THE CITY OF ROCKWALL, TEXAS

CIVIL SITE IMPROVEMENTS

TO SERVE

LOT 3, BLOCK B

ROCKWALL TECHNOLOGY PARK

PHASE II

COL-MET spray booths

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

THE STANDARD SHEETS C-D304 AND C-D305 SPECIFICALLY IDENTIFIED IN THIS INDEX OF SHEETS HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

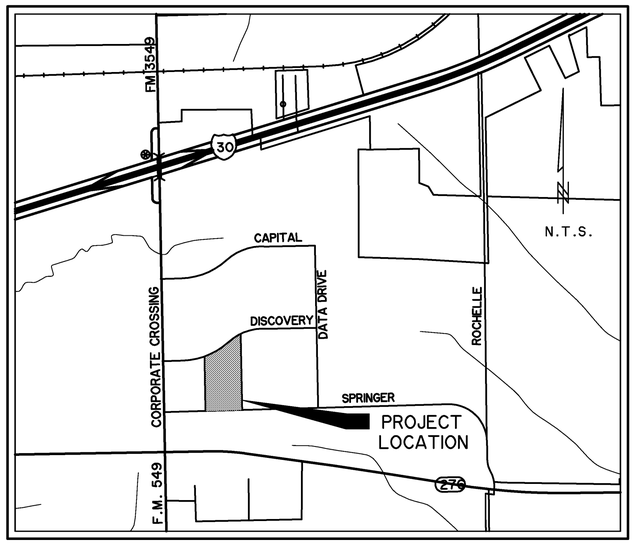
NOTE:

1.) ALL REFERENCES TO 'CITY' SHALL MEAN 'CITY OF ROCKWALL'.

2.) ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NORTH TEXAS COUNCIL OF GOVERNMENT STANDARD SPECIFICATIONS (3RD EDITION) AND THE CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION.

3) ANTICIPATED CONSTRUCTION START DATE: SEPTEMBER, 2014.

CITY OF ROCKWALL
STANDARD DETAIL SHEETS
INCORPORATED HEREIN
BY REFERENCE.



VICINITY MAP

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/28/15

PREPARED BY:

WIER & ASSOCIATES, INC.

ENGINEERS SURVEYORS LAND PLANNERS

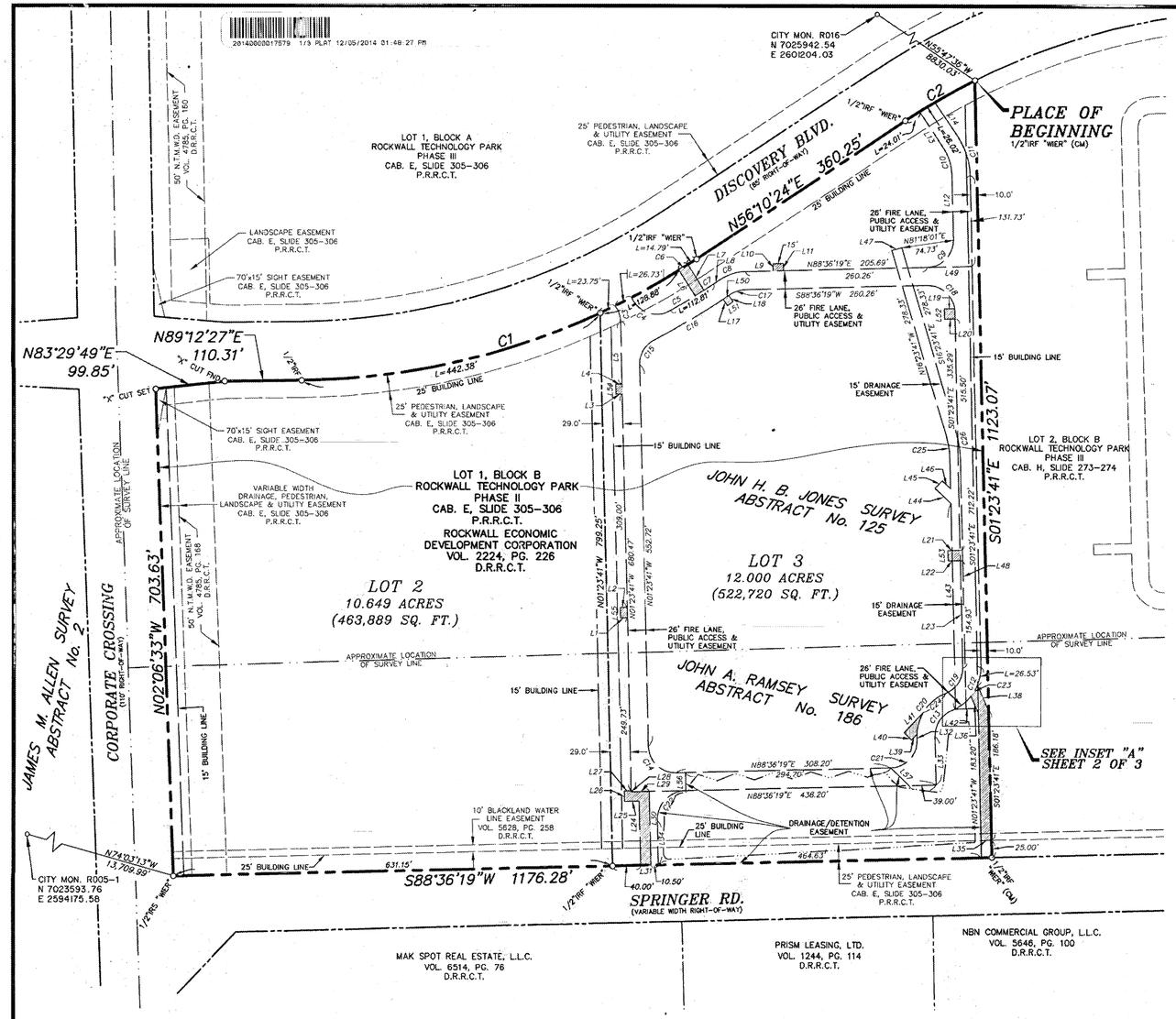
701 HIGHLANDER BLVD., SUITE 300 ARLINGTON, TEXAS 76015 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.WierAssociates.com

SHEET INDEX

RECORD PLANS
October 28, 2015

W.A.# 14029 - CIVIL SITE IMPROVEMENTS TO SERVE LOT 3, BLOCK B, ROCKWALL TECHNOLOGY PARK PHASE II, ROCKWALL, TEXAS.

PRINTED: 10/28/2015 STB FILE: WIER-PAVING.STB LAST SAVED: 10/28/2015 7:48 AM SAVED BY: PHILIPG FILE: COVER-14029.DWG



VICINITY MAP
NOT TO SCALE

GENERAL NOTES:

1) *IT SHALL BE THE POLICY OF THE CITY OF ROCKWALL TO WITHHOLD ISSUING 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 THEREFORE ISSUED, NOR SHALL SUCH APPROVAL CONSTITUTE ANY REPRESENTATION, ASSURANCE OR GUARANTEE BY THE CITY OF THE ADEQUACY AND AVAILABILITY FOR WATER FOR PERSONAL USE AND FIRE PROTECTION WITHIN SUCH PLAT, AS REQUIRED UNDER ORDINANCE 83-54.*

2) *ALL BEARINGS BASED ON THE EAST LINE OF LOT 1, BLOCK B, ROCKWALL TECHNOLOGY PARK, PHASE II AN ADDITION TO THE CITY OF ROCKWALL ROCKWALL COUNTY, TEXAS, AS SHOWN ON THE PLAT RECORDED IN CABINET E, SLIDES 305 AND 306, PLAT RECORDS, ROCKWALL COUNTY, TEXAS (P.R.R.C.T.), (N 01°23'41" W).*

SEE SHEET 2 OF 3 FOR LINE AND CURVE TABLES

LEGEND

L1	LINE IDENTIFIED IN LINE TABLE
C1	CURVE IDENTIFIED IN CURVE TABLE
(CM)	CONTROLLING MONUMENT
IRF	IRON ROD FOUND
IRS	IRON ROD SET
"WIER"	A CAP STAMPED "WIER & ASSOC INC"
	WATER EASEMENT
	DETENTION POND 100 YEAR WATER SURFACE LIMITS

0 100 200 300

1113

REPLAT
LOTS 2 & 3, BLOCK B ROCKWALL TECHNOLOGY PARK, PHASE II

BEING A REPLAT OF LOT 1, BLOCK B, ROCKWALL TECHNOLOGY PARK AS SHOWN BY THE PLAT RECORDED IN CABINET E, SLIDES 305-306.
BEING 22.649 ACRES OF LAND LOCATED IN THE JOHN H. B. JONES SURVEY, ABSTRACT No. 125 AND THE JOHN A. RAMSEY SURVEY, ABSTRACT No. 186 CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

OWNER / DEVELOPER
ROCKWALL ECONOMIC DEVELOPMENT CORPORATION
697 EAST INTERSTATE 30
P.O. BOX 968
ROCKWALL, TEXAS 75087
(972) 772-0025

ENGINEER / SURVEYOR
WIER & ASSOCIATES, INC.
701 HIGHLANDER BLVD., SUITE 300
ARLINGTON, TEXAS 76015-4340
CONTACT: PHILIP GRAHAM, P.E.
PH: (817) 467-7700
FAX: (817) 467-7713

PREPARED BY:
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ENGINEERS SURVEYORS LAND PLANNERS
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Texas Firm Registration No. F-2776 www.WierAssociates.com
Texas Board of Professional Land Surveying Registration No. 10033900

CASE No. P2014-036
DATE: 11/21/2014
W.A. No. 98041

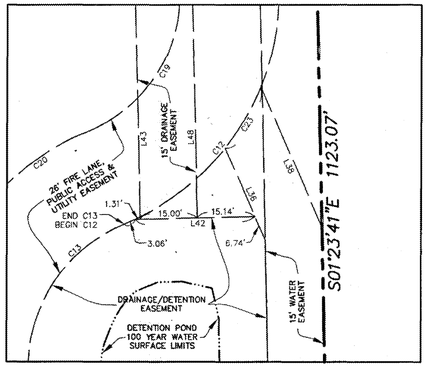
PRINTED: 11/24/2014 STB FILE: WCR-SURVEY.STB LAST SAVED: 11/21/2014 4:31 PM SAVED BY: MATTHEWJ . : REPLAT-98041.DWG

LINE TABLE		
LINE	BEARING	DIST
L1	S88°36'19"W	10.00'
L2	N88°36'19"E	10.00'
L3	S88°36'19"W	9.00'
L4	N88°36'19"E	9.00'
L5	N01°23'41"W	90.24'
L6	N32°36'05"W	43.50'
L7	S32°36'05"E	43.50'
L8	N56°10'24"E	13.04'
L9	N88°36'19"E	39.57'
L10	N01°23'41"W	10.56'
L11	S01°23'41"E	10.56'
L12	N01°23'41"W	92.73'
L13	N33°49'36"W	60.51'
L14	S33°49'36"E	59.51'
L17	N33°49'36"W	11.00'
L18	N33°49'36"W	11.00'
L19	N88°36'19"E	14.97'
L20	S88°36'19"W	15.25'
L21	S88°36'19"W	17.72'
L22	N88°36'19"E	17.72'
L23	S01°23'41"E	154.93'
L24	N01°23'41"W	92.28'
L25	S88°36'19"W	21.00'
L26	N01°23'41"W	15.00'
L27	N88°36'19"E	10.00'

LINE TABLE		
LINE	BEARING	DIST
L28	S01°23'41"E	1.50'
L29	N88°36'19"E	26.00'
L30	S01°23'41"E	105.78'
L31	S88°36'19"W	15.00'
L32	N01°23'41"W	4.64'
L33	N01°23'41"W	69.64'
L34	S01°23'41"E	63.78'
L35	S88°36'19"W	15.00'
L36	N23°53'41"W	26.23'
L38	S23°53'41"E	40.08'
L39	N43°36'19"E	11.12'
L40	N46°23'41"W	15.00'
L41	N43°36'19"E	40.47'
L42	N88°36'19"E	31.45'
L43	S01°23'41"E	297.53'
L44	S46°23'41"E	31.52'
L45	S43°36'19"W	15.00'
L46	N46°23'41"W	16.52'
L47	S73°36'19"W	15.00'
L48	N01°23'41"W	359.96'
L49	N88°36'19"E	65.00'
L50	S56°10'24"W	13.04'
L51	S56°10'24"W	10.00'
L52	N01°23'41"W	15.00'
L53	N01°23'41"W	15.00'

LINE TABLE		
LINE	BEARING	DIST
L54	N01°23'41"W	15.00'
L55	N01°23'41"W	15.00'
L56	N01°23'41"W	26.00'
L57	S46°23'41"E	36.77'

CURVE TABLE					
CURVE	ARC	RADIUS	DELTA	BEARING	DIST.
C1	601.06'	1042.50'	33°02'02"	N72°41'26"E	592.77'
C2	115.74'	957.50'	6°55'33"	N59°38'11"E	115.67'
C3	24.36'	39.00'	35°46'53"	S19°17'07"E	23.96'
C4	66.49'	39.00'	97°41'13"	S71°09'43"E	58.73'
C5	41.70'	1086.00'	2°12'01"	N58°53'40"E	41.70'
C6	15.00'	1042.50'	0°49'28"	N57°23'55"E	15.00'
C7	15.72'	1086.00'	0°49'47"	N56°35'18"E	15.72'
C8	37.64'	66.50'	32°25'55"	N72°23'22"E	37.14'
C9	61.26'	39.00'	90°00'00"	N43°36'19"E	55.15'
C10	44.72'	79.00'	32°25'55"	N17°36'38"W	44.12'
C11	59.43'	105.00'	32°25'55"	S17°36'38"E	58.64'
C12	78.44'	65.00'	69°08'18"	S33°10'28"W	73.76'
C13	48.87'	40.50'	69°08'19"	S33°10'28"W	45.96'
C14	61.26'	39.00'	90°00'00"	S46°23'41"E	55.15'
C15	43.24'	39.00'	63°31'11"	S30°21'55"W	41.06'
C16	115.51'	1112.00'	5°57'06"	S59°08'57"W	115.46'
C17	22.92'	40.50'	32°25'55"	S72°23'22"W	22.62'
C18	61.26'	39.00'	90°00'00"	N46°23'41"W	55.15'
C19	47.06'	39.00'	69°08'18"	N33°10'28"E	44.26'
C20	80.25'	66.50'	69°08'19"	N33°10'28"E	75.46'
C21	61.26'	39.00'	90°00'00"	N43°36'19"E	55.15'
C22	65.97'	42.00'	90°00'00"	S43°36'19"W	59.40'
C23	18.59'	65.00'	16°23'02"	N30°10'45"E	18.52'
C24	42.78'	66.50'	36°51'39"	S49°18'48"W	42.05'
C25	37.31'	142.50'	15°00'00"	N08°53'41"W	37.20'
C26	41.23'	157.50'	15°00'00"	N08°53'41"W	41.12'



INSET "A"

I 114

REPLAT
LOTS 2 & 3, BLOCK B ROCKWALL TECHNOLOGY PARK, PHASE II

BEING A REPLAT OF LOT 1, BLOCK B, ROCKWALL TECHNOLOGY PARK AS SHOWN BY THE PLAT RECORDED IN CABINET E, SLIDES 305-306.
BEING 22.649 ACRES OF LAND LOCATED IN THE JOHN H. B. JONES SURVEY, ABSTRACT No. 125 AND THE JOHN A. RAMSEY SURVEY, ABSTRACT No. 186
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

PREPARED BY:
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OWNER'S CERTIFICATE

STATE OF TEXAS
COUNTY OF ROCKWALL

WHEREAS THE ROCKWALL ECONOMIC DEVELOPMENT CORPORATION, BEING THE OWNER OF A TRACT OF LAND IN THE COUNTY OF ROCKWALL, STATE OF TEXAS, SAID TRACT BEING DESCRIBED AS FOLLOWS:

FIELD NOTES

BEING A TRACT OF LAND LOCATED IN THE JOHN A. RAMSEY SURVEY, ABSTRACT NO. 186 AND THE JOHN H.B. JONES SURVEY, ABSTRACT NO. 125, ROCKWALL COUNTY, TEXAS, BEING A PORTION OF A TRACT OF LAND DESCRIBED IN A DEED TO ROCKWALL ECONOMIC DEVELOPMENT CORPORATION, RECORDED IN VOLUME 2224, PAGE 226, DEED RECORDS, ROCKWALL COUNTY, TEXAS (D.R.R.C.T.), AND BEING ALL OF LOT 1, BLOCK B, ROCKWALL TECHNOLOGY PARK, PHASE II AN ADDITION TO THE CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS, AS SHOWN ON THE PLAT RECORDED IN CABINET E, SLIDES 305 AND 306, PLAT RECORDS, ROCKWALL COUNTY, TEXAS (P.R.R.C.T.), AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 1/2" IRON ROD FOUND WITH CAP STAMPED "WIER & ASSOC INC" IN THE SOUTH RIGHT-OF-WAY LINE OF DISCOVERY BOULEVARD (AN 85 FOOT WIDE RIGHT-OF-WAY), SAID IRON ROD BEING THE NORTHEAST CORNER OF SAID LOT 1, AND THE NORTHWEST CORNER OF LOT 2, BLOCK B, ROCKWALL TECHNOLOGY PARK, PHASE III, AN ADDITION TO THE CITY OF ROCKWALL, ROCKWALL COUNTY TEXAS, AS SHOWN ON THE PLAT RECORDED IN CABINET H, SLIDES 273 AND 274, P.R.R.C.T.;

THENCE S 01°23'41" E, ALONG THE EAST LINE OF SAID LOT 1 AND THE WEST LINE OF SAID LOT 2, A DISTANCE OF 1123.07 FEET TO A 1/2" IRON ROD FOUND WITH CAP STAMPED "WIER & ASSOC INC" IN THE NORTH RIGHT-OF-WAY LINE OF SPRINGER ROAD (A VARIABLE WIDTH RIGHT-OF-WAY), SAID IRON ROD BEING THE SOUTHEAST CORNER OF SAID LOT 1 AND THE SOUTHWEST CORNER OF SAID LOT 2;

THENCE S 88°36'19" W, ALONG THE NORTH RIGHT-OF-WAY LINE OF SAID SPRINGER ROAD AND THE SOUTH LINE OF SAID LOT 1, A DISTANCE OF 1176.28 FEET TO A 1/2" IRON ROD SET WITH CAP STAMPED "WIER & ASSOC INC", SAID 1/2" IRON ROD BEING THE SOUTHWEST CORNER OF SAID LOT 1 AND BEING THE INTERSECTION OF THE NORTH RIGHT-OF-WAY LINE OF SAID SPRINGER ROAD AND THE EAST RIGHT-OF-WAY LINE OF CORPORATE CROSSING (A 110 FOOT WIDE RIGHT-OF-WAY);

THENCE N 02°06'33" W, ALONG THE WEST LINE OF SAID LOT 1 AND THE EAST RIGHT-OF-WAY LINE OF SAID CORPORATE CROSSING (F.M. 3549), 703.63 FEET TO AN "X" CUT SET, SAID "X" CUT SET BEING THE NORTHWEST CORNER OF SAID LOT 1 AND BEING THE INTERSECTION OF THE EAST RIGHT-OF-WAY LINE OF SAID CORPORATE CROSSING AND THE SOUTH RIGHT-OF-WAY LINE OF SAID DISCOVERY BOULEVARD;

THENCE ALONG THE NORTH LINE OF SAID LOT 1 AND THE SOUTH RIGHT-OF-WAY LINE OF SAID DISCOVERY BOULEVARD AS FOLLOWS:

(1) N 83°29'49" E, 99.85 FEET TO AN "X" CUT FOUND;

(2) N 89°12'27" E, 110.31 FEET TO 1/2" IRON ROD FOUND, BEING THE BEGINNING OF A CURVE TO THE LEFT;

(3) NORTHEASTERLY, AN ARC LENGTH OF 601.06 FEET ALONG SAID CURVE TO THE LEFT, HAVING A RADIUS OF 1042.50 FEET, A DELTA ANGLE OF 33°02'02", AND A CHORD BEARING OF N 72°41'26" E, 592.77 FEET TO A 1/2" IRON ROD FOUND WITH A CAP STAMPED "WIER & ASSOC INC",

(4) N 56°10'24"E, 360.25 FEET TO A 1/2" IRON ROD FOUND WITH A CAP STAMPED "WIER & ASSOC INC", BEING THE BEGINNING OF A CURVE TO THE RIGHT;

(5) NORTHEASTERLY, AN ARC LENGTH OF 115.74 FEET ALONG SAID CURVE TO THE RIGHT, HAVING A RADIUS OF 957.50 FEET, A DELTA ANGLE OF 6°55'33", AND A CHORD BEARING OF N 59°38'11" E, 115.67 FEET TO THE PLACE OF BEGINNING AND CONTAINING 22.649 ACRES (986,609 SQ. FT.) OF LAND, MORE OR LESS.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

STATE OF TEXAS
COUNTY OF ROCKWALL

I, THE UNDERSIGNED OWNER OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS LOTS 2 & 3, BLOCK B, ROCKWALL TECHNOLOGY PARK, PHASE II TO THE CITY OF ROCKWALL, TEXAS, AND WHOSE NAME IS 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. I FURTHER CERTIFY THAT ALL OTHER PARTIES WHO HAVE A MORTGAGE OR LIEN INTEREST IN LOTS 2 & 3, BLOCK B, ROCKWALL TECHNOLOGY PARK, PHASE II HAVE BEEN NOTIFIED AND SIGNED THIS PLAT.

I 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. I 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 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.

I, 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, MY SUCCESSORS AND ASSIGNS HEREBY WAIVE ANY CLAIM, DAMAGE, OR CAUSE OF ACTION THAT I MAY HAVE AS A RESULT OF THE DEDICATION OF EXACTIONS MADE HEREIN.

WITNESS OUR HANDS THIS THE 2nd DAY OF December 2014.

FOR: ROCKWALL ECONOMIC
DEVELOPMENT CORPORATION

Sheri Franza
OWNER

STATE OF TEXAS
COUNTY OF ROCKWALL

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED Sheri Franza OF ROCKWALL ECONOMIC DEVELOPMENT CORPORATION, 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 2 DAY OF December 2014.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

Sharra Fleming
PRINTED NAME

SHARRA L. FLEMING
Notary Public, State of Texas
My Commission Expires
February 10, 2015

Filed and Recorded
Official Public Records
Shelli Miller, County Clerk
Rockwall County, Texas
12/05/2014 01:48:27 PM
$150.00
20140000017579

OWNER / DEVELOPER

ROCKWALL ECONOMIC
DEVELOPMENT CORPORATION
697 EAST INTERSTATE 30
P.O. BOX 968
ROCKWALL, TEXAS 75087
(972) 772-0025

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ARLINGTON, TEXAS 76015-4340
CONTACT: PHILIP GRAHAM, P.E.
PH: (817) 467-7700
FAX: (817) 467-7713

SURVEYOR'S CERTIFICATION:

NOW, THEREFORE KNOW ALL MEN BY THESE PRESENTS:

THAT I, GREGG A.E. MADSEN, 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.

11/24/14

GREGG A.E. MADSEN REGISTERED PUBLIC SURVEYOR
STATE OF TEXAS NO. 5798
EMAIL: GREGGM@WIERASSOCIATES.COM

STATE OF TEXAS
REGISTERED
GREGG A. E. MADSEN
5798
PROFESSIONAL
LAND SURVEYOR

RECOMMENDED FOR FINAL APPROVAL

PLANNING AND ZONING COMMISSION, CHAIRMAN — 11/11/2014 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 1st DAY OF November 2014.

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 4th DAY OF December 2014.

MAYOR, CITY OF ROCKWALL — CITY SECRETARY — CITY ENGINEER

CITY OF ROCKWALL, TEXAS SEAL

I 115

REPLAT
LOTS 2 & 3, BLOCK B ROCKWALL TECHNOLOGY PARK, PHASE II

BEING A REPLAT OF LOT 1, BLOCK B, ROCKWALL TECHNOLOGY PARK AS SHOWN BY THE PLAT RECORDED IN CABINET E, SLIDES 305-306.
BEING 22.649 ACRES OF LAND LOCATED IN THE JOHN H. B. JONES SURVEY, ABSTRACT No. 125 AND THE JOHN A. RAMSEY SURVEY, ABSTRACT No. 186
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
701 HIGHLANDER BLVD., SUITE 300 ARLINGTON, TEXAS 76015 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.WierAssociates.com
Texas Board of Professional Land Surveying Registration No. 10033900

SHEET 3 OF 3

CASE No. P2014-036
DATE: 11/21/2014
W.A. No. 98041

PARKING INFORMATION

OFFICE:
1 SPACE/300 SQ. FT.
15,750 SQ. FT./300 SQ. FT. = 53 SPACES
PRODUCTION AREA:
1 SPACE/500 SQ. FT.
105,490 SQ. FT./500 SQ. FT. = 211 SPACES
WAREHOUSE:
1 SPACE/1,000 SQ. FT.
25,000 SQ. FT./1,000 SQ. FT. = 25 SPACES
TOTAL PARKING SPACES REQUIRED:
= 53 + 211 + 25 = 289 SPACES
TOTAL PARKING SPACES PROVIDED:
= 219 SPACES ⚠

HANDICAP PARKING SPACES REQUIRED:
= 8 SPACES WITH 2 OF THOSE BEING VAN ACCESSIBLE
HANDICAP PARKING SPACES PROVIDED:
= 9 SPACES WITH 4 OF THOSE BEING VAN ACCESSIBLE

LANE USE:
OFFICE/INDUSTRIAL/WAREHOUSE

A PARKING VARIANCE HAS BEEN GRANTED

LEGEND

- 8" 3,600 P.S.I. (MIN. 6.5 SACK) TRUCK DOCK & DUMPSTER PAVEMENT
- 7" 3,600 P.S.I. (MIN. 6.5 SACK) TRUCK ROUTE & FIRE LANE PAVEMENT
- 6" 3,600 P.S.I. (MIN. 6.5 SACK) FIRE LANE PAVEMENT
- 5" 3,600 P.S.I. (MIN. 6.5 SACK) LIGHT DUTY PAVEMENT
- 8" 4,200 P.S.I. (MIN. 7.0 SACK) PUBLIC DRIVE APPROACH
- PROPOSED SIDEWALK (3,000 P.S.I., MIN. 5.5 SACK)
- (99) STANDARD PARKING SPACE
- VAN HANDICAP PARKING
- L.P. PARKING LOT LIGHT POLE SEE MEP PLAN

D=6°55'33"
R=957.50'
L=115.74'
CB=N59°38'11"E
115.67'

5' SIDEWALK | 106' R | 30' R | 45' R | 65' R | 39' R | 20' R

LOT 2, BLOCK B
ROCKWALL TECHNOLOGY
PARK PHASE III
CAB. H, SLIDE 273-274
P.R.R.C.T.

S01°23'41"E 1123.07'

APPROXIMATE LOCATION OF SURVEY LINE

15' BUILDING SETBACK | 25' BUILDING SETBACK | 15' ONCOR EASEMENT | 15' WATER EASEMENT | 15' DRAINAGE EASEMENT

26' FIRELANE & PUBLIC ACCESS EASEMENT | 26' FIRELANE, PUBLIC ACCESS & UTILITY EASEMENT

TRANSFORMER PAD | F.H. | 8" W.L. | OLD BARBED WIRE FENCE | METAL DIRECTION SIGN | L.P. | DS | DOOR | DOCK HIGH DOORS

DUMPSTER & ENCLOSURE WITH SELF-LATCHING MECHANISM | SCREENING WALL (SEE NOTE)

FDC | FIRE RISER ROOM | FIRE SPRINKLER LINE

BUILDING:
HEIGHT = 36 FT.
SIZE = 146,240 SQ. FT.

ADDRESS:
2975 DISCOVERY BLVD.

ZONING: LI
(LIGHT INDUSTRIAL DISTRICT)

LOT SIZE:
12.000 ACRES
(522,720 SQ. FT.)

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY
PARK PHASE II

JOHN H. B. JONES SURVEY
ABSTRACT NO. 125

ROCKWALL ECONOMIC DEVELOPMENT CORPORATION
VOL. 2224, PAGE 226
D.R.R.C.T.

ROCKWALL TECHNOLOGY PARK PHASE II
CAB. E, SLIDE 305-306
P.R.R.C.T.

JOHN A. RAMSEY SURVEY
ABSTRACT NO. 186

LANDSCAPE AREA FUTURE PARKING SPACES IF REQUIRED | FUTURE PARKING SPACES IF REQUIRED | FUTURE HC PARKING

LANDSCAPE AREA FUTURE PARKING SPACES IF REQUIRED

LANDSCAPE AREA FUTURE PARKING SPACES IF REQUIRED

CONC. FLUME

DETENTION POND

CONST. H.C. RAMP

LANDSCAPE AREA FUTURE PARKING SPACES IF REQUIRED

LANDSCAPE AREA FUTURE PARKING SPACES IF REQUIRED

EXISTING 382' MEDIAN OPENING

EXISTING 391' MEDIAN OPENING

MONUMENT SIGN

4" S.S. SERVICE

DISCOVERY BLVD. | SPRINGER ROAD

5' SIDEWALKS | 45' SIDEWALK

LOT 1, BLOCK A
ROCKWALL TECHNOLOGY
PARK PHASE II
CAB. E, SLIDE 305-306
P.R.R.C.T.

ZONING: LI
(LIGHT INDUSTRIAL DISTRICT)

D=8°43'14"
R=1042.50'
L=158.67'
CB=N60°32'02"E
158.52'

65' R.O.W.

82.1' R.O.W.

10' BLACKLAND WATER LINE EASEMENT
VOL. 5628, PAGE 258
D.R.R.C.T.

N56°10'24"E 360.15'

N01°23'41"W 799.25'

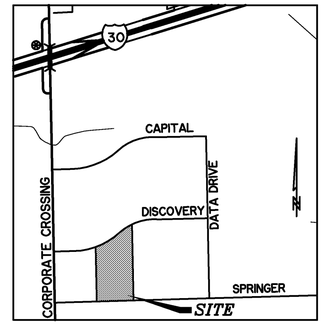
N88°36'19"E 545.13'

PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
07/30/15

APPROXIMATE LOCATION OF SURVEY LINE

CAUTION !!

EXISTING UTILITIES ARE INDICATED ON THE PLANS FROM AVAILABLE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES, TO NOTIFY ALL UTILITY COMPANIES OF THE CONTRACTORS OPERATIONS, TO PROTECT ALL UTILITIES FROM DAMAGE, TO REPAIR ALL UTILITIES DAMAGED DUE TO THE CONTRACTORS OPERATIONS, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING UTILITIES.



VICINITY MAP

GENERAL NOTES:
1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE
2. REFER TO ELECTRICAL SITE LAYOUT FOR PARKING LOT LIGHTING CONDUIT LOCATIONS AND LANDSCAPE IRRIGATION PLANS FOR IRRIGATION SLEEVE LOCATIONS.
3. ALL LIGHT POLES SHALL BE A MINIMUM OF 2' BACK OF CURB AND NOT LOCATED WITHIN AN EASEMENT.
4. ALL CURB RETURNS ARE 5' RADII UNLESS OTHERWISE SPECIFIED.
5. SPEED BUMPS ARE NOT PERMITTED WITHIN A FIRELANE.
6. TWO POINTS OF ACCESS SHALL BE MAINTAINED FOR THE PROPERTY AT ALL TIMES.

SCREENING NOTE:
1. BOTH OF THE GARBAGE DUMPSTERS LOCATED ON THE EAST AND WEST SIDES OF THE BUILDING WILL BE FULLY ENCLOSED WITH 10' TALL TEXTURED CONCRETE TILT WALLS TO MATCH THE BUILDING.
2. THE TRUCK COURTS LOCATED ON THE WEST SIDE OF THE BUILDING WILL BE SCREENED USING 10' TALL TEXTURED CONCRETE TILT WALLS TO MATCH THE BUILDING.
3. ALL ROOF MOUNTED UTILITY EQUIPMENT WILL BE SCREENED SO THAT IT SHALL NOT BE VISIBLE FROM ANY DIRECTION.

CUSHMAN & WAKEFIELD
SCOTT + REID General Contractors
COL-MET spray booths

RECORD PLANS
October 30, 2015

0 50 100 150
SCALE: 1" = 50'

DATE: 10/30/2015
W.A. No. 14029

REVISIONS	DATE	BY
⚠ RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
⚠ ADDED DRIVE CONNECTION	03/19/15	PLG
⚠ ADDED ADDITIONAL TRUCK PARKING & ADDED ADDITIONAL 7' PVMT.	04/13/15	TVW

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Texas Board of Professional Land Surveying Registration No. 10033900

OWNER:
TRMJ, INC.
1635 INNOVATION DRIVE
ROCKWALL, TX 75032
972-772-1919

PROJECT NAME
COL-MET SPRAY BOOTHS

LAND AND BLOCK DESIGNATION
LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II

SHEET TITLE
SITE PLAN

CASE #SP2014-012

PRINTED: 10/30/2015 STB FILE: WIER-PAVING.STB LAST SAVED: 10/30/2015 2:59 PM SAVED BY: PHILIPG FILE: SITE-PLAN-14029.DWG

GENERAL LEGEND

PROPERTY / BOUNDARY LINE	
CONTROL JOINT	CJ
EXPANSION JOINT	EJ
LIMITS OF WORK	L.O.W.
SHEET MATCHLINE	

APPROX.	APPROXIMATELY
ARCH.	ARCHITECT, ARCHITECTURE
BLDG.	BUILDING
B.O.C.	BACK OF CURB
CAL.	CALIPER
CIVIL	CIVIL ENGINEER/ ENGINEERING
CJ	CONTROL JOINT
DIA.	DIAMETER
EJ	EXPANSION JOINT
EQ.	EQUAL
F.O.C.	FACE OF CURB
GAL.	GALLON
LF	LINEAR FEET
L.O.W.	LIMITS OF WORK
MEP	MEP ENGINEER/ ENGINEERING
MAX.	MAXIMUM
MIN.	MINIMUM
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
O.C.	ON-CENTER
O.C.E.W.	ON-CENTER EACH WAY
PA	PLANTING AREA
PERP.	PERPENDICULAR
POB.	POINT OF BEGINNING
REF.	REFER, REFERENCE
RET.	RETAIN, RETAINING
SF	SQUARE FEET
STRUCTURAL	STRUCTURAL ENGINEER
TBD	TO BE DETERMINED
TYP.	TYPICAL
UNO.	UNLESS NOTED OTHERWISE
W/	WITH
W/O	WITHOUT

GENERAL NOTES:

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS AND LABOR TO COMPLETE SCOPE OF WORK AS INDICATED IN DOCUMENTS.
2. ALL WORK SHALL BE EXECUTED IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, AND SHALL COMPLY WITH PREVAILING ACCESSIBILITY REQUIREMENTS. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY PORTION OF DOCUMENTS WHICH CONFLICT WITH REGULATIONS PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS, APPROVALS AND INSPECTIONS RELATED TO SCOPE OF WORK.
4. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING LANDSCAPE ARCHITECT IN ADVANCE OF REQUESTED SITE VISITS IN ACCORDANCE WITH GENERAL REQUIREMENTS OF SPECIFICATIONS.
5. DRAWINGS ARE BASED ON SURVEY DATA AND DESIGN DRAWINGS PROVIDED BY OTHERS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY EXISTING CONDITIONS AND SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN DOCUMENTS AND ACTUAL SITE CONDITIONS PRIOR TO CONSTRUCTION.
6. DO NOT PROCEED WITH ANY PORTION OF WORK AS INDICATED IN DOCUMENTS IF OBSTRUCTIONS, DISCREPANCIES OR UNKNOWN CONDITIONS ARE ENCOUNTERED. NOTIFY LANDSCAPE ARCHITECT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED.
7. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DISCIPLINES AND TRADES.
8. LIMITS OF WORK INDICATED ON DRAWINGS, IF ANY, ARE GENERAL IN NATURE AND ARE INTENDED TO DEFINE THE GENERAL VICINITY IN WHICH THE SCOPE OF WORK EXISTS. ACTUAL LIMITS OF WORK SHALL INCLUDE ALL AREAS NECESSARY TO COMPLETE SCOPE OF DESIGN INTENT.

PLANTING LEGEND

PLANT CALLOUT:

INDICATES SPECIES → ABC
INDICATES QUANTITY → 123

PLANT MIX CALLOUT:

INDICATES DESCRIPTION OR % OF MIX → XXX
INDICATES SPECIES → XXX
INDICATES QUANTITY → XXX

CANOPY TREE (CENTER SYMBOL VARIES)

ACCENT TREE (CENTER SYMBOL VARIES)

SHRUB/ORNAMENTAL GRASS (CENTER SYMBOL VARIES)

PERENNIAL (CENTER LETTER VARIES)

VINE → ▲ OR ⬟

BED LINE (INDICATES SEPARATION OF SPECIES - NO EDGING)

STEEL EDGING

PLANTING NOTES:

1. ALL NON-DIMENSIONED PLANT SYMBOLS, EDGING AND BED LINES ARE DIAGRAMMATIC AND SHALL BE SCALED FROM DRAWINGS.
2. STAKE ALL PROPOSED TREE LOCATIONS ON FINISH GRADE WITH DIFFERENT COLOR FLAGS FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO EXCAVATION. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR ADJUSTMENTS TO TREE LOCATIONS PRIOR TO EXCAVATION.
3. PAINT OR STRING ALL EDGING AND BED LINE LOCATIONS ON FINISH GRADE FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. THE LANDSCAPE ARCHITECT SHALL RESERVE THE RIGHT TO MAKE MINOR ADJUSTMENTS TO LAYOUT OF PLANTING AREAS PRIOR TO EXCAVATION.
4. TREES SHALL BE PLANTED NO CLOSER THAN 4' TO PAVEMENT, CURB, EDGING, WALL OR UTILITIES UNLESS NOTED OTHERWISE.
5. TREES SHALL BE PLANTED NO CLOSER THAN 10' TO ANY STRUCTURE OR OVERHEAD UTILITY.
6. TREES OVERHANGING PEDESTRIAN AND VEHICULAR PAVEMENTS ARE INTENDED TO HAVE A MINIMUM CLEAR-TRUNK BRANCHING HEIGHT OF 7' AT MATURITY.
7. TREES OVERHANGING VISIBILITY EASEMENTS OR RIGHTS-OF-WAY ARE INTENDED TO HAVE A MINIMUM CLEAR-TRUNK BRANCHING HEIGHT OF 9' AT MATURITY.
8. ALL TREES, LAWN AND PLANTING AREAS TO RECEIVE 100% IRRIGATION COVERAGE FROM AUTOMATIC UNDERGROUND IRRIGATION SYSTEM UNLESS NOTED OTHERWISE.
9. FINISH GRADE SHALL BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO PLANTING.
10. ANY QUANTITIES PROVIDED ON PLANS OR SCHEDULES ARE FOR INFORMATION AND CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR QUANTITY TAKE-OFFS AND SHALL PROVIDE FULL COVERAGE OF PLANTING AREAS AS INDICATED IN DRAWINGS.
11. ALL PLANTS SHALL MEET SIZE AND QUALITY SPECIFICATIONS AS INDICATED IN DOCUMENTS AND SHALL BE OF TOP QUALITY, VIGOROUS, HEALTHY CONDITION. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT PLANTS NOT MEETING SPECIFICATIONS.
12. ALL NEW PLANTS AND LAWNS SHALL BE FERTILIZED ACCORDING TO SOIL ANALYSIS RECOMMENDATIONS, SUPPLIER RECOMMENDATIONS, AS INDICATED IN DOCUMENTS OR AS APPROVED BY LANDSCAPE ARCHITECT.
13. ALL PLANTING BEDS SHALL BE PREPARED WITH 6" OF "PH-BALANCED ORGANIC COMPOST", TILLED INTO EXISTING TOPSOIL TO OVERALL DEPTH OF 12. "PH-BALANCED COMPOST" AS DISTRIBUTED BY SOIL-BUILDING SYSTEMS, DALLAS, TEXAS.
14. MULCH ALL PLANTING AREAS WITH 3" DEPTH OF "FINE-SHREDDED HARDWOOD MULCH" AS DISTRIBUTED BY SOIL-BUILDING SYSTEMS, DALLAS, TEXAS.
15. PREPARE LAWN AREAS WITH 2" DEPTH OF "TURF SOIL" AS DISTRIBUTED BY SOIL-BUILDING SYSTEMS, DALLAS, TEXAS.
16. PROVIDE 90-DAY TEMPORARY MAINTENANCE AND ESTABLISHMENT FOR LANDSCAPE AND IRRIGATION SYSTEM, INCLUDING MOWING/EDGING, TRIMMING, MULCHING, WEEDING, SUPPLEMENTAL WATERING, RE-SETTING OF PLANTS, STAKES OR GUYS, REPAIR AND ADJUSTMENT OF IRRIGATION SYSTEM AND CLEAN-UP OF LITTER.
17. PROVIDE 1-YEAR WARRANTY ON LIVING PLANT MATERIALS AND IRRIGATION SYSTEM.

garthoffdesign
landscape architecture
5646 milton, suite 606
dallas, texas 75206
214.227.8444
www.garthoffdesign.com

Owner:
TRMJ, Inc.
1635 Innovation Drive
Rockwall, Texas 75032
Phone: 972-772-1919

REGISTERED LANDSCAPE ARCHITECT 2213 STATE OF TEXAS
10/16/2014

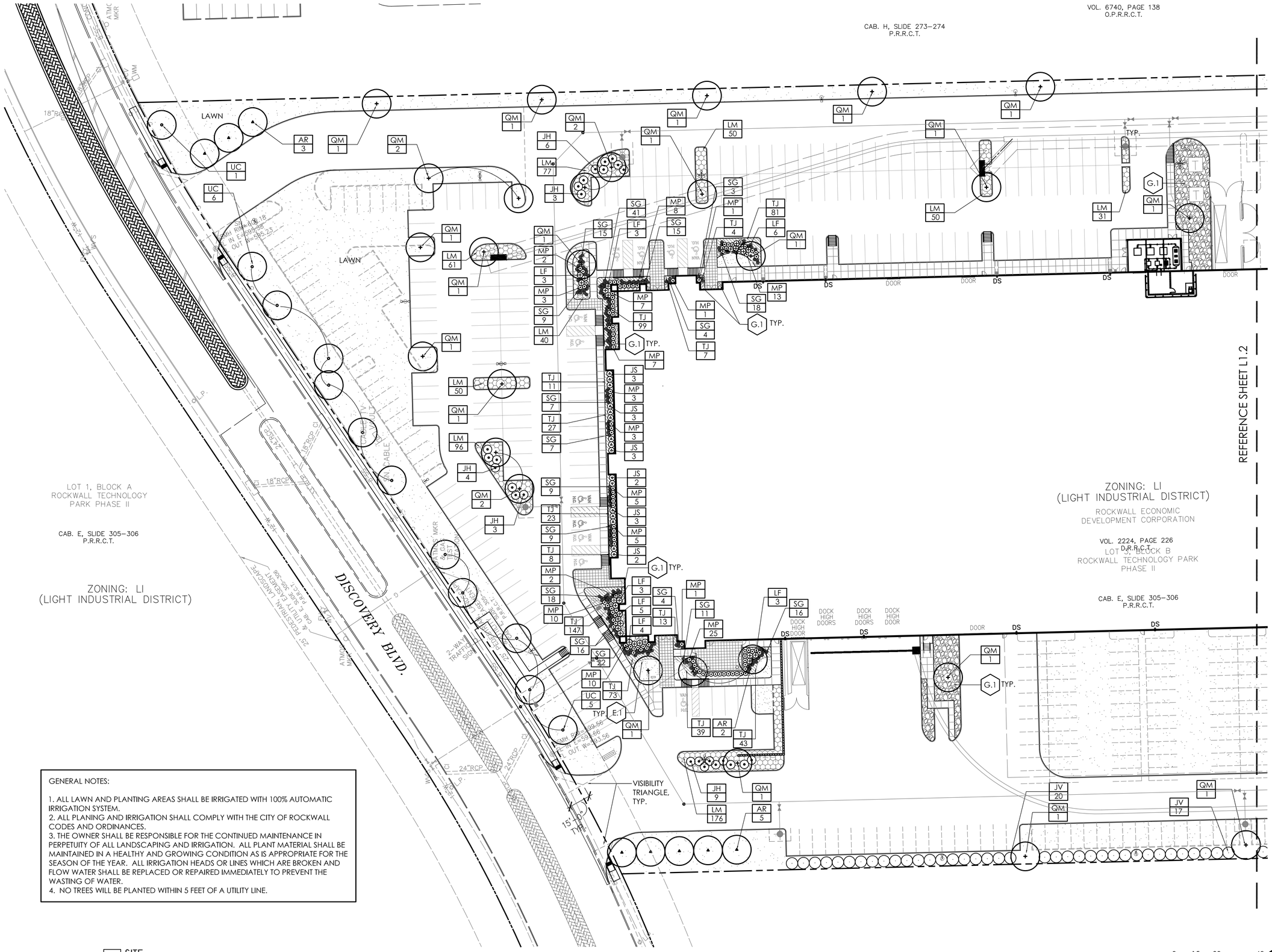
COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

LANDSCAPE REFERENCE

L1.0



GENERAL NOTES:

1. ALL LAWN AND PLANTING AREAS SHALL BE IRRIGATED WITH 100% AUTOMATIC IRRIGATION SYSTEM.
2. ALL PLANING AND IRRIGATION SHALL COMPLY WITH THE CITY OF ROCKWALL CODES AND ORDINANCES.
3. THE OWNER SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE IN PERPETUITY OF ALL LANDSCAPING AND IRRIGATION. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY AND GROWING CONDITION AS IS APPROPRIATE FOR THE SEASON OF THE YEAR. ALL IRRIGATION HEADS OR LINES WHICH ARE BROKEN AND FLOW WATER SHALL BE REPLACED OR REPAIRED IMMEDIATELY TO PREVENT THE WASTING OF WATER.
4. NO TREES WILL BE PLANTED WITHIN 5 FEET OF A UTILITY LINE.

A SITE PLAN

SCALE : 1" = 30'-0" 0 15 30 60

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REGISTERED LANDSCAPE ARCHITECT
2213
STATE OF TEXAS
10/22/2014

COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

LANDSCAPE PLAN

L1.1

THE ROCKWALL CITY CODE - PART III UNIFIED DEVELOPMENT CODE - Article VIII LANDSCAPE STANDARDS - SECTION 5. MANDATORY PROVISIONS

Sec. 5.1. Landscape buffer-strip

A minimum ten-foot-wide landscape buffer-strip must be provided along the entire length of the portion of the perimeter of any commercial or industrial lot that abuts, without an alley or drive separation, or is directly across a public street from a residential zoning district, exclusive of driveways and access-ways.

Not applicable - not adjacent to residential zoning district

Sec. 5.2. Screening of off-street loading docks

B. Off-street loading docks in industrial zoning classifications must be screened from:
1. Arterial streets, as indicated on the city's thoroughfare plan; and
2. Any residential district that abuts or is directly across a public street or alley from the lot.

Not applicable - loading docks do not face any arterial street and there is noT adjacent residential zoning district

Sec. 5.6. Screening from residential uses

Not applicable - not adjacent to residential zoning district

Sec. 5.7. Street landscaping

A street landscape buffer-strip with a minimum width of ten feet, must be provided along the entire length of the property to be developed that is adjacent to a major arterial or collector street. Large trees shall be provided in the required buffer in numbers equal to one tree for each 50 feet of street frontage.

A 10' buffer strip has been provided along Discovery Blvd. and Springer Rd.
Frontage along Discovery Blvd. = 635' 1 large tree/50' = 13 large trees required 13 TREES PROVIDED
Frontage along Springer Rd. = 545' 1 large tree/50' = 11 large trees required 11 TREES PROVIDED

Sec. 5.9. Parking Lot Landscaping

A. Any parking lot with more than two rows of spaces shall have a minimum of five percent or 200 square feet, whichever is greater, in the interior of the parking lot in landscaping. Such landscaping shall be counted toward the total landscaping.

The proposed parking area has approximately 6.5% landscape area.

B. If the parking and maneuvering space exceeds 20,000 square feet one large canopy tree for every ten required parking spaces shall be required internal to the parking lot. No tree shall be planted closer than 2½ feet to the pavement.

The proposed parking area has 200 parking spaces - 20 trees required - 28 TREES PROVIDED

Sec. 5.12. Required landscaping

A. Amount of landscaping.

1. Light Industrial - 10% of the site is required to be landscaping.

Total site area = 522,823.6 SF 10% of total = 52,282.4 SF
Total landscape area provided = 192,215 SF (37%)

NOTE: No trees to be planted (horizontally) within 5' of any public utility.

All fire hydrants to have 5' clearance around them. Groundcover is acceptable.

DETENTION AREA: 35,652 SF
55,536 SF / 750 SF = 74 TREES REQUIRED

38 PROPOSED BALD CYPRESS
+
36 PROPOSED EASTERN RED CEDAR

50 TOTAL TREES PROVIDED

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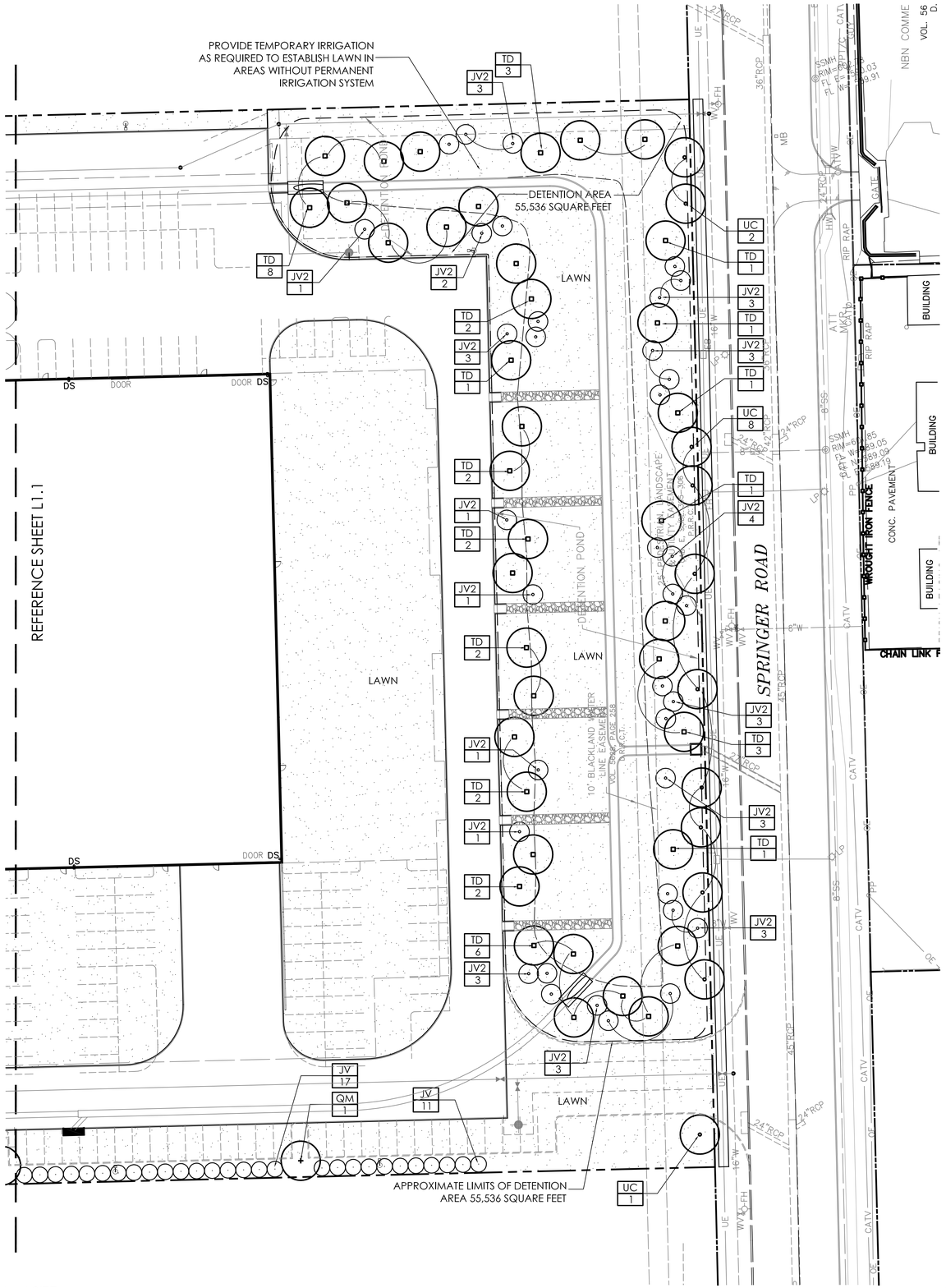
4. NO TREES WILL BE PLANTED WITHIN 5 FEET OF A UTILITY LINE.



A SITE PLAN

SCALE : 1" = 30'-0" 0 15 30 60

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REGISTERED LANDSCAPE ARCHITECT 2213 STATE OF TEXAS
10/22/2014

COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

LANDSCAPE PLAN

L1.2

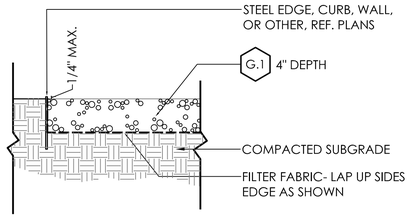
PLANT SCHEDULE

QUANT.	SYM.	BOTANICAL NAME/ COMMON NAME	MIN. CAL.	MIN. HEIGHT	MIN. SPREAD	CONTAINER/ ROOTBALL	SPACING	REMARKS
TREES								
10	AR	ACER RUBRUM 'OCTOBER GLORY' / OCTOBER GLORY RED MAPLE	4"	15'	5'	65 GAL.	PER PLAN	SINGLE STRAIGHT TRUNK, FULL CANOPY, MATCHED
*65	JV	JUNIPERUS VIRGINIANA / EASTERN RED CEDAR		8 - 10'	3'	45 GAL. OR TRANSPLANT	PER PLAN	* TRANSPLANT EXISTING CEDARS FROM TECHNOLOGY PARK AS AVAILABLE, COORDINATE WITH DEVELOPER
*36	JV2	JUNIPERUS VIRGINIANA / EASTERN RED CEDAR		10-12'	4'	45 GAL. OR TRANSPLANT	PER PLAN	* TRANSPLANT EXISTING CEDARS FROM TECHNOLOGY PARK AS AVAILABLE, COORDINATE WITH DEVELOPER
26	QM	QUERCUS MUHLENBERGIA / CHINQUAPIN OAK	4"	15'	5'	65 GAL.	PER PLAN	SINGLE STRAIGHT TRUNK, FULL CANOPY, MATCHED
38	TD	TAXODIUM DISTICHUM / BALD CYPRESS	4"	15'	5'	65 GAL.	PER PLAN	SINGLE STRAIGHT TRUNK, FULL CANOPY, MATCHED
23	UC	ULMUS CRASSIFOLIA / CEDAR ELM	4"	15'	5'	65 GAL.	PER PLAN	SINGLE STRAIGHT TRUNK, FULL CANOPY, MATCHED
SHRUBS / ORNAMENTAL GRASSES								
106	MP	MYRICA PUSILLA/ DWARF WAX MYRTLE	NA	18"	15"	5 GAL.	36" O.C.	
224	SG	SALVIA GREGGII / AUTUMN SAGE	NA	18"	18"	3 GAL.	30" O.C.	
26	JH	JASMINUM HUMILE/ ITALIAN JASMINE	NA	36"	36"	15 GAL.	72" O.C.	
16	JS	SKYROCKET JUNIPER/ JUNIPERUS SCOPULORUM 'SKYROCKET'	NA	60"	24"	15 GAL.	48" O.C.	
27	LF	LEUCOPHYLLUM FRUTESCENS 'SILVERADO'/ SILVERADO SAGE	NA	18"	24"	5 GAL.	48" O.C.	
GROUNDCOVERS / VINES								
591	LM	LANTANA MONTEVIDENSIS/ TRAILING LANTANA	NA	6"	12"	1 GAL.	30" O.C.	
575	TJ	TRACHAELOSPERMUM JASMINOIDES/ STAR JASMINE	NA	6"	12"	4" POTS	18" O.C.	3 (12') RUNNERS MINIMUM

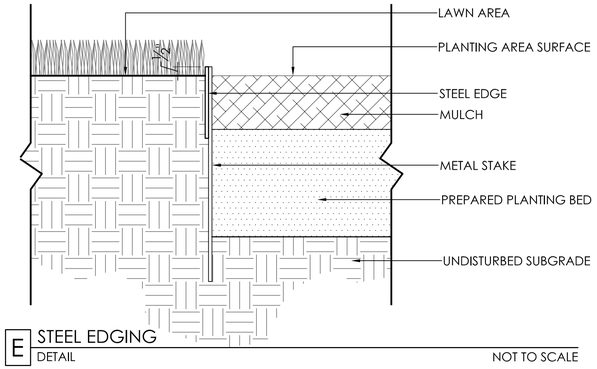
LAWN

CYNADON DACTYLON/ COMMON BERMUDA — HYDROSEED AREAS DESIGNATED ON PLANS

SYM.	DESCRIPTION	COLOR	FINISH	REMARKS
E.1	1/8" X 4" STEEL EDGING	GREEN	POWDER-COAT	
G.1	CRUSHED GRANITE			1 1/2" SIZE; 4" DEPTH

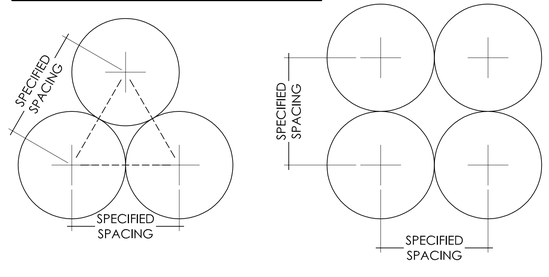


F GRAVEL BED
DETAIL — NOT TO SCALE

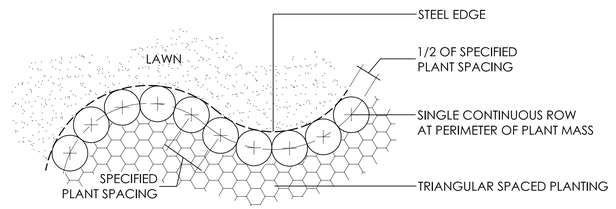


E STEEL EDGING
DETAIL — NOT TO SCALE

TRIANGULAR SPACING APPLIES TO ALL PLANTINGS UNLESS SQUARE SPACING IS SHOWN ON PLANS.

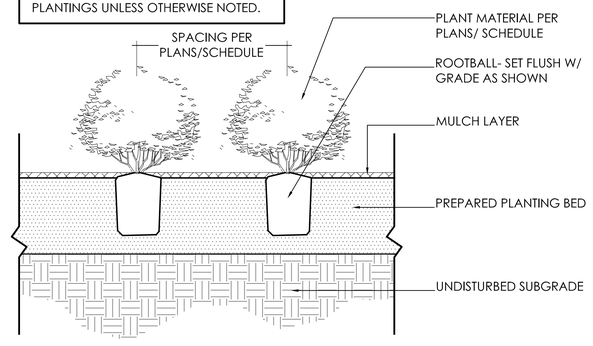


D PLANT SPACING
DETAIL — NOT TO SCALE



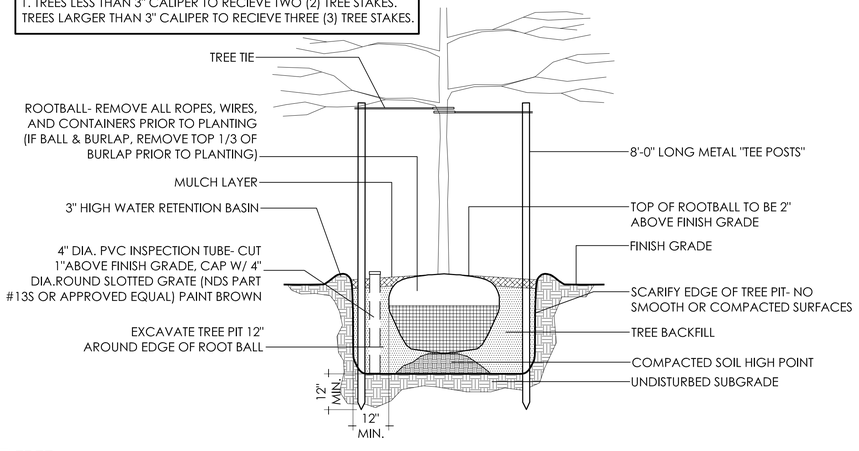
C PLANTING LAYOUT @ EDGE
DETAIL — NOT TO SCALE

NOTE: THIS DETAIL REFERS TO ALL SHRUB, ORNAMENTAL GRASS, GROUNDCOVER, PERENNIAL, VINE AND SEASONAL COLOR PLANTINGS UNLESS OTHERWISE NOTED.



B PLANTING
DETAIL — NOT TO SCALE

NOTES:
1. TREES LESS THAN 3" CALIPER TO RECIEVE TWO (2) TREE STAKES. TREES LARGER THAN 3" CALIPER TO RECIEVE THREE (3) TREE STAKES.



A TREE
DETAIL — NOT TO SCALE

garthoffdesign
landscape architecture
5646 milton, suite 606
dallas, texas 75206
214.227.8444
www.garthoffdesign.com

Owner:
TRMJ, Inc.
1635 Innovation Drive
Rockwall, Texas 75032
Phone: 972-772-1919

REGISTERED LANDSCAPE ARCHITECT 2213 STATE OF TEXAS
10/16/2014

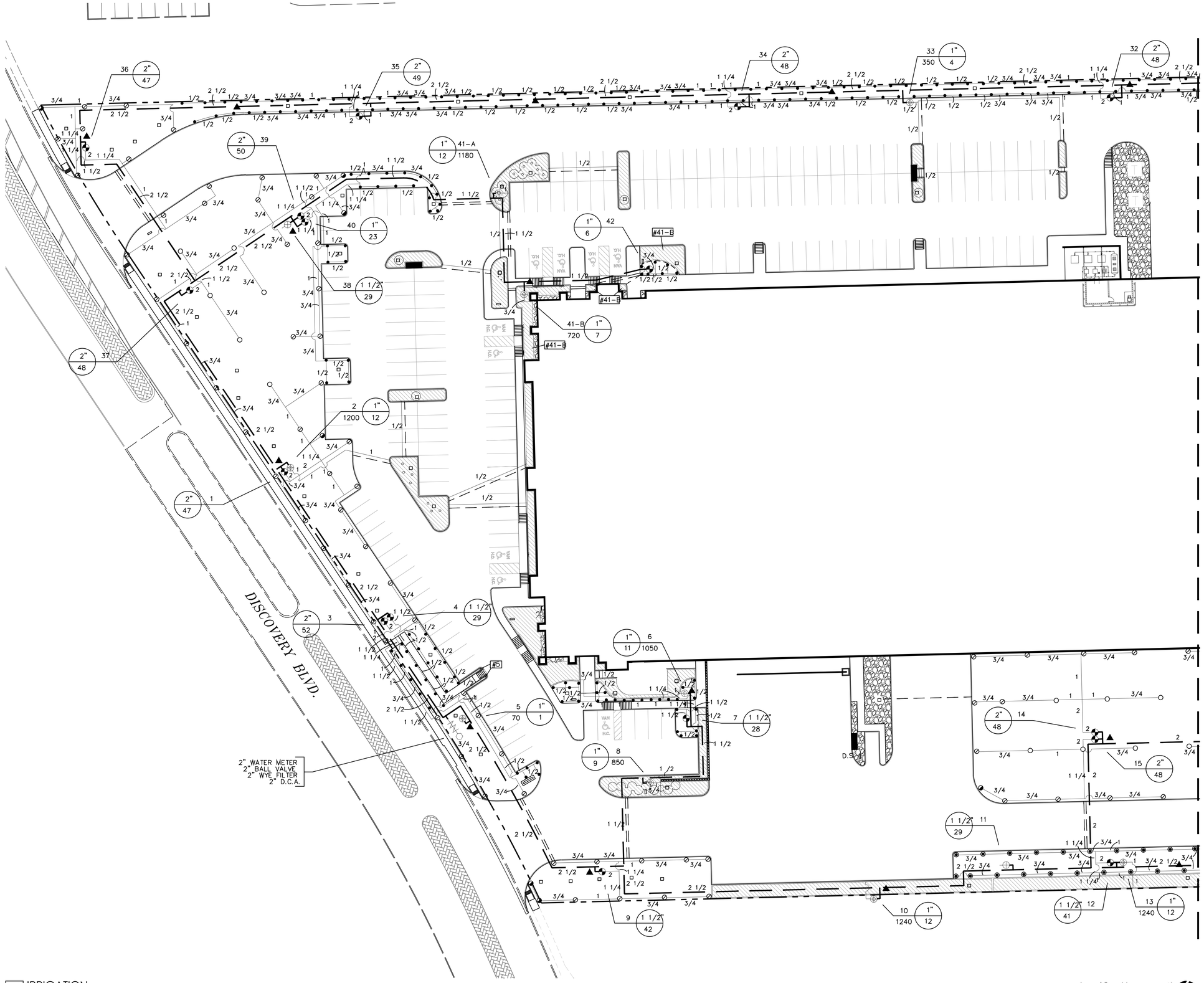
COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

LANDSCAPE MATERIALS & DETAILS

L1.3



A IRRIGATION PLAN

SCALE : 1" = 30'-0"

0 15 30 60

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STATE OF TEXAS
James Pole
658
LICENSED IRRIGATOR

10 / 10 / 2014

COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

James Pole
IRRIGATION CONSULTANTS
IRRIGATION DESIGN, CONSULTING, AND LANDSCAPE WATER MANAGEMENT
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FAX: 940.382.2475
james@jamespoleirrigation.com

IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISION ON ENVIRONMENTAL QUALITY (TCEQ) (MC-178) P.O. BOX 13087 T.C.E.Q.'S WEB SITE IS: WWW.TCEQ.STATE.TX.US

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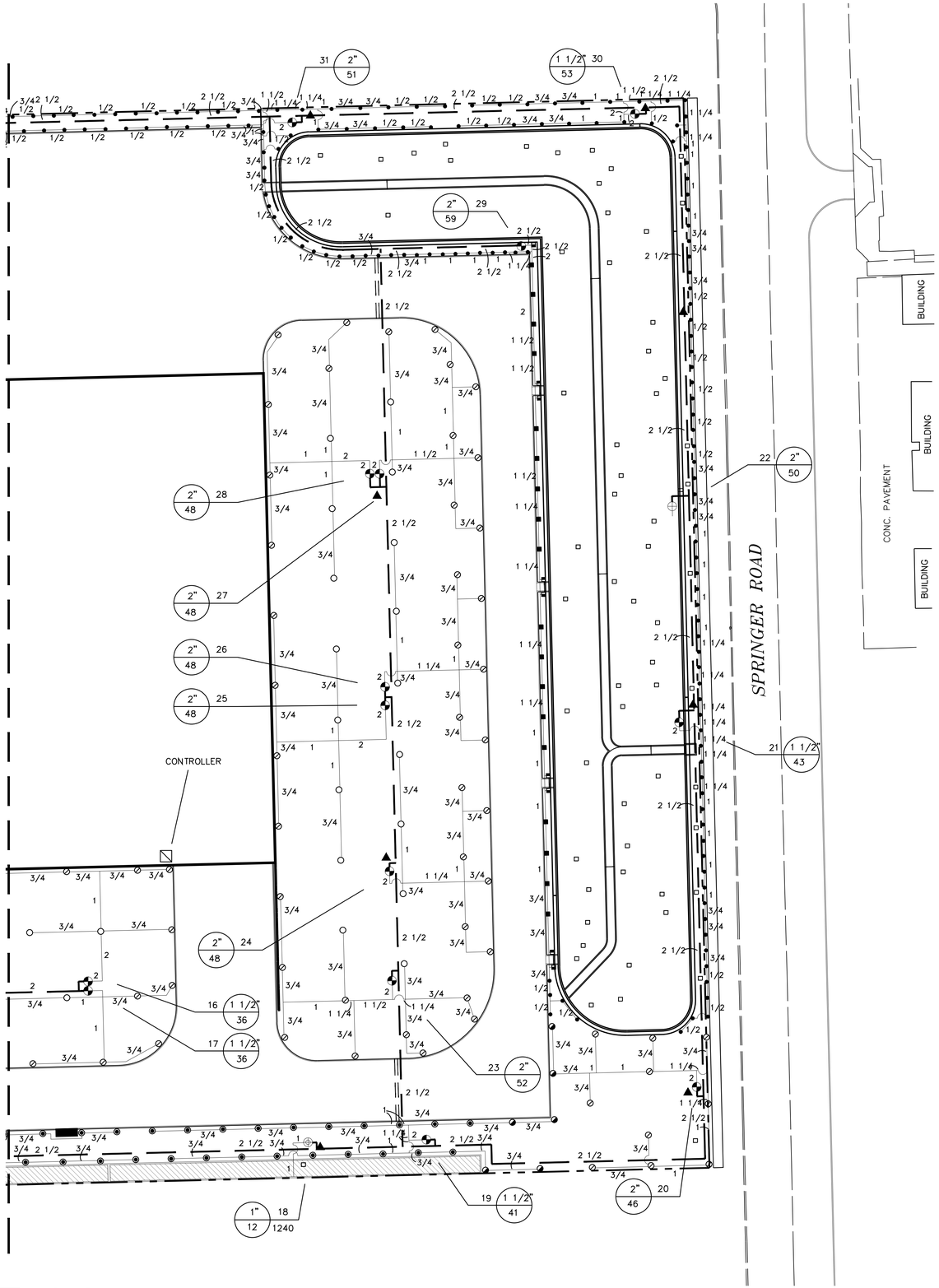
IRRIGATION PLAN

L2.1



A IRRIGATION PLAN

SCALE : 1" = 30'-0"

0 15 30 60

LEGEND

- HUNTER PROS-06-NSI-PRS30 SERIES POP UP SPRAY HEADS WITH HUNTER MSBN-50H STREAM BUBBLER NOZZLES. (TWO PER TREE)
  SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- HUNTER PROS-04-PRS30 SERIES POP UP SPRAY HEAD WITH SS / ES SERIES STRIP NOZZLE UNLESS NOTED OTHERWISE.
- HUNTER PROS-04-PRS30 SERIES POP UP SPRAY HEAD WITH PRO SPRAY SERIES NOZZLE AS NOTED BELOW
- HUNTER PLD SERIES (PLD-06-12) DRIP TUBE IN SHRUB BED INSTALLED AT 2" DEPTH
  SEE INSTALLATION NOTE #16 REGARDING DRIP TUBE LAYOUT IN SHRUB BEDS.
- HUNTER PLD SERIES (PLD-06-12) DRIP TUBE IN NARROW TURF AREAS INSTALLED AT 4" DEPTH
  SEE INSTALLATION NOTE #17 REGARDING DRIP TUBE LAYOUT IN TURF.
- HUNTER PGP ULTRA, ADJUSTABLE ARC 4" POP UP ROTARY HEAD, PART CIRCLE, #2.5 BLUE NOZZLE UNLESS NOTED OTHERWISE
- HUNTER PGP ULTRA, ADJUSTABLE ARC 12" POP UP ROTARY HEAD, PART CIRCLE, #1.0SR BLACK NOZZLE UNLESS NOTED OTHERWISE
- HUNTER PGP ULTRA, ADJUSTABLE ARC 4" POP UP ROTARY HEAD, PART CIRCLE, #4.0 BLUE NOZZLE UNLESS NOTED OTHERWISE
- HUNTER PGP ULTRA, ADJUSTABLE ARC 4" POP UP ROTARY HEAD, FULL CIRCLE, #8.0 BLUE NOZZLE UNLESS NOTED OTHERWISE
- HUNTER ICV SERIES ELECTRIC REMOTE CONTROL VALVE
- HUNTER ICV SERIES ELECTRIC REMOTE CONTROL, "TREE BUBBLER ZONE" VALVE
  SEE INSTALLATION NOTE #13 REGARDING TREE BUBBLER LATERAL PIPE
- HUNTER PCZ-101, ICZ-101, AND ICZ-102 DRIP VALVE ASSEMBLY WITH 40 PSI PRESSURE REGULATOR AND COMMERCIAL BASKET FILTER WITH STAINLESS STEEL SCREEN
- HUNTER HQ-33-LRC-R QUICK COUPLING VALVE WITH LOCKING PURPLE COVER AND 3/4" PVC BALL VALVE
- 2" WILKINS 350 SERIES D.C.A. INSTALLED PER CITY CODE, WITH SAME SIZE WILKINS 850 SERIES BRONZE BALL VALVE AND WILKINS YB SERIES BRONZE WYE FILTER WITH 20 MESH STAINLESS STEEL SCREEN
- 2" IRRIGATION WATER METER AND TAP
- HUNTER IC-4200-M SERIES AUTOMATIC CONTROLLER WITH WRFC WIRELESS RAIN / FREEZE SENSOR
  LOCATE SENSOR AS FIELD DIRECTED BY THE LANDSCAPE ARCHITECT
- CLASS 200 PVC MAINLINE PIPE
- CLASS 200 (EXCEPT 1/2 INCH #315) PVC LATERAL PIPE
- ONE 4" CLASS 200 SLEEVE PIPE UNLESS NOTED OTHERWISE
- TWO 4" CLASS 200 SLEEVE PIPES UNLESS NOTED OTHERWISE

L.I.C. SHALL SELECT PRO-SPRAY SPRAY NOZZLES FOR "HEAD-TO-HEAD" COVERAGE, ADJUSTED FOR NO OVERSPRAY ONTO WALLS AND WALKS. NO OVERSPRAY INTO STREETS IS PERMITTED.

TEMPORARY IRRIGATION

THE CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN AND PROVIDE TEMPORARY IRRIGATION FOR THE ESTABLISHMENT OF ALL PROPOSED PLANT MATERIALS LOCATED OUTSIDE THE LIMITS OF COVERAGE PROVIDED BY THE PERMANENT SYSTEM.

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STATE OF TEXAS 658 LICENSED IRRIGATOR
10 / 10 / 2014

COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

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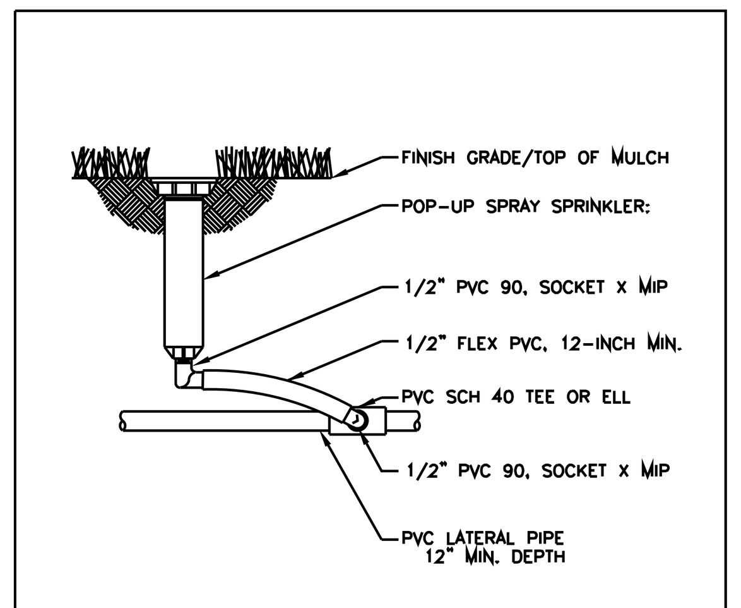
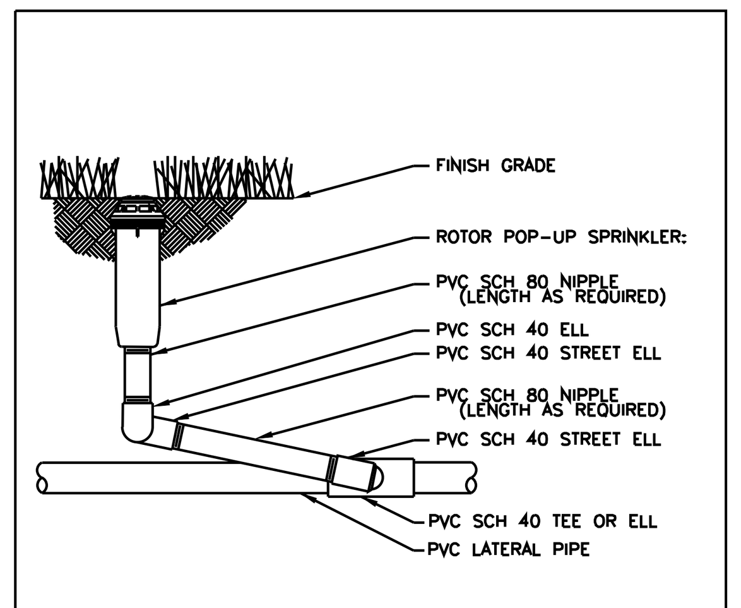
IRRIGATION PLAN

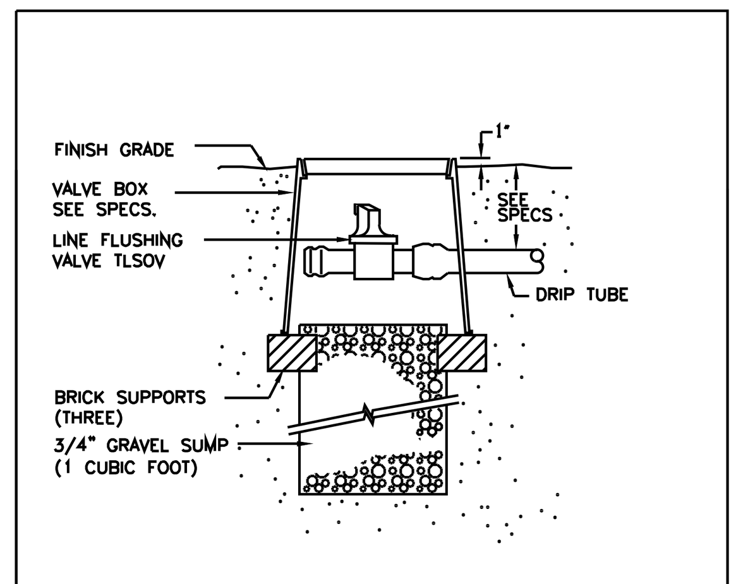
L2.2



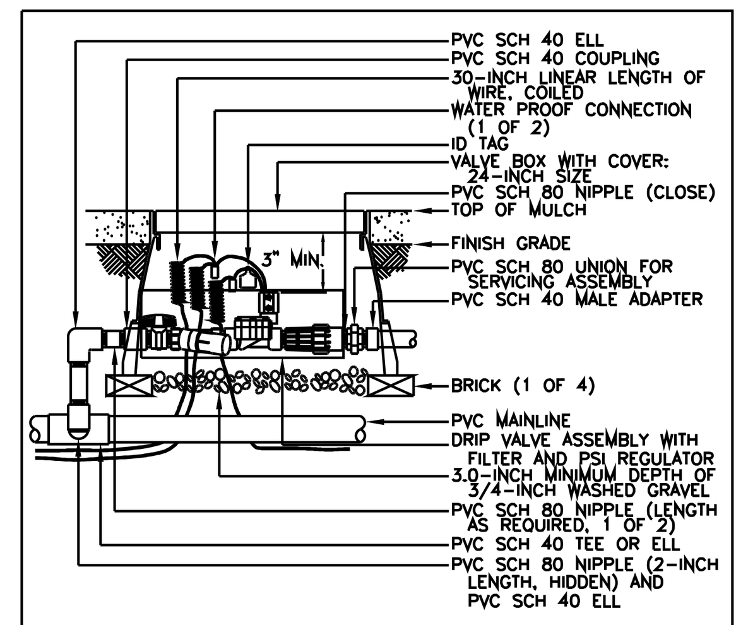
POP-UP SPRAY HEAD



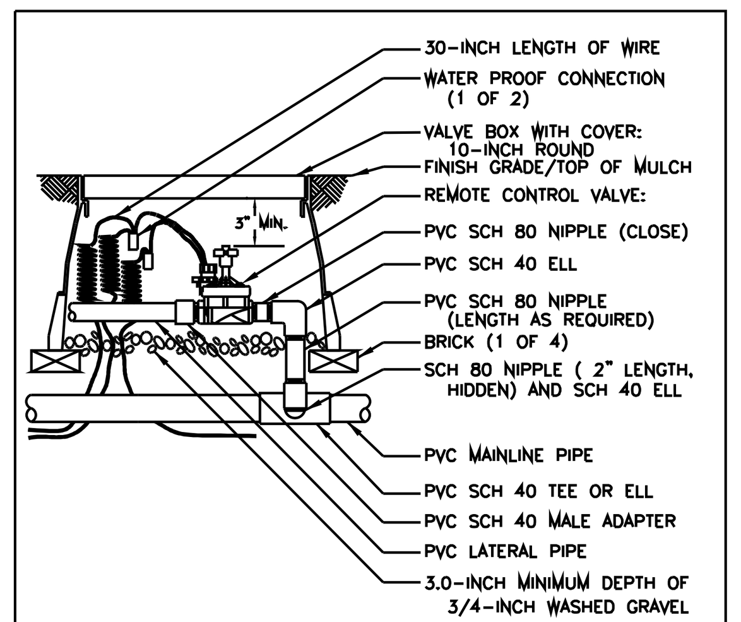
ROTOR POP-UP SPRINKLER



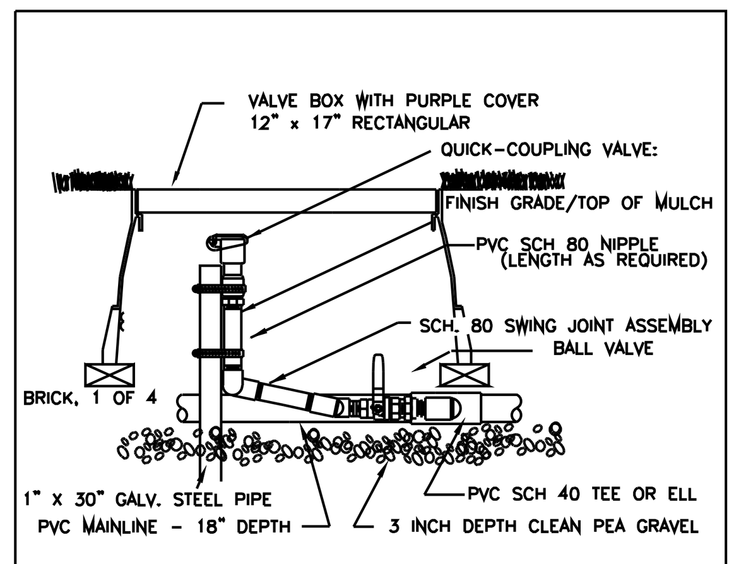
MANUAL LINE FLUSH VALVE



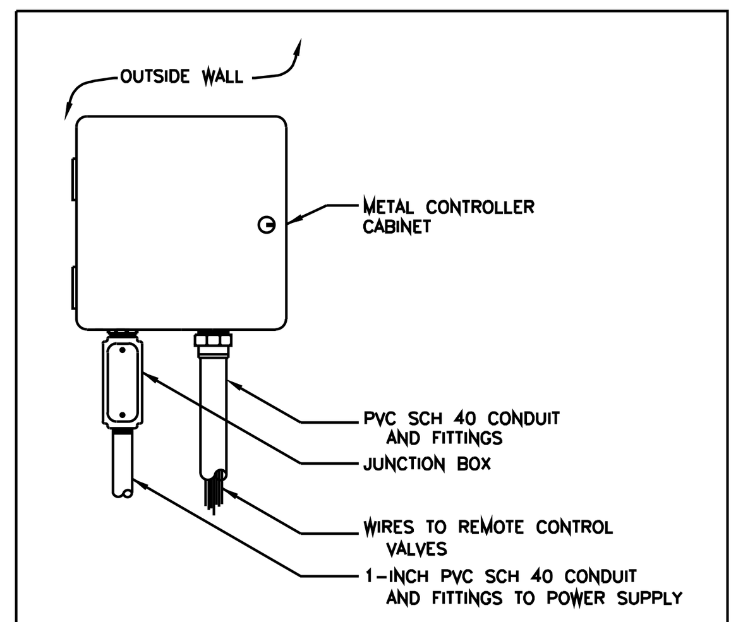
CONTROL ZONE KIT



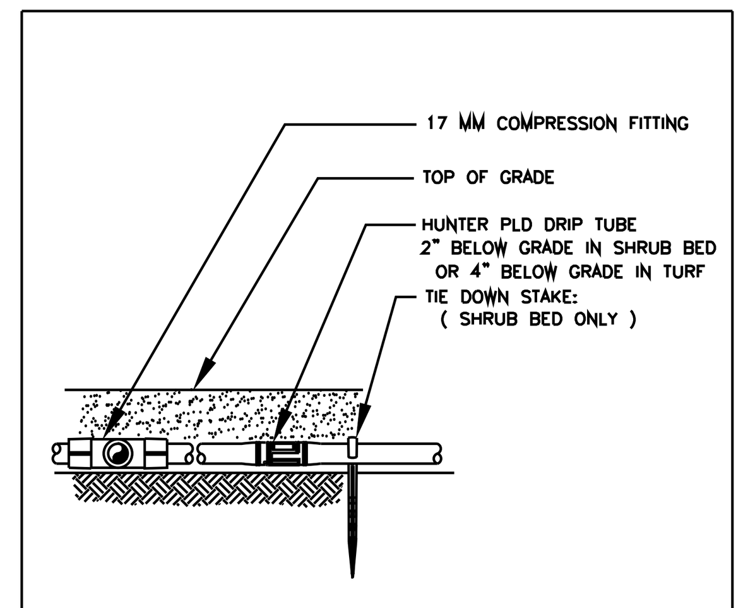
REMOTE CONTROL VALVE



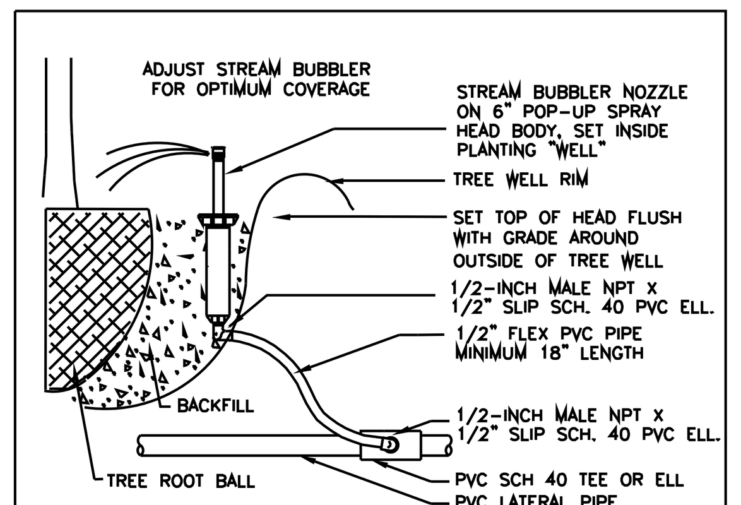
QUICK COUPLER VALVE
WITH PVC BALL VALVE



WALL MOUNT CONTROLLER

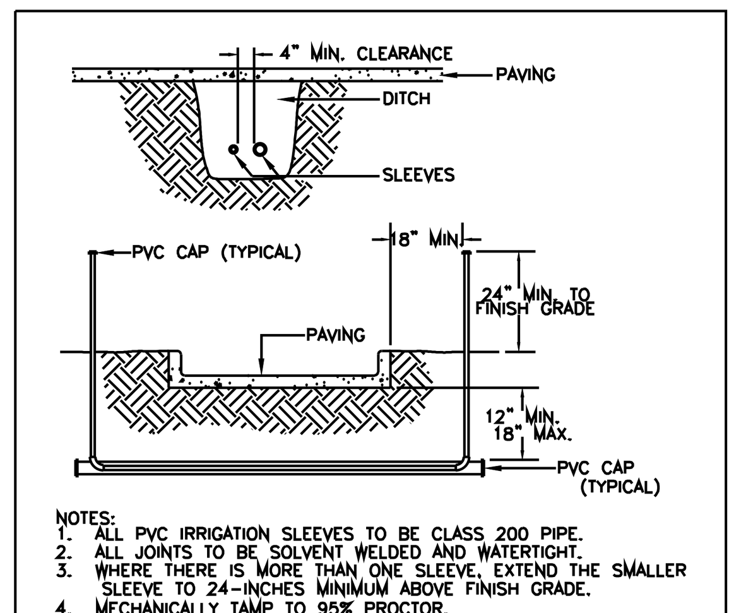


DRIP TUBE

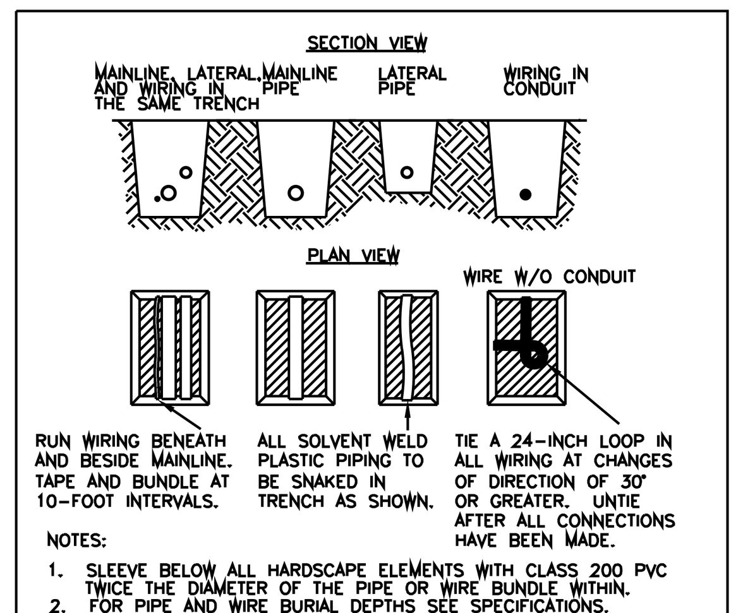


INCLUDE TWO BUBBLER HEADS, SET ON OPPOSITE SIDES OF ROOT BALL

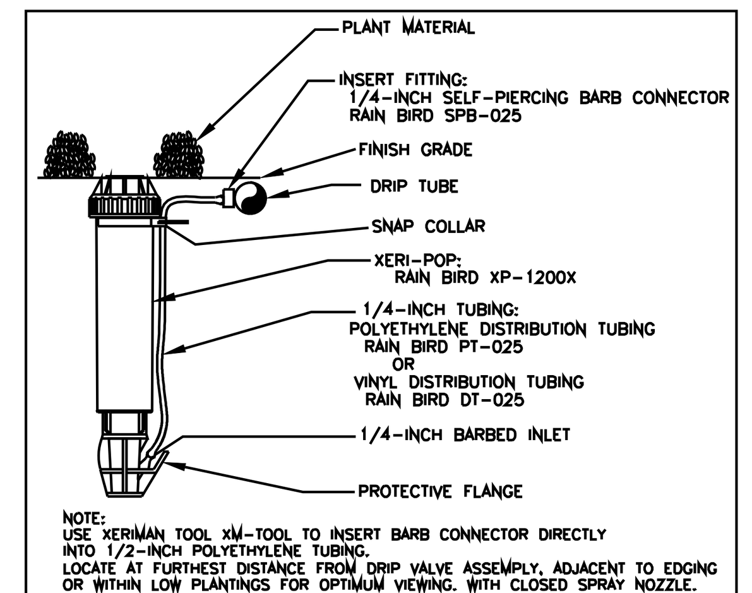
TREE BUBBLER



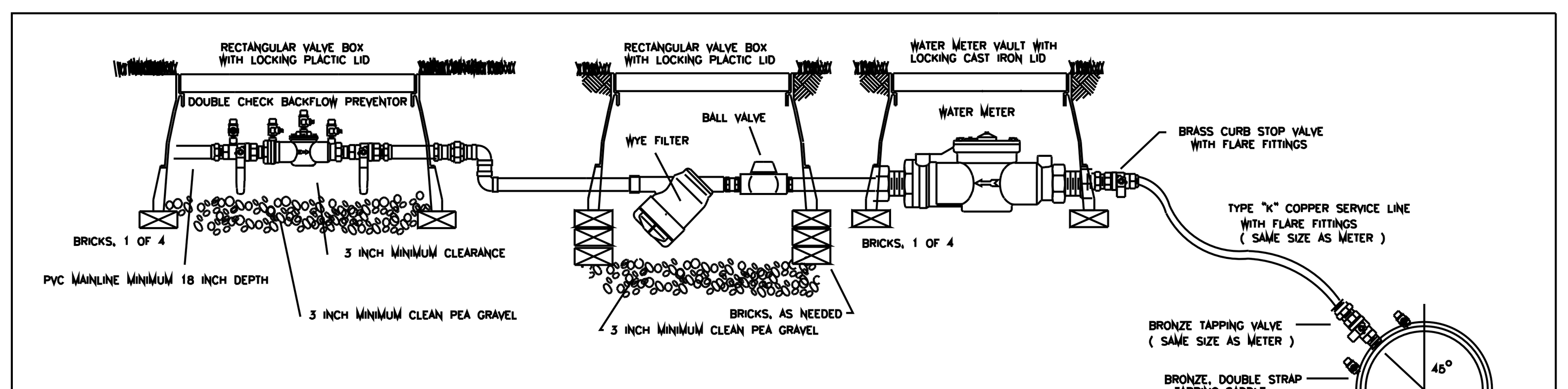
SLEEVING



TRENCH DETAIL

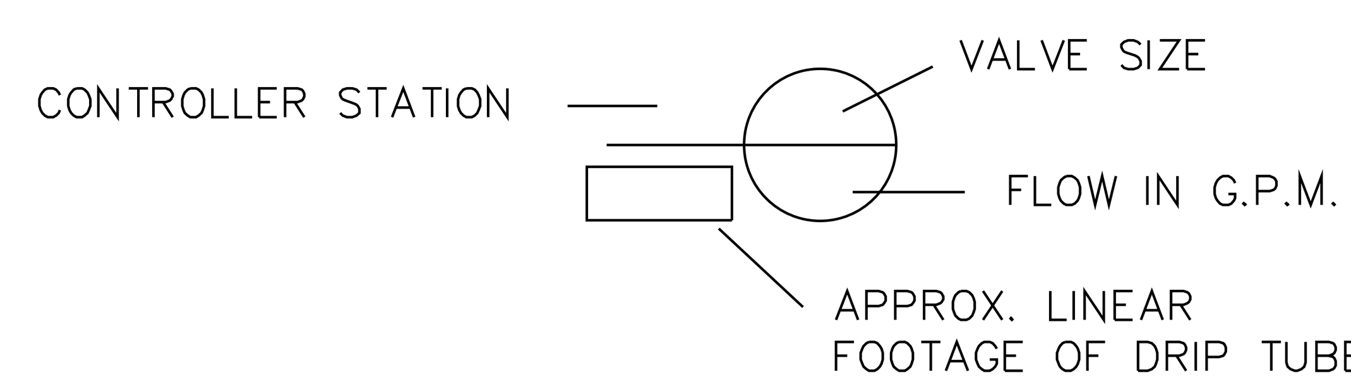


DRIP ZONE INDICATOR



* CONFIRM WITH LOCAL CITY REQUIREMENTS

WATER TAP WITH METER AND BACKFLOW ASSEMBLY



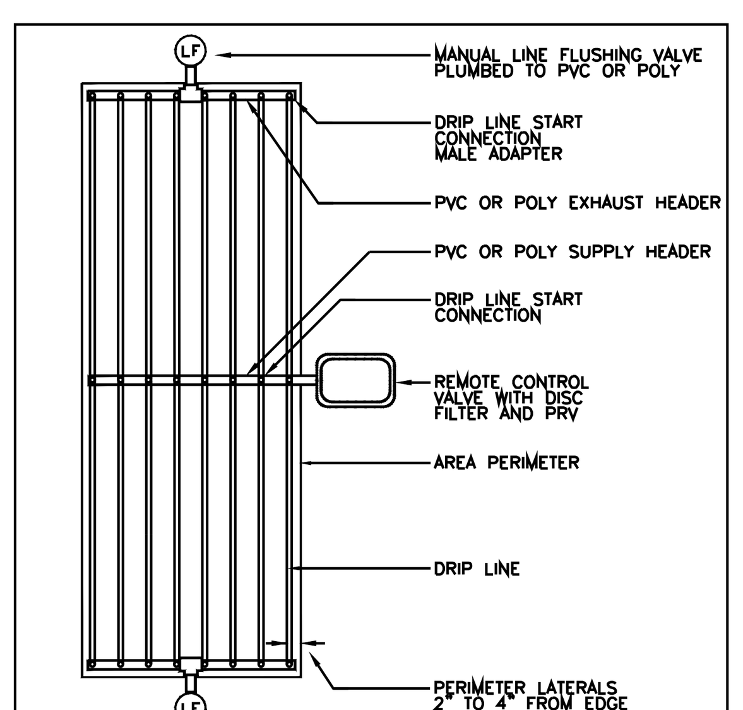
INSTALLATION NOTES

1. COORDINATE IRRIGATION INSTALLATION WITH PLANTING PLAN AND SITE CONDITIONS TO PROVIDE COMPLETE COVERAGE WITH MINIMUM OVERSPRAY. THE IRRIGATION CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS TO ENSURE PROPER COVERAGE AT NO ADDITIONAL COST TO THE OWNER.
2. THE IRRIGATION CONTRACTOR SHALL COMPLY WITH ALL LOCAL AND STATE MANDATED IRRIGATION ORDINANCES AND CODES, AND WILL SECURE ALL REQUIRED PERMITS. L.I.C. SHALL PAY ANY ASSOCIATED FEES UNLESS OTHERWISE NOTED. ALL LOCAL CODES SHALL PREVAIL OVER ANY DISCREPANCIES HEREIN AND SHALL BE ADDRESSED BEFORE ANY CONSTRUCTION BEGINS.
3. CONFIRM MINIMUM STATIC WATER PRESSURE OF 60 PSI AT THE HIGHEST ELEVATION OF THE SYSTEM LIMITS, AND MAXIMUM STATIC WATER PRESSURE OF 90 P.S.I. AT THE LOWEST ELEVATION OF THE SYSTEM LIMITS AT LEAST 7 DAYS BEFORE BEGINNING WORK. IF STATIC WATER PRESSURE IS OUTSIDE THE RANGE STATED ABOVE, DO NOT PROCEED UNTIL DIRECTED BY THE LANDSCAPE ARCHITECT.
4. LATERAL PIPE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 12 INCHES. MAINLINE PIPE AND WIRES SHALL BE INSTALLED AT A MINIMUM DEPTH OF 18 INCHES. NO MACHINE TRENCHING SHALL BE PERMITTED WITHIN EXISTING TREE ROOT ZONES. WHEN HAND – TRENCHING WITHIN EXISTING TREE ROOT ZONES, NO ROOTS LARGER THAN 1" DIAMETER SHALL BE CUT.
5. UNSLEEVED PIPES MAY BE SHOWN UNDER PAVEMENT FOR GRAPHIC CLARITY ONLY. INSTALL THESE PIPES IN ADJACENT LANDSCAPED AREAS.
6. ELECTRIC POWER SHALL BE PROVIDED WITHIN FIVE FEET OF CONTROLLER LOCATION BY GENERAL CONTRACTOR. L.I.C. TO PROVIDE FINAL HARD–WIRE TO CONTROLLER.
7. 24 VOLT VALVE WIRE SHALL BE A MINIMUM OF #14 GAUGE, U.F. APPROVED FOR DIRECT BURIAL, SINGLE CONDUCTOR "IRRIGATION WIRE". WIRE SPLICES SHALL INCLUDE DBY CONNECTORS AS MANUFACTURED BY 3M COMPANY. ALL FIELD SPLICES SHALL BE LOCATED IN A ROUND VALVE BOX OF SUFFICIENT SIZE TO ALLOW INSPECTION.
8. VALVE BOXES SHALL BE INSTALLED FLUSH WITH GRADE, SUPPORTED BY BRICKS IF NEEDED, WITH 3 INCHES OF CLEAN PEA GRAVEL LOCATED BELOW THE VALVE. USE 12" x 17" RECTANGULAR VALVE BOXES WITH PURPLE LID FOR QUICK COUPLING VALVES, AND 10" ROUND BOXES FOR ELECTRIC VALVES UNLESS NOTED OTHERWISE. D.C.A., WITH UPSTREAM BALL VALVE AND WYE FILTER SHALL BE BOXED AND LOCATED ACCORDING TO LOCAL CODE.
9. USE RIGID SCH. 80 PVC SWING JOINT ASSEMBLIES TO CONNECT ALL ROTARY HEADS AND QUICK COUPLERS.
10. ALL SPRAY HEADS SHALL BE CONNECTED WITH A 12" MINIMUM LENGTH OF 1/2" FLEX PVC. THE FLEX PVC SHALL BE SOLVENT WELDED TO SCHEDULE 40 PVC FITTINGS WITH WELD–ON #795 SOLVENT AND #P–70 PRIMER.
11. PROVIDE ONE QUICK COUPLER KEY WITH SWIVEL HOSE ELL FOR EVERY SIX Q.C. VALVES. (MINIMUM ONE SET).
12. CONTRACTOR IS TO CONTACT APPROPRIATE AUTHORITIES AND LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
13. LATERAL PIPE TO TREE STREAM BUBBLER HEADS IS OMITTED FOR GRAPHIC CLARITY. CONNECT TREE BUBBLER HEADS TO VALVES AS SHOWN WITH CLASS 200 PVC PIPE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF 5 FEET PER SECOND
14. THE PROPOSED LOCATIONS OF ALL ABOVE– GROUND EQUIPMENT INCLUDING BACKFLOW PREVENTORS, CONTROLLERS AND WEATHER SENSORS SHALL BE STAKED BY THE CONTRACTOR FOR APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE BEFORE THESE ITEMS ARE INSTALLED.
15. ALL HEADS SHALL BE INSTALLED A MINIMUM OF 4" FROM PAVEMENT EDGES. (6" OR GREATER WHERE REQUIRED BY LOCAL CODE) FINAL HEAD ADJUSTMENTS BY THE CONTRACTOR SHALL INCLUDE THE ADDITION OF CHECK VALVES WHERE NEEDED TO PREVENT EXCESSIVE LOW HEAD DRAINAGE. THE CONTRACTOR SHALL BUDGET FOR, AND INSTALL CHECK VALVES FOR UP 10 % OF THE TOTAL NUMBER OF HEADS WHEN NEEDED, WITH NO ADDITIONAL COST TO THE OWNER.
16. WHERE SHOWN ON THE PLANS, MASS SHRUB / GROUNDCOVER BEDS SHALL INCLUDE HUNTER PLD SERIES DRIP TUBE WITH PRE–INSTALLED .6 GPH DRIP EMITTERS AT 12" INTERVALS, INSTALLED IN CENTER–FED GRIDS WITH ROWS SPACED 18" APART. INDIVIDUAL DRIP TUBE RUNS SHALL NOT EXCEED 150 L.F. PVC LATERAL "TRUNK" LINES SHALL BE INSTALLED 10" DEEP. DRIP TUBE SHALL BE SET 2" BELOW FINISHED SOIL GRADE (NOT INCLUDING MULCH LAYER), AND SECURELY STAKED EVERY 18". FLUSH VALVES SHALL BE INSTALLED AT THE FARTHEST POINTS FROM THE ZONE VALVE. USE 17 MM BARBED FITTINGS FOR DRIP LINE CONNECTIONS, SET THE MAXIMUM OPERATING PRESSURE AT 30 PSI. DRIP TUBE SHALL BE INSTALLED PERPENDICULAR TO SLOPE FACE. INSTALL IN–LINE CHECK VALVES EVERY 4.5 FEET OF DRIP LINE ELEVATION CHANGE WITHIN THE ZONE. USE STAPLES TO SECURE TUBING EVERY 18". EACH DRIP ZONE SHALL INCLUDE ONE MAINTENANCE "FLAG" WHICH SHALL CONSIST OF A 12" POP–UP SPRAY HEAD AND COMPLETELY CLOSED SPRAY NOZZLE. THE POP–UP HEAD SHALL BE CONNECTED TO THE DRIP ZONE PIPE, SET FLUSH WITH GRADE, AND LOCATED AT THE FARTHEST DISTANCE FROM THE DRIP VALVE ASSEMBLY. INSTALL THE "FLAG" HEAD ADJACENT TO EDGING OR IN LOW PLANTINGS FOR EASE OF VIEWING.
17. WHERE SHOWN ON THE PLANS, SPECIFIC TURF AREAS SHALL INCLUDE HUNTER PLD SERIES DRIP TUBE WITH PRE–INSTALLED .6 GPH DRIP EMITTERS AT 12" INTERVALS, INSTALLED IN CENTER–FED GRIDS WITH ROWS SPACED 12" APART. INDIVIDUAL DRIP TUBE RUNS SHALL NOT EXCEED 150 L.F. PVC LATERAL "TRUNK" LINES SHALL BE INSTALLED 10" DEEP. DRIP TUBE SHALL BE SET 4" BELOW FINISHED SOIL GRADE AND SECURELY STAKED EVERY 18". FLUSH VALVES SHALL BE INSTALLED AT THE FARTHEST POINTS FROM THE ZONE VALVE. USE 17 MM BARBED FITTINGS FOR DRIP LINE CONNECTIONS, SET THE MAXIMUM OPERATING PRESSURE AT 30 PSI. DRIP TUBE SHALL BE INSTALLED PERPENDICULAR TO SLOPE FACE. INSTALL IN–LINE CHECK VALVES EVERY 4.5 FEET OF DRIP LINE ELEVATION CHANGE WITHIN THE ZONE. USE STAPLES TO SECURE TUBING EVERY 18". EACH DRIP ZONE SHALL INCLUDE ONE MAINTENANCE "FLAG" WHICH SHALL CONSIST OF A 12" POP–UP SPRAY HEAD AND COMPLETELY CLOSED SPRAY NOZZLE. THE POP–UP HEAD SHALL BE CONNECTED TO THE DRIP ZONE PIPE, SET FLUSH WITH GRADE, AND LOCATED AT THE FARTHEST DISTANCE FROM THE DRIP VALVE ASSEMBLY. INSTALL THE "FLAG" HEAD ADJACENT TO EDGING OR IN LOW PLANTINGS FOR EASE OF VIEWING.

TEMPORARY IRRIGATION

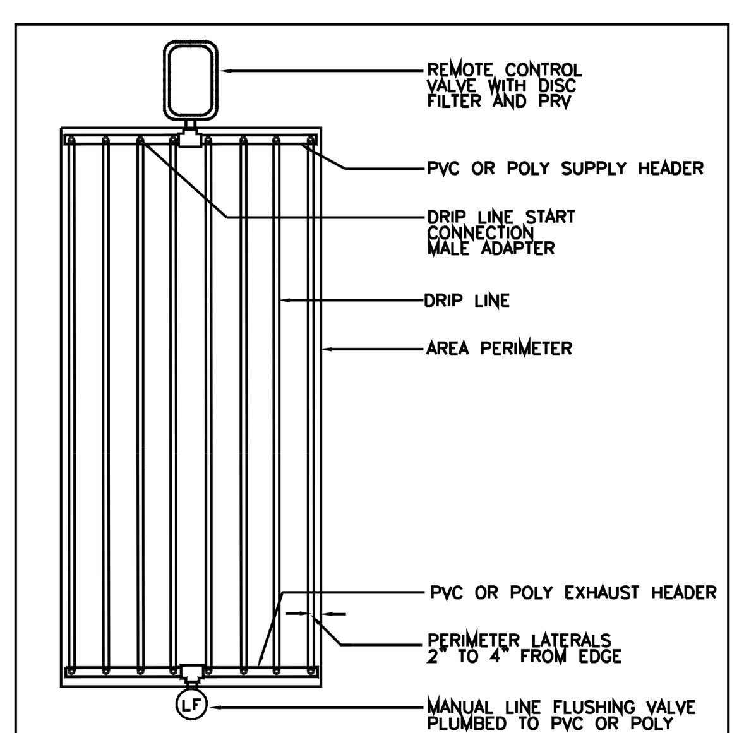
THE CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN AND PROVIDE TEMPORARY IRRIGATION FOR THE ESTABLISHMENT OF ALL PROPOSED PLANT MATERIALS LOCATED OUTSIDE THE LIMITS OF COVERAGE PROVIDED BY THE PERMANENT SYSTEM.

MINIMUM STATIC PRESSURE = 65 PSI
DESIGN PRESSURE = 58 PSI



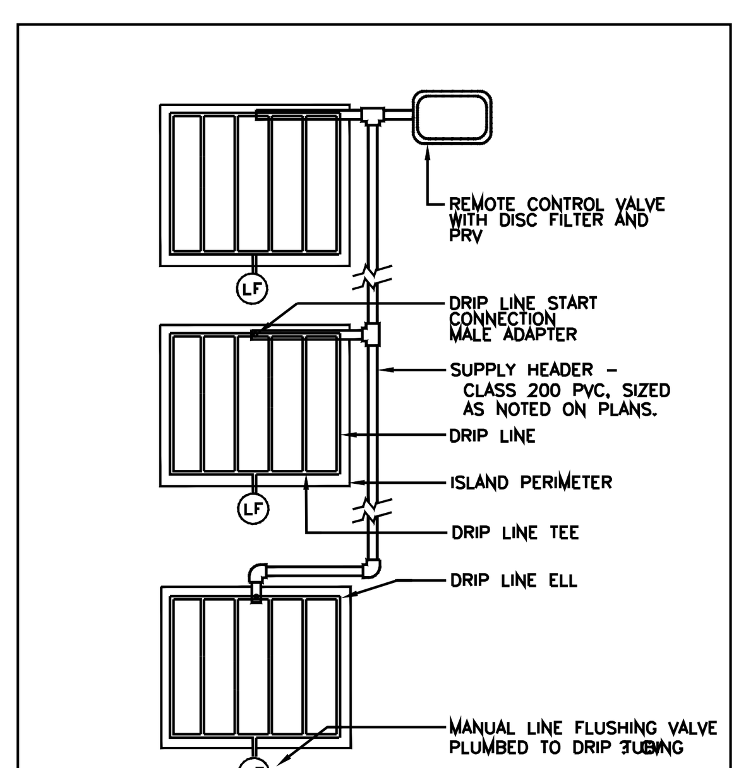
SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.
USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP CENTER FEED LAYOUT



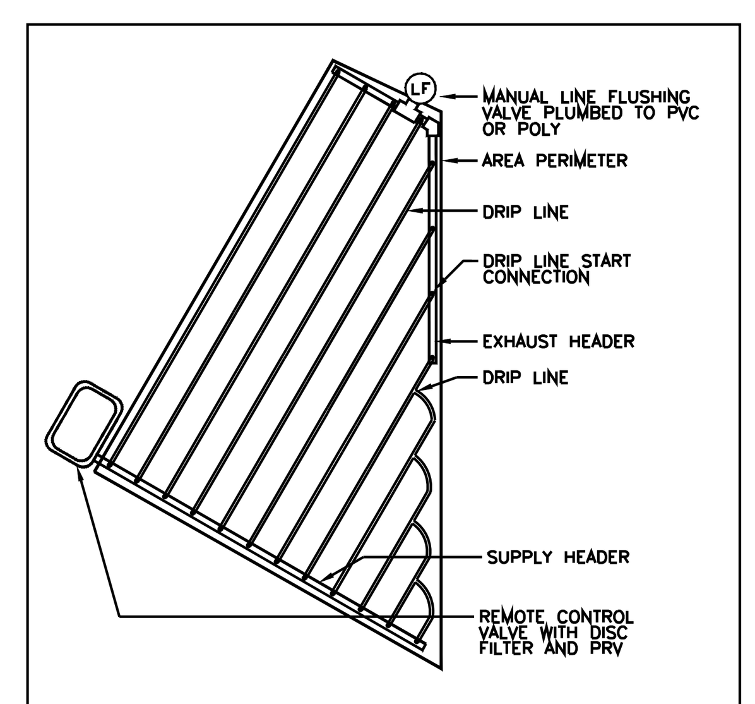
SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.
USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP END FEED LAYOUT



USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

DRIP ISLAND LAYOUT



SUPPLY AND EXHAUST HEADERS SHALL BE CLASS 200 PVC PIPE, OF THE SAME DIAMETER AS THE ZONE VALVE SIZE.
USE DRIP TUBE FOR SUPPLY AND EXHAUST HEADERS ON GRIDS WITH FLOW SMALLER THAN 5 GPM ONLY.

IRREGULAR AREA DRIP LAYOUT

James Pole
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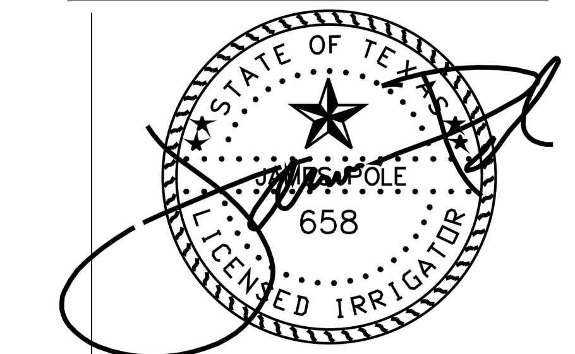

10 / 10 / 2014

COL-MET SPRAY BOOTHS
ROCKWALL, TEXAS

ISSUE:

REVISIONS:

IRRIGATION NOTES & DETAILS

L2.3

EXISTING TOPOGRAPHIC LEGEND

	ASPHALT PAVEMENT
BOL/GP	BOLLARD/GUARD POST
B/C	DIMENSION TO BACK OF CURB
CATV	CABLE TV
CM	CONTROL MONUMENT
CONC.	CONCRETE
EAP	EDGE OF ASPHALT PAVEMENT
EB	ELEC BOX (GROUND)
EM	ELEC METER
FH	FIRE HYDRANT
FO	FIBER OPTIC CABLE
GM	GAS METER
GMH	GAS MANHOLE
GTS	GAS TEST STATION
GUY	GUY WIRE
HDWL.	CONCRETE HEADWALL
ICV	IRRIGATION CONTROL VALVE
IRF	IRON ROD FOUND
IRS	IRON ROD SET
LP	LIGHT POLE
PP	POWER POLE
PP/LP	POWER POLE W/LIGHT
SDMH	STORM DRAIN MANHOLE
SHD	SPRINKLER HEAD
SN	SIGN
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEANOUT
SWBT	SOUTH WESTERN BELL TELEPHONE
TPD	TELEPHONE PEDESTAL
TSG	TELEPHONE SWITCH GEAR
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
TSC	TRAFFIC SIGNAL CONTROLLER
	TRANSFORMER PAD
WM	WATER METER
WV	WATER VALVE
OE	OVERHEAD ELECTRIC LINE
UE	UNDERGROUND ELECTRIC LINE
W	WATER LINE
SS	SANITARY SEWER LINE
FO	FIBER OPTIC LINE
UT	UNDERGROUND TELEPHONE
OT	OVERHEAD TELEPHONE
G	UNDERGROUND GAS
24" RCP	EXISTING CONCRETE STORM DRAIN LINE
24" CMP	EXISTING CORREGATED METAL STORM DRAIN LINE
	EXISTING FLOWLINE
BARBED WIRE FENCE	BARBED WIRE FENCE
CHAIN LINK FENCE	CHAIN LINK FENCE
WOOD FENCE	WOOD FENCE
	GUARD RAIL / BARRICADE
	EXISTING TREE LINE
	EXISTING TREE

PAVING PLAN LEGEND

	8" 3,600 P.S.I. REINFORCED CONCRETE TRUCK DOCK & DUMPSTER PAVEMENT (MIN. 6.5 SACK MIX)
	7" 3,600 P.S.I. REINFORCED CONCRETE TRUCK ROUTE & FIRE LANE PAVEMENT (MIN. 6.5 SACK MIX)
	6" 3,600 P.S.I. REINFORCED CONCRETE FIRE LANE PAVEMENT (MIN. 6.5 SACK MIX)
	5" 3,600 P.S.I. REINFORCED CONCRETE LIGHT DUTY PAVEMENT (MIN. 6.5 SACK MIX)
	8" 4,200 P.S.I. REINFORCED CONCRETE PUBLIC DRIVE APPROACH (MIN. 7.0 SACK MIX)
	4" 3,000 P.S.I. REINFORCED CONCRETE SIDEWALK (MIN. 5.5 SACK MIX)
	HANDICAP RAMP DETECTIBLE WARNING (TRUNCATED DOME PLATES SAME COLOR AS THE REDC AND R.O.W. PLATES)
	PROPOSED EDGE OF PAVEMENT
	FUTURE EDGE OF PAVEMENT
L2	LINE IDENTIFIED IN LINE TABLE
C2	CURVE IDENTIFIED IN CURVE TABLE
B/B	BACK OF CURB TO BACK OF CURB
	PROPOSED CHAIN LINK FENCE
	PROPOSED BARBED WIRE FENCE
	PROPOSED WOOD / STOCKADE FENCE
	PROPOSED BARRICADE / GUARD RAIL
	PROPOSED RETAINING WALL
	HANDICAP PARKING
	PROPOSED SIGN & POST
	INDICATES PROPOSED STANDARD CURB INLET
B	BOLLARD
SN	DIRECTIONAL SIGN SEE ARCHITECT'S PLANS

DRAINAGE PLAN LEGEND

A-1 / 2.00	DRAINAGE AREA DESIGNATION DRAINAGE AREA (ACRES)
	WATERSHED LIMITS
	MAJOR DRAINAGE AREA DIVIDE
	MAJOR DRAINAGE AREA SUB-DIVIDE
	ZONING BOUNDARY
	FLOW DIRECTION ARROW
L2	LINE IDENTIFIED IN LINE TABLE
C2	CURVE IDENTIFIED IN CURVE TABLE
	INDICATES PROPOSED STANDARD CURB INLET
	INDICATES PROPOSED DROP INLET
	INDICATES PROPOSED JUNCTION BOX
27" RCP	PROPOSED STORM DRAIN
27" RCP	FUTURE STORM DRAIN
	PROPOSED SWALE

EROSION CONTROL LEGEND

	LIMITS OF OPERATOR DAY TO DAY OPERATIONAL CONTROL
	PROPOSED SWALE
	INDICATES STABILIZED CONSTRUCTION ENTRANCE
	INDICATES REINFORCED SILT FENCE
	INDICATES ROCK BERM
	INDICATES DROP INLET PROTECTION
	INDICATES PROPOSED INLET TREATMENT
	CURLEX EROSION CONTROL BLANKET
	INDICATES SEDIMENT TRAP OUTLET CONTROL DEVICE
640	EXISTING CONTOUR LINE
640	PROPOSED CONTOUR LINE

WATER & SANITARY SEWER PLAN LEGEND

24" W	PROPOSED 16" OR LARGER WATER MAIN
8" W	PROPOSED 12" OR SMALLER WATER MAIN
24" W	FUTURE 16" OR LARGER WATER MAIN
8" W	FUTURE 12" OR SMALLER WATER MAIN
	PROPOSED GATE VALVE
	PROPOSED REDUCER
	PROPOSED WATER METER
	PROPOSED FIRE HYDRANT
	PROPOSED AIR RELEASE VALVE OR BLOW-OFF VALVE
24" SS	PROPOSED 16" OR LARGER SANITARY SEWER
8" SS	PROPOSED 12" OR SMALLER SANITARY SEWER
24" SS	FUTURE 16" OR LARGER SANITARY SEWER
8" SS	FUTURE 12" OR SMALLER SANITARY SEWER
	PROPOSED SANITARY SEWER MANHOLE
	PROPOSED SANITARY SEWER CLEANOUT

PREPARED BY:
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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
TOPOGRAPHIC LEGEND

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/30/15

LAST SHEET EDIT DATE 10/30/2015
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SHEET NO.
C-S001

RECORD PLANS
October 30, 2015

CUSHMAN & WAKEFIELD
SCOTT + REID General Contractors

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PAVEMENT & JOINT SEALING NOTES

1. ALL CONCRETE FOR PAVEMENT SHALL BE CLASS "C" AND HAVE A MINIMUM 3,600 PSI COMPRESSIVE STRENGTH (MINIMUM 6.5 SACK MIX) AT 28 DAYS WITH 4 TO 6 PERCENT AIR ENTRAINMENT UNLESS OTHERWISE NOTED. PAVEMENT MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE 3RD EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" PREPARED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS AND THE CITY OF ROCKWALL STANDARDS. SLIP FORMED CONCRETE SHALL HAVE A MAXIMUM SLUMP OF THREE INCHES. HAND-PLACED CONCRETE SHALL HAVE A MAXIMUM FIVE-INCH SLUMP. ALL REINFORCEMENT SHALL BE CHAIRED.

2. THE JOINTING SHALL CONFORM TO THE LOCATIONS AND DETAILS SHOWN ON THESE PLANS. SPECIFIC SAWED CONTRACTION OR CONSTRUCTION JOINT LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL SUBMIT A LAYOUT INDICATING THE SAWED JOINT LOCATIONS TO BE REVIEWED AND APPROVED BY THE ENGINEER. ISOLATION JOINTS SHALL BE PROVIDED AT ALL MANHOLE RIMS, LIGHT STANDARDS AND OTHER SIMILAR INSTALLATIONS. EXPANSION JOINT LOCATIONS HAVE BEEN INDICATED ON PAVING AND DIMENSIONAL CONTROL PLANS.

3. PROVIDE SAWED JOINTS AT MAXIMUM 20-FOOT SPACING FOR EIGHT-INCH CONCRETE. MAXIMUM 15 FEET FOR SIX-INCH CONCRETE AND MAXIMUM 12-FOOT SPACING FOR FIVE-INCH CONCRETE. DO NOT PLACE SAWED JOINT LONGITUDINALLY ALONG LOW POINT OR AT GUTTER LINE. SAWING OF JOINTS SHALL BEGIN AS SOON AS CONCRETE HAS HARDENED SUFFICIENTLY TO PERMIT SAWING WITHOUT EXCESSIVE RAVELING. COMPLETE ALL SAWED JOINTS BEFORE UNCONTROLLED SHRINKAGE CRACKING OCCURS.

4. DO NOT PLACE SAND OR SELECT FILL BENEATH CONCRETE PAVEMENT, SIDEWALKS, DRIVE APPROACHES OR HANDICAP RAMPS FOR LEVEL UP COURSE. UTILIZE COMPACTED NATIVE MATERIALS.

5. BACKFILL ALL CURBS TO EDGE OF SUBGRADE WITH ON-SITE CLAY SOILS. COMPACT TO 95% TO 100% OF STANDARD PROCTOR DENSITY AT OR ABOVE OPTIMUM MOISTURE CONTENT.

6. CONTRACTOR SHALL SAW-CUT TIE-INS AT EXISTING CURBS AS NECESSARY TO INSURE SMOOTH TRANSITIONS. CONTRACTOR SHALL SAW-CUT AND TRANSITION TO MEET EXISTING PAVEMENT AS NECESSARY TO INSURE POSITIVE DRAINAGE. (TYP. ALL INTERSECTIONS)

7. ALL EXPANSION, CONTRACTION AND CONSTRUCTION JOINTS IN PAVED AREAS SHALL BE SEALED IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE JOINT SEALING MANUFACTURERS RECOMMENDATIONS.

8. CLEAN ALL JOINTS PRIOR TO PLACEMENT OF JOINT SEALING MATERIAL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

9. PROVIDE BACKER RODS FOR JOINTS WITHOUT PRE-MOLDED JOINT MATERIAL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSTALL CERA-ROD MANUFACTURED BY W.R. MEADOWS OR EQUAL.

10. EXPANSION AND ISOLATION JOINT MATERIAL TO BE PRE-MOLDED EXPANSION JOINT MATERIAL AS RECOMMENDED BY JOINT SEALING MANUFACTURER WITH JOINT CAP TO PROTECT SEALANT RESERVOIR.

11. TYPICALLY, JOINT SEALING MATERIAL IS PLACED BELOW SURFACE OF CONCRETE TO NEAR FULL LEVEL. CERTAIN PRODUCTS SUCH AS SOFT SEAL ARE RECOMMENDED TO BE PLACED TO FULL LEVEL. REFER TO MANUFACTURERS RECOMMENDATIONS.

12. THE CONTRACTOR SHALL CONSTRUCT ALL DRIVEWAY APPROACHES IN CONFORMANCE WITH APPLICABLE CITY STANDARD ORDINANCES AND REQUIREMENTS. CONTRACTOR SHALL CONFIRM APPLICABLE DRIVEWAY OR ACCESS PERMITS HAVE BEEN OBTAINED PRIOR TO CONSTRUCTION.

13. ALL DIMENSIONS ARE TO BACK OF CURB, UNLESS NOTED OTHERWISE.

14. ALL COORDINATES ARE TO BACK OF CURB, UNLESS NOTED OTHERWISE.

15. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.

16. ALL EDGE OF PAVEMENT WITH NO CURB SHALL BE THICKENED EDGE.

WALKWAY, MARKING, AND SIGNAGE NOTES

1. ALL PEDESTRIAN WALKWAYS UTILIZED FOR DISABLED ACCESS ROUTE SHALL CONFORM TO LOCAL, STATE, AND FEDERAL REGULATIONS INCLUDING THE "STATE OF TEXAS PROGRAM FOR THE ELIMINATION OF ARCHITECTURAL BARRIERS", "TEXAS ACCESSIBILITY STANDARDS" (TAS) AND THE "AMERICANS WITH DISABILITIES ACT OF 1990" (ADA).

2. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED CITY PERMITS AND NOTIFY THE CITY PRIOR TO CONSTRUCTING PUBLIC SIDEWALKS.

3. UNLESS REQUIRED OTHERWISE BY CITY REGULATIONS, ALL WALKWAYS SHALL BE CONSTRUCTED OF MINIMUM 3,000 PSI CONCRETE AND A MINIMUM CEMENT CONTENT OF 5.5 SACKS PER CUBIC YARD. ALL SIDEWALKS SHALL BE REINFORCED WITH A MINIMUM OF #3 BARS AT 18-INCH CENTERS EACH WAY LOCATED AT THE CENTER OF THE THICKNESS. THE STEEL SHALL BE PLACED ON CHAIR SUPPORTS BEFORE CONCRETE PLACEMENT. IF NECESSARY, DURING CONCRETE PLACEMENT, THE STEEL SHALL BE PULLED UP TO INSURE THE PROPER LOCATION OF REINFORCEMENT.

4. WALKWAYS SHALL BE CONSTRUCTED TO THE LINE AND GRADE INDICATED ON THE PLANS OR THE TYPICAL LOCATIONS SHOWN ON THE PAVING PLANS IN RELATION TO PROPOSED CURB. SEE PAVEMENT NOTE #1 ABOVE.

5. PUBLIC AND PRIVATE SIDEWALKS SHALL BE CONSTRUCTED ON NATIVE MATERIALS. DO NOT PLACE SAND UNDER PUBLIC OR PRIVATE SIDEWALKS OR HANDICAP RAMPS FOR LEVEL UP COURSE. PUBLIC SIDEWALKS SHALL BE CONSTRUCTED ACCORDING TO CITY DETAILS.

6. FORMS SET FOR SIDEWALKS SHALL BE TRUE TO LINE AND GRADE AND SHALL PROVIDE A SLOPE OF 1/4 INCH PER FOOT ACROSS THE SIDEWALK UNLESS INDICATED OTHERWISE ON THE PLANS. FORMS SHALL BE SET TO PROVIDE FOR A FULL DEPTH OF CONCRETE INDICATED ON THE PLANS AND FORMS SHALL REMAIN IN PLACE A MINIMUM OF 24 HOURS. UPON REMOVAL OF THE FORM WORK, THE CONTRACTOR SHALL IMMEDIATELY BACKFILL THE EDGES OF THE WALK FOR A MINIMUM OF ONE FOOT (1') EACH SIDE OF THE WALK.

7. 24-INCH BY 3/4-INCH DIAMETER ASPHALT-COATED DOWELS WITH FIVE INCH BY 13/16-INCH DOWEL SLEEVE SHALL BE INSTALLED ON 16-INCH CENTERS, ALONG WITH REDWOOD EXPANSION BOARD AND SEALING COMPOUND AS PER STANDARD EXPANSION JOINT DETAIL SHEET ALONG PERIMETER OF WHEEL CHAIR RAMP AND SIDEWALK.

8. PROVIDE 15-INCH MINIMUM LAP BETWEEN REINFORCING STEEL IN STREET AND REINFORCING STEEL IN WHEEL CHAIR RAMP.

9. SUBGRADE FOR WALKWAYS ABUTTING CURBS, WITHIN PARKING ISLAND AREAS OR BETWEEN THE PARKING AREA AND BUILDING, SHALL BE PLACED ON COMPACTED FILL OR FIRM COMPACTED EXCAVATED GRADE. FILLS FOR SIDEWALKS SHALL CONFORM TO THE SAME REQUIREMENTS AS CONTROLLED DENSITY FILLS IN PARKING AREAS WITH THE COMPACTED MATERIAL EXTENDING A MINIMUM 18 INCHES BEYOND THE WALKWAY.

10. JOINT SEALING MATERIAL UTILIZED IN WALKWAY AREAS BETWEEN THE PARKING AREA AND THE BUILDING FOR EXPANSION JOINTS SHALL CONSIST OF "POURTHANE" MANUFACTURED BY W.R. MEADOWS, INC. OR EQUAL. THIS INCLUDES WALKWAYS ABUTTING PERIMETER PARKING IN FRONT OF BUILDING.

11. FOR WALKWAYS SIX FEET IN WIDTH OR LESS, GROOVED OR SAWED CONTRACTION JOINTS SHALL BE MADE AT UNIFORM INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK. ON WALKWAYS GREATER THAN SIX FEET IN WIDTH, CONTRACTION JOINTS SHALL BE SAWED. CONTRACTION JOINTS SHALL ONLY BE SEALED WHERE CONCENTRATED RUNOFF OCCURS IN PARKING AREAS, ENTRANCES AND WALKWAYS AT THE BUILDING. SEAL PARKING LOT CONCENTRATED RUNOFF AREAS SAME AS PARKING PAVEMENT. SEAL WALKWAYS WITHIN 50 FEET OF BUILDING WITH "DECK-0-SEAL" AS MANUFACTURED BY W.R. MEADOWS OR EQUAL.

12. CONCRETE FINISH SHALL BE BROOMED FOR ALL WALKWAYS LESS THAN SIX FEET IN WIDTH AND MINOR ACCESS ROUTES GREATER THAN EIGHT FEET IN WIDTH. ALL HANDICAP ACCESS RAMPS SHALL HAVE SURFACE TEXTURE FINISH COMPLYING WITH ADA AND TAS GUIDELINES 302 AND 405.4.

13. JOINT SEALING MATERIAL FOR WALKWAY AND EXPANSION JOINTS IN THE INTERNAL PARKING AREAS AND EXTERNAL OPEN AREAS SHALL BE "HI SPEC" MANUFACTURED BY W.R. MEADOWS OR EQUAL.

14. CLEAN ALL JOINTS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION PRIOR TO SEALING.

15. ALL SIGNS, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

16. ALL PAVEMENT MARKINGS SHALL BE FOUR INCHES WIDE, COLOR WHITE UNLESS INDICATED OTHERWISE ON THE DRAWINGS. STRIPING TO BE TWO COATS OF PAINT. SECOND COAT TO THE APPLIED IMMEDIATELY PRIOR TO OBTAINING A CERTIFICATE OF OCCUPANCY.

17. A MINIMUM CLEARANCE OF TWO (2) FEET SHALL BE MAINTAINED BETWEEN THE FACE OF CURB AND ANY PART OF A TRAFFIC SIGN.

18. CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS SHOWN ON THE PLANS.

19. CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL SIGNS, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES WITH OTHER CONTRACTORS ON THE SITE.

20. FIRE LANE STRIPING WIDTH AND RADIUS TO BE COORDINATED WITH FIRE MARSHAL WHERE FIRE LANE IS INDICATED ON PLANS. FIRE LANE IS ANTICIPATED TO REQUIRE SOLID SIX-INCH RED CONTINUOUS STRIPING ON BOTH SIDES AND CURB RETURNS. THE WORDS "FIRE LANE NO PARKING" SHALL BE PAINTED ON MINIMUM 20-FOOT CENTERS WITH FOUR-INCH WHITE LETTERS WITHIN SOLID RED STRIPE PER FIRE CODE. PAINT TYPE AND COLOR SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.

TESTING

1. REFER TO PROJECT GEOTECHNICAL RECOMMENDATIONS FOR FREQUENCY OF CONCRETE TESTING AND TEST METHODS. ALL CONCRETE SHALL BE TESTED. IF TESTING IS NOT ADDRESSED IN GEOTECHNICAL RECOMMENDATIONS PROVIDE AS PER NCTCOG ITEM 303.7.3 AND ITEM 702.2.4.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

PREPARED BY:
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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
PRIVATE GENERAL PAVING NOTES

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/28/15

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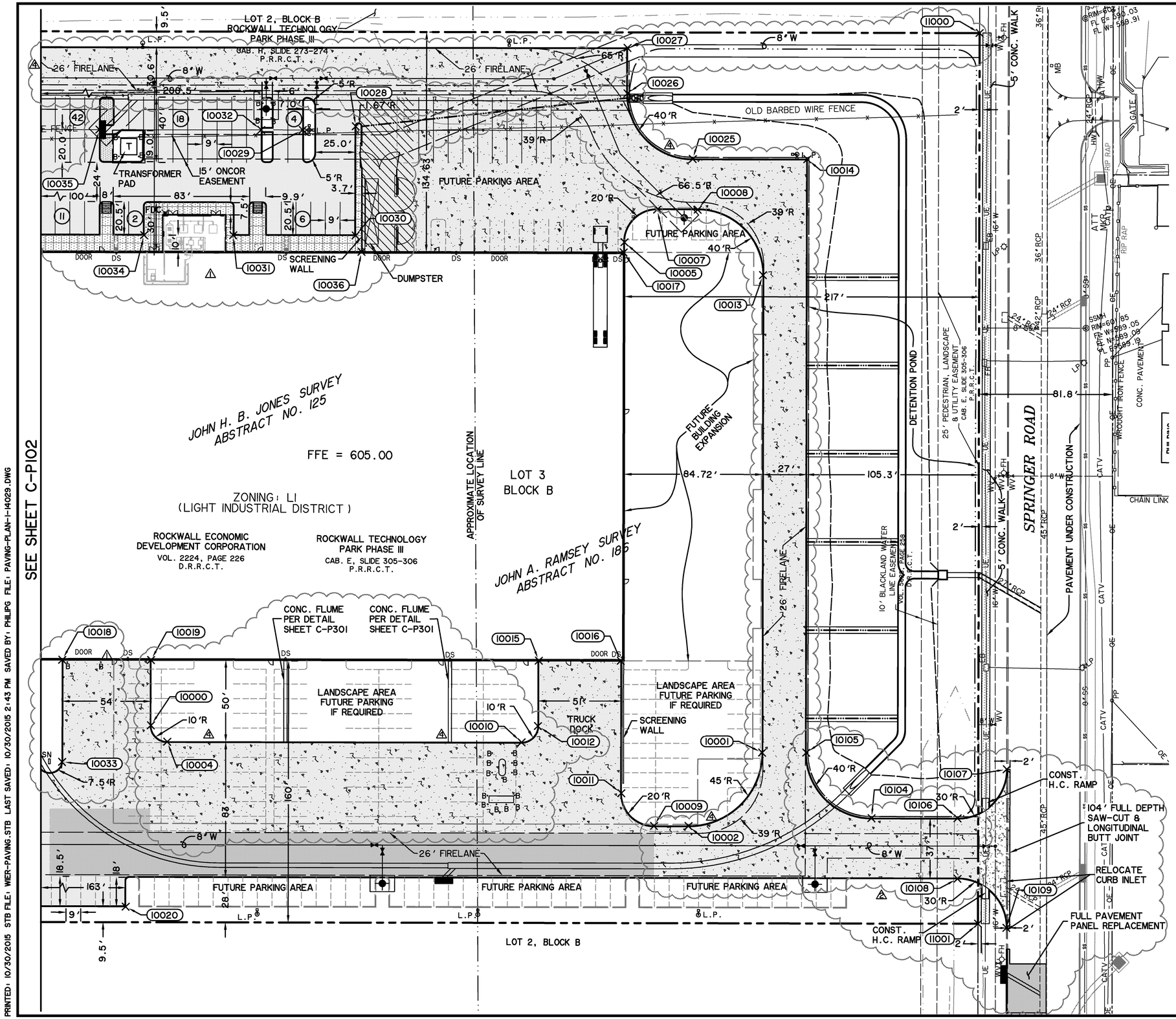

CAUTION !!

EXISTING UTILITIES ARE INDICATED ON THE PLANS FROM AVAILABLE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES, TO NOTIFY ALL UTILITY COMPANIES OF THE CONTRACTORS OPERATIONS, TO PROTECT ALL UTILITIES FROM DAMAGE, TO REPAIR ALL UTILITIES DAMAGED DUE TO THE CONTRACTORS OPERATIONS, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING UTILITIES.

GENERAL NOTES:

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE.
2. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
3. REFER TO ELECTRICAL SITE LAYOUT FOR PARKING LOT LIGHTING CONDUIT LOCATIONS AND LANDSCAPE IRRIGATION PLANS FOR IRRIGATION SLEEVE LOCATIONS.
4. ALL CURB RETURNS ARE 2' RADII UNLESS OTHERWISE SPECIFIED.
5. SPEED BUMPS ARE NOT PERMITTED WITHIN A FIRELANE.
6. TWO POINTS OF ACCESS SHALL BE MAINTAINED FOR THE PROPERTY AT ALL TIMES.
7. SEE SHEET C-S001 FOR PAVING LEGEND.

PAVING CONTROL POINTS		
POINT	NORTHING	EASTING
10000	7020351.5590	2608097.1085
10001	7019977.2724	2608090.2159
10002	7020021.1638	2608044.1340
10004	7020341.3186	2608087.3548
10005	7020069.6658	2608400.2597
10007	7020050.1585	2608420.7406
10008	7020025.3462	2608421.3447
10009	7020042.2426	2608043.6208
10010	7020124.5872	2608092.6316
10011	7020062.7235	2608063.1281
10012	7020114.8336	2608102.8720
10013	7019984.3844	2608382.3301
10014	7019959.1206	2608453.9663
10015	7020115.3073	2608142.8723
10016	7020065.1948	2608144.0924
10017	7020070.0147	2608394.0491
10018	7020406.8494	2608135.7741
10019	7020352.5326	2608137.0966
10020	7020364.0712	2607985.7708
10025	7020029.2357	2608452.2592
10026	7020070.1975	2608491.2738
10027	7020070.8773	2608519.1958
10028	7020235.8535	2608466.8617
10029	7020268.2872	2608463.7439
10030	7020234.2270	2608400.0540
10031	7020309.0552	2608398.2322
10032	7020293.6301	2608463.1269
10033	7020405.3285	2608073.3053
10034	7020363.5391	2608396.9057
10035	7020392.6008	2608460.7172
10036	7020230.3003	2608390.1467
10104	7019909.3187	2608051.8585
10105	7019950.2804	2608090.8731
10106	7019856.6625	2608053.1405
10107	7019827.4021	2608083.8846
10108	7019855.7474	2608016.1518
10109	7019825.0257	2607986.8758
11000	7019855.7517	2608533.9361
11001	7019842.4841	2607988.9666

REVISIONS	DATE	BY
1 RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
2 ADDED DRIVE CONNECTION	03/19/15	PLG
3 ADDED ADDITIONAL TRUCK PARKING & ADDED ADDITIONAL 7' PVMT.	04/13/15	TVW

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

RECORD PLANS
October 30, 2015

0 30 60 90

CUSHMAN & WAKEFIELD

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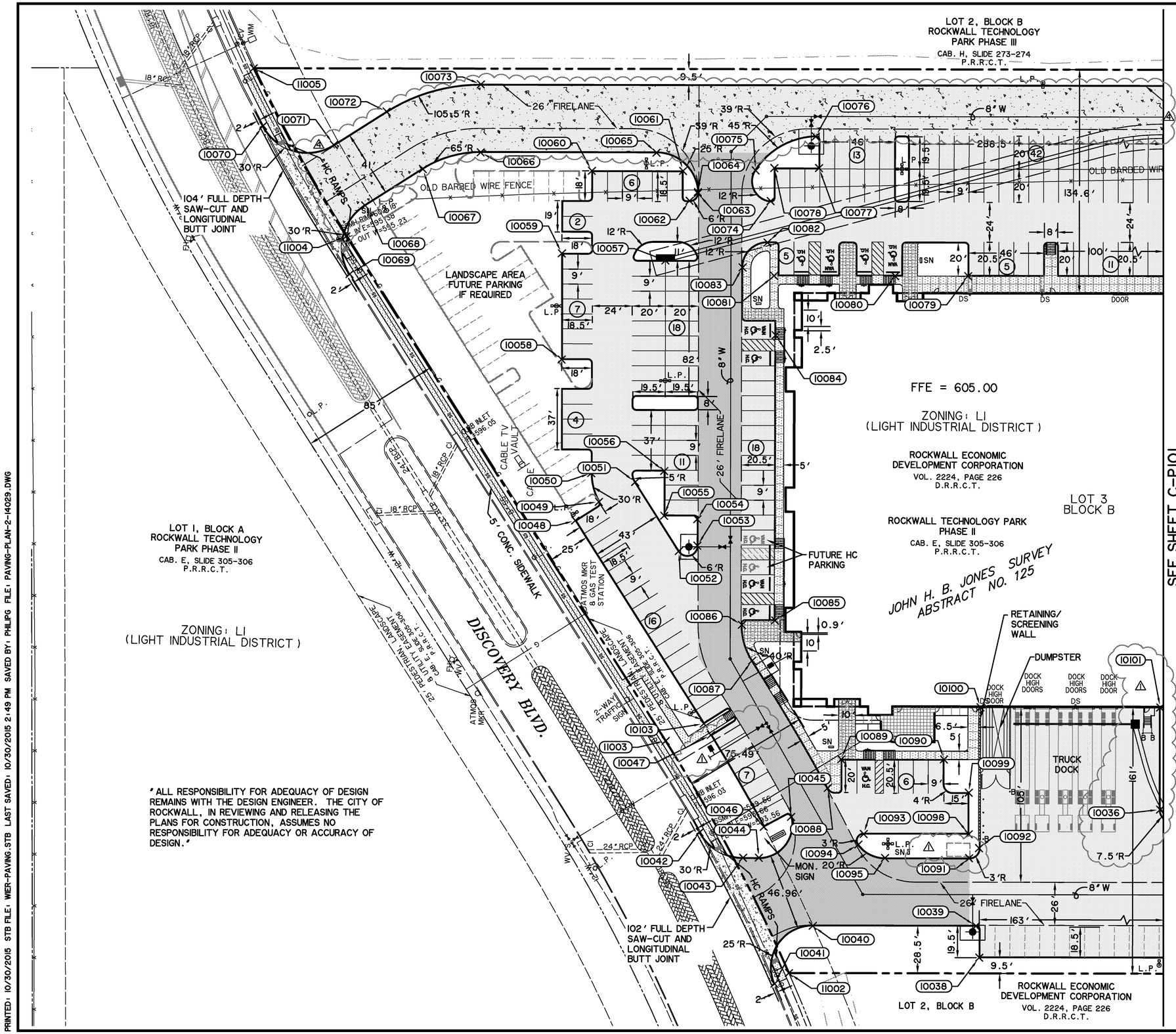

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2. SEE ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS.
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7. SEE SHEET C-S001 FOR PAVING LEGEND.

PAVING CONTROL POINTS

POINT	NORTHING	EASTING	POINT	NORTHING	EASTING
10036	7020420.3468	2608073.8754	10071	7020928.9398	2608461.6191
10038	7020527.0230	2607981.8035	10072	7020897.7390	2608482.5272
10039	7020529.4848	2608000.7492	10073	7020841.3107	2608500.4388
10040	7020627.9017	2607998.3531	10074	7020664.7057	2608434.6247
10041	7020649.9568	2607962.8077	10075	7020674.2605	2608452.8957
10042	7020697.5217	2608053.0218	10076	7020638.5711	2608474.2332
10043	7020670.9779	2608038.3165	10077	7020636.0409	2608455.2904
10044	7020661.4685	2608038.5481	10078	7020663.0329	2608454.6332
10045	7020642.6349	2608063.7116	10079	7020544.4854	2608392.5002
10046	7020658.9237	2608057.2772	10080	7020588.4724	2608391.4293
10047	7020692.3338	2608111.8186	10081	7020661.4508	2608389.6525
10048	7020777.4541	2608238.9546	10082	7020665.9644	2608409.5485
10049	7020763.5280	2608250.5792	10083	7020680.5948	2608394.1878
10050	7020768.5446	2608267.7998	10084	7020659.6060	2608353.8179
10051	7020741.8623	2608263.0849	10085	7020655.4196	2608181.8688
10052	7020714.4836	2608222.2281	10086	7020675.3465	2608178.6243
10053	7020703.5010	2608225.7143	10087	7020668.5874	2608157.3307
10054	7020703.8904	2608241.7068	10088	7020621.0140	2608081.6284
10055	7020723.9331	2608243.2194	10089	7020613.3670	2608099.2054
10056	7020724.5903	2608270.2114	10090	7020551.3854	2608100.7144
10057	7020727.1816	2608397.1859	10091	7020534.7205	2608041.6339
10058	7020788.2064	2608335.8363	10092	7020528.8684	2608047.7781
10059	7020789.7642	2608399.8174	10093	7020598.6140	2608054.5512
10060	7020772.9828	2608450.0869	10094	7020601.6705	2608048.0921
10061	7020717.9990	2608451.4255	10095	7020585.4144	2608040.3997
10062	7020713.5871	2608433.5276	10098	7020535.2945	2608056.0929
10063	7020708.7232	2608438.1474	10099	7020535.9030	2608081.0855
10064	7020708.7226	2608438.8976	10100	7020530.2083	2608132.7708
10065	7020734.2620	2608462.0328	10101	7020421.8450	2608135.4090
10066	7020840.3128	2608459.4509	10103	7020696.7354	2608118.4993
10067	7020874.9151	2608448.4674	11002	7020641.5002	2607969.5137
10068	7020909.1098	2608425.5530	11003	7020719.4778	2608107.5284
10069	7020917.3651	2608383.9815	11004	7020920.0204	2608406.7951
10070	7020971.9037	2608472.0415	11005	7020978.4914	2608506.6018

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

RECORD PLANS
October 30, 2015

REVISIONS	DATE	BY
⚠1 RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
⚠4 ADDED ADDITIONAL 7' PAVEMENT	04/13/15	TVW

0 30 60 90

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
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Texas Firm Registration No. F-2776 www.WierAssociates.com

COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
PAVING PLAN
NORTH

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/30/15

LAST SHEET EDIT DATE 10/30/2015
WA# 14029

SHEET NO. C-P102

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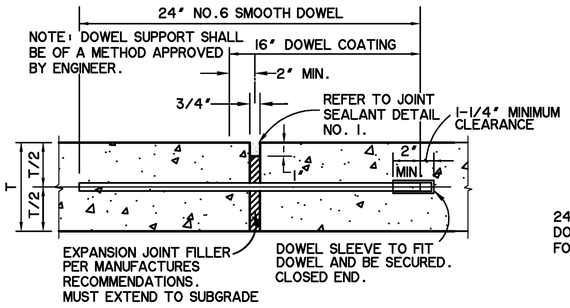
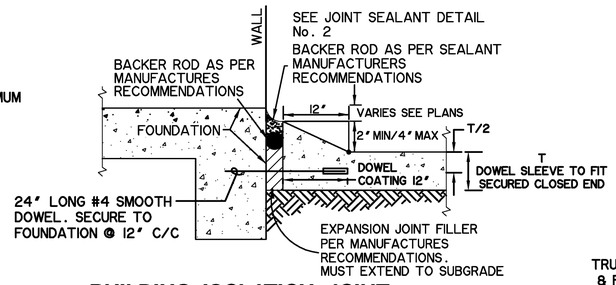


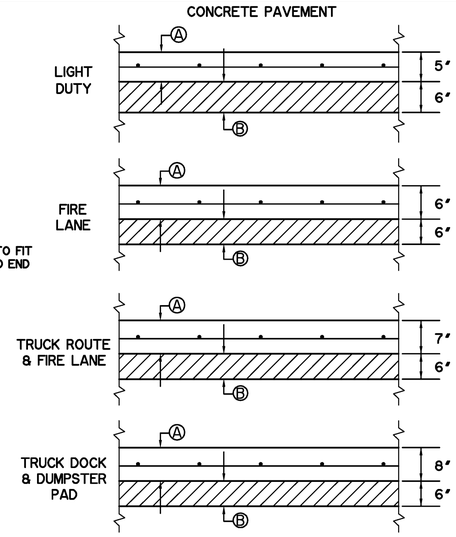
EXPANSION JOINT

N.T.S.



BUILDING ISOLATION JOINT

N.T.S.

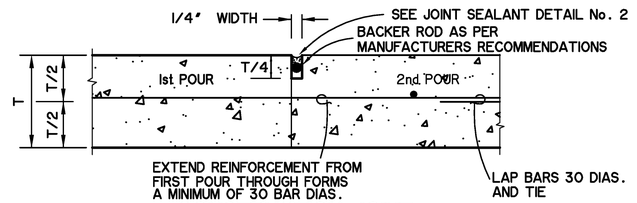


NOTES:

1. PRIVATE ON-SITE PAVING
   - A. 3,600 P.S.I. CONCRETE (MIN. 6.5 SACK MIX) REINFORCED WITH #3 BARS @ 18" C/C BOTH WAYS WITH FIVE (5) PERCENT (± 1 PERCENT) ENTRAINED AIR TO IMPROVE WORKABILITY AND DURABILITY.
   - B. 6" COMPACTED SUBGRADE TO BETWEEN 95% AND 100% STANDARD PROCTOR DENSITY (ASTM D698) AND BROUGHT TO A MOISTURE CONTENT BETWEEN 0% AND 4% OF THE OPTIMUM MOISTURE VALUE.
   - C. 6" MECHANICALLY LIME STABILIZED CLAY SUBGRADE (6% LIME APPLICATION RATE 36 lbs./S.Y.) COMPACTED TO BE BETWEEN 95% TO 100% STANDARD PROCTOR DENSITY (ASTM D698) AND BROUGHT TO A MOISTURE CONTENT BETWEEN 0% AND 4% OF THE OPTIMUM MOISTURE VALUE.
2. MATERIAL AND CONSTRUCTION METHODS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE 3RD EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PREPARED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS AND CITY OF ROCKWALL STANDARDS OF DESIGN AND CONSTRUCTION.
3. DO NOT PLACE SAND BENEATH PAVEMENT FOR LEVEL UP COURSE.
4. COMPACTION OF THE PAVEMENT SUBGRADES, BASES, AND NEW FILL SHALL BE VERIFIED BY FIELD MOISTURE/DENSITY TESTS MADE AT A MINIMUM FREQUENCY OF ONE TEST PER 10,000 SQUARE FEET.
5. THE CONCRETE SHALL BE DESIGNED IN ACCORDANCE WITH ACI BUILDING CODE 318 USING 4% TO 6% AIR ENTRAINMENT. THE CONCRETE DESIGN MIX SHALL BE PROVIDED TO THE PROJECT GEOTECHNICAL ENGINEER FOR REVIEW.
6. VOIDS SHALL BE BACKFILLED WITH A TOPSOIL/BERMUDA GRASS SEED BLEND TO WITHIN 1/2" OF THE CONCRETE SURFACE.

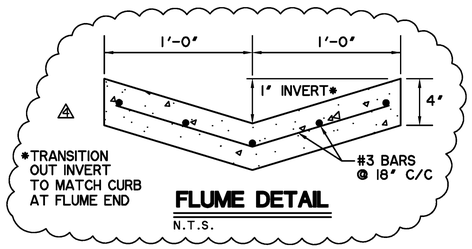
PAVEMENT SECTIONS

N.T.S.



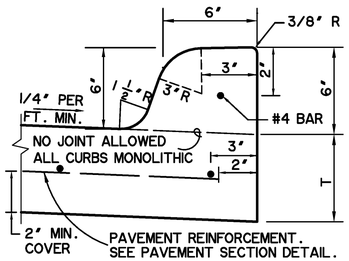
CONSTRUCTION JOINT

N.T.S.



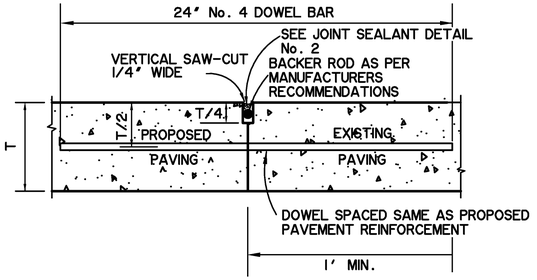
FLUME DETAIL

N.T.S.



MONOLITHIC CURB DETAIL

N.T.S.



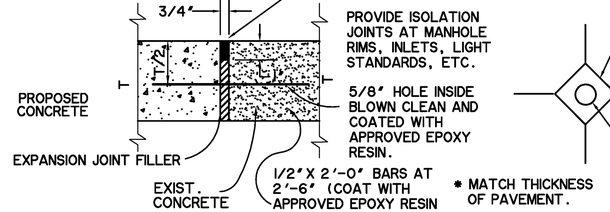
BUTT JOINT

N.T.S.

T = PAVEMENT THICKNESS

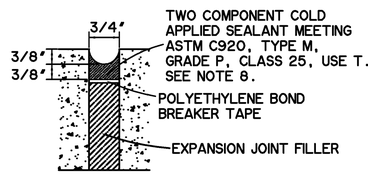
THICKENED EDGE DETAIL

N.T.S.



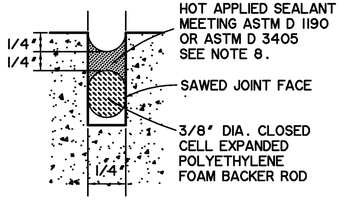
TYPICAL ISOLATION JOINT

N.T.S.



JOINT SEALANT DETAIL No. 1 SEAL FOR EXPANSION JOINT

N.T.S.



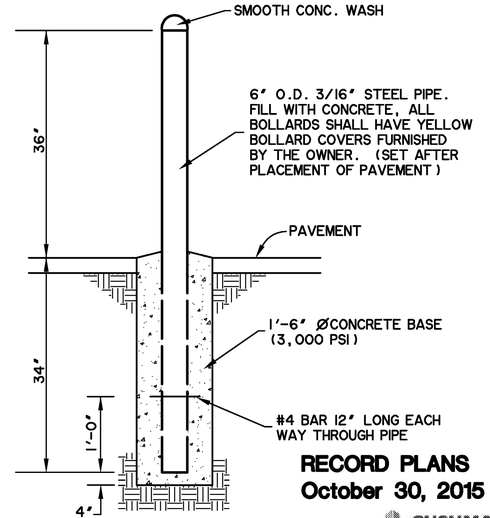
JOINT SEALANT DETAIL No. 2 SEAL FOR SAWED, CONSTRUCTION & BUTT JOINT

N.T.S.

JOINT NOTES:

T = PAVEMENT THICKNESS

1. CONTRACTOR MAY ELECT TO USE DOWELED CURB OR MONOLITHIC CURB
2. DOWEL BARS PLACED INTO EXISTING PAVEMENT SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. DRILLING BY HAND IS NOT ACCEPTABLE, PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE. SECURE DOWEL BARS IN EXISTING PAVING WITH EPOXY GROUT.
3. POLYETHYLENE FOAM BACKER ROD DOES NOT SIT ON BOTTOM OF SAW-CUT JOINT. PLACE AT DEPTH INDICATED IN DETAIL.
4. IF SEALANT PROTRUDES ABOVE THE SURFACE OF THE PAVEMENT, IT MUST BE REMOVED AND REPLACED.
5. SUBMIT MANUFACTURER'S LITERATURE FOR SEALANT, DOCUMENTING PRODUCT COMPLIES WITH ASTM SPECIFICATIONS AND PROVIDING MANUFACTURER'S RECOMMENDATIONS FOR APPLICATION. FOLLOW MANUFACTURER'S RECOMMENDATIONS ON USE OF THE PRODUCT.
6. THE CONSTRUCTION JOINT IS TO BE USED BETWEEN SEPARATE POURS OF PROPOSED PAVEMENT. NOTE THAT IT REQUIRES THE REINFORCEMENT TO BE EXTENDED THROUGH THE FORM TO TIE TO THE NEXT POUR. THE BUTT JOINT IS TO BE USED BETWEEN EXISTING CONCRETE PAVEMENT (STREET OR DRIVEWAY) AND PROPOSED PAVEMENT, UNLESS AN EXPANSION JOINT IS CALLED FOR.
7. JOINT SEALANTS SHALL BE INSTALL SOON AFTER JOINTS ARE SAWED AND/OR COMPLETED. THE JOINTS SHALL BE SEALED BEFORE A RAIN EVENT OCCURS AFTER SAWING OR COMPLETING THE JOINT.
8. JOINT SEALANTS MAY BE REQUIRED BY ARCHITECT OR OWNER TO BE GREY SILICONE TYPE SEALANTS MEETING ASTM C639, ASTM C679, ASTM C792, ASTM C793, ASTM D412 AND ASTM D792.



BOLLARD

N.T.S.

REVISIONS	DATE	BY
4 ADDED FLUME DETAIL	04/13/15	TVW

RECORD PLANS
October 30, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
PRIVATE PAVING DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/30/15

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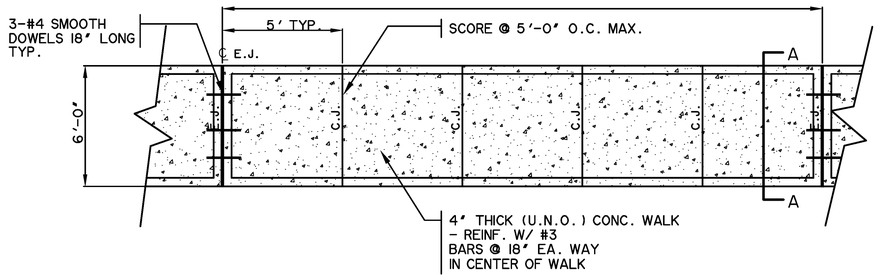
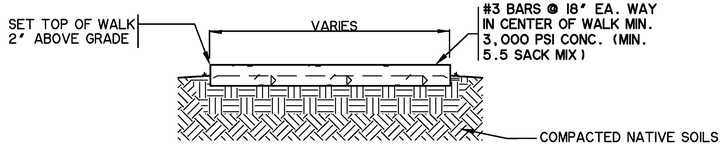
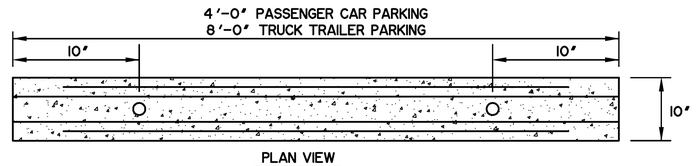


PLAN - TYP. CONC. WALK

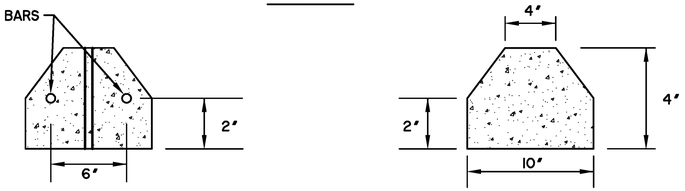
N.T.S.



SECTION 'A-A' - TYP. CONC. WALK

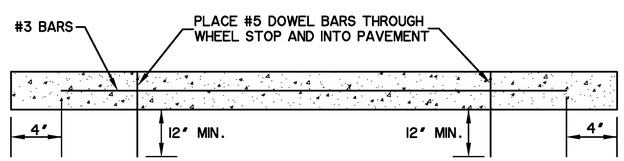


PLAN VIEW



CROSS SECTION

END VIEW

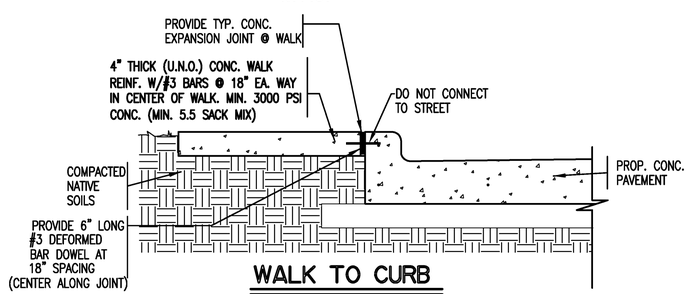


LONGITUDINAL SECTION (TYP)

ALL CONCRETE SHALL BE CLASS A CONCRETE IN ACCORDANCE WITH ITEM 364 OF THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS LATEST EDITION.

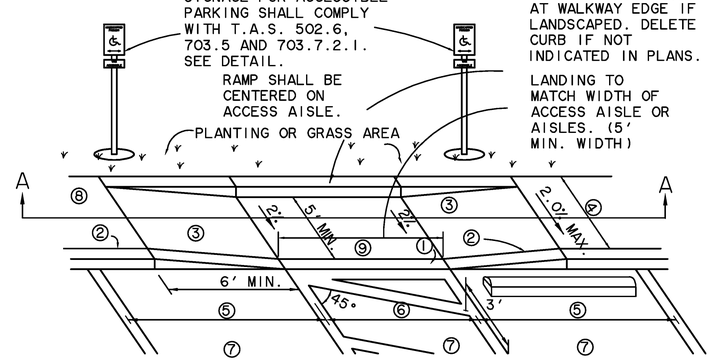
WHEEL STOP

N.T.S.

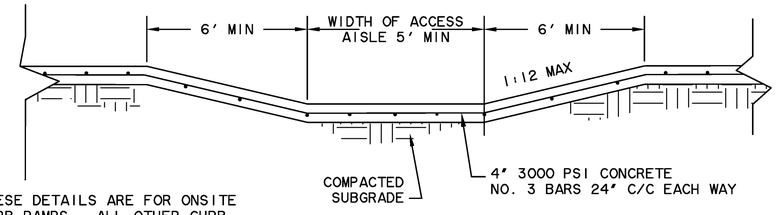


WALK TO CURB

N.T.S.



TYPE-3 CURB RAMP



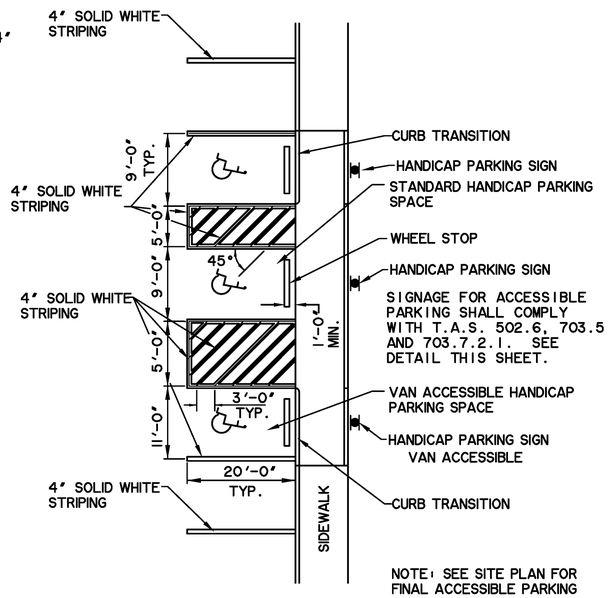
SECTION "A-A"

N.T.S.

* THESE DETAILS ARE FOR ONSITE CURB RAMPS. ALL OTHER CURB RAMPS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN COMPLIANCE WITH LOCAL CITY CODES AND DETAILS. CURB RAMPS WITHIN THE CITY RIGHT-OF-WAY SHALL REQUIRE TRUNCATED DOME PLATES.

CURB RAMP DETAILS *

N.T.S.



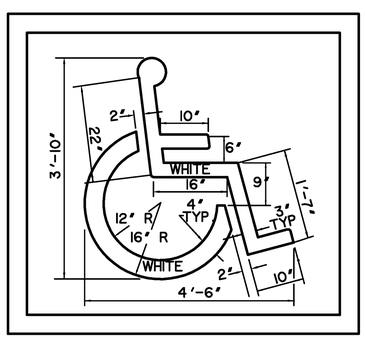
NOTE: SEE SITE PLAN FOR FINAL ACCESSIBLE PARKING LAYOUT.

NOTES:

1. HANDICAPPED PARKING SPACE DENOTED BY SYMBOL
2. STRIPING SHALL BE NON-REFLECTORIZED AND CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, NCTCOG. DIVISION 800, ITEM 804.2.2.

90° PARKING

N.T.S.

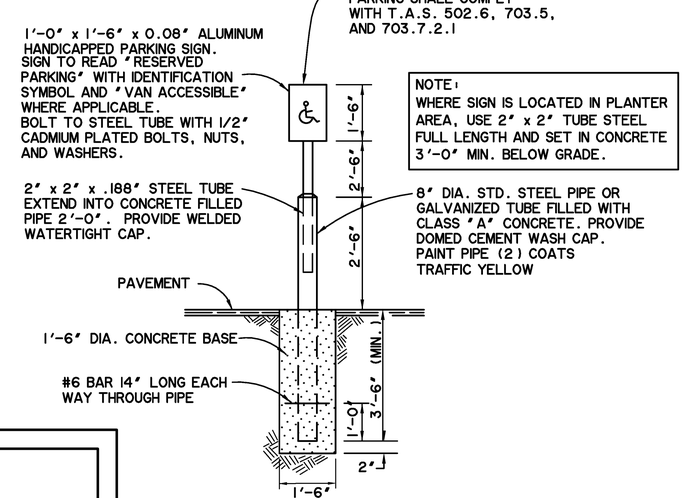


HANDICAPPED PARKING SPACE SYMBOL

SEE SPACES DESIGNATED 'H'
N.T.S.

NOTES:

1. TOP OF CURB TO BE FLUSH WITH PAVEMENT.
2. TOP OF CURB TO BE FLUSH WITH TOP OF WALK.
3. CURB RAMP SLOPES SHALL NOT EXCEED 1:12 AND SHALL COMPLY WITH T.A.S. 406.2 AND 406.3.
4. 36" MIN. IF PARKING STALL LENGTH IS 20' AND CURB STOPS ARE PROVIDED 2' OFF CURB OR 60" MIN. IF PARKING STALL LENGTH IS 18' WITH NO CURB STOPS. IF DIMENSION IS LESS THAN 48", THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 1:12.
5. ACCESSIBLE PARKING SPACE SHALL BE 8' MIN. AND SHALL COMPLY WITH T.A.S. 502.2. OPTIONAL UNIVERSAL PARKING SPACE SHALL BE 11' WIDE AND COMPLY WITH T.A.S. FIGURE 502.2 AND 502.3.
6. ACCESS AISLE SHALL BE 5' WIDE FOR TYPICAL OR UNIVERSAL ACCESSIBLE PARKING. ACCESS AISLE SHALL BE 8' WIDE FOR VAN ACCESSIBLE PARKING.
7. ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS AND SHALL COMPLY WITH T.A.S. 502.4.
8. AN ACCESSIBLE ROUTE WITH A RUNNING SLOPE GREATER THAN 1:20 (5%) IS CONSIDERED A RAMP AND SHALL COMPLY WITH T.A.S. 405. THE CROSS SLOPE OF AN ACCESSIBLE ROUTE SHALL NEVER EXCEED 1:50 (2%).
9. LANDING DIMENSIONS AT TOP OF RAMP OR A CHANGE IN DIRECTION SHALL BE 5'x5' MINIMUM.
10. GRADES IN ACCESIBILITY ROUTING INCLUDE CROSSING DRIVEWAYS, SHALL CONFORM TO ADA STANDARDS, NOT TO EXCEED 5.0% ALONG TRAVEL PATH WITH NOT MORE THAN 2.0% CROSSFALL.



NOTE:
WHERE SIGN IS LOCATED IN PLANTER AREA, USE 2" x 2" TUBE STEEL FULL LENGTH AND SET IN CONCRETE 3'-0" MIN. BELOW GRADE.

HANDICAPPED PARKING SIGN

N.T.S.

RECORD PLANS
October 28, 2015

* THESE DETAILS ARE FOR ON-SITE SIDEWALKS. ALL OTHER SIDEWALKS AND CURB RAMPS WITHIN PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED IN COMPLIANCE WITH LOCAL CODES AND DETAILS.

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
PRIVATE PAVING DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER

LAST SHEET EDIT DATE 10/28/2015
WA# 14029
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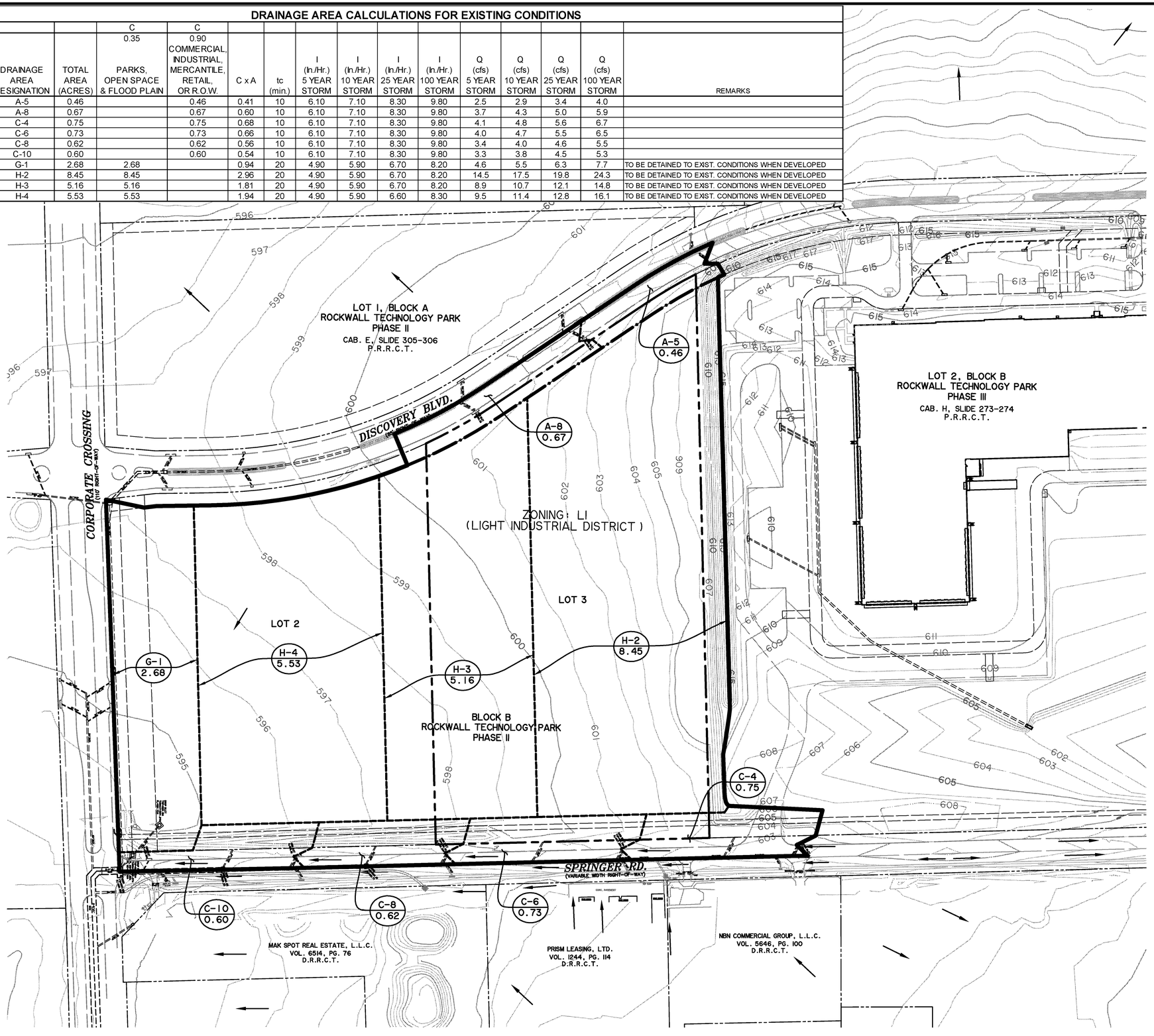
DRAINAGE AREA CALCULATIONS FOR EXISTING CONDITIONS

DRAINAGE AREA DESIGNATION	TOTAL AREA (ACRES)	C 0.35 PARKS, OPEN SPACE & FLOOD PLAIN	C 0.90 COMMERCIAL, INDUSTRIAL, MERCANTILE, RETAIL, OR R.O.W.	C x A	tc (min.)	I (In./Hr.) 5 YEAR STORM	I (In./Hr.) 10 YEAR STORM	I (In./Hr.) 25 YEAR STORM	I (In./Hr.) 100 YEAR STORM	Q (cfs) 5 YEAR STORM	Q (cfs) 10 YEAR STORM	Q (cfs) 25 YEAR STORM	Q (cfs) 100 YEAR STORM	REMARKS
A-5	0.46		0.46	0.41	10	6.10	7.10	8.30	9.80	2.5	2.9	3.4	4.0	
A-8	0.67		0.67	0.60	10	6.10	7.10	8.30	9.80	3.7	4.3	5.0	5.9	
C-4	0.75		0.75	0.68	10	6.10	7.10	8.30	9.80	4.1	4.8	5.6	6.7	
C-6	0.73		0.73	0.66	10	6.10	7.10	8.30	9.80	4.0	4.7	5.5	6.5	
C-8	0.62		0.62	0.56	10	6.10	7.10	8.30	9.80	3.4	4.0	4.6	5.5	
C-10	0.60		0.60	0.54	10	6.10	7.10	8.30	9.80	3.3	3.8	4.5	5.3	
G-1	2.68	2.68		0.94	20	4.90	5.90	6.70	8.20	4.6	5.5	6.3	7.7	TO BE DETAINED TO EXIST. CONDITIONS WHEN DEVELOPED
H-2	8.45	8.45		2.96	20	4.90	5.90	6.70	8.20	14.5	17.5	19.8	24.3	TO BE DETAINED TO EXIST. CONDITIONS WHEN DEVELOPED
H-3	5.16	5.16		1.81	20	4.90	5.90	6.70	8.20	8.9	10.7	12.1	14.8	TO BE DETAINED TO EXIST. CONDITIONS WHEN DEVELOPED
H-4	5.53	5.53		1.94	20	4.90	5.90	6.60	8.30	9.5	11.4	12.8	16.1	TO BE DETAINED TO EXIST. CONDITIONS WHEN DEVELOPED



LEGEND

- DENOTES WATERSHED BOUNDARY
- DENOTES MAJOR DRAINAGE AREA DIVIDE
- DENOTES MAJOR DRAINAGE AREA SUBDIVIDE
- A-1 / 0.95 — DRAINAGE AREA DESIGNATION DRAINAGE AREA ACRES
- 1 — DESIGN POINT
- ZONING BOUNDARY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAIN & INLET

NOTE:
EXISTING CONDITIONS DRAINAGE AREAS AND RUNOFF RATES SHOWN PER PLANS FOR ROCKWALL TECHNOLOGY PARK PHASE IV, DATED FEBRUARY 14, 2014.

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

RECORD PLANS
October 28, 2015

0 100 200 300

CUSHMAN & WAKEFIELD

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
EXISTING CONDITION
DRAINAGE AREA MAP

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/28/15

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C-D101

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DRAINAGE AREA CALCULATIONS FOR DEVELOPED CONDITIONS

DRAINAGE AREA DESIGNATION	TOTAL AREA (ACRES)	C 0.70 PARKS, OPEN SPACE & FLOOD PLAIN	C 0.90 COMMERCIAL, INDUSTRIAL, MERCANTILE, RETAIL, OR RIGHT-OF-WAY	C x A	tc (min.)	I (In./Hr.) 5 YEAR STORM	I (In./Hr.) 10 YEAR STORM	I (In./Hr.) 25 YEAR STORM	I (In./Hr.) 100 YEAR STORM	Q (cfs) 5 YEAR STORM	Q (cfs) 10 YEAR STORM	Q (cfs) 25 YEAR STORM	Q (cfs) 100 YEAR STORM	REMARKS
A-1	1.61	0.18	1.43	1.35	10	6.10	7.10	8.30	9.80	8.2	9.6	11.2	13.2	COLLECTED BY INLET A-1
A-2	2.35	0.39	1.96	1.90	10	6.10	7.10	8.30	9.80	11.6	13.5	15.8	18.6	COLLECTED BY INLET A-2
A-3	1.08	0.19	0.89	0.87	10	6.10	7.10	8.30	9.80	5.3	6.2	7.2	8.5	FLUME INTO DETENTION POND
A-4	2.35		2.35	2.12	10	6.10	7.10	8.30	9.80	12.9	15.1	17.6	20.8	COLLECTED BY INLET A-4
A-5	1.94		1.94	1.75	10	6.10	7.10	8.30	9.80	10.7	12.4	14.5	17.2	COLLECTED BY INLET A-5
A-6	0.32		0.32	0.29	10	6.10	7.10	8.30	9.80	1.8	2.1	2.4	2.8	FLUME INTO DETENTION POND
A-7	0.39		0.39	0.35	10	6.10	7.10	8.30	9.80	2.1	2.5	2.9	3.4	FLUME INTO DETENTION POND
A-8	0.14		0.14	0.13	10	6.10	7.10	8.30	9.80	0.8	0.9	1.1	1.3	FLUME INTO DETENTION POND
A-9	0.14		0.14	0.13	10	6.10	7.10	8.30	9.80	0.8	0.9	1.1	1.3	FLUME INTO DETENTION POND
A-10	0.14		0.14	0.13	10	6.10	7.10	8.30	9.80	0.8	0.9	1.1	1.3	FLUME INTO DETENTION POND
A-11	0.23		0.23	0.21	10	6.10	7.10	8.30	9.80	1.3	1.5	1.7	2.1	FLUME INTO DETENTION POND
A-12	1.65	0.14	1.51	1.41	10	6.10	7.10	8.30	9.80	8.6	10.0	11.7	13.8	DETENTION POND
D.P. #1	12.34	0.90	11.44	10.61	10	6.10	7.10	8.30	9.80	64.7	75.3	88.1	104.0	DETENTION POND DISCHARGE POINT
OS-1a	0.47	0.18	0.29	0.32	10	6.10	7.10	8.30	9.80	2.0	2.3	2.7	3.1	ON-SITE AREA BYPASSING DETENTION POND
OS-1b	0.36	0.03	0.33	0.31	10	6.10	7.10	8.30	9.80	1.9	2.2	2.6	3.0	ALTERED EXISTING CONDITION AREA "A-5", SEE NOTE 2
OS-2a	0.09		0.09	0.08	10	6.10	7.10	8.30	9.80	0.5	0.6	0.7	0.8	ON-SITE AREA BYPASSING DETENTION POND
OS-2b	0.59		0.59	0.53	10	6.10	7.10	8.30	9.80	3.2	3.8	4.4	5.2	ALTERED EXISTING CONDITION AREA "A-8", SEE NOTE 2
OS-3	0.59		0.59	0.53	10	6.10	7.10	8.30	9.80	3.2	3.8	4.4	5.2	ALTERED EXISTING CONDITION AREA "C-4", SEE NOTE 2
OS-4	0.32		0.32	0.29	10	6.10	7.10	8.30	9.80	1.8	2.1	2.4	2.8	ALTERED EXISTING CONDITION AREA "C-6", SEE NOTE 2
OS-5	0.55		0.55	0.50	10	6.10	7.10	8.30	9.80	3.1	3.6	4.2	4.9	ALTERED EXISTING CONDITION AREA "C-8", SEE NOTE 2
OS-6	0.60		0.60	0.54	10	6.10	7.10	8.30	9.80	3.3	3.8	4.5	5.3	ALTERED EXISTING CONDITION AREA "C-10", SEE NOTE 2
OS-7	2.68	2.68		0.94	20	4.90	5.90	6.60	8.30	4.6	5.5	6.2	7.8	SAME AS EXISTING CONDITION AREA "G-1"
OS-8	1.54	1.54		0.54	20	4.90	5.90	6.60	8.30	2.6	3.2	3.6	4.5	ALTERED EXISTING CONDITION AREA "H-3", SEE NOTE 2
OS-9	5.53	5.53		1.94	20	4.90	5.90	6.60	8.30	9.5	11.4	12.8	16.1	SAME AS EXISTING CONDITION AREA "H-4"

NOTES:
1. PORTION OF DRAINAGE AREAS A-1, A-2, A-3, OS-1a & OS-1b LOCATED IN HIGH SLOPE AREA ON ADJACENT BIMBO BAKERIES LOT HAS BEEN TREATED AS PERMANENT OPEN SPACE.
2. DRAINAGE AREAS SHOWN ON PLANS FOR ROCKWALL TECHNOLOGY PARK PHASE IV DATED, FEBRUARY 2014 ALTERED BY THIS DEVELOPMENT.

LEGEND

- DENOTES WATERSHED BOUNDARY
- DENOTES MAJOR DRAINAGE AREA DIVIDE
- DENOTES MAJOR DRAINAGE AREA SUBDIVIDE
- A-1 / 0.95 — DRAINAGE AREA DESIGNATION DRAINAGE AREA ACRES
- 1 — DESIGN POINT
- ZONING BOUNDARY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM DRAIN & INLET

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

RECORD PLANS
October 28, 2015

0 100 200 300

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
2201 E. LAMAR BLVD., SUITE 200E ARLINGTON, TEXAS 76006 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.wierassociates.com

COL-MET spray booths

LOT 3, BLOCK B ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
DEVELOPED CONDITIONS DRAINAGE AREA MAP

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER

LAST SHEET EDIT DATE 10/28/2015
WA# 14029

SHEET NO. C-D102

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INLET DESIGN CALCULATIONS

INLET No.	DISCHARGES TO	DESIGN STORM FREQUENCY (years)	TIME OF CONC. (min.)	RAINFALL INTENSITY (in./hr.)	DRAINAGE AREA (acres)	DRAINAGE AREA CA	FLOW FROM DRAINAGE AREA (cfs)	CARRY-OVER (cfs)	TOTAL GUTTER FLOW (cfs)	GUTTER SLOPE (%)	STREET SECTION	CROSS-SLOPE OR CROWN (ft/ft) OR (in.)	DEPTH OF FLOW (ft)	PONDED WIDTH (ft)	INLET LENGTH	FLOW COLLECTED	CARRY-OVER (cfs)	REMARKS
A-1	LINE A	100	10	9.80	1.61	1.35	13.2	0.0	13.2	SUMP	PARKING LOT	0.0200	0.26	13.0	10'	13.2	0.0	
A-2	LAT. A-2	100	10	9.80	2.35	1.90	18.6	0.0	18.6	SUMP	PARKING LOT	0.0350	0.28	8.0	10'	18.6	0.0	
A-4	LAT. A-4	100	10	9.80	2.35	2.12	20.8	0.0	20.8	SUMP	PARKING LOT	0.0100	0.13	13.0	N/A	20.8	0.0	TRUCK COURT TRENCH DRAIN
A-5	LAT. A-5	100	10	9.80	1.94	1.75	17.2	0.0	17.2	SUMP	PARKING LOT	0.0100	0.41	41.0	10'	17.2	0.0	
OS-1b	-	100	10	9.80	0.83	0.63	6.1	1.1	7.2	0.78	TRIANGULAR	6"	0.32	15.4	10'	5.5	1.7	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET A-5
OS-2b	-	100	10	9.80	0.68	0.61	6.0	1.7	7.7	SUMP	TRIANGULAR	6"	0.15	7.2	10'	7.7	0.0	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET A-8
OS-3	-	100	10	9.80	0.59	0.53	5.2	1.5	6.7	0.70	TRIANGULAR	6"	0.34	16.3	5'	2.7	4.0	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET C-4
OS-4	-	100	10	9.80	0.32	0.29	2.8	4.0	6.8	0.70	TRIANGULAR	6"	0.34	16.3	10'	6.0	0.8	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET C-6
OS-5	-	100	10	9.80	0.55	0.50	4.9	0.8	5.7	0.70	TRIANGULAR	6"	0.32	15.4	10'	5.7	0.0	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET C-8
OS-6	-	100	10	9.80	0.60	0.54	5.3	0.0	5.3	SUMP	TRIANGULAR	6"	0.10	4.8	10'	5.3	0.0	EXISTING ROCKWALL TECHNOLOGY PARK PHASE IV INLET C-10

STORM DRAIN DESIGN CALCULATIONS

FROM	REACH TO	INFLOW (INLETS & HEADWALLS) LENGTH (ft)	SOURCE	'CA'	INLET TIME (min)	TOTAL 'CA'	TIME AT UPSTREAM OF REACH (min)	DESIGN STORM FREQUENCY (yr)	RAINFALL INTENSITY 'I' (in/hr)	TOTAL FLOW 'Q' (cfs)	STORM DRAIN SIZE	VELOCITY (ft/sec)	SLOPE OF FRICTION GRADIENT (ft/ft)	STRUCTURE LOSS COEFF. 'Kj'	STRUCTURE LOSS AT UPSTREAM OF REACH (ft)	FLOW TIME IN DRAIN (min)	TIME AT DOWNSTREAM OF REACH (min)	H.G. AT UPSTREAM OF REACH (ft)	REMARKS
STORM DRAIN LINE "A"																			
INLET A-1	12+75.00	27.65	INLET A-1	1.35	10.0	1.35	10.0	100	9.80	13.2	27	3.3	0.0018	1.25	0.21	0.1	10.1	600.53	
12+75.00	9+38.72	336.28		0.00	0.0	1.35	10.1	100	9.78	13.2	27	3.3	0.0018	0.00	0.00	1.7	11.8	600.27	
INLET A-2	9+38.72	28.17	INLET A-2	1.90	10.0	1.90	10.0	100	9.80	18.6	30	3.8	0.0021	1.25	0.28	0.1	10.1	600.00	
9+38.72	6+26.50	312.22		0.00	0.0	3.25	11.8	100	9.47	30.8	42	3.2	0.0009	0.40	0.09	1.6	13.4	599.66	BEGINNING H.G.=598.98 DETENTION POND 100 YEAR W.S.
STORM DRAIN LINE "A-4"																			
INLET A-4	4+01.94	330.00	INLET A-4	2.12	10.0	2.12	10.0	100	9.80	20.8	33	3.5	0.0015	1.25	0.24	1.6	11.6	600.20	
INLET A-5	4+01.94	10.61	INLET A-5	1.75	10.0	1.75	10.0	100	9.80	17.2	24	5.5	0.0058	1.25	0.59	0.0	10.0	600.11	
4+01.94	1+47.50	254.44		0.00	0.0	3.87	11.6	100	9.50	36.8	42	3.8	0.0013	0.40	0.15	1.2	12.8	599.46	BEGINNING H.G.=598.98 DETENTION POND 100 YEAR W.S.
DETENTION POND DISCHARGE LINE																			
POND	1+00 (9+33.52)	65.60	POND	-	-	-	-	100	-	33.6	36	4.8	0.0025	1.25	0.44	0.2	-	598.63	BEGINNING H.G = 598.03 PER RE-ANALYSIS OF ROCKWALL
																			TECHNOLOGY PARK STORM DRAIN SYSTEM

RECORD PLANS
October 28, 2015

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
INLET & STORM DRAIN DESIGN CALCULATIONS

STATE OF TEXAS
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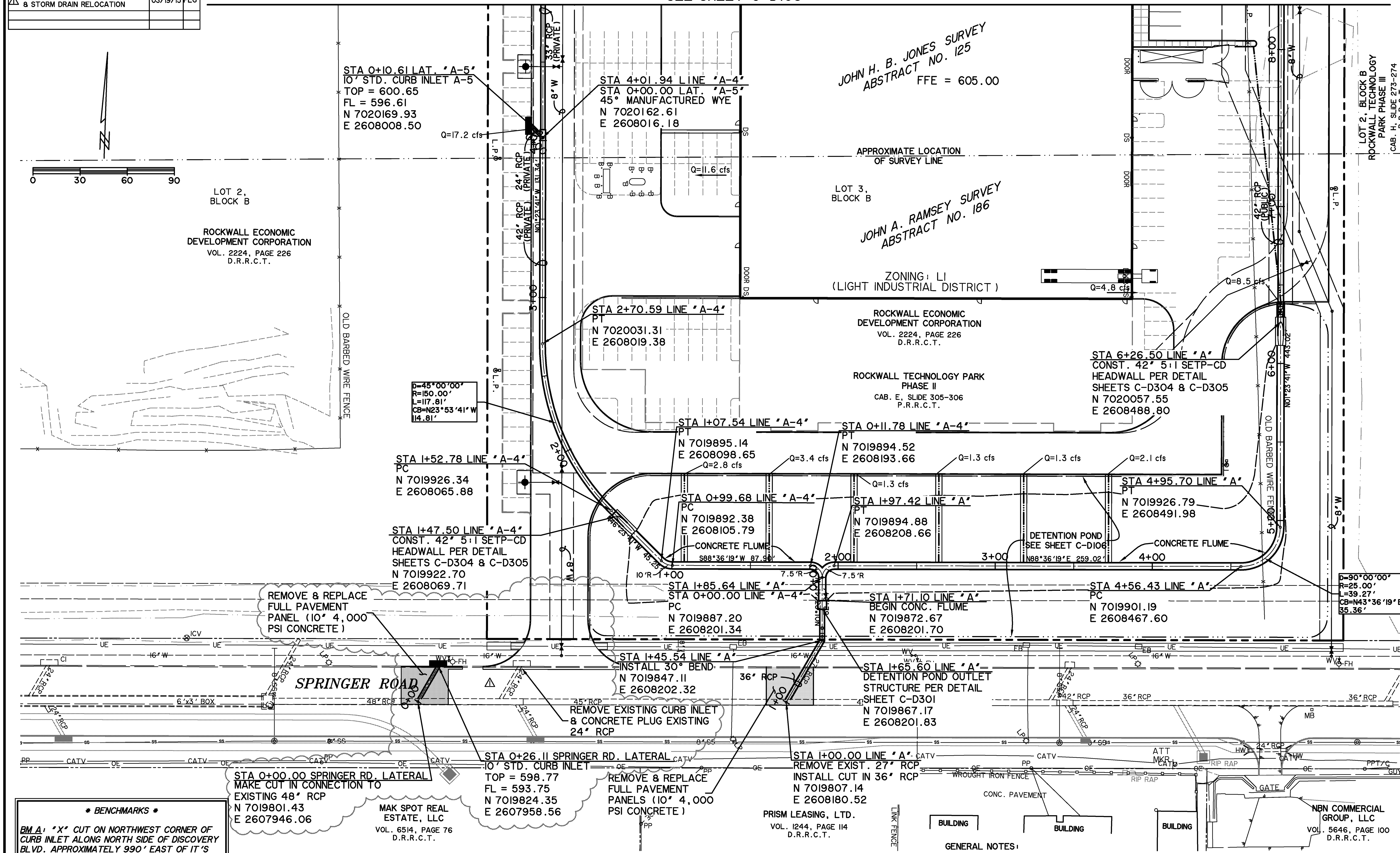
REVISIONS	DATE	BY
△ ADDED DRIVE CONNECTION, INLET & STORM DRAIN RELOCATION	03/19/15	PLG

SEE SHEET C-D105



0 30 60 90
LOT 2, BLOCK B
ROCKWALL ECONOMIC DEVELOPMENT CORPORATION
VOL. 2224, PAGE 226 D.R.R.C.T.
OLD BARBED WIRE FENCE
STA 0+10.61 LAT. 'A-5'
10' STD. CURB INLET A-5
TOP = 600.65
FL = 596.61
N 7020169.93
E 2608008.50
Q=17.2 cfs
33' RCP (PRIVATE)
STA 4+01.94 LINE 'A-4'
STA 0+00.00 LAT. 'A-5'
45° MANUFACTURED WYE
N 7020162.61
E 2608016.18
24' RCP (PRIVATE) N01°23'41"W 131.34'
42' RCP (PRIVATE)
Q=11.6 cfs
JOHN H. B. JONES SURVEY ABSTRACT NO. 125
FFE = 605.00
APPROXIMATE LOCATION OF SURVEY LINE
LOT 3, BLOCK B
JOHN A. RAMSEY SURVEY ABSTRACT NO. 186
ZONING: LI (LIGHT INDUSTRIAL DISTRICT)
Q=4.8 cfs
Q=8.5 cfs
LOT 2, BLOCK B ROCKWALL TECHNOLOGY PARK PHASE III CAB. H, SLIDE 273-274 P.R.R.C.T.
42' RCP (PUBLIC)
N01°23'41"W 443.02'
STA 2+70.59 LINE 'A-4'
PT
N 7020031.31
E 2608019.38
ROCKWALL ECONOMIC DEVELOPMENT CORPORATION
VOL. 2224, PAGE 226 D.R.R.C.T.
ROCKWALL TECHNOLOGY PARK PHASE II
CAB. E, SLIDE 305-306 P.R.R.C.T.
STA 6+26.50 LINE 'A'
CONST. 42' 5:1 SETP-CD
HEADWALL PER DETAIL
SHEETS C-D304 & C-D305
N 7020057.55
E 2608488.80
D=45°00'00"
R=150.00'
L=117.81'
CB=N23°53'41"W
114.81'
STA 1+07.54 LINE 'A-4'
PT
N 7019895.14
E 2608098.65
STA 0+11.78 LINE 'A-4'
PT
N 7019894.52
E 2608193.66
Q=2.8 cfs
Q=3.4 cfs
Q=1.3 cfs
Q=1.3 cfs
Q=1.3 cfs
Q=2.1 cfs
STA 1+52.78 LINE 'A-4'
PC
N 7019926.34
E 2608065.88
STA 0+99.68 LINE 'A-4'
PC
N 7019892.38
E 2608105.79
STA 1+97.42 LINE 'A'
PT
N 7019894.88
E 2608208.66
STA 4+95.70 LINE 'A'
PT
N 7019926.79
E 2608491.98
STA 1+47.50 LINE 'A-4'
CONST. 42' 5:1 SETP-CD
HEADWALL PER DETAIL
SHEETS C-D304 & C-D305
N 7019922.70
E 2608069.71
CONCRETE FLUME
S88°36'19"W 87.90'
DETENTION POND SEE SHEET C-D106
N88°36'19"E 259.02'
CONCRETE FLUME
D=90°00'00"
R=25.00'
L=39.27'
CB=N43°36'19"E
35.36'
REMOVE & REPLACE FULL PAVEMENT PANEL (10' 4,000 PSI CONCRETE)
STA 1+85.64 LINE 'A'
STA 0+00.00 LINE 'A-4'
PC
N 7019887.20
E 2608201.34
STA 1+71.10 LINE 'A'
BEGIN CONC. FLUME
N 7019872.67
E 2608201.70
STA 4+56.43 LINE 'A'
PC
N 7019901.19
E 2608467.60
STA 1+45.54 LINE 'A'
INSTALL 30° BEND
N 7019847.11
E 2608202.32
36' RCP
STA 1+65.60 LINE 'A'
DETENTION POND OUTLET STRUCTURE PER DETAIL SHEET C-D301
N 7019867.17
E 2608201.83
SPRINGER ROAD
6'x3' BOX
48' RCP
45' RCP
24' RCP
36' RCP
REMOVE EXISTING CURB INLET & CONCRETE PLUG EXISTING 24' RCP
STA 0+26.11 SPRINGER RD. LATERAL
10' STD. CURB INLET
TOP = 598.77
FL = 593.75
N 7019824.35
E 2607958.56
STA 0+00.00 SPRINGER RD. LATERAL
MAKE CUT IN CONNECTION TO EXISTING 48' RCP
N 7019801.43
E 2607946.06
REMOVE & REPLACE FULL PAVEMENT PANELS (10' 4,000 PSI CONCRETE)
STA 1+00.00 LINE 'A'
REMOVE EXIST. 27' RCP.
INSTALL CUT IN 36' RCP
N 7019807.14
E 2608180.52
MAK SPOT REAL ESTATE, LLC
VOL. 6514, PAGE 76 D.R.R.C.T.
PRISM LEASING, LTD.
VOL. 1244, PAGE 114 D.R.R.C.T.
WROUGHT IRON FENCE
CONC. PAVEMENT
BUILDING
BUILDING
BUILDING
RIP RAP
GATE
NBN COMMERCIAL GROUP, LLC
VOL. 5646, PAGE 100 D.R.R.C.T.

*** BENCHMARKS ***

BM A: "X" CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549. 601.19 FT.

BM B: "X" CUT IN BOX IN THE CONCRETE AROUND A WATER VALVE ON THE BACK OF CURB ALONG THE NORTH SIDE OF SPRINGER RD. APPROXIMATELY 921' EAST OF IT'S INTERSECTION WITH F.M. 549. 600.75 FT.

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CAUTION !!

EXISTING UTILITIES ARE INDICATED ON THE PLANS FROM AVAILABLE INFORMATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES, TO NOTIFY ALL UTILITY COMPANIES OF THE CONTRACTORS OPERATIONS, TO PROTECT ALL UTILITIES FROM DAMAGE, TO REPAIR ALL UTILITIES DAMAGED DUE TO THE CONTRACTORS OPERATIONS, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING UTILITIES.

GENERAL NOTES:

1. SEE SHEET C-S001 FOR STORM DRAIN LEGEND.
2. ALL STORM DRAIN LINE 'A' IS A PUBLIC LINE INCLUDING LATERAL/INLETS 'A-2'.
3. STORM DRAIN LINE 'A-4' IS PRIVATE AND TO BE MAINTAINED / REPAIRED BY PROPERTY OWNER.
4. DETENTION POND IS TO BE MAINTAINED BY PROPERTY OWNER.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
STORM DRAIN LAYOUT
SOUTH

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

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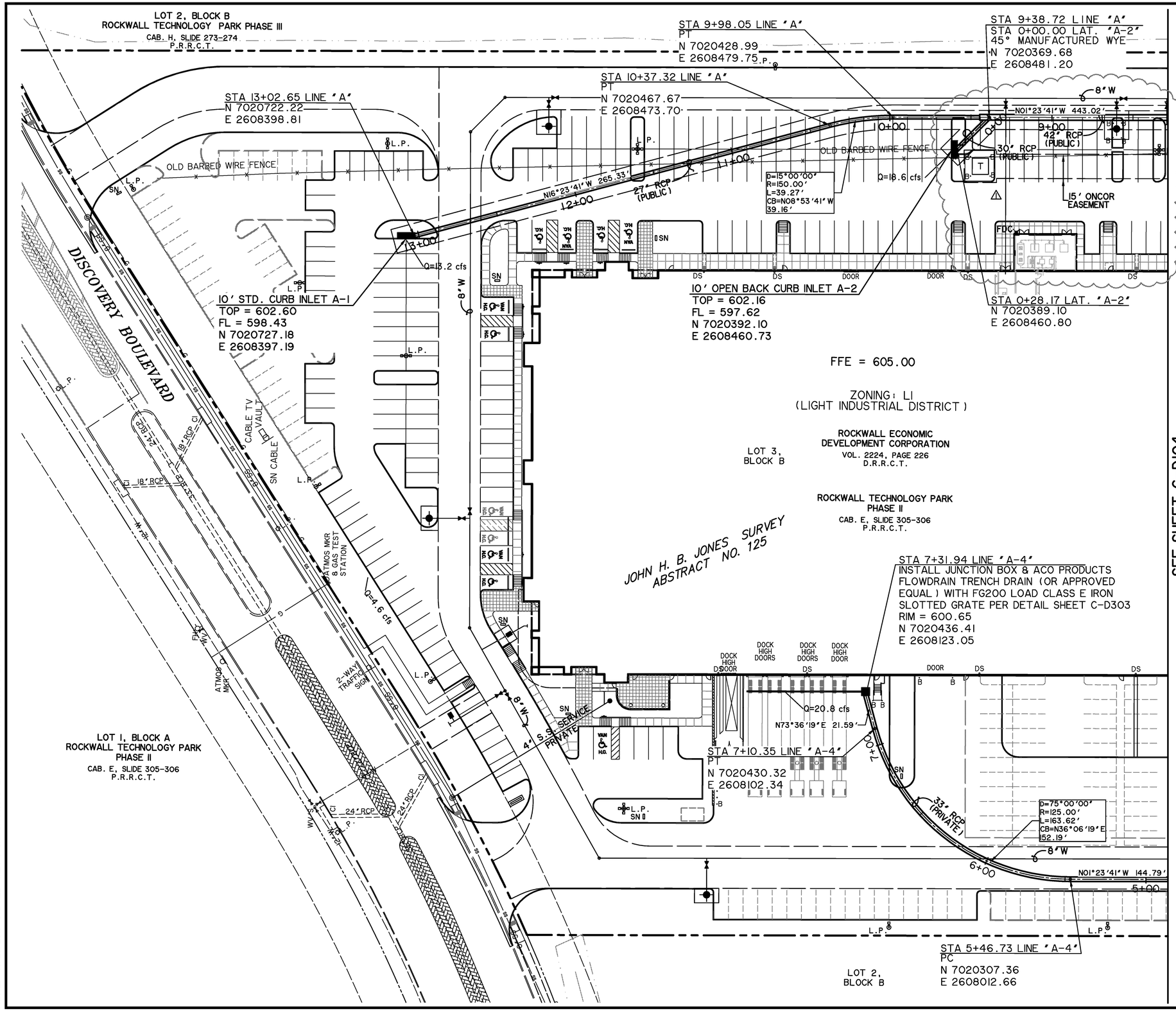

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*** BENCHMARKS ***

BM A: "X" CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549.
601.19 FT.

BM B: "X" CUT IN BOX IN THE CONCRETE AROUND A WATER VALVE ON THE BACK OF CURB ALONG THE NORTH SIDE OF SPRINGER RD. APPROXIMATELY 921' EAST OF IT'S INTERSECTION WITH F.M. 549.
600.75 FT.

GENERAL NOTES:

1. SEE SHEET C-S001 FOR STORM DRAIN LEGEND.
2. ALL STORM DRAIN LINE "A" IS A PUBLIC LINE (INCLUDING LATERAL/INLET "A-2").
3. STORM DRAIN LATERAL "A-4" IS PRIVATE AND TO BE MAINTAINED / REPAIRED BY PROPERTY OWNER.

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REVISIONS	DATE	BY
⚠ RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW

RECORD PLANS
October 28, 2015

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NORTH

STATE OF TEXAS
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10/28/15

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SHEET NO.
C-D105

CUSHMAN & WAKEFIELD
SCOTT + REID General Contractors

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 6:28 AM SAVED BY: PHILIPG FILE: STORM DRAIN-PLAN-2-14029.DWG

*** BENCHMARKS ***

BM A: "X" CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549.
601.19 FT.

BM B: "X" CUT IN BOX IN THE CONCRETE AROUND A WATER VALVE ON THE BACK OF CURB ALONG THE NORTH SIDE OF SPRINGER RD. APPROXIMATELY 921' EAST OF IT'S INTERSECTION WITH F.M. 549.
600.75 FT.

NOTES:
1. REVEGETATE ALL DISTURBED AREAS AROUND DETENTION POND BY HYDRO-MULCH SEEDING WITH BERMUDA GRASS. PLACE 6" TOPSOIL PRIOR TO RE-VEGETATION.
2. SEE SHEET C-D301 FOR CALCULATIONS.
3. DETENTION POND SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 8" AND RECOMPACTED (RE-PROCESSED) TO A MINIMUM 95% ASTM D698 AT A MOISTURE CONTENT BETWEEN +2% TO +5% OF OPTIMUM. LINER MATERIALS SHALL BE PROCESSED SUCH THAT THE LARGEST PARTICLE OR CLOD IS LESS THAN 3 INCHES PRIOR TO COMPACTION.
4. DETENTION POND TO BE INSTALLED AND SHALL HAVE BOTTOM EITHER SODDED OR HAVE ANCHORED SEEDED CURLEX BLANKET PRIOR TO ANY PAVING INCLUDING SLAB.

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

CAUTION !!
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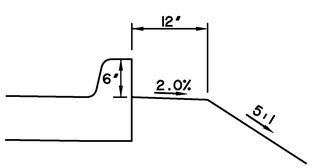
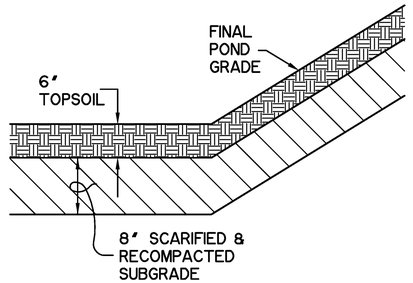
CONCRETE PILOT CHANNEL

HYDROMULCH SEED AND TOP SOIL



SECTION B-B
N.T.S.

CURB SECTION ADJACENT TO DETENTION POND



DETENTION POND BOTTOM & INTERIOR SIDE PREPARATION
N.T.S.

REVISIONS	DATE	BY
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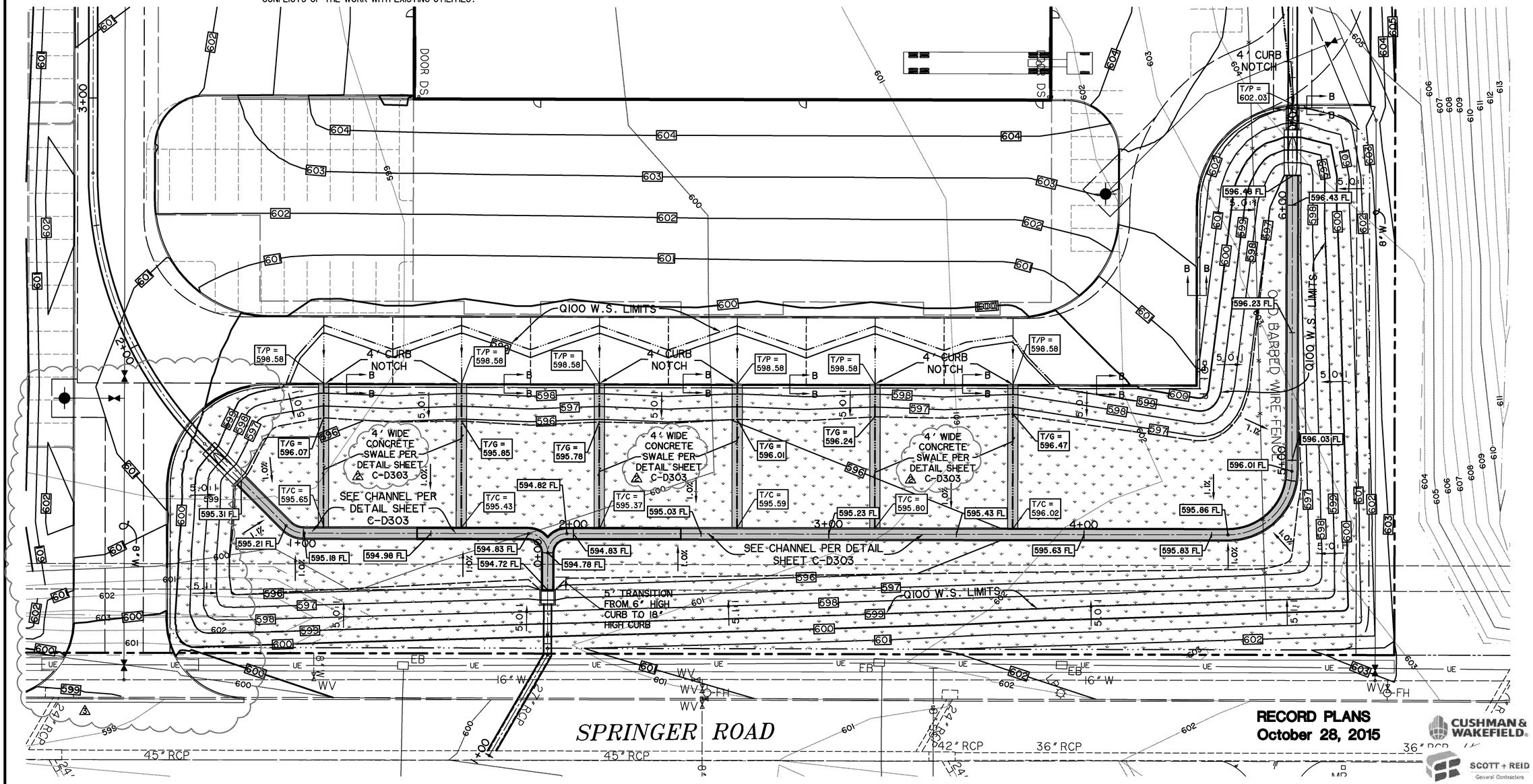
3 ADDED DRIVE & REVISED GRADING	03/19/15	PLG



RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
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Texas Firm Registration No. F-2776 www.wierassociates.com

COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
DETENTION POND PLAN

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER

LAST SHEET EDIT DATE 10/28/2015
WA# 14029

SHEET NO.
C-D106

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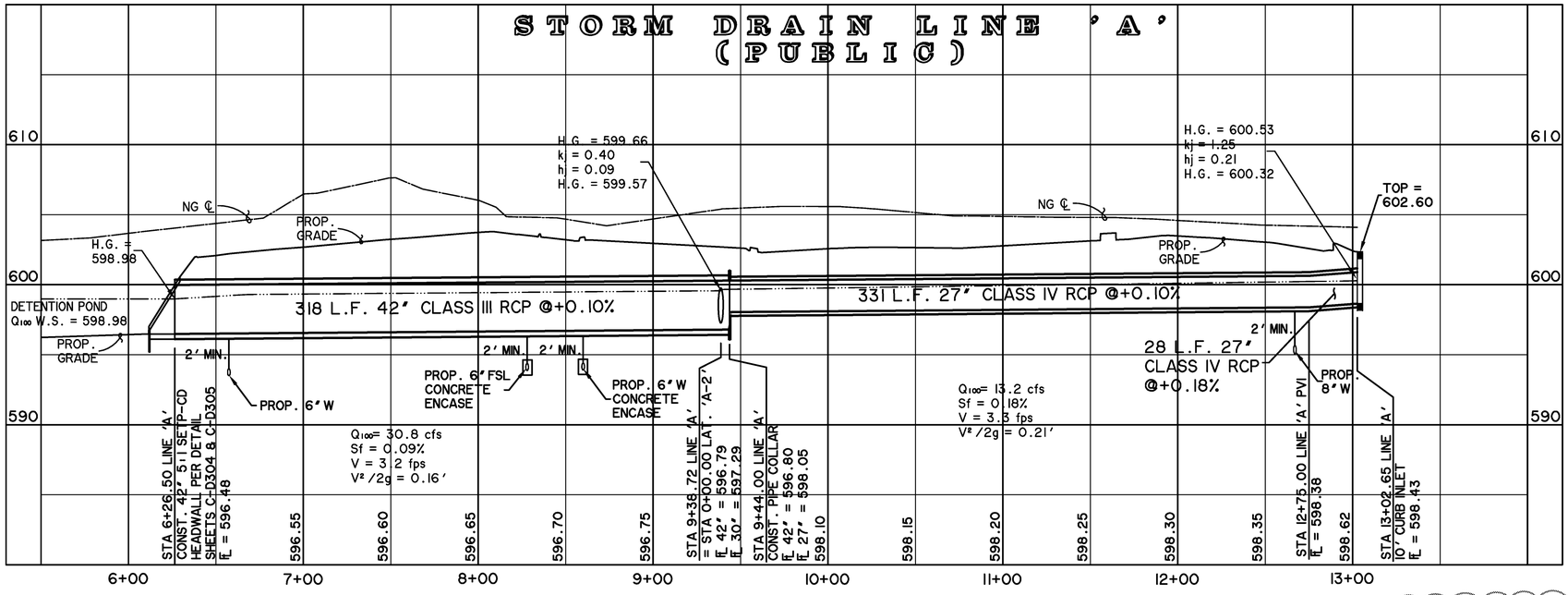

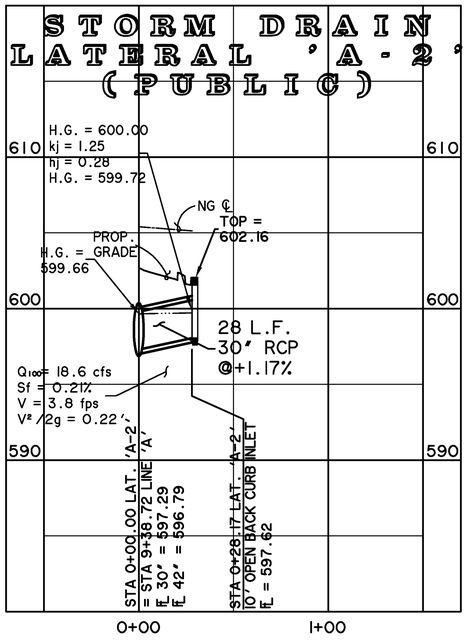

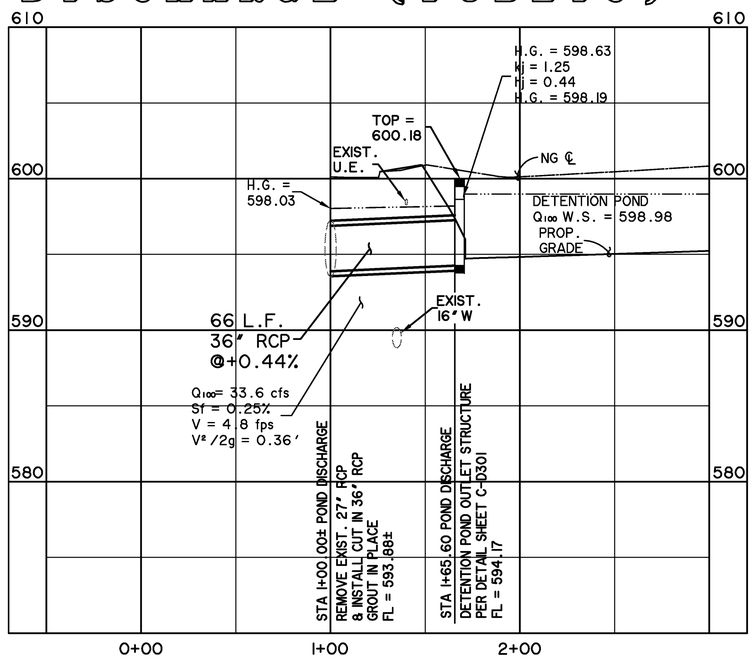

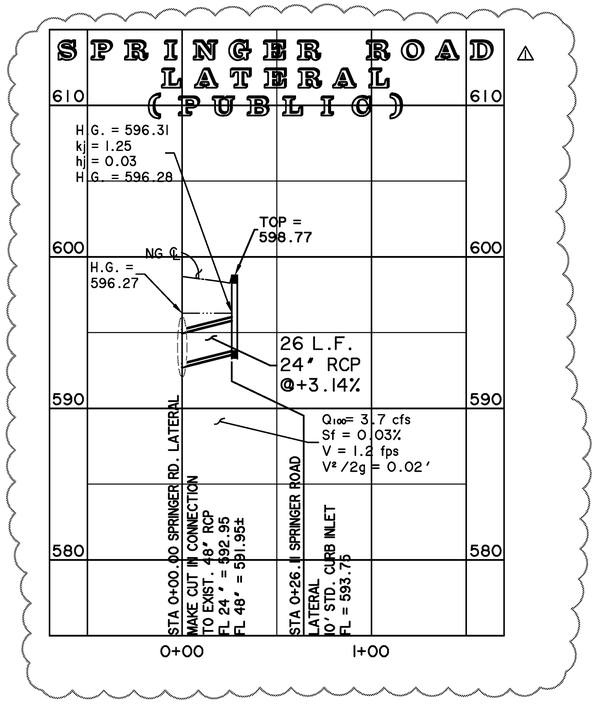

RECORD PLANS
October 28, 2015

* BENCHMARKS *

BM A: "X" CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549.
601.19 FT.

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CAUTION 11

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REVISIONS	DATE	BY
⚠ ADDED STORM DRAIN PROFILE	03/19/15	PLG

CUSHMAN & WAKEFIELD. SCOTT + REID General Contractors

SCALE:
HORIZ.: 1" = 40'
VERT.: 1" = 5'

0 1

BAR IS ONE INCH ON ORIGINAL DRAWING. IF BAR IS NOT ONE INCH ON THIS SHEET, ADJUST SCALE.

PREPARED BY:
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Texas Firm Registration No. F-2776 www.wierassociates.com

COL-MET spray booths

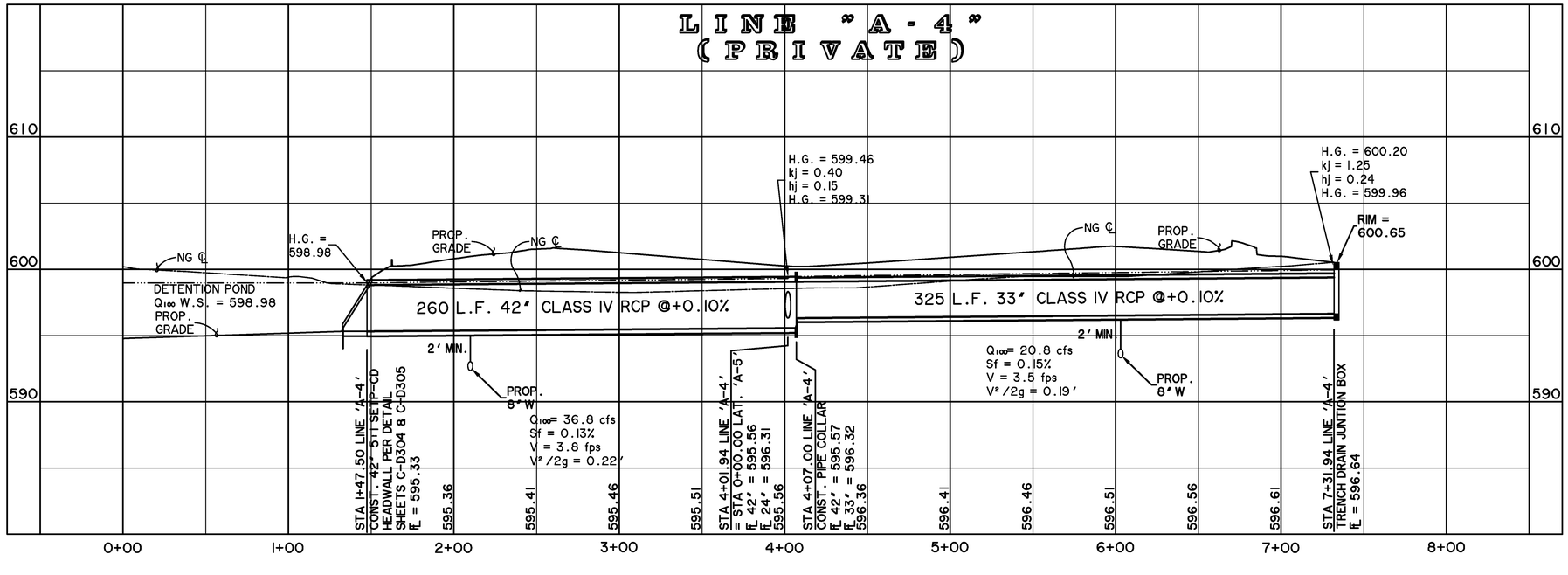
LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
STORM DRAIN PROFILES

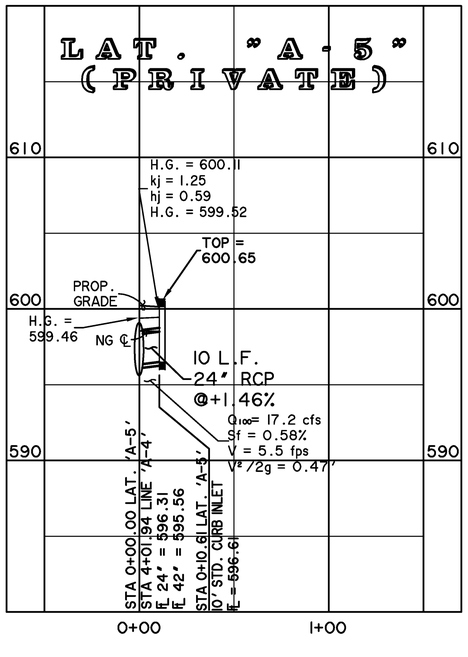
STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER

LAST SHEET EDIT DATE 10/28/2015
WA# 14029

SHEET NO.
C-D201

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 6:35 AM SAVED BY: PHILIPG FILE: STORM-DRAIN-PROFILES-I-14029.DWG





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RECORD PLANS
October 28, 2015

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0 1
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CUSHMAN & WAKEFIELD. SCOTT + REID General Contractors

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LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
STORM DRAIN PROFILES

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

LAST SHEET EDIT DATE 10/28/2015
WA# 14029
SHEET NO. C-D202

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 6:36 AM SAVED BY: PHILIPG FILE: STORM-DRAIN-PROFILES-2-14029.DWG

POND STORAGE CALCULATIONS

100 YEAR										
Time Step (min)	Intensity (in/hr)	Permanent Open Space C = 0.35	Commercial / Industrial C = 0.90	Total Contributing Area (acres)	Q (cfs)	Inflow (Cu Ft)	Allowable Q_{OUT} (cfs)	Outflow (Cu Ft)	Required Storage (Cu Ft)	Required Storage (Acre-Ft.)
10	9.8	0.90	11.44	12.34	104.0	62,400	33.6	20,160	42,240	0.97
15	9.0	0.90	11.44	12.34	95.5	85,950	33.6	25,200	60,750	1.39
20	8.3	0.90	11.44	12.34	88.1	105,720	33.6	30,240	75,480	1.73
30	6.9	0.90	11.44	12.34	73.2	131,760	33.6	40,320	91,440	2.10
40	5.8	0.90	11.44	12.34	61.5	147,600	33.6	50,400	97,200	2.23
50	5.0	0.90	11.44	12.34	53.1	159,300	33.6	60,480	98,820	2.27
60	4.5	0.90	11.44	12.34	47.7	171,720	33.6	70,560	101,160	2.32
70	4.0	0.90	11.44	12.34	42.4	178,080	33.6	80,640	97,440	2.24
80	3.7	0.90	11.44	12.34	39.3	188,640	33.6	90,720	97,920	2.25
90	3.5	0.90	11.44	12.34	37.1	200,340	33.6	100,800	99,540	2.29
100	3.4	0.90	11.44	12.34	36.1	216,600	33.6	110,880	105,720	2.43
110	3.2	0.90	11.44	12.34	34.0	224,400	33.6	120,960	103,440	2.37

25 YEAR										
Time Step (min)	Intensity (in/hr)	Permanent Open Space C = 0.35	Commercial / Industrial C = 0.90	Contributing Area (acres)	Q (cfs)	Inflow (Cu Ft)	Q_{OUT} (cfs)	Outflow (Cu Ft)	Required Storage (Cu Ft)	Required Storage (Acre-Ft.)
10	8.3	0.90	11.44	12.34	88.1	52,860	26.5	15,900	36,960	0.85
15	7.5	0.90	11.44	12.34	79.6	71,640	26.5	19,875	51,765	1.19
20	6.6	0.90	11.44	12.34	70.0	84,000	26.5	23,850	60,150	1.38
30	5.5	0.90	11.44	12.34	58.4	105,120	26.5	31,800	73,320	1.68
40	4.6	0.90	11.44	12.34	48.8	117,120	26.5	39,750	77,370	1.78
50	4.0	0.90	11.44	12.34	42.4	127,200	26.5	47,700	79,500	1.83
60	3.5	0.90	11.44	12.34	37.1	133,560	26.5	55,650	77,910	1.79
70	3.3	0.90	11.44	12.34	35.0	147,000	26.5	63,600	83,400	1.91
80	3.1	0.90	11.44	12.34	32.9	157,920	26.5	71,550	86,370	1.98
90	2.9	0.90	11.44	12.34	30.8	166,320	26.5	79,500	86,820	1.99
100	2.7	0.90	11.44	12.34	28.6	171,600	26.5	87,450	84,150	1.93
110	2.5	0.90	11.44	12.34	26.5	174,900	26.5	95,400	79,500	1.83

10 YEAR										
Time Step (min)	Intensity (in/hr)	Permanent Open Space C = 0.35	Commercial / Industrial C = 0.90	Contributing Area (acres)	Q (cfs)	Inflow (Cu Ft)	Q_{OUT} (cfs)	Outflow (Cu Ft)	Required Storage (Cu Ft)	Required Storage (Acre-Ft.)
10	7.1	0.90	11.44	12.34	75.3	45,180	23.9	14,340	30,840	0.71
15	6.5	0.90	11.44	12.34	69.0	62,100	23.9	17,925	44,175	1.01
20	5.9	0.90	11.44	12.34	62.6	75,120	23.9	21,510	53,610	1.23
30	4.8	0.90	11.44	12.34	50.9	91,620	23.9	28,680	62,940	1.44
40	4.0	0.90	11.44	12.34	42.4	101,760	23.9	35,850	65,910	1.51
50	3.5	0.90	11.44	12.34	37.1	111,300	23.9	43,020	68,280	1.57
60	3.0	0.90	11.44	12.34	31.8	114,480	23.9	50,190	64,290	1.48
70	2.8	0.90	11.44	12.34	29.7	124,740	23.9	57,360	67,380	1.55
80	2.6	0.90	11.44	12.34	27.6	132,480	23.9	64,530	67,950	1.56
90	2.5	0.90	11.44	12.34	26.5	143,100	23.9	71,700	71,400	1.64
100	2.4	0.90	11.44	12.34	25.5	153,000	23.9	78,870	74,130	1.70
110	2.3	0.90	11.44	12.34	24.4	161,040	23.9	86,040	75,000	1.72
120	2.1	0.90	11.44	12.34	22.3	160,560	23.9	93,210	67,350	1.55
130	1.9	0.90	11.44	12.34	20.2	157,560	23.9	100,380	57,180	1.31

5 YEAR										
Time Step (min)	Intensity (in/hr)	Permanent Open Space C = 0.35	Commercial / Industrial C = 0.90	Contributing Area (acres)	Q (cfs)	Inflow (Cu Ft)	Q_{OUT} (cfs)	Outflow (Cu Ft)	Required Storage (Cu Ft)	Required Storage (Acre-Ft.)
10	6.1	0.90	11.44	12.34	64.7	38,820	19.7	11,820	27,000	0.62
15	5.5	0.90	11.44	12.34	58.4	52,560	19.7	14,775	37,785	0.87
20	4.9	0.90	11.44	12.34	52.0	62,400	19.7	17,730	44,670	1.03
30	4.1	0.90	11.44	12.34	43.5	78,300	19.7	23,640	54,660	1.25
40	3.4	0.90	11.44	12.34	36.1	86,640	19.7	29,550	57,090	1.31
50	2.8	0.90	11.44	12.34	29.7	89,100	19.7	35,460	53,640	1.23
60	2.6	0.90	11.44	12.34	27.6	99,360	19.7	41,370	57,990	1.33
70	2.4	0.90	11.44	12.34	25.5	107,100	19.7	47,280	59,820	1.37
80	2.3	0.90	11.44	12.34	24.4	117,120	19.7	53,190	63,930	1.47
90	2.1	0.90	11.44	12.34	22.3	120,420	19.7	59,100	61,320	1.41
100	1.9	0.90	11.44	12.34	20.2	121,200	19.7	65,010	56,190	1.29

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POND WEIR CALCULATIONS

100 YEAR			
Q_{OUT} (cfs)	C_B	L (Ft)	H (Ft)
33.6	3	1.28	4.26

25 YEAR			
Q_{OUT} (cfs)	C_B	L (Ft)	H (Ft)
26.5	3	1.28	3.63

10 YEAR			
Q_{OUT} (cfs)	C_B	L (Ft)	H (Ft)
23.9	3	1.28	3.39

5 YEAR			
Q_{OUT} (cfs)	C_B	L (Ft)	H (Ft)
19.7	3	1.28	2.98

TOTAL AREA = 12.90 ACRES
AREA BYPASSING POND = 0.56 ACRES
AREA PASSING THROUGH POND = 12.34 ACRES

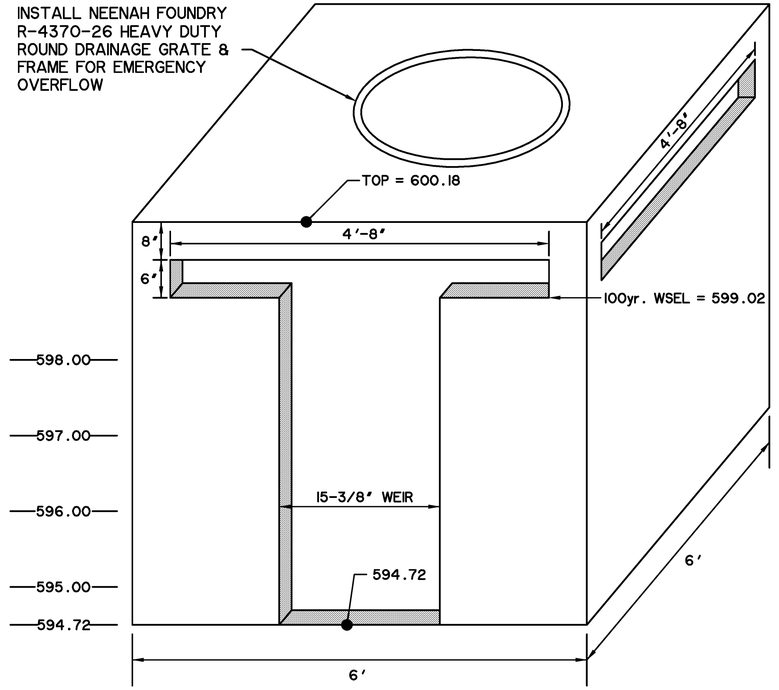
PRESENT CONDITIONS:
AREA = 12.90 ACRES
C = 0.35
CA = 4.52
Tc = 20 MIN.
I100 = 8.30 Q100 = 37.5 cfs
I25 = 6.60 Q25 = 29.8 cfs
I10 = 5.90 Q10 = 26.7 cfs
I5 = 4.90 Q5 = 22.1 cfs

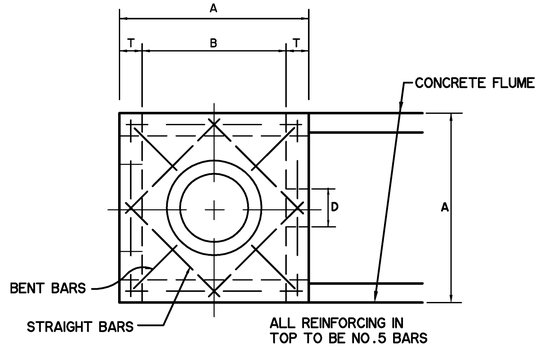
FLOW BYPASSING POND:
AREA = 0.56 ACRES
COMPOSITE C = 0.71
CA = 0.40
(SEE DRAINAGE AREA CALCULATIONS SHEET C-D102 AREAS OS-1a & OS-2a FOR REFERENCE)
Tc = 10 MIN.
I100 = 9.80 Q100 = 3.9 cfs
I25 = 8.30 Q25 = 3.3 cfs
I10 = 7.10 Q10 = 2.8 cfs
I5 = 6.10 Q5 = 2.4 cfs

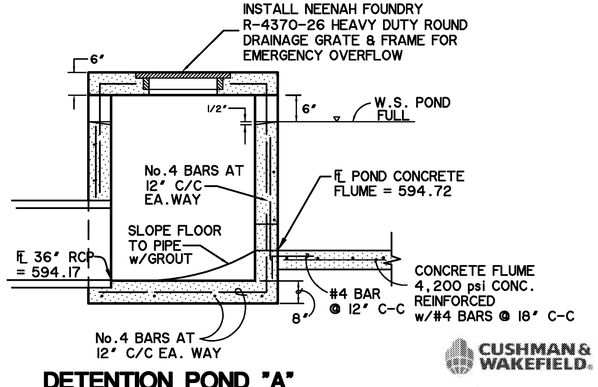
DETENTION POND ALLOWABLE DISCHARGES
Q100 = 37.5 cfs - 3.9 cfs = 33.6 cfs
Q25 = 29.8 cfs - 3.3 cfs = 26.5 cfs
Q10 = 26.7 cfs - 2.8 cfs = 23.9 cfs
Q5 = 22.1 cfs - 2.4 cfs = 19.7 cfs

H_1 (FT)	ELEV. (FT)	Q (CFS)	
0.00	594.72	0.0	
0.28	595.00	0.6	
0.48	595.20	1.3	
0.68	595.40	2.1	
0.88	595.60	3.2	
1.08	595.80	4.3	
1.28	596.00	5.5	
1.48	596.20	6.9	
1.68	596.40	8.3	
1.88	596.60	9.9	
2.08	596.80	11.5	
2.28	597.00	13.2	
2.48	597.20	14.9	
2.68	597.40	16.8	
2.88	597.60	18.7	
2.98	597.70	19.7	← Q5
3.08	597.80	20.7	
3.39	598.11	23.9	← Q10
3.63	598.35	26.5	← Q25
3.88	598.60	29.2	
4.08	598.80	31.5	
4.26	598.98	33.6	← Q100
4.48	599.20	36.3	
4.68	599.40	38.8	
4.88	599.60	41.3	
5.08	599.80	43.8	
5.28	600.00	46.4	
5.48	600.20	49.1	
5.68	600.40	51.8	

OUTLET STRUCTURE DETAILS				
INLET	A (IN)	B (IN)	T (IN)	D (IN)
OUTLET STRUCTURE	72"	56"	8"	13.5"







RECORD PLANS
October 28, 2015

DETENTION POND "A"
OUTLET STRUCTURE DETAIL

N.T.S.

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

PREPARED BY:
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LOT 3, BLOCK B
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COL-MET SPRAY BOOTHS
DETENTION POND DETAILS

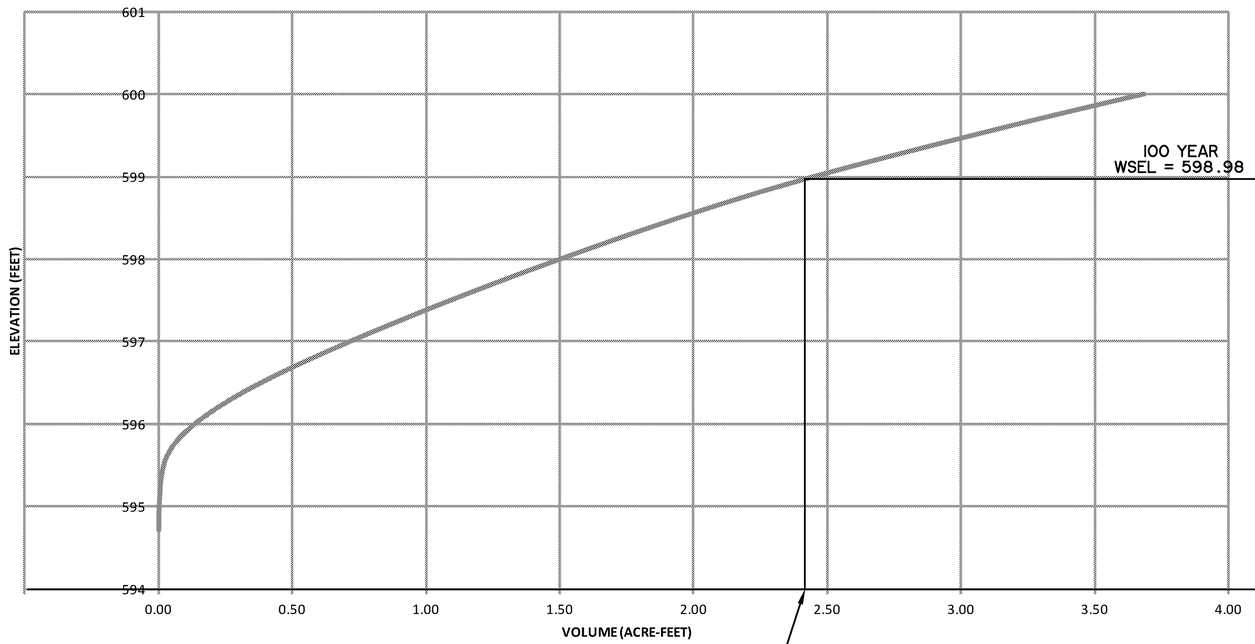
STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

LAST SHEET EDIT DATE: 10/28/2015
W&A# 14029

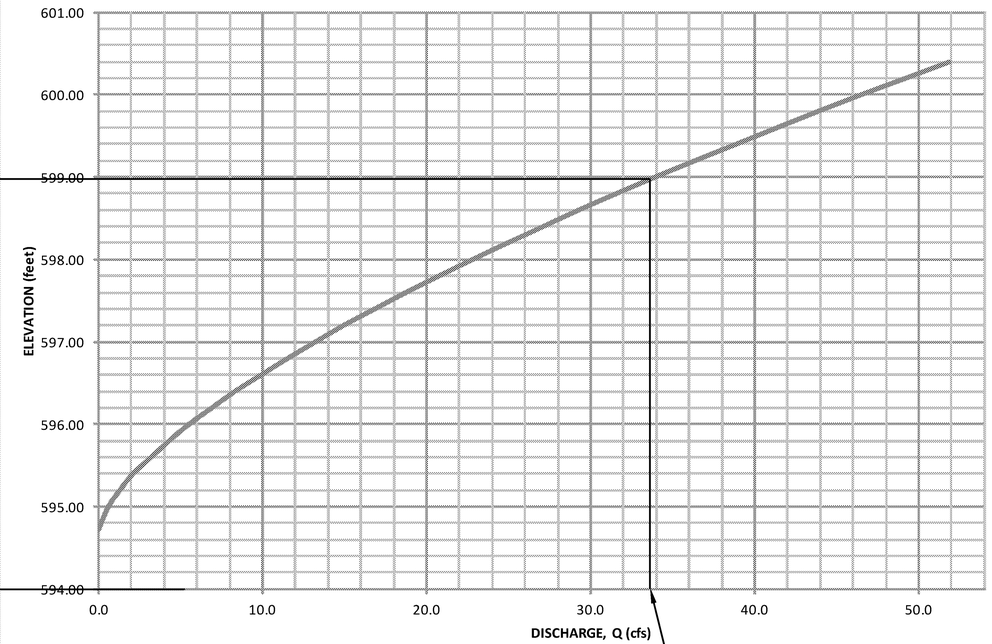
SHEET NO.
C-D301

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 6:39 AM SAVED BY: PHILIPG FILE: DETENTION-POND-DETAILS-I-14029.DWG

DETENTION POND VOLUME 100 YEAR



DETENTION POND OUTFLOW 100 YEAR



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

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD.

SCOTT + REID
General Contractors

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
2201 E. LAMAR BLVD., SUITE 200E ARLINGTON, TEXAS 76006 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.wierassociates.com

COL-MET spray booths

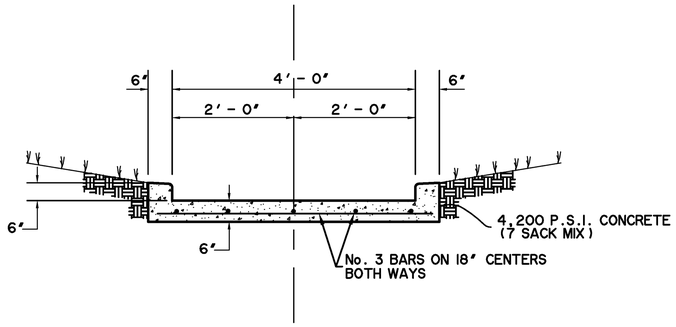
LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS

DETENTION POND DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

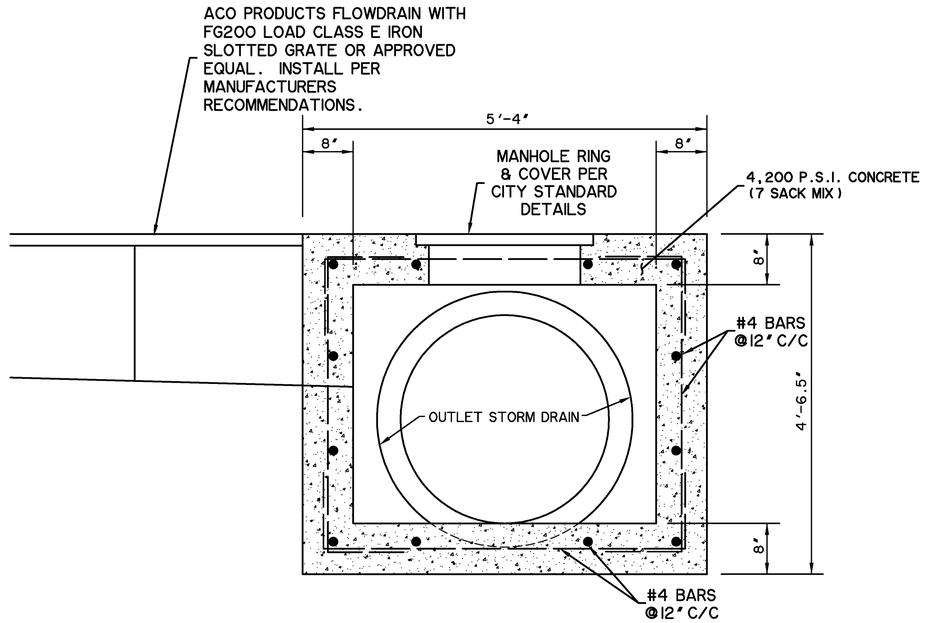
LAST SHEET EDIT DATE 10/28/2015
WA# 14029
SHEET NO.
C-D302

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 5:51 AM SAVED BY: PHILIPG FILE: DETENTION-POND-DETAILS-2-14029.DWG



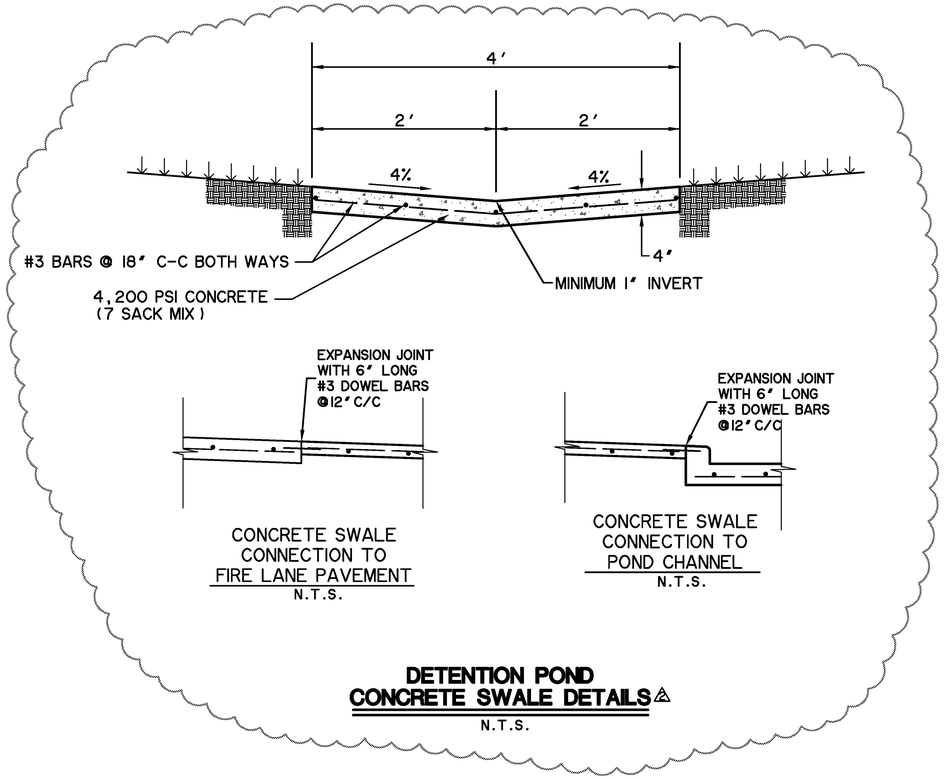
DETENTION POND CHANNEL DETAIL

N.T.S.



TRENCH DRAIN & JUNCTION BOX (PRIVATE)

N.T.S.



DETENTION POND CONCRETE SWALE DETAILS ⚠

N.T.S.

RECORD PLANS
October 28, 2015

REVISIONS	DATE	BY
⚠ ADDED CONCRETE SWALE DETAIL	02/11/15	PLG

CUSHMAN & WAKEFIELD

SCOTT + REID General Contractors

PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
2201 E. LAMAR BLVD., SUITE 200E ARLINGTON, TEXAS 76006 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.WierAssociates.com

COL-MET spray booths

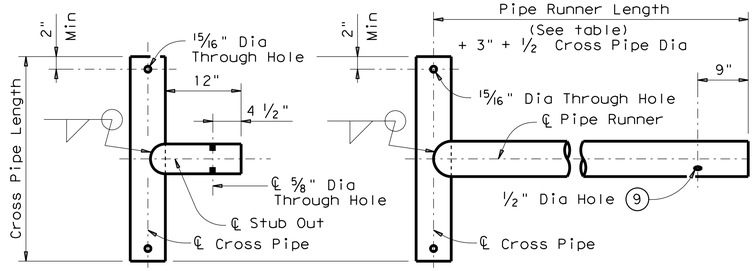
LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
DRAINAGE DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/28/15

LAST SHEET EDIT DATE: 10/28/2015
WA# 14029

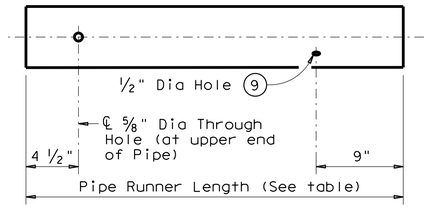
SHEET NO.
C-D303

PRINTED: 10/28/2015 STB FILE: WIER-STORM DRAIN.STB LAST SAVED: 10/28/2015 6:16 AM SAVED BY: PHILIPG FILE: STORM-DRAIN-DETAILS-14029.DWG



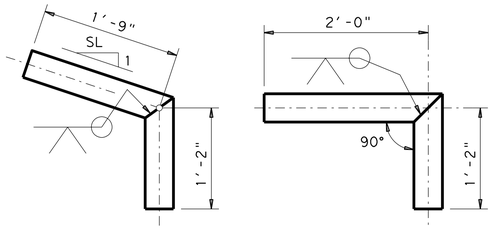
OPTION A1 OPTION A2

CROSS PIPE AND CONNECTIONS DETAILS



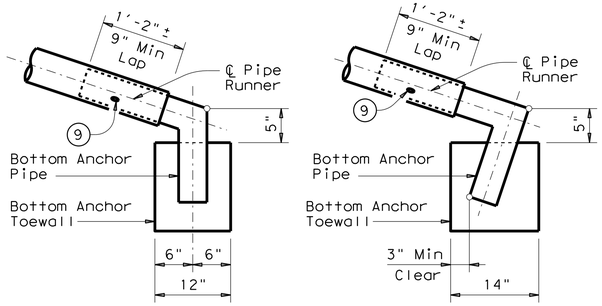
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS



OPTION B1 OPTION B2

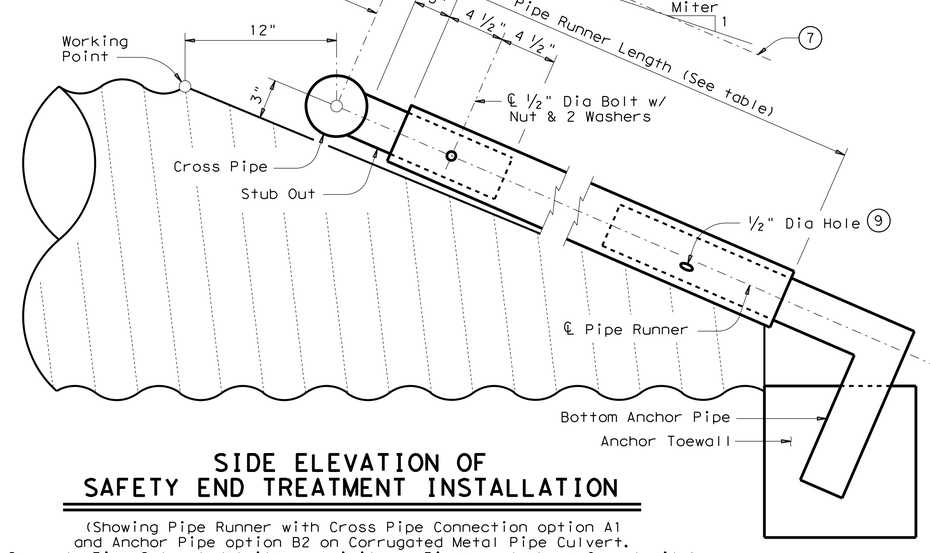
BOTTOM ANCHOR PIPE DETAILS (10)



OPTION B1 OPTION B2

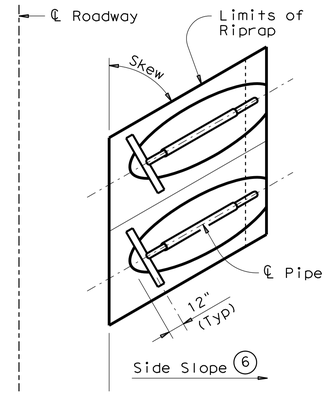
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert & Riprap not shown for clarity)

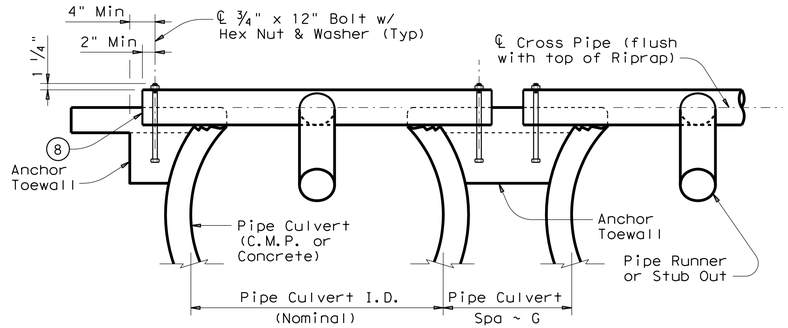


SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

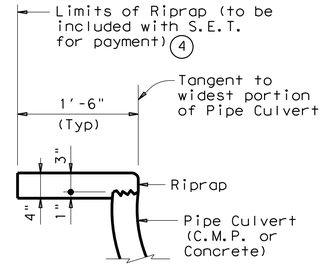
(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)



PLAN OF SKEWED INSTALLATION



SHOWING CROSS PIPE & ANCHOR TOEWALL



SHOWING TYPICAL PIPE CULVERT & RIPRAP

SECTION A-A

(4) Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

(6) Recommended values of side slope are 3:1, 4:1, & 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

(7) Note that actual slope of Pipe Runner may vary slightly from Side Slope of Riprap and trimmed Culvert Pipe edge.

(8) Care shall be taken 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, the 1/2" hole shall be inspected to ensure that the lap of the 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.

GENERAL NOTES:

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

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.

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.

RECORD PLANS
October 28, 2015

DATE:
FILE:

SHEET 2 OF 2

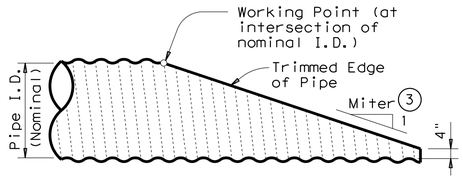
Texas Department of Transportation | Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA
PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

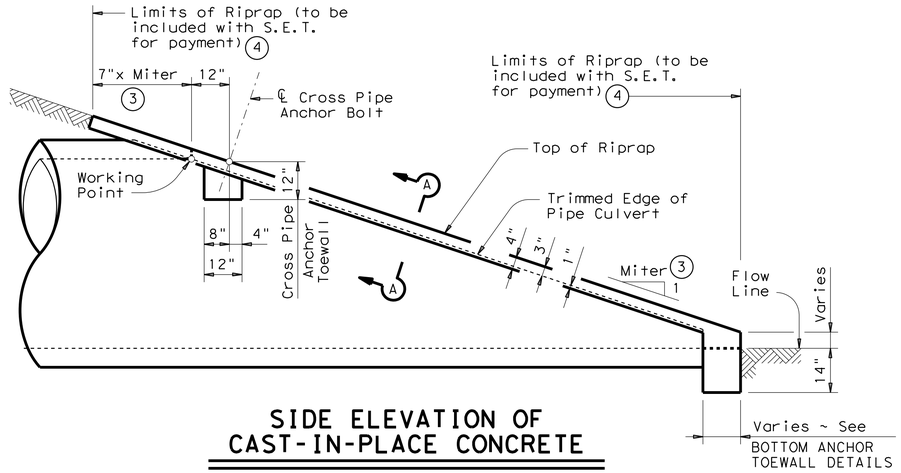
FILE: setpcdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.
				C-D305



NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

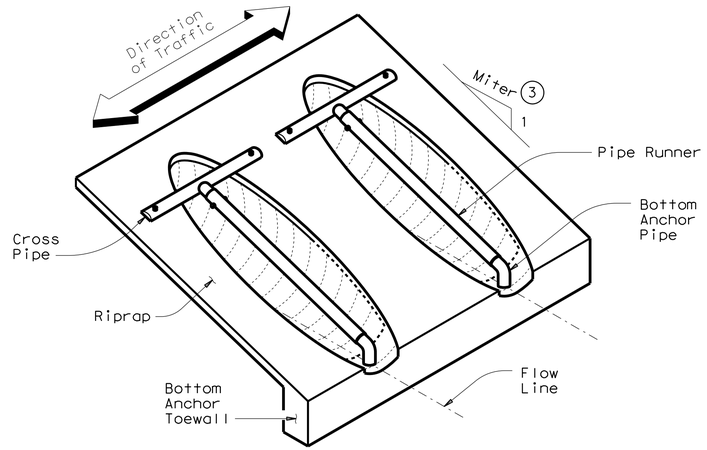
SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar. Pipe Runners not shown for clarity)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS (1) (2)

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length											
			3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
			0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	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" to 60"	Always required	Always required

STANDARD PIPE SIZES & 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				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	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) Size of Pipe Runner shall be as shown in the tables. Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out and Bottom Anchor Pipe shall be the next smaller size pipe as shown in the STANDARD PIPE SIZES 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:

For 60" culvert pipes, the skew must not exceed 0°.
For 54" culvert pipes, the skew must not exceed 15°.
For 48" culvert pipes, the skew must not exceed 30°.
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Roadway Design Manual".

(3) Miter = Slope of Mitered Pipe Culvert End

(4) Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

(5) Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple Pipe Culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

RECORD PLANS
October 28, 2015

DATE:
FILE:

SHEET 1 OF 2

Texas Department of Transportation

Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA
PIPE CULVERTS
TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE: setpcdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONT	SECT	JOB	HIGHWAY
REVISIONS 11-10: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO. C-D304

GENERAL GRADING & DRAINAGE NOTES

1. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS ARE BASED ON REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER DOES NOT ACCEPT THE RESPONSIBILITY FOR THE GRAPHICAL REPRESENTATION OF THE UTILITIES SHOWN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. EXISTING TOPOGRAPHIC INFORMATION SHOWN IS BASED ON IN-FIELD SURVEY PREPARED BY WIER & ASSOCIATES, INC. ON MARCH 5, 2014 AND JUNE 4 AND 5, 2014. (EXCLUDES BELOW GRADE PUBLIC UTILITY LOCATIONS PROVIDED BY UTILITY COMPANY AS DESCRIBED ABOVE.)

2. NEW FINISHED CONTOURS SHOWN ARE TOP OF PAVING IN AREAS TO RECEIVE PAVEMENT AND TOP OF TOPSOIL IN AREAS TO BE SEEDED.

3. AREAS OUTSIDE OF THE PARKING LOT PERIMETERS SHOWN TO BE SEEDED SHALL RECEIVE MINIMUM FOUR (4) INCHES OF TOPSOIL (OR TO DEPTH INDICATED ON LANDSCAPE ARCHITECT PLANS). THIS TOPSOIL TO BE PLACED AND LEVELED BY THE GRADING CONTRACTOR. THIS MATERIAL MAY BE STOCKPILED DURING STRIPPING OPERATIONS.

4. ROUGH GRADING ELEVATIONS SHALL BE AS FOLLOWS:
FOUR INCHES BELOW FINISHED CONTOURS IN SEEDED AREAS.
THE DEPTH OF PAVEMENT , TYPICALY SIX TO EIGHT INCHES, BELOW FINISHED CONTOURS IN PAVED AREAS, UNLESS OTHERWISE NOTED.

5. DIMENSIONS ON BUILDINGS ARE FOR GRADING PURPOSES ONLY AND ARE NOT TO BE USED TO LAYOUT FOOTINGS.

6. GRADING CONTRACTOR SHALL NOTIFY AND COOPERATE WITH ALL UTILITY COMPANIES OR FIRMS HAVING FACILITIES ON OR ADJACENT TO THE SITE BEFORE DISTURBING, ALTERING, REMOVING, RELOCATING, ADJUSTING, OR CONNECTING TO SAID FACILITIES. CONTRACTOR SHALL PAY ALL COSTS IN CONNECTION WITH THE ALTERATION OF OR RELOCATION OF THE FACILITIES. CONTRACTOR SHALL RAISE OR LOWER TOPS OF EXISTING MANHOLES AS REQUIRED TO MATCH FINISHED GRADES IN CONFORMANCE WITH CITY STANDARDS.

7. GRADING CONTRACTOR SHALL COOPERATE AND WORK WITH ALL OTHER CONTRACTORS PERFORMING WORK ON THIS PROJECT TO INSURE PROPER AND TIMELY COMPLETION OF THIS PROJECT.

8. THE GRADING CONTRACTOR SHALL USE WHATEVER MEASURES ARE REQUIRED TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM FLOWING ONTO ADJACENT PROPERTIES. THIS CAN BE ACCOMPLISHED BY SMALL TEMPORARY SEDIMENT PONDS, SILT FENCES OF STEEL WIRE AND BURLAP OR BARRIERS OF CEDAR TREES AND/OR BALES OF STRAW. CONTRACTOR SHALL COMPLY WITH ALL LOCAL EROSION, CONSERVATION AND SILTATION ORDINANCES. CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL STRUCTURES UPON COMPLETION OF PERMANENT DRAINAGE FACILITIES AND THE ESTABLISHMENT OF A STAND OF GRASS SUFFICIENT TO PREVENT EROSION.

9. FOR THE WORK ON THE STATE OR CITY RIGHT-OF-WAY, THE GRADING CONTRACTOR SHALL:

   A. NOT STORE MATERIAL, EXCESS DIRT OR EQUIPMENT ON THE SHOULDERS OF PAVEMENT, IN CASE OF MULTI-LANE HIGHWAYS, IN THE MEDIAN STRIPS. THE PAVEMENT SHALL BE KEPT FREE FROM ANY MUD OR EXCAVATION WASTE FROM TRUCKS OR OTHER EQUIPMENT. ON COMPLETION OF THE WORK, ALL EXCESS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY.

   B. SHALL PROVIDE ALL NECESSARY AND ADEQUATE SAFETY PRECAUTIONS SUCH AS SIGNS, FLAGS, LIGHTS, BARRICADES AND FLAGMEN AS REQUIRED BY THE LOCAL AUTHORITIES AND IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE GRADING CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HOLD HARMLESS THE TEXAS DEPARTMENT OF TRANSPORTATION, THE CITY, AND THE OWNER FROM ANY CLAIMS FOR DAMAGE DONE TO EXISTING PRIVATE PROPERTY, PUBLIC UTILITIES OR TO THE TRAVELING PUBLIC.

   C. SHALL COMPLETE THE WORK TO THE SATISFACTION OF THE CITY PUBLIC WORKS DEPARTMENT AND OBTAIN A LETTER FROM THE DEPARTMENT STATING THAT THE WORK UNDER PUBLIC JURISDICTION IS ACCEPTABLE.

   D. POST NECESSARY BONDS AS REQUIRED BY THE CITY AND/OR STATE.

10. GRADING CONTRACTOR SHALL TAKE ALL AVAILABLE PRECAUTIONS TO CONTROL DUST. CONTRACTOR SHALL CONTROL DUST BY SPRINKLING, BY APPLYING CALCIUM CHLORIDE OR BY OTHER METHODS AS DIRECTED BY ENGINEER AND/OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO OWNER.

11. REFER TO PAVING DETAILS FOR TYPE OF PAVING AND BASE TO BE USED.

12. GRADING CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY EXISTING STRUCTURES, FENCES, DEBRIS OR TREES REMAINING ON SITE, UNLESS NOTED OTHERWISE ON PLANS AND SHALL COORDINATE WITH GENERAL CONTRACTOR.

13. GRADING CONTRACTOR TO COMPLY WITH ALL STATE AND LOCAL SEDIMENT CONTROL AND AIR POLLUTION ORDINANCES OR RULES.

14. A QUALIFIED SOILS LABORATORY SHALL DETERMINE THE SUITABILITY OF THE EXISTING SUBGRADE AND EXISTING ON-SITE MATERIAL PRIOR TO BEGINNING ANY FILLING OPERATION.

15. UNSUITABLE EXCAVATED MATERIALS AND ALL WASTE RESULTING FROM CLEARING AND GRUBBING SHALL BE DISPOSED OF OFF-SITE BY GRADING CONTRACTOR.

16. ALL EXCAVATING IS UNCLASSIFIED AND SHALL INCLUDE ALL MATERIALS ENCOUNTERED.

17. ALL AREAS NOT COVERED BY BUILDING, PAVING OR PLANNED LANDSCAPING, SHALL BE GRASSED ON THIS LOT WITHIN 14 DAYS OF CESSATION OF CONSTRUCTION ACTIVITIES. PUBLIC STREET PARKWAYS SHALL BE GRASSED IMMEDIATELY.

18. BEFORE ANY MACHINE WORK IS DONE, CONTRACTOR SHALL STAKE OUT AND MARK THE ITEMS ESTABLISHED BY THE SITE PLAN. CONTROL POINTS SHALL BE PRESERVED AT ALL TIMES DURING THE COURSE OF THE PROJECT. LACK OF PROPER WORKING POINTS AND GRADE STAKES MAY REQUIRE CESSATION OF OPERATIONS UNTIL SUCH POINTS AND GRADES HAVE BEEN PLACED TO THE OWNER'S SATISFACTION. NO EXTENSION OF TIME WILL BE GRANTED FOR THE ABOVE.

19. TEMPORARY EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO BEGINNING OF GRADING. CONTRACTOR SHALL MAINTAIN ALL TEMPORARY EROSION CONTROL DEVICES AND SHALL REMOVE SILT FROM BERM DITCHES, SILT DAMS AND SILT FENCES AS NEEDED.

20. ALL DISTURBED AREAS SHALL BE HYDROMULCH SEEDED UNLESS OTHERWISE NOTED.

21. THE CONTRACTOR SHALL PREVENT SOIL STABILIZATION TREATMENT FROM LEAVING THE SITE BY WAY OF STORMWATER RUNOFF WHICH MAY DAMAGE DOWNSTREAM WATER COURSES, LAKES OR PONDS. ANY DAMAGE TO WILDLIFE OR FISH KILLS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE.

22. MAINTAIN AS MUCH EXISTING VEGETATION AS POSSIBLE AS WELL AS RE-ESTABLISHING THE GROUND COVER AS EARLY AS POSSIBLE. GRASS BUFFER STRIPS SHALL BE LEFT AROUND THE PERIMETER TO AID IN FILTERING SEDIMENTATION. A DENSITY OF TEMPORARY OR PERMANENT GROUND COVER SUFFICIENT TO PREVENT EROSION SHALL BE ESTABLISHED ON ALL BERMS, SWALES AND SLOPES.

23. ALL SITE GRADING AND EARTHWORK CONSTRUCTION SHALL COMPLY TO THE GEOTECHNICAL REPORT RECOMMENDATIONS AND SHALL BE COMPACTED TO A MINIMUM 95% OF ASTM D698 USING A SHEEPSFOOT ROLLER.

24. ALL DISTURBED AREAS SHALL HAVE A MINIMUM 1" TALL GRASS COVERAGE OVER 75% TO 80% OF THE ENTIRE AREA PRIOR TO ENGINEERING ACCEPTANCE OR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

PARKING LOT GRADING NOTES

1. THIS GRADING PLAN DOES NOT INCLUDE CONSTRUCTION OF THE FOUNDATION FOR THE BUILDING PAD AND THE AREAS ADJACENT TO THE BUILDING. THE OWNER SHALL SELECT THE FOUNDATION DESIGN OPTION WHICH WILL ESTABLISH THE CONSTRUCTION TECHNIQUE TO BE USED FOR THE FOUNDATION PAD AND AREAS OF THE BUILDING. REFER TO THE PROJECT GEOTECHNICAL REPORT FOR FOUNDATION CONSTRUCTION RECOMMENDATIONS.

2. CONSTRUCTION OF SITE GRADING AND EMBANKMENT SHALL MEET OR EXCEED THE RECOMMENDATION PROVIDED IN THE PROJECT GEOTECHNICAL REPORT.

3. AREAS A MINIMUM FIVE FEET HORIZONTALLY OF THE PARKING PAVEMENT AND EMBANKMENT SLOPES ADJACENT TO PARKING AREA SHALL BE CONSTRUCTED AS PER THE PROJECT GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE BELOW SPECIFICATIONS ARE MINIMUM REQUIREMENTS AND SHALL BE SUPERSEDED BY THE PROJECT GEOTECHNICAL RECOMMENDATIONS IF IN CONFLICT . THE SPECIFICATIONS ARE AS FOLLOWS:

   A. THE AREA SHALL BE STRIPPED OF VEGETATION A MINIMUM SIX INCHES OR DEEPER AS DIRECTED BY THE PROJECT GEOTECHNICAL ENGINEER TO STABLE SUBGRADE AND PROOFROLLED. PROOFROLLING CONSISTS OF ROLLING THE ENTIRE SUBGRADE WITH A HEAVILY-LOADED TANDEM AXLE DUMP TRUCK OR OTHER APPROVED EQUIPMENT CAPABLE OF APPLYING SIMILAR WHEEL LOADS. ANY SOFT, WET OR WEAK FILL OR NATURAL SOILS WHICH DO NOT COMPACT BY PROOFROLLING SHALL BE REMOVED AND RECOMPACTED AS OUTLINED HEREIN. THE PROOFROLLING OPERATION MUST BE PERFORMED UNDER THE OBSERVATION OF A QUALIFIED GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE AND DENSITY CONTROL TESTED.

   B. ON-SITE SOILS WITH PLASTICITY INDEX ANTICIPATED TO BE GREATER THAN 15, WHICH INCLUDES ANY DARK COLORED SURFACE CLAY SOILS, CAN BE ALSO USED AS GRADE RAISE FILL OUTSIDE THE PROPOSED BUILDING AREA. THESE CLAY SOILS SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF STANDARD PROCTOR DENSITY AND NOT EXCEEDING 100 PERCENT. THE COMPACTED MOISTURE CONTENT OF THE CLAYS DURING PLACEMENT SHALL BE BETWEEN OPTIMUM AND FOUR (4) PERCENTAGE POINTS ABOVE OPTIMUM.

   C. COMPACTION SHALL BE ACCOMPLISHED BY PLACING THE FILL IN SIX TO EIGHT-INCH THICK LOOSE LIFTS AND COMPACTING EACH LIFT TO AT LEAST THE SPECIFIED MINIMUM DRY DENSITY. IT IS IMPERATIVE THAT THE FILL PARTICLE SIZE BE LESS THAN SIX INCHES IN DIAMETER. IF LARGER CLODS ARE ENCOUNTERED DURING GRADING, THESE CLODS MUST BE BROKEN DOWN PRIOR TO FINAL PLACEMENT IN THE FILL. THIS MAY REQUIRE PLACEMENT OF THE MATERIAL, AN INITIAL COMPACTIVE EFFORT TO BREAK THE CLODS DOWN, SCARIFYING, WETTING AND RECOMPACTING TO A MINIMUM 95% OF ASTM D698 USING A SHEEPSFOOT ROLLER.

   D. IN ORDER FOR THE FILL MATERIALS TO PERFORM AS INTENDED, THE FILL MATERIAL MUST BE PLACED IN A MANNER WHICH PRODUCES A GOOD UNIFORM FILL COMPACTED WITHIN THE DENSITY AND MOISTURE RANGES OUTLINED IN THE PRECEDING PARAGRAPHS. FIELD DENSITY TESTS SHALL BE PERFORMED ON FILL SOILS TO CONFIRM THIS PERFORMANCE AS CONSTRUCTION PROGRESSES. FOR THE PROPOSED PARKING AND DRIVEWAY AREAS, TESTING AT A FREQUENCY OF NO LESS THAN ONE (1) TEST PER LIFT PER EACH 5,000 SQUARE FEET SHALL BE PROVIDED FOR FILL AND PROOFROLLING.

4. THESE SPECIFICATIONS DO NOT INCLUDE GRADING AND PREPARATION OF THE BUILDING FOUNDATION AREA. THE CONTRACTOR SHALL CONFIRM FOUNDATION CONSTRUCTION COMPACTION, MOISTURE CONTROL, SELECT FILLS AND/OR TREATMENT WITH THE OWNER, THE PROJECT GEOTECHNICAL ENGINEER AND STRUCTURAL ENGINEER.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

PREPARED BY:
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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
PRIVATE GENERAL GRADING NOTES

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER
10/28/15

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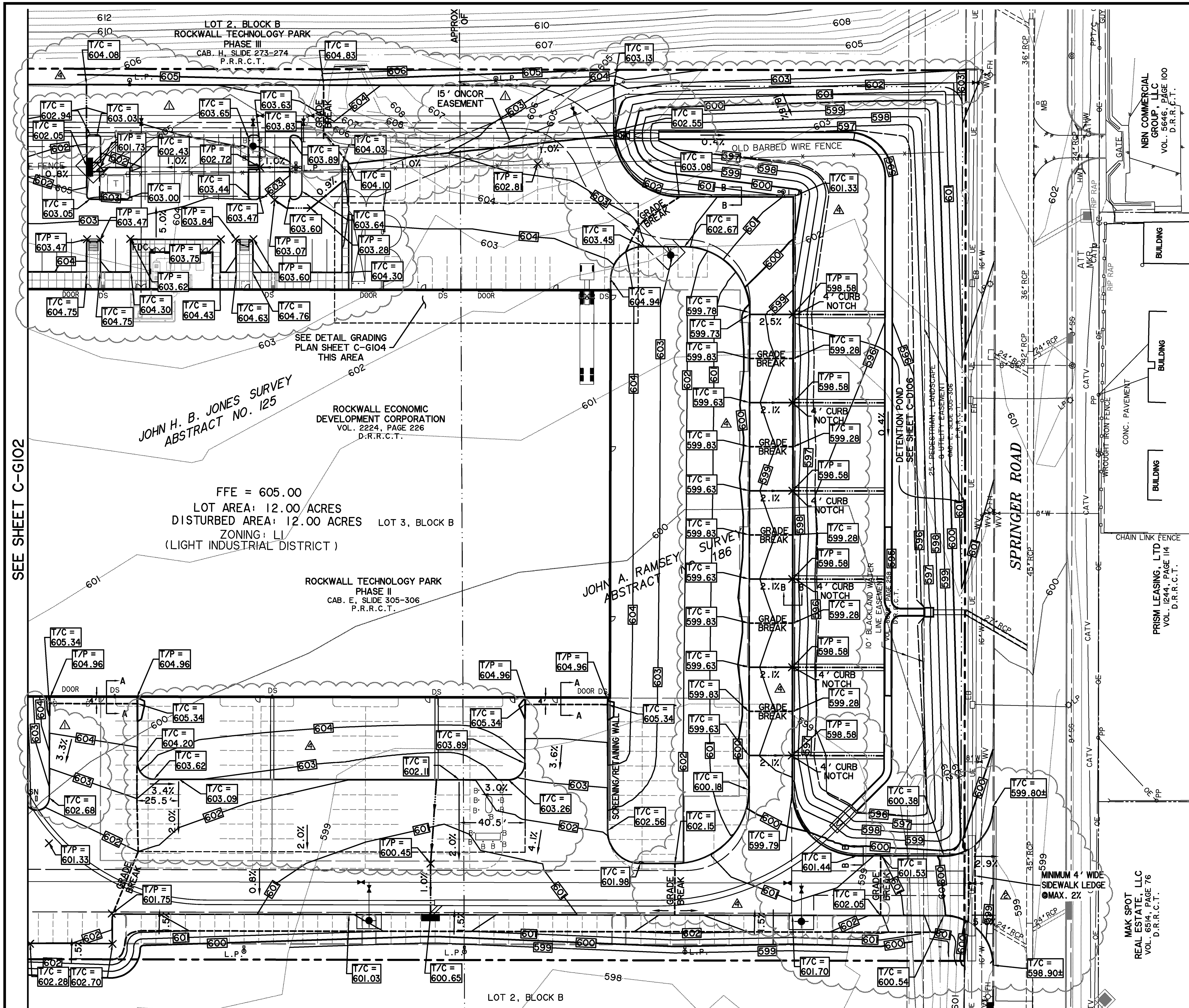

CAUTION !!

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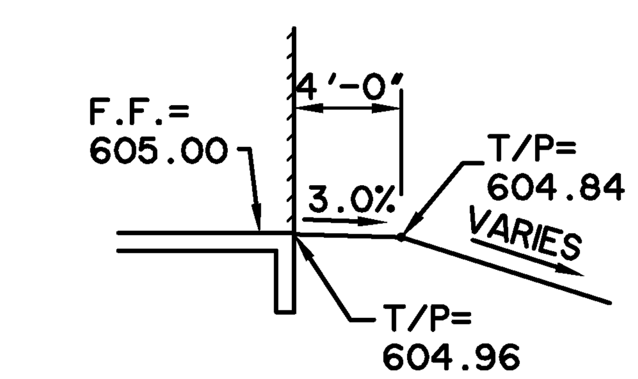
* BENCHMARKS *

BM A: "X" CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549.
601.19 FT.

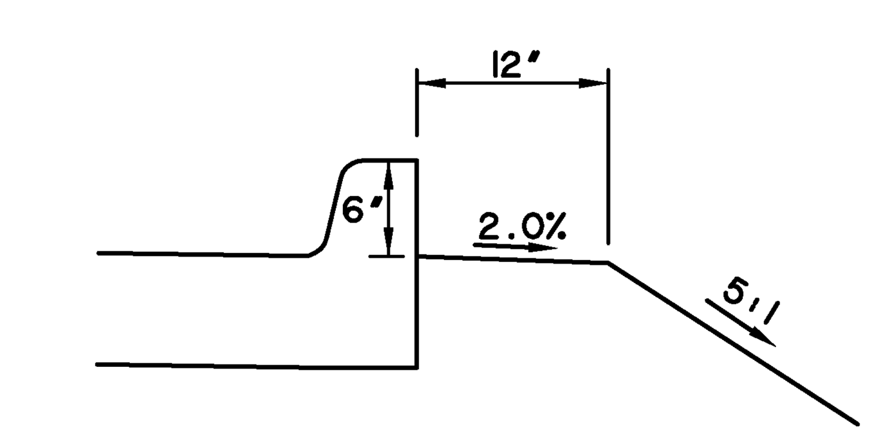
BM B: "X" CUT IN BOX IN THE CONCRETE AROUND A WATER VALVE ON THE BACK OF CURB ALONG THE NORTH SIDE OF SPRINGER RD. APPROXIMATELY 921' EAST OF IT'S INTERSECTION WITH F.M. 549.
600.75 FT.

	REVISIONS	DATE	BY
1	RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
2	ADDED DRIVE CONNECTION & REVISED GRADING	03/19/15	PLG
3	ADDED ADDITIONAL TRUCK PARKING & RAISED FIRE LANE PAVEMENT 1'	04/13/15	TVW

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



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

CURB SECTION ADJACENT TO DETENTION POND

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
GRADING PLAN
SOUTH

STATE OF TEXAS
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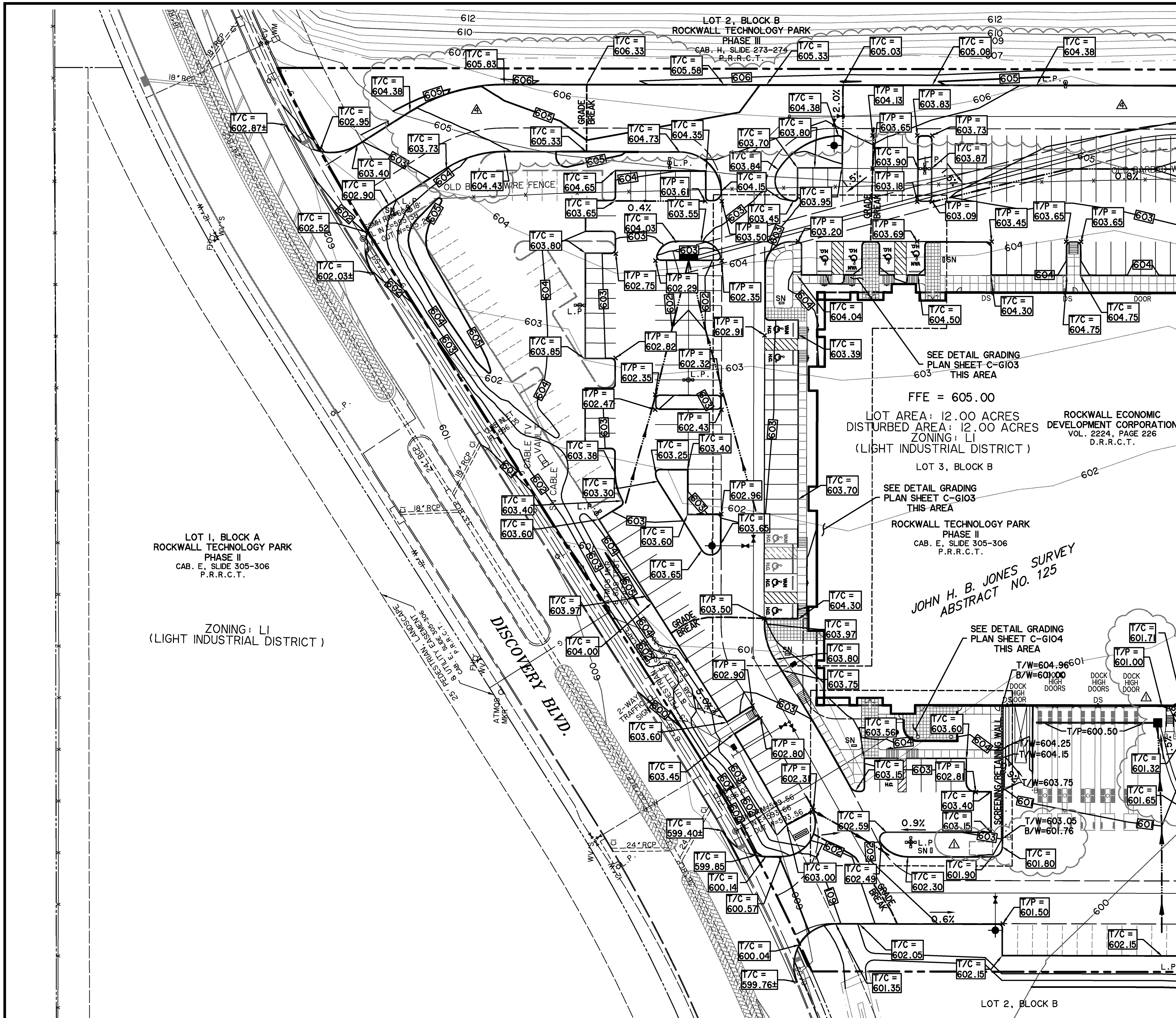

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GENERAL NOTES:
1. SEE SHEET 2 FOR GRADING LEGEND.

*** BENCHMARKS ***

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RECORD PLANS
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2 ADDED ADDITIONAL TRUCK PARKING & RAISED FIRE LANE PAVEMENT 1"	04/13/15	TVW

0 30 60 90

CUSHMAN & WAKEFIELD
SCOTT + REID General Contractors

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LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
GRADING PLAN
NORTH

STATE OF TEXAS
PHILIP L. GRAHAM
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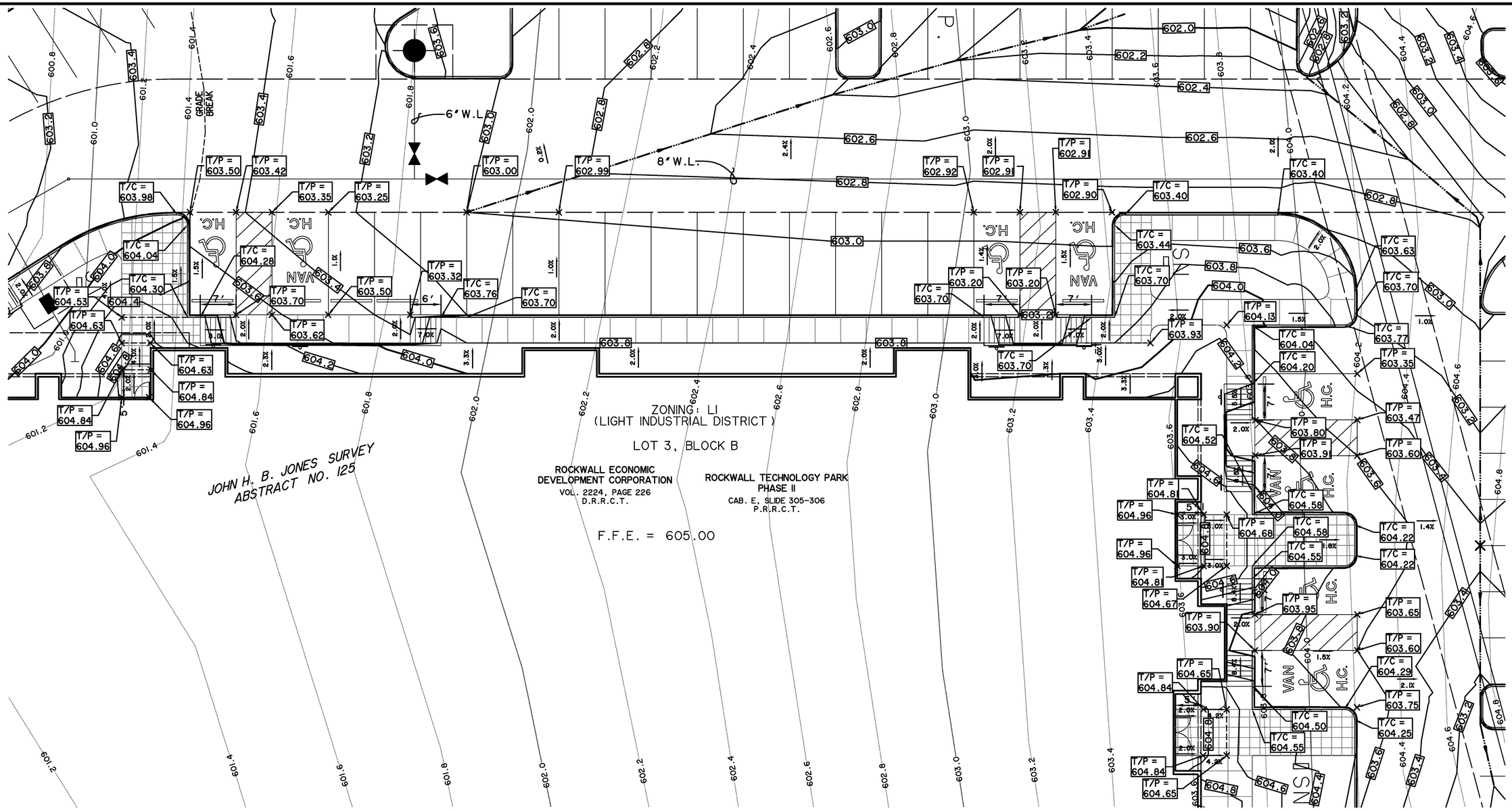

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
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GRADING PLAN DETAIL

STATE OF TEXAS
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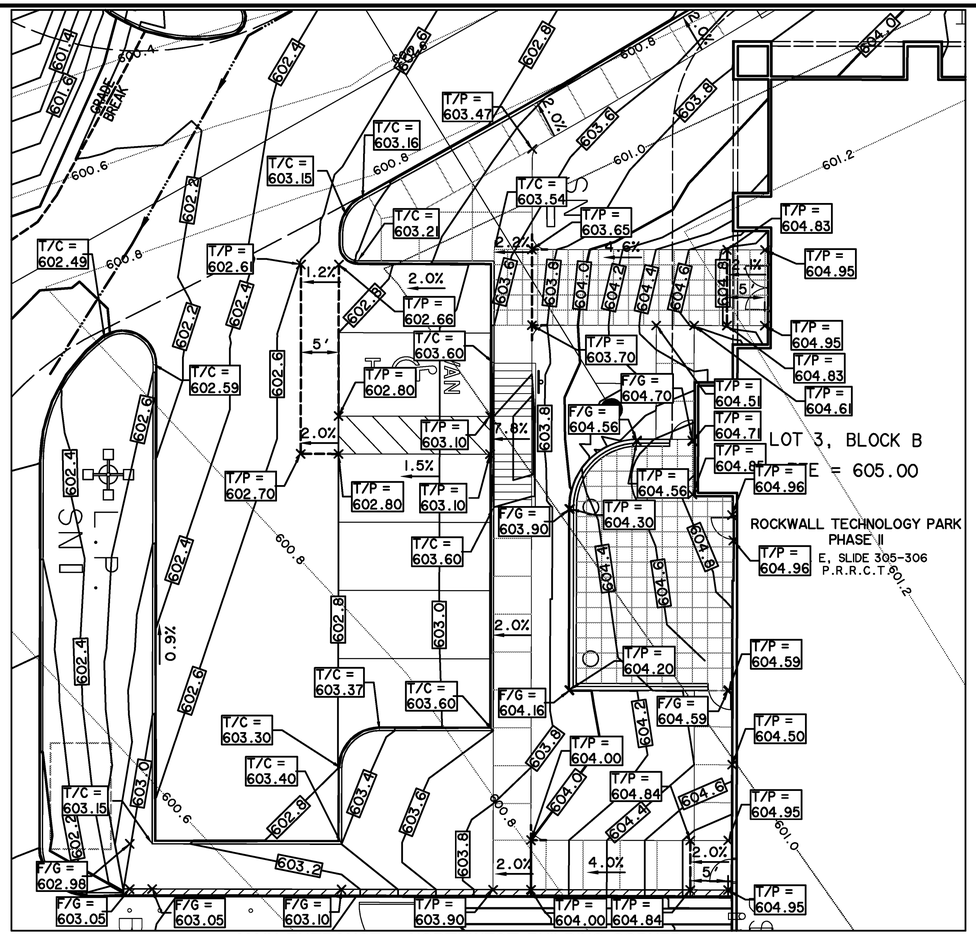
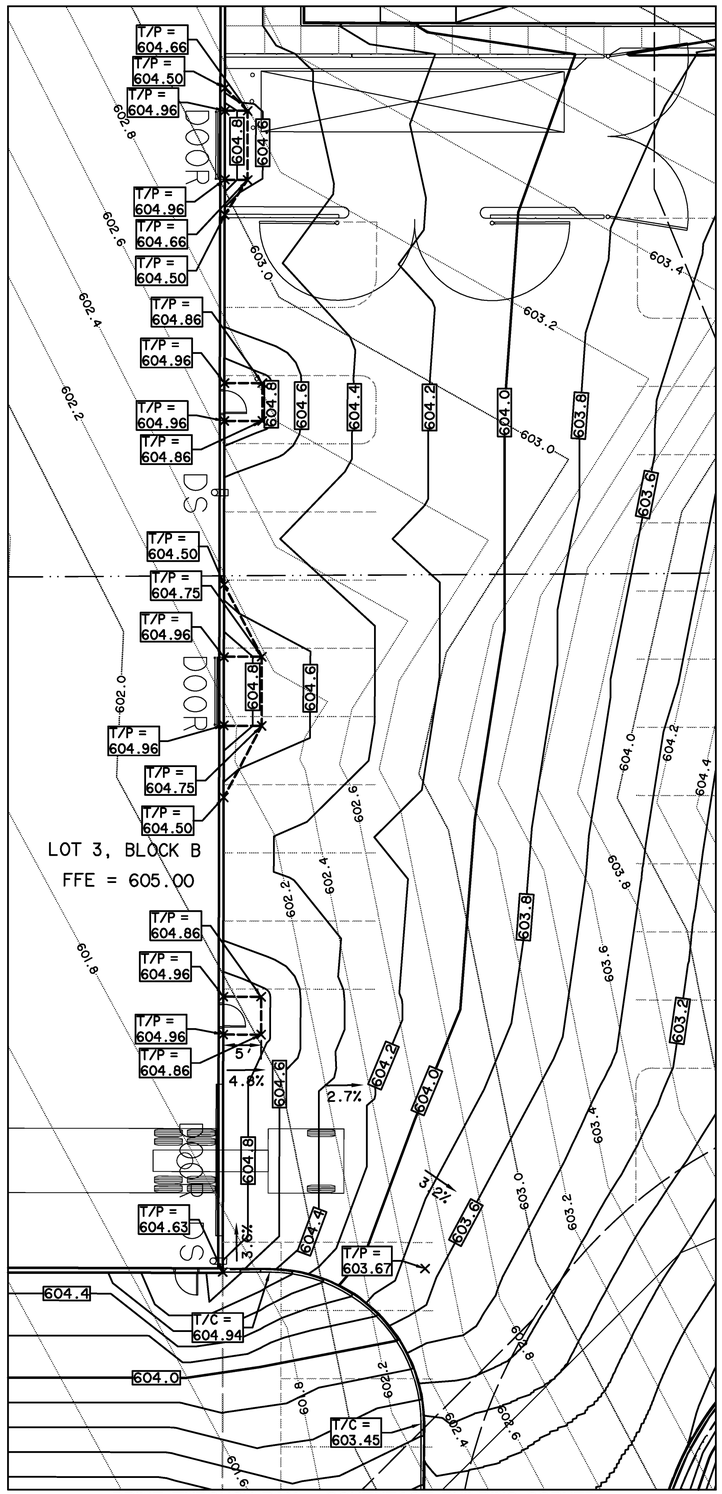


MAIN ENTRANCE – NORTHWEST BUILDING CORNER



DRIVE THROUGH BAY – SOUTHEAST BUILDING CORNER

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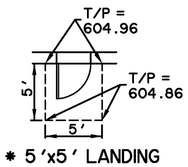

* 5'x5' LANDING

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RECORD PLANS
October 28, 2015

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LOT 3, BLOCK B
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COL-MET SPRAY BOOTHS
GRADING PLAN DETAIL

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UTILITY NOTES

1. THIS SHEET IS FOR SANITARY SEWER, WATER LINE AND STORM DRAINAGE CONSTRUCTION ONLY. DO NOT USE FOR GRADING CONSTRUCTION.

2. ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES AND ARE APPROXIMATE.

3. ALL WATER AND SANITARY SEWER BULKHEADS TO TERMINATE APPROXIMATELY FIVE FEET OUTSIDE THE BUILDING UNLESS OTHERWISE NOTED. THE END OF THESE SERVICE LINES SHALL BE TIGHTLY PLUGGED OR CAPPED AND MARKED UNTIL SUCH TIME AS CONNECTION IS MADE INSIDE BUILDING.

4. CONTRACTOR SHALL PROVIDE ALL THE MATERIALS AND APPURTENANCES NECESSARY FOR THE COMPLETE INSTALLATION OF THE UTILITIES. ALL PIPE AND FITTINGS SHALL BE INSPECTED BY THE WATER DEPARTMENT INSPECTOR PRIOR TO BEING COVERED. THE INSPECTOR MUST ALSO BE PRESENT DURING PRESSURE TESTING AND DISINFECTION OF MAINS AND HIS SIGNATURE OF APPROVAL IS REQUIRED.

5. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS AND/OR LOCAL STANDARDS IMPOSED BY LOCAL UTILITY AND THE CITY.

6. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE LOCAL UTILITY AUTHORITY FOR CONNECTION TO THE EXISTING MAINS.

7. ALL FIRE HYDRANTS ARE SIX-INCH DIAMETER WITH A 6-INCH DIAMETER LINE AND A SIX-INCH DIAMETER SHUT OFF VALVE. FIRE HYDRANTS SHALL BE SET SUCH THAT NOZZLE CONNECTIONS FACE THE FIRE LANE. FIRE HYDRANTS SHALL BE SET MINIMUM THREE FEET TO FIVE FEET BACK OF CURB.

8. ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 42 INCHES ABOVE TOP OF PIPE, UNLESS NOTED OTHERWISE.

9. CONTRACTOR SHALL ADJUST LOCATION OF PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH STORM SEWER OR OTHER UTILITIES.

10. THRUST BLOCKS SHALL BE PROVIDED AT ALL "TEES, ELBOWS AND BENDS" OF SUFFICIENT SIZE TO COMPLY WITH MINIMUM STANDARDS OF N.F.P.A.-24 FOR EXISTING SOIL CONDITIONS.

11. BASED ON SECTION 704.2 OF THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE, CLEANOUTS ARE REQUIRED AT A MAXIMUM SPACING OF 75 FEET ON UTILITY LEAD-INS TO BUILDING. CONTRACTOR TO PROVIDE CLEANOUTS WITHIN FIVE FEET OF BUILDING.

12. ALL GATE VALVES TO BE PROVIDED WITH CAST IRON BOXES. SIZE OF GATE VALVE (WHERE TAP IS MADE INTO EXISTING WATER LINE) WILL BE DETERMINED BY THE WATER DEPARTMENT.

13. SHOULD LATENT SOIL CONDITIONS NECESSITATE, CONTRACTOR SHALL INSTALL SPECIAL SUPPORTS FOR PIPING AND/OR APPURTENANCES INCLUDING THE REMOVAL OF UNSUITABLE MATERIAL AND BACKFILLING WITH GRAVEL OR OTHER MATERIAL. CONTRACTOR SHALL PERFORM ANY SUCH WORK AS DIRECTED BY THE CIVIL ENGINEER AND/OR SOILS ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

14. THE SITE UTILITY CONTRACTOR SHALL COOPERATE AND WORK WITH OTHER CONTRACTORS ON THE SITE.

15. ALL MANHOLES OVER FIVE FEET IN DEPTH SHALL HAVE A STANDARD ECCENTRIC CONE.

16. ALL MATERIALS SHALL BE U.L. LISTED AND FACTORY MUTUAL APPROVED UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

17. EXISTING UTILITIES AND UNDERGROUND FACILITIES INDICATED ON THESE PLANS ARE BASED ON REFERENCE INFORMATION SUPPLIED BY VARIOUS OWNERS OF THE FACILITIES. THE ENGINEER DOES NOT ACCEPT THE RESPONSIBILITY FOR THE GRAPHICAL REPRESENTATION OF THE UTILITIES SHOWN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND UNDERGROUND FACILITIES, BOTH HORIZONTALLY AND VERTICALLY, PRIOR TO CONSTRUCTION, TO TAKE NECESSARY PRECAUTIONS IN ORDER TO PROTECT ALL FACILITIES ENCOUNTERED, AND TO NOTIFY THE ENGINEER PROMPTLY OF ALL CONFLICTS OF THE WORK WITH EXISTING FACILITIES. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGE BY THE CONTRACTOR TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

18. UTILITY CONTRACTOR SHALL VERIFY WITH LOCAL AND STATE AUTHORITIES THAT ALL EXISTING STREET LIGHT AND TRAFFIC SIGNAL WIRES HAVE BEEN LOCATED PRIOR TO CONSTRUCTION.

19. PIPE THREE INCHES AND SMALLER SHALL BE TYPE K COPPER. FITTINGS SHALL BE COPPER OR CAST BRONZE. JOINTS SHALL BE SOLDER OR FLARE TUBE TYPE.

20. UTILITY LEAD-INS TO BUILDING SHALL NOT BE INSTALLED UNTIL BUILDING PLANS ARE COMPLETED AND LOCATIONS ESTABLISHED ON THE ARCHITECTURAL PLUMBING PLANS. LEAD-INS MAY CHANGE 15 FEET HORIZONTALLY AND THREE FEET VERTICALLY PRIOR TO INSTALLATIONS AT NO ADDITIONAL COST TO OWNER. LOCATION, SIZE AND INVERT ELEVATIONS OF SANITARY SEWER SHALL BE COORDINATED WITH THE APPROVED PLUMBING PLANS FOR THE BUILDING.

21. ALL TRENCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND THE STANDARDS THEREIN AND APPLICABLE STATE AND LOCAL REGULATIONS.

22. CONTRACTOR SHALL REFER TO SITE GEOTECHNICAL REPORT FOR RECOMMENDATIONS ON COMPACTING AND BACKFILLING TRENCHES. IF NO TRENCH COMPACTION RECOMMENDATIONS ARE PROVIDED, TRENCHES BENEATH OR WITHIN FIVE FEET OF PAVEMENT SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT BETWEEN OPTIMUM TO FIVE PERCENT ABOVE OPTIMUM. TRENCHES OUTSIDE OF PAVED AREAS SHALL BE COMPACTED TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT BETWEEN OPTIMUM TO FIVE PERCENT ABOVE OPTIMUM.

23. TRENCHES SHALL BE TESTED FOR COMPACTION AT A MINIMUM OF ONE TEST PER 300 LINEAR FEET PER LAYER.

24. TRENCHES ENTERING THE BUILDING SHALL BE BACKFILLED WITH CLAY SOIL MATERIAL WITH P.I. EXCEEDING 30 WITHIN FIVE FEET OF THE BUILDING.

25. ANY WATER OR SANITARY SEWER SERVICE LOCATED OUTSIDE OF A STREET RIGHT-OF-WAY, ALLEY OR EASEMENT SHALL BE INSTALLED BY A PLUMBER AND BE INSPECTED BY CODE ENFORCEMENT.

26. FIRE SPRINKLER LINE SHALL BE SIZED AND INSTALLED BY A STATE LICENSED FIRE SPRINKLER CONTRACTOR.

27. ALL PUBLIC WATER LINES SHALL BE CLASS 200 DR14.

28. BLUE EMS DISK SHALL BE INSTALLED ON WATER LINES AT EVERY CHANGE IN DIRECTION, VALVE, FIRE HYDRANT AND SERVICE.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

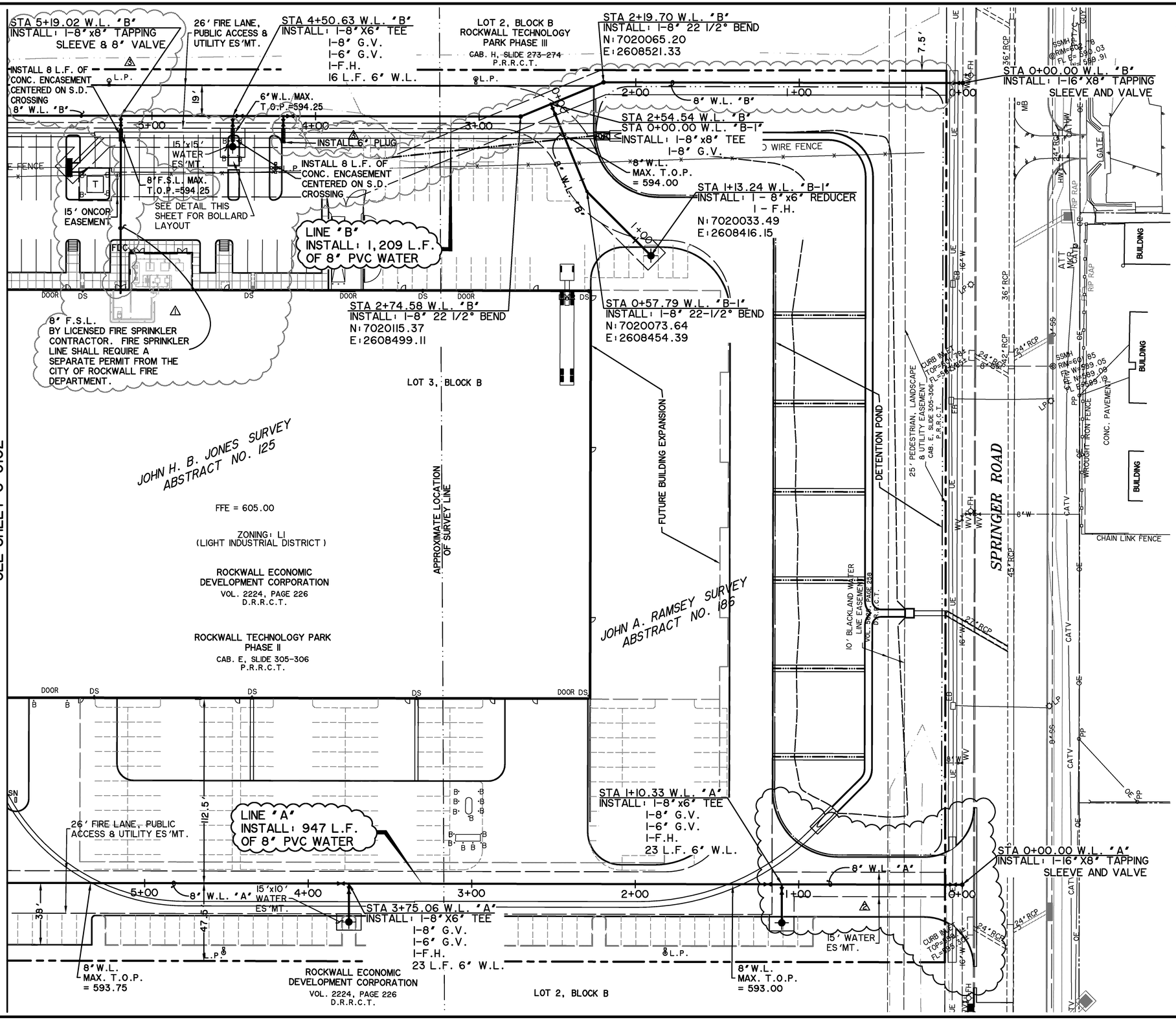
PREPARED BY:
WIER & ASSOCIATES, INC.
ENGINEERS SURVEYORS LAND PLANNERS
2201 E. LAMAR BLVD., SUITE 200E ARLINGTON, TEXAS 76006 METRO (817)467-7700
Texas Firm Registration No. F-2776 www.wierassociates.com

COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
UTILITY NOTES

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED
PROFESSIONAL ENGINEER

LAST SHEET EDIT
DATE 10/28/2015
WA# 14029
SHEET NO.
C-U001



CAUTION 11

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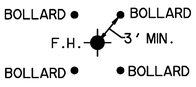
GENERAL NOTES:
1. SEE SHEET C-S001 FOR UTILITY LEGEND.

*** BENCHMARKS ***

BM A: 'X' CUT ON NORTHWEST CORNER OF CURB INLET ALONG NORTH SIDE OF DISCOVERY BLVD. APPROXIMATELY 990' EAST OF IT'S INTERSECTION WITH F.M. 549.
601.19 FT.

BM B: 'X' CUT IN BOX IN THE CONCRETE AROUND A WATER VALVE ON THE BACK OF CURB ALONG THE NORTH SIDE OF SPRINGER RD. APPROXIMATELY 921' EAST OF IT'S INTERSECTION WITH F.M. 549.
600.75 FT.



BOLLARD LAYOUT AT FIRE HYDRANT
N.T.S.

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

'ALL SANITARY SEWER WORK DESIGNATED AS 'PRIVATE' IN THIS SET OF PLANS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE, PERMITTED AND INSPECTED BY THE CITY BUILDING INSPECTION DEPARTMENT AND INSTALLED BY A LICENSED PLUMBER.'

REVISIONS	DATE	BY
1 RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
2 ADDED DRIVE CONNECTION	03/19/15	PLG
3 REVISED F.S.L. CONNECTION	03/26/15	PLG

RECORD PLANS
October 28, 2015

0 30 60 90

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
UTILITY PLAN
SOUTH

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

LAST SHEET EDIT DATE 10/28/2015
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SHEET NO. C-U101

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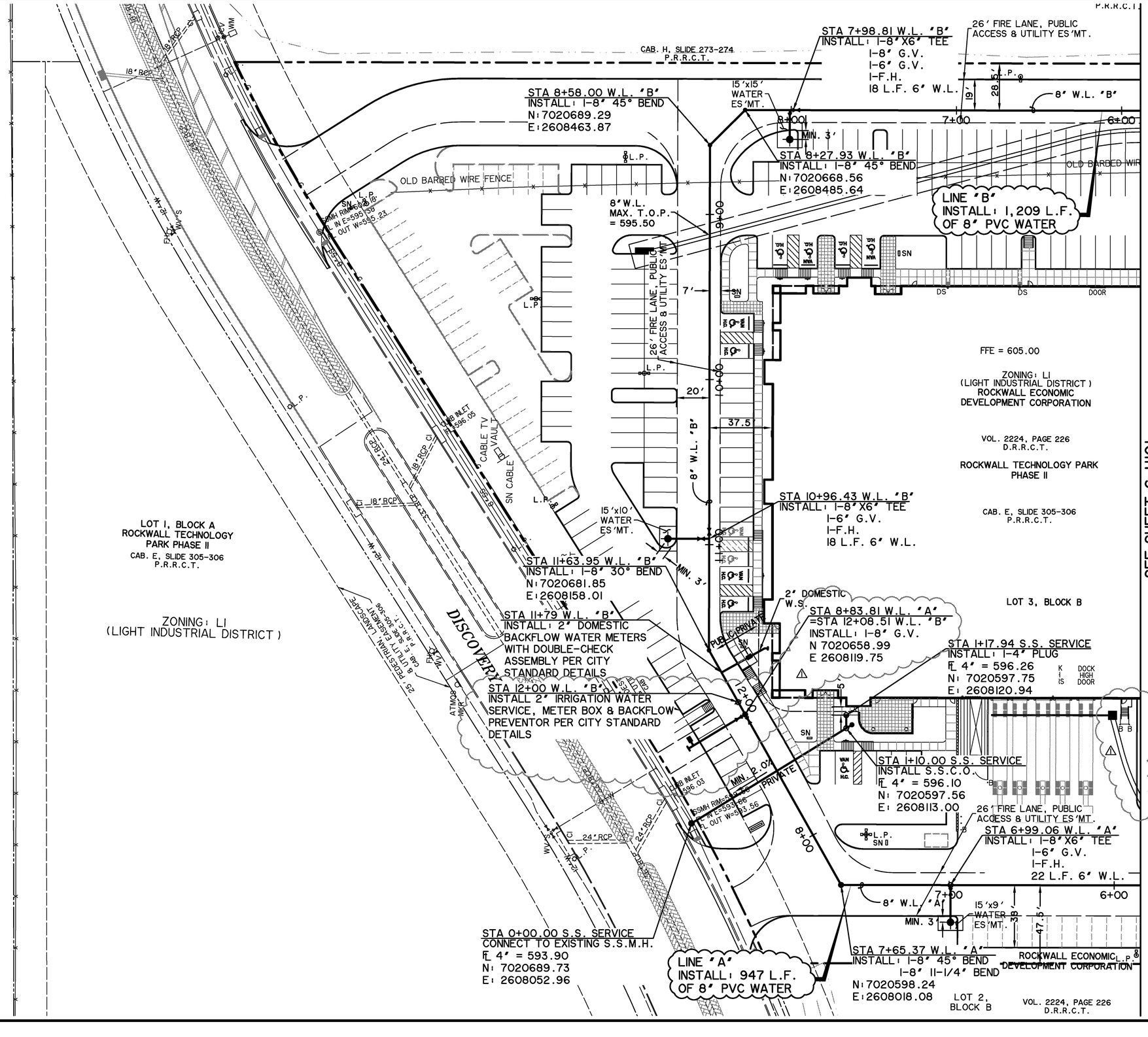

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RECORD PLANS
October 28, 2015

0 30 60 90

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
UTILITY PLAN
NORTH

LAST SHEET EDIT DATE: 10/28/2015
W.A.# 14029

SHEET NO. C-U102

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EROSION CONTROL NOTES

1. CONTRACTOR TO INSTALL PIPE SEDIMENT FILLER AT END OF EACH WORK DAY TO PREVENT ENTRY OF SEDIMENT INTO PROPOSED STORM SEWERS DURING CONSTRUCTION.
2. ALL STAGING AREAS, VEHICLE PARKING AREAS, STOCKPILES, SPOILS, ETC. SHALL BE LOCATED SUCH THAT THEY DO NOT ADVERSELY AFFECT THE STORM WATER QUALITY.
3. ON-SITE FUEL STORAGE TANKS SHALL BE PROTECTED BY A BERMED OR OTHERWISE SPILL PROTECTED AREA.
4. A CENTRAL PIT/WASH BASIN SHOULD BE CONSTRUCTED ON-SITE FOR THE PURPOSE OF TRUCK WASHING.
5. A MAINTENANCE PROGRAM SHALL BE DEVELOPED USING BEST MANAGEMENT PRACTICES FOR THIS PROJECT.
6. IN ORDER TO KEEP DISTURBANCE TO A MINIMUM. VEGETATION SHOULD BE RE-ESTABLISHED ON ALL DENUDED AREAS IN A TIMELY MANNER.
7. GENERAL CONTRACTOR AND OWNER/DEVELOPER ARE RESPONSIBLE FOR PREVENTING SEDIMENT OR OTHER POLLUTANTS FROM LEAVING THE SITE. CARE SHALL BE EXERCISED TO PREVENT THE FLOW OR OFF-SITE TRACKING OF SEDIMENT OR OTHER POLLUTANT TO ADJACENT ROADWAYS, INLETS, STORM SEWERS AND DRAINAGE DITCHES.
8. ALL SURFACE AREAS DISTURBED WITHIN OR ADJACENT TO CONSTRUCTION LIMITS MUST BE PERMANENTLY STABILIZED. STABILIZATION IS OBTAINED WHEN THE SITE IS COVERED WITH IMPERVIOUS STRUCTURES, PAVING OR A UNIFORM PERENNIAL VEGETATION COVER. THE PERENNIAL VEGETATION MUST HAVE A COVERAGE DENSITY OF AT LEAST 70 PERCENT. STABILIZATION IS REQUIRED BEFORE TERMINATING MAINTENANCE AND REMOVAL OF EROSION CONTROL MEASURES.
9. ALL PERIMETER EROSION CONTROL MEASURES AND ROCK STABILIZED EXIT MUST BE IN PLACE BEFORE STARTING SOIL DISTURBING ACTIVITIES.
10. THE GENERAL CONTRACTOR OR OWNER SHALL INSPECT EROSION CONTROL MEASURES AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS AFTER A STORM EVENT OF 1/2 INCH OR GREATER. RECORDS OF EACH INSPECTION SHOULD BE RETAINED ON SITE WITH THE SWPPP. CONTRACTOR TO REPLACE OR REPAIR DAMAGED MEASURES AS NECESSARY. EROSION CONTROL MEASURES THAT PROVE TO BE INEFFECTIVE SHALL BE REPLACED WITH MORE EFFECTIVE MEASURES OR ADDITIONAL MEASURES WITHIN SEVEN (7) CALENDAR DAYS.
11. GENERAL CONTRACTOR AND OWNER/DEVELOPER SHALL SUBMIT NOTICE OF INTENT (NOI) AND NOTICE OF TERMINATION (NOT) FORMS TO THE EPA AND COPIES TO THE CITY OF AMARILLO ENGINEERING. ALL EPA ASSIGNED PERMIT NUMBERS SHALL BE COPIED TO THE CITY WHEN THEY ARE AVAILABLE.
12. FOR ALTERNATIVE STABILIZATION AND EROSION CONTROL MEASURES, REFER TO THE EROSION AND SEDIMENT CONTROL GUIDELINES IN DEVELOPING AREAS IN TEXAS AND TEXAS HANDBOOK SECTION 17, EROSION CONTROL PRACTICES PUBLISHED BY THE SOIL CONSERVATION SERVICE.
13. IF 'SUMP' PUMPS ARE USED TO REMOVE WATER FROM EXCAVATED AREAS, CONTRACTOR TO FILTER THE DISCHARGE TO REMOVE SEDIMENT AND OTHER POLLUTANTS BEFORE THE WATER ENTERS STORM DRAIN FACILITIES OR LEAVES THE SITE.
14. ROCK STABILIZED ACCESS SHALL BE CONSTRUCTED AT ALL POINTS USED AS AN EXIT FROM THE CONSTRUCTION SITE.
15. CONTRACTOR TO LIMIT ANY PROPOSED LIME STABILIZATION OPERATIONS TO THAT WHICH CAN BE MIXED AND COMPACTED BY THE END OF EACH WORK DAY. SILT FENCE IS NOT EFFECTIVE IN FILTERING LIME SINCE THE GRAIN SIZE IS SIGNIFICANTLY SMALLER THAN THE OPENING IN THE FABRIC.
16. STORE ALL TRASH AND BUILDING MATERIAL IN AN ENCLOSURE UNTIL PROPER DISPOSAL AT OFF-SITE FACILITIES.
17. SURFACE STABILIZATION MEASURES MUST BE INITIATED WITHIN 14 DAYS IN ANY AREA WHERE CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES FOR A PERIOD OF 21 DAYS OR MORE.

SITE AND OR PROJECT DESCRIPTION DATA

1. NATURE OF THE CONSTRUCTION ACTIVITY:

   THE CONSTRUCTION ACTIVITY CONSISTS OF GRADING, DRAINAGE WATER, SANITARY SEWER AND PAVEMENT IMPROVEMENTS TO CONVERT THE SITE FROM OPEN PROPERTY TO COMMERCIAL.

2. POTENTIAL POLLUTANTS AND SOURCES:

   THE POTENTIAL SOURCES OF POLLUTION IDENTIFIED CONSIST OF STORM WATER RUNOFF FROM CONSTRUCTION ACTIVITIES. THERE ARE NO NON-STORM WATER DISCHARGES THAT ARE KNOWN TO EXIST AT THIS SITE. A SELF CONTAINED PORTABLE FACILITY WILL BE KEPT ON-SITE DURING CONSTRUCTION FOR HUMAN WASTE. CONSTRUCTION FUEL STORAGE IS NOT ANTICIPATED TO BE PROVIDED AT THE SITE. IF FUEL IS STORED AT THE SITE A BERM WILL BE PLACED AROUND THE FUEL TANK.

   CONTRACTOR SHALL MAINTAIN ALONG WITH THE SIGNED EFFECTIVE COPY OF SWP3 DRAWINGS AN UPDATEABLE LIST IDENTIFYING ALL POTENTIAL SOURCES OF POLLUTION INCLUDING PORTA-POTTYS, FUEL TANKS, STAGING AREAS, WASTE CONTAINERS, CHEMICAL STORAGE AREAS, CONCRETE CURE, PAINTS SOLVENTS, ETC., AND A DESCRIPTION OF THE LOCATION.

3. SEQUENCE OF MAJOR CONSTRUCTION ACTIVITIES:

   THE PROJECT SEQUENCE SHALL GENERALLY CONFORM TO THE FOLLOWING:

   PHASE I ESTIMATED START DATE: _____ ESTIMATED DURATION:

   A. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE, ROCK BERMS, SEDIMENTATION BASIN, BERMS/SWALES AND SILT FENCE ACCORDING TO THE APPROXIMATE LOCATION AND DETAIL SHOWN ON EROSION CONTROL PLAN SHEETS.
   B. BEGIN CLEARING AND GRADING OF SITE. GRADE OFF-SITE REGIONAL DETENTION POND AND TEMPORARILY USE AS SEDIMENTATION POND.
   C. SEED AND RE-VEGETATE SLOPES WHERE SHOWN.

   PHASE II ESTIMATED START DATE: _____ ESTIMATED DURATION:

   A. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE.
   B. INSTALL WATER, SANITARY SEWER AND STORM DRAIN AS SPECIFIED ON PLAN SHEETS.
   C. CONSTRUCT TEMPORARY SILT FENCE INLET TREATMENT AROUND OPEN STORM DRAIN INLETS WHERE INDICATED ON EROSION CONTROL PLANS.
   D. CONSTRUCT ALL STORM WATER POLLUTION PREVENTION DEVICES SHOWN ON EROSION CONTROL PLANS FOR PHASE TWO CONSTRUCTION.

   PHASE III ESTIMATED START DATE: _____ ESTIMATED DURATION:

   A. KEEP ALL STORM WATER POLLUTION PREVENTION MEASURES IN PLACE.
   B. STABILIZE SUBGRADE.
   C. INSTALL SITE PAVING AND SIDEWALKS AS SPECIFIED ON PLAN SHEETS.
   D. CONSTRUCT STORM DRAIN INLET TREATMENT AS SPECIFIED ON EROSION CONTROL PLANS FOR PHASE THREE CONSTRUCTION.
   E. REVEGETATE ALL DISTURBED AREAS.

   PHASE IV ESTIMATED START DATE: _____ ESTIMATED DURATION:

   A. LANDSCAPE CONTRACTOR SHALL RE-VEGETATE ALL AREAS RESERVED FOR LANDSCAPE VEGETATIVE COVERS.

4. AREA ESTIMATES:

TOTAL AREA ONSITE:	12.0 ACRES
ESTIMATED DISTURBED AREA ON-SITE:	12.0 ACRES
ESTIMATED DISTURBED AREA OFF-SITE:	2.5 ACRES

5. ESTIMATED RUNOFF COEFFICIENT AFTER CONSTRUCTION IS COMPLETED:

UNDEVELOPED	C = 0.35
DEVELOPED	C = 0.90

6. SOIL TYPE AT SITE:
   DARK BROWN TO LIGHT BROWN AND GRAY FAT CLAY (CH) AND SHALY CLAY TO DEPTHS OF 10 TO 22 FEET WITH GRAY SHALE BENEATH THE SURFACE CLAY SOILS. REFER TO GEOTECHNICAL REPORT BY RONE ENGINEERING (PROJECT No. 14-19061) PROVIDED IN THE CIVIL SPECIFICATIONS.
7. GENERAL LOCATION MAP AND DETAILED SITE MAP:
   REFER TO DRAINAGE AREA MAPS, EROSION CONTROL PLAN SHEETS AND GRADING PLAN SHEETS FOR DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES, AREAS WHERE SOIL DISTURBANCE WILL OCCUR, SOILS DISTURBANCE AREAS, STRUCTURAL CONTROL MEASURES, NATURAL VEGETATIVE FILTERING, RE-VEGETATION, IMPROVED STABILIZATION METHODS, SURFACE WATERS INCLUDING WETLANDS, DIRECT DISCHARGE POINTS TO SURFACE WATER BODIES.
8. TPDES GENERAL PERMIT NUMBERS:

   OWNER _____

   CONTRACTOR SCOTT + REID GENERAL CONTRACTORS, INC.

   N.O.I. SUBMITTAL DATES:

   OWNER _____

   CONTRACTOR _____

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD.

SCOTT + REID General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
EROSION CONTROL NOTES

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER

LAST SHEET EDIT
DATE 10/28/2015
WA# 14029

SHEET NO. C-E001

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SEE SHEET C-E102

LOT 2, BLOCK B
ROCKWALL TECHNOLOGY PARK
PHASE III
CAB. H, SLIDE 273-274
P.R.R.C.T.

OLD BARBED WIRE FENCE

BMP No. 2
PHASE I, II, III, & IV
INSTALL INLET
TREATMENT

BMP No. 5
PHASE I, II, III, & IV
INSTALL ROCK
CHECK DAM

BMP No. 3
PHASE I, II, III, & IV
INSTALL REINFORCED
SILT FENCE

F.F.E. = 605.00

JOHN H. B. JONES SURVEY
ABSTRACT NO. 125

ROCKWALL ECONOMIC
DEVELOPMENT CORPORATION
VOL. 2224, PAGE 226
D.R.R.C.T.

LOT 3, BLOCK B

JOHN A. RAMSEY SURVEY
ABSTRACT NO. 186

ROCKWALL TECHNOLOGY PARK
PHASE II
CAB. E, SLIDE 305-306
P.R.R.C.T.

SPRINGER ROAD

10' BLACKLAND WATER LINE EASEMENT

25' PEDESTRIAN LANDSCAPE & UTILITY EASEMENT

CONC. PAVEMENT

WROUGHT IRON FENCE

CHAIN LINK FENCE

BUILDING

GATE

RIP RAP

ATT MH

SSMH RIM=601.85 IN=589.05 IN=589.08

BMP No. 4
PHASE I, II, III, & IV
INSTALL TRIANGULAR
FILTER DIKE

BMP No. 2
PHASE I, II, III, & IV
INSTALL INLET
TREATMENT

LOT 2, BLOCK B

NATURAL VEGETATIVE FILTER

0 30 60 90

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SEE SHEET C-S001 FOR TOPOGRAPHIC LEGEND

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REVISIONS	DATE	BY
1 RETAINING WALL, PAVEMENT, WATER LINE, & ONCOR EASEMENT	01/27/15	TVW
2 ADD DRIVE CONNECTION, REVISE GRADING & EROSION CONTROL	03/19/15	PLG
3 ADDED ADDITIONAL TRUCK PARKING & RAISED FIRE LANE PAVEMENT 1'	04/13/15	TVW

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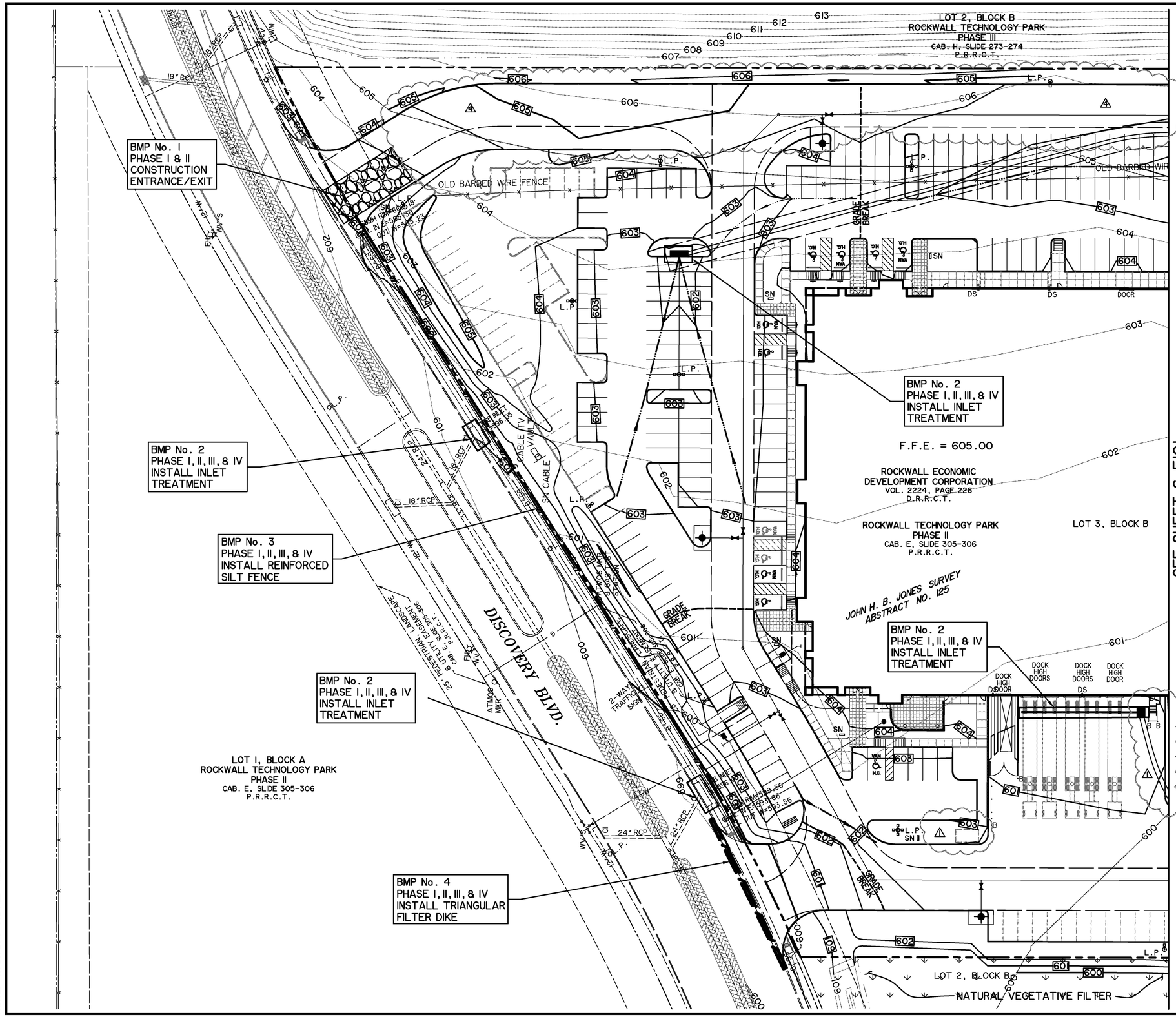

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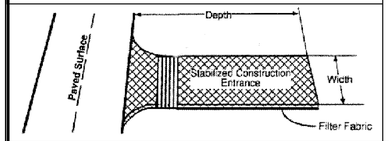
Stabilized Construction Entrance



DESCRIPTION
A stabilized construction entrance consists of a pad consisting of crushed stone, ~~recycled concrete~~ or other rock like material on top of geotextile filter cloth to facilitate the removal of sediment and other debris from construction equipment prior to exiting the construction site. This directly addresses the problem of silt and mud deposition in roadways used for construction site access. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking (See Wheel Wash, Fact Sheet S-10).

PRIMARY USE
Stabilized construction entrances are used primarily for sites in which significant truck traffic occurs on a daily basis. It reduces the need to remove sediment from streets. If used properly, it also directs the majority of traffic to a single location, reducing the number and quantity of disturbed areas on the site and providing protection for other structural controls through traffic control.

APPLICATIONS
Stabilized construction entrances are a required part of the erosion control plan for all site developments larger than one acre and a recommended practice for all construction sites. If possible, controlled entrances should be incorporated into small lot construction due to the large percentage of disturbed area on the site and the high potential for offsite tracking of silt and mud.

DESIGN CRITERIA
- ❑ Stabilized construction entrances are to be constructed such that drainage across the entrance is directed to a controlled, stabilized outlet on site with provisions for storage, proper filtration, and removal of wash water.
- ❑ The entrance must be sloped away from the paved surface so that storm water is not allowed to leave the site onto roadways.
- ❑ Minimum width of entrance shall be 15 feet.
- ❑ Stone shall be placed in a layer of at least 12-inches thickness. The stone shall be a minimum of **4** to **6** inch coarse aggregate.
- ❑ Prevent shortcutting of the full length of the construction entrance by installing barriers as necessary.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
- ◒ Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ● Capital Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe = N/A

S-9

North Central Texas Council of Governments

Stabilized Construction Entrance

- ❑ The geotextile fabric must meet the following minimum criteria:
  - ❍ Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 300-lbs.
  - ❍ Puncture Strength, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 120-lbs.
  - ❍ Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 600-psi.
  - ❍ Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 40 (max).
- ❑ When necessary, vehicles must be cleaned to remove sediment prior to entrance onto paved roads, streets, or parking lots. When washing is required, it shall be done on a constructed wheel wash facility that drains into an approved sediment trap or sediment basin or other sedimentation/filtration device.
- ❑ Minimum dimensions for the entrance shall be as follows:

Tract Area	Avg. Tract Depth	Min. Width of Entrance	Min. Depth of Entrance
< 1 Acre	100 feet	15 feet	20 feet
< 5 Acres	200 feet	20 feet	50 feet
> 5 Acres	> 200 feet	25 feet	75-100 feet

LIMITATIONS
Selection of the construction entrance location is critical. To be effective, it must be used exclusively.

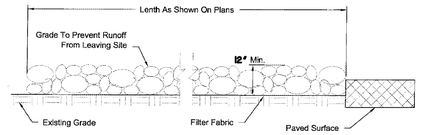
Stabilized entrances are rather expensive considering that it must be installed in combination with one or more other sediment control techniques, but it may be cost effective compared to labor-intensive street cleaning.

MAINTENANCE REQUIREMENTS
Construction entrances should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A). When sediment has substantially clogged the void area between the rocks, the aggregate mat must be washed down or replaced. Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the entrance from diminishing.

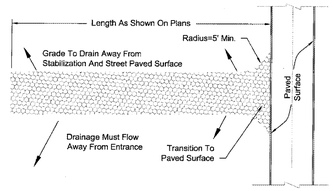
If the stabilized construction entrance is not effectively removing sediment from wheels then a wheel wash should be considered.

SPECIFICATION
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.10 Stabilized Construction Entrance.

Stabilized Construction Entrance



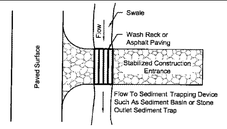
Profile View



Entrance Must Be Sloped So That Storm Water Is Not Allowed To Leave The Site And Enter Roadways.

Plan View

Wheel Wash



DESCRIPTION
The wheel wash is used in conjunction with a stabilized construction entrance to provide an area where truck wheels and undercarriages can be cleaned prior to traversing the stabilized construction entrance and entering the public road system. A wheel wash may consist of an impervious area or a grate over a swale. Wash water from hand held pressure washers or fixed nozzles is collected and drained to a sediment-trapping device such as a stone outlet sediment trap or sediment basin to provide for removal of sediment prior to discharge.

PRIMARY USE
Wheel washes should be used on large jobs where there is significant truck traffic, on those sites where site conditions cause the stabilized construction entrance to be overloaded with sediment and become ineffective, and in those instances where contaminated solids might be present on site. They provide added protection and reduce the need to remove sediment from streets.

APPLICATIONS
Wheel washes should be considered an ancillary component to the stabilized construction entrance.

DESIGN CRITERIA
- ❑ The location should be within the stabilized construction entrance so that the vehicle does not pick up additional sediment load by traversing disturbed areas.
- ❑ The size of the wheel wash facility should be sufficient so that all wash water and sediment is collected and drained to a sediment trapping device such as a sediment basin or stone outlet sediment trap.
- ❑ Suggested designs:
  - ○ 4-inch thick asphalt pavement on an 8-inch base of crushed rock graded so that wash water drains to a swale; or
  - ○ grate suitably designed to support construction vehicles installed over a swale.
- ❑ The facility should be designed so that it can be cleaned between uses.

LIMITATIONS
Sediment trapping BMPs used in conjunction with wheel wash facilities must be carefully designed for the anticipated amount of wash water to be treated.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
- ◒ Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ◒ Maintenance
- ◒ Training
- ○ Suitability for Slopes > 5%

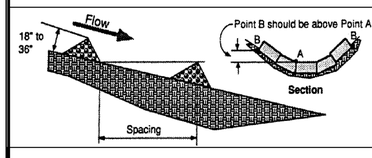
Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe = N/A

S-10

North Central Texas Council of Governments

Check Dams



DESCRIPTION
Check dams are small barriers consisting of rock, sand bag or earth berms placed across a drainage swale or ditch. They reduce the velocity of small concentrated flows, provide a limited barrier for sediment and help disperse concentrated flows, reducing potential erosion.

PRIMARY USE
Check dams are used for long drainage swales or ditches to reduce erosive velocities. They are typically used in conjunction with other channel protection techniques such as vegetation lining and turf reinforcement mats. Check dams provide limited treatment to sediment-laden flows. They are more useful in reducing flow to acceptable levels for other techniques.

APPLICATIONS
Check dams are typically used early in construction in swales for long linear projects such as roadways. They can also be used in short swales with a steep slope to reduce unacceptable velocities. Check dams shall not be used in live stream channels

DESIGN CRITERIA
- ❑ Check dams should be placed at a distance and height to allow small pools to form between each one. Typically, dam height should be between 18" and 36". Dams should be spaced such that the top of the downstream dam should be at the same elevation as the toe of the upstream dam.
- ❑ Major flows (greater than 2 year design storm) must pass the check dam without causing excessive upstream flooding.
- ❑ Check dams should be used in conjunction with other sediment reduction techniques prior to releasing flow offsite.
- ❑ Use geotextile filter fabric under check dams exceeding 18 inches in height. The fabric shall meet the material specified for the Stone Outlet Sediment Trap, S-5.

Rock Check Dams
- ❑ Stone shall be well graded with size range from 1-1/2 to 3-1/2 inches in diameter depending on expected flows.
- ❑ Rock check dams should be triangular in cross section with side slopes of 1:1 or flatter on the upstream side and 2:1 or flatter on the downstream side.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
- ◒ Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ● Maintenance
- ○ Training
- ◒ Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe=0.40

S-7

North Central Texas Council of Governments

Check Dams

Sand Bag Dams
- ❑ Sand bag check dams should have a maximum flow through rate of 0.1 cfs per square foot of surface with a minimum top width of 16 inches and bottom width of 48 inches. Bags should be filled with coarse sand, pea gravel, or filter stone that is clean and free of deleterious material.
- ❑ Bag length shall be 24-inches to 30-inches, width shall be 16-inches to 18-inches and thickness shall be 6-inches to 8-inches and having an approximate weight of 40-pounds.
- ❑ Bag material shall be polypropylene, polyethylene, polyamide or cotton burlap woven fabric, minimum unit weight 4-ounces-per-square-yard, Mullen burst strength exceeding 300-psi as determined by ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, and ultraviolet stability exceeding 70-percent.
- ❑ PVC pipes may be installed through the sand bag dam near the top to allow for controlled flow through the dam. Pipe should be schedule 40 or heavier polyvinyl chloride (PVC) having a nominal internal diameter of 4 inches.

LIMITATIONS
Minor ponding will occur upstream of the check dams. For heavy flows or high velocity flows, extensive maintenance or replacement of the dams will be required.

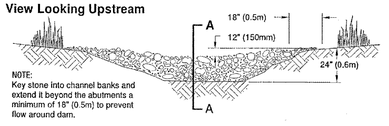
Care must be used when taking out rock check dams in order to remove as much rock as possible. Loose rock can create an extreme hazard during mowing operations once the area has been stabilized.

MAINTENANCE REQUIREMENTS
Check dams should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A). Silt must be removed when it reaches approximately 1/3 the height of the dam or 12", whichever is less.

SPECIFICATION
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.9 Rock Dam and Item 201.11Sand Bag Dam.

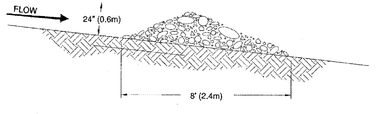
Check Dams

View Looking Upstream



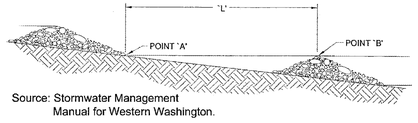
NOTE:
Key stone into channel banks and extend it beyond the abutments a minimum of 18" (0.5m) to prevent flow around dam.

Section A - A



Spacing Between Check Dams

"L" = the distance such that points "A" and "B" are of equal elevation.



Source: Stormwater Management Manual for Western Washington.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
COL-MET SPRAY BOOTHS
EROSION CONTROL DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

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C-E201

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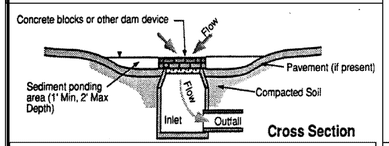
Inlet Protection



Cross Section

DESCRIPTION
Inlet protection consists of a variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric, inlet inserts, and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water.

PRIMARY USE
Inlet protection should be considered a secondary defense in site erosion control due to the limited effectiveness and applicability of the technique. It is normally used in new developments that include new inlets or roads with new curb inlets or during major repairs to existing roadways.

Inlet protection has limited use in developed areas due to the potential for flooding, traffic safety, pedestrian safety, and maintenance problems. Inlet protection can reduce sediment in storm sewer systems by serving as a back up system to onsite controls or by reducing sediment loads from controls with limited effectiveness.

APPLICATIONS
Different inlet protection variations are used for different conditions as follows:

- ❑ Filter barrier protection (similar to a silt fence barrier around the inlet) is appropriate when the drainage area is less than one acre and the basin slope is less than five (5) percent. This type of protection is not applicable in paved areas.
- ❑ Block and gravel (crushed stone, recycled concrete is also appropriate) protection is used when flows exceed 0.5 c.f.s. and it is necessary to allow for overtopping to prevent flooding.
- ❑ Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain system. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. The impoundment shall be sized such that the volume of excavation shall be equal to 1800 to 3600 cubic feet per acre of disturbed area entering the inlet for full effectiveness.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
- ◒ Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ● Capital Costs
- ● Maintenance
- ○ Training
- ○ Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Varies

S-4

North Central Texas Council of Governments

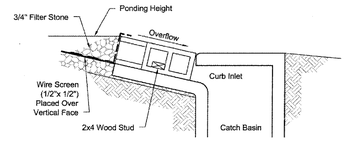
Inlet Protection

DESIGN CRITERIA
- ❑ Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.
- ❑ Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- ❑ Where applicable, filter fabric, posts, and wire backing shall meet the material requirements specified in BMP Fact Sheet S-1, Silt Fence.
- ❑ Filter gravel shall be ¾ inch (Block and Gravel Protection) or 1-1/2 to 2 inch (Excavated Impoundment Protection) washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- ❑ Concrete blocks shall be standard 8" x 8" x 16" concrete masonry units.
- ❑ Maximum depth of flow shall be eight (8) inches or less.
- ❑ Positive drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, excess flows shall be routed through established swales, streets, or other watercourses to minimize damage due to flooding.
- ❑ Filter Barrier Protection
  Silt Fence shall consist of nylon geotextile supported by wire mesh, W1.4 X W1.4, and galvanized steel posts set a minimum of 1 foot depth and spaced not more than 6 feet on center. A 6 inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
- ❑ Block and Gravel Protection (Curb and Drop Inlets)
  Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting. Openings in the blocks should face outward, not upward. ½" x ½" wire mesh shall then be placed over the outside face of the blocks covering the holes. Filter stone shall then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18 inches from the blocks. Alternatively, where loose stone is a concern (streets, etc.), the filter stone mayb be placed in appropriately sized geotextile fabric bags. Periodically, when the stone filter becomes clogged, the stone must be removed and cleaned in a proper manner or replaced with new stone and piled back against the wire mesh.
- ❑ Excavated Impoundment Protection
  An excavated impoundment shall be sized to provide a storage volume of between 1800 and 3600 cubic feet per acre of disturbed area. The trap shall have a minimum depth of one foot and a maximum depth of 2 feet as measured from the top of the inlet and shall have sideslopes of 2:1 or flatter. Weep holes are to be installed in the inlet walls to allow for the complete dewatering of the the trap. When the storage capacity of the impoundment has been reduced by one-half, the silt shall be removed and disposed in a proper manner.
- ❑ Inlet inserts are commercially available to remove sediment, constituents (pollutants) adsorbed to sediment, and oil and grease. Maintenance is required to removesediment and debris that could clog the filters. Inlet inserts must have a bypass function to prevent flooding from clogging or high flows.

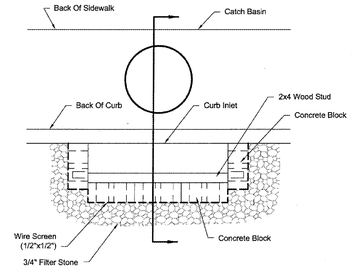
LIMITATIONS
Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.

Inlet protection is only viable at low point inlets. Inlets that are on a slope cannot be effectively protected because storm water will bypass the inlet and continue downstream, causing an overload condition at inlets downstream.

Inlet Protection - Curb

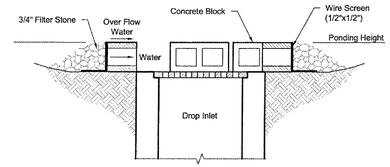


Cross Section



Plan View

Inlet Protection – Drop Inlet



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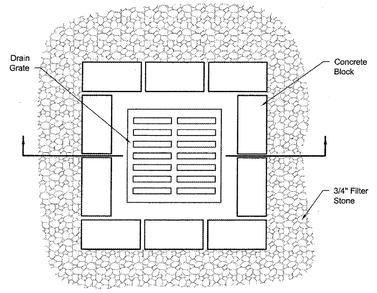


Plan View

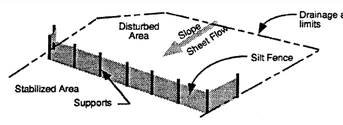
Inlet Protection

MAINTENANCE REQUIREMENTS
Inlet protection should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A). When silt fence is used and the fabric becomes clogged, it should be cleaned or, if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the inlet protection device. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using filter stone, when the filter stone becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of stone at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the inlet.

SPECIFICATION
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.15 Inlet Protection.

Silt Fence



DESCRIPTION
A silt fence consists of geotextile fabric supported by wire mesh netting or other backing stretched between ~~either wooden or~~ metal posts with the lower edge of the fabric securely embedded six-inches in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. A silt fence provides both filtration and time for sediment settling by reducing the velocity of the runoff.

PRIMARY USE
Silt fence is normally used as perimeter control located downstream of disturbed areas. It is only feasible for non-concentrated, sheet flow conditions. If it becomes necessary to place a silt fence where concentrated flows may be experienced (e.g. where two silt fences join at an angle, or across minor channels or gullies), it will be necessary to reinforce the silt fence at that area by a rock berm or sand bag berm, or other structural measures that will support the silt fence.

APPLICATIONS
Silt fence is an economical means to treat overland, non-concentrated flows for all types of projects. Silt fences are used as perimeter control devices for both site developers and linear (roadway) type projects. They are most effective with coarse to silty soil types. Due to the potential of clogging and limited effectiveness, silt fences should be used with caution in areas that have predominantly clay soil types. In this latter instance a soils engineer or soil scientist should confirm the suitability of silt fence for that application

DESIGN CRITERIA
- ❑ Fences are to be constructed along a line of constant elevation (along a contour line) where possible.
- ❑ Maximum drainage area shall be 0.25 acre per 100 linear feet of silt fence.
- ❑ Maximum flow to any 20 foot section of silt fence shall be 1 CFS.
- ❑ Maximum distance of flow to silt fence shall be 200 feet or less. If the slope exceeds 10 percent the flow distance shall be less than 50 feet.
- ❑ Maximum slope adjacent to the fence shall be 2:1.
- ❑ If 50% or less soil, by weight, passes the U.S. Standard sieve No. 200; select the apparent opening size (A.O.S.) to retain 85% of the soil.
- ❑ If 85% or more of soil by weight, passes the U.S. Standard sieve No. 200, silt fences shall not be used unless the soil mass is evaluated and deemed suitable by a soil scientist or geotechnical engineer concerning the erodiblity of the soil mass, dispersive characteristics, and the potential grain-size characteristics of the material that is likely to be eroded.

Applications
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

Targeted Constituents
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ● Maintenance
- ○ Training
- ◒ Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe=0.75

S-1

North Central Texas Council of Governments

Silt Fence

- ❑ Stone overflow structures or other outlet control devices shall be installed at all low points along the fence or spaced at approximately 300 feet if there is no apparent low point.
- ❑ Filter stone for overflow structure shall be 1-1/2" washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- ❑ Silt fence fabric must meet the following minimum criteria:
  - ❍ Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 90-lbs.
  - ❍ Puncture Rating, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 60-lbs.
  - ❍ Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 280-psi.
  - ❍ Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 70 (max) to No. 100 (min)
  - ❍ Ultravolet Resistance, ASTM D4355, Minimum 70 percent.
- ❑ Fence posts shall be galvanized steel and may be T-section or L-section, 1.3 pounds per linear foot minimum, and 4 feet in length minimum. ~~Wood Posts may be used depending on anticipated length of service and provided they are 4 feet in length minimum and have a nominal cross section of 2 inches by 2 inches for pine or 2 inches by 2 inches for hardwoods.~~
- ❑ Silt fence shall be supported by galvanized steel wire fence fabric as follows:
  - ❍ 4" x 4" mesh size, W1.4 /1.4, minimum 14-gauge wire fence fabric;
  - ❍ Hog wire, 12 gauge wire, small openings installed at bottom of silt fence;
  - ❍ Standard 2" x 2" chain link fence fabric; or
  - ❍ Other welded or woven steel fabrics consisting of equal or smaller spacing as that listed herein and appropriate gauge wire to provide support.
- ❑ A 6-inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel to prevent bypass of runoff under the fence. Fabric shall overlap at abutting ends a minimum of 3 feet and shall be joined such that no leakage or bypass occurs.
- ❑ Sufficient room for the operation of sediment removal equipment shall be provided between the silt fence and other obstructions in order to properly maintain the fence.
- ❑ The ends of the fence shall be turned upstream to prevent bypass of storm water.

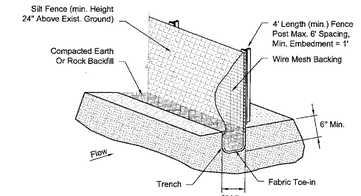
LIMITATIONS
Minor ponding will likely occur at the upstream side of the silt fence, which could result in minor localized flooding. Silt fences are not intended for use as check dams in swales or low areas subject to concentrated flow. Silt fences shall not be used where soil conditions prevent a minimum toe-in depth of 6 inches or installation of support posts to a depth of 12 inches.

Silt fence can interfere with construction operations; therefore planning of access routes onto the site is critical. Silt fence can fail structurally under heavy storm flows, creating maintenance problems and reducing the effectiveness of the system.

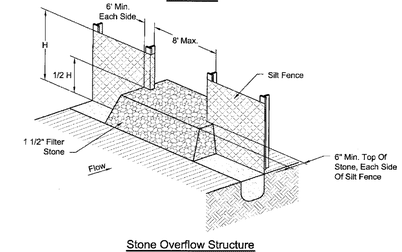
MAINTENANCE REQUIREMENTS
Silt fence should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A) for buildup of excess sediment, undercutting, sags, and other failures. Sediment should be removed when it reaches approximately one-half the height of the fence. In addition, determine the source of excess sediment and implement appropriate BMPs to control the erosion. If the fabric becomes damaged or clogged, it should be repaired or replaced as necessary.

SPECIFICATION
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.5 Silt Fence.

Silt Fence & Stone Overflow Structure



Silt Fence



Stone Overflow Structure

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD. SCOTT + REID General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE II
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STATE OF TEXAS
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10/28/15

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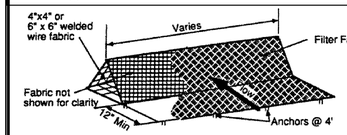
Triangular Sediment Filter Dike



DESCRIPTION
A Triangular Sediment Filter Dike is a self-contained silt fence consisting of filter fabric wrapped around welded wire fabric shaped into a triangular cross section. While similar in use to a silt fence, the dike is reusable, sturdier, transportable, and can be used on paved areas or in situations where it is impractical to install embedded posts for support.

PRIMARY USE
Triangular filter dikes are used in place of silt fence, treating sediment flow at the perimeter of construction areas and at the perimeter of the site. Also, the dikes can serve as stream protection devices by preventing sediment from entering the streams or as check dams in small swales.

Triangular sediment filter dikes are especially useful for construction areas surrounded by pavement, where silt fence, filter berm, or other BMP installation is impractical.

APPLICATIONS
Triangular dikes are used to provide perimeter control by detaining sediment on a disturbed site with drainage that would otherwise flow onto adjacent properties. Triangular dikes also serve as sediment trapping devices when used in areas of sheet flow across disturbed areas or are placed along stream banks to prevent sediment-laden sheet flow from entering the stream. The dikes can be subjected to more concentrated flows and a higher flow rate than silt fence.

DESIGN CRITERIA
- ❑ Dikes can be used on a variety of surfaces ranging from disturbed earth to pavement.
- ❑ Dikes are to be installed along a line of constant elevation (along a contour line).
- ❑ Maximum drainage area shall be 0.25 acre per 100 linear feet of dike.
- ❑ Maximum flow to any 20 foot section of dike shall be 1 CFS.
- ❑ Maximum distance of flow to dike shall be 200 feet or less. If the slope exceeds 10 percent the flow distance shall be less than 50 feet.
- ❑ Maximum slope adjacent to the dike shall be 2:1.

Applications
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

Targeted Constituents
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ◒ Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe=0.75

S-3

North Central Texas Council of Governments

Triangular Sediment Filter Dike

- ❑ If 50% or less of soil, by weight, passes the U.S. Standard sieve No. 200, select the apparent opening size (A.O.S.) to retain 85% of the soil.
- ❑ If 85% or more of soil, by weight, passes the U.S. Standard Sieve No. 200, triangular sediment dike shall not be used due to clogging.
- ❑ The filter fabric shall meet the material requirements specified in BMP Fact Sheet S-1, Silt Fence.
- ❑ The internal support for the dike structure shall be 6 gauge 6" x 6" wire mesh folded into triangular form eighteen (18) inches on each side.
- ❑ Filter material shall lap over ends six (6) inches to cover dike-to-dike junction; each junction shall be secured by shoat rings.
- ❑ Tie-in to the existing grade should be accomplished by (i) embedding the fabric six-inches below the top of ground on the upslope side, (ii) extending the fabric to form a 12-inch skirt on the upstream slope and covering it with 3 to 5 inches of crushed rock, or (iii) entrenching the base of the triangular dike four-inches below ground. For (ii) above, the skirt and the upslope portion of the triangular dike skeleton should be anchored by metal staples on two-foot centers, driven a minimum of six inches into the ground (except where crossing pavement or exposed limestone).
- ❑ Sand bags or large rock should be used as ballast inside the triangular dike section to stabilize the dike against the effects of high flows.
- ❑ Sufficient room for the operation of sediment removal equipment shall be provided between the dike and other obstructions in order to properly remove sediment.
- ❑ The ends of the dike shall be turned upgrade to prevent bypass of storm water.

LIMITATIONS
Effects of ponding caused by the dikes should be evaluated for effects on adjacent areas.
Triangular sediment filter dikes are not effective for conditions where there are substantial concentrated flows or when they are not constructed along a contour line due to the potential for flow concentration and overtopping.

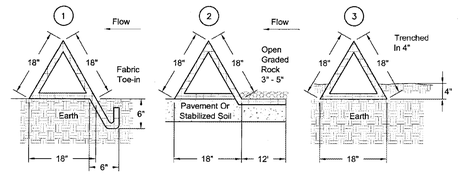
MAINTENTANCE REQUIREMENTS
Triangular sediment filter dikes should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A). Sediment should be removed when it reaches approximately 6 inches in depth. If the fabric becomes clogged, it should be cleaned or, if necessary, replaced. If structural deficiencies are found, the dike should be immediately repaired or replaced.

As with silt fence, integrity of the filter fabric is important to the effectiveness of the dike. Overlap between dike sections must be checked on a regular basis and repaired if deficient.

SPECIFICATION

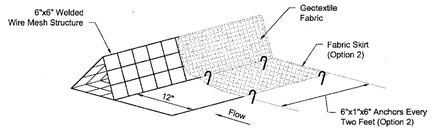
Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction – North Central Texas Council of Governments, Section 201.8 Triangular Sediment Filter Dike.

Triangular Sediment Filter Dike

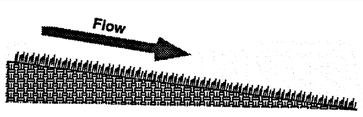


Cross Section Of Installation Options

1. Toe-in 6" Min.
2. Fabric Skirt Weighted With Rock
3. Trenched In 4"



Vegetation



DESCRIPTION
Vegetation, as a Best Management Practice, is the sowing or sodding of annual grasses, small grains, or legumes to provide interim and permanent vegetative stabilization for disturbed areas.

PRIMARY USE
Vegetation is used as a temporary or permanent stabilization technique for areas disturbed by construction. As a temporary control, vegetation is used to stabilize stockpiles and barren areas that are inactive for long periods of time. As a permanent control, grasses and other vegetation provide good protection from erosion along with some filtering for overland runoff. Subjected to acceptable runoff velocities, vegetation can provide a positive method of permanent storm water management as well as a visual amenity to the site.

Other BMPs may be required to assist during the establishment of vegetation. These other techniques include erosion control matting, swales, and dikes to direct flow around newly seeded areas and proper grading to limit runoff velocities during construction.

APPLICATIONS
Vegetation effectively reduces erosion in swales, stockpiles, berms, mild to medium slopes, and along roadways. Vegetative strips can provide some protection when used as a perimeter control for utility and site development construction.

In many cases, the initial cost of temporary seeding may be high compared to tarps or covers for stockpiles or other barren areas subject to erosion. This initial cost should be weighed with the amount of time the area is to remain inactive, since maintenance cost for vegetated areas is much less than most structural controls.

DESIGN CRITERIA
Surface Preparation
- ❑ Interim or final grading must be completed prior to seeding or sodding.
- ❑ Install all necessary erosion structures such as dikes, swales, diversions, etc. prior to seeding or sodding.
- ❑ When establishing vegetation from seed, groove or furrow slopes steeper than 3:1 on the contour line before seeding.

Applications
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

Targeted Constituents
- ● Sediment
- ◒ Nutrients Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes > 5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

Fe=0.90

E-4

North Central Texas Council of Governments

Vegetation

- ❑ Provide 4-6 inches of topsoil over rock, gravel or otherwise unsuitable soils. Poor quality topsoil should be amended with compost before applying seed or sod. Amendment should be three parts of topsoil to one part compost by volume thoroughly blended.
- ❑ Seed bed should be well pulverized, loose and uniform.

Plant Selection, Fertilization and Seeding
- ❑ Use only high quality, USDA certified seed.
- ❑ Use an appropriate species or species mixture adapted to local climate, soil conditions and season as shown below, or consult with the local office of the Natural Resource Conservation Service (NRCS) or Engineering Extension service as necessary for selection of proper species and application technique in this area.
- ❑ Seeding rate should be in accordance with the table below or as recommended by the NRCS or Engineering Extension service.
- ❑ Fertilizer shall be applied according to the manufacturer's recommendation with proper spreader equipment. Typical application rate for 10-10-10 grade fertilizer is 10 lbs. per 1,000 ft^2.
- ❑ If hydro-seeding is used, do not mix seed and fertilizer more than 30 minutes before application.
- ❑ Evenly apply seed using cyclone seeder, seed drill, cultipacker, terraseeding, or hydroseeder.
- ❑ Provide adequate water to aid in establishment of vegetation.
- ❑ Use appropriate mulching techniques where necessary, especially during cold periods of the year.

Sodding
- ❑ Sod shall be St. Augustine grass, common bermudagrass, buffalograss, an approved hybrid of common Bermudagrass or an approved zoysiagrass.
- ❑ The sod should be mowed prior to sod cutting so that the height of the grass shall not exceed 2-inches and should not be harvested or planted when its moisture condition is so excessively wet or dry that its survival shall be affected.
- ❑ Sod shall be planted within 3-days after it is excavated.
- ❑ In areas subject to direct sunlight, pre-moisten prepared sod bed by watering immediately prior to placing sod.
- ❑ Sodded areas shall be thoroughly watered immediately after they are planted.

ADDITIONAL GUIDANCE
- ❑ Establishing a good vegetative cover is dependent of the season of the year. Projects that commence in the fall of the year may not be candidates for vegetation used as a BMP.
- ❑ Where vegetation is used in swales and channels it may be necessary to use sod, rather than seeding, to establish an erosion resistant surface to accommodate rainfall runoff flows.
- ❑ Where vegetation is used for perimeter control, the use of sod is necessary for a fifteen-foot width.
- ❑ Mulch should be used to enhance vegetative growth, in that mulch protects seeds from heat, prevents soil moisture loss, and provides erosion protection until the vegetation is established.
- ❑ Fertilizers have both beneficial and adverse effects. Fertilizers provide nutrients to the vegetation, but also fertilizers are a source of nutrients to streams and lakes. In this latter regard they are a pollutant. The use of native vegetation rather than exotics reduces the need of fertilizer. Organic fertilizers are generally preferred over chemical fertilizers from the standpoint of environmental conditions.
- ❑ Steep slopes represent a problem for establishing vegetation. Bonded Fiber Matrix or Mechanically Bonded Fiber Matrix products applied with a tackifier are useful for establishing vegetation on slopes.

TEMPORARY VEGETATION
The table on the following page lists recommended plant species for the North Central Texas region depending on the season for planting.

Vegetation

RECOMMENDED GRASS MIXTURE FOR TEMPORARY EROSION CONTROL:

SEASON	COMMON NAME	RATE (LBS/ACRE)
Aug 15 - Nov 30	Tall Fescue	4.0
	Western Wheat Grass	5.0
	Wheat (Red, Winter)	30.0
May 1 - Aug 31	Foxtail Millet	30.0
Feb 15 – May 31	Annual Rye	20.0
Sep 1 – Dec 31		

PERMANENT VEGETATION
Grass seed for permanent vegetation can be sown at the same time as seeding for temporary (annual) vegetation. Drought tolerant native vegetation is recommended rather than exotics as a long-term water conservation measure. Native grasses can be planted as seed or placed as sod. Buffaloe 609, for example, is a hybrid grass that is placed as sod. Fertilizers are not normally used to establish native grasses, but mulching is effective in retaining soil moisture for the native plants.

RECOMMENDED NATIVE GRASSES FOR PERMANENT EROSION CONTROL

GRASS		RATE
Buffaloe Grass	Full Turf Application	3-4 lbs/1000 sqft
Blue Grama	Full Turf Application	2 lbs/1000 sqft
Side Oats Grama	Applied with other native seed	¼ lb/1000 sqft

LIMITATIONS
Vegetation is not appropriate for areas subjected to heavy pedestrian or vehicular traffic. As a temporary technique, vegetation may be costly when compared to other techniques. Vegetation may require a period of days to weeks before becoming established. Lack of water and lack of or improper use of soil amendments (compost, fertilizer, etc.) will usually result in poor turf establishment. Alternate erosion control (e.g. mulching, sodding vegetative strips, etc) should be used until vegetation can be established.

Vegetation is not appropriate for rock, gravel or coarse-grained soils unless 4 to 6 inches of topsoil is applied.

MAINTENANCE REQUIREMENTS
Protect newly seeded areas from excessive runoff and traffic until vegetation is established. A watering and fertilizing schedule will be required as part of the SWPPP to assist in the establishment of the vegetation. Vegetation should be inspected regularly (at least as often as required by the TPDES Construction General Permit, Appendix A) to ensure that the plant material is established properly and remains healthy. Bare spots shall be reseeded and/or protected from erosion by mulch or other BMP. Accumulated sediment deposited by runoff should be removed to prevent smothering of the vegetation. In addition, determine the source of excess sediment and implement appropriate BMPs to control the erosion.

RECORD PLANS
October 28, 2015

CUSHMAN & WAKEFIELD

SCOTT + REID
General Contractors

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COL-MET spray booths

LOT 3, BLOCK B
ROCKWALL TECHNOLOGY PARK PHASE I
COL-MET SPRAY BOOTHS
EROSION CONTROL DETAILS

STATE OF TEXAS
PHILIP L. GRAHAM
94719
LICENSED PROFESSIONAL ENGINEER
10/28/15

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