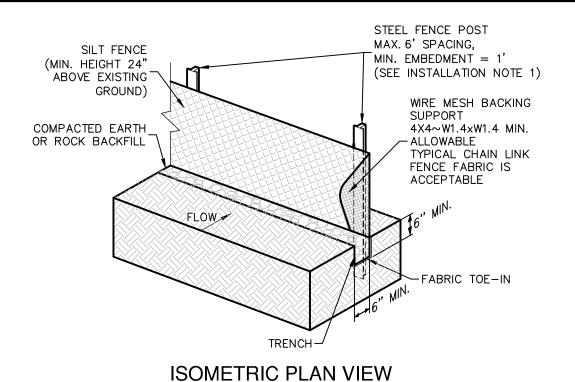
# COMMON TROUBLE POINTS

. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

# **ROCK BERM DETAIL**

NOT-TO-SCALE



## STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL NOT-TO-SCALE

LAY SOD IN A STAGGERED PATTERN. BUTT

DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

THE STRIPS TIGHTLY AGAINST EACH OTHER.

 ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED

**MATERIALS** 

OF 36 HOURS.

SHOOT GROWTH AND THATCH.

SITE PREPARATION

TIGHTLY (SEE FIGURE ABOVE).

APPEARANCE OF GOOD SOD

 ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL. 2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS

SHOOTS OR GRASS BLADES.

GRASS SHOULD BE GREEN AND

- THATCH- GRASS CLIPPINGS AND

-ROOT ZONE - SOIL AND ROOTS.

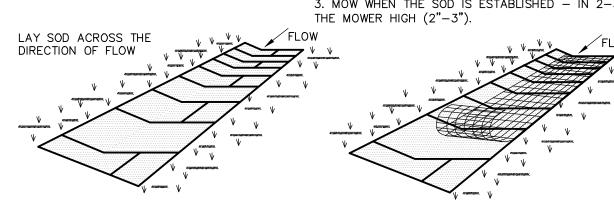
DEAD LEAVES, UP TO 1/2" THICK.

SHOULD BE 1/2"-3/4" THICK, WITH

DENSE ROOT MAT FOR STRENGTH.

HEALTHY; MOWED AT A 2"-3"

SOON AS THE SOD IS LAID. 3. MOW WHEN THE SOD IS ESTABLISHED - IN 2-3 WEEKS. SET



1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH

(± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND

STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO

SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD

PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT

THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL

FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE

ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD

DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER

SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC,

FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE

SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE

DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO

RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER

NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL

TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

INSTALLATION IN CHANNELS

INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

IN CRITICAL AREAS, SECURE SOD WITH NETTING, USE STAPLES.

# GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992

REDUCE ROOT BURNING AND DIEBACK.

SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN. 2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND

> FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

WITH THE GROUND.

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OF OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL. 6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS

UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

#### INSPECTION AND MAINTENANCE GUIDELINES SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT-TO-SCALE

#### IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH

STAPLE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED. SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

SILT FENCE

I. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC 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 NUMBER 30.

. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

# INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS 1/4 ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

#### COMMON TROUBLE POINTS FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE). 3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

#### INSPECTION AND MAINTENANCE GUIDELINES 1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

# 2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

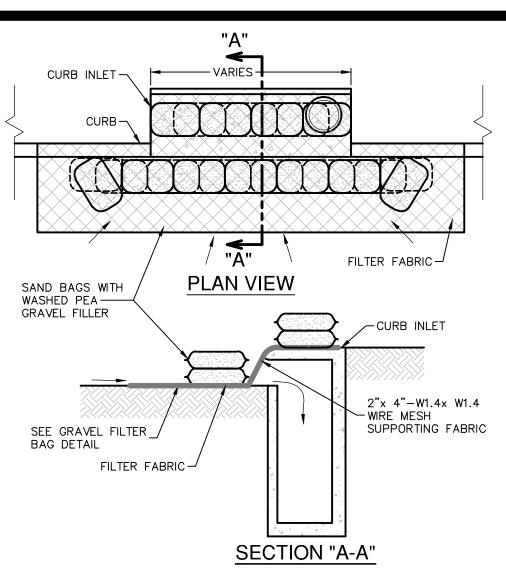
ENDS OF FABRIC MEET

3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL

SILT FENCE DETAIL



# **GENERAL NOTES**

A MANNER THAT IT WILL NOT ERODE.

CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

#### INSPECTION AND MAINTENANCE GUIDELINES . INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE

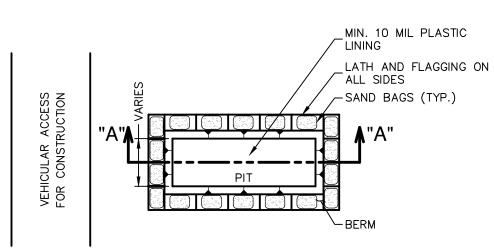
2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH

3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND

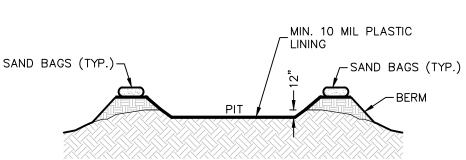
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING. 5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

# BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



**PLAN VIEW** 



# SECTION "A-A'

# **GENERAL NOTES**

. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE. 2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

FROM STORM WATER RUNOFF. 4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

# **MATERIALS**

PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

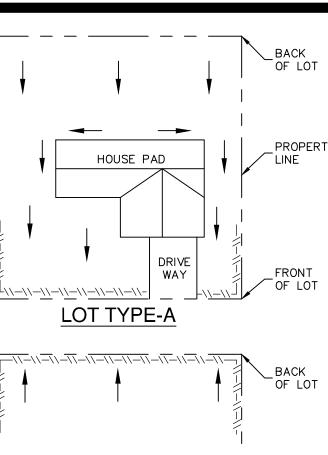
# MAINTENANCE

WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT

HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

# CONCRETE TRUCK WASHOUT

PIT DETAIL NOT-TO-SCALE



HOUSE PAD

LOT TYPE-B

HOUSE PAD

WAY

02/12/2024

EBECCA ANN CARRO

PROPER'

THESE DETAILS AND LOCATED ON THE DOWNGRADIENT SIDE OF EACH LOT LINE -\\-\\- SILT FENCE OR LIMITS OF CLEARING AS GENERALL'S → DRAINAGE FLOW SHOWN ON THE OVERALL SITE PLAN.

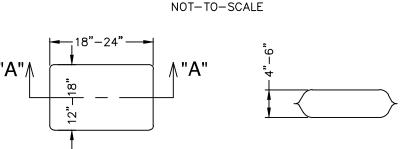
LEGENI

WAY

TYPICAL HOUSE LOT LAYOUTS

LOT TYPE-C

NOTE: SILT FENCE TO BE INSTALLED PER



PLAN VIEW SECTION "A-A'

THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA

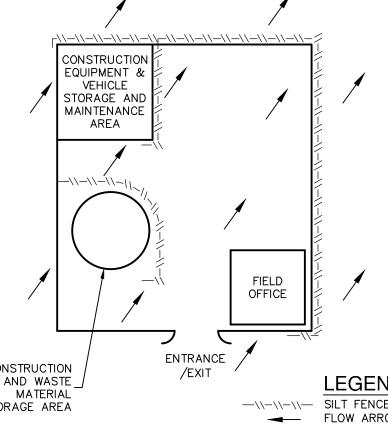
POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN, UNIT WEIGHT OF 4 OUNCES/SY. HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE.

GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER). 3. SAND SHALL <u>NOT</u> BE USED TO FILL THE FILTER BAGS.

# **GRAVEL FILTER BAG DETAIL**

NOT-TO-SCALE



THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR

PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE

**EXHIBIT 3** 

12733-12 February 2024

NOT-TO-SCALE

DOCUMENT HAS BEEN PRODUCED FROM MATERIAL THAT WAS STORED AND/OR TRANSMITTED ELECTRONICALLY AND MAY HAVE BEEN INADVERTENTLY ALTERED. RELY ONLY ON FINAL HARDCOPY MATERIALS BEARING THE CONSULTANT'S ORIGINAL SIGNATURE AND SEAL. AERIAL IMAGERY PROVIDED BY GOOGLE® UNLESS OTHERWISE NOTED. Imagery © 2016, CAPCOG, Digital Globe, Texas Orthorimagery Program, USDA Farm Service Agency

WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION CONSTRUCTION AND WASTE LEGEND -\\-\\- SILT FENCE STORAGE AREA → FLOW ARROWS CONSTRUCTION STAGING AREA FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED 24-118000X

NOT-TO-SCALE

THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS. THIS SHEET HAS BEEN PREPARED FOR

SHEET IN THE CIVIL IMPROVEMENT PLANS.

ESIGNER HECKED

DRAWN SS C8.10