BRAZOS OAKS PHASE II

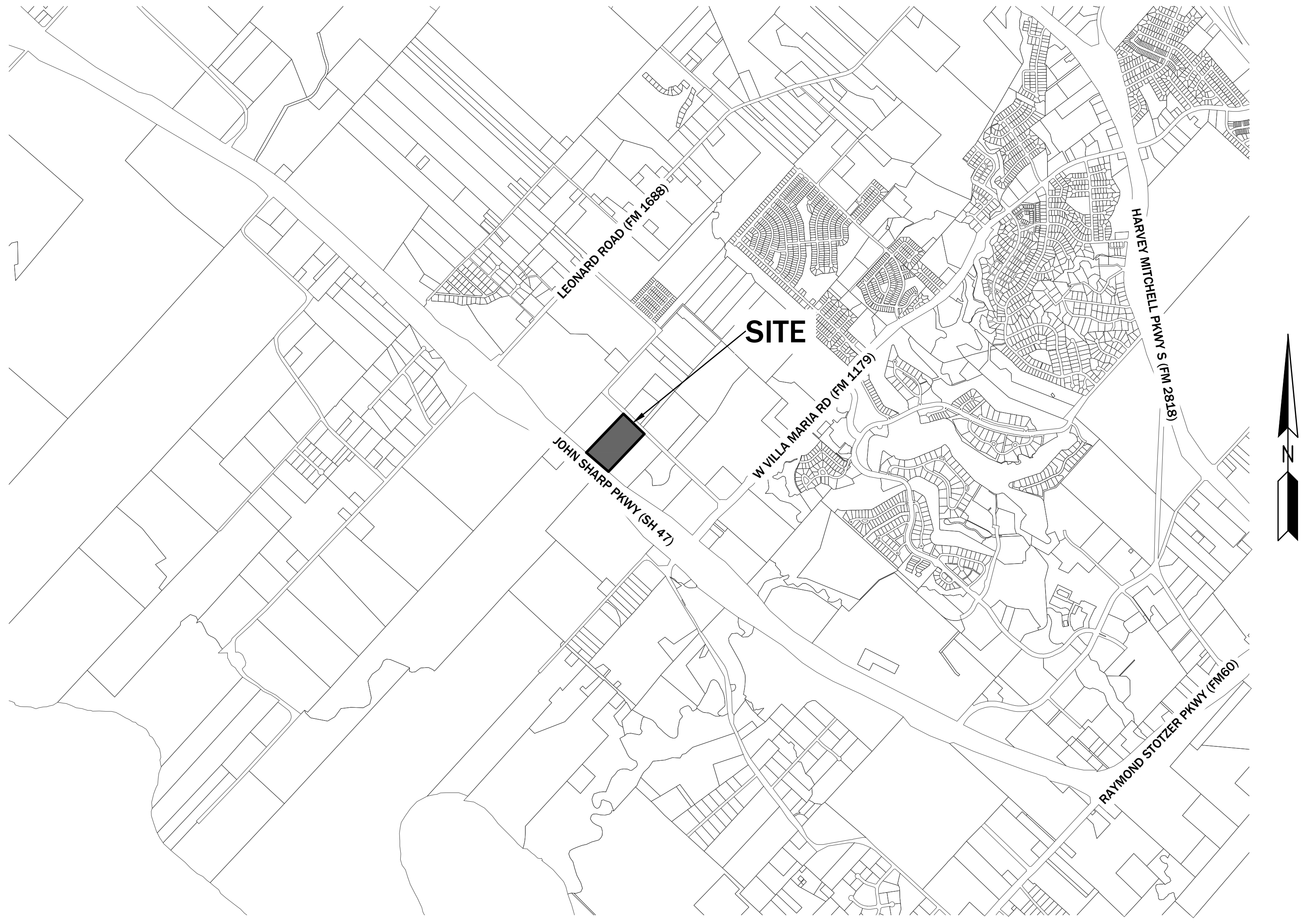
SITE PLAN CONSTRUCTION DOCUMENTS
5950 JONES ROAD, BRYAN, TX 77807
JANUARY 2026

ENGINEER:

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

DEVELOPER:

TEEPLE PARTNERS, INC.
1302 S CAPITAL OF TEXAS HWY
SUITE A134
AUSTIN, TX 78746



LEONARD ROAD (FM 1688)
SITE
HARVEY MITCHELL PKWY S (FM 2818)
W VILLA MARIA RD (FM 1179)
JOHN SHARP PKWY (SH 47)
RAYMOND STOTZER PKWY (FM60)
N

VICINITY MAP
N.T.S.

JAMES T. BATENHORST
93631

James T. Batenhorst, P.E.
on APRIL 15, 2026

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3C - Landscape Construction Plan
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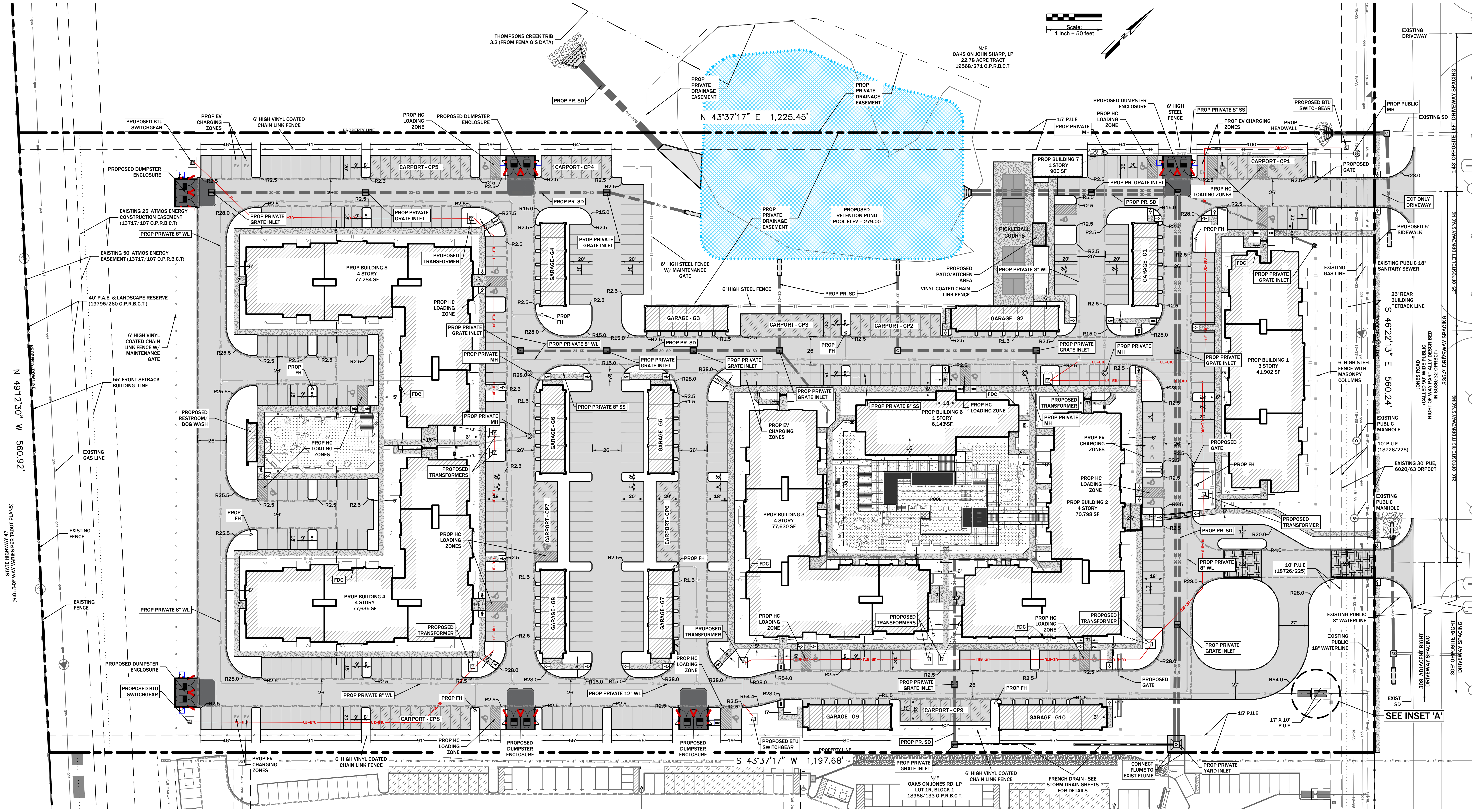
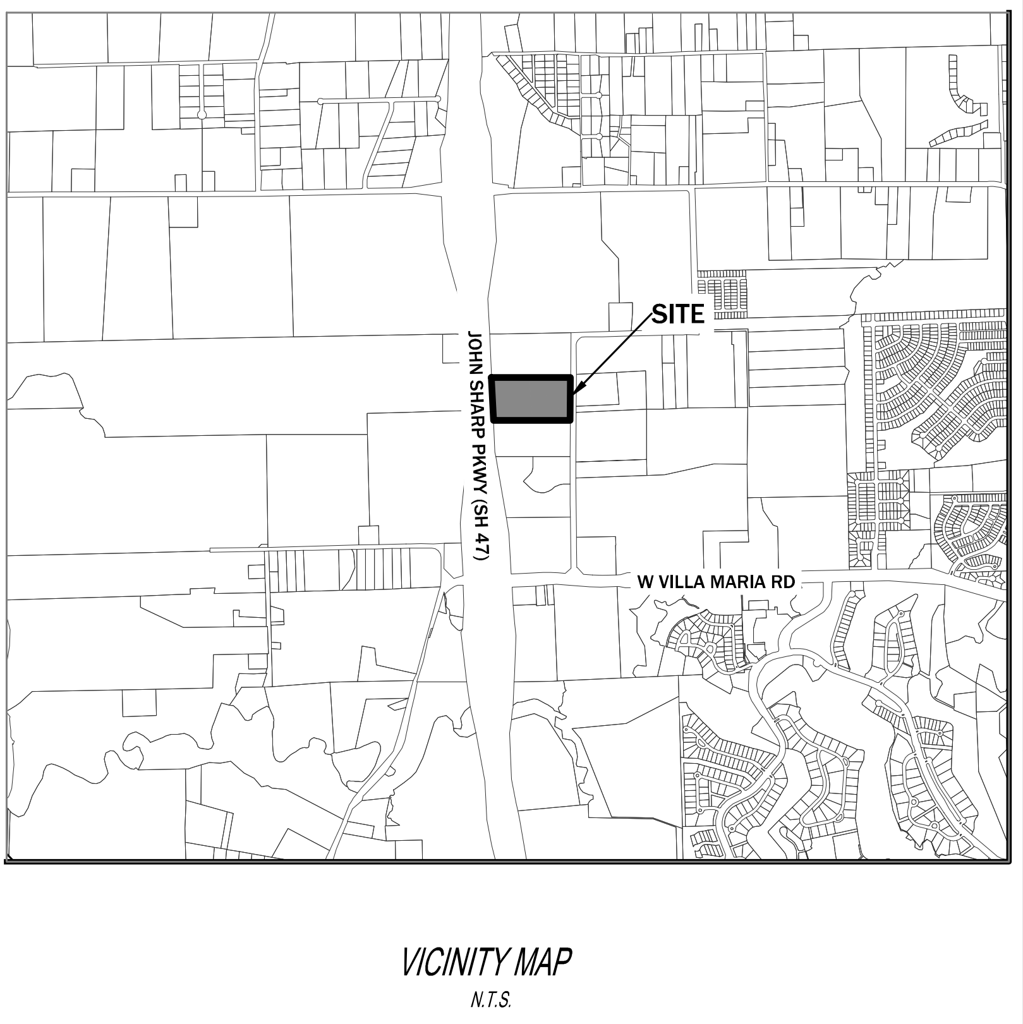
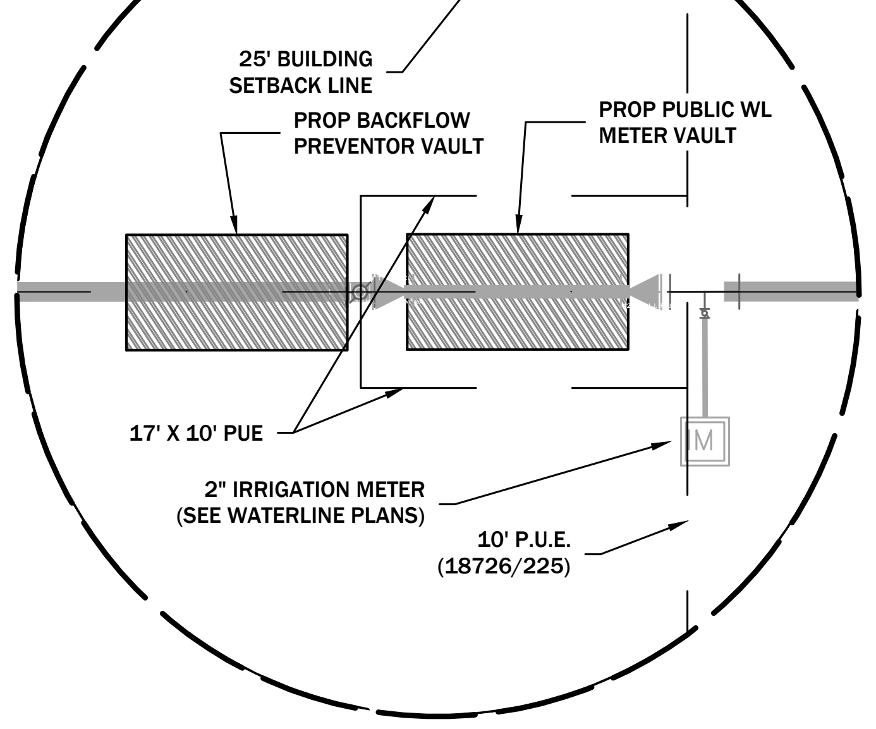
5C - Landscape Construction Plan
6C - Landscape Construction Plan
7C - Landscape Construction Plan
8C - Landscape Construction Plan
1P - Planting Plan
2P - Planting Plan
3P - Planting Plan
4P - Planting Plan

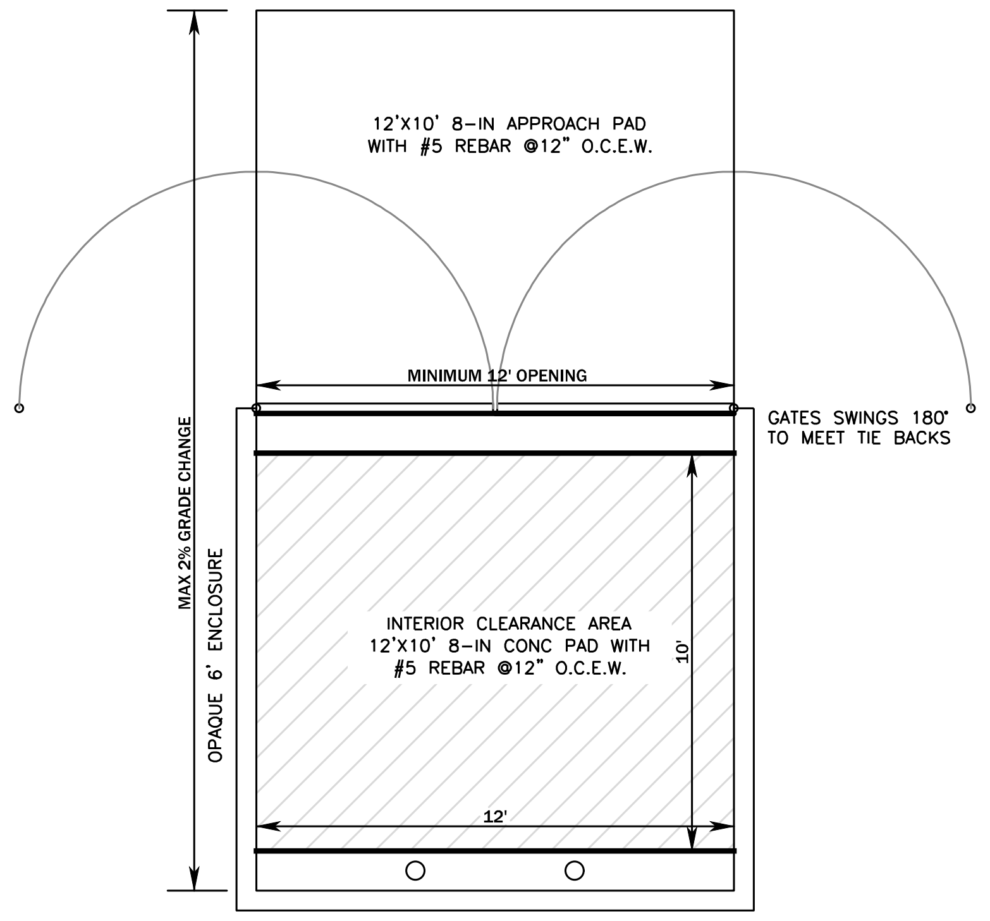

Scale: 1 inch = 50 feet
THOMPSONS CREEK TRIB 3.2 (FROM FEMA GIS DATA)
N/F OAKS ON JOHN SHARP, LP 22.78 ACRE TRACT 19568/271 O.P.R.B.C.T.
N 43°37'17" E 1,225.45'
S 43°37'17" W 1,197.68'
N 49°12'30" W 560.92'
S 46°22'13" E 560.24'
PROPOSED RETENTION POND POOL ELEV = 279.00
PROP PRIVATE DRAINAGE EASEMENT
PROP BUILDING 1 3 STORY 41,902 SF
PROP BUILDING 2 4 STORY 70,798 SF
PROP BUILDING 3 4 STORY 77,630 SF
PROP BUILDING 4 4 STORY 77,635 SF
PROP BUILDING 5 4 STORY 77,284 SF
PROP BUILDING 6 1 STORY 6,143 SF
PROP BUILDING 7 1 STORY 900 SF
PICKLEBALL COURTS
POOL
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G5
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
CARPORT - CP1
CARPORT - CP3
CARPORT - CP4
CARPORT - CP5
CARPORT - CP6
CARPORT - CP7
CARPORT - CP8
CARPORT - CP9
PROPOSED DUMPSTER ENCLOSURE
PROPOSED BTU SWITCHGEAR
PROP EV CHARGING ZONES
PROP HC LOADING ZONE
PROPOSED TRANSFORMER
PROP PRIVATE GRATE INLET
PROP PRIVATE MH
PROP PR. SD
PROP FH
6' HIGH VINYL COATED CHAIN LINK FENCE
6' HIGH STEEL FENCE
PROPOSED RESTROOM/ DOG WASH
PROPOSED PATIO/KITCHEN AREA
EXISTING 25' ATMOS ENERGY CONSTRUCTION EASEMENT (13717/107 O.P.R.B.C.T)
EXISTING 50' ATMOS ENERGY EASEMENT (13717/107 O.P.R.B.C.T)
40' P.A.E. & LANDSCAPE RESERVE (19795/260 O.P.R.B.C.T.)
55' FRONT SETBACK BUILDING LINE
25' REAR BUILDING SETBACK LINE
STATE HIGHWAY 47 (RIGHT-OF-WAY VARIES PER TXDOT PLANS)
JONES ROAD (CALLED 50' WIDE PUBLIC RIGHT-OF-WAY PARTIALLY DESCRIBED IN 6036/32 OPRBCT)
N/F OAKS ON JONES RD, LP LOT 1R, BLOCK 1 18956/133 O.P.R.B.C.T.
EXISTING DRIVEWAY
EXIT ONLY DRIVEWAY
PROPOSED GATE
SEE INSET 'A'
17' X 10' P.U.E
10' P.U.E (18726/225)
FRENCH DRAIN - SEE STORM DRAIN SHEETS FOR DETAILS
CONNECT FLUME TO EXIST FLUME
143' OPPOSITE LEFT DRIVEWAY SPACING
125' OPPOSITE LEFT DRIVEWAY SPACING
335.2' DRIVEWAY SPACING
210' OPPOSITE RIGHT DRIVEWAY SPACING
309' ADJACENT RIGHT DRIVEWAY SPACING
309' OPPOSITE RIGHT DRIVEWAY SPACING


SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP
N.T.S.


25' BUILDING SETBACK LINE
PROP BACKFLOW PREVENTOR VAULT
PROP PUBLIC WL METER VAULT
17' X 10' PUE
2" IRRIGATION METER (SEE WATERLINE PLANS)
10' P.U.E. (18726/225)
IM

INSET 'A'
SCALE= 1" =10'


12'X10' 8-IN APPROACH PAD WITH #5 REBAR @12" O.C.E.W.
MINIMUM 12' OPENING
GATES SWINGS 180° TO MEET TIE BACKS
MAX 2% GRADE CHANGE
OPAQUE 6' ENCLOSURE
INTERIOR CLEARANCE AREA 12'X10' 8-IN CONC PAD WITH #5 REBAR @12" O.C.E.W.
10'
12'

DUMPSTER ENCLOSURE DETAIL

COB Min. Standards
(RE: Architect Details for
Additional Information)

DUMPSTER ENCLOSURE NOTES:

1. BEFORE ENCLOSURE CONTRUCTION/MODIFICATION BEGIN, CONTACT SOLID WASTE AT: (979) 209-5900 FOR AN ON-SITE REVIEW.
2. IF ANY CHANGES ARE MADE TO THE ENCLOSURE PLAN DURING THE CONSTRUCTION PHASE, PLEASE CONTACT SOLID WASTE TO REVIEW MODIFICATIONS.
3. ALL-WEATHER ACCESS ROUTE MUST BE MAINTAINED AND REPAIRED AT THE BUSINESS OWNER'S EXPENSE.

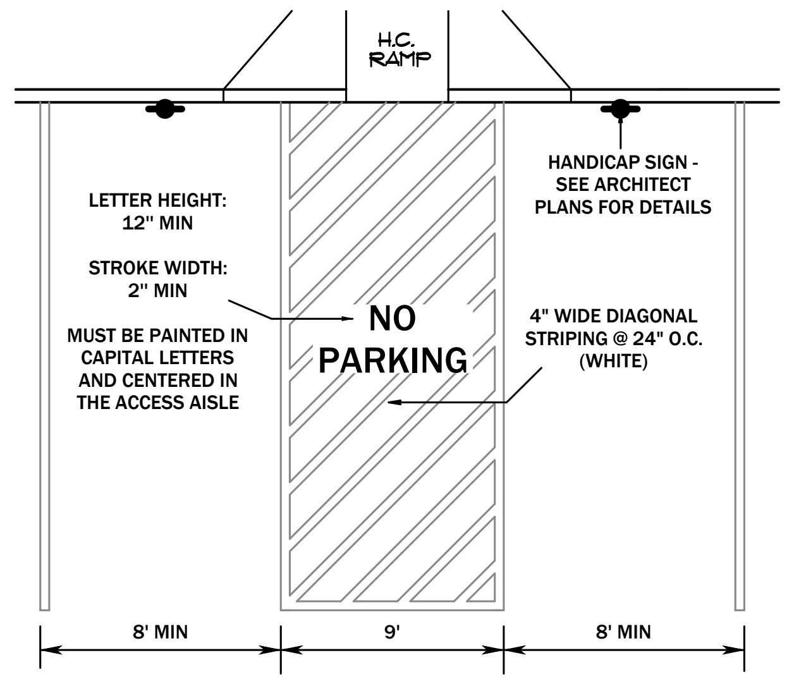
GENERAL CONSTRUCTION NOTES:

1. The contractor is responsible for obtaining all applicable permits for work contemplated on these plans.
2. It is the responsibility of the contractor to schedule a pre-construction meeting with the engineer of record and the regulatory agency inspector prior to commencing construction.
3. It shall be the responsibility of the Contractor to verify the exact location of ALL existing underground utilities. Furthermore, the Contractor shall contact all utility company representatives a minimum of 48 hours in advance of any excavation.
   - 3.1. Contact Dig Tess @ 1-800-344-8377
   - 3.2. Contact Josh Norton @ ATMOS 979-774-2506
   - 3.3. Contact Dan Augsburger @ Optimum Communications 979-204-8263
   - 3.4. Contact Brandon Charanza @ BTU 979-821-5770
   - 3.5. Contact Mac Ortiz @ Frontier 972-365-9198
   - 3.6. Contact Kris Smith @ MetroNet :kris.smith@metronetinc.com
   - 3.7. Contact Jayson Barfknecht @ COB (Water/Wastewater) 979-209-5959
4. All construction shall be in accordance with the current City of Bryan Standard Specifications for Street Construction, B/CS Unified Technical Specifications, Water and Sewer and Generals, 2012, and BCS Unified Design Details. All inspection shall be performed by the staff of the City Engineer of Bryan. All construction shall be coordinated with the City of Bryan City Engineer.
5. In lieu of using the construction materials indicated in these plans, the Contractor shall obtain written approval from the Engineer & Architect for any substitution prior to Construction. Requests for changes should include product information and an engineer's seal where applicable. The contractor shall be financially responsible for the engineer's time spent reviewing changes and redesigning based on contractor's requests.
6. Trench Safety Requirements shall be in accordance with O.S.H.A. Standard 29 CFR Part 1926 Subpart P and all federal, state and local regulations.
7. TRENCHING AND BACKFILLING: All trenching and backfilling shall conform to the specifications set out herein. Testing shall be provided by a certified laboratory, at the Owner's expense, to verify these standards. Any retesting due to substandard work shall be at the expense of the Contractor. Structural areas shall include all sidewalks and shall extend 5' beyond the curb lines of all streets, alleys and parking areas.
8. It is the responsibility of the contractor to comply with all State and Federal Regulations regarding construction activities near energized overhead power lines. Additionally, the contractor shall coordinate all proposed work and procedures with Bryan Texas Utility (BTU).
9. All materials & labor not identified as a Separate Bid Item shall be considered subsidiary to the item in which it is used. All materials and equipment shall be both furnished and installed unless otherwise noted.
10. The Contractor must provide construction staking from the information provide on these plans.
11. All soil exposed by construction shall receive hydromulch or sod in accordance with the landscape plan.
12. Trenches may not be left open overnight.
13. Adjustment of Water Meters, Valves, Manholes, Irrigation Systems, and any other Public or Private Utility, etc. are not separate pay items. The Price of the adjustment shall be subsidiary to the construction of Sewer Line, Force Main, etc.
14. The contractor shall coordinate with Atmos, Suddenlink Communications, BTU, CSU, and Frontier to adjust the location of existing facilities.
15. Temporary spoil areas will be identified on site by owner.
16. All materials storage and staging shall NOT be within the FEMA Floodplain.
17. Contractor shall provide parking lot striping in accordance with the layout shown on this plans.
18. All storm sewer, sanitary sewer and waterline being constructed with this site plan will be private.
19. All roof and ground mounted mechanical equipment shall be screened from view or isolated so as not to be visible from any public right-of-way or residential district within 150' of the subject.
20. All backflow devices must be installed and tested upon installation as per city Ordinance 2394.
21. Outdoor lighting shall not exceed 1 lumen at all property lines. Light fixtures in parking lot shall not exceed a maximum height of 24 feet and pedestrian walkway fixtures shall not exceed a maximum height of 12 feet. Outdoor lighting shall also be shielded and provided with cutoff fixtures that are designed to have a cutoff angle of no more than 90 degrees.
22. Cross slope and running slope of curb ramps serving the Accessible Parking shall comply with ICC A117.1 - 2009 Accesssibility Standards. Maximum cross slope 1:48 (2.08%) and maximum running slope 1:12 (8.33%).
23. The subject property is within the Innovation Corridor Overlay District as defined by Zoning Ordinance Section 130-27(b).
24. Property owner shall have direct responsibility to operate, repair and maintain the private detention facilities. The City of Bryan shall not be responsible for any operation, repair or maintenance of these areas.
25. Where electric facilities are installed, BTU has the right to install, operate, relocate, construct, reconstruct, add to, maintain, inspect, patrol, enlarge, repair, remove and replace said facilities upon, over, under, and across the property included in the PUE, and the right to ingress and egress on property adjacent to the PUE to access electric facilities.

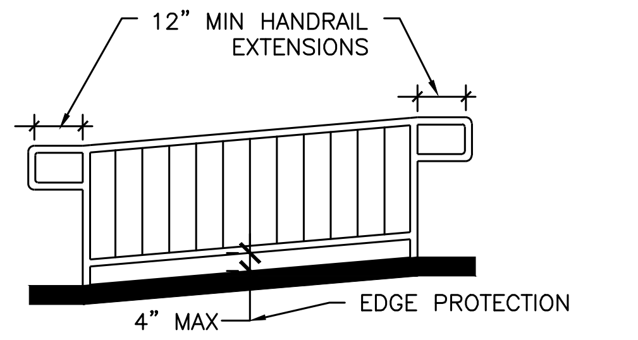
SITE PLAN NOTES:

1. Name of Project: Brazos Oaks Phase II
2. Legal: Lot 2, Block 1 of the OAK CREEK RANCH SUBDIVISION
   15.58 ACRES, Vol. 19795/Pg.260
3. Address: 5950 Jones Road
   Bryan, Texas 77807
4. Owner: Charles S. Teeple
   Teeple Partners, Inc.
   1302 S Capital of Texas Hwy, Suite A134
   Austin, Texas 78746
   (512) 329 5755
5. Engineer: Mitchell & Morgan, L.L.P.
   3204 Earl Rudder Fwy. S.
   College Station, Texas 77845
   (979) 260-6963
6. Zoning: IC-HDR Innovation Corridor - High Density Residential
7. Existing Use: Undeveloped-Vacant
8. Proposed Use: Multi-Family
9. Setbacks: Per City of Bryan Ordinances
10. Overall Site Area: 15.58 Acres
11. Dwelling Units/Acre =20.0 DU/ACRE
12. Water Demands: Min. = 59 gpm
    Avg. = 59 gpm
    Peak = 236 gpm
13. Sanitary Demands: Avg. = 84,372 GPD
    MAX. = 337,480 GPD
14. All pavement shall have a 6 inch curb unless otherwise noted.
15. This tract lies within FLOOD ZONE 'X' UNSHADED and does not currently lie within a special flood hazard area subject to the 1% Annual Chance Flood (100 YEAR FLOOD PLAIN) according to the Brazos County Flood Insurance Rate Map (FIRM) PANEL NO. 48041C0285E, REVISED DATE: 05-16-2012.
16. Signage shall be permitted separately.
17. Buildings are greater than 30' at eave height.
18. Contours associated with construction plans are shown on the grading plan sheets.
19. Refer to architect's plans for dimensional criteria for dumpster layout.
20. Contractor must contact City of Bryan Solid Waste @ 979-209-5900 prior to construction of dumpster enclosure. If any modifications to the dumpster enclosure are made during construction, the contractor shall notify the Solid Waste Department.

PARKING ANALYSIS			
REQUIRED PARKING:	455		
PROVIDED PARKING:	STANDARD	ACCESSIBLE	TOTAL
SURFACE	329	19	348
VISITOR PARKING	9	2	11
DETACHED GARAGES	60	2	62
CARPORTS	75	2	77
TOTAL:	473	25	498


H.C. RAMP
LETTER HEIGHT: 12" MIN
STROKE WIDTH: 2" MIN
MUST BE PAINTED IN CAPITAL LETTERS AND CENTERED IN THE ACCESS AISLE
NO PARKING
HANDICAP SIGN - SEE ARCHITECT PLANS FOR DETAILS
4" WIDE DIAGONAL STRIPING @ 24" O.C. (WHITE)
8' MIN
9'
8' MIN

HC STRIPING DETAIL
NTS


12" MIN HANDRAIL EXTENSIONS
4" MAX
EDGE PROTECTION

RAMP HANDRAILS SHALL EXTEND HORIZONTALLY ABOVE THE LANDING FOR 12 INCHES MINIMUM BEYOND THE TOP AND BOTTOM RAMP RUNS. EXTENSIONS SHALL RETURN TO A WALL, GUARD, OR THE LANDING SURFACE, OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT RAMP RUN. RAMP HANDRAILS TO BE UTILIZED AT ALL ACCESSIBLE LOCATIONS INTO BUILDINGS WITH SLOPE GREATER THAN 5% AS SHOWN ON THE GRADING PLAN.

TOP AND BOTTOM HANDRAIL
EXTENSION AT RAMPS & STEPS
NTS

FIRE LANE

DESIGNATED

PARKING

ONLY

18" x 12"
See Ordinance for
additional Information

All curbs and curb ends designated as firelanes on plans shall be painted red with four inch (4") white lettering stating "FIRE LANE - NO PARKING - TOW AWAY ZONE". Wording may not be spaced for than fifteen feet (15') apart.

From the point the fire lane begins to the point the fire lane ends, including behind all adjacent parking spaces, the fire lane shall be marked with one continuous eight inch (8") red stripe painted on the drive surface behind the parking spaces. All curbing adjoining a fire lane must be painted red. Red stripes and curbs will contain the wording "FIRE LANE - NO PARKING - TOW AWAY ZONE", painted in four inch (4") white letters.

FIRE LANE NO PARKING TOW AWAY ZONE
FIRE LN STRIPING

FIRE LANE MARKINGS

Unit Type	Description	BLDG I	BLDG II	BLDG III	BLDG IV	BLDG V	# of Units	# Bedrooms in Unit	# of Bedrooms in Project	Parking Required (1/BR)	Reqd Parking
A1	1BR/1BR/LIVING	9	12	16	16	16	69	1	69	1	69
A2	1BR/1BR/LIVING/DINING	12	0	12	12	12	48	1	48	1	48
A3	1BR/1BR/LIVING/DINING	12	4	16	16	16	64	1	64	1	64
A4	1BR/1BR/LIVING/DINING	0	2	0	1	0	3	1	3	1	3
B1	2BR/2BR/LIVING/DINING	3	21	12	11	11	58	2	116	1	116
B2	2BR/2BR/LIVING/DINING	0	4	4	4	4	16	2	32	1	32
B3	2BR/2BR/LIVING/DINING	6	8	8	8	8	38	2	76	1	76
B4	2BR/2BR/LIVING/DINING	0	0	1	0	0	1	2	2	1	2
C1	3BR/2BR/LIVING/DINING	0	4	3	4	4	15	3	45	1	45
	TOTAL	42	55	72	72	71	312		455		455

MITCHELL
M&M
MORGAN

T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443

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

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

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

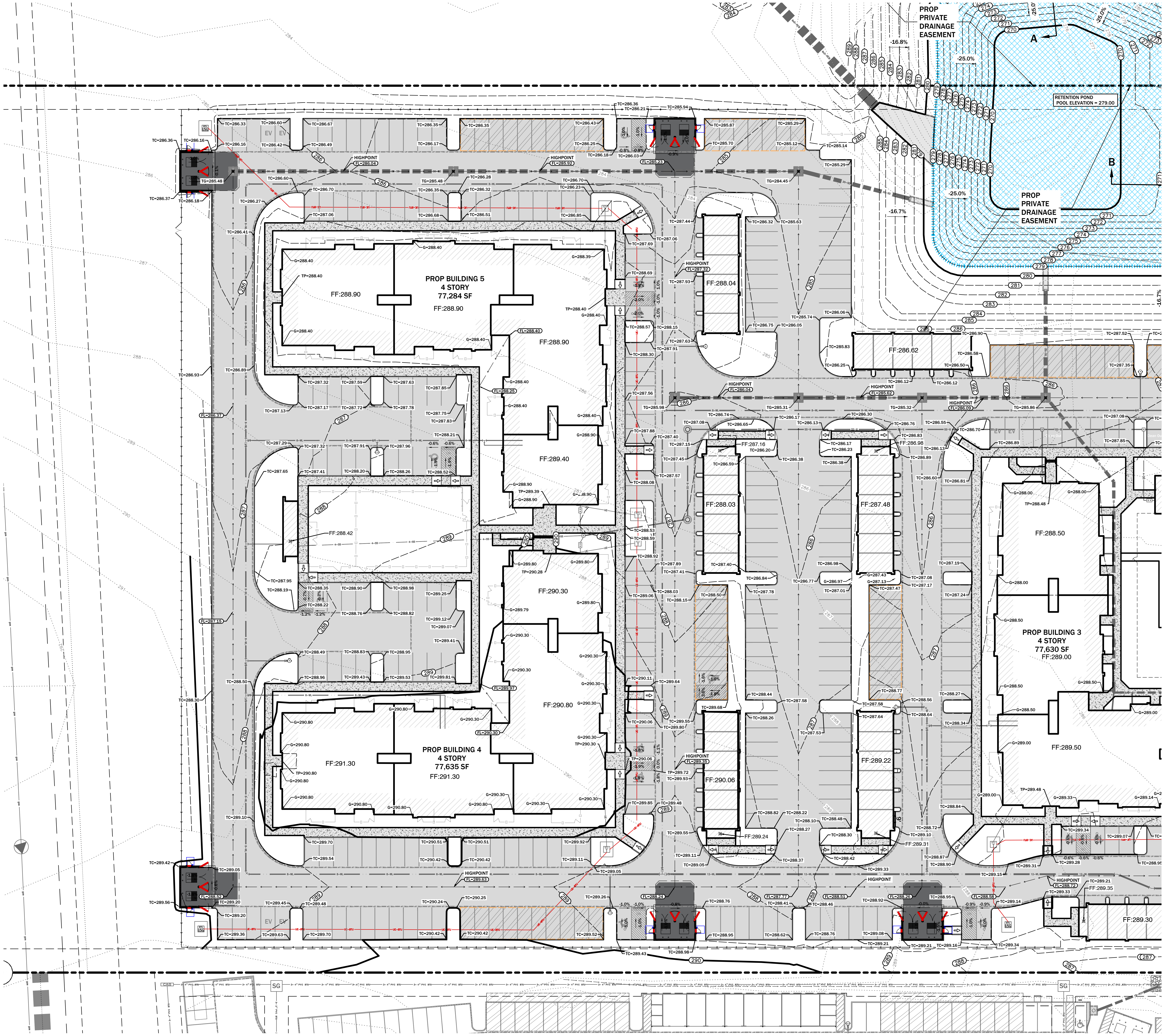
APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

OVERALL SITE PLAN
BRAZOS OAKS PHASE II

C-100


PROP
PRIVATE
DRAINAGE
EASEMENT
-16.8%
-25.0%
A
RETENTION POND
POOL ELEVATION = 279.00
B
-16.7%
PROP
PRIVATE
DRAINAGE
EASEMENT
PROP BUILDING 5
4 STORY
77,284 SF
FF:288.90
FF:288.90
FF:288.90
FF:289.40
FF:288.42
FF:290.30
FF:290.80
PROP BUILDING 4
4 STORY
77,635 SF
FF:291.30
FF:291.30
FF:288.04
FF:286.62
FF:287.16
FF:288.03
FF:287.48
FF:290.06
FF:289.22
FF:289.24
FF:289.31
FF:288.50
PROP BUILDING 3
4 STORY
77,630 SF
FF:289.00
FF:289.50
FF:289.30
HIGHPOINT
EV
SG

GRADING PLAN NOTES:

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

Scale:
1 inch = 30 feet

LEGEND

- - - - - -	EX. CONTOURS
— — — —	PROP. CONTOURS
━━━━━	PROP. CONTOURS

TC = Top of Curb
FL = Flowline of Pavement/Ground
TS = Top of Sidewalk
TG = Top of Grate
G = Top of Ground

MITCHELL
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JAMES T. BATENHORST
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James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:

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1302 S CAPITAL OF TEXAS HWY
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Revisions

GRADING PLAN 1 OF 3

BRAZOS OAKS PHASE II

C-101

S:\24Proj\24044-Teeple-SH47-PH2\24044-02-GradingPlan.dwg, 1OF3, 4/15/2026 11:53:40 AM

GRADING PLAN NOTES:

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LEGEND

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— — — — — —	PROP. CONTOURS
━━━━━━━	PROP. CONTOURS

TC = Top of Curb
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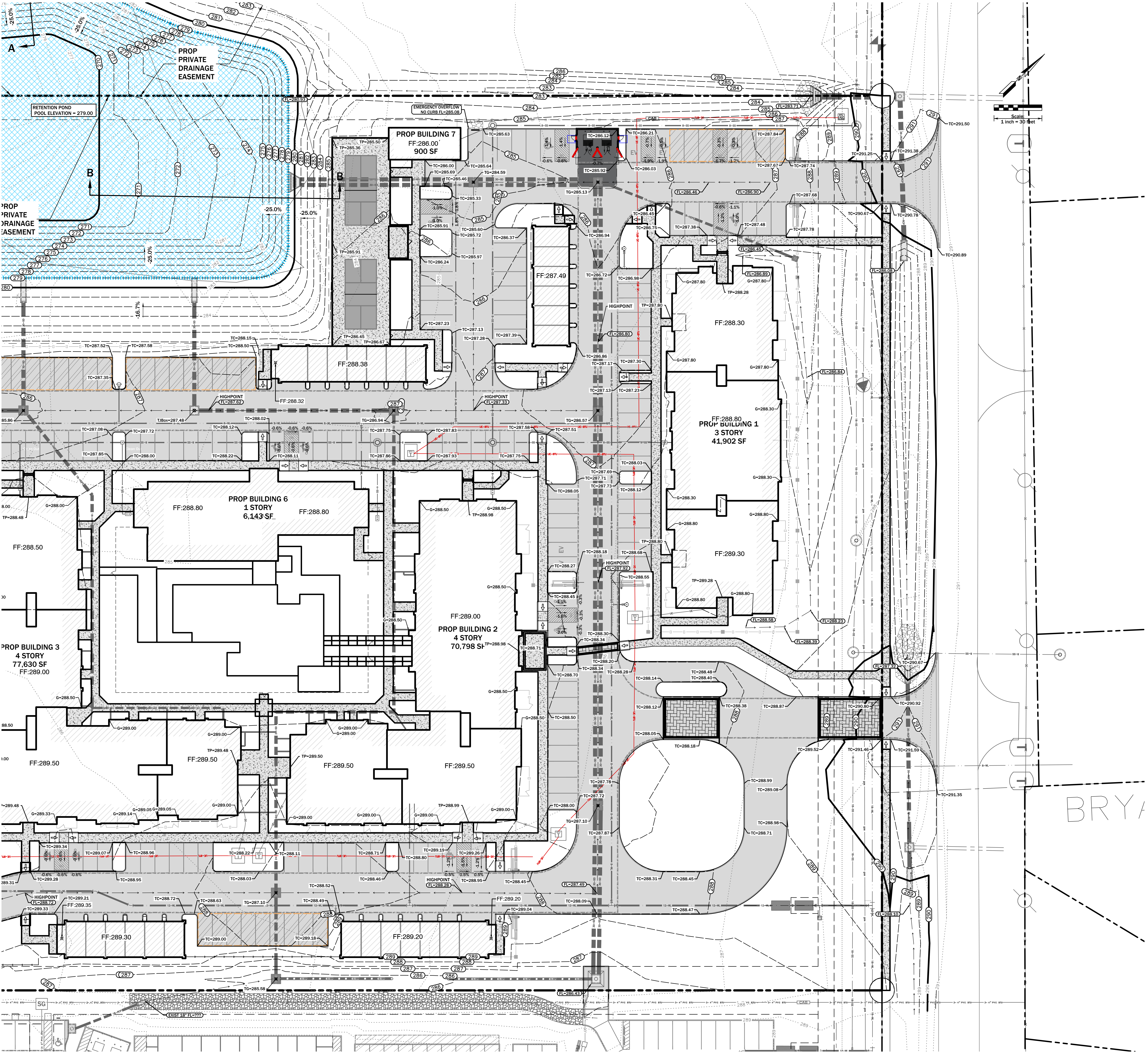

PROP PRIVATE DRAINAGE EASEMENT
RETENTION POND POOL ELEVATION = 279.00
A
B
-25.0%
-16.7%
EMERGENCY OVERFLOW NO CURB FL=285.08
PROP BUILDING 7
FF:286.00
900 SF
FF:287.49
FF:288.38
FF:288.30
FF:288.80
PROP BUILDING 1
3 STORY
41,902 SF
FF:289.30
PROP BUILDING 6
1 STORY
6,143 SF
FF:288.80
FF:288.50
FF:289.00
PROP BUILDING 2
4 STORY
70,798 SF
PROP BUILDING 3
4 STORY
77,630 SF
FF:289.00
FF:289.50
FF:289.30
FF:289.20
HIGHPOINT
BRY
Scale 1 inch = 30 feet
EXIST 18" FL=???
SG

Revisions

GRADING PLAN 2 OF 3

BRAZOS OAKS PHASE II

C-102

MITCHELL
M&M
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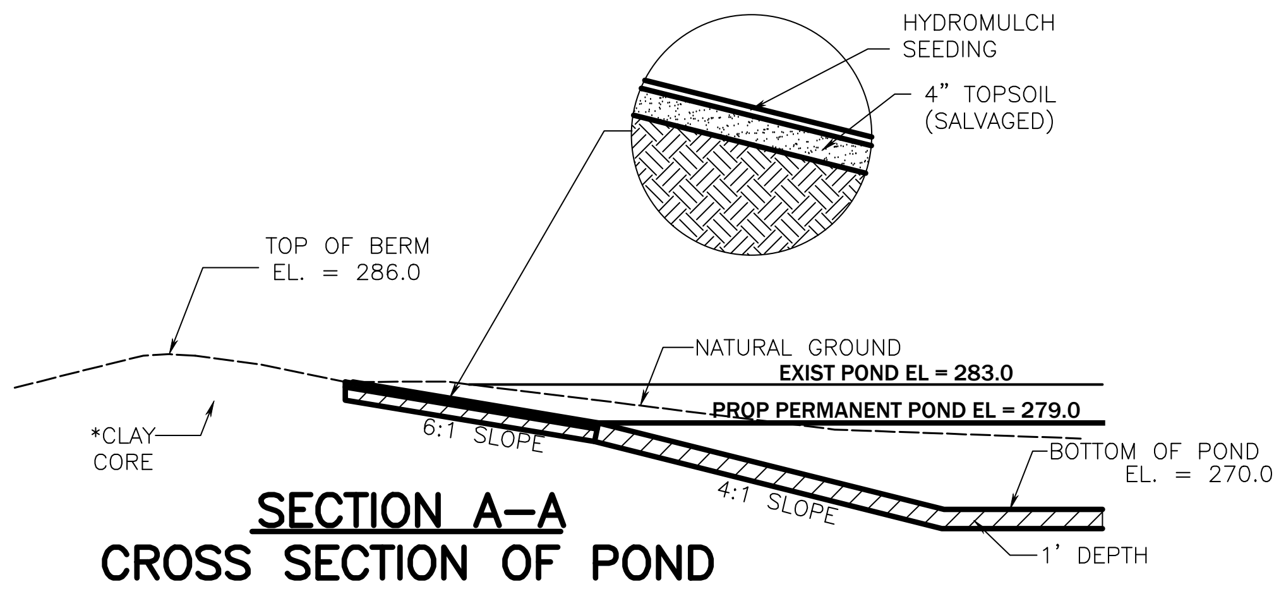
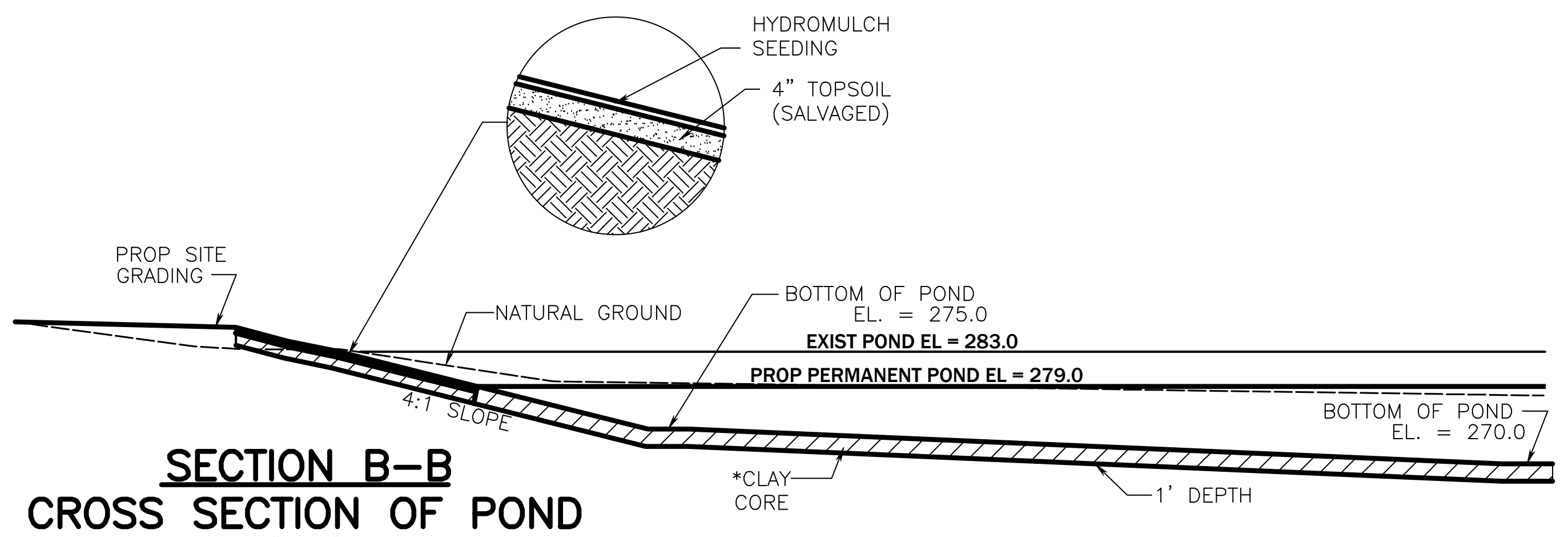
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

S:\24Proj\24044-Teeple-SH47-PH2\24044-02-GradingPlan.dwg, 2OF3, 4/15/2026 11:53:43 AM


HYDROMULCH SEEDING
4" TOPSOIL (SALVAGED)
TOP OF BERM EL. = 286.0
NATURAL GROUND
EXIST POND EL = 283.0
PROP PERMANENT POND EL = 279.0
*CLAY CORE
6:1 SLOPE
4:1 SLOPE
BOTTOM OF POND EL. = 270.0
1' DEPTH

SECTION A–A
CROSS SECTION OF POND
(N.T.S.)


HYDROMULCH SEEDING
4" TOPSOIL (SALVAGED)
PROP SITE GRADING
NATURAL GROUND
BOTTOM OF POND EL. = 275.0
EXIST POND EL = 283.0
PROP PERMANENT POND EL = 279.0
4:1 SLOPE
*CLAY CORE
BOTTOM OF POND EL. = 270.0
1' DEPTH

SECTION B–B
CROSS SECTION OF POND
(N.T.S.)

* Clay Core as shown shall consist of soil group classifaction CH or CH/CL, as defined by ASTM D2487. Minimum PI of 30.

Compaction requirements for Clay Core: 95% maximum per ASTM D1557 @ 0% - 4 % Wet of Optimum Moisture. Lifts shall not exceed 6" compacted lifts.

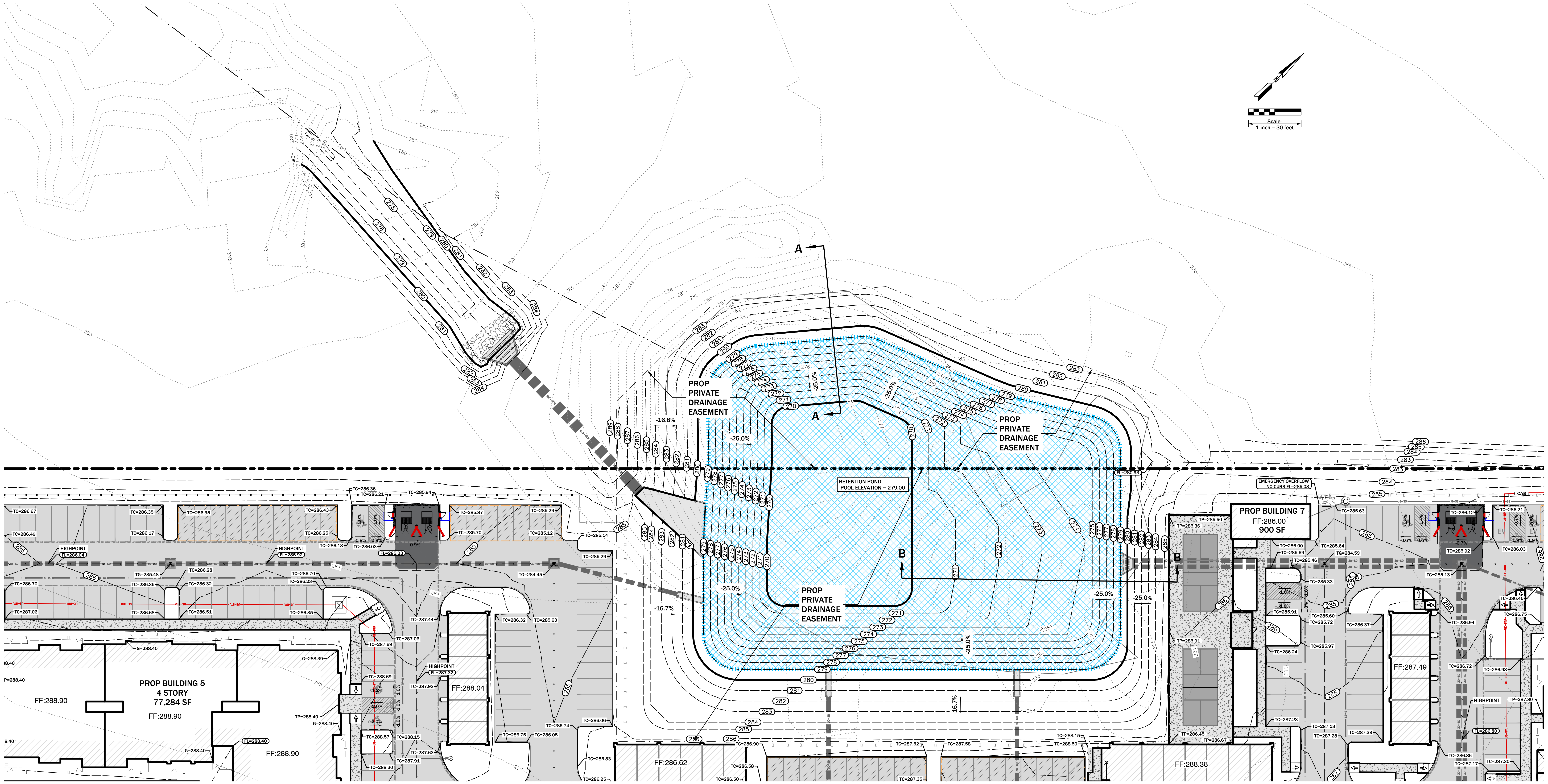
GRADING PLAN NOTES:

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

LEGEND

- - - - - - - -	EX. CONTOURS
— — — — —	PROP. CONTOURS
━━━━━━	PROP. CONTOURS

TC = Top of Curb
FL = Flowline of Pavement/Ground
TS = Top of Sidewalk
TG = Top of Grate
G = Top of Ground


Scale:
1 inch = 30 feet
A
B
PROP PRIVATE DRAINAGE EASEMENT
PROP PRIVATE DRAINAGE EASEMENT
PROP PRIVATE DRAINAGE EASEMENT
RETENTION POND POOL ELEVATION = 279.00
-25.0%
-16.8%
-16.7%
FL=280.93
EMERGENCY OVERFLOW NO CURB FL=285.08
PROP BUILDING 7
FF:286.00
900 SF
TP=285.50
TC=285.63
TC=286.00
TC=285.64
TC=285.69
TG=284.59
TC=285.46
TC=285.33
PROP BUILDING 5
4 STORY
77,284 SF
FF:288.90
FF:288.90
FF:288.90
FF:288.04
FF:286.62
FF:288.38
FF:287.49
HIGHPOINT
HIGHPOINT
HIGHPOINT
30-SD
270
271
272
273
274
275
276
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285
286

MITCHELL
M&M
MORGAN

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TX. FIRM # F-1443

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COLLEGE STATION, TX 77845

PLAN & DESIGN SPECIALISTS IN
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SITE PLANS SUBDIVISIONS

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:

TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

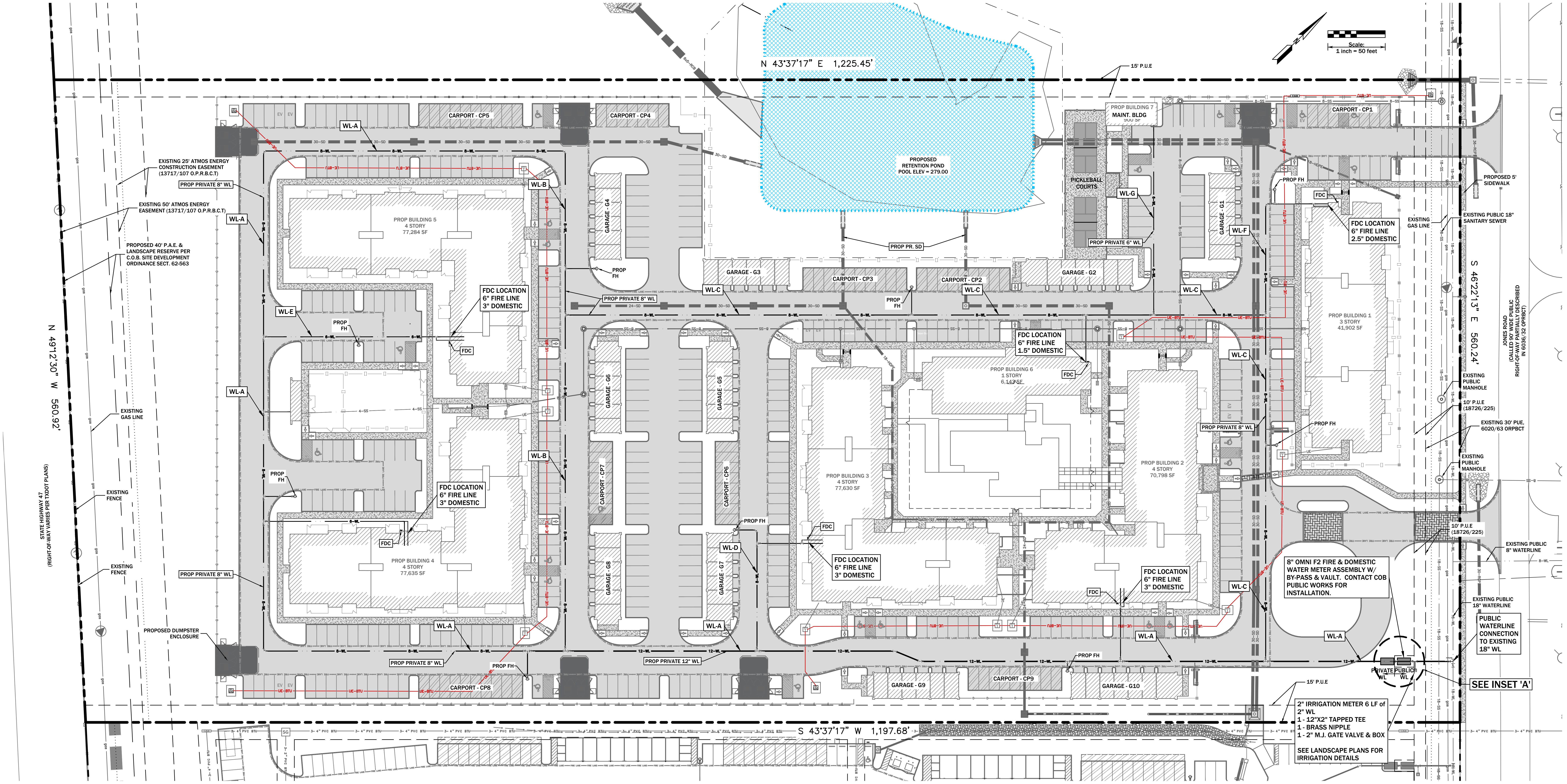
Revisions

GRADING PLAN 3 OF 3

BRAZOS OAKS PHASE II

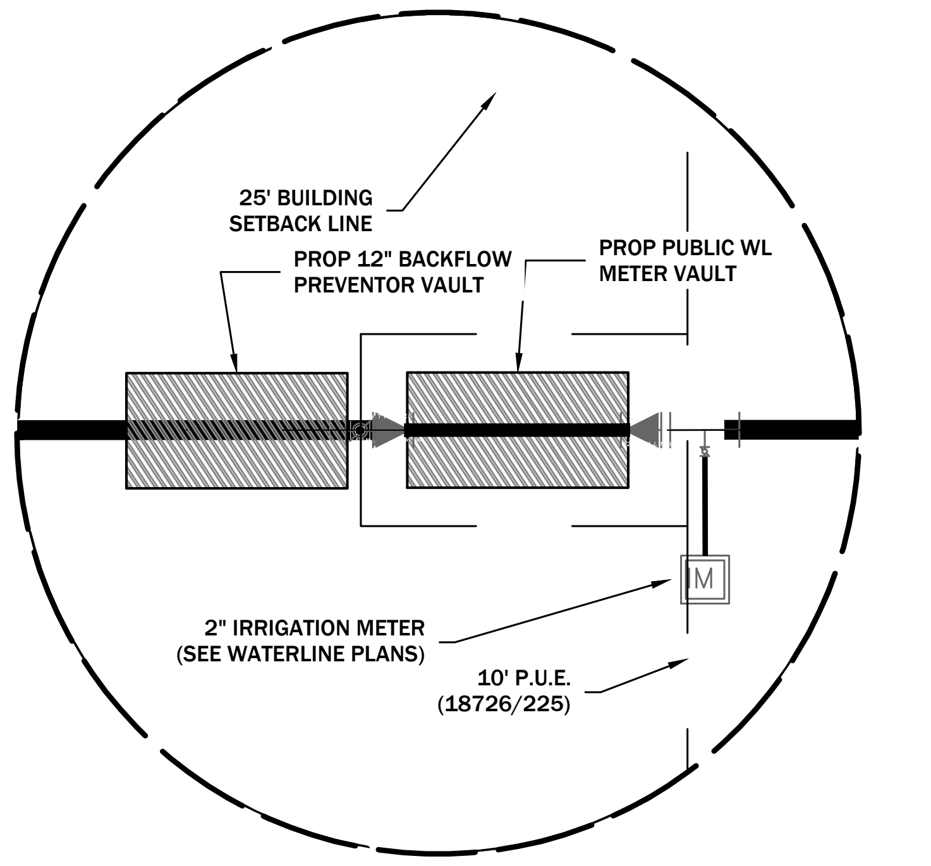
C-103

S:\24Proj\24044-Teeple-SH47-PH2\24044-02-GradingPlan.dwg, 3OF3, 4/15/2026 11:53:46 AM


N 43°37'17" E 1,225.45'
S 43°37'17" W 1,197.68'
N 49°12'30" W 560.92'
S 46°22'13" E 560.24'
Scale: 1 inch = 50 feet
15' P.U.E
PROPOSED RETENTION POND POOL ELEV = 279.00
PROP PR. SD
PROP BUILDING 7 MAINT. BLDG 900 SF
PICKLEBALL COURTS
CARPORT - CP5
CARPORT - CP4
CARPORT - CP1
CARPORT - CP3
CARPORT - CP2
CARPORT - CP6
CARPORT - CP7
CARPORT - CP8
CARPORT - CP9
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G5
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
PROP BUILDING 5 4 STORY 77,284 SF
PROP BUILDING 4 4 STORY 77,635 SF
PROP BUILDING 3 4 STORY 77,630 SF
PROP BUILDING 6 1 STORY 6,143 SF
PROP BUILDING 2 4 STORY 70,798 SF
PROP BUILDING 1 3 STORY 41,902 SF
EXISTING 25' ATMOS ENERGY CONSTRUCTION EASEMENT (13717/107 O.P.R.B.C.T)
EXISTING 50' ATMOS ENERGY EASEMENT (13717/107 O.P.R.B.C.T)
PROPOSED 40' P.A.E. & LANDSCAPE RESERVE PER C.O.B. SITE DEVELOPMENT ORDINANCE SECT. 62-563
EXISTING GAS LINE
EXISTING FENCE
EXISTING FENCE
STATE HIGHWAY 47 (RIGHT-OF-WAY VARIES PER TXDOT PLANS)
PROPOSED DUMPSTER ENCLOSURE
PROP PRIVATE 8" WL
PROP PRIVATE 6" WL
PROP PRIVATE 12" WL
WL-A
WL-B
WL-C
WL-D
WL-E
WL-F
WL-G
PROP FH
FDC
FDC LOCATION 6" FIRE LINE 3" DOMESTIC
FDC LOCATION 6" FIRE LINE 1.5" DOMESTIC
FDC LOCATION 6" FIRE LINE 2.5" DOMESTIC
PROPOSED 5' SIDEWALK
EXISTING GAS LINE
EXISTING PUBLIC 18" SANITARY SEWER
JONES ROAD (CALLED 90' WIDE PUBLIC RIGHT-OF-WAY PARTIALLY DESCRIBED IN 6036/32 ORPBCT)
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING 30' PUE, 6020/63 ORPBCT
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING PUBLIC 8" WATERLINE
8" OMNI F2 FIRE & DOMESTIC WATER METER ASSEMBLY W/ BY-PASS & VAULT. CONTACT COB PUBLIC WORKS FOR INSTALLATION.
EXISTING PUBLIC 18" WATERLINE
PUBLIC WATERLINE CONNECTION TO EXISTING 18" WL
PRIVATE WL
PUBLIC WL
SEE INSET 'A'
2" IRRIGATION METER 6 LF of 2" WL
1 - 12"X2" TAPPED TEE
1 - BRASS NIPPLE
1 - 2" M.J. GATE VALVE & BOX
SEE LANDSCAPE PLANS FOR IRRIGATION DETAILS

SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP
N.T.S.


25' BUILDING SETBACK LINE
PROP 12" BACKFLOW PREVENTOR VAULT
PROP PUBLIC WL METER VAULT
2" IRRIGATION METER (SEE WATERLINE PLANS)
10' P.U.E. (18726/225)

INSET 'A'
SCALE= 1" =10'

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OVERALL WATERLINE PLAN
BRAZOS OAKS PHASE II

C-200

OMNI™ Fireline (F2) Water Meter

4", 6", 8" and 10"

Strainer

The OMNI F2 meter includes the Sensus designed "V" shaped UL Listed/FM approved strainer which utilizes a stainless steel screen along with Floating Ball Technology (FBT) to create a design that provides greatly improved accuracy even in difficult settings. A removable strainer cover permits easy access to the screen for routine maintenance. Strainer drain ports allow for easy discharging of debris without the need to remove the cover.

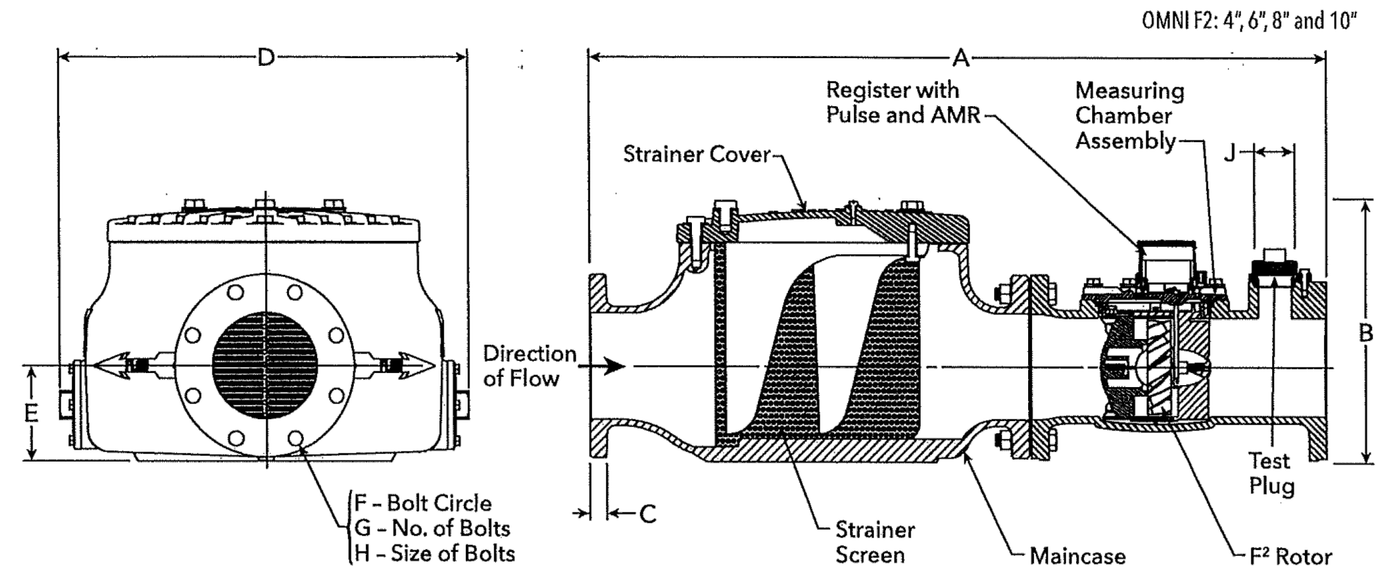
AMR/AMI Systems

Meters and Electronic Registers are compatible with current Sensus AMR/AMI systems and other AMI communication systems that use the Sensus UI1203 protocol.

Maintenance

The OMNI F2 meter is designed for easy maintenance. Should any maintenance be required, the measuring chamber and/or strainer cover can be removed independently. Replacement parts or complete measuring chambers are available for repairs.

OMNI F2: 4", 6", 8" and 10"


D
A
Register with Pulse and AMR
Measuring Chamber Assembly
J
Strainer Cover
Direction of Flow
B
E
F - Bolt Circle
G - No. of Bolts
H - Size of Bolts
C
Strainer Screen
Maincase
Test Plug
F² Rotor

DIMENSIONS AND NET WEIGHTS

Meter and Pipe Size	Normal Operating Range		Connections	A	B	C	D	E	F	G	H	J	Net Weight	Shipping Weight	Standard Fireline*
4" DN 100 mm	1.5 gpm .34 m³/hr	1200 gpm 227 m³/hr	Flanged	33" 838 mm	13-11/16" 348 mm	15/16" 24 mm	22.25" 515 mm	4-3/4" 121 mm	7-1/2" 191 mm	8	5/8" 16 mm	2" 51 mm	212 lb 96 kg	252 lb 114 kg	51-7/8" 1318 mm
6" DN 150 mm	3 gpm .681 m³/hr	2000 gpm 454 m³/hr	Flanged	45" 1143 mm	15-3/4" 400 mm	15/16" 24 mm	25.00" 635 mm	5-3/4" 146 mm	9-1/2" 241 mm	8	3/4" 19 mm	2" 51 mm	394 lb 179 kg	449 lb 204 kg	67-5/8" 1718 mm
8" DN 200 mm	4 gpm .91 m³/hr	3500 gpm 795 m³/hr	Flanged	53" 1346 mm	18-1/2" 470 mm	11/16" 17 mm	31.00" 788 mm	6-3/4" 171 mm	11-3/4" 298 mm	8	3/4" 19 mm	2" 51 mm	736 lb 334 kg	786 lb 357 kg	77" 1956 mm
10" DN 250 mm	5 gpm 1.1 m³/hr	5500 gpm 1249 m³/hr	Flanged	68" 1727 mm	22-1/4" 565 mm	11/16" 17 mm	37.50" 953 mm	8-1/2" 216 mm	14-1/4" 362 mm	12	7/8" 22 mm	2" 51 mm	1155 lb 524 kg	1215 lb 551 kg	90" 2286 mm

*Standard Fireline lay length with optional spool piece added.

OMNI™ Fireline (F2) Water Meter

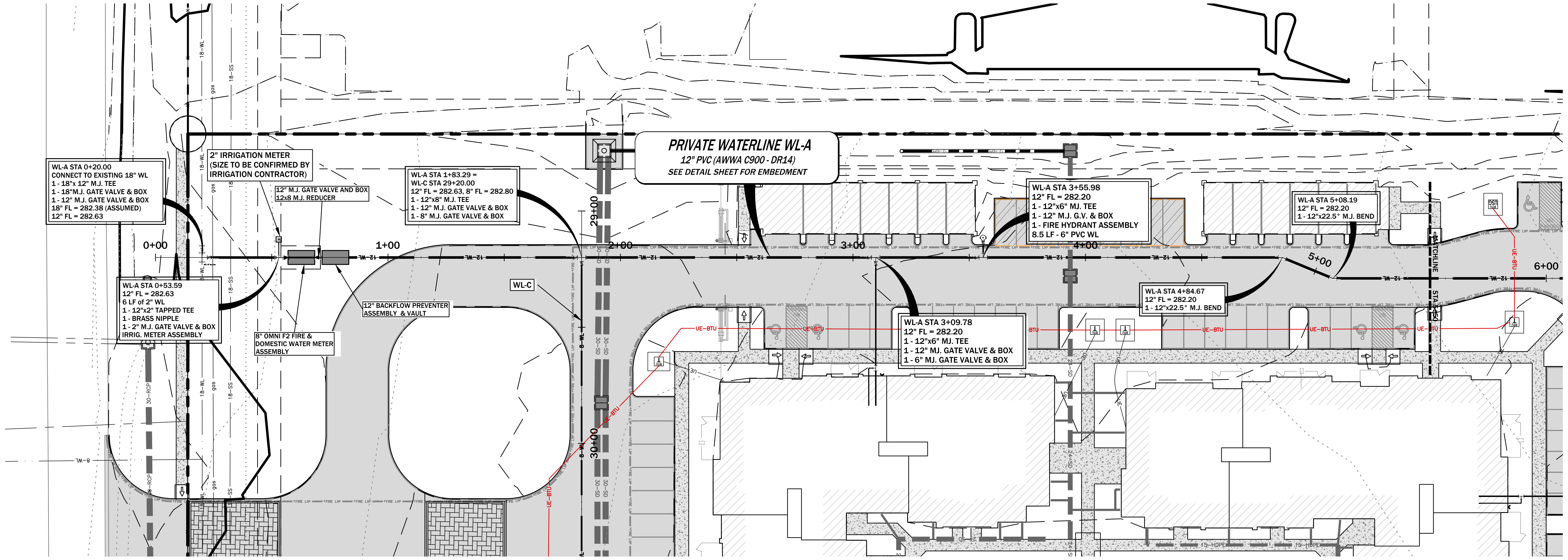
4", 6", 8" and 10"

SPECIFICATIONS

Service	Measurement of potable and reclaim water. Storage temperature: -22 °F (-30 °C) to 155 °F (68.3 °C)	Operating temperatures: Air: -22 °F (-30 °C) to 150 °F (65.6 °C) Water: 33 °F (0.6 °C) to 80 °F (26.7 °C)
Operating Range (100% ± 1.5%)	4": 1.5 - 1000 GPM (0.34 - 227 m³/hr) 6": 3 - 2000 GPM (0.68 - 454 m³/hr)	8": 4 - 3500 GPM (0.91 - 795 m³/hr) 10": 5 - 5500 GPM (1.1 - 1249 m³/hr)
Low flow (95% - 101.5%)	4": 0.75 GPM (0.17 m³/hr) 6": 1.5 GPM (0.34 m³/hr)	8": 2.5 GPM (0.57 m³/hr) 10": 3.5 GPM (0.79 m³/hr)
UL Minimum Flow	8": 97% @ 3 GPM (0.68 m³/hr) 10": 97% @ 4 GPM (0.91 m³/hr)	
Maximum Continuous Operation	4": 1000 GPM (227 m³/hr) 6": 2000 GPM (454 m³/hr)	8": 3500 GPM (795 m³/hr) 10": 5500 GPM (1249 m³/hr)
Maximum Intermittent Operation	4": 1250 GPM (284 m³/hr) 6": 2500 GPM (568 m³/hr)	8": 4700 GPM (1067 m³/hr) 10": 7000 GPM (1590 m³/hr)
Pressure Loss	4": 6.4 psi @ 1000 GPM (0.44 bar @ 227 m³/hr) 6": 6.7 psi @ 2000 GPM (0.46 bar @ 454 m³/hr)	8": 5 psi @ 3500 GPM (0.34 bar @ 795 m³/hr) 10": 7 psi @ 5500 GPM (0.48 bar @ 1249 m³/hr)
Maximum Operating Pressure	175 PSI (12 bar)	
Flange Connections	U.S. ANSI B16.1 / AWWA Class 125	
Test Ports	NPT	
Register	Fully electronic sealed register with programmable registration (Gal. / Cu. Ft. / Cu. Mtr. / Imp. Gal. / Acre Ft.)	Programmable AMR/AMI reading and pulse outputs Guaranteed 10-year battery life
NSF Approved Materials	Maincase: Coated Ductile Iron Measuring Chamber: Thermoplastic Rotor "Floating Ball": Thermoplastic Radial Bearings: Hybrid Thermoplastic Thrust Bearings: Sapphire/Ceramic Jewel	Magnets: Ceramic Strainer Screen: Stainless Steel Strainer Cover: Coated Ductile Iron Test Plug: Stainless Steel

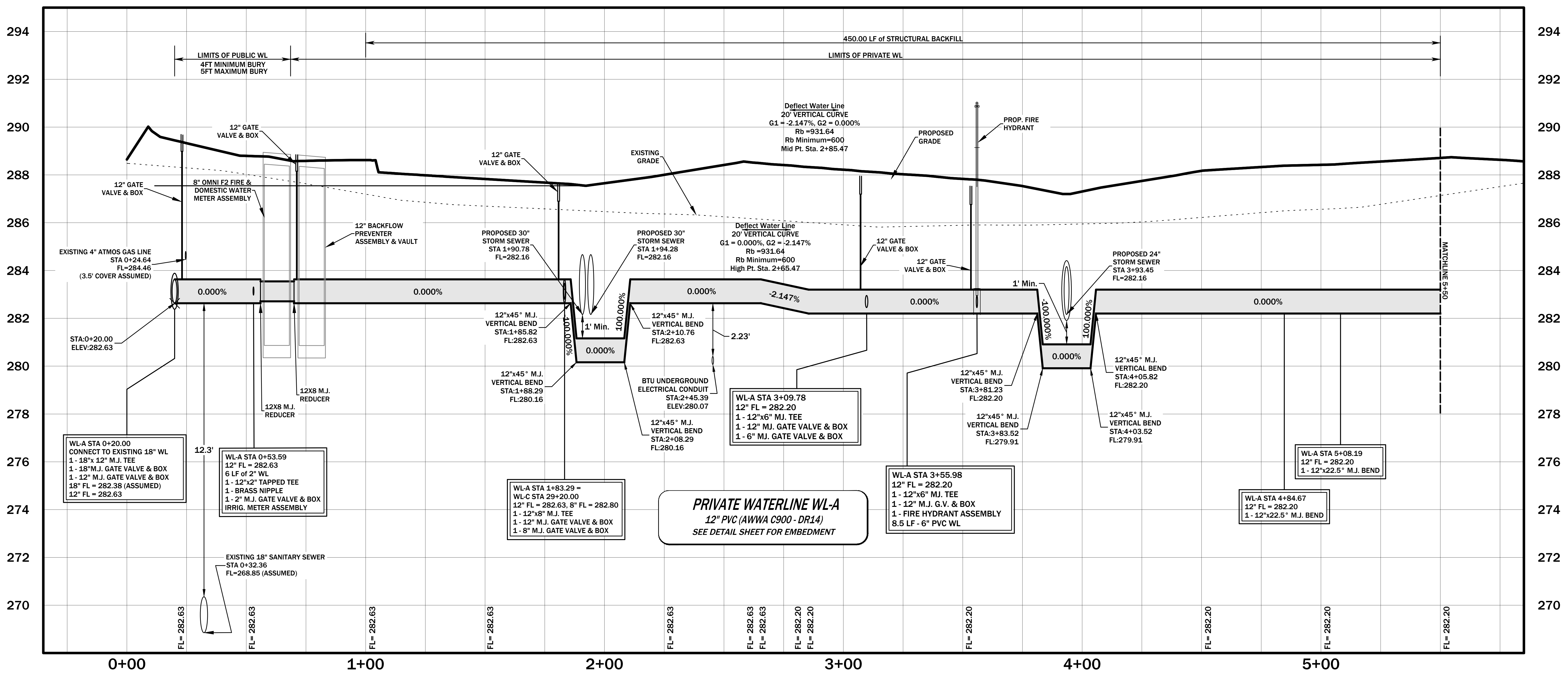
GENERAL NOTES:

1. CITY OF BRYAN FMC VAULTS WILL HAVE A FULL SIZED BYPASS THROUGH IT.
2. THE METER AND VAULTS WILL NEED TO BE PURCHASED/ORDERED THROUGH CITY OF BRYAN WATER SERVICES. CONTRACTOR SHALL COORDINATE WITH CITY OF BRYAN WATER SERVICES @ 979-209-5900.


WL-A STA 0+20.00
CONNECT TO EXISTING 18" WL
1 - 18"x 12" M.J. TEE
1 - 18"M.J. GATE VALVE & BOX
1 - 12" M.J. GATE VALVE & BOX
18" FL = 282.38 (ASSUMED)
12" FL = 282.63
2" IRRIGATION METER
(SIZE TO BE CONFIRMED BY
IRRIGATION CONTRACTOR)
12" M.J. GATE VALVE AND BOX
12x8 M.J. REDUCER
WL-A STA 1+83.29 =
WL-C STA 29+20.00
12" FL = 282.63, 8" FL = 282.80
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
PRIVATE WATERLINE WL-A
12" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-A STA 3+55.98
12" FL = 282.20
1 - 12"x6" MJ. TEE
1 - 12" M.J. G.V. & BOX
1 - FIRE HYDRANT ASSEMBLY
8.5 LF - 6" PVC WL
WL-A STA 5+08.19
12" FL = 282.20
1 - 12"x22.5° M.J. BEND
0+00
1+00
2+00
3+00
4+00
5+00
6+00
29+00
30+00
WL-C
WL-A STA 0+53.59
12" FL = 282.63
6 LF of 2" WL
1 - 12"x2" TAPPED TEE
1 - BRASS NIPPLE
1 - 2" M.J. GATE VALVE & BOX
IRRIG. METER ASSEMBLY
8" OMNI F2 FIRE &
DOMESTIC WATER METER
ASSEMBLY
12" BACKFLOW PREVENTER
ASSEMBLY & VAULT
WL-A STA 3+09.78
12" FL = 282.20
1 - 12"x6" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-A STA 4+84.67
12" FL = 282.20
1 - 12"x22.5° M.J. BEND
MATCHLINE
STA 5+50
18-WL
18-SS
gas
30-RCP
30-SD
24-SD
8-WL
12-WL
12-HDPE
FIRE LN
UE-BTU
UE
BTU
USG

Scale:
1 inch = 30 feet

WL-A


294
292
290
288
286
284
282
280
278
276
274
272
270
LIMITS OF PUBLIC WL
4FT MINIMUM BURY
5FT MAXIMUM BURY
450.00 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
12" GATE VALVE & BOX
8" OMNI F2 FIRE & DOMESTIC WATER METER ASSEMBLY
12" BACKFLOW PREVENTER ASSEMBLY & VAULT
EXISTING 4" ATMOS GAS LINE
STA 0+24.64
FL=284.46
(3.5' COVER ASSUMED)
STA:0+20.00
ELEV:282.63
12X8 M.J. REDUCER
12.3'
EXISTING 18" SANITARY SEWER
STA 0+32.36
FL=268.85 (ASSUMED)
PROPOSED 30" STORM SEWER
STA 1+90.78
FL=282.16
PROPOSED 30" STORM SEWER
STA 1+94.28
FL=282.16
EXISTING GRADE
PROPOSED GRADE
PROP. FIRE HYDRANT
Deflect Water Line
20' VERTICAL CURVE
G1 = -2.147%, G2 = 0.000%
Rb =931.64
Rb Minimum=600
Mid Pt. Sta. 2+85.47
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = -2.147%
Rb =931.64
Rb Minimum=600
High Pt. Sta. 2+65.47
0.000%
-2.147%
100.000%
-100.000%
1' Min.
2.23'
12"x45° M.J. VERTICAL BEND
STA:1+85.82
FL:282.63
12"x45° M.J. VERTICAL BEND
STA:1+88.29
FL:280.16
12"x45° M.J. VERTICAL BEND
STA:2+10.76
FL:282.63
12"x45° M.J. VERTICAL BEND
STA:2+08.29
FL:280.16
BTU UNDERGROUND ELECTRICAL CONDUIT
STA:2+45.39
ELEV:280.07
12"x45° M.J. VERTICAL BEND
STA:3+81.23
FL:282.20
12"x45° M.J. VERTICAL BEND
STA:3+83.52
FL:279.91
12"x45° M.J. VERTICAL BEND
STA:4+05.82
FL:282.20
12"x45° M.J. VERTICAL BEND
STA:4+03.52
FL:279.91
PROPOSED 24" STORM SEWER
STA 3+93.45
FL=282.16
MATCHLINE 5+50
WL-A STA 0+20.00
CONNECT TO EXISTING 18" WL
1 - 18"x 12" M.J. TEE
1 - 18"M.J. GATE VALVE & BOX
1 - 12" M.J. GATE VALVE & BOX
18" FL = 282.38 (ASSUMED)
12" FL = 282.63
WL-A STA 0+53.59
12" FL = 282.63
6 LF of 2" WL
1 - 12"x2" TAPPED TEE
1 - BRASS NIPPLE
1 - 2" M.J. GATE VALVE & BOX
IRRIG. METER ASSEMBLY
WL-A STA 1+83.29 =
WL-C STA 29+20.00
12" FL = 282.63, 8" FL = 282.80
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
PRIVATE WATERLINE WL-A
12" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-A STA 3+09.78
12" FL = 282.20
1 - 12"x6" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-A STA 3+55.98
12" FL = 282.20
1 - 12"x6" MJ. TEE
1 - 12" M.J. G.V. & BOX
1 - FIRE HYDRANT ASSEMBLY
8.5 LF - 6" PVC WL
WL-A STA 4+84.67
12" FL = 282.20
1 - 12"x22.5° M.J. BEND
WL-A STA 5+08.19
12" FL = 282.20
1 - 12"x22.5° M.J. BEND
FL= 282.63
FL= 282.63
FL= 282.63
FL= 282.63
FL= 282.63
FL= 282.63
FL= 282.63
FL= 282.20
FL= 282.20
FL= 282.20
FL= 282.20
FL= 282.20
FL= 282.20
0+00
1+00
2+00
3+00
4+00
5+00

MITCHELL
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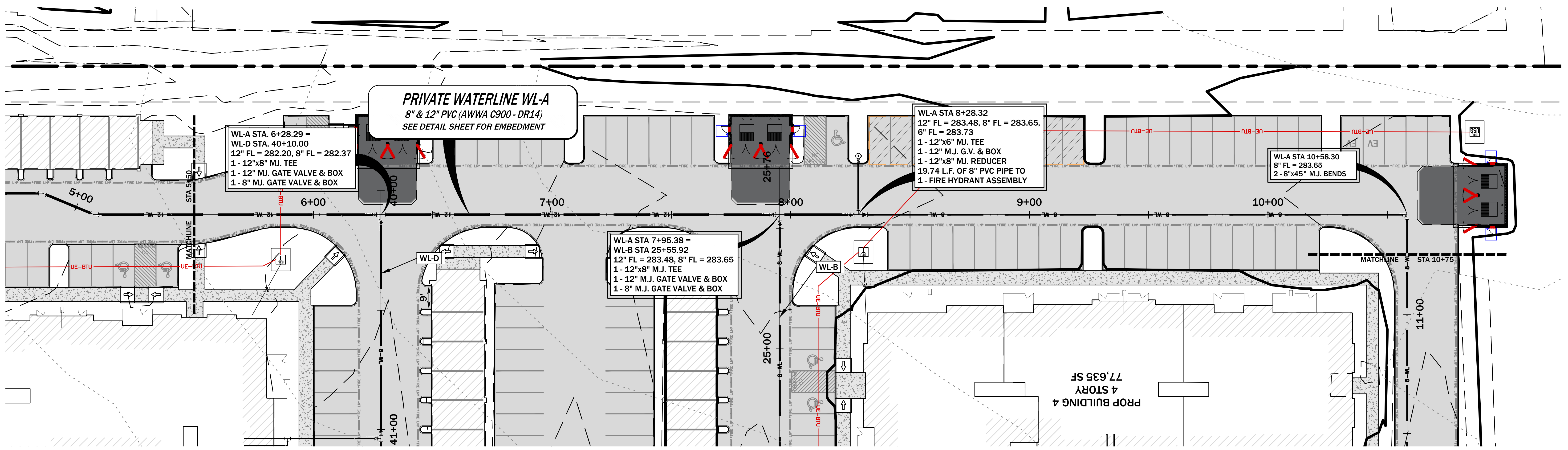
Revisions

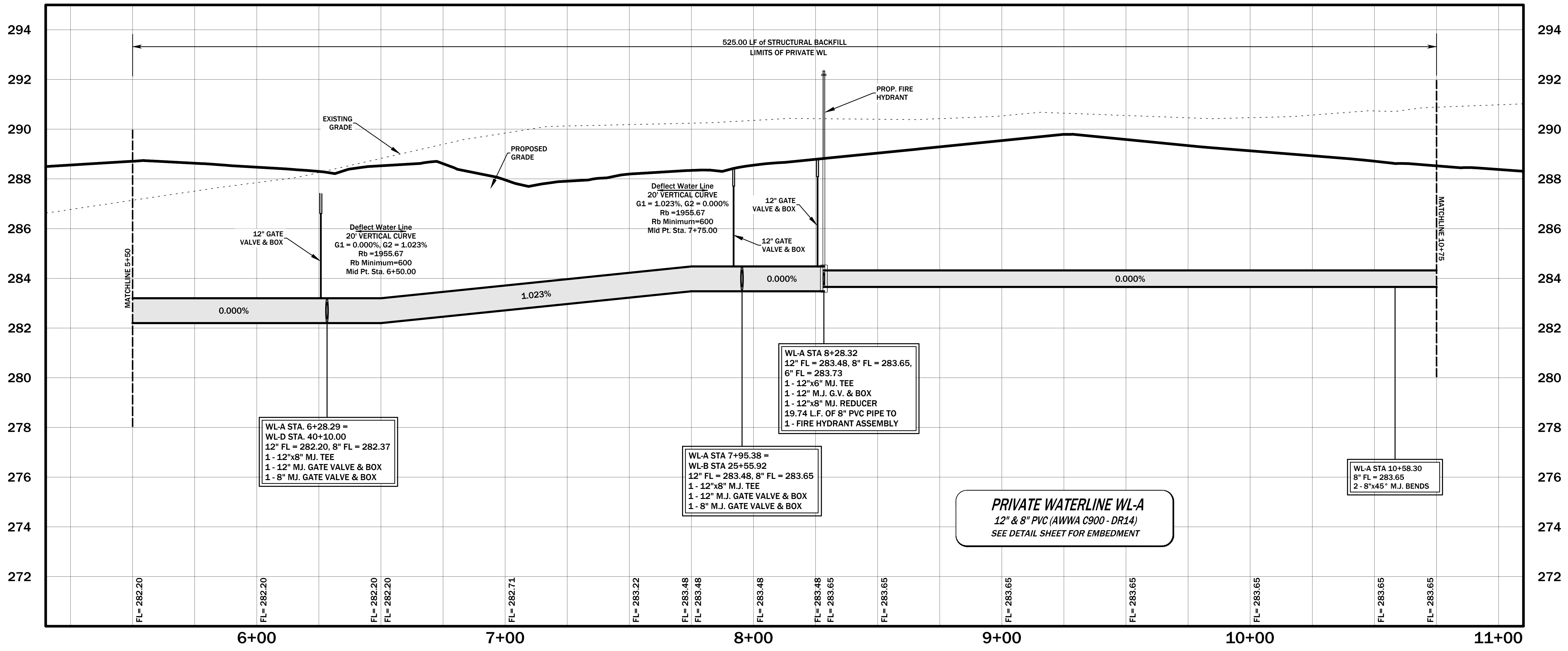
WL-A PLAN & PROFILE
STA. 0+00 TO STA. 5+50
BRAZOS OAKS PHASE II

C-201


PRIVATE WATERLINE WL-A
8" & 12" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-A STA. 6+28.29 =
WL-D STA. 40+10.00
12" FL = 282.20, 8" FL = 282.37
1 - 12"x8" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 8" MJ. GATE VALVE & BOX
WL-A STA 8+28.32
12" FL = 283.48, 8" FL = 283.65,
6" FL = 283.73
1 - 12"x6" MJ. TEE
1 - 12" M.J. G.V. & BOX
1 - 12"x8" MJ. REDUCER
19.74 L.F. OF 8" PVC PIPE TO
1 - FIRE HYDRANT ASSEMBLY
WL-A STA 7+95.38 =
WL-B STA 25+55.92
12" FL = 283.48, 8" FL = 283.65
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
WL-A STA 10+58.30
8" FL = 283.65
2 - 8"x45° M.J. BENDS
5+00
6+00
7+00
8+00
9+00
10+00
11+00
40+00
41+00
25+76
25+00
STA 5+50
MATCHLINE
MATCHLINE STA 10+75
WL-D
WL-B
UE-BTU
FIRE LN
12-WL
8-WL
EV
9'
77,635 SF
4 STORY
PROP BUILDING 4

Scale:
1 inch = 30 feet

WL-A


294
292
290
288
286
284
282
280
278
276
274
272
525.00 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROP. FIRE HYDRANT
EXISTING GRADE
PROPOSED GRADE
12" GATE VALVE & BOX
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = 1.023%
Rb =1955.67
Rb Minimum=600
Mid Pt. Sta. 6+50.00
Deflect Water Line
20' VERTICAL CURVE
G1 = 1.023%, G2 = 0.000%
Rb =1955.67
Rb Minimum=600
Mid Pt. Sta. 7+75.00
12" GATE VALVE & BOX
12" GATE VALVE & BOX
MATCHLINE 5+50
MATCHLINE 10+75
0.000%
1.023%
0.000%
0.000%
WL-A STA. 6+28.29 =
WL-D STA. 40+10.00
12" FL = 282.20, 8" FL = 282.37
1 - 12"x8" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 8" MJ. GATE VALVE & BOX
WL-A STA 8+28.32
12" FL = 283.48, 8" FL = 283.65,
6" FL = 283.73
1 - 12"x6" MJ. TEE
1 - 12" M.J. G.V. & BOX
1 - 12"x8" MJ. REDUCER
19.74 L.F. OF 8" PVC PIPE TO
1 - FIRE HYDRANT ASSEMBLY
WL-A STA 7+95.38 =
WL-B STA 25+55.92
12" FL = 283.48, 8" FL = 283.65
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
WL-A STA 10+58.30
8" FL = 283.65
2 - 8"x45° M.J. BENDS
PRIVATE WATERLINE WL-A
12" & 8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 282.20
FL= 282.20
FL= 282.20
FL= 282.20
FL= 282.71
FL= 283.22
FL= 283.48
FL= 283.48
FL= 283.48
FL= 283.48
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
6+00
7+00
8+00
9+00
10+00
11+00

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TX. FIRM # F-1443

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

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

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631

James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

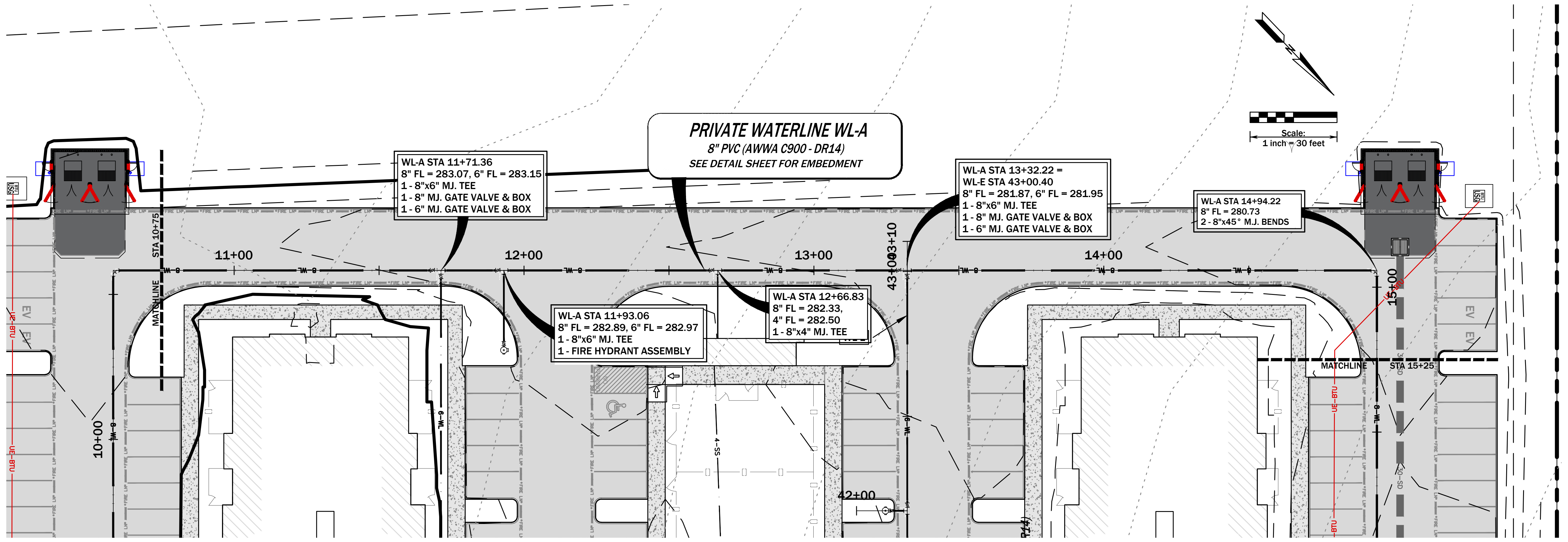
Prepared For:

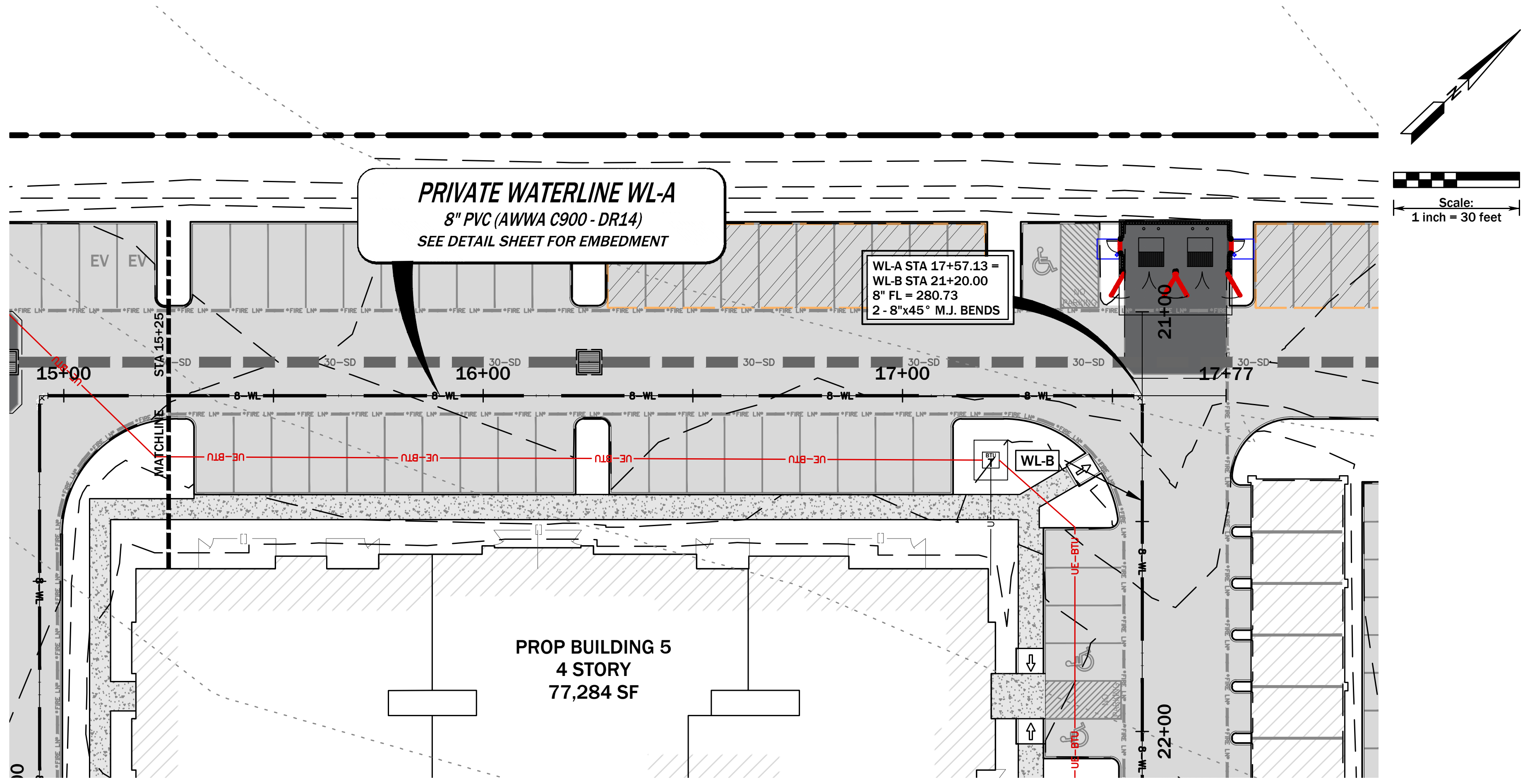
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

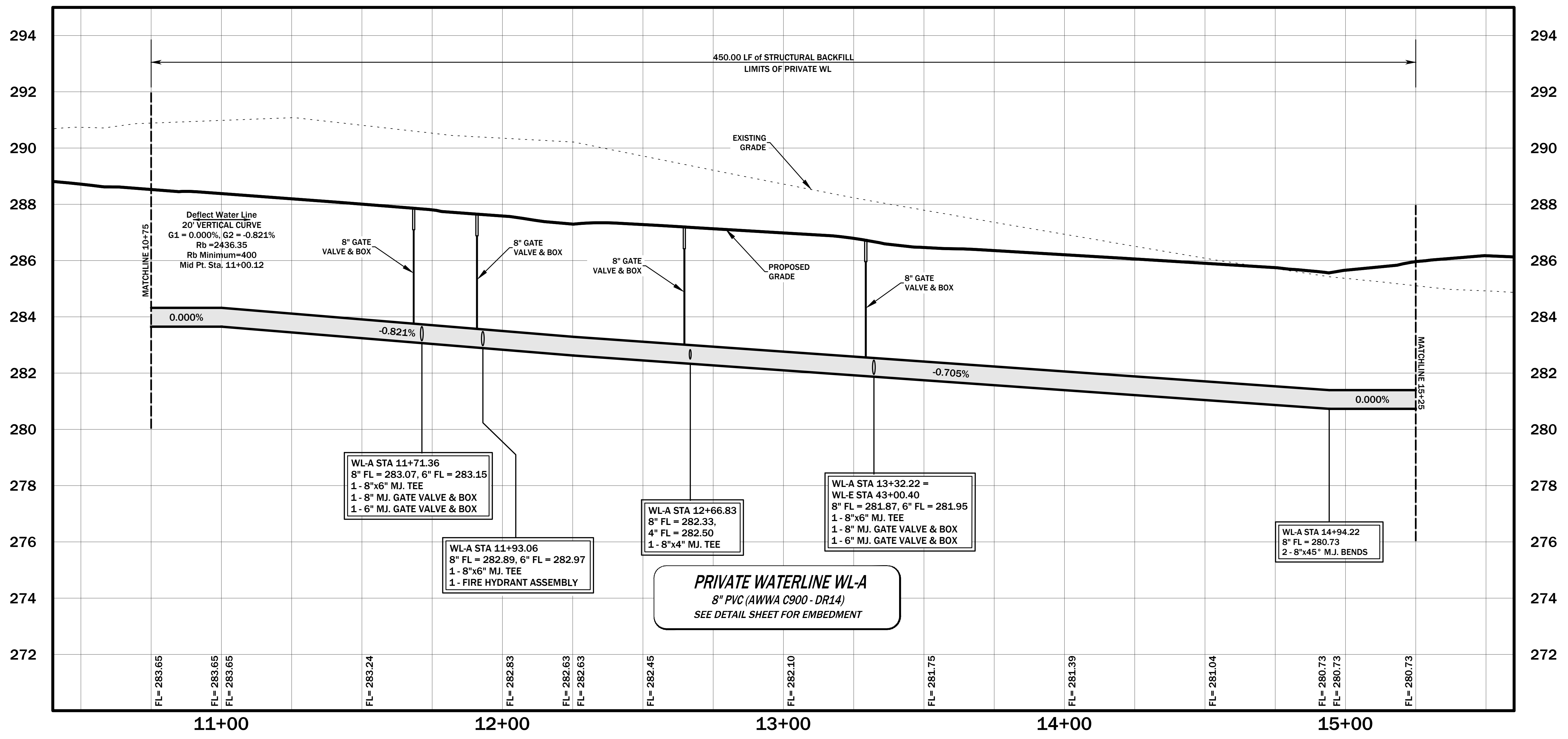
WL-A PLAN & PROFILE
STA. 5+50 TO STA. 10+75
BRAZOS OAKS PHASE II

C-202

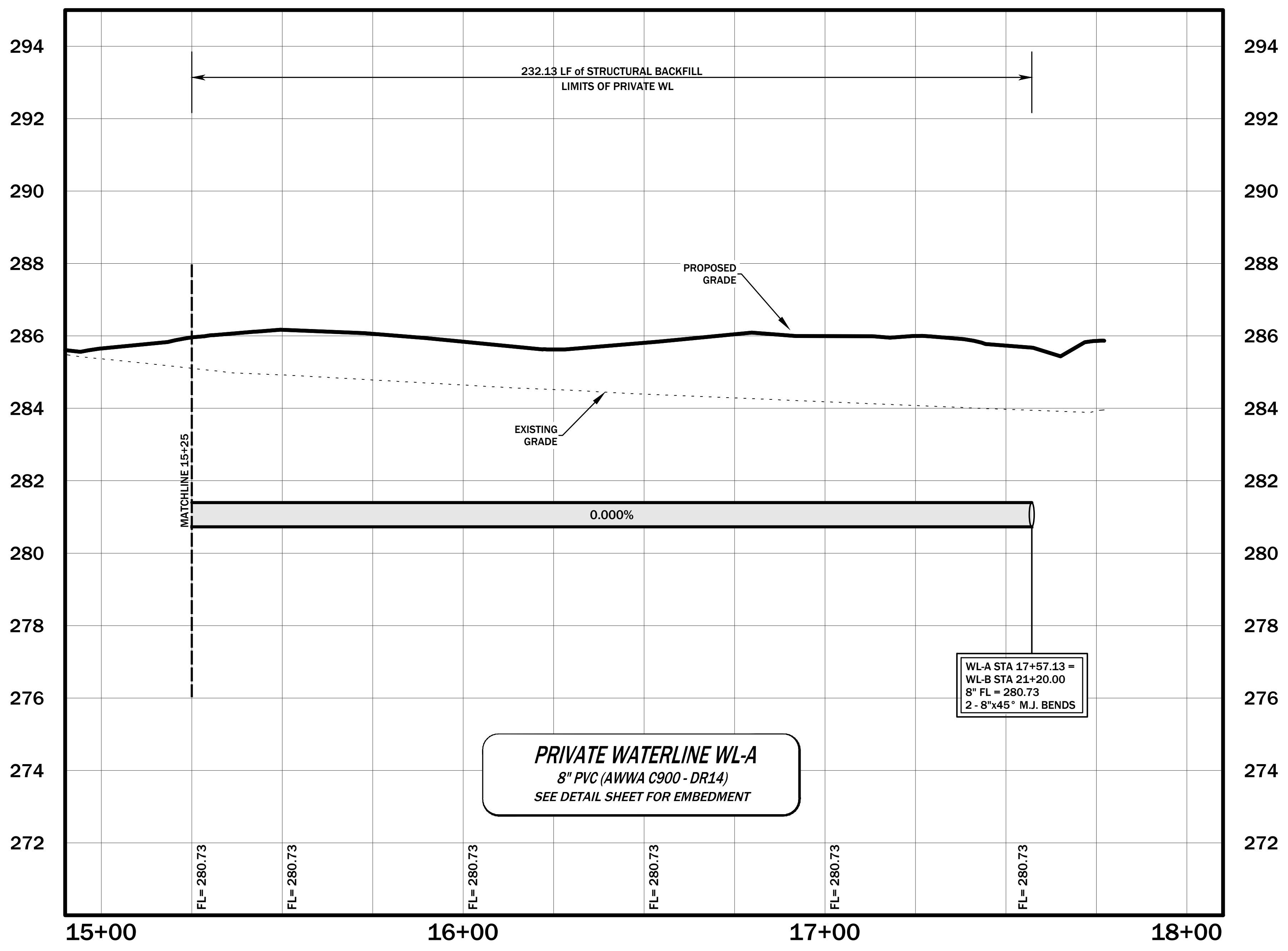

PRIVATE WATERLINE WL-A
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-A STA 11+71.36
8" FL = 283.07, 6" FL = 283.15
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-A STA 11+93.06
8" FL = 282.89, 6" FL = 282.97
1 - 8"x6" MJ. TEE
1 - FIRE HYDRANT ASSEMBLY
WL-A STA 12+66.83
8" FL = 282.33,
4" FL = 282.50
1 - 8"x4" MJ. TEE
WL-A STA 13+32.22 =
WL-E STA 43+00.40
8" FL = 281.87, 6" FL = 281.95
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-A STA 14+94.22
8" FL = 280.73
2 - 8"x45° M.J. BENDS
Scale:
1 inch = 30 feet
STA 10+75
MATCHLINE
10+00
11+00
12+00
13+00
43+00
13+10
14+00
15+00
MATCHLINE
STA 15+25
EV


PRIVATE WATERLINE WL-A
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-A STA 17+57.13 =
WL-B STA 21+20.00
8" FL = 280.73
2 - 8"x45° M.J. BENDS
Scale:
1 inch = 30 feet
PROP BUILDING 5
4 STORY
77,284 SF
15+00
STA 15+25
MATCHLINE
16+00
17+00
17+77
21+00
22+00
WL-B
EV

WL-A



WL-A



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APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

Prepared For:

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1302 S CAPITAL OF TEXAS HWY
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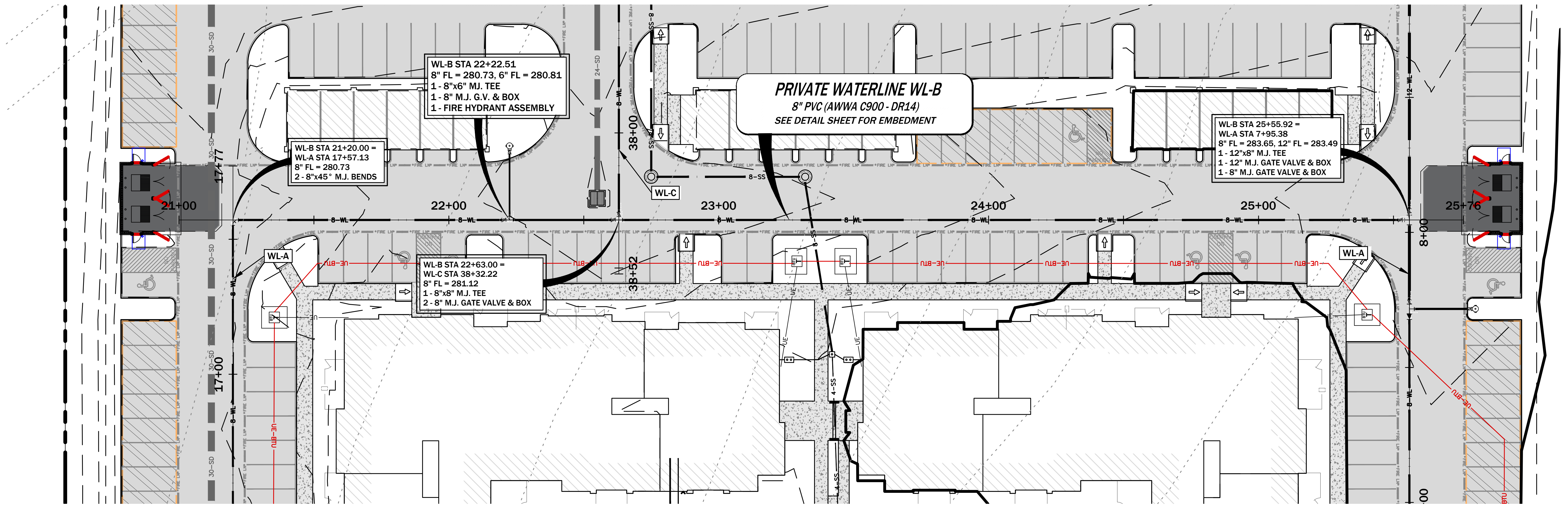
AUSTIN, TX 78746
512.329.5755

Revisions

WL-A PLAN & PROFILE
STA. 10+75 TO END

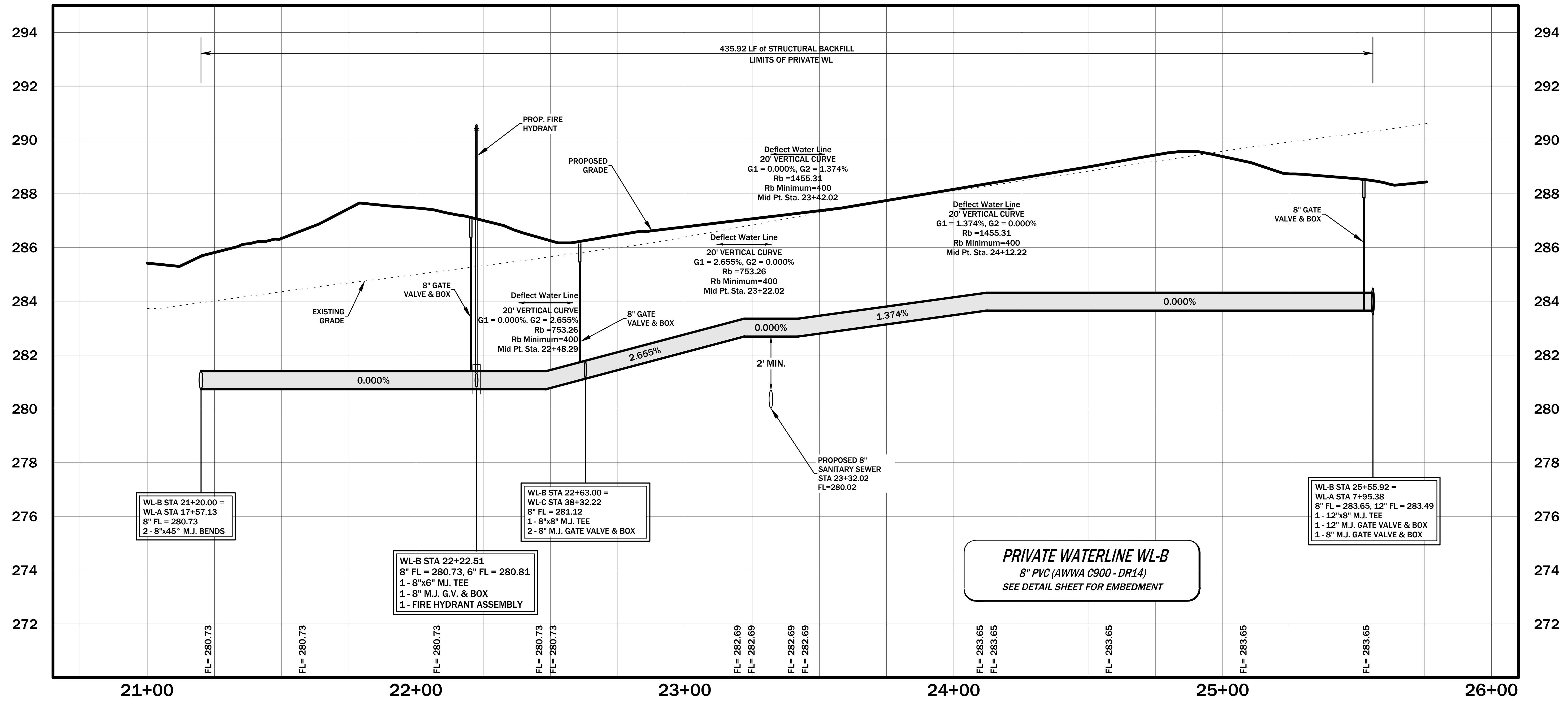
BRAZOS OAKS PHASE II

C-203


WL-B STA 22+22.51
8" FL = 280.73, 6" FL = 280.81
1 - 8"x6" MJ. TEE
1 - 8" M.J. G.V. & BOX
1 - FIRE HYDRANT ASSEMBLY
PRIVATE WATERLINE WL-B
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-B STA 25+55.92 =
WL-A STA 7+95.38
8" FL = 283.65, 12" FL = 283.49
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
WL-B STA 21+20.00 =
WL-A STA 17+57.13
8" FL = 280.73
2 - 8"x45° M.J. BENDS
WL-C
WL-A
WL-B STA 22+63.00 =
WL-C STA 38+32.22
8" FL = 281.12
1 - 8"x8" M.J. TEE
2 - 8" M.J. GATE VALVE & BOX
17+77
17+00
21+00
22+00
23+00
24+00
25+00
25+76
38+00
38+52
8+00
8-WL
12-WL
8-SS
4-SS
24-SD
30-SD
UE-BTU
UE
FIRE LN

Scale:
1 inch = 30 feet

WL-B


294
292
290
288
286
284
282
280
278
276
274
272
435.92 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROP. FIRE
HYDRANT
PROPOSED
GRADE
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = 1.374%
Rb =1455.31
Rb Minimum=400
Mid Pt. Sta. 23+42.02
Deflect Water Line
20' VERTICAL CURVE
G1 = 1.374%, G2 = 0.000%
Rb =1455.31
Rb Minimum=400
Mid Pt. Sta. 24+12.22
8" GATE
VALVE & BOX
Deflect Water Line
20' VERTICAL CURVE
G1 = 2.655%, G2 = 0.000%
Rb =753.26
Rb Minimum=400
Mid Pt. Sta. 23+22.02
8" GATE
VALVE & BOX
EXISTING
GRADE
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = 2.655%
Rb =753.26
Rb Minimum=400
Mid Pt. Sta. 22+48.29
8" GATE
VALVE & BOX
0.000%
2.655%
0.000%
1.374%
0.000%
2' MIN.
PROPOSED 8"
SANITARY SEWER
STA 23+32.02
FL=280.02
WL-B STA 21+20.00 =
WL-A STA 17+57.13
8" FL = 280.73
2 - 8"x45° M.J. BENDS
WL-B STA 22+22.51
8" FL = 280.73, 6" FL = 280.81
1 - 8"x6" MJ. TEE
1 - 8" M.J. G.V. & BOX
1 - FIRE HYDRANT ASSEMBLY
WL-B STA 22+63.00 =
WL-C STA 38+32.22
8" FL = 281.12
1 - 8"x8" M.J. TEE
2 - 8" M.J. GATE VALVE & BOX
PRIVATE WATERLINE WL-B
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-B STA 25+55.92 =
WL-A STA 7+95.38
8" FL = 283.65, 12" FL = 283.49
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX
FL= 280.73
FL= 280.73
FL= 280.73
FL= 280.73
FL= 280.73
FL= 282.69
FL= 282.69
FL= 282.69
FL= 282.69
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
FL= 283.65
21+00
22+00
23+00
24+00
25+00
26+00

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TX. FIRM # F-1443

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on APRIL 15, 2026

APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

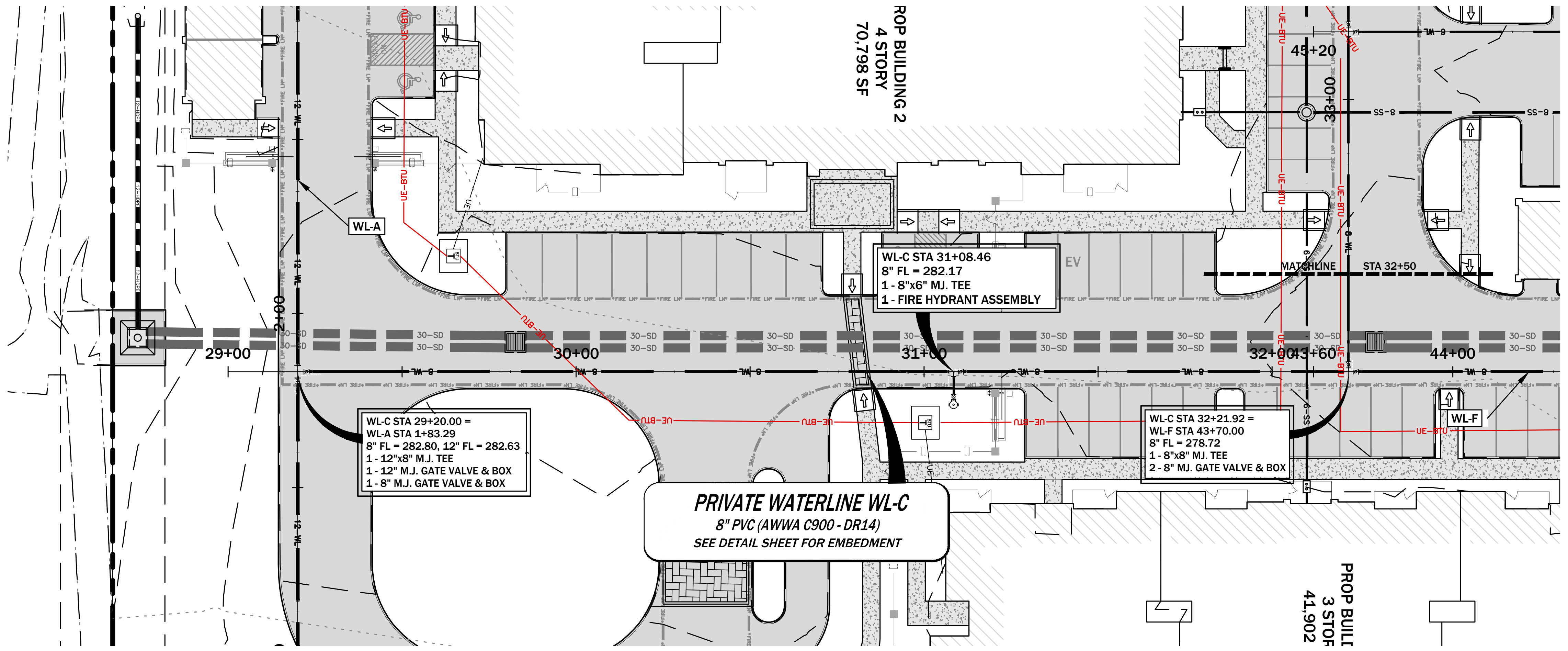
Prepared For:

TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

WL-B PLAN & PROFILE
BRAZOS OAKS PHASE II

C-204

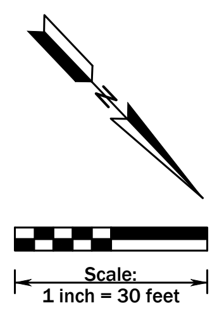

PROP BUILDING 2
4 STORY
70,798 SF
45+20
33+00
SS-8
WL-A
12-WL
12-HDPE
UE-BTU
BTU
FIRE LN
30-SD
29+00
30+00
31+00
32+00
43+60
44+00
8-WL
EV
MATCHLINE
STA 32+50
WL-F
PROP BUILDING
3 STORY
41,902

WL-C STA 29+20.00 =
WL-A STA 1+83.29
8" FL = 282.80, 12" FL = 282.63
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX

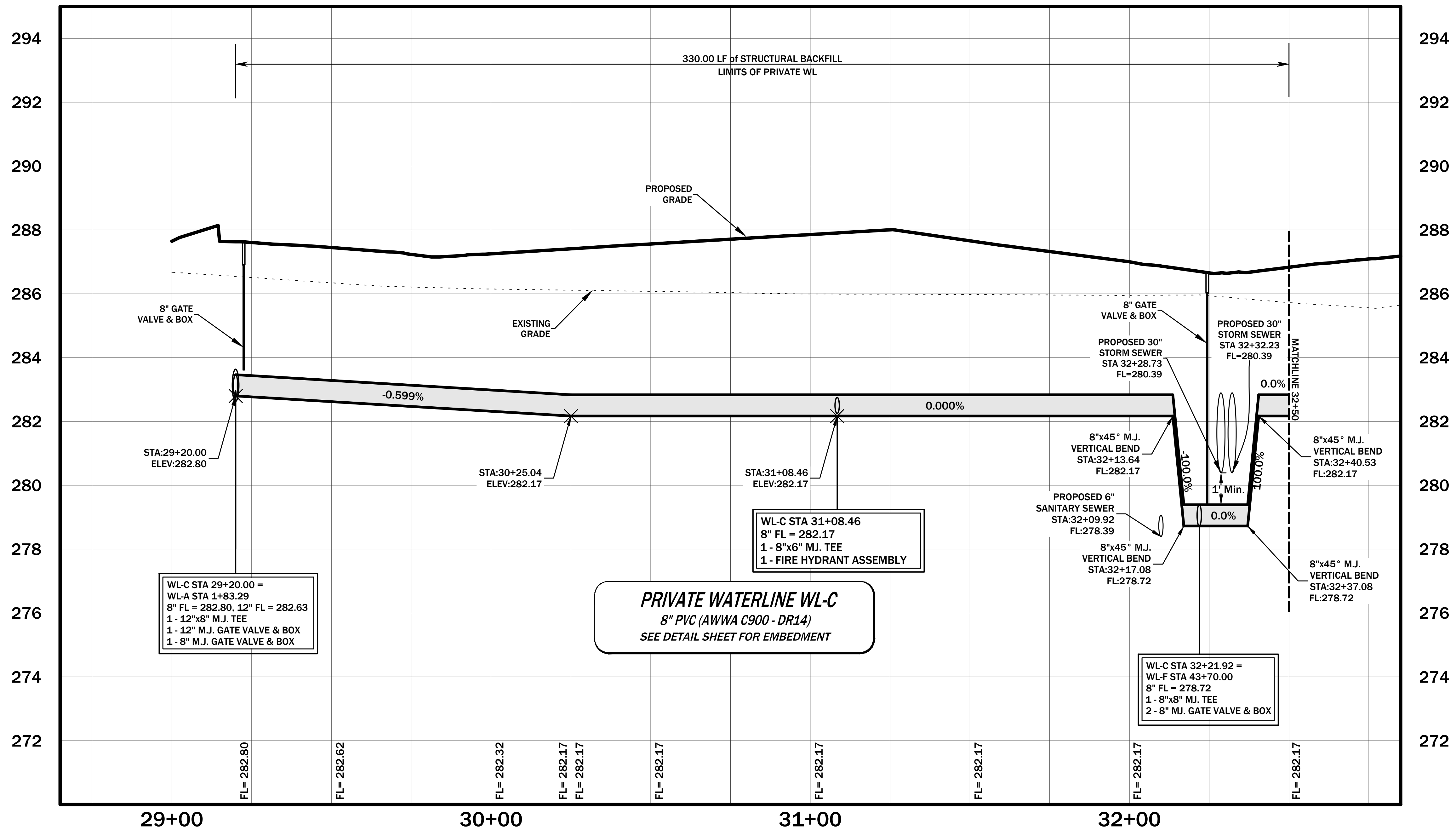
WL-C STA 31+08.46
8" FL = 282.17
1 - 8"x6" MJ. TEE
1 - FIRE HYDRANT ASSEMBLY

WL-C STA 32+21.92 =
WL-F STA 43+70.00
8" FL = 278.72
1 - 8"x8" MJ. TEE
2 - 8" MJ. GATE VALVE & BOX

PRIVATE WATERLINE WL-C
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT


Scale:
1 inch = 30 feet

WL-C



WL-C STA 29+20.00 =
WL-A STA 1+83.29
8" FL = 282.80, 12" FL = 282.63
1 - 12"x8" M.J. TEE
1 - 12" M.J. GATE VALVE & BOX
1 - 8" M.J. GATE VALVE & BOX

WL-C STA 31+08.46
8" FL = 282.17
1 - 8"x6" MJ. TEE
1 - FIRE HYDRANT ASSEMBLY

PRIVATE WATERLINE WL-C
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT

WL-C STA 32+21.92 =
WL-F STA 43+70.00
8" FL = 278.72
1 - 8"x8" MJ. TEE
2 - 8" MJ. GATE VALVE & BOX

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PLAN & DESIGN SPECIALISTS IN
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HYDROLOGY UTILITIES STREETS
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JAMES T. BATENHORST
93631
on APRIL 15, 2026

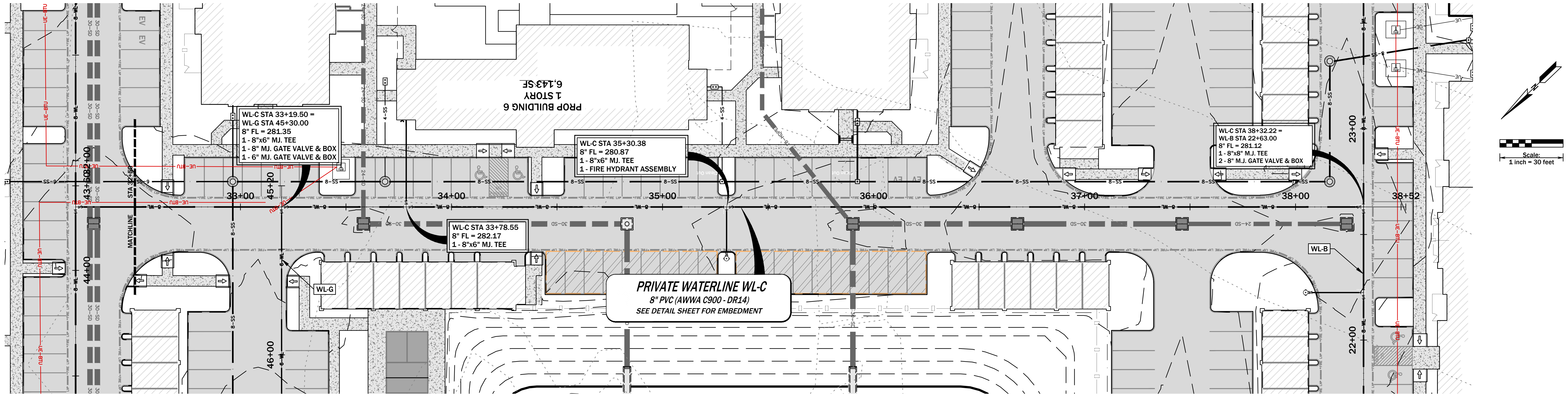
APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

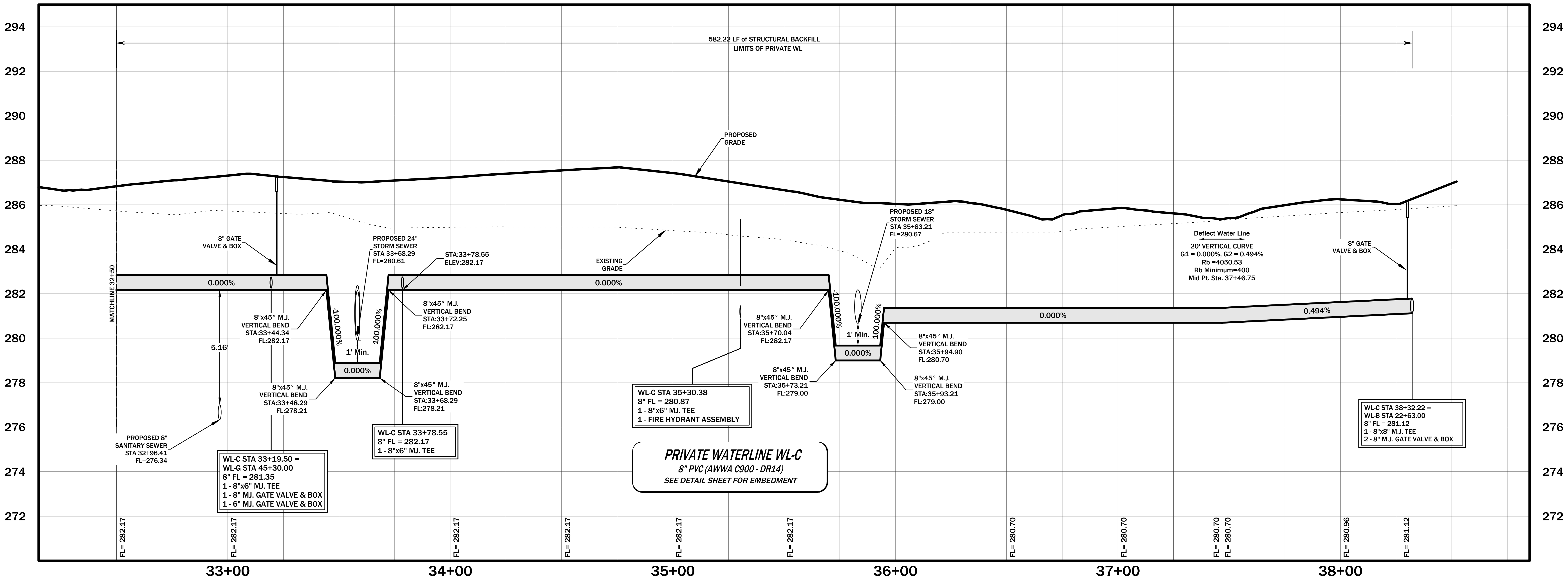
Revisions

WL-C PLAN & PROFILE
STA. 29+20 TO STA. 32+50
BRAZOS OAKS PHASE II

C-205


PROP BUILDING 6
1 STORY
6,143 SF
WL-C STA 33+19.50 =
WL-G STA 45+30.00
8" FL = 281.35
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-C STA 35+30.38
8" FL = 280.87
1 - 8"x6" MJ. TEE
1 - FIRE HYDRANT ASSEMBLY
WL-C STA 33+78.55
8" FL = 282.17
1 - 8"x6" MJ. TEE
WL-C STA 38+32.22 =
WL-B STA 22+63.00
8" FL = 281.12
1 - 8"x8" M.J. TEE
2 - 8" M.J. GATE VALVE & BOX
PRIVATE WATERLINE WL-C
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-G
WL-B
MATCHLINE
STA 32+50
43+00
44+00
45+20
46+00
33+00
34+00
35+00
36+00
37+00
38+00
38+52
23+00
22+00
8-SS
8-WL
6-WL
24-SD
30-SD
4-SS
18-HDPE
UE-BTU
FIRE LN
NO PARKING
Scale:
1 inch = 30 feet

WL-C


294
292
290
288
286
284
282
280
278
276
274
272
582.22 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROPOSED GRADE
EXISTING GRADE
MATCHLINE 32+50
8" GATE VALVE & BOX
PROPOSED 24" STORM SEWER
STA 33+58.29
FL=280.61
STA:33+78.55
ELEV:282.17
0.000%
-100.000%
100.000%
1' Min.
5.16'
8"x45° M.J. VERTICAL BEND
STA:33+44.34
FL:282.17
8"x45° M.J. VERTICAL BEND
STA:33+48.29
FL:278.21
8"x45° M.J. VERTICAL BEND
STA:33+72.25
FL:282.17
8"x45° M.J. VERTICAL BEND
STA:33+68.29
FL:278.21
PROPOSED 8" SANITARY SEWER
STA 32+96.41
FL=276.34
WL-C STA 33+19.50 =
WL-G STA 45+30.00
8" FL = 281.35
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-C STA 33+78.55
8" FL = 282.17
1 - 8"x6" MJ. TEE
WL-C STA 35+30.38
8" FL = 280.87
1 - 8"x6" MJ. TEE
1 - FIRE HYDRANT ASSEMBLY
PRIVATE WATERLINE WL-C
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED 18" STORM SEWER
STA 35+83.21
FL=280.67
8"x45° M.J. VERTICAL BEND
STA:35+70.04
FL:282.17
8"x45° M.J. VERTICAL BEND
STA:35+73.21
FL:279.00
8"x45° M.J. VERTICAL BEND
STA:35+94.90
FL:280.70
8"x45° M.J. VERTICAL BEND
STA:35+93.21
FL:279.00
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = 0.494%
Rb =4050.53
Rb Minimum=400
Mid Pt. Sta. 37+46.75
0.494%
8" GATE VALVE & BOX
WL-C STA 38+32.22 =
WL-B STA 22+63.00
8" FL = 281.12
1 - 8"x8" M.J. TEE
2 - 8" M.J. GATE VALVE & BOX
FL= 282.17
FL= 282.17
FL= 282.17
FL= 282.17
FL= 282.17
FL= 282.17
FL= 280.70
FL= 280.70
FL= 280.70
FL= 280.70
FL= 280.96
FL= 281.12
33+00
34+00
35+00
36+00
37+00
38+00

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TX. FIRM # F-1443

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APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

Prepared For:

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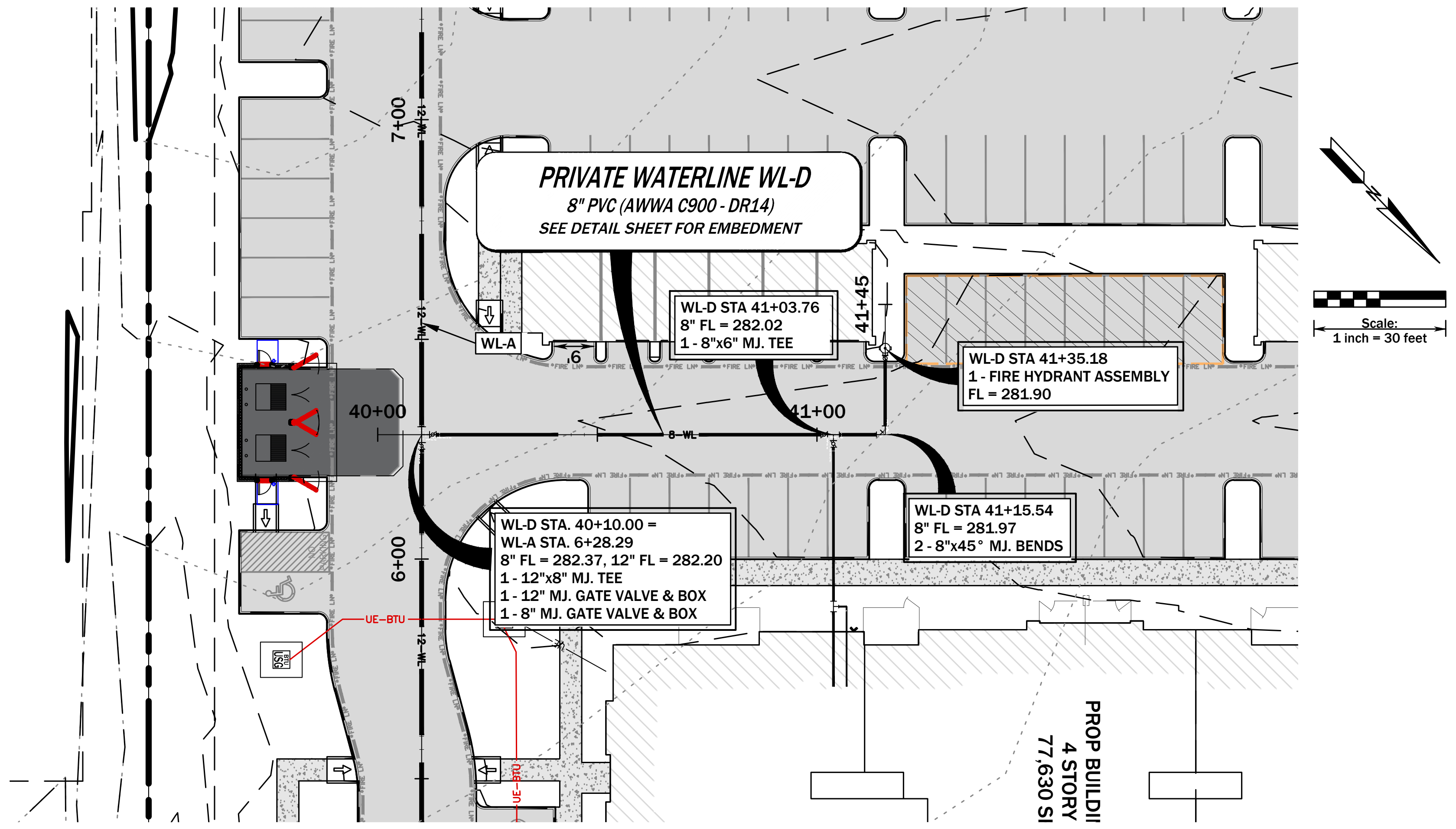
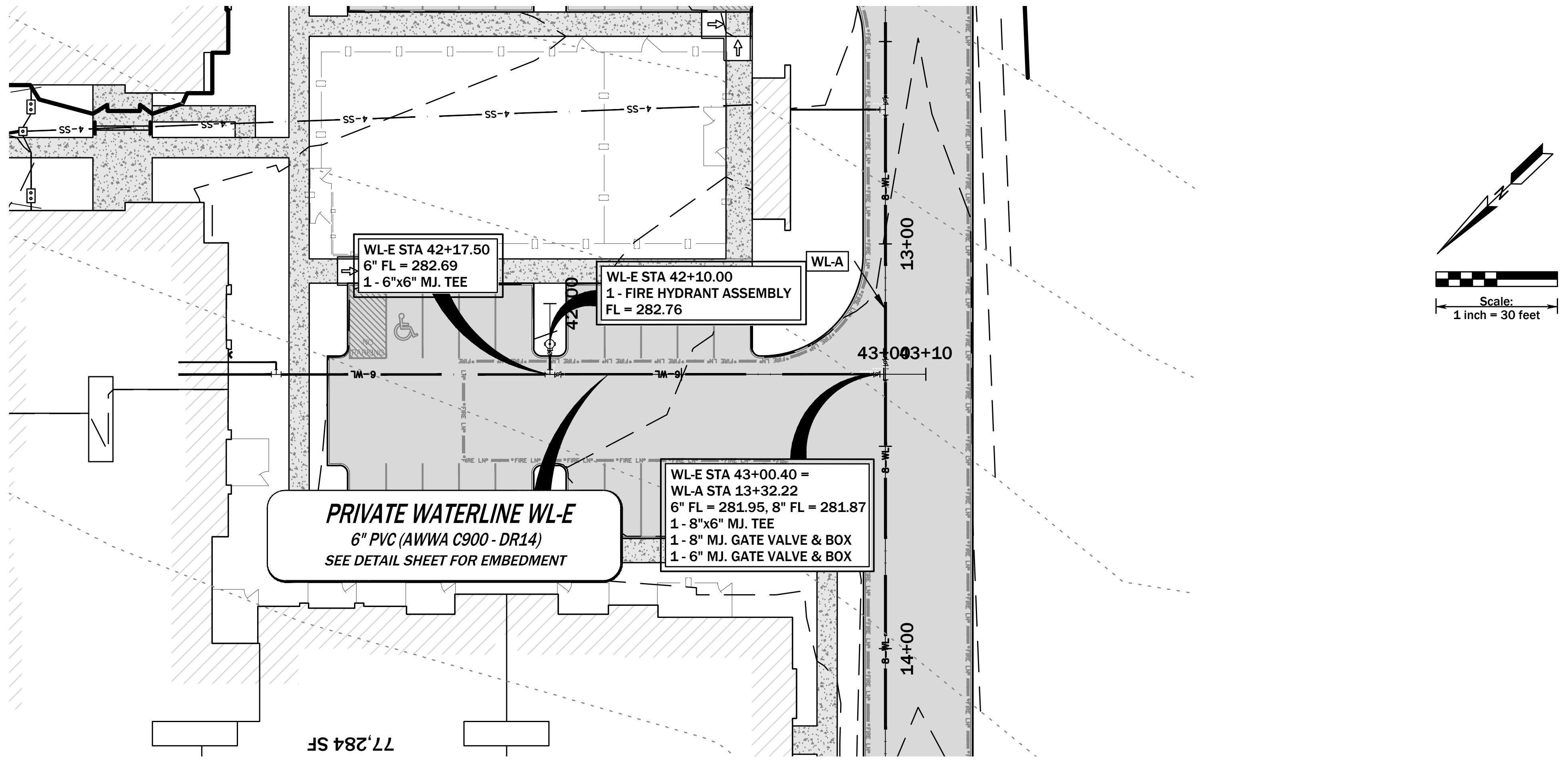
512.329.5755

Revisions

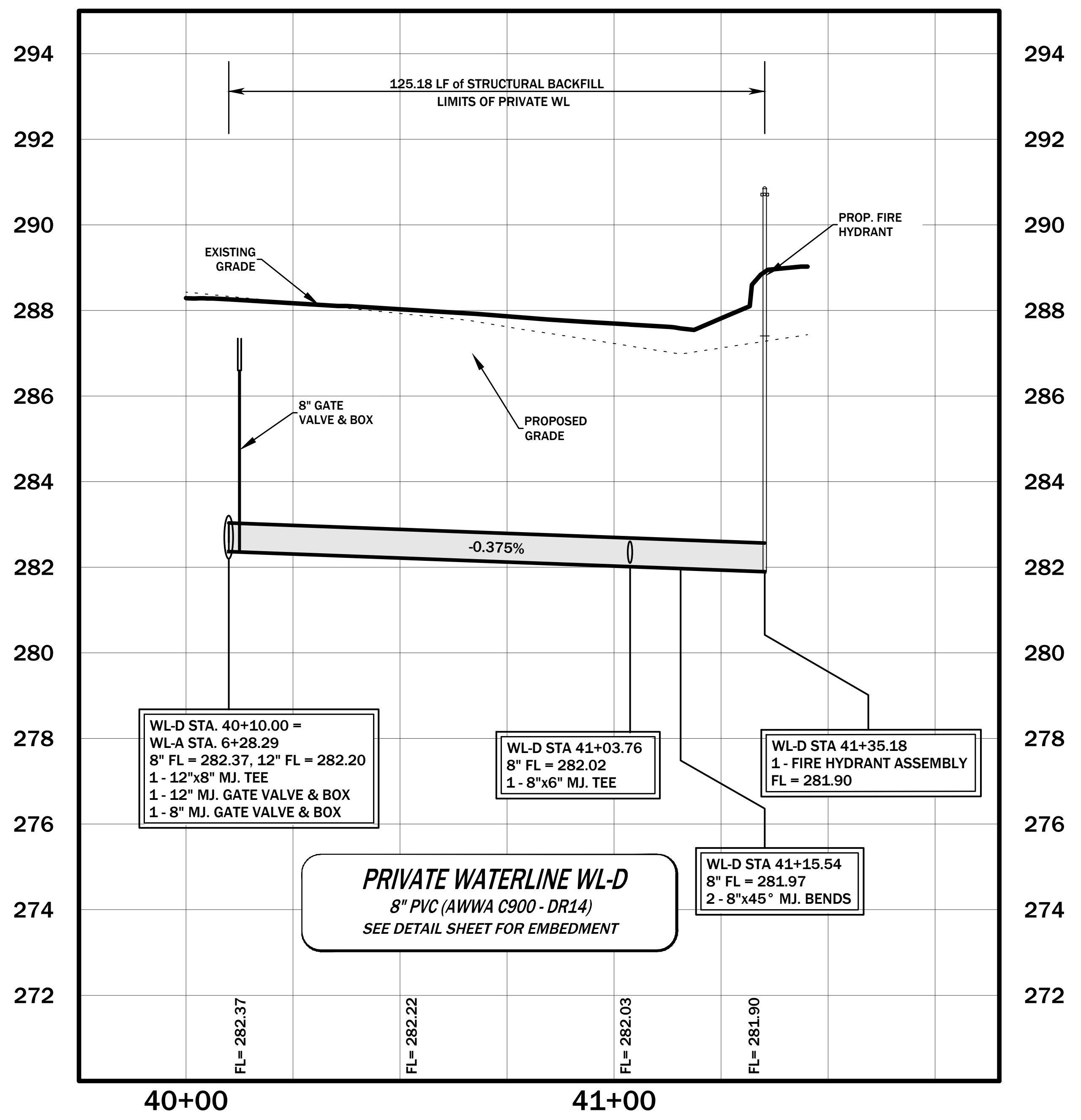
WL-C PLAN & PROFILE
STA. 32+50 TO END
BRAZOS OAKS PHASE II

C-206

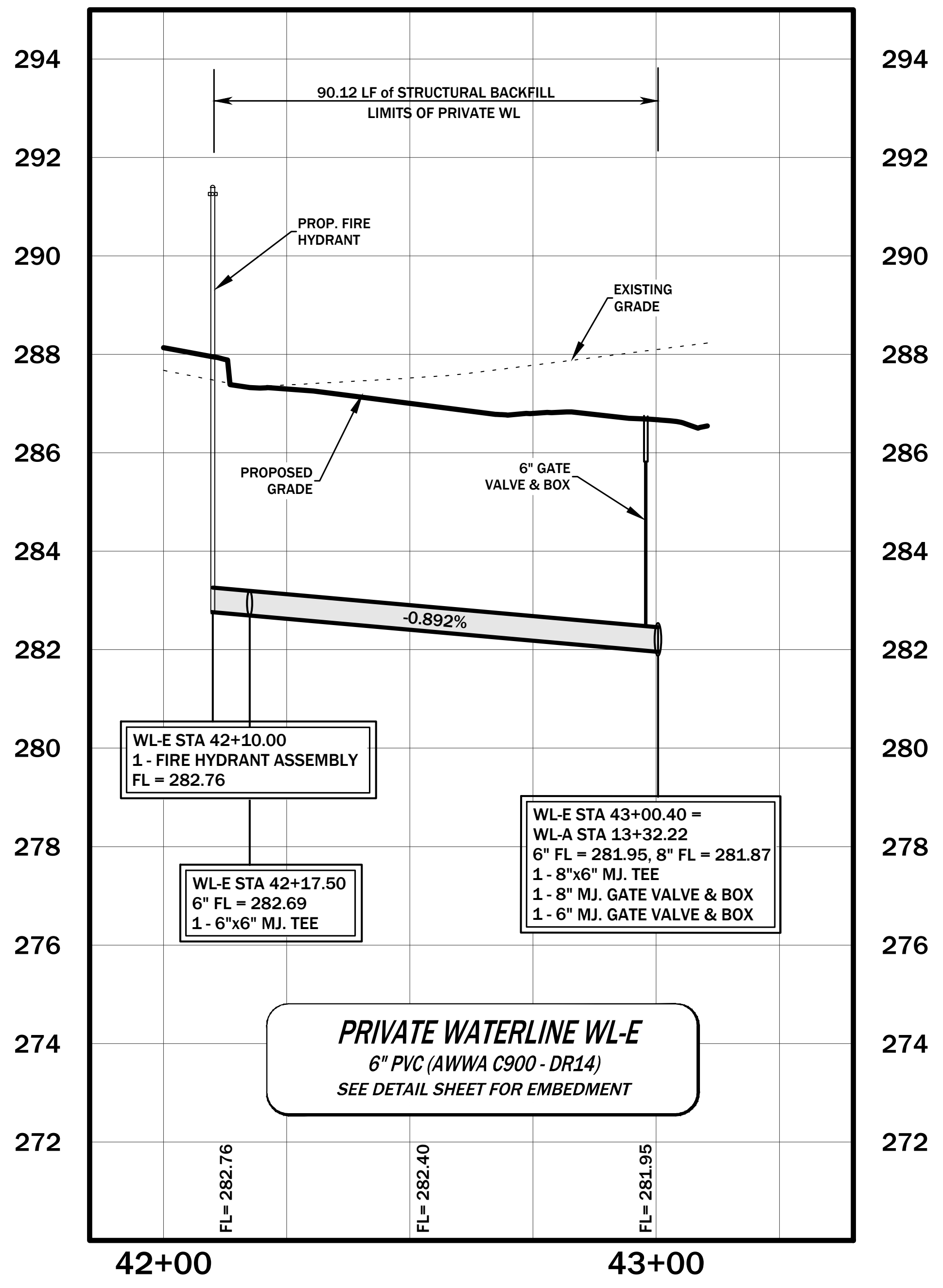

PRIVATE WATERLINE WL-D
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-D STA 41+03.76
8" FL = 282.02
1 - 8"x6" MJ. TEE
WL-D STA 41+35.18
1 - FIRE HYDRANT ASSEMBLY
FL = 281.90
WL-D STA 41+15.54
8" FL = 281.97
2 - 8"x45° MJ. BENDS
WL-D STA. 40+10.00 =
WL-A STA. 6+28.29
8" FL = 282.37, 12" FL = 282.20
1 - 12"x8" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 8" MJ. GATE VALVE & BOX
WL-A
40+00
41+00
41+45
7+00
6+00
PROP BUILDI
4 STORY
77,630 SI
Scale:
1 inch = 30 feet


WL-E STA 42+17.50
6" FL = 282.69
1 - 6"x6" MJ. TEE
WL-E STA 42+10.00
1 - FIRE HYDRANT ASSEMBLY
FL = 282.76
WL-A
13+00
43+00
43+10
42+00
PRIVATE WATERLINE WL-E
6" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
WL-E STA 43+00.40 =
WL-A STA 13+32.22
6" FL = 281.95, 8" FL = 281.87
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
14+00
77,284 SF
Scale:
1 inch = 30 feet

WL-D


294
292
290
288
286
284
282
280
278
276
274
272
125.18 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROP. FIRE HYDRANT
EXISTING GRADE
8" GATE VALVE & BOX
PROPOSED GRADE
-0.375%
WL-D STA. 40+10.00 =
WL-A STA. 6+28.29
8" FL = 282.37, 12" FL = 282.20
1 - 12"x8" MJ. TEE
1 - 12" MJ. GATE VALVE & BOX
1 - 8" MJ. GATE VALVE & BOX
WL-D STA 41+03.76
8" FL = 282.02
1 - 8"x6" MJ. TEE
WL-D STA 41+35.18
1 - FIRE HYDRANT ASSEMBLY
FL = 281.90
WL-D STA 41+15.54
8" FL = 281.97
2 - 8"x45° MJ. BENDS
PRIVATE WATERLINE WL-D
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 282.37
FL= 282.22
FL= 282.03
FL= 281.90
40+00
41+00

WL-E


294
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272
90.12 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROP. FIRE HYDRANT
EXISTING GRADE
PROPOSED GRADE
6" GATE VALVE & BOX
-0.892%
WL-E STA 42+10.00
1 - FIRE HYDRANT ASSEMBLY
FL = 282.76
WL-E STA 42+17.50
6" FL = 282.69
1 - 6"x6" MJ. TEE
WL-E STA 43+00.40 =
WL-A STA 13+32.22
6" FL = 281.95, 8" FL = 281.87
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
PRIVATE WATERLINE WL-E
6" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 282.76
FL= 282.40
FL= 281.95
42+00
43+00

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PLAN & DESIGN SPECIALISTS IN
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HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS

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JAMES T. BATENHORST
93631
on APRIL 15, 2026

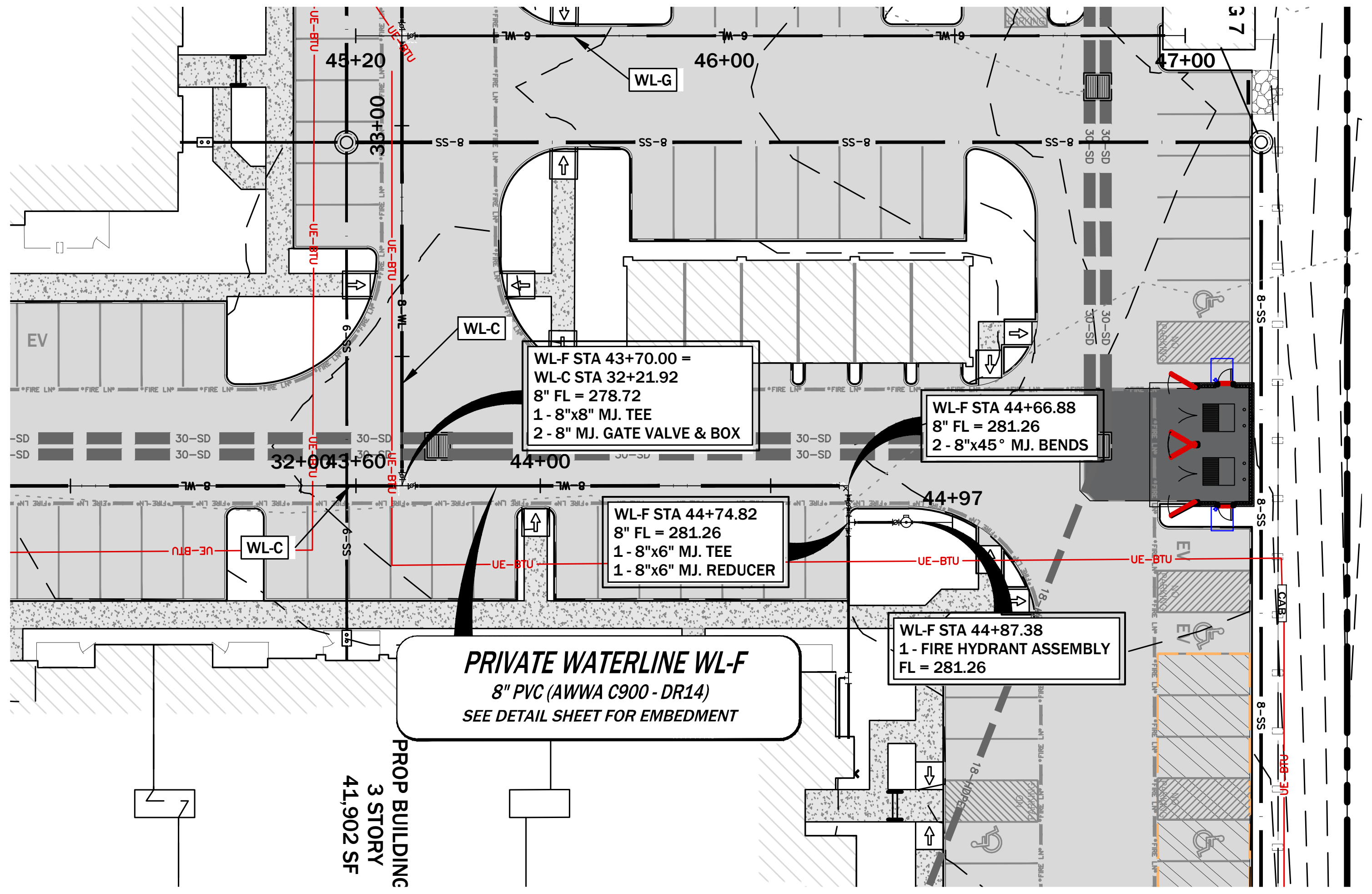
APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

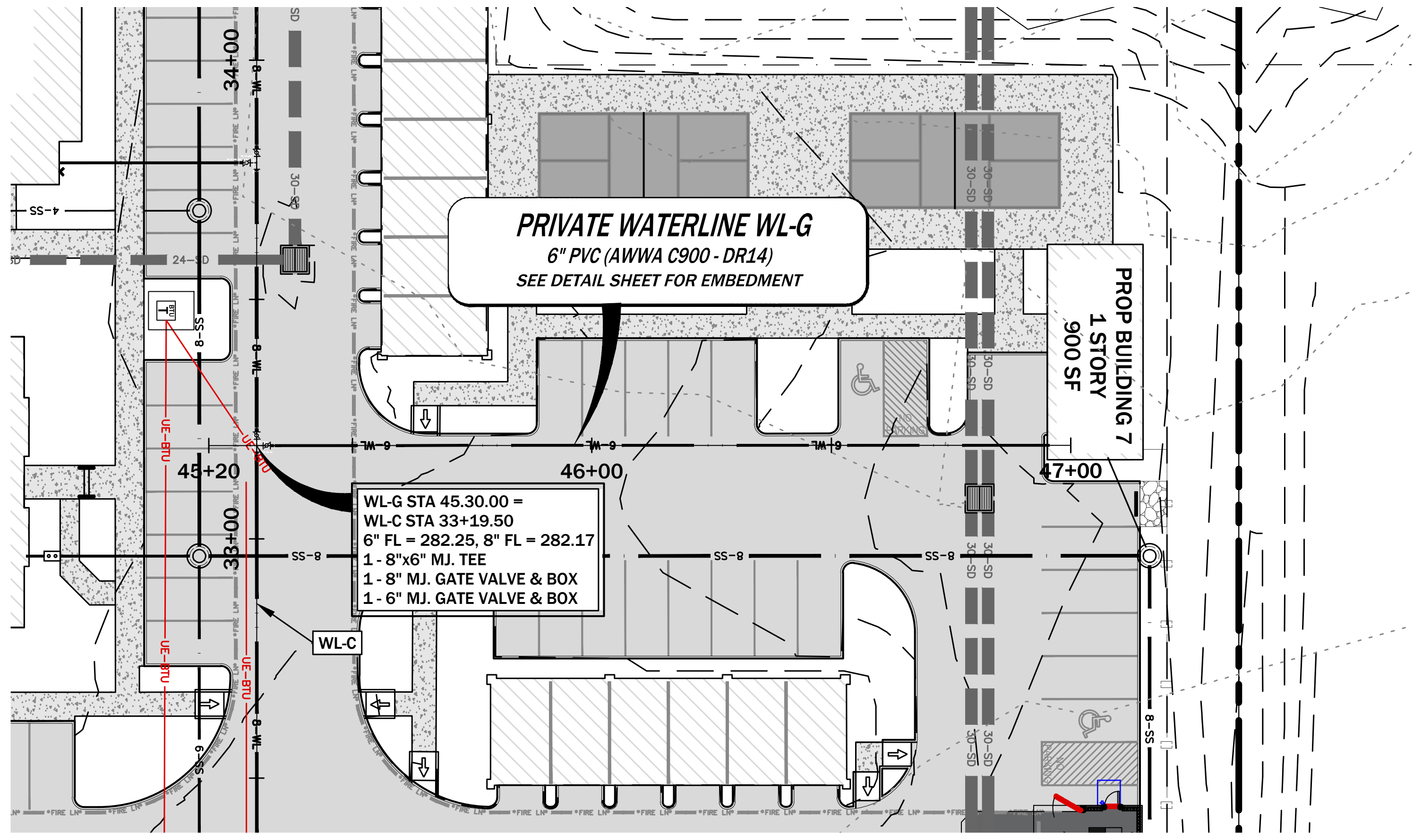
Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

WL-D & WL-E PLAN & PROFILE
BRAZOS OAKS PHASE II

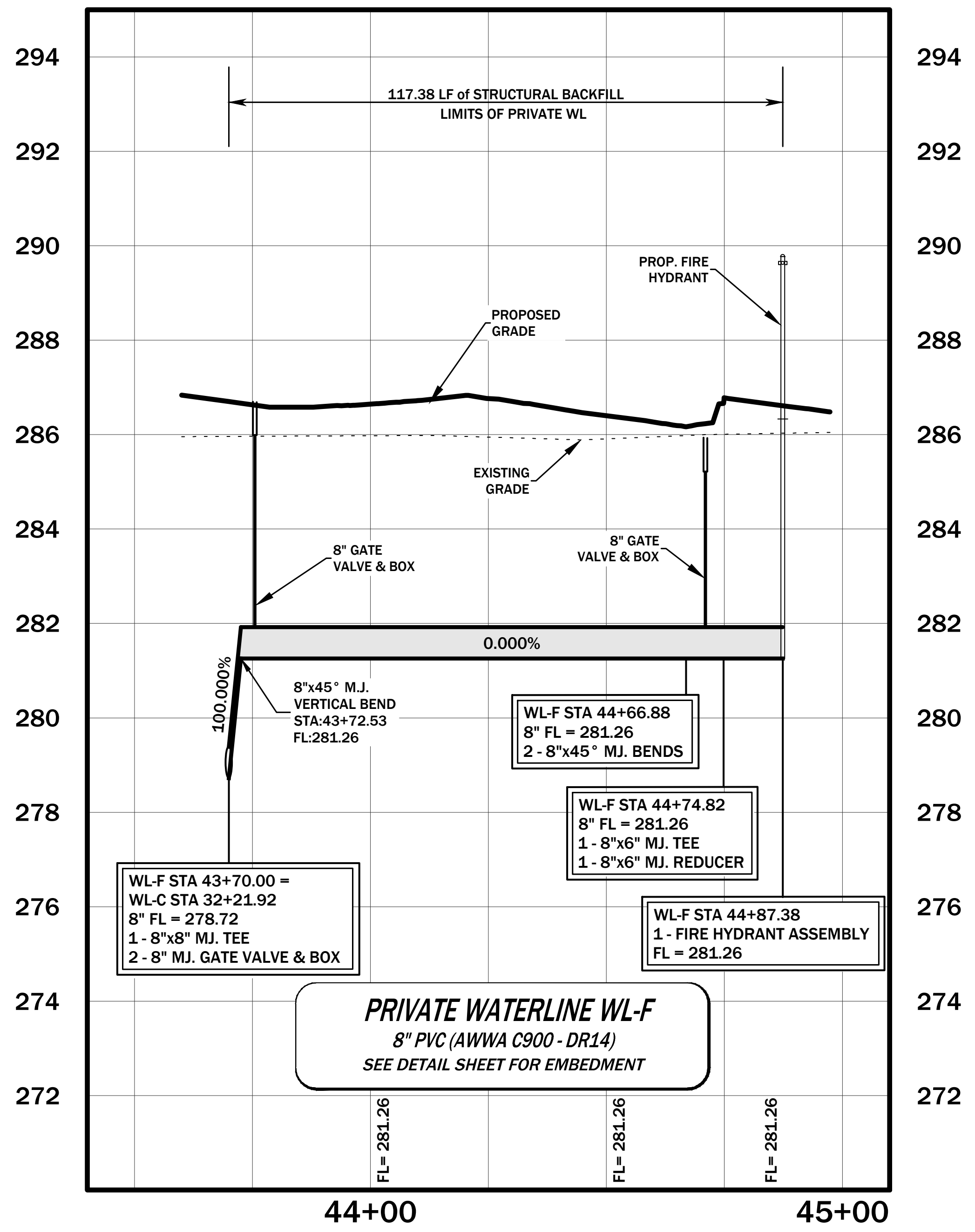
C-207


45+20
46+00
47+00
33+00
WL-G
WL-C
EV
32+00
33+60
44+00
44+97
WL-C
WL-F STA 43+70.00 =
WL-C STA 32+21.92
8" FL = 278.72
1 - 8"x8" MJ. TEE
2 - 8" MJ. GATE VALVE & BOX
WL-F STA 44+66.88
8" FL = 281.26
2 - 8"x45° MJ. BENDS
WL-F STA 44+74.82
8" FL = 281.26
1 - 8"x6" MJ. TEE
1 - 8"x6" MJ. REDUCER
WL-F STA 44+87.38
1 - FIRE HYDRANT ASSEMBLY
FL = 281.26
PRIVATE WATERLINE WL-F
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
PROP BUILDING
3 STORY
41,902 SF


34+00
PRIVATE WATERLINE WL-G
6" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
PROP BUILDING 7
1 STORY
900 SF
45+20
46+00
47+00
33+00
WL-G STA 45.30.00 =
WL-C STA 33+19.50
6" FL = 282.25, 8" FL = 282.17
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
WL-C

Scale:
1 inch = 30 feet

WL-F


294
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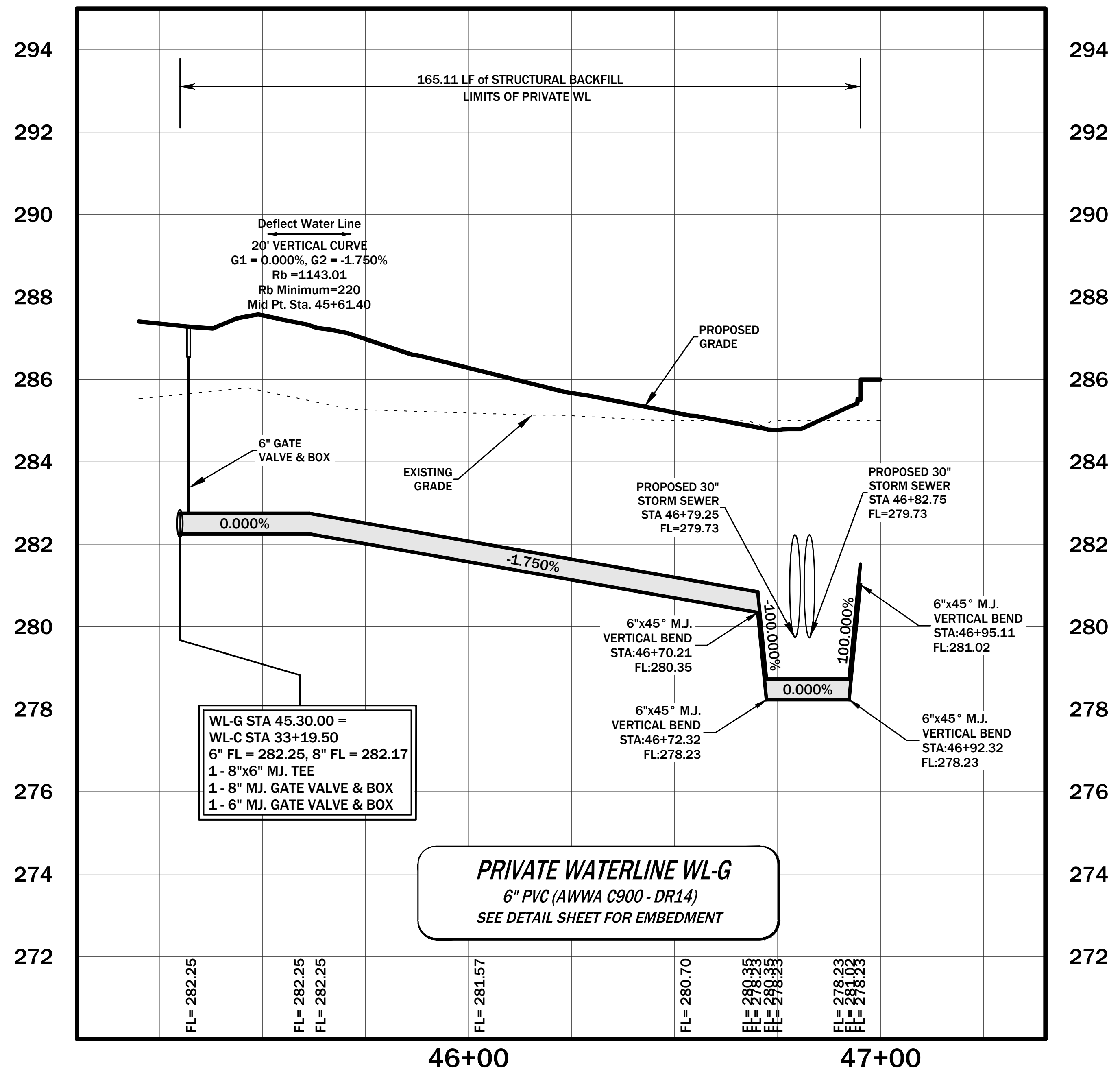
272
117.38 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
PROP. FIRE HYDRANT
PROPOSED GRADE
EXISTING GRADE
8" GATE VALVE & BOX
8" GATE VALVE & BOX
0.000%
100.000%
8"x45° MJ. VERTICAL BEND STA:43+72.53 FL:281.26
WL-F STA 44+66.88
8" FL = 281.26
2 - 8"x45° MJ. BENDS
WL-F STA 44+74.82
8" FL = 281.26
1 - 8"x6" MJ. TEE
1 - 8"x6" MJ. REDUCER
WL-F STA 43+70.00 =
WL-C STA 32+21.92
8" FL = 278.72
1 - 8"x8" MJ. TEE
2 - 8" MJ. GATE VALVE & BOX
WL-F STA 44+87.38
1 - FIRE HYDRANT ASSEMBLY
FL = 281.26
PRIVATE WATERLINE WL-F
8" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 281.26
FL= 281.26
FL= 281.26
44+00
45+00

WL-G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165.11 LF of STRUCTURAL BACKFILL
LIMITS OF PRIVATE WL
Deflect Water Line
20' VERTICAL CURVE
G1 = 0.000%, G2 = -1.750%
Rb =1143.01
Rb Minimum=220
Mid Pt. Sta. 45+61.40
PROPOSED GRADE
EXISTING GRADE
6" GATE VALVE & BOX
0.000%
-1.750%
PROPOSED 30" STORM SEWER STA 46+79.25 FL=279.73
PROPOSED 30" STORM SEWER STA 46+82.75 FL=279.73
6"x45° MJ. VERTICAL BEND STA:46+70.21 FL:280.35
6"x45° MJ. VERTICAL BEND STA:46+95.11 FL:281.02
100.000%
100.000%
0.000%
6"x45° MJ. VERTICAL BEND STA:46+72.32 FL:278.23
6"x45° MJ. VERTICAL BEND STA:46+92.32 FL:278.23
WL-G STA 45.30.00 =
WL-C STA 33+19.50
6" FL = 282.25, 8" FL = 282.17
1 - 8"x6" MJ. TEE
1 - 8" MJ. GATE VALVE & BOX
1 - 6" MJ. GATE VALVE & BOX
PRIVATE WATERLINE WL-G
6" PVC (AWWA C900 - DR14)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 282.25
FL= 282.25
FL= 282.25
FL= 281.57
FL= 280.70
FL= 280.35
FL= 278.23
FL= 278.23
FL= 278.23
FL= 278.23
46+00
47+00

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JAMES T. BATENHORST
93631

James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

Prepared For:

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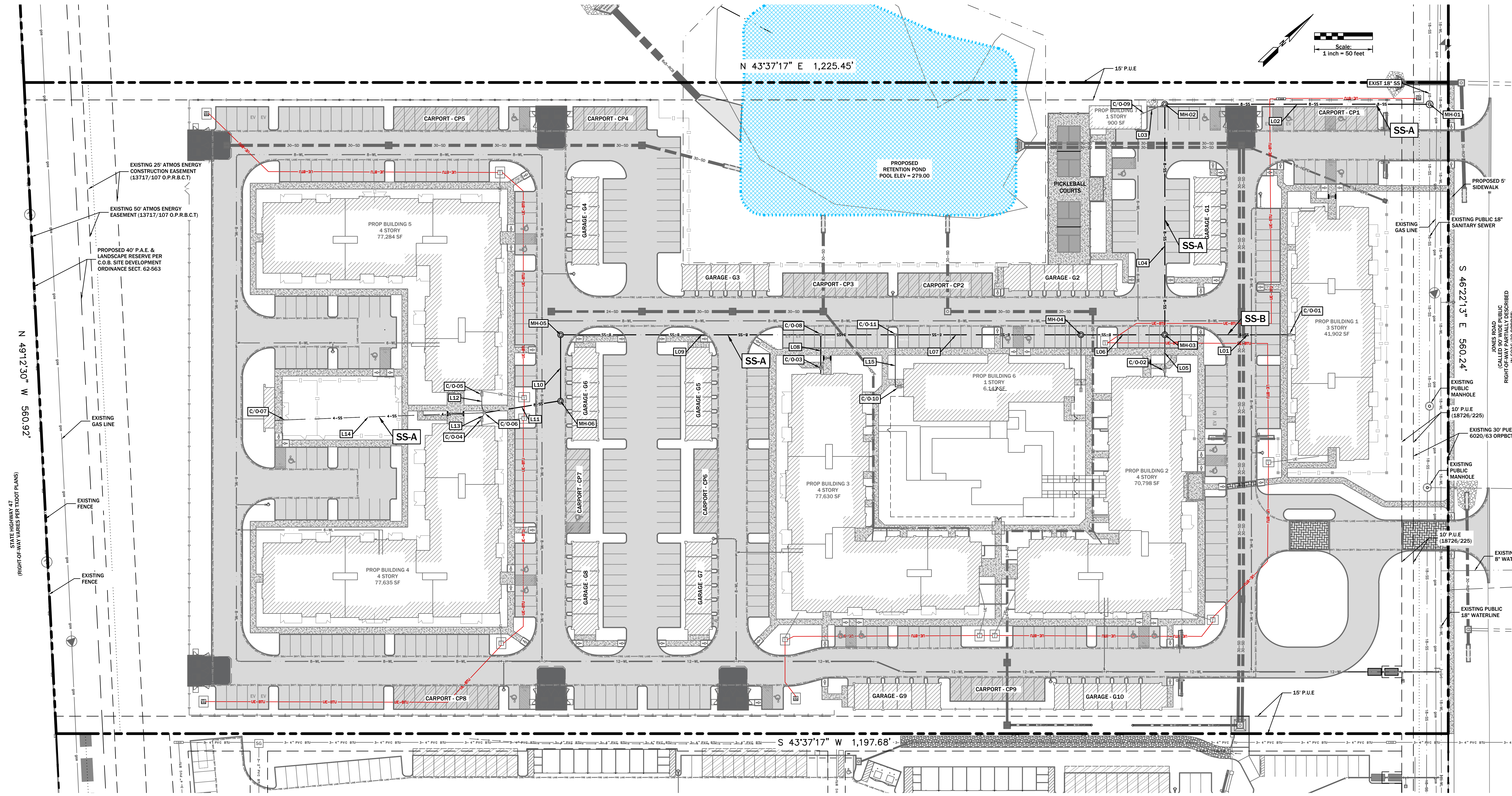
Revisions

WL-F & WL-G PLAN & PROFILE
BRAZOS OAKS PHASE II

C-208


N 43°37'17" E 1,225.45'
S 43°37'17" W 1,197.68'
N 49°12'30" W 560.92'
S 46°22'13" E 560.24'
Scale: 1 inch = 50 feet
PROPOSED RETENTION POND POOL ELEV = 279.00
EXISTING 25' ATMOS ENERGY CONSTRUCTION EASEMENT (13717/107 O.P.R.B.C.T)
EXISTING 50' ATMOS ENERGY EASEMENT (13717/107 O.P.R.B.C.T)
PROPOSED 40' P.A.E. & LANDSCAPE RESERVE PER C.O.B. SITE DEVELOPMENT ORDINANCE SECT. 62-563
EXISTING GAS LINE
EXISTING FENCE
EXISTING FENCE
STATE HIGHWAY 47 (RIGHT-OF-WAY VARIES PER TXDOT PLANS)
15' P.U.E
EXIST 18" SS
MH-01
SS-A
PROPOSED 5' SIDEWALK
EXISTING GAS LINE
EXISTING PUBLIC 18" SANITARY SEWER
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING 30' PUE, 6020/63 ORPBCT
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING PUBLIC 8" WATERLINE
EXISTING PUBLIC 18" WATERLINE
JONES ROAD (CALLED 90' WIDE PUBLIC RIGHT-OF-WAY PARTIALLY DESCRIBED IN 6036/32 OPRBCT)
CARPORT - CP5
CARPORT - CP4
CARPORT - CP1
CARPORT - CP3
CARPORT - CP2
CARPORT - CP7
CARPORT - CP6
CARPORT - CP8
CARPORT - CP9
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G5
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
PROP BUILDING 5 4 STORY 77,284 SF
PROP BUILDING 4 4 STORY 77,635 SF
PROP BUILDING 3 4 STORY 77,630 SF
PROP BUILDING 2 4 STORY 70,798 SF
PROP BUILDING 1 3 STORY 41,902 SF
PROP BUILDING 6 1 STORY 6,147 SF
PROP BUILDING 1 STORY 900 SF
PICKLEBALL COURTS
MH-02
MH-03
MH-04
MH-05
MH-06
SS-A
SS-B
C/O-01
C/O-02
C/O-03
C/O-04
C/O-05
C/O-06
C/O-07
C/O-08
C/O-09
C/O-10
C/O-11
L01
L02
L03
L04
L05
L06
L07
L08
L09
L10
L11
L12
L13
L14
L15

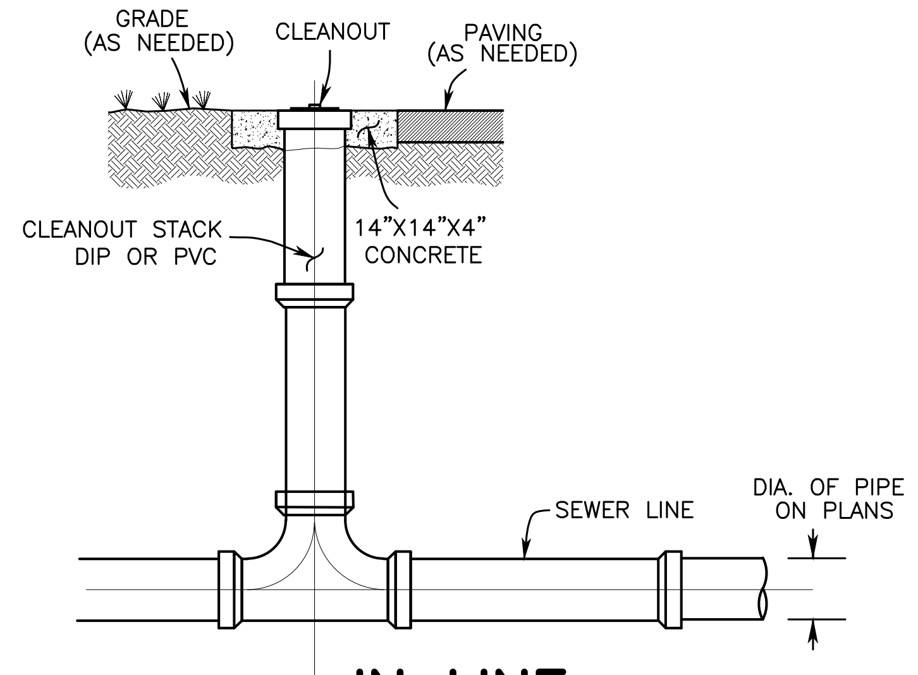
SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP

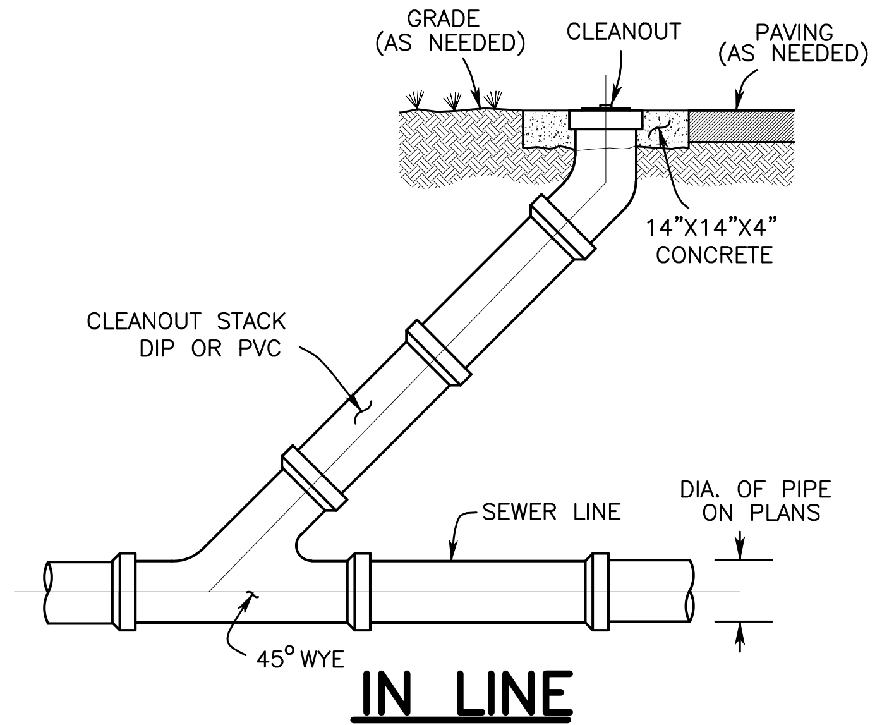
N.T.S.

NOTES:
ALL SANITARY SEWER SHOWN IS PRIVATE. ALL MANHOLE LIDS SHALL BE LABELLED AS PRIVATE AND SHALL NOT CONTAIN CITY OF BRYAN LOGO.

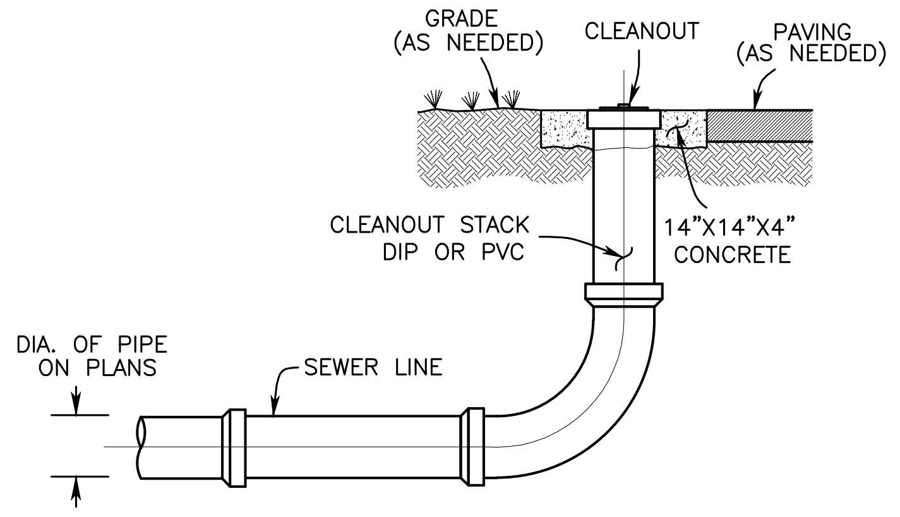
ALL PIPE AND FITTINGS SHALL MEET SDR26-ASTM D3034. PIPE SHALL BE GREEN PVC.


GRADE (AS NEEDED)
CLEANOUT
PAVING (AS NEEDED)
CLEANOUT STACK DIP OR PVC
14"X14"X4" CONCRETE
SEWER LINE
DIA. OF PIPE ON PLANS

IN LINE


GRADE (AS NEEDED)
CLEANOUT
PAVING (AS NEEDED)
14"X14"X4" CONCRETE
CLEANOUT STACK DIP OR PVC
SEWER LINE
DIA. OF PIPE ON PLANS
45° WYE

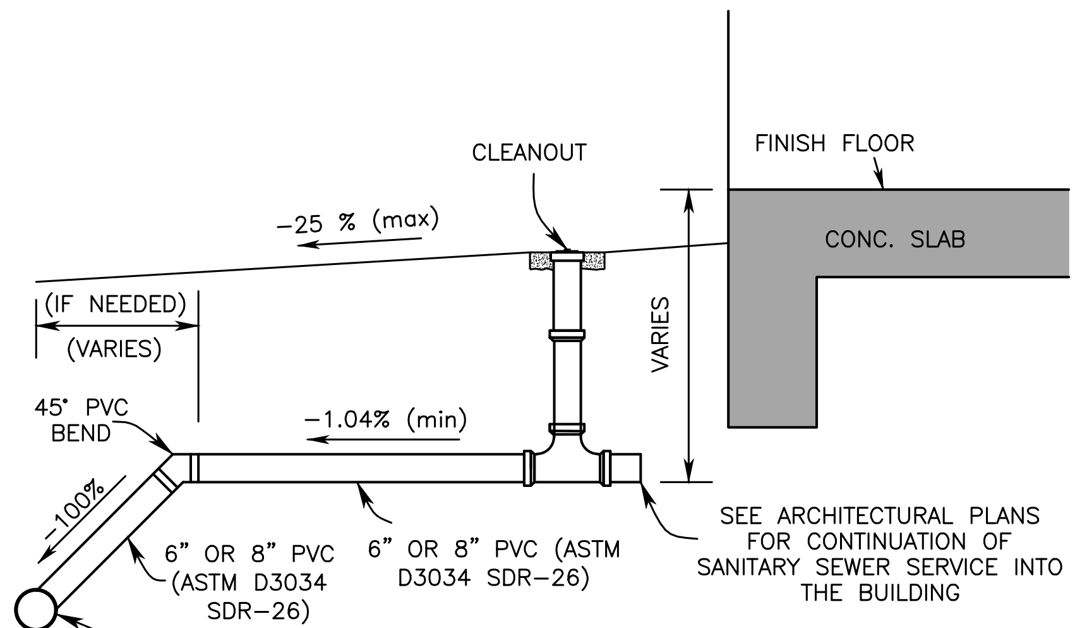
IN LINE


GRADE (AS NEEDED)
CLEANOUT
PAVING (AS NEEDED)
CLEANOUT STACK DIP OR PVC
14"X14"X4" CONCRETE
DIA. OF PIPE ON PLANS
SEWER LINE

END OF LINE

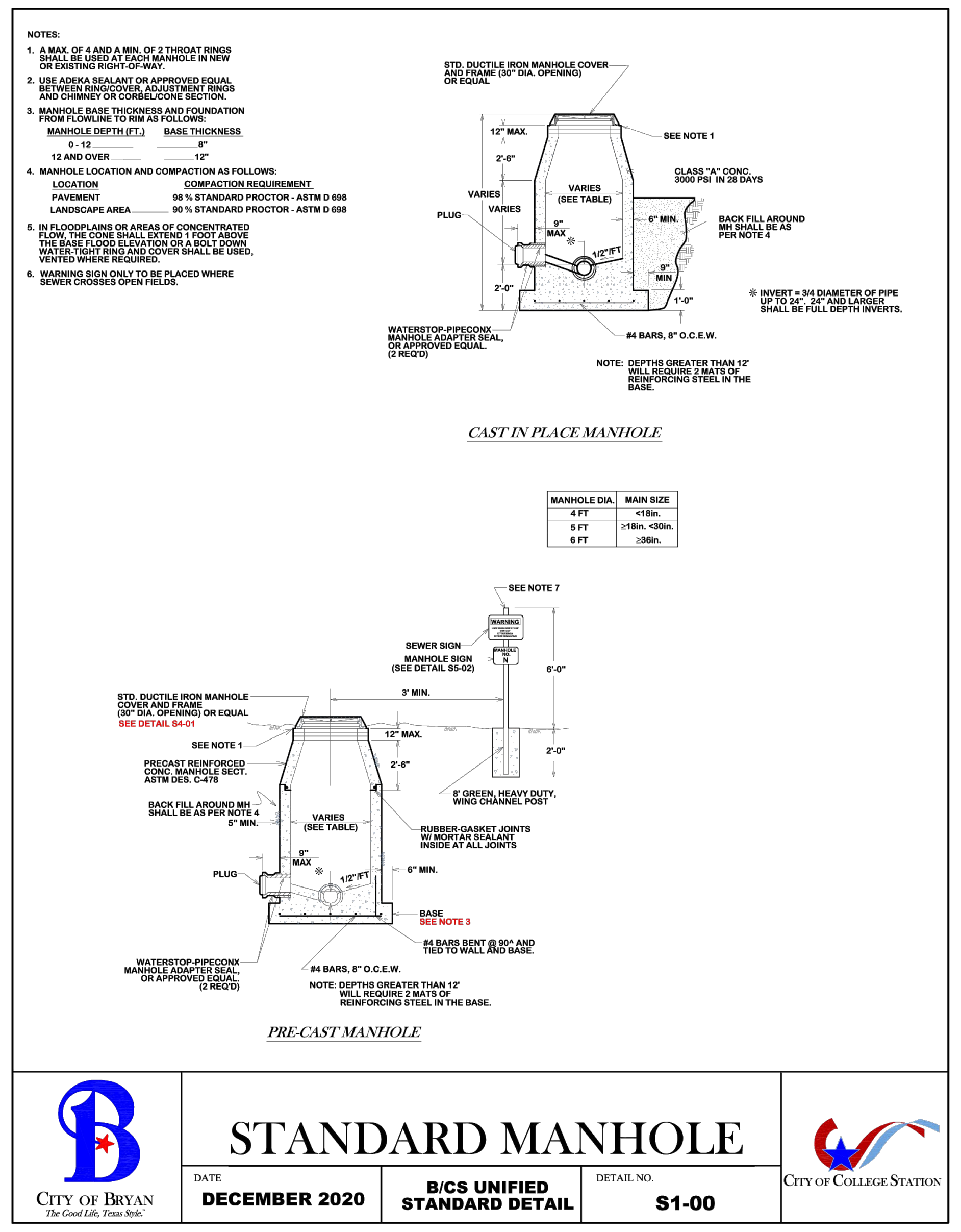
ONE WAY CLEANOUT

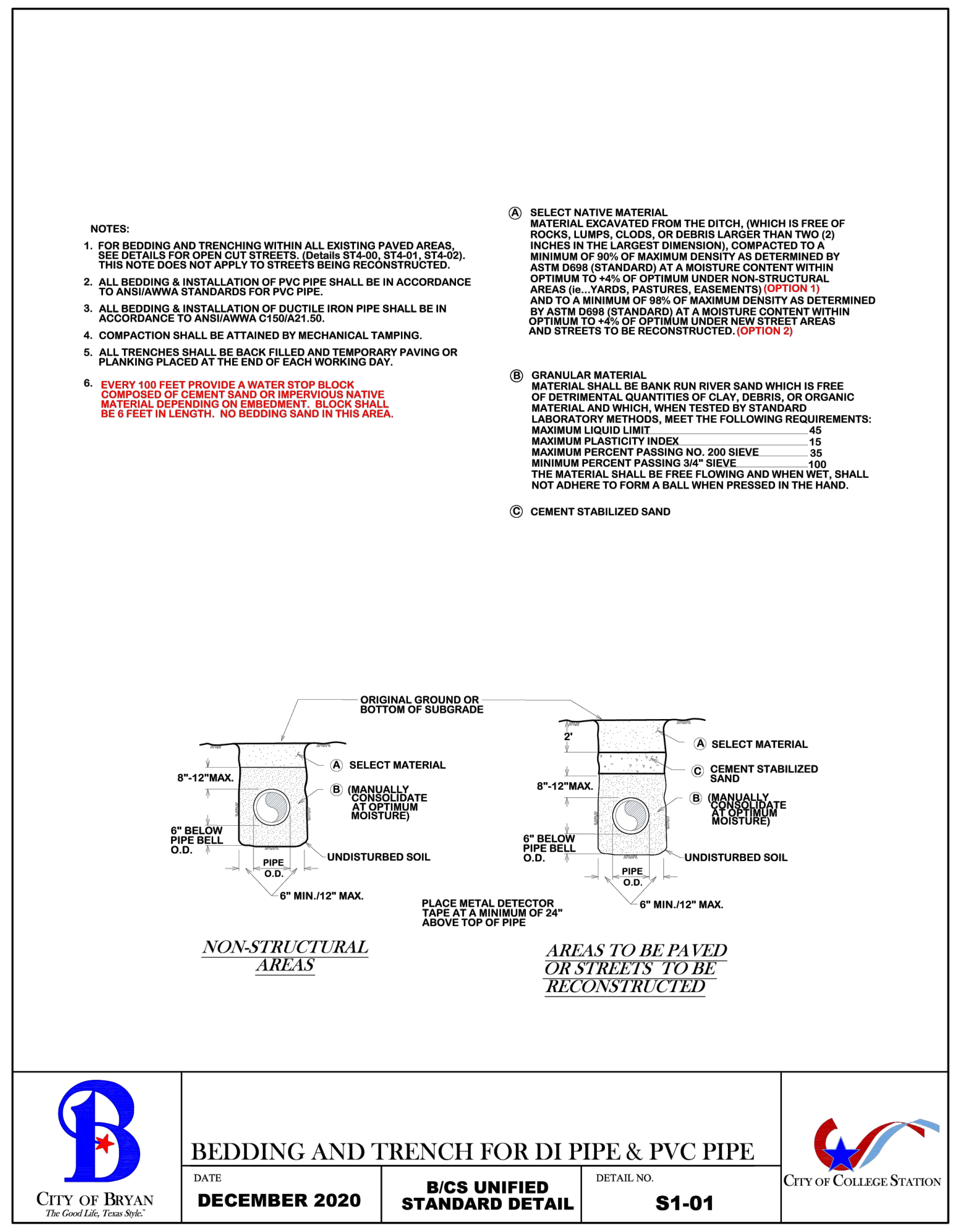
N.T.S.

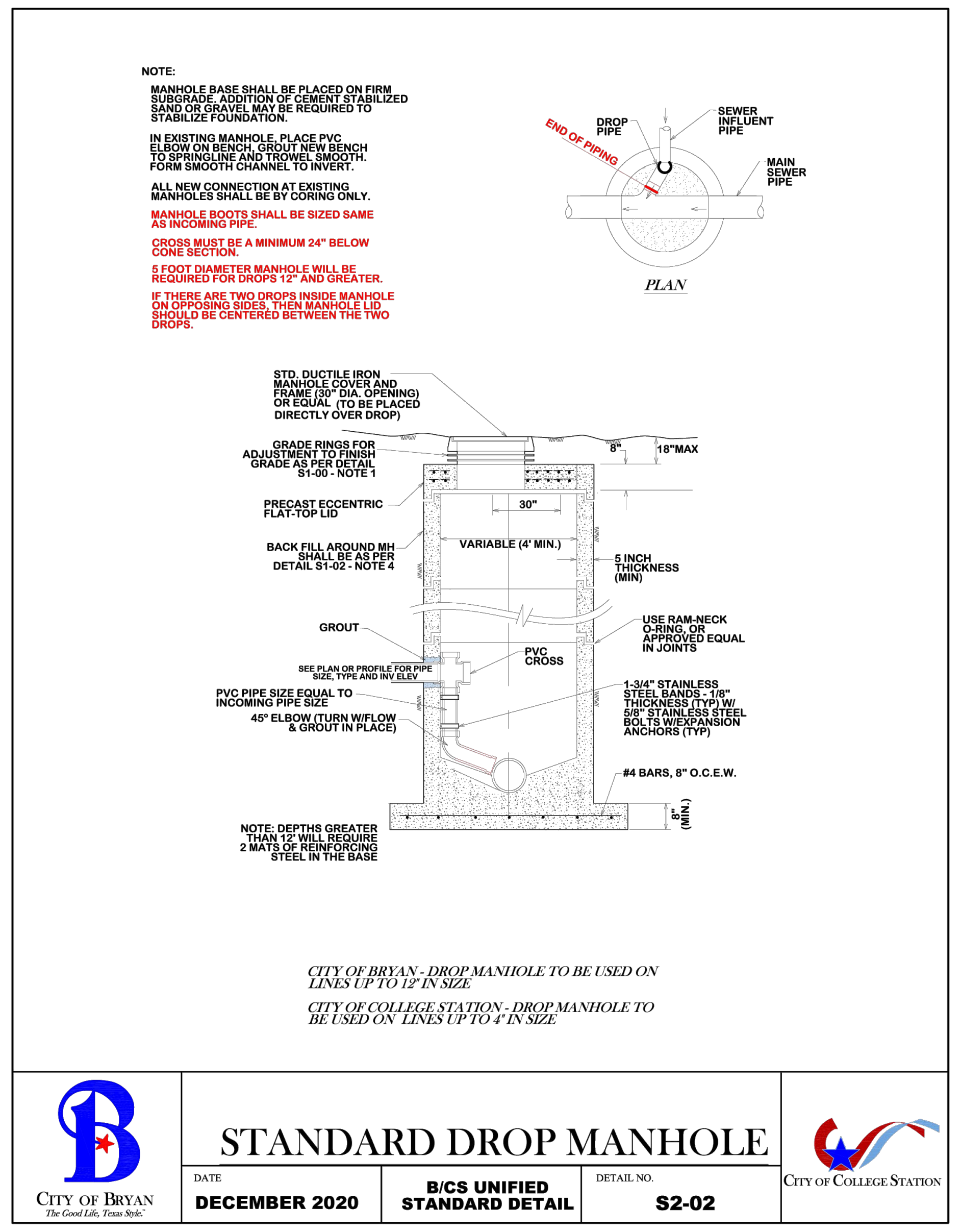

CLEANOUT
FINISH FLOOR
-25 % (max)
CONC. SLAB
(IF NEEDED)
(VARIES)
VARIES
45° PVC BEND
-1.04% (min)
-100%
6" OR 8" PVC (ASTM D3034 SDR-26)
6" OR 8" PVC (ASTM D3034 SDR-26)
SEE ARCHITECTURAL PLANS FOR CONTINUATION OF SANITARY SEWER SERVICE INTO THE BUILDING
8" SANITARY SEWER SERVICE PRIVATE LINE

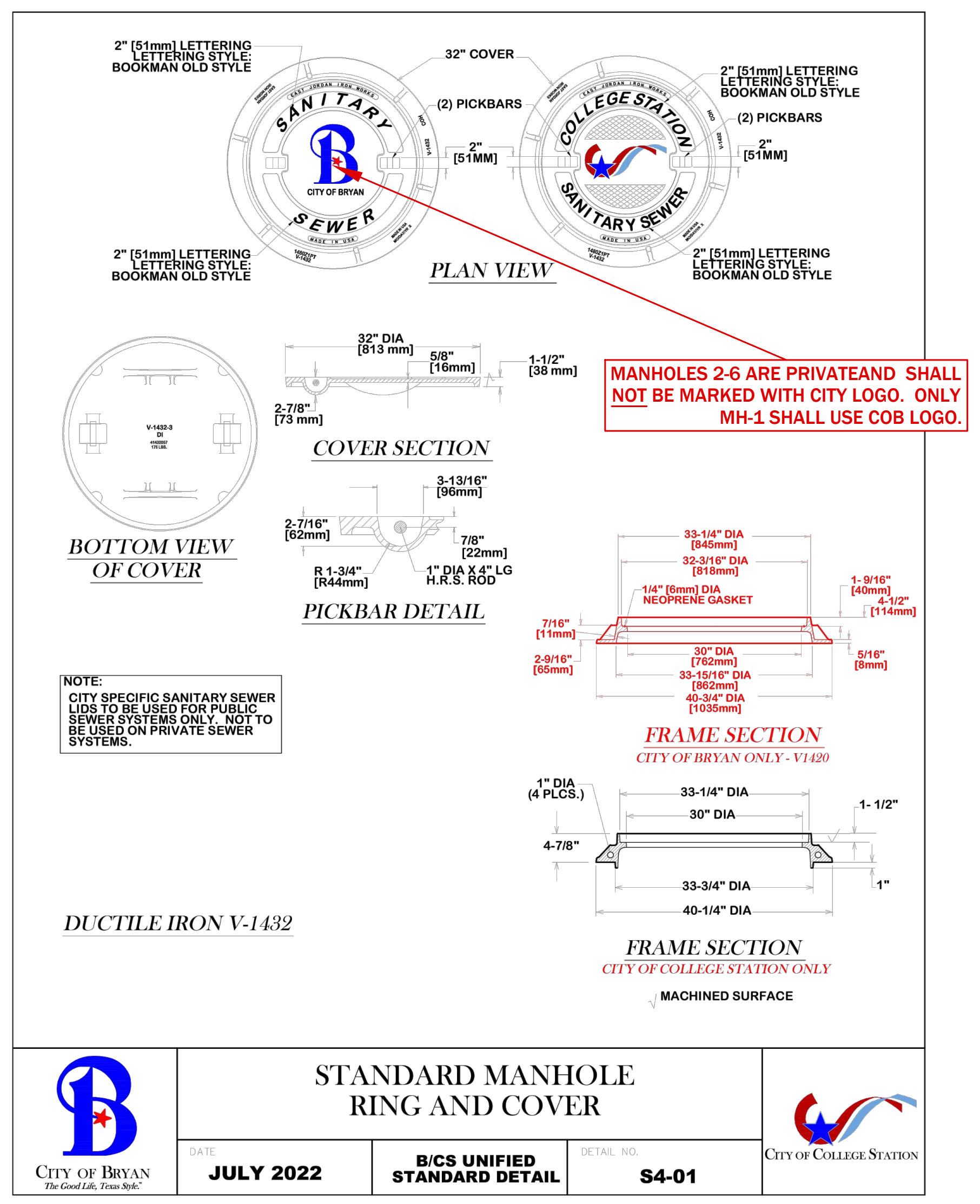
TYPICAL 6" & 8" SANITARY SEWER SERVICE

N.T.S.


CAST IN PLACE MANHOLE
PRE-CAST MANHOLE
STANDARD MANHOLE
DECEMBER 2020
B/CS UNIFIED STANDARD DETAIL
S1-00
CITY OF BRYAN
CITY OF COLLEGE STATION


NON-STRUCTURAL AREAS
AREAS TO BE PAVED OR STREETS TO BE RECONSTRUCTED
BEDDING AND TRENCH FOR DI PIPE & PVC PIPE
DECEMBER 2020
B/CS UNIFIED STANDARD DETAIL
S1-01
CITY OF BRYAN
CITY OF COLLEGE STATION


PLAN
CITY OF BRYAN - DROP MANHOLE TO BE USED ON LINES UP TO 12" IN SIZE
CITY OF COLLEGE STATION - DROP MANHOLE TO BE USED ON LINES UP TO 4" IN SIZE
STANDARD DROP MANHOLE
DECEMBER 2020
B/CS UNIFIED STANDARD DETAIL
S2-02
CITY OF BRYAN
CITY OF COLLEGE STATION


PLAN VIEW
COVER SECTION
BOTTOM VIEW OF COVER
PICKBAR DETAIL
MANHOLES 2-6 ARE PRIVATEAND SHALL NOT BE MARKED WITH CITY LOGO. ONLY MH-1 SHALL USE COB LOGO.
FRAME SECTION
DUCTILE IRON V-1432
STANDARD MANHOLE RING AND COVER
JULY 2022
B/CS UNIFIED STANDARD DETAIL
S4-01
CITY OF BRYAN
CITY OF COLLEGE STATION

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STATE OF TEXAS
JAMES T. BATENHORST
93631
LICENSED PROFESSIONAL ENGINEER
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
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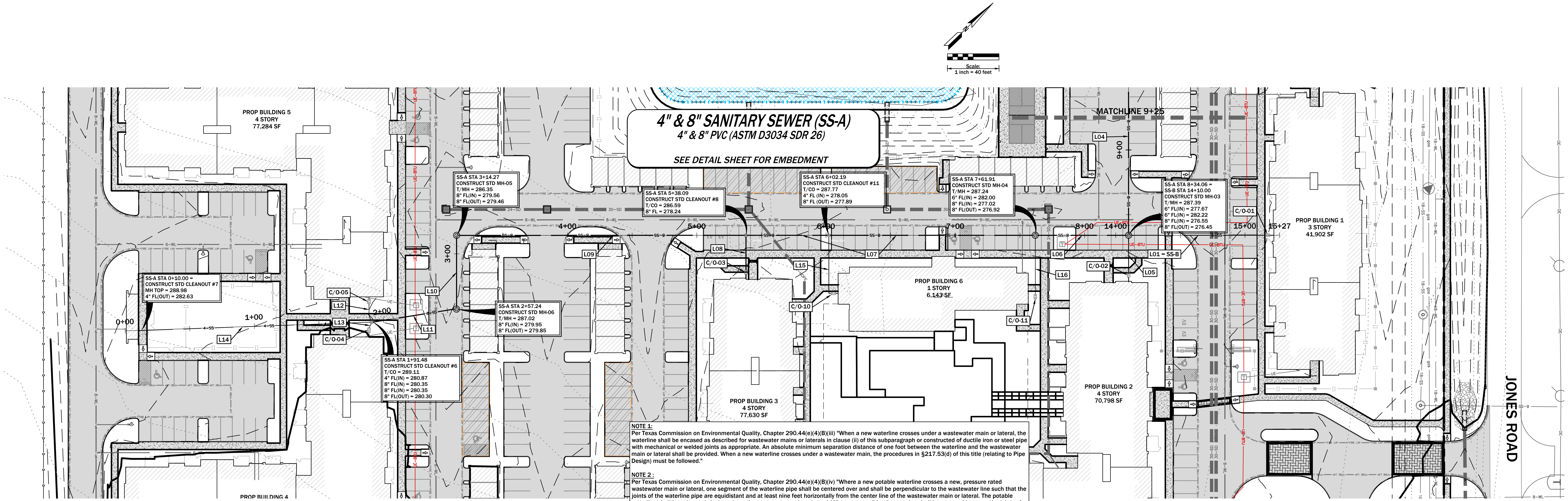
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

OVERALL SANITARY SEWERLINE PLAN
BRAZOS OAKS PHASE II

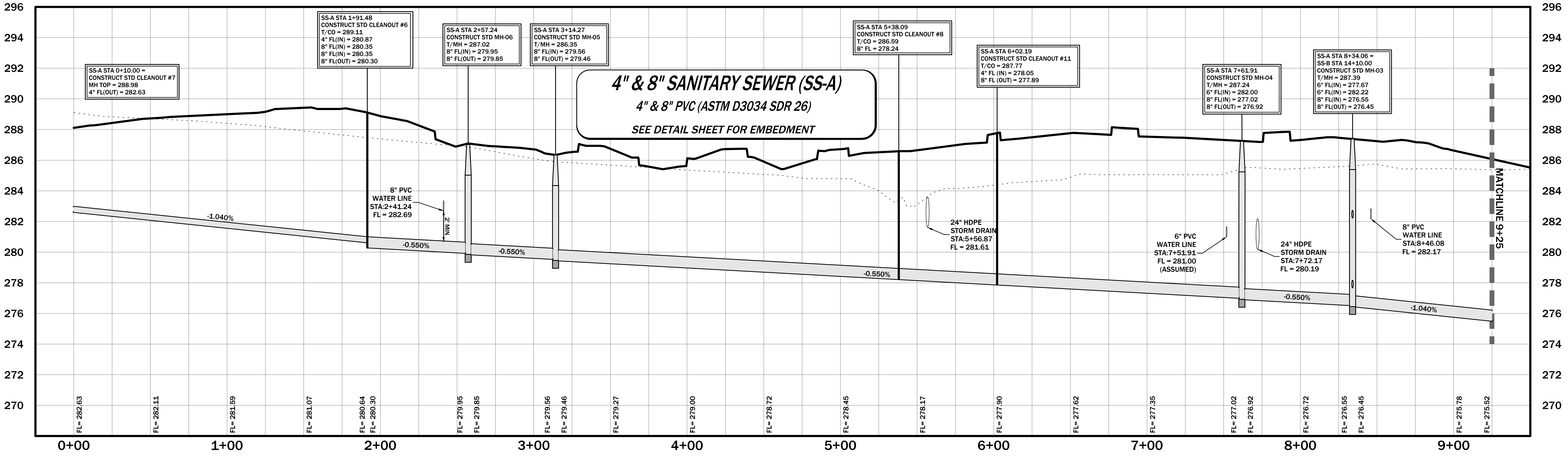
C-300


Scale:
1 inch = 40 feet
PROP BUILDING 5
4 STORY
77,284 SF
4" & 8" SANITARY SEWER (SS-A)
4" & 8" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT
MATCHLINE 9+25
SS-A STA 3+14.27
CONSTRUCT STD MH-05
T/MH = 286.35
8" FL(IN) = 279.56
8" FL(OUT) = 279.46
SS-A STA 5+38.09
CONSTRUCT STD CLEANOUT #8
T/CO = 286.59
8" FL = 278.24
SS-A STA 6+02.19
CONSTRUCT STD CLEANOUT #11
T/CO = 287.77
4" FL (IN) = 278.05
8" FL (OUT) = 277.89
SS-A STA 7+61.91
CONSTRUCT STD MH-04
T/MH = 287.24
6" FL(IN) = 282.00
8" FL(IN) = 277.02
8" FL(OUT) = 276.92
SS-A STA 8+34.06 =
SS-B STA 14+10.00
CONSTRUCT STD MH-03
T/MH = 287.39
6" FL(IN) = 277.67
6" FL(IN) = 282.22
8" FL(IN) = 276.55
8" FL(OUT) = 276.45
SS-A STA 0+10.00 =
CONSTRUCT STD CLEANOUT #7
MH TOP = 288.98
4" FL(OUT) = 282.63
SS-A STA 2+57.24
CONSTRUCT STD MH-06
T/MH = 287.02
8" FL(IN) = 279.95
8" FL(OUT) = 279.85
SS-A STA 1+91.48
CONSTRUCT STD CLEANOUT #6
T/CO = 289.11
4" FL(IN) = 280.87
8" FL(IN) = 280.35
8" FL(IN) = 280.35
8" FL(OUT) = 280.30
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
14+00
15+00
15+27
L01 = SS-B
L04
L05
L06
L07
L08
L09
L10
L11
L12
L13
L14
L15
L16
C/O-01
C/O-02
C/O-03
C/O-04
C/O-05
C/O-10
C/O-11
PROP BUILDING 6
1 STORY
6,143 SF
PROP BUILDING 1
3 STORY
41,902 SF
PROP BUILDING 2
4 STORY
70,798 SF
PROP BUILDING 3
4 STORY
77,630 SF
PROP BUILDING 4
JONES ROAD

NOTE 1:
Per Texas Commission on Environmental Quality, Chapter 290.44(e)(4)(B)(iii) "When a new waterline crosses under a wastewater main or lateral, the waterline shall be encased as described for wastewater mains or laterals in clause (ii) of this subparagraph or constructed of ductile iron or steel pipe with mechanical or welded joints as appropriate. An absolute minimum separation distance of one foot between the waterline and the wastewater main or lateral shall be provided. When a new waterline crosses under a wastewater main, the procedures in §217.53(d) of this title (relating to Pipe Design) must be followed."

NOTE 2 :
Per Texas Commission on Environmental Quality, Chapter 290.44(e)(4)(B)(iv) "Where a new potable waterline crosses a new, pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over and shall be perpendicular to the wastewater line such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the center line of the wastewater main or lateral. The potable waterline shall be at least six inches above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pressure rating of at least 150 psi. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (v) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end."

SS-A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274
272
270
SS-A STA 0+10.00 =
CONSTRUCT STD CLEANOUT #7
MH TOP = 288.98
4" FL(OUT) = 282.63
SS-A STA 1+91.48
CONSTRUCT STD CLEANOUT #6
T/CO = 289.11
4" FL(IN) = 280.87
8" FL(IN) = 280.35
8" FL(IN) = 280.35
8" FL(OUT) = 280.30
SS-A STA 2+57.24
CONSTRUCT STD MH-06
T/MH = 287.02
8" FL(IN) = 279.95
8" FL(OUT) = 279.85
SS-A STA 3+14.27
CONSTRUCT STD MH-05
T/MH = 286.35
8" FL(IN) = 279.56
8" FL(OUT) = 279.46
4" & 8" SANITARY SEWER (SS-A)
4" & 8" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT
SS-A STA 5+38.09
CONSTRUCT STD CLEANOUT #8
T/CO = 286.59
8" FL = 278.24
SS-A STA 6+02.19
CONSTRUCT STD CLEANOUT #11
T/CO = 287.77
4" FL (IN) = 278.05
8" FL (OUT) = 277.89
SS-A STA 7+61.91
CONSTRUCT STD MH-04
T/MH = 287.24
6" FL(IN) = 282.00
8" FL(IN) = 277.02
8" FL(OUT) = 276.92
SS-A STA 8+34.06 =
SS-B STA 14+10.00
CONSTRUCT STD MH-03
T/MH = 287.39
6" FL(IN) = 277.67
6" FL(IN) = 282.22
8" FL(IN) = 276.55
8" FL(OUT) = 276.45
8" PVC
WATER LINE
STA:2+41.24
FL = 282.69
2' MIN
-1.040%
-0.550%
-0.550%
-0.550%
24" HDPE
STORM DRAIN
STA:5+56.87
FL = 281.61
6" PVC
WATER LINE
STA:7+51.91
FL = 281.00
(ASSUMED)
24" HDPE
STORM DRAIN
STA:7+72.17
FL = 280.19
8" PVC
WATER LINE
STA:8+46.08
FL = 282.17
-0.550%
-1.040%
MATCHLINE 9+25
FL= 282.63
FL= 282.11
FL= 281.59
FL= 281.07
FL= 280.64
FL= 280.30
FL= 279.95
FL= 279.85
FL= 279.56
FL= 279.46
FL= 279.27
FL= 279.00
FL= 278.72
FL= 278.45
FL= 278.17
FL= 277.90
FL= 277.62
FL= 277.35
FL= 277.02
FL= 276.92
FL= 276.72
FL= 276.55
FL= 276.45
FL= 275.78
FL= 275.52
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00

Pipe Segment	Pipe Diameter	Length	Pipe Slope %
L03	4	20.4	1.50
L05	8	29.4	1.04
L08	8	25.5	1.04
L12	8	16.1	1.50
L13	8	6.0	1.50
L15	4	45.7	1.50

Clean Out	T/CO	F/L Elevation
C02	288.50	277.00
C03	288.20	278.65
C04	289.80	280.59
C05	289.10	280.44
C09	285.50	277.00
C10	288.50	278.71
C11	288.56	279.47

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TX. FIRM # F-1443

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HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS

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JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

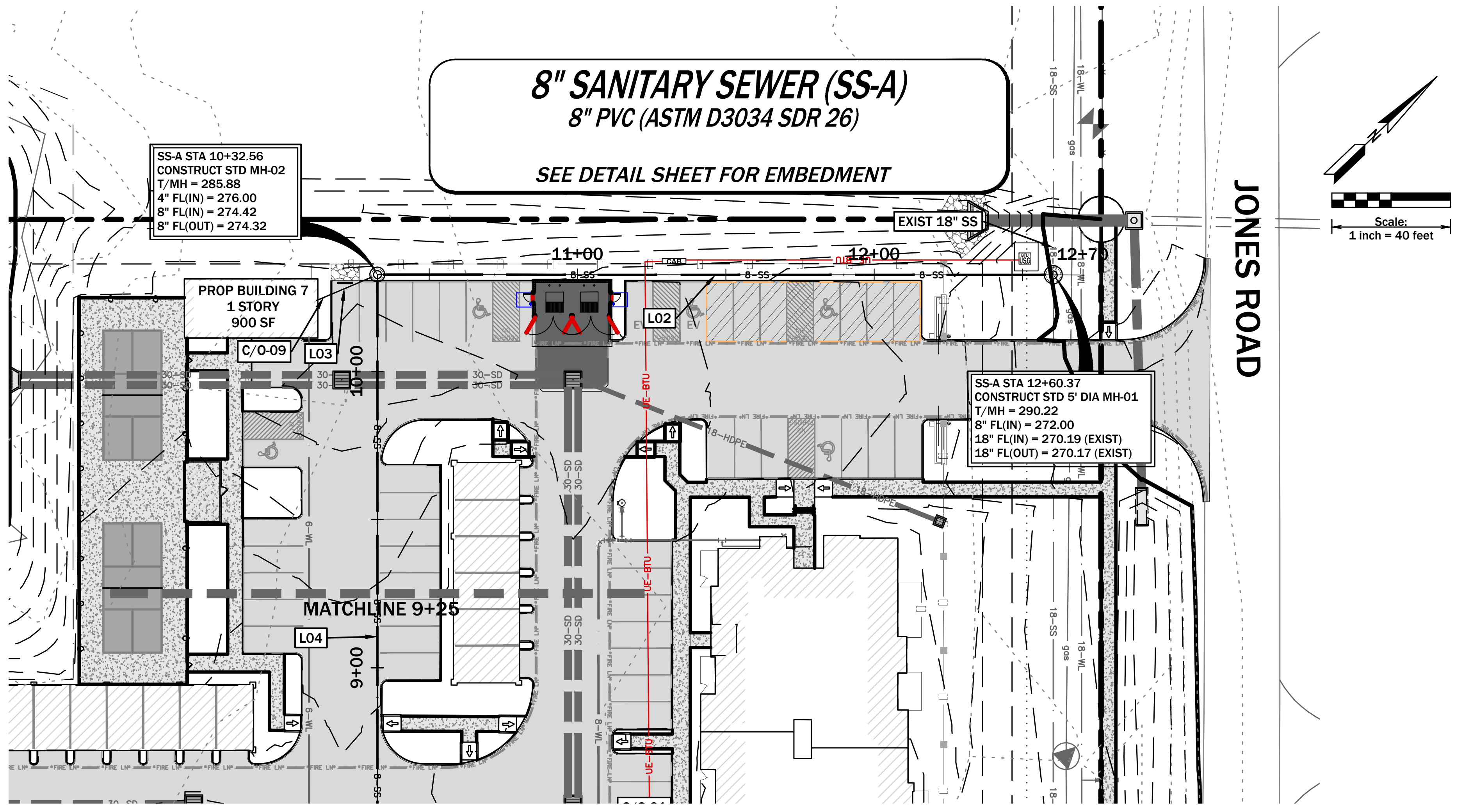
Prepared For:

TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

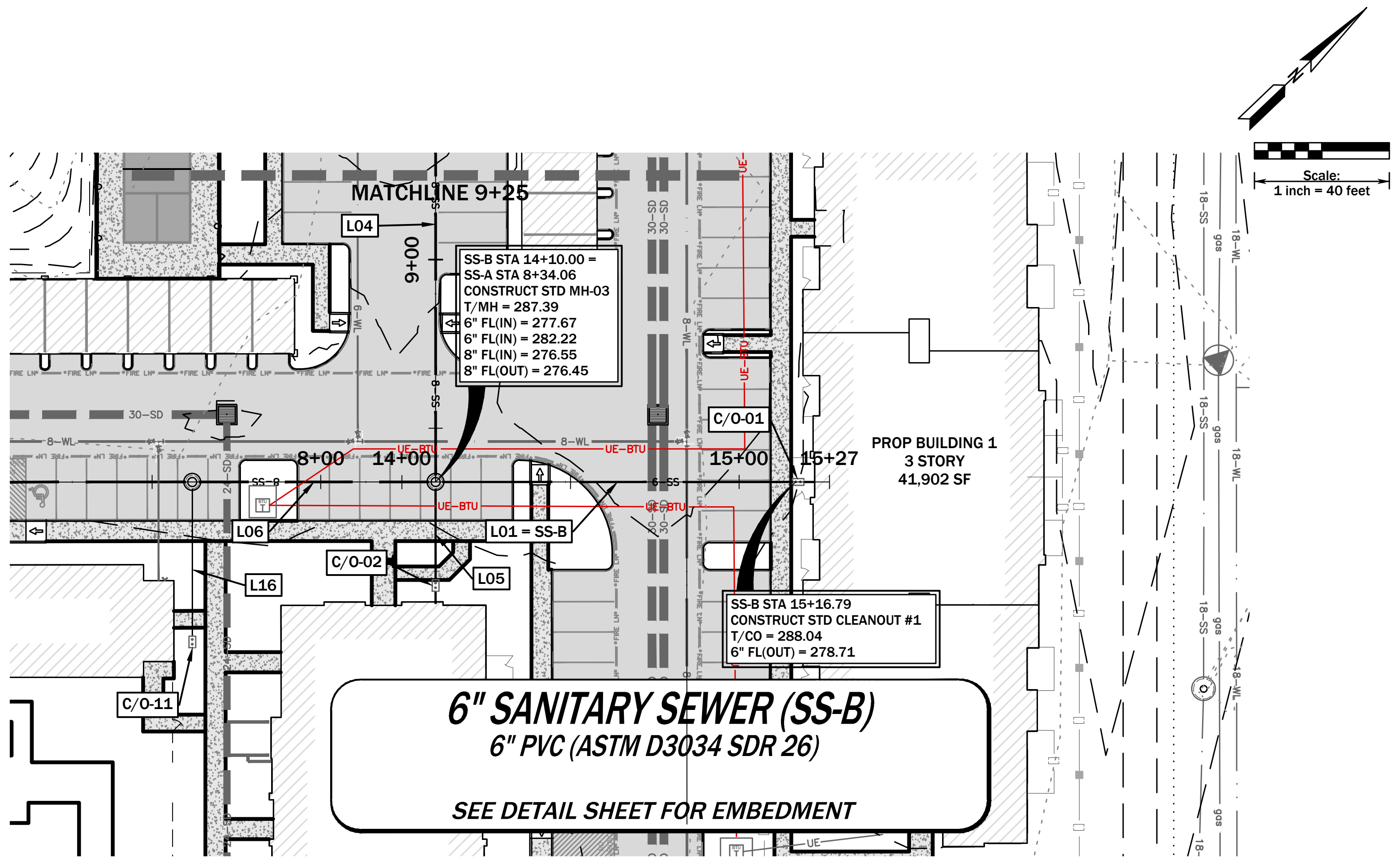
Revisions

SS-A PLAN & PROFILE
1 of 2
BRAZOS OAKS PHASE II

C-301


SS-A STA 10+32.56
CONSTRUCT STD MH-02
T/MH = 285.88
4" FL(IN) = 276.00
8" FL(IN) = 274.42
8" FL(OUT) = 274.32
PROP BUILDING 7
1 STORY
900 SF
C/O-09
L03
L02
10+00
11+00
12+00
12+70
EXIST 18" SS
JONES ROAD
MATCHLINE 9+25
L04
9+00
SS-A STA 12+60.37
CONSTRUCT STD 5' DIA MH-01
T/MH = 290.22
8" FL(IN) = 272.00
18" FL(IN) = 270.19 (EXIST)
18" FL(OUT) = 270.17 (EXIST)
Scale:
1 inch = 40 feet

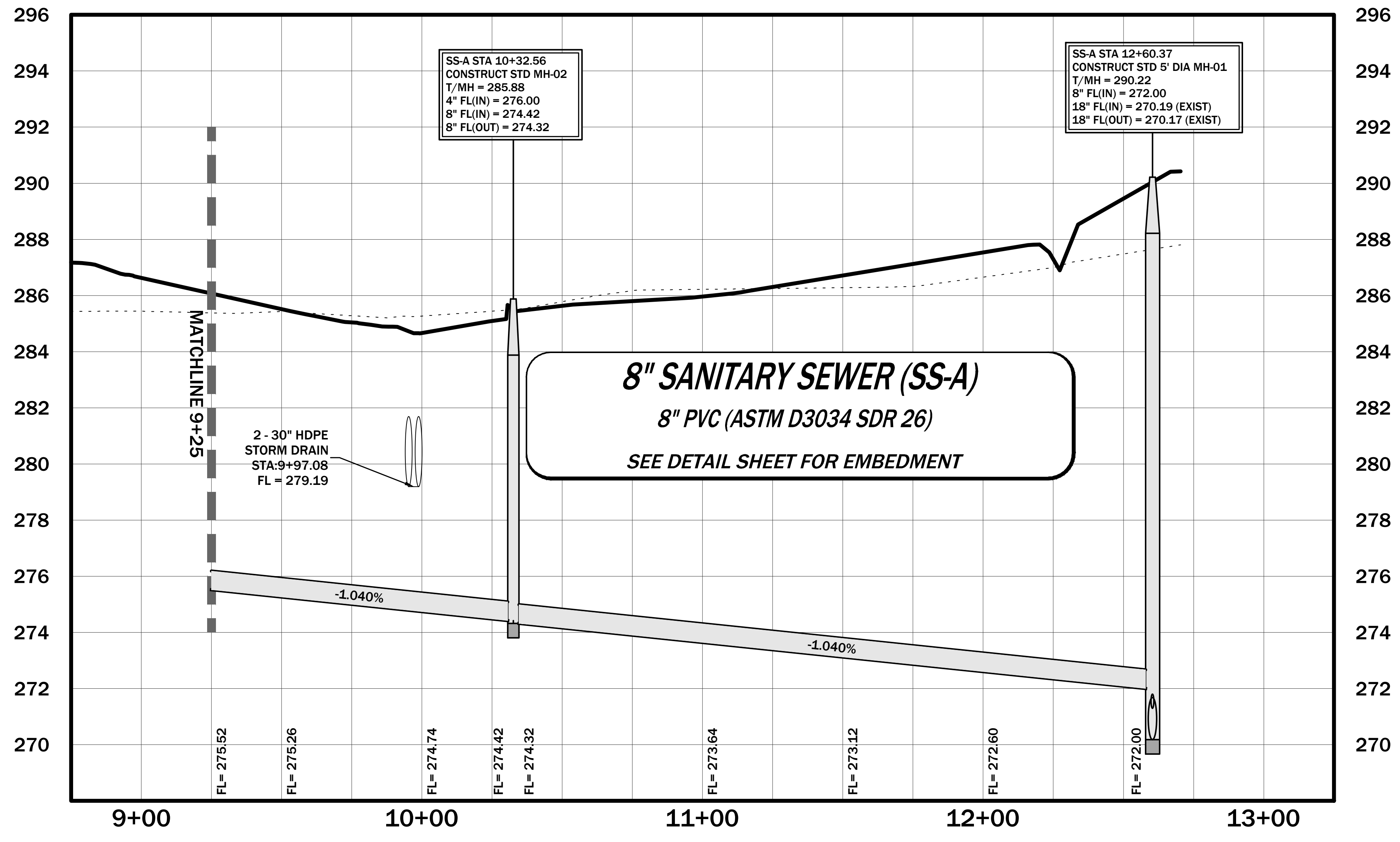
8" SANITARY SEWER (SS-A)
8" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT


MATCHLINE 9+25
L04
9+00
SS-B STA 14+10.00 =
SS-A STA 8+34.06
CONSTRUCT STD MH-03
T/MH = 287.39
6" FL(IN) = 277.67
6" FL(IN) = 282.22
8" FL(IN) = 276.55
8" FL(OUT) = 276.45
C/O-01
8+00
14+00
15+00
15+27
PROP BUILDING 1
3 STORY
41,902 SF
L06
L01 = SS-B
C/O-02
L05
L16
C/O-11
SS-B STA 15+16.79
CONSTRUCT STD CLEANOUT #1
T/CO = 288.04
6" FL(OUT) = 278.71
Scale:
1 inch = 40 feet

6" SANITARY SEWER (SS-B)
6" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT

Pipe Segment	Pipe Diameter	Length	Pipe Slope %
L03	4	20.4	1.50
L05	8	29.4	1.04
L08	8	25.5	1.04
L12	8	16.1	1.50
L13	8	6.0	1.50
L15	4	45.7	1.50

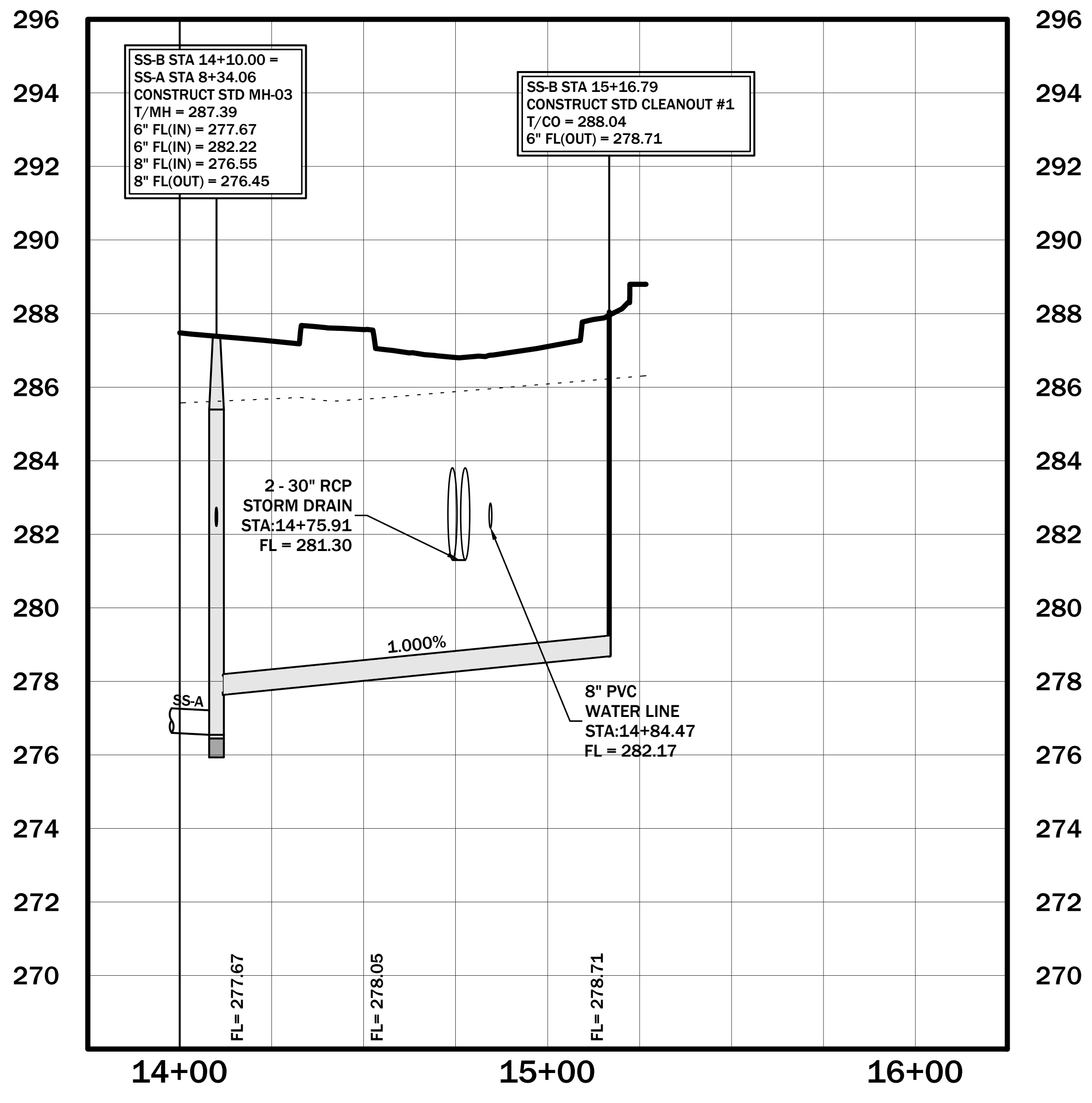
Clean Out	T/CO	F/L Elevation
C02	288.50	277.00
C03	288.20	278.65
C04	289.80	280.59
C05	289.10	280.44
C09	285.50	277.00
C10	288.50	278.71
C11	288.56	279.47


296
294
292
290
288
286
284
282
280
278
276
274
272
270
SS-A STA 10+32.56
CONSTRUCT STD MH-02
T/MH = 285.88
4" FL(IN) = 276.00
8" FL(IN) = 274.42
8" FL(OUT) = 274.32
SS-A STA 12+60.37
CONSTRUCT STD 5' DIA MH-01
T/MH = 290.22
8" FL(IN) = 272.00
18" FL(IN) = 270.19 (EXIST)
18" FL(OUT) = 270.17 (EXIST)
MATCHLINE 9+25
2 - 30" HDPE
STORM DRAIN
STA:9+97.08
FL = 279.19
-1.040%
-1.040%
FL= 275.52
FL= 275.26
FL= 274.74
FL= 274.42
FL= 274.32
FL= 273.64
FL= 273.12
FL= 272.60
FL= 272.00
9+00
10+00
11+00
12+00
13+00

8" SANITARY SEWER (SS-A)
8" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT

NOTE 1:
Per Texas Commission on Environmental Quality, Chapter 290.44(e)(4)(B)(iii) "When a new waterline crosses under a wastewater main or lateral, the waterline shall be encased as described for wastewater mains or laterals in clause (ii) of this subparagraph or constructed of ductile iron or steel pipe with mechanical or welded joints as appropriate. An absolute minimum separation distance of one foot between the waterline and the wastewater main or lateral shall be provided. When a new waterline crosses under a wastewater main, the procedures in §217.53(d) of this title (relating to Pipe Design) must be followed."

NOTE 2 :
Per Texas Commission on Environmental Quality, Chapter 290.44(e)(4)(B)(iv) "Where a new potable waterline crosses a new, pressure rated wastewater main or lateral, one segment of the waterline pipe shall be centered over and shall be perpendicular to the wastewater line such that the joints of the waterline pipe are equidistant and at least nine feet horizontally from the center line of the wastewater main or lateral. The potable waterline shall be at least six inches above the wastewater main or lateral. Whenever possible, the crossing shall be centered between the joints of the wastewater main or lateral. The wastewater pipe shall have a minimum pressure rating of at least 150 psi. The wastewater main or lateral shall be embedded in cement stabilized sand (see clause (v) of this subparagraph) for the total length of one pipe segment plus 12 inches beyond the joint on each end."


296
294
292
290
288
286
284
282
280
278
276
274
272
270
SS-B STA 14+10.00 =
SS-A STA 8+34.06
CONSTRUCT STD MH-03
T/MH = 287.39
6" FL(IN) = 277.67
6" FL(IN) = 282.22
8" FL(IN) = 276.55
8" FL(OUT) = 276.45
SS-B STA 15+16.79
CONSTRUCT STD CLEANOUT #1
T/CO = 288.04
6" FL(OUT) = 278.71
2 - 30" RCP
STORM DRAIN
STA:14+75.91
FL = 281.30
1.000%
SS-A
8" PVC
WATER LINE
STA:14+84.47
FL = 282.17
FL= 277.67
FL= 278.05
FL= 278.71
14+00
15+00
16+00

6" SANITARY SEWER (SS-B)
6" PVC (ASTM D3034 SDR 26)
SEE DETAIL SHEET FOR EMBEDMENT

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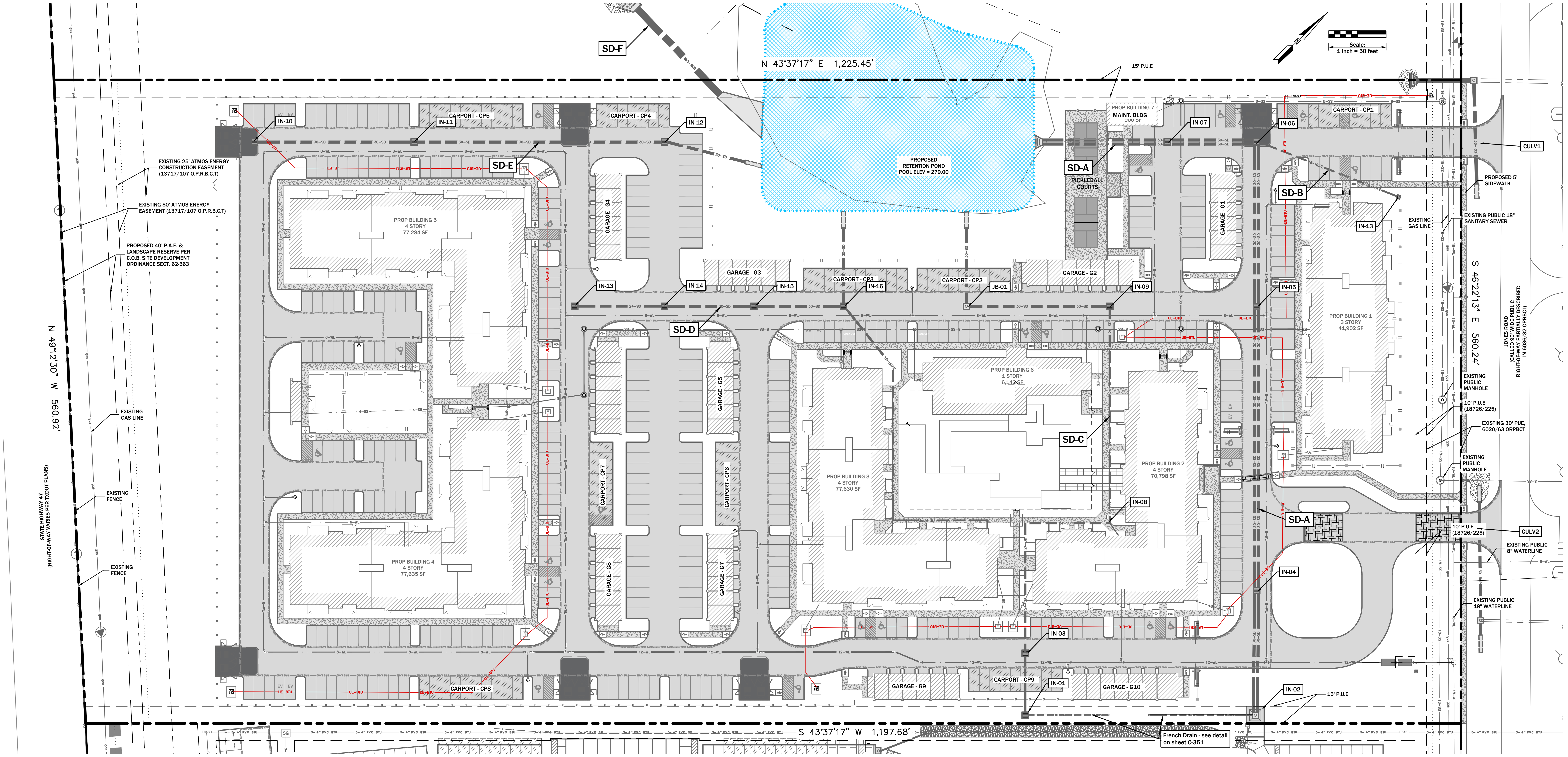
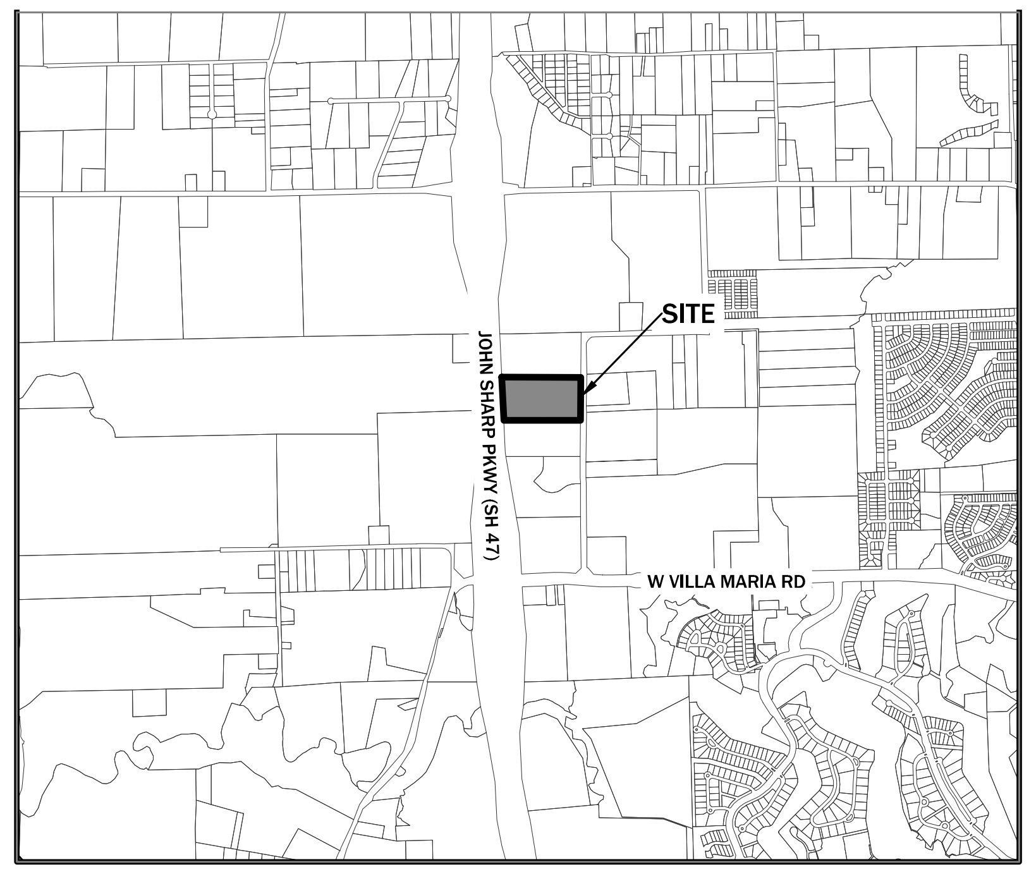
Revisions

SS-A & SSB PLAN & PROFILE
2 of 2
BRAZOS OAKS PHASE II

C-302


SD-F
N 43°37'17" E 1,225.45'
15' P.U.E
Scale: 1 inch = 50 feet
PROPOSED RETENTION POND POOL ELEV = 279.00
PROP BUILDING 7 MAINT. BLDG 900 SF
PICKLEBALL COURTS
SD-A
SD-B
SD-C
SD-D
SD-E
CARPORT - CP1
CARPORT - CP2
CARPORT - CP3
CARPORT - CP4
CARPORT - CP5
CARPORT - CP6
CARPORT - CP7
CARPORT - CP8
CARPORT - CP9
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G5
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
IN-01
IN-02
IN-03
IN-04
IN-05
IN-06
IN-07
IN-08
IN-09
IN-10
IN-11
IN-12
IN-13
IN-14
IN-15
IN-16
JB-01
PROP BUILDING 5 4 STORY 77,284 SF
PROP BUILDING 4 4 STORY 77,635 SF
PROP BUILDING 3 4 STORY 77,630 SF
PROP BUILDING 6 1 STORY 6,143 SF
PROP BUILDING 2 4 STORY 70,798 SF
PROP BUILDING 1 3 STORY 41,902 SF
EXISTING 25' ATMOS ENERGY CONSTRUCTION EASEMENT (13717/107 O.P.R.B.C.T)
EXISTING 50' ATMOS ENERGY EASEMENT (13717/107 O.P.R.B.C.T)
PROPOSED 40' P.A.E. & LANDSCAPE RESERVE PER C.O.B. SITE DEVELOPMENT ORDINANCE SECT. 62-563
N 49°12'30" W 560.92'
EXISTING GAS LINE
EXISTING FENCE
EXISTING FENCE
STATE HIGHWAY 47 (RIGHT-OF-WAY VARIES PER TXDOT PLANS)
CULV1
CULV2
PROPOSED 5' SIDEWALK
EXISTING GAS LINE
EXISTING PUBLIC 18" SANITARY SEWER
S 46°22'13" E 560.24'
JONES ROAD (CALLED 90' WIDE PUBLIC RIGHT-OF-WAY PARTIALLY DESCRIBED IN 6036/32 OPRBCT)
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING 30' PUE, 6020/63 ORPBCT
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING PUBLIC 8" WATERLINE
EXISTING PUBLIC 18" WATERLINE
15' P.U.E
S 43°37'17" W 1,197.68'
French Drain - see detail on sheet C-351

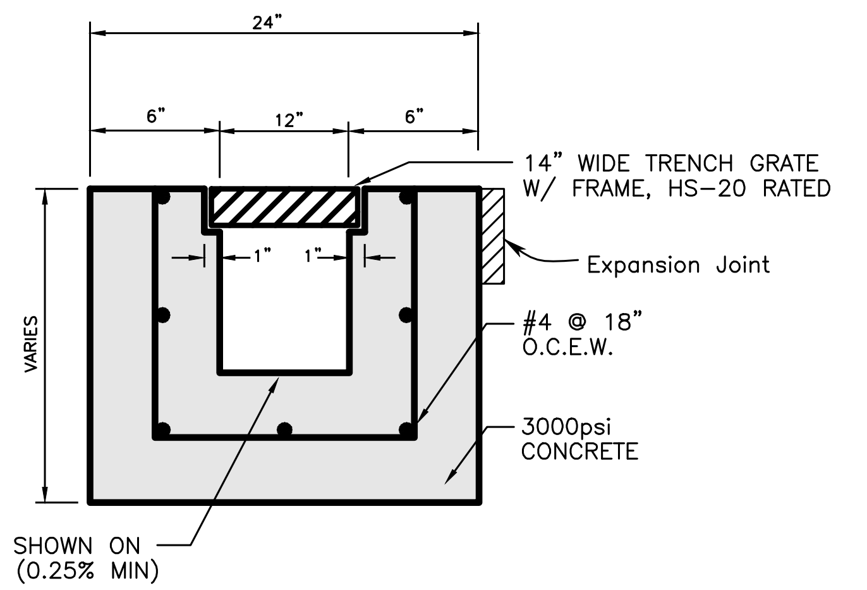

SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP

N.T.S.

NOTE:
ALL GRATE INLETS LOCATED WITHIN PARKING/DRIVE AISLE PAVED AREAS SHALL BE CONSTRUCTED WITH TRAFFIC RATED GRATES.

ALL STORM DRAIN LINES ARE PRIVATE AND BOX LIDS SHALL BE LABELLED AS PRIVATE. THEY SHALL NOT CONTAIN CITY OF BRYAN LOGO.

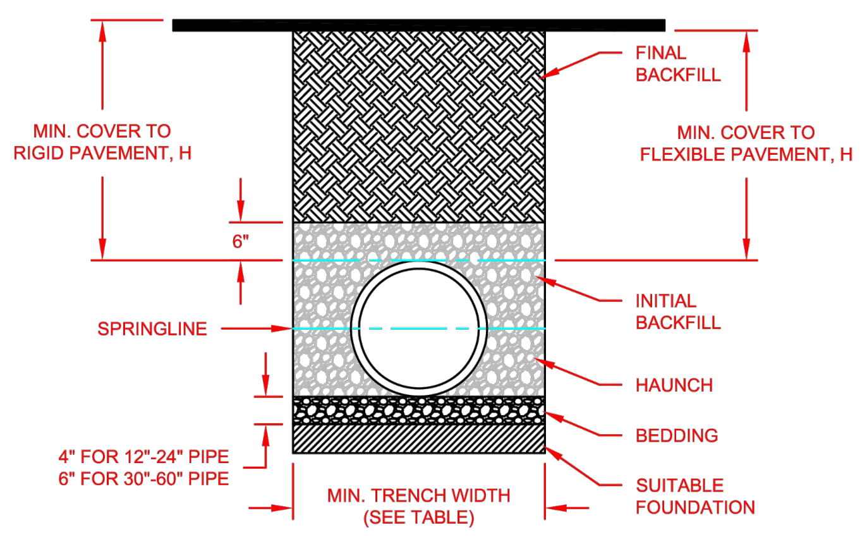

24"
6"
12"
6"
14" WIDE TRENCH GRATE W/ FRAME, HS-20 RATED
1"
1"
Expansion Joint
VARIES
#4 @ 18" O.C.E.W.
3000psi CONCRETE
FL AS SHOWN ON PLANS (0.25% MIN)

SIDEWALK TRENCH GRATE DETAIL

N.T.S.

Note:
A cast-iron plate covering shall be installed in locations where the flume is constructed under the sidewalk. The cast-iron plate shall sit flush with the top of the sidewalk and be bolted in place. This shall be accomplished by constructing a recessed notch in the top inside edges of the flume.

Coordinate with landscape plan to place trench grates as necessary to convey roof drain runoff.


FINAL BACKFILL
MIN. COVER TO RIGID PAVEMENT, H
MIN. COVER TO FLEXIBLE PAVEMENT, H
6"
SPRINGLINE
INITIAL BACKFILL
HAUNCH
BEDDING
4" FOR 12"-24" PIPE
6" FOR 30"-60" PIPE
MIN. TRENCH WIDTH (SEE TABLE)
SUITABLE FOUNDATION

RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION: H-25	SURFACE LIVE LOADING CONDITION: HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I		CLASS II		CLASS III
	COMPACTED	DUMPED	95%	90%	95%
4" (100mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
6" (150mm)	40 (12.2m)	19 (5.8m)	27 (8.2m)	19 (5.8m)	20 (6.1m)
8" (200mm)	30 (9.1m)	14 (4.3m)	21 (6.4m)	14 (4.3m)	15 (4.6m)
10" (250mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	18 (5.5m)
15" (375mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	19 (5.8m)
18" (450mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
24" (600mm)	27 (8.2m)	13 (4.0m)	19 (5.8m)	13 (4.0m)	14 (4.3m)
30" (750mm)	22 (6.7m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)
42" (1050mm)	24 (7.3m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
48" (1200mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

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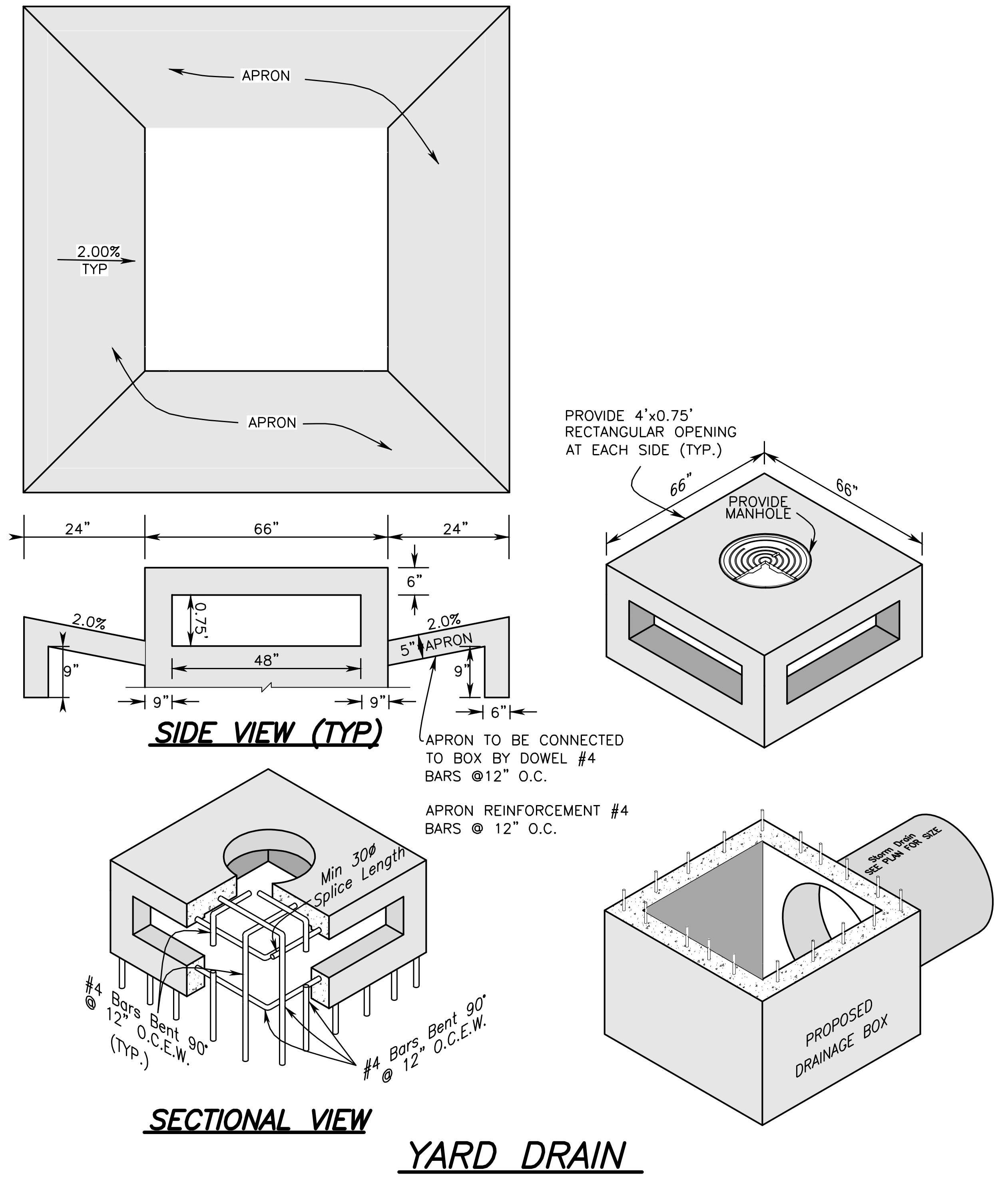
ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEERS RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

REV.	DESCRIPTION	BY	MM/DD/YY	CHK'D
4	ADDED CLASS 3 MAX COVER COLUMN	RJS	01/27/17	

TRENCH INSTALLATION DETAIL (ASTM F2648)
DRAWING NUMBER: STD-101A

ADVANCED DRAINAGE SYSTEMS, INC.
4640 TRUEMAN BLVD
HILLIARD, OHIO 43026

DRAWN BY: JLE
DATE: 8/15/13
CK'D BY:
SCALE: NTS
SHEET: 1 OF 1


APRON
2.00% TYP
APRON
24"
66"
24"
6"
2.0%
0.75'
48"
2.0%
5"
APRON
9"
9"
9"
9"
6"
PROVIDE 4'x0.75' RECTANGULAR OPENING AT EACH SIDE (TYP.)
66"
66"
PROVIDE MANHOLE
Min 30Ø Splice Length
#4 Bars Bent 90° @ 12" O.C.E.W. (TYP.)
#4 Bars Bent 90° @ 12" O.C.E.W.
Storm Drain SEE PLAN FOR SIZE
PROPOSED DRAINAGE BOX

SIDE VIEW (TYP)

APRON TO BE CONNECTED TO BOX BY DOWEL #4 BARS @12" O.C.

APRON REINFORCEMENT #4 BARS @ 12" O.C.

SECTIONAL VIEW

YARD DRAIN

NTS

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MORGAN

T.979.260.6963
F.979.260.3564

TX. FIRM # F-1443

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

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

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

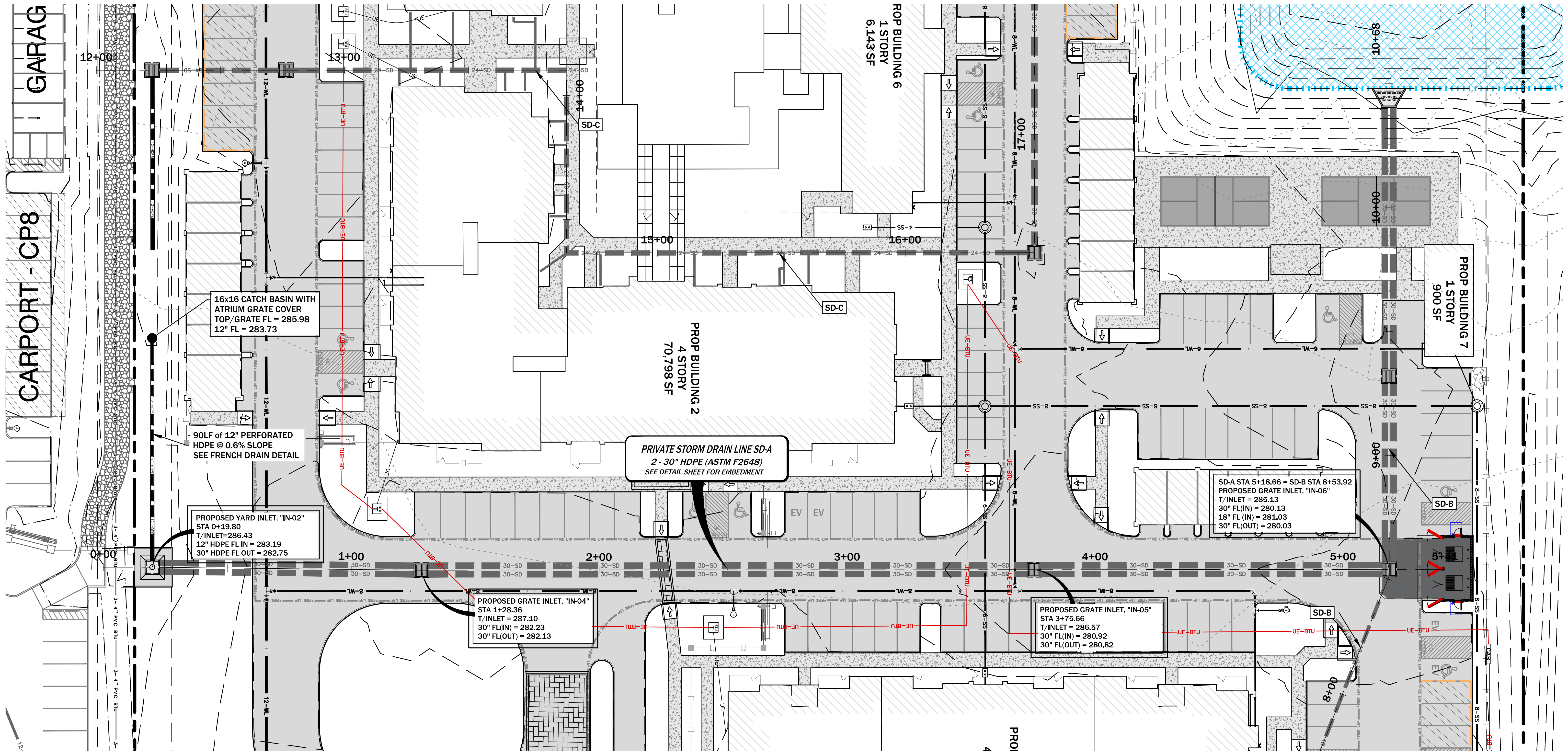
Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

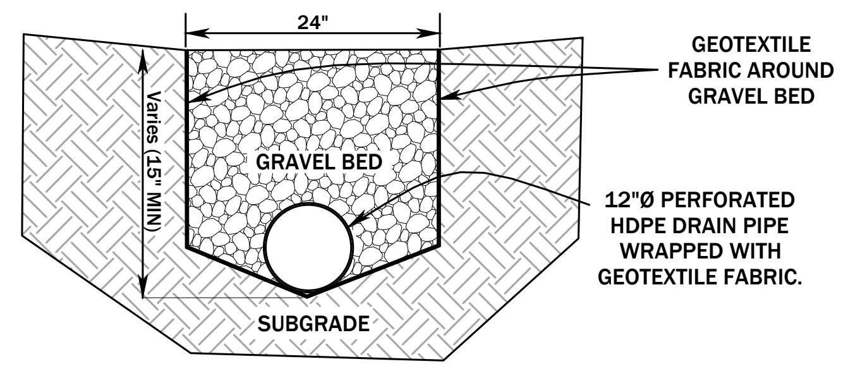
OVERALL STORM DRAIN PLAN

BRAZOS OAKS PHASE II

C-350


GARAG
CARPORT - CP8
12+00
13+00
14+00
15+00
16+00
17+00
10+00
10+69
9+00
8+00
0+00
1+00
2+00
3+00
4+00
5+00
PROP BUILDING 6
1 STORY
6,143 SF
PROP BUILDING 2
4 STORY
70,798 SF
PROP BUILDING 7
1 STORY
900 SF
SD-C
SD-B
16x16 CATCH BASIN WITH
ATRIUM GRATE COVER
TOP/GRATE FL = 285.98
12" FL = 283.73
90LF of 12" PERFORATED
HDPE @ 0.6% SLOPE
SEE FRENCH DRAIN DETAIL
PRIVATE STORM DRAIN LINE SD-A
2 - 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED YARD INLET, "IN-02"
STA 0+19.80
T/INLET=286.43
12" HDPE FL IN = 283.19
30" HDPE FL OUT = 282.75
PROPOSED GRATE INLET, "IN-04"
STA 1+28.36
T/INLET = 287.10
30" FL(IN) = 282.23
30" FL(OUT) = 282.13
PROPOSED GRATE INLET, "IN-05"
STA 3+75.66
T/INLET = 286.57
30" FL(IN) = 280.92
30" FL(OUT) = 280.82
SD-A STA 5+18.66 = SD-B STA 8+53.92
PROPOSED GRATE INLET, "IN-06"
T/INLET = 285.13
30" FL(IN) = 280.13
18" FL (IN) = 281.03
30" FL(OUT) = 280.03
30-SD
8-WL
12-WL
SS-8
UE-BTU
EV

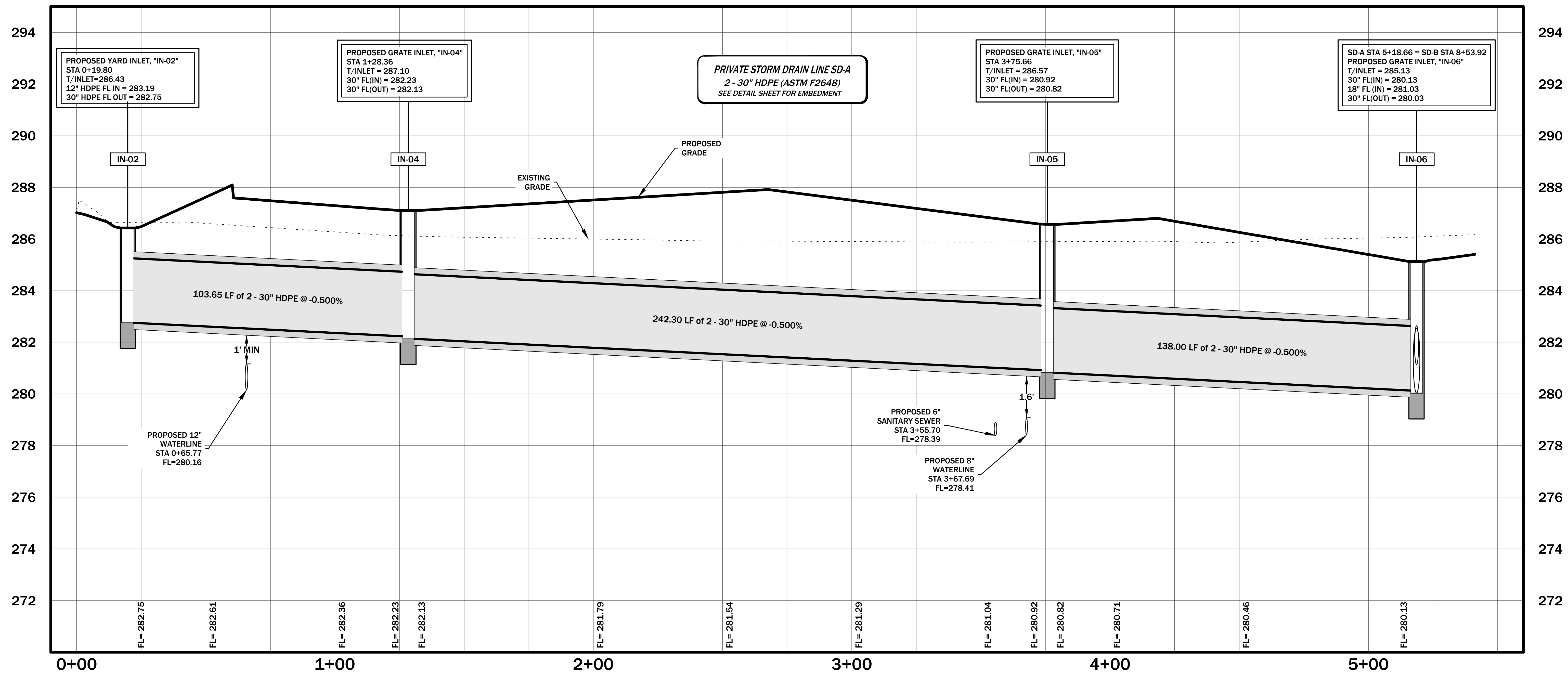
Scale:
1 inch = 30 feet


24"
Varies (15" MIN)
GEOTEXTILE
FABRIC AROUND
GRAVEL BED
GRAVEL BED
12"Ø PERFORATED
HDPE DRAIN PIPE
WRAPPED WITH
GEOTEXTILE FABRIC.
SUBGRADE

FRENCH DRAIN DETAIL

NOTES:
SUBGRADE TO DRAIN TOWARDS PERFORATED DRAIN PIPE

GRAVEL BED TO CONSIST OF #3 ANGULAR CRUSHED STONE
(1/2" - 2" NOMINAL)


294
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276
274
272
PROPOSED YARD INLET, "IN-02"
STA 0+19.80
T/INLET=286.43
12" HDPE FL IN = 283.19
30" HDPE FL OUT = 282.75
PROPOSED GRATE INLET, "IN-04"
STA 1+28.36
T/INLET = 287.10
30" FL(IN) = 282.23
30" FL(OUT) = 282.13
PRIVATE STORM DRAIN LINE SD-A
2 - 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED GRATE INLET, "IN-05"
STA 3+75.66
T/INLET = 286.57
30" FL(IN) = 280.92
30" FL(OUT) = 280.82
SD-A STA 5+18.66 = SD-B STA 8+53.92
PROPOSED GRATE INLET, "IN-06"
T/INLET = 285.13
30" FL(IN) = 280.13
18" FL (IN) = 281.03
30" FL(OUT) = 280.03
IN-02
IN-04
IN-05
IN-06
PROPOSED
GRADE
EXISTING
GRADE
103.65 LF of 2 - 30" HDPE @ -0.500%
242.30 LF of 2 - 30" HDPE @ -0.500%
138.00 LF of 2 - 30" HDPE @ -0.500%
1' MIN
1.6'
PROPOSED 12"
WATERLINE
STA 0+65.77
FL=280.16
PROPOSED 6"
SANITARY SEWER
STA 3+55.70
FL=278.39
PROPOSED 8"
WATERLINE
STA 3+67.69
FL=278.41
FL= 282.75
FL= 282.61
FL= 282.36
FL= 282.23
FL= 282.13
FL= 281.79
FL= 281.54
FL= 281.29
FL= 281.04
FL= 280.92
FL= 280.82
FL= 280.71
FL= 280.46
FL= 280.13
0+00
1+00
2+00
3+00
4+00
5+00

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Checked By: JTB

Prepared For:

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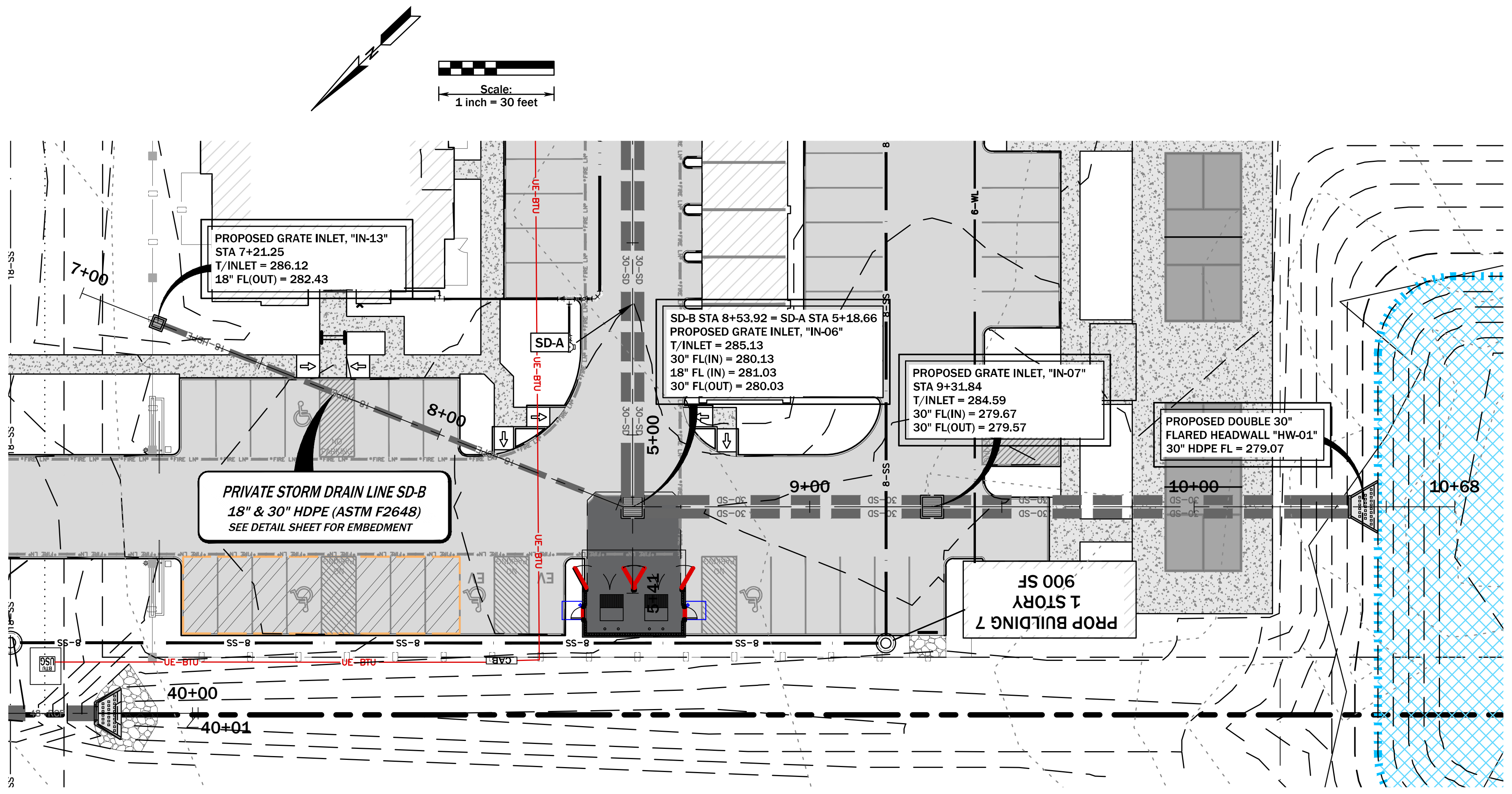
Revisions

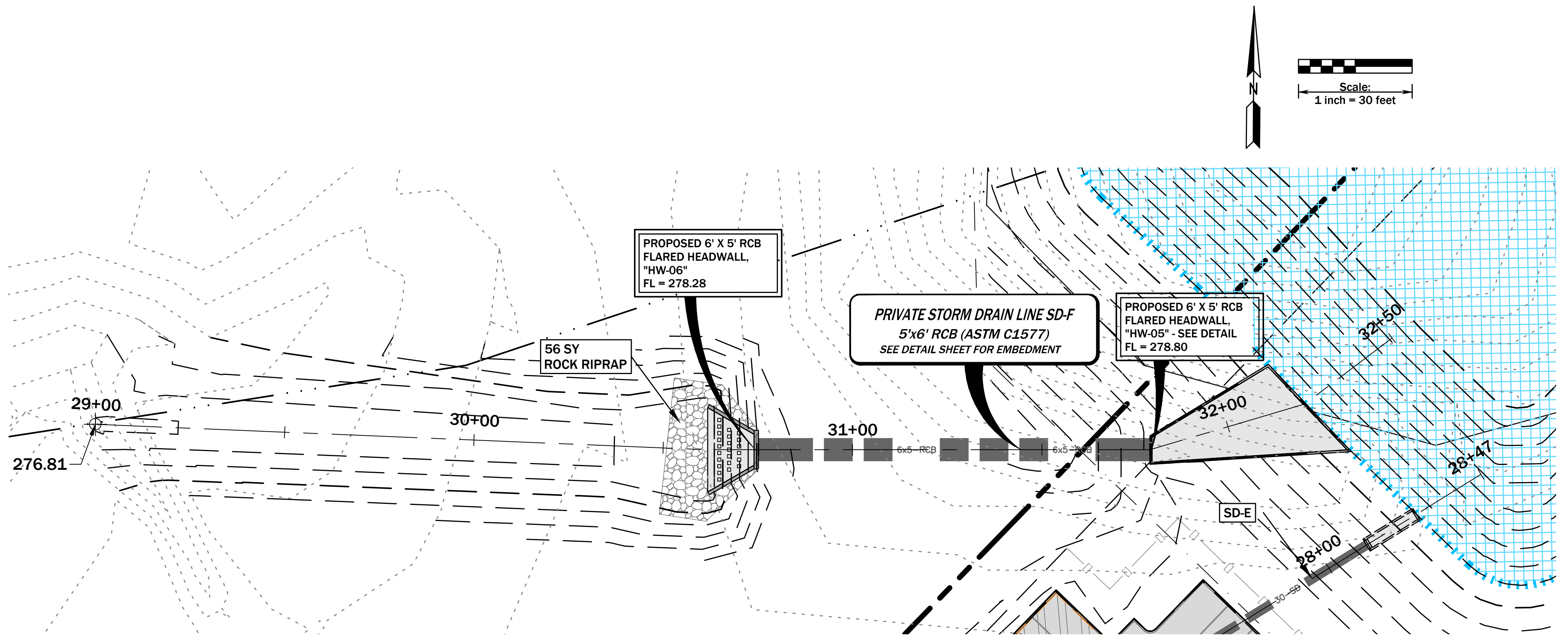
SD-A PLAN & PROFILE

BRAZOS OAKS PHASE II

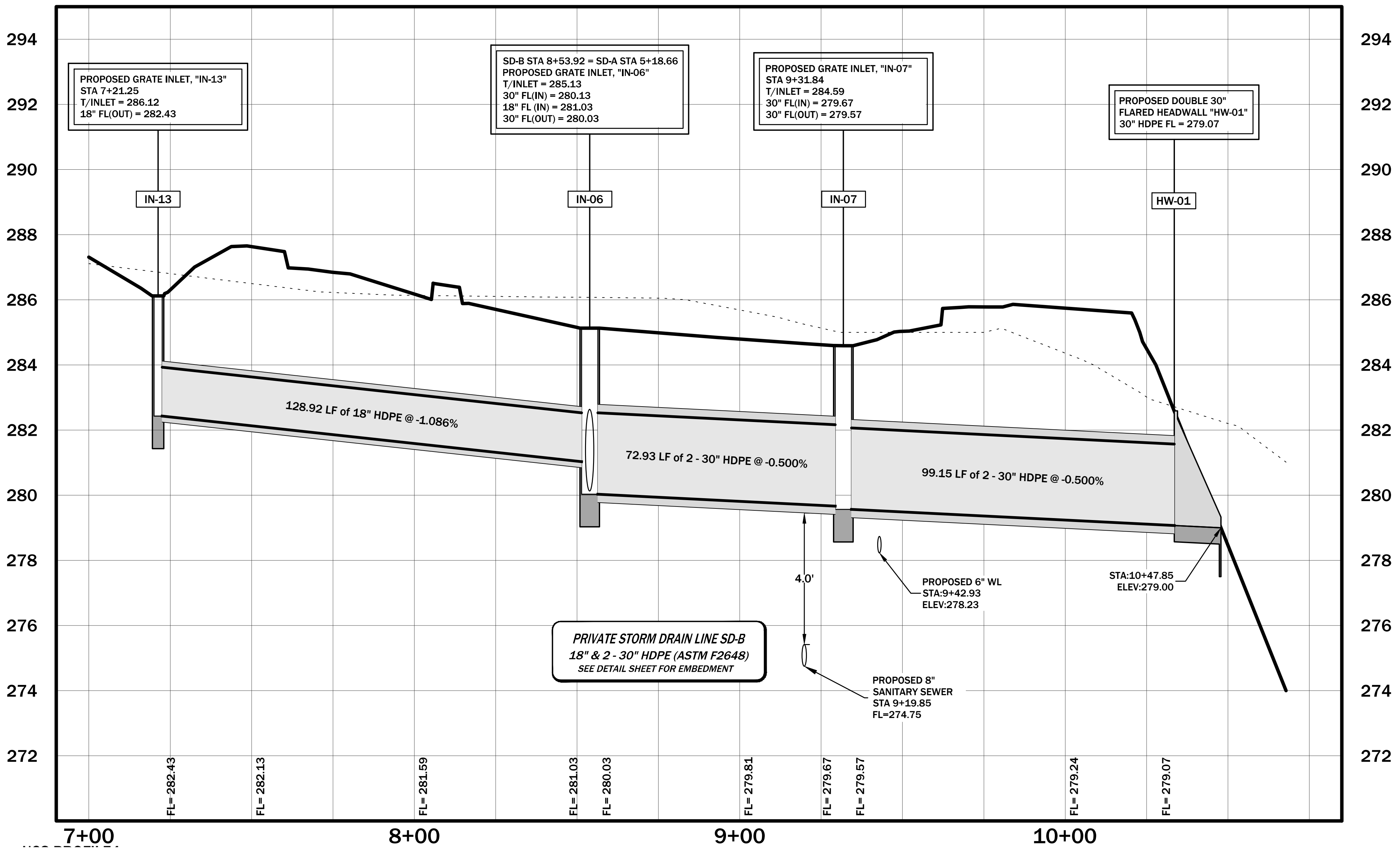
C-351



Scale:
1 inch = 30 feet
PROPOSED GRATE INLET, "IN-13"
STA 7+21.25
T/INLET = 286.12
18" FL(OUT) = 282.43
SD-B STA 8+53.92 = SD-A STA 5+18.66
PROPOSED GRATE INLET, "IN-06"
T/INLET = 285.13
30" FL(IN) = 280.13
18" FL (IN) = 281.03
30" FL(OUT) = 280.03
PROPOSED GRATE INLET, "IN-07"
STA 9+31.84
T/INLET = 284.59
30" FL(IN) = 279.67
30" FL(OUT) = 279.57
PROPOSED DOUBLE 30"
FLARED HEADWALL "HW-01"
30" HDPE FL = 279.07
PRIVATE STORM DRAIN LINE SD-B
18" & 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
SD-A
7+00
8+00
5+00
9+00
10+00
10+68
5+41
40+00
40+01
PROP BUILDING 7
1 STORY
900 SF
SS-8
UE-BTU
30-SD
6-WL



N
Scale:
1 inch = 30 feet
PROPOSED 6' X 5' RCB
FLARED HEADWALL,
"HW-06"
FL = 278.28
56 SY
ROCK RIPRAP
PRIVATE STORM DRAIN LINE SD-F
5'x6' RCB (ASTM C1577)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED 6' X 5' RCB
FLARED HEADWALL,
"HW-05" - SEE DETAIL
FL = 278.80
29+00
276.81
30+00
31+00
32+00
32+50
28+47
28+00
SD-E
6x5 RCB



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282
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278
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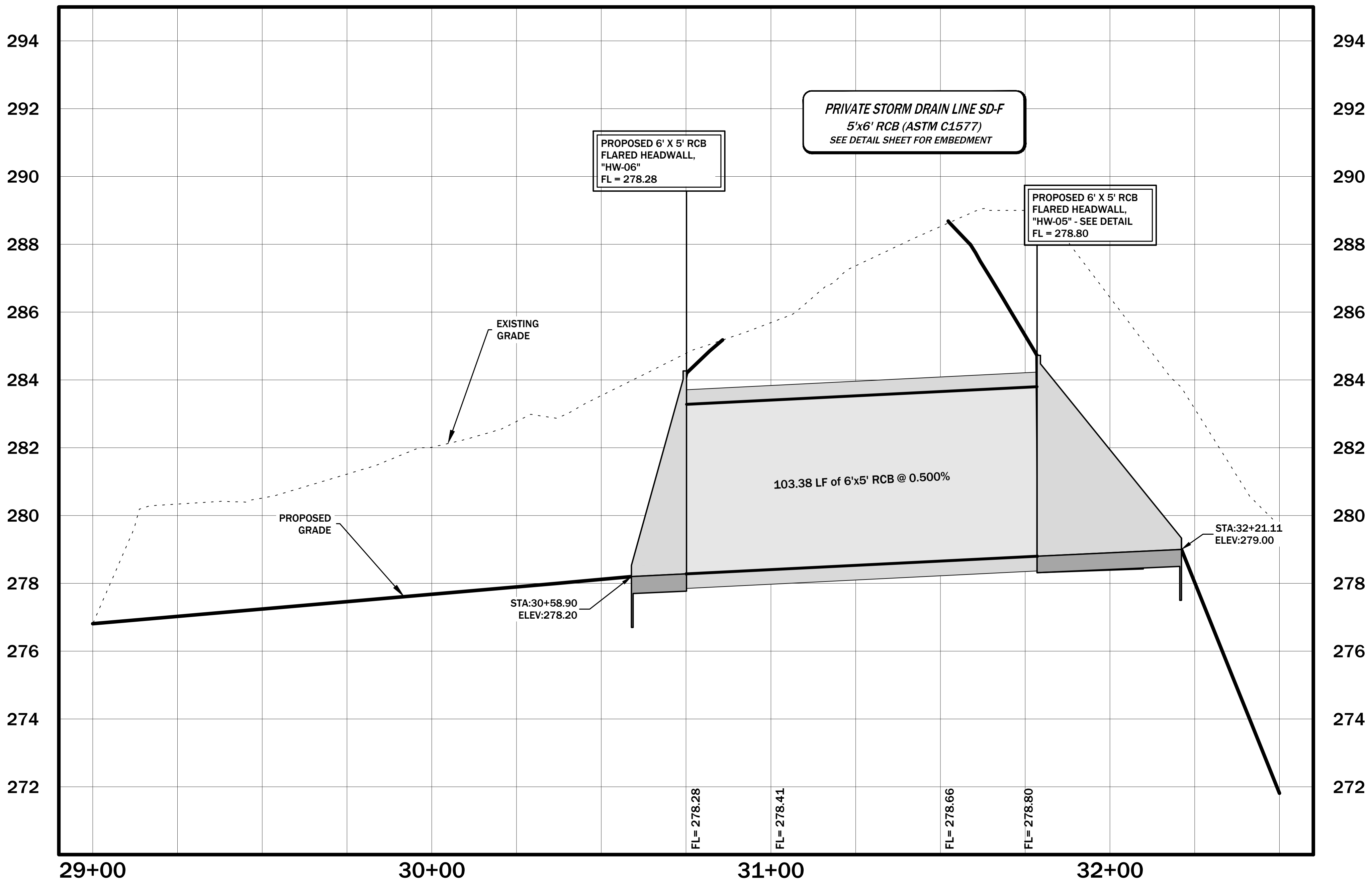
274
272
PROPOSED GRATE INLET, "IN-13"
STA 7+21.25
T/INLET = 286.12
18" FL(OUT) = 282.43
SD-B STA 8+53.92 = SD-A STA 5+18.66
PROPOSED GRATE INLET, "IN-06"
T/INLET = 285.13
30" FL(IN) = 280.13
18" FL (IN) = 281.03
30" FL(OUT) = 280.03
PROPOSED GRATE INLET, "IN-07"
STA 9+31.84
T/INLET = 284.59
30" FL(IN) = 279.67
30" FL(OUT) = 279.57
PROPOSED DOUBLE 30"
FLARED HEADWALL "HW-01"
30" HDPE FL = 279.07
IN-13
IN-06
IN-07
HW-01
128.92 LF of 18" HDPE @ -1.086%
72.93 LF of 2 - 30" HDPE @ -0.500%
99.15 LF of 2 - 30" HDPE @ -0.500%
4.0'
PROPOSED 6" WL
STA:9+42.93
ELEV:278.23
STA:10+47.85
ELEV:279.00
PRIVATE STORM DRAIN LINE SD-B
18" & 2 - 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED 8"
SANITARY SEWER
STA 9+19.85
FL=274.75
FL= 282.43
FL= 282.13
FL= 281.59
FL= 281.03
FL= 280.03
FL= 279.81
FL= 279.67
FL= 279.57
FL= 279.24
FL= 279.07
7+00
8+00
9+00
10+00



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274
272
PRIVATE STORM DRAIN LINE SD-F
5'x6' RCB (ASTM C1577)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED 6' X 5' RCB
FLARED HEADWALL,
"HW-06"
FL = 278.28
PROPOSED 6' X 5' RCB
FLARED HEADWALL,
"HW-05" - SEE DETAIL
FL = 278.80
EXISTING
GRADE
PROPOSED
GRADE
103.38 LF of 6'x5' RCB @ 0.500%
STA:30+58.90
ELEV:278.20
STA:32+21.11
ELEV:279.00
FL= 278.28
FL= 278.41
FL= 278.66
FL= 278.80
29+00
30+00
31+00
32+00

MITCHELL M&M MORGAN

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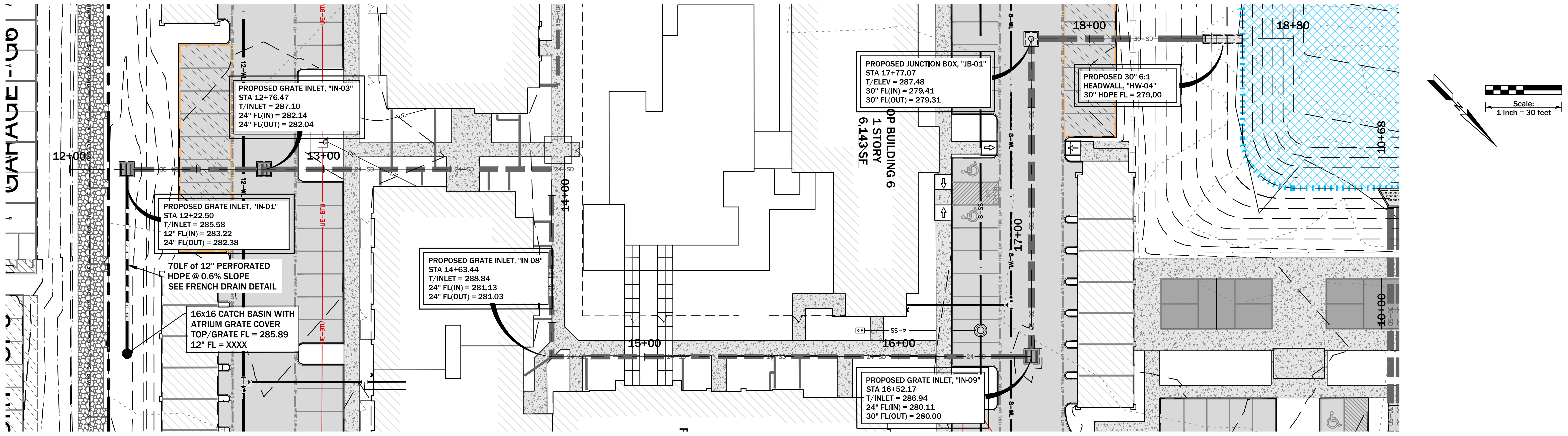
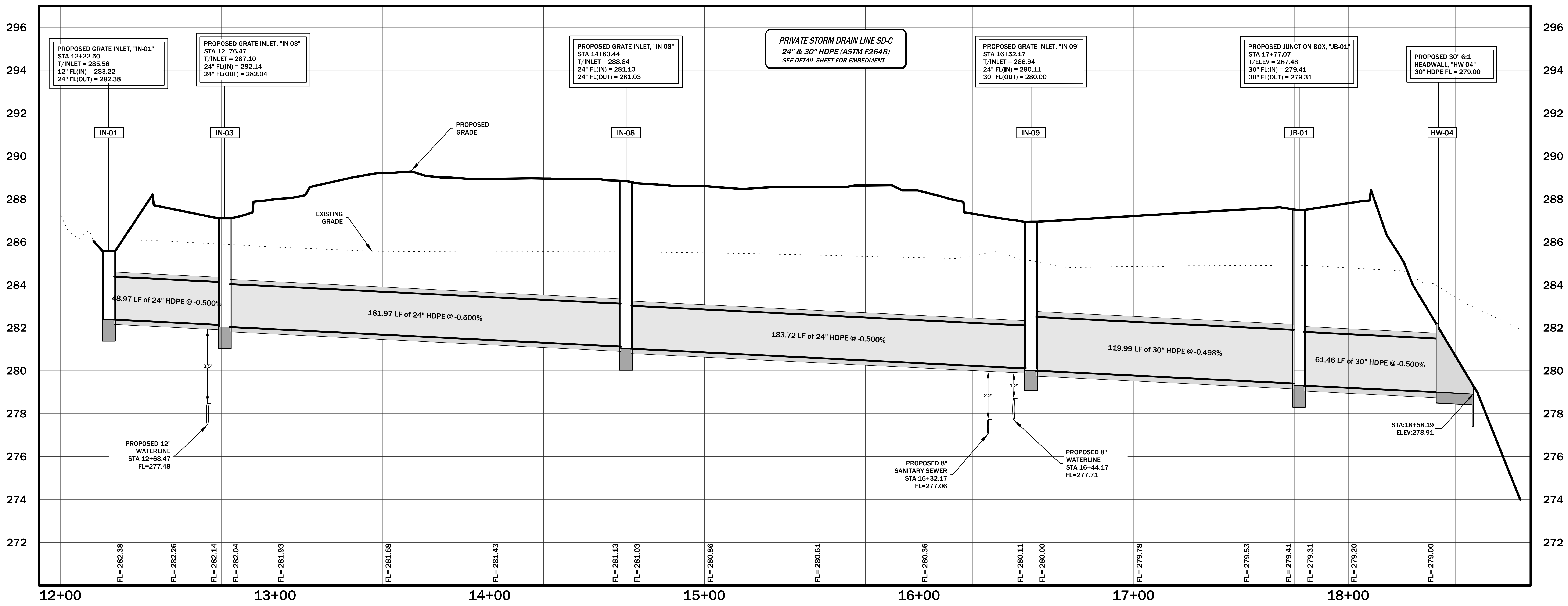
Revisions

SD-B & SD-F PLAN & PROFILE

BRAZOS OAKS PHASE II

C-352


GARAGE - G6
12+00
13+00
14+00
15+00
16+00
17+00
18+00
18+80
10+68
10+00
PROPOSED GRATE INLET, "IN-03"
STA 12+76.47
T/INLET = 287.10
24" FL(IN) = 282.14
24" FL(OUT) = 282.04
PROPOSED GRATE INLET, "IN-01"
STA 12+22.50
T/INLET = 285.58
12" FL(IN) = 283.22
24" FL(OUT) = 282.38
70LF of 12" PERFORATED
HDPE @ 0.6% SLOPE
SEE FRENCH DRAIN DETAIL
16x16 CATCH BASIN WITH
ATRIUM GRATE COVER
TOP/GRATE FL = 285.89
12" FL = XXXX
PROPOSED GRATE INLET, "IN-08"
STA 14+63.44
T/INLET = 288.84
24" FL(IN) = 281.13
24" FL(OUT) = 281.03
PROPOSED JUNCTION BOX, "JB-01"
STA 17+77.07
T/ELEV = 287.48
30" FL(IN) = 279.41
30" FL(OUT) = 279.31
OP BUILDING 6
1 STORY
6,143 SF
PROPOSED 30" 6:1
HEADWALL, "HW-04"
30" HDPE FL = 279.00
PROPOSED GRATE INLET, "IN-09"
STA 16+52.17
T/INLET = 286.94
24" FL(IN) = 280.11
30" FL(OUT) = 280.00
12-WL
UE-BTU
24-SD
30-SD
8-WL
8-SS
4-SS
FIRE LN
UE
N
Scale:
1 inch = 30 feet


PRIVATE STORM DRAIN LINE SD-C
24" & 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED GRATE INLET, "IN-01"
STA 12+22.50
T/INLET = 285.58
12" FL(IN) = 283.22
24" FL(OUT) = 282.38
PROPOSED GRATE INLET, "IN-03"
STA 12+76.47
T/INLET = 287.10
24" FL(IN) = 282.14
24" FL(OUT) = 282.04
PROPOSED GRATE INLET, "IN-08"
STA 14+63.44
T/INLET = 288.84
24" FL(IN) = 281.13
24" FL(OUT) = 281.03
PROPOSED GRATE INLET, "IN-09"
STA 16+52.17
T/INLET = 286.94
24" FL(IN) = 280.11
30" FL(OUT) = 280.00
PROPOSED JUNCTION BOX, "JB-01"
STA 17+77.07
T/ELEV = 287.48
30" FL(IN) = 279.41
30" FL(OUT) = 279.31
PROPOSED 30" 6:1
HEADWALL, "HW-04"
30" HDPE FL = 279.00
IN-01
IN-03
IN-08
IN-09
JB-01
HW-04
PROPOSED GRADE
EXISTING GRADE
48.97 LF of 24" HDPE @ -0.500%
181.97 LF of 24" HDPE @ -0.500%
183.72 LF of 24" HDPE @ -0.500%
119.99 LF of 30" HDPE @ -0.498%
61.46 LF of 30" HDPE @ -0.500%
3.5'
2.2'
1.2'
PROPOSED 12" WATERLINE STA 12+68.47 FL=277.48
PROPOSED 8" SANITARY SEWER STA 16+32.17 FL=277.06
PROPOSED 8" WATERLINE STA 16+44.17 FL=277.71
STA:18+58.19 ELEV:278.91
296
294
292
290
288
286
284
282
280
278
276
274
272
FL= 282.38
FL= 282.26
FL= 282.14
FL= 282.04
FL= 281.93
FL= 281.68
FL= 281.43
FL= 281.13
FL= 281.03
FL= 280.86
FL= 280.61
FL= 280.36
FL= 280.11
FL= 280.00
FL= 279.78
FL= 279.53
FL= 279.41
FL= 279.31
FL= 279.20
FL= 279.00
12+00
13+00
14+00
15+00
16+00
17+00
18+00

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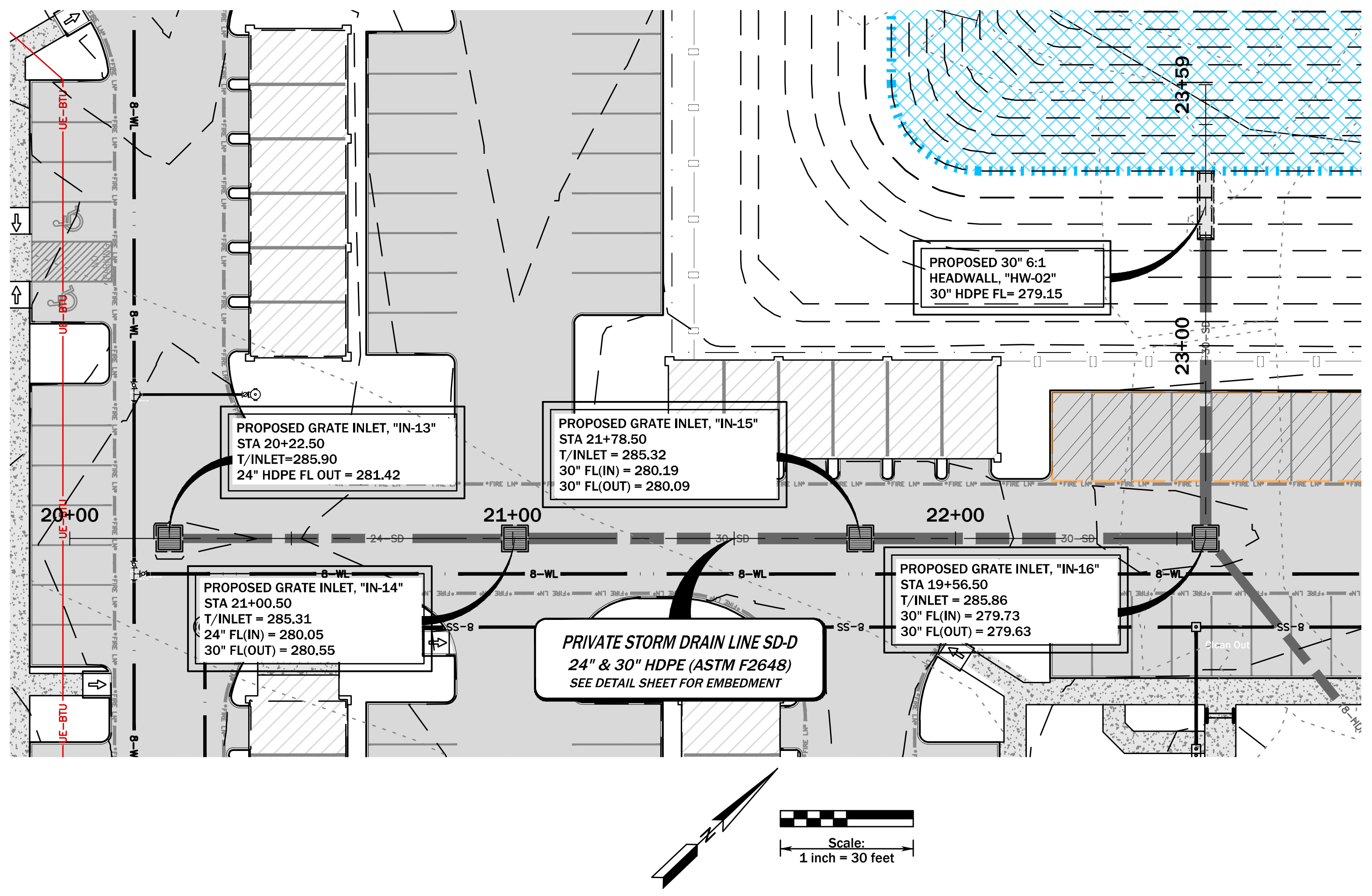
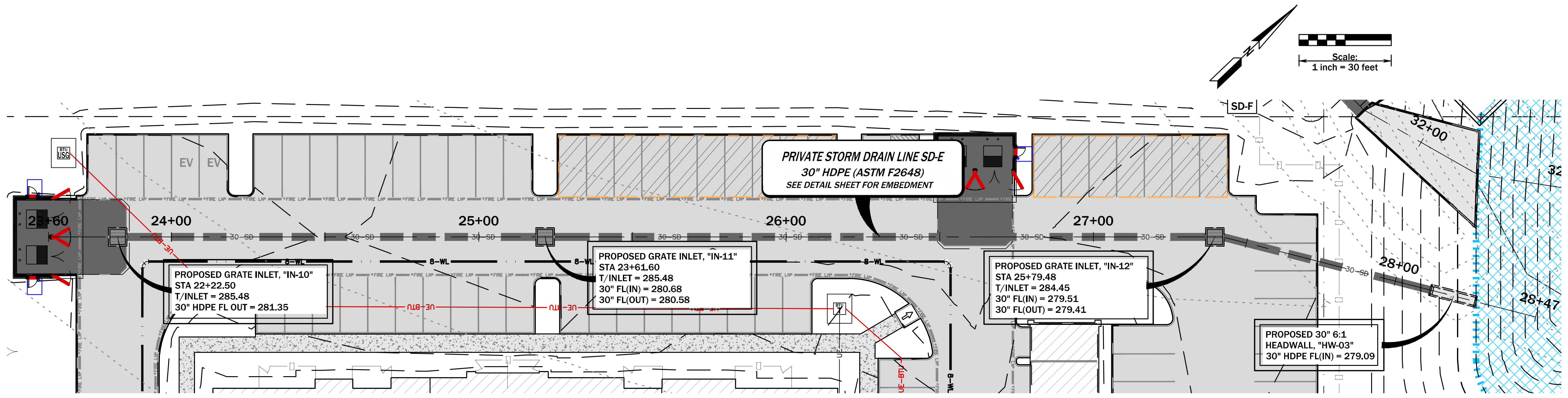
Revisions

SD-C PLAN & PROFILE
BRAZOS OAKS PHASE II

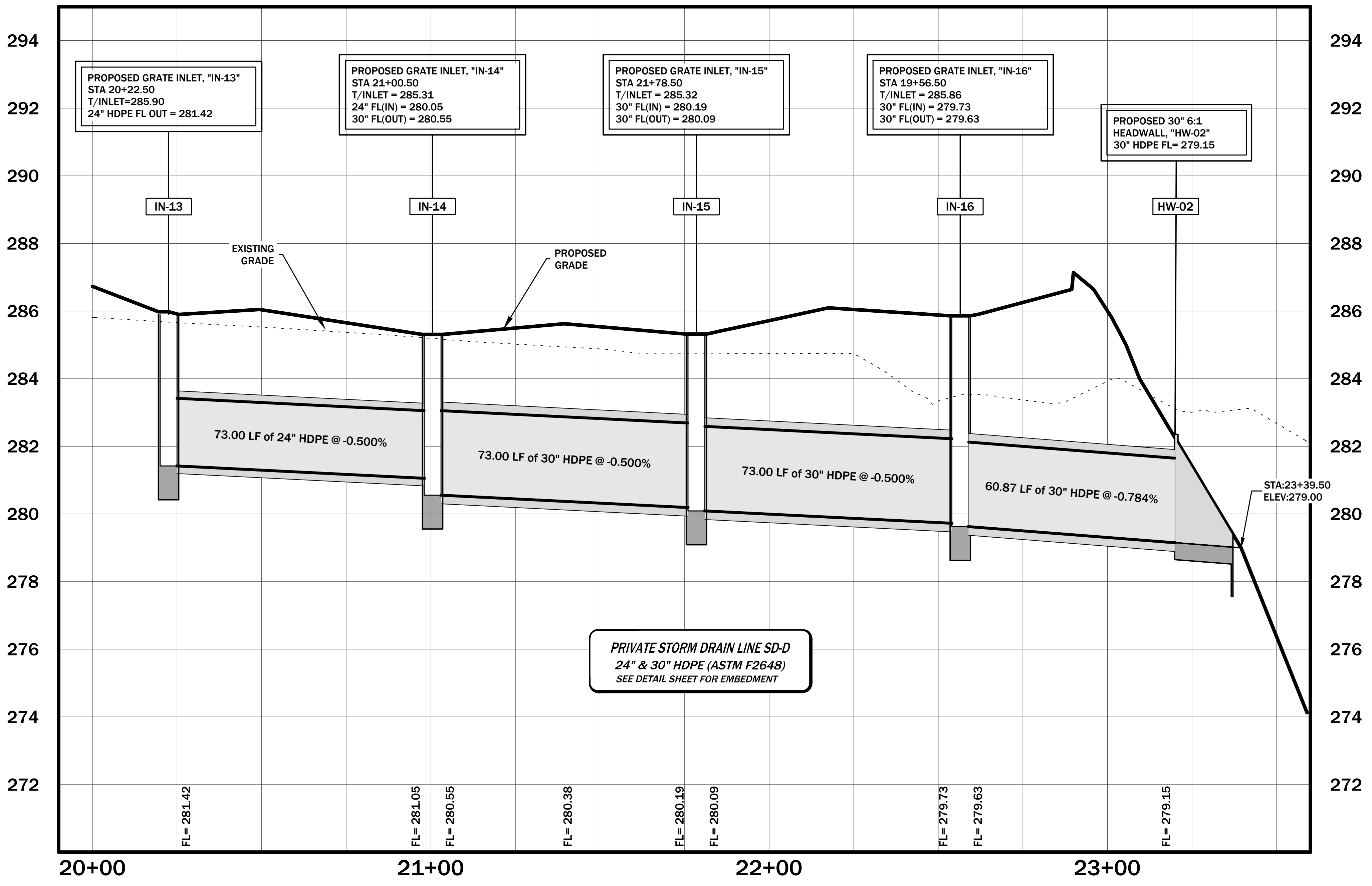
C-353



20+00
21+00
22+00
23+00
23+59
PROPOSED 30" 6:1 HEADWALL, "HW-02" 30" HDPE FL= 279.15
PROPOSED GRATE INLET, "IN-13" STA 20+22.50 T/INLET=285.90 24" HDPE FL OUT = 281.42
PROPOSED GRATE INLET, "IN-15" STA 21+78.50 T/INLET = 285.32 30" FL(IN) = 280.19 30" FL(OUT) = 280.09
PROPOSED GRATE INLET, "IN-14" STA 21+00.50 T/INLET = 285.31 24" FL(IN) = 280.05 30" FL(OUT) = 280.55
PROPOSED GRATE INLET, "IN-16" STA 19+56.50 T/INLET = 285.86 30" FL(IN) = 279.73 30" FL(OUT) = 279.63
PRIVATE STORM DRAIN LINE SD-D
24" & 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
Scale: 1 inch = 30 feet



Scale: 1 inch = 30 feet
SD-F
EV
22+60
24+00
25+00
26+00
27+00
28+00
28+47
32+00
PRIVATE STORM DRAIN LINE SD-E
30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED GRATE INLET, "IN-10" STA 22+22.50 T/INLET = 285.48 30" HDPE FL OUT = 281.35
PROPOSED GRATE INLET, "IN-11" STA 23+61.60 T/INLET = 285.48 30" FL(IN) = 280.68 30" FL(OUT) = 280.58
PROPOSED GRATE INLET, "IN-12" STA 25+79.48 T/INLET = 284.45 30" FL(IN) = 279.51 30" FL(OUT) = 279.41
PROPOSED 30" 6:1 HEADWALL, "HW-03" 30" HDPE FL(IN) = 279.09



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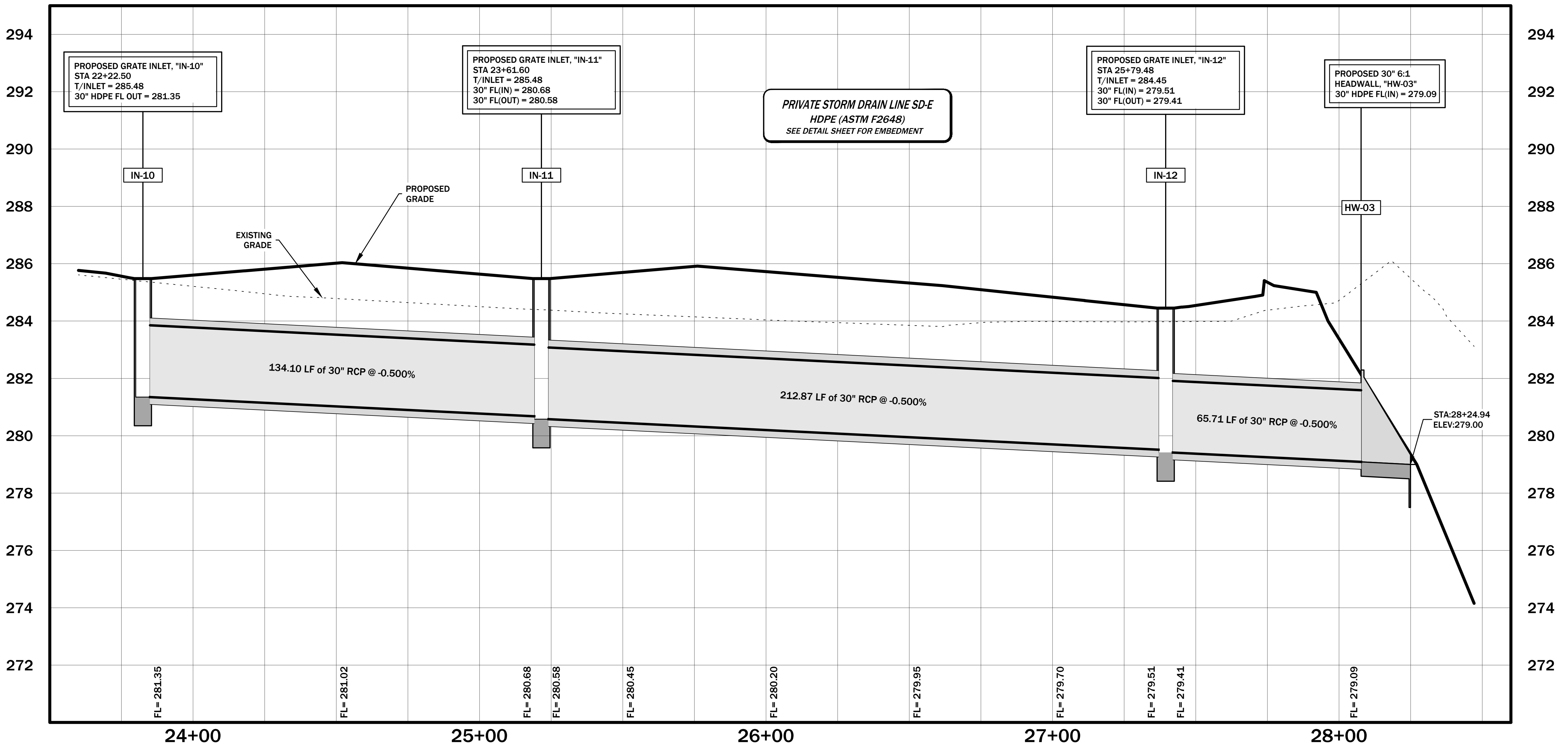
PROPOSED GRATE INLET, "IN-13" STA 20+22.50 T/INLET=285.90 24" HDPE FL OUT = 281.42
PROPOSED GRATE INLET, "IN-14" STA 21+00.50 T/INLET = 285.31 24" FL(IN) = 280.05 30" FL(OUT) = 280.55
PROPOSED GRATE INLET, "IN-15" STA 21+78.50 T/INLET = 285.32 30" FL(IN) = 280.19 30" FL(OUT) = 280.09
PROPOSED GRATE INLET, "IN-16" STA 19+56.50 T/INLET = 285.86 30" FL(IN) = 279.73 30" FL(OUT) = 279.63
PROPOSED 30" 6:1 HEADWALL, "HW-02" 30" HDPE FL= 279.15
IN-13
IN-14
IN-15
IN-16
HW-02
EXISTING GRADE
PROPOSED GRADE
73.00 LF of 24" HDPE @ -0.500%
73.00 LF of 30" HDPE @ -0.500%
73.00 LF of 30" HDPE @ -0.500%
60.87 LF of 30" HDPE @ -0.784%
STA:23+39.50 ELEV:279.00
PRIVATE STORM DRAIN LINE SD-D
24" & 30" HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 281.42
FL= 281.05
FL= 280.55
FL= 280.38
FL= 280.19
FL= 280.09
FL= 279.73
FL= 279.63
FL= 279.15
20+00
21+00
22+00
23+00



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272
PROPOSED GRATE INLET, "IN-10" STA 22+22.50 T/INLET = 285.48 30" HDPE FL OUT = 281.35
PROPOSED GRATE INLET, "IN-11" STA 23+61.60 T/INLET = 285.48 30" FL(IN) = 280.68 30" FL(OUT) = 280.58
PRIVATE STORM DRAIN LINE SD-E
HDPE (ASTM F2648)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED GRATE INLET, "IN-12" STA 25+79.48 T/INLET = 284.45 30" FL(IN) = 279.51 30" FL(OUT) = 279.41
PROPOSED 30" 6:1 HEADWALL, "HW-03" 30" HDPE FL(IN) = 279.09
IN-10
IN-11
IN-12
HW-03
PROPOSED GRADE
EXISTING GRADE
134.10 LF of 30" RCP @ -0.500%
212.87 LF of 30" RCP @ -0.500%
65.71 LF of 30" RCP @ -0.500%
STA:28+24.94 ELEV:279.00
FL= 281.35
FL= 281.02
FL= 280.68
FL= 280.58
FL= 280.45
FL= 280.20
FL= 279.95
FL= 279.70
FL= 279.51
FL= 279.41
FL= 279.09
24+00
25+00
26+00
27+00
28+00

MITCHELL
M&M
MORGAN

T.979.260.6963
F.979.260.3564

TX. FIRM # F-1443

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

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

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 10, 2026

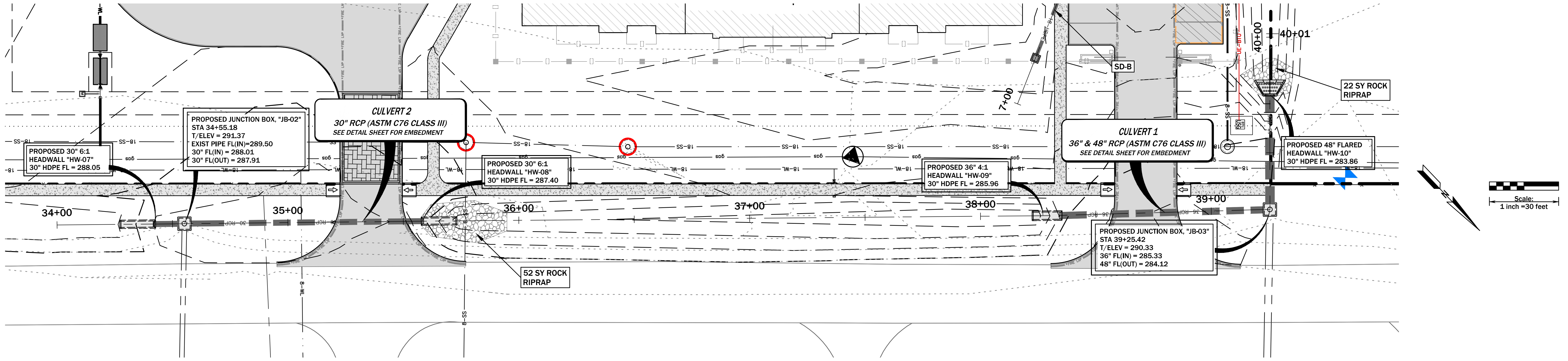
JANUARY 2026
Designed by: JTB
Drawn By: MGF
Checked By: JTB

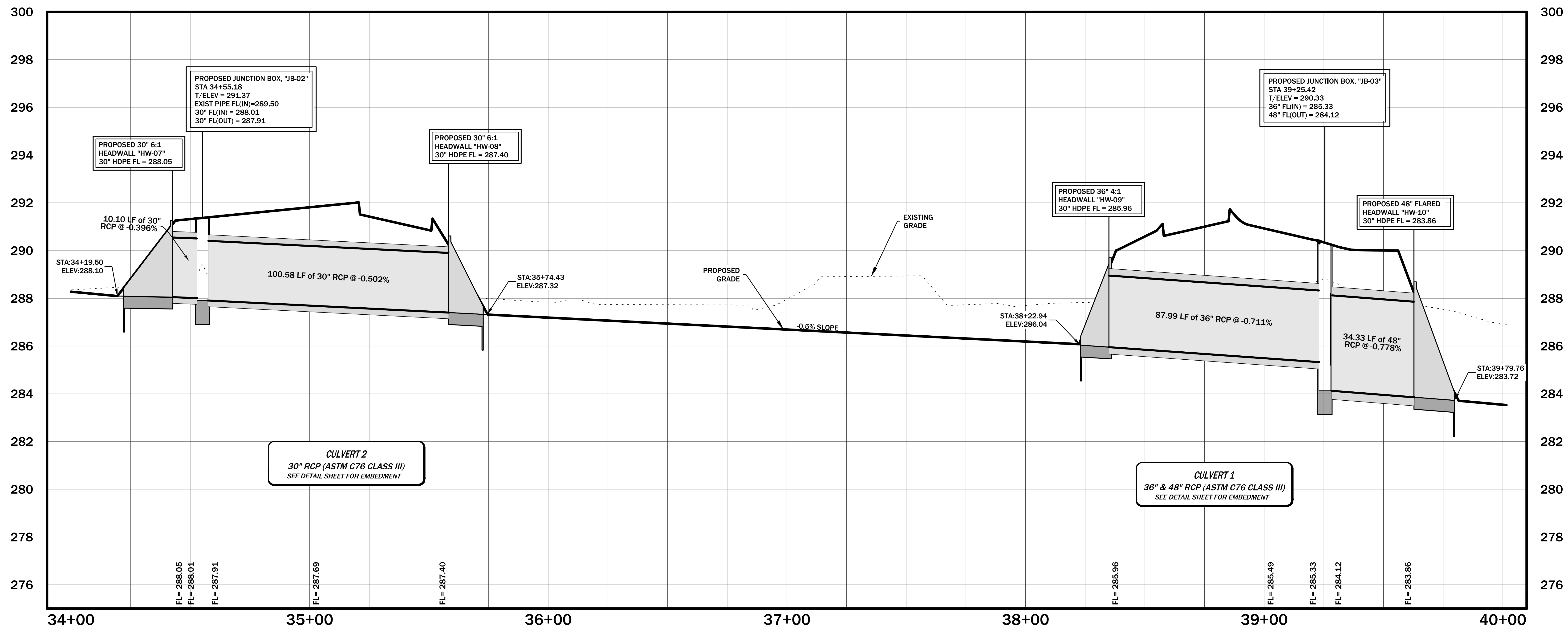
Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

SD-D & SD-E PLAN & PROFILE
BRAZOS OAKS PHASE II

C-354


PROPOSED 30" 6:1
HEADWALL "HW-07"
30" HDPE FL = 288.05
PROPOSED JUNCTION BOX, "JB-02"
STA 34+55.18
T/ELEV = 291.37
EXIST PIPE FL(IN)=289.50
30" FL(IN) = 288.01
30" FL(OUT) = 287.91
CULVERT 2
30" RCP (ASTM C76 CLASS III)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED 30" 6:1
HEADWALL "HW-08"
30" HDPE FL = 287.40
52 SY ROCK
RIPRAP
PROPOSED 36" 4:1
HEADWALL "HW-09"
30" HDPE FL = 285.96
SD-B
CULVERT 1
36" & 48" RCP (ASTM C76 CLASS III)
SEE DETAIL SHEET FOR EMBEDMENT
PROPOSED JUNCTION BOX, "JB-03"
STA 39+25.42
T/ELEV = 290.33
36" FL(IN) = 285.33
48" FL(OUT) = 284.12
22 SY ROCK
RIPRAP
PROPOSED 48" FLARED
HEADWALL "HW-10"
30" HDPE FL = 283.86
34+00
35+00
36+00
37+00
38+00
39+00
40+00
40+01
7+00
18-SS
18-WL
8-WL
8-SS
gas
30-RCP
36 RCP
FIRE LN
UE-BTU
N
Scale:
1 inch =30 feet


300
298
296
294
292
290
288
286
284
282
280
278
276
PROPOSED 30" 6:1
HEADWALL "HW-07"
30" HDPE FL = 288.05
PROPOSED JUNCTION BOX, "JB-02"
STA 34+55.18
T/ELEV = 291.37
EXIST PIPE FL(IN)=289.50
30" FL(IN) = 288.01
30" FL(OUT) = 287.91
PROPOSED 30" 6:1
HEADWALL "HW-08"
30" HDPE FL = 287.40
10.10 LF of 30"
RCP @ -0.396%
STA:34+19.50
ELEV:288.10
100.58 LF of 30" RCP @ -0.502%
STA:35+74.43
ELEV:287.32
PROPOSED
GRADE
EXISTING
GRADE
-0.5% SLOPE
STA:38+22.94
ELEV:286.04
PROPOSED 36" 4:1
HEADWALL "HW-09"
30" HDPE FL = 285.96
87.99 LF of 36" RCP @ -0.711%
PROPOSED JUNCTION BOX, "JB-03"
STA 39+25.42
T/ELEV = 290.33
36" FL(IN) = 285.33
48" FL(OUT) = 284.12
34.33 LF of 48"
RCP @ -0.778%
PROPOSED 48" FLARED
HEADWALL "HW-10"
30" HDPE FL = 283.86
STA:39+79.76
ELEV:283.72
CULVERT 2
30" RCP (ASTM C76 CLASS III)
SEE DETAIL SHEET FOR EMBEDMENT
CULVERT 1
36" & 48" RCP (ASTM C76 CLASS III)
SEE DETAIL SHEET FOR EMBEDMENT
FL= 288.05
FL= 288.01
FL= 287.91
FL= 287.69
FL= 287.40
FL= 285.96
FL= 285.49
FL= 285.33
FL= 284.12
FL= 283.86
34+00
35+00
36+00
37+00
38+00
39+00
40+00

MITCHELL
M&M
MORGAN

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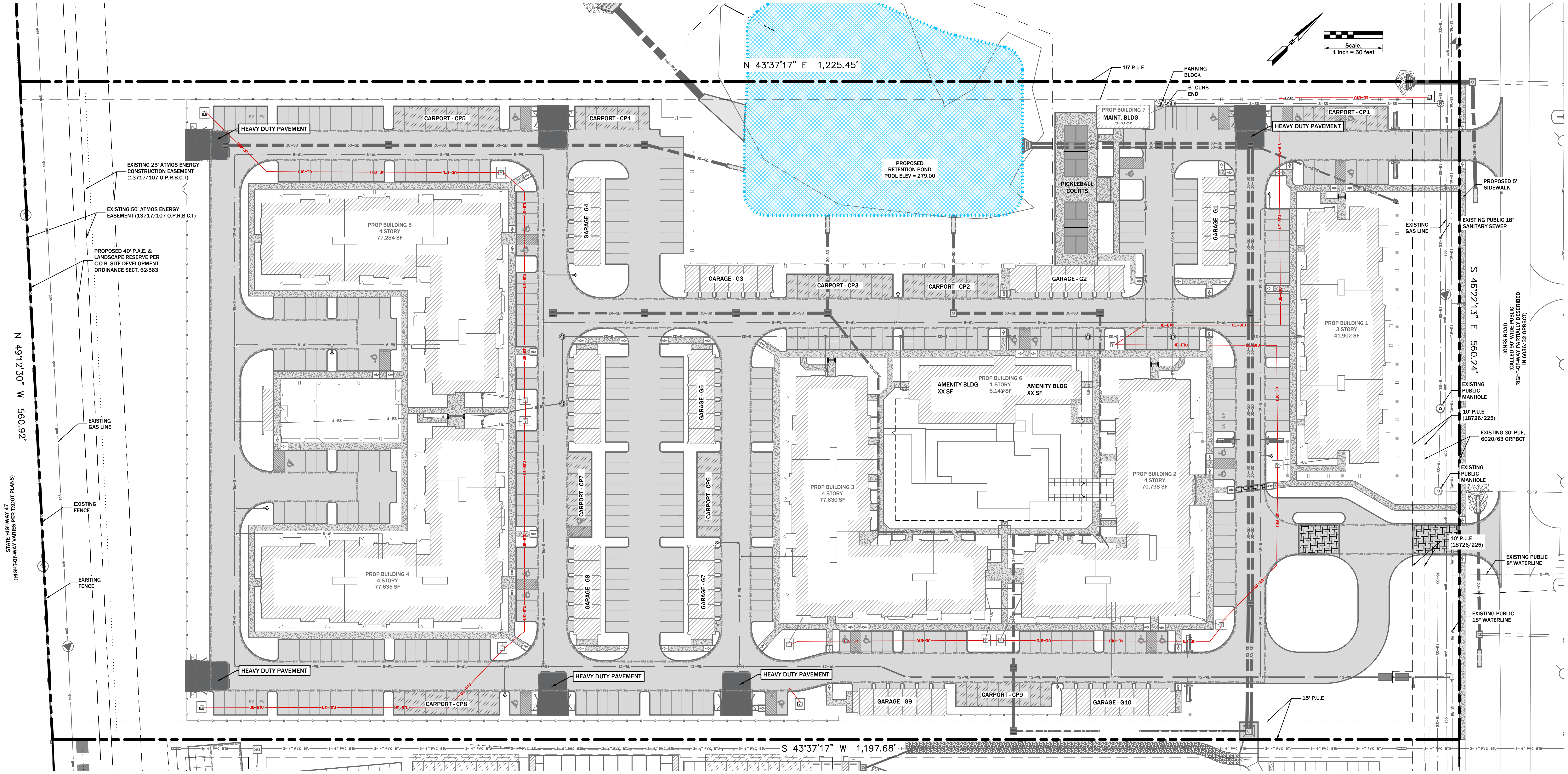
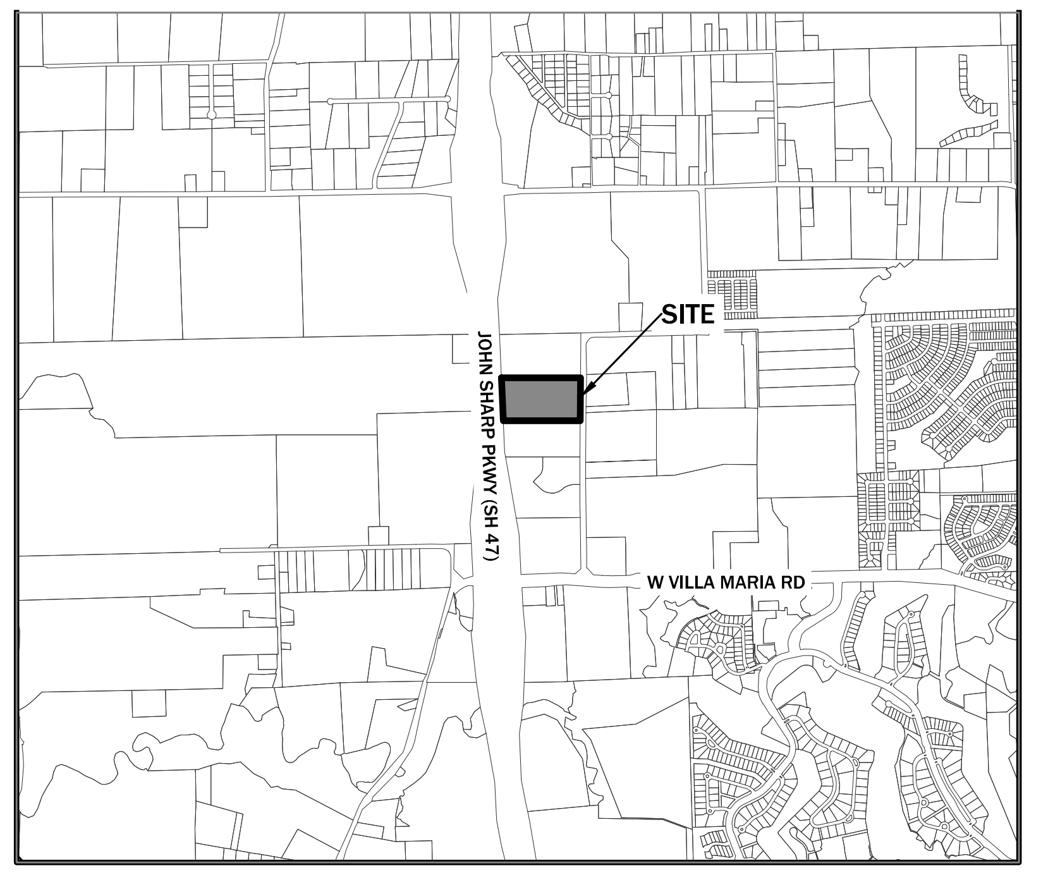
Revisions

CULVERTS 1 & 2 PLAN & PROFILE
BRAZOS OAKS PHASE II

C-355

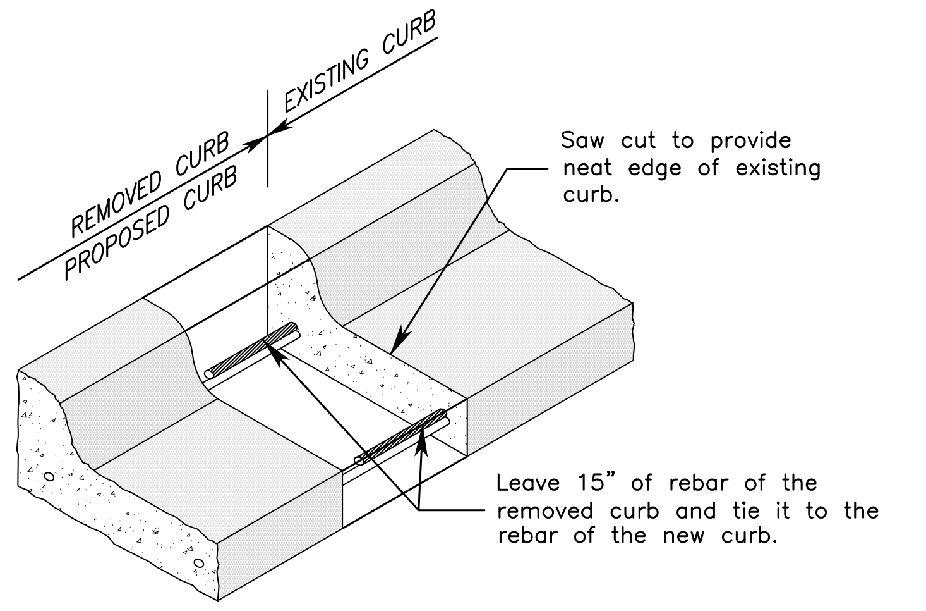

N 43°37'17" E 1,225.45'
S 43°37'17" W 1,197.68'
N 49°12'30" W 560.92'
S 46°22'13" E 560.24'
Scale:
1 inch = 50 feet
PROPOSED RETENTION POND
POOL ELEV = 279.00
HEAVY DUTY PAVEMENT
CARPORT - CP1
CARPORT - CP2
CARPORT - CP3
CARPORT - CP4
CARPORT - CP5
CARPORT - CP6
CARPORT - CP7
CARPORT - CP8
CARPORT - CP9
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G5
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
PROP BUILDING 1
3 STORY
41,902 SF
PROP BUILDING 2
4 STORY
70,798 SF
PROP BUILDING 3
4 STORY
77,630 SF
PROP BUILDING 4
4 STORY
77,635 SF
PROP BUILDING 5
4 STORY
77,284 SF
PROP BUILDING 6
1 STORY
6,143 SF
AMENITY BLDG
XX SF
PROP BUILDING 7
MAINT. BLDG
900 SF
PICKLEBALL COURTS
15' P.U.E
PARKING BLOCK
6" CURB END
PROPOSED 5' SIDEWALK
EXISTING GAS LINE
EXISTING PUBLIC 18" SANITARY SEWER
JONES ROAD
(CALLED 90' WIDE PUBLIC RIGHT-OF-WAY PARTIALLY DESCRIBED IN 6036/32 OPRBCT)
EXISTING PUBLIC MANHOLE
10' P.U.E (18726/225)
EXISTING 30' PUE, 6020/63 ORPBCT
EXISTING PUBLIC 8" WATERLINE
EXISTING PUBLIC 18" WATERLINE
EXISTING 25' ATMOS ENERGY CONSTRUCTION EASEMENT (13717/107 O.P.R.B.C.T)
EXISTING 50' ATMOS ENERGY EASEMENT (13717/107 O.P.R.B.C.T)
PROPOSED 40' P.A.E. & LANDSCAPE RESERVE PER C.O.B. SITE DEVELOPMENT ORDINANCE SECT. 62-563
EXISTING GAS LINE
EXISTING FENCE
EXISTING FENCE
STATE HIGHWAY 47
(RIGHT-OF-WAY VARIES PER TXDOT PLANS)
EV
FIRE LANE
30-SD
8-WL
8-SS
UE-BTU
3- 4" PVC BTU


SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP
N.T.S.

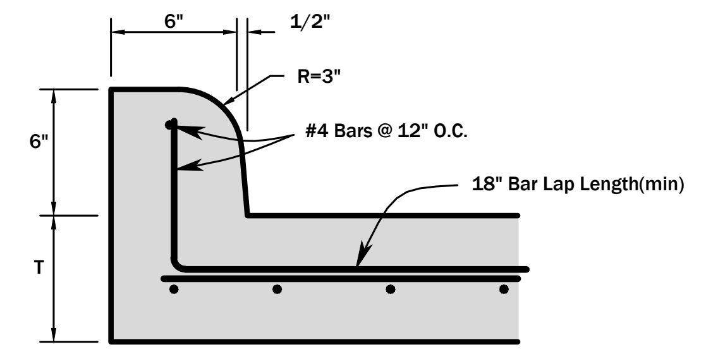
LEGEND:

- ░ SIDEWALK CONCRETE
- ▒ STANDARD PAVEMENT
- ▓ HEAVY DUTY PAVEMENT
- ▨ PROPOSED BUILDING SLAB
- ▥ SIDEWALK CONCRETE WITH ARCHITECTURAL SCORING


EXISTING CURB
REMOVED CURB
PROPOSED CURB
Saw cut to provide neat edge of existing curb.
Leave 15" of rebar of the removed curb and tie it to the rebar of the new curb.

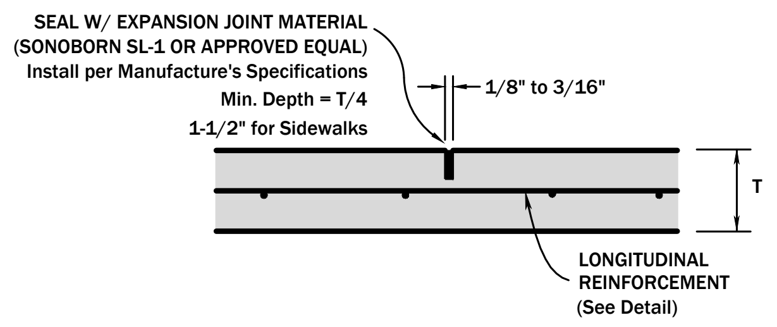
CONNECT TO EXISTING CURB DETAIL

NTS


6"
1/2"
R=3"
#4 Bars @ 12" O.C.
18" Bar Lap Length(min)
6"
T

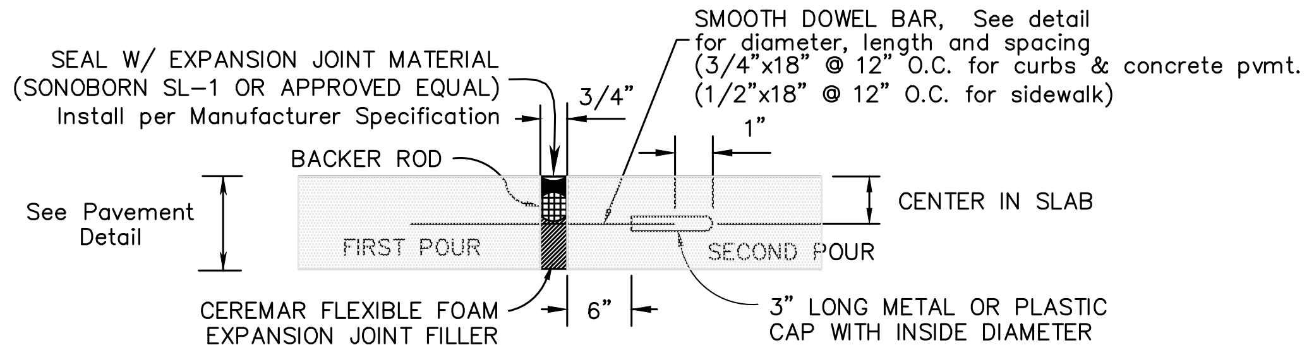
TYPE II CURB

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


SEAL W/ EXPANSION JOINT MATERIAL
(SONOBORN SL-1 OR APPROVED EQUAL)
Install per Manufacture's Specifications
Min. Depth = T/4
1-1/2" for Sidewalks
1/8" to 3/16"
T
LONGITUDINAL REINFORCEMENT
(See Detail)

CONTRACTION JOINT

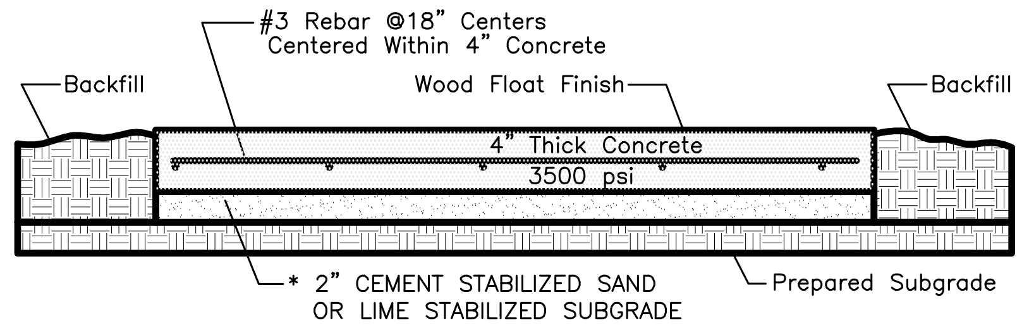
15' spacing


SEAL W/ EXPANSION JOINT MATERIAL
(SONOBORN SL-1 OR APPROVED EQUAL)
Install per Manufacturer Specification
3/4"
SMOOTH DOWEL BAR, See detail for diameter, length and spacing
(3/4"x18" @ 12" O.C. for curbs & concrete pvmt.
(1/2"x18" @ 12" O.C. for sidewalk)
1"
BACKER ROD
See Pavement Detail
CENTER IN SLAB
FIRST POUR
SECOND POUR
CEREMAR FLEXIBLE FOAM EXPANSION JOINT FILLER
(OR APPROVED EQUAL)
6"
3" LONG METAL OR PLASTIC CAP WITH INSIDE DIAMETER TO BE 1/16" GREATER THAN DIAMETER OF DOWEL BAR

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

EXPANSION JOINT

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

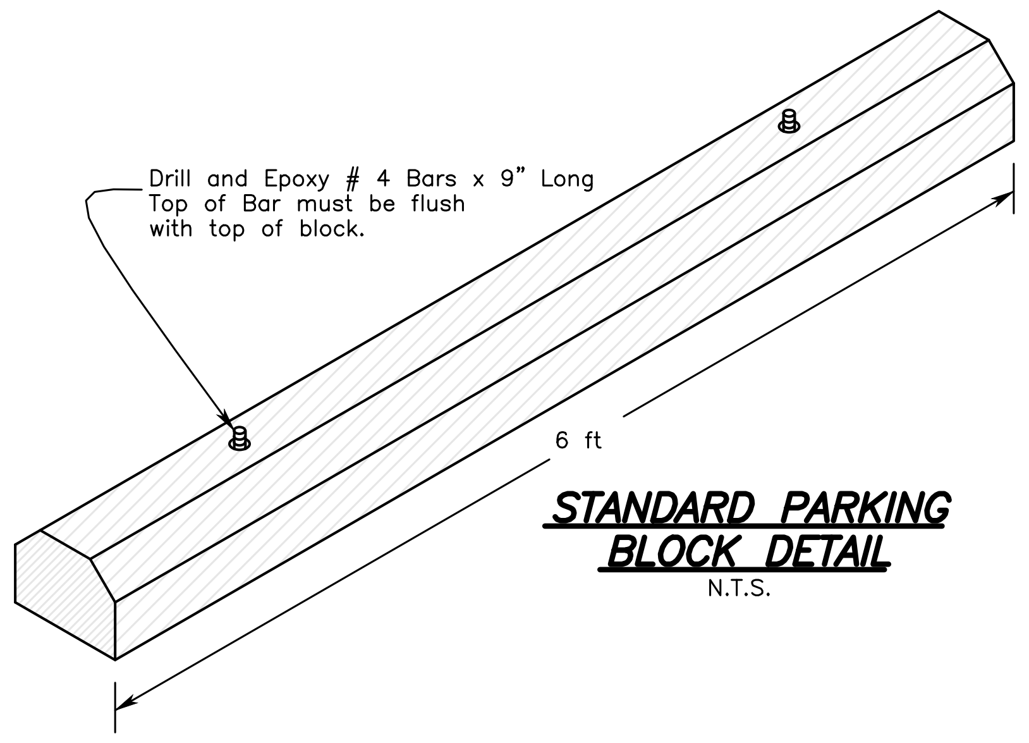

#3 Rebar @18" Centers Centered Within 4" Concrete
Backfill
Wood Float Finish
Backfill
4" Thick Concrete
3500 psi
* 2" CEMENT STABILIZED SAND OR LIME STABILIZED SUBGRADE
Prepared Subgrade

Expansion Joints @ 60' o.c.
Contracting Joints @ 5' o.c.

STANDARD CONCRETE SIDEWALK DETAIL

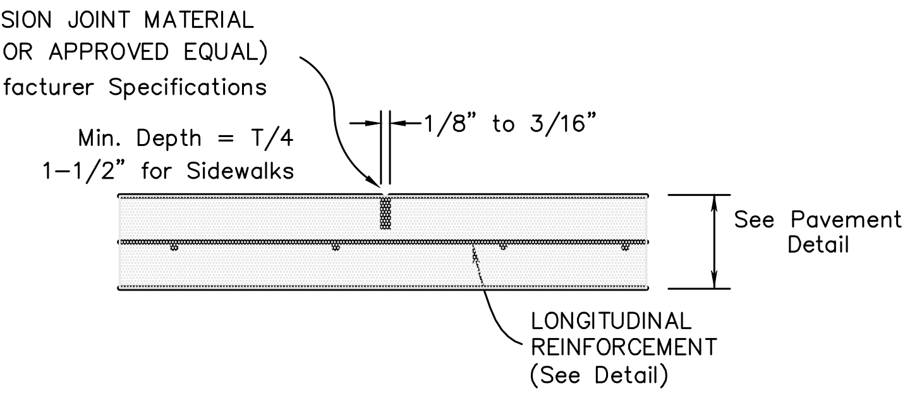
NTS

* 5" CONCRETE ON PREPARED SUBGRADE IS ACCEPTABLE.


Drill and Epoxy # 4 Bars x 9" Long
Top of Bar must be flush with top of block.
6 ft

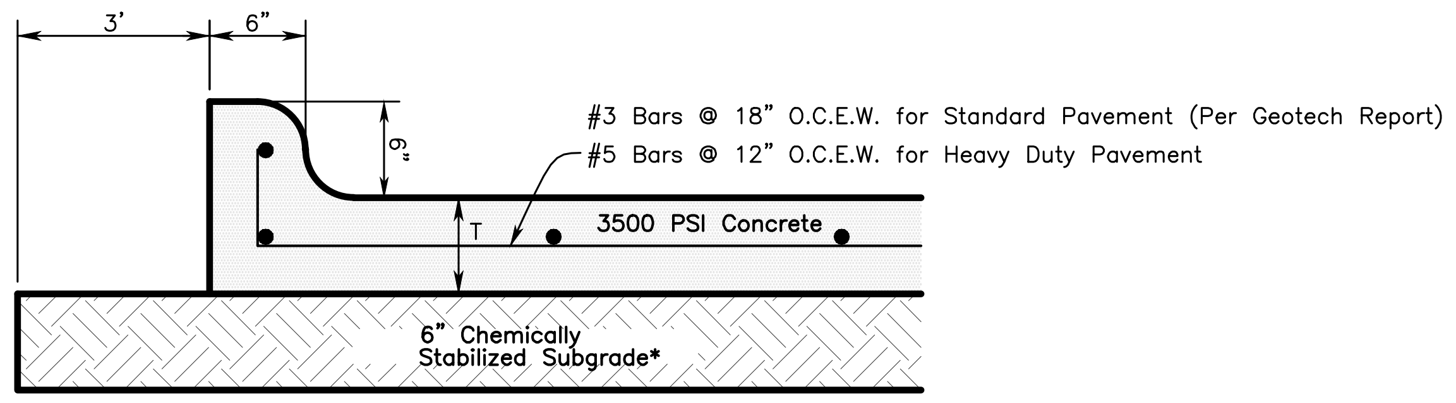
STANDARD PARKING BLOCK DETAIL

N.T.S.


SEAL W/ EXPANSION JOINT MATERIAL
(SONBORN SL-1 OR APPROVED EQUAL)
Install per Manufacturer Specifications
Min. Depth = T/4
1-1/2" for Sidewalks
1/8" to 3/16"
See Pavement Detail
LONGITUDINAL REINFORCEMENT
(See Detail)

CONTRACTION JOINT

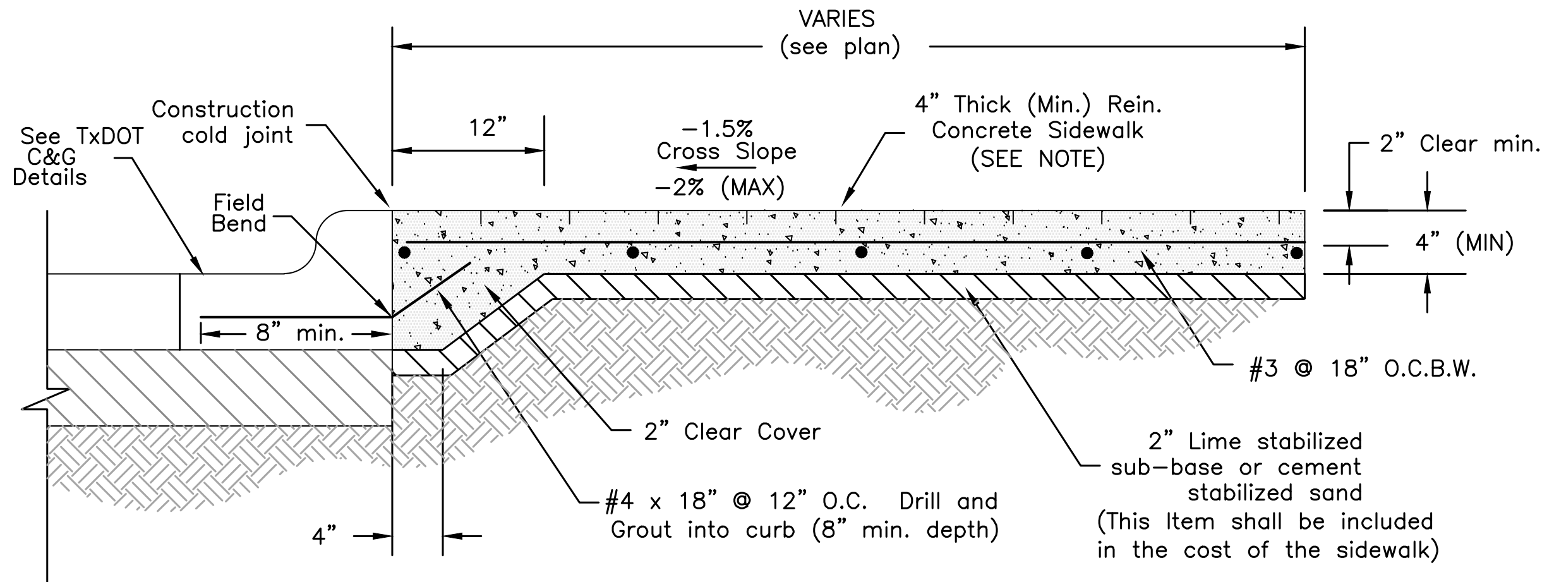
See detail for spacing


3'
6"
6"
#3 Bars @ 18" O.C.E.W. for Standard Pavement (Per Geotech Report)
#5 Bars @ 12" O.C.E.W. for Heavy Duty Pavement
T
3500 PSI Concrete
6" Chemically Stabilized Subgrade*

CONCRETE PAVEMENT DETAIL

T=6" FOR STANDARD PAVEMENT SECTION
T=8" FOR HEAVY DUTY PAVEMENT SECTION

Expansion Joints @ 60' o.c.
Contracting Joints @ 15' o.c.


VARIES
(see plan)
See TxDOT C&G Details
Construction cold joint
12"
-1.5% Cross Slope
-2% (MAX)
4" Thick (Min.) Rein. Concrete Sidewalk
(SEE NOTE)
2" Clear min.
4" (MIN)
Field Bend
8" min.
#3 @ 18" O.C.B.W.
2" Clear Cover
2" Lime stabilized sub-base or cement stabilized sand
(This Item shall be included in the cost of the sidewalk)
#4 x 18" @ 12" O.C. Drill and Grout into curb (8" min. depth)
4"

CONCRETE SIDEWALK NEXT TO CURB

NTS

MITCHELL
M&M
MORGAN

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TX. FIRM # F-1443

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93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

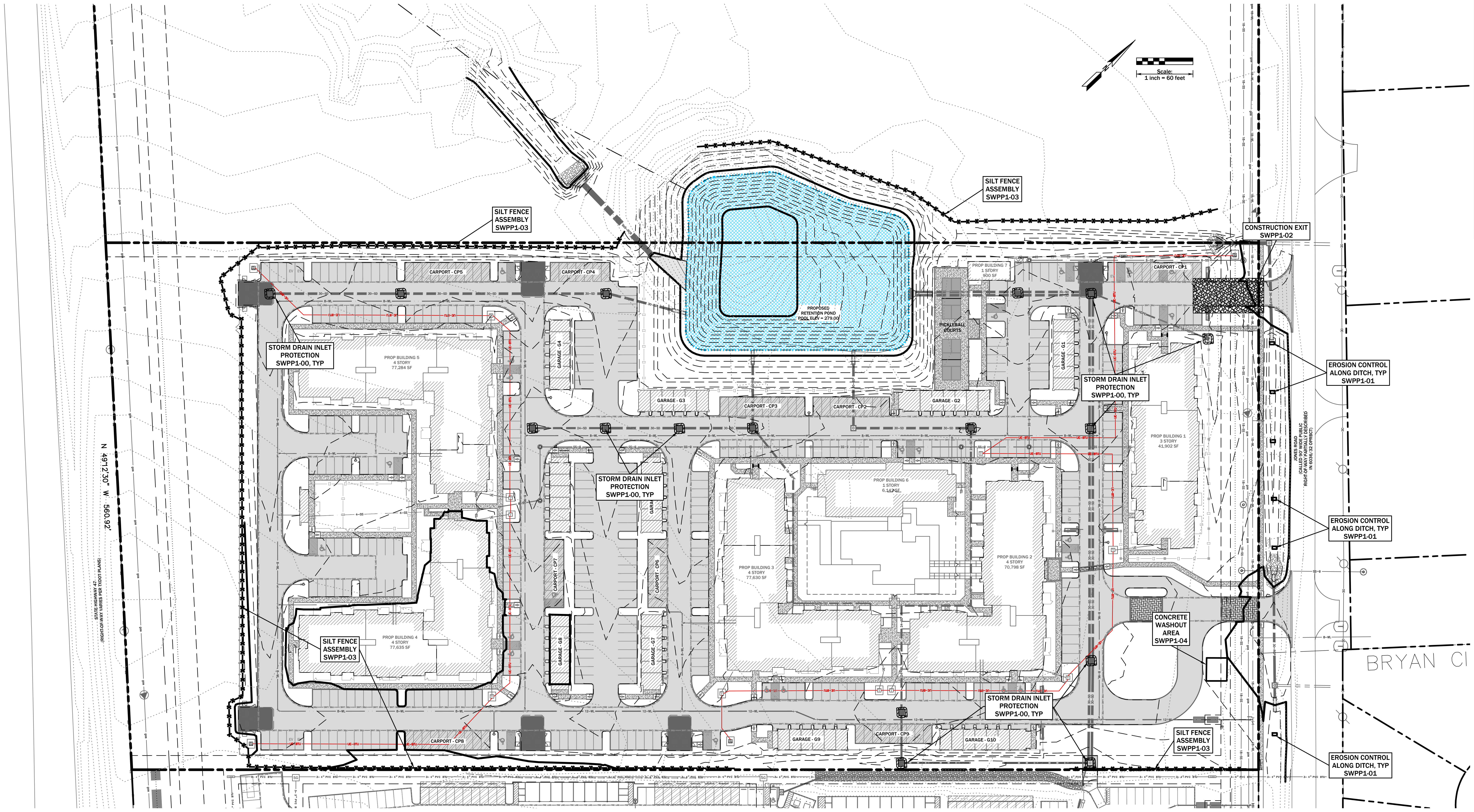
Prepared For:

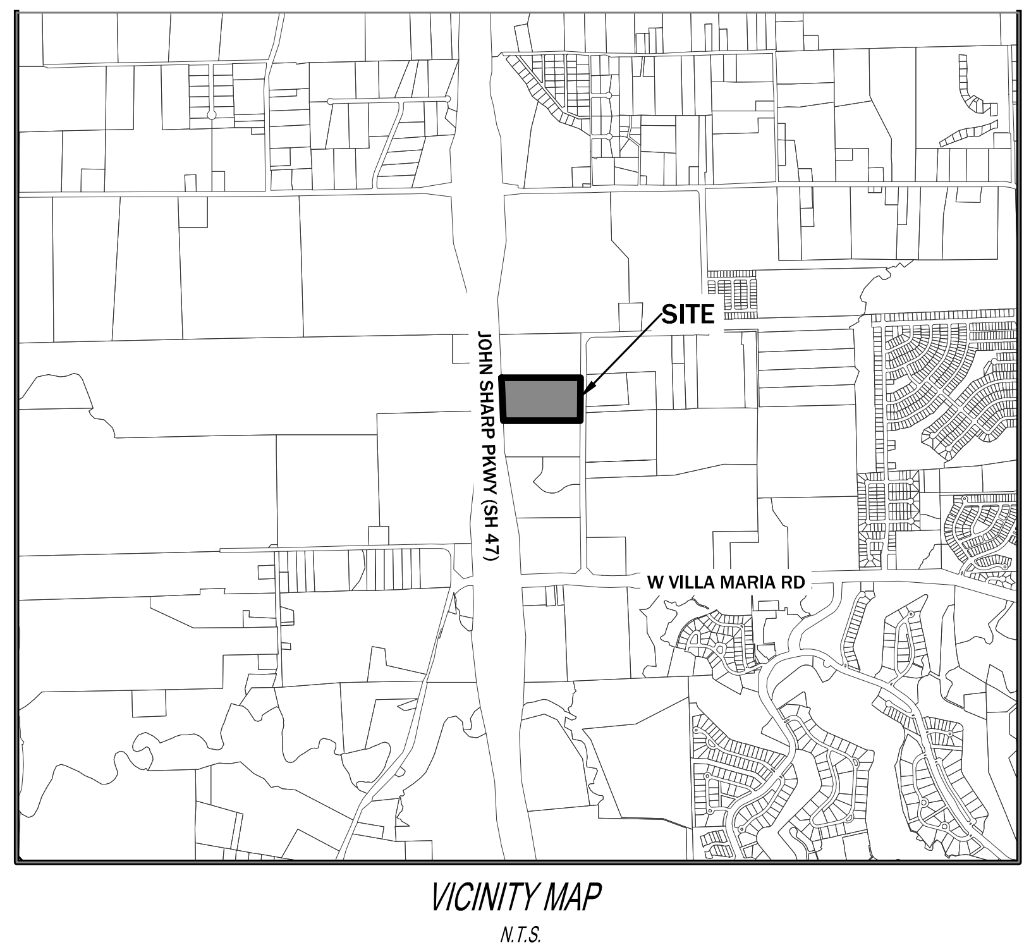
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

OVERALL PAVING PLAN
BRAZOS OAKS PHASE II

C-400


SILT FENCE ASSEMBLY SWPP1-03
SILT FENCE ASSEMBLY SWPP1-03
CONSTRUCTION EXIT SWPP1-02
STORM DRAIN INLET PROTECTION SWPP1-00, TYP
STORM DRAIN INLET PROTECTION SWPP1-00, TYP
STORM DRAIN INLET PROTECTION SWPP1-00, TYP
STORM DRAIN INLET PROTECTION SWPP1-00, TYP
EROSION CONTROL ALONG DITCH, TYP SWPP1-01
EROSION CONTROL ALONG DITCH, TYP SWPP1-01
EROSION CONTROL ALONG DITCH, TYP SWPP1-01
CONCRETE WASHOUT AREA SWPP1-04
SILT FENCE ASSEMBLY SWPP1-03
SILT FENCE ASSEMBLY SWPP1-03
PROPOSED RETENTION POND
PROP BUILDING 1 3 STORY 41,902 SF
PROP BUILDING 2 4 STORY 70,798 SF
PROP BUILDING 3 4 STORY 77,630 SF
PROP BUILDING 4 4 STORY 77,635 SF
PROP BUILDING 5 4 STORY 77,284 SF
PROP BUILDING 6 1 STORY
PROP BUILDING 7 1 STORY 900 SF
PICKLEBALL COURTS
CARPORT - CP1
CARPORT - CP2
CARPORT - CP3
CARPORT - CP4
CARPORT - CP5
CARPORT - CP6
CARPORT - CP7
CARPORT - CP8
CARPORT - CP9
GARAGE - G1
GARAGE - G2
GARAGE - G3
GARAGE - G4
GARAGE - G6
GARAGE - G7
GARAGE - G8
GARAGE - G9
GARAGE - G10
N 4°12'30" W 560.92'
JONES ROAD
BRYAN CI
Scale
1 inch = 60 feet


SITE
JOHN SHARP PKWY (SH 47)
W VILLA MARIA RD

VICINITY MAP
N.T.S.

SWPP Information:

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

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

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

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

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

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

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

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

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

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

-Water from water line flushing

Site Description:

Project name and location:
BRAZOS OAKS PHASE II
5950 JONES ROAD, Bryan, Brazos County, Texas

Developer:
TEEPLE PARTNERS, INC.
1302 S. CAPITAL OF TEXAS HWY
SUITE A134
AUSTIN, TX 78746

The site is not located on Indian lands.

Latitude: 30° 36' 49" N
Longitude: 96°24' 53" W

MS4 operator name: City of Bryan, Texas
Receiving water body: THOMPSONS CREEK TRIBUTARY 2
Estimated area to be disturbed: 15.58 acres

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

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

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

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

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

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

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

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

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

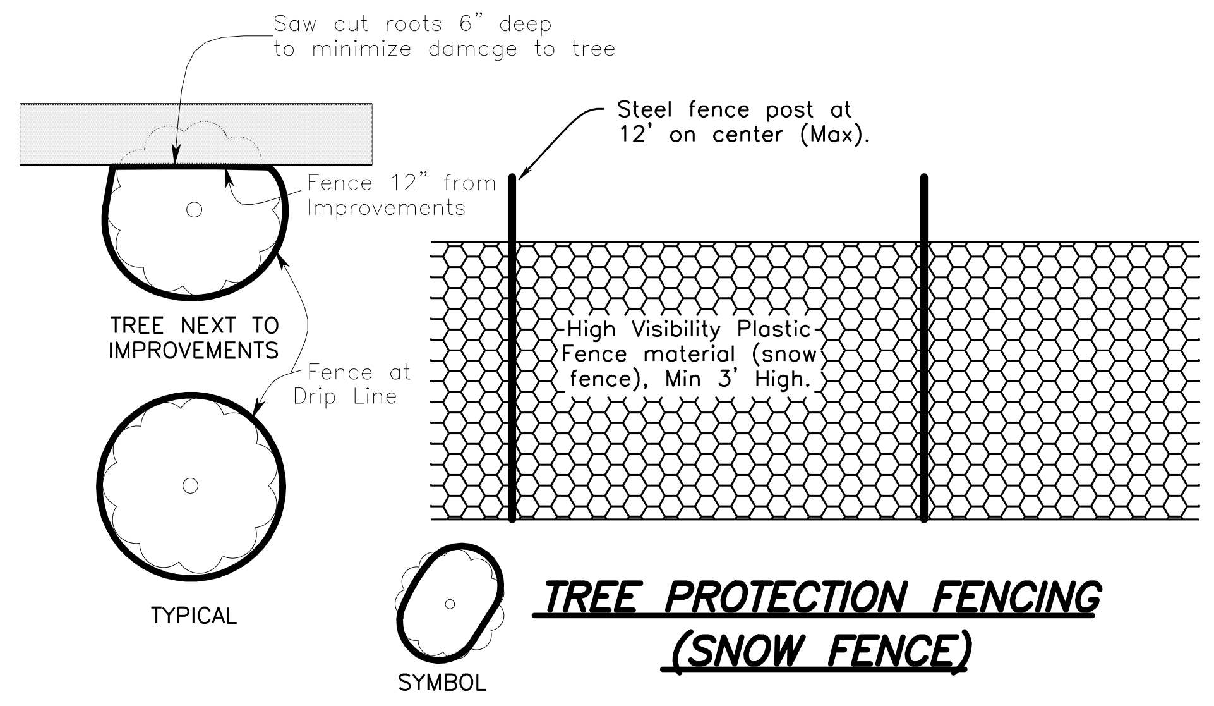
Operator's Record Keeping:
The permittee must retain the following records for a minimum of 3 years from the date that a NOT is submitted:

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

LEGEND

- - - XXX.XX - - -	Existing Grade
—— XXX.XX ——	Proposed Grade
— — XXX.XX — —	Proposed Grade
—o—o—o—o—	Tree Protection Fence
—x—x—x—x—	Silt Fence

SWPP PLAN NOTES:
1. All contractor vehicles, including employee's vehicles, shall park within the project site to minimize traffic on the public streets adjacent to the worksite entrance. Contractor will provide sufficient parking areas to accommodate his vehicles. Any areas disturbed by vehicular parking will be repaired to original condition prior to completion of project.
2. If required on the plans, the contractor shall maintain a vehicle wash down area of sufficient size and in a location to facilitate cleaning his vehicles prior to leaving the work site.
3. All areas where existing vegetation and grass cover have been bared by construction shall be adequately block sodded or hydromulched and watered until growth is established. In developed areas where grass is present, block sod will be required. Bared areas shall be seeded or sodded within 14 calendars days of last disturbance. All erosion control measures shall remain in place until acceptable vegetative growth is established after construction is complete and then removed by contractor.
4. Approved erosion control measures must be installed during the entire time earth has been bared by construction and shall stay in place until acceptable vegetative growth is established after construction is complete and then removed by the contractor.
5. All erosion control measures should be cleaned of silt after every rain event.
6. Approved erosion control measures must be installed during the entire time earth has been bared by construction
7. It is the responsibility of the contractor to use whatever means necessary to minimize erosion and prevent sediment from leaving the project site.
8. The contractor is responsible for implementing, inspecting and maintaining the erosion and sediment control devices.
9. Construction exit is to be dressed with additional rock as needed and maintain so as to prevent construction traffic from tracking mud onto adjacent public streets.
10. Inspection shall be performed every 14 days and every rainfall event of 1/2" or more. All erosion control devices shall be cleaned of silt (as needed) after every rain.
11. Structural controls shall be installed as soon after clearing as practical and maintained in good working order until the site is stabilized. Alternate structural controls may be utilized if approved by Engineer.
12. The contractor is responsible for complying with the TPDES General Permit No. TXR150000 requirements for construction sites.
13. The contractor shall coordinate with the owner to determine a temporary spoils, earthwork, and topsoil area for the site.
14. All areas that have a slope >15% shall be hydromulched (mix determined based upon season) upon completion of grading and contractor shall utilize a rolled single net straw erosion control blanket with poly netting (US-1S) as produced by US Erosion Control Products or approved equal to lay over the hydromulched slope. Contractor shall be responsible for watering and assuring 80% coverage in 21 days.
15. Contractor shall strip topsoil from the site prior to construction and stockpile and protect from contamination from other soils for later use onsite by the landscape contractor.
16. **ONCE GRADING OF POND IS COMPLETED, SILT FENCE SHALL BE ESTABLISHED AS SHOWN IN "**" LOCATIONS TO PREVENT ONSITE SILT FROM ENTERING POND.


Saw cut roots 6" deep to minimize damage to tree
Fence 12" from Improvements
TREE NEXT TO IMPROVEMENTS
Fence at Drip Line
TYPICAL
Steel fence post at 12' on center (Max).
High Visibility Plastic Fence material (snow fence), Min 3' High.
SYMBOL

TREE PROTECTION FENCING (SNOW FENCE)

NTS
Place fencing @ the drip line of all trees shown to be protected.

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TX. FIRM # F-1443

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PLAN & DESIGN SPECIALISTS IN
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JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
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Drawn By: MGF,SB
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AUSTIN, TX 78746
512.329.5755

Revisions

EROSION CONTROL PLAN
BRAZOS OAKS PHASE II

C-401

GENERAL REQUIREMENTS

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

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

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

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

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

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

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

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

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

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

SOIL CLASSIFICATION

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

TYPE A

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

1) The soil is fissured; or
2) The soil is subject to vibration from heavy traffic, pile driving, or similiar effects; or
3) The soil has been previously disturbed; or
4) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or
5) The material is subject to other factors that would require it to be classified as a less stable material.

TYPE B

1) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa); or
2) Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silty loam, sandy loam and in some cases, silty clay loam and sandy clay loam.
3) Previously disturbed soils except those which would otherwise be classed as Type C soil.
4) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or
5) Dry rock that is not stable; or
6) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

TYPE C

1) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48kPa) or less; or
2) Granular soils including gravel, sand and loamy sand; or
3) Submerged soil or soil from which water is freely seeping; or
4) Submerged rock that is not stable; or
5) Material in a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or steeper.

REQUIREMENT FOR PROTECTIVE SYSTEMS

SLOPING AND BENCHING SYSTEMS (FOUR OPTIONS)

1) A slope of 34 degrees or less, in lieu of soil classification. A slope of this gradation or less is considered safe for any type of soil.
2) Maximum allowable slopes and allowable configurations for sloping and benching systems will be determined through use of Appendices A (Soil classification) and B (Sloping and Benching) of 29CFR Part 1926, Subpart P.
3) Designs of sloping or benching shall be selected from, and be in accordance with, data provided in written form. The text to identify: Criteria that affect the selection, the limits of use of the data, and sufficient explanatory data as necessary to assist in making a correct choice of a protective system. At least one copy of the tabulated data identifying the Registered Professional Engineer who approved the information shall be maintained at the jobsite during the time the work is being carried out.
4) Excavations can be designed by a Registered Professional Engineer, put in written form and kept at the worksite, but must include, at least, the magnitude and configuration of the slopes determined to be safe for the project and the name of the RPE who approved the plan.

SUPPORT SHIELD AND OTHER PROTECTIVE SYSTEMS (FOUR OPTIONS)

1) Designs for timber shoring in trenches set in accordance with the conditions and requirements determined by using Appendices A and C (timber shoring for trenches) of 29 CFR, Part 1926, Subpart P. For aluminum hydraulic shoring, Appendices A and D of 29 CFR, Part 1926, Subpart P, can be used if manufacturers' tabulated data is not available.
2) Designs of support systems, shield systems or other protective systems using manufacturers' tabulated data may be used, deviation allowed only with specific, written approval of the manufacturer.
3) Designs of support systems, shield systems or other protective systems using other tabulated data may be used provided the data is in writing and includes: Explanatory information to aid the user in making a selection, the criteria determining the selection, and the limits on the use of the data. At least one copy of the information, including the identity of the RPE, is to be kept at the worksite during construction of the protective system.
4) Design systems not using any of the three previously cited options must be approved by a Registered Professional Engineer, shall be in writing and include the identity of the RPE and details such as sizes, types and configurations of the materials to be used. At least one copy of the plan is to be at the job site during construction.

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

TABLE OF MAXIMUM ALLOWABLE SLOPES

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

NOTES:

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

TIMBER TRENCH SHORING - MINIMUM TIMBER REQUIREMENTS

Soil Type A

Pa=25xH+72 psf

(2 ft Surcharge)

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

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) Close	4	5	6	8
5 Up to 10	Up To 6	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd					2 x 6	
	Up To 8	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd						2 x 8
	Up To 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4			2 x 6		
	Up To 12	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4				2 x 6	
10 Up to 15	Up To 6	4 x 4	4 x 4	4 x 6	6 x 6	6 x 6	4	Not Req'd					3 x 8	
	Up To 8	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4		2 x 6			
	Up To 10	6 x 6	6 x 5	6 x 6	6 x 8	6 x 8	4	8 x 10	4			2 x 6		
	Up To 12	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	10x10	4				3 x 8	
15 Up to 20	Up To 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	6 x 8	4	3 x 6				
	Up To 8	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	8 x 8	4	3 x 6				
	Up To 10	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	4	8 x 10	4	3 x 6				
	Up To 12	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	4	10x10	4	3 x 6				
Over 20	Note (1)													

Douglas fir or equiv. w/bending strength not less than 1500 psi

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) Close	4	5	6	8
5 Up to 10	Up To 6	4 x 4	4 x 4	4 x 4	4 x 4	4 x 6	4	Not Req'd	Not Req'd				4 x 6	
	Up To 8	4 x 4	4 x 4	4 x 4	4 x 6	4 x 6	4	Not Req'd	Not Req'd					4 x 8
	Up To 10	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4			4 x 6		
	Up To 12	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	8 x 8	4				4 x 6	
10 Up to 15	Up To 6	4 x 4	4 x 4	4 x 4	6 x 6	6 x 6	4	Not Req'd	Not Req'd				4 x 10	
	Up To 8	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	4	6 x 8	4		4 x 6			
	Up To 10	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4			4 x 6		
	Up To 12	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	8 x 10	4		4 x 6		4 x 10	
15 Up to 20	Up To 6	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	6 x 8	4	3 x 6				
	Up To 8	6 x 6	6 x 6	6 x 6	6 x 6	6 x 6	4	8 x 8	4	3 x 6	4 x 12			
	Up To 10	6 x 6	6 x 6	6 x 6	6 x 6	6 x 8	4	8 x 10	4	3 x 6				
	Up To 12	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	4	8 x 12	4	3 x 6	4 x 12			
Over 20	Note (1)													

Soil Type B

Pa=45xH+72 psf

(2 ft Surcharge)

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) Close	2	3		
5 Up to 10	Up To 6	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	5	6 x 8	5			2 x 6		
	Up To 8	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 10	5			2 x 6		
	Up To 10	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	10 x 10	5			2 x 6		
	See Note 1													
10 Up to 15	Up To 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 8	5		2 x 6			
	Up To 8	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 10	5		2 x 6			
	Up To 10	8 x 8	8 x 8	8 x 8	8 x 8	8x10	5	10 x 12	5		2 x 6			
	See Note 1													
15 Up to 20	Up To 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	8 x 10	5	3 x 6				
	Up To 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	5	10 x 12	5	3 x 6				
	Up To 10	8x10	8x10	8x10	8x10	10x10	5	12 x 12	5	3 x 6				
	See Note 1													
Over 20	See Note (1)													

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) Close	2	3	4	6
5 Up to 10	Up To 6	4 x 6	4 x 6	4 x 6	6 x 6	6 x 6	5	6 x 8	5			3 x 12 4 x 8		4 x 12
	Up To 8	4 x 6	4 x 6	6 x 6	6 x 6	6 x 6	5	8 x 8	5		3 x 8		4 x 8	
	Up To 10	4 x 6	4 x 6	6 x 6	6 x 6	6 x 8	5	8 x 10	5			4 x 8		
	See Note 1													
10 Up to 15	Up To 6	6 x 6	6 x 6	6 x 6	6 x 8	6 x 8	5	8 x 8	5	3 x 6	4 x 10			
	Up To 8	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 10	5	3 x 6	4 x 10			
	Up To 10	6 x 8	6 x 8	8 x 8	8 x 8	8 x 8	5	10 x 12	5	3 x 6	4 x 10			
	See Note 1													
15 Up to 20	Up To 6	6 x 8	6 x 8	6 x 8	6 x 8	8 x 8	5	8 x 10	5	4 x 6				
	Up To 8	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10 x 12	5	4 x 6				
	Up To 10	8 x 8	8 x 8	8 x 8	8 x 8	8 x 8	5	12 x 12	5	4 x 6				
	See Note 1													
Over 20	See Note (1)													

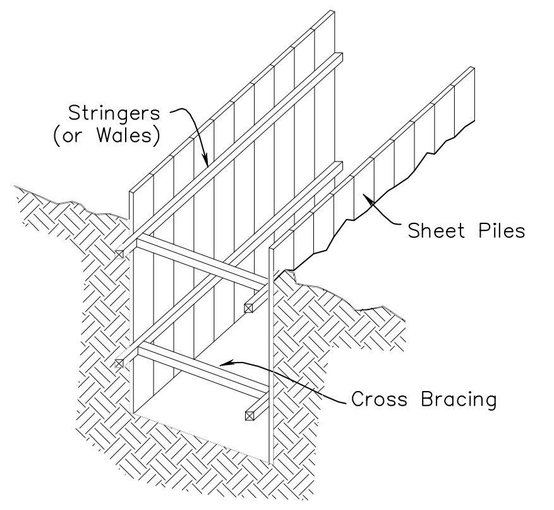
Soil Type C

Pa=80xH+72 psf

(2 ft Surcharge)

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) (See Note 2) Close
5 Up to 10	Up To 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	8 x 10	5	2 x 6
	Up To 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 10	5	10 x 12	5	2 x 6
	Up To 10	8x10	8x10	8x10	8x10	10x10	5	12 x 12	5	2 x 6
	See Note 1									
10 Up to 15	Up To 6	8 x 8	8 x 8	8 x 8	8 x 8	8x10	5	10 x 12	5	2 x 6
	Up To 8	8x10	8x10	8x10	8x10	10x10	5	12 x 12	5	2 x 6
	See Note 1									
	See Note 1									
15 Up to 20	Up To 6	8 x 10	8x10	8x10	8x10	10x10	5	12 x 12	5	3 x 6
	See Note 1									
	See Note 1									
	See Note 1									
Over 20	See Note (1)									

Depth of Trench (feet)	Cross Braces: Horizontal Spacing (Feet)	Cross Braces: Width of Trench (Feet) Up to 4	Up to 6	Up to 9	Up to 12	Up to 15	Cross Braces: Vert. Spacing (Feet)	Wales: Size (In)	Wales: Vert. Spacing (Feet)	Uprights: Maximum allowable horizontal spacing (feet) Close
5 Up to 10	Up To 6	6 x 6	6 x 6	6 x 6	6 x 6	8 x 8	5	8 x 8	5	3 x 6
	Up To 8	6 x 6	6 x 6	6 x 6	8 x 8	8 x 8	5	10x10	5	3 x 6
	Up To 10	6 x 6	6 x 6	8 x 8	8 x 8	8 x 8	5	10x12	5	3 x 6
	See Note 1									
10 Up to 15	Up To 6	6 x 8	6 x 8	6 x 8	8 x 8	8 x 8	5	10x10	5	4 x 6
	Up To 8	8 x 8	8 x 8	8 x 8	8 x 8	8 x 8	5	12x12	5	4 x 6
	See Note 1									
	See Note 1									
15 Up to 20	Up To 6	8 x 8	8 x 8	8 x 8	8x10	8x10	5	10x12	5	4 x 6
	See Note 1									
	See Note 1									
	See Note 1									
Over 20	See Note (1)									



TRENCH SAFETY NOMENCLATURE

GENERAL NOTES FOR TIMBER TRENCH SHORING TABLES:

(1) Member sizes at spacings other than indicated are to be determined as specified in {} 1926.652(c), " Design of Protective Systems."
(2) When conditions are saturated or submerged, use Tight Sheeting. Tight Sheeting refers to the use of specially-edged timber planks (e.g., tongue and groove) at least three inches thick, steel sheet piling, or similar construction that when driven or placed in position provide a tight wall to resist the lateral pressure of water and to prevent the loss of backfill material. Close Sheeting refers to the placement of planks side-by-side allowing as little space as possible between them.
(3) All spacing indicated is measured center to center.
(4) Wales to be installed with greater dimension horizontal.
(5) If the vertical distance from the the center of the lowest crossbrace to the bottom of the trench exceeds two and one-half feet, uprights shall be firmly embedded or a mudsill shall be used. Where uprights are embedded, the vertical distance from the center of the lowest crossbrace to the bottom of the trench shall not exceed 36 inches. When mudsills are used, the vertical distance shall not exceed 42 inches. Mudsills are wales that are installed at the toe of the trench side.
(6) Trench jacks may be used in lieu of or in combination with timber crossbraces.
(7) Placement of crossbraces. When the vertical spacing of crossbraces is four feet, place the top crossbrace no more than two feet below the top of the trench. When the vertical spacing of crossbraces is five feet, place the top crossbrace no more than 2.5 feet below the top of the trench.

ALUMINUM HYDRAULIC SHORING

VERTICAL SHORES FOR SOIL TYPES A & B

Depth of Trench (feet)	Hydraulic Cylinders: Maximun Horizontal Spacing (Feet)	Maximun Vertical Spacing (Feet)	Width of Trench (Feet): Up to 8	Over 8 Up to 12	Over 12 Up to 15
Over 5 Up to 10	8 (Type A) 8 (Type B)	4	2 inch Diameter	2 inch Diameter Note(2)	3 inch Diameter
Over 10 Up to 15	8 (Type A) 6.5 (Type B)				
Over 15 Up to 20	7 (Type A) 5.5 (Type B)				
Over 20	Note (1)				

Footnotes to tables, and general notes on hydraulic shoring, are found in Appendix D, Item (g)

WALER SYSTEMS FOR SOIL TYPE B

Depth of Trench (feet)	Wales: Vertical Shoring (Feet)	Wales: Section Modulus* (In3)	Hydraulic Cylinders, Width of Trench (Feet) Up to 8: Horiz. Spac.	Up to 8: Cylinder Dia	Over 8 UP TO 12: Horiz Spac.	Over 8 UP TO 12: Cylinder Dia	Over 12 Up to 15: Horiz Spac.	Over 12 Up to 15: Cylinder Dia	Timber Uprights, Max. Horiz. Spacing (On Center): Solid Sheet	2 Ft.	3 Ft.
Over 5 Up to 10	4	3.5	8.0	2 in	8.0	2 in Note(2)	8.0	3 in	——	——	3x12
		7.0	9.0	2 in	9.0	2 in Note(2)	9.0	3 in			
		14.0	12.0	3 in	12.0	3 in	12.0	3 in			
Over 10 Up to 15	4	3.5	6.0	2 in	6.0	2 in Note(2)	6.0	3 in	——	3x12	——
		7.0	8.0	3 in	8.0	3 in	8.0	3 in			
		14.0	10.0	3 in	10.0	3 in	10.0	3 in			
Over 15 Up to 20	4	3.5	5.5	2 in	5.5	2 in Note(2)	5.5	3 in	3x12	——	——
		7.0	6.0	3 in	6.0	3 in	6.0	3 in			
		14.0	9.0	3 in	9.0	3 in	9.0	3 in			
Over 20	Note (1)										

WALER SYSTEMS FOR SOIL TYPE C

Depth of Trench (feet)	Wales: Vertical Shoring (Feet)	Wales: Section Modulus* (In3)	Hydraulic Cylinders, Width of Trench (Feet) Up to 8: Horiz. Spac.	Up to 8: Cylinder Dia	Over 8 UP TO 12: Horiz Spac.	Over 8 UP TO 12: Cylinder Dia	Over 12 Up to 15: Horiz Spac.	Over 12 Up to 15: Cylinder Dia	Timber Uprights, Max. Horiz. Spacing (On Center): Solid Sheet	2 Ft.	3 Ft.
Over 5 Up to 10	4	3.5	6.0	2 in	6.0	2 in Note(2)	6.0	3 in	3x12	——	——
		7.0	6.5	2 in	6.5	2 in Note(2)	6.5	3 in			
		14.0	10.0	3 in	10.0	3 in	10.0	3 in			
Over 10 Up to 15	4	3.5	4.0	2 in	4.0	2 in Note(2)	4.0	3 in	3x12	——	——
		7.0	5.5	3 in	5.5	3 in	5.5	3 in			
		14.0	8.0	3 in	8.0	3 in	8.0	3 in			
Over 15 Up to 20	4	3.5	3.5	2 in	3.5	2 in Note(2)	3.5	3 in	3x12	——	——
		7.0	5.0	3 in	5.0	3 in	5.0	3 in			
		14.0	6.0	3 in	6.0	3 in	6.0	3 in			
Over 20	Note (1)										

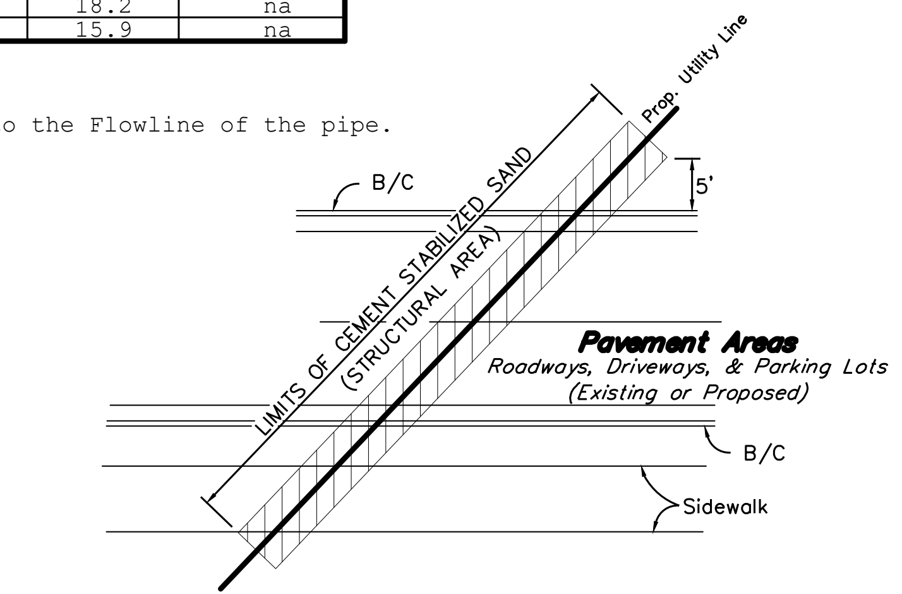
* Consult product manufacturer and/or qualified engineer for Section Modulus of available wales.

Maximum Depth Chart Using Typical Water and Sewer Trench Detail

(see detail this sheet)

	Sewer Line			Water Line
Spec.	D3034	D2241	C905	C900
SDR	26	26	25	14
Class	nc	160	165	200
Size	Maximum Depth of Bury (feet)			
4"	81.3	76.3	na	219.3
6"	54.5	51.5	na	152.5
8"	40.7	39.7	na	116.7
10"	33.5	32.8	na	95.8
12"	28.5	28	na	81
14"	na	25.7	24.7	na
15"	23.3	na	na	na
16"	na	na	21.8	na
18"	na	20.5	19.9	na
20"	na	na	18.2	na
24"	na	na	15.9	na

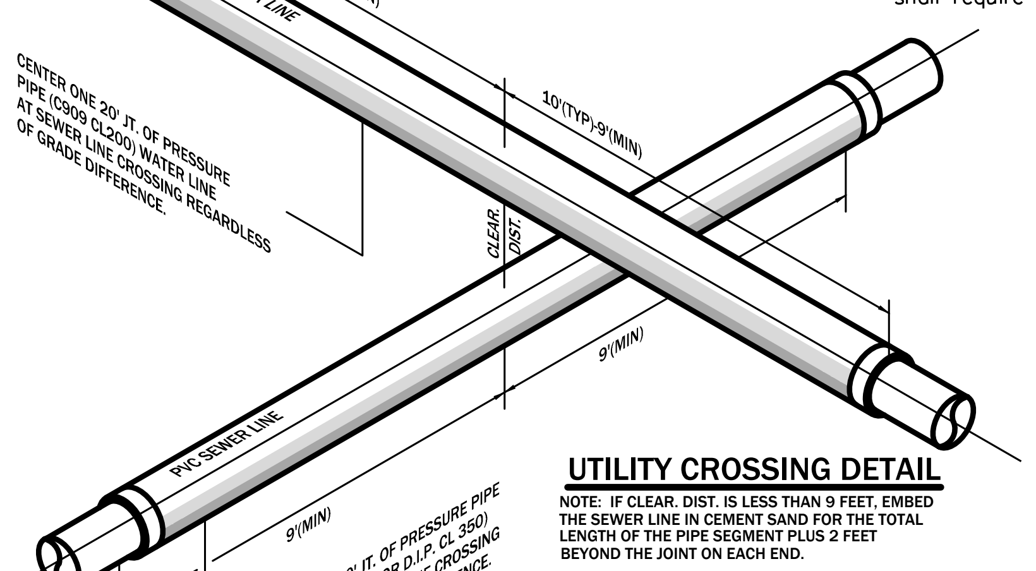
Depth of Bury in feet is measured to the Flowline of the pipe.
na = Not Available
nc = no pressure class


B/C
Prop. Utility Line
5'
LIMITS OF CEMENT STABILIZED SAND (STRUCTURAL AREA)
Pavement Areas
Roadways, Driveways, & Parking Lots (Existing or Proposed)
B/C
Sidewalk

PLAN VIEW

CEMENT STABILIZED BACKFILL AREA

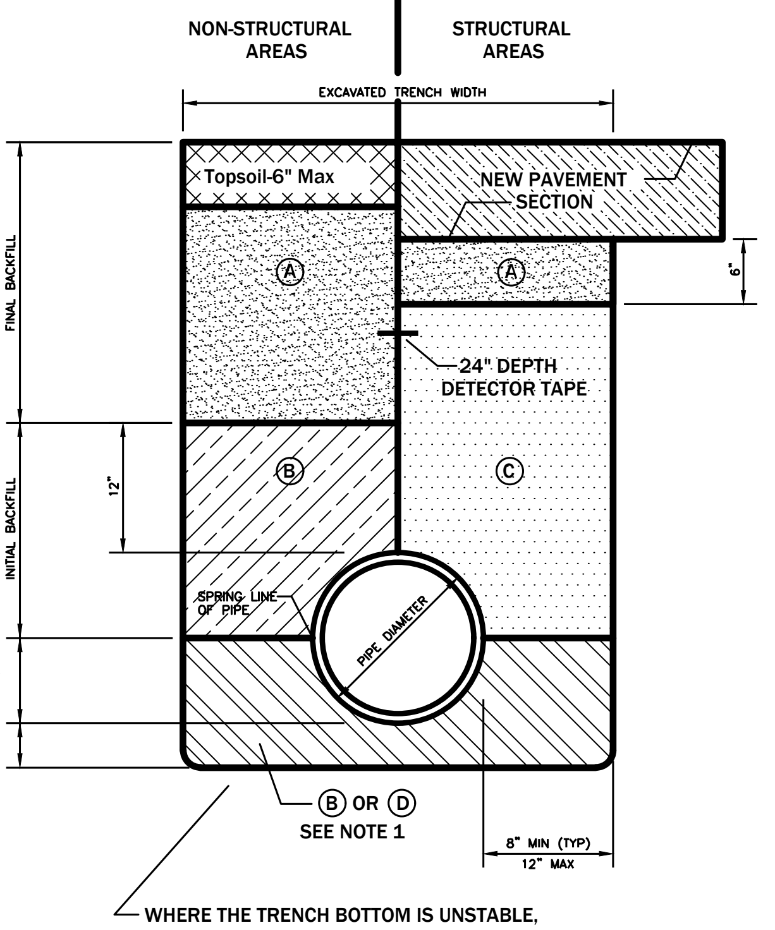
Cement stabilized backfill area include all paved areas (sidewalks, streets, alleys, driveways and parking areas) and shall extend 5' beyond the curb line. Where any portion of the Utility Trench lies under a paved area, the entire width of the trench shall require cement stabilized backfill.


10'(TYP)-9'(MIN)
PVC WATER LINE
10'(TYP)-9'(MIN)
CENTER ONE 20' JT. OF PRESSURE PIPE (C909 CL200) WATER LINE AT SEWER LINE CROSSING REGARDLESS OF GRADE DIFFERENCE.
CLEAR. DIST.
9'(MIN)
PVC SEWER LINE
9'(MIN)
CENTER ONE 20' JT. OF PRESSURE PIPE (PVC CL 160 D2241 OR D.I.P. CL 350) SEWER LINE AT WATER LINE CROSSING REGARDLESS OF GRADE DIFFERENCE.

UTILITY CROSSING DETAIL

NOTE: IF CLEAR. DIST. IS LESS THAN 9 FEET, EMBED THE SEWER LINE IN CEMENT SAND FOR THE TOTAL LENGTH OF THE PIPE SEGMENT PLUS 2 FEET BEYOND THE JOINT ON EACH END.

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



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

COMPACTION IN INITIAL BACKFILL ZONE
USE HAND TAMPERS OR IMPACT TAMPERS TO ACHIEVE DENSITY. MAINTAIN MOISTURE CONTENT NEAR OPTIMUM TO MINIMIZE COMPACTIVE EFFORT. AVOID CONTACT WITH PIPE AND MAINTAIN A MINIMUM OF 6" OVER PIPE CROWN WHEN USING SMALL MECHANICAL COMPACTORS.

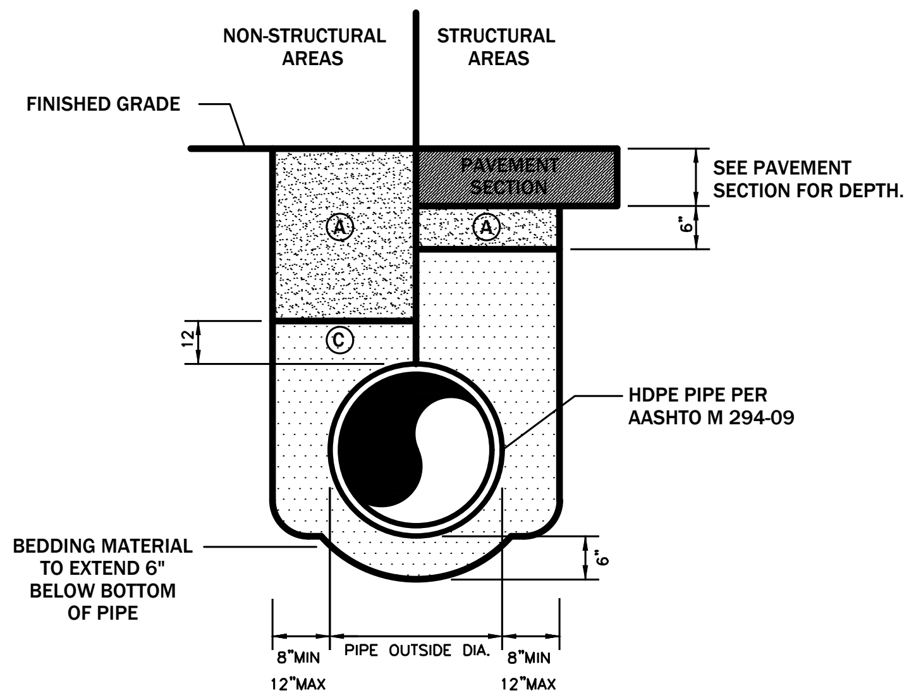
INSTALL AND COMPACT IN 6" MAX LAYERS. WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT. } HAUNCH ZONE

INSTALL AND COMPACT IN 6" MAX LAYERS. WORK IN LEVEL FINAL GRADE BY HAND. } 4" BEDDING (MIN)

WHERE THE TRENCH BOTTOM IS UNSTABLE, EXCAVATE TO A DEPTH AS REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF TYPE "D" MATERIAL. PLACE AND COMPACT TO ACHIEVE 85% MOD. PROCTOR DENSITY. THIS ITEM SHALL CONSTITUTE "EXTRA WORK" AND SHALL BE PAID FOR AS EXCAVATION.

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

TRENCH AND EMBEDMENT TO BE SUBSIDIARY TO MAIN AND SERVICE LINE BID ITEMS.



TYPICAL HDPE STORM DRAIN TRENCH DETAIL

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

BACKFILL MATERIAL LEGEND

CLASS OF MATERIAL	CLASS OF MATERIAL PER ASTM D2321-89	COMPACTION REQUIREMENTS: STRUCTURAL	COMPACTION REQUIREMENTS: NON-STRUCTURAL
Ⓐ	IV A OR IV B	95% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE	85% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE
Ⓑ	II, III, OR Ⓒ	95% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE	85% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE
Ⓒ	CEMENT STABILIZED SAND (SEE SPECIFICATION THIS SHEET)	95% MAX. PER ASTM D558 @ O TO 2% WET OF OPT. MOISTURE	95% MAX. PER ASTM D558 @ O TO 2% WET OF OPT. MOISTURE
Ⓓ	1A OR 1B	95% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE	85% MAX. PER ASTM DI557 @ O TO 4% WET OF OPT. MOISTURE
TESTING REQUIREMENTS		ONE TEST PER 200' OF TRENCH PER 2' FILL	

CEMENT STABILIZED SAND BACKFILL/BEDDING SPECIFICATIONS:

DESCRIPTION:
This item shall govern the mixing and placement of cement stabilized sand as a trench backfill material or bedding material. Placement shall be in conformity with the typical sections shown on the Plans or as described in the Special Provisions.

MATERIALS:
- A. SAND- Clean durable sand meeting grading requirements for fine aggregates of ASTM C33, and the following requirements:
  - 1. Classified as SW, SP or SM by the United Soil Classification System of ASTM D2487.
  - 2. Deleterious materials:
    - (a) Clay lumps, ASTM C142; less than 0.5 percent.
    - (b) Lightweight pieces, ASTM C123; less than 5.0 percent
    - (c) Organic impurities, ASTM C40; color no darker than the standard color.
    - (d) Plasticity index of 4 or less when tested in accordance with ASTM D4318.
- B. CEMENT- Type I Portland Cement conforming to ASTM C150.
- C. WATER- Potable water, free of oils, acids, alkalies, organic matter or other deleterious substances, meeting requirements of ASTM C94.

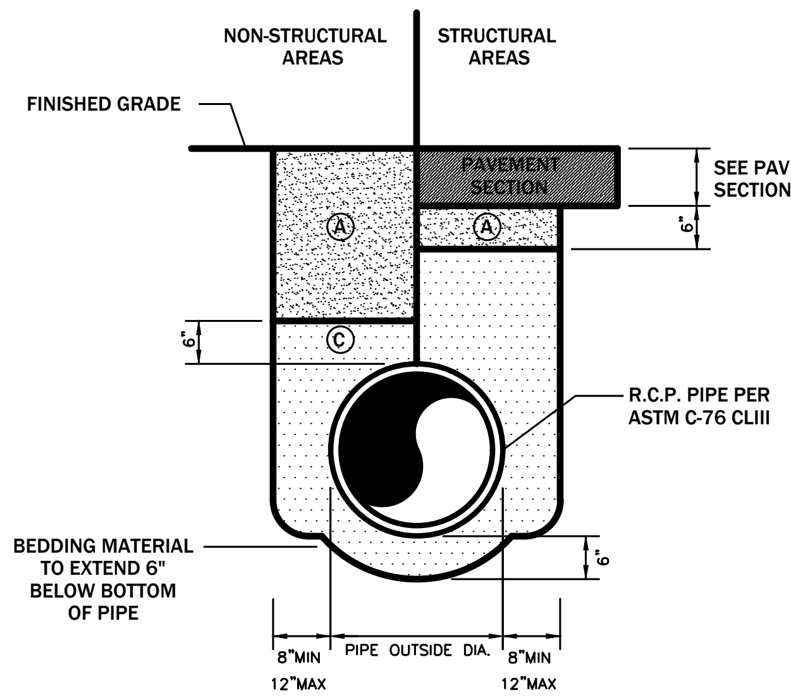
REQUIREMENTS FOR DESIGN:
Design sand-cement mixture to produce a minimum unconfined compressive strength of 50 pounds per square inch in 48 hours and 100 pounds per square inch in 7 days. All compaction shall be to 95% in accordance with ASTM D558. All curing shall be in accordance with ASTM D1632 and tested in accordance with ASTM D1633.
Mix shall contain a minimum of 1-1/2 sacks of cement per cubic yard for general purposes. Mix for use as sanitary sewer embedment within 9 feet of waterlines shall contain 2 1/2 sacks of cement per cubic yard. All mixes shall have a moisture content between 0% to 2% above optimum.

MIXING:
A. Thoroughly mix sand, cement and water according to the mix design using a pugmill-type mixer. The plant shall be equipped with automatic weight controls to ensure correct mix proportions.
B. Stamp batch ticket at plant with time of loading directly after mixing. Material not placed and compacted within 4 hours after mixing shall be rejected.

PLACING CEMENT STABILIZED SAND:
A. Place cement stabilized sand mixture in 8-inch lifts and compact to 95% of ASTM D558, unless otherwise specified. The moisture content during compaction shall be between 0% to 2% above optimum. Perform and complete compaction of cement stabilized sand mixture within 4 hours after mixing at the plant.
B. Do not place or compact cement stabilized sand mixture in standing or free water.

FIELD QUALITY CONTROL:
A. The cement content will be checked on samples obtained in the field whenever there are apparent changes in the mix properties.
B. Mixing plant inspections will be performed periodically. Material samples will be obtained and tested if there is evidence of change in material characteristic.
C. Random samples of delivered product will be taken in the field at point of delivery for each day of placement in a work area. Specimens will be prepared in accordance with ASTM D1632 and tested for 48-hour compressive strength in accordance with ASTM D1633.

MEASUREMENT AND PAYMENT:
No direct payment will be made for cement stabilized sand under this item. Payment for cement stabilized sand should be included in the unit price for the applicable utility or structure installation.



TYPICAL RCP STORM DRAIN TRENCH DETAIL

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

NOTE 1: UNDER NORMAL CIRCUMSTANCES THE CONTRACTOR SHALL USE TYPE "B" MATERIAL FOR BEDDING AND IN THE HAUNCH ZONE. ONLY WITH THE PERMISSION AND AT THE DIRECTION OF THE ENGINEER SHALL THE CONTRACTOR USE TYPE "D" MATERIAL AS SHOWN.

NOTE 2: BACKFILL OF STRUCTURES- WHEN STRUCURES (MANHOLES, INLETS, JUNCTION BOXES, ETC.) ARE WITHIN STRUCTURAL AREAS (AS DEFINED ON THIS SHEET) CEMENT STABILIZED SAND BACKFILL SHALL BE REQUIRED. USE CLASS III MATERIAL IN ALL OTHER AREAS.

NOTE 3: DETECTOR TAPE IS NOT REQUIRED ON DIP OR CMP.

ASTM D2321-89
CLASSES OF EMBEDMENT & BACKFILL MATERIALS

Class IA: Angular, Crushed Rock, no fines.

Class IB: Angular, Crushed Rock and sand, well graded to minimize migration of adjacent soils. Little or no fines.

Class II: Coarse Grained Soils, Clean. Native soils from the trench generally do not meet this requirement. The contractor may use native materials from the trench only after providing soils laboratory test demonstrating compliance.

Class III: Coarse Grained Soils with Fines. Native soils from the trench generally do not meet this requirement. The contractor may use native materials from the trench only after providing soils laboratory test demonstrating compliance. Bank run sand generally meets this requirement

Class IV A: Select Material from the Trench consisting of Fine-Grained Soils (inorganic). Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays. This material must have a liquid limit >50 and a Plasticity Index >7 and > "A" Line. See specification (ASTM D2321-89) for details.

Class IV B: Select Material from the Trench consisting of Fine-Grained Soils (inorganic). Inorganic clays of medium to high plasticity, fat clays, inorganic silts, fine sandy or silty soils, elastic silts.

Class V: Organic Soils. Material from the Trench which does not meet the requirements above. All rocks, lumps, and clods must be removed from this material prior to placement in the trench. This material is only appropriate for topsoil in the non-structural trench.

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JAMES T. BATENHORST
93631
on APRIL 15, 2026

APRIL 2026
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Drawn By: MGF,SB
Checked By: JTB

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AUSTIN, TX 78746
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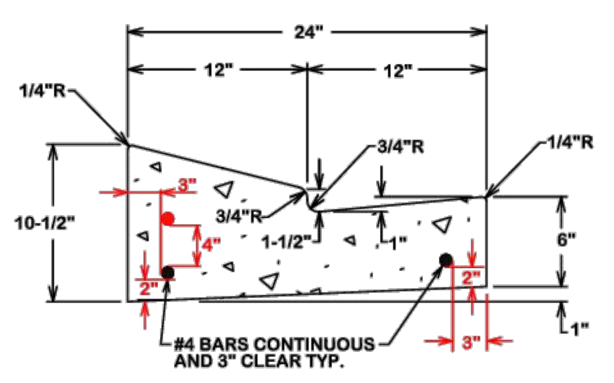
Revisions

EMBEDMENT & TRENCH SAFETY
BRAZOS OAKS PHASE II

C-402

NOTE:
TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'S AND P.C.'S. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10' APART.

28-DAY CONCRETE STRENGTH=3500 psi.

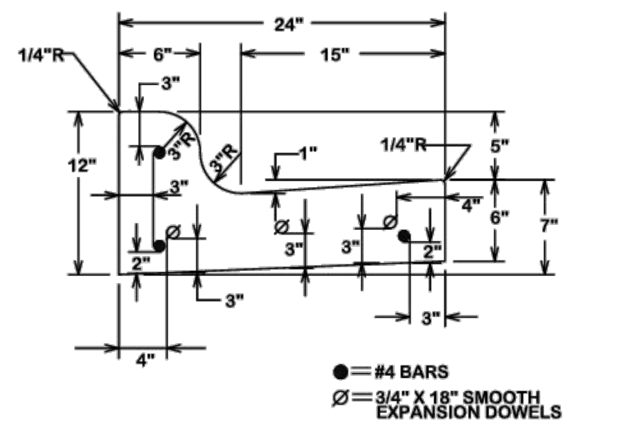

24"
12"
12"
1/4"R
3/4"R
1/4"R
10-1/2"
3"
3/4"R
4"
1-1/2"
1"
6"
2"
2"
3"
1"
#4 BARS CONTINUOUS AND 3" CLEAR TYP.

24" LAY DOWN GUTTER SECTION

ST1-00

NOTE:
TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'S AND P.C.'S. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10' APART.

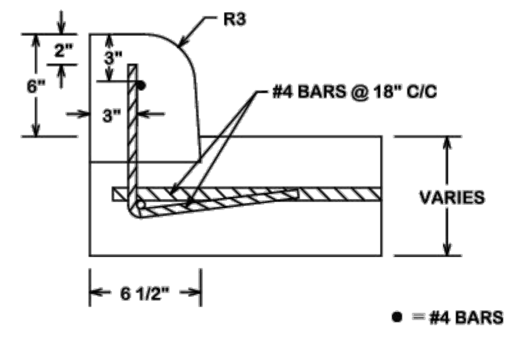
28-DAY CONCRETE STRENGTH=3500 psi.


24"
1/4"R
6"
15"
3"
3"R
3"R
1"
1/4"R
5"
12"
3"
4"
6"
7"
2"
3"
3"
3"
2"
3"
3"
4"
●=#4 BARS
Ø=3/4" X 18" SMOOTH EXPANSION DOWELS

TYPICAL COMBINED CURB & GUTTER SECTION

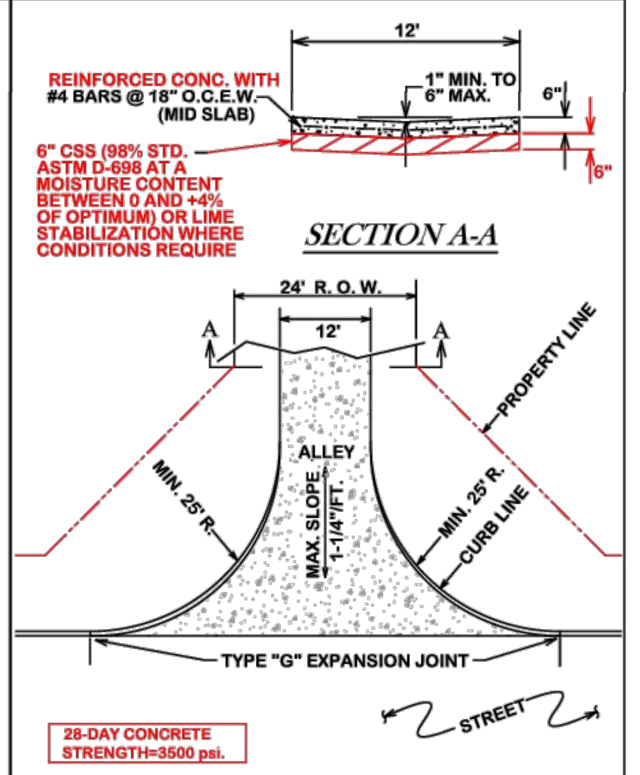
ST1-01

28-DAY CONCRETE STRENGTH=3500 psi.


R3
2"
3"
6"
3"
#4 BARS @ 18" C/C
VARIES
6 1/2"
● = #4 BARS

DOWELLED IN CURBS DETAIL

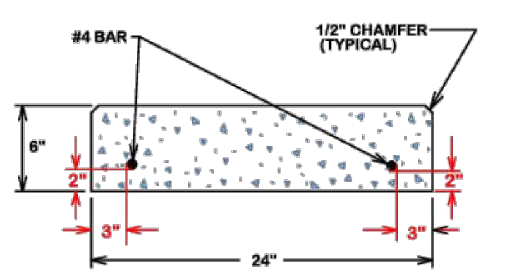
ST1-02


12'
REINFORCED CONC. WITH #4 BARS @ 18" O.C.E.W. (MID SLAB)
1" MIN. TO 6" MAX.
6"
6"
6" CSS (98% STD. ASTM D-698 AT A MOISTURE CONTENT BETWEEN 0 AND +4% OF OPTIMUM) OR LIME STABILIZATION WHERE CONDITIONS REQUIRE
SECTION A-A
24' R. O. W.
12'
A
A
PROPERTY LINE
ALLEY
MAX. SLOPE 1-1/4"/FT.
MIN. 25' R.
MIN. 25' R.
CURB LINE
TYPE "G" EXPANSION JOINT
STREET
28-DAY CONCRETE STRENGTH=3500 psi.

ALLEY PAVING

ST1-06

NOTE:
TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'s, AND P.C.'s. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10' APART

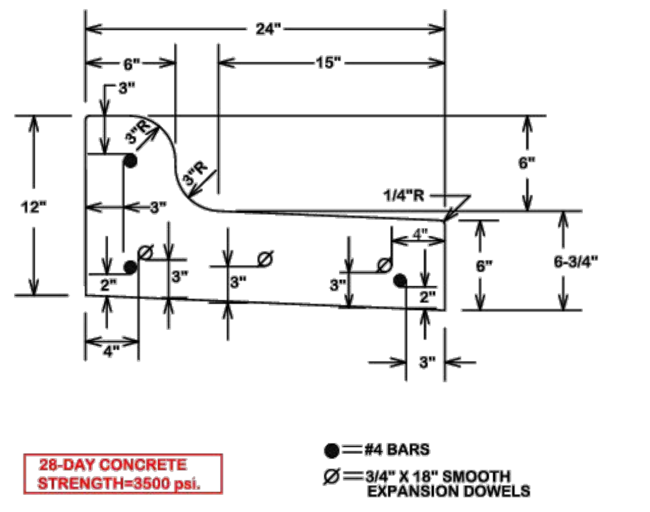

#4 BAR
1/2" CHAMFER (TYPICAL)
6"
2"
2"
3"
3"
24"

28-DAY CONCRETE STRENGTH=3500 psi.

TYPICAL RIBBON CURB

ST1-03

NOTE:
TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'s, AND P.C.'s. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10' APART


24"
6"
15"
3"
3"R
3"R
12"
3"
1/4"R
4"
6"
6-3/4"
6"
2"
3"
3"
3"
2"
4"
3"
●=#4 BARS
Ø=3/4" X 18" SMOOTH EXPANSION DOWELS

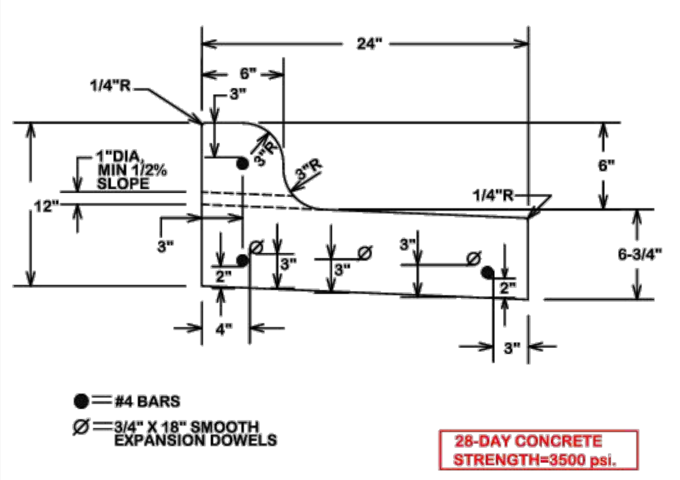
28-DAY CONCRETE STRENGTH=3500 psi.

TYPICAL COMBINED SPILL CURB

ST1-04

NOTE:

1. TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'s, AND P.C.'s. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAXIMUM DISTANCE OF 10' APART
2. PIPE EXTENDED 1"-2" FROM BOC TO BE COVERED WITH FABRIC AND TIED IN PLACE


24"
6"
1/4"R
3"
3"R
3"R
1"DIA. MIN 1/2% SLOPE
12"
6"
1/4"R
3"
2"
3"
3"
6-3/4"
2"
4"
3"
●=#4 BARS
Ø=3/4" X 18" SMOOTH EXPANSION DOWELS

28-DAY CONCRETE STRENGTH=3500 psi.

TYPICAL WEEPHOLE CURB

ST1-05

GENERAL NOTES:

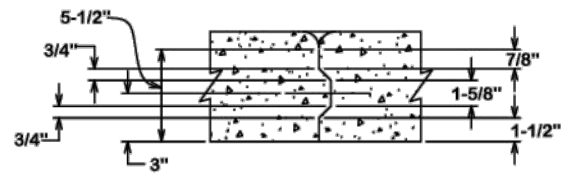
ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

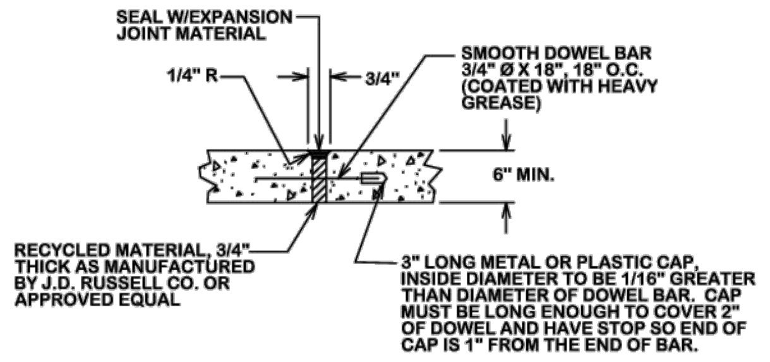
ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ALL TRAFFIC SIGNALS AND APPURTENANCES, AND ALL PAVEMENT MARKINGS AND MARKERS SHALL BE IN ACCORDANCE WITH TXDOT STANDARDS

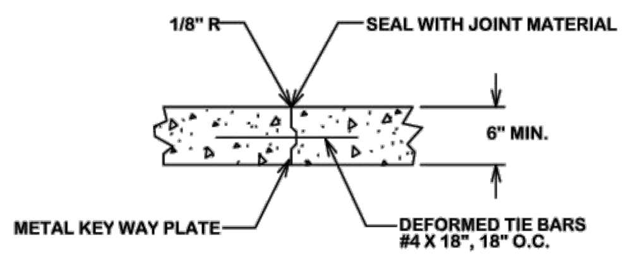
REFER TO SPEC 31 17 23.23 (PAVEMENT MARKINGS) FOR ADDITIONAL LOCAL REQUIREMENTS.


5-1/2"
3/4"
7/8"
1-5/8"
1-1/2"
3/4"
3"

METAL KEY WAY PLATE

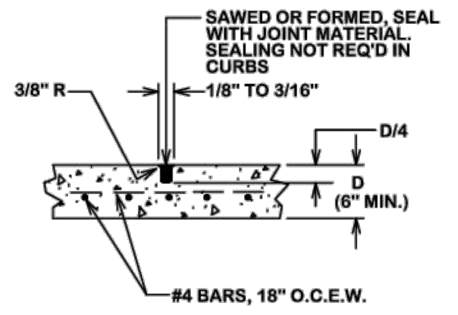

SEAL W/EXPANSION JOINT MATERIAL
1/4" R
3/4"
SMOOTH DOWEL BAR 3/4" Ø X 18", 18" O.C. (COATED WITH HEAVY GREASE)
6" MIN.
RECYCLED MATERIAL, 3/4" THICK AS MANUFACTURED BY J.D. RUSSELL CO. OR APPROVED EQUAL
3" LONG METAL OR PLASTIC CAP, INSIDE DIAMETER TO BE 1/16" GREATER THAN DIAMETER OF DOWEL BAR. CAP MUST BE LONG ENOUGH TO COVER 2" OF DOWEL AND HAVE STOP SO END OF CAP IS 1" FROM THE END OF BAR.

TYPE "G" EXPANSION & CONSTRUCTION JOINT

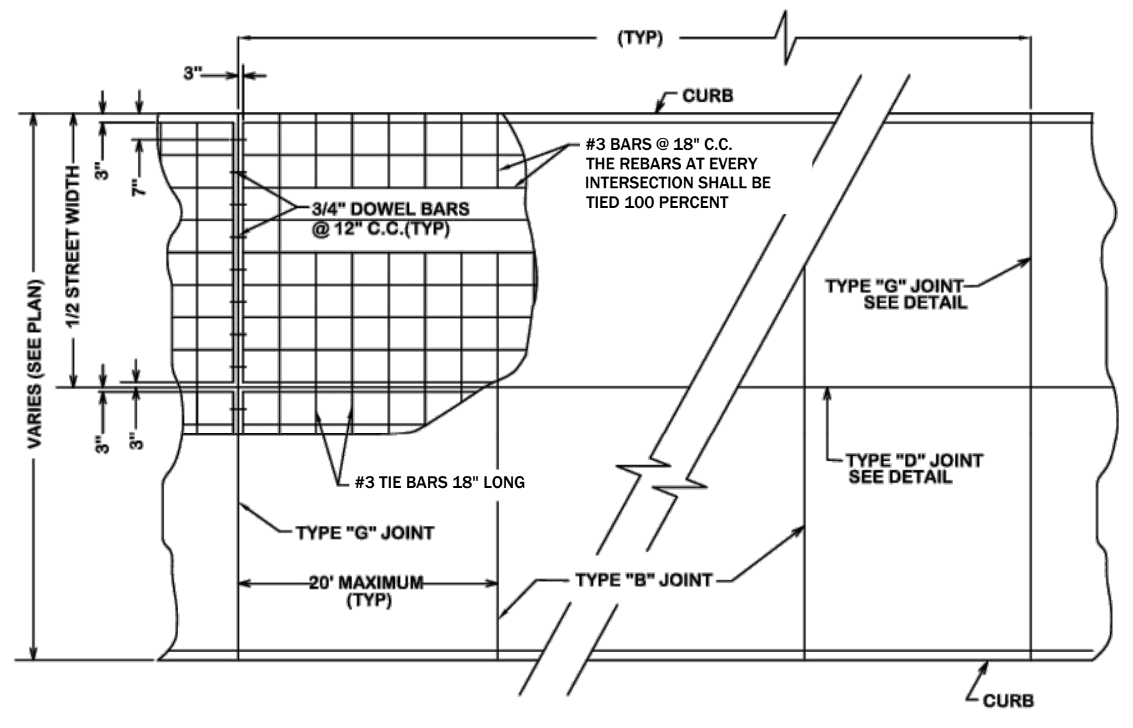

1/8" R
SEAL WITH JOINT MATERIAL
6" MIN.
METAL KEY WAY PLATE
DEFORMED TIE BARS #4 X 18", 18" O.C.

TYPE "D" LONGITUDINAL JOINT

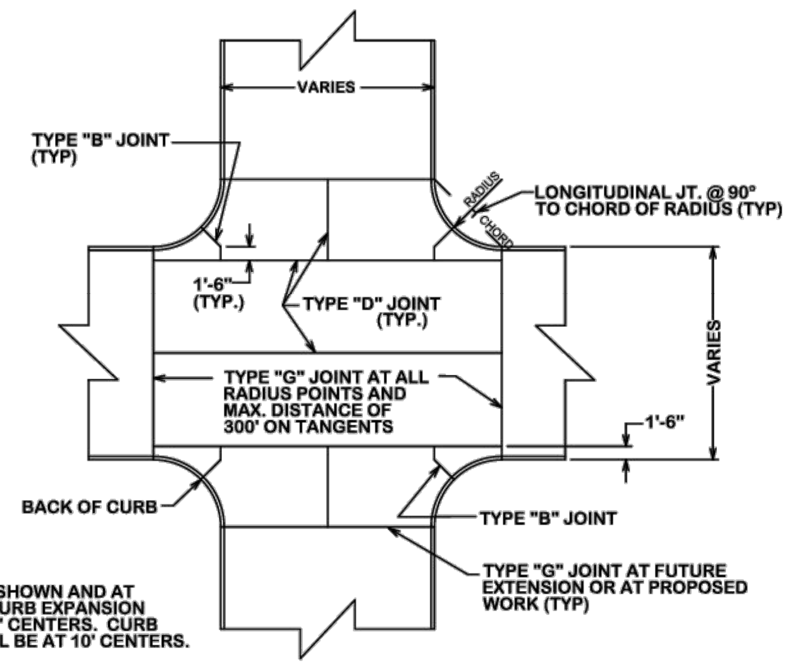
LONGITUDINAL JOINTS SHALL BE REQUIRED ONLY ON THE CENTERLINE OF THE PAVEMENT & IN INTERSECTIONS AS DETAILED


SAWED OR FORMED, SEAL WITH JOINT MATERIAL. SEALING NOT REQ'D IN CURBS
3/8" R
1/8" TO 3/16"
D/4
D (6" MIN.)
#4 BARS, 18" O.C.E.W.

TYPE "B" CONTRACTION JOINT


(TYP)
3"
CURB
#3 BARS @ 18" C.C. THE REBARS AT EVERY INTERSECTION SHALL BE TIED 100 PERCENT
3/4" DOWEL BARS @ 12" C.C.(TYP)
1/2 STREET WIDTH
VARIES (SEE PLAN)
3"
7"
3"
3"
TYPE "G" JOINT SEE DETAIL
TYPE "D" JOINT SEE DETAIL
#3 TIE BARS 18" LONG
TYPE "G" JOINT
20' MAXIMUM (TYP)
TYPE "B" JOINT
CURB

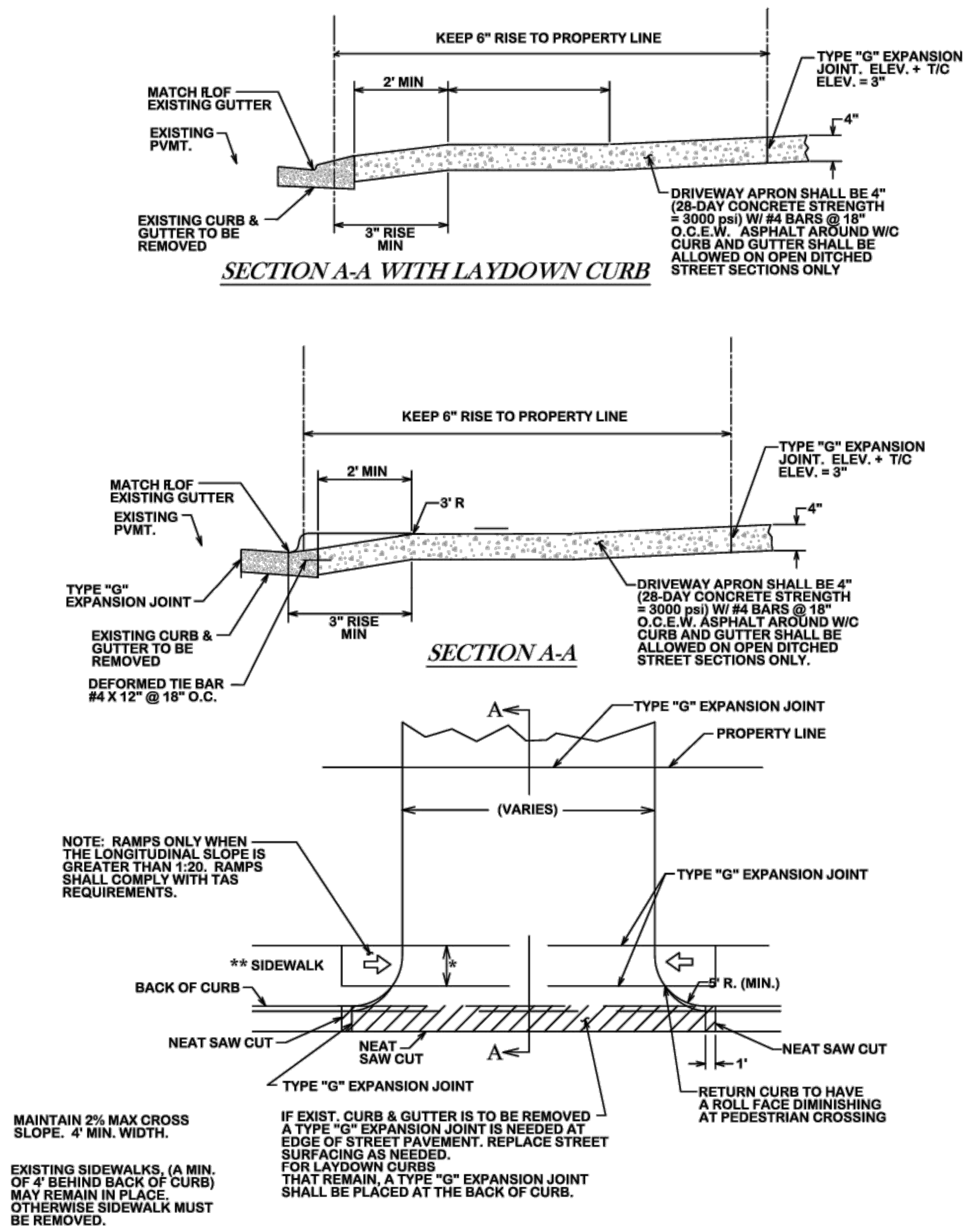
TYPICAL JOINT & REINFORCEMENT LAYOUT FOR CONCRETE PAVEMENT


VARIES
TYPE "B" JOINT (TYP)
RADIUS
CHORD
LONGITUDINAL JT. @ 90° TO CHORD OF RADIUS (TYP)
1'-6" (TYP.)
TYPE "D" JOINT (TYP.)
TYPE "G" JOINT AT ALL RADIUS POINTS AND MAX. DISTANCE OF 300' ON TANGENTS
VARIES
1'-6"
BACK OF CURB
TYPE "B" JOINT
TYPE "G" JOINT AT FUTURE EXTENSION OR AT PROPOSED WORK (TYP)

NOTE:
EXPANSION JOINTS AS SHOWN AND AT EACH RADIUS POINT. CURB EXPANSION JOINTS SHALL BE AT 60' CENTERS. CURB CONTROL JOINTS SHALL BE AT 10' CENTERS.

TYPICAL JOINT LAYOUT AT CONCRETE INTERSECTION

ST3-00

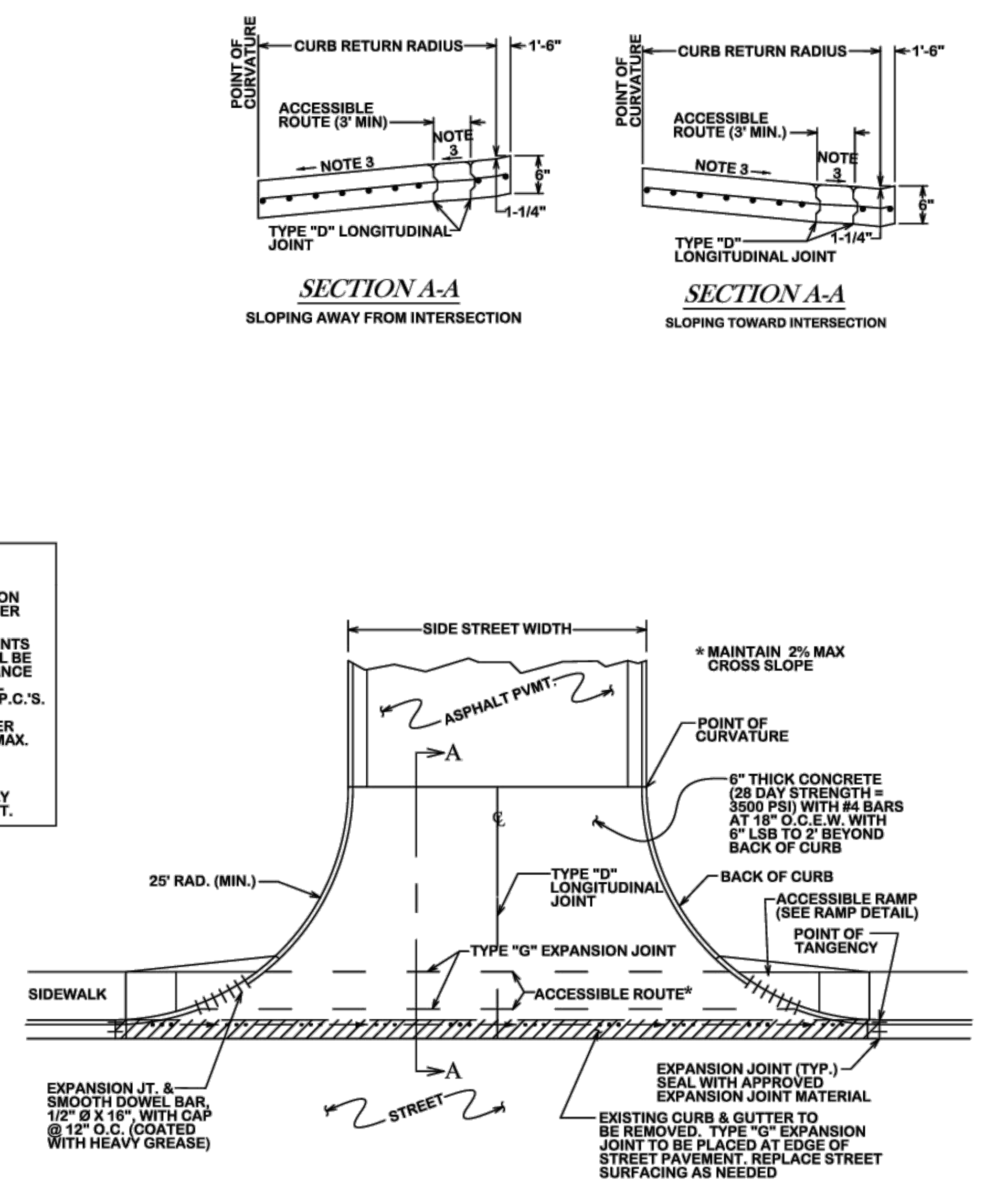

KEEP 6" RISE TO PROPERTY LINE
2' MIN
MATCH ℄ OF EXISTING GUTTER
EXISTING PVMT.
TYPE "G" EXPANSION JOINT. ELEV. + T/C ELEV. = 3"
4"
EXISTING CURB & GUTTER TO BE REMOVED
3" RISE MIN
DRIVEWAY APRON SHALL BE 4" (28-DAY CONCRETE STRENGTH = 3000 psi) W/ #4 BARS @ 18" O.C.E.W. ASPHALT AROUND W/C CURB AND GUTTER SHALL BE ALLOWED ON OPEN DITCHED STREET SECTIONS ONLY
SECTION A-A WITH LAYDOWN CURB
KEEP 6" RISE TO PROPERTY LINE
2' MIN
3' R
MATCH ℄ OF EXISTING GUTTER
EXISTING PVMT.
TYPE "G" EXPANSION JOINT. ELEV. + T/C ELEV. = 3"
4"
TYPE "G" EXPANSION JOINT
EXISTING CURB & GUTTER TO BE REMOVED
3" RISE MIN
DEFORMED TIE BAR #4 X 12" @ 18" O.C.
DRIVEWAY APRON SHALL BE 4" (28-DAY CONCRETE STRENGTH = 3000 psi) W/ #4 BARS @ 18" O.C.E.W. ASPHALT AROUND W/C CURB AND GUTTER SHALL BE ALLOWED ON OPEN DITCHED STREET SECTIONS ONLY.
SECTION A-A
A
TYPE "G" EXPANSION JOINT
PROPERTY LINE
(VARIES)
NOTE: RAMPS ONLY WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 1:20. RAMPS SHALL COMPLY WITH TAS REQUIREMENTS.
TYPE "G" EXPANSION JOINT
** SIDEWALK
*
BACK OF CURB
5' R. (MIN.)
NEAT SAW CUT
NEAT SAW CUT
A
NEAT SAW CUT
1'
TYPE "G" EXPANSION JOINT
RETURN CURB TO HAVE A ROLL FACE DIMINISHING AT PEDESTRIAN CROSSING
MAINTAIN 2% MAX CROSS SLOPE. 4' MIN. WIDTH.
EXISTING SIDEWALKS, (A MIN. OF 4' BEHIND BACK OF CURB) MAY REMAIN IN PLACE. OTHERWISE SIDEWALK MUST BE REMOVED.
IF EXIST. CURB & GUTTER IS TO BE REMOVED A TYPE "G" EXPANSION JOINT IS NEEDED AT EDGE OF STREET PAVEMENT. REPLACE STREET SURFACING AS NEEDED. FOR LAYDOWN CURBS THAT REMAIN, A TYPE "G" EXPANSION JOINT SHALL BE PLACED AT THE BACK OF CURB.

RESIDENTIAL DRIVEWAY

ST2-00

NOTES:

1. IF THERE IS A VALLEY GUTTER, THEN TRANSITION CROWN AT VALLEY GUTTER TO FULL CROWN IN 50'.
2. TYPE "G" EXPANSION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAX. DISTANCE OF 40' APART AND AT ALL RADIUS POINTS, P.T.'S & P.C.'S. TYPE "B" CONTRACTION JOINTS IN CURB & GUTTER SHALL BE SPACED AT A MAX. DISTANCE OF 10' APART.
3. 2% MAX SLOPE.
4. 5' MIN TRANSITION TO LAY DOWN CURB BEGIN AT P.T.

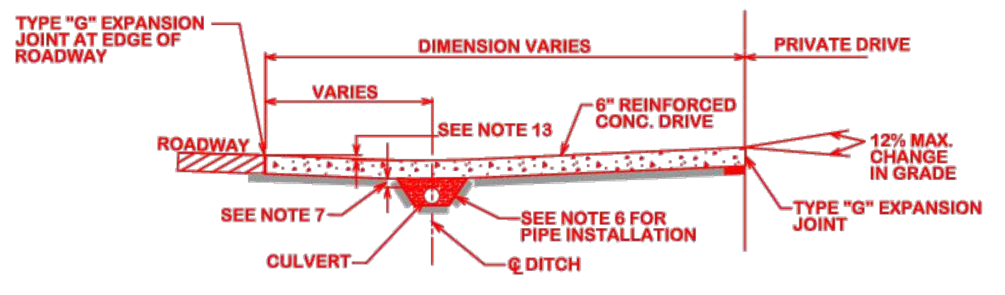

POINT OF CURVATURE
CURB RETURN RADIUS
1'-6"
ACCESSIBLE ROUTE (3' MIN)
NOTE 3
NOTE 3
6"
1-1/4"
TYPE "D" LONGITUDINAL JOINT
SECTION A-A
SLOPING AWAY FROM INTERSECTION
POINT OF CURVATURE
CURB RETURN RADIUS
1'-6"
ACCESSIBLE ROUTE (3' MIN.)
NOTE 3
NOTE 3
6"
1-1/4"
TYPE "D" LONGITUDINAL JOINT
SECTION A-A
SLOPING TOWARD INTERSECTION
SIDE STREET WIDTH
* MAINTAIN 2% MAX CROSS SLOPE
ASPHALT PVMT.
A
POINT OF CURVATURE
6" THICK CONCRETE (28 DAY STRENGTH = 3500 PSI) WITH #4 BARS AT 18" O.C.E.W. WITH 6" LSB TO 2' BEYOND BACK OF CURB
℄
25' RAD. (MIN.)
TYPE "D" LONGITUDINAL JOINT
BACK OF CURB
ACCESSIBLE RAMP (SEE RAMP DETAIL)
POINT OF TANGENCY
TYPE "G" EXPANSION JOINT
SIDEWALK
ACCESSIBLE ROUTE*
A
EXPANSION JT. & SMOOTH DOWEL BAR, 1/2" Ø X 16", WITH CAP @ 12" O.C. (COATED WITH HEAVY GREASE)
STREET
EXPANSION JOINT (TYP.) SEAL WITH APPROVED EXPANSION JOINT MATERIAL
EXISTING CURB & GUTTER TO BE REMOVED. TYPE "G" EXPANSION JOINT TO BE PLACED AT EDGE OF STREET PAVEMENT. REPLACE STREET SURFACING AS NEEDED

TYPICAL STREET CONCRETE APRON

ST2-01

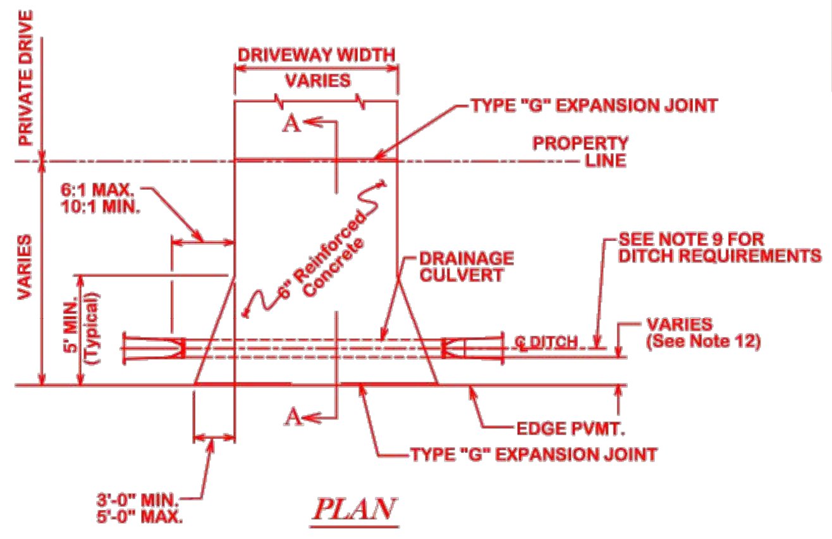
NOTE:

1. LENGTH OF DRAINAGE PIPE FOR RESIDENTIAL DRIVES IS 36' MAX & 20' MIN.
2. ALL DRIVEWAY PIPES WITHIN ROW MUST HAVE CONCRETE S.E.T. (SAFETY END TREATMENTS)(6:1 SLOPE) OR APPROVED EQUAL.
3. CULVERT DIAMETER TO BE APPROVED BY THE CITY ENGINEER. THE SIZE OF THE DRIVE CULVERT SHALL BE A MINIMUM OF 12" DIAMETER AND DESIGNED FOR AT LEAST A 10-YR STORM EVENT. THE SLOPE OF THE PIPE SHALL BE A MINIMUM OF 0.5%.
4. CULVERT SHALL BE RCP OR HDPE, MEETING THE CITY'S SPECIFICATIONS FOR STORM PIPE. CMP IS NOT ALLOWED.
5. BELL AND SPIGOT GASKETED JOINTS OR MANUFACTURED COUPLING BANDS ARE REQUIRED WITH HDPE.
6. CEMENT STABILIZED SAND IS REQUIRED WITH HDPE.
7. THERE SHALL BE A MINIMUM OF 12" COVER FOR HDPE PIPE AND 6" COVER FOR RCP PIPE.
8. TOP OF CONCRETE DRIVE TO BE LEVEL WITH ROAD SURFACE.
9. DITCH NEEDS TO BE CLEANED BOTH UPSTREAMAND DOWNSTREAM. CULVERT TO MATCH DITCH SOPE.
10. SLOPES TRANSVERSE TO THE PUBLIC STREET (e.g.: DRIVEWAY SIDE SLOPES) SHOULD BE AS FLAT AS PRACTICAL. WHERE PRACTICAL, A SLOPE OF 1 VERTICAL TO 6 HORIZONTAL (1V:6H) OR FLATTER SHALLBE CONSTRUCTED WITH A MINIMUM SLOPE OF 2.5% BEING ALLOWED. IN NO INSTANCE SHALL THE SLOPE EXCEED 1V:4H WITHOUT SPECIFIC CITY APPROVAL.
11. DRIVEWAY CULVERTS:
    - A. SHALL BE PLACED AS FAR AWAY FROM THE PUBLIC ROADWAY AS PRACTICAL.
    - B. SHALL BE CUT TO MATCH THE DRIVEWAY SLOPE.
    - C. SHALL HAVE DELINEATORS PLACED AT EACH END FOR HAZARD INDENTIFICATION.
12. REFER TO THE CURRENT ADDITION OF THE AASHTO ROADSIDE DESIGN GUIDE FOR ADDITIONAL INFORMATION ON THE CONSTRUCTION OF THE DRIVEWAY AND THE PLACEMENT OF THE DRIVEWAY CULVERT TO ALLOW SUFFICIENT CLEAR ZONE AND FLARE RATES.
13. DRIVEWAY ELEVATION OVER THE CULVERT MUST BE A MINIMUM 4" BELOW ROAD SURFACE WHEN DIP AND MAXIMUM OF 12" ABOVE ROAD SURFACE IF A HUMP.


TYPE "G" EXPANSION JOINT AT EDGE OF ROADWAY
DIMENSION VARIES
PRIVATE DRIVE
VARIES
SEE NOTE 13
6" REINFORCED CONC. DRIVE
ROADWAY
12% MAX. CHANGE IN GRADE
SEE NOTE 7
SEE NOTE 6 FOR PIPE INSTALLATION
TYPE "G" EXPANSION JOINT
CULVERT
℄ DITCH

SECTION A-A

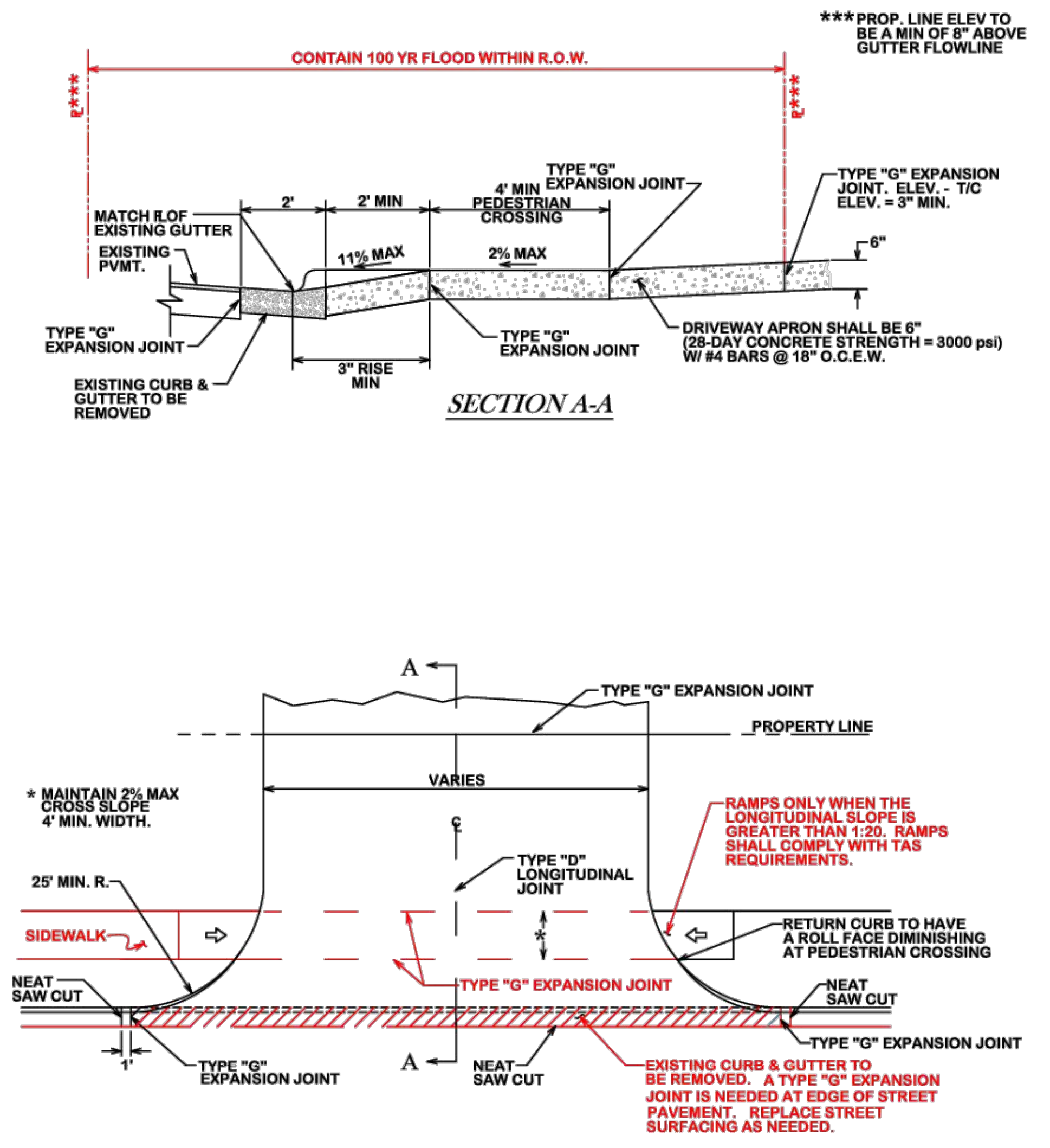
SPEED	SLOPE
≤ 40 MPH	3:1
45-50 MPH	4:1
≥ 55 MPH	6:1


PRIVATE DRIVE
DRIVEWAY WIDTH
VARIES
TYPE "G" EXPANSION JOINT
A
PROPERTY LINE
6:1 MAX. 10:1 MIN.
VARIES
5' MIN. (Typical)
6" Reinforced Concrete
DRAINAGE CULVERT
SEE NOTE 9 FOR DITCH REQUIREMENTS
℄ DITCH
VARIES (See Note 12)
A
EDGE PVMT.
TYPE "G" EXPANSION JOINT
3'-0" MIN. 5'-0" MAX.

PLAN

TYPICAL DRIVEWAY ENTRANCE WITH CULVERT

ST2-02


***PROP. LINE ELEV TO BE A MIN OF 8" ABOVE GUTTER FLOWLINE
CONTAIN 100 YR FLOOD WITHIN R.O.W.
℄***
℄***
TYPE "G" EXPANSION JOINT
4' MIN PEDESTRIAN CROSSING
TYPE "G" EXPANSION JOINT. ELEV. - T/C ELEV. = 3" MIN.
2'
2' MIN
MATCH ℄ OF EXISTING GUTTER
EXISTING PVMT.
11% MAX
2% MAX
6"
TYPE "G" EXPANSION JOINT
TYPE "G" EXPANSION JOINT
DRIVEWAY APRON SHALL BE 6" (28-DAY CONCRETE STRENGTH = 3000 psi) W/ #4 BARS @ 18" O.C.E.W.
EXISTING CURB & GUTTER TO BE REMOVED
3" RISE MIN
SECTION A-A
A
TYPE "G" EXPANSION JOINT
PROPERTY LINE
VARIES
* MAINTAIN 2% MAX CROSS SLOPE 4' MIN. WIDTH.
℄
RAMPS ONLY WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 1:20. RAMPS SHALL COMPLY WITH TAS REQUIREMENTS.
25' MIN. R.
TYPE "D" LONGITUDINAL JOINT
SIDEWALK
*
RETURN CURB TO HAVE A ROLL FACE DIMINISHING AT PEDESTRIAN CROSSING
NEAT SAW CUT
TYPE "G" EXPANSION JOINT
NEAT SAW CUT
TYPE "G" EXPANSION JOINT
1'
TYPE "G" EXPANSION JOINT
A
NEAT SAW CUT
EXISTING CURB & GUTTER TO BE REMOVED. A TYPE "G" EXPANSION JOINT IS NEEDED AT EDGE OF STREET PAVEMENT. REPLACE STREET SURFACING AS NEEDED.

COMMERCIAL DRIVEWAY

ST2-03

REVISIONS:

BRYAN - COLLEGE STATION
STANDARD STREET DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.™

DRAWN BY: B.I.
DATE: 12/2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
ST1
SHEET 1 OF 2

MITCHELL
M&M
MORGAN
T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443

3204 EARL RUDDER FWY. S.
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HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS

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JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

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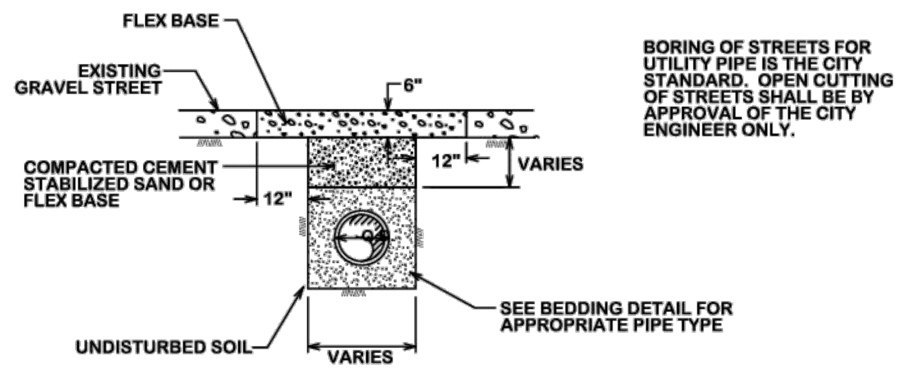
Revisions

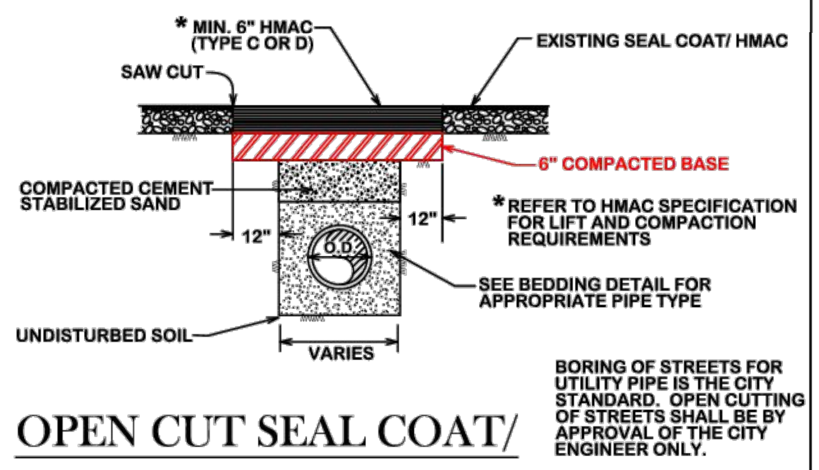
B/CS STANDARD STREET DETAILS -1
BRAZOS OAKS PHASE II

C-500


FLEX BASE
EXISTING GRAVEL STREET
6"
COMPACTED CEMENT STABILIZED SAND OR FLEX BASE
12"
12"
VARIES
SEE BEDDING DETAIL FOR APPROPRIATE PIPE TYPE
UNDISTURBED SOIL
VARIES
O.D.
BORING OF STREETS FOR UTILITY PIPE IS THE CITY STANDARD. OPEN CUTTING OF STREETS SHALL BE BY APPROVAL OF THE CITY ENGINEER ONLY.

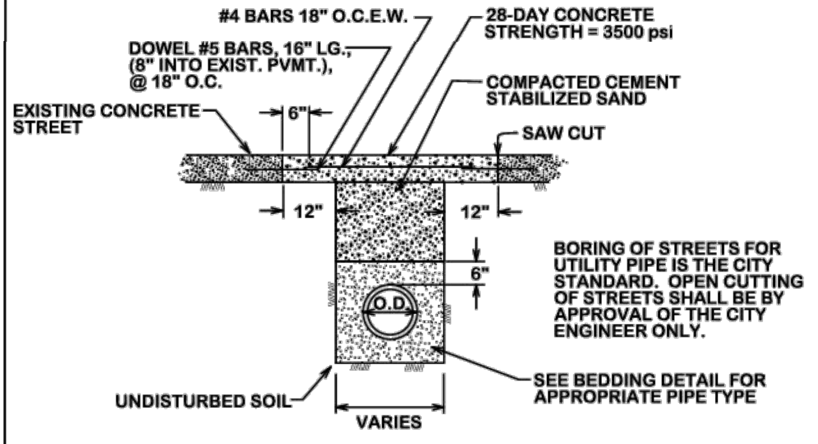
OPEN CUT
GRAVEL STREET

ST4-00


* MIN. 6" HMAC (TYPE C OR D)
SAW CUT
EXISTING SEAL COAT/ HMAC
6" COMPACTED BASE
COMPACTED CEMENT STABILIZED SAND
12"
12"
O.D.
* REFER TO HMAC SPECIFICATION FOR LIFT AND COMPACTION REQUIREMENTS
SEE BEDDING DETAIL FOR APPROPRIATE PIPE TYPE
UNDISTURBED SOIL
VARIES
BORING OF STREETS FOR UTILITY PIPE IS THE CITY STANDARD. OPEN CUTTING OF STREETS SHALL BE BY APPROVAL OF THE CITY ENGINEER ONLY.

OPEN CUT SEAL COAT/
OVERLAY STREET

ST4-01


#4 BARS 18" O.C.E.W.
28-DAY CONCRETE STRENGTH = 3500 psi
DOWEL #5 BARS, 16" LG., (8" INTO EXIST. PVMT.), @ 18" O.C.
COMPACTED CEMENT STABILIZED SAND
EXISTING CONCRETE STREET
6"
SAW CUT
12"
12"
6"
O.D.
BORING OF STREETS FOR UTILITY PIPE IS THE CITY STANDARD. OPEN CUTTING OF STREETS SHALL BE BY APPROVAL OF THE CITY ENGINEER ONLY.
SEE BEDDING DETAIL FOR APPROPRIATE PIPE TYPE
UNDISTURBED SOIL
VARIES

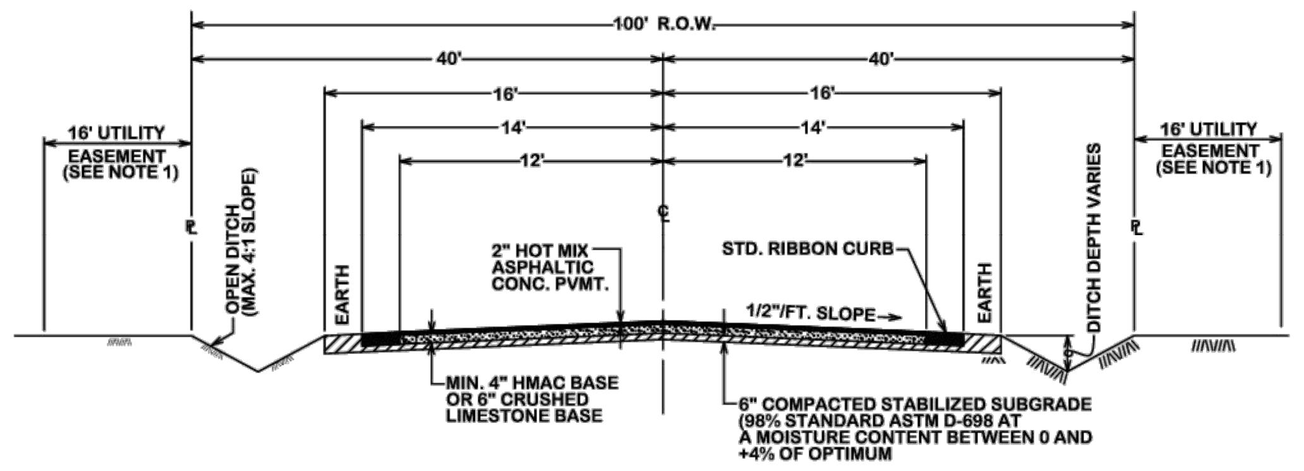
OPEN CUT CONCRETE STREET

ST4-02

	RESIDENTIAL SECTION	COLLECTOR SECTION
PAVEMENT WIDTH	24	30
R.O.W. WIDTH	70	100

NOTES:

1. RURAL SECTIONS WILL NOT REQUIRE 16' EASEMENTS PARALLEL TO R.O.W. WITHIN CITY LIMITS.
2. WITHIN ETJ AREA, RURAL SECTIONS SHALL FOLLOW COUNTY SPECS AND STANDARDS


100' R.O.W.
40'
40'
16'
16'
14'
14'
12'
12'
16' UTILITY EASEMENT (SEE NOTE 1)
16' UTILITY EASEMENT (SEE NOTE 1)
P
P
OPEN DITCH (MAX. 4:1 SLOPE)
EARTH
EARTH
2" HOT MIX ASPHALTIC CONC. PVMT.
STD. RIBBON CURB
1/2"/FT. SLOPE
DITCH DEPTH VARIES
MIN. 4" HMAC BASE OR 6" CRUSHED LIMESTONE BASE
6" COMPACTED STABILIZED SUBGRADE (98% STANDARD ASTM D-698 AT A MOISTURE CONTENT BETWEEN 0 AND +4% OF OPTIMUM

TYPICAL RURAL ROAD RIBBON CURB SECTION

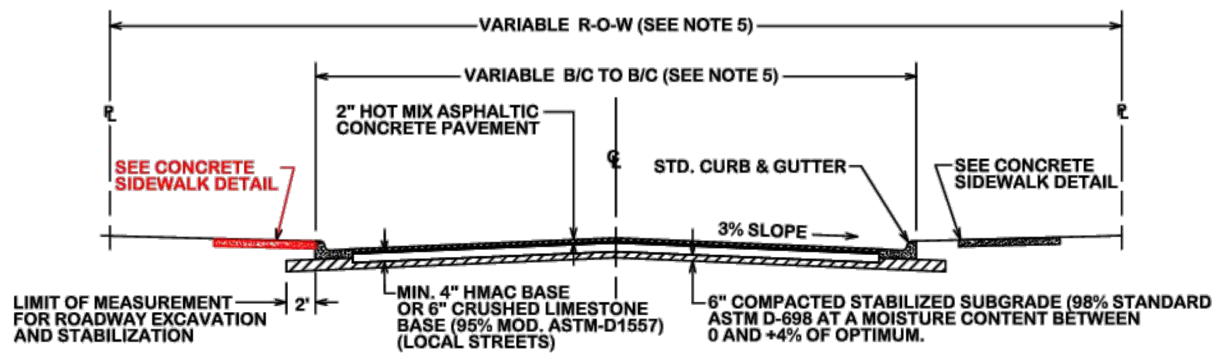
ST4-03

NOTES:

1. ALL SUBGRADES SHALL BE STABILIZED.
2. FOR SUBGRADES WITH PI > 15 AND % PASSING THE #200 SIEVE ≥ 35%, USE LIME STABILIZATION.
3. FOR SUBGRADES WITH PI < 7 AND % PASSING THE #200 SIEVE < 35%, USE PORTLAND CEMENT STABILIZATION.
4. SIDEWALK PLACEMENT VARIES WITH EACH LOCATION AND WILL BE DETERMINED BY THE ENGINEER.
5. REFER TO B/CS UNIFIED DESIGN GUIDELINE MANUAL FOR ACCEPTED RIGHT OF WAY AND PAVEMENT WIDTH.
6. COLLECTOR STREETS WILL BE REQUIRED TO USE 5" HMAC BASE OR 8" CRUSHED LIMESTONE BASE AND STABILIZED SUBGRADE IN ACCORDANCE WITH THE B/CS UNIFIED DESIGN GUIDELINE MANUAL OR AS DIRECTED BY CITY ENGINEER.

*

*


VARIABLE R-O-W (SEE NOTE 5)
VARIABLE B/C TO B/C (SEE NOTE 5)
P
P
2" HOT MIX ASPHALTIC CONCRETE PAVEMENT
SEE CONCRETE SIDEWALK DETAIL
STD. CURB & GUTTER
SEE CONCRETE SIDEWALK DETAIL
3% SLOPE
LIMIT OF MEASUREMENT FOR ROADWAY EXCAVATION AND STABILIZATION
2'
MIN. 4" HMAC BASE OR 6" CRUSHED LIMESTONE BASE (95% MOD. ASTM-D1557) (LOCAL STREETS)
6" COMPACTED STABILIZED SUBGRADE (98% STANDARD ASTM D-698 AT A MOISTURE CONTENT BETWEEN 0 AND +4% OF OPTIMUM.

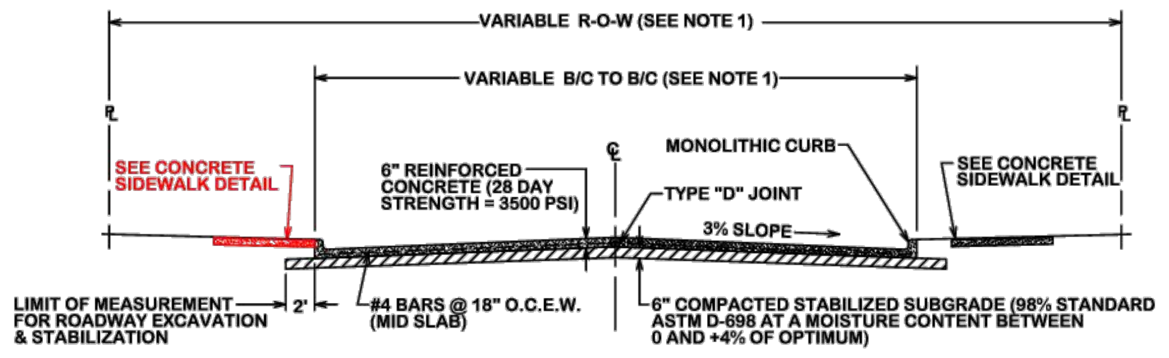
TYPICAL STREET SECTION

ASPHALTIC CONCRETE PAVEMENT

ST4-04

NOTES:

1. REFER TO B/CS UNIFIED DESIGN GUIDELINE MANUAL FOR ACCEPTED RIGHT OF WAY AND PAVEMENT WIDTH.
2. COLLECTOR STREETS WILL BE REQUIRED TO USE 8" REINFORCED CONCRETE (28 DAY STRENGTH = 3500 PSI)


VARIABLE R-O-W (SEE NOTE 1)
VARIABLE B/C TO B/C (SEE NOTE 1)
P
P
SEE CONCRETE SIDEWALK DETAIL
6" REINFORCED CONCRETE (28 DAY STRENGTH = 3500 PSI)
MONOLITHIC CURB
TYPE "D" JOINT
SEE CONCRETE SIDEWALK DETAIL
3% SLOPE
LIMIT OF MEASUREMENT FOR ROADWAY EXCAVATION & STABILIZATION
2'
#4 BARS @ 18" O.C.E.W. (MID SLAB)
6" COMPACTED STABILIZED SUBGRADE (98% STANDARD ASTM D-698 AT A MOISTURE CONTENT BETWEEN 0 AND +4% OF OPTIMUM)

TYPICAL STREET SECTION

REINFORCED CONCRETE PAVEMENT

ST4-05

REVISIONS:

BRYAN - COLLEGE STATION
STANDARD STREET DETAILS

CITY OF COLLEGE STATION

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DATE: 12/2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
ST2
SHEET 2 OF 2

MITCHELL
M&M
MORGAN

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F.979.260.3564
TX. FIRM # F-1443

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James T. Batenhorst, P.E.
on APRIL 15, 2026

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Drawn By: MGF,SB
Checked By: JTB

Prepared For:

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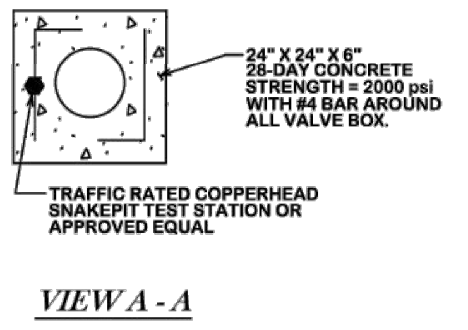
Revisions

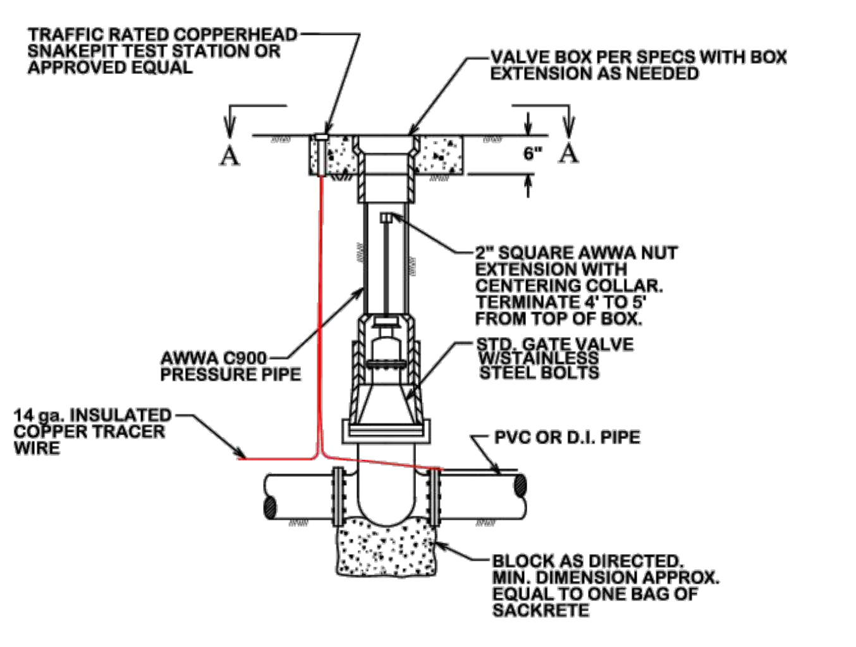
B/CS STANDARD STREET DETAILS -2
BRAZOS OAKS PHASE II

C-501


24" X 24" X 6"
28-DAY CONCRETE
STRENGTH = 2000 psi
WITH #4 BAR AROUND
ALL VALVE BOX.
TRAFFIC RATED COPPERHEAD
SNAKEPIT TEST STATION OR
APPROVED EQUAL

VIEW A - A

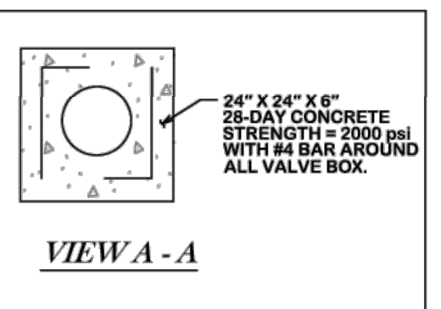
NOTE:
1. VALVE EXTENSION TO BE USED ONLY WHEN TOP OF GATE VALVE IS DEEPER THAN 5 FEET FROM FINISHED GRADE.
2. ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF METAL PAINT.
3. EXTENSIONS SHALL BE A MINIMUM OF ONE (1) FOOT LONG.
4. VALVE BOX LIDS LOCATED ON VALVES TO ISOLATE FIRE SUPPRESSION LINES FROM PUBLIC WATER LINES SHALL BE EJ 6800, PRODUCT 06800044 LOCKABLE LID.


TRAFFIC RATED COPPERHEAD
SNAKEPIT TEST STATION OR
APPROVED EQUAL
VALVE BOX PER SPECS WITH BOX EXTENSION AS NEEDED
A
6"
A
2" SQUARE AWWA NUT EXTENSION WITH CENTERING COLLAR. TERMINATE 4' TO 5' FROM TOP OF BOX.
STD. GATE VALVE W/STAINLESS STEEL BOLTS
AWWA C900 PRESSURE PIPE
14 ga. INSULATED COPPER TRACER WIRE
PVC OR D.I. PIPE
BLOCK AS DIRECTED. MIN. DIMENSION APPROX. EQUAL TO ONE BAG OF SACKRETE

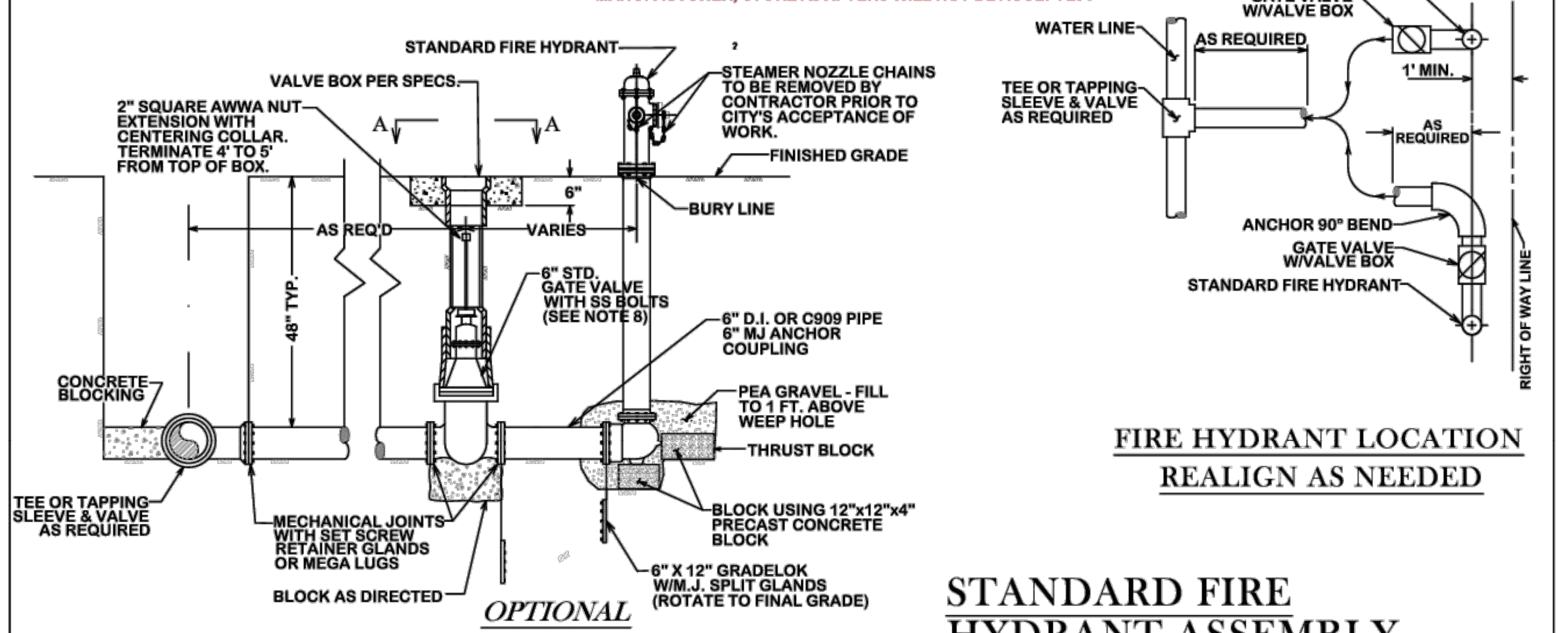
GATE VALVE & BOX

W1-00

GENERAL NOTES:
1. FINELY DIVIDED EARTH FREE OF ROCK, LUMPS AND CLODS EXCEEDING 6" SHALL BE PLACED BY HAND, AND COMPACTED AROUND THE CAST IRON PIPE TO A DEPTH OF 12" OVER THE TOP OF THE PIPE BEFORE BACKFILL IS BEGUN BY ANY MECHANICAL EQUIPMENT.
2. ALL CONCRETE BLOCKING SHALL BE - 28 DAY CONCRETE STRENGTH = 2000psi.
3. ALL THRUST BLOCKING SHALL PROVIDE A MINIMUM OF 2 SQUARE FEET OF BEARING AREA OF CONCRETE ON UNDISTURBED SOIL, OR AS DIRECTED BY THE ENGINEER.
4. WATER MAINS WILL NOT BE FULLY PRESSURIZED UNTIL CONCRETE HAS REACHED 7 DAY STRENGTH.
5. ALL PIPE WILL BE LAID SO AS THE ENTIRE BARRELL WILL HAVE FULL BEARING ON THE FINE GRADED TRENCH BOTTOM. BELL HOLES SHALL BE CUT FOR EACH BELL AND FIRE HYDRANT.
6. ALL FITTING SHALL BE MECHANICL JOINTS UNLESS OTHERWISE DIRECTED.
7. HYDRANTS SHALL BE LOCATED NO CLOSER THAN 3 FEET MEASURED FROM THE BACK OF CURB TO THE FACE OF THE STEAMER ON THE FIRE HYDRANT AND NO FURTHER THAN 15 FEET FROM BACK OF CURB
8. IF MAIN VALVE IS WITHIN 50 FEET OF FIRE HYDRANT THEN ASSEMBLY VALVE MAY BE OMITTED ON A DEAD END HYDRANT LEAD WITH NO ADDITIONAL CONNECTIONS.
9. HEIGHT OF FIRE HYDRANT MEASURED FROM THE STEAMER NOZZLE SHALL BE 18 TO 24 INCHES ABOVE NEAREST FINAL GRADE.
10. FIRE HYDRANTS SHALL COME EQUIPPED WITH STORZ QUARTER TURN PUMPER CONNECTIONS THAT ARE AN INTEGRAL PART OF THE FIRE HYDRANT, AND MUST BE FURNISHED BY THE MANUFACTURER, STORZ ADAPTERS WILL NOT BE ACCEPTED.


24" X 24" X 6"
28-DAY CONCRETE
STRENGTH = 2000 psi
WITH #4 BAR AROUND
ALL VALVE BOX.

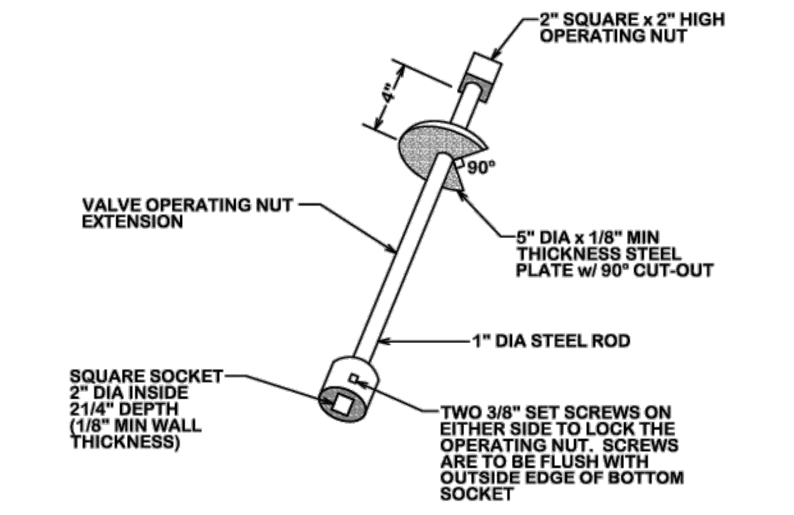
VIEW A - A


STANDARD FIRE HYDRANT
VALVE BOX PER SPECS.
2" SQUARE AWWA NUT EXTENSION WITH CENTERING COLLAR. TERMINATE 4' TO 5' FROM TOP OF BOX.
A
A
6"
STEAMER NOZZLE CHAINS TO BE REMOVED BY CONTRACTOR PRIOR TO CITY'S ACCEPTANCE OF WORK.
FINISHED GRADE
BURY LINE
AS REQ'D
VARIES
48" TYP.
6" STD. GATE VALVE WITH SS BOLTS (SEE NOTE 8)
6" D.I. OR C909 PIPE
6" MJ ANCHOR COUPLING
PEA GRAVEL - FILL TO 1 FT. ABOVE WEEP HOLE
THRUST BLOCK
CONCRETE BLOCKING
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
MECHANICAL JOINTS WITH SET SCREW RETAINER GLANDS OR MEGA LUGS
BLOCK USING 12"x12"x4" PRECAST CONCRETE BLOCK
6" X 12" GRADELOK W/M.J. SPLIT GLANDS (ROTATE TO FINAL GRADE)
BLOCK AS DIRECTED
OPTIONAL
WATER LINE
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
STANDARD FIRE HYDRANT
GATE VALVE W/VALVE BOX
AS REQUIRED
1' MIN.
AS REQUIRED
ANCHOR 90° BEND
GATE VALVE W/VALVE BOX
STANDARD FIRE HYDRANT
RIGHT OF WAY LINE

FIRE HYDRANT LOCATION
REALIGN AS NEEDED

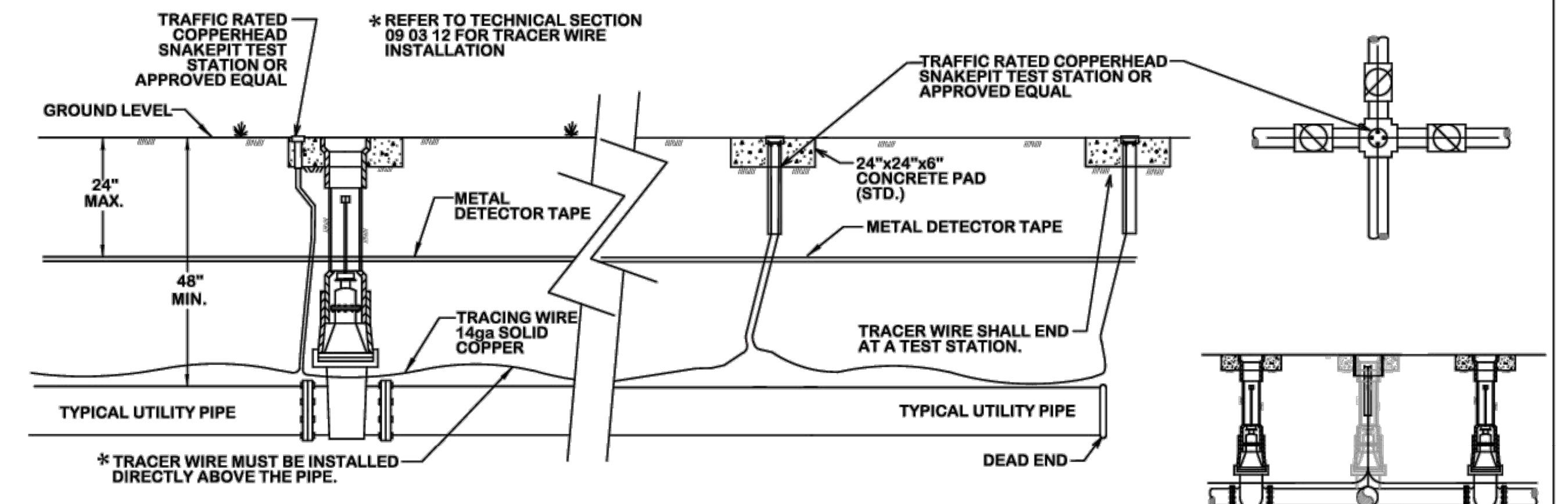
STANDARD FIRE
HYDRANT ASSEMBLY

W1-02


2" SQUARE x 2" HIGH OPERATING NUT
VALVE OPERATING NUT EXTENSION
90°
5" DIA x 1/8" MIN THICKNESS STEEL PLATE w/ 90° CUT-OUT
1" DIA STEEL ROD
SQUARE SOCKET 2" DIA INSIDE 2-1/4" DEPTH (1/8" MIN WALL THICKNESS)
TWO 3/8" SET SCREWS ON EITHER SIDE TO LOCK THE OPERATING NUT. SCREWS ARE TO BE FLUSH WITH OUTSIDE EDGE OF BOTTOM SOCKET

GATE VALVE EXTENSION

W1-01


TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL
* REFER TO TECHNICAL SECTION 09 03 12 FOR TRACER WIRE INSTALLATION
GROUND LEVEL
24" MAX.
48" MIN.
METAL DETECTOR TAPE
TRACING WIRE 14ga SOLID COPPER
TYPICAL UTILITY PIPE
* TRACER WIRE MUST BE INSTALLED DIRECTLY ABOVE THE PIPE.
TRAFFIC RATED COPPERHEAD SNAKEPIT TEST STATION OR APPROVED EQUAL
24"x24"x6" CONCRETE PAD (STD.)
METAL DETECTOR TAPE
TRACER WIRE SHALL END AT A TEST STATION.
TYPICAL UTILITY PIPE
DEAD END

UTILITY PIPE LOCATION MATERIALS

W1-03

THRUST BLOCK NOTES:
1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 psi FOR 24" AND SMALLER INNER DIAMETER PIPE.
2. ALL BEARING SURFACES OF THRUST BLOCKS SHALL BE PLACED AGAINST UNDISTURBED EARTH OR ROCK.
3. CONCRETE FOR BLOCKING SHALL BE 2000 psi.
4. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
5. WATER MAIN SHALL NOT BE PRESSURIZED UNTIL ALL CONCRETE BLOCKING HAS REACHED 1500 psi.

TEE SCHEDULE

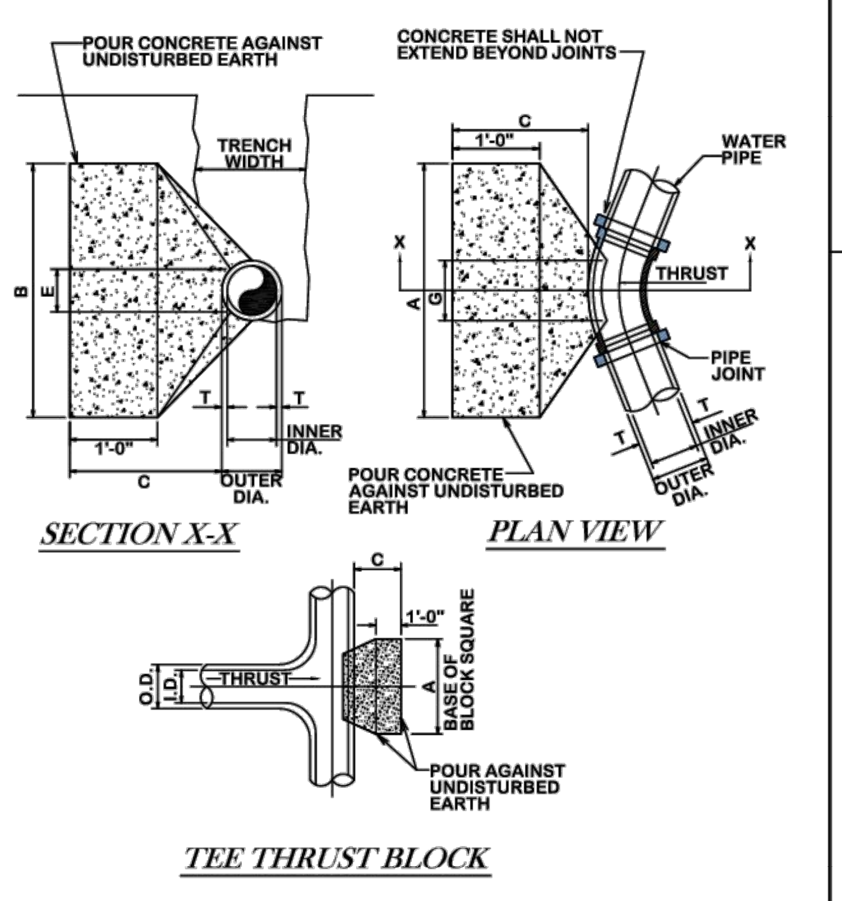
ID (in)	THRUST (tons)	C (ft)	A (ft)	VOLUME (c.y.)
4,6,8	5.1	1.5	2.5	0.3
10,12	11.3	1.5	3.5	0.6

HORIZONTAL THRUST BLOCK SCHEDULE

BEND	SIZE	A (ft)	B (ft)	C (ft)	E (ft)	G (ft)	VOLUME (c.y.)
90°	6,8"	5.0	1.5	1.5	0.9	2.7	0.4
	10,12"	6.5	2.5	1.5	1.2	4.0	1.0
45°	6,8"	2.0	2.0	1.5	0.9	1.5	0.2
	10,12"	3.5	2.5	1.5	1.2	2.2	0.5
22.5°	6,8"	1.5	1.5	1.5	0.9	0.8	0.1
	10,12"	2.0	2.5	1.5	1.2	1.1	0.3
11.25°	6,8"	1.0	1.5	1.5	0.9	0.4	0.1
	10,12"	1.5	1.5	1.5	1.2	0.6	0.1

NOTE:
USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE & PLUG TO PREVENT CONCRETE FROM STICKING TO PLUG.

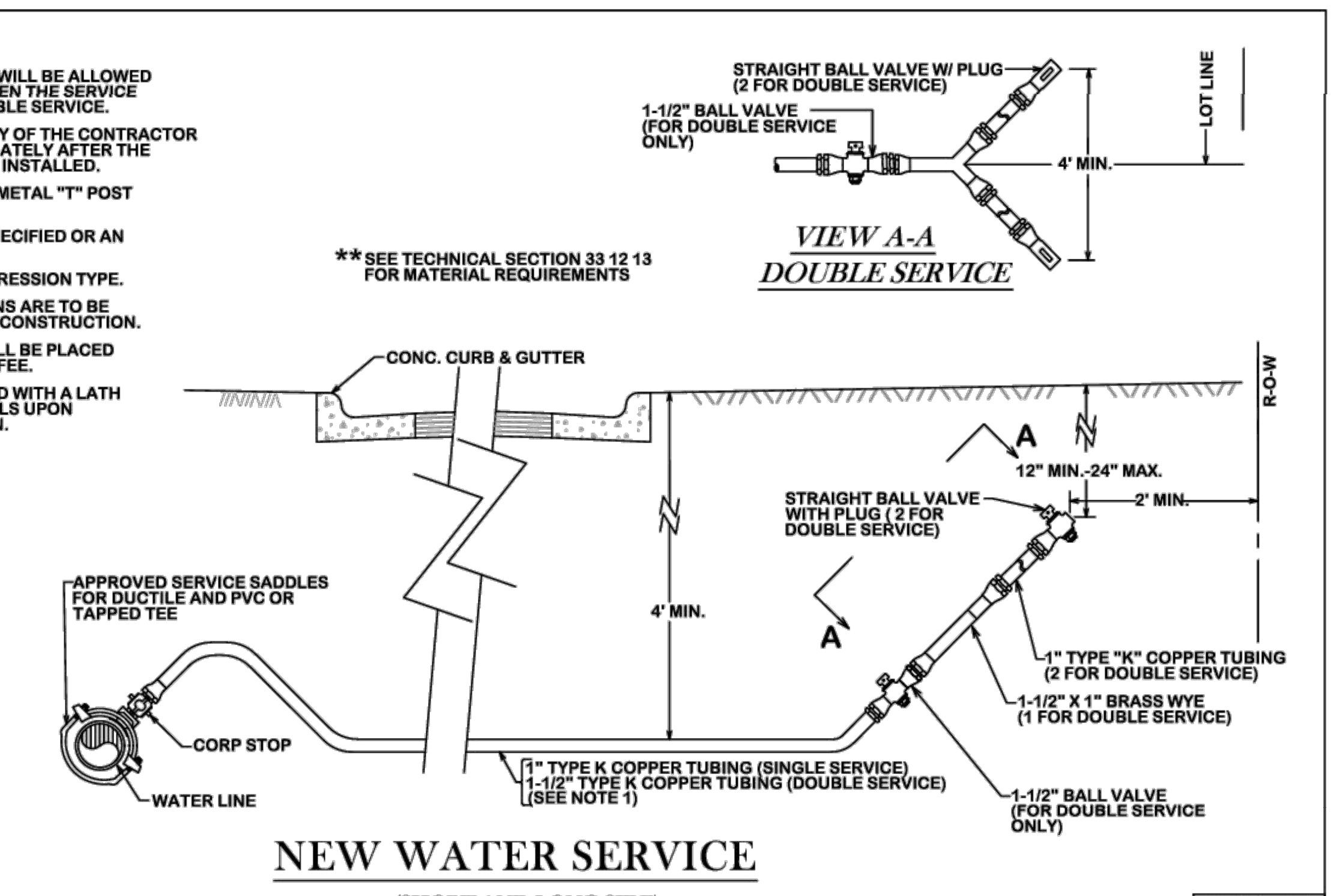
THRUST BLOCK DETAILS


POUR CONCRETE AGAINST UNDISTURBED EARTH
TRENCH WIDTH
CONCRETE SHALL NOT EXTEND BEYOND JOINTS
C
1'-0"
WATER PIPE
THRUST
PIPE JOINT
INNER DIA.
OUTER DIA.
SECTION X-X
POUR CONCRETE AGAINST UNDISTURBED EARTH
PLAN VIEW
THRUST
BASE OF BLOCK SQUARE
POUR AGAINST UNDISTURBED EARTH
TEE THRUST BLOCK

TYPICAL HORIZONTAL
THRUST BLOCK

W2-00

NOTES:
1. NO SPLICES IN COPPER TUBING WILL BE ALLOWED FOR SINGLE SERVICE OR BETWEEN THE SERVICE SADDLE AND THE WYE FOR DOUBLE SERVICE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PRESSURE TEST LINE IMMEDIATELY AFTER THE STREET CROSSINGS HAVE BEEN INSTALLED.
3. MARK EACH SERVICE END WITH METAL "T" POST PAINTED BLUE.
4. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
5. ALL CONNECTIONS TO BE COMPRESSION TYPE.
6. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.
7. METERS AND VALVE BOXES SHALL BE PLACED BY THE CITY UPON PAYMENT OF FEE.
8. LOT CORNERS SHALL BE MARKED WITH A LATH UNDER THE SUPERVISION F A RPLS UPON COMPLETION OF CONSTRUCTION.

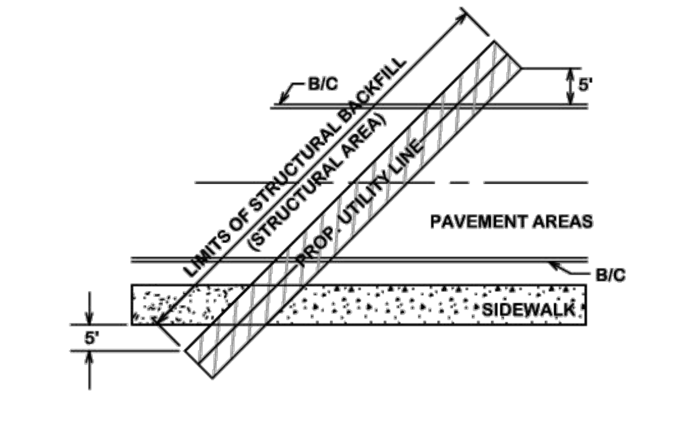

STRAIGHT BALL VALVE W/ PLUG (2 FOR DOUBLE SERVICE)
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)
LOT LINE
4' MIN.
VIEW A-A
DOUBLE SERVICE
** SEE TECHNICAL SECTION 33 12 13 FOR MATERIAL REQUIREMENTS
CONC. CURB & GUTTER
R-O-W
A
12" MIN.-24" MAX.
2' MIN.
STRAIGHT BALL VALVE WITH PLUG (2 FOR DOUBLE SERVICE)
APPROVED SERVICE SADDLES FOR DUCTILE AND PVC OR TAPPED TEE
4' MIN.
A
1" TYPE "K" COPPER TUBING (2 FOR DOUBLE SERVICE)
1-1/2" X 1" BRASS WYE (1 FOR DOUBLE SERVICE)
CORP STOP
WATER LINE
1" TYPE K COPPER TUBING (SINGLE SERVICE)
1-1/2" TYPE K COPPER TUBING (DOUBLE SERVICE) (SEE NOTE 1)
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)

NEW WATER SERVICE

(SHORT AND LONG SIDE)

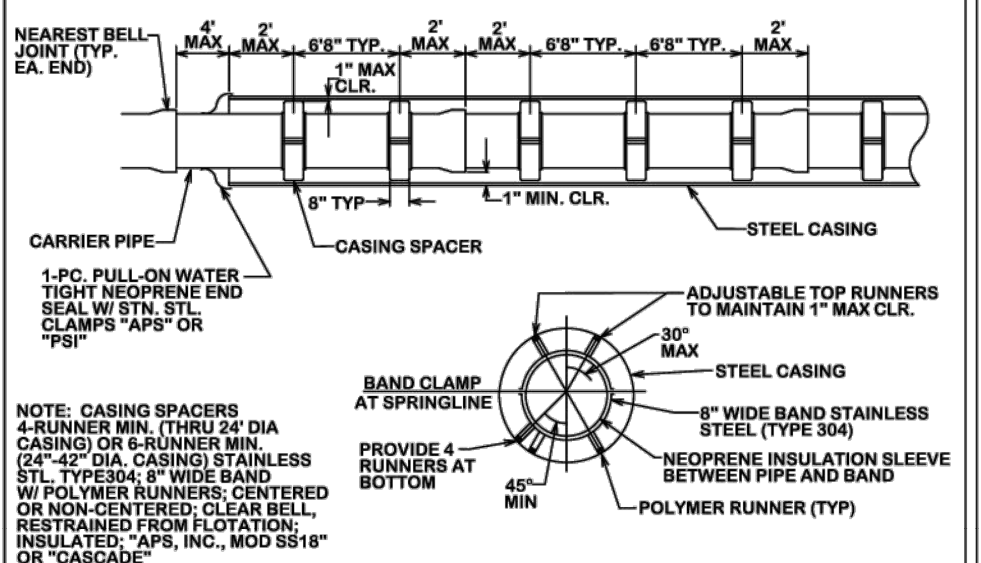
W2-01

STRUCTURAL BACKFILL AREA INCLUDES ALL PAVED AREAS (SIDEWALKS, STREETS, ALLEYS, DRIVEWAYS,AND PARKING AREAS) AND SHALL EXTEND 5' BEYOND THE CURB LINE. STRUCTURAL BACKFILL SHALL BE CEMENT STABILIZED (SEE DETAIL W4-02 - AREASTO BE PAVED) OR EXCAVATED SOIL COMPACTED TO 98% MAXIMUM DRY DENSITY AS PER ASTM D698 WITHIN OPTIMUM TO +4% WET OF OPTIMUM (SEE DETAIL W4-02 - NON-STRUCTURAL AREAS)


B/C
5'
LIMITS OF STRUCTURAL BACKFILL (STRUCTURAL AREA)
PROP. UTILITY LINE
PAVEMENT AREAS
B/C
SIDEWALK
5'

STRUCTURAL BACKFILL AREA

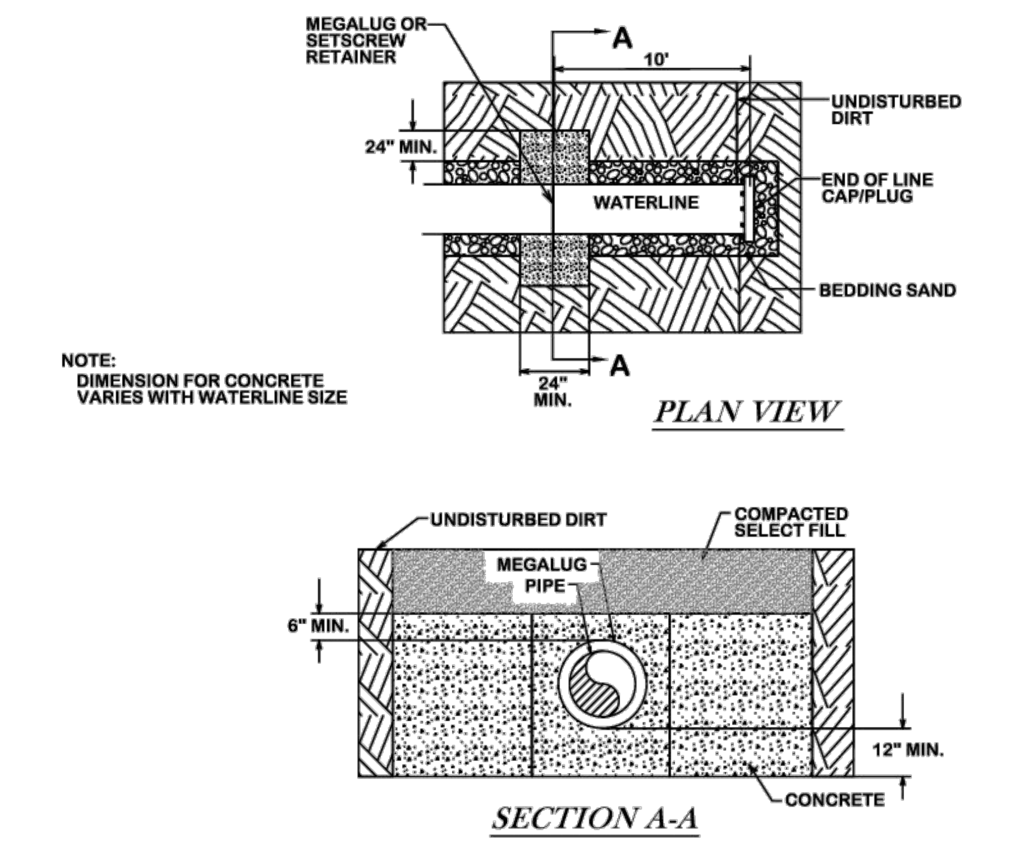
W2-02


NEAREST BELL JOINT (TYP. EA. END)
4' MAX
2' MAX
6'8" TYP.
2' MAX
2' MAX
6'8" TYP.
6'8" TYP.
2' MAX
1" MAX CLR.
8" TYP
1" MIN. CLR.
CARRIER PIPE
CASING SPACER
STEEL CASING
1-PC. PULL-ON WATER TIGHT NEOPRENE END SEAL W/ STN. STL. CLAMPS "APS" OR "PSI"
ADJUSTABLE TOP RUNNERS TO MAINTAIN 1" MAX CLR.
30° MAX
STEEL CASING
BAND CLAMP AT SPRINGLINE
8" WIDE BAND STAINLESS STEEL (TYPE 304)
PROVIDE 4 RUNNERS AT BOTTOM
NEOPRENE INSULATION SLEEVE BETWEEN PIPE AND BAND
45° MIN
POLYMER RUNNER (TYP)

NOTE: CASING SPACERS 4-RUNNER MIN. (THRU 24' DIA CASING) OR 6-RUNNER MIN. (24"-42" DIA. CASING) STAINLESS STL. TYPE304; 8" WIDE BAND W/ POLYMER RUNNERS; CENTERED OR NON-CENTERED; CLEAR BELL, RESTRAINED FROM FLOTATION; INSULATED; "APS, INC., MOD SS18" OR "CASCADE"

CASING DETAIL

W2-03

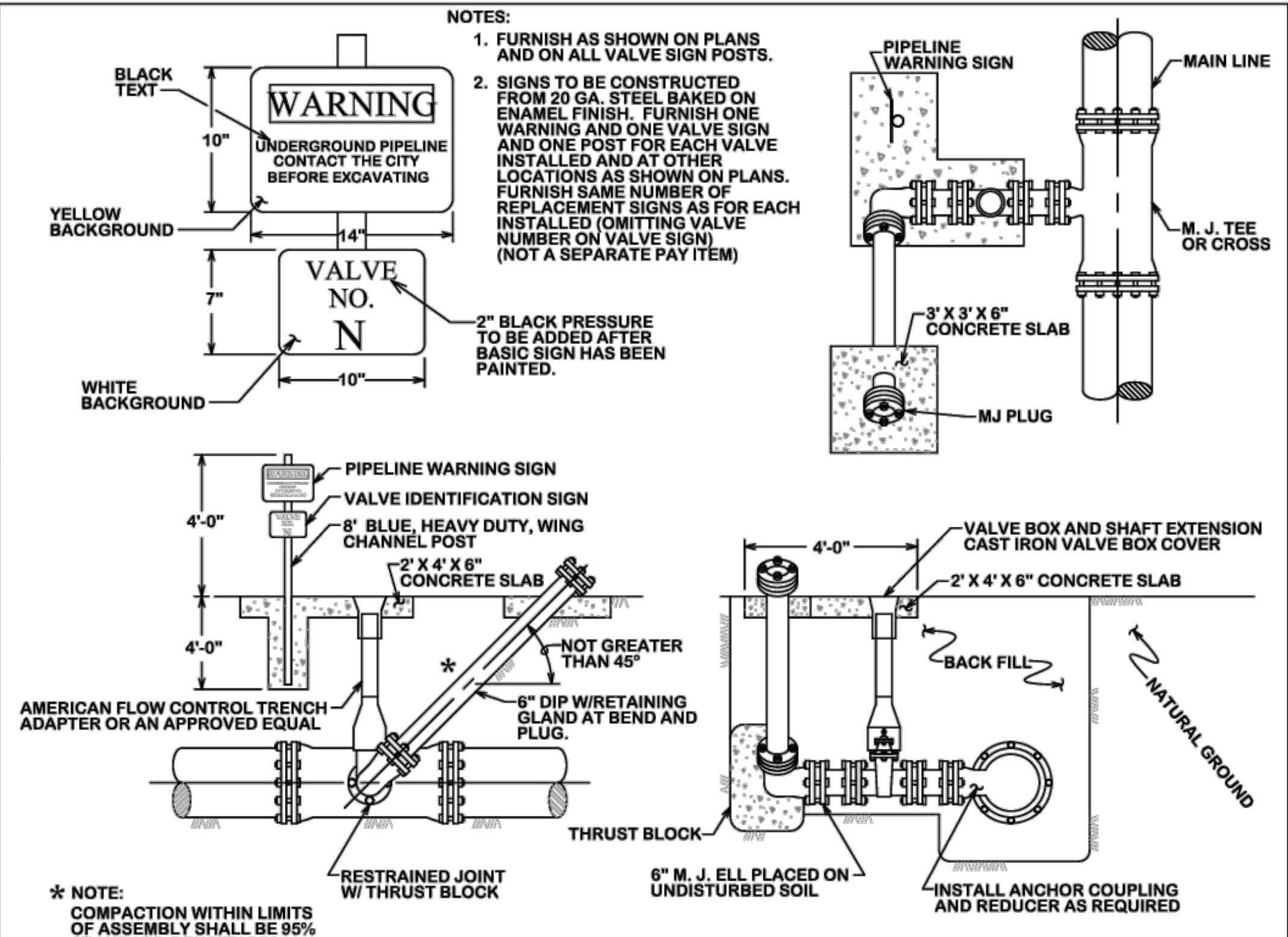

MEGALUG OR SETSCREW RETAINER
A
10'
UNDISTURBED DIRT
24" MIN.
WATERLINE
END OF LINE CAP/PLUG
BEDDING SAND
A
24" MIN.
PLAN VIEW
UNDISTURBED DIRT
COMPACTED SELECT FILL
MEGALUG PIPE
6" MIN.
12" MIN.
CONCRETE
SECTION A-A

NOTE:
DIMENSION FOR CONCRETE VARIES WITH WATERLINE SIZE

END OF LINE BLOCKING

W3-00

NOTES:
1. FURNISH AS SHOWN ON PLANS AND ON ALL VALVE SIGN POSTS.
2. SIGNS TO BE CONSTRUCTED FROM 20 GA. STEEL BAKED ON ENAMEL FINISH. FURNISH ONE WARNING AND ONE VALVE SIGN AND ONE POST FOR EACH VALVE INSTALLED AND AT OTHER LOCATIONS AS SHOWN ON PLANS. FURNISH SAME NUMBER OF REPLACEMENT SIGNS AS FOR EACH INSTALLED (OMITTING VALVE NUMBER ON VALVE SIGN) (NOT A SEPARATE PAY ITEM)

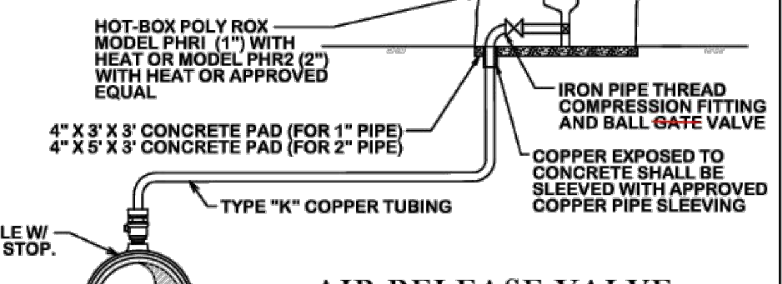

BLACK TEXT
WARNING
UNDERGROUND PIPELINE
CONTACT THE CITY
BEFORE EXCAVATING
10"
YELLOW BACKGROUND
14"
VALVE
NO.
N
7"
2" BLACK PRESSURE TO BE ADDED AFTER BASIC SIGN HAS BEEN PAINTED.
WHITE BACKGROUND
10"
PIPELINE WARNING SIGN
MAIN LINE
M. J. TEE OR CROSS
3' X 3' X 6" CONCRETE SLAB
MJ PLUG
PIPELINE WARNING SIGN
VALVE IDENTIFICATION SIGN
6" BLUE, HEAVY DUTY, WING CHANNEL POST
2' X 4' X 6" CONCRETE SLAB
4'-0"
4'-0"
NOT GREATER THAN 45°
6" DIP W/RETAINING GLAND AT BEND AND PLUG.
AMERICAN FLOW CONTROL TRENCH ADAPTER OR AN APPROVED EQUAL
RESTRAINED JOINT W/ THRUST BLOCK
THRUST BLOCK
VALVE BOX AND SHAFT EXTENSION CAST IRON VALVE BOX COVER
2' X 4' X 6" CONCRETE SLAB
6'-0"
BACK FILL
NATURAL GROUND
6" M. J. ELL PLACED ON UNDISTURBED SOIL
INSTALL ANCHOR COUPLING AND REDUCER AS REQUIRED

* NOTE:
COMPACTION WITHIN LIMITS OF ASSEMBLY SHALL BE 95% STANDARD DENSITY PER ASTM D698

IN-LINE BLOW OFF ASSEMBLY

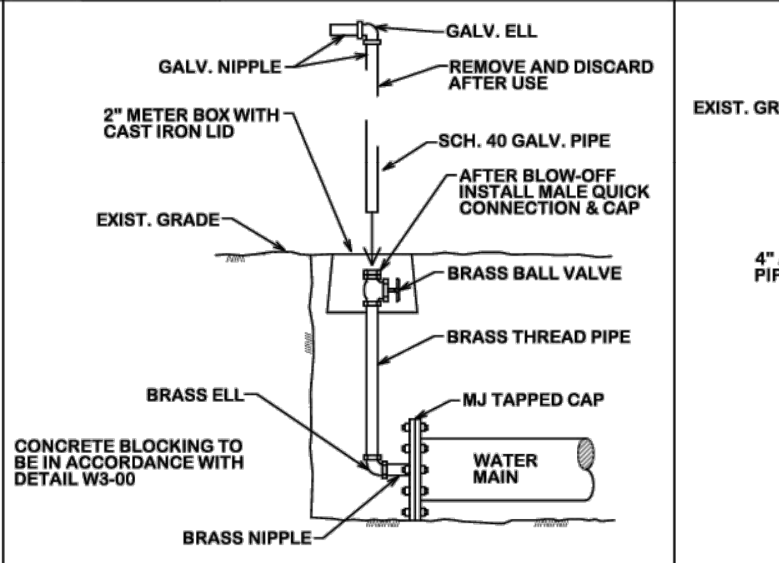
W3-01

NOTE:
1. EMBED COPPER LINE IN TAMPED SAND FROM UNDISTURBED SOIL TO 6" ABOVE AND ON BOTH SIDES OF COPPER PIPE.
2. PAYMENT FOR BID ITEM OF "AIR RELEASE VALVE" SHALL INCLUDE ALL MATERIALS, AS SHOWN IN DETAIL, INCLUDING MAIN LINE TAPPING SADDLE.
3. PIPE SIZE SHALL BE 1" OR 2".
4. SIZE OF LINES AND VALVES MAY BE MODIFIED BY THE ENGINEER


AIR RELEASE/VACUUM BREAKER VALVE VALMATIC MODEL 201C.2H (1") OR MODEL 202C.2H (2") OR APPROVED EQUAL W/ SCREENED HOOD
HOT-BOX POLY ROX MODEL PHRI (1") WITH HEAT OR MODEL PHR2 (2") WITH HEAT OR APPROVED EQUAL
IRON PIPE THREAD COMPRESSION FITTING AND BALL ~~GATE~~ VALVE
4" X 3' X 3' CONCRETE PAD (FOR 1" PIPE)
4" X 5' X 3' CONCRETE PAD (FOR 2" PIPE)
COPPER EXPOSED TO CONCRETE SHALL BE SLEEVED WITH APPROVED COPPER PIPE SLEEVING
TYPE "K" COPPER TUBING
TAPPING SADDLE W/ CORPORATION STOP

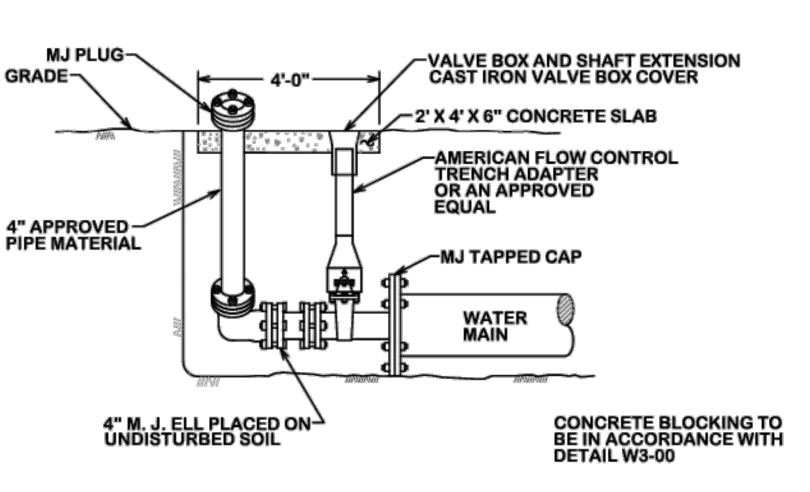
~~AIR RELEASE VALVE~~
~~& VACUUM CHECK VALVE~~
SINGLE BODY COMBINATION
AIR RELEASE VALVE

W3-02


GALV. ELL
GALV. NIPPLE
REMOVE AND DISCARD AFTER USE
2" METER BOX WITH CAST IRON LID
SCH. 40 GALV. PIPE
AFTER BLOW-OFF INSTALL MALE QUICK CONNECTION & CAP
EXIST. GRADE
BRASS BALL VALVE
BRASS THREAD PIPE
BRASS ELL
MJ TAPPED CAP
WATER MAIN
CONCRETE BLOCKING TO BE IN ACCORDANCE WITH DETAIL W3-00
BRASS NIPPLE

2" BLOW-OFF RISER

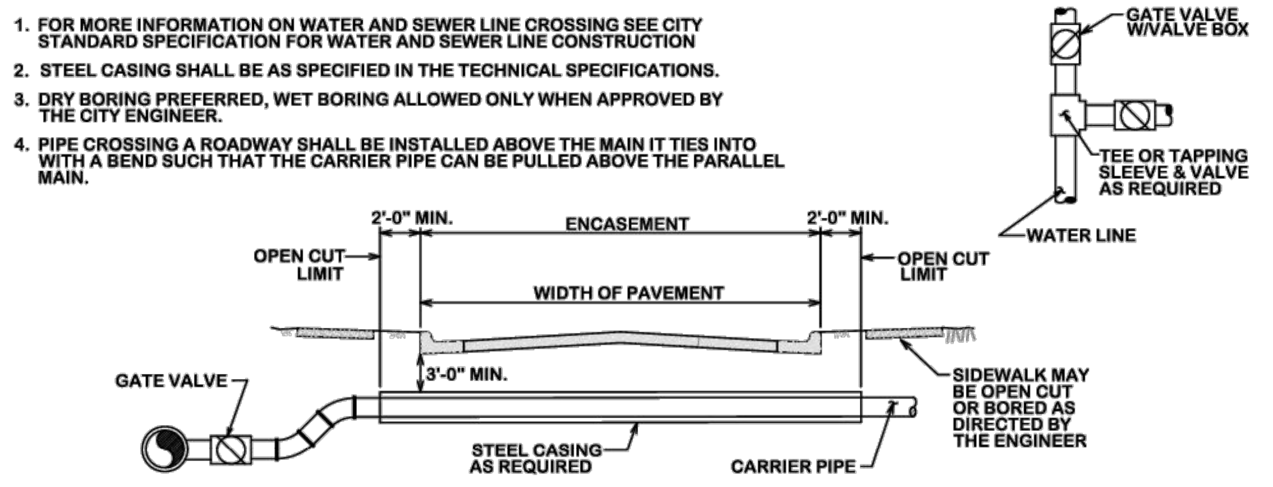
W3-03


MJ PLUG
EXIST. GRADE
4'-0"
VALVE BOX AND SHAFT EXTENSION CAST IRON VALVE BOX COVER
2' X 4' X 6" CONCRETE SLAB
AMERICAN FLOW CONTROL TRENCH ADAPTER OR AN APPROVED EQUAL
4" APPROVED PIPE MATERIAL
MJ TAPPED CAP
WATER MAIN
4" M. J. ELL PLACED ON UNDISTURBED SOIL
CONCRETE BLOCKING TO BE IN ACCORDANCE WITH DETAIL W3-00

4" END OF LINE
BLOW-OFF

W3-04

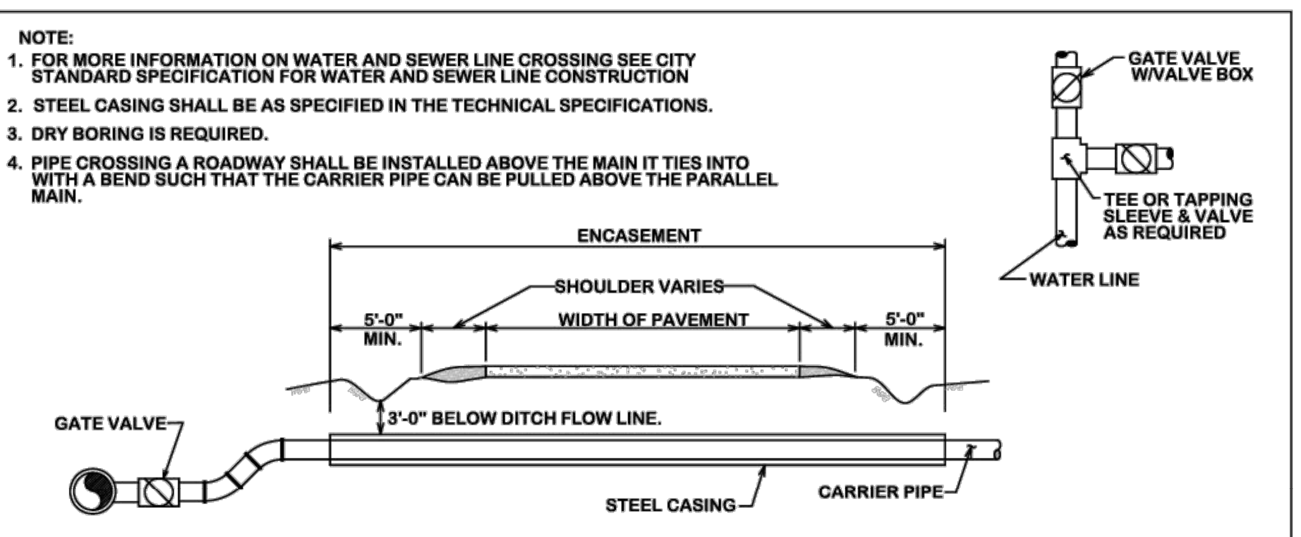
NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING PREFERRED, WET BORING ALLOWED ONLY WHEN APPROVED BY THE CITY ENGINEER.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.


GATE VALVE W/VALVE BOX
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
WATER LINE
2'-0" MIN.
ENCASEMENT
2'-0" MIN.
OPEN CUT LIMIT
WIDTH OF PAVEMENT
OPEN CUT LIMIT
3'-0" MIN.
GATE VALVE
SIDEWALK MAY BE OPEN CUT OR BORED AS DIRECTED BY THE ENGINEER
STEEL CASING AS REQUIRED
CARRIER PIPE

TYPICAL URBAN CITY STREET CROSSING

W4-00

NOTE:
1. FOR MORE INFORMATION ON WATER AND SEWER LINE CROSSING SEE CITY STANDARD SPECIFICATION FOR WATER AND SEWER LINE CONSTRUCTION
2. STEEL CASING SHALL BE AS SPECIFIED IN THE TECHNICAL SPECIFICATIONS.
3. DRY BORING IS REQUIRED.
4. PIPE CROSSING A ROADWAY SHALL BE INSTALLED ABOVE THE MAIN IT TIES INTO WITH A BEND SUCH THAT THE CARRIER PIPE CAN BE PULLED ABOVE THE PARALLEL MAIN.


GATE VALVE W/VALVE BOX
TEE OR TAPPING SLEEVE & VALVE AS REQUIRED
WATER LINE
ENCASEMENT
SHOULDER VARIES
5'-0" MIN.
WIDTH OF PAVEMENT
5'-0" MIN.
3'-0" BELOW DITCH FLOW LINE.
GATE VALVE
STEEL CASING
CARRIER PIPE

TYPICAL RURAL STREET CROSSING

W4-01

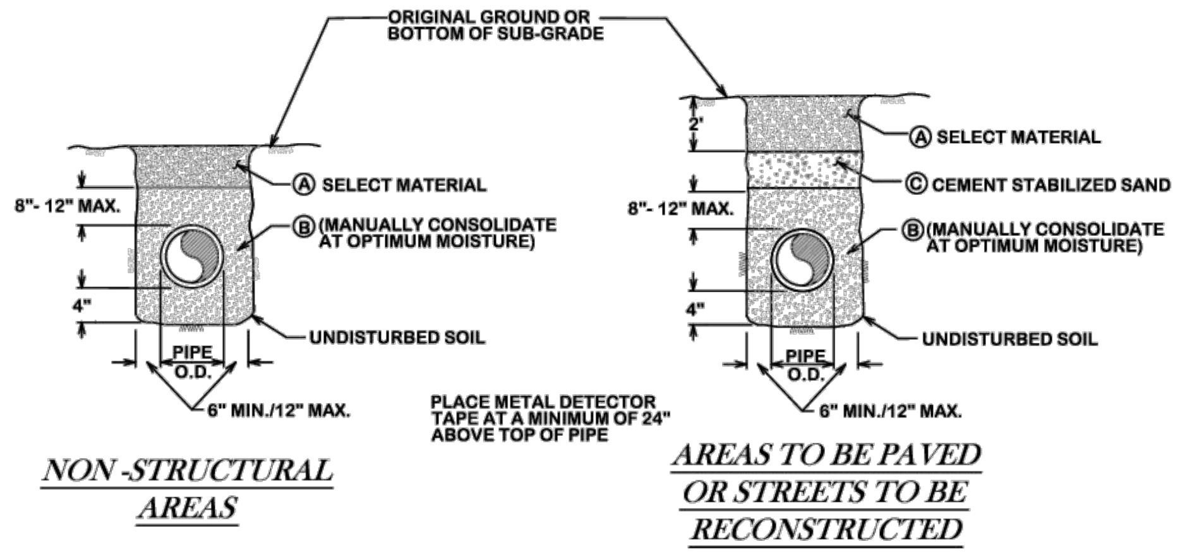
Ⓐ SELECT MATERIAL
MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLODS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE LARGEST DIMENSION), COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie...YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NEW STREET AREAS AND STREETS TO BE RECONSTRUCTED.

Ⓑ GRANULAR MATERIAL
MATERIAL SHALL BE BANK RUN RIVER SAND WHICH IS FREE OF DETRIMENTAL QUANTITIES OF CLAY, DEBRIS, OR ORGANIC MATERIAL AND WHICH, WHEN TESTED BY STANDARD LABORATORY METHODS, MEET THE FOLLOWING REQUIREMENTS:

MAXIMUM LIQUID LIMIT	45
MAXIMUM PLASTICITY INDEX	15
MAXIMUM PERCENT PASSING NO. 200 SIEVE	35
MINIMUM PERCENT PASSING 3/4" SIEVE	100

THE MATERIAL SHALL BE FREE FLOWING AND WHEN WET, SHALL NOT ADHERE TO FORM A BALL WHEN PRESSED IN THE HAND.

Ⓒ CEMENT STABILIZED SAND


ORIGINAL GROUND OR BOTTOM OF SUB-GRADE
8"- 12" MAX.
4"
PIPE O.D.
Ⓐ SELECT MATERIAL
Ⓑ (MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE)
UNDISTURBED SOIL
6" MIN./12" MAX.
NON -STRUCTURAL AREAS
8"- 12" MAX.
4"
PIPE O.D.
Ⓐ SELECT MATERIAL
Ⓒ CEMENT STABILIZED SAND
Ⓑ (MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE)
UNDISTURBED SOIL
PLACE METAL DETECTOR TAPE AT A MINIMUM OF 24" ABOVE TOP OF PIPE
6" MIN./12" MAX.
AREAS TO BE PAVED OR STREETS TO BE RECONSTRUCTED

NOTES:
1. *FOR BEDDING AND TRENCHING WITHIN ALL EXISTING PAVED AREAS, SEE DETAILS FOR OPEN CUT STREETS. (Details ST4-00, ST4-01, ST4-02). THIS NOTE DOES NOT APPLY TO STREETS BEING RECONSTRUCTED.*
2. *EVERY 100 FEET PROVIDE A WATER STOP BLOCK COMPOSED OF CEMENT SAND OR NATIVE MATERIAL DEPENDING ON EMBEDMENT. BLOCK SHALL BE 6 FEET IN LENGTH. NO BEDDING SAND IN THIS AREA.*
3. ALL BEDDING & INSTALLATION OF PVC PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA STANDARDS FOR PVC PIPE.
4. ALL BEDDING & INSTALLATION OF DUCTILE IRON PIPE SHALL BE IN ACCORDANCE WITH ANSI/AWWA C150/A21.50
5. COMPACTION SHALL BE ATTAINED BY MECHANICAL TAMPING.
6. RELATIVE COMPACTION SHALL BE TESTED IN THE PRESENCE OF THE CITY ENGINEER.
7. DUST RESULTING FROM THE CONTRACTOR'S PERFORMANCE OF THE WORK, EITHER INSIDE OR OUTSIDE THE RIGHT-OF-WAY, SHALL BE CONTROLLED BY THE CONTRACTOR.
8. ALL TRENCHES SHALL BE BACK FILLED AND TEMPORARY PAVING OR PLATING PLACED AT THE END OF EACH WORKING DAY.

BEDDING AND TRENCH FOR DI PIPE & PVC PIPE

W4-02

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ESTABLISHMENT OF VEGETATION MAY BE A WARRANTY ITEM.

REVISIONS:

BRYAN - COLLEGE STATION
STANDARD WATER DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.™

DRAWN BY: B.I.
DATE: 12/2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
W1
SHEET 1 OF 2

MITCHELL
M&M
MORGAN
T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443
3204 EARL RUDDER FWY. S.
COLLEGE STATION, TX 77845
PLAN & DESIGN SPECIALISTS IN
CIVIL ENGINEERING HYDRAULICS
HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS
www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

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1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

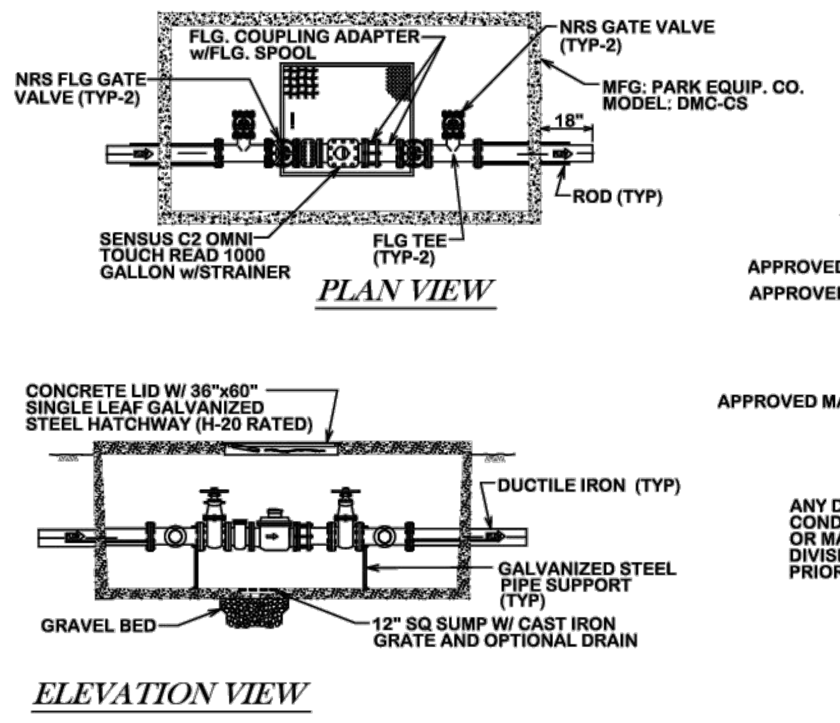
B/CS STANDARD WATER DETAILS -1
BRAZOS OAKS PHASE II

C-502

SPECIAL CONDITIONS

1. METER REGISTER SHALL BE NO DEEPER THAN 12 INCHES BELOW FINISHED GRADE.
2. FLOOR OF VAULT WILL BE A MINIMUM OF 6 INCHES FROM BOTTOM OF ANY PIPING APPARATUS OR METER WITHIN THE VAULT.
3. REINFORCED CONCRETE VAULT BASE (FLOOR) SHALL BE CONSTRUCTED USING A STANDARD FIVE SACK CONCRETE MIX AND REINFORCING COMPRISED OF #3 REBAR ON 12 INCH CENTERS WITH A MINIMUM BASE THICKNESS OF 6 INCHES.
4. SET SCREW RETAINER GLANDS SHALL BE INSTALLED AT EACH FITTING ON MECHANICAL JOINT PIPE.
5. VALVES SHALL MEET THE CITY SPECIFICATIONS FOR VALVES.
6. THERE SHALL BE NO PIPING UNDER THE FLOOR OF THE VAULT.

MODEL	SIZE	L1	W1	H1	WEIGHT LBS
DMC-CS3	3"	8'-8"	5'-0"	4'-6"	12,000
DMC-CS4	4"	8'-8"	5'-0"	4'-6"	12,000
DMC-CS6	6"	11'-0"	6'-0"	4'-9"	12,000


FLG. COUPLING ADAPTER w/FLG. SPOOL
NRS FLG GATE VALVE (TYP-2)
NRS GATE VALVE (TYP-2)
MFG: PARK EQUIP. CO. MODEL: DMC-CS
18"
ROD (TYP)
SENSUS C2 OMNI TOUCH READ 1000 GALLON w/STRAINER
FLG TEE (TYP-2)
PLAN VIEW
CONCRETE LID W/ 36"x60" SINGLE LEAF GALVANIZED STEEL HATCHWAY (H-20 RATED)
DUCTILE IRON (TYP)
GALVANIZED STEEL PIPE SUPPORT (TYP)
GRAVEL BED
12" SQ SUMP W/ CAST IRON GRATE AND OPTIONAL DRAIN
ELEVATION VIEW

APPROVED 3" OR LARGER COMPOUND METERS, VAULTS & MATERIALS

APPROVED METERS - SENSUS SRH (U. S. GALLONS)

APPROVED VAULTS - PARK DMC-BR PRE-CAST CONCRETE VAULT W/ ADEQUATE ACCESS AND VAULT DIMENSIONS FOR METER SELECTED

APPROVED MATERIALS - DUCTILE IRON PIPE WITH MECHANICAL JOINT. SET SCREW RETAINER GLANDS WILL BE BASED ON ALL M.J. FITTINGS.

ANY DEVIATIONS FROM THE ABOVE SPECIAL CONDITIONS OR APPROVED METERS, VAULTS OR MATERIALS MUST BE SUBMITTED TO THE DIVISION MANAGER, WATER SERVICES, 72 HOURS PRIOR TO ANTICIPATED DEVIATION.

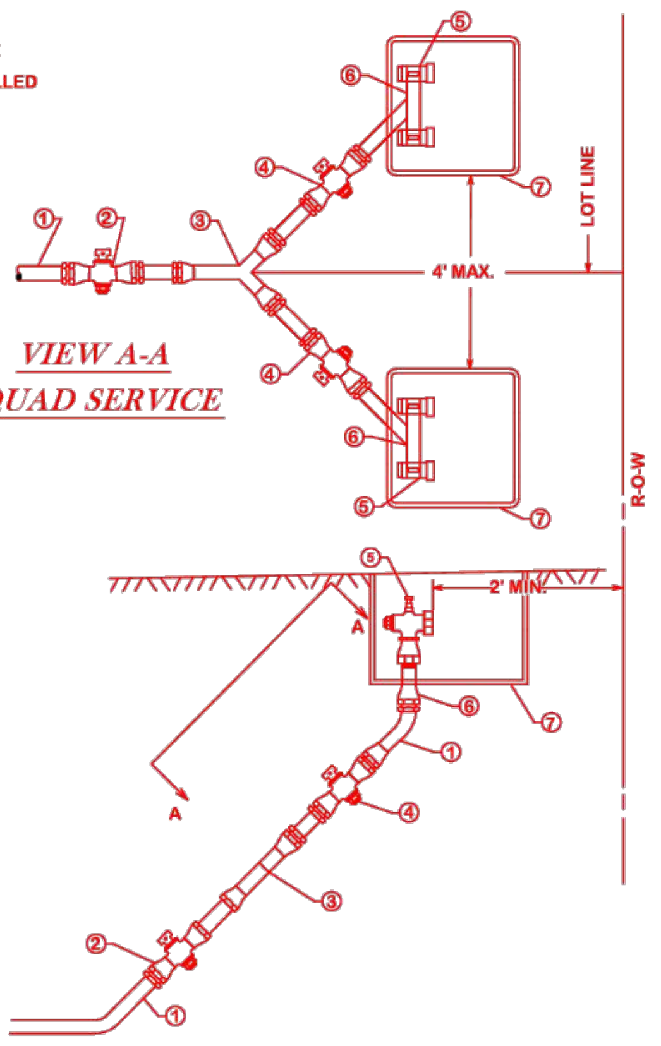
CITY OF COLLEGE STATION METER VAULT ASSEMBLY

W5-00

SPECIAL CONDITIONS

1. ALL CONNECTIONS SHALL BE PACK-JOINT COMPRESSION TYPE
2. ALL SERVICE EXTENSIONS/APPURTENANCES ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION
3. A MAXIMUM OF FOUR ~ 0.75" WATER METERS ARE ALLOWED FOR THIS CONFIGURATION
4. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL

① Service tubing: Type K copper - soft - 2"
② Ford Ball Valve - B44-777-NL- 2"
③ Ford 'Y' Branch - Y44-274-NL- 2" x 1" x 1"
④ Ford Ball Valve - B44-444-NL- 1"
⑤ Ford Angle Stop KV13-332W-NL - .75" x .75" Meter Nut Swivel
⑥ Ford 'U' Branch - U48-43-NL
⑦ Dual Concrete Meter Box - Provided by COCS

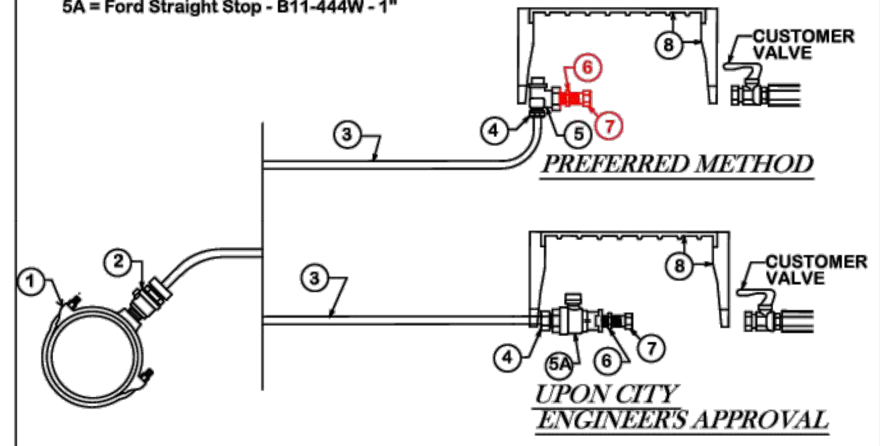

①
②
③
④
⑤
⑥
⑦
4' MAX.
LOT LINE
VIEW A-A
QUAD SERVICE
2' MIN.
R-O-W
A

CITY OF COLLEGE STATION QUAD SERVICE CONNECTION

W5-01

NOTES:

① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-4-Q - 1"
③ Service tubing: Type K copper - soft - 1"
④ Ford male adapter - C84-44-Q - 1"
⑤ Meter box valve:
5 = Ford Angle Stop - BA-11-444W - 1"
5A = Ford Straight Stop - B11-444W - 1"
⑥ Brass bushing IPS - 1" x 3/4"
⑦ Meter nipple - C38-23-2-5 - 3/4"
⑧ Meter box and lid:
Old Castle/Christy meter box and lid:
- B09 Utility Box
- N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole

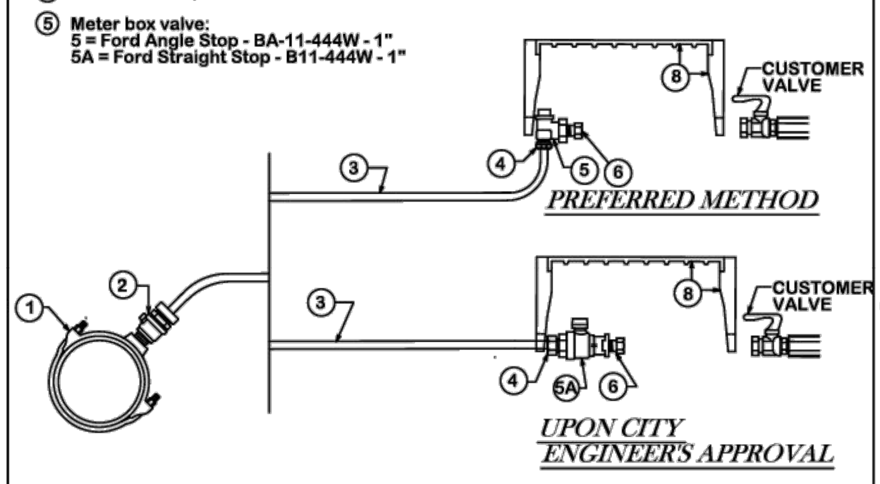

①
②
③
④
⑤
⑥
⑦
⑧
5A
CUSTOMER VALVE
PREFERRED METHOD
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN STRAIGHT OR ANGLE TAP-3/4"

W6-00

NOTES:

① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-4-Q - 1"
③ Service tubing: Type K copper - soft - 1"
④ Ford male adapter - C84-44-Q - 1"
⑤ Meter box valve:
5 = Ford Angle Stop - BA-11-444W - 1"
5A = Ford Straight Stop - B11-444W - 1"
⑥ Meter nipple - C38-44-2-625 - 1"
⑧ Meter box and lid:
Old Castle/Christy meter box and lid:
- B09 Utility Box
- N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole

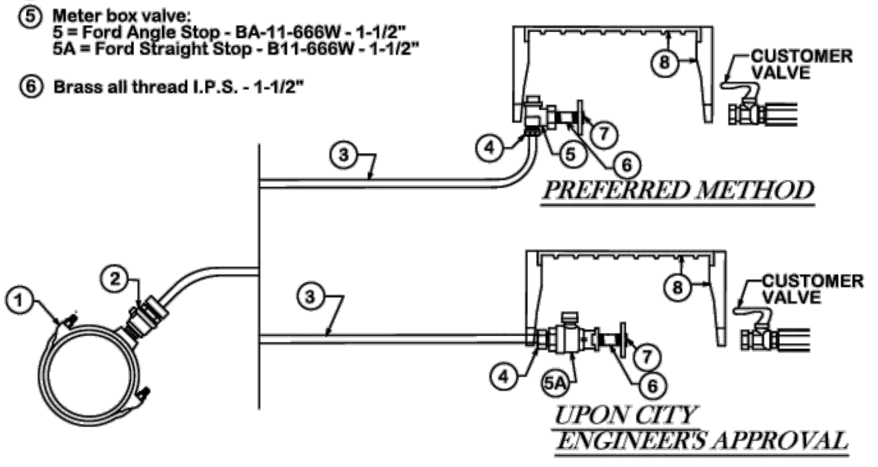

①
②
③
④
⑤
⑥
⑧
5A
CUSTOMER VALVE
PREFERRED METHOD
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN STRAIGHT OR ANGLE TAP - 1"

W6-01

NOTES:

① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-6-Q - 1-1/2"
③ Service tubing: Type K copper - soft - 1-1/2"
④ Ford male adapter - C84-66-Q - 1-1/2"
⑤ Meter box valve:
5 = Ford Angle Stop - BA-11-666W - 1-1/2"
5A = Ford Straight Stop - B11-666W - 1-1/2"
⑥ Brass all thread I.P.S. - 1-1/2"
⑦ Meter Flange - CF31-66 - 1-1/2"
⑧ Meter box and lid:
Old Castle/Christy meter box and lid:
- B65 Concrete Box
- B65P001-F Concrete Lid Marked with Flex-Net Probe Hole provision

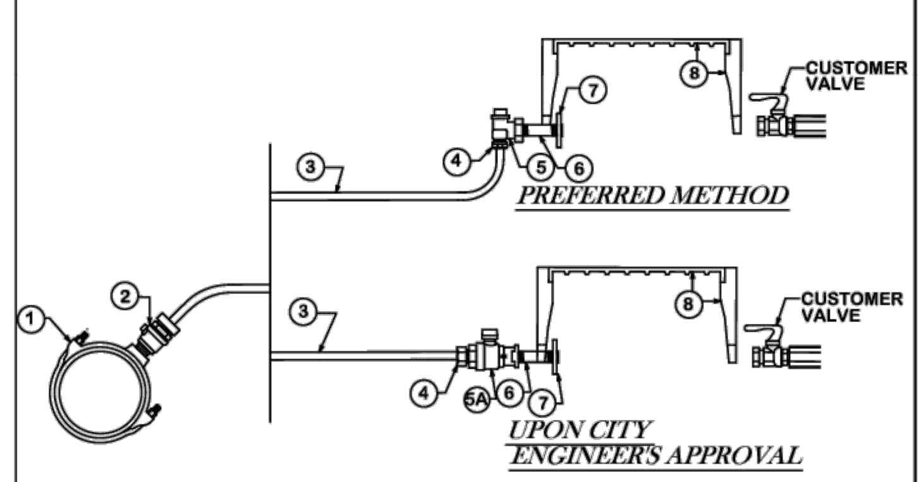

①
②
③
④
⑤
⑥
⑦
⑧
5A
CUSTOMER VALVE
PREFERRED METHOD
UPON CITY ENGINEER'S APPROVAL

CITY OF BRYAN STRAIGHT OR ANGLE TAP-1-1/2"

W6-02

NOTES:

① Service saddle, SS straps, CC threads Installed per manufacturer's recommendations. All main types: Smith Blair 317
② Corporation Stop: Ford FB 1000-7-Q (cc thread) - 2"
③ Service tubing: Type K copper - soft - 2"
④ Ford male adapter - C84-77-Q - 2"
⑤ Meter box valve:
5 = Ford Angle Stop - BA-11-777W - 2"
5A = Ford Straight Stop - B11-777W - 2"
⑥ Brass nipple I.P.S. - 2" x 3"
⑦ Meter Flange - CF31-77 - 2"
⑧ Meter box and lid:
Old Castle/Christy meter box and lid:
- B09 Utility Box
- N09R Concrete Lid Marked "Water" with Flex-Net Sensus Probe Hole


①
②
③
④
⑤
⑥
⑦
⑧
5A
CUSTOMER VALVE
PREFERRED METHOD
UPON CITY ENGINEER'S APPROVAL

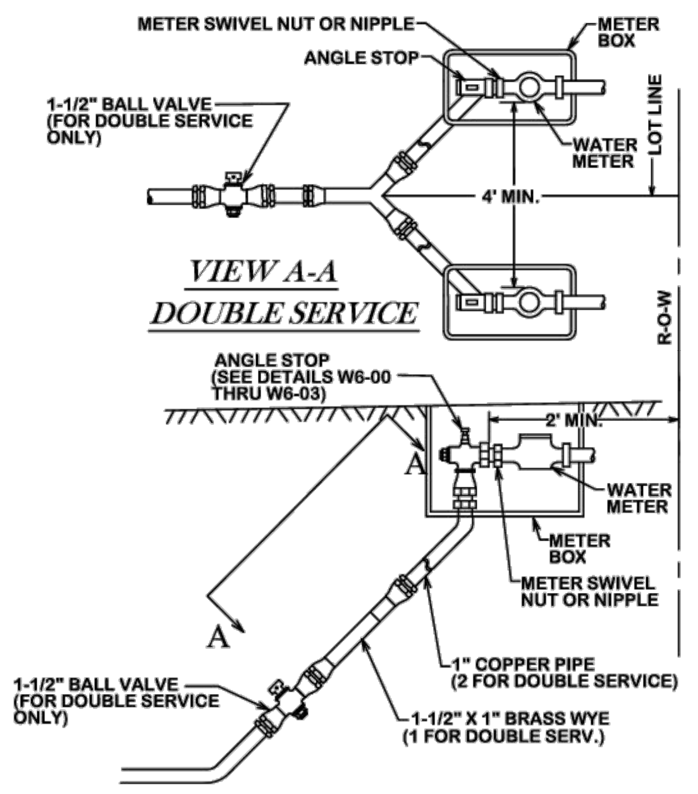
CITY OF BRYAN STRAIGHT OR ANGLE TAP - 2"

W6-03

NOTES:

1. ALL CONNECTIONS TO BE COMPRESSION TYPE.
2. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
3. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.
4. EXISTING METER BOXES ARE TO BE REMOVED. THE NEW METER BOXES SHALL BE OLD CASTLE.
5. ANGLE STOPS MAY BE USED FOR NEW CONSTRUCTION IF FINISHED ELEVATION IS KNOWN. THE STOP MUS BE INSTALLED 10"-12" BELOW THE FINISHED ELEVATION.

METER NUT SIZE	FORD PART NO.
3/4" x 2.5" Long	C38-23-2-5
3/4" x 3" Long	C38-23-3
3/4" x 12" Long	C38-23-12
1" x 2.625" Long	C38-44-2-625
1" x 8.5" Long	C38-44-8-5
1-1/2" Meter Nipple	C38-66-2-875
1-1/2" Meter Bushing	BBIM-66
2" Meter Nipple	C38-77
2" Meter Bushing	BBIM-77

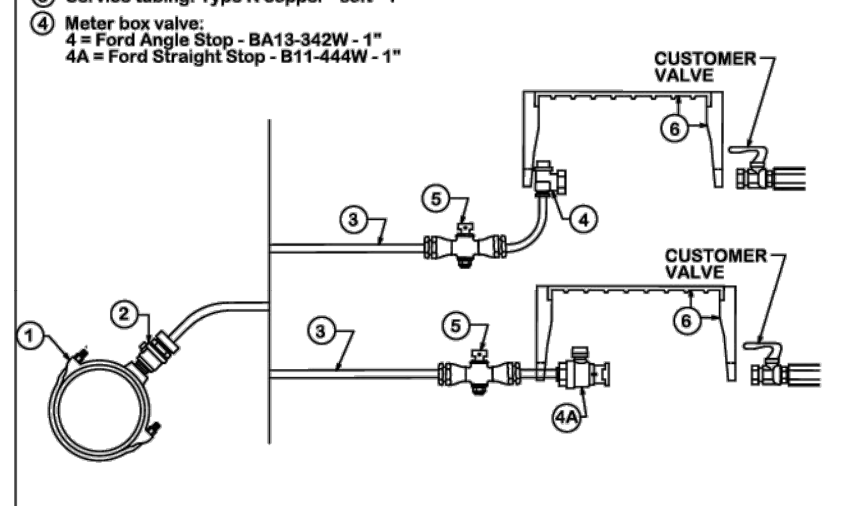

METER SWIVEL NUT OR NIPPLE
METER BOX
ANGLE STOP
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)
WATER METER
LOT LINE
4' MIN.
VIEW A-A
DOUBLE SERVICE
R-O-W
ANGLE STOP (SEE DETAILS W6-00 THRU W6-03)
2' MIN.
A
WATER METER
METER BOX
METER SWIVEL NUT OR NIPPLE
1" COPPER PIPE (2 FOR DOUBLE SERVICE)
1-1/2" BALL VALVE (FOR DOUBLE SERVICE ONLY)
1-1/2" X 1" BRASS WYE (1 FOR DOUBLE SERV.)

CITY OF BRYAN WATER SERVICE RECONNECTION

W6-04

NOTES:

① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-4- 1"
③ Service tubing: Type K copper - soft - 1"
④ Meter box valve:
4 = Ford Angle Stop - BA13-342W - 1"
4A = Ford Straight Stop - B11-444W - 1"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #36

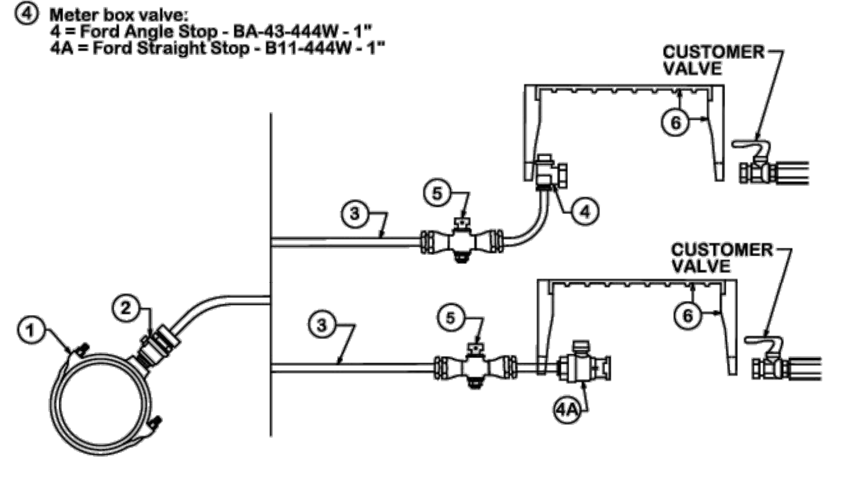

①
②
③
④
⑤
⑥
4A
CUSTOMER VALVE

CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 3/4"

W7-00

NOTES:

① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-4- 1"
③ Service tubing: Type K copper - soft - 1"
④ Meter box valve:
4 = Ford Angle Stop - BA-43-444W - 1"
4A = Ford Straight Stop - B11-444W - 1"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #36

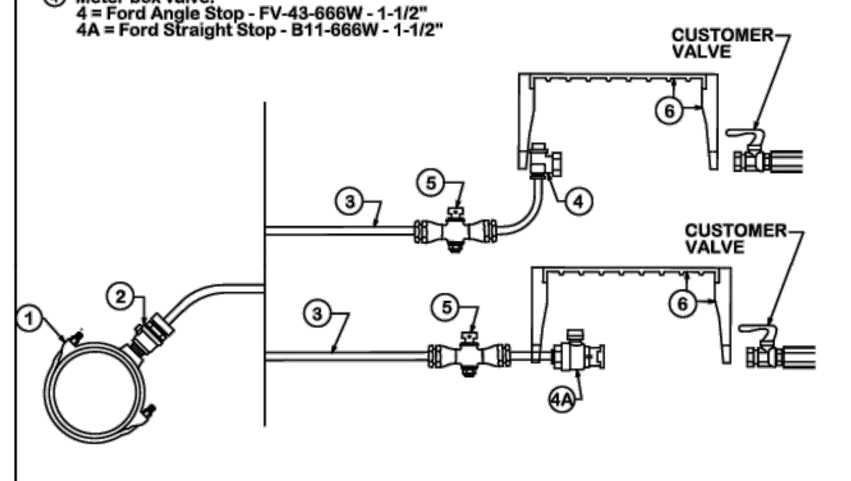

①
②
③
④
⑤
⑥
4A
CUSTOMER VALVE

CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 1"

W7-01

NOTES:

① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-6- 1-1/2"
③ Service tubing: Type K copper - soft - 1-1/2"
④ Meter box valve:
4 = Ford Angle Stop - FV-43-666W - 1-1/2"
4A = Ford Straight Stop - B11-666W - 1-1/2"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #65

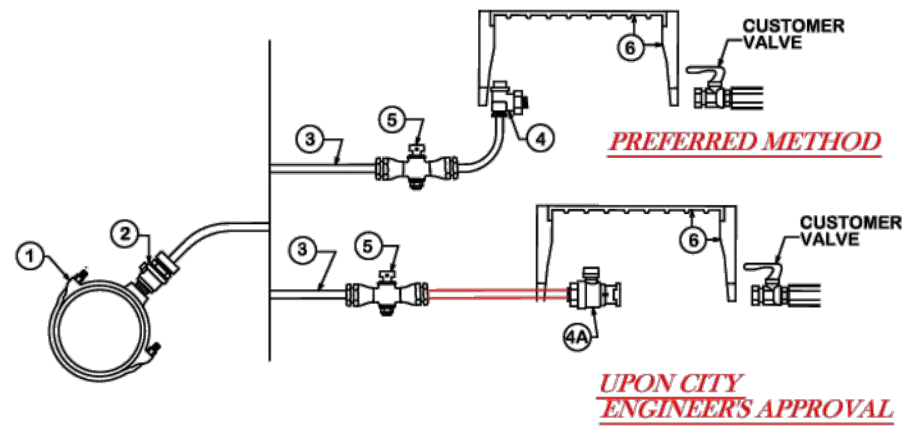

①
②
③
④
⑤
⑥
4A
CUSTOMER VALVE

CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 1-1/2"

W7-02

NOTES:

① Service saddle and CC threads installed per manufacturer's recommendations. All main types: Ford S70/S90
② Corporation Stop: Ford FB 1000-7 (cc thread) - 2"
③ Service tubing: Type K copper - soft - 2"
④ Meter box valve:
4 = Ford Angle Stop - FV-43-777W - 2"
4A = Ford Straight Stop - B11-777W - 2"
⑤ Ball valve
⑥ Meter box and lid: Old Castle meter box, CI lid with Reader #65


①
②
③
④
⑤
⑥
4A
CUSTOMER VALVE
PREFERRED METHOD
UPON CITY ENGINEER'S APPROVAL

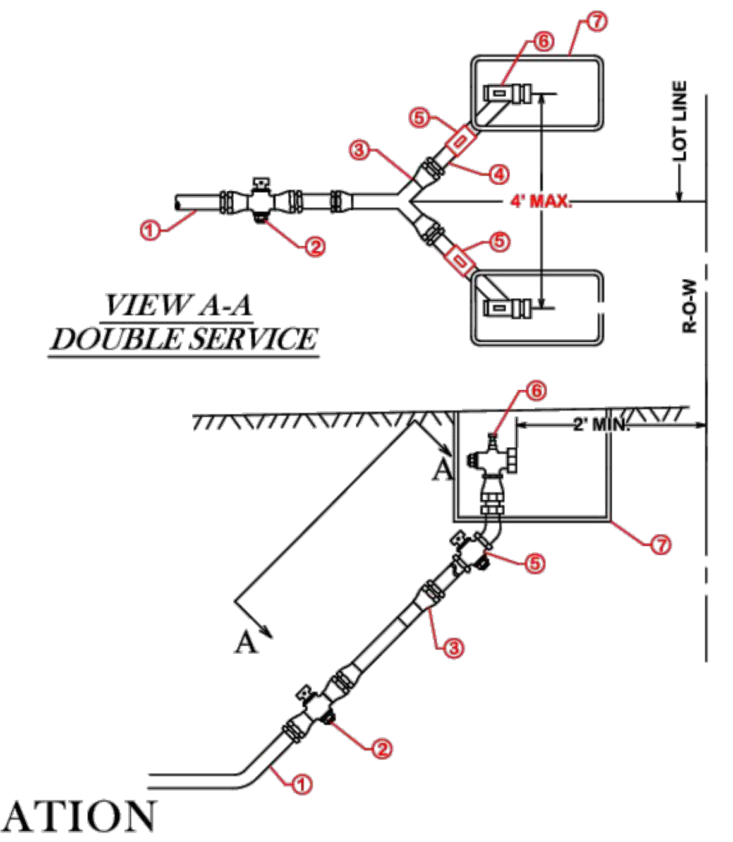
CITY OF COLLEGE STATION STRAIGHT OR ANGLE TAP - 2"

W7-03

NOTES:

1. ALL CONNECTIONS TO BE COMPRESSION TYPE.
2. MATERIAL USED SHALL BE AS SPECIFIED OR AN APPROVED EQUAL.
3. ALL SERVICE WYES & EXTENSIONS ARE TO BE INSTALLED WITH THE MAIN LINE CONSTRUCTION.

① Service Tubing: Type K Copper - cu - soft - 1.50"
② Ford Ball Valve - B44-666-NL- 1.50"
③ Ford 'Y' Branch - Y44-264-NL- 1.50" x 1" x 1"
④ Service Tubing: Type K Copper - soft - 1"
⑤ Ford Ball Valve - B44-444-NL - 1"
⑥ Ford Angle Stop KV43-332W-NL - 1" x 0.75 Meter Nut Swivel
⑦ Concrete Meter Box - Provided by COCS


①
②
③
④
⑤
⑥
⑦
4' MAX.
LOT LINE
VIEW A-A
DOUBLE SERVICE
R-O-W
2' MIN.
A

CITY OF COLLEGE STATION DOUBLE WATER SERVICE RECONNECTION

W7-04

REVISIONS:
7/1/2016 - Details W6-00 thru W6-04 Accepted for use by COB

BRYAN - COLLEGE STATION STANDARD WATER DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.™

DRAWN BY: B.I.
DATE: 12/2020
SCALE: NTS
APPROVED: W. P. K.

FIGURE:
W2
SHEET 2 OF 2

MITCHELL
M&M
MORGAN
T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443
3204 EARL RUDDER FWY. S.
COLLEGE STATION, TX 77845
PLAN & DESIGN SPECIALISTS IN
CIVIL ENGINEERING HYDRAULICS
HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS
www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
on APRIL 15, 2026

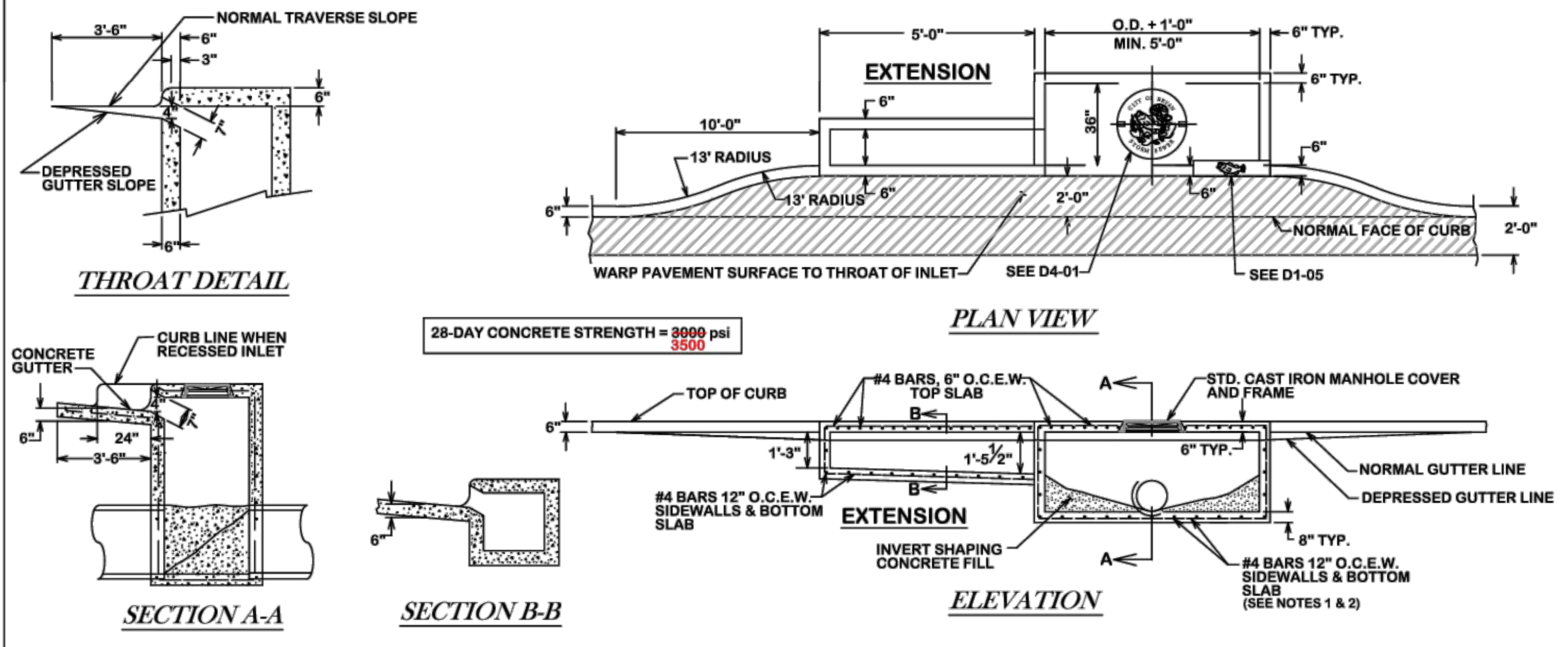
APRIL 2026
Designed By: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

B/CS STANDARD WATER DETAILS -2
BRAZOS OAKS PHASE II

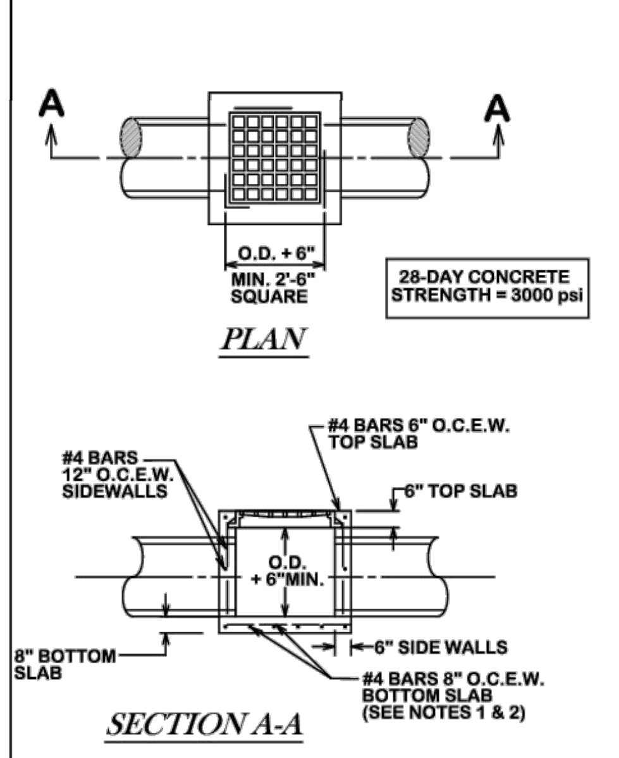
C-503


NORMAL TRAVERSE SLOPE
DEPRESSED GUTTER SLOPE
THROAT DETAIL
EXTENSION
13' RADIUS
WARP PAVEMENT SURFACE TO THROAT OF INLET
SEE D4-01
SEE D1-05
NORMAL FACE OF CURB
PLAN VIEW
CURB LINE WHEN RECESSED INLET
CONCRETE GUTTER
SECTION A-A
SECTION B-B
TOP OF CURB
#4 BARS, 6" O.C.E.W. TOP SLAB
STD. CAST IRON MANHOLE COVER AND FRAME
NORMAL GUTTER LINE
DEPRESSED GUTTER LINE
#4 BARS 12" O.C.E.W. SIDEWALLS & BOTTOM SLAB
INVERT SHAPING CONCRETE FILL
#4 BARS 12" O.C.E.W. SIDEWALLS & BOTTOM SLAB (SEE NOTES 1 & 2)
ELEVATION

28-DAY CONCRETE STRENGTH = ~~3000~~ 3500 psi

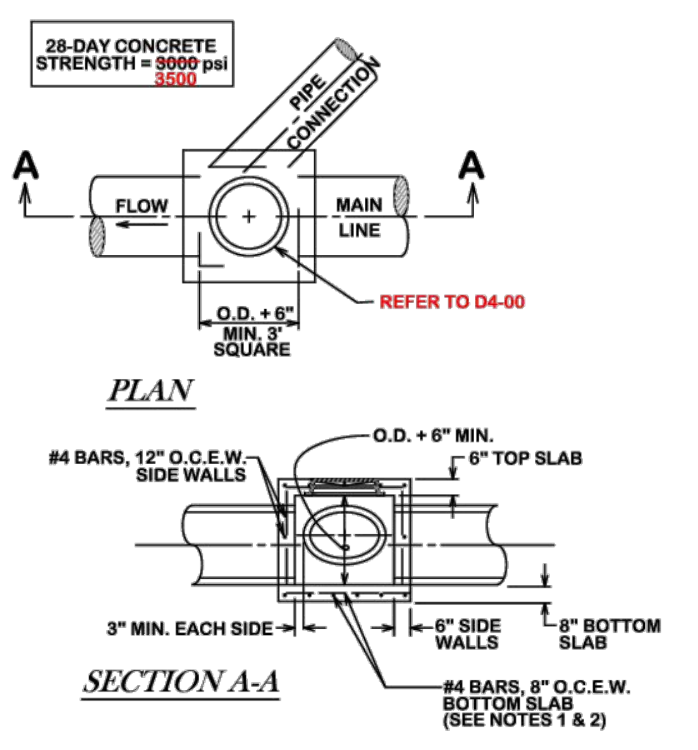
SINGLE RECESSED CURB INLET & CURB INLET W/EXTENSION

D1-00


A
A
O.D. + 6" MIN. 2'-6" SQUARE
28-DAY CONCRETE STRENGTH = 3000 psi
PLAN
#4 BARS 6" O.C.E.W. TOP SLAB
#4 BARS 12" O.C.E.W. SIDEWALLS
6" TOP SLAB
6" SIDE WALLS
8" BOTTOM SLAB
#4 BARS 8" O.C.E.W. BOTTOM SLAB (SEE NOTES 1 & 2)
SECTION A-A

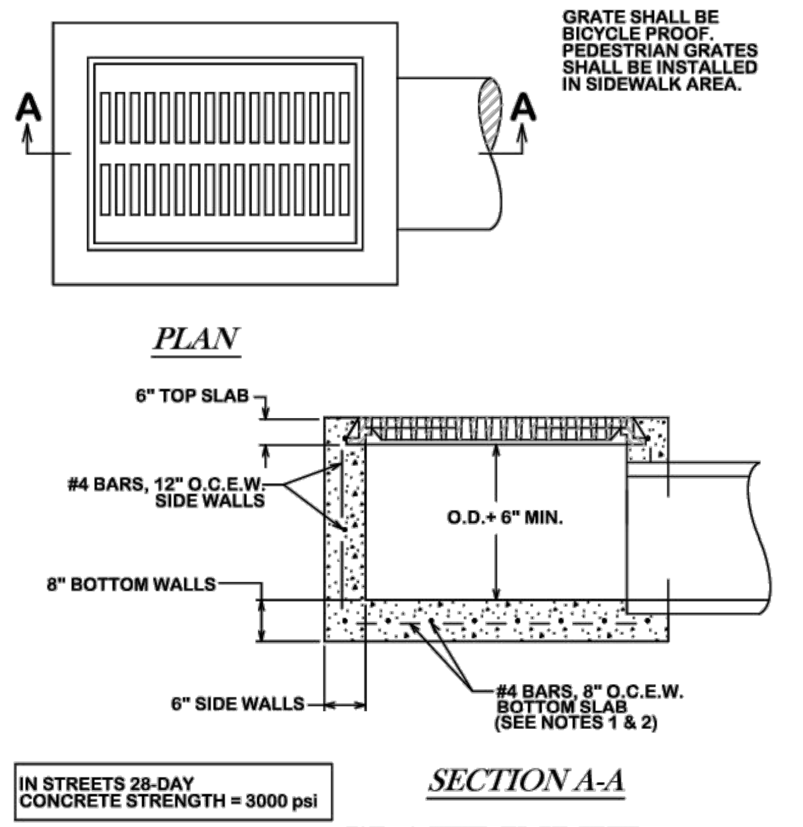
SINGLE GRATE INLET

D1-01


28-DAY CONCRETE STRENGTH = ~~3000~~ 3500 psi
PIPE CONNECTION
FLOW
MAIN LINE
O.D. + 6" MIN. 3' SQUARE
REFER TO D4-00
PLAN
O.D. + 6" MIN.
6" TOP SLAB
#4 BARS, 12" O.C.E.W. SIDE WALLS
3" MIN. EACH SIDE
6" SIDE WALLS
8" BOTTOM SLAB
#4 BARS, 8" O.C.E.W. BOTTOM SLAB (SEE NOTES 1 & 2)
SECTION A-A

STORM SEWER JUNCTION BOX

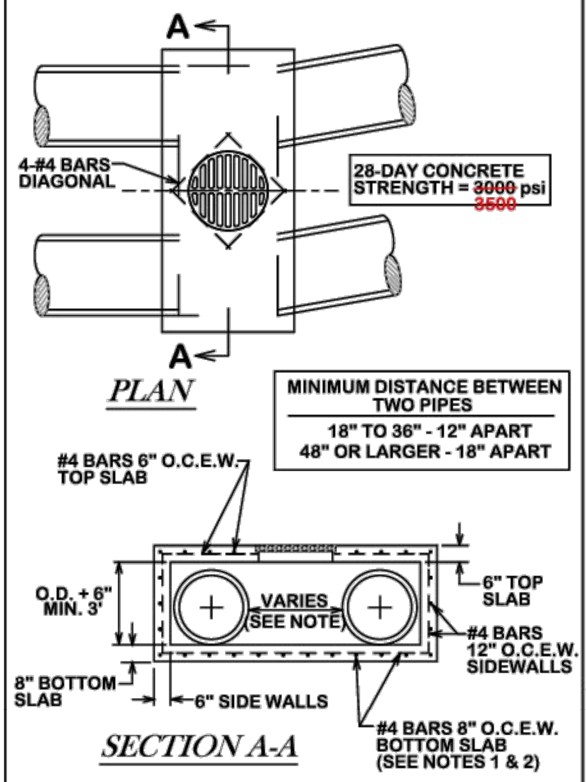
D1-02


GRATE SHALL BE BICYCLE PROOF. PEDESTRIAN GRATES SHALL BE INSTALLED IN SIDEWALK AREA.
PLAN
6" TOP SLAB
#4 BARS, 12" O.C.E.W. SIDE WALLS
O.D. + 6" MIN.
8" BOTTOM WALLS
6" SIDE WALLS
#4 BARS, 8" O.C.E.W. BOTTOM SLAB (SEE NOTES 1 & 2)
SECTION A-A

IN STREETS 28-DAY CONCRETE STRENGTH = 3000 psi

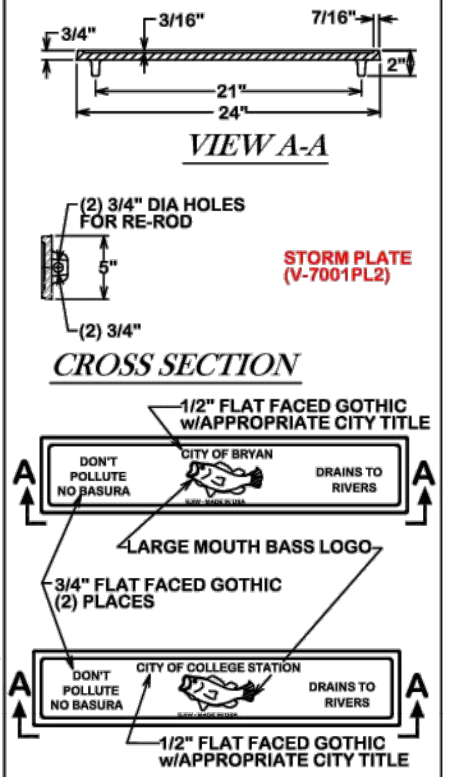
GRATE INLET

D1-03


4-#4 BARS DIAGONAL
28-DAY CONCRETE STRENGTH = ~~3000~~ 3500 psi
PLAN
MINIMUM DISTANCE BETWEEN TWO PIPES
18" TO 36" - 12" APART
48" OR LARGER - 18" APART
#4 BARS 6" O.C.E.W. TOP SLAB
O.D. + 6" MIN. 3'
VARIES (SEE NOTE)
6" TOP SLAB
#4 BARS 12" O.C.E.W. SIDEWALLS
8" BOTTOM SLAB
6" SIDE WALLS
#4 BARS 8" O.C.E.W. BOTTOM SLAB (SEE NOTES 1 & 2)
SECTION A-A

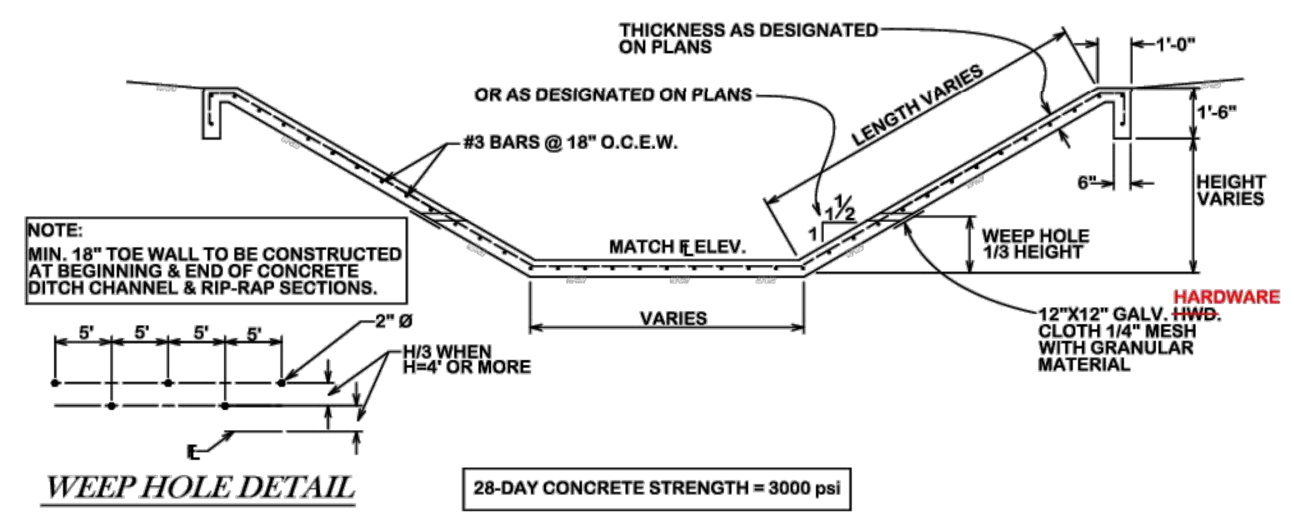
DOUBLE BARREL INLET

D1-04


3/4"
3/16"
7/16"
21"
24"
VIEW A-A
(2) 3/4" DIA HOLES FOR RE-ROD
STORM PLATE (V-7001PL2)
(2) 3/4"
CROSS SECTION
1/2" FLAT FACED GOTHIC w/APPROPRIATE CITY TITLE
CITY OF BRYAN
DON'T POLLUTE NO BASURA
DRAINS TO RIVERS
LARGE MOUTH BASS LOGO
3/4" FLAT FACED GOTHIC (2) PLACES
CITY OF COLLEGE STATION
1/2" FLAT FACED GOTHIC w/APPROPRIATE CITY TITLE

BASS LOGO PLATE

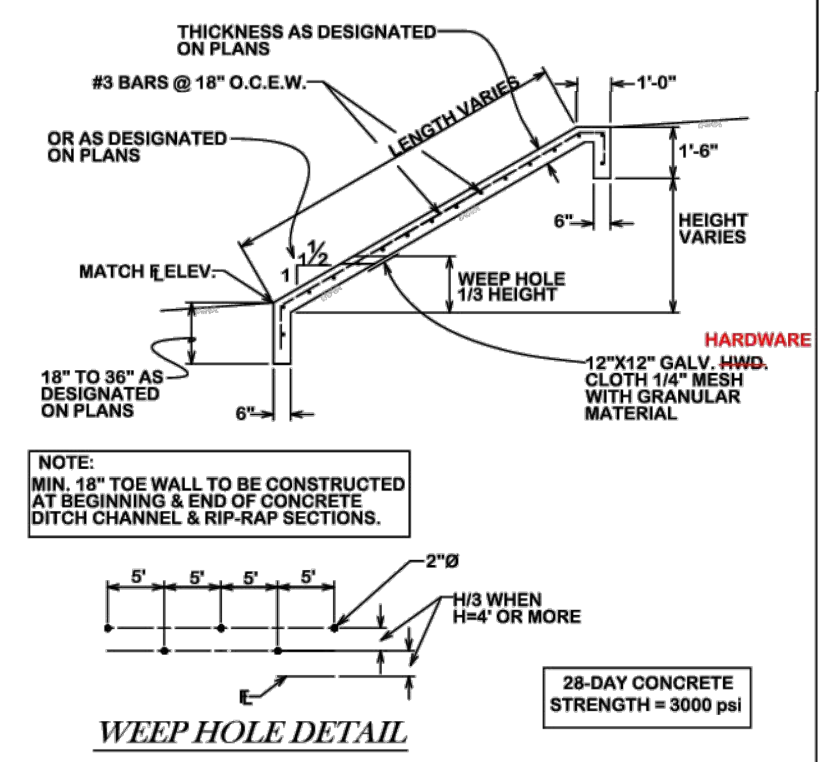
D1-05


THICKNESS AS DESIGNATED ON PLANS
OR AS DESIGNATED ON PLANS
#3 BARS @ 18" O.C.E.W.
LENGTH VARIES
1'-0"
1'-6"
HEIGHT VARIES
MATCH ℄ ELEV.
VARIES
WEEP HOLE 1/3 HEIGHT
HARDWARE
12"X12" GALV. ~~HWD.~~ CLOTH 1/4" MESH WITH GRANULAR MATERIAL
NOTE: MIN. 18" TOE WALL TO BE CONSTRUCTED AT BEGINNING & END OF CONCRETE DITCH CHANNEL & RIP-RAP SECTIONS.
2" Ø
H/3 WHEN H=4' OR MORE
WEEP HOLE DETAIL

28-DAY CONCRETE STRENGTH = 3000 psi

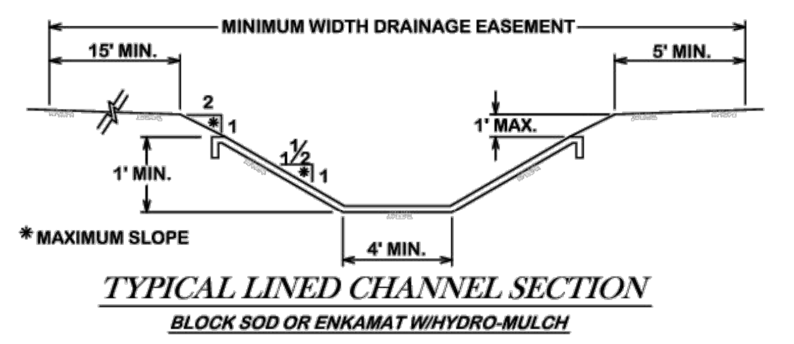
CONCRETE CHANNEL LINING

D2-00


THICKNESS AS DESIGNATED ON PLANS
#3 BARS @ 18" O.C.E.W.
OR AS DESIGNATED ON PLANS
LENGTH VARIES
1'-0"
1'-6"
HEIGHT VARIES
MATCH ℄ ELEV.
WEEP HOLE 1/3 HEIGHT
HARDWARE
12"X12" GALV. ~~HWD.~~ CLOTH 1/4" MESH WITH GRANULAR MATERIAL
18" TO 36" AS DESIGNATED ON PLANS
NOTE: MIN. 18" TOE WALL TO BE CONSTRUCTED AT BEGINNING & END OF CONCRETE DITCH CHANNEL & RIP-RAP SECTIONS.
2" Ø
H/3 WHEN H=4' OR MORE
WEEP HOLE DETAIL
28-DAY CONCRETE STRENGTH = 3000 psi

CONCRETE RIP-RAP

D2-01

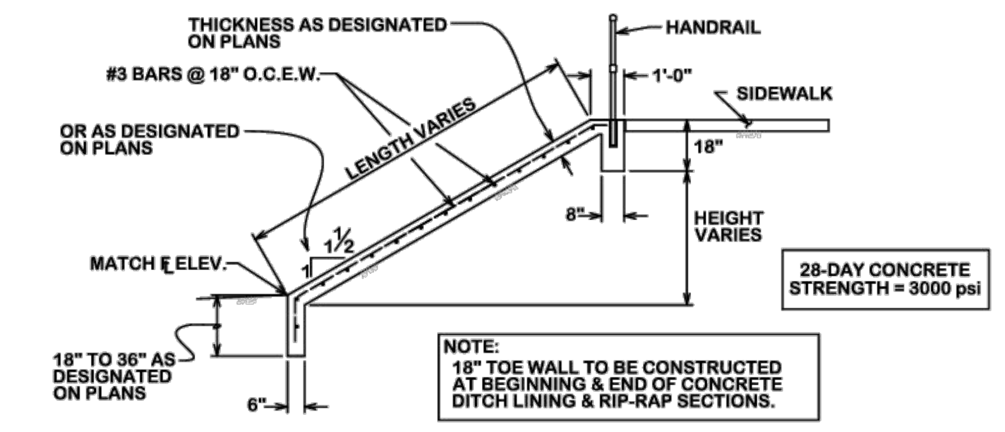

MINIMUM WIDTH DRAINAGE EASEMENT
15' MIN.
5' MIN.
1' MIN.
1' MAX.
4' MIN.
* MAXIMUM SLOPE

TYPICAL LINED CHANNEL SECTION

BLOCK SOD OR ENKAMAT W/HYDRO-MULCH

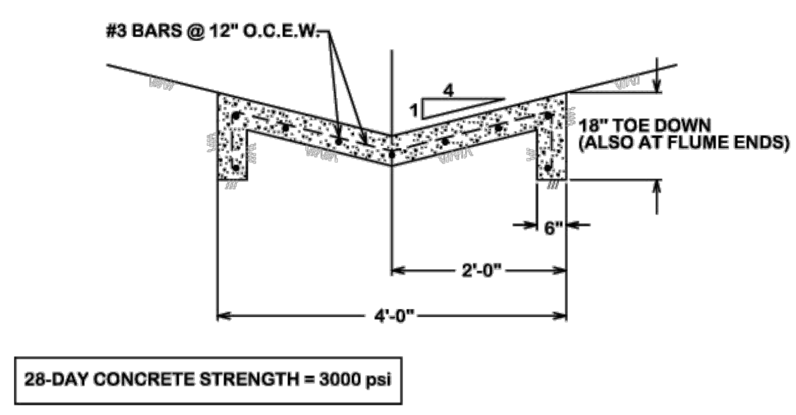
STANDARD CHANNEL SECTION

D2-02


THICKNESS AS DESIGNATED ON PLANS
HANDRAIL
#3 BARS @ 18" O.C.E.W.
1'-0"
SIDEWALK
OR AS DESIGNATED ON PLANS
LENGTH VARIES
18"
HEIGHT VARIES
MATCH ℄ ELEV.
28-DAY CONCRETE STRENGTH = 3000 psi
18" TO 36" AS DESIGNATED ON PLANS
NOTE: 18" TOE WALL TO BE CONSTRUCTED AT BEGINNING & END OF CONCRETE DITCH LINING & RIP-RAP SECTIONS.

CONCRETE SIDE SLOPE PROTECTION

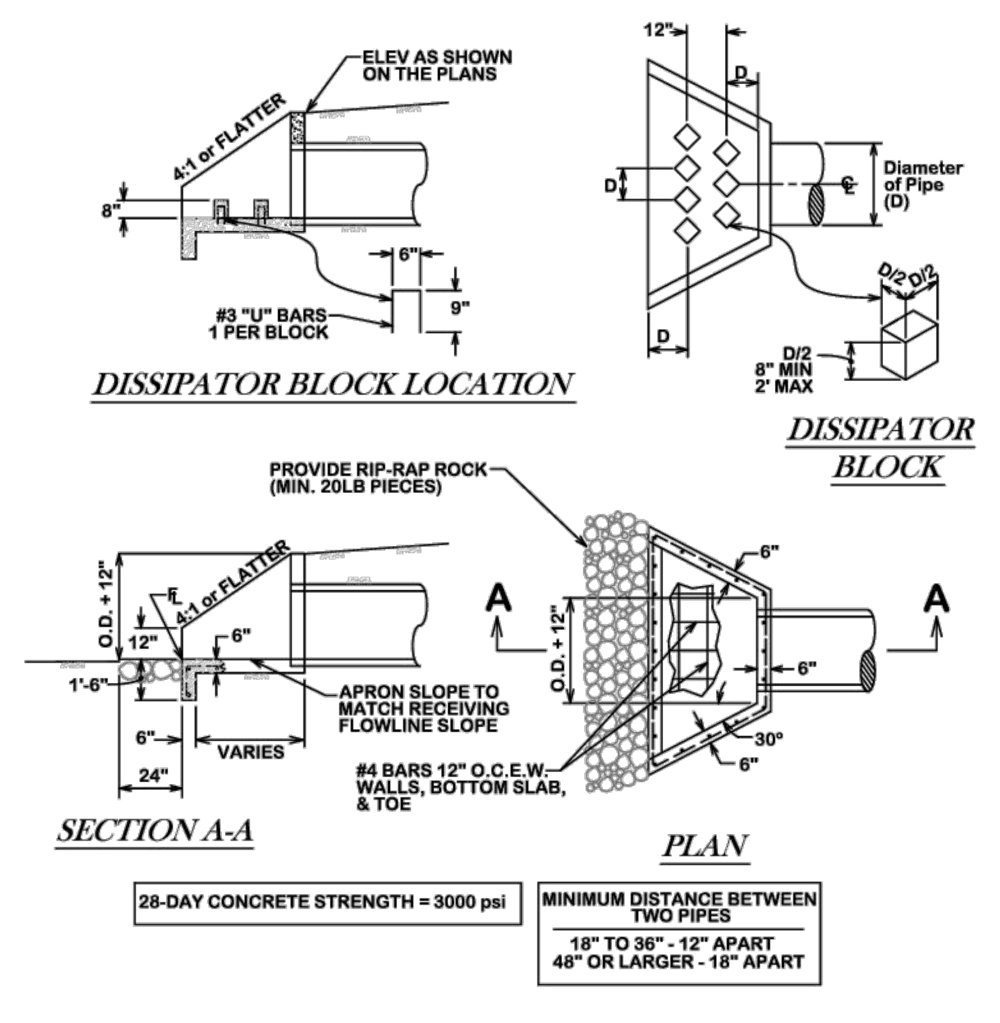
D2-03


#3 BARS @ 12" O.C.E.W.
18" TOE DOWN (ALSO AT FLUME ENDS)
2'-0"
4'-0"
28-DAY CONCRETE STRENGTH = 3000 psi

STANDARD FLUME SECTION

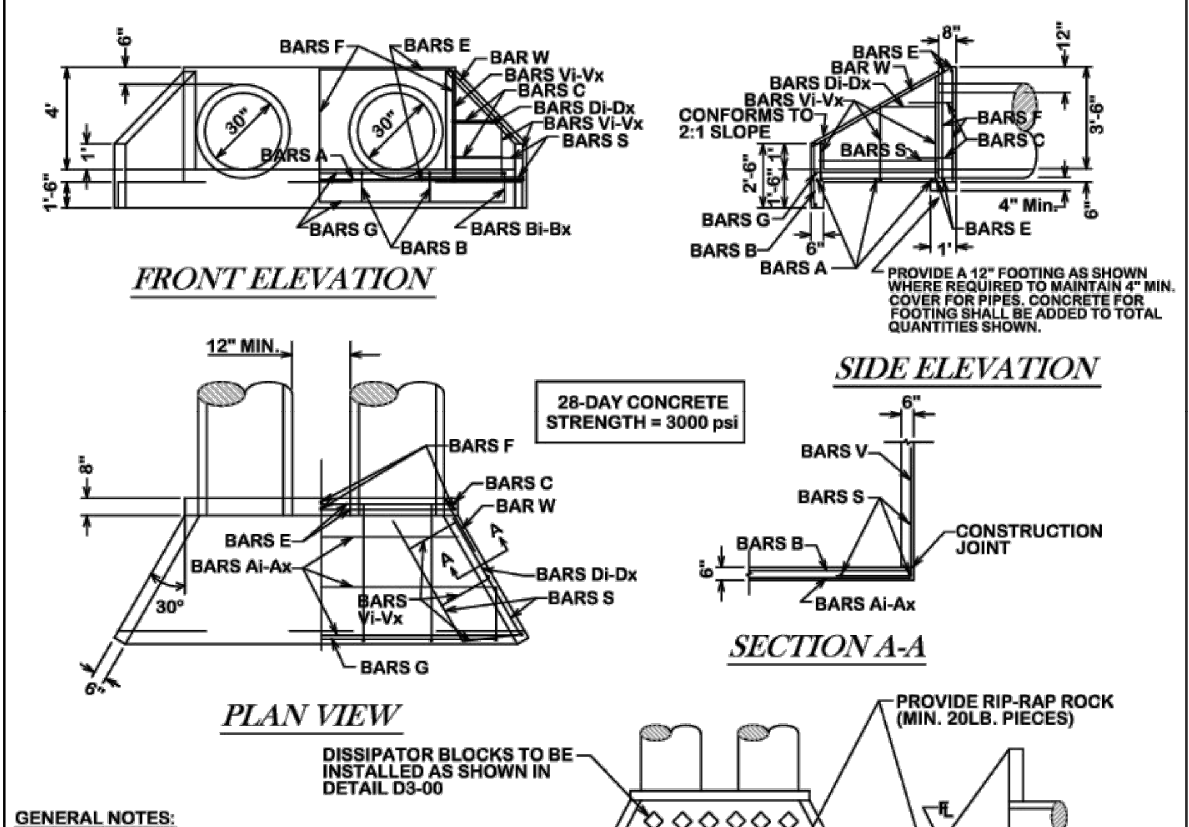
EXPANSION JOINTS AT 60' O.C.

D2-04


ELEV AS SHOWN ON THE PLANS
4:1 or FLATTER
#3 "U" BARS 1 PER BLOCK
DISSIPATOR BLOCK LOCATION
Diameter of Pipe (D)
D/2 MIN 2' MAX
DISSIPATOR BLOCK
PROVIDE RIP-RAP ROCK (MIN. 20LB PIECES)
O.D. + 12"
APRON SLOPE TO MATCH RECEIVING FLOWLINE SLOPE
VARIES
#4 BARS 12" O.C.E.W. WALLS, BOTTOM SLAB, & TOE
SECTION A-A
PLAN
28-DAY CONCRETE STRENGTH = 3000 psi
MINIMUM DISTANCE BETWEEN TWO PIPES
18" TO 36" - 12" APART
48" OR LARGER - 18" APART

TYPICAL CONCRETE HEADWALL & END WALL WITH WINGS

D3-00


BARS F
BARS E
BAR W
BARS Vi-Vx
BARS C
BARS Di-Dx
BARS S
BARS G
BARS B
BARS Bi-Bx
FRONT ELEVATION
CONFORMS TO 2:1 SLOPE
PROVIDE A 12" FOOTING AS SHOWN WHERE REQUIRED TO MAINTAIN 4" MIN. COVER FOR PIPE. CONCRETE FOR FOOTING SHALL BE ADDED TO TOTAL QUANTITIES SHOWN.
SIDE ELEVATION
12" MIN.
28-DAY CONCRETE STRENGTH = 3000 psi
BARS Ai-Ax
30º
6"
PLAN VIEW
CONSTRUCTION JOINT
SECTION A-A
DISSIPATOR BLOCKS TO BE INSTALLED AS SHOWN IN DETAIL D3-00
PROVIDE RIP-RAP ROCK (MIN. 20LB. PIECES)
24"

GENERAL NOTES:

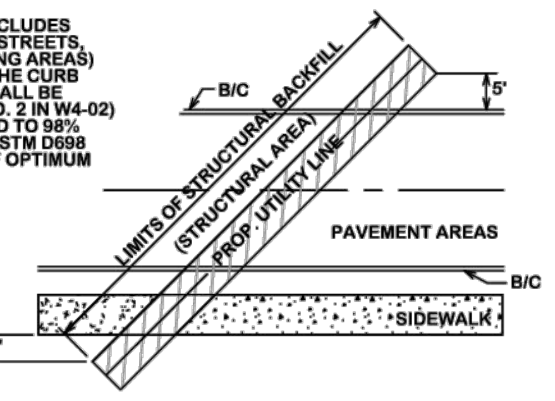
ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4". REINFORCING STEEL SHALL BE PLACED WITH THE CENTER OF THE OUTSIDE LAYER OF BARS 2" FROM THE SURFACE OF THE CONCRETE. TOTAL QUANTITIES INCLUDE ONE 20 DIAMETER LAP FOR ALL BARS OVER 6'-0" IN LENGTH.

REINFORCING STEEL FOR ONE HEADWALL										
BARS Ai-Ax #4@12"±	BARS B #3@18"±	BARS Bi-Bx #3@18"±	BARS C #4@12"±	BARS Di-Dx #3@12"±	BARS E #5	BARS F #4	BARS G #3	BARS S #4	BARS Vi-Vx #4@12"±	BARS W #5

CONCRETE HEADWALL FOR 2 PIPES

D3-01

STRUCTURAL BACKFILL AREA INCLUDES ALL PAVED AREAS (SIDEWALKS, STREETS, ALLEYS, DRIVEWAYS,AND PARKING AREAS) AND SHALL EXTEND 5' BEYOND THE CURB LINE. STRUCTURALBACKFILL SHALL BE CEMENT STABILIZED (OPTION NO. 2 IN W4-02) OR EXCAVATED SOIL COMPACTED TO 98% MAXIMUM DRY DENSITY AS PER ASTM D698 WITHIN OPTIMUM TO +4% WET OF OPTIMUM (OPTION NO. 1 IN W4-02)

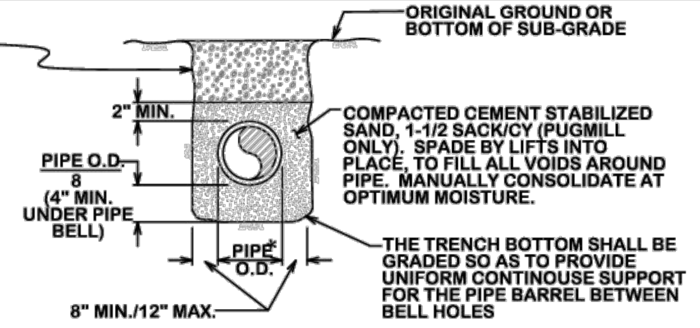

B/C
5'
LIMITS OF STRUCTURAL BACKFILL
(STRUCTURAL AREA)
PROP. UTILITY LINE
PAVEMENT AREAS
B/C
SIDEWALK
5'

STRUCTURAL BACKFILL AREA

D3-02

SELECT MATERIAL

MATERIAL EXCAVATED FROM THE DITCH, (WHICH IS FREE OF ROCKS, LUMPS, CLODS, OR DEBRIS LARGER THAN TWO (2) INCHES IN THE LARGEST DIMENSION, COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NON-STRUCTURAL AREAS (ie...YARDS, PASTURES, EASEMENTS) AND TO A MINIMUM OF 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D698 (STANDARD) AT A MOISTURE CONTENT WITHIN OPTIMUM TO +4% OF OPTIMUM UNDER NEW STREET AREAS AND STREETS TO BE RECONSTRUCTED.


ORIGINAL GROUND OR BOTTOM OF SUB-GRADE
2" MIN.
PIPE O.D. / 8
(4" MIN. UNDER PIPE BELL)
COMPACTED CEMENT STABILIZED SAND, 1-1/2 SACK/CY (PUGMILL ONLY). SPADE BY LIFTS INTO PLACE, TO FILL ALL VOIDS AROUND PIPE. MANUALLY CONSOLIDATE AT OPTIMUM MOISTURE.
PIPE* O.D.
THE TRENCH BOTTOM SHALL BE GRADED SO AS TO PROVIDE UNIFORM CONTINOUSE SUPPORT FOR THE PIPE BARREL BETWEEN BELL HOLES
8" MIN./12" MAX.

* PE MUST DESIGN TRENCH DETAIL SITE SPECIFIC FOR HDPE PIPE.

HDPE PIPE IS NOT TO BE USED ~~UNDER PUBLIC STREET PAVEMENT~~ WITHIN STRUCTURAL BACKFILL AREA

CEMENT STABILIZED SAND AS A MINIMUM WILL ALWAYS BE REQUIRED.

BEDDING AND TRENCH FOR REINFORCED CONCRETE PIPE AND BOX CULVERTS

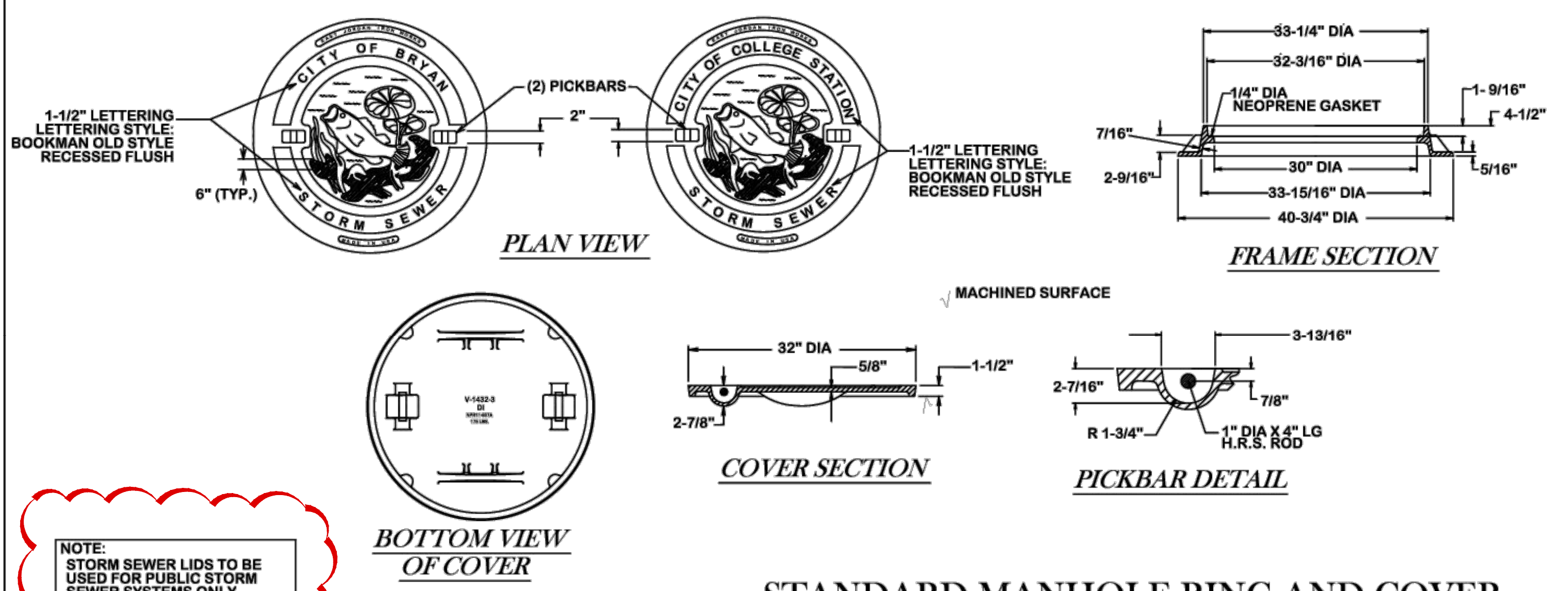
D3-03

GENERAL NOTES:

1. BASE THICKNESS AND FOUNDATION SHALL BE AS FOLLOWS:

INLET DEPTH (FT.) (MEASURED FROM FLOWLINE TO FINAL GRADE)	BASE THICKNESS
0 - 12	8"
12 AND OVER	12"

2. DEPTHS GREATER THAN 12' WILL REQUIRE 2 MATS OF REINFORCING STEEL IN THE BASE.
3. ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED.
4. APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

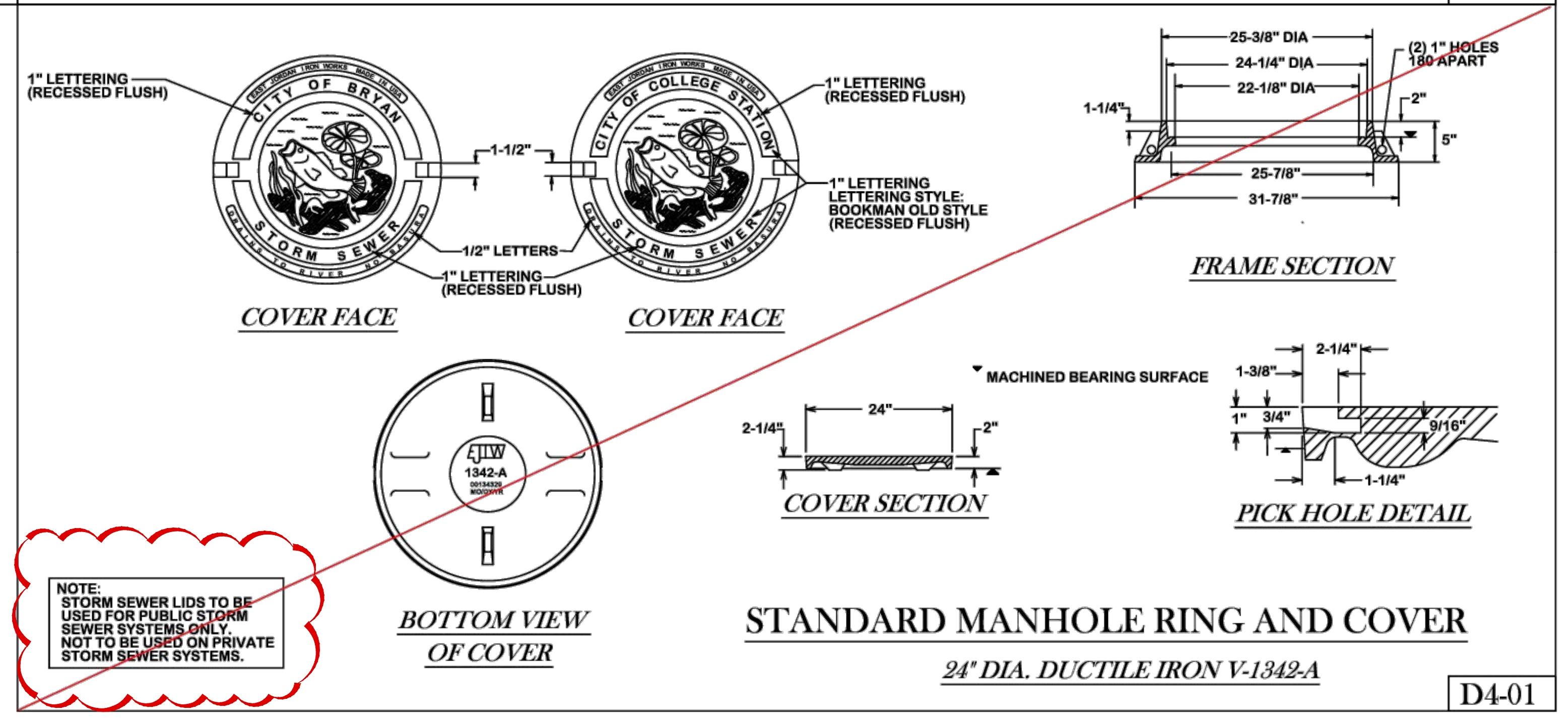

1-1/2" LETTERING LETTERING STYLE: BOOKMAN OLD STYLE RECESSED FLUSH
CITY OF BRYAN
STORM SEWER
(2) PICKBARS
2"
6" (TYP.)
CITY OF COLLEGE STATION
1-1/2" LETTERING LETTERING STYLE: BOOKMAN OLD STYLE RECESSED FLUSH
PLAN VIEW
33-1/4" DIA
32-3/16" DIA
1/4" DIA NEOPRENE GASKET
1-9/16"
4-1/2"
7/16"
2-9/16"
30" DIA
5/16"
33-15/16" DIA
40-3/4" DIA
FRAME SECTION
MACHINED SURFACE
32" DIA
5/8"
1-1/2"
2-7/8"
COVER SECTION
3-13/16"
2-7/16"
7/8"
R 1-3/4"
1" DIA X 4" LG H.R.S. ROD
PICKBAR DETAIL
BOTTOM VIEW OF COVER

NOTE:
STORM SEWER LIDS TO BE USED FOR PUBLIC STORM SEWER SYSTEMS ONLY.
NOT TO BE USED ON PRIVATE STORM SEWER SYSTEMS.

STANDARD MANHOLE RING AND COVER

32" DIA. DUCTILE IRON V-1432-3

D4-00


1" LETTERING (RECESSED FLUSH)
CITY OF BRYAN
EAST JORDAN IRON WORKS MADE IN USA
STORM SEWER
1-1/2"
1/2" LETTERS
1" LETTERING (RECESSED FLUSH)
COVER FACE
1" LETTERING (RECESSED FLUSH)
CITY OF COLLEGE STATION
1" LETTERING LETTERING STYLE: BOOKMAN OLD STYLE (RECESSED FLUSH)
COVER FACE
25-3/8" DIA
24-1/4" DIA
22-1/8" DIA
(2) 1" HOLES 180 APART
1-1/4"
2"
5"
25-7/8"
31-7/8"
FRAME SECTION
MACHINED BEARING SURFACE
2-1/4"
24"
2"
COVER SECTION
2-1/4"
1-3/8"
1"
3/4"
9/16"
1-1/4"
PICK HOLE DETAIL
1342-A
BOTTOM VIEW OF COVER

NOTE:
STORM SEWER LIDS TO BE USED FOR PUBLIC STORM SEWER SYSTEMS ONLY.
NOT TO BE USED ON PRIVATE STORM SEWER SYSTEMS.

STANDARD MANHOLE RING AND COVER

24" DIA. DUCTILE IRON V-1342-A

D4-01

REVISIONS:

BRYAN - COLLEGE STATION STANDARD DRAINAGE DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY: B.I.
DATE: 12-2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
D
SHEET 1 OF 1

MITCHELL
M&M
MORGAN

T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443

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

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

www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

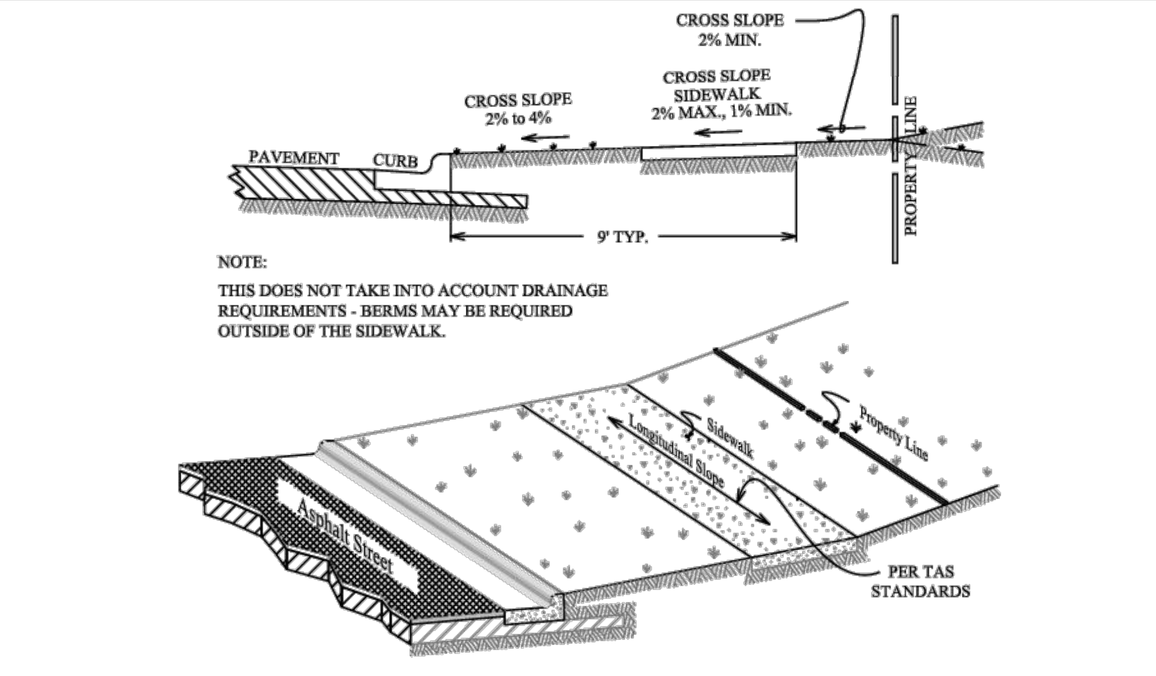
APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

B/CS STANDARD DRAINAGE DETAILS
BRAZOS OAKS PHASE II

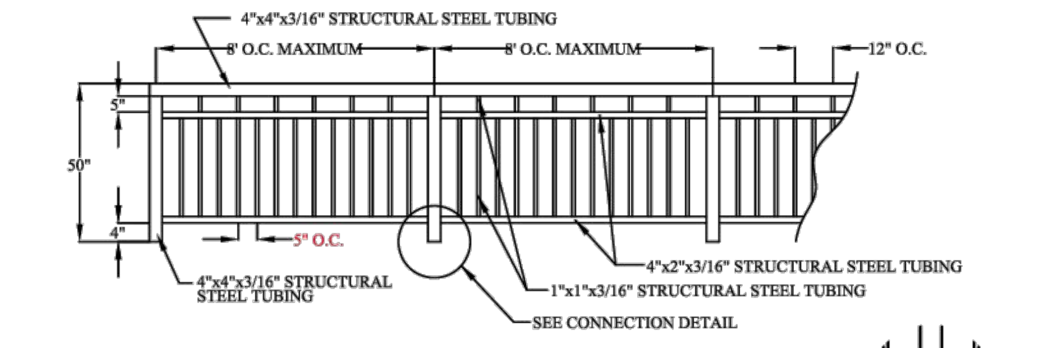
C-504


CROSS SLOPE 2% MIN.
CROSS SLOPE 2% to 4%
CROSS SLOPE SIDEWALK 2% MAX., 1% MIN.
PAVEMENT
CURB
9' TYP.
PROPERTY LINE
PER TAS STANDARDS

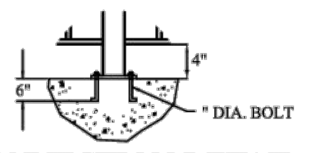
NOTE:
THIS DOES NOT TAKE INTO ACCOUNT DRAINAGE REQUIREMENTS - BERMS MAY BE REQUIRED OUTSIDE OF THE SIDEWALK.

SIDEWALK SLOPE REQUIREMENTS

SW1-00


4"x4"x3/16" STRUCTURAL STEEL TUBING
6' O.C. MAXIMUM
6' O.C. MAXIMUM
12" O.C.
5" O.C.
4"x2"x3/16" STRUCTURAL STEEL TUBING
6"x4"x3/16" STRUCTURAL STEEL TUBING
1"x1"x3/16" STRUCTURAL STEEL TUBING
SEE CONNECTION DETAIL

TYPICAL PEDESTRIAN GUARDRAIL



CONNECTION DETAIL

SW1-01

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

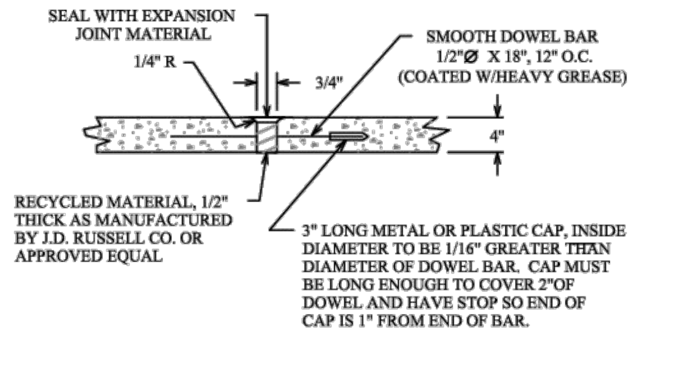
ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

ALL TRAFFIC SIGNALS AND APPURTENANCES, AND ALL PAVEMENT MARKINGS AND MARKERS SHALL BE IN ACCORDANCE WITH TXDOT STANDARDS

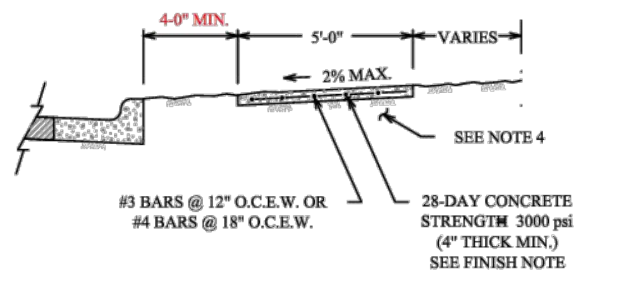
REFER TO SPEC 31 17 23.23 (PAVEMENT MARKINGS) FOR ADDITIONAL LOCAL REQUIREMENTS.

NOTES:

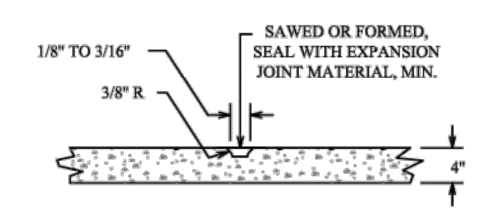
1. SIDEWALK PLACEMENT SHALL BE IN ACCORDANCE WITH B/CS UNIFIED DESIGN GUIDELINES.
2. FINISH: LIGHT BROOM FINISH. JOINTS TO BE TOOLED 1" DEEP AT AN INTERVAL EQUAL TO THE SIDEWALK WIDTH. EXPANSION JOINTS @ 40' O.C.,CONTRACTION JOINTS @ 4' O.C.
3. DOWEL IN AND TIE TO ANY CONCRETE STRUCTURE ADJACENT TO SIDEWALK (DRIVEWAY, INLET BOX, CURB, JUNCTION BOX, ETC.) WITH #3 x 12" BARS @ 12" O.C. OR #4 x 12" BARS @ 18" O.C.
4. COMPACTION: COMPACTED SUBGRADE MATERIAL COMPACTED TO A DENSITY AT LEAST 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY PROCTOR COMPACTION TEST ASTM D698 (STANDARD) AND SHALL BE 0-4% WET OF THE OPTIMUM MOISTURE CONTENT
5. A MINIMUM CLEAR PEDESTRIAN WIDTH AS DEFINED BY TAS AND ADA SHALL BE PROVIDED FOR ENTIRE LENGTH OF SIDEWALK.


SEAL WITH EXPANSION JOINT MATERIAL
1/4" R
3/4"
SMOOTH DOWEL BAR 1/2"Ø X 18", 12" O.C. (COATED W/HEAVY GREASE)
4"
RECYCLED MATERIAL, 1/2" THICK AS MANUFACTURED BY J.D. RUSSELL CO. OR APPROVED EQUAL
3" LONG METAL OR PLASTIC CAP, INSIDE DIAMETER TO BE 1/16" GREATER THAN DIAMETER OF DOWEL BAR. CAP MUST BE LONG ENOUGH TO COVER 2"OF DOWEL AND HAVE STOP SO END OF CAP IS 1" FROM END OF BAR.

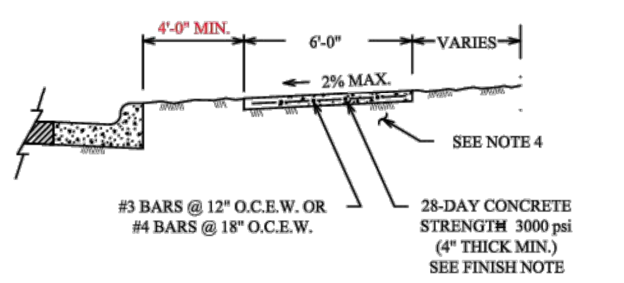
SIDEWALK EXPANSION & CONSTRUCTION JOINT


4-0" MIN.
5'-0"
VARIES
2% MAX.
SEE NOTE 4
#3 BARS @ 12" O.C.E.W. OR #4 BARS @ 18" O.C.E.W.
28-DAY CONCRETE STRENGTH 3000 psi (4" THICK MIN.) SEE FINISH NOTE

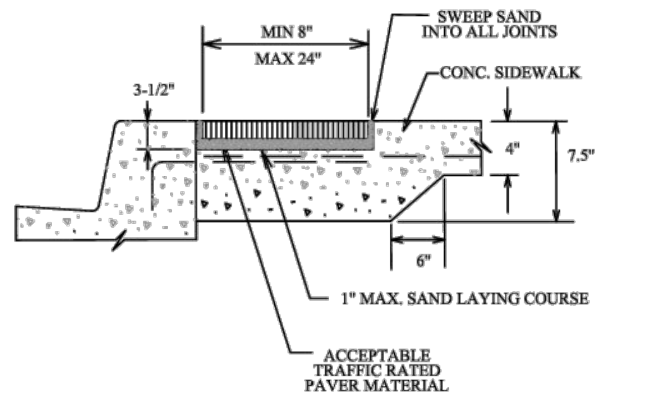
ALONG LOCAL STREETS


1/8" TO 3/16"
3/8" R
SAWED OR FORMED, SEAL WITH EXPANSION JOINT MATERIAL, MIN.

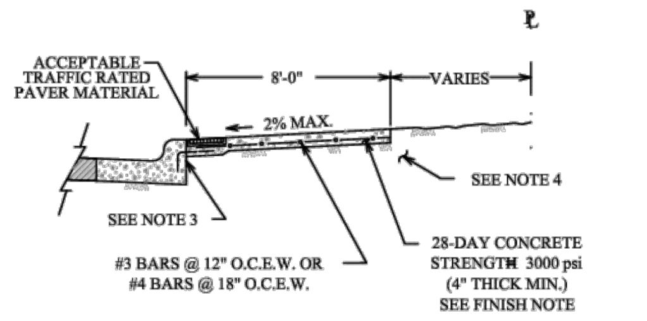
SIDEWALK CONTRACTION JOINT


6'-0" MIN.
6'-0"
VARIES
2% MAX.
SEE NOTE 4
#3 BARS @ 12" O.C.E.W. OR #4 BARS @ 18" O.C.E.W.
28-DAY CONCRETE STRENGTH 3000 psi (4" THICK MIN.) SEE FINISH NOTE

ALONG MINOR COLLECTORS AND LARGER


MIN 8"
MAX 24"
SWEEP SAND INTO ALL JOINTS
CONC. SIDEWALK
3-1/2"
6"
7.5"
6"
1" MAX. SAND LAYING COURSE
ACCEPTABLE TRAFFIC RATED PAVER MATERIAL

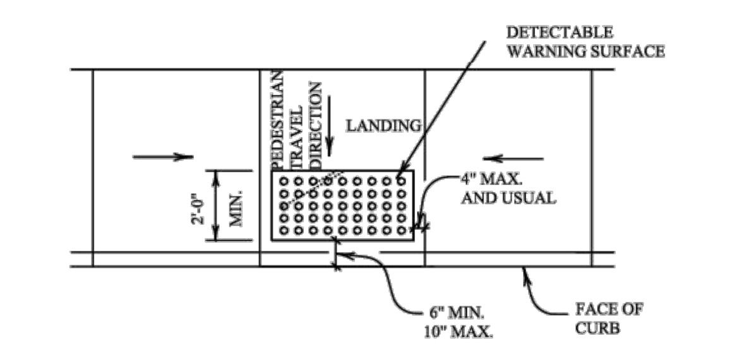
SIDEWALK PAVER SECTION


ACCEPTABLE TRAFFIC RATED PAVER MATERIAL
8'-0"
VARIES
2% MAX.
SEE NOTE 4
SEE NOTE 3
#3 BARS @ 12" O.C.E.W. OR #4 BARS @ 18" O.C.E.W.
28-DAY CONCRETE STRENGTH 3000 psi (4" THICK MIN.) SEE FINISH NOTE

ALONG MINOR COLLECTORS AND LARGER

CONCRETE SIDEWALK

SW1-02


DETECTABLE WARNING SURFACE
PEDESTRIAN TRAVEL DIRECTION
LANDING
2'-0" MIN.
4" MAX. AND USUAL
6" MIN. 10" MAX.
FACE OF CURB

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE

SW2-00

DETECTABLE WARNINGS GENERAL NOTES

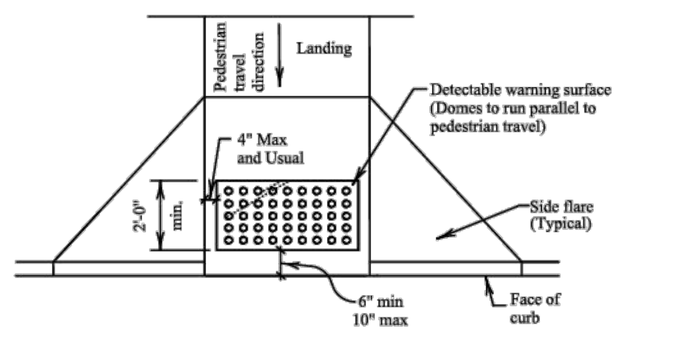
1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 4.29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. SHADED AREAS ON SHEETS 3 AND 4 INDICATE THE APPROXIMATE LOCATION FOR THE DETECABLE WARNING SURFACE FOR EACH CURB RAMP TYPE.
5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
6. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
7. ACCEPTABLE PAVER MATERIAL SHALL BE CLAY, VITRIFIED POLYMER COMPOSITE, PRECAST POLYMER CONCRETE, AND CONCRETE.

SW2-GN00

CROSSWALKS GENERAL NOTES

1. CROSSWALK MARKINGS ARE IMPORTANT TRAFFIC CONTROL DEVICES AT CONTROLLED INTERSECTIONS. THESE DEVICES IDENTIFY THE APPROPRIATE LOCATION FOR PEDESTRIANS TO CROSS THE INTERSECTION AS WELL AS INFORMING DRIVERS WHERE PEDESTRIANS MAYBE PRESENT. NOT ALL LOCATIONS NEED THE CROSSWALKS MARKED; HOWEVER, TYPICALLY COLLECTOR AND ARTERIAL STREETS DO. AS STATED IN THE TMUTCD, AN ENGINEERING STUDY SHOULD BE PERFORMED BEFORE CROSSWALKS ARE INSTALLED AT LOCATIONS OTHER THAN CONTROLLED INTERSECTIONS.
2. THE CITY OF BRYAN'S PREFERENCE FOR MARKING CROSSWALKS IS THE LONGITUDINAL (OR "LADDER" STYLE). THE CITY OF COLLEGE STATION'S PREFERENCE IS THE TYPICAL "TRANSVERSE" STYLE; HOWEVER, IN THE NORTHGATE AREA, ADJACENT TO SCHOOL OR SCHOOL ZONES, AND OTHER HIGH PEDESTRIAN CROSSINGS, THE LONGITUDINAL (OR "LADDER" STYLE) IS PREFERRED. DEVIATION FROM THESE PREFERENCES WILL BE ALLOWED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
3. THE LONGITUDINAL "LADDER" STYLE MARKING SHALL BE 24" WIDE AND 8 FEET IN LENGTH, SPACED 48-INCHES APART. CONSIST OF 12-INCH WIDE, WHITE LONGITUDINAL LINES SPACED 24-INCHES APART. LONGITUDINALLY, THESE MARKINGS SHALL EXTEND 8 FEET. THE TRANSVERSE MARKINGS SHALL CONSIST OF TWO 12-INCH WIDE LINES SEPARATED BY 6 FEET OF UNMARKED PAVEMENT. ALL CROSSWALK PAVEMENT MARKINGS SHALL ALWAYS MEET TxDOT'S SPECIFICATION FOR TYPE I MARKINGS UNLESS OTHERWISE BE THERMOPLASTIC, UNLESS A DIFFERENT MATERIAL IS APPROVED BY THE CITY ENGINEER.
4. ADDITIONAL INFORMATION ABOUT CROSSWALK MARKINGS CAN BE FOUND IN THE TMUTCD.
5. CROSSWALKS WITH BRICK PAVERS, STAMPED ASPHALT, STAMPED CONCRETE, ETC., SHALL ALSO REQUIRE RETRO-REFLECTIVE, THERMOPLASTIC TRANSVERSE STRIPING.

SW2-GN01


Pedestrian travel direction
Landing
6" Max and Usual
2'-0" min.
Detectable warning surface (Domes to run parallel to pedestrian travel)
Side flare (Typical)
6" min 10" max
Face of curb

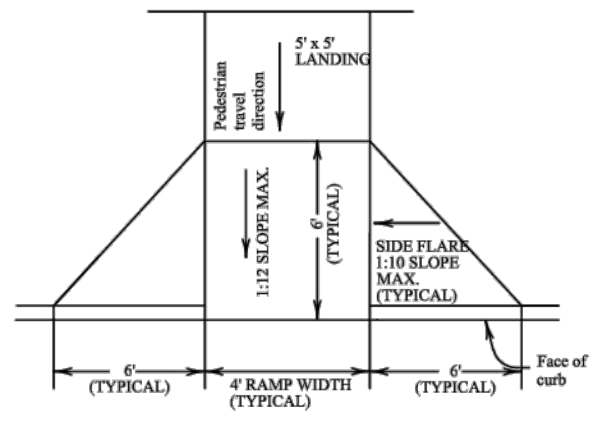
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

SW2-01

PEDESTRIAN FACILITIES GENERAL NOTES

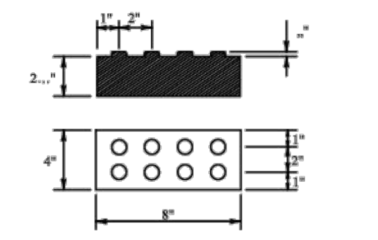
1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. LANDINGS SHALL BE A 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
3. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP IS 2%.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, EITHER BECAUSE THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR BECAUSE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED. OTHERWISE, PROVIDE FLARED SIDES.
6. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT RELECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC 68.102.
7. TO SERVE AS A PEDESTRIAN REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 5' WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
8. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
9. EXISTING FEATURES THAT COMPLY WITH TAS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
10. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER ON ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
11. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PREMOLD OR BOARD JOINT OF 3/4" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
12. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
13. FLARE SLOPE SHALL NOT EXCEED 10% MEASURED ALONG CURB LINE.

SW2-GN02

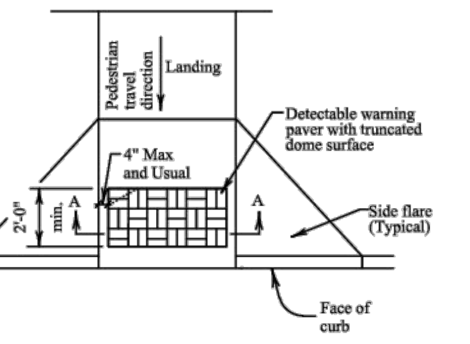

5' x 5' LANDING
Pedestrian travel direction
1:12 SLOPE MAX.
6' (TYPICAL)
SIDE FLARE 1:10 SLOPE MAX. (TYPICAL)
5' (TYPICAL)
4' RAMP WIDTH (TYPICAL)
6' (TYPICAL)
Face of curb

TYPICAL AMBULATORY RAMP W/ FLARED WINGS

SW2-02



DETECTABLE WARNING PAVER

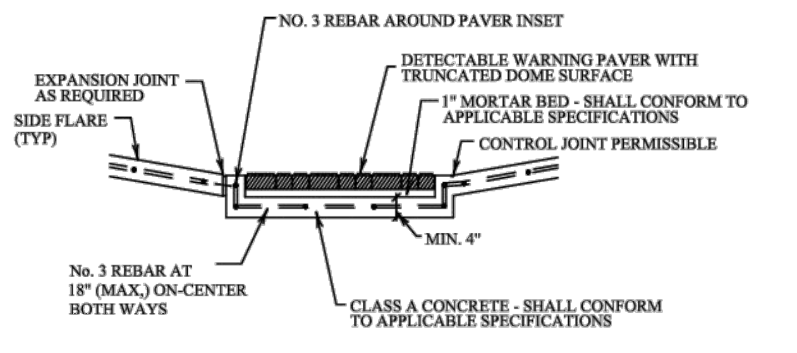

Pedestrian travel direction
Landing
Detectable warning paver with truncated dome surface
4" Max and Usual
2'-0" min.
A
A
Side flare (Typical)
Face of curb

TRUNCATED DOME PATTERN CURB RAMP

GENERAL NOTES (PAVERS)

FURNISH DETECTABLE WARNING PAVER UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.

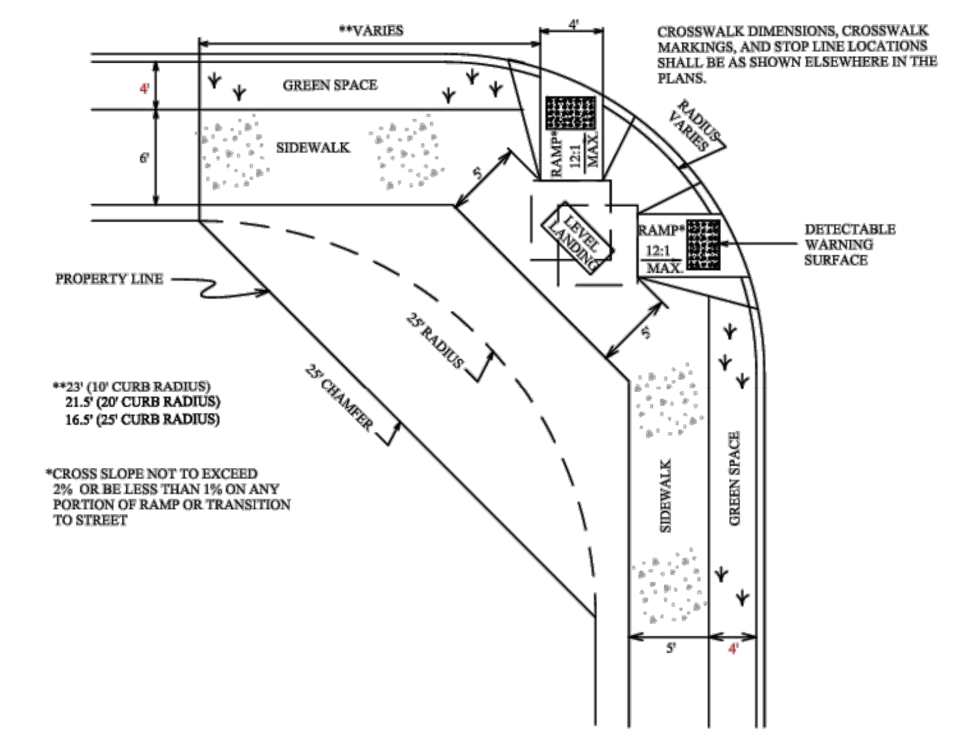
LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING PAVER UNITS USING A POWER SAW.


NO. 3 REBAR AROUND PAVER INSET
EXPANSION JOINT AS REQUIRED
SIDE FLARE (TYP)
DETECTABLE WARNING PAVER WITH TRUNCATED DOME SURFACE
1" MORTAR BED - SHALL CONFORM TO APPLICABLE SPECIFICATIONS
CONTROL JOINT PERMISSIBLE
MIN. 4"
No. 3 REBAR AT 18" (MAX.) ON-CENTER BOTH WAYS
CLASS A CONCRETE - SHALL CONFORM TO APPLICABLE SPECIFICATIONS

SECTION A-A

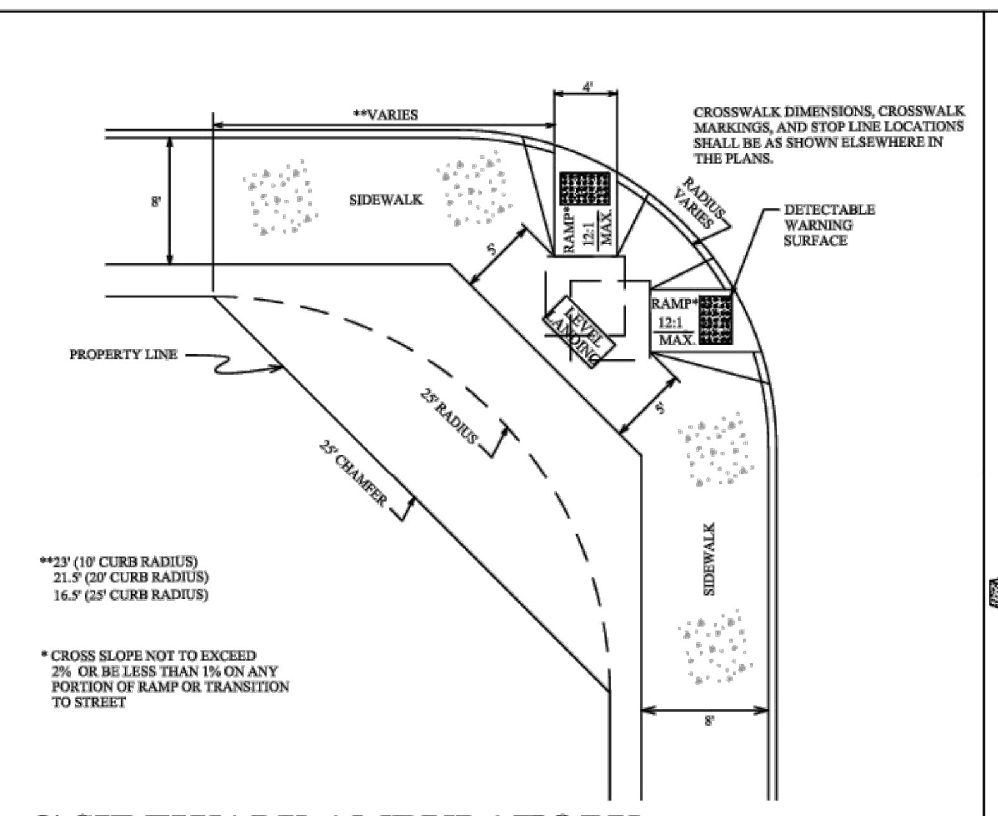
DETECTABLE WARNING PAVER

SW2-03


**VARIES
CROSSWALK DIMENSIONS, CROSSWALK MARKINGS, AND STOP LINE LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
GREEN SPACE
SIDEWALK
RAMP 12:1 MAX.
DETECTABLE WARNING SURFACE
PROPERTY LINE
25' RADIUS
25' CHAMFER
SIDEWALK
GREEN SPACE
**25' (10' CURB RADIUS) 21.5' (20' CURB RADIUS) 16.5' (25' CURB RADIUS)
*CROSS SLOPE NOT TO EXCEED 2% OR BE LESS THAN 1% ON ANY PORTION OF RAMP OR TRANSITION TO STREET

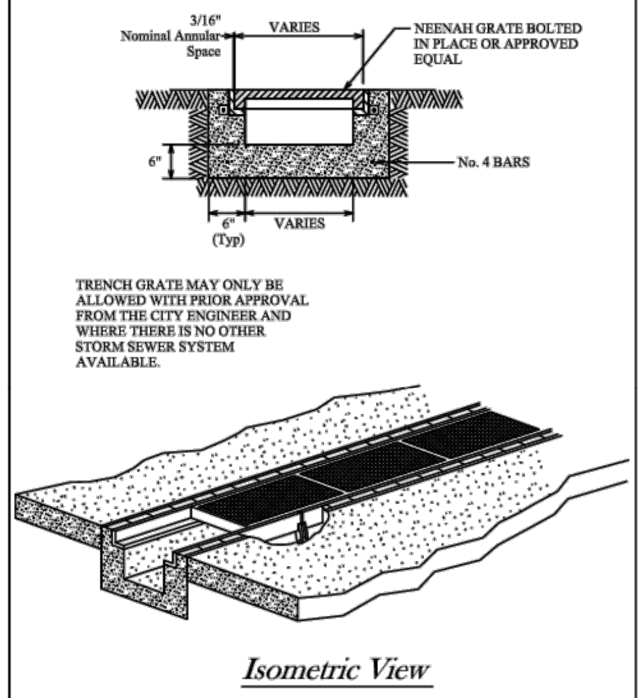
5'/6' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION

SW3-00


**VARIES
CROSSWALK DIMENSIONS, CROSSWALK MARKINGS, AND STOP LINE LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
SIDEWALK
DETECTABLE WARNING SURFACE
RAMP 12:1 MAX.
PROPERTY LINE
25' RADIUS
25' CHAMFER
SIDEWALK
**25' (10' CURB RADIUS) 21.5' (20' CURB RADIUS) 16.5' (25' CURB RADIUS)
* CROSS SLOPE NOT TO EXCEED 2% OR BE LESS THAN 1% ON ANY PORTION OF RAMP OR TRANSITION TO STREET

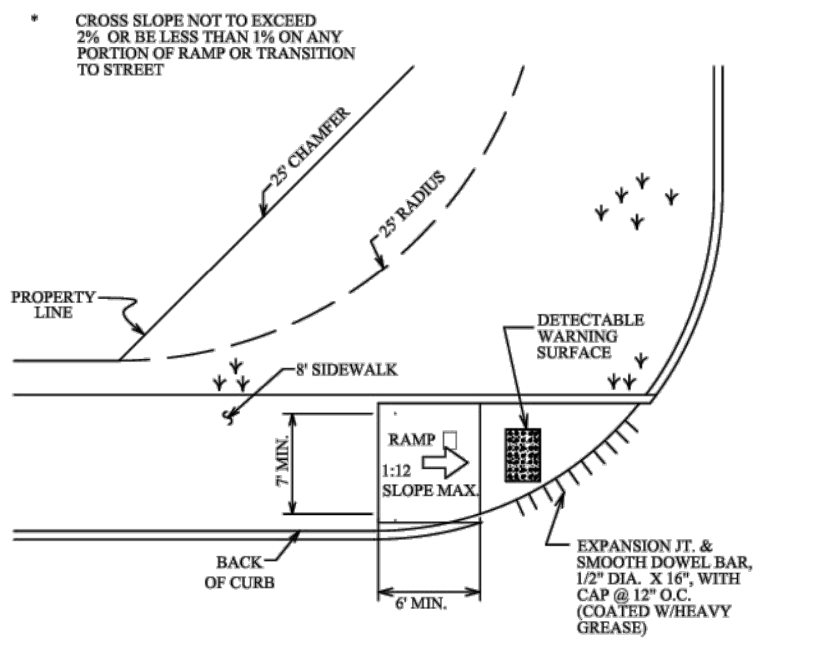
8' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION

SW3-01


3/16" Nominal Annular Space
VARIES
NEENAH GRATE BOLTED IN PLACE OR APPROVED EQUAL
No. 4 BARS
6"
VARIES
TRENCH GRATE MAY BE ALLOWED WITH PRIOR APPROVAL FROM THE CITY ENGINEER AND WHERE THERE IS NO OTHER STORM SEWER SYSTEM AVAILABLE.
Isometric View

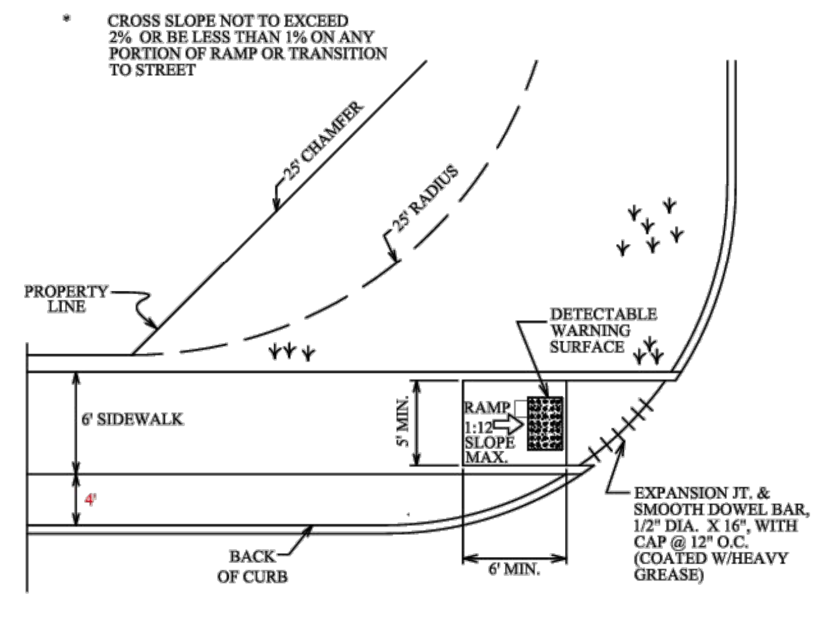
SIDEWALK DRAINAGE TRENCH GRATE

SW3-02


* CROSS SLOPE NOT TO EXCEED 2% OR BE LESS THAN 1% ON ANY PORTION OF RAMP OR TRANSITION TO STREET
25' CHAMFER
25' RADIUS
PROPERTY LINE
8' SIDEWALK
DETECTABLE WARNING SURFACE
RAMP 1:12 SLOPE MAX
5' MIN.
BACK OF CURB
6' MIN.
EXPANSION JT. & SMOOTH DOWEL BAR, 1/2" DIA. X 16", WITH CAP @ 12" O.C. (COATED W/HEAVY GREASE)

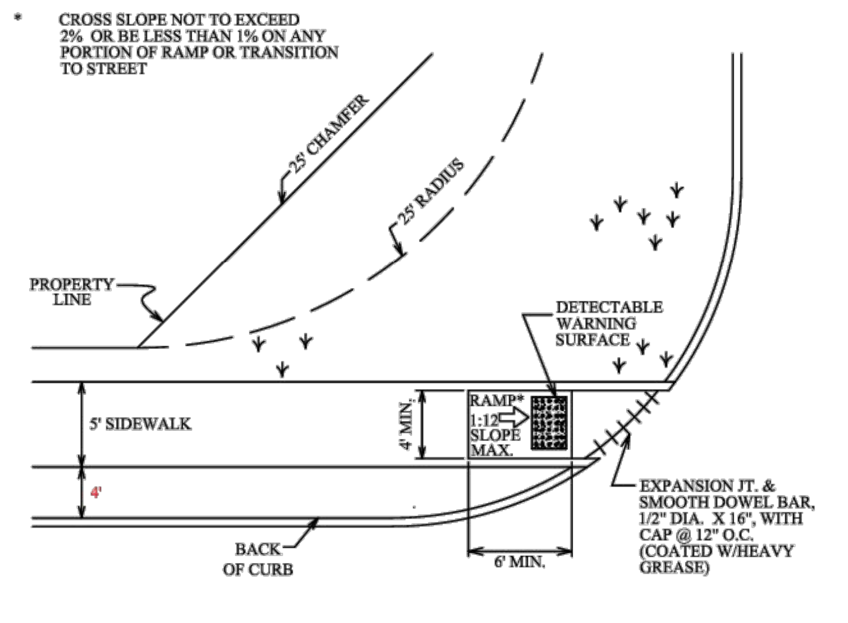
8' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-03


* CROSS SLOPE NOT TO EXCEED 2% OR BE LESS THAN 1% ON ANY PORTION OF RAMP OR TRANSITION TO STREET
25' CHAMFER
25' RADIUS
PROPERTY LINE
6' SIDEWALK
DETECTABLE WARNING SURFACE
RAMP 1:12 SLOPE MAX
5' MIN.
BACK OF CURB
6' MIN.
EXPANSION JT. & SMOOTH DOWEL BAR, 1/2" DIA. X 16", WITH CAP @ 12" O.C. (COATED W/HEAVY GREASE)

6' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-04


* CROSS SLOPE NOT TO EXCEED 2% OR BE LESS THAN 1% ON ANY PORTION OF RAMP OR TRANSITION TO STREET
25' CHAMFER
25' RADIUS
PROPERTY LINE
5' SIDEWALK
DETECTABLE WARNING SURFACE
RAMP 1:12 SLOPE MAX
4' MIN.
BACK OF CURB
6' MIN.
EXPANSION JT. & SMOOTH DOWEL BAR, 1/2" DIA. X 16", WITH CAP @ 12" O.C. (COATED W/HEAVY GREASE)

5' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-05

REVISIONS:

BRYAN - COLLEGE STATION STANDARD SIDEWALK DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY: B.I.
DATE: 12/2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
SW1
SHEET 1 OF 1

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T.979.260.6963
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SITE PLANS SUBDIVISIONS

www.mitchellandmorgan.com

STATE OF TEXAS
JAMES T. BATENHORST
93631
LICENSED PROFESSIONAL ENGINEER
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
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512.329.5755

Revisions

B/CS STANDARD SIDEWALK DETAILS
BRAZOS OAKS PHASE II

C-505

NOTE:

TEMPORARY DEVICES AROUND STORMS DRAINS ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN.

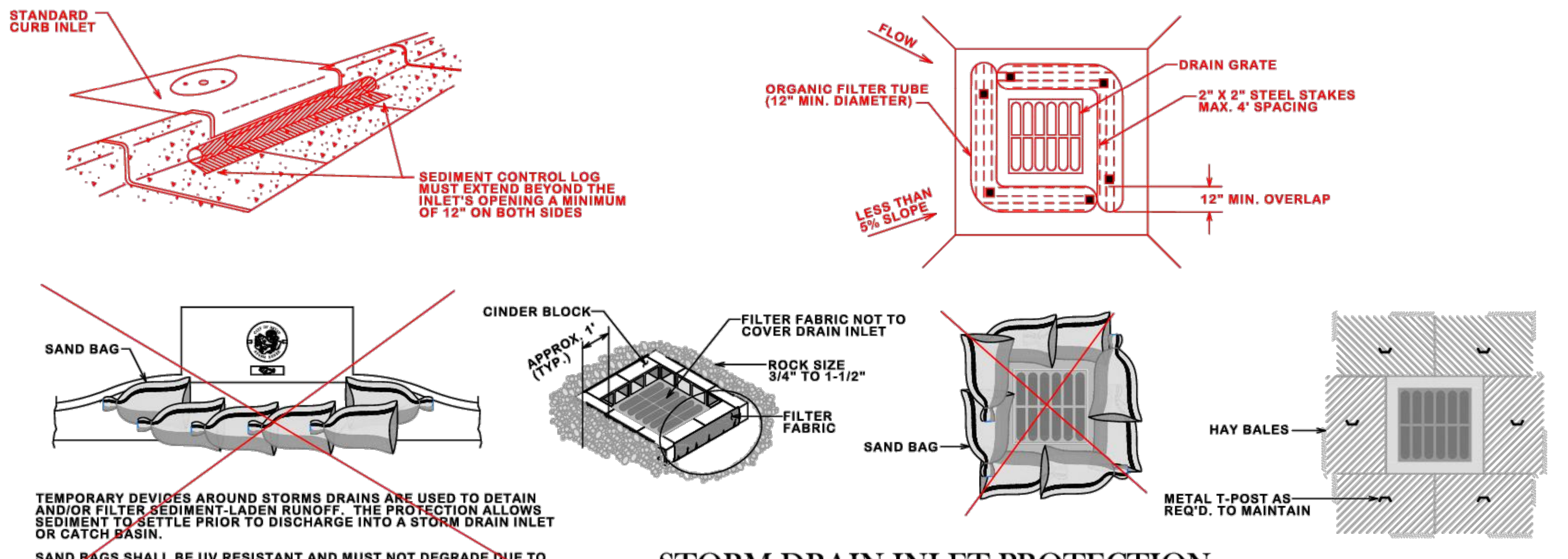
SEDIMENT CONTROL LOGS ARE TO BE USED ON EXISTING CURB INLETS WHICH ARE LOCATED ADJACENT TO OCCUPIED TRAVEL LANES WITHIN THE DISTURBED LIMITS OF A PROJECT AS SHOWN ON THE PLANS.

SEDIMENT CONTROL LOGS ARE TO BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S INSTRUCTIONS AND PROPERLY WEIGHTED IN ORDER TO REMAIN SECURELY IN PLACE. INSTALLATION MUST MEET THE CONSTRUCTION INSPECTOR'S APPROVAL.

SEDIMENT CONTROL LOGS ARE TO BE CONSTRUCTED OF WOOD FIBERS, SYNTHETIC FIBERS OR OTHER SUITABLE MATERIAL SUFFICIENT TO RETAIN ITS SHAPE AND ENCASED IN A UV STABILIZED FILTERING MEDIA OF SUFFICIENT STRENGTH TO RETAIN SEDIMENT.

SEDIMENT CONTROL LOGS ARE TO BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

SAND BAGS SHALL NOT BE USED.


STANDARD CURB INLET
SEDIMENT CONTROL LOG MUST EXTEND BEYOND THE INLET'S OPENING A MINIMUM OF 12" ON BOTH SIDES
FLOW
ORGANIC FILTER TUBE (12" MIN. DIAMETER)
DRAIN GRATE
2" X 2" STEEL STAKES MAX. 4' SPACING
LESS THAN 5% SLOPE
12" MIN. OVERLAP
SAND BAG
CINDER BLOCK
APPROX. 1' (TYP.)
FILTER FABRIC NOT TO COVER DRAIN INLET
ROCK SIZE 3/4" TO 1-1/2"
FILTER FABRIC
SAND BAG
HAY BALES
METAL T-POST AS REQ'D. TO MAINTAIN

~~TEMPORARY DEVICES AROUND STORMS DRAINS ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN.~~

~~SAND BAGS SHALL BE UV RESISTANT AND MUST NOT DEGRADE DUE TO ATMOSPHERIC CONDITIONS.~~

~~SAND BAGS SHALL BE REPLACED UPON FIRST SIGN OF DETERIORATION.~~

STORM DRAIN INLET PROTECTION

SWPP1-00

NOTE:

POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.

VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.

NO WASHING OUT OF CONCRETE TRUCKS OR WASHING OF SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS IS ALLOWED.

EXCESS CONCRETE IS NOT ALLOWED TO BE DUMPED ON-SITE, EXCEPT IN DESIGNATED TEMPORARY CONCRETE WASHOUT PIT AREAS.

ON-SITE TEMPORARY CONCRETE WASHOUT AREAS WILL BE LOCATED AT LEAST 50 FEET FROM STORM DRAINS, OPEN DITCHES, OR WATER BODIES AS DETERMINED IN THE FIELD.

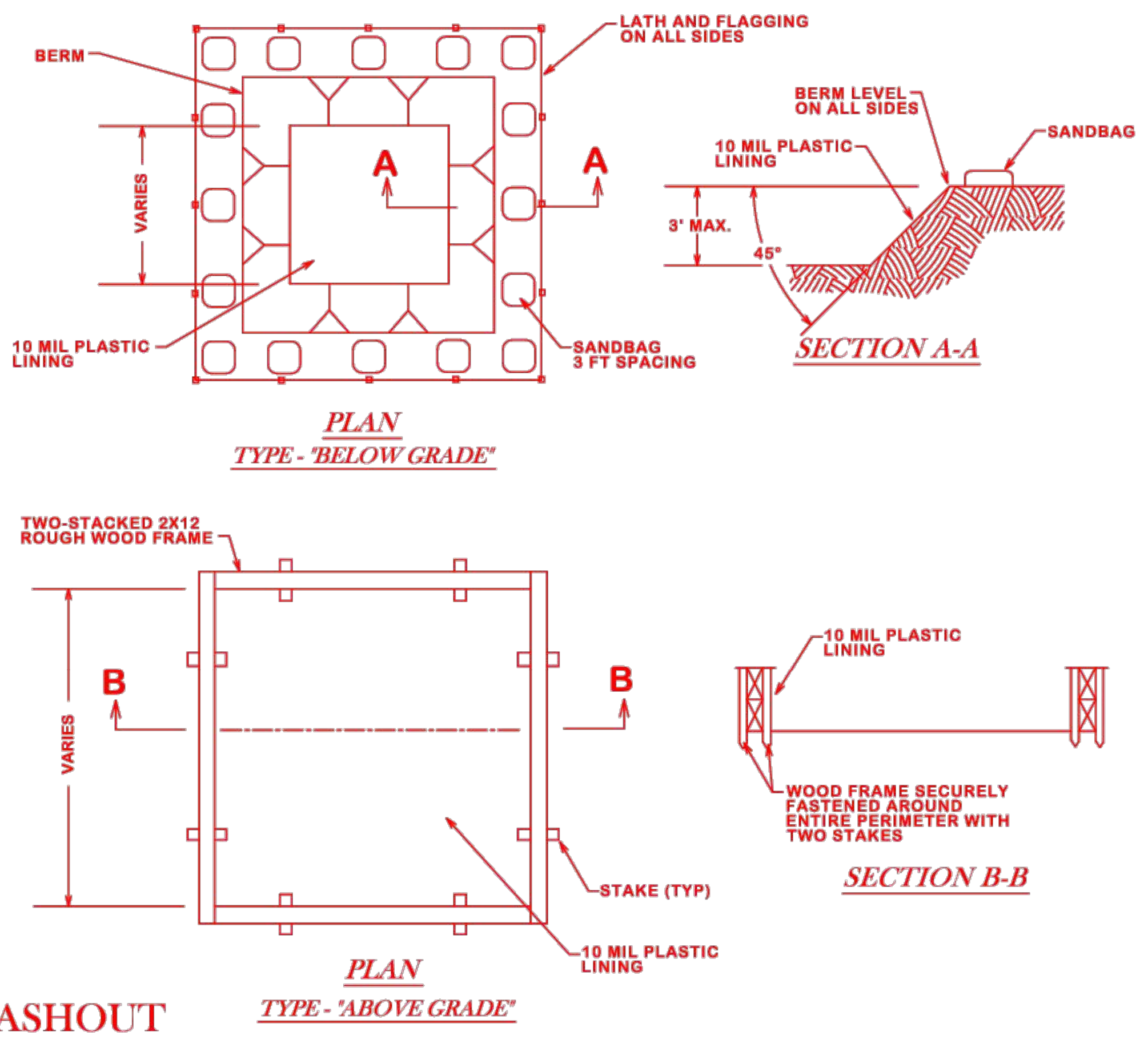
TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

WASHOUT FACILITIES WILL BE CLEANED OUT OR REPLACED ONCE THE WASHOUT IS 75% FULL.

PLASTIC LINING MATERIAL WIL BE MINIMUM OF 10 MIL POLYETHYLENE SHEETING AND WILL BE FREE OF HOLES, TEARS, OR OTHER DEFECTS.

WHEN WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR WORK, THE HARDENED CONCRETE WILL BE REMOVED AND DISPOSED OF OFFSITE. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES WILL BE REMOVED FROM THE SITE AND DISPOSED OF. BELOW GRADE PITS SHALL BE BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.

CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCK EQUIPMENT.

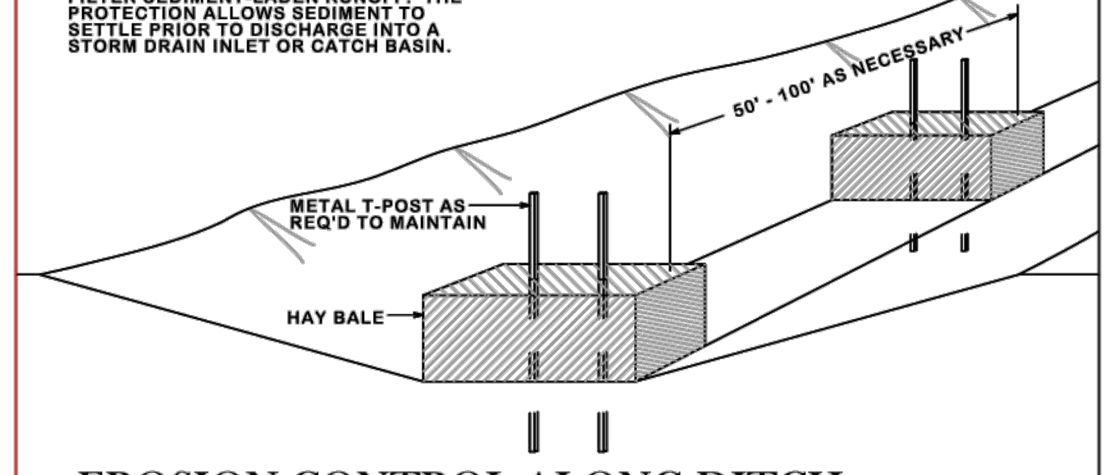

BERM
LATH AND FLAGGING ON ALL SIDES
A
A
VARIES
10 MIL PLASTIC LINING
SANDBAG 3 FT SPACING
BERM LEVEL ON ALL SIDES
SANDBAG
10 MIL PLASTIC LINING
3' MAX.
45°
SECTION A-A
PLAN
TYPE - "BELOW GRADE"
TWO-STACKED 2X12 ROUGH WOOD FRAME
B
B
VARIES
STAKE (TYP)
10 MIL PLASTIC LINING
10 MIL PLASTIC LINING
WOOD FRAME SECURELY FASTENED AROUND ENTIRE PERIMETER WITH TWO STAKES
SECTION B-B
PLAN
TYPE - "ABOVE GRADE"

CONCRETE WASHOUT

SWPP1-04

NOTE:

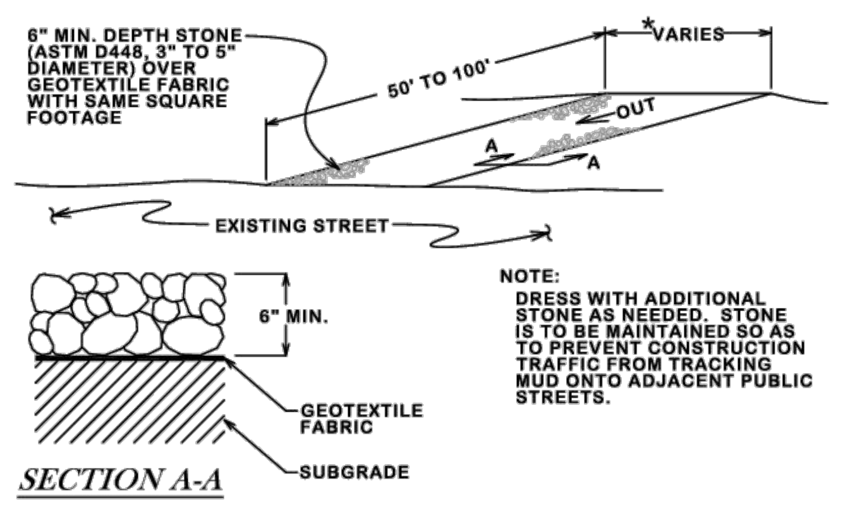
HAY BALES ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN.


50' - 100' AS NECESSARY
METAL T-POST AS REQ'D TO MAINTAIN
HAY BALE

EROSION CONTROL ALONG DITCH

SWPP1-01

*MINIMUM 12' SHALL BE FULL WIDTH OF SITE ENTRANCE

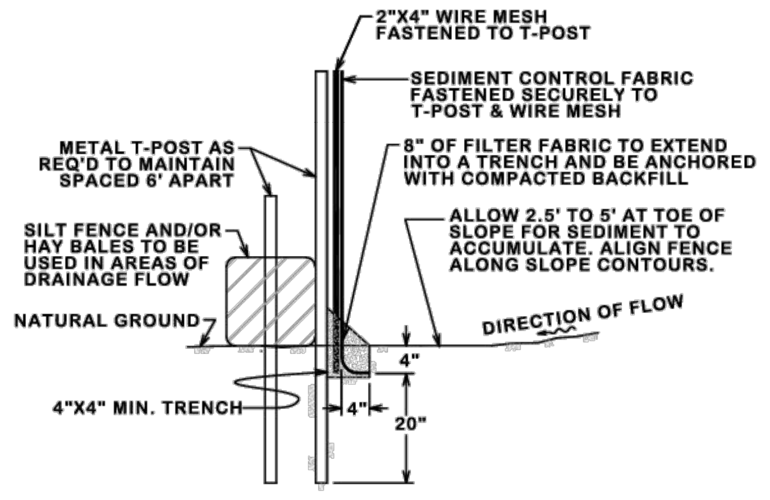

6" MIN. DEPTH STONE (ASTM D448, 3" TO 5" DIAMETER) OVER GEOTEXTILE FABRIC WITH SAME SQUARE FOOTAGE
50' TO 100'
*VARIES
OUT
A
A
EXISTING STREET
6" MIN.
GEOTEXTILE FABRIC
SUBGRADE
SECTION A-A

NOTE:

DRESS WITH ADDITIONAL STONE AS NEEDED. STONE IS TO BE MAINTAINED SO AS TO PREVENT CONSTRUCTION TRAFFIC FROM TRACKING MUD ONTO ADJACENT PUBLIC STREETS.

CONSTRUCTION EXIT SILT CONTROL

SWPP1-02


2"X4" WIRE MESH FASTENED TO T-POST
SEDIMENT CONTROL FABRIC FASTENED SECURELY TO T-POST & WIRE MESH
METAL T-POST AS REQ'D TO MAINTAIN SPACED 6' APART
8" OF FILTER FABRIC TO EXTEND INTO A TRENCH AND BE ANCHORED WITH COMPACTED BACKFILL
SILT FENCE AND/OR HAY BALES TO BE USED IN AREAS OF DRAINAGE FLOW
ALLOW 2.5' TO 5' AT TOE OF SLOPE FOR SEDIMENT TO ACCUMULATE. ALIGN FENCE ALONG SLOPE CONTOURS.
NATURAL GROUND
DIRECTION OF FLOW
4"
4"X4" MIN. TRENCH
4"
20"

SILT FENCE ASSEMBLY

SWPP1-03

GENERAL NOTES:

ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

REVISIONS:

BRYAN - COLLEGE STATION
STANDARD STORM WATER
POLLUTION PREVENTION DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY: B.I.
DATE: 12/2020
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
SWPP
SHEET 1 OF 1

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JAMES T. BATENHORST
93631
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
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Revisions

B/CS STANDARD STORM WATER POLLUTION PREVENTION DETAILS
BRAZOS OAKS PHASE II

C-506

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TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing length (2~wings) ③	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C – 0.250'
Lw = (Hw – 0.333') (SL)

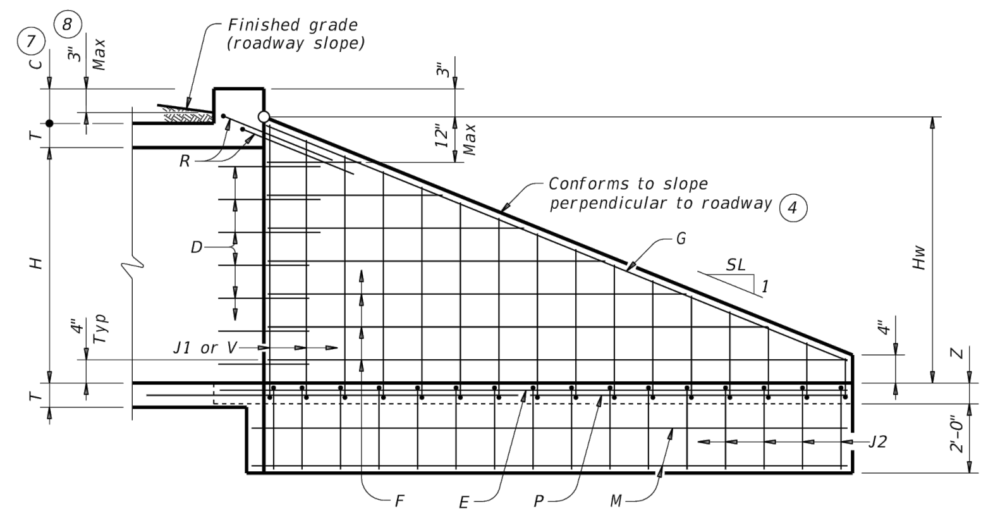
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N – 1) (0.5')

Total Wingwall Area (two wings ~ SF) = (Hw + 0.333') (Lw)

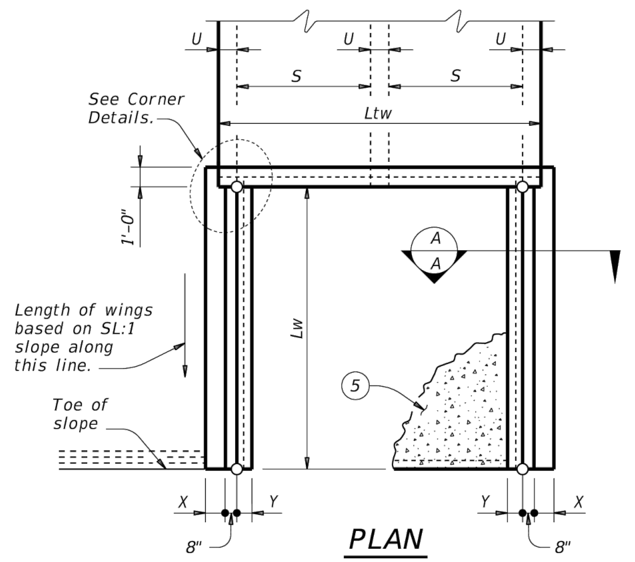
Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.


⑦ C
⑧ 3" Max
Finished grade (roadway slope)
3"
12" Max
T
R
Conforms to slope perpendicular to roadway ④
G
SL
1
D
H
Hw
4" Typ
J1 or V
Z
2'-0"
J2
F
E
P
M

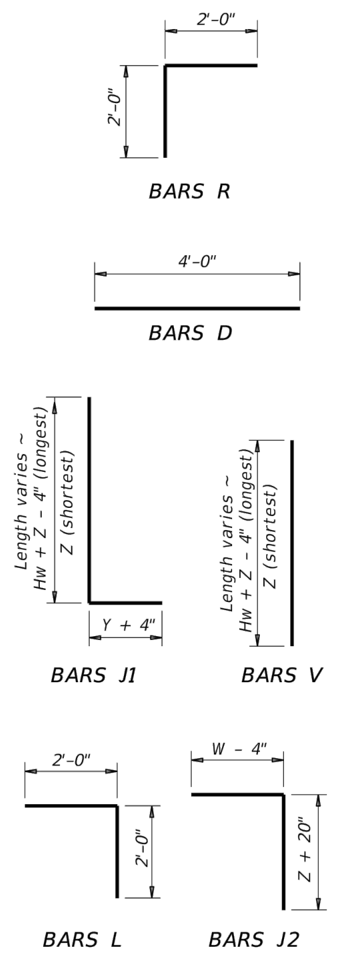
INSIDE ELEVATION

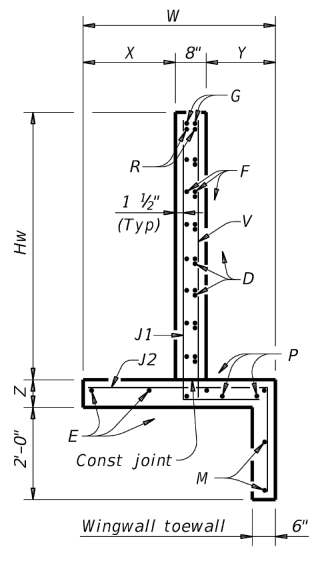
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)


U
S
Ltw
See Corner Details
1'-0"
A
Lw
Length of wings based on SL:1 slope along this line.
⑤
Toe of slope
X
Y
8"

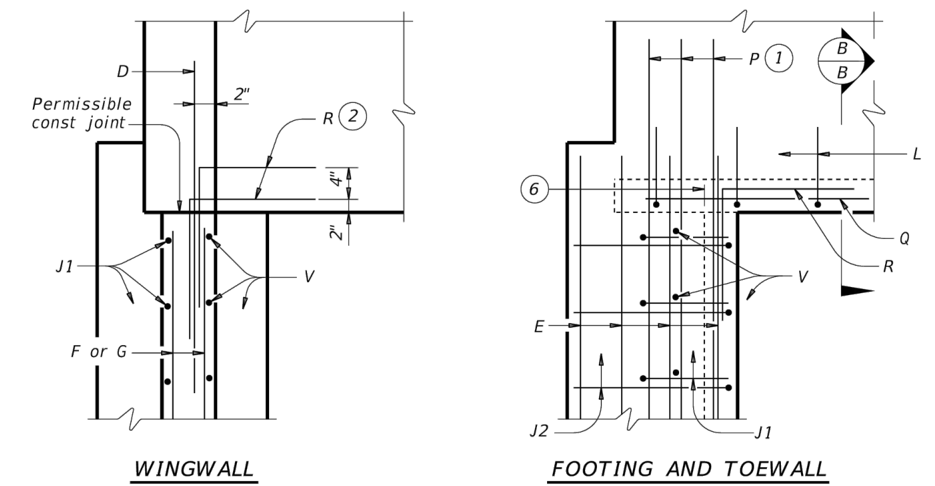
PLAN

(Showing dimensions.)

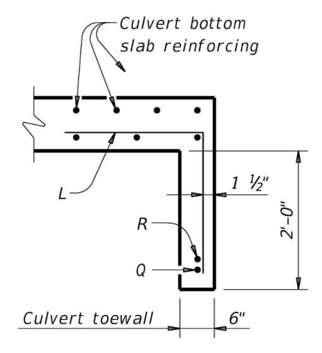

2'-0"
2'-0"
BARS R
4'-0"
BARS D
Length varies ~ Hw + Z - 4" (longest) Z (shortest)
Y + 4"
BARS J1
BARS V
2'-0"
W - 4"
Z + 20"
BARS L
BARS J2


W
X
8"
Y
G
R
1 ½" (Typ)
F
V
D
Hw
J1
J2
P
Z
2'-0"
E
Const joint
M
Wingwall toewall
6"

SECTION A-A


D
Permissible const joint
2"
R ②
J1
V
F or G
WINGWALL
P ①
B
⑥
E
Q
J2
J1
FOOTING AND TOEWALL

CORNER DETAILS


Culvert bottom slab reinforcing
L
1 ½"
R
Q
2'-0"
Culvert toewall
6"

SECTION B-B ⑤

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

⑧ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation
Bridge Division Standard

CONCRETE WINGWALLS
WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

SW-0

FILE: sw-0stde-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
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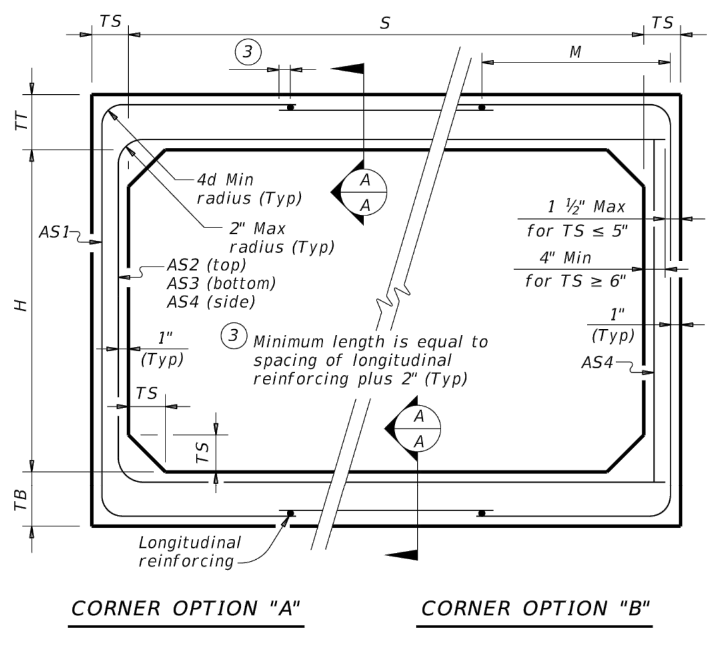
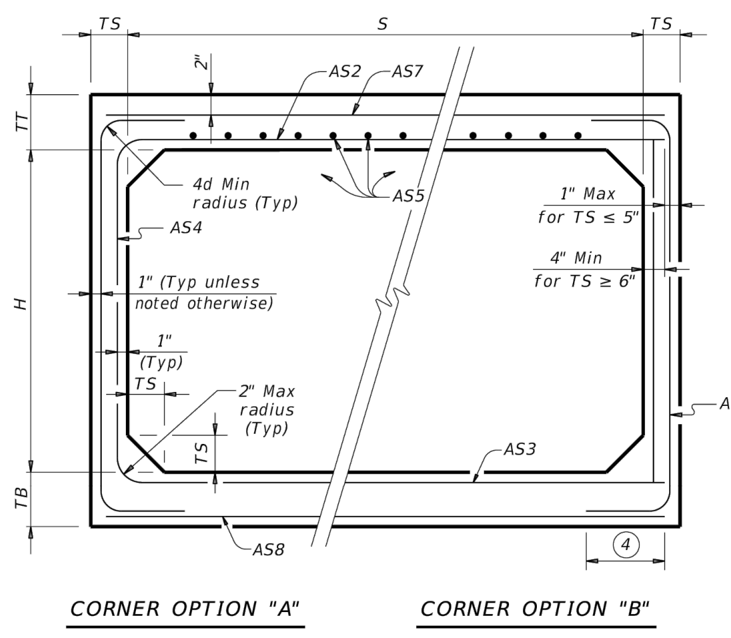
BOX DATA

SECTION DIMENSIONS					Fill Height	M (Min)	REINFORCING (sq. in. / ft.) ②							① Lift Weight
S (ft.)	H (ft.)	TT (in.)	TB (in.)	TS (in.)	(ft.)	(in.)	AS1	AS2	AS3	AS4	AS5	AS7	AS8	(tons)
6	2	8	7	7	< 2	–	0.23	0.27	0.19	0.17	0.19	0.19	0.17	7.2
6	2	7	7	7	2 < 3	43	0.25	0.21	0.17	0.17	–	–	–	6.8
6	2	7	7	7	3 – 5	43	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	10	39	0.20	0.17	0.17	0.17	–	–	–	6.8
6	2	7	7	7	15	39	0.26	0.20	0.20	0.17	–	–	–	6.8
6	2	7	7	7	20	39	0.34	0.26	0.26	0.17	–	–	–	6.8
6	2	7	7	7	25	39	0.43	0.32	0.32	0.17	–	–	–	6.8
6	2	7	7	7	30	39	0.52	0.38	0.39	0.17	–	–	–	6.8
6	3	8	7	7	< 2	–	0.20	0.31	0.22	0.17	0.19	0.19	0.17	7.9
6	3	7	7	7	2 < 3	43	0.21	0.24	0.19	0.17	–	–	–	7.5
6	3	7	7	7	3 – 5	39	0.17	0.18	0.17	0.17	–	–	–	7.5
6	3	7	7	7	10	39	0.17	0.18	0.19	0.17	–	–	–	7.5
6	3	7	7	7	15	38	0.22	0.24	0.24	0.17	–	–	–	7.5
6	3	7	7	7	20	38	0.28	0.31	0.31	0.17	–	–	–	7.5
6	3	7	7	7	25	38	0.35	0.38	0.39	0.17	–	–	–	7.5
6	3	7	7	7	30	38	0.42	0.46	0.46	0.17	–	–	–	7.5
6	4	8	7	7	< 2	–	0.19	0.34	0.25	0.17	0.19	0.19	0.17	8.6
6	4	7	7	7	2 < 3	43	0.19	0.27	0.21	0.17	–	–	–	8.2
6	4	7	7	7	3 – 5	39	0.17	0.21	0.19	0.17	–	–	–	8.2
6	4	7	7	7	10	39	0.17	0.20	0.21	0.17	–	–	–	8.2
6	4	7	7	7	15	38	0.18	0.27	0.27	0.17	–	–	–	8.2
6	4	7	7	7	20	38	0.24	0.34	0.35	0.17	–	–	–	8.2
6	4	7	7	7	25	38	0.29	0.43	0.42	0.17	–	–	–	8.2
6	4	7	7	7	30	38	0.35	0.51	0.52	0.17	–	–	–	8.2
6	5	8	7	7	< 2	–	0.19	0.37	0.28	0.17	0.19	0.19	0.17	9.3
6	5	7	7	7	2 < 3	43	0.17	0.30	0.24	0.17	–	–	–	8.9
6	5	7	7	7	3 – 5	43	0.17	0.23	0.21	0.17	–	–	–	8.9
6	5	7	7	7	10	39	0.17	0.22	0.23	0.17	–	–	–	8.9
6	5	7	7	7	15	38	0.17	0.28	0.29	0.17	–	–	–	8.9
6	5	7	7	7	20	38	0.20	0.37	0.38	0.17	–	–	–	8.9
6	5	7	7	7	25	38	0.25	0.45	0.46	0.17	–	–	–	8.9
6	5	7	7	7	30	38	0.30	0.54	0.55	0.17	–	–	–	8.9
6	6	8	7	7	< 2	–	0.19	0.38	0.30	0.17	0.19	0.19	0.17	10
6	6	7	7	7	2 < 3	52	0.17	0.32	0.26	0.17	–	–	–	9.6
6	6	7	7	7	3 – 5	52	0.17	0.24	0.22	0.17	–	–	–	9.6
6	6	7	7	7	10	43	0.17	0.23	0.24	0.17	–	–	–	9.6
6	6	7	7	7	15	39	0.17	0.29	0.31	0.17	–	–	–	9.6
6	6	7	7	7	20	39	0.18	0.38	0.39	0.17	–	–	–	9.6
6	6	7	7	7	25	38	0.23	0.46	0.48	0.17	–	–	–	9.6
6	6	7	7	7	30	38	0.27	0.55	0.57	0.17	–	–	–	9.6

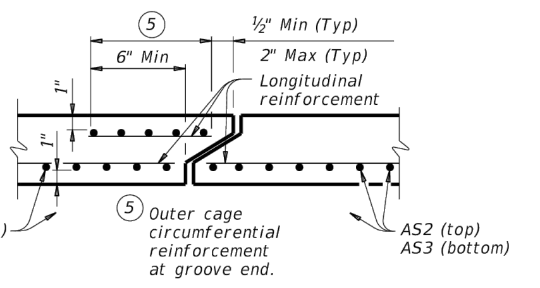

TS
S
TS
③
M
TT
H
TB
4d Min radius (Typ)
2" Max radius (Typ)
AS1
AS2 (top)
AS3 (bottom)
AS4 (side)
A
③ Minimum length is equal to spacing of longitudinal reinforcing plus 2" (Typ)
1 ½" Max for TS ≤ 5"
4" Min for TS ≥ 6"
1" (Typ)
AS4
1" (Typ)
TS
Longitudinal reinforcing
CORNER OPTION "A"
CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER


TS
S
TS
AS2
AS7
TT
4d Min radius (Typ)
AS5
AS4
1" Max for TS ≤ 5"
4" Min for TS ≥ 6"
H
1" (Typ unless noted otherwise)
1" (Typ)
TS
2" Max radius (Typ)
AS1
AS3
TB
AS8
④
CORNER OPTION "A"
CORNER OPTION "B"

FILL HEIGHT LESS THAN 2 FT

④ Length is equal to spacing of longitudinal reinforcing plus 2". (10" Min) (Typ)


⑤
6" Min
½" Min (Typ)
2" Max (Typ)
Longitudinal reinforcement
AS2 (top)
AS3 (bottom)
⑤ Outer cage circumferential reinforcement at groove end.
AS2 (top)
AS3 (bottom)

SECTION A-A

(Showing top and bottom slab joint reinforcement.)

MATERIAL NOTES:

Provide 0.03 sq. in./ft. minimum longitudinal reinforcement at each face in slabs and walls. This minimum requirement may be met by the transverse wires when wire mesh reinforcement is used.
Provide Class H concrete (f`c = 5,000 psi).

GENERAL NOTES:

Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
See Box Culverts Precast Miscellaneous Details (SCP-MD) standard sheet for details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Submit shop plans for alternate designs in accordance with Item "Precast Concrete Structural Members (Fabrication)."

HL93 LOADING

Texas Department of Transportation
Bridge Division Standard

SINGLE BOX CULVERTS PRECAST
6'-0" SPAN

SCP-6

FILE: CD-SCP06-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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	DIST	COUNTY		SHEET NO.

① For box length = 8'-0"

② AS1 thru AS4, AS7 and AS8 are minimum required areas of reinforcement per linear foot of box length. AS5 is minimum required area of reinforcement per linear foot of box width.

DATE:
FILE:

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TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

Dimensions					Variable Reinforcing				Estimated Quantities per ft of wing length (2~wings) ③	
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING
(2~wings)

Bar	Size	No.	Spa
D	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	4	~
M	#4	4	~
P	#4	~	1'-0"
R	#5	6	~
V	#4	~	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Q	#4	1	~
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C – 0.250'
A = (Hw – 0.333') (SL)
B = (A) tangent (30°)
Lw = (A) ÷ cosine (30°)

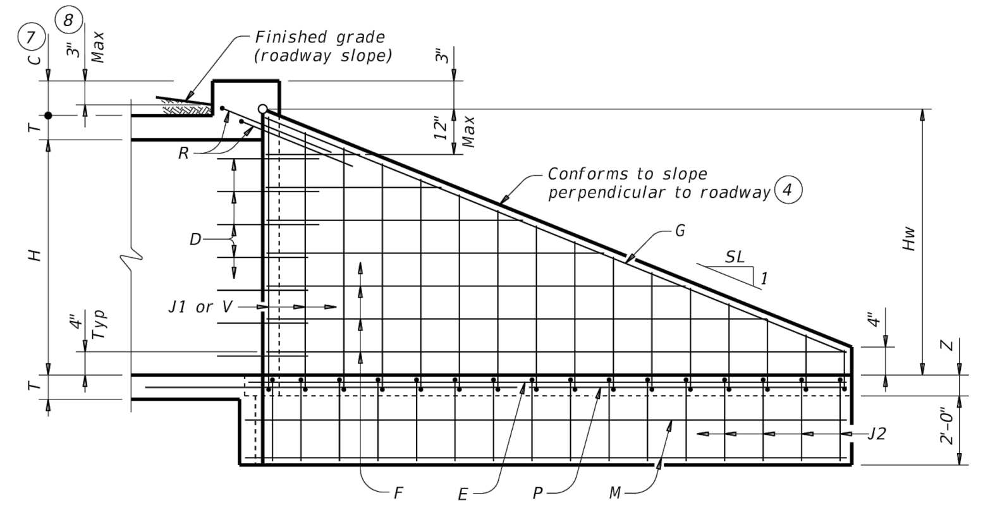
For cast-in-place culverts:
Ltw = (N) (S) + (N + 1) (U)

For precast culverts:
Ltw = (N) (2U + S) + (N – 1) (0.5')

Total wingwall area (two wings ~ SF) = (Hw + 0.333') (Lw)

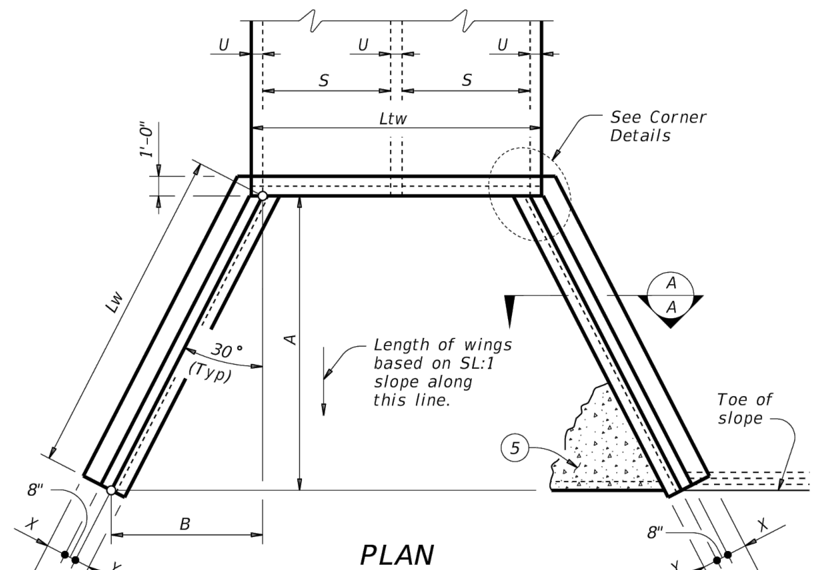
Hw = Height of wingwall
SL:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

See applicable box culvert standard sheet for H, S, T, and U values.


⑦ C
⑧ 3" Max
Finished grade (roadway slope)
3"
12" Max
T
R
Conforms to slope perpendicular to roadway ④
G
SL
1
D
H
Hw
4" Typ
J1 or V
Z
2'-0"
J2
F
E
P
M

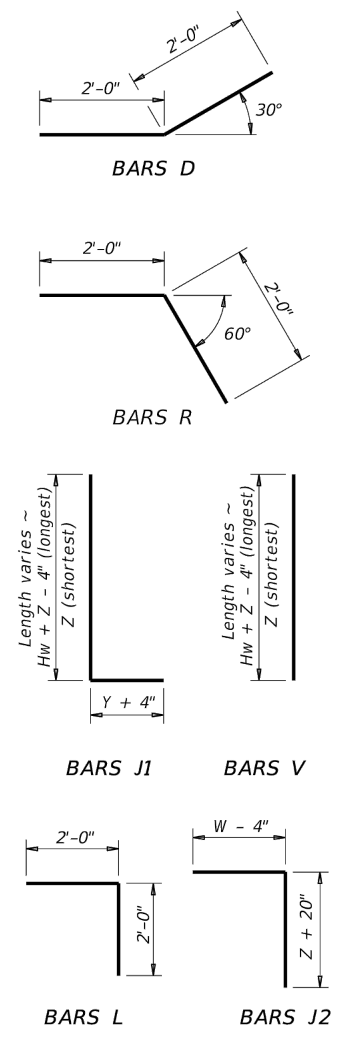
INSIDE ELEVATION

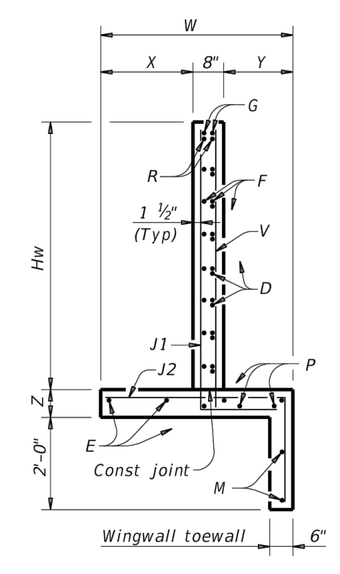
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)


U
S
Ltw
See Corner Details
1'-0"
A
Lw
30° (Typ)
Length of wings based on SL:1 slope along this line.
⑤
Toe of slope
B
8"
X
W
Y

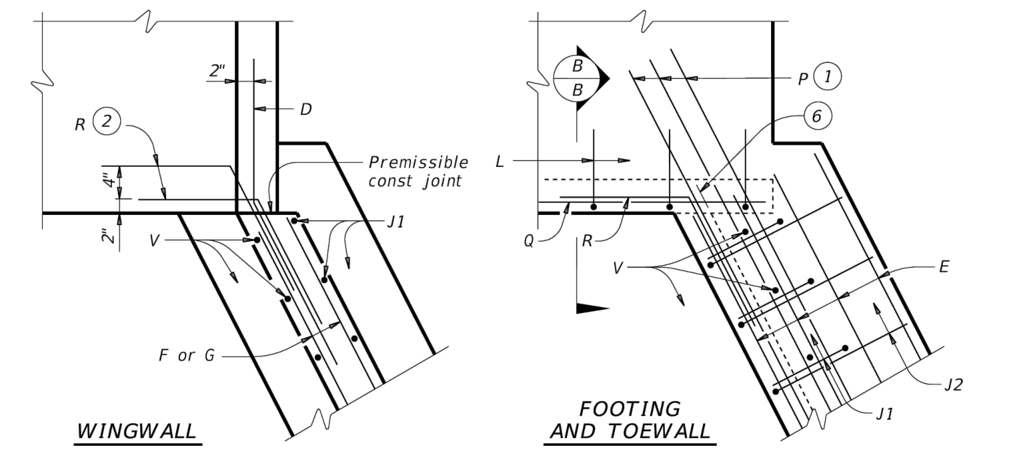
PLAN

(Showing dimensions.)


2'-0"
30°
BARS D
2'-0"
60°
2'-0"
BARS R
Length varies ~ Hw + Z - 4" (longest) Z (shortest)
Y + 4"
BARS J1
BARS V
2'-0"
W - 4"
Z + 20"
BARS L
BARS J2

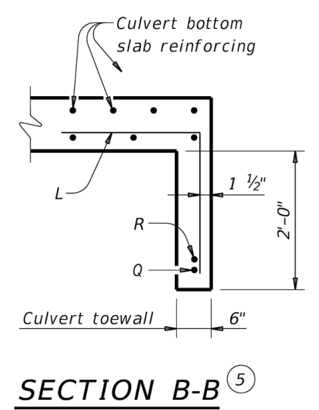

W
X
8"
Y
G
R
1 ½" (Typ)
F
V
D
Hw
J1
J2
P
Z
2'-0"
E
Const joint
M
Wingwall toewall
6"

SECTION A-A


D
R ②
Permissible const joint
V
J1
F or G
WINGWALL
B
P ①
⑥
E
L
Q
J2
J1
FOOTING AND TOEWALL

CORNER DETAILS

(Culvert and culvert toewall reinforcing not shown for clarity.)


Culvert bottom slab reinforcing
L
1 ½"
R
Q
2'-0"
Culvert toewall
6"

SECTION B-B ⑤

① Extend Bars P 3'-0" minimum into bottom slab of box culvert.

② Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.

③ Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.

④ Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.

⑤ When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap." Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-6" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.

⑥ At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.

⑦ 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

⑧ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
In riprap concrete synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation
Bridge Division Standard

CONCRETE WINGWALLS
WITH FLARED WINGS FOR 0° SKEW BOX CULVERTS

FW-0

FILE: CD-FW0-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
	DIST	COUNTY		SHEET NO.

DATE:
FILE:

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M&M
MORGAN
T.979.260.6963
F.979.260.3564
TX. FIRM # F-1443
3204 EARL RUDDER FWY. S.
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CIVIL ENGINEERING HYDRAULICS
HYDROLOGY UTILITIES STREETS
SITE PLANS SUBDIVISIONS
www.mitchellandmorgan.com

JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
Drawn By: MGF,SB
Checked By: JTB

Prepared For:
TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
STE A134
AUSTIN, TX 78746
512.329.5755

Revisions

TxDOT RCB STANDARDS
BRAZOS OAKS PHASE II

C-507

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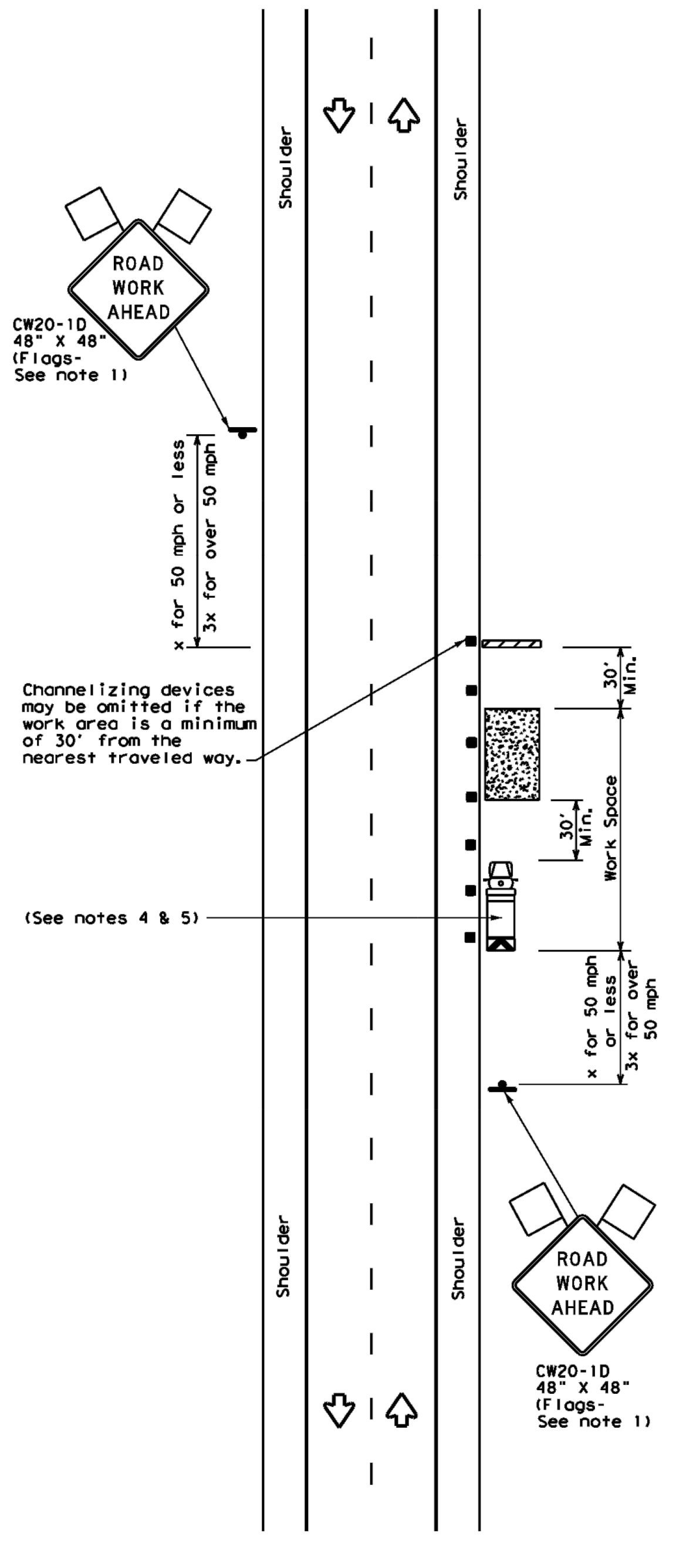
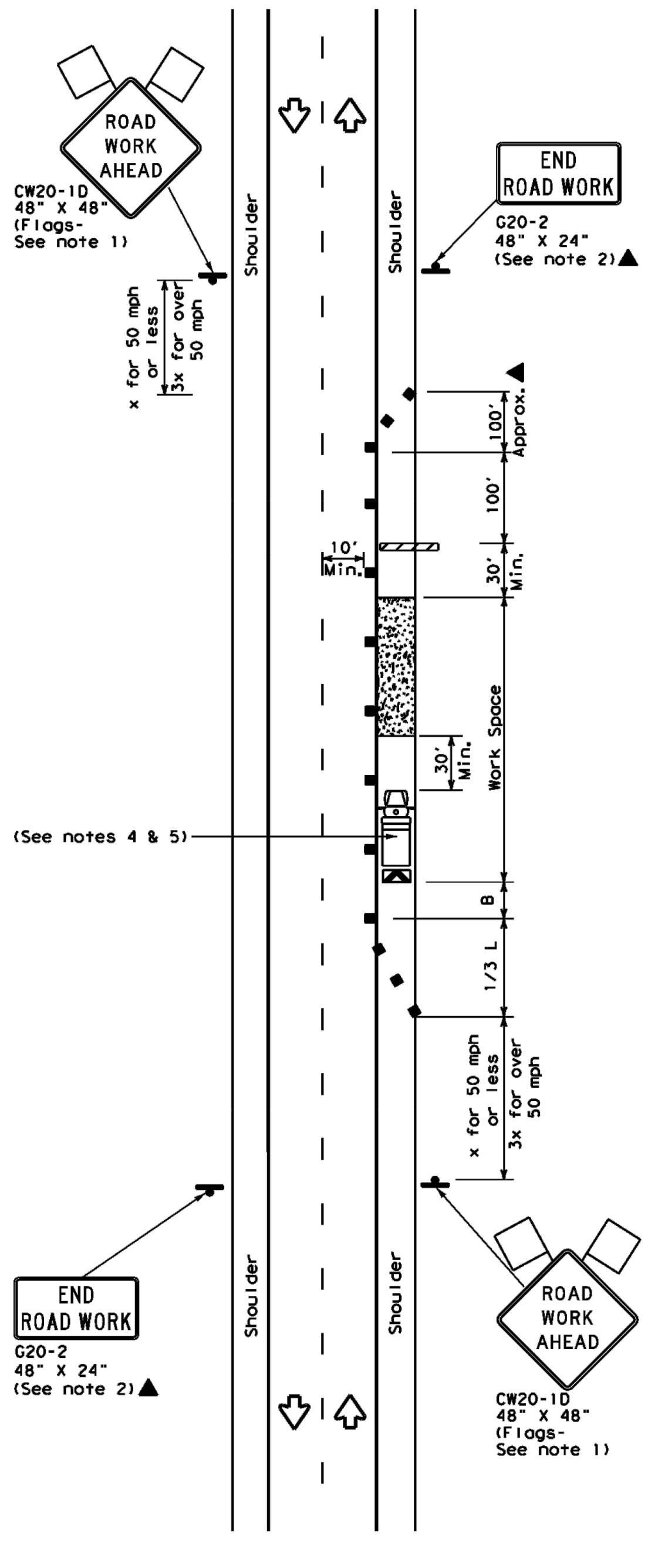
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.


ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)
Shoulder
Shoulder
x for 50 mph or less
3x for over 50 mph
Channelizing devices may be omitted if the work area is a minimum of 30' from the nearest traveled way.
30' Min.
30' Min.
Work Space
(See notes 4 & 5)
x for 50 mph or less
3x for over 50 mph
Shoulder
Shoulder
ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)

TCP (2-1a)

WORK SPACE NEAR SHOULDER

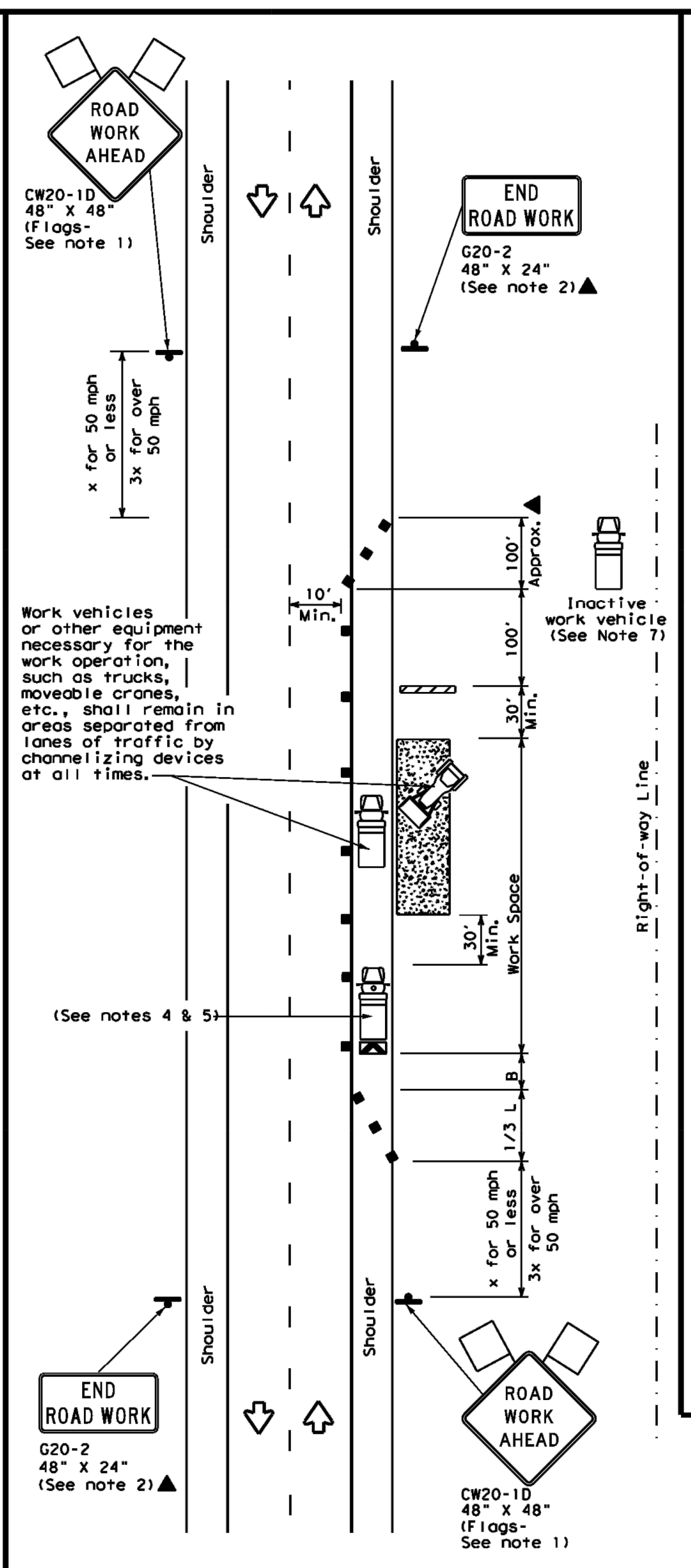
Conventional Roads


ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)
END ROAD WORK
G20-2
48" X 24"
(See note 2)▲
Shoulder
Shoulder
x for 50 mph or less
3x for over 50 mph
100' Approx. ▲
100'
10' Min.
30' Min.
30' Min.
Work Space
(See notes 4 & 5)
B
1/3 L
x for 50 mph or less
3x for over 50 mph
END ROAD WORK
G20-2
48" X 24"
(See note 2)▲
Shoulder
Shoulder
ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)

TCP (2-1b)

WORK SPACE ON SHOULDER

Conventional Roads


ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)
END ROAD WORK
G20-2
48" X 24"
(See note 2)▲
Shoulder
Shoulder
x for 50 mph or less
3x for over 50 mph
100' Approx. ▲
Inactive work vehicle (See Note 7)
10' Min.
100'
Work vehicles or other equipment necessary for the work operation, such as trucks, moveable cranes, etc., shall remain in areas separated from lanes of traffic by channelizing devices at all times.
30' Min.
30' Min.
Work Space
Right-of-way Line
(See notes 4 & 5)
B
1/3 L
x for 50 mph or less
3x for over 50 mph
END ROAD WORK
G20-2
48" X 24"
(See note 2)▲
Shoulder
Shoulder
ROAD WORK AHEAD
CW20-1D
48" X 48"
(Flags-
See note 1)

TCP (2-1c)

WORK VEHICLES ON SHOULDER

Conventional Roads

LEGEND

▭	Type 3 Barricade	■ ■	Channelizing Devices
▭	Heavy Work Vehicle	▲	Truck Mounted Attenuator (TMA)
⇦	Trailer Mounted Flashing Arrow Board	Ⓜ	Portable Changeable Message Sign (PCMS)
⊥	Sign	⇦	Traffic Flow
◇	Flag	○	Flagger

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

* Conventional Roads Only

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

TYPICAL USAGE

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

GENERAL NOTES

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

Texas Department of Transportation

Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
CONVENTIONAL ROAD
SHOULDER WORK

TCP(2-1)-18

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

161

DATE:
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MITCHELL
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JAMES T. BATENHORST
93631
James T. Batenhorst, P.E.
on APRIL 15, 2026

APRIL 2026
Designed by: JTB
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Checked By: JTB

Prepared For:

TEEPLE PARTNERS, INC
1302 S CAPITAL OF TEXAS HWY
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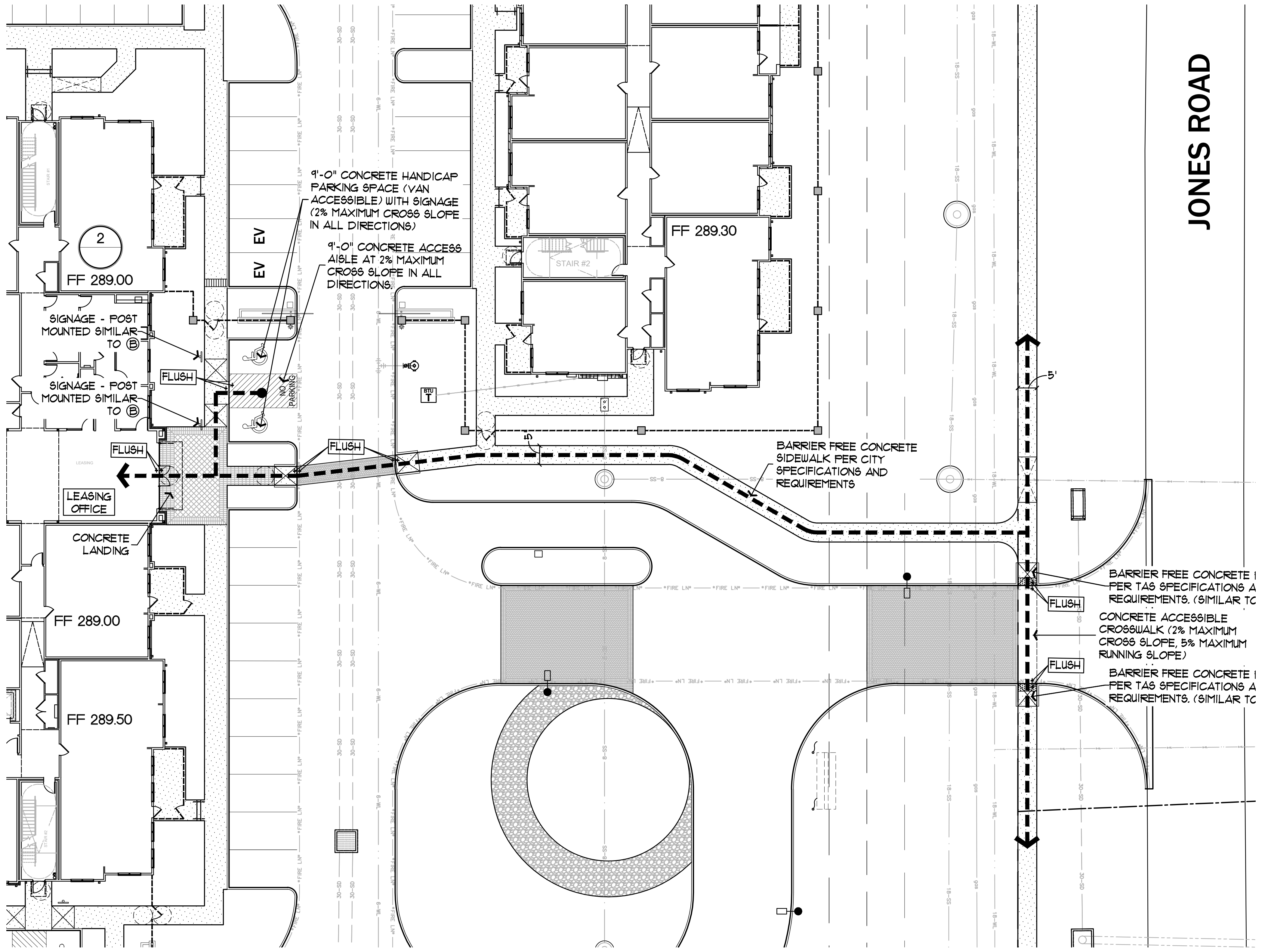
AUSTIN, TX 78746
512.329.5755

Revisions

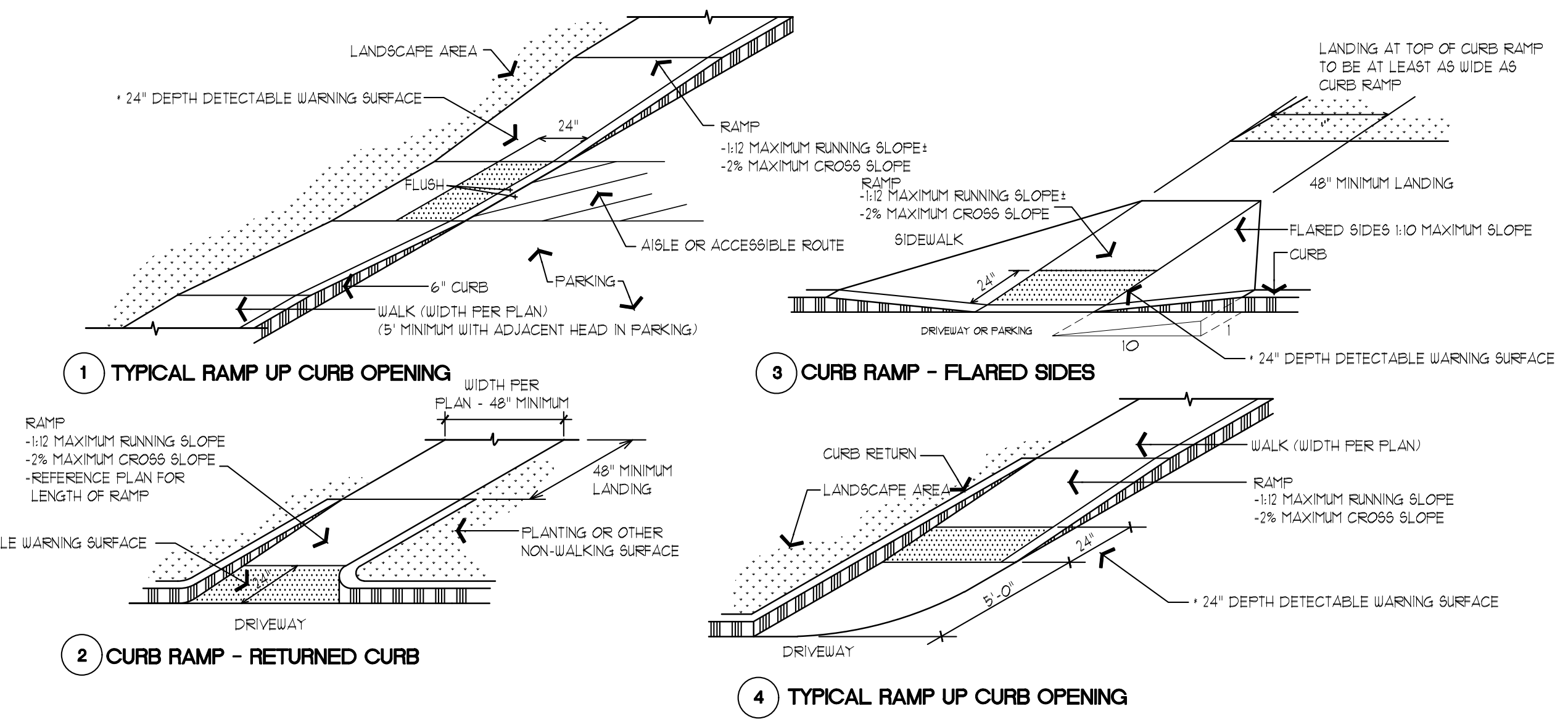
TxDOT TRAFFIC CONTROL STANDARDS
BRAZOS OAKS PHASE II

C-508


JONES ROAD
9'-0" CONCRETE HANDICAP PARKING SPACE (VAN ACCESSIBLE) WITH SIGNAGE (2% MAXIMUM CROSS SLOPE IN ALL DIRECTIONS)
9'-0" CONCRETE ACCESS AISLE AT 2% MAXIMUM CROSS SLOPE IN ALL DIRECTIONS.
2
FF 289.00
EV
EV
SIGNAGE - POST MOUNTED SIMILAR TO B
SIGNAGE - POST MOUNTED SIMILAR TO B
NO PARKING
FLUSH
FLUSH
FLUSH
LEASING OFFICE
CONCRETE LANDING
FF 289.00
FF 289.50
FF 289.30
STAIR #1
STAIR #2
BARRIER FREE CONCRETE SIDEWALK PER CITY SPECIFICATIONS AND REQUIREMENTS
5'
BARRIER FREE CONCRETE PER TAS SPECIFICATIONS A REQUIREMENTS. (SIMILAR TC
FLUSH
CONCRETE ACCESSIBLE CROSSWALK (2% MAXIMUM CROSS SLOPE, 5% MAXIMUM RUNNING SLOPE)
FLUSH
BARRIER FREE CONCRETE PER TAS SPECIFICATIONS A REQUIREMENTS. (SIMILAR TC
FIRE LN
30-SD
6-WL
18-WL
18-SS
gas

ACCESSIBILITY NOTES:

1. THE SLOPE ON ALL HANDICAP SPACES, AISLES AND SIDEWALK LANDINGS SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. ALL BUILDING ENTRIES TO BE FLUSH WITH ADJACENT ENTRY WALK (TYPICAL).
3. ACCESSIBLE ROUTES AND HANDICAP CROSSWALKS SHALL NOT EXCEED 2% CROSS SLOPE OR 5% RUNNING SLOPE WHERE SIDEWALKS/CONNECTORS INTERSECT OR CHANGE DIRECTION OR AT DOOR/GATE MANEUVERING CLEARANCES OR RAMP LANDINGS OCCUR, THE SLOPE MUST BE 2% MAXIMUM IN ALL DIRECTIONS.
4. ALL HANDICAP RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRACTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. ALL GROUND AND FLOOR SURFACES ALONG ACCESSIBLE ROUTES, INCLUDING FLOORS, WALKS, RAMPS, STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM, SLIP RESISTANT, AND SHALL COMPLY WITH SECTION A4.5 GROUND AND FLOOR SURFACES (ANSI).
6. ALL RAMPS TO HAVE A FIVE (5) FOOT LANDING AT TOP AND BOTTOM WHICH SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
7. ALL STEPS WITH TWO (2) OR MORE RISERS SHALL HAVE HANDRAILS INSTALLED ON EACH SIDE OF STEPS. ALL STEPS TO HAVE A 44" MINIMUM LANDING AT TOP AND BOTTOM WHICH SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
8. OWNER SHALL MAINTAIN ACCESS ROUTES IN AN ACCEPTABLE MANNER AT ALL TIMES.
9. OWNER TO COORDINATE AND DIRECT PLACEMENT OF ALL REQUIRED SIGNAGE FOR ACCESSIBLE ROUTES AND PARKING SPACES.
10. ALL HANDICAP PARKING SPACES TO BE DESIGNATED WITH POLE MOUNTED OR WALL MOUNTED SIGNAGE. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED CONSPICUOUSLY ON THE SURFACE OF THE PARKING SPACE IN A COLOR THAT CONTRASTS TO PAVEMENT.
11. THE WORDS "NO PARKING" SHALL BE PAINTED ON ANY ACCESS AISLE ADJACENT TO THE HANDICAP PARKING SPACE IN ALL CAPITAL LETTERS; WITH A LETTER HEIGHT OF AT LEAST TWELVE INCHES, AND A STROKE WIDTH OF AT LEAST TWO INCHES; AND CENTERED WITHIN EACH ACCESS AISLE ADJACENT TO THE PARKING SPACE.


LANDSCAPE AREA
* 24" DEPTH DETECTABLE WARNING SURFACE
24"
RAMP
-1:12 MAXIMUM RUNNING SLOPE±
-2% MAXIMUM CROSS SLOPE
FLUSH
AISLE OR ACCESSIBLE ROUTE
PARKING
6" CURB
WALK (WIDTH PER PLAN)
(5' MINIMUM WITH ADJACENT HEAD IN PARKING)
1 TYPICAL RAMP UP CURB OPENING
LANDING AT TOP OF CURB RAMP TO BE AT LEAST AS WIDE AS CURB RAMP
48" MINIMUM LANDING
RAMP
-1:12 MAXIMUM RUNNING SLOPE±
-2% MAXIMUM CROSS SLOPE
SIDEWALK
FLARED SIDES 1:10 MAXIMUM SLOPE
CURB
24"
DRIVEWAY OR PARKING
10
1
* 24" DEPTH DETECTABLE WARNING SURFACE
3 CURB RAMP - FLARED SIDES
WIDTH PER PLAN - 48" MINIMUM
RAMP
-1:12 MAXIMUM RUNNING SLOPE
-2% MAXIMUM CROSS SLOPE
-REFERENCE PLAN FOR LENGTH OF RAMP
48" MINIMUM LANDING
PLANTING OR OTHER NON-WALKING SURFACE
* 24" DEPTH DETECTABLE WARNING SURFACE
24"
DRIVEWAY
2 CURB RAMP - RETURNED CURB
CURB RETURN
LANDSCAPE AREA
WALK (WIDTH PER PLAN)
RAMP
-1:12 MAXIMUM RUNNING SLOPE
-2% MAXIMUM CROSS SLOPE
24"
5'-0"
* 24" DEPTH DETECTABLE WARNING SURFACE
DRIVEWAY
4 TYPICAL RAMP UP CURB OPENING

TAS (TEXAS ACCESSIBILITY STANDARDS)

THE FULL WIDTH AND DEPTH OF CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND SURFACE TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.

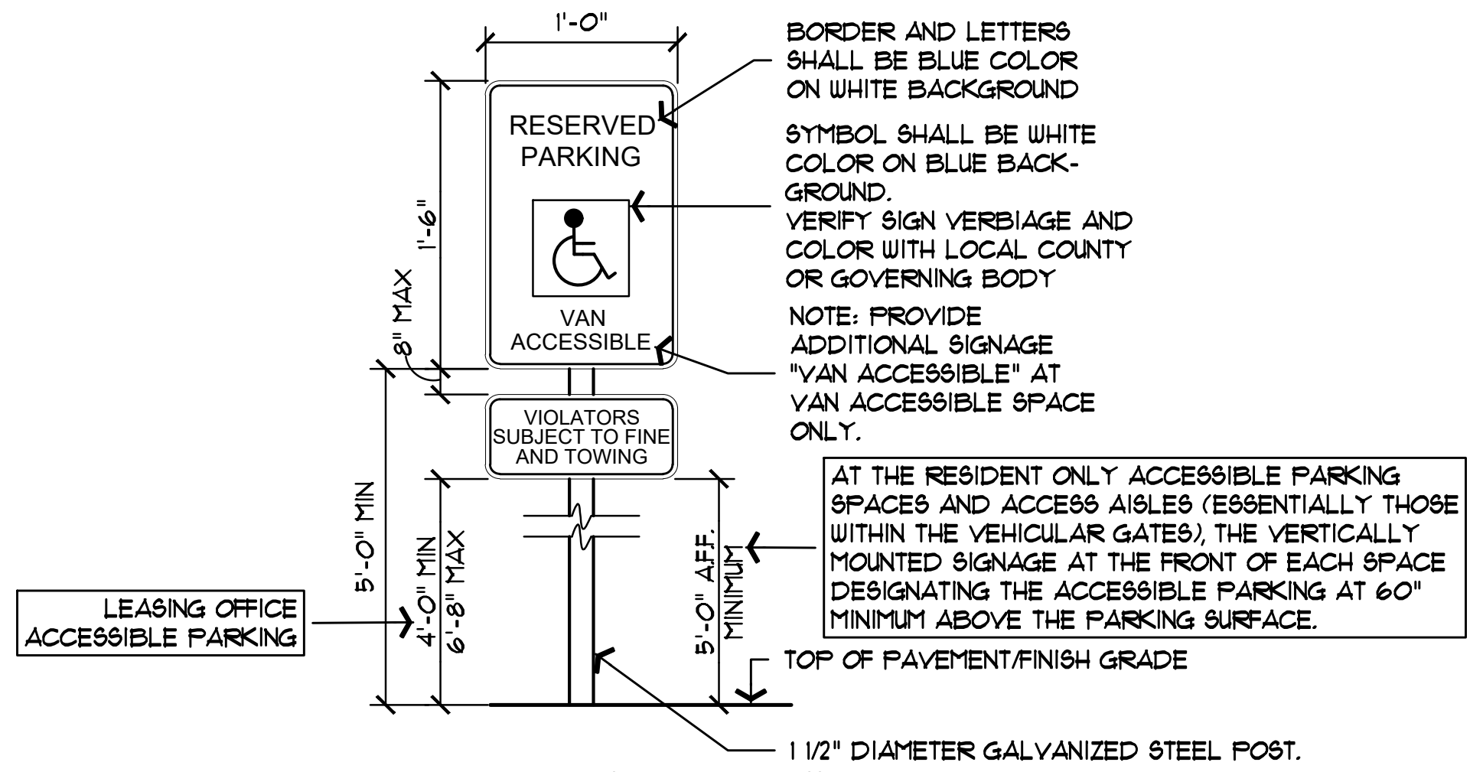
CURB RAMPS LOCATED IN THE PUBLIC RIGHT-OF-WAY SHALL HAVE A 24" MINIMUM DEPTH DETECTABLE WARNING SURFACE (MUST EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING).

REFERENCE ARCHITECTURAL DRAWING PACKAGE FOR FURTHER ACCESSIBILITY GUIDELINES AND TAS REQUIREMENTS.

CITY DETAILS TAKE PRECEDENCE IN CITY RIGHT-OF-WAY AND EASEMENT

A BARRIER FREE CURB RAMPS

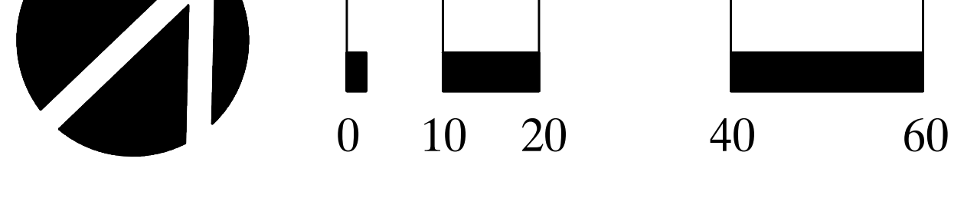
SCALE - NONE


1'-0"
RESERVED PARKING
VAN ACCESSIBLE
VIOLATORS SUBJECT TO FINE AND TOWING
1'-6"
8" MAX
5'-0" MIN
4'-0" MIN
6'-8" MAX
5'-0" A.F.F. MINIMUM
BORDER AND LETTERS SHALL BE BLUE COLOR ON WHITE BACKGROUND
SYMBOL SHALL BE WHITE COLOR ON BLUE BACK-GROUND.
VERIFY SIGN VERBIAGE AND COLOR WITH LOCAL COUNTY OR GOVERNING BODY
NOTE: PROVIDE ADDITIONAL SIGNAGE "VAN ACCESSIBLE" AT VAN ACCESSIBLE SPACE ONLY.
LEASING OFFICE ACCESSIBLE PARKING
TOP OF PAVEMENT/FINISH GRADE
1 1/2" DIAMETER GALVANIZED STEEL POST.

AT THE RESIDENT ONLY ACCESSIBLE PARKING SPACES AND ACCESS AISLES (ESSENTIALLY THOSE WITHIN THE VEHICULAR GATES), THE VERTICALLY MOUNTED SIGNAGE AT THE FRONT OF EACH SPACE DESIGNATING THE ACCESSIBLE PARKING AT 60" MINIMUM ABOVE THE PARKING SURFACE.

B HANDICAP PARKING SIGN

1" = 1'-0"



File Name: Brazos Oaks Phase II - TAS plan.dwg
Plot Date: 01/06/2026 - 08:10am

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

REGISTERED LANDSCAPE ARCHITECT
RICHARD B. ARTHUR
176
STATE OF TEXAS

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/10/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

REVISIONS

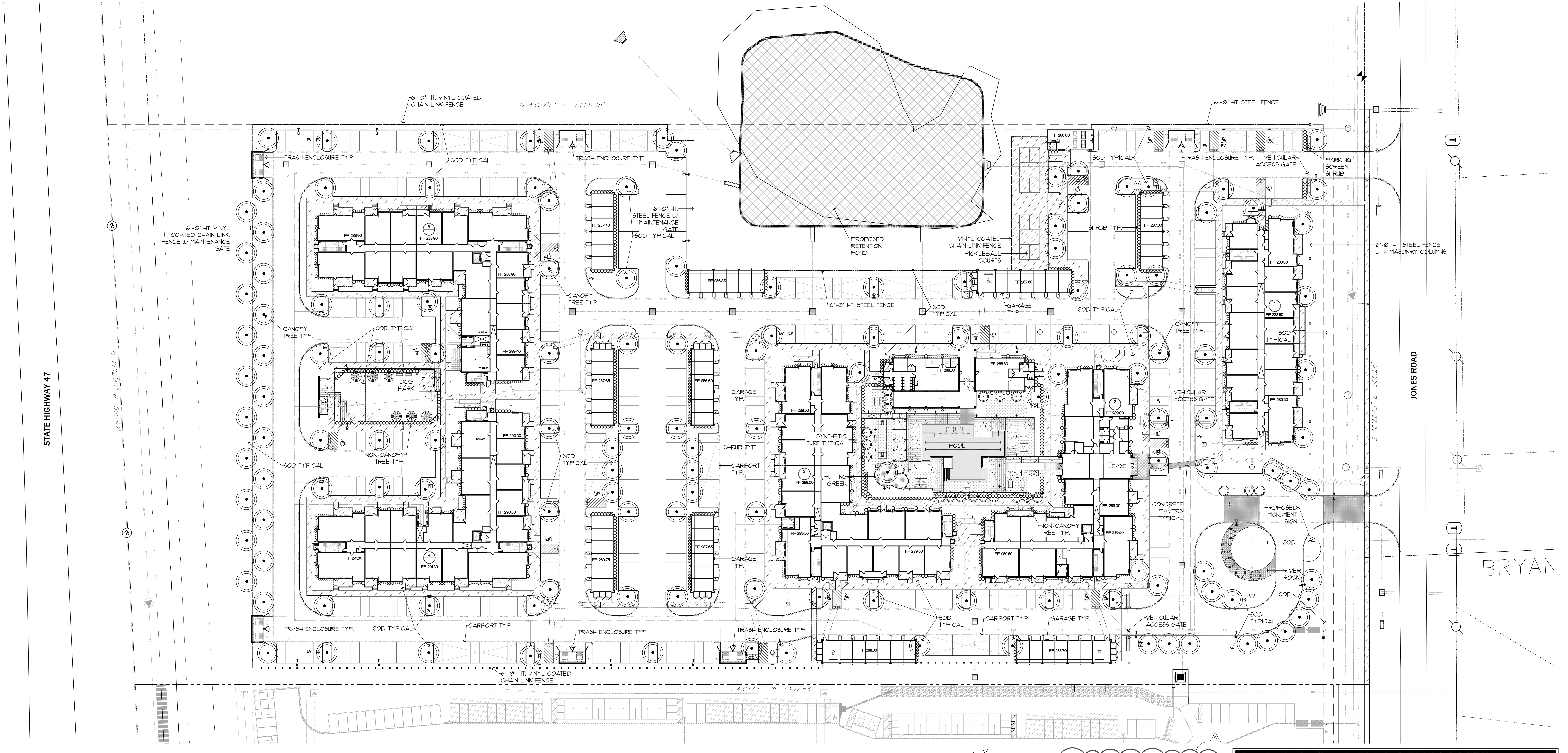
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1" = 20'-0'

DATE
PERMIT SET
10-10-2025

TITLE
TAS PLAN

SHEET
1TAS OF 1


6'-0" HT. VINYL COATED CHAIN LINK FENCE
N 43°37'17" E 1,225.45'
TRASH ENCLOSURE TYP.
SOD TYPICAL
6'-0" HT. VINYL COATED CHAIN LINK FENCE W/ MAINTENANCE GATE
6'-0" HT. STEEL FENCE W/ MAINTENANCE GATE
CANOPY TREE TYP.
NON-CANOPY TREE TYP.
DOG PARK
STATE HIGHWAY 47
N 49°12'30" W 560.92'
FF 288.90
FF 289.40
FF 290.30
FF 290.80
FF 291.30
FF 287.40
FF 286.35
FF 287.65
FF 286.60
FF 289.75
FF 287.65
GARAGE TYP.
CARPORT TYP.
SHRUB TYP.
SYNTHETIC TURF TYPICAL
PUTTING GREEN
POOL
LEASE
PROPOSED RETENTION POND
VINYL COATED CHAIN LINK FENCE
PICKLEBALL COURTS
6'-0" HT. STEEL FENCE
FF 286.00
FF 287.30
FF 287.80
FF 288.80
FF 288.50
FF 289.00
FF 289.50
FF 288.30
FF 288.80
FF 289.30
FF 288.33
FF 288.70
VEHICULAR ACCESS GATE
PARKING SCREEN SHRUB
6'-0" HT. STEEL FENCE WITH MASONRY COLUMNS
JONES ROAD
S 46°22'13" E 560.24'
CONCRETE PAVERS TYPICAL
PROPOSED MONUMENT SIGN
SOD
RIVER ROCK
6'-0" HT. VINYL COATED CHAIN LINK FENCE
S 43°37'17" W 1,197.68'
BRYAN
EV

LANDSCAPE TABULATIONS for Bryan, TX	
LANDSCAPING REQUIREMENT	
1. A minimum of 15% of the developed area (building site) shall be landscaped. 2. Screening is required along the street where parking abutts the public right of way. 3. Not less than 50% of the area to be landscaped shall be planted in trees. Not less than 50% of the trees planted shall be canopy trees. Square Feet Coverage a) newly planted canopy trees (1.5"-3") = 200 s.f.	
b) newly planted canopy trees (3"+) = 350 s.f.	
c) newly planted non canopy trees (1.5"-3") = 150 s.f.	
d) shrubs (less than 2 gallons) = 5 s.f.	
e) shrubs (2-15 gallons) = 10 s.f.	
f) 100 s.f. of grass and live groundcover = 10 s.f. (not to exceed 15% of overall landscape required)	
Site Area = 337,966 s.f.	
REQUIRED	PROVIDED
15% of developed area 7.76 acres (337,966 s.f.) = 50,695 s.f. landscaping Not less than 50% of required area shall be trees - 25,348 s.f. Not less than 50% of trees planted shall be canopy trees - 12,674 s.f. All parking islands must have a canopy tree.	(141) canopy trees x 200 s.f. = 28,200 s.f. (138) non-canopy trees x 100 s.f. = 3,300 s.f. (1,550) shrubs (3-5 gal.) x 10 = 15,500 s.f. (200,000) grass and groundcover/100=2,000 X 10=20,000 50,695 s.f. x 15%=7,604 s.f. maximum towards landscape requirements
TOTAL AREA REQUIRED = 50,695 s.f.	TOTAL LANDSCAPE AREA PROVIDED = 54,604 s.f.
PARKING SCREENING	
1. Parking areas shall be screened front adjacent right-of-way. 2. Planting strips shall be located 2' from any parking area. 3. Shade or evergreen trees moderate of rapid growth are required for every landscaped parking lot end island. 4. The remainder of all parking lot islands shall be landscaped with shrubs, grass, groundcover or other approved by the city.	
REQUIRED	PROVIDED
screening	screening

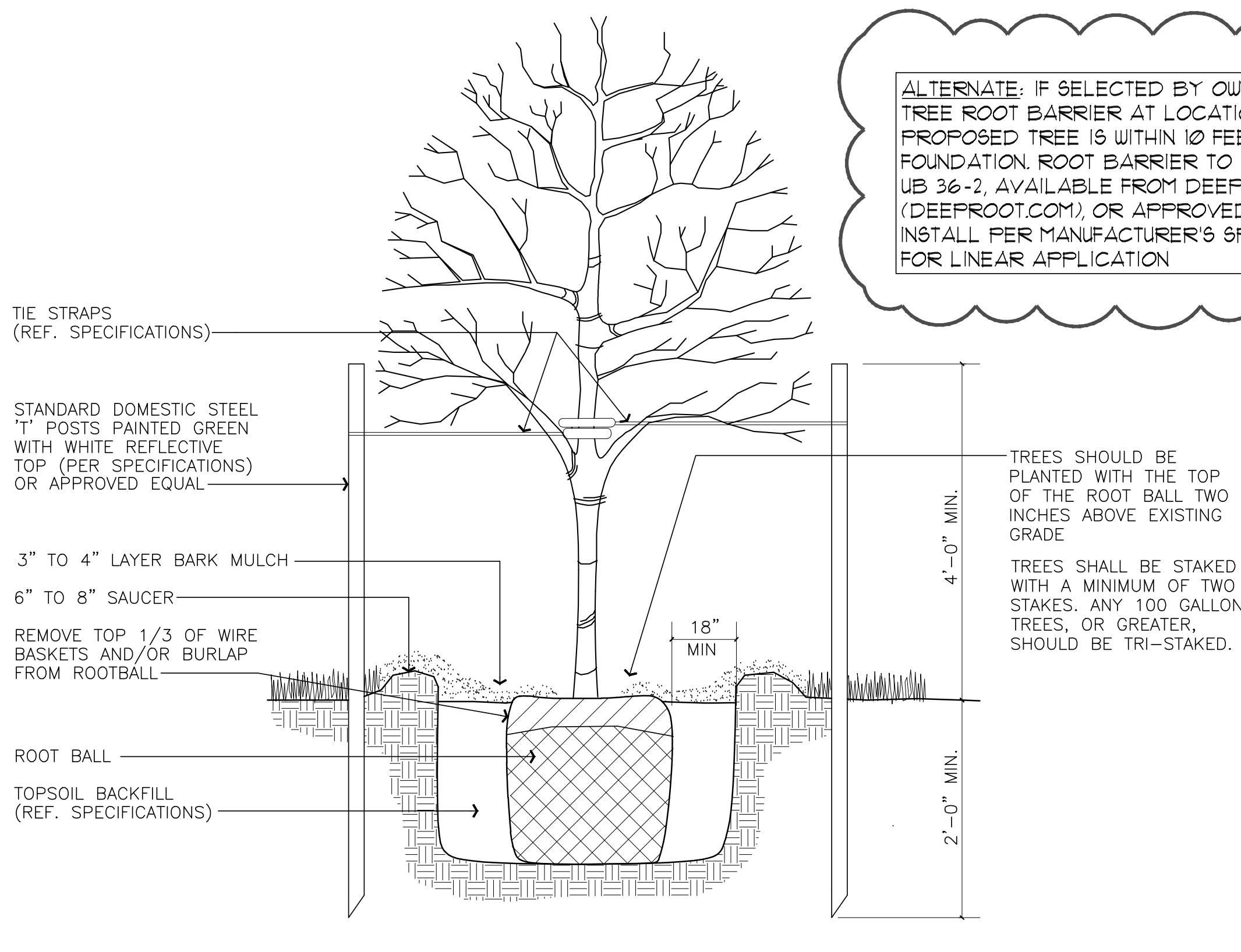
** AUTOMATIC IRRIGATION IS REQUIRED FOR THIS PROJECT**
** NO EXISTING TREES ON SITE TO BE PRESERVED**

File Name: Brazos Oaks Phase II submittal.dwg
Plot Date: 01/06/2026 – 08:13am

PLANT LIST					
SYMBOL	SIZE	OFFICIAL NAME	QUANTITY	SF VALUE	TOTAL
◎	CANOPY TREE 1.5"-3.0" CALIPER	LIVE OAK - QUERCUS VIRGINIANA CEDAR ELM - ULMUS CRASSIFOLIA LACEBARK ELM - ULMUS PARVIFOLIA WINGED ELM - ULMUS ALATA WATER OAK - QUERCUS NIGRA TEXAS ASH - FRAXINUS TEXENSIS BALD CYPRESS - TAXODIUM DISTICHUM CHINKAPIN OAK - QUERCUS MUEHLENBERGERII	141	200	28,200
◎	NON-CANOPY TREE 1.5"-3.0" CALIPER	CHERRY LAUREL - PRUNUS CAROLINIANA CRAPEMYRTLE - LAGERSTROEMIA INDICA DESERT WILLOW - CHILOPSIS LINEARIS YAUPON HOLLY - ILEX VOMITORIA POSSUMHAW HOLLY - ILEX DECIDUA MEXICAN PLUM - PRUNUS MEXICANA TEXAS MOUNTAIN LAUREL - SOPHORA SECUNDIFLORA REDBUD - CERCIS CANADENSIS	33	100	3,300
○○○○	SHRUB 3-5 GALLON	DWARF BURFORD HOLLY - ILEX CORNUTA 'BURFORDII NANA' SPRING BOUQUET VIBURNUM - VIBURNUM TINIS 'SPRING BOUQUET' DWARF WAX MYRTLE - MYRICA CERIFERA TEXAS SAGE - LEUCOPHYLLUM FRUITESCENS INDIAN HAWTHORN - RAPHIOLEPSIS INDICA JAPANESE BOXWOOD - BUXUS MICROPHYLLA 'JAPONICA' DWARF YAUPON HOLLY - ILEX VOMITORIA 'NANA' HARBOR DWARF NANDINA - NANDINA DOMESTICA DWARF PITTOSPORUM - PITTOSPORUM TOBIRA 'WHEELERS DWARF' SPIRAEA - SPIRAEA BUMALDA 'ANTHONY WATERER' WAXLEAF LIGUSTRUM - LIGUSTRUM JAPONICUM DWARF EUONYMUS - EUONYMUS JAPONICA	1,550	10	15,500
	COVER (15% MAX)	BERMUDA GRASS	200,000/100	10	7,604 SF

GENERAL NOTES

1. AN UNDERGROUND AUTOMATIC POP-UP TYPE IRRIGATION SYSTEM SHALL BE INSTALLED TO WATER ALL LANDSCAPE AREAS, INCLUDING RIGHT-OF-WAY AREAS. ADJUSTMENTS TO SYSTEM WILL LIMIT OVERSPRAY ONTO ADJACENT ROADWAYS AND CONSERVE WATER TO THE GREATEST EXTENT POSSIBLE. A RAIN SENSING DEVICE AND A FREEZE SENSOR WILL BE PART OF THE SYSTEM.
2. ADDITIONAL PLANT MATERIAL WILL BE INSTALLED ON-SITE BY OWNER, IN ACCORDANCE WITH THE CITY OF BRYAN LANDSCAPE STANDARDS. MATERIAL SHOWN ON THIS PLAN IS TO MEET MINIMUM CITY OF BRYAN LANDSCAPE ORDINANCE REQUIREMENTS.
3. ALL PLANT MATERIAL SHALL BE MAINTAINED BY OWNER IN A HEALTHY AND GROWING CONDITION, AND REPLACED WITH PLANT MATERIAL OF SIMILAR VARIETY AND SIZE IF DAMAGED, DESTROYED OR REMOVED.
4. LANDSCAPE AREAS SHALL BE KEPT FREE OF TRASH, LITTER, WEEDS AND OTHER MATERIALS OR PLANTS NOT A PART OF THE ORIGINAL LANDSCAPING.
5. ALL LANDSCAPE AREAS SHALL BE PROTECTED FROM VEHICULAR TRAFFIC THROUGH THE USE OF CONCRETE CURBS, WHEELSTOPS OR OTHER PERMANENT BARRIERS.
6. ALL PERMEABLE SURFACES NOT OCCUPIED BY TREES, SHRUBS, PLANTING BEDS, SIGNS AND OTHER PERMITTED ITEMS OR FIXTURES SHALL BE BERMUDA, BUFFALO GRASS OR ST. AUGUSTINE GRASS LAWN AREAS, UNLESS NOTED OTHERWISE.
7. ALL TREES ARE TO BE LOCATED, WHENEVER POSSIBLE, OUTSIDE SANITARY SEWER AND UTILITY EASEMENTS.
8. REFERENCE ENGINEERING PLANS FOR PROPOSED GRADES.
9. FINAL LOCATION OF PLANT MATERIAL MAY VARY DUE TO ACTUAL FIELD CONDITIONS, PROPOSED GRADES AND HARDSCAPE LAYOUT. GENERAL INTENT WILL BE MAINTAINED.
10. TREES TO HAVE A CLEAR BRANCHING HEIGHT OF 7'-0" OVER PARKING AND SIDEWALKS.
11. A MINIMUM THREE INCH LAYER OF BARK MULCH SHALL BR PROVIDED AT ALL PROPOSED TREES.


TIE STRAPS (REF. SPECIFICATIONS)
STANDARD DOMESTIC STEEL 'T' POSTS PAINTED GREEN WITH WHITE REFLECTIVE TOP (PER SPECIFICATIONS) OR APPROVED EQUAL
3" TO 4" LAYER BARK MULCH
6" TO 8" SAUCER
REMOVE TOP 1/3 OF WIRE BASKETS AND/OR BURLAP FROM ROOTBALL
ROOT BALL
TOPSOIL BACKFILL (REF. SPECIFICATIONS)
18" MIN
4'-0" MIN.
2'-0" MIN.

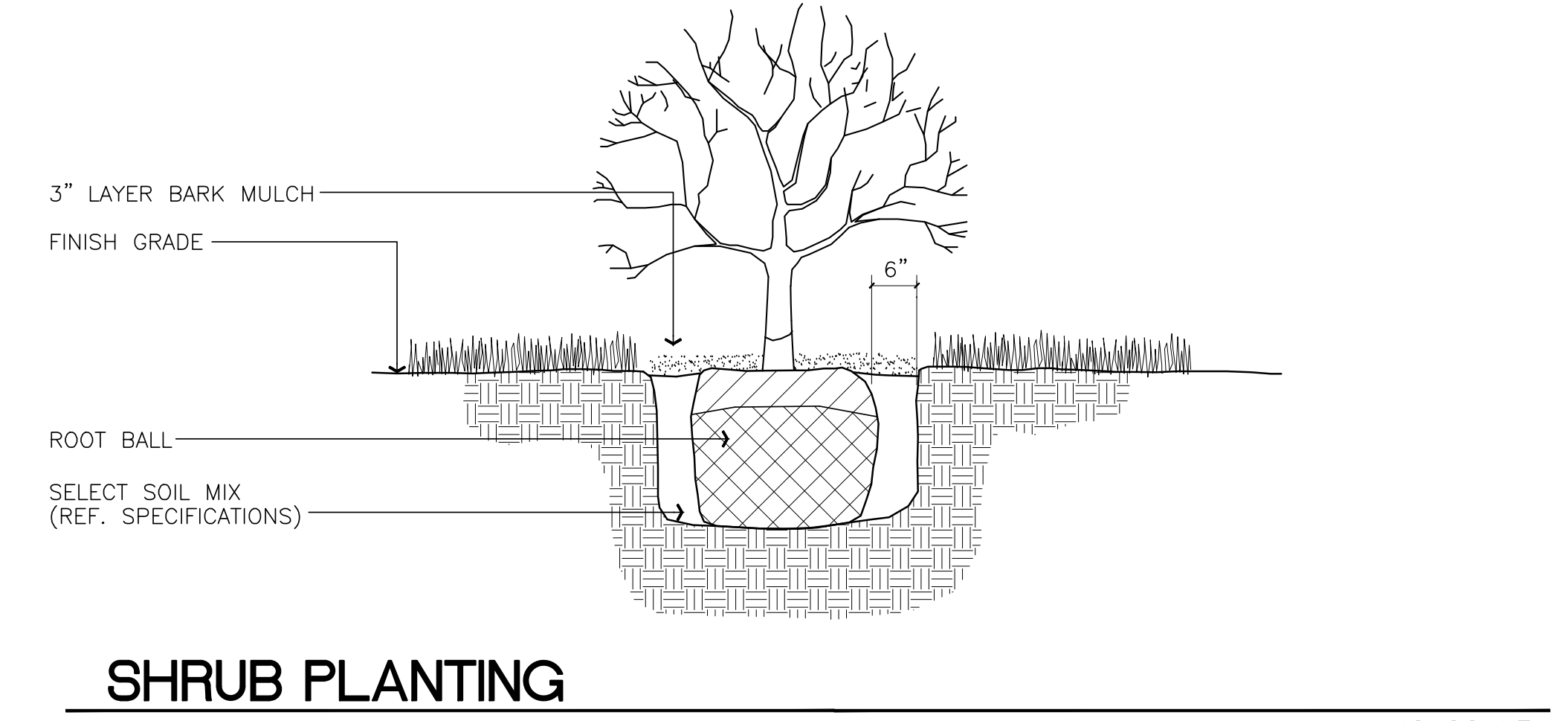
TREES SHOULD BE PLANTED WITH THE TOP OF THE ROOT BALL TWO INCHES ABOVE EXISTING GRADE

TREES SHALL BE STAKED WITH A MINIMUM OF TWO STAKES. ANY 100 GALLON TREES, OR GREATER, SHOULD BE TRI-STAKED.

ALTERNATE: IF SELECTED BY OWNER, PROVIDE TREE ROOT BARRIER AT LOCATIONS WHERE PROPOSED TREE IS WITHIN 10 FEET OF BUILDING FOUNDATION. ROOT BARRIER TO BE MODEL NO. UB 36-2, AVAILABLE FROM DEEPROOT (DEEPROOT.COM), OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS FOR LINEAR APPLICATION

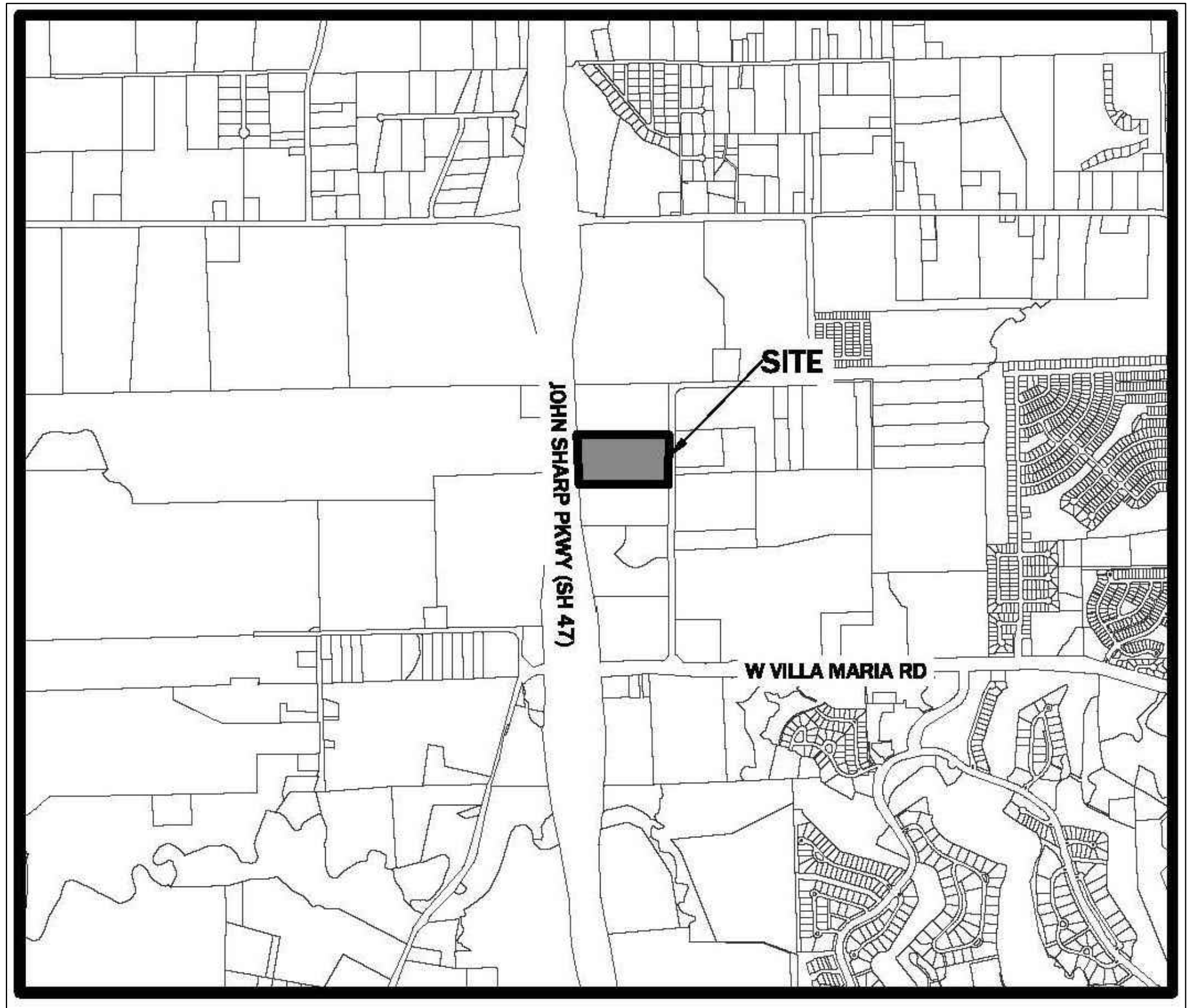
TREE PLANTING

NO SCALE

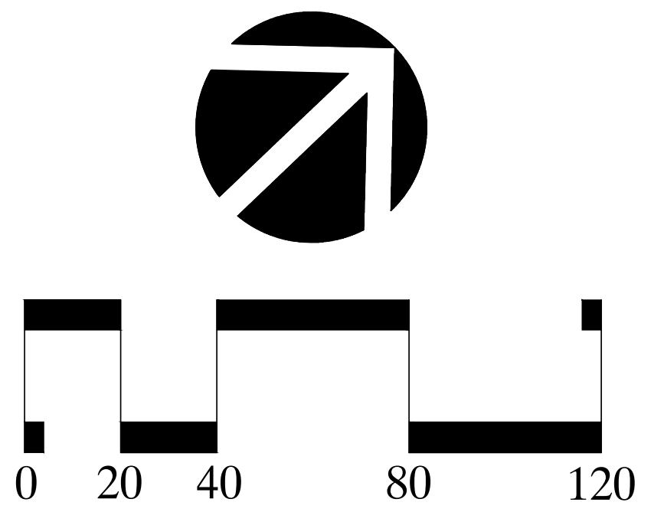

3" LAYER BARK MULCH
FINISH GRADE
6"
ROOT BALL
SELECT SOIL MIX (REF. SPECIFICATIONS)

SHRUB PLANTING

NO SCALE


SITE
JOHN SHARP PKWY (GH 47)
W VILLA MARIA RD

VICINITY MAP
N.T.S.


0
20
40
80
120

LANDSCAPE PLAN
BRAZOS OAKS PHASE II
BRYAN, TEXAS

PREPARED FOR:
TEEPLE PARTNERS
1301 S. Capital of Texas Hwy
Suite A134
Austin, Texas 78746
(512) 329-5755
Contact: Charles S. Teeple

PREPARED BY:
ENVIRO DESIGN
7424 Greenville Avenue
Suite 200
Dallas, Texas 75231
(214) 987-3010
Contact: Dick Arthur

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

RICHARD B. ARTHUR
176

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/10/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

REVISIONS
A 17 DEC 2025
CITY COMMENTS

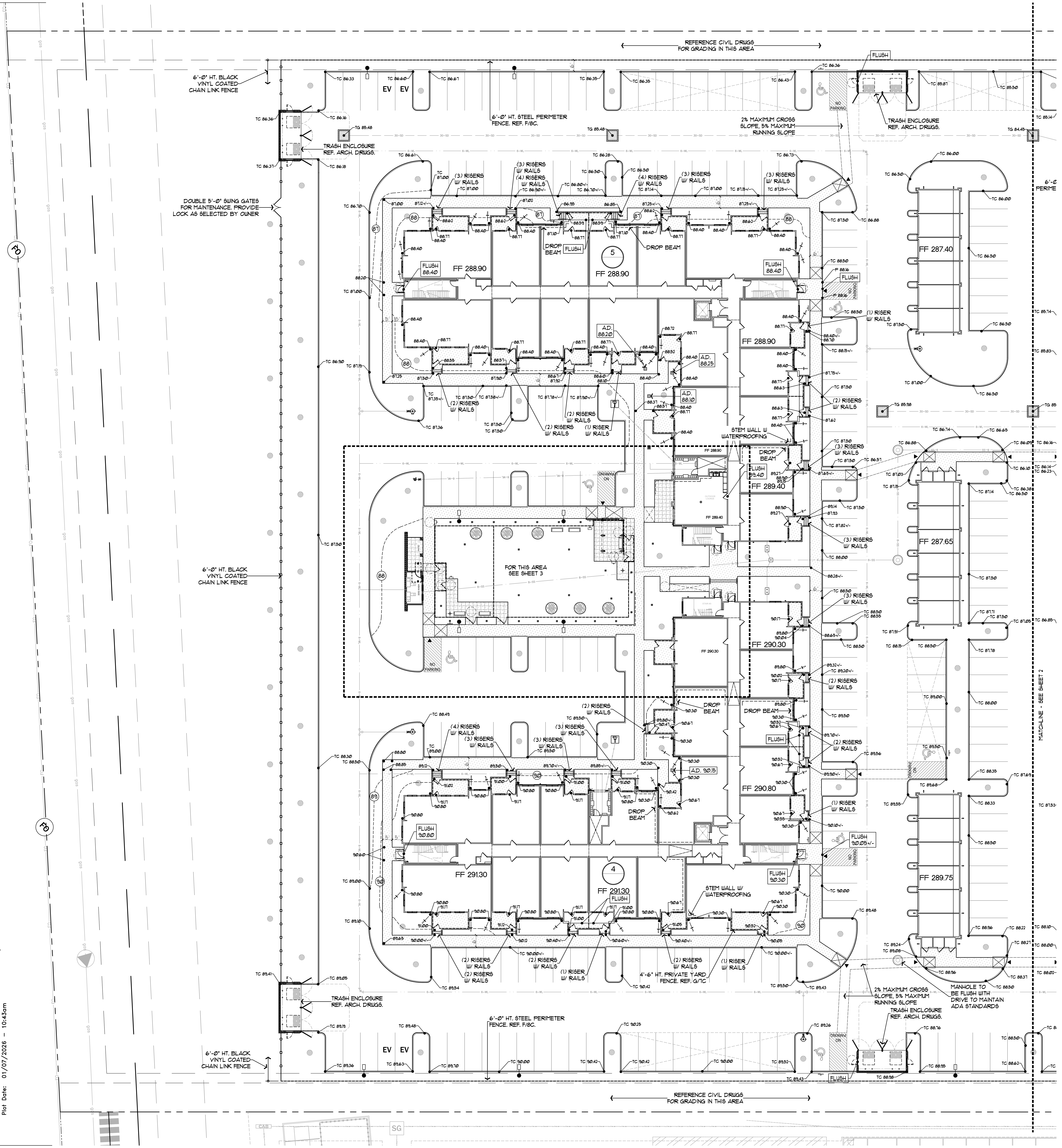
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1" = 40'-0"

DATE
10 OCT 2025

TITLE
LANDSCAPE PLAN

SHEET
1LP OF 1


REFERENCE CIVIL DRWGS FOR GRADING IN THIS AREA
6'-0" HT. BLACK VINYL COATED CHAIN LINK FENCE
6'-0" HT. STEEL PERIMETER FENCE, REF. F/8C.
TRASH ENCLOSURE REF. ARCH. DRWGS.
DOUBLE 5'-0" SWING GATES FOR MAINTENANCE. PROVIDE LOCK AS SELECTED BY OWNER
2% MAXIMUM CROSS SLOPE, 5% MAXIMUM RUNNING SLOPE
FLUSH
EV
NO PARKING
(3) RISERS W/ RAILS
(2) RISERS W/ RAILS
(4) RISERS W/ RAILS
(1) RISER W/ RAILS
DROP BEAM
STEM WALL W/ WATERPROOFING
FF 288.90
FF 287.40
FF 289.40
FF 287.65
FF 290.30
FF 290.80
FF 291.30
FF 289.75
A.D. 88.20
A.D. 88.25
A.D. 88.10
A.D. 90.15
FOR THIS AREA SEE SHEET 3
MATCHLINE - SEE SHEET 2
4'-6" HT. PRIVATE YARD FENCE, REF. G/7C
MANHOLE TO BE FLUSH WITH DRIVE TO MAINTAIN ADA STANDARDS
5
4

File Name: Brazos Oaks Phase II – construction.dwg
Plot Date: 01/07/2026 – 10:43am

CONSTRUCTION NOTES

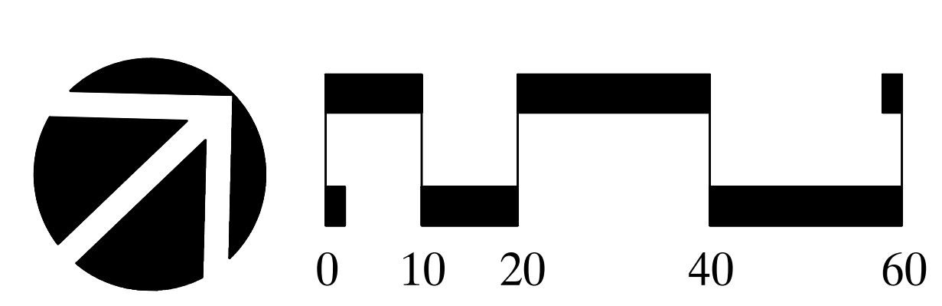
1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL GRADES, DIMENSIONS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
2. SAVE ALL EXISTING VEGETATION POSSIBLE. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY REMOVAL QUESTION OR VARIED DESIGN LAYOUT.
3. ALL CONCRETE WALKS, UNLESS NOTED OTHERWISE, SHALL HAVE A LIGHT BROOM FINISH. CONTROL JOINTS SHALL BE INSTALLED IN ALL WALKS AT 5'-0" ON CENTER MAXIMUM OR AS SHOWN ON PLANS. EXPANSION JOINTS SHALL BE INSTALLED AT 20'-0" ON CENTER MAXIMUM WITH PINS TO PREVENT UPLIFTING.
4. ALL WALKS TO BE 4'-0" WIDE, UNLESS NOTED OTHERWISE, WITH A MAXIMUM CROSS-SLOPE OF 2%. WALKS ON PLANS MAY NOT BE DRAWN TO SCALE. WALKS AT FRONT OF HEAD-IN CAR PARKING TO BE 5'-0" MINIMUM FROM BACK OF CURB.
5. RAILINGS ON WALLS AND WALKS ARE SHOWN AS A GUIDE ONLY. OWNER'S REPRESENTATIVES ARE TO DETERMINE ACTUAL CODE REQUIREMENTS. HANDRAILS SHALL BE PROVIDED AT STEPS OF TWO OR MORE RISERS AND AT RAMPS AS REQUIRED BY STATE AND LOCAL CODES. HANDRAILS TO EXTEND A MINIMUM OF 12" BEYOND TOP RISER AND 12" BEYOND BOTTOM RISER (OR WIDTH OF TREAD IF GREATER THAN 12") ON ALL SETS OF STAIRS. GUARD RAILS ARE REQUIRED AT DROPS OF 30 INCHES OR MORE.
6. ALL SIDEWALK CONNECTIONS TO BUILDING FOUNDATION AND ENTRY SLABS TO BE FLUSH UNLESS A STEP IS NOTED.
7. ALL WALKS TO BE 4.99% RUNNING SLOPE OR LESS, UNLESS INDICATED AS A RAMP.
8. RAMPS TO BE A MAXIMUM OF 8.3% RUNNING SLOPE WITH RAILINGS EXCEPT AT CURB CUTS OR OTHER 6" RAMPS WHERE RAILING IS NOT REQUIRED. LEVEL 5'-0" LANDINGS WITH 2% MAXIMUM SLOPE IN ANY DIRECTION SHALL BE LOCATED AT THE TOP AND BOTTOM OF RAMP.
9. AREA DRAIN AND/OR DECK DRAIN SIZE AND PVC DRAIN LINE SIZE, LOCATIONS AND GRADE TO BE DETERMINED BY CIVIL ENGINEER AND SHALL MEET MINIMUM REQUIREMENTS:
   - DECK DRAINS (LOCATED IN PAVED AREAS) - ALL DRAINS TO BE CAPPED WITH A MINIMUM 4" ROUND GRATE.
   - PLANTER DRAINS (LOCATED IN SHRUB AND/OR GROUNDCOVER BEDS) - ALL DRAINS TO BE CAPPED WITH A MINIMUM 6" ATRIUM GRATE.
10. CONNECT AREA DRAINS TO STORM SEWER. AREA DRAINS AND CONNECTING DRAIN LINES TO BE ROUTED AND SIZED BY THE CIVIL ENGINEER. EXACT LOCATION TO BE FIELD VERIFIED TO AVOID CONFLICTS WITH EXISTING OR PROPOSED VEGETATION AND OTHER UNDERGROUND UTILITIES. REFERENCE CIVIL ENGINEER PLANS FOR LOCATION OF STORM SEWER. ALL DRAINS AND DRAINLINES TO BE SIZED BY CIVIL ENGINEER.
11. ALL FINISH DIRT GRADES TO BE A MINIMUM SIX INCHES BELOW FINISHED FLOOR ELEVATION UNLESS NOTED OTHERWISE.
12. CONTRACTOR TO PAY SPECIAL ATTENTION TO DRAINAGE AND FIELD VERIFY POSITIVE FLOW AWAY FROM ALL BUILDINGS. NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
13. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY CHANGES IN LOCATION OF AIR CONDITIONERS, TRANSFORMERS OR OTHER ON-SITE ITEMS.
14. IT IS THE INTENT OF THIS PLAN TO MEET ALL HANDICAP ACCESSIBILITY STANDARDS. NOTIFY LANDSCAPE ARCHITECT IF ANY DISCREPANCIES ARE DETECTED. CONTRACTOR AND OWNER SHALL VERIFY THAT ALL REQUIREMENTS AND STANDARDS ARE MET OR EXCEEDED.
15. DESIGN AND CONSTRUCTION OF BARRIER-FREE RAMPS SHALL COMPLY WITH THE STATE OF TEXAS PROGRAM FOR THE ELIMINATION OF ARCHITECTURAL BARRIERS - SECTION 'J'. BARRIER-FREE CROSSWALKS TO BE IN ACCORDANCE WITH CITY AND ADA REQUIREMENTS AND STANDARDS.
16. LIGHT LOCATION, AS INDICATED ON PLANS, ARE RECOMMENDED LOCATIONS ONLY. FINAL FIXTURE QUANTITY AND LOCATIONS MAY VARY DUE TO OWNER'S SELECTION OF LAMP TYPE, LAMP WATTAGE, FOOT-CANDLE INTENSITY AND HEIGHT OF FIXTURE. OWNER OR OWNER'S LIGHTING CONSULTANT TO DETERMINE REQUIRED ILLUMINATION.
17. REFER TO ARCHITECTURAL AND STRUCTURAL ENGINEER PLANS FOR STEM WALL AND DROP BEAM LOCATIONS AND DETAILS. REFER TO STRUCTURAL ENGINEER PLANS FOR RETAINING WALL AND FOOTING STRUCTURAL DETAILS.
18. SITE CONFIGURATION, BUILDING AND PARKING LAYOUT, PROPOSED ENGINEERING GRADING, SPACE LIMITATIONS, ACCESSIBILITY REQUIREMENTS AND RELATED CODES DO NOT ALLOW US TO ACHIEVE THE DRAINAGE RECOMMENDATIONS LISTED IN THE P.T.I., INTERNATIONAL BUILDING CODE, MANY GEOTECHNICAL REPORTS, AND OTHER DRAINAGE PUBLICATIONS. SOME GEOTECHNICAL REPORTS RECOMMEND THAT NEW TREES NOT BE PLACED CLOSER THAN 1 OF THEIR MATURE HEIGHT TO THE BUILDING FOUNDATION. THE ITEMS LISTED ABOVE AND CITY LANDSCAPE CODE REQUIREMENTS DO NOT ALLOW US TO MEET THIS RECOMMENDATION.
19. THE GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER SHOULD REVIEW OUR LANDSCAPE CONSTRUCTION DRAWINGS AND APPROVE THE DRAINAGE CONDITIONS AND TREE PLACEMENT OR PROVIDE AN ALTERNATIVE FOR MITIGATION.
20. TOP OF CURB GRADES, FINISH FLOORS AND PAVEMENT GRADES PROVIDED BY CIVIL ENGINEER. BUILDING ENTRY GRADES PROVIDED BY ARCHITECT.
21. ALL HANDICAP SPACES TO BE DESIGNATED WITH POLE MOUNTED OR WALL MOUNTED SIGNAGE.

ACCESSIBILITY NOTES:

1. THE SLOPE ON ALL HANDICAP SPACES, AISLES, SIDEWALK LANDINGS AND THE SLOPE WITHIN REQUIRED DOOR/GATE MANEUVERING CLEARANCE AREA SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. ALL BUILDING ENTRIES TO BE FLUSH WITH ADJACENT ENTRY WALK (TYPICAL).
3. ACCESSIBLE ROUTES AND HANDICAP CROSSWALKS SHALL NOT EXCEED 2% CROSS SLOPE OR 5% RUNNING SLOPE.
4. ALL HANDICAP RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. ALL GROUND AND FLOOR SURFACES ALONG ACCESSIBLE ROUTES, INCLUDING FLOORS, WALKS, RAMPS, STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM, SLIP RESISTANT, AND SHALL COMPLY WITH SECTION A4.5 GROUND AND FLOOR SURFACES (ANSI).
6. ALL RAMPS TO HAVE A FIVE (5) FOOT LANDING AT TOP AND BOTTOM WHICH SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
7. ALL STEPS WITH TWO (2) OR MORE RISERS SHALL HAVE HANDRAILS INSTALLED ON EACH SIDE OF STEPS. ALL STEPS TO HAVE A 44" MINIMUM LANDING AT TOP AND BOTTOM WHICH SHALL NOT EXCEED 2% SLOPE IN ANY DIRECTION.
8. OWNER SHALL MAINTAIN ACCESS ROUTES IN AN ACCEPTABLE MANNER AT ALL TIMES.
9. OWNER TO COORDINATE AND DIRECT PLACEMENT OF ALL REQUIRED SIGNAGE FOR ACCESSIBLE ROUTES AND PARKING SPACES.
10. ALL HANDICAP PARKING SPACES TO BE DESIGNATED WITH POLE MOUNTED OR WALL MOUNTED SIGNAGE. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHALL BE PAINTED CONSPICUOUSLY ON THE SURFACE OF THE PARKING SPACE IN A COLOR THAT CONTRASTS TO PAVEMENT.
11. THE WORDS "NO PARKING" SHALL BE PAINTED ON ANY ACCESS AISLE ADJACENT TO THE HANDICAP PARKING SPACE IN ALL CAPITAL LETTERS WITH A LETTER HEIGHT OF AT LEAST TWELVE INCHES, AND A STROKE WIDTH OF AT LEAST TWO INCHES; AND CENTERED WITHIN EACH ACCESS AISLE ADJACENT TO THE PARKING SPACE.

CONSTRUCTION LEGEND

TOP OF CURB GRADE	TC XX.XX
PAVEMENT GRADE	P XX.XX
PROPOSED GRADE	XX.XX
TOP OF WALL GRADE	TW XX.XX
AREA DRAIN ELEVATION	A.D. XX.XX
AREA DRAIN	▤
DECK DRAIN ELEVATION	D.D. XX.XX
DECK DRAIN	⊖
SUB-SURFACE DRAIN	⊗
PROPOSED CONTOUR	XX
DIRECTION OF DRAINAGE	→
STONE WALL	▭
BRICK WALL	▭
SLOPED WALL	▨
BRUSH FINISH CONCRETE	▭
SPECIAL PAVING (REFERENCE PLAN)	▭ ▦ ▦
SYNTHETIC TURF	▭
RIVER ROCK	▨
BLACK VINYL COATED CHAIN LINK FENCE	─□─□─
STEEL PERIMETER FENCE W/ MASONRY COLUMN	---■---
HANDRAIL / RAILING	----
POST LIGHT	●
BOLLARD LIGHT	✹
LED LANDSCAPE ACCENT LIGHT	◬
WALL MOUNTED SCONCE LIGHT	⊖
6FT LENGTH BENCH	▭
TRANSFORMER	☒
ELECTRICAL METERS	▭
BARRIER-FREE RAMP AND CURB OPENING	☒
BARRIER-FREE RAMP	☒
ACCESSIBLE ROUTE 1:20 MAX. SLOPE	☒
CURB OPENING	▲
IRRIGATION SLEEVE	----
PROPOSED TREE BALL	●
5x5 CLEAR LANDING (2% MAXIMUM CROSS SLOPE)	○
PVC DRAINLINE	....



ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

REGISTERED LANDSCAPE ARCHITECT
RICHARD B. ARTHUR
176
STATE OF TEXAS

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REVISIONS
A 01-02-26
VE UPDATES

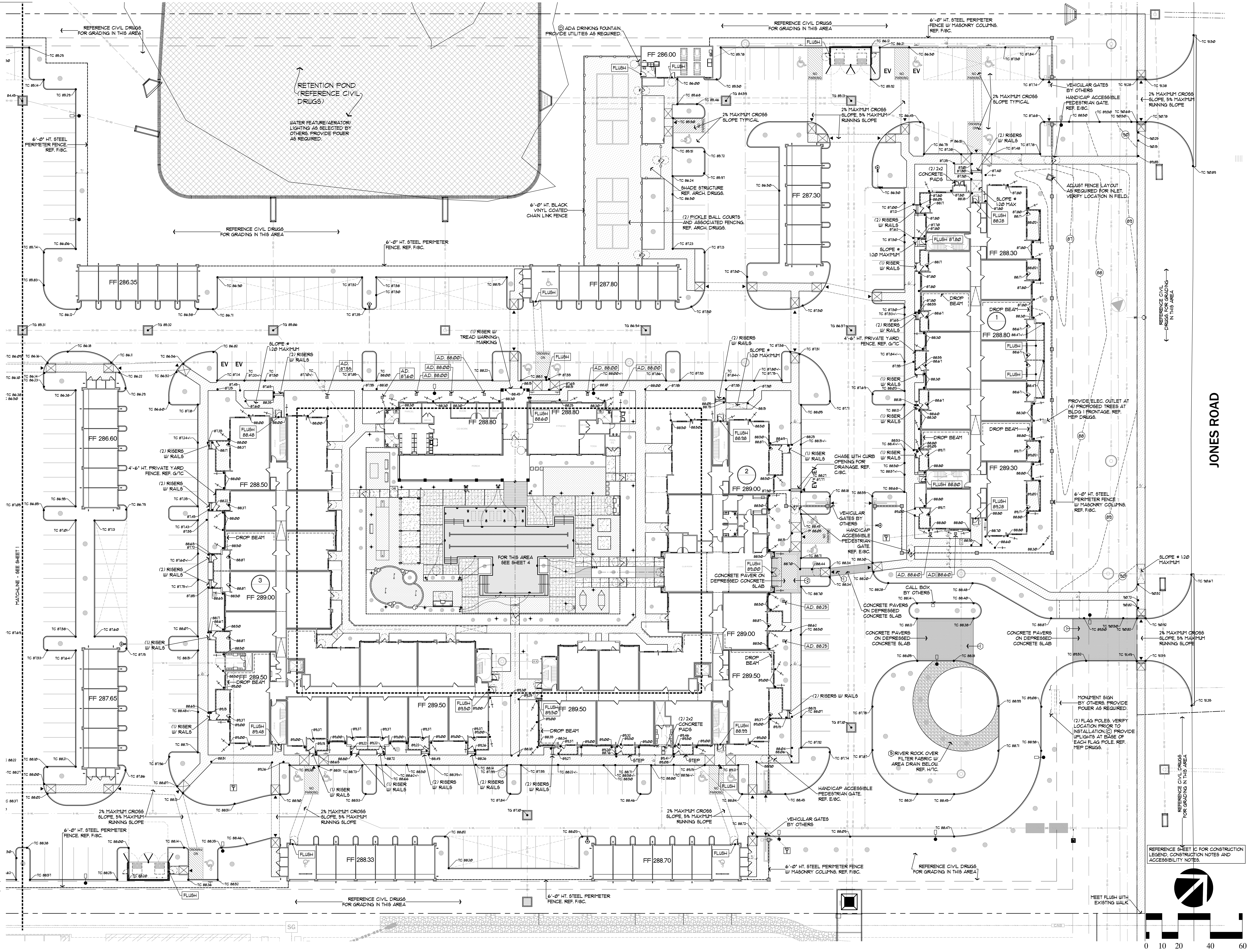
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1" = 20'-0'

DATE
PERMIT SET
10-10-2025

TITLE
CONSTRUCTION

SHEET
1C OF 8


REFERENCE CIVIL DRWGS FOR GRADING IN THIS AREA
RETENTION POND (REFERENCE CIVIL DRWGS)
WATER FEATURE/AERATOR/ LIGHTING AS SELECTED BY OTHERS. PROVIDE POWER AS REQUIRED.
ⓓ ADA DRINKING FOUNTAIN. PROVIDE UTILITIES AS REQUIRED.
6'-0" HT. STEEL PERIMETER FENCE W/ MASONRY COLUMNS, REF. F/8C.
6'-0" HT. STEEL PERIMETER FENCE REF. F/8C.
6'-0" HT. BLACK VINYL COATED CHAIN LINK FENCE
FF 286.00
FF 286.35
FF 287.80
FF 287.30
FF 286.60
FF 287.65
FF 288.80
FF 288.50
FF 289.00
FF 289.50
FF 288.33
FF 288.70
FF 288.30
FF 288.80
FF 289.30
FLUSH
2% MAXIMUM CROSS SLOPE TYPICAL
2% MAXIMUM CROSS SLOPE, 5% MAXIMUM RUNNING SLOPE
SHADE STRUCTURE REF. ARCH. DRWGS.
(2) PICKLE BALL COURTS AND ASSOCIATED FENCING. REF. ARCH. DRWGS.
VEHICULAR GATES BY OTHERS
HANDICAP ACCESSIBLE PEDESTRIAN GATE. REF. E/8C.
(2) 2x2 CONCRETE PADS
ADJUST FENCE LAYOUT AS REQUIRED FOR INLET. VERIFY LOCATION IN FIELD.
SLOPE @ 1:20 MAX
SLOPE @ 1:20 MAXIMUM
(2) RISERS W/ RAILS
(1) RISER W/ RAILS
(1) RISER W/ TREAD WARNING MARKING
4'-6" HT. PRIVATE YARD FENCE. REF. G/1C
DROP BEAM
EV
NO PARKING
AD. 88.00
AD. 88.60
AD. 88.25
PROVIDE ELEC. OUTLET AT (4) PROPOSED TREES AT BLDG 1 FRONTAGE. REF. MEP DRWGS.
CHASE WITH CURB OPENING FOR DRAINAGE. REF. C/8C.
FOR THIS AREA SEE SHEET 4
CONCRETE PAVER ON DEPRESSED CONCRETE SLAB
CONCRETE PAVERS ON DEPRESSED CONCRETE SLAB
CALL BOX BY OTHERS
ⓢ RIVER ROCK OVER FILTER FABRIC W/ AREA DRAIN BELOW REF. H/1C.
MONUMENT SIGN BY OTHERS. PROVIDE POWER AS REQUIRED.
(2) FLAG POLES. VERIFY LOCATION PRIOR TO INSTALLATION. Ⓒ PROVIDE UPLIGHTS AT BASE OF EACH FLAG POLE. REF. MEP DRWGS.
STEP
MATCHLINE - SEE SHEET 1
JONES ROAD
MEET FLUSH WITH EXISTING WALK
1
2
3
0 10 20 40 60

REFERENCE SHEET 1C FOR CONSTRUCTION LEGEND, CONSTRUCTION NOTES AND ACCESSIBILITY NOTES.

File Name: Brazos Oaks Phase II – construction.dwg
Plot Date: 01/07/2026 – 10:44am

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
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STATE OF TEXAS

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REVISIONS
Ⓐ 01-02-26
VE UPDATES

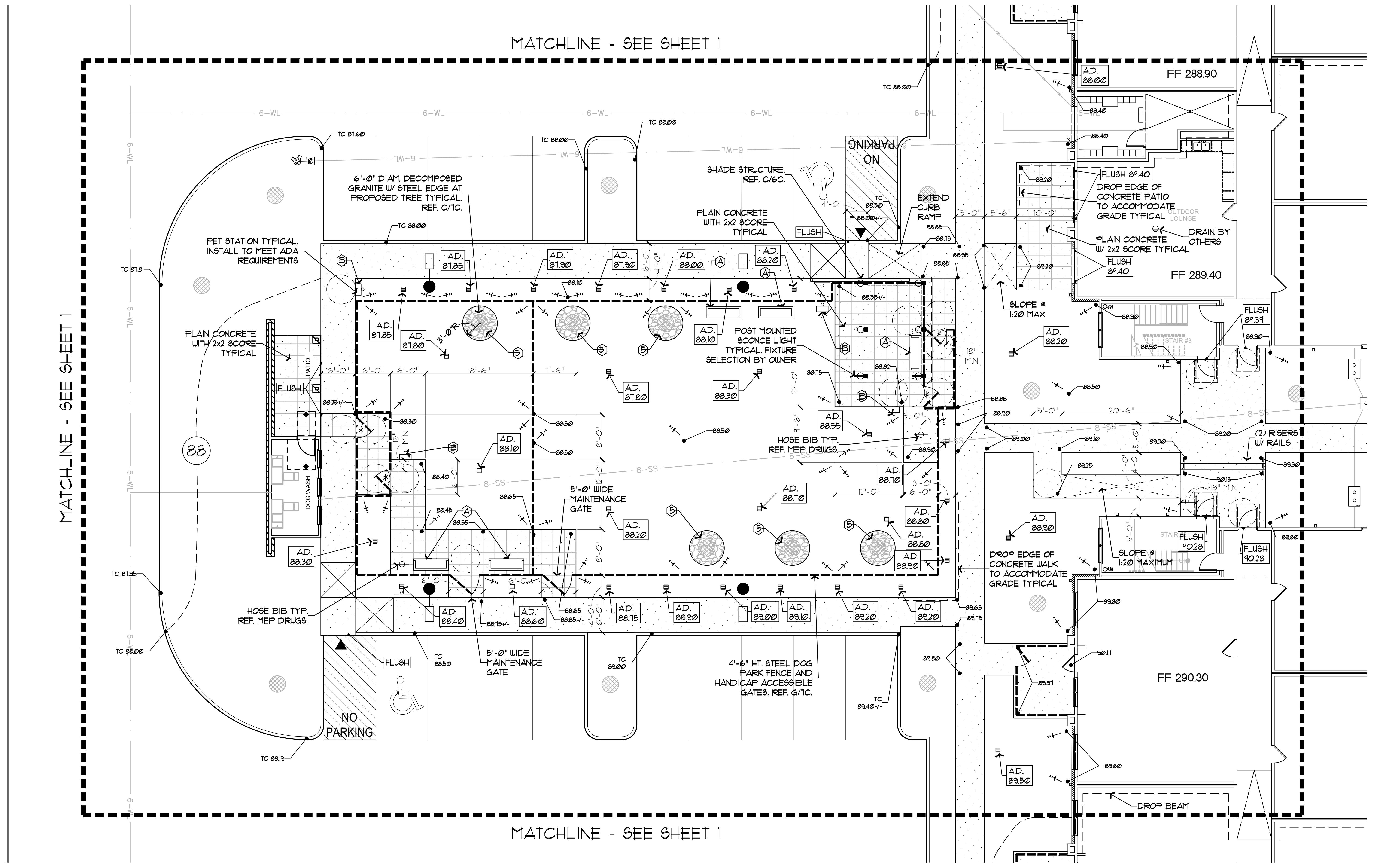
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1" = 20'-0'

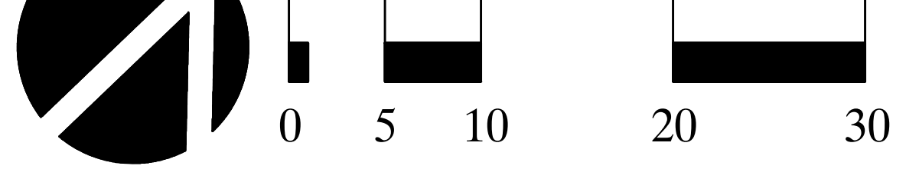
DATE
PERMIT SET
10-10-2025

TITLE
CONSTRUCTION

SHEET
2C OF 8


MATCHLINE - SEE SHEET 1
MATCHLINE - SEE SHEET 1
MATCHLINE - SEE SHEET 1
6-WL
TC 87.60
TC 88.00
TC 87.81
TC 87.95
TC 88.00
TC 88.13
88
6'-0" DIAM. DECOMPOSED GRANITE W/ STEEL EDGE AT PROPOSED TREE TYPICAL. REF. C/1C.
PET STATION TYPICAL. INSTALL TO MEET ADA REQUIREMENTS
PLAIN CONCRETE WITH 2x2 SCORE TYPICAL
PATIO
FLUSH
DOG WASH
HOSE BIB TYP. REF. MEP DRWGS.
5'-0" WIDE MAINTENANCE GATE
5'-0" WIDE MAINTENANCE GATE
NO PARKING
SHADE STRUCTURE. REF. C/6C.
PLAIN CONCRETE WITH 2x2 SCORE TYPICAL
POST MOUNTED SCONCE LIGHT TYPICAL. FIXTURE SELECTION BY OWNER
EXTEND CURB RAMP
HOSE BIB TYP. REF. MEP DRWGS.
4'-6" HT. STEEL DOG PARK FENCE AND HANDICAP ACCESSIBLE GATES. REF. G/1C.
A.D. 87.85
A.D. 87.90
A.D. 87.90
A.D. 88.00
A.D. 88.20
A.D. 87.85
A.D. 87.80
A.D. 88.10
A.D. 88.30
A.D. 87.80
A.D. 88.10
A.D. 88.20
A.D. 88.30
A.D. 88.55
A.D. 88.70
A.D. 88.70
A.D. 88.80
A.D. 88.80
A.D. 88.90
A.D. 88.40
A.D. 88.60
A.D. 88.75
A.D. 88.90
A.D. 89.00
A.D. 89.10
A.D. 89.20
A.D. 89.20
A.D. 88.00
A.D. 88.20
A.D. 88.90
A.D. 89.50
FF 288.90
FF 289.40
FF 290.30
FLUSH 89.40
DROP EDGE OF CONCRETE PATIO TO ACCOMMODATE GRADE TYPICAL
OUTDOOR LOUNGE
DRAIN BY OTHERS
PLAIN CONCRETE W/ 2x2 SCORE TYPICAL
FLUSH 89.40
SLOPE @ 1:20 MAX
FLUSH 89.39
STAIR #3
(2) RISERS W/ RAILS
18" MIN
DROP EDGE OF CONCRETE WALK TO ACCOMMODATE GRADE TYPICAL
SLOPE @ 1:20 MAXIMUM
FLUSH 90.28
FLUSH 90.28
DROP BEAM
8-SS

DOG PARK



ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

REGISTERED LANDSCAPE ARCHITECT
RICHARD B. ARTHUR
176
STATE OF TEXAS

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/10/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

REVISIONS
A 01-02-26
VE UPDATES

BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

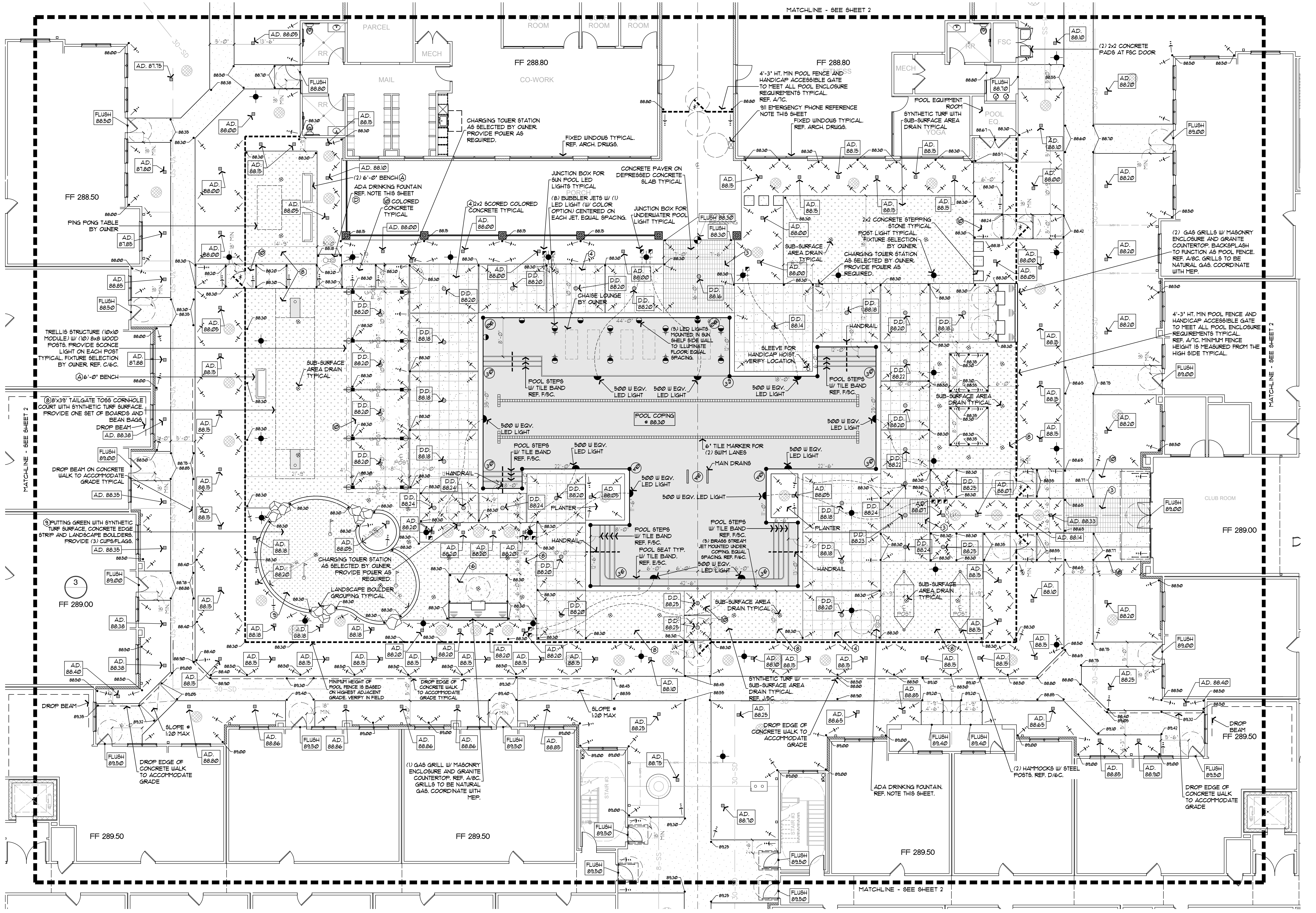
SCALE
1" = 10'-0'

DATE

TITLE
CONSTRUCTION

SHEET
3C OF 8

File Name: Brazos Oaks Phase II - construction.dwg
Plot Date: 01/05/2026 - 06:15pm


MATCHLINE - SEE SHEET 2
PARCEL
MAIL
CO-WORK
MECH
RR
ROOM
FF 288.80
FF 288.50
FF 289.00
FF 289.50
FSC
POOL EQ.
YOGA
CLUB ROOM
CHARGING TOWER STATION AS SELECTED BY OWNER. PROVIDE POWER AS REQUIRED.
FIXED WINDOWS TYPICAL. REF. ARCH. DRWGS.
4'-3" HT. MIN POOL FENCE AND HANDICAP ACCESSIBLE GATE TO MEET ALL POOL ENCLOSURE REQUIREMENTS TYPICAL. REF. A/1C.
911 EMERGENCY PHONE REFERENCE NOTE THIS SHEET
POOL EQUIPMENT ROOM
SYNTHETIC TURF WITH SUB-SURFACE AREA DRAIN TYPICAL
(2) 2x2 CONCRETE PADS AT FSC DOOR
(2) 6'-0" BENCH
ADA DRINKING FOUNTAIN REF. NOTE THIS SHEET
COLORED CONCRETE TYPICAL
PING PONG TABLE BY OWNER
2x2 SCORED COLORED CONCRETE TYPICAL
JUNCTION BOX FOR SUN POOL LED LIGHTS TYPICAL
(8) BUBBLER JETS W/ (1) LED LIGHT (W/ COLOR OPTION) CENTERED ON EACH JET. EQUAL SPACING.
CONCRETE PAVER ON DEPRESSED CONCRETE SLAB TYPICAL
JUNCTION BOX FOR UNDERWATER POOL LIGHT TYPICAL
2x2 CONCRETE STEPPING STONE TYPICAL
POST LIGHT TYPICAL. FIXTURE SELECTION BY OWNER.
SUB-SURFACE AREA DRAIN TYPICAL
CHARGING TOWER STATION AS SELECTED BY OWNER. PROVIDE POWER AS REQUIRED.
(2) GAS GRILLS W/ MASONRY ENCLOSURE AND GRANITE COUNTERTOP, BACKSPLASH TO FUNCTION AS POOL FENCE. REF. A/6C. GRILLS TO BE NATURAL GAS. COORDINATE WITH MEP.
CHAISE LOUNGE BY OWNER
(3) LED LIGHTS MOUNTED IN SUN SHELF SIDE WALL TO ILLUMINATE FLOOR. EQUAL SPACING.
SLEEVE FOR HANDICAP HOIST. VERIFY LOCATION
HANDRAIL
4'-3" HT. MIN POOL FENCE AND HANDICAP ACCESSIBLE GATE TO MEET ALL POOL ENCLOSURE REQUIREMENTS TYPICAL. REF. A/1C. MINIMUM FENCE HEIGHT IS MEASURED FROM THE HIGH SIDE TYPICAL.
TRELLIS STRUCTURE (10'x10' MODULE) W/ (10) 8x8 WOOD POSTS, PROVIDE SCONCE LIGHT ON EACH POST TYPICAL. FIXTURE SELECTION BY OWNER. REF. C/6C.
6'-0" BENCH
SUB-SURFACE AREA DRAIN TYPICAL
POOL STEPS W/ TILE BAND REF. F/5C.
500 W EQV. LED LIGHT
POOL COPING 88.30
8'x39" TAILGATE TOSS CORNHOLE COURT WITH SYNTHETIC TURF SURFACE. PROVIDE ONE SET OF BOARDS AND BEAN BAGS.
DROP BEAM
6" TILE MARKER FOR (2) SWIM LANES
MAIN DRAINS
SUB-SURFACE AREA DRAIN TYPICAL
DROP BEAM ON CONCRETE WALK TO ACCOMMODATE GRADE TYPICAL
PLANTER
PUTTING GREEN WITH SYNTHETIC TURF SURFACE, CONCRETE EDGE STRIP AND LANDSCAPE BOULDERS. PROVIDE (3) CUPS/FLAGS.
CHARGING TOWER STATION AS SELECTED BY OWNER. PROVIDE POWER AS REQUIRED.
LANDSCAPE BOULDER GROUPING TYPICAL
POOL STEPS W/ TILE BAND REF. F/5C.
POOL SEAT TYP. W/ TILE BAND. REF. E/5C.
(3) BRASS STREAM JET MOUNTED UNDER COPING. EQUAL SPACING. REF. F/6C.
SUB-SURFACE AREA DRAIN TYPICAL
MINIMUM HEIGHT OF POOL FENCE IS BASED ON HIGHEST ADJACENT GRADE. VERIFY IN FIELD
DROP EDGE OF CONCRETE WALK TO ACCOMMODATE GRADE TYPICAL
SYNTHETIC TURF W/ SUB-SURFACE AREA DRAIN TYPICAL. REF. J/5C.
SLOPE = 1:20 MAX
DROP EDGE OF CONCRETE WALK TO ACCOMMODATE GRADE
DROP EDGE OF CONCRETE WALK TO ACCOMMODATE GRADE
(1) GAS GRILL W/ MASONRY ENCLOSURE AND GRANITE COUNTERTOP. REF. A/6C. GRILLS TO BE NATURAL GAS. COORDINATE WITH MEP.
ADA DRINKING FOUNTAIN. REF. NOTE THIS SHEET.
(2) HAMMOCKS W/ STEEL POSTS. REF. D/6C.
DROP EDGE OF CONCRETE WALK TO ACCOMMODATE GRADE
STAIR
MATCHLINE - SEE SHEET 2

POOL NOTES

ALL POOL AND POOL FACILITIES TO MEET ALL STATE OF TEXAS CODES AND STANDARDS AS ADOPTED IN THE 'TEXAS DEPARTMENT OF HEALTH STANDARDS FOR PUBLIC SWIMMING POOL AND SPA.'

CONNECT DECK DRAINS / AREA DRAINS TO STORM SEWER. REFERENCE CIVIL ENGINEER'S PLANS FOR LOCATION OF STORM SEWER. DRAINS AND DRAINLINE TO BE SIZED BY CIVIL ENGINEER/MEP ENGINEER.

ALL WINDOWS OPENING DIRECTLY INTO THE POOL YARD SHALL BE PERMANENTLY FIXED. REFERENCE ARCHITECTURAL DRAWINGS.

ALL PATIO ENCLOSURES AND/OR RAILINGS DIRECTLY ADJACENT TO THE POOL YARD SHALL MEET ALL POOL YARD ENCLOSURE REQUIREMENTS. REFERENCE ARCHITECTURAL DRAWINGS.

ALL BUILDING DOWNSPOUTS DISCHARGING INTO COURTYARD AREAS SHALL BE TIED INTO THE UNDERGROUND STORM DRAIN SYSTEM (TYPICAL). REFERENCE CIVIL AND MEP DRAWINGS.

ALL PAVED AREAS IN POOL COURT ARE CAST STONE COPING, 2x2 SCORED COLORED CONCRETE, BROOM FINISH COLORED CONCRETE CONCRETE PAVERS ON DEPRESSED CONCRETE SLAB OR SYNTHETIC TURF.

IF WATER FEATURE(S) ARE DETERMINED TO FALL UNDER "TITLE 25 HEALTH SERVICES PART 1, CHAPTER 265 GENERAL SANITATION, SUBCHAPTER M PUBLIC INTERACTIVE WATER FEATURES AND FOUNTAINS", SECTION 265.301-265.308 OF THE TEXAS ADMINISTRATIVE CODE, THE POOL CONTRACTOR AND/OR INSTALLER SHALL MEET ALL APPLICABLE REQUIREMENTS.

POOL AND/OR SPA INSTALLATION AND EQUIPMENT SHALL BE COMPLIANT WITH THE VIRGINIA GRAEME-BAKER POOL AND SPA SAFETY ACT (ASME/ANSI A112.19.8a-2008).

ALL POOL HANDRAILS TO BE SPECIALTY CUSTOM STAINLESS STEEL HANDRAILS AS DIRECTED BY OWNER. PROVIDE SHOP DRAWINGS FOR OWNER REVIEW AND APPROVAL.

DECK SLOPES SHALL NOT EXCEED MAXIMUM 2% IN ANY DIRECTION.

POOL SAFETY EQUIPMENT SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION AND MOUNTED WITHIN MAXIMUM 48" A.F.F.

IF TABLE SEATING AREAS ARE PROVIDED, A MINIMUM OF (1) TABLE AT EACH TABLE SEATING AREA IS NOT TO EXCEED MAXIMUM 34" HEIGHT AND SHALL PROVIDE MINIMUM 30"Wx27"Hx19"D NET CLEAR ACCESSIBLE KNEE SPACE FOR FORWARD APPROACH.

IF TABLE UMBRELLAS ARE PROVIDED, WHEN OPEN, THE UMBRELLA MUST PROVIDE A MINIMUM OF 80" VERTICAL CLEARANCE.

NOTE:

- REFER TO SHEET 1C FOR CONSTRUCTION NOTES AND ACCESSIBILITY NOTES.
- REFER TO SHEET 5C-8C FOR POOL NOTES, SPECIFICATIONS AND DETAILS.
- OWNER TO PROVIDE REQUIRED SIGNAGE AT POOL AREA, INCLUDING "NO DIVING" AND "NO SWIMMING IN FOUNTAIN".
- * HANDICAP ACCESSIBLE GATE WITH KEY, CARD OR SIMPLEX TYPE LOCK ONLY. INSTALL ON BOTH SIDES OF GATE WHEN GATE SHIELD IS NOT INSTALLED. INSTALL ON OUTSIDE OF POOL FENCE, WITH LATCH ON POOL SIDE ONLY, WHEN GATE SHIELD IS INSTALLED. REFER TO A/1C.

POOL CLASSIFICATION: CLASS C

MAXIMUM NUMBER OF USERS IN POOL AT ANY TIME (50 SQ. FT. OF WATER SURFACE AREA PER USER)

POOL - 3,096 SQ. FT. / 15 = 206 USERS

POOL AND DECK ILLUMINATION:

ANY COMBINATION OF OVERHEAD AND UNDERWATER LIGHTING SHALL PROVIDE MAINTAINED ILLUMINATION NOT LESS THAN 10 HORIZONTAL FOOT-CANDLES (10 LUMENS PER SQUARE FOOT) AT THE POOL WATER SURFACE.

DECK AREA LIGHTING SHALL PROVIDE MAINTAINED ILLUMINATION OF NOT LESS THAN 10 HORIZONTAL FOOT-CANDLES (10 LUMENS PER SQUARE FOOT) AT THE WALKING SURFACE OF THE REQUIRED DECK (6'-0" AREA ADJACENT TO POOL COPING).

LIGHTING SPECIFICATIONS AND FIXTURE QUANTITY REQUIRED TO MEET MINIMUM STANDARDS OF THE TEXAS POOL CODE TO BE BY OTHERS.

POOL CONSTRUCTION LEGEND

PROPOSED GRADE	XX.XX
TOP OF WALL GRADE	TW XX.XX
AREA DRAIN ELEVATION	A.D. XX.XX
AREA DRAIN	▤
DECK DRAIN ELEVATION	D.D. XX.XX
DECK DRAIN	⊜
SUBSURFACE AREA DRAIN	⊗
PROPOSED CONTOUR	— —(XX)— —
DIRECTION OF DRAINAGE	→
BRICK VENEER WALL	▭
STONE VENEER WALL	▭
SLOPED WALL	▨
BRUSH FINISH CONCRETE	▨
SPECIAL PAVING (REFERENCE PLAN)	▦ ▨
SYNTHETIC TURF	▨
DECOMPOSED GRANITE WITH STABILIZER	▨
RIVER ROCK	▩
ORNAMENTAL STEEL POOL FENCE	▬ ▬ ▬
HANDRAIL / RAILING	▬ ▬ ▬
WALL MOUNTED LED STEP LIGHT	⧗
POST LIGHT	●
WALL MOUNTED SCONCE LIGHT	φ
LED LANDSCAPE ACCENT LIGHT	◬
POOL LIGHT (LED)	◓
LED LIGHT	◒
PVC DRAIN LINE	· · · · · ·
JUNCTION BOX	◩
PROPOSED TREE BALL	◍
POOL DEPTH (FEET AND INCHES)	⊗
POOL DIMENSIONS	● 5'-0" ●
BARRIER-FREE RAMP	⊠
ACCESSIBLE ROUTE 1:20 MAX. SLOPE	⊠
IRRIGATION SLEEVE	▬ ▬ ▬
5x5 CLEAR LANDING (2% MAXIMUM CROSS SLOPE)	◯

POOL MATERIALS AND EQUIPMENT

POOL/SUN POOL/CONVERSATION POOL COPING :
CAST STONE COPING (12" WIDTH)
COLOR: TO BE DETERMINED.

POOL DECK FIELDS:
2x2 SCORED COLORED CONCRETE AND BRUSH FINISH COLORED CONCRETE
COLOR: TO BE DETERMINED.

POOL DECK ACCENT FIELDS:
CONCRETE PAVERS ON DEPRESSED CONCRETE SLAB
COLOR(S): TO BE DETERMINED.
MORTAR PAVER WHERE ACTING AS EDGE.
PAVERS AVAILABLE FROM KEYSTONE HARDSCAPES, 214-684-4427, OR APPROVED EQUAL.
CITYSTONE I (6x12) STACK BANDING, BORDER AND INFILL FIELDS.

POOL/SUN POOL/CONVERSATION POOL TILE:
NOBLE TILE SUPPLY GLASS TILE
COLOR(S): TO BE DETERMINED.

POOL PLASTER:
NPT STONESCAPES FINISH
COLOR: FRENCH GRAY MINI

'911' EMERGENCY TELEPHONE:
(1) WALL MOUNT WITH APPROPRIATE SIGNAGE. VERIFY LOCATION AND PROVIDE UTILITIES AS REQUIRED.
MODEL: EMERGENCY SPEAKER PHONE
#384POOL
MANUF: RATH MICROTECH
1.800.451.1460
OR APPROVED EQUAL
VERIFY QUANTITY OF PHONES AND SIGNAGE REQUIRED BY CODE. ENSURE 5'x5' CLEAR AREA FOR H/C ACCESS. INSTALL TO MEET ALL ACCESSIBILITY CODES AND ENSURE CONTROLS ARE WITHIN 48" A.F.F.

ADA DRINKING FOUNTAIN:
ACCESSIBLE DRINKING FOUNTAIN IS LOCATED INSIDE BUILDING AT RESTROOM/FITNESS CORRIDOR. REFERENCE ARCHITECTURAL DRAWINGS. PROVIDE DIRECTIONAL SIGNAGE IN POOL COURTYARD TO DRINKING FOUNTAIN.
IN ADDITION, PROVIDE ADA DRINKING FOUNTAIN ON POOL DECK AT LOCATIONS SHOWN
MODEL: 440SM
COLOR: TO BE DETERMINED
MANUF: MOST DEPENDABLE FOUNTAINS
901-867-0039
OR APPROVED EQUAL
INSTALL PER MANUFACTURER'S SPECIFICATIONS AND PROVIDE UTILITIES AND FREEZE PROTECTION AS REQUIRED. INSTALL TO MEET ADA REQUIREMENTS.

HARDSCAPE MATRIX - SITE MATERIALS LIST

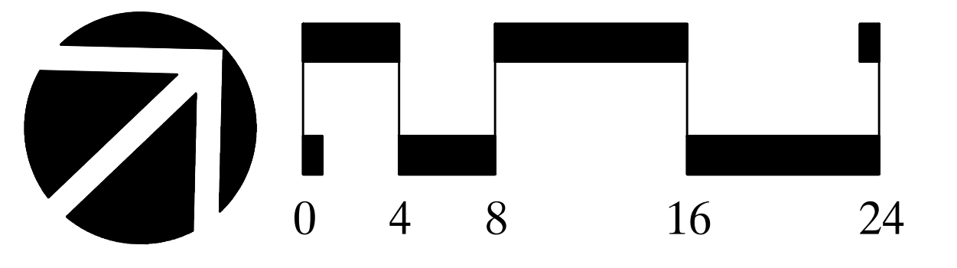
KEY	ITEM	FINISH	COLOR	QUANTITY	REMARKS
①	CITYSTONE I, 6x12, 80MM 90 DEGREE HERRINGBONE INFILL WITH SINGLE OR DOUBLE STACK HEADER COURSE PICTURE FRAME BORDER	STANDARD	TBD	PER PLAN	SAND-SET ON CONCRETE SUB-SLAB. KEYSTONE HARDSCAPES (KEYSTONEHARDSCAPES.COM), JOEY GUEDEA 214-684-4427. MORTAR PAVER WHERE ACTING AS EDGE.
②	CITYSTONE III, 12x12, 60MM STACK INFILL LAID 45 DEGREE TO BUILDING FACE AT LEASE FRONT DOOR WITH CITYSTONE I, 6x12, 60MM MULTI STACK BANDING IN DIRECTION SHOWN	STANDARD	TBD	PER PLAN	SAND-SET ON CONCRETE SUB-SLAB. KEYSTONE HARDSCAPES (KEYSTONEHARDSCAPES.COM), JOEY GUEDEA 214-684-4427. MORTAR PAVER WHERE ACTING AS EDGE.
③	CITYSTONE I, 6x12, 60MM, 90 DEGREE STACK IN DIRECTION SHOWN	STANDARD	TBD	PER PLAN	SAND-SET ON CONCRETE SUB-SLAB. KEYSTONE HARDSCAPES (KEYSTONEHARDSCAPES.COM), JOEY GUEDEA 214-684-4427. MORTAR PAVER WHERE ACTING AS EDGE.
④	COLORED CONCRETE WITH 2x2 SCORE	SALT FINISH	TBD	PER PLAN	DAVIS COLORS, 800-356-4848 (DAVISCOLORS.COM), OR APPROVED EQUAL.
⑤	RIVER ROCK, 3"-5" SIZE	N/A	SALT/PEPPER	PER PLAN	ALAMO STONE (ALAMOSTONE.COM), 800-501-0803 OR APPROVED EQUAL. 3" MINIMUM DEPTH INSTALLED OVER FILTER FABRIC. PROVIDE STEEL EDGE WHERE PAVEMENT EDGE IS NOT AVAILABLE.
⑥	DECOMPOSED GRANITE WITH STABILIZER SOLUTION	NATURAL	NATURAL	PER PLAN	ALAMO STONE (ALAMOSTONE.COM), 800-501-0803 OR APPROVED EQUAL. INSTALL TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE.
⑦	LANDSCAPE LIMESTONE BOULDER 36"x42" GENERAL SIZE	WEATHERED	WEATHERED	PER PLAN	TEXAS STONE SUPPLY (TXSTONESUPPLY.COM), 817-579-0900 OR APPROVED EQUAL. PARTIALLY BURY BOULDER FOR STABILITY. INSTALLED BOULDERS TO BE STABLE WITH NO ROCKING MOTION.
⑧	PLATINUM HEATMAXX 47 SYNTHETIC TURF	N/A	BLADE COLOR PER MANUFACTURER	PER PLAN	GO GREEN SYNTHETIC LAWN SOLUTIONS, 844-368-4765 (GOGREENSYNTURF.COM) OR APPROVED EQUAL. TURF TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. INSTALL TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. SYNTHETIC TURF TO BE NYLON MATERIAL AND HAVE MINIMUM 450 DEGREE MELT POINT AND MAXIMUM 1" PILE HEIGHT.
⑨	SPORTMAXX 36 2CU SYNTHETIC TURF (PUTTING GREEN ONLY	N/A	BLADE COLOR PER MANUFACTURER	PER PLAN	GO GREEN SYNTHETIC LAWN SOLUTIONS, 844-368-4765 (GOGREENSYNTURF.COM) OR APPROVED EQUAL. TURF TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. INSTALL TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. SYNTHETIC TURF TO BE NYLON MATERIAL WITH HIGH HEAT TOLERANCE AND APPROXIMATE 3/8" PILE HEIGHT.
⑩	COLORED CONCRETE, SCORED AS SHOWN	BRUSH FINISH	TBD	PER PLAN	DAVIS COLORS, 800-356-4848 (DAVISCOLORS.COM), OR APPROVED EQUAL

HARDSCAPE MATRIX - SITE FURNISHINGS LIST

KEY	ITEM	FINISH	COLOR	QUANTITY	REMARKS
Ⓐ	FORMS + SURFACES FLOAT BENCH	POWDER COATED	ALUMINUM TEXTURE	8	FORMS + SURFACES FLOAT BENCH, BACKED - NO DIVIDER. SBFLO-72BO, POWDER COAT ALUMINUM TEXTURE. THERMALLY MODIFIED RED OAK HARDWOOD, FREESTANDING MOUNT (FORMS-SURFACES.COM)
Ⓑ	DOGIPOT ALUMINUM PET STATION, ITEM #1003-BLK-L (WITH STEEL TRASH RECEPTACLE)	N/A	BLACK	4	THE PARK CATALOG, 866-280-9894 (WWW.THEPARKCATALOG.COM). INSTALL PER MANUFACTURER'S SPECIFICATIONS AND ANSI 4.25. ENSURE ADA ACCESSIBILITY FOR USER IS MAINTAINED.
Ⓒ	LIBERTY 25 FT ALUMINUM FLAGPOLE	SATIN ALUMINUM	N/A	2	LIBERTY FLAGPOLES 25 FT ALUMINUM, EXTERNAL HALYARD, COMMERCIAL GRADE, OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
Ⓓ	ADA DRINKING FOUNTAIN MODEL NO. 440SM	N/A	BLACK	2	MOST DEPENDABLE FOUNTAINS, 800-552-6331, OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS

NOTE:
LANDSCAPE CONTRACTOR TO PROVIDE A DESIGN/BUILD FRENCH DRAIN SYSTEM TIED TO CIVIL STORM LINE ALL AROUND POOL DECK.

REFERENCE SHEET 1C FOR CONSTRUCTION LEGEND, CONSTRUCTION NOTES AND ACCESSIBILITY NOTES.



File Name: Brazos Oaks Phase II – construction.dwg
Plot Date: 01/05/2026 – 06:16pm

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

RICHARD B. ARTHUR
176

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A 01-02-26
VE UPDATES

BRAZOS OAKS PHASE II

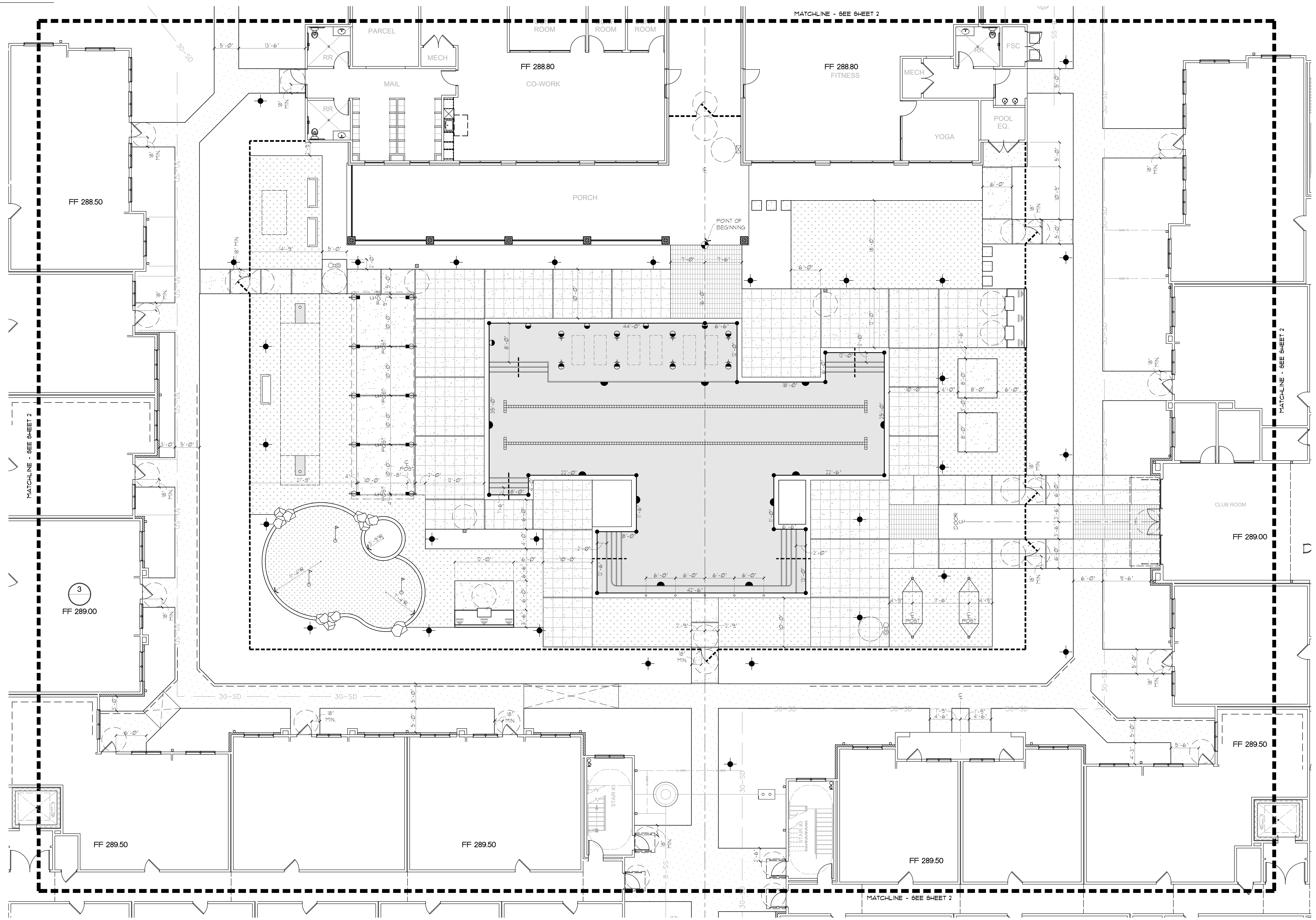
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1/8" = 1'-0"

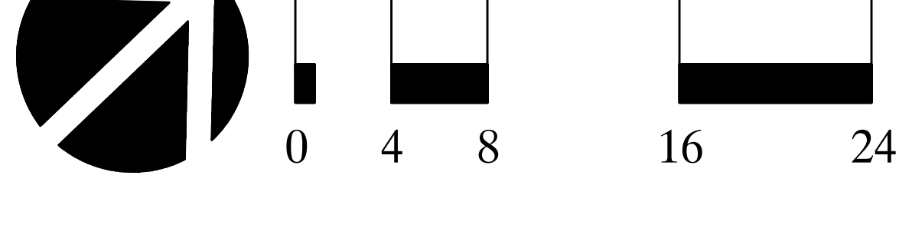
DATE
PERMIT SET
10-10-2025

TITLE
CONSTRUCTION

SHEET
4C OF 8


MATCHLINE - SEE SHEET 2
PARCEL
ROOM
ROOM
ROOM
MECH
RR
RR
MAIL
FF 288.80
CO-WORK
FF 288.80
FITNESS
FSC
MECH
YOGA
POOL EQ.
PORCH
POINT OF BEGINNING
FF 288.50
MATCHLINE - SEE SHEET 2
3
FF 289.00
CLUB ROOM
FF 289.00
FF 289.50
FF 289.50
FF 289.50
FF 289.50
STAIR #3
STAIR #1
30-SD
8-SS
MATCHLINE - SEE SHEET 2
MATCHLINE - SEE SHEET 2
44'-0"
42'-6"
22'-0"
22'-6"
18' MIN.

REFERENCE SHEET 1C FOR CONSTRUCTION LEGEND, CONSTRUCTION NOTES AND ACCESSIBILITY NOTES.



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BRYAN, TEXAS

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1/8" = 1'-0"

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PERMIT SET
10-10-2025

TITLE
CONSTRUCTION

SHEET
4.1C OF 8

POOL SPECIFICATIONS

PART 1 – GENERAL

1.01 SCOPE

A. PROVIDE COMPLETE INSTALLATION AS DETAILED.

1.02 QUALITY ASSURANCE

A. POOL CONTRACTOR SHALL VERIFY THAT THIS DESIGN COMPLIES WITH ALL APPLICABLE BUILDING, PLUMBING AND ELECTRICAL CODES BEFORE CONSTRUCTION. ANY DISCREPANCY BETWEEN THE POOL DESIGN AND/OR SPECIFICATIONS AND THE GOVERNING CODES SHALL BE REPORTED IMMEDIATELY UPON DISCOVERY, IN WRITING, TO THE OWNER AND THE LANDSCAPE ARCHITECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY DEFICIENCIES NOT REPORTED TO THE LANDSCAPE ARCHITECT AND OWNER.

1.03 PERMITS

A. POOL CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND MEETING ALL APPLICABLE PERMITS FOR CONSTRUCTION OF, BUT NOT LIMITED TO, THE FOLLOWING: ALL POOL EQUIPMENT, PIPING, POOL SHELL, TILE, DEPTH MARKERS, POOL HANDRAILS, POOL STEPS, COPING, ELECTRICAL WORK AND ANY OTHER POOL RELATED ITEMS.

1.04 SUBMITTALS

A. POOL EQUIPMENT, PIPING AND STEEL REINFORCING SCHEDULE IS TO BE SUBMITTED WITH THE POOL BID. THE STEEL REINFORCING SCHEDULE IS TO BE APPROVED AND SEALED BY AN ENGINEER AND STATE THAT IT WILL MEET THE PARTICULAR SITE CONDITIONS. STRUCTURAL, MECHANICAL AND ELECTRICAL ASPECTS OF THE POOL DESIGN SHALL BE DESIGNED BY PROFESSIONAL ENGINEERS CERTIFIED TO PERFORM SUCH WORK.

B. UPON COMPLETION, PROVIDE COMPLETE OPERATIONS MANUAL AND EQUIPMENT BROCHURES, NEATLY BOUND IN BINDER, TWO COPIES.

C. POOL CONTRACTOR TO SUBMIT A LIST OF MATERIALS WITH PROPOSAL. FINAL SELECTION OF MATERIALS SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER BEFORE CONSTRUCTION. MATERIALS TO BE SUBMITTED FOR APPROVAL INCLUDE DECK FINISHES, DECK DRAINS, EXPANSION JOINT MATERIAL, POOL WALL FINISH AND COLOR, POOL COPING, POOL TILE, DEPTH MARKERS, HANDRAILS, INLETS, AND LIGHTS. CHANGE ORDERS SHALL BE ISSUED FOR ANY SELECTIONS BY THE OWNER THAT DIFFER FROM ITEMS BID, OR REPRESENT AN INCREASE IN COST.

1.05 SITE CONDITIONS

A. THE POOL CONTRACTOR SHALL VERIFY SITE CONDITIONS PRIOR TO CONSTRUCTION AND BRING ANY DISCREPANCIES BETWEEN SITE AND PLAN TO THE ATTENTION OF THE OWNER AND LANDSCAPE ARCHITECT IMMEDIATELY UPON DISCOVERY.

B. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ROUGH GRADING THE POOL AREA TO WITHIN SIX INCHES OF THE FINISHED GRADE BEFORE POOL EXCAVATION.

C. UTILITIES TO THE PUMP ROOM LOCATION WILL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.06 WARRANTY

A. PROVIDE A MINIMUM FIVE-YEAR WRITTEN GUARANTEE FOR THE POOL SHELL AGAINST FAILURE TO PERFORM. GUARANTEE POOL EQUIPMENT FOR A MINIMUM OF ONE YEAR AFTER FINAL ACCEPTANCE.

PART A2 – PRODUCTS

2.01 SAND FILTER

A. MEETS NATIONAL SANITATION FOUNDATION STANDARDS.

2.02 GUNITE

A. CONTRACTOR TO VERIFY CONCRETE SPECIFICATIONS WITH A STRUCTURAL ENGINEER FOR SPECIFIC SITE CONDITIONS.

2.03 HAIR AND LINT CATCHER

A. INSTALL ON THE SUCTION SIDE OF THE PUMP. AREA OF CATCHER TO BE A MINIMUM OF FOUR TIMES THE CROSS SECTIONAL AREA OF INLET PIPE.

2.04 MAIN DRAIN OUTLET

A. BY SWIMQUIP OR APPROVED EQUAL WITH HYDROSTATIC RELIEF VALVE AND PERFORATED COLLECTION TUBE.

B. ALL MAIN DRAIN SUCTION PIPES MUST COME FROM AT LEAST TWO (2) SOURCES. REFERENCE LOCAL, STATE AND NATIONAL CODES.

2.05 PVC PIPING

A. SCHEDULE 40, WITH SCHEDULE 40 FITTINGS.

2.06 PLASTER

A. SUBMIT COLOR SAMPLES OR EXISTING POOL EXAMPLES FOR APPROVAL.

2.07 PUMP

A. MUST BE OF ADEQUATE SIZE TO TURN OVER POOL WASTE CAPACITY WITHIN FIVE HOURS OR PER LOCAL OR STATE CODES.

B. VERIFY MINIMUM POOL CODE REQUIREMENTS.

2.08 SKIMMER

A. BY SWIMQUIP, U-3 OR APPROVED EQUAL AUTOMATIC SURFACE SKIMMER. ONE PER 500 SQUARE FEET MINIMUM. VERIFY MINIMUM POOL CODE REQUIREMENTS.

2.09 UNDERWATER LIGHTING

A. AS SHOWN ON MATERIALS LIST, OR PLAN AND DETAILS.

2.10 DECK MATERIAL

A. DECK SURFACE SHALL BE TEXTURED FOR POSITIVE FOOT TRACTION.

2.11 DEPTH MARKERS

A. DEPTH MARKERS AND "NO DIVING" NOTATIONS SHALL BE MADE IN ACCORDANCE WITH GOVERNING CODES. AT A MINIMUM, DEPTH MARKERS SHALL BE INSTALLED FLUSH WITH THE POOL DECK AND ON POOL TILES IN LOCATIONS AROUND THE POOL MARKING THE DEPTH AT EVERY SIX (6) INCHES OF CHANGE.

2.12 AUTOMATIC WATER LEVELER

A. SPAS AND FOUNTAINS INDEPENDENT OF THE MAIN POOL SHALL HAVE AN AUTOMATIC WATER LEVELER INSTALLED IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS AND PER APPLICABLE POOL CODES. LEVELER TO BE NOYES 'POOL MISER' OR EQUIVALENT.

PART 3 – EXECUTION

3.01 STAKING

A. STAKE OUT POOL AND FINISHED GRADES. NOTIFY LANDSCAPE ARCHITECT AND RECEIVE APPROVAL PRIOR TO EXCAVATION. VERIFY EXISTING CONDITIONS, NOTIFY THE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.

3.02 TREE PROTECTION

A. PROTECT EXISTING TREES. DO NOT CUT OR FILL BENEATH TREES UNLESS SPECIFICALLY SHOWN ON THE PLANS. DO NOT TRENCH WITHIN DRIP LINE OF TREES.

3.03 EXCAVATION

A. SOIL IS UNCLASSIFIED.

3.04 STEEL

A. CONTRACTOR TO SUBMIT SCHEDULE, APPROVED AND SEALED BY STRUCTURAL ENGINEER, WITH PROPOSAL.

3.05 GUNITE

A. TO BE DONE IN CONTINUOUS OPERATION OR AS APPROVED BY STRUCTURAL ENGINEER.

B. POOL TO BE GROUNDED PER CODE.

C. POOL WALLS, FLOOR AND BEAMS TO BE GUNITE.

3.06 PIPING

A. ALL PIPING SHALL BE ROUTED AROUND TREES THAT ARE TO BE PLANTED ADJACENT TO THE POOL

3.07 JUNCTION BOXES

A. INSTALL AS SHOWN ON PLANS.

3.08 LINES

A. PROVIDE POOL FILL LINES AND POOL OVERFLOW LINES.

3.09 PLASTER

A. TROWEL TO SMOOTH, DENSE IMPERVIOUS SURFACE FREE FROM BLEMISHES. MINIMUM THICKNESS OF ½ INCH.

3.10 ADJUSTING

A. SUPPLY ALL REQUIRED START UP CHEMICALS AND BALANCE POOL. MEET WITH OWNER'S REPRESENTATIVE TO DISCUSS POOL OPERATION.

3.11 CLEANING

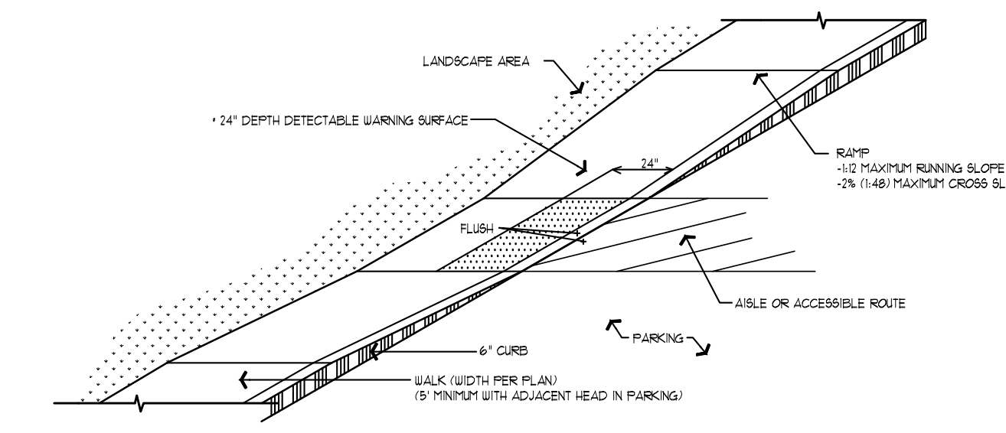
A. KEEP PREMISES NEAT AND ORDERLY. REMOVE DEBRIS FROM SITE AND LEAVE AREAS IN A BROOM CLEAN CONDITION.

3.12 CONFORMANCE

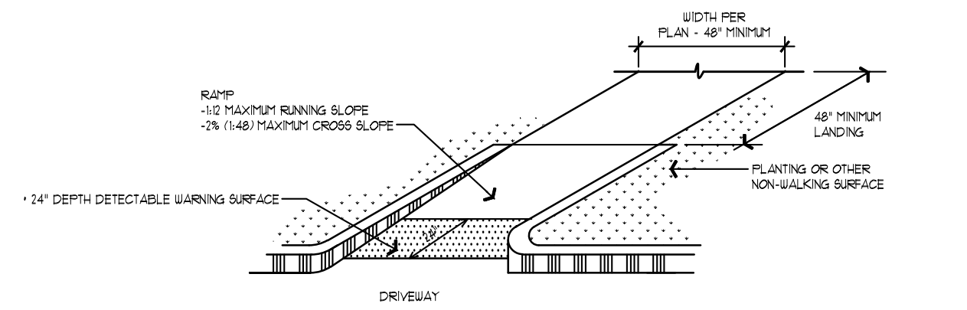
A. CONTRACTOR TO CONFIRM THAT THE ABOVE SPECIFICATIONS AND ALL POOL CONSTRUCTION WORK, MEETS OR EXCEEDS ALL GOVERNMENT CODES AND REGULATIONS.

POOL NOTES
(ONLY AS APPLICABLE TO GARAGE ROOF DECK POOL CONSTRUCTION)

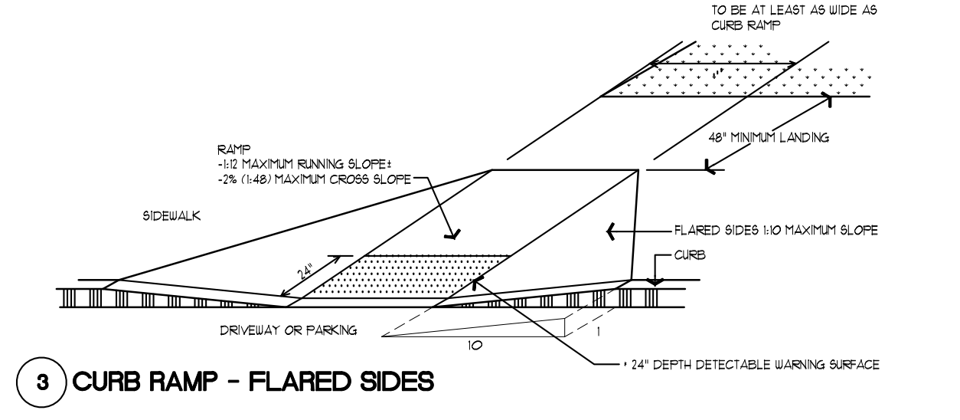
1. POOL CONTRACTOR IS RESPONSIBLE FOR THE QUALITY OF WORKMANSHIP, SUPERINTENDENCE AND SCHEDULING OF WORK UNDER HIS AND THE SUBCONTRACTOR'S AGREEMENT. CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR THIS WORK AND SHALL PROMPTLY CORRECT (AT CONTRACTOR'S EXPENSE) ANY DEFECTIVE WORK DURING THE CONSTRUCTION OF THE PROJECT OR THE WARRANTY PERIOD THEREAFTER. POOL CONTRACTOR IS RESPONSIBLE FOR EMPLOYING A STRUCTURAL ENGINEER FOR REQUIRED POOL ENGINEERING.
2. THE POOL CONTRACTOR SHALL PROVIDE CONSTRUCTION METHODS AND COMPATIBLE COMPONENTS REQUIRED FOR COMPLETE AND OPERABLE SYSTEMS FOR SWIMMING POOL, FOUNTAIN AND/OR SPA INCLUDING, BUT NOT LIMITED TO, EXCAVATION, DEWATERING OF CONSTRUCTION AREA, AND REMOVAL OF EXCESS EARTH FROM SITE.
3. THE OWNER OR OWNER'S MANAGEMENT SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF POOL WARNING SIGNS AND SAFETY EQUIPMENT IN THE POOL AREA TO COMPLY WITH STATE AND LOCAL CODES, AND STATE AND LOCAL CODE GUIDELINES.
4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ROUGH GRADING IN THE POOL AREA. THE GRADE PROVIDED SHALL BE WITHIN SIX INCHES OF FINISHED GRADE BEFORE POOL EXCAVATION BEGINS.
5. THE POOL CONTRACTOR WILL STAKE OUT THE POOL AND SET THE FINISHED GRADE. THE LANDSCAPE ARCHITECT OR OWNER WILL BE NOTIFIED AND APPROVE THIS WORK PRIOR TO EXCAVATION.
6. POOL LIGHTS AND JUNCTION BOXES TO BE INSTALLED PER FEDERAL, STATE AND LOCAL CODES BY POOL CONTRACTOR. POOL DECK LIGHTING SHALL FULLY ILLUMINATE THE POOL DECK AND BE IN ACCORDANCE WITH THE GOVERNING STANDARDS. UNDERWATER LIGHTING SHALL BE IN ACCORDANCE WITH GOVERNING CODES. ALL POST LIGHTS AND LANDSCAPE LIGHTING SHALL BE A MINIMUM OF 10'-0" FROM POOL WATER'S EDGE OR AS REQUIRED BY LOCAL CODES AND GUIDELINES.
7. REQUIRED UTILITIES AT THE POOL FILTER/EQUIPMENT LOCATION TO BE SUPPLIED BY THE GENERAL CONTRACTOR.
8. AREA DRAIN SIZE AND PVC DRAIN LINE SIZE AND GRADE TO BE DETERMINED BY CIVIL ENGINEER AND SHALL MEET MINIMUM REQUIREMENTS:
   - DECK DRAINS (LOCATED IN PAVED AREAS) - ALL DRAINS TO BE CAPPED WITH A MINIMUM 4" ROUND GRATE
   - PLANTER DRAINS (LOCATED IN SHRUB AND/OR GROUNDCOVER AREAS) - ALL DRAINS TO BE CAPPED WITH A MINIMUM 6" ATRIUM GRATE.
9. ALL POOL ENCLOSURE GATES AND FENCES TO COMPLY WITH STATE AND LOCAL CODES.
10. ALL PIPING SHALL BE 24" DEEP MINIMUM IN ALL PLANTING AREAS, AND ROUTED AROUND PROPOSED OR EXISTING TREES.
11. POOL CONTRACTOR IS RESPONSIBLE FOR TEMPORARY FENCING DURING CONSTRUCTION.
12. FINISH GRADES NEXT TO WALKS AND POOL DECKS SHALL BE THE RESPONSIBILITY OF THE POOL CONTRACTOR.
13. POOL CONTRACTOR SHALL PROVIDE SWIMMING POOL HANDICAP LIFTER ANCHOR SLEEVES AS SHOWN ON THE DRAWINGS. AS AN ALTERNATE, POOL CONTRACTOR TO ALSO PROVIDE A PRICE FOR SWIMMING POOL LIFTER AND RELATED ITEMS. HOYER SWIMMING POOL LIFT MODEL NUMBER SS-HSP-1, OR EQUAL, AVAILABLE FROM PATIENTLIFTUSA (PATIENTLIFTUSA.COM), 888-826-4423. IF ALTERNATE IS SELECTED BY OWNER, THE PORTABLE LIFT SHALL BE KEPT BY MANAGEMENT UNTIL REQUESTED FOR USE.
14. HANDICAP ACCESSIBLE GATE WITH KEY CARD OR SIMPLEX TYPE LOCK ACCESS ONLY SHALL BE INSTALLED AT LOCATION SHOWN BY "*" ON PLAN. REFERENCE DETAILS.
15. LIGHT LOCATIONS AS INDICATED ON PLANS ARE RECOMMENDED LOCATIONS ONLY. FINAL FIXTURE QUANTITY AND LOCATIONS MAY VARY DUE TO OWNER'S SELECTION OF LAMP TYPE, LAMP WATTAGE, FOOT CANDLE INTENSITY AND HEIGHT OF FIXTURE. OWNER OR OWNER'S LIGHTING CONSULTANT TO DETERMINE REQUIRED ILLUMINATION.
16. '911 EMERGENCY TELEPHONE' TO BE READILY ACCESSIBLE TO SWIMMING POOL FOR EMERGENCY USE. REFERENCE PLAN FOR LOCATION. PROVIDE DIRECTIONAL SIGNAGE AS REQUIRED.
17. ALL STRUCTURAL DESIGN AND DETAILS BY OTHERS.
18. SHOWER REQUIREMENTS FOR POOL FACILITIES TO BE CONFIRMED BY THE LOCAL HEALTH DEPARTMENT OR OTHER AUTHORIZED AGENCY.


LANDSCAPE AREA
• 24" DEPTH DETECTABLE WARNING SURFACE
24"
FLUSH
RAMP
-1:12 MAXIMUM RUNNING SLOPE
-2% (1:48) MAXIMUM CROSS SLOPE
AISLE OR ACCESSIBLE ROUTE
PARKING
6" CURB
WALK (WIDTH PER PLAN)
(5' MINIMUM WITH ADJACENT HEAD IN PARKING)

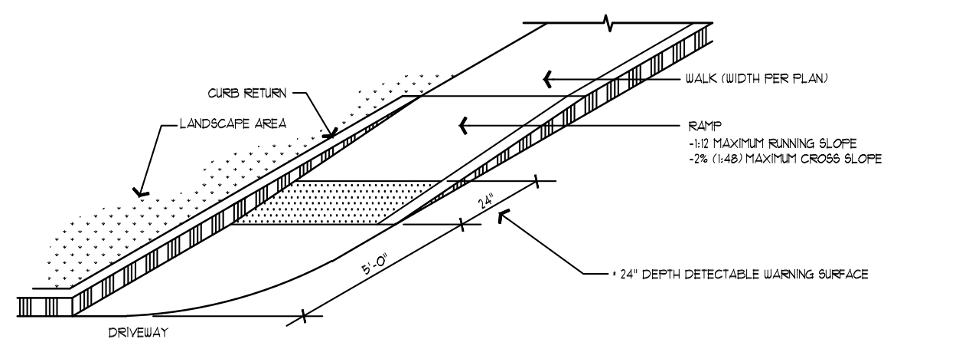
① TYPICAL RAMP UP CURB OPENING


WIDTH PER
PLAN - 48" MINIMUM
RAMP
-1:12 MAXIMUM RUNNING SLOPE
-2% (1:48) MAXIMUM CROSS SLOPE
• 24" DEPTH DETECTABLE WARNING SURFACE
48" MINIMUM
LANDING
PLANTING OR OTHER
NON-WALKING SURFACE
24"
DRIVEWAY

② CURB RAMP - RETURNED CURB


LANDING AT TOP OF CURB RAMP
TO BE AT LEAST AS WIDE AS
CURB RAMP
48" MINIMUM LANDING
RAMP
-1:12 MAXIMUM RUNNING SLOPE±
-2% (1:48) MAXIMUM CROSS SLOPE
SIDEWALK
FLARED SIDES 1:10 MAXIMUM SLOPE
CURB
24"
DRIVEWAY OR PARKING
10
1
• 24" DEPTH DETECTABLE WARNING SURFACE

③ CURB RAMP - FLARED SIDES


CURB RETURN
LANDSCAPE AREA
WALK (WIDTH PER PLAN)
RAMP
-1:12 MAXIMUM RUNNING SLOPE
-2% (1:48) MAXIMUM CROSS SLOPE
24"
5'-0"
• 24" DEPTH DETECTABLE WARNING SURFACE
DRIVEWAY

④ TYPICAL RAMP UP CURB OPENING

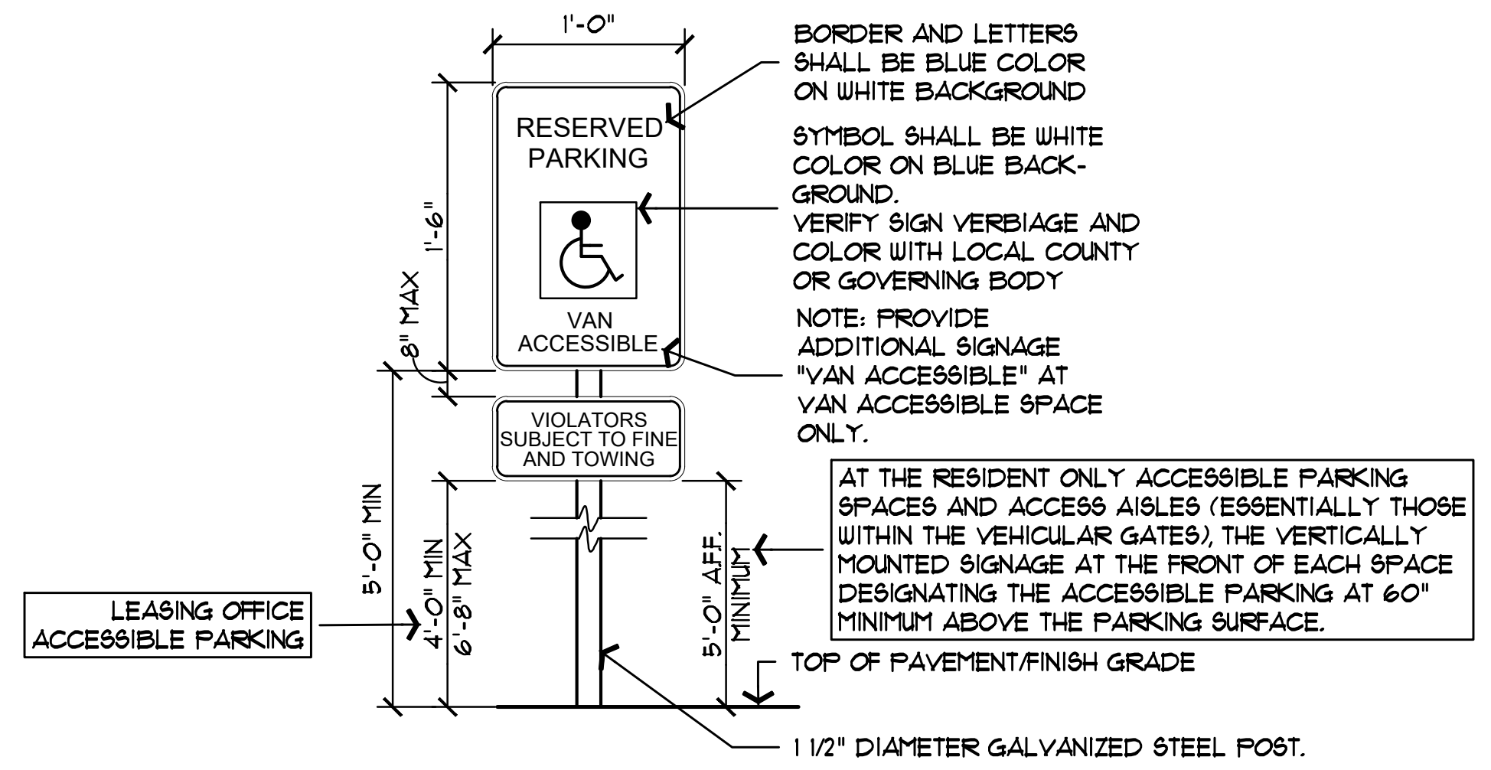
2012 TAS (TEXAS ACCESSIBILITY STANDARDS) - SECTION 406 CURB RAMPS

CURB RAMPS LOCATED IN THE PUBLIC RIGHT-OF-WAY SHALL HAVE A 24" MINIMUM DEPTH DETECTABLE WARNING SURFACE (MUST EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING).

REFERENCE ARCHITECTURAL DRAWING PACKAGE FOR FURTHER ACCESSIBILITY GUIDELINES AND TAS REQUIREMENTS.

(A) BARRIER FREE CURB RAMPS

SCALE - NONE


1'-0"
RESERVED
PARKING
VAN
ACCESSIBLE
VIOLATORS
SUBJECT TO FINE
AND TOWING
1'-6"
8" MAX
5'-0" MIN
4'-0" MIN
6'-8" MAX
5'-0" A.F.F. MINIMUM
LEASING OFFICE
ACCESSIBLE PARKING
BORDER AND LETTERS SHALL BE BLUE COLOR ON WHITE BACKGROUND
TOP OF PAVEMENT/FINISH GRADE
1 1/2" DIAMETER GALVANIZED STEEL POST.

SYMBOL SHALL BE WHITE COLOR ON BLUE BACKGROUND. VERIFY SIGN VERBIAGE AND COLOR WITH LOCAL COUNTY OR GOVERNING BODY

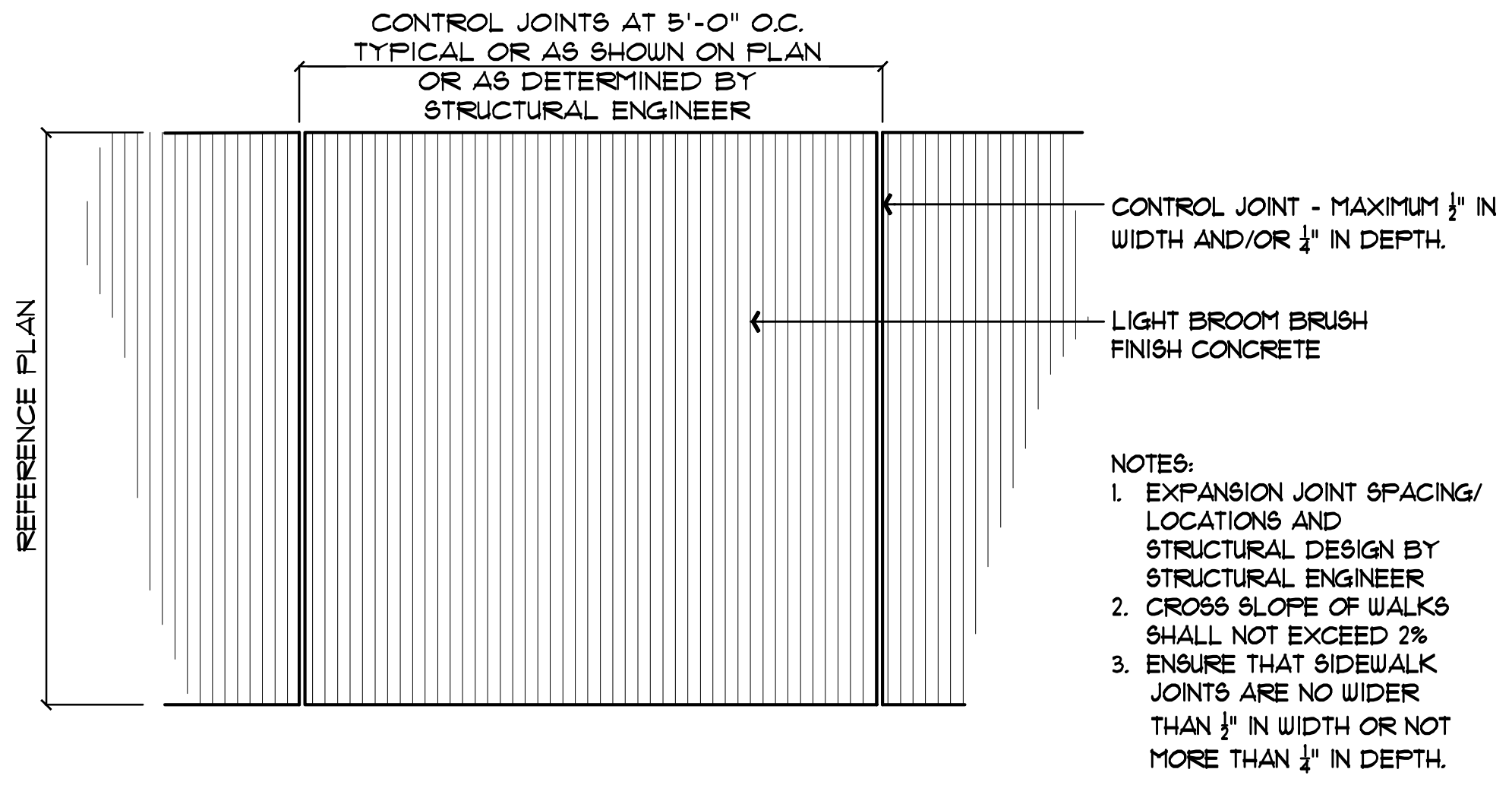
NOTE: PROVIDE ADDITIONAL SIGNAGE "VAN ACCESSIBLE" AT VAN ACCESSIBLE SPACE ONLY.

AT THE RESIDENT ONLY ACCESSIBLE PARKING SPACES AND ACCESS AISLES (ESSENTIALLY THOSE WITHIN THE VEHICULAR GATES), THE VERTICALLY MOUNTED SIGNAGE AT THE FRONT OF EACH SPACE DESIGNATING THE ACCESSIBLE PARKING AT 60" MINIMUM ABOVE THE PARKING SURFACE.

(B) HANDICAP PARKING SIGN

(WALL MOUNT SIGN IS SIMILAR)

1" = 1'-0"

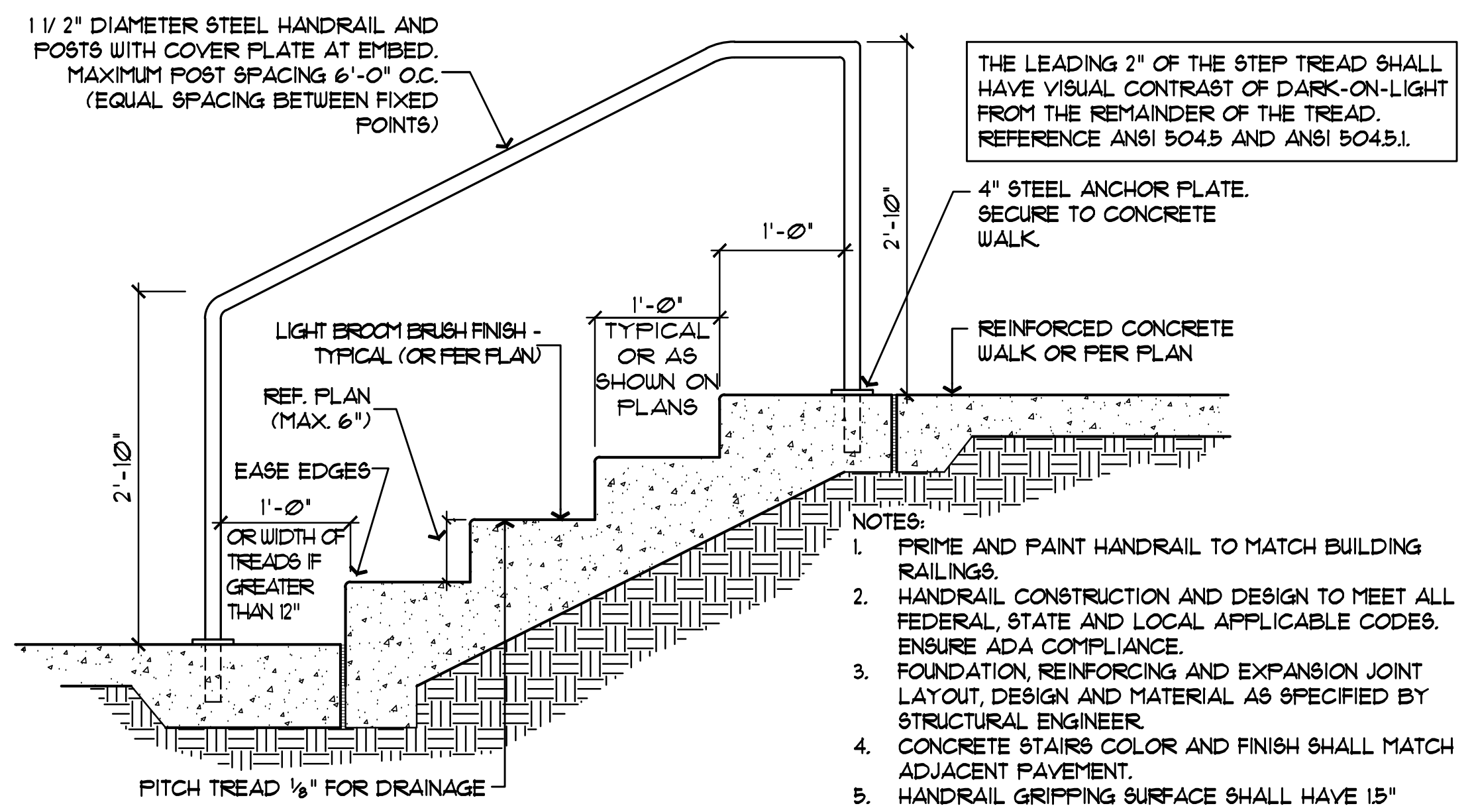

CONTROL JOINTS AT 5'-0" O.C.
TYPICAL OR AS SHOWN ON PLAN
OR AS DETERMINED BY
STRUCTURAL ENGINEER
REFERENCE PLAN
CONTROL JOINT - MAXIMUM ½" IN WIDTH AND/OR ¼" IN DEPTH.
LIGHT BROOM BRUSH FINISH CONCRETE

NOTES:
1. EXPANSION JOINT SPACING/ LOCATIONS AND STRUCTURAL DESIGN BY STRUCTURAL ENGINEER
2. CROSS SLOPE OF WALKS SHALL NOT EXCEED 2%
3. ENSURE THAT SIDEWALK JOINTS ARE NO WIDER THAN ½" IN WIDTH OR NOT MORE THAN ¼" IN DEPTH.

(C) SIDEWALK

BRUSH FINISH CONCRETE - TYPICAL PLAN VIEW

3/4" = 1'-0"

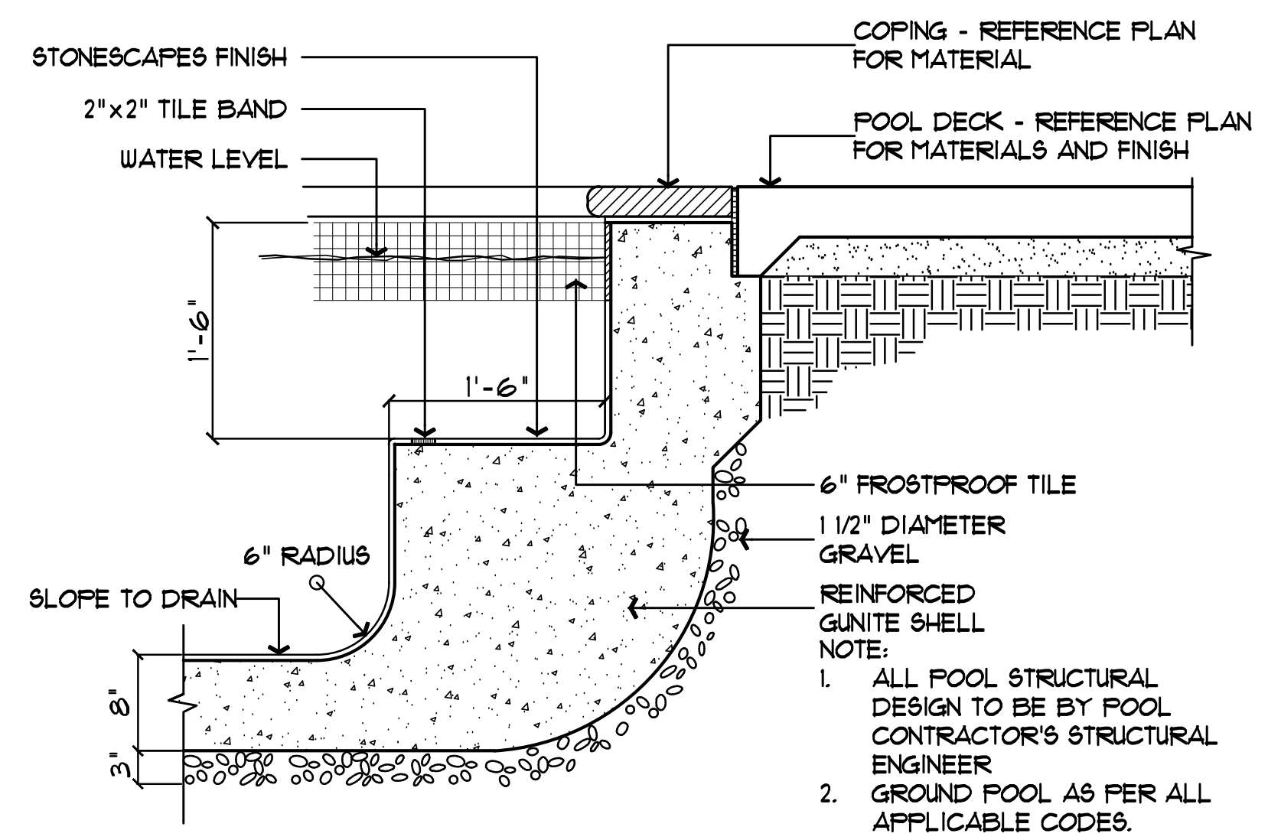

1 1/ 2" DIAMETER STEEL HANDRAIL AND POSTS WITH COVER PLATE AT EMBED. MAXIMUM POST SPACING 6'-0" O.C. (EQUAL SPACING BETWEEN FIXED POINTS)
2'-10"
1'-0"
1'-0" TYPICAL OR AS SHOWN ON PLANS
LIGHT BROOM BRUSH FINISH - TYPICAL (OR PER PLAN)
REF. PLAN (MAX. 6")
EASE EDGES
1'-0"
OR WIDTH OF TREADS IF GREATER THAN 12"
2'-10"
4" STEEL ANCHOR PLATE. SECURE TO CONCRETE WALK.
REINFORCED CONCRETE WALK OR PER PLAN
PITCH TREAD ⅛" FOR DRAINAGE

THE LEADING 2" OF THE STEP TREAD SHALL HAVE VISUAL CONTRAST OF DARK-ON-LIGHT FROM THE REMAINDER OF THE TREAD. REFERENCE ANSI 504.5 AND ANSI 504.5.1.

NOTES:
1. PRIME AND PAINT HANDRAIL TO MATCH BUILDING RAILINGS.
2. HANDRAIL CONSTRUCTION AND DESIGN TO MEET ALL FEDERAL, STATE AND LOCAL APPLICABLE CODES. ENSURE ADA COMPLIANCE.
3. FOUNDATION, REINFORCING AND EXPANSION JOINT LAYOUT, DESIGN AND MATERIAL AS SPECIFIED BY STRUCTURAL ENGINEER.
4. CONCRETE STAIRS COLOR AND FINISH SHALL MATCH ADJACENT PAVEMENT.
5. HANDRAIL GRIPPING SURFACE SHALL HAVE 1.5" MINIMUM CLEARANCE FROM THE SURFACE OF ADJACENT WALL.
6. ALL RISER HEIGHT SHALL REMAIN CONSISTENT. VERIFY RISER HEIGHT WITH GRADING PLAN.
7. REFERENCE PLAN FOR ADJACENT SIDEWALK MATERIAL TYPICAL.

(D) STAIR AND HANDRAIL

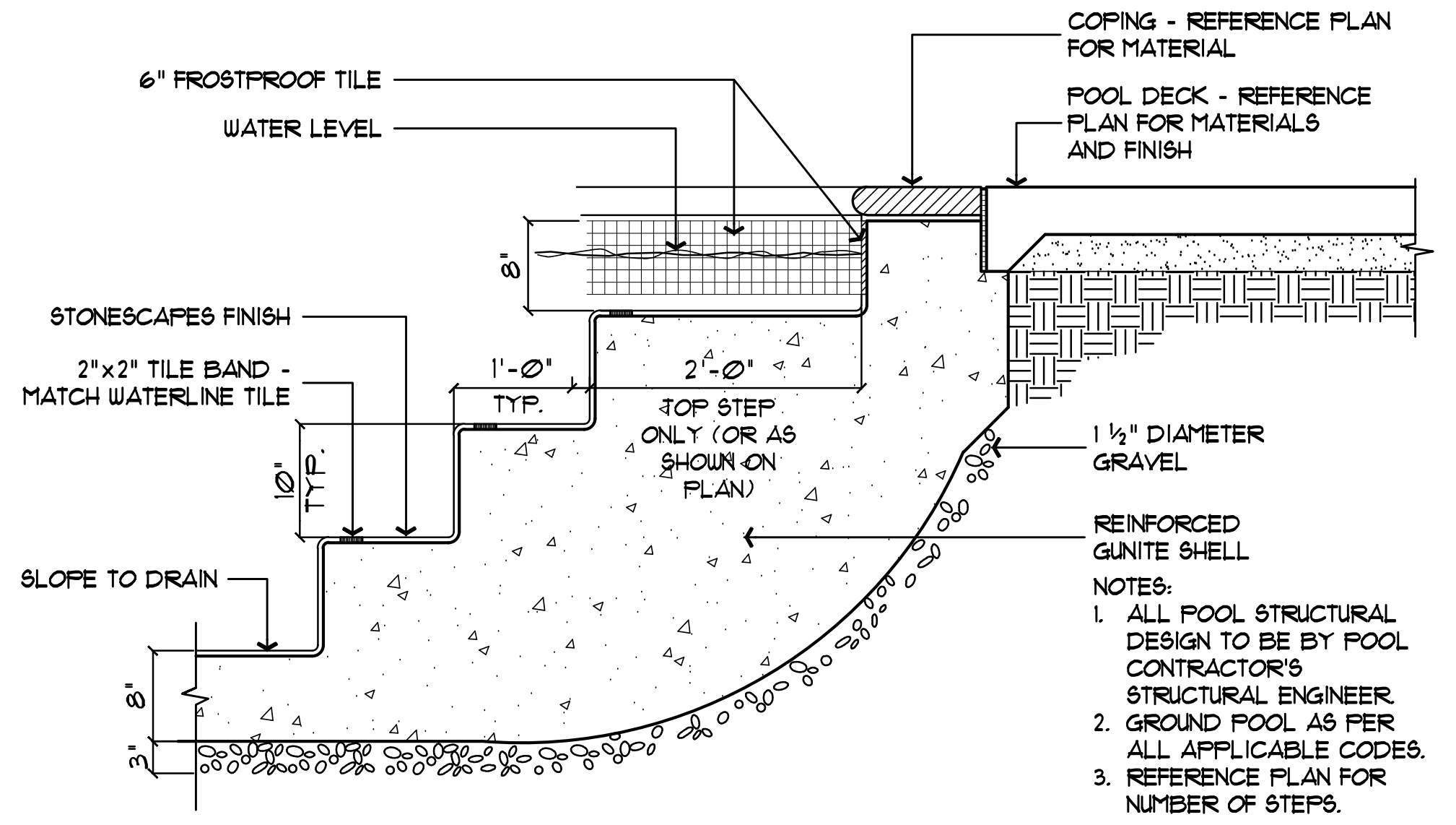
3/4" = 1'-0"


STONESCAPES FINISH
2"x2" TILE BAND
WATER LEVEL
COPING - REFERENCE PLAN FOR MATERIAL
POOL DECK - REFERENCE PLAN FOR MATERIALS AND FINISH
1'-6"
1'-6"
6" FROSTPROOF TILE
1 1/2" DIAMETER GRAVEL
6" RADIUS
SLOPE TO DRAIN
REINFORCED GUNITE SHELL
8"
3"

NOTE:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. DIMENSION FROM POOL SEAT TO POOL BOTTOM WILL VARY WITH LOCATION OF SEAT

(E) POOL SEAT

3/4" = 1'-0"

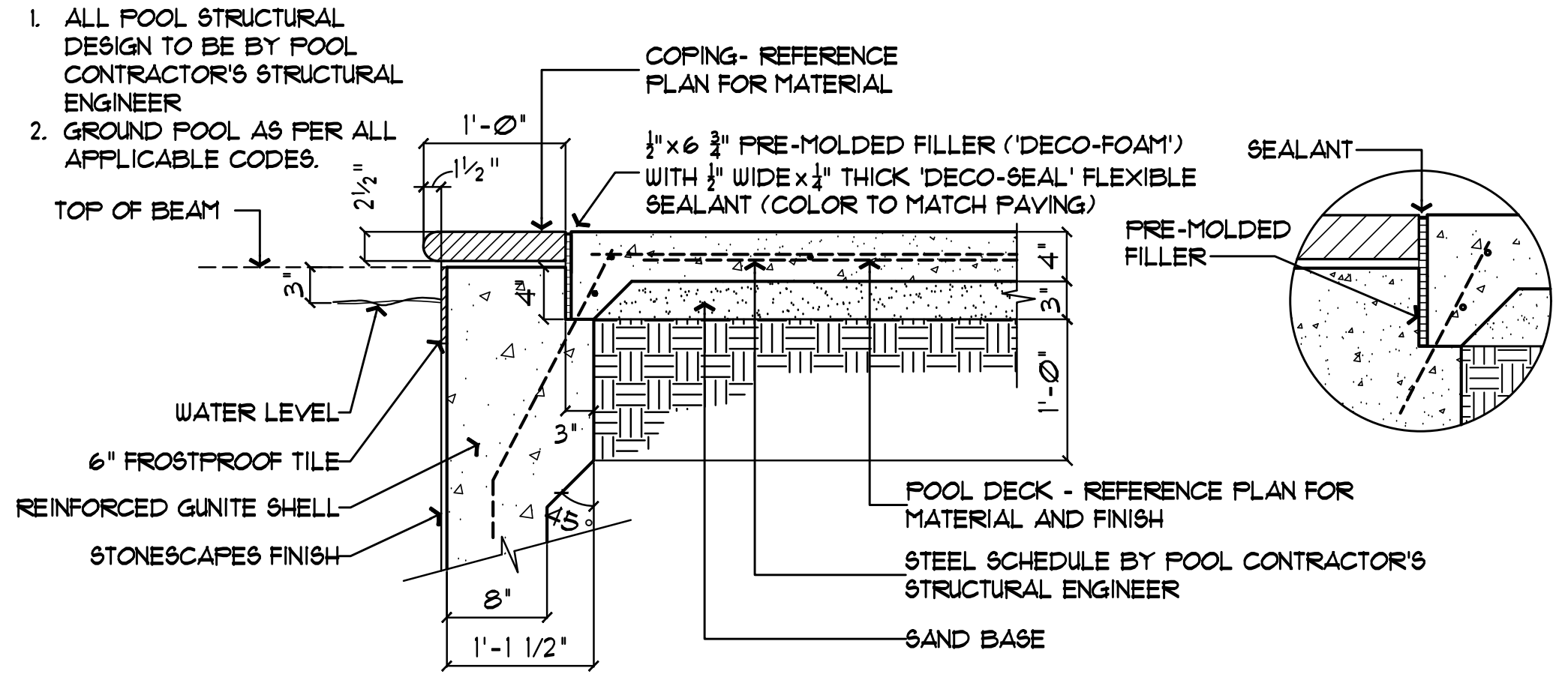

6" FROSTPROOF TILE
WATER LEVEL
COPING - REFERENCE PLAN FOR MATERIAL
POOL DECK - REFERENCE PLAN FOR MATERIALS AND FINISH
8"
STONESCAPES FINISH
2"x2" TILE BAND - MATCH WATERLINE TILE
1'-0" TYP.
2'-0"
TOP STEP ONLY (OR AS SHOWN ON PLAN)
10" TYP.
1 ½" DIAMETER GRAVEL
REINFORCED GUNITE SHELL
SLOPE TO DRAIN
8"
3"

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. REFERENCE PLAN FOR NUMBER OF STEPS.

(F) POOL STEPS

3/4" = 1'-0"

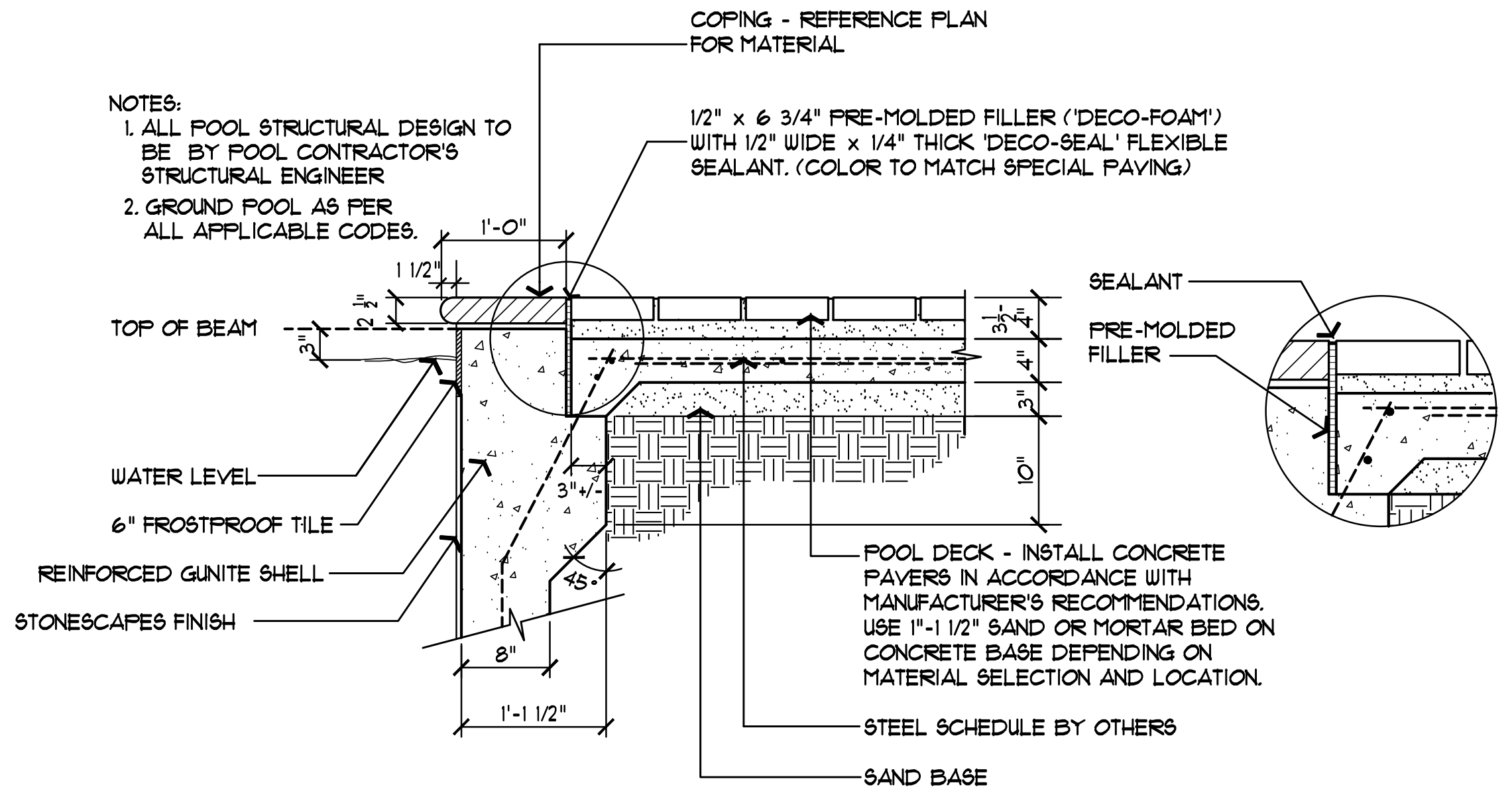
NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER
2. GROUND POOL AS PER ALL APPLICABLE CODES.


COPING- REFERENCE PLAN FOR MATERIAL
1'-0"
1½"
2½"
½"x6 ¾" PRE-MOLDED FILLER ('DECO-FOAM') WITH ½" WIDE x ¼" THICK 'DECO-SEAL' FLEXIBLE SEALANT (COLOR TO MATCH PAVING)
SEALANT
PRE-MOLDED FILLER
TOP OF BEAM
3"
4"
4"
3"
1'-0"
3"
WATER LEVEL
6" FROSTPROOF TILE
REINFORCED GUNITE SHELL
STONESCAPES FINISH
45°
8"
1'-1 1/2"
POOL DECK - REFERENCE PLAN FOR MATERIAL AND FINISH
STEEL SCHEDULE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER
SAND BASE

(G) COPING AT POOL DECK

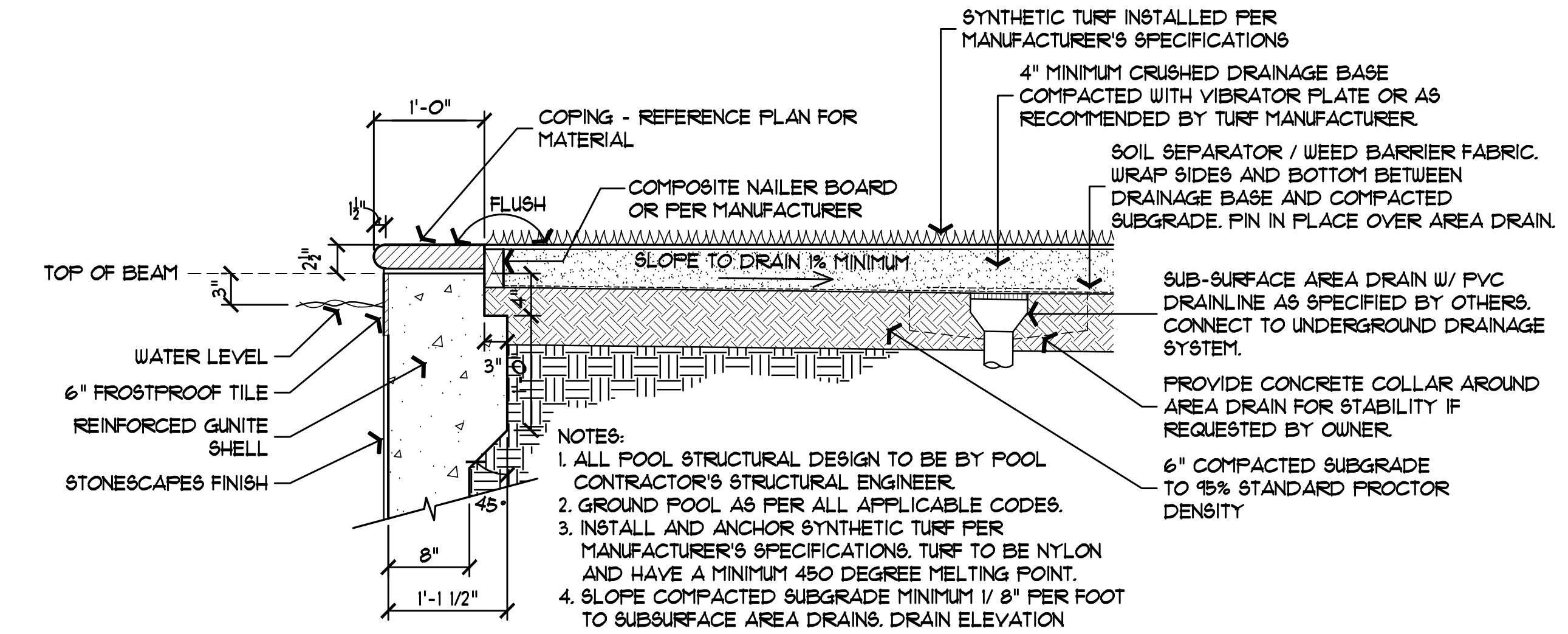
3/4" = 1'-0"

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER
2. GROUND POOL AS PER ALL APPLICABLE CODES.


COPING - REFERENCE PLAN FOR MATERIAL
1/2" x 6 3/4" PRE-MOLDED FILLER ('DECO-FOAM') WITH 1/2" WIDE x 1/4" THICK 'DECO-SEAL' FLEXIBLE SEALANT. (COLOR TO MATCH SPECIAL PAVING)
1'-0"
1 1/2"
2½"
TOP OF BEAM
3"
SEALANT
PRE-MOLDED FILLER
3½"-4"
4"
3"
10"
WATER LEVEL
6" FROSTPROOF TILE
REINFORCED GUNITE SHELL
STONESCAPES FINISH
3"+/-
45°
8"
1'-1 1/2"
POOL DECK - INSTALL CONCRETE PAVERS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. USE 1"-1 1/2" SAND OR MORTAR BED ON CONCRETE BASE DEPENDING ON MATERIAL SELECTION AND LOCATION.
STEEL SCHEDULE BY OTHERS
SAND BASE

(H) COPING AT POOL DECK - SPECIAL PAVING

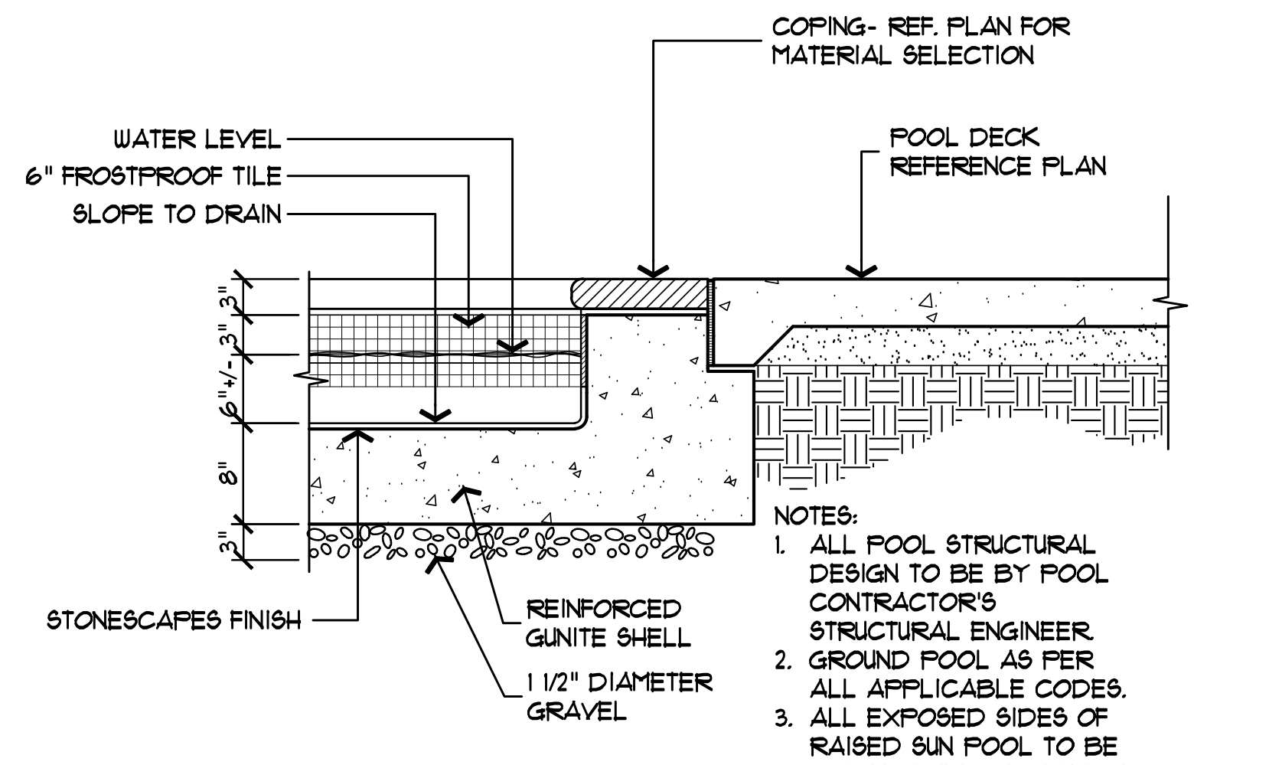
3/4" = 1'-0"


SYNTHETIC TURF INSTALLED PER MANUFACTURER'S SPECIFICATIONS
4" MINIMUM CRUSHED DRAINAGE BASE COMPACTED WITH VIBRATOR PLATE OR AS RECOMMENDED BY TURF MANUFACTURER.
SOIL SEPARATOR / WEED BARRIER FABRIC. WRAP SIDES AND BOTTOM BETWEEN DRAINAGE BASE AND COMPACTED SUBGRADE. PIN IN PLACE OVER AREA DRAIN.
1'-0"
COPING - REFERENCE PLAN FOR MATERIAL
COMPOSITE NAILER BOARD OR PER MANUFACTURER
FLUSH
1½"
2½"
TOP OF BEAM
3"
SLOPE TO DRAIN 1% MINIMUM
4"
3"
SUB-SURFACE AREA DRAIN W/ PVC DRAINLINE AS SPECIFIED BY OTHERS. CONNECT TO UNDERGROUND DRAINAGE SYSTEM.
PROVIDE CONCRETE COLLAR AROUND AREA DRAIN FOR STABILITY IF REQUESTED BY OWNER.
6" COMPACTED SUBGRADE TO 95% STANDARD PROCTOR DENSITY
WATER LEVEL
6" FROSTPROOF TILE
REINFORCED GUNITE SHELL
STONESCAPES FINISH
45°
8"
1'-1 1/2"

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. INSTALL AND ANCHOR SYNTHETIC TURF PER MANUFACTURER'S SPECIFICATIONS. TURF TO BE NYLON AND HAVE A MINIMUM 450 DEGREE MELTING POINT.
4. SLOPE COMPACTED SUBGRADE MINIMUM 1/ 8" PER FOOT TO SUBSURFACE AREA DRAINS. DRAIN ELEVATION TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
5. PROVIDE CONCRETE COLLAR AROUND AREA DRAIN TO ANCHOR IN PLACE IF REQUESTED BY OWNER. DO NOT BLOCK DRAINAGE FLOW WITH COLLAR. VERIFY IN FIELD.
6. SYNTHETIC TURF TO BE INSTALLED AND MAINTAINED TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. SYNTHETIC TURF SURFACE SHOULD HAVE A ½" TRANSITION FROM ADJACENT PAVING/COPING TO SYNTHETIC TURF TO BE FLUSH. VERIFY IN FIELD. ENSURE 2% MAXIMUM CROSS SLOPE AND A STABLE FIRM SUB-SURFACE.

(J) COPING AT SYNTHETIC TURF

3/4" = 1'-0"


COPING- REF. PLAN FOR MATERIAL SELECTION
WATER LEVEL
6" FROSTPROOF TILE
SLOPE TO DRAIN
POOL DECK REFERENCE PLAN
3"
3"
6"+/-
8"
3"
STONESCAPES FINISH
REINFORCED GUNITE SHELL
1 1/2" DIAMETER GRAVEL

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. ALL EXPOSED SIDES OF RAISED SUN POOL TO BE BRICK VENEER TO MATCH BUILDING.

(K) SUN POOL

3/4" = 1'-0"

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

RICHARD B. ARTHUR
176

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/10/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

REVISIONS
A 01-02-26 VE UPDATES

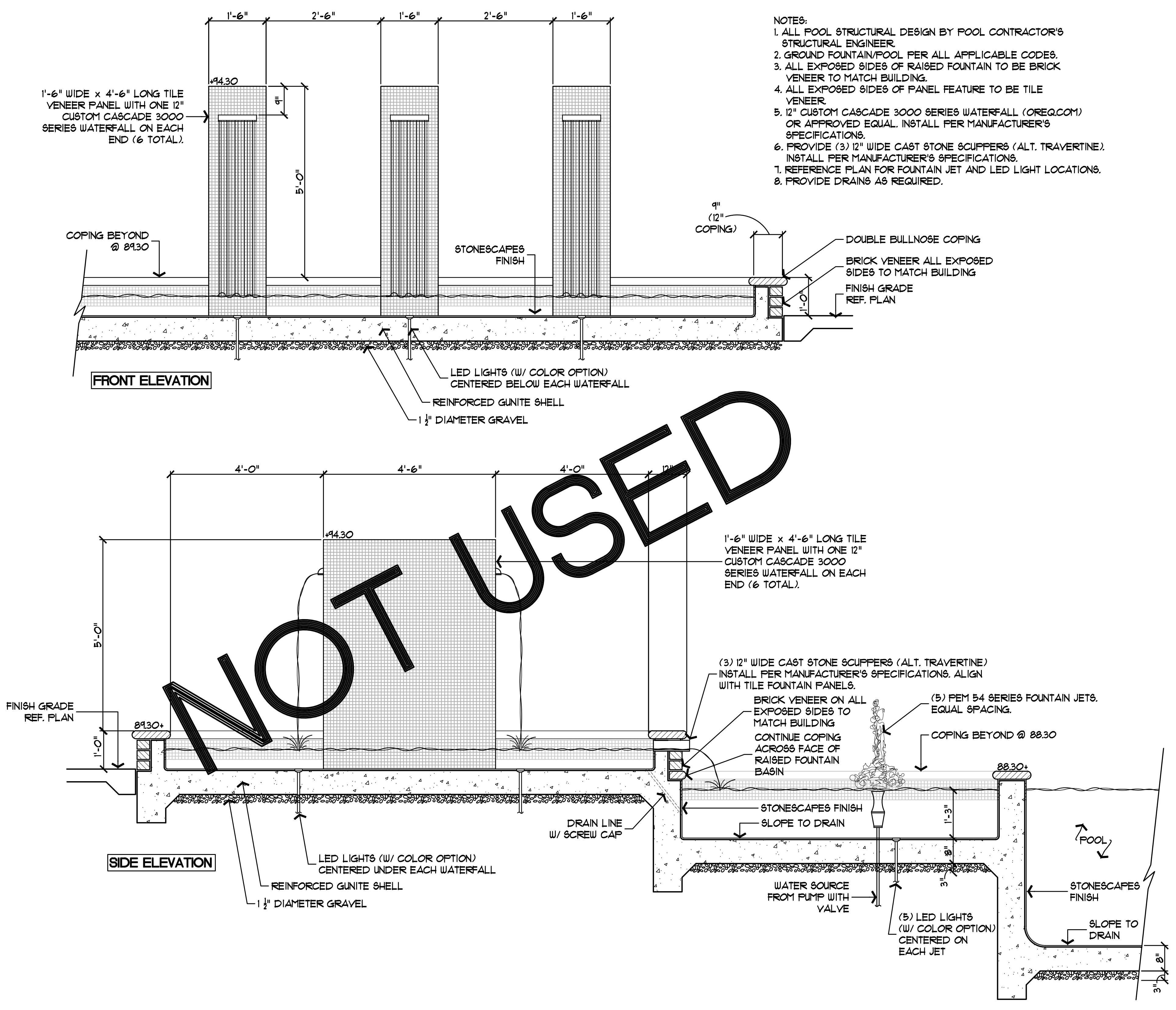
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
AS SHOWN

DATE
PERMIT SET
10-10-2025

TITLE
CONSTRUCTION DETAILS

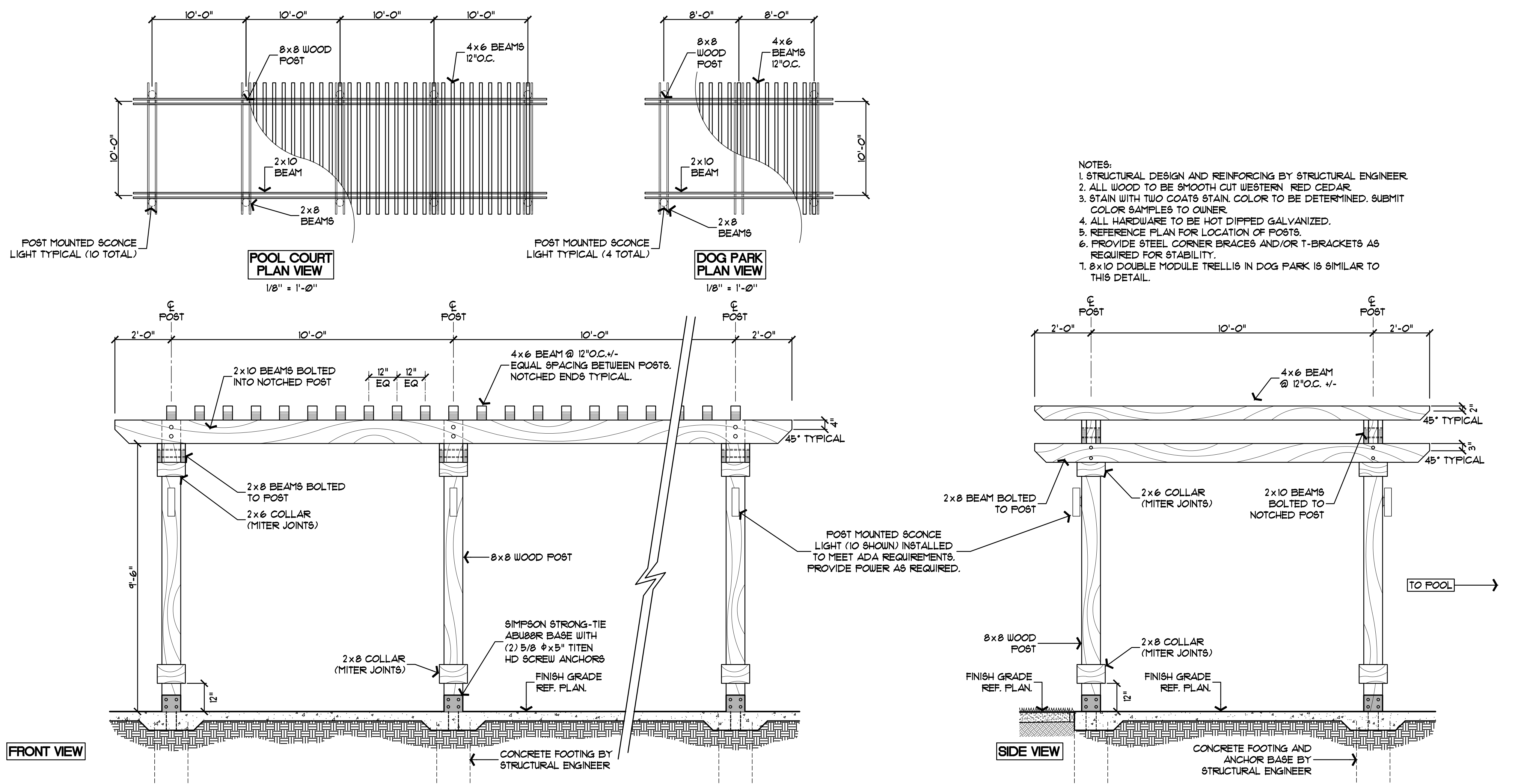
SHEET
5C OF 8


1'-6"
2'-6"
1'-6"
2'-6"
1'-6"
1'-6" WIDE x 4'-6" LONG TILE VENEER PANEL WITH ONE 12" CUSTOM CASCADE 3000 SERIES WATERFALL ON EACH END (6 TOTAL).
5'-0"
COPING BEYOND @ 89.30
STONESCAPES FINISH
9" (12" COPING)
DOUBLE BULLNOSE COPING
BRICK VENEER ALL EXPOSED SIDES TO MATCH BUILDING
FINISH GRADE REF. PLAN
FRONT ELEVATION
LED LIGHTS (W/ COLOR OPTION) CENTERED BELOW EACH WATERFALL
REINFORCED GUNITE SHELL
1 1/2" DIAMETER GRAVEL
4'-0"
4'-6"
4'-0"
1'-6" WIDE x 4'-6" LONG TILE VENEER PANEL WITH ONE 12" CUSTOM CASCADE 3000 SERIES WATERFALL ON EACH END (6 TOTAL).
(3) 12" WIDE CAST STONE SCUPPERS (ALT. TRAVERTINE). INSTALL PER MANUFACTURER'S SPECIFICATIONS. ALIGN WITH TILE FOUNTAIN PANELS.
BRICK VENEER ON ALL EXPOSED SIDES TO MATCH BUILDING
CONTINUE COPING ACROSS FACE OF RAISED FOUNTAIN BASIN
(5) PEM 54 SERIES FOUNTAIN JETS. EQUAL SPACING.
COPING BEYOND @ 88.30
FINISH GRADE REF. PLAN
STONESCAPES FINISH
SLOPE TO DRAIN
DRAIN LINE W/ SCREW CAP
POOL
STONESCAPES FINISH
SLOPE TO DRAIN
SIDE ELEVATION
LED LIGHTS (W/ COLOR OPTION) CENTERED UNDER EACH WATERFALL
REINFORCED GUNITE SHELL
1 1/2" DIAMETER GRAVEL
WATER SOURCE FROM PUMP WITH VALVE
(5) LED LIGHTS (W/ COLOR OPTION) CENTERED ON EACH JET
NOT USED

NOTES:
1. ALL POOL STRUCTURAL DESIGN BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND FOUNTAIN/POOL PER ALL APPLICABLE CODES.
3. ALL EXPOSED SIDES OF RAISED FOUNTAIN TO BE BRICK VENEER TO MATCH BUILDING.
4. ALL EXPOSED SIDES OF PANEL FEATURE TO BE TILE VENEER.
5. 12" CUSTOM CASCADE 3000 SERIES WATERFALL (OREQ.COM) OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS.
6. PROVIDE (3) 12" WIDE CAST STONE SCUPPERS (ALT. TRAVERTINE). INSTALL PER MANUFACTURER'S SPECIFICATIONS.
7. REFERENCE PLAN FOR FOUNTAIN JET AND LED LIGHT LOCATIONS.
8. PROVIDE DRAINS AS REQUIRED.

Ⓐ WATERFALL PANELS / JETS / SCUPPERS AT RAISED FOUNTAIN BASIN

1/2" = 1'-0"

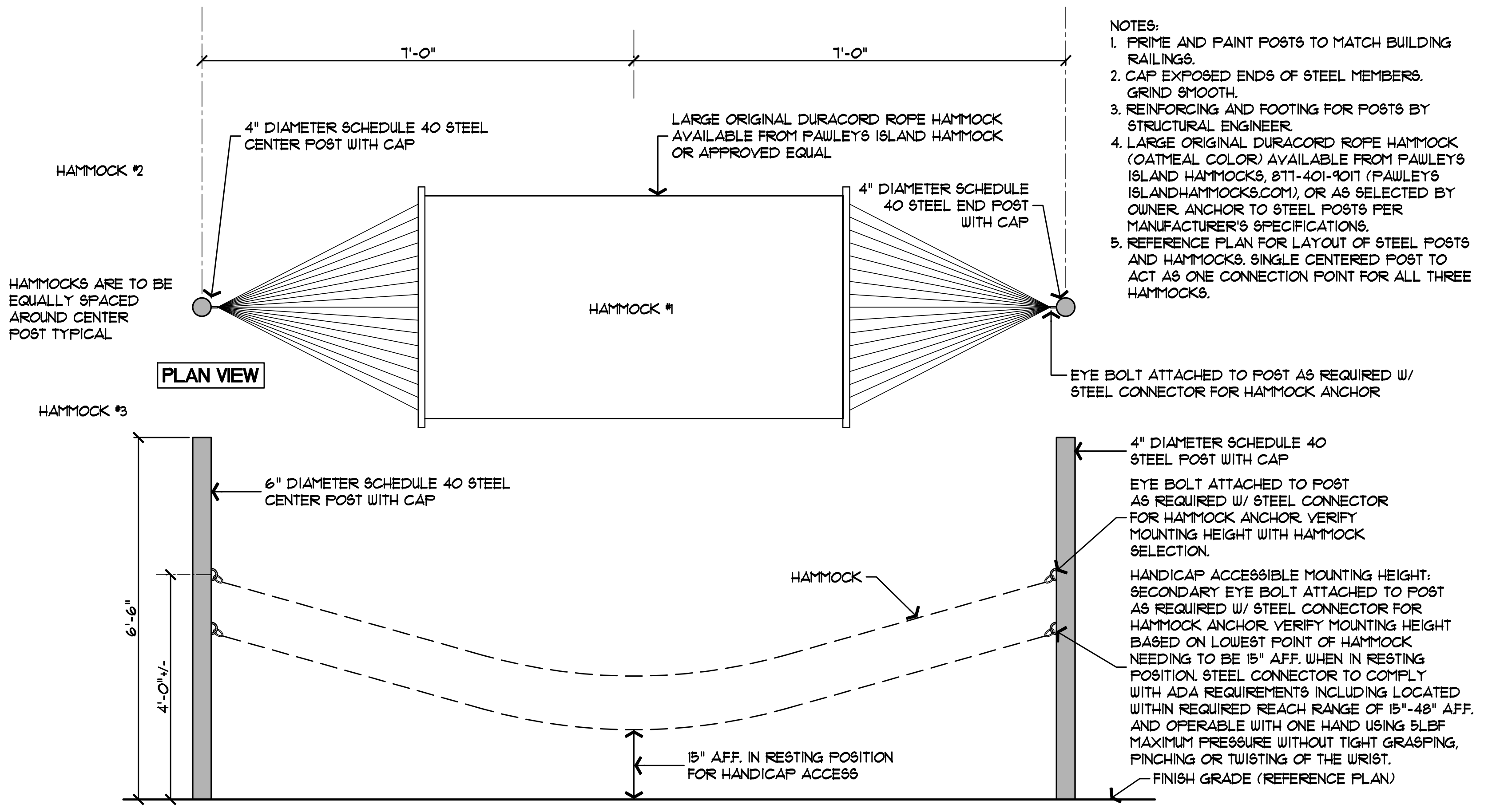

10'-0"
10'-0"
10'-0"
10'-0"
8x8 WOOD POST
4x6 BEAMS 12"O.C.
10'-0"
2x10 BEAM
2x8 BEAMS
POST MOUNTED SCONCE LIGHT TYPICAL (10 TOTAL)
POOL COURT PLAN VIEW
1/8" = 1'-0"
8'-0"
8'-0"
8x8 WOOD POST
4x6 BEAMS 12"O.C.
2x10 BEAM
2x8 BEAMS
POST MOUNTED SCONCE LIGHT TYPICAL (4 TOTAL)
DOG PARK PLAN VIEW
1/8" = 1'-0"
POST
POST
POST
2'-0"
10'-0"
10'-0"
2'-0"
2x10 BEAMS BOLTED INTO NOTCHED POST
12" 12"
EQ EQ
4x6 BEAM @ 12"O.C.+/- EQUAL SPACING BETWEEN POSTS. NOTCHED ENDS TYPICAL.
45° TYPICAL
2x8 BEAMS BOLTED TO POST
2x6 COLLAR (MITER JOINTS)
8x8 WOOD POST
9'-6"
SIMPSON STRONG-TIE ABU88R BASE WITH (2) 5/8 Φx5" TITEN HD SCREW ANCHORS
2x8 COLLAR (MITER JOINTS)
FINISH GRADE REF. PLAN
CONCRETE FOOTING BY STRUCTURAL ENGINEER
FRONT VIEW
POST MOUNTED SCONCE LIGHT (10 SHOWN) INSTALLED TO MEET ADA REQUIREMENTS. PROVIDE POWER AS REQUIRED.
POST
POST
2'-0"
10'-0"
2'-0"
4x6 BEAM @ 12"O.C. +/-
45° TYPICAL
45° TYPICAL
2x8 BEAM BOLTED TO POST
2x6 COLLAR (MITER JOINTS)
2x10 BEAMS BOLTED TO NOTCHED POST
TO POOL
8x8 WOOD POST
2x8 COLLAR (MITER JOINTS)
FINISH GRADE REF. PLAN
FINISH GRADE REF. PLAN
CONCRETE FOOTING AND ANCHOR BASE BY STRUCTURAL ENGINEER
SIDE VIEW

NOTES:
1. STRUCTURAL DESIGN AND REINFORCING BY STRUCTURAL ENGINEER.
2. ALL WOOD TO BE SMOOTH CUT WESTERN RED CEDAR.
3. STAIN WITH TWO COATS STAIN. COLOR TO BE DETERMINED. SUBMIT COLOR SAMPLES TO OWNER.
4. ALL HARDWARE TO BE HOT DIPPED GALVANIZED.
5. REFERENCE PLAN FOR LOCATION OF POSTS.
6. PROVIDE STEEL CORNER BRACES AND/OR T-BRACKETS AS REQUIRED FOR STABILITY.
7. 8x10 DOUBLE MODULE TRELLIS IN DOG PARK IS SIMILAR TO THIS DETAIL.

Ⓒ WOOD SHADE STRUCTURE

POOL COURTYARD (DOG PARK SHADE STRUCTURE IS SIMILAR)

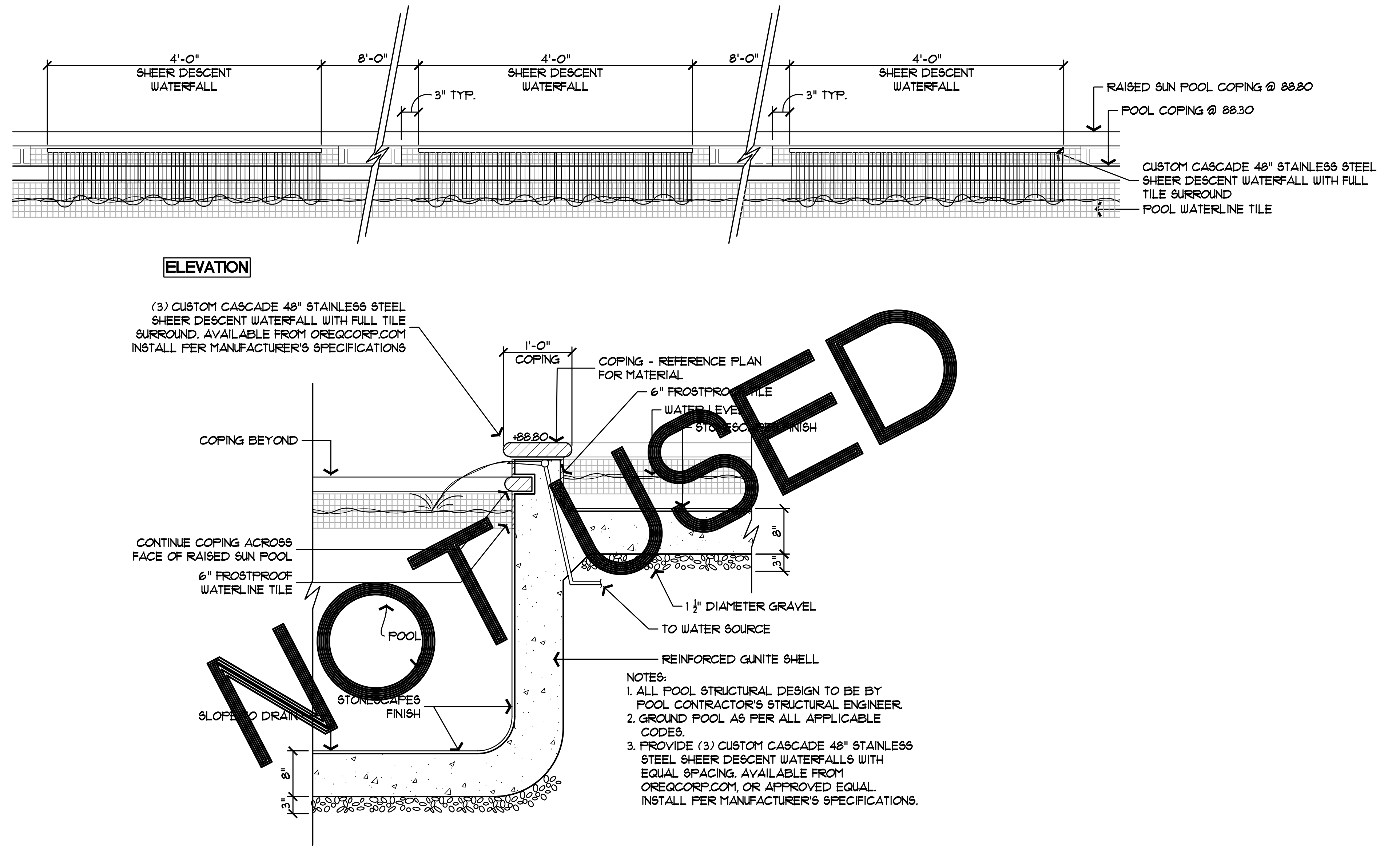
3/8" = 1'-0"


7'-0"
7'-0"
HAMMOCK #2
4" DIAMETER SCHEDULE 40 STEEL CENTER POST WITH CAP
LARGE ORIGINAL DURACORD ROPE HAMMOCK AVAILABLE FROM PAWLEYS ISLAND HAMMOCK OR APPROVED EQUAL
4" DIAMETER SCHEDULE 40 STEEL END POST WITH CAP
HAMMOCKS ARE TO BE EQUALLY SPACED AROUND CENTER POST TYPICAL
HAMMOCK #1
PLAN VIEW
EYE BOLT ATTACHED TO POST AS REQUIRED W/ STEEL CONNECTOR FOR HAMMOCK ANCHOR
HAMMOCK #3
6" DIAMETER SCHEDULE 40 STEEL CENTER POST WITH CAP
4" DIAMETER SCHEDULE 40 STEEL POST WITH CAP
EYE BOLT ATTACHED TO POST AS REQUIRED W/ STEEL CONNECTOR FOR HAMMOCK ANCHOR. VERIFY MOUNTING HEIGHT WITH HAMMOCK SELECTION.
HAMMOCK
6'-6"
4'-0"+/-
HANDICAP ACCESSIBLE MOUNTING HEIGHT: SECONDARY EYE BOLT ATTACHED TO POST AS REQUIRED W/ STEEL CONNECTOR FOR HAMMOCK ANCHOR. VERIFY MOUNTING HEIGHT BASED ON LOWEST POINT OF HAMMOCK NEEDING TO BE 15" A.F.F. WHEN IN RESTING POSITION. STEEL CONNECTOR TO COMPLY WITH ADA REQUIREMENTS INCLUDING LOCATED WITHIN REQUIRED REACH RANGE OF 15"-48" A.F.F. AND OPERABLE WITH ONE HAND USING 5LBF MAXIMUM PRESSURE WITHOUT TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
15" AFF. IN RESTING POSITION FOR HANDICAP ACCESS
FINISH GRADE (REFERENCE PLAN)

NOTES:
1. PRIME AND PAINT POSTS TO MATCH BUILDING RAILINGS.
2. CAP EXPOSED ENDS OF STEEL MEMBERS. GRIND SMOOTH.
3. REINFORCING AND FOOTING FOR POSTS BY STRUCTURAL ENGINEER.
4. LARGE ORIGINAL DURACORD ROPE HAMMOCK (OATMEAL COLOR) AVAILABLE FROM PAWLEYS ISLAND HAMMOCKS, 877-401-9017 (PAWLEYS ISLANDHAMMOCKS.COM), OR AS SELECTED BY OWNER. ANCHOR TO STEEL POSTS PER MANUFACTURER'S SPECIFICATIONS.
5. REFERENCE PLAN FOR LAYOUT OF STEEL POSTS AND HAMMOCKS. SINGLE CENTERED POST TO ACT AS ONE CONNECTION POINT FOR ALL THREE HAMMOCKS.

Ⓓ STEEL POSTS W/ HAMMOCK

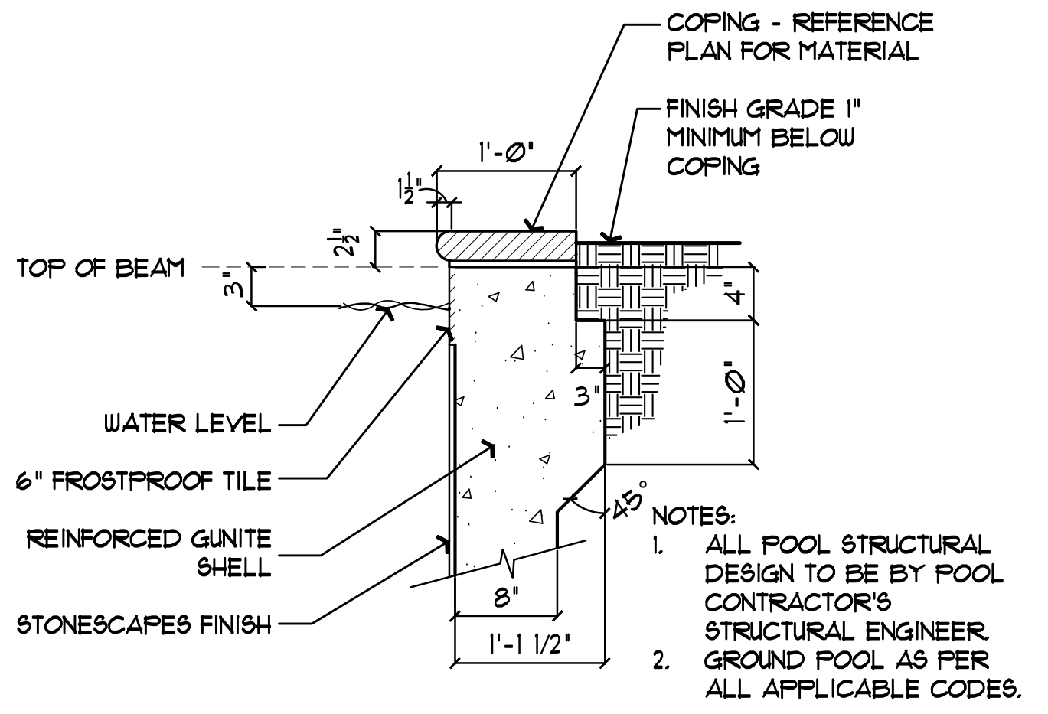
1/2" = 1'-0"


4'-0"
SHEER DESCENT WATERFALL
8'-0"
4'-0"
SHEER DESCENT WATERFALL
8'-0"
4'-0"
SHEER DESCENT WATERFALL
3" TYP.
3" TYP.
RAISED SUN POOL COPING @ 88.80
POOL COPING @ 88.30
CUSTOM CASCADE 48" STAINLESS STEEL SHEER DESCENT WATERFALL WITH FULL TILE SURROUND
POOL WATERLINE TILE
ELEVATION
(3) CUSTOM CASCADE 48" STAINLESS STEEL SHEER DESCENT WATERFALL WITH FULL TILE SURROUND. AVAILABLE FROM OREQCORP.COM INSTALL PER MANUFACTURER'S SPECIFICATIONS
1'-0" COPING
COPING - REFERENCE PLAN FOR MATERIAL
6" FROSTPROOF TILE
WATER LEVEL
STONESCAPES FINISH
COPING BEYOND
CONTINUE COPING ACROSS FACE OF RAISED SUN POOL
6" FROSTPROOF WATERLINE TILE
POOL
STONESCAPES FINISH
SLOPE TO DRAIN
1 1/2" DIAMETER GRAVEL
TO WATER SOURCE
REINFORCED GUNITE SHELL
NOT USED

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. PROVIDE (3) CUSTOM CASCADE 48" STAINLESS STEEL SHEER DESCENT WATERFALLS WITH EQUAL SPACING. AVAILABLE FROM OREQCORP.COM, OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS.

Ⓑ SHEER DESCENT WATERFALL • RAISED SUN POOL

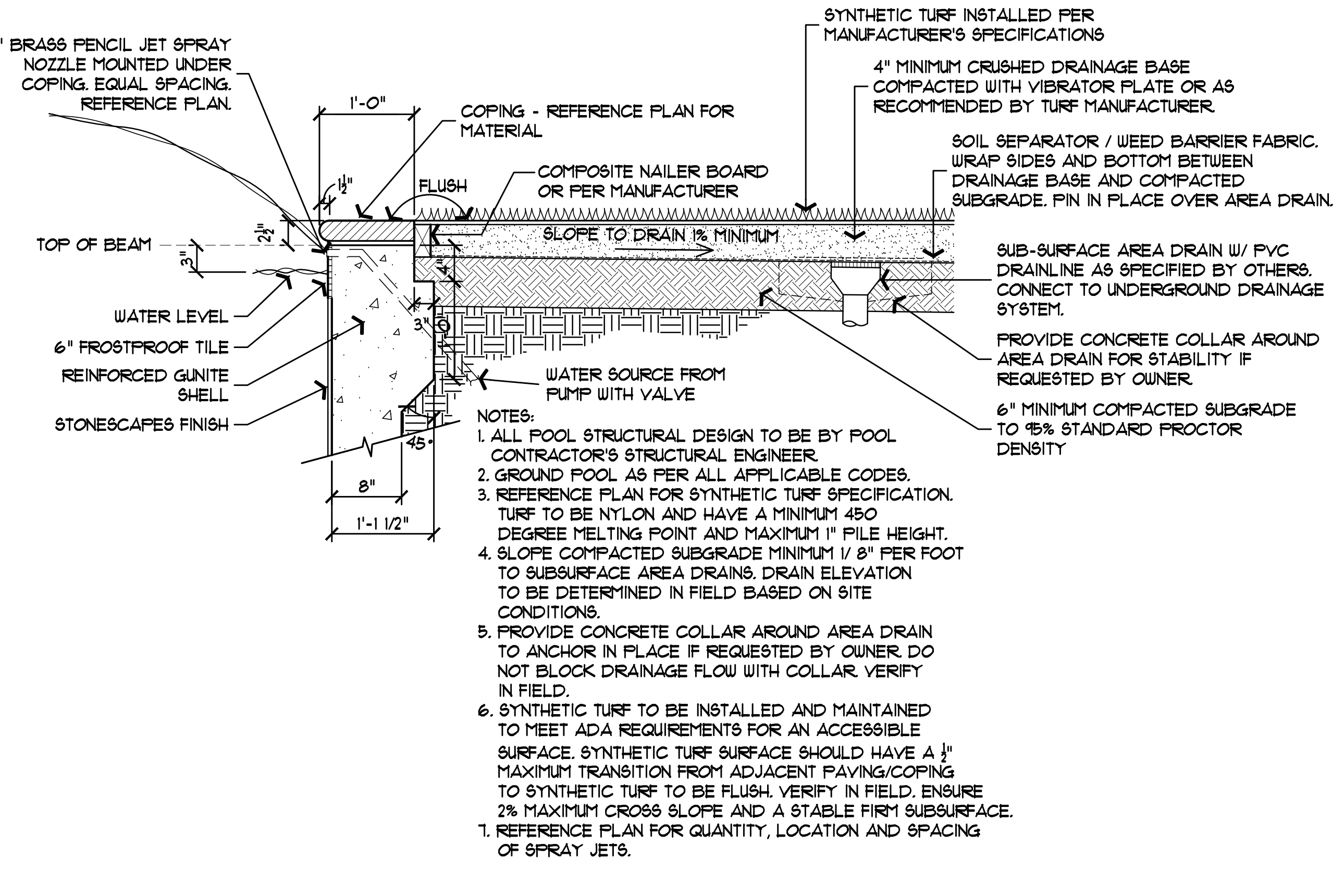
3/4" = 1'-0"


1'-0"
COPING - REFERENCE PLAN FOR MATERIAL
FINISH GRADE 1" MINIMUM BELOW COPING
TOP OF BEAM
WATER LEVEL
6" FROSTPROOF TILE
REINFORCED GUNITE SHELL
STONESCAPES FINISH
3"
4"
1'-0"
8"
1'-1 1/2"

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.

Ⓔ COPING AT PLANTER

3/4" = 1'-0"


3/4" BRASS PENCIL JET SPRAY NOZZLE MOUNTED UNDER COPING. EQUAL SPACING. REFERENCE PLAN.
1'-0"
COPING - REFERENCE PLAN FOR MATERIAL
1 1/2"
FLUSH
COMPOSITE NAILER BOARD OR PER MANUFACTURER
SYNTHETIC TURF INSTALLED PER MANUFACTURER'S SPECIFICATIONS
4" MINIMUM CRUSHED DRAINAGE BASE COMPACTED WITH VIBRATOR PLATE OR AS RECOMMENDED BY TURF MANUFACTURER.
SOIL SEPARATOR / WEED BARRIER FABRIC. WRAP SIDES AND BOTTOM BETWEEN DRAINAGE BASE AND COMPACTED SUBGRADE. PIN IN PLACE OVER AREA DRAIN.
TOP OF BEAM
2 1/2"
3"
SLOPE TO DRAIN 1% MINIMUM
4"
3"
SUB-SURFACE AREA DRAIN W/ PVC DRAINLINE AS SPECIFIED BY OTHERS. CONNECT TO UNDERGROUND DRAINAGE SYSTEM.
WATER LEVEL
6" FROSTPROOF TILE
REINFORCED GUNITE SHELL
STONESCAPES FINISH
WATER SOURCE FROM PUMP WITH VALVE
PROVIDE CONCRETE COLLAR AROUND AREA DRAIN FOR STABILITY IF REQUESTED BY OWNER.
6" MINIMUM COMPACTED SUBGRADE TO 95% STANDARD PROCTOR DENSITY
45°
8"
1'-1 1/2"

NOTES:
1. ALL POOL STRUCTURAL DESIGN TO BE BY POOL CONTRACTOR'S STRUCTURAL ENGINEER.
2. GROUND POOL AS PER ALL APPLICABLE CODES.
3. REFERENCE PLAN FOR SYNTHETIC TURF SPECIFICATION. TURF TO BE NYLON AND HAVE A MINIMUM 450 DEGREE MELTING POINT AND MAXIMUM 1" PILE HEIGHT.
4. SLOPE COMPACTED SUBGRADE MINIMUM 1/ 8" PER FOOT TO SUBSURFACE AREA DRAINS. DRAIN ELEVATION TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
5. PROVIDE CONCRETE COLLAR AROUND AREA DRAIN TO ANCHOR IN PLACE IF REQUESTED BY OWNER. DO NOT BLOCK DRAINAGE FLOW WITH COLLAR. VERIFY IN FIELD.
6. SYNTHETIC TURF TO BE INSTALLED AND MAINTAINED TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. SYNTHETIC TURF SURFACE SHOULD HAVE A 1/2" MAXIMUM TRANSITION FROM ADJACENT PAVING/COPING TO SYNTHETIC TURF TO BE FLUSH. VERIFY IN FIELD. ENSURE 2% MAXIMUM CROSS SLOPE AND A STABLE FIRM SUBSURFACE.
7. REFERENCE PLAN FOR QUANTITY, LOCATION AND SPACING OF SPRAY JETS.

Ⓕ BRASS STREAM JET AT POOL COPING

3/4" = 1'-0"

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

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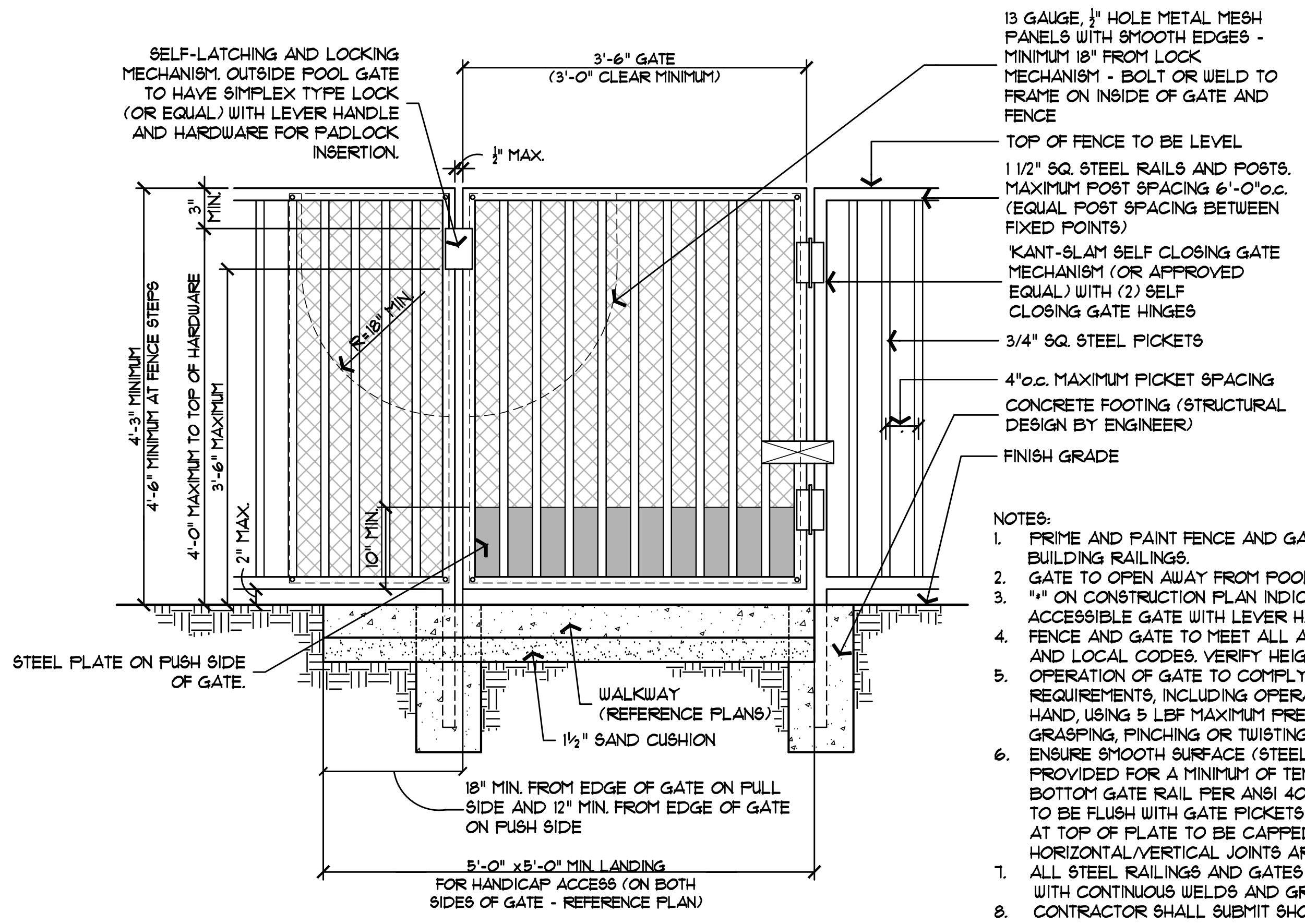
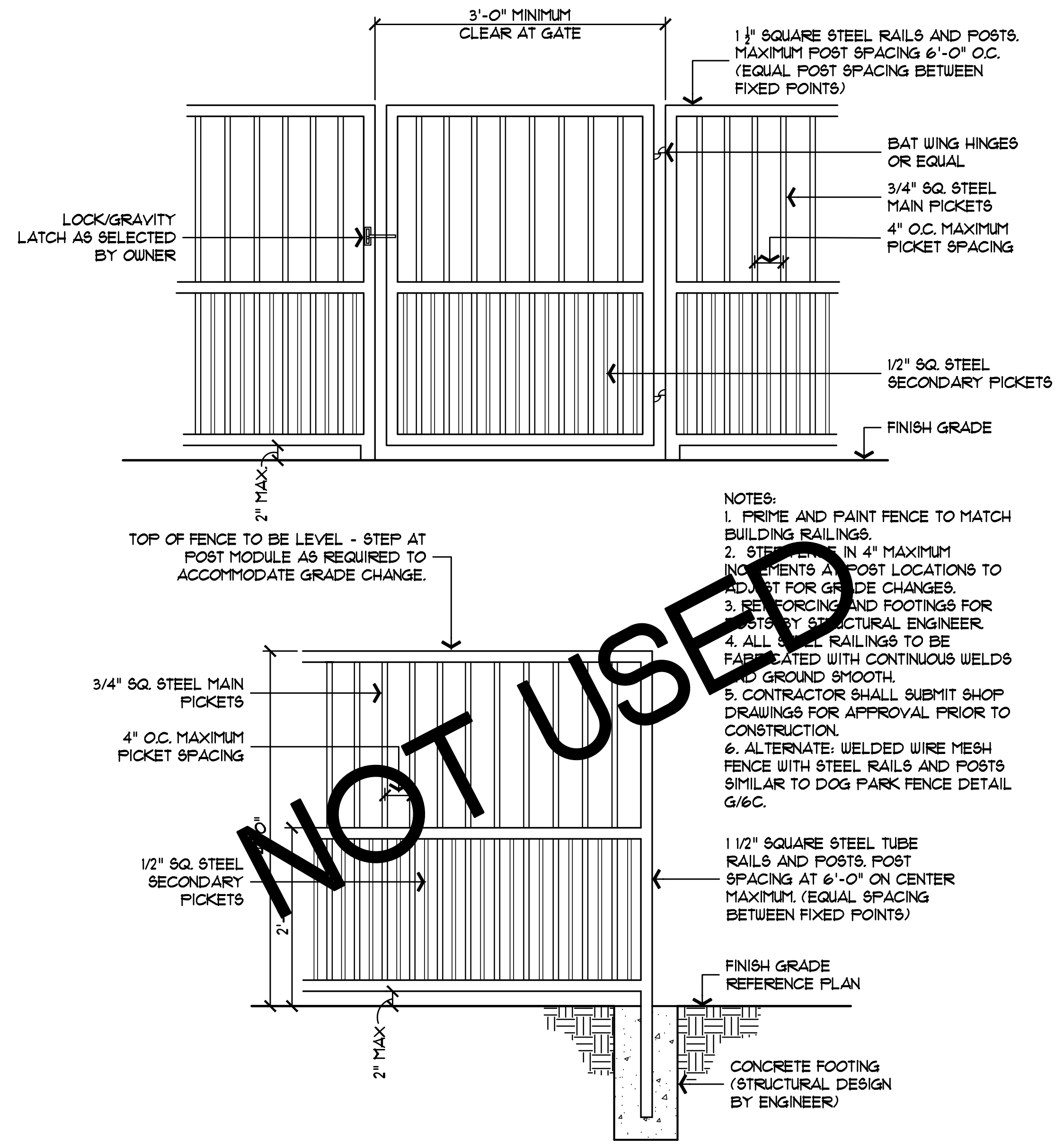

SELF-LATCHING AND LOCKING MECHANISM. OUTSIDE POOL GATE TO HAVE SIMPLEX TYPE LOCK (OR EQUAL) WITH LEVER HANDLE AND HARDWARE FOR PADLOCK INSERTION.
3'-6" GATE (3'-0" CLEAR MINIMUM)
½" MAX.
13 GAUGE, ½" HOLE METAL MESH PANELS WITH SMOOTH EDGES - MINIMUM 18" FROM LOCK MECHANISM - BOLT OR WELD TO FRAME ON INSIDE OF GATE AND FENCE
TOP OF FENCE TO BE LEVEL
1 1/2" SQ. STEEL RAILS AND POSTS. MAXIMUM POST SPACING 6'-0"o.c. (EQUAL POST SPACING BETWEEN FIXED POINTS)
'KANT-SLAM SELF CLOSING GATE MECHANISM (OR APPROVED EQUAL) WITH (2) SELF CLOSING GATE HINGES
3/4" SQ. STEEL PICKETS
4"o.c. MAXIMUM PICKET SPACING
CONCRETE FOOTING (STRUCTURAL DESIGN BY ENGINEER)
FINISH GRADE
3" MIN.
R=18" MIN
4'-3" MINIMUM
4'-6" MINIMUM AT FENCE STEPS
4'-0" MAXIMUM TO TOP OF HARDWARE
3'-6" MAXIMUM
2" MAX.
10" MIN.
STEEL PLATE ON PUSH SIDE OF GATE.
WALKWAY (REFERENCE PLANS)
1½" SAND CUSHION
18" MIN. FROM EDGE OF GATE ON PULL SIDE AND 12" MIN. FROM EDGE OF GATE ON PUSH SIDE
5'-0" x5'-0" MIN. LANDING FOR HANDICAP ACCESS (ON BOTH SIDES OF GATE - REFERENCE PLAN)

NOTES:
1. PRIME AND PAINT FENCE AND GATE TO MATCH BUILDING RAILINGS.
2. GATE TO OPEN AWAY FROM POOL YARD.
3. "*" ON CONSTRUCTION PLAN INDICATES HANDICAP ACCESSIBLE GATE WITH LEVER HANDLE.
4. FENCE AND GATE TO MEET ALL APPLICABLE STATE AND LOCAL CODES. VERIFY HEIGHT REQUIREMENTS.
5. OPERATION OF GATE TO COMPLY WITH ADA REQUIREMENTS, INCLUDING OPERABLE WITH ONE HAND, USING 5 LBF MAXIMUM PRESSURE WITHOUT TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
6. ENSURE SMOOTH SURFACE (STEEL PLATE) IS PROVIDED FOR A MINIMUM OF TEN INCHES ABOVE BOTTOM GATE RAIL PER ANSI 4042.9. STEEL PLATE TO BE FLUSH WITH GATE PICKETS AND ANY CAVITIES AT TOP OF PLATE TO BE CAPPED. ENSURE HORIZONTAL/VERTICAL JOINTS ARE LESS THAN 1/16".
7. ALL STEEL RAILINGS AND GATES TO BE FABRICATED WITH CONTINUOUS WELDS AND GROUND SMOOTH.
8. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
9. REINFORCING AND FOOTING DETAILS FOR FENCE POSTS BY STRUCTURAL ENGINEER.

A POOL FENCE AND GATE

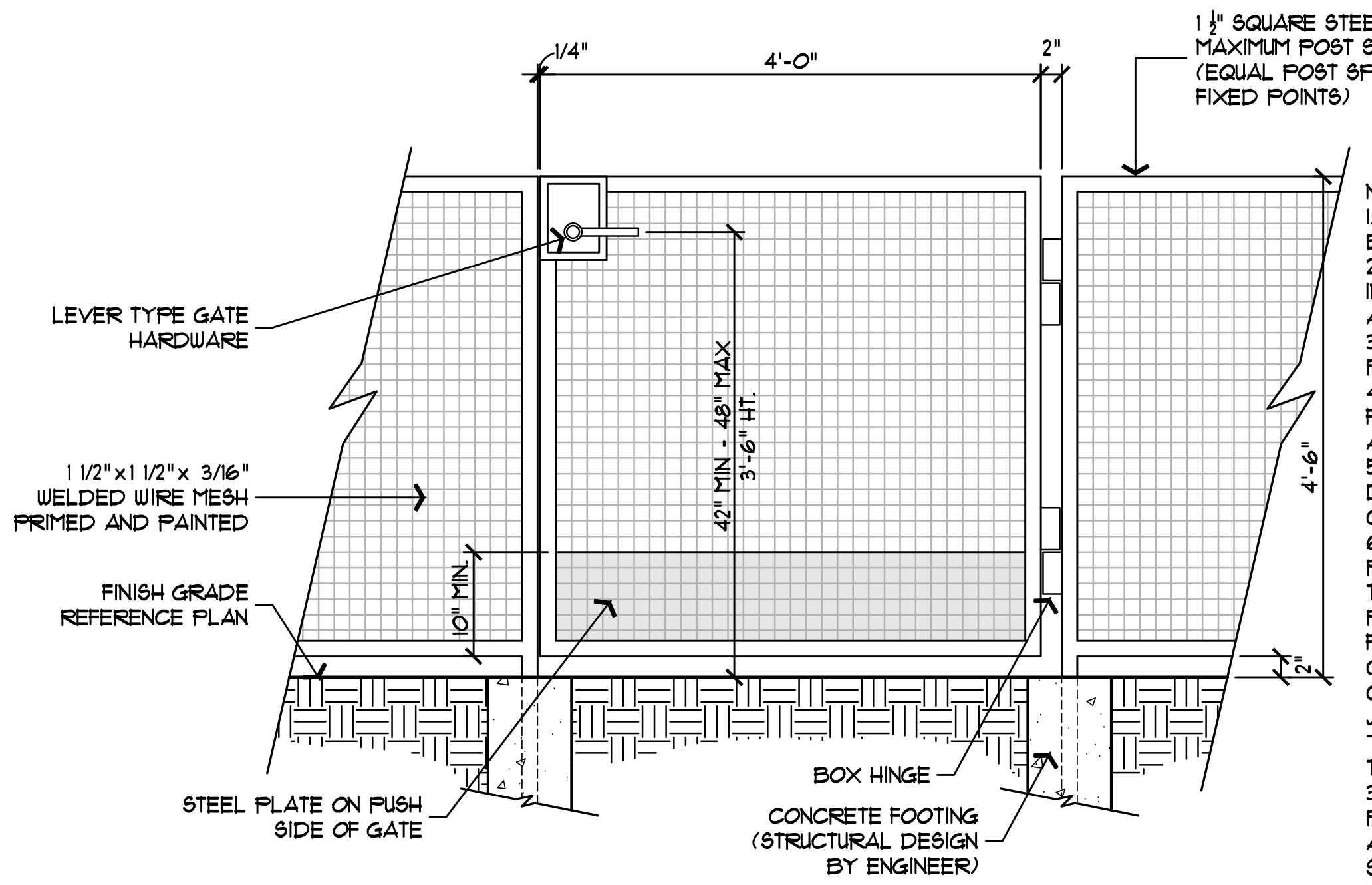
3/4" = 1'-0"


3'-0" MINIMUM CLEAR AT GATE
1 ½" SQUARE STEEL RAILS AND POSTS. MAXIMUM POST SPACING 6'-0" O.C. (EQUAL POST SPACING BETWEEN FIXED POINTS)
BAT WING HINGES OR EQUAL
3/4" SQ. STEEL MAIN PICKETS
4" O.C. MAXIMUM PICKET SPACING
LOCK/GRAVITY LATCH AS SELECTED BY OWNER
1/2" SQ. STEEL SECONDARY PICKETS
FINISH GRADE
2" MAX.
TOP OF FENCE TO BE LEVEL - STEP AT POST MODULE AS REQUIRED TO ACCOMMODATE GRADE CHANGE.
3/4" SQ. STEEL MAIN PICKETS
4" O.C. MAXIMUM PICKET SPACING
1/2" SQ. STEEL SECONDARY PICKETS
1 1/2" SQUARE STEEL TUBE RAILS AND POSTS. POST SPACING AT 6'-0" ON CENTER MAXIMUM. (EQUAL SPACING BETWEEN FIXED POINTS)
FINISH GRADE REFERENCE PLAN
CONCRETE FOOTING (STRUCTURAL DESIGN BY ENGINEER)
2" MAX
NOT USED

NOTES:
1. PRIME AND PAINT FENCE TO MATCH BUILDING RAILINGS.
2. STEP FENCE IN 4" MAXIMUM INCREMENTS AT POST LOCATIONS TO ADJUST FOR GRADE CHANGES.
3. REINFORCING AND FOOTINGS FOR POSTS BY STRUCTURAL ENGINEER.
4. ALL STEEL RAILINGS TO BE FABRICATED WITH CONTINUOUS WELDS AND GROUND SMOOTH.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
6. ALTERNATE: WELDED WIRE MESH FENCE WITH STEEL RAILS AND POSTS SIMILAR TO DOG PARK FENCE DETAIL G/6C.

D 4'-0" HT. PRIVATE YARD FENCE

3/4" = 1'-0"

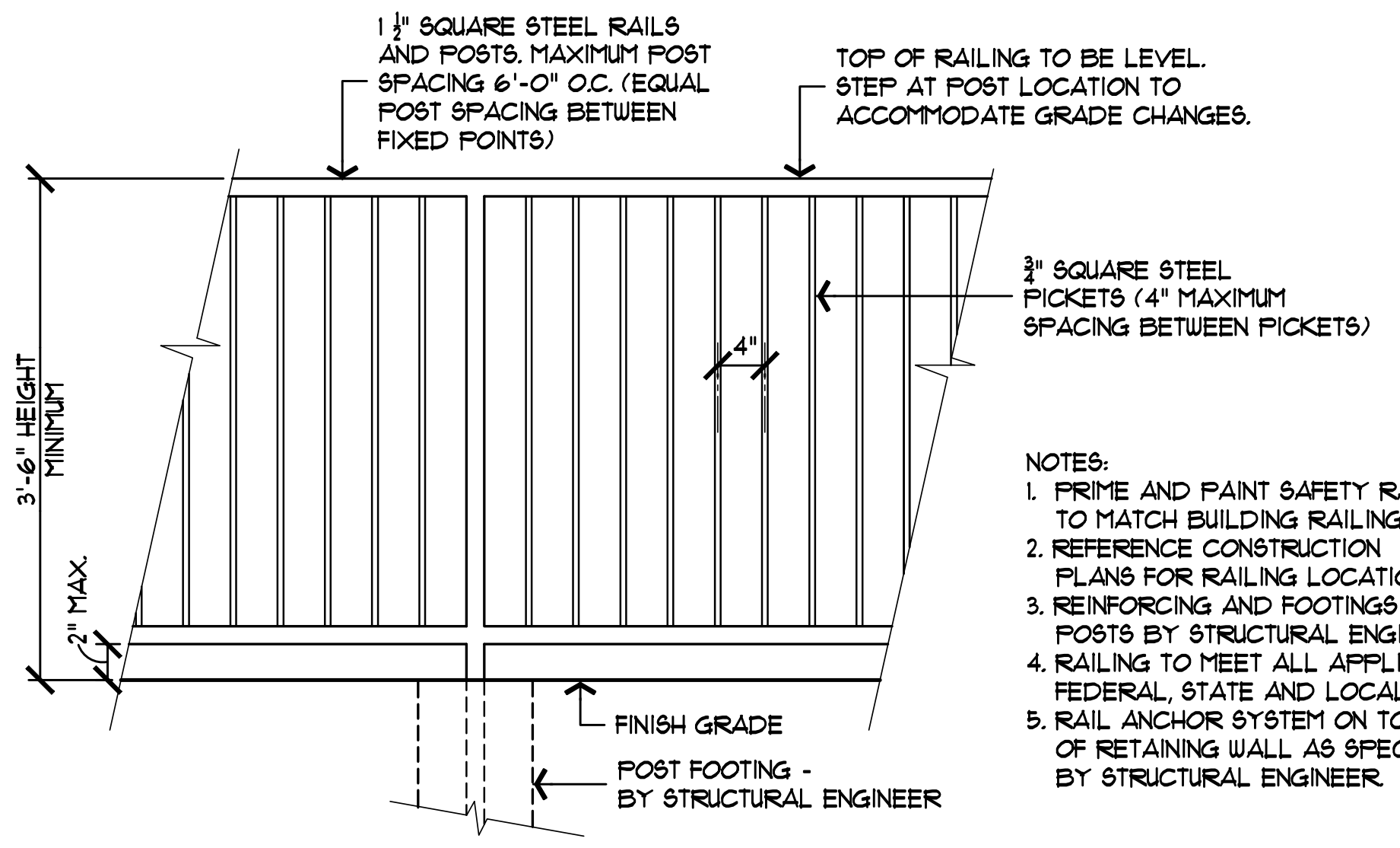

1/4"
4'-0"
2"
1 ½" SQUARE STEEL RAILS AND POSTS. MAXIMUM POST SPACING 8'-0" O.C. (EQUAL POST SPACING BETWEEN FIXED POINTS)
LEVER TYPE GATE HARDWARE
1 1/2"x1 1/2"x 3/16" WELDED WIRE MESH PRIMED AND PAINTED
FINISH GRADE REFERENCE PLAN
10" MIN.
42" MIN - 48" MAX
3'-6" HT.
4'-6"
2"
STEEL PLATE ON PUSH SIDE OF GATE
BOX HINGE
CONCRETE FOOTING (STRUCTURAL DESIGN BY ENGINEER)

NOTES:
1. PRIME AND PAINT FENCE TO MATCH BUILDING RAILINGS.
2. STEP FENCE IN 4" MAXIMUM INCREMENTS AT POST LOCATIONS TO ADJUST FOR GRADE CHANGES.
3. REINFORCING AND FOOTINGS FOR POSTS BY STRUCTURAL ENGINEER.
4. ALL STEEL RAILINGS TO BE FABRICATED WITH CONTINUOUS WELDS AND GROUND SMOOTH.
5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
6. ENSURE SMOOTH SURFACE (STEEL PLATE) IS PROVIDED FOR A MINIMUM OF TEN INCHES ABOVE BOTTOM GATE RAIL PER ANSI 4042.9. STEEL PLATE IS TO BE FLUSH WITH GATE WIRE MESH AND ANY CAVITIES AT TOP OF PLATE TO BE CAPPED. ENSURE HORIZONTAL/VERTICAL JOINTS ARE LESS THAN 1/16".
7. PRIVATE YARD FENCE TO BE SIMILAR TO THIS DETAIL. ACCESS GATE TO BE 3'-0" WIDTH TYPICAL. ANCHOR FENCE POST TO CONCRETE SLAB WITH APPROPRIATE STEEL BASE PLATE. STEEL PLATE ON PUSH SIDE OF GATE NOT REQUIRED AT PRIVATE YARDS.

G 4'-6" HT. DOG PARK FENCE AND GATE

PRIVATE YARD FENCE TO BE SIMILAR WITH 3'-0" GATE

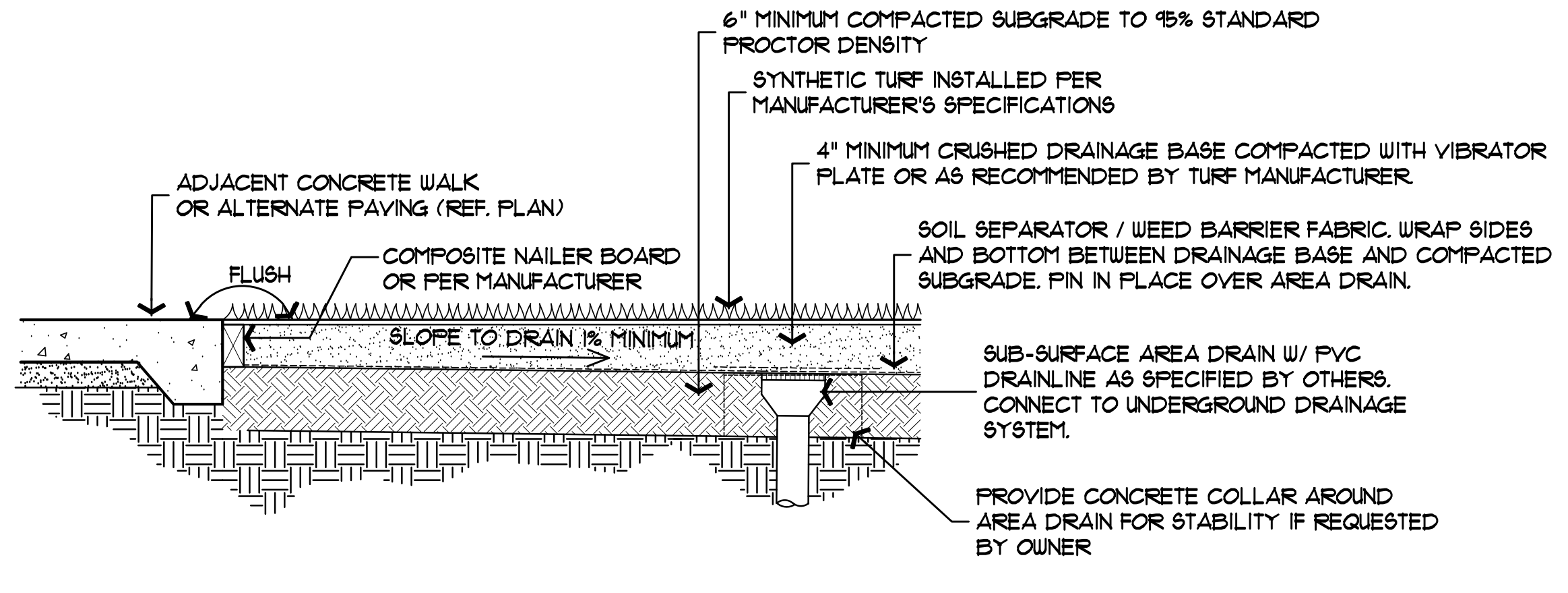
3/4" = 1'-0"


1 ½" SQUARE STEEL RAILS AND POSTS. MAXIMUM POST SPACING 6'-0" O.C. (EQUAL POST SPACING BETWEEN FIXED POINTS)
TOP OF RAILING TO BE LEVEL. STEP AT POST LOCATION TO ACCOMMODATE GRADE CHANGES.
¾" SQUARE STEEL PICKETS (4" MAXIMUM SPACING BETWEEN PICKETS)
4"
3'-6" HEIGHT MINIMUM
2" MAX.
FINISH GRADE
POST FOOTING - BY STRUCTURAL ENGINEER

NOTES:
1. PRIME AND PAINT SAFETY RAILING TO MATCH BUILDING RAILINGS.
2. REFERENCE CONSTRUCTION PLANS FOR RAILING LOCATIONS.
3. REINFORCING AND FOOTINGS FOR POSTS BY STRUCTURAL ENGINEER.
4. RAILING TO MEET ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
5. RAIL ANCHOR SYSTEM ON TOP OF RETAINING WALL AS SPECIFIED BY STRUCTURAL ENGINEER.

B SAFETY RAILING

3/4" = 1'-0"

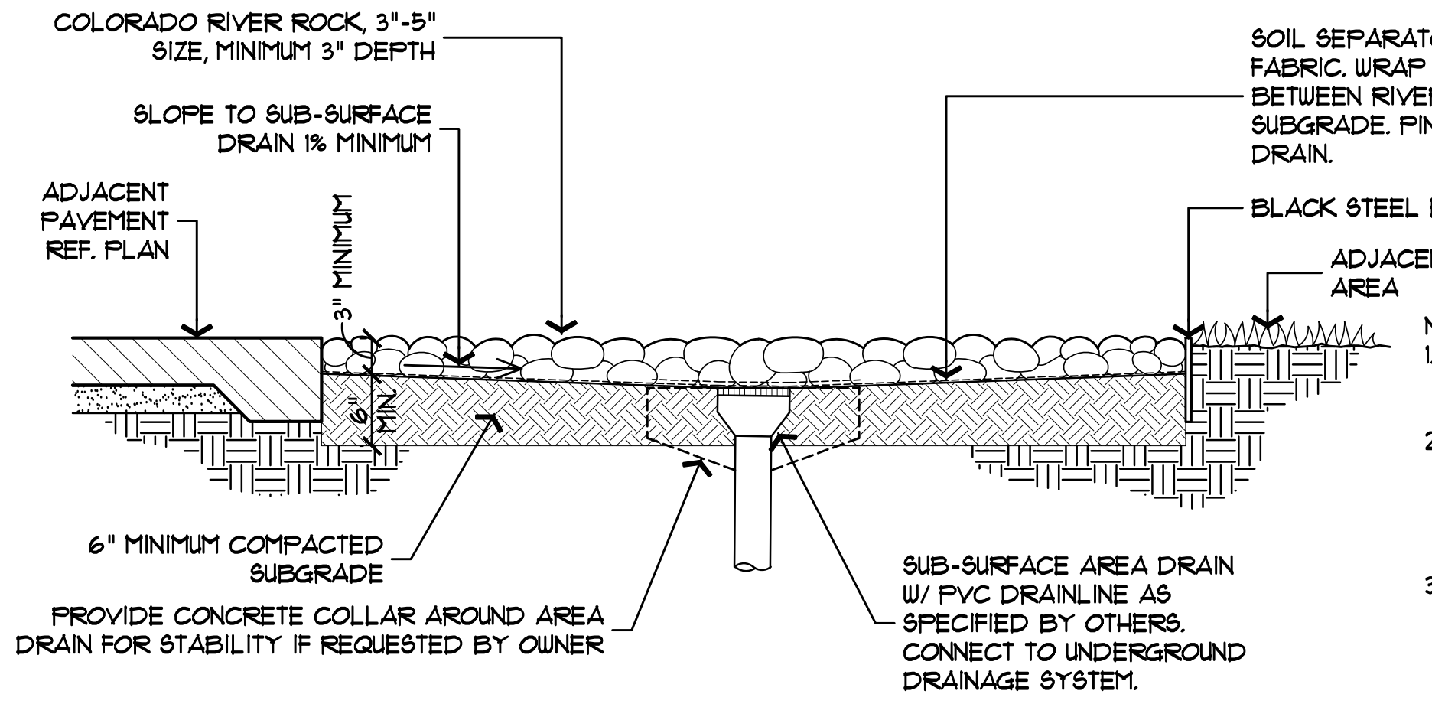

6" MINIMUM COMPACTED SUBGRADE TO 95% STANDARD PROCTOR DENSITY
SYNTHETIC TURF INSTALLED PER MANUFACTURER'S SPECIFICATIONS
4" MINIMUM CRUSHED DRAINAGE BASE COMPACTED WITH VIBRATOR PLATE OR AS RECOMMENDED BY TURF MANUFACTURER.
SOIL SEPARATOR / WEED BARRIER FABRIC. WRAP SIDES AND BOTTOM BETWEEN DRAINAGE BASE AND COMPACTED SUBGRADE. PIN IN PLACE OVER AREA DRAIN.
ADJACENT CONCRETE WALK OR ALTERNATE PAVING (REF. PLAN)
FLUSH
COMPOSITE NAILER BOARD OR PER MANUFACTURER
SLOPE TO DRAIN 1% MINIMUM
SUB-SURFACE AREA DRAIN W/ PVC DRAINLINE AS SPECIFIED BY OTHERS. CONNECT TO UNDERGROUND DRAINAGE SYSTEM.
PROVIDE CONCRETE COLLAR AROUND AREA DRAIN FOR STABILITY IF REQUESTED BY OWNER

NOTES:
1. REFERENCE PLAN FOR SYNTHETIC TURF SPECIFICATION. TURF TO BE NYLON AND HAVE A MINIMUM 450 DEGREE MELTING POINT AND MAXIMUM 1" PILE HEIGHT.
2. SLOPE COMPACTED SUBGRADE MINIMUM 1/ 8" PER FOOT TO SUBSURFACE AREA DRAINS. DRAIN ELEVATION TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
3. PROVIDE CONCRETE COLLAR AROUND AREA DRAIN TO ANCHOR IN PLACE IF REQUESTED BY OWNER. DO NOT BLOCK DRAINAGE FLOW WITH COLLAR. VERIFY IN FIELD.
4. SYNTHETIC TURF TO BE INSTALLED AND MAINTAINED TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. THERE MUST BE AT LEAST ONE ACCESSIBLE EDGE AT THE TRANSITION TO THE WALK WITH A 1/2" MAXIMUM OVERALL CHANGE IN LEVEL WHERE A 1:2 BEVEL IS PROVIDED OR 1/4" MAXIMUM VERTICAL CHANGE IN LEVEL. ENSURE 2% MAXIMUM CROSS SLOPE AND A STABLE FIRM SUBSURFACE.

E SYNTHETIC TURF

AT CONCRETE WALK

3/4" = 1'-0"

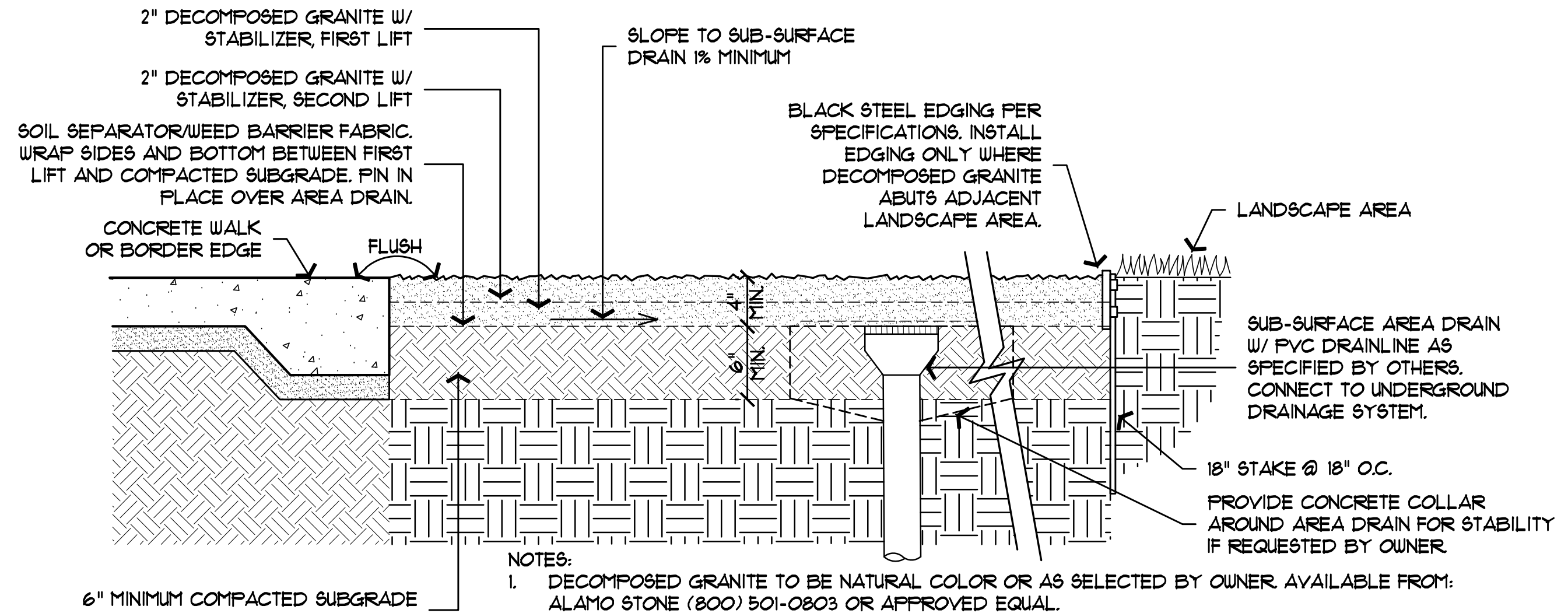

COLORADO RIVER ROCK, 3"-5" SIZE, MINIMUM 3" DEPTH
SLOPE TO SUB-SURFACE DRAIN 1% MINIMUM
ADJACENT PAVEMENT REF. PLAN
3" MINIMUM
6" MIN.
SOIL SEPARATOR/WEED BARRIER FABRIC. WRAP SIDES AND BOTTOM BETWEEN RIVER ROCK AND COMPACTED SUBGRADE. PIN IN PLACE OVER AREA DRAIN.
BLACK STEEL EDGING
ADJACENT LANDSCAPE AREA
6" MINIMUM COMPACTED SUBGRADE
PROVIDE CONCRETE COLLAR AROUND AREA DRAIN FOR STABILITY IF REQUESTED BY OWNER
SUB-SURFACE AREA DRAIN W/ PVC DRAINLINE AS SPECIFIED BY OTHERS. CONNECT TO UNDERGROUND DRAINAGE SYSTEM.

NOTES:
1. COLORADO RIVER ROCK TO BE 3"-5" SIZE AND INSTALLED AT MINIMUM 3" DEPTH.
2. SLOPE COMPACTED SUB-GRADE 1/8" PER FOOT TO SUB-SURFACE AREA DRAIN. DRAIN ELEVATION TO BE VERIFIED IN FIELD BASED ON SITE CONDITIONS.
3. PROVIDE CONCRETE COLLAR AROUND AREA DRAIN TO ANCHOR IN PLACE IF REQUESTED BY OWNER. DO NOT BLOCK DRAINAGE FLOW WITH COLLAR. VERIFY IN FIELD.

H COLORADO RIVER ROCK

WITH SUB-SURFACE AREA DRAIN

3/4" = 1'-0"

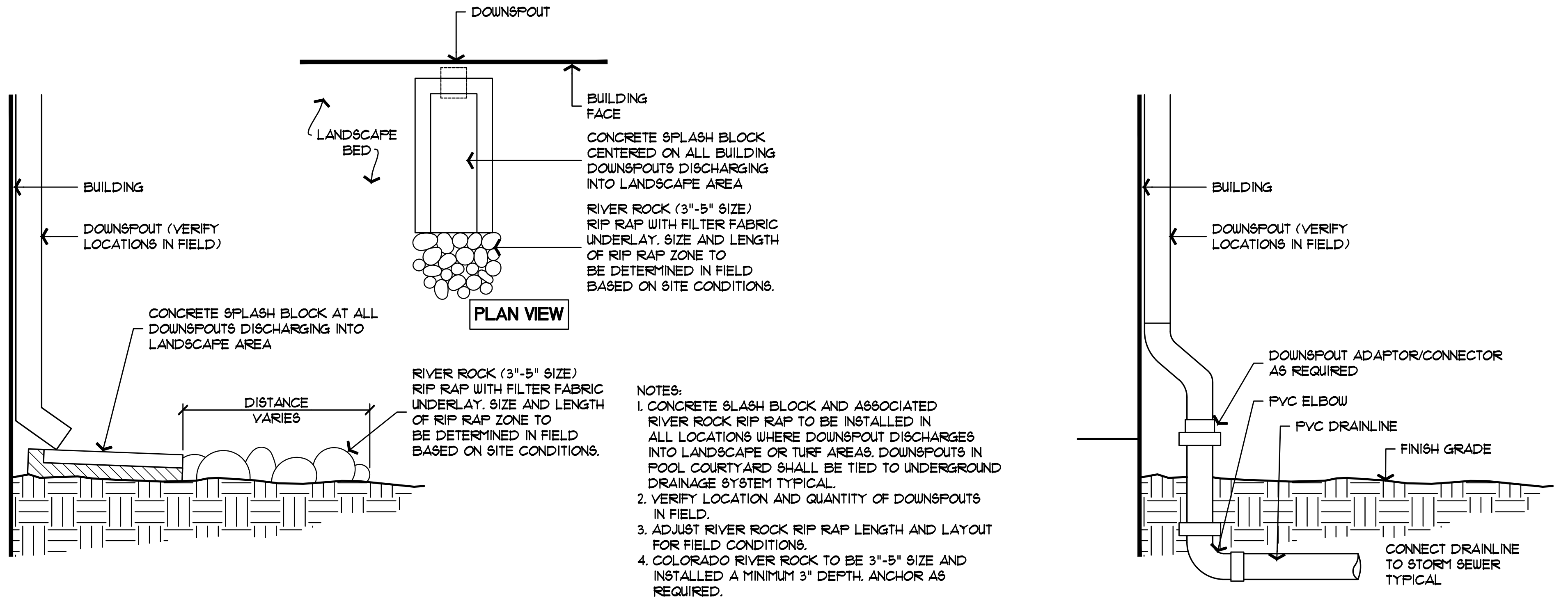

2" DECOMPOSED GRANITE W/ STABILIZER, FIRST LIFT
2" DECOMPOSED GRANITE W/ STABILIZER, SECOND LIFT
SOIL SEPARATOR/WEED BARRIER FABRIC. WRAP SIDES AND BOTTOM BETWEEN FIRST LIFT AND COMPACTED SUBGRADE. PIN IN PLACE OVER AREA DRAIN.
CONCRETE WALK OR BORDER EDGE
FLUSH
SLOPE TO SUB-SURFACE DRAIN 1% MINIMUM
4" MIN.
6" MIN.
BLACK STEEL EDGING PER SPECIFICATIONS. INSTALL EDGING ONLY WHERE DECOMPOSED GRANITE ABUTS ADJACENT LANDSCAPE AREA.
LANDSCAPE AREA
SUB-SURFACE AREA DRAIN W/ PVC DRAINLINE AS SPECIFIED BY OTHERS. CONNECT TO UNDERGROUND DRAINAGE SYSTEM.
18" STAKE @ 18" O.C.
PROVIDE CONCRETE COLLAR AROUND AREA DRAIN FOR STABILITY IF REQUESTED BY OWNER
6" MINIMUM COMPACTED SUBGRADE TO 95% STANDARD PROCTOR DENSITY

NOTES:
1. DECOMPOSED GRANITE TO BE NATURAL COLOR OR AS SELECTED BY OWNER. AVAILABLE FROM: ALAMO STONE (800) 501-0803 OR APPROVED EQUAL.
2. EACH LIFT OF DECOMPOSED GRANITE GRAVEL SHALL BE DAMPENED, ROLLED AND COMPACTED AS SPECIFIED.
3. STABILIZER BY STABILIZER SOLUTION OR APPROVED EQUAL.
4. DECOMPOSED GRANITE TO BE INSTALLED TO MEET ADA REQUIREMENTS FOR AN ACCESSIBLE SURFACE. THE SURFACE SHALL BE SMOOTH, WITH BINDING AGENT ADDED, AND NO LOOSE GRAVEL. THE FINISHED SURFACE SHOULD BE SIMILAR TO COLORED ASPHALT.
5. SLOPE COMPACTED SUB-GRADE 1/8" PER FOOT TO SUB-SURFACE AREA DRAIN. DRAIN ELEVATION TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
6. PROVIDE CONCRETE COLLAR AROUND AREA DRAIN TO ANCHOR IN PLACE IF REQUESTED BY OWNER. DO NOT BLOCK DRAINAGE FLOW WITH COLLAR. VERIFY IN FIELD.

C DECOMPOSED GRANITE

AT CONCRETE WALK AND/OR LANDSCAPE AREA

1" = 1'-0"


DOWNSPOUT
BUILDING FACE
LANDSCAPE BED
CONCRETE SPLASH BLOCK CENTERED ON ALL BUILDING DOWNSPOUTS DISCHARGING INTO LANDSCAPE AREA
RIVER ROCK (3"-5" SIZE) RIP RAP WITH FILTER FABRIC UNDERLAY. SIZE AND LENGTH OF RIP RAP ZONE TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
PLAN VIEW
BUILDING
DOWNSPOUT (VERIFY LOCATIONS IN FIELD)
CONCRETE SPLASH BLOCK AT ALL DOWNSPOUTS DISCHARGING INTO LANDSCAPE AREA
DISTANCE VARIES
RIVER ROCK (3"-5" SIZE) RIP RAP WITH FILTER FABRIC UNDERLAY. SIZE AND LENGTH OF RIP RAP ZONE TO BE DETERMINED IN FIELD BASED ON SITE CONDITIONS.
BUILDING
DOWNSPOUT (VERIFY LOCATIONS IN FIELD)
DOWNSPOUT ADAPTOR/CONNECTOR AS REQUIRED
PVC ELBOW
PVC DRAINLINE
FINISH GRADE
CONNECT DRAINLINE TO STORM SEWER TYPICAL

NOTES:
1. CONCRETE SLASH BLOCK AND ASSOCIATED RIVER ROCK RIP RAP TO BE INSTALLED IN ALL LOCATIONS WHERE DOWNSPOUT DISCHARGES INTO LANDSCAPE OR TURF AREAS. DOWNSPOUTS IN POOL COURTYARD SHALL BE TIED TO UNDERGROUND DRAINAGE SYSTEM TYPICAL.
2. VERIFY LOCATION AND QUANTITY OF DOWNSPOUTS IN FIELD.
3. ADJUST RIVER ROCK RIP RAP LENGTH AND LAYOUT FOR FIELD CONDITIONS.
4. COLORADO RIVER ROCK TO BE 3"-5" SIZE AND INSTALLED A MINIMUM 3" DEPTH. ANCHOR AS REQUIRED.

F DOWNSPOUT TREATMENT

CONCRETE SPLASH BLOCK / TIE-IN TO STORM SEWER

3/4" = 1'-0"

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

REGISTERED LANDSCAPE ARCHITECT
RICHARD B. ARTHUR
176
STATE OF TEXAS

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/10/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

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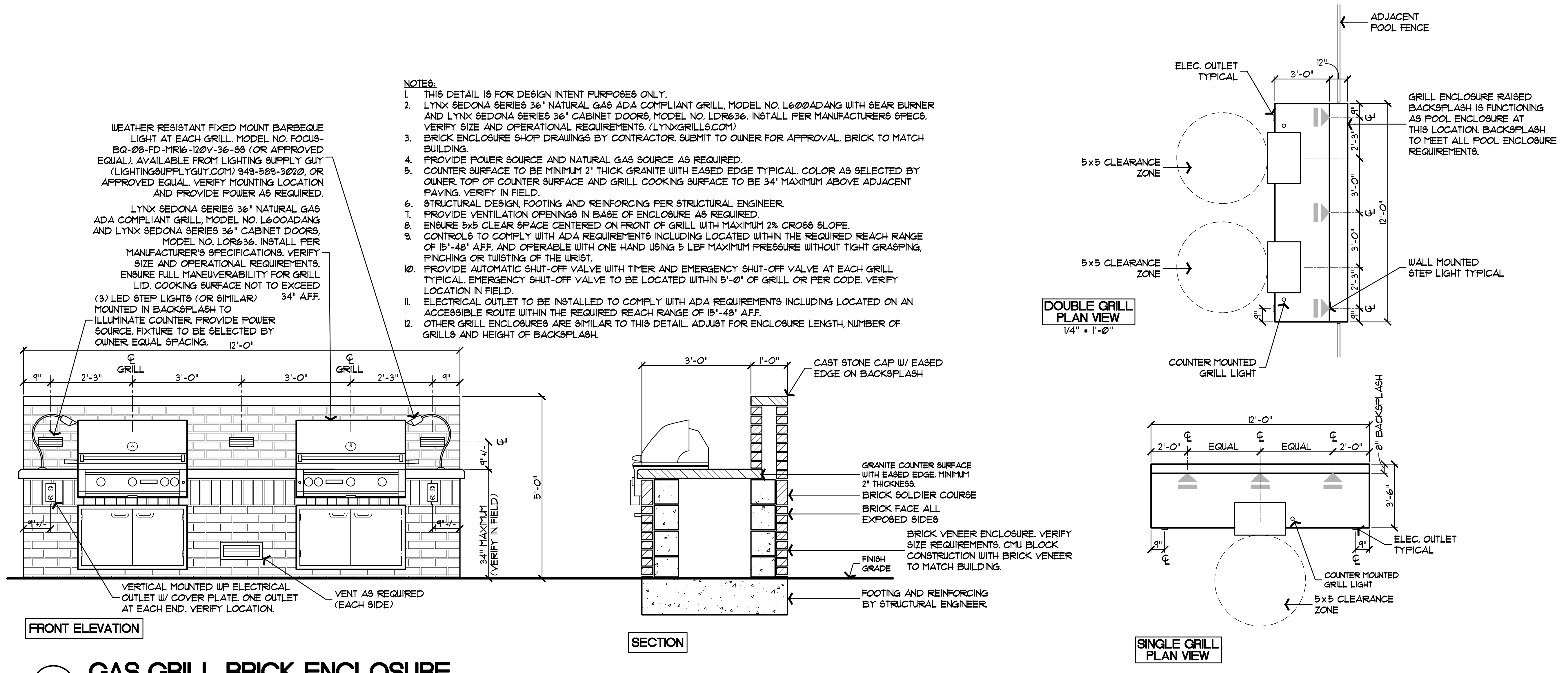
BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
AS SHOWN

DATE
PERMIT SET
10-10-2025

TITLE
CONSTRUCTION DETAILS

SHEET
7C OF 8


WEATHER RESISTANT FIXED MOUNT BARBEQUE LIGHT AT EACH GRILL. MODEL NO. FOCUS-BQ-08-FD-MR16-120V-36-SS (OR APPROVED EQUAL). AVAILABLE FROM LIGHTING SUPPLY GUY (LIGHTINGSUPPLYGUY.COM) 949-589-3020, OR APPROVED EQUAL. VERIFY MOUNTING LOCATION AND PROVIDE POWER AS REQUIRED.
LYNX SEDONA SERIES 36" NATURAL GAS ADA COMPLIANT GRILL, MODEL NO. L600ADANG AND LYNX SEDONA SERIES 36" CABINET DOORS, MODEL NO. LOR636. INSTALL PER MANUFACTURER'S SPECIFICATIONS. VERIFY SIZE AND OPERATIONAL REQUIREMENTS. ENSURE FULL MANEUVERABILITY FOR GRILL LID. COOKING SURFACE NOT TO EXCEED 34" A.F.F.
(3) LED STEP LIGHTS (OR SIMILAR) MOUNTED IN BACKSPLASH TO ILLUMINATE COUNTER. PROVIDE POWER SOURCE. FIXTURE TO BE SELECTED BY OWNER. EQUAL SPACING.
12'-0"
℄ GRILL
℄ GRILL
9"
2'-3"
3'-0"
3'-0"
2'-3"
9"
9"+/-
9"+/-
9"+/-
34" MAXIMUM (VERIFY IN FIELD)
5'-0"
VERTICAL MOUNTED WP ELECTRICAL OUTLET W/ COVER PLATE. ONE OUTLET AT EACH END. VERIFY LOCATION.
VENT AS REQUIRED (EACH SIDE)
FRONT ELEVATION
3'-0"
1'-0"
CAST STONE CAP W/ EASED EDGE ON BACKSPLASH
GRANITE COUNTER SURFACE WITH EASED EDGE. MINIMUM 2" THICKNESS.
BRICK SOLDIER COURSE
BRICK FACE ALL EXPOSED SIDES
BRICK VENEER ENCLOSURE. VERIFY SIZE REQUIREMENTS. CMU BLOCK CONSTRUCTION WITH BRICK VENEER TO MATCH BUILDING.
FINISH GRADE
FOOTING AND REINFORCING BY STRUCTURAL ENGINEER.
SECTION
ADJACENT POOL FENCE
ELEC. OUTLET TYPICAL
12"
3'-0"
GRILL ENCLOSURE RAISED BACKSPLASH IS FUNCTIONING AS POOL ENCLOSURE AT THIS LOCATION. BACKSPLASH TO MEET ALL POOL ENCLOSURE REQUIREMENTS.
5x5 CLEARANCE ZONE
5x5 CLEARANCE ZONE
9"
2'-3"
3'-0"
3'-0"
2'-3"
9"
12'-0"
WALL MOUNTED STEP LIGHT TYPICAL
COUNTER MOUNTED GRILL LIGHT
DOUBLE GRILL PLAN VIEW
1/4" = 1'-0"
12'-0"
2'-0"
EQUAL
EQUAL
2'-0"
8" BACKSPLASH
3'-6"
9"
9"
ELEC. OUTLET TYPICAL
COUNTER MOUNTED GRILL LIGHT
5x5 CLEARANCE ZONE
SINGLE GRILL PLAN VIEW

NOTES:

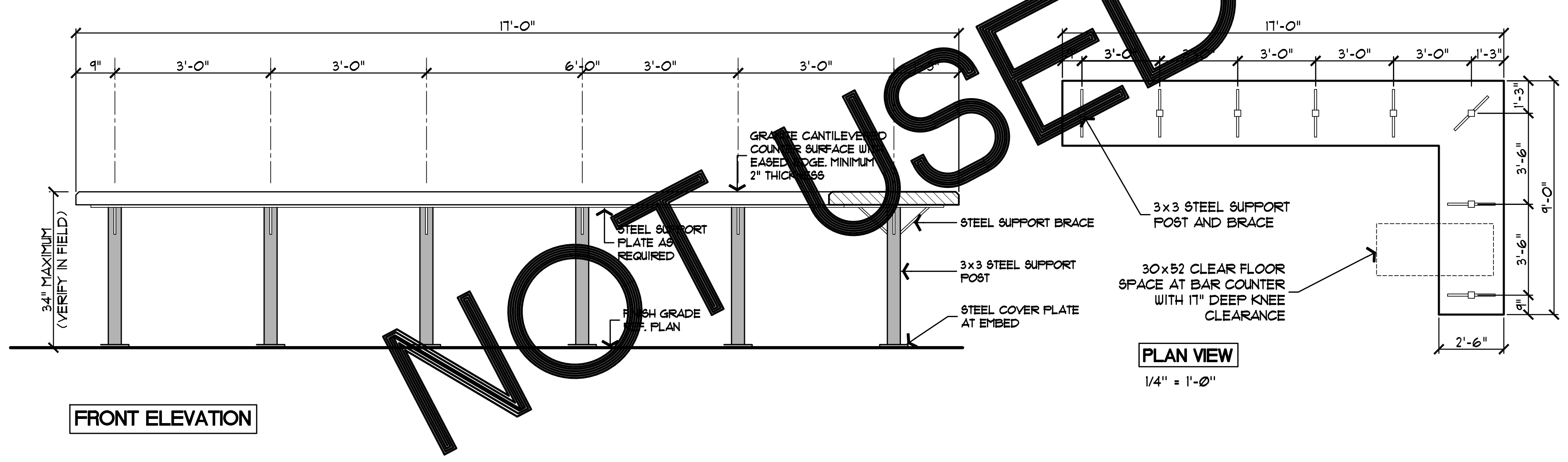
1. THIS DETAIL IS FOR DESIGN INTENT PURPOSES ONLY.
2. LYNX SEDONA SERIES 36" NATURAL GAS ADA COMPLIANT GRILL, MODEL NO. L600ADANG WITH SEAR BURNER AND LYNX SEDONA SERIES 36" CABINET DOORS, MODEL NO. LDR636. INSTALL PER MANUFACTURERS SPECS. VERIFY SIZE AND OPERATIONAL REQUIREMENTS. (LYNXGRILLS.COM)
3. BRICK ENCLOSURE SHOP DRAWINGS BY CONTRACTOR. SUBMIT TO OWNER FOR APPROVAL. BRICK TO MATCH BUILDING.
4. PROVIDE POWER SOURCE AND NATURAL GAS SOURCE AS REQUIRED.
5. COUNTER SURFACE TO BE MINIMUM 2" THICK GRANITE WITH EASED EDGE TYPICAL. COLOR AS SELECTED BY OWNER. TOP OF COUNTER SURFACE AND GRILL COOKING SURFACE TO BE 34" MAXIMUM ABOVE ADJACENT PAVING. VERIFY IN FIELD.
6. STRUCTURAL DESIGN, FOOTING AND REINFORCING PER STRUCTURAL ENGINEER.
7. PROVIDE VENTILATION OPENINGS IN BASE OF ENCLOSURE AS REQUIRED.
8. ENSURE 5x5 CLEAR SPACE CENTERED ON FRONT OF GRILL WITH MAXIMUM 2% CROSS SLOPE.
9. CONTROLS TO COMPLY WITH ADA REQUIREMENTS INCLUDING LOCATED WITHIN THE REQUIRED REACH RANGE OF 15"-48" A.F.F. AND OPERABLE WITH ONE HAND USING 5 LBF MAXIMUM PRESSURE WITHOUT TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
10. PROVIDE AUTOMATIC SHUT-OFF VALVE WITH TIMER AND EMERGENCY SHUT-OFF VALVE AT EACH GRILL TYPICAL. EMERGENCY SHUT-OFF VALVE TO BE LOCATED WITHIN 5'-0" OF GRILL OR PER CODE. VERIFY LOCATION IN FIELD.
11. ELECTRICAL OUTLET TO BE INSTALLED TO COMPLY WITH ADA REQUIREMENTS INCLUDING LOCATED ON AN ACCESSIBLE ROUTE WITHIN THE REQUIRED REACH RANGE OF 15"-48" A.F.F.
12. OTHER GRILL ENCLOSURES ARE SIMILAR TO THIS DETAIL. ADJUST FOR ENCLOSURE LENGTH, NUMBER OF GRILLS AND HEIGHT OF BACKSPLASH.

A GAS GRILL BRICK ENCLOSURE

1/2" = 1'-0"

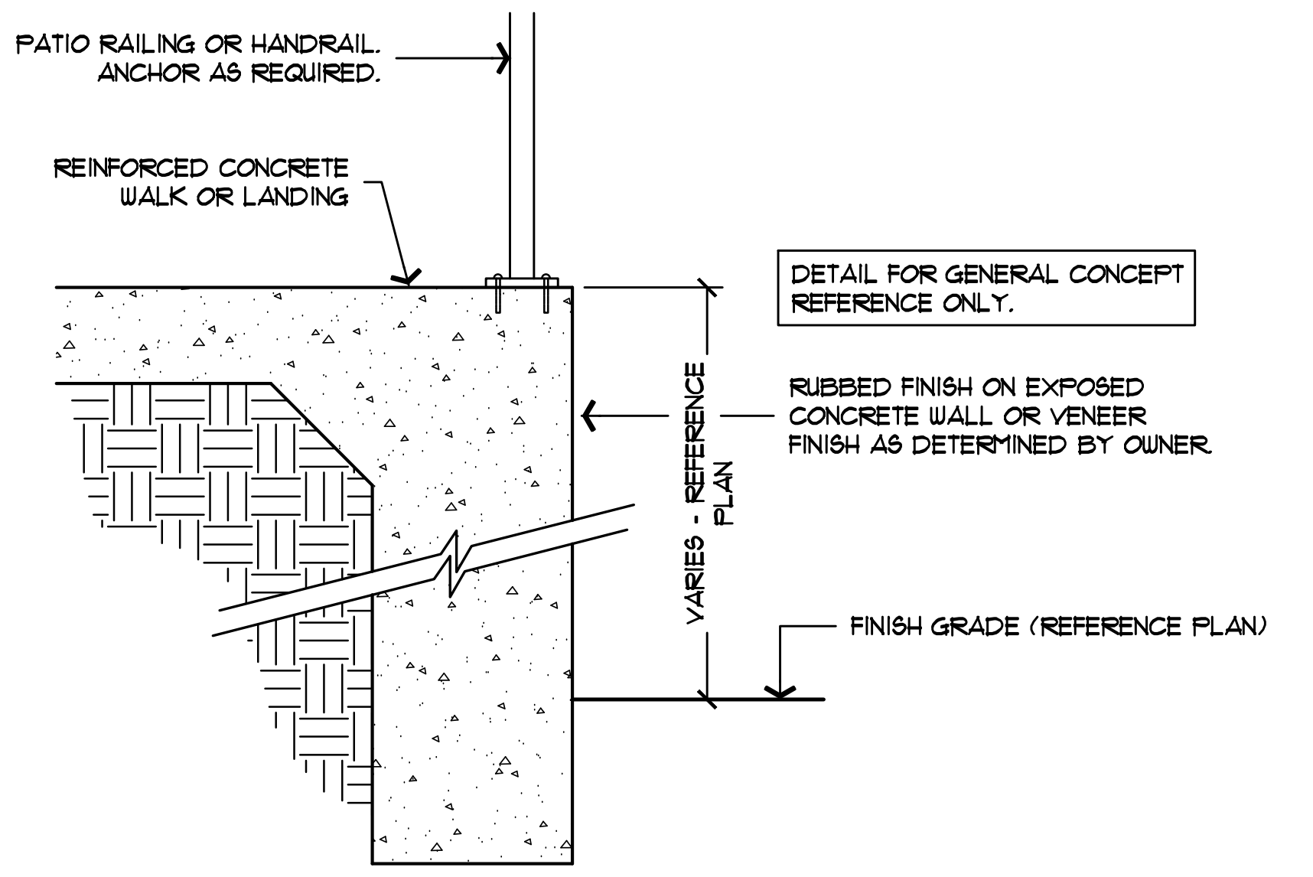
NOTES:

1. THIS DETAIL IS FOR DESIGN INTENT PURPOSES ONLY.
2. COUNTER SURFACE TO BE MINIMUM 2" THICK GRANITE WITH EASED EDGE TYPICAL. COLOR AS SELECTED BY OWNER. TOP OF COUNTER SURFACE TO BE 34" MAXIMUM ABOVE ADJACENT PAVING. VERIFY IN FIELD.
3. STRUCTURAL DESIGN, FOOTING AND REINFORCING PER STRUCTURAL ENGINEER.
4. PRIME AND PAINT STEEL TO MATCH BUILDING RAILINGS.
5. VERIFY 30"x52" CLEAR FLOOR SPACE AT CANTILEVERED BAR COUNTER WITH 17" DEEP KNEE CLEARANCE. BAR COUNTER TO MEET ALL ADA REQUIREMENTS.


NOT USED
17'-0"
9"
3'-0"
3'-0"
6'-0"
3'-0"
3'-0"
34" MAXIMUM (VERIFY IN FIELD)
GRANITE CANTILEVERED COUNTER SURFACE WITH EASED EDGE. MINIMUM 2" THICKNESS
STEEL SUPPORT PLATE AS REQUIRED
FINISH GRADE REF. PLAN
STEEL SUPPORT BRACE
3x3 STEEL SUPPORT POST
STEEL COVER PLATE AT EMBED
FRONT ELEVATION
17'-0"
3'-0"
3'-0"
3'-0"
3'-0"
1'-3"
1'-3"
3'-6"
3'-6"
9"
9'-0"
2'-6"
3x3 STEEL SUPPORT POST AND BRACE
30x52 CLEAR FLOOR SPACE AT BAR COUNTER WITH 17" DEEP KNEE CLEARANCE
PLAN VIEW
1/4" = 1'-0"

D CANTILEVERED COUNTER AT GRILL

1/2" = 1'-0"

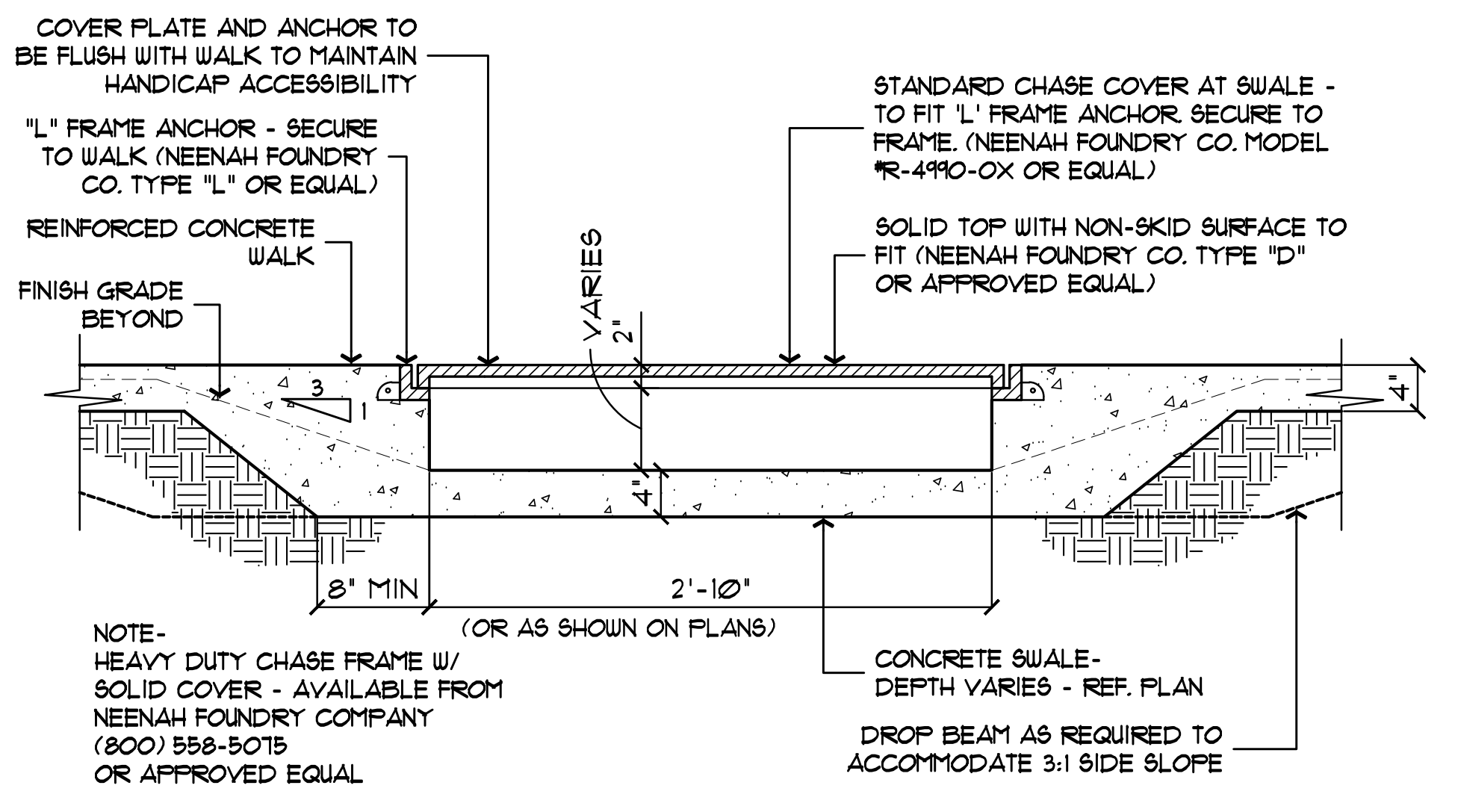

PATIO RAILING OR HANDRAIL. ANCHOR AS REQUIRED.
REINFORCED CONCRETE WALK OR LANDING
DETAIL FOR GENERAL CONCEPT REFERENCE ONLY.
VARIES - REFERENCE PLAN
RUBBED FINISH ON EXPOSED CONCRETE WALL OR VENEER FINISH AS DETERMINED BY OWNER.
FINISH GRADE (REFERENCE PLAN)

NOTE:

1. REFERENCE ARCH. DRAWINGS FOR PATIO RAILING.
2. PRIME AND PAINT STEEL HANDRAIL AND POSTS TO MATCH BUILDING RAILINGS.
3. FOUNDATION, REINFORCING AND EXPANSION JOINT LAYOUT, DESIGN AND MATERIAL AS SPECIFIED BY STRUCTURAL ENGINEER.
4. SIDEWALK, STEPS AND ASSOCIATED DROP BEAM AT EXPOSED EDGE TO BE REINFORCED CONCRETE. RUBBED FINISH ON EXPOSED FACE TYPICAL OR VENEER FINISH AS DETERMINED BY OWNER.
5. HANDRAIL GRIPPING SURFACE SHALL HAVE A 1.5" MINIMUM CLEARANCE FROM SURFACE OF AN ADJACENT WALL OR RAIL.
6. ALL RISER HEIGHT TO BE CONSISTENT. VERIFY RISER HEIGHT WITH GRADING PLAN.
7. POST SPACING 6'-0" O.C. MAXIMUM. EQUAL POST SPACING BETWEEN FIXED POINTS.

B FINISH VENEER AT STEP/WALK DROP BEAM CONDITIONS

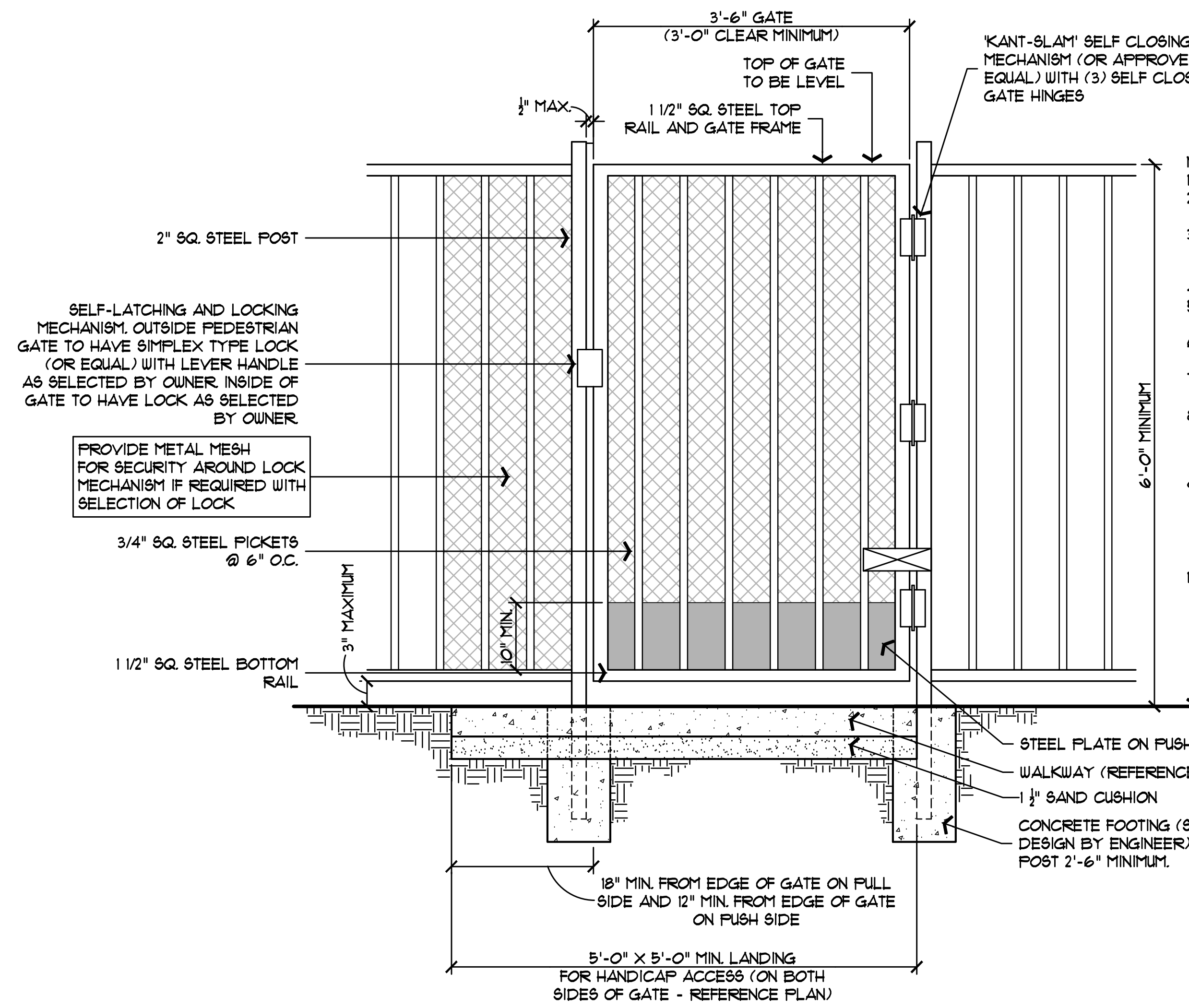
1" = 1'-0"


COVER PLATE AND ANCHOR TO BE FLUSH WITH WALK TO MAINTAIN HANDICAP ACCESSIBILITY
"L" FRAME ANCHOR - SECURE TO WALK (NEENAH FOUNDRY CO. TYPE "L" OR EQUAL)
REINFORCED CONCRETE WALK
FINISH GRADE BEYOND
STANDARD CHASE COVER AT SWALE - TO FIT 'L' FRAME ANCHOR. SECURE TO FRAME. (NEENAH FOUNDRY CO. MODEL #R-4990-OX OR EQUAL)
SOLID TOP WITH NON-SKID SURFACE TO FIT (NEENAH FOUNDRY CO. TYPE "D" OR APPROVED EQUAL)
VARIES
2"
3
1
4"
4"
8" MIN
2'-10"
(OR AS SHOWN ON PLANS)
CONCRETE SWALE- DEPTH VARIES - REF. PLAN
DROP BEAM AS REQUIRED TO ACCOMMODATE 3:1 SIDE SLOPE

NOTE-
HEAVY DUTY CHASE FRAME W/ SOLID COVER - AVAILABLE FROM NEENAH FOUNDRY COMPANY (800) 558-5075 OR APPROVED EQUAL

C SIDEWALK CHASE FOR DRAINAGE

3/4" = 1'-0"


3'-6" GATE (3'-0" CLEAR MINIMUM)
TOP OF GATE TO BE LEVEL
1/2" MAX.
1 1/2" SQ. STEEL TOP RAIL AND GATE FRAME
'KANT-SLAM' SELF CLOSING GATE MECHANISM (OR APPROVED EQUAL) WITH (3) SELF CLOSING GATE HINGES
2" SQ. STEEL POST
SELF-LATCHING AND LOCKING MECHANISM. OUTSIDE PEDESTRIAN GATE TO HAVE SIMPLEX TYPE LOCK (OR EQUAL) WITH LEVER HANDLE AS SELECTED BY OWNER. INSIDE OF GATE TO HAVE LOCK AS SELECTED BY OWNER.
PROVIDE METAL MESH FOR SECURITY AROUND LOCK MECHANISM IF REQUIRED WITH SELECTION OF LOCK
3/4" SQ. STEEL PICKETS @ 6" O.C.
3" MAXIMUM
10" MIN.
1 1/2" SQ. STEEL BOTTOM RAIL
6'-0" MINIMUM
FINISH GRADE
STEEL PLATE ON PUSH SIDE OF GATE
WALKWAY (REFERENCE PLANS)
1 1/2" SAND CUSHION
CONCRETE FOOTING (STRUCTURAL DESIGN BY ENGINEER). EMBED STEEL POST 2'-6" MINIMUM.
18" MIN. FROM EDGE OF GATE ON PULL SIDE AND 12" MIN. FROM EDGE OF GATE ON PUSH SIDE
5'-0" X 5'-0" MIN. LANDING FOR HANDICAP ACCESS (ON BOTH SIDES OF GATE - REFERENCE PLAN)

NOTES:

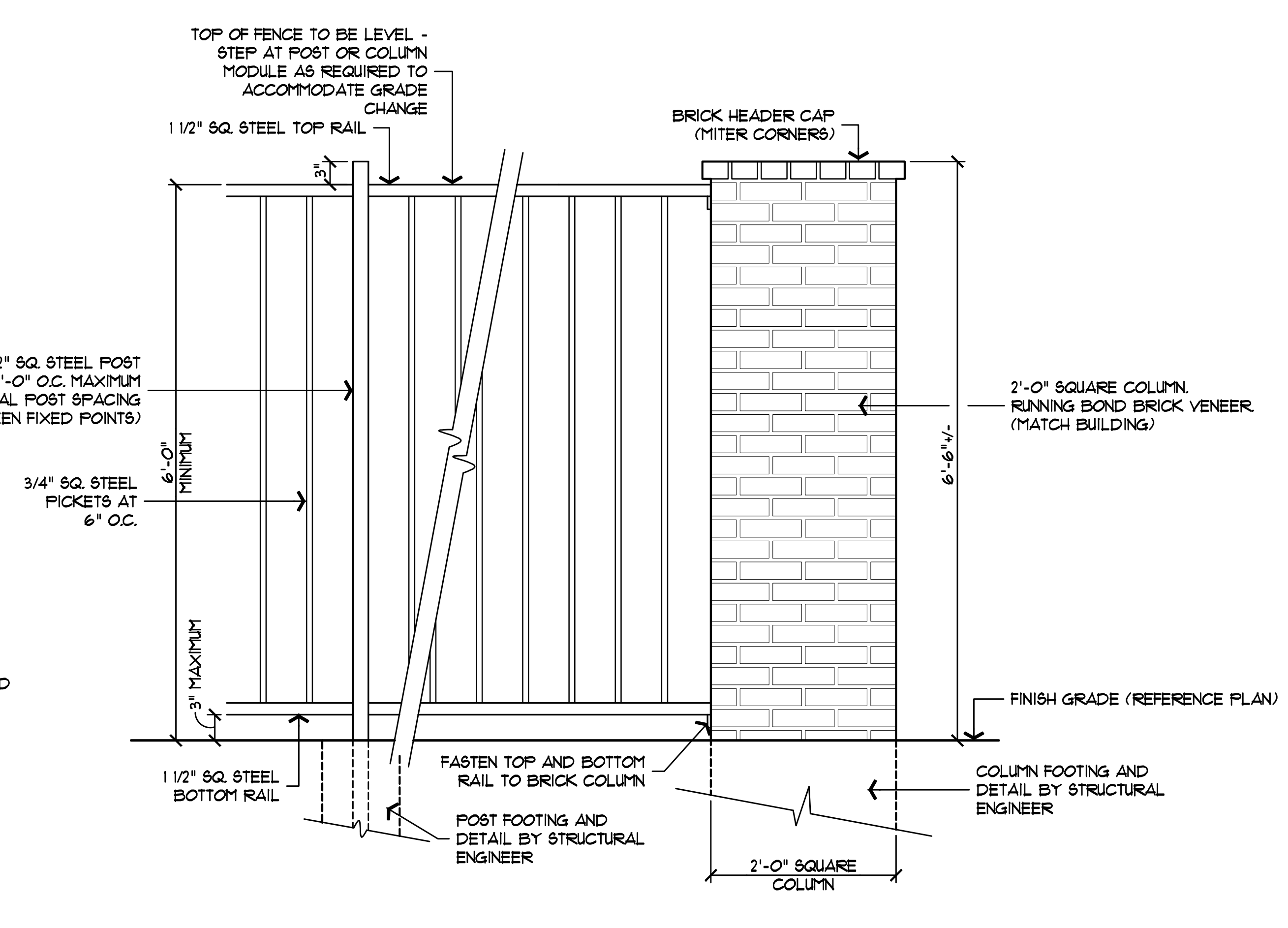
1. PRIME AND PAINT GATE TO MATCH BUILDING RAILINGS.
2. REINFORCING AND FOOTING DETAILS FOR FENCE POSTS BY STRUCTURAL ENGINEER.
3. PROVIDE 3'-6" ACCESS GATE WHERE SHOWN ON PLAN. HC ACCESSIBLE ENTRY LOCK FEATURE AS SELECTED BY OWNER. SELF LATCHING AND LOCKING MECHANISM.
4. ENSURE 5x5 CLEAR SPACE ON PULL SIDE OF GATES.
5. ALL STEEL GATES AND RAILINGS TO BE FABRICATED WITH CONTINUOUS WELDS AND GROUND SMOOTH.
6. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.
7. ALL GATES TO MEET ALL APPLICABLE STATE AND LOCAL CODES AND ADA STANDARDS AND GUIDELINES.
8. OPERATION OF GATE TO COMPLY WITH ADA REQUIREMENTS, INCLUDING OPERABLE WITH ONE HAND, USING 5LBF MAXIMUM PRESSURE WITHOUT TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
9. ENSURE SMOOTH SURFACE (STEEL PLATE) IS PROVIDED FOR A MINIMUM OF TEN INCHES ABOVE BOTTOM GATE RAIL PER ANSI 404.2.9. STEEL PLATE TO BE FLUSH WITH GATE PICKETS AND ANY CAVITIES AT TOP OF PLATE TO BE CAPPED. ENSURE HORIZONTAL/VERTICAL JOINTS ARE LESS THAN 1/16".
10. PROVIDE FIRE DEPARTMENT APPROVED ACCESS LOCK AS REQUIRED AT PERIMETER GATES TYPICAL.

E STEEL PEDESTRIAN GATE AT PERIMETER FENCE

3/4" = 1'-0"

NOTES:

1. PRIME AND PAINT FENCE TO MATCH BUILDING RAILINGS.
2. REINFORCING AND FOOTING DETAILS FOR COLUMN AND FENCE POSTS BY STRUCTURAL ENGINEER.
3. REFERENCE PLAN FOR COLUMN LOCATIONS AND GATE LOCATIONS.
4. BRICK TO MATCH BUILDING. VERIFY BRICK SIZE AND ADJUST DETAIL AS REQUIRED.
5. TOP OF FENCE TO BE LEVEL. STEP AT POST AND/OR COLUMN LOCATION AS REQUIRED TO ACCOMMODATE GRADE CHANGE.
6. MAXIMUM SPACING BETWEEN POSTS SHALL BE 6'-0".
7. ALL STEEL RAILINGS TO BE FABRICATED WITH CONTINUOUS WELDS AND GROUND SMOOTH.
8. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO CONSTRUCTION.


TOP OF FENCE TO BE LEVEL - STEP AT POST OR COLUMN MODULE AS REQUIRED TO ACCOMMODATE GRADE CHANGE
1 1/2" SQ. STEEL TOP RAIL
3"
BRICK HEADER CAP (MITER CORNERS)
2" SQ. STEEL POST AT 6'-0" O.C. MAXIMUM (EQUAL POST SPACING BETWEEN FIXED POINTS)
3/4" SQ. STEEL PICKETS AT 6" O.C.
6'-0" MINIMUM
3" MAXIMUM
2'-0" SQUARE COLUMN. RUNNING BOND BRICK VENEER (MATCH BUILDING)
6'-6"+/-
FINISH GRADE (REFERENCE PLAN)
1 1/2" SQ. STEEL BOTTOM RAIL
FASTEN TOP AND BOTTOM RAIL TO BRICK COLUMN
POST FOOTING AND DETAIL BY STRUCTURAL ENGINEER
COLUMN FOOTING AND DETAIL BY STRUCTURAL ENGINEER
2'-0" SQUARE COLUMN

F STEEL PERIMETER FENCE w/ MASONRY COLUMN

3/4" = 1'-0"

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

RICHARD B. ARTHUR
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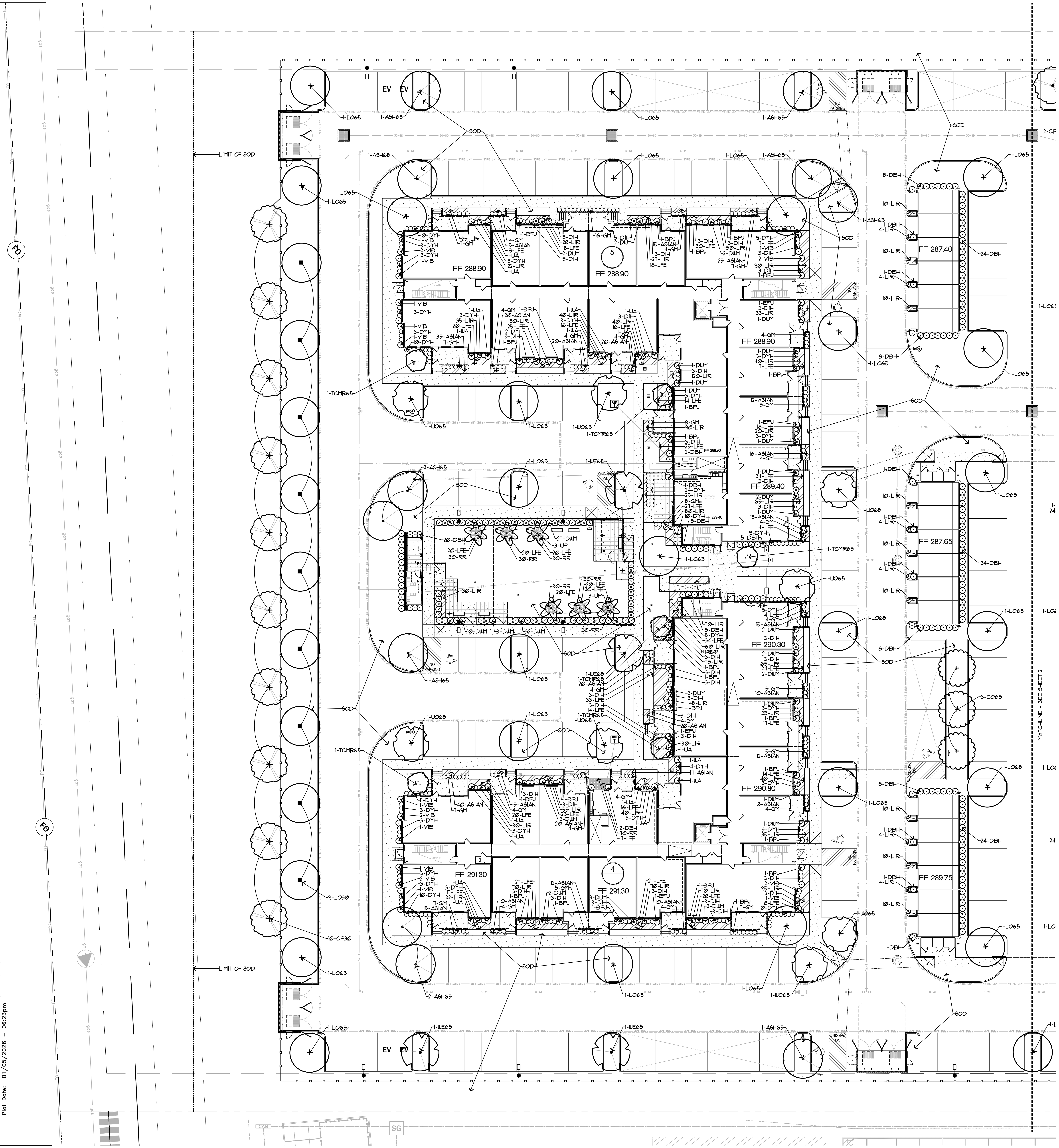
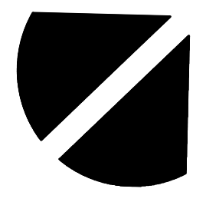
SHEET
8C OF 8


LIMIT OF SOD
SOD
EV
NO PARKING
1-LO65
1-ASH65
2-ASH65
1-WO65
1-WE65
1-TCMR65
3-CO65
3-LO30
10-CF30
2-CF
8-DBH
24-DBH
1-DBH
10-LIR
4-LIR
FF 288.90
FF 287.40
FF 289.40
FF 287.65
FF 290.30
FF 290.80
FF 291.30
FF 289.75
5
4
20-DBH
20-LFE
30-RR
27-DWM
3-WP
30-LIR
10-DWM
3-DWM
32-DWM
MATCHLINE - SEE SHEET 2
PO
SG
CAB

ALTERNATE: IF SELECTED BY OWNER, PROVIDE TREE ROOT BARRIER AT LOCATIONS WHERE PROPOSED TREE IS WITHIN 10 FEET OF BUILDING FOUNDATION. ROOT BARRIER TO BE MODEL NO. UB 36-2, AVAILABLE FROM DEEPROOT (DEEPROOT.COM), OR APPROVED EQUAL. INSTALL PER MANUFACTURER'S SPECIFICATIONS FOR LINEAR APPLICATION



File Name: Brazos Oaks Phase II – planting.dwg
Plot Date: 01/05/2026 – 06:23pm

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

REGISTERED LANDSCAPE ARCHITECT
RICHARD B. ARTHUR
176
STATE OF TEXAS

THIS ELECTRONIC DRAWING FILE IS RELEASED UNDER THE AUTHORITY OF RICHARD B. ARTHUR, REGISTRATION #176, ON 10/17/25, WHO MAINTAINS THE ORIGINAL FILE. THIS ELECTRONIC DRAWING FILE MAY BE USED AS A BACKGROUND DRAWING. PURSUANT TO RULE 3.103 (f) OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS, THE USER OF THIS ELECTRONIC DRAWING FILE AGREES TO ASSUME ALL RESPONSIBILITY FOR ANY MODIFICATION TO OR USE OF THIS DRAWING FILE THAT IS INCONSISTENT WITH THE REQUIREMENTS OF THE RULES AND REGULATIONS OF THE TEXAS BOARD OF ARCHITECTURAL EXAMINERS. NO PERSON MAY MAKE ANY MODIFICATION TO THIS ELECTRONIC DRAWING FILE WITHOUT THE LANDSCAPE ARCHITECT'S EXPRESS WRITTEN PERMISSION.

REVISIONS
A 01-02-26
VE UPDATES

BRAZOS OAKS PHASE II

TEEPLE PARTNERS
BRYAN, TEXAS

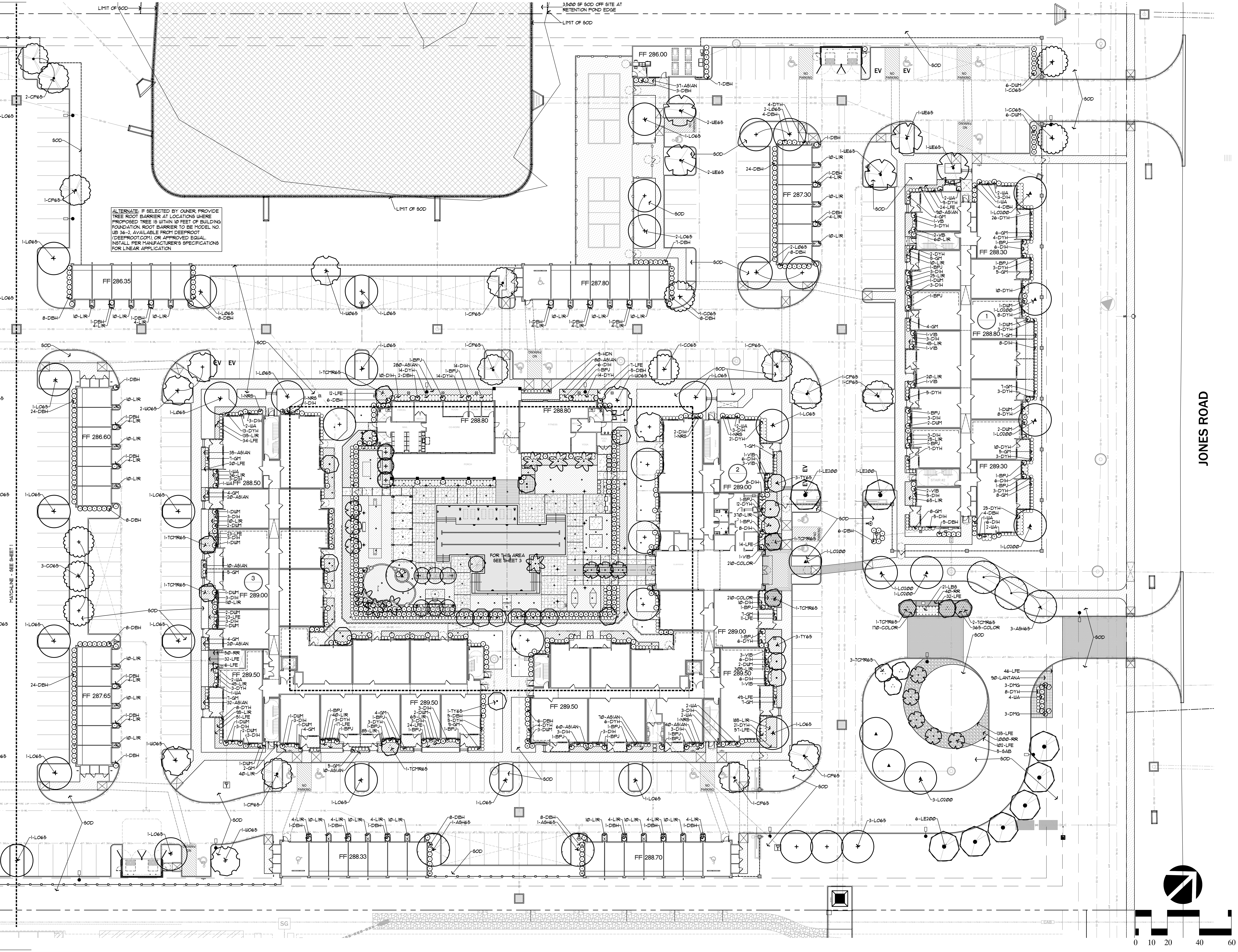
SCALE
1" = 20'-0'

DATE
PERMIT SET
10-17-2025

TITLE
PLANTING

SHEET
1P OF 4

File Name: Brazos Oaks Phase II – planting.dwg
Plot Date: 01/05/2026 – 06:24pm


LIMIT OF SOD
3,500 SF SOD OFF SITE AT RETENTION POND EDGE
LIMIT OF SOD
LIMIT OF SOD
FF 286.00
FF 287.30
FF 286.35
FF 287.80
FF 286.60
FF 287.65
FF 288.80
FF 288.80
FF 288.50
FF 289.00
FF 289.50
FF 289.50
FF 289.50
FF 289.00
FF 289.00
FF 289.50
FF 288.30
FF 288.80
FF 289.30
FF 288.33
FF 288.70
1
2
3
EV
EV
NO PARKING
FOR THIS AREA SEE SHEET 3
JONES ROAD
MATCHLINE - SEE SHEET 1
SOD
37-ASIAN
3-DBH
7-DBH
2-WE65
1-LO65
2-WE65
4-DYH
2-LO65
4-DBH
1-DBH
24-DBH
10-LIR
1-DBH
4-LIR
2-LO65
8-DBH
7-DBH
1-CO65
8-DBH
1-WE65
6-DWM
1-CO65
2-WA
9-DYH
24-LFE
90-ASIAN
4-GM
1-VB
3-DYH
2-VB
60-LIR
3-DIH
1-WA
4-DBH
1-LO200
26-DYH
6-GM
1-BPJ
6-DIH
2-DYH
5-GM
25-LIR
1-DWM
10-DYH
8-DYH
7-GM
1-VIB
45-LIR
8-DIH
20-LIR
2-DWM
65-LIR
8-GM
5-DIH
5-DBH
25-DYH
STAIR #2
2-CF65
1-CF65
1-LO65
1-WO65
1-TCMR65
3-CO65
1-TY65
3-TY65
1-LE200
21-LBS
40-RR
32-LFE
1-TCMR65
170-COLOR
2-TCMR65
365-COLOR
3-ASH65
3-TCMR65
46-LFE
90-LANTANA
3-DMG
4-WA
135-LFE
1,000-RR
102-LFE
5-SAB
3-LO200
3-LO65
6-LE200
1-ASH65
0
10
20
40
60

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SITE PLANNING
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REVISIONS
A 01-02-26 VE UPDATES

BRAZOS OAKS PHASE II

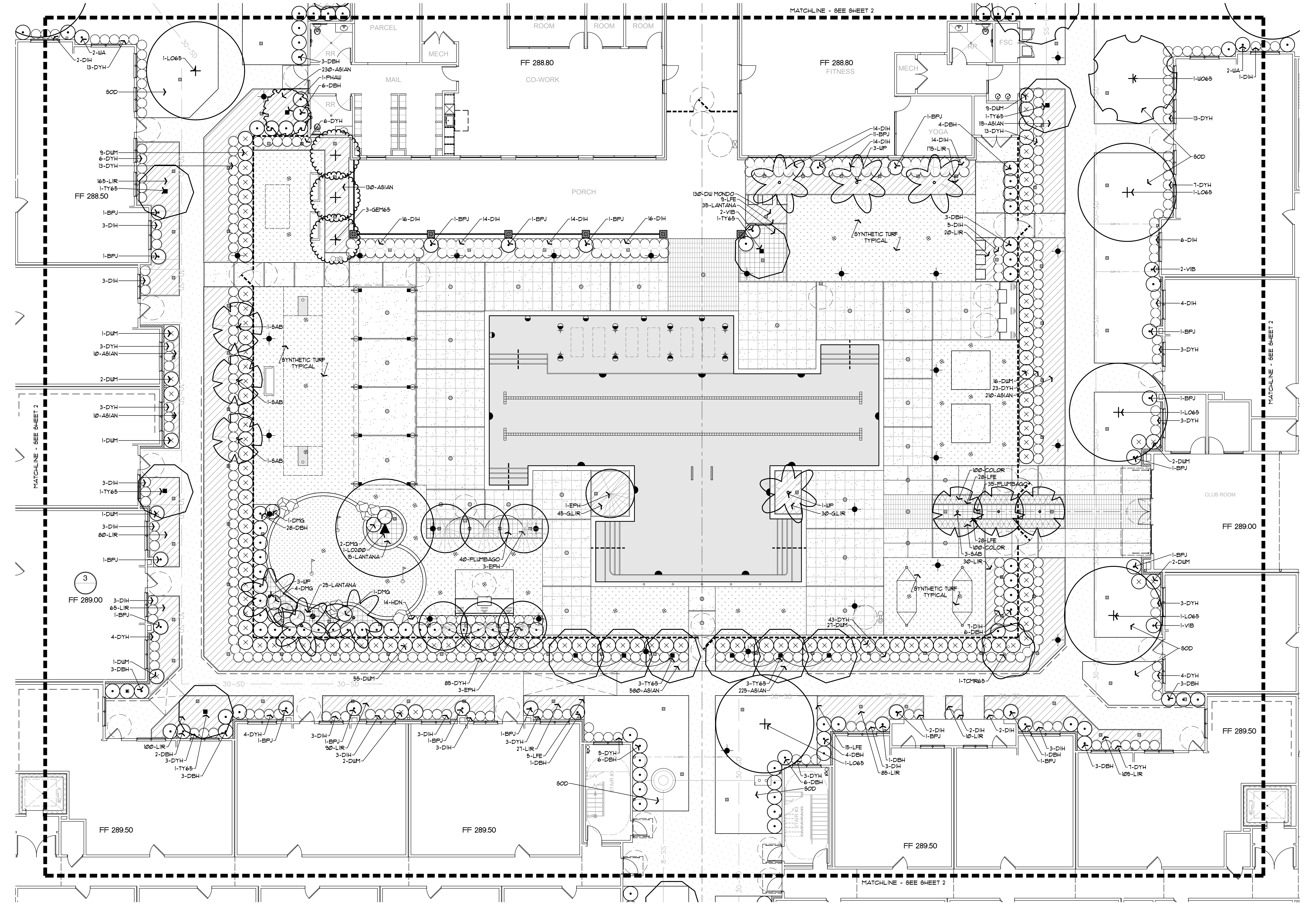
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1" = 20'-0'

DATE
PERMIT SET
10-17-2025

TITLE
PLANTING

SHEET
2P OF 4


MATCHLINE - SEE SHEET 2
MATCHLINE - SEE SHEET 2
MATCHLINE - SEE SHEET 2
MATCHLINE - SEE SHEET 2
PARCEL
MECH
MAIL
RR
RR
CO-WORK
FF 288.80
ROOM
ROOM
ROOM
PORCH
FF 288.80
FITNESS
MECH
RR
FSC
YOGA
FF 288.50
FF 289.00
FF 289.00
FF 289.50
FF 289.50
FF 289.50
FF 289.50
CLUB ROOM
STAIR #3
STAIR #3
3
30-SD
8-SS
2-WA
2-DIH
13-DYH
1-LO65
SOD
3-DBH
230-ASIAN
1-PHAW
6-DBH
6-DYH
9-DWM
6-DYH
13-DYH
165-LIR
1-TY65
1-BPJ
3-DIH
1-BPJ
3-DIH
130-ASIAN
3-GEM65
16-DIH
1-BPJ
14-DIH
1-BPJ
14-DIH
1-BPJ
16-DIH
14-DIH
11-BPJ
14-DIH
3-WP
1-BPJ
4-DBH
14-DIH
175-LIR
9-DWM
1-TY65
115-ASIAN
13-DYH
130-DW MONDO
9-LFE
35-LANTANA
2-VIB
1-TY65
SYNTHETIC TURF TYPICAL
3-DBH
5-DIH
20-LIR
2-WA
1-DIH
1-WO65
13-DYH
SOD
7-DYH
1-LO65
6-DIH
2-VIB
4-DIH
1-BPJ
3-DYH
16-DWM
23-DYH
210-ASIAN
1-BPJ
1-LO65
3-DYH
2-DWM
1-BPJ
1-DWM
3-DYH
10-ASIAN
2-DWM
3-DYH
10-ASIAN
1-DWM
1-SAB
1-SAB
1-SAB
SYNTHETIC TURF TYPICAL
3-DIH
1-TY65
1-DWM
3-DIH
80-LIR
1-BPJ
3-DIH
65-LIR
1-BPJ
4-DYH
1-DWM
3-DBH
1-DMG
28-DBH
2-DMG
1-LO200
15-LANTANA
3-WP
4-DMG
25-LANTANA
1-DMG
14-HDN
40-PLUMBAGO
3-EPH
1-EPH
45-GLIR
1-WP
30-GLIR
100-COLOR
28-LFE
35-PLUMBAGO
28-LFE
100-COLOR
3-SAB
30-LIR
SYNTHETIC TURF TYPICAL
43-DYH
27-DWM
7-DIH
6-DBH
1-BPJ
2-DWM
3-DYH
1-LO65
1-VIB
SOD
4-DYH
3-DBH
55-DWM
85-DYH
3-EPH
3-TY65
580-ASIAN
3-TY65
225-ASIAN
1-TCMR65
100-LIR
2-DBH
3-DYH
1-TY65
3-DBH
4-DYH
1-BPJ
3-DIH
1-BPJ
90-LIR
3-DIH
2-DWM
3-DIH
1-BPJ
3-DIH
1-BPJ
3-DYH
27-LIR
5-LFE
1-DBH
5-DYH
6-DBH
SOD
3-DYH
6-DBH
SOD
15-LFE
4-DBH
1-LO65
1-DBH
3-DIH
85-LIR
2-DIH
1-BPJ
2-DIH
10-LIR
2-DIH
3-DIH
1-DBH
1-BPJ
3-DBH
7-DYH
105-LIR

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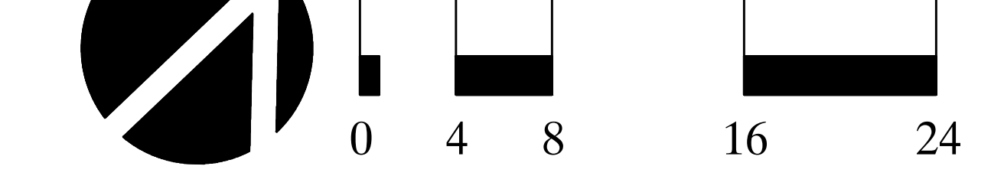

File Name: Brazos Oaks Phase II – planting.dwg
Plot Date: 01/05/2026 – 06:25pm

ENVIRO DESIGN
LANDSCAPE ARCHITECTURE
SITE PLANNING
7424 Greenville Ave. Suite 200 Dallas, TX 75231 (214) 987-3010

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REVISIONS
A 01-02-26
VE UPDATES

BRAZOS OAKS PHASE II

TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
1/8" = 1'-0"

DATE
PERMIT SET
10-17-2025

TITLE
PLANTING

SHEET
3P OF 4

GENERAL REQUIREMENTS

DEFINITIONS

Whenever in these specifications the following terms are used, the intent and meaning shall be interpreted as follows:

1. Landscape Architect: Enviro Design, 7424 Greenville Avenue, Suite 200, Dallas, Texas 75231, and/or their authorized representatives.
2. Approved: Approved by the Owner and the Landscape Architect. Any variation from these specifications or substitutions of materials specified must be approved in writing.
3. Drawings: Any plan, elevation, section, detail or other drawing under the title of this project.
4. Specifications: All of the specifications bound in this volume, and addenda thereto which may be issued, and such descriptive data as may be incorporated in approved work orders or change orders.
5. Contractor: The bidder who is awarded this contract, his representatives, and his subcontractors and their representatives.
6. Initial Acceptance: Owner acceptance of the initially completed landscape and irrigaiton installation at the start of the one (1) year warranty period.
7. Final Acceptance: Owner acceptance of the completed landscape and irrigation installation at the end of the one (1) year warranty period.

CHANGES IN THE WORK

The Landscape Architect or General Contractor shall have authority to order minor changes in the work not involving an adjustment in the contract sum or an extension of the contract time, and not inconsistent with the intent of the contract documents.

The Owner, without invalidating the contract, may order changes in the work consisting of additions, deletions or other revisions, the contract sum and the contract time being adjusted accordingly. All such changes in the work shall be authorized by change order and shall be executed under the applicable conditions of the contract documents.

While no new or unforeseen items are anticipated, they shall be classed as extra work when they cannot be covered by any of the contract documents. The Contractor shall submit detailed prices for any extras to the Landscape Architect, and shall perform extras upon written acceptance from the Owner or Landscape Architect. In the absence of such written order, he shall not be entitled to payment for such extra work. All bills for extra work shall be submitted monthly.

COOPERATION

The Owner shall have the right to do other work or to let other contracts for work to be done on the same site as specified for the work to be done under this contract. The Owner's arrangements as to precedence of work and the relationship between the Contractor and the Owner shall be decisive.

LANDSCAPE ARCHITECT'S STATUS

The Landscape Architect is the representative of the Owner.

As the Landscape Architect is the interpreter of the contract documents, he shall side neither with the Owner nor with the Contractor, but shall endeavor to enforce faithful performance by both.

DAMAGES

The Contractor shall be responsible for all damage that may occur to the adjoining improvements or streets, or any accidents to any person or persons in and about the site or adjacent streets, and for all damage done to adjoining property or the work of others during the progress of the work under the contract, and caused by any act or omission of the Contractor or his employees.

The Contractor shall be responsible for damage to the site improvements thereon, including underground improvements, incurred through his execution of this work, and shall agree to have such damage repaired by qualified workmen. However, the cost of changing underground lines, unless otherwise specified, shall not be included in this contract.

DIRECTION OF THE WORK

The Contractor shall be held responsible for the full direction and supervision of all work under this contract and shall follow all instructions or directions from the Landscape Architect or Owner.

The Contractor shall have a competent Supervisor or Foreman on the job at all times while the work is in progress. This Foreman, acceptable to the Owner, shall direct operations and receive instructions in the absence of the Contractor. The Foreman shall correlate the work of the various subcontractors.

DRAWINGS AND SPECIFICATIONS

The Contractor shall keep one (1) copy of all drawings and specifications, memoranda and shop drawings at the job at all reasonable times, available to the Owner or Landscape Architect, and their representatives.

These specifications and accompanying drawings are to be interpreted to their full intent, meaning and spirit, whether taken separately or together. Taken together, they shall be deemed mutually to explain each other and to be descriptive of the work performed under this contract.

Should there be any discrepancy between the drawings and specifications, the drawings shall govern, between the descriptive writing on the drawings and the plant list designating the materials, the descriptive writings shall govern. The large-scale details shall be followed in preference to the smaller-scale drawings.

Should there be anything shown on the drawings and not described in the specifications, or not shown on the drawings and described in the specifications, the same shall be fully executed and carried out as if drawn, shown or described in both, and the Contractor is not to make any alterations or corrections on the drawings or in the specifications. Should any error appear, the same is to be referred to the Landscape Architect before the bids are submitted or the work is commenced, or as otherwise specified herein.

EXAMINATION OF THE SITE

All Contractors submitting proposals for this work shall first examine the site and all conditions at the site. All proposals shall take into consideration all such conditions as may effect the work under this contract.

The Contractor and subcontractors shall be responsible for verifying all plant quantities shown on the plant list and plans. Any discrepancies shall be brought to the attention of the Landscape Architect prior to bidding.

Extra charges or compensation will not be allowed due to differences between actual measurement and the dimensions shown on the drawings after the work is initiated.

UNIT COST SUBMITTAL

As part of his bid, the Contractor shall submit a unit cost schedule of all products, including labor, for the purpose of additions or deductions to the project.

GUARANTEE-WARRANTY

The Contractor shall, and hereby does, warrant all materials and all work performed by him for a period of one (1) year after initial acceptance as set out in the various sections and for which guarantees are required.

INSURANCE

The Contractor and his subcontractor shall carry Property Damage and Public Liability Insurance, and Workmen's Compensation and Employers Liability Insurance in the amount required by the Owner. He shall furnish the Owner certificates of compliance before starting work on the job.

All fixtures, equipment, and materials supplied by the Contractor shall remain his property until such time as accepted in writing or paid for by the Owner, and the Contractor shall protect them with appropriate insurance against theft or other loss.

The Contractor shall not cause any insurance to be cancelled or permit any insurance to lapse. All insurance policies shall include a clause to the effect that the policy shall not be cancelled or reduced, restricted, or limits changed until thirty (30) days after the Owner has received written notice as evidenced by return receipt of registered or certified mail.

Certificate of Insurance shall contain transcripts from the proper office of the insurer, evidencing in particular those insured, the extent of the insurance, location and operations to which the insurance applies, the expiration date, and the above mentioned notice of cancellation clause.

MATERIAL INSPECTION

The Contractor shall inspect all materials upon their arrival at the job and see that they conform to the requirements of these specifications and prevent the unloading of unsatisfactory material or promptly remove same from the premises without awaiting instructions to do so. The Landscape Architect shall have the right to inspect all materials prior to and after delivery to the site and shall reserve the right to accept or reject said materials at any time before initial acceptance.

MATERIAL AND WORKMANSHIP

Materials shall be new. Both workmanship and materials shall be the best quality of their respective grades.

The Contractor shall submit samples of materials, etc., when required by the Landscape Architect as spelled out in other sections of these specifications. All samples shall be approved by the Landscape Architect before proceeding with the work. The Contractor shall be responsible for satisfactory completion of all work and shall provide, without extra charge, all incidental items required as a part of the work, even though every such item may not be specifically prescribed or indicated, but is necessary for proper and complete installation of the work. The Contractor shall submit evidence, if required by the Landscape Architect, that each item of material furnished under this contract fulfills the requirements of the specifications for such materials.

PERMITS AND REGULATIONS

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the work of this contract.

The Contractor shall obtain all permits and pay all fees, licenses and deposits required by law or ordinances to comply with the work of these specifications.

SUBSTITUTION OF MATERIALS

The Contractor, before submitting bid, shall locate all necessary materials as called for in the plans and specifications, and shall be assured of their availability for use on the job.

The Contract bids shall be based upon providing the specified materials, processes, products, etc., identified in this specification and/or indicated on the drawings, or as provided in the Alternates.

In the event substitutions are proposed by the Contractor to the Landscape Architect after the contract has been awarded, the Landscape Architect will record all time and materials used by him and by his consultants in evaluation of each such proposed substitution. Whether or not the Landscape Architect approves a proposed substitution, the Contractor, promptly upon receipt of the Landscape Architect's billing, shall reimburse the Landscape Architect and his consultant for time and materials spent by them in evaluating the proposed substitution.

RELATIONS OF CONTRACTOR AND SUBCONTRACTOR

The Contractor agrees to bind every subcontractor to the terms of the drawings and specifications and wherever practicable, to the agreement and General Conditions, as far as applicable to the subcontractor's work.

SUPERINTENDENCE

The Landscape Architect will not engage in any way to superintend or relieve the Contractor of responsibility for the complete and proper execution of the work, nor for the consequences of neglect or carelessness by him or his subordinates.

SALES TAX

The Contractor shall include all applicable taxes.

STORAGE

The Contractor shall verify, prior to bidding, whether or not he will be allowed to store materials on the site at a location approved by Owner for use at a later date. Owner will not be responsible or liable for loss of stored materials.

TEMPORARY UTILITIES

All necessary utilities may not be available at all areas of work. Owner may be contacted for further information.

WATER

Water will be available on the site at no expense to the Contractor. Tap, meter fee, hose and other watering equipment required for the work shall be furnished by this Contractor at his expense. Additional water will be available as the irrigation system is installed.

TERMS OF THE CONTRACT

A copy of the Owner's standard contract form or General Contractor's subcontract form will be available to the bidder upon request, and will generally outline the terms of the contract.

UNCOVERING AND CORRECTION OF WORK

If any work should be covered contrary to the request of the Landscape Architect, it must, if required by the Landscape Architect, be uncovered for his observation and replaced at the Contractor's expense.

If any other work has been covered which the Landscape Architect has not specifically requested to observe prior to being covered, the Landscape Architect may request to see such work, and it shall be uncovered by the Contractor. If such work is found to be in accordance with the contract documents, the cost of uncovering and replacement shall, by apporopriate change order, be charged to the Owner. If such work is found not in accordance with the contract documents, the Contractor shall pay such costs unless it is found that this condition was caused by a separate contractor employed by the Owner under a separate contract; and in that event, the Owner shall be responsible for the payment of such costs.

The Contractor shall promptly correct all work rejected by the Owner or Landscape Architect as defective or as failing to conform to the contract documents whether observed before or after substantial completion and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected work.

STARTING WORK

The Contractor agrees to begin the on-site work not later than ten (10) calendar days after the date of written notice from the Owner or General Contractor authorizing the Contractor to proceed with the work, and that he will work continuously, barring bad weather, until the job is completed and as noted herein. Actual gathering of material, etc., may start after the contract is executed and the Owner issues any necessary purchase orders for the contract amount.

INITIAL COMPLETION AND ACCEPTANCE

Upon written notice that the work is ready for initial inspection and acceptance, the Landscape Architect or his representative will promptly make an observation visit to the project and, when he finds the work acceptable under the contract documents, he will promptly declare in writing that to the best of his knowledge, and on the basis of his observations, the work has been completed in accordance with the terms and conditions of the contract documents.

TECHNICAL SPECIFICATIONS

PART ONE - GENERAL

WORK INCLUDED

Perform all work required to complete and maintain, until acceptance by the Owner, the landscape installation, including all labor, materials, services, and equipment necessary and described herein and shown on the accompanying drawings.

RELATED WORK

Drawings and general provisions of Contract, including General and Supplementary Conditions and Specification sections, apply to work of this section. Coordinate with work of other trades.

QUALITY ASSURANCE

Approval: The selection of materials and execution of operations required under these drawings and specifications are subject to the approval of the Landscape Architect or Owner.

Rejection: The Landscape Architect or Owner will, at any stage of the operation, have the right to reject material and work which in his opinion does not conform to the contract documents. All rejected material shall be promptly removed and corrected by the Contractor as directed.

SOURCE QUALITY CONTROL

The Landscape Architect has the right to select all plant materials at the nursery, field source or Contractor's holding yard, when so authorized by the Owner. The Contractor is to include in the base contract cost the amount for transportation, lodging, meals, etc. for the Landscape Architect to tag, at the source of supply, the plants indicated on the materials list. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work.

REFERENCES

STANDARDS FOR NURSERY STOCK, by the American National Standards Institute, Z60.1, May 1986
HORTUS THIRD, 1976 - Cornell University

SUBMITTALS

Submit for approval, when requested, sufficient representative quantities of topsoil, compost, peat moss, sod, stone, gravel, etc. Samples shall be approved by the Landscape Architect before use on project.

Submit signed truck quantity delivery receipts upon request.

Submit one (1) representative sample of each tree, shrub, and groundcover plant, when requested, for the Landscape Architect's approval. When approved, they will be tagged and maintained as representative samples. Samples may be used to complete installation provided they remain tagged until initial acceptance of entire installation.

ACCEPTANCE

Maintain all trees, shrubs, and groundcover under this Contract until Owner's acceptance, by adequate watering, cultivating the top two (2) inches, weeding every two (2) weeks, spraying, and replacing as necessary to keep plants in a healthy, vigorous condition, remulching and raking bed areas as may be required to keep them neat.

Maintain all grass areas under this Contract until acceptance by watering, mowing, edging, fertilizing, spraying, etc.

JOB CONDITIONS

Water will be available on the site at no expense to the Contractor. Hose and other watering equipment required for the work shall be furnished by the Contractor at his expense. Additional water will be available as the irrigation system is installed.

Work notification: Notify the Landscape Architect at least seven (7) working days prior to installation of plant materials.

Protect existing utilities, paving, and other site amenities from damage caused by landscape operations. It shall be the Contractor's responsibility to notify utility companies of impending planting operations and have all utility lines flagged.

The irrigation system will be installed prior to planting. Locate, protect, and maintain the irrigation system during planting operations. Repair irrigation system components damaged during planting operations at this Contractor's expense.

WARRANTY

All work is warranted for one (1) full year after initial acceptance. The Contractor is obligated to correct any work found to be defective or nonconforming. Upon notice, remove dead materials and all materials not in vigorous, thriving condition, as soon as weather permits and on notification by the Landscape Architect or Owner. Plants, including trees, which have partially died so that shape, size or symmetry has been damaged, shall be considered for replacement. In such cases, the opinion of the Landscape Architect will be final. Annual plants will be guaranteed for a period coinciding with their normal season of growth.

Plants used for replacement shall be of the same kind and size as those originally planted, and shall be planted as originally specified. All work, including materials, labor, and equipment used in replacement, will be at no cost to the Owner. Replacement plants shall carry a one (1) year warranty. Any damage, including ruts in lawn or bed areas, incurred in making replacements shall be repaired to the satisfaction of the Owner or Landscape Architect by this Contractor.

At the direction of the Landscape Architect, plants may be replaced at the start of the next planting or digging season; but in such cases, dead plants shall be immediately and completely removed from the premises.

Should the Owner not elect to contract for a one (1) year Maintenance Contract with the successful bidder, he agrees that for the warranty to be effective, he will follow and perform a permanent maintenance program including proper mowing, trimming, pruning, weeding of beds, fertilizing, and watering (including deep root watering of trees and removal of water from tree underdrain systems).

PART TWO - PRODUCTS

PLANT MATERIALS

Plant material shall be delivered to the site after the beds are prepared and are ready for planting. Shipments of plant materials shall be thoroughly protected from the sun and from drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected. Plant materials remain the property of the Contractor until initial acceptance.

SHRUBS AND GROUNDCOVERS

Plants shall be nursery grown, healthy, vigorous, compact, bushy to the ground, well branched, of normal habit of growth for the species, and shall be free from defects, decay, girdling roots, sun-scald injuries, abrasions of the bark or limbs, disease, insect eggs, and larvae. They shall have ball sizes that meet the standard set forth by the American Association of Nurserymen, Inc. The specified sizes shall be after pruning, and the plants shall be measured from their nominal top branches in normal position to the top of the ball or soil level. Plants shall not be pruned prior to delivery, except upon special approval.

All plants shall be of specimen quality. Specimen means an exceptionally heavy, symmetrical, tightly knit plant, so trained or favored in its development that its appearance is unquestionable and outstandingly superior in form, number of branches, compactness and symmetry.

All plants shall be hardy under climatic conditions similar to those in the locality of the project.

SHADE TREES

Shade trees shall be healthy, vigorous, full-branched on all sides, well-shaped, specimen quality, symmetrical, and shall meet the trunk diameter, height and spread requirements as specified. Single trunk trees shall have a straight trunk. Trees which have a damaged or crooked leader or trunk or are one-sided, or do not have a full, symmetrical branch structure and crown, will be rejected. Ball shall be firm, neat, slightly tapered, and well burlaped. Any tree loose in the ball or with broken ball at the time of planting will be rejected. Trees with abrasions on the bark, disfiguring knots, or wounds over two (2) inches which have not calloused will be rejected. Tree ball sizes shall be as outlined in ANSI Z60.1 - 1980.

Multi-trunk Trees: No division of the trunk which branches more than six (6) inches from the ground level, as determined by the root crown of the plant, shall be considered a stem.

ORNAMENTAL TREES

Ornamental trees shall be healthy, vigorous, full branched, well shaped, and shall meet the height and spread, caliper and branching character as specified. Trees not having a full, symmetrical branch structure and crown will be rejected.

Single trunk ornamental trees shall have straight trunks with branching beginning a minimum of forty-two (42) inches above the top of the ball or container.

Multi-trunk ornamental trees shall be pruned so all "sucker" type branching is removed from around trunk canes as well as extraneous branching on trunk canes below crown of tree. Pruning shall be such that at least one-half of the plant is trunk branching and approximately one-half is crown foliage. All multi-trunk trees will conform to the number of trunk canes and/or caliper specified.

MATERIALS

Compost: 100% organic, aerobically composted humus, fully composted under proper C/H ratios with sustained temperatures to 170 degrees F., possessing excellent air porosity, water holding capacity and drainage, optimum cation exchange capacity, free of weeds, weed seeds, insect pests and with a pH averaging 6.5 to 7.0. As supplied by Living Earth Technology, Dallas, Texas, or approved equal.

Fertilizer: Complete slow release fertilizer with an organic base, uniform in composition, dry and free flowing. Deliver fertilizer to site in original unopened containers, each bearing manufacturer's guaranteed statement of analysis. Fertilizer shall contain 20% nitrogen, 10% phosphoric acid, 10% potash, unless otherwise specified or approved. "Agriform" by Sierra Chemical Company, or approved equal.

Filter Fabric: Terra Tex SD as supplied by Sneary, Inc., Dallas, Texas, or approved equal.

Jute Mesh: Smolder Resistant, No. 715-1006. Ludlow Soil Saver as supplied by Lofland Company, Dallas, Texas, or approved equal.

Peat Moss: Clean hypnum peat, free of noxious weeds and rubble, dark brown in color.

Pine Bark Mulch: Fine, textured, one (1) inch to one and one-half (1.5) inch size as supplied by Hope-Agri Products, Hope, Arkansas, or approved equal.

Hardwood Bark Mulch: Hardwood barks, consisting of oak, gum and hickory, hammermilled through a one and one-half (1.5) inch screen. Initial pH to be in the 6.0 - 7.0 range, with long term buffering. As supplied by Living Earth Technology, Dallas, Texas, or approved equal.

Cypress Bark Mulch: Decomposed cypress bark having a pH between 6.0 and 7.0, sterilized, containing no harmful active residues (i.e., pesticides, disease organisms and foreign chemicals), and screened to a particle size of one (1) inch or smaller.

Steel Edging: Four (4) inches wide, 1/8" thick, painted black with rust resistant paint and stake loops welded or formed onto backside. Spikes shall be similar material, 18 inches long. As supplied by J.T. Ryerson & Son, Inc., or approved equal.

Tree Stakes and Guys: Standard domestic steel "T" posts, six (6) foot length, painted green, with white reflective top. Adj-a-Tye Model 5100 tie straps. As supplied by A.M. Leonard Company, Piqua, Ohio, or approved equal.

Topsoil: Fertile natural surface soil, uniform in composition, similar to site topsoil if approved, free of stones, lumps, weeds, and roots. Minimum 20 percent organic matter, 50 to 70 percent sand, 15-20 percent clay.

Espalier Wire: 16 gauge galvanized wire with appropriate fasteners and ties.

PART THREE - EXECUTION

TAGGING

The Contractor shall make an initial selection and tag, with a permanent tree tag, the trees he proposes to furnish that meet all the specification requirements and deliver required samples to the site for approval when requested. Tree tags to be removed after final planting is complete.

The Contractor shall lay out his work and set necessary markers and stakes. All plants are to be in straight and even rows or as shown on plans. The Landscape Architect or Owner reserves the right to relocate shrubs and trees from positions on the plans prior to their planting. All tree locations are to be approved by the Landscape Architect.

TREE PITS AND PLANTING

Ornamental Trees: Plant ornamental trees in pits twelve (12) inches larger than the tree ball. After setting the tree, the pit shall be backfilled with acceptable existing soil or topsoil (or as specified by city landscape code requirements) and carefully settled by watering to prevent air pockets. Form a three (3) inch high watering ring ring for each ornamental tree. All cord or wire to secure burlap on tree ball shall be cut from top of ball and around trunk. Place a three (3) inch layer of compost or bark mulch inside the watering ring.

Shade Trees: Plant shade trees in a tree pit two (2) feet greater in diameter than the tree ball. The crown of the tree ball should be approximately one (1) inch higher than the existing grade. After setting the tree, the pit shall be backfilled with acceptable existing soil or topsoil (or as specified by city landscape code requirements) and carefully settled by watering to prevent air pockets. Form a four (4) inch high watering ring around the tree. All cord or wire used to secure burlap on tree ball shall be cut from top one-third of ball and from around trunk after setting. Place a three (3) inch layer of compost or bark mulch inside the watering ring.

Percolation Test Pits: The Contractor shall excavate at least four (4) test pits on the site and fill with water to test for percolation. Size of pits shall be comparable to largest tree pit to be excavated. Location can be in conjunction with proposed shade tree location. Monitor pit for forty-eight (48) hours. If, at the end of that time, water has not significantly percolated, a Stand Pipe underdrain system should be installed for trees in that area.

Stand Pipe Installation: Should it be determined that tree pits will not percolate, or do so very slowly, shade trees shall have sump pipes installed in specially excavated tree pits per details shown on plans. Pipe shall be four (4) inch diameter class 200 PVC, extending into gravel backfill and projecting four (4) inches above tree ball, inside water ring. PVC caps will be placed on all pipes. Exposed portion of pipe to be painted flat black, or color approved by Landscape Architect.

BED PREPARATION

Groundcover Beds: Loosen all groundcover beds to a depth of six (6) inches. Two (2) inches of peat moss or compost shall be applied and worked into the upper six (6) inches of bed. Beds shall be thoroughly tilled and pulverized to a depth of six (6) inches and raked smooth. Work fertilizer into soil at the rate of four (4) pounds per 100 square feet. Delivery receipts of soil amendments may be requested.

Loosen all seasonal color beds to a depth of six (6) inches. Four (4) inches of peat moss or compost shall be applied and worked into the upper six (6) inches of the bed. Beds shall be thoroughly tilled and pulverized to a depth of six (6) inches and raked smooth. Beds shall be left two (2) to three (3) inches higher than surrounding grade for proper drainage.

Shrub Pocket Planting: Loosen the shrub planting area by rototilling. Excavate shrub pits six (6) inches wider and four (4) inches deeper than the shrub root ball. Backfill with one (1) part compost or peat moss and six (6) parts existing good topsoil. Broadcast fertilizer and work lightly into the soil around the shrubs at the rate of four (4) pounds per 100 square feet. Beds shall be left high to prevent poor drainage or ponding of water within the bed.

Care shall be taken to prevent planting beds from blocking drainage against building or impeding site drainage in any way.

TREE GUYING AND STAKING

Submit unit cost in bid for staking all trees four (4) inch caliper and under, with three (3) steel stakes and three (3) Adj-A-Tye straps, Model 5100. Stakes should be located equal distant around tree, and outside of tree pit. Stakes to be embedded a minimum of two (2) feet into stable soil.

Stakes and guys shall be removed following the one (1) year warranty period.

BED ALIGNMENT AND PLANT PLACEMENT

Shrubs and groundcover shall be planted in string line straight rows using alternate spaces between rows. The specified quantity of shrubs or groundcover shall be placed in the bed prior to planting to assure even coverage. The specified quantity of seasonal color shall be placed in the bed prior to planting to assure even coverage.

After the planting is completed, all cultivated areas shall be leveled, loosened, and raked, and the edges carefully trimmed so that the tree pits and beds shall present a neat appearance. Care shall be used that these bed edges conform as closely as possible with the lines shown on the Planting Plan. Steel edging stakes shall be on the inside of the beds.

TOP DRESSING

After the work of planting has been completed and approved by the Landscape Architect, mulch all beds and tree rings with three (3) inches of bark mulch, lightly cultivated into area. Do not disturb watering saucer and do not cover root flair.

PRUNING

Prune all dead and broken branches and stubs flush. Selectively thin out twenty (20) percent of the branches of all trees and ornamentals at time of planting. Yaupon Holly and Crape Myrtle are to be pruned so that at least one-half of the tree is trunk branching and approximately one-half is crown foliage. Remove tags, labels, ribbons, etc. Tip prune all shrubs to maintain a neat, uniform appearance.

ESPALIER WIRE INSTALLATION

Attach one (1) vertical wire to surface as follows:

1. Wrought Iron - wire fasteners
2. Masonry - masonry nails
3. Wood - galvanized nails
4. Stucco - glue fasteners

Use one (1) fastener per three (3) feet of height. Wire shall continue to the top of the vertical surface. Patterns shall be designated on the plan if different from that specified.

GRASS AND WEED REMOVAL

Existing grass and weeds in areas of proposed beds shall be removed either chemically or by excavation, including root systems. Existing weeds shall be removed either chemically or by excavation, including root system, from all proposed lawn areas prior to installation of grass. Contractor shall re-fill excavated areas with topsoil to finish grade before bed preparation or grass installation.

SOIL EROSION PROTECTION

Install jute mesh in planting beds with slopes greater than three to one prior to planting. Mesh shall have a minimum overlap of twelve (12) inches where sections join. Material shall be installed in lengthwise sections running parallel with the slope, providing the length of slope is in excess of ten (10) linear feet from top to bottom. Jute mesh on slopes with lengths less than ten (10) linear feet shall be installed across the slope and double pinned at the twelve (12) inch overlap. Pins shall be installed so that no gaps or sags are visible in mesh.

LAWNS

Loosen and rake smooth all areas to be grassed. Remove all weeds, debris and any clumps, stones, clods, etc. larger than three quarter (3/4) inch diameter. Ensure lawn areas and swales are graded for proper drainage. Areas next to sidewalks and curbs shall be graded down to one (1) inch below finished grade to allow for thickness of grass build-up.

Sod: Areas will be planted with sod as indicated on the plans. All sod shall be dark, rich green, free of weeds and nut grass and placed so joints are flush between pieces. Sod is to have root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners. Sodded areas shall be rolled with a 200 pound roller immediately after laying, watered thoroughly and rerolled. All sodded grass areas shall be fertilized at the rate of four (4) pounds per 1000 square feet, prior to laying sod. Dead patches of sod shall be removed and replaced immediately.

Bermudagrass Hydromulch (May 15 - August 15):
The hydromulch is to be composed of virgin wood, green color additive, cellulose fiber by Conwed or Weyerhauser. Certified hulled Common Bermudagrass seed shall have minimum purity of 98 percent and a minimum germination rate of 95 percent. The fertilizer shall be granular form and be homogenized. Apply at the following rates per 1000 square feet: fifty (50) pounds hydromulch, two and one-half (2.5) pounds seed, and twelve (12) pounds fertilizer. Areas of hydromulch that do not germinate will be rehydromulched immediately. Substantial stand of grass must be apparent prior to initial acceptance.

When climatic conditions are such that a healthy stand of grass cannot be developed prior to onset of cool weather, seed with Winter Rye as an interim groundcover, and return in the spring when conditions are appropriate for active seed germination. Remove either chemically or by excavation, including entire root system, all existing Winter Rye and prepare soil for new application of Bermudagrass seed hydromulch by the steps previously specified. Apply hydromulch mixture as previously specified.

Winter Rye Grass (September 15 - November 15):
Seed with Winter Rye Grass seed at the rate of five (5) pounds per 1000 square feet.

LAWN ESTABLISHMENT

It is the responsibility of the Contractor to establish a dense lawn of permanent grasses, free from weeds, lumps and depressions. Any part of the area that fails to show a uniform germination shall be reseeded or resodded, and such reseeding or resodding shall continue until a dense lawn is established, regardless of amount of rain.

Water, mow and edge the lawn until initial acceptance. Mow each time after the lawn has reached a height of four (4) inches. Mow to a height of three (3) inches, returning the clippings to the lawn. Damage to seeded areas resulting from erosion shall be repaired by the Contractor. Scattered bare spots will not be allowed over one (1) foot square in the lawn area. Never mow off more than one-third of the grass leaves.

CLEAN-UP

During the work, the premises are to be kept neat and orderly at all times. Storage areas for plant and other materials shall be so organized that they, too, are neat and orderly. All trash, including debris resulting from removing weeds or rock from planting area, preparing beds, or planting plants, shall be removed from the site daily as the work progresses. All walks and drives shall be kept clean by sweeping and hosing. Excavated soil may be distributed on the site or hauled off site as directed by Owner.

MAINTENANCE

The Contractor shall maintain all trees, shrubs, and groundcover under this Contract until initial acceptance, by adequate watering, cultivating the top two (2) inches, weeding every two (2) weeks, spraying, and replacing as necessary to keep plants in a healthy, vigorous condition. Bed areas shall be raked as may be required to keep them neat.

The Contractor shall maintain all grass areas under this Contract until initial acceptance by watering, mowing, spraying, fertilizing, etc.

ONE YEAR MAINTENANCE

The Contractor shall submit a separate price for maintenance of the landscape and irrigation installation for a period of one (1) year after initial acceptance. Maintenance shall be based on the Maintenance Specifications included in this set.

LANDSCAPE & IRRIGATION MAINTENANCE SPECIFICATIONS

One (1) year Landscape and Irrigation Maintenance shall include the following listed services and schedules:

STANDARD MAINTENANCE SERVICES

1. Mow weekly during growing season.
2. Edge as necessary to maintain neat curb and bedlines.
3. Prune shrubbery as needed to maintain uniform shape and eventually form a mass.
4. Keep all beds free of debris and weeds.
5. Trim around buildings and fences.
6. Police sidewalks and parking lots.
7. Monitor, adjust and repair irrigation system as needed.

FERTILIZATION AND WEED CONTROL

1. Fertilize turf areas three (3) times and ornamentals one (1) time annually.
2. Apply pre-emergent annually in spring.
3. Control Broad-Leaf weeds in turf areas.

PESTICIDES AND FUNGICIDES

1. Carefully inspect all planting weekly and recommend any needed control.
2. Apply EPA approved chemicals as needed to control fungus, insects and disease in the turf and ornamental areas.

SEASONAL COLOR

1. Two (2) change outs of seasonal color shall be included during the one (1) year period. Selection by Owner.
2. Installation of seasonal color shall be per Technical Specifications.
3. Additional plantings of seasonal color, as requested by the management, will be billed separately.

GRASS

1. Mowing: Frequency and mowing height to be determined by the season of the year. According to respective seasons, mowing shall be required one (1) time every seven (7) to ten (10) days, depending upon the rate of growth. Clippings shall be returned to lawn.
2. Type of Grass: See Technical Specifications for types of grass.
3. Curbs, walks, walls and fences will be edged as needed.
4. Planting beds, tree rings and other objects in grass areas shall receive edging as needed.
5. Soil analysis samples are to be taken when grass fails to respond to scheduled fertilization program. Approved corrective measures will be handled on a time plus materials basis.
6. Blowers will be used to clear walks, curbs and streets of organic material caused by Contractor's mowing and edging. Collect refuse material and dispose of properly.

MISCELLANEOUS

1. Scheduling for maintenance visits shall be determined by seasonal needs.
2. Trash and leaves on lawn areas and in planting beds will be picked up and disposed of during routine maintenance visits.
3. Fire ants will be treated with recommended chemicals.
4. Contractor will be responsible for proper instruction of all safety measures to their personnel. All work equipment and supplies in performance of these specifications will be subject to inspection at any or all times, by the duly authorized management representative.
5. The schedule of work hours for the accomplishment of landscape maintenance service will in no way interfere with the normal routine of the facility tenants or visitors.
6. All labor, materials, equipment, supervision, insurance and labor taxes will be furnished by the Contractor. Said Contractor must be fully covered by public liability and property damage insurance, and must be certified by the State in which project is being completed for commercial pesticide application.
7. Contractor will not be liable for loss or damage to plant or irrigation material caused by persons not employed by Contractor or by extreme acts of nature.

MULCH

1. Mulch shall be as specified in the Technical Specifications. Two (2) complete mulchings per year shall be included. Additional mulching will be done as needed on a cost plus basis.

SHRUBBERY, GROUNDCOVER, VINES AND TREES

1. Fertilization will be done one (1) time during the normal season using a surface granular application. The fertilizer will be custom blended and contain a controlled release nitrogen for season long feeding.
2. Pruning: Timing, frequency and technique will be determined by the plants' growth rate, habit and management preference. For the purpose of budgeting, management preference must be expressed and written into this proposal.
3. Tree Pruning: Complete this work with experienced personnel only. Thin out and remove crossing, damaged, diseased or dead wood. Cuts to be clean and flush, leaving no stubs.
4. Deep root water trees as needed to prevent stress in dry periods. Monitor excess water levels in tree underdrain systems (if applicable) and remove excess water.
5. Chemicals for weed control in shrub beds, around trees and in all open mulched areas shall be applied as needed.

TREE AND VINE GUYING

1. Periodically check guy wires and adjust to keep wire taut. Straighten and guy trees and large shrubs as needed.
2. Espalier wire for vines shall be maintained and vines attached as they grow.

IRRIGATION SYSTEM

1. Inspect the system one (1) time per month during the winter months and two (2) times a month during the growing season by walking the entire system to inspect all heads and valves for proper operation.
2. Set watering program on automatic controllers and monitor or re-program controller as necessary during the maintenance period to insure normal plant growth. Take into consideration specific site conditions and compensate system's timing for areas in shade, sloping areas and weather conditions.
3. Broken or damaged irrigation heads and piping shall be promptly repaired. Equipment damaged, broken or missing through no fault of the Contractor shall be reported to the management as such, and authorization obtained for repair or replacement.
4. Raise or lower and align irrigation heads as needed for proper operation.
5. At the end of the one (1) year maintenance period, provide the Owner with a record of the watering program and complete instructions for system operation.

LARGE TREES

QUANTITY	SYMBOL/ CALLOUT	COMMON NAME	SCIENTIFIC NAME	SIZE & CONDITION
16	ASH65 ◯	Texas Ash	Fraxinus texana	3" caliper, 10' Ht./5' spread, B&B
10	CP30 ◯	Chinese Pistache	Pistacia chinensis	30 gallon, 1.5" caliper, 7' Ht./3' spread straight trunk, container grown
11	CP65 ◯	Chinese Pistache	Pistacia chinensis	65 gallon, 3" caliper, 12' Ht./5' spread straight trunk, container grown
15	WO65 ◯	Water Oak	Quercus nigra	65 gallon, 3" caliper, 12' Ht./4' spread container grown, specimen
10	CO65 ◯	Chinquapin Oak	Quercus muhlenbergii	3" caliper, 12' Ht./ 4' spread, B&B, straight trunk
9	WE65 ◯	Winged Elm	Ulmus alata	3" caliper, 12' Ht./ 4' spread, B&B, straight trunk
9	LO30 ◯	Live Oak	Quercus virginiana	30 gallon, 1.5" caliper, 7' Ht./3' spread straight trunk, container grown
61	LO65 ◯	Live Oak	Quercus virginiana	65 gallon, 3" cal. min., 12' Ht./5' spread, container grown, single trunk
11	LO200 ◯	Live Oak	Quercus virginiana	200 gallon, 6" cal. min., 16' Ht./10' spread, container grown, single trunk
8	LE200 ◯	Lacebark Elm	Ulmus parvifolia	200 gallon, 6" cal. min., 14' Ht./10' spread, container grown, single trunk

ORNAMENTAL TREES

QUANTITY	SYMBOL/ CALLOUT	COMMON NAME	SCIENTIFIC NAME	SIZE AND CONDITION
11	SAB ◯	Sabal Palm	Sabal palmetto	6'-10' clear trunk minimum, B&B or container, matching specimen, no "hurricane cuts"
1	PHAW ◯	Possumhaw Holly	Ilex decidua	8' Ht./5' spread, multi-trunk, 5 trunk min., 1 1/2" cal./trunk min., container, female
18	TY65 ◯	Yaupon Holly	Ilex vomitoria	65 gallon, 11' Ht./6' spread, 5 trunk minimum, container grown, female
19	TCMR65 ◯	Red flowering Crape Myrtle	Lagerstroemia indica 'Red Rocket'	65 gallon, 11' Ht./6' spread, 5 trunk minimum, container grown
3	GEM65 ◯	Little Gem Magnolia	Magnolia grandiflora 'Little Gem'	65 gallon, 8' Ht./3'-6" spread, full, bushy to ground, container grown
13	WP ✱	Windmill Palm	Trachycarpus fortunei	4' clear trunk min., w/pups, B&B or container, matching specimens
7	EPH ◯	Tree East Palatka Holly	Ilex attenuata 'East Palatka'	30 gallon, 8' Ht./4' spread, single trunk, tree form, container grown, berried

*TREE BRANCHING ADJACENT TO PEDESTRIAN WALKS TO BE 7'-0" MINIMUM A.F.F.

SHRUBS

QUANTITY	CALLOUT	COMMON NAME	SCIENTIFIC NAME	SIZE AND CONDITION
460	DBH	Dwarf Burford Holly	Ilex cornuta 'Burfordii nana'	7 gallon, 30" Ht./20" spread, 3' o.c.
6	NRS	Nellie R. Stevens Holly	Ilex cornuta 'Nellie R. Stevens'	7 gallon, 3' Ht. pyramidal form, 24" at base, matching specimens, 3' o.c.
771	DYH	Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	5 gallon, 12" Ht./12" spread, 2' o.c.
73	BPJ	Blue Point Juniper	Juniperus chinensis 'Blue Point'	7 gallon, 36" Ht./18" spread, full, 3' o.c.
14	DMG	Maiden Grass, Dw.	Miscanthus sinensis 'Adagio'	3 gallon, 18" Ht./12" spread, 2'-6" o.c.
289	GM	Gulf Muhly	Muhlenbergia capillaris	5 gallon, 20" Ht./20" spread
21	LBS	Little Bluestem	Schizachyrium scoparium	1 gallon, 8" Ht./12" spread
280	DWM	Dwarf Southern Wax Myrtle	Myrica pusilla	7 gallon, 30" Ht./20" spread, 3' o.c.
23	HDN	Harbour Dwarf Nandina	Nandina domestica 'Harbour Dwarf'	3 gallon, 5" Ht./9" spread
430	DIH	White Indian Hawthorn	Raphiolepis Indica 'Clara'	5 gallon, 15" Ht./15" spread, 2' o.c.
44	VIB	Japanese Viburnum	Viburnum odaratissimum	7 gallon, 32" Ht./22" spread
47	WA	Waxleaf Ligustrum	Ligustrum japonicum	7 gallon, 32" Ht./22" spread

GROUNDCOVERS / PERENNIALS

QUANTITY	SYMBOL	CALLOUT	COMMON NAME	SCIENTIFIC NAME	SIZE AND CONDITION
165	▦	LANTANA		Lantana hybrid 'New Gold'	1 gallon at 18" o.c.
5,212	▨	LIR	LIRIOPE	Liriope muscari 'Majestic'	1 gallon at 12" o.c.
75	▦	PLUMBAGO (BLUE)		Plumbago auriculata	1 gallon at 18" o.c.
1,155	▩	COLOR			4" pots at 8" o.c., as selected by owner
2,711	▨	ASIAN	Asian Jasmine	Trachelospermum asiaticum	1 gallon at 12" o.c.
75	▨	G.LIR	GIANT LIRIOPE	Liriope muscari 'gigantea'	1 gallon at 15" o.c.
130	▨	DW MONDO	Dwarf Monkey Grass	Ophiopogon japonicus 'Pure Dwarf'	4" pots at 4" o.c.

TURF GRASS

QUANTITY	CALLOUT	COMMON NAME	SCIENTIFIC NAME	SIZE AND CONDITION
201,500	S.F. SOD	Common Bermuda Grass	Cynodon dactylon	Solid sod

MISCELLANEOUS

QUANTITY	CALLOUT	DESCRIPTION
1,556	LFE	L.F. Steel edge 1/8" x 4" with 12" stakes, green in color
1,340	RR	S.F. Colorado River Rock, 3"-5", over filter fabric

NOTES

1. Landscape Contractor is responsible for verification of all plant quantities.
2. Adjustments in actual location of plant material may be necessary due to existing field items (air conditioners, transformers, etc.)
3. Full bed preparation typical. Reference specifications.
4. Landscape Contractor to provide a unit cost (including installation) for ALL items.
5. Verify location of all utility lines prior to installation. Field adjust for general intent if conflict exists.
6. Landscape Contractor to provide a separate cost for a one year maintenance program as outlined in specifications.
7. When the same species of trees are paired or grouped in 3 or more, they should be matched in size, shape, growth characteristics, etc.
8. Landscape Contractor is responsible for the calculation of all sod areas. Verify locations with owner.
9. Plant material availability shall be confirmed by Landscape Contractor prior to bidding. Should specified material not be available, the Owner and Landscape Architect shall be notified prior to bid date.
10. The Landscape Cotractor shall not eliminate, substitute, and/or downsize plant material without prior approval of the Owner and Landscape Architect. Minimum standards and requirements of the City Landscape Submittal Plan must be maintained.
11. Deep "V" cut around all planting beds to separate sod from bed if no steel edging is specified.
12. Landscape contractor to provide lightweight potting soil, filter fabric, drainage base, etc, as necessary for pots. Pots by others. Soils Building Systems lightweight "container soil" or equal (972-831-8181), soilbuildingsystems.com.
13. 100 gallon trees to be tri-stacked. Others to have minimum of two stakes.
14. Tree stake alternate: Tree Stake Solutions - www.treestakesolutions.com (281) 723-9081. City approval required.
15. All trees and planting beds shall have a minimum 3'' layer of mulch. The mulch should not touch the trunk of the tree.
16. All landscape areas must be irrigated with an automatic underground irrigation system.

ENVIRO DESIGN
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RICHARD B. ARTHUR
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REVISIONS
A 01-02-26
VE UPDATES

BRAZOS OAKS PHASE II
TEEPLE PARTNERS
BRYAN, TEXAS

SCALE
N/A

DATE
PERMIT SET
10-17-2025

TITLE
PLANTING

SHEET
4P OF 4

File Name: Brazos Oaks Phase II – planting.dwg
Plot Date: 01/05/2026 – 06:26pm