CONSTRUCTION PLANS FOR

NORTHGATE

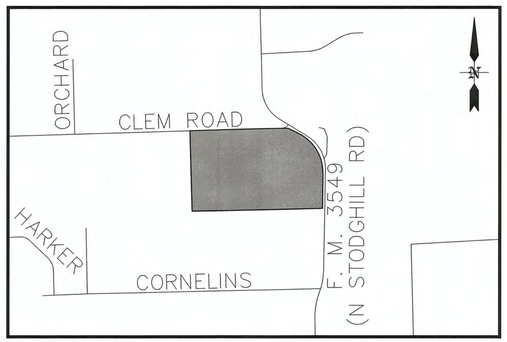
40 RESIDENTIAL LOT SUBDIVISION
AN ADDITION TO THE CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS
63.514 ACRES

CONTACT INFORMATION:

Mayor: Jim Pruitt

Rockwall Engineer and Public Works:
Amy Williams, P.E. (972) 771-7746

City Manager:
Rick Crowley (972) 771-7700



VICINITY MAP
NOT TO SCALE

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PROBABLE CONSTRUCTION DATE: JUNE 2020

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

ISSUED FOR CONSTRUCTION
6/1/2020

NORTHGATE
THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

* ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CAUTION! EXISTING UTILITIES

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

OWNER
NORTHGATE ROCKWALL LD, L.P.
1189 WATERS EDGE DRIVE
ROCKWALL, TX 75087

DEVELOPER
NORTHGATE ROCKWALL LD, L.P.
1189 WATERS EDGE DRIVE
ROCKWALL, TX 75087

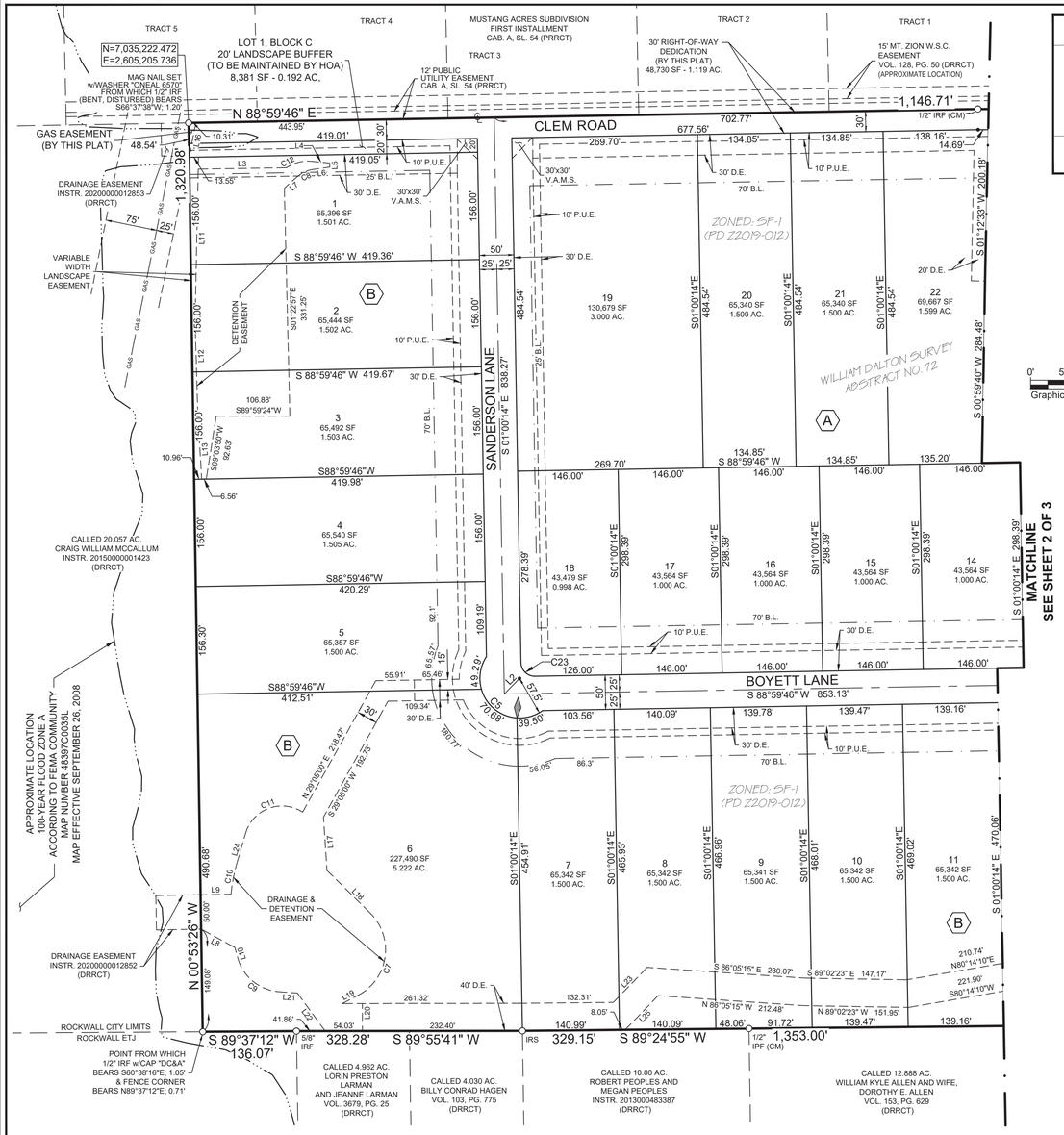
ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
1 1/25/2021 COMBINED LOTS A19 & A20
2 1/26/2021 2-1" IRRIGATION METERS

DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 CV.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/26/2021



KEY MAP
Scale: 1" = 1,000'

VICINITY MAP
NOT TO SCALE

CURVE TABLE						
CURVE	DELTA	RADIUS	TANGENT	LENGTH	CHORD BEARING	CHORD
C1	63°42'40"	713.94'	443.62'	793.88'	N 30°30'10" W	753.61'
C2	34°13'31"	500.00'	153.94'	298.67'	N 73°53'29" W	294.25'
C3	31°44'23"	500.00'	142.14'	276.98'	S 72°38'54" E	273.45'
C4	88°39'30"	408.94'	399.47'	632.78'	N 42°37'42" W	571.52'
C5	158°54'25"	57.50'	308.84'	159.47'	S 46°09'22" E	113.06'
C6	308°08'36"	57.50'	27.96'	309.24'	S 04°13'56" W	50.28'
C7	104°31'10"	74.96'	96.85'	136.75'	N 06°10'00" E	118.56'
C8	32°14'09"	44.40'	12.83'	24.98'	S 64°17'52" W	24.65'
C9	66°48'46"	67.98'	44.83'	79.27'	S 54°28'27" E	74.85'
C10	11°56'27"	239.29'	25.03'	49.87'	S 11°09'59" W	49.78'
C11	106°14'06"	54.98'	73.28'	101.95'	S 70°02'37" W	87.96'
C12	40°12'35"	55.84'	20.44'	39.19'	S 75°44'02" W	38.39'
C13	24°51'40"	48.00'	10.58'	20.83'	N 69°52'41" W	20.66'
C14	40°37'31"	201.98'	74.76'	143.21'	N 61°59'29" W	140.23'
C15	3°35'46"	197.93'	6.21'	12.42'	N 43°29'30" W	12.42'
C16	17°29'13"	48.00'	7.38'	14.65'	N 38°55'56" W	14.59'
C17	4°53'31"	197.91'	8.45'	16.90'	N 50°07'18" W	16.89'
C18	34°43'45"	194.17'	60.72'	117.70'	N 35°50'56" W	115.90'
C19	24°38'43"	48.00'	10.49'	20.65'	N 31°30'58" W	20.49'
C20	20°42'01"	48.00'	8.77'	17.34'	N 08°52'06" W	17.25'
C21	37°05'44"	202.07'	67.80'	130.83'	N 00°40'14" W	128.56'
C22	17°17'00"	48.00'	7.29'	14.48'	N 04°35'57" E	14.42'
C23	89°59'59"	20.00'	20.00'	31.42'	S 46°00'15" E	28.28'

NOTES:

1. All bearings shown hereon are based on the Texas State Plane Coordinate System of 1983 (2011), North Central Zone (4202).
2. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 48397C0035L, dated September 26, 2008, a portion of this property lies within Flood Zone X and a potion of this property lies within Flood Zone A as shown. This Flood Statement does not imply that the property and/or structures thereon will be free from flooding or flood damage. On rare occasions, greater floods can and will occur and flood heights may be increased by man-made or natural causes. This Flood Statement shall not create liability on the part of the surveyor.
3. It shall be the policy of the City of Rockwall to withhold issuing of building permits until all streets, water, sewer, and storm drainage systems have been accepted by the City. The approval of a plat by the City does not constitute any representation, assurance, or guarantee that any building within such plat shall be approved, authorized, or permit thereof issued, as required under Ordinance 83-54.

FINAL PLAT
NORTHGATE ADDITION
BEING
63.514 ACRES
38 RESIDENTIAL LOTS
AND 4 COMMON AREA LOTS
SITUATED IN THE
WILLIAM DALTON SURVEY, ABST. 72
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

DATE: 10/29/20 CASE NO. P2020-022 SHEET 1 OF 3

OWNER/DEVELOPER
Northgate Rockwall LD, L.P.
1189 Waters Edge Drive
Rockwall, TX 75087
(512) 965-6280

LAND SURVEYOR
O'Neal Surveying Co.
P.O. Box 361
Athens Texas 75751
(903) 804-2891
Firm No. 10194132
Job No. 19081

ENGINEERINGCONCEPTS & DESIGN, L.P
ENGINEERING / PROJECT MANAGEMENT /
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201 WINDCO CIR, SUITE 200, WYLIE, TX 75098
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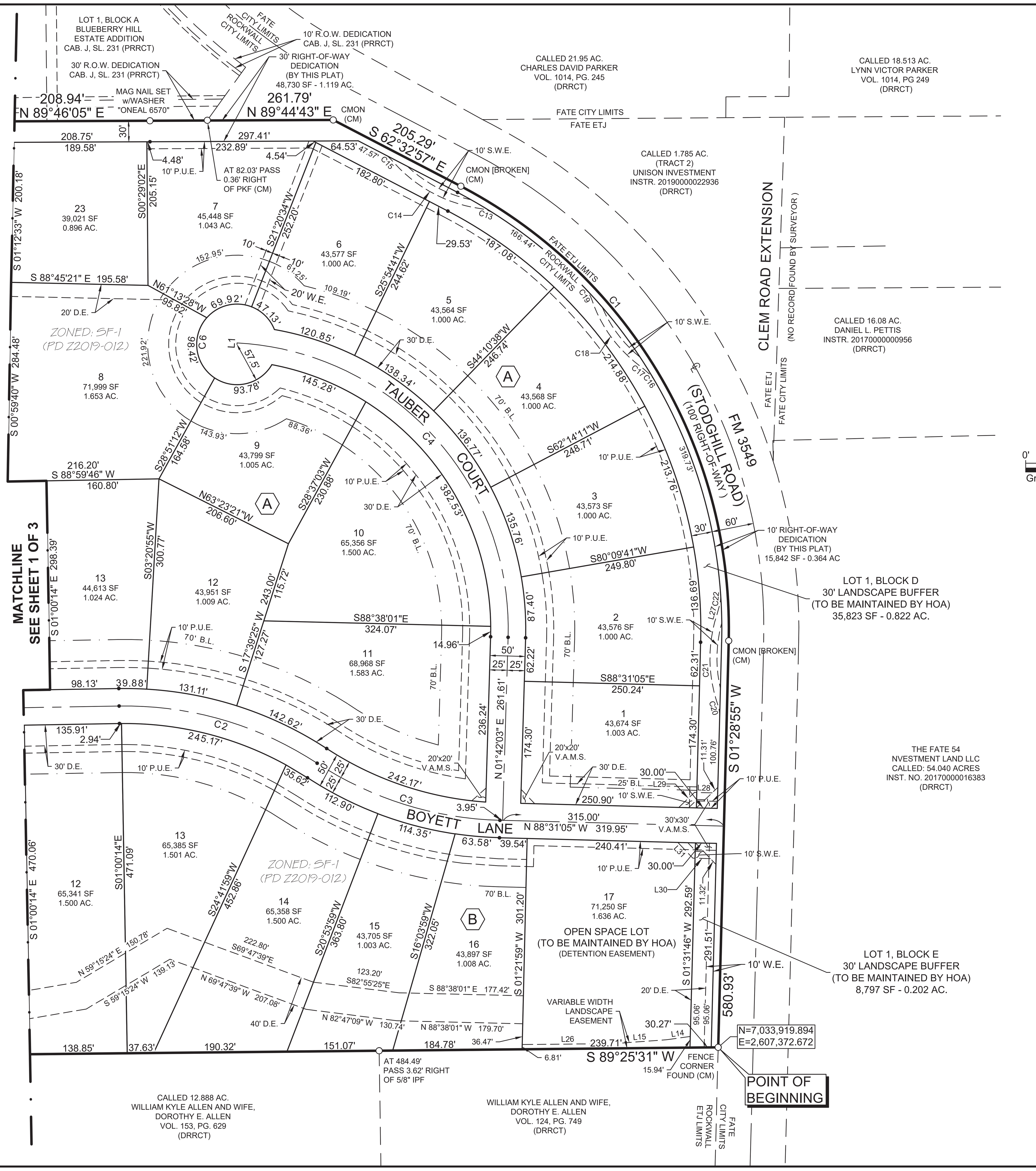
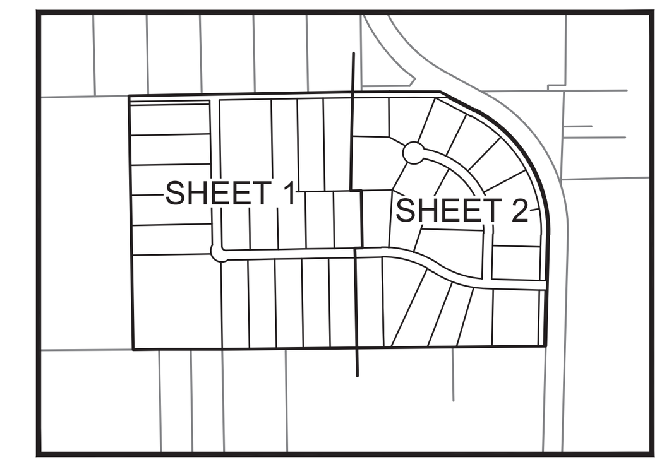
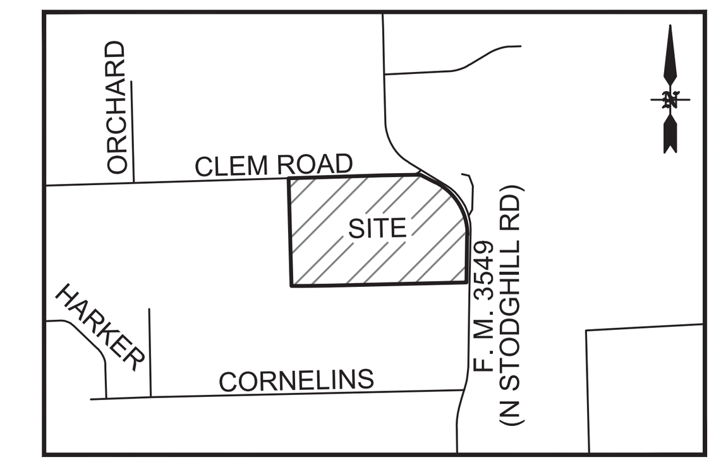
Z:\PROJECTS\08838 Nortgate-Fate-Jay Webb\dwg\Plats\08838 FinalPlat Northgate.dwg

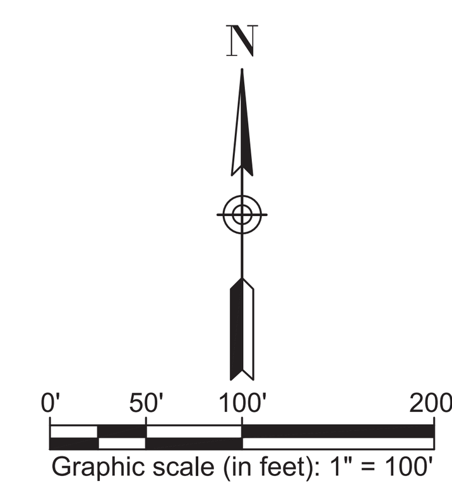




KEY MAP
Scale: 1" = 1,000'



VICINITY MAP
NOT TO SCALE



LEGEND

IRS	1/2" Iron Rod Set with red cap stamped "ONEAL 6570"
IRF	Iron Rod Found
IPF	Iron Pipe Found
PKF	PK Nail Found
CMON	Concrete Monument Found
CM	Controlling monument
DRRCT	Deed Records, Rockwall County, Texas
PRRCT	Plat Records, Rockwall County, Texas
B.L.	Building Line
P.U.E.	Public Utility Easement
D.E.	Drainage Easement
S.W.E.	Sidewalk and Trail Easement
C.A.	Common Area
V.A.M.S.	Visibility, Access, Maintenance & Sidewalk Easement
◆	Indicates Street Name Change

LINE TABLE

NO.	DIRECTION	DISTANCE
L1	S 03°02'33" W	2.22'
L2	N 44°13'01" E	31.70'
L3	N 89°06'34" E	128.18'
L4	S 84°09'40" E	25.77'
L5	S 01°00'14" E	6.00'
L6	S 82°09'12" W	25.77'
L7	S 48°10'48" W	24.55'
L8	N 61°27'02" W	55.67'
L9	N 89°06'34" E	44.11'
L10	S 16°03'48" E	21.92'
L11	S 01°11'06" W	236.70'
L12	S 01°37'09" E	133.38'
L13	S 03°23'13" E	98.19'
L14	N 82°05'51" E	34.17'
L15	N 85°49'03" E	75.79'
L16	S 11°26'15" W	49.71'

LINE TABLE

NO.	DIRECTION	DISTANCE
L17	N 03°39'45" W	77.67'
L18	N 45°24'37" W	87.43'
L19	N 62°13'35" E	30.66'
L20	S 00°04'19" E	40.00'
L21	N 85°57'46" W	23.83'
L22	N 36°17'17" W	68.57'
L23	N 43°59'46" E	70.79'
L24	N 16°09'46" E	42.31'
L25	S 43°59'46" W	68.92'
L26	N 89°25'34" E	130.55'
L27	N 15°39'30" E	15.82'
L28	S 88°31'20" E	25.12'
L29	N 46°28'55" E	31.11'
L30	S 88°30'51" E	25.12'
L31	S 43°31'05" E	31.11'

FINAL PLAT
NORTHGATE ADDITION
BEING
63.514 ACRES
38 RESIDENTIAL LOTS
AND 4 COMMON AREA LOTS
SITUATED IN THE
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DATE: 10/29/20 CASE NO. P2020-022 SHEET 2 OF 3

OWNER/DEVELOPER
Northgate Rockwall LD, L.P.
1189 Waters Edge Drive
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(512) 965-6280

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OWNER'S CERTIFICATION [Public Dedication]

STATE OF TEXAS §
COUNTY OF ROCKWALL §

WHEREAS NORTHGATE ROCKWALL LD, L.P. AND REBECCA AIRHEART , BEING THE OWNERS OF A TRACT OF LAND IN THE COUNTY OF ROCKWALL, STATE OF TEXAS, SAID TRACT BEING DESCRIBED AS FOLLOWS:

BEING 63.514 ACRES OF LAND LOCATED IN THE WILLIAM DALTON SURVEY, ABSTRACT NUMBER 72, ROCKWALL COUNTY, TEXAS, BEING ALL OF THAT CERTAIN CALLED 62.517 ACRE TRACT AS DESCRIBED TO NORTHGATE ROCKWALL, LD, L.P., BY DEED RECORDED IN INSTRUMENT 20190000022936, DEED RECORDS, ROCKWALL COUNTY, TEXAS (D.R.R.C.T.) AND ALL OF THAT CERTAIN CALLED 1.00 ACRE TRACT AS DESCRIBED TO REBECCA AIRHEART BY DEED RECORDED IN INSTRUMENT NUMBER 202000000003814 (D.R.R.C.T.), AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A FENCE CORNER FOUND IN THE WEST LINE OF FARM-TO-MARKET ROAD 3549 (100' RIGHT-OF-WAY) AT THE SOUTHEAST CORNER OF THE ABOVE-MENTIONED 62.517 ACRE TRACT;

THENCE SOUTH 89 DEGREES 25 MINUTES 31 SECONDS WEST, AT A DISTANCE OF 484.49 FEET PASS 3.62 FEET RIGHT OF A 5/8" IRON PIPE FOUND AND CONTINUING FOR A TOTAL DISTANCE OF 1353.00 FEET WITH THE SOUTH LINE OF SAID 62.517 ACRE TRACT TO A 1/2" IRON PIPE FOUND AT THE NORTHWEST CORNER OF THE WILLIAM KYLE ALLEN ET UX 12.888 ACRE TRACT AS DESCRIBED IN VOLUME 153, PAGE 629, (D.R.R.C.T.) AND THE NORTHEAST CORNER OF THE ROBERT PEOPLES AND MEGAN PEOPLES 10.00 ACRE TRACT AS DESCRIBED IN INSTRUMENT NUMBER 2013000483387, (D.R.R.C.T.);

THENCE SOUTH 89 DEGREES 24 MINUTES 55 SECONDS WEST, A DISTANCE OF 329.15 FEET WITH THE SOUTH LINE OF SAID 62.517 ACRE TRACT TO A 1/2" IRON ROD WITH RED CAP STAMPED "ONEAL 6570" SET AT THE NORTHWEST CORNER OF THE ABOVE-MENTIONED 10.00 ACRE TRACT AND THE NORTHEAST CORNER OF THE BILLY CONRAD HAGEN 4.030 ACRE TRACT AS DESCRIBED IN VOLUME 103, PAGE 775, (D.R.R.C.T.);

THENCE SOUTH 89 DEGREES 55 MINUTES 41 SECONDS WEST, A DISTANCE OF 328.28 FEET WITH THE SOUTH LINE OF SAID 62.517 ACRE TRACT, SAME BEING THE COMMON NORTH LINE OF THE ABOVE-MENTIONED 4.030 ACRE TRACT AND THE LORIN PRESTON LARMAN AND JEANNE LARMAN 4.962 ACRE TRACT AS DESCRIBED IN VOLUME 3679, PAGE 25, (D.R.R.C.T.) TO A 5/8" IRON ROD FOUND AT THE NORTHWEST CORNER OF THE JUST MENTIONED 4.962 ACRE TRACT;

THENCE SOUTH 89 DEGREES 37 MINUTES 12 SECONDS WEST, A DISTANCE OF 136.07 FEET TO THE SOUTHWEST CORNER OF SAID 62.517 ACRE TRACT, SAME BEING THE COMMON SOUTHEAST CORNER OF THE CRAIG WILLIAM MCCALLUM 20.057 ACRE TRACT AS DESCRIBED IN INSTRUMENT NUMBER 20150000001423, (D.R.R.C.T.), FROM WHICH A 1/2" IRON ROD WITH CAP STAMPED "DC&A" BEARS SOUTH 60 DEGREES 38 MINUTES 16 SECONDS EAST, A DISTANCE OF 1.05 FEET AND A FENCE CORNER BEARS NORTH 89 DEGREES 37 MINUTES 12 SECONDS EAST, A DISTANCE OF 0.71 FEET;

THENCE NORTH 00 DEGREES 53 MINUTES 26 SECONDS WEST, A DISTANCE OF 1320.98 FEET TO A MAG NAIL WITH WASHER STAMPED "ONEAL 6570" SET IN THE APPROXIMATE CENTERLINE OF CLEM ROAD (NO RECORD FOUND BY SURVEYOR) AT THE NORTHWEST CORNER OF SAID 62.517 ACRE TRACT AND THE NORTHEAST CORNER OF THE ABOVE-MENTIONED 20.057 ACRE TRACT;

THENCE NORTH 88 DEGREES 59 MINUTES 46 SECONDS EAST, A DISTANCE OF 1146.71 FEET WITH THE APPROXIMATE CENTERLINE OF CLEM ROAD AND THE NORTH LINE OF SAID 62.517 ACRE TRACT TO A 1/2" IRON ROD FOUND AT AN EXTERIOR CORNER OF SAID 62.517 ACRE TRACT AND THE NORTHWEST CORNER OF SAID 1.00 ACRE AIRHEART TRACT;;

THENCE NORTH 89 DEGREES 46 MINUTES 05 SECONDS EAST, A DISTANCE OF 208.94 FEET WITH THE APPROXIMATE CENTERLINE OF CLEM ROAD AND THE NORTH LINE OF SAID 1.00 ACRE TRACT TO A MAG NAIL WITH WASHER STAMPED "ONEAL 6570" SET AT THE NORTHEAST CORNER OF SAID 1.00 ACRE TRACT AND AN EXTERIOR CORNER OF SAID 62.517 ACRE TRACT;

THENCE NORTH 89 DEGREES 44 MINUTES 43 SECONDS EAST, A DISTANCE OF 261.79 FEET WITH THE NORTH LINE OF SAID 62.517 ACRE TRACT TO A CONCRETE MONUMENT FOUND IN THE SOUTHWEST LINE OF FARM-TO-MARKET ROAD 3549;

THENCE SOUTH 62 DEGREES 32 MINUTES 57 SECONDS EAST, A DISTANCE OF 205.29 FEET WITH THE SOUTHWEST LINE OF FARM-TO-MARKET ROAD 3549 AND THE COMMON NORTHEAST LINE OF SAID 62.517 ACRE TRACT, TO A BROKEN CONCRETE MONUMENT FOUND AT THE BEGINNING OF A CURVE TO THE RIGHT HAVING A DELTA ANGLE OF 063 DEGREES 42 MINUTES 40 SECONDS, A RADIUS OF 713.94 FEET AND A LONG CHORD THAT BEARS SOUTH 30 DEGREES 30 MINUTES 10 SECONDS EAST FOR A DISTANCE OF 753.61 FEET;

THENCE SOUTHEASTERLY WITH SAID CURVE TO THE RIGHT AND THE SOUTHWEST LINE OF FARM-TO-MARKET ROAD 3549 AND THE COMMON NORTHEAST LINE OF SAID 62.517 ACRE TRACT, AN ARC LENGTH OF 793.88 FEET TO A BROKEN CONCRETE MONUMENT FOUND;

THENCE SOUTH 01 DEGREES 28 MINUTES 55 SECONDS WEST, WITH THE WEST LINE OF FARM-TO-MARKET ROAD 3549 AND THE COMMON EAST LINE OF SAID 62.517 ACRE TRACT, A DISTANCE OF 580.93 FEET TO THE **POINT OF BEGINNING** AND CONTAINING 63.514 ACRES OF LAND, MORE OR LESS.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS §
COUNTY OF ROCKWALL §

NORTHGATE ROCKWALL LD, L.P. AND REBECCA AIRHEART, the undersigned owner of the land shown on this plat, and designated herein as the **NORTHGATE ADDITION** subdivision to the City of Rockwall, Texas, and whose names are subscribed hereto, hereby dedicate to the use of the public forever all streets, alleys, parks, water courses, drains, easements and public places thereon shown on the purpose and consideration therein expressed. W further certify that all other parties who have a mortgage or lien interest in the **NORTHGATE ADDITION** subdivision have been notified and signed this plat. We understand and do hereby reserve the easement strips shown on this plat for the purposes stated and for the mutual use and accommodation of all utilities desiring to use or using same. We also understand the following;

1. No buildings shall be constructed or placed upon, over, or across the utility easements as described herein.
2. Any public utility shall have the right to remove and keep removed all or part of any buildings, fences, trees, shrubs, or other growths or improvements which in any way endanger or interfere with construction, maintenance or efficiency of their respective system on any of these easement strips; and any public utility shall at all times have the right of ingress or egress to, from and upon the said easement strips for purpose of construction, reconstruction, inspecting, patrolling, maintaining, and either adding to or removing all or part of their respective system without the necessity of, at any time, procuring the permission of anyone.
3. The City of Rockwall will not be responsible for any claims of any nature resulting from or occasioned by the establishment of grade of streets in the subdivision.
4. The developer and subdivision engineer shall bear total responsibility for storm drain improvements.
5. The developer shall be responsible for the necessary facilities to provide drainage patterns and drainage controls such that properties within the drainage area are not adversely affected by storm drainage from the development.
6. No house dwelling unit, or other structure shall be constructed on any lot in this addition by the owner or any other person until the developer and/or owner has complied with all requirements of the Subdivision Regulations of the City of Rockwall regarding improvements with respect to the entire block on the street or streets on which property abuts, including the actual installation of streets with the required base and paving, curb and gutter, water and sewer, drainage structures, storm structures, storm sewers, and alleys, all according to the specifications of the City of Rockwall; or Until an escrow deposit, sufficient to pay for the cost of such improvements, as determined by the city's engineer and/or city administrator, computed on a private commercial rate basis, has been made with the city secretary, accompanied by an agreement signed by the developer and/or owner, authorizing the city to make such improvements at prevailing private commercial rates, or have the same made by a contractor and pay for the same out of the escrow deposit, should the developer and/or owner fail or refuse to install the required improvements within the time stated in such written agreement, but in no case shall the City be obligated to make such improvements itself. Such deposit may be used by the owner and/or developer as progress payments as the work progresses in making such improvements by making certified requisitions to the city secretary, supported by evidence of work done; or Until the developer and/or owner files a corporate surety bond with the city secretary in a sum equal to the cost of such improvements for the designated area, guaranteeing the installation thereof within the time stated in the bond, which time shall be fixed by the city council of the City of Rockwall.
7. The property owner(s)/HOA shall be responsible for all maintenance, repairs, and reconstruction of drainage and detention easements, open spaces, common areas and landscape buffers.
8. The HOA shall be responsible for all care and maintenance of any decorative sign poles installed. The HOA must maintain, repair, and replace all non-standard street and regulatory sign poles and fixtures or other approved non-standard items.

I (we) further acknowledge that the dedications and/or exaction's made herein are proportional to the impact of the Subdivision upon the public services required in order that the development will comport with the present and future growth needs of the City; I (we), my (our) successors and assigns hereby waive any claim, damage, or cause of action that I (we) may have as a result of the dedication of exactions made herein.

NORTHGATE ROCKWALL LD, L.P. (OWNER)

_____

BY: Michael Ryan Joyce

REBECCA AIRHEART (OWNER)

STATE OF TEXAS §
COUNTY OF ROCKWALL §

Before me, the undersigned authority, on this day personally appeared Michael Ryan Joyce, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purpose and consideration therein stated.

Given upon my hand and seal of office this _____ day of _____, 2020.

_____

Notary Public in and for the State of Texas
My Commission Expires:

STATE OF TEXAS §
COUNTY OF ROCKWALL §

Before me, the undersigned authority, on this day personally appeared Rebecca Airheart, known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that she executed the same for the purpose and consideration therein stated.

Given upon my hand and seal of office this _____ day of _____, 2020.

_____

Notary Public in and for the State of Texas
My Commission Expires:

SURVEYOR'S CERTIFICATE

NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

THAT I, Daniel Chase O'Neal, do hereby certify that I prepared this plat from an actual and accurate survey of the land, and that the corner monuments shown thereon were properly placed under my personal supervision.

_____

Daniel Chase O'Neal
Registered Professional Land Surveyor
State of Texas No. 6570

STATE OF TEXAS · REGISTERED · DANIEL CHASE O'NEAL · 6570 · PROFESSIONAL LAND SURVEYOR

STANDARD CITY SIGNATURE BLOCK

_____ _____

Planning & Zoning Commission, Chairman Date

APPROVED:
I hereby certify that the above and foregoing plat of an addition to the City of Rockwall, Texas, was approved by the City Council of the City of Rockwall on the _____ day of _____, 2020.

This approval shall be invalid unless the approved plat for such addition is recorded in the office of the County Clerk of Rockwall, County, Texas, within one hundred eighty (180) days from said date of final approval.

WITNESS OUR HANDS, this _____ day of _____, 2020.

_____ _____ _____

Mayor, City of Rockwall City Secretary City Engineer

OWNER/DEVELOPER
Northgate Rockwall LD, L.P.
1189 Waters Edge Drive
Rockwall, TX 75087
(512) 965-6280

LAND SURVEYOR
O'Neal Surveying Co.
P.O. Box 361
Athens Texas 75751
(903) 804-2891
Firm No. 10194132
Job No. 19081

FINAL PLAT
NORTHGATE ADDITION
BEING
63.514 ACRES
38 RESIDENTIAL LOTS
AND 4 COMMON AREA LOTS
SITUATED IN THE
WILLIAM DALTON SURVEY, ABST. 72
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

DATE: 10/29/20 CASE NO. P2020-022 SHEET 3 OF 3

ENGINEERINGCONCEPTS & DESIGN, L.P
ENGINEERING / PROJECT MANAGEMENT /
CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, SUITE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

GENERAL ITEMS

1. All construction shall conform to the requirements set forth in the City of Rockwall's Engineering Department's "Standards of Design and Construction" and the "Standard Specifications for Public Works Construction" by the North Texas Central Council of Governments, 5th edition amended by the City of Rockwall. The CONTRACTOR shall reference the latest City of Rockwall standard details provided in the Rockwall Engineering Departments "Standards of Design and Construction" manual for details not provided in these plans. The CONTRACTOR shall possess one set of the NCTCOG Standard Specifications and Details and the City of Rockwall's "Standards of Design and Construction" manual on the project site at all times
2. Where any conflicting notes, details or specifications occur in the plans the City of Rockwall General Construction Notes, Standards, Details and Specifications shall govern unless detail or specification is more strict.
3. The City of Rockwall Engineering Departments "Standards of Design and Construction" can be found online at: http://www.rockwall.com/engr.asp
4. All communication between the City and the CONTRACTOR shall be through the Engineering Construction Inspector and City Engineer or designated representative only. It is the responsibility of the CONTRACTOR to contact the appropriate department for inspections that do not fall under this approved engineering plan set.
5. Prior to construction, CONTRACTOR shall have in their possession all necessary permits, plans, licenses, etc.
6. The CONTRACTOR shall have at least one original stamped and signed set of approved engineering plans and specifications on-site and in their possession at all times. A stop work order will be issued if items are not on-site. Copies of the approved plans will not be substituted for the required original "approved plans to be on-site".
7. All material submittals, concrete batch designs and shop drawings required for City review and approval shall be submitted by the CONTRACTOR to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
8. All site dimensions are referenced to the face of curb or edge of pavement unless otherwise noted.
9. The City requires ten (10%) percent-two (2) year maintenance bond for paving, paving improvements, water systems, wastewater systems, storm sewer systems including detention systems, and associated fixtures and structures which are located within the right-of-ways or defined easements. The two (2) year maintenance bond is to state "from date of City acceptance" as the starting time.
10. A review of the site shall be conducted at twenty (20) months into the two (2) year maintenance period. The design engineer or their designated representative and the CONTRACTOR shall be present to walk the site with the City of Rockwall Engineering Inspection personnel.

EROSION CONTROL & VEGETATION

1. The CONTRACTOR or developer shall be responsible, as the entity exercising operational control, for all permitting as required by the Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ). This includes, but is not limited to, preparation of the Storm Water Pollution Prevention Plan (SWPPP), the Construction Site Notice (CSN), the Notice of Intent (NOI), the Notice of Termination (NOT) and any Notice of Change (NOC) and is required to pay all associated fees
2. Erosion control devices as shown on the erosion control plan for the project shall be installed prior to the start of land disturbing activities.
3. All erosion control devices are to be installed in accordance with the approved plans, specifications and Storm Water Pollution Prevention Plan (SWPPP) for the project. Erosion control devices shall be placed and in working order prior to start of construction. Changes are to be reviewed and approved by the design engineer and the City of Rockwall prior to implementation.
4. If the Erosion Control Plans and Storm Water Pollution Prevention Plan (SWPPP) as approved cannot appropriately control erosion and off-site sedimentation from the project, the erosion control plan and/or the SWPPP is required to be revised and any changes reported to the Texas Commission on Environmental Quality (TCEQ), when applicable.
5. All erosion control devices shall be inspected weekly by the CONTRACTOR and after all major rain events, or more frequently as dictated in the project Storm Water Pollution Prevention Plan (SWPPP). CONTRACTOR shall provide copies of inspection's reports to the engineering inspection after each inspection.
6. The CONTRACTOR shall not dispose of waste and any materials into streams, waterways or floodplains. The CONTRACTOR shall secure all excavation at the end of each day and dispose of all excess materials.
7. CONTRACTOR shall take all available precautions to control dust. CONTRACTOR shall control dust by sprinkling water or other means as approved by the City Engineer.
8. CONTRACTOR shall establish grass and maintain the seeded area, including watering, until a "Permanent Stand of Grass" is obtained at which time the project will be accepted by the City. A "Stand of Grass" (not winter rye or weeds) shall consist of 75% to 80% coverage of all disturbed areas and a minimum of one-inch (1") in height as determined by the City. No bare spots will be allowed. Re-seeding will be required in all washed areas and areas that don't grow.
9. All City right-of-ways shall be sodded if disturbed. No artificial grass is allowed in any City right-of-way and/or easements.
10. All adjacent streets/alleys shall be kept clean at all times
11. CONTRACTOR shall keep construction site clean at all times, immediately contain all debris and trash, all debris and trash shall be removed at the end of each work day, and all vegetation on the construction site 10-inches or taller in height must be cut immediately.
12. Suspension of all construction activities for the project will be enforced by the City if any erosion control requirements are not meet. Work may commence after deficiency has been rectified.
13. During construction of the project, all soil stockpiles and borrow areas shall be stabilized or protected with sediment trapping measures. The CONTRACTOR is responsible for the temporary protection and permanent stabilization of all soil stockpiles on-site as well as borrow areas and soil intentionally transported from the project site.
14. Where construction vehicles access routes intersect paved or public roads/alleys, construction entrances shall be installed to minimize the transport of sediment by vehicular tracking onto paved surfaces. Where sediment is transferred onto paved or public surfaces, the surface shall be immediately cleaned. Sediment shall be removed from the surface by shoveling or sweeping and transported to a sediment disposal area. Pavement washing shall be allowed only after sediment is removed in this manner.
15. All drainage inlets shall be protected from siltation, ineffective or unmaintained protection devices shall be immediately replaced and the inlet and storm system cleaned. Flushing is not an acceptable method of cleaning.
16. During all dewatering operations, water shall be pumped into an approved filtering device prior to discharge into a receiving outlet.

TRAFFIC CONTROL

1. All new Detouring or Traffic Control Plans are required to be submitted to the City for review and approval a minimum of 21 calendar days prior to planned day of implementation.
2. When the normal function of the roadway is suspended through closure of any portion of the right-of-way, temporary construction work zone traffic control devices shall be installed to effectively guide the motoring public through the area. Consideration for road user safety, worker safety, and the efficiency of road user flow is an integral element of every traffic control zone.
3. All traffic control plans shall be prepared and submitted to the Engineering Department in accordance with the standards identified in Part VI of the most recent edition of the TMUTCD. Lane closures will not occur on roadways without an approval from the Rockwall Engineering Department and an approved traffic control plan. Traffic control plans shall be required on all roadways as determined by the City Engineer or the designated representative.
4. All traffic control plans must be prepared, signed, and sealed by an individual that is licensed as a professional engineer in the State of Texas. All traffic control plans and copies of work zone certification must be submitted for review and approval a minimum of three (3) weeks prior to the anticipated temporary traffic control.
5. The CONTRACTOR executing the traffic control plan shall notify all affected property owners two (2) weeks prior to any the closures in writing and verbally.
6. Any deviation from an approved traffic control plan must be reviewed by the City Engineer or the designated representative. If an approved traffic control plan is not adhered to, the CONTRACTOR will first receive a verbal warning and be required to correct the problem immediately. If the deviation is not corrected, all construction work will be suspended, the lane closure will be removed, and the roadway opened to traffic.
7. All temporary traffic control devices shall be removed as soon as practical when they are no longer needed. When work is suspended for short periods of time at the end of the workday, all temporary traffic control devices that are no longer appropriate shall be removed or covered. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure.
8. Lane closures on any major or minor arterial will not be permitted between the hours of 6:00 am to 9:00 am and 3:30 pm to 7:00 pm. Where lane closures are needed in a school area, they will not be permitted during peak hours of 7:00 am – 9:00 am and 3:00 pm to 5:00 pm. Closures may be adjusted according to the actual start-finish times of the actual school with approval by the City Engineer. The first violation of this provision will result in a verbal warning to the construction foreman. Subsequent violations will result in suspension of all work at the job site for a minimum of 48 hours. All contractors working on City funded projects will be charged one working day for each 24 hour closure of a roadway whether they are working or not.
9. No traffic signs shall be taken down without permission from the City.
10. No street/roadway will be allowed to be fully closed.

UTILITY LINE LOCATES

1. It is the CONTRACTOR's responsibility to notify utility companies to arrange for utility locates at least 48 hours prior to beginning construction. The completeness and accuracy of the utility data shown on the plans is not guaranteed by the design engineer or the City. The CONTRACTOR is responsible for verifying the depth and location of existing underground utilities proper to excavating, trenching, or drilling and shall be required to take any precautionary measures to protect all lines shown and .or any other underground utilities not on record or not shown on the plans.
2. The CONTRACTOR shall be responsible for damages to utilities
3. CONTRACTOR shall adjust all City of Rockwall utilities to the final grades.
4. All utilities shall be placed underground.
5. CONTRACTOR shall be responsible for the protection of all existing main lines and service lines crossed or exposed by construction operations. Where existing mains or service lines are cut, broken or damaged, the CONTRACTOR shall immediately make repairs to or replace the entire service line with same type of original construction or better. The City of Rockwall can and will intervene to restore service if deemed necessary and charge the CONTRACTOR for labor, equipment, material and loss of water if repairs aren't made in a timely manner by the CONTRACTOR.
6. The City of Rockwall (City utilities) is not part of the Dig Tess or Texas one Call – 811 – line locate system. All City of Rockwall utility line locates are to be scheduled with the City of Rockwall Service Center. 972-771-7730. A 48-hour advance notice is required for all non-emergency line locates.
7. Underground utility lines shall be installed in accordance with the following standards in addition to other applicable criteria:
   a. No more than 500 linear feet of trench may be opened at one time.
   b. Material used for backfilling trenches shall be properly compacted to 95% standard density in order to minimize erosion, settlement, and promote stabilization that the geotechnical engineer recommends.
   c. Applicable safety regulations shall be complied with.
11. This plan details pipes up to 5 feet from the building. Refer to the building plans for building connections. CONTRACTOR shall supply and install pipe adapters as necessary.
12. All underground lines shall be installed, inspected, and approved prior to backfilling.
13. All concrete encasement shall have a minimum of 28 days compressive strength at 3,000 psi (min. 5.5 sack mix).

WATER LINE NOTES

1. The CONTRACTOR shall maintain existing water service at all times during construction.
2. Proposed water lines shall be AWWA C900-16 PVC Pipe (blue in color) for all sizes, DR 14 (PC 305) for pipeline sizes 12-inch and smaller, and DR 18 (PC 235) for 14-inch and larger water pipelines unless otherwise shown on water plan and profiles sheets. Proposed water lines shall be constructed with minimum cover of 4 feet for 6-inch through 8-inch, 5 feet for 12-inch through 18-inch and 6 feet for 20-inch and larger.
3. Proposed water line embedment shall be NCTCOG Class 'B-3' as amended by the City of Rockwall's engineering standards of design and construction manual.
4. CONTRACTOR shall coordinate the shutting down of all water lines with the City of Rockwall Engineering Inspector and Water Department. The City shall operate all water valves. Allow 5 business days from the date of notice to allow City personnel time to schedule a shut down. Two additional days are required for the CONTRACTOR to notify residents in writing of the shut down after the impacted area has been identified. Water shut downs impacting businesses during their normal operation hours is not allowed. CONTRACTOR is required to coordinate with the Rockwall Fire Department regarding any fire watch requirements as well as any costs incurred when the loss of fire protection to a structure occurs.
5. CONTRACTOR shall furnish and install gaskets on water lines between all dissimilar metals and at valves (both existing and proposed).
6. All fire hydrants and valves removed and salvaged shall be returned to the City of Rockwall Municipal Service Center.
7. Blue EMS pads shall be installed at every change in direction, valve, curb stop and service tap on the proposed water line and every 250'.
8. All water valve hardware and valve extensions, bolts, nuts and washers shall be 316 stainless steel.
9. All fire hydrants bolts, nuts and washers that are buried shall be 316 stainless steel.
10. Abandoned water lines to remain in place shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product. Valves to be abandoned in place shall have any extensions and the valve box removed and shall be capped in concrete.
11. All fire hydrants will have a minimum of 5 feet of clearance around the appurtenance including but not limited to parking spaces and landscaping.
12. All joints are to be megalug joints with thrust blocking.
13. Water and sewer mains shall be kept 10 feet apart (parallel) or when crossing 2 feet vertical clearance.
14. CONTRACTOR shall maintain a minimum of 4 feet of cover on all water lines.
15. All domestic and irrigation services are required to have a testable backflow device with a double check valve installed per the City of Rockwall regulations at the property line and shown on plans.

WASTEWATER LINE NOTES

1. The CONTRACTOR shall maintain existing wastewater service at all times during construction.
2. Wastewater line for 4-inch through 15-inch shall be Green PVC – SDR 35 (ASTM D3034) [less 10 ft cover] and SDR 26 (ASTM D3034) [10 ft or more cover]. For 18-inch and lager wastewater line shall be Green PVC – PS 46 (ASTM F679) [less 10 ft cover] and PS 115 (ASTM F679) [10 ft or more cover]. No services will be allowed on a sanitary sewer line deeper than 10 feet.
3. Proposed wastewater line embedment shall be NCTCOG Class 'H' as amended by the City of Rockwall's public works standard design and construction manual.
4. Green EMS pads shall be installed at every 250', manhole, clean out and service lateral on proposed wastewater lines.
5. CONTRACTOR shall CCTV all existing wastewater lines that are to be abandoned to ensure that all laterals are accounted for and transferred to proposed wastewater lines prior to abandonment.
6. All abandoned wastewater and force main lines shall be cut and plugged and all void spaces within the abandoned line shall be filled with grout, flowable fill or an expandable permanent foam product.
7. Existing manholes and cleanouts not specifically called to be relocated shall be adjusted to match final grades.
8. All wastewater pipes and public services shall be inspected by photographic means (television and DVD) prior to final acceptance and after franchise utilities are installed. The CONTRACTOR shall furnish a DVD to the Engineering Construction Inspector for review. Any sags, open joints, cracked pipes, etc. shall be repaired or removed by the CONTRACTOR at the CONTRACTOR's expense. A television survey will be performed as part of the final testing in the twentieth (20th) month of the maintenance period.
9. All manholes (public or private) shall be fitted with inflow prevention. The inflow prevention shall conform to the measures called out in standard detail R-5031.
10. All new or existing manholes being modified shall have corrosion protection being Raven Liner 405 epoxy coating, ConShield, or approved equal.. Consheild must have terracotta color dye mixed in the precast and cast-in-place concrete. Where connections to existing manholes are made the CONTRACTOR shall rehab manhole as necessary and install a 125 mil thick coating of Raven Liner 405 or approved equal.
11. If an existing wastewater main or trunk line is called out to be replaced in place a wastewater bypassing pump plan shall be required and submitted to the Engineering Construction Inspector and City Engineer for approval prior to implementation. Bypass pump shall be fitted with an auto dialer and conform to the City's Noise Ordinance. Plan shall be to the City sufficiently in advance of scheduled construction to allow no less than 10 business days for review and response by the City.
12. CONTRACTOR shall maintain a minimum of 4 feet of cover on all wastewater lines.

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY DATE

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING 1/27/2021
RYAN C. KING DATE

GENERAL CONSTRUCTION NOTES
Sheet 1 of 2
April 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087

P (972) 771-7746
F (972) 771-7748

DEMOLITION, REMOVAL, DISPOSAL AND EXCAVATION NOTES

1. All pavements to be removed and replaced shall be saw cut to full depth along neat squared lines shown in the plans.
2. Proposed concrete pavement shall be constructed with longitudinal butt construction joints at all connections to existing concrete pavement.
3. All public concrete pavement to be removed and replaced shall be full panel replacement, 1-inch thicker and on top of 6-inch thick compacted flexbase.
4. No excess excavated material shall be deposited in low areas or along natural drainage ways without written permission from the affected property owner and the City of Rockwall. No excess excavation shall be deposited in the City Limits without a permit from the City of Rockwall. If the CONTRACTOR places excess materials in these areas without written permission, the CONTRACTOR will be responsible for all damages resulting from such fill and shall remove the material at their own cost.

PAVING AND GRADING

1. All detention systems are to be installed and verified for design compliance along with the associated storm sewer and outflow structures, prior to the start of any paving operations (including building foundations). Erosion protection shall be placed at the pond outflow structures, silt fence along the perimeter of the pond along with any of the associated erosion BMPs noted on the erosion control plan, and the sides and bottom of the detention system shall have either sod or anchored seeded curlex installed prior to any concrete placement.
2. All paving roadway, driveways, fire lanes, drive-isles, parking, dumpster pads, etc. sections shall have a minimum thickness, strength, reinforcement, joint type, joint spacing and subgrade treatment shall at a minimum conform to the City standards of Design and Construction and table below.

Street/Pavement Type	Minimum Thickness (inches)	Streng th 28-Day (psi)	Minimum Cement (sacks / CY)		Steel Reinforcement	
			Machine placed	Hand Placed	Bar #	Spacing (O.C.E.W.)
Arterial	10"	3,600	6.0	6.5	#4 bars	18"
Collector	8"	3,600	6.0	6.5	#4 bars	18"
Residential	6"	3,600	6.0	6.5	#3 bars	24"
Alley	7"-5"-7"	3,600	6.0	6.5	#3 bars	24"
Fire Lane	6"	3,600	6.0	6.5	#3 bars	24"
Driveways	6"	3,600	6.0	6.5	#3 bars	24"
Barrier Free Ramps	6"	3,600	N/A	6.5	#3 bars	24"
Sidewalks	4"	3,000	N/A	5.5	#3 bars	24"
Parking Lot/Drive Aisles	5"	3,000	5.0	5.5	#3 bars	24"
Dumpster Pads	7"	3,600	6.0	6.5	#3 bars	24"

3. Reinforcing steel shall be tied (100%). Reinforcing steel shall be set on plastic chairs. Bar laps shall be minimum 30 diameters. Sawed transverse dummy joints shall be spaced every 15 feet or 1.25 time longitudinal butt joint spacing whichever is less. Sawing shall occur within 5 to 12 hours after the pour, including sealing. Otherwise, the section shall be removed and longitudinal butt joint constructed.
4. No sand shall be allowed under any paving.
5. All concrete mix design shall be submitted to the City for review and approval prior to placement.
6. Fly ash may be used in concrete pavement locations provided that the maximum cement reduction does not exceed 20% by weight per C.Y. of concrete. The fly ash replacement shall be 1.25 lbs. per 1.0 lb. cement reduction.
7. All curb and gutter shall be integral (monolithic) with the pavement.
8. All fill shall be compacted by sheep's foot roller to a minimum 95% standard proctor. Maximum loose lift for compaction shall be 8 inches. All lifts shall be tested for density by an independent laboratory.
9. All concrete compression tests and soil compaction/density tests are required to be submitted to the City's Engineering Inspector immediately upon results.
10. All proposed sidewalks shall include barrier free ramps at intersecting streets, alleys, etc. Barrier free ramps (truncated dome plate in Colonial or brick red color) shall meet current City and ADA requirements and be approved by the Texas Department of Licensing and Regulation (TDLR).
11. All public sidewalks shall be doweled into pavement where it abuts curbs and driveways. Expansion joint material shall be used at these locations.
12. All connection of proposed concrete pavement to existing concrete pavement shall include a longitudinal butt joint as the load transfer device. All longitudinal butt joints shall be clean, straight and smooth (not jagged in appearance)
13. Cracks formed in concrete pavement shall be repaired or removed by the CONTRACTOR at the City's discretion. CONTRACTOR shall replace existing concrete curbs, sidewalk, paving, a gutters as indicated on the plans and as necessary to connect to the existing infrastructure, including any damage caused by the CONTRACTOR.
14. All residential lots will require individual grading plans submitted during the building permit process that correspond with the engineered grading and drainage area plans.
15. Approval of this plan is not an authorization to grade adjacent properties when the plans or field conditions warrant off-site grading. Written permission must be obtained and signed from the affected property owner(s) and temporary construction easements may be required. The written permission shall be provided to the City as verification of approval by the adjacent property owner(s). Violation of this requirement will result in suspension of all work at the job site until issue has been rectified.
16. All cut or fill slopes of non-paved areas shall be a maximum of 4:1 and minimum of 1%.
17. CONTRACTOR agrees to repair any damage to property and the public right-of-way in accordance with the City Standards of Design and Construction.
18. CONTRACTOR shall protect all monuments, iron pins/rods, and property corners during construction.
19. CONTRACTOR shall ensure positive drainage so that runoff will drain by gravity flow to new or existing drainage inlets or sheet flow per these approved plans.

DRAINAGE / STORM SEWER NOTES

1. The CONTRACTOR shall maintain drainage at all times during construction. Ponding of water in streets, drives, trenches, etc. will not be allowed. Existing drainage ways shall not be blocked or removed unless explicitly stated in the plans or written approval is given by the City.
2. All structural concrete shall be 4200 psi compressive strength at 28 days minimum 7.0 sack mix, air entrained, unless noted otherwise. Fly ash shall not be allowed in any structural concrete.
3. Proposed storm sewer embedment shall be NCTCOG Class 'B' as amended by the City of Rockwall's Engineering Department Standards of Design and Construction Manual.
4. All public storm pipe shall be a minimum of 18-inch reinforced concrete pipe (RCP), Class III, unless otherwise noted.
5. All storm pipe entering structures shall be grouted to assure connection at the structure is watertight.
6. All storm structures shall have a smooth uniform poured mortar invert from invert in to invert out.
7. All storm sewer manholes in paved areas shall be flush with the paving grade, and shall have traffic bearing ring and covers.

RETAINING WALLS

1. All retaining walls, regardless of height, will be reviewed and approved by the City Engineering Department
2. All retaining walls (including foundation stem walls), regardless of height, will be constructed of rock/stone/brick or rock/stone/brick faced. No smooth concrete walls are allowed. Wall materials shall be the same for all walls on the project.
3. All portions, including footings, tie-backs, and drainage backfill, of the wall shall be on-site and not encroach into any public easements or right-of-way. The entire wall shall be in one lot and shall not be installed along a lot line.
4. All walls 3 feet and taller will be designed and signed/sealed by a registered professional engineer in the State of Texas. The wall design engineer is required to inspect the wall construction and supply a signed/sealed letter of wall construction compliance to the City of Rockwall along with wall as-builts prior to City Engineering acceptance.
5. No walls are allowed in detention easements. A variance to allow retaining walls in a detention easement will require approval by the Planning and Zoning Commission with appeals being heard by the City Council.

FINAL ACCEPTANCE AND RECORD DRWINGS/AS-BUILTS

1. Final Acceptance shall occur when all the items on the Checklist for Final Acceptance have been completed and signed-off by the City. An example of the checklist for final acceptance has been included in the Appendix of the Standards of Design and Construction. Items on the checklist for final acceptance will vary per project and additional items not shown on the check list may be required.
2. After improvements have been constructed, the developer shall be responsible for providing to the City "As Built" or "Record Drawings". The Design Engineer shall furnish all digital files of the project formatted in Auto Cad 14, or 2000 format or newer and Adobe Acrobat (.pdf) format with a CD-ROM disk or flash drive. The disk or drive shall include a full set of plans along with any landscaping, wall plans, and details sheets.
3. Submit 1-set of printed drawings of the "Record Drawings" containing copies of all sheets to the Engineering Construction Inspector for the project. The printed sheets will be reviewed by the inspector PRIOR to producing the "Record Drawing" digital files on disk or flash drive. This will allow any revisions to be addressed prior to producing the digital files.
4. Record Drawing Disk drawings shall have the Design Engineers seal, signature and must be stamped and dated as "Record Drawings" or "As Built Drawings" on all sheets.
5. The City of Rockwall will not accept any Record Drawing disk drawings which include a disclaimer. A disclaimer shall not directly or indirectly state or indicate that the design engineer or the design engineer's surveyor/surveyors did not verify grades after construction, or that the Record Drawings were based solely on information provided by the construction contractor/contractors. Any Record Drawings which include like or similar disclaimer verbiage will not be accepted by the City of Rockwall.
6. Example of Acceptable Disclaimer: "To the best of our knowledge ABC Engineering, Inc., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor."

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY _____ DATE _____

GENERAL CONSTRUCTION NOTES
Sheet 2 of 2
April 2020

CITY OF ROCKWALL
ENGINEERING DEPARTMENT

385 S. Goliad
Rockwall, Texas 75087
P (972) 771-7746
F (972) 771-7748

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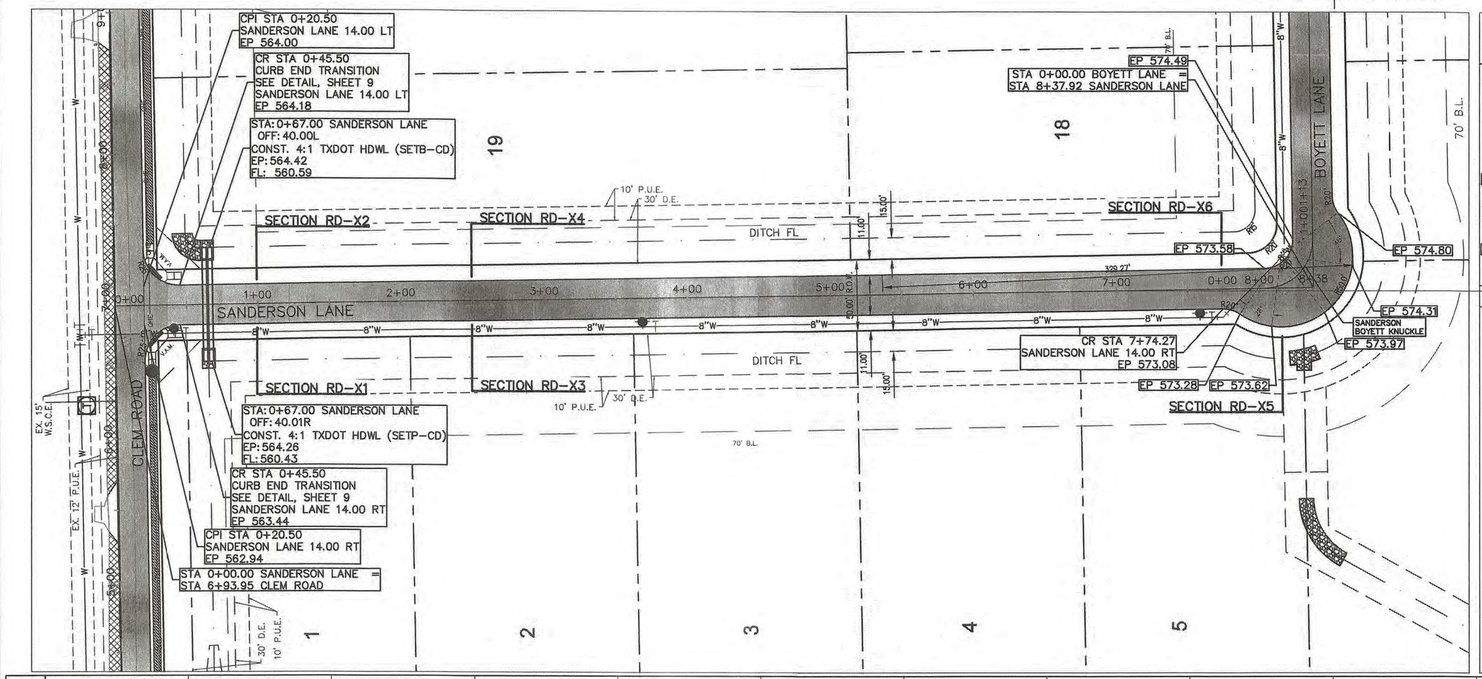
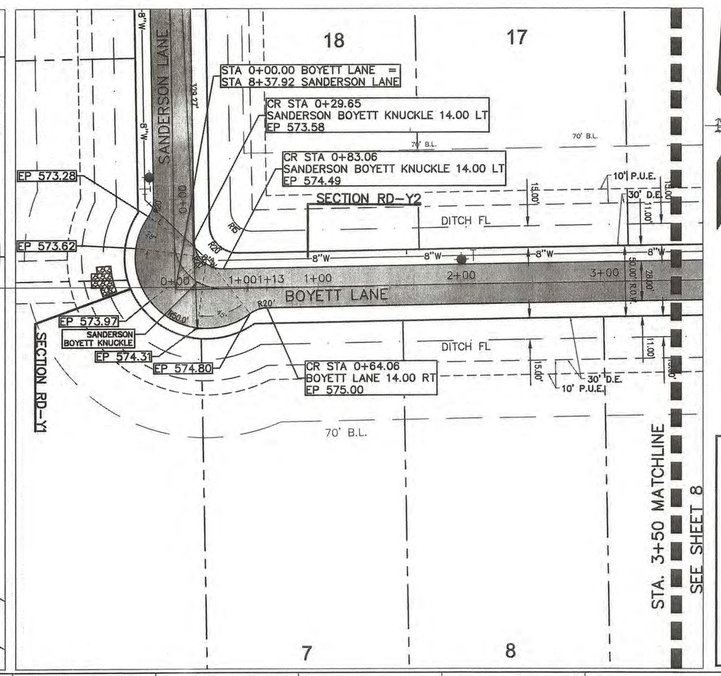
SEE SHEET 8 FOR TYPICAL PAVING SECTION





NOTE:
NO PAVING OPERATIONS SHALL BEGIN UNTIL THE DETENTION IS FULLY INSTALLED WITH EROSION PROTECTION ON SIDES AND BOTTOM.

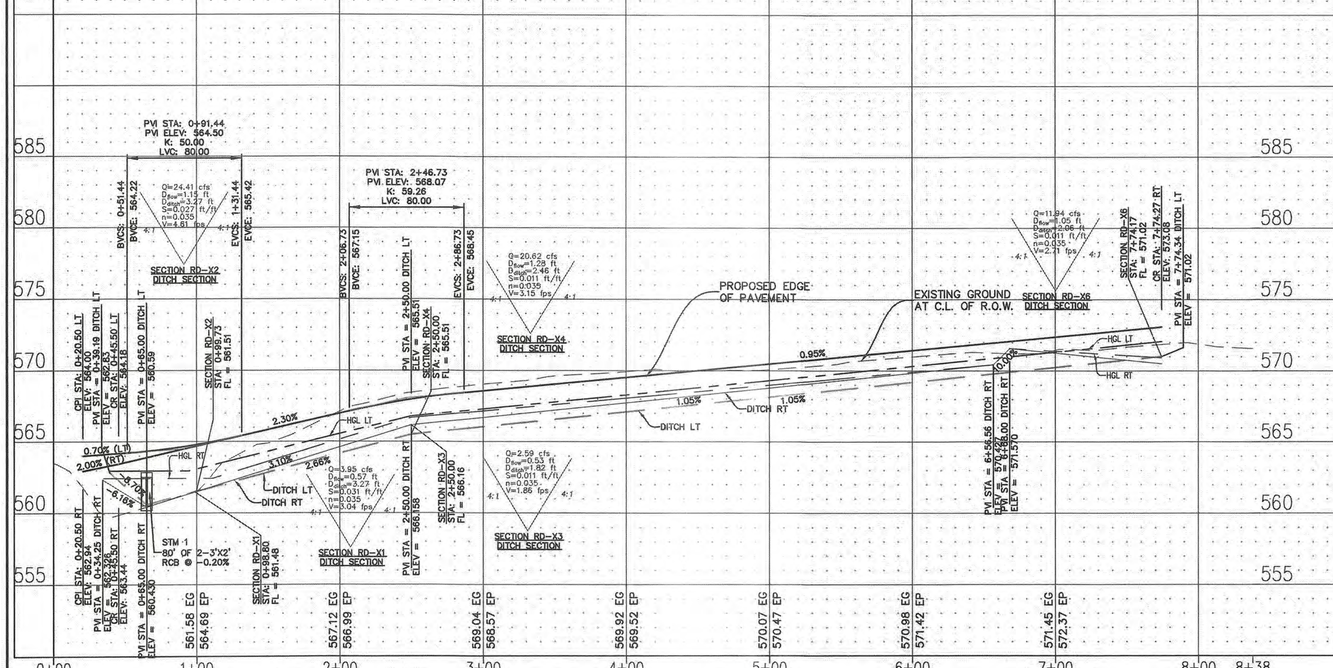
50 25 0 50 100
SCALE IN FEET
1" = 50'

LEGEND

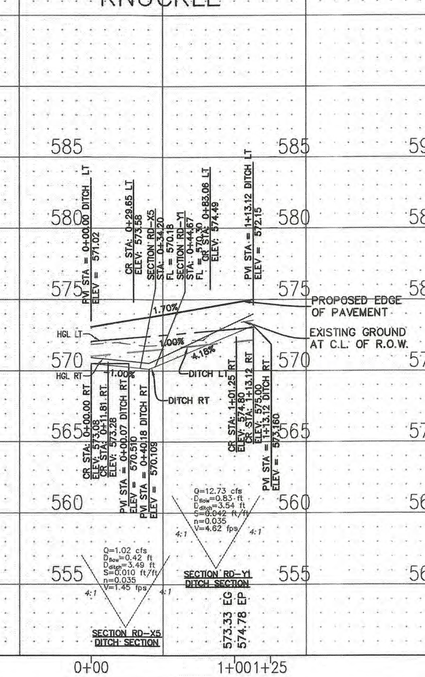
- MATCHLINE
- PROPOSED ROAD
- PROPOSED CONC. TRANS.
- ASPHALT TO BE REMOVED
- W — EXISTING WATER LINE
- EXISTING STORM LINE
- R.O.W. CENTER LINE
- R.O.W. LINE LINE
- EXISTING UTILITY POLE
- OHE — EXISTING OVERHEAD UTILITY

PROFILE VERTICAL
SCALE 1"=5'

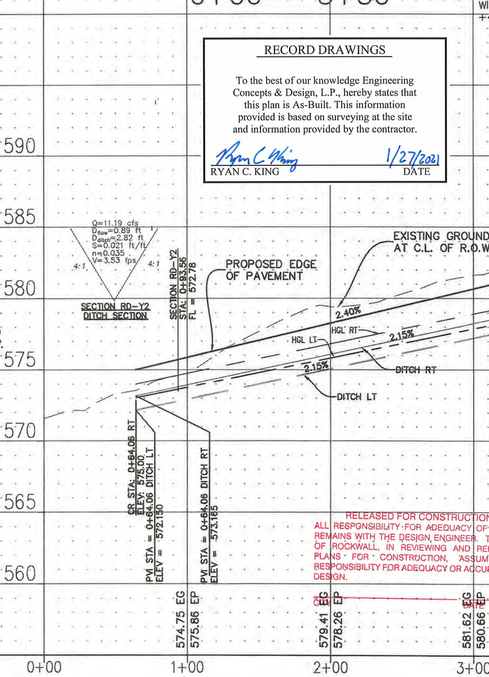
SANDERSON LANE



SANDERSON-BOYETT KNUCKLE



BOYETT LANE 0+00 – 3+50



NOTE:
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RECORD DRAWINGS

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RYAN C. KING 1/27/2021 DATE

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REVISIONS:

DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 PV.DWG	

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STATE OF TEXAS · RYAN C. KING · 123635 · REGISTERED PROFESSIONAL ENGINEER · 6/1/2020

PAVING PLAN - SANDERSON LANE

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 7 OF 40

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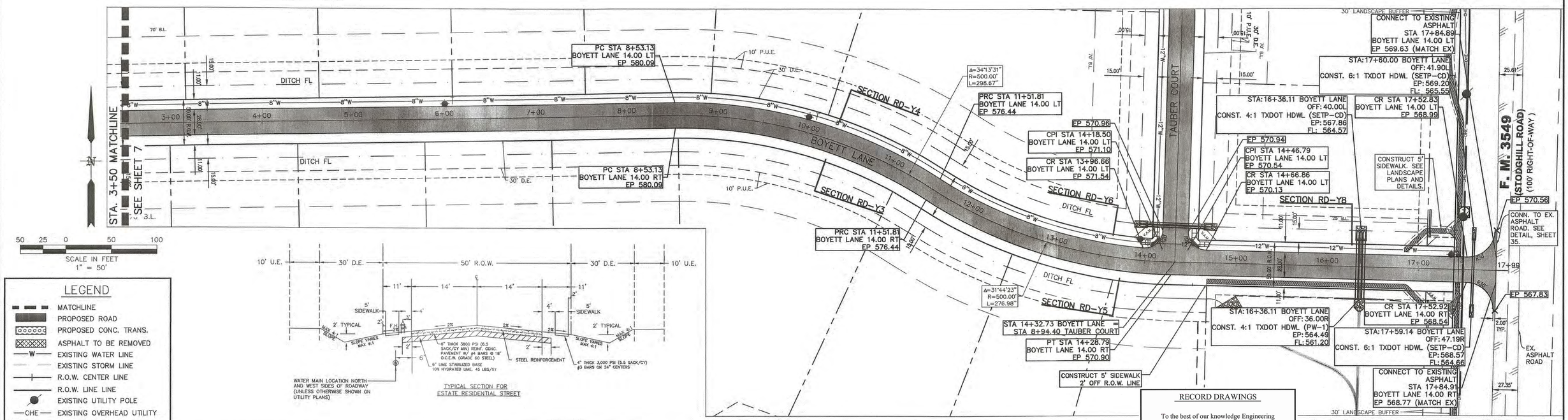
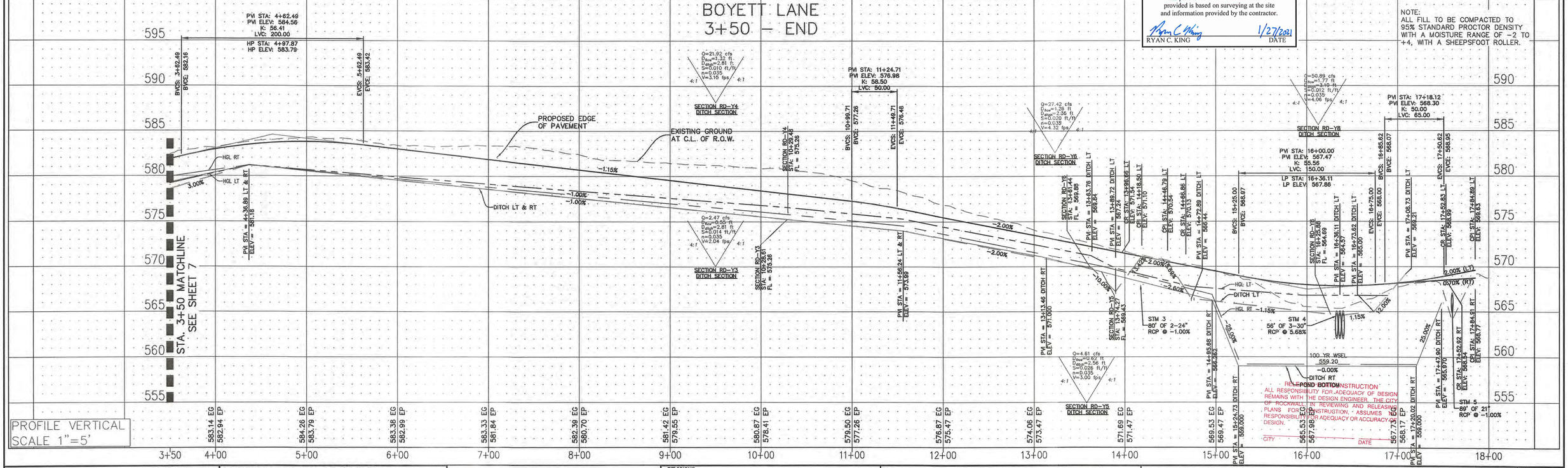


LEGEND

- MATCHLINE
- PROPOSED ROAD
- PROPOSED CONC. TRANS.
- ASPHALT TO BE REMOVED
- W — EXISTING WATER LINE
- EXISTING STORM LINE
- R.O.W. CENTER LINE
- R.O.W. LINE LINE
- EXISTING UTILITY POLE
- OHE — EXISTING OVERHEAD UTILITY

TYPICAL SECTION FOR ESTATE RESIDENTIAL STREET

BOYETT LANE 3+50 – END



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CITY DATE

PAVING PLAN - BOYETT LANE

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 8 OF 40

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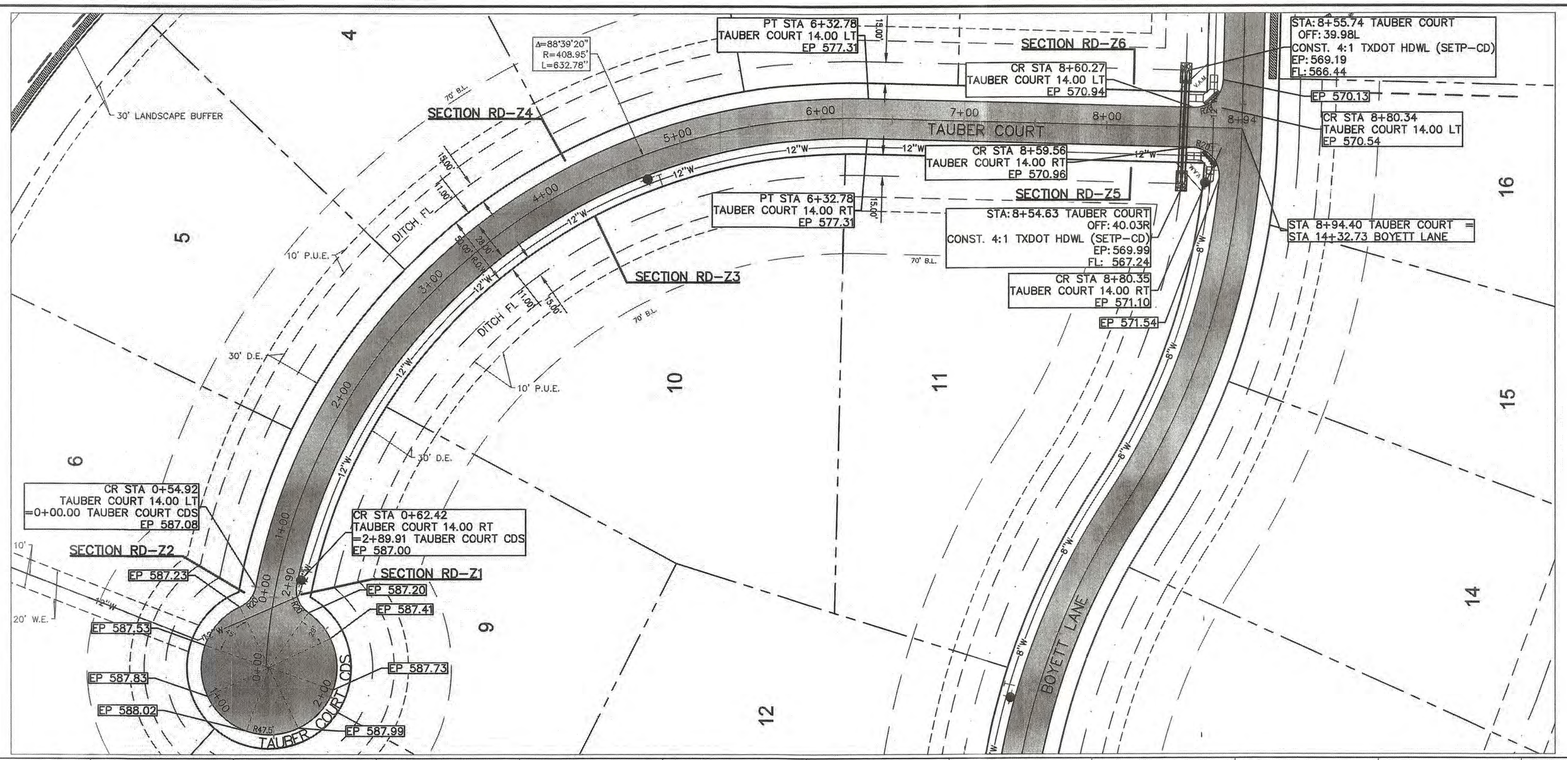

SEE SHEET 8 FOR TYPICAL PAVING SECTION

50 25 0 50 100

SCALE IN FEET
1" = 50'

LEGEND

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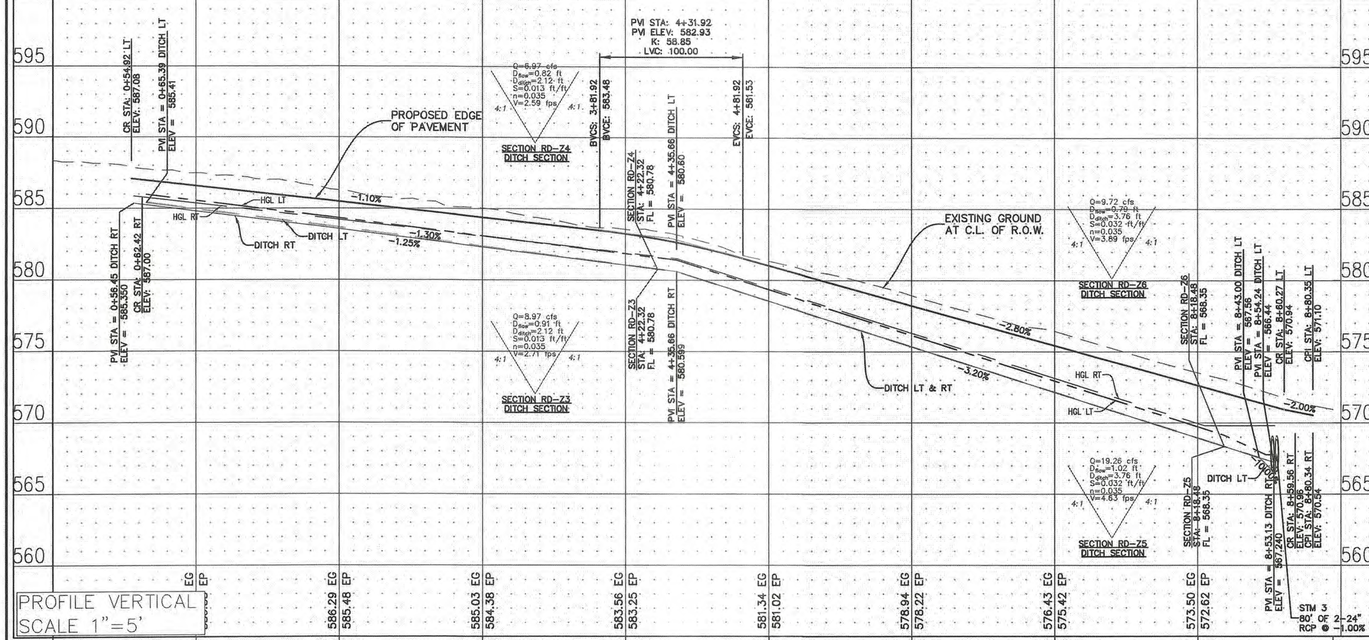

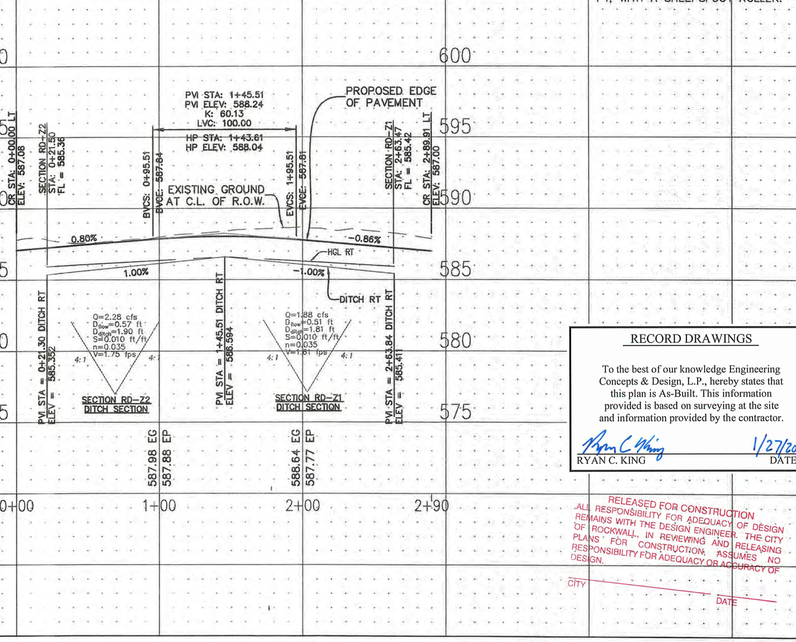

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STATE OF TEXAS · RYAN C. KING · 123635 · REGISTERED PROFESSIONAL ENGINEER · 6/1/2020

PAVING PLAN - TAUBER COURT

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 9 OF 40

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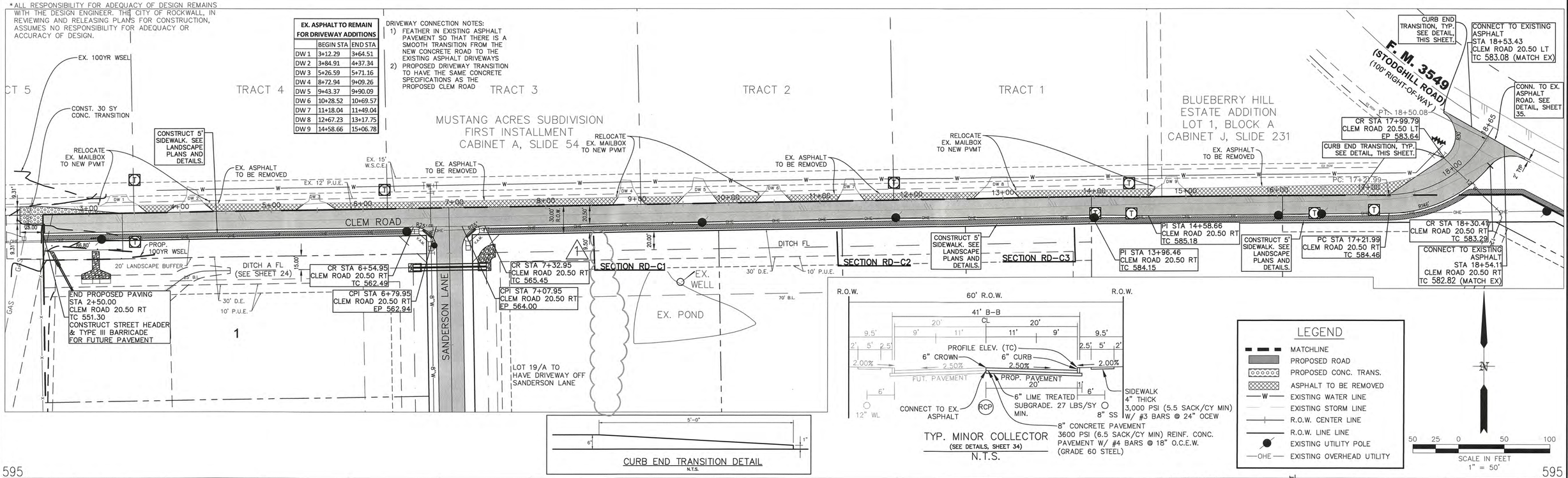
EX. ASPHALT TO REMAIN FOR DRIVEWAY ADDITIONS		
	BEGIN STA	END STA
DW 1	3+12.29	3+64.51
DW 2	3+84.91	4+37.34
DW 3	5+26.59	5+71.16
DW 4	8+72.94	9+09.26
DW 5	9+43.37	9+90.09
DW 6	10+28.52	10+69.57
DW 7	11+18.04	11+49.04
DW 8	12+67.23	13+17.75
DW 9	14+58.66	15+06.78

DRIVEWAY CONNECTION NOTES:
1) FEATHER IN EXISTING ASPHALT PAVEMENT SO THAT THERE IS A SMOOTH TRANSITION FROM THE NEW CONCRETE ROAD TO THE EXISTING ASPHALT DRIVEWAYS
2) PROPOSED DRIVEWAY TRANSITION TO HAVE THE SAME CONCRETE SPECIFICATIONS AS THE PROPOSED CLEM ROAD



CURB END TRANSITION DETAIL
N.T.S.

TYP. MINOR COLLECTOR
(SEE DETAILS, SHEET 34)
N.T.S.

LEGEND
- MATCHLINE
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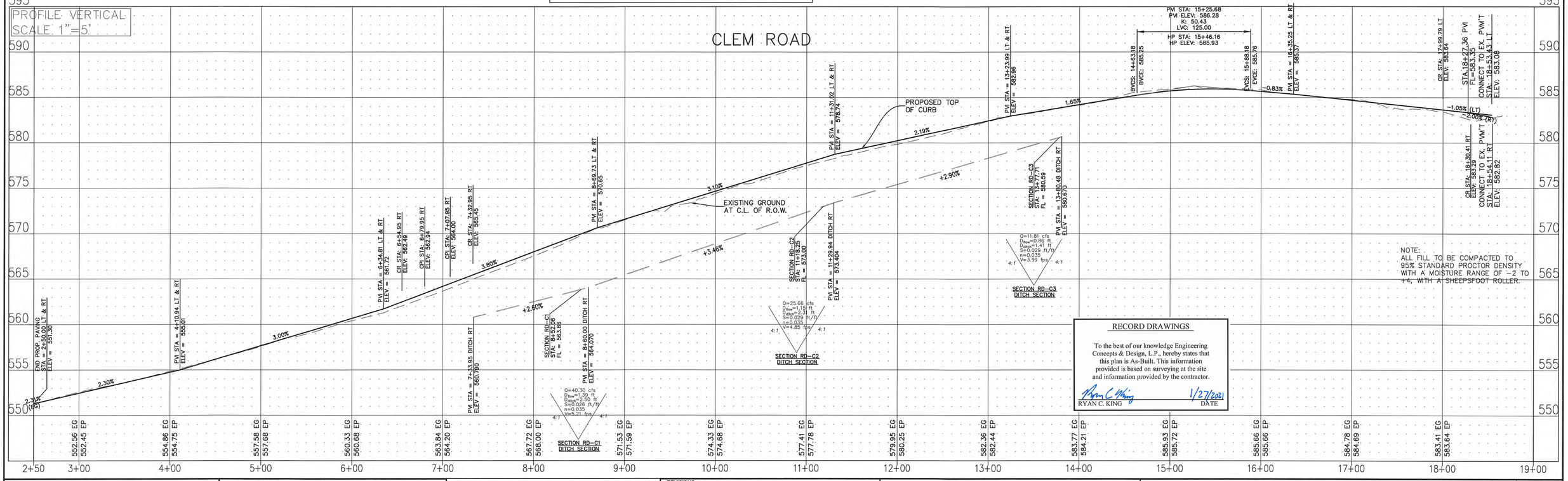
N

50 25 0 50 100
SCALE IN FEET
1" = 50'



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REVISIONS:
1/25/2021 COMBINED LOTS A19 & A20

DRAWN: MJH DATE:
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STATE OF TEXAS
RYAN C. KING
123635
REGISTERED PROFESSIONAL ENGINEER
1/25/2021

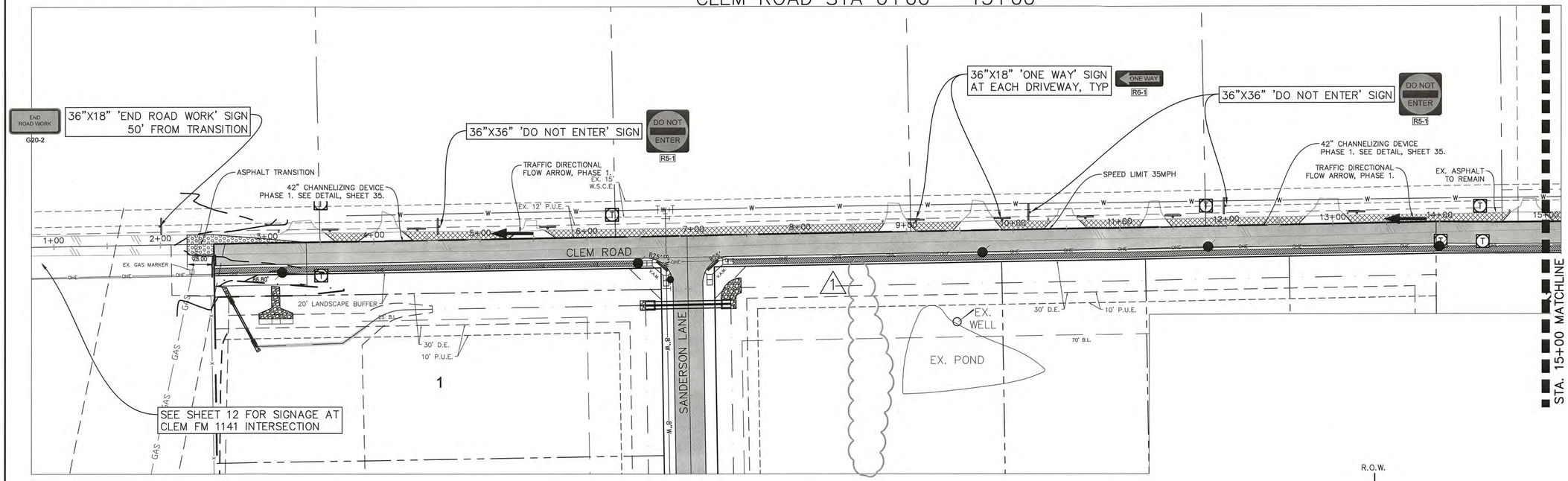
PAVING PLAN - CLEM ROAD

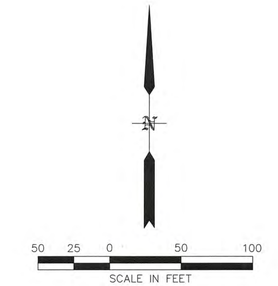
NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 10 OF 40

CLEM ROAD STA 0+00 – 15+00





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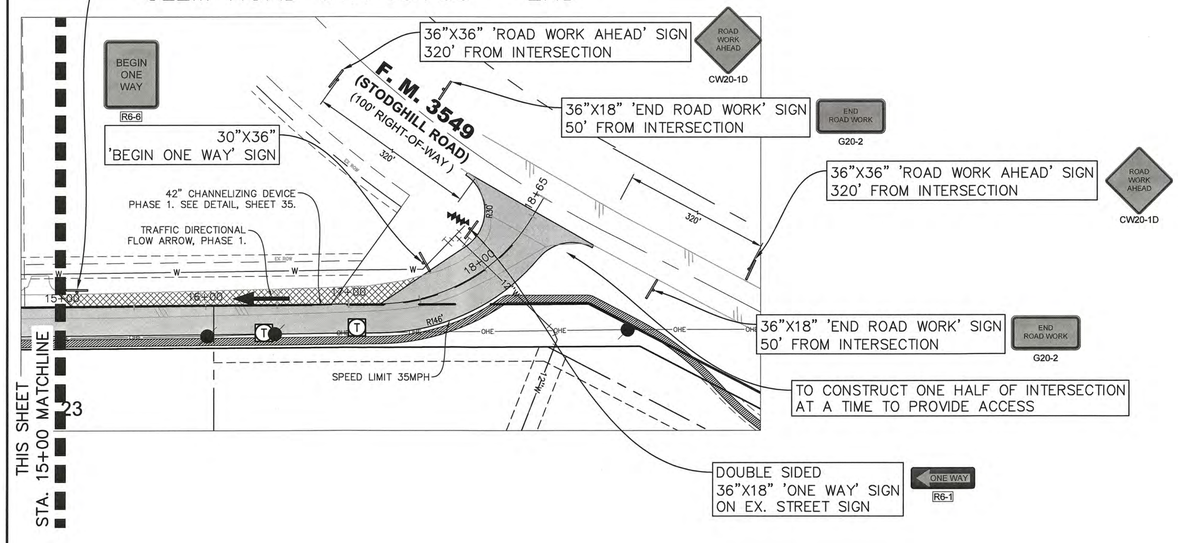
CLEM ROAD STA 15+00 – END



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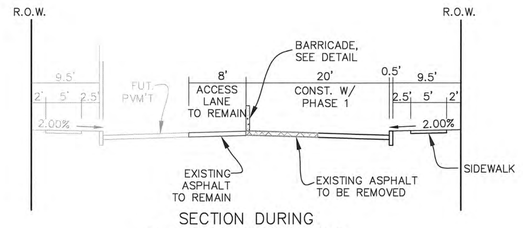
CLEM ROAD CONSTRUCTION SEQUENCE OF EVENTS:

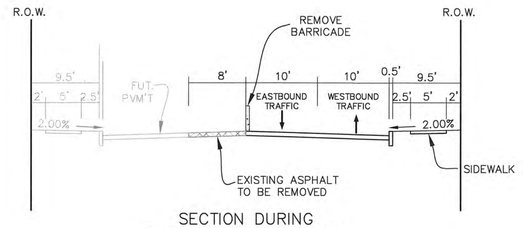
PHASE 1
1) NOTIFY CITY 3 WEEKS IN ADVANCE
2) PLACE BARRICADE
3) INSTALL TEMPORARY TRAFFIC CONTROL
4) CLOSE EASTBOUND TRAFFIC, WESTBOUND TRAFFIC TO REMAIN ON EXISTING ASPHALT
5) REMOVE EXISTING ASPHALT
6) CONSTRUCT 20' CONCRETE PAVING LANE
7) INSTALL CONCRETE TRANSITIONS

PHASE 2
1) REMOVE BARRICADE
2) OPEN EASTBOUND & WESTBOUND TRAFFIC ON NEW PAVEMENT
3) REMOVE EXISTING ASPHALT (ASPHALT IN FRONT OF EXISTING DRIVEWAYS TO REMAIN, SEE SHEET 10)
4) SOD DISTRUBED R.O.W. AREA

NOTE:
1) ONE-WAY TRAFFIC TO BE WESTBOUND FROM STODGEHILL TO FM 1141.
2) CONTRACTOR/DEVELOPER WILL BE RESPONSIBLE FOR NOTIFYING ALL PROPERTY OWNERS ALONG CLOSURE AND EMERGENCY SERVICES (FIRE, POLICE, EMS), SCHOOL DISTRICTS, TRASH SERVICES, CITY PUBLIC COMMUNICATIONS OFFICERS, AND ENGINEERING DEPARTMENT OF CLOSURE 3 WEEKS BEFORE IT OCCURS. THIS INCLUDES PREPARATION OF ALL NOTICES TO BE PREPARED AND DISTRIBUTED.
3) CONTRACTOR/DEVELOPER RESPONSIBLE FOR ALL SIGNAGE, BARRICADES, DETOURS, AND MESSAGE BOARDS FOR THE PROJECT.
4) READ AND INCLUDE IN PLANS NOTES PER SECTION 2.17 TEMP. TRAFFIC CONTROL OF CITY STANDARDS.
5) PLACE MESSAGE BOARDS OUT 2 WEEKS PRIOR TO START OF CLOSURE
6) EXISTING ESTATE LOTS TO HAVE ACCESS AT ALL TIMES.



SECTION DURING PHASE 1 CONSTRUCTION
N.T.S.



SECTION DURING PHASE 2 CONSTRUCTION
N.T.S.

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1 1/25/2021 COMBINED LOTS A19 & A20

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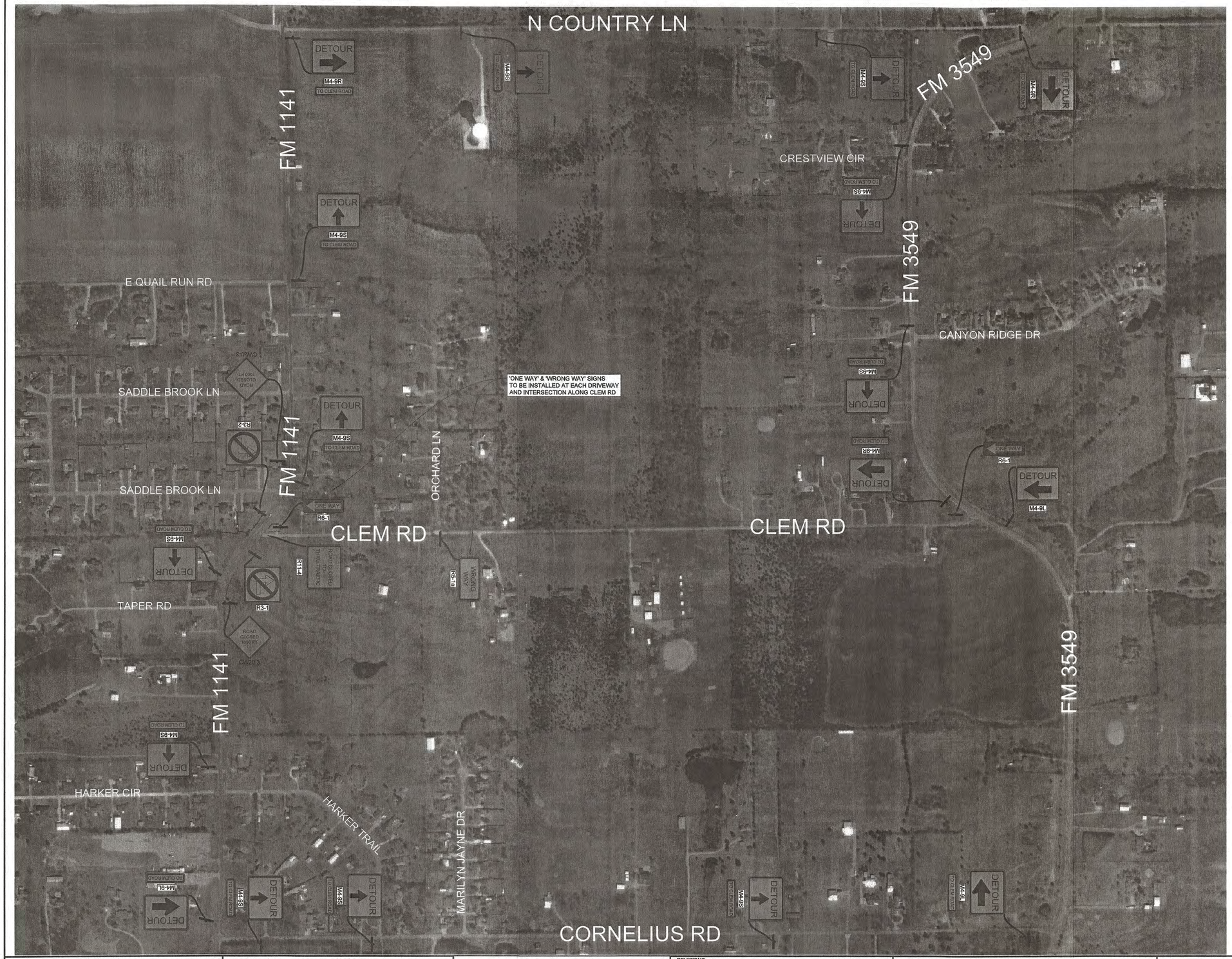
TRAFFIC CONTROL PLAN - CLEM ROAD NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 11 OF 40



300 150 0 300 600

SCALE IN FEET
1" = 300'

LEGEND

SIGN, TYP.

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DRAWN: MJH — DATE:
CHECKED: RCK — DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DETOUR.DWG

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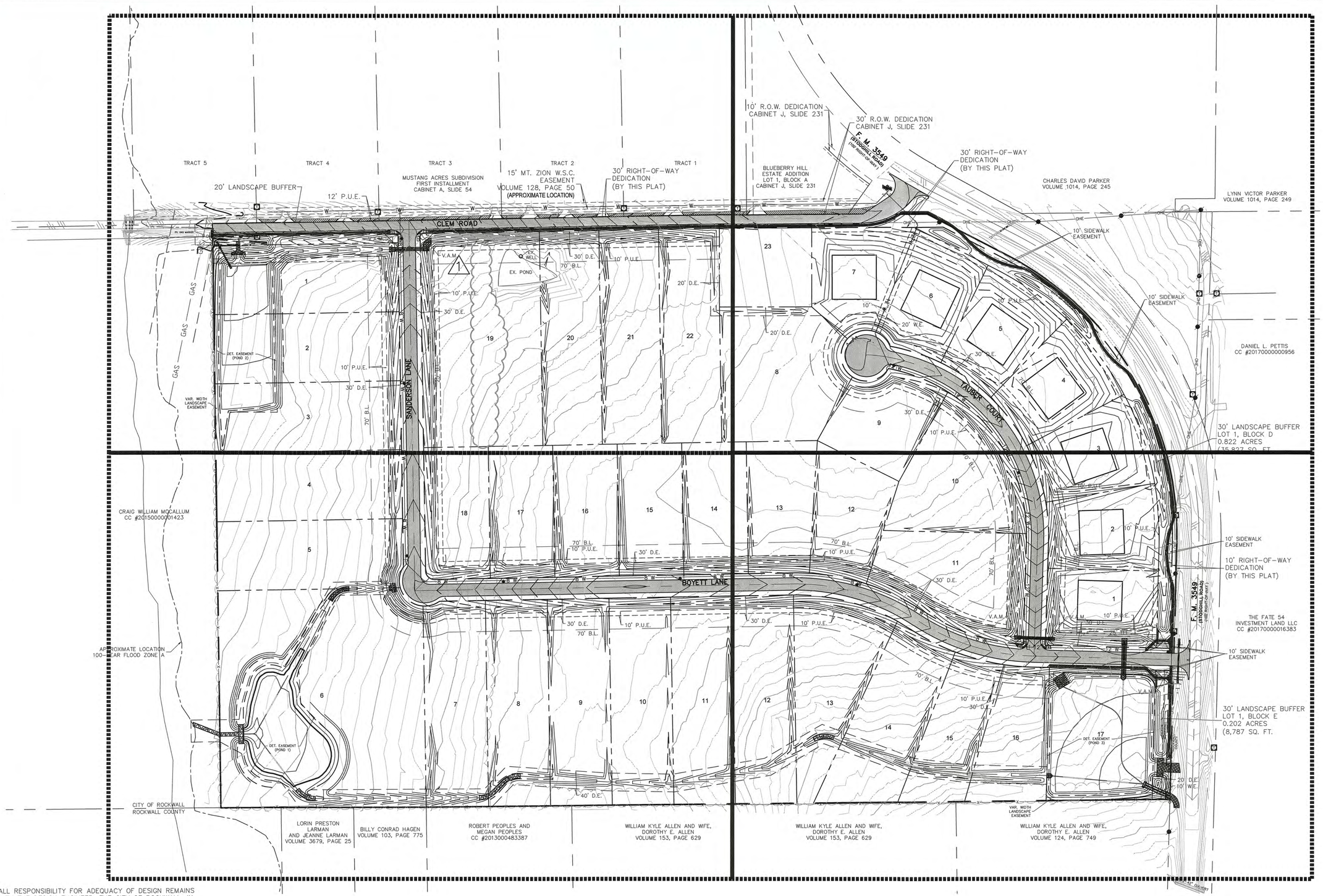
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

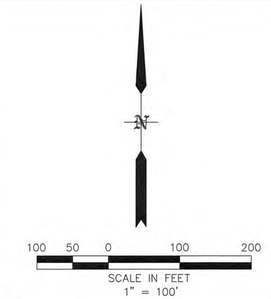
DETOUR PLAN

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 12 OF 40





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RECORD DRAWINGS

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RYAN C. KING — 1/27/2021 DATE

CAUTION! EXISTING UTILITIES

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Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

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201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
1/25/2021 COMBINED LOTS A19 & A20

DRAWN:	MJH	DATE:	
CHECKED:	RCK	DATE:	6/1/2020
PROJECT NO.:	08838		
DWG FILE NAME:	08838 GR.DWG		

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STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

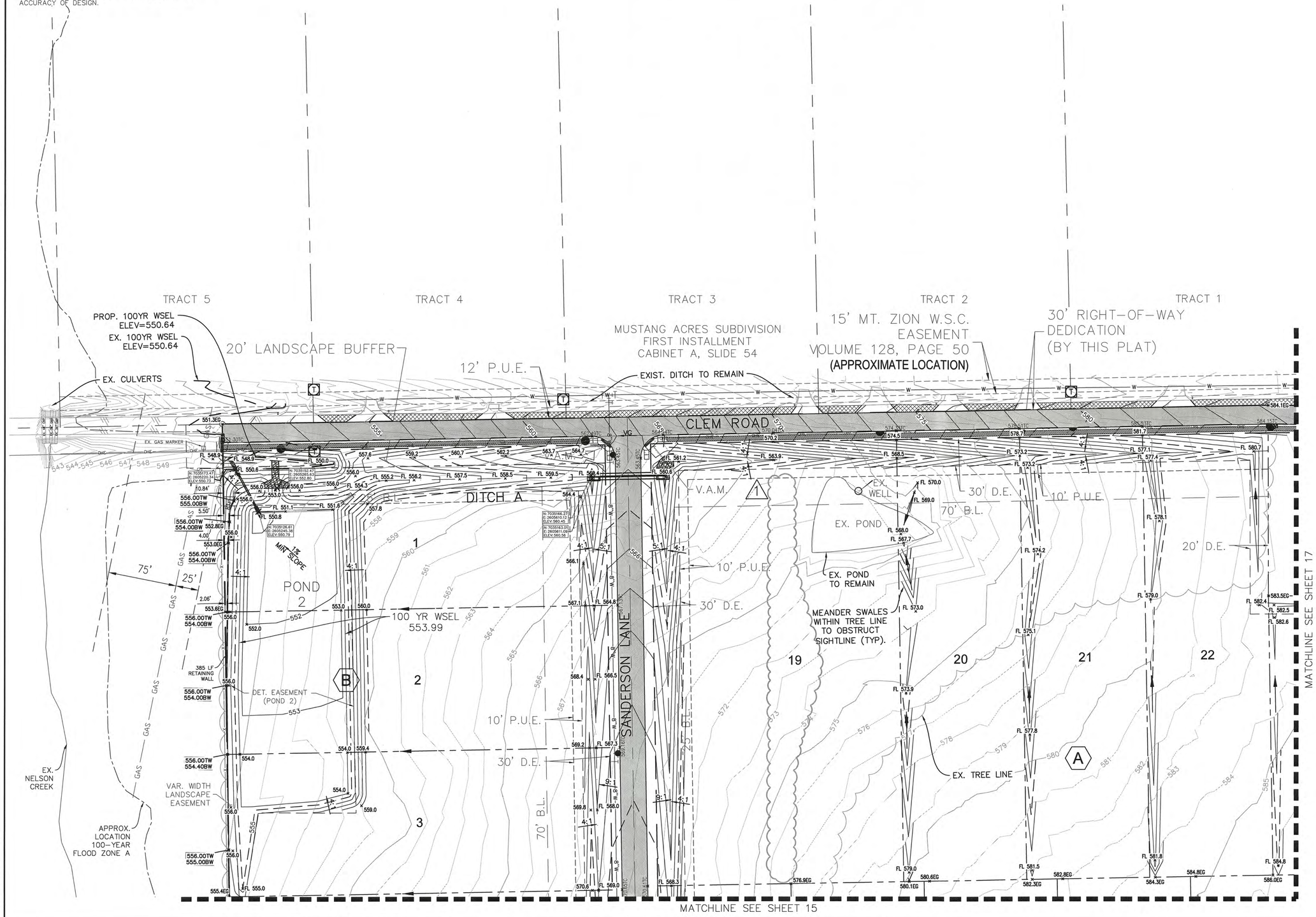
GRADING PLAN KEY MAP

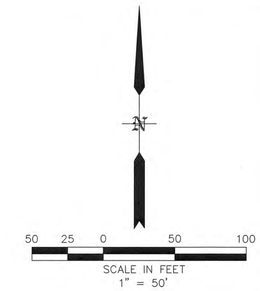
NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 13 OF 40

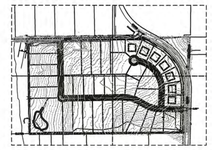
*ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.





LEGEND

- MATCHLINE
- 545 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 560 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED RETAINING WALL
- 558.1 PROPOSED ELEVATION
- 543.45TC PROPOSED TOP OF CURB



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RYAN C. KING — 1/27/2021 DATE

GRADING NOTES:

1. ALL WALLS SHALL BE ON ONE LOT INCLUDING FOOTINGS, TIE BACKS, OR STRUCTURAL FILL.
2. ALL COMPACTION TO BE 95% STANDARD DENSITY USING A SHEEP FOOT ROLLER.
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6. WALLS 3' AND OVER MUST BE DESIGNED BY A LICENSED ENGINEER AND APPROVED BEFORE CONSTRUCTION.
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GRADING CONTRACTOR TO ENSURE THAT DRAINAGE IS MAINTAINED ACROSS ENTIRE SITE. NO PONDING SHALL OCCUR.

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Elev.: 584.83'

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REVISIONS:	
1/25/2021 COMBINED LOTS A19 & A20	
DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 GR.DWG	

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STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

GRADING PLAN 1

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 14 OF 40

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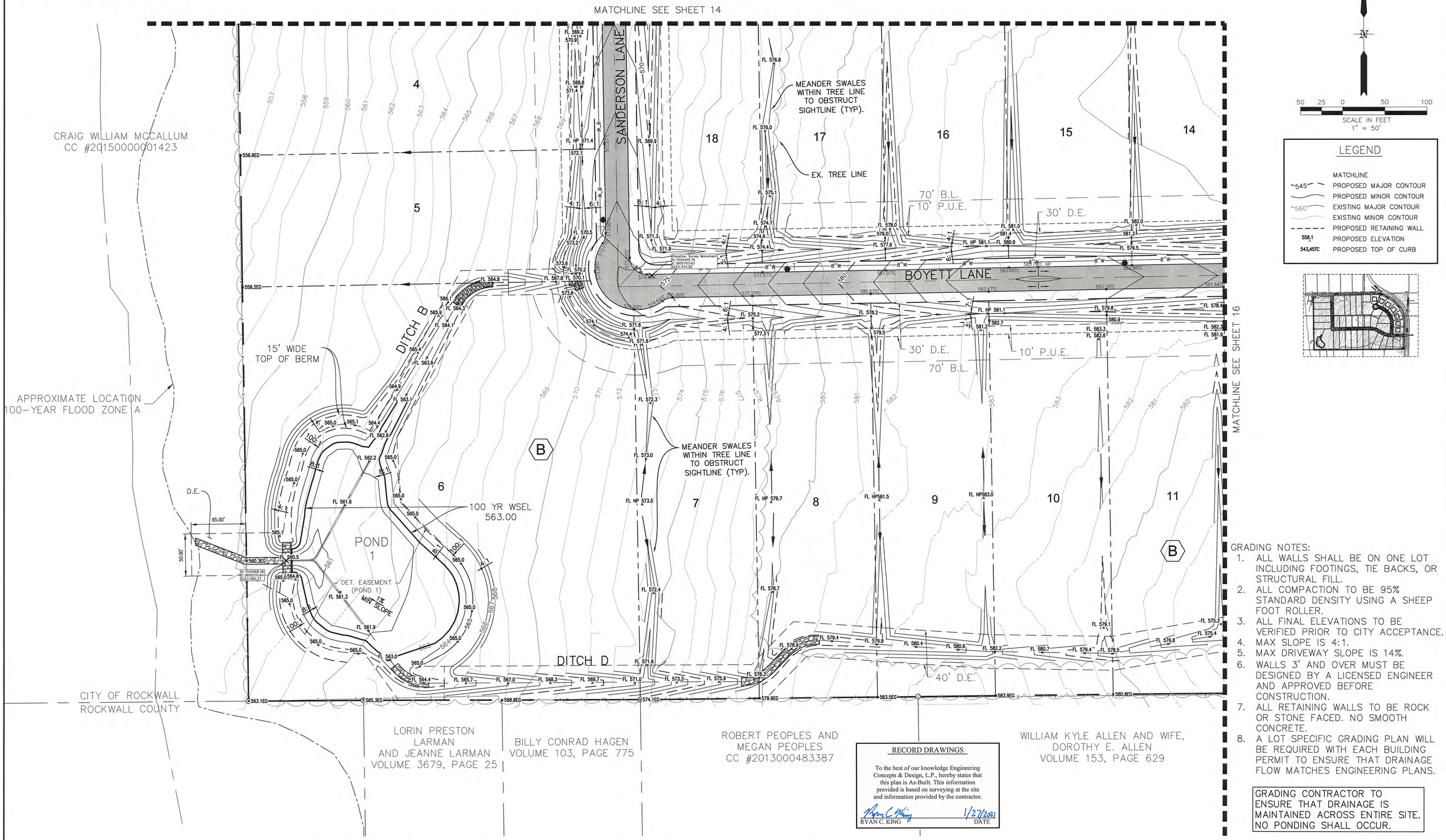

50 25 0 50 100
SCALE IN FEET
1" = 50'

LEGEND

- MATCHLINE
- 545 PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 560 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED RETAINING WALL
- 558.1 PROPOSED ELEVATION
- 543.45TC PROPOSED TOP OF CURB

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RYAN C. KING 1/27/2021 DATE

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STATE OF TEXAS · RYAN C. KING · 123635 · REGISTERED PROFESSIONAL ENGINEER · 1/25/2021

GRADING PLAN 2

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 15 OF 40

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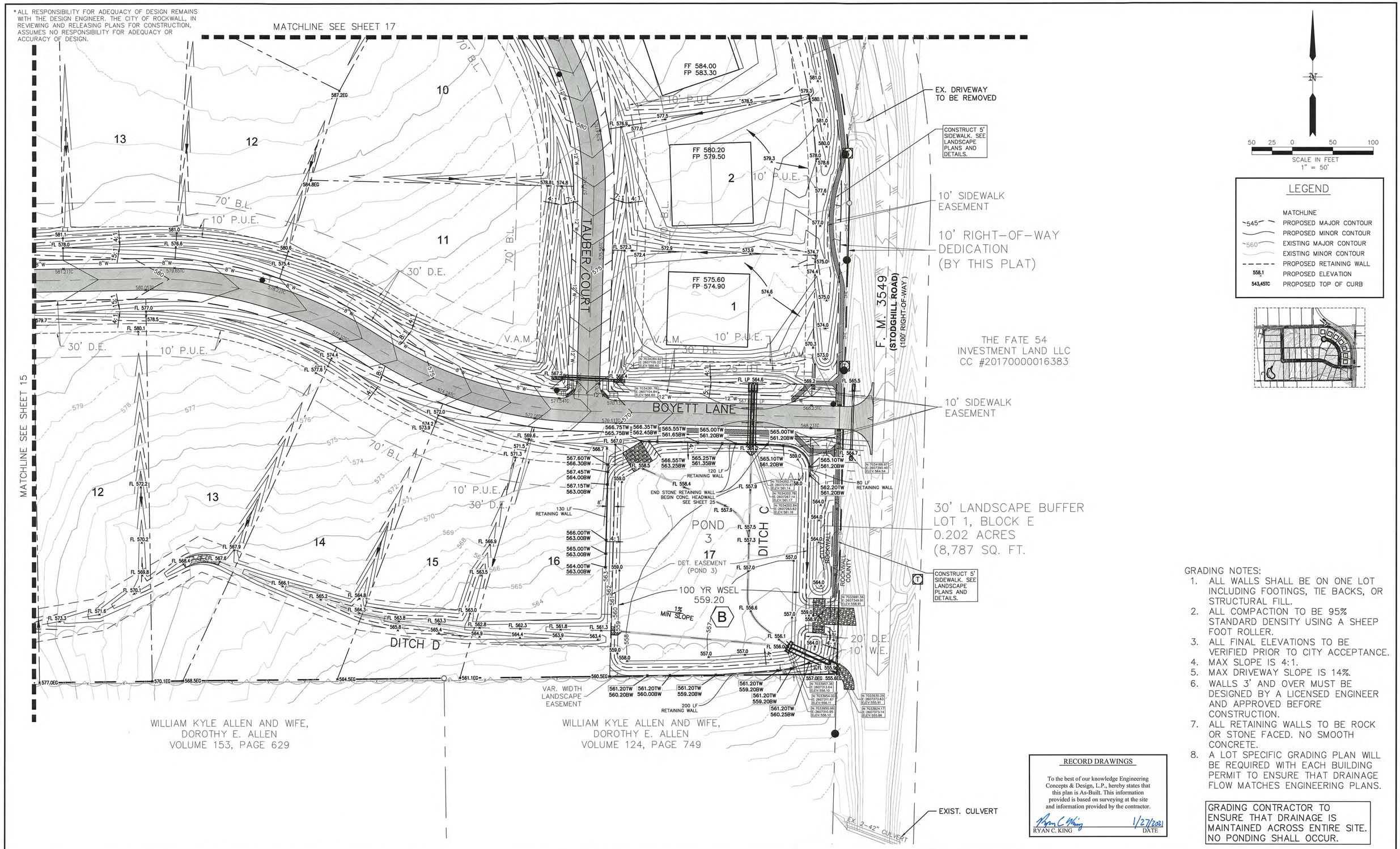

N

50 25 0 50 100

SCALE IN FEET
1" = 50'

LEGEND

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STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

GRADING PLAN 3

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 16 OF 40

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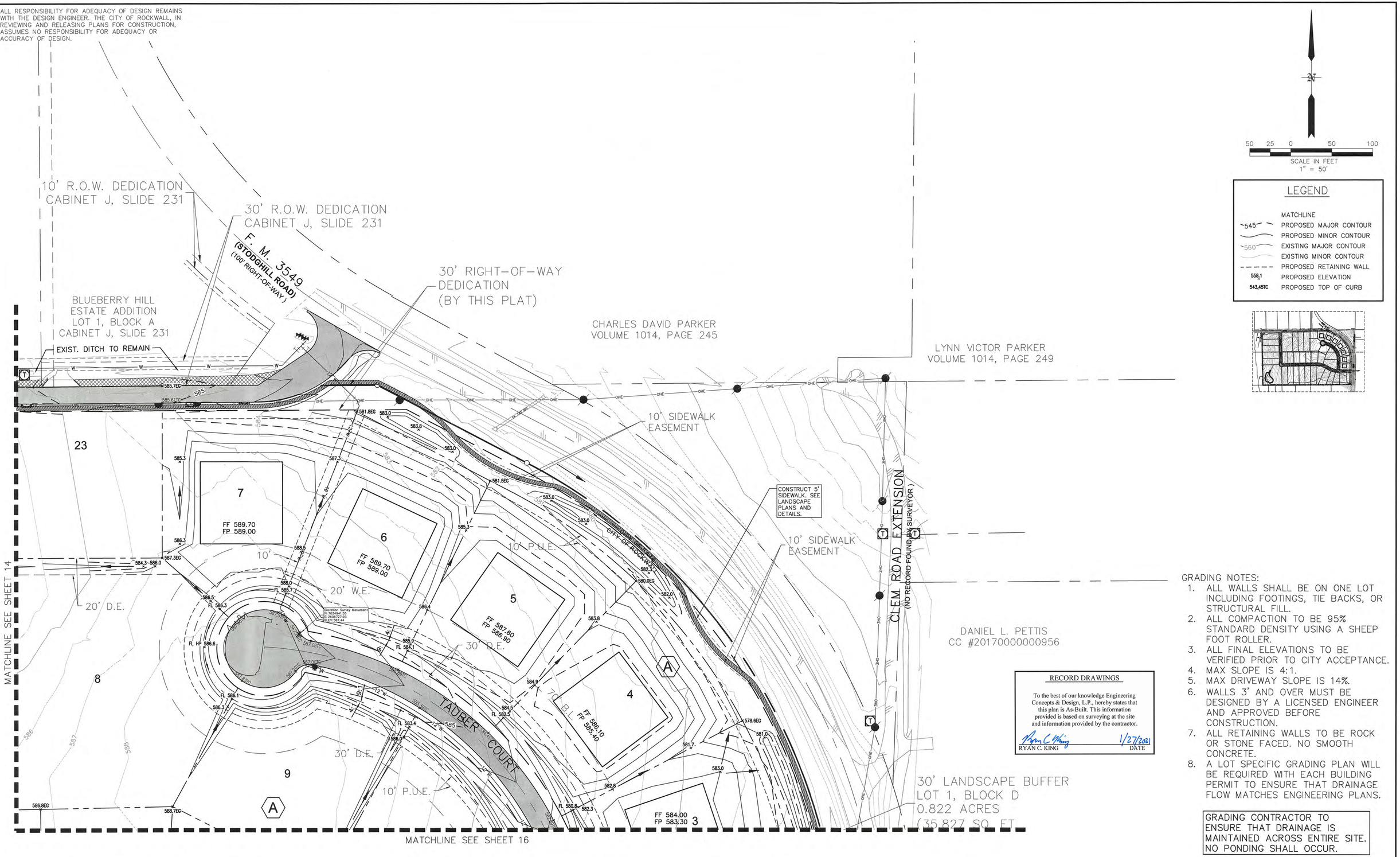

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REVISIONS:

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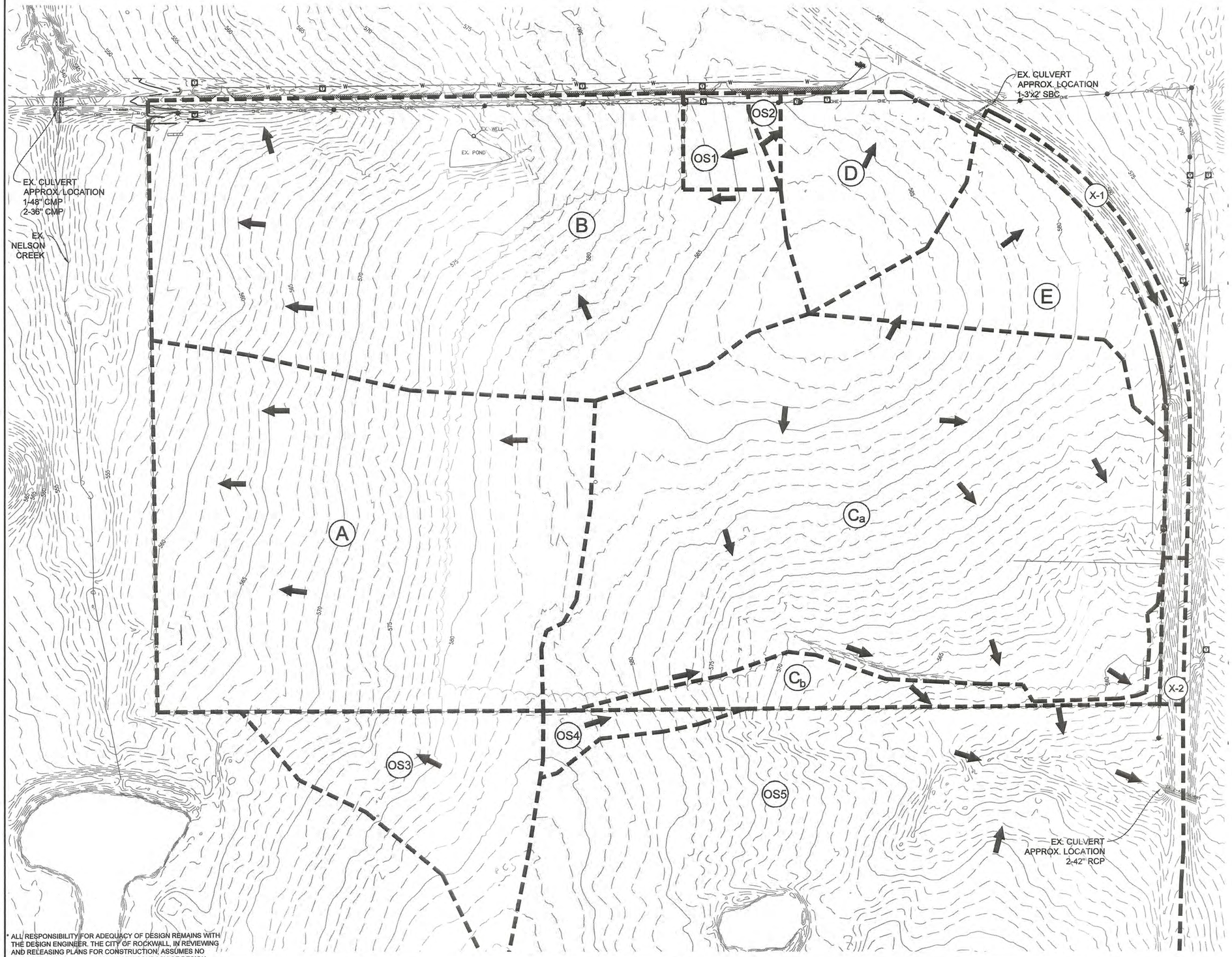
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

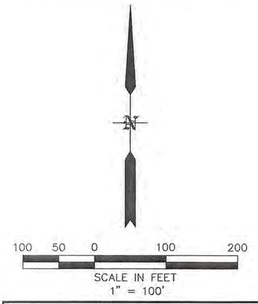
GRADING PLAN 4

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 17 OF 40





LEGEND

- DRAINAGE AREA BOUNDARY
- 560 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- (D) EXISTING DRAINAGE AREA

Existing Drainage Area Calculations

Drainage Area	Area (AC)	Tc (Min)	C	K	I_{100} (in/hr)	Q_{100} (cfs)	Description
A	14.95	20.00	0.35	1.00	8.30	43.43	TO EX. CLEM ROAD CULVERT
B	17.79	20.00	0.35	1.00	8.30	51.68	TO EX. CLEM ROAD CULVERT
C_a	20.85	20.00	0.35	1.00	8.30	60.57	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)
C_b	1.64	20.00	0.35	1.00	8.30	4.76	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)
D	3.32	20.00	0.35	1.00	8.30	9.64	TO EX. F.M. 3549 3'x2' SBC
E	3.95	20.00	0.35	1.00	8.30	11.47	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)
OS1	0.81	10.00	0.50	1.00	9.80	3.97	TO AREA B
OS2	0.20	10.00	0.50	1.00	9.80	0.98	TO AREA D
OS3	4.04	20.00	0.35	1.00	8.30	11.74	TO AREA A
OS4	0.58	20.00	0.35	1.00	8.30	1.68	TO AREA C_b
OS5	40.95	20.00	0.35	1.00	8.30	118.96	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)
X-1	1.28	10.00	0.90	1.00	9.80	11.29	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)
X-2	0.36	10.00	0.90	1.00	9.80	3.18	TO EX. F.M. 3549 2-42" RCP (TO SOUTH)

RECORD DRAWINGS

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RYAN C. KING — DATE 1/27/2021

RELEASED FOR CONSTRUCTION
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CITY — DATE

*REFER TO NORTHGATE STORMWATER DETENTION ANALYSIS PREPARED BY NATHAN D. MAIER CONSULTING ENGINEERS, INC. DATED APRIL 2020

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STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

DRAINAGE AREA EXISTING

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 18 OF 40

*REFER TO NORTHGATE STORMWATER DETENTION ANALYSIS PREPARED BY NATHAN D. MAIER CONSULTING ENGINEERS, INC. DATED MAY 2020

N

100 50 0 100 200

SCALE IN FEET
1" = 100'

LEGEND

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- 560 EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- (D) PROPOSED DRAINAGE AREA

Proposed Drainage Area Calculations

Drainage Area	Area (AC)	Tc (min)	C	K	I_{100} (in/hr)	Q_{100} (cfs)	Description
A-1	2.81	10.00	0.50	1.00	9.80	13.75	TO POND 1
A-2	2.41	10.00	0.50	1.00	9.80	11.81	TO POND 1
A-3	3.72	10.00	0.50	1.00	9.80	18.20	TO POND 1
A-4	3.88	10.00	0.50	1.00	9.80	19.00	BYPASS POND 1
B-1	5.05	10.00	0.50	1.00	9.80	24.74	TO POND 2
B-2	7.69	10.00	0.50	1.00	9.80	37.66	TO POND 2
B-3	1.06	10.00	0.50	1.00	9.80	5.19	BYPASS POND 2
B-4	4.98	10.00	0.50	1.00	9.80	24.40	TO POND 2
C-1	10.55	10.00	0.50	1.00	9.80	51.70	TO POND 3
C-2	9.53	10.00	0.50	1.00	9.80	46.70	TO POND 3
C-3	4.90	10.00	0.50	1.00	9.80	24.00	TO POND 3
C-4	1.64	10.00	0.50	1.00	9.80	8.04	BYPASS POND 3
D-1	1.96	10.00	0.50	1.00	9.80	9.60	TO EX F.M. 3549 3'x2' SBC
E-1	2.34	10.00	0.50	1.00	9.80	11.47	BYPASS POND 3
OS1	0.81	10.00	0.50	1.00	9.80	3.97	TO AREA B-2 (TO POND 2)
OS2	0.20	10.00	0.50	1.00	9.80	0.98	TO AREA D-1 (NOT DETAINED)
OS3	4.04	20.00	0.35	1.00	8.30	11.74	TO AREA A-1
OS4	0.58	20.00	0.35	1.00	8.30	1.68	TO AREA C-4 (NOT TO POND)
OS5	40.95	20.00	0.35	1.00	8.30	118.96	TO EX. F.M. 3549 2-42" RCP (NOT TO POND)
X-1	1.28	10.00	0.90	1.00	9.80	11.29	TO EX. F.M. 3549 2-42" RCP (NOT TO POND)
X-2	0.36	10.00	0.90	1.00	9.80	3.18	TO EX. F.M. 3549 2-42" RCP (NOT TO POND)

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

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Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

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972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
1 1/25/2021 COMBINED LOTS A19 & A20

DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DA.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

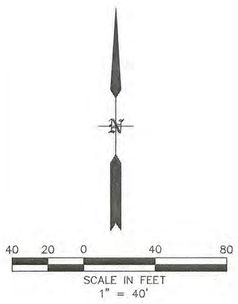
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

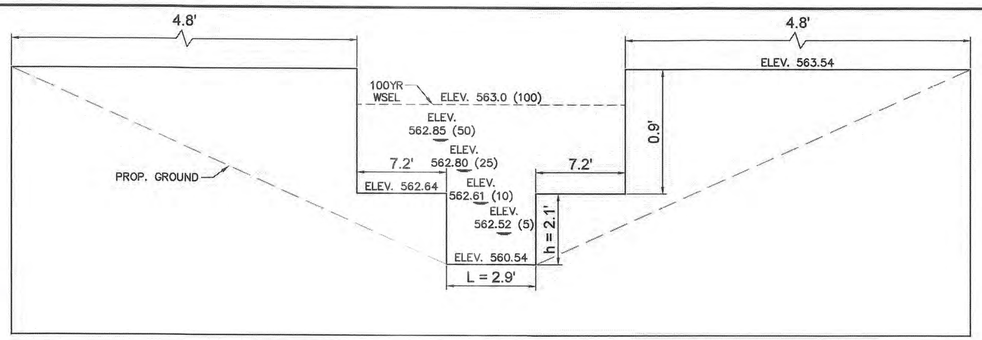
DRAINAGE AREA PROPOSED

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

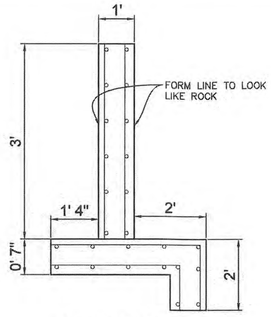
SHEET 19 OF 40





SECTION A–A

OUTFALL STRUCTURE
N.T.S.



SECTION B–B

NOTES:
1. 12" THICK CLASS F 4200 PSI CONCRETE FOR ENTIRE STRUCTURE. 7.0 SACK/CY MIN. (NO FLY ASH ALLOWED FOR STORM STRUCTURES.)
2. #4 BARS @ 12" O.C.E.W.

POND 1 DRAINAGE AREAS

DA	Pre-Developed Area (AC)	Developed Area (AC)	Bypass Area (AC)	Flow Through Area (AC)
A	14.95			
A-1		2.81		
A-2		2.41		
A-3		3.72		
A-4		3.88	3.88	
OS3				4.04
TOTAL	14.95	12.81	3.88	4.04

STAGE STORAGE - POND 1

	Elevation (FT)	Pond Surface (SF)	Volume (CF)	Cum. Volume (CF)
	560.56	0	0	0
	561.00	1287	283	283
	562.00	20102	10695	10978
5YR	562.52	26428	12098	23076
10YR	562.61	27523	14526	25503
25YR	562.80	29835	19975	30952
50YR	562.85	30443	21482	32459
100YR	563.00	32268	26185	37163
	564.00	40674	36471	73634

DETENTION CALCS - POND (100 YR)

Time (min)	C*K	Intensity, I (in/hr)	Runoff, Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	9.80	63.56	38134.7	21701.2	16433.6
15	0.50	9.00	58.37	52532.6	27126.5	25406.1
20	0.50	8.30	53.83	64595.6	32551.8	32043.8
30	0.50	6.90	44.75	80549.9	43402.4	37147.5
40	0.50	5.80	37.62	90278.2	54253.0	36025.2
50	0.50	5.00	32.43	97282.5	65103.6	32178.9
60	0.50	4.50	29.18	105065.1	75954.2	29110.9
70	0.50	4.00	25.94	108956.4	86804.8	22151.6
80	0.50	3.70	24.00	115182.5	97655.4	17527.1
90	0.50	3.50	22.70	122576.0	108506.0	14070.0
100	0.50	3.40	22.05	132304.2	119356.5	12947.7
110	0.50	3.20	20.75	136973.8	130207.1	6766.6
120	0.50	2.70	17.51	126078.1	141057.7	-14979.6
150	0.50	2.40	15.57	140086.8	173609.5	-33522.7

LEGEND

545	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
560	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED RETAINING WALL
558.1	PROPOSED ELEVATION
543.45TC	PROPOSED TOP OF CURB

NOTES:
1. ALL DETENTION SYSTEMS TO BE COMPLETED PER PLAN AND FUNCTIONING PRIOR TO ANY PAVING CONSTRUCTION. THE BOTTOM AND SIDES TO HAVE EITHER ANCHORED CURLEX OR SOD. MUST BE SEEDED WITH ANNUAL GRASS SEED.
2. NO CITY ACCEPTANCE UNTIL 75%–80% OF ALL DISTURBED AREA TO HAVE 1" MINIMUM STAND OF ANNUAL GRASS (NO WINTER RYE OR SIMILAR).

DETENTION CALCS - POND (50 YR)

Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	9.00	58.37	35021.7	19441.4	15580.4
15	0.50	8.10	52.53	47279.3	24301.7	22977.6
20	0.50	7.50	48.64	58369.5	29162.0	29207.5
30	0.50	6.10	39.56	71210.8	38882.7	32328.1
40	0.50	5.20	33.72	80939.0	48603.4	32335.7
50	0.50	4.50	29.18	87554.3	58324.1	29230.2
60	0.50	3.90	25.29	91056.4	68044.7	23011.7
70	0.50	3.70	24.00	100784.7	77765.4	23019.3
80	0.50	3.50	22.70	108956.4	87486.1	21470.3
90	0.50	3.30	21.40	115571.6	97206.8	18364.9
100	0.50	3.00	19.46	116739.0	106927.4	9811.6
110	0.50	2.90	18.81	124132.5	116648.1	7484.4
120	0.50	2.40	15.57	112069.4	126368.8	-14299.3
150	0.50	2.00	12.97	116739.0	155530.8	-38791.8

DETENTION CALCS - POND (25 YR)

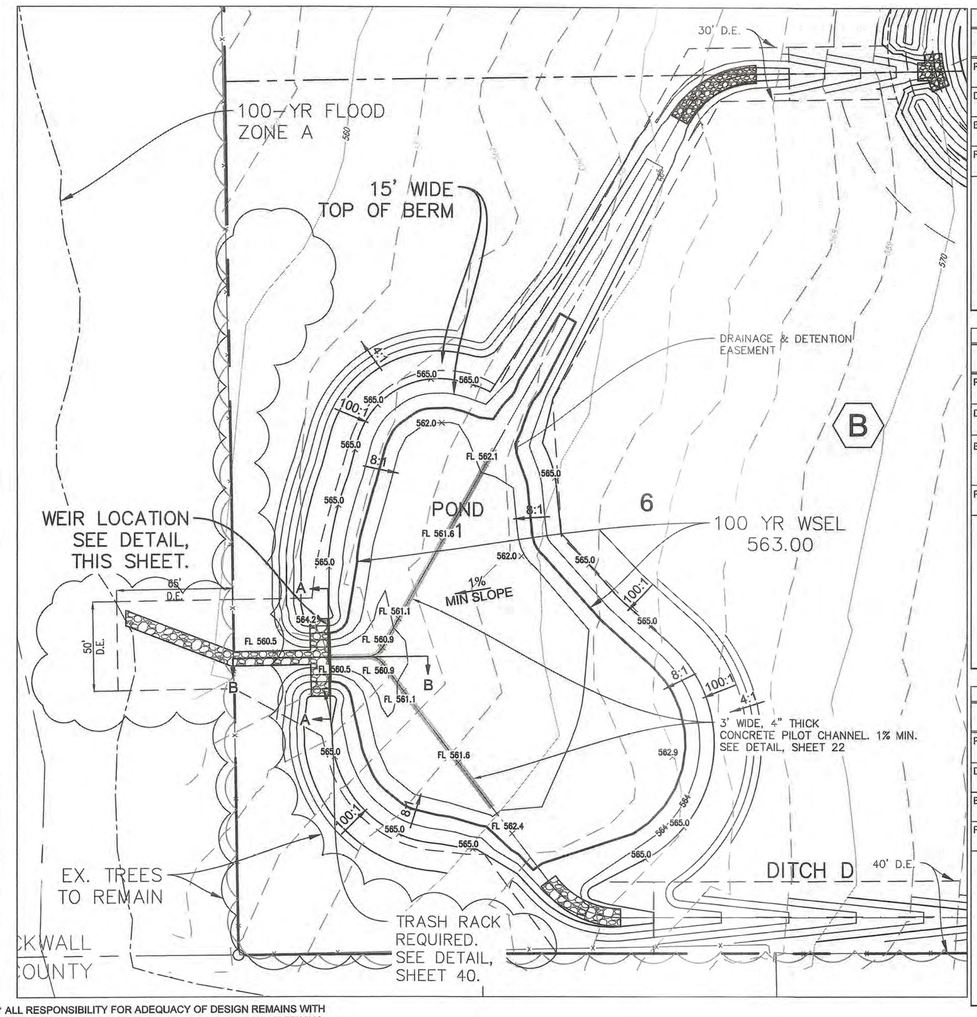
Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	8.30	53.83	32297.8	16666.4	15631.4
15	0.50	7.50	48.64	43777.1	20833.0	22944.1
20	0.50	6.60	42.80	51365.2	24999.6	26365.5
30	0.50	5.50	35.67	64206.5	33332.8	30873.6
40	0.50	4.60	29.83	71599.9	41666.0	29933.9
50	0.50	4.00	25.94	77826.0	49999.2	27826.8
60	0.50	3.50	22.70	81717.3	58332.4	23384.9
70	0.50	3.30	21.40	89889.0	66665.6	23223.4
80	0.50	3.10	20.11	96504.2	74998.8	21505.4
90	0.50	2.90	18.81	101562.9	83332.1	18230.9
100	0.50	2.70	17.51	105065.1	91665.3	13399.8
110	0.50	2.50	16.21	107010.8	99998.5	7012.3
120	0.50	2.15	13.94	100395.5	108331.7	-7936.1
150	0.50	1.80	11.67	105065.1	133331.3	-28266.2

DETENTION CALCS - POND (10 YR)

Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	7.10	46.05	27628.2	15270.6	12357.6
15	0.50	6.50	42.16	37940.2	19088.3	18851.9
20	0.50	5.90	38.26	45917.3	22905.9	23011.4
30	0.50	4.80	31.13	56034.7	30541.2	25493.5
40	0.50	4.00	25.94	62260.8	38176.5	24084.3
50	0.50	3.50	22.70	68097.8	45811.8	22286.0
60	0.50	3.00	19.46	70043.4	53447.1	16596.3
70	0.50	2.80	18.16	76269.5	61082.4	15187.1
80	0.50	2.60	16.86	80939.0	68717.7	12221.3
90	0.50	2.50	16.21	87554.3	76353.0	11201.3
100	0.50	2.40	15.57	93391.2	83988.3	9402.9
110	0.50	2.30	14.92	98449.9	91623.6	6826.3
120	0.50	1.80	11.67	84052.1	99258.9	-15206.8
150	0.50	1.50	9.73	87554.3	122164.8	-34610.6

DETENTION CALCS - POND (5 YR)

Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	6.10	39.56	23736.9	12445.8	11291.1
15	0.50	5.50	35.67	32103.2	15557.3	16546.0
20	0.50	4.90	31.78	38134.7	18668.7	19466.0
30	0.50	4.10	26.59	47863.0	24891.6	22971.4
40	0.50	3.40	22.05	52921.7	31114.5	21807.2
50	0.50	2.80	18.16	54478.2	37337.4	17140.8
60	0.50	2.60	16.86	60704.3	43560.3	17144.0
70	0.50	2.40	15.57	65373.8	49783.2	15590.6
80	0.50	2.30	14.92	71599.9	56006.1	15593.8
90	0.50	2.10	13.62	73545.6	62229.0	11316.6
100	0.50	1.90	12.32	73934.7	68451.9	5482.8
110	0.50	1.80	11.67	77047.7	74674.8	2372.9
120	0.50	1.60	10.38	74713.0	80897.7	-6184.7
150	0.50	1.35	8.76	78798.8	99566.4	-20767.6



POND 1 RELEASE CALCULATIONS (100 YR)

	On-Site Area A	Tc (min)	K-Value	C-Factor	Intensity I (in/hr)	Flow Q (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	14.95	20	1.00	0.35	8.30	43.43
DEVELOPED CONDITIONS (Onsite - Total)	12.81	10	1.00	0.50	9.80	62.76
BYPASS CONDITIONS (Onsite - Not to Pond)	3.88	10	1.00	0.50	9.80	19.00
FLOW THROUGH CONDITIONS (Offsite - To Pond)	4.04	20	1.00	0.35	8.30	11.74

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through
Qe = 55.17 cfs

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q
Qp = 36.17 cfs Max Release
36.16 cfs Actual Release
Site Release Flow Qs = Pond Release Qp+ Bypass Q
Qs = 55.17 cfs

POND 1 RELEASE CALCULATIONS (50 YR)

	On-Site Area A	Tc (min)	K-Value	C-Factor	Intensity I (in/hr)	Flow Q (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	14.95	20	1.00	0.35	7.50	39.24
DEVELOPED CONDITIONS (Onsite - Total)	12.81	10	1.00	0.50	9.00	57.64
BYPASS CONDITIONS (Onsite - Not to Pond)	3.88	10	1.00	0.50	9.00	17.45
FLOW THROUGH CONDITIONS (Offsite - To Pond)	4.04	20	1.00	0.35	7.50	10.61

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through
Qe = 49.85 cfs

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q
Qp = 32.40 cfs Max Release
29.23 Actual Release
Site Release Flow Qs = Pond Release Qp+ Bypass Q
Qs = 49.85 cfs

POND 1 RELEASE CALCULATIONS (25 YR)

	On-Site Area A	Tc (min)	K-Value	C-Factor	Intensity I (in/hr)	Flow Q (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	14.95	20	1.00	0.35	6.60	34.53
DEVELOPED CONDITIONS (Onsite - Total)	12.81	10	1.00	0.50	8.30	53.15
BYPASS CONDITIONS (Onsite - Not to Pond)	3.88	10	1.00	0.50	8.30	16.09
FLOW THROUGH CONDITIONS (Offsite - To Pond)	4.04	20	1.00	0.35	6.60	9.33

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through
Qe = 43.87 cfs

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q
Qp = 27.78 cfs Max Release
27.24 cfs Actual Release
Site Release Flow Qs = Pond Release Qp+ Bypass Q
Qs = 43.87 cfs

POND 1 RELEASE CALCULATIONS (10 YR)

	On-Site Area A	Tc (min)	K-Value	C-Factor	Intensity I (in/hr)	Flow Q (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	14.95	20	1.00	0.35	5.90	30.87
DEVELOPED CONDITIONS (Onsite - Total)	12.81	10	1.00	0.50	7.10	45.47
BYPASS CONDITIONS (Onsite - Not to Pond)	3.88	10	1.00	0.50	7.10	13.76
FLOW THROUGH CONDITIONS (Offsite - To Pond)	4.04	20	1.00	0.35	5.90	8.34

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through
Qe = 39.21 cfs

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q
Qp = 25.45 cfs Max Release
22.13 cfs Actual Release
Site Release Flow Qs = Pond Release Qp+ Bypass Q
Qs = 39.21 cfs

POND 1 RELEASE CALCULATIONS (5 YR)

	On-Site Area A (AC)	Tc (min)	K-Value	C-Factor	Intensity I (in/hr)	Flow Q (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	14.95	20	1.00	0.35	4.90	25.64
DEVELOPED CONDITIONS (Onsite - Total)	12.81	10	1.00	0.50	6.10	39.06
BYPASS CONDITIONS (Onsite - Not to Pond)	3.88	10	1.00	0.50	6.10	11.82
FLOW THROUGH CONDITIONS (Offsite - To Pond)	4.04	20	1.00	0.35	4.90	6.93

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through
Qe = 32.57 cfs

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q
Qp = 20.74 cfs Max Release
20.69 cfs Actual Release
Site Release Flow Qs = Pond Release Qp+ Bypass Q
Qs = 32.57 cfs

RECORD DRAWINGS

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RYAN C. KING 1/27/2021 DATE

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CITY DATE

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ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DET.DWG

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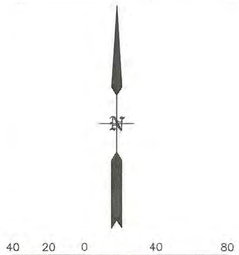
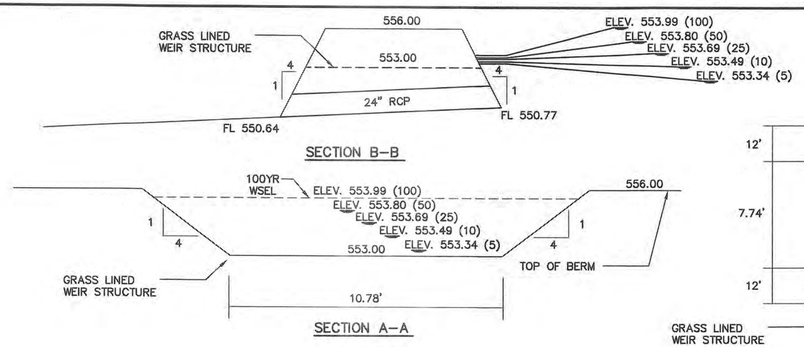
STATE OF TEXAS · RYAN C. KING · 123635 · REGISTERED PROFESSIONAL ENGINEER · 6/1/2020

DETENTION POND 1
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 20 OF 40





WEIR DETAIL
N.T.S.

ORIFICE DESIGN (1-24" Pipe) Qo=A*[C*(2*g*h)^0.5]						
STAGE	100	50	25	10	5	YEAR
C	0.66	0.66	0.66	0.66	0.66	ORIFICE COEFFICIENT
g	32.2	32.2	32.2	32.2	32.2	GRAVITATIONAL CONSTANT
h	2.22	2.03	1.92	1.72	1.57	FT
A	3.14	3.14	3.14	3.14	3.14	SF (AREA OF ORIFICE)
Qo	24.79	23.71	23.06	21.82	20.85	CFS

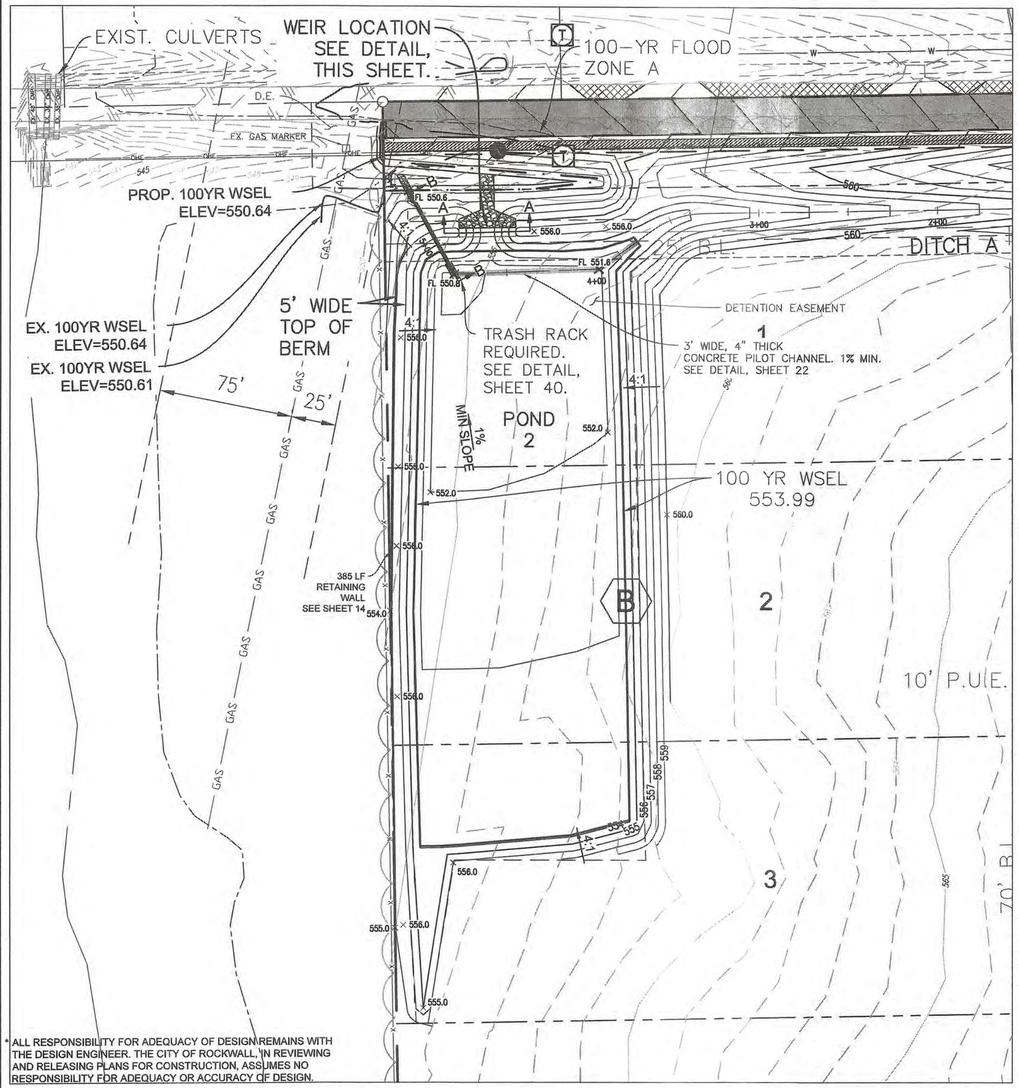
TRAPEZOIDAL WEIR CALCULATION Qw=3.367*L*H^(3/2)						
STAGE	100	50	25	10	5	YEAR
H	0.99	0.80	0.69	0.49	0.34	FT
L	7.74	7.74	7.74	7.74	7.74	FT
V	2.22	2.13	2.06	1.88	1.67	FPS
Qw	25.67	18.65	14.94	8.94	5.17	CFS

ACTUAL VS. ALLOWABLE RELEASE FLOW						
STAGE	100	50	25	10	5	YEAR
ACTUAL	50.46	42.35	37.99	30.76	26.02	FT
ALLOWABLE	50.46	45.58	40.06	35.85	29.75	FT

LEGEND

- 545 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 560 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED RETAINING WALL
- 558.1 PROPOSED ELEVATION
- 543.65TC PROPOSED TOP OF CURB

NOTES:
1. ALL DETENTION SYSTEMS TO BE COMPLETED PER PLAN AND FUNCTIONING PRIOR TO ANY PAVING CONSTRUCTION. THE BOTTOM AND SIDES TO HAVE EITHER ANCHORED CURLEX OR SOD. MUST BE SEEDED WITH ANNUAL GRASS SEED.
2. NO CITY ACCEPTANCE UNTIL 75%–80% OF ALL DISTURBED AREA TO HAVE 1" MINIMUM STAND OF ANNUAL GRASS (NO WINTER RYE OR SIMILAR).



POND 2 RELEASE CALCULATIONS														
	On-Site Area A (AC)	Tc (min)	K-Value	C-Factor	Intensity I_{100} (in/hr)	I_{50} (in/hr)	I_{25} (in/hr)	I_{10} (in/hr)	I_5 (in/hr)	Flow Q_{100} (cfs)	Q_{50} (cfs)	Q_{25} (cfs)	Q_{10} (cfs)	Q_5 (cfs)
PRE-DEVELOPED CONDITIONS (Onsite - Total)	17.79	20	1.00	0.35	8.30	7.50	6.60	5.90	4.90	51.68	46.70	41.09	36.74	30.51
DEVELOPED CONDITIONS (Onsite - Total)	18.77	10	1.00	0.50	9.80	9.00	8.30	7.10	6.10	91.99	84.48	77.91	66.65	57.26
BYPASS CONDITIONS (Onsite - Not to Pond)	1.06	10	1.00	0.50	9.80	9.00	8.30	7.10	6.10	5.19	4.77	4.39	3.76	3.23
FLOW THROUGH CONDITIONS (Offsite - To Pond)	0.81	10	1.00	0.50	9.80	9.00	8.30	7.10	6.10	3.97	3.65	3.36	2.88	2.47

Existing Site Release Flow Qe = Pre-Developed Q + Flow Through

Qe_{100}	Qe_{50}	Qe_{25}	Qe_{10}	Qe_5	
55.65	50.34	44.46	39.61	32.98	(cfs)

Pond Release Flow Qp = Pre-Developed Q + Flow Through - Bypass Q

Qp_{100}	Qp_{50}	Qp_{25}	Qp_{10}	Qp_5	
50.46	45.58	40.06	35.85	29.75	(cfs)

Site Release Flow Qs = Pond Release Qp+ Bypass Q

Qs_{100}	Qs_{50}	Qs_{25}	Qs_{10}	Qs_5	
55.65	50.34	44.46	39.61	32.98	(cfs)

POND 2 DRAINAGE AREAS				
DA	Pre-Developed Area (AC)	Developed Area (AC)	Bypass Area (AC)	Flow Through Area (AC)
B	17.79			
B-1		5.05		
B-2		7.69		
B-3		1.06	1.06	
B-4		4.98		
OS-1				0.81
TOTAL	17.79	18.77	1.06	0.81

STAGE STORAGE - POND 2			
Elevation (FT)	Pond Surface (SF)	Volume (CF)	Cum. Volume (CF)
550.77	0	0	0
551.00	459	53	53
552.00	11346	5903	5955
553.00	24133	17740	23695
5YR 553.34	28992	9031	32726
10YR 553.49	31135	13541	37235
25YR 553.69	33993	20054	43748
50YR 553.80	35565	23879	47574
100YR 553.99	38280	30894	54589
554.00	38423	31278	54973
555.00	49688	44056	99028
556.00	54453	52071	151099

DETENTION CALCS - POND 2 (100 YR)						
Time (min)	C*K	Intensity, I (in/hr)	Runoff, Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	9.80	90.77	54463.5	30275.9	24187.6
15	0.50	9.00	83.36	75026.3	37844.9	37181.4
20	0.50	8.30	76.88	92254.5	45413.9	46840.6
30	0.50	6.90	63.91	115040.3	60551.8	54488.4
40	0.50	5.80	53.72	128934.0	75689.8	53244.2
50	0.50	5.00	46.31	138937.5	90827.7	48109.8
60	0.50	4.50	41.68	150052.5	105965.7	44086.8
70	0.50	4.00	37.05	155610.0	121103.6	34506.4
80	0.50	3.70	34.27	164502.0	136241.6	28260.4
90	0.50	3.50	32.42	175061.3	151379.6	23681.7
100	0.50	3.40	31.49	188955.0	166517.5	22437.5
110	0.50	3.20	29.64	195624.0	181655.5	13968.5
120	0.50	2.70	25.01	180063.0	196793.4	-16730.4
150	0.50	2.40	22.23	200070.0	242207.3	-42137.3

DETENTION CALCS - POND 2 (50 YR)						
Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	9.00	83.36	50017.5	27347.0	22670.6
15	0.50	8.10	75.03	67523.6	34183.7	33339.9
20	0.50	7.50	69.47	83362.5	41020.4	42342.1
30	0.50	6.10	56.50	101702.3	54693.9	47008.4
40	0.50	5.20	48.17	115596.0	68367.4	47228.6
50	0.50	4.50	41.68	125043.8	82040.9	43002.9
60	0.50	3.90	36.12	130045.5	95714.3	34331.2
70	0.50	3.70	34.27	143939.3	109387.8	34551.5
80	0.50	3.50	32.42	155610.0	123061.3	32548.7
90	0.50	3.30	30.57	165057.8	136734.8	28323.0
100	0.50	3.00	27.79	166725.0	150408.2	16316.8
110	0.50	2.90	26.86	177284.3	164081.7	13202.6
120	0.50	2.40	22.23	160056.0	177755.2	-17699.2
150	0.50	2.00	18.53	166725.0	218775.6	-52050.6

DETENTION CALCS - POND 2 (25 YR)						
Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	8.30	76.88	46127.3	24036.9	22090.3
15	0.50	7.50	69.47	62521.9	30046.2	32475.7
20	0.50	6.60	61.13	73359.0	36055.4	37303.6
30	0.50	5.50	50.94	91698.8	48073.9	43624.9
40	0.50	4.60	42.61	102258.0	60092.3	42165.7
50	0.50	4.00	37.05	111150.0	72110.8	39039.2
60	0.50	3.50	32.42	116707.5	84129.3	32578.2
70	0.50	3.30	30.57	128378.3	96147.7	32230.5
80	0.50	3.10	28.71	137826.0	108166.2	29659.8
90	0.50	2.90	26.86	145050.8	120184.7	24866.1
100	0.50	2.70	25.01	150052.5	132203.1	17849.4
110	0.50	2.50	23.16	152831.3	144221.6	8609.7
120	0.50	2.15	19.91	143383.5	156240.0	-12856.5
150	0.50	1.80	16.67	150052.5	192295.4	-42242.9

DETENTION CALCS - POND 2 (10 YR)						
Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	7.10	65.76	39458.3	21511.4	17946.8
15	0.50	6.50	60.21	54185.6	26889.3	27296.3
20	0.50	5.90	54.65	65578.5	32267.2	33311.3
30	0.50	4.80	44.46	80028.0	43022.9	37005.1
40	0.50	4.00	37.05	88920.0	53778.6	35141.4
50	0.50	3.50	32.42	97256.3	64534.3	32721.9
60	0.50	3.00	27.79	100035.0	75290.0	24745.0
70	0.50	2.80	25.94	108927.0	86045.8	22881.2
80	0.50	2.60	24.08	115596.0	96801.5	18794.5
90	0.50	2.50	23.16	125043.8	107557.2	17486.6
100	0.50	2.40	22.23	133380.0	118312.9	15067.1
110	0.50	2.30	21.30	140604.8	129068.6	11536.1
120	0.50	1.80	16.67	120042.0	139824.4	-19782.4
150	0.50	1.50	13.89	125043.8	172091.5	-47047.8

DETENTION CALCS - POND 2 (5 YR)						
Time (min)	C*K	Intensity, I (in/hr)	Runoff(1), Q (cfs)	Volume In (CF)	Volume Out (CF)	Storage Req. (CF)
10	0.50	6.10	56.50	33900.8	17850.2	16050.5
15	0.50	5.50	50.94	45849.4	22312.8	23536.6
20	0.50	4.90	45.39	54463.5	26775.4	27688.1
30	0.50	4.10	37.98	68357.3	35700.5	32656.8
40	0.50	3.40	31.49	75582.0	44625.6	30956.4
50	0.50	2.80	25.94	77805.0	53550.7	24254.3
60	0.50	2.60	24.08	86697.0	62475.8	24221.2
70	0.50	2.40	22.23	93366.0	71401.0	21965.0
80	0.50	2.30	21.30	102258.0	80326.1	21931.9
90	0.50	2.10	19.45	105036.8	89251.2	15785.6
100	0.50	1.90	17.60	105592.5	98176.3	7416.2
110	0.50	1.80	16.67	110038.5	107101.4	2937.1
120	0.50	1.60	14.82	106704.0	116026.6	-9322.6
150	0.50	1.35	12.50	112539.4	142801.9	-30262.5

FLOOD PLAIN CUT/FILL

Existing 100YR WSEL Cut/Fill			
Elevation (FT)	Contour Surface (SF)	Volume (CF)	Cum. Volume (CF)
549.00	162	0	0
550.00	655	409	409
550.64	1180	587	996

Proposed 100YR WSEL Cut/Fill			
Elevation (FT)	Contour Surface (SF)	Volume (CF)	Cum. Volume (CF)
549.00	171	0	0
550.00	665	418	418
550.64	1181	591	1009

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING 1/27/2021
RYAN C. KING DATE

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY DATE

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CAUTION! EXISTING UTILITIES
CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

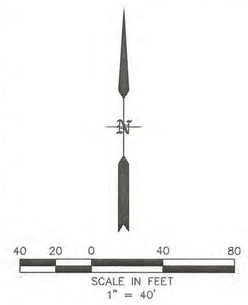
DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DET.DWG

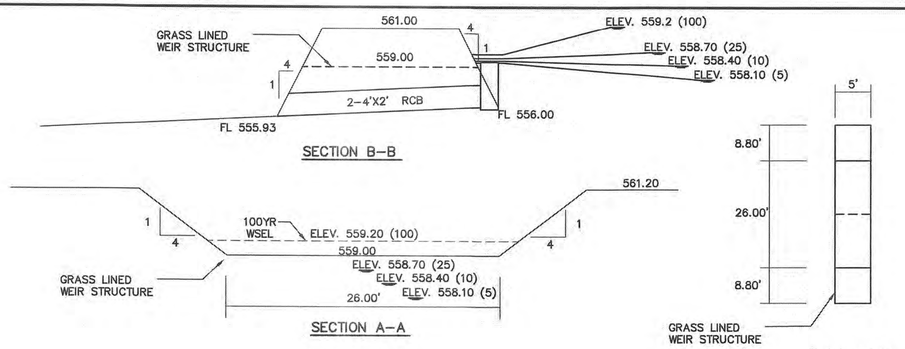
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

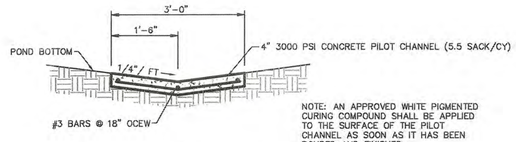
DETENTION POND 2
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 21 OF 40





WEIR DETAIL
N.T.S.



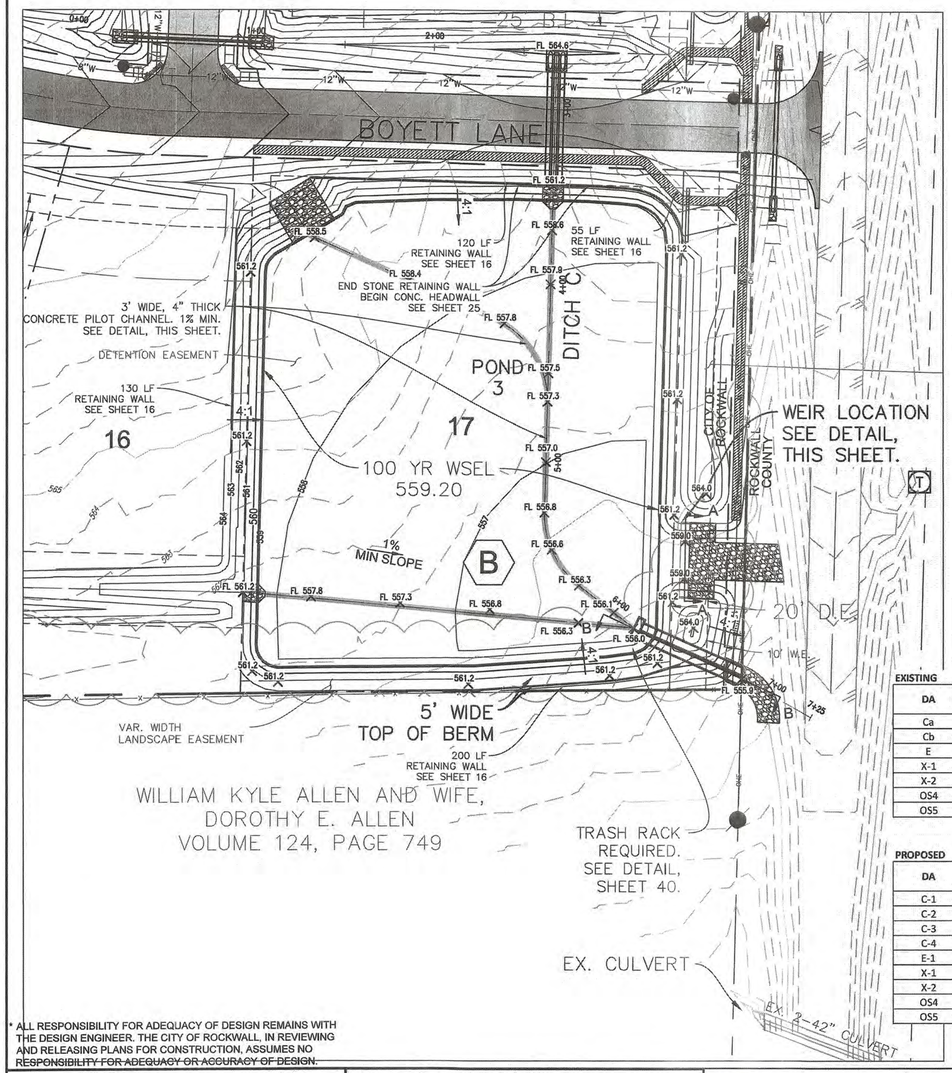
NOTE: AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO THE SURFACE OF THE PILOT CHANNEL AS SOON AS IT HAS BEEN POURED AND FINISHED.

PILOT CHANNEL DETAIL
NTS

LEGEND

545	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
560	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED RETAINING WALL
558.1	PROPOSED ELEVATION
543.45TC	PROPOSED TOP OF CURB

NOTES:
1. ALL DETENTION SYSTEMS TO BE COMPLETED PER PLAN AND FUNCTIONING PRIOR TO ANY PAVING CONSTRUCTION. THE BOTTOM AND SIDES TO HAVE EITHER ANCHORED CURLEX OR SOD. MUST BE SEEDED WITH ANNUAL GRASS SEED.
2. NO CITY ACCEPTANCE UNTIL 75%-80% OF ALL DISTURBED AREAA TO HAVE 1" MINIMUM STAND OF ANNUAL GRASS (NO WINTER RYE OR SIMILAR.



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Storm Event	Peak Discharges (cfs)*				
	Pre (1)	Post_No Pond (2)	Post_w/pond (3)	(2) - (1)	(3) - (1)
5-Year	249.1	280.1	246.5	31	-2.6
10-Year	305.4	341.5	294.1	36.1	-11.3
25-Year	362	403	341.8	41	-20.2
100-Year	468.5	518.5	441	50	-27.5

*at "outlet"

Storm Event	Peak Storage	Peak Elevation
	(ac-ft)	(ft)
5-Year	0.80	558.1
10-Year	1.10	558.4
25-Year	1.40	558.7
100-Year	2.00	559.2

WQv Orifice Flow

$$Q = Ca\sqrt{2gh}$$

FL= 556.00
Corrifice = 0.60

Weir Flow

$$Q = CLh^{3/2}$$

Cweir = 2.7

Water Surface Elevation	WQv Orifice						Weir - Outfall structure				Weir - Spillway				Cum. volume (ac-ft)	Total Discharge (cfs)
	Centroid	depth (ft.)	width (ft.)	Area (sf)	Head (feet)	Discharge (cfs)	Crest	Length (feet)	Head (feet)	Discharge (cfs)	Crest	Length (feet)	Head (feet)	Discharge (cfs)		
556.00	556.50	1.00	12.00	12.0000	0.00	0.00									0.00	0.00
556.50	556.50	1.00	12.00	12.0000	0.00	0.00									0.06	0.00
557.00	556.50	1.00	12.00	12.0000	0.50	40.86									0.11	40.86
557.50	556.50	1.00	12.00	12.0000	1.00	57.78									0.39	57.78
558.00	556.50	1.00	12.00	12.0000	1.50	70.77									0.66	70.77
558.50	556.50	1.00	12.00	12.0000	2.00	81.71	558.20	12.00	0.3000	5.32					1.20	87.04
559.00	556.50	1.00	12.00	12.0000	2.50	91.36	558.20	12.00	0.8000	23.18	559.00	26.00	0.00	0.00	1.74	114.54
559.20	556.50	1.00	12.00	12.0000	2.70	94.94	558.20	12.00	1.0000	32.40	559.00	26.00	0.20	6.28	2.00	133.62
559.50	556.50	1.00	12.00	12.0000	3.00	100.08	558.20	12.00	1.3000	48.02	559.00	26.00	0.50	24.82	2.41	172.92
560.00	556.50	1.00	12.00	12.0000	3.50	108.10	558.20	12.00	1.8000	78.24	559.00	26.00	1.00	70.20	3.08	256.54
560.50	556.50	1.00	12.00	12.0000	4.00	115.56	558.20	12.00	2.3000	113.02	559.00	26.00	1.50	128.97	3.80	357.54
561.00	556.50	1.00	12.00	12.0000	4.50	122.57	558.20	12.00	2.8000	151.80	559.00	26.00	2.00	198.56	4.51	472.93

EXISTING

DA	DA Area (ac)	DA Area (sq mi)	LU Area 1			LU Area 2			LU Area 3			Weighted CN	Weighted CN
			Description	Area (ac)	CN	Description	Area (ac)	CN	Description	Area (ac)	CN	AMC-II	AMC-III
Ca	20.85	0.032583	Open Space/Range/Pasture (OSg)	20.85	80							80.00	90.20
Cb	1.64	0.002563	Wooded (Wg)	1.64	77							77.00	88.51
E	3.95	0.006178	Open Space/Range/Pasture (OSg)	3.95	80							80.00	90.20
X-1	1.28	0.001992	Paved Roads, R.O.W. (Rp)	1.28	93							93.00	96.83
X-2	0.36	0.000567	Paved Roads, R.O.W. (Rp)	0.36	93							93.00	96.83
OS4	0.58	0.000911	Open Space/Range/Pasture (OSg)	0.58	80							80.00	90.20
OS5	40.95	0.063985	Open Space/Range/Pasture (OSg)	30.00	80	Residential (R20)	8.12	86	Paved Roads, R.O.W. (Rp)	2.83	93	82.09	91.33

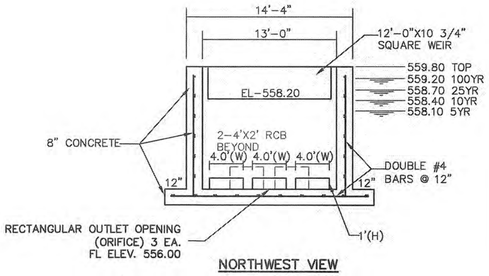
PROPOSED

DA	DA Area (ac)	DA Area (sq mi)	LU Area 1			LU Area 2			LU Area 3			Weighted CN	Weighted CN
			Description	Area (ac)	CN	Description	Area (ac)	CN	Description	Area (ac)	CN	AMC-II	AMC-III
C-1	10.55	0.016490	Residential (R20)	8.79	86	Inundated (W)	1.76	100				88.34	94.57
C-2	9.53	0.014885	Residential (R30)	9.53	87							87.00	93.90
C-3	4.90	0.007653	Residential (R20)	4.90	86							86.00	93.39
C-4	1.64	0.002563	Wooded (Wg)	1.64	77							77.00	88.51
E-1	2.34	0.003650	Residential (R20)	2.34	86							86.00	93.39
X-1	1.28	0.001992	Paved Roads, R.O.W. (Rp)	1.28	93							93.00	96.83
X-2	0.36	0.000567	Paved Roads, R.O.W. (Rp)	0.36	93							93.00	96.83
OS4	0.58	0.000911	Open Space/Range/Pasture (OSg)	0.58	80							80.00	90.20
OS5	40.95	0.063985	Open Space/Range/Pasture (OSg)	30.00	80	Residential (R20)	8.12	86	Paved Roads, R.O.W. (Rp)	2.83	93	82.09	91.33

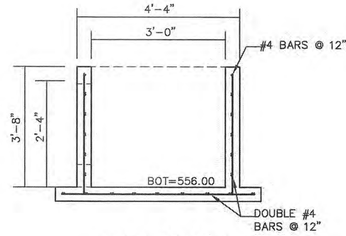
RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — DATE 1/27/2021



NORTHWEST VIEW



SOUTHEAST VIEW

OUTFALL STRUCTURE

NOTES:
1. 4200 PSI CONCRETE FOR ENTIRE STRUCTURE. 7.0 SACK/CY MIN.
2. DOUBLE #4 BARS @ 12" O.C.E.W. FOR WALLS AND BASE WITH MINIMUM 3" COVER.
3. SINGLE #4 BARS @ 12" O.C.E.W. FOR TOP.
4. 30" MH LID ON TOP, CENTERED IN STRUCTURE.
5. TRASH RACK REQUIRED. SEE DETAIL, SHEET 39.

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CITY _____ DATE _____

*REFER TO NORTHGATE STORMWATER DETENTION ANALYSIS PREPARED BY NATHAN D. MAIER CONSULTING ENGINEERS, INC. DATED MAY 2020

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Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

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ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DET.DWG

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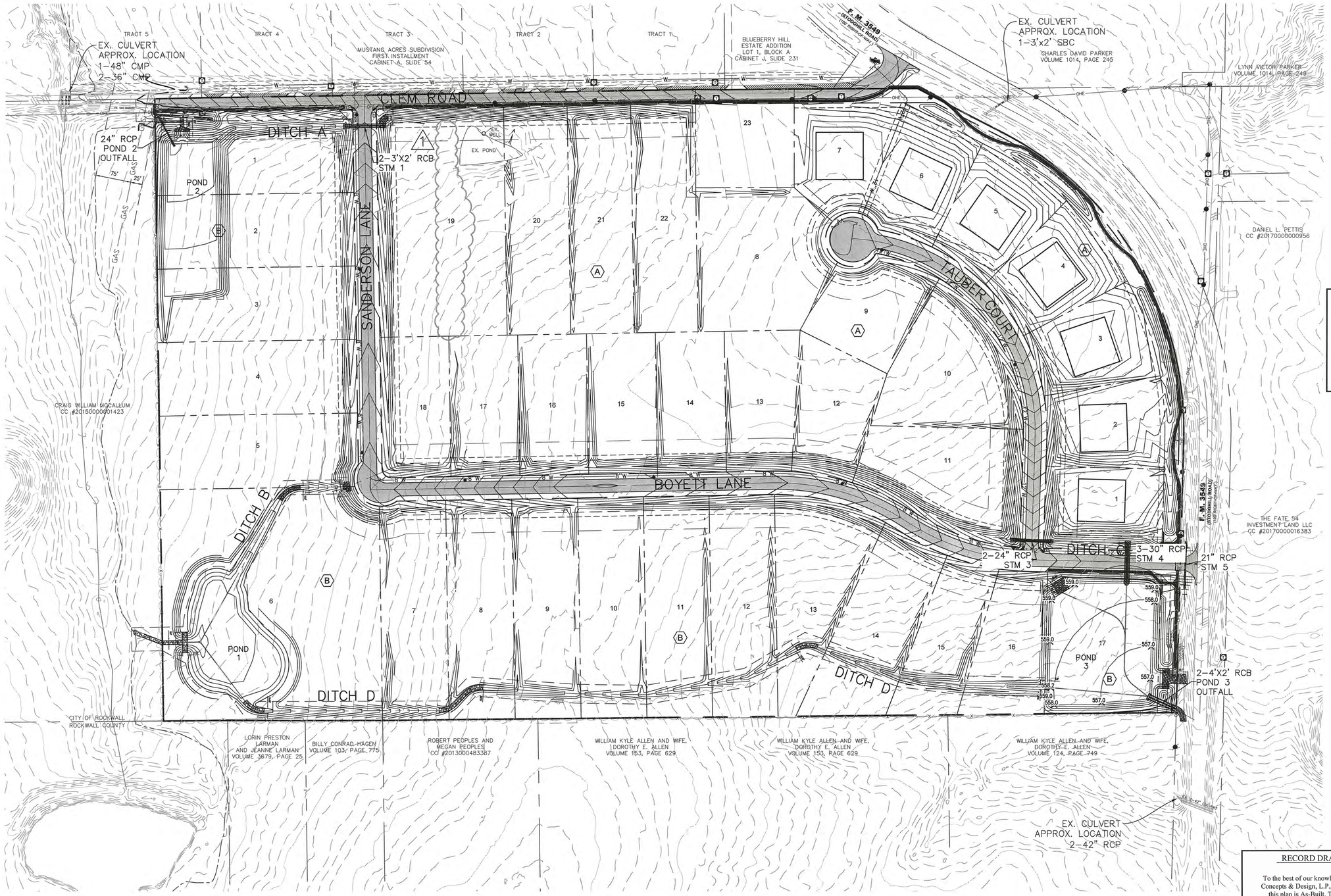
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

DETENTION POND 3

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 22 OF 40



LEGEND

- 545 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 560 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- RETAINING WALL

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RECORD DRAWINGS

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REVISIONS:	
1 1/25/2021 COMBINED LOTS A19 & A20	
DRAWN: MJH	DATE:
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PROJECT NO.: 08838	
DWG FILE NAME: 08838 ST.DWG	

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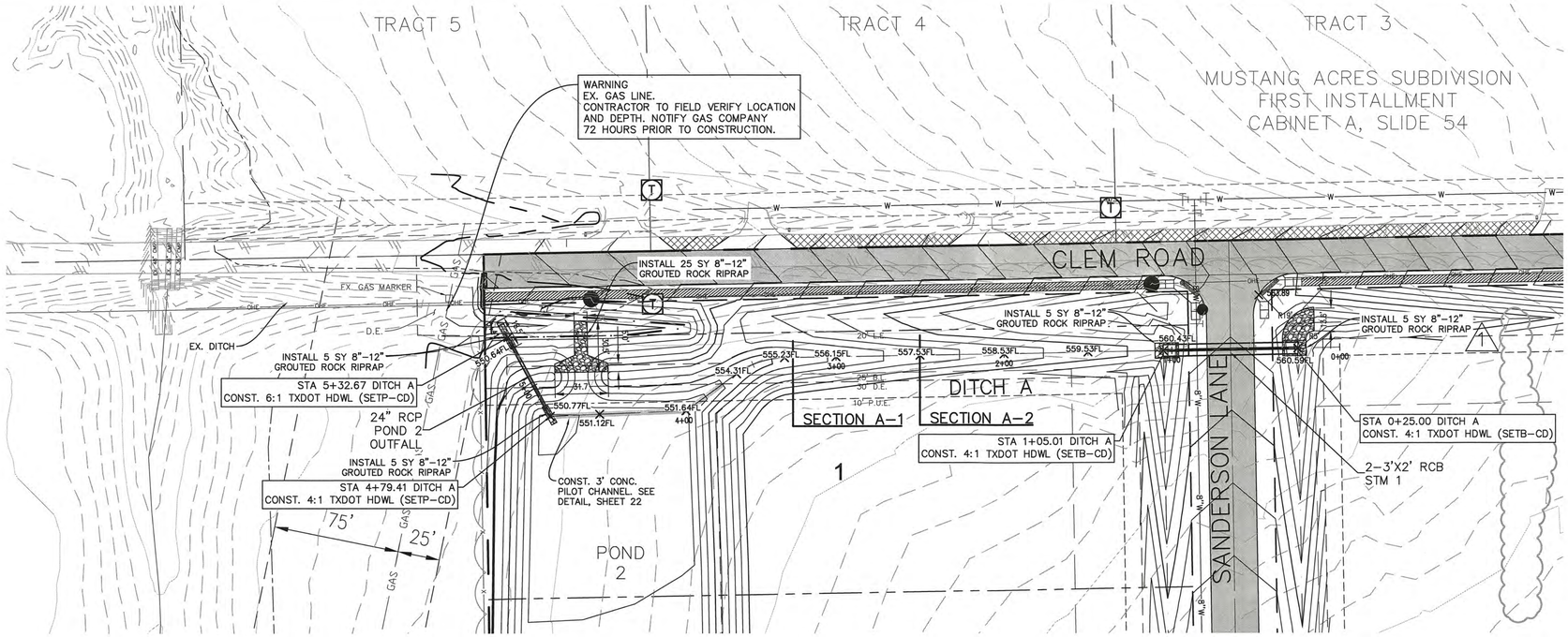
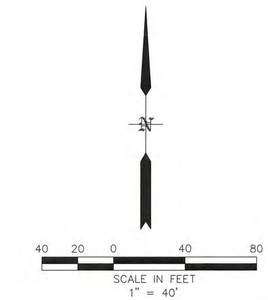
OVERALL STORM PLAN

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 23 OF 40





LEGEND

- MATCHLINE
- W — PROPOSED WATER LINE
- W — EXISTING WATER LINE
- PROPOSED STORM LINE
- EXISTING STORM LINE
- R.O.W. CENTER LINE
- R.O.W. LINE LINE
- EXISTING UTILITY POLE
- OHE — EXISTING OVERHEAD UTILITY

SEE RIPRAP DETAILS, SHEET 38.

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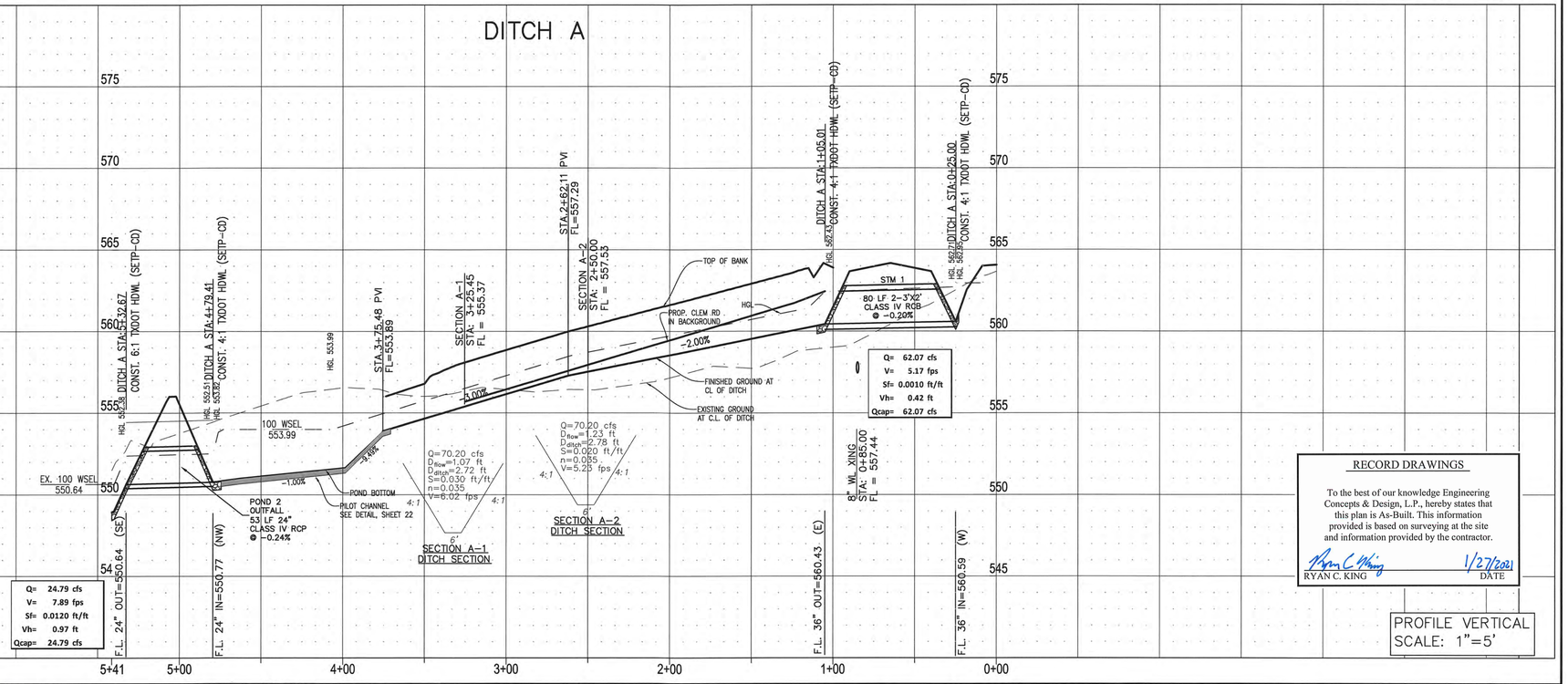

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RYAN C. KING 1/27/2021 DATE

PROFILE VERTICAL SCALE: 1"=5'

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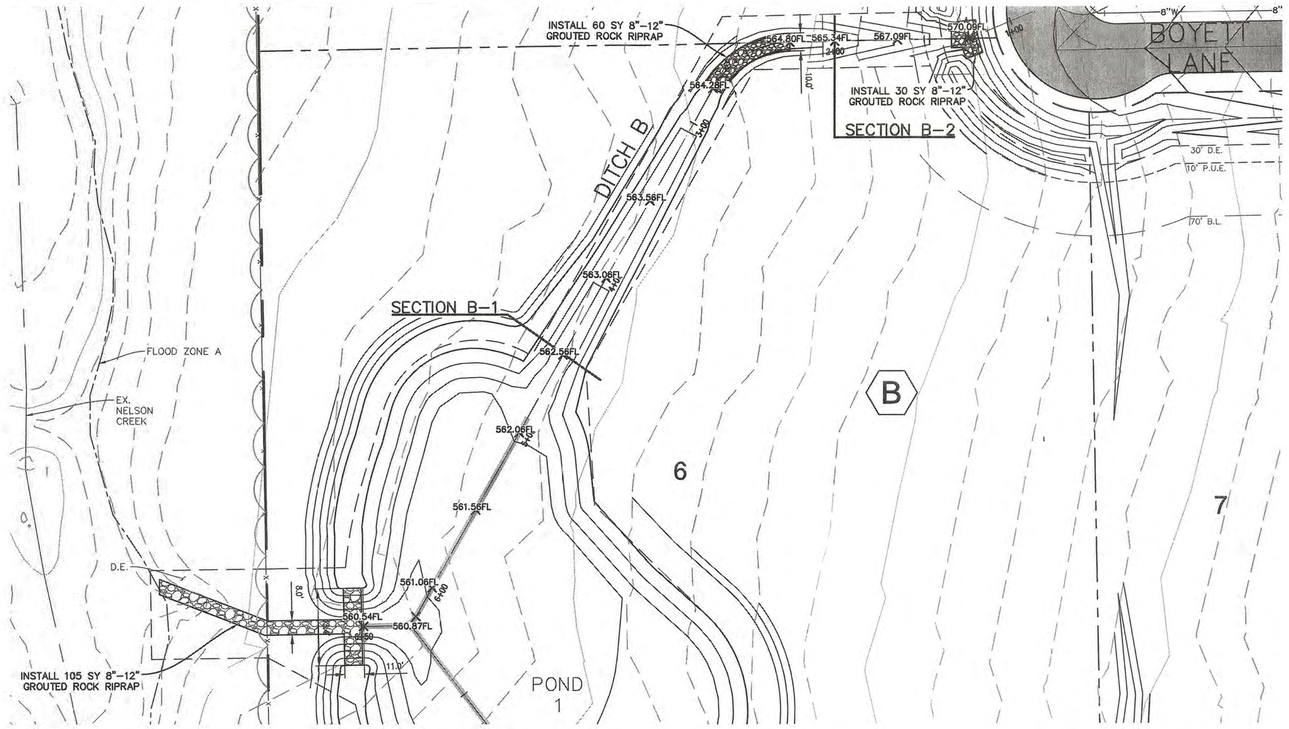
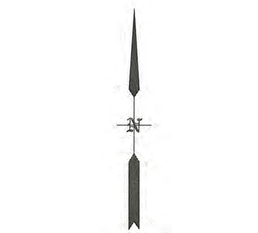
STORM PLAN - DITCH A

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 24 OF 40





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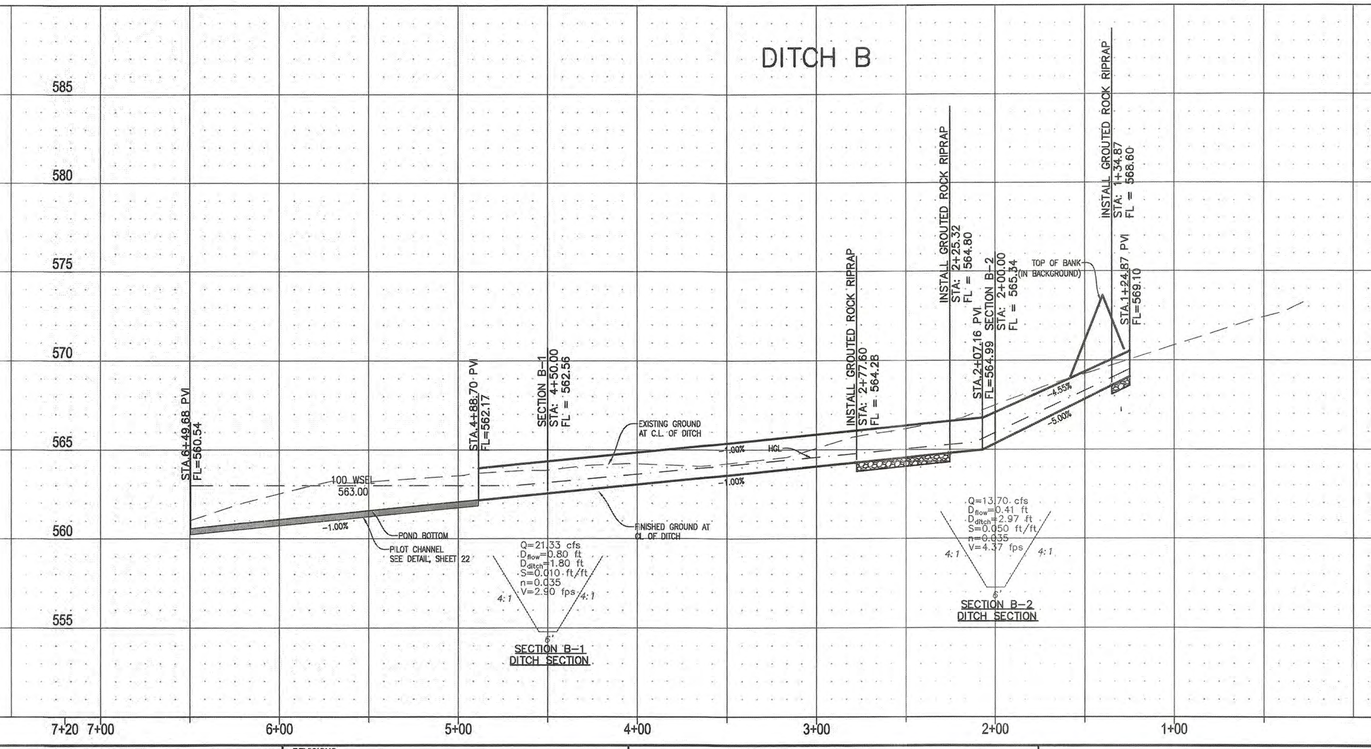

PROFILE VERTICAL
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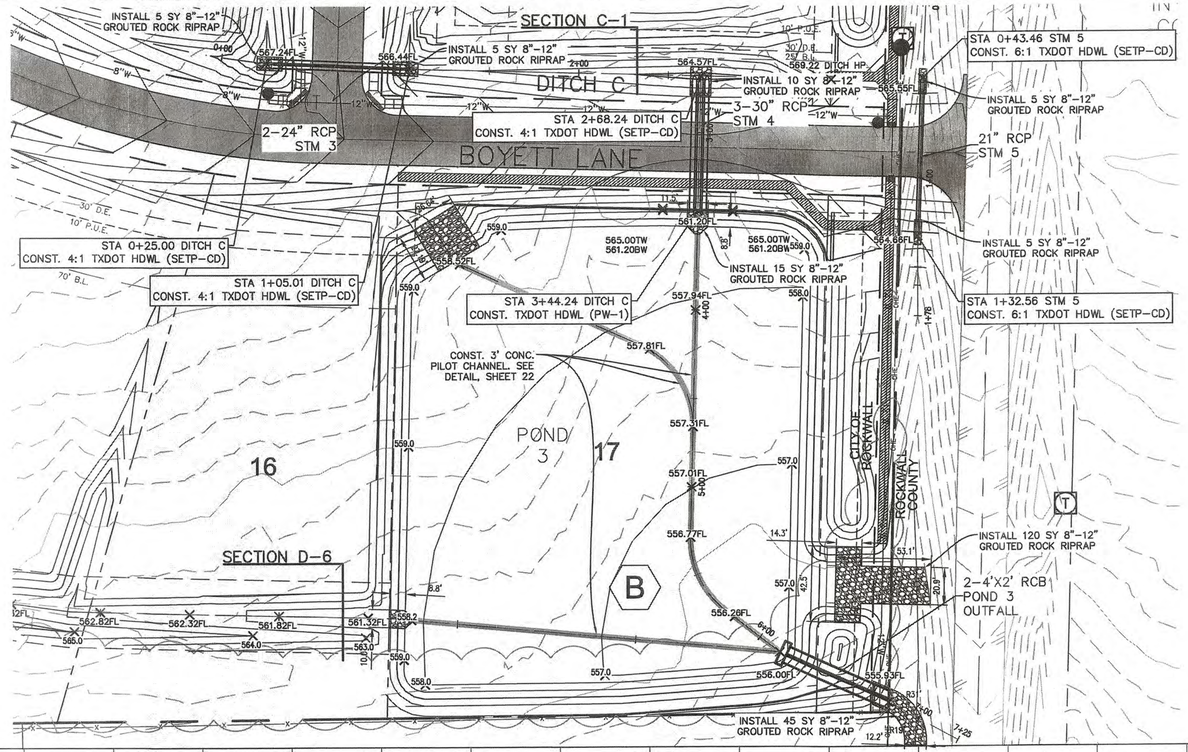
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

STORM PLAN - DITCH B

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 25 OF 40



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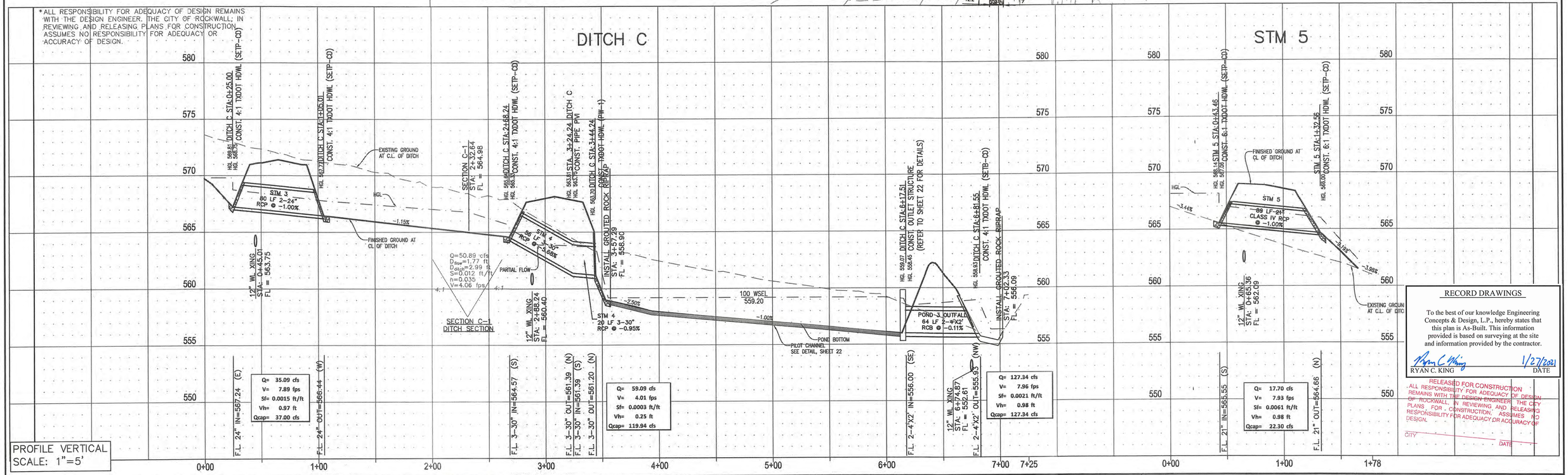

PROFILE VERTICAL
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STATE OF TEXAS
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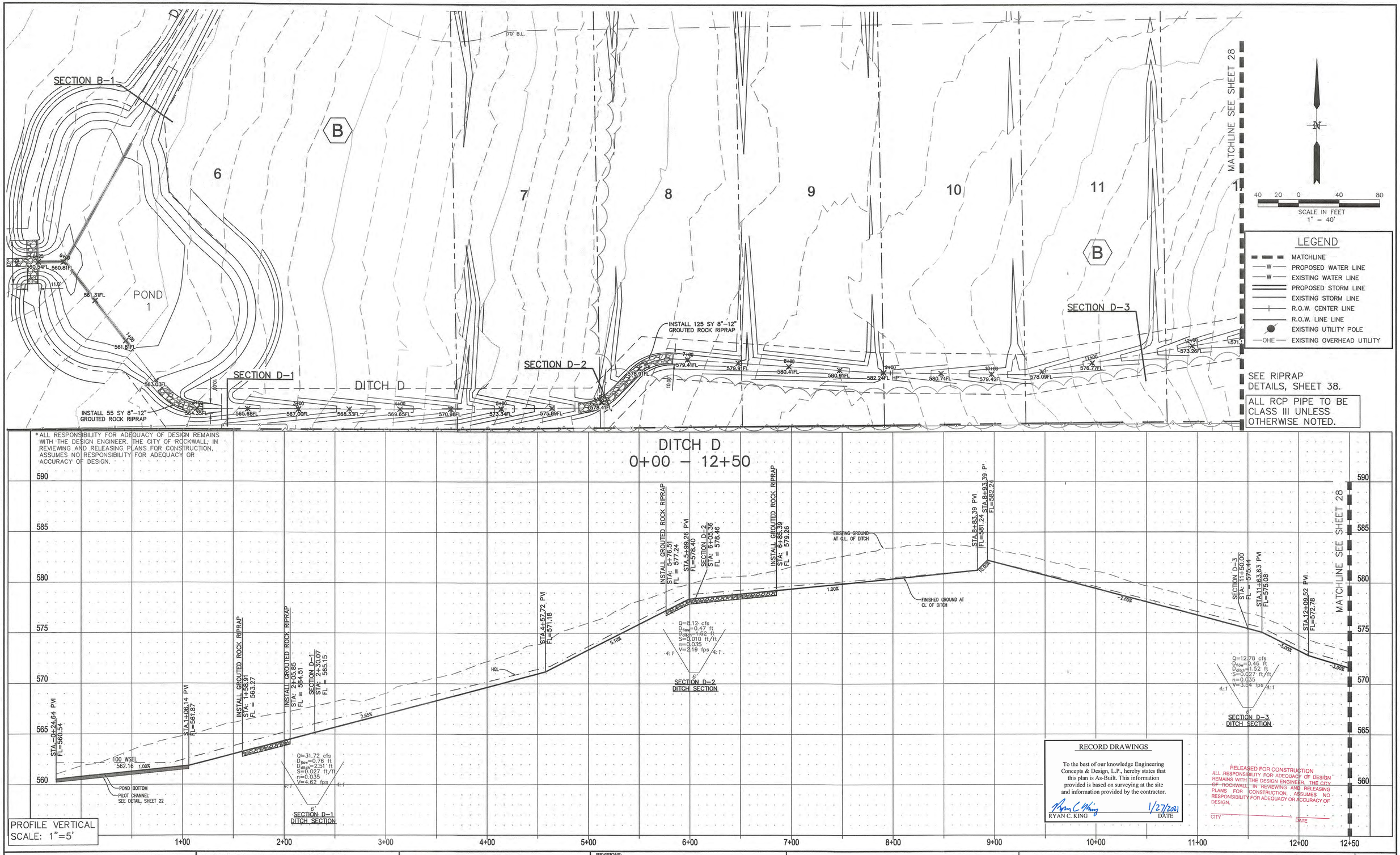
STORM PLAN - DITCH C

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 26 OF 40



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PROFILE VERTICAL
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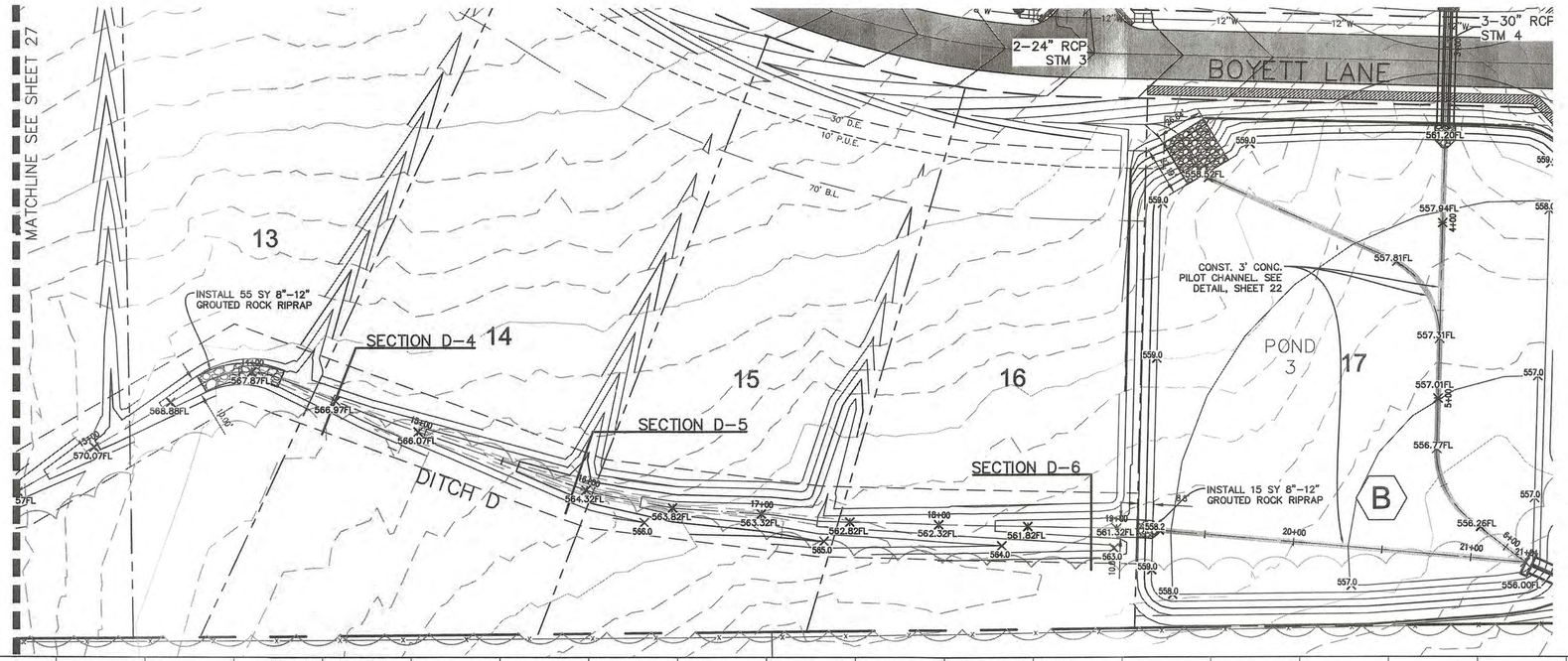
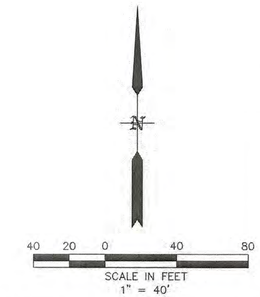
STORM PLAN - DITCH D 0+00 - 12+50
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 27 OF 40





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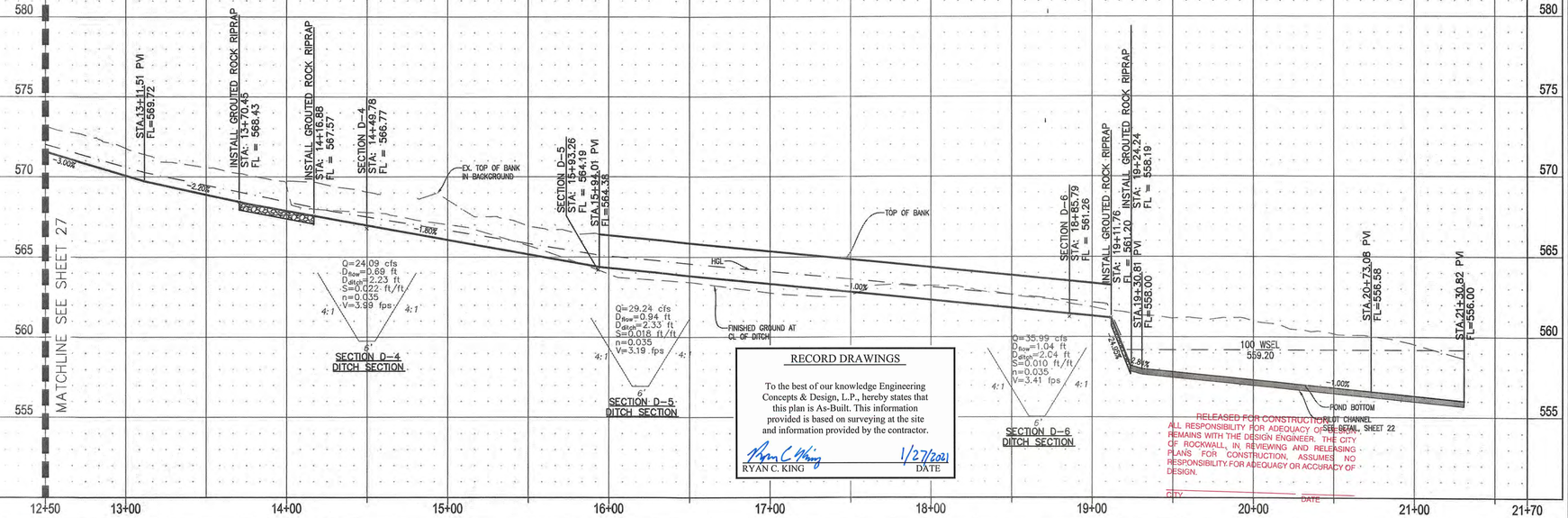
DITCH D
12+50 – END



Q=24.09 cfs
D_{flow}=0.69 ft
D_{ditch}=2.23 ft
S=0.022 ft/ft
n=0.035
V=3.99 fps
4:1 4:1 6'

SECTION D-4 DITCH SECTION

Q=29.24 cfs
D_{flow}=0.94 ft
D_{ditch}=2.33 ft
S=0.018 ft/ft
n=0.035
V=3.19 fps
4:1 4:1 6'

SECTION D-5 DITCH SECTION

Q=35.99 cfs
D_{flow}=1.04 ft
D_{ditch}=2.04 ft
S=0.010 ft/ft
n=0.035
V=3.41 fps
4:1 4:1 6'

SECTION D-6 DITCH SECTION

PROFILE VERTICAL
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STATE OF TEXAS RYAN C. KING 123635 REGISTERED PROFESSIONAL ENGINEER 6/1/2020

STORM PLAN - DITCH D 12+50 - END
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 28 OF 40

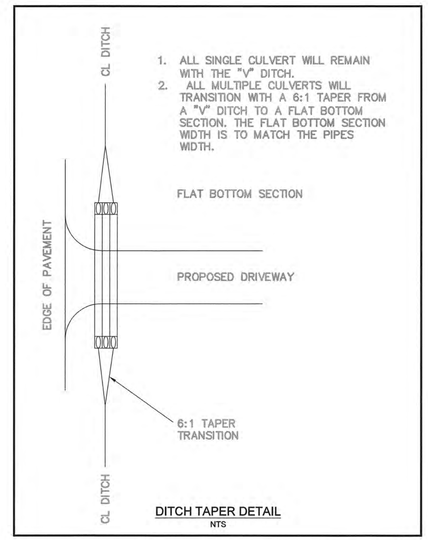
Pipe Calculations

Line Desc.	Upstream Sta.	Downstream Sta.	Dist. Btwn. Points	Area Number	D A (AC)	Coeff., CK	Increm. CA	Accum-ulated CA	Time at Upstream	Design Storm Freq.	Rainfall Intensity, I (in/hr)	Storm Water Runoff, Q (cfs)	Cum. Runoff Q (cfs)	Number of Barrels	Storm Sewer Diameter, Ø (in)	RCP		Type	Area of Pipe (ft^2)	Wetted Perimeter of Pipe (ft)	Hydraulic Radius of Pipe (ft)	Mann. Coeff. (in)	Flowline Elevation		Slope of Storm Pipe (%)	Velocity in Storm Pipe (fps)	Hydraulic Gradient Slope, S_f (ft/ft)	Storm Sewer Capacity Q (cfs)	Partial Flow	L*Sf	V1²/2g	V2²/2g	Head Loss Coeff, Kj	Velocity Head Loss Upstream (ft)	Inlet and Bend Losses	Flow Time Distance (V*60) (min)	Flow Time of Downstream Sta. (min)	Down-stream HGL	Upstream HGL	Starting HGL	Top of Curb Elevation	HGL Below Top of Curb	Flow Regime	Remarks
																Span (ft)	Rise (ft)						Up-stream	Down-stream																						
1	2	3	4	17/36	18	19	20	21	22	23	24	25	25	5	6	7	8	9	10	11	12	13	14	15	16	28	30	26	27	31	34	35	37	38	38	29		33	32	39	40	41	42	43	
STM 4	268.24	324.24	56.00	INLET	12.06	0.50	6.03	6.03	10.00	100-YR	9.80	59.09	59.09	3	30	0	0	RCP	14.73	23.56	0.63	0.0130	564.57	561.39	5.68%	4.01	0.0023	293.27	Yes	0.129		0.25	1.25	0.00	0.31	0.23	10.23	565.33	565.64		567.64	2.00	INLET	
STM 4	324.24	344.24	20.00	PVI	0.00	0.50	0.00	6.03	10.23	100-YR	9.76	0.00	59.09	3	30	0	0	RCP	14.73	23.56	0.63	0.0130	561.39	561.20	0.95%	4.01	0.0023	119.94	No	0.046	4.01	0.25	0.25	0.00	0.06	0.08	10.32	563.75	563.81	563.70			INLET	

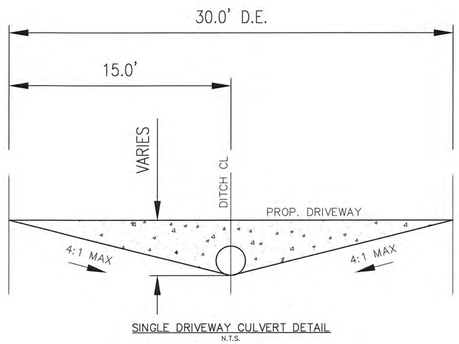
CULVERT CALCULATIONS

Description	Area (AC)	Area Cum (AC)	Q100 (cfs)	Length "L" (ft)	Roughness Coeff "n"	Tailwater	Roadway Elev.	U.S. Culvert FL	D.S. Culvert FL	D.S. Culvert HGL	U.S. Culvert HGL	HW	Required Freeboard	Culvert Slope "S_o"	TRAIL CULVERT AHW (ft)	CULVERT SIZE No. Openings	Width of Box "B" (in)	Box Depth or Pipe Dia "D" (in)	Total Culvert Area "A_c" (sq. ft)	"Q" Each Opening (cfs)	INLET CONTROL HW/D	HW	HEADWATER CALCULATION OUTLET CONTROL CASE III HW=H+TW-L*S_o (ft) Entrance Coeff. K_b	"H" (ft)	"TW" (Ft)	$Lx S_o$ (ft)	"HW" (ft)	CASE IV HW=H+h_o-L*So (ft) "H" (ft)	d_c (ft)	$(d_c+D)/2$ (ft)	"TW" (ft)	h_o (ft)	$Lx S_o$ (ft)	"HW" (ft)	The Greater Controlling Head Water (Inlet or Outlet) (ft)	SELECTED CONDUIT SIZE
															4	6		8	9	10	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1/A	1.08	4.00	19.62	22.00	0.013	0.77	574.87	571.50	570.80	571.57	572.62	573.14	1.00	3.20	1.64	2		24	6.28	9.81	0.82	1.64	0.50	0.27	0.77	0.70	0.34	0.27	1.12	1.56	0.77	1.56	0.70	1.12	INLET	24
2/A	1.11	2.92	14.33	22.00	0.013	1.65	579.05	576.22	575.52	576.16	577.17	577.56	1.00	3.20	1.34	2		24	6.28	7.17	0.67	1.34	0.50	0.14	0.64	0.70	0.08	0.14	0.95	1.48	0.64	1.48	0.70	0.91	INLET	24
3/A	0.48	1.81	8.88	22.00	0.013	1.51	582.60	580.43	579.73	580.27	581.24	581.60	1.00	3.20	1.17	2		18	3.53	4.44	0.78	1.17	0.50	0.19	0.54	0.70	0.03	0.19	0.81	1.15	0.54	1.15	0.70	0.64	INLET	18
4/A	0.31	1.34	6.55	22.00	0.013	0.98	584.27	582.20	581.91	582.46	582.89	583.18	1.00	1.30	0.98	2		18	3.53	3.27	0.65	0.98	0.50	0.10	0.55	0.29	0.36	0.10	0.69	1.09	0.55	1.09	0.29	0.91	INLET	18
5/A	0.32	1.03	5.03	22.00	0.013	0.89	585.74	583.88	583.59	584.07	584.48	584.72	1.00	1.30	0.84	2		18	3.53	2.51	0.56	0.84	0.50	0.06	0.48	0.29	0.25	0.06	0.60	1.05	0.48	1.05	0.29	0.82	INLET	18
6/A	0.37	0.71	3.48	22.00	0.013	0.79	587.27	585.49	585.20	585.59	585.99	586.17	1.00	1.30	0.68	2		18	3.53	1.74	0.45	0.68	0.50	0.03	0.39	0.29	0.13	0.03	0.50	1.00	0.39	1.00	0.29	0.74	OUTLET	18
7/A	0.34	0.34	1.67	22.00	0.013	0.71	587.92	586.20	585.98	586.39	586.69	586.86	1.00	1.00	0.66	1		18	1.77	1.67	0.44	0.66	0.50	0.03	0.41	0.22	0.22	0.03	0.49	0.99	0.41	0.99	0.22	0.80	OUTLET	18
8/A	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9/A	0.85	0.85	4.17	22.00	0.013	0.82	587.60	585.85	585.58	586.01	586.40	586.61	1.00	1.25	0.76	2		18	3.53	2.08	0.51	0.76	0.50	0.04	0.43	0.28	0.20	0.04	0.54	1.02	0.43	1.02	0.28	0.79	OUTLET	18
10/A	1.63	2.49	12.18	22.00	0.013	1.15	583.83	581.67	581.40	582.10	582.55	582.91	1.00	1.25	1.24	2		24	6.28	6.09	0.62	1.24	0.50	0.10	0.71	0.28	0.53	0.10	0.87	1.44	0.71	1.44	0.28	1.27	OUTLET	24
11/A	1.69	4.17	20.45	22.00	0.013	1.89	576.33	573.17	572.47	573.30	574.36	575.05	1.00	3.20	1.88	3		30	14.73	6.82	0.75	1.88	0.50	0.05	0.83	0.70	0.18	0.05	0.87	1.68	0.83	1.68	0.70	1.03	INLET	30
12/A	1.13	3.87	18.99	22.00	0.013	1.37	579.52	576.51	576.29	577.30	577.66	578.30	1.00	1.00	1.79	2		21	4.81	9.49	1.02	1.79	0.50	0.44	1.01	0.22	1.23	0.44	1.15	1.45	1.01	1.45	0.22	1.67	INLET	21
13/A	1.07	2.74	13.44	22.00	0.013	1.18	580.95	577.77	577.55	578.37	578.73	579.18	1.00	1.00	1.41	2		21	4.81	6.72	0.81	1.41	0.50	0.22	0.82	0.22	0.82	0.22	0.96	1.35	0.82	1.35	0.22	1.36	INLET	21
14/A	1.09	1.67	8.19	22.00	0.013	1.33	582.62	579.23	579.01	580.02	580.34	581.08	1.00	1.00	1.85	1		18	1.77	8.19	1.23	1.85	0.50	0.63	1.01	0.22	1.42	0.63	1.11	1.30	1.01	1.30	0.22	1.72	INLET	18
15/A	0.59	0.59	2.87	22.00	0.013	0.86	583.77	580.69	580.47	581.02	581.33	581.60	1.00	1.00	0.91	1		18	1.77	2.87	0.61	0.91	0.50	0.08	0.55	0.22	0.41	0.08	0.64	1.07	0.55	1.07	0.22	0.93	OUTLET	18
16/A	0.44	0.44	2.17	22.00	0.013	1.22	583.49	581.15	580.49	580.86	581.71	581.90	1.00	3.00	0.75	1		18	1.77	2.17	0.50	0.75	0.50	0.04	0.37	0.66	-0.25	0.04	0.56	1.03	0.37	1.03	0.66	0.41	INLET	18
17/A	1.08	1.53	7.48	22.00	0.013	1.53	580.52	577.09	576.62	577.43	578.15	578.80	1.00	2.15	1.71	1		18	1.77	7.48	1.14	1.71	0.50	0.53	0.81	0.47	0.87	0.53	1.06	1.28	0.81	1.28	0.47	1.34	INLET	18
18/A	1.00	2.52	12.37	22.00	0.013	1.43	577.06	574.00	573.53	574.25	574.96	575.48	1.00	2.15	1.48	2		18	3.53	6.18	0.99	1.48	0.50	0.36	0.72	0.47	0.61	0.36	0.96	1.23	0.72	1.23	0.47	1.12	INLET	18
19/A	5.71	5.71	27.97	22.00	0.013	1.94	570.87	567.92	567.15	567.95	569.09	569.66	1.00	3.50	1.74	3		21	7.22	9.32	0.99	1.74	0.50	0.43	0.80	0.77	0.46	0.43	1.18	1.46	0.80	1.46	0.77	1.12	INLET	21
20/A	1.50	5.08	24.90	22.00	0.013	1.80	575.16	572.58	571.81	572.49	573.61	574.05	1.00	3.50	1.47	3		24	9.42	8.30	0.73	1.47	0.50	0.19	0.68	0.77	0.10	0.19	1.03	1.51	0.68	1.51	0.77	0.94	INLET	24
21/A	1.50	3.58	17.55	22.00	0.013	1.49	578.81	576.62	575.98	576.56	577.47	577.80	1.00	2.90	1.18	3		24	9.42	5.85	0.59	1.18	0.50	0.10	0.58	0.64	0.04	0.10	0.85	1.43	0.58	1.43	0.64	0.88	INLET	24
22/A	2.08	2.08	10.20	22.00	0.013	1.28	582.40	580.53	579.89	580.32	581.17	581.39	1.00	2.90	0.86	3		24	9.42	3.40	0.43	0.86	0.50	0.03	0.43	0.64	-0.18	0.03	0.64	1.32	0.43	1.32	0.64	0.72	INLET	24
1/B	0.15	0.95	4.66	22.00	0.013	1.26	566.42	563.84	563.16	563.54	564.42	564.63	1.00	3.10	0.79	2		18	3.53	2.33	0.53	0.79	0.50	0.05	0.38	0.68	-0.25	0.05	0.58	1.04	0.38	1.04	0.68	0.41	INLET	18
2/B	0.20	0.80	3.94	22.00	0.013	0.76	568.90	567.04	566.81	567.25	567.57	567.77	1.00	1.05	0.73	2		18	3.53	1.97	0.49	0.73	0.50	0.04	0.44	0.23	0.25	0.04	0.53	1.01	0.44	1.01	0.23	0.82	OUTLET	18
3/B	0.20	0.61	2.97	22.00	0.013	0.69	570.38	568.68	568.45	568.83	569.14	569.30	1.00	1.05	0.62	2		18	3.53	1.49	0.41	0.62	0.50	0.02	0.38	0.23	0.17	0.02	0.46	0.98	0.38	0.98	0.23	0.77	OUTLET	18
4/B	0.19	0.41	2.01	22.00	0.013	0.60	571.86	570.32	570.09	570.40	570.69	570.82	1.00	1.05	0.50	2		18	3.53	1.00	0.33	0.50	0.50	0.01	0.31	0.23	0.09	0.01	0.37	0.94	0.31	0.94	0.23	0.71	OUTLET	18
5/B	0.22	0.22	1.08	22.00	0.013	0.61	572.35	571.28	571.06	571.39	571.67	571.80	1.00	1.00	0.52	1		18	1.77	1.08	0.35	0.52	0.50	0.01	0.33	0.22	0.12	0.01	0.39	0.94	0.33	0.94	0.22	0.74	OUTLET	18
6/B	0.43	2.59	12.67	22.00	0.013	1.64	573.90	571.36	570.44	570.89	572.08	572.32	1.00	4.18	0.96	3		24	9.42	4.22	0.48	0.96	0.50	0.05	0.45	0.92	-0.42	0.05	0.72	1.36	0.45	1.36	0.92	0.49	INLET	24
7/B	0.83	2.16	10.58	22.00	0.013	1.13	576.78	574.78	574.31	574.78	575.44	575.67	1.00	2.15	0.89	3		24	9.42	3.53	0.44	0.89	0.50	0.03	0.47	0.47	0.03	0.03	0.66	1.33	0.47	1.33	0.47	0.89	OUTLET	24
8/B	0.87	1.33	6.49	22.00	0.013	1.37	580.22	577.84	577.37	578.03	578.74	579.11	1.00	2.15	1.27	1		24	3.14	6.49	0.63	1.27	0.50	0.12	0.66	0.47	0.31	0.12	0.90	1.45	0.66	1.45	0.47	1.10	INLET	24
9/B	0.45	0.45	2.21	22.00	0.013	1.03	583.28	580.87	580.40	580.80	581.43	581.64	1.00	2.15	0.77	1		18	1.77	2.21	0.51	0.77	0.50	0.05	0.40	0.47	-0.02	0.05	0.56	1.03	0.40	1.03	0.47	0.60	INLET	18
10/B	0.18	0.18	0.86	22.00	0.013	0.57	583.61	580.92	580.70	580.99	581.27	581.38	1.00	1.00	0.46	1		18	1.77	0.86	0.31	0.46	0.50	0.01	0.29	0.22	0.08	0.01	0.35	0.92	0.29	0.92	0.22	0.71	OUTLET	18
11/B	0.18	0.35	1.72	22.00	0.013	0.71	582.94	579.51	579.29	579.71	580.00	580.18	1.00	1.00	0.67	1		18	1.77	1.72	0.45	0.67	0.50	0.03	0.42	0.22	0.23	0.03	0.49	1.00	0.42	1.00	0.22	0.80	OUTLET	18
12/B	0.18	0.53	2.58	22.00	0.013	0.83	581.33	578.10	577.88	578.40	578.71	578.95	1.00	1.00	0.85	1		18	1.77	2.58	0.57	0.85	0.50	0.06	0.52	0.22	0.36	0.06	0.61	1.05	0.52	1.05	0.22	0.90	OUTLET	18
13/B	0.30	0.83	4.07	22.00	0.013	0.99	579.07	576.13	575.91	576.57	576.90	577.25	1.00	1.00	1.12	1		18	1.77	4.07	0.75	1.12	0.50	0.16	0.66	0.22	0.60	0.16	0.77	1.14	0.66	1.14	0.22	1.07	INLET	18
14/B	0.19	1.03	5.02	22.00	0.013	1.08	576.43	574.03	573.81	574.56	574.89	575.32	1.00	1.00	1.29	1		18	1.77	5.02	0.86	1.29	0.50	0.24	0.75	0.22	0.77	0.24	0.86	1.18	0.75	1.18	0.22	1.20	INLET	18
15/B	0.15	1.18	5.78	22.00	0.013	1.27	573.87	571.64	571.22	571.85	572.49	572.83	1.00	1.90	1.19	1		24	3.14	5.78	0.60	1.19	0.50	0.09	0.63	0.42	0.30	0.09	0.85	1.42	0.63	1.42	0.42	1.10	INLET	24
16/B	0.14	1.32	6.46	22.00	0.013	1.55	571.78	569.25	568.68	569.39	570.23	570.78	1.00	2.60	1.53	1		18	1.77	6.46	1.02	1.53	0.50	0.39	0.71	0.57	0.53	0.39	0.98	1.24	0.71	1.24	0.57	1.06	INLET	18
STM 1	12.67	12.67	62.07	80.00	0.013	2.32	564.42	560.59	560.43	562.43	562.75	563.01	1.00	0.20	2.42	2	36	24	12.00	31.04	1.21	2.42	0.50	0.02	2.00	0.16	1.86	0.02	1.49	1.75	2.00	2.00	0.16	1.86	INLET	3'x2'
STM 3	7.16	7.16	35.09	80.00	0.013	2.31	570.95	567.24	566.44	567.77	568.75	569.81	1.00	1.00	2.57	2		24	6.28	17.55	1.28	2.57	0.50	1.21	1.33	0.80	1.74	1.21	1.51	1.75	1.33	1.75	0.80	2.16	INLET	24
STM 5	3.61	3.61	17.70	89.10	0.013	2.40	569.20	565.55	564.66	566.00	567.06	568.14	1.00	1.00	2.59	1		24	3.14	17.70	1.30	2.59	0.50	1.29	1.34	0.89	1.74	1.29	0.86	1.43	1.34	1.43	0.89	1.83	INLET	24

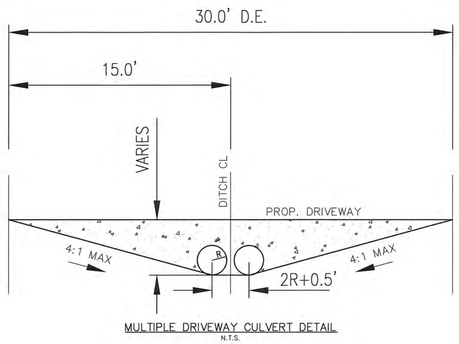
1



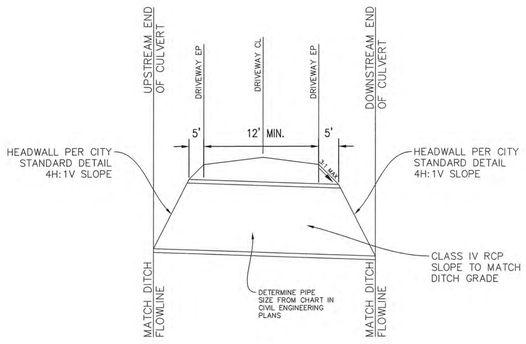
DITCH TAPER DETAIL
NTS



SINGLE DRIVEWAY CULVERT DETAIL
N.T.S.



MULTIPLE DRIVEWAY CULVERT DETAIL
N.T.S.



TYPICAL DRIVEWAY CULVERT DETAIL
N.T.S.

* ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING 1/27/2021 DATE

CAUTION! EXISTING UTILITIES

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
1 1/25/2021 COMBINED LOTS A19 & A20

DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 ST.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS RYAN C. KING 123635 REGISTERED PROFESSIONAL ENGINEER 1/25/2021

DRAINAGE CALCULATIONS

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 29 OF 40

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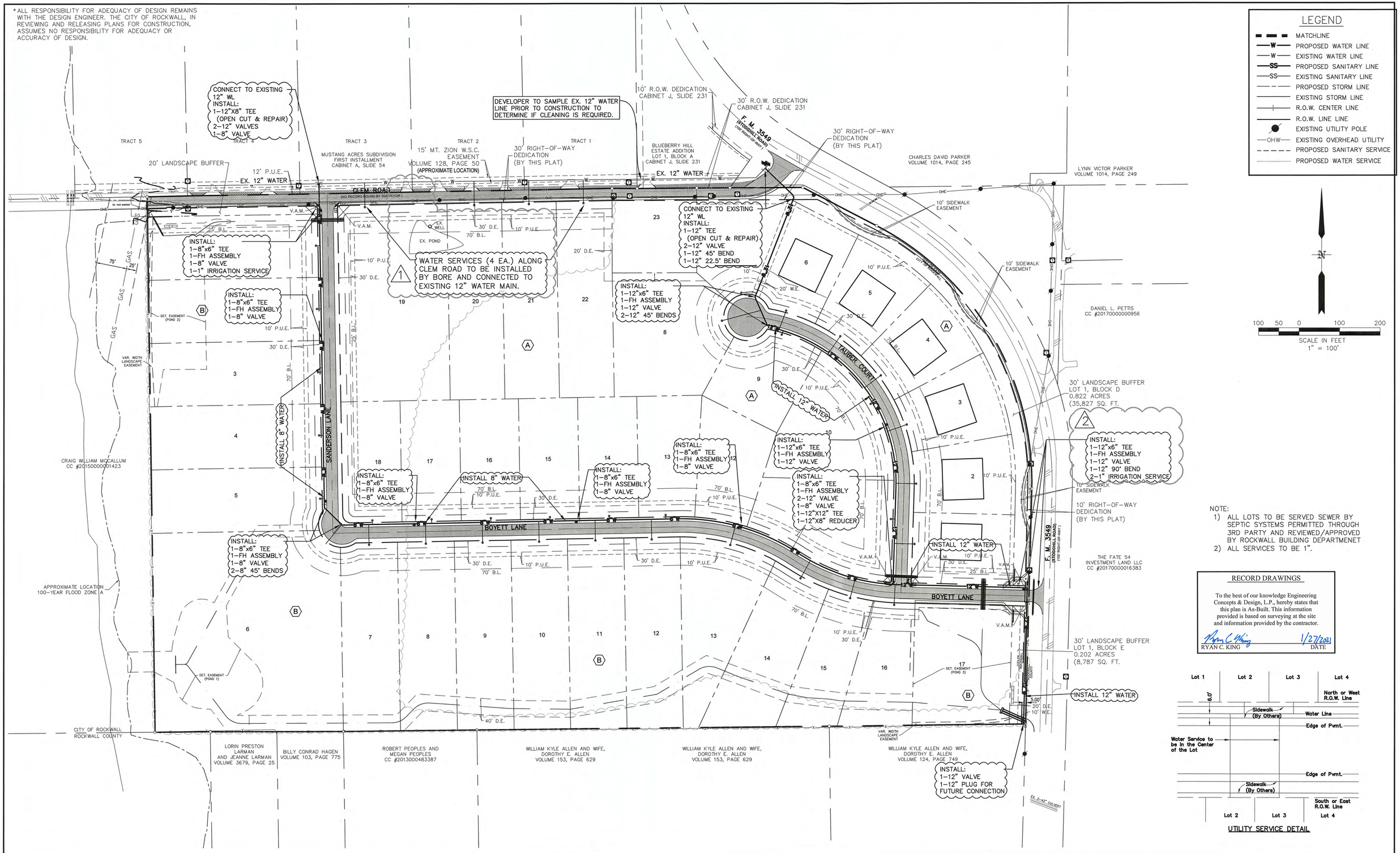

LEGEND

- MATCHLINE
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SANITARY LINE
- EXISTING SANITARY LINE
- PROPOSED STORM LINE
- EXISTING STORM LINE
- R.O.W. CENTER LINE
- R.O.W. LINE LINE
- EXISTING UTILITY POLE
- EXISTING OVERHEAD UTILITY
- PROPOSED SANITARY SERVICE
- PROPOSED WATER SERVICE

N

100 50 0 100 200

SCALE IN FEET
1" = 100'

NOTE:
1) ALL LOTS TO BE SERVED SEWER BY SEPTIC SYSTEMS PERMITTED THROUGH 3RD PARTY AND REVIEWED/APPROVED BY ROCKWALL BUILDING DEPARTMENET
2) ALL SERVICES TO BE 1".

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

UTILITY SERVICE DETAIL

CAUTION! EXISTING UTILITIES

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BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

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ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:
1 1/25/2021 COMBINED LOTS A19 & A20
2 1/26/2021 2-1" IRRIGATION METERS

DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 UT.DWG	

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/26/2021

WATER PLAN

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 30 OF 40

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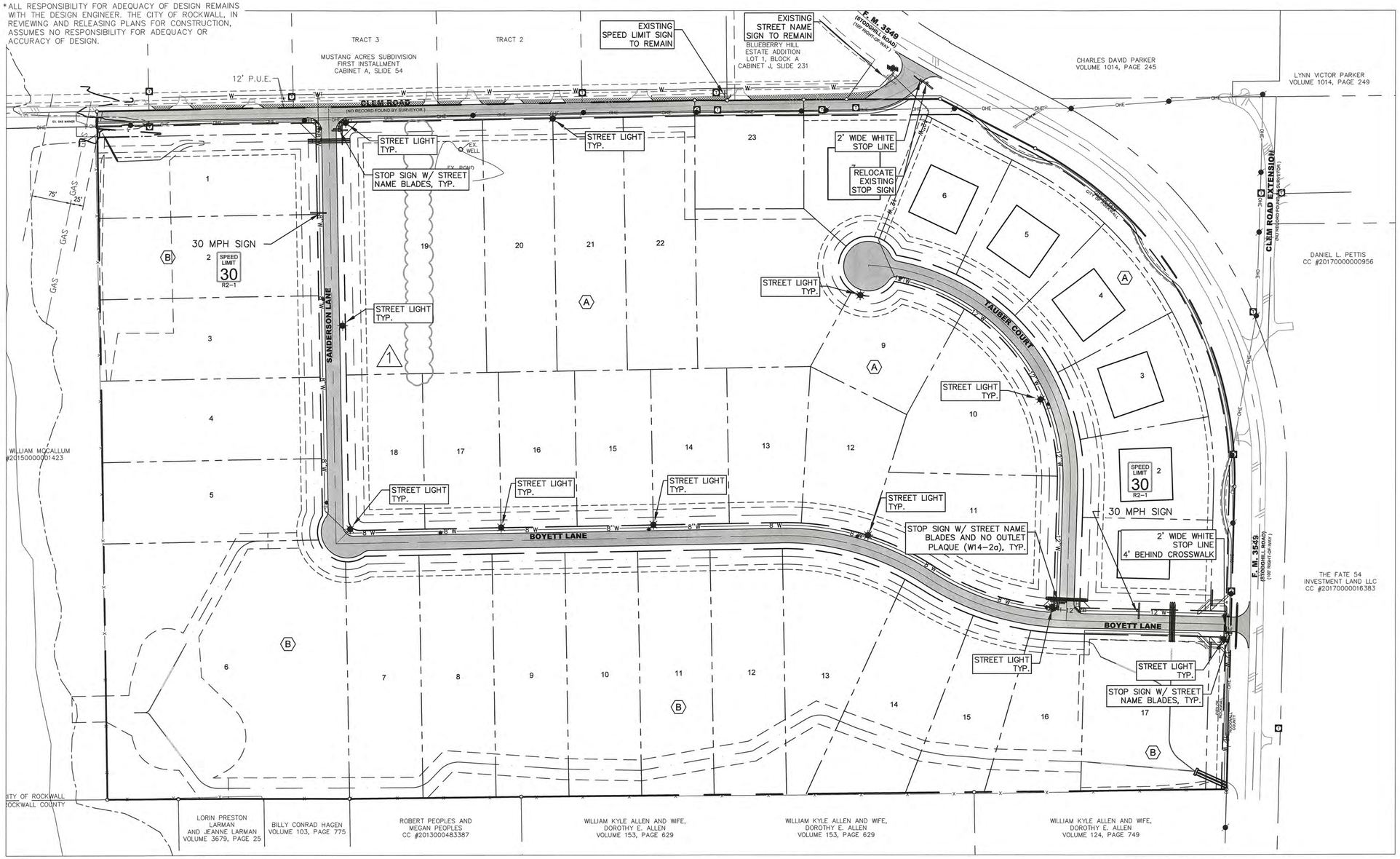
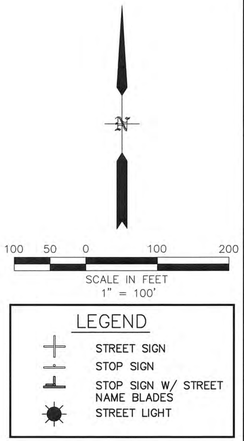
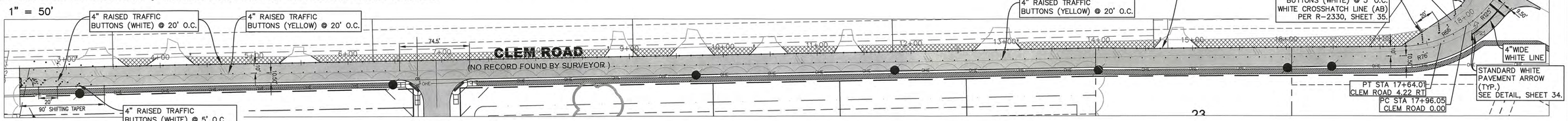




NOTE:
IF THE DEVELOPER ELECTS TO INSTALL DECORATIVE SIGN POLES AND FIXTURES:
- –HOMEOWNERS ASSOCIATION WILL BE RESPONSIBLE FOR ALL CARE AND MAINTENANCE FOR ANY DECORATIVE SIGN POLES INSTALLED.
- –PLAT SHALL HAVE ITEM NOTE "HOA MUST MAINTAIN, REPAIR, AND REPLACE ALL NON–STANDARD STREET AND REGULATORY SIGN POLES AND FIXTURES OR OTHER APPROVED NON–STANDARD ITEMS."
- –THE CITY OF ROCKWALL WILL NOT BE RESPONSIBLE TO STORE OR HANDLE ANY DECORATIVE SIGN POST OR FIXTURES.
- –THE CITY OF ROCKWALL RESERVES THE RIGHT TO APPROVE OR DISAPPROVE ANY DECORATIVE NON–STANDARD STREET SIGN AND REGULATES SIGN POLES/POSTS AND FIXTURES.
- –STANDARD STREET AND REGULATORY 2' 3/8" GALVANIZED STEEL ROUND POST WITH ASSOCIATED FIXTURES TO BE USED.

A SAMPLE SIGN MUST BE SUBMITTED FOR APPROVAL BY THE CITY PRIOR TO FABRICATION OF ALL STREET SIGNS.



STRIPING DETAIL

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REVISIONS:
1/25/2021 COMBINED LOTS A19 & A20

DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 SL.DWG	

RECORD DRAWINGS

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RYAN C. KING 1/27/2021 DATE

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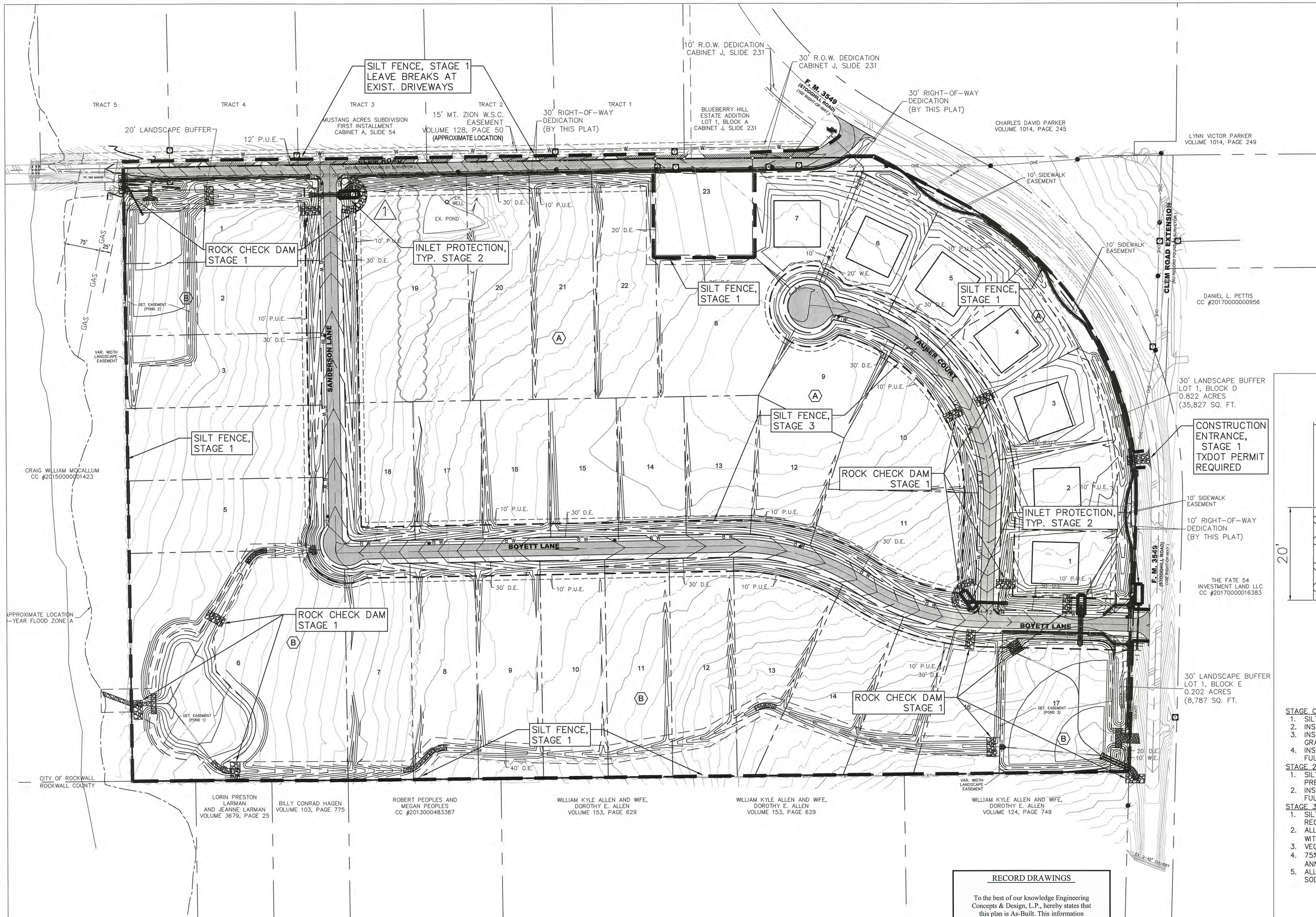
STATE OF TEXAS · RYAN C. KING · 123635 · REGISTERED PROFESSIONAL ENGINEER · 1/25/2021

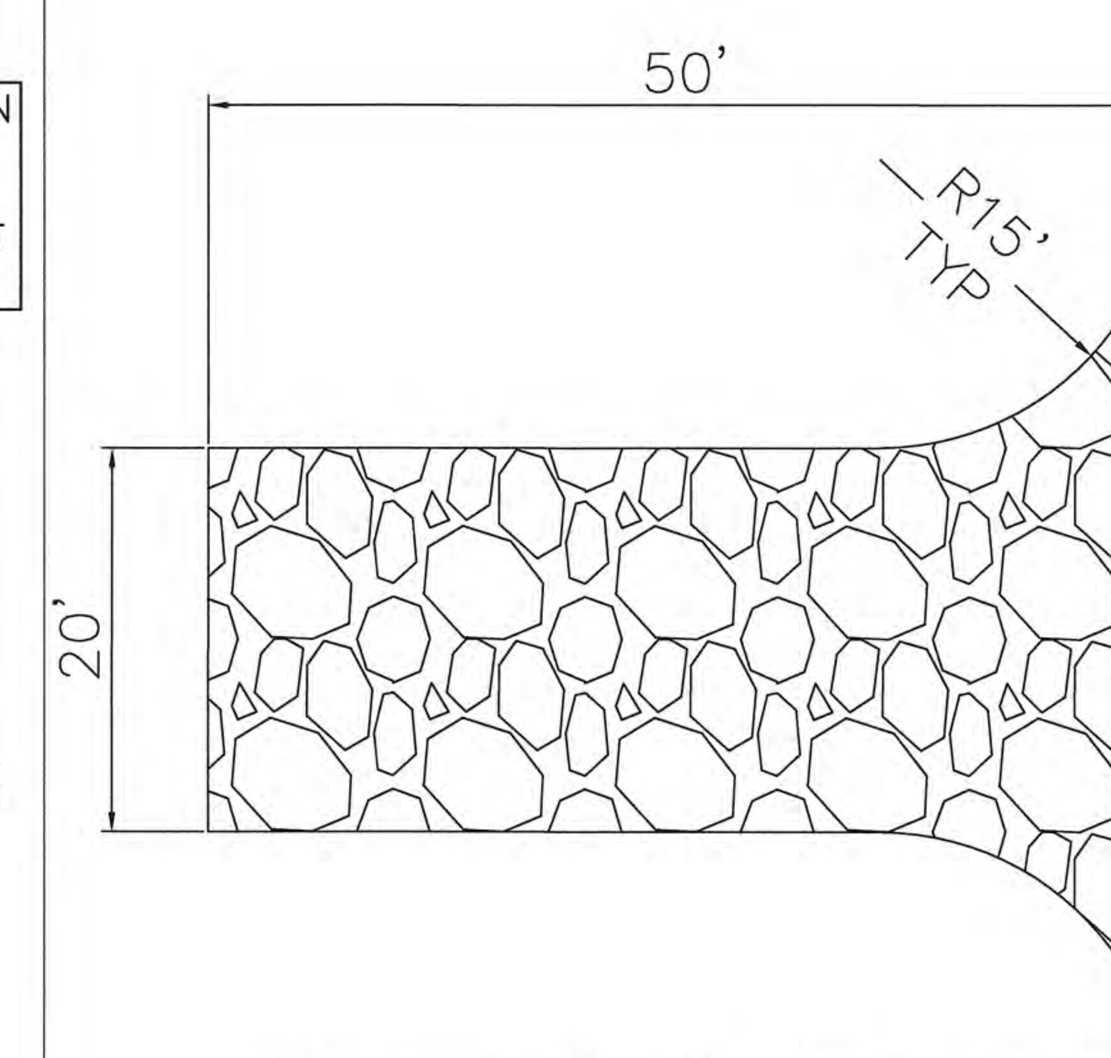
STREET LIGHT AND SIGNAGE PLAN
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 31 OF 40



LEGEND

- MATCHLINE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR



CONSTRUCTION ENTRANCE DETAIL
N.T.S

STAGE ONE (PRIOR TO START OF ROUGH GRADING)
1. SILT FENCE TO BE INSTALLED AS SHOWN ON PLAN OR AS REQUIRED.
2. INSTALL ROCK CHECK DAMS AT EXISTING OUTFALLS.
3. INSTALL ROCK CHECK DAMS AS SHOWN AT COMPLETION OF ROUGH GRADING IN THE AREA.
4. INSTALL ALL EROSION PROTECTION ON THE SIDES OR BOTTOMS OF ALL FULLY INSTALLED DETENTION SYSTEMS PER CITY STANDARDS.

STAGE 2 (AFTER UTILITY CONSTRUCTION AND PRIOR TO PAVING CONSTRUCTION)
1. SILT FENCE SHALL BE PLACED AROUND TOP OF INLETS UNTIL TOPPED OUT, PREVENT EROSION MATERIAL FROM ENTERING STORM SEWER SYSTEM.
2. INSTALL ALL EROSION PROTECTION ON THE SIDES OR BOTTOMS OF ALL FULLY INSTALLED DETENTION SYSTEMS PER CITY STANDARDS.

STAGE 3 (AFTER PAVING CONSTRUCTION)
1. SILT FENCE SHALL BE PLACED IN ROW ALONG PAVEMENT AS SHOWN WHERE REQUIRED BY SLOPE CONDITIONS.
2. ALL PARKWAYS AND DISTURBED AREA IN STREET R.O.W. TO BE SEEDED WITH GRASS AND CURLEX (ANCHORED) AS PER CITY STANDARDS.
3. VEGETATION TO BE ESTABLISHED IN ALL OFFSITE DISTURBED AREAS.
4. 75%-80% OF ALL DISTURBED AREA TO HAVE A MINIMUM OF 1" STAND OF ANNUAL GRASS (NO RYE OR WEEDS) PRIOR TO CITY ACCEPTANCE.
5. ALL EXISTING RIGHT-OF-WAYS INCLUDING CLEM ROAD & F.M. 3549 TO BE SODDED PRIOR TO ACCEPTANCE.

SITE ACREAGE: 62.512 AC

DISTURBED ACREAGE: 68.035 AC

RECORD DRAWINGS

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RYAN C. KING — 1/27/2021 DATE

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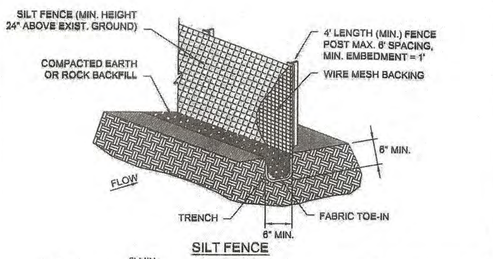
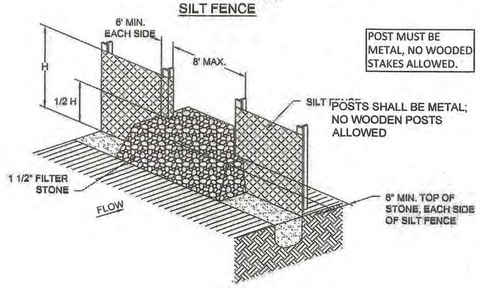
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 1/25/2021

EROSION CONTROL PLAN
NORTHGATE
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 32 OF 40



SILT FENCE



STONE OVERFLOW STRUCTURE

SILT FENCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.5 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1020A

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

SILT FENCE GENERAL NOTES:

1. POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH SUPPORT POST OR TO WIRE BACKING, WHICH IN TURN IS ATTACHED TO THE FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

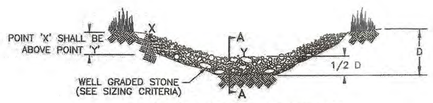
6. SILT FENCE SHALL BE REMOVED WHEN FINAL STABILIZATION IS ACHIEVED OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

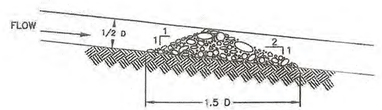
8. FILTER STONE SHALL BE WRAPPED IN FILTER FABRIC AND BURIED SIX (6") INCHES MINIMUM.

SILT FENCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.5 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1020B

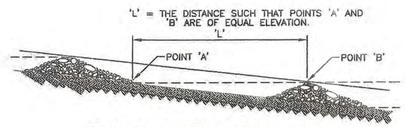
*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



VIEW LOOKING UPSTREAM



SECTION A – A



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 201.9	
		DATE OCT. '04	STANDARD DRAWING NO. 1060A

ROCK CHECK DAM GENERAL NOTES:

1. STONE SHALL BE WELL GRADED WITH SIZE RANGE FROM 1½ TO 3½ INCHES IN DIAMETER DEPENDING ON EXPECTED FLOWS.

2. THE CHECK DAM SHALL BE INSPECTED AS SPECIFIED IN THE SWPPP AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

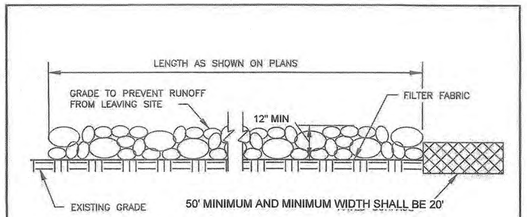
3. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE CHECK DAM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

4. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION OR ANOTHER EROSION OR SEDIMENT CONTROL DEVICE IS EMPLOYED, THE CHECK DAM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

5. FILTER STONE SHALL BE WRAPPED IN APPROPRIATE SIZED WIRE MESH TO CONTAIN STONE AND BURIED SIX (6") INCHES MINIMUM.

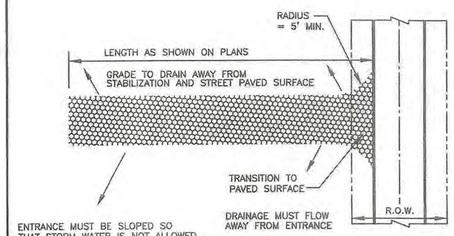
ROCK CHECK DAM	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.9 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1060B

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



NO CRUSHED CONCRETE ALLOWED

N.T.S.



PLAN VIEW

N.T.S.

STABILIZED CONSTRUCTION ENTRANCE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 201.10	
		DATE OCT. '04	STANDARD DRAWING NO. 1070A

STABILIZED CONSTRUCTION ENTRANCE GENERAL NOTES:

1. STONE SHALL BE 4 TO 6 INCH DIAMETER COARSE AGGREGATE.

2. MINIMUM LENGTH SHALL BE 50 FEET AND WIDITH SHALL BE 20 FEET.

3. THE THICKNESS SHALL NOT BE LESS THAN 12 INCHES.

4. THE WIDTH SHALL BE NO LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

5. WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE USING APPROVED METHODS.

6. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.

7. THE ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

8. PREVENT SHORTCUTTING OF THE FULL LENGTH OF THE CONSTRUCTION ENTRANCE BY INSTALLING BARRIERS AS NECESSARY.

9. INSPECTION SHALL BE AS SPECIFIED IN THE SWPPP.

10. NO CRUSHED OR RECYCLED CONCRETE ALLOWED.

STABILIZED CONSTRUCTION ENTRANCE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 202.11 *	
		DATE Mar. 2018	STANDARD DRAWING NO. R-1070B

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CITY _____ DATE _____

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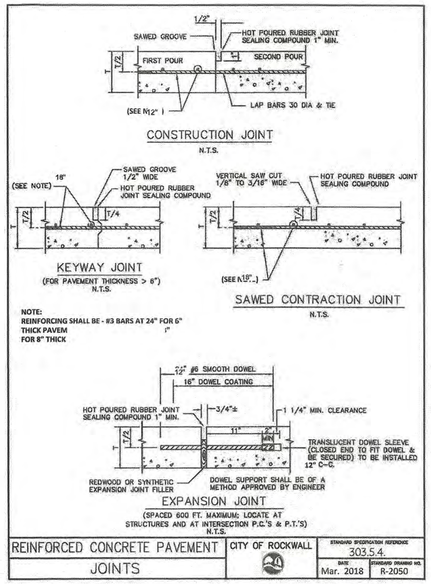
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

EROSION CONTROL DETAILS

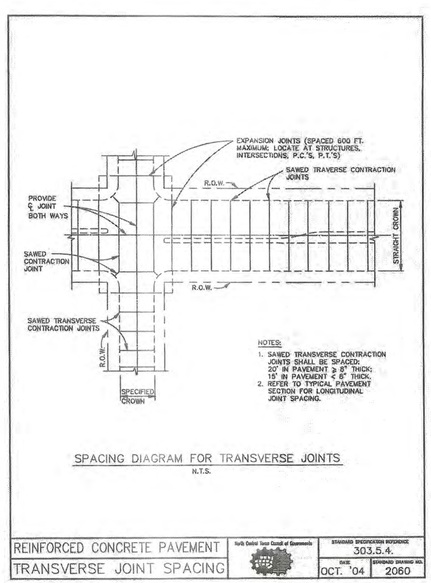
NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

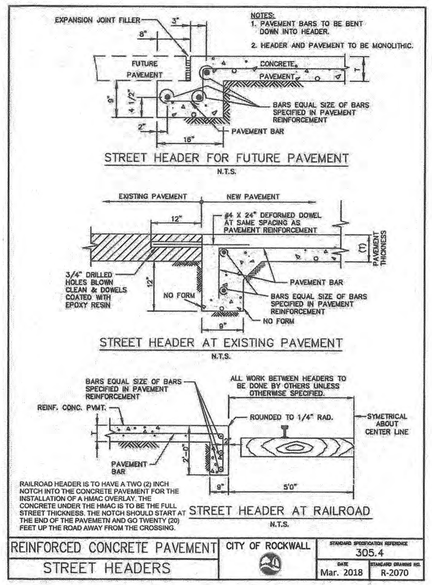
SHEET 33 OF 40



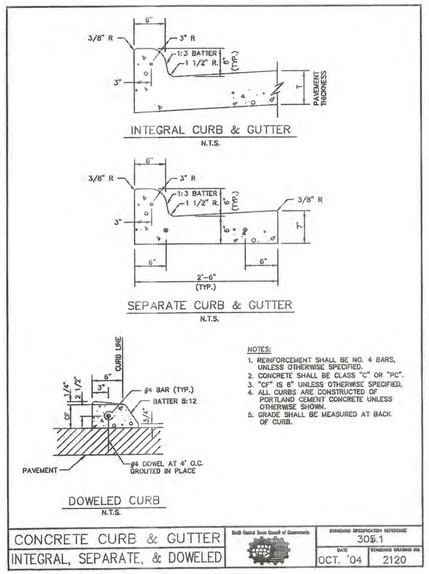
REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE
JOINTS		303.5.4.
	DATE: Mar. 2018	STANDARD DRAWING NO. R-2050



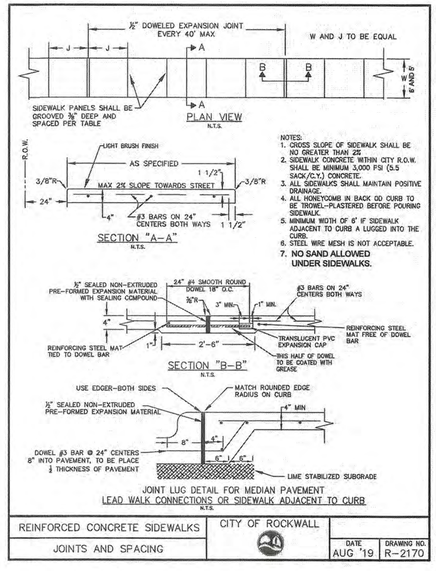
REINFORCED CONCRETE PAVEMENT	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE
TRANSVERSE JOINT SPACING		303.5.4.
	DATE: OCT. '04	STANDARD DRAWING NO. 2060



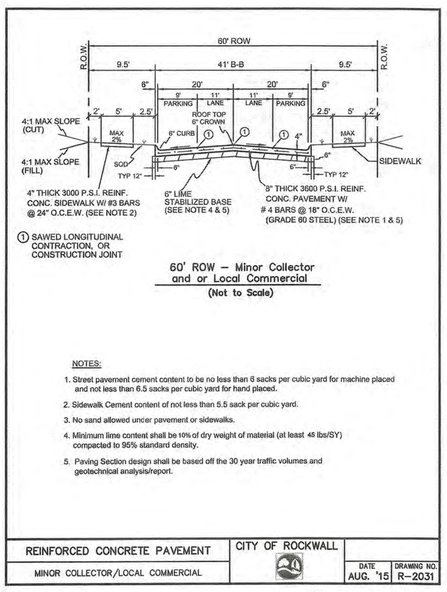
REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE
STREET HEADERS		305.4
	DATE: Mar. 2018	STANDARD DRAWING NO. R-2070



CONCRETE CURB & GUTTER	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE
INTEGRAL, SEPARATE, & DOWELED		305.1
	DATE: OCT. '04	STANDARD DRAWING NO. 2120



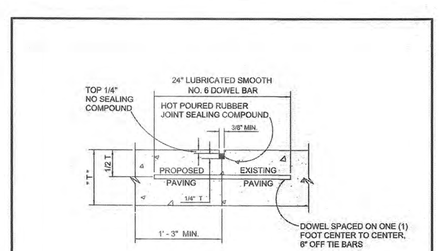
REINFORCED CONCRETE SIDEWALKS	CITY OF ROCKWALL	
JOINTS AND SPACING		
	DATE: AUG '19	DRAWING NO. R-2170



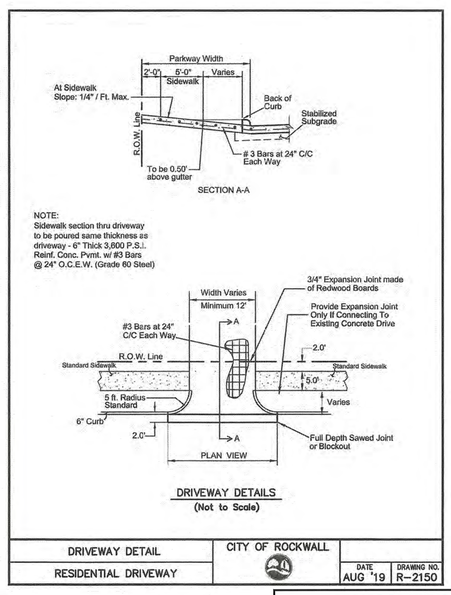
NOTES:

1. Street pavement cement content to be no less than 6 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 10% of dry weight of material (at least 45 lbs/SY) compacted to 95% standard density.
5. Paving Section design shall be based off the 30 year traffic volumes and geotechnical analysis/report.

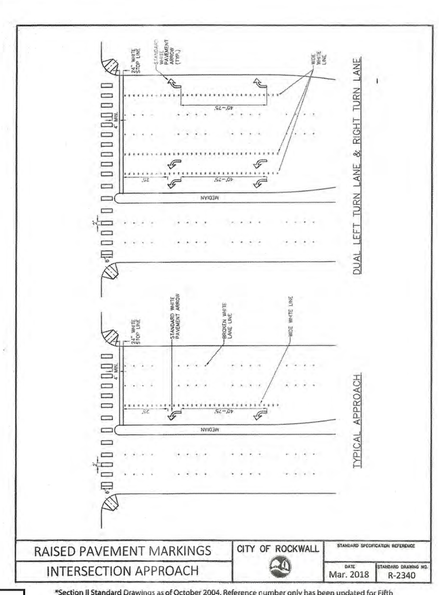
REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	
MINOR COLLECTOR/LOCAL COMMERCIAL		
	DATE: AUG. '15	DRAWING NO. R-2031



REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	
LONGITUDINAL BUTT JOINT		
	DATE: OCT. '17	DRAWING NO. R-2051

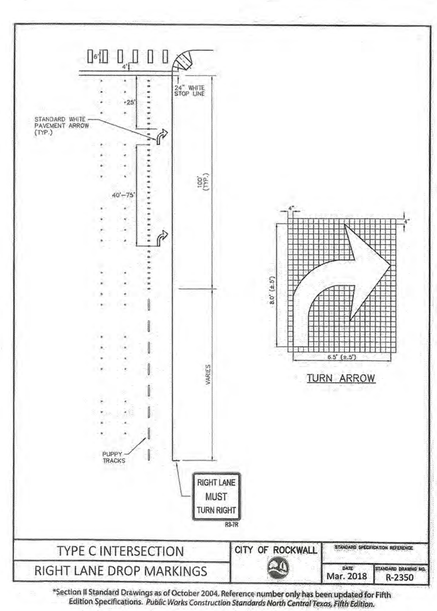


DRIVEWAY DETAIL	CITY OF ROCKWALL	
RESIDENTIAL DRIVEWAY		
	DATE: AUG '19	DRAWING NO. R-2150



RAISED PAVEMENT MARKINGS	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE
INTERSECTION APPROACH		
	DATE: Mar. 2018	STANDARD DRAWING NO. R-2340

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



TYPE C INTERSECTION	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE
RIGHT LANE DROP MARKINGS		
	DATE: Mar. 2018	STANDARD DRAWING NO. R-2350

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY _____ DATE _____

CAUTION! EXISTING UTILITIES

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 DT.DWG	

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

PAVING DETAILS 1

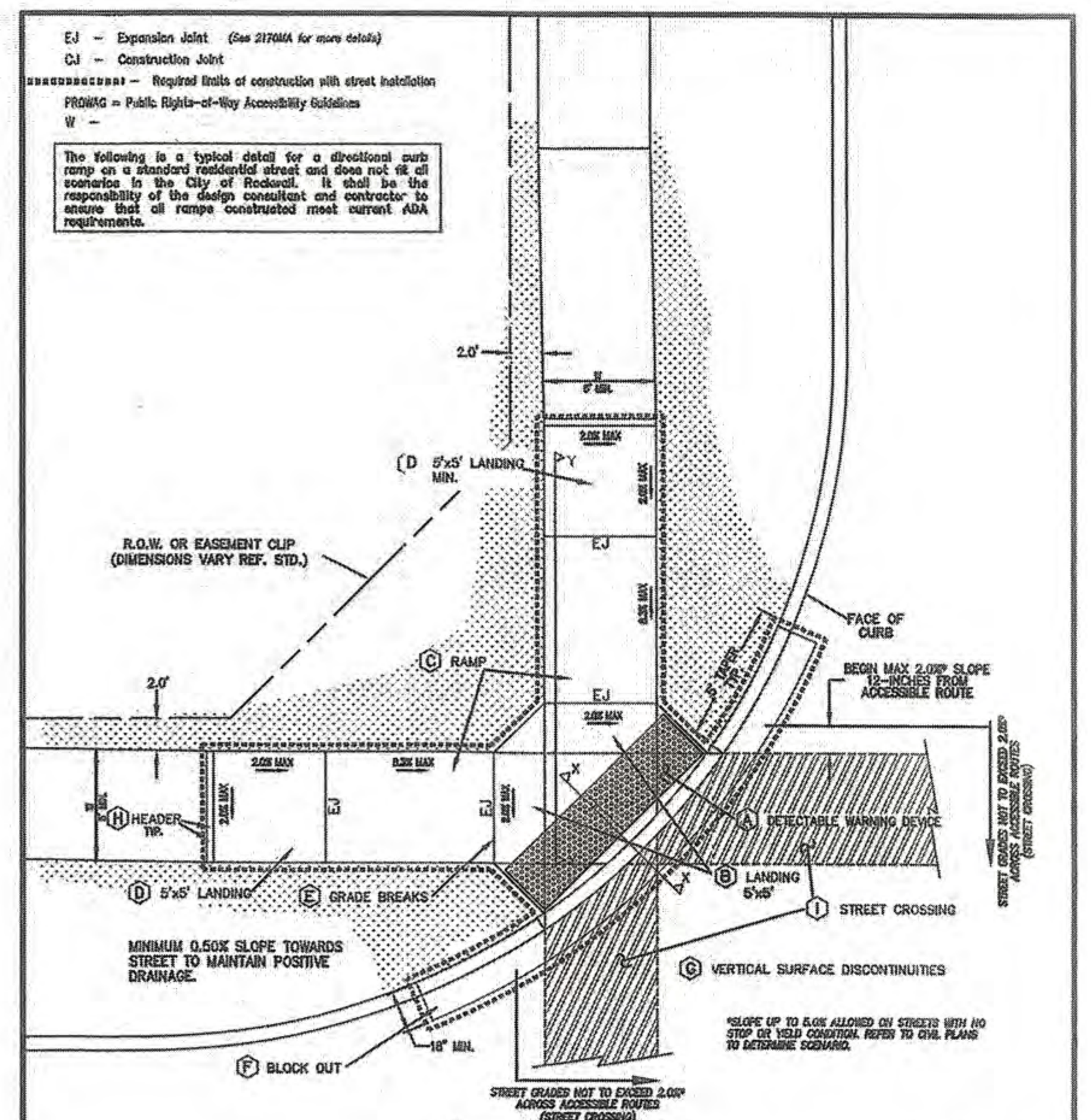
NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 34 OF 40

EJ – Expansion Joint (See 2170MA for more details)
CJ – Construction Joint
– Required limits of construction with street installation
PROWAG = Public Rights-of-Way Accessibility Guidelines
W –

The following is a typical detail for a directional curb ramp on a standard residential street and does not fit all scenarios in the City of Rockwall. It shall be the responsibility of the design consultant and contractor to ensure that all ramps constructed meet current ADA requirements.



NOTES: All newly constructed sidewalks, curb ramps and crosswalks installed within City of Rockwall public rights-of-way shall be considered a pedestrian access route and shall conform to the most current "Draft" Guidelines for Public Rights-of-Way created by the United States Access Board.

1. SEE DETAIL R-2125B FOR RAMP FEATURE DESCRIPTIONS
2. SEE DETAIL R-2125C FOR SECTIONS X-X AND Y-Y
3. SEE DETAIL R-2125D FOR ADDITIONAL NOTES

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17	DRAWING NO. R-2125A

(A) Detectable Warning Devices (DWD) shall be pre-manufactured cast-in-place truncated dome plates installed to the manufacturer's specifications, and shall meet all ADA requirements. No Brick Pavers allowed. Color to be approved by the City. DWD shall be 24 inches in length for the full width of the street connection starting at the back of curb. A maximum 2-inch border shall be allowed on the sides of the DWD for proper installation.

(B) Also known as "Clear Space" per ADA PROWAG, the City requires a minimum landing space of 5-foot by 5-foot at the bottom of every ramp. This landing space shall have a cross slope in both directions that does not exceed 2.0%. and shall be wholly outside the parallel vehicular travel path.

(C) The ramp component of the directional curb ramp shall have a continuous longitudinal slope more than 5% and less than 8.3%. The ramp shall also have a cross slope of no more than 2.0%. Length of ramp can vary, but shall not exceed 15 feet to achieve desired elevation change.

(D) Also known as "Turning Space" per ADA PROWAG, a minimum landing space of 5-foot by 5-foot shall be at the top of every ramp. This landing (turning) space shall have a cross slope in both directions that does not exceed 2.0%. Landing must match width of sidewalk and length shall be the same distance ("Squared" Landing).

(E) All curb ramps shall have grade breaks at the top and bottom that are perpendicular to the direction of the ramp run. Where the ends of the bottom grade break are less than or equal to 5 feet, the DWD shall be placed within the ramp at the bottom grade break. Where either end of the bottom grade break is greater than 5 feet, the DWD shall be placed behind the back of the curb.

(F) Paving contractor shall leave block out with a keyway joint installed, minimum of 18 inches measured from back of curb. Block out shall be poured monolithically with Curb Ramp. Concrete shall tie to street paving with a keyway joint per NCTCOG detail 2050. No curb shall be constructed where a DWD is provided. The curb on either side shall have a typical 5 foot taper to transition from the standard 6-inch curb height to be flush with ramp.

(G) All work associated with accessible routes shall be installed flush with all features to minimize vertical surface discontinuities. Each segment along accessible route shall be flush with no more (zero tolerance) than a ¼-inch grade separation (elevation difference), or ½-inch grade separation if beveled (bevel slope shall not be steeper than 50%).

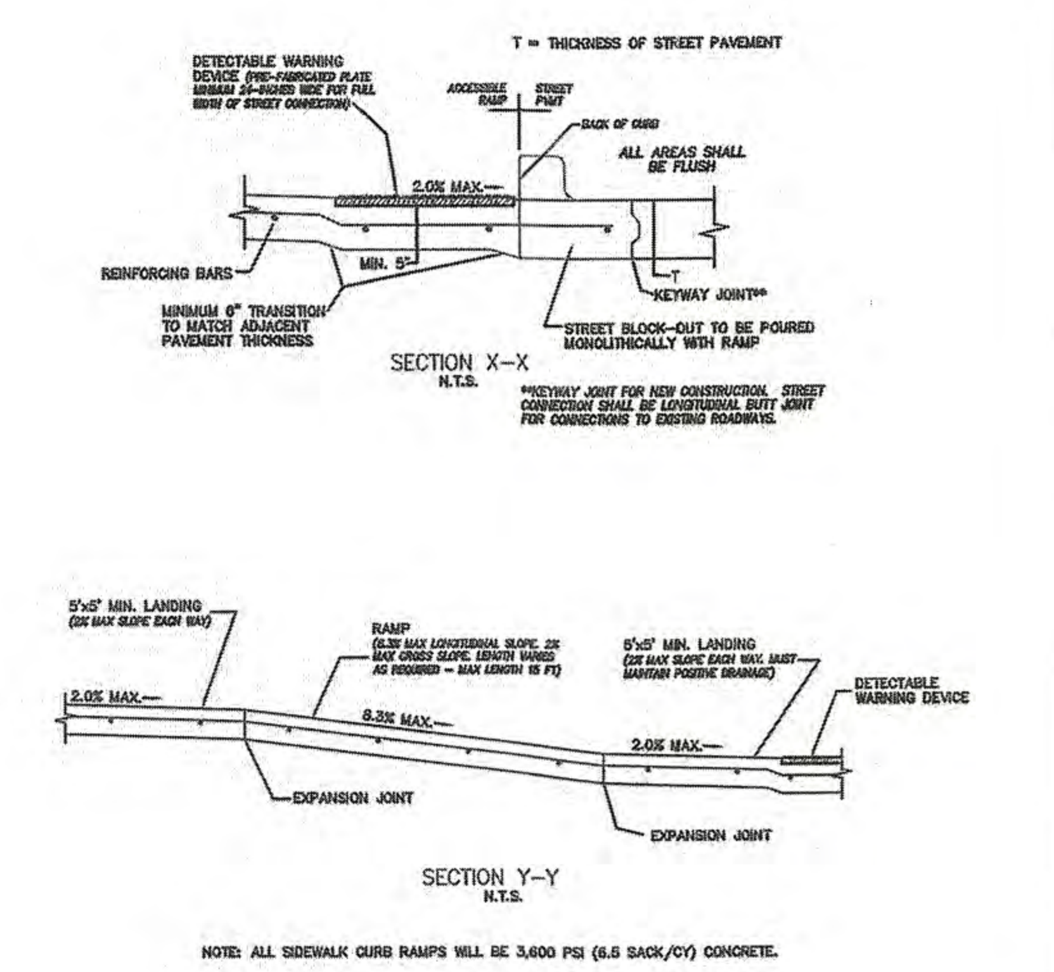
(H) A sidewalk header shall be constructed at ends of all work performed.

(I) Street crossings shall adhere to same guidelines as other accessible routes within public right-of-way, and shall be for the full width of the in-line accessible route. Cross slope shall not exceed 2%*. New street construction shall incorporate all ADA design requirements. It shall be the responsibility of the Design Professional and Contractor to ensure all street crossings meet the requirements of PROWAG. Street alterations on existing streets to bring to compliance shall be at the City Engineer's discretion.

(J) All curbs constructed as part of an ADA Ramp shall match City curb standards.

** See PROWAG special design considerations when street crossing has no stop or yield condition.*

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17	DRAWING NO. R-2125B



NOTE: ALL SIDEWALK CURB RAMPS WILL BE 3,600 PSI (6.5 SACK/CY) CONCRETE.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17	DRAWING NO. R-2125C

PEDESTRIAN ACCESSIBILITY (WITHIN PUBLIC R.O.W.)

All newly constructed sidewalks, curb ramps and crosswalks installed within City of Rockwall public rights-of-way shall be considered a pedestrian access route and shall conform to the most current Guidelines for Public Rights-of-Way created by the United States Access Board.

CURB RAMPS

1. All slopes shown are MAXIMUM ALLOWABLE. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
2. Landings shall be 5'x 5' minimum with a maximum 2% slope in the transverse and longitudinal directions..
3. Clear space at the bottom of curb ramps shall be a minimum of 5'x 5' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
4. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
5. Additional information on curb ramp location, design, light reflective value and texture may be found in the most current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102. Federal guidelines shall supersede any conflicts.
6. 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 and accessible routes shall align with theoretical crosswalks unless otherwise directed.
7. Handrails are not required on curb ramps.
8. Provide a flush transition where the curb ramps connect to the street.
9. Accessible routes are considered "ramps" when longitudinal slopes are between 5% and 8.3% (maximum allowable). Sidewalks under 5% longitudinal slope are deemed accessible routes and must follow all applicable guidelines.

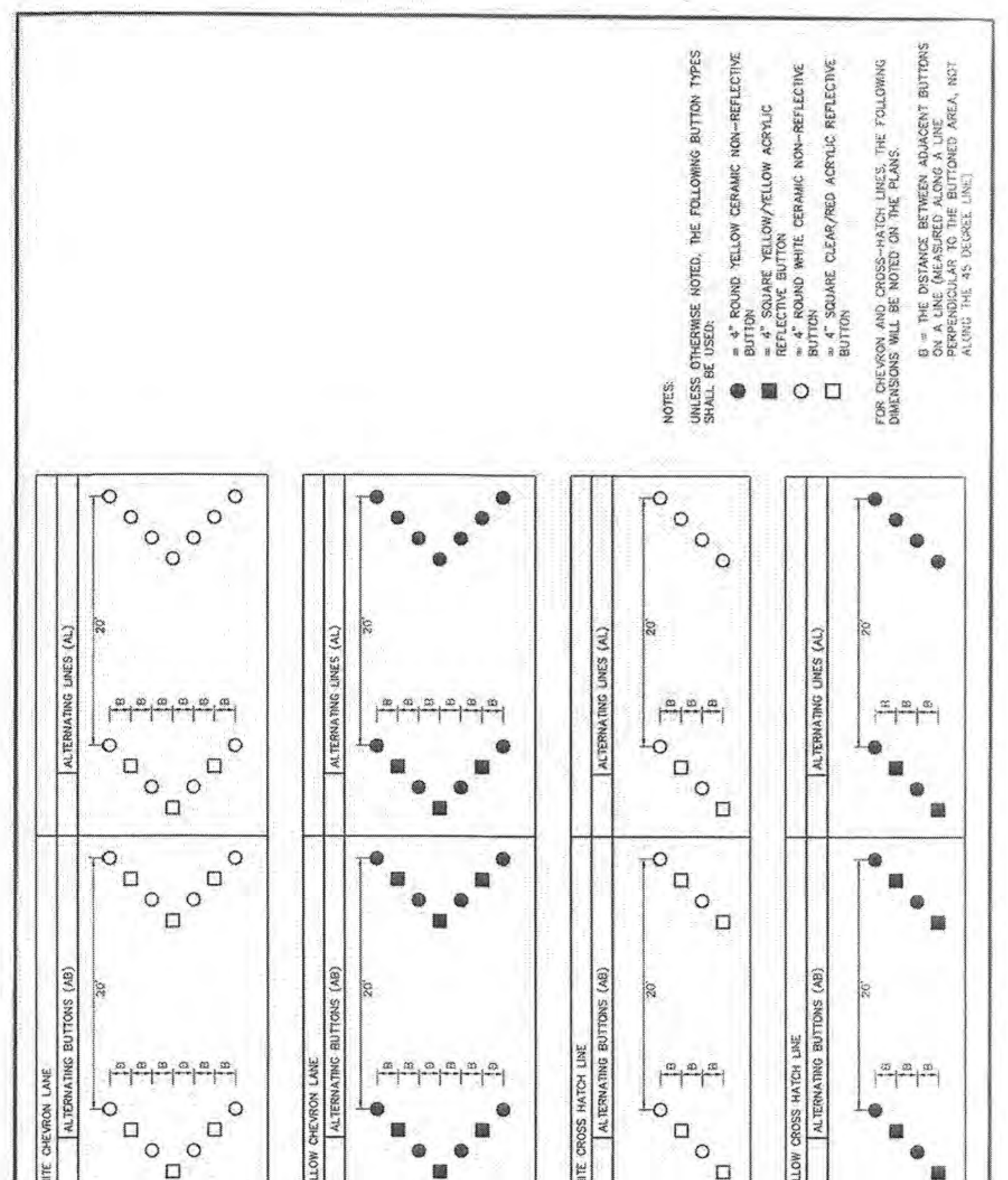
DETECTABLE WARNING DEVICE

10. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces. Furnish and install an approved cast-in-place dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
11. Detectable Warning Materials shall be truncated dome plates in the color approved by the City. Install products in accordance with manufacturer's specifications.
12. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
13. 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.
14. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. When placed on the ramp, align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Where detectable warning surfaces are provided on a surface with a slope that is less than 5 percent, dome orientation is less critical. Detectable warning surfaces may be curved along the corner radius.

SIDEWALKS

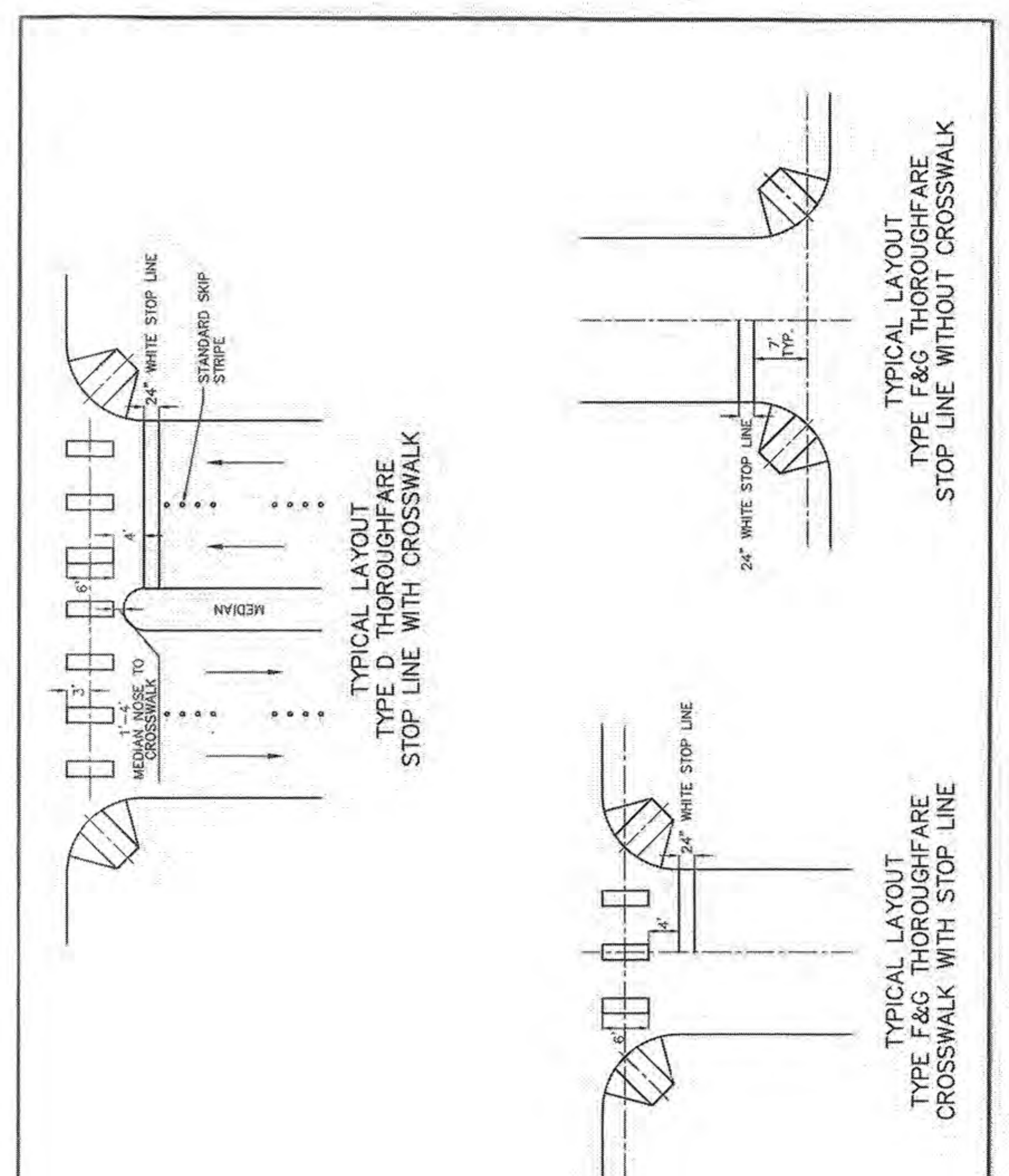
15. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
16. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
17. Street grades and cross slopes shall be as shown elsewhere in the plans.
18. Changes in level greater than 1/4 inch are not permitted (1/2 inch with bevel).
19. The least possible grace should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
20. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.

DIRECTIONAL CURB RAMP	CITY OF ROCKWALL	DATE MAR. '17	DRAWING NO. R-2125D



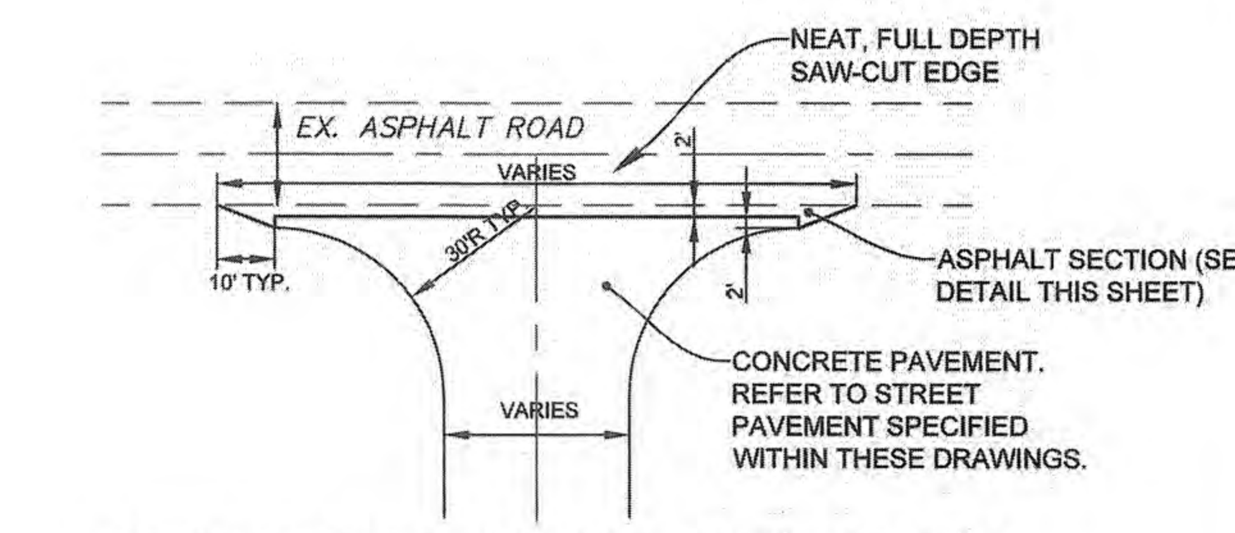
RAISED PAVEMENT MARKINGS	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	
CHEVRON AND CROSSHATCH		DATE Mar. 2018	STANDARD DRAWING NO. R-2330

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

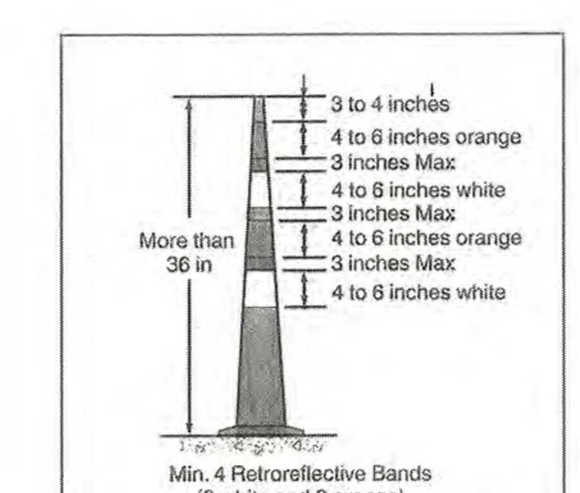


TYPICAL THOROUGHFARE	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE	
LAYOUTS		DATE Mar. 2018	STANDARD DRAWING NO. R-2360

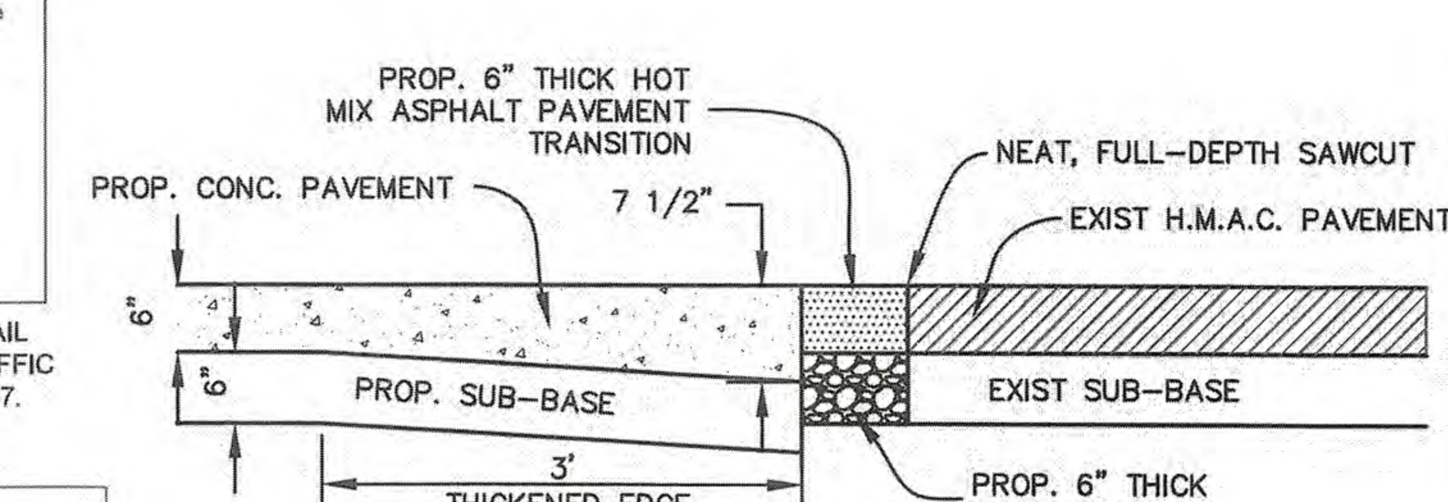
*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*



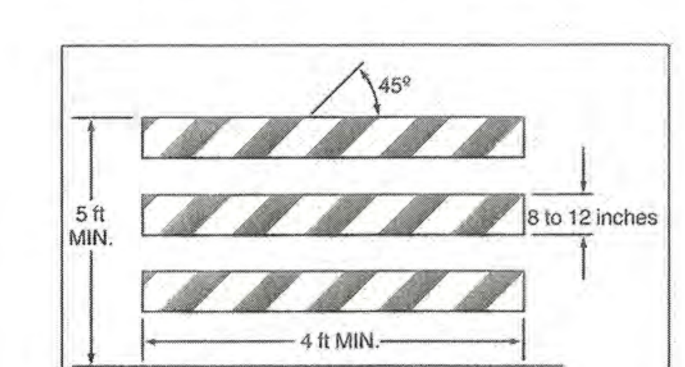
CONNECTION TO EXISTING ASPHALT STREET
N.T.S.



42" CHANNELIZING DEVICE DETAIL
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6F-7.



STREET CONNECTION TYPICAL SECTION TO EXISTING ASPHALT STREET
N.T.S.



TYPE III BARRICADE DETAIL
TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, FIGURE 6F-7.

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CITY ____ DATE ____

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REVISIONS:

DRAWN: MJH	DATE:
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PROJECT NO.: 08838	
DWG FILE NAME: 08838 DT.DWG	

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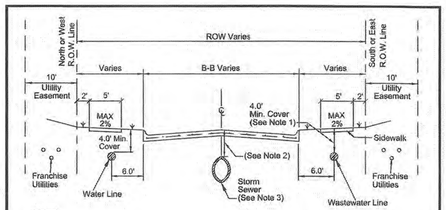
STATE OF TEXAS
RYAN C. KING
123635
REGISTERED PROFESSIONAL ENGINEER
6/1/2020

PAVING DETAILS 2

NORTHGATE

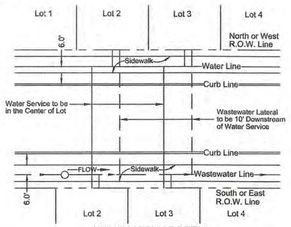
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 35 OF 40



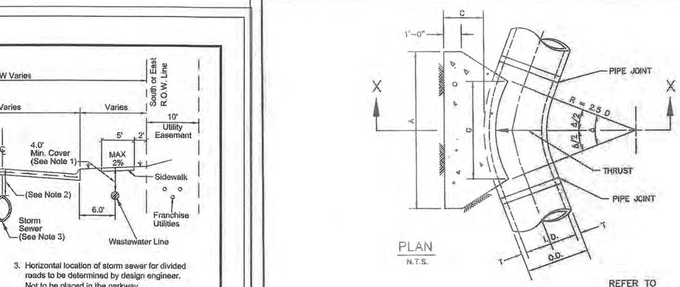
NOTE:

1. If wastewater line has a cover greater than ten feet (10') than pipe shall be minimum SDR 26 and no services allowed.
2. If cover is two (2) feet or less than Class IV RCP is required.
3. Horizontal location of storm sewer for divided roads to be determined by design engineer. Not to be placed in the parkway.



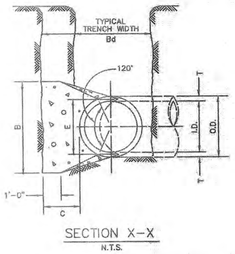
UTILITY SERVICE DETAIL

GENERAL UNDERGROUND CONDUIT UTILITIES LOCATION DETAIL	CITY OF ROCKWALL	DATE: OCT. '17	DRAWING NO.: R-3000



PLAN
N.T.S.

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.



SECTION X-X
N.T.S.

HORIZONTAL THRUST BLOCK AT PIPE BEND	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4010A

I.D. (IN.)	T (IN.)	Δ = 11.25° C (FT.)	Δ = 22.50° C (FT.)	E (FT.)
4,6,8	0.4	1.5	1.5	0.9
10,12	0.5	1.5	1.5	1.2
16,18	0.6	1.5	1.5	1.6
20	0.7	1.5	1.5	1.8
24	0.9	1.5	1.5	2.1
30	2.9	1.5	1.9	2.6
36	4.5	1.5	2.3	3.3
42	5.0	1.8	2.6	3.8
48	5.5	2.0	3.0	4.3
54	6.0	2.3	3.4	4.8
60	6.5	2.5	3.8	5.3
66	6.8	2.8	4.1	5.7
72	7.5	3.0	4.5	6.3
78	7.5	3.3	4.9	6.7
84	8.0	3.5	5.3	7.2
90	8.5	3.8	5.6	7.7
96	9.0	4.0	6.0	8.2

I.D. (IN.)	Δ = 11.25° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)	I.D. (IN.)	Δ = 22.50° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.8	3.0	3.5	0.6	2.0	2.5	0.3
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1
48	2.2	28.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.8	6.0	7.0	5.3
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.8	162.1	13.0	12.5	27.2	8.5	10.0	14.8
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7
96	4.4	108.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8

TABLES OF DIMENSIONS AND QUANTITIES

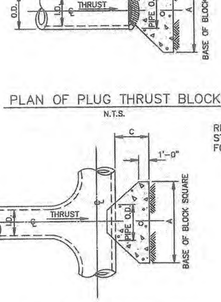
HORIZONTAL THRUST BLOCK AT PIPE BEND	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4010B

I.D. (IN.)	Δ = 30° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)	I.D. (IN.)	Δ = 45° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)
4,6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.8
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.5	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.8	8.0	4.5	2.3	4.5	4.0	1.1
30	3.6	27.5	6.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6
36	4.4	39.5	7.0	6.0	3.4	4.5	4.5	1.6	36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6
42	5.1	53.8	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	79.6	11.5	7.0	8.1	8.0	5.0	4.2
48	5.8	70.3	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3
54	6.5	89.0	10.0	9.0	10.3	7.0	6.5	5.3	54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.8
60	7.3	110.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0
66	8.0	132.9	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2
72	8.7	158.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7
78	9.4	185.6	14.5	13.0	30.0	10.0	9.5	15.6	78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9
84	10.1	215.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6
90	10.9	247.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6
96	11.8	281.2	18.0	16.0	55.5	12.5	11.5	28.9	96	17.1	415.6	26.0	16.0	89.5	18.5	11.8	48.5

I.D. (IN.)	Δ = 67.50° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)	I.D. (IN.)	Δ = 90° G (FT.)	THRUST (TONS)	EARTH A (FT.)	EARTH B (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK B (FT.)	ROCK VOL. (C.Y.)
4,6,8	2.1	5.6	3.0	2.0	0.3	2.0	1.5	0.2	4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
10,12	3.1	12.8	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	5.2	34.9	9.0	4.0	2.3	5.5	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	6.2	50.3	11.5	4.5	3.5	6.5	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1
30	7.8	58.9	12.0	5.0	4.8	7.5	4.0	2.2	30	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.3
36	9.4	84.9	14.5	6.0	8.2	9.5	4.5	3.8	36	11.9	108.0	18.0	6.0	11.4	12.0	4.5	5.3
42	10.9	115.5	17.0	7.0	12.8	11.0	5.5	6.3	42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7
48	12.5	150.9	19.0	8.0	18.4	13.0	6.0	9.2	48	15.9	192.0	24.0	8.0	25.2	16.0	6.0	12.4
54	14.0	191.0	21.5	9.0	26.0	15.0	6.5	12.9	54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.1
60	15.8	235.8	24.0	10.0	35.6	16.0	7.5	17.6	60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.0
66	17.1	285.3	26.0	11.0	45.0	18.0	8.0	23.0	66	21.8	362.8	33.0	11.0	66.2	22.0	8.5	32.5
72	18.7	339.5	28.5	12.0	57.8	19.0	9.0	28.4	72	23.8	431.8	36.0	12.0	85.6	24.0	9.0	41.0
78	20.2	398.5	31.0	13.0	75.7	21.0	9.5	37.4	78	25.7	506.7	39.0	13.0	108.2	26.0	10.0	53.2
84	21.8	462.1	33.5	14.0	94.7	22.0	10.5	46.5	84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.8
90	23.3	530.5	35.5	15.0	114.4	24.5	11.0	58.2	90	29.0	674.6	45.0	15.0	164.8	30.0	11.5	81.2
96	24.9	603.6	38.0	16.0	138.9	25.5	12.0	70.0	96	31.6	767.9	48.0	16.0	199.0	32.0	12.0	95.1

TABLES OF DIMENSIONS AND QUANTITIES

HORIZONTAL THRUST BLOCK AT PIPE BEND	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4010C



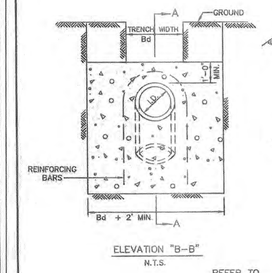
PLAN OF PLUG THRUST BLOCK
N.T.S.

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

PLAN OF TEE THRUST BLOCK
N.T.S.

I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH A (FT.)	EARTH VOL. (C.Y.)	ROCK A (FT.)	ROCK VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	78.3	4.0	9.0	7.3	8.5	4.2
42	104.3	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.8	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.6
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

HORIZONTAL THRUST BLOCK AT TEES AND PLUGS	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4020



ELEVATION "B-B"
N.T.S.

SECTION "A-A"
N.T.S.

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

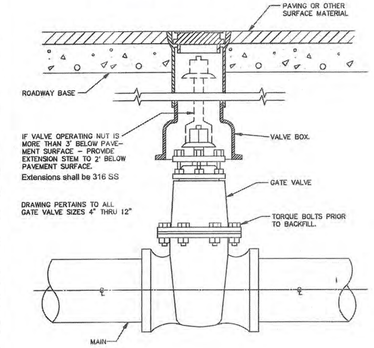
Δ	11.25° THRUST (TONS)	11.25° VOL. (C.Y.)	22.50° THRUST (TONS)	22.50° VOL. (C.Y.)	30° THRUST (TONS)	30° VOL. (C.Y.)	45° THRUST (TONS)	45° VOL. (C.Y.)	67.50° THRUST (TONS)	67.50° VOL. (C.Y.)	90° THRUST (TONS)	90° VOL. (C.Y.)	Δ I.D. (IN.)
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4,6,8
10,12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10,12
16,18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16,18
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.8	24
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.8	49.0	24.5	53.1	26.5	30
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	76.4	38.2	36
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60
66	50.1	25.0	98.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0	78
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96

VERTICAL THRUST BLOCK AT PIPE BEND	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4030

GENERAL NOTES FOR ALL THRUST BLOCKS:

1. CONCRETE FOR BLOCKING SHALL BE CLASS "B".
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
3. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
8. USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

THRUST BLOCK GENERAL NOTES	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE: 502.4	DATE: OCT. '04	STANDARD DRAWING NO.: 4040

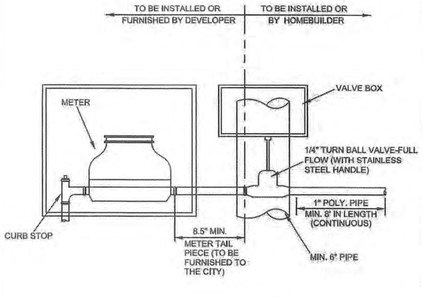


GATE VALVE BOX AND EXTENSION STEM
N.T.S.

GATE VALVE 4" TO 12" BOX & EXTENSION STEM	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE: 502.6.6*	DATE: AUG. '19	STANDARD DRAWING NO.: R-4050

*Section II Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. *Public Works Construction Standards North Central Texas, Fifth Edition.*

City of Rockwall
The Lake Pleasant



NOTE:

VALVE BOX TO BE TRAFFIC RATED IF UNDER PAVING.

SINGLE SERVICE METER TAIL CONNECTION
NOT TO SCALE

WATER METER DETAIL SINGLE SERVICE	CITY OF ROCKWALL	DATE: AUG. '15	DRAWING NO.: R-4145

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY _____ DATE _____

CAUTION! EXISTING UTILITIES
CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

ENGINEERINGCONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH DATE:
CHECKED: RCK DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DT.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

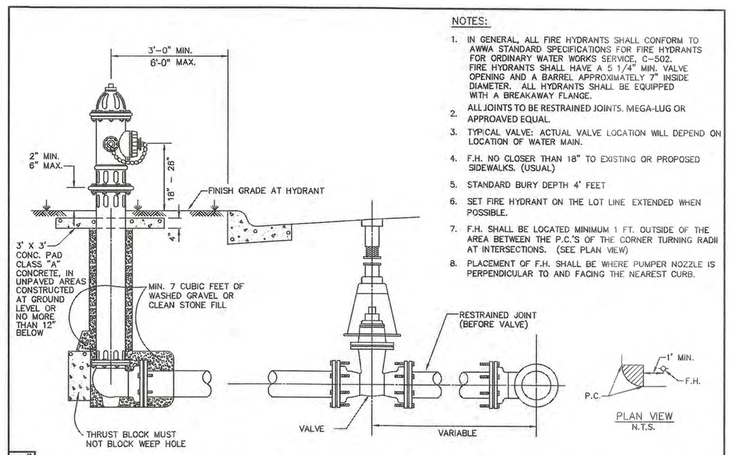
STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

WATER DETAILS 1

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

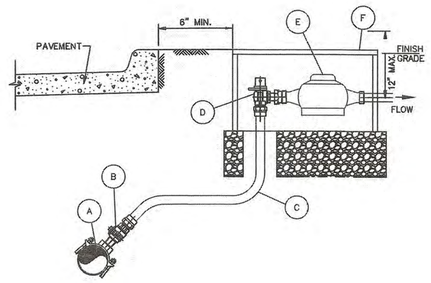
SHEET 36 OF 40



NOTES:

1. IN GENERAL, ALL FIRE HYDRANTS SHALL CONFORM TO AWWA STANDARD SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE, C-502. FIRE HYDRANTS SHALL HAVE A 5 1/4" MIN. VALVE OPENING AND A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE.
2. ALL JOINTS TO BE RESTRAINED JOINTS. MEGA-LUG OR APPROAVED EQUAL.
3. TYPICAL VALVE; ACTUAL VALVE LOCATION WILL DEPEND ON LOCATION OF WATER MAIN.
4. F.H. NO CLOSER THAN 18" TO EXISTING OR PROPOSED SIDEWALKS. (USUAL)
5. STANDARD BURY DEPTH 4' FEET
6. SET FIRE HYDRANT ON THE LOT LINE EXTENDED WHEN POSSIBLE.
7. F.H. SHALL BE LOCATED MINIMUM 1 FT. OUTSIDE OF THE AREA BETWEEN THE P.C.'S OF THE CORNER TURNING RADII AT INTERSECTIONS. (SEE PLAN VIEW)
8. PLACEMENT OF F.H. SHALL BE WHERE PUMPER NOZZLE IS PERPENDICULAR TO AND FACING THE NEAREST CURB.

STANDARD DRAWING NO. R-4120	FIRE HYDRANT INSTALLATION	CITY OF ROCKWALL	STANDARD SPECIFICATION REFERENCE 502.3
			DATE Aug. 2019 / STANDARD DRAWING NO. R-4120



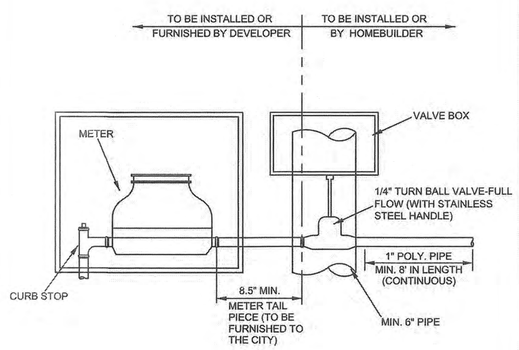
NOTES:

1. SERVICE PIPE SHALL BE 1" OR 2" SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR 9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
2. TOP OF METER BOXES SHALL BE 1" ABOVE FINISHED GRADE.
3. METER BOX SHALL HAVE A MINIMUM OF 6" OF GRAVEL BENEATH METER BOX AS ILLUSTRATED.
4. LOCATION OF THE METER BOX SHALL BE LOCATED TO ALLOW 6" CLEARANCE FROM CURB.

MATERIAL LIST:

A. SERVICE SADDLE SHALL BE BRASS WITH DOUBLE BRONZE FLATTENED STRAPS OR STAINLESS STEEL DOUBLE BOLT WIDE STRAPS. NO BANDED OR HINGED STRAPS SHALL BE ALLOWED. SERVICE SADDLES SHALL MEET AWWA/CC TAPPING OUTLET (TAPERED THREADS) REQUIREMENTS. ALL SERVICE SADDLES SHALL BE PER APPROVED WATER MATERIALS LIST.
B. 1" OR 2" CORPORATION STOP PER APPROVED WATER MATERIALS LIST.
C. 1" OR 2" SERVICE PIPE SHALL BE SEAMLESS 250 PSI BLUE COLORED POLYETHYLENE ASTM D2737, SDR9, CTS WATER SERVICE PIPE, NSF61 APPROVED.
D. 1" OR 2" LOCKING ANGLE METER VALVE (STOP) PER APPROVED WATER MATERIALS LIST.
E. WATER METERS CENTERED IN BOX AS ILLUSTRATED.
F. ROUND METER BOX PER APPROVED WATER MATERIALS LIST.

WATER SERVICE INSTALLATION	CITY OF ROCKWALL	
1" OR 2" LINE		DATE AUG '19 / DRAWING NO. R-4130



NOTE:

VALVE BOX TO BE TRAFFIC RATED IF UNDER PAVING.

SINGLE SERVICE METER TAIL CONNECTION
NOT TO SCALE

WATER METER DETAIL	CITY OF ROCKWALL	
SINGLE SERVICE		DATE AUG. '15 / DRAWING NO. R-4145

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

RELEASED FOR CONSTRUCTION
ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY _____ DATE _____

CAUTION! EXISTING UTILITIES

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BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

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ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:	
DRAWN: MJH	DATE:
CHECKED: RCK	DATE: 6/1/2020
PROJECT NO.: 08838	
DWG FILE NAME: 08838 DT.DWG	

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

WATER DETAILS 2

NORTHGATE

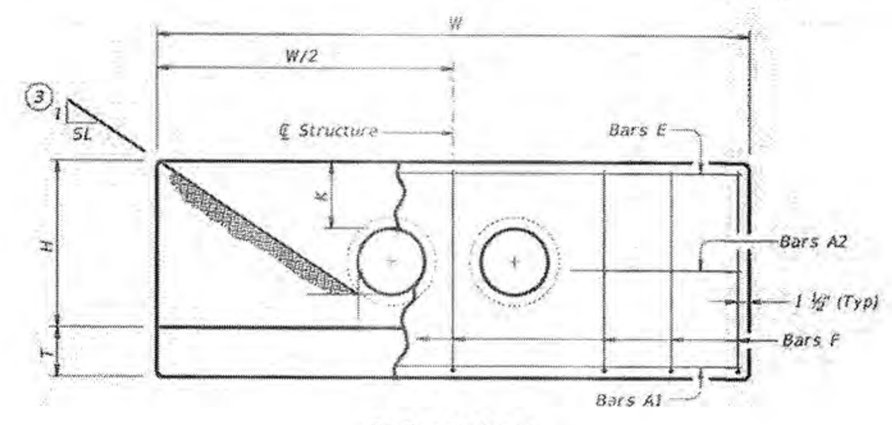
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 37 OF 40

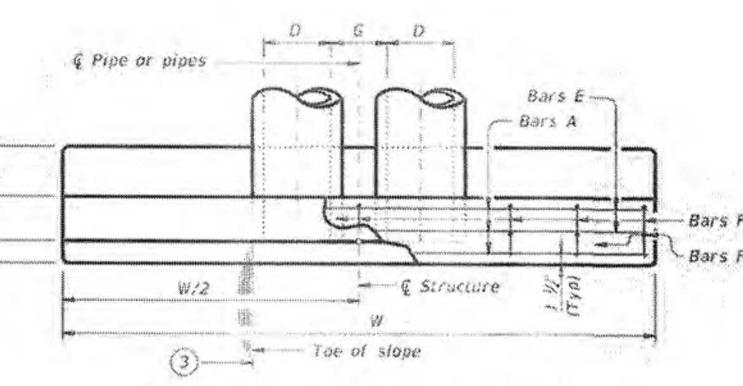
TABLE OF VARIABLE DIMENSIONS (5) AND QUANTITIES FOR ONE HEADWALL

Slope	Dia of Pipe (D)	Values for One Pipe: W	Reinf (Lbs) (1)	Conc (CY) (2)	Values To Be Added for Each Addt'l Pipe: W	Reinf (Lbs) (1)	Conc (CY) (2)
2:1	12"	9' - 0"	122	1.1	1' - 9"	15	0.2
	15"	10' - 3"	136	1.3	2' - 2"	16	0.2
	18"	11' - 6"	163	1.5	2' - 8"	19	0.3
	21"	12' - 9"	200	1.8	3' - 1"	31	0.4
	24"	14' - 0"	217	2.1	3' - 7"	34	0.4
	27"	15' - 3"	254	2.4	3' - 11"	37	0.5
	30"	16' - 6"	272	2.7	4' - 4"	40	0.6
	33"	17' - 9"	314	3.1	4' - 8"	43	0.6
	36"	19' - 0"	371	3.9	5' - 1"	46	0.8
	42"	21' - 6"	442	4.9	5' - 10"	52	1.0
	48"	25' - 0"	569	6.4	6' - 7"	59	1.3
	54"	27' - 6"	701	7.5	7' - 6"	82	1.6
	60"	30' - 0"	794	8.8	8' - 3"	90	1.8
	66"	32' - 6"	894	10.2	8' - 9"	96	2.0
	72"	35' - 0"	1,055	11.7	9' - 4"	103	2.3
3:1	12"	13' - 0"	175	1.6	1' - 9"	14	0.2
	15"	14' - 9"	193	1.9	2' - 2"	17	0.2
	18"	16' - 6"	228	2.2	2' - 8"	19	0.3
	21"	18' - 3"	299	2.6	3' - 1"	31	0.4
	24"	20' - 0"	323	3.0	3' - 7"	33	0.4
	27"	21' - 9"	371	3.5	3' - 11"	37	0.5
	30"	23' - 6"	415	4.0	4' - 4"	40	0.5
	33"	25' - 3"	469	4.6	4' - 8"	43	0.6
	36"	27' - 0"	556	5.7	5' - 1"	46	0.8
	42"	30' - 6"	675	7.1	5' - 10"	52	1.0
	48"	35' - 6"	837	9.2	6' - 7"	59	1.3
	54"	39' - 0"	1,015	11.0	7' - 6"	84	1.6
	60"	42' - 6"	1,171	12.9	8' - 3"	91	1.8
	66"	46' - 0"	1,298	14.9	8' - 9"	98	2.0
	72"	49' - 6"	1,561	17.1	9' - 4"	103	2.3
4:1	12"	17' - 0"	229	2.0	1' - 9"	15	0.2
	15"	19' - 3"	266	2.4	2' - 2"	17	0.2
	18"	21' - 6"	306	2.9	2' - 8"	19	0.3
	21"	23' - 9"	382	3.5	3' - 1"	31	0.3
	24"	26' - 0"	430	3.9	3' - 7"	34	0.4
	27"	28' - 3"	486	4.7	3' - 11"	37	0.5
	30"	30' - 6"	539	5.2	4' - 4"	40	0.6
	33"	32' - 9"	603	6.0	4' - 8"	42	0.6
	36"	35' - 0"	738	7.5	5' - 1"	47	0.8
	42"	39' - 6"	881	9.3	5' - 10"	52	1.0
	48"	46' - 0"	1,102	12.1	6' - 7"	61	1.3
	54"	50' - 6"	1,364	14.4	7' - 6"	84	1.6
	60"	55' - 0"	1,547	16.9	8' - 3"	91	1.8
	66"	59' - 6"	1,741	19.5	8' - 9"	98	2.0
	72"	64' - 0"	2,077	22.4	9' - 4"	102	2.3
6:1	12"	25' - 0"	336	3.0	1' - 9"	14	0.2
	15"	28' - 3"	384	3.6	2' - 2"	17	0.2
	18"	31' - 6"	452	4.2	2' - 8"	19	0.3
	21"	34' - 9"	581	5.1	3' - 1"	31	0.4
	24"	38' - 0"	644	5.8	3' - 7"	34	0.4
	27"	41' - 3"	737	6.9	3' - 11"	37	0.5
	30"	44' - 6"	807	7.7	4' - 4"	39	0.6
	33"	47' - 9"	912	8.9	4' - 8"	44	0.6
	36"	51' - 0"	1,108	11.0	5' - 1"	48	0.8
	42"	57' - 6"	1,318	13.7	5' - 10"	54	1.0
	48"	67' - 0"	1,682	17.9	6' - 7"	59	1.3
	54"	73' - 6"	2,072	21.3	7' - 6"	83	1.6
	60"	80' - 0"	2,351	24.9	8' - 3"	89	1.8
	66"	86' - 6"	2,643	28.9	8' - 9"	96	2.0
	72"	93' - 0"	3,121	33.1	9' - 4"	101	2.3

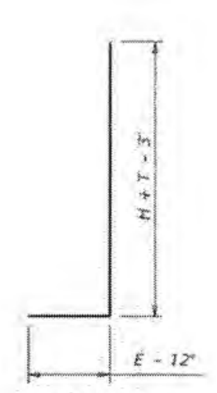
DATE:
FILE:



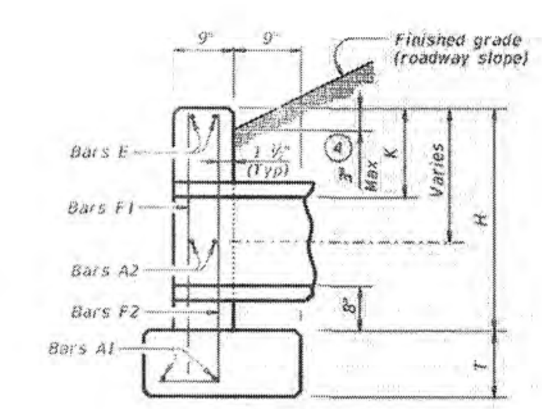
ELEVATION



PLAN OF NON-SKEWED PIPES



BARS F2



SECTION AT CENTER OF PIPE

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (5)	H	T	E
12"	0' - 9"	1' - 0"	2' - 8"	0' - 9"	1' - 9"
15"	0' - 11"	1' - 0"	2' - 11"	0' - 9"	1' - 9"
18"	1' - 2"	1' - 0"	3' - 2"	0' - 9"	1' - 9"
21"	1' - 4"	1' - 0"	3' - 5"	0' - 9"	2' - 0"
24"	1' - 7"	1' - 0"	3' - 8"	0' - 9"	2' - 0"
27"	1' - 8"	1' - 0"	3' - 11"	0' - 9"	2' - 3"
30"	1' - 10"	1' - 0"	4' - 2"	0' - 9"	2' - 3"
33"	1' - 11"	1' - 0"	4' - 5"	0' - 9"	2' - 6"
36"	2' - 1"	1' - 0"	4' - 8"	1' - 0"	2' - 6"
42"	2' - 4"	1' - 0"	5' - 2"	1' - 0"	2' - 9"
48"	2' - 7"	1' - 3"	5' - 11"	1' - 0"	3' - 0"
54"	3' - 0"	1' - 3"	6' - 5"	1' - 0"	3' - 3"
60"	3' - 3"	1' - 3"	6' - 11"	1' - 0"	3' - 6"
66"	3' - 3"	1' - 3"	7' - 5"	1' - 0"	3' - 9"
72"	3' - 4"	1' - 3"	7' - 11"	1' - 0"	4' - 0"

TABLE OF (6) REINFORCING STEEL

Bar	Size	Spa	No.
A1	#5	–	2
A2	#5	1' - 6"	–
E	#5	–	2
F	#5	1' - 0"	–

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class C concrete (f'c = 3,600 psi).

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

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

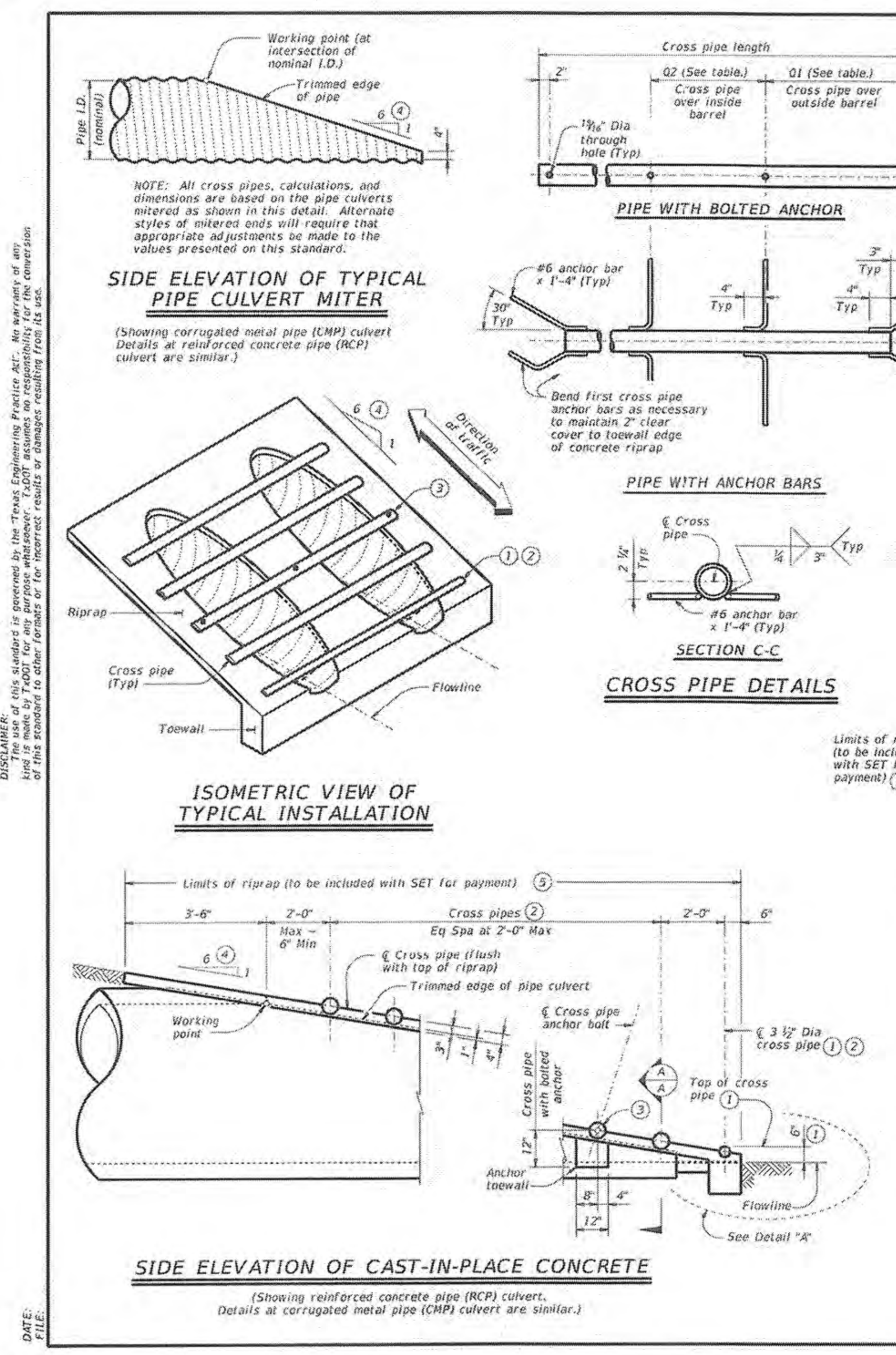
(1) Total quantities include one 3'-1" lap for bars over 60' in length.
(2) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.
(3) Indicated slope is perpendicular to centerline pipe or pipes.
(4) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
(5) Dimensions shown are usual and maximum.
(6) Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: chpw0ste-20.dgn | DN: TxDOT | CK: TxDOT | DW: TxDOT | CK: TxDOT
©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.



SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

ISOMETRIC VIEW OF TYPICAL INSTALLATION

PIPE WITH BOLTED ANCHOR

PIPE WITH ANCHOR BARS

SECTION C-C

CROSS PIPE DETAILS

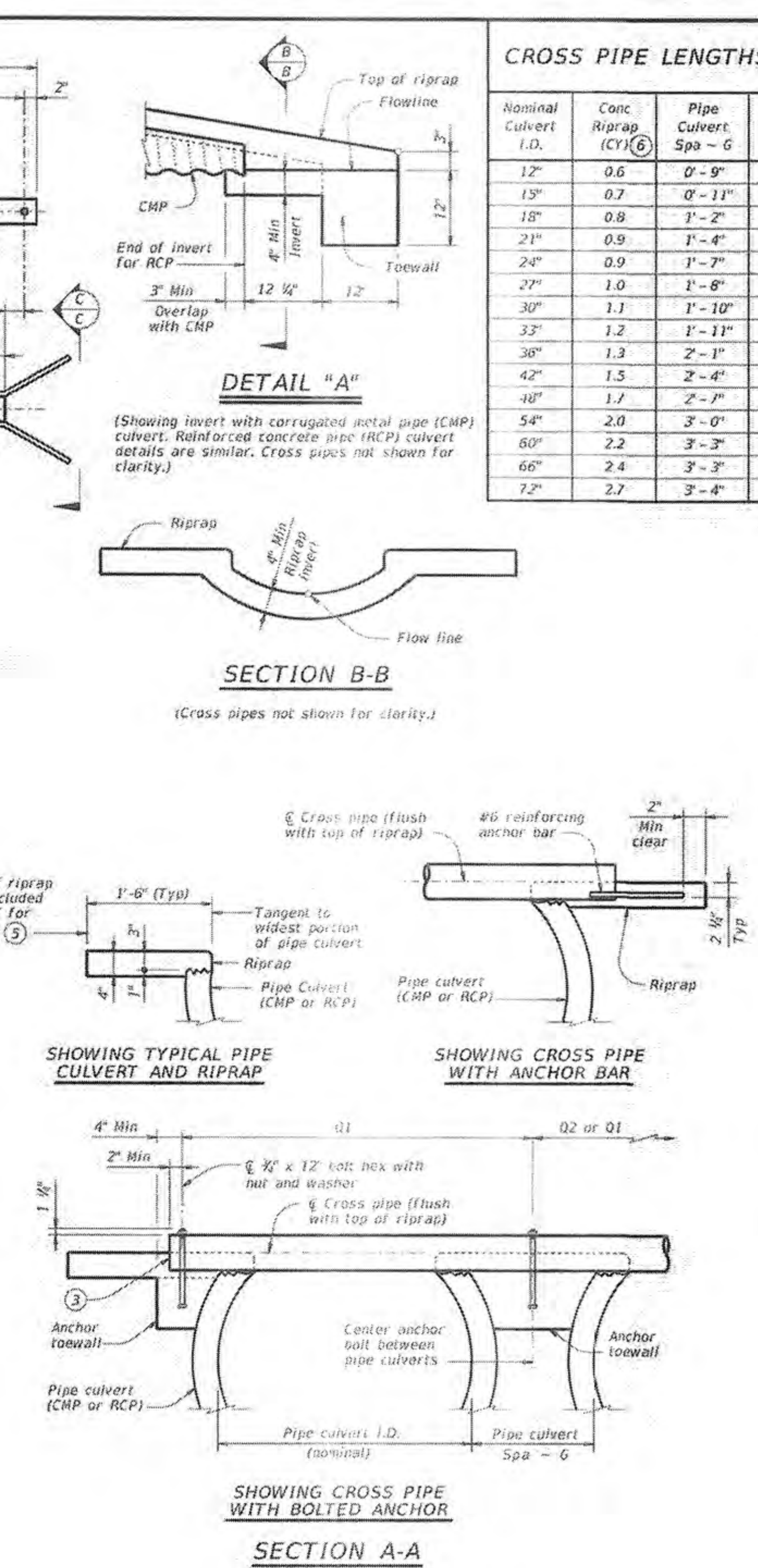
DETAIL "A"

SECTION B-B

SHOWING TYPICAL PIPE CULVERT AND RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR

SIDE ELEVATION OF CAST-IN-PLACE CONCRETE



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa – G	Single Barrel – Q1	Multi-Barrel – Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' - 9"	N/A	2' - 1"	1' - 9"	3 or more pipe culverts	3" Std (3.500" O.D.)
15"	0.7	0' - 11"	N/A	2' - 5"	2' - 2"		
18"	0.8	1' - 2"	N/A	2' - 10"	2' - 8"		
21"	0.9	1' - 4"	N/A	3' - 2"	3' - 1"		
24"	0.9	1' - 7"	N/A	3' - 6"	3' - 7"		
27"	1.0	1' - 8"	N/A	3' - 10"	3' - 11"	3 or more pipe culverts	3 ½" Std (4.000" O.D.)
30"	1.1	1' - 10"	N/A	4' - 2"	4' - 4"	2 or more pipe culverts	
33"	1.2	1' - 11"	4' - 2"	4' - 5"	4' - 8"	All pipe culverts	
36"	1.3	2' - 1"	4' - 5"	4' - 9"	5' - 1"	All pipe culverts	4" Std (4.500" O.D.)
42"	1.5	2' - 4"	4' - 11"	5' - 5"	5' - 10"		
48"	1.7	2' - 7"	5' - 5"	6' - 0"	6' - 7"	All pipe culverts	5" Std (5.563" O.D.)
54"	2.0	3' - 0"	5' - 11"	6' - 9"	7' - 6"		
60"	2.2	3' - 3"	6' - 5"	7' - 4"	8' - 3"		
66"	2.4	3' - 3"	6' - 11"	7' - 10"	8' - 9"		
72"	2.7	3' - 4"	7' - 5"	8' - 5"	9' - 4"		

(1) The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 6" above the flow line.
(2) Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.
(3) Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
(4) Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
(5) Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".
(6) Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

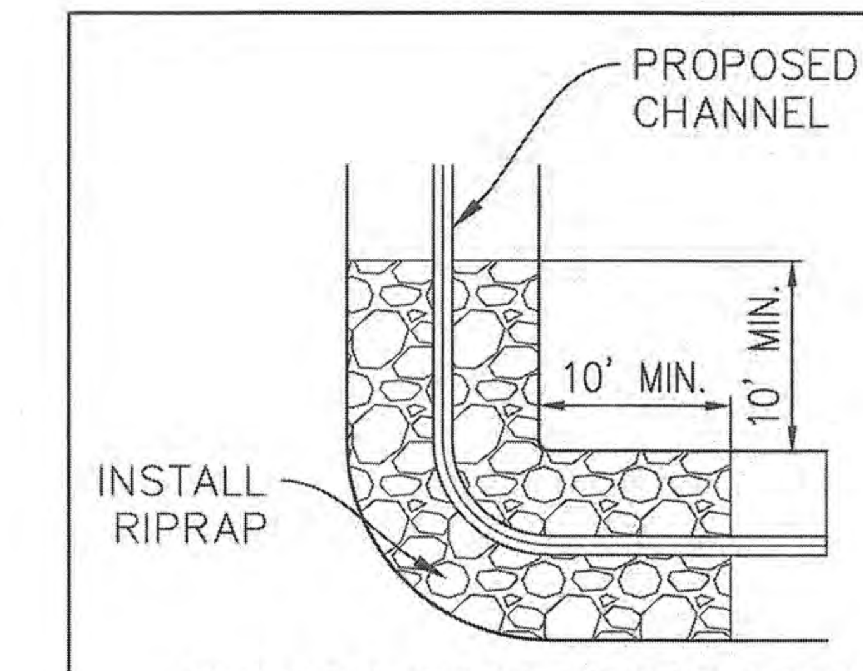
MATERIAL NOTES:
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5LX52.
Provide ASTM A307 bolts and nuts.
Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:
Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap".
Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Texas Department of Transportation — Bridge Division Standard

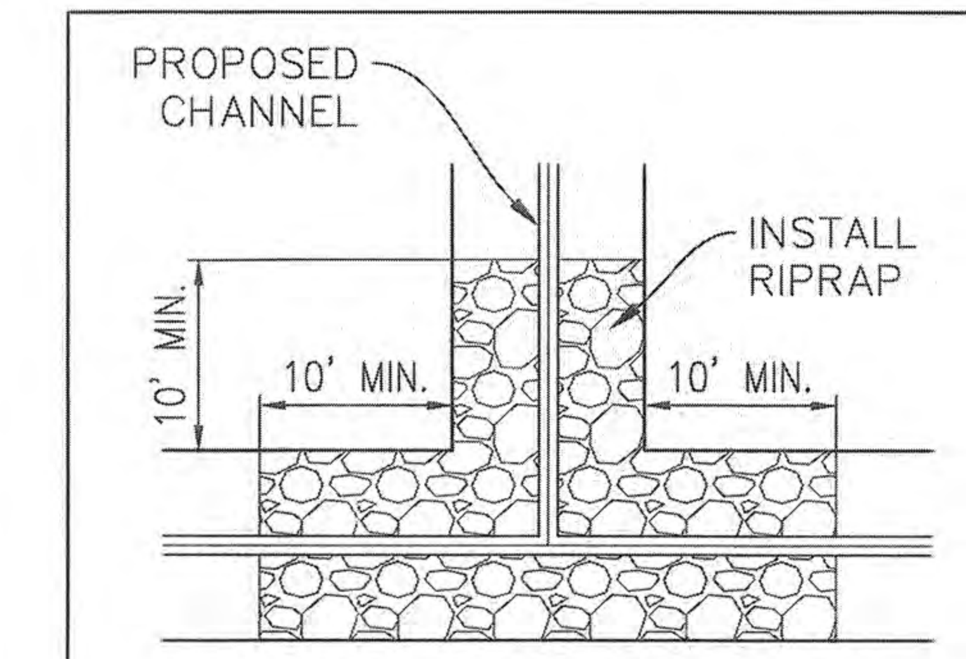
SAFETY END TREATMENT FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

SETP-PD

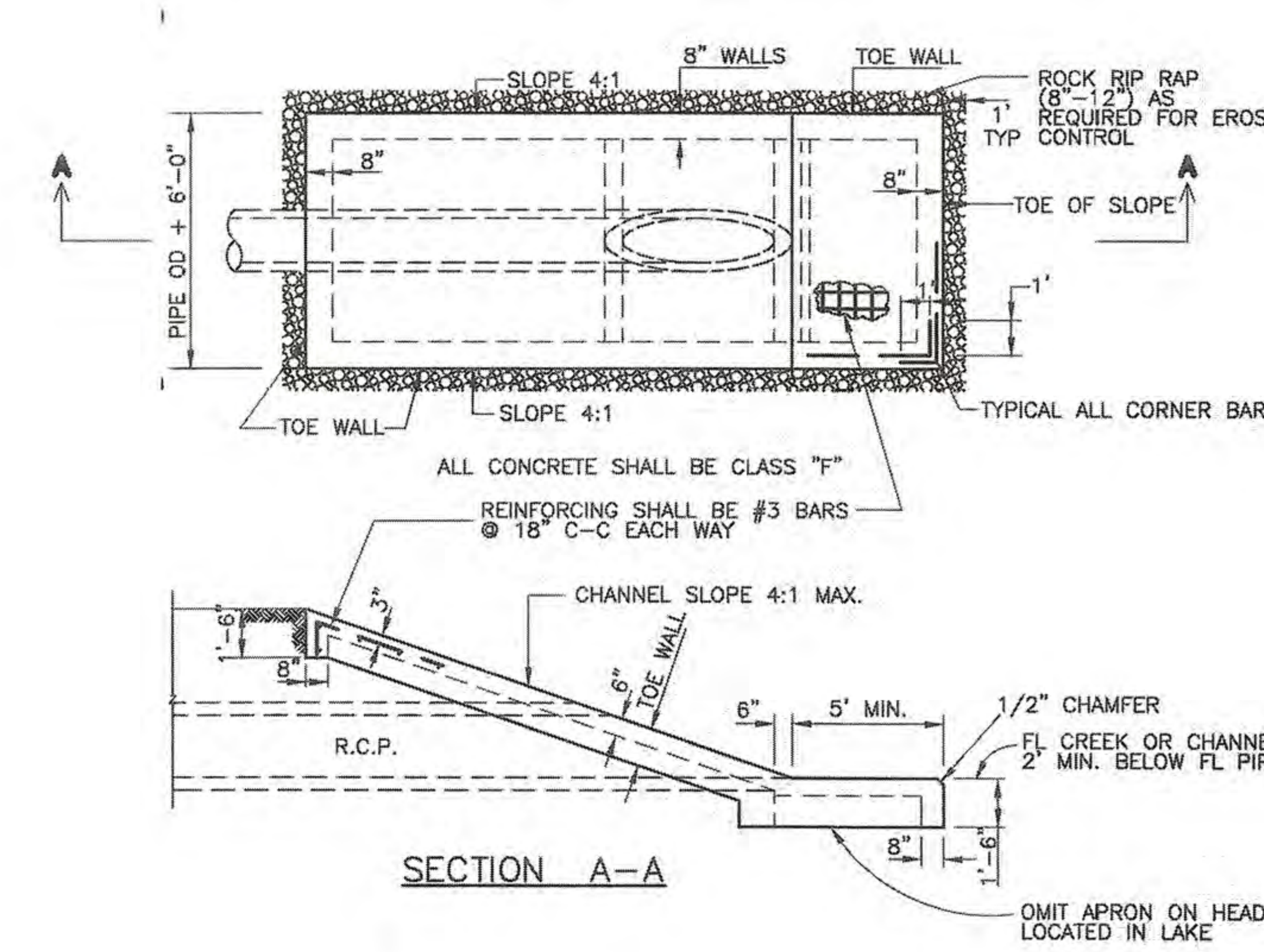


NOTE:
GROUT WILL BE PLACED FIRST AND ROCK PLACED INTO "WET" GROUT

GROUTED ROCK RIPRAP DETAIL FOR BENDS
N.T.S.



GROUTED ROCK RIPRAP DETAIL FOR INTERSECTIONS
N.T.S.



TYPICAL HEADWALL RIPRAP DETAIL
N.T.S.

GENERAL NOTES

1. All materials and construction shall conform to "Standard Specifications for Public Works Construction" by North Central Texas Council of Governments(NCTCOG) most recent amendment if not covered by City of Rockwall's standards or specified on the plans.
2. Excavated material shall be disposed of by the contractor at his expense.
3. All concrete structures shall be class F (4200psi, min. 7.0 sack cement). No fly ash is allowed in concrete structures.

RELEASED FOR CONSTRUCTION
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CITY DATE

RECORD DRAWINGS

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RYAN C. KING 1/27/2021
DATE

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Elev.: 559.07'

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ENGINEERING CONCEPTS & DESIGN, L.P.
ENGINEERING / PROJECT MANAGEMENT / CONSTRUCTION SERVICES - FIRM REG. #F-001145
201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH | DATE:
CHECKED: RCK | DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DT.DWG

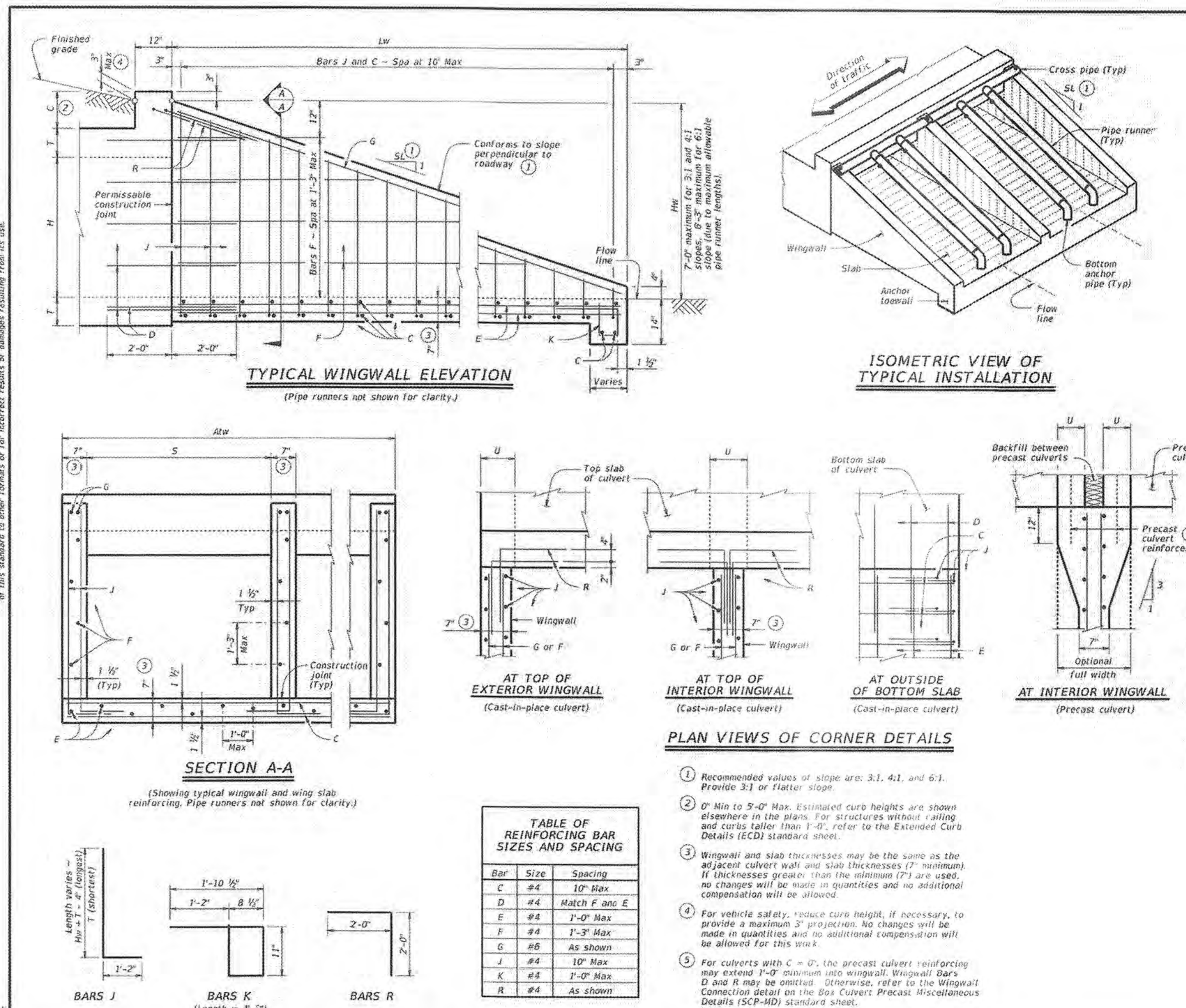
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER
6/1/2020

STORM DETAILS 1

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS



SAFETY END TREATMENT FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I – CROSS DRAINAGE (SETB-CD) – SHEET 1 OF 2

TYPICAL WINGWALL ELEVATION

(Pipe runners not shown for clarity.)

ISOMETRIC VIEW OF TYPICAL INSTALLATION

SECTION A-A

(Showing typical wingwall and wing slab reinforcing. Pipe runners not shown for clarity.)

PLAN VIEWS OF CORNER DETAILS

AT TOP OF EXTERIOR WINGWALL (Cast-in-place culvert)

AT TOP OF INTERIOR WINGWALL (Cast-in-place culvert)

AT OUTSIDE OF BOTTOM SLAB (Cast-in-place culvert)

AT INTERIOR WINGWALL (Precast culvert)

TABLE OF REINFORCING BAR SIZES AND SPACING		
Bar	Size	Spacing
C	#4	10" Max
D	#4	Match F and E
E	#4	1'-0" Max
F	#4	1'-3" Max
G	#6	As shown
J	#4	10" Max
K	#4	1'-0" Max
R	#4	As shown

BARS J   BARS K (Length = 4'-3")   BARS R

WING DIMENSION CALCULATIONS

PIPE RUNNER DIMENSION CALCULATIONS

MATERIAL NOTES

GENERAL NOTES

Texas Department of Transportation – Bridge Division Standard

SAFETY END TREATMENT

FOR 0° SKEW BOX CULVERTS

(MAXIMUM Hw = 7'-0")

TYPE I – CROSS DRAINAGE

SETB-CD

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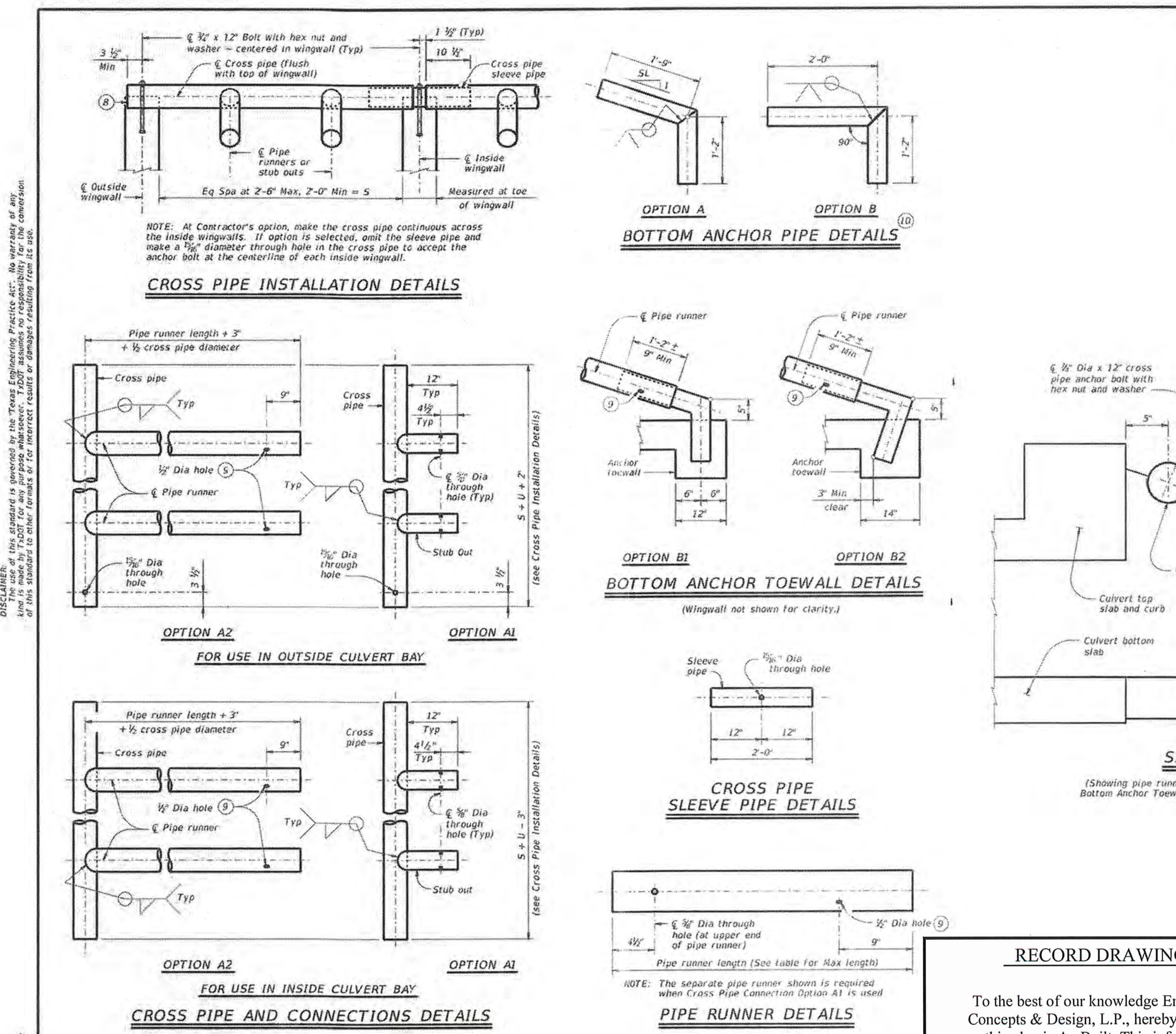


SETB-CD – SHEET 2 OF 2

CROSS PIPE INSTALLATION DETAILS

BOTTOM ANCHOR PIPE DETAILS (OPTION A, OPTION B)

BOTTOM ANCHOR TOEWALL DETAILS (OPTION B1, OPTION B2)

(Wingwall not shown for clarity.)

CROSS PIPE AND CONNECTIONS DETAILS

OPTION A2 – FOR USE IN OUTSIDE CULVERT BAY

OPTION A2 – FOR USE IN INSIDE CULVERT BAY

CROSS PIPE SLEEVE PIPE DETAILS

PIPE RUNNER DETAILS

SIDE ELEVATION

(Showing pipe runner with Cross Pipe Connection Option A1 and Bottom Anchor Toewall Option B2. Wingwall not shown for clarity.)

⑧ Take care to ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

⑨ After installation, inspect the 1#2" hole to ensure that the lap of the safety pipe runner with the bottom anchor pipe is adequate.

⑩ At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

MAXIMUM PIPE RUNNER LENGTHS AND ⑥ REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES						
Maximum Pipe Runner Length	Required Pipe Runner Size			Required Anchor Pipe Size		
	Pipe Size	Pipe O.D.	Pipe I.D.	Pipe Size	Pipe O.D.	Pipe I.D.
10'- 0"	3" STD	3.500"	3.068"	2" STD	2.375"	2.067"
19'- 8"	4" STD	4.500"	4.026"	3" STD	3.500"	3.068"
34'- 2"	5" STD	5.563"	5.047"	4" STD	4.500"	4.026"

Texas Department of Transportation – Bridge Division Standard

SAFETY END TREATMENT

FOR 0° SKEW BOX CULVERTS

(MAXIMUM Hw = 7'-0")

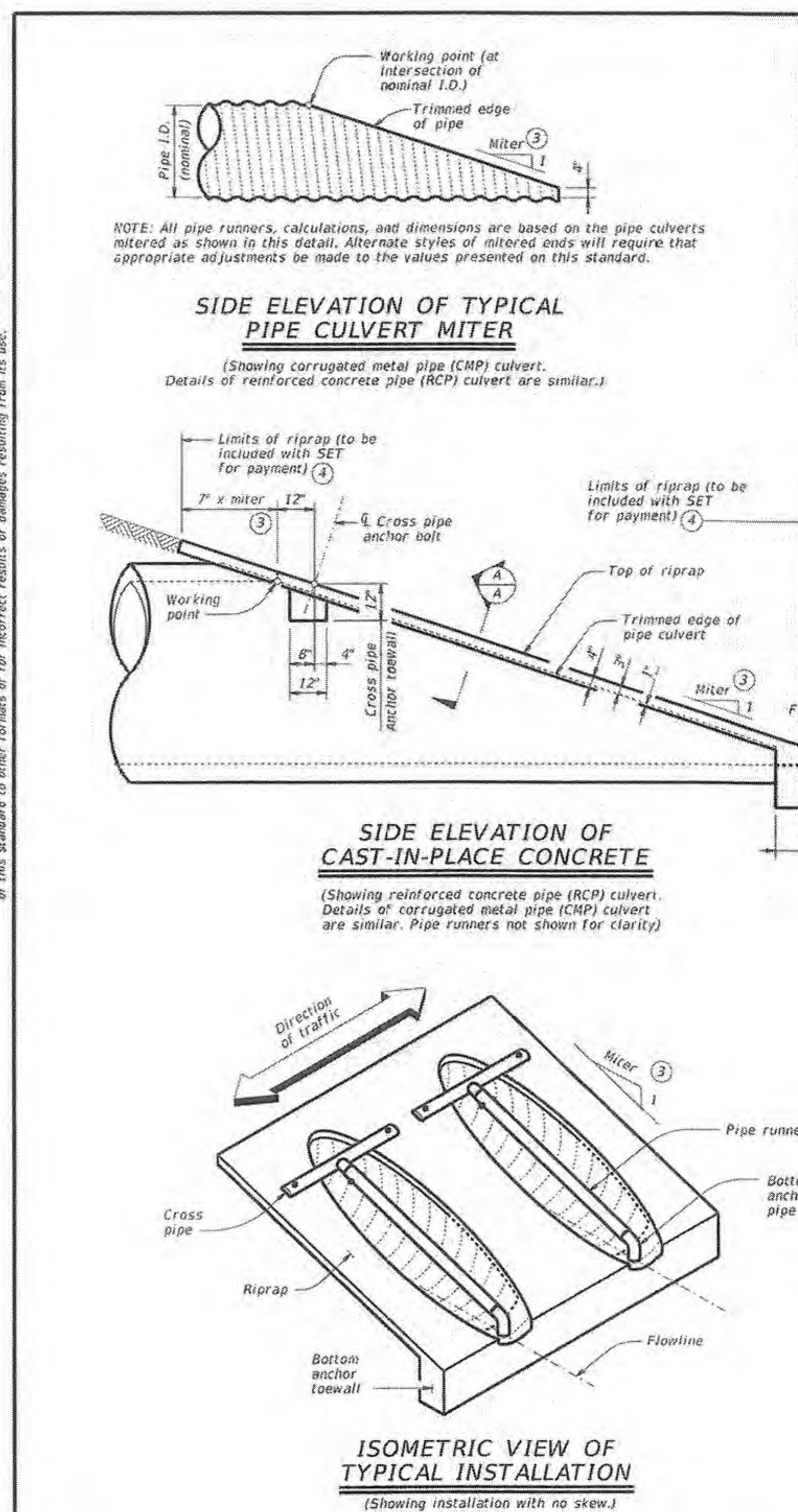
TYPE I – CROSS DRAINAGE

SETB-CD

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING   1/27/2021 DATE



SAFETY END TREATMENT FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II – CROSS DRAINAGE (SETP-CD) – SHEET 1 OF 2

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing corrugated metal pipe (CMP) culvert. Details of reinforced concrete pipe (RCP) culvert are similar.)

SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS AND PIPE RUNNER LENGTHS ①②

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	3:1 Side Slope 0° Skew	3:1 15° Skew	3:1 30° Skew	3:1 45° Skew	4:1 Side Slope 0° Skew	4:1 15° Skew	4:1 30° Skew	4:1 45° Skew	6:1 Side Slope 0° Skew	6:1 15° Skew	6:1 30° Skew	6:1 45° Skew
24"	1'-7"	3'-5"	N/A	N/A	N/A	5'-10"	N/A	N/A	N/A	8'-1"	N/A	N/A	N/A	12'-9"
27"	1'-8"	3'-8"	N/A	N/A	5'-5"	6'-11"	N/A	N/A	7'-7"	9'-7"	N/A	N/A	11'-11"	14'-11"
30"	1'-10"	3'-11"	N/A	N/A	6'-4"	8'-0"	N/A	N/A	8'-9"	11'-0"	N/A	N/A	13'-8"	17'-0"
33"	1'-11"	4'-2"	6'-2"	6'-5"	7'-3"	9'-1"	8'-6"	8'-10"	10'-0"	12'-5"	13'-3"	13'-9"	15'-5"	19'-2"
36"	2'-1"	4'-5"	6'-11"	7'-3"	8'-2"	10'-2"	9'-6"	9'-11"	11'-2"	13'-10"	14'-9"	15'-3"	17'-2"	21'-3"
42"	2'-4"	4'-11"	8'-6"	8'-10"	9'-11"	12'-4"	11'-7"	12'-0"	13'-6"	16'-8"	17'-9"	18'-5"	20'-8"	25'-7"
48"	2'-7"	5'-5"	10'-1"	10'-5"	11'-9"	N/A	13'-7"	14'-2"	15'-10"	N/A	20'-9"	21'-6"	24'-2"	N/A
54"	3'-0"	5'-11"	11'-8"	12'-1"	N/A	N/A	15'-8"	16'-3"	N/A	N/A	23'-10"	24'-8"	N/A	N/A
60"	3'-3"	6'-5"	13'-3"	N/A	N/A	N/A	17'-9"	N/A	N/A	N/A	26'-10"	N/A	N/A	N/A

TYPICAL PIPE CULVERT MITERS ③

Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

CONDITIONS WHERE PIPE RUNNERS ARE NOT REQUIRED ②

Nominal Culvert I.D.	Single Pipe Culvert	Multiple Pipe Culverts
12" thru 21"	Skews thru 45°	Skews thru 45°
24"	Skews thru 45°	Skews thru 30°
27"	Skews thru 30°	Skews thru 15°
30"	Skews thru 15°	Skews thru 15°
33"	Skews thru 15°	Always required
36"	Normal (no skew)	Always required
42" thru 60"	Always required	Always required

STANDARD PIPE SIZES AND MAX PIPE RUNNER LENGTHS ①

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10'-0"
4" STD	4.500"	4.026"	19'-8"
5" STD	5.563"	5.047"	34'-2"

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) ⑤

Nominal Culvert I.D.	3:1 Side Slope 0° Skew	3:1 15° Skew	3:1 30° Skew	3:1 45° Skew	4:1 Side Slope 0° Skew	4:1 15° Skew	4:1 30° Skew	4:1 45° Skew	6:1 Side Slope 0° Skew	6:1 15° Skew	6:1 30° Skew	6:1 45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A

① Provide pipe runner of the size shown in the tables. Provide cross pipe of the same size as the pipe runner. Provide cross pipe stub out and bottom anchor pipe of the next smaller size pipe as shown in the Standard Pipe Sizes and Max Pipe Runner Lengths table.

② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met.

③ Miter = slope of mitered end of pipe culvert.

④ Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap".

⑤ Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

Texas Department of Transportation – Bridge Division Standard

SAFETY END TREATMENT

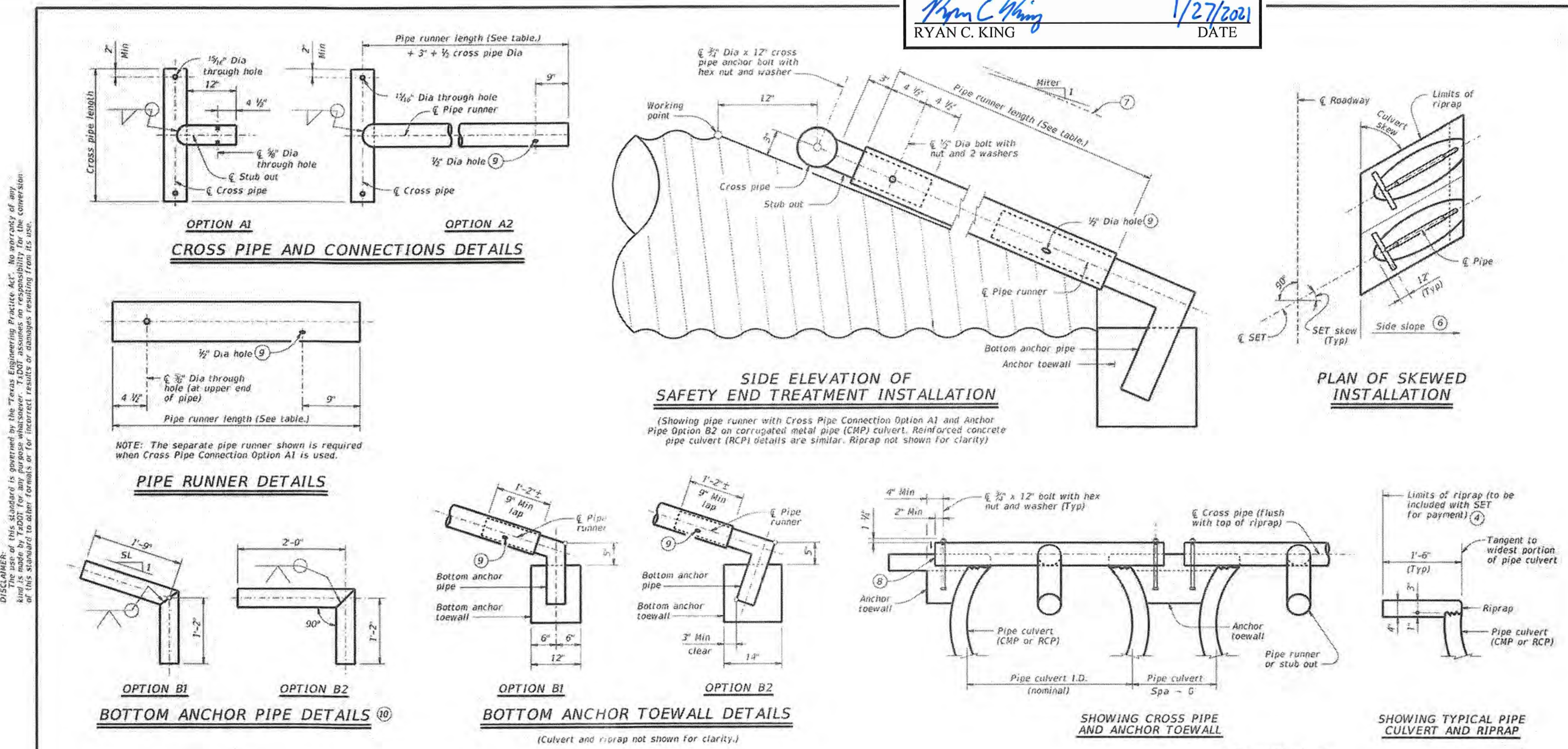
FOR 12" DIA TO 60" DIA

PIPE CULVERTS

TYPE II – CROSS DRAINAGE

SETP-CD

©TxDOT February 2020



SETP-CD – SHEET 2 OF 2

CROSS PIPE AND CONNECTIONS DETAILS (OPTION A1, OPTION A2)

PIPE RUNNER DETAILS

SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

PLAN OF SKEWED INSTALLATION

BOTTOM ANCHOR PIPE DETAILS ⑩ (OPTION B1, OPTION B2)

BOTTOM ANCHOR TOEWALL DETAILS (OPTION B1, OPTION B2)

(Culvert and riprap not shown for clarity.)

SECTION A-A

SHOWING CROSS PIPE AND ANCHOR TOEWALL

SHOWING TYPICAL PIPE CULVERT AND RIPRAP

MATERIAL NOTES

GENERAL NOTES

RELEASED FOR CONSTRUCTION ALL RESPONSIBILITY FOR ADEQUACY OF DESIGN REMAINS WITH THE DESIGN ENGINEER. THE CITY OF ROCKWALL, IN REVIEWING AND RELEASING PLANS FOR CONSTRUCTION, ASSUMES NO RESPONSIBILITY FOR ADEQUACY OR ACCURACY OF DESIGN.

CITY   DATE

Texas Department of Transportation – Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA

PIPE CULVERTS

TYPE II – CROSS DRAINAGE

SETP-CD

CAUTION! EXISTING UTILITIES

CONTRACTOR SHOULD CALL 1-800-DIG-TESS PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITIES FOR EXISTING UTILITY LOCATIONS. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS HAVE BEEN LOCATED FROM REFERENCE INFORMATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY BOTH HORIZONTALLY AND VERTICALLY THE LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION AND TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION.

BM-1: "PK" Nail on the south side of Clem Road, approximately 2275' west of the centerline intersection of Clem Road and FM 3549
Elev.: 559.07'

BM-2: "PK" Nail in Clem Road, approximately 175' west of the centerline intersection of Clem Road and FM 3549
Elev.: 584.83'

ENGINEERINGCONCEPTS & DESIGN, L.P.
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201 WINDCO CIR, STE 200, WYLIE, TX 75098
972-941-8400 FAX: 972-941-8401 WWW.ECDLP.COM

REVISIONS:

DRAWN: MJH   DATE:
CHECKED: RCK   DATE: 6/1/2020
PROJECT NO.: 08838
DWG FILE NAME: 08838 DT.DWG

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF CONSTRUCTION. THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY RYAN C. KING, P.E. 123635

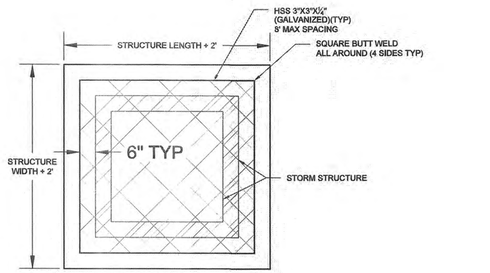
STATE OF TEXAS – RYAN C. KING – 123635 – REGISTERED PROFESSIONAL ENGINEER – 6/1/2020

STORM DETAILS 2

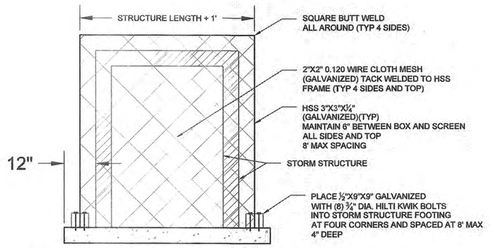
NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

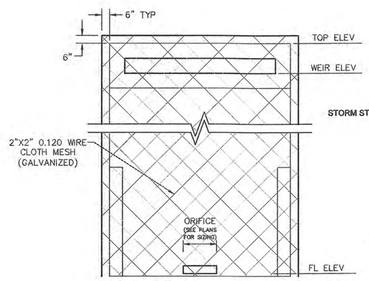
SHEET 39 OF 40



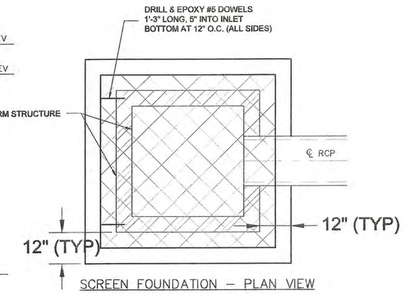
PLAN
NOT TO SCALE



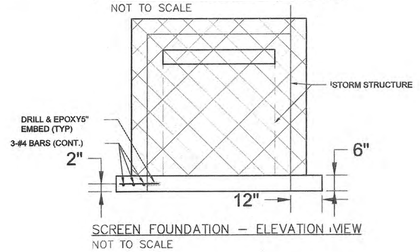
OUTFALL STRUCTURE STEEL FRAME DETAIL
NOT TO SCALE



ELEVATION VIEW
NOT TO SCALE

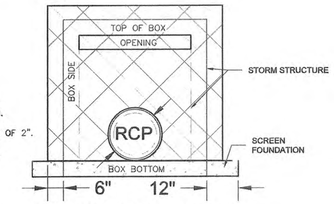


SCREEN FOUNDATION – PLAN VIEW
NOT TO SCALE



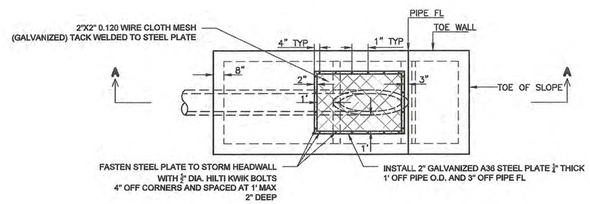
SCREEN FOUNDATION – ELEVATION VIEW
NOT TO SCALE

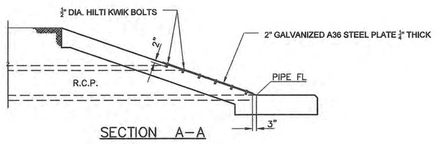
NOTE:
1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,200 PSI (MIN 7.0 SACK MIX) NO FLY ASH.
2. REINFORCING BARS SHALL HAVE A MINIMUM CLEAR COVER OF 2".
3. ALL REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.



SCREEN FOUNDATION – REAR VIEW
NOT TO SCALE

TRASH RACK DETAIL FOR OUTFALL STRUCTURE
NOT TO SCALE





SECTION A–A

TRASH RACK DETAIL FOR SLOPED HEADWALL
N.T.S.

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — 1/27/2021 DATE

RELEASED FOR CONSTRUCTION
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CITY _____ DATE _____

CAUTION! EXISTING UTILITIES
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STATE OF TEXAS — RYAN C. KING — 123635 — REGISTERED PROFESSIONAL ENGINEER — 6/1/2020

DETENTION POND DETAILS

NORTHGATE

CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

SHEET 40 OF 40

CONSTRUCTION PLANS
FOR
SCREENING AND BUFFERING

~NORTHGATE PH. 1~

CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

SUBMITTAL DATE: June 1, 2020

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION, TESTING, AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY'S CURRENT STANDARDS, DETAILS, AND SPECIFICATIONS.
2. PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL BE FAMILIAR WITH THE PLANS INCLUDING ALL NOTES, STANDARD SPECIFICATIONS, DETAILS, AND CITY STANDARDS.
3. TESTING AND INSPECTION OF MATERIALS SHALL BE PERFORMED BY A COMMERCIAL TESTING LABORATORY APPROVED BY THE CLIENT AND CITY. CONTRACTOR SHALL FURNISH MATERIALS OR SPECIMENS FOR TESTING, AND SHALL FURNISH SUITABLE EVIDENCE THAT THE MATERIALS PROPOSED TO BE INCORPORATED INTO THE WORK ARE IN ACCORDANCE WITH THE SPECIFICATIONS.
4. CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS PRIOR TO BEGINNING ANY CONSTRUCTION.
5. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS PRIOR TO BEGINNING ANY CONSTRUCTION.
6. CONTRACTOR MUST KEEP AVAILABLE ON-SITE AT ALL TIMES APPROVED CONSTRUCTION PLANS AND COPIES OF ANY REQUIRED PERMITS ALONG WITH THE CURRENT VERSIONS OF THE FOLLOWING REFERENCES: CITY OF ROCKWALL ENGINEERING STANDARDS, NCTCOG SPECIFICATIONS, TXDOT SPECIFICATIONS, TXDOT STANDARD DRAWINGS.
7. ALL SHOP DRAWINGS, WORKING DRAWINGS OR OTHER DOCUMENTS WHICH REQUIRE REVIEW BY THE CITY SHALL BE SUBMITTED BY THE CONTRACTOR SUFFICIENTLY IN ADVANCE OF SCHEDULED CONSTRUCTION TO ALLOW NO LESS THAN 14 CALENDAR DAYS FOR REVIEW AND RESPONSE BY THE CITY.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED CONSTRUCTION SURVEYING AND STAKING AND SHALL NOTIFY THE CLIENT AND CITY OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH ANY WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL SURVEY MARKERS INCLUDING IRON RODS, PROPERTY CORNERS, OR SURVEY MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE ROW DURING CONSTRUCTION. ANY SURVEY MARKERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE CLIENT.
10. CONTRACTOR IS RESPONSIBLE FOR KEEPING STREETS AND DRIVEWAYS ADJACENT TO THE PROJECT FREE OF MUD AND DEBRIS AT ALL TIMES. CONTRACTOR SHALL CLEAN UP AND REMOVE ALL LOOSE MATERIAL RESULTING FROM CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST.
11. THE EXISTENCE AND LOCATIONS OF THE PUBLIC AND FRANCHISE UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING, TRENCHING, OR DRILLING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND / OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PUBLIC AGENCIES AND FRANCHISE UTILITIES 48 HOURS PRIOR TO CONSTRUCTION. (DIG-TESS 1-800-344-8377) THE CONTRACTOR MAY BE REQUIRED EXPOSE THESE FACILITIES AT NO COST TO THE CITY. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAMAGES TO UTILITIES IF THE DAMAGE IS CAUSED BY NEGLIGENCE OR FAILURE TO HAVE LOCATES PERFORMED.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES OR ADJACENT PROPERTIES DURING CONSTRUCTION. ANY REMOVAL OR DAMAGE TO EXISTING FACILITIES SHALL BE REPLACED OR REPAIRED TO EQUAL OR BETTER CONDITION BY THE CONTRACTOR.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND TXDOT BARRICADE AND CONSTRUCTION STANDARDS.
14. CONTRACTOR SHALL NOT IMPEDE TRAFFIC ON EXISTING STREETS, DRIVEWAYS, ALLEYS, OR FIRE LANES OPEN TO THE PUBLIC. IN THE EVENT THE CONSTRUCTION WORK REQUIRES THE CLOSURE OF AN EXISTING STREET, ALLEY, OR FIRE LANE, THE CONTRACTOR SHALL REQUEST THE ROAD CLOSURE THROUGH THE CITY TRAFFIC DIVISION.
15. CONTRACTOR SHALL NOT STORE MATERIALS, EQUIPMENT OR OTHER CONSTRUCTION ITEMS ON ADJACENT PROPERTIES OR RIGHT-OF-WAY WITHOUT THE PRIOR WRITTEN CONSENT OF THE PROPERTY OWNER AND THE CITY.
16. TEMPORARY FENCING SHALL BE INSTALLED PRIOR TO THE REMOVAL OF EXISTING FENCING. TEMPORARY FENCING SHALL BE REMOVED AFTER PROPOSED FENCING IS APPROVED BY THE CITY. ALL TEMPORARY AND PROPOSED FENCING LOCATIONS SHALL BE SUBJECT TO FIELD REVISIONS AS DIRECTED BY THE CITY.
17. UNUSABLE EXCAVATED MATERIAL, OR CONSTRUCTION DEBRIS SHALL BE REMOVED AND DISPOSED OF OFFSITE AT AN APPROVED DISPOSAL FACILITY BY THE CONTRACTOR AT HIS EXPENSE.
18. CONTRACTOR SHALL AVOID DAMAGE TO EXISTING TREES. WHEN NECESSARY, TREES AND SHRUB TRIMMING FOR CONSTRUCTION SHALL BE PERFORMED BY CERTIFIED TREE WORKER OR UNDER THE DIRECTION OF A REGISTERED LANDSCAPE ARCHITECT OR CERTIFIED ARBORIST.
19. EROSION CONTROL DEVICES SHALL BE INSTALLED ON ALL PROJECTS PRIOR TO BEGINNING CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT THE PROJECT IN A CONDITION ACCEPTABLE TO THE CITY.
20. CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING LANDSCAPE IRRIGATION SYSTEMS. DAMAGE TO EXISTING IRRIGATION SYSTEMS AND LANDSCAPE MATERIALS SHALL BE RESTORED TO EQUAL OR BETTER CONDITION AT NO COST TO CITY OR CLIENT.
21. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A NEAT AND ACCURATE RECORD OF CONSTRUCTION FOR THE CLIENT'S AND CITY'S RECORDS.

LOCATION MAP
NOT TO SCALE

SHEET INDEX	
HS1	OVERALL LAYOUT PLAN
HS2-HS6	HARDSCAPE PLANS
HS7-HS10	HARDSCAPE DETAILS
EX1	LIGHTING EXHIBIT
L1-L5	LANDSCAPE PLANS
L6	LANDSCAPE DETAILS

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — DATE 1/27/2021

GENERAL LANDSCAPE NOTES:

INSPECTIONS:
1. NO EXCAVATION SHALL OCCUR IN CITY R.O.W. WITHOUT A R.O.W. PERMIT--CONTACT THE PUBLIC WORKS DEPARTMENT.
2. THE CONTRACTOR SHALL MARK ALL WATER LINES, SEWER LINES, AND TREE LOCATIONS PRIOR TO CALLING FOR ROW INSPECTION AND PERMIT.
3. THE LANDSCAPE INSTALLATION SHALL COMPLY WITH APPROVED LANDSCAPE DRAWINGS PRIOR TO FINAL ACCEPTANCE BY THE CITY AND ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
4. WATER METERS, CLEANOUTS AND OTHER APPURTENANCES, SHALL BE ACCESSIBLE, ADJUSTED TO GRADE, CLEARLY MARKED WITH FLAGGING AND COMPLIANT WITH PUBLIC WORKS DEPARTMENT STANDARDS PRIOR TO CALLING FOR FINAL LANDSCAPE AND ROW INSPECTIONS.

LANDSCAPE STANDARDS:
1. PLANTINGS AND LANDSCAPE ELEMENTS SHALL COMPLY WITH THE CITY'S ENGINEERING DESIGN STANDARDS, PUBLIC R.O.W. VISIBILITY REQUIREMENTS.
2. UNLESS OTHERWISE SPECIFIED, TREES SHALL BE PLANTED NO LESS THAN 4' FROM CURBS, SIDEWALKS, UTILITY LINES, SCREENING WALLS AND OTHER STRUCTURES. THE CITY HAS FINAL APPROVAL FOR ALL TREE PLACEMENTS.
3. A MINIMUM THREE FEET (3') RADIUS AROUND A FIRE HYDRANT MUST REMAIN CLEAR OF LANDSCAPE PURSUANT TO THE FIRE CODE.
4. STREET TREES, WHERE REQUIRED, SHALL BE (10') MINIMUM FROM THE EDGE OF A STORM SEWER CURB INLET BOX AND THE EDGE OF THE ROOT BALL SHALL BE (4') MINIMUM FROM THE WATER METER.
5. THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014) SPECIFICATIONS SHALL GOVERN PLANT QUALIFICATIONS, GRADES, AND STANDARDS.
6. TREE PLANTING SHALL COMPLY WITH DETAILS HEREIN AND THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) STANDARDS.
7. A 2-3" LAYER OF MULCH SHALL BE PROVIDED AROUND THE BASE OF THE PLANTED TREE. THE MULCH SHALL BE PULLED BACK 4" FROM THE TRUNK OF THE TREE.
8. TREE PITS SHALL BE TESTED FOR WATER PERCOLATION. IF WATER DOES NOT DRAIN OUT OF TREE PIT WITHIN 24-HOURS, THE TREE SHALL BE MOVED OR DRAINAGE SHALL BE PROVIDED.
9. ALL BEDS TO HAVE 3" OF COMPOSTED SOIL, LIVING EARTH TECHNOLOGY, OR APPROVED EQUAL TILLED AND TURNED TO A DEPTH OF 8" MINIMUM.
10. ALL PLANT BEDS SHALL BE TOP-DRESSED WITH A MINIMUM OF 3 INCHES OF HARDWOOD MULCH.
11. NATIVE SITE TOPSOIL IS TO BE PROTECTED FROM EROSION OR STOCKPILED. NATIVE SITE TOPSOIL SHALL BE LABORATORY TESTED BY AND ACCREDITED LABORATORY AND AMENDED PER SAID LABORATORY'S RECOMMENDATIONS.

IRRIGATION STANDARDS:
1. ANY CHANGES TO THESE APPROVED IRRIGATION DRAWINGS SHALL BE AUTHORIZED BY THE CITY.
2. CONTACT DEVELOPMENT SERVICES FOR AN IRRIGATION PERMIT PRIOR TO INSTALLING THE IRRIGATION SYSTEM.
3. IRRIGATION OVER-SPRAY ON STREETS AND WALKS IS PROHIBITED.
4. MAINLINES, VALVES, OR CONTROL WIRES SHALL NOT BE LOCATED IN THE CITY'S ROW.
5. ET IRRIGATION CONTROLLERS SHALL BE PROGRAMMED AND ADJUSTED TO NOT EXCEED THE LANDSCAPE WATER ALLOWANCE (LWA) PRIOR TO APPROVAL OF LANDSCAPE INSTALLATION.
6. VALVES SHALL BE LOCATED A MINIMUM OF (3') AWAY FROM STORM SEWERS, AND SANITARY SEWER LINES AND 5 FEET FROM CITY FIRE HYDRANTS AND WATER VALVES.
7. THE BORE DEPTH UNDER STREETS, DRIVE AISLES, AND FIRE LANES SHALL PROVIDE (2') OF CLEARANCE (MINIMUM).
8. IRRIGATION HEADS THAT RUN PARALLEL AND NEAR PUBLIC WATER AND SANITARY SEWER LINES; SHALL BE FED FROM STUBBED LATERALS OR BULL-BEADS. A MINIMUM FIVE FOOT (5') SEPARATION IS REQUIRED BETWEEN IRRIGATION MAIN LINES AND LATERALS THAT RUN PARALLEL TO PUBLIC WATER AND SANITARY SEWER LINES.
9. NO VALVES, BACKFLOW PREVENTION ASSEMBLIES, QUICK COUPLERS ETC. SHALL BE LOCATED CLOSER THAN 10' FROM THE CURB AT STREET OR DRIVE INTERSECTION.

MAINTENANCE STANDARDS:
1. THE OWNER SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT, MAINTENANCE, AND VIGOR OF PLANT MATERIAL IN ACCORDANCE WITH THE DESIGN INTENT AND AS APPROPRIATE FOR THE SEASON OF THE YEAR.
2. LANDSCAPE AND OPEN AREAS SHALL BE FREE OF TRASH, LITTER AND WEEDS.
3. NO PLANT MATERIAL SHALL BE ALLOWED TO ENCROACH ON R.O.W., SIDEWALKS OR EASEMENTS TO THE EXTENT THAT VISION OR ROUTE OF TRAVEL FOR VEHICULAR, PEDESTRIAN, OR BICYCLE TRAFFIC IS IMPEDED.
4. TREE MAINTENANCE SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
5. TREE STAKING MATERIALS, IF USED, SHALL BE REMOVED AFTER (1) GROWING SEASON, NO MORE THAN (1) YEAR AFTER INSTALLATION (STEEL TREE STAKES, WIRES, AND HOSES ARE PROHIBITED).

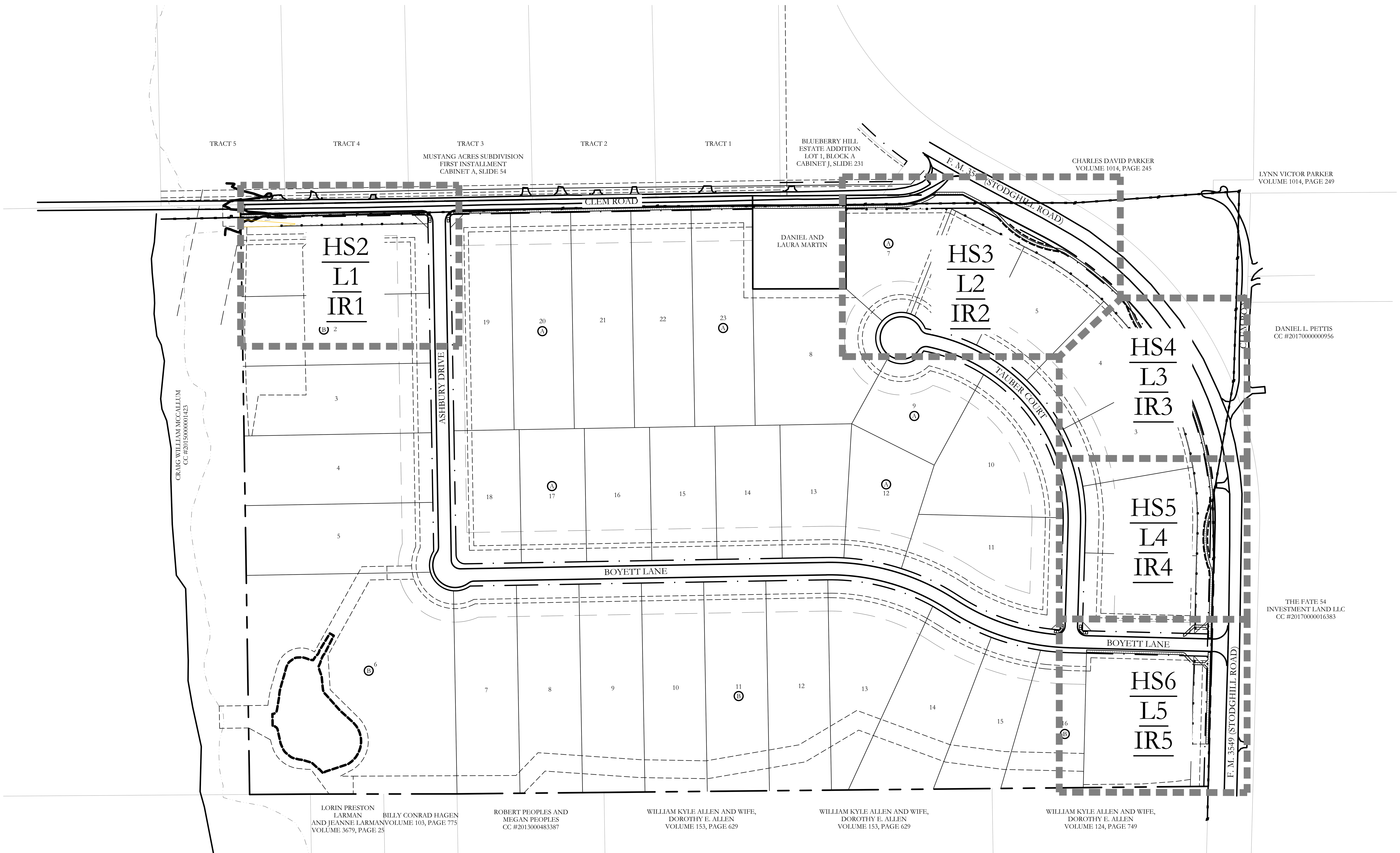
TREE PROTECTION NOTES:
1. CONTACT DEVELOPMENT SERVICES FOR A TREE REMOVAL PERMIT PRIOR TO REMOVAL OR TRANSPLANTING OF ANY TREES.
2. ALL TREES WHICH ARE TO REMAIN ON SITE SHALL BE PROTECTED WITH A (4') TALL BRIGHTLY COLORED PLASTIC FENCE, OR SILT FENCE, PLACED AT THE DRIP LINE OF THE TREES.
3. PRIOR TO THE PRE-CONSTRUCTION MEETING OR OBTAINING A GRADING PERMIT, ALL TREE MARKINGS AND PROTECTIVE FENCING SHALL BE INSTALLED BY THE OWNER AND BE INSPECTED BY DEVELOPMENT SERVICES.
4. NO EQUIPMENT SHALL BE CLEANED, OR HARMFUL LIQUIDS DEPOSITED WITHIN THE LIMITS OF THE ROOT ZONE OF TREES WHICH REMAIN ON SITE.
5. NO SIGNS, WIRES, OR OTHER ATTACHMENTS SHALL BE ATTACHED TO ANY TREE TO REMAIN ON SITE.
6. VEHICULAR AND CONSTRUCTION EQUIPMENT SHALL NOT PARK OR DRIVE WITHIN THE LIMITS OF THE DRIP LINE.
7. GRADE CHANGES IN EXCESS OF 3 INCHES (CUT OR FILL) SHALL NOT BE ALLOWED WITHIN A ROOT ZONE, UNLESS ADEQUATE TREE PRESERVATION METHODS ARE APPROVED BY THE CITY.
8. NO TRENCHING SHALL BE ALLOWED WITHIN THE DRIP-LINE OF A TREE, UNLESS APPROVED BY THE CITY.
9. ALL REMOVED TREES SHALL BE CHIPPED AND USED FOR MULCH ON SITE OR HAULED OFF-SITE.
10. ALL TREE MAINTENANCE TECHNIQUES SHALL BE IN CONFORMANCE WITH INDUSTRY IDENTIFIED STANDARDS. IMPROPER OR MALICIOUS PRUNING TECHNIQUES ARE STRICTLY PROHIBITED.

OWNER / DEVELOPER:
NORTHGATE ROCKWALL, LP
1189 WATERS EDGE DRIVE
ROCKWALL, TEXAS 75087
PH. (512) 965-6280
CONTACT: RYAN JOYCE

CIVIL ENGINEER:
ENGINEERING CONCEPTS & DESIGN, LP
201 WINDCO CIRCLE
SUITE 200
WYLIE, TEXAS 75098
PH. (972) 941-8400
CONTACT: RYAN KING

LANDSCAPE ARCHITECT:
CODY JOHNSON STUDIO, LLC
9720 COIT ROAD SUITE 220-333
PLANO, TEXAS 75025
PH. (903) 570-0162
CONTACT: CODY JOHNSON, RLA, ASLA, LI

CODY JOHNSON
s·t·u·d·i·o



RECORD DRAWINGS

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RYAN C. KING — DATE 1/27/2021

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT
CODY L. JOHNSON
2833
STATE OF TEXAS
June 1, 2020

NORTH

100 50 0 100

Scale: 1" = 100'-0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.

One Inch

SCREENING AND BUFFERING

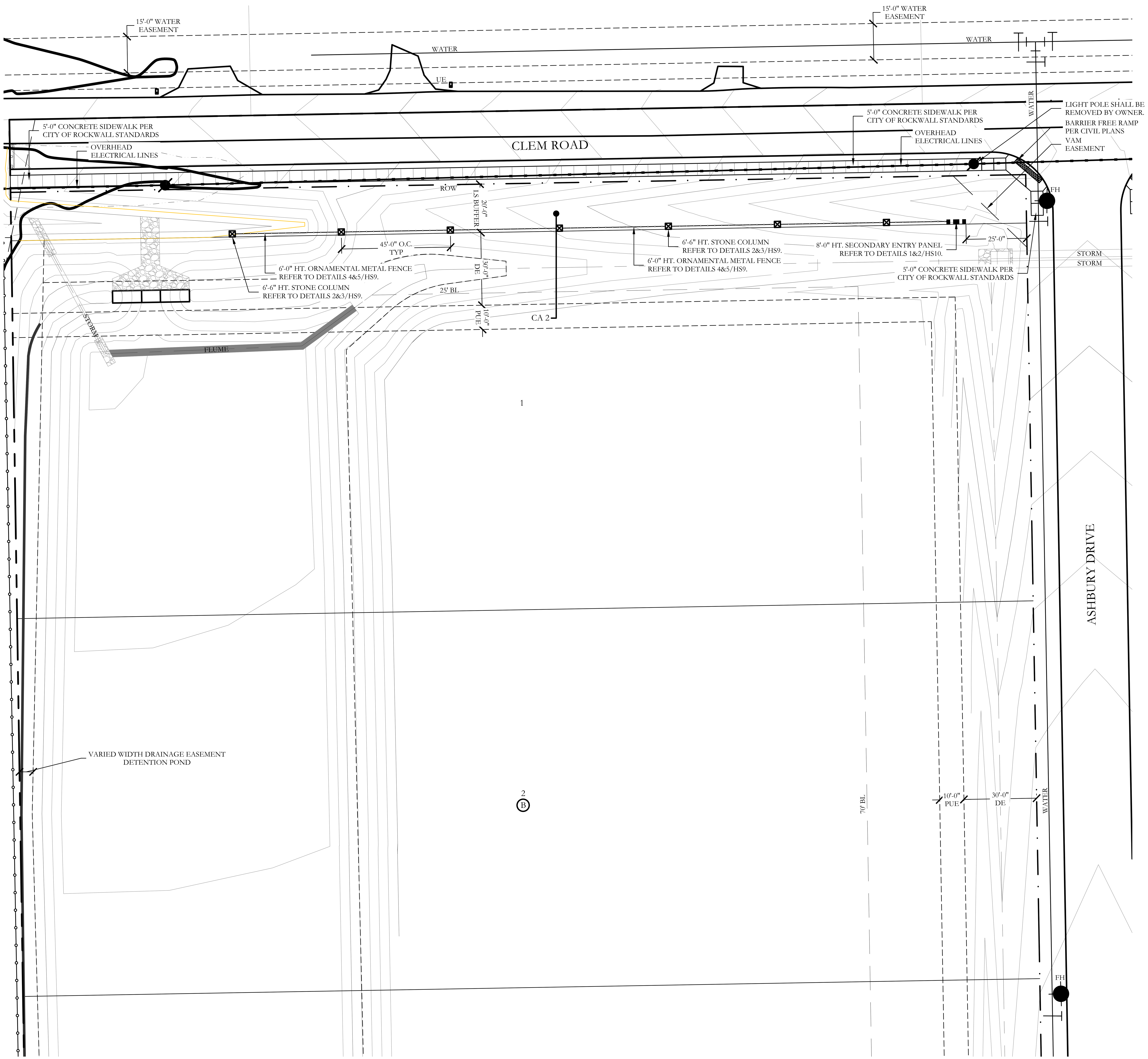
Overall Layout Plan

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
HS1 of 10



HARDSCAPE LEGEND

▭	4'-0" HT. STONE WALL. REFER TO DETAILS 2&3/HS8.
⊠	6'-6" HT. STONE COLUMN. REFER TO DETAILS 2&3/HS9.
- - - -	OVERHEAD CEDAR BEAMS. REFER TO DETAILS 1/HS7 & 1&2/HS8.
━━━	9'-0" HT. STONE SIGN PANEL REFER TO DETAILS 1&3/HS7 & 1/HS8.
— — —	6'-0" HT. STONE MINOR WALL WALL. REFER TO DETAILS 1/HS7 & 1/HS9.
■■■■	8'-0" HT. STONE LOGO PANEL. REFER TO DETAILS 1&2/HS7.
———	6'-0" HT. ORNAMENTAL METAL FENCE. REFER TO DETAILS 4&5/HS9.

REFER TO CIVIL PLANS FOR SIDEWALK AND BARRIER FREE RAMP ALIGNMENT AND DETAILS.

RECORD DRAWINGS

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RYAN C. KING 1/27/2021
DATE

CODY JOHNSON s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT CODY L. JOHNSON 2833 STATE OF TEXAS
June 1, 2020

NORTH

20 10 0 20
Scale: 1" = 20'-0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

SCREENING AND BUFFERING

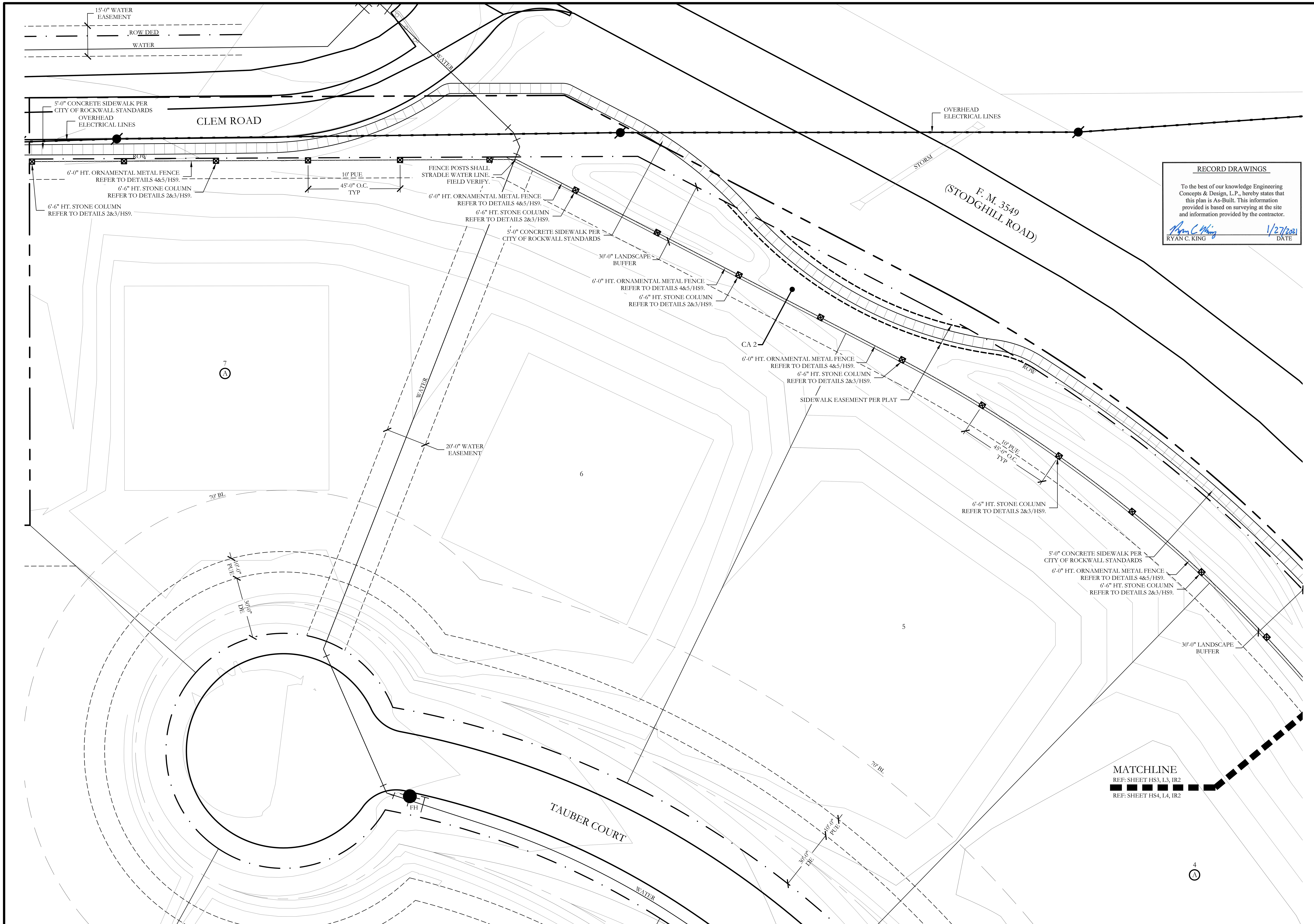
Hardscape Plans

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
HS2 of 10



CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT
CODY L. JOHNSON
2833
STATE OF TEXAS
June 1, 2020

NORTH

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One Inch

SCREENING AND BUFFERING

Hardscape Plans

Northgate Phase 1

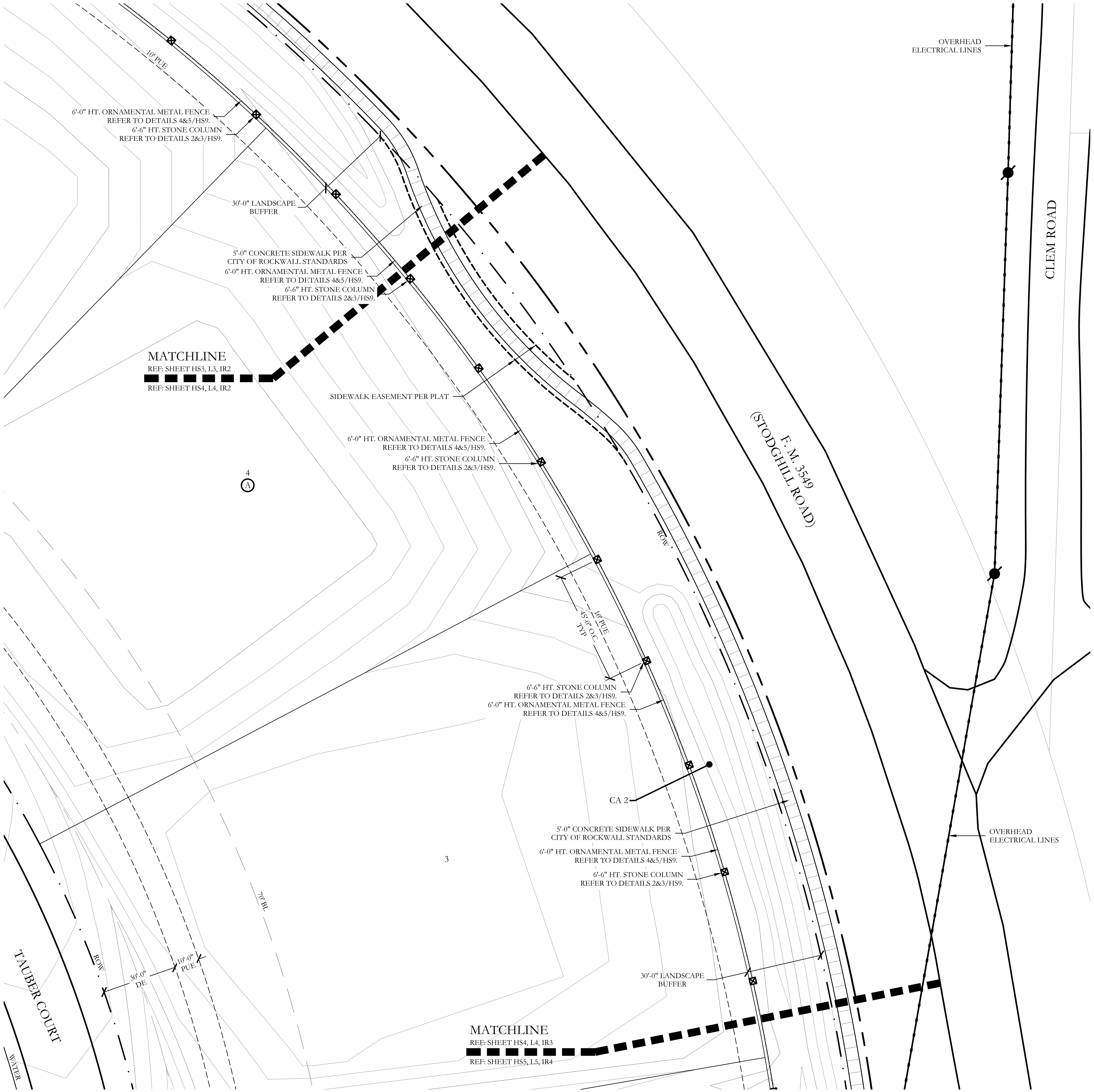
City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.

MJP001

SHEET NO.

HS3 of 10



HARDSCAPE LEGEND

- 4'-0" HT. STONE WALL. REFER TO DETAILS 2&3/HS8.
- 6'-6" HT. STONE COLUMN. REFER TO DETAILS 2&3/HS9.
- OVERHEAD CEDAR BEAMS. REFER TO DETAILS 1/HS7 & 1&2/HS8.
- 9'-0" HT. STONE SIGN PANEL REFER TO DETAILS 1&3/HS7 & 1/HS8.
- 6'-0" HT. STONE MINOR WALL WALL. REFER TO DETAILS 1/HS7 & 1/HS9.
- 8'-0" HT. STONE LOGO PANEL. REFER TO DETAILS 1&2/HS7.
- 6'-0" HT. ORNAMENTAL METAL FENCE. REFER TO DETAILS 4&5/HS9.

REFER TO CIVIL PLANS FOR SIDEWALK AND BARRIER FREE RAMP ALIGNMENT AND DETAILS.

RECORD DRAWINGS

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RYAN C. KING — DATE 1/27/2021

CODY JOHNSON s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT — CODY L. JOHNSON — 2833 — STATE OF TEXAS
June 1, 2020

NORTH

20 10 0 20
Scale: 1" = 20'-0"

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One Inch

SCREENING AND BUFFERING

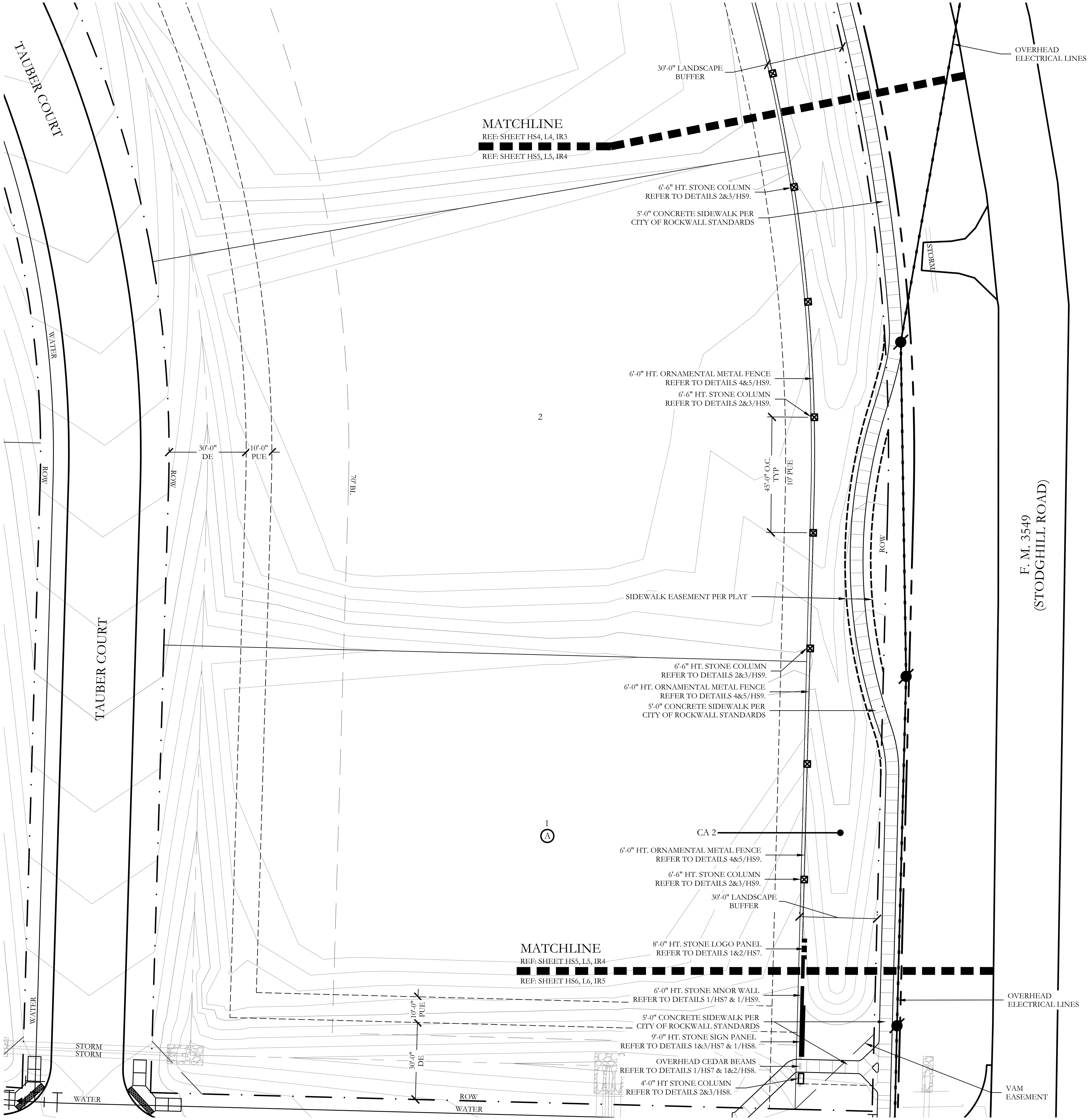
Hardscape Plans

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
HS4 of 10



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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT CODY L. JOHNSON 2833 STATE OF TEXAS

June 1, 2020

NORTH

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One Inch

SCREENING AND BUFFERING

Hardscape Plans

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO. MJP001

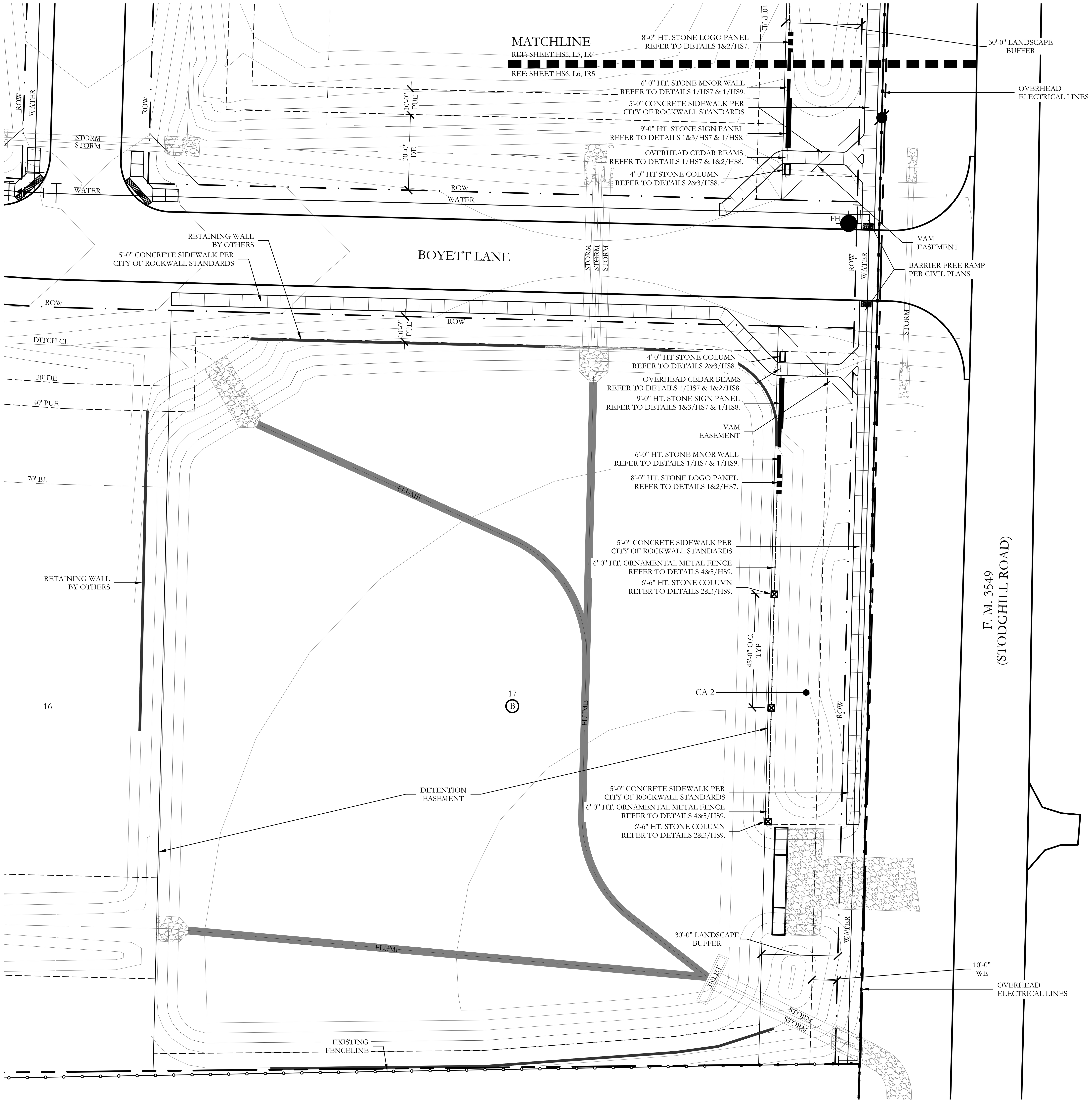
SHEET NO. HS5 of 10

SCREENING AND BUFFERING

Hardscape Plans

Northgate Phase 1

City of Rockwall, Tarrant County, Texas



HARDSCAPE LEGEND

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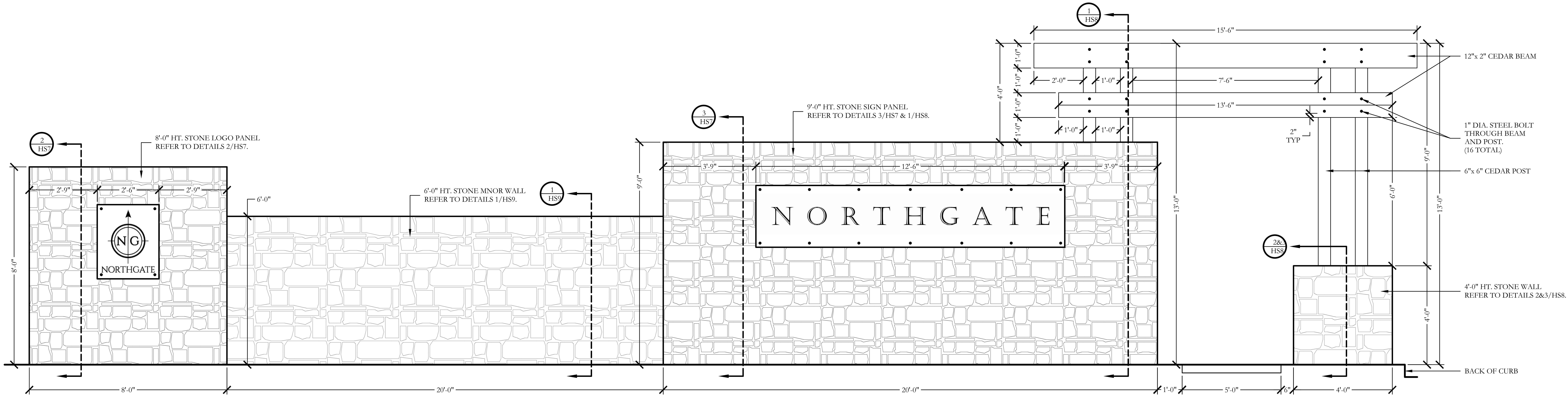
RYAN C. KING — DATE 1/27/2021

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

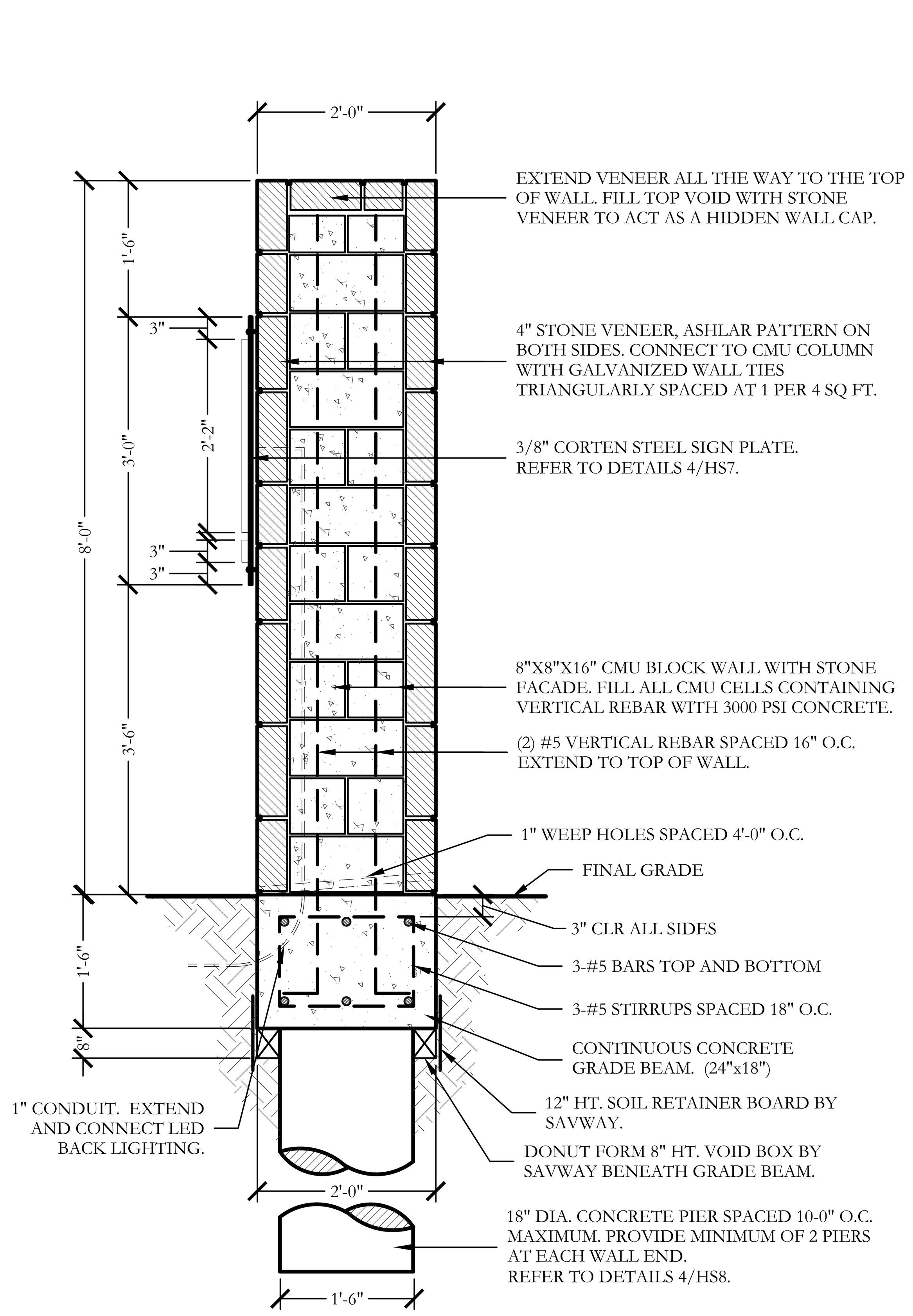
REGISTERED LANDSCAPE ARCHITECT — CODY L. JOHNSON — 2833 — STATE OF TEXAS
June 1, 2020

CJS PROJECT NO.
MJP001

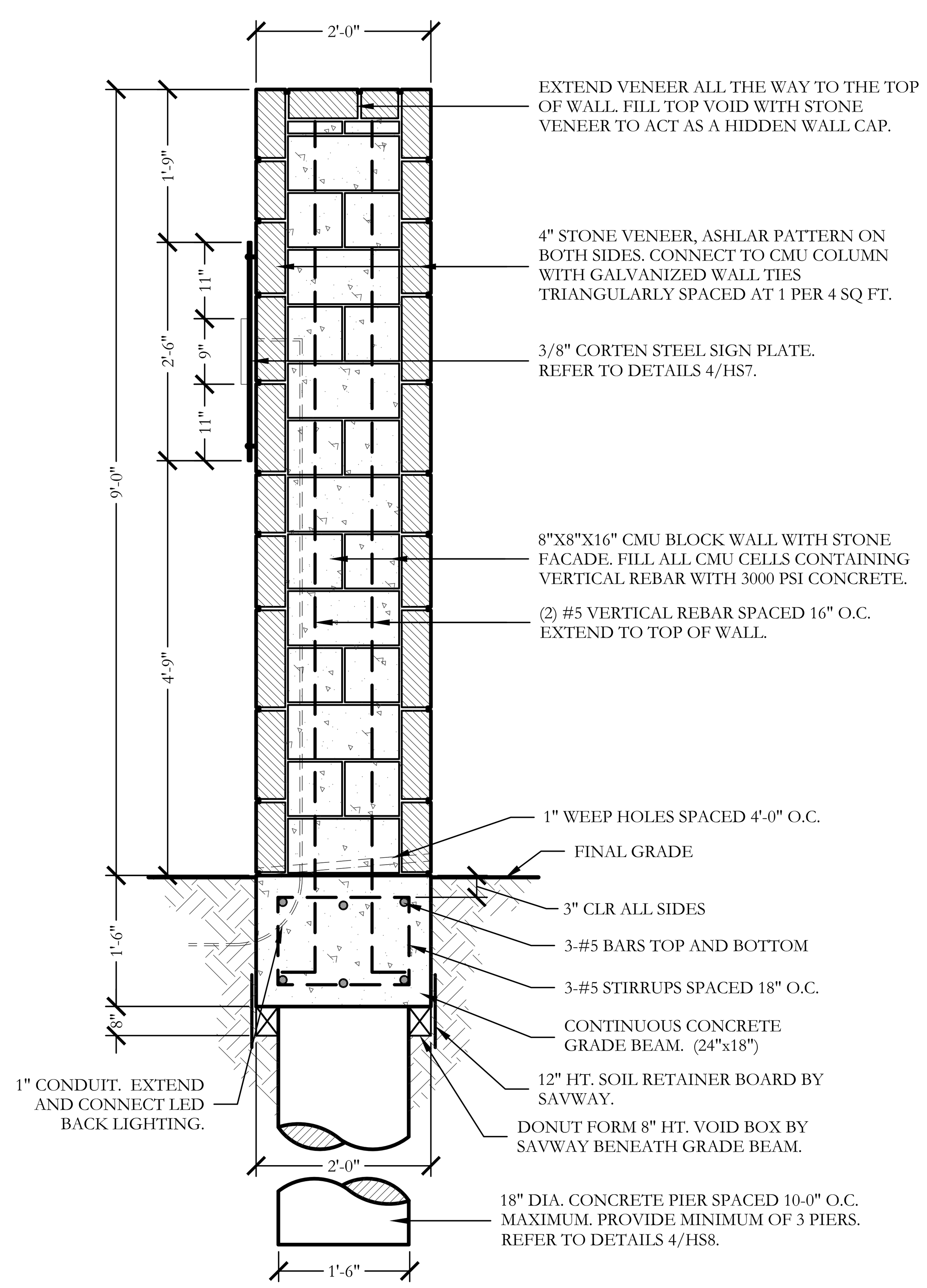
SHEET NO.
HS6 of 10



1 MAIN ENTRY SEQUENCE
ELEVATION
SCALE: 1/2"=1'-0"

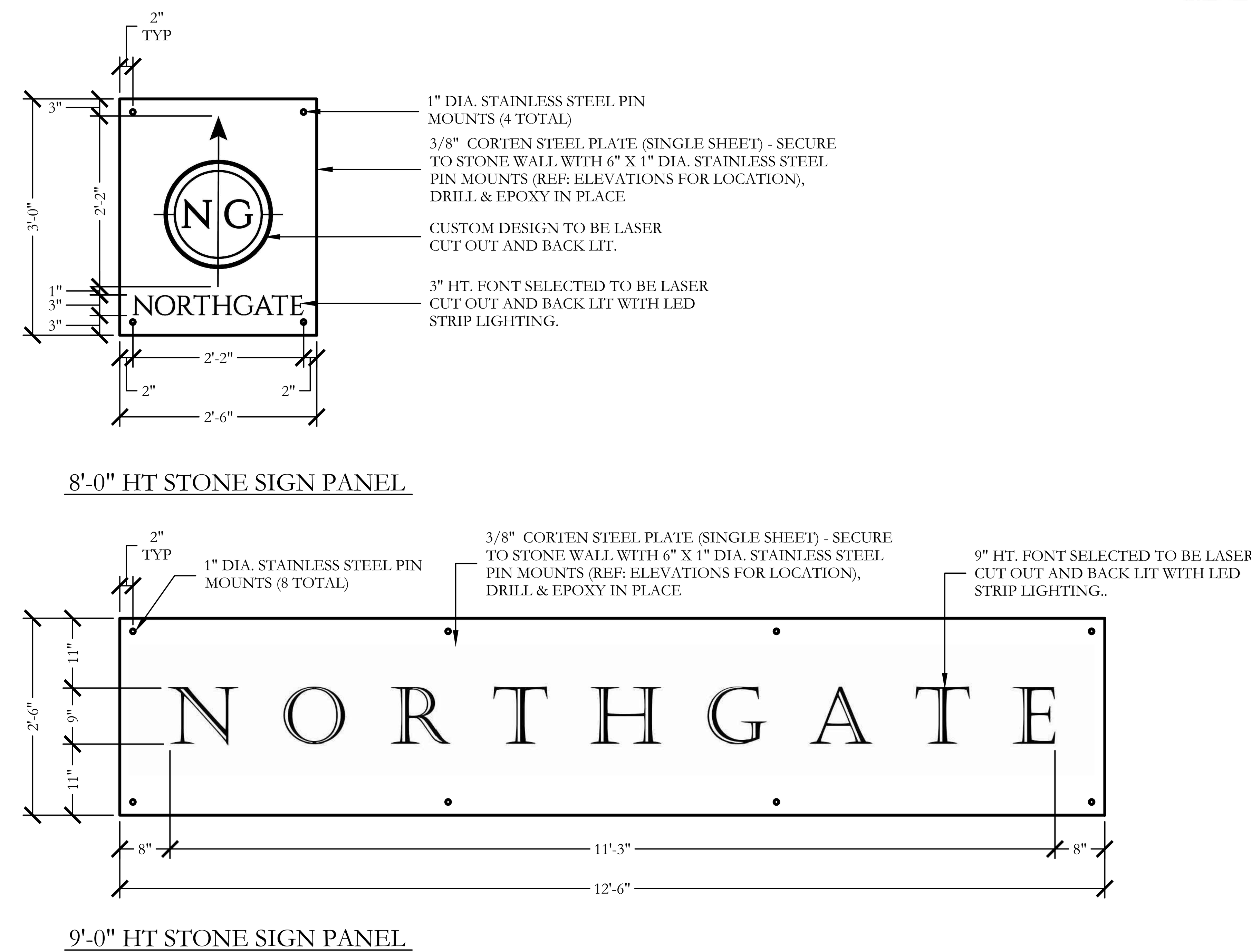


2 8'-0" HT. STONE LOGO PANEL
SECTION
SCALE: 3/4"=1'-0"



3 9'-0" HT. STONE SIGN PANEL
SECTION
SCALE: 3/4"=1'-0"

NOTE:
DESIGN BASED ON PRELIMINARY GEOTECHNICAL REPORT (ALPHA NO. G190837). FINAL GEOTECHNICAL REPORT NOT AVAILABLE AT TIME OF DESIGN. FINAL REPORT SHALL BE PROVIDED TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION TAKING PLACE.



4 CORTEN STEEL SIGN PANELS
ELEVATION
SCALE: 3/4"=1'-0"

RECORD DRAWINGS

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RYAN C. KING — 1/27/2021 DATE

CODY JOHNSON s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

April 1, 2020

REAVES CONSULTING
Reaves Consulting
831 Arrowhead Drive
Prosper, Texas 75078
972.347.3908
richard@reavesconsultingllc.com
F-10826

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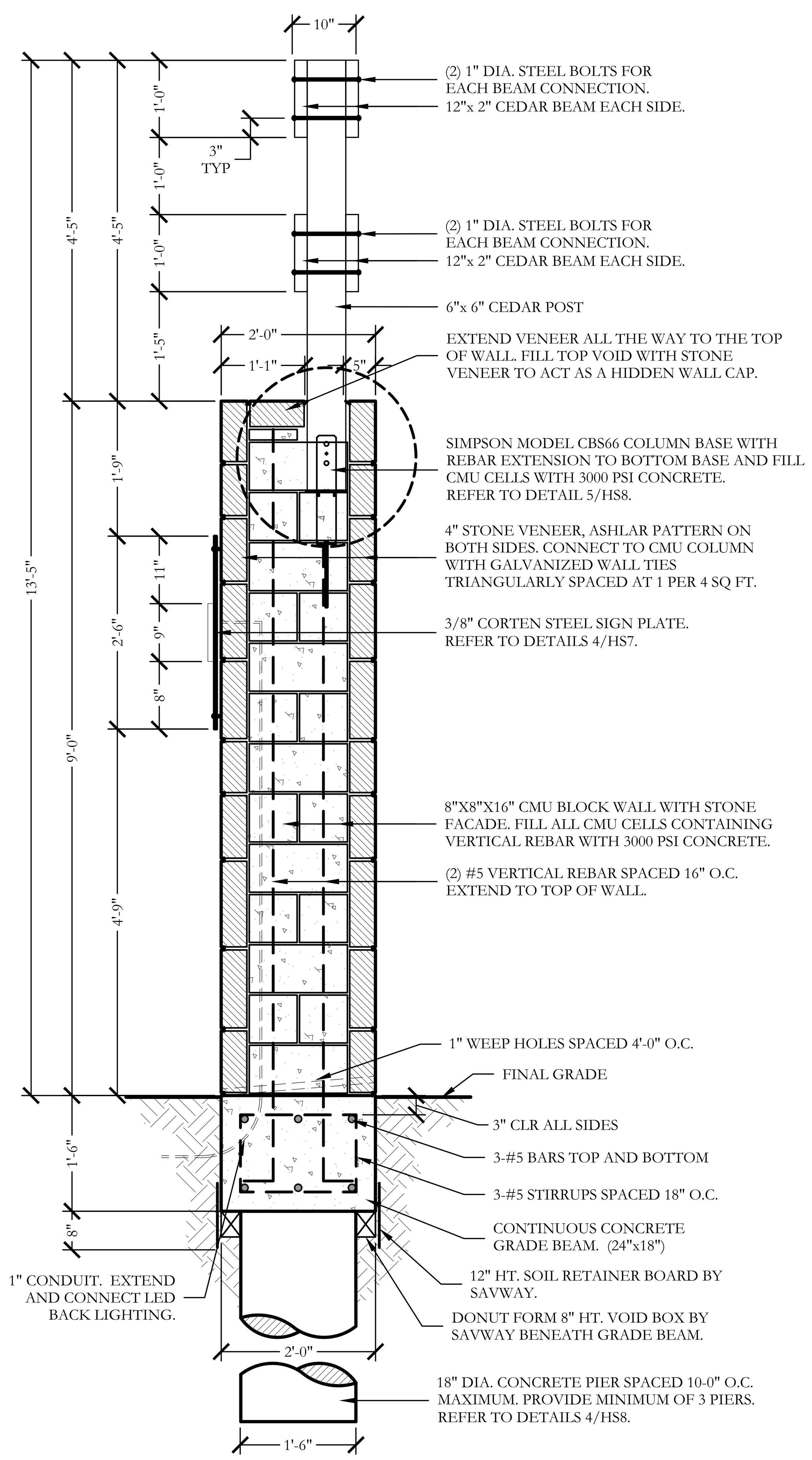
One Inch

SCREENING AND BUFFERING
Hardscape Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

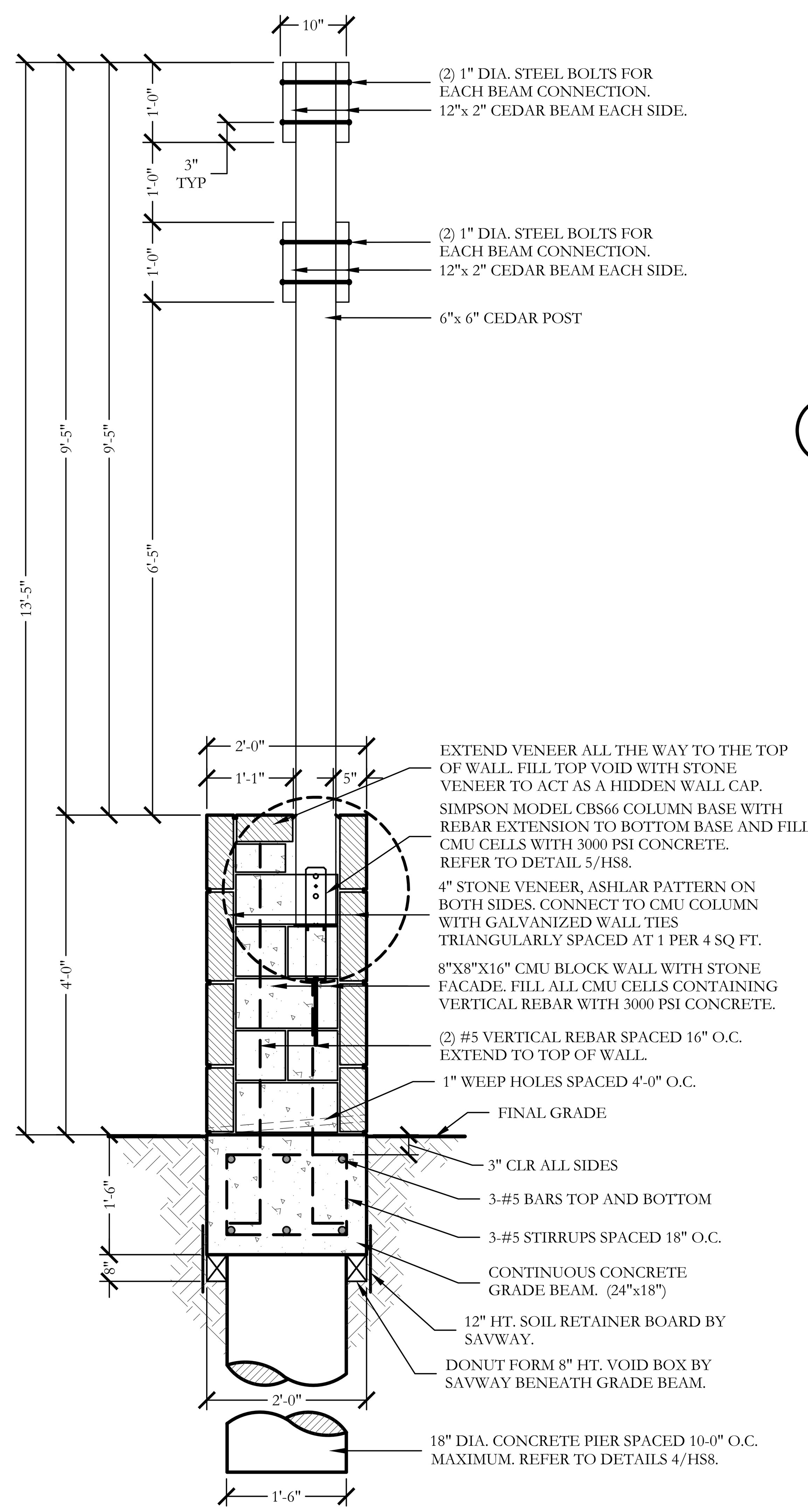
CJS PROJECT NO.
MJP001
SHEET NO.
HS7 of 10

WALL NOTES

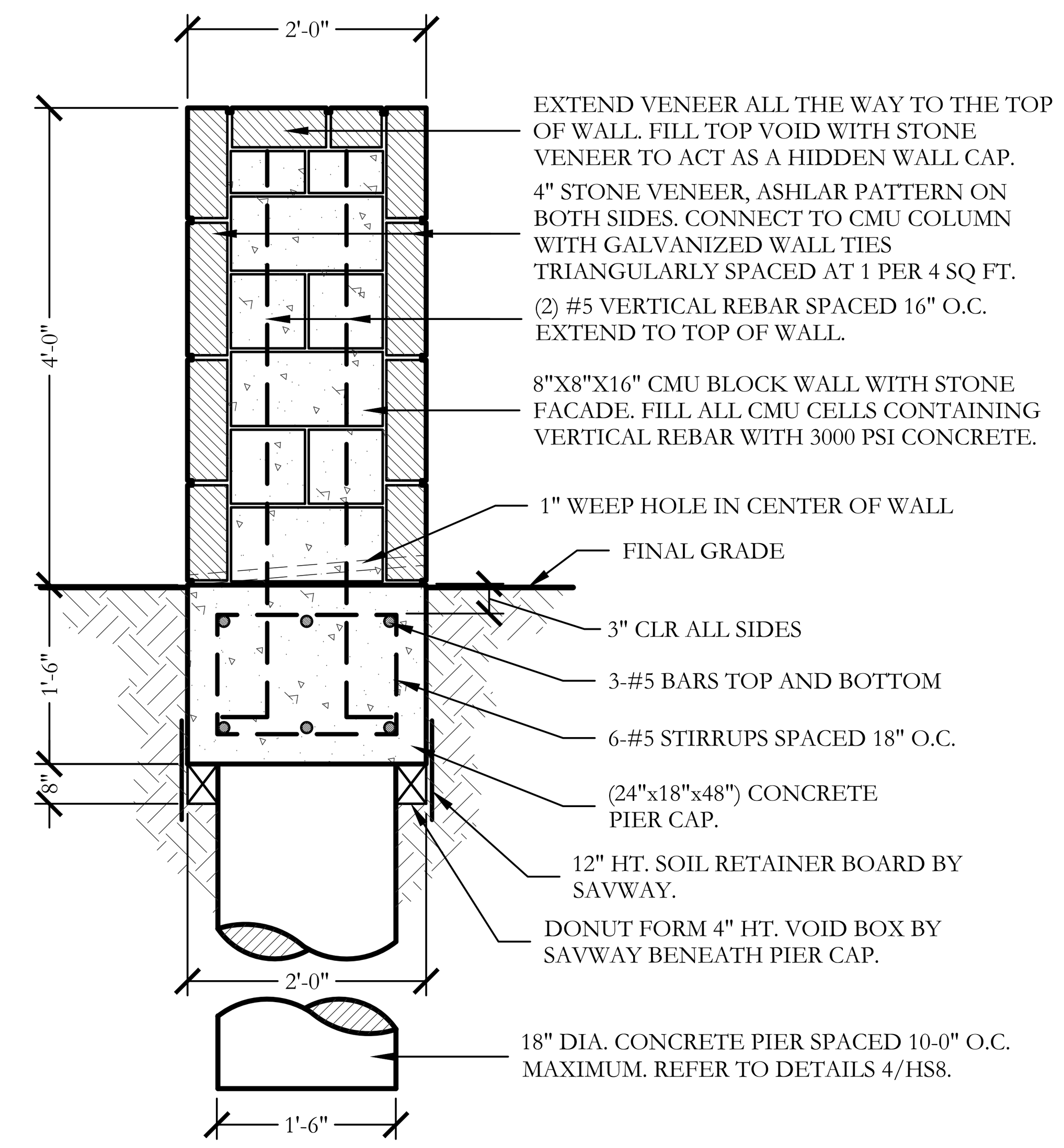
1. THESE DETAILS AND SPECIFICATIONS ARE APPLICABLE ONLY FOR THE SITE CONDITIONS AND HEIGHTS SHOWN HEREIN. IF CONDITIONS CHANGE FROM THOSE DESCRIBED HEREIN, THE ENGINEER SHOULD BE NOTIFIED IMMEDIATELY TO DETERMINE THE EFFECT, IF ANY, ON THE STRUCTURAL DESIGN AND LAYOUT.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES, AND STRUCTURES EITHER SHOWN OR NOT SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE OR REPLACEMENT OF SAID UTILITIES AND STRUCTURES CAUSED BY HIS FORCES.
3. ALL EARTHWORK SHALL BE PERFORMED AS INDICATED IN THE GEOTECHNICAL INVESTIGATION. PROPER EXECUTION OF EARTHWORK SHALL BE VERIFIED BY AN INDEPENDENT TESTING LAB.
4. PRE-POUR OBSERVATION OF FOOTINGS, BEAMS, AND PIERS IS RECOMMENDED BY OR UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER.
5. ALL CONCRETE USED IN FOOTINGS AND PIERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS. CONCRETE USED IN COLUMNS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS
6. ALL REINFORCING SHALL BE NEW BILLET STEEL, ASTM A615, GRADE 60 EXCEPT STIRRUPS SHALL BE GRADE 40 AND SPIRALS SHALL BE ASTM A82, GRADE 60.
7. CONCRETE FOR DRILLED PIERS SHALL BE POURED WITHIN 8 HOURS OF DRILLING PIER HOLES.
8. REFER TO DETAILS FOR TYPE AND SIZE OF BRICK AND STONE WALL REINFORCING.
9. ALL MORTAR TO BE TYPE S; MORTAR COLOR TO BE SELECTED BY OWNER. MASONRY CEMENT WILL NOT BE ALLOWED.
10. ALL MORTAR JOINTS ARE TO BE 3/8" CONCAVE TOOLED JOINTS.
11. STONE VENEER MATERIAL SHALL BE SELECTED BY OWNER.
12. VERIFY ALL DIMENSIONS IN THE FIELD BEFORE MANUFACTURING CAST-STONE.
13. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS, APPLICABLE FEES, AND CITY INSPECTIONS.
14. LAYOUT OF THE PROPOSED SCREENING WALL SHALL BE PERFORMED IN THE FIELD BY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
15. THE WALL STONE MATERIAL & PATTERN SHALL BE SELECTED BY OWNER AS NOTED ON LAY STONE COURSES LEVEL AND PLUMB. DO NOT EXCEED 1/4" VARIATION FROM LEVEL IN 20 FEET MAXIMUM.
16. CLEAN STONEWORK PROMPTLY AFTER COMPLETION WITH FIBER BRUSHES, CLEAN WATER OR APPROVED CLEANING AGENT. DO NOT USE WIRE BRUSHES OR ACID TYPE CLEANING AGENTS.
17. THE CONTRACTOR SHALL PROVIDE A 4' X 4' MOCKUP OF THE STONE AND BRICK SCREEN WALL FOR THE OWNERS REVIEW PRIOR TO BEGINNING THE STONE WORK. THE APPROVED "MOCKUP" SHALL SERVE AS THE STANDARD FOR THE STONE WORK ON THE PROJECT.
18. THE CONTRACTOR SHALL OBTAIN A PERMIT FOR ALL WALL CONSTRUCTION AND SECURE ALL NECESSARY INSPECTIONS AND CERTIFICATIONS REQUIRED.



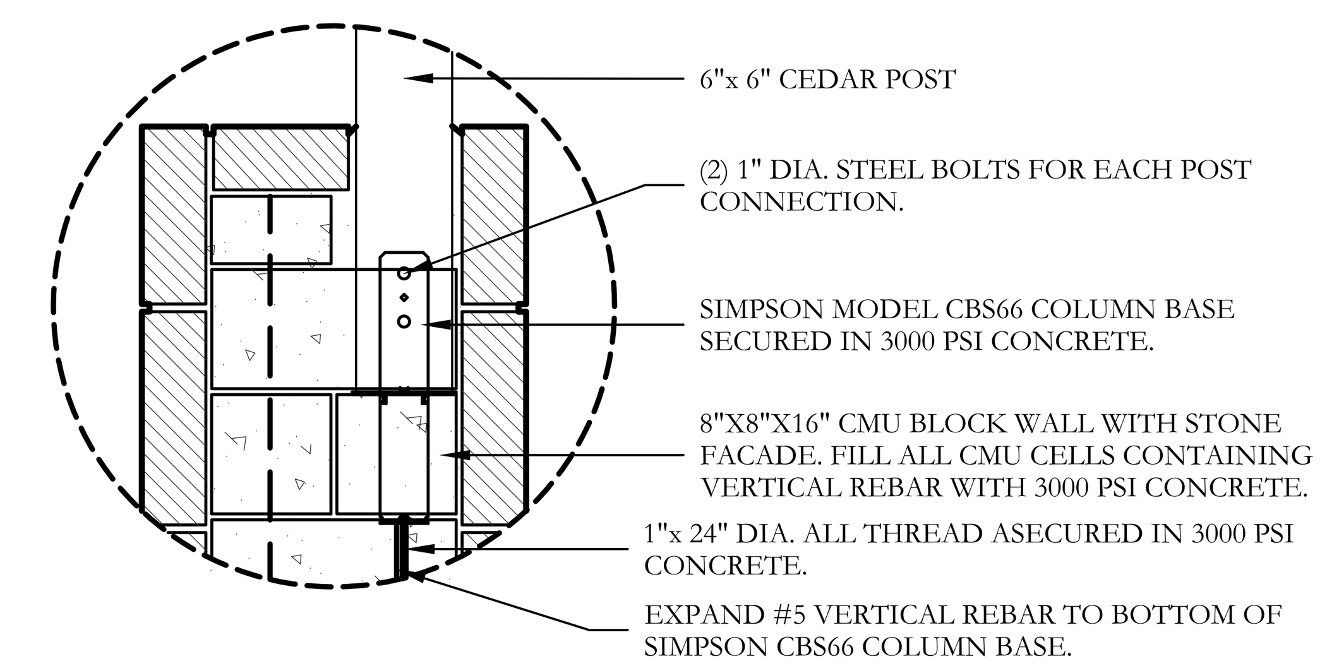
1 9'-0" HT. STONE SIGN PANEL W/ CEDAR OVERHEAD
SECTION SCALE: 3/4"=1'-0"



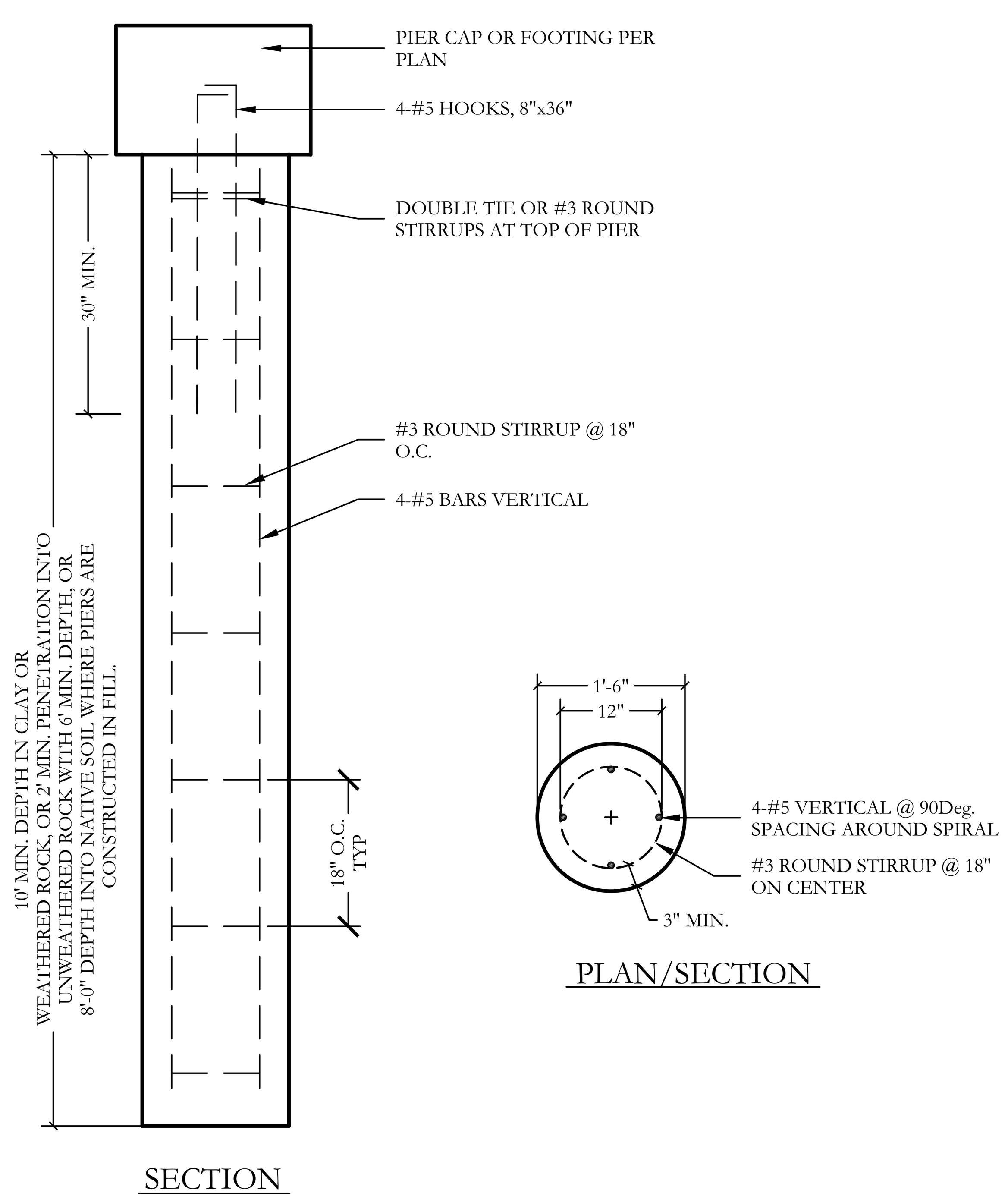
2 4'-0" HT. STONE WALL W/ CEDAR OVERHEAD
SECTION SCALE: 3/4"=1'-0"



3 4'-0" HT. STONE WALL
SECTION SCALE: 3/4"=1'-0"



5 SIMPSON COLUMN BASE CONNECTION
SECTION SCALE: 1"=1'-0"



4 PIER (18" DIA.)
PLAN/SECTION SCALE: 3/4" = 1'-0"

RECORD DRAWINGS

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RYAN C. KING DATE 1/27/2021

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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS
RICHARD REAVES
91128
LICENSED PROFESSIONAL ENGINEER
April 1, 2020

REAVES CONSULTING
Reaves Consulting
831 Arrowhead Drive
Prosper, Texas 75078
972.347.3908
richard@reavesconsultingllc.com
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SCREENING AND BUFFERING
Hardscape Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

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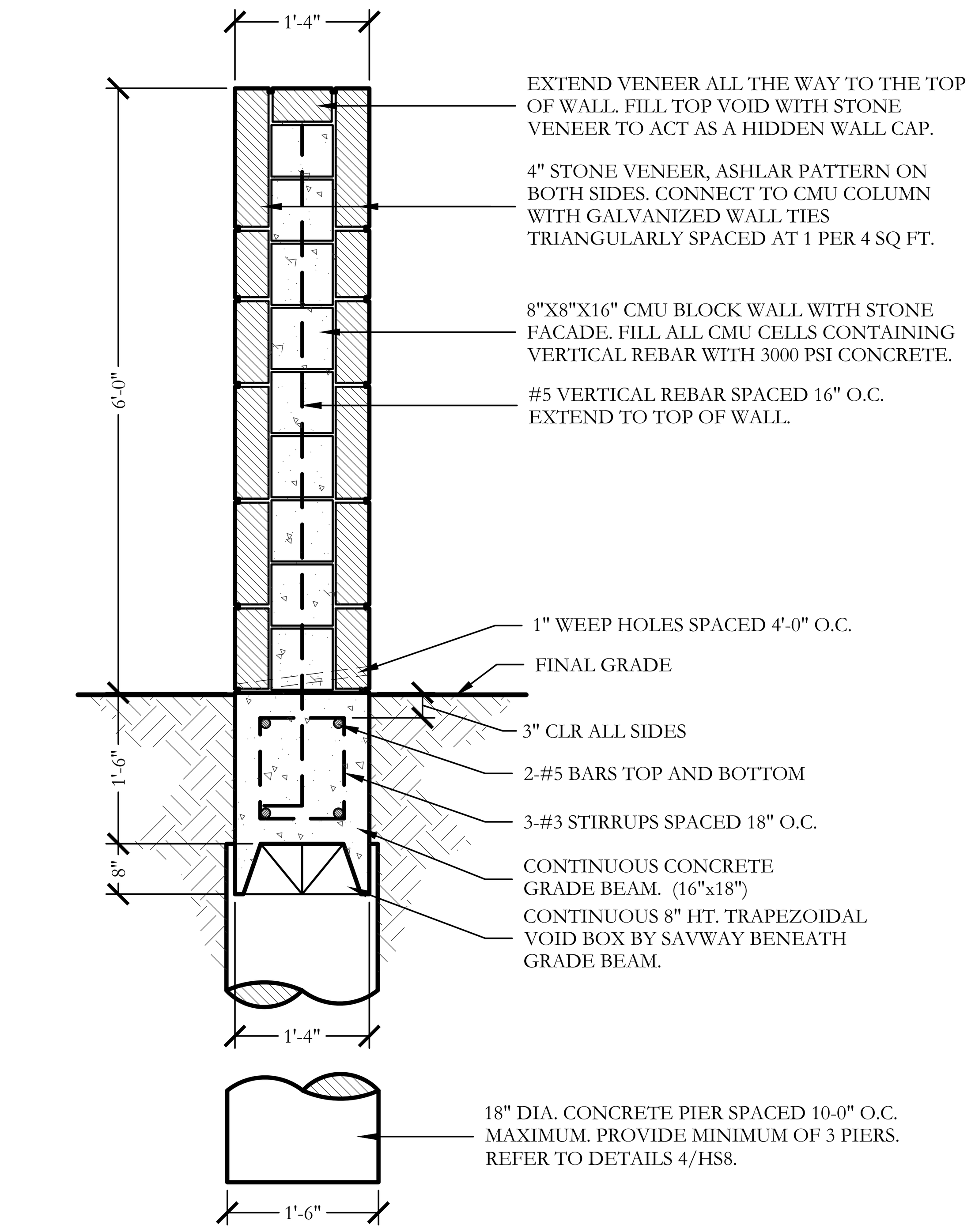
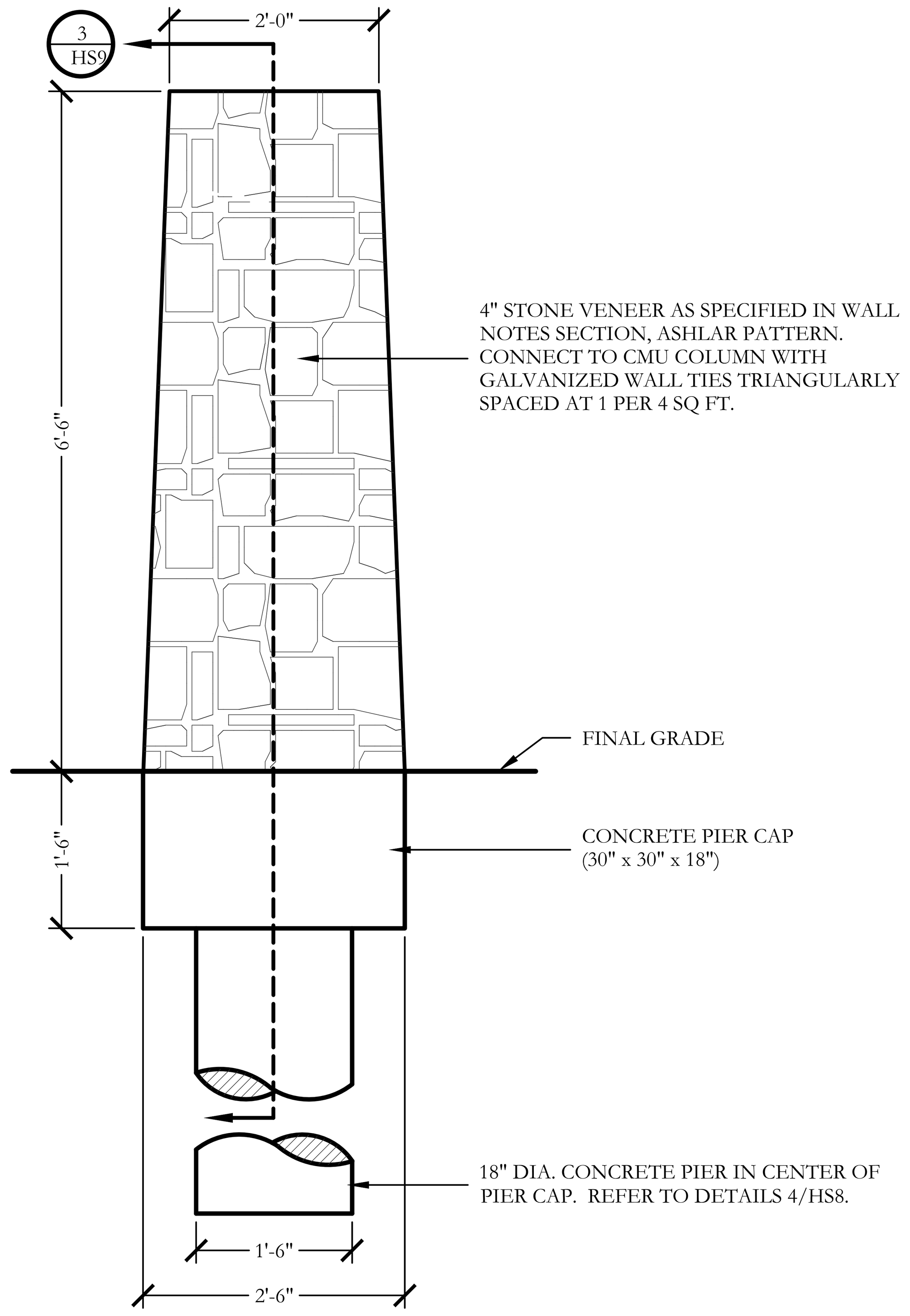
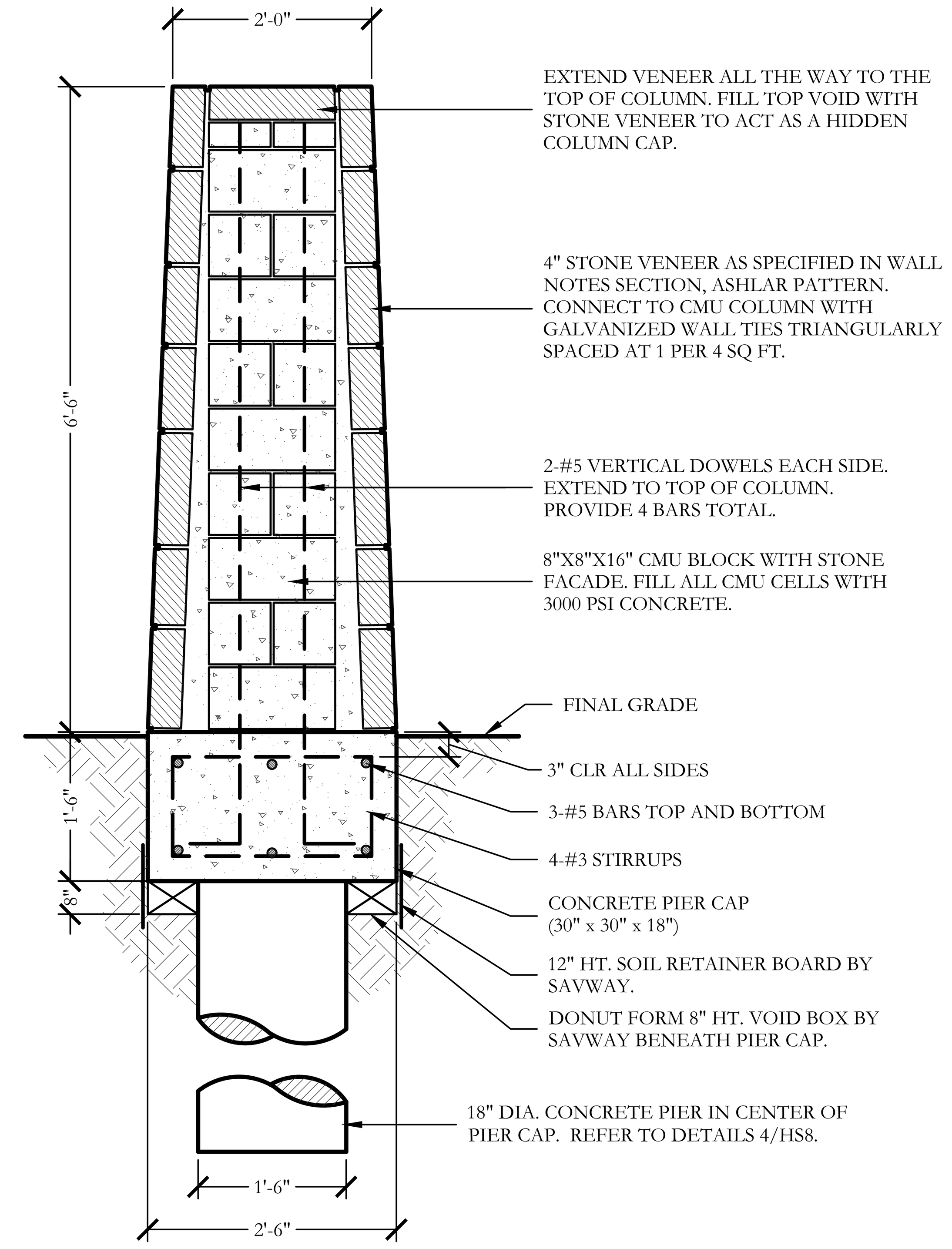
MJP001
SHEET NO.
HS8 of 10



1 6'-0" HT. STONE MINOR WALL
SECTION SCALE: 3/4"=1'-0"



2 6'-6" HT. STONE COLUMN
ELEVATION SCALE: 3/4"=1'-0"



3 6'-6" HT. STONE COLUMN
SECTION SCALE: 3/4"=1'-0"

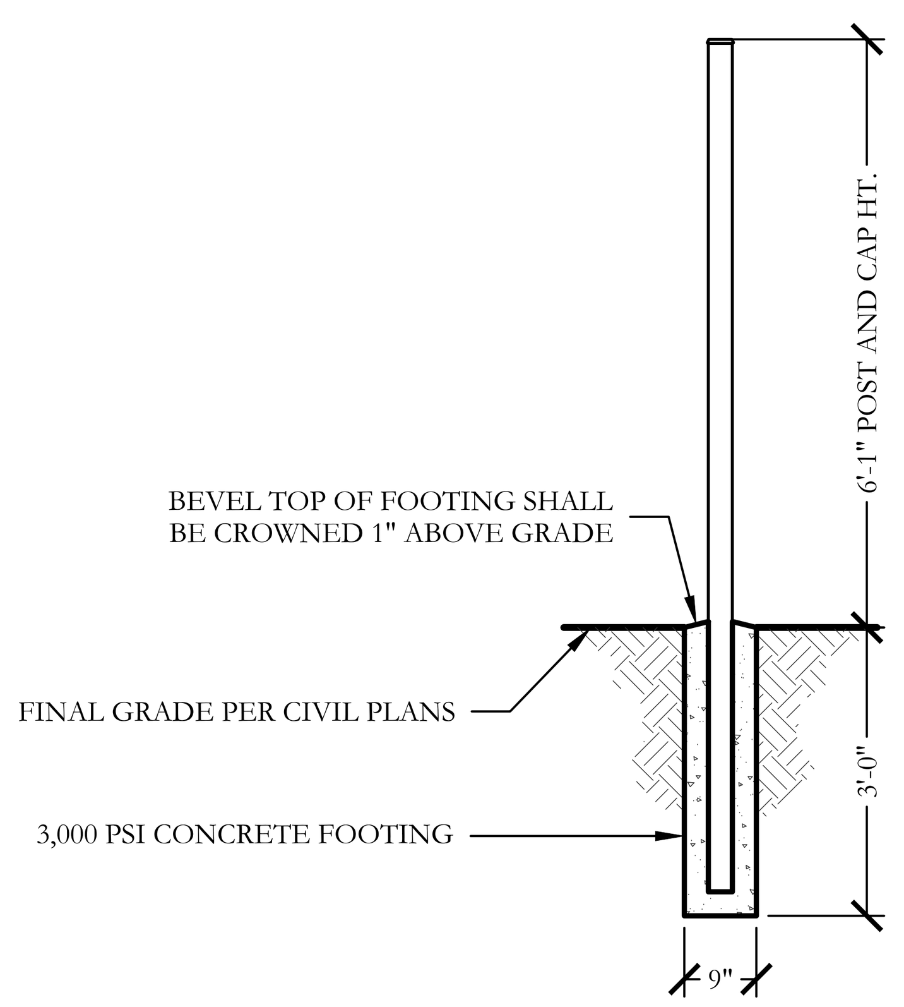
GENERAL NOTES - HARDSCAPE

CAST-IN-PLACE CONCRETE
1. ALL CONCRETE SHALL BE 3000 PSI, NORMAL WEIGHT, 28 DAY STRENGTH WITH A 4 TO 6 INCH SLUMP. THE CEMENT SHALL BE TYPE 1 AND SHALL CONFORM TO ASTM C150. AGGREGATES SHALL CONFORM TO ASTM C33.
2. ALL MIXING, TRANSPORTING, PLACING, AND CURING OF CONCRETE SHALL COMPLY WITH ACI 318.
3. CONCRETE SHALL NOT BE PLACED IN RAINING OR FREEZING WEATHER.
4. CHLORIDES SHALL NOT BE USED.
5. MAXIMUM AGGREGATE SIZE = 1".

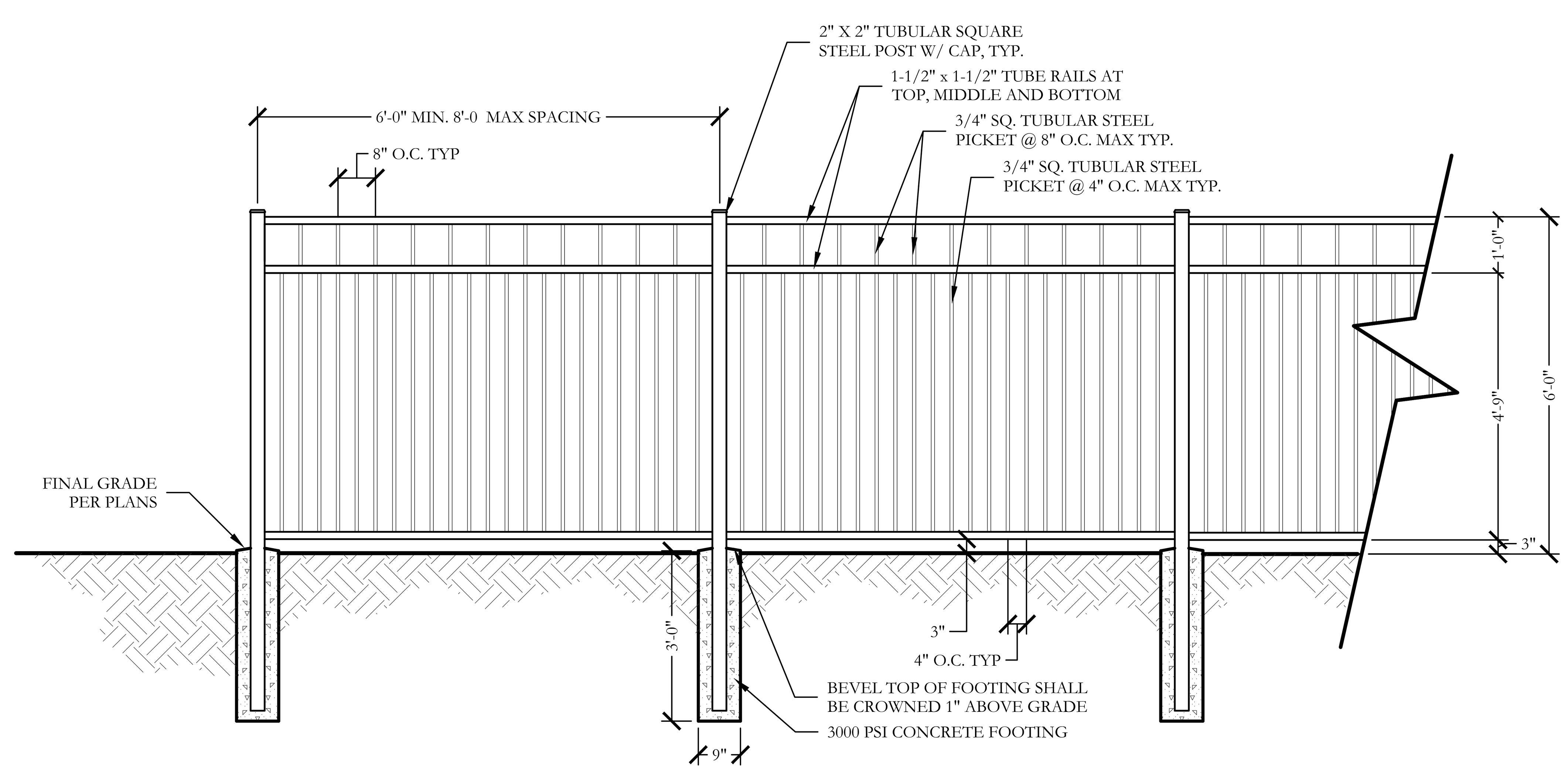
CONCRETE REINFORCING STEEL
1. ALL REINFORCEMENT SHALL CONFORM TO ASTM A615 60 GRADE AND DEFORMED PER ASTM A305. PROVIDE 38 BAR DIAMETER LAP SPLICES FOR ALL CONTINUOUS BARS UNLESS NOTED OTHERWISE.
2. PROVIDE THE FOLLOWING MINIMUM COVER FOR CONCRETE CAST IN PLACE REINFORCEMENT:
   - 2.1. CONCRETE CAST AGAINST EARTH AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
   - 2.2. CONCRETE EXPOSED TO EARTH OF WEATHER:
     - 2.2.1. (A) BARS LARGER THAN NO. 5: 2 INCHES
     - 2.2.2. (B) BARS NO. 5 AND SMALLER: 1-1/2 INCHES.
   - 2.3. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
     - 2.3.1. SLABS, WALLS AND JOISTS
       - 2.3.1.1. (A) BARS, LARGER THAN NO. 11: 1-1/2 INCHES
       - 2.3.1.2. (B) BARS NO. 11 AND SMALLER: 3/4 INCHES.
     - 2.3.2. BEAMS AND COLUMNS: 1-1/2 INCHES
     - 2.3.3. SHELLS AND FOLDED PLATES
       - 2.3.3.1. (A) BAR LARGER THAN NO. 5: 3/4 INCHES.
       - 2.3.3.2. (B) BARS NO. 5 AND SMALLER: 1/2 INCHES.
3. ALL REINFORCING STEEL SHALL BE CLEAN AND FREE OF GREASE.

DRILLED PIERS
1. PIERS NOT SPECIFICALLY LOCATED ON THE PLAN SHALL BE CENTERED ON WALL OR BEAM.
2. PIER REINFORCING AND CONCRETE SHALL BE PLACED IMMEDIATELY OR TO WITHIN A MAXIMUM OF 8 HOURS AFTER DRILLING IS COMPLETE.
3. STEEL CASING IS REQUIRED WHEN MORE THAN 2 INCHES OF STANDING WATER IS PRESENT AT THE BOTTOM OF THE SHAFTS PRIOR TO PLACEMENT OF STEEL AND CONCRETE.
4. PROVIDE 64 BAR DIAMETER LAP SPLICES IN ALL VERTICAL PIER REINFORCING AS REQUIRED
5. PROVIDE PIER TO GRADE BEAM DOWELS TO MATCH SIZE, QUANTITY, AND LOCATION OF LONGITUDINAL PIER REINFORCING. MIN DOWEL PROJECTION INTO PIER = 30 BAR DIA. MIN DOWEL PROJECTION INTO BEAM = TOP LONGITUDINAL GRADE BEAM REINFORCING. PROVIDE STANDARD HOOK AT TERMINAL END OF DOWEL IN GRADE BEAM.

STRUCTURAL CONCRETE MASONRY UNIT
1. CONCRETE MASONRY UNITS SHALL BE HOLLOW LOAD-BEARING TYPE N-1 CONFORMING TO ASTM C90 AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI.
2. CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM PRISM STRENGTH OF 1500 PSI AT 28 DAYS.
3. MORTAR SHALL BE ASTM C270, TYPE S, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1800 PSI IN ACCORDANCE WITH ASTM C780. MASONRY CEMENT IS PROHIBITED.
4. COARSE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AND A MAXIMUM AGGREGATE SIZE OF ½" IN ACCORDANCE WITH ASTM C476.REFER TO DETAILS FOR WALL REINFORCING BAR SIZE AND SPACING.
5. REINFORCE HORIZONTAL JOINTS WITH GALVANIZED LADDER-TYPE STEEL IN ACCORDANCE WITH ANSI/ASTM A82. SIDE AND CROSS RODS SHALL BE 9 GA MINIMUM.
6. HORIZONTAL REINFORCEMENT SHALL BE SPACED AT 16" MAXIMUM. PROVIDE A 16" LAP AT SPLICES.
7. JOINT REINFORCING SHALL BE DISCONTINUOUS AT CONTROL AND EXPANSION JOINTS.
8. LAP VERITCAL REINFORCING BARS AT 72 BAR DIAMETERS.
9. LAP HORIZONTAL REINFORCING BARS AT 48 BAR DIAMETERS.
10. PLACE GROUT USING LOW-LIFT METHOD, 6'-8" MAXIMUM LIFTS.



4 TYPICAL METAL POST FOOTING
SECTION SCALE: 1/2"=1'-0"



5 6'-0" HT. ORNAMENTAL METAL FENCE
ELEVATION SCALE: 1/2"=1'-0"

ORNAMENTAL METAL FENCE NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES, AND STRUCTURES EITHER SHOWN OR NOT SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY COST INCURRED DUE TO DAMAGE OR REPLACEMENT OF SAID UTILITIES AND STRUCTURES CAUSED BY HIS FORCES.
2. ALL CONCRETE USED IN FOOTING AND PIERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL REQUIRED PERMITS AND TOWN INSPECTIONS.
4. ALL ORNAMENTAL METAL TUBES, POSTS, RAILS AND PICKETS SHALL BE FLUSH AND FREE OF ALL DENTS, SPURS, AND SHARP EDGES AND SHALL BE INSTALLED LEVEL, PLUMB, AND SQUARE.
5. PROVIDE CONTINUOUS WELDS ALONG ALL EDGES OF FENCE MEMBERS.
6. GRIND SMOOTH ALL WELDS.
7. ALL METAL SURFACES SHALL BE PRIMED AND PAINTED WITH TWO COATS OF RUSTPROOF PAINT, COLOR TO BE FLAT BLACK. CONTRACTOR TO SUBMIT SAMPLES AS REQUIRED.
8. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS BEFORE MANUFACTURING GATES AND FENCE. GATE LOCKING MECHANISM SHALL BE SELECTED BY OWNER.
9. ALL ORNAMENTAL METAL FENCE MEMBERS ARE TO BE TUBULAR MEMBERS IN ACCORDANCE WITH ASTM 513 HOT ROLLED STRUCTURAL STEEL 50,000 PSI TENSILE STRENGTH, 60,000 PSI YIELD STRENGTH.
10. FENCE MEMBER SIZES TO BE AS FOLLOWS:
    - 10.1. PICKETS, 3/4" SQUARE 16 GA.
    - 10.2. RAILS, 1-1/2" X 1/2" SQUARE 16 GA.
    - 10.3. POSTS, 2" SQUARE 11 GA.
11. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL FENCE GATES AND OPENERS. SHOP DRAWINGS SHALL INCLUDE ALL PRODUCT CUT SHEETS AS WELL AS INSTALLATION AND MANUFACTURING DETAILS. CONTRACTOR TO BE RESPONSIBLE FOR STRUCTURAL DESIGN OF GATES.
12. CONCRETE FOOTING FOR POSTS SHALL BE 3X POST WIDTH FOR 2" SQUARE POSTS AND 2X POST WIDTH FOR 6" SQUARE POSTS. .
13. POSTS SHALL BE PLACED AT A MINIMUM DISTANCE OF 6'-0" O.C AND A MAXIMUM DISTANCE OF 8'-0" O.C.
14. FENCE SHALL MEET LOCAL CODES AND REQUIREMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE INCLUDING NECESSARY UPSIZING OF POSTS, PICKETS AND HORIZONTAL BARS AND INCREASING THE HEIGHT OF THE FENCE AS IT APPEARS IN THIS DETAILS AT NO ADDITIONAL COST TO THE OWNER FOR MATERIALS AND/OR LABOR.

RECORD DRAWINGS

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RYAN C. KING 1/27/2021
DATE

NOTE:
DESIGN BASED ON PRELIMINARY GEOTECHNICAL REPORT (ALPHA NO. G190837). FINAL GEOTECHNICAL REPORT NOT AVAILABLE AT TIME OF DESIGN. FINAL REPORT SHALL BE PROVIDED TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION TAKING PLACE.

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS
RICHARD REAVES
91128
LICENSED
PROFESSIONAL ENGINEER
April 1, 2020

REAVES CONSULTING
Reaves Consulting
831 Arrowhead Drive
Prosper, Texas 75078
972.347.3908
richard@reavesconsultingllc.com
F-10826

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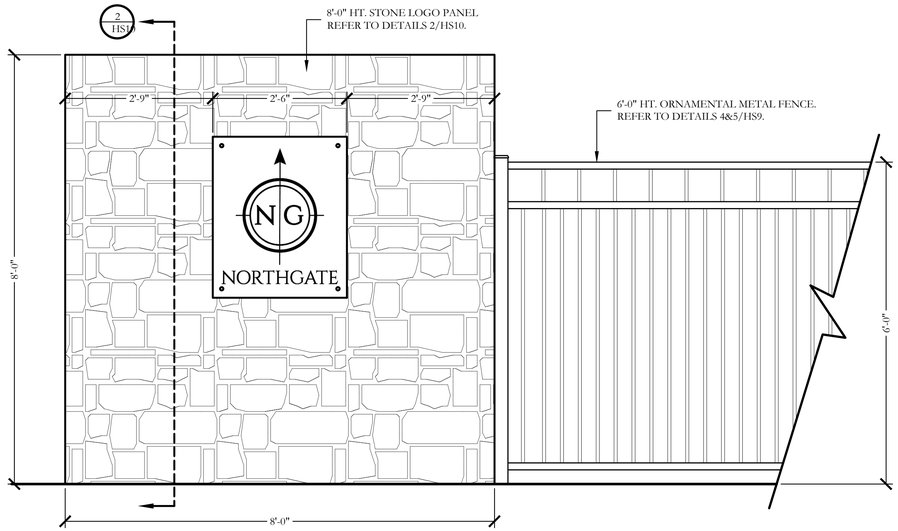
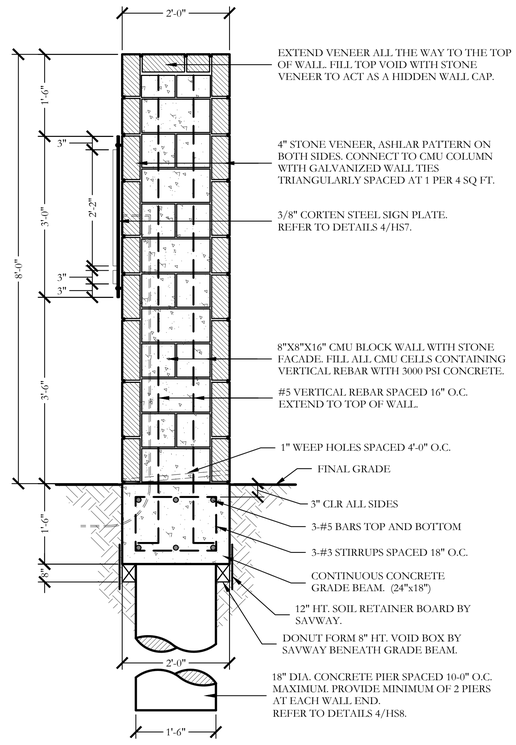
SCREENING AND BUFFERING
Hardscape Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001
SHEET NO.
HS9 of 10



1 8'-0" HT. SECONDARY ENTRY SEQUENCE
ELEVATION
SCALE: 3/4"=1'-0"



2 8'-0" HT. STONE LOGO PANEL
SECTION
SCALE: 3/4"=1'-0"

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s.t.u.d.i.o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH (469) 570-0062
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

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REAVES CONSULTING
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PROSPER, TEXAS 75078
972.347.3908
RICHARD@REAVESCONSULTINGLLC.COM
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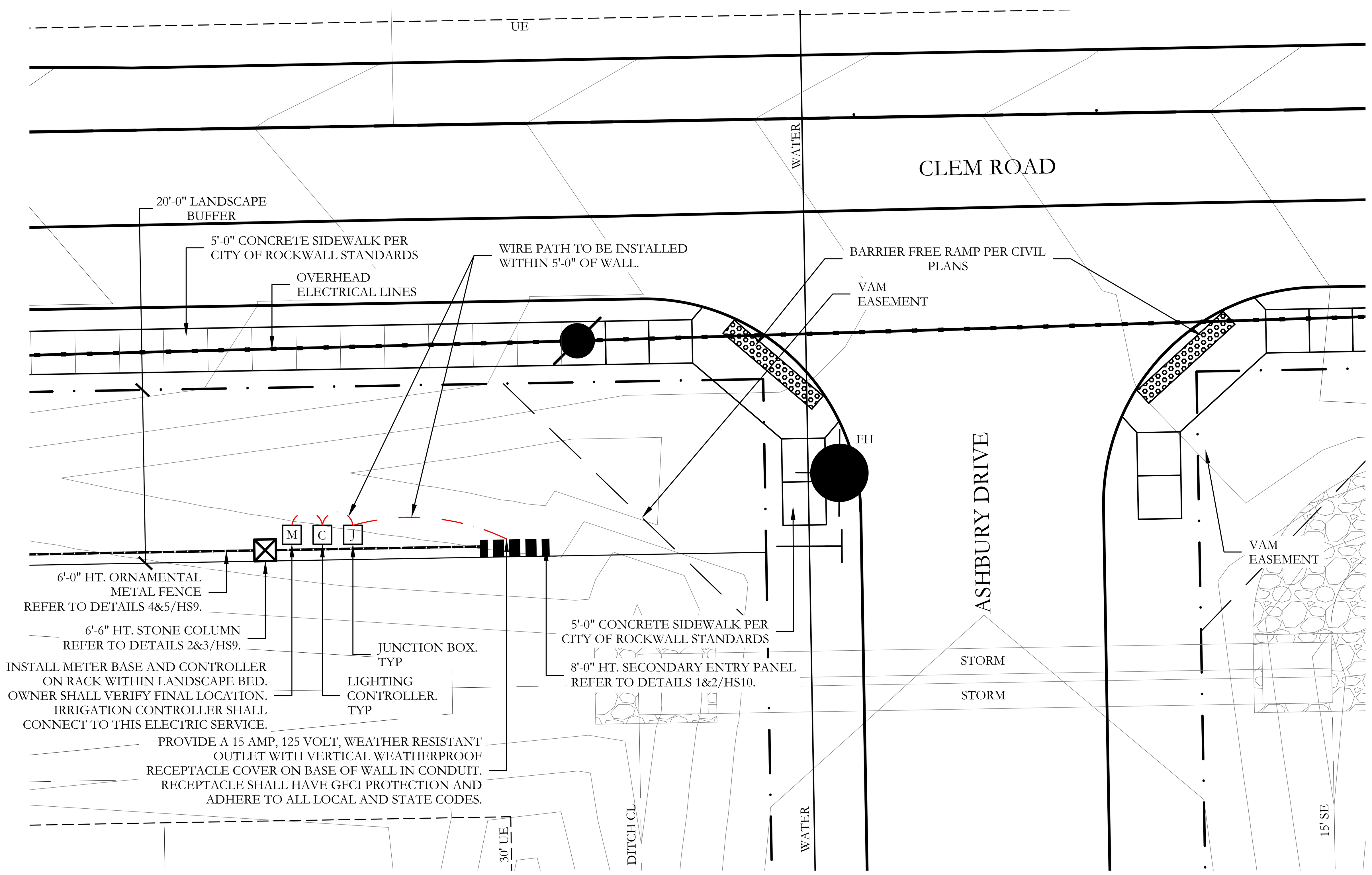
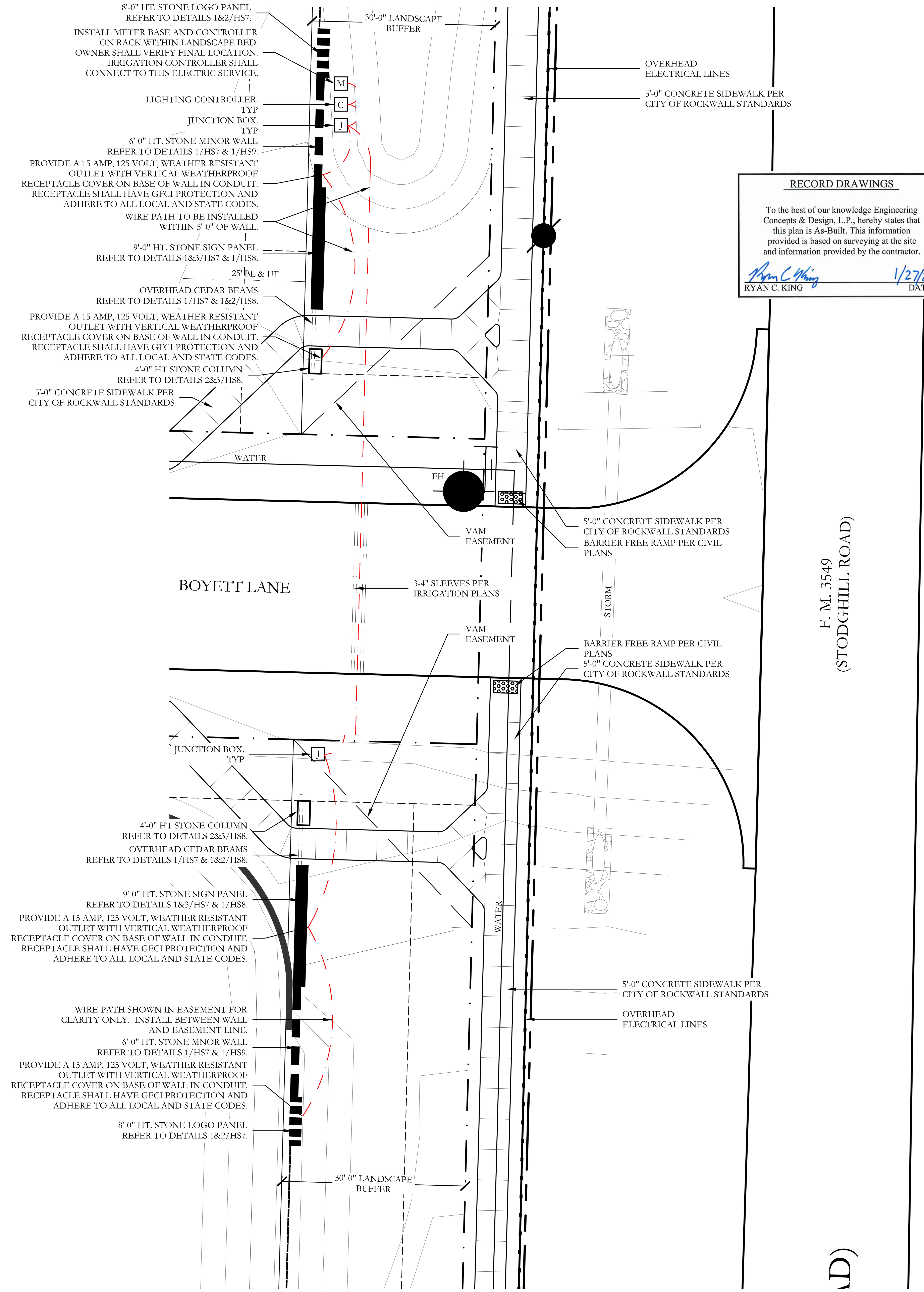
Hardscape Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

1	

CJS PROJECT NO.
MJP001

SHEET NO.
HS10 of 10





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RYAN C. KING 1/27/2021
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LIGHTING LEGEND

SYMBOL	ITEM	QTY
M	PROPOSED METER BASE	2
C	LIGHTING CONTROLLER AS SELECTED BY OWNER	2
J	JUNCTION BOX, AS NECESSARY	3

LIGHTING NOTES

1. COORDINATE ALL ELECTRIC UTILITY REQUIREMENTS WITH THE SERVICE PROVIDER IN THE AREA. COORDINATE EXACT TRANSFORMER LOCATION TO MAINTAIN REQUIRED CLEARANCES FROM BUILDING, EQUIPMENT, ETC. PRIOR TO INSTALLATION. POUR TRANSFORMER PAD PER UTILITY COMPANY REQUIREMENTS.
2. COORDINATE ALL TELEPHONE SERVICE REQUIREMENTS WITH LOCAL TELEPHONE UTILITY COMPANY AND PROVIDE ACCORDINGLY.
3. LIGHTING TYPE AND SIZE SHALL BE SELECTED BY THE OWNER.
4. LIGHTING AND ELECTRICAL CONNECTIONS SHALL COMPLY WITH TEXAS DEPARTMENT STATE HEALTH SERVICES AND MANUFACTURER RECOMMENDATIONS.
5. COORDINATE ALL SLEEVE LOCATIONS WITH OTHER TRADES. INSTALL ADDITIONAL SLEEVES AS NECESSARY.
6. THE ELECTRICAL CONTRACTOR SHALL REFER AND ADHERE TO ALL MANUFACTURER'S SPECIFICATIONS, CUT SHEETS, SHOP DRAWINGS, NOTES, AND INSTALLATION PROCEDURES FOR ALL PRODUCTS SHOWN ON PLANS.
7. THE CONTRACTOR SHALL DETERMINE WIRE SIZES AND RUN PATTERNS IN THE FIELD.
8. REFER TO IRRIGATION PLANS AND COORDINATE WITH IRRIGATION CONTRACTOR FOR ALL SLEEVE LOCATIONS.
9. THE LIGHTING EXHIBIT SHOWN HEREIN IS FOR GRAPHIC REFERENCE ONLY TO BE USED FOR BIDDING PURPOSES. FINAL DESIGN AND INSTALLATION SHALL BE PROVIDED BY A LICENSED ELECTRICIAN.

CODY JOHNSON s·t·u·d·i·o

9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT CODY L. JOHNSON 2833 STATE OF TEXAS

June 1, 2020

NORTH

10 5 0 10

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One Inch

SCREENING AND BUFFERING

Hardscape Details

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.

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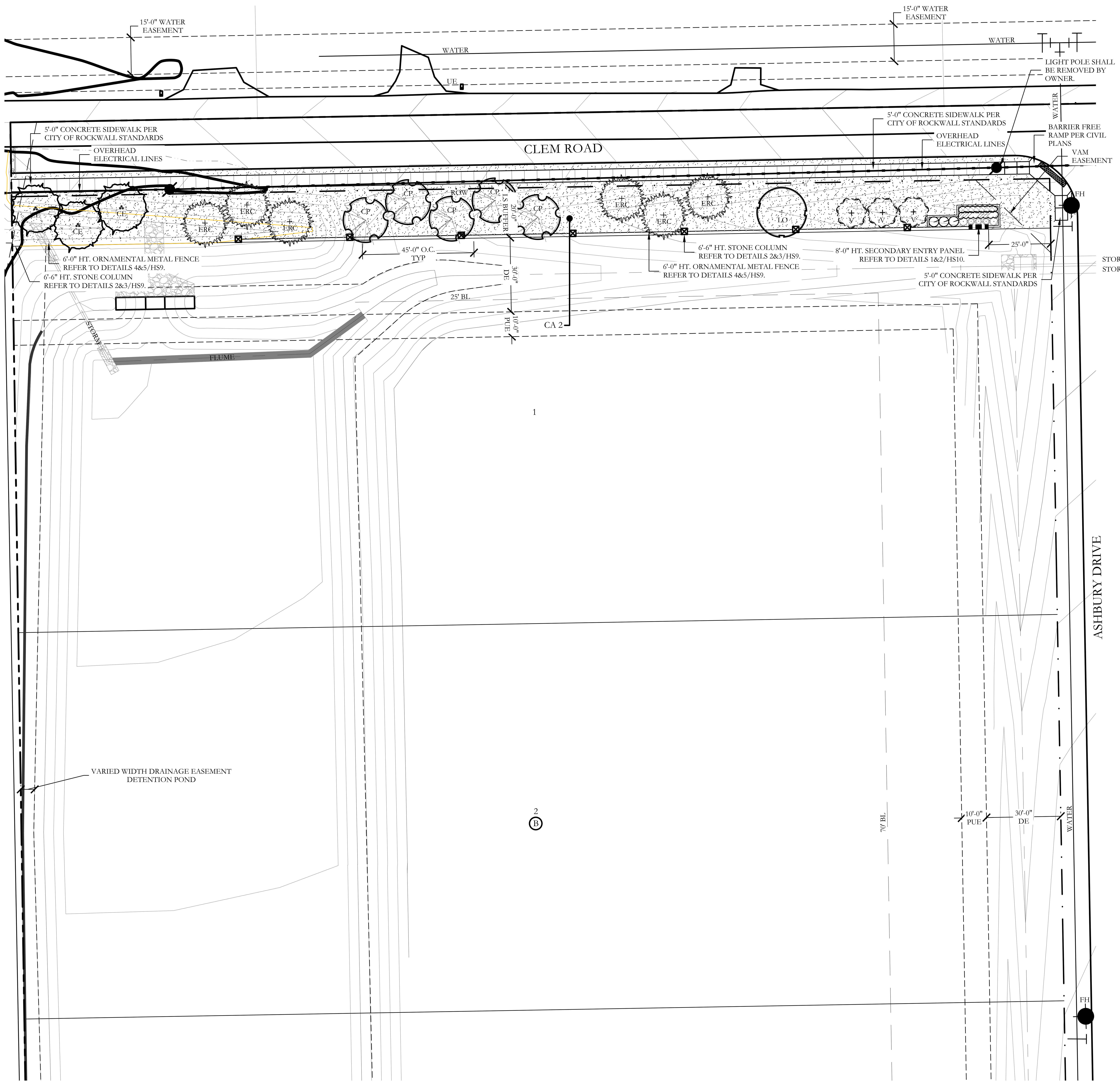
SHEET NO.

EX1 of 1



PLANT LEGEND					
SYMBOL	KEY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING
LO	LO	LIVE OAK	QUERCUS VIRGINIANA	4" CALIPER	AS SHOWN
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CE	CE	CEDAR ELM	ULMUS CRASSIFOLIA	4" CALIPER	AS SHOWN
ERC	ERC	EASTERN RED CEDAR AS PROVIDED BY OWNER	JUNIPERUS VIRGINIANA	MINIMUM 4" CALIPER	AS SHOWN
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DW	DW	DESERT WILLOW	CHILOPSIS LINEARIS	2" CALIPER	AS SHOWN
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		NATIVE DRAINFIELD SEED MIX	BY NATIVE AMERICAN SEED CO.	SQUARE FEET	HYDROMULCH

RECORD DRAWINGS

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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT CODY L. JOHNSON 2833 STATE OF TEXAS
June 1, 2020

NORTH

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SCREENING AND BUFFERING

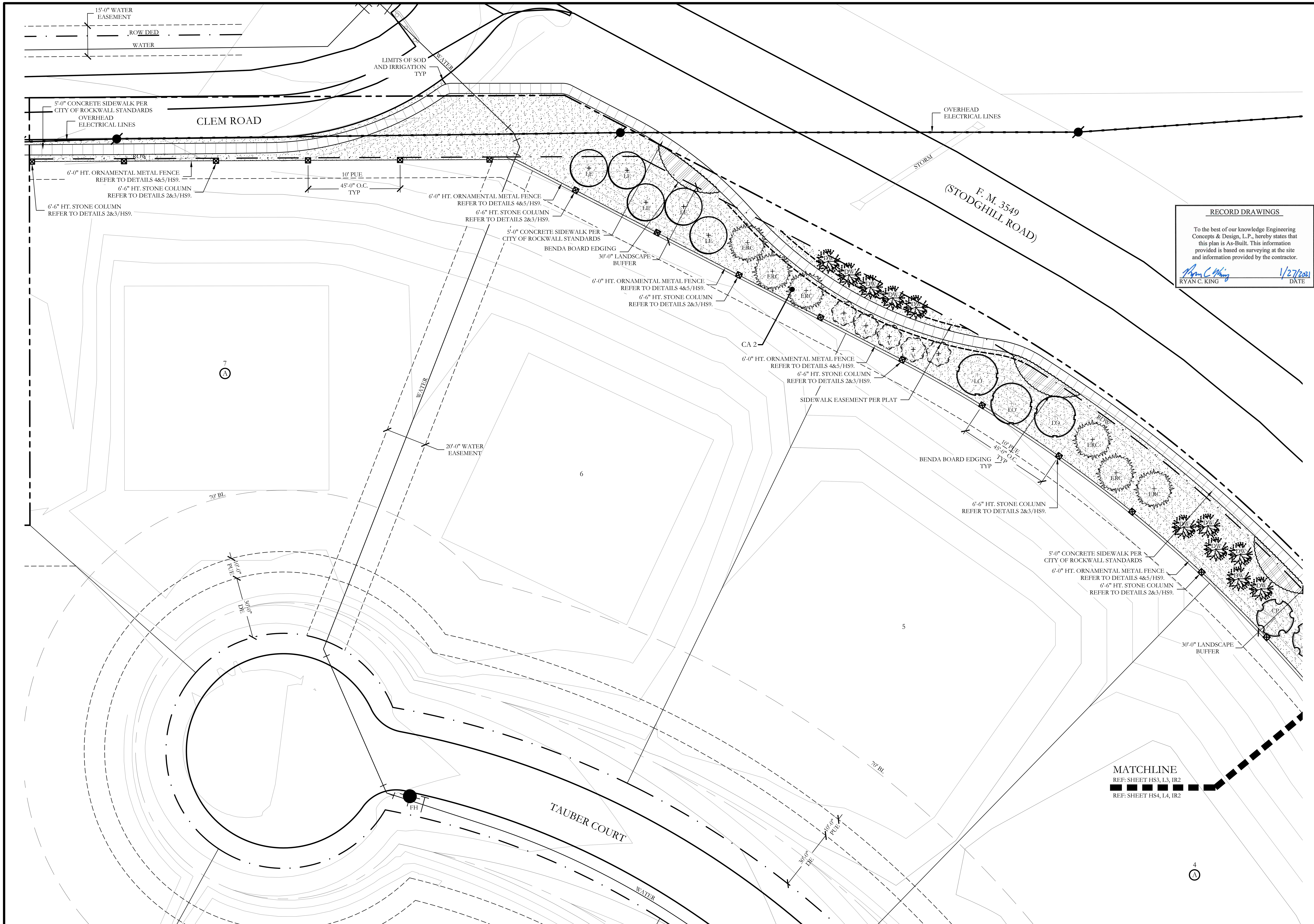
Landscape Plan

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
L1 of 6



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s·t·u·d·i·o
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PH. (903) 570-0162
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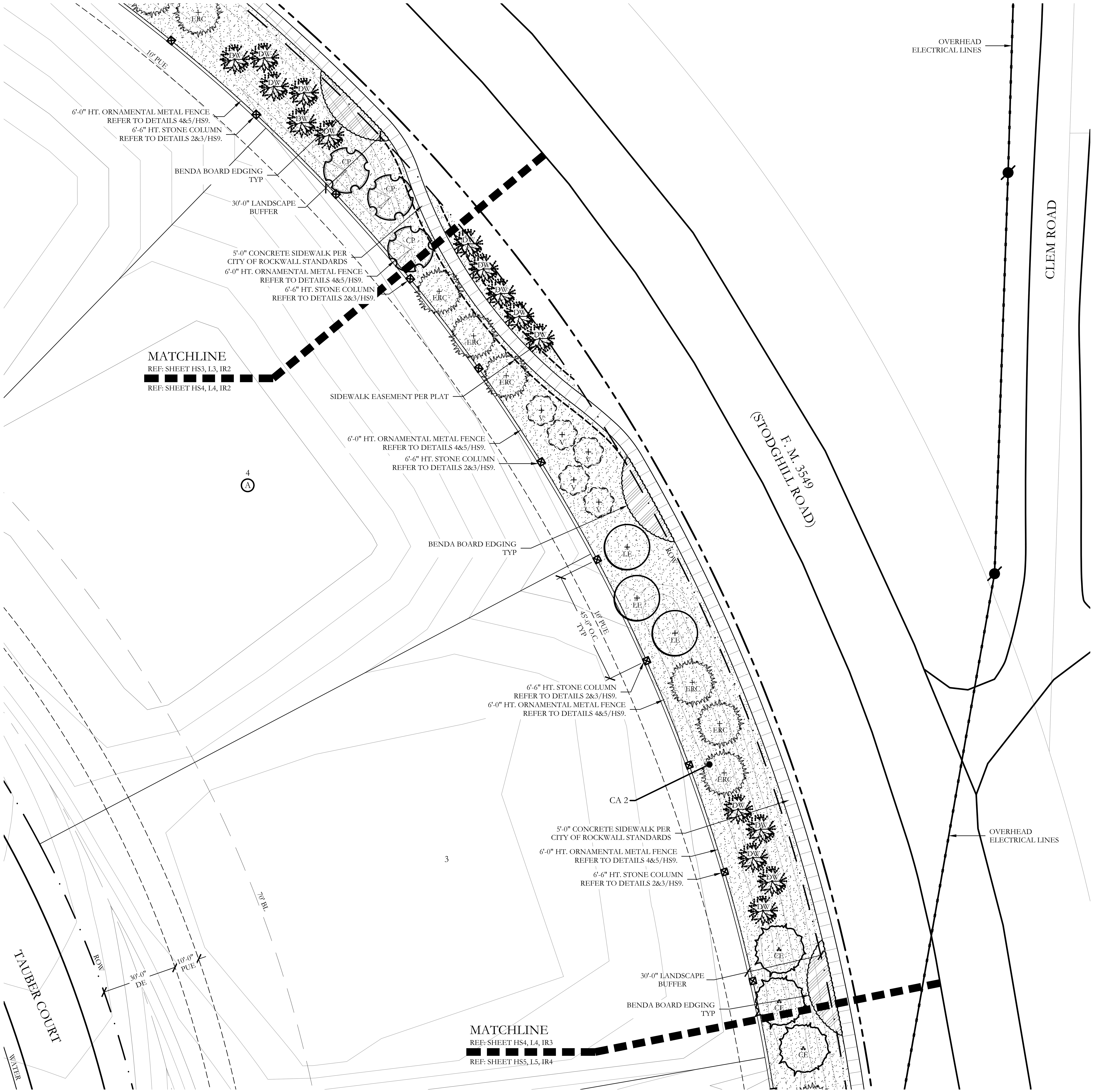
L2 of 6



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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

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June 1, 2020

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SCREENING AND BUFFERING

Landscape Plan

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

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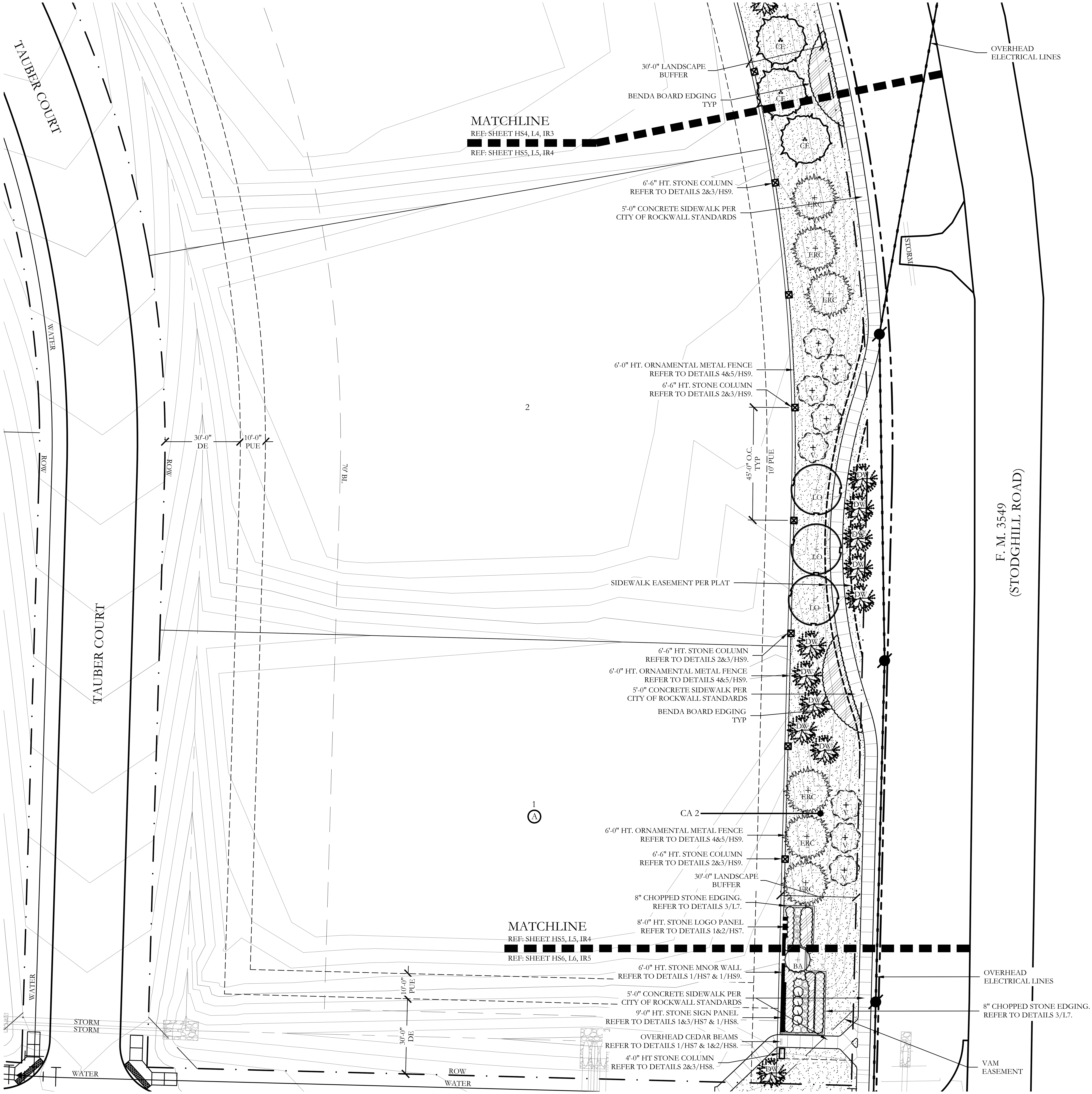
SHEET NO. L3 of 6



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PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

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SCREENING AND BUFFERING
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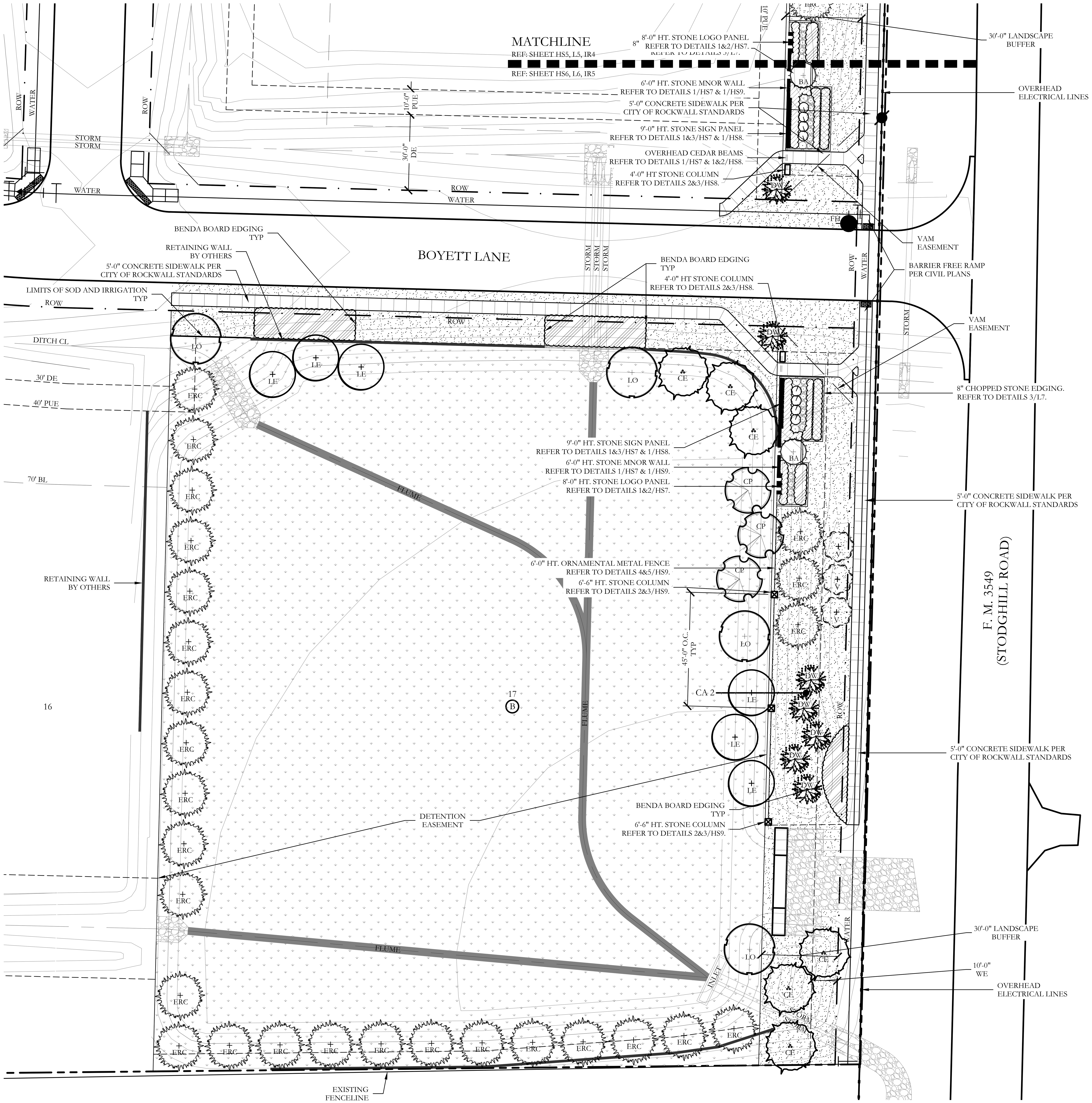
SHEET NO.
L4 of 6



PLANT LEGEND

SYMBOL	KEY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING
LO	LO	LIVE OAK	QUERCUS VIRGINIANA	4" CALIPER	AS SHOWN
LE	LE	LACEBARK ELM	ULMUS PARVIFOLIA	4" CALIPER	AS SHOWN
CP	CP	CHINESE PISTACHE	PISTACIA CHINENSIS	4" CALIPER	AS SHOWN
CE	CE	CEDAR ELM	ULMUS CRASSIFOLIA	4" CALIPER	AS SHOWN
ERC	ERC	EASTERN RED CEDAR AS PROVIDED BY OWNER	JUNIPERUS VIRGINIANA	MINIMUM 4" CALIPER	AS SHOWN
V	V	CHASTE TREE	VITEX ANGUS-CASTUS	2" CALIPER	AS SHOWN
DW	DW	DESERT WILLOW	CHILOPSIS LINEARIS	2" CALIPER	AS SHOWN
BA	BA	BLUE ATLAS CEDAR	CEDRUS ATLANTICA 'GLAUCA'	2" CALIPER	AS SHOWN
		TEXAS SAGE	LEUCOPHYLLUM FRUTESCENS	5 GALLON	48" O.C.
		UPRIGHT ROSEMARY	ROSMARINUS OFFICINALIS 'UPRIGHT'	5 GALLON	36" O.C.
		MORNING LIGHT MISCANTHUS	MISCANTHUS SINENSIS 'MORNING LIGHT'	5 GALLON	36" O.C.
		GOLD STAR JUNIPER	JUNIPERUS CHINENSIS 'BAKAUREA'	5 GALLON	48" O.C.
		SHORE JUNIPER	JUNIPERUS CONFERTA 'BLUE PACIFIC'	5 GALLON	36" O.C.
		GULF MUHLY GRASS	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	5 GALLON	36" O.C.
		COMMON BERMUDA GRASS	CYNODON DACTYLON	SQUARE FEET	SOLID SOD
		NATIVE DRAINFIELD SEED MIX	BY NATIVE AMERICAN SEED CO.	SQUARE FEET	HYDROMULCH

RECORD DRAWINGS

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RYAN C. KING — DATE 1/27/2021

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT CODY L. JOHNSON 2833 STATE OF TEXAS
June 1, 2020

NORTH

20 10 0 20
Scale: 1" = 20'-0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

SCREENING AND BUFFERING

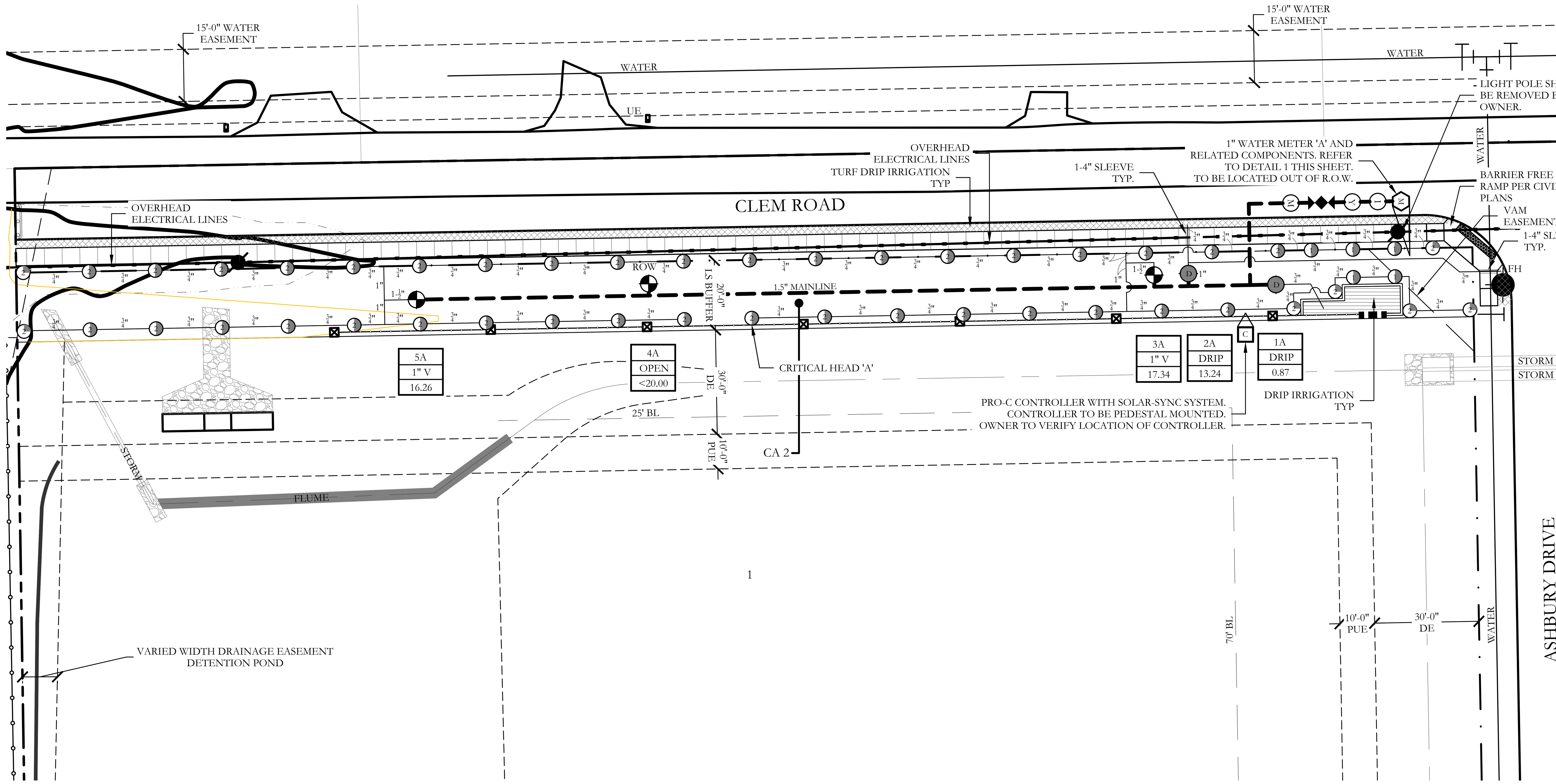
Landscape Plan

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
L5 of 6



SINGLE-WIRE IRRIGATION NOTES

1. PROVIDE A COMPLETE, FUNCTIONING AUTOMATIC IRRIGATION SYSTEM INCLUDING LABOR, MATERIALS, FEES, TAXES, EQUIPMENT, AND OTHER COSTS INCIDENTAL TO ACCOMPLISHING WORK.
2. ACQUIRE WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT OR LICENSED IRRIGATOR FOR MATERIAL SUBSTITUTES PRIOR TO BEGINNING INSTALLATION.
3. FORTY EIGHT (48) HOURS BEFORE IRRIGATION CONSTRUCTION BEGINS, IRRIGATION CONTRACTOR MUST CALL (800) DIG-TESS AND IS RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND UTILITIES AND/OR OBSTACLES PRIOR TO BEGINNING WORK. ANY DAMAGE TO UTILITIES AND/OR FINISHES FROM INFERIOR WORKMANSHIP BY THE IRRIGATION CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
4. PIPING IS DIAGRAMMATIC AND SHOWN FOR CLARITY ONLY. ADJUST AS REQUIRED FOR EXISTING UTILITIES, OBSTRUCTIONS, TREE ROOT BALLS, ETC. PIPING AND VALVES SHOWN IN PAVING FOR CLARITY ONLY AND SHALL BE INSTALLED IN ADJACENT LANDSCAPE AREA. COORDINATE WITH THE CITY OR ENTITY INSPECTING THE IRRIGATION SYSTEM AND DETERMINE THE LOCAL RULES AND CODES TO ABIDE BY REGARDING MAINLINE AND LATERAL PIPING LOCATIONS.
5. COORDINATE SLEEVE AND CONDUIT REQUIREMENTS WITH GENERAL CONTRACTOR. IRRIGATION SLEEVES SHALL BE AS FOLLOWS:
   - 5.1. SLEEVES INTENDED FOR LATERAL LINES ARE TO BE ONE-FOUR INCH SLEEVE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
   - 5.2. SLEEVES INTENDED FOR THE 1.5" MAINLINE ARE TO BE TWO-FOUR INCH SLEEVES SIDE BY SIDE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
6. LOCATE EACH END OF IRRIGATION SLEEVES DIMENSIONALLY ON THE RECORD "AS BUILT" DRAWINGS.
7. THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO ENSURE ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
8. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PLANT MATERIAL DUE TO SYSTEM FAILURE FROM INFERIOR WORKMANSHIP FOR THE DURATION OF THE INSTALLATION OF PLANT MATERIAL AND MAINTENANCE PERIOD FOLLOWING INSTALLATION.
9. THE IRRIGATION CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY TO HAND DIG WITHIN ALL EXISTING TREE DRIPLINE ZONES AT NO ADDITIONAL COST TO THE OWNER. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO STAKE AND RECEIVE APPROVAL FROM ALL DISCIPLINES PRIOR TO AN TRENCHING AND HAND DIGGING IN AREAS OF EXISTING TREE COVERAGE OR ANY ADDITIONAL AREAS THAT MIGHT BE QUESTIONABLE.
10. EXTEND ONE EXTRA CONTROL WIRE TO FARTHEST VALVE, ROUTED PARALLEL TO COMMON GROUND WIRE WITH INSTALLATION OF LEAD AND COMMON WIRES.
11. CONTROL WIRE SHALL BE DIRECT BURIAL, 24 VOLT, SINGLE CONDUCTOR, SOLID COPPER, PLASTIC INSULATED CABLE, RATED FOR DIRECT BURIAL APPLICATIONS, UF., UL., APPROVED, 14 GAUGE MINIMUM LEAD AND COMMON GROUND RETURN WIRE UNLESS NOTED OTHERWISE ON PLANS. COLOR OF INSULATION AS FOLLOWS:
   - 11.1. LEAD WIRE: ANY COLOR (SAME COLOR), EXCEPT WHITE OR ORANGE
   - 11.2. COMMON GROUND WIRE: WHITE (COLOR)
   - 11.3. EXTRA CONTROL WIRE: ORANGE (COLOR)
12. WIRE SPLICES SHALL BE KING ONE-STEP #7 (TAN) OR 3M-DBY PERMANENT AND WATERPROOF. INSTALL ALL WIRE SPLICES IN 10" ROUND PENTEK VALVE BOXES.
13. THE OWNER AND/OR LANDSCAPE ARCHITECT SHALL DETERMINE THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTION OF CONTROLLER PER LOCAL ELECTRICAL CODE. PROVIDE ALL NECESSARY FUSE BOXES, CONDUIT, FITTINGS, CONNECTORS OR OTHER ELECTRICAL DEVICES TO MAKE CONNECTION. OWNER SHALL PROVIDE ELECTRICAL SERVICE WITHIN 10 LINEAR FEET OF CONTROLLER LOCATION UNLESS NOTED OTHERWISE ON DRAWINGS.
14. CONNECT REMOTE SENSORS TO CONTROLLER WITH GROUND WIRE IN SERIES PRIOR TO CONNECTING TO REMOTE CONTROL VALVES.
15. ALL P.V.C. MAINLINES AND LATERAL LINES SHALL RECEIVE AS FOLLOWS:
   - 15.1. 18" MINIMUM COVER FOR MAIN LINES
   - 15.2. 18" MINIMUM COVER FOR PIPING LOCATED UNDER PAVING
   - 15.3. 12" MINIMUM COVER FOR LATERAL LINES
16. THE MINIMUM DISTANCE BETWEEN THE MAINLINE AND LATERAL LINE FITTINGS (EXCEPT FOR REDUCER BUSHINGS) SHALL BE 18".
17. THE MINIMUM HORIZONTAL DISTANCE OF 36" SHALL BE MAINTAINED BETWEEN ANY VALVES THAT ARE INSTALLED SIDE BY SIDE.
18. WHERE SERVICE TREES ARE INSTALLED ON THE MAINLINE FOR INSTALLATION OF THE ELECTRIC VALVES AND/OR QUICK COUPLING VALVES, THE CONTRACTOR SHALL LIMIT THE NUMBER OF THESE PER SERVICE TEE. DO NOT INSTALL MORE THAN A TOTAL OF EITHER THREE ELECTRIC VALVES OR A COMBINATION OF TWO ELECTRIC VALVES AND ONE QUICK COUPLER VALVE AT EACH TEE. THE MINIMUM DISTANCE BETWEEN FITTINGS SHALL BE 18" AS REFERENCED IN THE ABOVE NOTES.
19. ALL PVC PIPE AND FITTINGS ARE TO BE PRIMED WITH PURPLE PVC PRIMER SOLVENT BEFORE APPLYING PVC CEMENT IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.
20. INSTALL QUICK COUPLING VALVES IN 12"X17" PENTEK VALVE BOXES PER DETAIL SHOWN. CONNECT QUICK COUPLING VALVES TO MAINLINE PIPE WITH LASCO UNITIZED, O-RING SWING JOINTS PER DETAIL SHOWN, #T722-22. SUPPLY OWNER WITH THREE COUPLER KEYS WITH SWIVEL HOSE BIBB EACH, #33DK-10 AND #SH-0 RESPECTIVELY. VALVES TO BE INSTALLED SO THAT THE TOP OF THE QUICK COUPLER IS 2" BELOW BOTTOM OF VALVE BOX LID. PURPLE LID SHALL READ "NON-POTABLE, NOT SAFE FOR DRINKING" IN ENGLISH AND SPANISH.
21. ALL LATERAL LINES SHALL BE 3/4" CLASS 200 PVC UNLESS OTHERWISE NOTED ON PLANS.
22. ZONE VALVES LABELED AS 'OPEN" ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
23. ALL STATE OF TEXAS LAWS/RULES AND ALL LOCAL CODES/ORDINANCES AREA MADE PART OF THESE PLANS AND SPECIFICATIONS WHETHER SHOWN OR NOT. THESE LAWS AND ORDINANCES WILL SUPERCEDE THE PLANS, DETAILS, AND/OR SPECIFICATIONS FOR THIS PROJECT. THE IRRIGATION CONTRACTOR IS CAUTIONED THAT HE/SHE IS TO INCLUDE ANY AND ALL COST NECESSARY TO MEET OR EXCEED THE LAWS OF THE STATE OF TEXAS AND LOCAL CODES CONCERNING LANDSCAPE IRRIGATION.
24. INCLUDE THE FOLLOWING ALLOWANCES FOR PROVIDING AND INSTALLING AIR RELIEF VALVES AND FLUSH VALVES FOR THE DRIP SYSTEM. EXACT QUANTITY AND LOCATION OF THESE DEVICES WILL BE DETERMINED AT THE TIME OF INSTALLATION. IN GENERAL, ALL AIR RELIEF VALVES WILL BE INSTALLED AT THE HIGH POINTS AND FLUSH VALVES WILL BE INSTALLED AT THE LOW POINTS OF EXHAUST HEADER. ALLOW FOR APPROXIMATELY (1) AIR RELIEF AND APPROXIMATELY ONE (1) FLUSH VALVE FOR EACH DRIP ZONE KIT.
25. INCLUDE THE FOLLOWING ALLOWANCE FOR PROVIDING AND INSTALLING DRIP INDICATOR FOR THE DRIP SYSTEM. LOCATION OF DRIP INDICATOR SHOULD BE CENTERED IN DRIP ZONE.

IRRIGATION LEGEND AND SCHEDULE

SYM	DESCRIPTION	MANUFACTURER	MODEL	SIZE / NOZZLE
C	AUTOMATIC CONTROLLER	HUNTER	REFER TO PLANS	N/A
D	DRIP IRRIGATION CONTROL VALVE	HUNTER	ICZ-101	1"
	DRIP IRRIGATION (LANDSCAPE BEDS)	HUNTER	PLD-06-18	N/A
	DRIP IRRIGATION (TURF BEDS)	HUNTER	PLD-06-12	N/A
	TEMPORARY IRRIGATION	N/A	N/A	N/A
	DRIP IRRIGATION	HUNTER	AFB-ADJ BUBBLER (0.5 GPM EACH BUBBLER)	1/2"
	REMOTE CONTROL VALVE	HUNTER	ICV-101G ICV-151G	REFER TO PLAN FOR SIZE
1 1 1 1	LAWN MP ROTATOR	HUNTER	MP ROTATOR	MP1000, MP2000, MP3000, MP3500
	4" POP UP MP ROTATOR CORNER STRIP	HUNTER	STRIP SERIES	MPLC515 IVORY MPRCS515 COPPER MPSS530 BROWN
C	4" POP UP MP ROTATOR CORNER	HUNTER	CORNER SERIES	MP CORNER SERIES ADJUSTABLE ARC 8'-15'
M	WATER METER	----	PER CITY	REFER TO PLAN FOR SIZE
	DOUBLE CHECK VALVE	FEBCO	850-BV Series	REFER TO PLAN FOR SIZE
I	ISOLATION VALVE	NIBCO	*T-113	LINE SIZE
Y	WYE STRAINER	FEBCO	*850	REFER TO PLAN FOR SIZE
M	MASTER VALVE	HUNTER	ICV-101G ICV-151G	REFER TO PLAN FOR SIZE
	IRRIGATION SLEEVE	----	SCH. 40 w/ 12 GA. PULL WIRE IN SLEEVE	REFER TO PLAN FOR SIZE
	IRRIGATION MAIN LINE	----	SCH. 40	REFER TO PLAN FOR SIZE
	IRRIGATION LATERAL LINE	----	CLASS 200	REFER TO PLAN FOR SIZE

- PROGRAM AND STATION NUMBER FOR AUTOMATIC CONTROLLER
- VALVE SIZE IN INCHES
- GALLONS PER MINUTE, PER VALVE

REFER TO SHEET IR6 FOR FULL IRRIGATION LEGEND AND SCHEDULE

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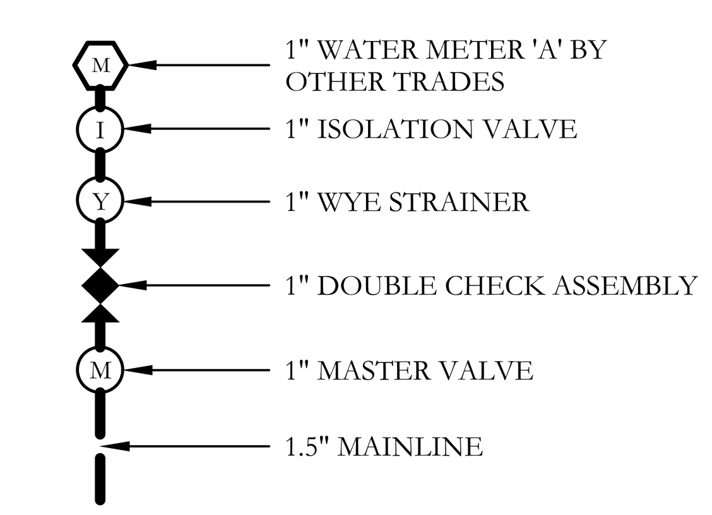

1 BACKFLOW AND RELATED COMPONENTS
NOT TO SCALE

RECORD DRAWINGS

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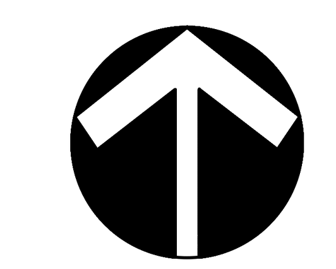
RYAN C. KING — DATE 1/27/2021

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS — CODY L. JOHNSON — 17132 — REGISTERED LICENSED IRRIGATOR

December 7, 2020



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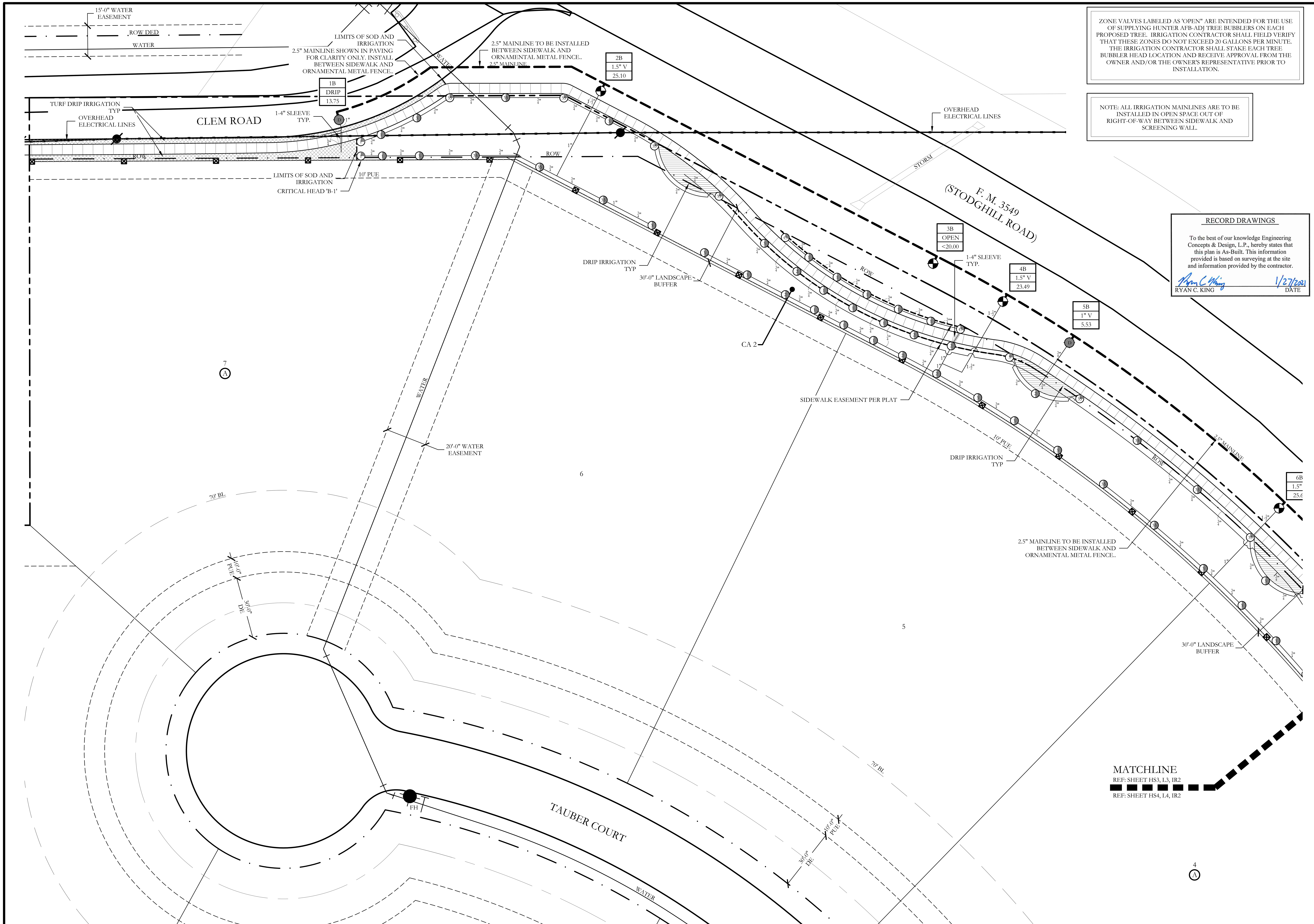
One Inch

SCREENING AND BUFFERING
Irrigation Plan
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
IR1 of 7



CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS
CODY L. JOHNSON
17132
REGISTERED LANDSCAPE IRRIGATOR
December 7, 2020

NORTH

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SCREENING AND BUFFERING

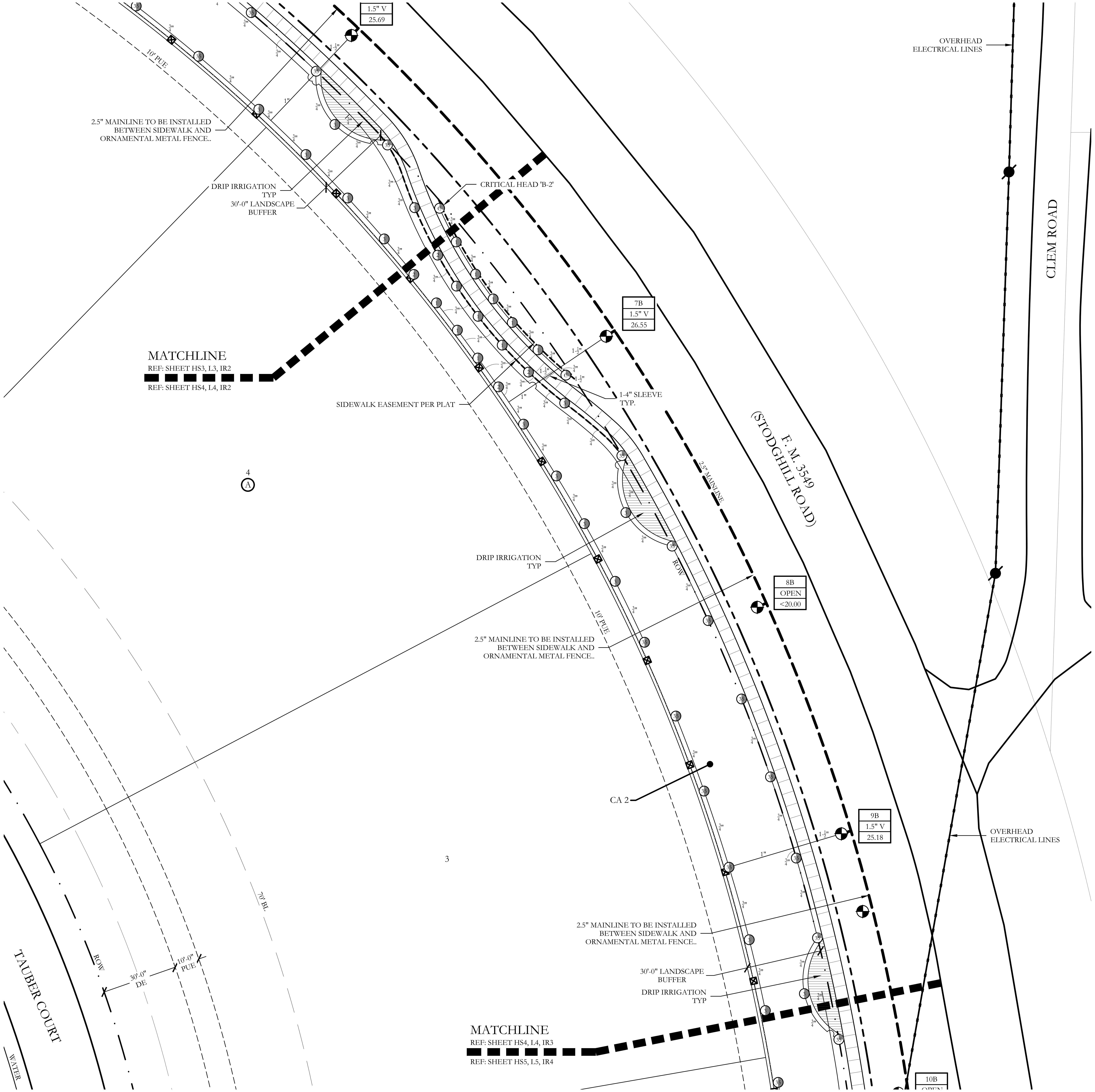
Irrigation Plan

Northgate Phase 1

City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
IR2 of 7



IRRIGATION LEGEND AND SCHEDULE

SYM	DESCRIPTION	MANUFACTURER	MODEL	SIZE / NOZZLE
C	AUTOMATIC CONTROLLER	HUNTER	REFER TO PLANS	N/A
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	DRIP IRRIGATION (LANDSCAPE BEDS)	HUNTER	PLD-06-18	N/A
	DRIP IRRIGATION (TURF BEDS)	HUNTER	PLD-06-12	N/A
	TEMPORARY IRRIGATION	N/A	N/A	N/A
	DRIP IRRIGATION	HUNTER	AFB-ADJ BUBBLER (0.5 GPM EACH BUBBLER)	1/2"
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M	WATER METER	----	PER CITY	REFER TO PLAN FOR SIZE
	DOUBLE CHECK VALVE	FEBCO	850-BV Series	REFER TO PLAN FOR SIZE
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	IRRIGATION SLEEVE	----	SCH. 40 w/ 12 GA. PULL WIRE IN SLEEVE	REFER TO PLAN FOR SIZE
	IRRIGATION MAIN LINE	----	SCH. 40	REFER TO PLAN FOR SIZE
	IRRIGATION LATERAL LINE	----	CLASS 200	REFER TO PLAN FOR SIZE

- PROGRAM AND STATION NUMBER FOR AUTOMATIC CONTROLLER
- VALVE SIZE IN INCHES
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RECORD DRAWINGS

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RYAN C. KING — 1/27/2021 DATE

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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS — CODY L. JOHNSON — 17132 — REGISTERED LICENSED IRRIGATOR
December 7, 2020

NORTH

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SCREENING AND BUFFERING
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Northgate Phase 1
City of Rockwall, Tarrant County, Texas

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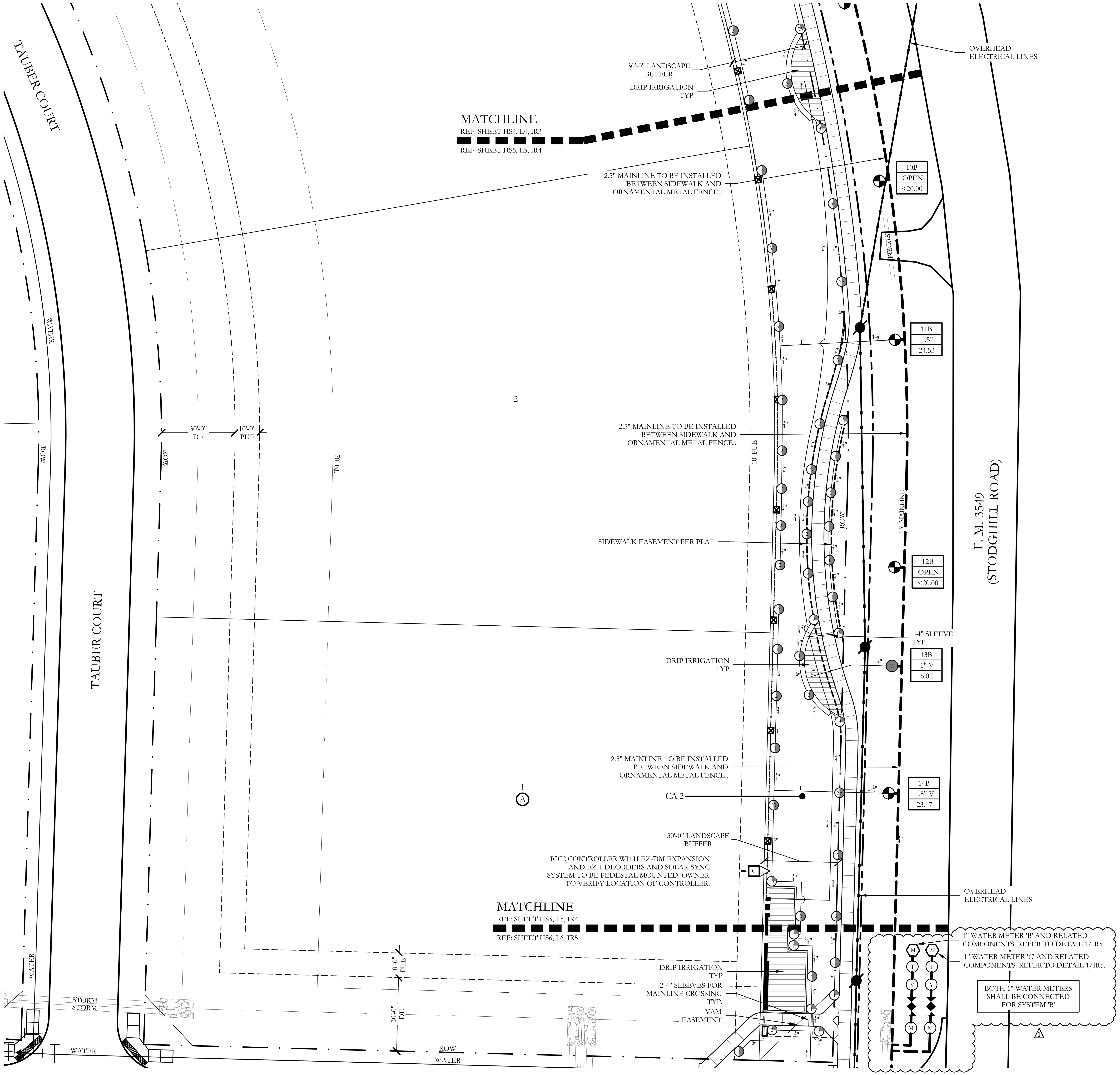

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9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS — CODY L. JOHNSON — 17132 — REGISTERED LANDSCAPE IRRIGATOR
January 26, 2021

NORTH

20 10 0 20
Scale: 1" = 20'-0"

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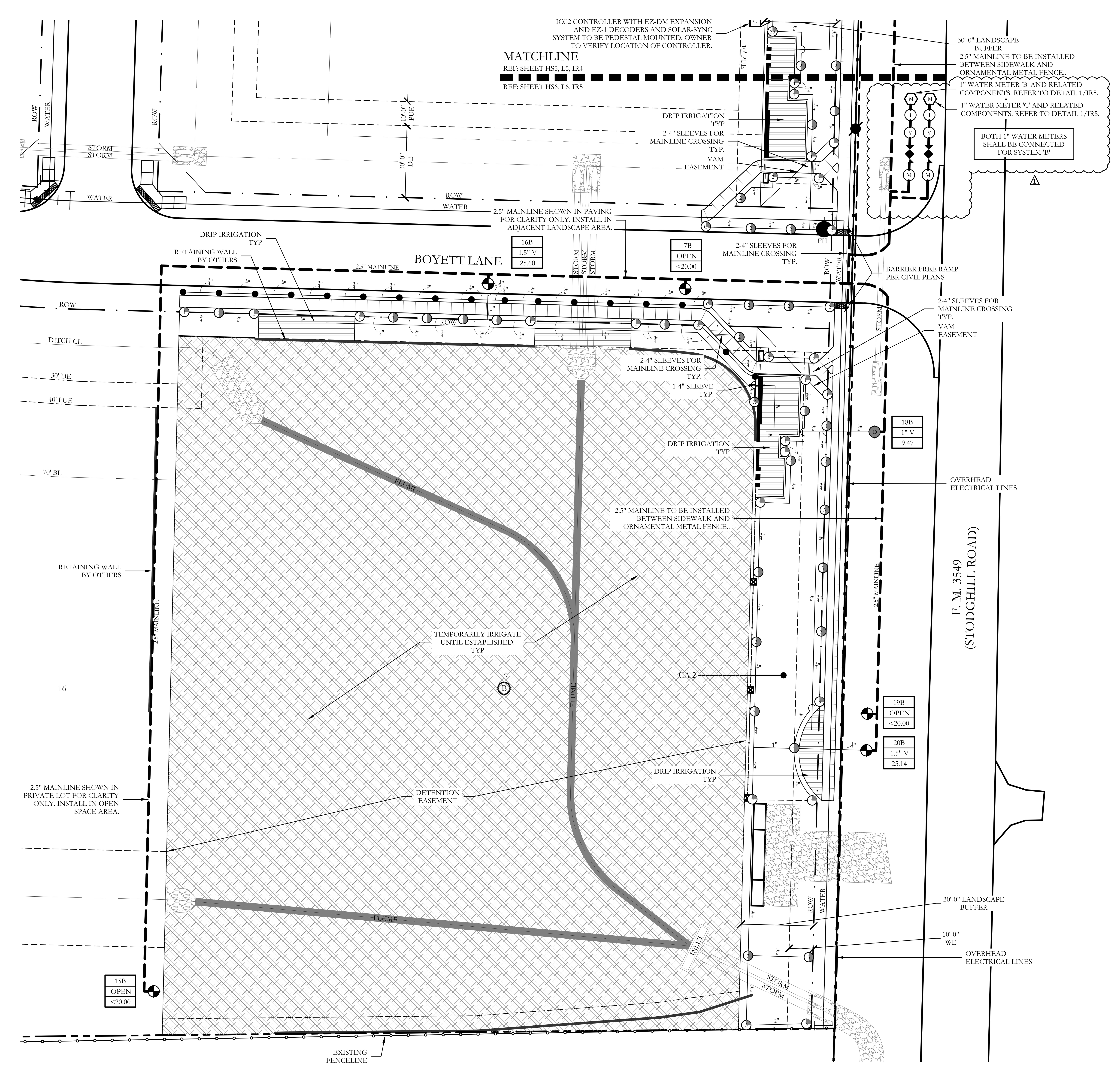
One Inch

SCREENING AND BUFFERING
Irrigation Plan
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

1 Water meter 'C' added.

CJS PROJECT NO.
MJP001



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I	ISOLATION VALVE	NIBCO	*T-113	LINE SIZE
Y	WYE STRAINER	FEBCO	*850	REFER TO PLAN FOR SIZE
M	MASTER VALVE	HUNTER	ICV-101G ICV-151G	REFER TO PLAN FOR SIZE
	IRRIGATION SLEEVE	----	SCH. 40 w/ 12 GA. PULL WIRE IN SLEEVE	REFER TO PLAN FOR SIZE
	IRRIGATION MAIN LINE	----	SCH. 40	REFER TO PLAN FOR SIZE
	IRRIGATION LATERAL LINE	----	CLASS 200	REFER TO PLAN FOR SIZE

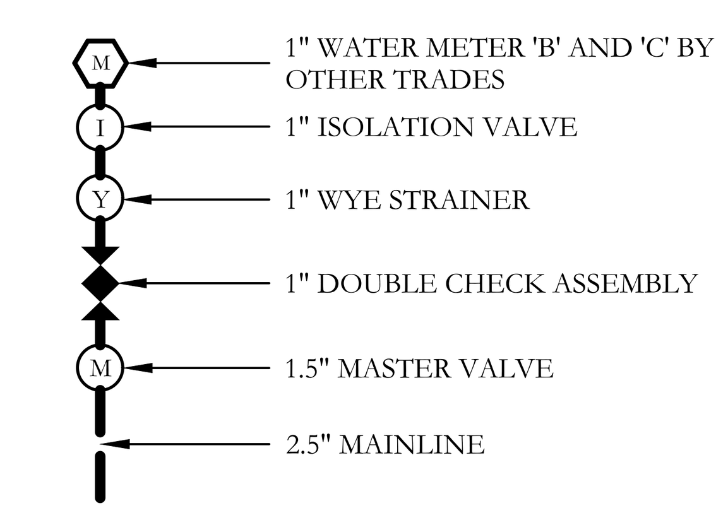
- PROGRAM AND STATION NUMBER FOR AUTOMATIC CONTROLLER
- VALVE SIZE IN INCHES
- GALLONS PER MINUTE, PER VALVE

REFER TO SHEET IR6 FOR FULL IRRIGATION LEGEND AND SCHEDULE

NOTE:
ALL LATERAL LINES SHALL BE 3/4" CLASS 200 PVC UNLESS OTHERWISE NOTED ON PLANS.

ZONE VALVES LABELED AS 'OPEN" ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.

NOTE: ALL IRRIGATION MAINLINES ARE TO BE INSTALLED IN OPEN SPACE OUT OF RIGHT-OF-WAY BETWEEN SIDEWALK AND SCREENING WALL.



1 BACKFLOW AND RELATED COMPONENTS
NOT TO SCALE

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING — DATE 1/27/2021

CODY JOHNSON s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

STATE OF TEXAS — CODY L. JOHNSON — 17132 — REGISTERED LANDSCAPE ARCHITECT
January 26, 2021

NORTH

Scale: 1" = 20'-0"

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

SCREENING AND BUFFERING
Irrigation Plan
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

Water meter 'C' added.

CJS PROJECT NO. MJP001

SHEET NO. IR5 of 7

TWO-WIRE IRRIGATION NOTES

1. PROVIDE A COMPLETE, FUNCTIONING AUTOMATIC IRRIGATION SYSTEM INCLUDING LABOR, MATERIALS, FEES, TAXES, EQUIPMENT, AND OTHER COSTS INCIDENTAL TO ACCOMPLISHING WORK.
2. ACQUIRE WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT OR LICENSED IRRIGATOR FOR MATERIAL SUBSTITUTES PRIOR TO BEGINNING INSTALLATION.
3. FORTY EIGHT (48) HOURS BEFORE IRRIGATION CONSTRUCTION BEGINS, IRRIGATION CONTRACTOR MUST CALL (800) DIG-TESS AND IS RESPONSIBLE FOR LOCATING EXISTING UNDERGROUND UTILITIES AND/OR OBSTACLES PRIOR TO BEGINNING WORK. ANY DAMAGE TO UTILITIES AND/OR FINISHES FROM INFERIOR WORKMANSHIP BY THE IRRIGATION CONTRACTOR SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.
4. PIPING IS DIAGRAMMATIC AND SHOWN FOR CLARITY ONLY. ADJUST AS REQUIRED FOR EXISTING UTILITIES, OBSTRUCTIONS, TREE ROOT BALLS, ETC. PIPING AND VALVES SHOWN IN PAVING FOR CLARITY ONLY AND SHALL BE INSTALLED IN ADJACENT LANDSCAPE AREA. COORDINATE WITH THE CITY OR ENTITY INSPECTING THE IRRIGATION SYSTEM AND DETERMINE THE LOCAL RULES AND CODES TO ABIDE BY REGARDING MAINLINE AND LATERAL PIPING LOCATIONS.
5. COORDINATE SLEEVE AND CONDUIT REQUIREMENTS WITH GENERAL CONTRACTOR. IRRIGATION SLEEVES SHALL BE AS FOLLOWS:
   - 5.1. SLEEVES INTENDED FOR LATERAL LINES ARE TO BE ONE-FOUR INCH SLEEVE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
   - 5.2. SLEEVES INTENDED FOR THE 2.5" MAINLINE ARE TO BE TWO-FOUR INCH SLEEVES SIDE BY SIDE AND ARE TO BE NO MORE THAN A DEPTH OF TWO FEET BELOW TOP OF CURB. SLEEVES SHOULD EXTEND A MINIMUM OF 2'-0" BEYOND BACK OF CURB.
6. LOCATE EACH END OF IRRIGATION SLEEVES DIMENSIONALLY ON THE RECORD "AS BUILT" DRAWINGS.
7. THE IRRIGATION CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE IRRIGATION SYSTEM WITH THE LANDSCAPE CONTRACTOR TO ENSURE ALL PLANT MATERIAL WILL BE WATERED IN ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS.
8. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO PLANT MATERIAL DUE TO SYSTEM FAILURE FROM INFERIOR WORKMANSHIP FOR THE DURATION OF THE INSTALLATION OF PLANT MATERIAL AND MAINTENANCE PERIOD FOLLOWING INSTALLATION.
9. THE IRRIGATION CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIAL NECESSARY TO HAND DIG WITHIN ALL EXISTING TREE DRIPLINE ZONES AT NO ADDITIONAL COST TO THE OWNER. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO STAKE AND RECEIVE APPROVAL FROM ALL DISCIPLINES PRIOR TO AN TRENCHING AND HAND DIGGING IN AREAS OF EXISTING TREE COVERAGE OR ANY ADDITIONAL AREAS THAT MIGHT BE QUESTIONABLE.
10. EXTEND EXTRA WIRE AND MAINLINE PAST THE FARTHEST VALVE, ROUTED PARALLEL AND PLACE IN 12"X17" PENTEK VALVE BOX WERE NOTED ON PLANS FOR FUTURE EXPANSION OF IRRIGATION SYSTEM AT A LATER DATE.
11. TWO WIRE PATH SHALL BE DIRECT BURIAL, 14 AWG OR STANDARD DECODER CABLE BY HUNTER WITH YELLOW JACKET (ID1YLW), RATED FOR DIRECT BURIAL APPLICATIONS, UF., UL., APPROVED. HUNTER ICD DECODERS SHALL BE USED ON ALL ZONE VALVE CONNECTIONS TO TWO WIRE PATH. CONTRACTOR TO USE MANUFACTURERS RECOMMENDATIONS OF WIRE SPLICING AND BURIAL TECHNIQUES AS DETAILED AT WWW.HUNTERINDUSTRIES.COM.
12. THE OWNER AND/OR LANDSCAPE ARCHITECT SHALL DETERMINE THE FINAL CONTROLLER LOCATION. THE IRRIGATION CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTION OF CONTROLLER PER LOCAL ELECTRICAL CODE. PROVIDE ALL NECESSARY FUSE BOXES, CONDUIT, FITTINGS, CONNECTORS OR OTHER ELECTRICAL DEVICES TO MAKE CONNECTION. OWNER SHALL PROVIDE ELECTRICAL SERVICE WITHIN 10 LINEAR FEET OF CONTROLLER LOCATION UNLESS NOTED OTHERWISE ON DRAWINGS.
13. CONNECT REMOTE SENSORS TO CONTROLLER WITH GROUND WIRE IN SERIES PRIOR TO CONNECTING TO REMOTE CONTROL VALVES.
14. ALL P.V.C. MAINLINES AND LATERAL LINES SHALL RECEIVE AS FOLLOWS:
    - 14.1. 18" MINIMUM COVER FOR MAIN LINES
    - 14.2. 18" MINIMUM COVER FOR PIPING LOCATED UNDER PAVING
    - 14.3. 12" MINIMUM COVER FOR LATERAL LINES
15. THE MINIMUM DISTANCE BETWEEN THE MAINLINE AND LATERAL LINE FITTINGS (EXCEPT FOR REDUCER BUSHINGS) SHALL BE 18".
16. THE MINIMUM HORIZONTAL DISTANCE OF 36" SHALL BE MAINTAINED BETWEEN ANY VALVES THAT ARE INSTALLED SIDE BY SIDE.
17. WHERE SERVICE TREES ARE INSTALLED ON THE MAINLINE FOR INSTALLATION OF THE ELECTRIC VALVES AND/OR QUICK COUPLING VALVES, THE CONTRACTOR SHALL LIMIT THE NUMBER OF THESE PER SERVICE TEE. DO NOT INSTALL MORE THAN A TOTAL OF EITHER THREE ELECTRIC VALVES OR A COMBINATION OF TWO ELECTRIC VALVES AND ONE QUICK COUPLER VALVE AT EACH TEE. THE MINIMUM DISTANCE BETWEEN FITTINGS SHALL BE 18" AS REFERENCED IN THE ABOVE NOTES.
18. ALL PVC PIPE AND FITTINGS ARE TO BE PRIMED WITH PURPLE PVC PRIMER SOLVENT BEFORE APPLYING PVC CEMENT IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.
19. INSTALL QUICK COUPLING VALVES IN 12"X17" PENTEK VALVE BOXES PER DETAIL SHOWN. CONNECT QUICK COUPLING VALVES TO MAINLINE PIPE WITH LASCO UNITIZED, O-RING SWING JOINTS PER DETAIL SHOWN, #T722-22. SUPPLY OWNER WITH THREE COUPLER KEYS WITH SWIVEL HOSE BIBB EACH, #33DK-10 AND #SH-0 RESPECTIVELY. VALVES TO BE INSTALLED SO THAT THE TOP OF THE QUICK COUPLER IS 2" BELOW BOTTOM OF VALVE BOX LID. PURPLE LID SHALL READ "NON-POTABLE, NOT SAFE FOR DRINKING" IN ENGLISH AND SPANISH.
20. ALL LATERAL LINES SHALL BE 3/4" CLASS 200 PVC UNLESS OTHERWISE NOTED ON PLANS.
21. ZONE VALVES LABELED AS 'OPEN" ARE INTENDED FOR THE USE OF SUPPLYING HUNTER AFB-ADJ TREE BUBBLERS ON EACH PROPOSED TREE. IRRIGATION CONTRACTOR SHALL FIELD VERIFY THAT THESE ZONES DO NOT EXCEED 20 GALLONS PER MINUTE. THE IRRIGATION CONTRACTOR SHALL STAKE EACH TREE BUBBLER HEAD LOCATION AND RECEIVE APPROVAL FROM THE OWNER AND/OR THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
22. ALL STATE OF TEXAS LAWS/RULES AND ALL LOCAL CODES/ORDINANCES AREA MADE PART OF THESE PLANS AND SPECIFICATIONS WHETHER SHOWN OR NOT. THESE LAWS AND ORDINANCES WILL SUPERCEDE THE PLANS, DETAILS, AND/OR SPECIFICATIONS FOR THIS PROJECT. THE IRRIGATION CONTRACTOR IS CAUTIONED THAT HE/SHE IS TO INCLUDE ANY AND ALL COST NECESSARY TO MEET OR EXCEED THE LAWS OF THE STATE OF TEXAS AND LOCAL CODES CONCERNING LANDSCAPE IRRIGATION.
24. INCLUDE THE FOLLOWING ALLOWANCES FOR PROVIDING AND INSTALLING AIR RELIEF VALVES AND FLUSH VALVES FOR THE DRIP SYSTEM. EXACT QUANTITY AND LOCATION OF THESE DEVICES WILL BE DETERMINED AT THE TIME OF INSTALLATION. IN GENERAL, ALL AIR RELIEF VALVES WILL BE INSTALLED AT THE HIGH POINTS AND FLUSH VALVES WILL BE INSTALLED AT THE LOW POINTS OF EXHAUST HEADER. ALLOW FOR APPROXIMATELY (1) AIR RELIEF AND APPROXIMATELY ONE (1) FLUSH VALVE FOR EACH DRIP ZONE KIT.
25. INCLUDE THE FOLLOWING ALLOWANCE FOR PROVIDING AND INSTALLING DRIP INDICATOR FOR THE DRIP SYSTEM. LOCATION OF DRIP INDICATOR SHOULD BE CENTERED IN DRIP ZONE.

IRRIGATION LEGEND AND SCHEDULE

SYM	DESCRIPTION	MANUFACTURER	MODEL	SIZE / NOZZLE	NOTES
C	AUTOMATIC CONTROLLER	HUNTER	REFER TO PLANS	N/A	INSTALL PER MANUFACTURER'S STANDARDS. IN ADDITION, INSTALL SOLAR-SYNC SYSTEM BY HUNTER.
D	DRIP IRRIGATION CONTROL VALVE	HUNTER	ICZ-101	1"	INSTALL PER DETAIL IN 10" ROUND BOX w/ BOLT DOWN LID. ROUT AND PAINT VALVE NUMBER ON LID.
	DRIP IRRIGATION (LANDSCAPE BEDS)	HUNTER	PLD-06-18	N/A	INSTALL PER DETAIL w/ 40 PSI AT OUTFLOW OF DRIP ZONE VALVE.
	DRIP IRRIGATION (TURF BEDS)	HUNTER	PLD-06-12	N/A	INSTALL PER DETAIL w/ 40 PSI AT OUTFLOW OF DRIP ZONE VALVE.
	TEMPORARY IRRIGATION	N/A	N/A	N/A	INSTALL PER MANUFACTURER'S STANDARDS. TO BE REMOVED ONCE AREA IS ESTABLISHED.
	DRIP IRRIGATION	HUNTER	AFB-ADJ BUBBLER (0.5 GPM EACH BUBBLER)	1/2"	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL 1.0 GPM/LARGE SHADE TREE AND 0.5 GPM/ORN. TREES INSTALL ON ALL PROPOSED TREES, SEE LANDSCAPE PLANS.
	REMOTE CONTROL VALVE	HUNTER	ICV-101G ICV-151G	Refer to Plan for Size	INSTALL PER DETAIL IN 10" ROUND PENTEK VALVE BOX WITH BOLT DOWN LID. ROUT AND PAINT VALVE NUMBER ON LID.
1 1 1 1	LAWN MP ROTATOR	HUNTER	MP ROTATOR	MP1000, MP2000, MP3000, MP3500	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL ON IPS FLEX PIPE ALL SPRAY BODIES. INSTALL NOZZLES ON 4" PRS40 SPRAY BODIES.
	4" POP UP MP ROTATOR CORNER STRIP	HUNTER	STRIP SERIES	MPLC515 IVORY MPRCS515 COPPER MPSS530 BROWN	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL ON IPS FLEX PIPE ALL SPRAY BODIES. INSTALL NOZZLES ON 4" PRS40 SPRAY BODIES.
C	4" POP UP MP ROTATOR CORNER	HUNTER	CORNER SERIES	MP CORNER SERIES ADJUSTABLE ARC 8'-15'	INSTALL PER DETAIL w/ 40 PSI AT BASE OF HEAD. INSTALL ON IPS FLEX PIPE ALL SPRAY BODIES. INSTALL NOZZLES ON 4" PRS40 SPRAY BODIES.
M	WATER METER	----	PER CITY	REFER TO PLAN FOR SIZE	INSTALLED BY GENERAL CONTRACTOR
	DOUBLE CHECK VALVE	FEBCO	850-BV Series	REFER TO PLAN FOR SIZE	FURNISH AND INSTALL PER LOCAL CODE BY LICENSED IRRIGATION CONTRACTOR.
I	ISOLATION VALVE	NIBCO	*T-113	LINE SIZE	INSTALL PER DETAIL IN 12"x17" PENTEK VALVE BOX WITH BOLT DOWN LID.
Y	WYE STRAINER	FEBCO	*850	REFER TO PLAN FOR SIZE	INSTALL PER DETAIL IN 12"x17" PENTEK VALVE BOX WITH BOLT DOWN LID.
M	MASTER VALVE	HUNTER	ICV-101G ICV-151G	REFER TO PLAN FOR SIZE	INSTALL PER DETAIL IN 12"x17" PENTEK VALVE BOX WITH BOLT DOWN LID.
	IRRIGATION SLEEVE	----	SCH. 40 w/ 12 GA. PULL WIRE IN SLEEVE	REFER TO PLAN FOR SIZE	DRIVEWAY SLEEVES INSTALLED BY GENERAL CONTRACTOR. SIDEWALK SLEEVES INSTALLED BY IRRIGATION CONTRACTOR.
	IRRIGATION MAIN LINE	----	SCH. 40	REFER TO PLAN FOR SIZE	18" INSTALLATION DEPTH.
	IRRIGATION LATERAL LINE	----	CLASS 200	REFER TO PLAN FOR SIZE	12" INSTALLATION DEPTH STANDARD. 18" INSTALLATION DEPTH UNDER PAVING.

PROGRAM AND STATION NUMBER FOR AUTOMATIC CONTROLLER
VALVE SIZE IN INCHES
GALLONS PER MINUTE, PER VALVE

HYDRAULIC CALCULATION NOTES

TEN DAYS PRIOR TO COMMENCING WORK, VERIFY STATIC PRESSURE. IF STATIC PRESSURE IS LESS THAN THE ASSUMED STATIC PRESSURE DO NOT START WORK UNTIL NOTIFIED IN WRITING TO PROCEED BY OWNER. IF CONTRACTOR PROCEEDS WITH WORK WITHOUT AUTHORIZATION FROM OWNER, THE CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE TO CORRECT, MODIFY OR REPAIR ANY ITEMS OR MATERIALS THAT MAY BE REQUIRED TO PROVIDE A FULLY FUNCTIONING AND OPERATIONAL IRRIGATION SYSTEM IN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. HYDRAULIC CALCULATIONS FOR THIS SYSTEM ARE BASED ON THE STATIC PRESSURE AS STATED ABOVE. THE STATIC PRESSURE SHOWN IS AN ASSUMED PRESSURE, A PRESSURE MEASURED AT THE SITE, OR AN ESTIMATED PRESSURE PROVIDED BY THE COUNTY OR CITY. THE OWNER UNDERSTANDS THIS PROJECT MAY NOT PROVIDE 100% COVERAGE AT ALL TIMES.

HYDRAULIC CALCULATION (LARGEST HEAD)

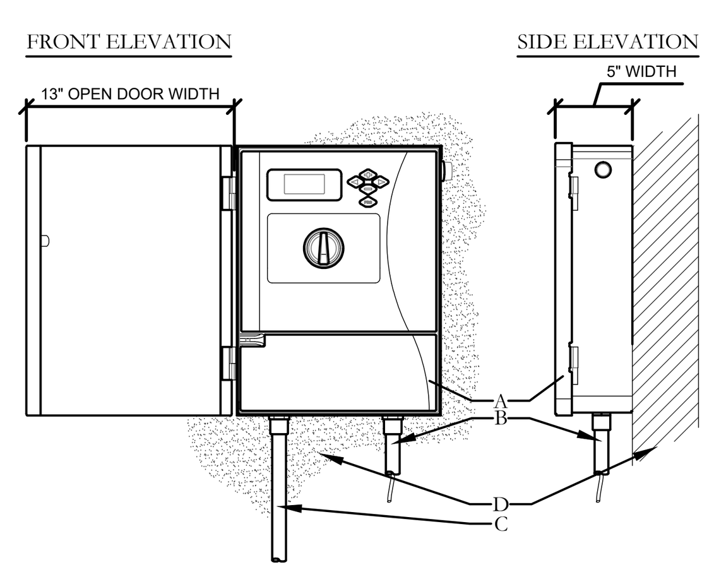
ITEM	SIZE	PSI	NOTES
SERVICE	1.25"	0.70	TYPE "K" COPPER 20 LN. FT. (17.34 GPM)
WATER METER 'A'	1"	1.80	(17.34 GPM)
BALL VALVE	1"	1.00	(17.34 GPM)
WYE FILTER	1"	0.30	(17.34 GPM)
BACKFLOW PREVENTER	1"	4.00	(17.34 GPM)
MASTER VALVE	1"	3.00	(17.34 GPM)
MAIN LINE	1.5"	0.75	40 LINEAR FEET (17.34 GPM)
ZONE VALVE (3A)	1"	3.00	(17.34 GPM)
LATERAL PIPING	N/A	2.18	
CRITICAL HEAD 'A'	N/A	40.00	
TOTAL LOSS		56.74	
ASSUMED STATIC PRESSURE		70.00	
PRESSURE DIFFERENTIAL		-13.26	

HYDRAULIC CALCULATION (FARTHEST ZONE)

ITEM	SIZE	PSI	NOTES
SERVICE	1.25"	1.39	TYPE "K" COPPER 20 LN. FT. (25.10 GPM)
WATER METER 'B'	1"	4.00	(25.10 GPM)
BALL VALVE	1"	1.00	(25.10 GPM)
WYE FILTER	1"	0.30	(25.10 GPM)
BACKFLOW PREVENTER	1"	4.00	(25.10 GPM)
MASTER VALVE	1.5"	1.50	(25.10 GPM)
MAIN LINE	2.5"	5.70	1240 LINEAR FEET (25.10 GPM)
ZONE VALVE (2B)	1.5"	1.50	(25.10 GPM)
LATERAL PIPING	N/A	2.49	
CRITICAL HEAD 'B-1'	N/A	40.00	
TOTAL LOSS		61.88	
ASSUMED STATIC PRESSURE		70.00	
PRESSURE DIFFERENTIAL		-8.12	

HYDRAULIC CALCULATION (LARGEST ZONE)

ITEM	SIZE	PSI	NOTES
SERVICE	1.25"	1.59	TYPE "K" COPPER 20 LN. FT. (26.55 GPM)
WATER METER 'B'	1"	4.60	(26.55 GPM)
BALL VALVE	1"	1.00	(26.55 GPM)
WYE FILTER	1"	0.30	(26.55 GPM)
BACKFLOW PREVENTER	1"	4.00	(26.55 GPM)
MASTER VALVE	1.5"	1.50	(26.55 GPM)
MAIN LINE	2.5"	3.57	690 LINEAR FEET (26.55 GPM)
ZONE VALVE (7B)	1.5"	1.50	(26.55 GPM)
LATERAL PIPING	N/A	3.91	
CRITICAL HEAD 'B-2'	N/A	40.00	
TOTAL LOSS		61.97	
ASSUMED STATIC PRESSURE		70.00	
PRESSURE DIFFERENTIAL		-8.03	



CONSTRUCTION NOTES:
A. IRRIGATION CONTROLLER (12C-800-M) PER PLAN
B. IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
C. ELECTRICAL SUPPLY CONDUIT, CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
D. ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN

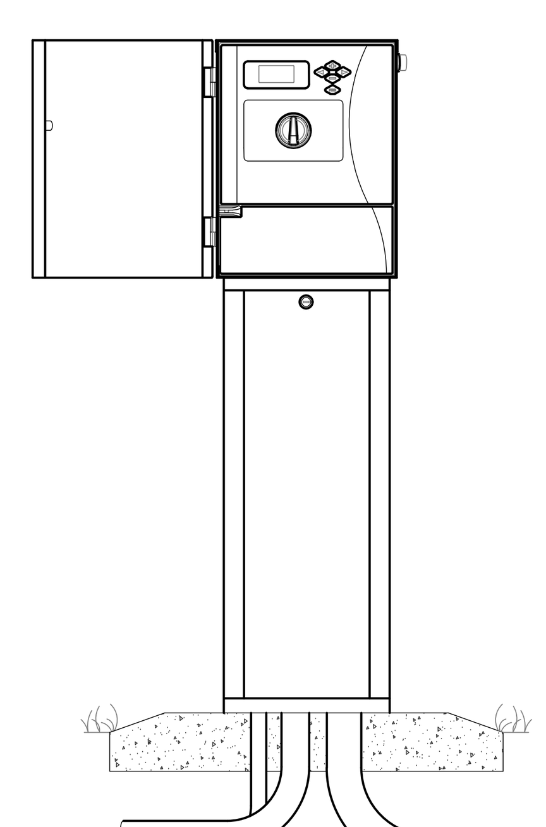
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
2. CONTROLLER ACCEPTS 120 VOLTS AC
3. SEE PLAN LEGEND FOR MODEL NUMBER AND SPECIFICATIONS
4. ALWAYS REFER TO PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION
5. MOUNT CONTROLLER LCD SCREEN EYE LEVEL, CONTROLLER SHALL BE HARD WIRE TO GROUNDED 110 VAC POWER SOURCE

ICC2 CONTROLLER - WALL MOUNT
(NOT TO SCALE)

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

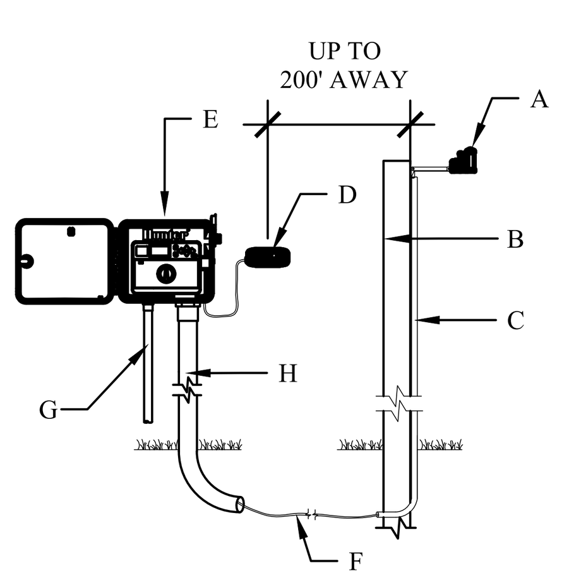
RYAN C. KING — 1/27/2021
DATE



CONSTRUCTION NOTES:
A. IRRIGATION CONTROLLER (ICC-PED) PER PLAN
B. ELECTRICAL SUPPLY CONDUIT, CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
C. GROUND WIRE CODUIT GROUND PER ASIC GUIDELINES
D. IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
E. PEDESTAL BASE PER PLAN, ENSURE POSITIVE DRAINAGE AWAY FROM PEDESTAL

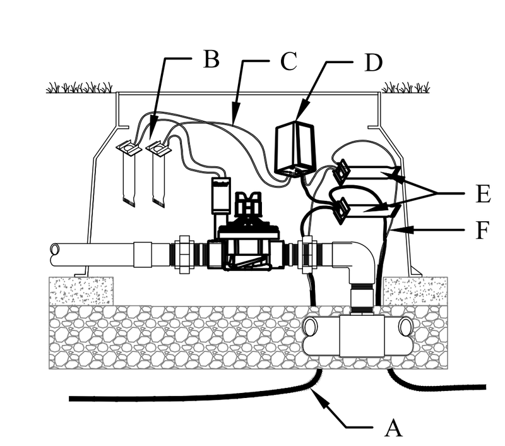
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
2. SEE PLAN LEGEND FOR MODEL NUMBER AND SPECIFICATIONS
3. ALWAYS REFER TO PRODUCT INSTALLATION NOTES PRIOR TO INSTALLATION
4. CONTROLLER SHALL BE HARD WIRE TO GROUNDED 110 VAC POWER SOURCE

ICC2 CONTROLLER - PEDESTAL MOUNT
(NOT TO SCALE)



CONSTRUCTION NOTES:
A. MODEL: SOLAR SYNC SENSOR
B. SUITABLE POST, POLE, OR GUTTER MOUNT. MOUNT IN LOCATION WHERE SENSOR CAN RECEIVE FULL SUN, IS OPEN TO RAINFALL AND OUT OF SPRINKLER SPRAY PATTERN.
C. CONDUIT FROM SOLAR SYNC SENSOR TO CONTROLLER OR TO A POINT 12" BELOW GRADE
D. MODEL SOLAR SYNC MODULE. MOUNT LESS THAN 6" AWAY FROM CONTROLLER. MODULE CAN BE MOUNTED INTERNALLY WHEN PAIRED WITH THE PCC CONTROLLER.*
E. HUNTER ICC2 CONTROLLER
F. COMMUNICATION WIRE, 18-2(WIRE TYPE TO MEET INSTALLATION CODE REQUIREMENTS), FROM MODULE TO SENSOR. MAXIMUM TOTAL WIRE DISTANCE, 200 FEET.
G. POWER SOURCE
H. CONDUIT FOR VALVE CONTROL WIRE AND SOLAR SYNC COMMUNICATION WIRE

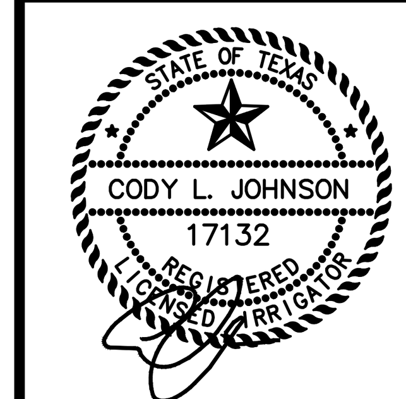
SOLAR SYNC SYSTEM (ICC2 CONTROLLER)
NOT TO SCALE



CONSTRUCTION NOTES:
A. JACKETED ID WIRE PATH TWISTED TO NEXT DECODER
B. DBY-2
C. TWO BLACK WIRES TO VALVE SOLENOID/ UP TO 100 FT/30M
D. MODEL DUAL-1 DECODER
E. DBR\T-6 (2)
F. JACKETED ID: WIRE PATH FROM CONTROLLER ALLOW 5 FT./1.5M SLACK PER DECODER/1/3 ON EITHER SIDE OF DECODER.

DUAL-1 DECODER
NOT TO SCALE

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

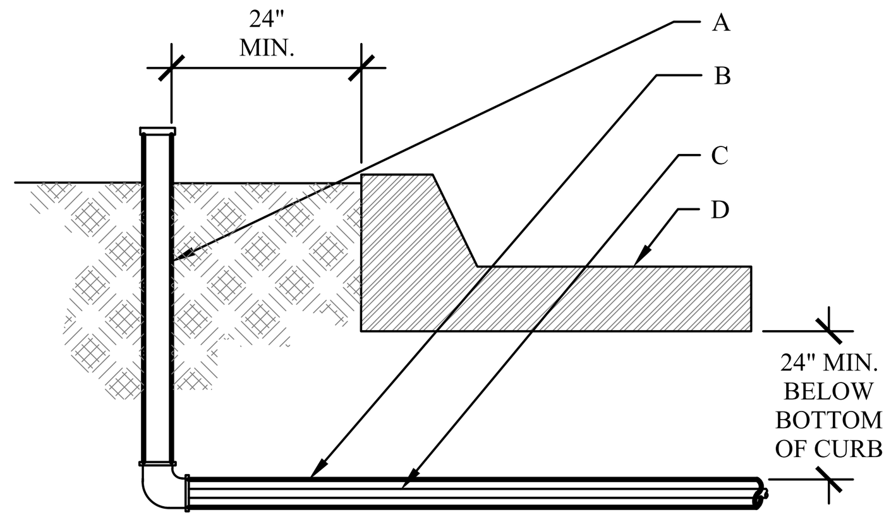


December 7, 2020

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

LANDSCAPE AND SCREENING
Irrigation Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

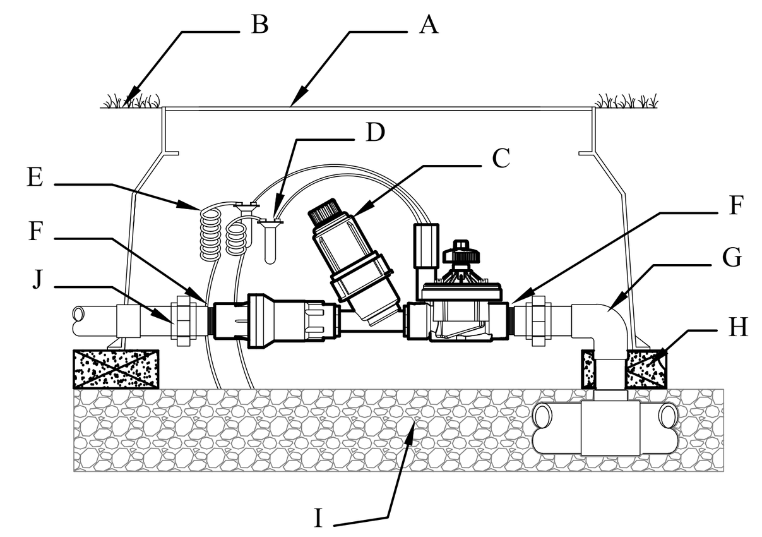
CJS PROJECT NO.
MJP001
SHEET NO.
IR6 of 7



GENERAL NOTES:
1. NO DIRECT CONNECTION TO SLEEVE SHALL BE ALLOWED. SLEEVE SIZE SHALL BE TWO (2) SIZES LARGER THAN THE PIPE TO BE SLEEVED.
2. MARK HARDSCAPE WITH SYMBOL "S" TO INDICATE THAT A SLEEVE IS BELOW.
3. INSTALL WIRING IN SEPARATE SLEEVE FROM LATERAL AND MAINLINE PIPING.

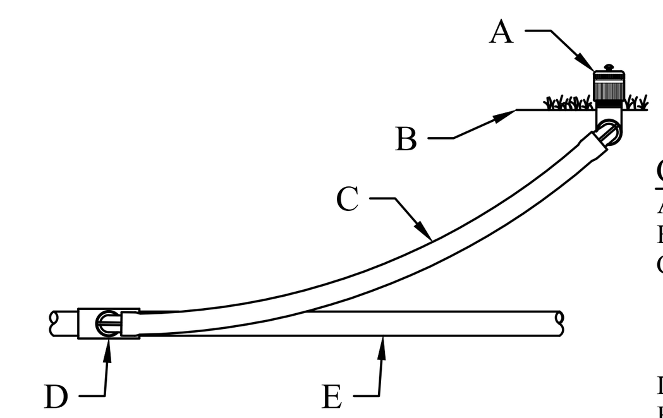
CONSTRUCTION NOTES:
A. TEMPORARY RISER AND CAP.
B. SCH 40 PVC IRRIGATION SLEEVE - SEE PLAN.
C. PVC MAINLINE, LATERAL OR WIRING - SEE PLAN
D. PAVING

IRRIGATION SLEEVES
NOT TO SCALE



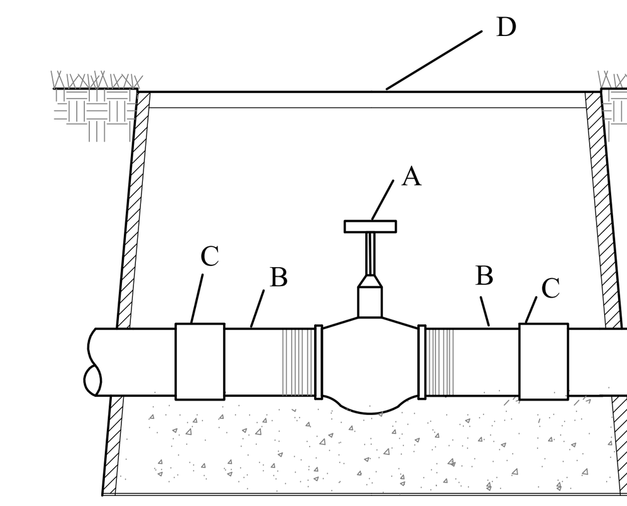
CONSTRUCTION NOTES:
A. JUMBO VALVE BOX
B. FINISH GRADE
C. DRIP ZONE KIT, MODEL ICZ-101
D. WATERPROOF CONNECTORS (2)
E. 18-24" COILED WIRE
F. SCH. 80 T.O.W. NIPPLE
G. MAINLINE PIPING AND FITTINGS
H. BRICK SUPPORTS (4)
I. 3/4" MINUS WASHED GRAVEL
J. PVC SLIP UNIONS (2)

DRIP CONTROL ZONE
NOT TO SCALE



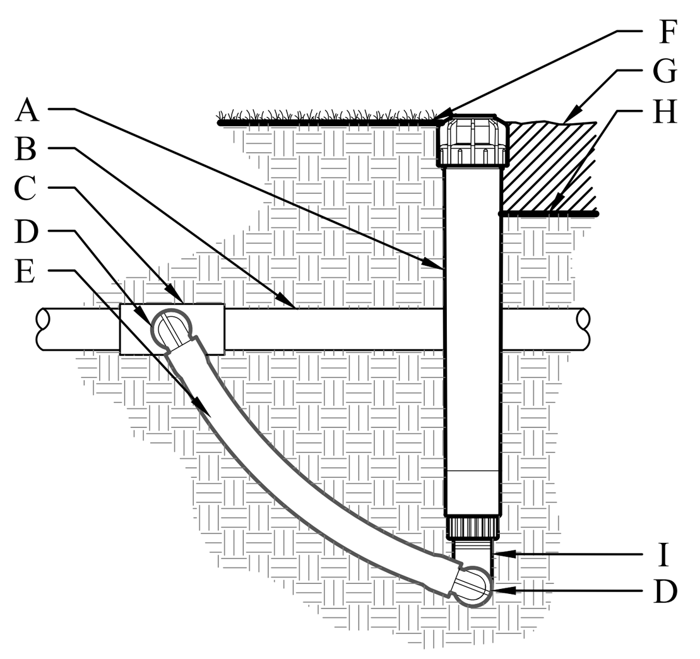
CONSTRUCTION NOTES:
A. MODEL AFB BUBBLER
B. FINISH GRADE
C. SWING JOINT: HUNTER 'PRO-FLEX' TUBING 24"-36", HSBE-050 ELBOWS (2), & MARLEX STREET ELBOW (1)
D. LATERAL TEE OR ELL
E. LATERAL PIPE

AFB BUBBLER
NOT TO SCALE



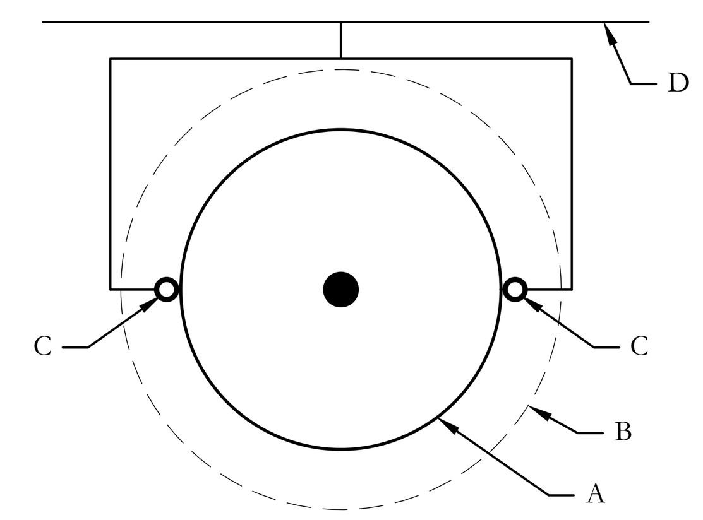
CONSTRUCTION NOTES:
A. GATE VALVE
B. SCH 80 TOE NIPPLE
C. COUPLING
D. 11x17 VALVE BOX

GATE VALVE
NOT TO SCALE



CONSTRUCTION NOTES:
A. ECO INDICATOR - ECOID
B. LATERAL PIPE PER PLAN
C. FPT CONNECTION FROM LATERAL
D. SPIRAL BARB ELBOW - HSBE-XXX
E. FLEX∞ TUBING - FLEXSG
F. FINISHED GRADE IN TURF
G. ADJACENT MULCH
H. FINISHED GRADE IN PLANTER BED
I. MARLEX STREET ELBOW

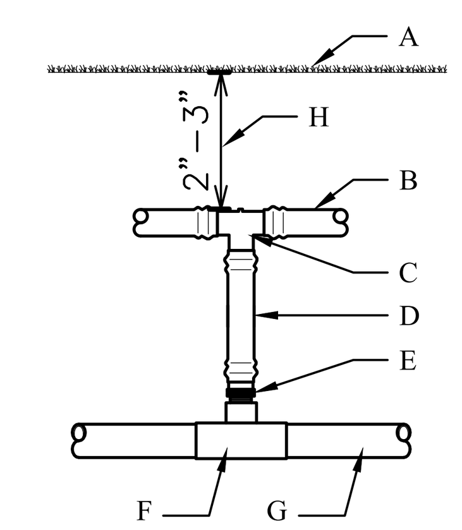
ECO INDICATOR WITH FLEX TUBING
NOT TO SCALE



GENERAL NOTES:
1. TREE BUBBLERS TO BE ALIGNED PARALLEL WITH MEDIAN CURBS.
2. NO TRENCHING ALLOWED WITHIN THE TREES ROOTBALL.
3. TREE BUBBLERS TO BE ON UPHILL SIDE OF THE TREE IN THE RETENTION BASIN OR AS SHOWN.
4. COORDINATE THE LOCATION OF THE BUBBLERS WITH THE PROPOSED TREE LOCATIONS AS SHOWN ON THE LANDSCAPE PLANTING PLANS.

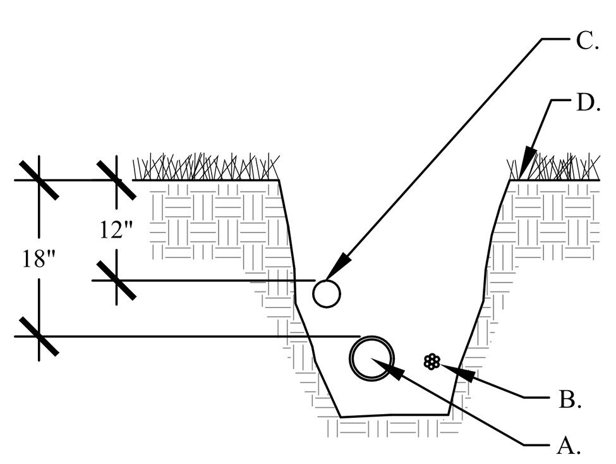
CONSTRUCTION NOTES:
A. TREE ROOTBALL
B. EDGE OF TREE PIT (RETENTION BASIN)
C. TREE BUBBLER. NOZZLE AFB
D. LATERAL LINE (SIZED AS SPEC'D.)

TREE BUBBLER PLAN
NOT TO SCALE



CONSTRUCTION NOTES:
A. FINISH GRADE
B. HUNTER PLD 06-18
C. PLD-TEE 17MM BARBxBARB
D. PLD-BLNK
E. PLD-075 3/4" MPTxBARB
F. 3/4" MPT TEE
G. LATERAL PIPE
H. MINIMUM DRIPLINE DEPTH

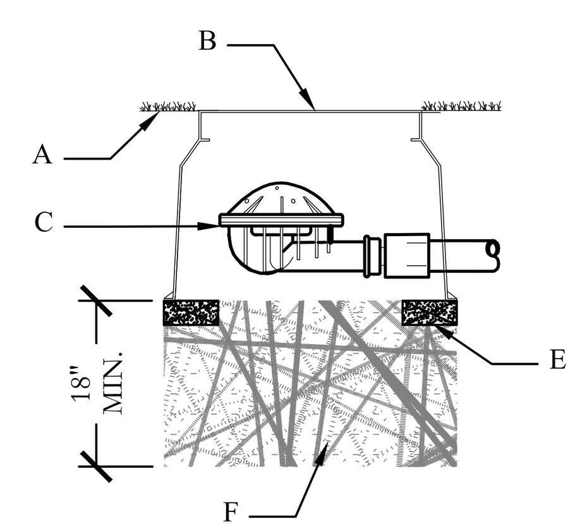
BELOW GRADE START CONNECTION
NOT TO SCALE



GENERAL NOTES:
1. REST PIPE FIRMLY ON TRENCH BOTTOM.
2. SNAKE PIPE FROM SIDE TO SIDE.
3. DO NOT STACK PIPE IN TRENCH. PROVIDE HORIZONTAL SEPARATION.
4. MAINTAIN 2" MINIMUM SEPARATION BETWEEN MAINLINE AND LATERAL LINE PIPING.
5. BUNDLE WIRE(S) AT 20 FT. INTERVALS.

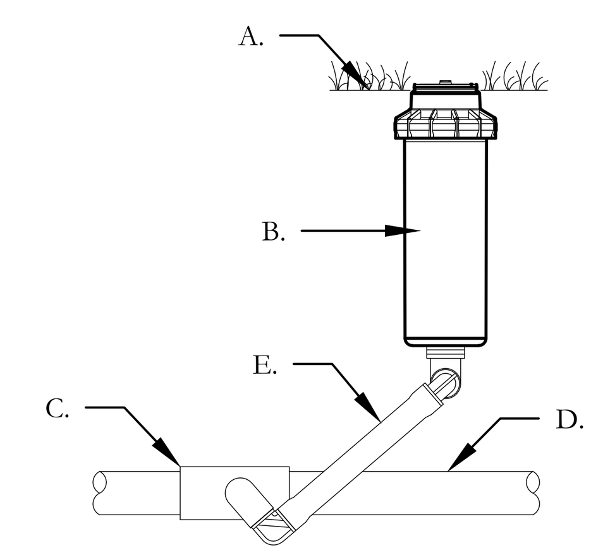
CONSTRUCTION NOTES:
A. MAINLINE PIPING - 18" MINIMUM COVER
B. WIRE BUNDLE - TAPE PER SPECIFICATIONS
C. LATERAL LINE PIPING - 12" MINIMUM COVER
D. FINISH GRADE

IRRIGATION TRENCH
NOT TO SCALE



CONSTRUCTION NOTES:
A. FINISH GRADE
B. 10" ROUND VALVE BOX
C. LINE FLUSHING VALVE
D. PLD-050 OR 1/2" FPT ADAPTER
E. BRICK SUPPORTS (3)
F. 3/4" GRAVEL SUMP

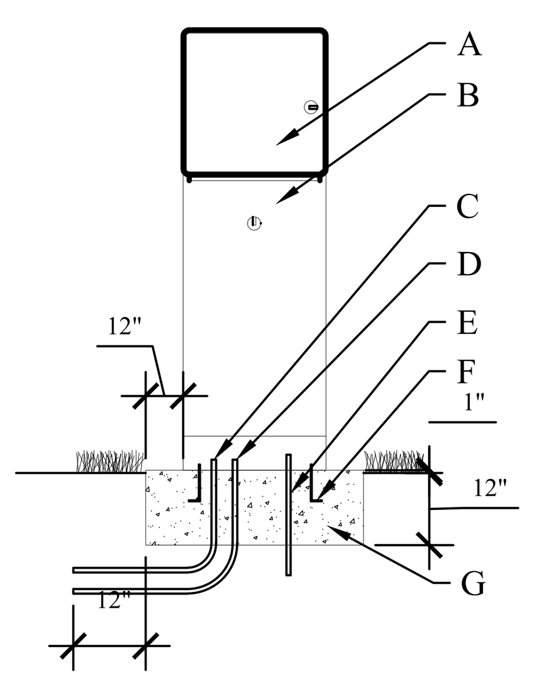
DRIP IRRIGATION - FLUSH VALVE
NOT TO SCALE



GENERAL NOTES:
1. REST PIPE FIRMLY ON TRENCH BOTTOM.
2. SNAKE PIPE FROM SIDE TO SIDE.
3. DO NOT STACK PIPE IN TRENCH. PROVIDE HORIZONTAL SEPARATION.
4. MAINTAIN 2" MINIMUM SEPARATION BETWEEN MAINLINE AND LATERAL LINE PIPING.
5. BUNDLE WIRE(S) AT 20 FT. INTERVALS.

CONSTRUCTION NOTES:
A. FINISHED GRADE
B. ROTOR HEAD
C. LATERAL TEE OR ELL
D. LATERAL PIPE
E. LASCO SWING JOINT

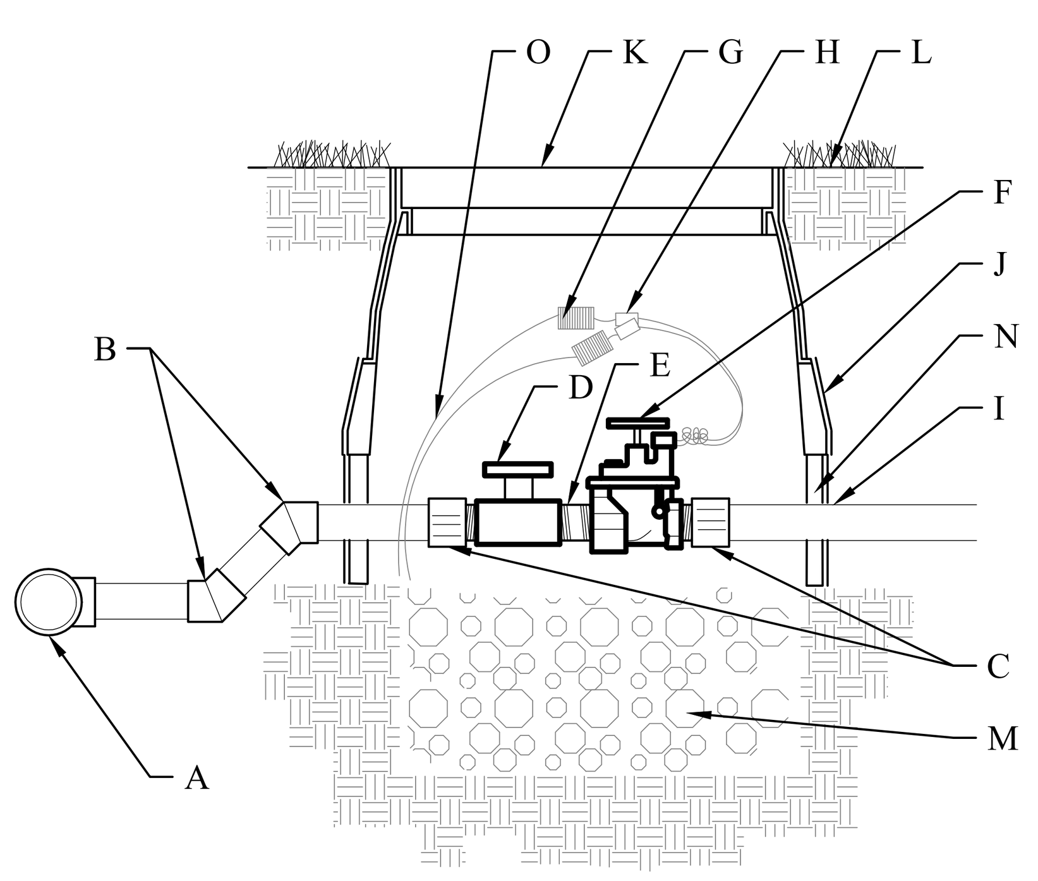
ROTOR HEAD
NOT TO SCALE



GENERAL NOTES:
1. INSTALL ELECTRICAL WIRING PER LOCAL CODES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK.
3. PROVIDE DRAINAGE AWAY FROM BASE OF PEDESTAL.
4. GROUND IRRIGATION BOXES WITH GROUNDING ROD PER N.E.C.
5. INSTALL TEMPERATURE SENSOR TO NORTH SIDE OF CONTROLLER PEDESTAL W/ STAINLESS STEEL SCREWS

CONSTRUCTION NOTES:
A. CONTROLLER
B. PEDESTAL
C. ELECTRICAL SERVICE CONDUIT
D. REMOTE CONTROL VALVE WIRING CONDUIT
E. GROUNDING ROD(S) PER MANUFACTURER'S REQUIREMENTS
F. ANCHOR BOLTS
G. CONCRETE BASE, 3,000 PSI

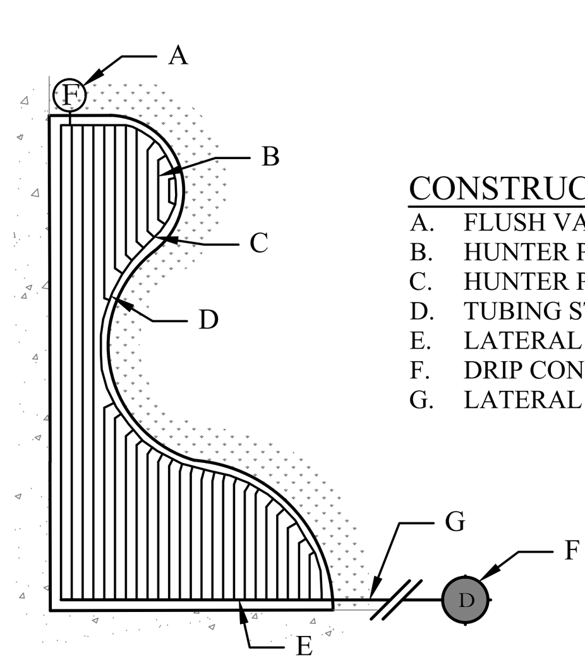
PEDESTAL MOUNTED CONTROLLER
NOT TO SCALE



GENERAL NOTES:
1. INSTALL PEA GRAVEL FLUSH WITH BOTTOM OF PIPE AND VALVE.
2. MAINLINE SHALL HAVE A MINIMUM OF 18" COVER AND LATERAL LINE SHALL HAVE A MINIMUM OF 12" COVER.
3. PROVIDE A 24" WIRE EXPANSION COIL AT EACH DRY SPLICE WIRE CONNECTION.
4. CENTER VALVE ASSEMBLY IN VALVE BOX.

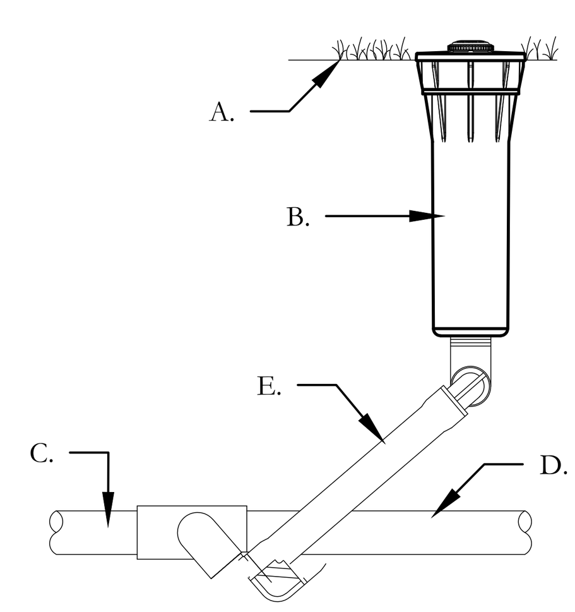
CONSTRUCTION NOTES:
A. PVC SERVICE TEE
B. SCH 40 45° BEND
C. SCH 40 MALE ADAPTER
D. SCH 40 BALL VALVE
E. GRAY SCH 80 SHORT NIPPLE (TBE)
F. AUTOMATIC VALVE
G. WIRE COIL
H. WATERPROOF WIRE CONNECTORS
I. LATERAL PIPE
J. 10 ML BLACK PLASTIC
K. ARMOR 12" STANDARD VALVE BOX WITH COVER AND PENTAGON LOCK. ROUT AND PAINT VALVE NUMBER ON TOP OF LID. SET ½" ABOVE FINISH GRADE.
L. FINISH GRADE
M. WASHED PEA GRAVEL - 6" DEPTH MIN
N. 6" VALVE BOX EXTENSIONS AS REQUIRED
O. VALVE WIRING

ELECTRIC VALVE
NOT TO SCALE



CONSTRUCTION NOTES:
A. FLUSH VALVE
B. HUNTER PLD 06-18
C. HUNTER PLD TEE
D. TUBING STAKE
E. LATERAL TO PLD CONNECTION
F. DRIP CONTROL VALVE. MODEL ICZ-101
G. LATERAL PIPE TO PLANTING BED

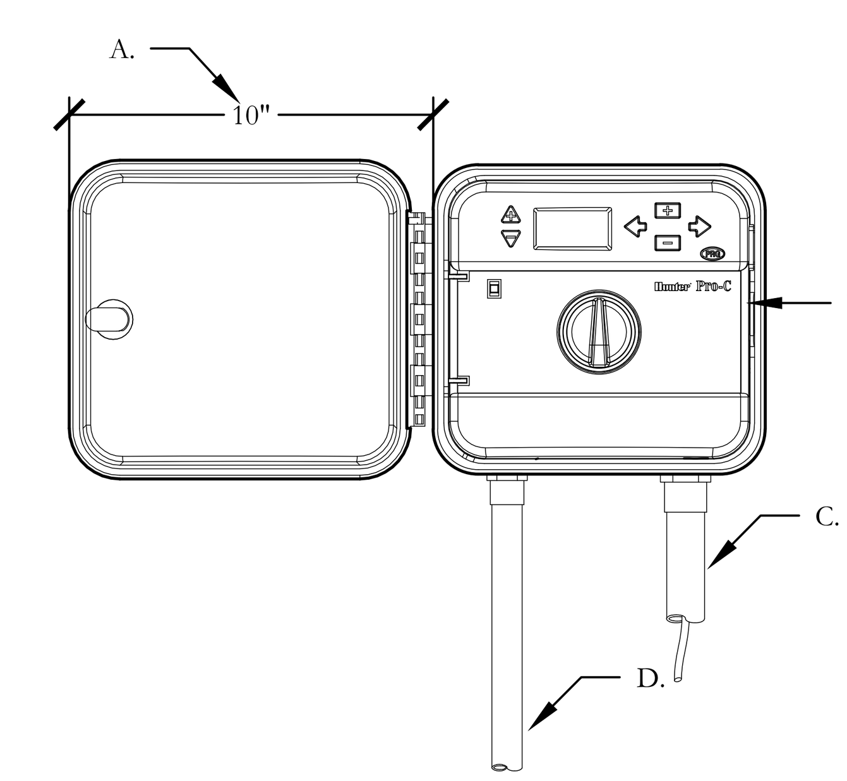
DRIP IRRIGATION - BED
NOT TO SCALE



GENERAL NOTES:
1. REST PIPE FIRMLY ON TRENCH BOTTOM.
2. SNAKE PIPE FROM SIDE TO SIDE.
3. DO NOT STACK PIPE IN TRENCH. PROVIDE HORIZONTAL SEPARATION.
4. MAINTAIN 2" MINIMUM SEPARATION BETWEEN MAINLINE AND LATERAL LINE PIPING.
5. BUNDLE WIRE(S) AT 20 FT. INTERVALS.

CONSTRUCTION NOTES:
A. FINISHED GRADE
B. ROTOR HEAD PER PLANS
C. LATERAL TEE OR ELL
D. LATERAL PIPE
E. IPS FLEX PIPE

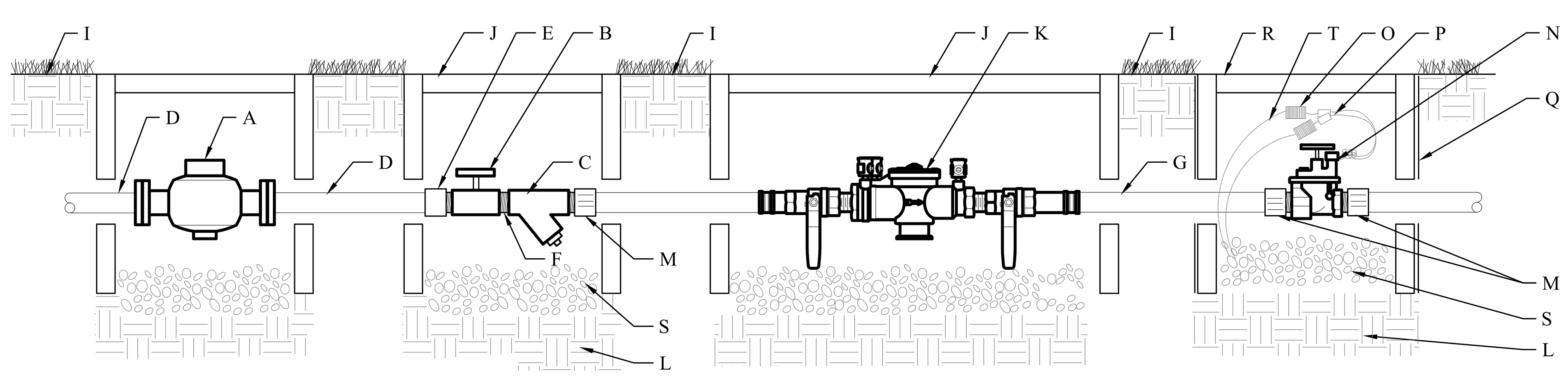
PRS40-CV - MP ROTATOR SPRAY HEAD
NOT TO SCALE



GENERAL NOTES:
1. REST PIPE FIRMLY ON TRENCH BOTTOM.
2. SNAKE PIPE FROM SIDE TO SIDE.
3. DO NOT STACK PIPE IN TRENCH. PROVIDE HORIZONTAL SEPARATION.
4. MAINTAIN 2" MINIMUM SEPARATION BETWEEN MAINLINE AND LATERAL LINE PIPING.
5. BUNDLE WIRE(S) AT 20 FT. INTERVALS

CONSTRUCTION NOTES:
A. MINIMAL CLEARANCE FOR OPENING
B. CONTROLLER MODEL AS LABELED ON LEGEND.
C. CONTROL WIRE IN ELECTRICAL CONDUIT SIZE AND TYPE PER LOCAL CODE.
D. ELECTRICAL SUPPLY CONDUIT. CONNECT TO POWER SOURCE. J BOX INSIDE CONTROLLER.

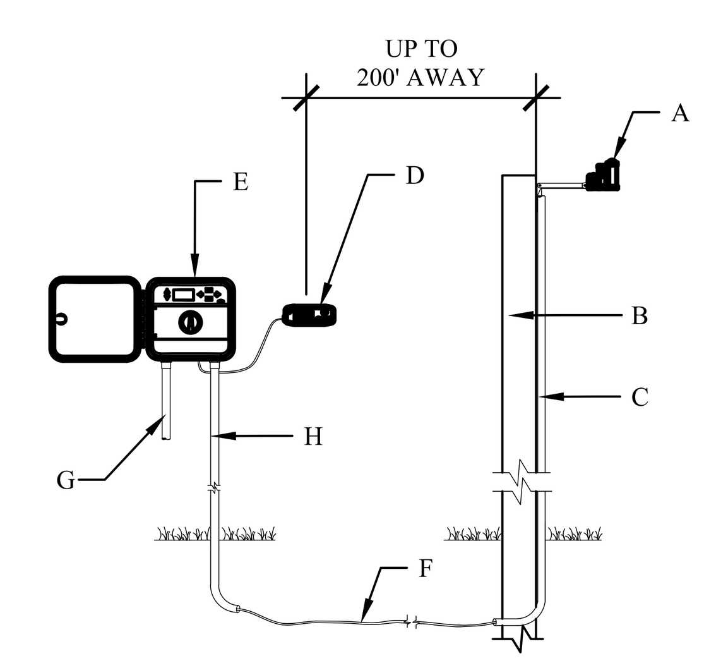
PRO-C CONTROLLER
NOT TO SCALE



CONSTRUCTION NOTES:
A. WATER METER (SIZE PER PLAN)
B. BALL VALVE (SIZE PER LINE)
C. WYE STRAINER (SIZE PER LINE)
D. TYPE "K" COPPER PIPE
E. COPPER SxT COUPLING
F. TBE NIPPLE
G. PIPE PER CITY CODE
H. COUPLING
I. FINISH GRADE
J. 12"x17" VALVE BOX. SET FLUSH WITH FINISH GRADE
K. DOUBLE CHECK VALVE ASSEMBLY
L. COMPACTED SUBGRADE
M. MALE ADAPTER
N. MASTER ELECTRIC VALVE
O. WIRE COIL
P. WATERPROOF WIRE CONNECTORS
Q. 10 ML BLACK PLASTIC
R. 10" RD VALVE BOX. SET ½" ABOVE FINISH GRADE.
S. WASHED PEA GRAVEL - 6" DEPTH MIN
T. VALVE WIRING

GENERAL NOTES:
1. INSTALL WASHED PEA GRAVEL BELOW DCA TO ALLOW ACCESS TO TEST COCKS AND OPERATION OF BALL VALVES
2. INSTALL PEA GRAVEL FLUSH WITH ELECTRIC VALVE.
3. PROVIDE A 24" WIRE EXPANSION COIL AT EACH DRY SPLICE WIRE CONNECTION.
4. CENTER VALVE ASSEMBLY IN VALVE BOX.

BACKFLOW PREVENTER CONNECTION
NOT TO SCALE



CONSTRUCTION NOTES:
A. MODEL: SOLAR SYNC SENSOR
B. SUITABLE POST, POLE, OR GUTTER MOUNT. MOUNT IN LOCATION WHERE SENSOR CAN RECEIVE FULL SUN, IS OPEN TO RAINFALL AND OUT OF SPRINKLER SPRAY PATTERN.
C. CONDUIT FROM SOLAR SYNC SENSOR TO CONTROLLER OR TO A POINT 12" BELOW GRADE
D. MODEL SOLAR SYNC MODULE. MOUNT LESS THAN 6" AWAY FROM CONTROLLER. MODULE CAN BE MOUNTED INTERNALLY WHEN PAIRED WITH THE PCC CONTROLLER.*
E. HUNTER PRO-C CONTROLLER
F. COMMUNICATION WIRE, 18-2(WIRE TYPE TO MEET INSTALLATION CODE REQUIREMENTS), FROM MODULE TO SENSOR. MAXIMUM TOTAL WIRE DISTANCE, 200 FEET.
G. POWER SOURCE
H. CONDUIT FOR VALVE CONTROL WIRE AND SOLAR SYNC COMMUNICATION WIRE

SOLAR SYNC SYSTEM (PRO-C CONTROLLER)
NOT TO SCALE

CODY JOHNSON
s · t · u · d · i · o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

RECORD DRAWINGS

To the best of our knowledge Engineering Concepts & Design, L.P., hereby states that this plan is As-Built. This information provided is based on surveying at the site and information provided by the contractor.

RYAN C. KING 1/27/2021
DATE

STATE OF TEXAS
CODY L. JOHNSON
17132
REGISTERED LICENSED IRRIGATOR
December 7, 2020

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

LANDSCAPE AND SCREENING
Irrigation Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001
SHEET NO.
IR7 of 7

LANDSCAPE PROVIDED

CLEM ROAD

A. MINIMUM TWENTY (20) FOOT LANDSCAPE EDGE PROVIDED.

B. 6' HT. ORNAMENTAL METAL FENCE PROVIDED.

C. 1-4" CAL. CANOPY TREE / 50 LF OF LANDSCAPE EDGE
717 LF OF FRONTAGE / 50 LF = 15 - 4" CAL. TREES REQUIRED.
PROVIDED: 15 - 4" CALIPER CANOPY TREES PROVIDED

STODGHILL ROAD (F.M. 3549)

A. MINIMUM THIRTY (30) FOOT LANDSCAPE EDGE PROVIDED.

B. 6' HT. ORNAMENTAL METAL FENCE PROVIDED.

C. 1-4" CAL. CANOPY TREE / 35 LF OF LANDSCAPE EDGE
1,524 LF OF FRONTAGE / 35 LF = 44 - 4" CAL. TREES REQUIRED.
PROVIDED: 44 - 4" CALIPER CANOPY TREES PROVIDED

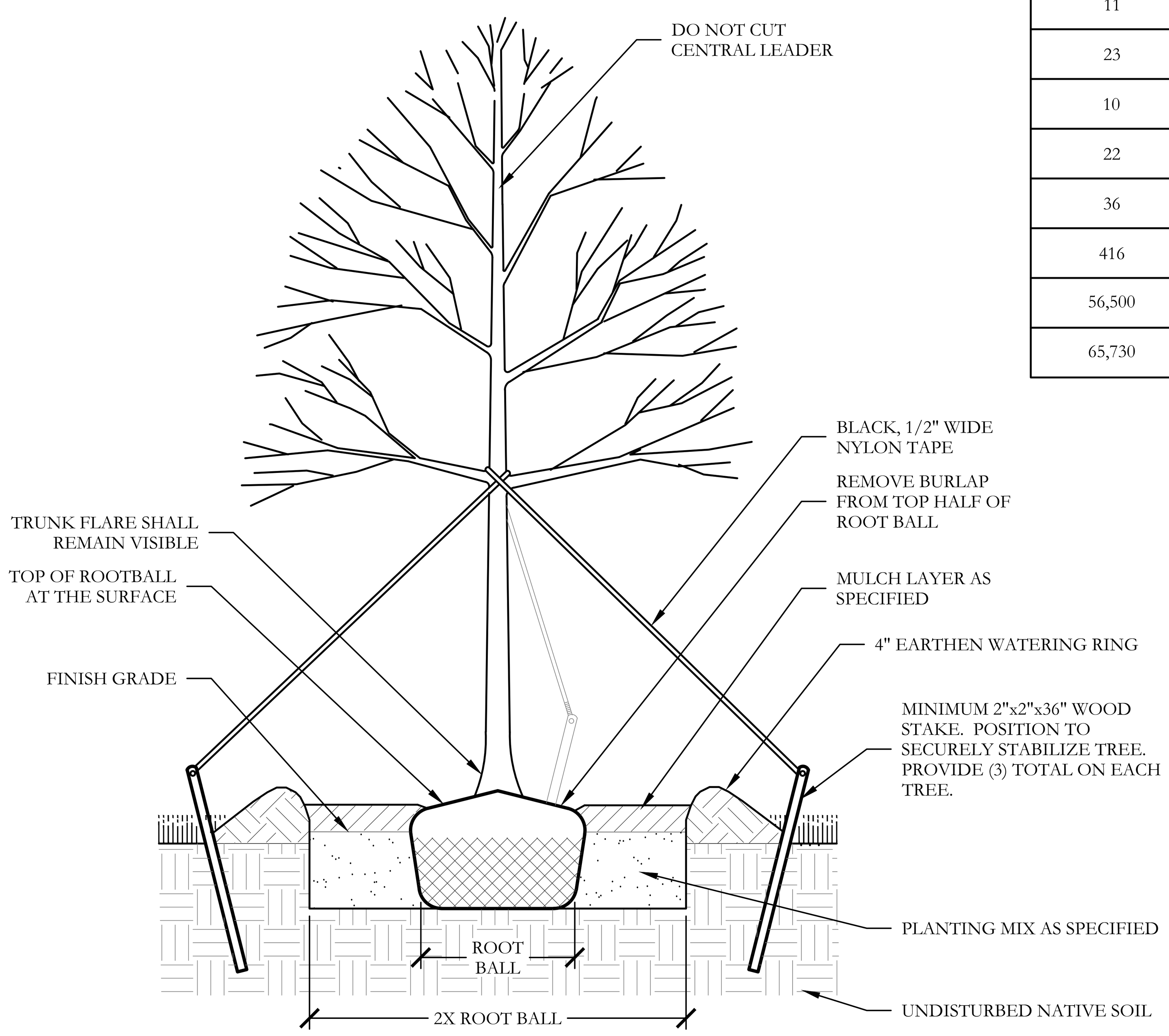
D. 4-2" CAL. ORNAMENTAL TREE / 100 LF OF FRONTAGE
1,524 LF OF FRONTAGE / 100 LF x 4 = 61 - 2" CAL. TREES REQUIRED.
PROVIDED: 61 - 2" CALIPER ORNAMENTAL TREES PROVIDED

OPEN SPACE LOT 17, BLOCK B

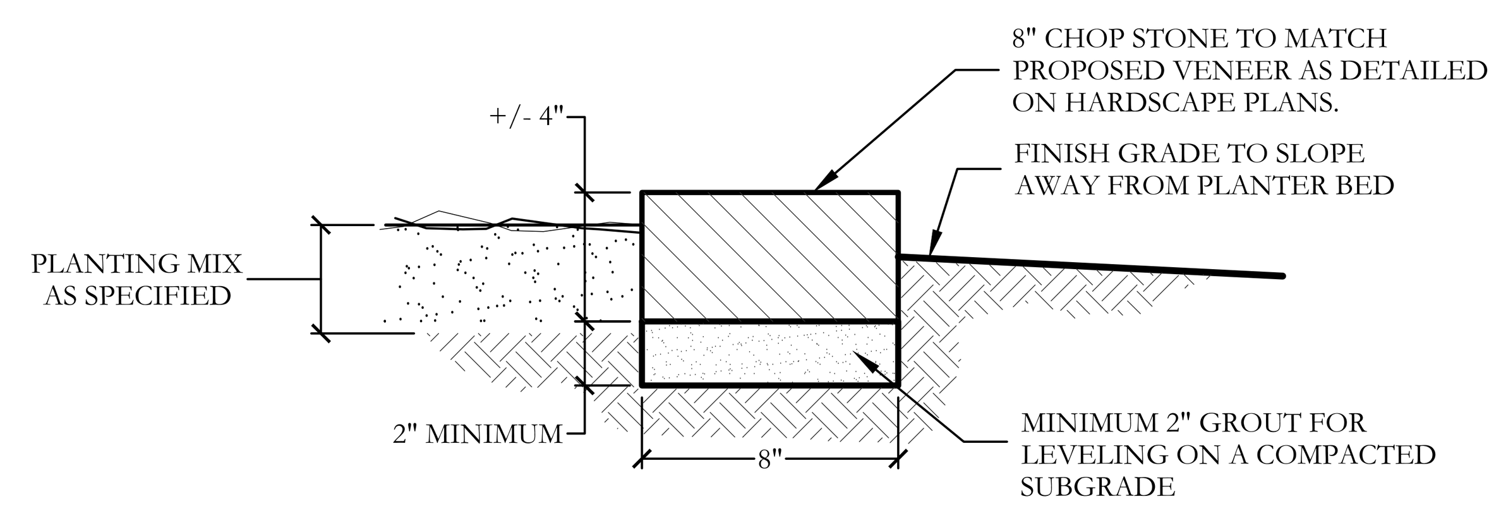
A. PROVIDED 40 - 4" CALIPER CANOPY TREES.
PROVIDED 968 SF OF ORNAMENTAL GRASSES..
REMAINDER OF OPEN SPACE SHALL BE HYDROMULCHED WITH NATIVE DRAINFIELD SEED MIX BY NATIVE AMERICAN SEED CO.

PLANT LIST

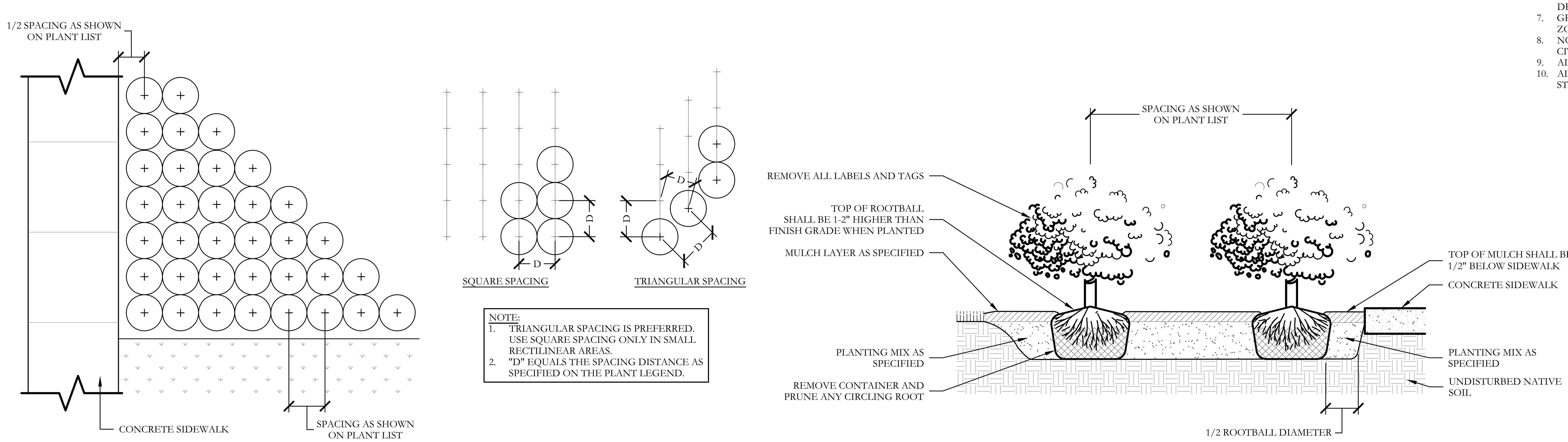
ESTM. QUANTITY	KEY	COMMON NAME	SCIENTIFIC NAME	SIZE	SPACING	REMARKS
11	LO	LIVE OAK	QUERCUS VIRGINIANA	4" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM BRANCHING HEIGHT AT 6'-0"; MINIMUM 10'-0" OVERALL HEIGHT.
14	LE	LACEBARK ELM	ULMUS PARVIFOLIA	4" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM BRANCHING HEIGHT AT 6'-0"; MINIMUM 10'-0" OVERALL HEIGHT.
11	CP	CHINESE PISTACHE	PISTACIA CHINENSIS	4" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM BRANCHING HEIGHT AT 6'-0"; MINIMUM 10'-0" OVERALL HEIGHT.
12	CE	CEDAR ELM	ULMUS CRASSIFOLIA	4" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM BRANCHING HEIGHT AT 6'-0"; MINIMUM 10'-0" OVERALL HEIGHT.
51	ERC	EASTERN RED CEDAR (PROVIDED BY OWNER)	JUNIPERUS VIRGINIANA	MINIMUM 4" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM BRANCHING HEIGHT AT 6'-0"; MINIMUM 10'-0" OVERALL HEIGHT.
25	V	CHASTE TREE	VITEX ANGUS-CASTUS	2" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM 8'-0" OVERALL HEIGHT.
38	DW	DESERT WILLOW	CHILOPSIS LINEARIS	2" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM 8'-0" OVERALL HEIGHT.
2	BA	BLUE ATLAS CEDAR	CEDRUS ATLANTICA 'GLAUCA'	2" CALIPER	AS SHOWN	NURSERY GROWN; FULL HEAD; MINIMUM 8'-0" OVERALL HEIGHT.
11		TEXAS SAGE	LEUCOPHYLLUM FRUTESCENS	5 GALLON	48" O.C.	CONTAINER GROWN; FULL PLANT.
23		UPRIGHT ROSEMARY	ROSMARINUS OFFICINALIS 'UPRIGHT'	5 GALLON	36" O.C.	CONTAINER GROWN; FULL PLANT.
10		MORNING LIGHT MISCANTHUS	MISCANTHUS SINENSIS 'MORNING LIGHT'	5 GALLON	36" O.C.	CONTAINER GROWN; FULL PLANT.
22		GOLD STAR JUNIPER	JUNIPERUS CHINENSIS 'BAKAUREA'	5 GALLON	48" O.C.	CONTAINER GROWN; FULL PLANT.
36		SHORE JUNIPER	JUNIPERUS CONFERTA 'BLUE PACIFIC'	5 GALLON	36" O.C.	CONTAINER GROWN; FULL PLANT.
416		GULF MUHLY GRASS	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	5 GALLON	36" O.C.	CONTAINER GROWN; FULL PLANT.
56,500		COMMON BERMUDA GRASS	CYNODON DACTYLON	SQUARE FEET	SOLID SOD	MINIMUM 100% COVERAGE ALL AREAS SHOWN
65,730		NATIVE DRAINFIELD SEED MIX	BY NATIVE AMERICAN SEED CO.	SQUARE FEET	HYDROMULCH	MINIMUM 75% DESITY ALL AREAS SHOWN



1 TYPICAL TREE PLANTING
SECTION
NOT TO SCALE



3 8" CHOP STONE EDGING DETAIL
SECTION
NOT TO SCALE



2 TYPICAL SHRUB AND GROUNDCOVER PLANTING
PLAN/SECTION
NOT TO SCALE

GENERAL LANDSCAPE NOTES

INSPECTIONS:
1. NO EXCAVATION SHALL OCCUR IN CITY R.O.W. WITHOUT A R.O.W. PERMIT--CONTACT THE PUBLIC WORKS DEPARTMENT.
2. THE CONTRACTOR SHALL MARK ALL WATER LINES, SEWER LINES, AND TREE LOCATIONS PRIOR TO CALLING FOR ROW INSPECTION AND PERMIT.
3. THE LANDSCAPE INSTALLATION SHALL COMPLY WITH APPROVED LANDSCAPE DRAWINGS PRIOR TO FINAL ACCEPTANCE BY THE CITY AND ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
4. WATER METERS, CLEANOUTS AND OTHER APPURTENANCES, SHALL BE ACCESSIBLE, ADJUSTED TO GRADE, CLEARLY MARKED WITH FLAGGING AND COMPLIANT WITH PUBLIC WORKS DEPARTMENT STANDARDS PRIOR TO CALLING FOR FINAL LANDSCAPE AND ROW INSPECTIONS.

LANDSCAPE STANDARDS:
1. PLANTINGS AND LANDSCAPE ELEMENTS SHALL COMPLY WITH THE CITY'S ENGINEERING DESIGN STANDARDS, PUBLIC R.O.W. VISIBILITY REQUIREMENTS.
2. UNLESS OTHERWISE SPECIFIED, TREES SHALL BE PLANTED NO LESS THAN 4' FROM CURBS, SIDEWALKS, UTILITY LINES, SCREENING WALLS AND OTHER STRUCTURES. THE CITY HAS FINAL APPROVAL FOR ALL TREE PLACEMENTS.
3. A MINIMUM THREE FEET (3') RADIUS AROUND A FIRE HYDRANT MUST REMAIN CLEAR OF LANDSCAPE PURSUANT TO THE FIRE CODE.
4. STREET TREES, WHERE REQUIRED, SHALL BE (10') MINIMUM FROM THE EDGE OF A STORM SEWER CURB INLET BOX AND THE EDGE OF THE ROOT BALL SHALL BE (4') MINIMUM FROM THE WATER METER.
5. THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2004) SPECIFICATIONS SHALL GOVERN PLANT QUALIFICATIONS, GRADES, AND STANDARDS.
6. TREE PLANTING SHALL COMPLY WITH DETAILS HEREIN AND THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) STANDARDS.
7. A 2-3" LAYER OF MULCH SHALL BE PROVIDED AROUND THE BASE OF THE PLANTED TREE. THE MULCH SHALL BE PULLED BACK 4" FROM THE TRUNK OF THE TREE.
8. TREE PITS SHALL BE TESTED FOR WATER PERCOLATION. IF WATER DOES NOT DRAIN OUT OF TREE PIT WITHIN 24-HOURS, THE TREE SHALL BE MOVED OR DRAINAGE SHALL BE PROVIDED.
9. ALL BEDS TO HAVE 3" OF COMPOSTED SOIL, LIVING EARTH TECHNOLOGY, OR APPROVED EQUAL TILLED AND TURNED TO A DEPTH of 7" MINIMUM.
10. ALL PLANT BEDS SHALL BE TOP-DRESSED WITH A MINIMUM OF 3 INCHES OF HARDWOOD MULCH.
11. NATIVE SITE TOPSOIL IS TO BE PROTECTED FROM EROSION OR STOCKPILED. NATIVE SITE TOPSOIL SHALL BE LABORATORY TESTED BY AND ACCREDITED LABORATORY AND AMENDED PER SAID LABORATORY'S RECOMMENDATIONS.
12. NO LANDSCAPE INCLUDING TREES IN RIGHT-OF-WAY.
13. ALL RIGH-OF-WAY TO BE SODDED.
14. NO TREES WITH 5'-0" FROM ANY PUBLIC WATER, SANITARY SEWER, OR STORM LINE LESS THAN 10" AND 10'-0" FROM ANY PUBLIC WATER, SANITARY SEWER, OR STORM GREATER THAN OR EQUAL TO 10".

IRRIGATION STANDARDS:
1. ANY CHANGES TO THESE APPROVED IRRIGATION DRAWINGS SHALL BE AUTHORIZED BY THE CITY.
2. CONTACT DEVELOPMENT SERVICES FOR AN IRRIGATION PERMIT PRIOR TO INSTALLING THE IRRIGATION SYSTEM.
3. IRRIGATION OVER-SPRAY ON STREETS AND WALKS IS PROHIBITED.
4. MAINLINES, VALVES, OR CONTROL WIRES SHALL NOT BE LOCATED IN THE CITY'S ROW.
5. ET IRRIGATION CONTROLLERS SHALL BE PROGRAMMED AND ADJUSTED TO NOT EXCEED THE LANDSCAPE WATER ALLOWANCE (LWA) PRIOR TO APPROVAL OF LANDSCAPE INSTALLATION.
6. VALVES SHALL BE LOCATED A MINIMUM OF (3') AWAY FROM STORM SEWERS, AND SANITARY SEWER LINES AND 5 FEET FROM CITY FIRE HYDRANTS AND WATER VALVES.
7. THE BORE DEPTH UNDER STREETS, DRIVE AISLES, AND FIRE LANES SHALL PROVIDE (2') OF CLEARANCE (MINIMUM).
8. IRRIGATION HEADS THAT RUN PARALLEL AND NEAR PUBLIC WATER AND SANITARY SEWER LINES; SHALL BE FED FROM STUBBED LATERALS OR BULL-BEADS. A MINIMUM FIVE FOOT (5') SEPARATION IS REQUIRED BETWEEN IRRIGATION MAIN LINES AND LATERALS THAT RUN PARALLEL TO PUBLIC WATER AND SANITARY SEWER LINES.
9. NO VALVES, BACKFLOW PREVENTION ASSEMBLIES, QUICK COUPLERS ETC. SHALL BE LOCATED CLOSER THAN 10' FROM THE CURB AT STREET OR DRIVE INTERSECTION.

MAINTENANCE STANDARDS:
1. THE OWNER SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT, MAINTENANCE, AND VIGOR OF PLANT MATERIAL IN ACCORDANCE WITH THE DESIGN INTENT AND AS APPROPRIATE FOR THE SEASON OF THE YEAR.
2. LANDSCAPE AND OPEN AREAS SHALL BE FREE OF TRASH, LITTER AND WEEDS.
3. NO PLANT MATERIAL SHALL BE ALLOWED TO ENCROACH ON R.O.W., SIDEWALKS OR EASEMENTS TO THE EXTENT THAT VISION OR ROUTE OF TRAVEL FOR VEHICULAR, PEDESTRIAN, OR BICYCLE TRAFFIC IS IMPEDED.
4. TREE MAINTENANCE SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
5. TREE STAKING MATERIALS, IF USED, SHALL BE REMOVED AFTER (1) GROWING SEASON, NO MORE THAN (1) YEAR AFTER INSTALLATION (STEEL TREE STAKES, WIRES, AND HOSES ARE PROHIBITED).

TREE PROTECTION NOTES:
1. CONTACT DEVELOPMENT SERVICES FOR A TREE REMOVAL PERMIT PRIOR TO REMOVAL OR TRANSPLANTING OF ANY TREES.
2. ALL TREES WHICH ARE TO REMAIN ON SITE SHALL BE PROTECTED WITH A (4') TALL BRIGHTLY COLORED PLASTIC FENCE, OR SILT FENCE, PLACED AT THE DRIP LINE OF THE TREES.
3. PRIOR TO THE PRE-CONSTRUCTION MEETING OR OBTAINING A GRADING PERMIT, ALL TREE MARKINGS AND PROTECTIVE FENCING SHALL BE INSTALLED BY THE OWNER AND BE INSPECTED BY DEVELOPMENT SERVICES.
4. NO EQUIPMENT SHALL BE CLEANED, OR HARMFUL LIQUIDS DEPOSITED WITHIN THE LIMITS OF THE ROOT ZONE OF TREES WHICH REMAIN ON SITE.
5. NO SIGNS, WIRES, OR OTHER ATTACHMENTS SHALL BE ATTACHED TO ANY TREE TO REMAIN ON SITE.
6. VEHICULAR AND CONSTRUCTION EQUIPMENT SHALL NOT PARK OR DRIVE WITHIN THE LIMITS OF THE DRIP LINE.
7. GRADE CHANGES IN EXCESS OF 3 INCHES (CUT OR FILL) SHALL NOT BE ALLOWED WITHIN A ROOT ZONE, UNLESS ADEQUATE TREE PRESERVATION METHODS ARE APPROVED BY THE CITY.
8. NO TRENCHING SHALL BE ALLOWED WITHIN THE DRIP-LINE OF A TREE, UNLESS APPROVED BY THE CITY.
9. ALL REMOVED TREES SHALL BE CHIPPED AND USED FOR MULCH ON SITE OR HAULED OFF-SITE.
10. ALL TREE MAINTENANCE TECHNIQUES SHALL BE IN CONFORMANCE WITH INDUSTRY IDENTIFIED STANDARDS. IMPROPER OR MALICIOUS PRUNING TECHNIQUES ARE STRICTLY PROHIBITED.

RECORD DRAWINGS

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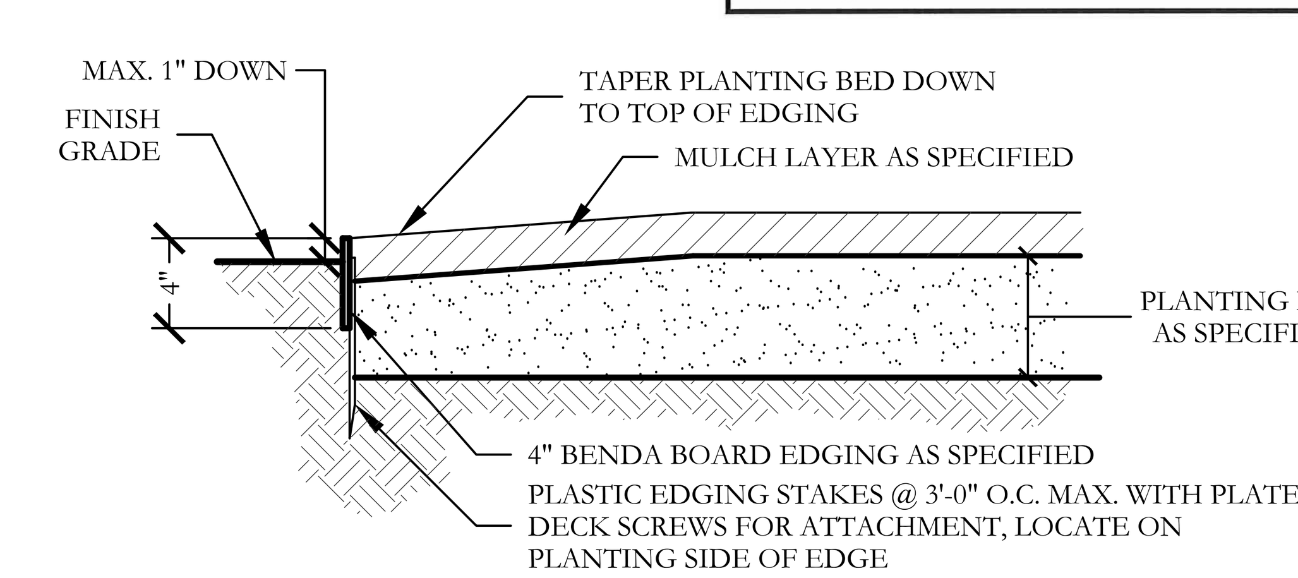
RYAN C. KING 1/27/2021
DATE



4 BENDA BOARD EDGING DETAIL
SECTION
NOT TO SCALE

CODY JOHNSON
s·t·u·d·i·o
9720 COIT ROAD SUITE 220-333 PLANO, TEXAS 75025
PH. (903) 570-0162
EMAIL: CODY@CODYJOHNSONSTUDIO.COM

REGISTERED LANDSCAPE ARCHITECT
CODY L. JOHNSON
2833
STATE OF TEXAS
June 1, 2020

Bar is one inch on original drawing. If not one inch on this sheet, adjust scale as necessary.
One Inch

SCREENING AND BUFFERING
Landscape Details
Northgate Phase 1
City of Rockwall, Tarrant County, Texas

CJS PROJECT NO.
MJP001

SHEET NO.
L6 of 6

BUILDING CODE OR APPLICABLE DESIGN STANDARDS

1. INTERNATIONAL BUILDING CODE, 2015 EDITION

REFERENCED GEOTECHNICAL REPORT IF AVAILABLE/APPLICABLE

1. FIRM: ALPHA TESTING, INC.
2. REPORT NUMBER: G190837
3. DATE: 06-27-19
4. ALLOWABLE BEARING CAPACITY(FOOTING): 1500 PSF
5. RECOMMENDED ACTIVE EQUIVALENT FLUID PRESSURE: 34 PSF PER NOTE 3.

GENERAL

1. THESE SPECIFICATIONS ARE APPLICABLE ONLY FOR WALLS 1'-6" TO 6'-0" IN RETAINED HEIGHT (H).

2. TEMPORARY SLOPE - BY BUILDER, AS REQUIRED FOR SAFETY.

3. LOADS AND FACTORS OF SAFETY

ACTIVE PRESSURES USED IN DESIGN FOR THE SOIL BACKFILL WERE DERIVED FROM COULOMB'S THEORY OF SOIL PRESSURE, CORRESPONDING TO A CLEAN GRAVEL-SAND BACKFILL PLACED AS SHOWN WITH AN INTERNAL FRICTION ANGLE OF 33. EQUIVALENT FLUID PRESSURE IS APPROXIMATELY 35 PSF PER FOOT OF RETAINED SOIL DEPTH.

PASSIVE PRESSURES FOR THE SOIL IN FRONT OF THE WALL FOOTING WERE DERIVED FROM COULOMB'S THEORY OF SOIL PRESSURE BASED ON IN-SITU SOIL OR PREPARED COMPACTED FILL PER THE REFERENCED GEOTECHNICAL REPORT ABOVE.

ALLOWABLE BEARING PRESSURES WERE BASED ON THE REFERENCED GEOTECHNICAL REPORT ABOVE. IF NO REPORT WAS MADE AVAILABLE, A MINIMUM ALLOWABLE BEARING PRESSURE OF 1500 PSF WAS USED FOR DESIGN.

SURCHARGE LOADS -UNLESS NOTED OTHERWISE ON THE DETAILS AND SCHEDULES SURCHARGE LOADS ARE NOT EXPECTED FOR STRUCTURES LOCATED WITHIN D=1.5H DISTANCE FROM RETAINING WALLS.

FACTORS OF SAFETY - A FACTOR OF SAFETY OF 2.0 FOR OVERTURNING AND 1.5 FOR SLIDING WAS USED FOR THE DETAILS AND SCHEDULES SHOWN ON THE FOLLOWING SHEETS.

4. UNLESS NOTED OTHERWISE THE RETAINING WALL DETAILS AND SCHEDULES SHOWN DO NOT ACCOUNT FOR GLOBAL SLOPE STABILITY.

IF GLOBAL SLOPE STABILITY IS A CONCERN, A GEOTECHNICALFIRM WITH EXPERIENCE IN GLOBAL STABILITY ANALYSES SHOULD BE RETAINED IN ORDER TO PROVIDE RECOMMENDATIONS FOR THE WALL DESIGN.

5. COMPACTED BACKFILL SHALL BE PROPERLY PLACED AND COMPACTED TO MINIMUM 95 PERCENT OF STANDARD PROCTOR. COMPACTION VERIFICATION BY OTHERS.

6. WEEP HOLE DRAINS - PROVIDE MINIMUM 3"ø WEEP HOLES @ 10'-0".

7. IF CONDITIONS CHANGE FROM THOSE DESCRIBED HEREIN, NOTIFY D&E STRUCTURES IMMEDIATELY TO DETERMINE THE EFFECT, IF ANY, ON THE RETAINING WALL DESIGN.

8. FORMED VERTICAL CONTROL JOINTS ARE RECOMMENDED TO CONTROL SHRINKAGE CRACK LOCATIONS. CONTROL JOINTS SHOULD BE SPACED AT 20'-0" O.C. MAX. JOINTS SHALL BE AT LEAST 1/2" x 4".

9. DRAINAGE, SEWER, OR OTHER MISCELLANEOUS CONDUIT SHALL NOT BE PLACED IN FRONT OF THE TOE OF THE WALL WITHOUT COORDINATION AND APPROVAL WITH D&E STRUCTURES.

MATERIALS

1. ALL MORTAR SHALL BE TYPE "S", 2500 PSI. FULL HEAD & BED JOINT MORTAR IS REQUIRED. TESTING BY OTHERS, IF DESIRED SHALL CONFORM TO ASTM C270.

2. ALL STONE SHALL BE EARTH-TONE COLORED, CLEAN, HARD, DENSE, AND WEATHER RESISTANT 12" TO 18" MILSAP SANDSTONE FROM A MILSAP ROCK QUARRY. THE AVERAGE DENSITY OF THE SANDSTONE SHALL RANGE FROM 135 PCF TO 145 PCF.

3. DRAINAGE MATERIAL - ON WALLS OVER 4'-0" IN HEIGHT, USE 1 1/2" TO 3" DIAMETER CRUSHED CONCRETE AND UP TO 6" DIAMETER SANDSTONE ROCK PLACED NOT COMPACTED. SANDSTONE NOT TO EXCEED 20% OF GRAVEL BACKFILL. WRAP IN FILTER FABRIC. FOR WALLS LESS THAN 4'-0" IN HEIGHT, USE 1 1/2" TO 6" CRUSHED CONCRETE OR SANDSTONE ROCK, WITH NO RESTRICTIONS ON PERCENTAGE OF USE FOR EITHER MATERIAL WRAP IN FILTER FABRIC.

4. FILTER FABRIC SHALL BE TERRA TEX N04.5 BY HANES GEO COMPONENTS OR APPROVED EQUAL.

FOOTINGS

1. ALL WALLS SHALL BE PROVIDED WITH A STONE AND MORTAR LEVELING COURSE AT THE BASE.
2. ALL WALLS SHALL BE BEDDED IN FIRM IN-SITU OR COMPACTED FILL TO THE MINIMUM DEPTH SPECIFIED ON THE PLAN.

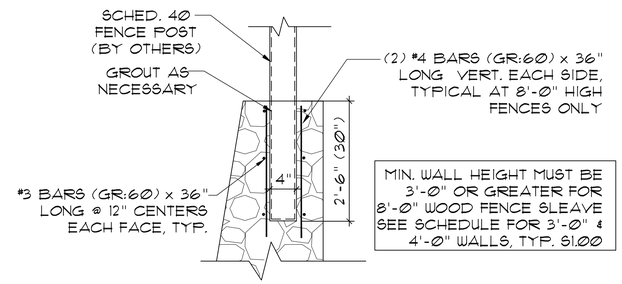
INSPECTION REQUIREMENTS

1. BY OR UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN RETAINING WALL DESIGN AND CONSTRUCTION.
2. FOOTING WIDTH AND EMBEDMENT
3. DRAIN INSTALLATION
4. CONTROL JOINT LOCATIONS
5. INSPECTION IS PERFORMED ONLY TO DEVELOP A GENERAL OPINION REGARDING THE BUILDER'S COMPLIANCE WITH PROJECT SPECIFICATIONS. NO WARRANTY OR GUARANTEE IS PROVIDED.

EMBED DEPTH NOTES:

IN AREAS WHERE THE SLOPE BELOW THE WALL IS GREATER THAN OR EQUALTO 3:1, THE MINIMUM EMBED DEPTH SHALL BE 3'-0"

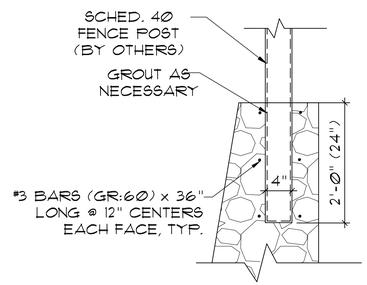
IN AREAS WHERE THE FRONT OF THE WALL IS ADJACENT TO A POND OR SIMILAR BODY OF WATER THE MINIMUM EMBED DEPTH SHALL BE INCREASED BY 1'-4" TO THE SCHEDULED EMBED DEPTH ABOVE.



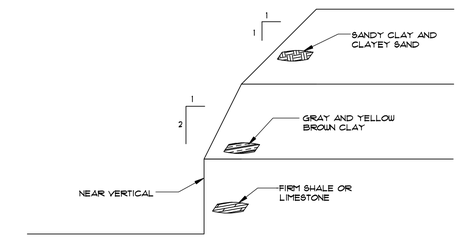
FENCE POST EMBED DETAIL - 8'-0" WOOD FENCE

WALL SCHEDULE (8' FENCE)				
HEIGHT (H)	N/A	N/A	3'	4'
BASE WIDTH (B)	N/A	N/A	25"	27"
TOP WIDTH (B1)	N/A	N/A	12"	12"
EMBEDMENT (t)	N/A	N/A	10"	12"
TOE WIDTH (tw)	N/A	N/A	5"	7"

USE THE SCHEDULE ABOVE ONLY WHEN 8'-0" HIGH BOARD-ON-BOARD FENCE POSTS ARE EMBEDDED INTO WALLS BETWEEN 3'-0" & 4'-0" IN HEIGHT, WE STRONGLY RECOMMEND THAT ALL 8'-0" HIGH FENCE POSTS BE PLACED OUTSIDE OF THE WALL AREA, OR PLACED INTO STANDARD CONCRETE POST PIERS PRIOR TO THE CONSTRUCTION OF THE RETAINING WALL. FOR RETAINING WALLS WITH HIEIGHT LESS THAN 3'-0", 8'-0" HIGH BOARD-ON-BOARD FENCE POSTS ARE NOT ALLOWED.



FENCE POST EMBED DETAIL - 6'-0" WOOD FENCE



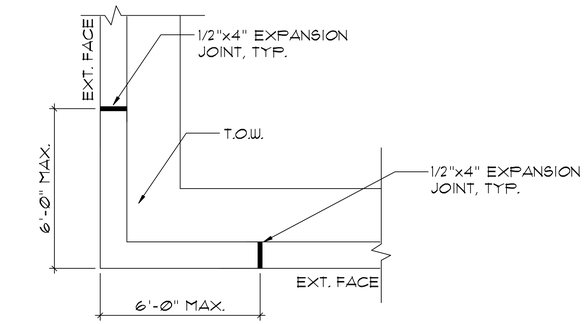
SLOPE AND BENCHING DIAGRAM - SIMPLE SLOPE

NOTES:

1. NO EQUIPMENT OR SPOIL CLOSER THAN 3'-0" OR ONE-HALF THE DEPTH OF EXCAVATION. WHICHEVER IS GREATER. TO TOP OF SLOPE.

2. ASSUMES ABSENCE OF GROUNDWATER. SEEPAGE CAN REQUIRE ADJUSTMENTS IN SLOPE ANGLES AND/OR DEWATERING.

3. PRIOR TO CONSTRUCTION DAILY OBSERVATIONS OF SLOPE STABILITY REQUIRED. IF QUESTIONS OR CONCERNS REGARDING SLOPE STABILITY ARISE CONTACT D&E STRUCTURES.



EXPANSION DETAIL AT CORNERS

RECORD DRAWINGS

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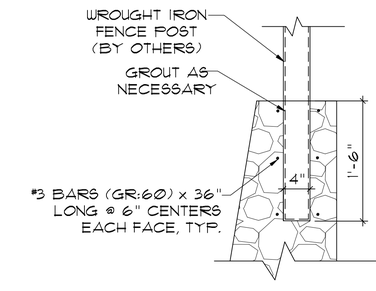
RYAN C. KING — 1/27/2021 DATE



FENCE POST EMBED DETAIL - WROUGHT IRON

REVISIONS

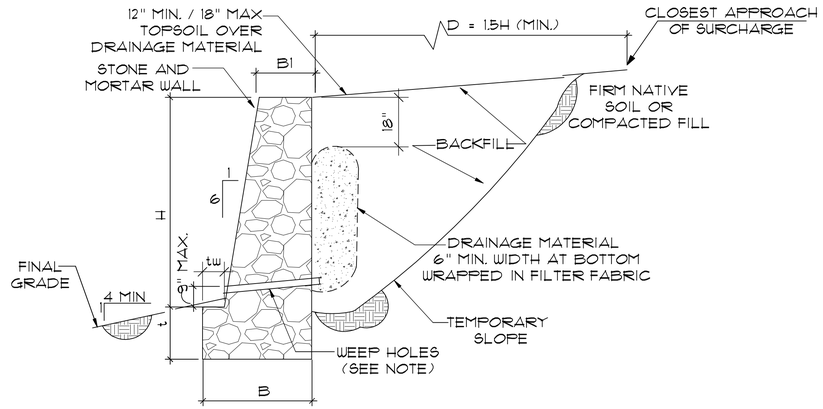
THE ENGINEERS SEAL ON THIS PLAN WAS ELECTRONICALLY AFFIXED BY LOKI KOTTKAMP. REGISTRATION No. 93691 ON JUNE 9, 2020.

STATE OF TEXAS · LOKI KOTTKAMP · 93691 · LICENSED PROFESSIONAL ENGINEER

D&E STRUCTURES
CONSULTING ENGINEERS
TX FIRM REG. #F-870
1010 E. ARAPHO ROAD, SUITE 106
RICHARDSON, TX 75081 214-741-3095

WALLCO RETAINING WALLS, INC.
NORTHGATE
ROCKWALL, TEXAS
PLAN: STANDARD RW NOTES AND DETAILS
OFF N. STODGHILL RD & CLEM RD

JOB # 260772-1
DATE 06/09/20
DRAWN BY
CHECKED BY LK
SHEET S1.00

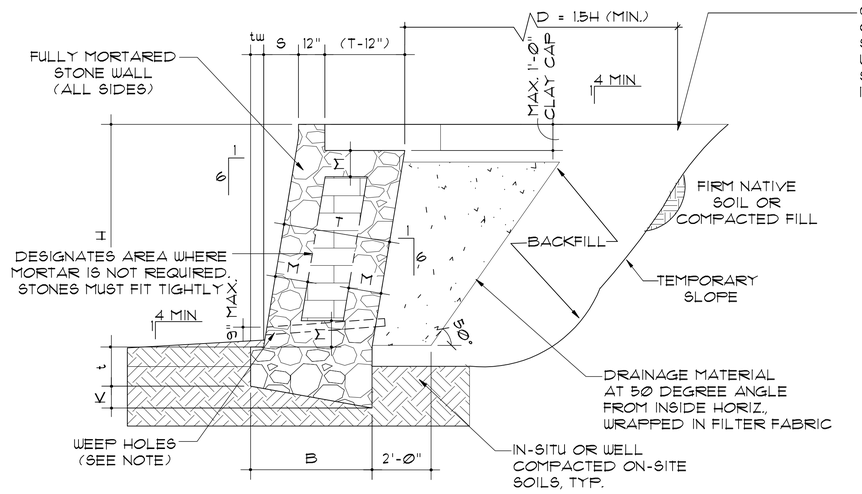


TYPICAL RETAINING WALL SECTION

WALLS 4'-Ø" OR LESS IN HEIGHT

WALL SCHEDULE				
HEIGHT (H)	1.5'	2'	3'	4'
BASE WIDTH (B)	15"	16"	22"	25"
TOP WIDTH (B1)	12"	12"	12"	12"
EMBEDMENT (t)	6"	9"	10"	12"
TOE WIDTH (tw)	Ø"	Ø"	2"	5"

SCHEDULE-SURCHARGE				
HEIGHT (H)	1.5'	2'	3'	4'
BASE WIDTH (B)	18"	20"	28"	31"
TOP WIDTH (B1)	12"	12"	12"	12"
EMBEDMENT (t)	6"	11"	13"	15"
TOE WIDTH (tw)	3"	4"	10"	11"



TYPICAL RETAINING WALL SECTION

WALLS 5'-Ø" to 6'-Ø" IN HEIGHT

WALL SCHEDULE - STANDARD														
HEIGHT (H)	5'	6'												
BASE WIDTH (B)	27"	30"												
WALL THKNS (T)	23"	27"												
EMBEDMENT (t)	12"	12"												
MORTAR THICKNESS (M)	8"	10"												
BATTER WIDTH (S)	10"	12"												
KEY DEPTH (K)	5"	6"												
TOE WIDTH (tw)	2"	3"												
ALLOWABLE BEARING PRESSURE	1500 PSF													

SURCHARGE SCHEDULE

WALL SCHEDULE - SURCHARGE LOADING														
HEIGHT (H)	5'	6'												
BASE WIDTH (B)	34"	37.5"												
WALL THKNS (T)	29"	34"												
EMBEDMENT (t)	15"	15"												
MORTAR THICKNESS (M)	10"	12.5"												
BATTER WIDTH (S)	10"	12"												
KEY DEPTH (K)	6.5"	7.5"												
TOE WIDTH (tw)	2.5"	4"												
ALLOWABLE BEARING PRESSURE	1500 PSF													

REVISIONS

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STATE OF TEXAS
LOKI KOTTKAMP
93691
PROFESSIONAL ENGINEER

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