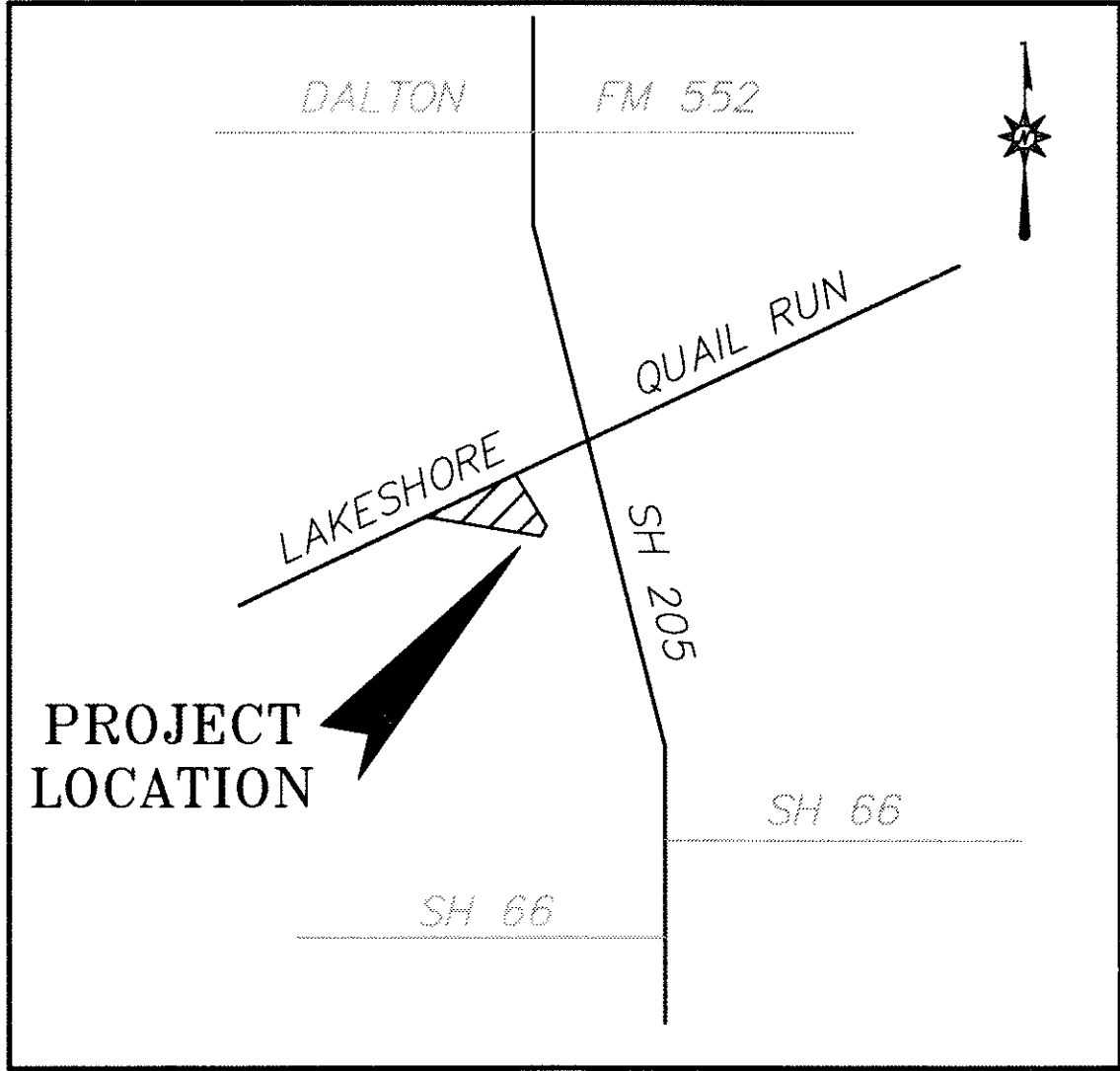


CONSTRUCTION PLANS
FOR
LAKE SHORE COMMONS
1.47 AC±
LOT 1, BLOCK A
LAKE SHORE COMMONS ADDN
IN
ROCKWALL, TEXAS



VICINITY MAP

FOR
MOORE WORTH INVESTMENTS, LLC
8445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

APRIL 2017

SHEET INDEX	
SHT #	SHEET TITLE
C-1	COVER SHEET
	REPLAT - BY OTHERS
C-2	SITE PLAN
1 OF 1	LANDSCAPE PLAN - BY OTHERS
C-3	PAVING PLAN
C-4	GRADING PLAN
C-5	DRAINAGE PLAN
C-6	DETENTION CALCULATIONS
C-7	UNDERGROUND DETENTION SYSTEM DETAILS
C-8	STORM SEWER PROFILES
C-9	STORM SEWER & INLET CALCS
C-10	UTILITY PLAN
C-11	EROSION CONTROL PLAN
D-1	DETAILS
S1	RETAINING WALL DETAILS - BY OTHERS
S2	RETAINING WALL DETAILS - BY OTHERS

PLAN SUBMITTALS		
No	DATE	COMMENTS
1	04-10-17	CITY OF ROCKWALL - 1st SUBMITTAL
2	05-16-17	CITY OF ROCKWALL - 2nd SUBMITTAL
F	06-22-17	CITY OF ROCKWALL - FINALS

RECORD DRAWING

THIS RECORD DRAWING HAS BEEN PREPARED
BASED ON INFORMATION PROVIDED BY OTHERS.
THE ENGINEER HAS NOT VERIFIED THE ACCURACY
OF THIS INFORMATION AND SHALL NOT BE
RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY
BE INCORPORATED HEREIN AS A RESULT.

Hickman Consulting Engineers, Inc.
3094 County Road 1824
Farms Road
Irving, TX 75063
Phone: 214-415-9993
Fax: 214-415-9994
markredhick@gmail.com
Engineers
Planners

COVER SHEET
LAKE SHORE COMMONS
LOT 1: LAKE SHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
8445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

SCALE: N/A
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE: 1501-357-LWD
SUBMITTAL: 06/22/17(F)

Mark H. Hickman
78409
F-12172

DATE: BY: DESCRIPTION: REVISION:

SHEET
C-1

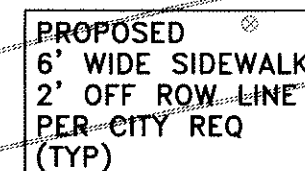


TEXAS ONE CALL SYSTEM

1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120

2 SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.

3 SEE BUILDING PLANS FOR BUILDING DIMENSIONS.



PROPOSED
5' WIDE ACCESSIBLE
ROUTE STRIPED PER
ADA REQUIREMENTS
(TYP)

PROP 5' WIDE
SIDEWALK TO
MEANDER
AROUND FH

PROP
BARRIER-RAMP
FREE RAMP
BY OTHERS

VAN ACCESSIBLE
SPC STRIPED PER ADA
REQUIREMENTS (TYP)

RETAIL BLDG
9873 SF
FF EL = 472.12

METAL BEAM
GUARD FENCE
ALONG FIRE LANE
PER TXDOT
GE(31)-14

TRAFFIC-BARRIER:
ADD 2 BLOCKS OF NATURAL
QUARRIED STONE TO TOP OF
EXISTING RETAINING WALL; MATERIAL
SHALL MATCH EXISTING RETAINING
WALL FROM POINT (A) TO (B)

DUMPSTER
TO BE ENCLOSED ON THREE
SIDES WITH 8' TALL WALL OF
SAME MATERIAL AND FINISH AS
PROPOSED BLDG W/METAL PANEL
GATES; SEE BLDG PLANS FOR DETAIL

- 1 TEXTURE: SHALL CONSIST OF EXPOSED CRUSHED STONE AGGREGATE, ROUGHENED CONCRETE, RUBBER, RAISED ABRASIVE STRIPS OR TRUNNED DOCS. (SEE TABLE FOR ADDITIONAL OPTIONS). SURFACES MUST BE DETECTABLE UNDER FOOT. SURFACES THAT ARE RAISED OR ETCHED IN A WAY THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
- 2 CONTRAST: FOR PURPOSES OF WARNING, THE FULL WIDTH AND DEPTH OF CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJACING PEDESTRIAN ROUTES.
- 3 RAMPS WITHIN THE CITY RIGHT OF WAY SHALL BE CONSTRUCTED PER CITY STD. AND SLOPED DOWNWARD AT AN ANGLE OF 2-4° MAXIMUM. RAMP SHALL EXTEND THE FULL LENGTH OF THE PUBLIC USE AREA OF THE PLATFORM.

ACCESSIBLE ROUTE	<5% SLOPE <2% CROSS SLOPE
RAMP & CURB RAMP	<8.33% (1:12) <2% CROSS SLOPE
TAS PARKING & ACCESS AISLE	<2% SLOPE IN ANY DIRECTION
CONTRACTOR TO ENSURE THAT GRADES ALONG ADA ROUTES MEET THESE SLOPE REQUIREMENTS	

NOTE:
PARKING & ACCESSIBLE ROUTES FOR DISABLED PERSONS SHALL BE DESIGNATED, DESIGNED & CONSTRUCTED PER CITY, TAS & ADA REQUIREMENTS

HATCHED AREA INDICATES PROP 24' FIRE LANE, UTILITY DETENTION/DRAINAGE AND PUBLIC ACCESS EASEMENT

PROPOSED	EXISTING
- 600 PROPOSED CONTOURS	⊗ = POWER POLE
515.00 SPOT ELEVATION AT FINISHED GRADE	⊗ = ANCHOR
514.00 INDICATES TOP OF STRUCTURE	⊗ = WATER METER
513.50 INDICATES FLOW LINE ELEVATION	⊗ = WATER VALVE
(W) PROPOSED WATER LINE	⊗ = IRRIGATION CONTROL VALVE
(SS) PROPOSED SANITARY SEWER LINE	⊗ = TELEPHONE PEDESTAL
(SD) PROPOSED STORM DRAIN LINE	⊗ = GAS METER
(C) PROPOSED CONDUIT	⊗ = MAILBOX
(G) PROPOSED GAS	⊗ = LIGHT POLE
(CC) CONCRETE CURB PER CITY STD	⊗ = FIRE HYDRANT
(1) WATER SERVICE TAP NO	BL = BUILDING LINE
	UE = UTILITY EASEMENT
	DUE = DRAINAGE & UTILITY EASEMENT
	FCD = FIBER OPTIC CABLE MARKER
	GAS = GAS SIGN
	SSSB = SUB SURFACE SERVICE BOX
	T = TRAFFIC SIGN
	T = TRAFFIC SIGNAL
	U.E. = UTILITY EASEMENT
	G = GAS STOP
	G = GAS TEST STATION
	BGS = BURIED CABLE SIGN

- 1 FIRE LANES SHALL BE DESIGNED AND CONSTRUCTED PER CITY STANDARDS.
- 2 ALL SIGNAGE BY SEPARATE PERMIT.
- 3 ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROCKWALL STD SPECIFICATIONS AND CONSTRUCTION STDs, AND STD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PREPARED BY NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (LATEST REVISION).
- 4 THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING IMPROVEMENTS IN THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION. REPAIRS SHALL BE EQUAL TO OR BETTER THAN CONDITION PRIOR TO CONSTRUCTION.
- 5 THE LIGHTING FOR THE SUBJECT PROPERTY WILL BE CONSTRUCTED IN CONFORMANCE WITH CITY REQUIREMENTS.
SEE BLDG PLANS.

- 1 ALL FIRE LANES ARE 24' WIDE WITH MIN 20' INSIDE RADIUS AND MIN 44' OUTSIDE RADIUS. FIRE LANES SHALL BE CONSTRUCTED AND STRIPED PER CITY OF ROCKWALL FIRE DEPT REQUIREMENTS.
- 2 ALL PARKING STALLS, UNLESS SHOWN OTHERWISE, SHALL BE 9' WIDE X 18' DEEP EXCEPT STALLS IN FRONT OF BLDG SHALL BE 9' WIDE X 12' DEEP.
- 3 VAN ACCESSIBLE AREA SHALL BE 9' MIN WIDE X 18' (OR 20') DEEP. OTHER ACCESS AISLES ADJACENT TO H/C PARKING SHALL BE 5' WIDE X 18' (OR 20') DEEP. ALL PARKING STALLS SHALL BE CONSTRUCTED PER PAYING PLAN.
- 3 ALL OTHER DRIVING LANES SHALL BE MIN 24' WIDE AND CONSTRUCTED PER THE PAYING PLAN.

ZONED	PD-85 (FOR GR USES)
PROPOSED USE	RETAIL/RESTAURANT/MEDICAL OFC
LOT AREA	1.47 AC (64,106.50 SF)
BUILDING AREA	9873 SF
PARKING	
<u>RETAIL = 5473 SF</u>	
REQUIRED TOTAL	22 SPACES
1/250	
5473/250=21.89	
<u>RESTAURANT = 2400 SF</u>	
REQUIRED TOTAL	24 SPACES
1/100	
2400/100=24.0	
<u>MEDICAL OFFICE = 2000 SF</u>	
REQUIRED TOTAL	10 SPACES
1/200	
2000/200=10.0	
REQUIRED TOTAL	56 SPACES (53 REG; 3 H/C)
PROVIDED TOTAL	56 SPACES (53 REG; 3 H/C)
LOT COVERAGE	15.4% (9873 SF)
IMPERVIOUS AREA	67% (42,915 SF)
PERVIOUS AREA	33% (21,191 SF)


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BE INCORPORATED HEREIN AS A RESULT.

CASE NO. SP2016--018

SITE PLAN
LAKESHORE COMMONS
LOT 1; LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
34445 FREEDOT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-0003

SCALE: 1"=30'
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
TITLE: 165-1501357-LC-PI WD
DATE: 05/22/17(E)

Hickman Consulting Engineers, Inc.



4/16/18 F-12172

REVISION	DESCRIPTION	DATE	BY

SHEET
C-2

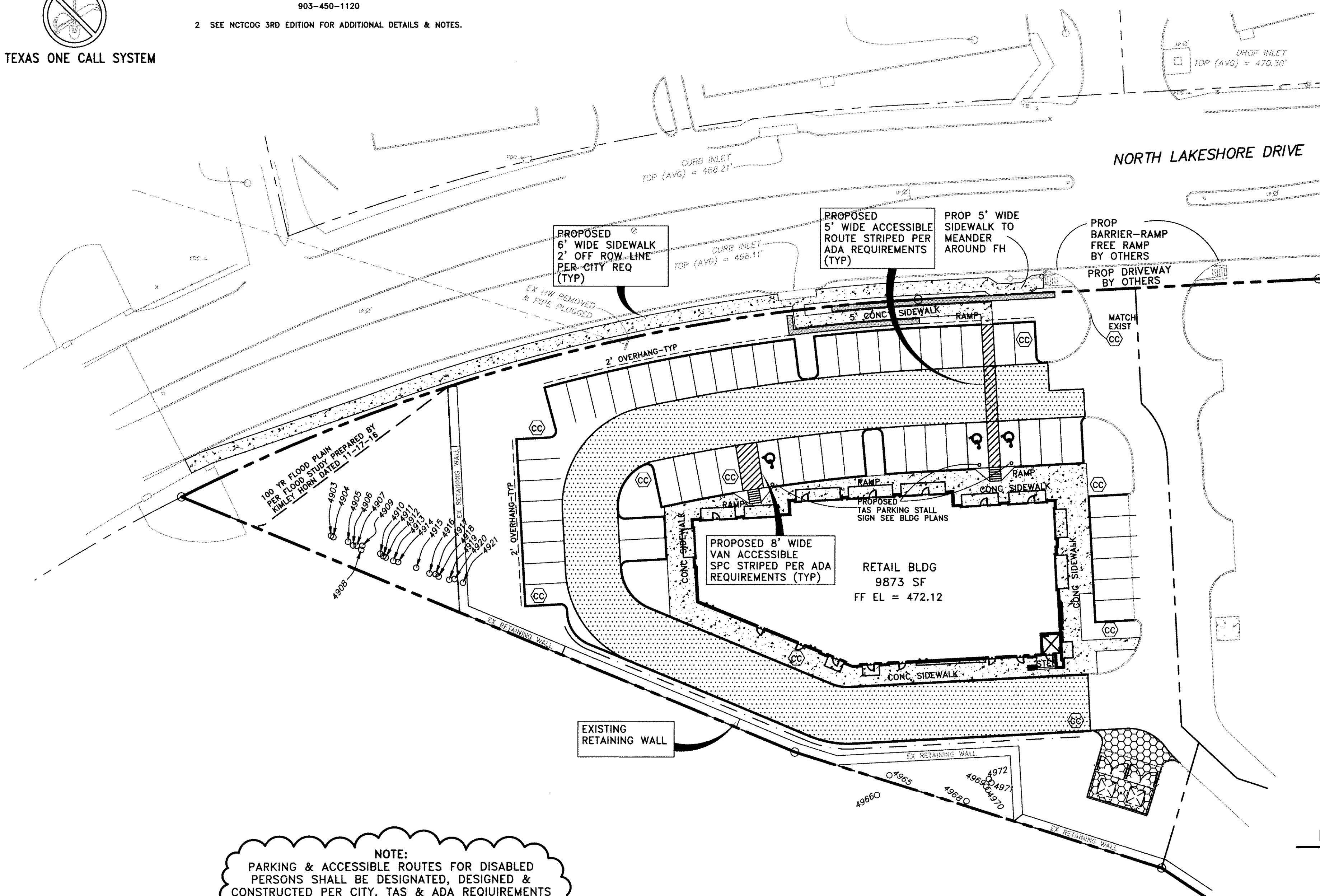


TEXAS ONE CALL SYSTEM

1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120

2 SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.

2. SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.



NOTE:
PARKING & ACCESSIBLE ROUTES FOR DISABLED
PERSONS SHALL BE DESIGNATED, DESIGNED &
CONSTRUCTED PER CITY, TAS & ADA REQUIREMENTS

ADA/TAS SLOPE REQUIREMENTS	
ACCESSIBLE ROUTE	<5% SLOPE <2% CROSS SLOPE
RAMP & CURB RAMP	<8.33% (1:12) <2% CROSS SLOPE
TAS PARKING & ACCESS AISLE	<2% SLOPE IN ANY DIRECTION
CONTRACTOR TO ENSURE THAT GRADES ALONG ADA ROUTES MEET THESE SLOPE REQUIREMENTS	

ADA BARRIER-FREE RAMP REQUIREMENTS:

- TEXTURE: SHALL CONSIST OF EXPOSED CRUSHED STONE AGGREGATE, ROUGHENED CONCRETE, RUBBER, RAISED ABRASIVE STRIPS, OR TRUNCATED DOMES (SEE T&A/ADS STDS FOR ADDITIONAL OPTIONS). SURFACES SHALL BE DETACHABLE UNDER FOOT SURFACES THAT ARE RAISED OR ETCHED IN A WAY THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
2. CONTRAST: FOR PURPOSES OF WARNING, THE FULL WIDTH AND DEPTH OF CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
3. RAMPS WITHIN THE CITY RIGHT OF WAY SHALL BE CONSTRUCTED PER CITY 24. TRUNCATED DOMES AT PLATFORM BOARDING EDGES SHALL BE A MINIMUM OF 2' WIDE AND 1' LONG. THE SURFACING OF THE PLATFORM SHALL BE THE SAME AS THE PLACEMENT SURFACING.

NOTE:
ALL PAVEMENT RECOMMENDATIONS SHOWN ON THIS
PLAN TO BE VERIFIED WITH SOILS REPORT PREPARED
BY ALPHA TESTING, INC.
REPORT NO G162558

PROPOSED		EXISTING	
— 500 —	PROPOSED CONTOURS	⊗	POWER POLE
\$15.00	SPOT ELEVATION AT FINISHED GRADE	⊗	ANCHOR
\$14.00	INDICATES TOP OF STRUCTURE	⊗	WATER METER
\$13.50	INDICATES FLOW LINE ELEVATION	⊗	WATER VALVE
(W)	PROPOSED WATER LINE	⊗	IRRIGATION CONTROL VALVE
		⊗	TELEPHONE PEDESTAL
(SS)	PROPOSED SANITARY SEWER LINE	⊗	GAS METER
		⊗	MAILBOX
(SD)	PROPOSED STORM DRAIN LINE	⊗	LIGHT POLE
		⊗	FIRE HYDRANT
(C)	PROPOSED CONDUIT	BL	BUILDING LINE
		UR	UTILITY EASEMENT
(E)	PROPOSED GAS	DUE	DRAINAGE & UTILITY EASEMENT
		FGC	FIBER OPTIC CABLE MARKER
(CC)	CONCRETE CURB PER CITY STD	GAS	GAS SIGN
		SSSB	SUB SURFACE SERVICE BOX
(I)	WATER SERVICE TAP NO	⊗	TRAFFIC SIGN
		⊗	TRAFFIC SIGNAL
		U.E.	UTILITY EASEMENT
		⊗	GAS STUB
		⊗	GAS TEST STATION
		BGS	BURIED CABLE SIGN

NOTE:
CONTRACTOR TO VERIFY HORIZONTAL & VERTICAL
LOCATION OF ALL EXISTING UTILITIES PRIOR
TO BEGINNING ANY CONSTRUCTION/EXCAVATION
AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES
EXISTING UTILITIES SHOWN ON THESE PLANS
ARE BASED ON COMBINATION OF FIELD SURVEY
& CITY RECORD DRAWINGS

PAVING REQUIREMENTS

SEE SOILS REPORT FOR ADDITIONAL INFORMATION, REINFORCEMENT, SUBGRADE & OPTIONS.

- 1 FIRE LANE – 6" MIN CONC THICKNESS;
3600 PSI; #3 @ 18" OCEW
6.0 SACK/CY MACHINE
6.5 SACK/CY HAND
PER CITY STD
ALL FIRE LANES SHALL BE STRIPPED OR SIGNED
IN ACCORDANCE WITH THE 2015 INTERNATIONAL
FIRE CODE AS ADOPTED BY THE CITY OF ROCKWALL.
- 2 DUMPSTY AREA – 7" MIN CONC THICKNESS,
3600 PSI; #3 @ 18" ONEW
6.5 SACK MIN/CY
PER SOILS REPORT
- 3 LIGHT DUTY – 5" MIN CONC THICKNESS,
3000 PSI; #3 @ 18" OCEW
5.5 SACK MIN/CY
PER SOILS REPORT
- 4 SIDEWALK – 4" MIN CONC THICKNESS,
3000 PSI; #3 @ 24" OCEW
5.5 SACK MIN/CY.

PAYING NOTES

1. SAW CUT CONCRETE AREAS SO THAT NO LARGER THAN 15'X15' CONCRETE AREAS REMAIN.
2. THE CONTRACTOR SHALL NOTIFY THE OWNER 3 DAYS PRIOR TO ANY CONCRETE POUR.
3. ANY WORK DONE IN THE RIGHT OF WAY SHALL BE DONE IN ACCORDANCE WITH CITY REQUIREMENTS.
4. ALL BARRIER FREE RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY, ADA & TAS STD. SPECIFICATIONS AND DETAILS.
5. PAVEMENT SHALL HAVE SEALED JOINTS ON 15 TO 20 FOOT SPACINGS, CUT TO A DEPTH OF AT LEAST 1/4 OF THE PAVEMENT THICKNESS
6. EXPANSION JOINTS SHOULD BE ON 45 FOOT SPACING AND BE SEALED WITH AN ELASTOMERIC JOINT SEALANT.
7. AFTER CONSTRUCTION, THE CONSTRUCTION AND EXPANSION JOINTS SHOULD BE INSPECTED AS REQUIRED AND RESEALED, IF NECESSARY.
8. SOILS REPORT SHALL BE REVIEWED BY CONTRACTOR PRIOR TO BEGINNING ANY CONSTRUCTION.
9. CONCRETE PAVEMENT HEADERS PER THE CITY OF ROCKWALL ARE REQUIRED WHERE THE NEW PAVEMENT IS PLACED AGAINST EXISTING PAVEMENT.

RECORD DRAWING

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NOTE:

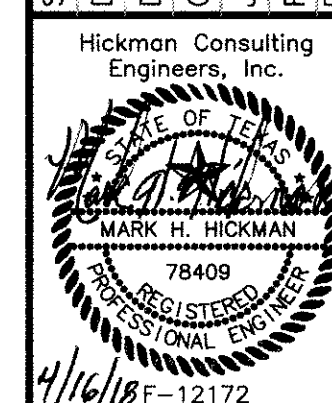
- 2) OFFSHORE BENCHMARK - STEEL ROD W/ACCESS CAP STAMPED N 1495 1066 @ THE INTERSECTION OF THE NORTH LINE OF AIRPORT ROAD WITH THE WEST LINE OF THE AIRPORT ACCESS ROAD.
ELEVATION = 568.70' (VERTICAL DATUM: NAVD 1985)
- BM#1 = 1/2" IRON ROD WITH CAP STAMPED "STOVALL TRAVERSES" LOCATED AT THE INTERSECTION OF THE SOUTH LINE OF LAKESHORE DRIVE WITH THE WEST LINE OF STATE HIGHWAY NO. 206.
ELEVATION = 475.75'
- BM#2 = "X" CUT ON TOP OF INLET IN THE NORTH LINE OF PECAN VALLEY DRIVE ± 56 WEST OF STATE HIGHWAY NO. 206.
ELEVATION = 498.31'

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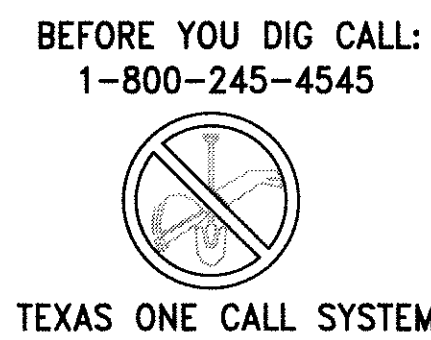
Hickman Consulting Engineers, Inc.
3094 County Road 1024
Farmersville, Texas 75442
Ph. (972)784-2499
markredhick@gmail.com
Engineers Planners

PAVING PLAN
LAKESHORE COMMONS
LOT 1; LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063

SCALE: 1"=30'
DATE: APRIL 2017
DRAWN BY: FP
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JOB NO: 1501-357
FILE: 165-1501357-LCWD
DATE

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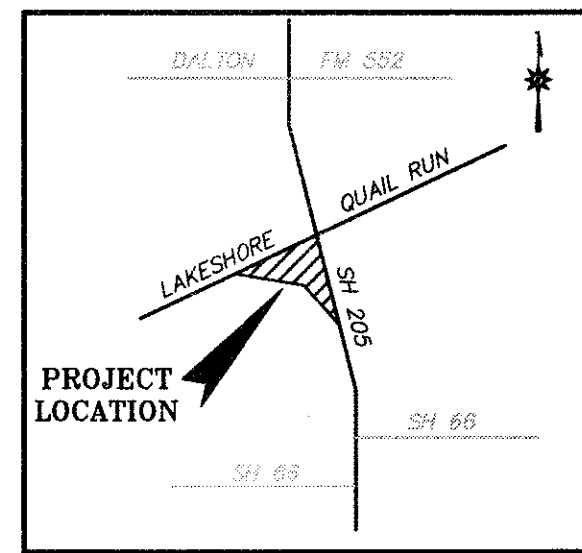
SHEET
C-3



TEXAS ONE CALL SYSTEM

1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120

2 SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.



VICINITY MAP

NOTES

- 2) OPPOSITE BENCHMARK - STEEL ROD W/ACCESS CAP STAMPED N 1495 1986 @ THE INTERSECTION OF THE NORTH LINE OF AIRPORT ROAD WITH THE WEST LINE OF THE AIRPORT ACCESS ROAD.
ELEVATION = 568.70" (VERTICAL DATUM: NAVD 1988)
- BM#1 = "1/2" IRON ROD WITH CAP STAMPED "LAKESHORE TRAVELERS" LOCATED AT THE INTERSECTION OF THE SOUTH LINE OF LAKESHORE DRIVE WITH THE WEST LINE OF STATE HIGHWAY NO. 205.
ELEVATION = 476.75"
- BM#2 = "1" CUT UP TOP OF INLET IN THE NORTH LINE OF PECAN VALLEY DRIVE ± 554.5" ELEVATION HIGHWAY NO. 205.
ELEVATION = 468.31"

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PROPOSED		EXISTING	
— 500 —	PROPOSED CONTOURS	⚡	POWER POLE
515.00	SPOT ELEVATION AT FINISHED GRADE	⦿	ANCHOR
514.00	TOP OF CURB ELEVATION	⊗	WATER METER
513.50	GUTTER ELEVATION	⊗	WATER VALVE
(W)	PROPOSED WATER LINE	⊗	IRRIGATION CONTROL VALVE
(SS)	PROPOSED SANITARY SEWER LINE	⊗	TELEPHONE PEDISTAL
(SD)	PROPOSED STORM DRAIN LINE	⊗	GAS METER
(C)	PROPOSED CONDUIT	⊗	MAILBOX
(G)	PROPOSED GAS	⊗	LIGHT POLE
(CC)	CONCRETE CURB PER CITY STD	⊗	FIRE HYDRANT
(1)	WATER SERVICE TAP NO	BL	BUILDING LINE
		UE	UTILITY EASEMENT
		DUB	DRAINAGE & UTILITY EASEMENT
		FGC	FIBER OPTIC CABLE MARKER
		GS	GAS SIGN
		SSSB	SUB SURFACE SERVICE BOX
		TS	TRAFFIC SIGN
		TS	TRAFFIC SIGNAL
		U.E.	UTILITY EASEMENT
		GS	GAS STUB
		GS	GAS TEST STATION
		BGS	BURIED CABLE SIGN

NOTE:
CONTRACTOR TO VERIFY HORIZONTAL & VERTICAL
LOCATION OF ALL EXISTING UTILITIES PRIOR
TO BEGINNING ANY CONSTRUCTION/EXCAVATION
AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES
EXISTING UTILITIES SHOWN ON THESE PLANS
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& CITY RECORD DRAWINGS

1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120

2 ALL FILL TO BE COMPACTED TO 95% STD DENSITY USING
SHEEPSFOOT ROLLER.

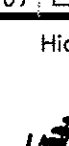
ADA/TAS SLOPE REQUIREMENTS	
ACCESSIBLE ROUTE	<5% SLOPE <2% CROSS SLOPE
RAMP & CURB RAMP	<8.33% (1:12) <2% CROSS SLOPE
TAS PARKING & ACCESS AISLE	<2% SLOPE IN ANY DIRECTION
CONTRACTOR TO ENSURE THAT GRADES ALONG ADA ROUTES MEET THESE SLOPE REQUIREMENTS	

NOTE:
PARKING & ACCESSIBLE ROUTES FOR DISABLED PERSONS SHALL BE DESIGNATED, DESIGNED & CONSTRUCTED PER CITY, TAS & ADA REQUIREMENTS

- 1 TEXTURE: SHALL CONSIST OF EXPOSED CRUSHED STONE AGGREGATE, ROUGHENED CONCRETE, RUBBER, RAISED ABRASIVE STRIPS, OR TRUNCATED DOMES (SEE SECTION 901 FOR ADDITIONAL OPTIONS). SURFACE MUST BE DETECTABLE UNDER FOOT. SURFACES THAT ARE RAISED OR ETCHED IN A WAY THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
- 2 CONTRAST: FOR PURPOSES OF WARNING, THE FULL WIDTH AND DEPTH OF CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN RAMPES.
- 3 RAMPS WITHIN THE CITY RIGHT OF WAY SHALL BE CONSTRUCTED PER CITY STANDARD DOWN TO PLUMB LINE. THE MINIMUM WIDTH OF 24" WIDE AND SHALL EXTEND THE FULL LENGTH OF THE PUBLIC USE AREA OF THE PLATFORM.

THIS RECORD DRAWING HAS BEEN PREPARED
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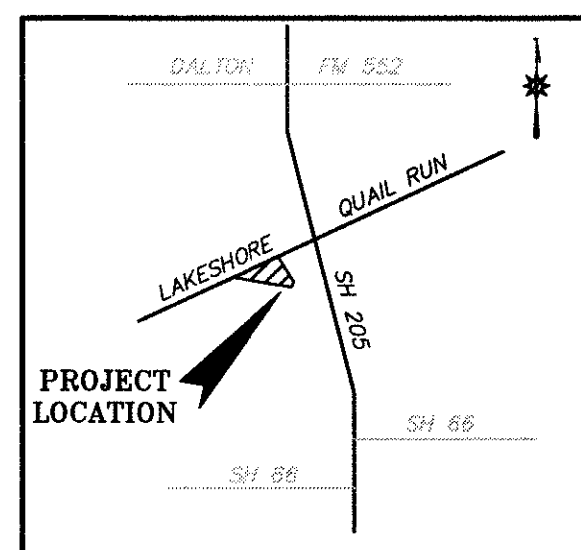
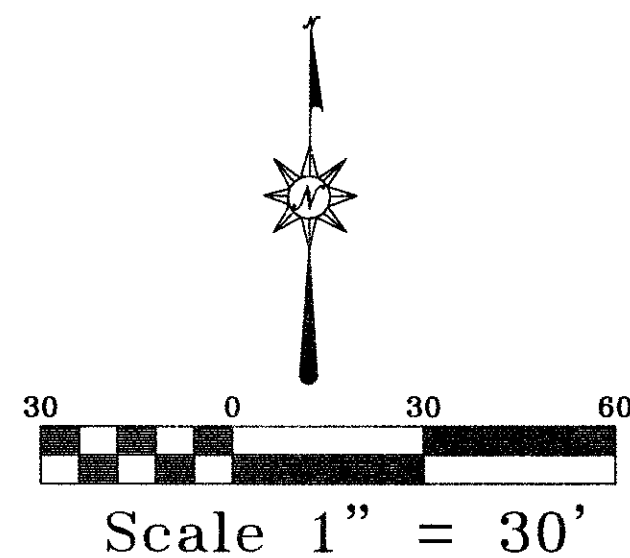
GRADING PLAN
LAKESHORE COMMONS
LOT 1; LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE NORTH INVESTMENTS, LLC
8445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

SCALE: 1"=20'	DATE: APRIL 2017	DRAWN BY: FP	CHK'D BY: MHH	JOB NO: 1501-357	FILE#65-1501357-LWD
Hickman Consulting Engineers, Inc.					DATE OF SUBMITTAL: 06/22/17(F)
					
<div style="display: flex; justify-content: space-between;"> 4/16/18 F-12172 </div>					

REVISION	DESCRIPTION	DATE	BY

SHEET

C-4



NOTES

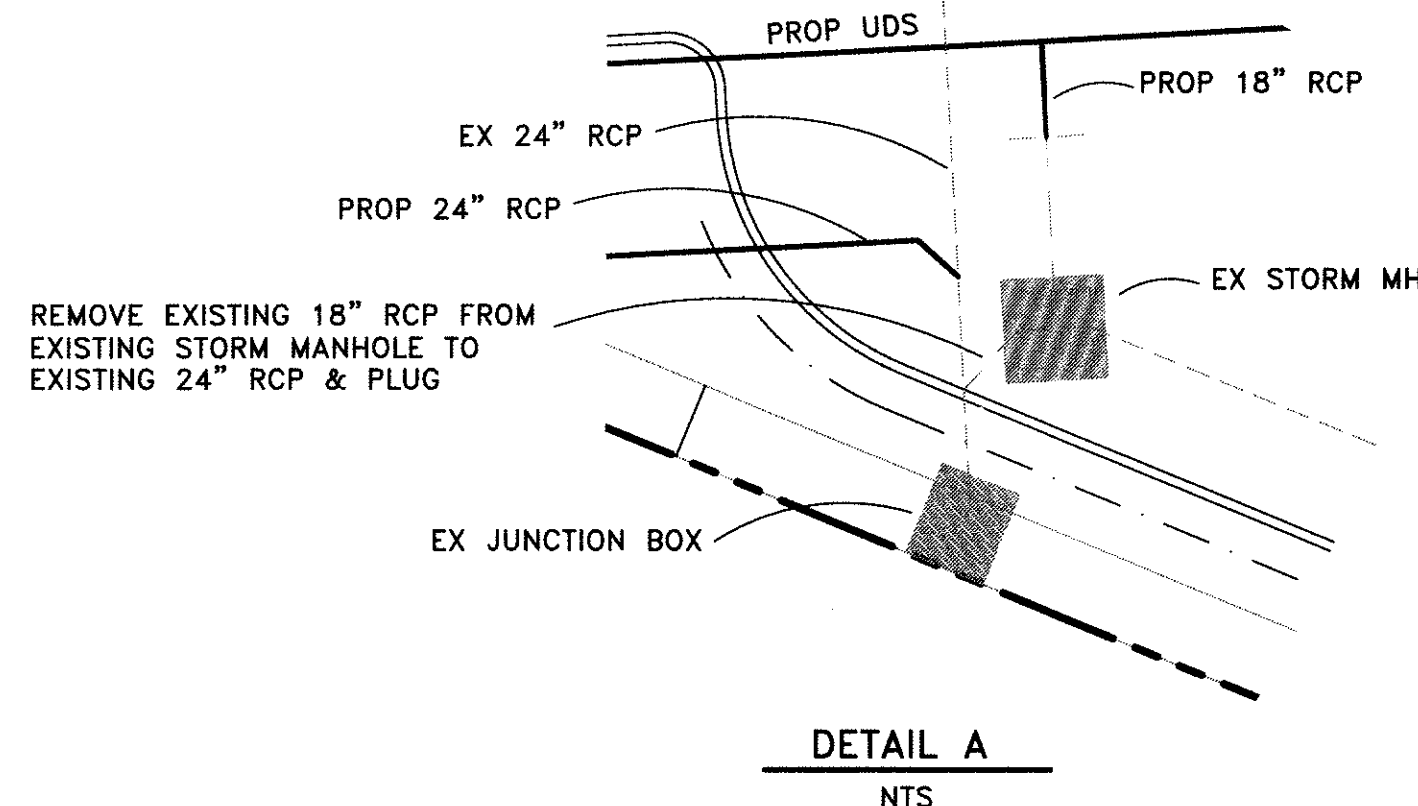
- 2) OFFSITE BENCHMARK - STEEL ROD W/ACCESS CAP STAMPED N 1486 1086 @ THE INTERSECTION OF THE NORTH LINE OF AIRPORT ROAD WITH THE WEST LINE OF THE AIRPORT ACCESS ROAD. ELEVATION = 556.70' (VERTICAL DATUM: NAVD 1988)
- BM#1 = 1/2" IRON ROD WITH CAP STAMPED "STOVALL TRAVELERS" LOCATED AT THE INTERSECTION OF THE SOUTH LINE OF LAKESHORE DRIVE WITH THE WEST LINE OF STATE HIGHWAY NO. 205. ELEVATION = 475.70'
- BM#2 = "X" CUT ON TOP OF INLET IN THE NORTH LINE OF PECAN VALLEY DRIVE ± 554' WEST OF STATE HIGHWAY NO. 205. ELEVATION = 468.31'

BEFORE YOU DIG CALL:
1-800-245-4545

TEXAS ONE CALL SYSTEM

NOTES:

- 1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120
- 2 SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.



DRAINAGE AREA CHART						
AREA	C runoff coefficient	I 100 rainfall intensity	A acres	Q ₁₀₀ cfs	CONVEYANCE	OUTFALL
1	0.90	9.80	0.61	5.38	TO STRUCTURE #1-UDS	TO CREEK
2	0.90	9.80	0.69	6.09	TO STRUCTURE #2-UDS	TO CREEK
3	0.90	9.80	0.02	0.18	REMAIN NATURAL/FLOODPLAIN	TO CREEK
4	0.90	9.80	0.14	1.23	REMAIN NATURAL/FLOODPLAIN	TO CREEK
5	0.90	9.80	0.09	0.79	SHEET FLOW-BYPASS UDS	TO N LAKESHORE DR
6	0.90	9.80	0.04	0.35	SHEET FLOW-BYPASS UDS	TO CREEK
7	0.90	9.80	0.02	0.18	SHEET FLOW-BYPASS UDS	TO CREEK

Tc = 10 min

LEGEND	
PROPOSED	EXISTING
500 - PROPOSED CONTOURS	POWER POLE
515.00 SPOT ELEVATION AT FINISHED GRADE	ANCHOR
514.00 INDICATES TOP OF STRUCTURE	WATER METER
513.50 INDICATES FLOW LINE ELEVATION	WATER VALVE
W PROPOSED WATER LINE	IRRIGATION CONTROL VALVE
SS PROPOSED SANITARY SEWER LINE	TELEPHONE PEDESTAL
SD PROPOSED STORM DRAIN LINE	GAS METER
C PROPOSED CONDUIT	MAILBOX
G PROPOSED GAS	LIGHT POLE
CC CONCRETE CURB PER CITY STD	FIRE HYDRANT
I WATER SERVICE TAP NO	BL = BUILDING LINE
	UE = UTILITY EASEMENT
	DUE = DRAINAGE & UTILITY EASEMENT
	FCC = FIBER OPTIC CABLE MARKER
	GAS = GAS SIGN
	SSSB = SUB SURFACE SERVICE BOX
	T = TRAFFIC SIGN
	TS = TRAFFIC SIGNAL
	UE = UTILITY EASEMENT
	GAS = GAS STUB
	GS = GAS TEST STATION
	BCS = BURIED CABLE SIGN

NOTES:

- 1 BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120

NOTE:
CONTRACTOR TO VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON COMBINATION OF FIELD SURVEY & CITY RECORD DRAWINGS

KEY:

DRAINAGE AREA NO (X)

DRAINAGE NOTES

- CONTRACTOR SHALL COMPLY WITH ALL CITY REQUIREMENTS AND SHALL COORDINATE WITH THE CITY WHEN CONNECTING TO PUBLIC UTILITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS TO EXISTING UTILITIES THAT MAY BE REQUIRED AS A RESULT OF HIS ACTIVITIES.
- THE CONTRACTOR SHALL COMPLY WITH TEXAS HOUSE BILL 1569 AND PROVIDE A TRENCH SAFETY SYSTEM DESIGN.
- ALL CONCRETE PIPE JOINTS SHALL BE SEALED WITH RAMNECK OR APPROVED EQUAL.
- ALL CONNECTIONS SHALL BE WATERTIGHT.
- ALL EXISTING APPURTENANCES SHALL BE ADJUSTED TO PROPOSED FINISHED ELEVATION.
- MAINTENANCE OF PRIVATE STORM DRAINS AND DETENTION SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
- THE DETENTION SYSTEM SHALL BE IN PLACE AND FUNCTIONING PER APPROVED PLANS PRIOR TO ANY PAVING OR SLAB BEING INSTALLED.

RECORD DRAWING

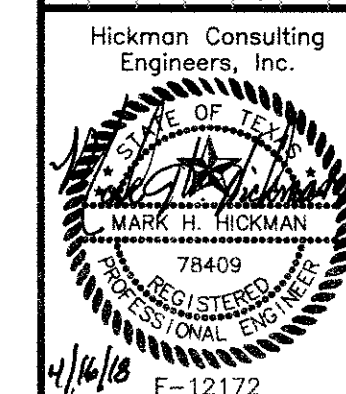
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Hickman Consulting Engineers, Inc.
3094 County Road 1024
Farmersville, Texas 75442
Ph: (972) 794-2489
marc@hce-engineers.com
Engineers

DRAINAGE PLAN
LAKESHORE COMMONS
LOT 1: LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE NORTH INVESTMENTS, LLC
8445 FREEMONT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

SCALE: 1"=30'
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE NO: 1501357-Low
DATE SUBMITTAL: 06/22/17



DATE	BY
DESCRIPTION	
REVISION	

SHEET
C-5

5 YEAR STORM

AREA	ACRE	C	Tc	I _h	Q _h
PRE-DEV (AREAS 1, 2 & 5-7)	1.45	0.35	20	4.9	2.49
POST-DEV BYPASS (AREA 5-7)	0.15	0.90	10	6.1	0.82

$$\text{Allowable Q from Pond} = Q_{h0} - Q_{by \text{ Pass}} = Q_{\text{Design}}$$

$$\text{Allowable Q from Pond} = 2.49 - 0.82 = 1.67 \text{ cfs}$$

A = 1.45 ACRES				
DURATION	I _h	CA	Q _h	
10	6.1	1.305	7.98	
20	4.9	1.305	6.39	
30	4.1	1.305	5.35	
40	3.4	1.305	4.44	
50	2.8	1.305	3.65	
60	2.6	1.305	3.39	
70	2.4	1.305	3.13	
80	2.3	1.305	3.00	

10 YEAR STORM

AREA	ACRE	C	Tc	I _h	Q _h
PRE-DEV (AREAS 1, 2 & 5-7)	1.45	0.35	20	5.9	2.99
POST-DEV BY-PASS (AREA 5-7)	0.15	0.90	10	7.1	0.96

$$\text{Allowable Q from Pond} = Q_{h0} - Q_{by \text{ Pass}} = Q_{\text{Design}}$$

$$\text{Allowable Q from Pond} = 2.99 - 0.96 = 2.03 \text{ cfs}$$

A = 1.45 ACRES				
DURATION	I _h	CA	Q _h	
10	7.1	1.305	9.27	
20	5.9	1.305	7.70	
30	4.8	1.305	6.26	
40	4.0	1.305	5.22	
50	3.5	1.305	4.57	
60	3.0	1.305	3.92	
70	2.8	1.305	3.65	
80	2.6	1.305	3.39	

25 YEAR STORM

AREA	ACRE	C	Tc	I _h	Q _h
PRE-DEV (AREAS 1, 2 & 5-7)	1.45	0.35	20	6.8	3.35
POST-DEV BY-PASS (AREA 5-7)	0.15	0.90	10	8.3	1.12

$$\text{Allowable Q from Pond} = Q_{h0} - Q_{by \text{ Pass}} = Q_{\text{Design}}$$

$$\text{Allowable Q from Pond} = 3.35 - 1.12 = 2.23 \text{ cfs}$$

A = 1.45 ACRES				
DURATION	I _h	CA	Q _h	
10	8.3	1.305	10.83	
20	6.6	1.305	8.61	
30	5.5	1.305	7.18	
40	4.6	1.305	6.00	
50	4.0	1.305	5.22	
60	3.5	1.305	4.57	
70	3.3	1.305	4.31	
80	3.1	1.305	4.05	
90	2.9	1.305	3.78	
100	2.4	1.305	3.13	

100 YEAR STORM

AREA	ACRE	C	Tc	I _h	Q _h
PRE-DEV (AREAS 1, 2 & 5-7)	1.45	0.35	20	8.3	4.21
POST-DEV BYPASS (AREA 5-7)	0.15	0.90	10	9.8	1.32

$$\text{Allowable Q from Pond} = Q_{h0} - Q_{by \text{ Pass}} = Q_{\text{Design}}$$

$$\text{Allowable Q from Pond} = 4.21 - 1.32 = 2.89 \text{ cfs}$$

A = 1.45 ACRES				
DURATION	I _h	CA	Q _h	
10	9.8	1.305	12.79	
20	8.3	1.305	10.83	
30	6.9	1.305	9.00	
40	5.8	1.305	7.57	
50	5.0	1.305	6.53	
60	4.5	1.305	5.67	
70	4.0	1.305	5.22	
80	3.7	1.305	4.83	
90	3.5	1.305	4.57	
100	3.3	1.305	4.31	
110	3.0	1.305	3.92	

UDS STAGE/STORAGE CALCS

CMP: Underground Detention System
Storage Volume Estimation

Adjustable Input Cells

Contech Engineered Solutions, LLC is pleased to offer the following estimate of storage volume for the above named project. The results are submitted as an estimate only, without liability on the part of Contech Engineered Solutions, LLC for accuracy or suitability to any particular application and are subject to verification of the Engineer of Record. This tool is only applicable for rectangular shaped systems.

System Information			Summary of Inputs			Pipe & Analysis Information		
System Diameter (in):	60.0		Backfill Porosity (%):	0.0		System Diameter (in):	60.0	
Out-to-out length (ft):	100.0		Depth Above Pipe (in):	0.0		Pipe Spacing (in):	60.0	
Out-to-out width (ft):	10.0		Depth Below Pipe (in):	0.0		Incremental Analysis (in):	60.0	
Number of Manifolds (ea):	1.0		Width At Ends (ft):	0.0		System Invert (Elevation):	465.04	
Number of Barrels (ea):	1.0		Width At Sides (ft):	0.0				

Storage Volume Estimation									
System		Pipe		Stone		Total System		Miscellaneous	
Depth (ft)	Elevation (ft)	Incremental Storage (cf)	Cumulative Storage (cf)	Incremental Storage (cf)	Cumulative Storage (cf)	Incremental Storage (cf)	Cumulative Storage (cf)	Percent Open	Ave. Surface Area (sf)
0.00	462.56	0.0	0.0	0.0	0.0	0.0	0.0	0.0%	0.0
0.17	462.72	168.5	168.5	0.0	0.0	168.5	168.5	100.0%	1,506.1
0.33	462.89	303.2	471.7	0.0	0.0	303.2	471.7	100.0%	2,062.8
0.50	463.06	385.7	857.4	0.0	0.0	385.7	857.4	100.0%	2,517.0
0.67	463.22	448.4	1,305.8	0.0	0.0	448.4	1,305.8	100.0%	2,862.1
0.83	463.39	498.9	1,804.7	0.0	0.0	498.9	1,804.7	100.0%	3,126.8
1.00	463.56	540.8	2,345.5	0.0	0.0	540.8	2,345.5	100.0%	3,356.0
1.17	463.72	575.8	2,921.3	0.0	0.0	575.8	2,921.3	100.0%	3,548.6
1.33	463.89	605.3	3,526.6	0.0	0.0	605.3	3,526.6	100.0%	3,710.2
1.50	464.06	629.9	4,156.6	0.0	0.0	629.9	4,156.6	100.0%	3,844.8
1.67	464.22	650.3	4,806.9	0.0	0.0	650.3	4,806.9	100.0%	3,955.1
1.83	464.39	666.8	5,473.7	0.0	0.0	666.8	5,473.7	100.0%	4,043.1
2.00	464.56	679.7	6,153.4	0.0	0.0	679.7	6,153.4	100.0%	4,110.2
2.17	464.72	689.3	6,842.7	0.0	0.0	689.3	6,842.7	100.0%	4,157.5
2.33	464.89	695.5	7,538.2	0.0	0.0	695.5	7,538.2	100.0%	4,185.7
2.50	465.06	698.6	8,236.9	0.0	0.0	698.6	8,236.9	100.0%	4,195.0
2.67	465.22	698.6	8,935.5	0.0	0.0	698.6	8,935.5	100.0%	4,185.7
2.83	465.39	695.5	9,631.0	0.0	0.0	695.5	9,631.0	100.0%	4,157.5
3.00	465.56	689.3	10,320.3	0.0	0.0	689.3	10,320.3	100.0%	4,110.2
3.17	465.72	679.7	11,000.0	0.0	0.0	679.7	11,000.0	100.0%	4,043.1
3.33	465.89	666.8	11,666.8	0.0	0.0	666.8	11,666.8	100.0%	3,955.1
3.50	466.06	650.3	12,317.1	0.0	0.0	650.3	12,317.1	100.0%	3,844.8
3.67	466.22	629.9	12,947.1	0.0	0.0	629.9	12,947.1	100.0%	3,710.2
3.83	466.39	605.3	13,552.4	0.0	0.0	605.3	13,552.4	100.0%	3,548.6
4.00	466.56	575.8	14,128.2	0.0	0.0	575.8	14,128.2	100.0%	3,356.0
4.17	466.72	540.8	14,669.0	0.0	0.0	540.8	14,669.0	100.0%	3,126.8
4.33	466.89	498.9	15,168.0	0.0	0.0	498.9	15,168.0	100.0%	2,862.1
4.50	467.06	448.4	15,616.4	0.0	0.0	448.4	15,616.4	100.0%	2,517.0
4.67	467.22	385.7	16,002.1	0.0	0.0	385.7	16,002.1	100.0%	2,062.8
4.83	467.39	303.2	16,305.2	0.0	0.0	303.2	16,305.2	100.0%	1,506.1
5.00	467.56	168.5	16,473.7	0.0	0.0	168.5	16,473.7	100.0%	0.0

These results are submitted to you as a guideline only, without liability on the part of CONTECH Engineered Solutions, LLC for accuracy or suitability to any particular application, and are subject to your verification.

POND VOLUME CALCULATIONS - 5 YEAR STORM				
10	10 * 7.96 * 60 = 4776			
0.50 * 20 * 1.67 * 60 = 1002				
	3774 ft. ³			
20	20 * 6.39 * 60 = 7668			
0.50 * 30 * 1.67 * 60 = 1503				
	6165 ft. ³			
30	30 * 5.35 * 60 = 9630			
0.50 * 40 * 1.67 * 60 = 2004				
	7626 ft. ³			
40	40 * 4.44 * 60 = 10,656			
0.50 * 50 * 1.67 * 60 = 2505				
	8151 ft. ³			
50	50 * 3.65 * 60 = 10,950			
0.50 * 60 * 1.67 * 60 = 3006				
	7944 ft. ³			

PEAK STORM = 40 MIN.
REQUIRED STORAGE = 8151 ft.³

ELEVATION @ 8151 ft.³ = 465.04

POND VOLUME CALCULATIONS - 10 YEAR STORM				
10	10 * 9.27 * 60 = 5562			
0.50 * 20 * 2.03 * 60 = 1218				
	4344 ft. ³			
20	20 * 7.70 * 60 = 9240			
0.50 * 30 * 2.03 * 60 = 1827				
	7413 ft. ³			
30	30 * 6.26 * 60 = 11,268			
0.50 * 40 * 2.03 * 60 = 2436				
	8832 ft. ³			
40	40 * 5.22 * 60 = 12,528			
0.50 * 50 * 2.03 * 60 = 3045				
	9483 ft. ³			
50	50 * 4.57 * 60 = 13,710			
0.50 * 60 * 2.03 * 60 = 3654				
	10,056 ft. ³			
60	60 * 3.92 * 60 = 14,112			
0.50 * 70 * 2.03 * 60 = 4263				
	9849 ft. ³			

PEAK STORM = 50 MIN.
REQUIRED STORAGE = 10,056 ft.³

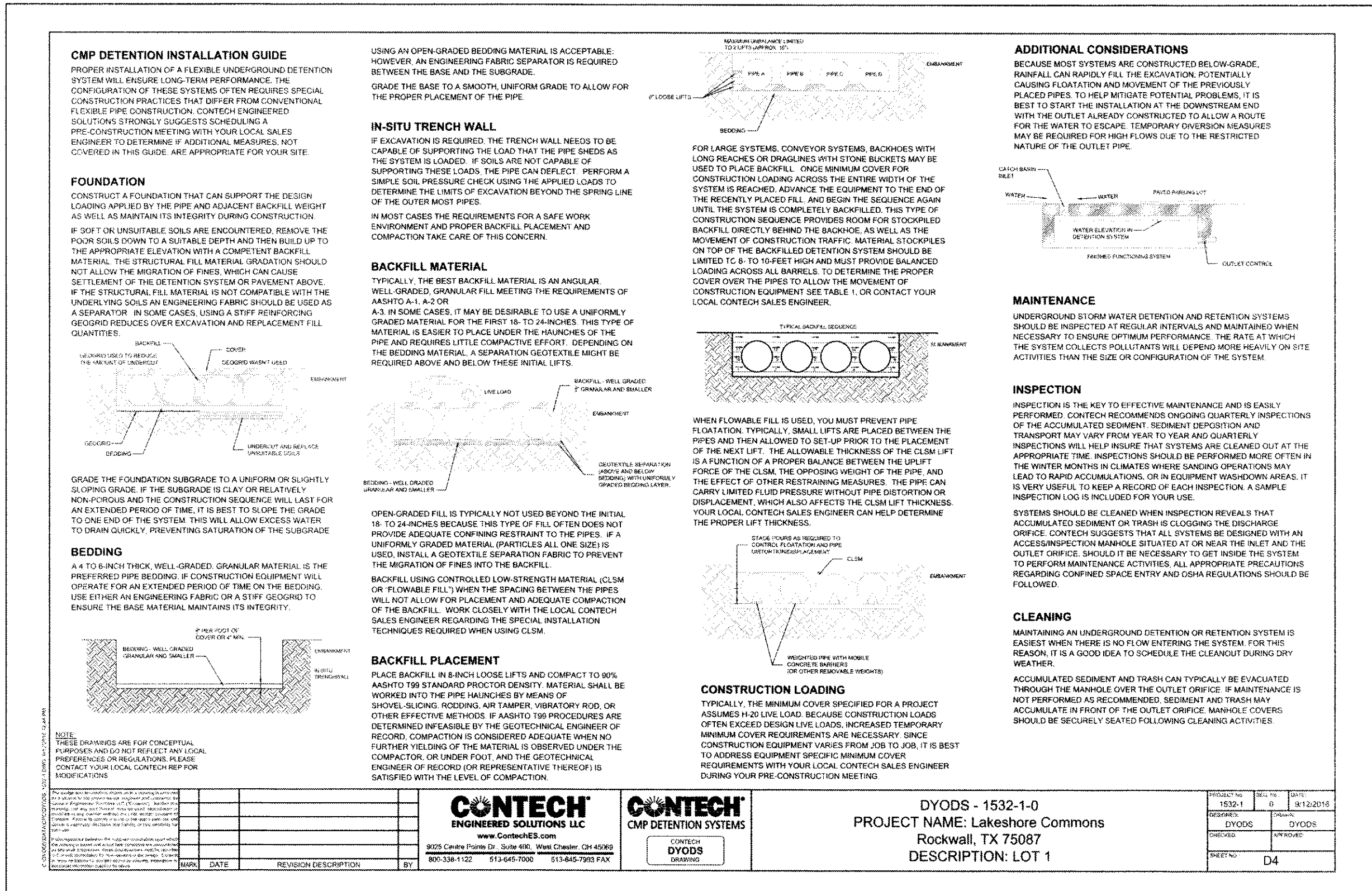
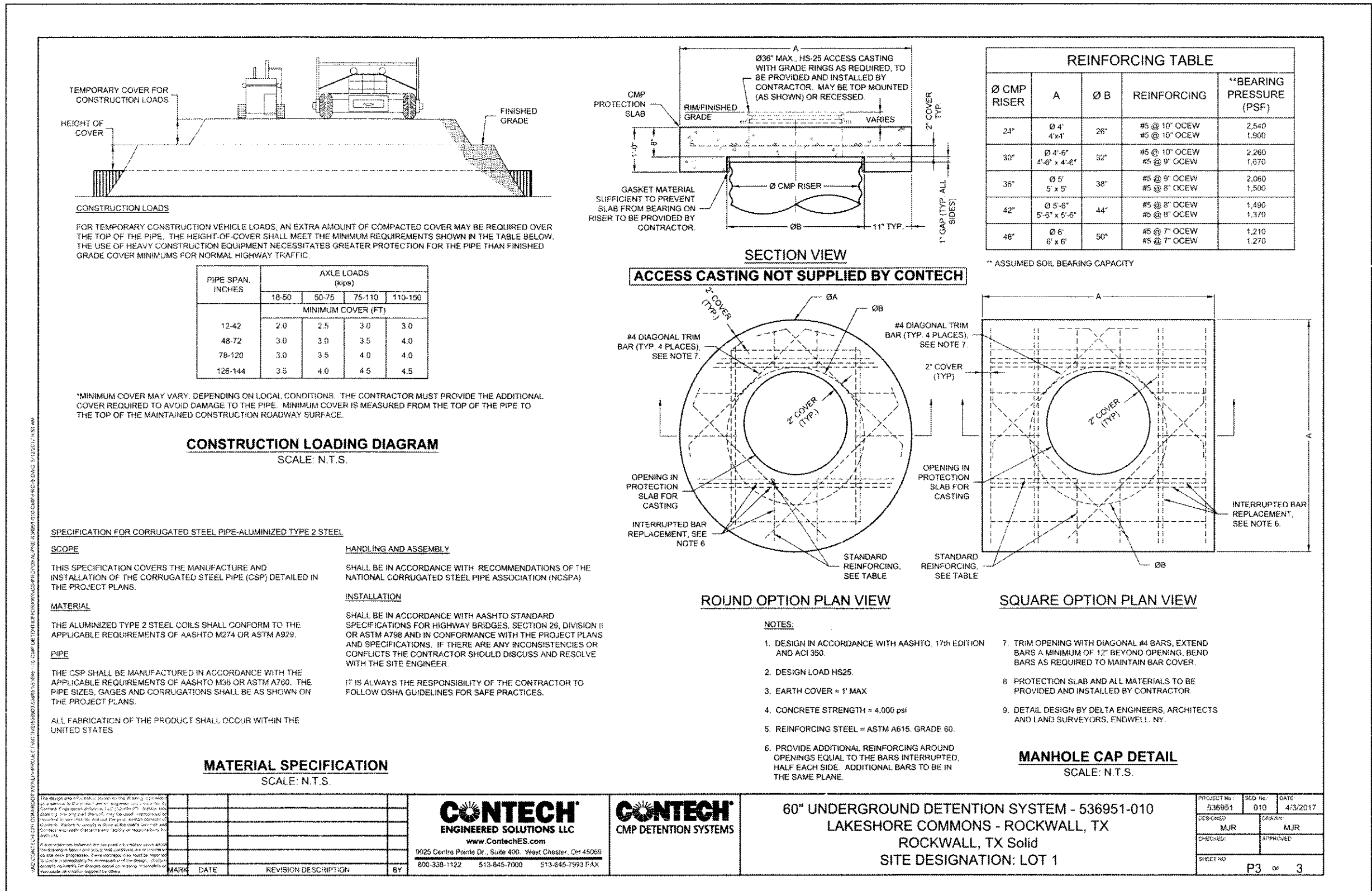
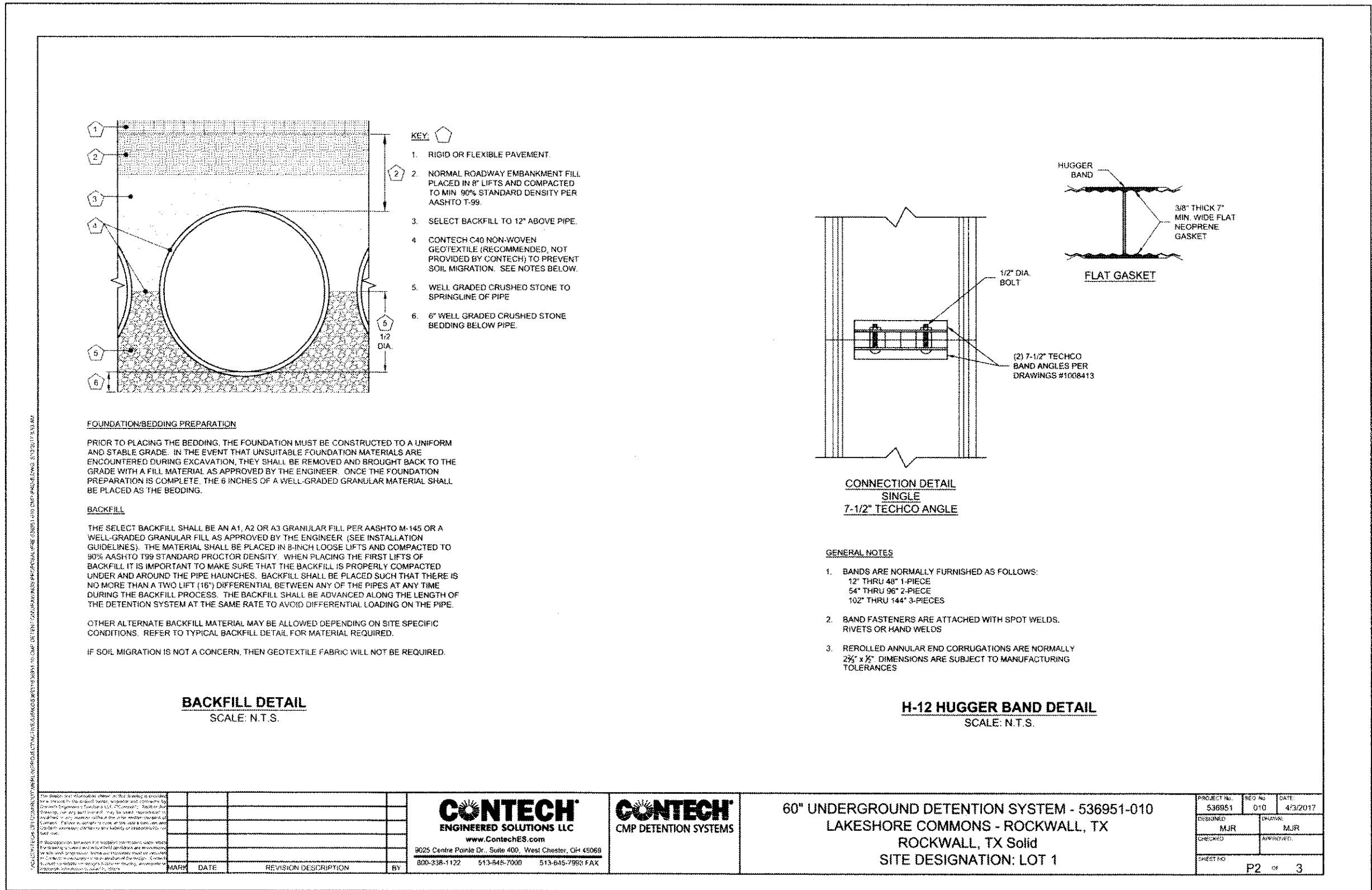
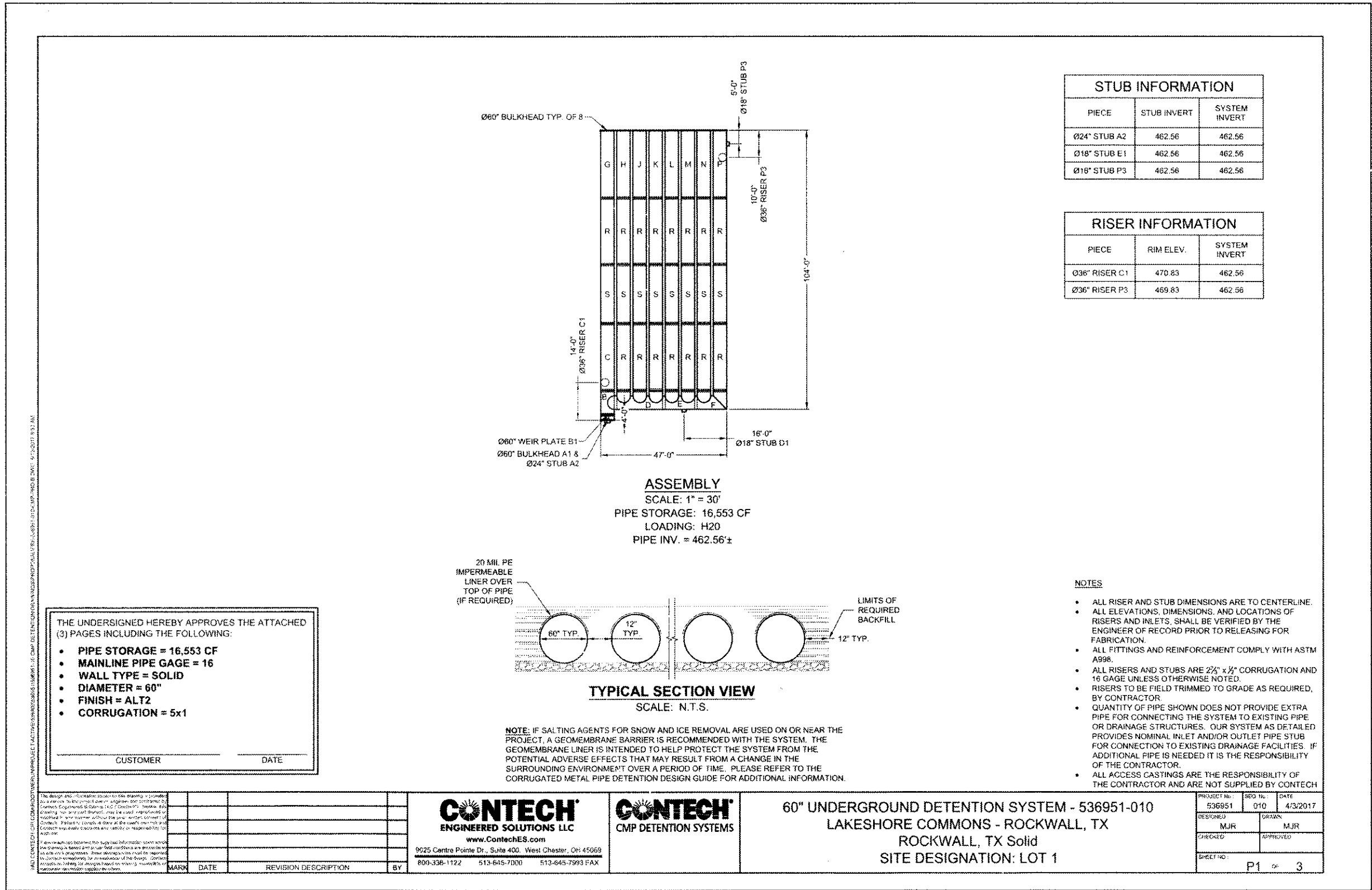
ELEVATION @ 10,056 ft.³ = 465.49

POND VOLUME CALCULATIONS - 25 YEAR STORM				
10	10 * 10.83 * 60 = 6498			
0.50 * 20 * 2.23 * 60 = 1338				
	5160 ft. ³			
20	20 * 8.61 * 60 = 10,332			
0.50 * 30 * 2.23 * 60 = 2007				
	8325 ft. ³			
30	30 * 7.18 * 60 = 12,924			
0.50 * 40 * 2.23 * 60 = 2676				
	10,248 ft. ³			
40	40 * 6.00 * 60 = 14,400			
0.50 * 50 * 2.23 * 60 = 3445				
	11,055 ft. ³			
50	50 * 5.22 * 60 = 15,660			
0.50 * 60 * 2.23 * 60 = 4014				
	11,646 ft. ³			
60	60 * 4.57 * 60 = 16,452			
0.50 * 70 * 2.23 * 60 = 4683				
	11,769 ft. ³			
70	70 * 4.31 * 60 = 18,102			
0.50 * 80 * 2.23 * 60 = 5352				
	12,750 ft. ³			
80	80 * 4.05 * 60 = 19,440			
0.50 * 90 * 2.23 * 60 = 6021				
	13,419 ft. ³			
90	90 * 3.78 * 60 = 20,412			
0.50 * 100 * 2.23 * 60 = 6990				
	13,722 ft. ³			
100	100 * 3.13 * 60 = 18,780			
0.50 * 110 * 2.23 * 60 = 7359				
	11,421 ft. ³			

PEAK STORM = 90 MIN.
REQUIRED STORAGE = 13,722 ft.³

ELEVATION @ 13,722 ft.³ = 466.44

POND VOLUME CALCULATIONS - 100 YEAR STORM				
10	$10 * 12.79 * 60 =$	7674		
	$0.50 * 20 * 2.89 * 60 =$	1734		
		<u>5940</u>	ft. ³	
20	$20 * 10.83 * 60 =$	12,996		
	$0.50 * 30 * 2.89 * 60 =$	2601		
		<u>10,395</u>	ft. ³	
30	$30 * 9.00 * 60 =$	16,200		
	$0.50 * 40 * 2.89 * 60 =$	3468		
		<u>12,732</u>	ft. ³	
40	$40 * 7.57 * 60 =$	18,168		
	$0.50 * 50 * 2.89 * 60 =$	4335		
		<u>13,833</u>	ft. ³	
50	$50 * 6.53 * 60 =$	19,590		
	$0.50 * 60 * 2.89 * 60 =$	5202		
		<u>14,388</u>	ft. ³	
60	$60 * 5.87 * 60 =$	21,132		
	$0.50 * 70 * 2.89 * 60 =$	6069		
		<u>15,063</u>	ft. ³	
70	$70 * 5.22 * 60 =$	21,924		
	$0.50 * 80 * 2.89 * 60 =$	6936		
		<u>14,988</u>	ft. ³	
80	$80 * 4.83 * 60 =$	23,184		
	$0.50 * 90 * 2.89 * 60 =$	7803		
		<u>15,381</u>	ft. ³	
90	$90 * 4.57 * 60 =$	24,678		
	$0.50 * 100 * 2.89 * 60 =$	8670		
		<u>16,008</u>	ft. ³	
100	$100 * 4.31 * 60 =$	25,860		
	$0.50 * 110 * 2.89 * 60 =$	9333		
		<u>16,527</u>	ft. ³	
110	$110 * 3.92 * 60 =$	25,672		
	$0.50 * 120 * 2.89 * 60 =$	10,404		
		<u>15,468</u>	ft. ³	



RECORD DRAWING

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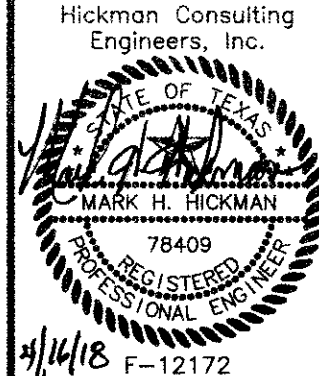
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3094 County Road 1024
Farmersville, TX 77942
Ph: (727) 828-2990
markredhick@gmail.com
Engineers Planners

HCE

UDS DETAILS
LAKESHORE COMMONS
LOT 1: LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
8445 FREEST PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9933

SCALE: N/A
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: WHH
JOB NO: 1501-357
FILE NO: 1501-357-LWD
DATE SUBMITTED: 06/22/17

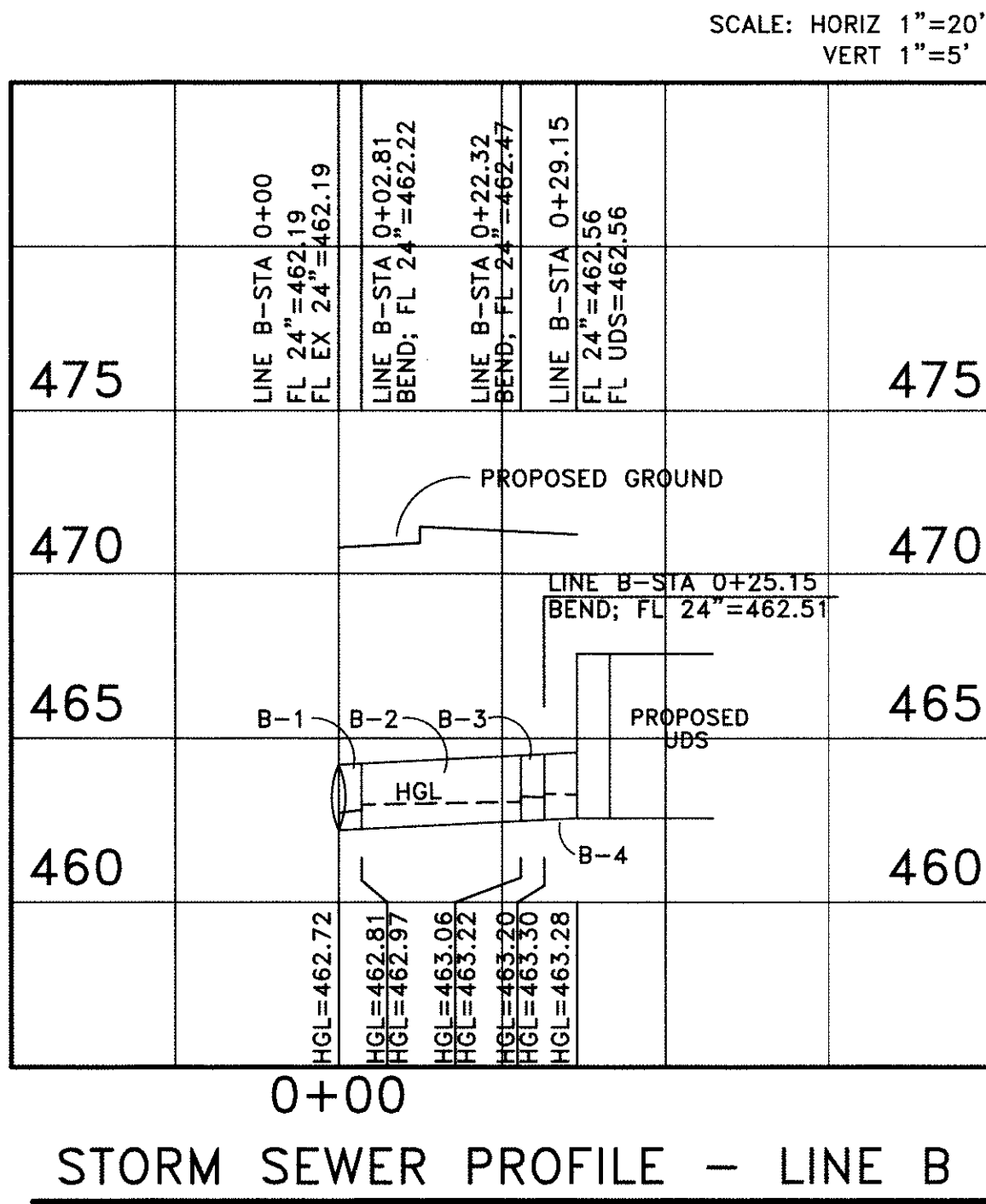
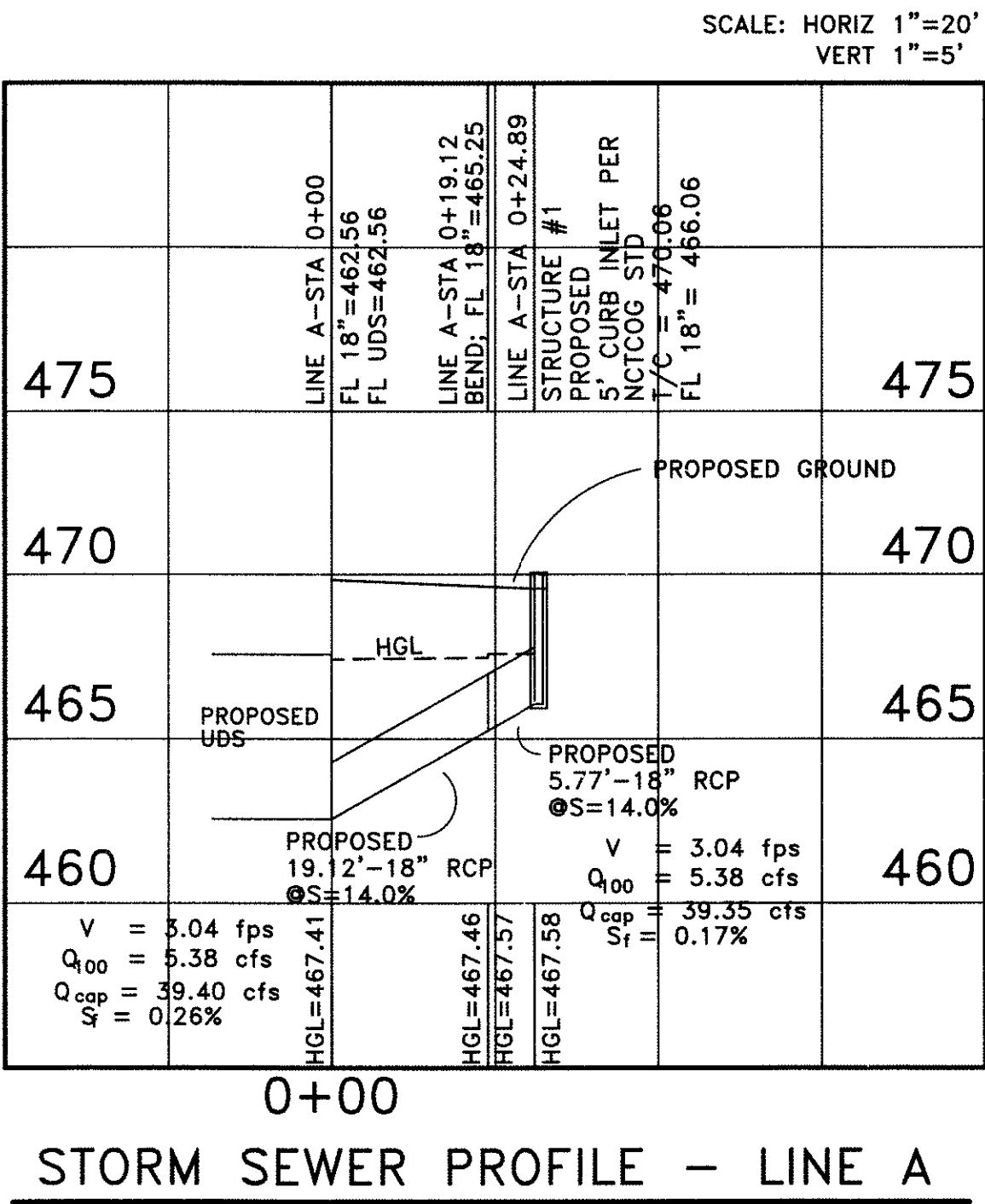


REVISION	DATE	BY	DESCRIPTION
1	04/20/17	FP	ISSUED FOR PERMIT
2	06/22/17	WHH	REVISIONS

SHEET
C-7

NOTE:
CONC ENCASE WATER LINE WHERE
9' OF HORIZONTAL & VERTICAL CLEARANCE
TO SANITARY SEWER LINE CANNOT BE MAINTAINED
ENCASEMENT SHALL BE CENTERED ON CROSSING
AND EXTENDED 10' EACH WAY-TOTAL 20' ENCASEMENT

CONC ENCASE SANITARY SEWER LINE WHERE
2' OF VERTICAL CLEARANCE TO STORM SEWER
LINE CANNOT BE MAINTAINED
ENCASEMENT SHALL BE CENTERED ON CROSSING
AND EXTENDED 10' EACH WAY-TOTAL 20' ENCASEMENT

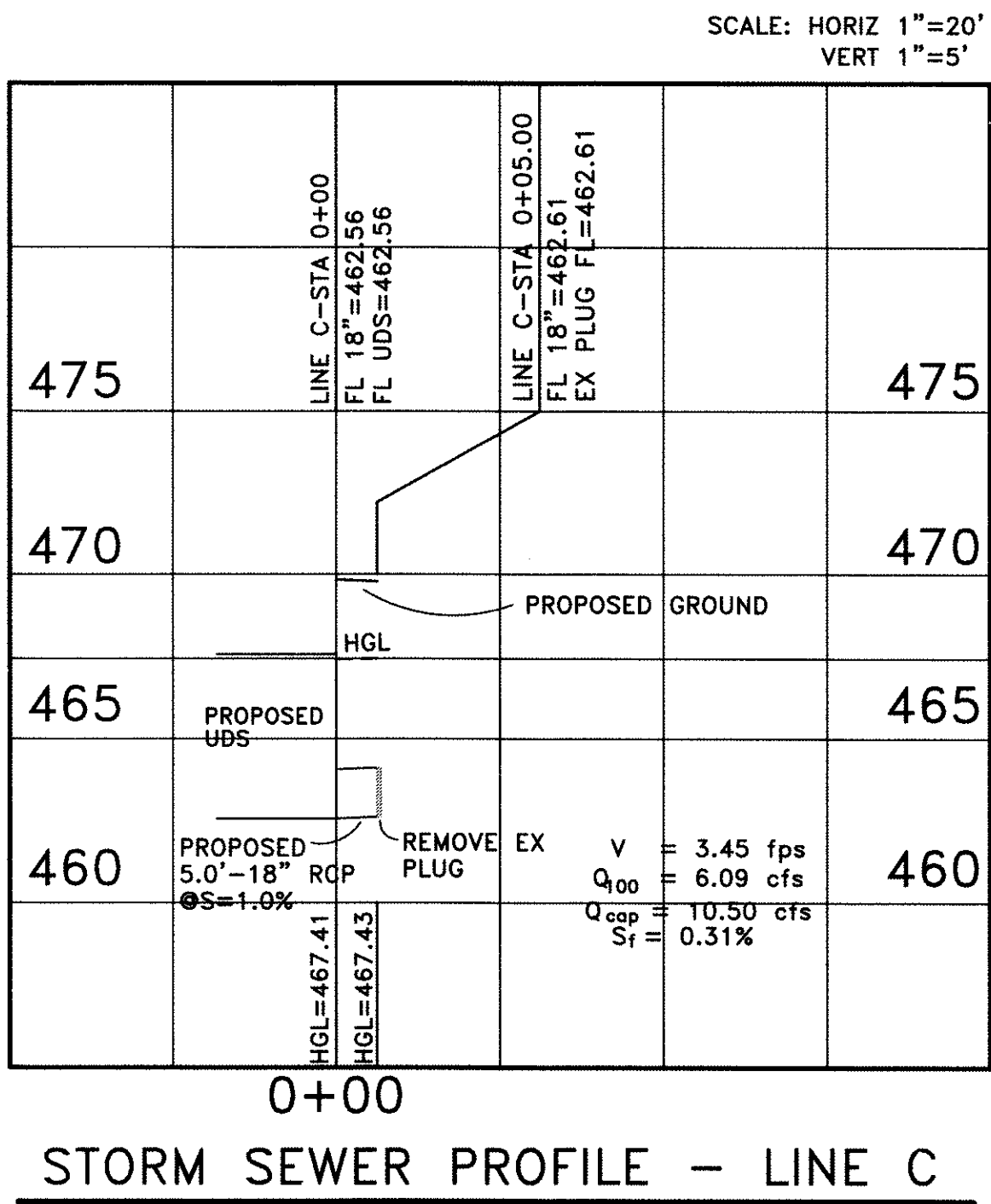


SEGMENT B-1:
PROPOSED
2.81'-24" RCP
S=1.27%
V = 5.06 fps
Q₀₀ = 2.89 cfs
Q_{cap} = 23.37 cfs
S_f = 3.20%

SEGMENT B-2:
PROPOSED
19.51'-24" RCP
S=1.27%
V = 5.40 fps
Q₀₀ = 2.89 cfs
Q_{cap} = 25.61 cfs
S_f = 0.46%

SEGMENT B-3:
PROPOSED
2.83'-24" RCP
S=1.27%
V = 5.59 fps
Q₀₀ = 2.89 cfs
Q_{cap} = 26.89 cfs
S_f = -0.71%

SEGMENT B-4:
PROPOSED
4.01'-24" RCP
S=1.27%
V = 5.35 fps
Q₀₀ = 2.89 cfs
Q_{cap} = 25.29 cfs
S_f = -0.50%



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INLET DESIGN CALCULATIONS

INLET ID	LOCATION				DESIGN FREQ	AREA RUNOFF					UPSTREAM BYPASS	TOTAL GUTTER FLOW Qa	GUTTER FLOW												INLET CAPACITY										INLET BYPASS		REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	ALIGNMENT	STATION	OFFSET	C		AREA ID	Tc	INTENSITY I	AREA A	RUNOFF Q			THOROUGH --FARE TYPE	ON--GRADE/SAG	MANNING'S n	LONG SLOPE S	CROWN TYPE	CROSS SLOPE		DEPRESSION DEPTH a	WIDTH W	PONDING WIDTH (allow) Tallow	SPREAD (actual) Tactual	DEPTH OF (allow) Tallow	GUTTER/FLOW (actual) Tactual	MAX ALLOWABLE FLOW BASED ON MAX PONDING WIDTH Qallowable cfs	DEPRESSED AREA Aw	GUTTER WETTED PERIMETER Pw	SEC. SEC BEYOND AREA Ao	DEPRESSION WETTED PERIMETER Po	CONVEYANCE		RATIO OF DEPRESSION FLOW TO TOTAL FLOW Eo	EQUIVALENT CROSS-SLOPE Ss	INLET LENGTH			INLET CAPACITY Qc	FLOW Qb	C* A	TO INLET ID																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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STORM SEWER CALCULATIONS

SYSTEM ID	CONDUIT PROPERTIES														INCREMENTAL DRAINAGE AREA								UP—STREAM Tc	DESIGN STORM FREQ	INTENSITY I	RUNOFF Q	CONDUIT CAPACITY Qc	PARTIAL FLOW	VELOCITY V	TIME IN CONDUIT	FRICTION SLOPE Sf	FRICTION HEAD—LOSS	HGL		HEADLOSS CALCULATIONS						DESIGN HGL	TOP OF CURB ELEV	HGL DEPTH BELOW T/C	REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	COLLECTION POINT STA		LENGTH	# OF BARRELS	PIPE SIZE	BOX		TYPE	AREA	WETTED PERIMETER Pw	HYDRAULIC RADIUS	MANNING'S n	FLOWLINE ELEVATION		SLOPE	INLET ID	AREA	RUNOFF COEFF C	INCRE—MENTAL C*A	ACCUM—ULATED C*A	U/S	D/S											JCT TYPE	COEFF Kf	HEADLOSS HL	U/S	D/S	V ² / _{2g}	V ² / _{2g}																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	U/S	D/S				SPAN	RISE						U/S	D/S																																		U/S	D/S	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft

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**LOT 1; LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
8445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063**

SCALE: N/A
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE: 165-1501357-LCWD
DATE:

Hickman Consulting Engineers, Inc.

Mark H. Hickman

STATE OF TEXAS

MARK H. HICKMAN

78409

REGISTERED PROFESSIONAL ENGINEER

2/16/18 F-12172

[illegible]

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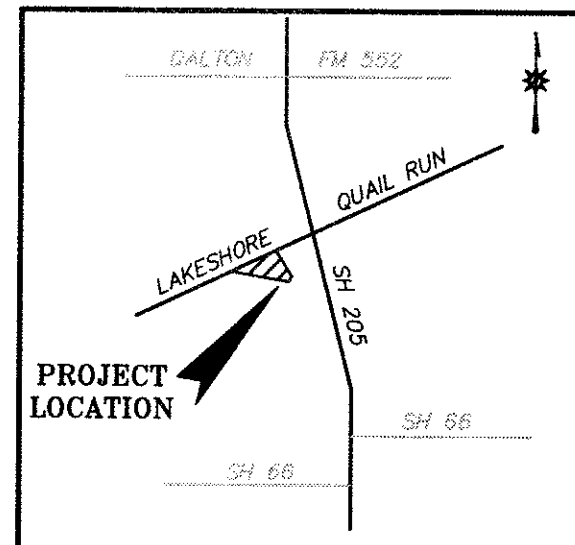
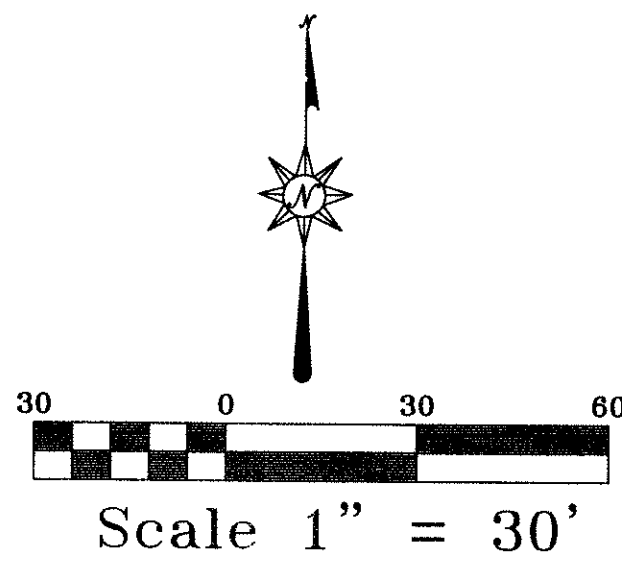
ATION

DESCRIPTION

1. The first step is to identify the key components of the system. This includes understanding the hardware, software, and data involved. For example, in a web application, this might involve identifying the server, database, and client-side code.

[illegible]

SHEET
C-9



NOTES:

- BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120
- SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.

LEGEND	
PROPOSED	EXISTING
500 - PROPOSED CONTOURS	☉ = POWER POLE
515.00 SPOT ELEVATION AT FINISHED GRADE	☐ = ANCHOR
514.00 INDICATES TOP OF STRUCTURE	⊕ = WATER METER
513.50 INDICATES FLOW LINE ELEVATION	⊕ = WATER VALVE
W - PROPOSED WATER LINE	⊕ = IRRIGATION CONTROL VALVE
SS - PROPOSED SANITARY SEWER LINE	⊕ = TELEPHONE PEDESTAL
SD - PROPOSED STORM DRAIN LINE	⊕ = GAS METER
C - PROPOSED CONDUIT	⊕ = MAILBOX
G - PROPOSED GAS	⊕ = LIGHT POLE
CONCRETE CURB PER CITY STD	⊕ = FIRE HYDRANT
1 - WATER SERVICE TAP NO	BL = BUILDING LINE
	DU = DRAINAGE & UTILITY EASEMENT
	FDC = FIBER OPTIC CABLE MARKER
	GAS = GAS SIGN
	SSSB = SUB SURFACE SERVICE BOX
	⊕ = TRAFFIC SIGN
	U.E. = UTILITY EASEMENT
	⊕ = GAS STUB
	⊕ = GAS TEST STATION
	⊕ = BURIED CABLE SIGN

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NOTE:
CONTRACTOR TO VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION/EXCAVATION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES EXISTING UTILITIES SHOWN ON THESE PLANS ARE BASED ON COMBINATION OF FIELD SURVEY & CITY RECORD DRAWINGS

WATER & WASTEWATER NOTES:

- ALL WATER AND SANITARY SEWER MAIN CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY OR EASEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) GUIDELINES FOR CONSTRUCTION OF PUBLIC WATER AND SEWER SYSTEMS. WATER AND SANITARY SERVICES SHALL BE TESTED IN ACCORDANCE WITH CITY STANDARDS AND SPECIFICATIONS.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL MAINTAIN EXISTING SANITARY SEWER AND WATER SERVICE AT ALL TIMES DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE "AS-BUILT" PLANS TO THE OWNER SO THAT THE REPRODUCIBLES OF THE PLANS MAY BE CORRECTED TO REFLECT "AS-BUILT" CONDITIONS.
- THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN ALL NECESSARY WARNING AND SAFETY DEVICES (FLASHING LIGHTS, BARRICADES, SIGNS, ETC.) TO PROTECT THE PUBLIC SAFETY AND HEALTH UNTIL ALL WORK HAS BEEN COMPLETED AND ACCEPTED BY THE CITY.
- THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND VERIFY IN THE FIELD ANY UTILITIES THAT MAY CONFLICT WITH HIS CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ANY RELOCATION OR ADJUSTMENT COST ASSOCIATED WITH HIS WORK. AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION IN THE VICINITY OF EXISTING UNDERGROUND UTILITIES, THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES TO LOCATE ALL UNDERGROUND UTILITIES.
- ALL SANITARY SEWER PIPES SHALL BE SDR 35 CLASS 150 AND SHALL BE TESTED IN ACCORDANCE WITH CITY REQUIREMENTS.
- ALL DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE AND RIGHT-OF-WAY OR PROPERTY LINE, UNLESS NOTED OTHERWISE.
- WATER SERVICES SHALL BE TYPE K COPPER, LOCATED AS INDICATED ON THE PLANS. METER BOXES
- SANITARY SEWER LATERALS SHALL BE AS INDICATED ON THE PLAN.
- EMBEDMENTS SHALL BE PER CITY REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN AND BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO HIS WORK.
- ALL WATER METERS ARE TO BE LOCATED IN NON-TRAFFIC AREAS.
- CONSTRUCTION SHALL NOT PROCEED ABOVE THE FOUNDATION PRIOR TO COMPLETION OF ALL FIRE LANES AND FIRE HYDRANTS.
- ALL SANITARY SEWER LATERALS OUTSIDE OF EASEMENT SHALL BE INSPECTED BY THE CITY BUILDING INSPECTOR PRIOR TO BACKFILL.
- A CLEAR SPACE OF 3' SHALL BE MAINTAINED AROUND ALL FIRE HYDRANTS.
- WHEN TRYING TO EXISTING MANHOLES, THE INVERT SHALL BE REWORKED.
- THE FIRE SYSTEM REQUIRES A SEPARATE PERMIT.
- PRIVATE WATER LINES AND SEWER LINES REQUIRE A SEPARATE PERMIT.
- ALL WATER MAINS SHALL BE DR 14 C-900 AND SHALL BE TESTED IN ACCORDANCE WITH CITY REQUIREMENTS.
- CONTRACTOR TO INSTALL BLUE EWS DISKS ON WATER LINES AT EVERY CHANGE IN DIRECTION, 250', VALVES AND SERVICE CONNECTIONS.

NOTES

- OFFSITE BENCHMARK - STEEL ROD W/ACCESS CAP STAMPED N 1405 1900 @ THE INTERSECTION OF THE NORTH LINE OF AIRPORT ROAD WITH THE WEST LINE OF THE AIRPORT ACCESS ROAD. ELEVATION = 506.70' (VERTICAL DATUM: NAVD 1988)
- BM#1 = 1/2" IRON ROD WITH CAP STAMPED "STOVALL TRAVELERS" LOCATED AT THE INTERSECTION OF THE SOUTH LINE OF LAKESHORE DRIVE WITH THE WEST LINE OF STATE HIGHWAY NO. 205. ELEVATION = 475.75'
- BM#2 = "X" CUT ON TOP OF INLET IN THE NORTH LINE OF PECAN VALLEY DRIVE ± 504' WEST OF STATE HIGHWAY NO. 205. ELEVATION = 468.31'

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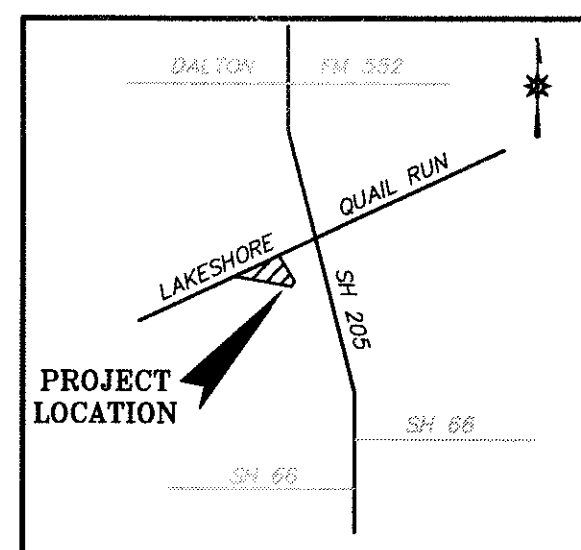
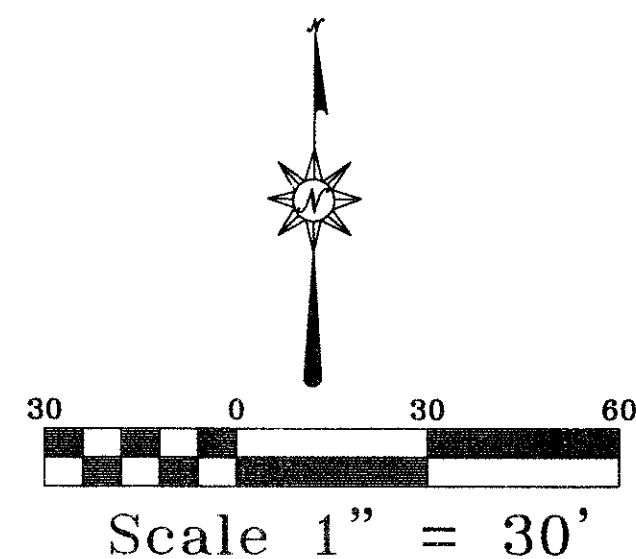
UTILITY PLAN
LAKESHORE COMMONS
LOT 1: LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE NORTH INVESTMENTS, LLC
8445 FREEMAN PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

SCALE: 1"=30'
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE:168-1501357-LWD
DATE SUBMITTED: 06/22/17(E)

Hickman Consulting Engineers, Inc.
MARK H. HICKMAN
REGISTERED PROFESSIONAL ENGINEER
78409
4/6/18 F-12172

REVISION	DESCRIPTION	DATE	BY

SHEET
C-10



- NOTES:
- BOUNDARY/TOPO SURVEY PROVIDED BY:
STOVALL & ASSOCIATES LAND SURVEYING
6417 WESLEY STREET
GREENVILLE, TEXAS 75402
903-450-1120
 - SEE NCTCOG 3RD EDITION FOR ADDITIONAL DETAILS & NOTES.

LEGEND	
PROPOSED	EXISTING
500 - PROPOSED CONTOURS	POWER POLE
515.00 - SPOT ELEVATION AT FINISHED GRADE	ANCHOR
514.00 - INDICATES TOP OF STRUCTURE	WATER METER
513.50 - INDICATES FLOW LINE ELEVATION	WATER VALVE
(W) - PROPOSED WATER LINE	IRRIGATION CONTROL VALVE
(SS) - PROPOSED SANITARY SEWER LINE	TELEPHONE PEDESTAL
(SD) - PROPOSED STORM DRAIN LINE	GAS METER
(C) - PROPOSED CONDUIT	MAILBOX
(G) - PROPOSED GAS	LIGHT POLE
(CC) - CONCRETE CURB PER CITY STD	BUILDING LINE
(1) - WATER SERVICE TAP NO	UR = UTILITY EASEMENT
	DUE = DRAINAGE & UTILITY EASEMENT
	FOC = FIBER OPTIC CABLE MARKER
	GAS = GAS SIGN
	SSSB = SUB SURFACE SERVICE BOX
	TRAFFIC SIGNAL
	U.E. = UTILITY EASEMENT
	GAS STUB
	GAS TEST STATION
	B.C.S. = BURIED CABLE SIGN

NOTE:
GENERAL CONTRACTOR TO BE
RESPONSIBLE FOR INSTALLING & MAINTAINING
ALL EROSION CONTROL DEVICES PER
CITY OF ROCKWALL REQUIREMENTS & STANDARDS

CONSTRUCTION SEQUENCE

- PHASE 1 - GRADING
PHASE 2 - UTILITY INSTALLATION
PHASE 3 - PAVING
PHASE 4 - LANDSCAPE/SOIL STABILIZATION

DISTURBED AREA:

1.18 Ac±

SILT FENCE

SILT FENCE SHOULD BE INSPECTED WEEKLY AND AFTER MAJOR RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM BEHIND FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-THIRD THE HEIGHT OF THE FENCE ABOVE GRADE. INSPECT THE BASE OF THE FENCE TO ENSURE THAT NO GAPS HAVE DEVELOPED AND RE-TRENCH AS NECESSARY. INSPECT FENCE POSTS TO ENSURE THAT THEY ARE PROPERLY SUPPORTING THE FENCE. STRAIGHTEN, RESET AND ADD POSTS IF NECESSARY. IF FILTER FABRIC IS RIPPED, DAMAGED OR DETERIORATED, REPLACE IT IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS AND DETAILS.

INLET PROTECTION

CURB INLET PROTECTION SHOULD BE INSPECTED WEEKLY AND AFTER MAJOR RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE STORAGE AREA WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-HALF OF THE STORAGE DEPTH. IF DEWATERING OF THE STORAGE VOLUME IS NOT OCCURRING, CLEAN OR REPLACE THE FILTER STONE. CLEAN THE FILTER STONE SURFACE THE FIRST FEW TIMES BY RAKING. REPEATED SEDIMENT BUILD-UP WILL REQUIRE FILTER STONE REPLACEMENT.

CONSTRUCTION ENTRANCE

INSPECTIONS SHOULD BE MADE WEEKLY AND AFTER RAIN STORM EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. WHEN SEDIMENT OR MUD HAS CLOGGED THE VOID SPACES BETWEEN THE STONES OR MUD IS BEING TRACKED ONTO THE PUBLIC ROADWAY THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASHDOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL OFF-SITE SEDIMENTATION. PERIODIC RE-GRADING OR THE ADDITION OF NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFICIENCY OF THE INSTALLATION.

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HCE

EROSION CONTROL PLAN
LAKESHORE COMMONS
LOT 1: LAKESHORE COMMONS
ROCKWALL, ROCKWALL COUNTY, TEXAS
MOORE WORTH INVESTMENTS, LLC
8445 FREEPORT PARKWAY, SUITE 175
IRVING, TX 75063
214-415-9993

SCALE: 1"=30'
DATE: APRIL 2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE # 45-1501357-LDW
SUBMITTAL: 06/22/17(C)



REVISION	DATE	BY	DESCRIPTION

SHEET
C-11

NOTES

- OFFSITE BENCHMARK - STEEL ROD W/ACCESS CAP STAMPED N 1495 1006 @ THE INTERSECTION OF THE NORTH LINE OF AIRPORT ROAD WITH THE WEST LINE OF THE AIRPORT ACCESS ROAD.
ELEVATION = 566.70' (VERTICAL DATUM: NAVD 1986)
- BM#1 = 1/2" IRON ROD WITH CAP STAMPED "STOVALL TRAVERSE" LOCATED AT THE INTERSECTION OF THE SOUTH LINE OF LAKESHORE DRIVE WITH THE WEST LINE OF STATE HIGHWAY NO. 206.
ELEVATION = 475.75'
- BM#2 = "X" CUT ON TOP OF INLET IN THE NORTH LINE OF PECAN VALLEY DRIVE ± 554' WEST OF STATE HIGHWAY NO. 206.
ELEVATION = 468.31'

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EROSION CONTROL NOTES

- SOIL EROSION AND SEDIMENT CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CITY SEDIMENT AND EROSION CONTROL ORDINANCE.
- SEDIMENT TRAPS, SILT FENCE, AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AND FUNCTIONAL BEFORE ANY GRADING OR LAND DISTURBANCE TAKES PLACE.
- PERMANENT OR TEMPORARY SOIL STABILIZATION MUST BE APPLIED TO DENUED AREAS WITHIN FIFTEEN (15) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. SOIL STABILIZATION MUST ALSO BE APPLIED WITHIN FIFTEEN (15) DAYS TO DENUED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN SIXTY (60) DAYS. (INCLUDES APPLICATION OF BASE MATERIAL ON AREAS TO BE PAVED.
- THE CITY/COUNTY & APPROPRIATE STATE AGENCIES SHALL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHOD USED AND THE OVERALL EFFECTIVENESS OF THE EROSION CONTROL PROGRAM. IF AN EROSION AND SEDIMENT ON-SITE INSPECTION INDICATES THAT THE APPROVED CONTROL MEASURES ARE NOT EFFECTIVE IN CONTROLLING EROSION AND SEDIMENTATION OR IF BECAUSE OF CHANGED CIRCUMSTANCES, THE APPROVED PLAN CAN NOT BE CARRIED OUT, ADDITIONAL MEASURES MAY BE REQUIRED TO BE INSTALLED.
- ALL EROSION CONTROL DEVICES SHALL BE INSPECTED DAILY BY THE SITE FOREMAN. ANY STRUCTURES THAT ARE DAMAGED OR INOPERATIVE WILL BE IMMEDIATELY REPAIRED OR REPLACED.
- CONTRACTOR TO CONSTRUCT A PIT OR WASH BASIN FOR "WASH OUT" OF CONCRETE TRUCKS. CONTRACTOR TO CONSTRUCT AN ENCLOSURE TO STORE ALL TRASH AND WASTE MATERIALS UNTIL PROPER DISPOSAL AT OFF-SITE FACILITY.
- CONTRACTOR TO SUPPLY SPILL PROTECTION FOR ANY TEMPORARY FUEL STORAGE TANK ON SITE DURING CONSTRUCTION.
- EROSION CONTROL DEVICES AS SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER AND THE CITY ENGINEERING DEPT.
- IF THE EROSION CONTROL PLAN AS APPROVED CANNOT CONTROL EROSION AND OFF-SITE SEDIMENTATION FROM THE PROJECT THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE REQUIRED ON SITE.
- IF OFF-SITE SOIL BORROW OR SPOIL SITES ARE USED IN CONJUNCTION WITH THIS PROJECT, THIS INFORMATION SHALL BE DISCLOSED AND SHOWN ON THE EROSION CONTROL PLAN. OFF-SITE BORROW AND SPOIL AREAS ARE CONSIDERED A PART OF THE PROJECT SITE AND THEREFORE SHALL COMPLY WITH CITY EROSION CONTROL REQUIREMENTS. THESE AREAS SHALL BE STABILIZED WITH PERMANENT GROUND COVER PRIOR TO FINAL APPROVAL OF THE PROJECT.
- MOWABLE VEGETATION SHALL BE ESTABLISHED PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY.
- 75-80% OF ALL DISTURBED AREA TO HAVE A MIN OF 1" TALL STAND OF GRASS (NOT WEEDS) PRIOR TO CITY ACCEPTANCE.

- 1) ALL WORK WITHIN RIGHT-OF-WAY SHALL CONFORM TO CITY STANDARDS AND DETAILS & NCTCOG 3RD EDITION.
- 2) EXISTING UTILITIES SHOWN ARE FROM AVAILABLE RECORDS. LOCATIONS SHOWN ARE GENERALLY SCHEMATIC IN NATURE AND MAY NOT ACCURATELY REFLECT THE SIZE AND LOCATION OF EACH PARTICULAR UTILITY. SOME UTILITY LINES MAY NOT BE SHOWN. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ACTUAL FIELD LOCATION AND PROTECTION OF EXISTING FACILITIES WHETHER SHOWN OR NOT. CONTRACTOR SHALL ALSO ASSUME RESPONSIBILITY FOR REPAIRS TO EXISTING FACILITIES, WHETHER SHOWN OR NOT, DAMAGED BY CONTRACTOR'S ACTIVITIES. DIFFERENCES IN HORIZONTAL OR VERTICAL LOCATIONS EXISTING UTILITIES SHALL NOT BE A BASIS FOR ADDITIONAL EXPENSES.
- 3) TRAFFIC FLOW AND ACCESS SHALL BE MAINTAINED DURING ALL PHASES OF THE CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC SAFETY MEASURES FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
- 4) THE CONTRACTOR SHALL PROVIDE MATERIAL AND QUALITY CONTROL TESTING AS REQUIRED BY OWNER. TESTS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
 - DENSITY TESTS FOR GENERAL SITE FILL. (MINIMUM ONE TEST PER LIFT PER 10,000 S.F. FILL.)
 - DENSITY TESTS FOR UTILITY TRENCH BACK FILL (MINIMUM ONE TEST PER 100 L.F. ON EVERY OTHER LIFT)
 - CONCRETE CYLINDER TESTS. (MINIMUM 4 CYLINDERS PER 100 C.Y. OF MATERIAL.)
- 5) CONTRACTOR SHALL MAINTAIN DRAINAGE AT ALL TIMES DURING CONSTRUCTION. PONDING OF WATER IN STREETS, DRIVES, TRUCK COURTS, TRENCHES, ETC. WILL NOT BE ALLOWED.
- 6) PAVEMENT REMOVAL AND REPAIR SHALL CONFORM TO CITY GUIDELINES. ALL SAW CUTS SHALL BE FULL DEPTH CUTS. CONTRACTOR SHALL MAKE EFFORTS TO PROTECT CONCRETE EDGES. ANY LARGE SPALLED OR BROKEN EDGES SHALL BE REMOVED BY SAW CUTTING PAVEMENT PRIOR TO REPLACEMENT. DOWEL NEW PAVEMENT TO EXISTING CONCRETE PAVEMENT WITH #6 SMOOTH DOWELS AT 15" C-C EACH FACE. DRILL DOWELS TO A DEPTH OF 12 INCHES AND GROUT OR EPOXY IN PLACE.
- 7) EARTHWORK OPERATIONS SHALL BE PERFORMED UNDER THE SUPERVISION OF QUALIFIED PERSONNEL WORKING IN CONJUNCTION WITH THE PROJECT GEOTECHNICAL ENGINEER.
- 8) CONCRETE CURB TO BE CONSTRUCTED PER CITY STANDARDS.
- 9) SEE LANDSCAPE PLAN PRIOR TO ANY CLEARING AND/OR GRUBBING TO LOCATE WHICH TREES AND SHRUBS WILL REMAIN OR BE RELOCATED.
- 10) REVIEW UTILITY PLAN PRIOR TO ANY CLEARING AND/OR GRUBBING.
- 11) REMOVE ALL EXISTING TREES, BUSHES, AND/OR SHRUBS IN THE PATH OF THE SIDEWALK CONSTRUCTION. SPECIAL LANDSCAPE FEATURES TO BE REPLACED WHEN DETERMINED BY THE CITY ENGINEER.
- 12) ALL EXPANSION JOINTS TO BE CONSTRUCTED AT EVERY 40 FEET, AT CURBS AND AT ALL DRIVEWAYS.
- 13) ALL CONSTRUCTION JOINTS SHALL BE PLACED AT 4 OR 5 FOOT INTERVALS ON 4 FOOT WIDE SIDEWALK AND AT EVERY 6 FOOT INTERVALS ON 6 FOOT SIDEWALKS.



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HE

DATE: APRIL2017
DRAWN BY: FP
CHK'D BY: MHH
JOB NO: 1501-357
FILE:165-1501357-LC-L101
DATE
DATE OF SUBMITAL: 06/22/17(F)

Hickman Consulting Engineers, Inc.

STATE OF TEXAS

MARK H. HICKMAN

78409

REGISTERED PROFESSIONAL ENGINEER

14/15 F-12172

REVISION	DESCRIPTION	DATE	BY
1	Initial design and construction of the prototype.	2023-01-15	J. Doe
2	Revised design to improve the accuracy of the measurements.	2023-02-01	J. Doe
3	Added a new feature to the software interface.	2023-02-15	J. Doe
4	Revised the hardware design to accommodate the new feature.	2023-03-01	J. Doe
5	Completed the final design and construction of the prototype.	2023-03-15	J. Doe

SHEET
D-1