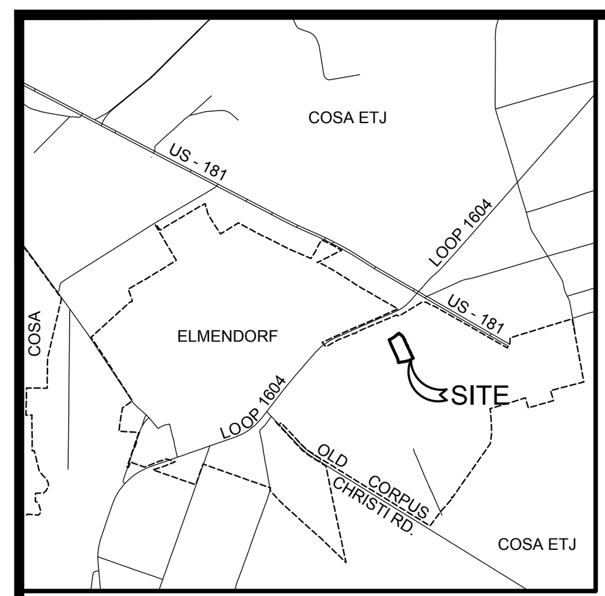
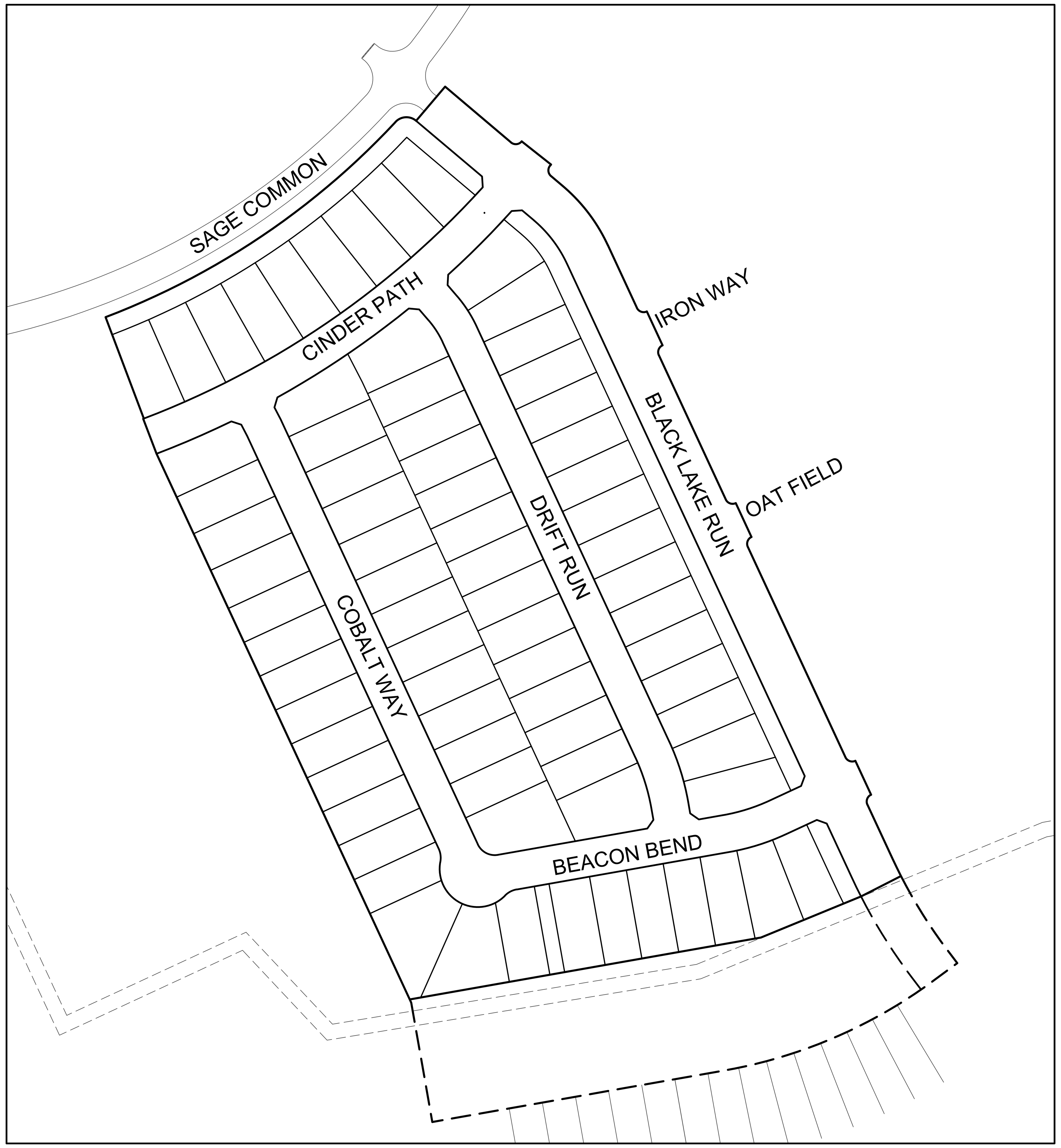
CONSTRUCTION PLANS
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7



LOCATION MAP
NOT TO SCALE



INDEX MAP
1"=100'

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602	SEDIMENTATION & EROSION CONTROL NARRATIVE
603	SEDIMENTATION AND EROSION CONTROL DETAILS

OWNER/DEVELOPER:

DAVIDSON HOMES, LLC
2801 PARIA CYN
CONVERSE, TX 78109

PREPARED BY:

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

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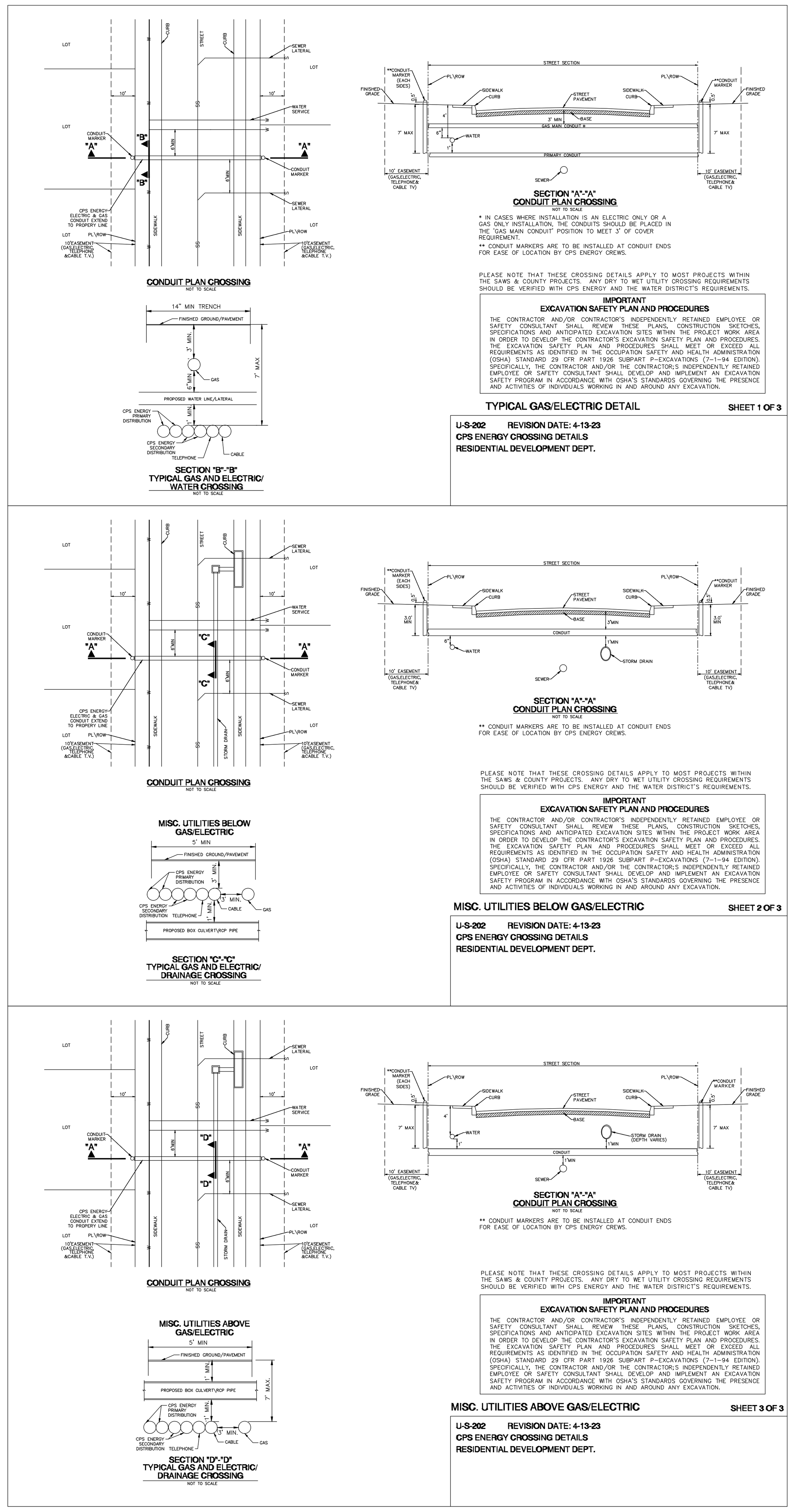
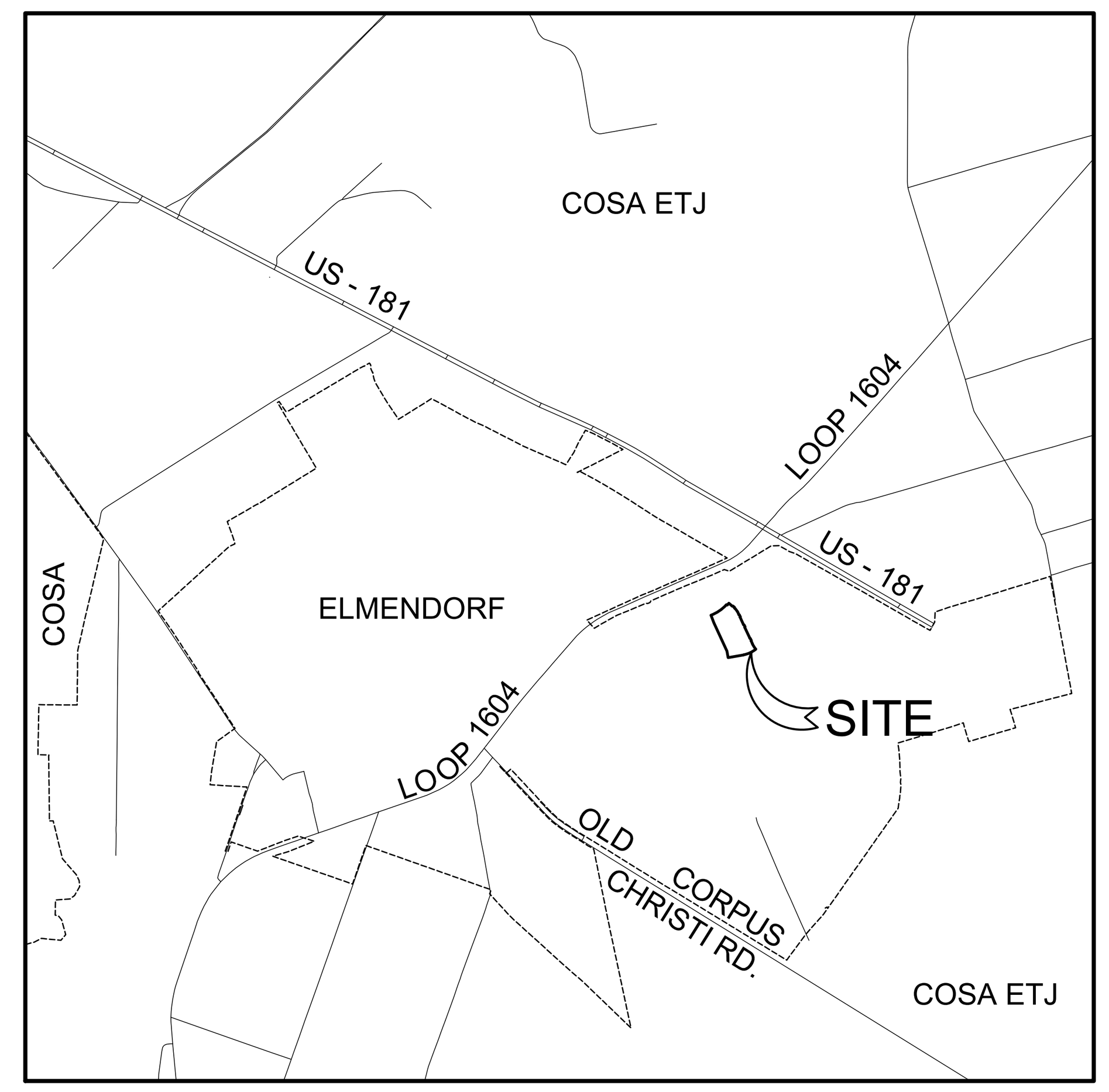
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
CONSTRUCTION COVER

DRAFTING: N.M./C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE: 09/2025	
KCI JOB #: 00049614_002	
SHEET: 100	

Date: Apr 13, 2026, 4:08pm User ID: Lance.Elling File: L:\develop\...

UTILITY PLANS & DETAILS
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7





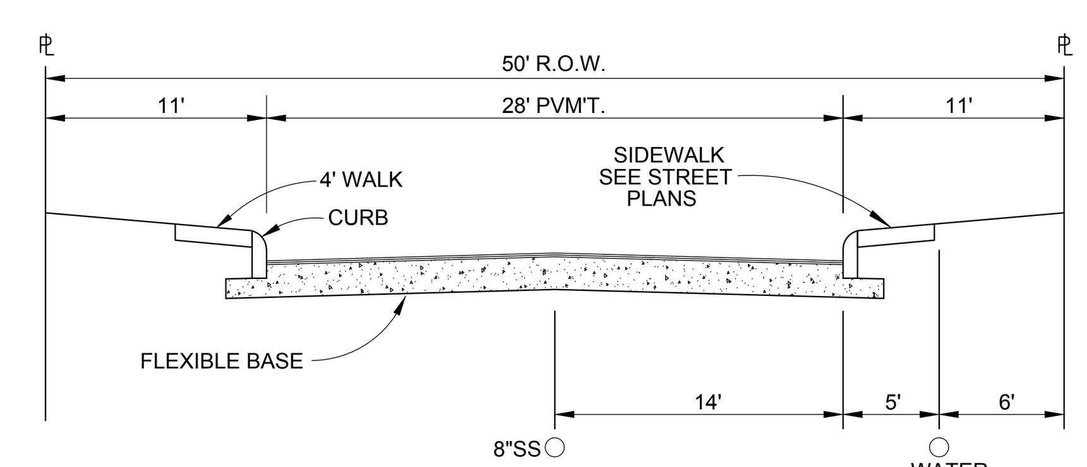
LOCATION MAP
NOT TO SCALE

LEGEND

EXISTING EDGE OF PAVEMENT	//// ////
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
EXISTING GAS MAIN	G
PROPOSED GAS MAIN	G
EXISTING UNDERGROUND TELEPHONE	T
PROPOSED UNDERGROUND TELEPHONE	T
EXISTING UNDERGROUND ELECTRIC	E
PROPOSED UNDERGROUND ELECTRIC	E
EXISTING OVERHEAD ELECTRIC	O.E.
PROPOSED OVERHEAD ELECTRIC	O.E.
EXISTING OVERHEAD TELEPHONE	O.T.
PROPOSED OVERHEAD TELEPHONE	O.T.
EXISTING UNDERGROUND CABLE T.V.	T.V.
PROPOSED UNDERGROUND CABLE T.V.	T.V.
EXISTING OVERHEAD CABLE T.V.	O.T.V.
PROPOSED OVERHEAD CABLE T.V.	O.T.V.
FIRE HYDRANT	
GAS, ELECTRIC, TELEPHONE & CABLE T.V. EASEMENT	G.E.T.TV.E.
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.
PROPOSED STREET LIGHT (250 WATT/SINGLE ARM)	L.P.(250)
EXISTING STREET LIGHT	E.L.P.
HIGH DENSITY POLYETHYLENE	H.D.P.E.
EXISTING SANITARY SEWER LATERAL	ESS
SANITARY SEWER LATERAL	SS
WATER SERVICE	W
IRRIGATION SERVICE	IS

SHEET INDEX

SHEET	TITLE
200	UTILITY COVER AND DETAILS
201	OVERALL UTILITY PLAN



TYPICAL LOCAL "A" STREET SECTION
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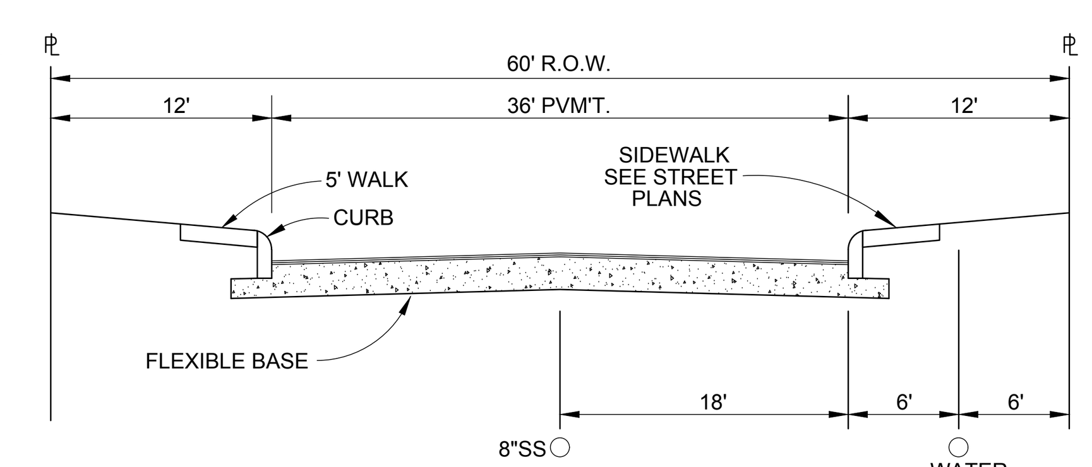

TYPICAL LOCAL "B" STREET SECTION
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OWNER/DEVELOPER:
DAVIDSON HOMES, LLC
2801 PARIA CYN
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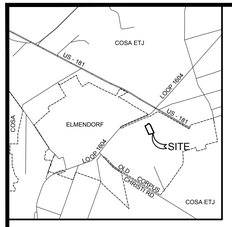
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
UTILITY COVER & DETAILS

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
200



LOCATION MAP
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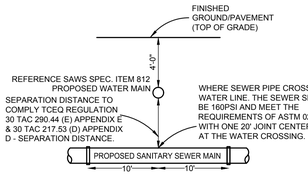

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
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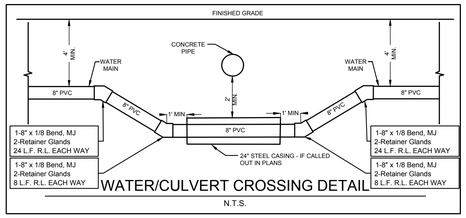
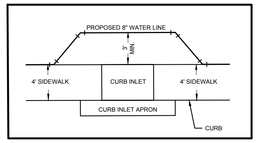


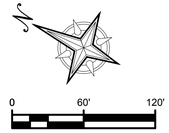
WATER/CULVERT CROSSING DETAIL
N.T.S.

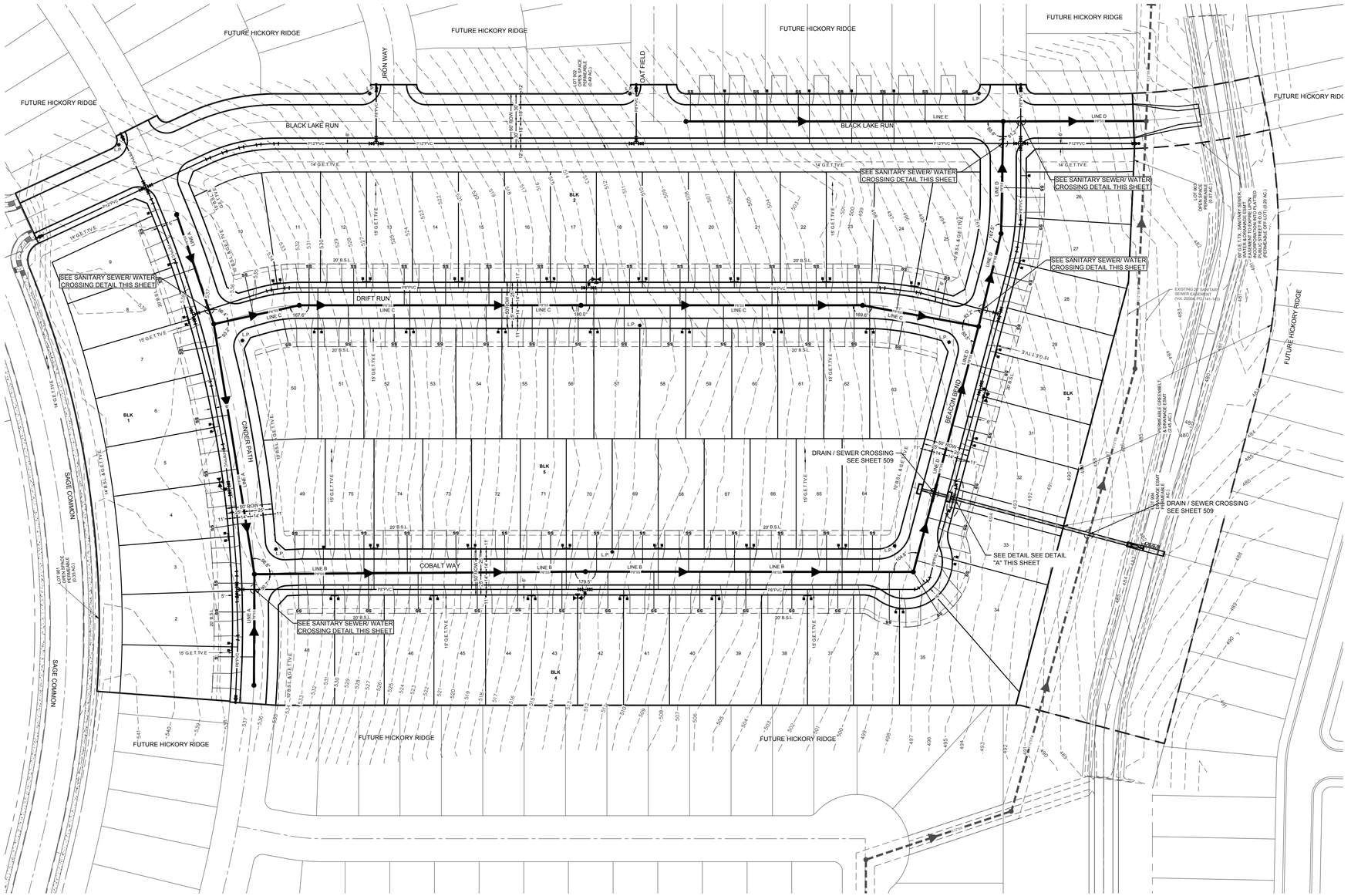


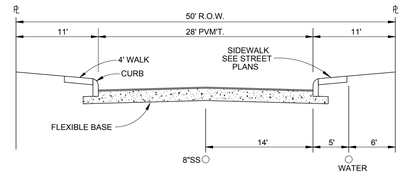
DETAIL "A"
N.T.S.

LEGEND

- EXISTING EDGE OF PAVEMENT
- EXISTING SANITARY SEWER MAIN — E8"/12"SS
- PROPOSED SANITARY SEWER MAIN — P8"/12"SS
- DIRECTION OF FLOW
- EXISTING WATER MAIN — E8"PVC
- PROPOSED WATER MAIN — P8"PVC
- PROPOSED LIGHT POLE (100 WATT LED) — L.P.
- PROPOSED WATER SERVICE / METER
- PROPOSED FIRE HYDRANT







TYPICAL LOCAL "A" STREET SECTION
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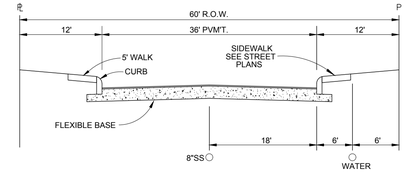

TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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

REV	DATE	DESCRIPTION

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PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F- 10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
OVERALL UTILITY PLAN

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
201

Date: Apr 13, 2026 - 4:08pm User ID: Lance.Ehrig File: L:\Develop\Proj_2025_GO\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cad\00049614_002 201 OVERALL UTILITY PLAN.dwg

SANITARY SEWER CONSTRUCTION
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7

CONSTRUCTION NOTES

ALL DEVELOPER PROJECTS

AQUA TEXAS GENERAL NOTES
PROPOSED AQUA TEXAS FACILITIES INCLUDE ITEMS OF THE PROPOSED WORK THE DEVELOPER PLANS TO CONVEY TO AQUA TEXAS TO OWN AND OPERATE UPON COMPLETION OF THE WORK AND AFTER SATISFYING CERTAIN OTHER REQUIREMENTS.

AQUA TEXAS HAS NO AGREEMENT OR CONTRACT WITH THE CONTRACTOR. THE PROPOSED AQUA TEXAS FACILITIES DESCRIBE ON THESE PLAN SHEETS ARE BEING CONSTRUCTED BY AND FOR THE BENEFIT OF THE PROJECT OWNER.

AQUA TEXAS HAS NOT PROVIDED REVIEW RELATED TO ITEMS OF WORK NOT RELATED TO PROPOSED OR EXISTING AQUA TEXAS FACILITIES OR CONTRACTORS' SAFETY PRECAUSTIONS OR MEANS, METHODS, TECHINIQUES, SQUENCES OR PROCEDURES REQUIRED FOR THE CONTRACTOR TO PEFORM THEIR WORK.

ANY CONTRACTOR(S) USING THESE DRAWINGS SHALL OBTAIN AND THEREAFTER KEEP IN FORCE THROUGH THE DURATION OF THAT USE CUSTOMARY AND APPROPRIATE INSURANCE COVERAGE, WHICH SHALL INCLUDE WORKERS COMPENSATION AND EMPLOYERS' LIABILITY, COMMERCIAL GENERAL LIABILITY, COMMERCIAL AUTOMOBILE LIABILITY, AND UMBRELLA LIABILITY. CERTIFICATE(S) OF INSURANCE BY THE INSURER(S) ISSUING THE POLICIES SHALL BE FILED WITH AQUA TEXAS PRIOR TO COMMENCING CONSTRUCTION OF AQUA TEXAS FACILITIES

ANY CONTRACTOR(S) USING THESE DRAWINGS, BY SAID USE, SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS AQUA TEXAS, ITS OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS FROM AND AGAINST ANY AND ALL CLAIMS, DEMANDS, DEBTS, SUITS, CAUSES OF ACTION, LOSSES, DAMAGES, JUDGMENTS, FINES, PENALTIES, LIABILITIES, AND COSTS, INCLUDING REASONABLE ATTORNEY FEES AND DEFENSE COSTS (COLLECTIVELY "DAMAGES") INCURRED BY AQUA ARISING OUT OF CONSTRUCTION OF THE AQUA TEXAS FACILITIES.

THE DEVELOPER, ENGINEER, OR CONTRACTOR SHALL CHAIR OR ATTEND A PRECONSTRUCTION MEETING WHICH INCLUDES AQUA TEXAS PERSONNEL. CONTACT AQUA TEXAS' BUSINESS DEVELOPMENT ENGINEER TO COORDINATE THE MEETING ATTENDANCE, SCHEDULE, AND CONTENT.

THE CONTRACTOR SHALL WORK WITH FINAL ENGINEERING PLANS MARKED TO INDICATE APPROVAL BY AQUA TEXAS' ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL HAVE APPROVED PLANS ON HAND ANYTIME PROPOSED AQUA TEXAS FACILITIES ARE BEING CONSTRUCTED OR DISTURBED. AQUA TEXAS' APPROVAL SHOULD BE NOTED ON THE COVER SHEET ALONG WITH THE DATE THE PLANS WERE APPROVED.

NO PLAN CHANGES OR FIELD CHANGES RELATED TO THE CONSTRUCTION OF PROPOSED AQUA TEXAS FACILITIES SHALL BE ALLOWED WITHOUT THE WRITTEN APPROVAL OF AN AQUA TEXAS ENGINEERING DEPARTMENT REPRESENTATIVE.

CONTRACTOR SHALL NOTIFY AQUA TEXAS 48 HOURS BEFORE:

BEGINNING CONSTRUCTION OF PROPOSED AQUA TEXAS FACILITIES
NOTIFY: AQUA ENGINEERING AND AQUA OPERATIONS*

CONDUCTING REQUIRED SAMPLING OR TESTING
NOTIFY: AQUA OPERATIONS*

TAPPING, CONNECTING, MODIFYING OR IN ANY OTHER WAY DISTURBING AQUA TEXAS FACILITIES
NOTIFY: AQUA OPERATIONS*
*(AQUA ENGINEERING AND OPERATIONS CONTACTS SHALL BE DESIGNATED AT THE PRE-CONSTRUCTION MEETING)

AN AQUA TEXAS REPRESENTATIVE MAY BE ON SITE FROM TIME TO TIME TO OBERVE AND RECORD:

CONNECTION TO AQUA FACILITITES
CONSTRUCTION PROGRESS AND CONDITIONS
TESTING AND SAMPLING.

THESE OBSERVATIONS AND RECORDS IN NO WAY CONSTITUTE APPROVAL OR ACCEPTANCE OF WORK BY THE CONTRACTOR.

A CONTRACTOR'S REPRESENTATIVE SHALL ATTEND A PRE-FINAL AND FINAL WALK THROUGH CALLED BY THE DEVELOPER. FOLLOWING THE PREFINAL WALK THROUGH THE CONTRACTOR AND OTHER ATTENDEES SHALL PREPARE AN AGREED, WRITTEN PUNCH LIST OF WORK NECESSARY FOR COMPLETION OF PROPOSED AQUA TEXAS FACILITIES IN ACCORDANCE WITH THE APPROVED FINAL ENGINEERING PLANS. THE PURPOSE OF THE FINAL WALK THROUGH IS TO CONFIRM COMPLETION OF THE PUNCH LIST WORK ITEMS.

SEWER NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO SANITARY SEWER OVERFLOW (SSO) OCCURS AS A RESULT OF THEIR WORK. ALL CONTRACTOR PERSONNEL RESPONSIBLE FOR SSO PREVENTION AND CONTROL SHALL BE TRAINED ON PROPER RESPONSE. SHOULD AN SSO OCCUR, THE CONTRACTOR SHALL:

A. IDENTIFY THE SOURCE OF THE SSO AND NOTIFY SAWS EMERGENCY OPERATIONS CENTER (EOC) IMMEDIATELY AT (210) 233-2014. PROVIDE THE ADDRESS OF THE SPILL AND AN ESTIMATED VOLUME OR FLOW.
B. ATTEMPT TO ELIMINATE THE SOURCE OF THE SSO.
C. CONTAIN SEWAGE FROM THE SSO TO THE EXTENT OF PREVENTING A POSSIBLE CONTAMINATION OF WATERWAYS.
D. CLEAN UP SPILL SITE (RETURN CONTAINED SEWAGE TO THE COLLECTION SYSTEM IF POSSIBLE) AND PROPERLY DISPOSE OF CONTAMINATED SOIL/MATERIALS.
E. CLEAN THE AFFECTED SEWER MAINS AND REMOVE ANY DEBRIS.
F. MEET ALL POST-SSO REQUIREMENTS AS PER THE EPA CONSENT DECREE, INCLUDING LINE CLEANING AND TELEVISING THE AFFECTED SEWER MAINS (AT SAWS DIRECTION) WITHIN 24 HOURS.

SHOULD THE CONTRACTOR FAIL TO ADDRESS AN SSO IMMEDIATELY AND TO AQUA TEXAS INC'S SATISFACTION, THEY WILL BE RESPONSIBLE FOR ALL COSTS INCURRED BY AQUA TEXAS INC., INCLUDING ANY FINES FROM EPA, TCEQ AND/OR ANY OTHER FEDERAL, STATE OR LOCAL AGENCIES.

NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY THE TCEQ AND AQUA TEXAS INC.

2. IF BYPASS PUMPING IS REQUIRED, THE CONTRACTOR SHALL PERFORM SUCH WORK IN ACCORDANCE WITH SAWS STANDARD SPECIFICATION FOR WATER AND SANITARY SEWER CONSTRUCTION, ITEM NO. 865, "BYPASS PUMPING".

3. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING FORCE MAINS OF ANY SIZE MUST BE COORDINATED WITH THE AQUA TEXAS INC. CONSTRUCTION INSPECTION DIVISION AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO AQUA TEXAS INC. OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.

4. SEWER PIPE WHERE WATER LINE CROSSES SHALL BE 160 PSI AND MEET THE REQUIREMENTS OF ASTM D2241, TAC 217.53 AND TCEQ 290.44(E)(4)(B). CONTRACTOR SHALL CENTER A 20' JOINT OF 160 PSI PRESSURE RATED PVC AT THE PROPOSED WATER CROSSING.

5. ELEVATIONS POSTED FOR TOP OF MANHOLES ARE FOR REFERENCE ONLY: IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ALLOWANCES AND ADJUSTMENTS FOR TOP OF MANHOLES TO MATCH THE FINISHED GRADE OF THE PROJECT'S IMPROVEMENTS. (NSPI)

6. SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE SAWS INSPECTOR ASSIGNED TO THE COUNTER PERMIT OR GENERAL CONSTRUCTION PERMIT (GCP). THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE REGARDLESS OF SIZE.

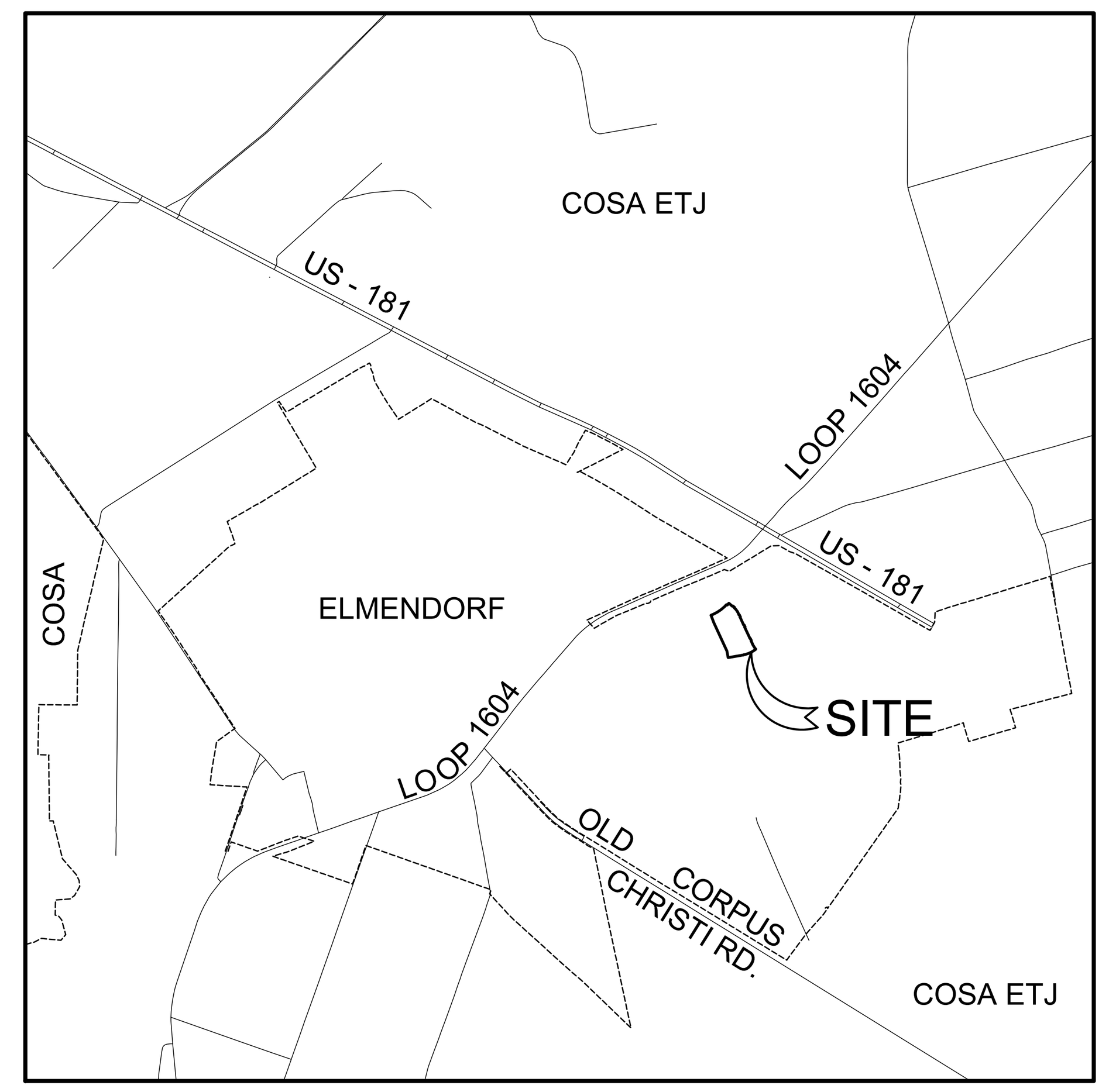
7. MANHOLE AND ALL PIPE TESTING (INCLUDING THE TV INSPECTION) MUST BE PERFORMED AND PASSED PRIOR TO FINAL FIELD ACCEPTANCE BY AQUA TEXAS INC. CONSTRUCTION INSPECTION DIVISION, AS PER THE AQUA TEXAS INC. SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.

8. ALL PVC PIPE OVER 14 FEET OF COVER SHALL BE EXTRA STRENGTH WITH MINIMUM PIPE STIFFNESS OF 115 PSI.

* SEWER MAINS & LATERALS CROSSING WATER MAINS SHALL COMPLY WITH 30 TAC 290.44(e) AND 30 TAC 217.53(d) (FORMERLY 30 TAC 317.13 APPENDIX E)

SANITARY SEWER TESTING REQUIREMENTS:

CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm



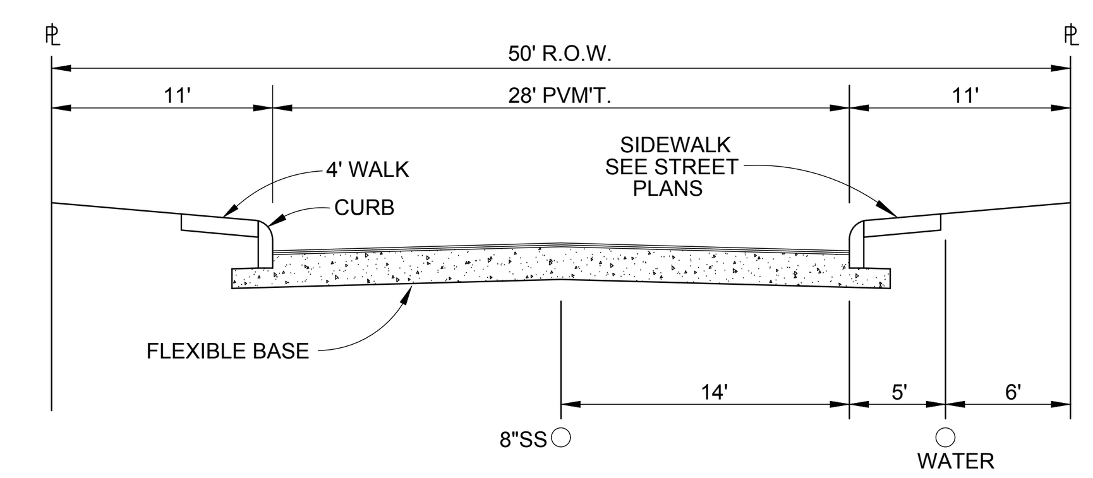
LOCATION MAP
NOT TO SCALE

LEGEND

EXISTING EDGE OF PAVEMENT	//// ////
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES
1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND 35 FEET IN LENGTH UNLESS NOTED OTHERWISE.
2. ALL RESIDENTIAL SEWER SERVICE LATERALS SHALL BE CAPPED AND SEALED.
3. LATERALS TO LOTS SHALL BE SLOPED FROM THE TEE OR STACK AT 2% THROUGH THE G.E.T.TV.E. LOCATED IN THE FRONT OF THE LOT.
4. ALL SEWER PIPE TO BE SDR-26 UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO ENSURE LATERALS AT PROPOSED DRY UITLITY CROSSINGS ARE LOCATED AT A DEPTH TO AVOID ANY CONFLICT WITH DRY UTILITY INSTALLATION.

Sheet List Table



TYPICAL LOCAL "A" STREET SECTION
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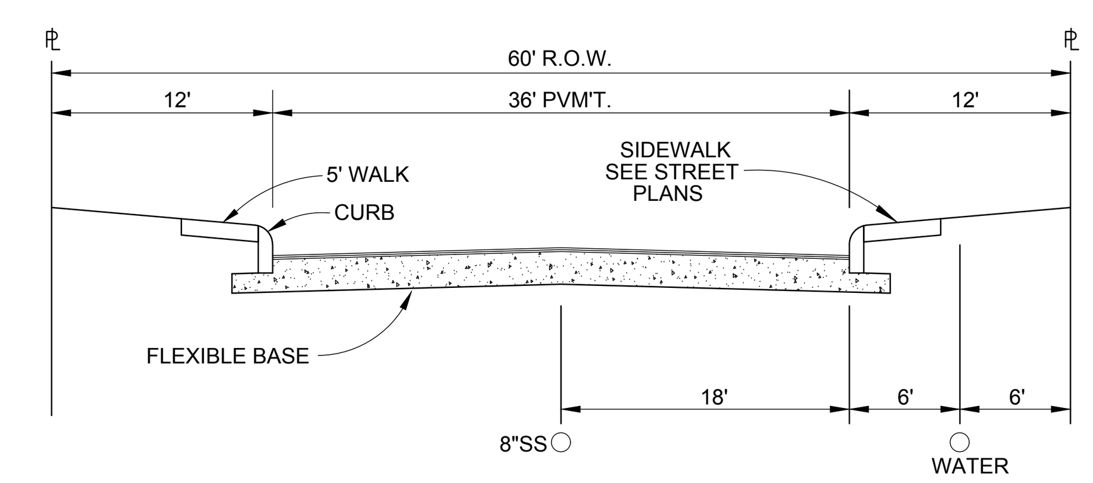

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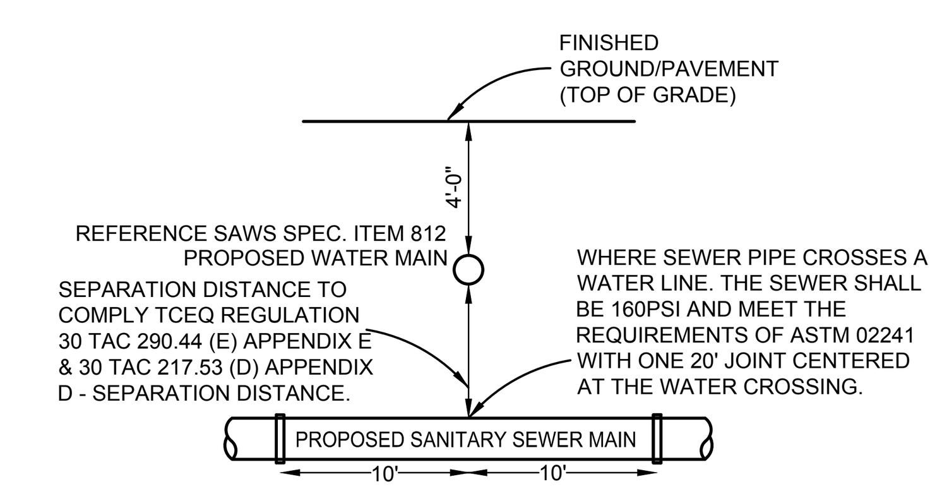

TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE

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2806 W. BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

REV	DATE	DESCRIPTION

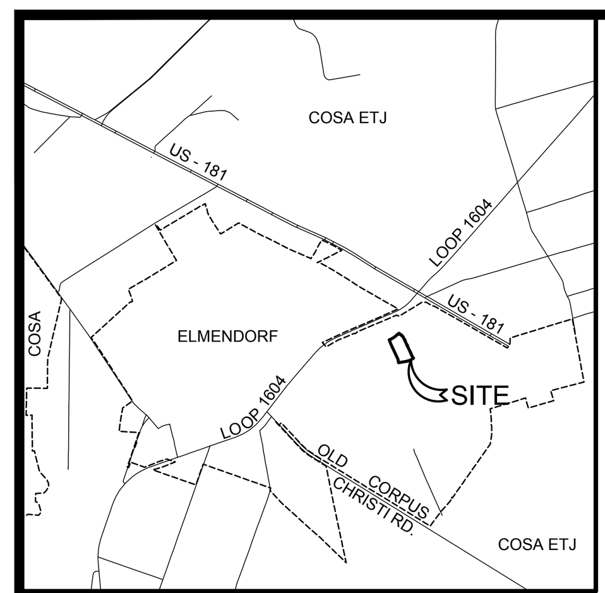
FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

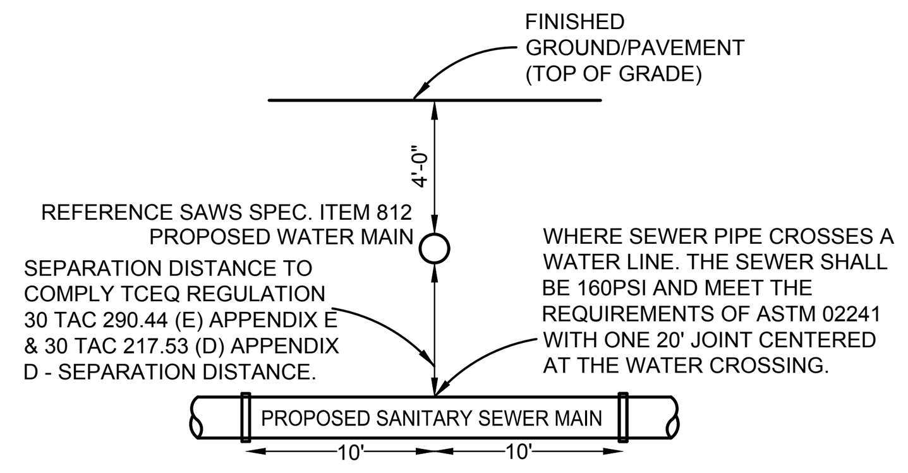
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER COVER

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
300



LOCATION MAP
NOT TO SCALE



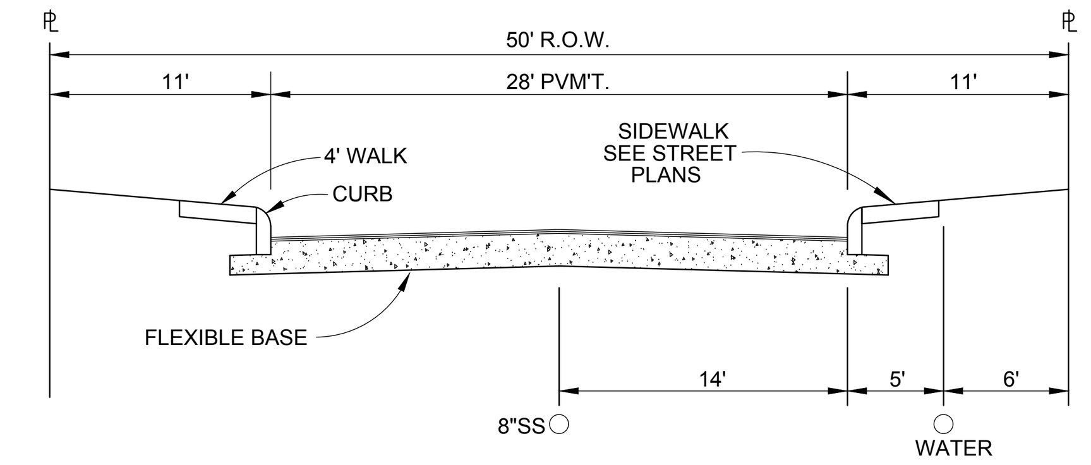
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE

SANITARY SEWER TESTING REQUIREMENTS:

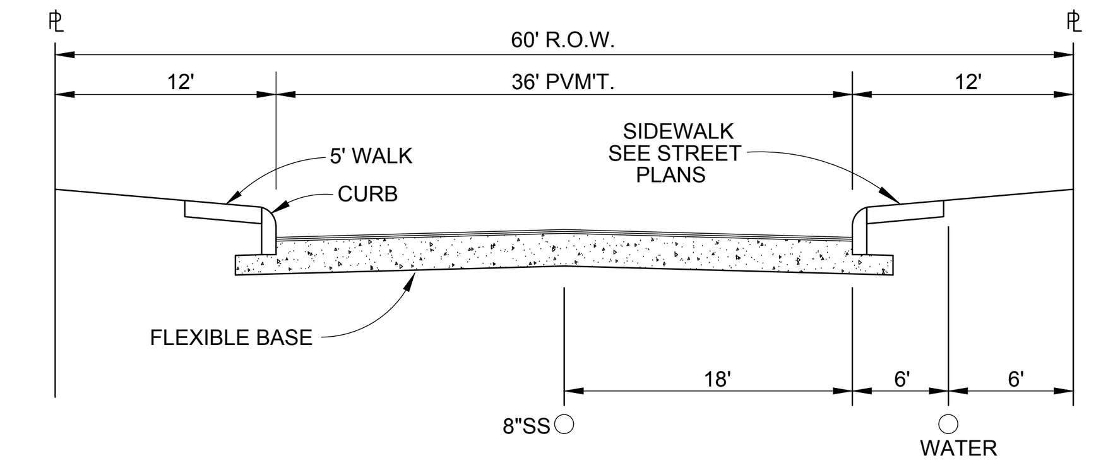
CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm

TRENCH EXCAVATION SAFETY PROTECTION

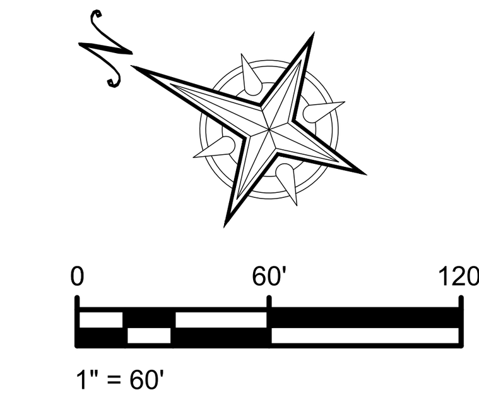
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL. REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

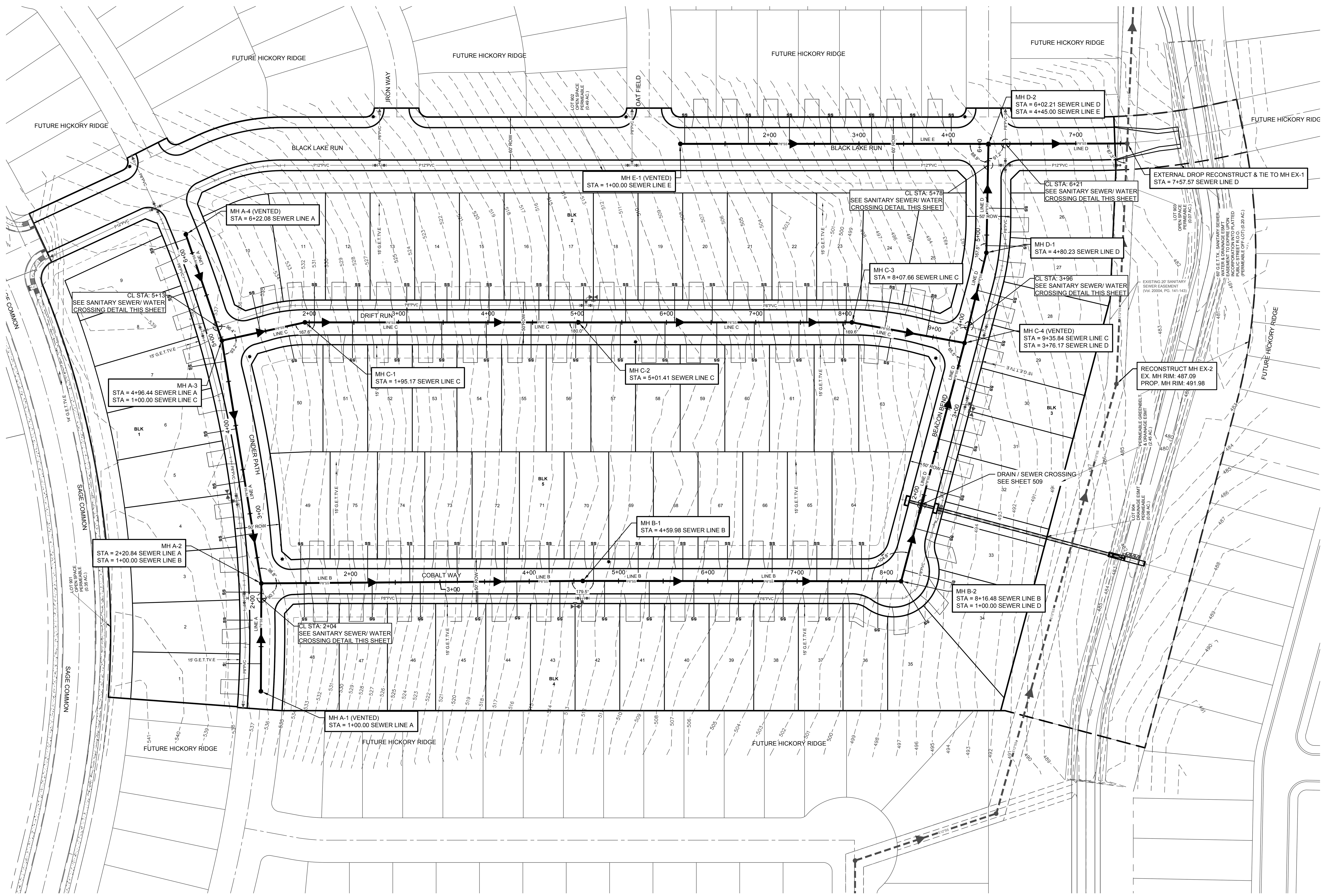


TYPICAL LOCAL "A" STREET SECTION
NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE





LEGEND

EXISTING EDGE OF PAVEMENT	
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND 35 FEET IN LENGTH UNLESS NOTED OTHERWISE.
2. ALL RESIDENTIAL SEWER SERVICE LATERALS SHALL BE CAPPED AND SEALED.
3. LATERALS TO LOTS SHALL BE SLOPED FROM THE TEE OR STACK AT 2% THROUGH THE G.E.T.TV.E. LOCATED IN THE FRONT OF THE LOT.
4. ALL SEWER PIPE TO BE SDR-26 UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO ENSURE LATERALS AT PROPOSED DRY UITLITY CROSSINGS ARE LOCATED AT A DEPTH TO AVOID ANY CONFLICT WITH DRY UTILITY INSTALLATION.

REV	DATE	DESCRIPTION

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KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
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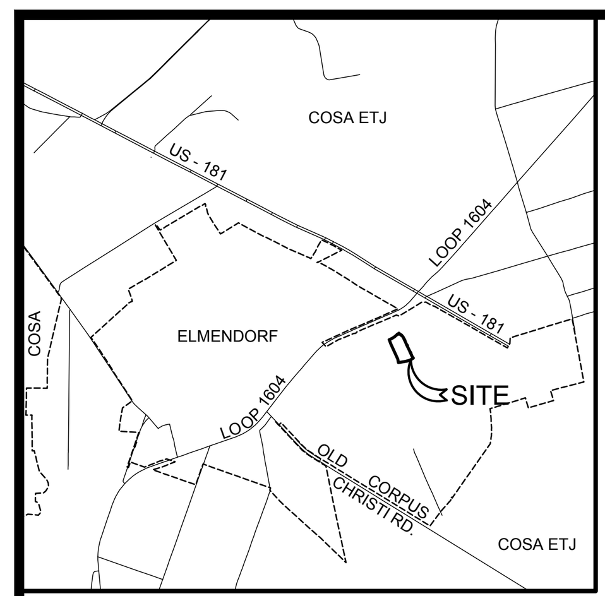
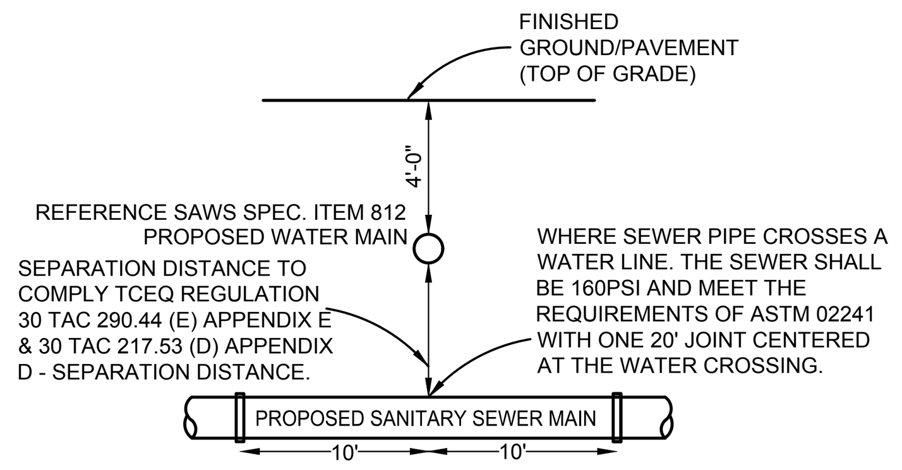
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
OVERALL SANITARY SEWER PLAN

DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		
SHEET:	301		



LOCATION MAP
NOT TO SCALE



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE

SANITARY SEWER TESTING REQUIREMENTS:

CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm

TRENCH EXCAVATION SAFETY PROTECTION

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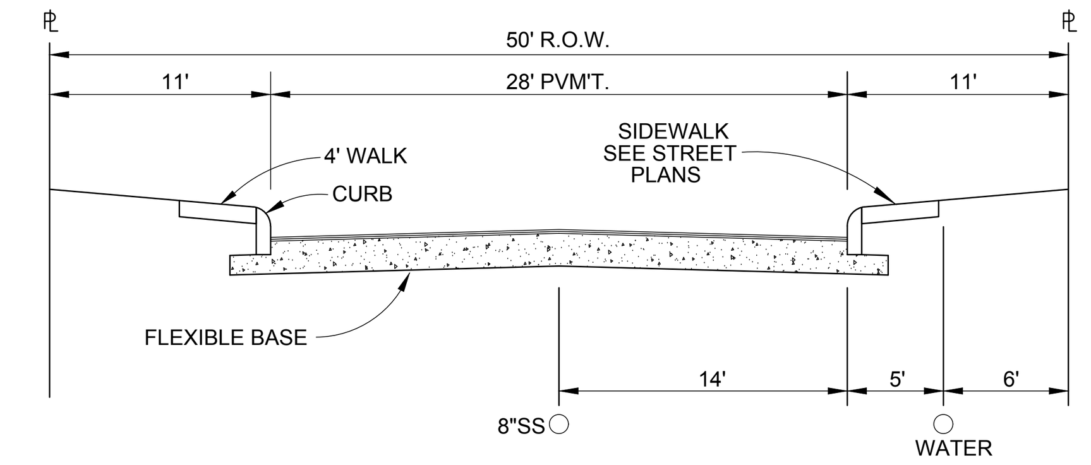
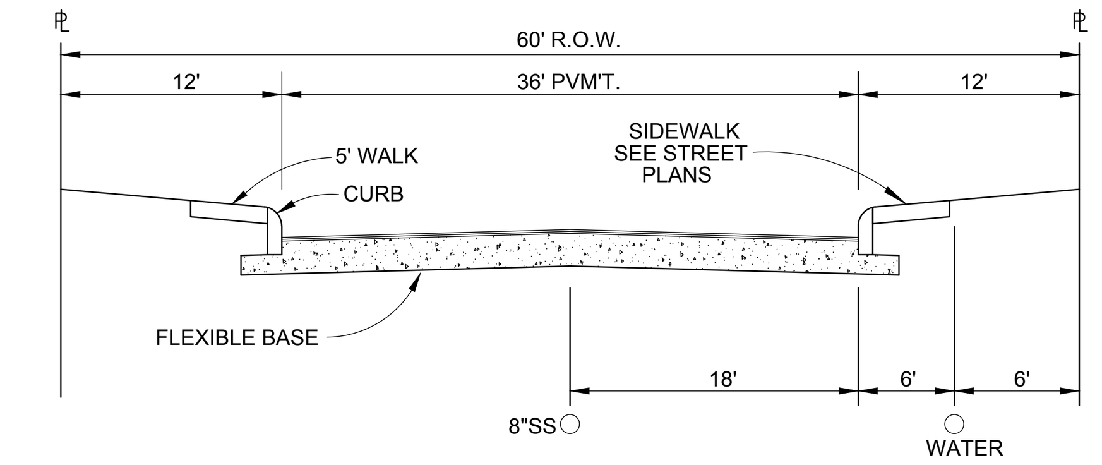
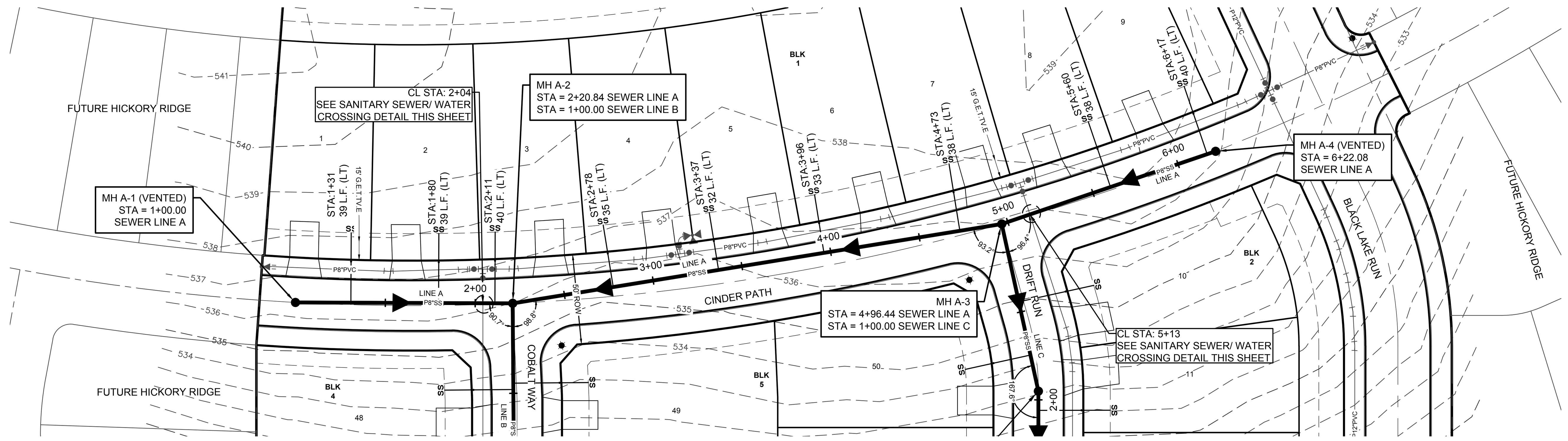
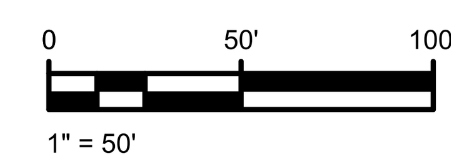


TYPICAL LOCAL "A" STREET SECTION
NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE





LEGEND

EXISTING EDGE OF PAVEMENT	////
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

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2. ALL RESIDENTIAL SEWER SERVICE LATERALS SHALL BE CAPPED AND SEALED.
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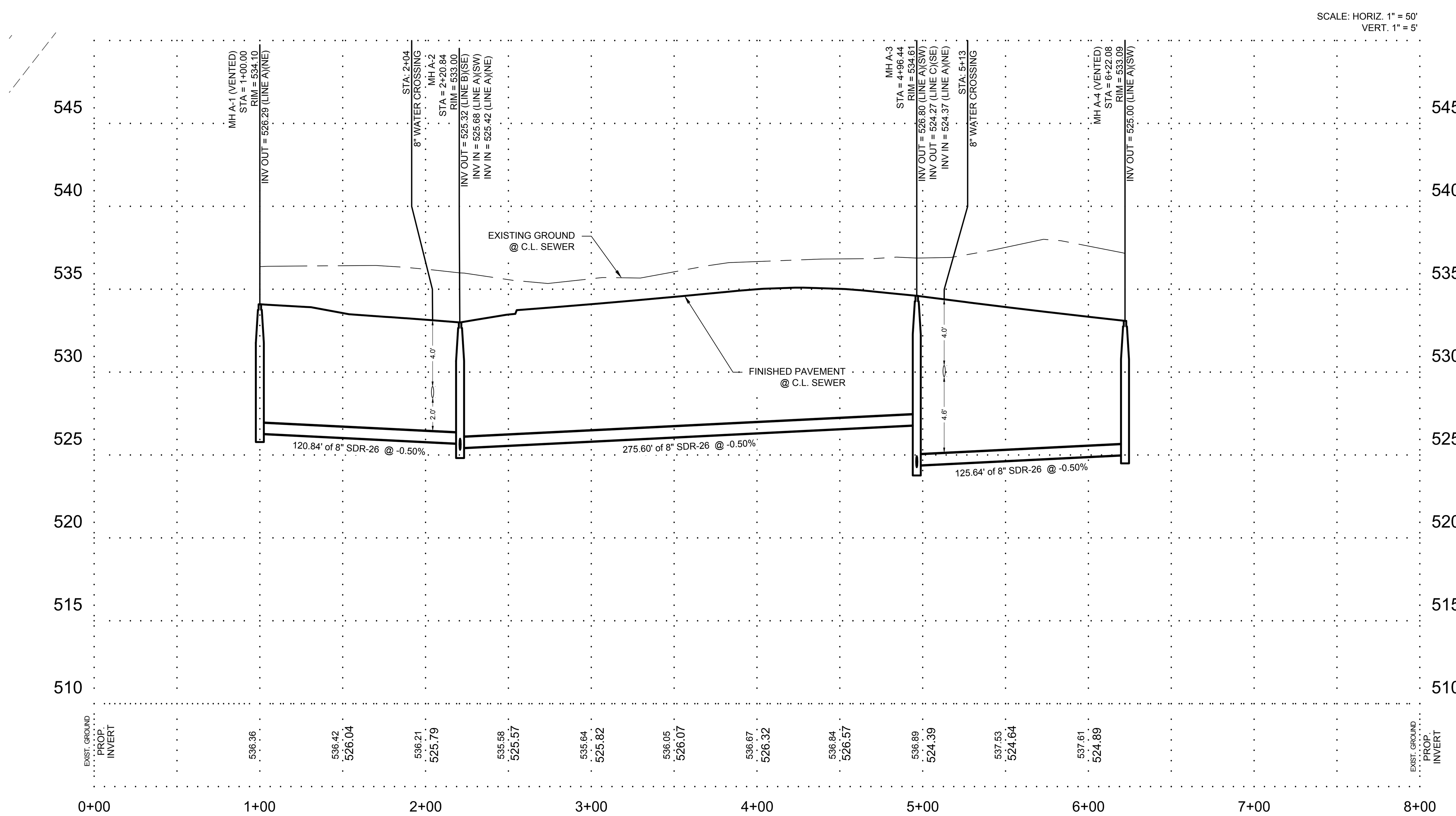
SANITARY SEWER LINE "A"

STA. 1+00.00 TO STA. 6+22.08



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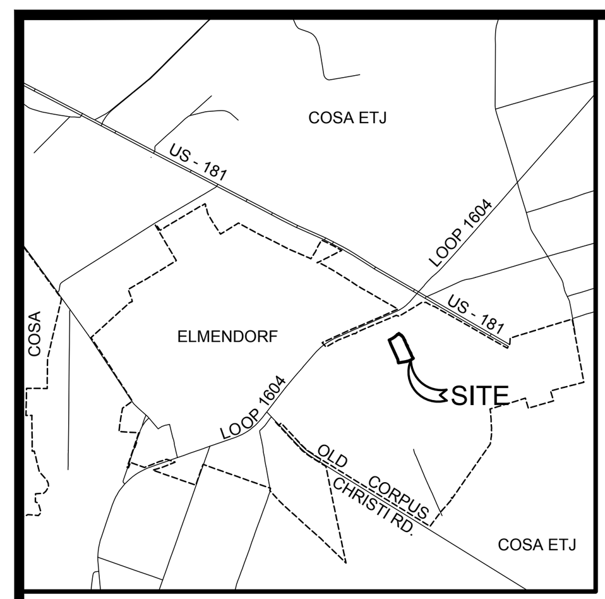
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10943-65

KCI TECHNOLOGIES

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER LINE A PLAN & PROFILE

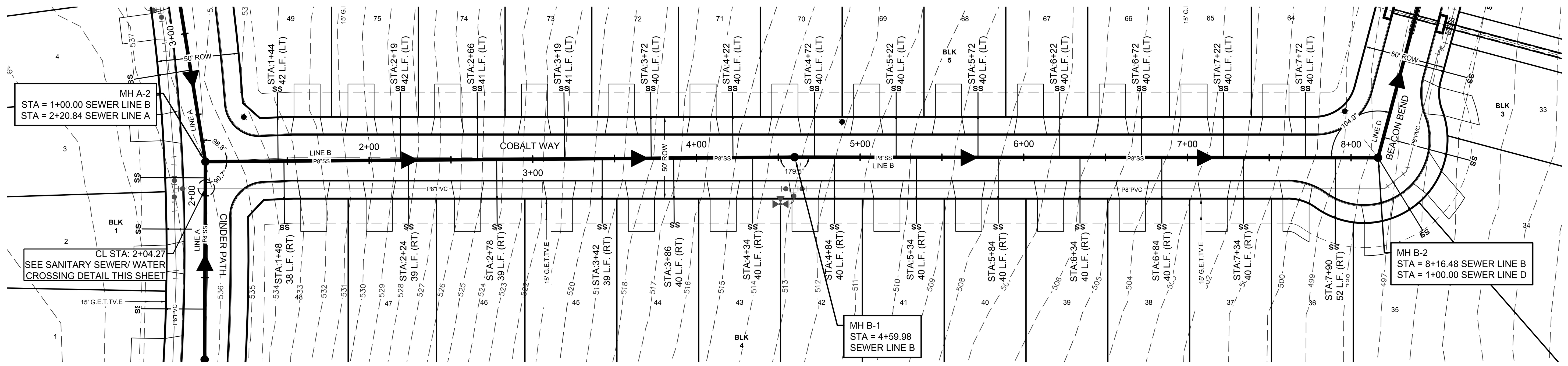
DRAFTING: N.M.C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002
SHEET:			

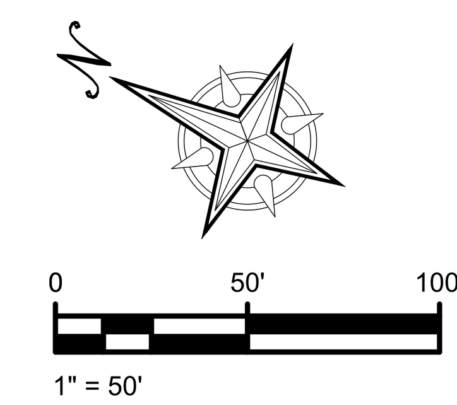
302



LOCATION MAP

NOT TO SCALE





LEGEND

EXISTING EDGE OF PAVEMENT	
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

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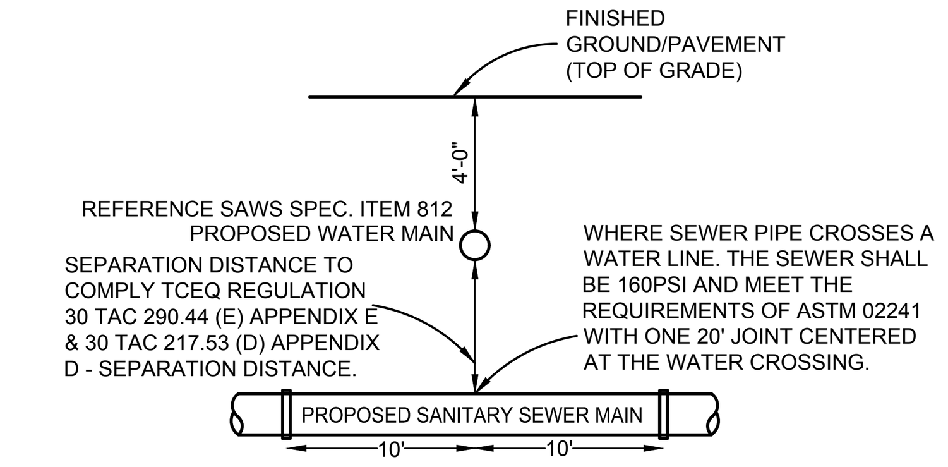
SANITARY SEWER TESTING REQUIREMENTS:

CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm



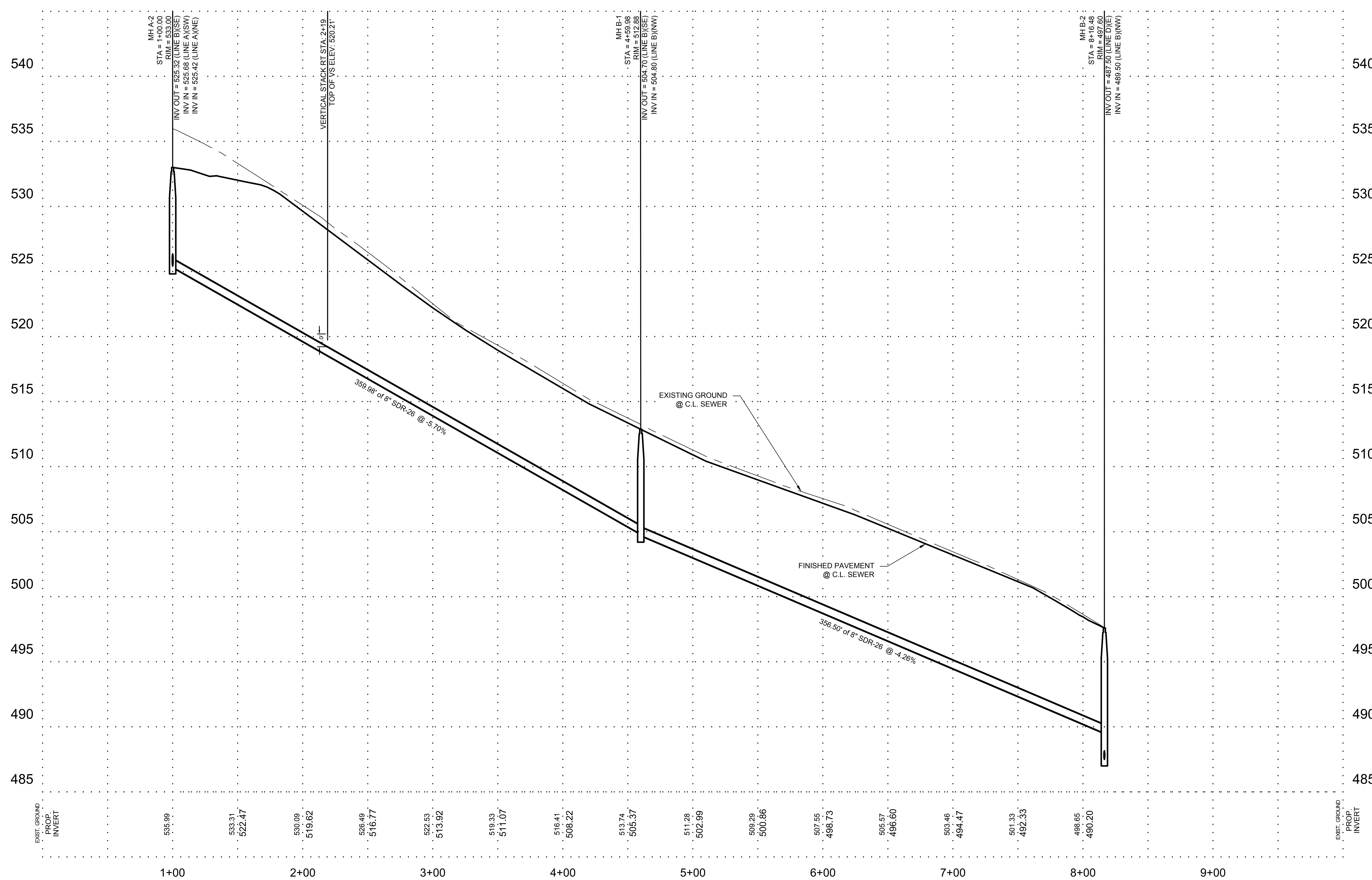
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

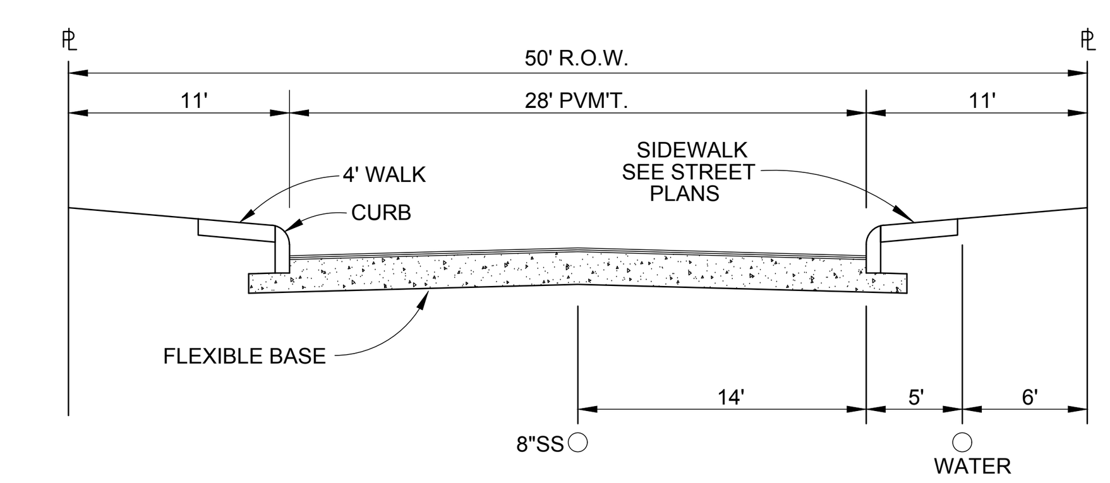
NOT TO SCALE

SANITARY SEWER LINE "B"

STA. 1+00.00 TO STA. 8+16.48

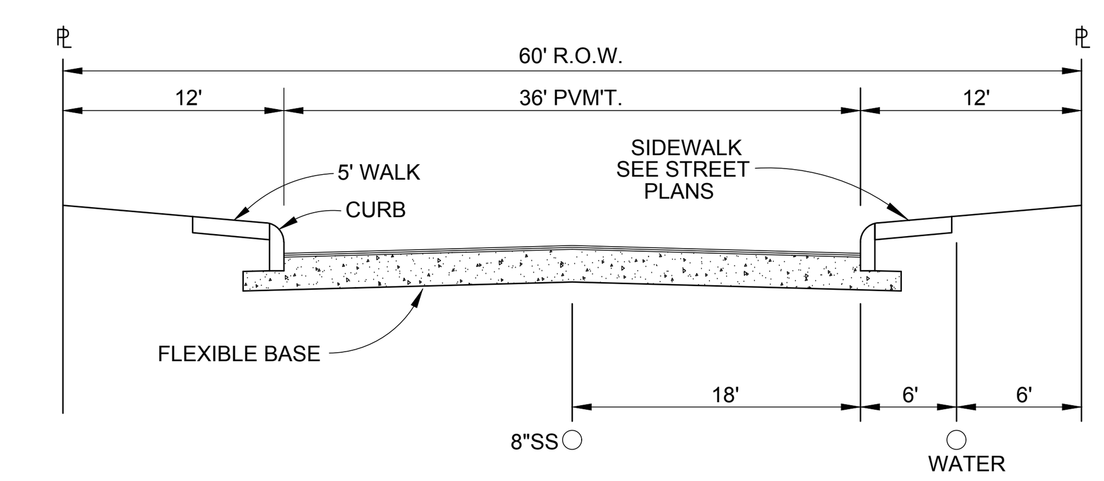
SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'





TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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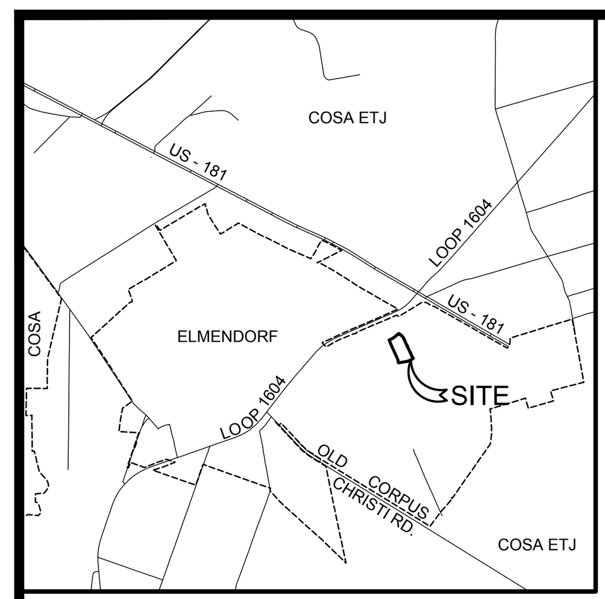
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER LINE B PLAN & PROFILE

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

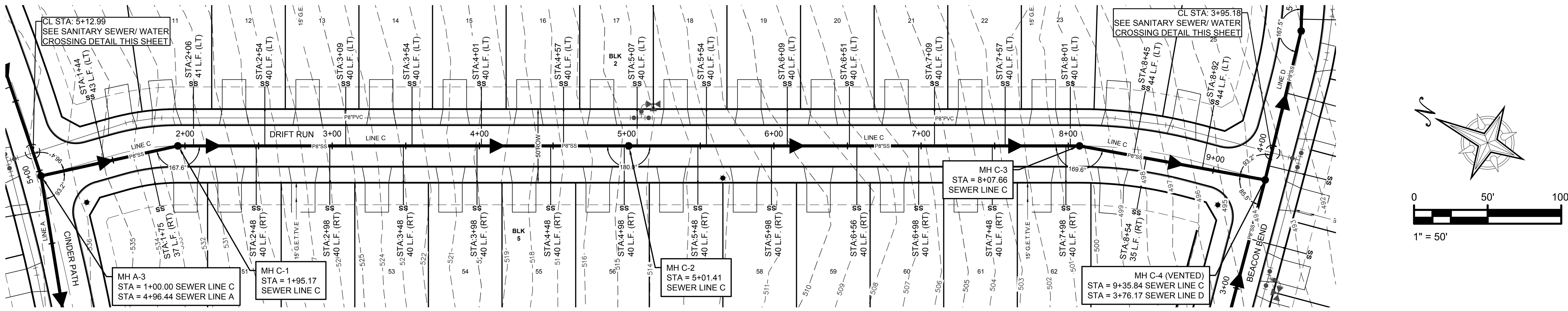
SHEET:
303

Date: Apr 13, 2026, 4:09pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 303 SANITARY SEWER LINE B PLAN & PROFILE.dwg



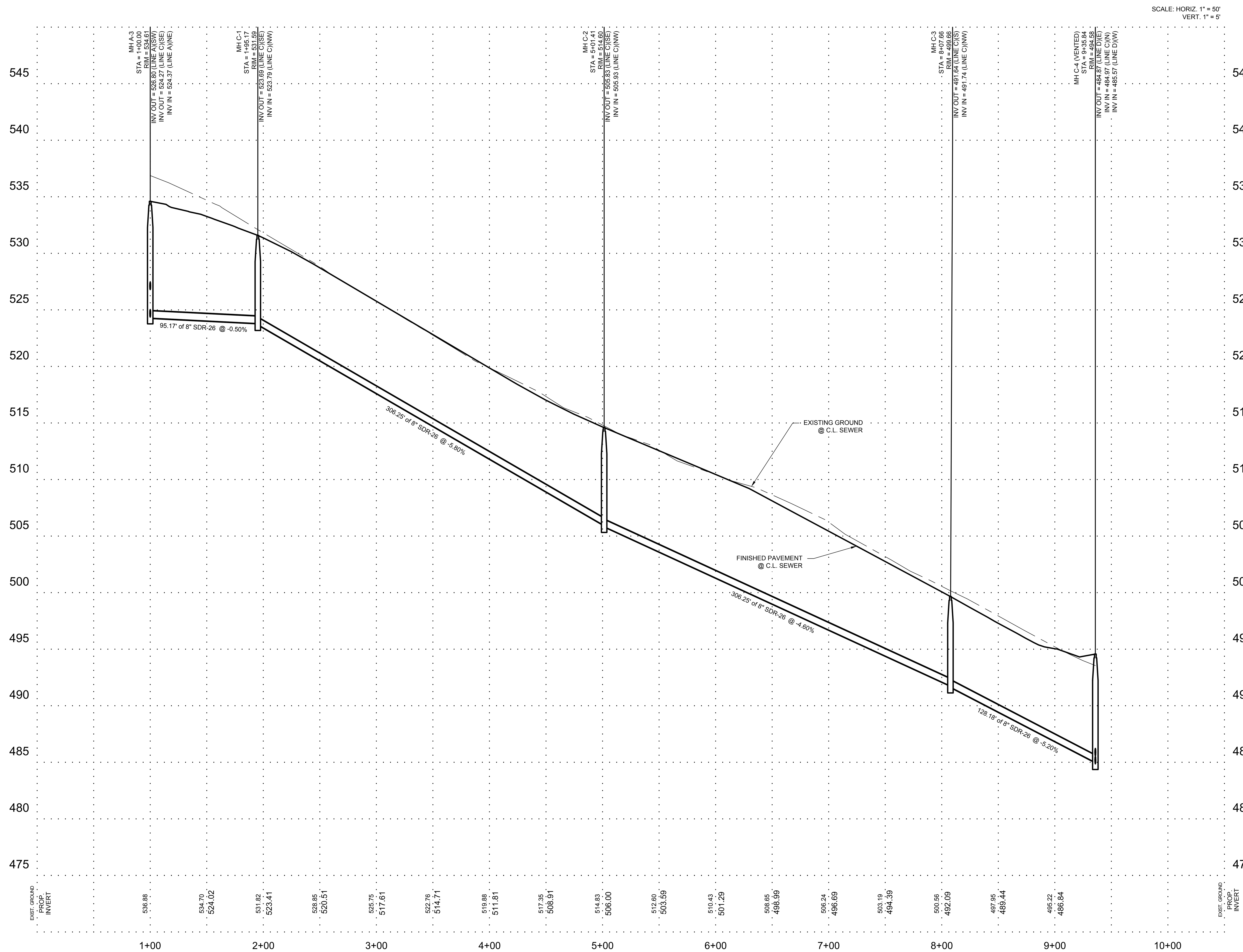
LOCATION MAP

NOT TO SCALE



SANITARY SEWER LINE "C"

STA. 1+00.00 TO STA. 9+35.84



LEGEND

EXISTING EDGE OF PAVEMENT	
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

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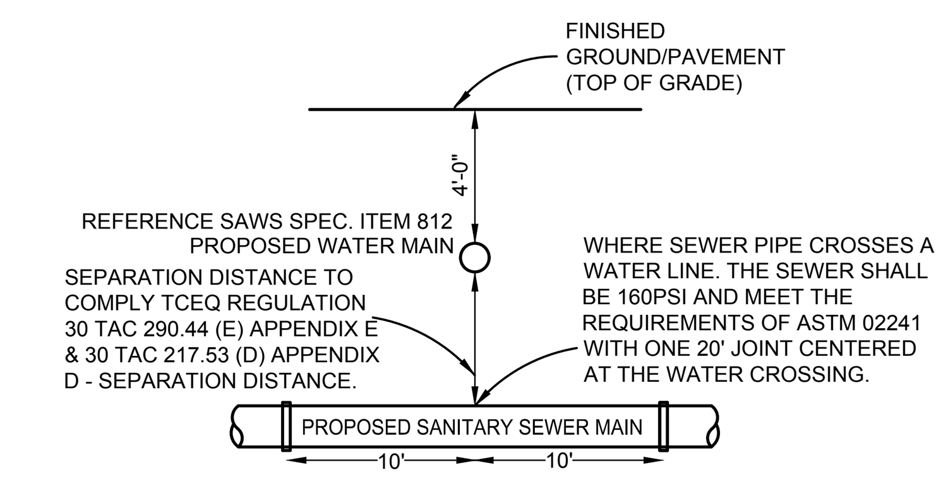
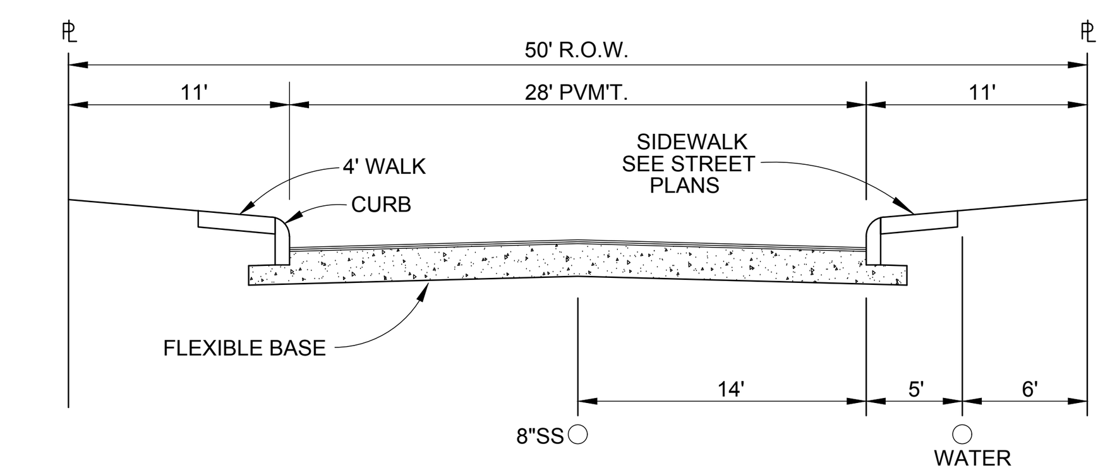
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm



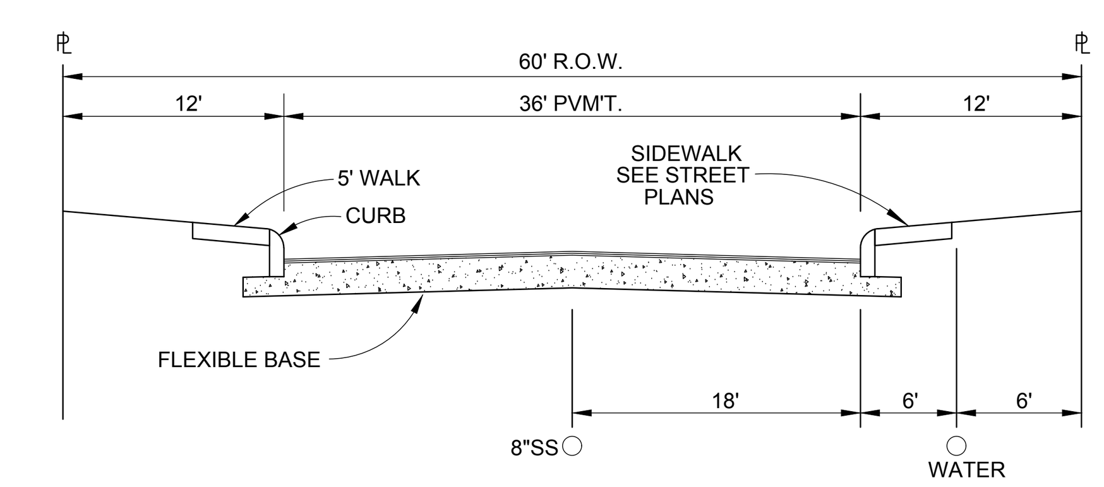
TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

NOT TO SCALE



TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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PHONE: (210) 641-9999
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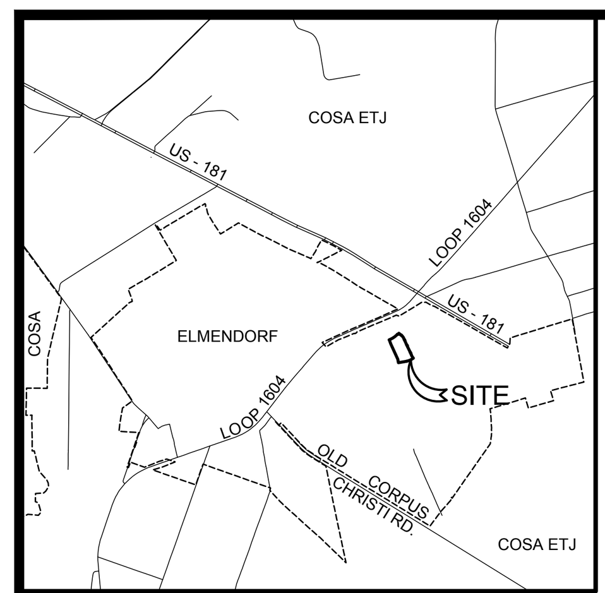
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER LINE C PLAN & PROFILE

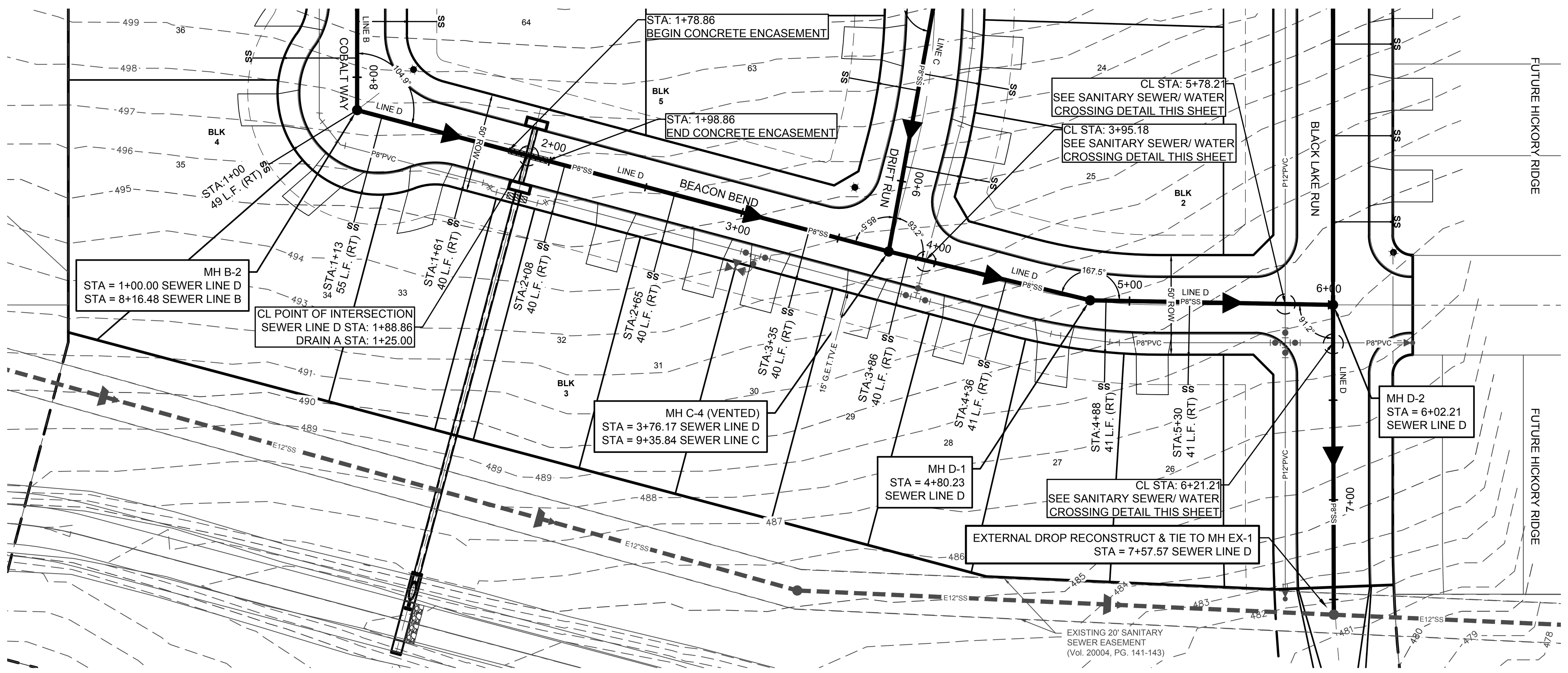
DRAFTING: N.M./C.C		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

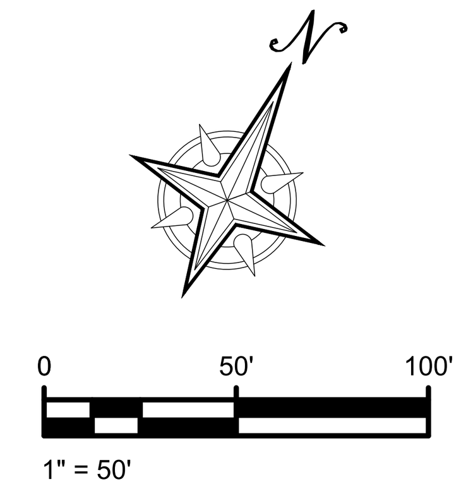
SHEET:
304

Date: Apr 13, 2026, 4:09pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 304 SANITARY SEWER LINE C PLAN & PROFILE.dwg



LOCATION MAP
NOT TO SCALE

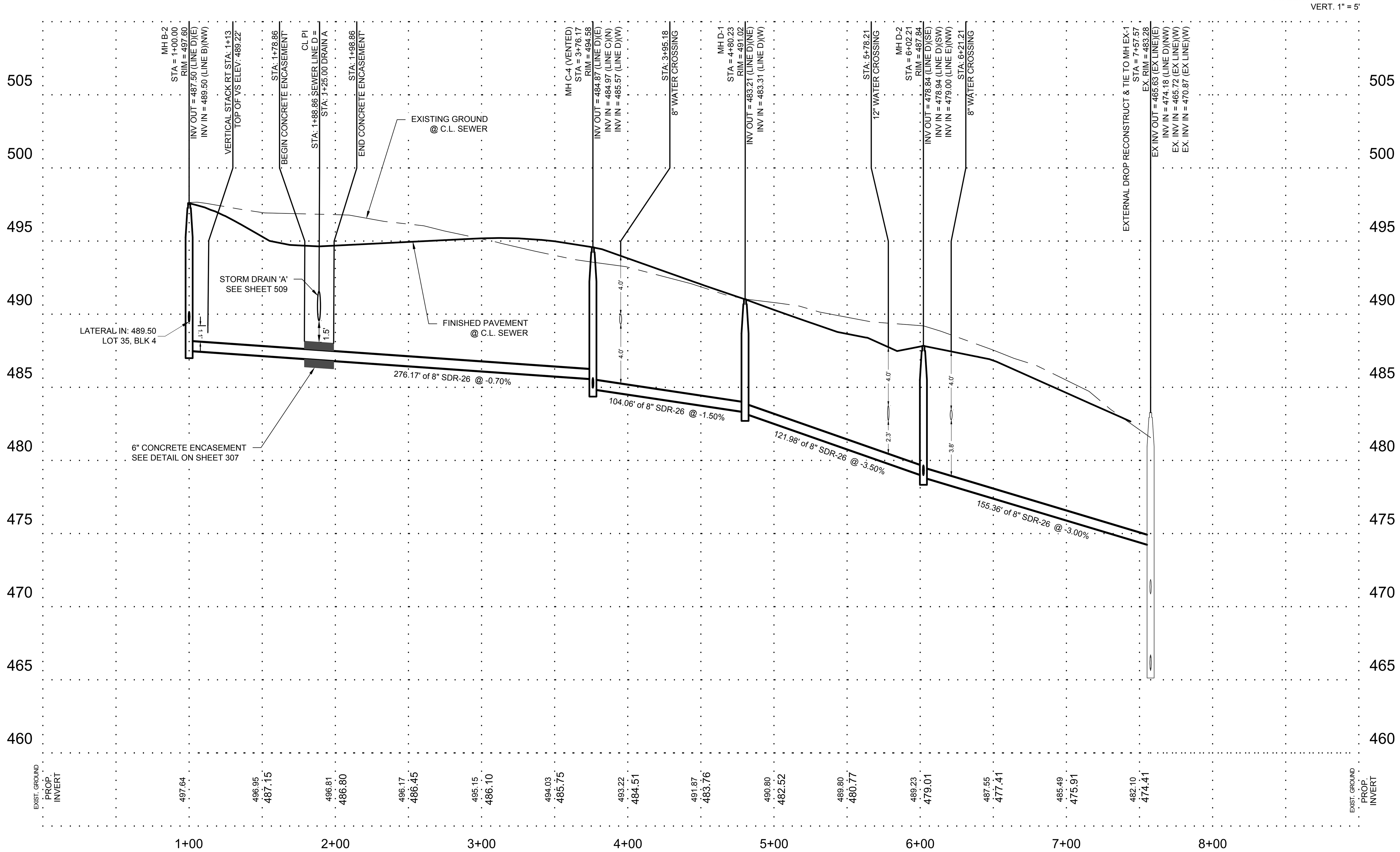




SANITARY SEWER LINE "D"

STA. 1+00.00 TO STA. 7+57.57

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



LEGEND

EXISTING EDGE OF PAVEMENT	
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

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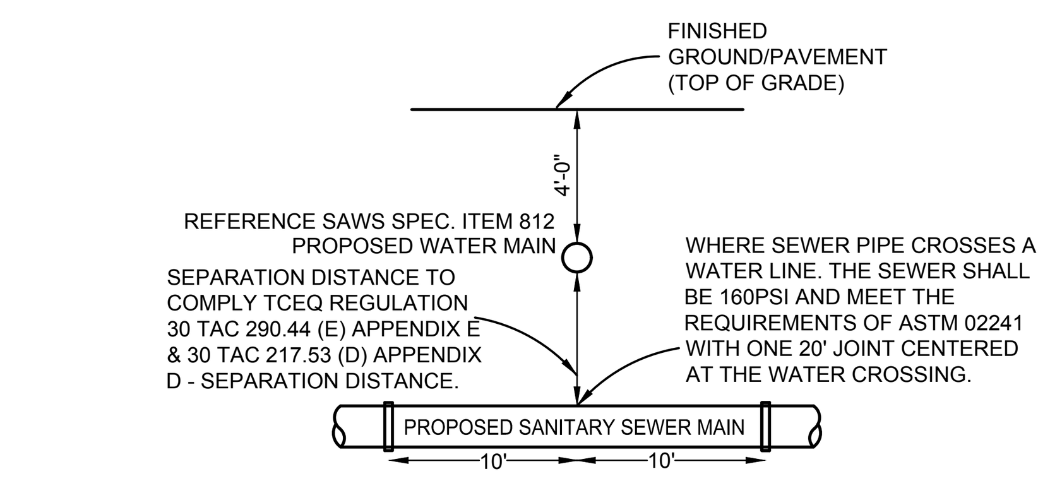
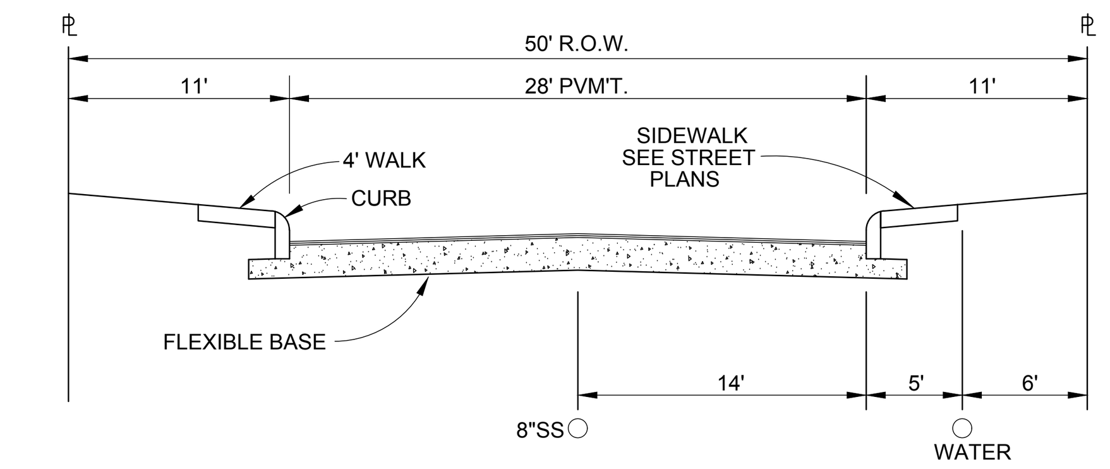
4. ALL SEWER PIPE TO BE SDR-26 UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO ENSURE LATERALS AT PROPOSED DRY UITLITY CROSSINGS ARE LOCATED AT A DEPTH TO AVOID ANY CONFLICT WITH DRY UTILITY INSTALLATION.

SANITARY SEWER TESTING REQUIREMENTS:

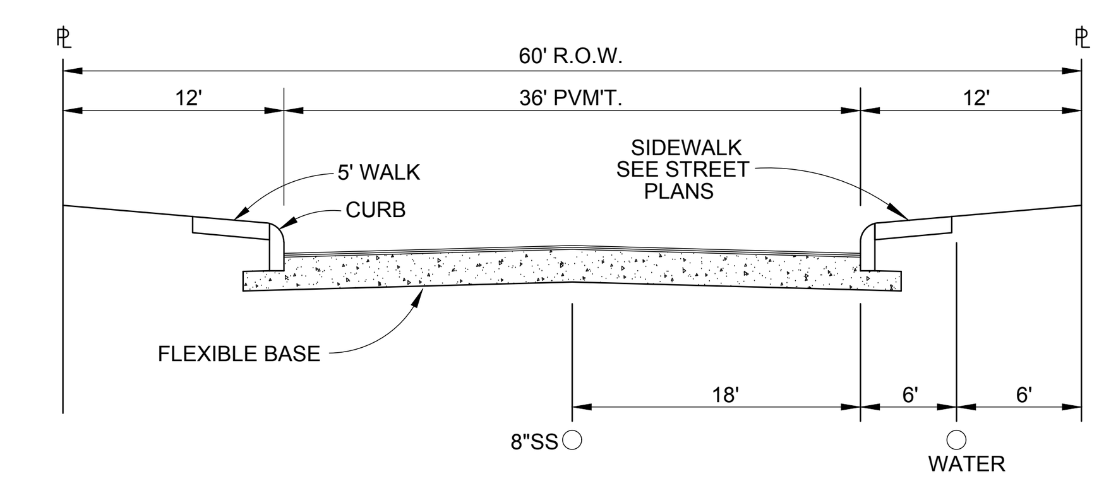
CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
WEBSITE: https://apps.saws.org/business_center/specs/constspecs/constspecs_2020/index.cfm



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE



TYPICAL LOCAL "A" STREET SECTION
NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10194365

HICKORY RIDGE SUBDIVISION

PHASE 2 UNIT 7

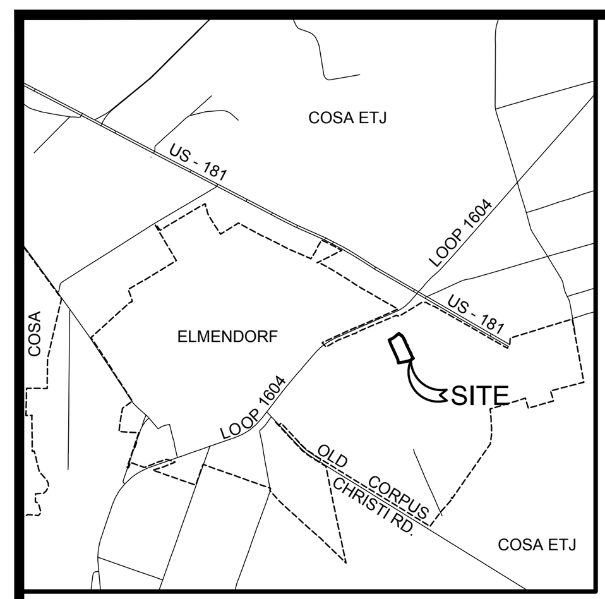
SANITARY SEWER LINE D PLAN & PROFILE

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

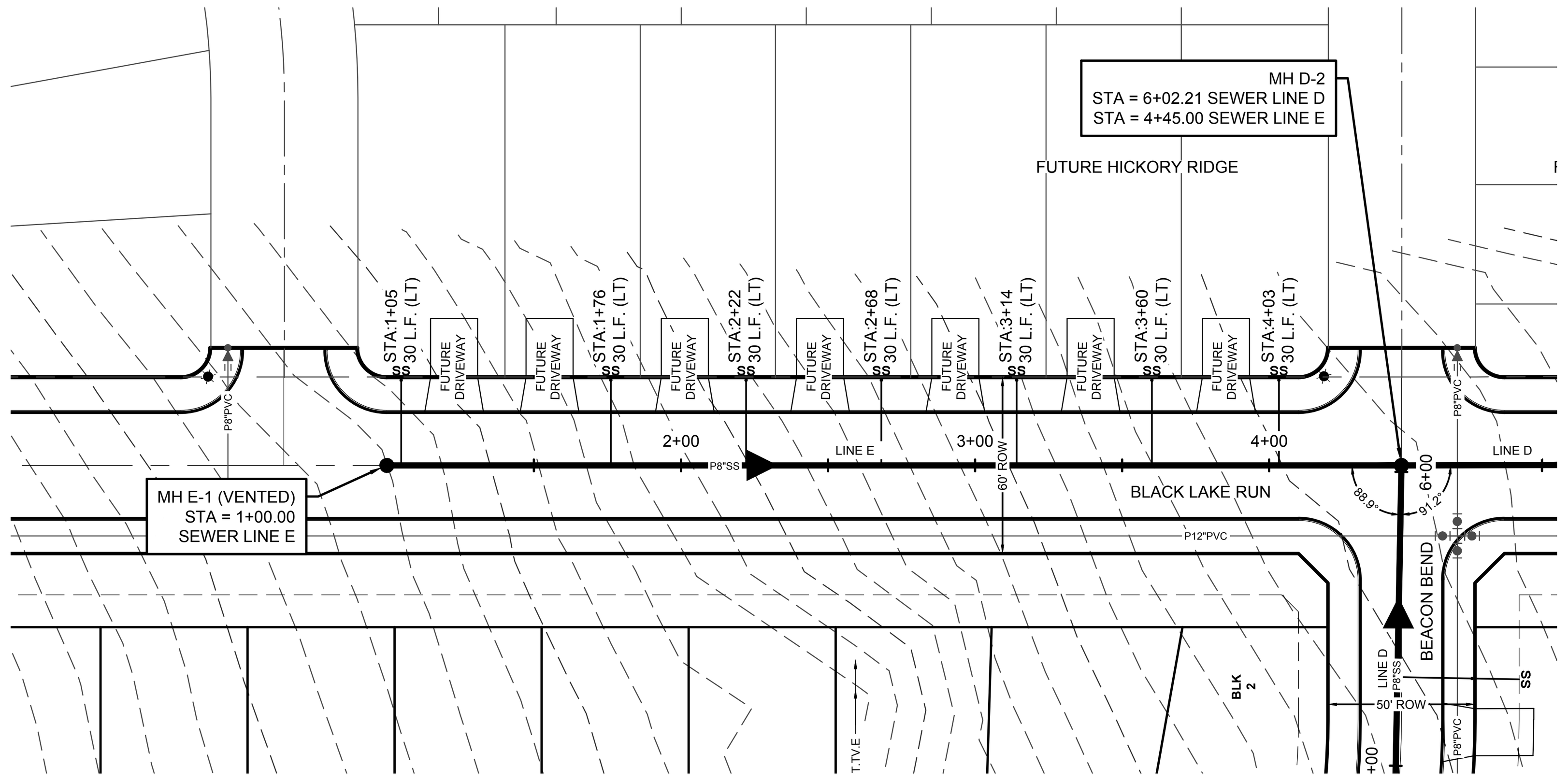
SHEET:

305

Date: Apr 13, 2026, 4:09pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 305 SANITARY SEWER LINE D PLAN & PROFILE.dwg



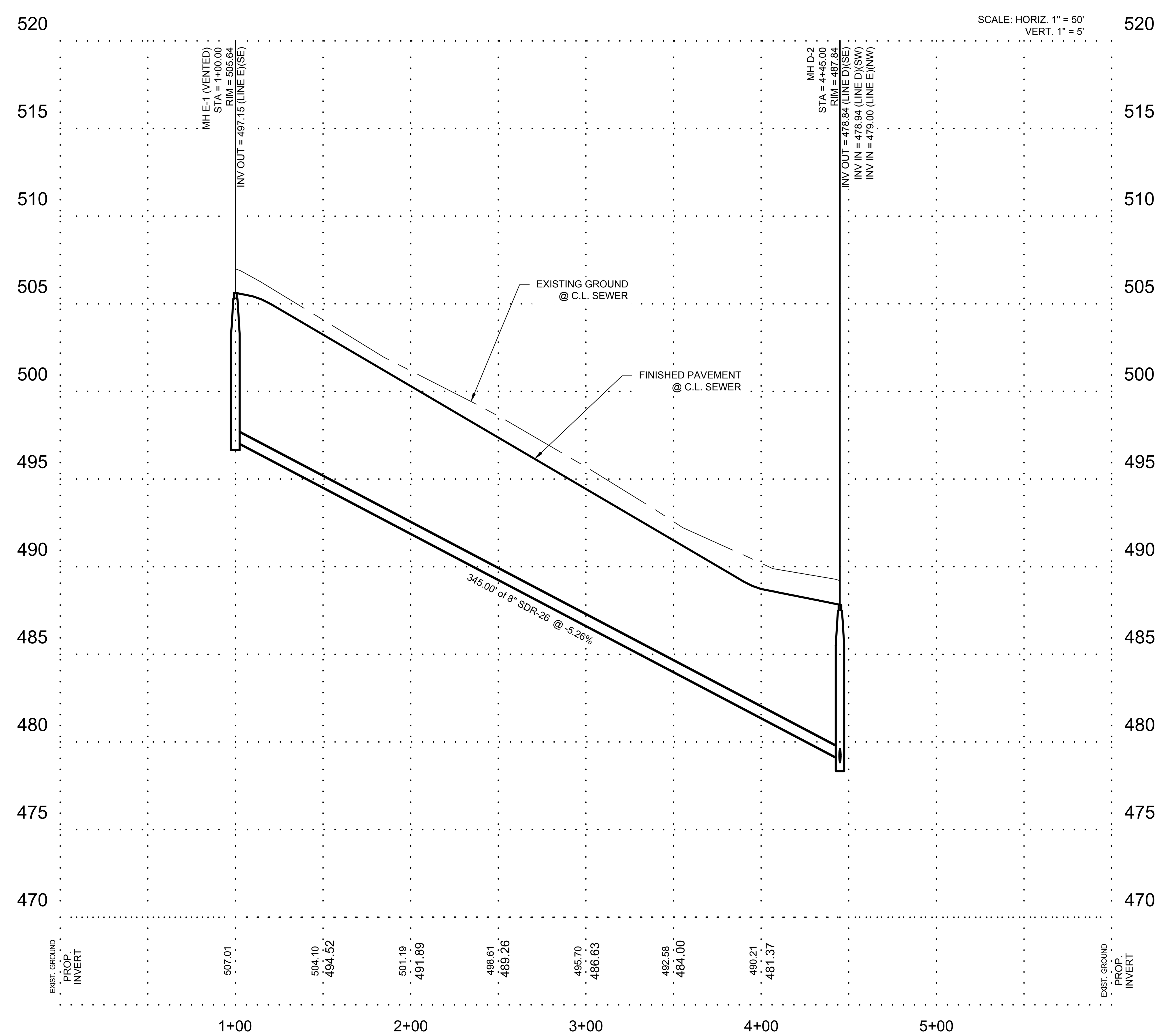
LOCATION MAP
NOT TO SCALE



0 50' 100'
1" = 50'

SANITARY SEWER LINE "E"

STA. 1+00.00 TO STA. 4+45.00



LEGEND

EXISTING EDGE OF PAVEMENT	
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

NOTES

1. ALL RESIDENTIAL SEWER SERVICE LATERALS ARE 6" DIA. AND 35 FEET IN LENGTH UNLESS NOTED OTHERWISE.
2. ALL RESIDENTIAL SEWER SERVICE LATERALS SHALL BE CAPPED AND SEALED.
3. LATERALS TO LOTS SHALL BE SLOPED FROM THE TEE OR STACK AT 2% THROUGH THE G.E.T.TV.E. LOCATED IN THE FRONT OF THE LOT.
4. ALL SEWER PIPE TO BE SDR-26 UNLESS OTHERWISE NOTED.
5. CONTRACTOR TO ENSURE LATERALS AT PROPOSED DRY UITLITY CROSSINGS ARE LOCATED AT A DEPTH TO AVOID ANY CONFLICT WITH DRY UTILITY INSTALLATION.

SANITARY SEWER TESTING REQUIREMENTS:

CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
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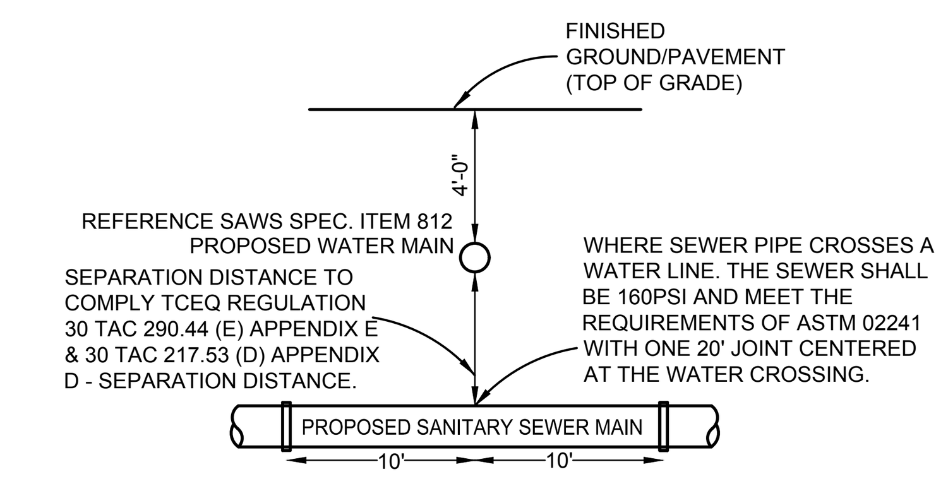
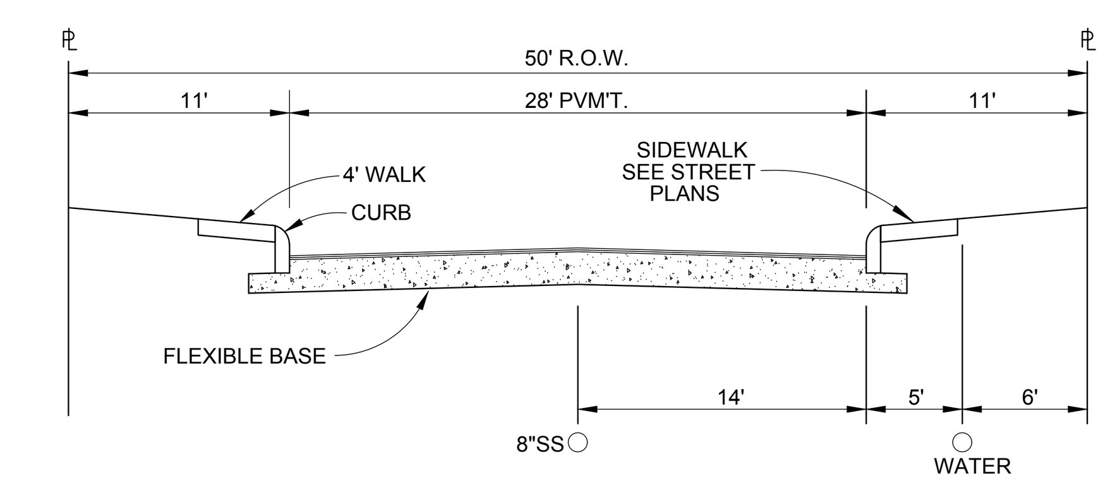
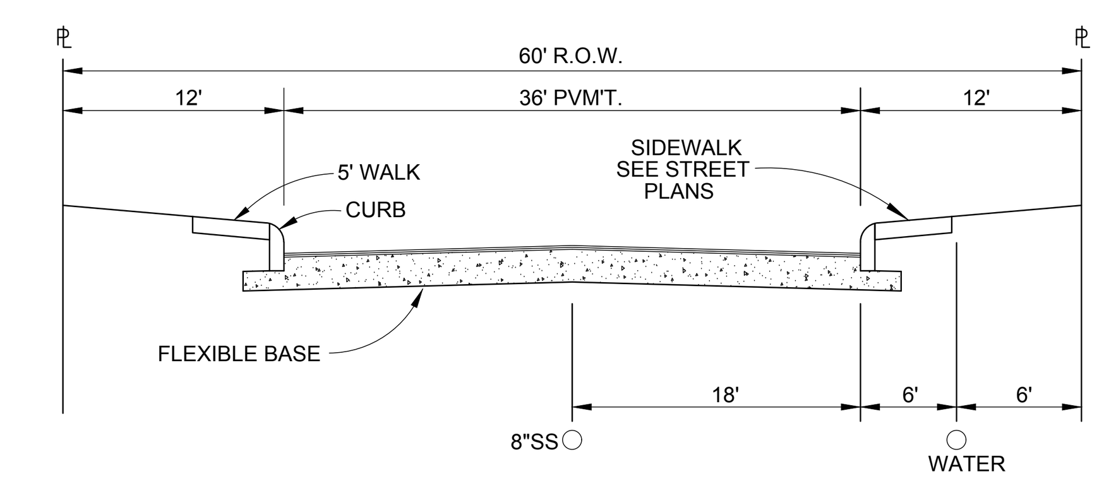


TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE



TYPICAL LOCAL "A" STREET SECTION
NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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REV	DATE	DESCRIPTION

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HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER LINE E PLAN & PROFILE

DRAFTING:	N.M./C.C.	CHECK:	L.E.
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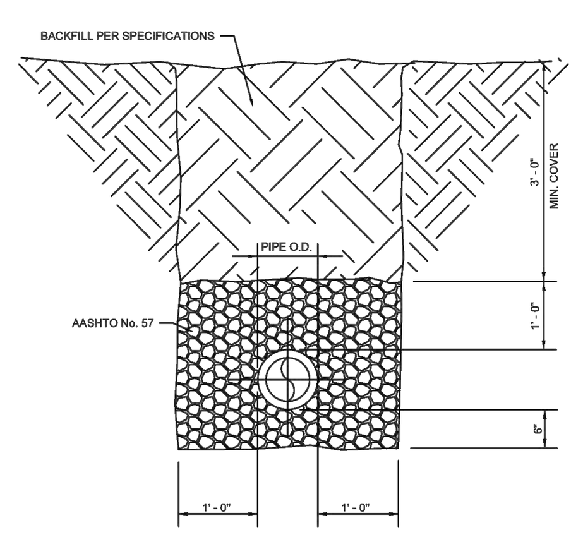
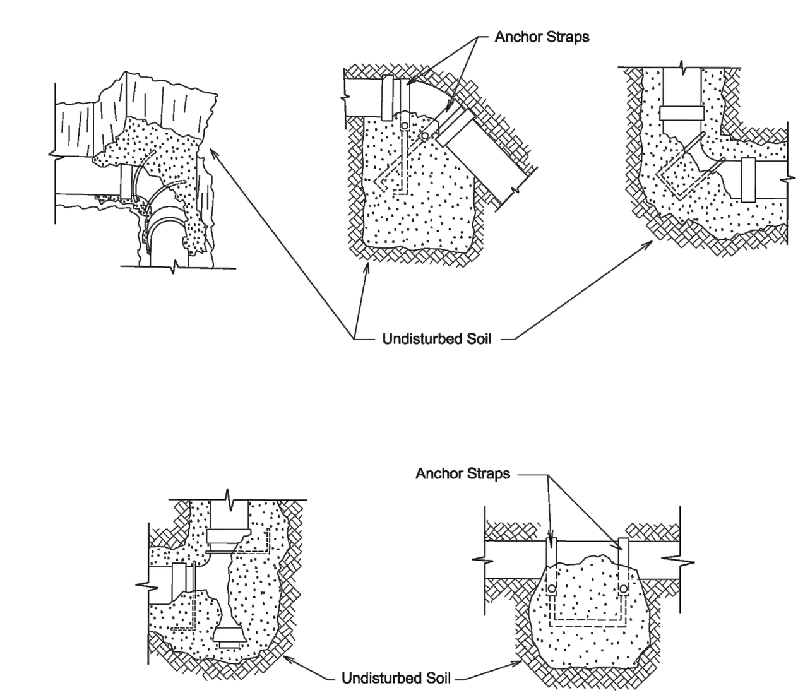


AQUA TEXAS INC.

TYPICAL P.V.C. PIPE TRENCH

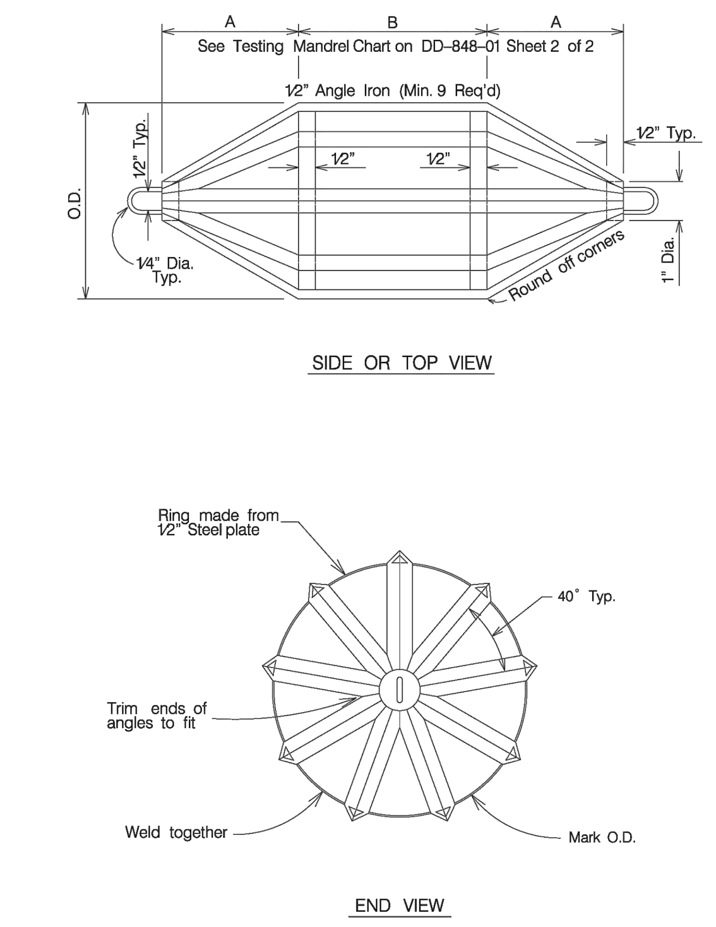
AQUA

DATE: JUNE 2022 SCALE: N.T.S.



Note:
All concrete used for thrust blocking shall have a minimum concrete strength of 3,000 psi.

PROPERTY OF SAN ANTONIO WATER SYSTEM — TYPICAL THRUST BLOCKS (SEWER ONLY) — APPROVED MARCH 2008 — REVISED APRIL 2014 — DD-839-03 — SHEET 1 OF 1



Note:
All mandrels must be approved by SAWS Construction Inspections and stamped before use.

PROPERTY OF SAN ANTONIO WATER SYSTEM — GO, NO GO DEFLECTION TESTING MANDREL — APPROVED March 2008 — DD-848-01 — SHEET 1 OF 2

			MANDREL O.D.	RING O.D.
SIZE	A	B*	PVC (SDR-26)	PVC (SDR-26)
6"	4.0"	4.5"	5.50	4.79
8"	5.5"	6"	7.37	6.66
10"	7.0"	7.5"	9.21	8.50
12"	8.0"	9"	10.96	10.25
15"	10.0"	11"	13.42	12.71
18"	12.0"	13.5"	——	——
21"	14.0"	16"	——	——
24"	16.0"	18"	——	——
27"	18.0"	20"	——	——

* Minimum Length

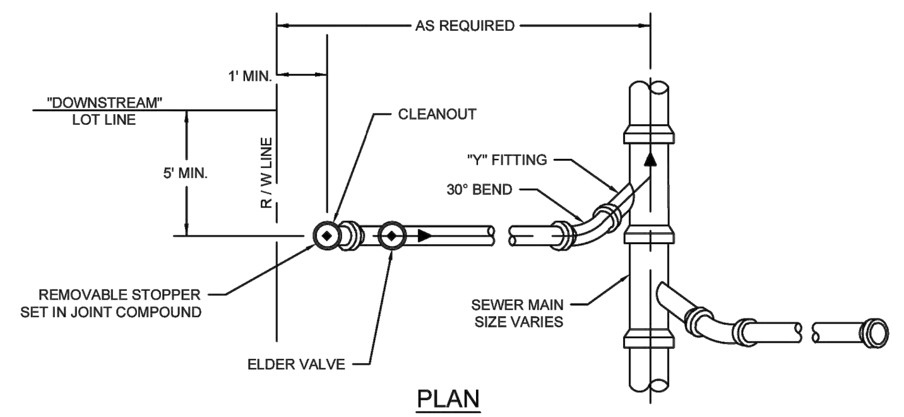
CHART

Notes:
PVC pipes and fittings 6" to 15" in diameter shall conform to ASTM D-3034-08.
PVC pipes and fittings 18" to 27" in diameter shall conform to ASTM F-679-08.

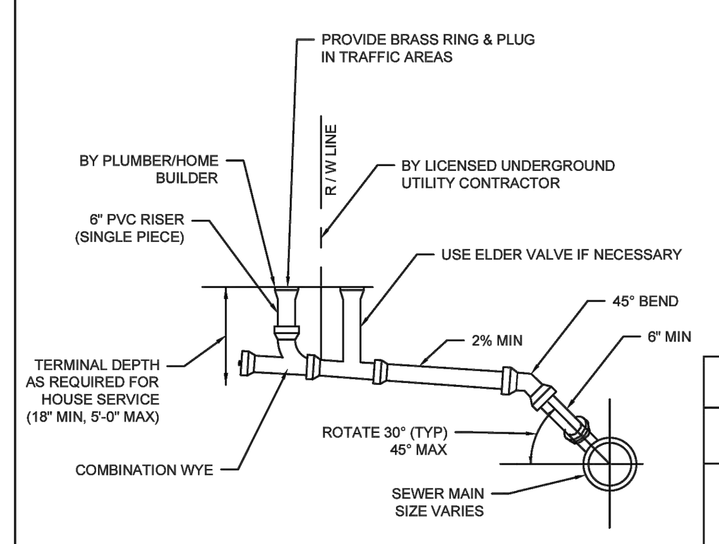
This information is provided as a reference. All deflection testing shall be done in accordance with TCEQ Chapter 217.

PROPERTY OF SAN ANTONIO WATER SYSTEM — GO, NO GO DEFLECTION TESTING MANDREL CHART — APPROVED MARCH 2008 — REVISED APRIL 2014 — DD-848-01 — SHEET 2 OF 2

NOTES:
1. THE SITE DEVELOPER SHALL LEAVE THE CLEANOUT RISER 3'-4' ABOVE GRADE AND IT SHALL REMAIN SO UNTIL LOT BUILD OUT. THE RISER SHALL THEN BE CUT AND CAPPED AT FINISHED GRADE WITH A CONCRETE PAD.
2. ALL CLEANOUTS TO BE FLUSH WITH FINISH GRADE.
3. UTILITY CONTRACTOR TO INSTALL & PRESSURE TEST WYE AND INSTALL PLUG. PLUMBER TO REMOVE PLUG, INSTALL CLEANOUT AND CONCRETE PAD.
4. MARK CURB WITH "S" WHERE LATERAL CROSSES UNDER CURB.
5. ALL COMMERCIAL AND RESIDENTIAL SINGLE LATERALS SHALL HAVE 4" CLEANOUTS.
6. MAINTAIN A MINIMUM OF 3' CLEARANCE FREE OF ALL PLANTINGS & STRUCTURES AROUND CLEANOUT.
7. CLEANOUT CAPS SHALL BE SLOTTED OR HAVE A RECESSED NUT.
8. CLEAN - OUT (SHOWN DASHED) SHALL BE INSTALLED BY THE UTILITY CONTRACTOR TO FINAL CONFIGURATION IN ACCORDANCE WITH STANDARD PLUMBING CODE.
9. DOUBLE LATERALS ARE TO BE AVOIDED WHENEVER POSSIBLE. LOCATE DOUBLE LATERAL AS CLOSE TO LOT LINE AS POSSIBLE, 5' MAXIMUM.
10. INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW PRING LINE.
11. DOUBLE SERVICE LATERAL TO BE USED ONLY WHEN BOTH BUILDING SLABS ARE NOT GREATER THAN 4 INCHES ELEVATION DIFFERENCE.
12. SERVICE LATERAL, PIPING AND FITTINGS TO BE 6" SDR35 PVC UNLESS OTHERWISE NOTED. (GASKETED ONLY)
13. INSTALL 4"x4" (TOP ONE-FOOT PAINTED GREEN) AND 3M MAGNETIC MARKER TO IDENTIFY LOCATION OF CLEANOUT(s) AT THE PROPERTY LINE.
14. ALL LATERALS SHALL HAVE C.O. SET @ 2-FT BACK OF CURB OR 2-FT BACK OF SIDEWALK. IF SIDEWALK IS IMMEDIATELY ADJACENT TO CURB, DO NOT PLACE C.O. IN SIDEWALK.
15. AQUA TEXAS, INC. REPAIR/MAINTENANCE RESPONSIBILITY FOR SANITARY LATERALS IS FROM THE MAINLINE TO THE C.O. DESCRIBED IN THE NOTE ABOVE. THE PROPERTY OWNER IS RESPONSIBLE UPSTREAM OF C.O.
16. PVC SDR-26 SHALL BE USED FROM THE C.O. TO THE MAINLINE WHERE AQUA TEXAS, INC. IS RESPONSIBLE FOR REPAIR/MAINTANCE.



PLAN



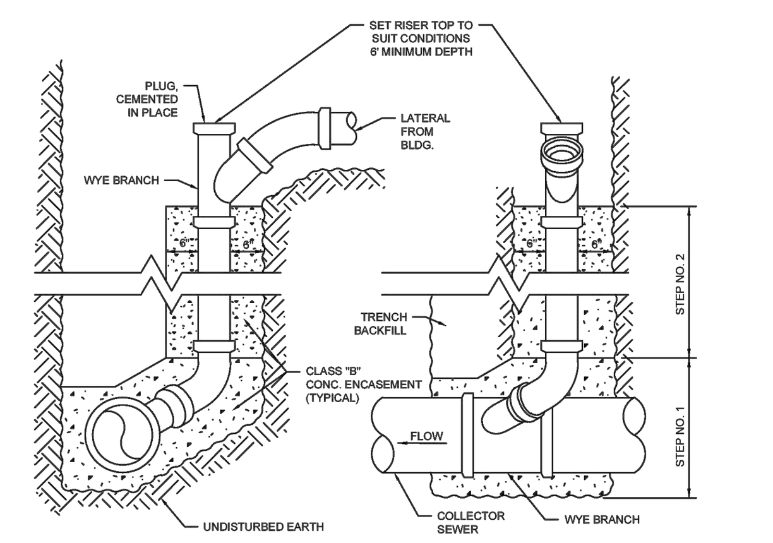
PROFILE

AQUA TEXAS INC.

TYPICAL SERVICE LATERAL DETAIL

AQUA

DATE: JUNE 2022 SCALE: N.T.S.



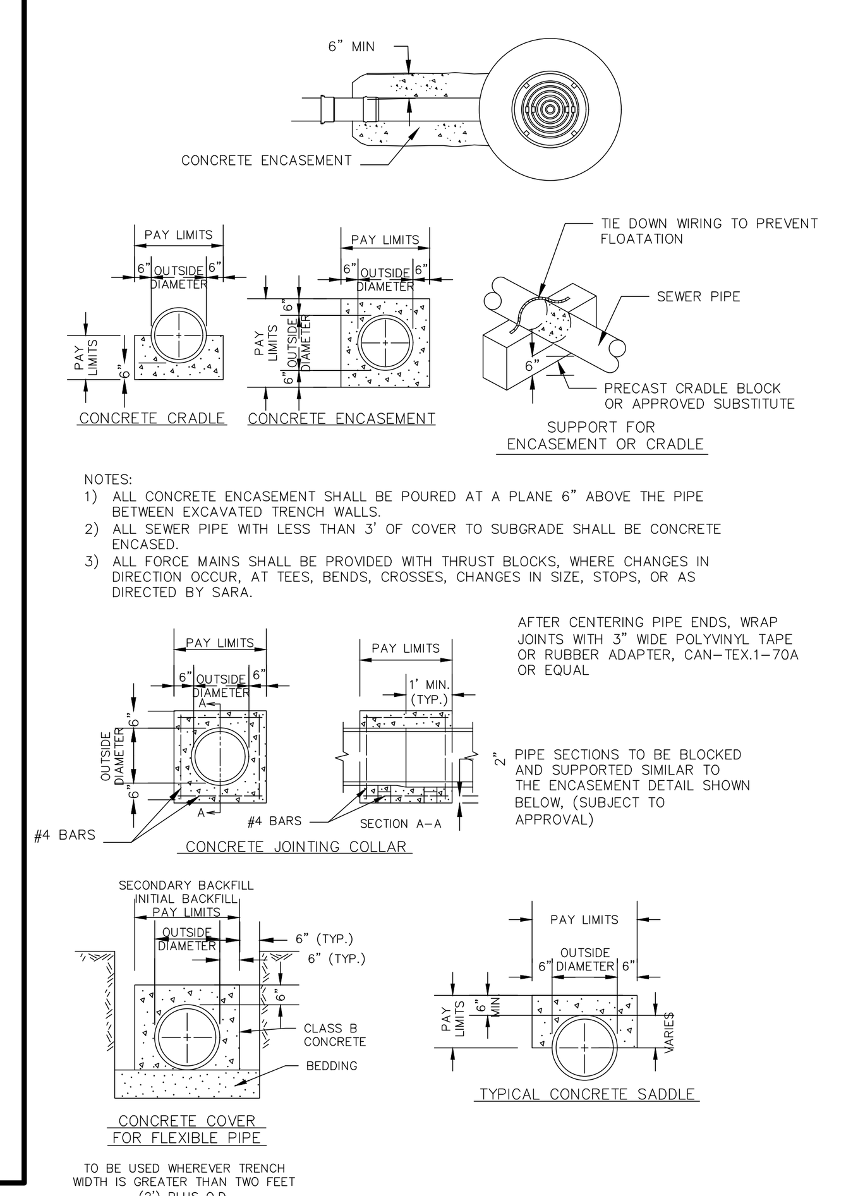
STEP DESCRIPTION:
1. INSTALL LOWER WYE BRANCH, 1/8 BEND, AND CONCRETE ENCASEMENT PROTECT LOWER CONCRETE ENCASEMENT FOR 24 HOUR CURING PERIOD
2. INSTALL RISER, UPPER WYE BRANCH, AND CONCRETE ENCASEMENT

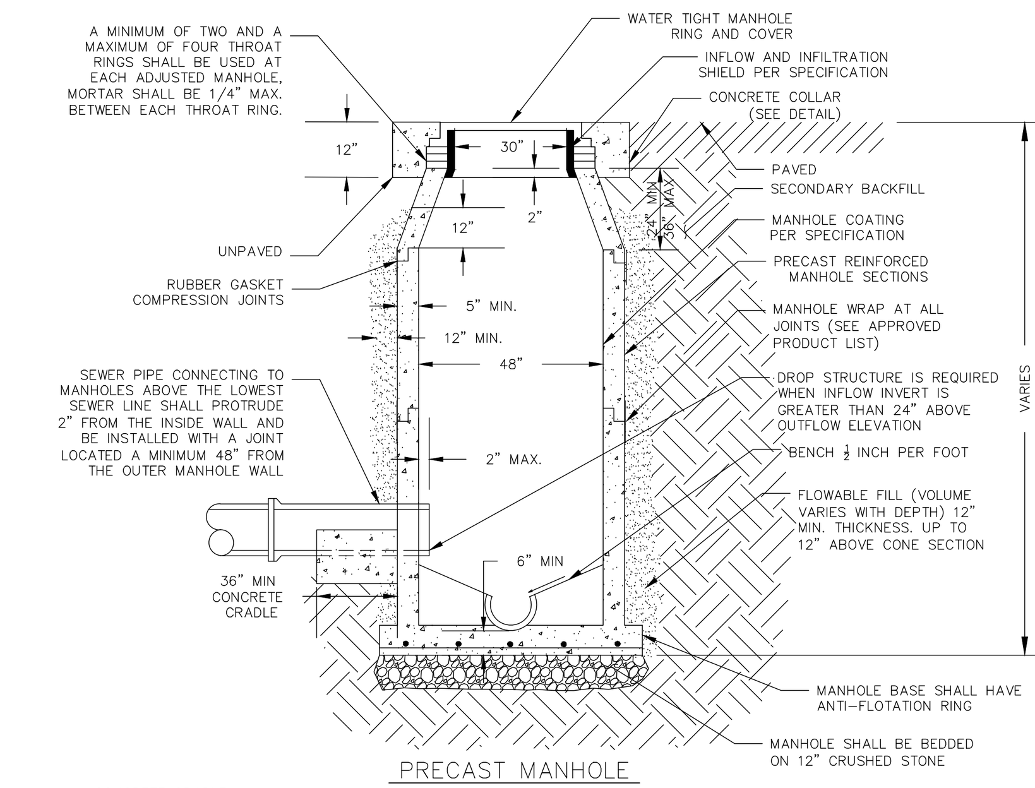
AQUA TEXAS INC.

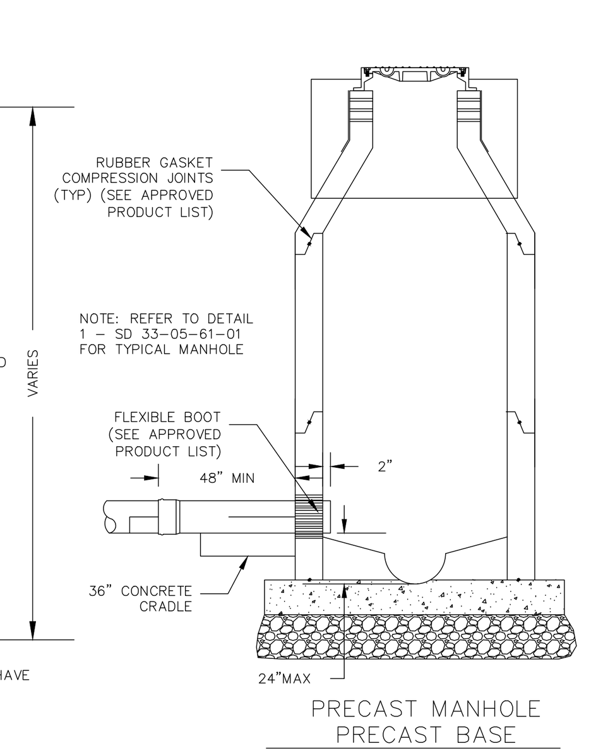
DEEP CUT LATERAL

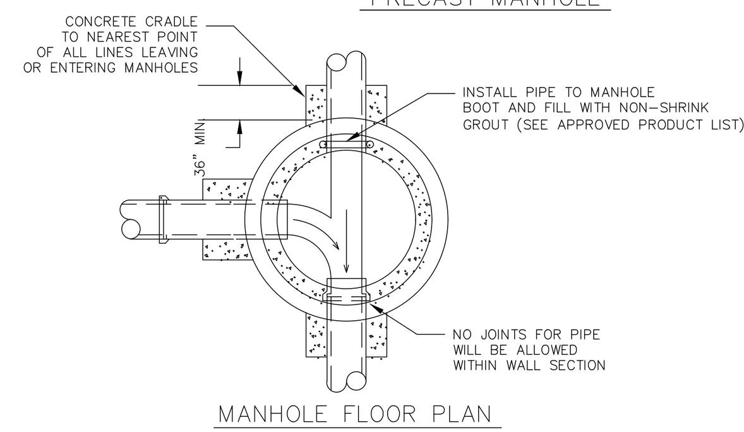
AQUA

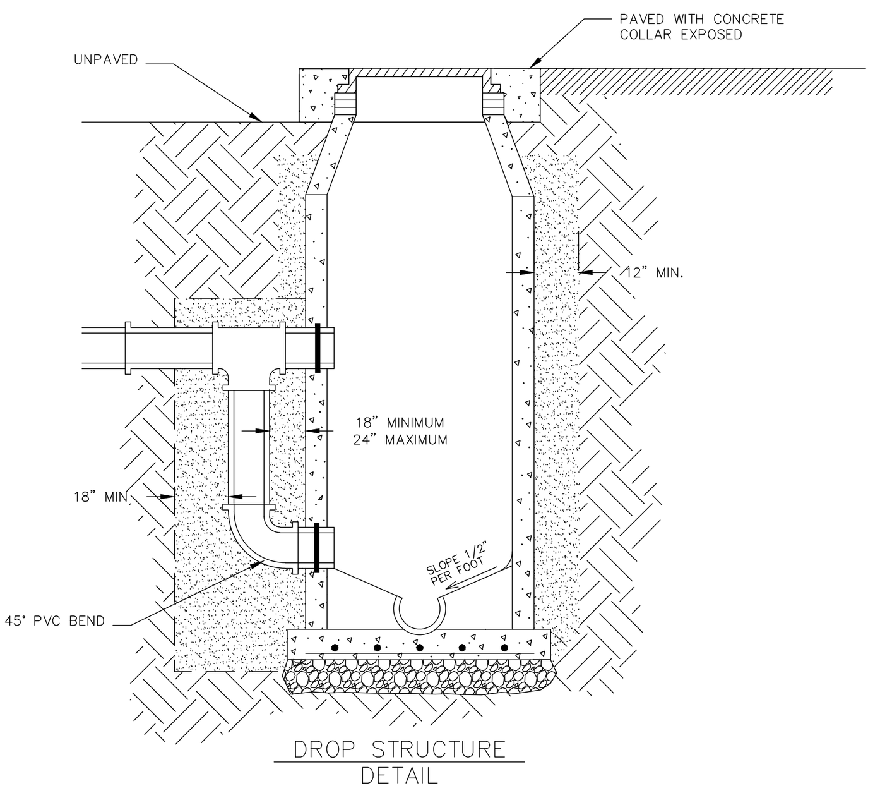
DATE: JUNE 2022 SCALE: N.T.S.

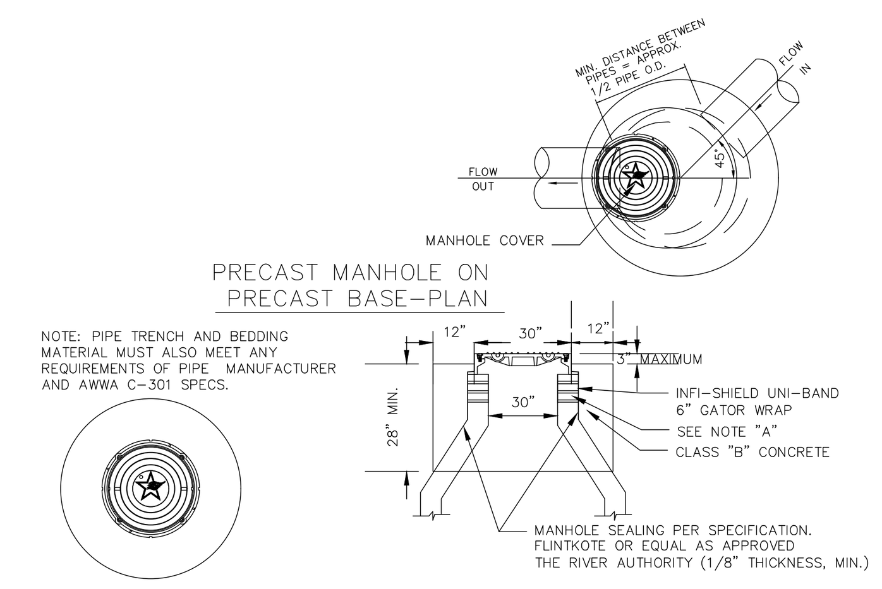


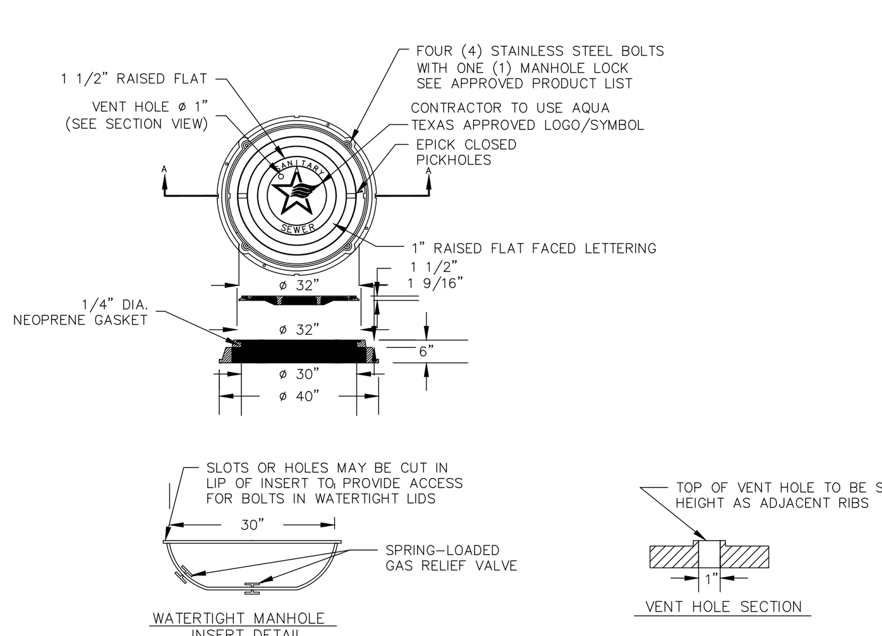








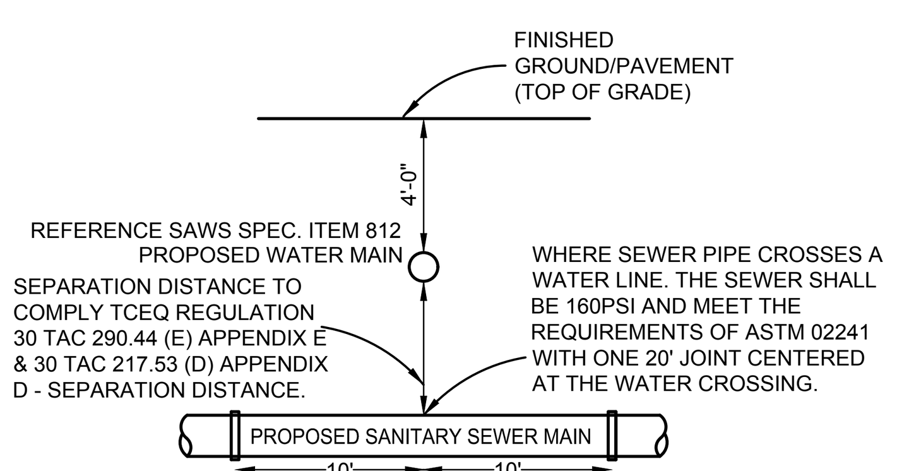




EXISTING MANHOLE RECONSTRUCTION CONSTRUCTION:
CONTRACTOR SHALL FOLLOW SAWS STANDARD SPECIFICATION FOR CONSTRUCTION ITEM NO. 855 RECONSTRUCTION OF EXISTING MANHOLES.
https://apps.saws.org/business_center/specs/constspecs/index.cfm

BYPASS PUMPING NOTE:
CONTRACTOR SHALL FOLLOW SAWS STANDARD SPECIFICATION FOR CONSTRUCTION ITEM NO. 865 BYPASS PUMPING SMALL DIAMETER SANITARY SEWER MAINS.
https://apps.saws.org/business_center/specs/constspecs/index.cfm

SANITARY SEWER TESTING REQUIREMENTS:
CONTRACTOR TO REFERENCE SAWS SPECIFICATION ITEM NO. 849 "SANITARY SEWER ACCEPTANCE TESTING" FOR SANITARY SEWER TESTING REQUIREMENTS.
https://apps.saws.org/business_center/specs/constspecs_2020/index.cfm



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

NOT TO SCALE

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV | DATE | DESCRIPTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SANITARY SEWER DETAILS

DRAFTING: N.M.C.C.		CHECK:	L.E.
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SUBMITTAL PHASE:			
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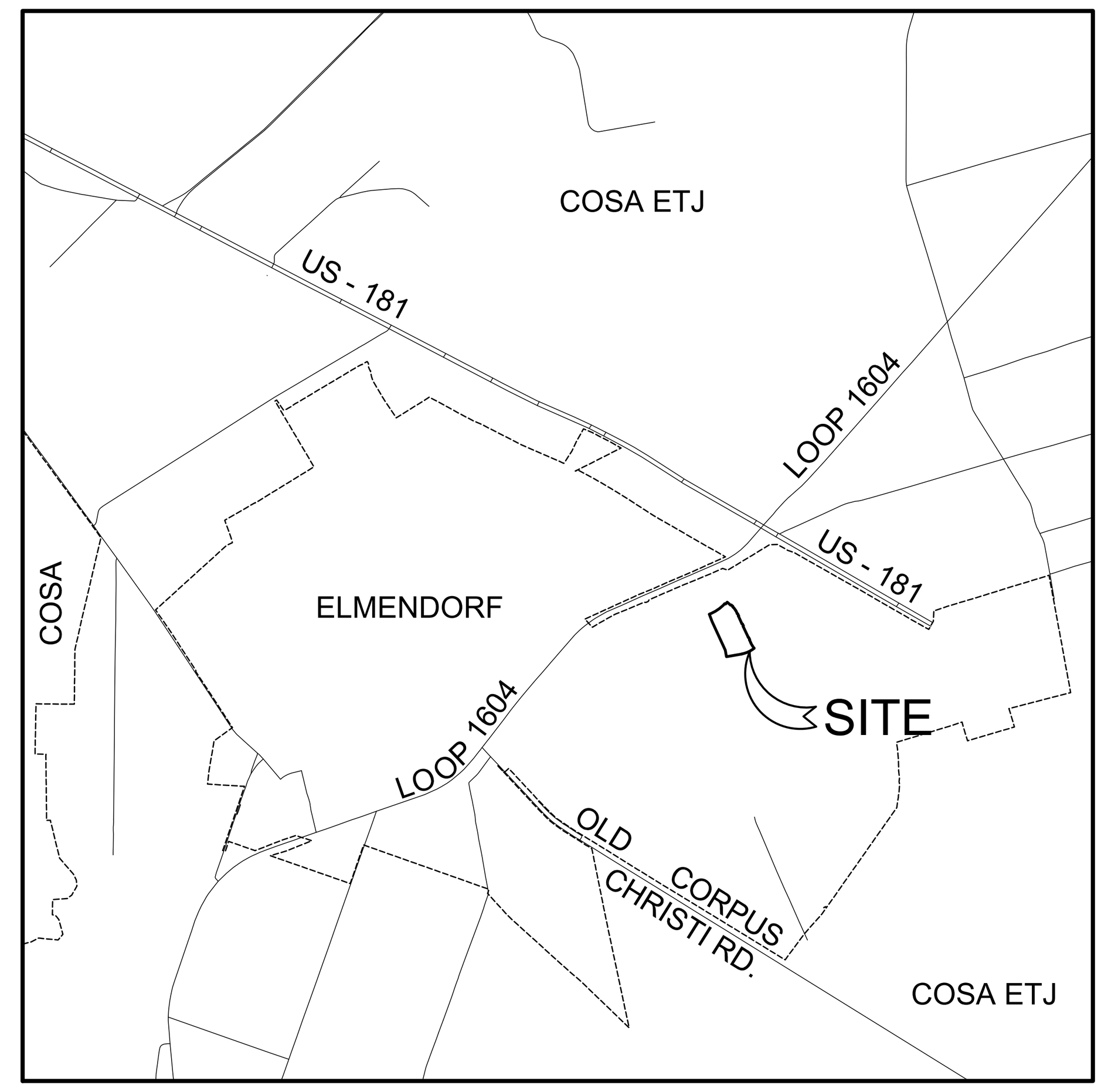
KCI JOB #:	00049614_002		

SHEET:
307

WATERLINE CONSTRUCTION PLANS
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7



LOCATION MAP
NOT TO SCALE

Sheet List Table

Sheet Number	Sheet Title
400	WATER COVER
401	OVERALL WATER PLAN
402	WATER DETAILS
403	WATER DETAILS

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE CITY OF ELMENDORF AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM," TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER," TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."
   E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN APPROVAL FROM THE CITY OF ELMENDORF AND HAS BEEN NOTIFIED BY THE CITY TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT APPROVAL BY THE CITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLAN.
4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE CITY OF ELMENDORF AT (210) 635-8210, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO THE CITY OR THE DEVELOPER.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
   - CITY OF ELMENDORF 210-635-8210
   - TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLY WITH CITY OF ELMENDORF OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM CITY WORK ON CITY RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO THE CITY.
    - WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE CITY OF ELMENDORF 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO THE CITY.
    - ANY AND ALL CITY UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR METTING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE CITY INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY THE CITY WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE CITY OF ELMENDORF.

WATER NOTES:

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE CITY OF ELMENDORF AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO THE CITY OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFCATION FOR HANDLING ASBESTOS CEMENT PIPE."
3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP / PLUG. (NSPI)
4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
5. ALL VALVES SHALL READ "OPEN RIGHT."
6. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.
7. BACKFLOW PREVENTION DEVICES:
   - ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
   - ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.
9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND THE CITY OF ELMENDORF HAS RELEASED THE MAIN FOR TIE-IN AND USE.

TRENCH EXCAVATION SAFETY PROTECTION

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

NOTES:

1) SAWS REQUIRES GCPs AND COUNTER PERMITS TO USE LEAD FREE (<0.25% LEAD) FIRE HYDRANTS.

2) ANCHORAGE/THRUST BLOCKING AND JOINT RESTRAINTS SHALL BE DONE IN ACCORDANCE WITH SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION. (ITEM NO. 839)

3) THE CITY OF ELMENDORF WATER SYSTEM IS HEREBY GRANTED THE RIGHT OF INGRESS AND EGRESS ACROSS GRANTOR'S ADJACENT PROPERTY TO ACCESS THE WATER AND/OR WASTEWATER EASEMENTS SHOWN.

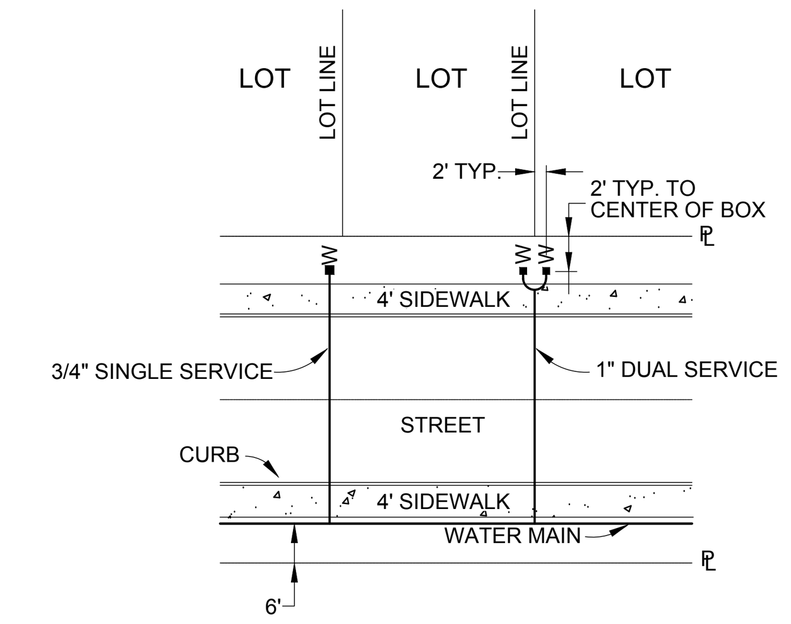
OWNER/DEVELOPER:

CASTLEROCK COMMUNITIES
2401 FOUNTAIN VIEW DRIVE, SUITE 215
HOUSTON, TEXAS 77057
PHONE: (713) 600-7060

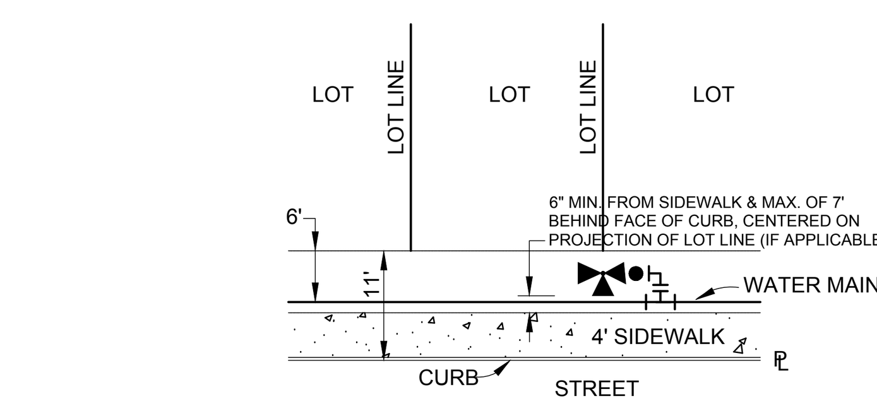
PREPARED BY:

KCI TECHNOLOGIES, INC.

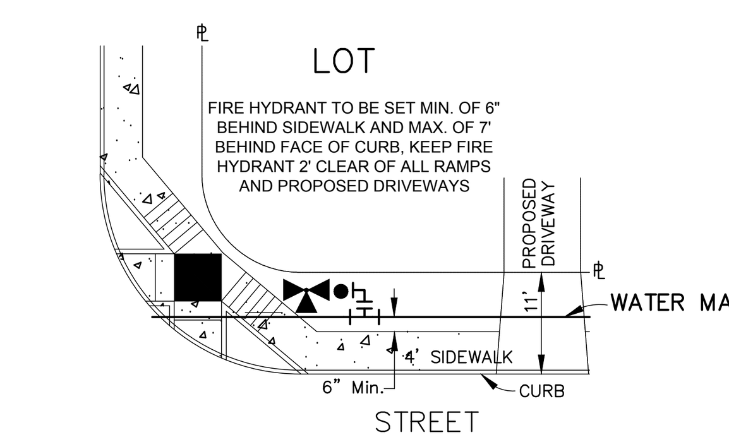
2806 W. BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65



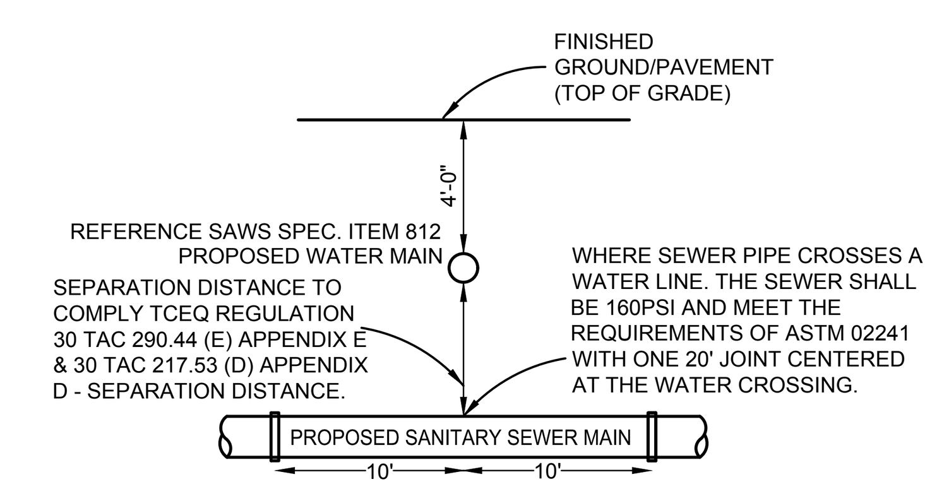
METER BOX DETAIL
NOT TO SCALE



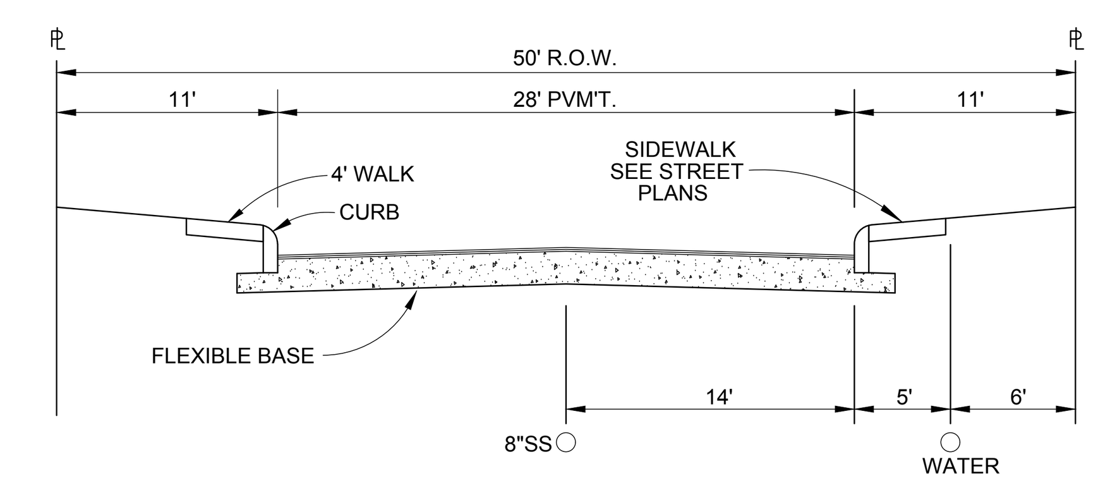
FIRE HYDRANT DETAIL ON LOCAL "A"
NOT TO SCALE
NOTE: Sidewalks and fire hydrants shall be installed per City of San Antonio Standard Specifications for Construction and SAWS Standard Specifications for Construction.



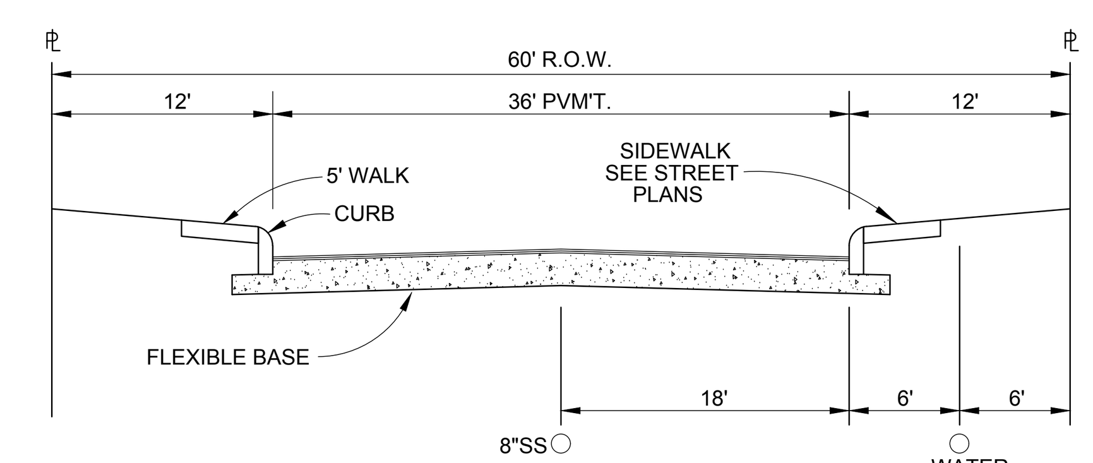
FIRE HYDRANT DETAIL @ CORNER
NOT TO SCALE
NOTE: Sidewalks and fire hydrants shall be installed per City of San Antonio Standard Specifications for Construction and SAWS Standard Specifications for Construction.



TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL
NOT TO SCALE



TYPICAL LOCAL "A" STREET SECTION
NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION
NOT TO SCALE

REV | DATE | DESCRIPTION

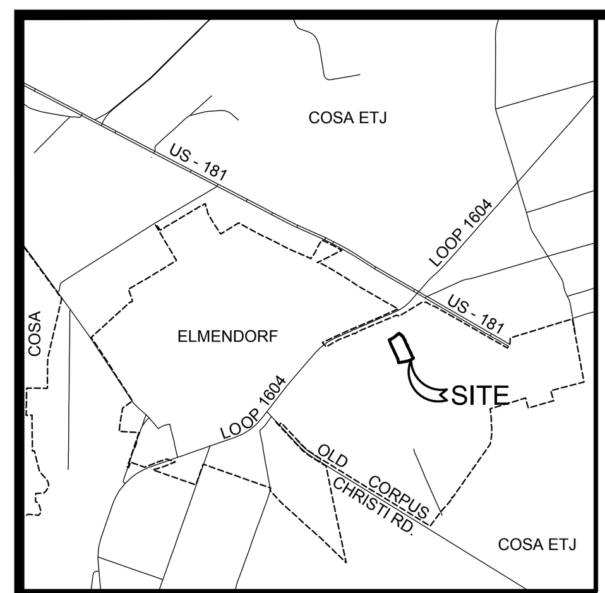
FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
WATER COVER

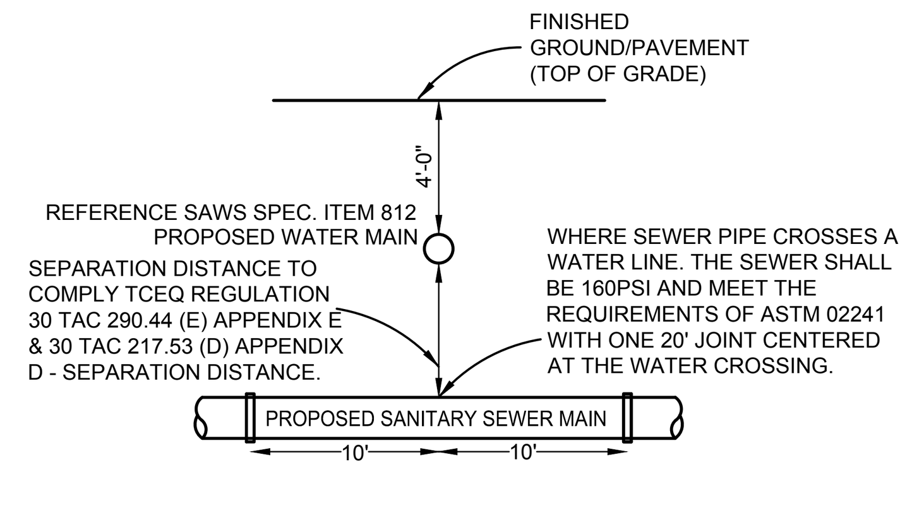
DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
400



LOCATION MAP

NOT TO SCALE

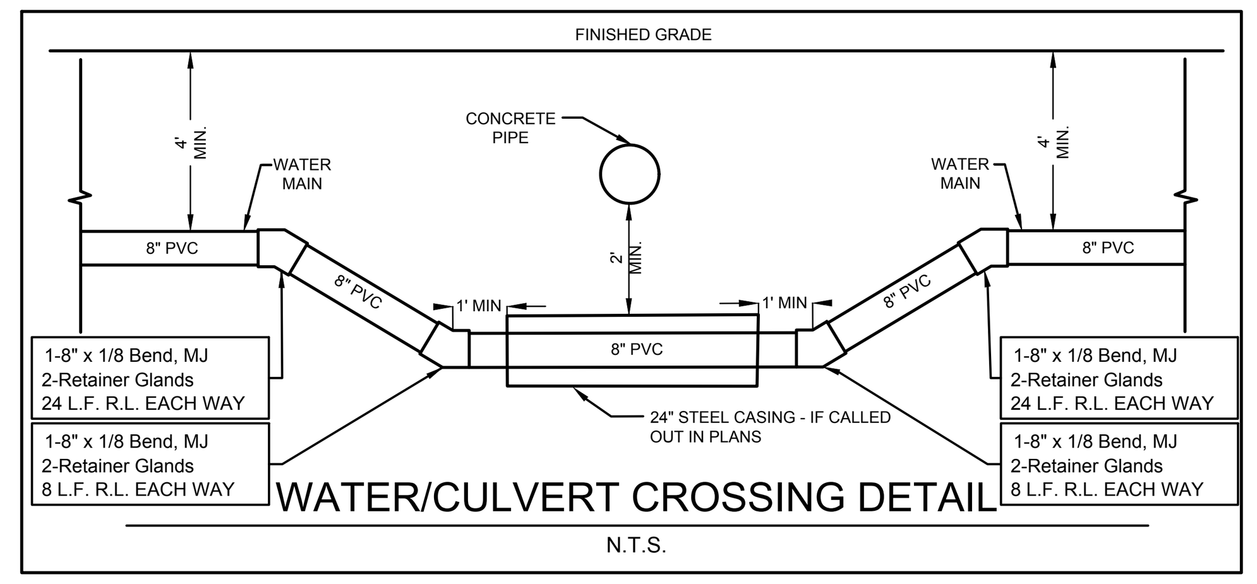


TYPICAL SANITARY SEWER/ WATER CROSSING DETAIL

NOT TO SCALE

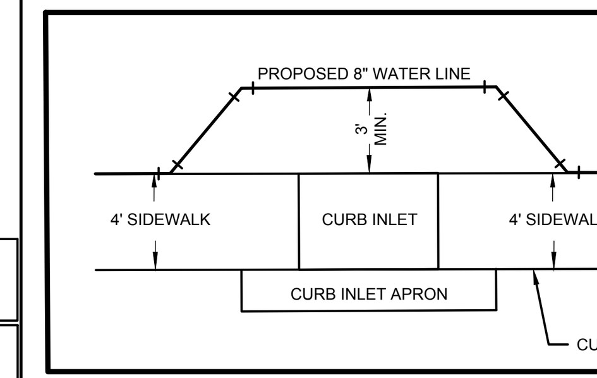
TRENCH EXCAVATION SAFETY PROTECTION

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



WATER/CULVERT CROSSING DETAIL

N.T.S.



DETAIL "A"

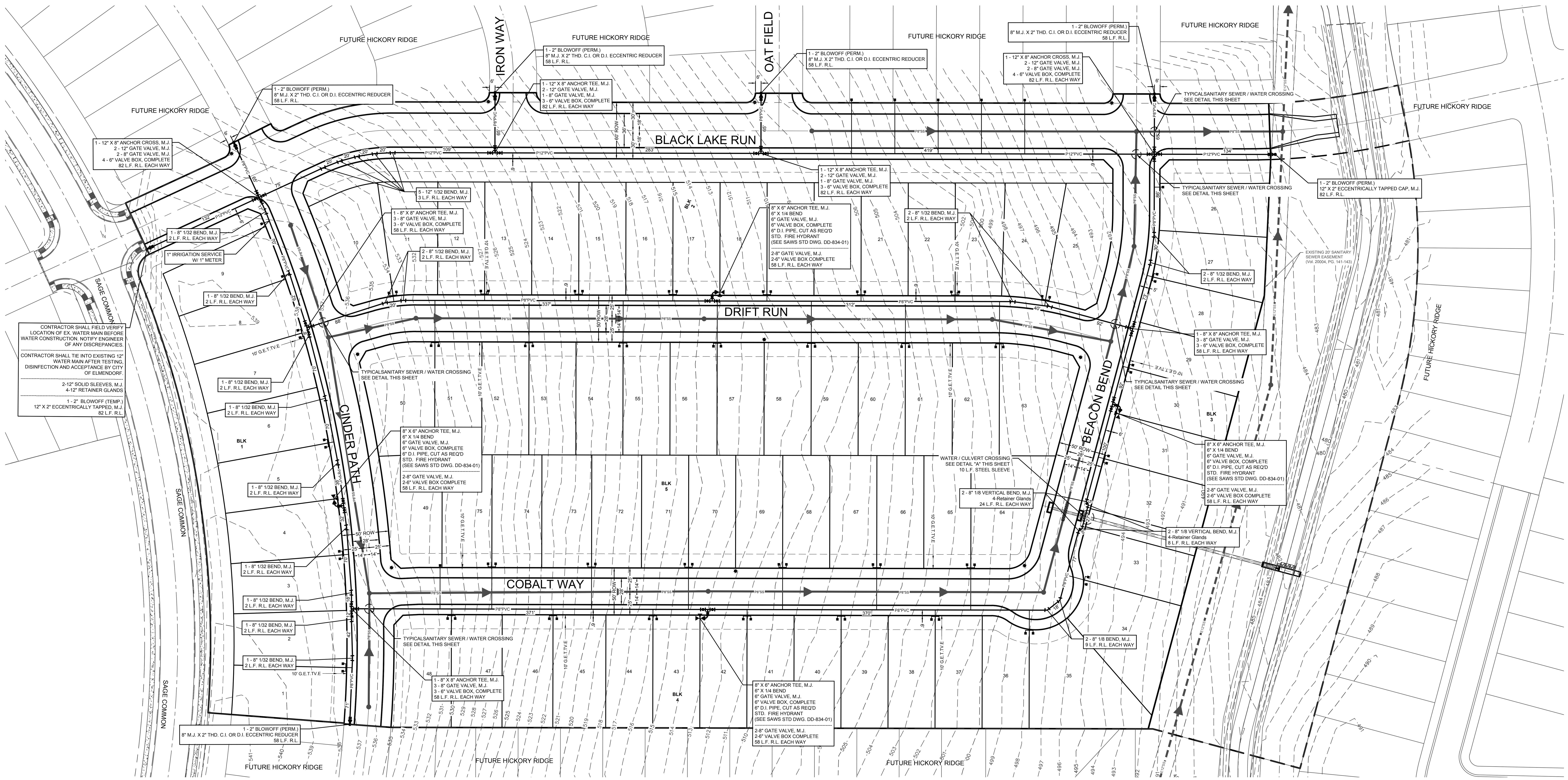
N.T.S.

LEGEND

EXISTING EDGE OF PAVEMENT	////
EXISTING SANITARY SEWER MAIN	E8"/12" SS
PROPOSED SANITARY SEWER MAIN	P8"/12" SS
EXISTING WATER MAIN	E8"/16" PVC
PROPOSED WATER MAIN	P8"/12" PVC
IRRIGATION SERVICE	IS
PROPOSED WATER SERVICE/ METER	
FIRE HYDRANT	
PROPOSED STREET LIGHT (100 WATT/SINGLE ARM)	L.P.

0 60' 120'

1" = 60'



	DESCRIPTION
	DATE
	REV

FOR BIDDING PURPOSES ONLY

NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.

2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

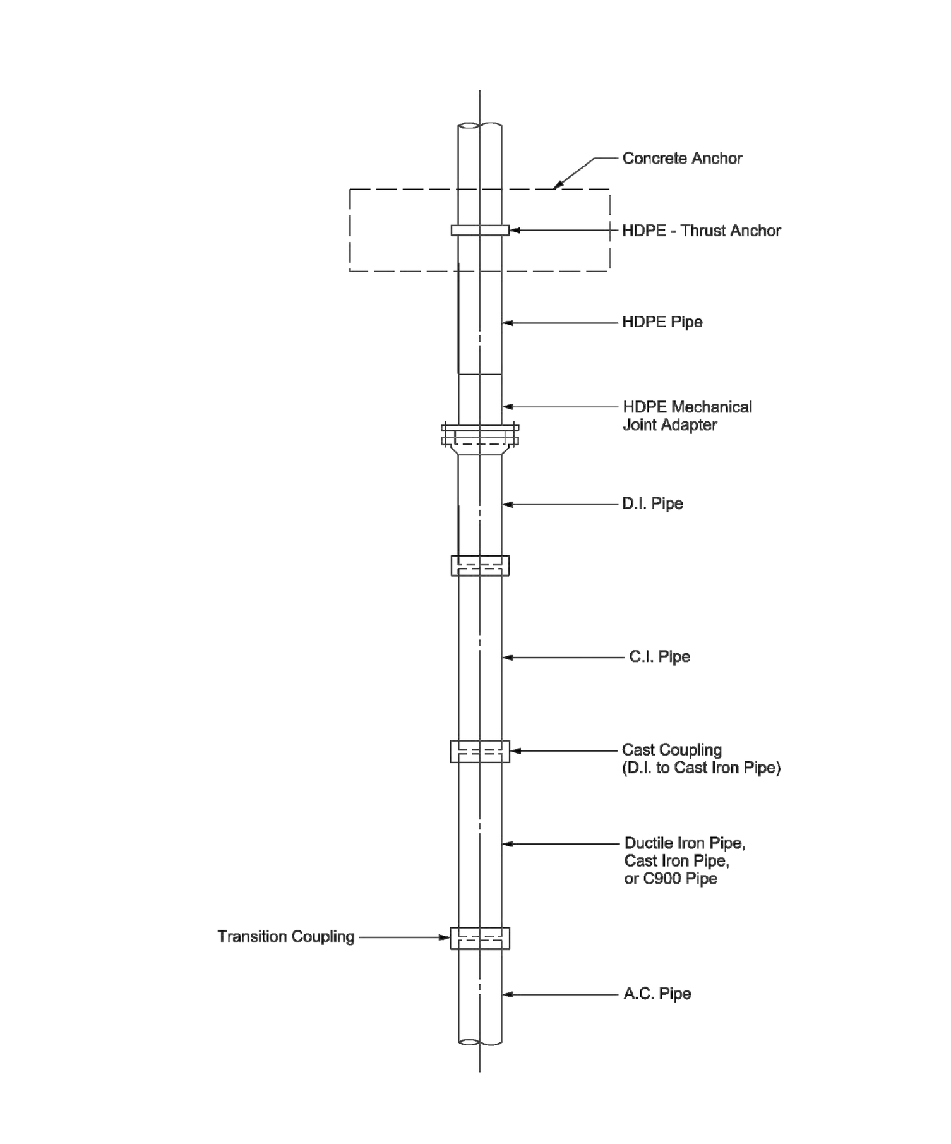
KCI TECHNOLOGIES

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
OVERALL WATER PLAN

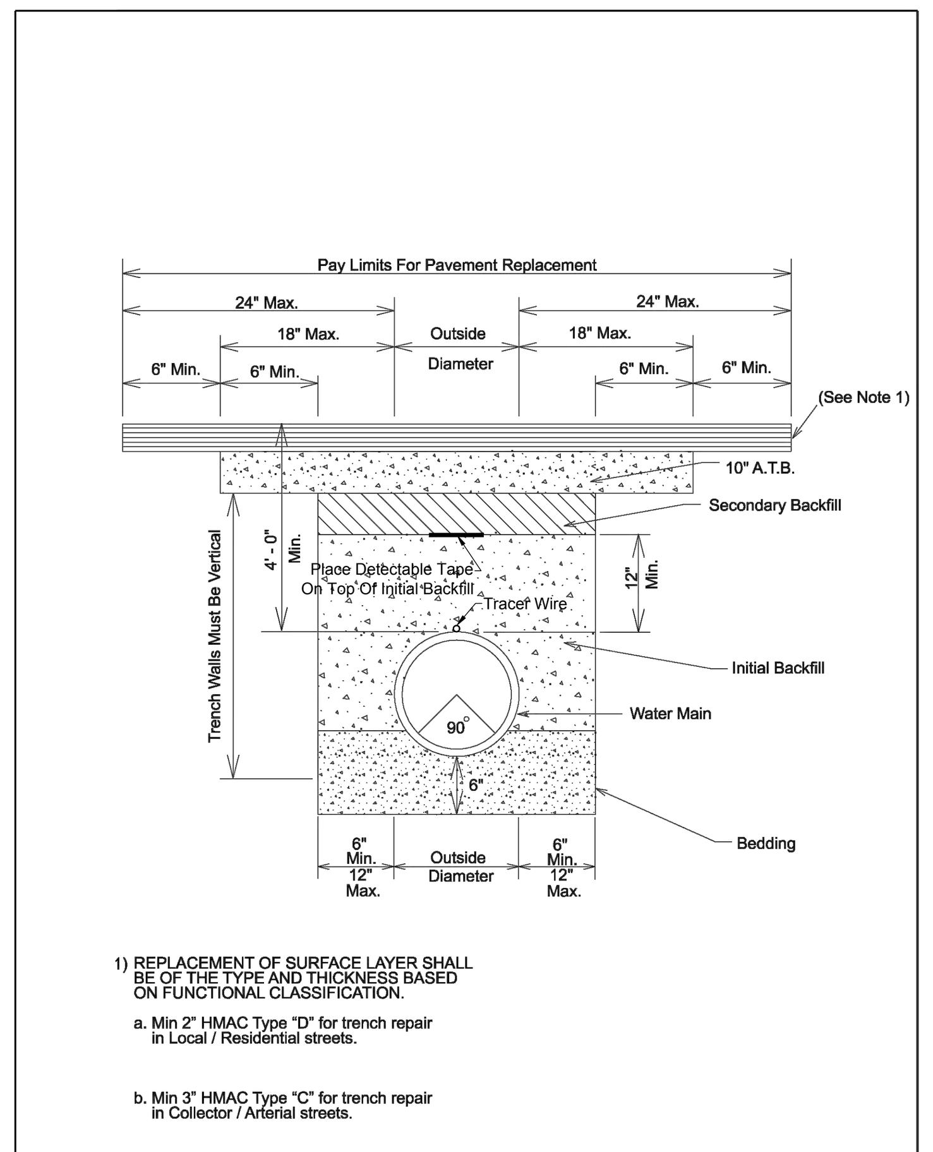
DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:

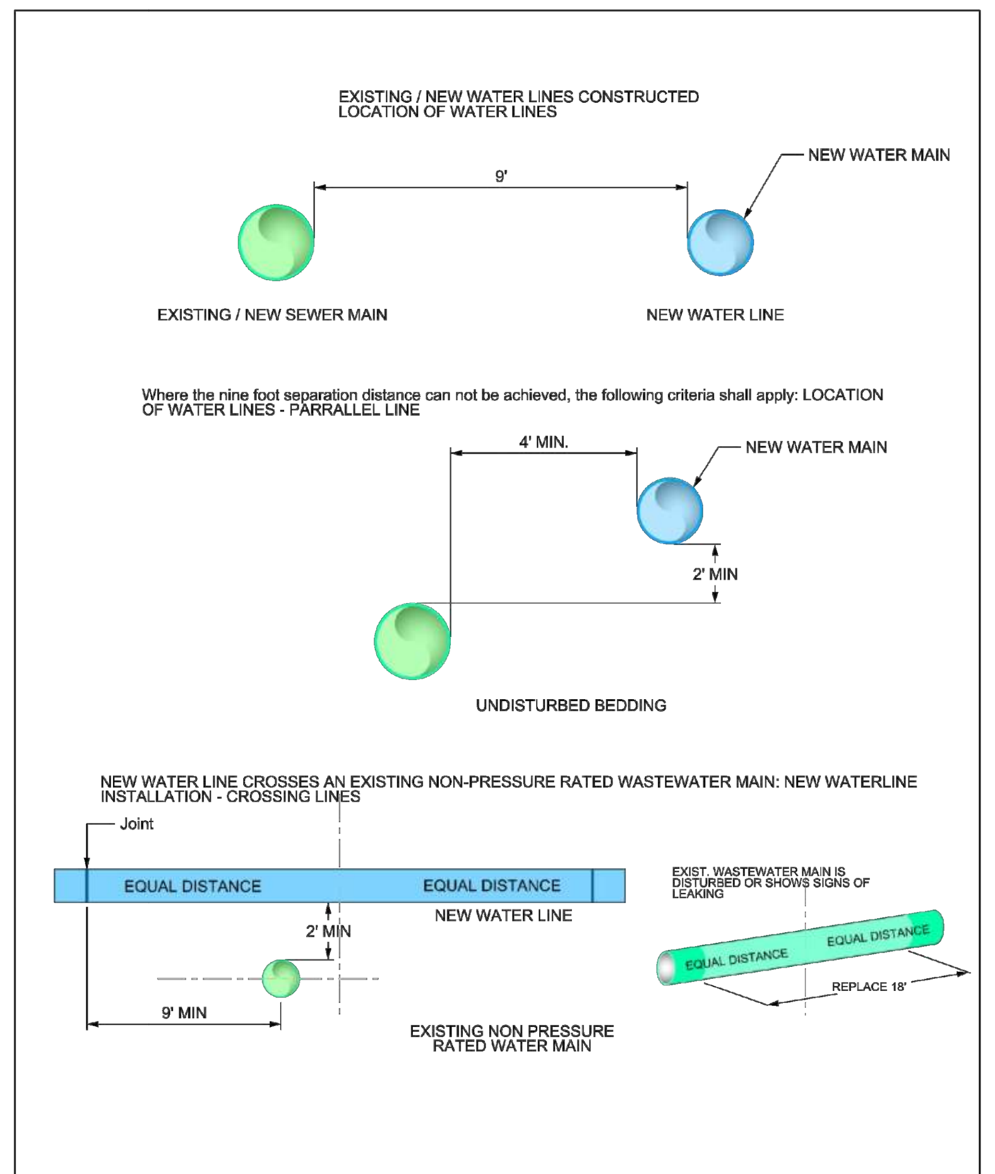
401



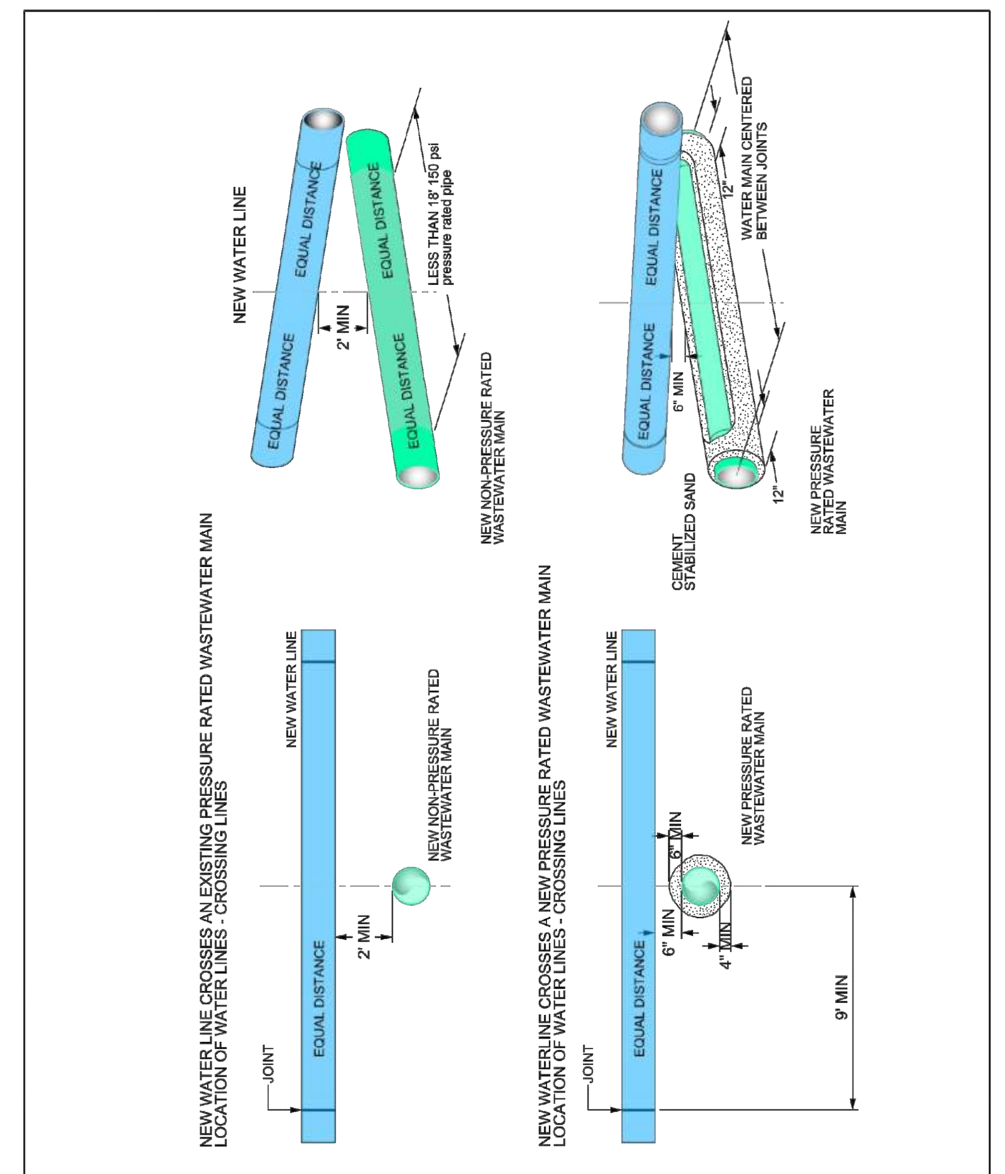
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — PIPE COUPLINGS — APPROVED MARCH 2008 — REVISED AUG 2019 — DD-812-01 — SHEET 1 OF 9



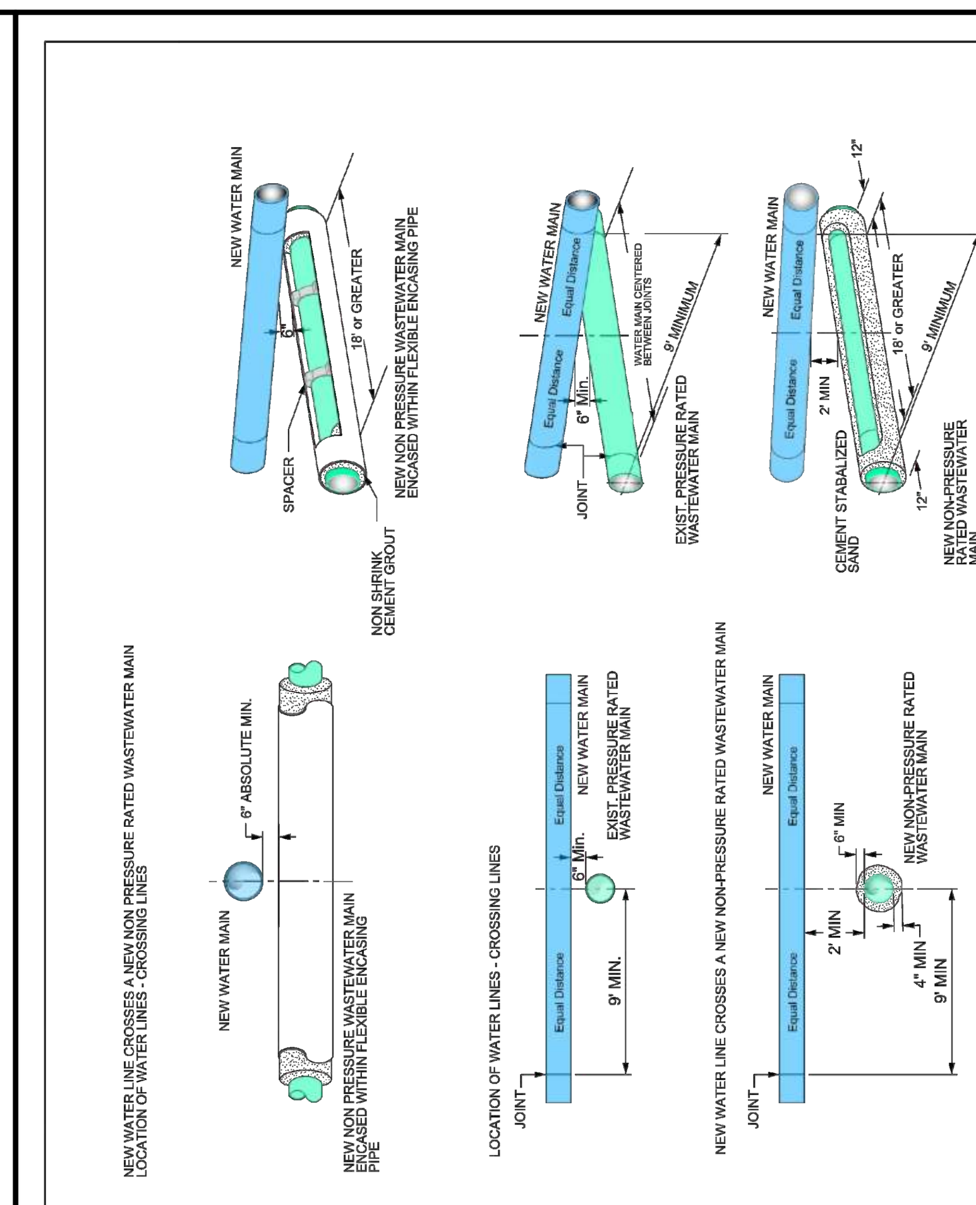
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — POTABLE AND RECYCLED WATER MAIN DETAIL — APPROVED MARCH 2008 — REVISED APRIL 2014 — DD-812-01 — SHEET 1 OF 1



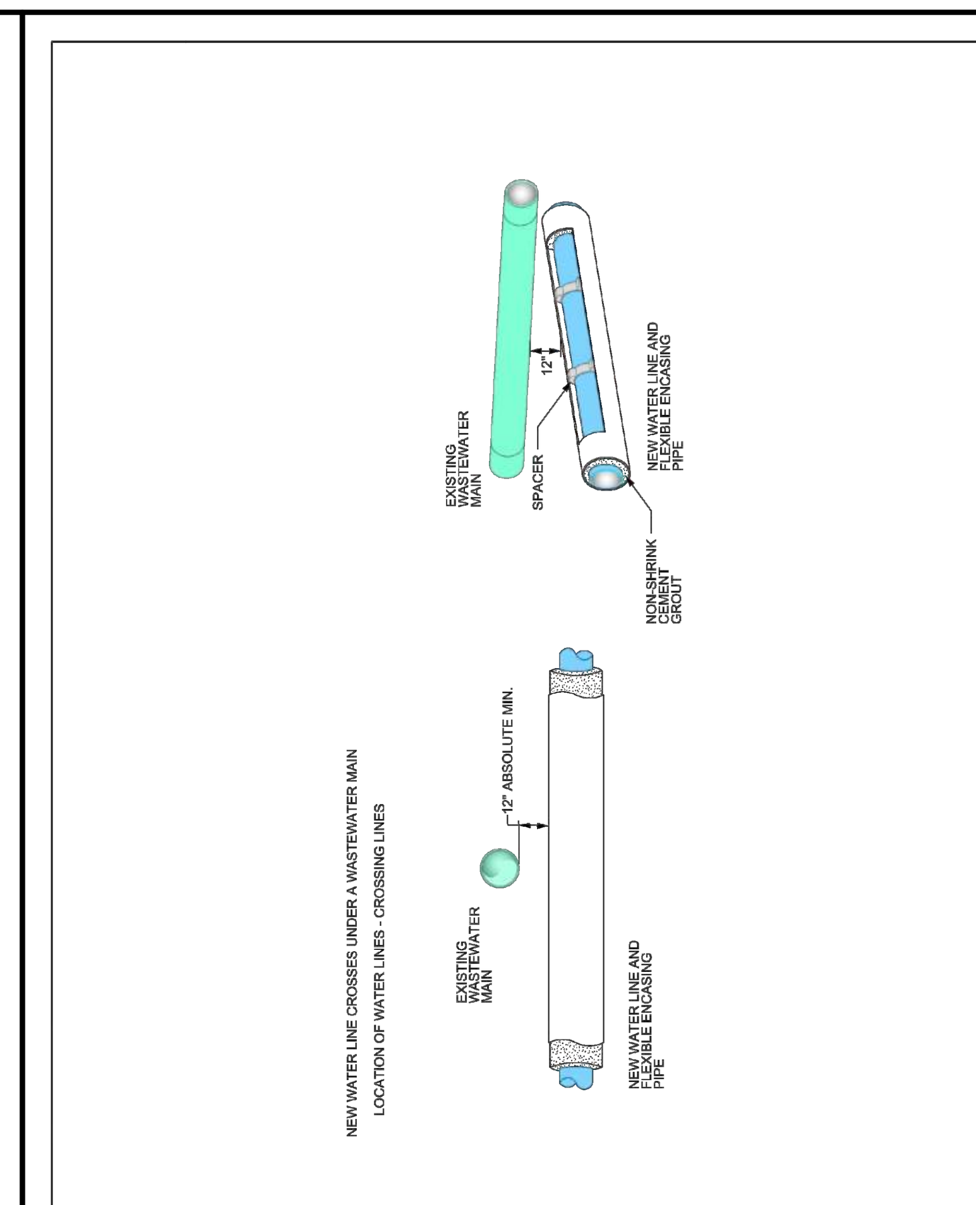
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — WATER LINES — APPROVED MARCH 2008 — REVISED AUG 2019 — DD-812-01 — SHEET 3 OF 9



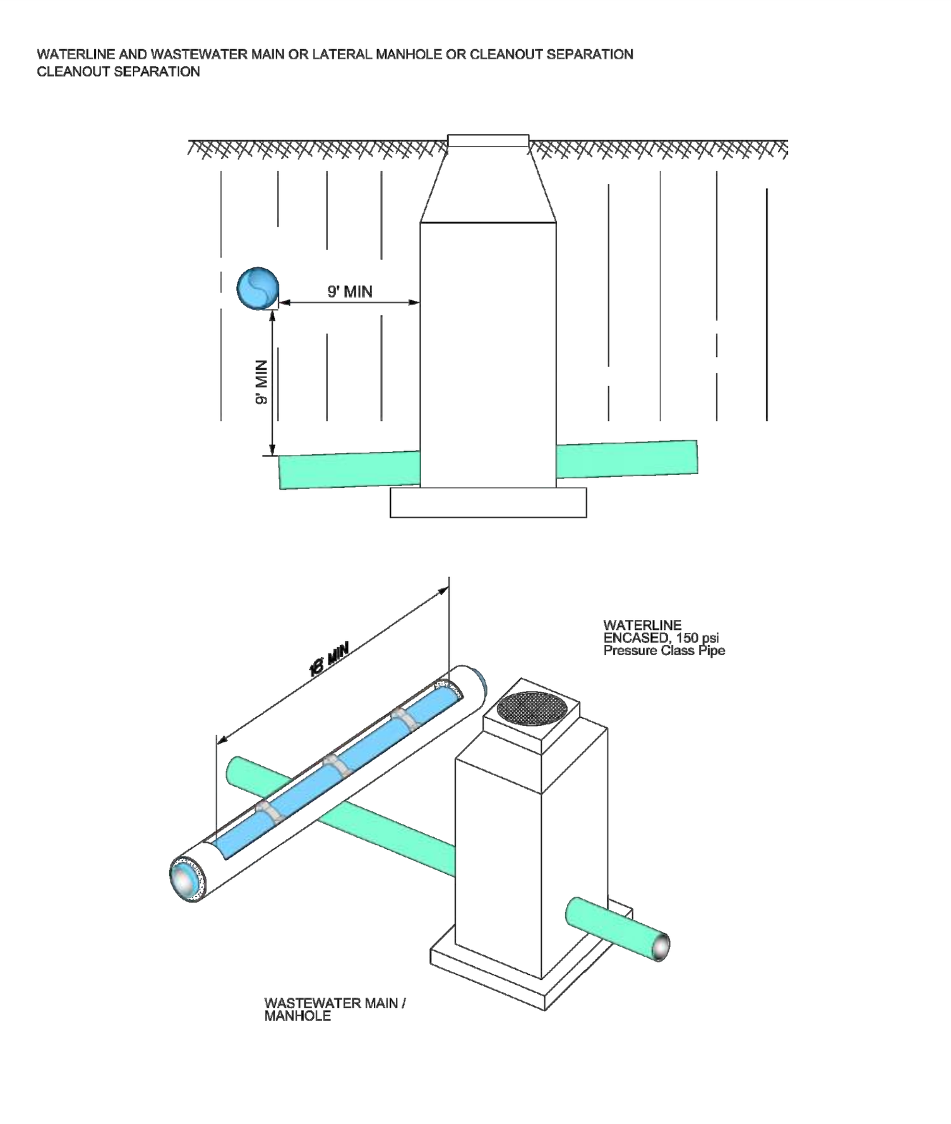
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — DETAIL — APPROVED MARCH 2018 — REVISED AUG 2019 — DD 812-01 — SHEET 4 OF 9



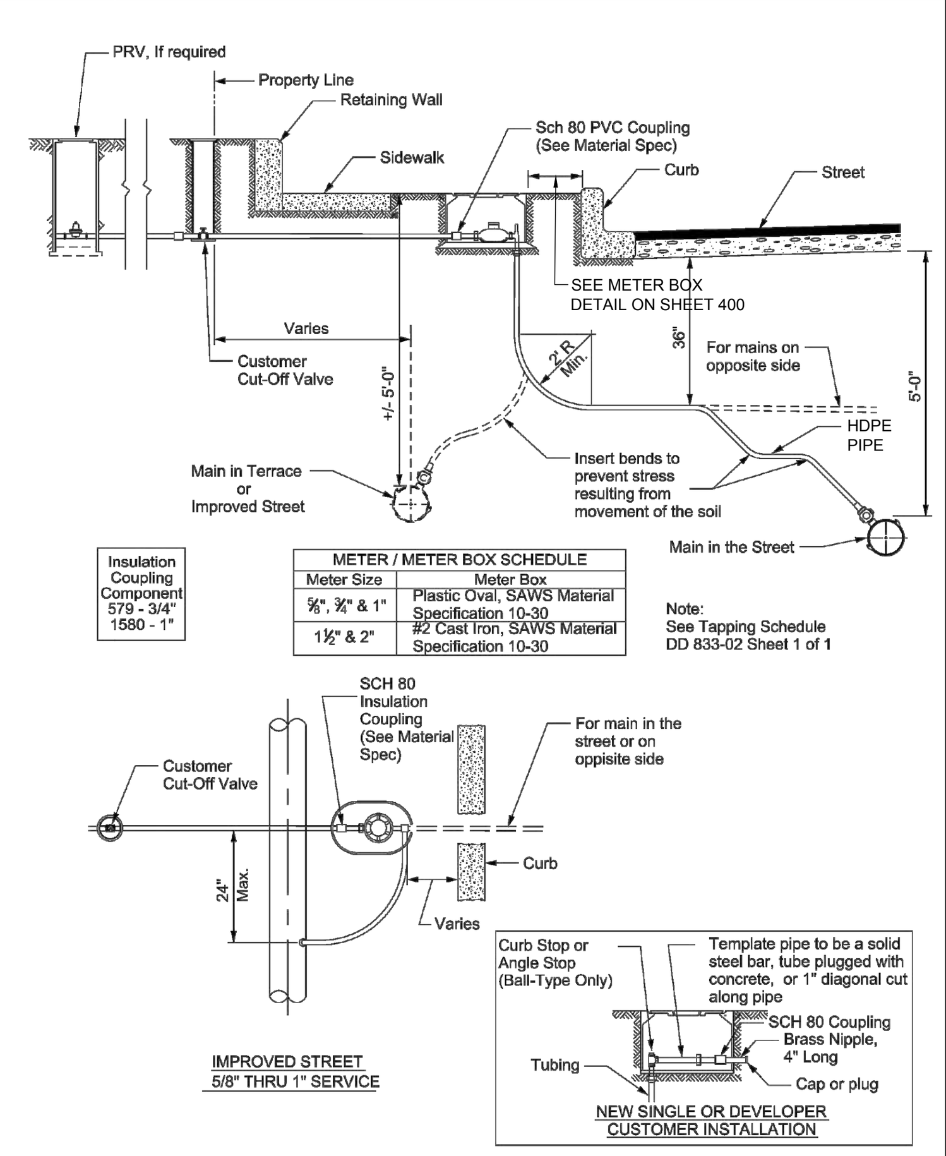
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — DETAIL — APPROVED MARCH 2008 — REVISED AUG 2019 — DD-812-01 — SHEET 5 OF 9



PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — DETAIL — APPROVED MAY 2013 — REVISED AUG 2019 — DD-812-01 — SHEET 6 OF 9



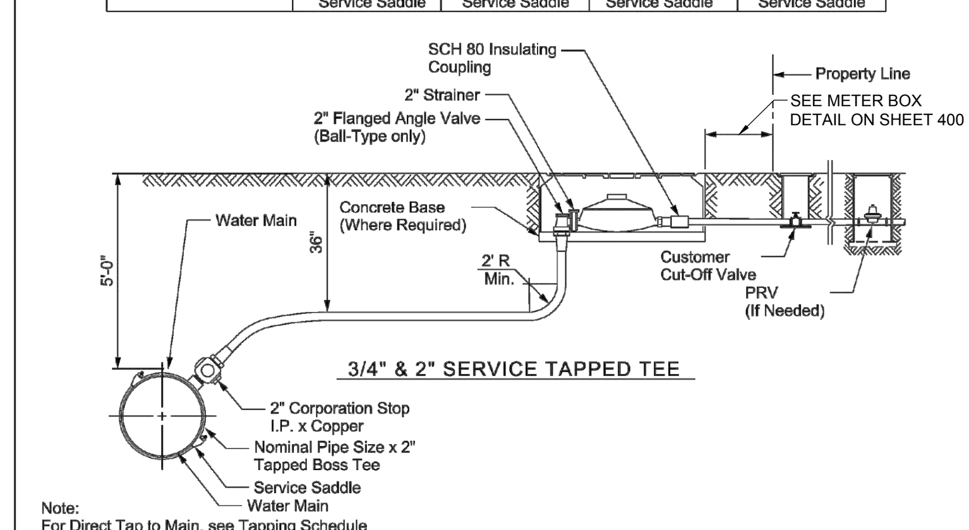
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — CLEANOUT SEPARATION — APPROVED MAY 2013 — REVISED AUG 2019 — DD-812-01 — SHEET 7 OF 9



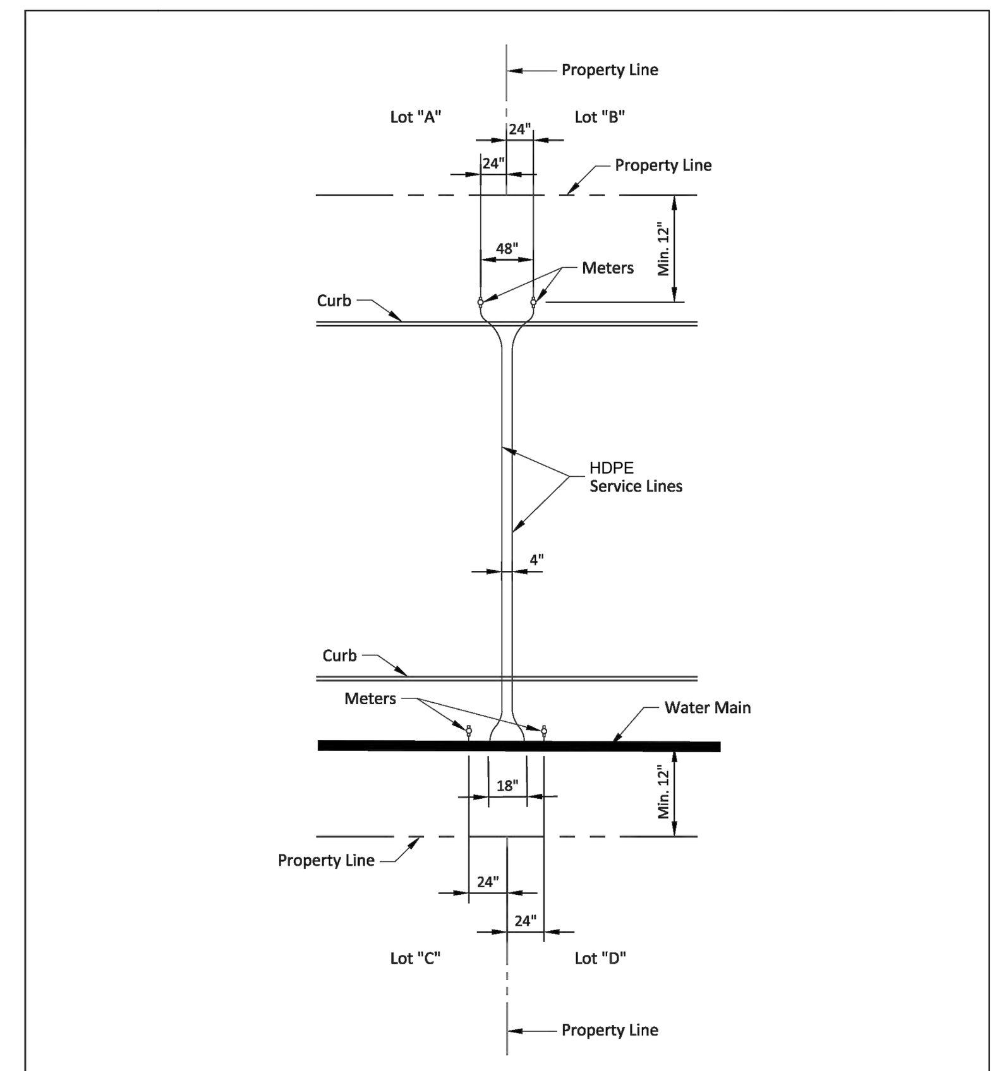
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — COPPER or HDPE SERVICE INSTALLATION MAIN in TERRACE or IMPROVED STREET — APPROVED MARCH 2008 — REVISED AUG 2019 — DD-824-01 — SHEET 1 OF 3

PIPE TAPPING SCHEDULE

PIPE DIAMETER	SERVICE SIZE 3/4"	1"	1½"	2"
6" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
6" C.I., D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" C.I., D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
8" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" C.I., D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
10" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" C.I., D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
12" PVC	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
16" A.C.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
16" C.I., D.I.	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle
6" - 16" HDPE	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle	Tap With Service Saddle

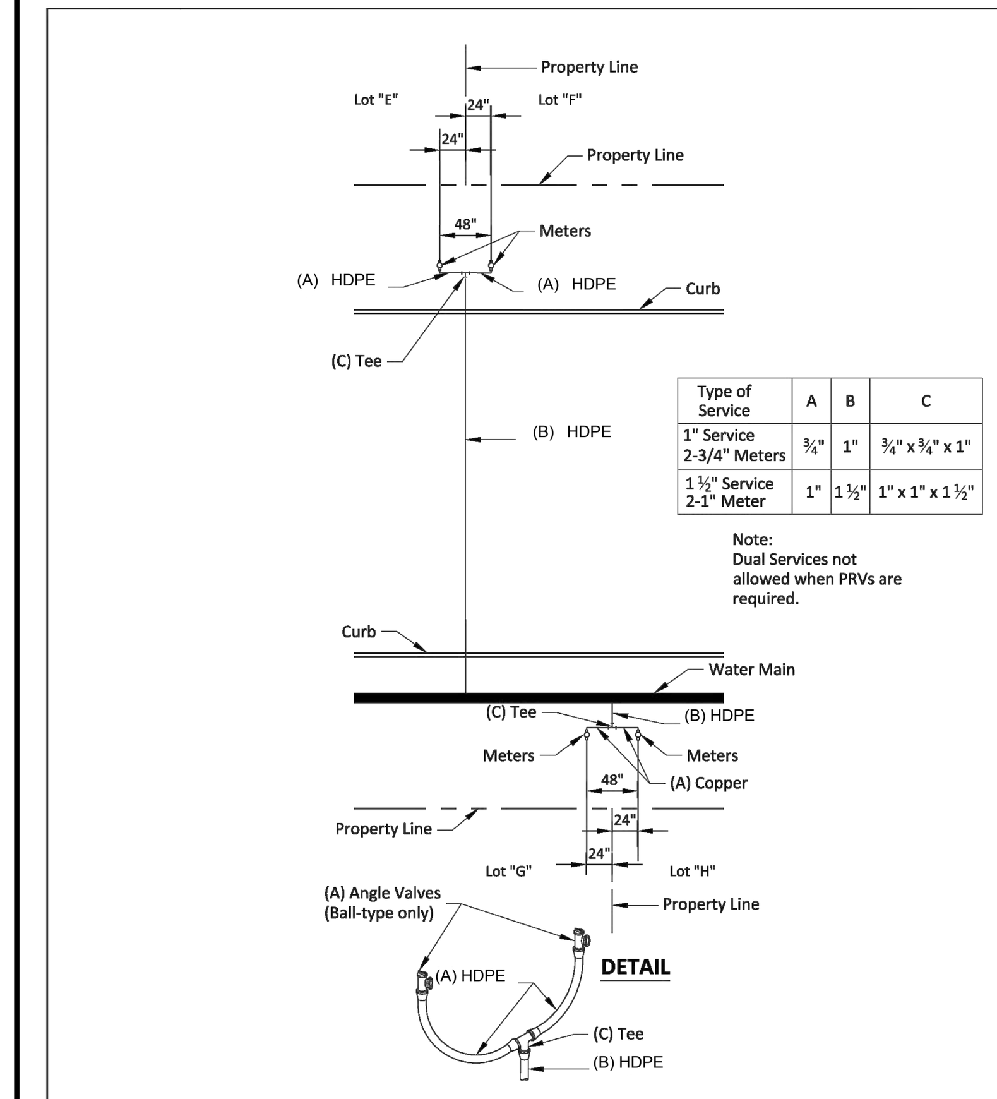


PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — COPPER & HDPE SERVICE INSTALLATION TAPPING SCHEDULE — APPROVED MARCH 2008 — REVISED AUG 2019 — DD-824-01 — SHEET 3 OF 3



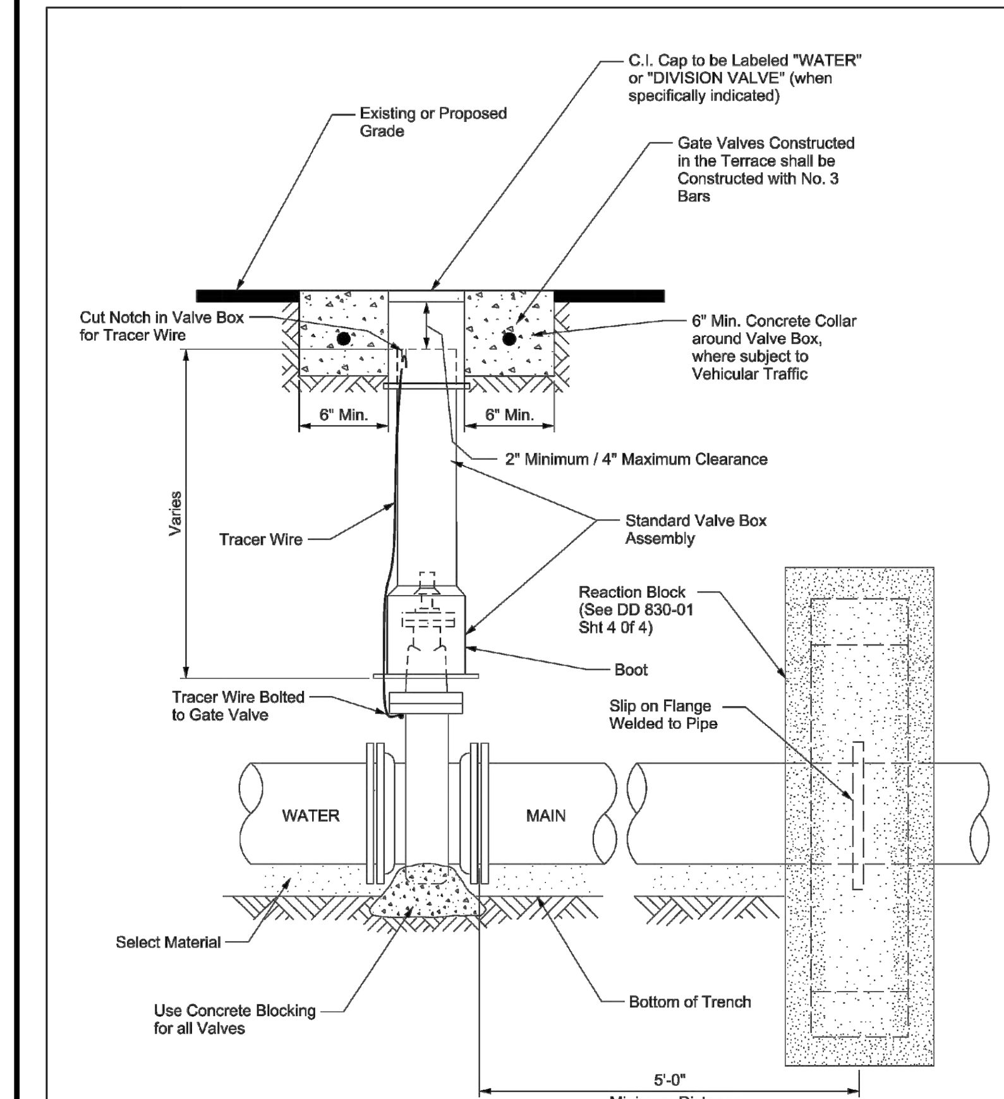
SINGLE SERVICE LINE - SINGLE METER

PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — TYPICAL NEW DEVELOPMENT SERVICE ARRANGEMENT — APPROVED March 2008 — REVISED December 2018 — DD-824-05 — SHEET 1 OF 3



SINGLE SERVICE LINE - DUAL METER

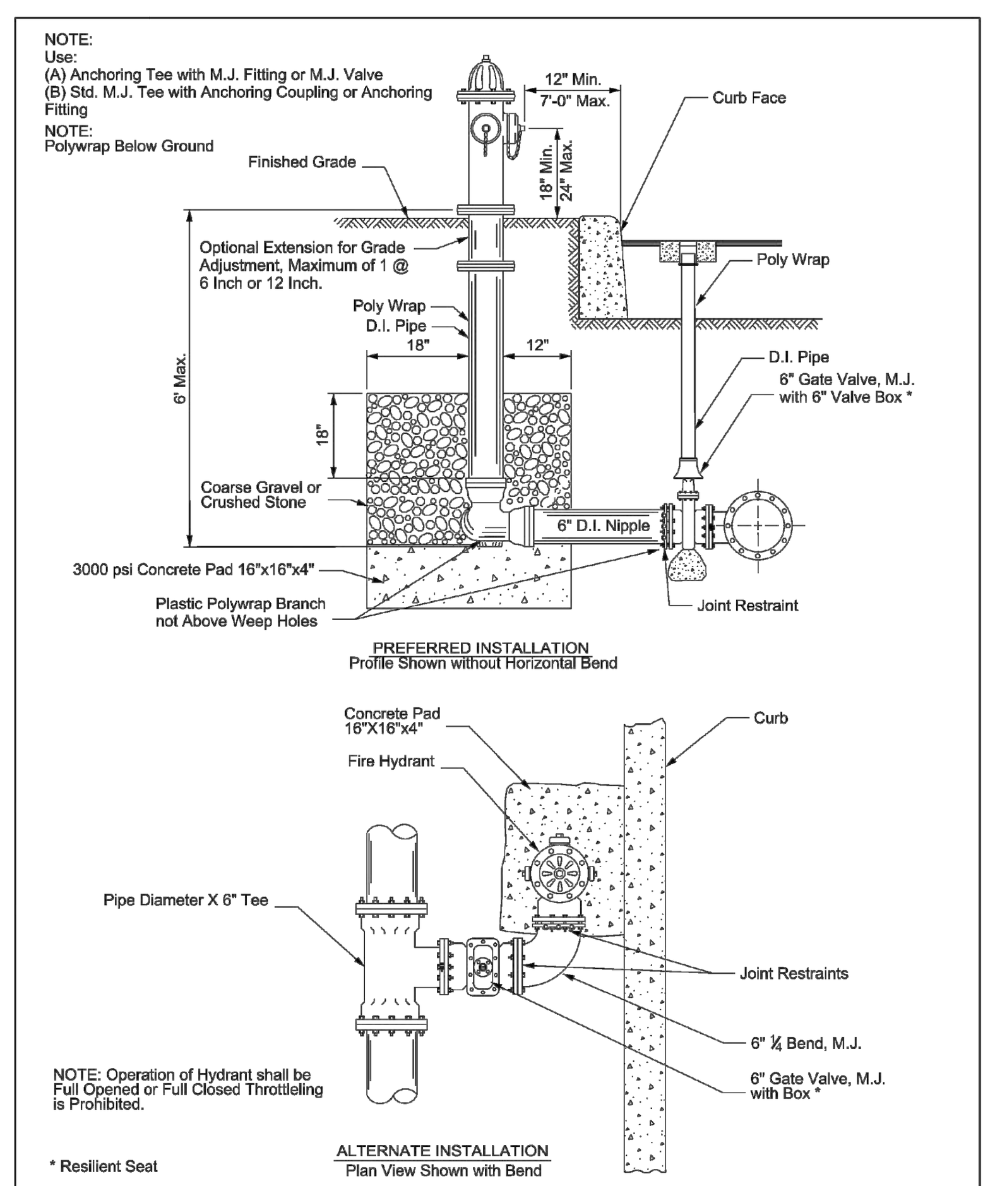
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — TYPICAL SERVICE ARRANGEMENT — APPROVED March 2008 — REVISED December 2018 — DD-824-05 — SHEET 2 OF 3



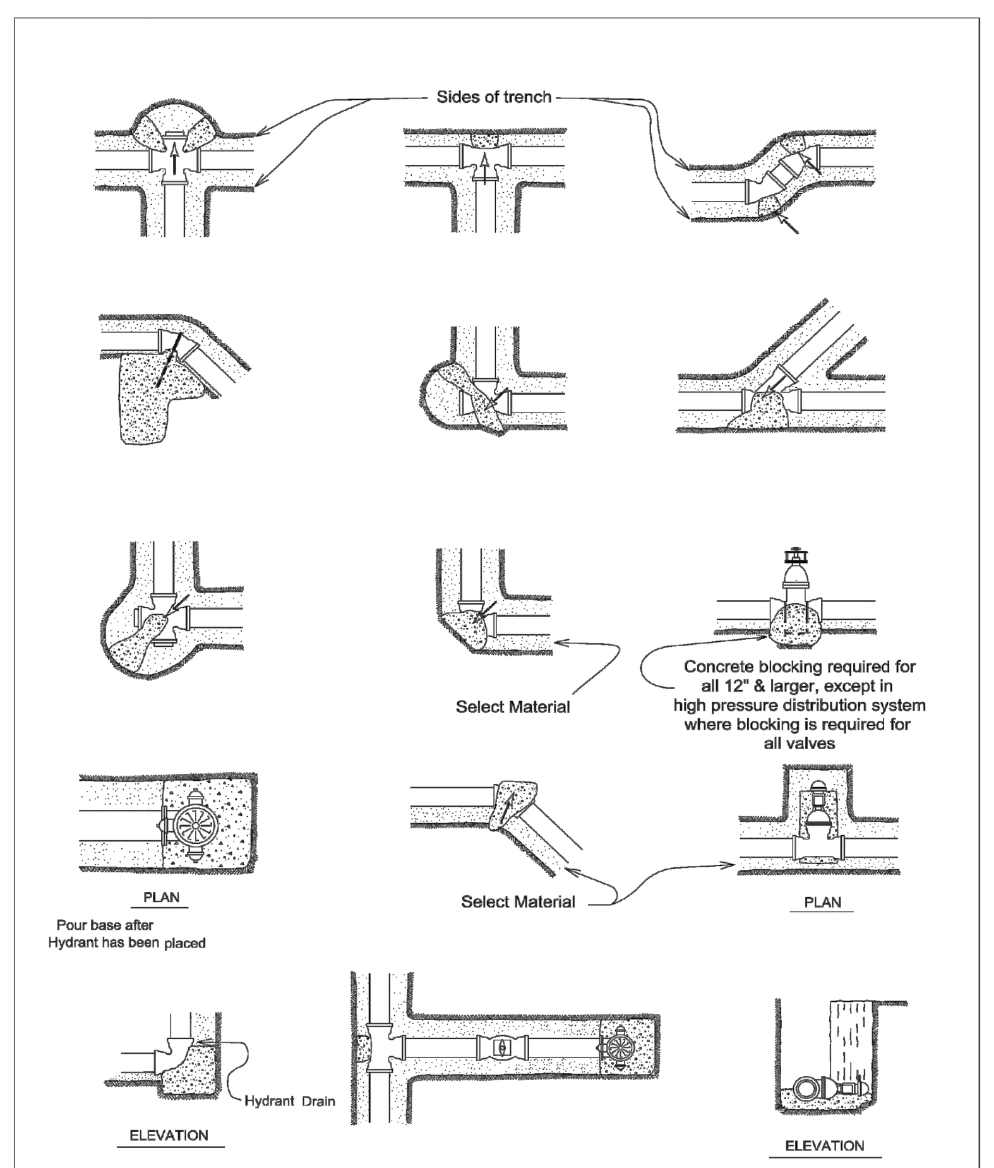
NOTE: Tracer Wire for PVC (Typ. for PVC & HDPE)
NOTE: All Concrete to be 3,000 psi

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

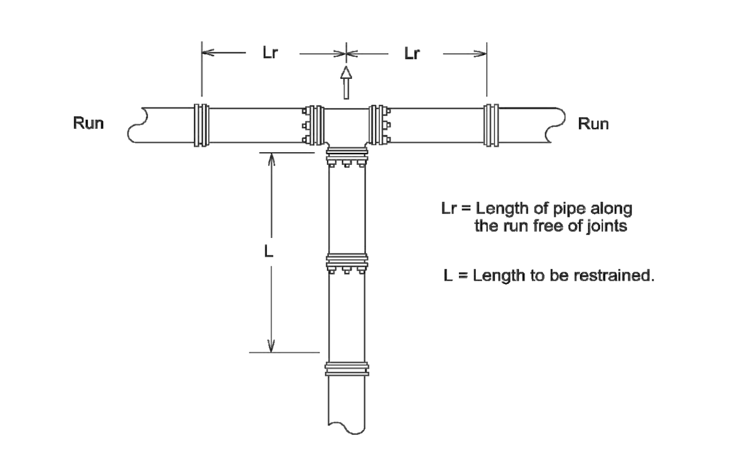
PROPERTY OF SAN ANTONIO WATER SYSTEM, SAN ANTONIO, TEXAS — INSTALLATION OF NON-GEARED GATE VALVE WITH VALVE BOX AND EXTENSION — APPROVED MARCH 2008 — REVISED AUG 2019 — DD 828-01 — SHEET 1 OF 1



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



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



RESTRAINED LENGTH FOR TEES

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

RESTRAINED LENGTH DESIGN

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

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

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

RESTRAINED LENGTH FOR TEES (Cont'd)

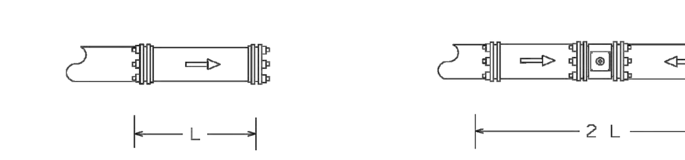
PIPE SIZE (inch)	BRANCH SIZE (inch)	LENGTH OF RUN (ft.)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
12	4	0	42	31
12	4	5	1	1
12	6	0	59	44
12	6	5	13	1
12	6	10	1	1
12	8	0	77	58
12	8	5	42	23
12	8	10	7	1
12	8	15	1	1
12	12	0	109	82
12	12	5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

RESTRAINED LENGTH DESIGN

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

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

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



L=LENGTH TO BE RESTRAINED

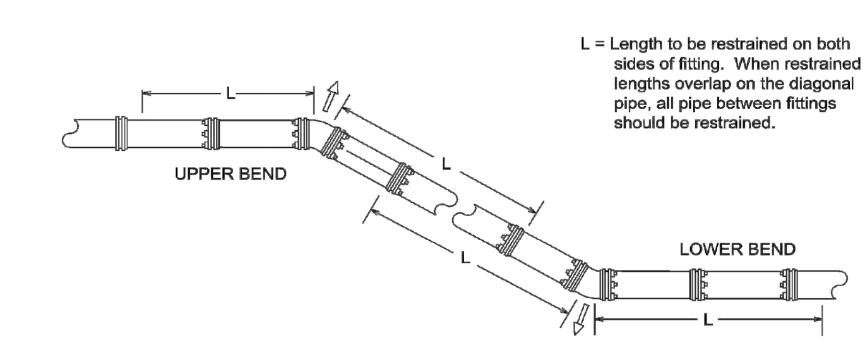
PIPE SIZE (inch)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 psi	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 150 psi
6	59	44
8	77	58
10	93	69
12	109	82

RESTRAINED LENGTH DESIGN

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

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

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



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

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

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

REV	DATE	DESCRIPTION

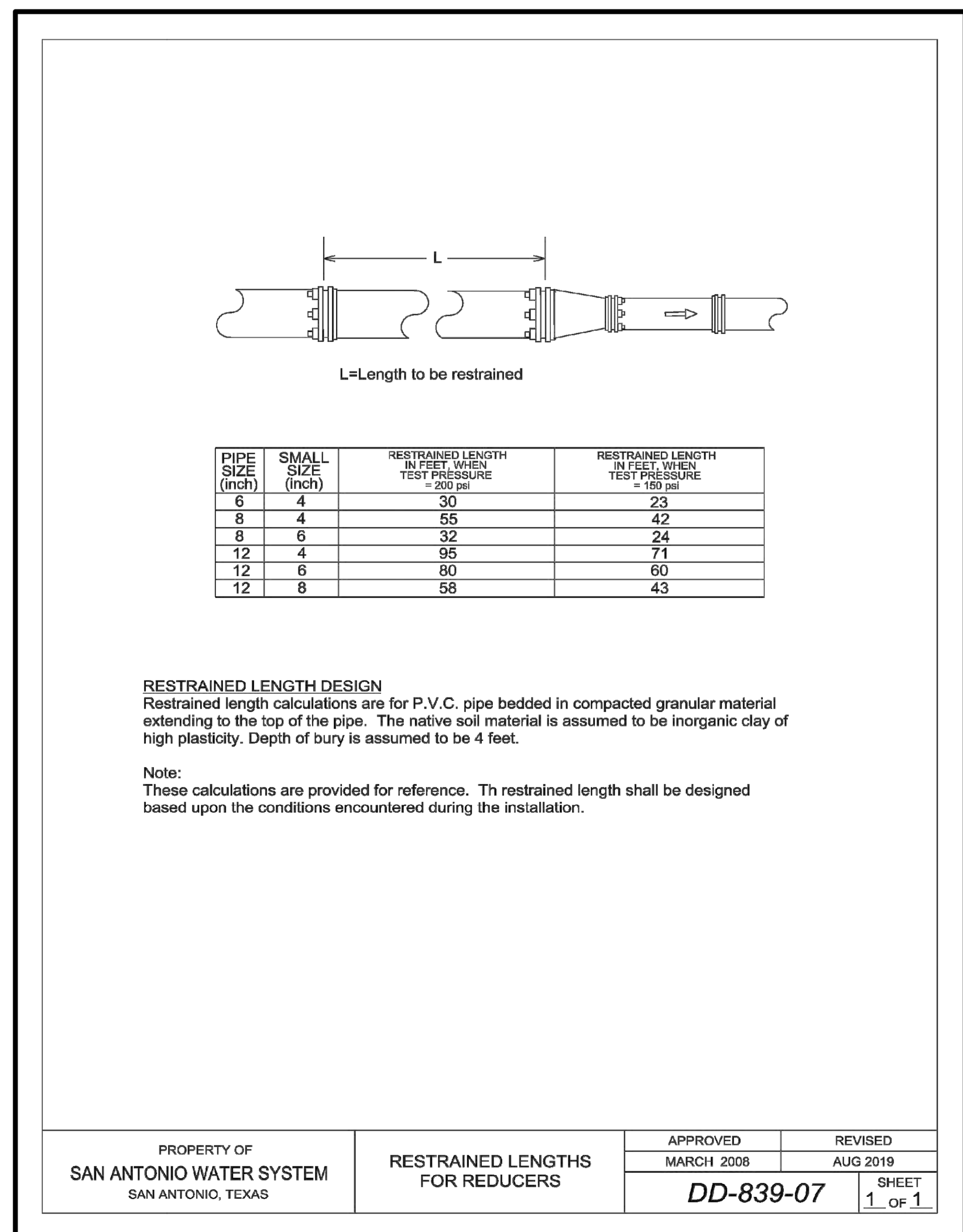
FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

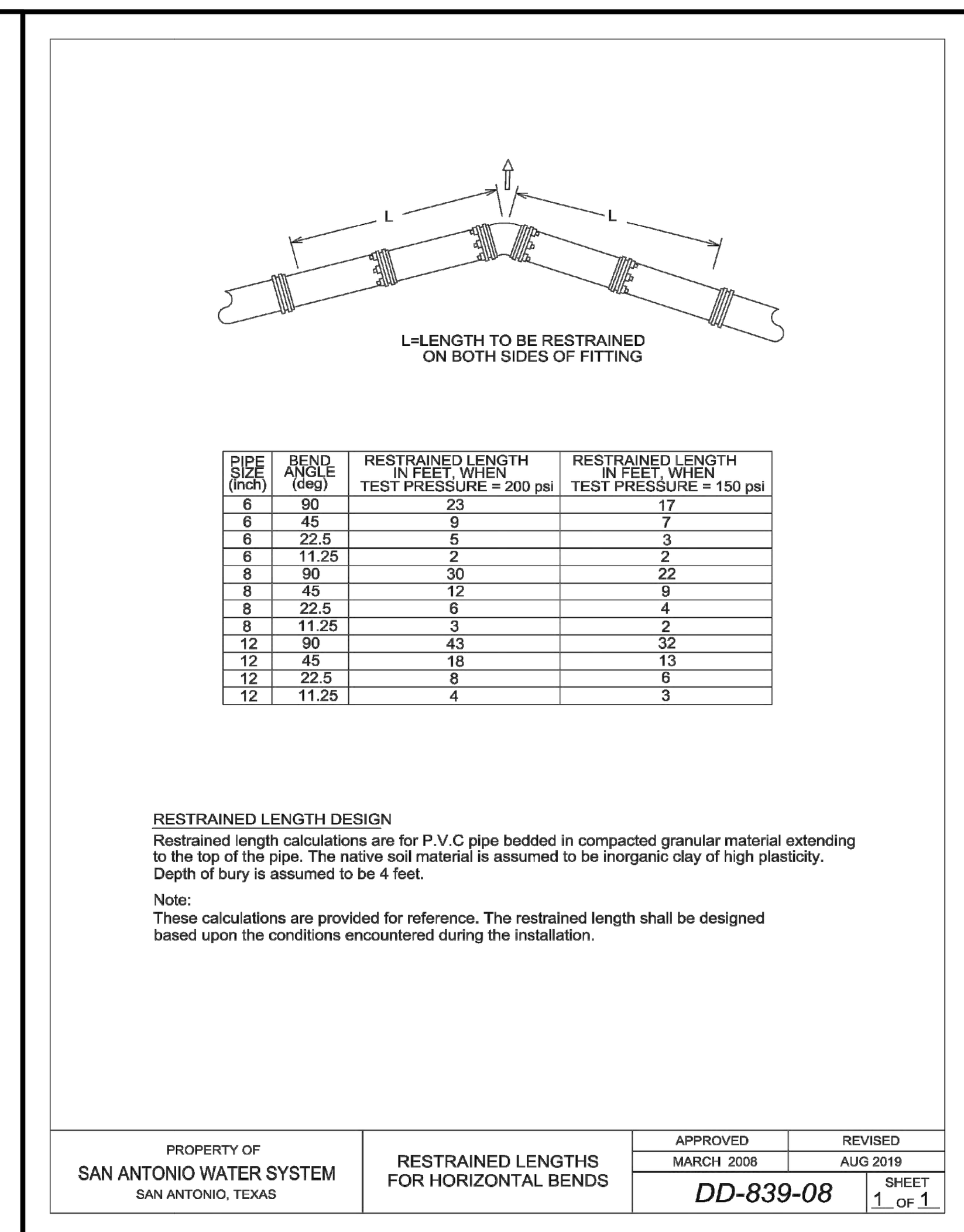
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

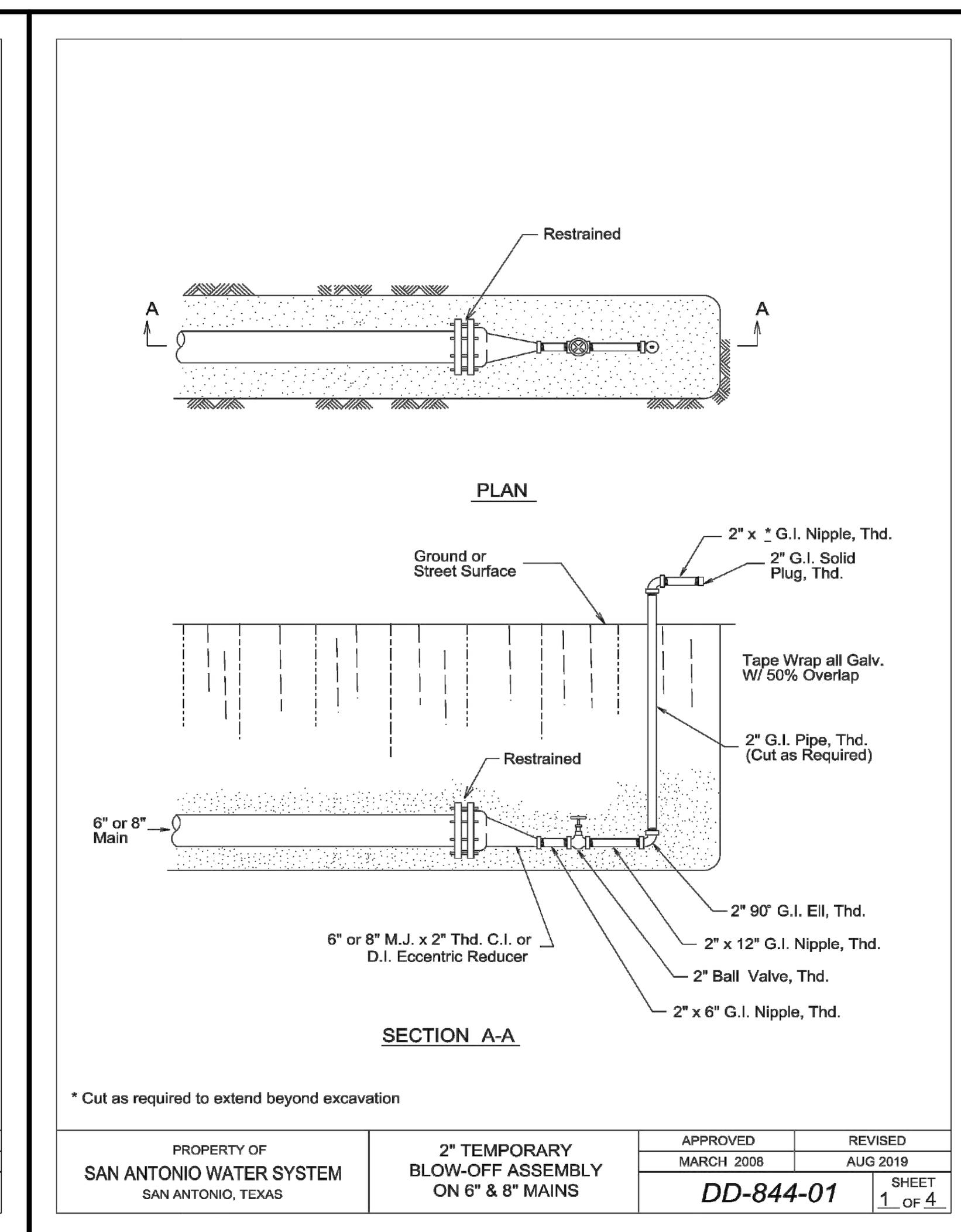
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
WATER DETAILS

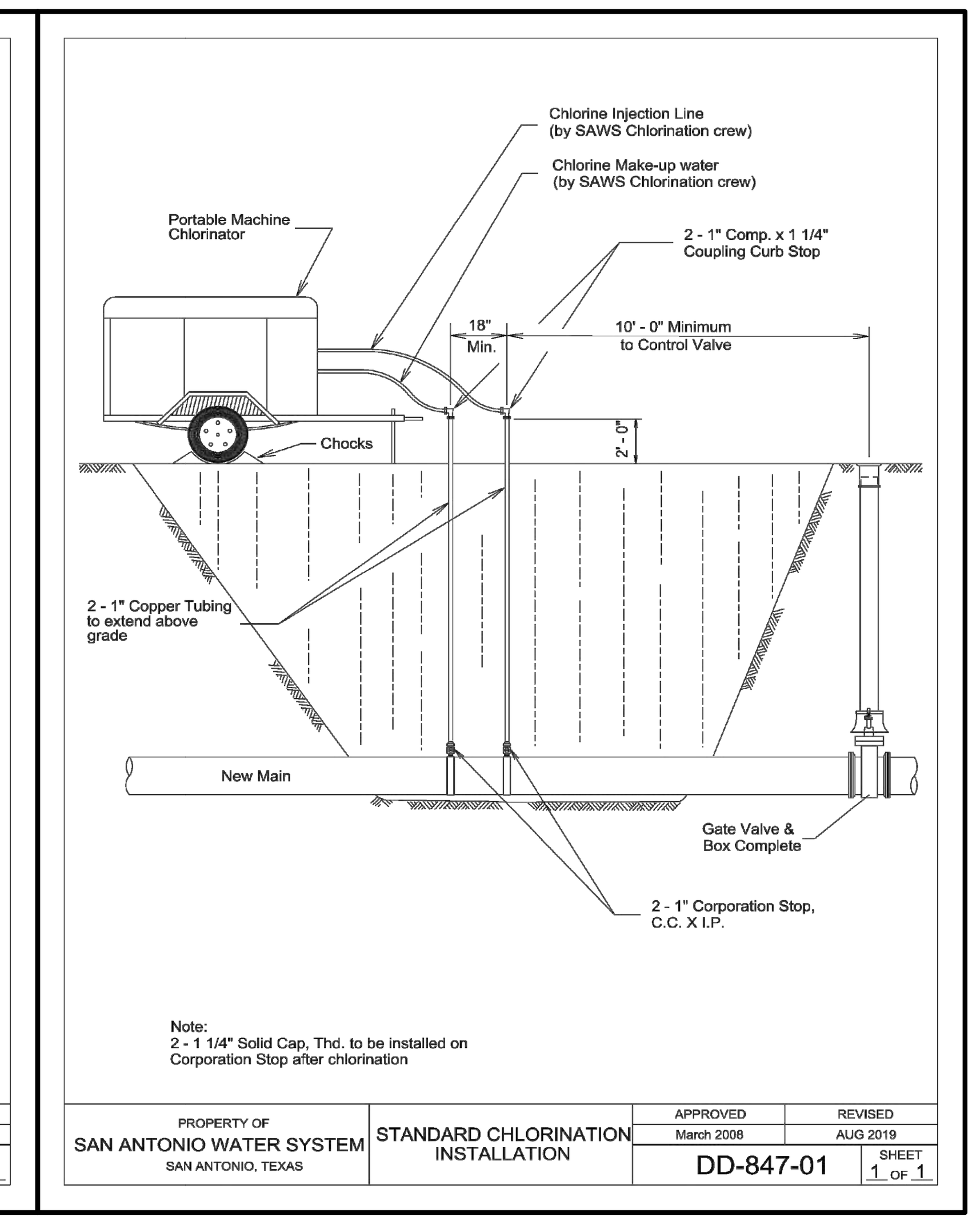
DRAFTING: N.M./C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	402

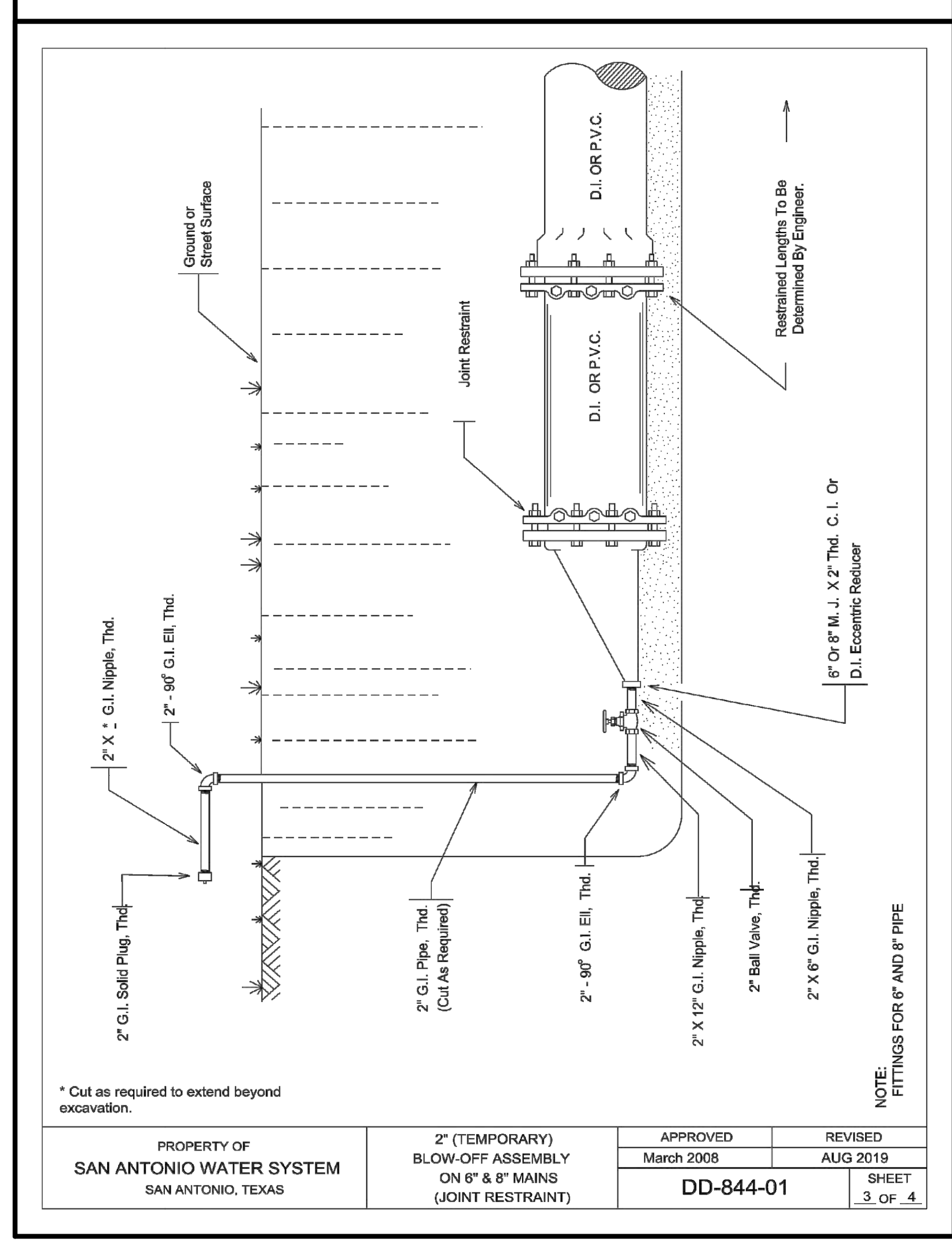
Date: Apr 13, 2026, 4:10pm User ID: Lance.Eiling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 402-403 WATER DETAILS.dwg

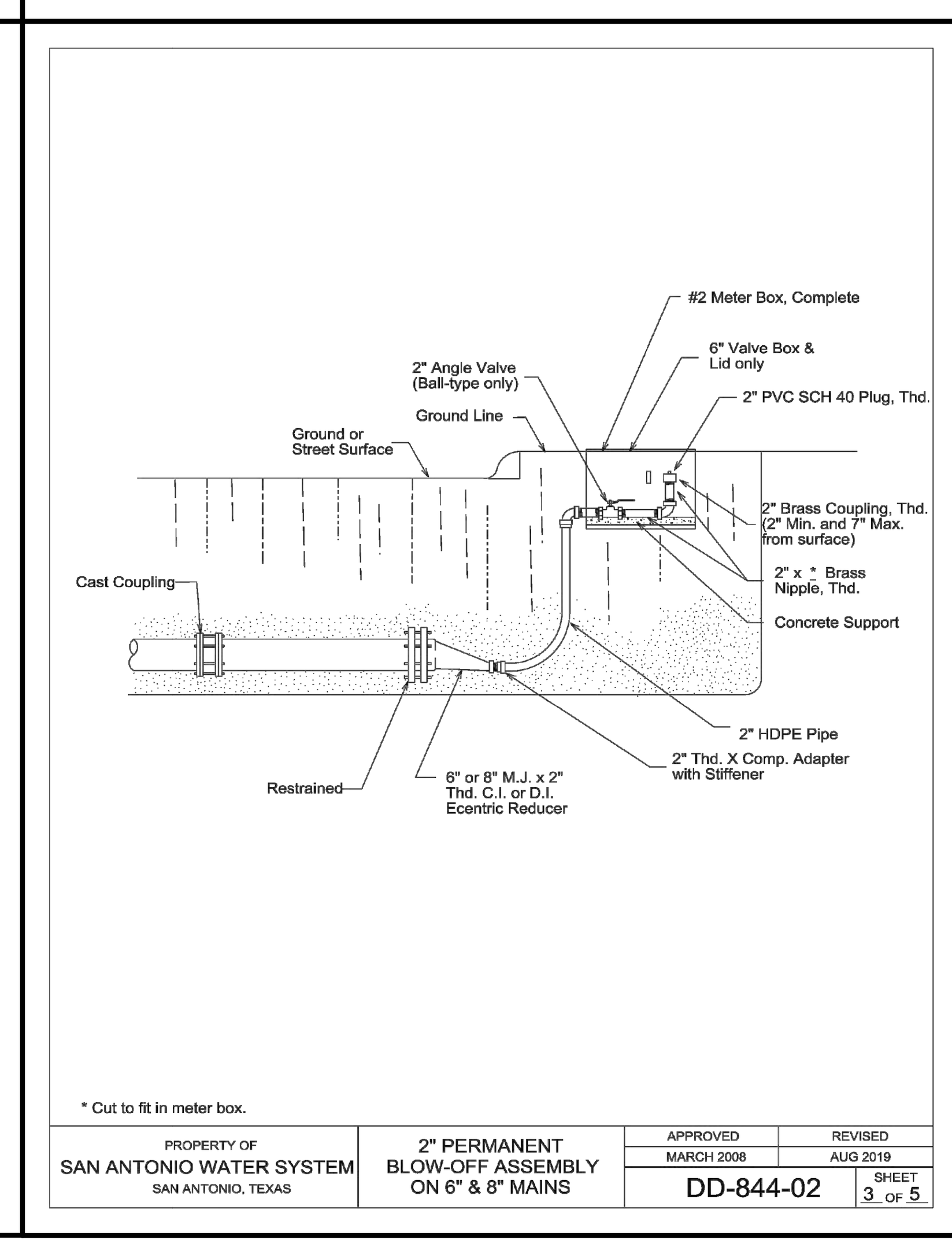












GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL BE APPROVED BY THE CITY OF ELMENDORF AND COMPLY WITH THE PLANS, SPECIFICATIONS, GENERAL CONDITIONS AND WITH THE FOLLOWING AS APPLICABLE:
   A. CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) "DESIGN CRITERIA FOR DOMESTIC WASTEWATER SYSTEM," TEXAS ADMINISTRATIVE CODE (TAC) TITLE 30 PART 1 CHAPTER 217 AND "PUBLIC DRINKING WATER," TAC TITLE 30 PART 1 CHAPTER 290.
   B. CURRENT TXDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND DRAINAGE."
   C. CURRENT "SAN ANTONIO WATER SYSTEM STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION."
   D. CURRENT CITY OF SAN ANTONIO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION."
   E. CURRENT CITY OF SAN ANTONIO "UTILITY EXCAVATION CRITERIA MANUAL" (UECM).
2. THE CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN APPROVAL FROM THE CITY OF ELMENDORF AND HAS BEEN NOTIFIED BY THE CITY TO PROCEED WITH THE WORK AND HAS ARRANGED A MEETING WITH THE INSPECTOR AND CONSULTANT FOR THE WORK REQUIREMENTS. WORK COMPLETED BY THE CONTRACTOR WITHOUT APPROVAL BY THE CITY WILL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE EXPENSE OF THE CONTRACTORS AND/OR THE DEVELOPER.
3. THE CONTRACTOR SHALL OBTAIN THE SAWS STANDARD DETAILS FROM THE SAWS WEBSITE, HTTP://WWW.SAWS.ORG/BUSINESS_CENTER/SPECS. UNLESS OTHERWISE NOTED WITHIN THE DESIGN PLAN.
4. THE CONTRACTOR IS TO MAKE ARRANGEMENTS WITH THE CITY OF ELMENDORF AT (210) 635-8210, ON NOTIFICATION PROCEDURES THAT WILL BE USED TO NOTIFY AFFECTED HOME RESIDENTS AND/OR PROPERTY OWNERS 48 HOURS PRIOR TO BEGINNING ANY WORK.
5. LOCATION AND DEPTH OF EXISTING UTILITIES AND SERVICE LATERALS SHOWN ON THE PLANS ARE UNDERSTOOD TO BE APPROXIMATE. ACTUAL LOCATIONS AND DEPTHS MUST BE FIELD VERIFIED BY THE CONTRACTOR AT LEAST 1 WEEK PRIOR TO CONSTRUCTION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION AND TO PROTECT THEM DURING CONSTRUCTION AT NO COST TO THE CITY OR THE DEVELOPER.
6. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF UNDERGROUND UTILITIES AND DRAINAGE STRUCTURES AT LEAST 1-2 WEEKS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT. PLEASE ALLOW UP TO 7 BUSINESS DAYS FOR LOCATES REQUESTING PIPE LOCATION MARKERS ON SAWS FACILITIES. THE FOLLOWING CONTACT INFORMATION ARE SUPPLIED FOR VERIFICATION PURPOSES:
   - CITY OF ELMENDORF 210-635-8210
   - TEXAS STATE WIDE ONE CALL LOCATOR 1-800-545-6005 OR 811
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, SIDEWALKS, LANDSCAPING AND STRUCTURES TO ITS ORIGINAL OR BETTER CONDITION IF DAMAGES ARE MADE AS A RESULT OF THE PROJECT'S CONSTRUCTION.
8. ALL WORK IN TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) AND/OR BEXAR COUNTY RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH RESPECTIVE CONSTRUCTION SPECIFICATIONS AND PERMIT REQUIREMENTS.
9. THE CONTRACTOR SHALL COMPLY WITH CITY OF ELMENDORF OR OTHER GOVERNING MUNICIPALITY'S TREE ORDINANCES WHEN EXCAVATING NEAR TREES.
10. THE CONTRACTOR SHALL NOT PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN PERMIT.
11. HOLIDAY WORK: CONTRACTORS WILL NOT BE ALLOWED TO PERFORM CITY WORK ON CITY RECOGNIZED HOLIDAYS. REQUEST SHOULD BE SENT TO THE CITY.
   - WEEKEND WORK: CONTRACTORS ARE REQUIRED TO NOTIFY THE CITY OF ELMENDORF 48 HOURS IN ADVANCE TO REQUEST WEEKEND WORK. REQUEST SHOULD BE SENT TO THE CITY.
   - ANY AND ALL CITY UTILITY WORK INSTALLED WITHOUT HOLIDAY/WEEKEND APPROVAL WILL BE SUBJECT TO BE UNCOVERED FOR PROPER INSPECTION.
12. COMPACTION NOTE (ITEM 804): THE CONTRACTOR SHALL BE RESPONSIBLE FOR METTING THE COMPACTION REQUIREMENTS ON ALL TRENCH BACKFILL AND FOR PAYING FOR THE TESTS PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED, OR AS INDICATED BY THE CITY INSPECTOR AND/OR THE TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT PER 400 LINEAR FEET AT A MINIMUM. THIS PROJECT WILL NOT BE ACCEPTED AND FINALIZED BY THE CITY WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.
13. A COPY OF ALL TESTING REPORTS SHALL BE FORWARDED TO THE CITY OF ELMENDORF.

WATER NOTES:

1. PRIOR TO TIE-INS, ANY SHUTDOWNS OF EXISTING MAINS OF ANY SIZE MUST BE COORDINATED WITH THE CITY OF ELMENDORF AT LEAST ONE WEEK IN ADVANCE OF THE SHUTDOWN. THE CONTRACTOR MUST ALSO PROVIDE A SEQUENCE OF WORK AS RELATED TO THE TIE-INS; THIS IS AT NO ADDITIONAL COST TO THE CITY OR THE PROJECT AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SEQUENCE THE WORK ACCORDINGLY.
2. ASBESTOS CEMENT (AC) PIPE, ALSO KNOWN AS TRANSITE PIPE WHICH IS KNOWN TO CONTAIN ASBESTOS-CONTAINING MATERIAL (ACM), MAY BE LOCATED WITHIN THE PROJECT LIMITS. SPECIAL WASTE MANAGEMENT PROCEDURES AND HEALTH AND SAFETY REQUIREMENTS WILL BE APPLICABLE WHEN REMOVAL AND/OR DISTURBANCE OF THIS PIPE OCCURS. SUCH WORK IS TO BE MADE UNDER SPECIAL SPECIFICATION ITEM NO. 3000, "SPECIAL SPECIFCATION FOR HANDLING ASBESTOS CEMENT PIPE."
3. VALVE REMOVAL: WHERE THE CONTRACTOR IS TO ABANDON A WATER MAIN, THE CONTROL VALVE LOCATED ON THE ABANDONING BRANCH WILL BE REMOVED AND REPLACED WITH A CAP / PLUG. (NSPI)
4. SUITABLE ANCHORAGE/THRUST BLOCKING OR JOINT RESTRAINT SHALL BE PROVIDED AT ALL OF THE FOLLOWING MAIN LOCATIONS: DEAD ENDS, PLUGS, CAPS, TEES, CROSSES, VALVES, AND BENDS, IN ACCORDANCE WITH THE STANDARD DRAWINGS DD-839 SERIES AND ITEM NO. 839, IN THE SAWS STANDARD SPECIFICATIONS FOR CONSTRUCTION.
5. ALL VALVES SHALL READ "OPEN RIGHT."
6. PIPE DISINFECTION WITH DRY HTH FOR PROJECTS LESS THAN 800 LINEAR FEET. (ITEM NO. 847.3): MAINS SHALL BE DISINFECTED WITH DRY HTH WHERE SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE INSPECTOR, AND SHALL NOT EXCEED A TOTAL LENGTH OF 800 FEET. THIS METHOD OF DISINFECTION WILL ALSO BE FOLLOWED FOR MAIN REPAIRS. THE CONTRACTOR SHALL UTILIZE ALL APPROPRIATE SAFETY MEASURE TO PROTECT HIS PERSONNEL DURING DISINFECTION OPERATIONS.
7. BACKFLOW PREVENTION DEVICES:
   - ALL IRRIGATION SERVICES WITHIN RESIDENTIAL AREAS ARE REQUIRED TO HAVE BACKFLOW PREVENTION DEVICES.
   - ALL COMMERCIAL BACKFLOW PREVENTION DEVICES MUST BE APPROVED BY SAWS PRIOR TO INSTALLATION.
9. FINAL CONNECTION TO THE EXISTING WATER MAIN SHALL NOT BE MADE UNTIL THE WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED, AND THE CITY OF ELMENDORF HAS RELEASED THE MAIN FOR TIE-IN AND USE.

ADDITIONAL NOTES:

1. LEAD FREE (0.25% LEAD) FIRE HYDRANTS TO BE USED.
2. ATTENTION CONTRACTORS: ALL SPILLS, OVERFLOWS, OR DISCHARGES OF WASTEWATER, RECYCLED WATER, PETROLEUM PRODUCTS, OR CHEMICALS MUST BE REPORTED IMMEDIATELY TO THE CITY. THIS REQUIREMENT APPLIES TO EVERY SPILL, OVERFLOW, OR DISCHARGE - REGARDLESS OF SIZE. YOUR COMPLIANCE WILL ENABLE SAWS TO FULFIL REGULATORY REPORTING REQUIREMENTS.

   IT IS THE CONTRACTORS RESPONSIBILITY TO CONTROL SEWER FLOWS SO THAT A SPILL OVERFLOW, OR DISCHARGE DOES NOT OCCUR, IN THE EVENT THAT A SPILL, OVERFLOW, OR DISCHARGE OCCURS, THE CONTRACTOR MAY BE HELD LIABLE FOR:
   - ALL FINES, PENALTIES, OR OTHER COSTS ASSESSED TO OR AGAINST BY SAWS BY ANY STATE, FEDERAL, OR OTHER GOVERNMENTAL AGENCY.
   - CITY STAFF AND MATERIAL COSTS TO RESPOND TO THE SPILL, OVERFLOW, OR DISCHARGE, OR TO MITIGATE THE EFFECTS OF THE SPILL, OVERFLOW, OR DISCHARGE, OR TO SUPPORT THE CLEANUP EFFORT.
   - ALL DAMAGES CAUSED TO CITY, OR ANY OTHER PERSONS OR ENTITIES THAT RESULT FROM THE SPILL, OVERFLOW, OR DISCHARGE.
3. ALL PROPOSED 8" PVC WATER PIPE SHALL BE C900 CLASS 235 DR-18.
4. ALL WATER METERS SHALL BE $\frac{5}{8}$" UNLESS OTHERWISE NOTED.

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
WATER DETAILS

DRAFTING: N.M.C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
403

STREET & DRAIN PLANS
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7

LEGEND

WHEELCHAIR RAMPS	
WHEELCHAIR RAMP TYPE (I-IV)	①②③④
SINGLE DIRECTIONAL WHEELCHAIR RAMP	D1
DUAL DIRECTIONAL WHEELCHAIR RAMP	D2
WASHOUT CROWN	
SIDEWALK TO BE BUILT BY DEVELOPER	
PROPOSED DRIVEWAY	DW
TOP OF PVMT. ELEVATION	940.00
EXISTING STREET LIGHT	ELP
PROPOSED STREET LIGHT (100 WATT)	LP
PROPOSED FIRE HYDRANT	
EXISTING FIRE HYDRANT	

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

GENERAL NOTES

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

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

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

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

5. Minimum Testing Schedule:

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

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

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

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

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

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

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

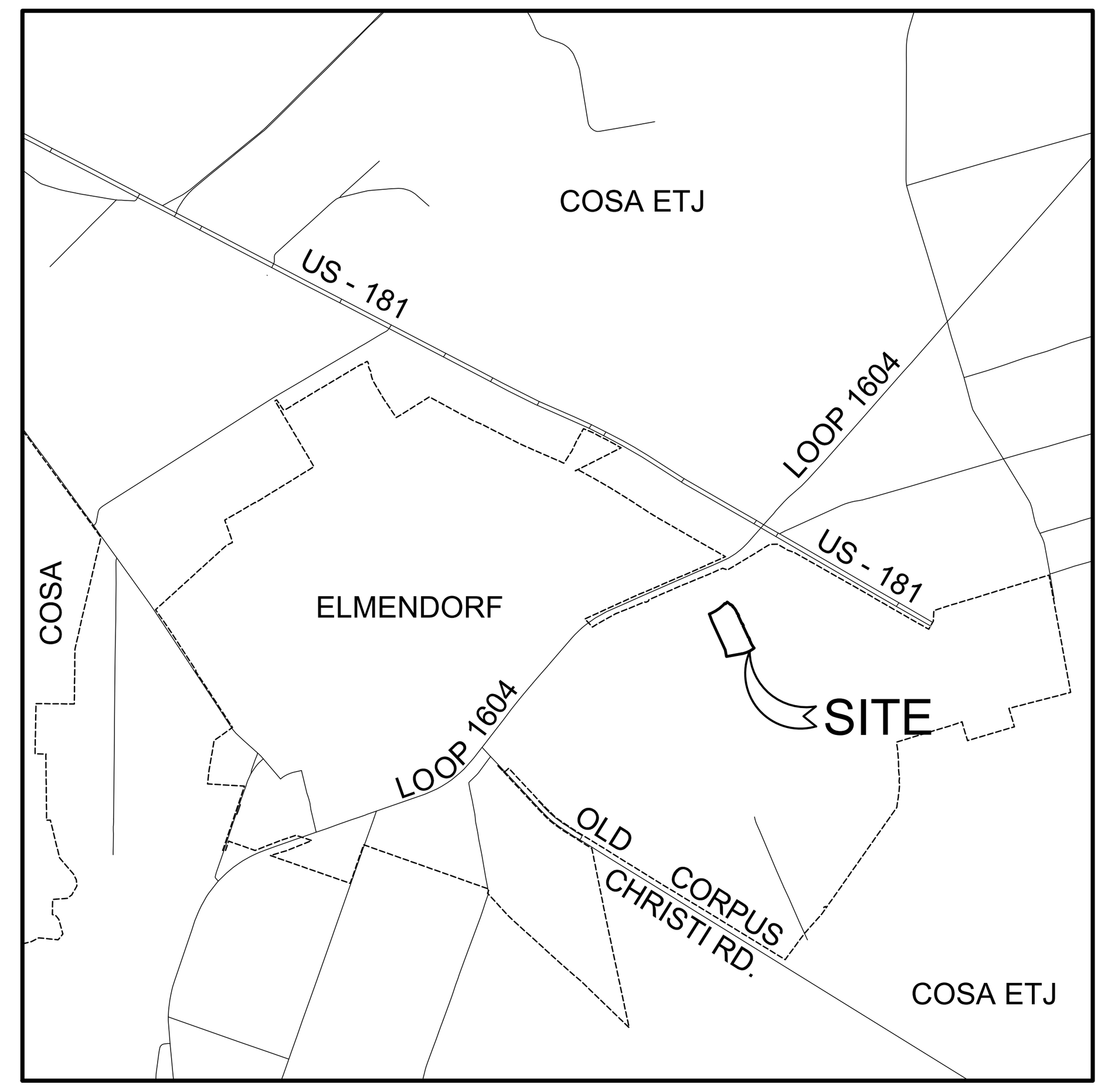
12. The contractor shall not place any waste material in the 100-year flood plain without first obtaining an approved Flood Plain Development Permit.

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

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

TRENCH EXCAVATION SAFETY PROTECTION

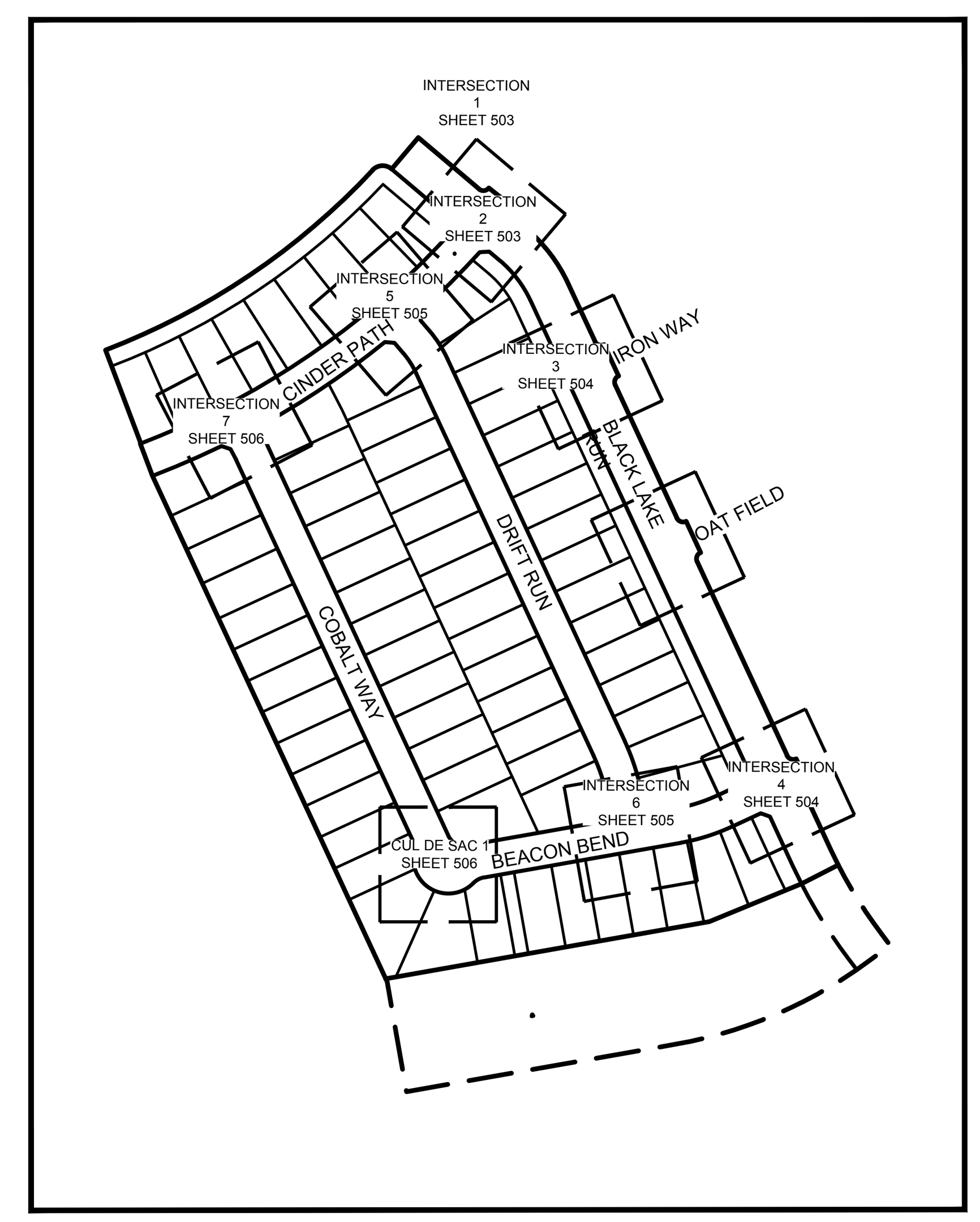
Contractor and/or contractor's independently retained employee or structural design/geotechnical/safety/equipment consultant, if any, shall. review these plans and available geotechnical information and the anticipated installation site(s) within the project work area in order to implement Contractor's trench excavation safety protection systems, programs and/or procedures. The Contractor's implementation of the systems, programs and/or procedures shall provide for adequate trench excavation, safety protection that complies with as a minimum, OSHA standards for trench excavations. Specifically, Contractor and/or Contractor's independently retained employee or safety consultant shall implement a trench safety program in accordance with OSHA standards governing the presence and activities of individuals working in and around trench excavation.



LOCATION MAP
NOT TO SCALE

SHEET INDEX

SHEET	TITLE
500	STREET & DRAIN COVER
501	OVERALL GRADING PLAN
502	GRADING PLAN RETAINING WALLS
503	BLACK LAKE RUN PLAN & PROFILE
504	BLACK LAKE RUN PLAN & PROFILE
505	DRIFT RUN PLAN & PROFILE
506	COBALT WAY PLAN & PROFILE
507	CINDER PATH PLAN & PROFILE
508	BEACON BEND PLAN & PROFILE
509	DRAIN 'A' PLAN & PROFILE
510	INTERCEPTOR DRAIN B PLAN & PROFILE
511	OVERALL SIGNAGE PLAN
512	DRAIN DETAILS
513	DRAIN DETAILS
514	STREET DETAILS
515	STREET DETAILS
516	SIGN DETAILS
517	SIGN DETAILS



INTERSECTION & CUL DE SAC KEY MAP
NOT TO SCALE

OWNER/DEVELOPER:
DAVIDSON HOMES, LLC
2801 PARIA CYN
CONVERSE, TX 78109

PREPARED BY:
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
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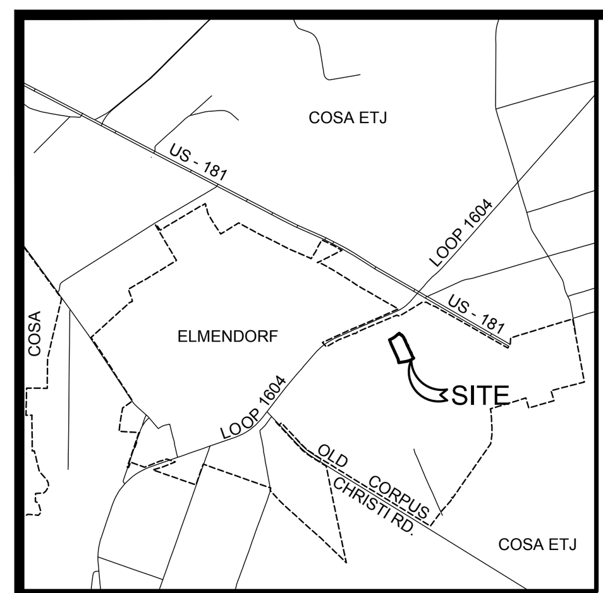
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
STREET & DRAIN COVER

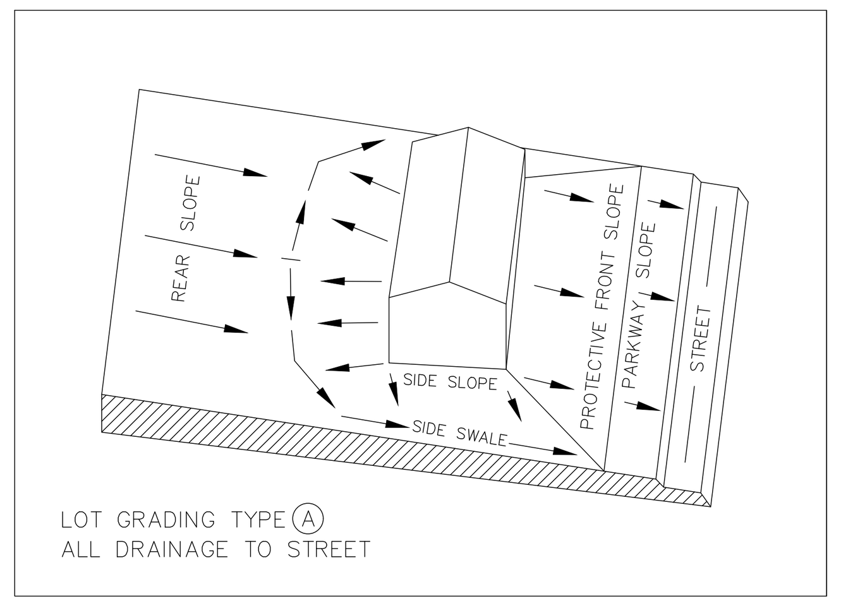
DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

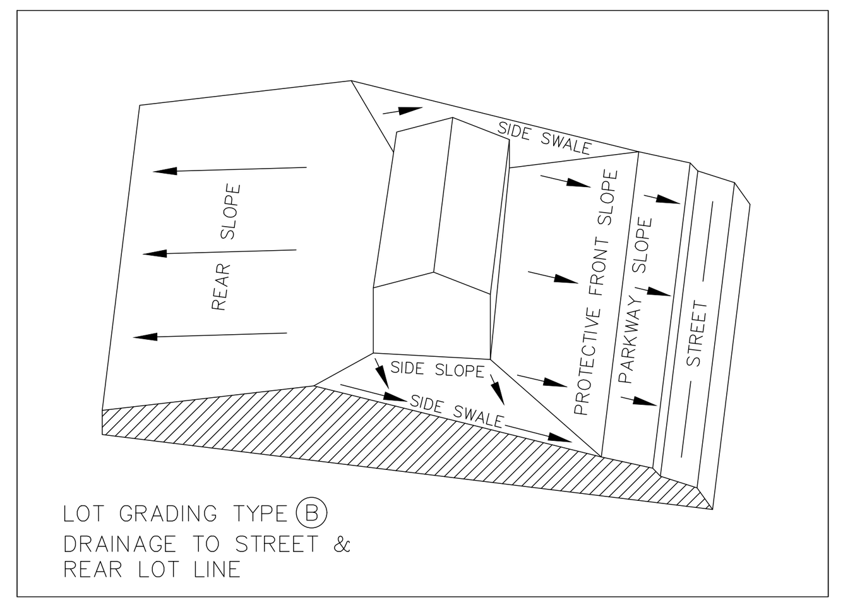
SHEET:
500

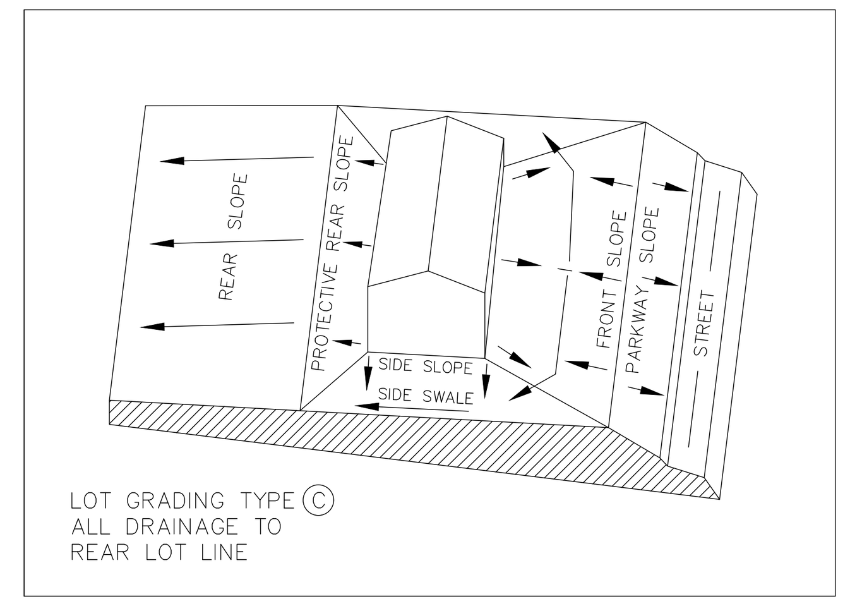


LOCATION MAP

NOT TO SCALE







GENERAL NOTES

1. Fill Materials: Materials shall consist of soils approved by the Engineer from sources identified and approved. The soil shall be free of vegetable matter and other deleterious substance and shall not contain rocks or lumps having a diameter greater than six inches (6").
2. Depth and Mixing of Fill Layers: The selected fill material shall be placed in level, uniform layers which, when compacted, shall have a density conforming to required amount of compaction. Each layer shall be thoroughly blade mixed during the spreading to insure uniformity of material in each layer. Compacted layer thickness normally will be six inches (6"), however, it may be increased to twelve inches (12") if compaction equipment of demonstrated capability will be used.
3. Rock: When fill material includes rock; the maximum rock size acceptable shall be six inches (6"). No large rocks shall be allowed to nest and all voids must be carefully filled with small stones or earth, and properly compacted. No large rocks will be allowed within twelve inches (12") of the finished surface.
4. Moisture Content: The fill material shall be compacted at the appropriate moisture content specified for the soils being used and identified in soil and laboratory reports. Moisture content tolerances shall be plus or minus 3% from optimum.

TRENCH EXCAVATION SAFETY PROTECTION

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

0 60' 120'

1" = 60'

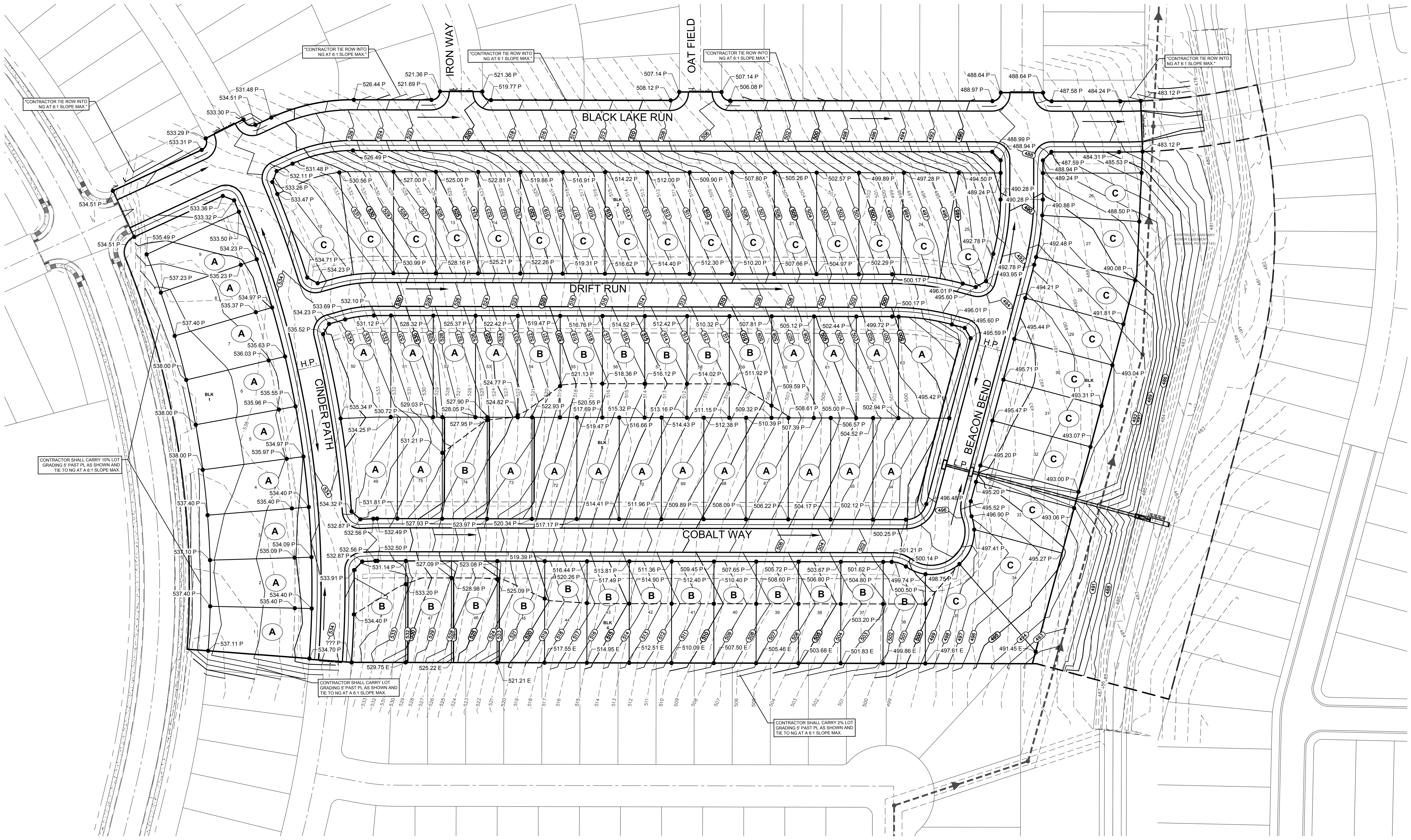
LEGEND

740	PROPOSED FINISHED CONTOUR
740	EXISTING CONTOUR
A, B & C	LOT GRADING TYPE

A-LOT DRAINS TO FRONT
B-LOT DRAINS TO FRONT AND REAR
C-LOT DRAINS TO REAR

NOTES:

1. DRIVEWAYS SHALL BE LOCATED ON THE HIGH SIDE OF EACH LOT.
2. FINISHED FLOOR ELEVATIONS SHALL BE A MINIMUM OF 8" ABOVE FINAL GRADE AFTER PLACEMENT OF TOP SOIL AND SOD.
3. FINAL LOT SWALES SHALL BE PLACED WITH HOME CONSTRUCTION.



REV	DATE

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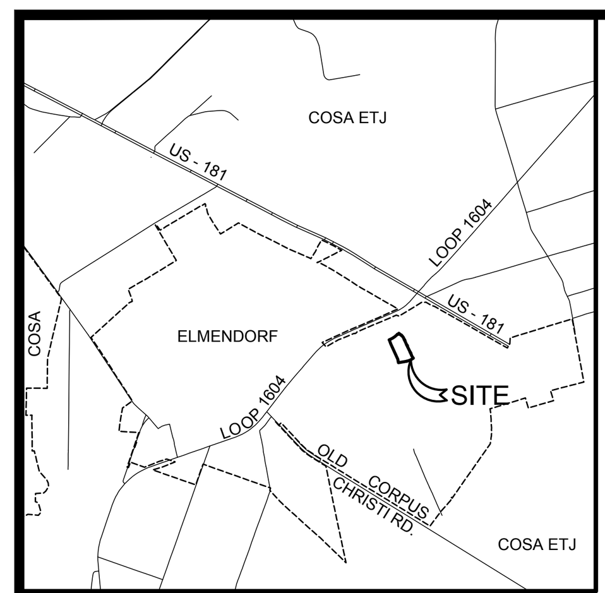
KCI TECHNOLOGIES

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
OVERALL GRADING PLAN

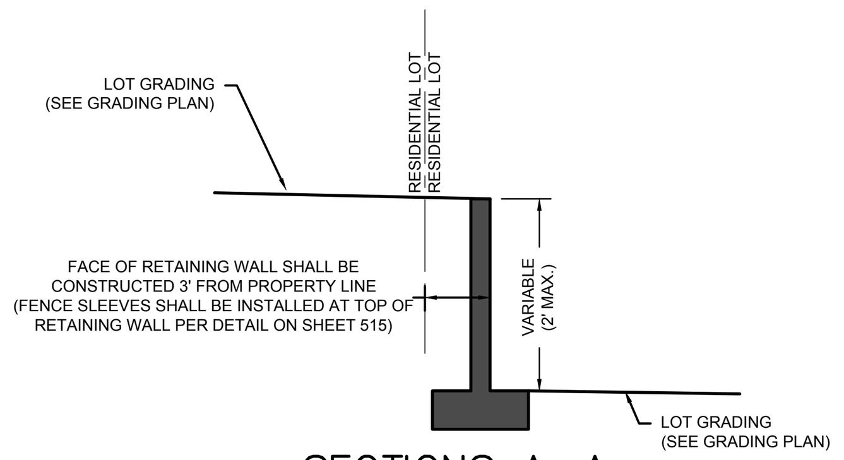
DRAFTING: N.M./C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
501

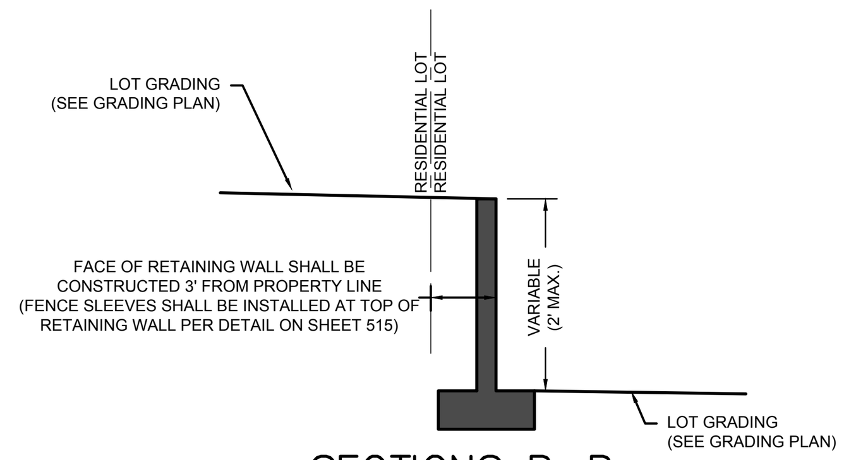
Date: Apr 13, 2026, 4:10pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 501-502 OVERALL GRADING PLAN.dwg



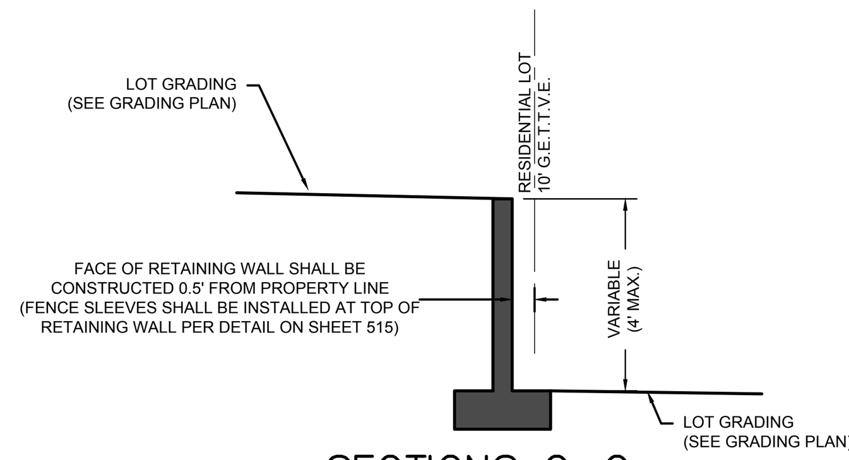
LOCATION MAP
NOT TO SCALE



SECTIONS A–A
TYPICAL RETAINING WALL
N.T.S.



SECTIONS B–B
TYPICAL RETAINING WALL
N.T.S.



SECTIONS C–C
TYPICAL RETAINING WALL
N.T.S.

GENERAL NOTES

1. Fill Materials: Materials shall consist of soils approved by the Engineer from sources identified and approved. The soil shall be free of vegetable matter and other deleterious substance and shall not contain rocks or lumps having a diameter greater than six inches (6").
2. Depth and Mixing of Fill Layers: The selected fill material shall be placed in level, uniform layers which, when compacted, shall have a density conforming to required amount of compaction. Each layer shall be thoroughly blade mixed during the spreading to insure uniformity of material in each layer. Compacted layer thickness normally will be six inches (6"), however, it may be increased to twelve inches (12") if compaction equipment of demonstrated capability will be used.
3. Rock: When fill material includes rock; the maximum rock size acceptable shall be six inches (6"). No large rocks shall be allowed to nest and all voids must be carefully filled with small stones or earth, and properly compacted. No large rocks will be allowed within twelve inches (12") of the finished surface.
4. Moisture Content: The fill material shall be compacted at the appropriate moisture content specified for the soils being used and identified in soil and laboratory reports. Moisture content tolerances shall be plus or minus 3% from optimum.

TRENCH EXCAVATION SAFETY PROTECTION

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

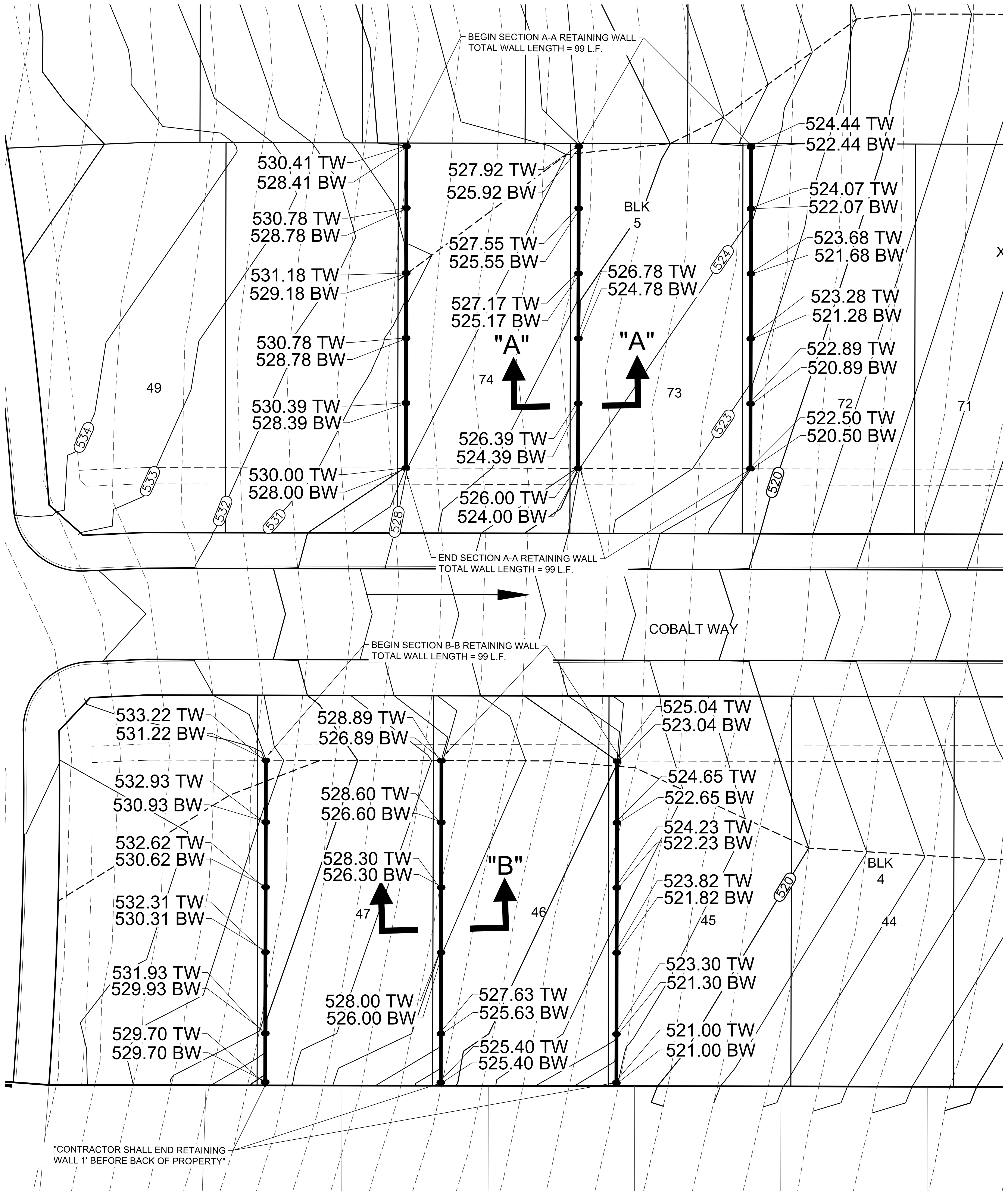
LEGEND

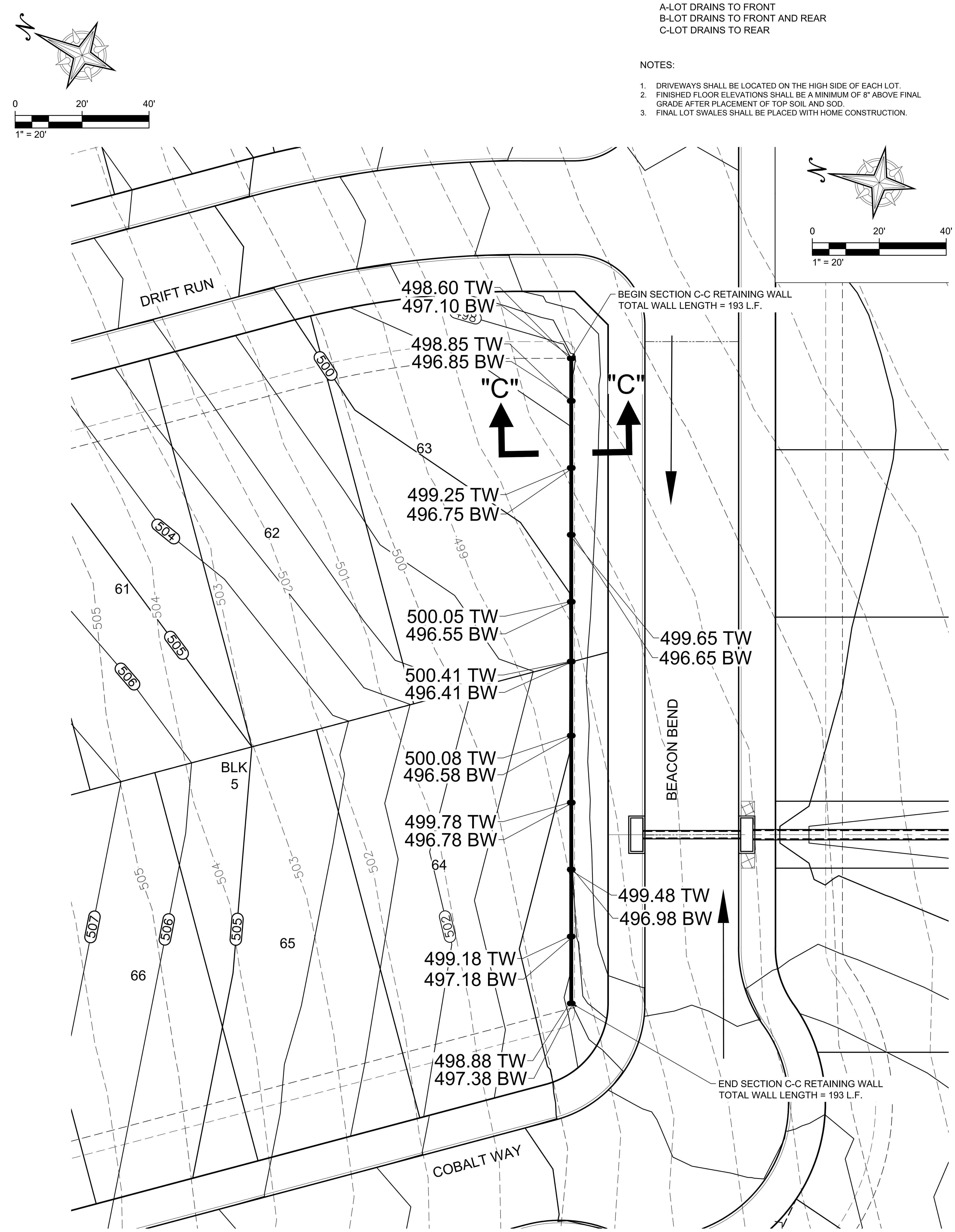
(740)	PROPOSED FINISHED CONTOUR
740	EXISTING CONTOUR
A, B & C	LOT GRADING TYPE

A-LOT DRAINS TO FRONT
B-LOT DRAINS TO FRONT AND REAR
C-LOT DRAINS TO REAR

NOTES:

1. DRIVEWAYS SHALL BE LOCATED ON THE HIGH SIDE OF EACH LOT.
2. FINISHED FLOOR ELEVATIONS SHALL BE A MINIMUM OF 8" ABOVE FINAL GRADE AFTER PLACEMENT OF TOP SOIL AND SOD.
3. FINAL LOT SWALES SHALL BE PLACED WITH HOME CONSTRUCTION.





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NOT FOR CONSTRUCTION

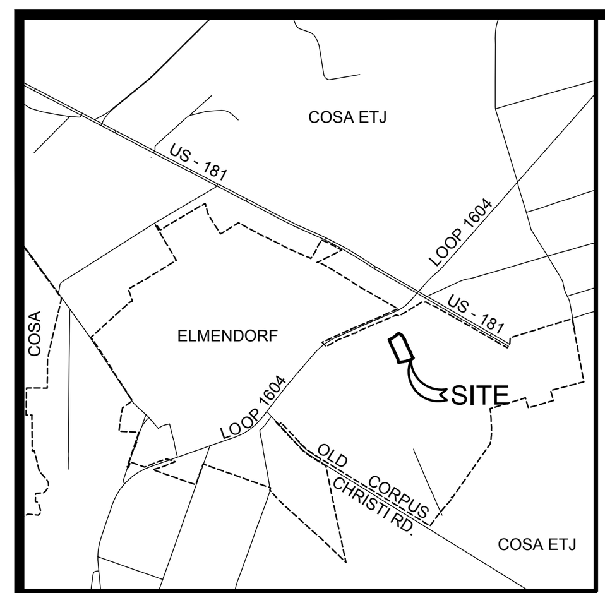
REV	DATE	DESCRIPTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
GRADING PLAN RETAINING WALLS

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
502



LOCATION MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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STREETLIGHT NOTE

STREETLIGHT POLES TO BE IN OPEN GREEN SPACE WHERE SHOWN ON PLANS.

DRIVEWAY NOTE

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

BEXAR COUNTY PERMIT NOTE:

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

CLEAR VISION NOTE:

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

Line Table

Line	Length	Direction
L1	137.17'	S49°47'55"E
L2	69.05'	S49°47'55"E
L3	127.74'	S24°53'07"E
L4	282.70'	S24°53'07"E
L5	380.06'	S24°53'07"E
L6	114.92'	S24°53'07"E

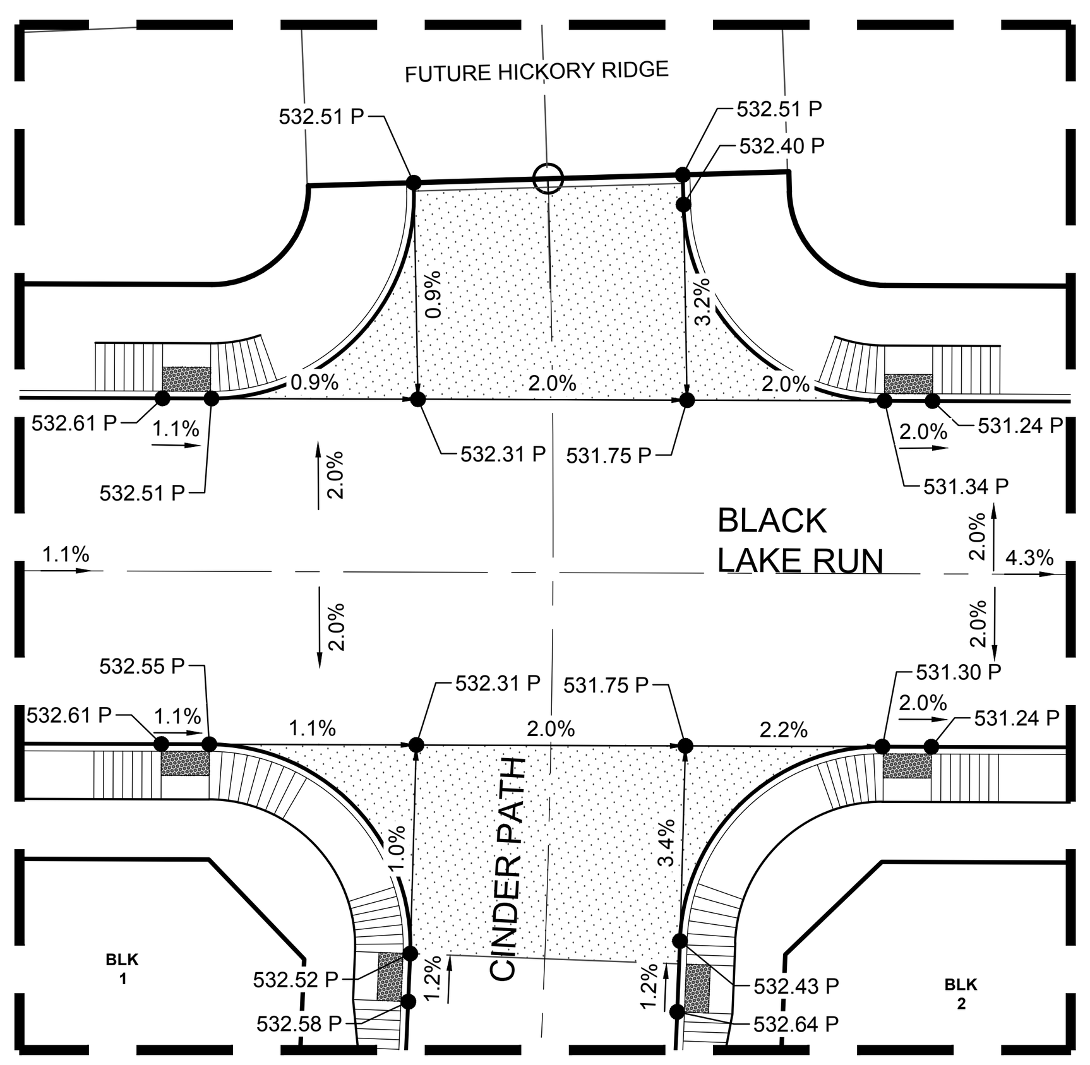
Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	86.73'	200.04'	024°50'26"	S37° 18' 20"E	86.05'
C2	26.69'	700.10'	002°11'02"	S25° 58' 38"E	26.68'

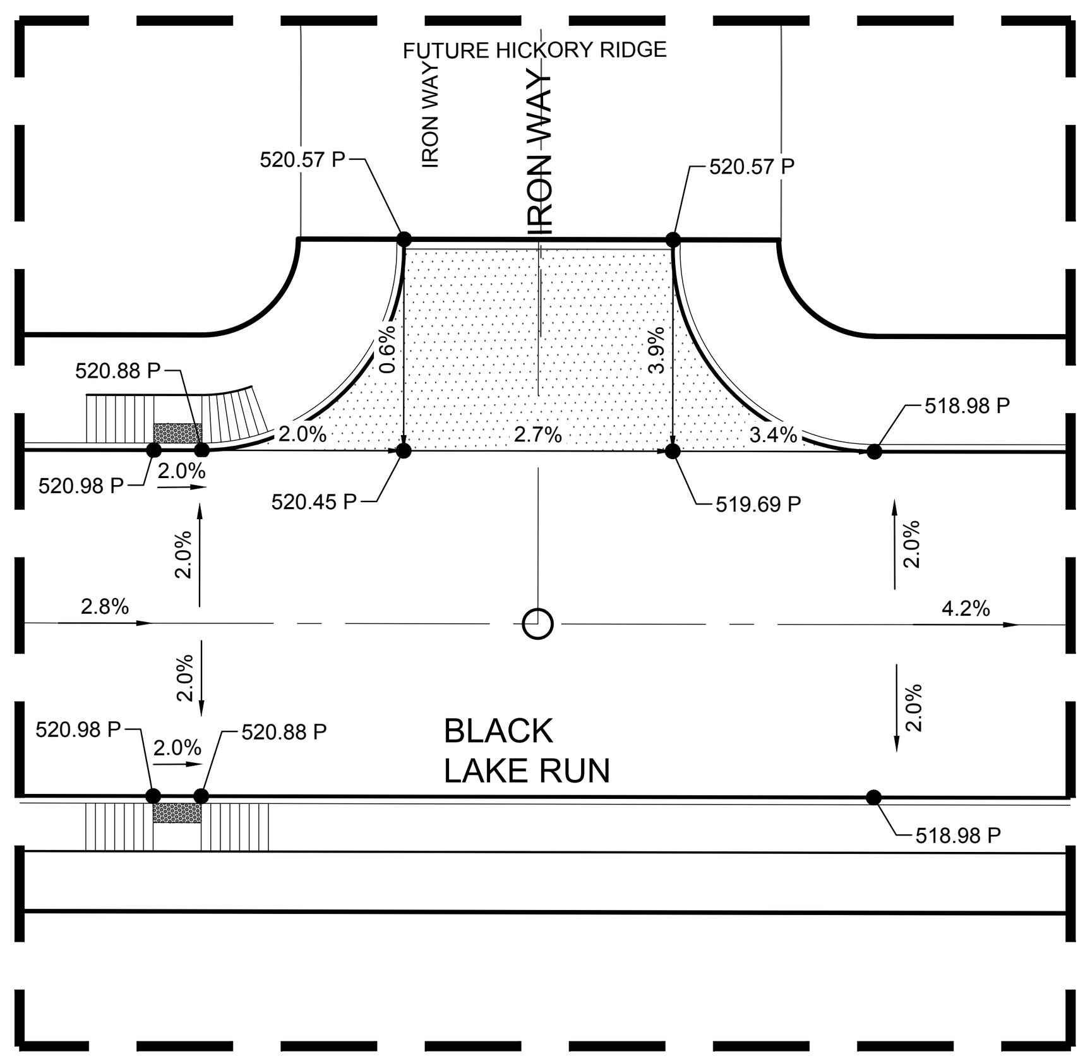
0 50' 100'
1" = 50'

LEGEND

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



INTERSECTION DETAIL #1
SCALE: 1" = 20'



INTERSECTION DETAIL #2
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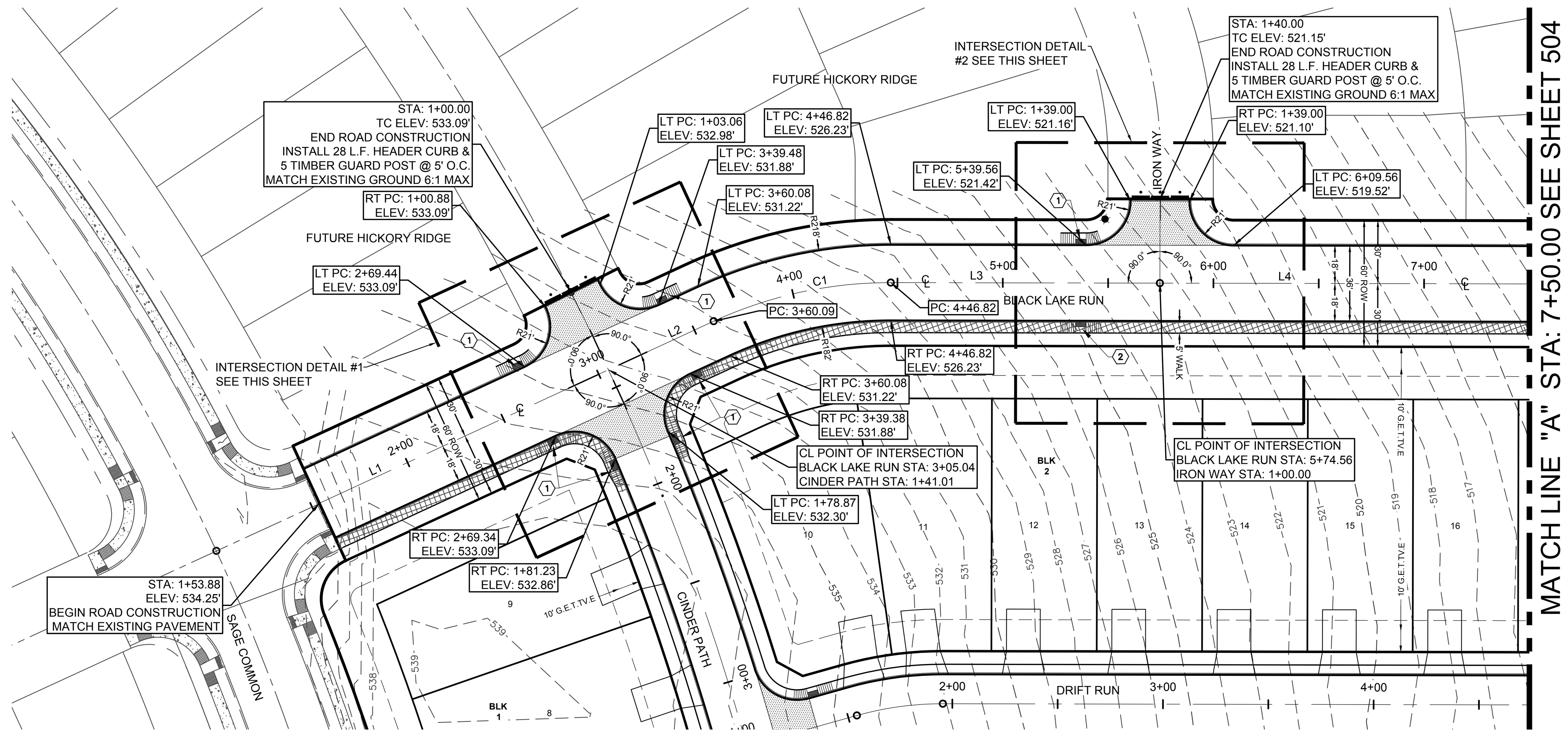
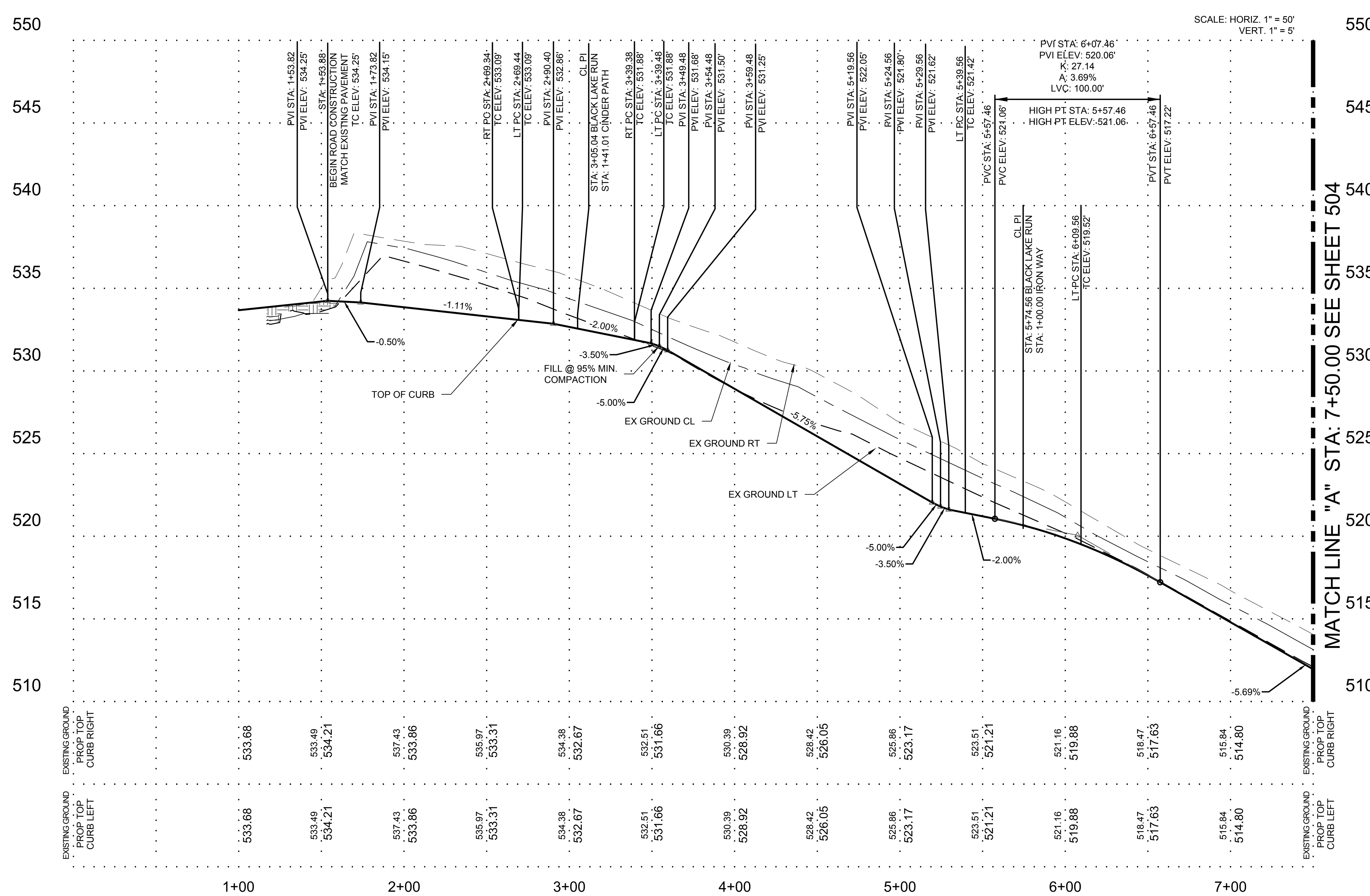


B L A C K   L A K E   R U N

STA. 1+00.00 TO STA. 7+50.00



KCI TECHNOLOGIES, INC.
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FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
BLACK LAKE RUN PLAN & PROFILE

DRAFTING:	N.M.C.C	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
503

TRENCH EXCAVATION SAFETY PROTECTION

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STREETLIGHT NOTE
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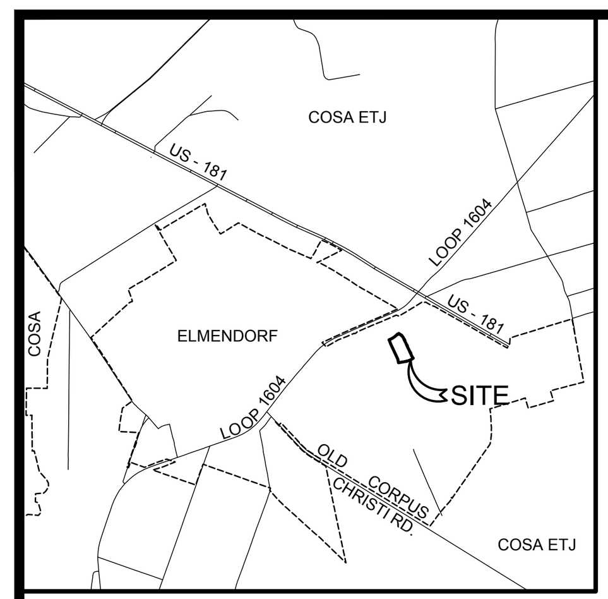

LOCATION MAP
NOT TO SCALE

Line Table

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Curve Table

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LEGEND

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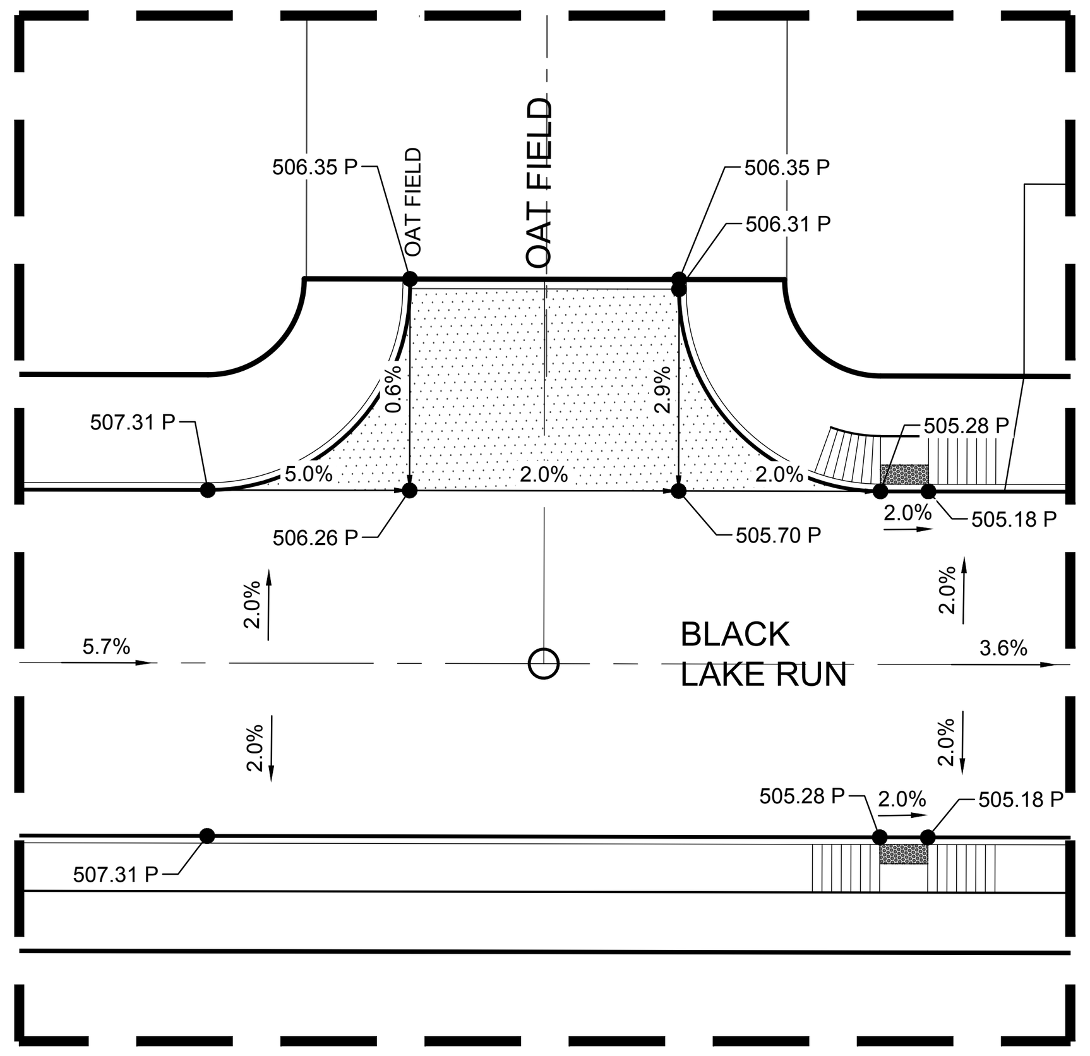
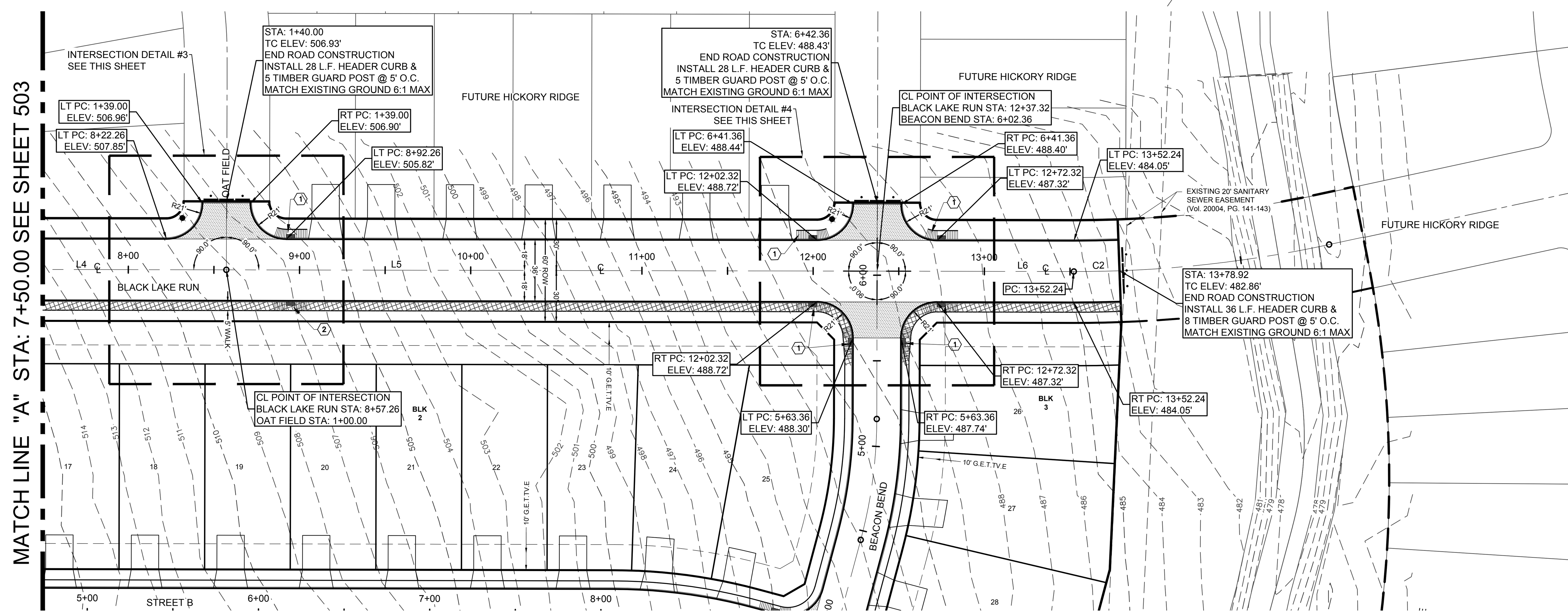
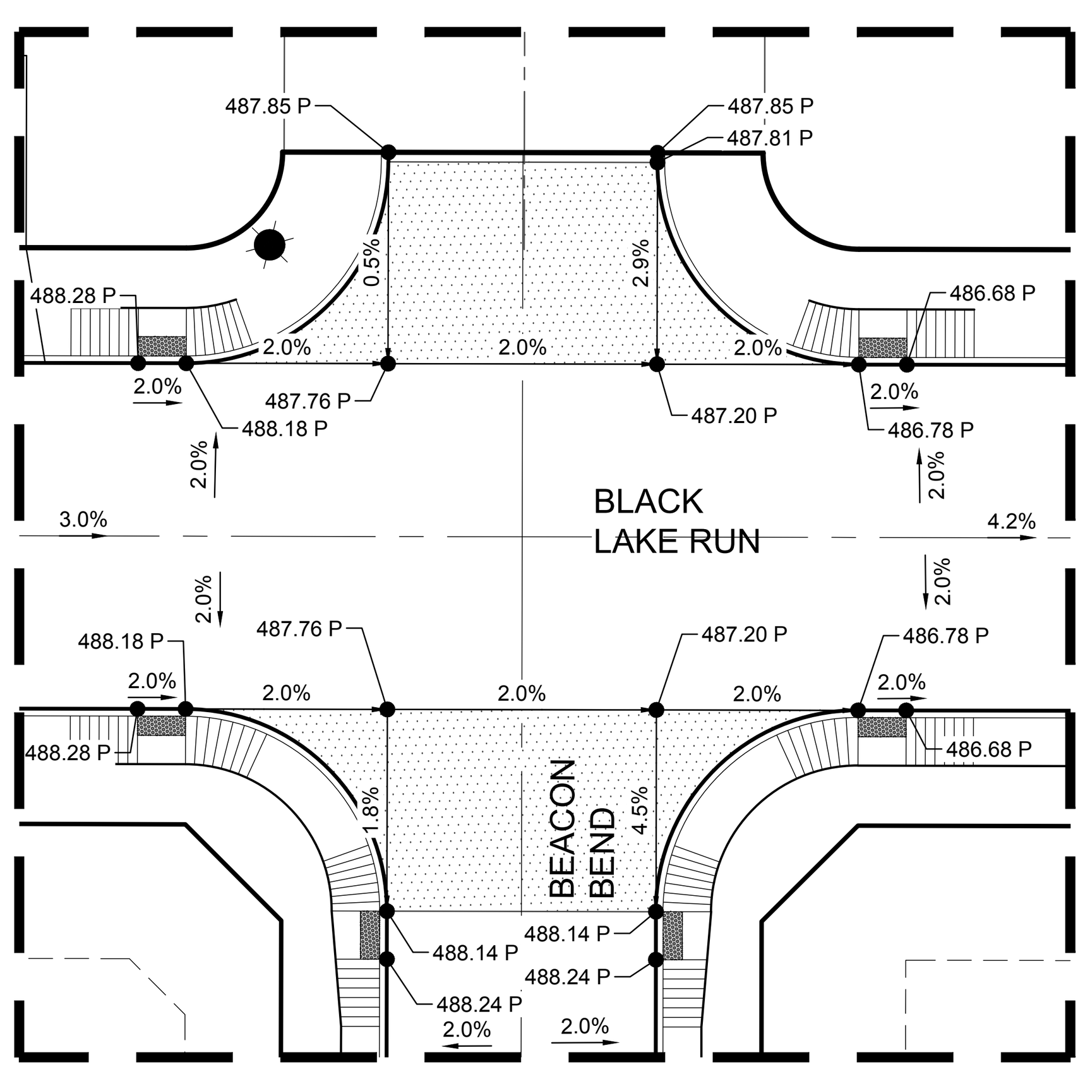


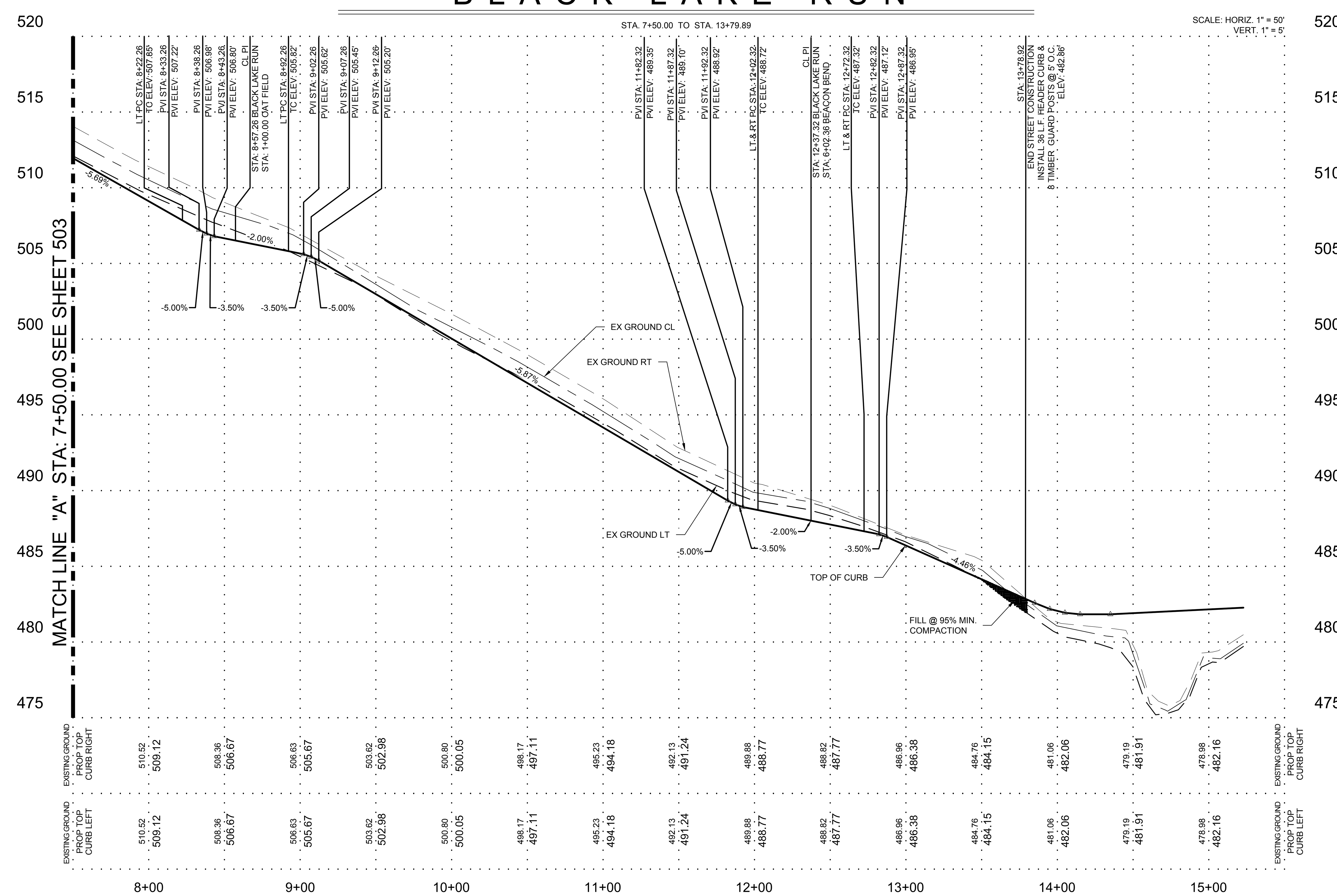
INTERSECTION DETAIL #3
SCALE: 1" = 20'





INTERSECTION DETAIL #4
SCALE: 1" = 20'

BLACK LAKE RUN



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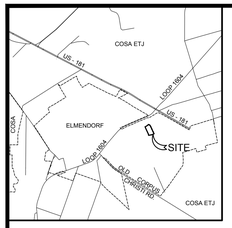
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
BLACK LAKE RUN PLAN & PROFILE

DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
504



LOCATION MAP
NOT TO SCALE

LEGEND

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

TRENCH EXCAVATION SAFETY PROTECTION
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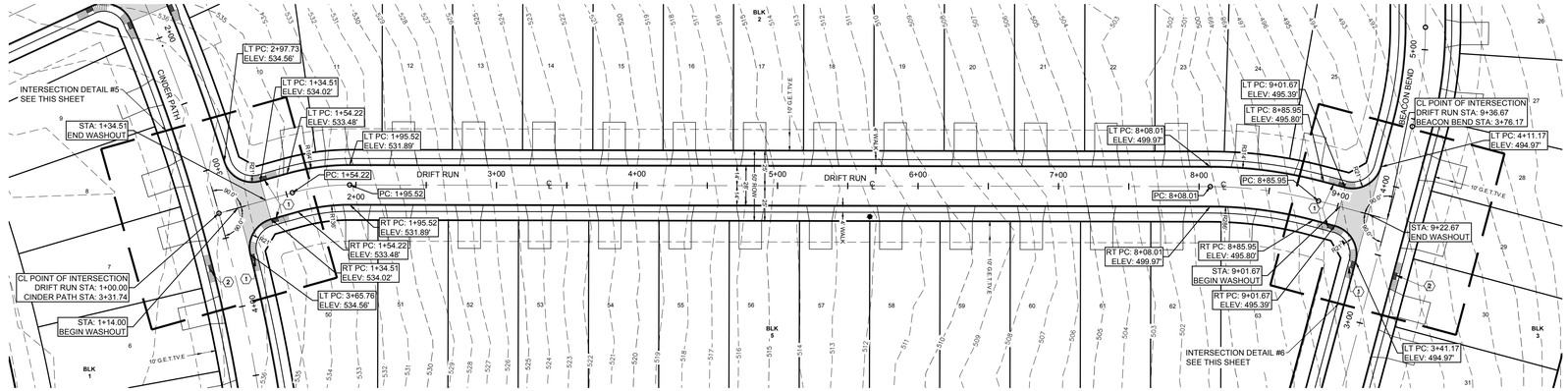
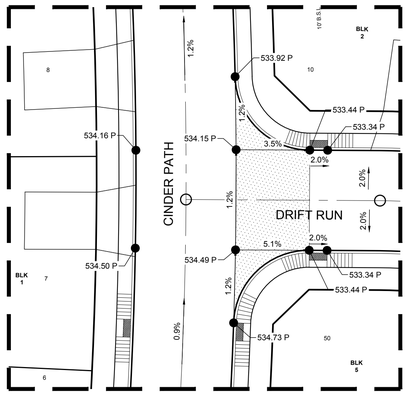
Line Table		
Line	Length	Direction

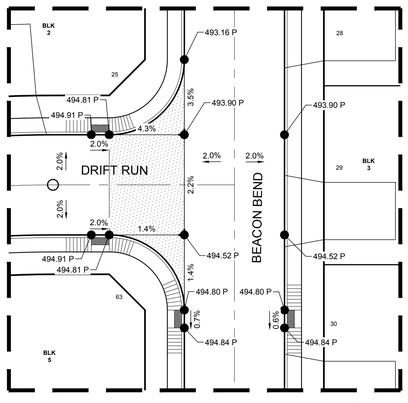
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length

0 50' 100'
1" = 50'





INTERSECTION DETAIL #5
SCALE: 1" = 20'

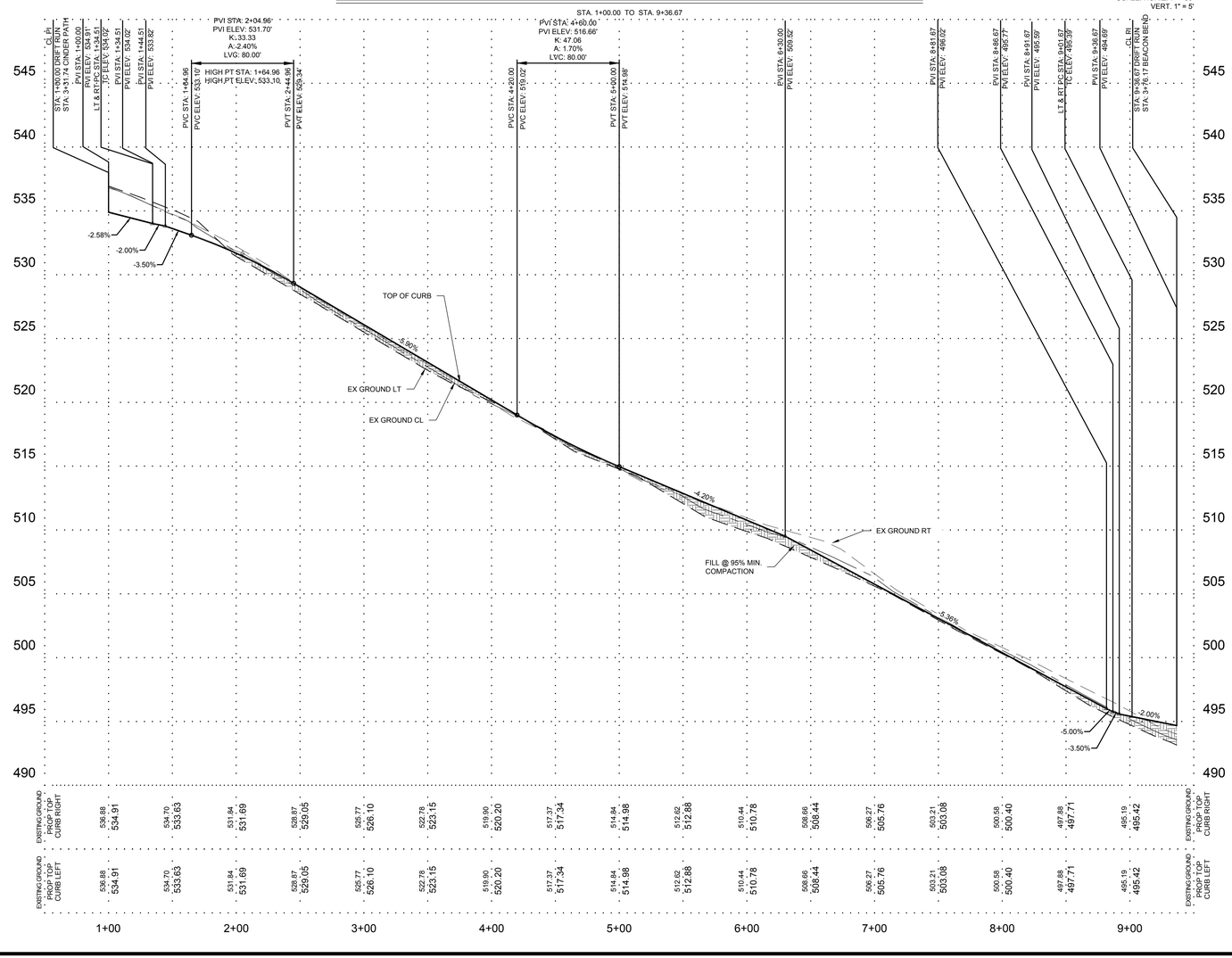


INTERSECTION DETAIL #6
SCALE: 1" = 20'

DRIFT RUN

STA. 1+00.00 TO STA. 9+36.67

SCALE: HORIZ. 1" = 50'
VERT. 1" = 5'



REV	DATE	DESCRIPTION

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SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
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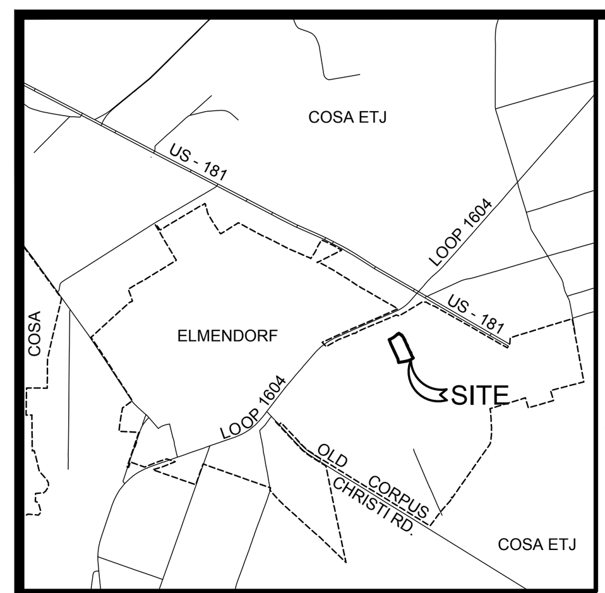
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
DRIFT RUN PLAN & PROFILE

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002
SHEET:			505

Date: Apr 13, 2026, 4:19pm User ID: Lance.Ehrig File: L:\Drawings\Proj_2025\...\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cad\00049614_002 505 DRIFT RUN PLAN & PROFILE.dwg



LOCATION MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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STREETLIGHT NOTE

STREETLIGHT POLES TO BE IN OPEN GREEN SPACE WHERE SHOWN ON PLANS.

DRIVEWAY NOTE

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BEXAR COUNTY PERMIT NOTE:

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CLEAR VISION NOTE:

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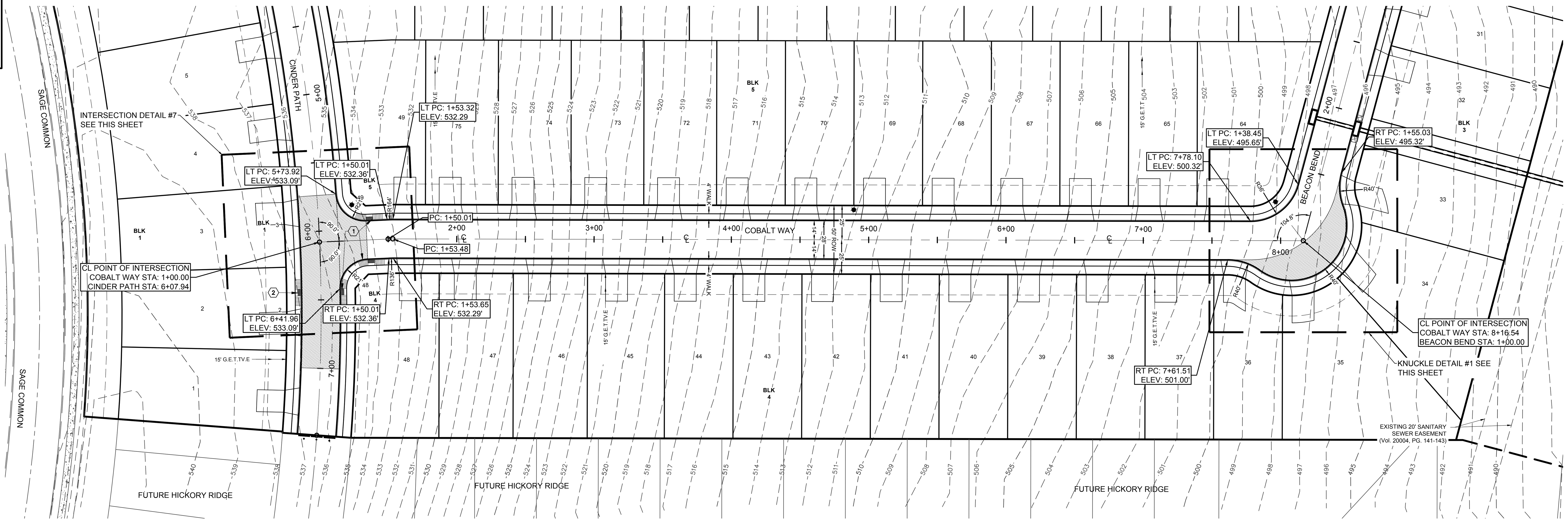
Line Table		
Line	Length	Direction

Curve Table						
Curve #	Length	Radius	Delta	Chord Direction	Chord Length	

0 50' 100'
1" = 50'

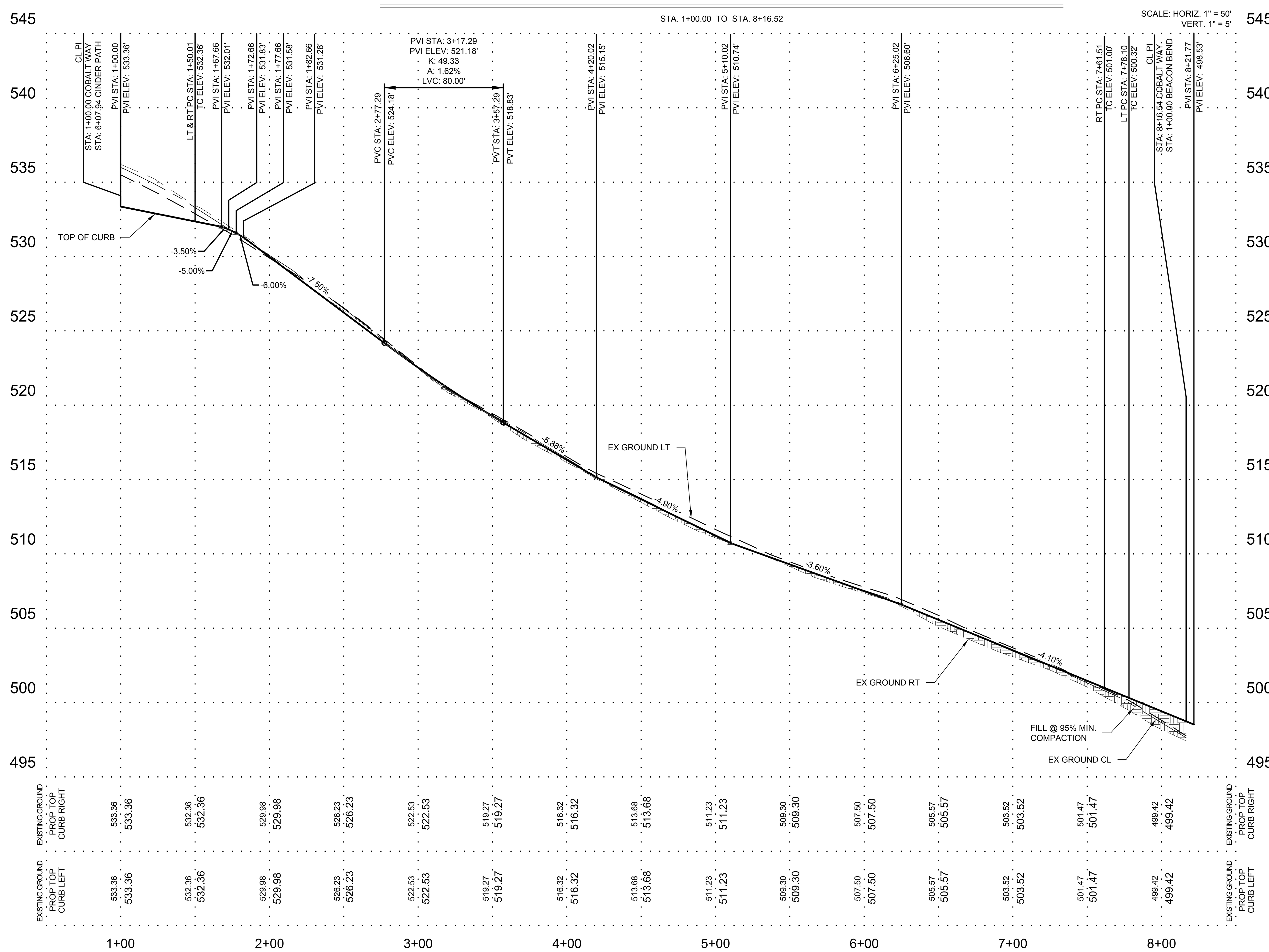
LEGEND

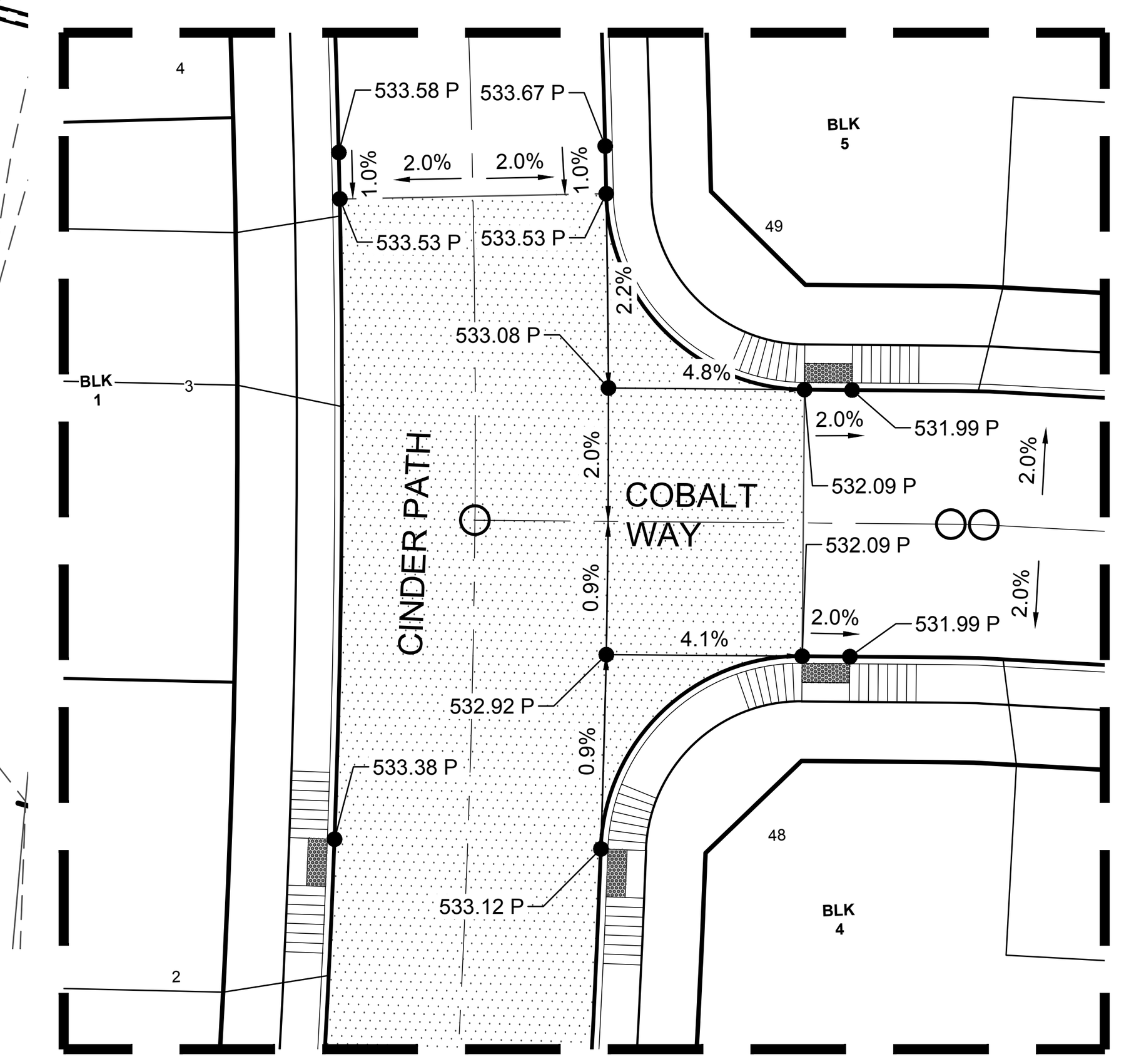
WHEELCHAIR RAMPS	
WASHOUT CROWN	
SIDEWALK TO BE BUILT BY DEVELOPER	
PROPOSED DRIVEWAY	DW
TOP OF CURB ELEVATION	940
EXISTING STREET LIGHT	ELP
PROPOSED STREET LIGHT (100 WATT)	LP



COBALT WAY

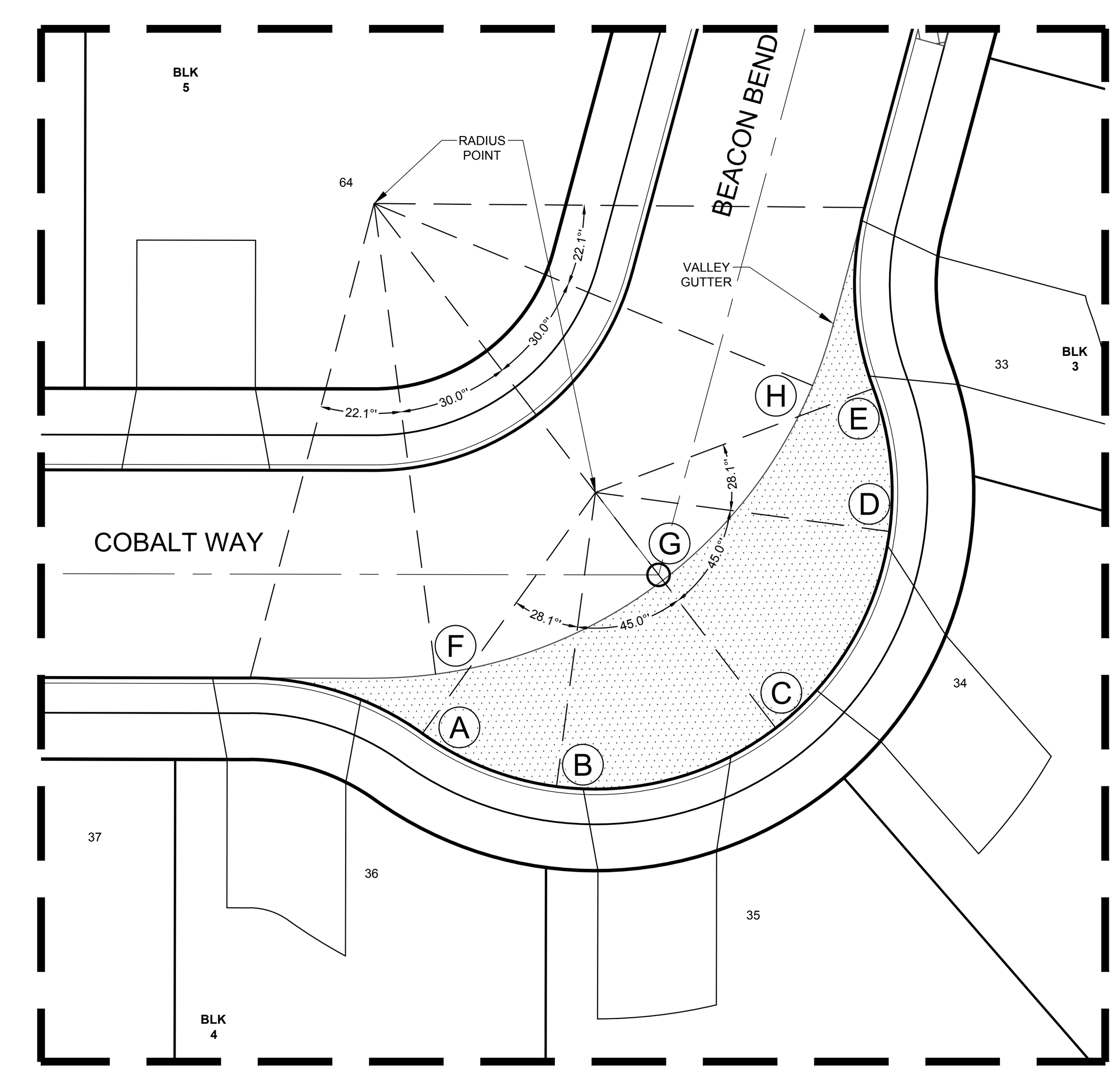
STA. 1+00.00 TO STA. 8+16.52





INTERSECTION DETAIL #7

SCALE: 1" = 20'



KNUCKLE DETAIL #1

SCALE: 1" = 20'

POINT	CURB ELEV.	GUTTER ELEV.
RT PC	501.00	500.42
A	* 499.93	499.35
B	499.54	498.96
C	498.66	498.08
D	497.51	496.93
E	496.69	496.11
F		499.08
G		497.58
H		496.07
RT PC	495.32	494.74

NOTE: * HIGH POINT

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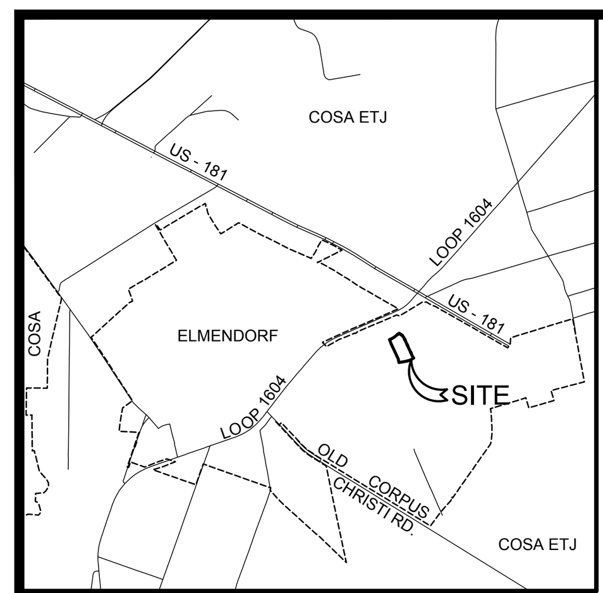
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
COBALT WAY PLAN & PROFILE

DRAFTING: N.M.C.O.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002
SHEET:			

506



LOCATION MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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

STREETLIGHT NOTE

STREETLIGHT POLES TO BE IN OPEN GREEN SPACE WHERE SHOWN ON PLANS.

DRIVEWAY NOTE

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

BEXAR COUNTY PERMIT NOTE:

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

CLEAR VISION NOTE:

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

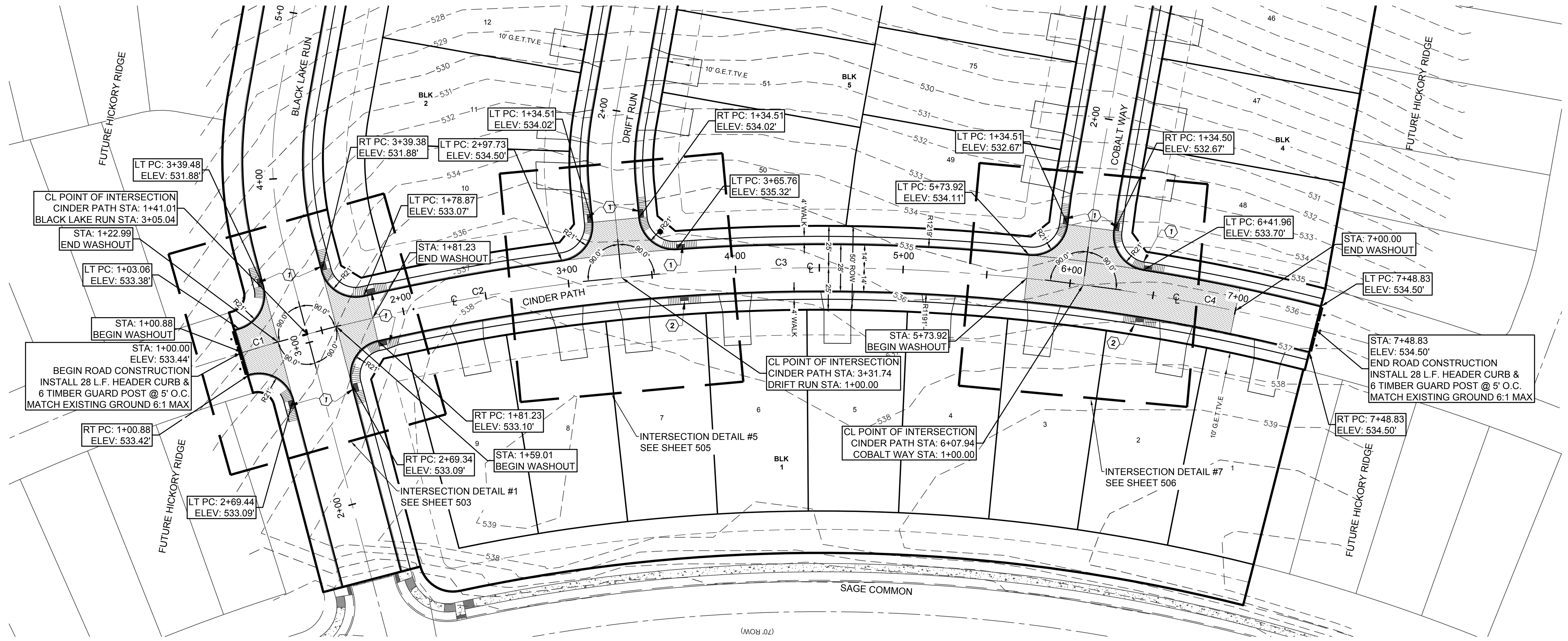
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	41.01'	1,205.16'	001°56'59"	S39° 17' 52"W	41.01'
C2	190.74'	1,205.16'	009°04'05"	S44° 48' 24"W	190.54'
C3	276.20'	1,205.16'	013°07'52"	S55° 54' 22"W	275.60'
C4	140.89'	1,205.16'	006°41'54"	S65° 49' 15"W	140.81'

N

0 50' 100'
1" = 50'

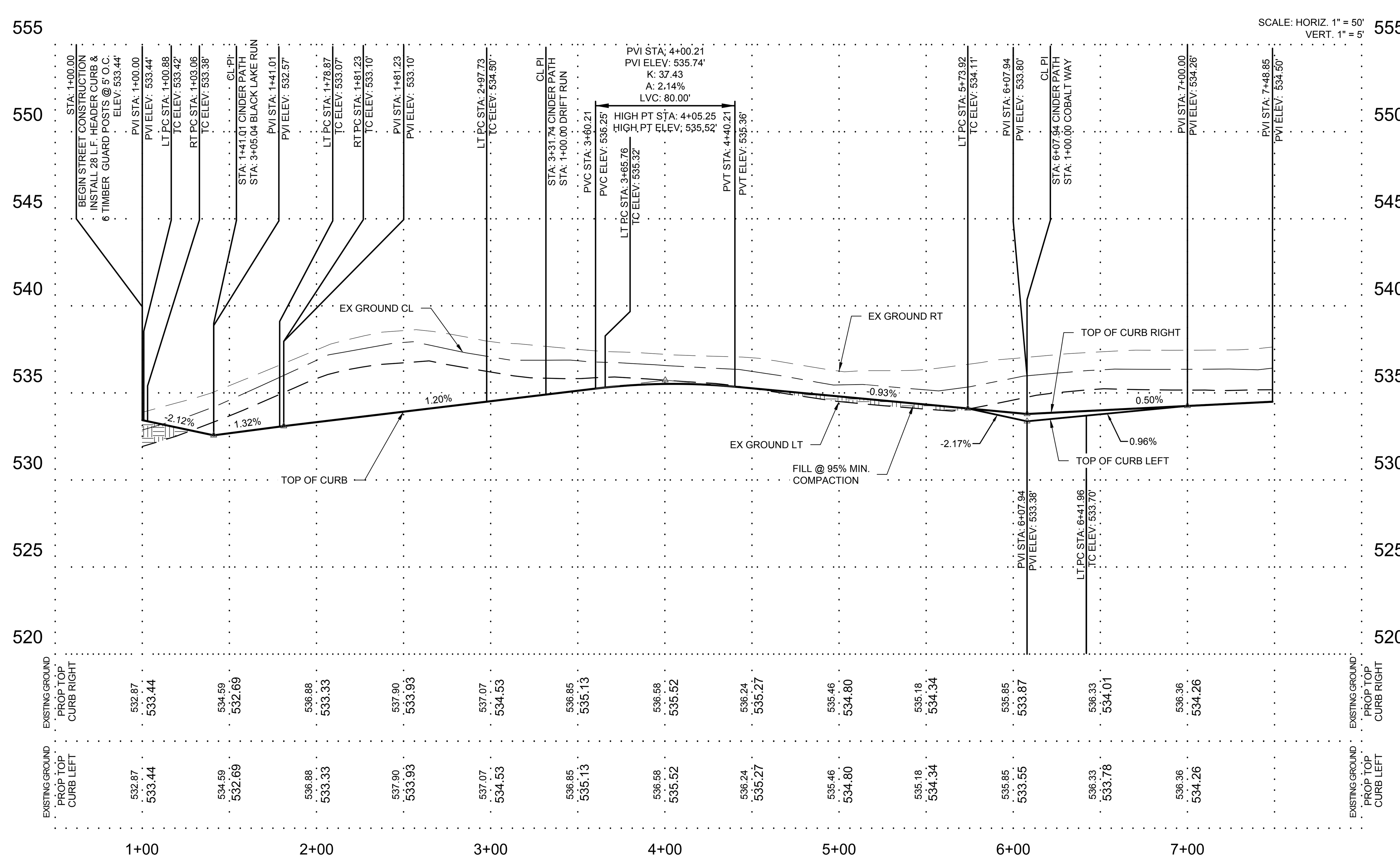
LEGEND

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



CINDER PATH

STA. 1+00.00 TO STA. 7+48.83



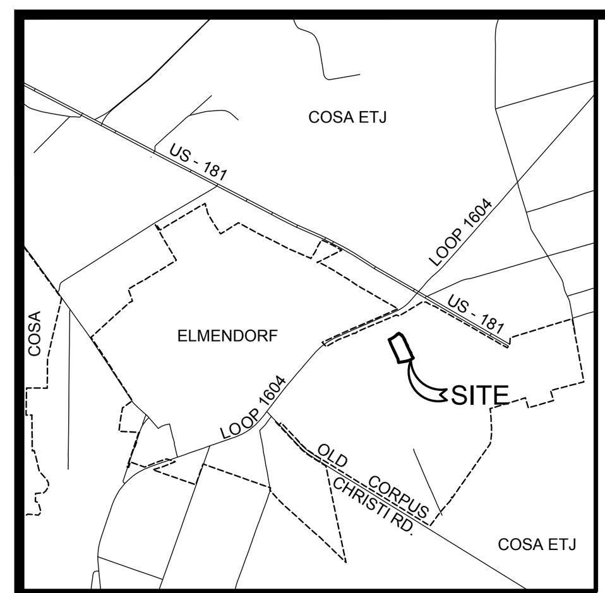
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
CINDER PATH PLAN & PROFILE

DRAFTING: N.M.C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	507



LOCATION MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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Line Table

Line	Length	Direction
L1	276.17'	N79°59'57"E
L2	68.41'	N79°59'57"E
L3	86.34'	N65°06'53"E
L4	40.00'	N65°06'53"E

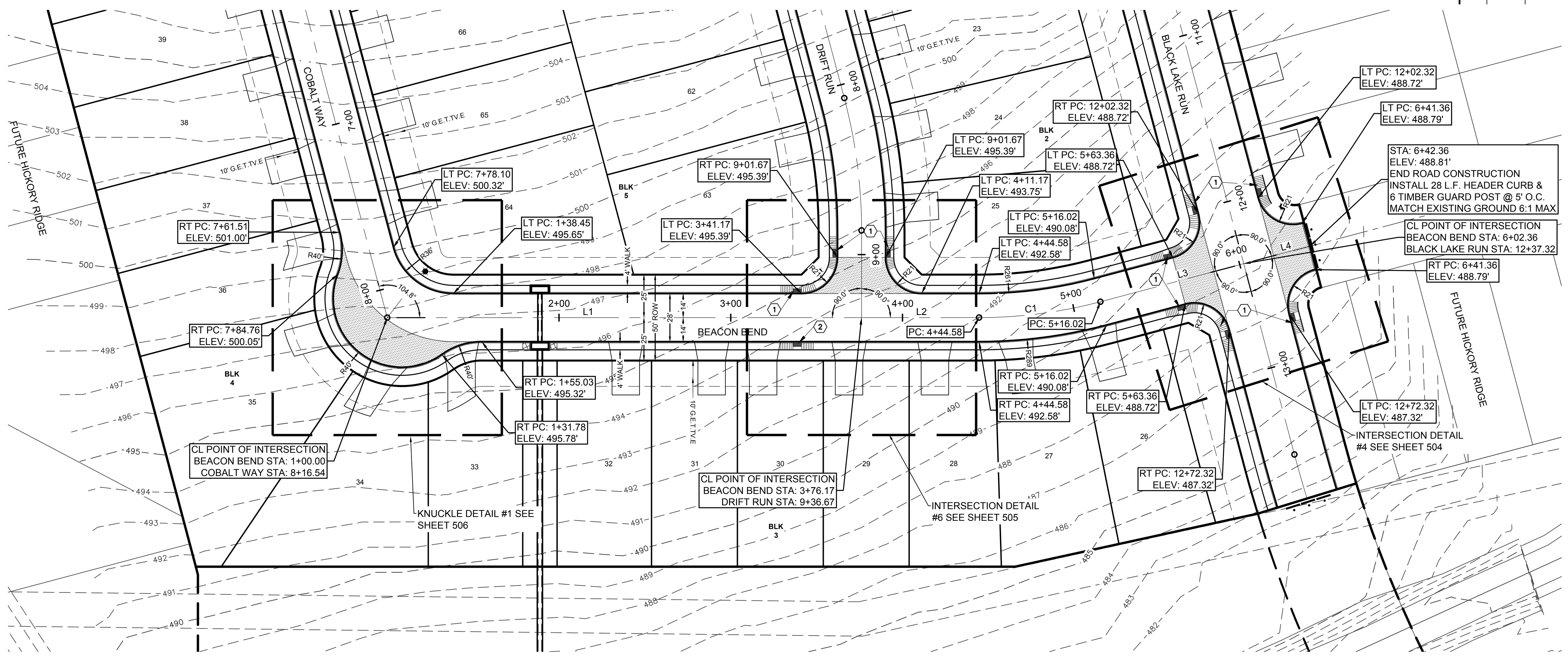
Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	71.44'	275.00'	014°53'04"	N72° 33' 25"E	71.24'

0 50' 100'
1" = 50'

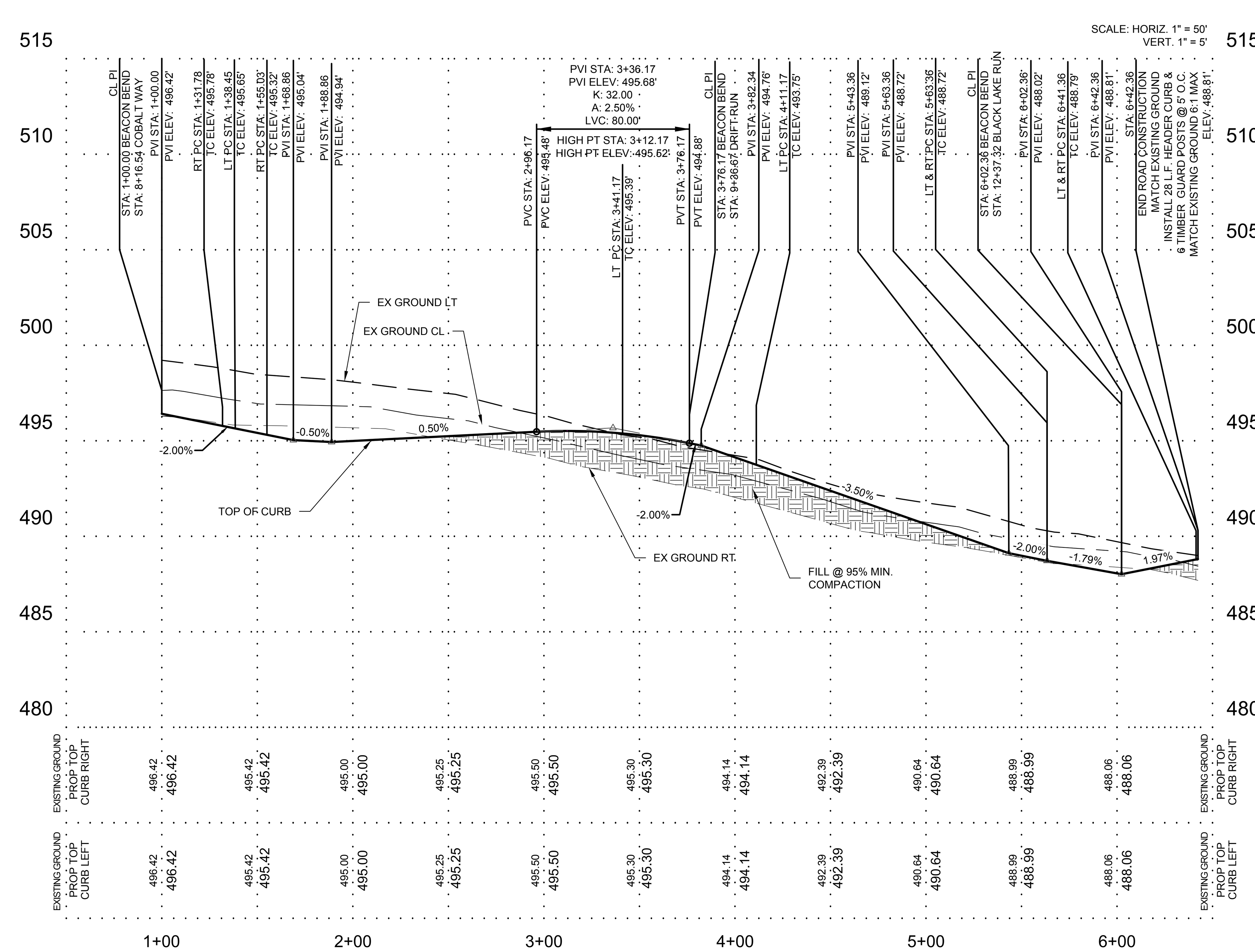
LEGEND

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



BEACON BEND

STA. 1+00.00 TO STA. 6+42.36



REV	DATE	DESCRIPTION

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NOT FOR CONSTRUCTION

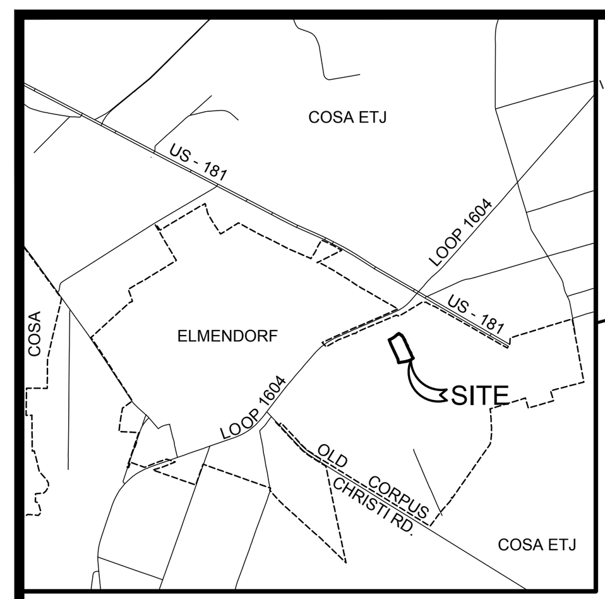
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

KCI TECHNOLOGIES

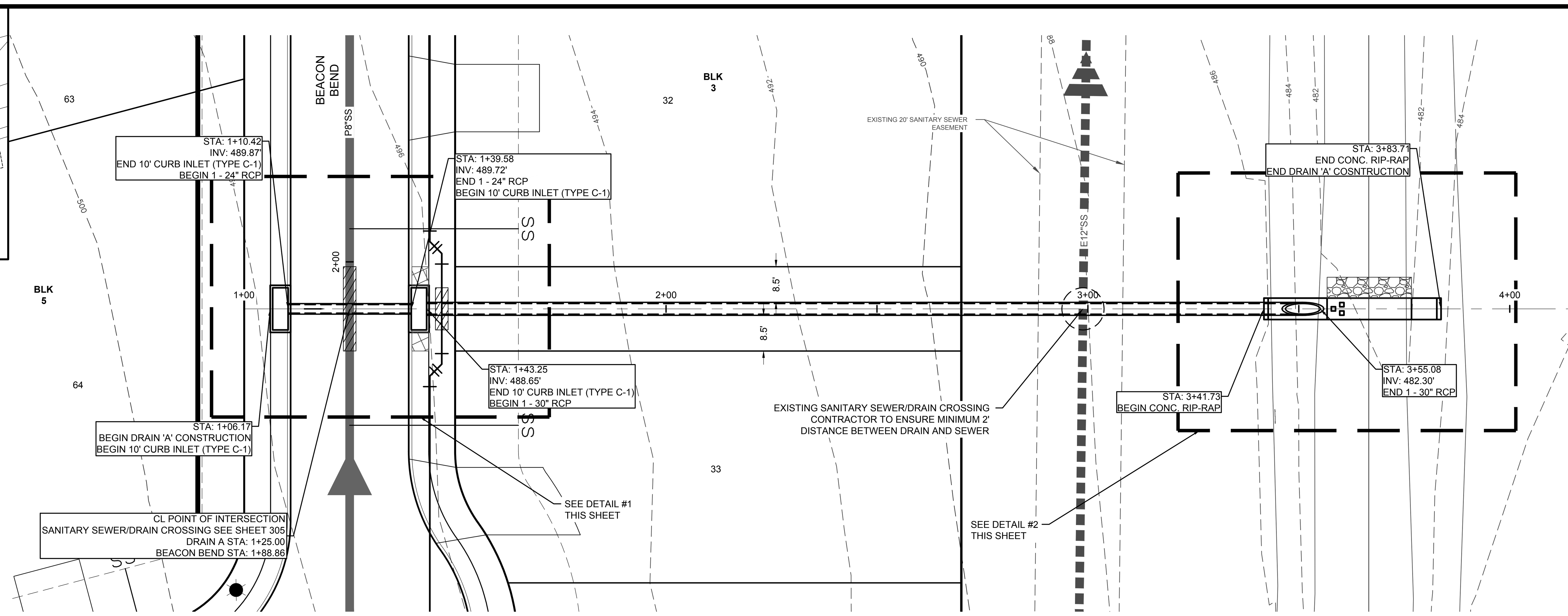
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
BEACON BEND PLAN & PROFILE

DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
508



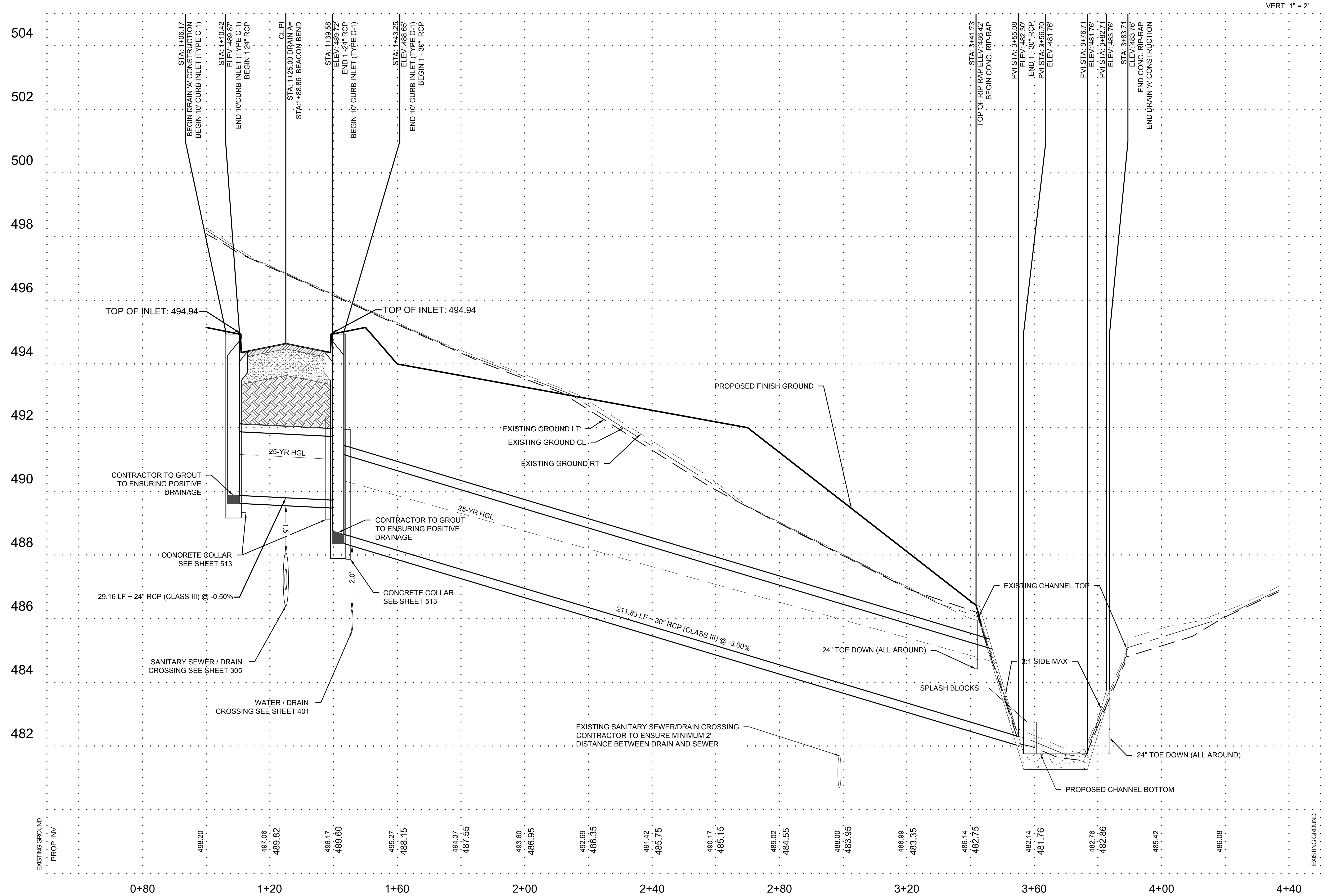
LOCATION MAP
NOT TO SCALE



DRAIN "A"

STA. 1+06.17 TO STA. 3+83.71

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'



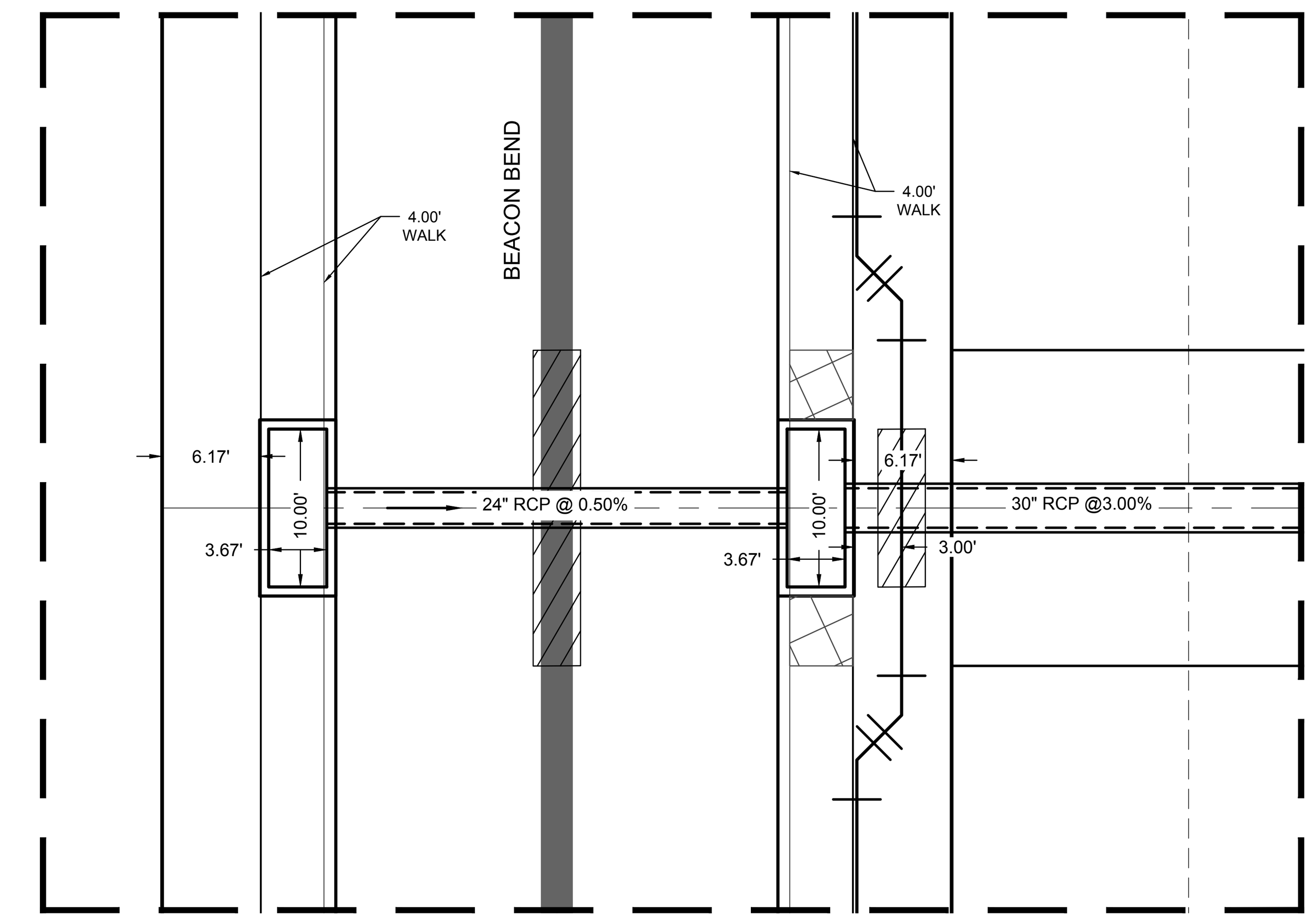
LEGEND

EXISTING CONTOUR — 740 —
PROPOSED CONTOUR — 740 —

NOTE:

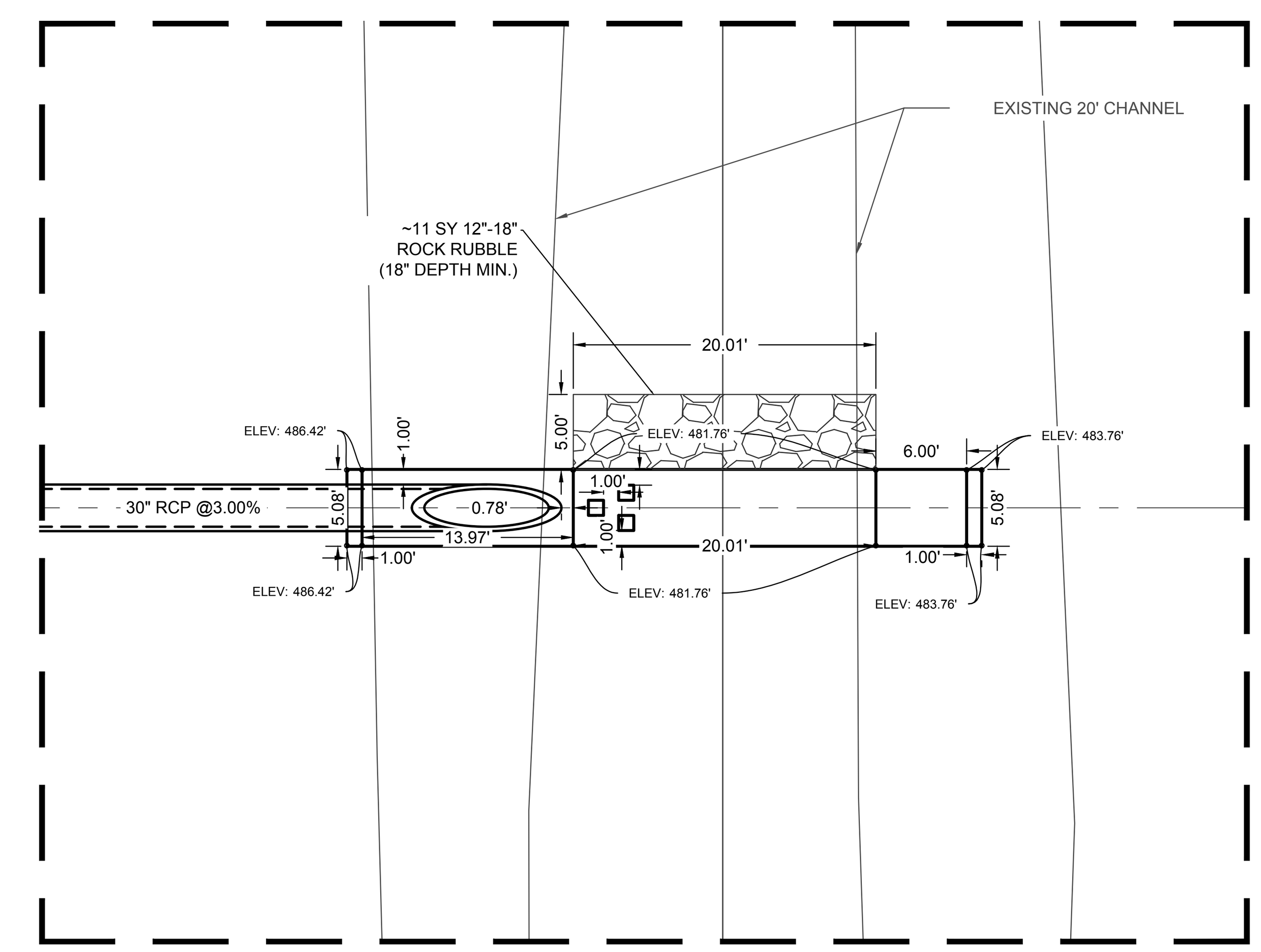
CONTRACTOR TO ENSURE POSITIVE DRAINAGE AT UPSTREAM & DOWNSTREAM ENDS OF DRAINS AND THAT NO PONDING WILL OCCUR.

0 20' 40'
1" = 20'



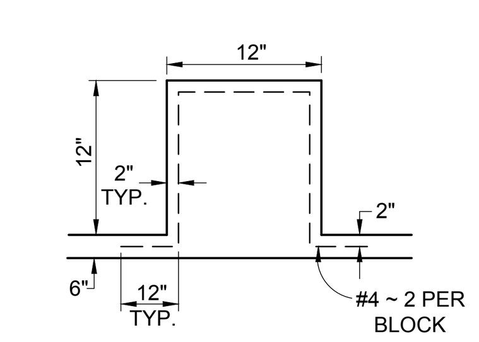
DETAIL #1

SCALE: 1" = 10'



DETAIL #2

SCALE: 1" = 10'



SPLASH BLOCK DETAIL

NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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

REV	DATE	DESCRIPTION

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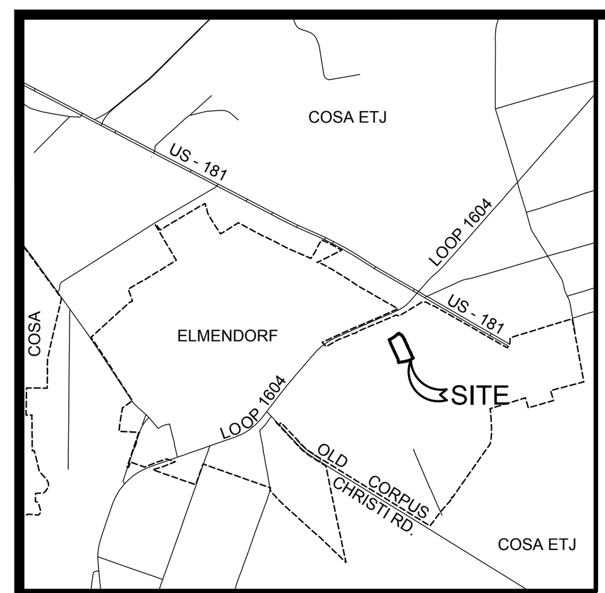
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10194365

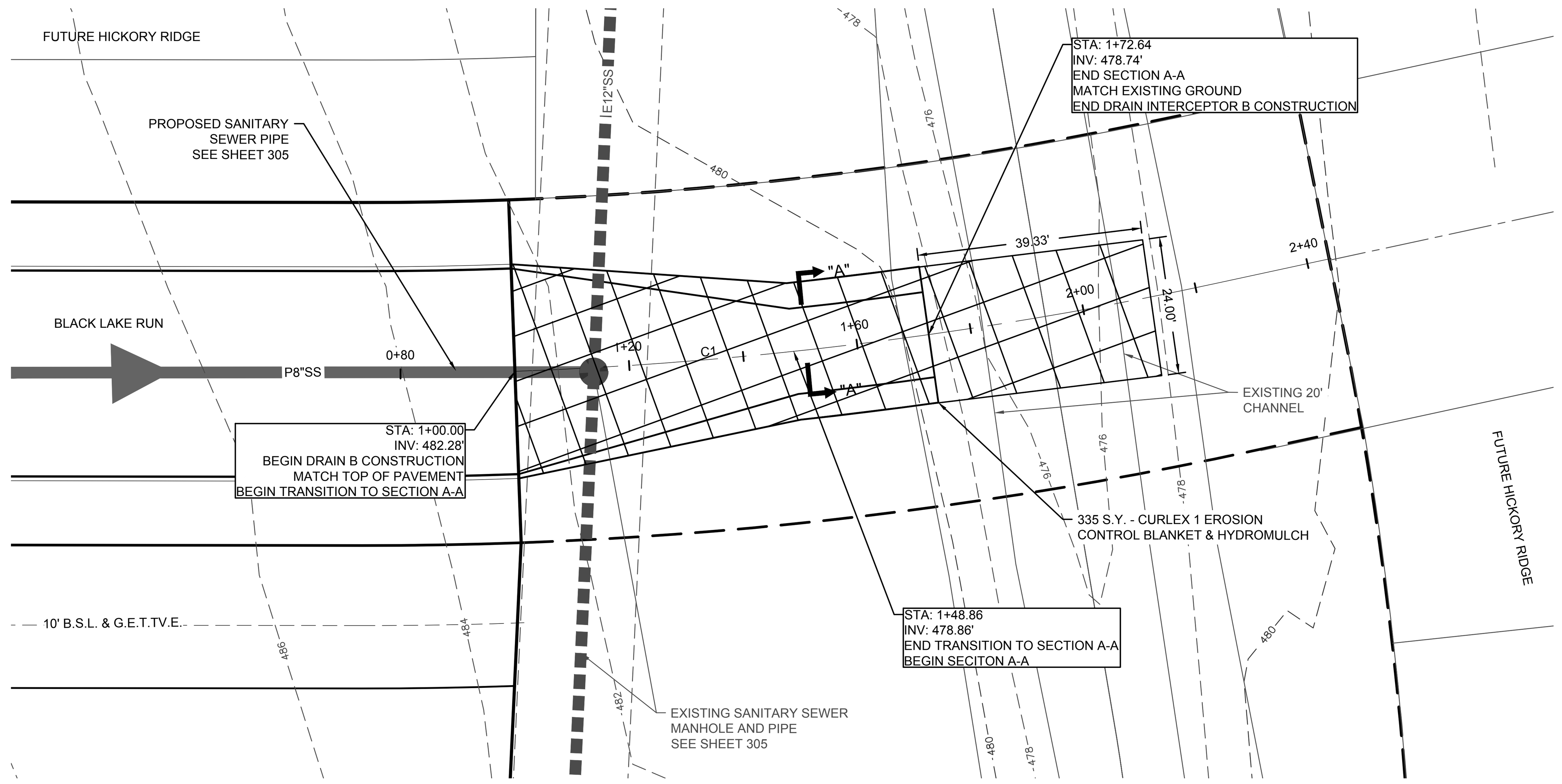
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
DRAIN 'A' PLAN & PROFILE

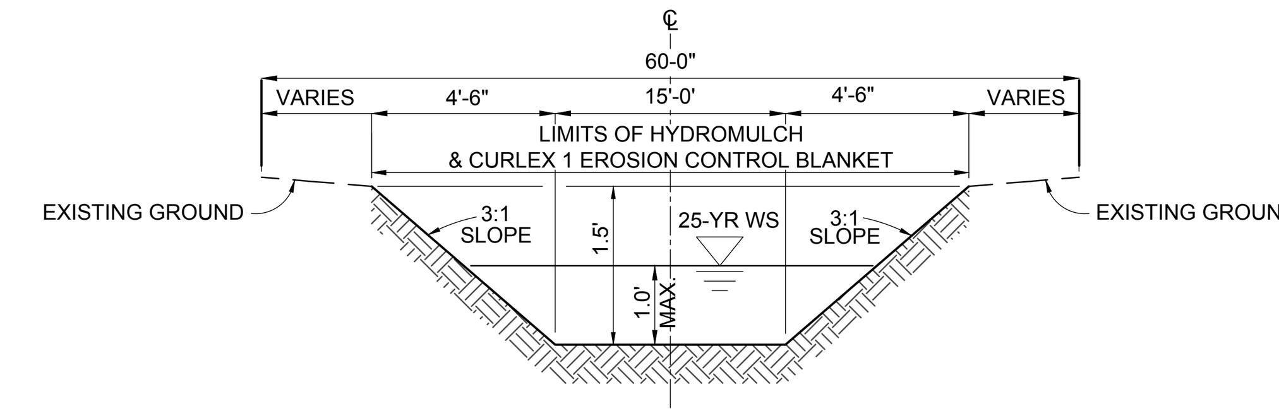
DRAFTING: N.M.C.C	CHECK: L.E.		
DESIGN: L.E.	CHECK: M.P.S.		
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
509



LOCATION MAP
NOT TO SCALE





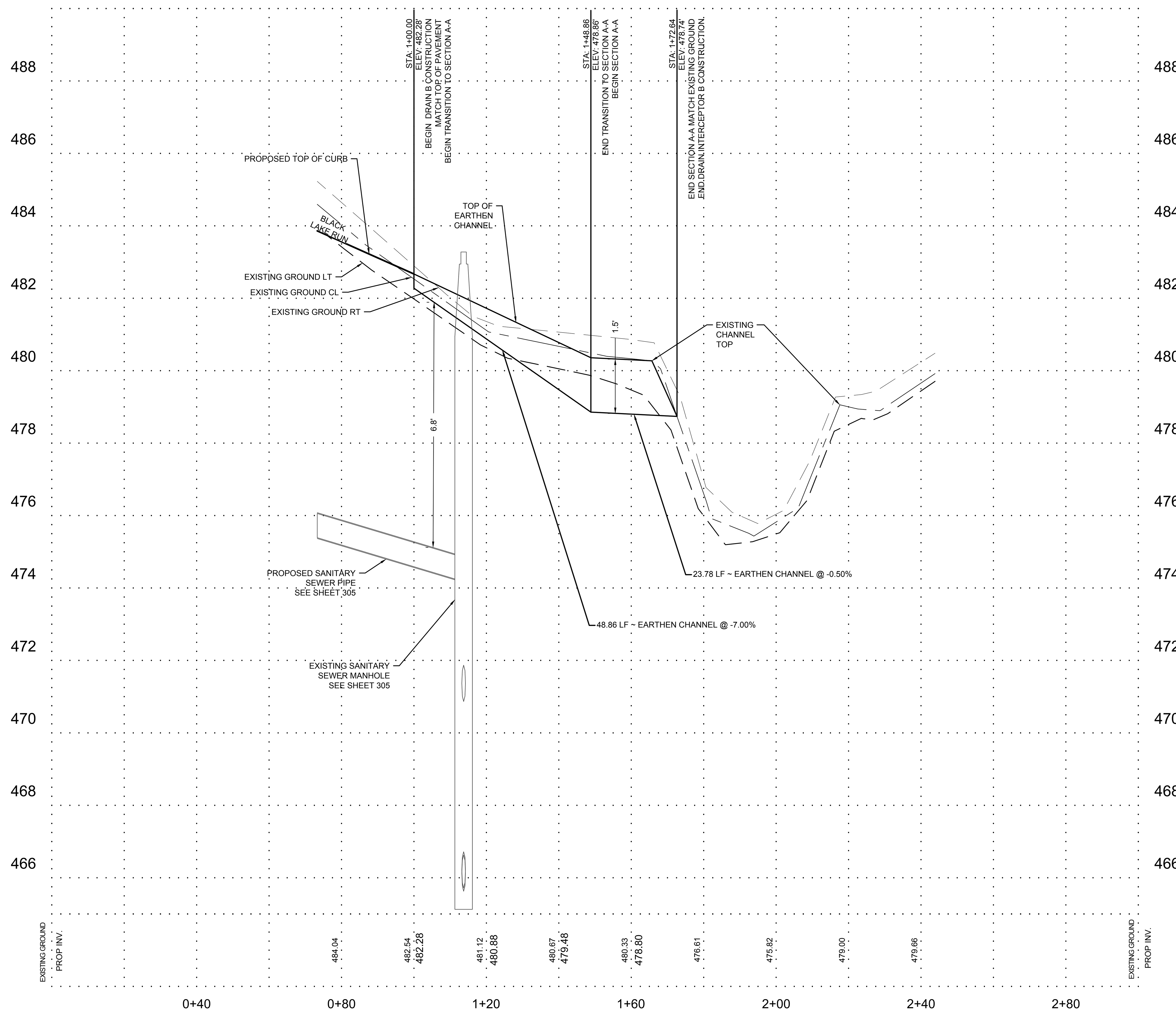
SECTION "A-A" (EARTHEN)
NOT TO SCALE
STA. 1+48.86 TO STA. 1+72.64
HGL = 0.89'

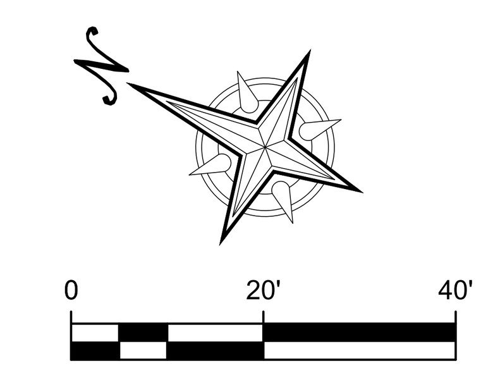
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	72.64'	700.10'	005°56'42"	S30° 02' 30"E	72.61'

INTERCEPTOR DRAIN "B"

STA. 1+00.00 TO STA. 1+72.64

SCALE: HORIZ. 1" = 20'
VERT. 1" = 2'





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

LEGEND
EXISTING CONTOUR — 740
PROPOSED CONTOUR — 740

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

REV	DATE	DESCRIPTION

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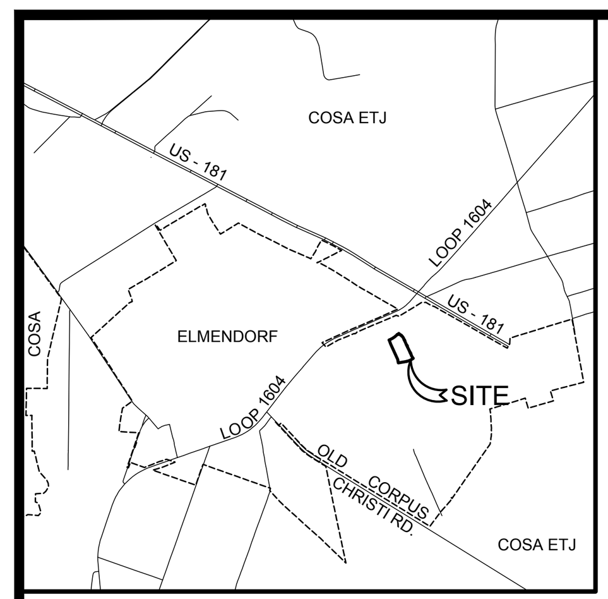
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
INTERCEPTOR DRAIN B PLAN & PROFILE

DRAFTING: N.M.C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	510



LOCATION MAP
NOT TO SCALE

SIGNAGE NOTES:

1. TRAFFIC SIGNS SHALL BE USED IN ACCORDANCE WITH THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND WHERE JUSTIFIED BY ENGINEERING JUDGEMENT OR STUDY. TRAFFIC SIGNS INCLUDE REGULATORY SIGNS, WARNING SIGNS, STREET NAME SIGNS AND OBJECT MARKERS.
2. ALL SIGNS SHALL BE SHOWN IN THE ENGINEERING PLANS FOR REVIEW AND APPROVAL AS PART OF THE PLAN AND PROFILE SHEET OR SEPARATE SIGNING & PAVEMENT MARKING LAYOUT SHEET. THE ENGINEERING PLANS SHALL INCLUDE SIGN LOCATION, NAME, DESIGNATION AND SIZE. SIGN STANDARDS SHALL BE INCLUDED IN THE ENGINEERING PLANS.

INSTALLATION

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REGULATORY, WARNING AND STREET NAME SIGNS AND SIGN MOUNTS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS.
2. ALL SIGNAGE SHALL BE INSTALLED WITHIN STREET R.O.W.

MOUNTING:

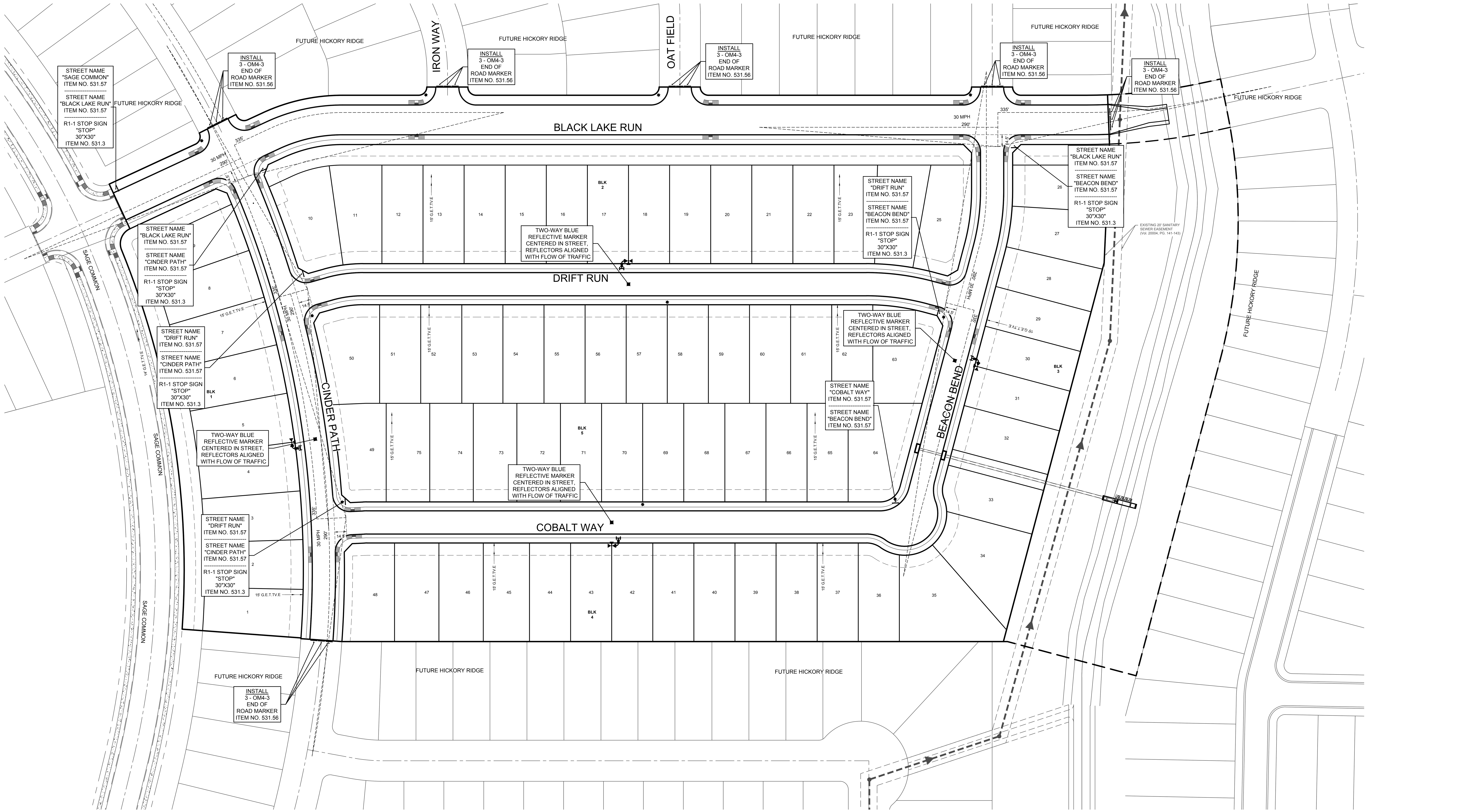
1. THE WEDGE ANCHOR STEEL SYSTEM AND THIN-WALLED TUBING POST SHALL BE USED FOR SIGNS WITH UP TO 10 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TxDOT TRAFFIC STANDARDS SMD (GEN) - 08 AND SMD (TWT) - 08.
2. THE TRIANGULAR SLIP BASE SYSTEM AND 10 BWG TUBING POST SHALL BE USED FOR SIGNS THAT HAVE 10 TO 16 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TxDOT TRAFFIC STANDARDS SMD (GEN) - 08 AND SMD (SLIP-1 - 3) - 08.
3. OBJECT MARKER MATERIALS AND INSTALLATION SHOULD FOLLOW THE TxDOT TRAFFIC STANDARDS D & OM (1-5) - 10.

MATERIALS:

1. SIGN MATERIALS INCLUDING ALUMINUM SIGN BLANKS AND SIGN FACE MATERIALS SHOULD FOLLOW THE TxDOT TRAFFIC STANDARDS TSR (1-5) - 08 AND DEPARTMENT MATERIAL SPECIFICATIONS DMS-7110 AND DMS-8300.

THE CITY OF ELMENDORF WILL INSPECT ALL SIGNS FOR FINAL INSPECTION.

0 60' 120'
1" = 60'



FOR BIDDING PURPOSES ONLY
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REV	DATE	DESCRIPTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
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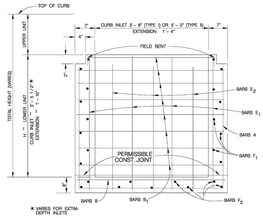
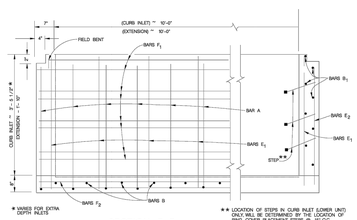
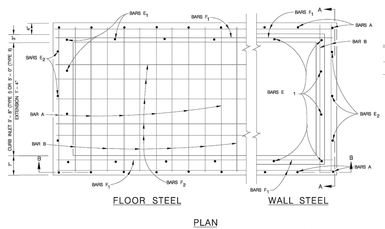
REGISTRATION #F-10573 / #10943-65

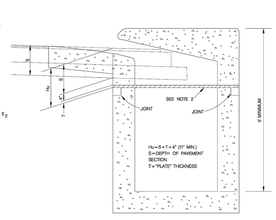
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
OVERALL SIGNAGE PLAN

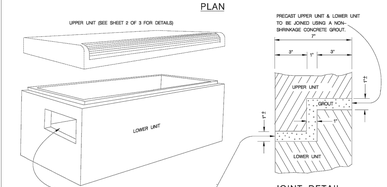
DRAFTING: N.M.C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	511

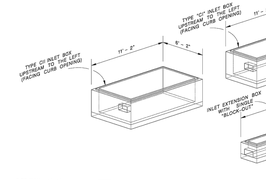


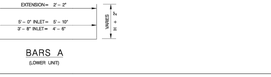


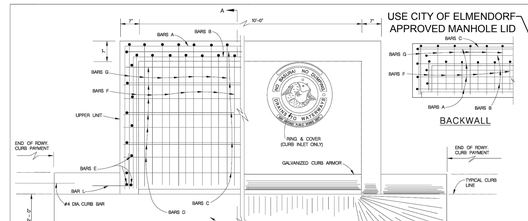


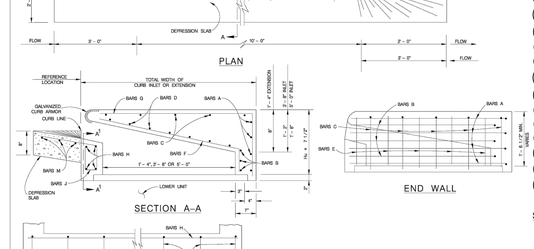


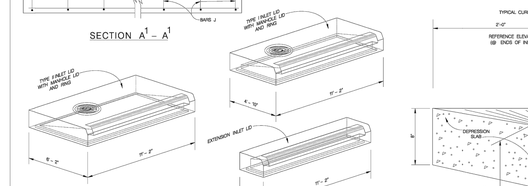


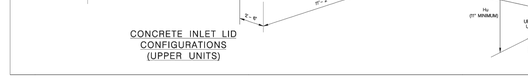


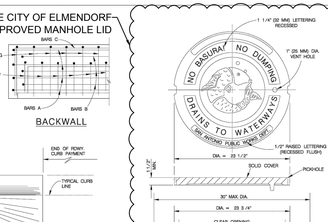


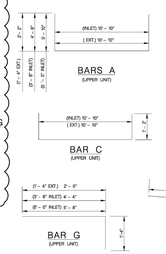


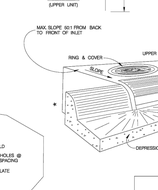


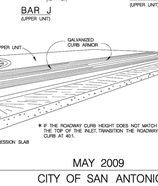


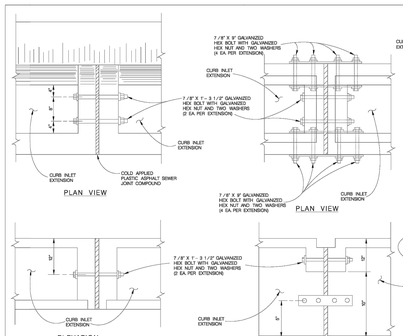


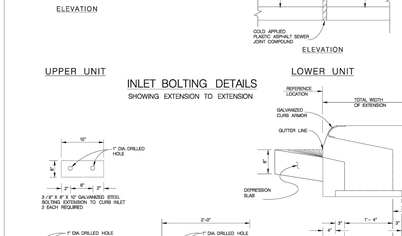


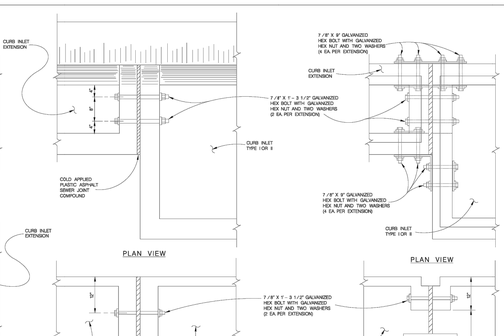


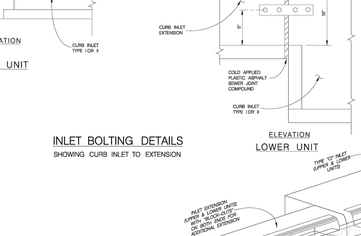


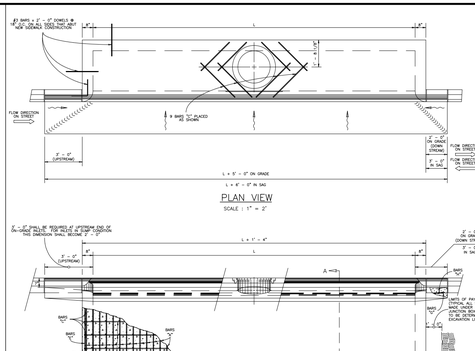


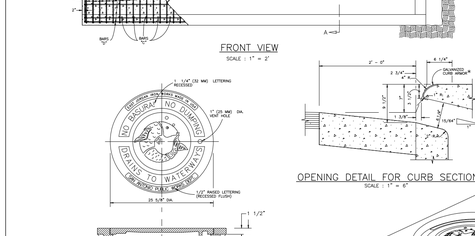


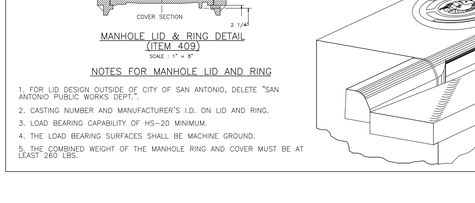


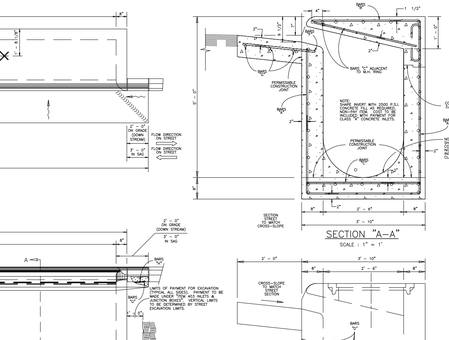


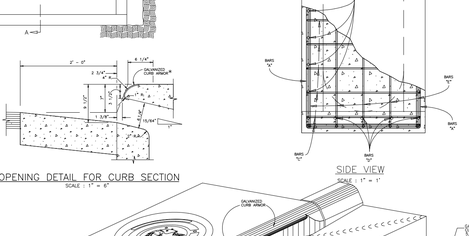


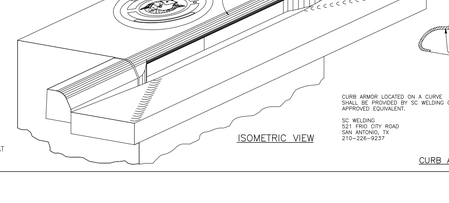


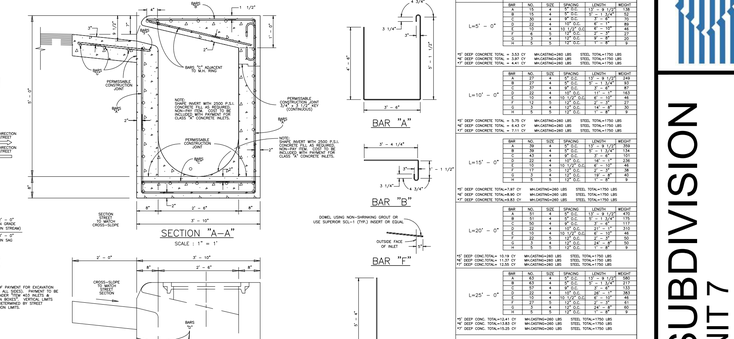












PHASE CONSTRUCTION

NOTES FOR PHASE CONSTRUCTION (WHEN DIRECTED BY THE ENGINEER):

1. THE CURB INLET AND EXTENSION SHALL BE CONSTRUCTED TO A DEPTH "Hu" BELOW THE INLET AND EXTENSION GUTTER LINE ELEVATION.
2. CAP THE CURB INLET AND EXTENSION WITH A STEEL PLATE APPROVED BY THE ENGINEER AND CONSTRUCT THE ROADWAY OVER THE PLATE.
3. AFTER THE ROADWAY IS COMPLETED, BUT PRIOR TO THE FINAL HMAC OVERLAY, SAW CUT THE PAVEMENT, REMOVE THE PLATE AND COMPLETE THE UPPER PORTION OF THE CURB INLET AND /OR EXTENSION.

REINFORCING STEEL

LOWER UNIT 10' X 3' – 8" (TYPE I)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	4'–6"
B_1	VARIES	#4	12"	4'–6"
E_1	20	#4	18"±	VARIES
E_2	6	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'–10'
F_2	9	#4	—	10'–10"

LOWER UNIT 10' X 5' – 0" (TYPE II)				
BAR	NO.	SIZE	SPAC.	LENGTH
A	12	#4	12"	VARIES
B	11	#4	12"	5'–10"
B_1	VARIES	#4	12"	5'–10"
E_1	22	#4	18"±	VARIES
E_2	8	#4	18"±	VARIES
F_1	VARIES	#4	12"±	10'–10"
F_2	11	#4	—	10'–10"

GENERAL NOTES

1. 5' INLETS AND 5' EXTENSIONS MUST BE IN ACCORDANCE WITH THE LATEST TXDOT CURB INLET TYPE "C" AND EXTENSION TYPE E (IL-C).
2. TYPE C-II INLET TO BE USED ONLY WHEN STORM DRAIN PIPE IS IN-LINE WITH CURB INLET AND APPROVED BY THE ENGINEER.
3. QUANTITIES SHOWN ARE FOR CONTRACTORS INFORMATION ONLY.
4. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
5. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 1 1/2".
7. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
8. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3 /4".
9. DEPRESSION SLAB SHALL RECEIVE A WOOD FLOAT FINISH.
10. FACE OF INLET TO CONFORM TO FACE OF CURB LINE.
11. ALL BARS INTERCEPTING MANHOLE RING & COVER SHALL BE CUT OR BENT.
12. PAYMENT FOR ALL EXCAVATION, BACK-FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER, CURB ARMOR AND STEPS SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
13. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
14. GALVANIZED BOLTS, NUTS, WASHERS, PLATES AND GASKETS ARE SUBSIDIARY TO INLETS.
15. THE CONTRACTOR SHALL PROVIDE AN ADEQUATE MEANS TO LIFT AND PLACE THE INLETS, WHEN USING PRECAST UNITS.
16. ALL BARS AT PIPE BLOCKOUT LOCATIONS SHALL BE CUT OR BEND.
17. ALL LOWER UNITS SHALL RECEIVE INVERT MORTAR SHAPING.
18. PIPE BLOCKOUTS IN INLET WALLS SHOULD NOT EXCEED 3" BEYOND THE OUTER SHELL OF THE PIPE, TAKING INTO ACCOUNT THE SKEW OF THE PIPE AS NECESSARY. CONSTRUCTION JOINT MAY BE RAISED A MAXIMUM OF 6".

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 1 OF 3

_____% SUBMITTAL	PROJECT NO.:__________		DATE:__________
DRWN. BY: V. VASQUEZ	DSGN. BY: L.E. MALTOS, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____OF____

MANHOLE LID & RING DETAIL (ITEM 409)

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

SEE SHEET 1 OF 3 FOR GENERAL NOTES.

REINFORCING STEEL (FOR Hu = 11")

UPPER UNIT 10' X 3'-8" (TYPE I)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	19'-10"	53
B	3	#4	—	18'-10"	38
C	5	#4	11"	13'-2"	44
D	7	#4	6"	10'-10"	51
E	12	#4	11"	1'-2"	9
F	21	#6	6"	4'-8"	147
G	22	#6	6"	5'-8"	187
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
TOTAL WEIGHT					620 LBS.

UPPER UNIT 10' X 5' (TYPE II)					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	22'-6"	60
B	3	#4	—	21'-6"	43
C	7	#4	11"	13'-2"	62
D	11	#4	6"	10'-10"	80
E	16	#4	11"	1'-2"	13
F	21	#6	6"	5'-8"	179
G	22	#6	6"	7'-0"	231
H	4	#4	—	10'-10"	29
J	12	#4	12"	3'-6"	28
L	4	#4	—	2'-0"	5
M	3	#4	—	14'-8"	29
TOTAL WEIGHT					759 LBS.

CLASS "A" CONCRETE QUANTITIES (FOR Hu = 11")

DEPRESSION SLAB	C.Y.
10' INLET	0.7
10' EXTENSION	0.7

UPPER UNIT (ONLY)	C.Y.
10' X 3'-8" CURB INLET	1.9
10' X 5'-0" CURB INLET	2.7
10' EXTENSION	1.0

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 2 OF 3

_____% SUBMITTAL	PROJECT NO.:__________		DATE:__________
DRWN. BY: V, VASQUEZ	DSGN. BY: L.E. MALTOS, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____OF____

UPPER UNIT EXTENSION (FOR Hu = 11")					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	4	#4	—	15' – 2"	41
B	3	#4	—	14' – 2"	28
C	3	#4	11"	13' – 2"	26
D	3	#4	6"	10' – 10"	22
E	8	#4	11"	1 '– 2"	6
F	21	#6	6"	2' – 0"	63
G	22	#6	6"	3' – 4"	110
H	4	#4	—	10' – 10"	29
J	12	#4	12"	3' – 6"	28
L	4	#4	—	2' – 0"	5
M	3	#4	—	14' – 8"	29
REINFORCING STEEL				LBS.	387
CLASS "A" CONCRETE				C.Y.	1.0

LOWER UNIT EXTENSION					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
A	12	#4	12"	6' – 2"	49
B	11	#4	12"	2' – 2"	16
B_1	3	#4	12"	2' – 2"	4
E_1	18	#4	18" ±	2' – 3"	27
E_2	4	#4	18" ±	2' – 1"	6
F_1	16	#4	12" ±	10' – 10"	116
F_2	5	#4	—	10' – 10"	36
REINFORCING STEEL				LBS.	254
CLASS. "A" CONCRETE				C.Y.	1.4

GENERAL NOTES

1. WHEN INLET EXTENSIONS ARE REQUIRED FOR ON GRADE INLETS THE EXTENSION(S) SHALL BE PLACED ON THE UPSTREAM END OF THE INLET.
2. FOR CURB INLET EXTENSION REINFORCING STEEL, NOTES & VARIOUS OTHER APPLICABLE DETAILS NOT FOUND ON THIS SHEET, REFER TO SHEETS 1 & 2.

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TYPE "C" INLET (TYPE I & II)
& INLET EXTENSION STANDARDS
SHEET 3 OF 3

_____% SUBMITTAL	PROJECT NO.:__________		DATE:__________
DRWN. BY: V. VASQUEZ	DSGN. BY: L.E. MALTOS, P.E.	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.:____OF____

MANHOLE LID & RING DETAIL (ITEM 409)

SCALE : 1" = 8"

NOTES FOR MANHOLE LID AND RING

1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT.".
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHINE GROUND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 260 LBS.

INLET LENGTH	REINFORCING STEEL SCHEDULE					
	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=5' – 0"	A	15	4	5" O.C.	13' – 9 1/2"	138
	B	15	4	5" O.C.	5' – 1 3/4"	52
	C	30	4	9" O.C.	3' – 6"	70
	D	22	4	10" O.C.	6' – 1"	89
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	6	5	12" O.C.	2' – 3"	27
	G	3	4	12" O.C.	9' – 8"	20
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONCRETE TOTAL = 3.53 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONCRETE TOTAL = 3.97 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONCRETE TOTAL = 4.41 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

INLET LENGTH	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=10' – 0"	A	27	4	5" O.C.	13' – 9 1/2"	249
	B	27	4	5" O.C.	5' – 1 3/4"	93
	C	37	4	9" O.C.	3' – 6"	87
	D	22	4	10" O.C.	11' – 1"	163
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	12	5	12" O.C.	2' – 3"	27
	G	3	4	12" O.C.	14' – 8"	30
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONCRETE TOTAL = 5.75 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONCRETE TOTAL = 6.43 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONCRETE TOTAL = 7.11 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

INLET LENGTH	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=15' – 0"	A	39	4	5" O.C.	13' – 9 1/2"	359
	B	39	4	5" O.C.	5' – 1 3/4"	134
	C	43	4	9" O.C.	3' – 6"	101
	D	22	4	10" O.C.	16' – 1"	236
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	17	5	12" O.C.	2' – 3"	38
	G	3	4	12" O.C.	19' – 8"	40
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONCRETE TOTAL=7.97 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONCRETE TOTAL=8.90 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONCRETE TOTAL=9.83 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

INLET LENGTH	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=20' – 0"	A	51	4	5" O.C.	13' – 9 1/2"	470
	B	51	4	5" O.C.	5' – 1 3/4"	175
	C	50	4	9" O.C.	3' – 6"	117
	D	22	4	10" O.C.	21' – 1"	310
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	22	5	12" O.C.	2' – 3"	50
	G	3	4	12" O.C.	24' – 8"	50
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONC.TOTAL= 10.19 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONC.TOTAL= 11.37 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONC.TOTAL= 12.55 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

INLET LENGTH	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=25' – 0"	A	63	4	5" O.C.	13' – 9 1/2"	580
	B	63	4	5" O.C.	5' – 1 3/4"	217
	C	57	4	9" O.C.	3' – 6"	133
	D	22	4	10" O.C.	26' – 1"	383
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	27	5	12" O.C.	2' – 3"	61
	G	3	4	12" O.C.	24' – 8"	60
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONC. TOTAL=12.41 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONC. TOTAL=13.83 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONC. TOTAL=15.25 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

INLET LENGTH	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
L=30' – 0"	A	75	4	5" O.C.	13' – 9 1/2"	691
	B	75	4	5" O.C.	5' – 1 3/4"	258
	C	63	4	9" O.C.	3' – 6"	147
	D	22	4	10" O.C.	31' – 1"	457
	E	10	4	10 1/2" O.C.	6' – 10"	46
	F	32	5	12" O.C.	2' – 3"	72
	G	3	4	12" O.C.	34' – 8"	70
	H	5	5	12" O.C.	1' – 8"	9

*5' DEEP CONC TOTAL=14.63 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*6' DEEP CONC TOTAL=16.30 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS
*7' DEEP CONC TOTAL=17.97 CY MH.CASTING=260 LBS STEEL TOTAL=1750 LBS

* THESE FIGURES DO NOT EXCLUDE CONCRETE & STEEL INTERCEPTED BY MANHOLE AND REINFORCED CONC. PIPE.
* INCLUDES CONCRETE GUTTER FOR ON GRADE INLET. REDUCE BY .05 C.Y. FOR INLETS IN SUMP.
FOR 6' INLETS , ADD 2' TO BARS "A" & 1' TO BARS "E".
FOR 7' INLETS , ADD 4' TO BARS "A" & 2' TO BARS "E".

GENERAL NOTES

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 PSI IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3/4"
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCRETION. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A-615, GRADE 60 REQUIREMENTS.
7. INVERT OF DROP INLET TO BE SHAPED WITH CONCRETE FILL TO AFFECT DRAINAGE TO OUTLET PIPE.
8. DELETE 4 "C" BARS FROM SCHEDULE QUANTITIES IF MANHOLE RING AND COVER ARE PLACED AT END OF INLET.
9. CAST IRON MANHOLE RING AND COVER TO BE PLACED NEXT TO OUTLET PIPE, EXCEPT FOR VERTICAL OUTLET PIPE IN WHICH CASE MANHOLE RING AND COVER WILL BE OFFSET.
10. PAYMENT FOR ALL EXCAVATION, BACK FILLING, CONCRETE, REINFORCING STEEL, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 "STORM SEWER JUNCTION BOXES AND INLETS".
11. THIS DETAIL TO BE UTILIZED FOR CAST IN PLACE INLETS.

JANUARY 2005

STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEPARTMENT OF PUBLIC WORKS

TYPE "C" INLET
STANDARDS

DRAWN BY: V. VASQUEZ	DATE	REVISIONS	SCALE: SEE ABOVE
			DATE:
CHECKED BY: NAT HARDY, P.E.			SHEET: OF

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

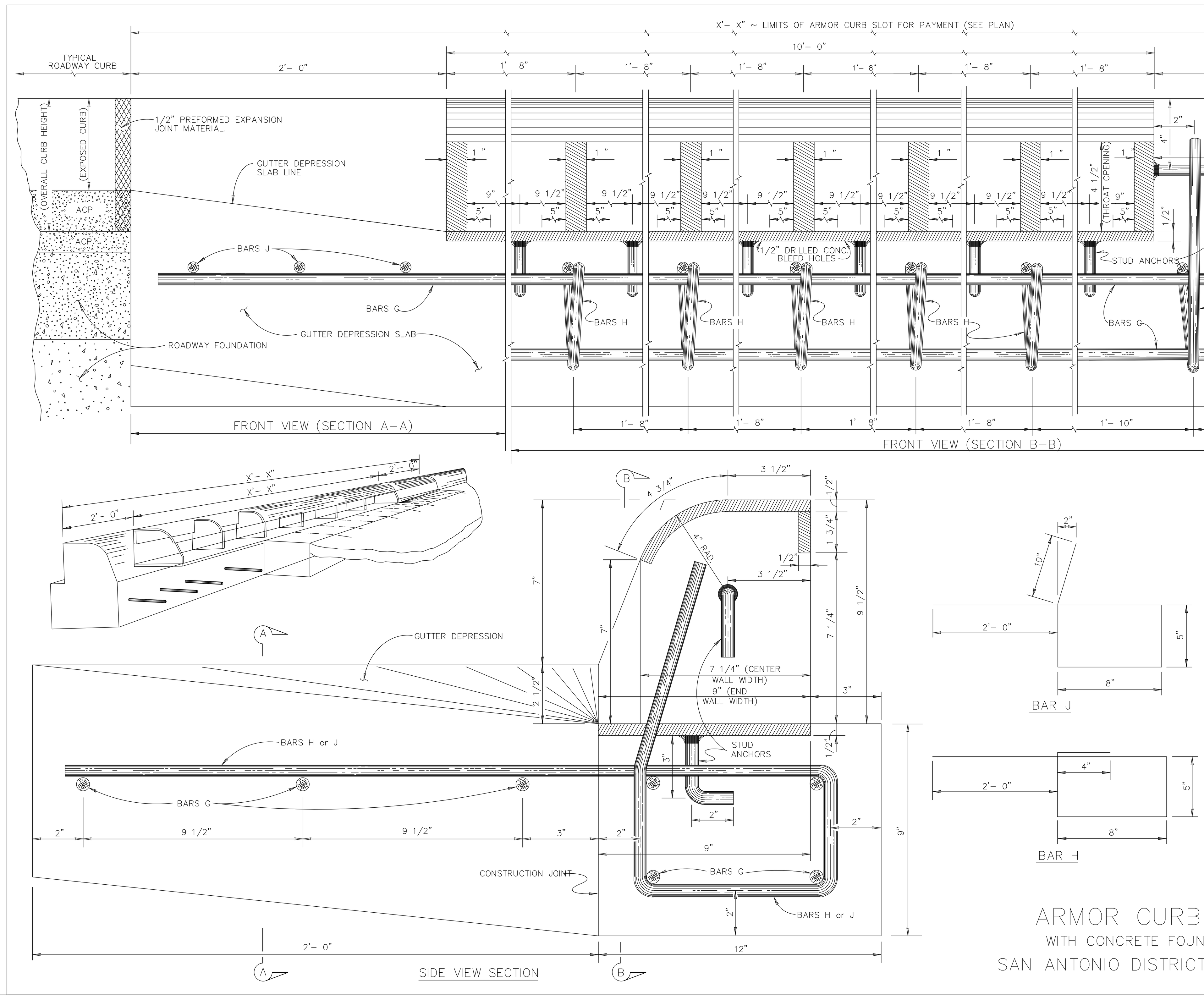
KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

KCI TECHNOLOGIES

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
DRAIN DETAILS

DRAFTING: N.M./C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002
SHEET:			512

Date: Apr 13, 2026, 4:13pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 512-513 DRAIN DETAILS.dwg



ARMOR CURB SLOT

WITH CONCRETE FOUNDATION

SAN ANTONIO DISTRICT STANDARDS

FRONT VIEW (SECTION A-A) · FRONT VIEW (SECTION B-B) · SIDE VIEW SECTION · BAR J · BAR H

ESTIMATED QUANTITIES FOR REINFORCING STEEL					
BAR	NO.	SIZE	SPAC.	LENGTH	WEIGHT
G	7	#4	SHOWN	13'- 9"	64
H	5	#4	1'- 8"	4'- 6"	15
J	6	#4	8"	5'- 0"	20
TOTAL WEIGHT *				LBS.	99
CONCRETE FOR FOUNDATION *				C.Y.	0.47
CONCRETE FOR GUTTER DEPRESSION *				C.Y.	0.78

STRUCTURAL STEEL FOR ARMOR CURB SLOT		
STUD ANCHORS (1/2"DIA.)	LBS.	3.5
STEEL PLATE	LBS.	451
TOTAL WEIGHT*	LBS.	454.5

* FOR CONTRACTORS INFO ONLY.

GENERAL NOTES:

ALL CONCRETE SHALL BE CL."A".

ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.

ALL SIDES OF ARMOR CURB SLOT AND STUD ANCHORS SHALL BE 1/4" FILLET WELDS.

ALL EXPOSED STRUCTURAL STEEL (ARMOR) SHALL BE GALVANIZED.

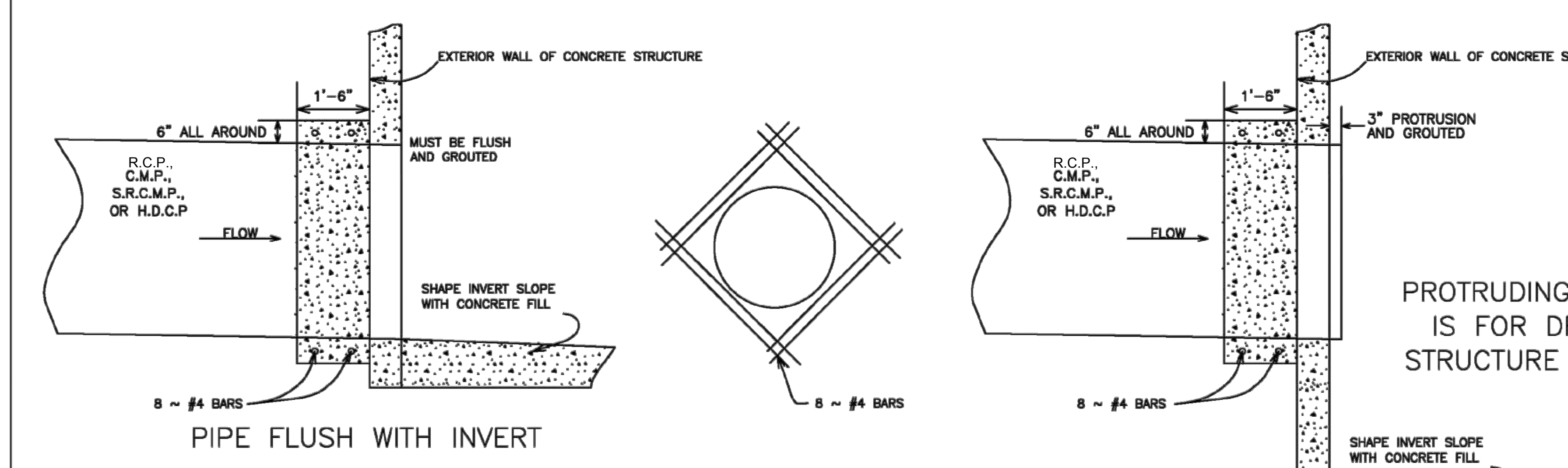
ALL EXPOSED EDGES ON ARMOR CURB SHALL RECEIVE A 1/8" BEVEL.

THE SHAPE OF THE TYPICAL ROADWAY CURB SHALL TRANSITION TO THE ARMOR CURB AS APPROVED BY THE ENGINEER.

FED.RD. DIV.NO.	PROJECT NO.	SHEET NO.
6		
STATE: TEXAS	STATE DISTRICT: SAT	COUNTY

10/95 REV.07/01

1. CONCRETE FOR STRUCTURE SHALL BE CLASS "A," 3,000 P.S.I. AT 28 DAYS.
2. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
3. REINFORCING STEEL SHALL BE NEW BILLET STEEL, INTERMEDIATE GRADE, ASTM. A-15. THE DEFORMATION SHALL CONFORM TO ASTM. A-305.
4. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
5. ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
6. WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 33 DIAMETERS SHALL BE USED.
7. INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (3,000 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).



PIPE FLUSH WITH INVERT

PROTRUDING PIPE IS FOR DROP STRUCTURE ONLY

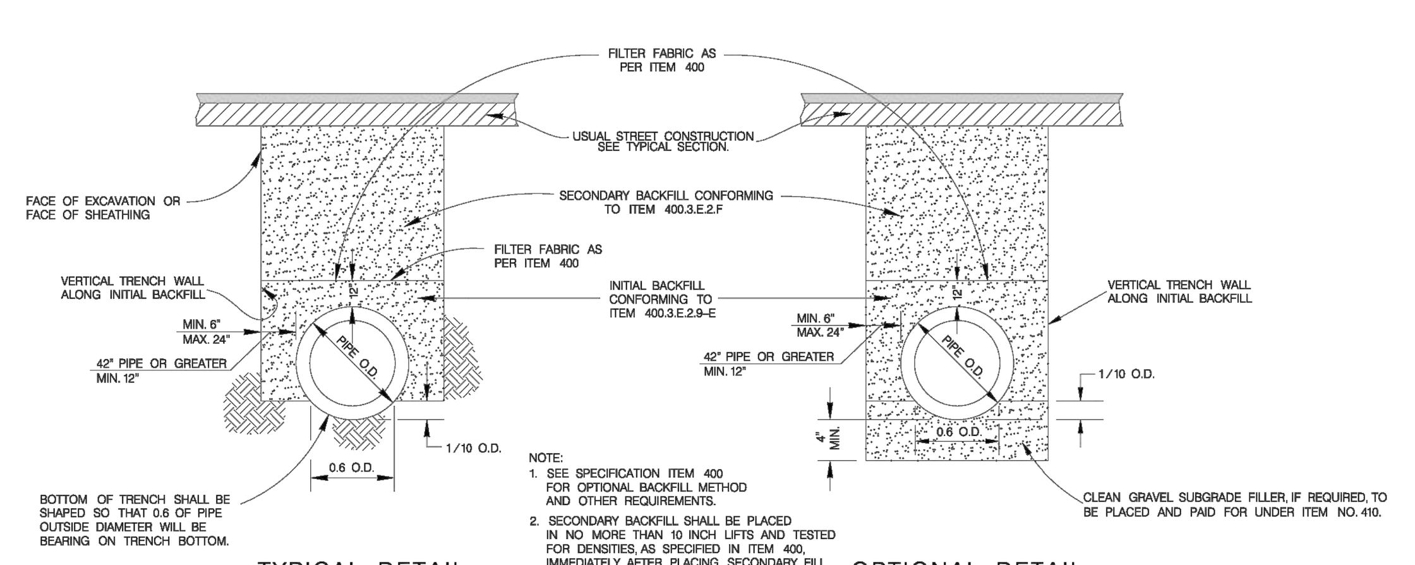
CONCRETE COLLAR DETAIL

(NOT TO SCALE)

JANUARY 2006

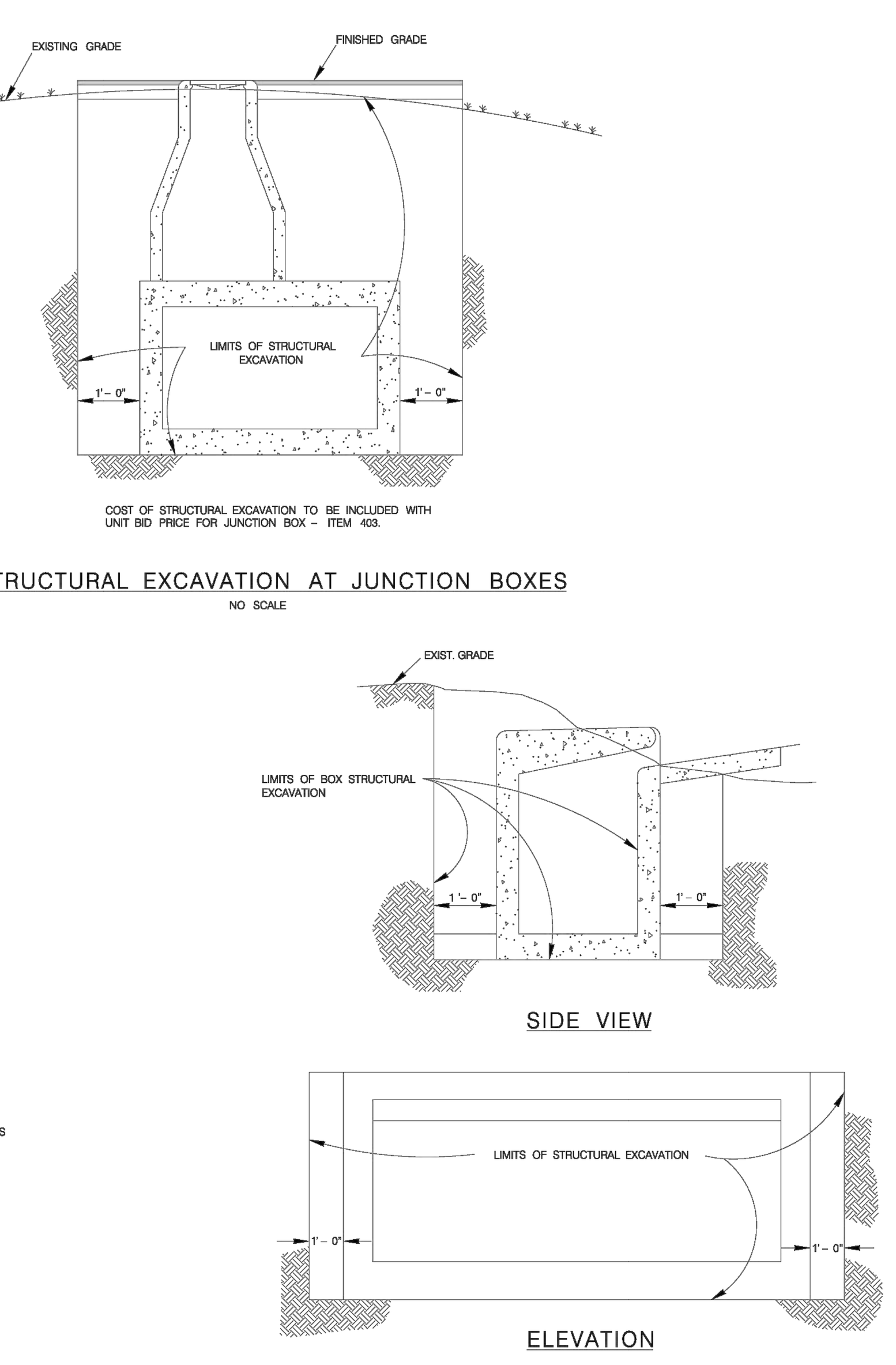
STANDARD PLANS
CITY OF SAN ANTONIO, TEXAS
DEVELOPMENT SERVICES

CONCRETE COLLAR DETAIL



TYPICAL DETAIL · OPTIONAL DETAIL

PIPE BEDDING & BACKFILL DETAILS



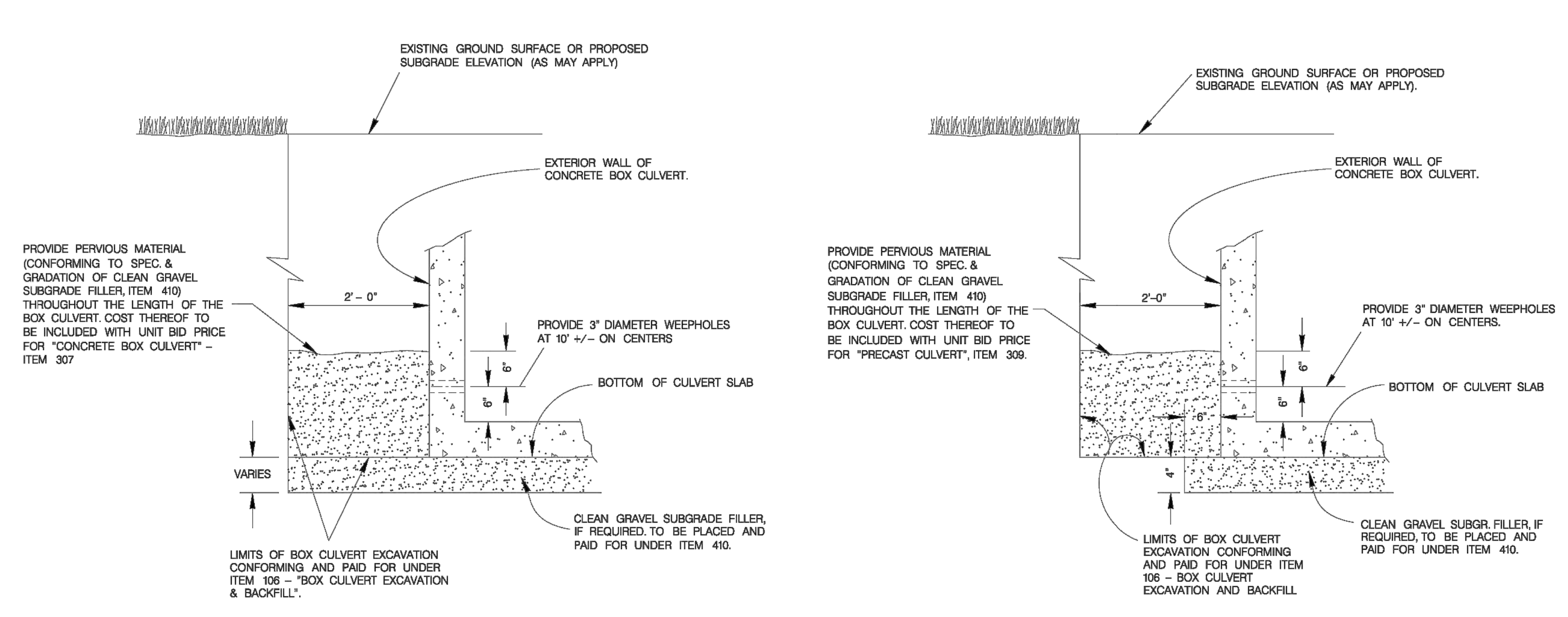
STRUCTURAL EXCAVATION AT JUNCTION BOXES

NO SCALE

SIDE VIEW · ELEVATION

STRUCTURAL EXCAVATIONS AT DRAINAGE INLETS

NO SCALE



CAST-IN-PLACE BOX CULVERT · PRECAST BOX CULVERT

CONCRETE BOX CULVERT

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
DRAIN DETAILS

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10943-65

DRAFTING: N.M.C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET: **513**

LOCAL A PRIMARY PAVEMENT DESIGN

PAVEMENT DESIGN WAS PREPARED BY InTEC

PROJECT No.: S251257; DATE: AUGUST 29, 2025

PAVEMENT STRUCTURE (DESIGN CBR=4.0)	STR. COEF.	STR. NO.
2" HOT MIX ASPHALT TYPE D	0.44	0.88
12" FLEXIBLE BASE (TYPE A, GRADE 1 OR 2)	0.14	1.68
6" CEMENT TREATED SUBGRADE (25#/S.Y.)	0.00	0.00
	TOTAL	2.56

DRIFT RUN	STA. 1+00.00	TO	9+36.67
COBALT WAY	STA. 1+00.00	TO	8+16.54
CINDER PATH	STA. 1+00.00	TO	7+48.83
BEACON BEND	STA. 1+00.00	TO	6+02.36

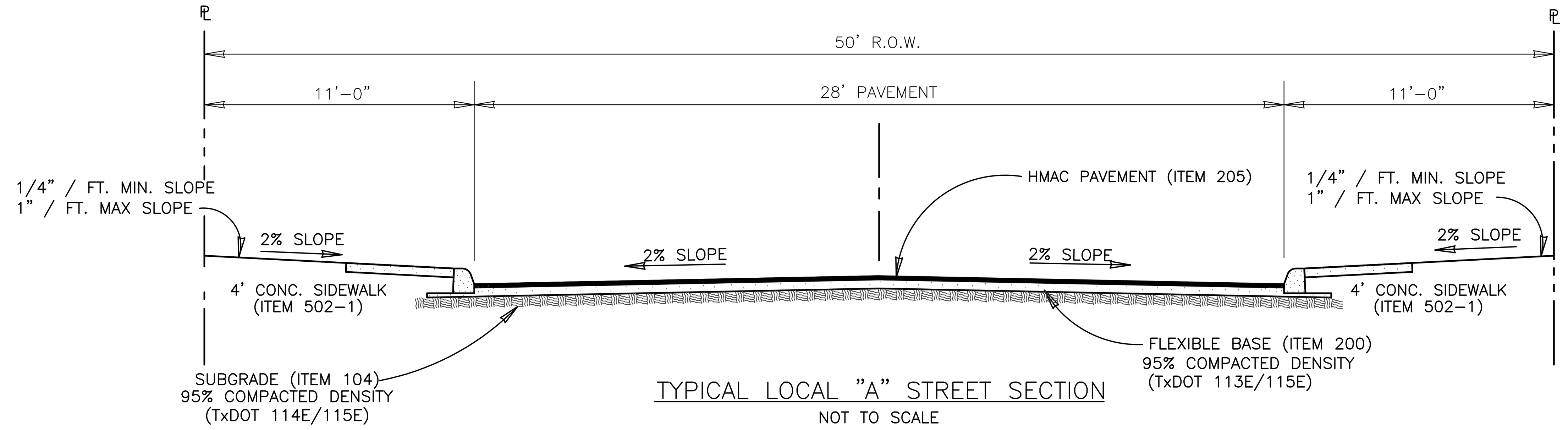
LOCAL B PRIMARY PAVEMENT DESIGN

PAVEMENT DESIGN WAS PREPARED BY InTEC

PROJECT No.: S251257; DATE: AUGUST, 2025

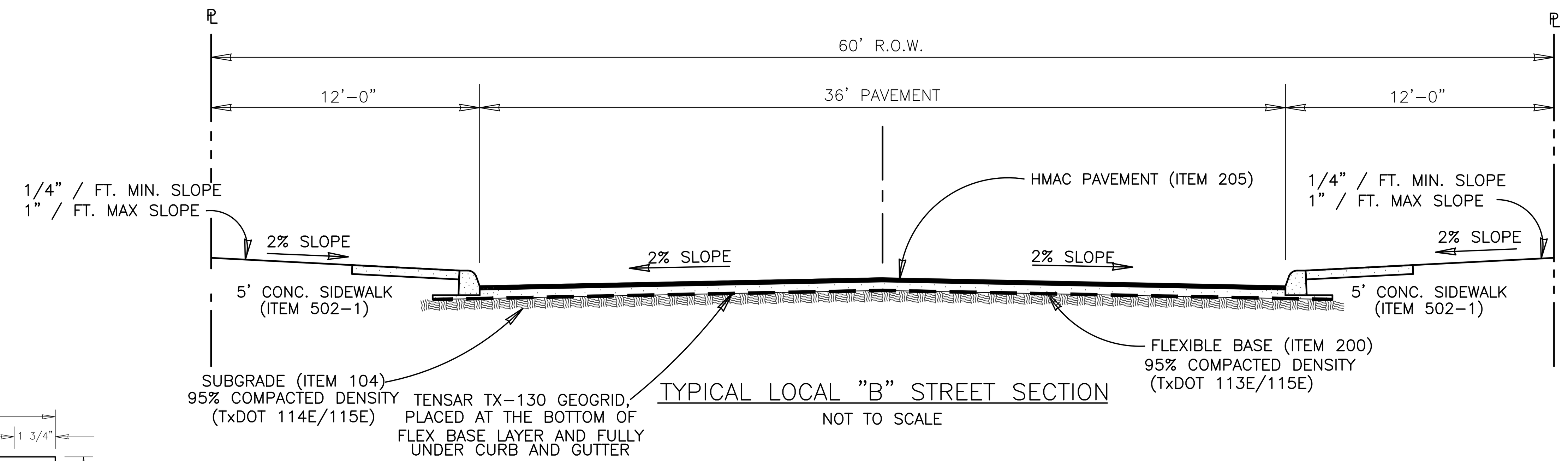
PAVEMENT STRUCTURE (DESIGN CBR=4.0)	STR. COEF.	STR. NO.
3" HOT MIX ASPHALT TYPE D	0.44	1.32
16" FLEXIBLE BASE (TYPE A, GRADE 1 OR 2) W/ TENSAR TX-130 GEOGRID	0.17	2.72
6" CEMENT TREATED SUBGRADE (25#/S.Y.)	0.00	0.00
	TOTAL	4.04

BLACK LAKE RUN STA. 1+53.88 TO 13+79.89



TYPICAL LOCAL "A" STREET SECTION

NOT TO SCALE



TYPICAL LOCAL "B" STREET SECTION

NOT TO SCALE

NOTES:

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

FILL MATERIAL NOTE:

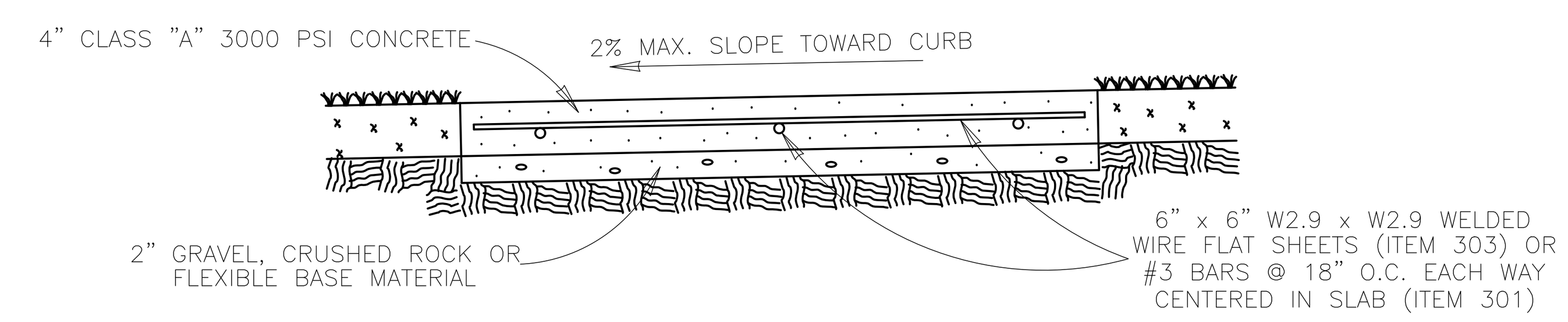
IF FILL IS USED TO RAISE THE GRADE, APPROVED FILL MATERIAL UNDERNEATH THE PAVEMENT SHOULD BE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH MAXIMUM PLASTICITY INDEX VALUE OF 20 AND A MINIMUM CBR VALUE OF 4.0. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME OR CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY AND/OR COUNTY GUIDELINES.

SUBGRADE MATERIAL NOTE:

1. SUBGRADE SOIL PLASTICITY INDEX SHOULD BE LESS THAN OR EQUAL TO 20 FOR PRIMARY PAVEMENT DESIGN.
2. IF THE SUBGRADE SOIL PLASTICITY INDEX VALUE IS GREATER THAN 20, THEN ONE OF THE FOLLOWING OPTIONS SHOULD BE FOLLOWED:
   - 2.a. THE SUBGRADE SHOULD BE STABILIZED TO A DEPTH OF 6 INCHES (SEE ALTERNATE PAVEMENT DESIGN).
   - 2.b. THE EXPANSIVE CLAYS SHOULD BE REMOVED AND REPLACED WITH SOILS WITH A PLASTICITY INDEX VALUE OF 20 OR LESS.
3. GEOTECHNICAL ENGINEER SHALL BE ON SITE TO MAKE SUBGRADE DETERMINATION AND PROVIDE/SUBMIT LETTER INDICATING STATION TO STATION FOR PLACEMENT OF EACH PVM'T. DESIGN SECTION TO BE APPROVED BY ENGINEER PRIOR TO PLACEMENT OF BASE.

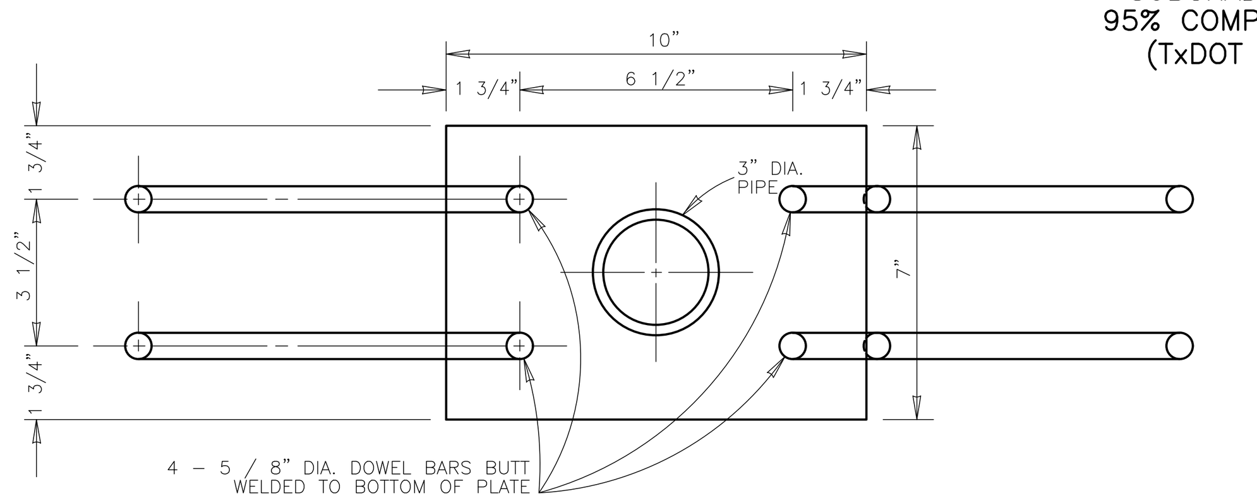
FOR CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED IN THE FIELD:

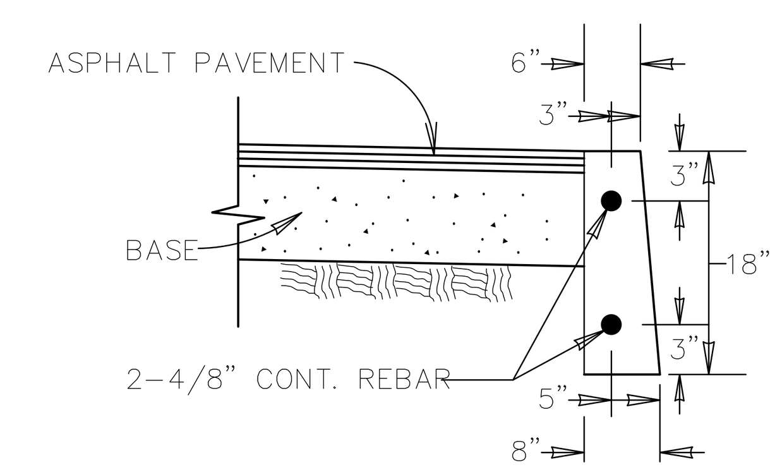
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2 - 3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
- AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE ¾ INCH SIEVE FROM THE SAMPLE):
  - -MINIMUM PASSING 1 ¾" SIEVE 100
  - -MINIMUM PASSING ¾" SIEVE 85
  - -MINIMUM PASSING NO. 4 SIEVE 60
- SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN WITH PROCEDURE OUTLINED ABOVE FOR MIXTURE DESIGN.
- COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED);
- CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
- VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.



CONCRETE SIDEWALK SECTION

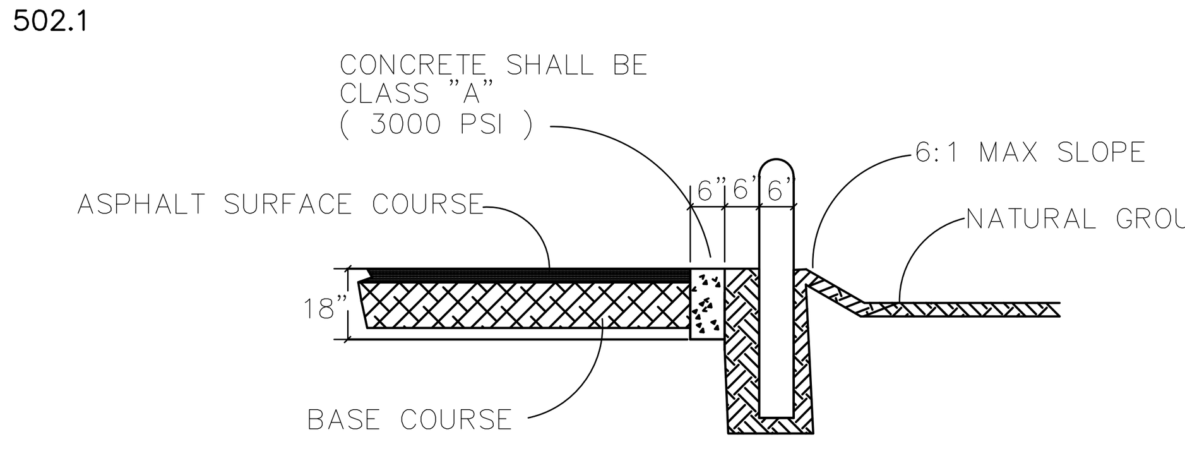
ITEM 502.1





HEADER CURB DETAIL W/ REBAR

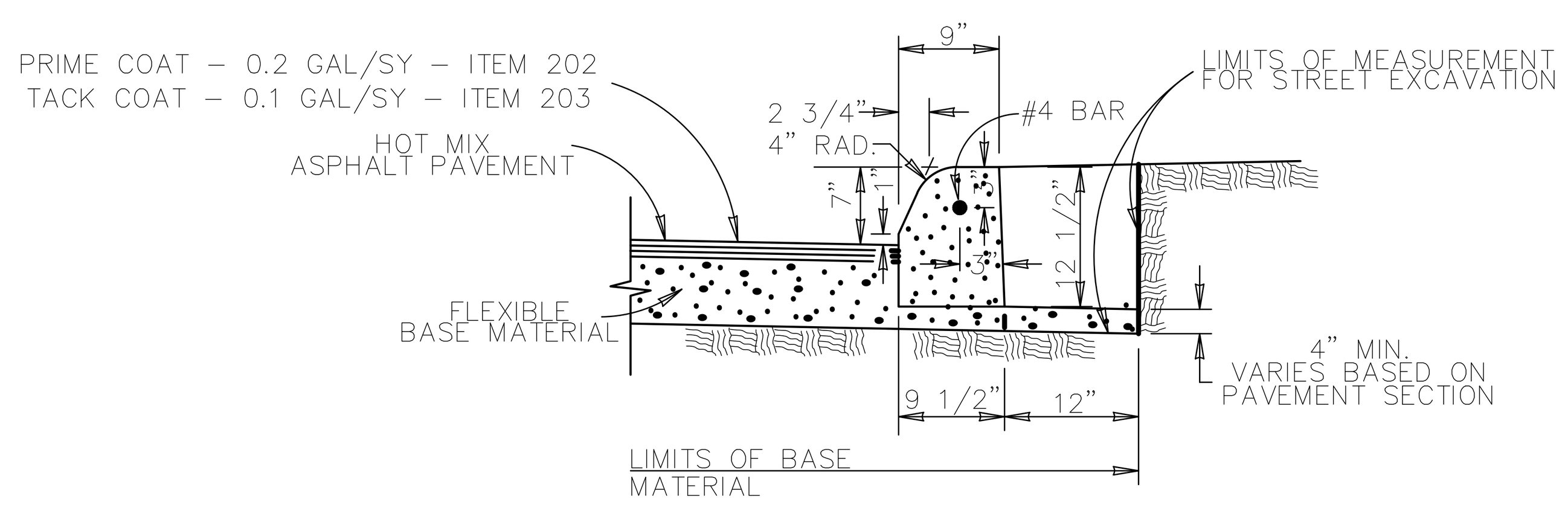
N.T.S.



CONCRETE FLUSH CURB & BARRICADE POST

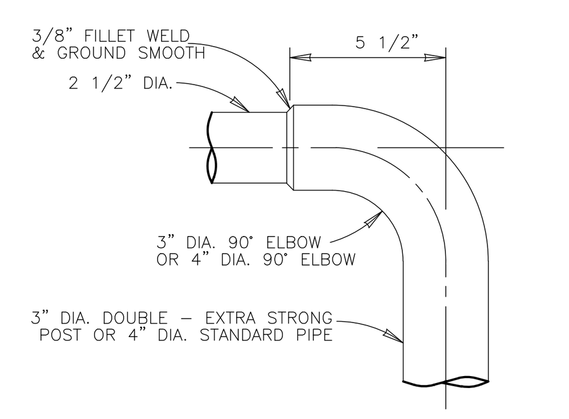
NOTE:

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



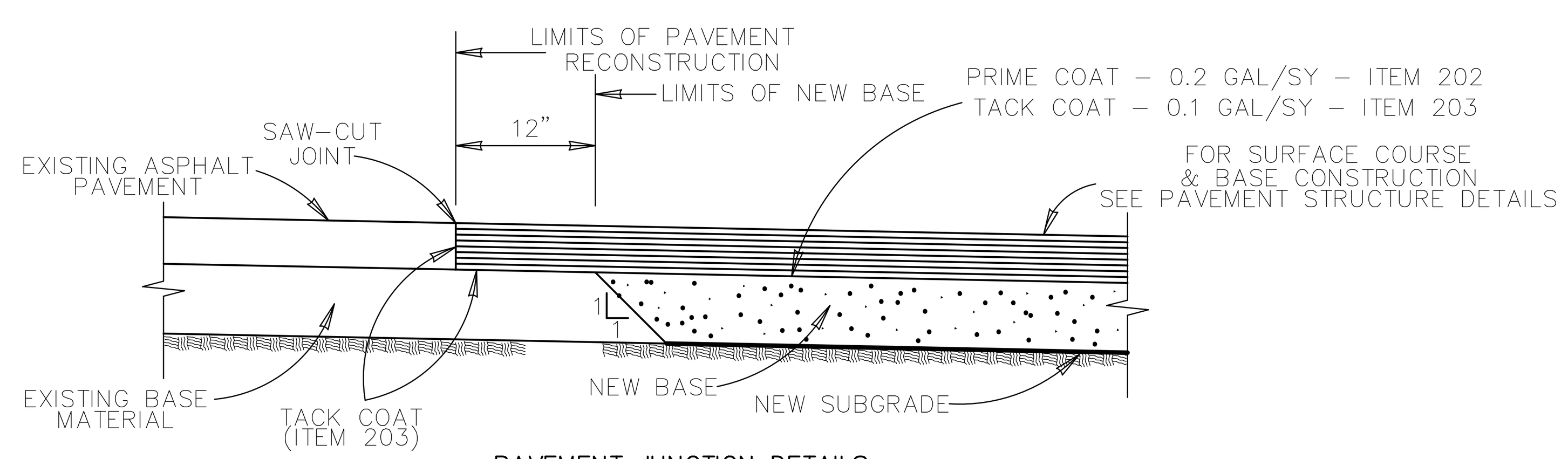
MACHINE LAID CURB

ITEM 501 ON FLEXIBLE BASE MATERIAL



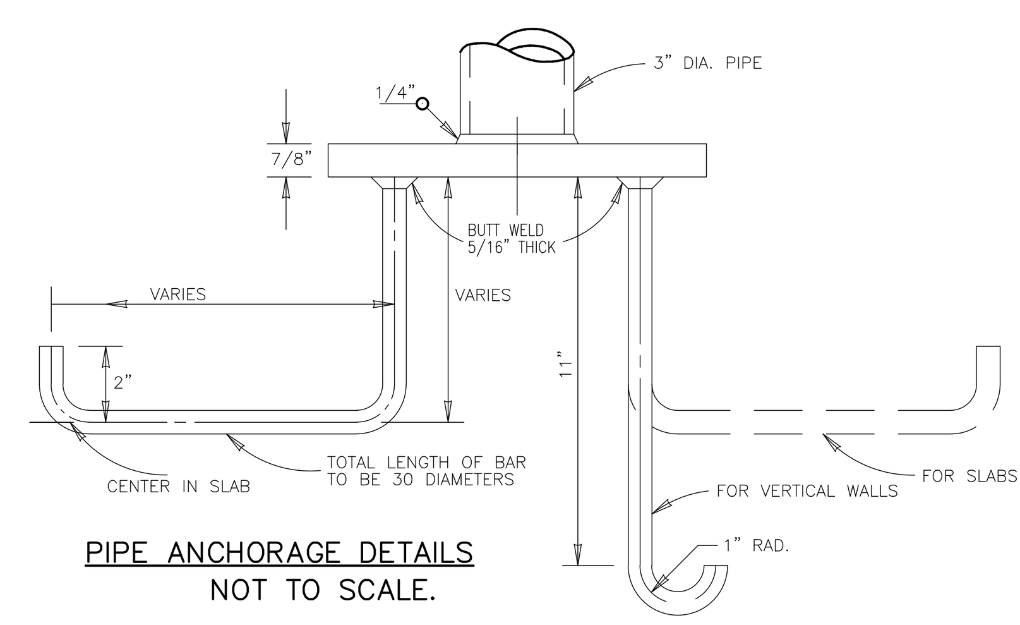
DETAIL OF 90° WELDING ELBOWS

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



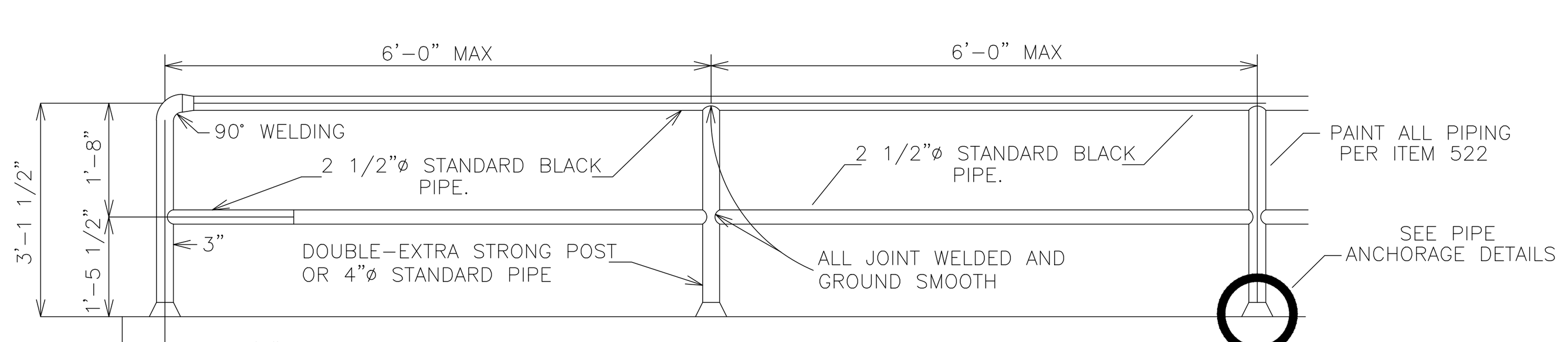
PAVEMENT JUNCTION DETAILS

NOT TO SCALE



PIPE ANCHORAGE DETAILS

NOT TO SCALE.



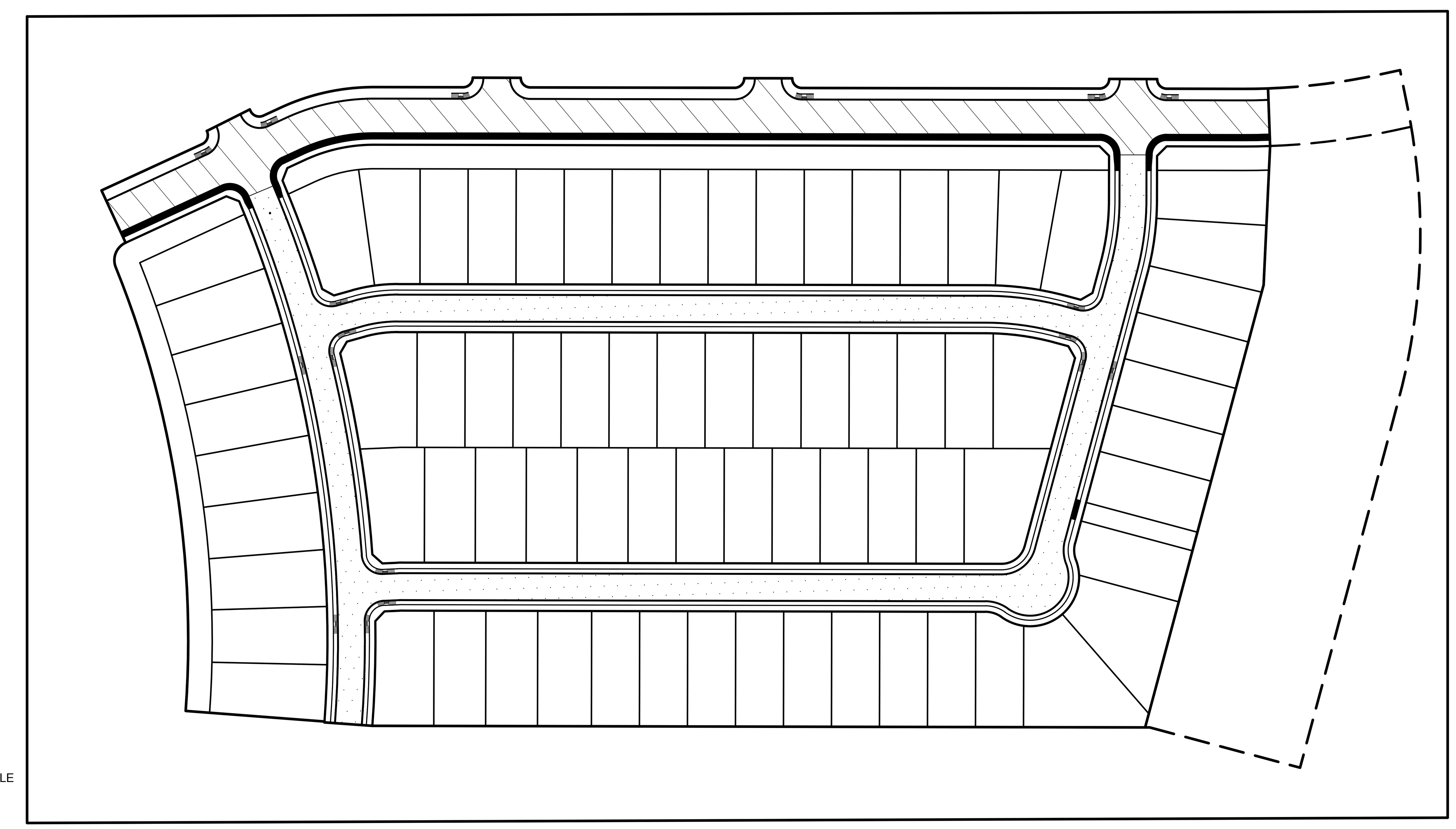
SIDEWALK PIPE RAILING

NOT TO SCALE

ITEM 522.1

LEGEND

- (LOCAL "A")
- (LOCAL "B")
- DEVELOPER RESPONSIBLE SIDEWALK



REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY

NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10943-65

HICKORY RIDGE SUBDIVISION

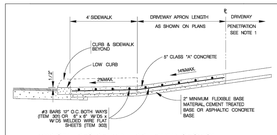
PHASE 2 UNIT 7

STREET DETAILS

DRAFTING:	N.M.C.C	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:

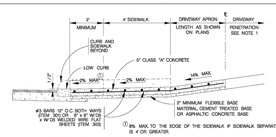
514



TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.1

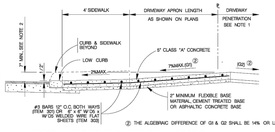


TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

ITEM 503.1

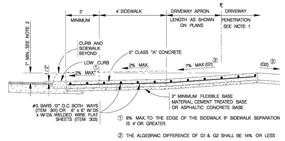
① 8% MAX TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB

ITEM 503.2



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB

ITEM 503.2

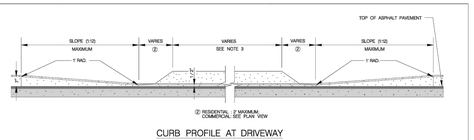
① 8% MAX TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

CONCRETE DRIVEWAY NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MINIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2
   B) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2 AND SHALL INCLUDE A MINIMUM OF 7" ASPHALT TYPE "D & E" FLEXIBLE BASE
   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO 503.3 AND SHALL INCLUDE A MINIMUM OF 7" FLEXIBLE BASE
2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL – ONE WAY	12'	25'
COMMERCIAL – TWO WAY	24'	30'

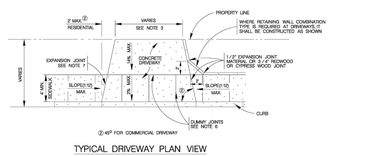
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS,THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS,SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3-/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE, WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



② RESIDENTIAL: 2' MAXIMUM, COMMERCIAL SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

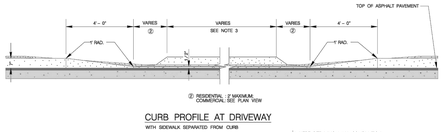
WITH SIDEWALK ABUTTING CURB



② 40° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

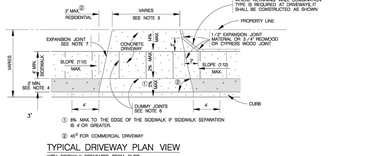
WITH SIDEWALK ABUTTING CURB



② RESIDENTIAL: 2' MAXIMUM, COMMERCIAL SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

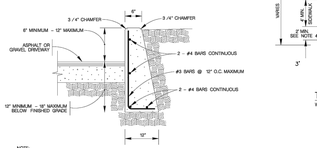


① 8% MAX TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 40° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB



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

DRIVEWAY – CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE

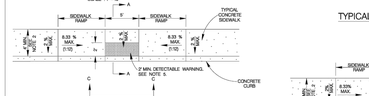
ITEM 307.1

NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MIN LANDING THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB

SCALE: 1"=10'



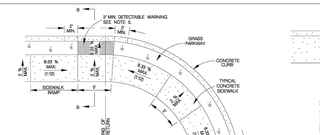
TYPICAL SIDEWALK RAMP – TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SCALE: 1"=10'

GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE ALLOWING A MINIMUM OF 1-FOOT BUFFER DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4'AND IF SEPARATED FROM THE CURB,THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS,SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4'AND SEPARATED A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION,THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB
4. SIDEWALK RAMP LENGTHS SHALL BE SUFFICIENT IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK 2%P LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB RAMPS OR LANDINGS ABUTTING THE SIDEWALK SHALL HAVE A DETECTABLE WARNING IN INCHES WIDE (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING.THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (0.9 MM) A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM).DETECTABLE WARNING SURFACE SHALL BE A CAST-IN-PLACE TILE CONFORMING TO THE CITY OF SAN ANTONIO STANDARD SPECIFI-CATION 36
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES,EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WAKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO INSTALL TYPE I OR TYPE II CURB RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS 1500 - CONCRETE CURB,GUTTER, AND CONCRETE TRAFFIC FLUME AND GUTTER AND 1502 - CONCRETE SIDEWALK.CONCRETE SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W OR 6" x 6" - W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY.ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEPPED THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS,HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2% .LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11% .THE CHANGE OF GRADE SHALL BE LESS THAN 13% ,I.E. 8.33-(-4.67)=13. IN ADDITION,THE ADJACENT PAVEMENT CROSS SLOPE AT THE STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE.THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% ,I.E. 8.33-(-2.67)=11. IN ADDITION,THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5% .
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11% A LEVELING STRIP,2 FEET IN LENGTH,SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS,BOUNDARIES OR SCOPE OF A PLANNED PROJECT.

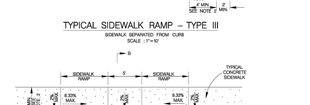


NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MIN LANDING THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB

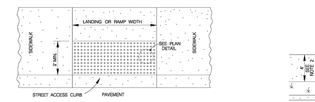
SCALE: 1"=10'



TYPICAL SIDEWALK RAMP – TYPE IV

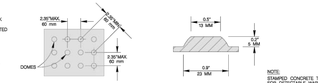
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE: 1"=10'



DETECTABLE WARNING SURFACE

SCALE: 1"=4'



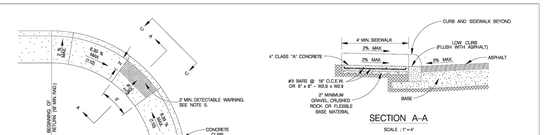
PLAN DETAIL

NO SCALE

DOME SECTION

NO SCALE

NOTES:
1. TRUNCATED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.



NOTE:
1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MIN LANDING THE EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 4' MIN RADIUS.

TYPICAL SIDEWALK RAMP – TYPE V

SIDEWALK ABUTS CURB

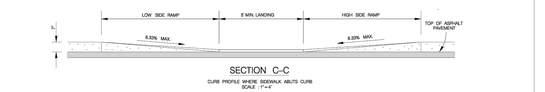
SCALE: 1"=10'

SECTION A–A

SCALE: 1"=4'

SECTION B–B

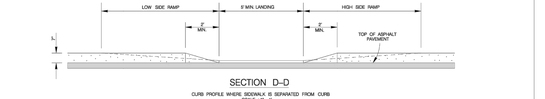
SCALE: 1"=4'



SECTION C–C

CURB PROFILE WHERE SIDEWALK ABUTS CURB

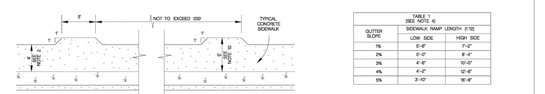
SCALE: 1"=4'



SECTION D–D

CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB

SCALE: 1"=4'



SIDEWALK PASSING SPACE

SCALE: 1"=10'

TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE%	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-0"	7'-0"
2%	5'-0"	9'-4"
3%	4'-8"	10'-6"
4%	4'-0"	12'-6"
5%	3'-10"	16'-8"

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

% SUBMITTAL	PROJECT NO.:	DATE:
DRAWN BY:V.VASQUEZ	DESIGN BY:	CHKD BY:R.S.HOSSEINI, P.E.

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY

NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

KCI TECHNOLOGIES

HICKORY RIDGE SUBDIVISION

PHASE 2 UNIT 7

STREET DETAILS 2

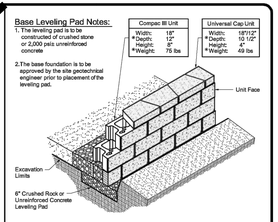
DRAFTING: N.M./C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	515

Base Levelling Pad Notes:

1. The leveling pad is to be constructed of crushed stone or 2,000 psis unreinforced concrete
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

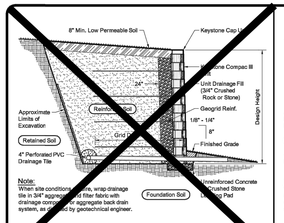
Compac III Unit	
* Width:	18"
* Depth:	12"
*Weight:	75 lbs

Universal Cap Unit	
Width:	18"/12"
Depth:	10 1/2"
*Weight:	49 lbs



Compac III Unit/Base Pad Isometric Section View

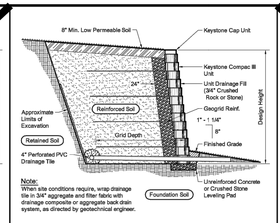
* Dimensions & Weight May Vary by Region



Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

Typical Reinforced Wall Section

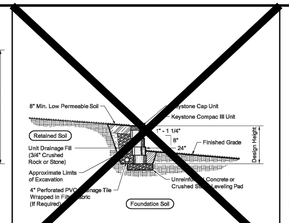
Compac III Unit - Near Vertical Setback



Note:
When site conditions require, wrap drainage tile in 3/4" aggregate and filter fabric with drainage composite or aggregate back drain system, as directed by geotechnical engineer.

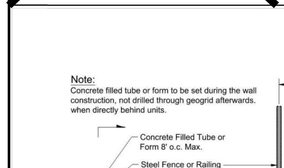
Typical Reinforced Wall Section

Compac III Unit - 1" Setback



Typical Gravity Wall Section

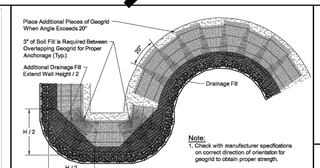
Compac III Unit - 1" Setback



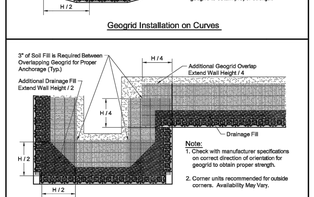
Fence Plan Detail

Fence Section & Plan Detail

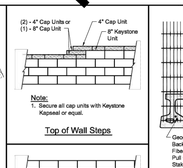
Compacii Unit - Near Vertical Setback



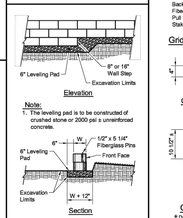
Geogrid Installation on Curves



Geogrid Installation at Corners

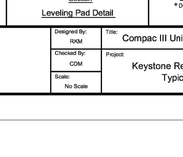


Top of Wall Steps



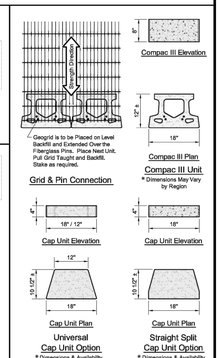
Elevation

Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



Section

Leveling Pad Detail



Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.

2. Corner units recommended for outside corners. Availability May Vary.

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Design is for internal stability of the KEYSTONE wall structure only. External stability, including but not limited to foundation and slope stability is the responsibility of the Owner. The design is based on the assumption that the materials within the retained mass, methods of construction, and quality of materials conform to KEYSTONE's specification for this project.

This drawing is being furnished for this specific project only. Any party accepting this document does so in confidence and agrees that it shall not be duplicated in whole or in part, nor disclosed to others without the consent of Keystone Retaining Wall Systems, Inc.

No.	Date	Revision	By

KEYSTONE RETAINING WALL SYSTEMS

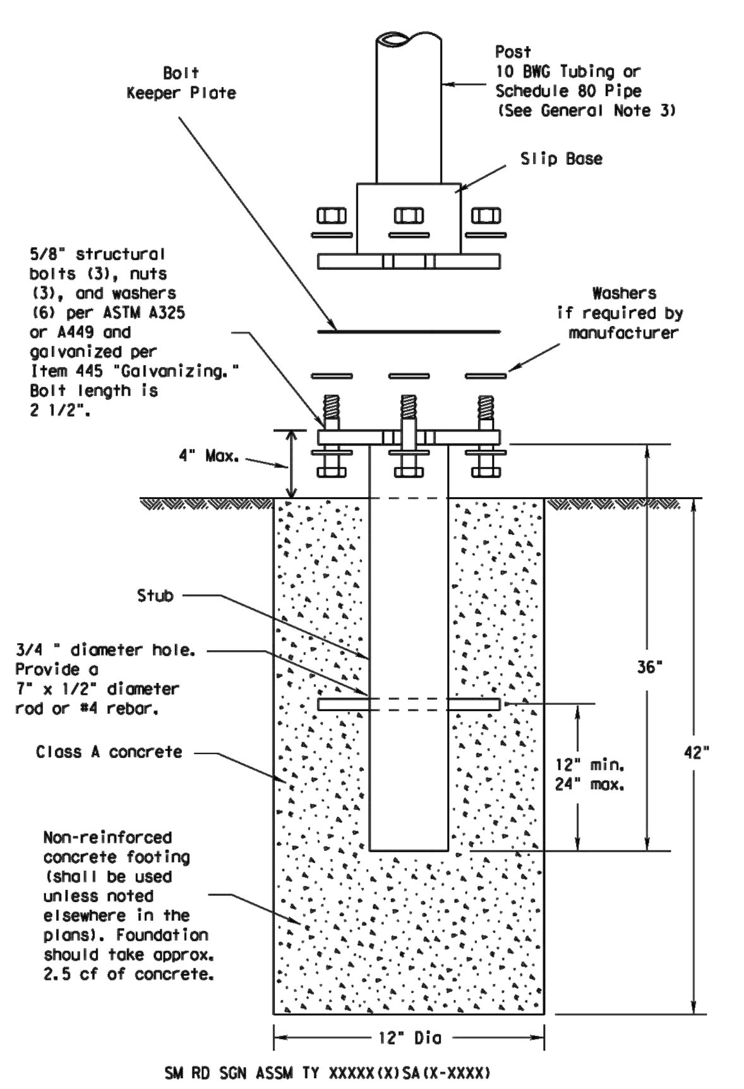
A CRH COMPANY

4444 W 78th Street
Minneapolis, MN 55435
952-897-1040

Designed By: RKM	Title: Compac III Unit - Straight Face Details	Date:
Checked By: CDM	Project: Keystone Retaining Wall Systems Typical Wall Details	Project No:
Scale: No Scale		Drawing No:

Date: Apr 13, 2026, 4:34pm User: ID: C:\Develop\Proj\2025_KCI\00049614_002 Hickory_Ridge_Ph2\2_Subdivision\Cad\00049614_002 SHEET DETAILS.dwg

TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. http://www.txdot.gov/business/producer_list.htm The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:

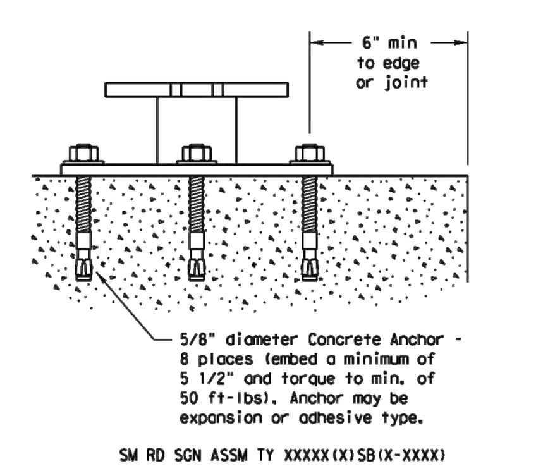
1. Slip base shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
2. Material used as post with this system shall conform to the following specifications:
   10 BWG Tubing (2.875" outside diameter)
   0.134" nominal wall thickness
   Seamless or electric-resistance welded steel tubing or pipe
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   20% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
   Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
   Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
   Schedule 80 Pipe (2.875" outside diameter)
   0.276" nominal wall thickness
   Steel tubing per ASTM A500 Gr C
   Other seamless or electric-resistance welded steel tubing or pipe with equivalent outside diameter and wall thickness may be used if they meet the following:
   46,000 PSI minimum yield strength
   62,000 PSI minimum tensile strength
   21% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of 0.248" to 0.304"
   Outside diameter (uncoated) shall be within the range of 2.855" to 2.895"
   Galvanization per ASTM A123
3. See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: http://www.txdot.gov/publications/traffic.htm
4. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

ASSEMBLY PROCEDURE

Foundation
1. Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
4. Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
5. The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

Support
1. Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
2. Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

CONCRETE ANCHOR



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-1)-08

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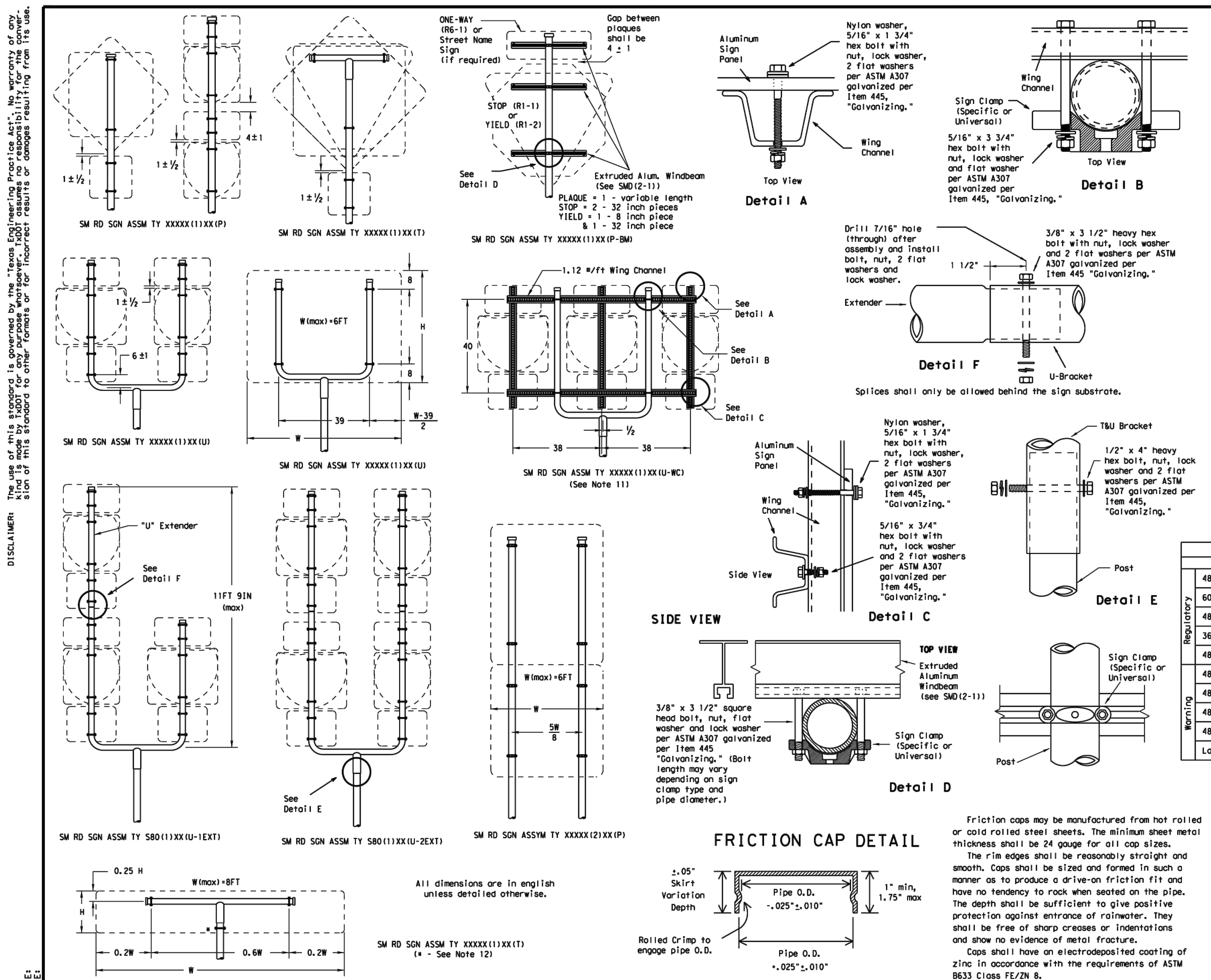

Friction caps may be manufactured from hot rolled or cold rolled steel sheets. The minimum sheet metal thickness shall be 24 gauge for all cap sizes. The rim edges shall be reasonably straight and smooth. Caps shall be sized and formed in such a manner as to produce a drive-on friction fit and have no tendency to rock when seated on the pipe. The depth shall be sufficient to give positive protection against entrance of rainwater. There shall be free of sharp creases or indentations and show no evidence of metal fracture. Caps shall have an electrodeposited coating of zinc in accordance with the requirements of ASTM B633 Class FE/ZN 8.

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional route markers may be added vertically, provided the total sign area does not exceed the maximum allowable amount per Note 1.
11. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.
13. Sign blanks shall be the sizes and shapes shown on the plans.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-2)-08

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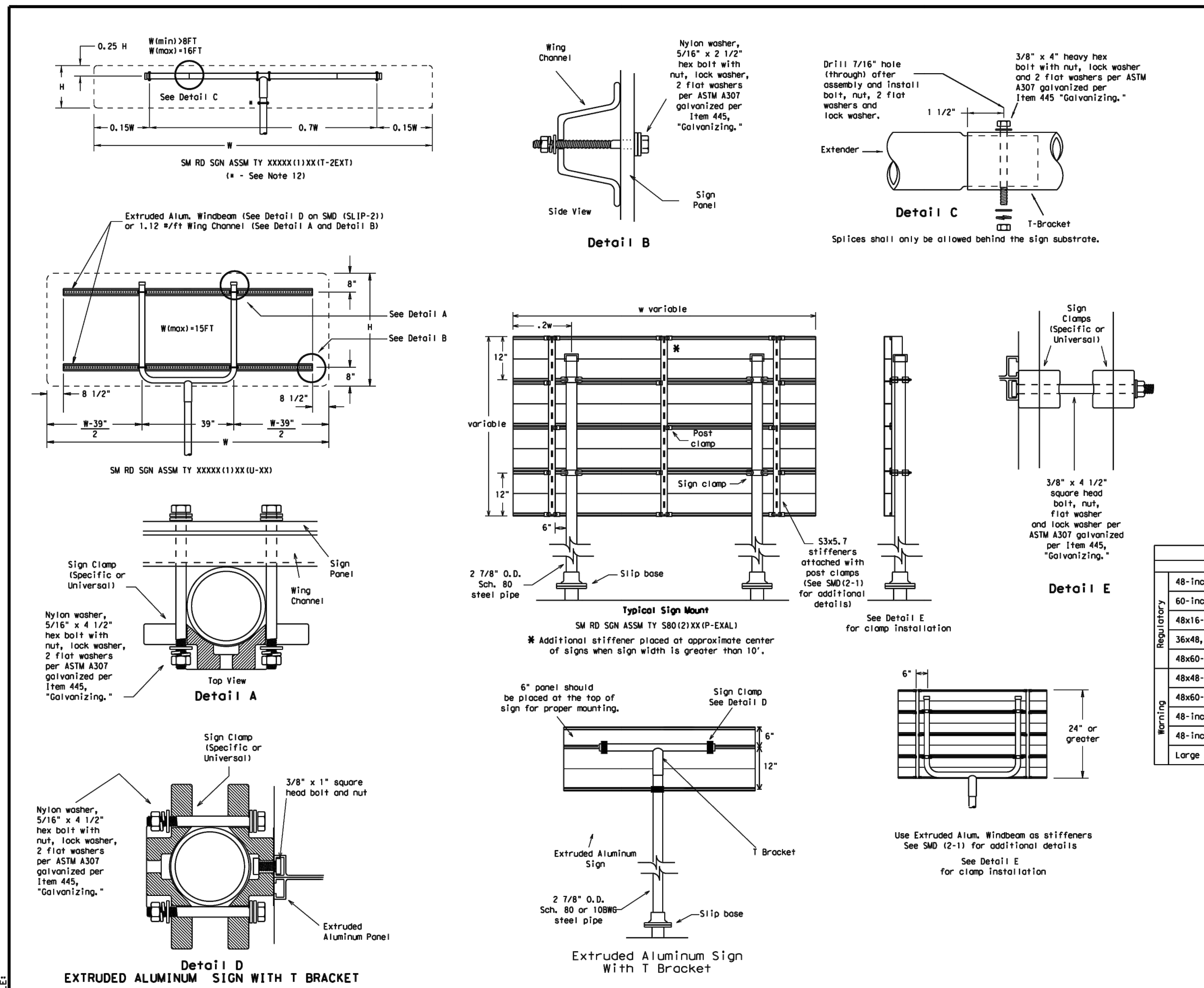

GENERAL NOTES:

1.

SIGN SUPPORT	# OF POSTS	MAX. SIGN AREA
10 BWG	1	16 SF
10 BWG	2	32 SF
Sch 80	1	32 SF
Sch 80	2	64 SF

2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Additional sign clamp required on the "T-bracket" post for 24 inch height signs. Place the clamp 3 inches above bottom of sign when possible.
11. Sign blanks shall be the sizes and shapes shown on the plans.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT		
	SIGN DESCRIPTION	SUPPORT
Regulatory	48-inch STOP sign (R1-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	60-inch YIELD sign (R1-2)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	48x16-inch ONE-WAY sign (R6-1)	TY 10BWG(1)XX(T) TY 10BWG(1)XX(P-BM)
	36x48, 48x36, and 48x48-inch signs	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
Warning	48x48-inch signs (diamond or square)	TY 10BWG(1)XX(T)
	48x60-inch signs	TY S80(1)XX(T)
	48-inch Advance School X-ing sign (S1-1)	TY 10BWG(1)XX(T)
	48-inch School X-ing sign (S2-1)	TY 10BWG(1)XX(T)
	Large Arrow sign (W1-6 & W1-7)	TY 10BWG(1)XX(T)

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
TRIANGULAR SLIPBASE SYSTEM

SMD(SLIP-3)-08

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9-08 REVISIONS | CONT | SECT | JOB | HIGHWAY | DIST | COUNTY | SHEET NO.

26D

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

Post Type

FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
TWT = Thin-Walled Tubing (see SMD(TWT))
10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

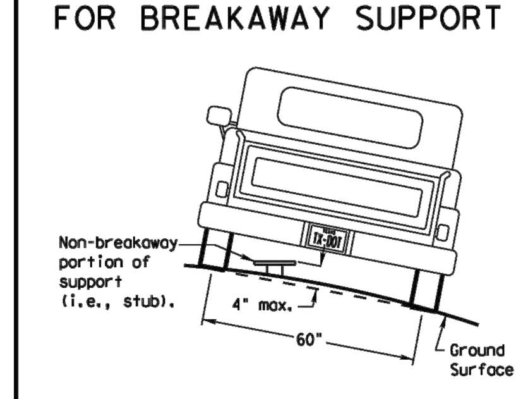
Anchor Type

UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
WS = Wedge Anchor Steel - (see SMD(TWT))
WP = Wedge Anchor Plastic (see SMD(TWT))
SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation

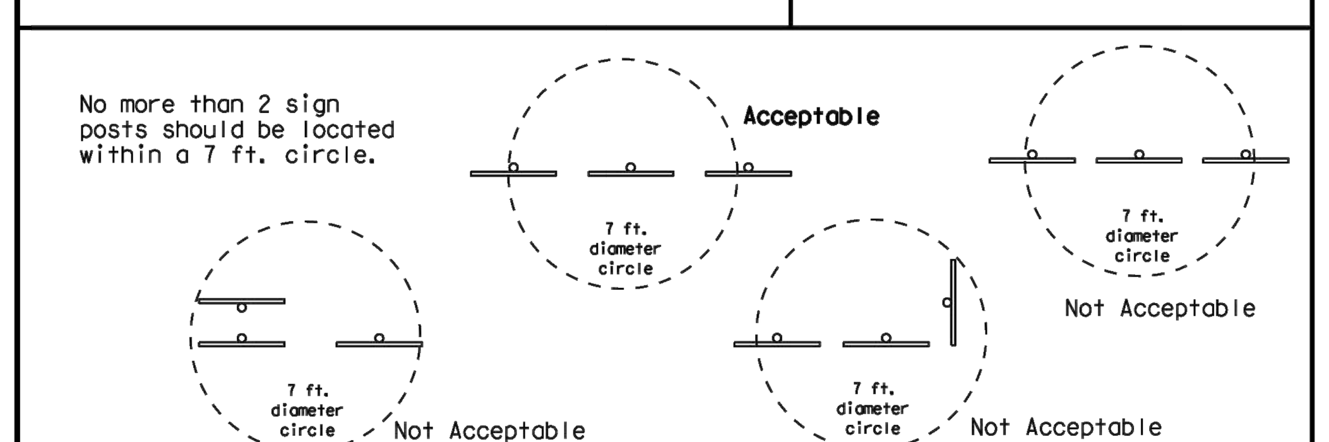
P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
IF REQUIRED
1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT

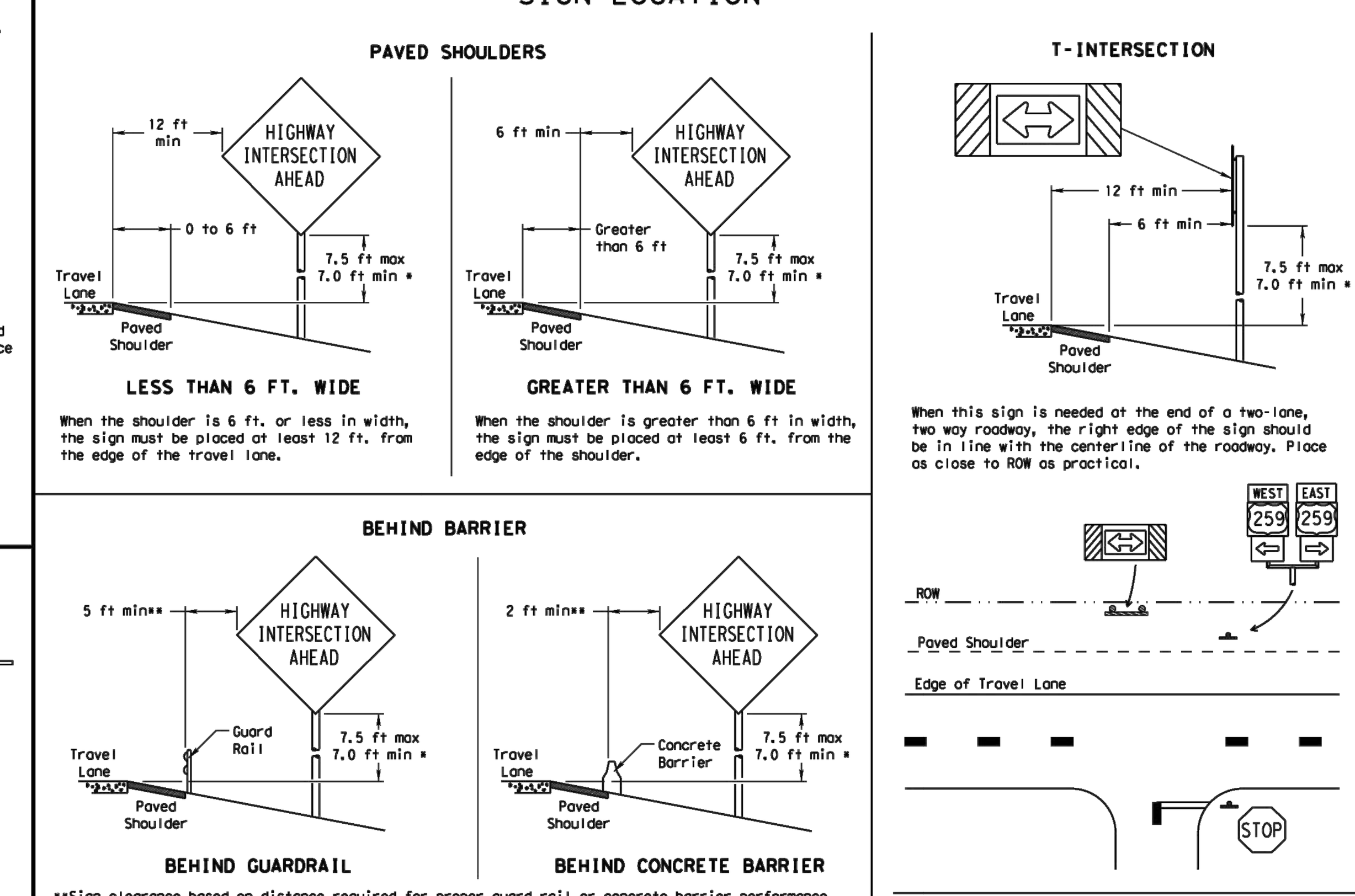


To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

No more than 2 sign posts should be located within a 7 ft. circle.



SIGN LOCATION



* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

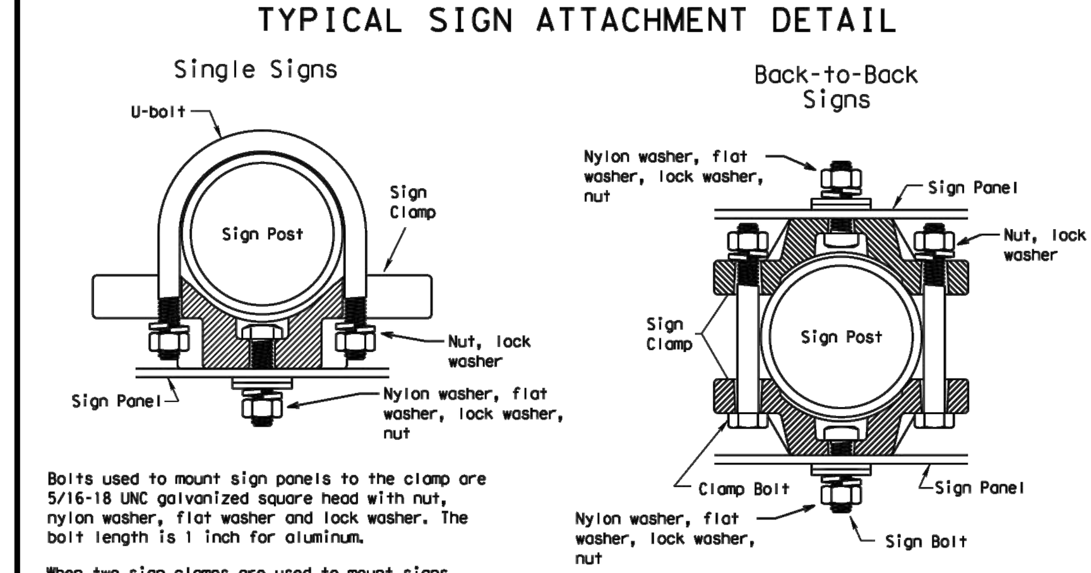
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm

TYPICAL SIGN ATTACHMENT DETAIL

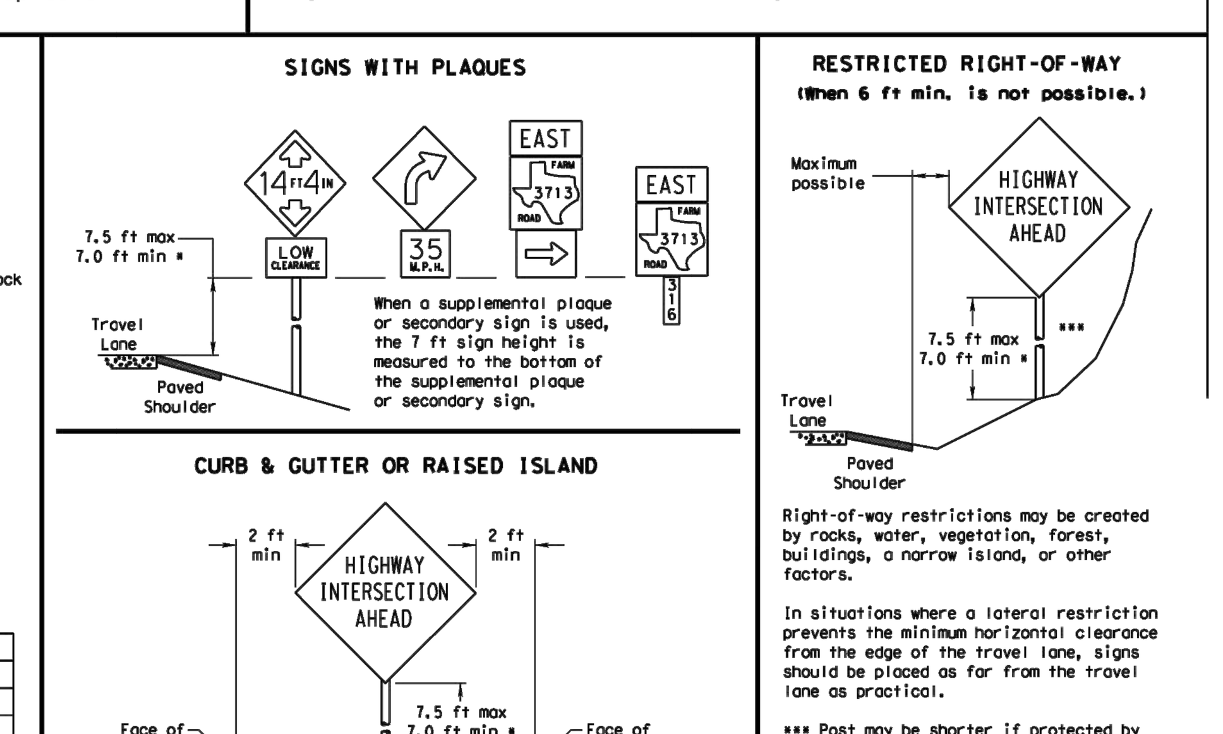


Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2" or 4"
3" nominal	3 1/2 or 4"	4 1/2"



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
GENERAL NOTES & DETAILS

SMD(GEN)-08

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9-08 REVISIONS | CONT | SECT | JOB | HIGHWAY | DIST | COUNTY | SHEET NO.

26A

REV	DATE	DESCRIPTION

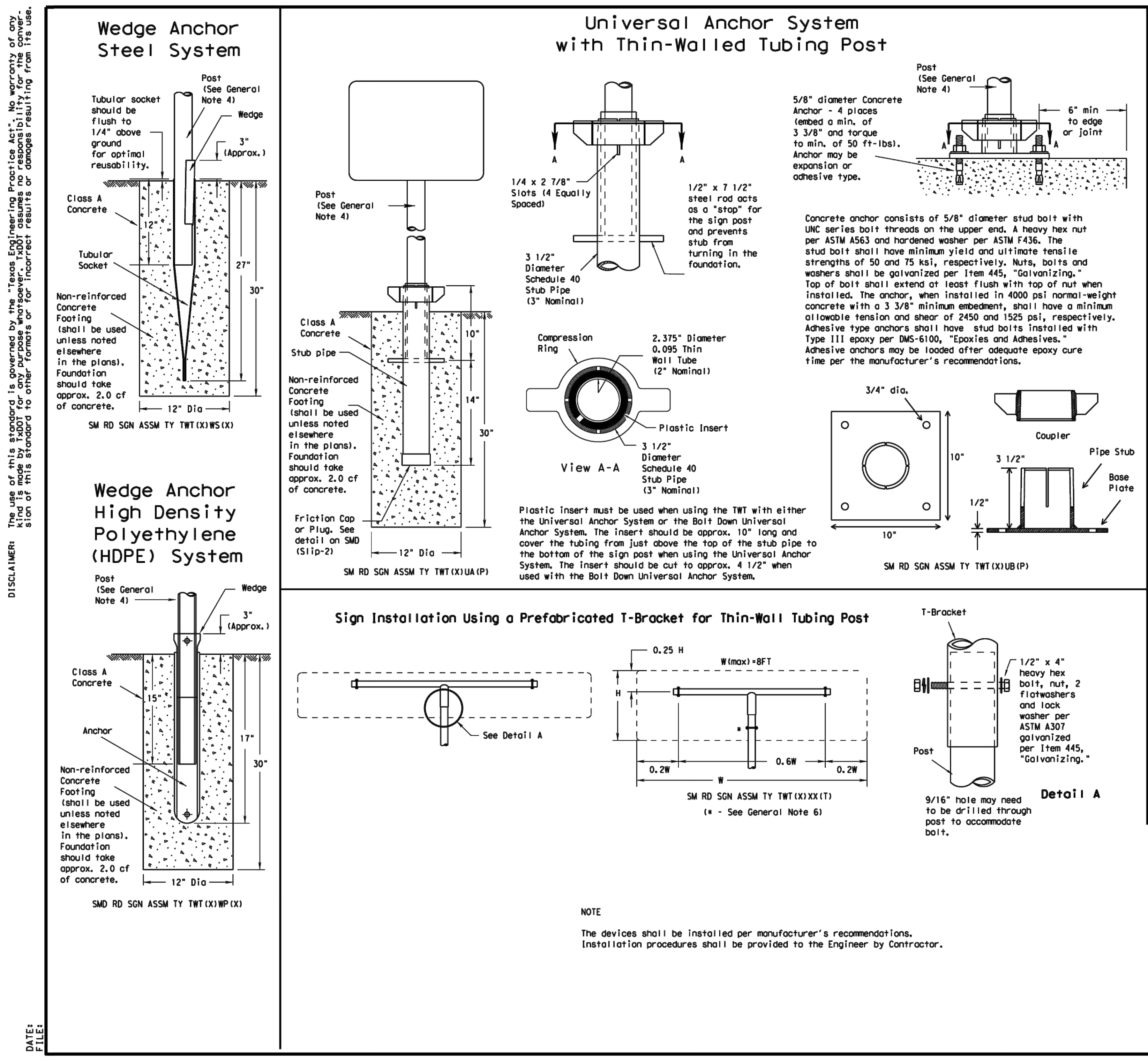
FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SIGN DETAILS

DRAFTING:	N.M./C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
516



GENERAL NOTES:

1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximaely 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

SMD(TWT)-08

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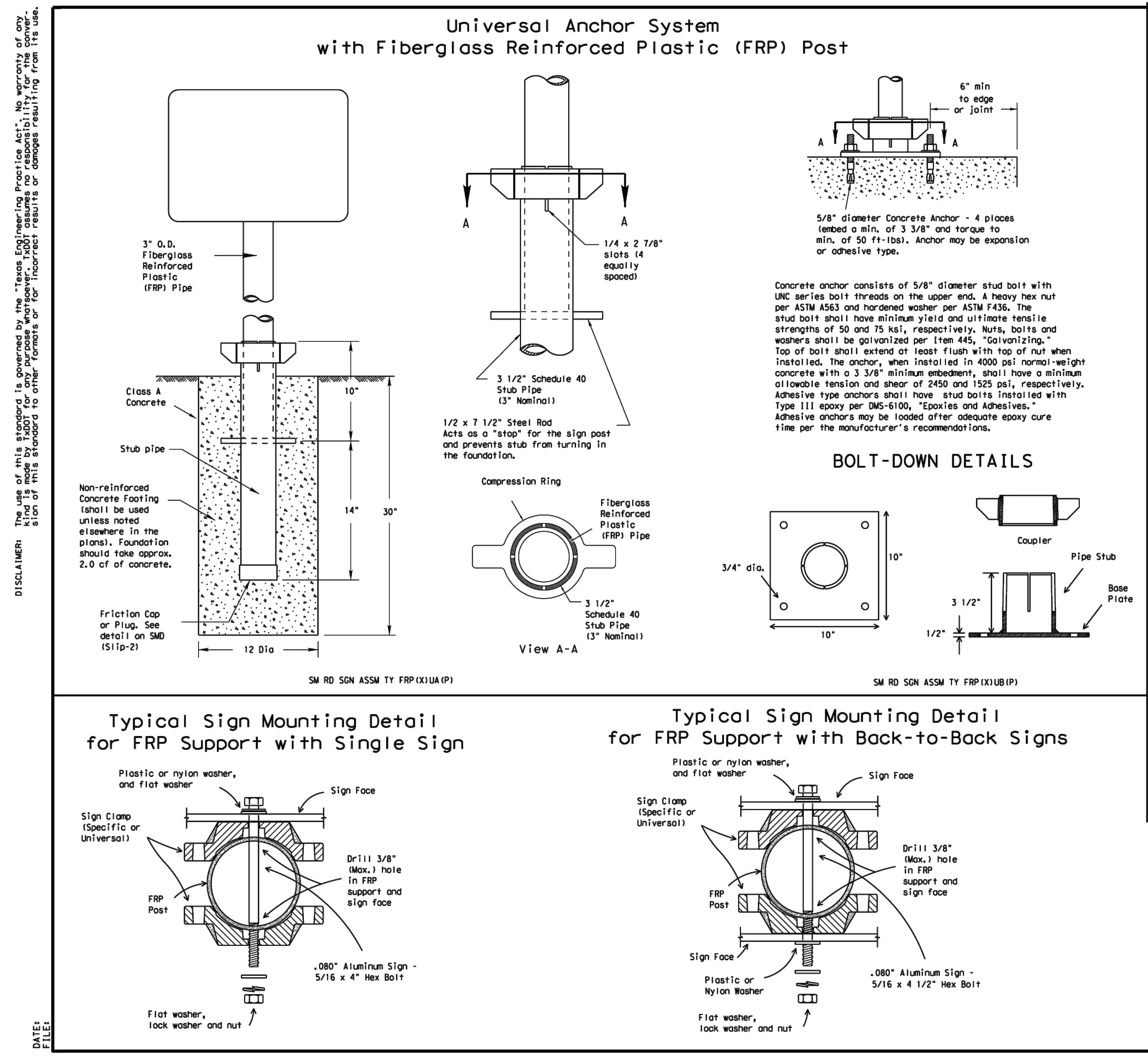

GENERAL NOTES:

1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

BOLT DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Attach sign to FRP post.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

SMD(FRP)-08

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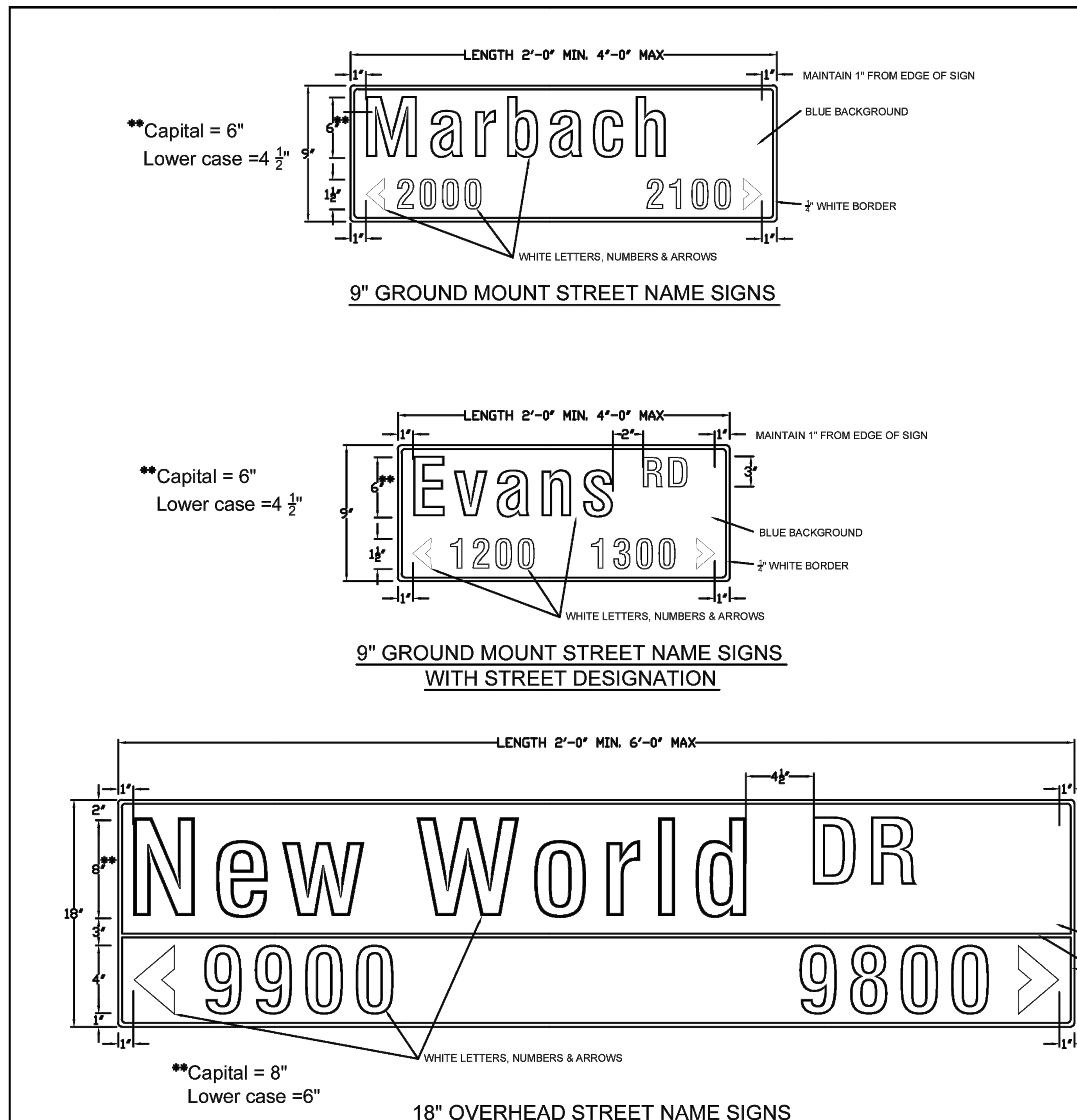


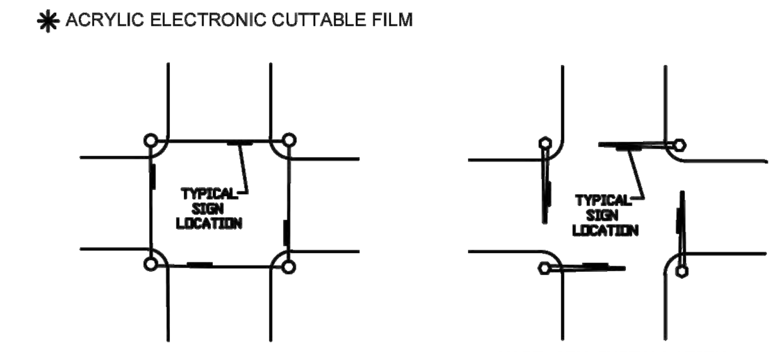
9" GROUND MOUNT STREET NAME SIGNS

9" GROUND MOUNT STREET NAME SIGNS WITH STREET DESIGNATION

18" OVERHEAD STREET NAME SIGNS

	18" OVERHEAD SIGN	9" GROUND MOUNT SIGNS
HEIGHT	18" (381 mm)	9" (228 mm)
LENGTH	48" (1200 mm) MIN. 72" (1800 mm) MAX. 1' (300mm) INCREMENTS OF LENGTH	24" (600 mm) MIN. 48" (1200 mm) MAX. 6" (150mm) INCREMENTS OF LENGTH
THICKNESS	0.125" (3 mm)	
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209 GOLD CHROMATE FINISH	
SIGN FACE MATERIALS	BLUE FILM ✱ OVER DIAMOND GRADE - ASTM Type XI Non-Fluorescent	BLUE FILM ✱ OVER HIGH INTENSITY PRISMATIC- ASTM Type IV
LEGENDS AND SYMBOLS	SERIES D, B OR C IF NAME OTHERWISE EXCEEDS MAXIMUM SIGN LENGTH	
COLOR	WHITE LEGEND ON BLUE BACKGROUND	
LETTER TRACKING	17% (USUAL) 10% (MIN.)	10%

✱ ACRYLIC ELECTRONIC CUTTABLE FILM



SIGN FACE MATERIALS SHALL CONFORM TO:

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION OF ROADS & BRIDGES ON FEDERAL HIGHWAY PROJECTS - FP-03 U.S. CUSTOMARY UNITS SECTION 718
2. GENERAL SERVICES ADMINISTRATION FEDERAL SPECIFICATIONS L-S-300C
3. ASTM D 4956 - 09e1

Bexar County Public Works
Street Name Sign Details
SHEET 46a

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

REV | DATE | DESCRIPTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #10194365

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SIGN DETAILS

DRAFTING: N.M.C.C.		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:			09/2025
KCI JOB #:			00049614_002

SHEET:
517

SEDIMENTATION & EROSION CONTROL PLANS
for
HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7

GENERAL NOTES

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

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

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

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

5. Minimum Testing Schedule:

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

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

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

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

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

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

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

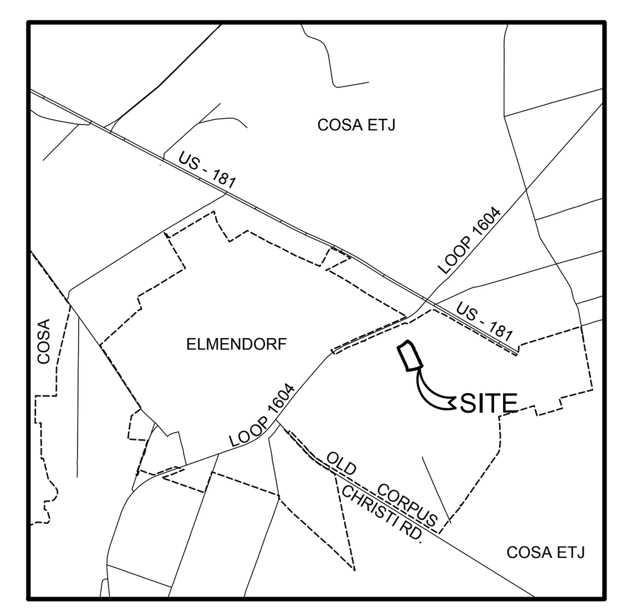
12. The contractor shall not place any waste material in the 100-year flood plain without first obtaining an approved Flood Plain Development Permit.

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

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

TRENCH EXCAVATION SAFETY PROTECTION

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



LOCATION MAP
NOT TO SCALE

SHEET INDEX

SHEET	TITLE
600	SEDIMENTATION & EROSION CONTROL COVER
601	SEDIMENTATION & EROSION CONTROL PLAN
602	SEDIMENTATION & EROSION CONTROL NARRATIVE
603	SEDIMENTATION AND EROSION CONTROL DETAILS

LEGEND

TEMPORARY SEDIMENT CONTROL FENCE	SCF
TEMPORARY ROCK FILTER DAM	RFD
TYPE 1 CONSTRUCTION EXIT	
CONCRETE WASHOUT PIT	
GRAVEL FILTER BAGS	
LIMITS OF CONSTRUCTION	LOC
GRADING SLOPE ARROW	

OWNER/DEVELOPER:

DAVIDSON HOMES, LLC
2801 PARIA CYN
CONVERSE, TX 78109

PREPARED BY:

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD, SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

REV	DATE	DESCRIPTION

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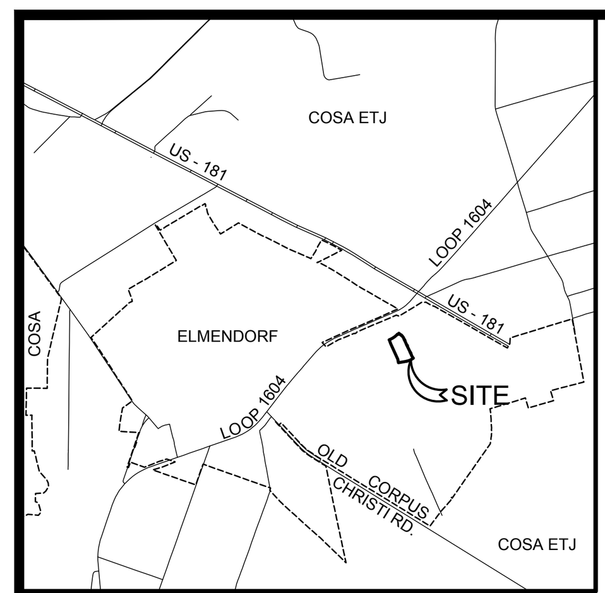
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SEDIMENTATION & EROSION CONTROL COVER

DRAFTING: N.M.C.C		CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
600



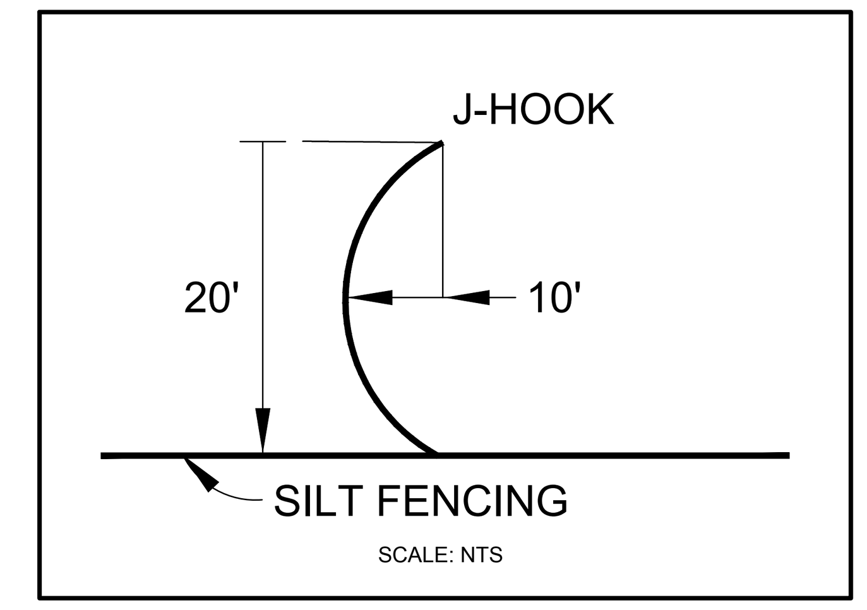
LOCATION MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

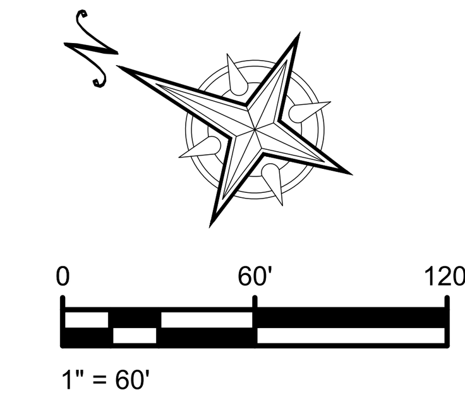
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL. REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

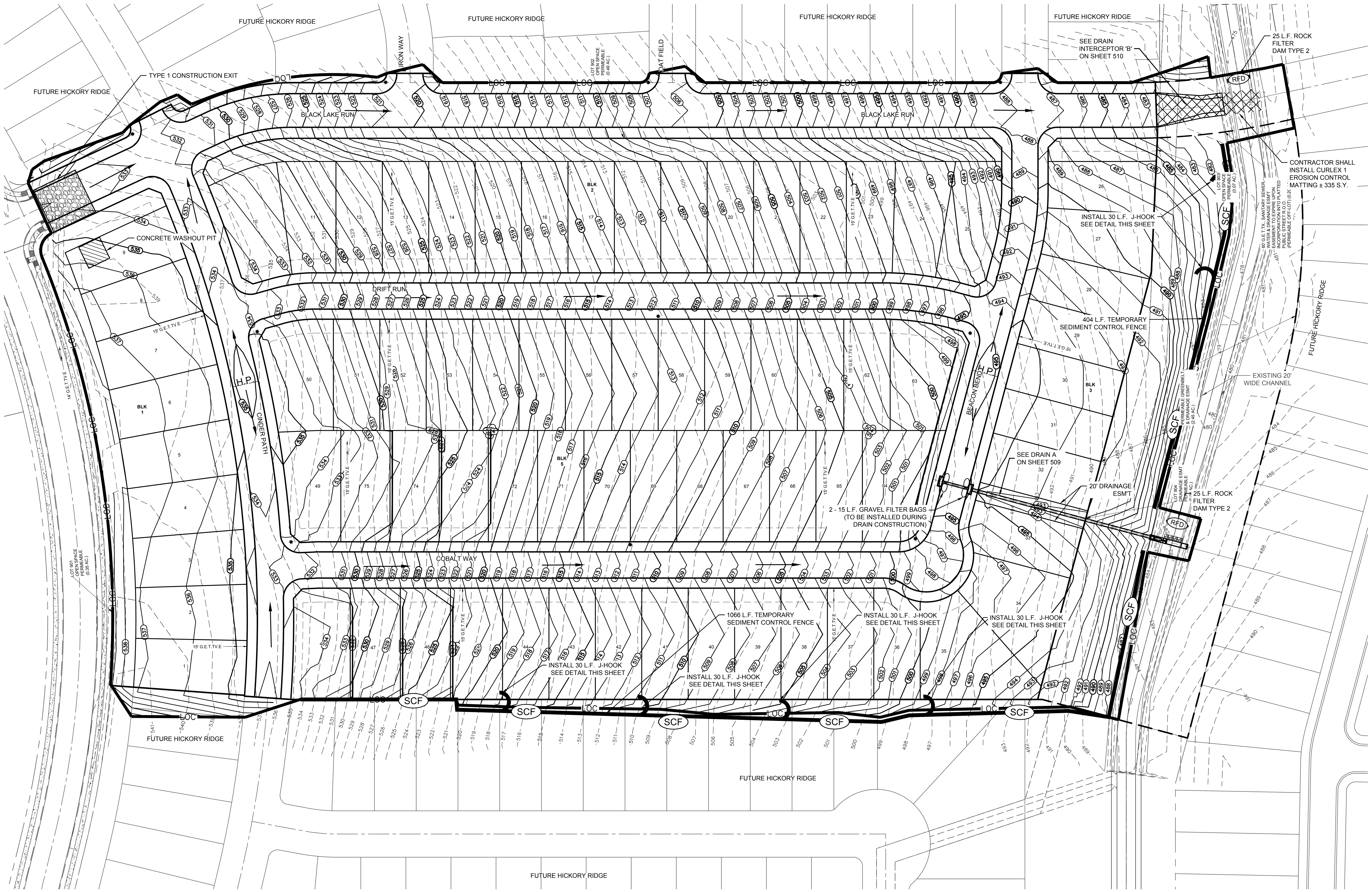
LEGEND

TEMPORARY SEDIMENT CONTROL FENCE	SCF
TEMPORARY ROCK FILTER DAM	RFD
TYPE 1 CONSTRUCTION EXIT	
CONCRETE WASHOUT PIT	
GRAVEL FILTER BAGS	
LIMITS OF CONSTRUCTION	LOC
GRADING SLOPE ARROW	



J-HOOK DETAIL





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

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

2. A RAIN GAUGE SHALL BE PROVIDED BY THE CONTRACTOR AND LOCATED AT THE PROJECT SITE. WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE (AS MEASURED BY THE PROJECT SITE GAUGE) THE CONTRACTOR AND INSPECTOR WILL INSPECT THE ENTIRE PROJECT TO DETERMINE THE CONDITION OF THE CONTROL MEASURES. SEDIMENT WILL BE REMOVED AND DEVICES REPAIRED AS SOON AS PRACTICABLE BUT NO LATER THAN 7 DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE BEING CAUSED BY REPAIR OPERATIONS.

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

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

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

6. THE NPDES NOTICE OF INTENT (N.0.I.) SHALL BE SIGNED AND SUBMITTED BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO THE CONTRACTOR MOVING ONTO THE SITE.

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

NOTES:

1. DRIVEWAYS SHALL BE LOCATED ON THE HIGH SIDE OF EACH LOT.
2. FINISHED FLOOR ELEVATIONS SHALL BE A MINIMUM OF 8" ABOVE FINAL GRADE AFTER PLACEMENT OF TOP SOIL AND SOD.
3. FINAL LOT SWALES SHALL BE PLACED WITH HOME CONSTRUCTION.

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
2806 W. BITTERS RD., SUITE 218
SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SEDIMENTATION & EROSION CONTROL PLAN

DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET:
601

EROSION AND SEDIMENT CONTROLS

SITE DESCRIPTION

PROJECT LIMITS: 20.98 acre unit located south of the intersection of 1604 and SAGE CMN

Latitude: 29°15'9.73"N // Longitude: 98°18'11.26"W

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

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

TOTAL PROJECT AREA: 20.98 AC

TOTAL AREA TO BE DISTURBED: 20.98 out of 20.98 (100%)

WEIGHTED RUNOFF COEFFICIENT (PRE-CONSTRUCTION): 0.49

WEIGHTED RUNOFF COEFFICIENT (POST-CONSTRUCTION): 0.69

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: The existing topsoil is aluf sand. The exisitng site is nearly 100% vegetated.

NAME OF RECEIVING WATERS: The storm water will flow into Calaveras Creek.

SOIL STABILIZATION PRACTICES:

- [ ] TEMPORARY SEEDING
- [x] PERMANENT PLANTING, SODDING, OR SEEDING
- [ ] MULCHING
- [ ] SOIL RETENTION BLANKET
- [ ] BUFFER ZONES
- [ ] PRESERVATION OF NATURAL RESOURCES

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

STRUCTURAL PRACTICES:

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

OTHER:

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

The order of activities will be as follows:

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

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

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

OTHER EROSION AND SEDIMENT CONTROLS:

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

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

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

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

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

OFFSITE VEHICLE TRACKING:

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

PERMITS:

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

OWNERS CERTIFICATION

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

SIGNATURE ____________________ DATE ____________________

CONTRACTOR'S CERTIFICATION

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

SIGNATURE (CONTRACTOR) ____________________ DATE ____________________

REV	DATE	DESCRIPTION

FOR BIDDING PURPOSES ONLY
NOT FOR CONSTRUCTION

KCI TECHNOLOGIES, INC.
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SAN ANTONIO, TEXAS 78248
PHONE: (210) 641-9999
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REGISTRATION #F-10573 / #101943-65

HICKORY RIDGE SUBDIVISION
PHASE 2 UNIT 7
SEDIMENTATION & EROSION CONTROL NARRATIVE

DRAFTING:	N.M.C.C.	CHECK:	L.E.
DESIGN:	L.E.	CHECK:	M.P.S.
SUBMITTAL PHASE:			
DATE:	09/2025		
KCI JOB #:	00049614_002		

SHEET: 602

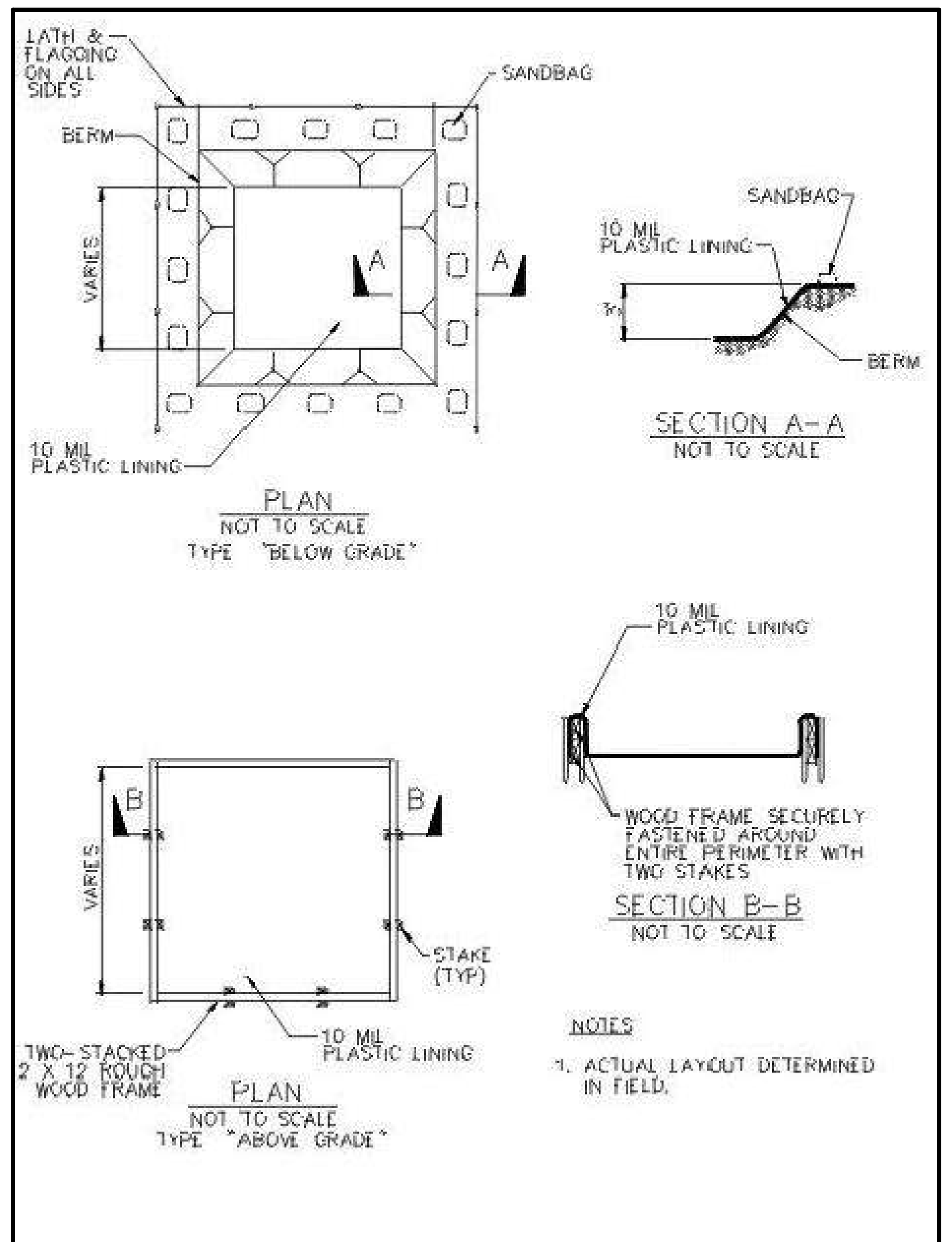

Figure 1-43 Schematics of Concrete Washout Areas

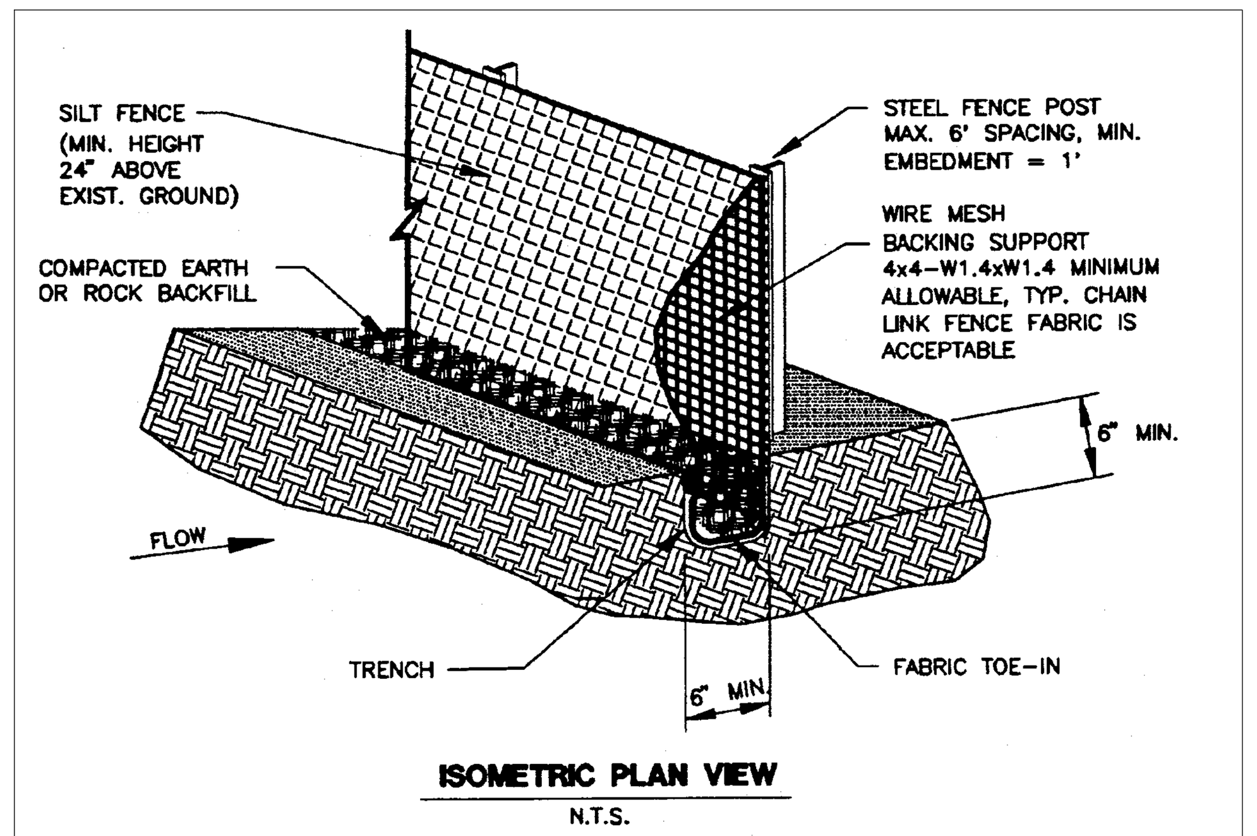

Figure 1-26 Schematic of a Silt Fence Installation (NCTCOG, 1993b)

GENERAL NOTES:

1. Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
2. Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft2, and Brindell hardness exceeding 140.
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. Post must be embedded a minimum of 1–foot deep and spaced not more than 8 feet on center. Where water concentrates, the maximum spacing should be 6 feet.
2. Lay out fencing down–slope of disturbed area, following the contour as closely as possible. The fence should be sited so that the maximum drainage area is ¼ 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.
4. The trench must be a minimum of 6 inches deep and 6 inches wide to allow for the silt fence fabric to be laid in the ground and backfilled with compacted material.
5. 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 ends of fabric meet.
6. Silt fence should be removed when the site is completely stabilized so as not to block or impede storm flow or drainage.

SILT FENCE

1.4.6 High Service Rock Berms

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

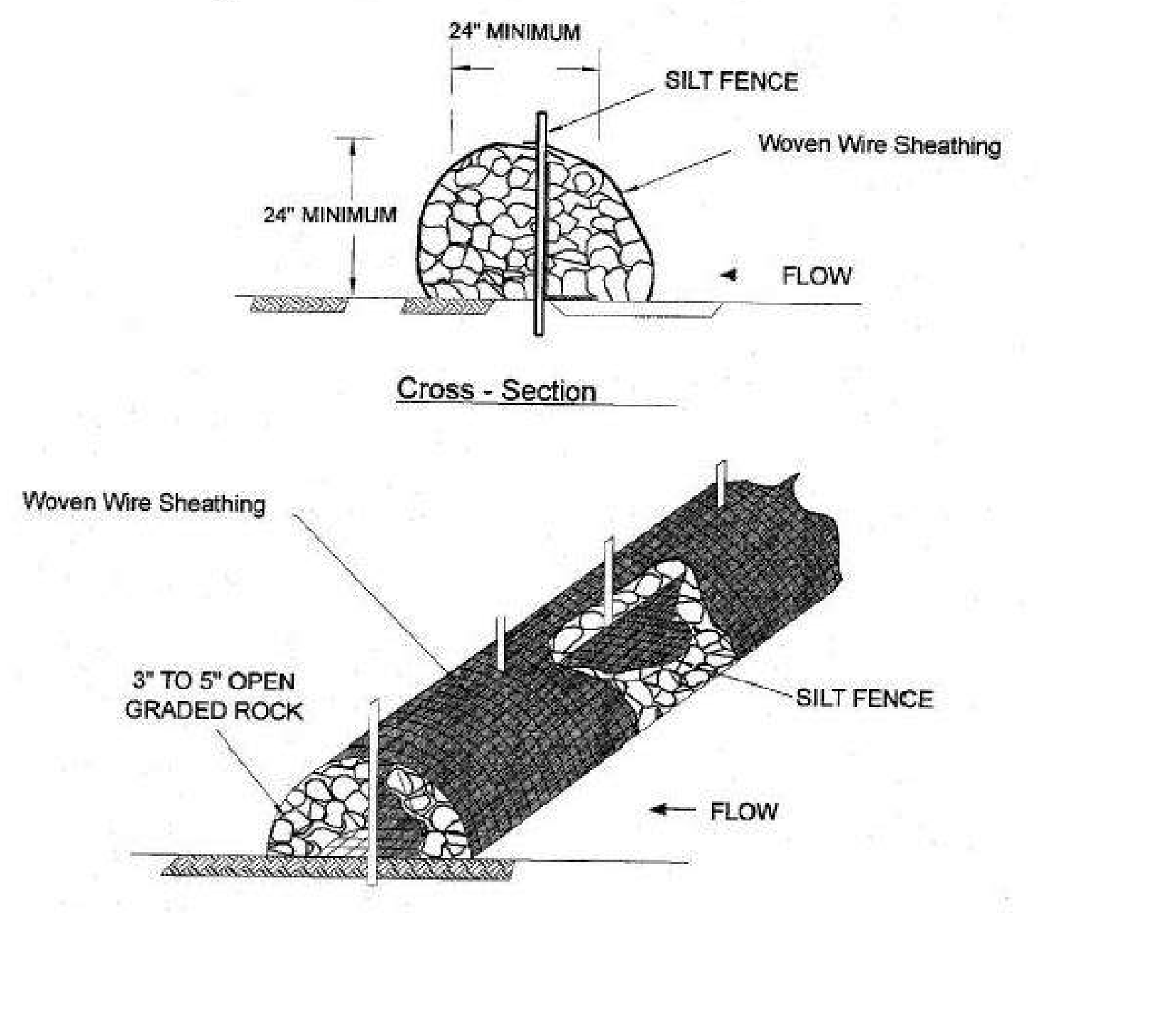

Figure 1-29 Schematic Diagram of High Service Rock Berm (LCRA, 1998)

1. Silt fence material should be polypropylene, polyethylene or polyamide woven or nonwoven fabric. The fabric width should be 36 inches, with a minimum unit weight of 4.5 oz/yd, mullen burst strength exceeding 190 lb/in2, ultraviolet stability exceeding 70%, and minimum apparent opening size of U.S. Sieve No. 30.
2. Fence posts should be made of hot rolled steel, at least 4 feet long with Tee or Ybar cross section, surface painted or galvanized, minimum nominal weight 1.25 lb/ft2, and Brindell hardness exceeding 140. Rebar (either #5 or #6) may also be used to anchor the berm.
3. Woven wire backing to support the fabric should be galvanized 2"x 4" welded wire, 12 gauge minimum.
4. The berm structure should be secured with a woven wire sheathing having maximum opening of 1 inch and a minimum wire diameter of 20 gauge galvanized and should be secured with shoat rings.
5. Clean, open graded 3– to 5–inch diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5– to 8–inch diameter rocks may be used.

Installation:

1. Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1– inch openings.
2. Install the silt fence along the center of the proposed berm placement, as with a normal silt fence described in Section 2.4.3.
3. Place the rock along the sheathing on both sides of the silt fence as shown in the diagram (Figure 1–29), to a height not less than 24 inches. Clean, open graded 3 – 5"diameter rock should be used, except in areas where high velocities or large volumes of flow are expected, where 5– to 8– inch diameter rock may be used.
4. Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and the berm retains its shape when walked upon.
5. The high service rock berm should be removed when the site is revegetated or otherwise stabilized or it may remain in place as a permanent BMP if drainage is adequate.

HIGH SERVICE ROCK BERM

1. The aggregate should consist of 4 to 8 inch washed stone over a stable foundation as specified in the plan.
2. The aggregate should be placed with a minimum thickness of 8 inches.
3. The geotextile fabric should be designed specifically for use as a soil filtration media with an approximate weight of 6 oz/yd2, a mullen burst rating of 140 lb/in2, and an equivalent opening size greater than a number 50 sieve.
4. If a washing facility is required, a level area with a minimum of 4 inch diameter washed stone or commercial rack should be included in the plans. Divert wastewater to a sediment trap or basin.

Installation:

1. Avoid curves on public roads and steep slopes. Remove vegetation and other objectionable material from the foundation area. Grade crown foundation for positive drainage.
2. The minimum width of the entrance/exit should be 12 feet or the full width of exit roadway, whichever is greater.
3. The construction entrance should be at least 50 feet long.
4. If the slope toward the road exceeds 2%, construct a ridge, 6 to 8 inches high with 3:1 (H:V) side slopes, across the foundation approximately 15 feet from the entrance to divert runoff away from the public road.
5. Place geotextile fabric and grade foundation to improve stability, especially where wet conditions are anticipated.
6. Place stone to dimensions and grade shown on plans. Leave surface smooth and slope for drainage.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.
8. Install pipe under pad as needed to maintain proper public road drainage.

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

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

CONSTRUCTION EXIT

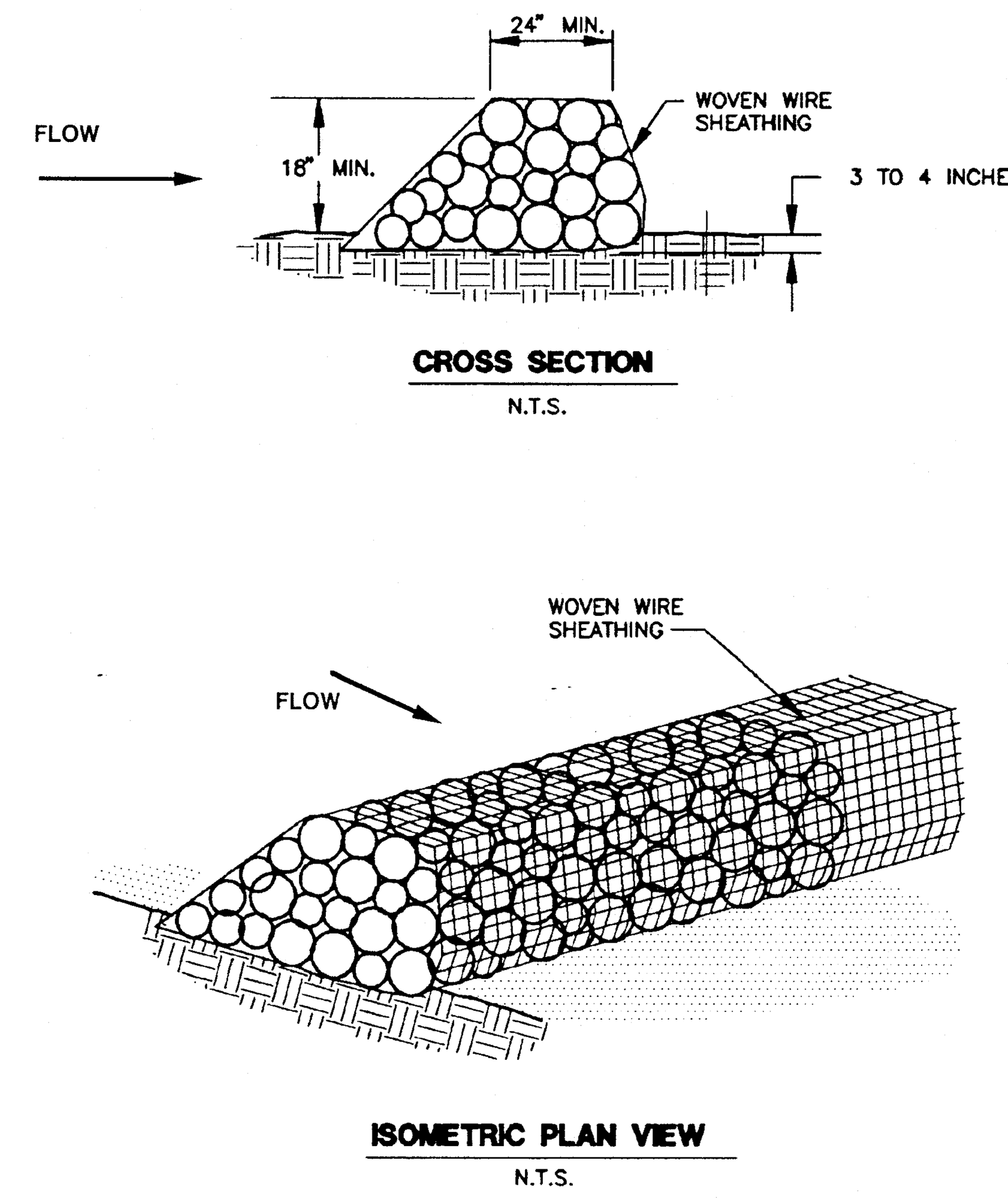

Figure 1-28 Schematic Diagram of a Rock Berm (NCTCOG, 1993)

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

Installation:

1. Lay out the woven wire sheathing perpendicular to the flow line. The sheathing should be 20 gauge woven wire mesh with 1 inch openings.
2. Berm should have a top width of 2 feet minimum with side slopes being 2:1 (H:V) or flatter.
3. Place the rock along the sheathing as shown in the diagram (Figure 1–28), to a height not less than 18".
4. Wrap the wire sheathing around the rock and secure with tie wire so that the ends of the sheathing overlap at least 2 inches, and the berm retains its shape when walked upon.
5. Berm should be built along the contour at zero percent grade or as near as possible.
6. The ends of the berm should be tied into existing upslope grade and the berm should be buried in a trench approximately 3 to 4 inches deep to prevent failure of the control.

ROCK BERM

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

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

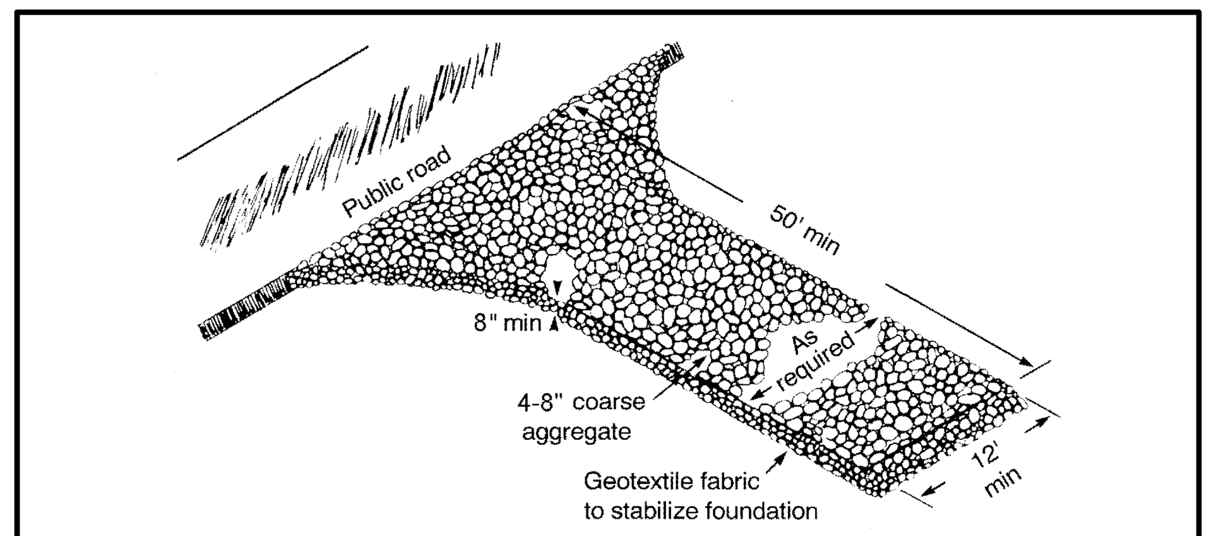

Figure 1-24 Schematic of Temporary Construction Entrance/Exit (after NC, 1993)

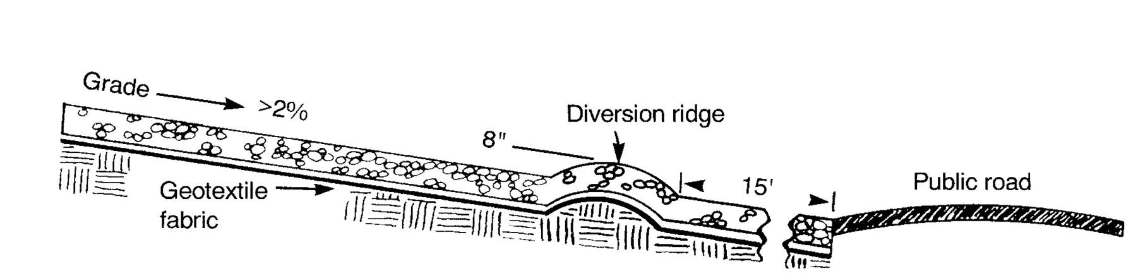

Figure 1-25 Cross-section of a Construction Entrance/Exit (NC, 1993)

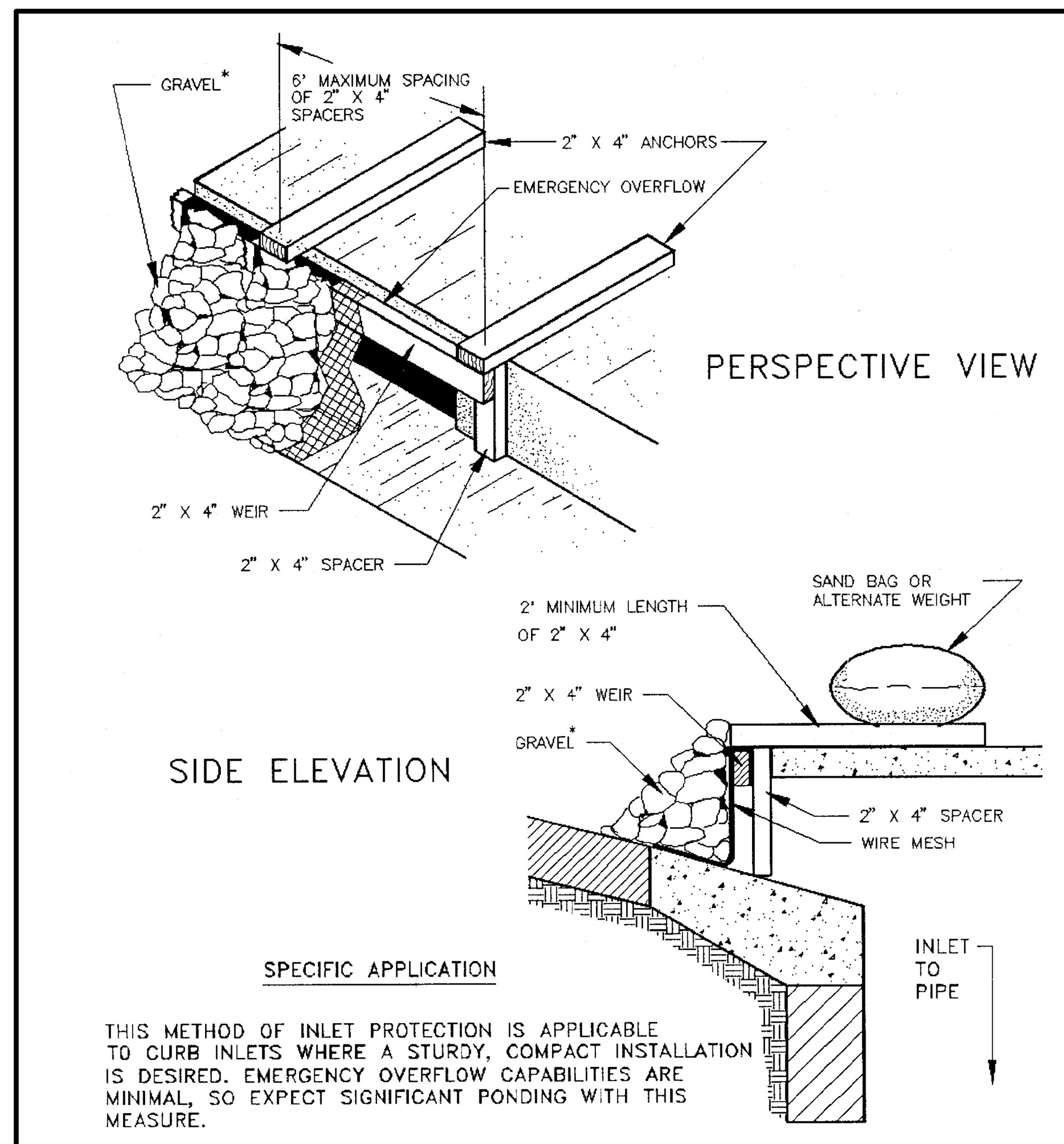

Figure 1-37 Wooden Weir Curb Inlet Protection (VA Dept of Conservation, 1992)

GENERAL NOTES:

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

CURB INLET PROTECTION (WEIR)

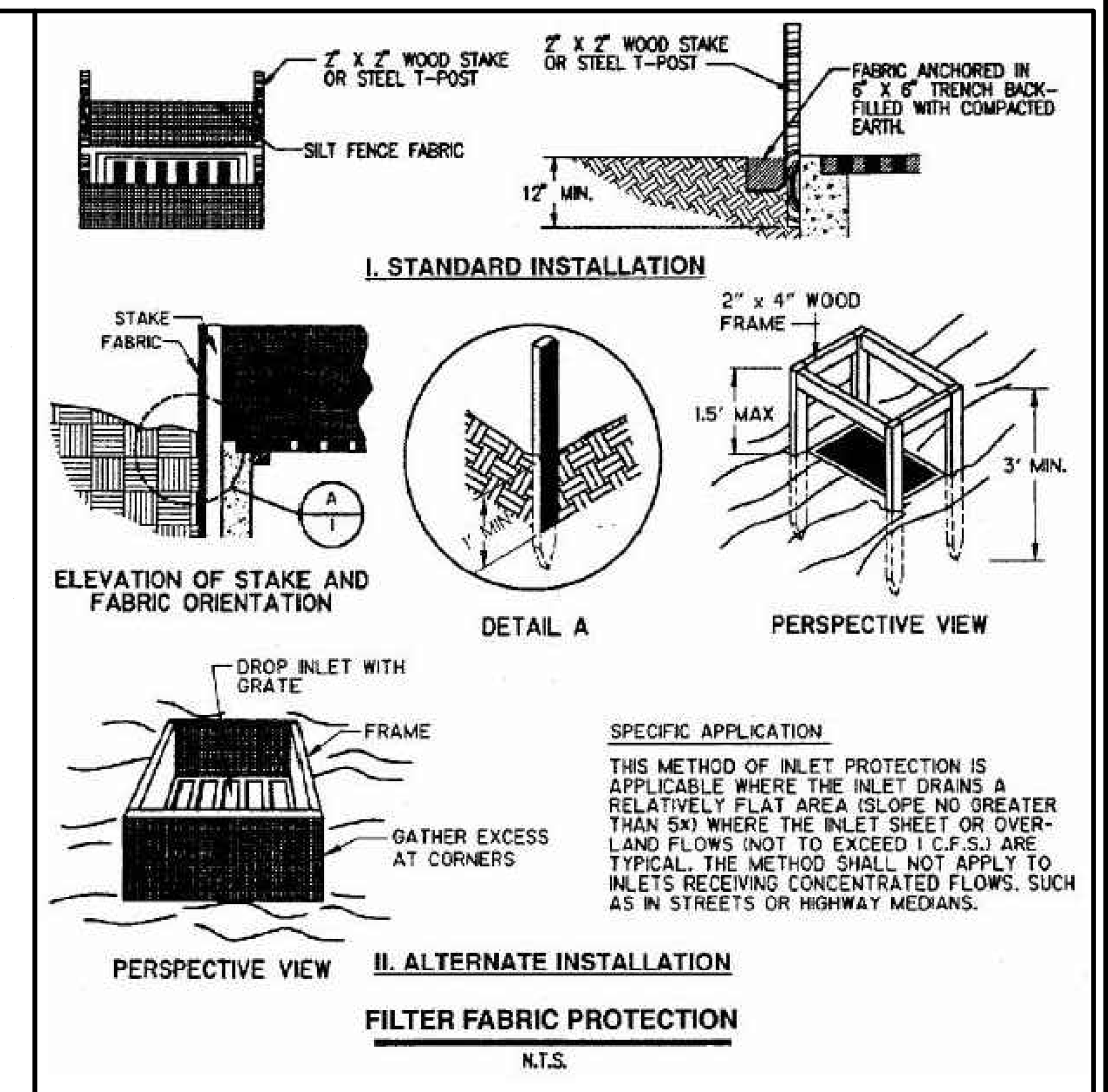

Figure 1-33 Filter Fabric Inlet Protection (NCTCOG, 1993)

GENERAL NOTES:

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

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

Guidelines for installation:

Silt Fence Drop Inlet Protection

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

INLET PROTECTION (FABRIC)

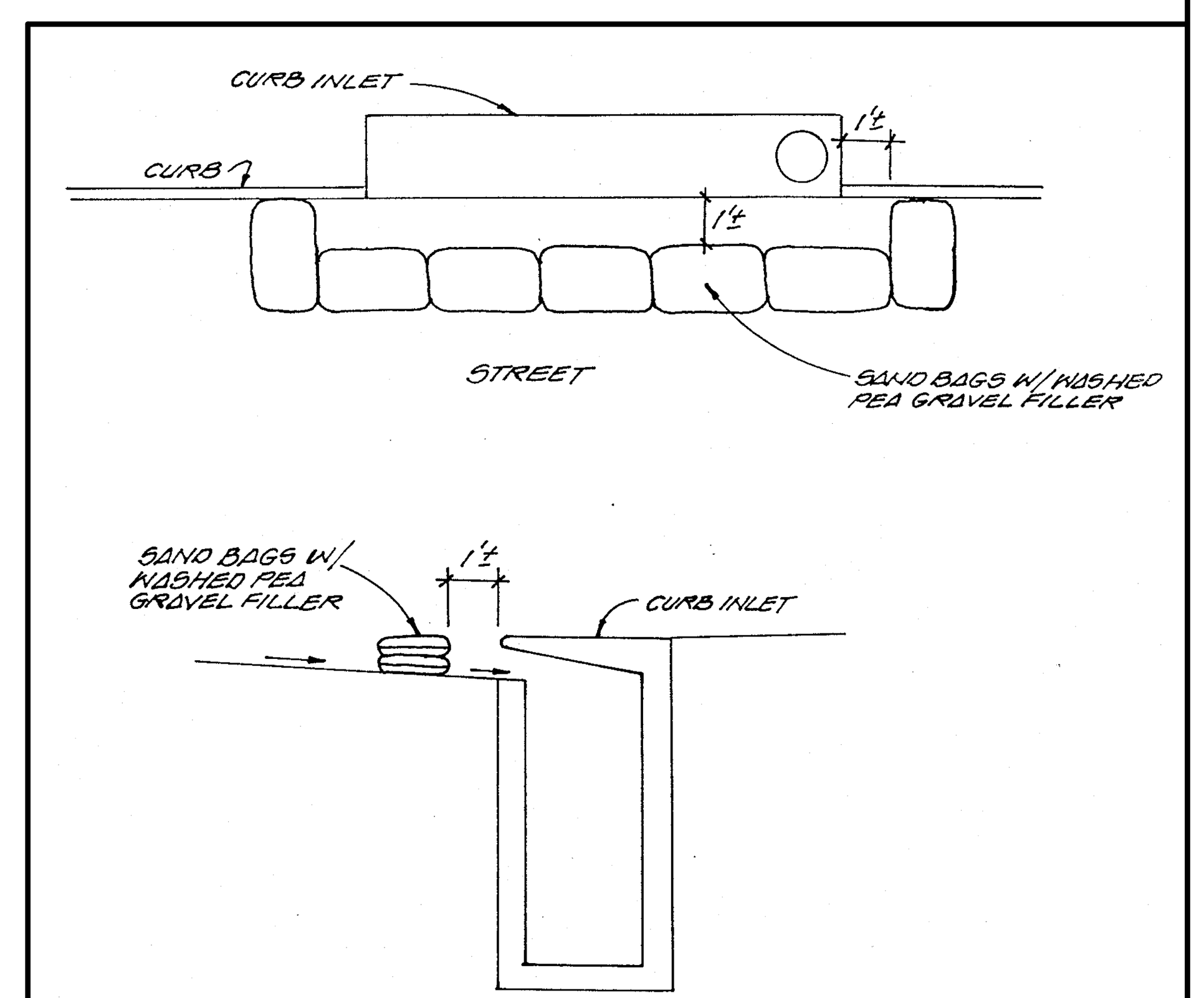

Figure 1-39 Diagram of Bagged Gravel Curb Inlet Protection (Pape-Dawson).

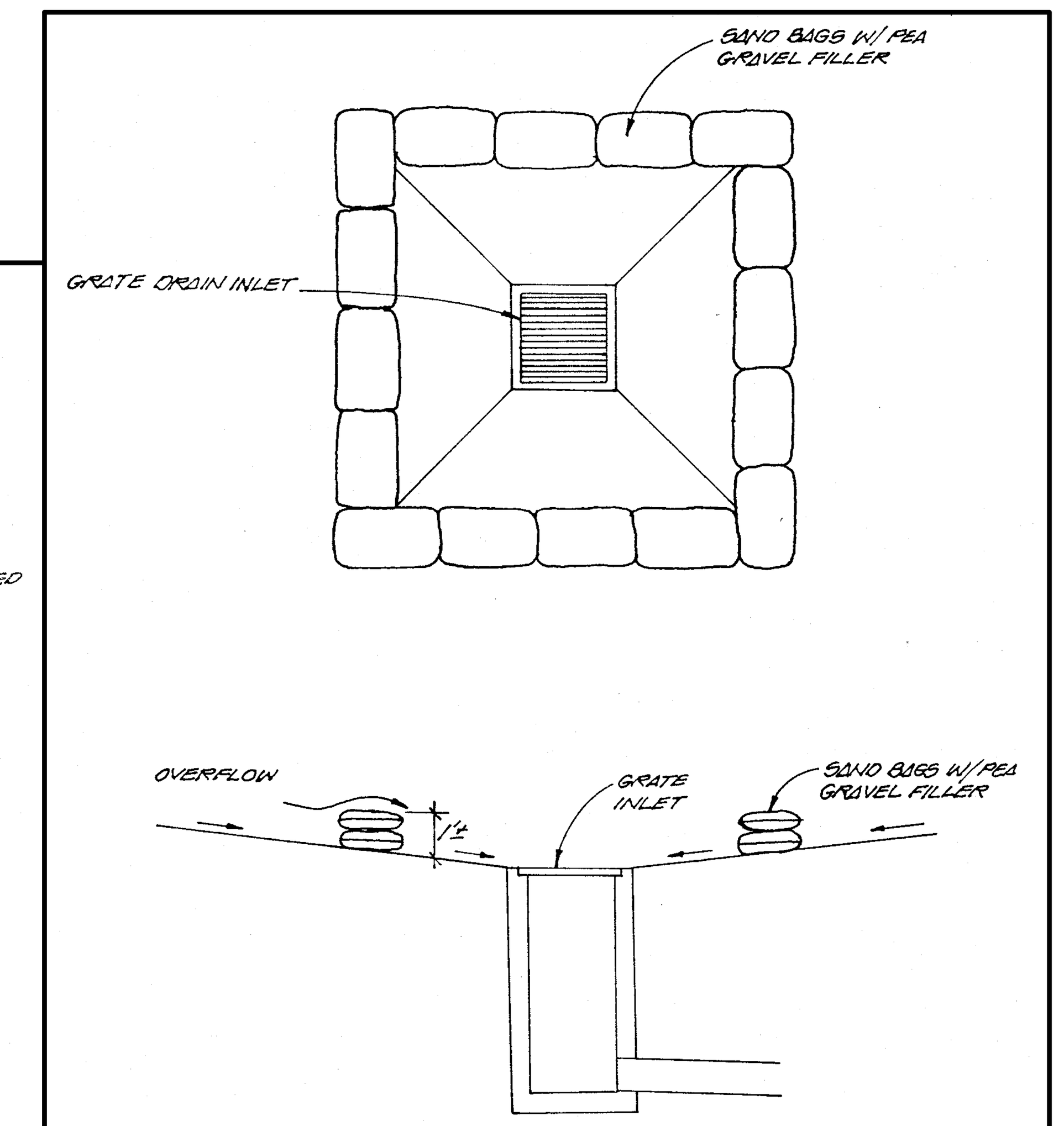

Figure 1-38 Diagram of Bagged Gravel Grate Inlet Protection (Pape-Dawson)

GENERAL NOTES:

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

INLET PROTECTION (GRAVEL FILTER BAGS)

REV	DATE	DESCRIPTION

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NOT FOR CONSTRUCTION

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HICKORY RIDGE SUBDIVISION
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SEDIMENTATION AND EROSION CONTROL DETAILS

DRAFTING: N.M./C.C.	CHECK: L.E.
DESIGN: L.E.	CHECK: M.P.S.
SUBMITTAL PHASE:	
DATE:	09/2025
KCI JOB #:	00049614_002
SHEET:	603

Date: Apr 13, 2026, 4:13pm User ID: Lance.Elling File: L:\develop\Proj_2025_KCI\00049614_002 Hickory_Ridge_Ph2U7_Subdivision\Cadd\00049614_002 602–603 SED NOTES & DETAILS.dwg