CONSTRUCTION PLANS FOR

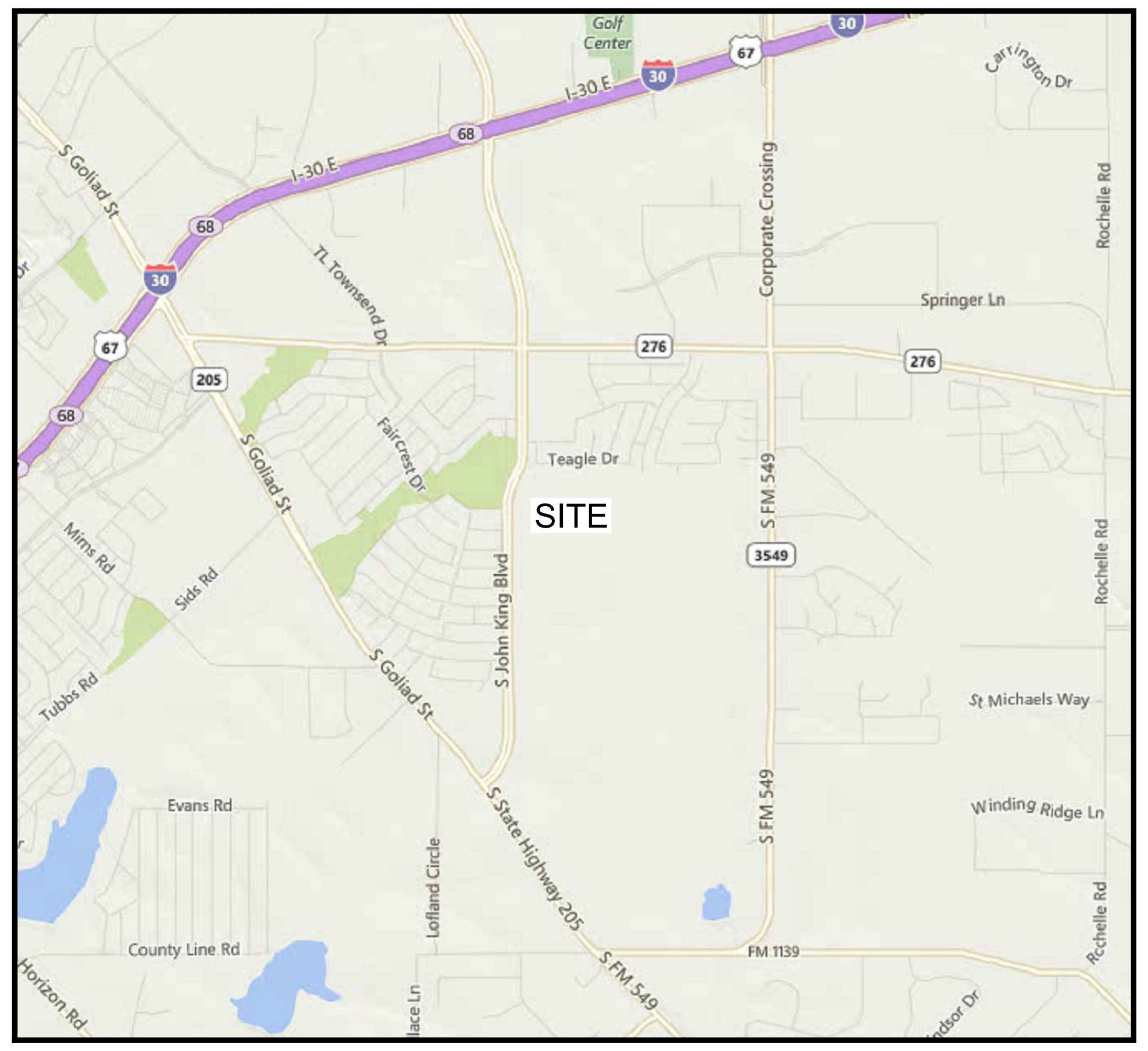
ROCKWALL CCA

JOHN KING BLVD

CITY OF ROCKWALL, ROCKWALL COUNTY / JOHNSON COUNTY, TEXAS 75032

GENERAL NOTE:

CONTRACTOR TO UTILIZE CITY APPROVED CONSTRUCTION PLANS FOR CONSTRUCTION OF ALL CIVIL RELATED FACILITIES. CONTRACTOR TO NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF ANY COST DISCREPANCIES BETWEEN THE CITY APPROVED SET AND BID SET WITH LATEST ADDENDUMS.



Location Map

RECORD DRAWING

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Signed Mike Glenn

Date July 25, 2018

Glenn Engineering Corporation

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OWNER

ROCKWALL I.S.D.
1050 WILLIAMS STREET
ROCKWALL, TEXAS 75087
972-771-0605

ARCHITECT

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ENGINEER

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October 2016

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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COVER SHEET

8

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. C1.0

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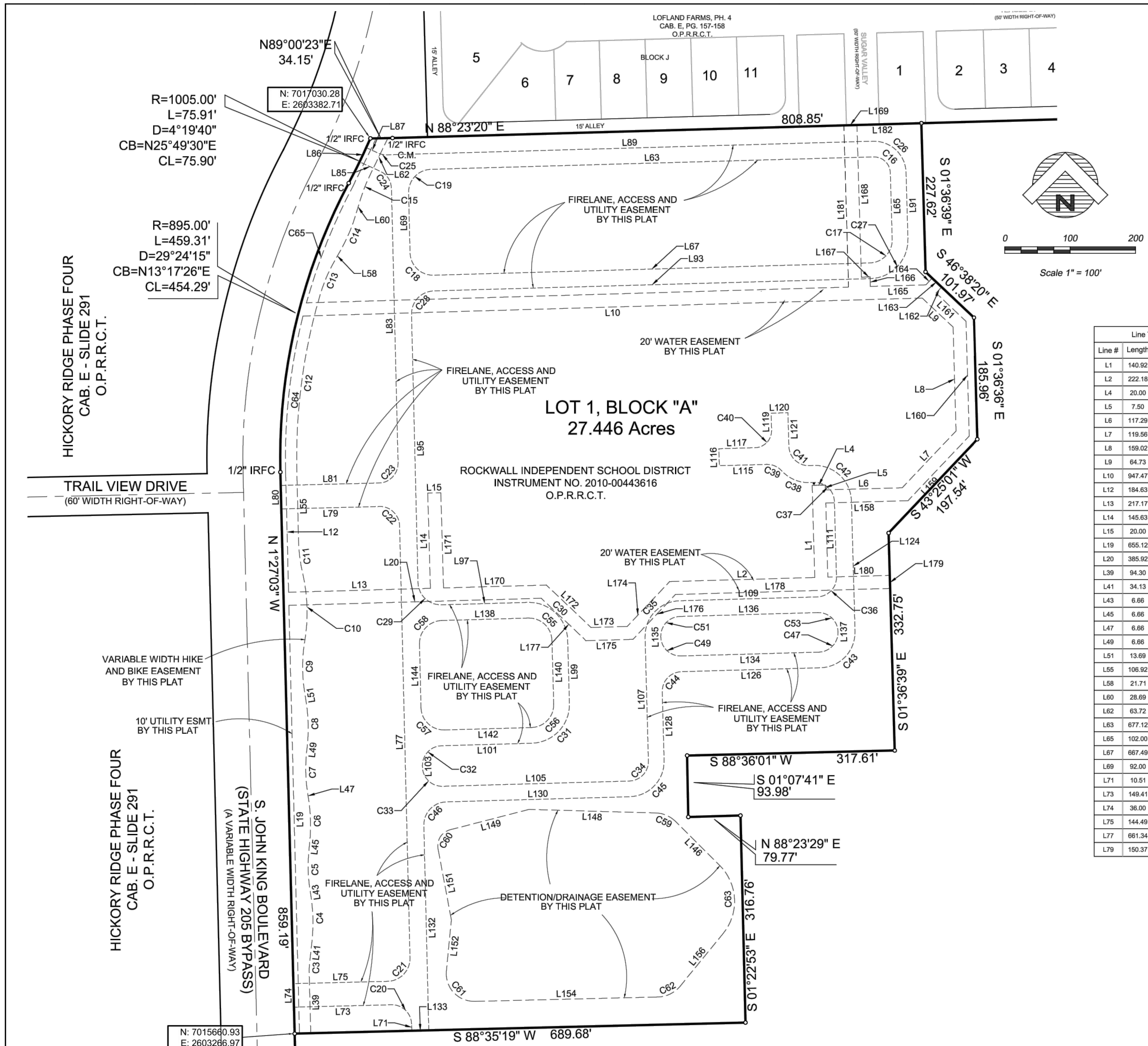

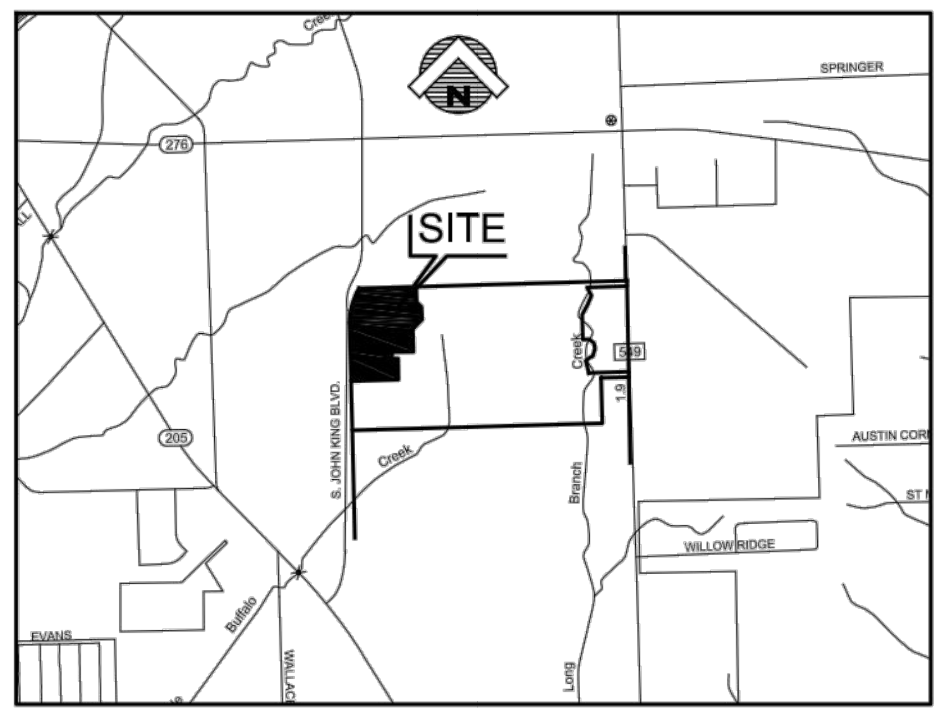

VICINITY MAP
N.T.S.

Line Table		
Line #	Length	Direction
L1	140.92	N01° 36' 39"W
L2	222.18	N88° 23' 21"E
L4	20.00	N88° 23' 21"E
L5	7.50	S01° 36' 39"E
L6	117.29	N88° 23' 21"E
L7	119.56	N43° 25' 01"E
L8	159.02	N01° 36' 39"W
L9	64.73	N46° 38' 20"W
L10	947.47	S88° 19' 59"W
L12	184.63	S01° 24' 41"E
L13	217.17	N88° 23' 21"E
L14	145.63	N01° 36' 39"W
L15	20.00	N88° 23' 21"E
L19	655.12	N01° 24' 41"W
L20	385.92	N88° 23' 21"E
L39	94.30	N01° 24' 41"W
L41	34.13	N06° 15' 03"E
L43	6.66	N09° 04' 25"W
L45	6.66	N06° 15' 03"E
L47	6.66	N09° 04' 25"W
L49	6.66	N06° 15' 03"E
L51	13.69	N09° 04' 25"W
L55	106.92	N01° 24' 41"W
L58	21.71	N29° 17' 32"E
L60	28.69	N17° 07' 36"E
L62	63.72	N25° 50' 44"E
L63	677.12	N88° 23' 21"E
L65	102.00	S01° 36' 39"E
L67	667.49	S88° 23' 21"W
L69	92.00	N01° 22' 42"W
L71	10.51	N02° 15' 24"W
L73	149.41	S88° 35' 19"W
L74	36.00	N01° 27' 03"W
L75	144.49	N88° 35' 19"E
L77	661.34	N01° 22' 42"W
L79	150.37	S88° 35' 19"W

Line Table		
Line #	Length	Direction
L80	36.00	N01° 27' 03"W
L81	150.45	N88° 35' 19"E
L83	419.62	N01° 22' 42"W
L85	34.47	N65° 27' 21"W
L86	24.00	N24° 32' 39"E
L87	20.05	S65° 27' 21"E
L89	744.00	N88° 23' 21"E
L91	102.00	S01° 36' 39"E
L93	667.88	S88° 23' 21"W
L95	410.33	S01° 22' 42"E
L97	131.97	N88° 23' 21"E
L99	97.50	S01° 35' 46"E
L101	138.08	S88° 23' 21"W
L103	2.00	S01° 22' 42"E
L105	285.61	N88° 23' 21"E
L107	189.55	N01° 32' 28"W
L109	211.31	N88° 22' 54"E
L111	115.19	N01° 34' 28"W
L115	72.53	S88° 23' 21"W
L116	26.00	N01° 36' 39"W
L117	55.39	N88° 23' 21"E
L119	26.08	N01° 36' 39"W
L120	26.00	N88° 23' 21"E
L121	51.42	S01° 36' 39"E
L124	199.70	S01° 34' 28"E
L126	213.35	S88° 23' 21"W
L128	105.07	S01° 32' 28"E
L130	280.97	S88° 23' 21"W
L132	313.72	S01° 22' 42"E
L133	25.84	S88° 35' 19"W
L134	211.25	S88° 23' 21"W
L135	0.48	N01° 32' 28"W
L136	211.25	N88° 22' 54"E
L137	0.51	S01° 34' 28"E
L138	132.35	N88° 23' 21"E
L140	97.50	S01° 35' 46"E

Line Table		
Line #	Length	Direction
L142	132.72	S88° 23' 21"W
L144	97.50	N01° 22' 42"W
L146	95.10	N45° 04' 48"W
L148	193.86	N88° 25' 05"W
L149	124.58	S75° 31' 24"W
L151	110.89	S10° 35' 21"E
L152	78.55	S05° 33' 50"W
L154	280.50	N88° 37' 07"E
L156	104.05	N39° 12' 01"E
L158	125.57	N88° 23' 21"E
L159	136.13	N43° 25' 01"E
L160	175.60	N01° 36' 39"W
L161	62.92	N46° 38' 20"W
L162	12.50	N43° 21' 40"E
L163	20.00	S46° 38' 20"E
L164	14.11	S43° 21' 40"W
L165	84.62	S88° 19' 59"W
L166	14.59	N01° 40' 01"W
L167	13.35	S88° 19' 59"W
L168	232.91	N01° 40' 01"W
L169	20.00	S88° 23' 20"W
L170	156.97	N88° 23' 21"E
L171	145.63	S01° 36' 39"E
L172	94.44	S46° 36' 39"E
L173	55.38	N88° 23' 21"E
L174	94.44	N43° 23' 21"E
L175	71.95	N88° 23' 21"E
L176	94.44	N43° 23' 21"E
L177	94.44	S46° 36' 39"E
L178	328.52	N88° 23' 21"E
L179	20.00	N01° 36' 39"W
L180	94.62	S88° 23' 21"W
L181	247.52	N01° 40' 01"W
L182	100.88	N88° 23' 20"E

FINAL PLAT
OF

ROCKWALL - CCA ADDITION
LOT 1, BLOCK A

OUT OF THE
W.H. BAIRD SURVEY, ABSTRACT NO. 25
CITY OF ROCKWALL, ROCKWALL COUNTY, TEXAS

APRIL 8, 2017 SHEET: 1 OF 2 SCALE: 1"= 100'

OWNER:

ROCKWALL ISD
801 EAST WASHINGTON ST,
ROCKWALL TEXAS, 75087
(972) 771-0605 CONTACT:
JAMES WATSON

SURVEYOR:

SURVEY GROUP
400 SOUTH INDUSTRIAL BLVD.
SUITE 219
EULESS, TEXAS 76048
TBPS NO. 101733-00
(817) 354-1445
(817) 354-1451 FAX CONTACT:
RODNEY MARTINEZ

ENGINEER:

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TEXAS 75062
TBPE FIRM NO. F-303
(972) 989-2174 CELL
(972) 717-5151 OFFICE
CONTACT: ROBERT HOWMAN

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

FOR INFORMATION ONLY

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TEXAS REGISTRATION NUMBER: F-303
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105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

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FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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FINAL
PLAT
8

Job. No. 1759-03-01	**Sheet No.** C1.1
Drawn By: RAH	
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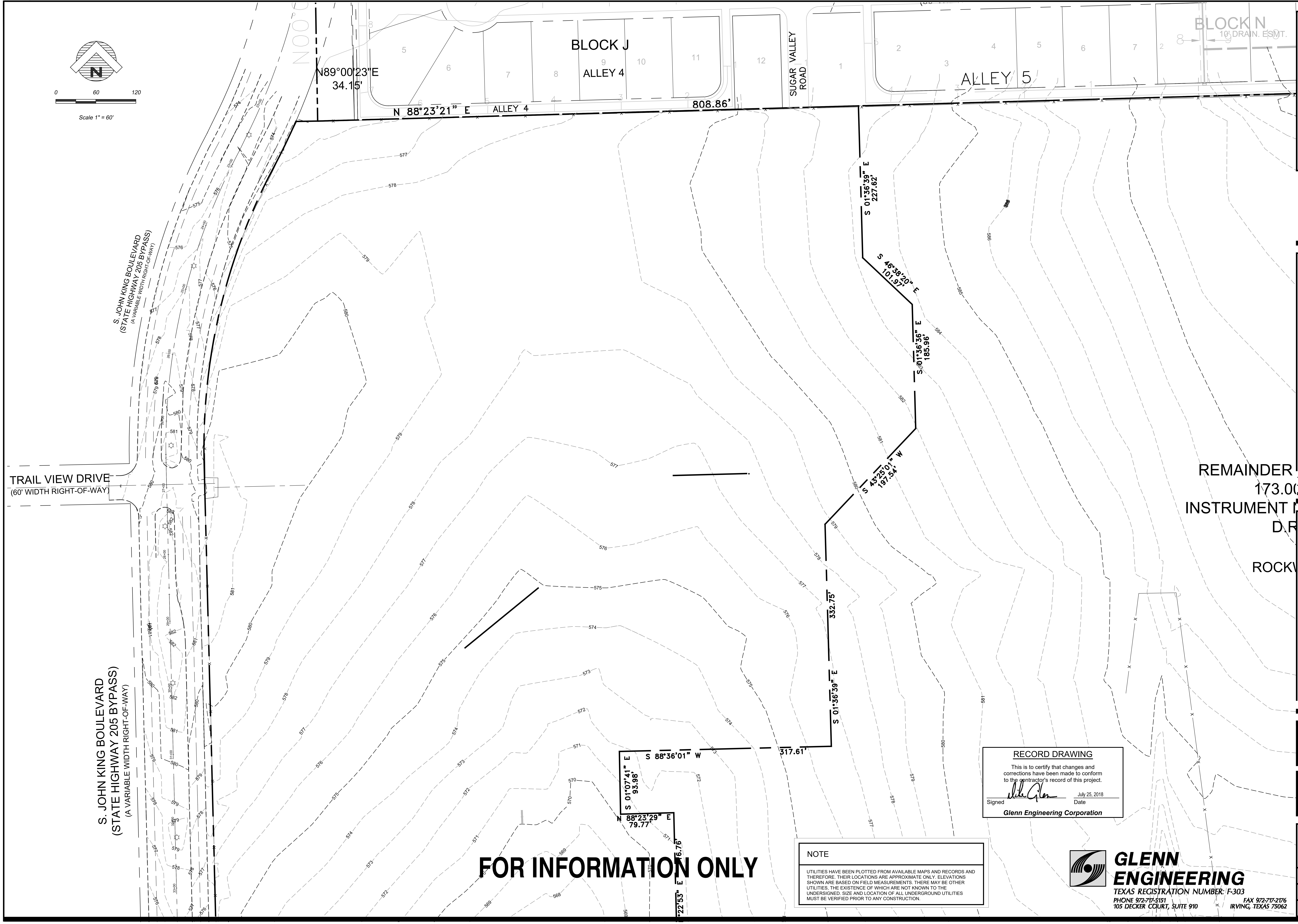

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NOTE

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ROCKWALL, TEXAS

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NORTH TOPOGRAPHIC SURVEY

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Job. No. 1759-03-01	Sheet No. C1.3
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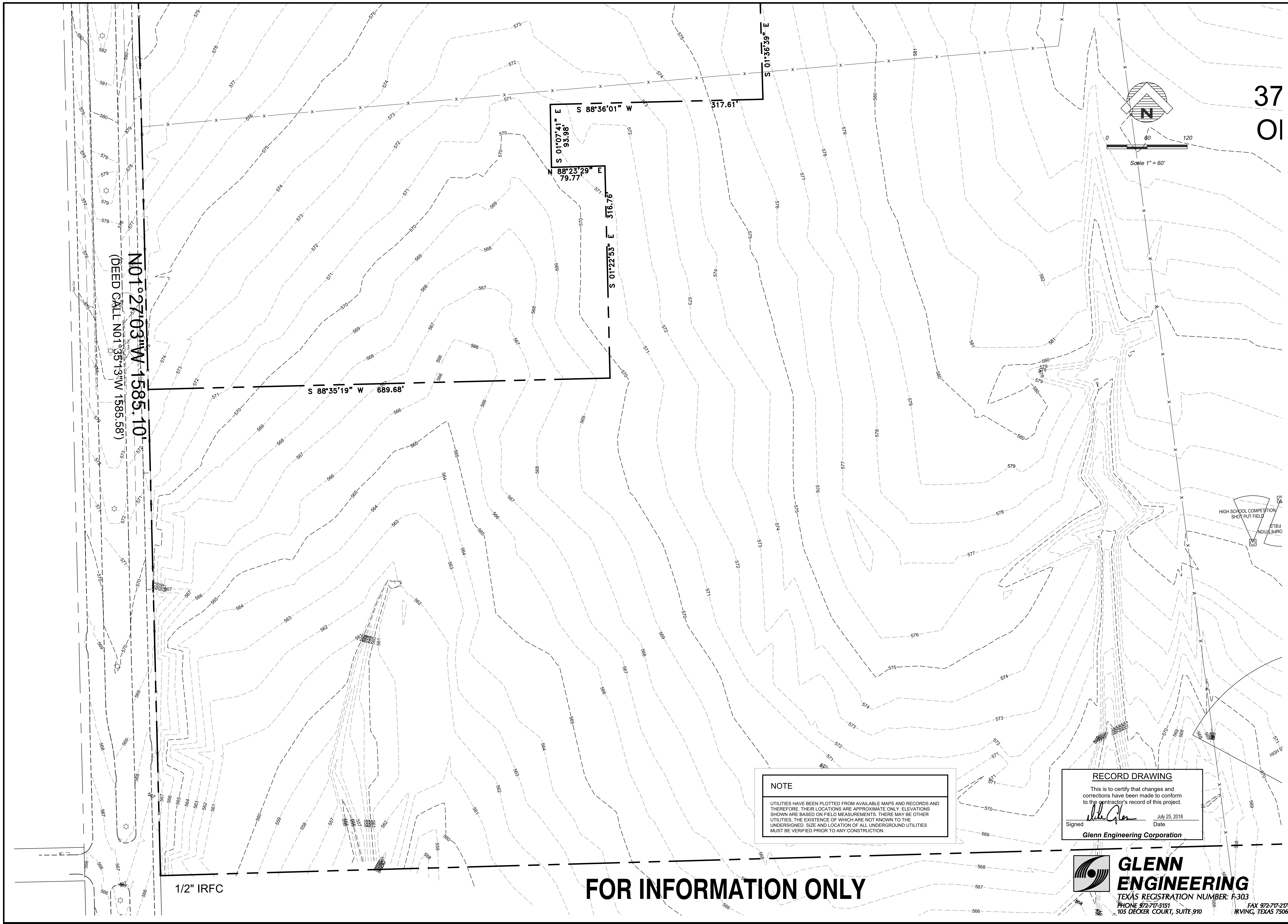

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Mike Glenn — Signed
July 25, 2018 — Date

Glenn Engineering Corporation

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FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
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SOUTH TOPOGRAPHIC SURVEY
8

Job. No. 1759-03-01	**Sheet No.** C1.4
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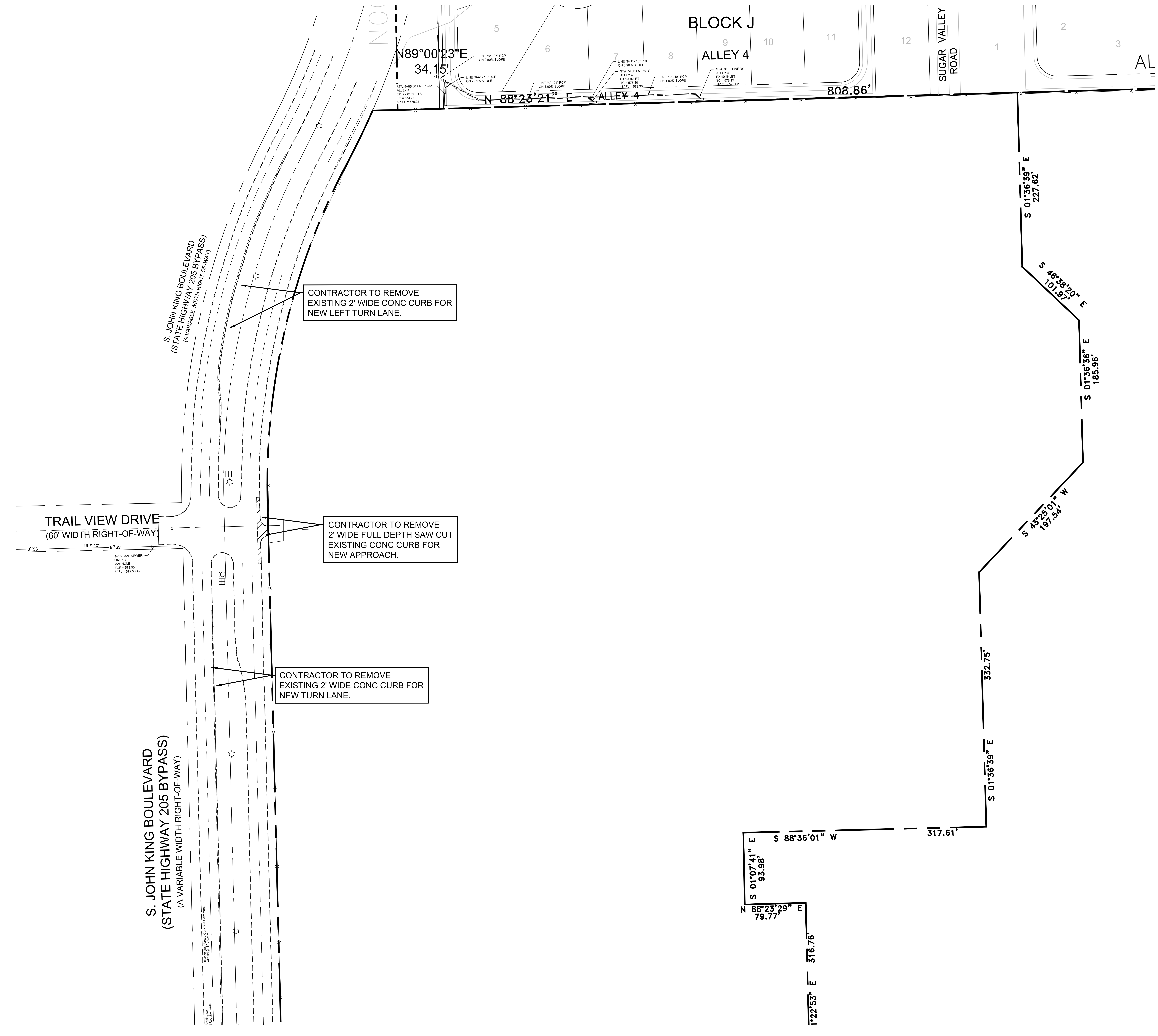
BLOCK J
5
6
7
8
9
10
11
12
1
2
3
ALLEY 4
SUGAR VALLEY ROAD
AL
N89°00'23"E
34.15'
LINE "8" - 27" RCP ON 0.50% SLOPE
LINE "8-A" - 18" RCP ON 2.51% SLOPE
STA. 6+85.60 LAT. "8-A" ALLEY 4 EX. 2 - 8' INLETS TC = 574.71 18" FL = 570.21
LINE "8" - 21" RCP ON 1.00% SLOPE
LINE "8-B" - 18" RCP ON 3.90% SLOPE
STA. 5+00 LAT "8-B" ALLEY 4 EX 10' INLET TC = 576.80 18" FL = 572.30
LINE "8" - 18" RCP ON 1.00% SLOPE
STA. 3+60 LINE "8" ALLEY 4 EX 10' INLET TC = 578.12 18" FL = 573.62
N 88°23'21" E
ALLEY 4
808.86'
S 01°36'39" E 227.62'
S 46°38'20" E 101.97'
S 01°36'36" E 185.96'
S 43°25'01" W 197.54'
332.75'
S 01°36'39" E
S 88°36'01" W
317.61'
S 01°07'41" E 93.98'
N 88°23'29" E 79.77'
316.76'
1°22'53" E
S. JOHN KING BOULEVARD (STATE HIGHWAY 205 BYPASS) (A VARIABLE WIDTH RIGHT-OF-WAY)
TRAIL VIEW DRIVE (60' WIDTH RIGHT-OF-WAY)
LINE "G"
8''SS
4+18 SAN. SEWER LINE "G" MANHOLE TOP = 578.50 8" FL = 572.50 +/-
CONTRACTOR TO REMOVE EXISTING 2' WIDE CONC CURB FOR NEW LEFT TURN LANE.
CONTRACTOR TO REMOVE 2' WIDE FULL DEPTH SAW CUT EXISTING CONC CURB FOR NEW APPROACH.
CONTRACTOR TO REMOVE EXISTING 2' WIDE CONC CURB FOR NEW TURN LANE.

NOTE

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N

0 60 120

Scale 1" = 60'

DEMOLITION NOTES:

1. CONTRACTOR SHALL CONSULT ALL UTILITY COMPANIES AND VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DEMOLITION. REMOVAL AND RELOCATION OF ALL UTILITY LINES, METERS, VALVES, ETC. SHALL BE PERFORMED PER REQUIREMENTS OF THE CITY OF ROCKWALL & UTILITY COMPANIES. ANY DAMAGE TO PUBLIC UTILITIES SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CORRECT.

2. ALL DEMOLITION AND CONSTRUCTION TO BE KEPT WITHIN THE BOUNDARIES OF THE SITE OR AS DESIGNATED BY CONSTRUCTION ENGINEER. ANY DAMAGE BY CONTRACTOR TO ADJOINING PROPERTIES OR ITEMS NOT IN THE DESIGNATED DEMOLITION AREA SHALL BE THE GENERAL CONTRACTOR'S RESPONSIBILITY TO CORRECT.

3. REMOVE ALL EXISTING UNDERGROUND UTILITIES, CAP AS REQUIRED. BACK FILL AND COMPACT PER CITY OF ROCKWALL SPECIFICATIONS.

4. REMOVE SURFACE PAVING AS NEEDED TO COMPLETE PAVING PLAN.

5. REMOVE EXISTING SIGNAGE, INCLUDING POSTS AND FOUNDATIONS.

6. REMOVE ANY OTHER ITEMS NOT INDICATED ABOVE BUT WHICH MUST BE DEMOLISHED TO COMPLETE PROJECT AS DESIGNATED BY SITE PLAN.

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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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Signed Mike Glen
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Glenn Engineering Corporation

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TEXAS REGISTRATION NUMBER: F-303
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105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

DEMOLITION PLAN

8

Job. No. 1759-03-01	**Sheet No.** CD1.0
Drawn By: RAH	
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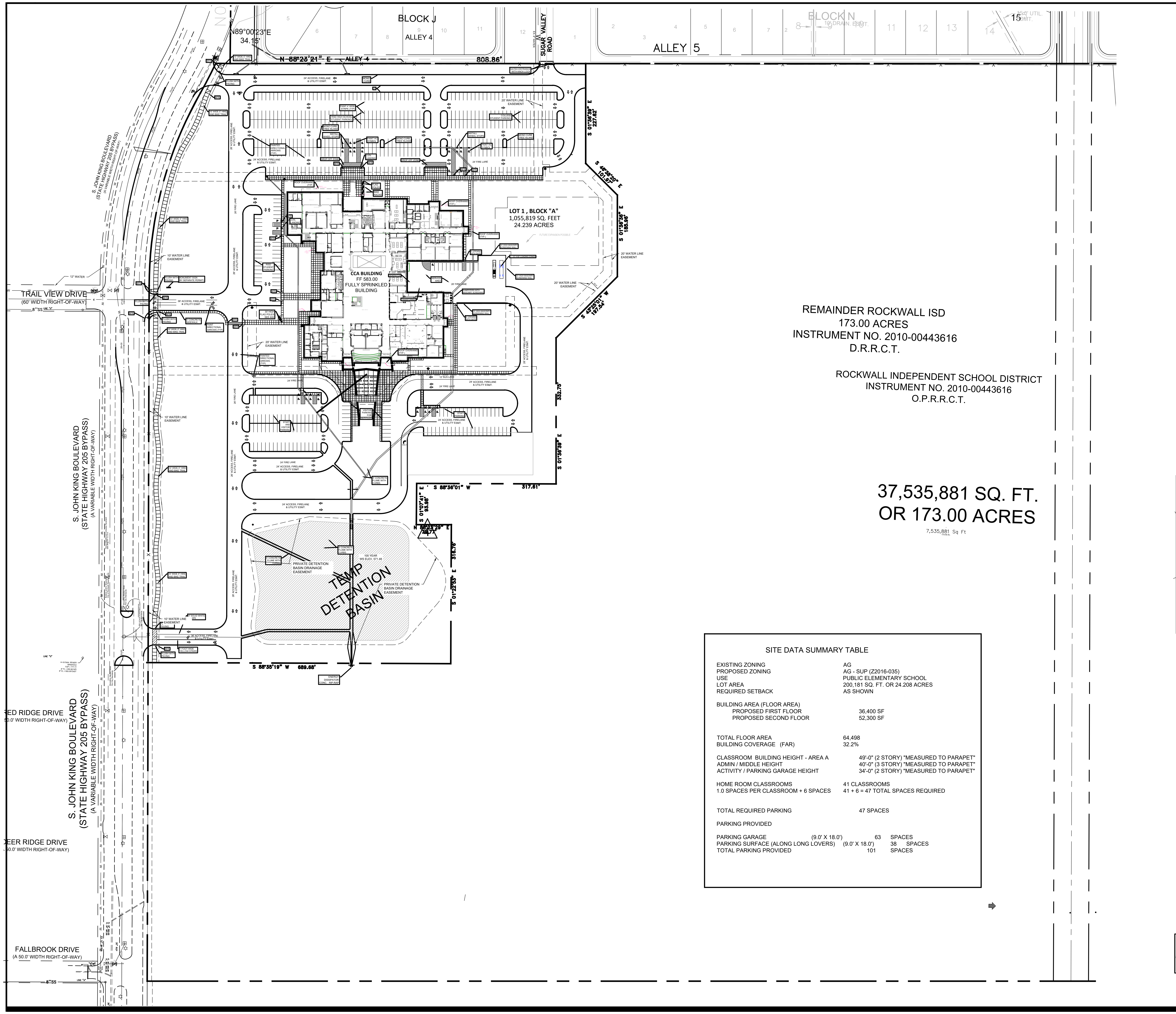

SITE DATA SUMMARY TABLE

EXISTING ZONING	AG
PROPOSED ZONING	AG - SUP (Z2016-035)
USE	PUBLIC ELEMENTARY SCHOOL
LOT AREA	200,181 SQ. FT. OR 24.208 ACRES
REQUIRED SETBACK	AS SHOWN
BUILDING AREA (FLOOR AREA)	
PROPOSED FIRST FLOOR	36,400 SF
PROPOSED SECOND FLOOR	52,300 SF
TOTAL FLOOR AREA	64,498
BUILDING COVERAGE (FAR)	32.2%
CLASSROOM BUILDING HEIGHT - AREA A	49'-0" (2 STORY) "MEASURED TO PARAPET"
ADMIN / MIDDLE HEIGHT	40'-0" (3 STORY) "MEASURED TO PARAPET"
ACTIVITY / PARKING GARAGE HEIGHT	34'-0" (2 STORY) "MEASURED TO PARAPET"
HOME ROOM CLASSROOMS	41 CLASSROOMS
1.0 SPACES PER CLASSROOM + 6 SPACES	41 + 6 = 47 TOTAL SPACES REQUIRED
TOTAL REQUIRED PARKING	47 SPACES
PARKING PROVIDED	
PARKING GARAGE (9.0' X 18.0')	63 SPACES
PARKING SURFACE (ALONG LONG LOVERS) (9.0' X 18.0')	38 SPACES
TOTAL PARKING PROVIDED	101 SPACES

GENERAL NOTES:

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5. ALL WORK SHALL CONFORM TO THE CITY OF ROCKWALL SPECIFICATIONS, STANDARDS, AND DETAILS. AND N.C.T.C.O.G. , 4TH ADDITION AND AS AMENDED BY THE CITY OF ROCKWALL.

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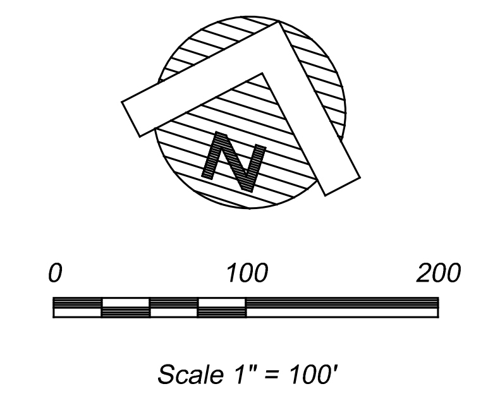

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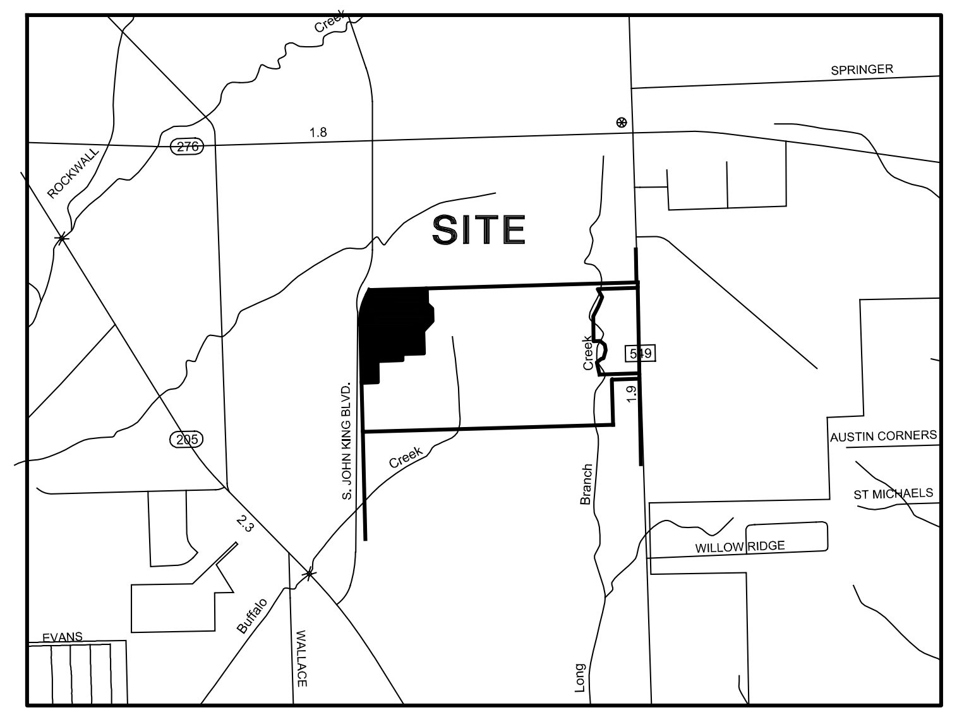

VICINITY MAP

N.T.S.

GENERAL NOTES:

CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING UTILITIES.

BARRIER FREE RAMPS (BFR) IN PUBIC R.O.W. SHALL BE PER CITY STANDARDS AND DETAILS.

REFER TO DEVELOPMENT PLANS FOR GRADING DETAILS.

OUTDOOR LIGHTING NOTE:

ALL OUTDOOR LIGHTING MUST BE ORIENTED SO THAT LIGHTING LEVELS AT ALL PROPERTY LINES ARE 1 FOT-CANDLE OR LESS.

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed: Mike Glenn
Date: July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

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13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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OVERALL SITE PLAN
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Job. No.	Sheet No.
1759-03-01	CS1.0
Drawn By: RAH	
Date: 02-28-2017	

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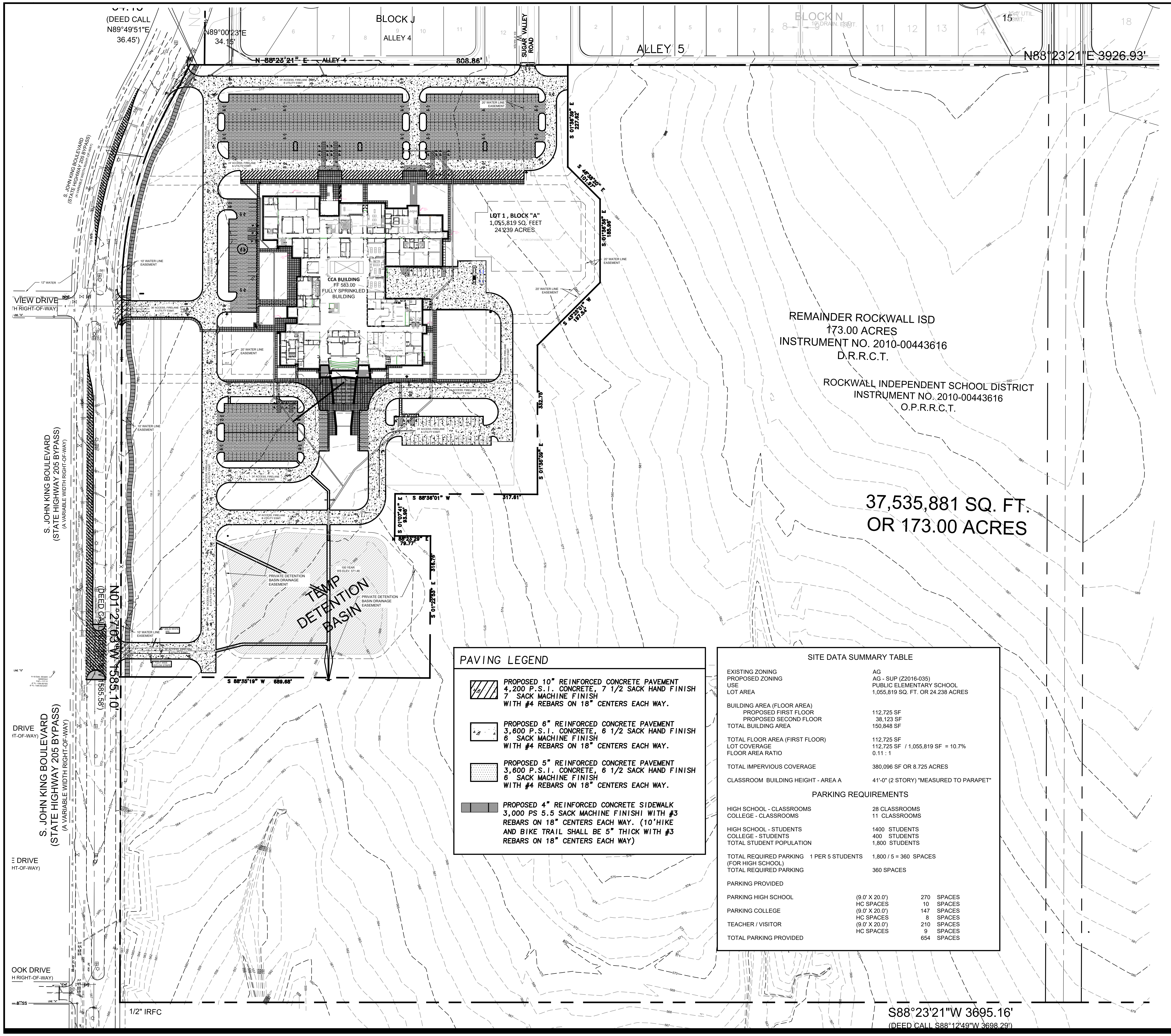

PAVING LEGEND

▨	PROPOSED 10" REINFORCED CONCRETE PAVEMENT 4,200 P.S.I. CONCRETE, 7 1/2 SACK HAND FINISH 7 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
☐	PROPOSED 6" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
░	PROPOSED 5" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
▦	PROPOSED 4" REINFORCED CONCRETE SIDEWALK 3,000 PS 5.5 SACK MACHINE FINISHI WITH #3 REBARS ON 18" CENTERS EACH WAY. (10'HIKE AND BIKE TRAIL SHALL BE 5" THICK WITH #3 REBARS ON 18" CENTERS EACH WAY)

SITE DATA SUMMARY TABLE

EXISTING ZONING	AG
PROPOSED ZONING	AG - SUP (Z2016-035)
USE	PUBLIC ELEMENTARY SCHOOL
LOT AREA	1,055,819 SQ. FT. OR 24.238 ACRES
BUILDING AREA (FLOOR AREA)	
PROPOSED FIRST FLOOR	112,725 SF
PROPOSED SECOND FLOOR	38,123 SF
TOTAL BUILDING AREA	150,848 SF
TOTAL FLOOR AREA (FIRST FLOOR)	112,725 SF
LOT COVERAGE	112,725 SF / 1,055,819 SF = 10.7%
FLOOR AREA RATIO	0.11 : 1
TOTAL IMPERVIOUS COVERAGE	380,096 SF OR 8.725 ACRES
CLASSROOM BUILDING HEIGHT - AREA A	41'-0" (2 STORY) "MEASURED TO PARAPET"

PARKING REQUIREMENTS

HIGH SCHOOL - CLASSROOMS		28 CLASSROOMS	
COLLEGE - CLASSROOMS		11 CLASSROOMS	
HIGH SCHOOL - STUDENTS		1400 STUDENTS	
COLLEGE - STUDENTS		400 STUDENTS	
TOTAL STUDENT POPULATION		1,800 STUDENTS	
TOTAL REQUIRED PARKING (FOR HIGH SCHOOL)	1 PER 5 STUDENTS	1,800 / 5 = 360 SPACES	
TOTAL REQUIRED PARKING		360 SPACES	
PARKING PROVIDED			
PARKING HIGH SCHOOL	(9.0' X 20.0')	270	SPACES
	HC SPACES	10	SPACES
PARKING COLLEGE	(9.0' X 20.0')	147	SPACES
	HC SPACES	8	SPACES
TEACHER / VISITOR	(9.0' X 20.0')	210	SPACES
	HC SPACES	9	SPACES
TOTAL PARKING PROVIDED		654	SPACES

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12. THE HICKORY RIDGE LIFT STATION WILL BE UPGRADED TO ACCOMMODATE THE SCHOOL SITE.

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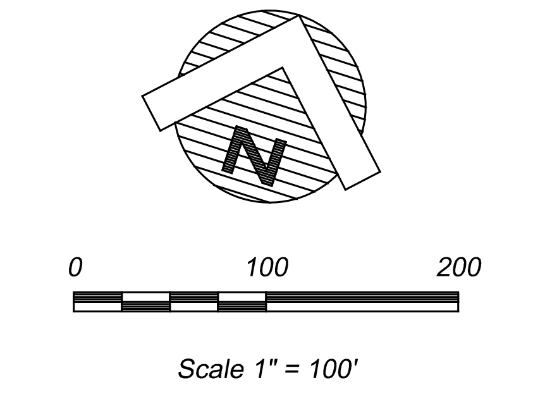

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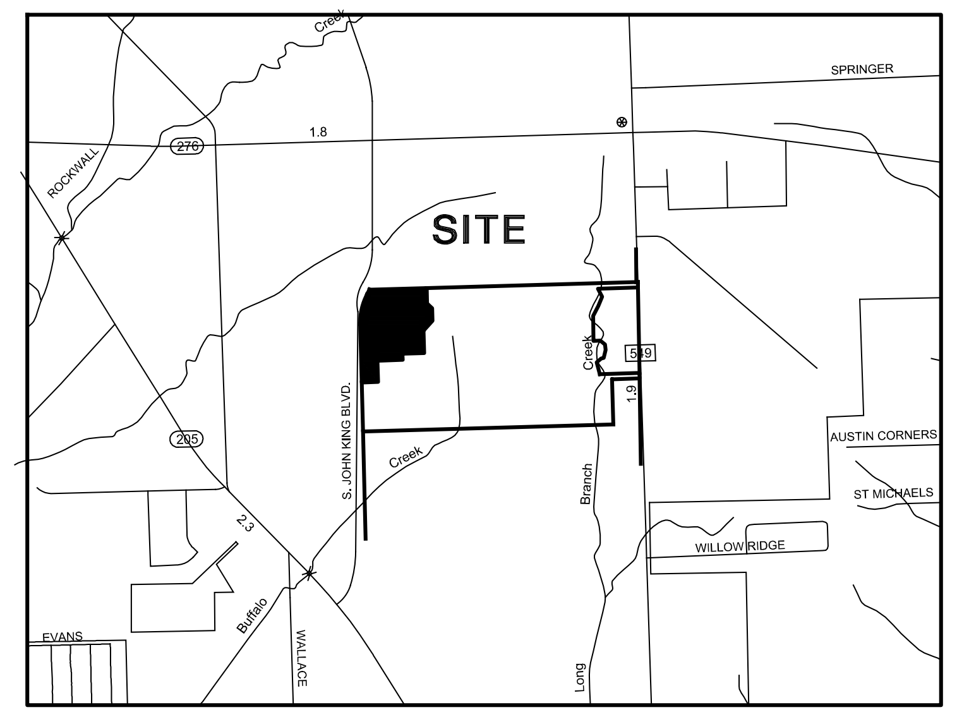

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Date July 25, 2018
Glenn Engineering Corporation

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TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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SUP SITE PLAN
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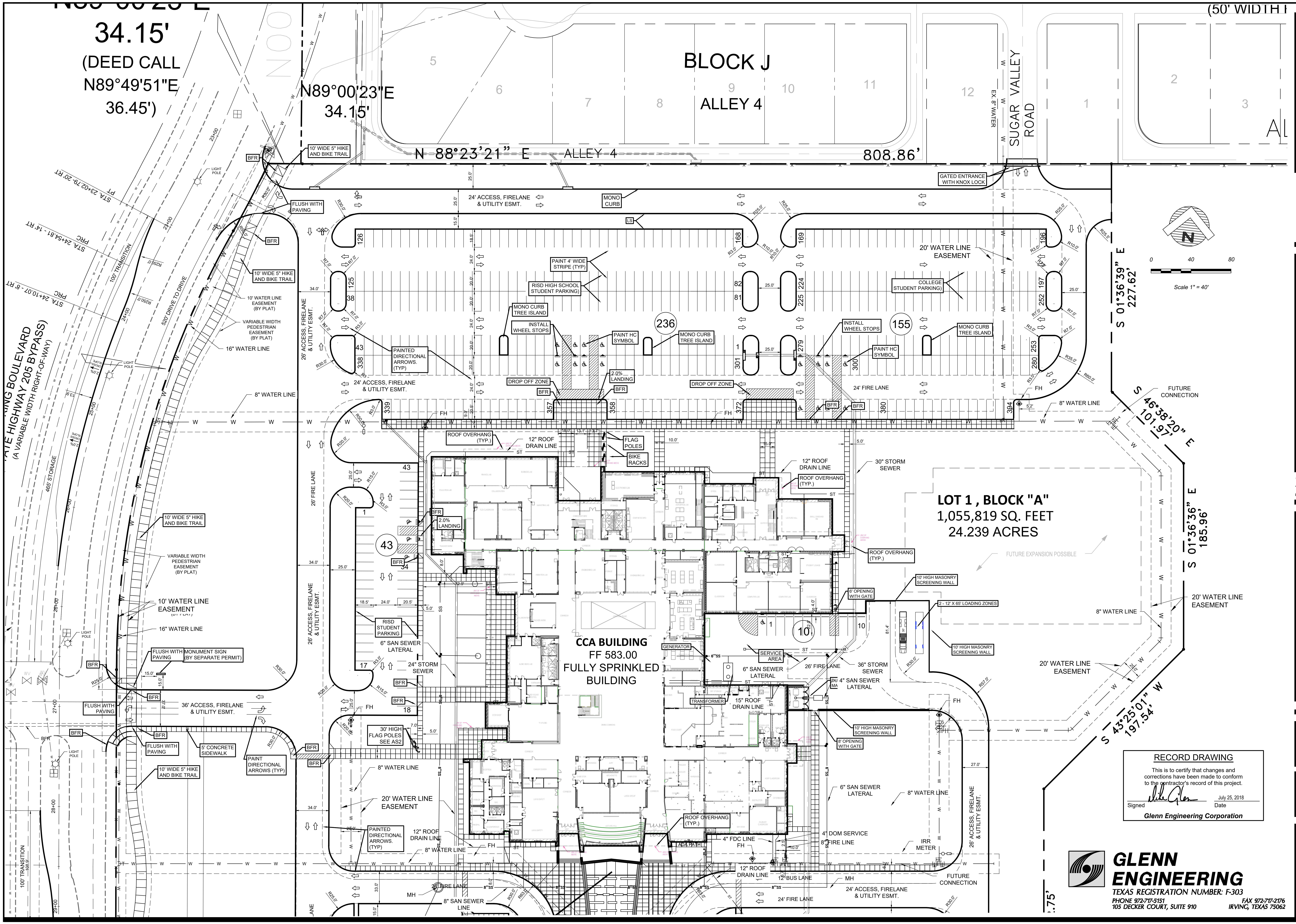
Job. No. 1759-03-01	Sheet No.
Drawn By: RAH	CS
Date: 02-28-2017	1.0A



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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
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ROCKWALL, TEXAS

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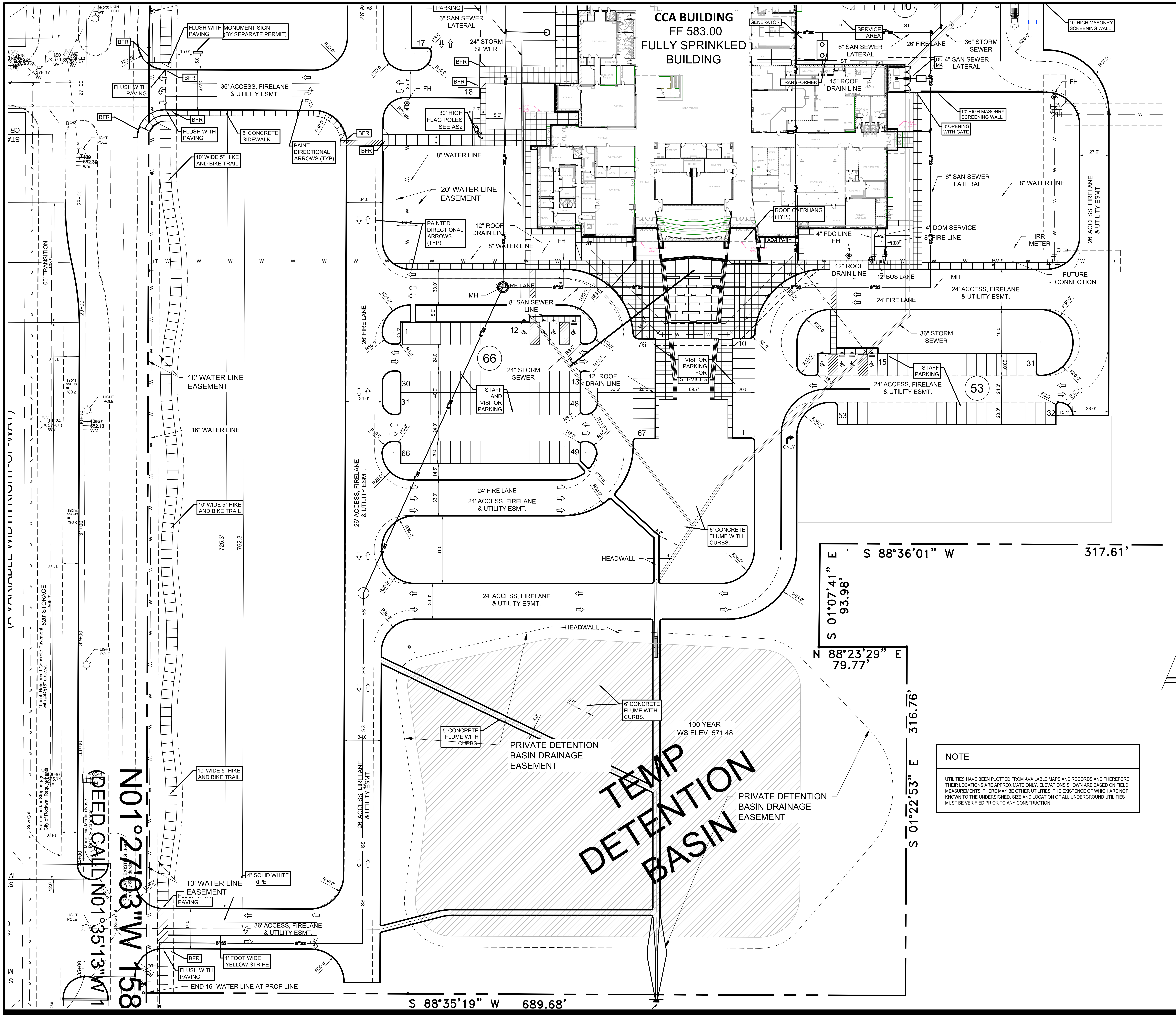
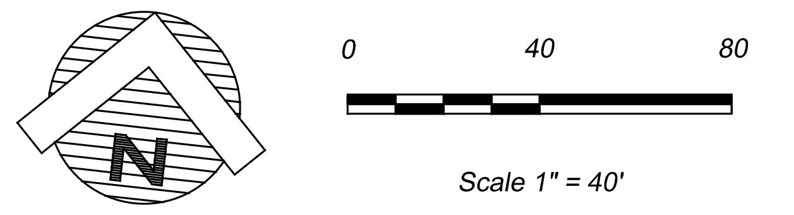
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

DETAIL NORTH CITY SITE PLAN

Job. No.: 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 8
CS1.1





Scale 1" = 40'

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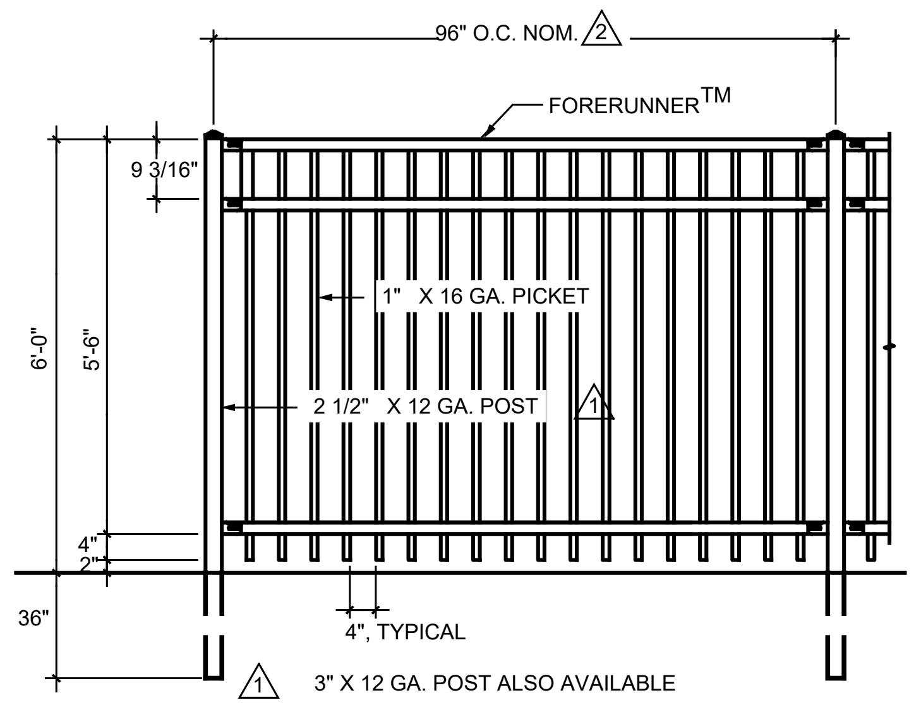
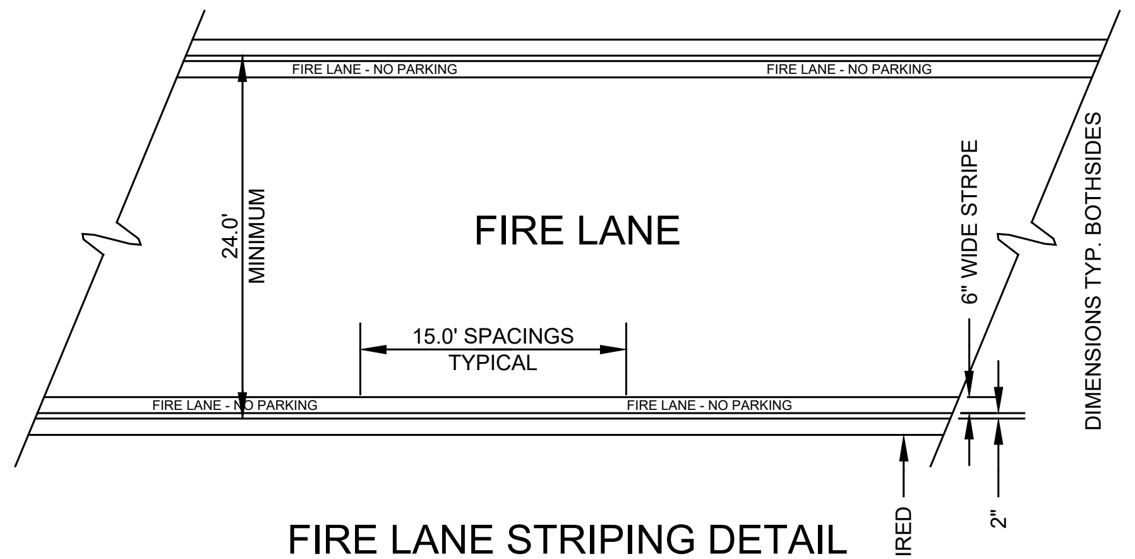


1 3" X 12 GA. POST ALSO AVAILABLE
2 PANELS ALSO AVAILABLE FOR 6' O.C. POST SPACING

ORNAMENTAL FENCE DETAIL

N.T.S.



FIRE LANE STRIPING DETAIL

STRIPING DETAILS AND SPECIFICATIONS

A. PAINT:
  1. STRIPE SHALL BE SIX(6) INCHES WIDE PAINTED WITH AN EXTERIOR ACRYLIC LATEX PAINT. COLOR SHALL BE "TRAFFIC RED" GILDDEN NO. 63251 OR EQUAL.
  2. LETTERS SHALL BE FOUR(4) INCHES HIGH PAINTED WITH AN EXTERIOR ACRYLIC PAINT. COLOR SHALL BE "TRAFFIC WHITE" GILDDEN NO. 563245 OR EQUAL.

B. APPLICATION:
  1. STRIPE MAY BE BRUSHED OR SPRAYED, ONE COAT TO FINISH.
  2. LETTERS SHALL BE STENCIL FORMED, BRUSH APPLIED AND SPACED AS DETAILED ON THIS SHEET.

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DETAILED SOUTH CITY SITE PLAN

Job. No. 1759-03-01	Sheet No. 8
Drawn By: RAH	CS1.2
Date: 02-28-2017	

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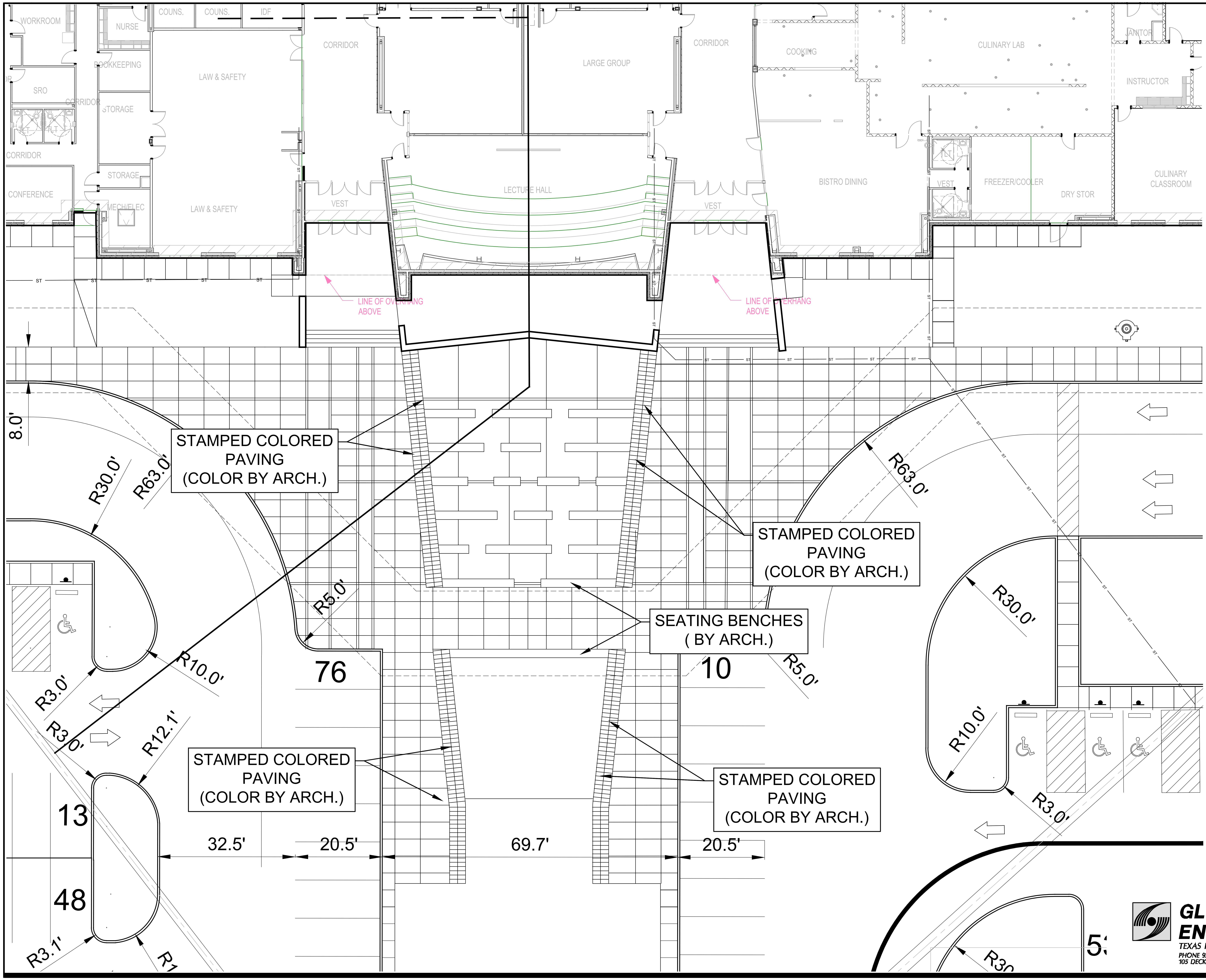

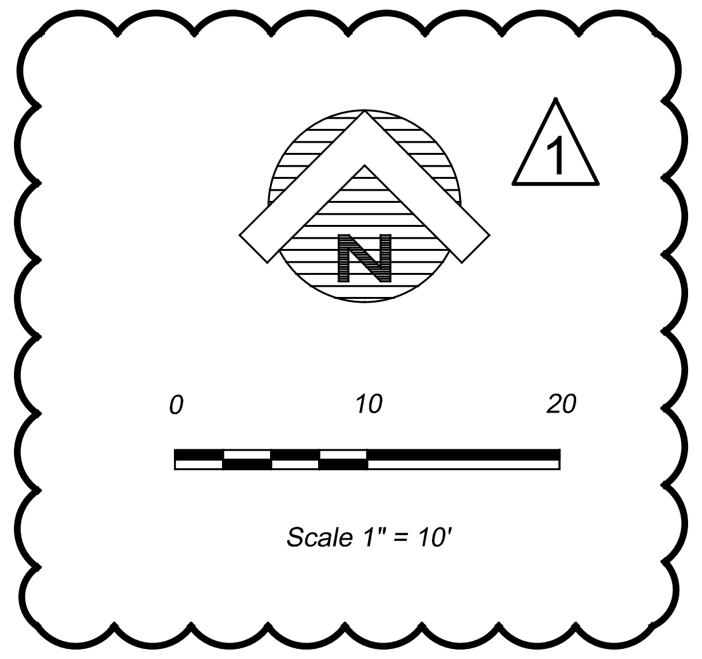

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Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

DETAILED ENTRY PLAN

Job. No.
1759-03-01

Drawn By:
RAH

Date:
02-28-2017

Sheet No. 8
CS1.3

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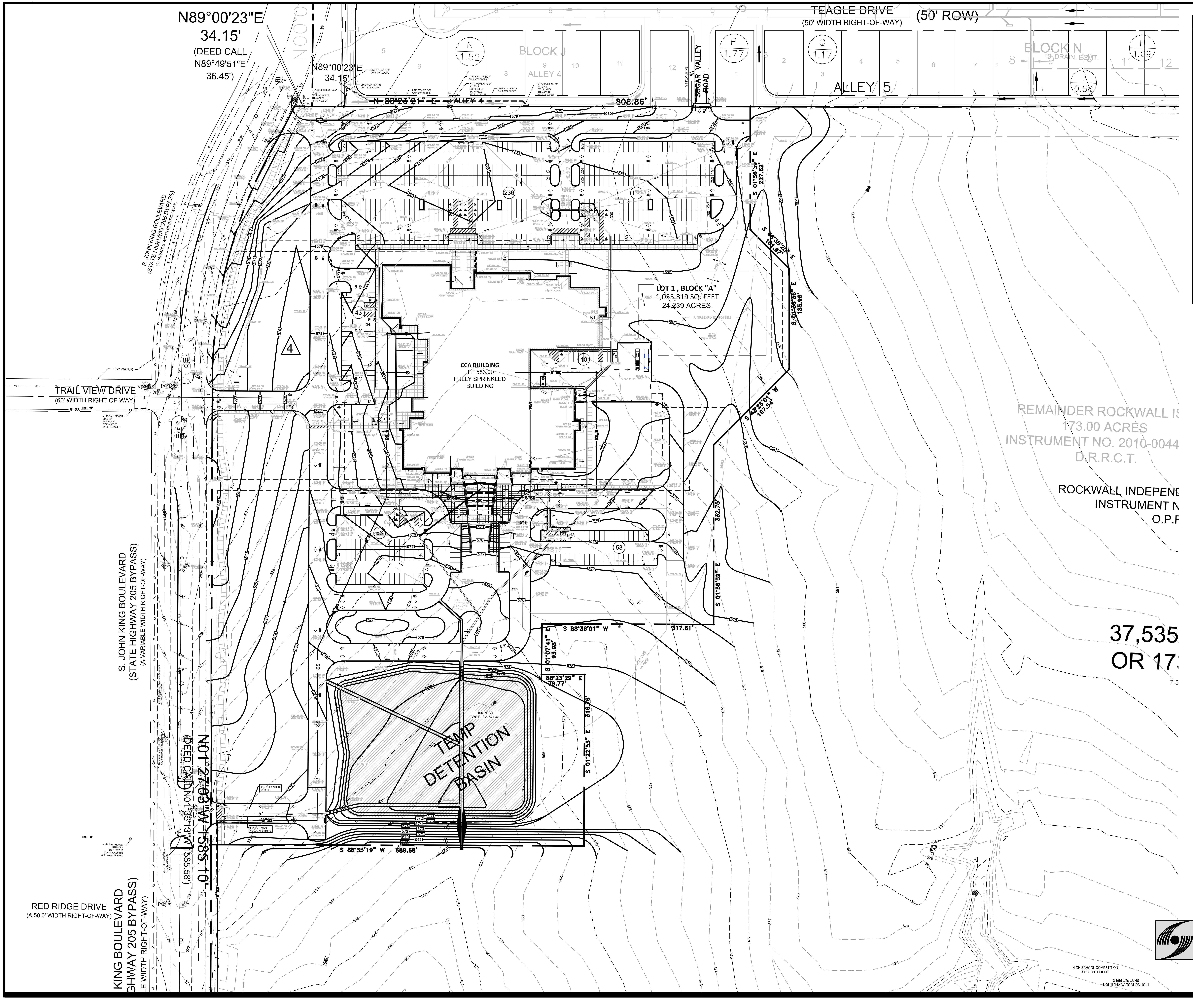

GENERAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THESE PLANS AND CITY OF ROCKWALL STANDARDS AND SPECIFICATIONS.

2. ALL PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN THE EVENT OF ANY DISCREPANCIES.

3. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION. IN THE EVENT OF ANY CONFLICT AND PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, IMMEDIATELY NOTIFY ENGINEER. MINOR ADJUSTMENTS OF FINISHED GRADE TO ACCOMPLISH SPOT DRAINAGE ARE ACCEPTABLE.

4. POSITIVE DRAINAGE SHALL BE PROVIDED AWAY FROM ALL FOUNDATIONS AND STRUCTURES.

5. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT OR GUTTER. TO OBTAIN TOP OF CURB ELEVATION, ADD 0.5 FEET.

6. GROUND SHALL BE SCARIFIED PRIOR TO PLACING ANY FILL.

7. FILL SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION AND SOILS REPORT RECOMMENDATIONS.

8. ANY EXCESS EXCAVATION SHALL BE DISTRIBUTED AS DIRECTED BY THE OWNER OR THE ENGINEER.

9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND/OR ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION AND MAINTAIN THE BENCHMARK DURING CONSTRUCTION.

10. THE LOCATIONS OF ALL UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE PUBLIC RECORDS. THE EXACT LOCATION AND DEPTH OF ALL UTILITIES INDICATED MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT.

11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ANY UTILITIES DAMAGED DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

12. NO WEEP HOLES SHALL BE COVERED.

13. THIS SITE IS ASSUMED TO BE A BALANCED SITE BY ADJUSTING THE THE BENCHMARK ELEVATION . THE CONTRACTOR SHALL INFORM THE ENGINEERING OF THE ADJUSTMENT TO THE BENCHMARK TO ACHIEVE THE BALANCED SITE.

0 80 160
Scale 1" = 80'

LEGEND

558.00 ●	= PROPOSED TOP OF CURB
558.00 TP ●	= PROPOSED TOP OF PAVEMENT
558.00 TI ●	= PROPOSED TOP OF INLET
558.00 FG ●	= PROPOSED TOP OF INLET
558	= PROPOSED CONTOUR
FF=558.00	= PROPOSED FINISH FLOOR
– – – –	= PROPOSED LANDSCAPE BERM
←	= DIRECTION OF FLOW
558.00 GR ●	= EXISTING SHOT
-----558-----	= EXISTING CONTOUR

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
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10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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RECORD DRAWING

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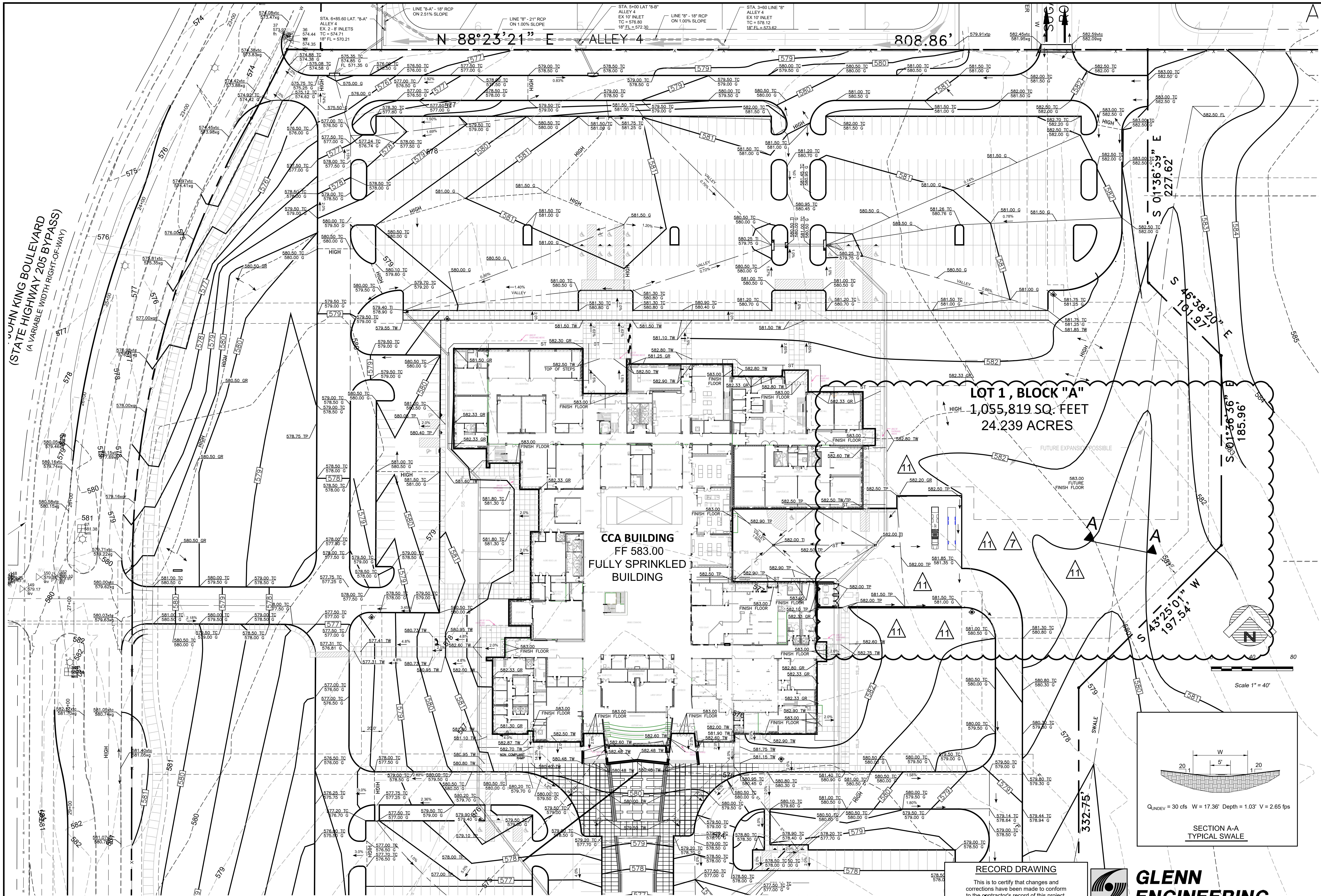
Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

OVERALL GRADING PLAN

Job. No. 1759-03-01	Sheet No. 8
Drawn By: RAH	CG1.0
Date: 02-28-2017	


ALLEY 4
N 88°23'21" E
808.86'
JOHN KING BOULEVARD
(STATE HIGHWAY 205 BYPASS)
(A VARIABLE WIDTH RIGHT-OF-WAY)
LINE "8-A" - 18" RCP ON 2.51% SLOPE
LINE "8" - 21" RCP ON 1.00% SLOPE
LINE "8" - 18" RCP ON 1.00% SLOPE
STA. 6+85.60 LAT. "8-A" ALLEY 4 EX. 2 - 8' INLETS TC = 574.71 18" FL = 570.21
STA. 5+00 LAT "8-B" ALLEY 4 EX 10' INLET TC = 576.80 18" FL = 572.30
STA. 3+60 LINE "8" ALLEY 4 EX 10' INLET TC = 578.12 18" FL = 573.62
S 01°36'39" E
227.62'
S 46°38'20" E
101.97'
S 01°36'56" E
185.96'
S 43°25'01" W
197.54'
332.75'
LOT 1 , BLOCK "A"
1,055,819 SQ. FEET
24.239 ACRES
FUTURE EXPANSION POSSIBLE
583.00 FUTURE FINISH FLOOR
CCA BUILDING
FF 583.00
FULLY SPRINKLED
BUILDING
583.00 FINISH FLOOR
HIGH
VALLEY
SWALE
NON COMPLIANT RAMP
TOP OF STEPS
A
N
40
80
Scale 1" = 40'
W
5'
20
1
Q_{UNDEV} = 30 cfs W = 17.36' Depth = 1.03' V = 2.65 fps
SECTION A-A
TYPICAL SWALE

RECORD DRAWING

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Mike Glenn
Signed

July 25, 2018
Date

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Project:
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FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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NORTH
DETAILED
GRADING PLAN

Job. No.: 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 8
CG1.1

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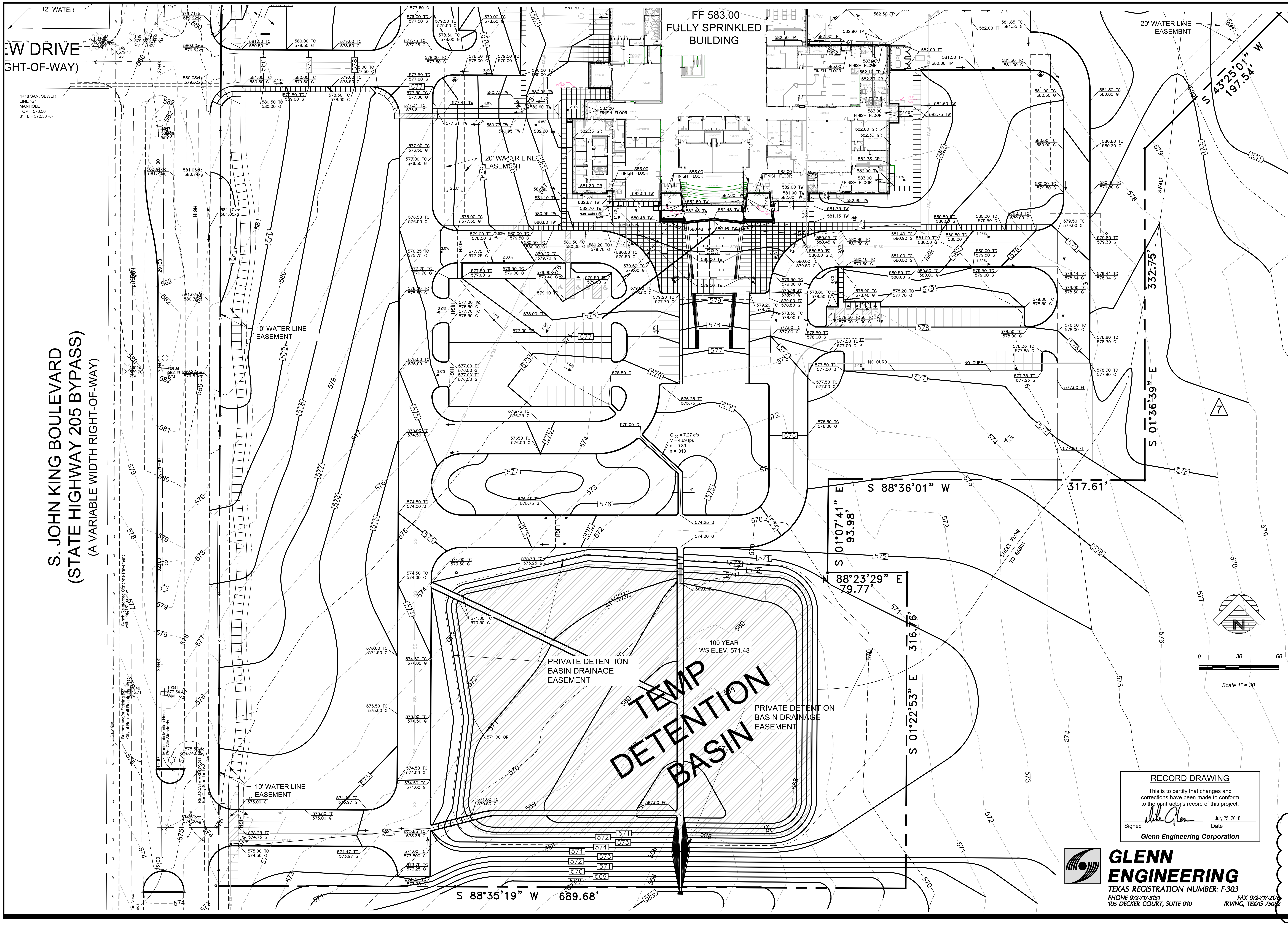

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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

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Mike Glenn — July 25, 2018
Signed — Date

Glenn Engineering Corporation

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SOUTH DETAILED GRADING PLAN

8

Job. No.	Sheet No.
1759-03-01	CG1.2
Drawn By: RAH	
Date: 02-28-2017	

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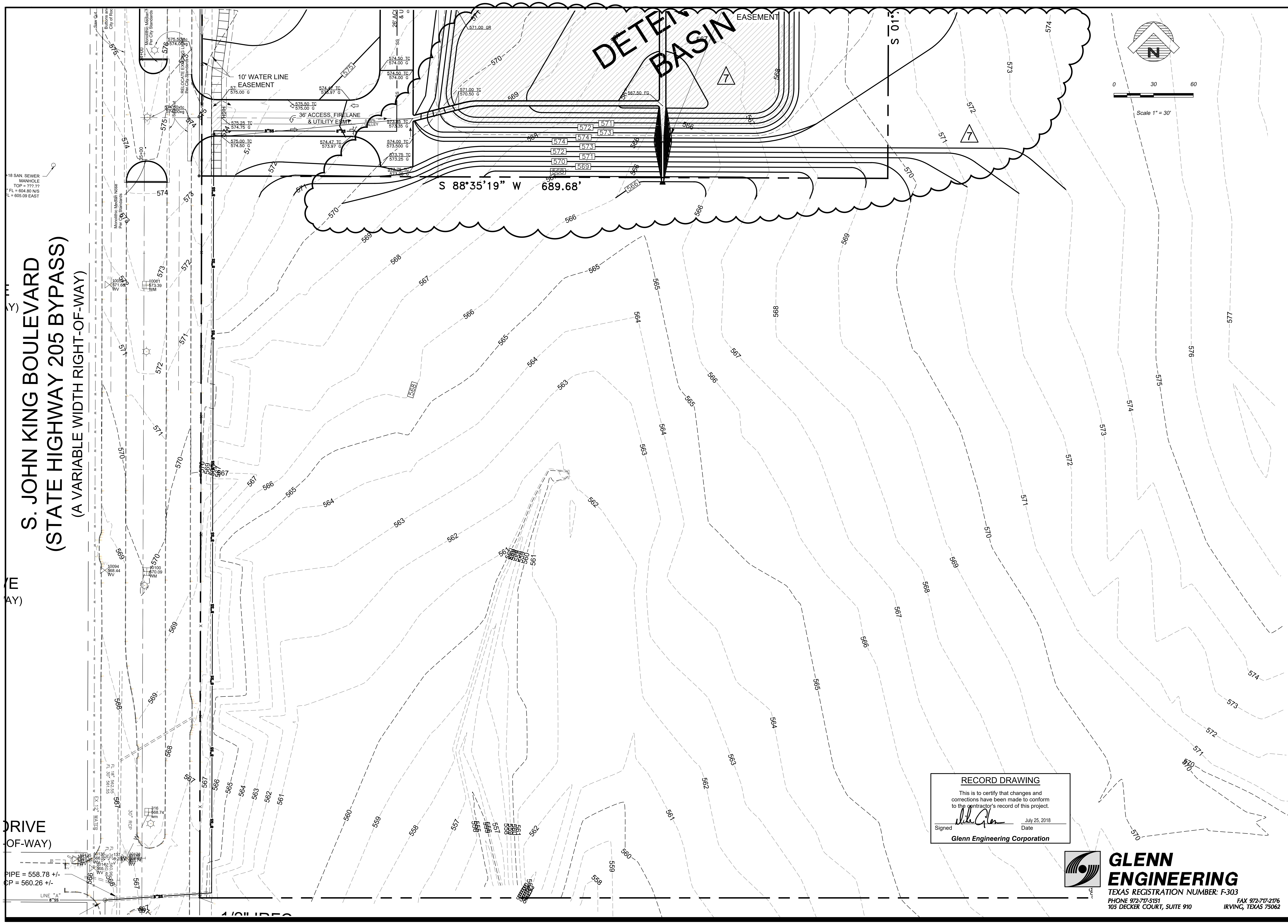

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Project:

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Date: July 25, 2018

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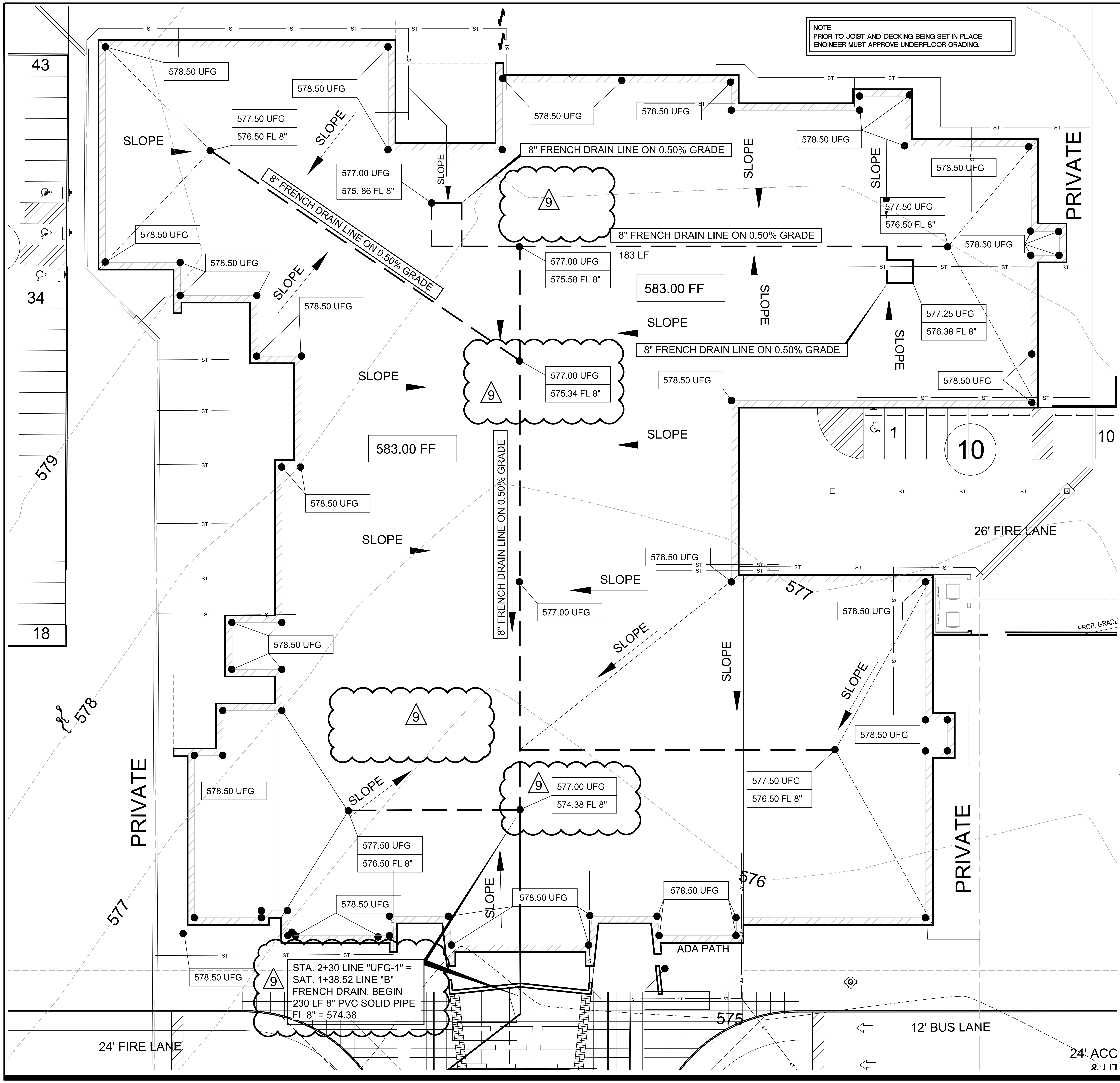
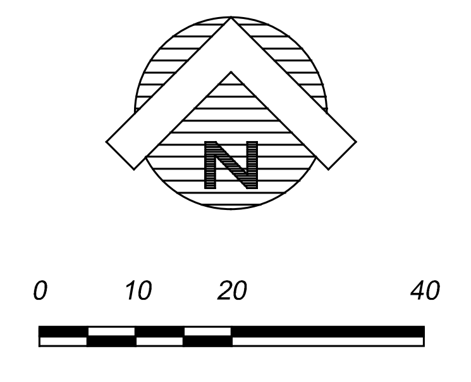
DETAILED BASIN GRADING PLAN

Job. No.: 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 8
CG1.3

NOTE:
PRIOR TO JOIST AND DECKING BEING SET IN PLACE ENGINEER MUST APPROVE UNDERFLOOR GRADING.



STA. 2+30 LINE "UFG-1" =
SAT. 1+38.52 LINE "B"
FRENCH DRAIN, BEGIN
230 LF 8" PVC SOLID PIPE
FL 8" = 574.38



Scale 1" = 20'

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

GENERAL NOTES:

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2. ALL PROPOSED CONTOURS ARE APPROXIMATE. PROPOSED SPOT ELEVATIONS AND DESIGNATED GRADIENT ARE TO BE USED IN THE EVENT OF ANY DISCREPANCIES.

3. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION. IN THE EVENT OF ANY CONFLICT AND PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, IMMEDIATELY NOTIFY ENGINEER. MINOR ADJUSTMENTS OF FINISHED GRADE TO ACCOMPLISH SPOT DRAINAGE ARE ACCEPTABLE.

4. POSITIVE DRAINAGE SHALL BE PROVIDED AWAY FROM ALL FOUNDATIONS AND STRUCTURES.

5. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT OR GUTTER. TO OBTAIN TOP OF CURB ELEVATION, ADD 0.5 FEET.

6. GROUND SHALL BE SCARIFIED PRIOR TO PLACING ANY FILL.

7. FILL SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION AND SOILS REPORT RECOMMENDATIONS.

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9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND/OR ESTABLISH A BENCHMARK PRIOR TO CONSTRUCTION AND MAINTAIN THE BENCHMARK DURING CONSTRUCTION.

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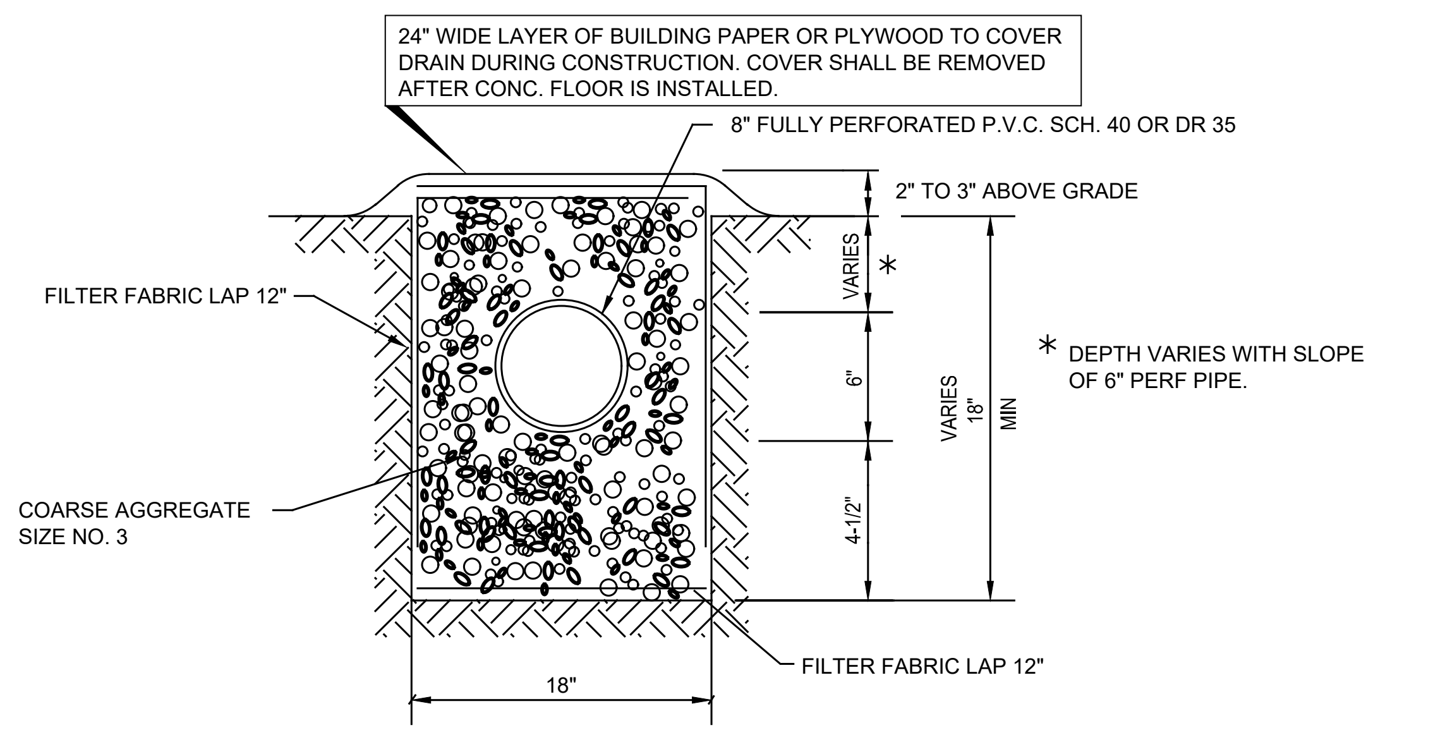
11. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES IN THE CONSTRUCTION OF THIS PROJECT. ANY UTILITIES DAMAGED DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

12. NO WEEP HOLES SHALL BE COVERED.

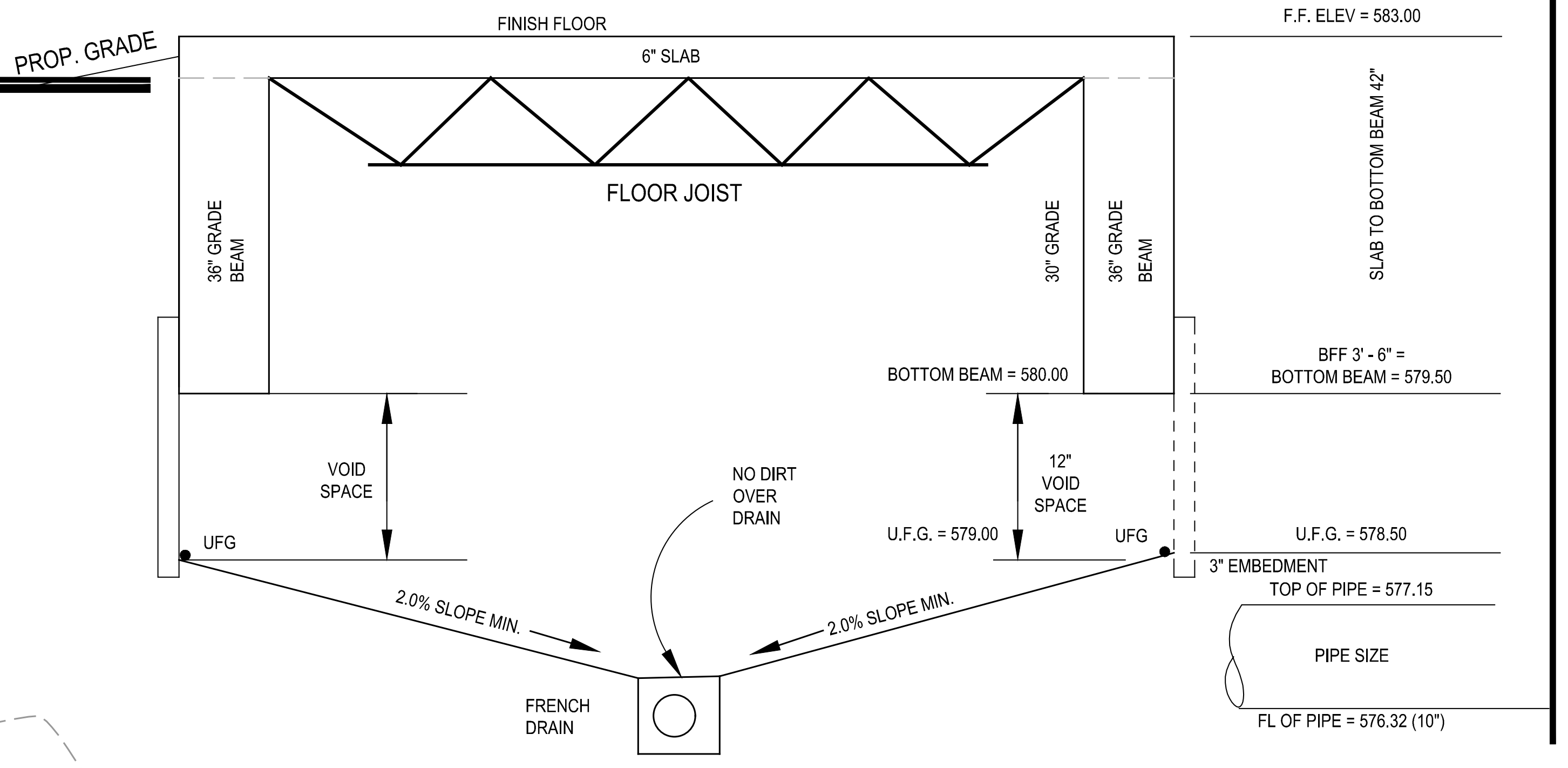
CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS AND ELEVATIONS PRIOR TO CONSTRUCTION.

ALL STORM SEWER CONSTRUCTION TO BE PER CITY OF ROCKWALL STANDARDS.

NOTE: ALL AGGREGATE SHALL CONFORM WITH A.S.T.M. C-33.


24" WIDE LAYER OF BUILDING PAPER OR PLYWOOD TO COVER DRAIN DURING CONSTRUCTION. COVER SHALL BE REMOVED AFTER CONC. FLOOR IS INSTALLED.
8" FULLY PERFORATED P.V.C. SCH. 40 OR DR 35
2" TO 3" ABOVE GRADE
FILTER FABRIC LAP 12"
VARIES
*
6"
4-1/2"
VARIES
18"
MIN
* DEPTH VARIES WITH SLOPE OF 6" PERF PIPE.
COARSE AGGREGATE SIZE NO. 3
FILTER FABRIC LAP 12"
18"

DETAIL
TYPE 1 FRENCH DRAIN



UNDER FLOOR GRADING DETAIL

NOTE: SEE STRUCTUAL PLANS FOR ACTUAL BEAM DEPTHS
AND VOID SPACE REQUIREMENTS.

BENCH MARKS:

BENCHMARK:
SQUARE CUT ON TOP OF HEADWALL AT THE MOST NORTHERLY CORNER OF BRIDGE. NORTHEASTERLY SIDE OF FM 205. 1680' +/- NORTHWEST OF CL OF MIMS ROAD.

ELEVATION = 529.11

BENCHMARK:
CITY OF ROCKWALL, TEXAS CONTROL MONUMENT #929. TOP OF HEADWALL IN NORTHWEST CORNER OF BRIDGE OVER SQUABBLE CREEK. SOUTHWESTERLY SIDE OF FM 205.

ELEVATION = 524.55

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13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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UNDER FLOOR
GRADING

Job. No. 1759-03-01	**Sheet No.** 9 CG1.4
Drawn By: RAH	
Date: 02-28-2017	

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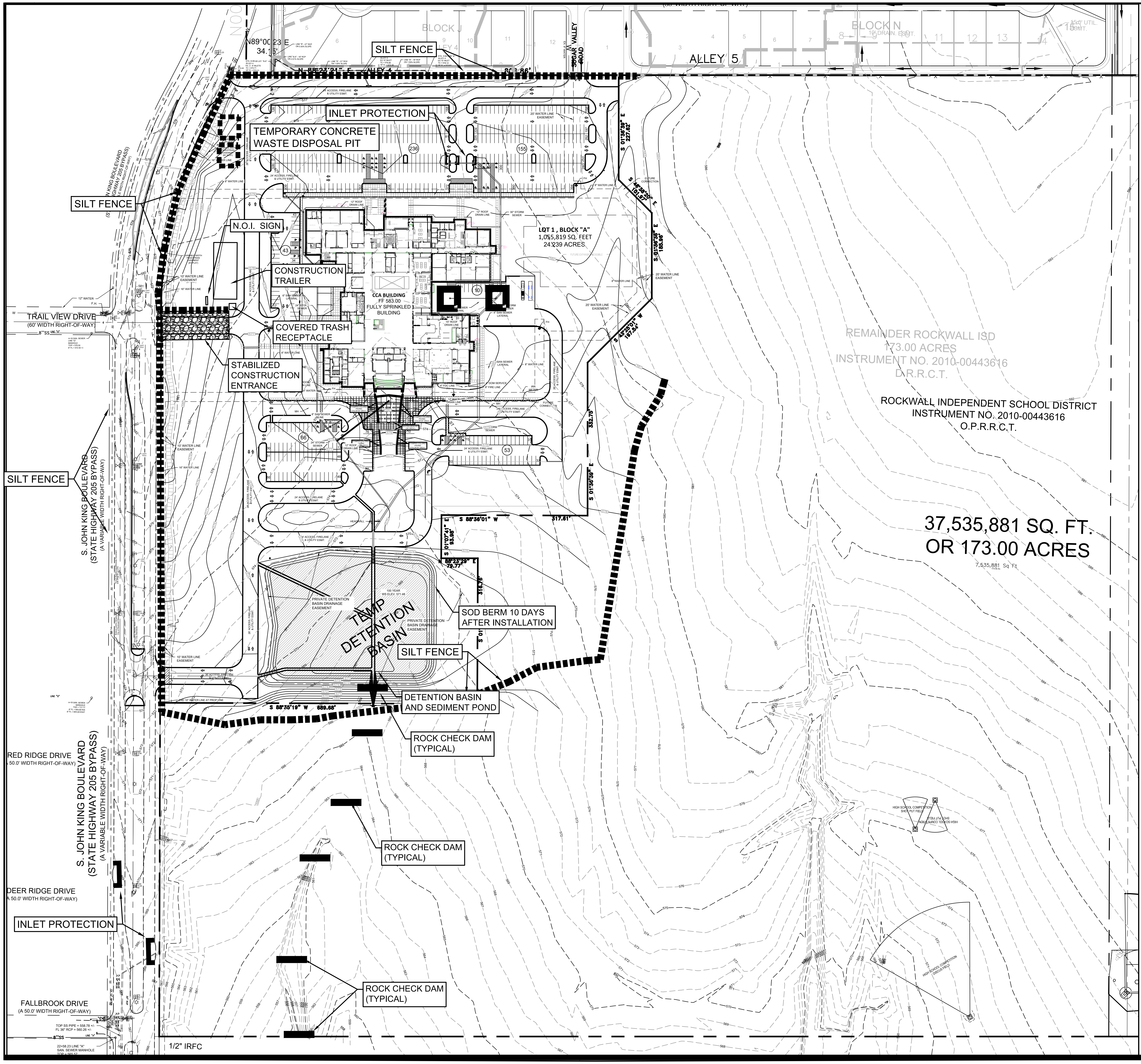

SEDIMENT CONTROL NOTES:

1. CONTRACTOR TO CHOOSE LOCATION OF CONSTRUCTION ENTRANCE. THIS ENTRANCE MUST BE USED BY ALL TRAFFIC ENTERING OR EXITING THE SITE. SEE SHEET CG 1.7 FOR STABILIZED CONSTRUCTION ENTRANCE DETAILS.

2. SEDIMENT CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. THE STONE FROM ROCK CHECK DAMS SHALL BE USED AS ENERGY DISSIPATORS FOR PROPOSED STORM SEWER AT CONSTRUCTION COMPLETION.

3. CURB INLET PROTECTION SHALL BE INSTALLED AS SOON AS STORM DRAINAGE HAS BEEN CONSTRUCTED.

4. PLYWOOD INLET PROTECTION TO BE PLACED AT UPSTREAM END OF ALL UNFINISHED PIPING AT DAYS END.

5. ALL SEDIMENT CONTROL MEASURES TO REMAIN IN PLACE UNTIL ENTIRE SITE IS STABILIZED.

6. THE EXTENT AND DURATION OF DISTURBANCE TO THE DRAINAGEWAYS SHALL BE MINIMIZED. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED:

A. INSTALL STABILIZED CONSTRUCTION ENTRANCE.

B. INSTALL SILT FENCE PRIOR TO DISTURBING SOIL. PERIMETER SILT FENCE TO BE INSTALLED OUTSIDE OF ANY POINT TO BE DISTURBED.

C. DURING CONSTRUCTION, INLET PROTECTION SHALL BE INSTALLED AS NEEDED. ALL SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED PER CONTRACT REQUIREMENTS. ALL DISTURBED AREAS WHICH ARE INACTIVE FOR LONG PERIODS OF TIME SHALL BE VEGETATED.

D. ONLY WHEN ENTIRE SITE IS STABILIZED AND CONSTRUCTION IS COMPLETE, SHALL SEDIMENT CONTROL MEASURES BE REMOVED.

7. CONTRACTOR SHALL CONTROL MUD ACCUMULATION ON ALL STREETS SURROUNDING THE PROJECT. NO MUD ACCUMULATION WILL BE ALLOWED IN PUBLIC STREETS.

8. MAINTAIN ALL FILTERS DURING CONSTRUCTION TO PREVENT ANY BLOCKAGES FROM ACCUMULATED SEDIMENT. ADDITIONAL HAY BALES MAY BE REQUIRED DURING CONSTRUCTION AS SPECIFIED BY ENGINEER OR CITY INSPECTOR.

9. ALL PROPOSED PARKING AREAS TO BE PAVED AS SOON AS POSSIBLE AFTER SUBGRADE IS PREPARED.

10. 80% OF ALL DISTURBED AREA SHALL BE COVERED (1 INCH IN HEIGHT) BY GRASS PRIOR TO CITY ACCEPTANCE.

11. ALL DETENTION FACILITIES SHALL BE INSTALLED AND FUNCTIONAL PER PLANS PRIOR TO ANY PAVING BEING PLACED ON SITE INCLUDING BUILDING FOUNDATION.

12. ALL SIDES, SLOPES AND TOP OF DETENTION BASIN SHALL BE SODDED OR ANCHORED ON SEEDED CURLEX PRIOR TO ANY PAVING BEING PLACED INCLUDING BUILDING FOUNDATION,.

13. DETENTITION BASIN SHALL BE UTILIZED AS SEDIMENT CONTROL BASIN DURING CONSTRUCTION OPERATIONS AND SHALL BE SIZED AND DETAILED PER THE REQUIREMENTS OF TCEQ.

LEGEND

▪▪▪▪ = INSTALL SILT FENCE
▬ = INSTALL ROCK CHECK DAM
⊓ = INSTALL CURB INLET PROTECTION
⊞ = INSTALL AREA DRAIN INLET PROTECTION
■ = INSTALL SEDIMENT POND AT CURB INLET, WYE INLET OR AREA DRAIN

N

0 50 100

Scale 1" = 50'

NOTE:
SEE SEDIMENT CONTROL DETAIL SHEET

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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FOR
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S.W.P.P.P. PLAN ⑧

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CG1.5

SITE DESCRIPTION

PROJECT NAME & LOCATION:	ROCKWALL CCA ROCKWALL, TEXAS
OWNER NAME & ADDRESS:	ROCKWALL INDEPENDENT SCHOOL DISTRICT 801 EAST WASHINGTON ROCKWALL, TEXAS
PROJECT DESCRIPTION:	NEW CCA HIGH SCHOOL / COLLEGE
SEQUENCE OF MAJOR ACTIVITIES:	PLACEMENT OF EROSION CONTROL DEVICES DENUDE SITE INSTALLATION OF UTILITY LINES START FOUNDATION OF BUILDINGS PLACEMENT OF CONCRETE PAVEMENT COMPLETE BUILDINGS PLACEMENT OF LANDSCAPE AND GRASS REMOVAL OF EROSION CONTROL DEVICES
MAJOR SOIL DISTURBING ACTIVITIES:	DENUDE SITE INSTALLATION OF UTILITY LINES PLACEMENT OF LANDSCAPE AND GRASS
PRE-DEVELOPMENT RUNOFF COEFFICIENT:	0.30
FINAL RUNOFF COEFFICIENT AFTER CONSTRUCTION:	0.70
TOTAL PROJECT AREA:	173.00 ACRES
TOTAL AREA TO BE DISTURBED:	43.79 ACRES
DESCRIPTION OF EXISTING SOIL:	CLAY SOILS

DESCRIPTION OF STABILIZATION OF EXISTING DRAINAGE WAYS:
SILT FENCE
INLET PROTECTION
DETENTION BASIN / SEDIMENT BASIN

DESCRIPTION OF EXISTING QUALITY OF STORM WATER DISCHARGE FOR SITE (IF AVAILABLE):
CITY STREETS
EXISTING STREAM

NAME OF RECEIVING WATERS:
CITY CURB AND GUTTER
CURB AND GUTTER ALONG ROADWAYS
ENCLOSED STORM SEWERS
LITTLE BUFFALO CREEK

ADDITIONAL COMMENTS:

ESTIMATED PROJECT START DATE:	FEBRUARY 2017
ESTIMATED PROJECT END DATE:	FEBRUARY 2018
LATITUDE:	32°56'50" N
LONGITUDE	96°23'33" W
NAME OF RECEIVING WATER	BUFFALO CREEK

SEQUENCE AND TIMING OF INDICATED EROSION CONTROL PRACTICES AND/OR FEATURES
(INCLUDE TREATMENT OF STOCKPILED DIRT FOR FUTURE USE)

PRIOR TO STARTING CONSTRUCTION:
PLACEMENT OF SILT FENCES
INSTALLATION OF INLET PROTECTION FOR STREET INLETS

DURING CONSTRUCTION:
INSPECTION AND MAINTENANCE OF SILT FENCES
INSTALLATION OF INLET PROTECTION FOR ON-SITE PAVING

COMPLETION OF SITE:
INSTALLATION OF LANDSCAPE AND GRASS
REMOVAL OF EROSION CONTROL DEVICES

SITE RATING FACTOR UTILIZING INDICATED
EROSION CONTROL & MEASURES = 0.70
(MUST BE 0.70 OR LARGER)

EROSION AND SEDIMENT CONTROLS

STABILIZATION PRACTICES

DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

TEMPORARY	PERMANENT	
X	X	SEED OR SOD
	X	VEGETATION OTHER THAN SEED OR SOD
X	X	EROSION CONTROL MATS
		PRESERVATION OF NATURAL VEGETATION
		OTHER (DESCRIBE)

ADDITIONAL COMMENTS:

STRUCTURAL PRACTICES

TEMPORARY	PERMANENT	
X		SILT FENCE
		HAY BALES
X		ROCK BERMS
		DIVERSION,INTERCEPTOR, OR PERIMETER DIKES
		DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
		PIPE SLOPE DRAIN
		TRIANGULAR SEDIMENT FILTER DIKE
X		INLET PROTECTION
		STONE OUTLET SEDIMENT TRAP
		SEDIMENT BASIN (REQUIRED FOR 10 ACRES OR LARGER WHERE ATTAINABLE)
		CHECK DAM
		TEMPORARY SEDIMENT TANK
X		STABILIZED CONSTRUCTION ENTRY
		SANDBAG BERM
		OTHER (DESCRIBE):

ADDITIONAL COMMENTS:

OTHER ADDITIONAL STORM WATER MANAGEMENT FEATURES

PERMANENT	
X	CURB & GUTTER
X	STORM SEWER INLETS
X	STORM SEWER
X	CULVERTS
	STORM WATER DETENTION POND
	VELOCITY DISSIPATION DEVICES
	OTHER (DESCRIBE):

ADDITIONAL COMMENTS:

OTHER BEST MANAGEMENT (HOUSEKEEPING) PRACTICES
THE FOLLOWING INDICATED PRACTICES SHALL BE FOLLOWED:

LIME STABILIZATION
X ATTACHED BMP S-11 FROM NCTCOG CONSTRUCTION BMP MANUAL
— OTHER (DESCRIBE):

SOLID WASTE MANAGEMENT
X ATTACHED BMP W-2 FROM NCTCOG CONSTRUCTION BMP MANUAL
— OTHER (DESCRIBE):

HAZARDOUS WASTE MANAGEMENT
X ATTACHED BMP W-2 FROM NCTCOG CONSTRUCTION BMP MANUAL
— STORAGE AREAS (DESCRIBE):

— OTHER (DESCRIBE):

CONCRETE WASTE MANAGEMENT
X ATTACHED BMP W-3 FROM NCTCOG CONSTRUCTION BMP MANUAL
— OTHER (DESCRIBE):

SANDBLASTING WASTE MANAGEMENT
X ATTACHED BMP W-4 FROM NCTCOG CONSTRUCTION BMP MANUAL
— OTHER (DESCRIBE):

DUST REDUCTION MEASURES
X DISTURBED AREAS DAMPENED PERIODICALLY FOR DUST CONTROL
— EXCESS DIRT ON ADJACENT ROADS REMOVED DAILY
— OTHER (DESCRIBE):

SIGNATORY REQUIREMENTS

THE CITY HAS ADOPTED THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) CONSTRUCTION BMP MANUAL. THESE OUTLINES WERE DEVELOPED AS AN AID FOR THOSE PREPARING STORM WATER POLLUTION PREVENTION PLANS (SW3P'S) FOR VARIOUS CONSTRUCTION ACTIVITIES IN THE CITY. THEIR USE DOES NOT RELIEVE THE DESIGN ENGINEER OR OPERATOR(S) FROM COMPLYING WITH THE NCTCOG BMP MANUAL OR THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION SITES.

THE SW3P SHALL BE SEALED BY A TEXAS REGISTERED PROFESSIONAL ENGINEER AND CERTIFIED BY THE OWNER THAT THE INFORMATION IS TRUE AND THAT THEY ASSUME RESPONSIBILITY FOR THE PLAN. ADDITIONALLY, THEY SHALL CERTIFY THAT THE PLAN MEETS STATE AND LOCAL REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL AND STORM WATER QUALITY. IN ALL CASES, A DULY AUTHORIZED REPRESENTATIVE AS INDICATED IN THE GENERAL PERMIT MAY CERTIFY THIS PLAN.

PRIOR TO THE COMMENCEMENT OF WORK, THE OWNER AND GENERAL CONTRACTOR MUST SUBMIT NOTICES OF INTENT (NOI) AS CO-PERMITTEES TO DISCHARGE STORM WATER FROM A CONSTRUCTION SITE UNDER THE NPDES PERMIT. ADDITIONALLY, ALL CONTRACTORS AND SUBCONTRACTORS (INCLUDING FRANCHISE UTILITIES) WHOSE ACTIVITIES IMPACT THE SW3P MUST SIGN AN APPROVED CERTIFICATION THAT THEY UNDERSTAND THEIR RESPONSIBILITIES UNDER THE PLAN. NO WORK WILL BE ALLOWED UNTIL COPIES OF ALL APPROPRIATE NOI'S AND CERTIFICATIONS ARE RECEIVED BY THE CITY.

EROSION AND SEDIMENT CONTROLS

MAINTENANCE/INSPECTION PROCEDURES

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN A RAIN GAUGE UTILIZING MIN. 0.1 INCH INCREMENTS AT THE PROJECT SITE.
2. CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF ANY STORM EVENT OF 0.5 INCH OR GREATER. IF A REPAIR IS NECESSARY IT WILL BE DONE AT THE EARLIEST PRACTICABLE DATE.
3. INSPECTION WILL BE PERFORMED BY THE OWNERS REPRESENTATIVE AT LEAST ONCE A WEEK AS WELL AS AFTER EVERY 0.5 INCH OF RAIN OR GREATER. AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE FOR EACH INSPECTION AND KEPT AT THE PROJECT SITE. THE INSPECTION SHOULD USE THE OPERATOR INSPECTION FORM IN THE NCTCOG CONSTRUCTION BMP MANUAL OR OTHER FORM APPROVED BY THE CITY.
4. THE CONTRACTOR SHALL KEEP RECORDS OF THE CONSTRUCTION ACTIVITY ON THE SITE.

OTHER (DESCRIBE)

ALLOWABLE NON-STORM WATER DISCHARGES

- DISCHARGES FROM FIRE FIGHTING ACTIVITIES.
- FIRE HYDRANT FLUSHINGS. *
- WATER USED TO WASH VEHICLES OR CONTROL DUST.
- POTABLE WATER SOURCES (INCLUDING WATERLINE FLUSHINGS CONTAINING LESS THAN 1000 GALLONS). *
- UNCONTAMINATED GROUND WATER (INCLUDING DEWATERING GROUNDWATER INFILTRATION).
- FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS.
- SPRINGS, RIPARIAN HABITATS, WETLANDS AND UNCONTAMINATED GROUNDWATER.
- IRRIGATION WATER.
- EXTERIOR BUILDING WASH DOWN WITHOUT DETERGENTS.
- PAVEMENT WASH WATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILL MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED.
- AIR CONDITIONING CONDENSATE.

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* HEAVILY CHLORINATED WATER (3.5 MG/L OR GREATER FREE CHLORINE) RESULTING FROM WATER LINE STERILIZATION SHALL BE DIRECTED UNDER PERMIT TO THE SANITARY SEWER UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL APPLY TO THE ENGINEERING DEPARTMENT FOR A SANITARY SEWER DISCHARGE PERMIT AFTER THE MANDATORY CHLORINE RETENTION TIME (USUALLY 24 HOURS). THE HEAVILY CHLORINATED WATER MAY BE DISCHARGED TO THE SANITARY SEWER, BEGINNING TWO WORKING DAYS AFTER PERMIT APPLICATION.

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Mike Glenn — Signed
July 25, 2018 — Date
Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059
Mike Glenn
The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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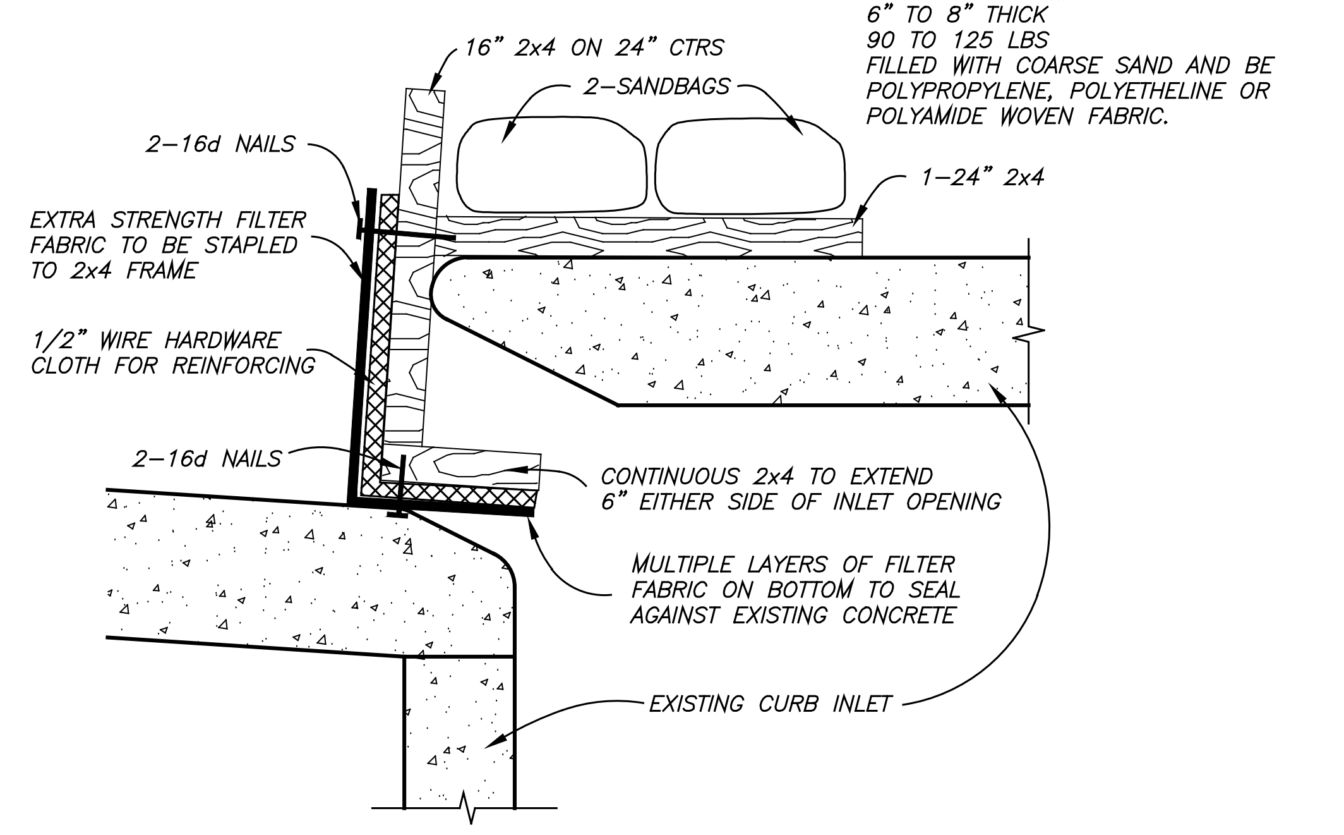
S.W.P.P.P.
DETAILS

Job. No. 1759-03-01	**Sheet No.** CG1.6
Drawn By: RAH	
Date: 02-28-2017	

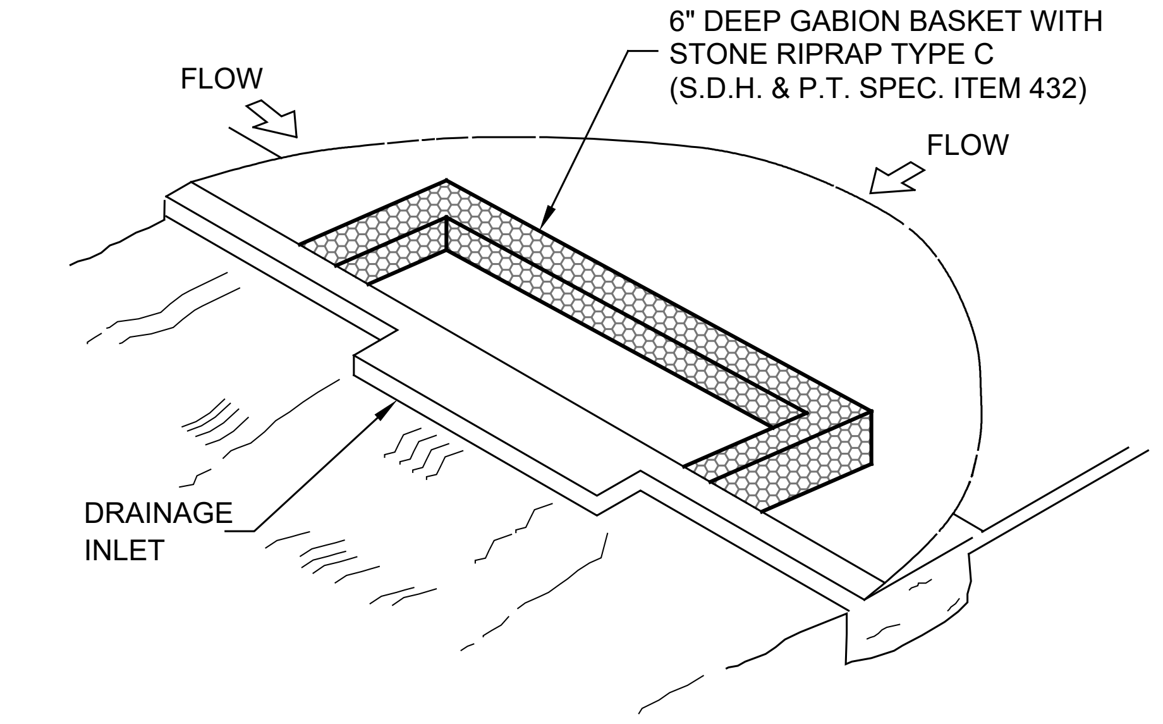
Plotted: Jul 25, 2018, 12:35 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA RECORD DRAWINGS.dwg

EROSION CONTROL PLAN


NOTE:
SANDBAGS TO BE 24" TO 30" IN LENGTH
16" TO 18" IN WIDTH
6" TO 8" THICK
90 TO 125 LBS
FILLED WITH COARSE SAND AND BE POLYPROPYLENE, POLYETHELINE OR POLYAMIDE WOVEN FABRIC.
16" 2x4 ON 24" CTRS
2–SANDBAGS
2–16d NAILS
1–24" 2x4
EXTRA STRENGTH FILTER FABRIC TO BE STAPLED TO 2x4 FRAME
1/2" WIRE HARDWARE CLOTH FOR REINFORCING
2–16d NAILS
CONTINUOUS 2x4 TO EXTEND 6" EITHER SIDE OF INLET OPENING
MULTIPLE LAYERS OF FILTER FABRIC ON BOTTOM TO SEAL AGAINST EXISTING CONCRETE
EXISTING CURB INLET

CURB INLET PROTECTION ON GRADE

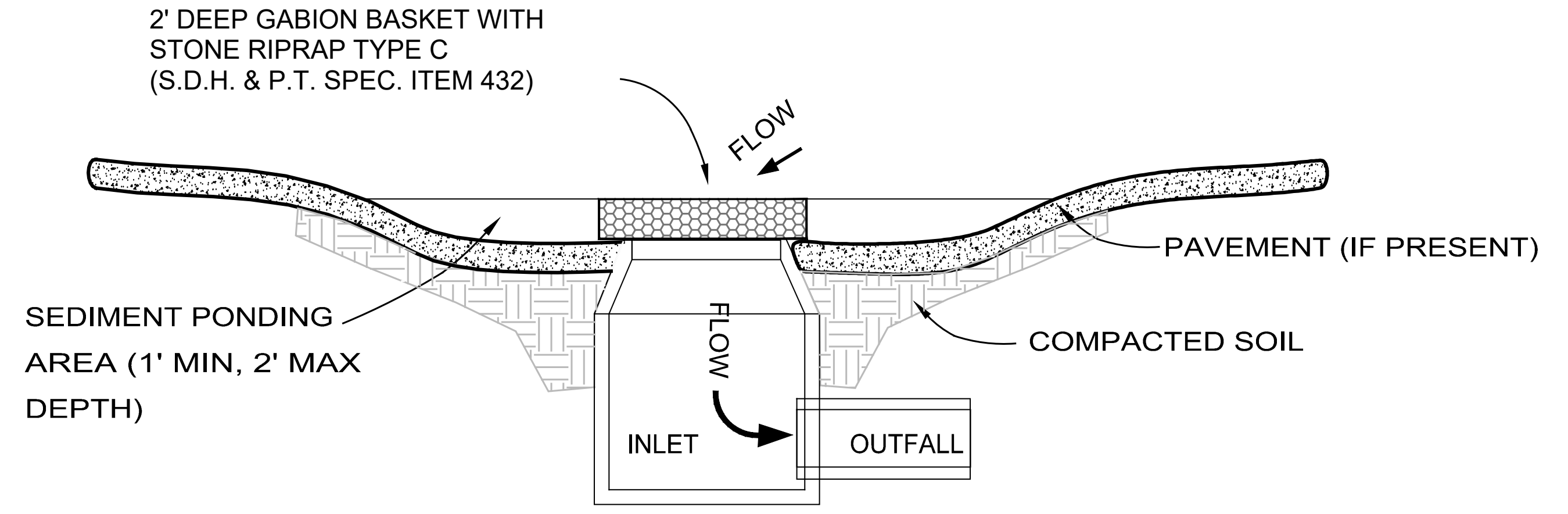
NOT TO SCALE


6" DEEP GABION BASKET WITH STONE RIPRAP TYPE C (S.D.H. & P.T. SPEC. ITEM 432)
FLOW
FLOW
DRAINAGE INLET

TO BE INSTALLED AT EACH LOW POINT INLET

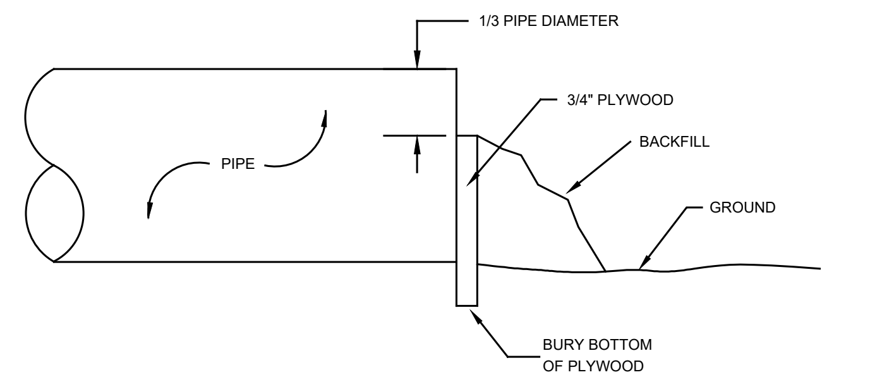
LOW POINT CURB INLET SEDIMENT FILTER

N.T.S.


2' DEEP GABION BASKET WITH STONE RIPRAP TYPE C (S.D.H. & P.T. SPEC. ITEM 432)
FLOW
PAVEMENT (IF PRESENT)
SEDIMENT PONDING AREA (1' MIN, 2' MAX DEPTH)
COMPACTED SOIL
FLOW
INLET
OUTFALL

SEDIMENT POND @ CURB INLETS & AREA DRAINS

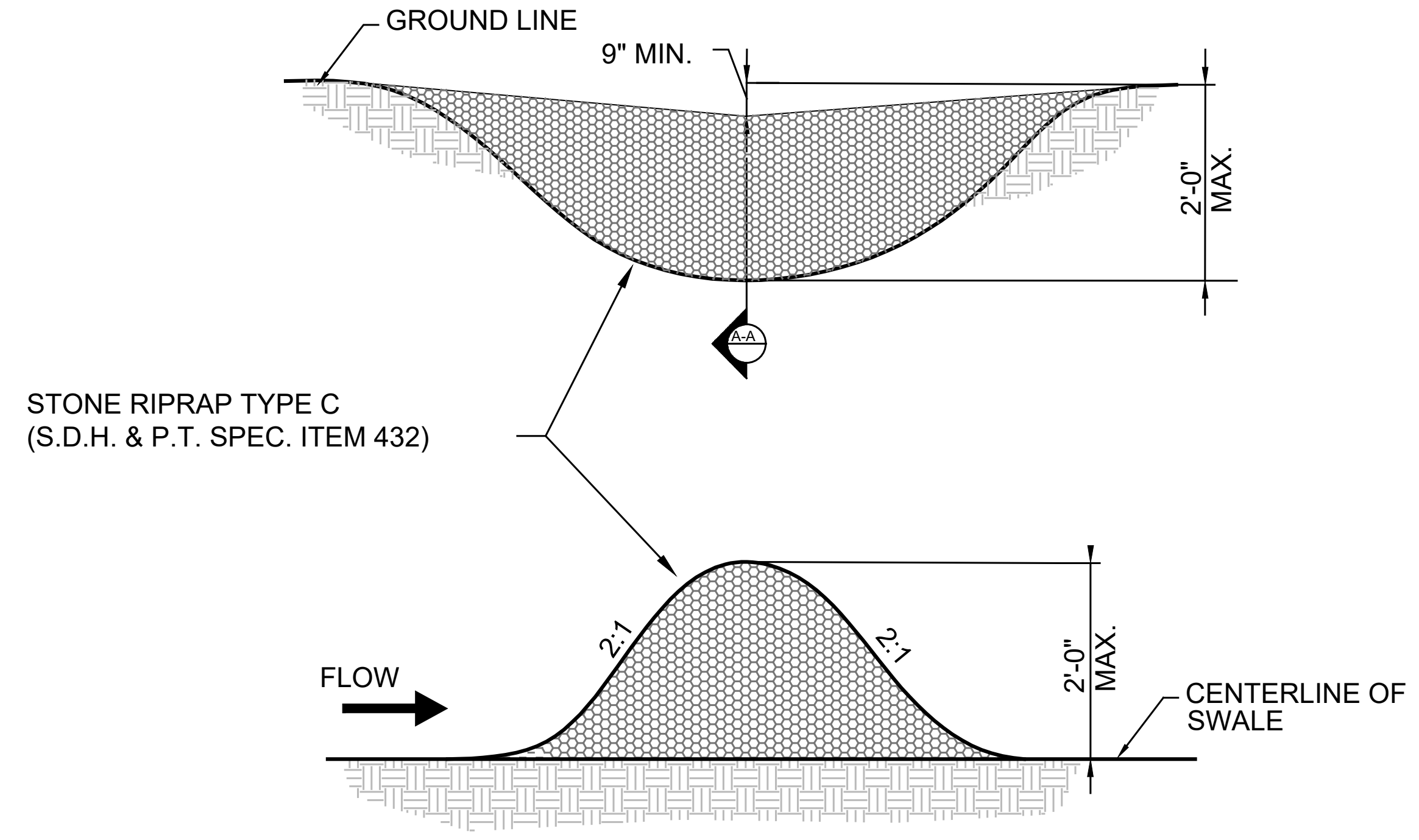
NOT TO SCALE



NOTE:
DUE TO ANY STOPPAGE IN CONSTRUCTION OR AT COMPLETION OF LINE, CONTRACTOR SHALL INSTALL 3/4" PLYWOOD OVER END OF PIPE AND BACKFILL TO SECURELY HOLD IN PLACE TO PREVENT SEDIMENT FROM ENTERING PIPE

PLYWOOD PROTECTION AT PIPE

N.T.S.



SECTION A-A

ROCK CHECK DAM DETAIL

N.T.S.

Solid Waste Management

DESCRIPTION
Large volumes of solid waste are often generated at construction sites including: packaging, pallets, wood waste, concrete waste, soil, electrical wiring, cuttings, and a variety of other materials. The solid waste management practice lists techniques to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices.

PRIMARY USE
These practices should be a part of all construction practices. By limiting the trash and debris on site, storm water quality is improved along with reduced clean up requirements at the completion of the project.

APPLICATIONS
The solid waste management practice for construction sites is based on proper storage and disposal practices by construction workers and supervisors.. Key elements of the program are education and modification of improper disposal habits.. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the recommendations and procedures are followed. Following are lists describing the targeted materials and recommended procedures:

- ☐ Targeted Solid Waste Materials
  - Paper and cardboard containers
  - Plastic packaging
  - Styrofoam packing and forms
  - Insulation materials (non–hazardous)
  - Wood pallets
  - Wood cuttings
  - Pipe and electrical cuttings
  - concrete, brick, and mortar waste
  - Shingle cuttings and waste
  - Roofing tar
  - Steel (cuttings, nails, rust residue)
  - Gypsum board cuttings and waste
  - SROCKWALLing cuttings and waste
  - Miscellaneous cuttings and waste
  - Food waste
  - Demolition waste

Storage Procedures
- ☐ Wherever possible, minimize production of solid waste materials.
- ☐ Designate a foreman or supervisor to oversee and enforce proper solid waste procedures.
- ☐ Instruct construction workers in proper solid waste procedures.
- ☐ Segregate potentially hazardous waste from non–hazardous construction site debris.
- ☐ Keep solid waste materials under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff.
- ☐ Store waste materials away from drainage ditches, swales and catch basins.
- ☐ Do not allow trash containers to overflow.
- ☐ Do not allow waste materials to accumulate on the ground.
- ☐ Prohibit littering by workers and visitors.
- ☐ Police area daily for litter and debris.
- ☐ Enforce solid waste handling and storage procedures.

Disposal Procedures
- ☐ If feasible, segregate recyclable wastes from non–recyclable waste materials and dispose of properly.
- ☐ General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).
- ☐ Use waste facilities approved by local jurisdiction.
- ☐ Runoff which comes into contact with unprotected waste shall be directed into structural be dirt treatment such as silt fence to remove debris.

Education
- ☐ Educate all workers on solid waste storage and disposal procedures.
- ☐ Instruct workers in identification of solid waste and hazardous waste.
- ☐ Have regular meetings to discuss and reinforce disposal procedures (incorporate in regular safety seminars).
- ☐ Clearly mark on all solid waste containers which materials are acceptable.

Quality Control
- ☐ Foreman and/or construction supervisor shall monitor on–site solid waste storage and disposal procedures.
- ☐ Discipline workers who repeatedly violate procedures.

Requirements
- ☐ Job–site waste handling and disposal education and awareness program.
- ☐ Commitment by management to implement and enforce Solid Waste Management Program.
- ☐ Compliance by workers.
- ☐ Sufficient and appropriate waste storage containers.
- ☐ Timely removal of stored solid waste materials.
- ☐ Possible modest cost impact for additional waste storage containers.
- ☐ Minimal overall cost impact.

LIMITATIONS
Only addresses non–hazardous solid waste.
One part of a comprehensive construction site management program.

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

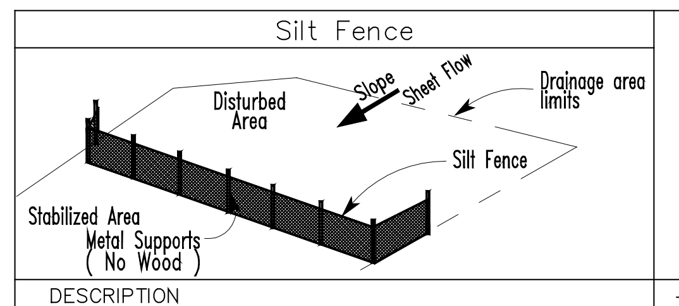
Targeted Constituents
○ Sediment
● Nutrients Toxic Materials
○ Oil & Grease
● Floatable Materials
● Other Construction Wastes

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

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

W–2

Silt Fence



DESCRIPTION
A silt fence consists of geotextile fabric supported by poultry netting or other backing stretched between either wooden or metal posts with the lower edge of the fabric securely embedded in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. Silt fence provides both filtration and time for sedimentation to reduce sediment and it reduces the velocity of the runoff. Properly designed silt fence is economical since it can be re–located during construction and re–used on other projects.

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.

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 developments and linear (roadway) type projects. They are most effective with coarse to silty soil types. Due to the potential of clogging, silt fence should not be used with clay soil types.

In order to reduce the length of silt fence, it should be placed adjacent to the down slope side of the construction activities.

elevation (along a contour line) where possible.
- ☐ Maximum slope adjacent to the fence is 1:1
- ☐ Maximum distance of flow to silt fence should be 200 feet or less.
- ☐ Maximum concentrated flow to silt fence shall be 1 CFS per 20 feet of fence.
- ☐ If 50% or less of soil, by weight, passes the U.S. Standard sieve No. 200, select the equivalent opening size (E.O.S.) to retain 85% of the soil.
- ☐ Maximum equivalent opening size shall be 70 (#70 sieve).
- ☐ Minimum equivalent opening size shall be 100 (#100 sieve).
- ☐ If 85% or more of soil, by weight, passes the U.S. Standard sieve No. 200, silt fences shall not be used due to potential clogging.
- ☐ 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 stormwater. bypass of stormwater.

LIMITATIONS
Minor ponding will likely occur at the upstream side of the silt fence resulting in minor flocalized flooding.

Fences which are constructed in swales or low areas subject to concentrated flow may be concentrated overtopped resulting in failure of the filter fence. Silt fences subject to areas of concentrated flow (waterways with flows > 1 cfs) are not acceptable.

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
Inspections should be made on a weekly basis, especially after large storm events.
Ilf the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately one–half the height of the fence.

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

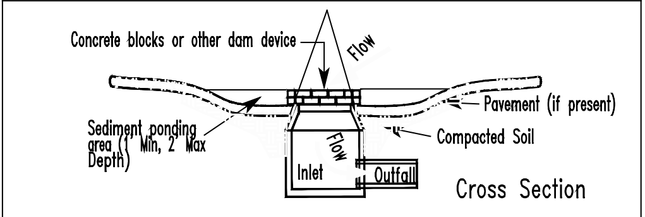
Targeted Constituents
● Sediment
○ Nutrients Toxic Materials
○ Oil & Grease
◒ Floatable Materials
○ Other Construction Wastes

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

Inlet Protection


Concrete blocks or other dam device
Flow
Pavement (if present)
Sediment ponding area (1' Min, 2' Max Depth)
Compacted Soil
Flow
Inlet
Outfall
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 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 is normally used as 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 and pedestrian safety and maintenance problems. Inlet protection can reduce sediment in storm sewer system by serving as a back up system to on–site controls or by reducing sediment loads from controls with limited effectiveness such as straw bale dikes.

APPLICATIONS
Different 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 five (5) percent. This type of protection is not applicable in paved areas. (See details, Section 9)
- ☐ Block and gravel (crushed stone, recycled concrete is also appropriate) protection is used when flows exceed 0.5 cfs and it is necessary to allow for overtopping to prevent flooding (See sketch at top of fact sheet).
- ☐ Wire mesh and gravel protection (crushed stone, recycled concrete is also appropriate) is used when flows exceed 0.5 cfs and construction traffic may occur over the inlet. This form of protection may be used with both curb and drop inlets (See details Section 9).
- ☐ Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm crain 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 contributing drainage area entering the inlet for full effectiveness. Smaller volumes can be used for reduced effectiveness (SEE details Section 9).

Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- ☐ Maximum depth of flow shall be (8) eight inches or less depending on vehicular and pedestrian traffic.
- ☐ Positive drainage is critical in the design of inlet protection. If overflow is not prodded for at the inlet, flows which exceed the capacity of the inlet protection system shall be routed through established swales, streets or other watercourses to minimize damage due to ponding and to provide for public safety.

LIMITATIONS
Ponding will occur at the inlet with possible flooding as a result.

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

MAINTENANCE REQUIREMENTS
Inspections should be made on a weekly basis, especially after large (>0.5 inches) storm events. 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 fence. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using stone filters, when the stone filter becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of gravel 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.

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

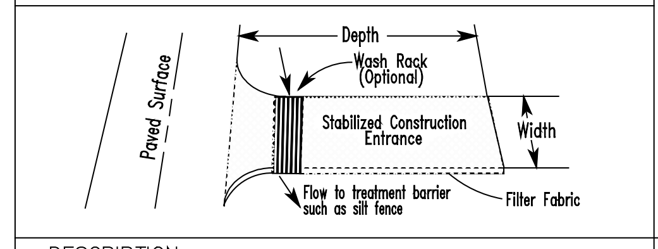
Targeted Constituents
◒ Sediment
○ Nutrients Toxic Materials
○ Oil & Grease
◒ Floatable Materials
○ Other Construction Wastes

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

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

Fe=0.67–0.75
S–4

Stabilized Construction Entrance


Depth
Wash Rack (Optional)
Paved Surface
Stabilized Construction Entrance
Width
Flow to treatment barrier such as silt fence
Filter Fabric

DESCRIPTION
A stabilized construction entrance consists of a pad consisting of gravel, crushed stone, or other rock like material on top of geotextile filter cloth to facilitate the wash down and removal of sediment and other debris from construction equipment prior to exiting the construction site. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking. For long term projects, cattle guards or other type of permanent rack system can be used in conjunction with a wash rack. This directly addresses the problem of silt and mud deposition in roadways used for construction site access.

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 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 5 acres and a recommended practice for all construction sites. It is not suitable for long, linear projects. If possible, small 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 properly graded so that storm water is not allowed to leave the site and enter roadways.
- ☐ Minimum width of entrance shall be 15 feet, but in no case shall the width be less than that of the entry way to be used.
- ☐ Minimum depth of entrance shall be 12 inches for the entire length of the control.
- ☐ Minimum dimensions for entrances of tract areas less than 1 acre shall be an average lot depth of 100 feet with a minimum entrance width of 15 feet and a minimum entrance depth of 20 feet.
- ☐ Minimum 4" to 6" rock, No crushed concrete allowed.

LIMITATIONS
Selection of the construction entrance location is critical in that 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
Inspections should be made on a regular basis and after large storm events in order to ascertain whether or not sediment and pollution are being effectively detained on site.

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.

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

Concrete Waste Management

DESCRIPTION
Concrete waste at construction sites comes in two forms; 1)excess fresh concrete mix including truck and equipment washing, and 2) concrete dust and concrete debris resulting from demolition. Both forms have the potential to impact water quality through storm water runoff contact with the waste.

PRIMARY USE
Concrete waste is present at most construction sites. This BMP should be utilized at sites in which concrete waste is present.

APPLICATIONS
A number of water quality parameters can be affected by introduction of concrete – especially fresh concrete. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life. Suspended solids in the form of both cement and aggregate dust are also generated from both fresh and demolished concrete waste.

Current Unacceptable Waste Concrete Disposal Practices
- ☐ Dumping in vacant areas on the job–site.
- ☐ Illicit dumping off–site.
- ☐ Dumping into ditches or drainage facilities.

Recommended Disposal Practices
- ☐ Avoid unacceptable disposal practices listed above.
- ☐ Develop pre–determined, safe concrete disposal areas.
- ☐ Provide a washout area with a minimum of 6 cubic feet of containment area volume for every 10 cubic yards of concrete poured.
- ☐ Never dump waste concrete illicitly or without property owners knowledge and consent.
- ☐ Treat runoff from storage areas through the use of structural controls as required.

Education
- ☐ Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).
- ☐ Supervisors must be made aware of the potential environmental consequences of improperly handled concrete waste.

Enforcement
- ☐ The construction site manager or foreman must ensure that employees and pre–mix companies follow proper procedures for concrete disposal and equipment washing.
- ☐ Employees violating disposal or equipment cleaning directives must be re–educated or disciplined if necessary.

Demolition Practices
- ☐ Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters. Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

Requirements
- ☐ Use pre–determined disposal sites for waste concrete.
- ☐ Prohibit dumping waste concrete anywhere but pre–determined areas.
- ☐ Assign pre–determined truck and equipment washing areas
- ☐ Educate drivers and operators on proper disposal and equipment cleaning procedures.

Education
- ☐ Minimal cost impact for training and monitoring.
- ☐ Concrete disposal cost depends on availability and distance to suitable disposal areas.
- ☐ Additional costs involved in equipment washing could be significant.

LIMITATIONS
This concrete waste management program is one part of a comprehensive construction site waste management program.

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

W–3

ALLOWABLE NON–STORM WATER DISCHARGES

- ■ DISCHARGES FROM FIRE FIGHTING ACTIVITIES.
- ■ FIRE HYDRANT FLUSHINGS. *
- ■ WATER USED TO WASH VEHICLES OR CONTROL DUST.
- ■ POTABLE WATER SOURCES (INCLUDING WATERLINE FLUSHINGS CONTAINING LESS THAN 1000 GALLONS). *
- ■ UNCONTAMINATED GROUND WATER (INCLUDING DEWATERING GROUNDWATER INFILTRATION).
- ■ FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS MATERIALS SUCH AS SOLVENTS.
- ■ SPRINGS, RIPARIAN HABITATS, WETLANDS AND UNCONTAMINATED GROUNDWATER.
- ■ IRRIGATION WATER.
- ■ EXTERIOR BUILDING WASH DOWN WITHOUT DETERGENTS.
- ■ PAVEMENT WASH WATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILL MATERIAL HAS BEEN REMOVED) AND WHERE DETERGENTS ARE NOT USED.
- ■ AIR CONDITIONING CONDENSATE.

* HEAVILY CHLORINATED WATER (3.5 MG/L OR GREATER FREE CHLORINE) RESULTING FROM WATER LINE STERILIZATION SHALL BE DIRECTED UNDER PERMIT TO THE SANITARY SEWER UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL APPLY TO THE ENGINEERING DEPARTMENT FOR A SANITARY SEWER DISCHARGE PERMIT AFTER THE MANDATORY CHLORINE RETENTION TIME (USUALLY 24 HOURS). THE HEAVILY CHLORINATED WATER MAY BE DISCHARGED TO THE SANITARY SEWER, BEGINNING TWO WORKING DAYS AFTER PERMIT APPLICATION.

Legend

—SF—	Silt Fence	S	Covered Storage
— — —	Limits of Construction	▨	Vegetated/Preserved Buffer Strip
———	Property Boundary	©	Concrete Wash Area
—600—	Elevation Contours	∘∘∘	Inlet Protection
Building	Building Foot Print		North Arrow
T	Covered Trash	▨	Stabilized Construction Entrance ☐ Rock ☐ Daily Mulch ☐ Swale ☐ Other (Specify) ______ ☐ Erosion Mat
——→	Direction of Storm Water Runoff Flow		

MAINTENANCE AND INSPECTION PROCEDURES: CONTROL MEASURES WILL BE INSPECTED AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF ANY STORM EVENT OR 0.5 INCHES OR GREATER. IF A REPAIR IS NECESSARY IT WILL BE DONE AT THE EARLIEST PRACTICABLE DATE BUT WITHIN 48 HOURS.

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn   Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
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IRVING, TEXAS 75062

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

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S.W.P.P.P.
DETAILS

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CG1.7

Plotted: Jul 25, 2018, 12:35 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKS\D\LOFLAND 153 AC CCA\BID SET\CCA RECORD DRAWINGS.dwg

DRAINAGE AREA MAP RATIONAL METHOD

Drainage Area Calculations- City of Rockwall					
Drainage Area Name	**"C"**	**Intensity (in/hr)**	**Area (ac)**	**Q 100 (cfs)**	**Notes**
EX-1	0.9	9.8	1.68	14.82	To exist. 2-2'x4' RCB under 205 bypass
EX-2	0.5	9.8	3.31	16.22	To exist. 3'x3' "Y" inlet
EX-3	0.9	9.8	0.51	4.50	To exist. 10' curb inlet
EX-4	0.5	9.8	2.38	11.66	To exist. 10' curb inlet
EX-5	0.9	9.8	4.67	41.19	Exist. area inlet connected to 21" RCP
EX-6	0.5	9.8	4.00	19.60	Exist. 36" RCP
EX-7	0.5	9.8	61.88	303.21	To Exist. 8'x4' RCB
EX-10	0.9	9.8	3.37	29.72	To exist. 10' curb inlet
EX-11	0.9	9.8	2.11	18.61	To exist. 10' curb inlet
EX-12	0.5	9.8	2.20	10.78	To exist. 10' curb inlet
EX-13	0.5	9.8	1.81	8.87	To exist. 10' curb inlet
EX-14	0.5	9.8	2.45	12.01	To Culvert A Outfall
A-0	0.9	9.8	3.24	28.58	To 3'x3' area inlet and 27" stubbed RCP
A-1	0.9	9.8	3.41	30.08	Proposed inlets
A-2	0.9	9.8	1.63	14.38	Proposed 20' curb inlet
A-3	0.9	9.8	2.09	18.43	Proposed 20' curb inlet
A-4	0.9	9.8	0.80	7.06	Proposed 15' curb inlet
A-5	0.9	9.8	1.63	14.38	Proposed 15' curb inlet
A-6	0.9	9.8	0.72	6.35	Proposed 15' curb inlet
A-7	0.9	9.8	0.64	5.64	Proposed 10' curb inlet
A-8	0.9	9.8	1.84	16.23	Proposed 20' curb inlet
B-1	0.9	9.8	1.66	14.64	Proposed 20' curb inlet
B-2	0.9	9.8	1.00	8.82	Proposed 15' curb inlet
B-3	0.9	9.8	1.50	13.23	Proposed 20' curb inlet
C-1	0.9	9.8	1.40	12.35	Proposed 24" Culvert to Culvert B
OS-1	0.5	9.8	69.63	341.19	Offsite area going to proposed Culvert A
OS-2	0.5	9.8	30.52	149.55	Offsite area going to proposed Culvert A
OS-3	0.5	9.8	83.00	406.70	Offsite area going to proposed Culvert A
OS-4	0.5	9.8	70.03	343.15	Offsite area going to proposed Culvert B
OS-5	0.5	9.8	5.72	28.03	Offsite area going to proposed Culvert B

INLET CAPACITY CALCULATIONS

GUTTER FLOW / INLET COMPUTATIONS

INLET			D.A. No.	D.A. Area	C	Time to Inlet	Intensity	Q	CO	Q_T	n	S_L	S_X	a	W	S'_W	S_W	E_o	Se	y	T	L_R	L	E	Qi	Qa-Qi	Bypass Target:	Remarks
ID	LOCATION	TYPE																										
				acres		min	in/hr	cfs	cfs	cfs	constant	ft/ft	ft/ft	ft	ft	ft/ft	ft/ft		ft/ft	ft	ft	ft	ft		cfs	cfs		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
A0	Sta10+40.29 205 Bypass (RT)	On Grade	A0	3.24	0.50	10	9.80	15.88	0.00	15.88	0.0175	0.0015	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**n/a**	n/a	3.00	3	1.00	15.88	0.00		3'x3' "Y" inlet
A1a	Sta 14+73.50 205 Bypass (RT)	On Grade	A1	0.72	0.90	10	9.80	6.35	0.00	6.35	0.0175	0.0055	0.021	0.5	2.00	0.25	0.27	0.30	0.09	0.34	16.27	12.76	10	0.78	4.98	1.37	A1N	
A1N	Sta 15+21.50 205 Bypass (RT)	Sag	A1	1.00	0.90	10	9.80	8.82	1.37	10.19	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.23	0.08	0.45	21.78	14.63	20	1.00	10.19	0.00		
A1S	Sta 15+21.50 205 Bypass (RT)	Sag	A1	1.00	0.90	10	9.80	8.82	1.70	10.52	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.22	0.08	0.46	22.04	14.90	20	1.00	10.52	0.00		
A1b	Sta15+67.88 205 Bypass (RT)	On Grade	A1	0.69	0.90	10	9.80	6.09	0.00	6.09	0.0175	0.0090	0.021	0.5	2.00	0.25	0.27	0.33	0.10	0.30	14.60	13.89	10	0.72	4.38	1.70	A1S	
A2	Sta 40+63.09 205 Bypass (LT)	On Grade	A2	1.90	0.90	10	9.80	16.76	0.00	16.76	0.0175	0.0080	0.021	0.5	2.00	0.25	0.27	0.23	0.08	0.45	21.83	24.23	20	0.83	13.84	2.92	A3	
A3	Sta 51+92.57 205 Bypass (LT)	On Grade	A3	2.09	0.90	10	9.80	18.43	2.92	21.36	0.0175	0.0200	0.021	0.5	2.00	0.25	0.27	0.24	0.08	0.42	20.13	33.93	20	0.59	12.59	8.77	A4	
A4	Sta 54+26.66 205 Bypass (LT)	On Grade	A4	0.80	0.90	10	9.80	7.06	8.77	15.82	0.0175	0.0100	0.021	0.5	2.00	0.25	0.27	0.24	0.08	0.43	20.49	23.48	15	0.64	10.11	5.72	A6N	
A6N	Sta 55+22.50 205 Bypass (LT)	Sag	A6	0.36	0.90	10	9.80	3.18	5.72	8.89	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.24	0.08	0.43	20.69	11.40	15	1.00	8.89	0.00		
A6S	Sta 55+22.50 205 Bypass (LT)	Sag	A6	0.36	0.90	10	9.80	3.18	4.11	7.29	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.25	0.08	0.40	19.20	10.15	15	1.00	7.29	0.00		
A5N	Sta 55+22.50 205 Bypass (RT)	Sag	A5	1.03	0.90	10	9.80	9.08	0.00	9.08	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.24	0.08	0.43	20.85	11.54	15	1.00	9.08	0.00		
A5S	Sta 55+22.50 205 Bypass (RT)	Sag	A5	0.60	0.90	10	9.80	5.29	0.00	5.29	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.28	0.09	0.35	17.03	8.35	15	1.00	5.29	0.00		
A7	Sta 56+17.35 205 Bypass (LT)	On Grade	A7	0.64	0.90	10	9.80	5.64	4.25	9.89	0.0175	0.0080	0.021	0.5	2.00	0.25	0.27	0.27	0.09	0.37	17.91	17.11	10	0.58	5.78	4.11	A6S	
A8	Sta 58+00 205 Bypass (LT)	On Grade	A8	1.84	0.90	10	9.80	16.23	0.00	16.23	0.0175	0.0150	0.021	0.5	2.00	0.25	0.27	0.25	0.08	0.40	19.17	27.09	20	0.74	11.98	4.25	A7	
B1N	Sta 69+22.50 205 Bypass (LT)	Sag	B1	0.88	0.90	10	9.80	7.76	3.37	11.13	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.22	0.08	0.47	22.50	12.95	20	1.00	11.13	0.00		
B1S	Sta 69+22.50 205 Bypass (LT)	Sag	B1	0.78	0.90	10	9.80	6.88	0.00	6.88	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.26	0.09	0.39	18.79	9.81	20	1.00	6.88	0.00		
B2N	Sta 69+22.50 205 Bypass (RT)	Sag	B2	0.74	0.90	10	9.80	6.53	0.00	6.53	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.26	0.09	0.38	18.42	9.50	15	1.00	6.53	0.00		
B2S	Sta 69+22.50 205 Bypass (RT)	Sag	B2	0.26	0.90	10	9.80	2.29	0.00	2.29	0.0175	0.0030	0.021	0.5	2.00	0.25	0.27	0.37	0.11	0.26	12.44	4.69	15	1.00	2.29	0.00		
B3	Sta 67+00 Bypass (LT)	On Grade	B3	1.50	0.90	10	9.80	13.23	0.00	13.23	0.0175	0.0200	0.021	0.5	2.00	0.25	0.27	0.29	0.09	0.35	16.82	26.83	20	0.75	9.86	3.37	B1N	

LEGEND:

- Q - Discharge Calculated for D.A.
- CO - Carryover from upstream inlet
- Q_T - Actual Discharge = Q+CO
- n - Manning's roughness coefficient
- S_L - Longitudinal slope of roadway
- S_X or S_W - Cross-slope or Gutter Slope
- y - Gutter depth of flow
- W - Width of gutter conveying flow
- a - depth of depression
- Lr - Required inlet for 100% interception
- L - Actual inlet length
- Q_i - Actual inlet interception
- T - Top width of spread
- E - Efficiency

This Record Drawing is a combination of the sealed engineering contract drawings for this project, modified by information furnished by the contractor reflecting changes in the Project made during construction. The original sealed drawings are on file at the offices of

FREESE AND NICHOLS, INC.
4055 INTERNATIONAL PLAZA, SUITE 200
FORT WORTH, TEXAS 76109-4895
(817) 735-7300
RECORD DRAWINGS PREPARED ON:
3/16/2009

THE SEAL THAT ORIGINALLY APPEARED ON THIS DOCUMENT WAS AUTHORIZED BY TRICIA H. HATLEY P.E. TEXAS NO: 83282 ON 2/5/2008. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

Freese and Nichols
1701 N. Market Street, Suite 500, LB 51
Dallas, Texas 75202-2001
Phone - (214) 920-2500
Fax - (214) 920-2565

CITY OF ROCKWALL, TEXAS
205 BYPASS CONSTRUCTION
CIVIL
STORM SEWER CALCULATIONS

NO.	ISSUE	BY	DATE
1	RECORD DRAWINGS	CJP	5/12/09

F&N JOB NO. ROK06114
DATE 05/2007
DESIGNED KAS
DRAWN KAS
REVISED
CHECKED TBS
FILE NAME CV-ALL-PL-DRNG04.dwg

VERIFY SCALE
0 1
Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

SHEET DA-4
SEQ. 25 OF 86

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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EXISTING DRAINAGE AREA MAP
8

Job. No.
1759-03-01
Drawn By:
RAH
Date:
02-28-2017
Sheet No.
CG
1.8A

FOR INFORMATION ONLY

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glen
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 *FAX 972-717-2176*
105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

ACAD Rel 17.0s (LMS Tech) User: KAS
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NOV 17, 2006 2:00:42 A.M. LTS: 1.00 PSLTS: 1
REFERENCE FILE: ..\..\STANDARD\34BORDER

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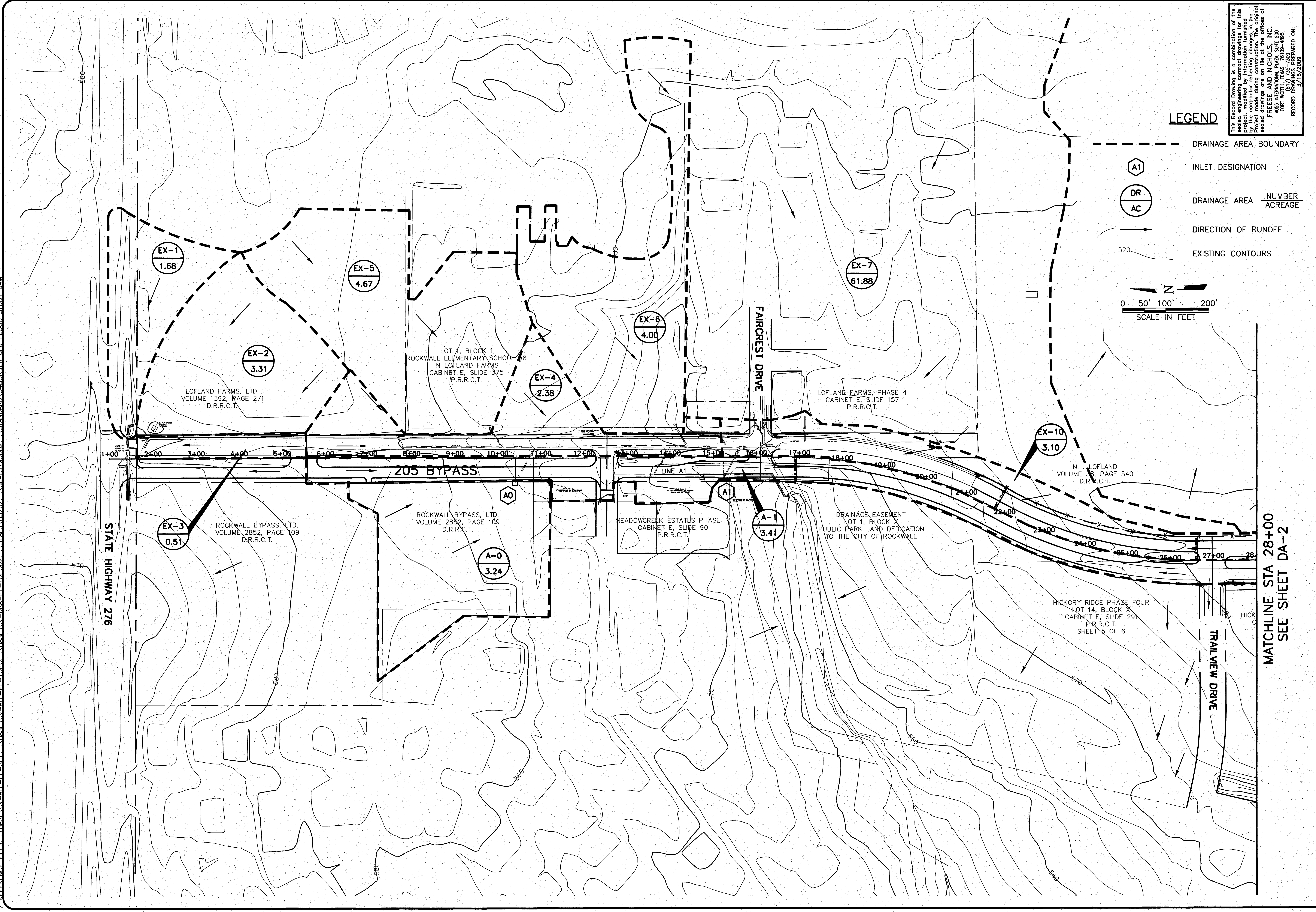

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CITY OF ROCKWALL, TEXAS

205 BYPASS CONSTRUCTION

CIVIL

DRAINAGE AREA MAP

NO.	ISSUE	BY	DATE	F&N JOB NO. ROK06114
				DATE 05/2007
				DESIGNED KAS
				DRAWN CHM
△	RECORD DRAWINGS	CJP	5/12/09	REVISED
				CHECKED TBS
				FILE NAME CV-ALL-PL-DRNG01.dwg

VERIFY SCALE 0 1" Bar is one inch on original drawing. If not one inch on this sheet, adjust scale.

SHEET DA-1
SEQ. 22 OF 86

FOR INFORMATION ONLY

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

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12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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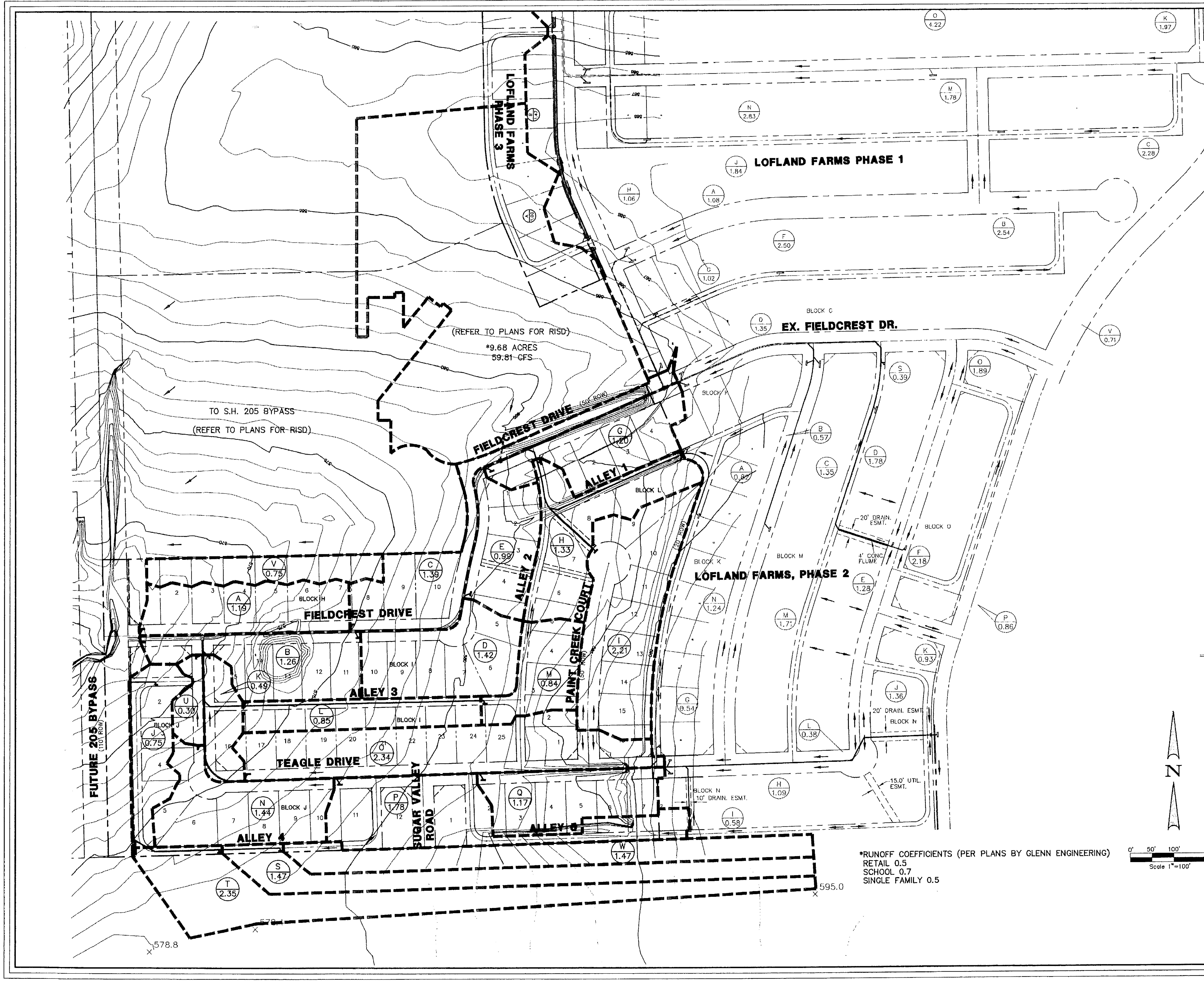
EXISTING DRAINAGE AREA MAP 8

Job. No. 1759-03-01	**Sheet No.** CG 1.8
Drawn By: RAH	
Date: 02-28-2017	



*RUNOFF COEFFICIENTS (PER PLANS BY GLENN ENGINEERING)
RETAIL 0.5
SCHOOL 0.7
SINGLE FAMILY 0.5

0' 50' 100' 200'
Scale 1"=100'

N

LEGEND

A / 0.45	AREA DESIGNATION
	AREA IN ACRES
←	FLOW ARROWS
▭	PROPOSED INLETS
▬	PROPOSED STORM SEWER SYSTEM
	DRAINAGE AREA BOUNDARY
▭	EX. INLETS
═ ═ ═	EX. STORM SEWER
	EXIST. CONTOURS

ASBUILT

Winkelmann & Associates, Inc. hereby states that this [illegible] to the best of our knowledge [illegible] from the originally approved [illegible] been made as per information [illegible] Winkelmann & Associates [illegible] correctness or quality of [illegible] performed

F E Middleton Jr
WINKELMANN & ASSOCIATES INC
2.12.02
DATE

BENCHMARK: ELEV. = 600.69
CITY OF ROCKWALL R-19
BRASS MONUMENT AT THE N/W CORNER OF SILVERVIEW & DIAMOND WAY. 500' ± SOUTH OF S.H. 276.

BENCHMARK: ELEV. = 583.56
R.R. SPIKE SET IN THE CENTERLINE OF S.H. 276 3600± WEST OF F.M. 549

NO.	DATE	REVISION	APPROV.

Winkelmann & Associates, Inc.
CONSULTING CIVIL ENGINEERS ■ SURVEYORS
6750 Hillcrest Plaza Drive, Suite 100
Dallas, Texas 75230
www.winkelmann.com
(972) 490-7090
(972) 490-7099 FAX

F. E. MIDDLETON, JR.
67449

THESE CONSTRUCTION PLANS WERE PREPARED UNDER THE RESPONSIBLE SUPERVISION OF F.E. MIDDLETON, JR., REGISTERED PROFESSIONAL ENGINEER NO. 67449.
F E Middleton Jr 11-19-01

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY F.E. MIDDLETON, JR., P.E. #67449

LOFLAND FARMS, PHASE 4
W.H. BAIRD SURVEY, ABSTRACT NO. 25
CITY OF ROCKWALL
ROCKWALL COUNTY, TEXAS

CONTINENTAL HOMES
621 WEST COLLEGE STREET
GRAPEVINE, TEXAS 76051

LOFLAND FARMS, PHASE 4
DRAINAGE AREA MAP

Scale : 1"=100' Date : 3-2-01
Designed By : RB
Drawn By : MK
Checked By : FEM
File : 320024DAM.DWG View :
Project No. : 32002.01

SHEET
1
OF
24

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Mike Glenn July 25, 2018
Signed Date
Glenn Engineering Corporation

GLENN ENGINEERING
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105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

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FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059
Mike Glenn

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EXISTING DRAINAGE AREA MAP 8

Job. No. 1759-03-01	**Sheet No.**
Drawn By: RAH	CG1.9
Date: 02-28-2017	

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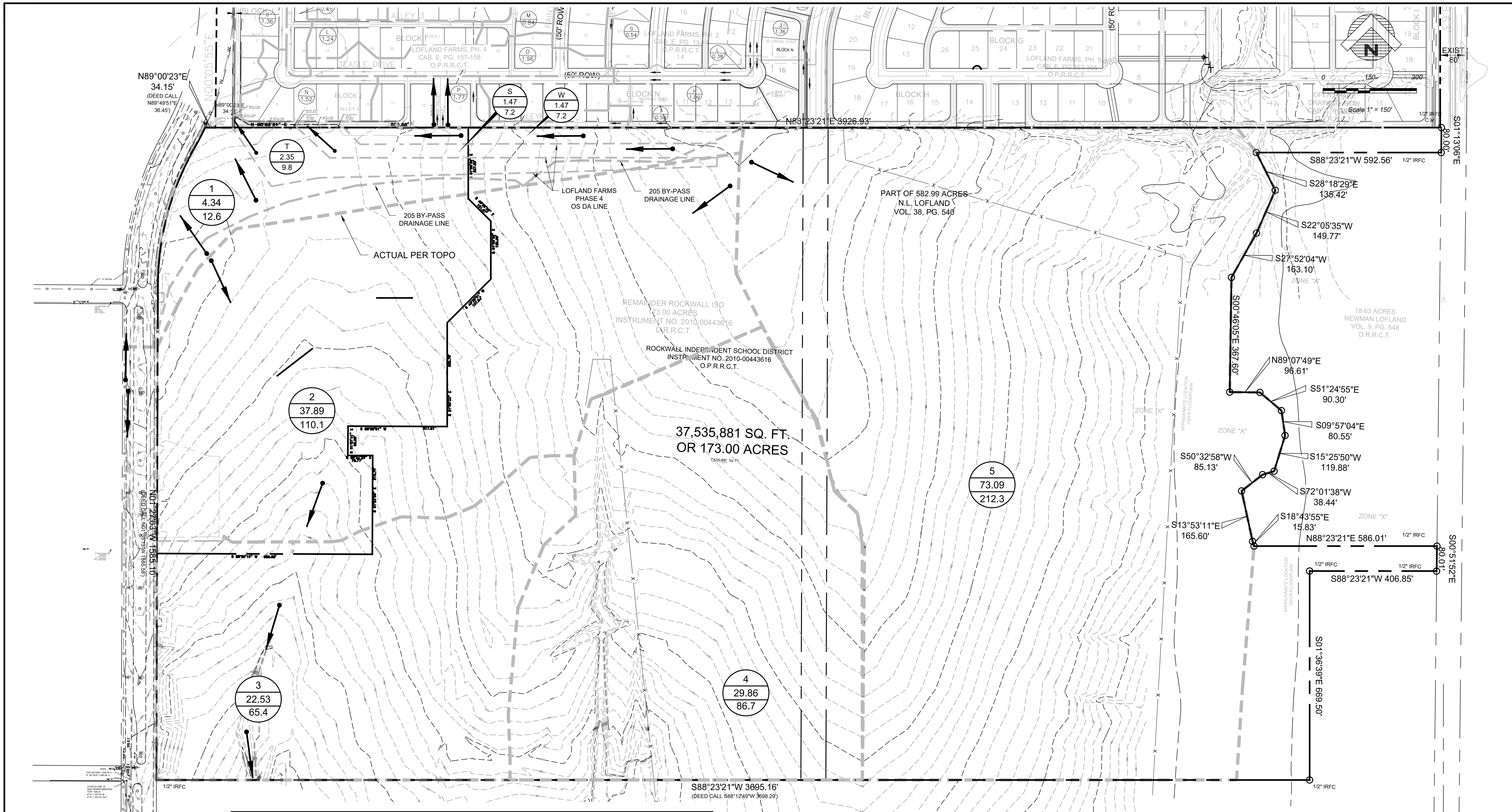

PRE EXISTING RUNOFF CALCULATIONS ROCKWALL CCA

AREA NO.	DRAINAGE AREA (ACRES)	TIME OF CONCENTRATION MINUTES	RUNOFF COEFFICIENT	INTENSITY "I100" (INCHES/HR)	DESIGN FLOW "Q 100" (CFS)	REMARKS
W	1.47	10	0.50	9.80	7.2	EXISTING DA AREA FROM LOFLAND - PHASE 4 - ALLEY INLET #1
S	1.47	10	0.50	9.80	7.2	EXISTING DA AREA FROM LOFLAND - PHASE 4 - ALLEY INLET #2
T	2.35	10	0.50	8.30	9.8	EXISTING DA AREA FROM LOFLAND - PHASE 4 - ALLEY INLET #3
1	4.34	20	0.35	8.30	12.6	EXISTING SHEET FLOW TO JOHN KING BLVD. AND LOFLAND PH 4, ALLEY 4
2	37.89	20	0.35	8.30	110.1	DEVELOPED AREA TO BE DETAINED - TO LITTLE BUFFALO CREEK
3	22.53	20	0.35	8.30	65.4	UNCHANGED (SAME AS "J") - TO LITTLE BUFFALO CREEK
4	29.86	20	0.35	8.30	86.7	UNCHANGED (SAME AS "K") - TO LITTLE BUFFALO CREEK
5	73.09	20	0.35	8.30	212.3	TO LONG BRANCH CREEK
	SUM OF ALL AREAS 173.00				SUM OF ALL AREAS "Q100" 487.2	

NOTES:

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Signed Mike Glenn   Date July 25, 2018

Glenn Engineering Corporation

DRAINAGE STUDY LEGEND

▮▮▮▮▮▮▮▮▮▮	DRAINAGE DIVIDE (EXIST)
A1	DRAINAGE AREA (EXIST)
0.25	NUMBER OF ACRES (EXIST)
2.00	DESIGN FLOW (NEW)
435	MAJOR CONTOUR (NEW)
436	MINOR CONTOUR (NEW)
— 435 —	MAJOR CONTOUR (EXISTING)
— 436 —	MINOR CONTOUR (EXISTING)
═	STORM SEWER (NEW)
□	AREA DRAIN (NEW)
▭	STORM SEWER (EXISTING)
▭	CURB INLET (EXISTING)
▬	RETAINING WALL (NEW)
FF = 475.00	PROPOSED FINISH FLOOR
═ ═ ═	EXISTING STORM SEWER
------475------	EXISTING CONTOUR
●──▶	DIRECTION OF FLOW

TOTAL DISTURBED ACRES

DISTURBED ACRES: 44.79

GLENN ENGINEERING
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ROCKWALL, TEXAS

MIKE GLENN
35059

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EXISTING ON-SITE DRAINAGE AREA MAP
8

Job. No.: 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No.: CG 1.10

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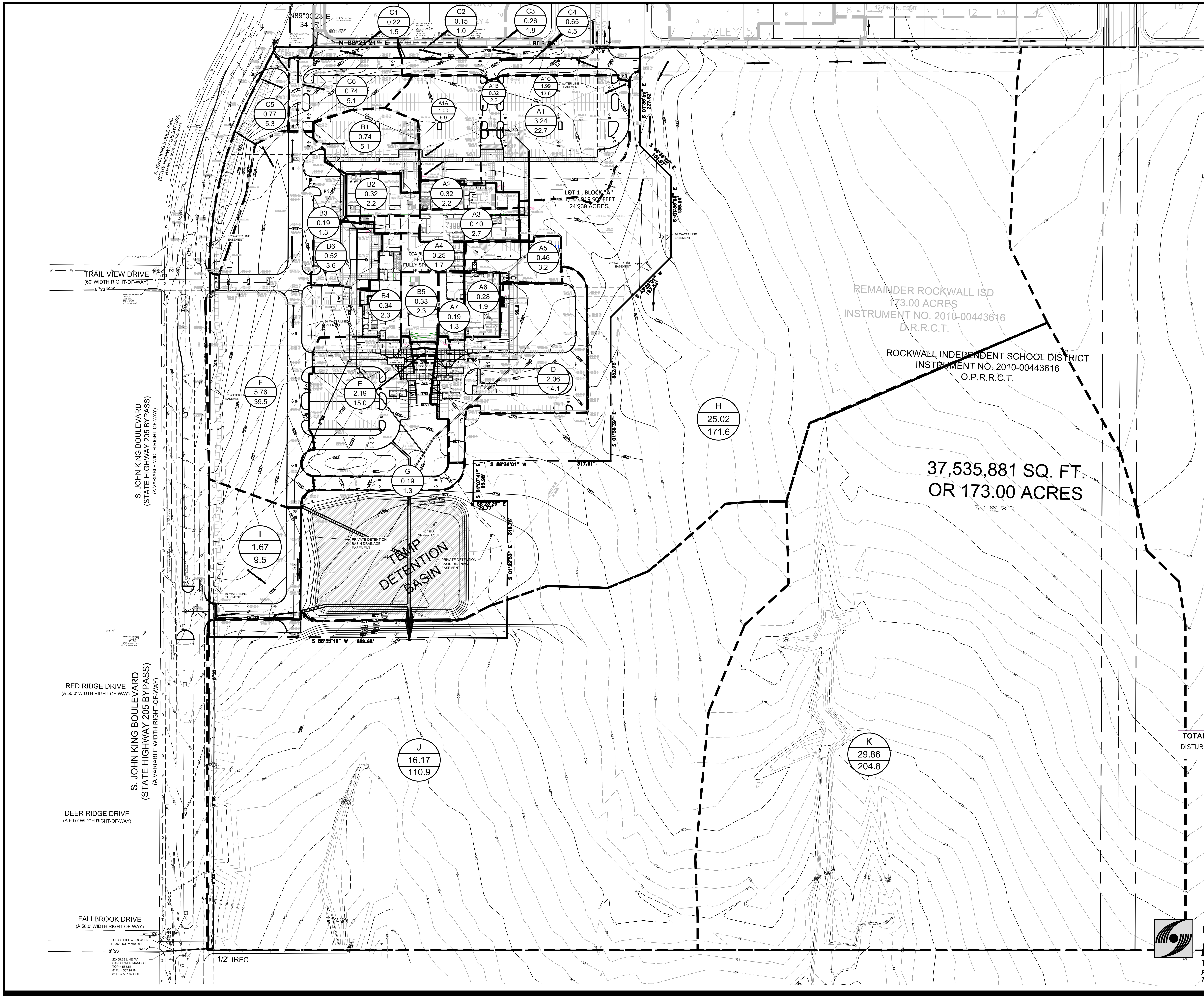

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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

DRAINAGE STUDY LEGEND

▬ ▬ ▬	DRAINAGE DIVIDE (NEW)
A1	DRAINAGE AREA (NEW)
0.25	NUMBER OF ACRES (NEW)
2.00	DESIGN FLOW (NEW)
435	MAJOR CONTOUR (NEW)
436	MINOR CONTOUR (NEW)
435	MAJOR CONTOUR (EXISTING)
436	MINOR CONTOUR (EXISTING)
ST	STORM SEWER (NEW)
☐	AREA DRAIN (NEW)
	STORM SEWER (EXISTING)
	CURB INLET (EXISTING)
	RETAINING WALL (NEW)

TOTAL DISTURBED ACRES

DISTURBED ACRES: 44.79

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Signed Mike Glen
Date July 25, 2018

Glenn Engineering Corporation

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105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

PROPOSED
DRAINAGE
AREA MAP

Job. No. 1759-03-01	Sheet No. 8 CG1.11
Drawn By: RAH	
Date: 02-28-2017	

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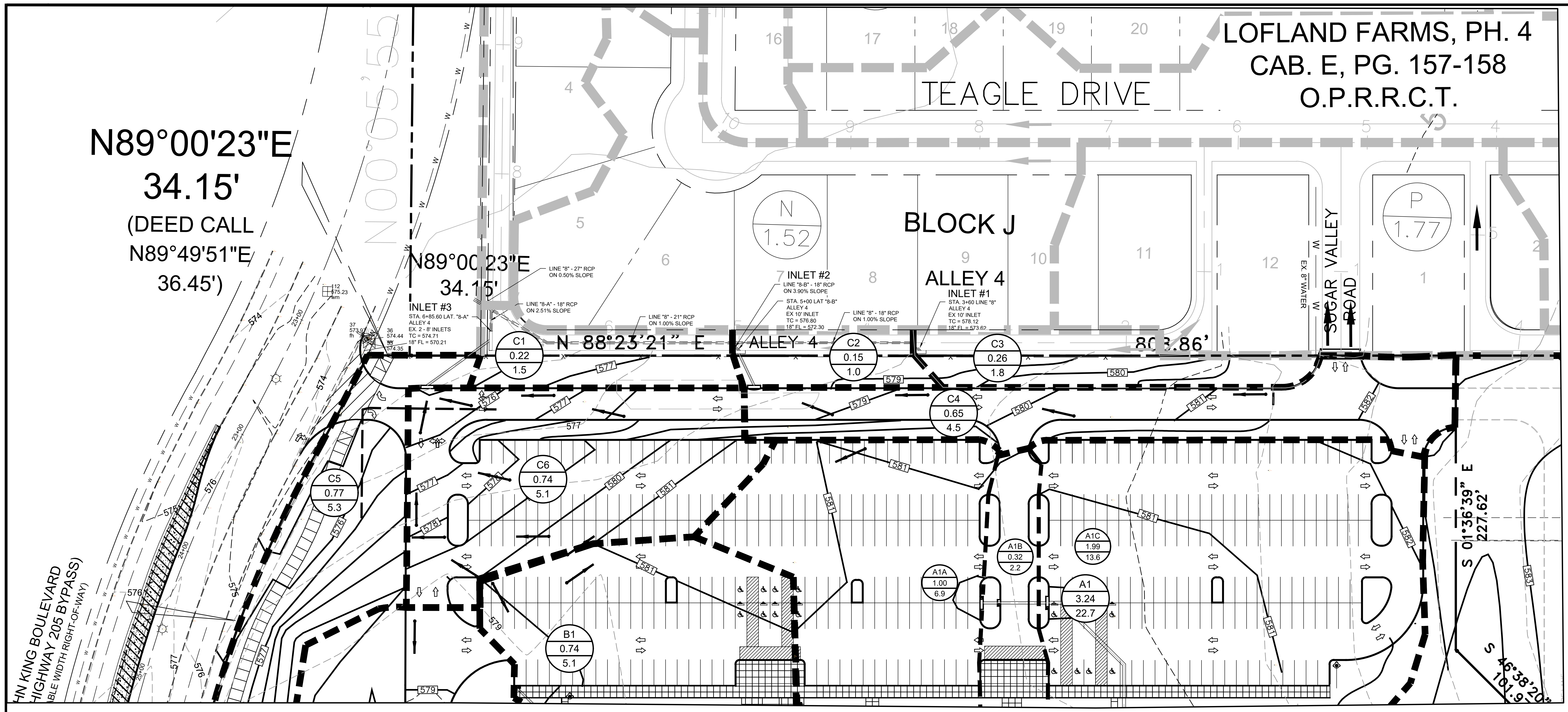


DRAINAGE INTO LOFLAND FARMS PHASE 4 NOTES:

INLET #1

LOFLAND FARMS - PHASE 4 - STORM SEWER
STA. 3+60 LINE "8" IN ALLEY 4 - EXISTING 10' INLET
ORIGINAL DESIGN DRAINAGE TO INLET #1
DA "W" - 1.47 ACRES * C=0.50 * I=9.8 = 7.2 cfs
PROPOSED DRAINAGE TO INLET #1
DA "C3" - 0.26 ACRES * C=0.70 * I=9.8 = 1.8 cfs

REDUCTION IN RUNOFF TO INLET #1 = 5.4 cfs

INLET #2

LOFLAND FARMS - PHASE 4 - STORM SEWER
STA. 5+00 LAT "8-B" IN ALLEY 4 - EXISTING 10' INLET
ORIGINAL DESIGN DRAINAGE TO INLET #2
DA "S" - 1.47 ACRES * C=0.50 * I=9.8 = 7.2 CFS
PROPOSED DRAINAGE TO INLET #1
DA "C2" - 0.15 ACRES * C=0.70 * I=9.8 = 1.0 CFS
DA "C4" - 0.65 ACRES * C=0.70 * I=9.8 = 4.5 CFS
TOTAL = 5.5 CFS

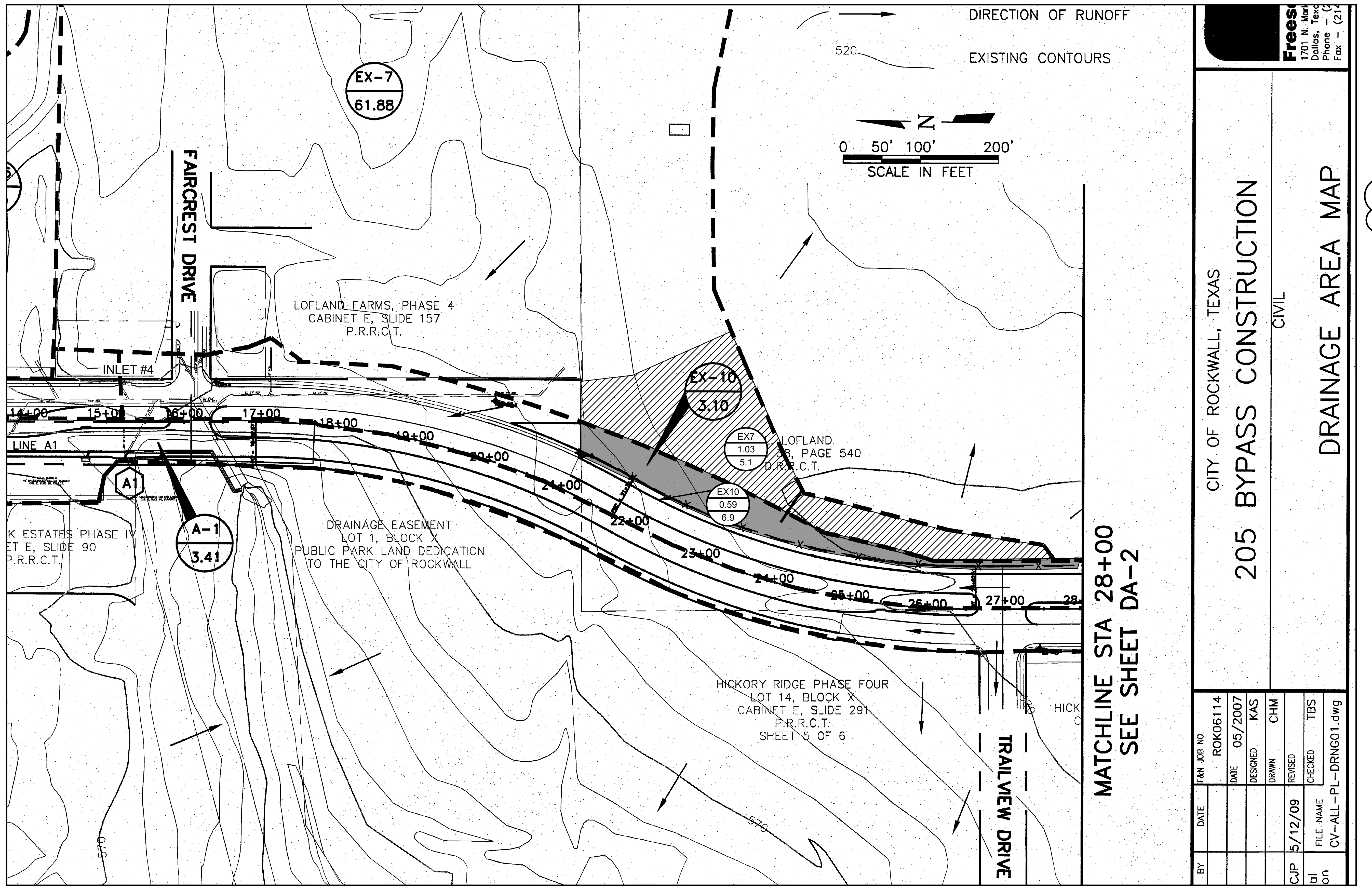
REDUCTION IN RUNOFF TO INLET #2 = 1.7 CFS

INLET #3

LOFLAND FARMS - PHASE 4 - STORM SEWER
STA. 6+85.60 LAT "8-A" IN ALLEY 4 - EXISTING 10' INLET
ORIGINAL DESIGN DRAINAGE TO INLET #3
DA "T" - 2.35 ACRES * C=0.50 * I=9.8 = 9.8 CFS
PROPOSED DRAINAGE TO INLET #1
DA "C1" - 0.22 ACRES * C=0.70 * I=9.8 = 1.5 CFS
DA "C6" - 0.74 ACRES * C=0.70 * I=9.8 = 5.1 CFS
TOTAL = 6.6 CFS

REDUCTION IN RUNOFF TO INLET #3 = 3.2 CFS

DRAINAGE AREAS "T" , "S" AND "W" = 5.29 ACRES
5.29 AC * C - 0.50 * 9.8 = 25.92 CFS (ALLOWABLE)
PROPOSED DRAINAGE AREAS "C - C4 AND C6" TO LINE "8"
2.02 ACRES * C- 0.70 * 9.8 = 13.86 CFS (ACTUAL)



DRAINAGE AREA MAP RATIONAL METHOD

Drainage Area Calculations- City of Rockwall					
Drainage Area Name	"C"	Intensity (in/hr)	Area (ac)	Q 100 (cfs)	Notes
EX-1	0.9	9.8	1.68	14.82	To exist. 2-2'x4' RCB under 205 bypass
EX-2	0.5	9.8	3.31	16.22	To exist. 3'x3' "Y" inlet
EX-3	0.9	9.8	0.51	4.50	To exist. 10' curb inlet
EX-4	0.5	9.8	2.38	11.66	To exist. 10' curb inlet
EX-5	0.9	9.8	4.67	41.19	Exist. area inlet connected to 21" RCP
EX-6	0.5	9.8	4.00	19.60	Exist. 36" RCP
EX-7	0.5	9.8	61.88	303.21	To Exist. 8'x4' RCB
EX-10	0.9	9.8	3.37	29.72	To exist. 10' curb inlet
EX-11	0.9	9.8	2.11	18.61	To exist. 10' curb inlet
EX-12	0.5	9.8	2.20	10.78	To exist. 10' curb inlet
EX-13	0.5	9.8	1.81	8.87	To exist. 10' curb inlet
EX-14	0.5	9.8	2.45	12.01	To Culvert A Outfall
A-0	0.9	9.8	3.24	28.58	To 3'x3' area inlet and 27" stubbed RCP
A-1	0.9	9.8	3.41	30.08	Proposed inlets
A-2	0.9	9.8	1.63	14.38	Proposed 20' curb inlet
A-3	0.9	9.8	2.09	18.43	Proposed 20' curb inlet
A-4	0.9	9.8	0.80	7.06	Proposed 15' curb inlet
A-5	0.9	9.8	1.63	14.38	Proposed 15' curb inlet
A-6	0.9	9.8	0.72	6.35	Proposed 15' curb inlet
A-7	0.9	9.8	0.64	5.64	Proposed 10' curb inlet
A-8	0.9	9.8	1.84	16.23	Proposed 20' curb inlet
B-1	0.9	9.8	1.66	14.64	Proposed 20' curb inlet
B-2	0.9	9.8	1.00	8.82	Proposed 15' curb inlet
B-3	0.9	9.8	1.50	13.23	Proposed 20' curb inlet
C-1	0.9	9.8	1.40	12.35	Proposed 24" Culvert to Culvert B
OS-1	0.5	9.8	69.63	341.19	Offsite area going to proposed Culvert A
OS-2	0.5	9.8	30.52	149.55	Offsite area going to proposed Culvert A
OS-3	0.5	9.8	83.00	406.70	Offsite area going to proposed Culvert A
OS-4	0.5	9.8	70.03	343.15	Offsite area going to proposed Culvert B
OS-5	0.5	9.8	5.72	28.03	Offsite area going to proposed Culvert B

DRAINAGE INTO 205 BYPASS NOTES:

INLET #4

205 BYPASS - STORM SEWER
EXISTING 10' INLET
ORIGINAL DESIGN DRAINAGE TO INLET #4
DA "EX10" - 3.37 ACRES * C=0.90 * I=9.8 = 29.72 cfs
OFFSITE TO JOHN KING FROM SCHOOL SITE
(PART OF DA "EX10" - SHADED)
PART OF "EX10 - 0.59 ACRES * C=0.90 * I=9.8 = 5.2 CFS

PROPOSED DRAINAGE TO INLET #4
DA "C3" - 0.77 ACRES * C=0.70 * I=9.8 = 5.3 cfs
CHANGE IN RUNOFF TO INLET #4 = 0.10 cfs

DRAINAGE INTO 205 BYPASS NOTES:

INLET #4

205 BYPASS - STORM SEWER
EXISTING 10' INLET
ORIGINAL DESIGN DRAINAGE TO INLET #4
PART OF EX7 CURRENTLY SHEET FLOW TO
JOHN KING FROM SCHOOL SITE
(PART OF DA "EX7" - CROSS HATCHED)
PART OF "EX7 - 1.03 ACRES * C=0.50 * I=9.8 = 5.1 CFS
NET REDUCTION IN RUNOFF TO INLET #4 = 5.0 cfs

DRAINAGE INTO 205 BYPASS NOTES:

INLET #4

205 BYPASS - STORM SEWER
EXISTING 10' INLET - EXISTING UNDEVELOPED
DRAINAGE AREA TO JOHN KING FROM SCHOOL SITE.
(SEE SHEET CG 1.10 DA #1)
DA #1 - 4.34 ACRES * C=0.35 * I=8.3 = 12.6 CFS
PROPOSED DRAINAGE TO INLET #4
DA "C3" - 0.77 ACRES * C=0.70 * I=9.8 = 5.3 CFS
NET REDUCTION IN RUNOFF TO INLET #4 = 7.3 cfs

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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PROPOSED
DETAIL DRAINAGE
AREA "C"

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 8 CG1.12

EXECUTIVE SUMMARY DETENTION BASIN
100 YEAR

QMAX TO PROPOSED BASIN (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	BASIN RESTRICTION (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
280.32	52.95	227.37	571.48	200,650

EXECUTIVE SUMMARY DETENTION BASIN
50 YEAR

QMAX TO PROPOSED BASIN (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	BASIN RESTRICTION (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
249.67	48.00	201.67	571.23	177,658

EXECUTIVE SUMMARY DETENTION BASIN
25 YEAR

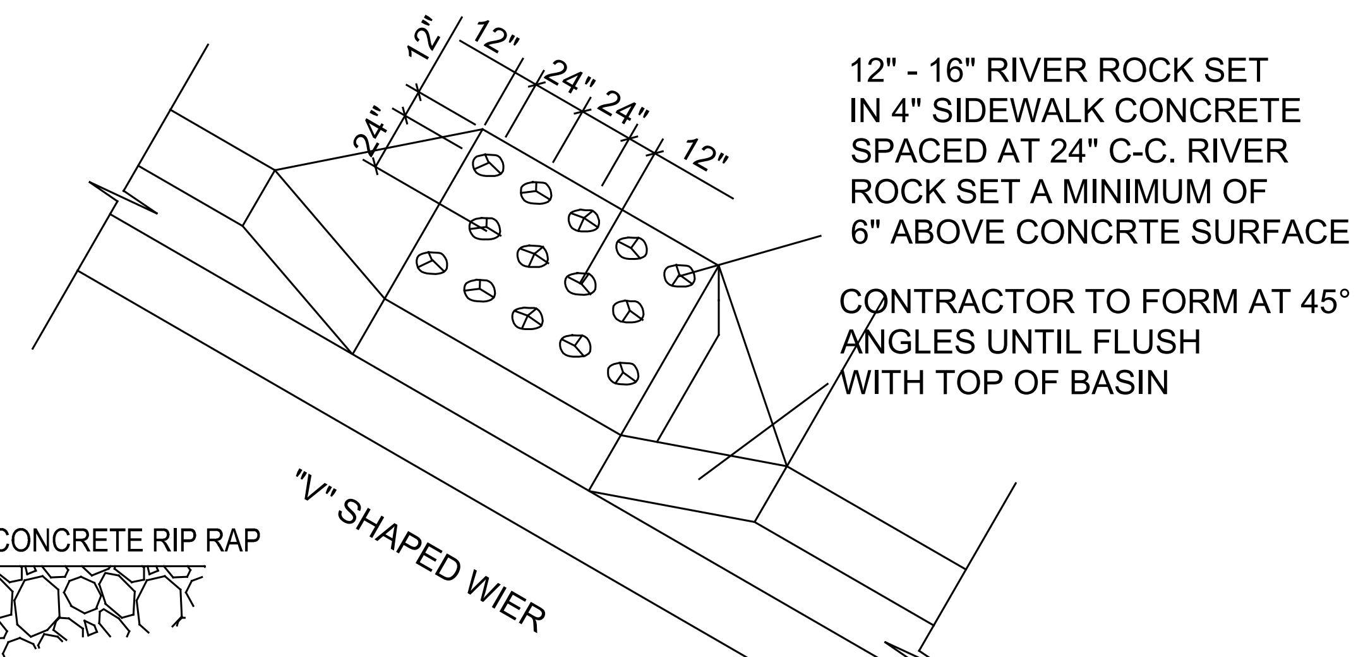
QMAX TO PROPOSED BASIN (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	BASIN RESTRICTION (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
227.16	44.47	182.69	571.05	160,807

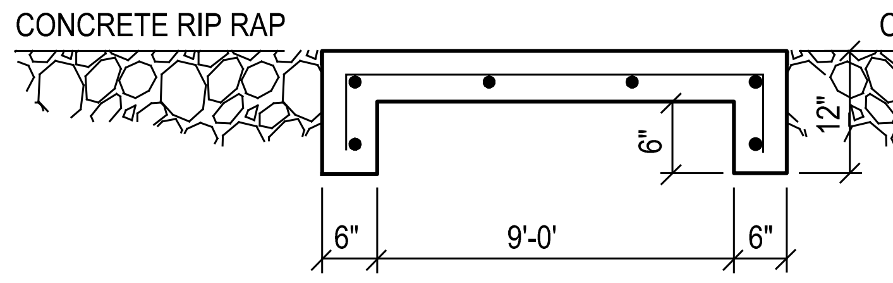
EXECUTIVE SUMMARY DETENTION BASIN
10 YEAR

QMAX TO PROPOSED BASIN (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	BASIN RESTRICTION (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
192.77	38.61	154.16	570.73	135,219

EXECUTIVE SUMMARY DETENTION BASIN
5 YEAR

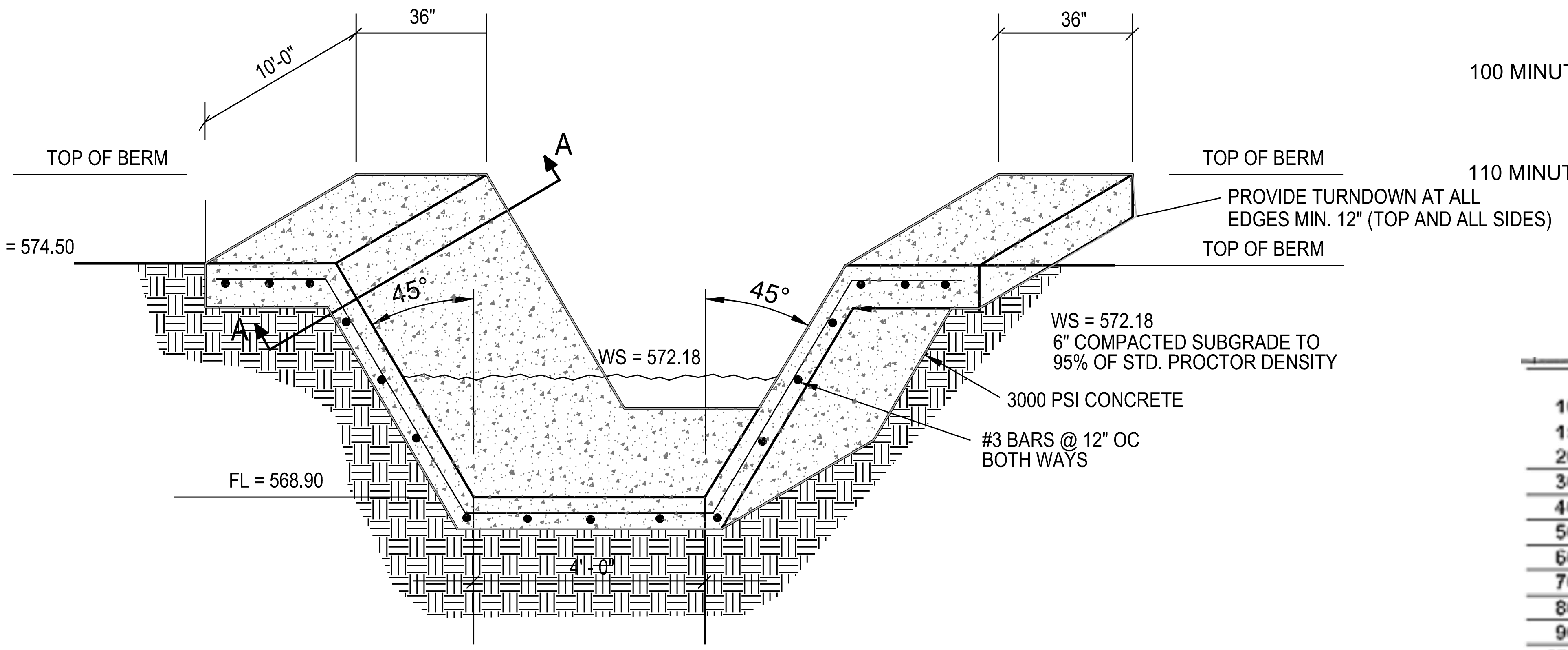
QMAX TO PROPOSED BASIN (CFS)	QMAX OUT OF BASIN (ROUTED) (CFS)	BASIN RESTRICTION (CFS)	MAX. 100 YR WATER SURFACE ELEVATION	MAX. STORAGE C.F.
170.83	34.93	135.90	570.52	118,872


12"
12"
24"
24"
24"
12"
12" - 16" RIVER ROCK SET IN 4" SIDEWALK CONCRETE SPACED AT 24" C-C. RIVER ROCK SET A MINIMUM OF 6" ABOVE CONCRTE SURFACE
CONTRACTOR TO FORM AT 45° ANGLES UNTIL FLUSH WITH TOP OF BASIN
"V" SHAPED WIER



SECTION "A-A"

SECTION "B-B"
RIVER ROCK ENERGY DISSIPATER


36"
10'-0"
36"
A
TOP OF BERM
TOP OF BERM
PROVIDE TURNDOWN AT ALL EDGES MIN. 12" (TOP AND ALL SIDES)
TOP = 574.50
TOP OF BERM
45°
45°
A
WS = 572.18
WS = 572.18
6" COMPACTED SUBGRADE TO 95% OF STD. PROCTOR DENSITY
3000 PSI CONCRETE
#3 BARS @ 12" OC BOTH WAYS
FL = 568.90
4'-0"

TYPICAL "V" SHAPED CONCRETE WIER CHANNEL

ONSITE 44.79 ACRES

PRESENT CONDITIONS

Q = C*I*A
C = 0.35
Tc = 20 MINUTES
I100 = 8.3 in/hr
Q100 = (0.35)(8.3)(44.79 ACRES) = 130.11 MAXIMUM RELEASE RATE

PROPOSED CONDITIONS BASIN "A"

Q = C*I*A
C = 0.70 SCHOOL
Tc = 10 MINUTES
I100 = 9.8 in/hr
Q100 = (0.70)(9.8)(44.79 ACRES) = 303.56

PROPOSED CONDITIONS WITH BASIN "A"

STORM DURATIONS ONSITE DEVELOPED

10 MINUTES I = 9.8 Q = (0.70)*(9.8)*(44.79 ACRES) = 307.26
15 MINUTES I = 9.0 Q = (0.70)*(9.0)*(44.79 ACRES) = 282.18
20 MINUTES I = 8.3 Q = (0.70)*(8.3)*(44.79 ACRES) = 260.23
30 MINUTES I = 6.9 Q = (0.70)*(6.9)*(44.79 ACRES) = 216.34
40 MINUTES I = 5.8 Q = (0.70)*(5.8)*(44.79 ACRES) = 181.85
50 MINUTES I = 5.0 Q = (0.70)*(5.0)*(44.79 ACRES) = 156.77
60 MINUTES I = 4.5 Q = (0.70)*(4.5)*(44.79 ACRES) = 141.09
70 MINUTES I = 4.0 Q = (0.70)*(4.0)*(44.79 ACRES) = 125.41
80 MINUTES I = 3.7 Q = (0.70)*(3.7)*(44.79 ACRES) = 116.01
90 MINUTES I = 3.5 Q = (0.70)*(3.5)*(44.79 ACRES) = 109.74
100 MINUTES I = 3.4 Q = (0.70)*(3.4)*(44.79 ACRES) = 106.60
110 MINUTES I = 3.2 Q = (0.70)*(3.2)*(44.79 ACRES) = 100.33

MAXIMUM STORM VOLUMES

10 MINUTES INFLOW (10 min)*(307.26 cfs)*(60 sec/in) = 184,356 cf
OUTFLOW (0.50)*(20 min)*(130.11 cfs)*(60 sec/min) = 78,069 cf
= 106,287 cf

15 MINUTES INFLOW (15 min)*(282.18 cfs)*(60 sec/min) = 253,959 cf
OUTFLOW (0.50)*(25 min)*(130.11cfs)*(60 sec/min) = 97,586 cf
= 156,373 cf

20 MINUTES INFLOW (20 min)*(260.23 cfs)*(60 sec/min) = 312,276 cf
OUTFLOW (0.50)*(30 min)*(130.11 cfs)*(60 sec/min) = 117,103 cf
= 195,172 cf

30 MINUTES INFLOW (30 min)*(216.34 cfs)*(60 sec/min) = 389,404 cf
OUTFLOW (0.50)*(40 min)*(130.11 cfs)*(60 sec/min) = 156,138 cf
= 233,266 cf

* 40 MINUTES INFLOW (40 min)*(181.85 cfs)*(60 sec/min) = 436,434 cf
OUTFLOW (0.50)*(50 min)*(130.11 cfs)*(60 sec/min) = 195,172 cf
= 241,261cf *

50 MINUTES INFLOW (50 min)*(156.77 cfs)*(60 sec/min) = 470,295 cf
OUTFLOW (0.50)*(60 min)*(130.11 cfs)*(60 sec/min) = 234,207 cf
= 236,088 cf

60 MINUTES INFLOW (60 min)*(141.09 cfs)*(60 sec/min) = 507,919 cf
OUTFLOW (0.50)*(70 min)*(130.11 cfs)*(60 sec/min) = 73,241 cf
= 234,677 cf

70 MINUTES INFLOW (70 min)*(125.41 cfs)*(60 sec/min) = 526,722 cf
OUTFLOW (0.50)*(80 min)*(130.11 cfs)*(60 sec/min) = 312,264 cf
= 214,458 cf

80 MINUTES INFLOW (80 min)*(116.01 cfs)*(60 sec/min) = 556,848 cf
OUTFLOW (0.50)*(90 min)*(130.11 cfs)*(60 sec/min) = 351,297 cf
= 205,551 cf

90 MINUTES INFLOW (90 min)*(109.74 cfs)*(60 sec/min) = 592,596 cf
OUTFLOW (0.50)*(100 min)*(130.11 cfs)*(60 sec/min) = 390,330 cf
= 202,266 cf

100 MINUTES INFLOW (100 min)*(106.60 cfs)*(60 sec/min) = 639,600 cf
OUTFLOW (0.50)*(110 min)*(130.11 cfs)*(60 sec/min) = 429,363 cf
= 210,237 cf

110 MINUTES INFLOW (110 min)*(100.33 cfs)*(60 sec/min) = 662,178 cf
OUTFLOW (0.50)*(120 min)*(130.11 cfs)*(60 sec/min) = 468,396 cf
= 193,782 cf

	100 yr.	50 yr.	25 yr.	10 yr.	5 yr.	2 yr.
10 min	9.8	9.0	8.3	7.1	6.1	5.3
15 min	9.0	8.1	7.5	6.5	5.5	4.5
20 min	8.3	7.5	6.6	5.9	4.9	3.9
30 min	6.9	6.1	5.5	4.8	4.1	3.3
40 min	5.8	5.2	4.6	4.0	3.4	2.6
50 min	5.0	4.5	4.0	3.5	2.8	2.3
60 min	4.5	3.9	3.5	3.0	2.6	1.9
70 min	4.0	3.7	3.3	2.8	2.4	1.8
80 min	3.7	3.5	3.1	2.6	2.3	1.7
90 min	3.5	3.3	2.9	2.5	2.1	1.6
100 min	3.4	3.0	2.7	2.4	1.9	1.5
110 min	3.2	2.9	2.5	2.3	1.8	1.4

POST DEVELOPEMENT RUNOFF CALCULATIONS ROCKWALL CCA

AREA ID	DRAINAGE AREA (ACRES)	RUNOFF COEFFICIENT "C"	C*A	TIME OF CONCENTRATION MINUTES	INTENSITY "I100" (INCHES/HR)	DESIGN FLOW "Q 100" (CFS)	DRAINS TO / REMARKS
							TO BASIN
A1A	1.0	0.7	0.70	10	9.8	6.9	STA. 8+88.52 LINE "A" 10' CURB INLET "A-1"
A1B	0.32	0.7	0.22	10	9.8	2.2	STA. 8+75.02 LINE "A" 5' CURB INLET "A-2"
A1C	1.99	0.7	1.39	10	9.8	13.7	STA. 8+37.52 LINE "A" 15' CURB INLET "A-3"
A1	3.31	0.70	2.32	10	9.80	22.7	3 CURB INLETS TO BASIN "A" (Above)
A2	0.32	0.70	0.22	10	9.80	2.2	ROOF DRAIN TO BASIN "A"
A3	0.40	0.70	0.28	10	9.80	2.7	ROOF DRAIN TO BASIN "A"
A4	0.25	0.70	0.18	10	9.80	1.7	ROOF DRAIN TO BASIN "A"
A5	0.46	0.70	0.32	10	9.80	3.2	SERVICE AREA - AREA DRAINS TO BASIN "A"
A6	0.28	0.70	0.20	10	9.80	1.9	ROOF DRAIN TO BASIN "A"
A7	0.19	0.70	0.13	10	9.80	1.3	ROOF DRAIN TO BASIN "A"
	SUM OF "A" AREAS 5.21					SUM OF "A" AREAS "Q100" 35.7	
B1	0.74	0.70	0.52	10	9.80	5.1	5' CURB INLET TO BASIN "A"
B2	0.32	0.70	0.22	10	9.80	2.2	ROOF DRAIN TO BASIN "A"
B3	0.19	0.70	0.13	10	9.80	1.3	ROOF DRAIN TO BASIN "A"
B4	0.34	0.70	0.24	10	9.80	2.3	ROOF DRAIN TO BASIN "A"
B5	0.33	0.70	0.23	10	9.80	2.3	ROOF DRAIN TO BASIN "A"
	SUM OF "B" AREAS 1.92					SUM OF "B" AREAS "Q100" 13.2	
C1	0.22	0.70	0.15	10	9.80	1.5	STA. 0+27 LINE "C1" - 5' INLET, LOFTLAND PH 4 LINE "8"
C2	0.15	0.70	0.11	10	9.80	1.0	SHEET FLOW TO ALLEY 4 , LOFTLAND PH 4 LINE "8"
C3	0.26	0.70	0.18	10	9.80	1.8	SHEET FLOW TO ALLEY 4 , LOFTLAND PH 4 LINE "8"
C4	0.65	0.70	0.46	10	9.80	4.5	STA. 0+60 LINE "C4" - 5' INLET, LOFTLAND PH 4 LINE "8-A"
C5	0.77	0.70	0.54	10	9.80	5.3	SHEET FLOW TO JOHN KING- PART OF DA
C6	0.74	0.70	0.52	10	9.80	5.1	TO 5' CURB INLET - PART OF LOFLAND PH4 DA "T"
	SUM OF "C" AREAS 2.79					SUM OF "C" AREAS "Q100" 19.2	
D	2.06	0.70	1.44	10	9.80	14.1	PARKING - 5' FLUME TO BASIN
E	2.19	0.70	1.53	10	9.80	15.0	PARKING - 5' FLUME TO BASIN
F	6.28	0.70	4.40	10	9.80	43.1	DRIVE - 5' FLUME TO BASIN
G	0.19	0.70	0.13	10	9.80	1.3	DRIVE - 3' FLUME TO BASIN
H	25.56	0.70	17.89	10	9.80	175.3	UNDEVELOPED - SHEET FLOW TO BASIN
I	1.38	0.70	0.97	10	9.80	9.5	
	SUM OF AREAS A, B, D -I TO BASIN 44.79					SUM OF TOTAL "Q" A, B, D -I TO BASIN "Q100" 307.3	
J	16.17	0.35	5.66	15	8.30	47.0	UNDEVELOPED - SHEET FLOW - BY PASS BASIN
K	29.86	0.35	10.45	15	8.30	86.7	UNDEVELOPED - SHEET FLOW - BY PASS BASIN

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed July 25, 2018
Date

Glenn Engineering Corporation

Table 3.2: Runoff Coefficient for Types of Land Use

TYPE OF AREA OR LAND USE	ADOPTED RUNOFF COEFFICIENT
Parks or Open Areas	0.35
Single Family Residential or Duplex	0.50
School	0.70
Apartments	0.75
Townhouse	0.80
Churches	0.80
Industrial	0.90
Commercial Business	0.90
Mercantile District	0.90
Retail	0.90
Parking Lot	0.90
Major and Minor Arterials – R.O.W.	0.90

OUTLET DEVICE = CIPOLETTI WEIR - 2' - 0" BOTTOM ELEV. 568.60

Q allowable OUT OF POND	Q actual OUT OF OUT FALL STRUCTURE	
Q2 = 60.40 cfs	30.52 cfs	570.26 W.S.
Q5 = 75.89 cfs	34.93 cfs	570.52 W.S.
Q10 = 91.38 cfs	38.61 cfs	570.73 W.S.
Q25 = 102.21 cfs	44.47 cfs	571.05 W.S.
Q50 = 116.16 cfs	48.00 cfs	571.23 W.S.
Q100 = 128.55 cfs	52.95 cfs	571.48 W.S.

PROPOSED CONDITIONS WITH BASIN "A"

MAXIMUM VOLUME REQUIRED IS 241,261 CF AT THE 40 MIN. STORM DURATION

MAXIMUM VOLUME PROVIDED IS 401,643 CF AT THE 40 MIN. STORM DURATION

TOP OF POND = 574.00
100 YEAR WATER SURFACE = 571.48 WS
REQUIRED 2'-0" FREEBOARD = 573.48 WS

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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PROPOSED DRAINAGE CALULATIONS 8

Job. No.
1759-03-01

Drawn By:
RAH

Date:
02-28-2017

Sheet No.
CG 1.13

Plotted: Jul 25, 2018, 12:21 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA RECORD DRAWINGS.dwg

SYSTEM ID	Conduit Properties															Incremental Drainage Area				Accum ulated C*A	Up- stream Tc	Design Storm Freq	Intensity I	Runoff Q	Conduit Capacity Qc	Partial Flow	Velocity	Time In Conduit	Friction Slope Sr	Friction Head- loss	HGL		Headloss Calculations					Design HGL	Top of Curb Elev.	HGL Depth Below T/C	Remarks
	Collection Point Station		Length	# of Barrels	Pipe Size	Box		Type	Area	Wetted Perimeter Pw	Hydraulic Radius	Manning's n	Flowline Elevation		Slope	Inlet ID	Area	Runoff Coefficient "C"	Incre-mental "CA"												U/S	D/S	V12/2g	V22/2g	Jct. Type	Coeff. Kj	Head- loss HL				
	U/S	D/S				Span	Rise						Up- Stream	Down- Stream																											
	sta	sta	(ft)		(inches)	(ft)	(ft)		(ft2)	(ft)	(ft)				(ft/ft)		(acres)				(min)	(yr)	(in/hr)	(cfs)	(cfs)	(Yes/No)	(ft/s))	(min)	(ft/ft)	(ft)			(ft)	(ft)			(ft)			(ft)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)
STORM DRAIN LINE 'A'																																									
Private Line "A"	8+88.52	8+75.02	13.5		24			RCP	3.14	6.28	0.50	0.013	575.19	575.13	0.0048	A1A	1.00	0.70	0.70	0.70	10.00	100	9.80	6.86	15.70	No	2.18	0.10	0.0009	0.01	578.010	577.998	0.000	0.074	Inlet	1.25	0.10	578.110	580.25	2.14	
	8+75.02	8+37.52	37.5		24			RCP	3.14	6.28	0.50	0.013	575.13	574.94	0.0050	A1B	0.32	0.70	0.22	0.92	10.00	100	9.80	9.06	15.98	No	2.88	0.22	0.0016	0.06	577.838	577.778	0.074	0.129	Inlet	1.25	0.16	577.998	580.50	2.50	
	8+37.52	8+27.70	9.8		30			RCP	4.91	7.85	0.63	0.013	574.94	574.89	0.0053	A1C	1.99	0.70	1.39	2.32	10.00	100	9.80	22.71	29.88	No	4.63	0.04	0.0030	0.03	577.378	577.348	0.129	0.332	Inlet	1.25	0.40	577.778	580.80	3.02	
	8+27.70	7+59.70	68.0		30			RCP	4.91	7.85	0.63	0.013	574.89	574.55	0.0050		0.00	0.70	0.00	2.32	10.00	100	9.80	22.71	28.91	Yes	4.63	0.25	0.0030	0.21	577.226	577.019	0.332	0.332	45° Bend	0.37	0.12	577.348	580.25	2.90	
	7+59.70	6+68.86	90.8		30			RCP	4.91	7.85	0.63	0.013	574.55	574.09	0.0050			0.70	0.00	2.32	10.00	100	9.80	22.71	29.06	Yes	4.63	0.33	0.0030	0.28	576.897	576.620	0.332	0.332	45° Bend	0.37	0.12	577.019	581.30	4.28	
	6+68.86	6+09.13	59.7		30			RCP	4.91	7.85	0.63	0.013	574.09	573.80	0.0050	A2	0.32	0.70	0.22	2.54	10.00	100	9.80	24.90	29.00	Yes	5.07	0.20	0.0037	0.22	576.296	576.077	0.332	0.400	90° Lat.	0.25	0.32	576.620	582.50	5.88	
	6+09.13	5+53.46	55.7		30			RCP	4.91	7.85	0.63	0.013	573.80	573.52	0.0050	A3	0.15	0.70	0.11	2.65	10.00	100	9.80	25.93	29.07	Yes	5.28	0.18	0.0040	0.22	575.744	575.523	0.400	0.433	90° Lat.	0.25	0.33	576.077	582.80	6.72	
	5+53.46	5+23.32	30.1		30			RCP	4.91	7.85	0.63	0.013	573.52	573.37	0.0050	A3	0.25	0.70	0.18	2.82	10.00	100	9.80	27.65	28.97	Yes	5.63	0.09	0.0045	0.14	575.138	575.001	0.433	0.493	90° Lat.	0.25	0.39	575.523	582.50	6.98	
	5+23.32	5+09.47	13.9		30			RCP	4.91	7.85	0.63	0.013	573.37	573.30	0.0051			0.70	0.00	2.82	10.00	100	9.80	27.65	29.19	Yes	5.63	0.04	0.0045	0.06	574.818	574.756	0.493	0.493	45° Bend	0.37	0.18	575.001	582.00	7.00	
	5+09.47	4+56.82	52.7		36			RCP	7.07	9.42	0.75	0.013	573.30	573.03	0.0050	A5	0.46	0.70	0.32	3.14	10.00	100	9.80	30.80	47.22	Yes	4.36	0.20	0.0021	0.11	574.584	574.472	0.493	0.295	90° Lat.	0.25	0.17	574.756	582.00	7.24	
	4+56.82	3+96.00	60.8		36			RCP	7.07	9.42	0.75	0.013	573.03	572.73	0.0050	A4	0.25	0.70	0.18	3.32	10.00	100	9.80	32.52	47.24	Yes	4.60	0.22	0.0024	0.14	574.217	574.073	0.295	0.329	90° Lat.	0.25	0.26	574.472	582.00	7.53	
	3+96.00	3+02.78	93.2		36			RCP	7.07	9.42	0.75	0.013	572.73	572.26	0.0050	A7	0.19	0.70	0.13	3.45	10.00	100	9.80	33.82	47.24	Yes	4.78	0.32	0.0026	0.24	573.800	573.562	0.329	0.355	90° Lat.	0.25	0.27	574.073	582.75	8.68	
	3+02.78	2+31.03	71.8		36			RCP	7.07	9.42	0.75	0.013	572.26	571.91	0.0050	A6	0.28	0.70	0.20	3.65	10.00	100	9.80	35.74	47.26	Yes	5.06	0.24	0.0029	0.20	573.254	573.049	0.355	0.397	90° Lat.	0.25	0.31	573.562	581.50	7.94	
	2+31.03	1+79.00	52.0		36			RCP	7.07	9.42	0.75	0.013	571.91	571.65	0.0050			0.70	0.00	3.65	10.00	100	9.80	35.74	47.23	Yes	5.06	0.17	0.0029	0.15	572.902	572.753	0.397	0.397	45° Bend	0.37	0.15	573.049	581.00	7.95	
	1+79.00	0+00.00	179.0		42			RCP	9.62	11.00	0.88	0.013	571.65	570.75	0.0050	A7	0.19	0.70	0.13	3.78	10.00	100	9.80	37.04	71.30	Yes	3.85	0.77	0.0013	0.24	572.623	572.382	0.397	0.230	90° Lat.	0.25	0.13	572.753	576.00	3.25	
STORM DRAIN LINE 'B'																																									
Private Line "B"	7+14.70	6+62.15	52.6		18			HDPE	1.77	4.71	0.38	0.013	574.32	574.06	0.0049	B2	0.32	0.70	0.22	0.22	10.00	100	9.80	2.20	7.37	Yes	1.24	0.71	0.0004	0.02	575.281	575.258	0.000	0.024	90° Lat.	0.25	0.39	575.666	581.00	5.33	
	6+62.15	5+42.00	120.2		18			HDPE	1.77	4.71	0.38	0.013	574.06	573.46	0.0050	B1	0.75	0.70	0.53	0.75	10.00	100	9.80	7.34	7.42	Yes	4.15	0.48	0.0049	0.58	575.075	574.492	0.024	0.268	60° Wye	0.35	0.18	575.258	580.50	5.24	
	5+42.00	5+38.78	3.2		24			HDPE	3.14	6.28	0.50	0.013	573.46	573.44	0.0050		0.00	0.70	0.00	0.75	10.00	100	9.80	7.34	15.95	Yes	2.34	0.02	0.0010	0.00	574.320	574.316	0.268	0.085	Pipe Size Ch	0.25	0.17	574.492	582.00	7.51	
	5+38.78	5+28.02	10.8		24			HDPE	3.14	6.28	0.50	0.013	573.44	573.39	0.0050	B3	0.19	0.70	0.13	0.88	10.00	100	9.80	8.64	16.03	Yes	2.75	0.07	0.0015	0.02	574.061	574.045	0.085	0.118	45° Bend	0.37	0.26	574.316	582.50	8.18	
	5+28.02	3+87.39	140.6		24			HDPE	3.14	6.28	0.50	0.013	573.39	572.69	0.0050		0.00	0.70	0.00	0.88	10.00	100	9.80	8.64	16.00	Yes	2.75	0.85	0.0015	0.20	573.772	573.568	0.118	0.118	45° Bend	0.37	0.27	574.045	581.60	7.55	
	3+87.39	2+65.26	122.1		24			HDPE	3.14	6.28	0.50	0.013	572.69	572.08	0.0050	B4	0.34	0.70	0.24	1.12	10.00	100	9.80	10.98	16.01	Yes	3.49	0.58	0.0023	0.29	573.260	572.974	0.118	0.190	90° Lat.	0.25	0.31	573.568	582.60	9.03	
	2+65.26	2+09.45	55.8		24			HDPE	3.14	6.28	0.50	0.013	572.08	571.80	0.0050	B5	0.33	0.70	0.23	1.35	10.00	100	9.80	13.24	16.00	Yes	4.21	0.22	0.0034	0.19	572.827	572.637	0.190	0.276	90° Lat.	0.25	0.15	572.974	581.00	8.03	
	2+09.45	0+00.00	209.5		24			HDPE	3.14	6.28	0.50	0.013	571.80	570.75	0.0050		0.00	0.70	0.00	1.35	10.00	100	9.80	13.24	16.00	Yes	4.21	0.83	0.0034	0.71	572.537	571.823	0.276	0.276	45° Bend	0.37	0.10	572.637	580.20	7.56	
STORM DRAIN LINE 'C'																																									
Private Line "C"	1+74.83	1+24.75	50.1		42			RCP	9.62	11.00	0.88	0.013	570.75	570.25	0.0100	Line "A"	5.40	0.70	3.78	3.78	10.00	100	9.80	37.04	101.01	Yes	3.85	0.22	0.0013	0.07	572.382	572.314	0.426	0.230	Line "A"	0.00	0.00	572.382	576.00	3.62	
	1+24.75	0+68.34	56.4		42			RCP	9.62	11.00	0.88	0.013	570.25	569.68	0.0101	Line "B"	2.03	0.70	1.42	5.20	10.00	100	9.80	50.94	101.14	Yes	5.29	0.18	0.0026	0.14	571.959	571.815	0.230	0.435	60° Wye	0.35	0.36	572.314	575.20	2.89	
	0+68.34	0+00.00	68.3		42			RCP	9.62	11.00	0.88	0.013	569.68	569.00	0.0100	A7	0.00	0.70	0.00	5.2	10.00	100	9.80	50.96	100.58	Yes	5.30	0.22	0.0026	0.17	571.654	571.480	0.435	0.436	45° Bend	0.37	0.16	571.815	575.00	3.18	
STORM DRAIN LATERAL "BL-1"																																									
Private Lat. "BL-1"	0+59.46	0+00.00	59.5		18			HDPE	1.77	4.71	0.38	0.013	574.40	574.10	0.0050	B1	0.74	0.70	0.52	0.52	10.00	100	9.80	5.08	7.46	Yes	2.87	0.34	0.0023	0.14	575.398	575.260	0.000	0.128	Inlet	1.25	0.16	575.558	579.40	3.84	
STORM DRAIN LATERAL "C-1"																																									
Private Lat. "C-1"	0+45.06	0+00.00	45.1		24			HDPE	3.14	6.28	0.50	0.013	570.75	570.25	0.0111	B1-B5	2.03	0.70	1.42	1.42	10.00	100	9.80	13.90	23.84	Yes	4.42	0.17	0.0038	0.17	571.823	571.654	0.000	0.304	Line "B"	0.00	0.00	571.823	579.40	7.58	
STORM DRAIN LATERAL "C-4"																																									
Private Lat. "C-4"	0+27.00	0+00.00	27.0		18			HDPE	1.77	4.71	0.38	0.013	574.00	573.72	0.0104	C-4	0.65	0.70	0.46	0.46	10.00	100	9.80	4.46	10.69	Yes	2.52	0.18	0.0018	0.05	573.888	573.840	0.000	0.099	Inlet	1.25	0.12	574.012	578.50	4.49	
STORM DRAIN LATERAL "C-6"																																									
Private Lat. "C-6"	0+60.00	0+00.00	60.0		18			HDPE	1.77	4.71	0.38	0.013	571.35	570.31	0.0173	C-6	0.74	0.70	0.52	0.52	10.00	100	9.80	5.08	13.82		2.87	0.35	0.0023	0.14	572.009	571.870	0.000	0.128	Inlet	1.25	0.16	572.169	575.35	3.18	

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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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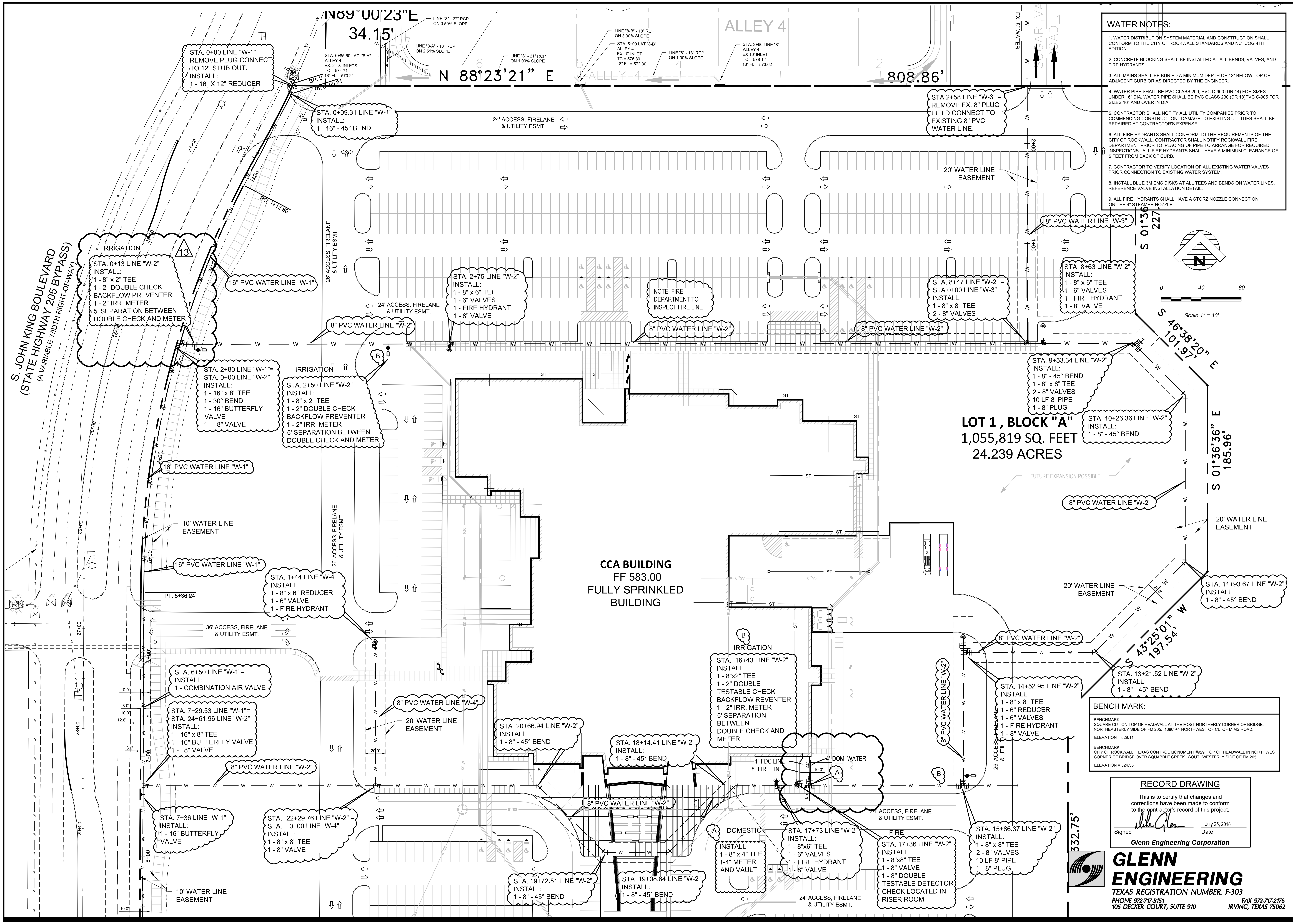
GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

PROPOSED DRAINAGE CALULATIONS
8

Job No.
1759-03-01
Drawn By:
RAH
Date:
02-28-2017

Sheet No.
CG 1.14



WATER NOTES:

1. WATER DISTRIBUTION SYSTEM MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCKWALL STANDARDS AND NCTCOG 4TH EDITION.

2. CONCRETE BLOCKING SHALL BE INSTALLED AT ALL BENDS, VALVES, AND FIRE HYDRANTS.

3. ALL MAINS SHALL BE BURIED A MINIMUM DEPTH OF 42" BELOW TOP OF ADJACENT CURB OR AS DIRECTED BY THE ENGINEER.

4. WATER PIPE SHALL BE PVC CLASS 200, PVC C-900 (DR 14) FOR SIZES UNDER 16" DIA. WATER PIPE SHALL BE PVC CLASS 230 (DR 18)PVC C-905 FOR SIZES 16" AND OVER IN DIA.

5. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING CONSTRUCTION. DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

6. ALL FIRE HYDRANTS SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF ROCKWALL. CONTRACTOR SHALL NOTIFY ROCKWALL FIRE DEPARTMENT PRIOR TO PLACING OF PIPE TO ARRANGE FOR REQUIRED INSPECTIONS. ALL FIRE HYDRANTS SHALL HAVE A MINIMUM CLEARANCE OF 5 FEET FROM BACK OF CURB.

7. CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING WATER VALVES PRIOR CONNECTION TO EXISTING WATER SYSTEM.

8. INSTALL BLUE 3M EMS DISKS AT ALL TEES AND BENDS ON WATER LINES. REFERENCE VALVE INSTALLATION DETAIL.

9. ALL FIRE HYDRANTS SHALL HAVE A STORZ NOZZLE CONNECTION ON THE 4" STEAMER NOZZLE.

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
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13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

BENCH MARK:

BENCHMARK:
SQUARE CUT ON TOP OF HEADWALL AT THE MOST NORTHERLY CORNER OF BRIDGE. NORTHEASTERLY SIDE OF FM 205. 1680' +/- NORTHWEST OF CL OF MIMS ROAD.

ELEVATION = 529.11

BENCHMARK:
CITY OF ROCKWALL, TEXAS CONTROL MONUMENT #929. TOP OF HEADWALL IN NORTHWEST CORNER OF BRIDGE OVER SQUABBLE CREEK. SOUTHWESTERLY SIDE OF FM 205.

ELEVATION = 524.55

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RECORD DRAWING

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Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

WATER PLAN

Job. No. 1759-03-01	Sheet No. 13 CU1.0
Drawn By: RAH	
Date: 02-28-2017	

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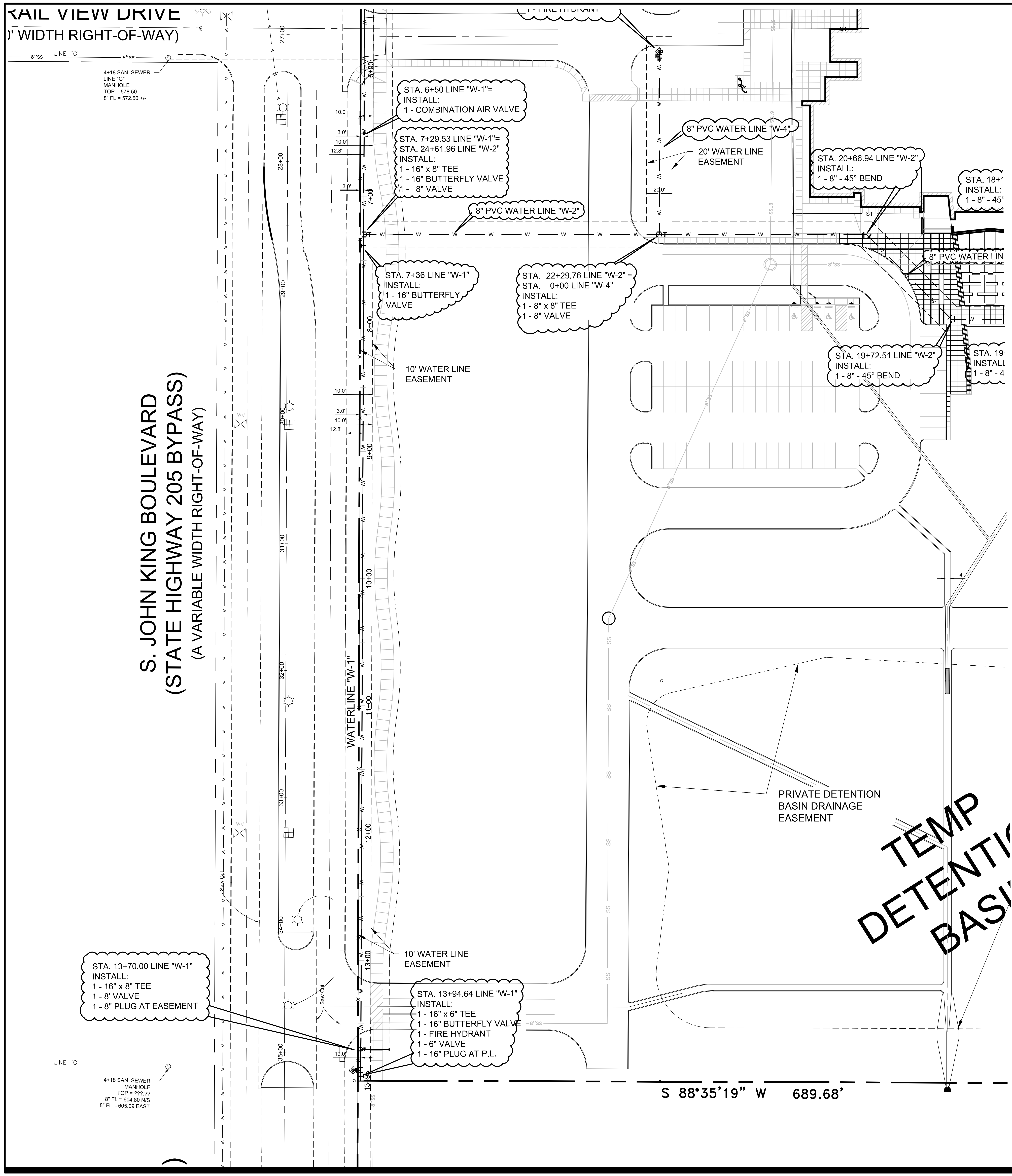

WATER NOTES:

1. WATER DISTRIBUTION SYSTEM MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE CITY OF ROCKWALL STANDARDS.

2. CONCRETE BLOCKING SHALL BE INSTALLED AT ALL BENDS, VALVES, AND FIRE HYDRANTS.

3. ALL MAINS SHALL BE BURIED A MINIMUM DEPTH OF 42" BELOW TOP OF ADJACENT CURB OR AS DIRECTED BY THE ENGINEER.

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5. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO COMMENCING CONSTRUCTION. DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.

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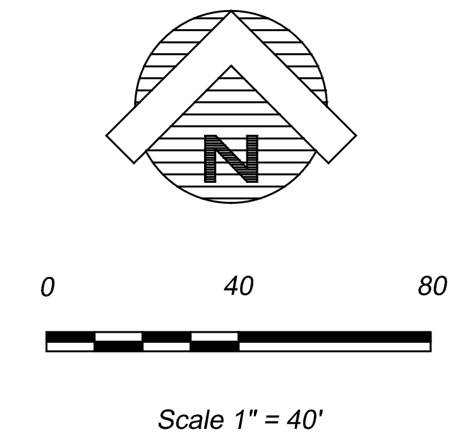
9. ALL FIRE HYDRANTS SHALL HAVE A STORZ NOZZLE CONNECTION ON THE 4" STEAMER NOZZLE.



Scale 1" = 40'

RECORD DRAWING

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Signed Mike Glenn

Date July 25, 2018

Glenn Engineering Corporation

BENCH MARK:

BENCHMARK:
SQUARE CUT ON TOP OF HEADWALL AT THE MOST NORTHERLY CORNER OF BRIDGE.
NORTHEASTERLY SIDE OF FM 205. 1680' +/- NORTHWEST OF CL OF MIMS ROAD.

ELEVATION = 529.11

BENCHMARK:
CITY OF ROCKWALL, TEXAS CONTROL MONUMENT #929. TOP OF HEADWALL IN NORTHWEST CORNER OF BRIDGE OVER SQUABBLE CREEK. SOUTHWESTERLY SIDE OF FM 205.

ELEVATION = 524.55

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 *FAX 972-717-2176*
105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

Revision /	Date	
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4	01/24/2017	ADDENDUM #3
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12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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WATER PLAN SOUTH

Job. No.	Sheet No. 8
1759-03-01	CU1.1
Drawn By: RAH	
Date: 02-28-2017	

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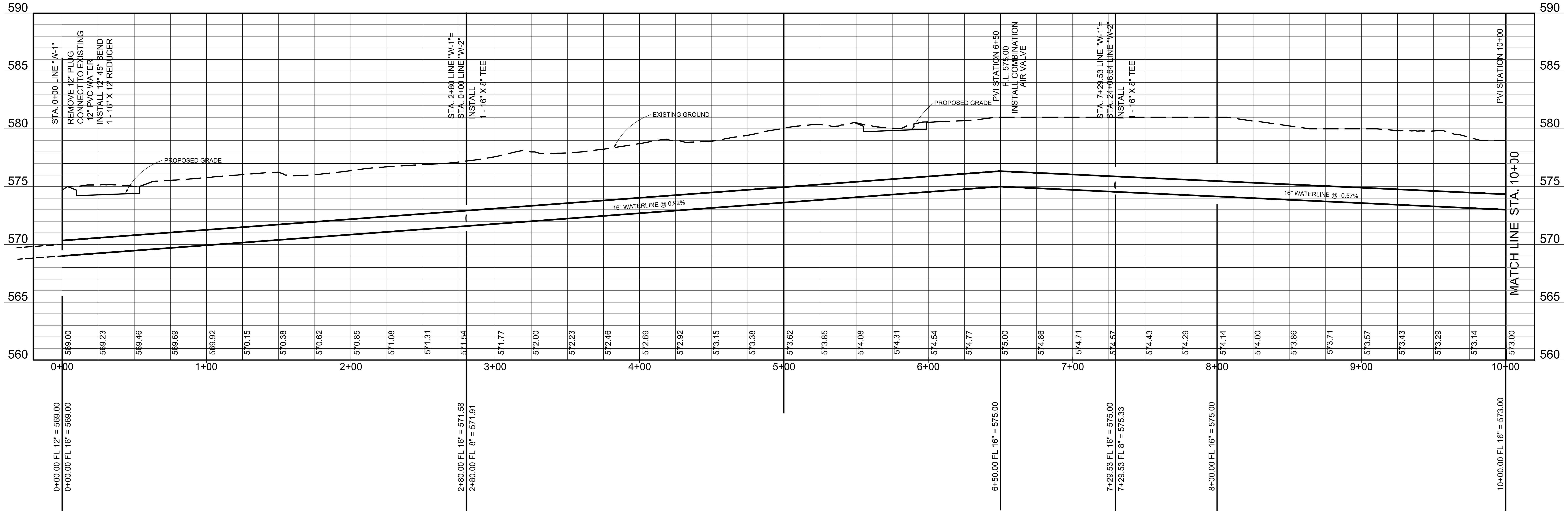
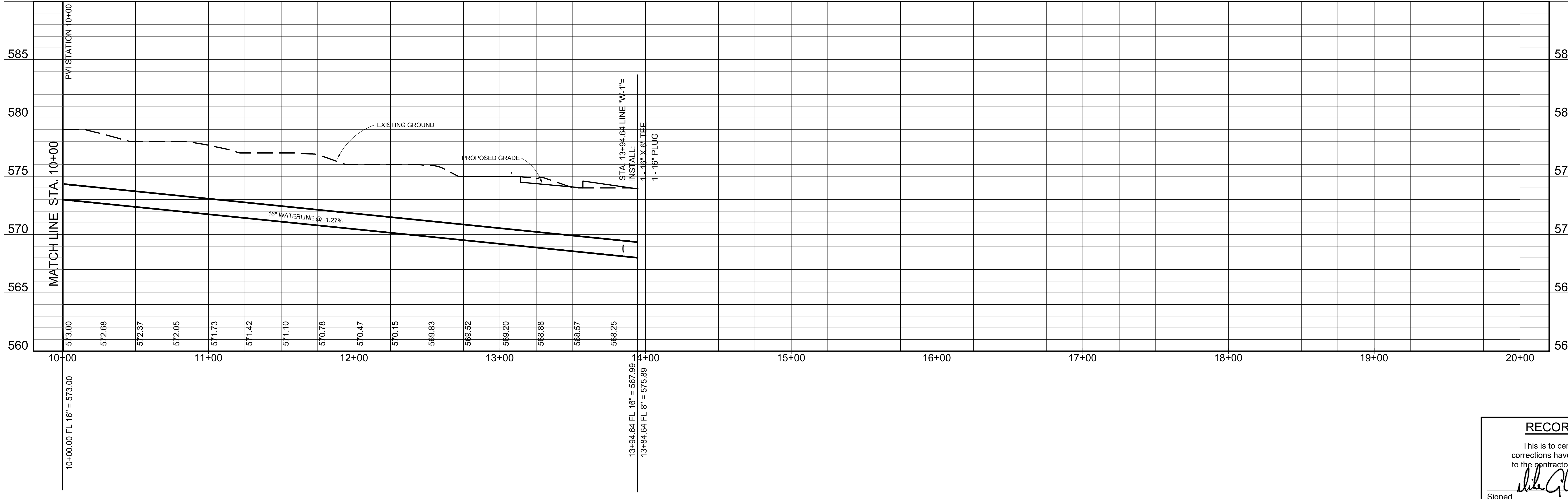
WATERLINE "W-1"



WATERLINE "W-1"



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Signed Mike Glenn

Date July 25, 2018

Glenn Engineering Corporation

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

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WATER PROFILE 8

Job. No. 1759-03-01	Sheet No. CU1.2
Drawn By: RAH	
Date: 02-28-2017	

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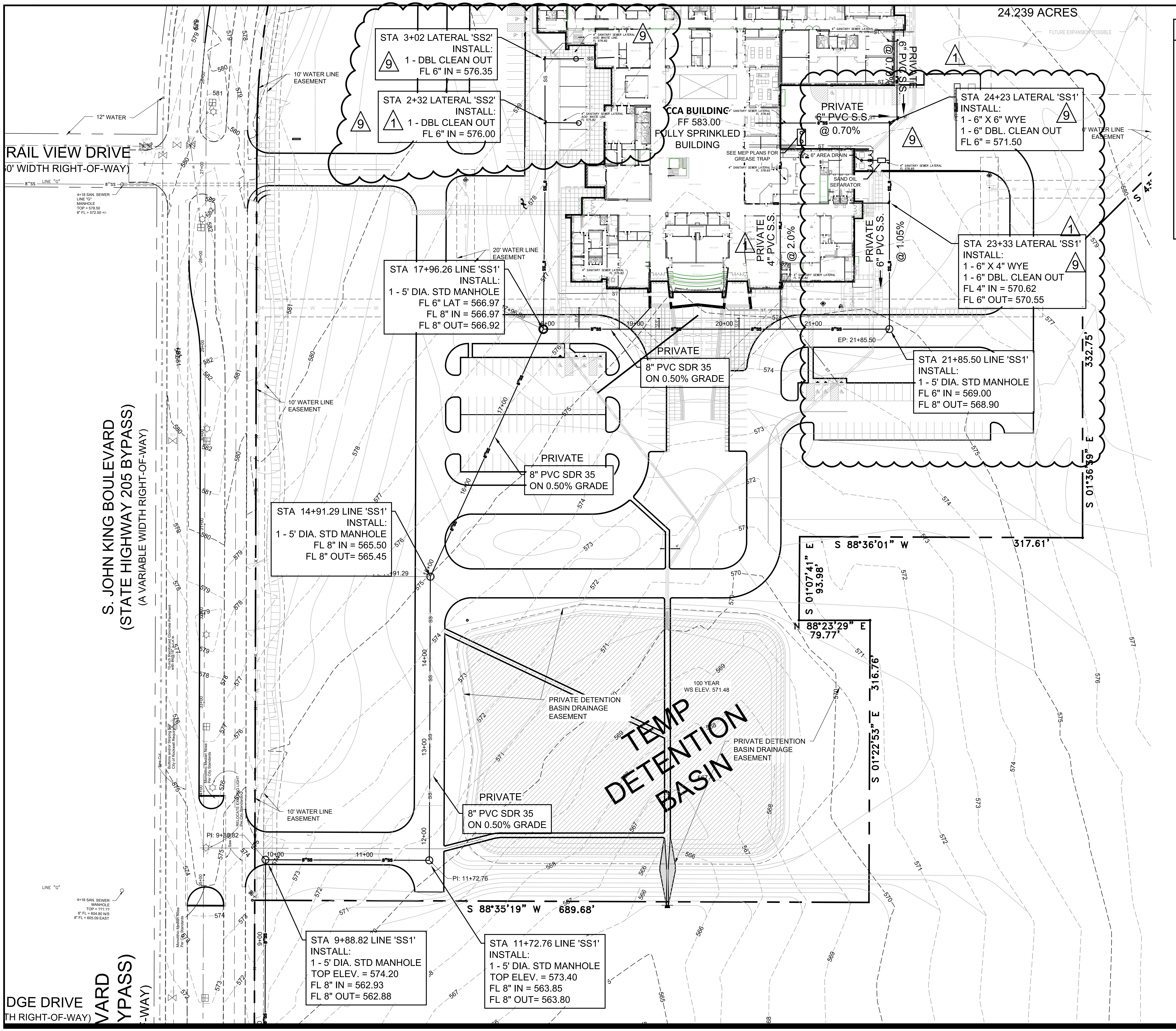


SANITARY SEWER NOTES:

1. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND OTHERS WHO MAY HAVE BURIED EQUIPMENT OR PIPELINES IN THE VICINITY OF CONSTRUCTION PRIOR TO COMMENCING CONSTRUCTION. DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

2. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF TIE-IN TO EXISTING SEWER SYSTEM. IF GRADES NEED REVISING DUE TO UNFORESEEN *CONFLICTS, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO LAYING PIPE.*

3. UNLESS OTHERWISE REQUIRED, ALL SANITARY SEWER PIPE, MANHOLES, AND RELATED APPURTENANCES SHALL CONFORM TO THE MATERIAL AND CONSTRUCTION SPECIFICATIONS AS SET FORTH IN THE CITY OF ROCKWALL STANDARD SPECIFICATIONS. 4. PARTICULAR ATTENTION SHALL BE PAID TO THE INSTALLATION, EMBEDMENT, AND BACKFILL OF SEWER PIPE. ALL EMBEDMENT SHALL CONFORM TO CITY OF ROCKWALL CLASS 'B'.

5. SPECIAL CARE SHALL BE TAKEN IN ADHERING TO THOSE SPECIFICATIONS REGARDING PIPE JOINTS, PIPE EMBEDMENT AND TESTING OF INSTALLED WATER AND SANITARY SEWER PIPES.

6. SEWER PIPE SHALL BE PVC SDR 35.

7. SERVICES SHALL BE 4" PVC, SDR 35, AND SHALL BE INSTALLED AS SHOWN.

8. CONTRACTOR SHALL MEET ALL O.S.H.A. REQUIREMENTS REGARDING TRENCH SAFETY IN THE CONSTRUCTION OF THIS SEWER SERVICE.

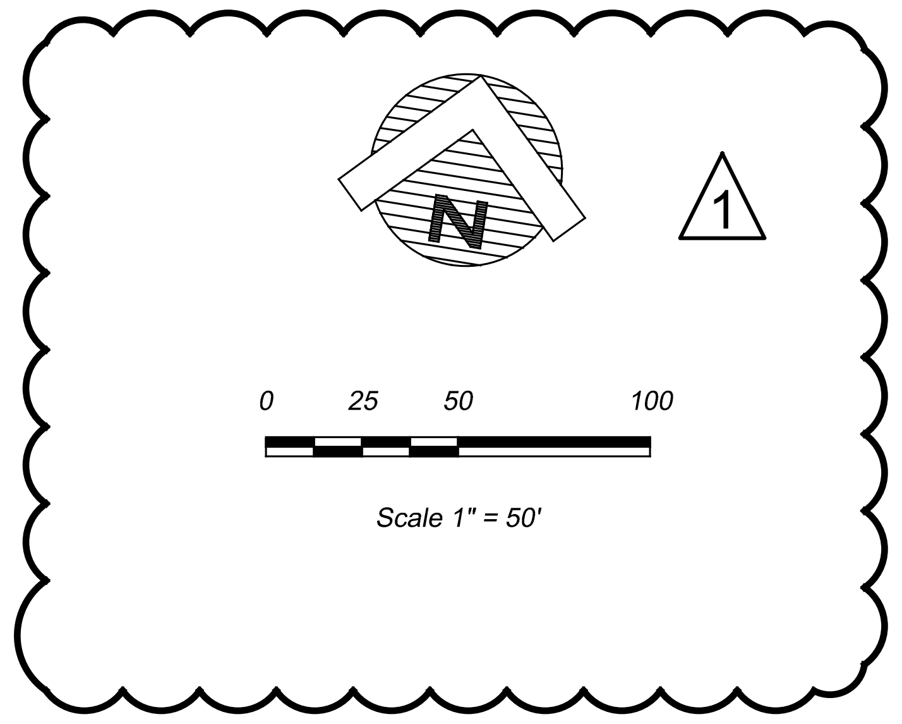
9. ALL SANITARY SEWER MANHOLES SHALL BE RAVEN EPOXY COATED OR APPROVED EQUAL.

10. CONTRACTOR SHALL INSTALL GREEN EMS DISKS AT EVERY MANHOLE, CLEANOUT AND SERVICE CONNECTION.

BENCH MARK:

BENCHMARK #1:
SPK NAIL IN CENTER OF HUBBARD DRIVE .
N 6985121.0710 E 2586167.9530
ELEVATION = 456.02

BENCHMARK #2:
3" ALUMINUM DISK SET IN CONCRETE N.W.
CORNER OF LIFT STATION FENCE.
N 6988281.3710 E 2587591.4680
ELEVATION = 524.55



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Project:
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FOR
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ROCKWALL, TEXAS

MIKE GLENN
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Date July 25, 2018

Glenn Engineering Corporation

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SANITARY
SEWER PLAN
NORTH

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 9
CU1.3

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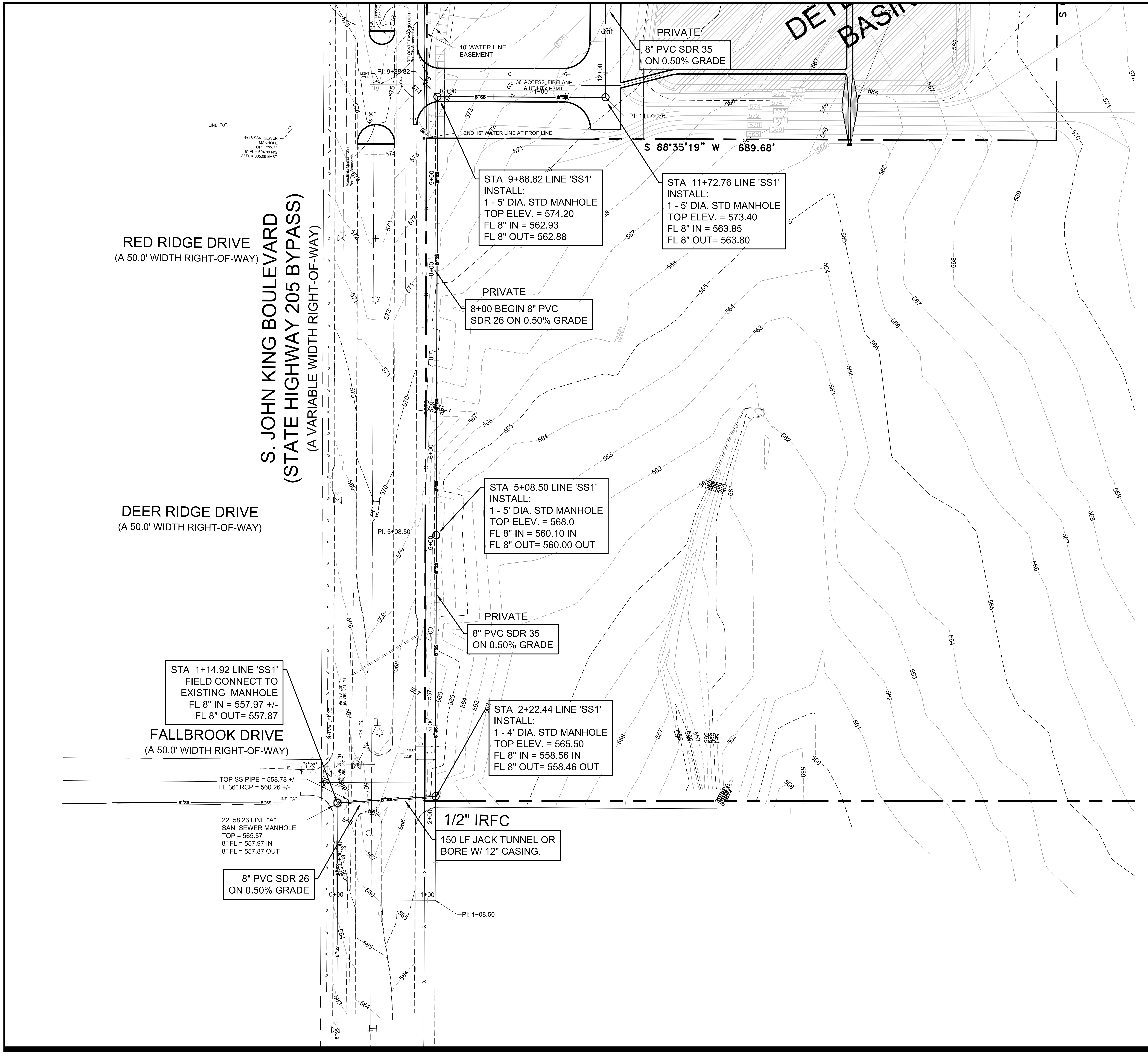

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7. SERVICES SHALL BE 4" PVC, SDR 35, AND SHALL BE INSTALLED AS SHOWN.

8. CONTRACTOR SHALL MEET ALL O.S.H.A. REQUIREMENTS REGARDING TRENCH SAFETY IN THE CONSTRUCTION OF THIS SEWER SERVICE.

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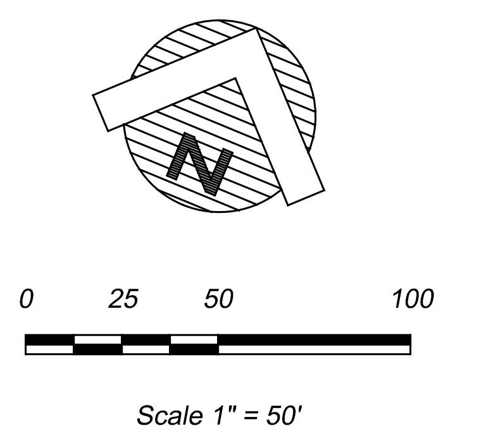
10. CONTRACTOR SHALL INSTALL GREEN EMS DISKS AT EVERY MANHOLE, CLEANOUT AND SERVICE CONNECTION.

BENCH MARK:

BENCHMARK #1:
SPK NAIL IN CENTER OF HUBBARD DRIVE .
N 6985121.0710 E 2586167.9530
ELEVATION = 456.02

BENCHMARK #2:
3" ALUMINUM DISK SET IN CONCRETE N.W.
CORNER OF LIFT STATION FENCE.
N 6988281.3710 E 2587591.4680
ELEVATION = 524.55



Scale 1" = 50'

RECORD DRAWING

This is to certify that changes and
corrections have been made to conform
to the contractor's record of this project.

Signed Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

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3	01/03/2017	CITY ENGINEERING SUBMITTAL
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10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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SANITARY SEWER PLAN SOUTH

Job. No. 1759-03-01	Sheet No. 8 CU1.4
Drawn By: RAH	
Date: 02-28-2017	

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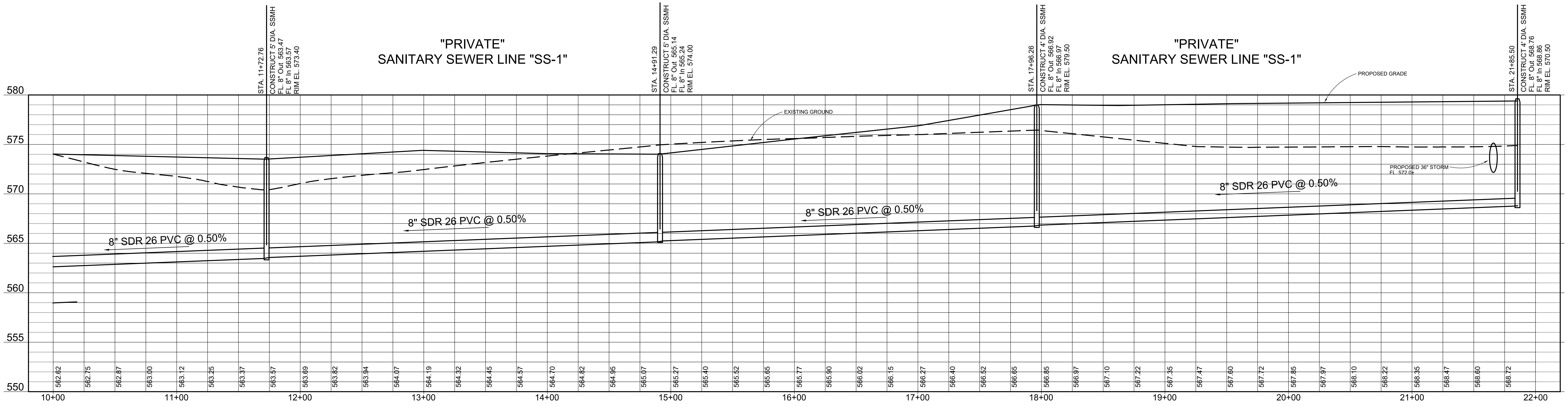

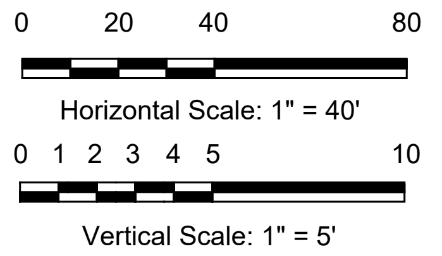

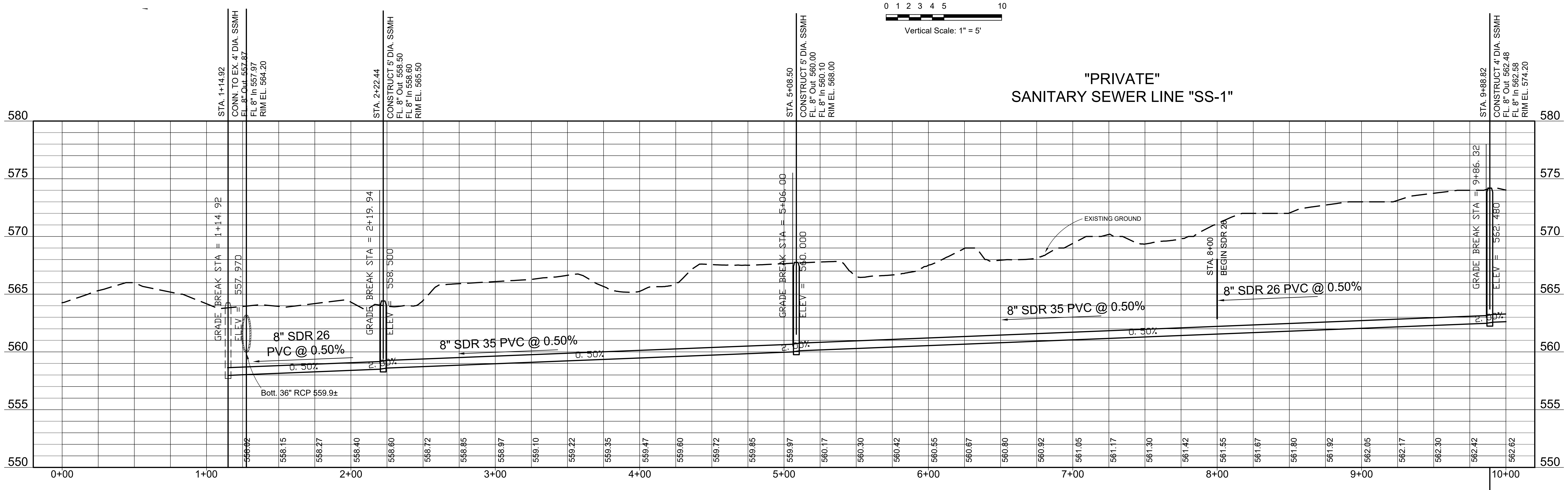

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

MIKE GLENN
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FOR
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ROCKWALL, TEXAS

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SANITARY SEWER PROFILES 8

Job. No. 1759-03-01	**Sheet No.** CU1.5
Drawn By: RAH	
Date: 02-28-2017	

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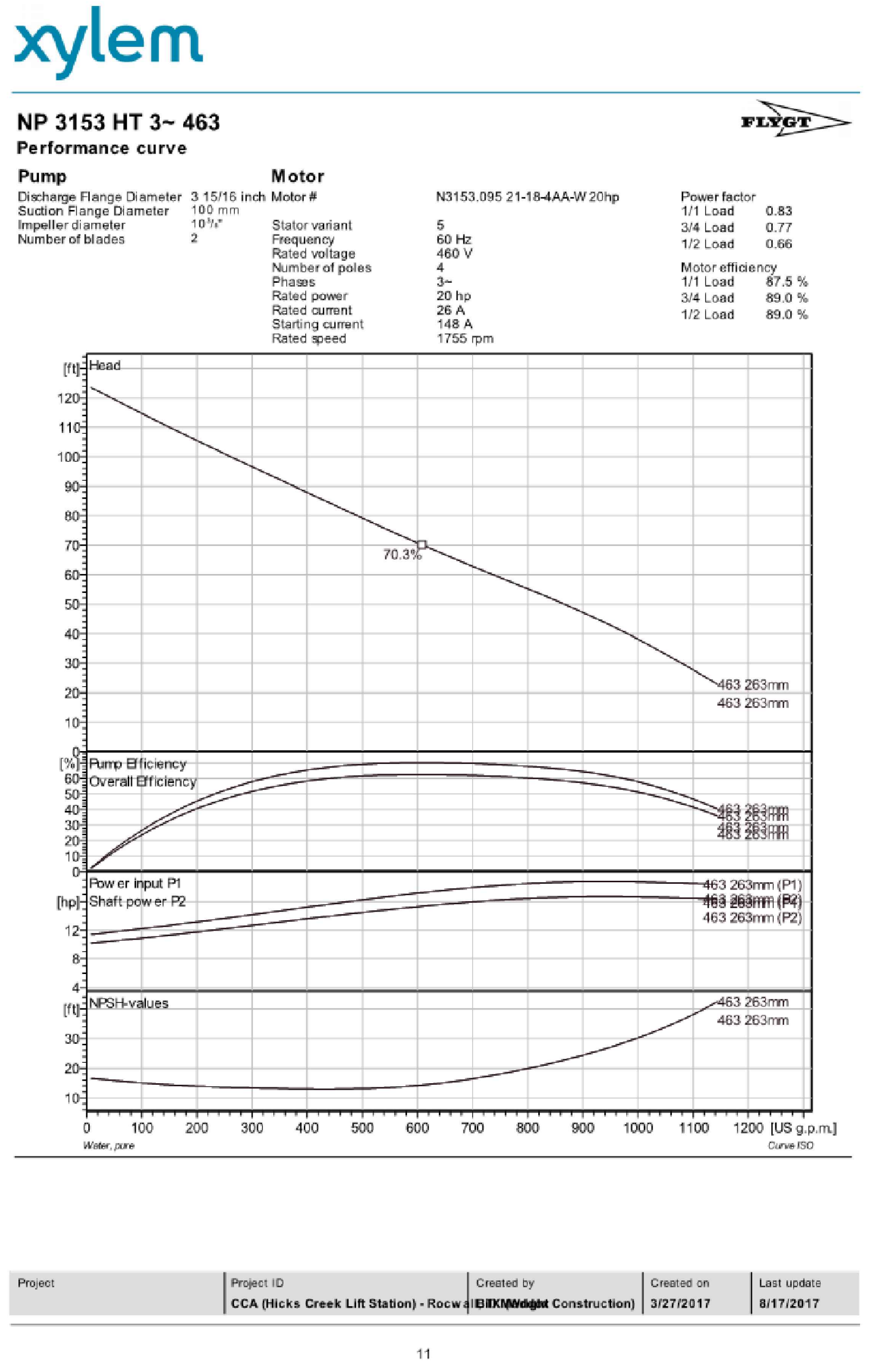
NOTE #1:
REPLACE EXISTING 2-10 HP
FLYGT SUBMERSIBLE PUMPS WITH 2-20 HP
FLYGT XYLEM NP 3153 HT3 - 463 PUMPS
LISTED BELOW WITH 8" X 4" REDUCER.



xylem

NP 3153 HT 3~ 463

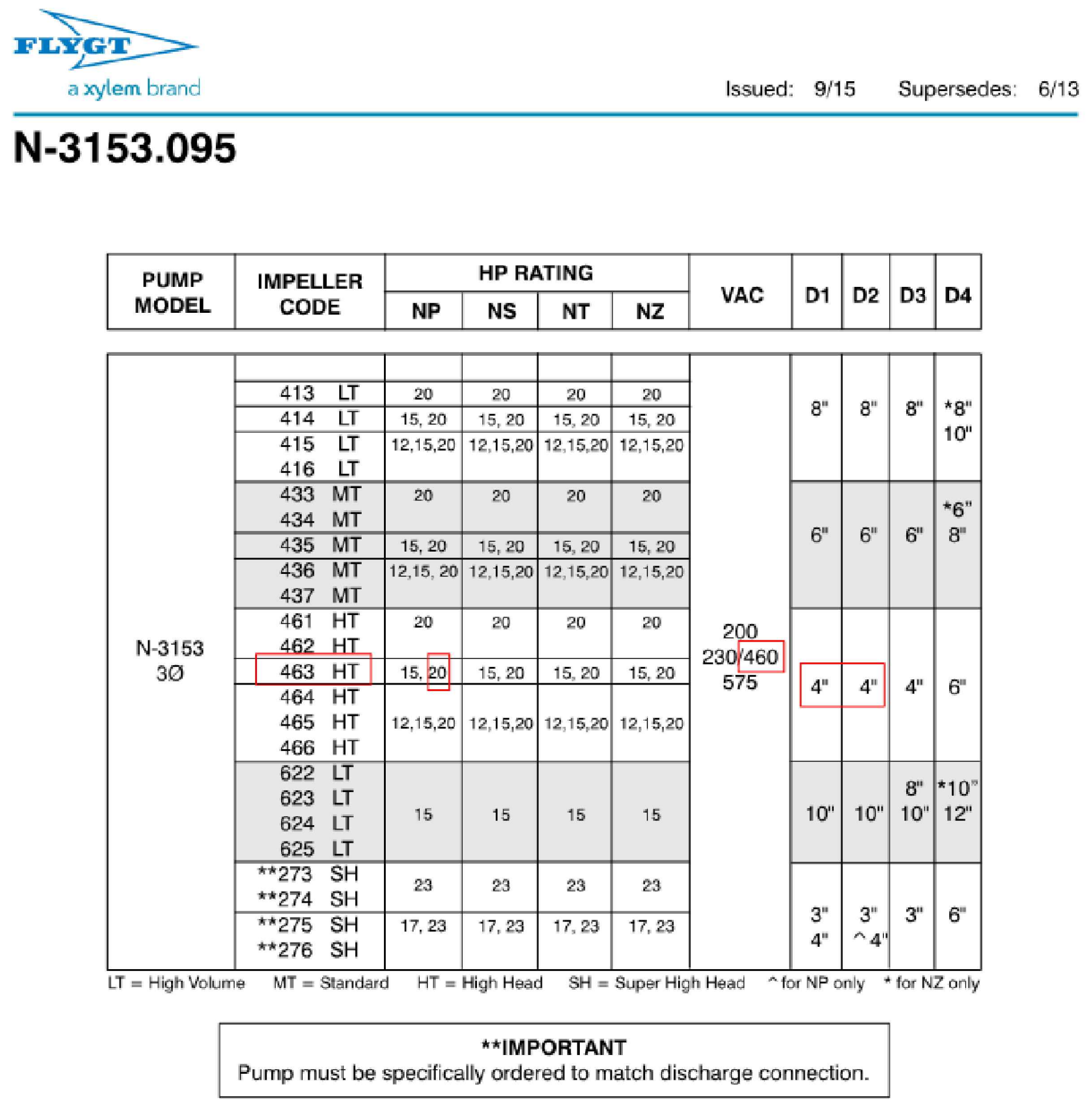
Performance curve

FLYGT

Pump		**Motor**		
Discharge Flange Diameter	3 15/16 inch	Motor #	N3153.095 21-18-4AA-W 20hp	Power factor
Suction Flange Diameter	100 mm			1/1 Load 0.83
Impeller diameter	10 ³⁄₁₆"	Stator variant	5	3/4 Load 0.77
Number of blades	2	Frequency	60 Hz	1/2 Load 0.66
		Rated voltage	460 V	
		Number of poles	4	Motor efficiency
		Phases	3~	1/1 Load 87.5 %
		Rated power	20 hp	3/4 Load 89.0 %
		Rated current	26 A	1/2 Load 89.0 %
		Starting current	148 A	
		Rated speed	1755 rpm	

Project	Project ID	Created by	Created on	Last update
	CCA (Hicks Creek Lift Station) - Rocwall	BIXM Wright Construction)	3/27/2017	8/17/2017

11



FLYGT
a xylem brand

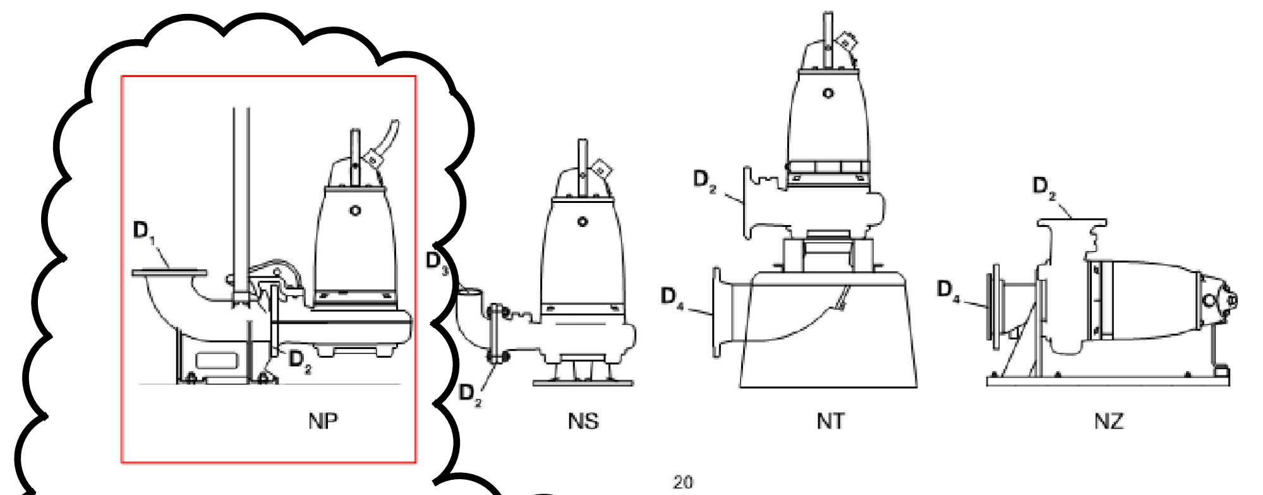
Issued: 9/15 Supersedes: 6/13

N-3153.095

PUMP MODEL	IMPELLER CODE	HP RATING				VAC	D1	D2	D3	D4
		NP	NS	NT	NZ					
N-3153 3Ø	413 LT	20	20	20	20	200 230/460 575	8"	8"	8"	*8" 10"
	414 LT	15, 20	15, 20	15, 20	15, 20					
	415 LT	12,15,20	12,15,20	12,15,20	12,15,20					
	416 LT									
	433 MT	20	20	20	20		6"	6"	6"	*6" 8"
	434 MT									
	435 MT	15, 20	15, 20	15, 20	15, 20					
	436 MT	12,15, 20	12,15,20	12,15,20	12,15,20					
	437 MT									
	461 HT	20	20	20	20		4"	4"	4"	6"
	462 HT									
	463 HT	15, 20	15, 20	15, 20	15, 20					
	464 HT	12,15,20	12,15,20	12,15,20	12,15,20					
	465 HT									
	466 HT									
	622 LT	15	15	15	15		10"	10"	8" 10"	*10" 12"
	623 LT									
	624 LT									
	625 LT									
	**273 SH	23	23	23	23		3" 4"	3" ^4"	3"	6"
	**274 SH									
	**275 SH	17, 23	17, 23	17, 23	17, 23					
	**276 SH									

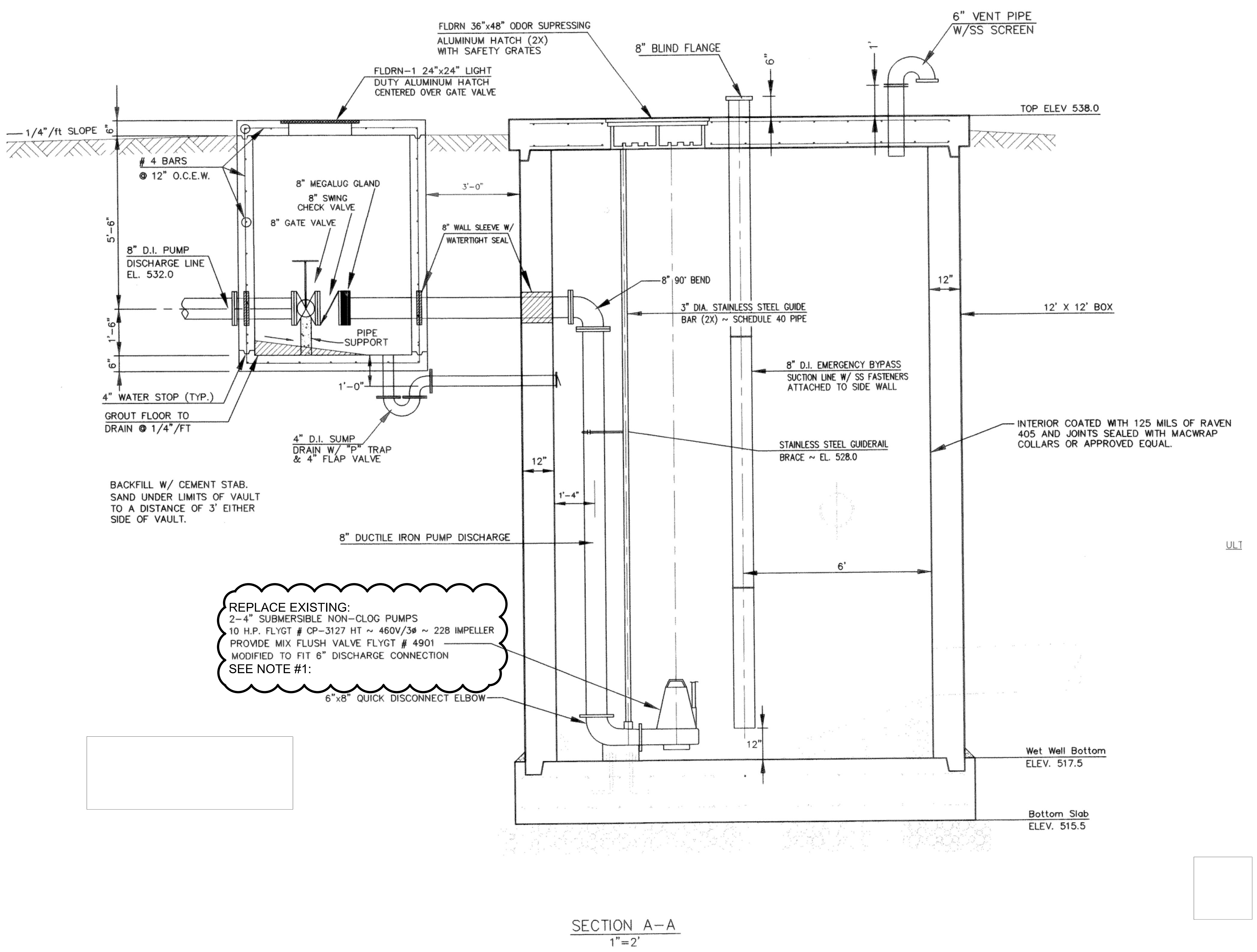
LT = High Volume MT = Standard HT = High Head SH = Super High Head ^ for NP only * for NZ only

**IMPORTANT
Pump must be specifically ordered to match discharge connection.



20

D1
INSTALL 8" X 4" REDUCER.



REPLACE EXISTING:
2-4" SUBMERSIBLE NON-CLOG PUMPS
10 H.P. FLYGT # CP-3127 HT ~ 460V/3ø ~ 228 IMPELLER
PROVIDE MIX FLUSH VALVE FLYGT # 4901
MODIFIED TO FIT 6" DISCHARGE CONNECTION
SEE NOTE #1:

SECTION A-A
1"=2'

LIFT STATION SHOWN FOR INFORMATION ONLY

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

NOTE

THE ABOVE LIFT STATION IS SHOWN FROM AVAILABLE RECORDS AND THEREFORE THE INFORMATION IS FOR USE FOR THE REPLACEMENT OF THE PUMPS AND IMPELLERS ONLY. IT IS THE CONTRACTORS FULL RESPONSIBILITY TO VISIT THE LIFT STAION WITH CITY OF ROCKWALL SHALL PRIOR TO REPLACEMENT FOR ALL WIRING AND CONNECTION REQUIREMENTS. THE PUMP AND IMPELLER REPLACEMENT IS ALL INCLUSIVE.

NOTE #2:
EXISTING PUMPS AND ELECTRICAL EQUIPMENT TO BE REMOVED AND SALVAGED SHALL BE RETURNED TO CITY AND DELIVERED TO MUNICIPAL SERVICE CENTER, 1600 AIRPORT ROAD

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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Hickory Creek
Lift Station
Improvements

Job. No. 1759-03-01	**Sheet No.** CU1.5A
Drawn By: RAH	
Date: 02-28-2017	

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General Notes for Sequencing Electrical

1. Turn off power to existing control cabinet.

2. Turn off Breaker feeding one of the pumps.

3. Using Volt Meter test line and load side of breaker to verify no voltage.

4. Remove wiring from breaker and remove breaker from control cabinet.

5. Install new breaker provided by others and re-terminate existing wiring back on breaker.

6. Repeat Steps 3-5 on second breaker.

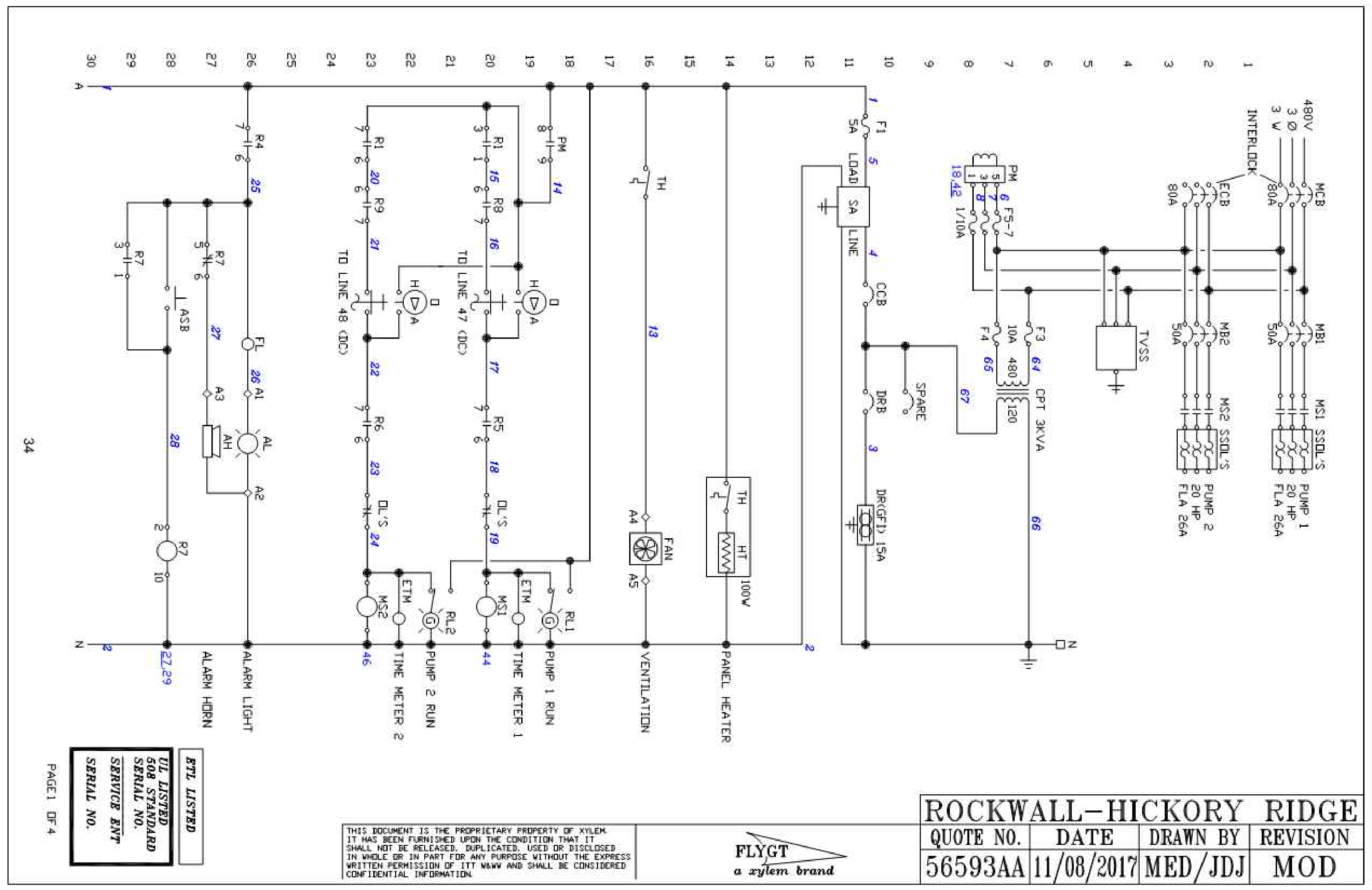
7. Turn power back on to control cabinet .

8. Turn off breaker 1 again, test using volt meter to verify no voltage.

9. Remove existing starter and replace with new one, set starter at old pump rating until new pumps are installed .

10. Repeat steps 8-9 on second pump.
All new equipment will operate existing pumps until new ones are installed
Starters and existing pumps will removed and replace one at a time to avoid both pumps being down at the same time. Once new pumps are installed set Starters for rating on new pumps.

11. General Note: The Lift station shall remain active while the pumps are being replaced.



QUOTE NO.	**56593AA**	**Date:11/08/17**	**Rev:MOD**
JOB NAME	**ROCKWALL - HICKORY RIDGE**	**SN: 03-1018**	
CUSTOMER	**XYLEM, TX (DALLAS)**	**PO: 653857**	

PACKING LIST

MOD KIT PARTS

QTY	LEGEND	DESCRIPTION	MFG	PART #	
2	MCB/ECB	MAIN/EMERGENCY CIRCUIT BREAKER *(3-POLE) (H – FRAME)*	SQD	HDL36080	[ ]
1		MECHANICAL INTERLOCK	STA-CON	SLIDE BAR	[ ]
2		MULTI-LUG KITS (6-#14-#6)	SQD	PDC6HD6	[ ]
2	MB1,2	MOTOR BREAKER *(3-POLE) (H – FRAME)*	SQD	HDL36050	[ ]
2	MS1,2	MOTOR STARTER (SIZE 2, 15-45A)	SQD	8536-SD01VO2H30S	[ ]
12ft.		WIRE, BLK, 8AWG	STACON	STACON	[ ]
		REVISED DRAWINGS			

NOTES: *** OR EQUAL**
SPECIAL ITEMS **IN BOLD TYPE**

NOTE #1:
REPLACE EXISTING 2-10 HP FLYGT SUBMERSIBLE PUMPS WITH 2-20 HP FLYGT XYLEM NP 3153 HT3 - 463 PUMPS

NOTE #2:
EXISTING PUMPS AND ELECTRICAL EQUIPMENT TO BE REMOVED AND SALVAGED SHALL BE RETURNED TO CITY AND DELIVERED TO MUNICIPAL SERVICE CENTER, 1600 AIRPORT ROAD

RECORD DRAWING

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Signed Mike Glen Date July 25, 2018

Glenn Engineering Corporation

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

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Hickory Creek
Lift Station
Improvements

Job No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CU1.5B

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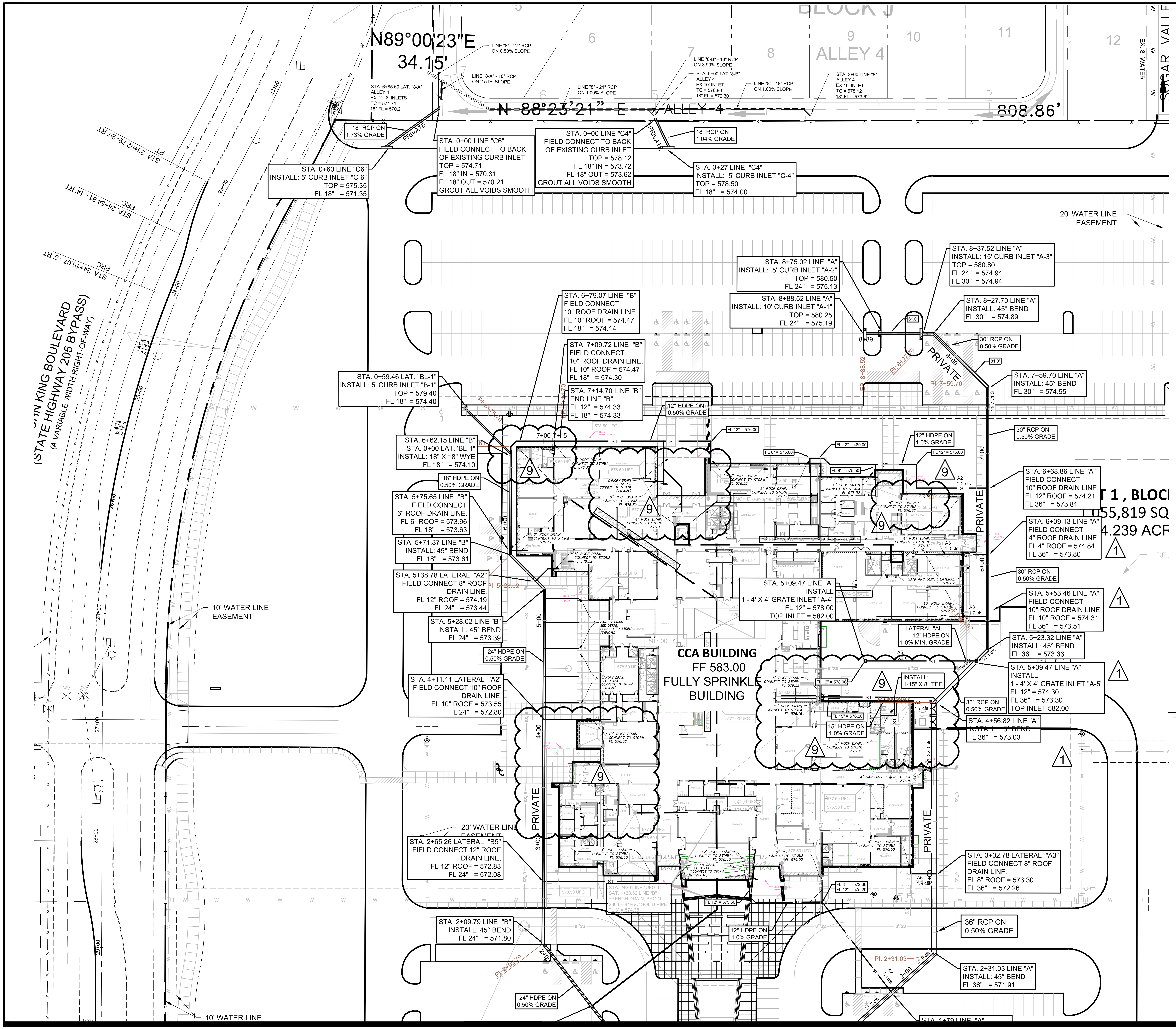
BLOCK J
ALLEY 4
N89°00'23"E
34.15'
N 88°23'21" E
808.86'
LINE "8" - 27" RCP ON 0.50% SLOPE
LINE "8-A" - 18" RCP ON 2.51% SLOPE
STA. 6+85.60 LAT. "8-A" ALLEY 4 EX. 2 - 8' INLETS TC = 574.71 18" FL = 570.21
LINE "8" - 21" RCP ON 1.00% SLOPE
LINE "8-B" - 18" RCP ON 3.90% SLOPE
STA. 5+00 LAT "8-B" ALLEY 4 EX 10' INLET TC = 576.80 18" FL = 572.30
LINE "8" - 18" RCP ON 1.00% SLOPE
STA. 3+60 LINE "8" ALLEY 4 EX 10' INLET TC = 578.12 18" FL = 573.62
EX. 8" WATER
18" RCP ON 1.73% GRADE
PRIVATE
STA. 0+00 LINE "C6" FIELD CONNECT TO BACK OF EXISTING CURB INLET TOP = 574.71 FL 18" IN = 570.31 FL 18" OUT = 570.21 GROUT ALL VOIDS SMOOTH
STA. 0+00 LINE "C4" FIELD CONNECT TO BACK OF EXISTING CURB INLET TOP = 578.12 FL 18" IN = 573.72 FL 18" OUT = 573.62 GROUT ALL VOIDS SMOOTH
18" RCP ON 1.04% GRADE
STA. 0+60 LINE "C6" INSTALL: 5' CURB INLET "C-6" TOP = 575.35 FL 18" = 571.35
STA. 0+27 LINE "C4" INSTALL: 5' CURB INLET "C-4" TOP = 578.50 FL 18" = 574.00
STA 23+02.79-20' RT
STA. 24+54.81-14' RT
STA. 24+10.07-8' RT
PRC
PT
(JOHN KING BOULEVARD (STATE HIGHWAY 205 BYPASS) (A VARIABLE WIDTH RIGHT-OF-WAY)
20' WATER LINE EASEMENT
STA. 8+75.02 LINE "A" INSTALL: 5' CURB INLET "A-2" TOP = 580.50 FL 24" = 575.13
STA. 8+88.52 LINE "A" INSTALL: 10' CURB INLET "A-1" TOP = 580.25 FL 24" = 575.19
STA. 8+37.52 LINE "A" INSTALL: 15' CURB INLET "A-3" TOP = 580.80 FL 24" = 574.94 FL 30" = 574.94
STA. 8+27.70 LINE "A" INSTALL: 45° BEND FL 30" = 574.89
30" RCP ON 0.50% GRADE
STA. 7+59.70 LINE "A" INSTALL: 45° BEND FL 30" = 574.55
PI: 8+27.70
PI: 7+59.70
EP: 8+88.52
61.0'
81.0'
25.7 CFS
STA. 6+79.07 LINE "B" FIELD CONNECT 10" ROOF DRAIN LINE. FL 10" ROOF = 574.47 FL 18" = 574.14
STA. 7+09.72 LINE "B" FIELD CONNECT 10" ROOF DRAIN LINE. FL 10" ROOF = 574.47 FL 18" = 574.30
STA. 7+14.70 LINE "B" END LINE "B" FL 12" = 574.33 FL 18" = 574.33
STA. 0+59.46 LAT. "BL-1" INSTALL: 5' CURB INLET "B-1" TOP = 579.40 FL 18" = 574.40
12" HDPE ON 0.50% GRADE
STA. 6+62.15 LINE "B" STA. 0+00 LAT. 'BL-1" INSTALL: 18" X 18" WYE FL 18" = 574.10
18" HDPE ON 0.50% GRADE
STA. 5+75.65 LINE "B" FIELD CONNECT 6" ROOF DRAIN LINE. FL 6" ROOF = 573.96 FL 18" = 573.63
STA. 5+71.37 LINE "B" INSTALL: 45° BEND FL 18" = 573.61
STA. 5+38.78 LATERAL "A2" FIELD CONNECT 8" ROOF DRAIN LINE. FL 12" ROOF = 574.19 FL 24" = 573.44
STA. 5+28.02 LINE "B" INSTALL: 45° BEND FL 24" = 573.39
24" HDPE ON 0.50% GRADE
STA. 4+11.11 LATERAL "A2" FIELD CONNECT 10" ROOF DRAIN LINE. FL 10" ROOF = 573.55 FL 24" = 572.80
10' WATER LINE EASEMENT
FL 12" = 576.00
FL 12" = 489.00
FL 8" = 576.00
FL 8" = 575.50
12" HDPE ON 1.0% GRADE
FL 12" = 575.00
30" RCP ON 0.50% GRADE
STA. 6+68.86 LINE "A" FIELD CONNECT 10" ROOF DRAIN LINE. FL 12" ROOF = 574.21 FL 36" = 573.81
STA. 6+09.13 LINE "A" FIELD CONNECT 4" ROOF DRAIN LINE. FL 4" ROOF = 574.84 FL 36" = 573.80
30" RCP ON 0.50% GRADE
STA. 5+53.46 LINE "A" FIELD CONNECT 10" ROOF DRAIN LINE. FL 10" ROOF = 574.31 FL 36" = 573.51
STA. 5+09.47 LINE "A" INSTALL 1 - 4' X 4' GRATE INLET "A-4" FL 12" = 578.00 TOP INLET = 582.00
LATERAL "AL-1" 12" HDPE ON 1.0% MIN. GRADE
STA. 5+23.32 LINE "A" INSTALL: 45° BEND FL 36" = 573.36
STA. 5+09.47 LINE "A" INSTALL 1 - 4' X 4' GRATE INLET "A-5" FL 12" = 574.30 FL 36" = 573.30 TOP INLET 582.00
INSTALL: 1-15" X 8" TEE
FL 12" = 578.00
FL 15" = 576.20
15" HDPE ON 1.0% GRADE
36" RCP ON 0.50% GRADE
STA. 4+56.82 LINE "A" INSTALL: 45° BEND FL 36" = 573.03
A2 2.2 cfs
A3 1.0 cfs
A3 1.7 cfs
A4 1.7 cfs
A5 3.2 cfs
A6 1.9 cfs
A7 1.3 cfs
27.1 cfs
32.0 cfs
33.9 cfs
35.2 cfs
8" ROOF DRAIN CONNECT TO STORM FL 576.32
4" ROOF DRAIN CONNECT TO STORM FL 576.32
6" ROOF DRAIN CONNECT TO STORM FL 576.32
10" ROOF DRAIN CONNECT TO STORM FL 576.32
12" ROOF DRAIN CONNECT TO STORM FL 576.16
CANOPY DRAIN SEE DETAIL CONNECT TO STORM (TYPICAL)
6" SANITARY SEWER LATERAL FL 576.82
4" SANITARY SEWER LATERAL FL 576.82
8" FRENCH DRAIN LINE ON 0.50% GRADE
CCA BUILDING
FF 583.00
FULLY SPRINKLED BUILDING
LOT 1, BLOCK
1,055,819 SQ
24.239 ACR
PRIVATE
20' WATER LINE EASEMENT
STA. 2+65.26 LATERAL "B5" FIELD CONNECT 12" ROOF DRAIN LINE. FL 12" ROOF = 572.83 FL 24" = 572.08
8" ROOF DRAIN CONNECT TO STORM FL 576.00
12" ROOF DRAIN CONNECT TO STORM FL 575.50
STA. 2+30 LINE "UFG-1" = SAT. 1+38.52 LINE "B" FRENCH DRAIN, BEGIN 230 LF 8" PVC SOLID PIPE FL 8" = 574.38
FL 12" = 575.50
FL 8" = 572.36
FL 12" = 575.20
STA. 3+02.78 LATERAL "A3" FIELD CONNECT 8" ROOF DRAIN LINE. FL 8" ROOF = 573.30 FL 36" = 572.26
STA. 2+09.79 LINE "B" INSTALL: 45° BEND FL 24" = 571.80
PI: 2+09.79
12" HDPE ON 1.0% GRADE
36" RCP ON 0.50% GRADE
PI: 2+31.03
STA. 2+31.03 LINE "A" INSTALL: 45° BEND FL 36" = 571.91
24" HDPE ON 0.50% GRADE
10' WATER LINE
STA. 1+79 LINE "A"
9
1

GENERAL STORM SEWER NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND CITY OF ROCKWALL STANDARDS AND SPECIFICATIONS.

2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL MAKE CERTAIN THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.

4. IN THE EVENT AN ITEM IS NOT COVERED IN THE CITY OF ROCKWALL SPECIFICATIONS, THE ENGINEER'S DECISION SHALL APPLY.

5. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO "STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION BARRICADING AND CONSTRUCTION STANDARDS".

6. THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION. IN THE EVENT OF ANY CONFLICT AND PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, IMMEDIATELY NOTIFY ENGINEER. MINOR ADJUSTMENTS OF FINISH GRADE TO ACCOMPLISH SPOT DRAINAGE ARE ACCEPTABLE, IF NECESSARY, UPON PRIOR APPROVAL OF ENGINEER. PAVING INSTALLED SHALL 'FLUSH OUT' AT ANY JUNCTURE WITH EXISTING PAVING.

7. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD SURVEYS AND LOCAL UTILITY COMPANY RECORDS. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION.

8. CONTRACTOR SHALL VERIFY ALL EXISTING INVERTS, RIM ELEVATIONS AND SIZES PRIOR TO CONSTRUCTION.

9. ALL NON RCP DRAIN PIPE SHALL BE PVC SCH 40, ADS OR APPROVED EQUAL.

10. ALL RCP SHALL BE CLASS III.

11. W.E. AS INDICATED ON INLET CALLS INDICATES WATER ELEVATION AT INLET DURING 100 YEAR STORM EVENT.

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
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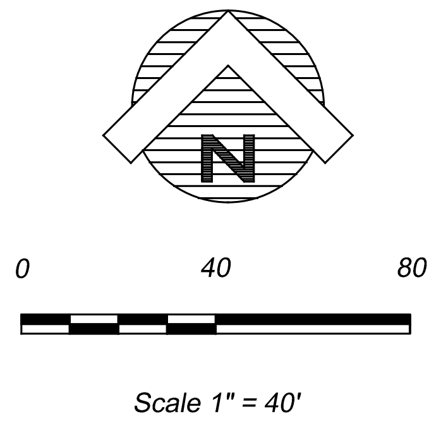
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

NOTE:

SEE SHEET MEP SHEET PL 1.1 FOR DOWNSPOUT & ROOF DRAIN LOCATIONS. ALL ROOF DRAINS & DOWNSPOUTS SHALL BE CONNECTED TO STORM SEWER SYSTEM.



Scale 1" = 40'

BENCH MARK:

BENCHMARK #1:
SPK NAIL IN CENTER OF HUBBARD DRIVE .
N 6985121.0710 E 2586167.9530
ELEVATION = 456.02

BENCHMARK #2:
3" ALUMINUM DISK SET IN CONCRETE N.W. CORNER OF LIFT STATION FENCE.
N 6988281.3710 E 2587591.4680
ELEVATION = 524.55

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

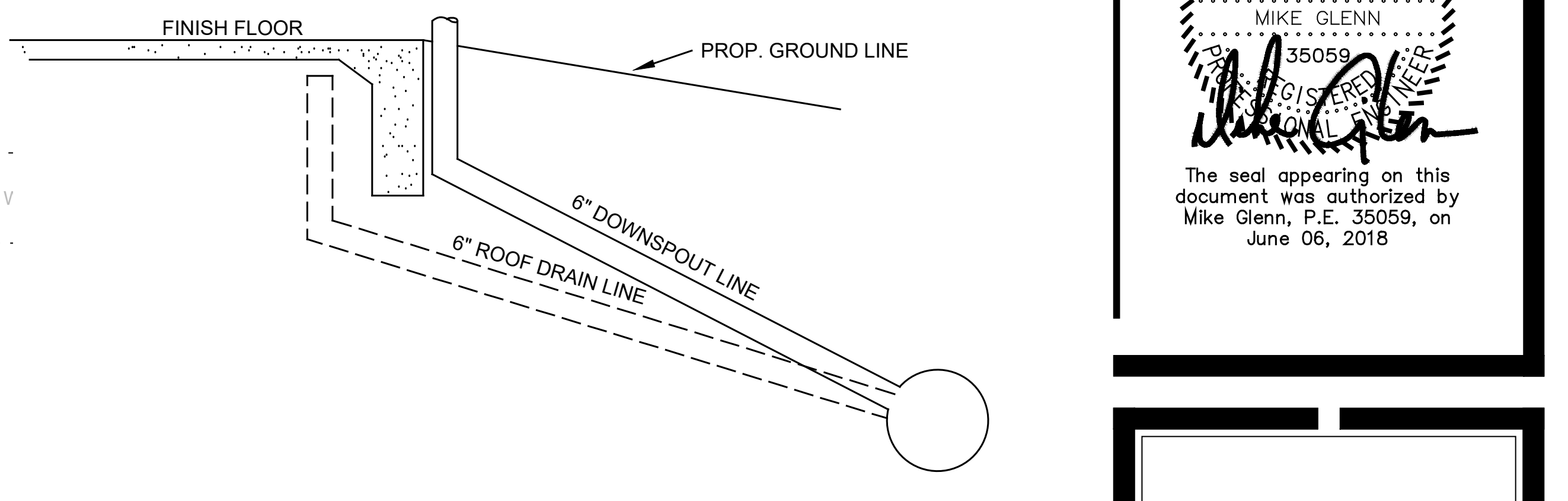
Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018



DOWNSPOUT DETAIL

NTS

NOTE:
1. AT ALL LOCATIONS OF DOWNSPOUTS AND ROOF DRAINS A 6" PVC PIPE IS TO BE INSTALLED FROM THE 12" PVC LINE TO THE FOUNDATION AND EXTEND UP ABOVE THE FINISH FLOOR ELEVATION. SEE ARCHITECTURAL PLAN FOR THE CONNECTION DETAIL AND THE ROOF PLAN FOR ACTUAL DOWNSPOUT AND ROOF DRAIN LOCATIONS.

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GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
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FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

STORM PLAN NORTH
9

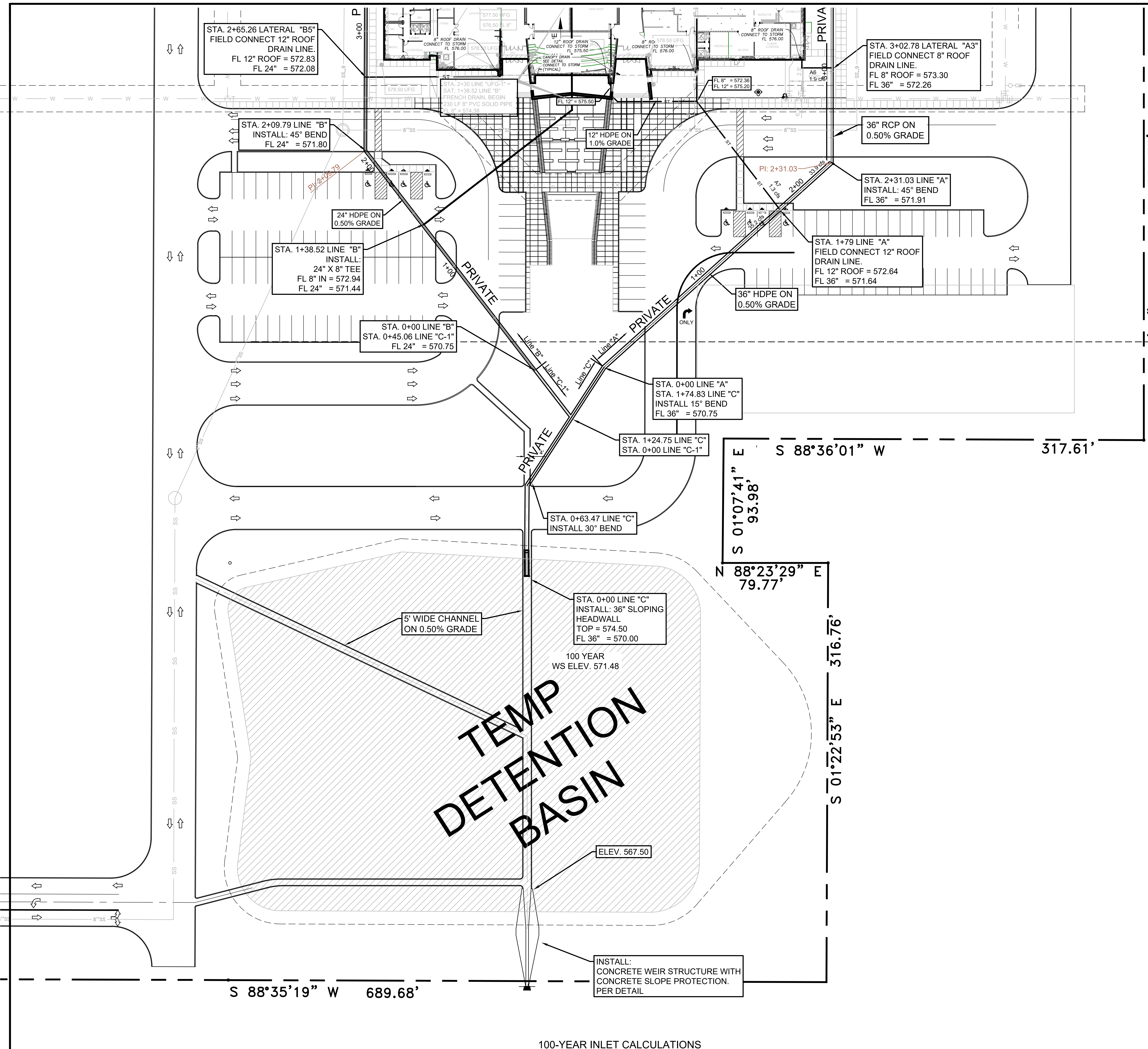
Job. No.
1759-03-01

Drawn By:
RAH

Date:
02-28-2017

Sheet No.
CU1.6

Plotted: Jul 25, 2018, 12:14 PM by user: robert - Saved: 7/25/2018 by user: john
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA RECORD DRAWINGS.dwg



GENERAL STORM SEWER NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND CITY OF ROCKWALL STANDARDS AND SPECIFICATIONS.

2. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL MAKE CERTAIN THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.

3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REQUIREMENTS AND STANDARDS OF THE LOCAL GOVERNING AUTHORITY.

4. IN THE EVENT AN ITEM IS NOT COVERED IN THE CITY OF ROCKWALL SPECIFICATIONS, THE ENGINEER'S DECISION SHALL APPLY.

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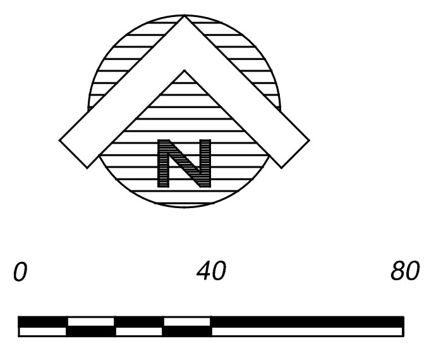
NOTE:

SEE SHEET MP 8.0 FOR DOWNSPOUT & ROOF DRAIN LOCATIONS. ALL ROOF DRAINS & DOWNSPOUTS SHALL BE CONNECTED TO STORM SEWER SYSTEM.



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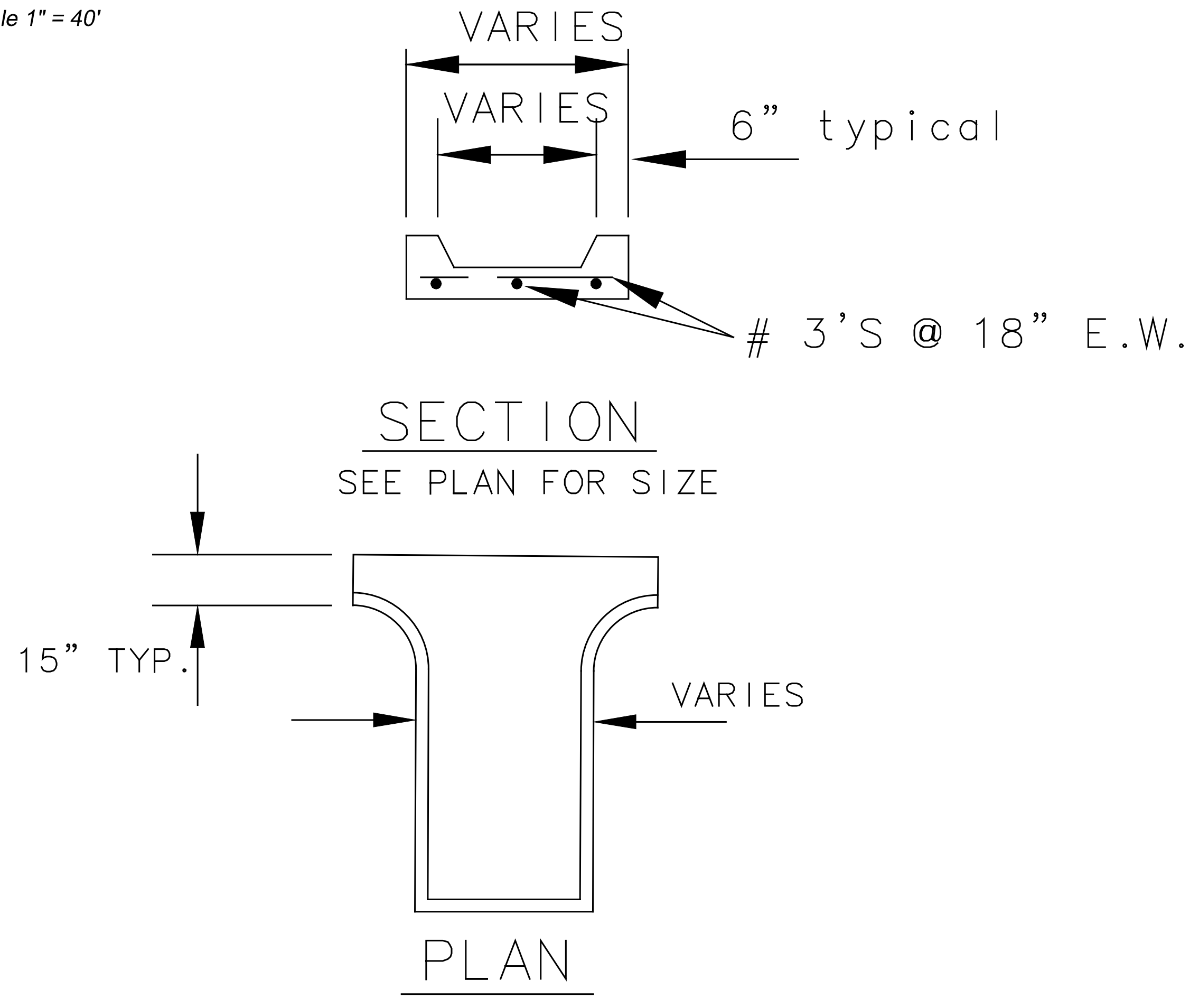
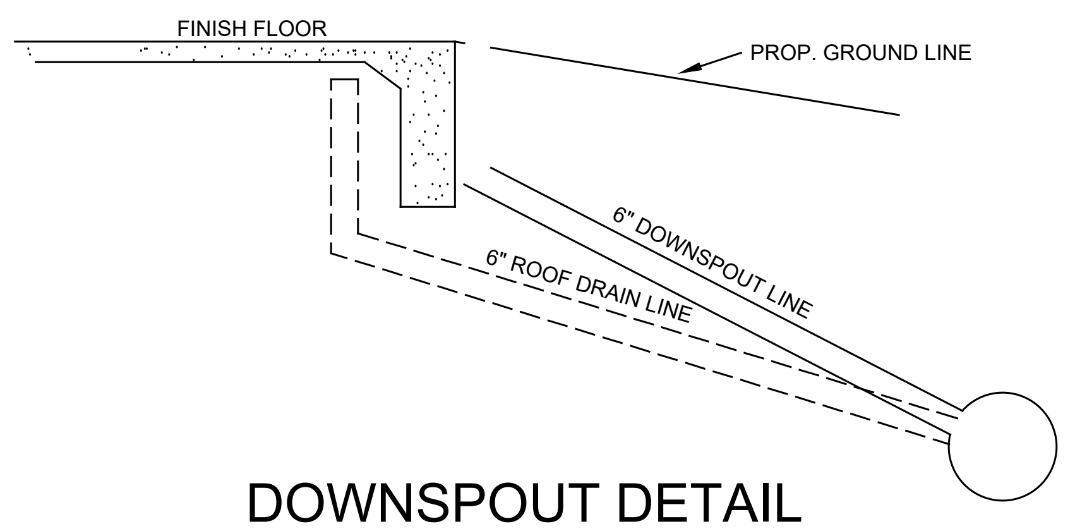


FLUME DETAILS

NTS



DOWNSPOUT DETAIL

NTS

NOTE:
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100-YEAR INLET CALCULATIONS

	INLET	Design			AREA RUNOFF	Q= CIA		Carry-Over	Total	Sag/	Gutter	Gutter		SELECTED INLET					Cary-Over	Remarks
Inlet No.	Location	Storm Frequency (yrs)	Time of Conc. (min)	Intensity I (In./hr.)	Runoff Coeff. "C"	Area (ac.)	"Q" (c.f.s.)	From Upstream Inlet (c.f.s)	Gutter Flow (c.f.s.)	On Grade	Capacity (c.f.s.)	Slope (ft/100ft)	Crown Type	Length "Li" (Feet)	Gutter Depression Width (Feet)	Depth of Flow (y) (feet)	Type	Inlet Capacity (c.f.s.)	To Downstream Inlet (c.f.s)	
1	2	3	4	5	6	7	8	9	10		11	12	13	14			15		16	
A-1	Area A-1A	100	10	9.8	0.7	1	6.86	0		Sag	Sag	Sag	6"	10	2	0.36	Curb	6.86	0	
A-2	Area A-1B	100	10	9.8	0.7	0.32	2.20	0		Sag	Sag	Sag	6"	5	2	0.23	Curb	2.20	0	
A-3	Area A-1C	100	10	9.8	0.7	1.99	13.65	0		Sag	Sag	Sag	6"	15	2	0.47	Curb	13.65	0	
A-4	Area A-5A	100	10	9.8	0.7	0.17	1.17	0		Sag	Sag	Sag	6"	4'x4'	N/A	0.14**	Grate	1.2**	0	
A-5	Area A-5B	100	10	9.8	0.7	0.29	1.99	0		Sag	Sag	Sag	6"	4'x4'	N/A	0.2**	Grate	2**	0	
B-1	Area B-1	100	10	9.8	0.7	0.74	5.08	0		Sag	Sag	Sag	6"	5	2	0.4	Curb	5.08	0	
C-1	Area C-1	100	10	9.8	0.7	0.6	4.12	0		Sag	Sag	Sag	6"	5	2	0.35	Curb	4.12	0	
C-2	Area C-2	100	10	9.8	0.7	0.74	5.08	0		Sag	Sag	Sag	6"	5	2	0.41	Curb	5.08	0	
	** CAPACITY AND DEPTH OF FLOW CALCULATED USING WEIR EQUATION WITH ASSUMED 60 PERCENT EFFICIENCY DUE TO CLOGGING																			

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

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TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
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105 DECKER COURT, SUITE 910
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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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STORM PLAN SOUTH
9

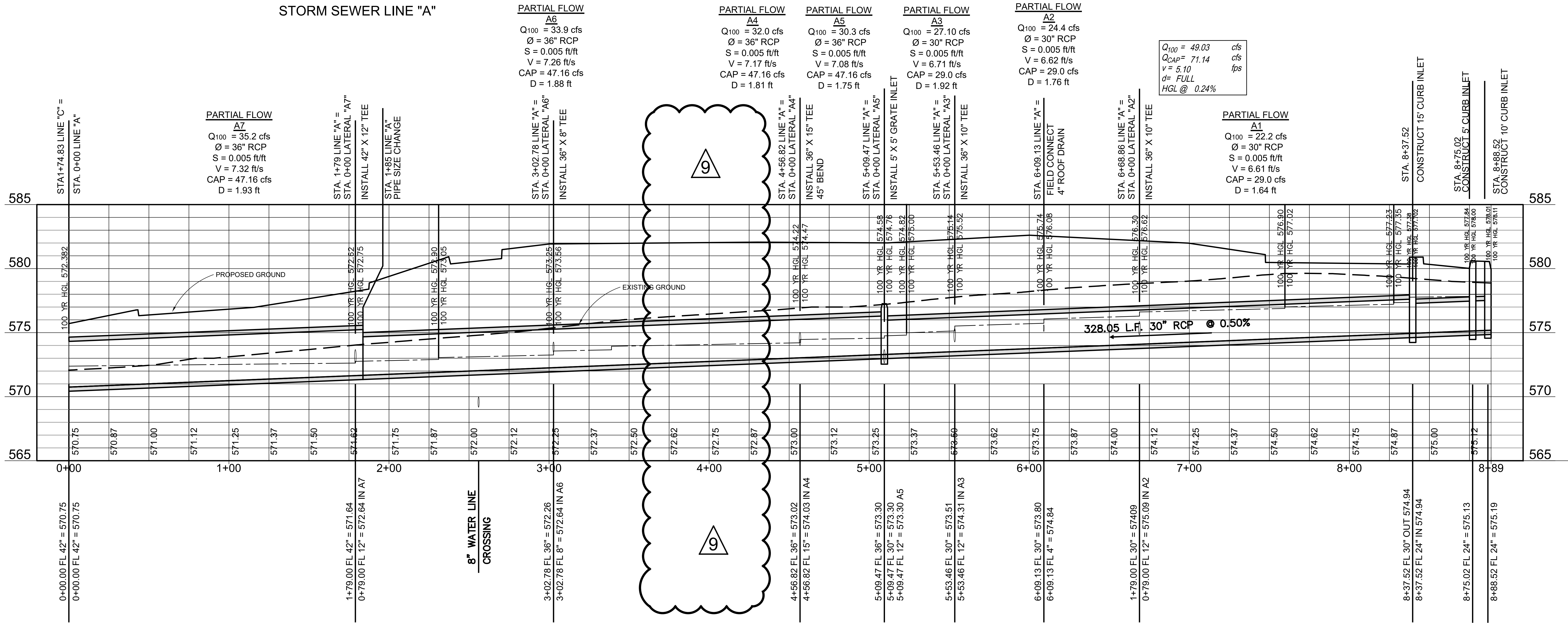
Job. No.
1759-03-01

Drawn By:
RAH

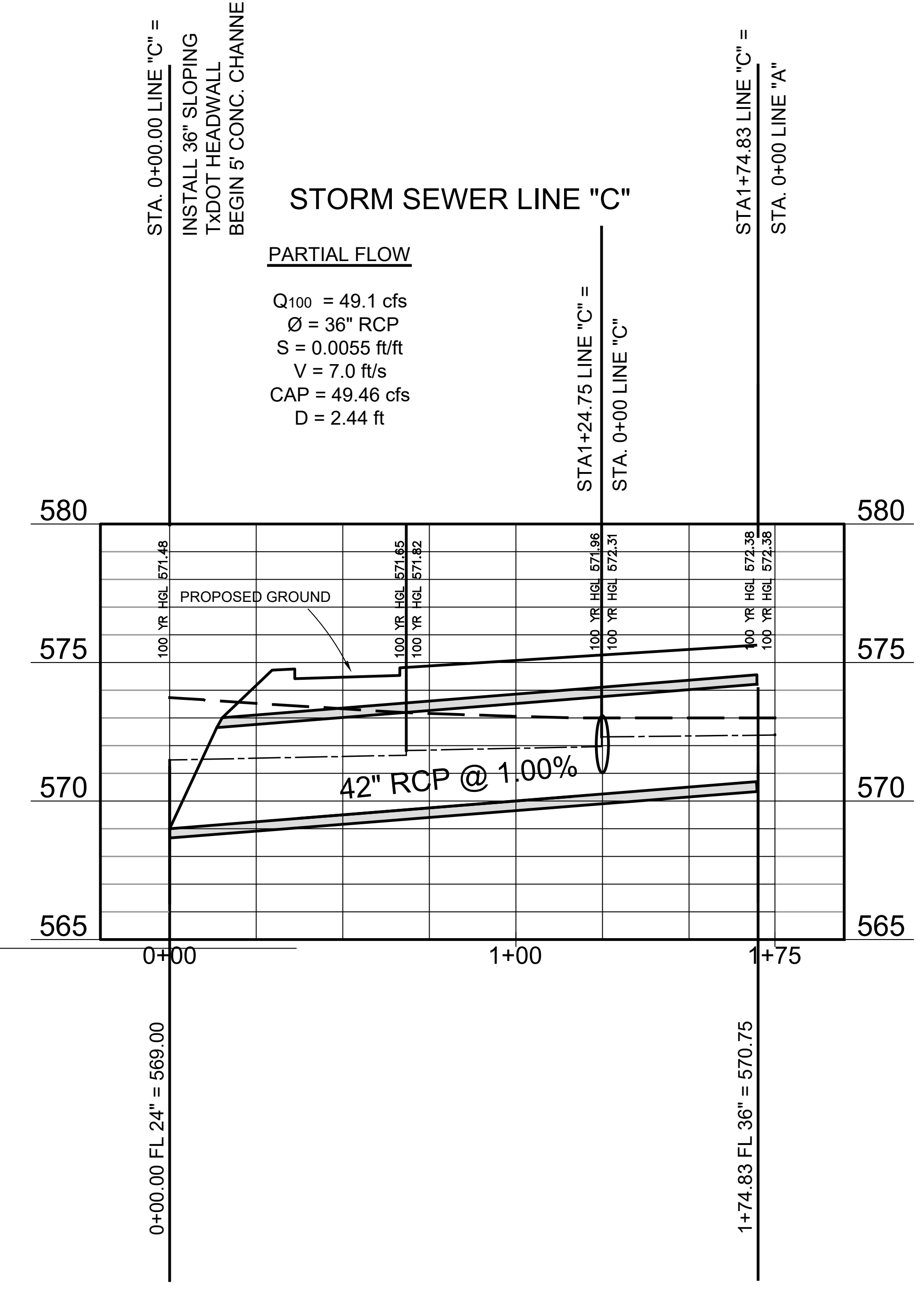
Date:
02-28-2017

Sheet No.
CU1.7

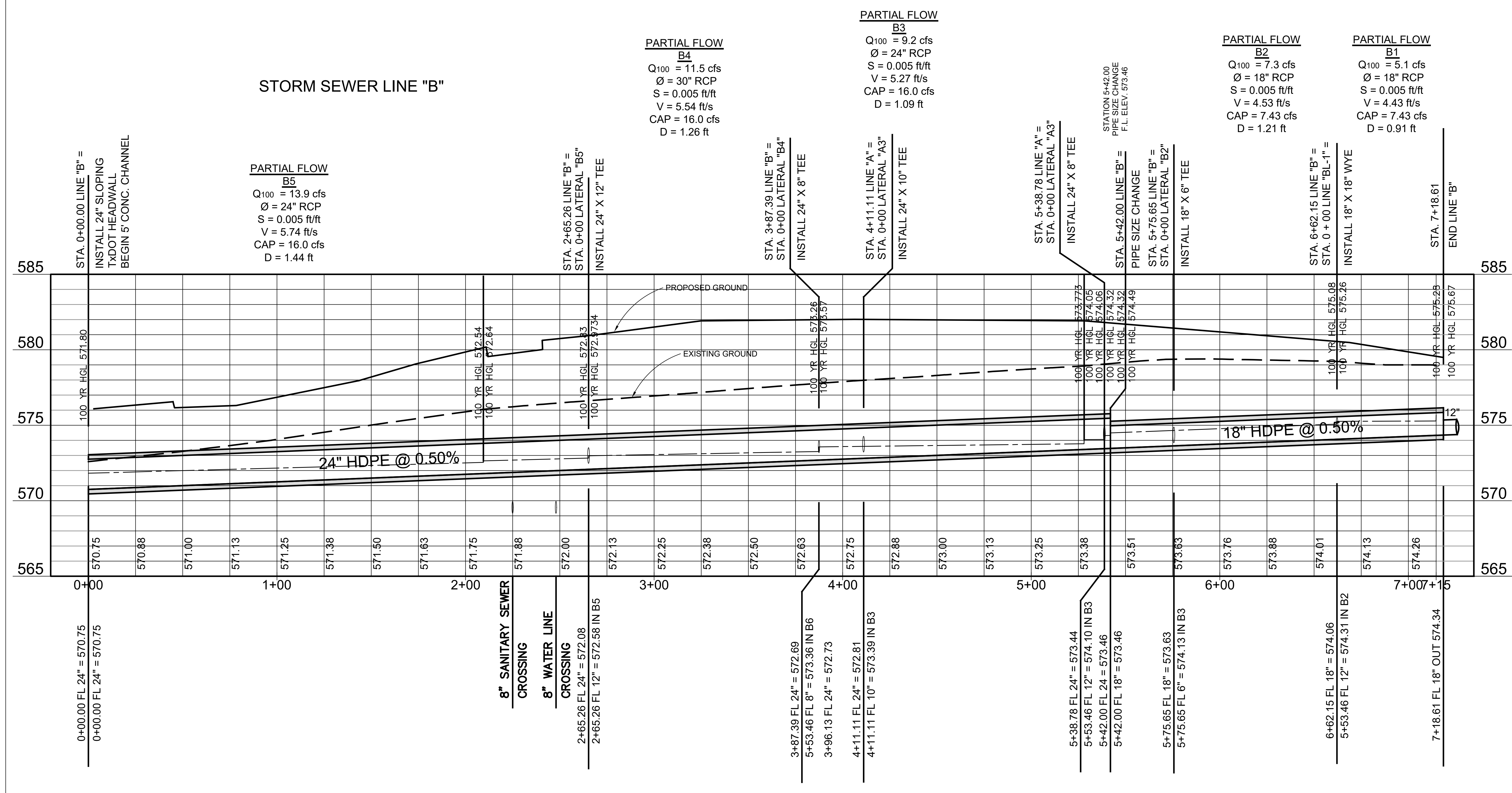
STORM SEWER LINE "A"


PARTIAL FLOW A6: Q100 = 33.9 cfs; Ø = 36" RCP; S = 0.005 ft/ft; V = 7.26 ft/s; CAP = 47.16 cfs; D = 1.88 ft
PARTIAL FLOW A4: Q100 = 32.0 cfs; Ø = 36" RCP; S = 0.005 ft/ft; V = 7.17 ft/s; CAP = 47.16 cfs; D = 1.81 ft
PARTIAL FLOW A5: Q100 = 30.3 cfs; Ø = 36" RCP; S = 0.005 ft/ft; V = 7.08 ft/s; CAP = 47.16 cfs; D = 1.75 ft
PARTIAL FLOW A3: Q100 = 27.10 cfs; Ø = 30" RCP; S = 0.005 ft/ft; V = 6.71 ft/s; CAP = 29.0 cfs; D = 1.92 ft
PARTIAL FLOW A2: Q100 = 24.4 cfs; Ø = 30" RCP; S = 0.005 ft/ft; V = 6.62 ft/s; CAP = 29.0 cfs; D = 1.76 ft
Q100 = 49.03 cfs; QCAP = 71.14 cfs; v = 5.10 fps; d = FULL; HGL @ 0.24%
PARTIAL FLOW A7: Q100 = 35.2 cfs; Ø = 36" RCP; S = 0.005 ft/ft; V = 7.32 ft/s; CAP = 47.16 cfs; D = 1.93 ft
PARTIAL FLOW A1: Q100 = 22.2 cfs; Ø = 30" RCP; S = 0.005 ft/ft; V = 6.61 ft/s; CAP = 29.0 cfs; D = 1.64 ft
STA 1+74.83 LINE "C" = STA. 0+00 LINE "A"
STA. 1+79 LINE "A" = STA. 0+00 LATERAL "A7" INSTALL 42" X 12" TEE
STA. 1+85 LINE "A" PIPE SIZE CHANGE
STA. 3+02.78 LINE "A" = STA. 0+00 LATERAL "A6" INSTALL 36" X 8" TEE
STA. 4+56.82 LINE "A" = STA. 0+00 LATERAL "A4" INSTALL 36" X 15" TEE 45° BEND
STA. 5+09.47 LINE "A" = STA. 0+00 LATERAL "A5" INSTALL 5' X 5' GRATE INLET
STA. 5+53.46 LINE "A" = STA. 0+00 LATERAL "A3" INSTALL 36" X 10" TEE
STA. 6+09.13 LINE "A" = FIELD CONNECT 4" ROOF DRAIN
STA. 6+68.86 LINE "A" = STA. 0+00 LATERAL "A2" INSTALL 36" X 10" TEE
STA. 8+37.52 CONSTRUCT 15' CURB INLET
STA. 8+75.02 CONSTRUCT 5' CURB INLET
STA. 8+88.52 CONSTRUCT 10' CURB INLET
PROPOSED GROUND
EXISTING GROUND
328.05 L.F. 30" RCP @ 0.50%
9
585
580
575
570
565
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
8+89
0+00.00 FL 42" = 570.75
0+00.00 FL 24" "A" = 570.75
1+79.00 FL 42" = 571.64
0+79.00 FL 12" = 572.64 IN A7
8" WATER LINE CROSSING
3+02.78 FL 36" = 572.26
3+02.78 FL 8" = 572.64 IN A6
4+56.82 FL 36" = 573.02
4+56.82 FL 15" = 574.03 IN A4
5+09.47 FL 36" = 573.30
5+09.47 FL 30" = 573.30
5+09.47 FL 12" = 573.30 A5
5+53.46 FL 30" = 573.51
5+53.46 FL 12" = 574.31 IN A3
6+09.13 FL 30" = 573.80
6+09.13 FL 4" = 574.84
1+79.00 FL 30" = 57409
0+79.00 FL 12" = 575.09 IN A2
8+37.52 FL 30" OUT 574.94
8+37.52 FL 24" IN 574.94
8+75.02 FL 24" = 575.13
8+88.52 FL 24" = 575.19

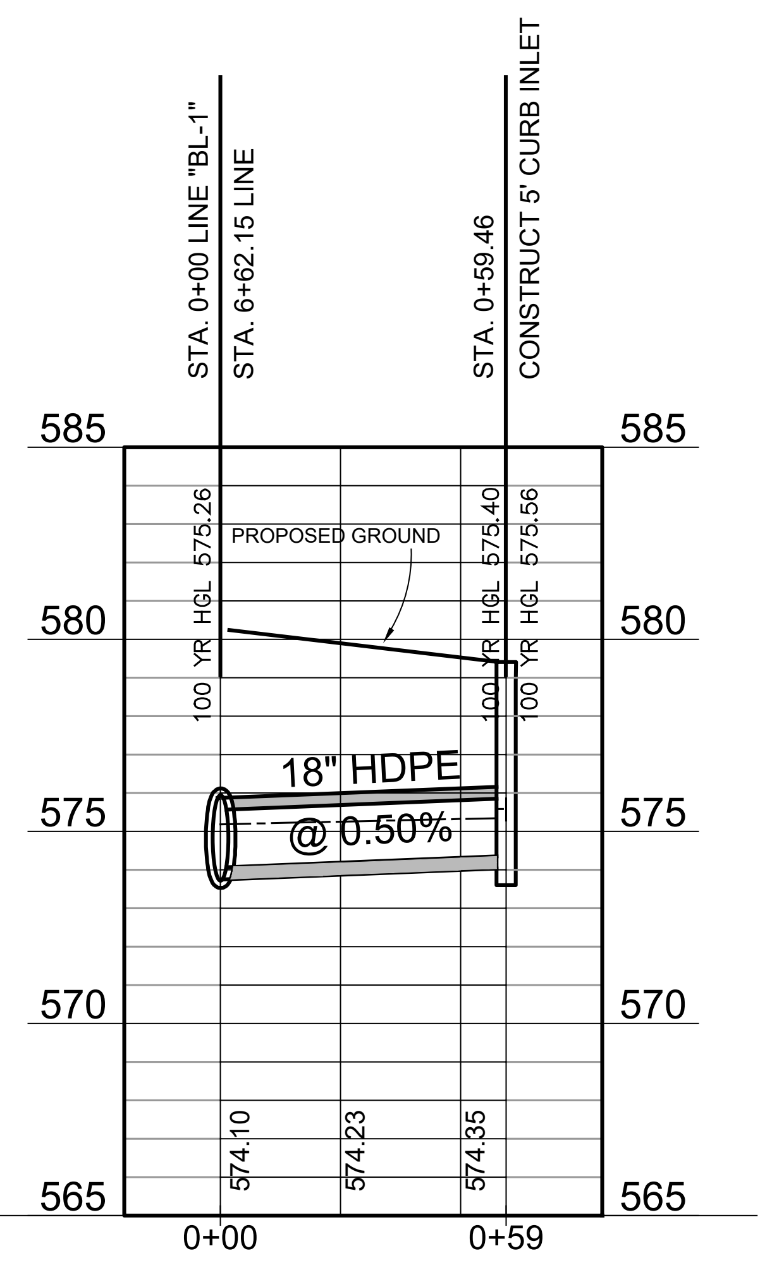
STORM SEWER LINE "C"


STA. 0+00.00 LINE "C" = INSTALL 36" SLOPING TxDOT HEADWALL BEGIN 5' CONC. CHANNEL
PARTIAL FLOW: Q100 = 49.1 cfs; Ø = 36" RCP; S = 0.0055 ft/ft; V = 7.0 ft/s; CAP = 49.46 cfs; D = 2.44 ft
STA 1+24.75 LINE "C" = STA. 0+00 LINE "C"
STA 1+74.83 LINE "C" = STA. 0+00 LINE "A"
PROPOSED GROUND
42" RCP @ 1.00%
580
575
570
565
0+00
1+00
1+75
0+00.00 FL 24" = 569.00
1+74.83 FL 36" = 570.75

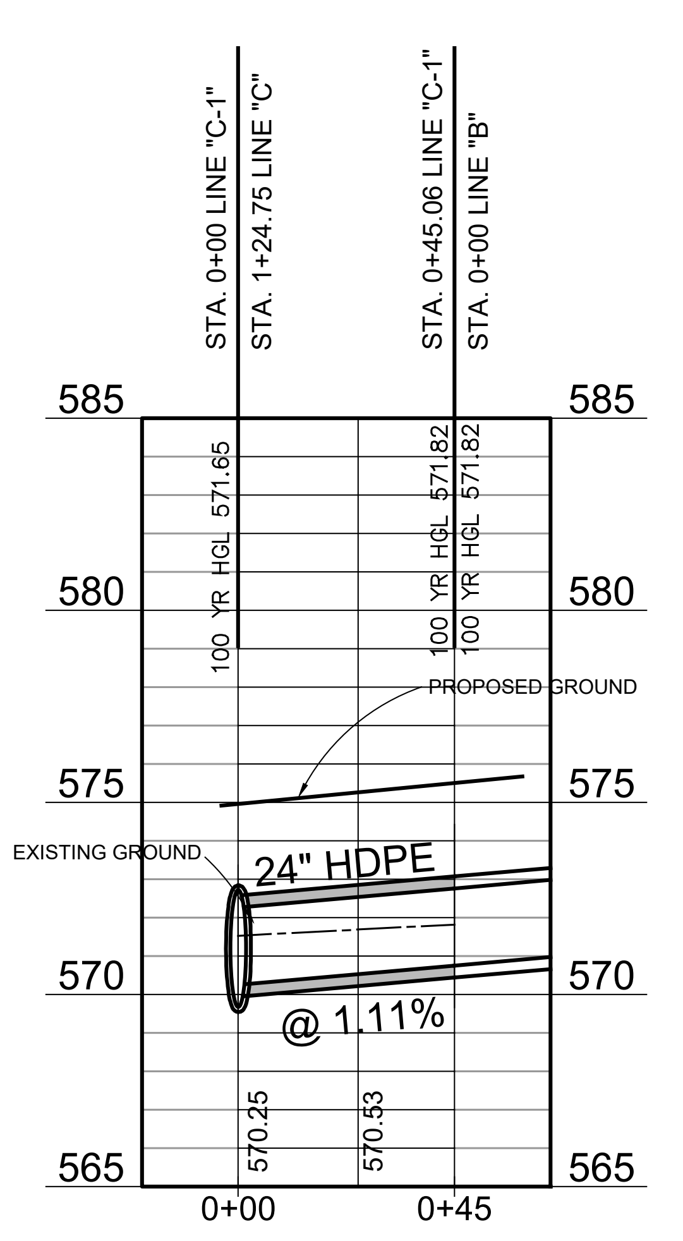
STORM SEWER LINE "B"


PARTIAL FLOW B4: Q100 = 11.5 cfs; Ø = 30" RCP; S = 0.005 ft/ft; V = 5.54 ft/s; CAP = 16.0 cfs; D = 1.26 ft
PARTIAL FLOW B3: Q100 = 9.2 cfs; Ø = 24" RCP; S = 0.005 ft/ft; V = 5.27 ft/s; CAP = 16.0 cfs; D = 1.09 ft
PARTIAL FLOW B2: Q100 = 7.3 cfs; Ø = 18" RCP; S = 0.005 ft/ft; V = 4.53 ft/s; CAP = 7.43 cfs; D = 1.21 ft
PARTIAL FLOW B1: Q100 = 5.1 cfs; Ø = 18" RCP; S = 0.005 ft/ft; V = 4.43 ft/s; CAP = 7.43 cfs; D = 0.91 ft
PARTIAL FLOW B5: Q100 = 13.9 cfs; Ø = 24" RCP; S = 0.005 ft/ft; V = 5.74 ft/s; CAP = 16.0 cfs; D = 1.44 ft
STA. 0+00.00 LINE "B" = INSTALL 24" SLOPING TxDOT HEADWALL BEGIN 5' CONC. CHANNEL
STA. 2+65.26 LINE "B" = STA. 0+00 LATERAL "B5" INSTALL 24" X 12" TEE
STA. 3+87.39 LINE "B" = STA. 0+00 LATERAL "B4" INSTALL 24" X 8" TEE
STA. 4+11.11 LINE "A" = STA. 0+00 LATERAL "A3" INSTALL 24" X 10" TEE
STA. 5+38.78 LINE "A" = STA. 0+00 LATERAL "A3" INSTALL 24" X 8" TEE
STATION 5+42.00 PIPE SIZE CHANGE F.L. ELEV. 573.46
STA. 5+42.00 LINE "B" = PIPE SIZE CHANGE STA. 5+75.65 LINE "B" = STA. 0+00 LATERAL "B2" INSTALL 18" X 6" TEE
STA. 6+62.15 LINE "B" = STA. 0+00 LINE "BL-1" INSTALL 18" X 18" WYE
STA. 7+18.61 END LINE "B"
PROPOSED GROUND
EXISTING GROUND
24" HDPE @ 0.50%
18" HDPE @ 0.50%
12"
585
580
575
570
565
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00 7+15
0+00.00 FL 24" = 570.75
0+00.00 FL 24" = 570.75
8" SANITARY SEWER CROSSING
8" WATER LINE CROSSING
2+65.26 FL 24" = 572.08
2+65.26 FL 12" = 572.58 IN B5
3+87.39 FL 24" = 572.69
5+53.46 FL 8" = 573.36 IN B6
3+96.13 FL 24" = 572.73
4+11.11 FL 24" = 572.81
4+11.11 FL 10" = 573.39 IN B3
5+38.78 FL 24" = 573.44
5+53.46 FL 12" = 574.10 IN B3
5+42.00 FL 24 = 573.46
5+42.00 FL 18" = 573.46
5+75.65 FL 18" = 573.63
5+75.65 FL 6" = 574.13 IN B3
6+62.15 FL 18" = 574.06
5+53.46 FL 12" = 574.31 IN B2
7+18.61 FL 18" OUT 574.34

STORM SEWER LINE "BL-1"


STA. 0+00 LINE "BL-1" STA. 6+62.15 LINE
STA. 0+59.46 CONSTRUCT 5' CURB INLET
PROPOSED GROUND
18" HDPE @ 0.50%
585
580
575
570
565
0+00
0+59

STORM SEWER LINE "C-1"


STA. 0+00 LINE "C-1" STA. 1+24.75 LINE "C"
STA. 0+45.06 LINE "C-1" STA. 0+00 LINE "B"
PROPOSED GROUND
EXISTING GROUND
24" HDPE @ 1.11%
585
580
575
570
565
0+00
0+45

0 20 40 80
Horizontal Scale: 1" = 40'
0 1 2 3 4 5 10
Vertical Scale: 1" = 5'

RECORD DRAWING

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Signed Mike Glenn Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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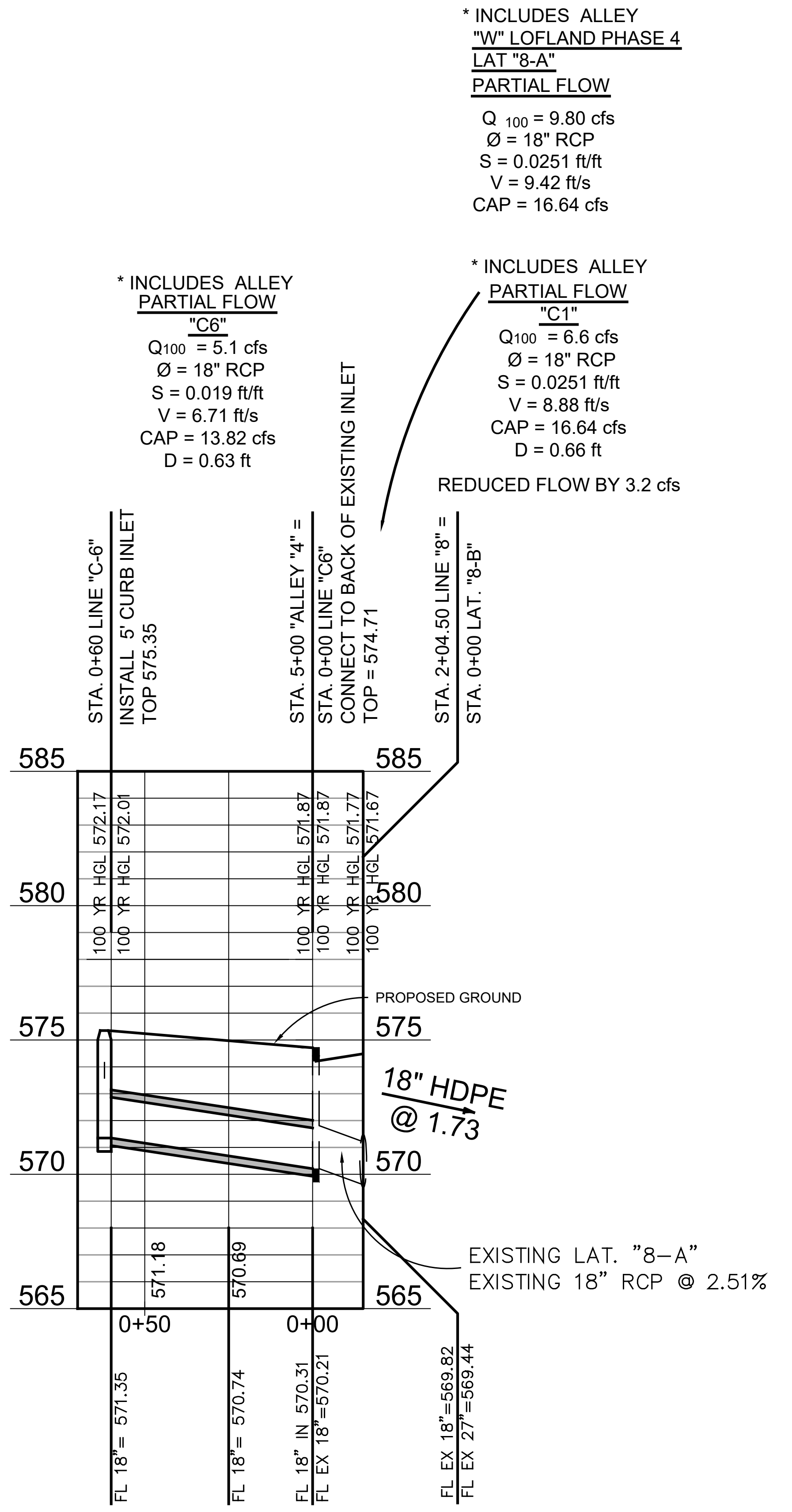
STORM SEWER PROFILES
9

Job. No.	Sheet No.
1759-03-01	CU1.8
Drawn By: RAH	
Date: 02-28-2017	

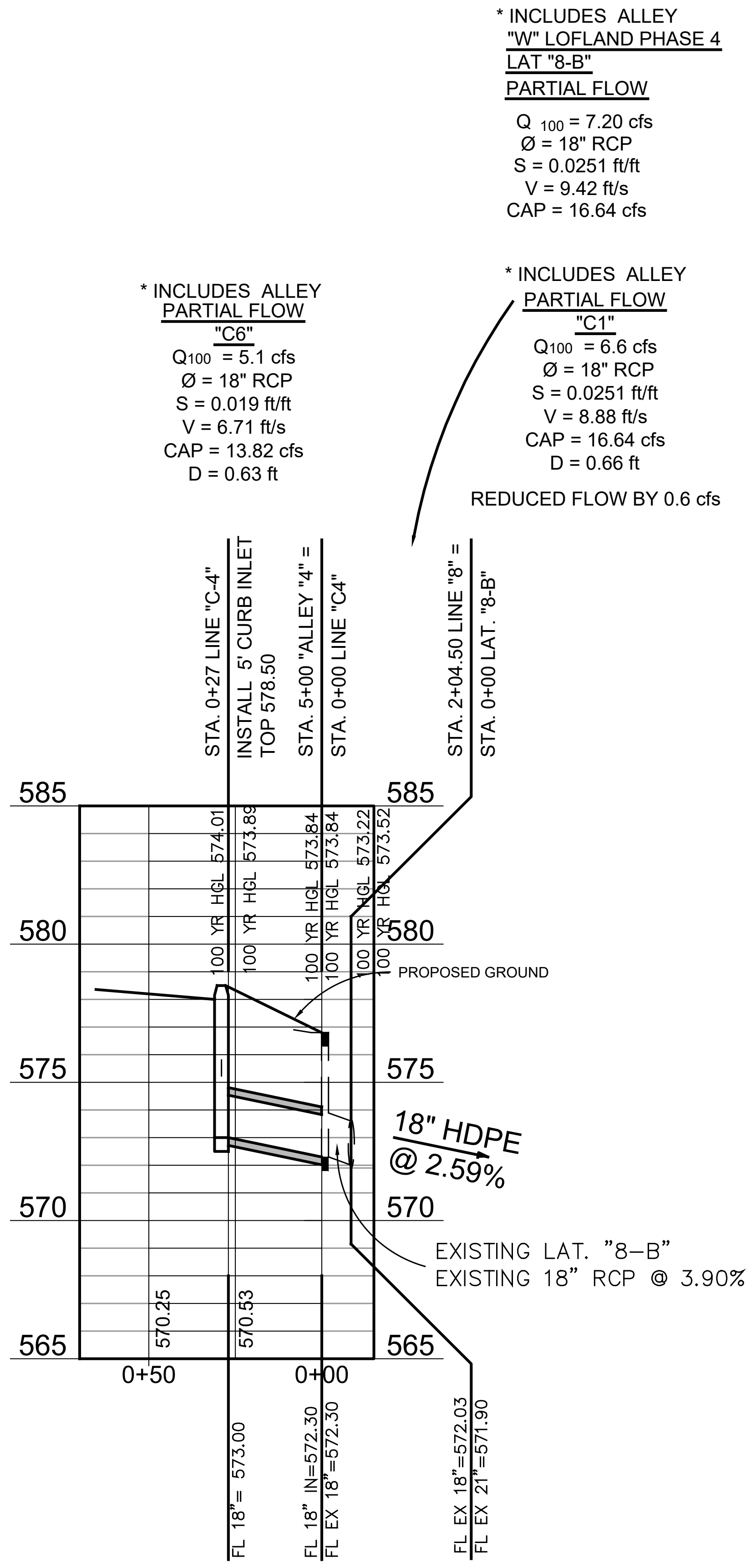


* INCLUDES ALLEY
"W" LOFLAND PHASE 4
LAT "8-A"
PARTIAL FLOW
Q_{100} = 9.80 cfs
Ø = 18" RCP
S = 0.0251 ft/ft
V = 9.42 ft/s
CAP = 16.64 cfs

* INCLUDES ALLEY
PARTIAL FLOW
"C6"
Q_{100} = 5.1 cfs
Ø = 18" RCP
S = 0.019 ft/ft
V = 6.71 ft/s
CAP = 13.82 cfs
D = 0.63 ft

* INCLUDES ALLEY
PARTIAL FLOW
"C1"
Q_{100} = 6.6 cfs
Ø = 18" RCP
S = 0.0251 ft/ft
V = 8.88 ft/s
CAP = 16.64 cfs
D = 0.66 ft

REDUCED FLOW BY 3.2 cfs



* INCLUDES ALLEY
"W" LOFLAND PHASE 4
LAT "8-B"
PARTIAL FLOW
Q_{100} = 7.20 cfs
Ø = 18" RCP
S = 0.0251 ft/ft
V = 9.42 ft/s
CAP = 16.64 cfs

* INCLUDES ALLEY
PARTIAL FLOW
"C6"
Q_{100} = 5.1 cfs
Ø = 18" RCP
S = 0.019 ft/ft
V = 6.71 ft/s
CAP = 13.82 cfs
D = 0.63 ft

* INCLUDES ALLEY
PARTIAL FLOW
"C1"
Q_{100} = 6.6 cfs
Ø = 18" RCP
S = 0.0251 ft/ft
V = 8.88 ft/s
CAP = 16.64 cfs
D = 0.66 ft

REDUCED FLOW BY 0.6 cfs

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glen
Date July 25, 2018

Glenn Engineering Corporation

0 20 40 80
Horizontal Scale: 1" = 40'
0 1 2 3 4 5 10
Vertical Scale: 1" = 5'

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

STORM SEWER PROFILES

Job. No.
1759-03-01

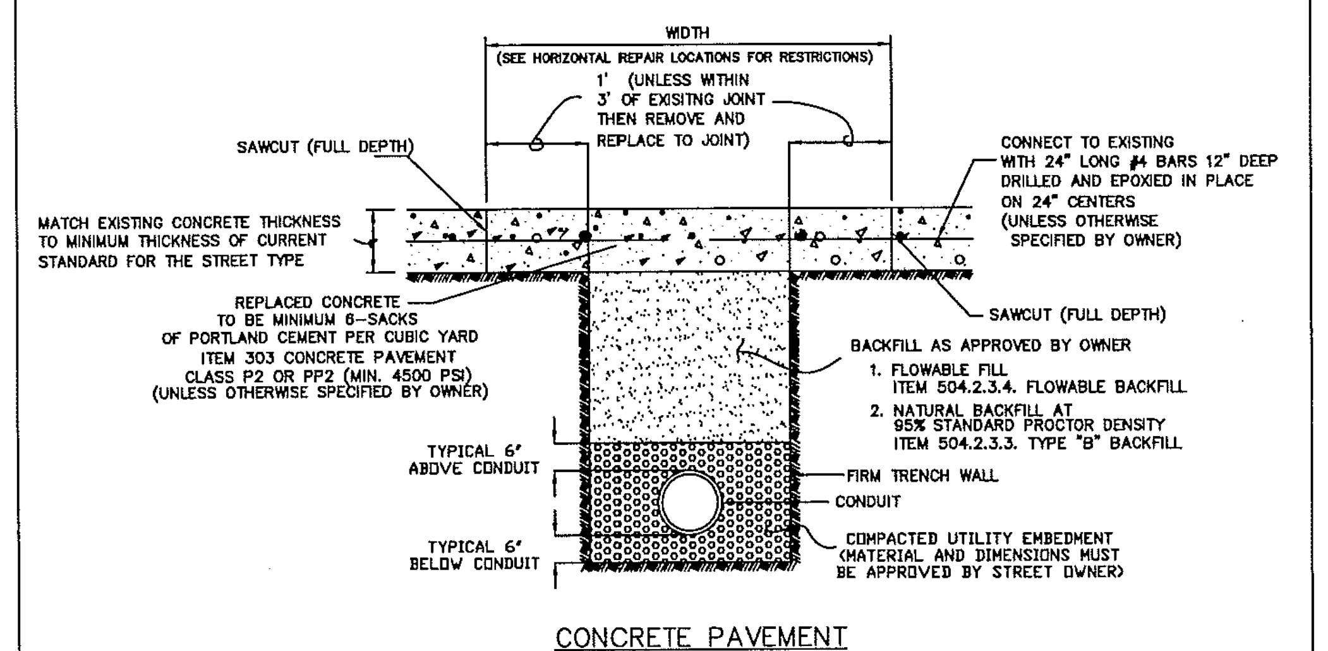
Drawn By:
RAH

Date:
02-28-2017

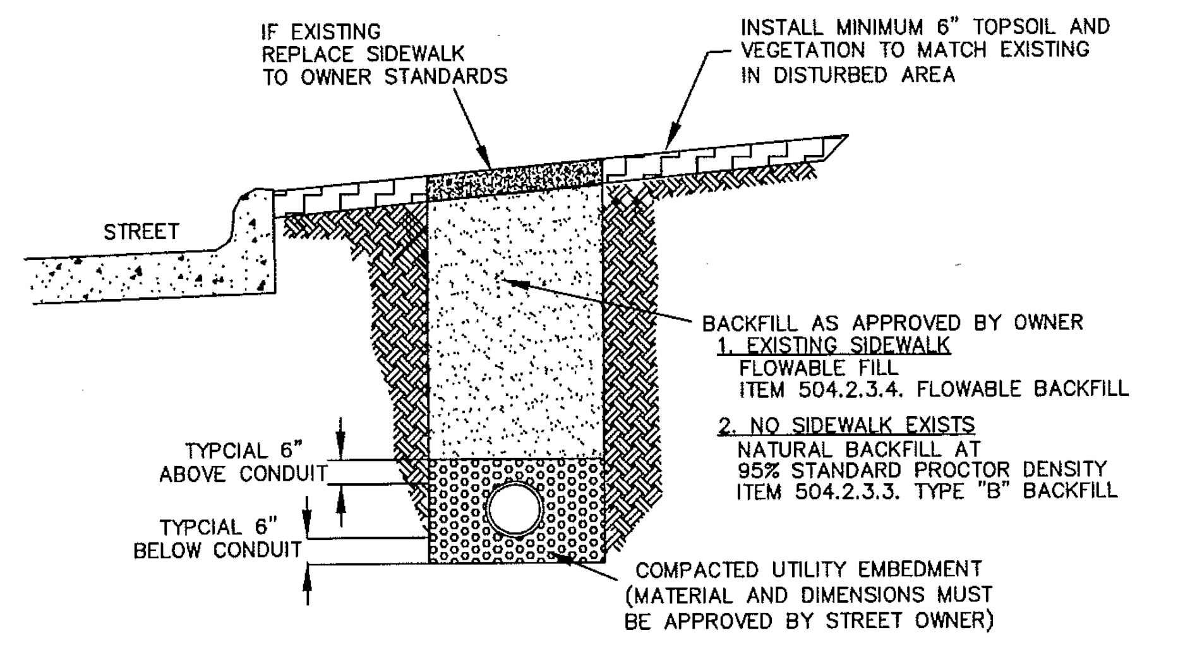
Sheet No.
CU
1.8A

Plotted: Jul 25, 2018, 12:11 PM by user: robert - Saved: 7/25/2018 by user: john
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA RECORD DRAWINGS.dwg

GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN

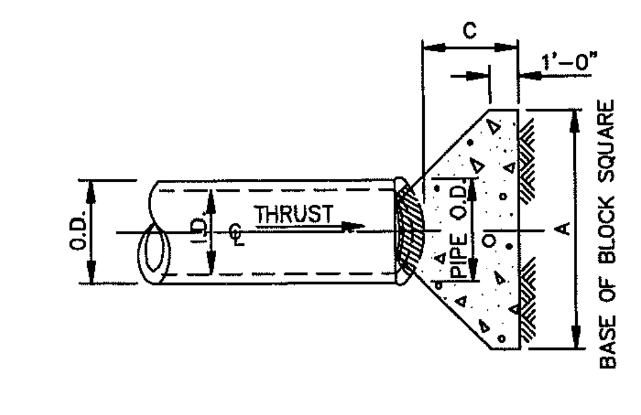

WIDTH
(SEE HORIZONTAL REPAIR LOCATIONS FOR RESTRICTIONS)
1' (UNLESS WITHIN 3' OF EXISITNG JOINT THEN REMOVE AND REPLACE TO JOINT)
SAWCUT (FULL DEPTH)
MATCH EXISTING CONCRETE THICKNESS TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
CONNECT TO EXISTING WITH 24" LONG #4 BARS 12" DEEP DRILLED AND EPOXIED IN PLACE ON 24" CENTERS (UNLESS OTHERWISE SPECIFIED BY OWNER)
REPLACED CONCRETE TO BE MINIMUM 6-SACKS OF PORTLAND CEMENT PER CUBIC YARD ITEM 303 CONCRETE PAVEMENT CLASS P2 OR PP2 (MIN. 4500 PSI) (UNLESS OTHERWISE SPECIFIED BY OWNER)
SAWCUT (FULL DEPTH)
BACKFILL AS APPROVED BY OWNER
1. FLOWABLE FILL ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
TYPICAL 6" ABOVE CONDUIT
FIRM TRENCH WALL
CONDUIT
TYPICAL 6" BELOW CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)

CONCRETE PAVEMENT
N.T.S.


IF EXISTING REPLACE SIDEWALK TO OWNER STANDARDS
INSTALL MINIMUM 6" TOPSOIL AND VEGETATION TO MATCH EXISTING IN DISTURBED AREA
STREET
BACKFILL AS APPROVED BY OWNER
1. EXISTING SIDEWALK
FLOWABLE FILL
ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NO SIDEWALK EXISTS
NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
TYPICAL 6" ABOVE CONDUIT
TYPICAL 6" BELOW CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)

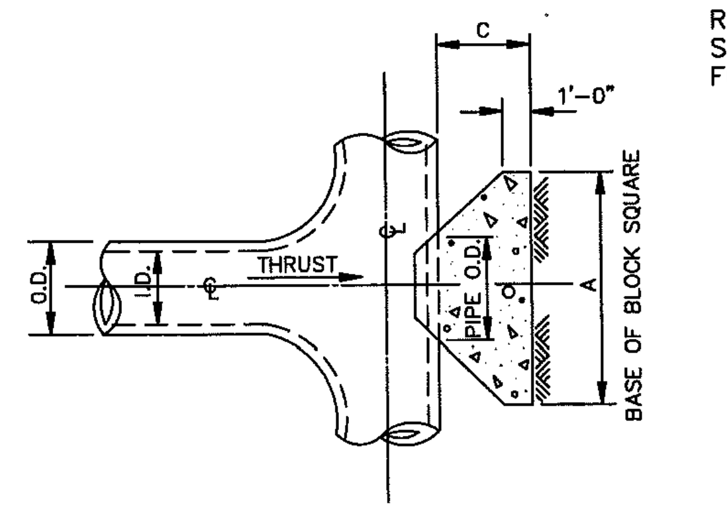
STREET PARKWAY
N.T.S.

PAVEMENT CUT AND REPAIR
CONCRETE AND PARKWAY
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 402
DATE OCT. '04
STANDARD DRAWING NO. 3070A



PLAN OF PLUG THRUST BLOCK
N.T.S.

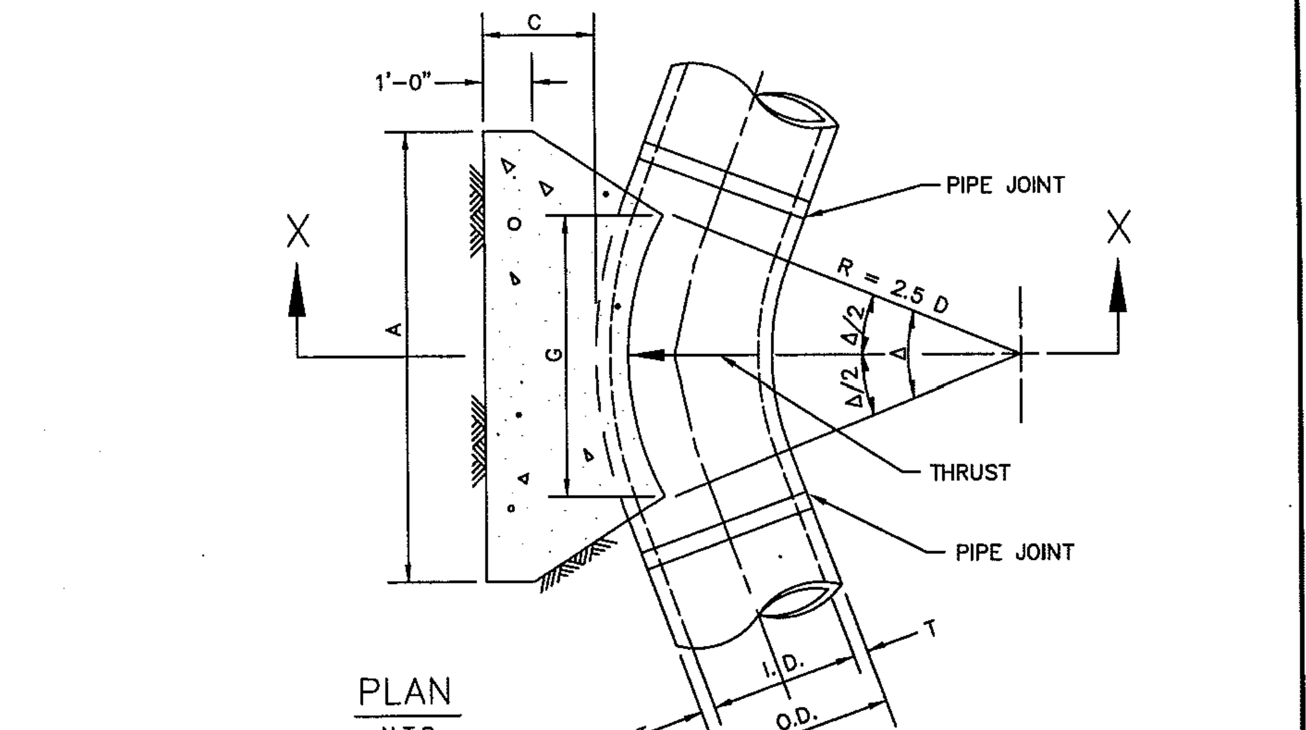
REFER TO
STD. DWG. No. 4040
FOR GENERAL NOTES.



PLAN OF TEE THRUST BLOCK
N.T.S.

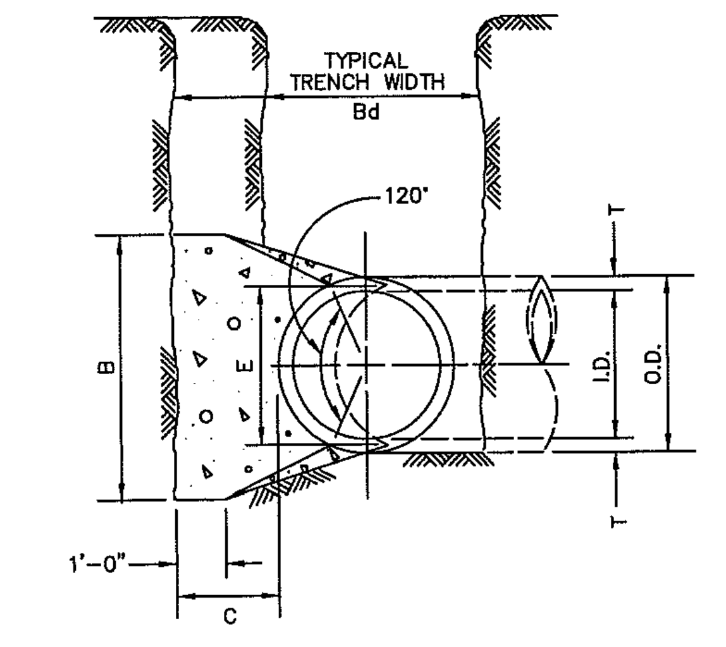
			EARTH		ROCK	
I.D. (IN.)	THRUST (TONS)	C (FT.)	A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.2
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.6	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.2
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

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



PLAN
N.T.S.

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



SECTION X–X
N.T.S.

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

GENERAL NOTES FOR ALL THRUST BLOCKS:

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

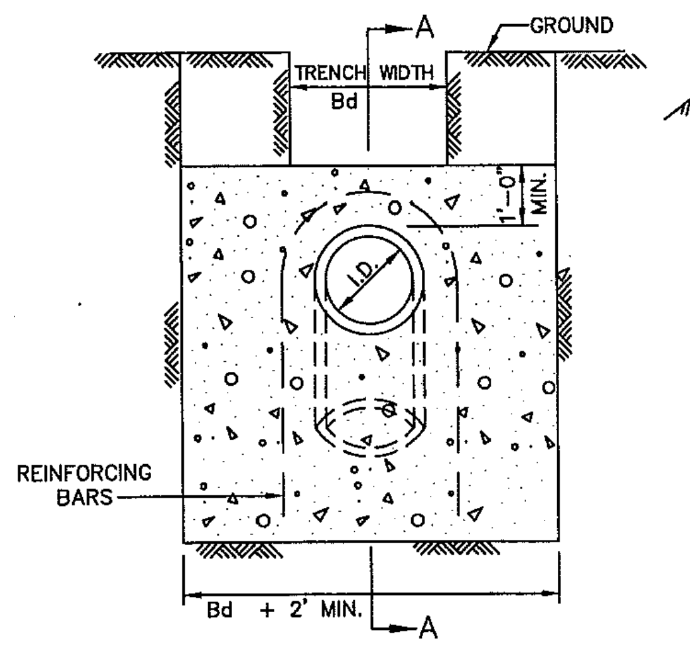
RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

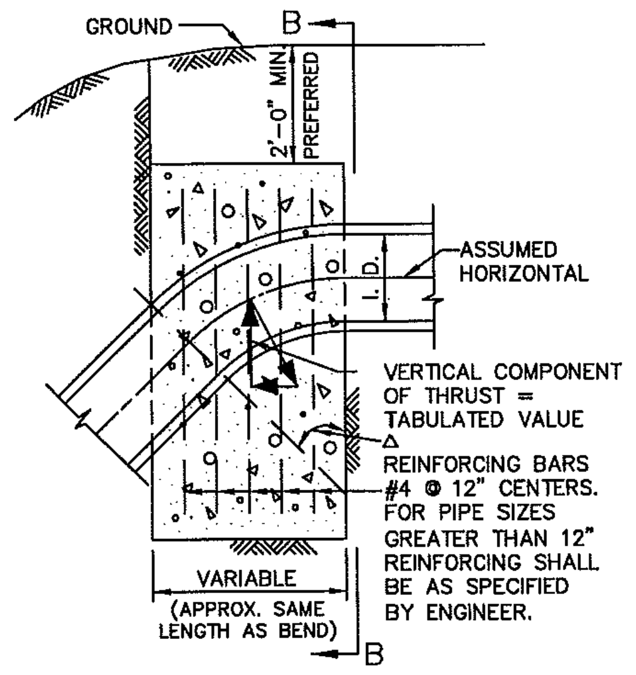
Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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



ELEVATION "B–B"
N.T.S.

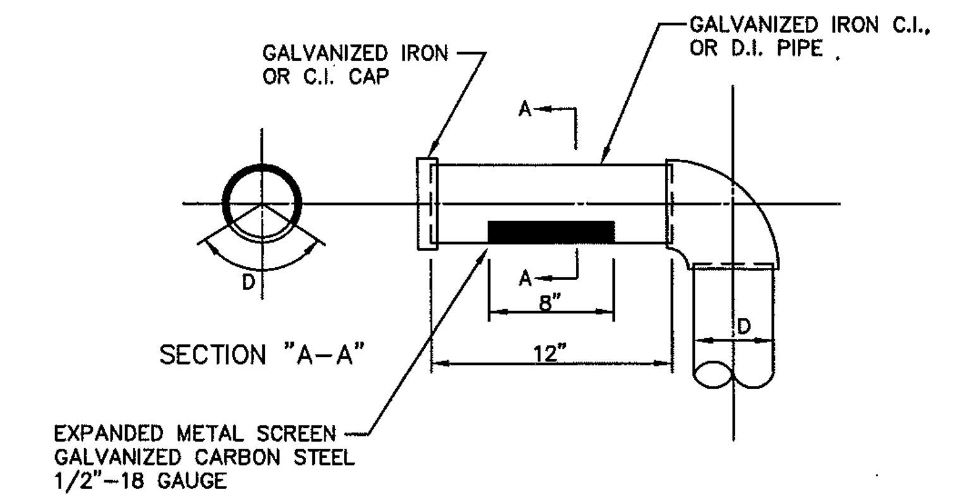

GROUND
B
2'-0" MIN. PREFERRED
ASSUMED HORIZONTAL
VERTICAL COMPONENT OF THRUST = TABULATED VALUE
Δ
REINFORCING BARS #4 @ 12" CENTERS. FOR PIPE SIZES GREATER THAN 12" REINFORCING SHALL BE AS SPECIFIED BY ENGINEER.
VARIABLE (APPROX. SAME LENGTH AS BEND)
B

SECTION "A–A"
N.T.S.

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

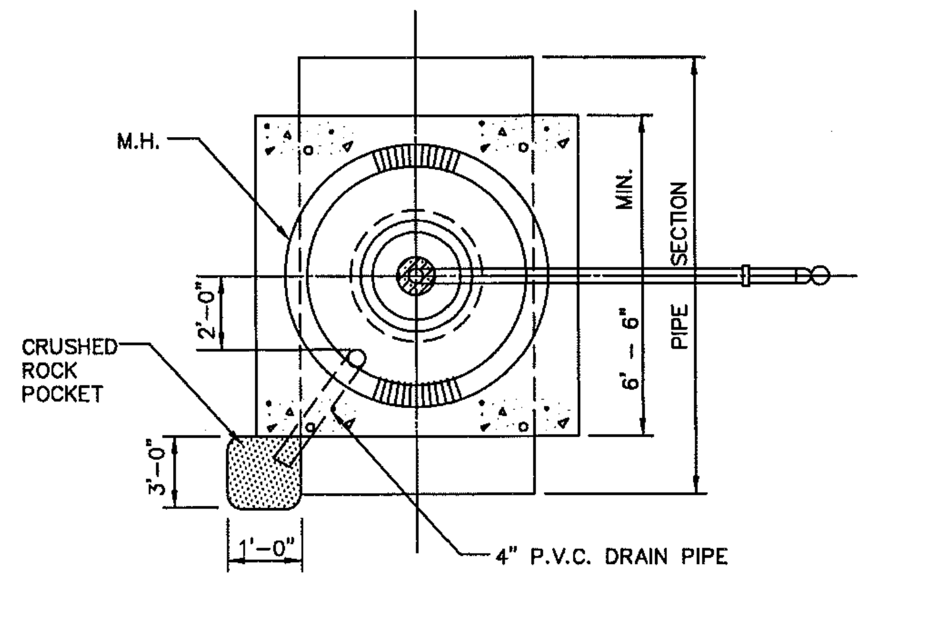
Δ →	11.25°		22.50°		30°		45°		67.50°		90°		← Δ
I.D. (IN.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	THRUST (TONS)	VOL. (C.Y.)	I.D. (IN.)
4,6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4,6,8
10,12	2.2	1.1	4.3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

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


GALVANIZED IRON OR C.I. CAP
GALVANIZED IRON C.I. OR D.I. PIPE
D
A
A
8"
12"
D
SECTION "A–A"
EXPANDED METAL SCREEN GALVANIZED CARBON STEEL 1/2"–18 GAUGE

AIR VENT
N.T.S.

AIR VALVE	GATE VALVE	FLG. OUTLET	MIN. FITTING HEIGHT	VENT PIPE D	M.H. DIA.
2"	2"	8"	26"	2"	5'
3"	3"	18"	31"	3"	5'
4"	4"	18"	38"	4"	5'
6"	6"	18"	46"	6"	5'
8"	8"	18"	53"	8"	6'
10"	10"	20"	62"	10"	6'
12"	12"	24"	72"	12"	6'



PLAN VIEW
N.T.S.

AIR RELEASE VALVE
TYPE "2"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 502.6
DATE OCT. '04
STANDARD DRAWING NO. 4100B

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

	Δ = 11.25°								I.D. (IN.)	Δ = 22.50°							
			EARTH			ROCK						EARTH			ROCK		
I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.6	162.1	13.0	12.5	27.2	8.5	10.0	14.8
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8

TABLES OF DIMENSIONS AND QUANTITIES

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

	Δ = 30°								I.D. (IN.)	Δ = 45°							
			EARTH			ROCK						EARTH			ROCK		
I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1
30	3.6	27.5	6.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6
36	4.4	39.5	7.0	6.0	3.4	4.5	4.5	1.6	36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6
42	5.1	53.8	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	79.6	11.5	7.0	8.1	8.0	5.0	4.2
48	5.8	70.3	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3
54	6.5	89.0	10.0	9.0	10.3	7.0	6.5	5.3	54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.9
60	7.3	110.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0
66	8.0	132.9	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2
72	8.7	158.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7
78	9.4	185.6	14.5	13.0	30.0	10.0	9.5	15.6	78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9
84	10.1	215.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6
90	10.9	247.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6
96	11.6	281.2	18.0	16.0	55.5	12.5	11.5	28.9	96	17.1	415.6	26.0	16.0	89.5	18.5	11.5	48.5

	Δ = 67.50°								I.D. (IN.)	Δ = 90°							
			EARTH			ROCK						EARTH			ROCK		
I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	2.1	5.6	3.0	2.0	0.3	2.0	1.5	0.2	4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
10,12	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	5.2	34.9	9.0	4.0	2.3	5.5	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	6.2	50.3	11.5	4.5	3.5	6.5	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1
30	7.8	58.9	12.0	5.0	4.8	7.5	4.0	2.2	30	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.3
36	9.4	84.9	14.5	6.0	8.2	9.5	4.5	3.8	36	11.9	108.0	18.0	6.0	11.4	12.0	4.5	5.3
42	10.9	115.5	17.0	7.0	12.8	11.0	5.5	6.3	42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7
48	12.5	150.9	19.0	8.0	18.4	13.0	6.0	9.2	48	15.9	192.0	24.0	8.0	26.2	16.0	6.0	12.4
54	14.0	191.0	21.5	9.0	26.0	15.0	6.5	12.9	54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.1
60	15.6	235.8	24.0	10.0	35.6	16.0	7.5	17.6	60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.0
66	17.1	285.3	26.0	11.0	46.0	18.0	8.0	23.0	66	21.8	362.8	33.0	11.0	66.2	22.0	8.5	32.5
72	18.7	339.5	28.5	12.0	57.8	19.0	9.0	28.4	72	23.8	431.8	36.0	12.0	85.6	24.0	9.0	41.0
78	20.2	398.5	31.0	13.0	75.7	21.0	9.5	37.4	78	25.7	506.7	39.0	13.0	108.2	26.0	10.0	53.2
84	21.8	462.1	33.5	14.0	94.7	22.0	10.5	46.5	84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.8
90	23.3	530.5	35.5	15.0	114.4	24.5	11.0	58.2	90	29.0	674.6	45.0	15.0	164.9	30.0	11.5	81.2
96	24.9	603.6	38.0	16.0	138.9	25.5	12.0	70.0	96	31.6	767.5	48.0	16.0	199.0	32.0	12.0	95.1

TABLES OF DIMENSIONS AND QUANTITIES

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

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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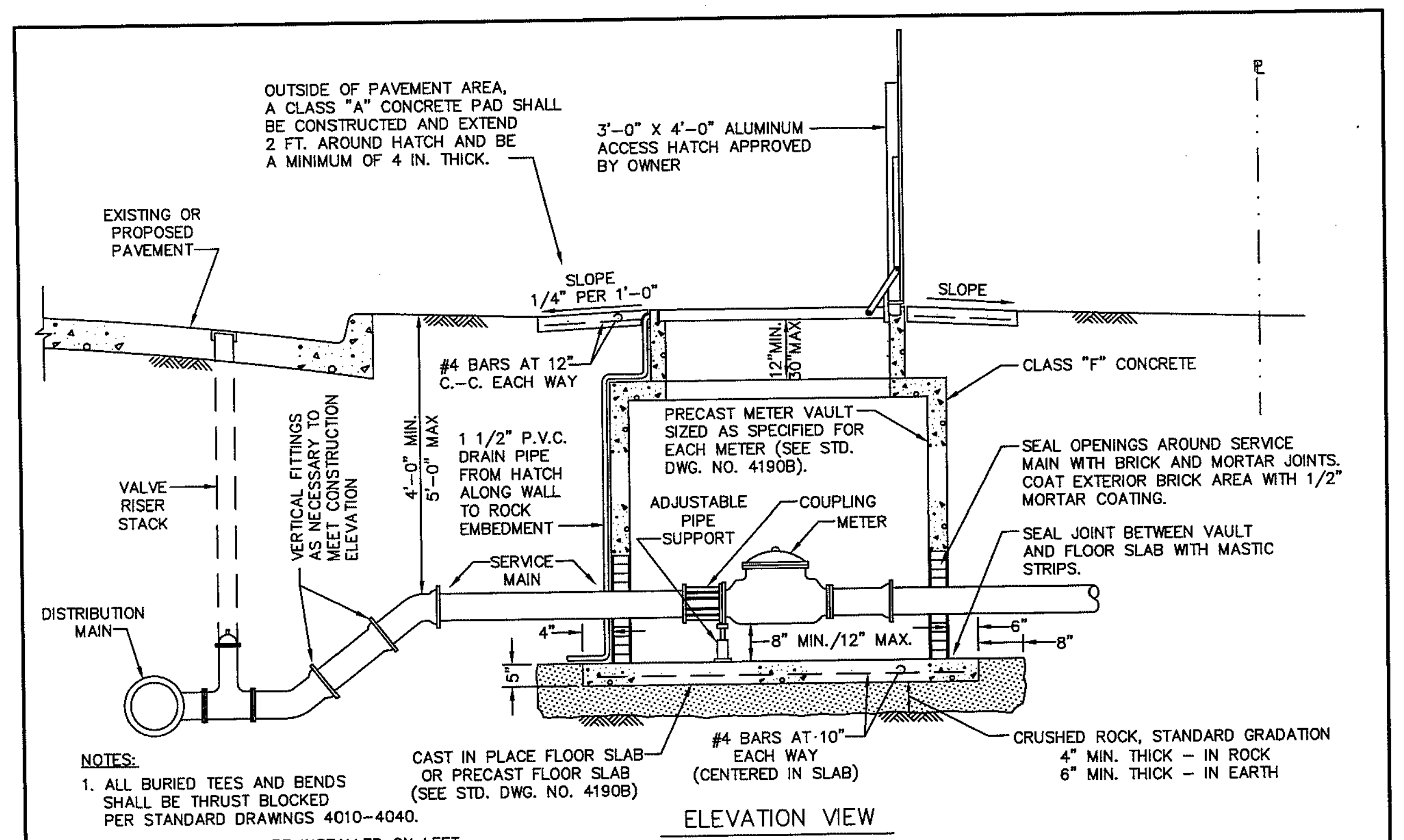
WATER DETAILS 1
8

Job No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CU1.9

TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Plotted: Jul 25, 2018, 12:6 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BID SET\CCA ENG REV 18 DETAILS ONLY.dwg


OUTSIDE OF PAVEMENT AREA, A CLASS "A" CONCRETE PAD SHALL BE CONSTRUCTED AND EXTEND 2 FT. AROUND HATCH AND BE A MINIMUM OF 4 IN. THICK.
3'-0" X 4'-0" ALUMINUM ACCESS HATCH APPROVED BY OWNER
EXISTING OR PROPOSED PAVEMENT
SLOPE 1/4" PER 1'-0"
SLOPE
#4 BARS AT 12" C.-C. EACH WAY
12" MIN. 30" MAX
CLASS "F" CONCRETE
VALVE RISER STACK
VERTICAL FITTINGS AS NECESSARY TO MEET CONSTRUCTION ELEVATION
4'-0" MIN. 5'-0" MAX
1 1/2" P.V.C. DRAIN PIPE FROM HATCH ALONG WALL TO ROCK EMBEDMENT
PRECAST METER VAULT SIZED AS SPECIFIED FOR EACH METER (SEE STD. DWG. NO. 4190B).
ADJUSTABLE PIPE SUPPORT
COUPLING
METER
SEAL OPENINGS AROUND SERVICE MAIN WITH BRICK AND MORTAR JOINTS. COAT EXTERIOR BRICK AREA WITH 1/2" MORTAR COATING.
SEAL JOINT BETWEEN VAULT AND FLOOR SLAB WITH MASTIC STRIPS.
SERVICE MAIN
DISTRIBUTION MAIN
4"
5"
8" MIN./12" MAX.
6"
8"
CAST IN PLACE FLOOR SLAB OR PRECAST FLOOR SLAB (SEE STD. DWG. NO. 4190B)
#4 BARS AT 10" EACH WAY (CENTERED IN SLAB)
CRUSHED ROCK, STANDARD GRADATION 4" MIN. THICK – IN ROCK 6" MIN. THICK – IN EARTH

ELEVATION VIEW
(D.C. METER SHOWN) N.T.S.

NOTES:

1. ALL BURIED TEES AND BENDS SHALL BE THRUST BLOCKED PER STANDARD DRAWINGS 4010-4040.
2. BY-PASS LINE MAY BE INSTALLED ON LEFT SIDE OF METER VAULT TO FACILITATE LIMITED WORKING AREA CONDITIONS BY PERMISSION OF OWNER.
3. ALL BURIED D.I. PIPE AND C.I. FITTINGS SHALL BE POLY-WRAPPED AS SPECIFIED FOR THE ADJECENT DISTRIBUTION MAIN.

STANDARD DRAWING NO. 4190A

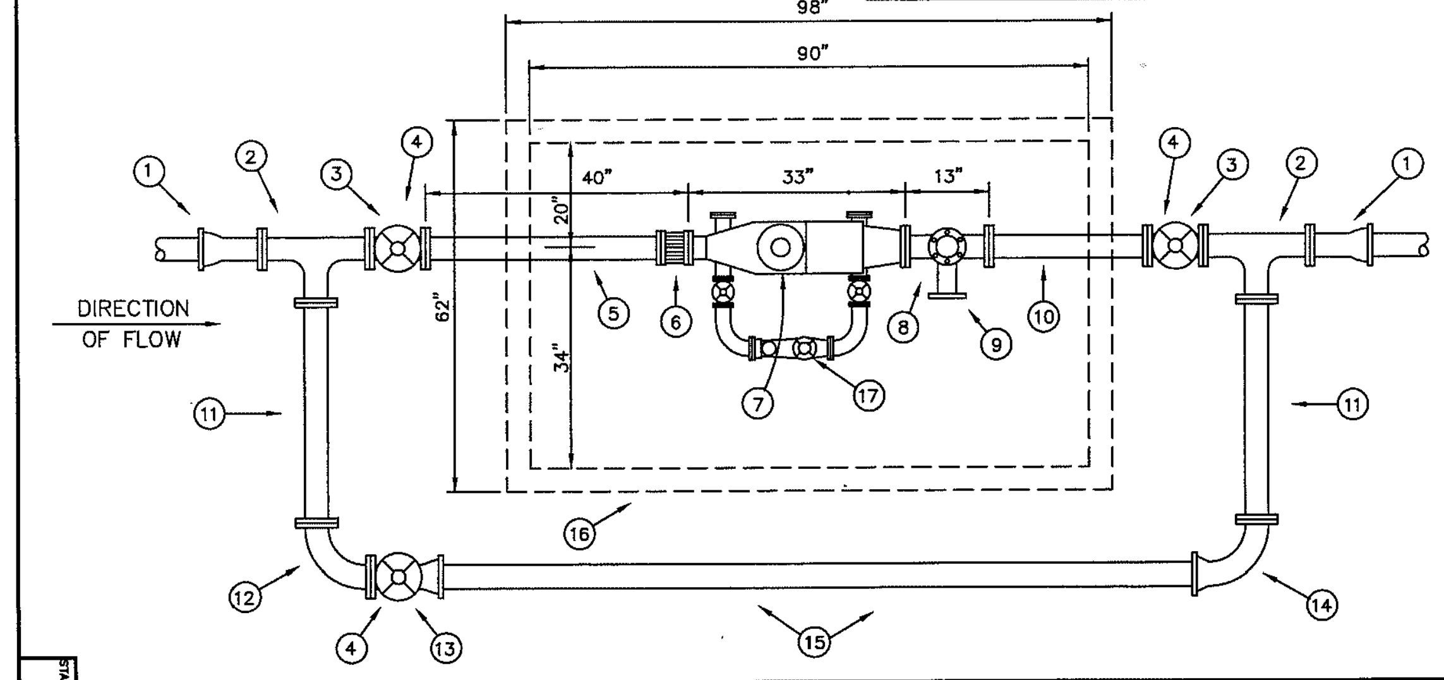
LARGE SERVICE METER
VAULT INSTALLATION

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 702.4
DATE OCT. '04
STANDARD DRAWING NO. 4190A

MATERIALS LIST		
PART NO.	QUANTITY	DESCRIPTION
①	2 EA.	4" X 12" D.I. NIPPLE M.J. X F.
②	2 EA.	4" X 4" D.I. TEE F. X F.
③	2 EA.	4" GATE VALVE F. X F.
④	3 EA.	VALVE STACK RISER COVER & LID
⑤	1 EA.	4" X 40" D.I. NIPPLE F. X SLEEVE
⑥	1 EA.	4" FLANGED COUPLING ADAPTER
⑦	1 EA.	4" METER AS SPECIFIED (TYPE F.M. SHOWN)
⑧	1 EA.	4" X 4" D.I. TEE F. X F. (TEST POINT)
⑨	1 EA.	4" BLIND FLG.

MATERIALS LIST		
PART NO.	QUANTITY	DESCRIPTION
⑩	1 EA.	4" X 24" D.I. NIPPLE F. X F.
⑪	2 EA.	4" X 36" D.I. NIPPLE F. X F.
⑫	1 EA.	4" D.I. 90° BEND F. X F.
⑬	1 EA.	4" GATE VALVE F. X M.J.
⑭	1 EA.	4" D.I. 90° BEND M.J. X F.
⑮	1 EA.	4" D.I. PIPE, CLASS 52, APPROX. 10'
⑯	1 EA.	PRECAST METER VAULT
	1 EA.	VAULT FLOOR (NOT SHOWN)
	1 EA.	ACCESS HATCH (NOT SHOWN)
⑰	1 EA.	BY-PASS METER

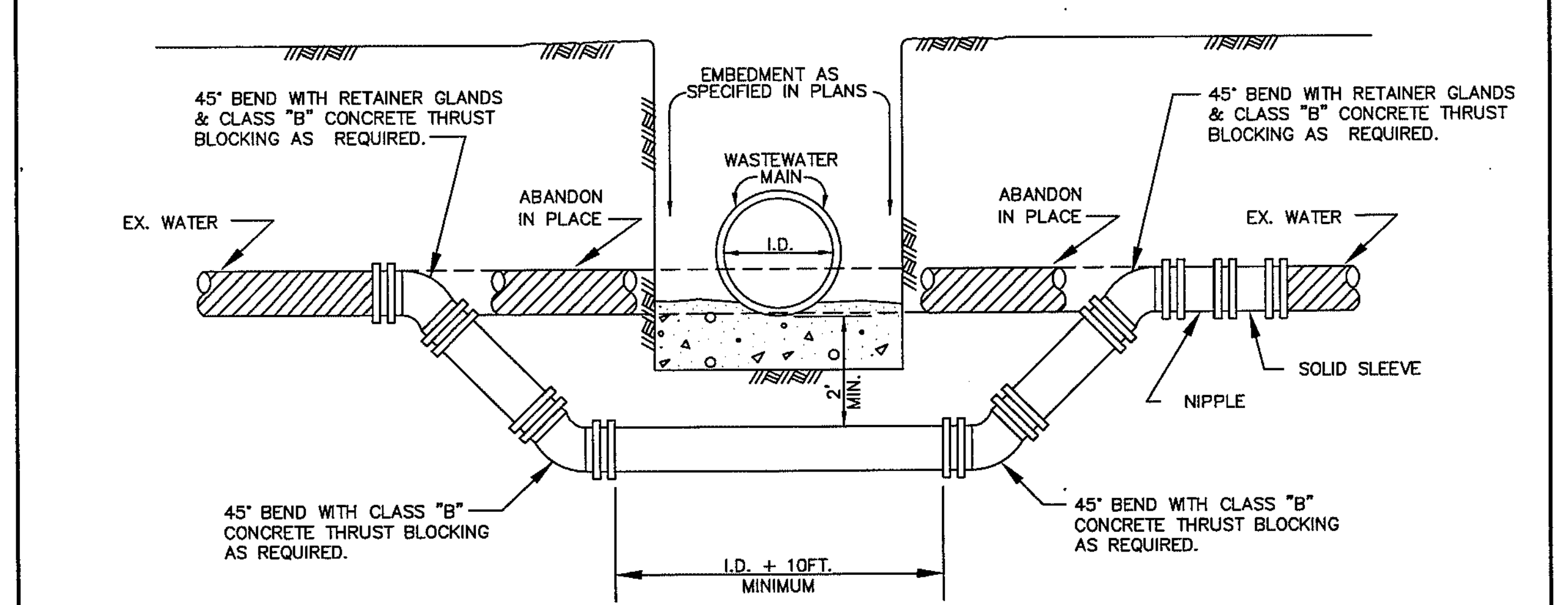


STANDARD DRAWING NO. 4150

4" COMBINED SERVICE
WITH 4" METER

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 502.10
DATE OCT. '04
STANDARD DRAWING NO. 4150


EMBEDMENT AS SPECIFIED IN PLANS
45° BEND WITH RETAINER GLANDS & CLASS "B" CONCRETE THRUST BLOCKING AS REQUIRED.
45° BEND WITH RETAINER GLANDS & CLASS "B" CONCRETE THRUST BLOCKING AS REQUIRED.
WASTEWATER MAIN
ABANDON IN PLACE
ABANDON IN PLACE
EX. WATER
EX. WATER
I.D.
SOLID SLEEVE
NIPPLE
2' MIN.
45° BEND WITH CLASS "B" CONCRETE THRUST BLOCKING AS REQUIRED.
45° BEND WITH CLASS "B" CONCRETE THRUST BLOCKING AS REQUIRED.
I.D. + 10FT. MINIMUM

STANDARD DRAWING NO. 4200

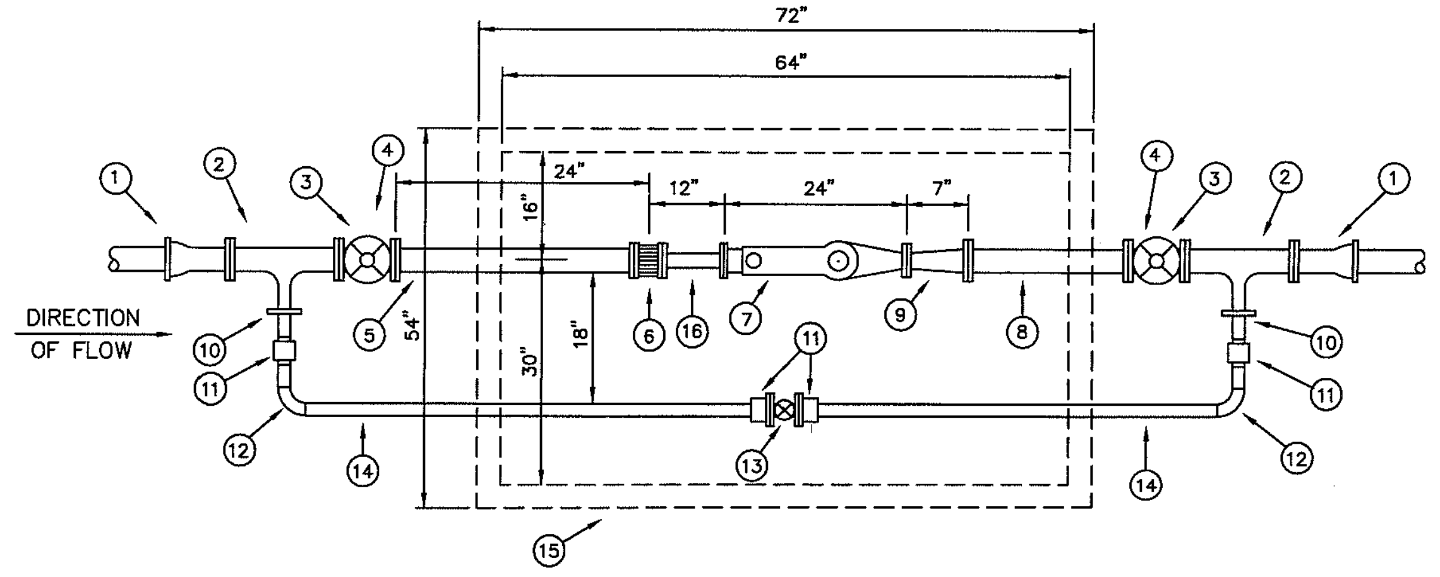
WATER MAIN LOWERING
BELOW WASTEWATER MAIN

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 506.6
DATE OCT. '04
STANDARD DRAWING NO. 4200

MATERIALS LIST		
PART NO.	QUANTITY	DESCRIPTION
①	2 EA.	4" X 12" D.I. NIPPLE M.J. X F.
②	2 EA.	4" X 2" D.I. TEE F. X F.
③	2 EA.	4" GATE VALVE F. X F.
④	2 EA.	VALVE STACK RISER COVER & LID
⑤	1 EA.	4" X 24" D.I. NIPPLE F. X SLEEVE
⑥	1 EA.	4" X 3" FLANGED RED. COUPLING ADAPTER
⑦	1 EA.	3" METER AS SPECIFIED (TYPE C.T. SHOWN)
⑧	1 EA.	4" X 18" D.I. NIPPLE F. X F.
⑨	1 EA.	4" X 3" D.I. REDUCER F. X F.

MATERIALS LIST		
PART NO.	QUANTITY	DESCRIPTION
⑩	2 EA.	2" COMPANION FLANGE
⑪	4 EA.	2" SOL. X OSIP UNION
⑫	2 EA.	2" SOL. 90° ELL
⑬	1 EA.	2" BALL VALVE
⑭	2 EA.	2" COPPER PIPE, APPROX. 5'
⑮	1 EA.	PRECAST METER VAULT
	1 EA.	VAULT FLOOR (NOT SHOWN)
	1 EA.	ACCESS HATCH (NOT SHOWN)
⑯	1 EA.	3"x12" D.I. NIPPLE F. x SLEEVE



STANDARD DRAWING NO. 4180

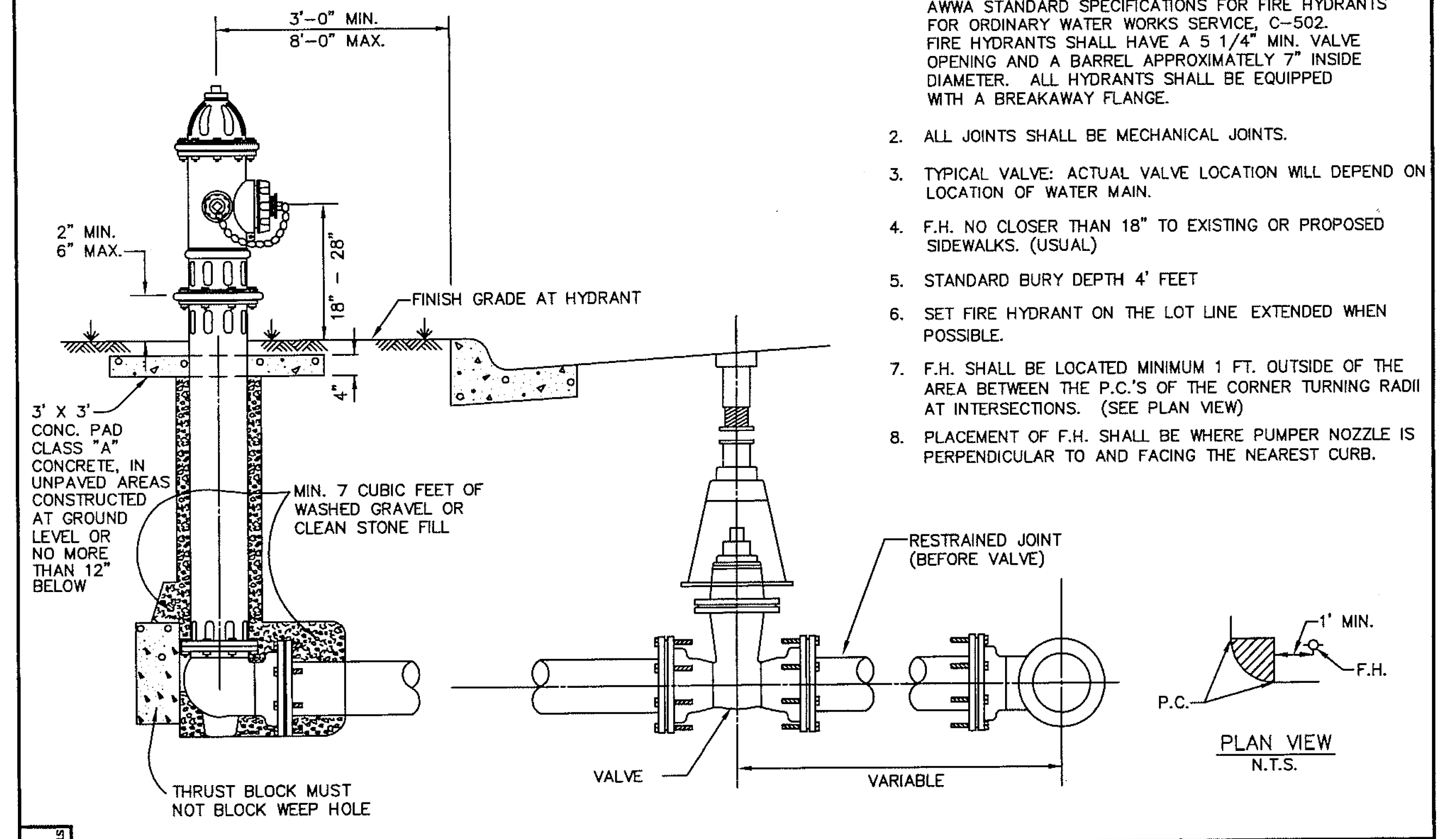
4" DOMESTIC SERVICE
WITH 3" METER

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 502.10
DATE OCT. '04
STANDARD DRAWING NO. 4180

NOTES:

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

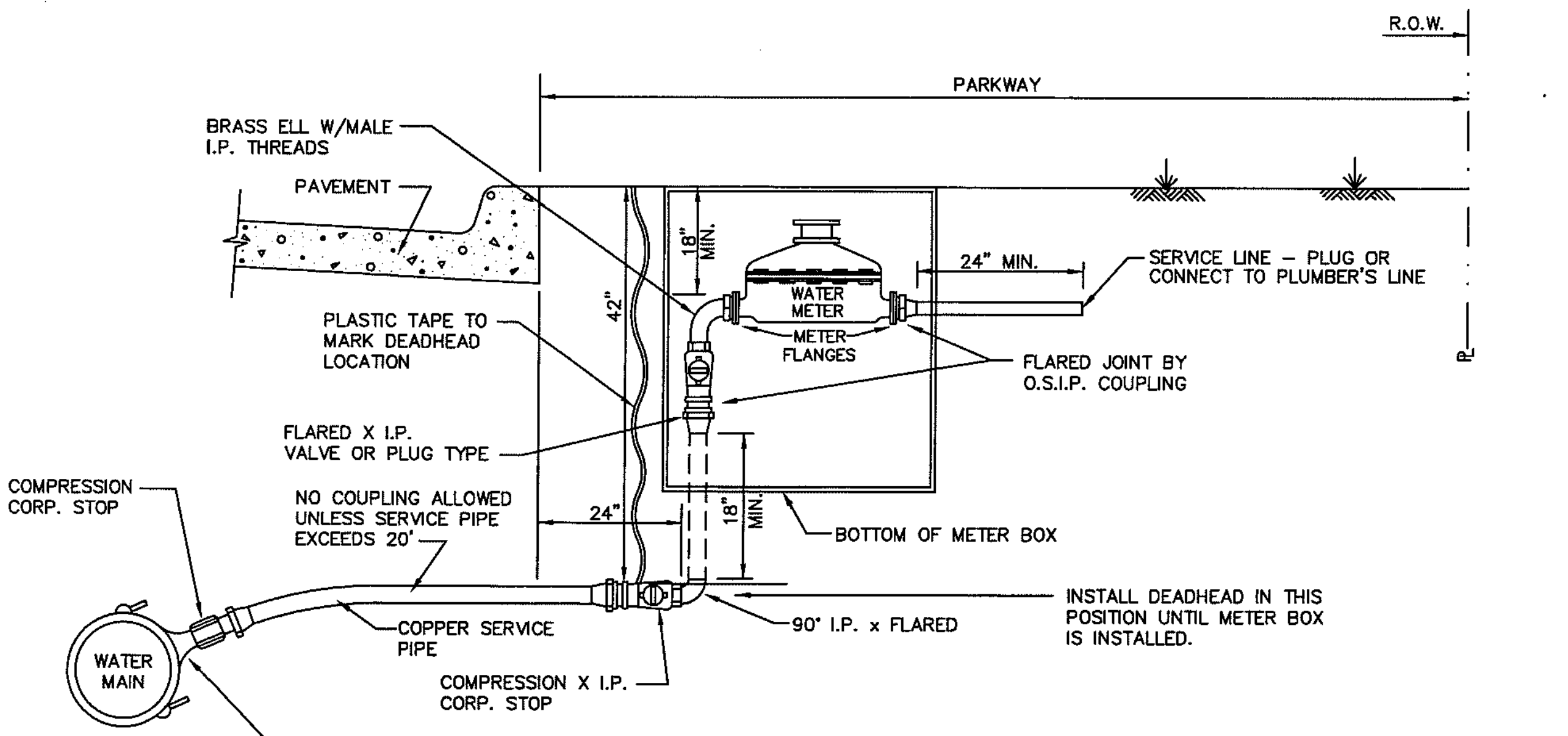

3'-0" MIN.
8'-0" MAX.
2" MIN.
6" MAX.
18" - 28"
FINISH GRADE AT HYDRANT
4"
3' X 3' CONC. PAD CLASS "A" CONCRETE, IN UNPAVED AREAS CONSTRUCTED AT GROUND LEVEL OR NO MORE THAN 12" BELOW
MIN. 7 CUBIC FEET OF WASHED GRAVEL OR CLEAN STONE FILL
THRUST BLOCK MUST NOT BLOCK WEEP HOLE
RESTRAINED JOINT (BEFORE VALVE)
VALVE
VARIABLE
1' MIN.
F.H.
P.C.
PLAN VIEW
N.T.S.

STANDARD DRAWING NO. 4120

FIRE HYDRANT
INSTALLATION

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 502.3
DATE OCT. '04
STANDARD DRAWING NO. 4120


R.O.W.
PARKWAY
BRASS ELL W/MALE I.P. THREADS
PAVEMENT
18" MIN.
42"
WATER METER
METER FLANGES
24" MIN.
SERVICE LINE – PLUG OR CONNECT TO PLUMBER'S LINE
PLASTIC TAPE TO MARK DEADHEAD LOCATION
FLARED JOINT BY O.S.I.P. COUPLING
FLARED X I.P. VALVE OR PLUG TYPE
COMPRESSION CORP. STOP
NO COUPLING ALLOWED UNLESS SERVICE PIPE EXCEEDS 20'
24"
18" MIN.
BOTTOM OF METER BOX
INSTALL DEADHEAD IN THIS POSITION UNTIL METER BOX IS INSTALLED.
90° I.P. x FLARED
WATER MAIN
COPPER SERVICE PIPE
COMPRESSION X I.P. CORP. STOP

LOCATION OF TAPS TO BE AT 45°. DIRECT TAPS TO BE MADE WITH A.W.W.A. TAPERED THREADS. TAPS USING TAPPING SADDLE TO BE MADE WITH IRON PIPE THREADS.

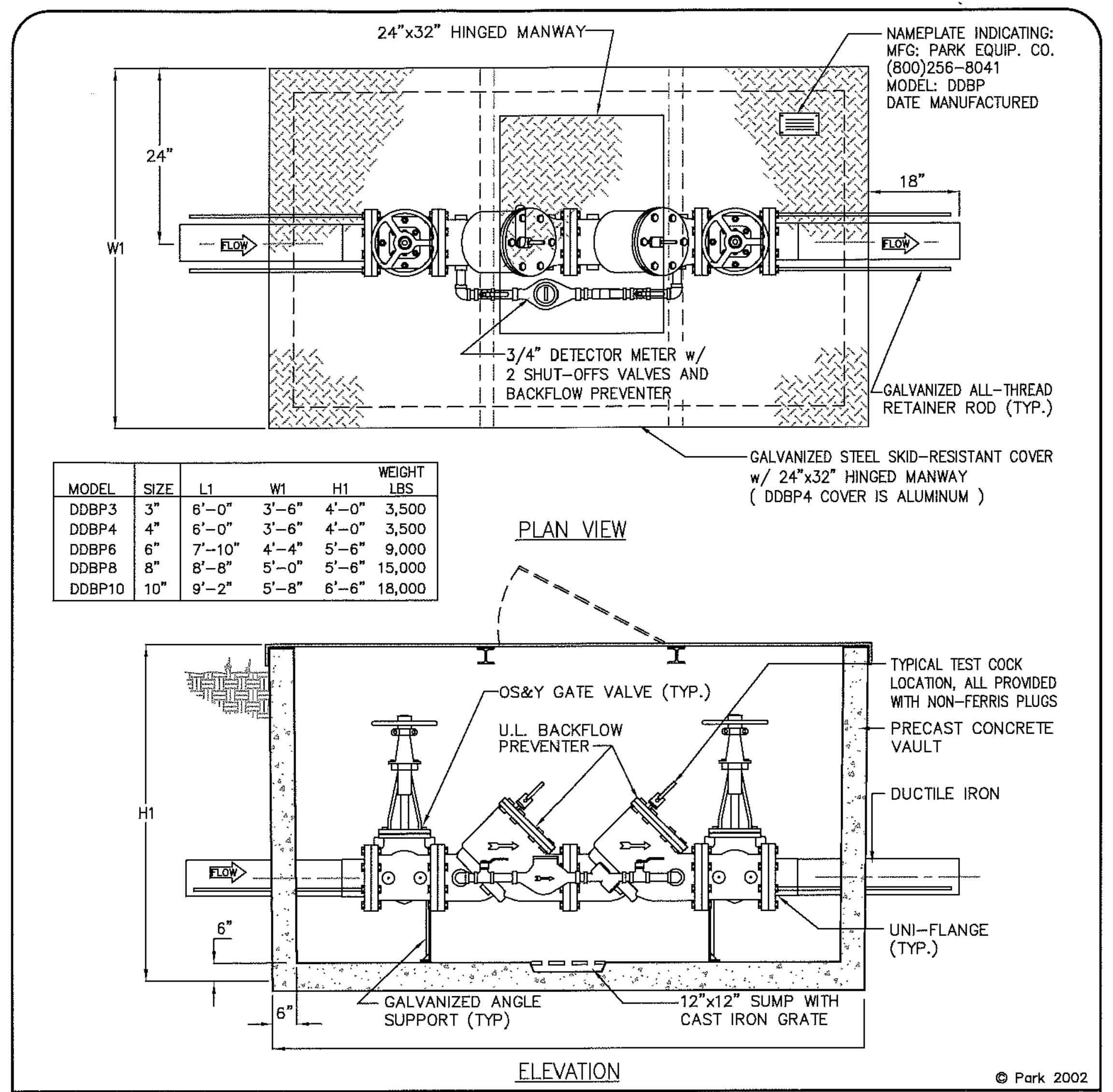
NOTE:
LOCATION OF METER BOX WITHIN THE AVAILABLE PARKWAY SHALL BE SPECIFIED BY OWNER. IF THE LOCATION INTERSECTS A SIDEWALK, METER BOX SHALL BE PLACED IN CENTER OF SIDEWALK.

STANDARD DRAWING NO. 4140

WATER SERVICE INSTALLATION
1 1/2" OR 2" LINE

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 502.10
DATE OCT. '04
STANDARD DRAWING NO. 4140


24"x32" HINGED MANWAY
NAMEPLATE INDICATING: MFG: PARK EQUIP. CO. (800)256-8041 MODEL: DDBP DATE MANUFACTURED
24"
18"
W1
FLOW
FLOW
3/4" DETECTOR METER w/ 2 SHUT-OFFS VALVES AND BACKFLOW PREVENTER
GALVANIZED ALL-THREAD RETAINER ROD (TYP.)
GALVANIZED STEEL SKID-RESISTANT COVER w/ 24"x32" HINGED MANWAY (DDBP4 COVER IS ALUMINUM)
PLAN VIEW
OS&Y GATE VALVE (TYP.)
U.L. BACKFLOW PREVENTER
TYPICAL TEST COCK LOCATION, ALL PROVIDED WITH NON-FERRIS PLUGS
PRECAST CONCRETE VAULT
DUCTILE IRON
H1
FLOW
6"
6"
UNI-FLANGE (TYP.)
GALVANIZED ANGLE SUPPORT (TYP)
12"x12" SUMP WITH CAST IRON GRATE
ELEVATION

MODEL	SIZE	L1	W1	H1	WEIGHT LBS
DDBP3	3"	6'-0"	3'-6"	4'-0"	3,500
DDBP4	4"	6'-0"	3'-6"	4'-0"	3,500
DDBP6	6"	7'-10"	4'-4"	5'-6"	9,000
DDBP8	8"	8'-8"	5'-0"	5'-6"	15,000
DDBP10	10"	9'-2"	5'-8"	6'-6"	18,000

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Specifications

CONCRETE :	Class 1 concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
REINFORCEMENT:	Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
STEEL COVER:	1/4" steel skid-resistant floor plate welded to 3" angle frame with (2) 3"x2-3/8" I beam supports (300 PSF).

Engineering Data

The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

AWWA

PROJECT :
LOCATION:
CUSTOMER:
GEN.CONTR.:
ORDER # :
DATE:

PARK ENVIRONMENTAL EQUIPMENT
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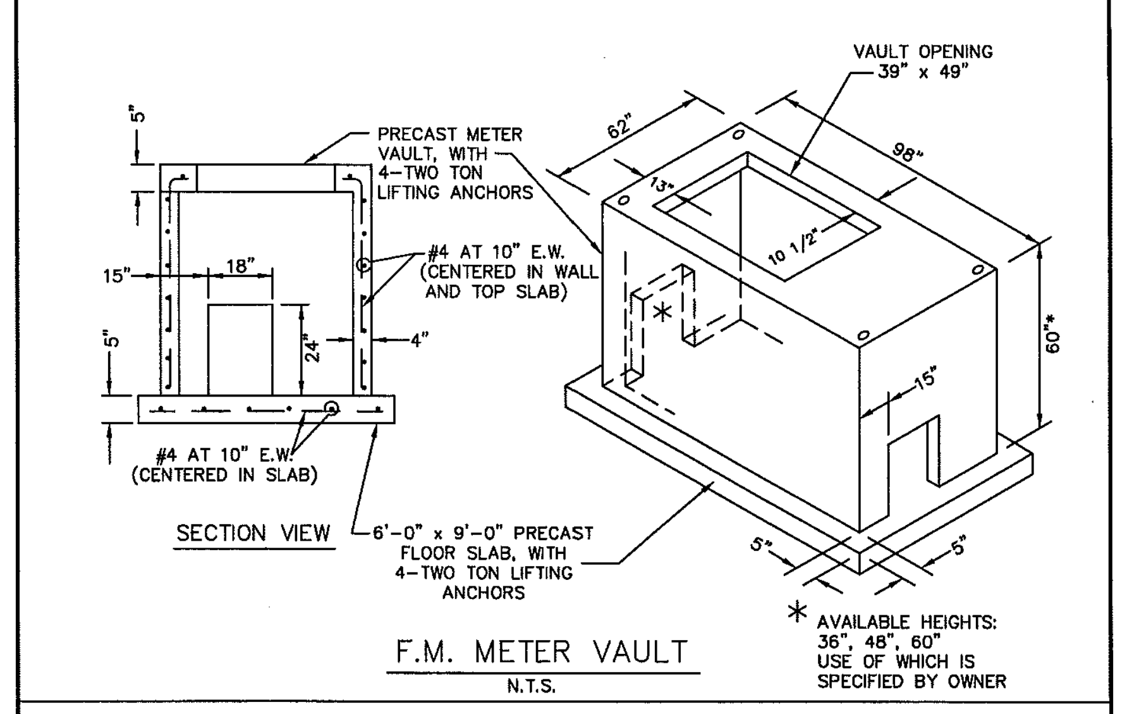
www.park-USA.com
"Expect the Best"

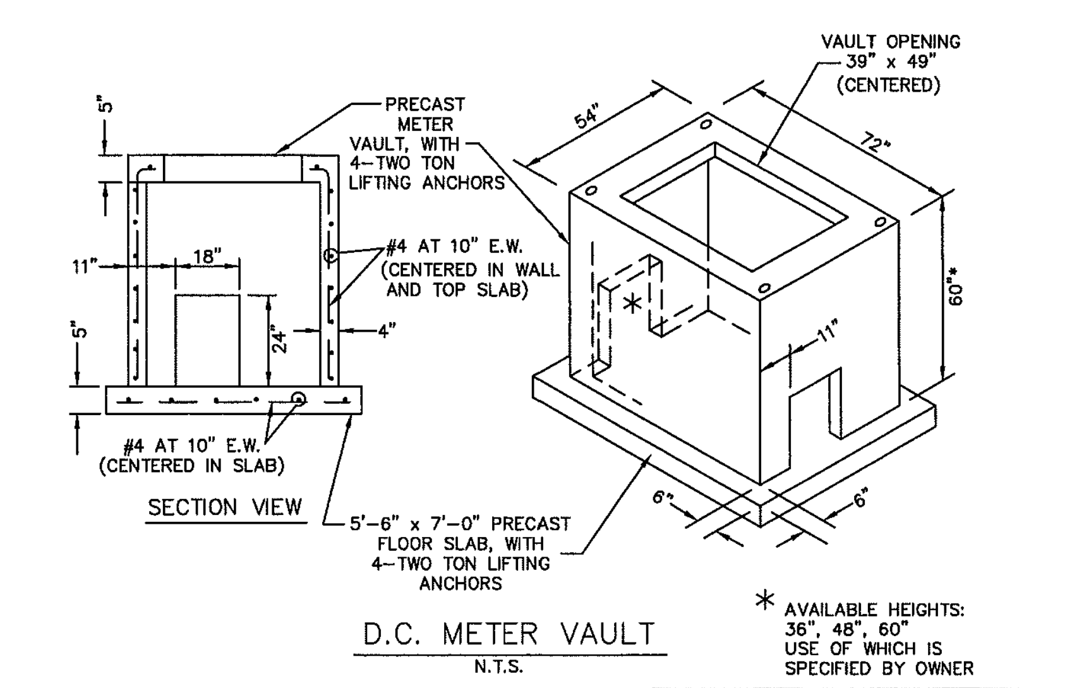
6" DOUBLE DETECTOR BACKFLOW PREVENTER ASSEMBLY FOR FIRE SERVICE

SCALE NONE	DWG. NO.	REV.
DATE 01/02	DDBP-1	A


VAULT OPENING 39" x 49"
PRECAST METER VAULT, WITH 4-TWO TON LIFTING ANCHORS
62"
98"
13"
10 1/2"
5"
15"
18"
5"
24"
4"
#4 AT 10" E.W. (CENTERED IN WALL AND TOP SLAB)
#4 AT 10" E.W. (CENTERED IN SLAB)
60"*
15"
SECTION VIEW
6'-0" x 9'-0" PRECAST FLOOR SLAB, WITH 4-TWO TON LIFTING ANCHORS
5"
5"

F.M. METER VAULT
N.T.S.

* AVAILABLE HEIGHTS: 36", 48", 60" USE OF WHICH IS SPECIFIED BY OWNER


VAULT OPENING 39" x 49" (CENTERED)
PRECAST METER VAULT, WITH 4-TWO TON LIFTING ANCHORS
54"
72"
5"
11"
18"
5"
24"
4"
#4 AT 10" E.W. (CENTERED IN WALL AND TOP SLAB)
#4 AT 10" E.W. (CENTERED IN SLAB)
60"*
11"
SECTION VIEW
5'-6" x 7'-0" PRECAST FLOOR SLAB, WITH 4-TWO TON LIFTING ANCHORS
6"
6"

D.C. METER VAULT
N.T.S.

* AVAILABLE HEIGHTS: 36", 48", 60" USE OF WHICH IS SPECIFIED BY OWNER

LARGE SERVICE METER
PRECAST VAULT

North Central Texas Council of Governments

STANDARD SPECIFICATION REFERENCE 702.4
DATE OCT. '04
STANDARD DRAWING NO. 4190B

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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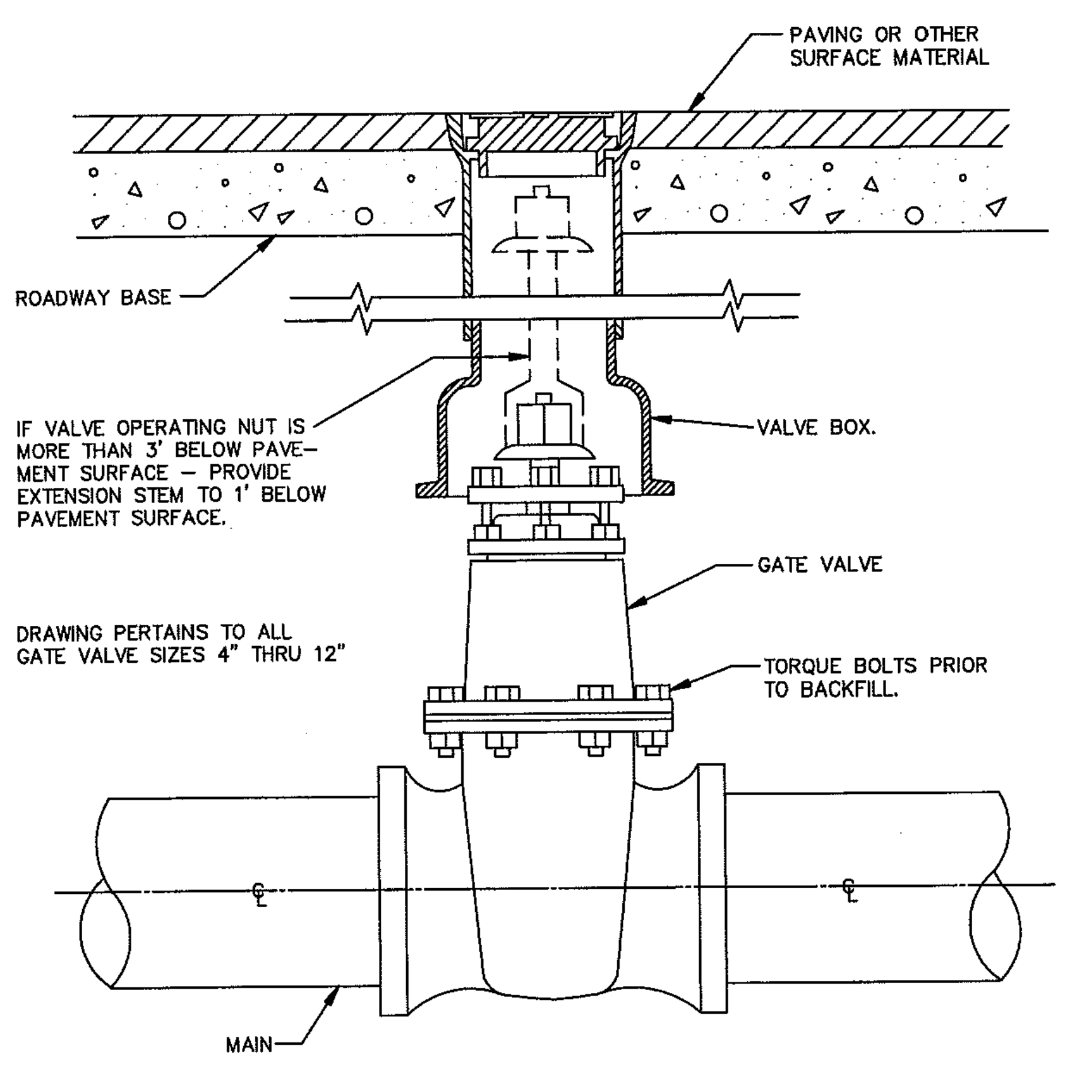
WATER DETAILS 2
8

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CU1.10

Plotted: Jul 25, 2018, 12:6 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg

NOTE:

IN UNPAVED AREAS, INSTALL 2' x 2' x 6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.


PAVING OR OTHER SURFACE MATERIAL
ROADWAY BASE
IF VALVE OPERATING NUT IS MORE THAN 3' BELOW PAVEMENT SURFACE – PROVIDE EXTENSION STEM TO 1' BELOW PAVEMENT SURFACE.
VALVE BOX.
GATE VALVE
DRAWING PERTAINS TO ALL GATE VALVE SIZES 4" THRU 12"
TORQUE BOLTS PRIOR TO BACKFILL.
MAIN
℄

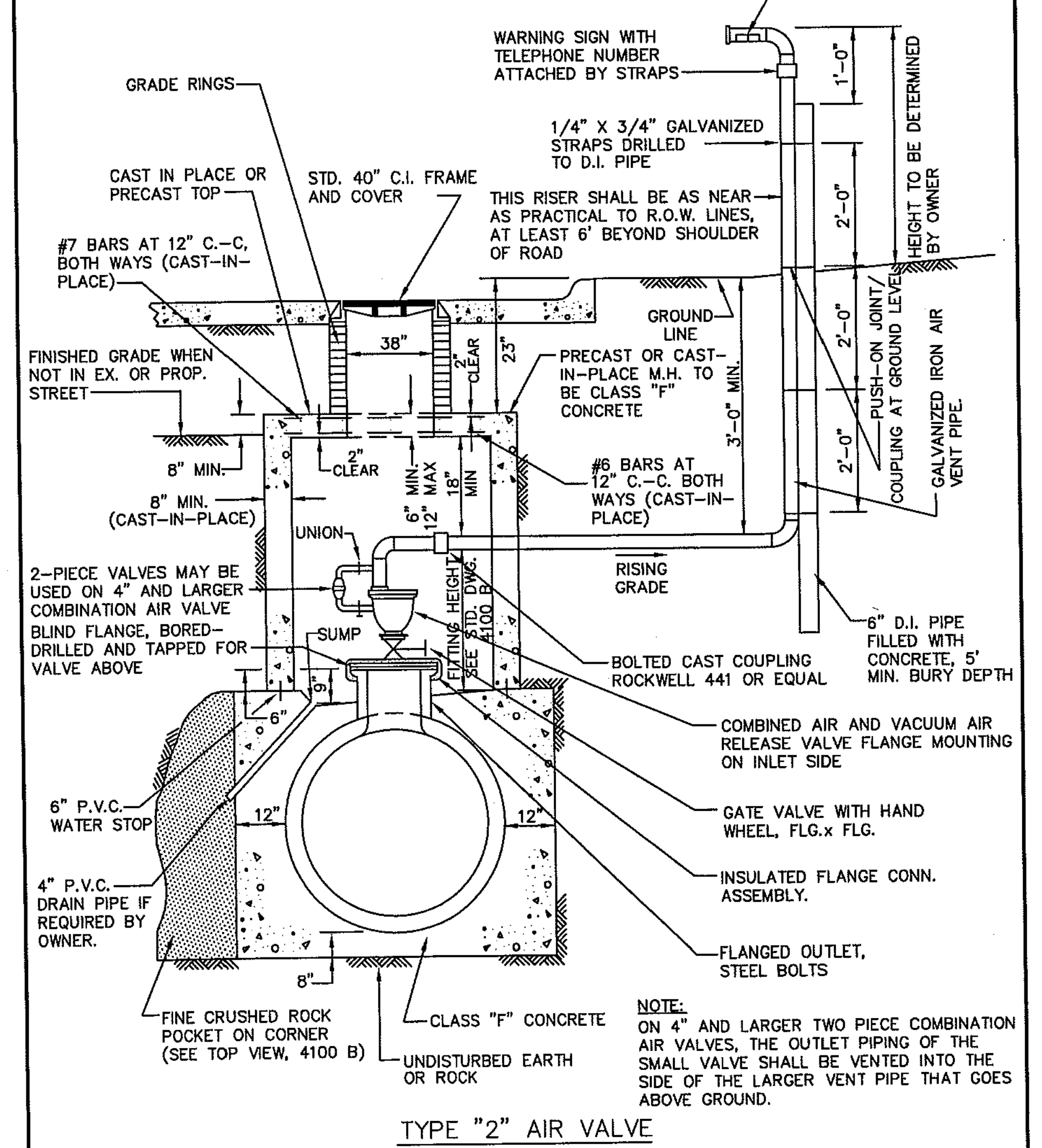
GATE VALVE BOX AND EXTENSION STEM

N.T.S.

GATE VALVE 4" TO 12"	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.6	
BOX & EXTENSION STEM		DATE OCT. '04	STANDARD DRAWING NO. 4050

NOTE:

WHEN NOT IN PAVING OR WALK, A CONCRETE PAD REINFORCED W/ #3 BARS AT 12" C–C EACH WAY, SHALL EXTEND A MINIMUM OF 2' AROUND THE M.H. AND VENT PIPE, AND SHALL BE A MINIMUM OF 4" THICK.


SEE AIR VENT STD. DWG. NO. 4100B
WARNING SIGN WITH TELEPHONE NUMBER ATTACHED BY STRAPS
GRADE RINGS
1/4" X 3/4" GALVANIZED STRAPS DRILLED TO D.I. PIPE
CAST IN PLACE OR PRECAST TOP
STD. 40" C.I. FRAME AND COVER
THIS RISER SHALL BE AS NEAR AS PRACTICAL TO R.O.W. LINES, AT LEAST 6' BEYOND SHOULDER OF ROAD
#7 BARS AT 12" C.–C, BOTH WAYS (CAST–IN–PLACE)
1'–0"
2'–0"
2'–0"
2'–0"
HEIGHT TO BE DETERMINED BY OWNER
GROUND LINE
38"
23"
2" CLEAR
FINISHED GRADE WHEN NOT IN EX. OR PROP. STREET
PRECAST OR CAST–IN–PLACE M.H. TO BE CLASS "F" CONCRETE
3'–0" MIN.
PUSH–ON JOINT/ COUPLING AT GROUND LEVEL
GALVANIZED IRON AIR VENT PIPE.
8" MIN.
2" CLEAR
6" MIN. 12" MAX
18" MIN
#6 BARS AT 12" C.–C. BOTH WAYS (CAST–IN–PLACE)
8" MIN. (CAST–IN–PLACE)
UNION
RISING GRADE
2–PIECE VALVES MAY BE USED ON 4" AND LARGER COMBINATION AIR VALVE
BLIND FLANGE, BORED–DRILLED AND TAPPED FOR VALVE ABOVE
SUMP
FITTING HEIGHT SEE STD. DWG. 4100 B
BOLTED CAST COUPLING ROCKWELL 441 OR EQUAL
6" D.I. PIPE FILLED WITH CONCRETE, 5' MIN. BURY DEPTH
9"
6"
COMBINED AIR AND VACUUM AIR RELEASE VALVE FLANGE MOUNTING ON INLET SIDE
6" P.V.C. WATER STOP
12"
12"
GATE VALVE WITH HAND WHEEL, FLG.x FLG.
4" P.V.C. DRAIN PIPE IF REQUIRED BY OWNER.
INSULATED FLANGE CONN. ASSEMBLY.
FLANGED OUTLET, STEEL BOLTS
8"
FINE CRUSHED ROCK POCKET ON CORNER (SEE TOP VIEW, 4100 B)
CLASS "F" CONCRETE
UNDISTURBED EARTH OR ROCK

NOTE:

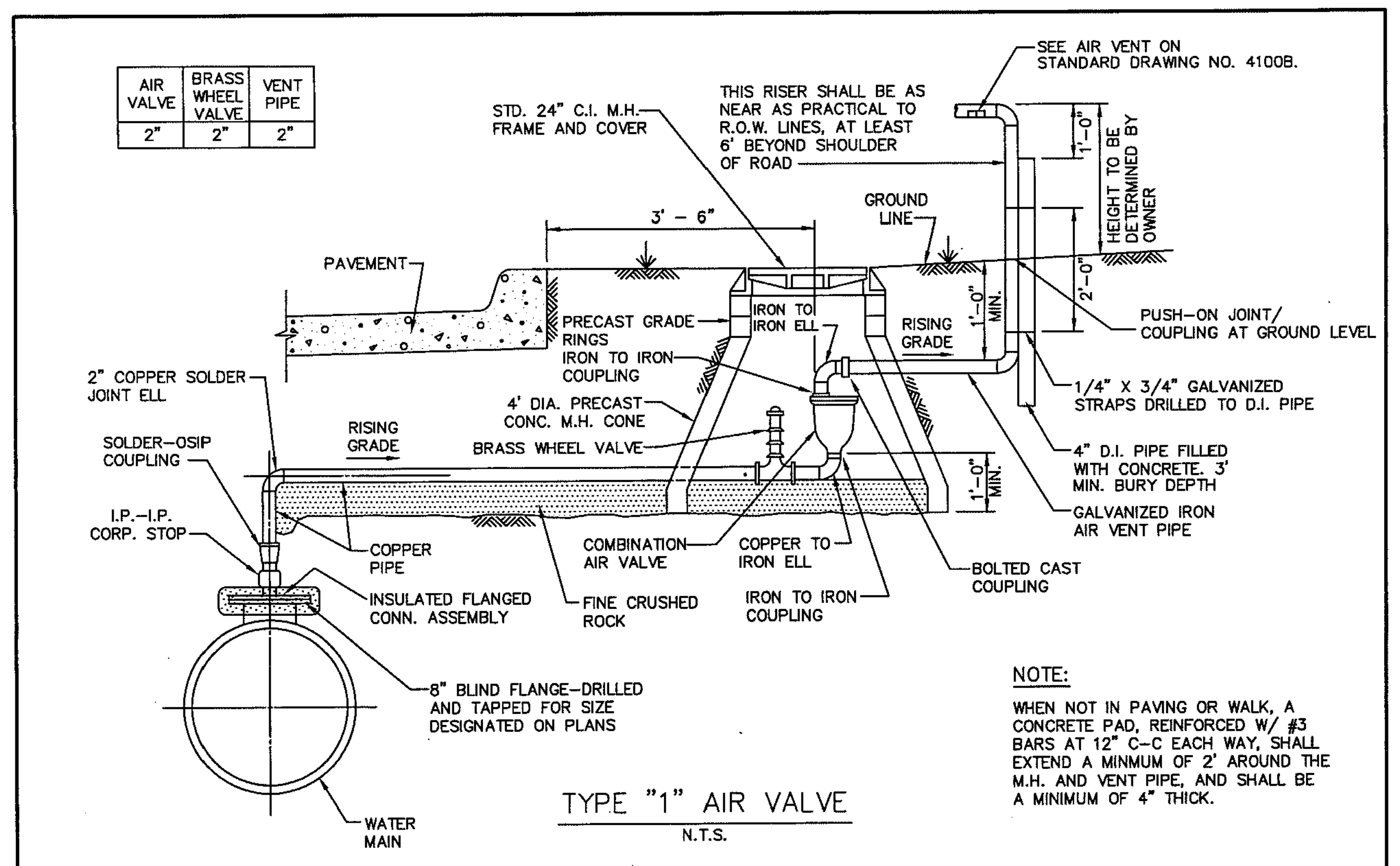
ON 4" AND LARGER TWO PIECE COMBINATION AIR VALVES, THE OUTLET PIPING OF THE SMALL VALVE SHALL BE VENTED INTO THE SIDE OF THE LARGER VENT PIPE THAT GOES ABOVE GROUND.

TYPE "2" AIR VALVE

N.T.S.

COMBINATION AIR VACUUM VALVE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.6	
TYPE "2"		DATE OCT. '04	STANDARD DRAWING NO. 4100A

AIR VALVE	BRASS WHEEL VALVE	VENT PIPE
2"	2"	2"


SEE AIR VENT ON STANDARD DRAWING NO. 4100B.
STD. 24" C.I. M.H. FRAME AND COVER
THIS RISER SHALL BE AS NEAR AS PRACTICAL TO R.O.W. LINES, AT LEAST 6' BEYOND SHOULDER OF ROAD
1'–0"
HEIGHT TO BE DETERMINED BY OWNER
GROUND LINE
3' – 6"
PAVEMENT
2'–0"
PRECAST GRADE RINGS
IRON TO IRON ELL
RISING GRADE
1'–0" MIN.
PUSH–ON JOINT/ COUPLING AT GROUND LEVEL
IRON TO IRON COUPLING
2" COPPER SOLDER JOINT ELL
4' DIA. PRECAST CONC. M.H. CONE
1/4" X 3/4" GALVANIZED STRAPS DRILLED TO D.I. PIPE
RISING GRADE
BRASS WHEEL VALVE
SOLDER–OSIP COUPLING
4" D.I. PIPE FILLED WITH CONCRETE. 3' MIN. BURY DEPTH
1'–0" MIN.
GALVANIZED IRON AIR VENT PIPE
I.P.–I.P. CORP. STOP
COPPER PIPE
COMBINATION AIR VALVE
COPPER TO IRON ELL
BOLTED CAST COUPLING
INSULATED FLANGED CONN. ASSEMBLY
FINE CRUSHED ROCK
IRON TO IRON COUPLING
8" BLIND FLANGE–DRILLED AND TAPPED FOR SIZE DESIGNATED ON PLANS
WATER MAIN

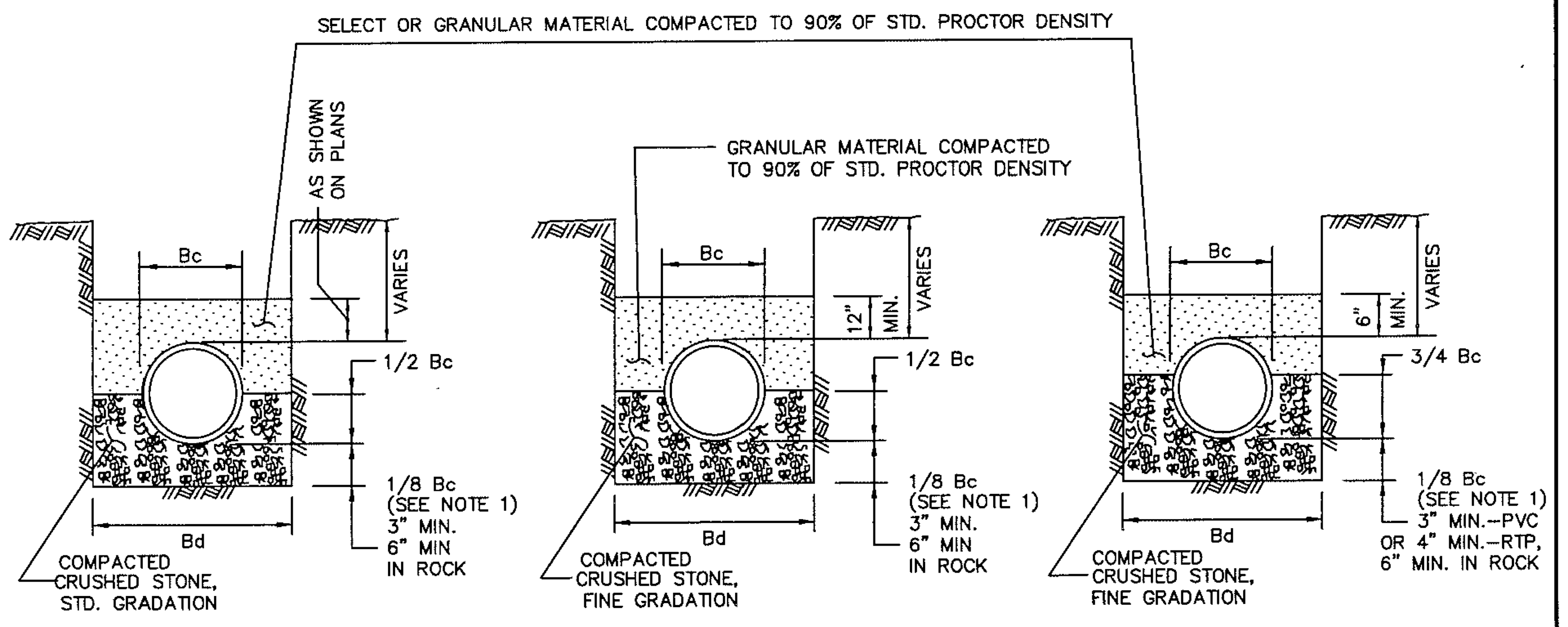
NOTE:

WHEN NOT IN PAVING OR WALK, A CONCRETE PAD, REINFORCED W/ #3 BARS AT 12" C–C EACH WAY, SHALL EXTEND A MINMUM OF 2' AROUND THE M.H. AND VENT PIPE, AND SHALL BE A MINIMUM OF 4" THICK.

TYPE "1" AIR VALVE

N.T.S.

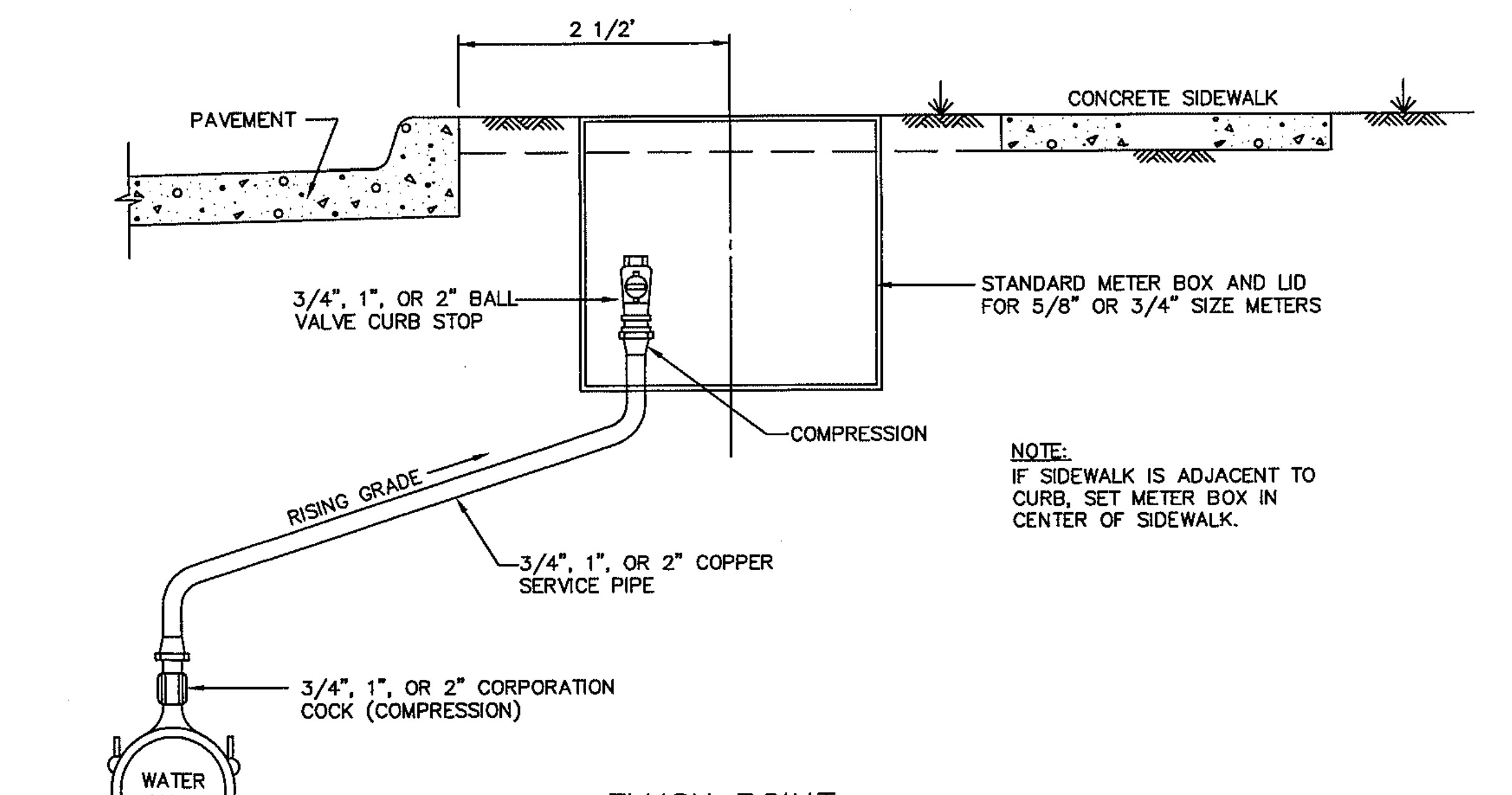
STANDARD DRAWING NO. 4090	COMBINATION AIR VACUUM VALVE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.6	
	TYPE "1"		DATE OCT. '04	STANDARD DRAWING NO. 4090


SELECT OR GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY
AS SHOWN ON PLANS
GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY
Bc
VARIES
1/2 Bc
1/8 Bc (SEE NOTE 1) 3" MIN. 6" MIN IN ROCK
Bd
COMPACTED CRUSHED STONE, STD. GRADATION
CLASS "B"
N.T.S.
Bc
12" MIN.
VARIES
1/2 Bc
1/8 Bc (SEE NOTE 1) 3" MIN. 6" MIN IN ROCK
Bd
COMPACTED CRUSHED STONE, FINE GRADATION
CLASS "B+"
N.T.S.
Bc
6" MIN.
VARIES
3/4 Bc
1/8 Bc (SEE NOTE 1) 3" MIN.–PVC OR 4" MIN.–RTP, 6" MIN. IN ROCK
Bd
COMPACTED CRUSHED STONE, FINE GRADATION
CLASS "B–1"
N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

STANDARD DRAWING NO. 3020	EMBEDMENT	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 504.5	
	CLASS "B", "B+", & "B–1"		DATE OCT. '04	STANDARD DRAWING NO. 3020


2 1/2'
PAVEMENT
CONCRETE SIDEWALK
3/4", 1", OR 2" BALL VALVE CURB STOP
STANDARD METER BOX AND LID FOR 5/8" OR 3/4" SIZE METERS
COMPRESSION
RISING GRADE
3/4", 1", OR 2" COPPER SERVICE PIPE
3/4", 1", OR 2" CORPORATION COCK (COMPRESSION)
WATER MAIN

NOTE:

IF SIDEWALK IS ADJACENT TO CURB, SET METER BOX IN CENTER OF SIDEWALK.

FLUSH POINT

(SIZE DESIGNATED ON PLANS)

N.T.S.

STANDARD DRAWING NO. 4110	FLUSH POINT INSTALLATION	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10	
	TYPE "1"		DATE OCT. '04	STANDARD DRAWING NO. 4110

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glen Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING

TEXAS REGISTRATION NUMBER: F-303

PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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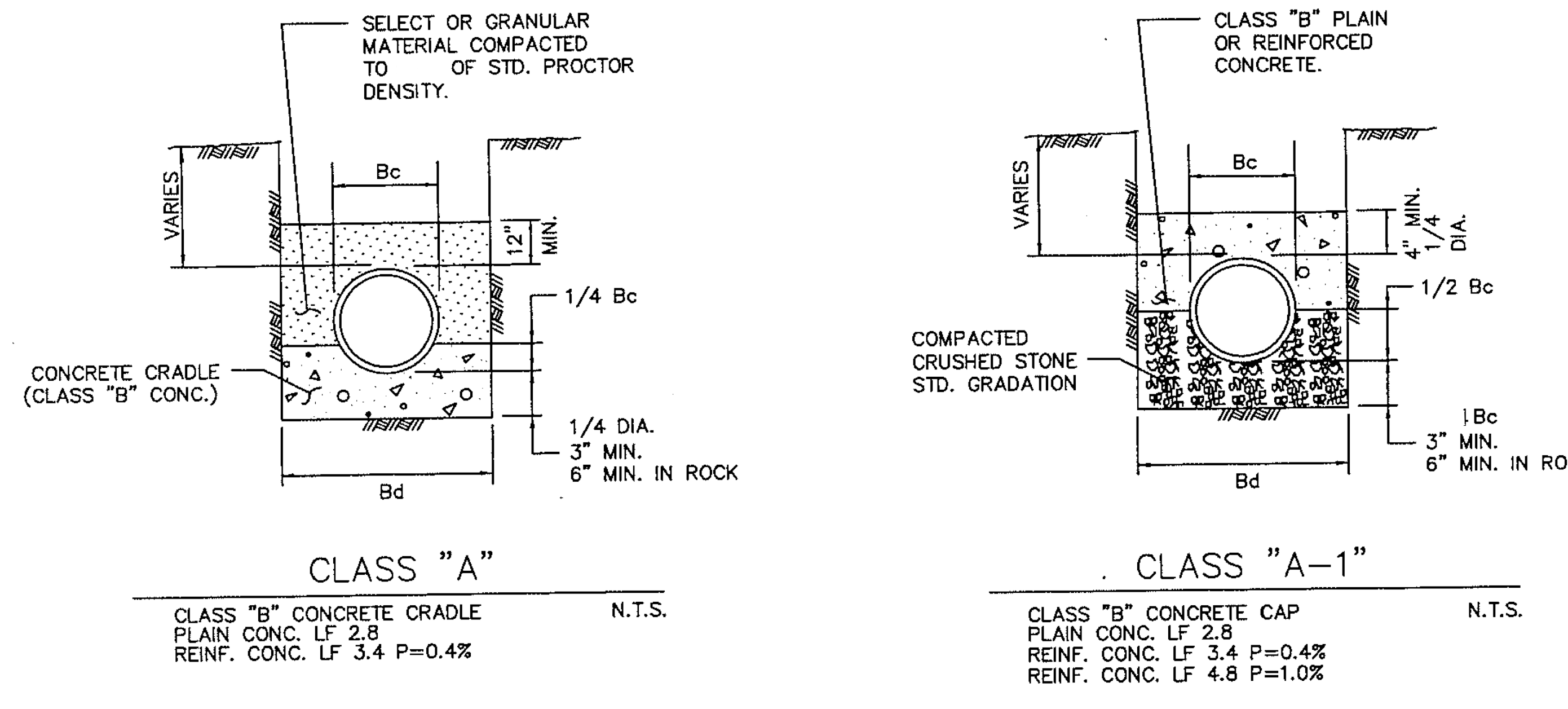
WATER DETAILS 3 8

Job. No. 1759-03-01	Sheet No.
Drawn By: RAH	CU1.11
Date: 02-28-2017	

Plotted: Jul 25, 2018, 12:7 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg

Plotted: Jul 25, 2018, 12:7 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg


SELECT OR GRANULAR MATERIAL COMPACTED TO OF STD. PROCTOR DENSITY.
VARIES
Bc
12" MIN.
1/4 Bc
CONCRETE CRADLE (CLASS "B" CONC.)
1/4 DIA.
3" MIN.
6" MIN. IN ROCK
Bd
CLASS "B" PLAIN OR REINFORCED CONCRETE.
4" MIN. 1/4 DIA.
1/2 Bc
COMPACTED CRUSHED STONE STD. GRADATION
Bc
3" MIN.
6" MIN. IN ROCK

CLASS "A" N.T.S.

CLASS "B" CONCRETE CRADLE
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%

CLASS "A-1" N.T.S.

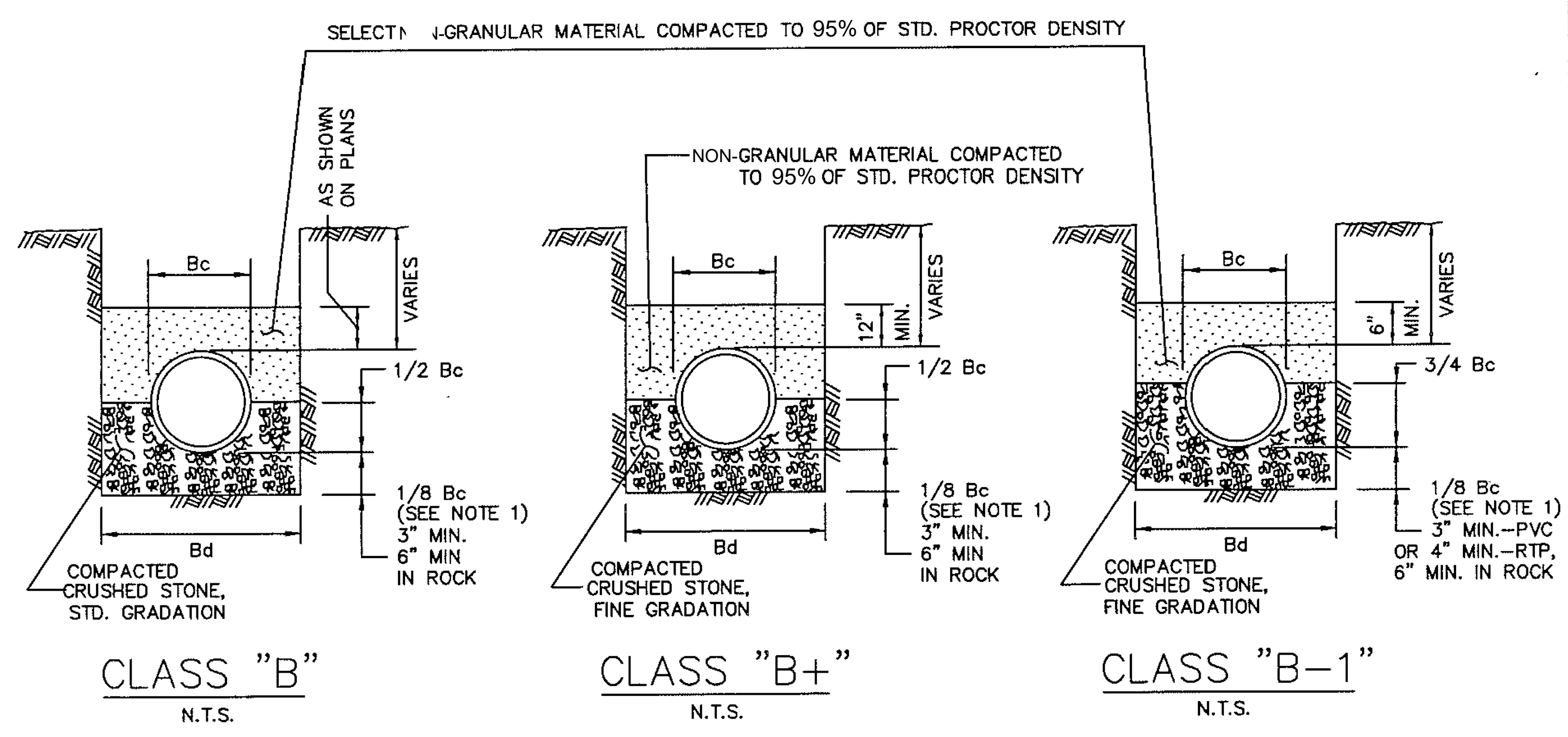
CLASS "B" CONCRETE CAP
PLAIN CONC. LF 2.8
REINF. CONC. LF 3.4 P=0.4%
REINF. CONC. LF 4.8 P=1.0%

NOTES:

1. LF. = LOAD FACTOR TO BE USED TO DETERMINE 3 EDGE BEARING BASED ON TYPE OF EMBEDMENT.
2. FREE-FALL OF CONCRETE NOT TO EXCEED 5 FT. MAXIMUM.
3. P = Rho FOR STEEL %
4. Bc = OUTSIDE DIAMETER OF PIPE
5. Bd = TRENCH WIDTH

STANDARD DRAWING NO. 3010

EMBEDMENT
CLASS "A" & "A-1"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3010


SELECT N-GRANULAR MATERIAL COMPACTED TO 95% OF STD. PROCTOR DENSITY
AS SHOWN ON PLANS
NON-GRANULAR MATERIAL COMPACTED TO 95% OF STD. PROCTOR DENSITY
Bc
VARIES
12" MIN.
6" MIN.
1/2 Bc
3/4 Bc
Bd
1/8 Bc (SEE NOTE 1)
3" MIN.
6" MIN IN ROCK
3" MIN.-PVC OR 4" MIN.-RTP, 6" MIN. IN ROCK
COMPACTED CRUSHED STONE, STD. GRADATION
COMPACTED CRUSHED STONE, FINE GRADATION

CLASS "B" N.T.S.

CLASS "B+" N.T.S.

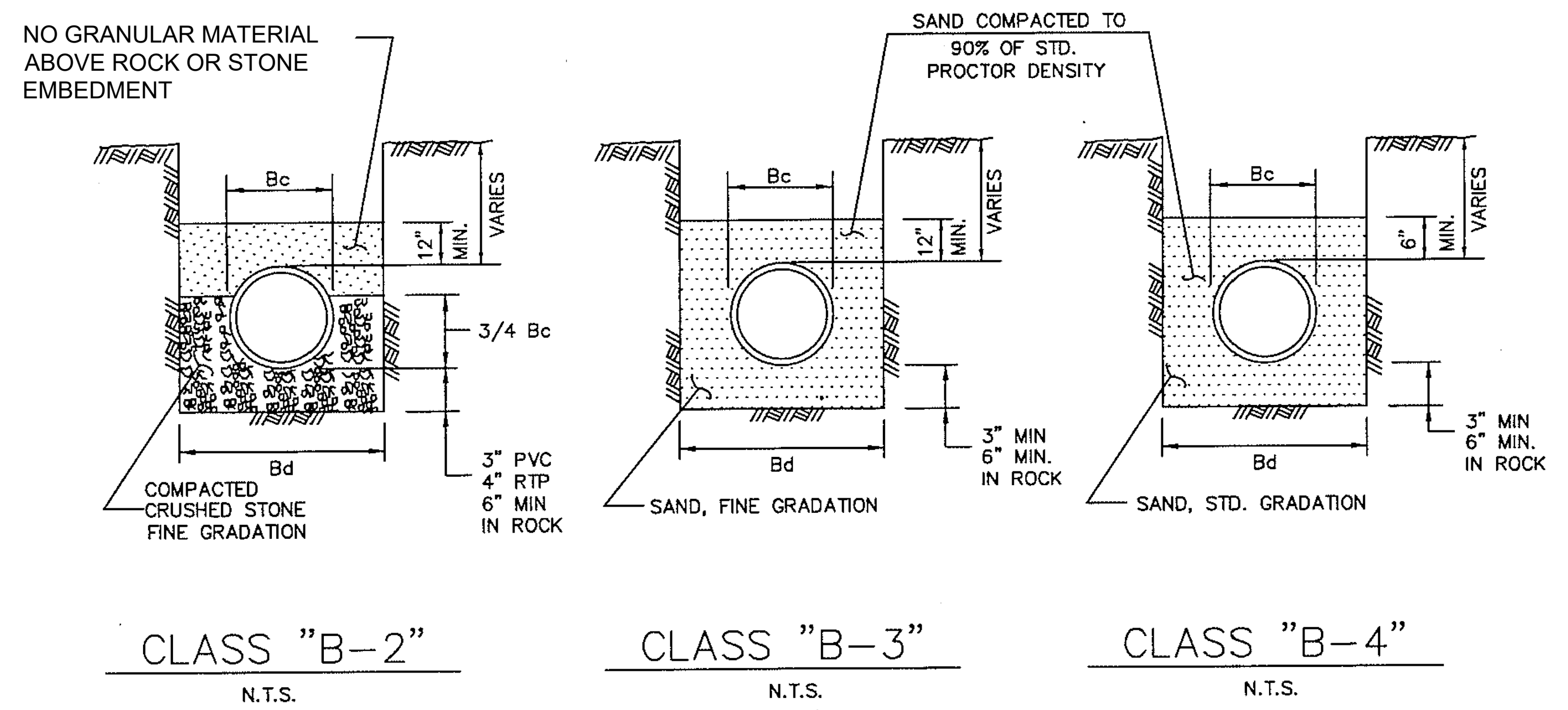
CLASS "B-1" N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

STANDARD DRAWING NO. 3020

EMBEDMENT
CLASS "B", "B+", & "B-1"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3020


NO GRANULAR MATERIAL ABOVE ROCK OR STONE EMBEDMENT
SAND COMPACTED TO 90% OF STD. PROCTOR DENSITY
Bc
VARIES
12" MIN.
6" MIN.
3/4 Bc
Bd
COMPACTED CRUSHED STONE FINE GRADATION
3" PVC
4" RTP
6" MIN IN ROCK
SAND, FINE GRADATION
3" MIN
6" MIN. IN ROCK
SAND, STD. GRADATION

CLASS "B-2" N.T.S.

CLASS "B-3" N.T.S.

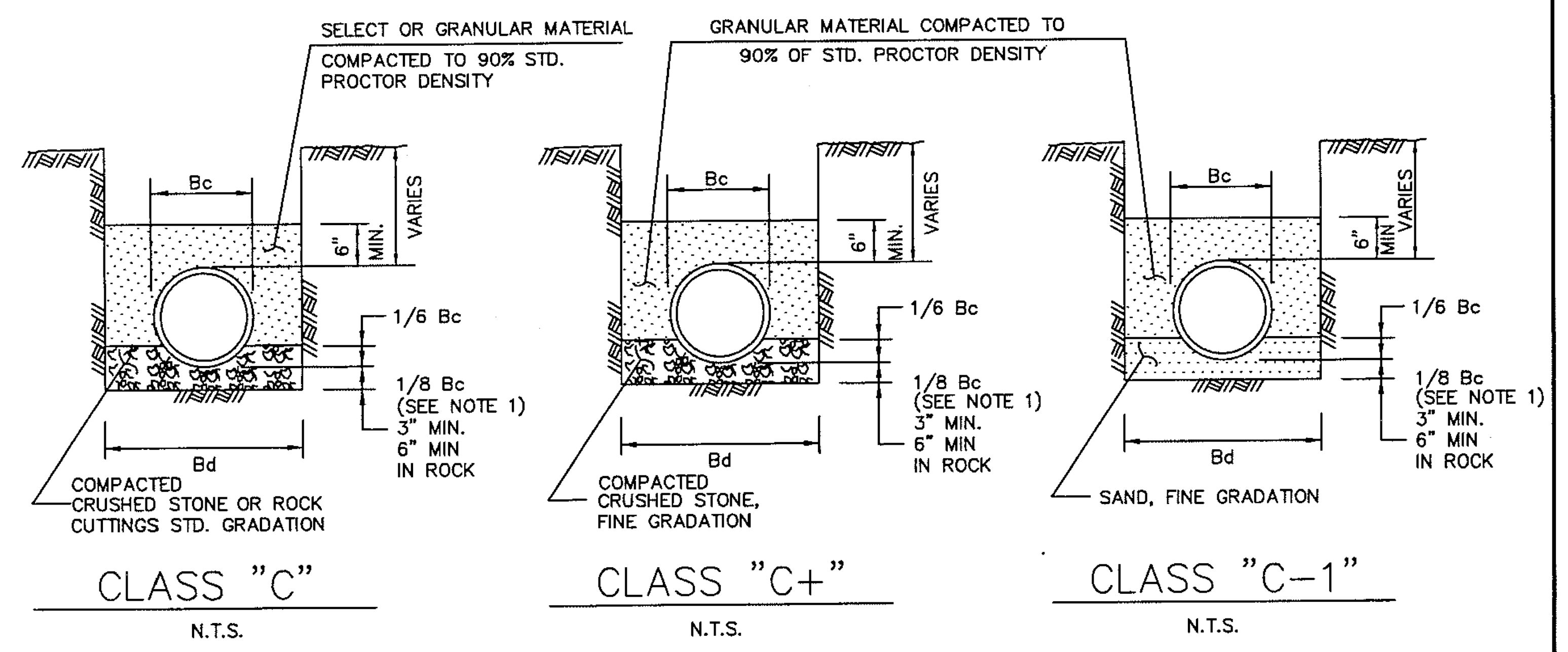
CLASS "B-4" N.T.S.

NOTES:

1. Bc = OUTSIDE DIAMETER OF PIPE
2. Bd = TRENCH WIDTH

STANDARD DRAWING NO. 3030

EMBEDMENT
CLASS "B-2","B-3", & "B-4"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3030


SELECT OR GRANULAR MATERIAL COMPACTED TO 90% STD. PROCTOR DENSITY
GRANULAR MATERIAL COMPACTED TO 90% OF STD. PROCTOR DENSITY
Bc
VARIES
6" MIN.
1/6 Bc
1/8 Bc (SEE NOTE 1)
3" MIN.
6" MIN IN ROCK
Bd
COMPACTED CRUSHED STONE OR ROCK CUTTINGS STD. GRADATION
COMPACTED CRUSHED STONE, FINE GRADATION
SAND, FINE GRADATION

CLASS "C" N.T.S.

CLASS "C+" N.T.S.

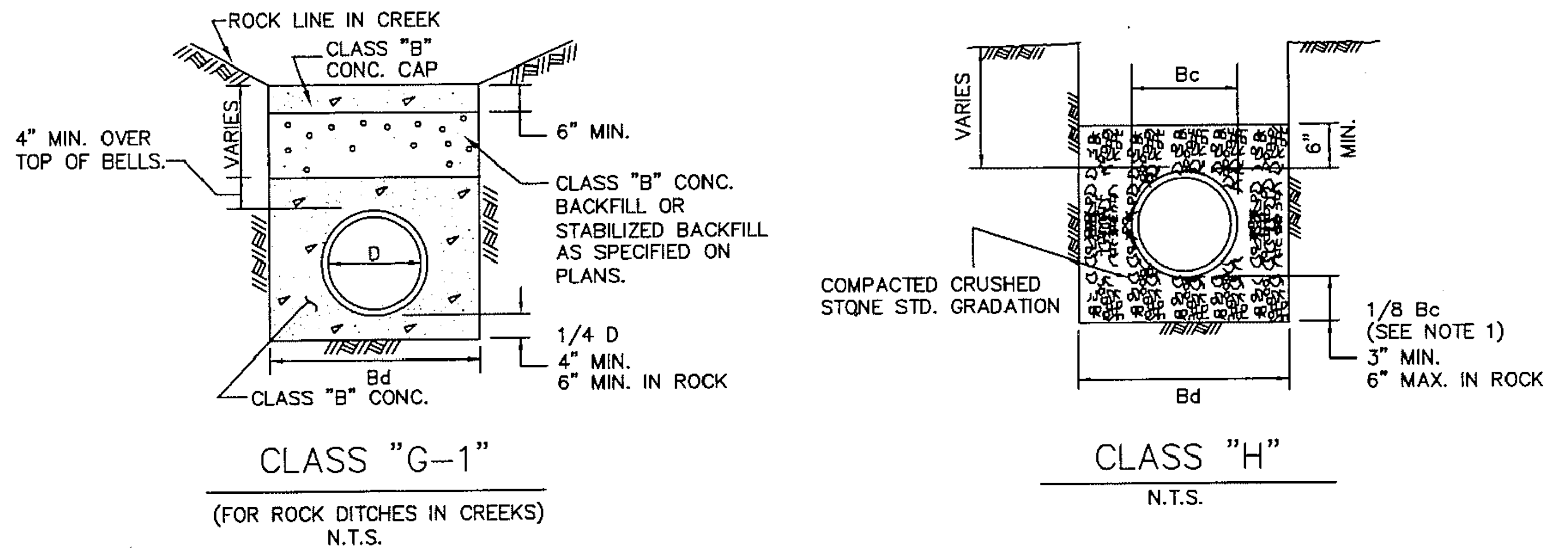
CLASS "C-1" N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

STANDARD DRAWING NO. 3040

EMBEDMENT
CLASS "C", "C+", & "C-1"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3040



CLASS "G-1"
(FOR ROCK DITCHES IN CREEKS)
N.T.S.

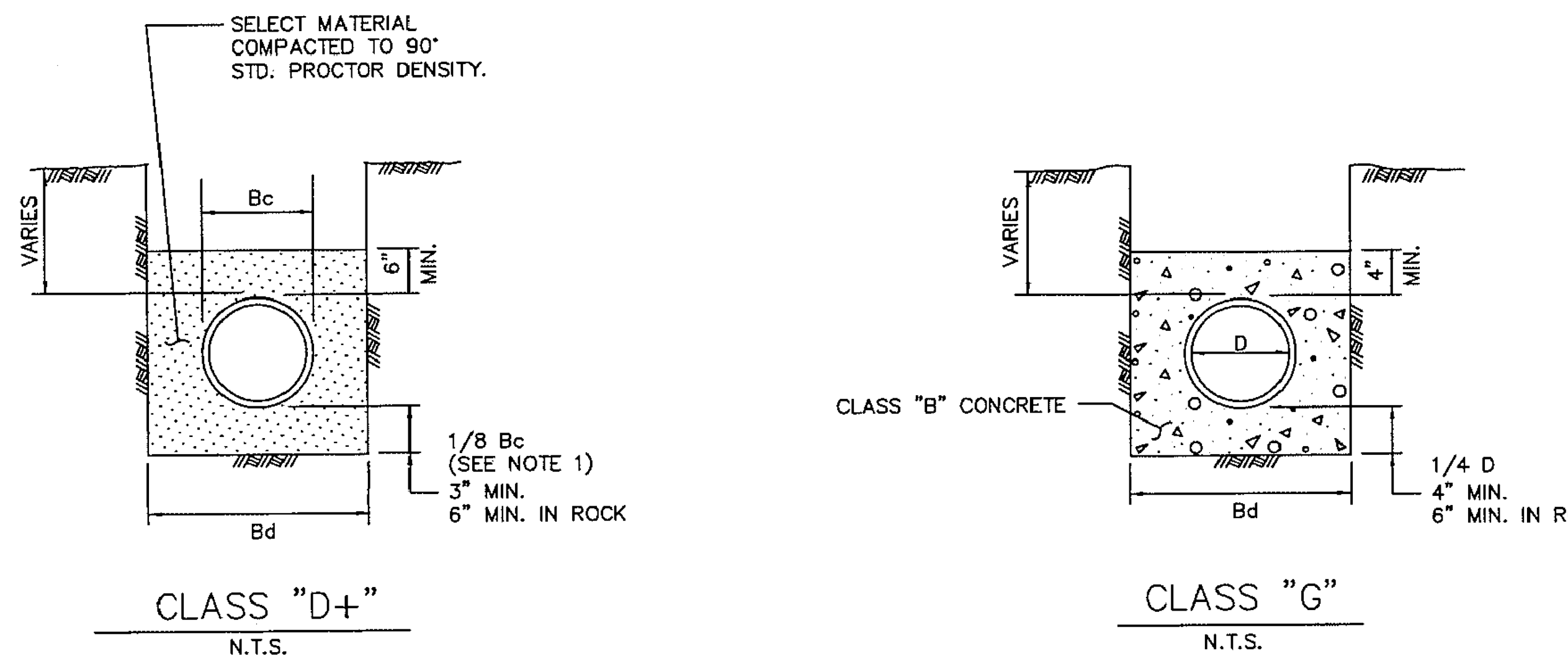
CLASS "H" N.T.S.

NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bd = TRENCH WIDTH
3. Bc = OUTSIDE DIAMETER OF PIPE
4. D = INSIDE DIAMETER OF PIPE

STANDARD DRAWING NO. 3060

EMBEDMENT
CLASS "G-1" & "H"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3060



CLASS "D+" N.T.S.

CLASS "G" N.T.S.

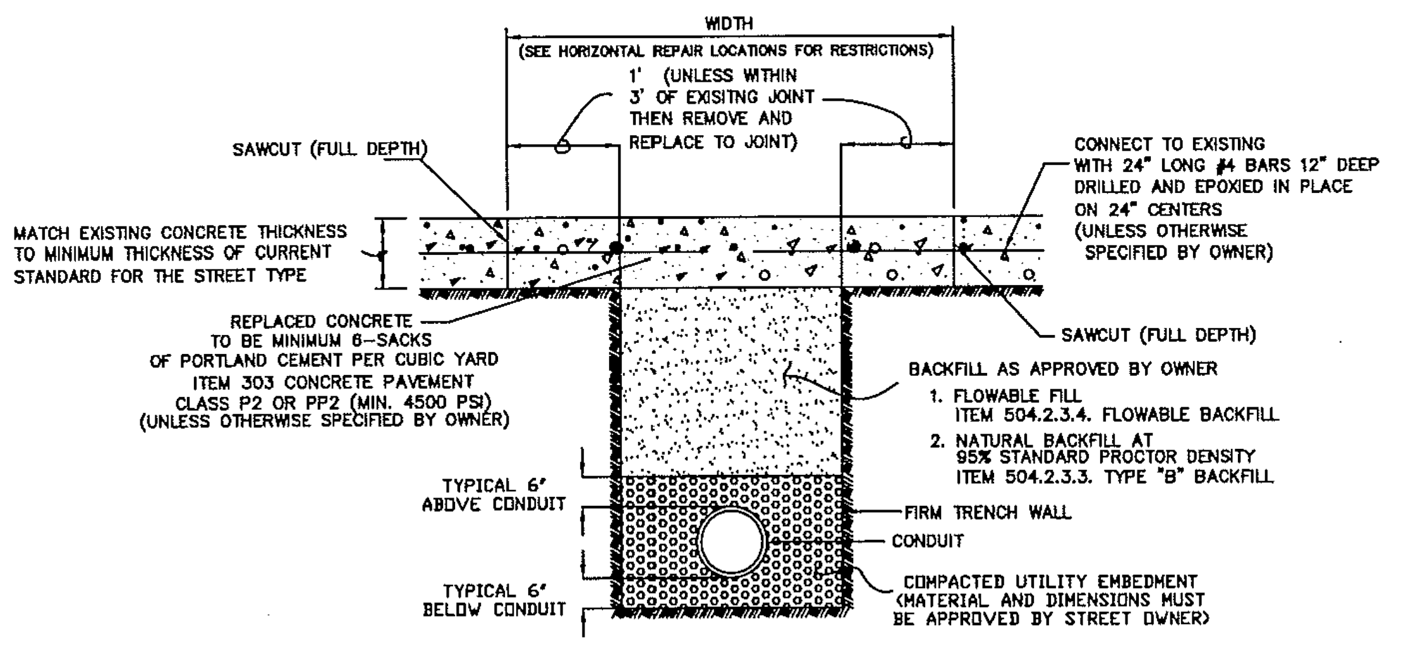
NOTES:

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH
4. D = INSIDE DIAMETER OF PIPE

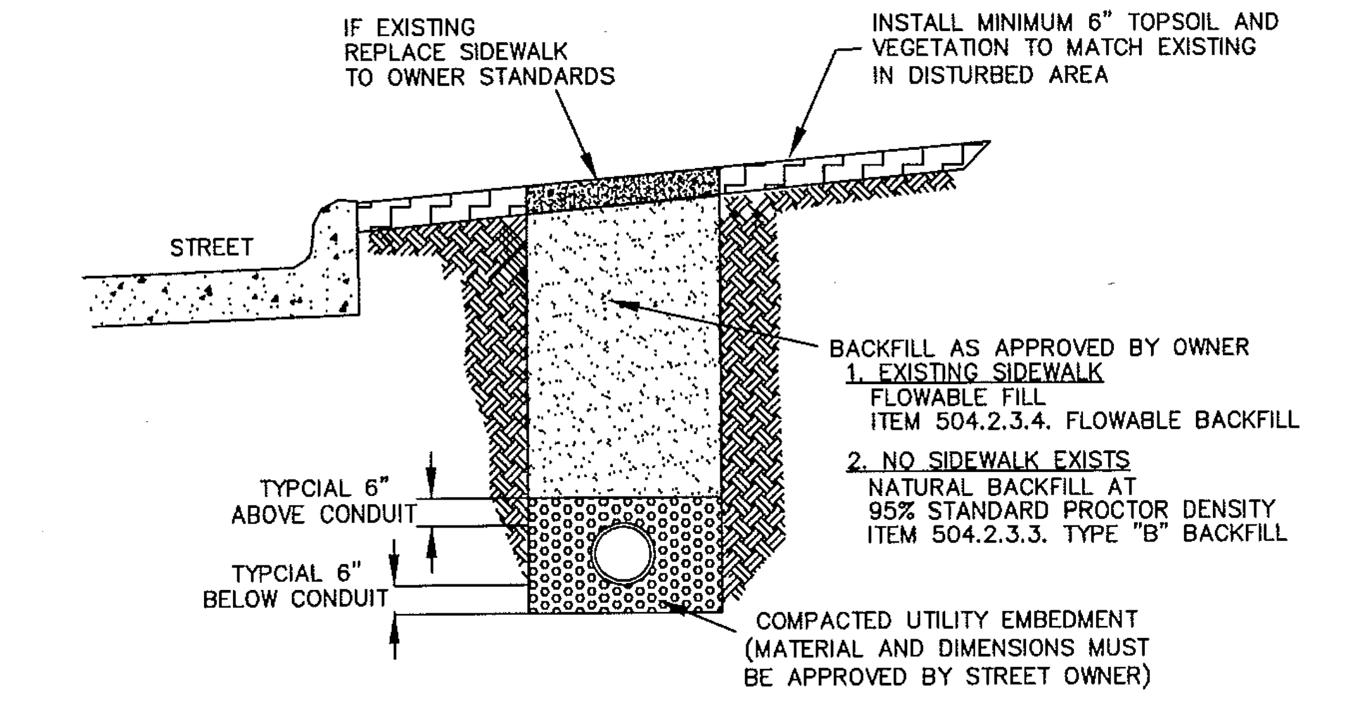
STANDARD DRAWING NO. 3050

EMBEDMENT
CLASS "D+" & "G"
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 504.5
DATE OCT. '04
STANDARD DRAWING NO. 3050

GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN


WIDTH
(SEE HORIZONTAL REPAIR LOCATIONS FOR RESTRICTIONS)
1' (UNLESS WITHIN 3' OF EXISITNG JOINT THEN REMOVE AND REPLACE TO JOINT)
SAWCUT (FULL DEPTH)
MATCH EXISTING CONCRETE THICKNESS TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
CONNECT TO EXISTING WITH 24" LONG #4 BARS 12" DEEP DRILLED AND EPOXIED IN PLACE ON 24" CENTERS (UNLESS OTHERWISE SPECIFIED BY OWNER)
REPLACED CONCRETE TO BE MINIMUM 6-SACKS OF PORTLAND CEMENT PER CUBIC YARD ITEM 303 CONCRETE PAVEMENT CLASS P2 OR PP2 (MIN. 4500 PSI) (UNLESS OTHERWISE SPECIFIED BY OWNER)
SAWCUT (FULL DEPTH)
BACKFILL AS APPROVED BY OWNER
1. FLOWABLE FILL ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
FIRM TRENCH WALL
CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)
TYPICAL 6' ABOVE CONDUIT
TYPICAL 6' BELOW CONDUIT

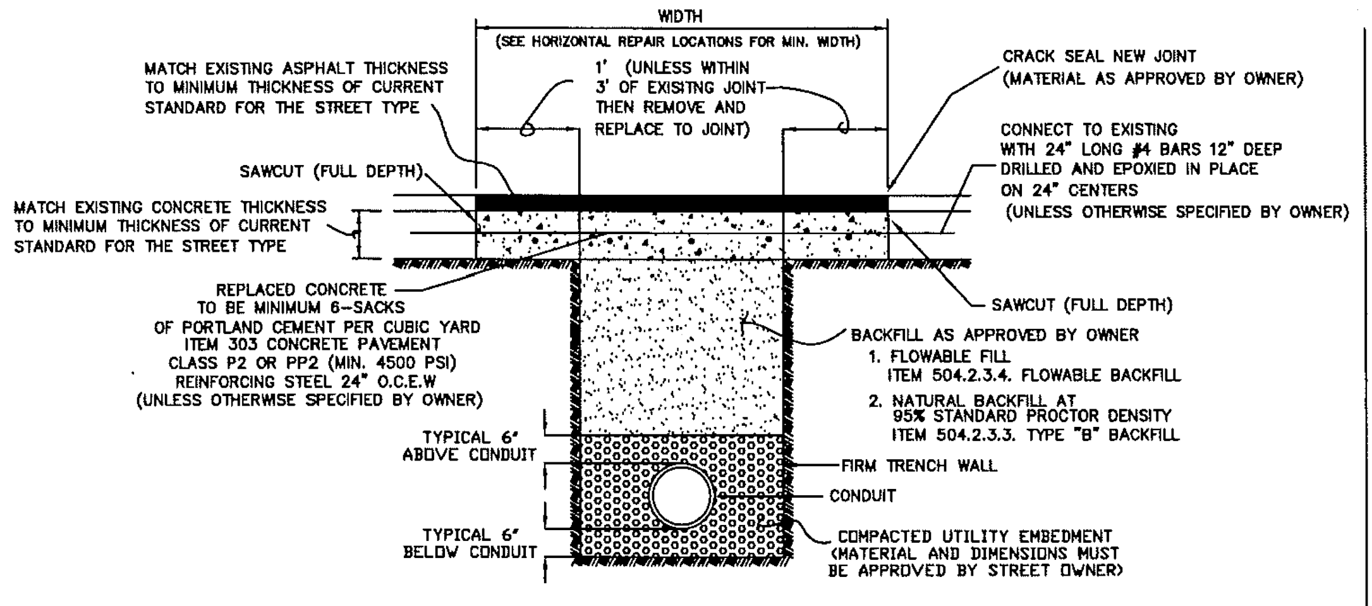
CONCRETE PAVEMENT
N.T.S.


IF EXISTING REPLACE SIDEWALK TO OWNER STANDARDS
INSTALL MINIMUM 6" TOPSOIL AND VEGETATION TO MATCH EXISTING IN DISTURBED AREA
STREET
BACKFILL AS APPROVED BY OWNER
1. EXISTING SIDEWALK FLOWABLE FILL ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NO SIDEWALK EXISTS NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
TYPCIAL 6" ABOVE CONDUIT
TYPCIAL 6" BELOW CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)

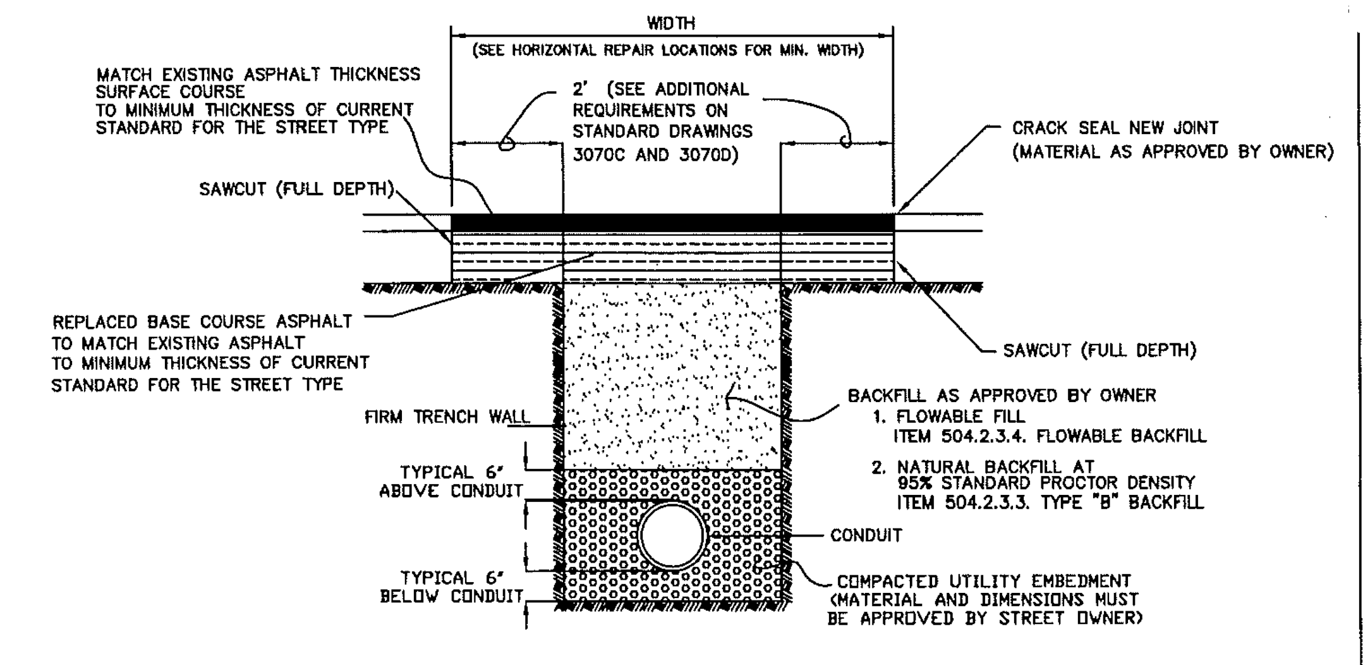
STREET PARKWAY
N.T.S.

PAVEMENT CUT AND REPAIR
CONCRETE AND PARKWAY
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 402
DATE OCT. '04
STANDARD DRAWING NO. 3070A

GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN


WIDTH
(SEE HORIZONTAL REPAIR LOCATIONS FOR MIN. WIDTH)
1' (UNLESS WITHIN 3' OF EXISITNG JOINT THEN REMOVE AND REPLACE TO JOINT)
MATCH EXISTING ASPHALT THICKNESS TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
CRACK SEAL NEW JOINT (MATERIAL AS APPROVED BY OWNER)
CONNECT TO EXISTING WITH 24" LONG #4 BARS 12" DEEP DRILLED AND EPOXIED IN PLACE ON 24" CENTERS (UNLESS OTHERWISE SPECIFIED BY OWNER)
SAWCUT (FULL DEPTH)
MATCH EXISTING CONCRETE THICKNESS TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
REPLACED CONCRETE TO BE MINIMUM 6-SACKS OF PORTLAND CEMENT PER CUBIC YARD ITEM 303 CONCRETE PAVEMENT CLASS P2 OR PP2 (MIN. 4500 PSI) REINFORCING STEEL 24" O.C.E.W (UNLESS OTHERWISE SPECIFIED BY OWNER)
SAWCUT (FULL DEPTH)
BACKFILL AS APPROVED BY OWNER
1. FLOWABLE FILL ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
FIRM TRENCH WALL
CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)
TYPICAL 6' ABOVE CONDUIT
TYPICAL 6' BELOW CONDUIT

CONCRETE PAVEMENT WITH ASPHALT OVERLAY
N.T.S.


WIDTH
(SEE HORIZONTAL REPAIR LOCATIONS FOR MIN. WIDTH)
2' (SEE ADDITIONAL REQUIREMENTS ON STANDARD DRAWINGS 3070C AND 3070D)
MATCH EXISTING ASPHALT THICKNESS SURFACE COURSE TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
CRACK SEAL NEW JOINT (MATERIAL AS APPROVED BY OWNER)
SAWCUT (FULL DEPTH)
REPLACED BASE COURSE ASPHALT TO MATCH EXISTING ASPHALT TO MINIMUM THICKNESS OF CURRENT STANDARD FOR THE STREET TYPE
SAWCUT (FULL DEPTH)
FIRM TRENCH WALL
BACKFILL AS APPROVED BY OWNER
1. FLOWABLE FILL ITEM 504.2.3.4. FLOWABLE BACKFILL
2. NATURAL BACKFILL AT 95% STANDARD PROCTOR DENSITY ITEM 504.2.3.3. TYPE "B" BACKFILL
TYPICAL 6' ABOVE CONDUIT
CONDUIT
TYPICAL 6' BELOW CONDUIT
COMPACTED UTILITY EMBEDMENT (MATERIAL AND DIMENSIONS MUST BE APPROVED BY STREET OWNER)

FULL DEPTH ASPHALT PAVEMENT
N.T.S.

PAVEMENT CUT AND REPAIR
ASPHALT
North Central Texas Council of Governments
STANDARD SPECIFICATION REFERENCE 402
DATE OCT. '04
STANDARD DRAWING NO. 3070B

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018
Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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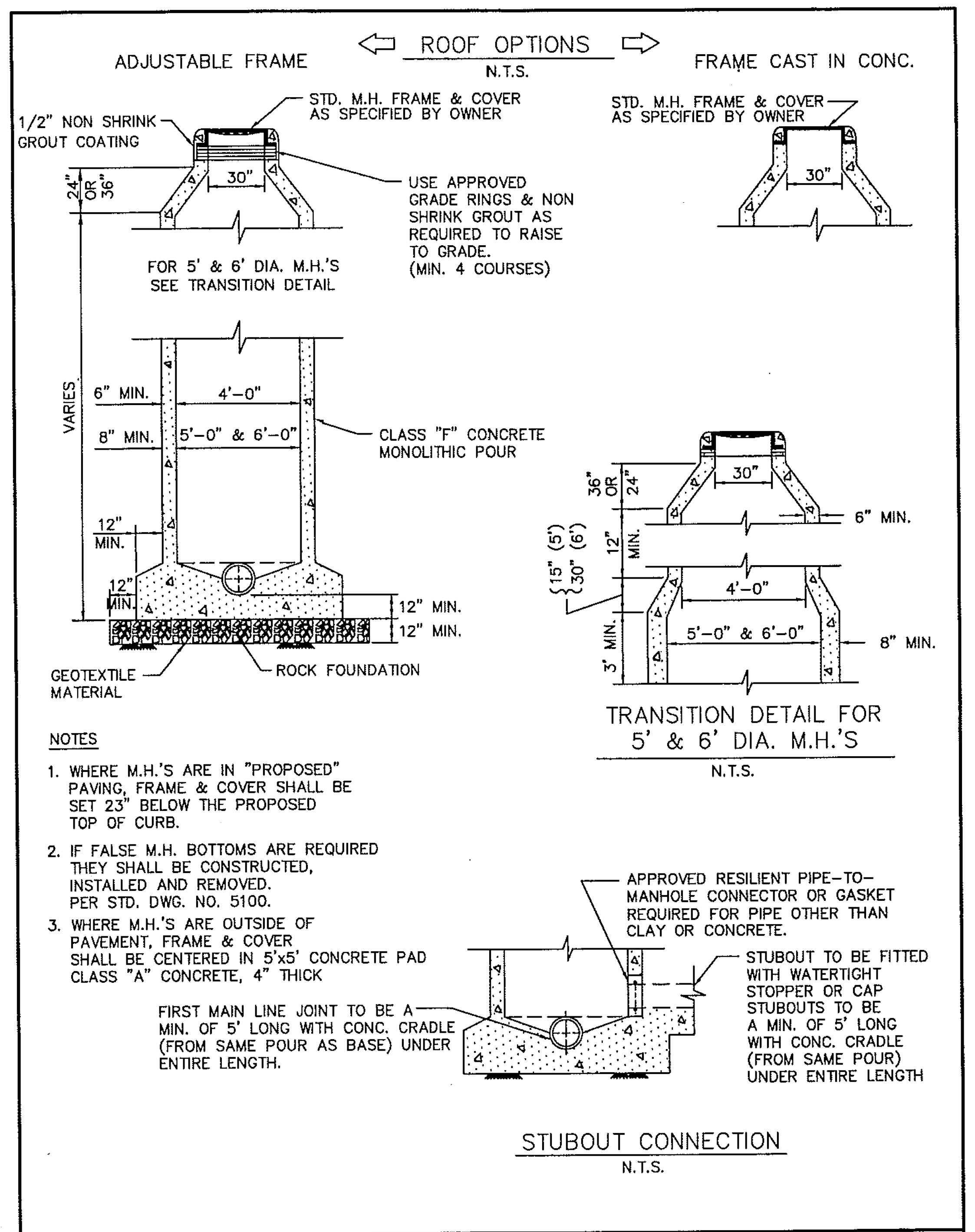
EMBEDMENT DETAILS 8

Job. No. 1759-03-01	Sheet No.
Drawn By: RAH	CU1.12
Date: 02-28-2017	


ROOF OPTIONS
N.T.S.
ADJUSTABLE FRAME
FRAME CAST IN CONC.
1/2" NON SHRINK GROUT COATING
STD. M.H. FRAME & COVER AS SPECIFIED BY OWNER
30"
24" OR 36"
USE APPROVED GRADE RINGS & NON SHRINK GROUT AS REQUIRED TO RAISE TO GRADE. (MIN. 4 COURSES)
FOR 5' & 6' DIA. M.H.'S SEE TRANSITION DETAIL
VARIES
6" MIN.
4'-0"
8" MIN.
5'-0" & 6'-0"
CLASS "F" CONCRETE MONOLITHIC POUR
12" MIN.
12" MIN.
12" MIN.
12" MIN.
GEOTEXTILE MATERIAL
ROCK FOUNDATION
36" OR 24"
12" MIN.
6" MIN.
15" (5')
30" (6')
4'-0"
5'-0" & 6'-0"
3' MIN.
8" MIN.
APPROVED RESILIENT PIPE-TO-MANHOLE CONNECTOR OR GASKET REQUIRED FOR PIPE OTHER THAN CLAY OR CONCRETE.
STUBOUT TO BE FITTED WITH WATERTIGHT STOPPER OR CAP STUBOUTS TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR) UNDER ENTIRE LENGTH
FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER ENTIRE LENGTH.

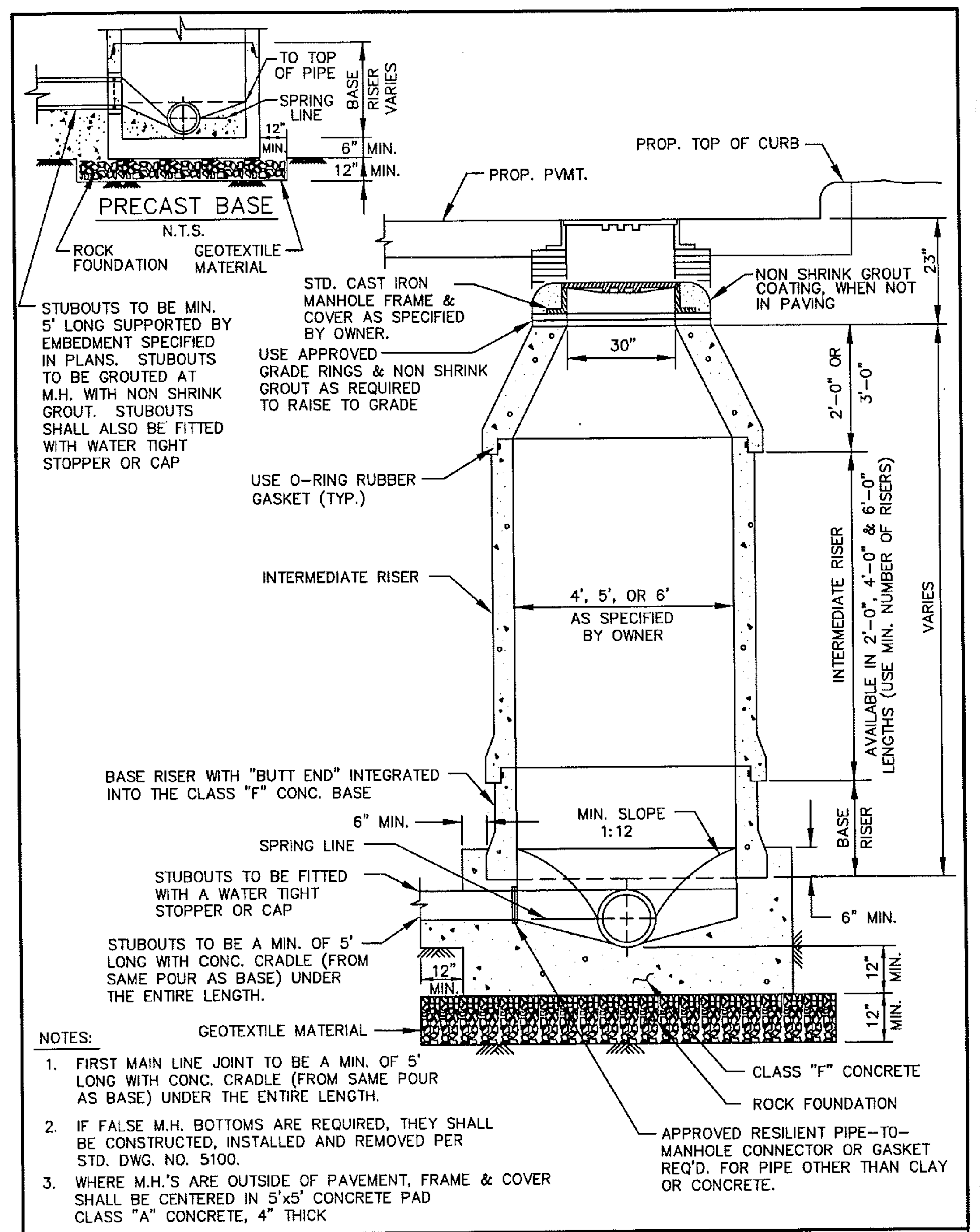
TRANSITION DETAIL FOR 5' & 6' DIA. M.H.'S
N.T.S.

STUBOUT CONNECTION
N.T.S.

NOTES

1. WHERE M.H.'S ARE IN "PROPOSED" PAVING, FRAME & COVER SHALL BE SET 23" BELOW THE PROPOSED TOP OF CURB.
2. IF FALSE M.H. BOTTOMS ARE REQUIRED THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED. PER STD. DWG. NO. 5100.
3. WHERE M.H.'S ARE OUTSIDE OF PAVEMENT, FRAME & COVER SHALL BE CENTERED IN 5'x5' CONCRETE PAD CLASS "A" CONCRETE, 4" THICK

WASTEWATER MANHOLE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.1
CAST-IN-PLACE		DATE OCT. '04 STANDARD DRAWING NO. 5030


TO TOP OF PIPE
SPRING LINE
BASE RISER VARIES
12" MIN.
6" MIN.
12" MIN.
ROCK FOUNDATION
GEOTEXTILE MATERIAL
PROP. TOP OF CURB
PROP. PVMT.
23"
STD. CAST IRON MANHOLE FRAME & COVER AS SPECIFIED BY OWNER.
NON SHRINK GROUT COATING, WHEN NOT IN PAVING
USE APPROVED GRADE RINGS & NON SHRINK GROUT AS REQUIRED TO RAISE TO GRADE
30"
2'-0" OR 3'-0"
USE O-RING RUBBER GASKET (TYP.)
INTERMEDIATE RISER
4', 5', OR 6' AS SPECIFIED BY OWNER
INTERMEDIATE RISER
AVAILABLE IN 2'-0", 4'-0" & 6'-0" LENGTHS (USE MIN. NUMBER OF RISERS)
VARIES
BASE RISER WITH "BUTT END" INTEGRATED INTO THE CLASS "F" CONC. BASE
6" MIN.
MIN. SLOPE 1:12
BASE RISER
SPRING LINE
STUBOUTS TO BE FITTED WITH A WATER TIGHT STOPPER OR CAP
STUBOUTS TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER THE ENTIRE LENGTH.
6" MIN.
12" MIN.
12" MIN.
12" MIN.
GEOTEXTILE MATERIAL
CLASS "F" CONCRETE
ROCK FOUNDATION
APPROVED RESILIENT PIPE-TO-MANHOLE CONNECTOR OR GASKET REQ'D. FOR PIPE OTHER THAN CLAY OR CONCRETE.

PRECAST BASE
N.T.S.

STUBOUTS TO BE MIN. 5' LONG SUPPORTED BY EMBEDMENT SPECIFIED IN PLANS. STUBOUTS TO BE GROUTED AT M.H. WITH NON SHRINK GROUT. STUBOUTS SHALL ALSO BE FITTED WITH WATER TIGHT STOPPER OR CAP

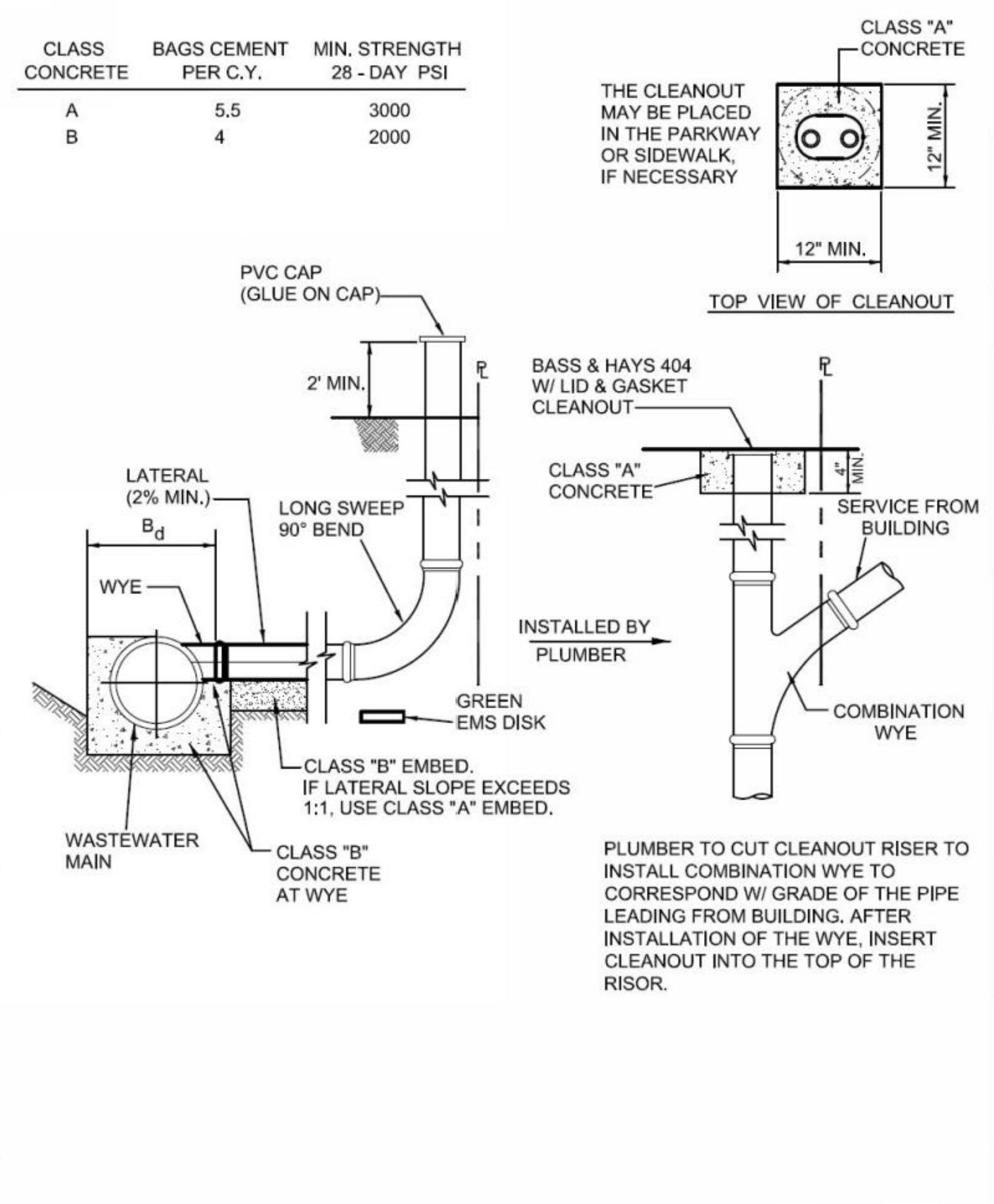
NOTES:

1. FIRST MAIN LINE JOINT TO BE A MIN. OF 5' LONG WITH CONC. CRADLE (FROM SAME POUR AS BASE) UNDER THE ENTIRE LENGTH.
2. IF FALSE M.H. BOTTOMS ARE REQUIRED, THEY SHALL BE CONSTRUCTED, INSTALLED AND REMOVED PER STD. DWG. NO. 5100.
3. WHERE M.H.'S ARE OUTSIDE OF PAVEMENT, FRAME & COVER SHALL BE CENTERED IN 5'x5' CONCRETE PAD CLASS "A" CONCRETE, 4" THICK

WASTEWATER MANHOLE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.1
PRECAST		DATE OCT. '04 STANDARD DRAWING NO. 5020

City of Rockwall
The New Horizon

CLASS CONCRETE	BAGS CEMENT PER C.Y.	MIN. STRENGTH 28 - DAY PSI
A	5.5	3000
B	4	2000



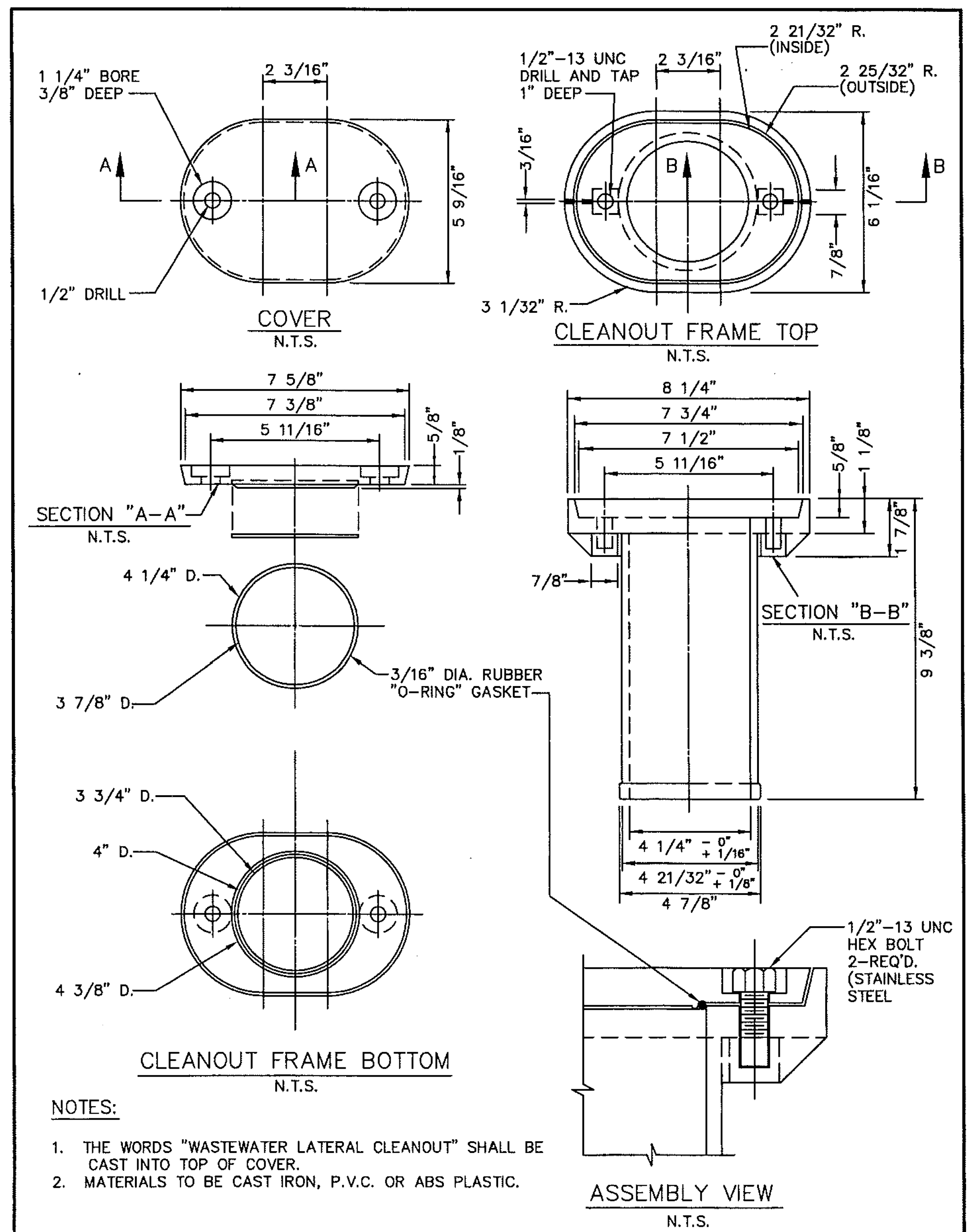
THE CLEANOUT MAY BE PLACED IN THE PARKWAY OR SIDEWALK, IF NECESSARY

TOP VIEW OF CLEANOUT

PLUMBER TO CUT CLEANOUT RISER TO INSTALL COMBINATION WYE TO CORRESPOND W/ GRADE OF THE PIPE LEADING FROM BUILDING. AFTER INSTALLATION OF THE WYE, INSERT CLEANOUT INTO THE TOP OF THE RISOR.

WASTEWATER LATERAL	**CITY OF ROCKWALL**	
CONNECTIONS – RESIDENTIAL		DATE AUG. '15 DRAWING NO. R–5120

Page 228



COVER
N.T.S.

CLEANOUT FRAME TOP
N.T.S.

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

SECTION "B-B"
N.T.S.

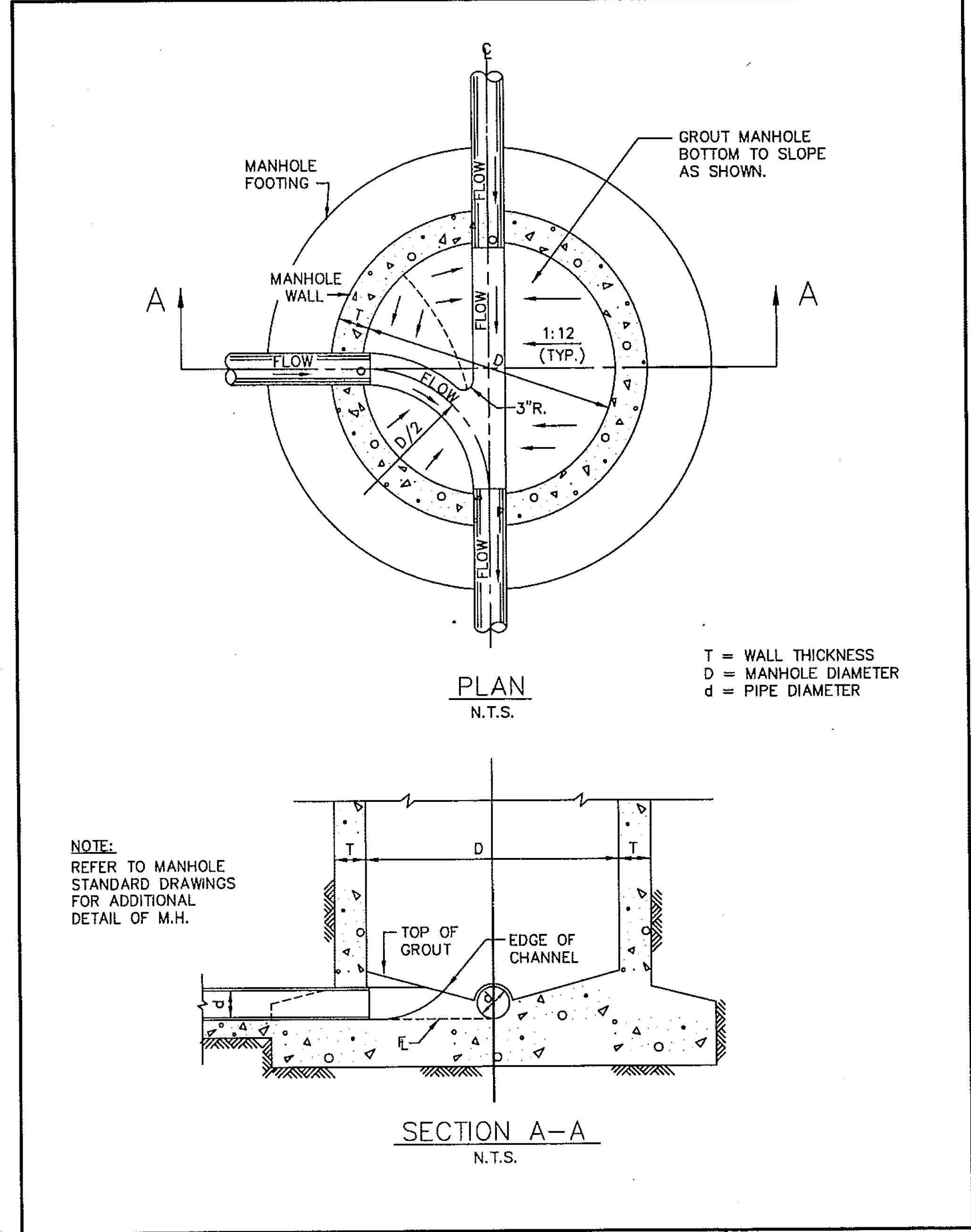
CLEANOUT FRAME BOTTOM
N.T.S.

ASSEMBLY VIEW
N.T.S.

NOTES:

1. THE WORDS "WASTEWATER LATERAL CLEANOUT" SHALL BE CAST INTO TOP OF COVER.
2. MATERIALS TO BE CAST IRON, P.V.C. OR ABS PLASTIC.

WASTEWATER LATERAL	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10
CLEANOUT FRAME & COVER		DATE OCT. '04 STANDARD DRAWING NO. 5140



PLAN
N.T.S.

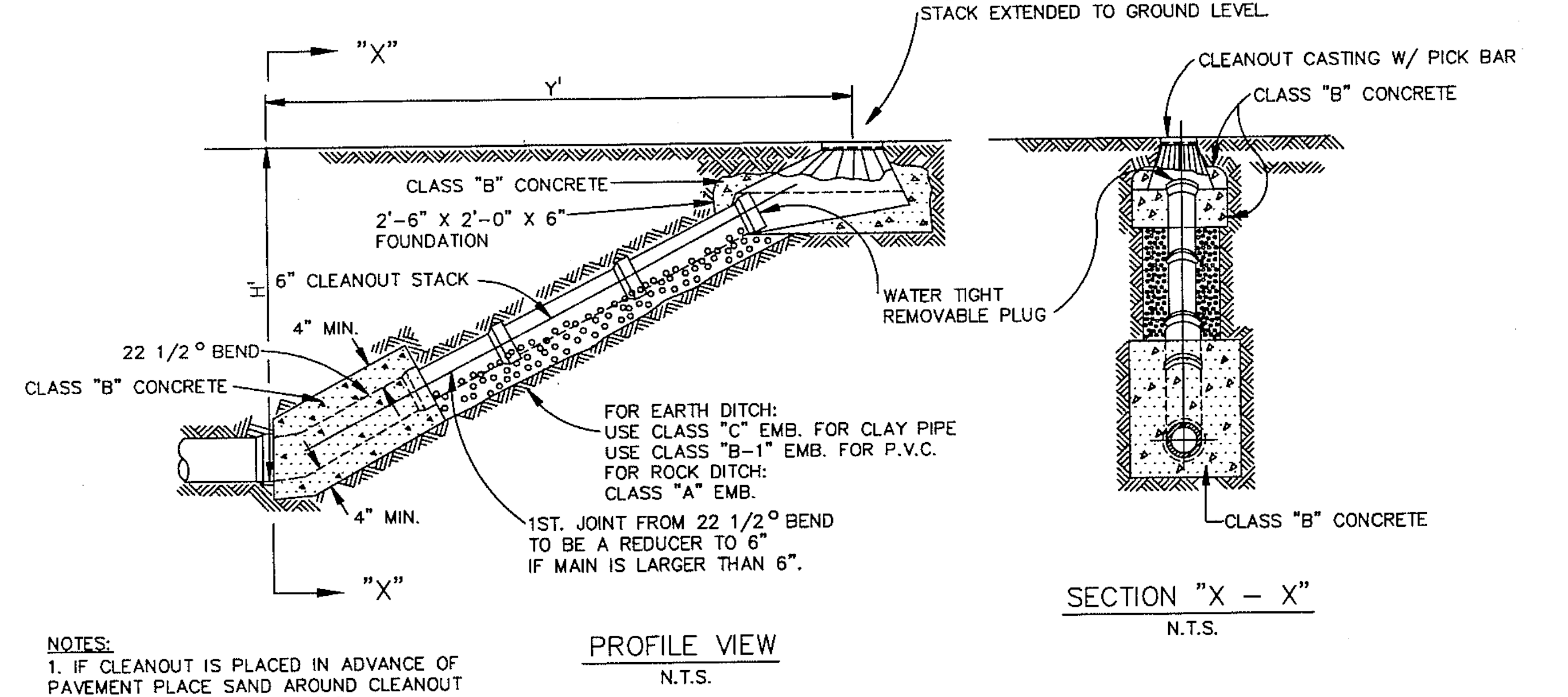
T = WALL THICKNESS
D = MANHOLE DIAMETER
d = PIPE DIAMETER

NOTE:
REFER TO MANHOLE STANDARD DRAWINGS FOR ADDITIONAL DETAIL OF M.H.

SECTION A–A
N.T.S.

WASTEWATER MANHOLE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.1
LINE INTERSECTION		DATE OCT. '04 STANDARD DRAWING NO. 5090

H'	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	H'
Y'	10	12	14	17	19	22	24	27	29	31	34	36	39	41	43	46	48	Y'


CLEANOUT CASTING OPENING TO BE INSTALLED CENTERED OVER THE CENTERLINE OF THE CLEANOUT STACK EXTENDED TO GROUND LEVEL.
"X"
Y'
CLASS "B" CONCRETE
2'-6" X 2'-0" X 6" FOUNDATION
H'
6" CLEANOUT STACK
4" MIN.
22 1/2° BEND
CLASS "B" CONCRETE
WATER TIGHT REMOVABLE PLUG
FOR EARTH DITCH: USE CLASS "C" EMB. FOR CLAY PIPE USE CLASS "B-1" EMB. FOR P.V.C. FOR ROCK DITCH: CLASS "A" EMB.
4" MIN.
1ST. JOINT FROM 22 1/2° BEND TO BE A REDUCER TO 6" IF MAIN IS LARGER THAN 6".
"X"
CLEANOUT CASTING W/ PICK BAR
CLASS "B" CONCRETE
CLASS "B" CONCRETE

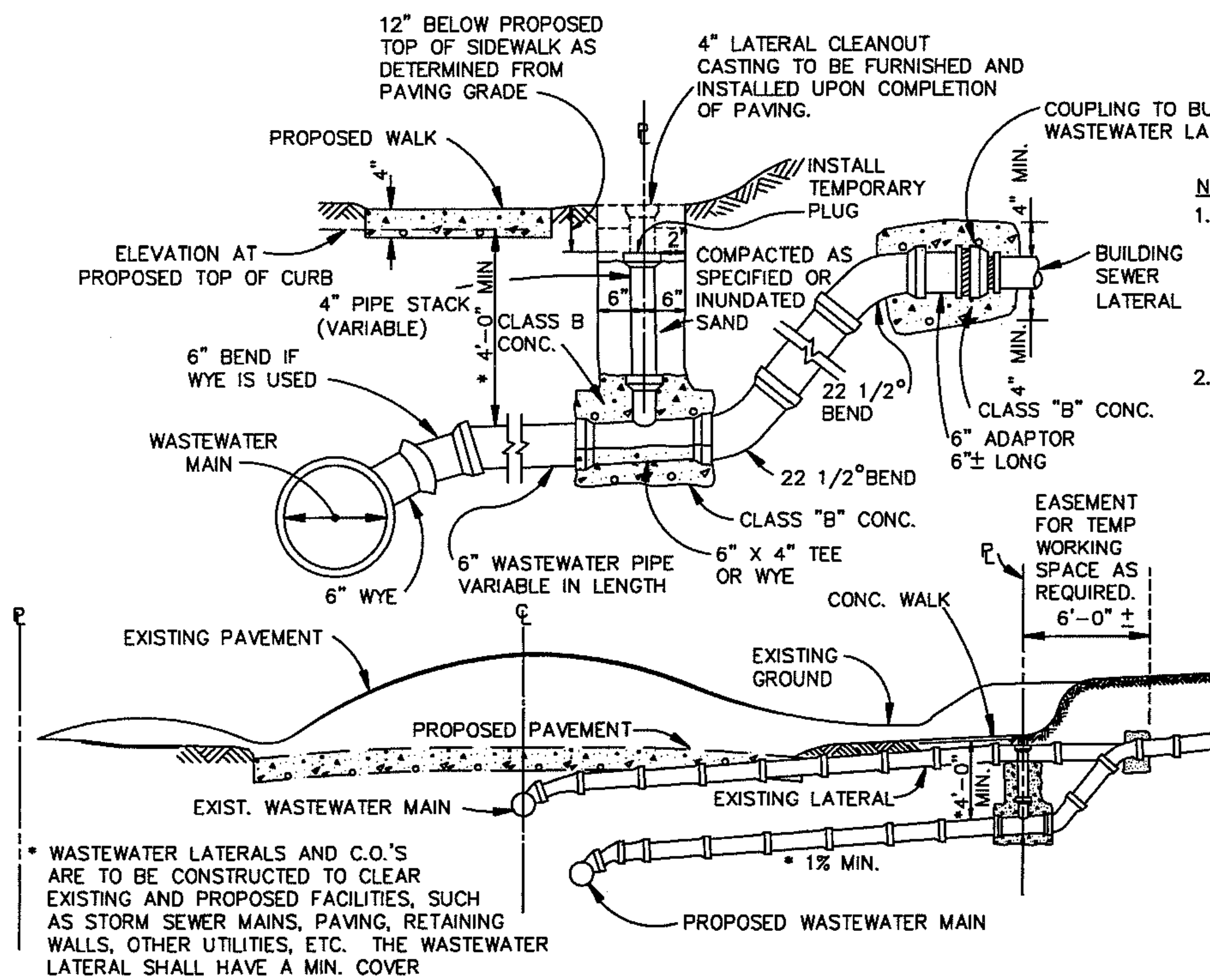
PROFILE VIEW
N.T.S.

SECTION "X – X"
N.T.S.

NOTES:
1. IF CLEANOUT IS PLACED IN ADVANCE OF PAVEMENT PLACE SAND AROUND CLEANOUT CASTING IN LIEU OF CLASS "B" CONCRETE.
2. IF CLEANOUT IS OUTSIDE OF PAVEMENT, CENTER CASTING IN 15"x15" CLASS "A" CONCRETE PAD "4" THICK.

STANDARD DRAWING NO. 5110

WASTEWATER MAIN	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.2
CLEANOUT		DATE OCT. '04 STANDARD DRAWING NO. 5110



NOTES:
1. CLEANOUT TO BE INSTALLED ON PROPERTY LINE EXCEPT AS REQUIRED TO AVOID CONFLICT WITH EXISTING OR PROPOSED FACILITIES IN WHICH CASE THE LOCATION SHALL BE DETERMINED BY THE OWNER.
2. SUBSTITUTE 4" FOR 6" FITTINGS IF PLANS OR SPEC. CONDITION CALL FOR 4" LATERALS.

* WASTEWATER LATERALS AND C.O.'S ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, PAVING, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MIN. COVER OF 4' BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 1.00% GRADE, OR AS DIRECTED BY THE OWNER.

WASTEWATER LATERAL REPLACEMENT
N.T.S.

STANDARD DRAWING NO. 5160

WASTEWATER LATERAL REPLACEMENT	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10
IN ADVANCE OF PAVING		DATE OCT. '04 STANDARD DRAWING NO. 5160

RECORD DRAWING

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Signed Mike Glen Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 FAX 972-717-2176
105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

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3	01/03/2017	CITY ENGINEERING SUBMITTAL
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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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SANITARY
SEWER
DETAILS

Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. 8
CU1.13

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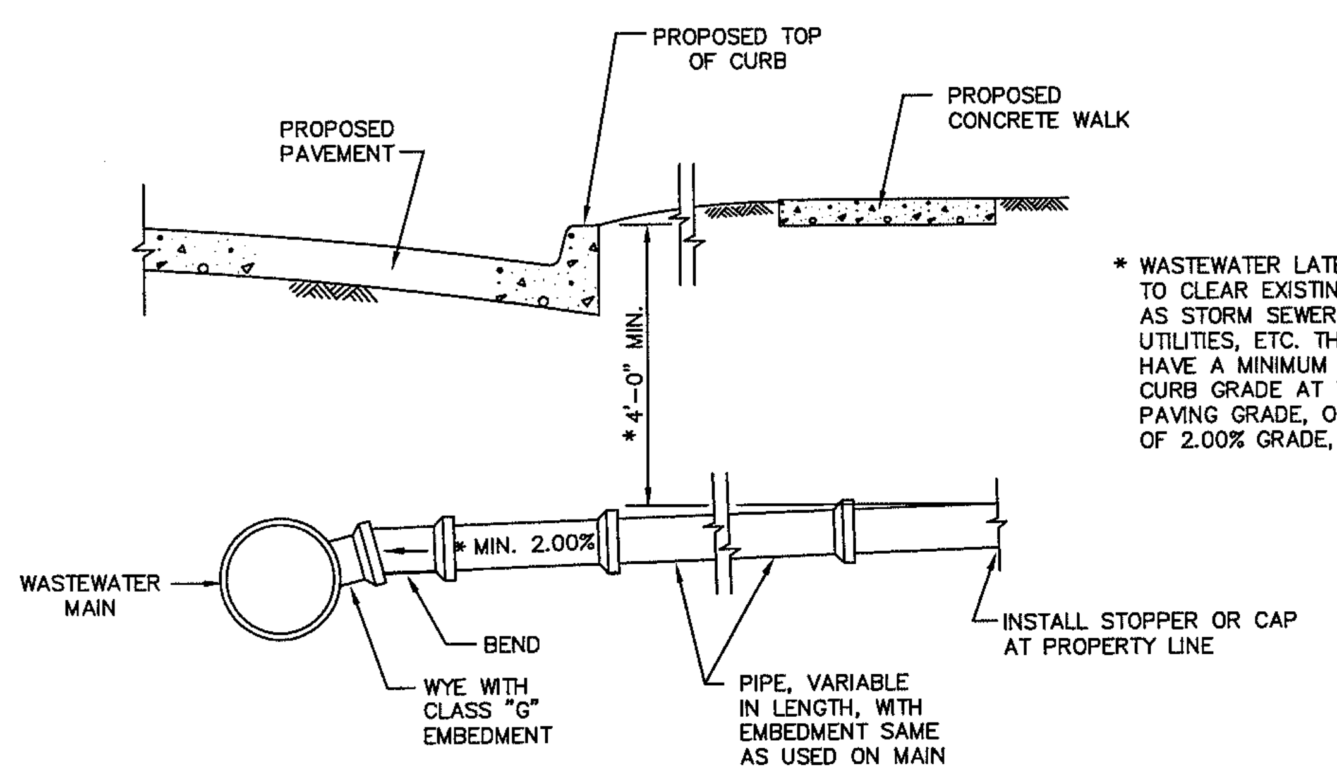
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg

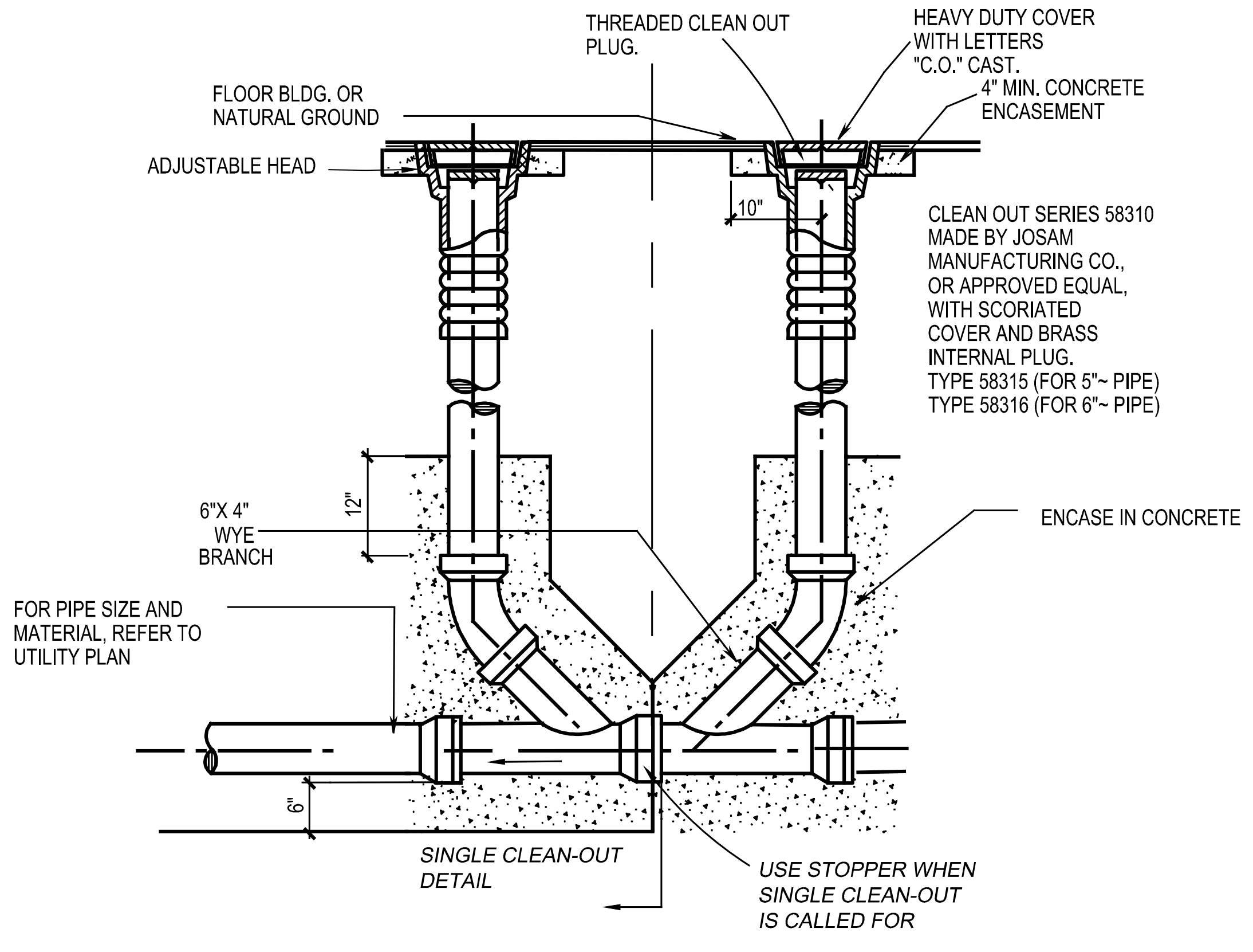

PROPOSED TOP OF CURB
PROPOSED PAVEMENT
PROPOSED CONCRETE WALK
* 4'-0" MIN.
* MIN. 2.00%
WASTEWATER MAIN
BEND
WYE WITH CLASS "G" EMBEDMENT
PIPE, VARIABLE IN LENGTH, WITH EMBEDMENT SAME AS USED ON MAIN
INSTALL STOPPER OR CAP AT PROPERTY LINE

* WASTEWATER LATERALS ARE TO BE CONSTRUCTED TO CLEAR EXISTING AND PROPOSED FACILITIES, SUCH AS STORM SEWER MAINS, RETAINING WALLS, OTHER UTILITIES, ETC. THE WASTEWATER LATERAL SHALL HAVE A MINIMUM COVER OF 4'-0" BELOW THE PROPOSED CURB GRADE AT THE PROPERTY LINE, DETERMINED FROM PAVING GRADE, OR AS REQUIRED TO MAINTAIN A MINIMUM OF 2.00% GRADE, OR AS DIRECTED BY THE OWNER.

WASTEWATER LATERAL STUBOUT

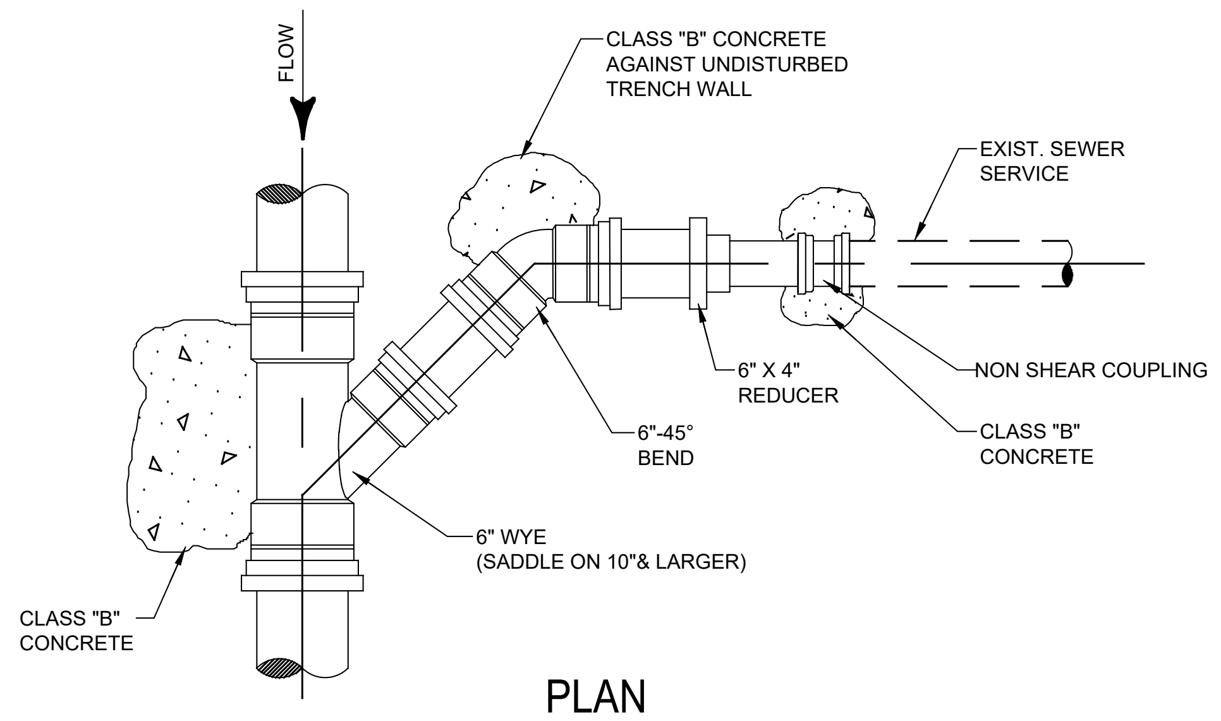
(FOR FUTURE CONNECTION, 4" OR 6" AS SPECIFIED)
N.T.S.

STANDARD DRAWING NO. 5150	WASTEWATER LATERAL STUBOUT IN ADVANCE OF PAVING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.10	
			DATE OCT. '04	STANDARD DRAWING NO. 5150

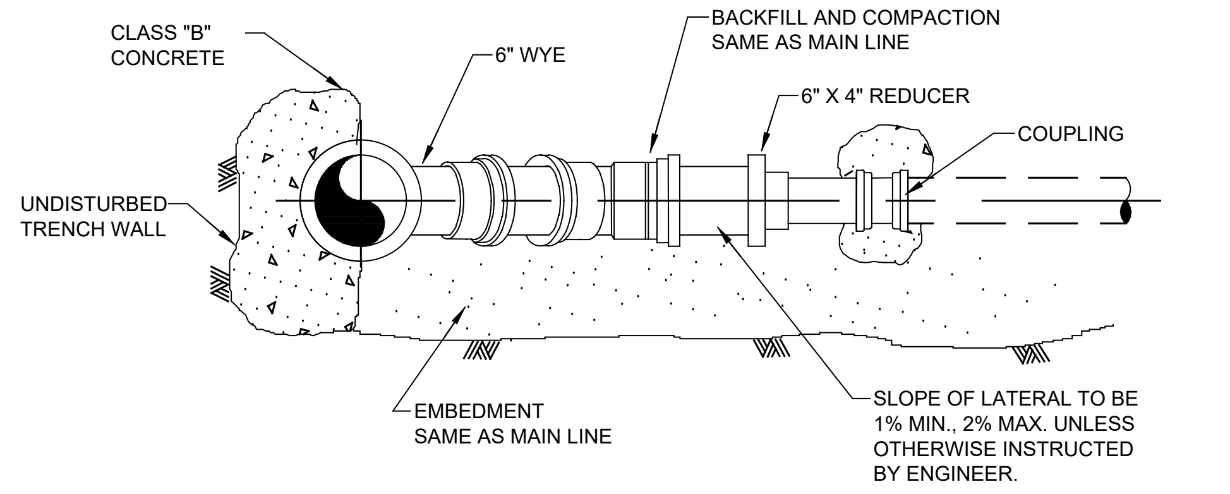

THREADED CLEAN OUT PLUG.
HEAVY DUTY COVER WITH LETTERS "C.O." CAST.
4" MIN. CONCRETE ENCASEMENT
FLOOR BLDG. OR NATURAL GROUND
ADJUSTABLE HEAD
10"
CLEAN OUT SERIES 58310 MADE BY JOSAM MANUFACTURING CO., OR APPROVED EQUAL, WITH SCORIATED COVER AND BRASS INTERNAL PLUG. TYPE 58315 (FOR 5"~ PIPE) TYPE 58316 (FOR 6"~ PIPE)
12"
6"X 4" WYE BRANCH
ENCASE IN CONCRETE
FOR PIPE SIZE AND MATERIAL, REFER TO UTILITY PLAN
6"
SINGLE CLEAN-OUT DETAIL
USE STOPPER WHEN SINGLE CLEAN-OUT IS CALLED FOR

SANITARY SEWER DOUBLE CLEAN-OUT

SINGLE / DOUBLE



PLAN


CLASS "B" CONCRETE
6" WYE
BACKFILL AND COMPACTION SAME AS MAIN LINE
6" X 4" REDUCER
COUPLING
UNDISTURBED TRENCH WALL
EMBEDMENT SAME AS MAIN LINE
SLOPE OF LATERAL TO BE 1% MIN., 2% MAX. UNLESS OTHERWISE INSTRUCTED BY ENGINEER.

SECTION

DETAIL
SANITARY SEWER
LATERAL

3/4"=1'-0"

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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SANITARY
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8

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Drawn By: RAH	
Date: 02-28-2017	

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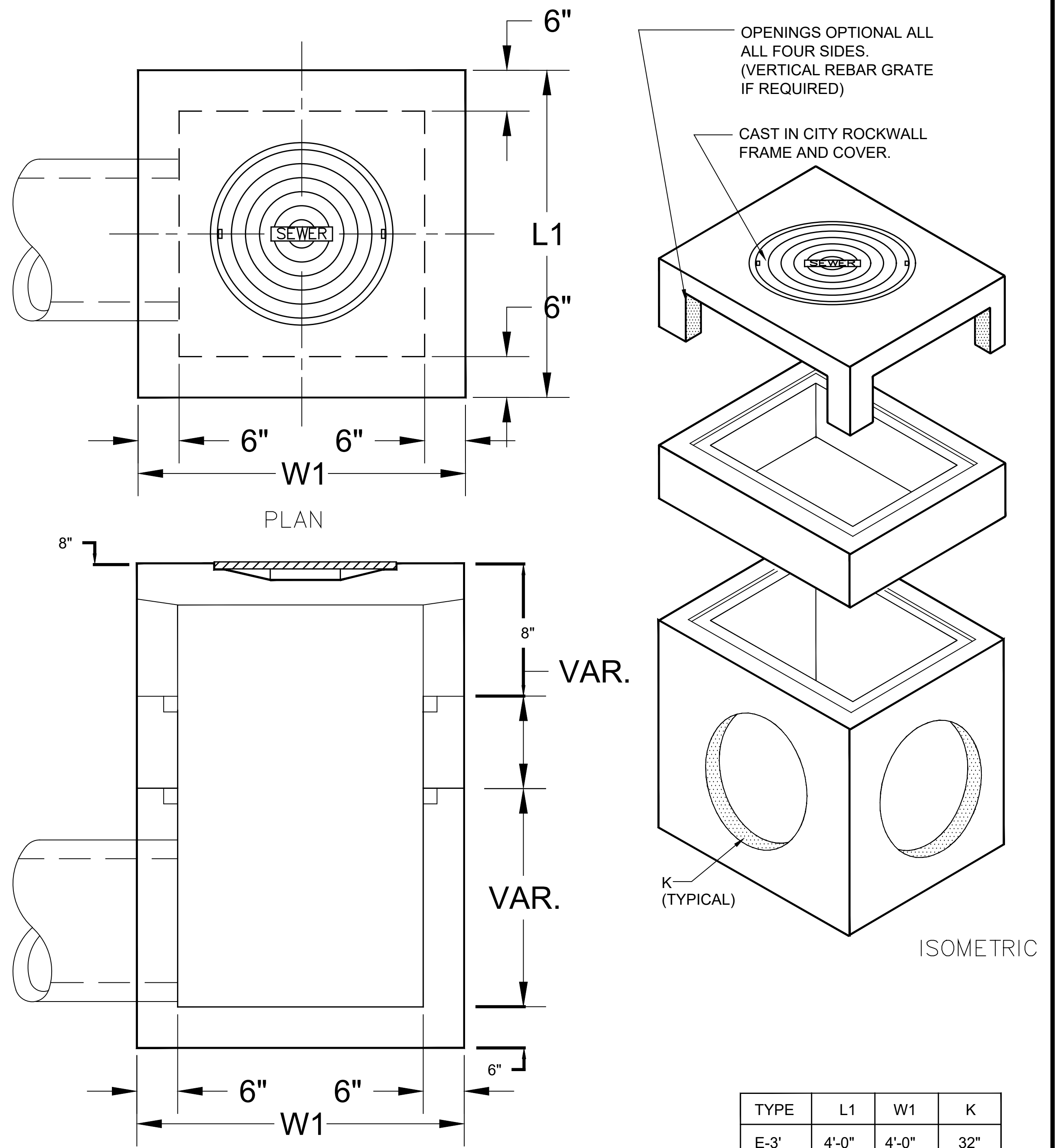


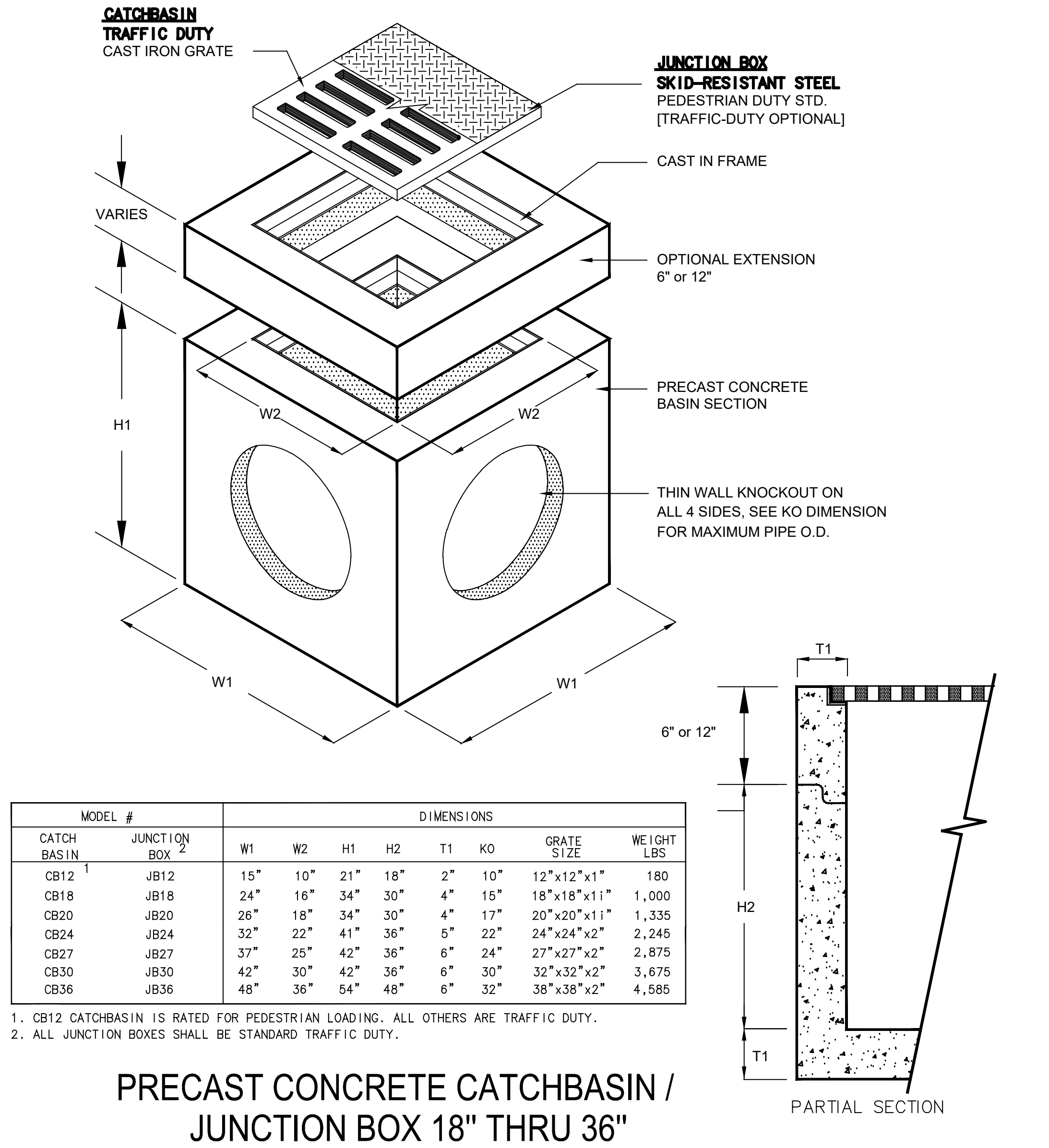
TYPE	L1	W1	K
E-3'	4'-0"	4'-0"	32"
E-4'	5'-0"	5'-0"	48"

SPECIFICATIONS

CONCRETE :	Class 1 concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth. Rated **for H-20 Loading.**
REINFORCEMENT:	Grade 60 reinforced. No. 4 steel rebar to conform to ASTM A615 on required centers or equal.
C.I. CASTINGS:	Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30.

"Y" INLET DETAIL

NOT TO SCALE



MODEL #		DIMENSIONS							
CATCH BASIN	JUNCTION BOX [2]	W1	W2	H1	H2	T1	KO	GRATE SIZE	WEIGHT LBS
CB12 [1]	JB12	15"	10"	21"	18"	2"	10"	12"x12"x1"	180
CB18	JB18	24"	16"	34"	30"	4"	15"	18"x18"x1i"	1,000
CB20	JB20	26"	18"	34"	30"	4"	17"	20"x20"x1i"	1,335
CB24	JB24	32"	22"	41"	36"	5"	22"	24"x24"x2"	2,245
CB27	JB27	37"	25"	42"	36"	6"	24"	27"x27"x2"	2,875
CB30	JB30	42"	30"	42"	36"	6"	30"	32"x32"x2"	3,675
CB36	JB36	48"	36"	54"	48"	6"	32"	38"x38"x2"	4,585

1. CB12 CATCHBASIN IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.
2. ALL JUNCTION BOXES SHALL BE STANDARD TRAFFIC DUTY.

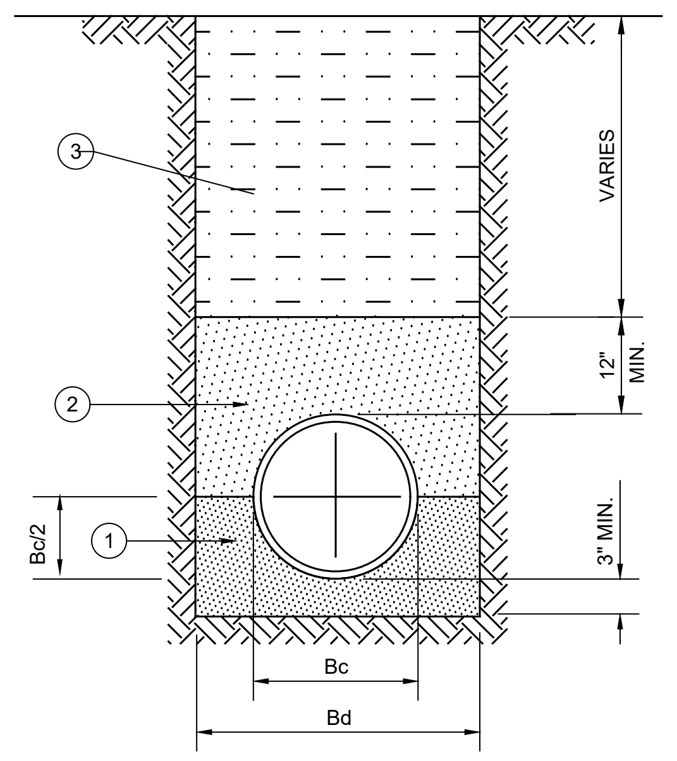
PRECAST CONCRETE CATCHBASIN / JUNCTION BOX 18" THRU 36"

NOT TO SCALE

SPECIFICATIONS

CONCRETE :	Class 1 concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
REINFORCEMENT:	Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
C.I. CASTINGS:	Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30.

ALL AREA DRAINS SHALL BE CB24 (24" X24")



① FINE GRADATION CRUSHED STONE - TOP LAYER IS TO BE PLACED TO GRADE TO PROVIDE UNIFORM SUPPORT OF PIPE BARREL. EXCAVATE BELL HOLES.

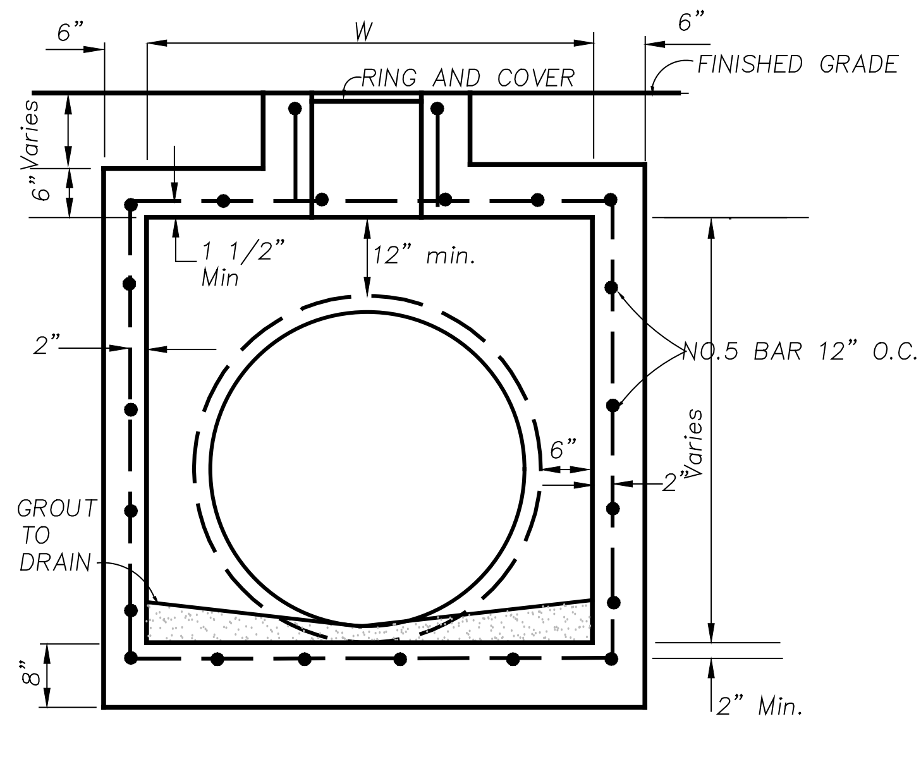
② SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 95% STANDARD PROCTOR DENSITY. UNDER STRUCTURES, ROADWAYS AND PAVEMENT, USE NON-GRANULAR MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO SAND PERMITTED ABOVE STONE)

③ SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 95% STANDARD PROCTOR DENSITY. UNDER STRUCTURES, ROADWAYS AND PAVEMENT, COMPACT TO 95% STANDARD PROCTOR DENSITY.

CLASS "B+" EMBEDMENT

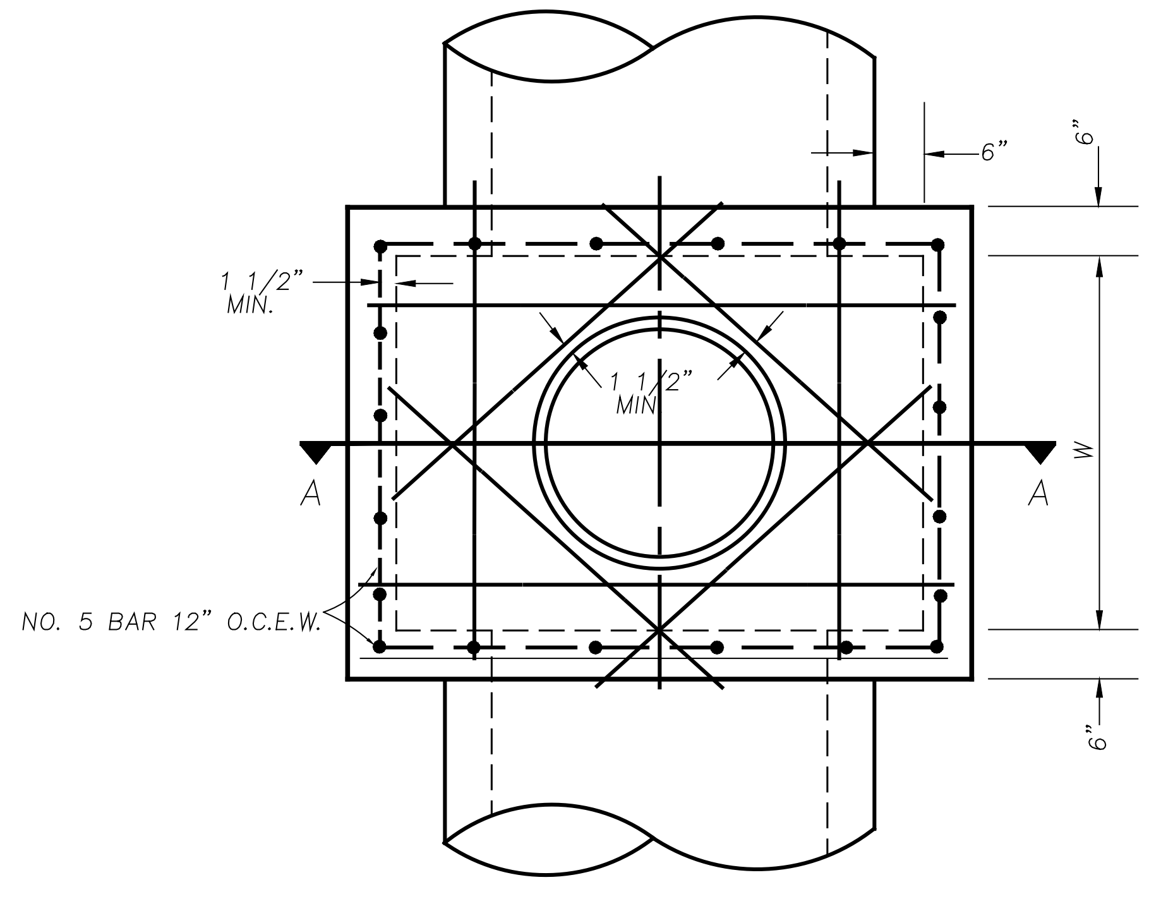
NOT TO SCALE

ROOF DRAIN LINES AND
STORM SEWER LINES



SECTION A–A

Not To Scale



STORM SEWER JUNCTION BOX DETAIL

Not To Scale

NOTES:
1. JUNCTION BOX FLOWLINE TO MATCH STORM SEWER FLOWLINE.
2. ALL STEEL TO BE GRADE 60, NO. 5 BAR 12" O.C.E.W. EACH FACE.
3. CONCRETE TO BE 4200 PSI, (6 1/2 SACK) 28 DAYS.
4. GROUT FLOOR TO DRAIN.
5. RING 8 COVER FOR JB4 TO BE NEENAH FOUNDRY NO. R-1915-D OR APPROVED EQUIVALENT.
7. RISER TO BE MONOLITHIC WITH JUNCTION BOX.

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed — Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
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Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
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10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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STORM
DETAILS 1
8

Job. No. 1759-03-01	**Sheet No.**
Drawn By: RAH	CU1.15
Date: 02-28-2017	

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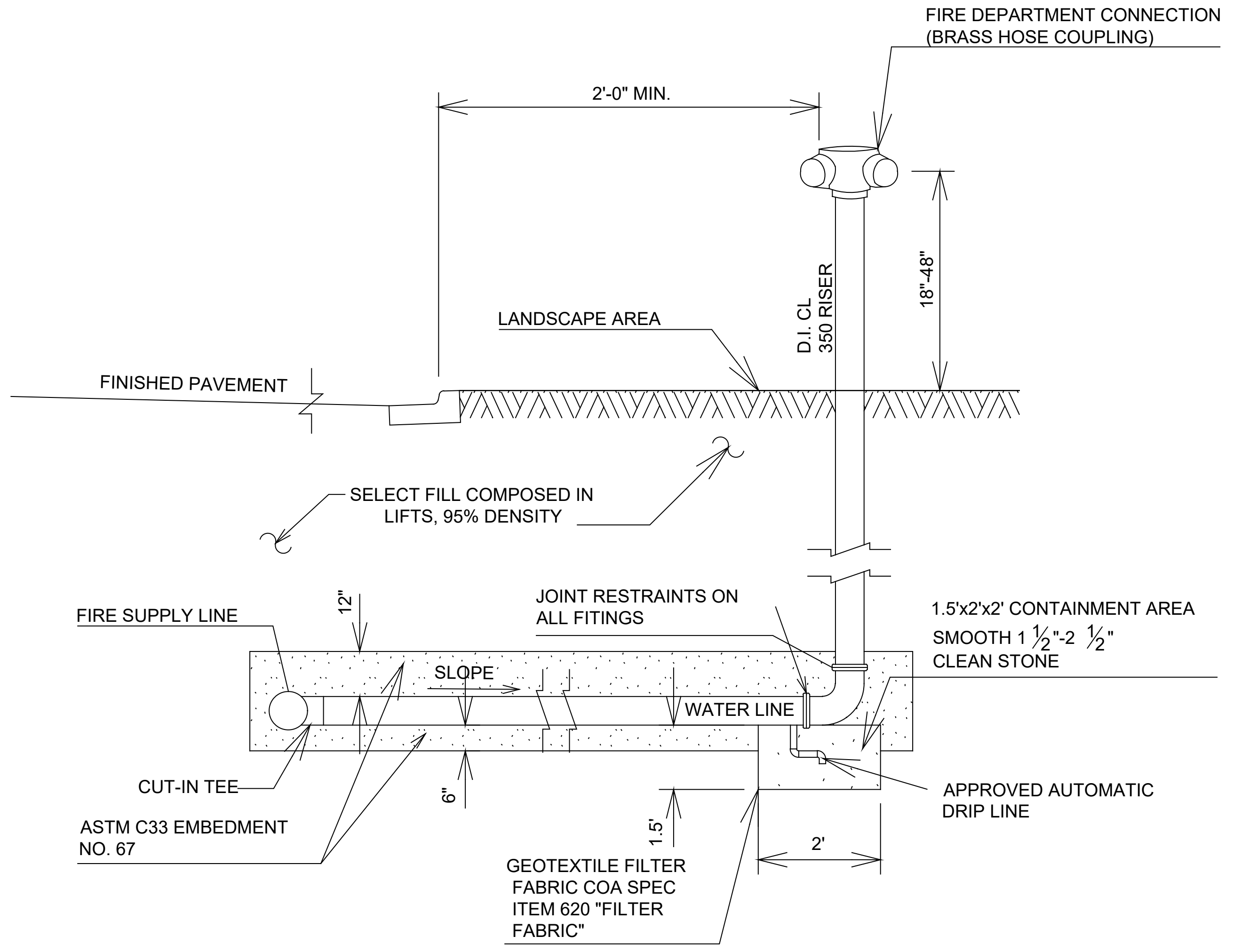
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg


FIRE DEPARTMENT CONNECTION (BRASS HOSE COUPLING)
2'-0" MIN.
18"-48"
D.I. CL 350 RISER
LANDSCAPE AREA
FINISHED PAVEMENT
SELECT FILL COMPOSED IN LIFTS, 95% DENSITY
FIRE SUPPLY LINE
12"
JOINT RESTRAINTS ON ALL FITINGS
1.5'x2'x2' CONTAINMENT AREA
SMOOTH 1 ½"-2 ½" CLEAN STONE
SLOPE
WATER LINE
CUT-IN TEE
ASTM C33 EMBEDMENT NO. 67
6"
1.5'
2'
APPROVED AUTOMATIC DRIP LINE
GEOTEXTILE FILTER FABRIC COA SPEC ITEM 620 "FILTER FABRIC"

NOTES:
1. THE PIPING BETWEEN THE CHECKVALVE AND THE OUTSIDE HOSE COUPLING SHALL BE EQUIPPED WITH AN APPROVED AUTOMATIC DRIP ON THE LOWEST PORTION OF THE PIPING. UNDERGROUND PIPE SHALL BE SLOPED FOR DRAINAGE.

2. PIPE SHALL BE SIZED IN ACCORDANCE WITH NFPA 13.

3. FIRE DEPARTMENT CONNECTION SHALL CONSIST OF TWO 2 1/2" CONNECTIONS USING NST INTERNAL THREADED SWIVEL FITTINGS.

4. WATER PIPE MAY BE CONNECTED DIRECTLY TO FIRE SUPPLY LINE IN LIEU OF DIRECTLY INSIDE THE BUILDING. (SEE DETAIL)

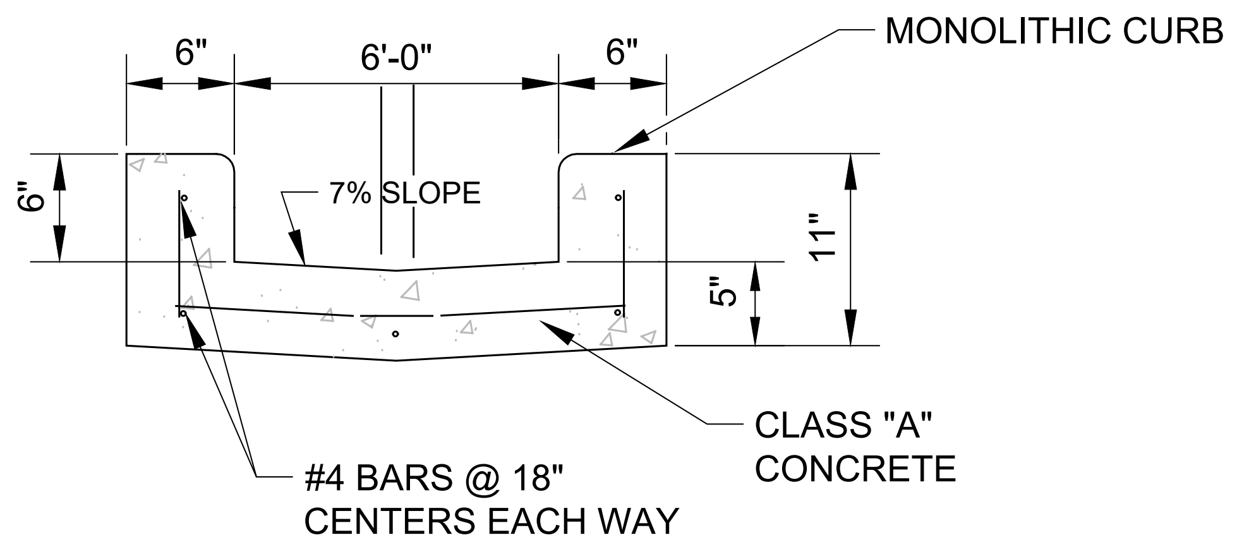
5. GEOTEXTILE CONTAINMENT AREA MAY BE SUBSTITUTED WITH CONCRETE VAULT. DRIP LINE MUST BE PROTECTED FROM DIRT AND DEBRIS TO ENSURE LINE DOES NOT CLOG.

FIRE DEPARTMENT CONNECTION

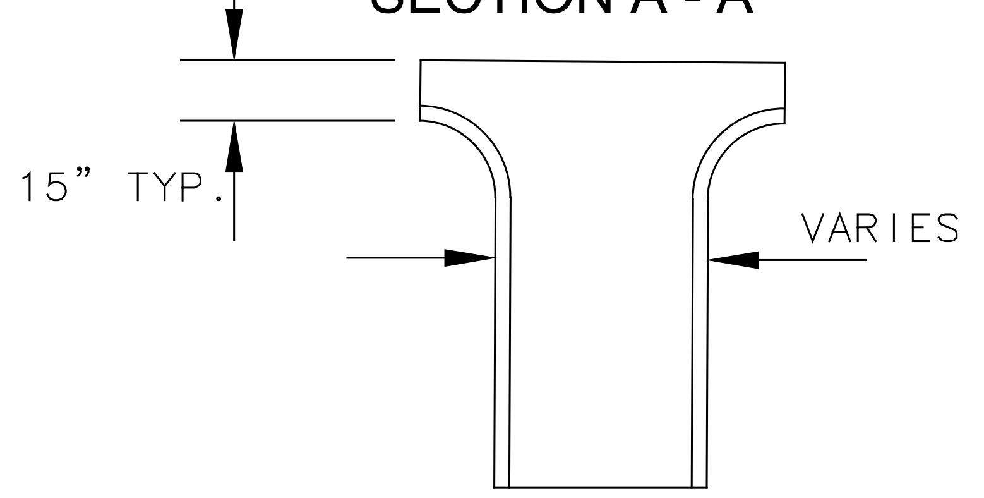
N.T.S.

NOTES:

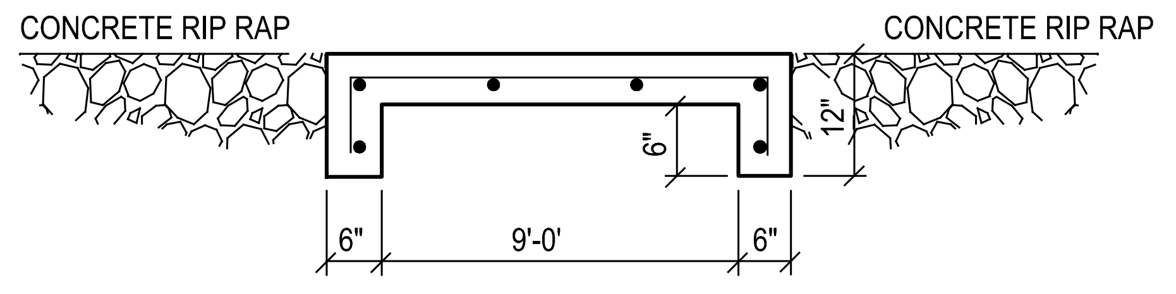
1. FLUME NEEDS TO BE FLARED AT ENTRANCE ONLY FOR HYDRAULIC PURPOSES.



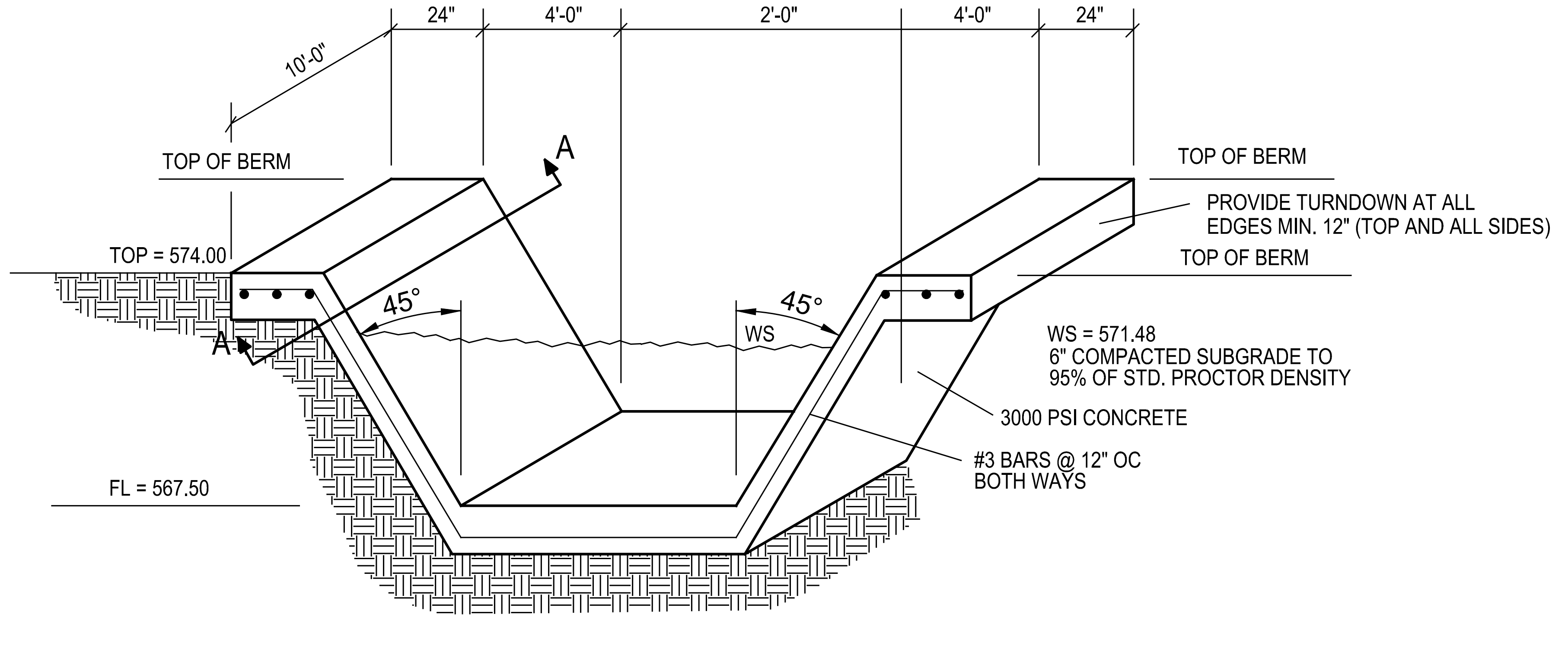
SECTION A - A



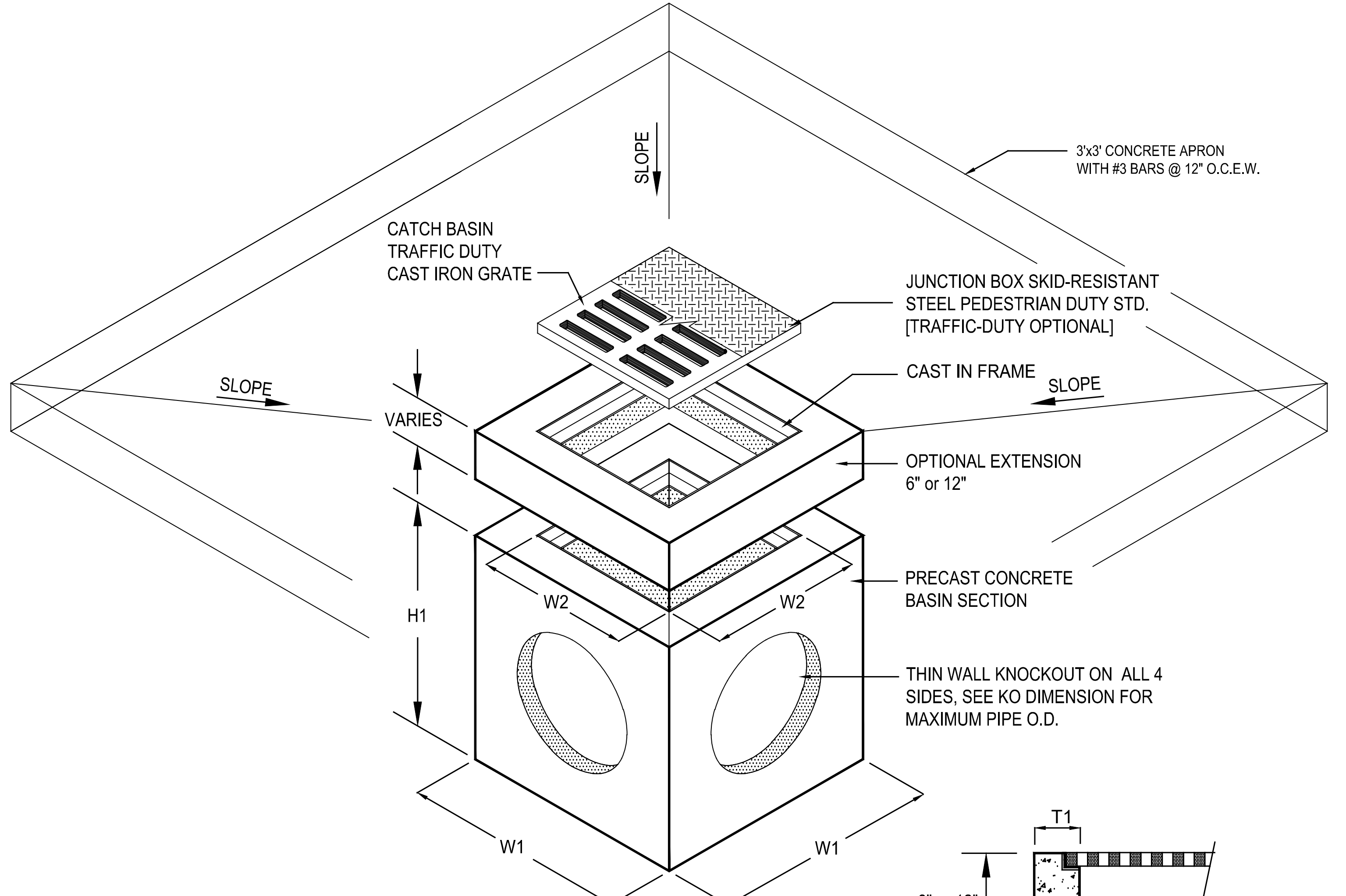
PLAN

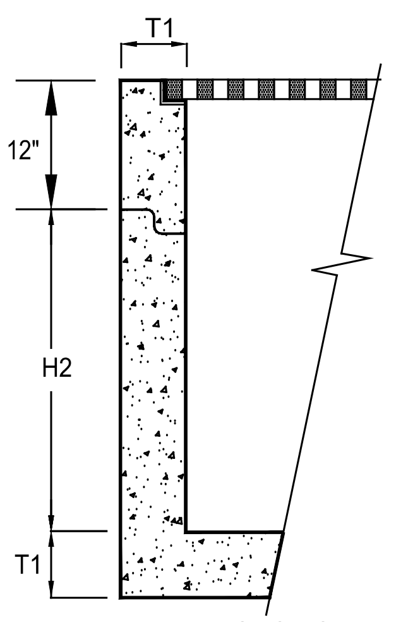


SECTION "A-A"


10'-0"
24"
4'-0"
2'-0"
4'-0"
24"
TOP OF BERM
A
TOP OF BERM
PROVIDE TURNDOWN AT ALL EDGES MIN. 12" (TOP AND ALL SIDES)
TOP OF BERM
TOP = 574.00
45°
45°
WS
A
WS = 571.48
6" COMPACTED SUBGRADE TO 95% OF STD. PROCTOR DENSITY
3000 PSI CONCRETE
#3 BARS @ 12" OC BOTH WAYS
FL = 567.50

TYPICAL "V" SHAPED CONCRETE WIER CHANNEL


SLOPE
3'x3' CONCRETE APRON WITH #3 BARS @ 12" O.C.E.W.
CATCH BASIN TRAFFIC DUTY CAST IRON GRATE
JUNCTION BOX SKID-RESISTANT STEEL PEDESTRIAN DUTY STD. [TRAFFIC-DUTY OPTIONAL]
CAST IN FRAME
SLOPE
SLOPE
VARIES
OPTIONAL EXTENSION 6" or 12"
H1
W2
W2
PRECAST CONCRETE BASIN SECTION
THIN WALL KNOCKOUT ON ALL 4 SIDES, SEE KO DIMENSION FOR MAXIMUM PIPE O.D.
W1
W1



PARTIAL SECTION

MODEL #		DIMENSIONS							
CATCH BASIN	JUNCTION BOX	W1	W2	H1	H2	T1	KO	GRATE SIZE	WEIGHT LBS
CB12	JB12	15"	10"	21"	18"	2"	10"	12"x12"x1"	180
CB18	JB18	24"	16"	34"	30"	4"	15"	18"x18"x1i"	1,000
CB20	JB20	26"	18"	34"	30"	4"	17"	20"x20"x1i"	1,335
CB24	JB24	32"	22"	41"	36"	5"	22"	24"x24"x2"	2,245
CB27	JB27	37"	25"	42"	36"	6"	24"	27"x27"x2"	2,875
CB30	JB30	42"	30"	42"	36"	6"	30"	32"x32"x2"	3,675
CB36	JB36	48"	36"	54"	48"	6"	32"	38"x38"x2"	4,585

1. CB12 CATCHBASIN IS RATED FOR PEDESTRIAN LOADING. ALL OTHERS ARE TRAFFIC DUTY.
2. ALL JUNCTION BOXES SHALL BE STANDARD TRAFFIC DUTY.

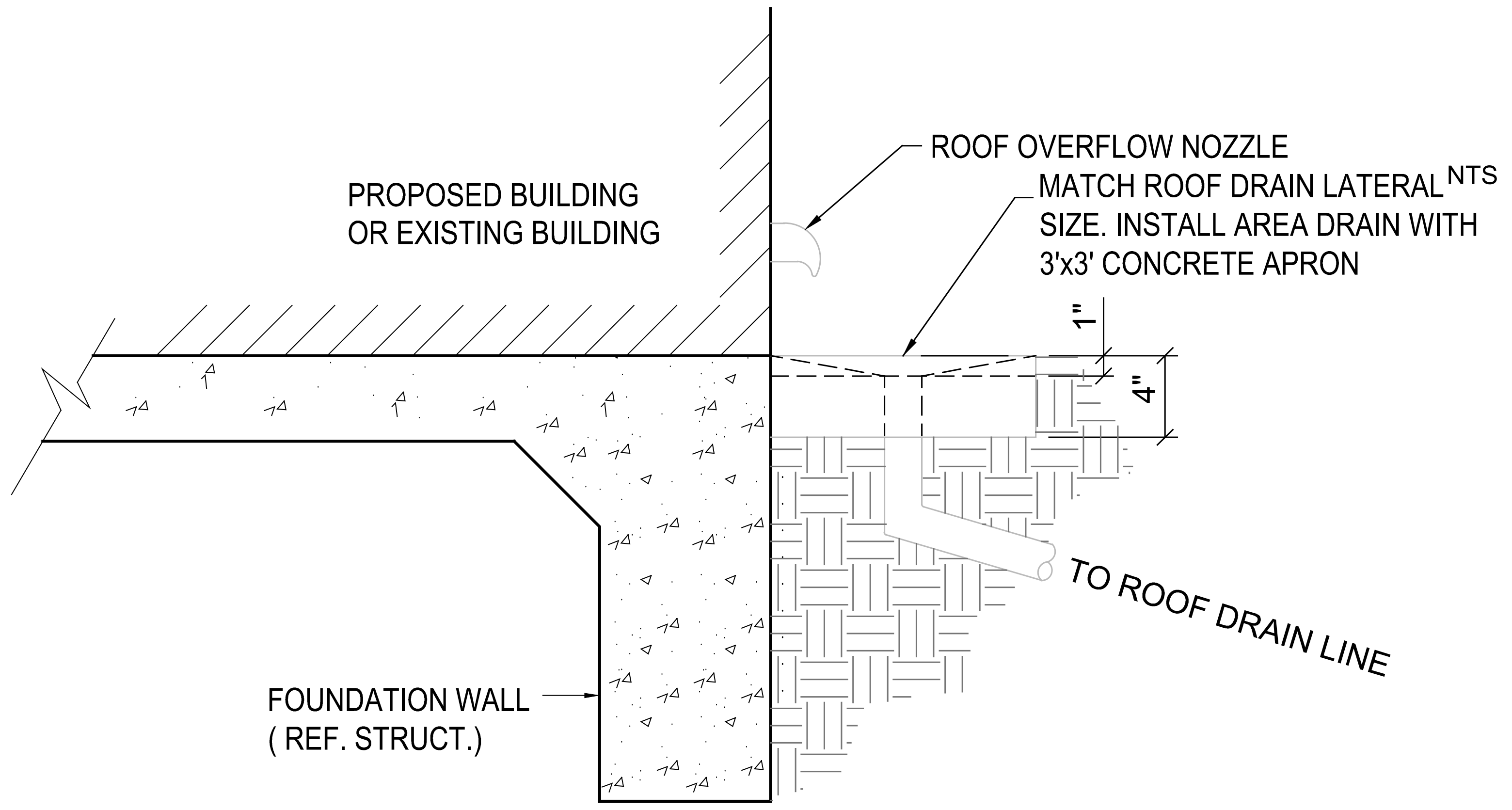
PRIVATE PRECAST CONCRETE CATCHBASIN / JUNCTION BOX 18" THRU 36"

NOT TO SCALE

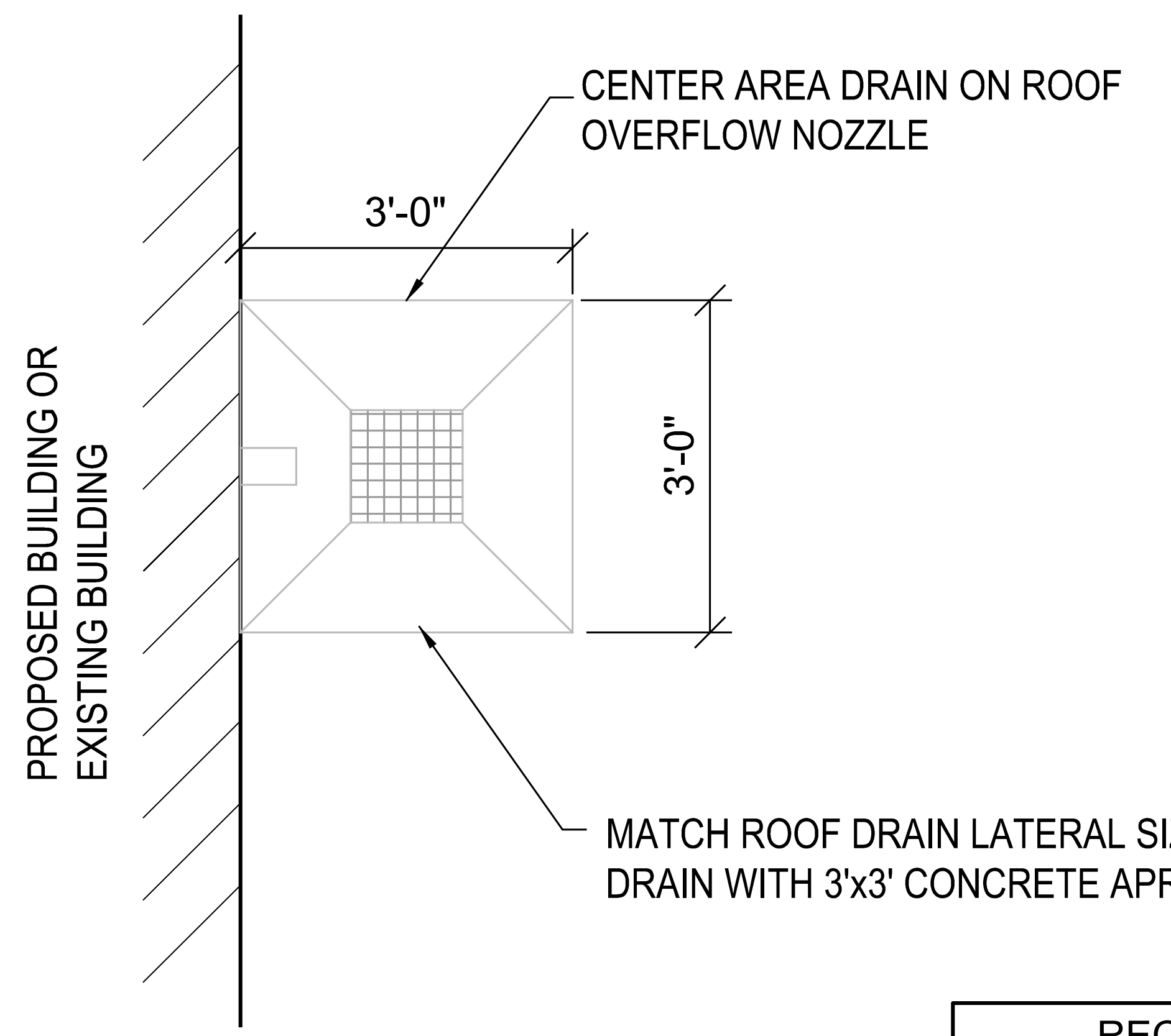
ALL AREA DRAINS SHALL BE CB24 (24" X24")

SPECIFICATIONS

CONCRETE :	Class 1 concrete with of design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional riser to required depth.
REINFORCEMENT:	Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.
C.I. CASTINGS:	Cast iron frames and grates are manufactured of grey cast iron conforming to ASTM A48-76 Class 30.


PROPOSED BUILDING OR EXISTING BUILDING
ROOF OVERFLOW NOZZLE
MATCH ROOF DRAIN LATERAL SIZE. INSTALL AREA DRAIN WITH 3'x3' CONCRETE APRON
NTS
1"
4"
TO ROOF DRAIN LINE
FOUNDATION WALL (REF. STRUCT.)

SECTION


CENTER AREA DRAIN ON ROOF OVERFLOW NOZZLE
3'-0"
3'-0"
PROPOSED BUILDING OR EXISTING BUILDING
MATCH ROOF DRAIN LATERAL SIZE. INSTALL AREA DRAIN WITH 3'x3' CONCRETE APRON

PLAN

NOTE: CONTRACTOR TO INSTALL AT ALL ROOF DRAIN OVERFLOW LOCATIONS

ROOF DRAIN OVERFLOW NOZZLE DETAILS OUTSIDE FOUNDATION WALL

NTS

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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13	06/05/2018	IRRIGATION METER

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ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

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PRIVATE STORM DETAILS 2
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Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CU 1.16

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RECOMMENDATIONS FOR INSTALLATION AND USE OF SOILS AND AGGREGATES FOR FOUNDATION, EMBEDMENT AND BACKFILL

	SOIL CLASS			
	CLASS IA	CLASS IB	CLASS II	CLASS III
GENERAL RECOMMENDATIONS AND RESTRICTIONS	DO NOTE USE WHERE CONDITIONS MAY CAUSE MIGRATION OF FINES FROM ADJACENT SOIL AND LOSS OF PIPE SUPPORT. SUITABLE FOR USE AS A DRAINAGE BLANKET AND UNDERDRAIN IN ROCK CUTS WHERE ADJACENT MATERIAL IS SUITABLY GRADED	PROCESS MATERIAL AS REQUIRED TO OBTAIN GRADATION WHICH WILL MINIMIZE MIGRATION OF ADJACENT MATERALS SUITABLE FOR USE AS DRAINAGE BLANKET AND UNDERDRAIN.	WHERE HYDRAULIC GRADIENT EXISTS CHECK GRADATION TO MINIMIZE MIGRATION. "CLEAN" GROUPS SUITABLE FOR USE AS DRAINAGE BLANKET AND UNDERDRAIN.	DO NOT USE WHERE WATER CONDITIONS IN TRENCH MAY CAUSE INSTABILITY
FOUNDATION	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED TRENCH BOTTOM AS RESTRICTED ABOVE. DO NOT USE IN THICKNESSES GREATER THAN 12 IN. TOTAL. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS
BEDDING	SUITABLE AS RESTRICTED ABOVE. INSTALL IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	SUITABLE ONLY IN DRY TRENCH CONDITIONS. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).
HAUNCHING	SUITABLE AS RESTRICTED ABOVE. INSTALL IN 6-IN. MAXIMUM LAYERS. WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT	INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT.	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. WORK AROUND PIPE BY HAND. TO PROVIDE UNIFORM SUPPORT
INITIAL BACKFILL	SUITABLE AS RESTRICTED ABOVE. INSTALL TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN.	INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN.	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN.
EMBEDMENT COMPACTION	PLACE AND WORK BY HAND TO INSURE ALL EXCAVATED VOIDS AND HAUNCH AREAS ARE FILLED. FOR HIGH DENSITIES USE VIBRATORY COMPACTORS.	MINIMUM DENSITY 85 % STD. PROCTOR.[C] USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 85 % STD. PROCTOR.[C] USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 90 % STD. PROCTOR.[C] USE HAND TAMPERS OR VIBRATORY COMPACTORS. MAINTAIN MOISTURE CONTENT NEAR OPTIMUM TO MINIMIZE COMPACTIVE EFFORT.
FINAL BACKFILL	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.

[B] WHEN USING MECHANICAL COMPACTORS AVOID CONTACT WITH PIPE. WHEN COMPACTING OVER PIPE CROWN MAINTAIN A MINIMUM OF 6 IN. COVER WHEN USING SMALL MECHANICAL COMPACTORES. WHEN USING LARGER COMPACTORS MAINTAIN MINIMUM CLEARANCES AS REQUIRED BY THE ENGINEER.

[C] THE MINIMUM DENSITIES GIVEN IN THE TABLE ARE INTEDED AS THE COMPATION REQUIREMENTS FOR OBTAINING SATISFACTORY EMBEDMENT STIFFNESS IN MOST INSTALLATION CONDITIONS.

GENERAL NOTES:

1. MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M-294, LATEST EDITION, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
2. RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRGIN COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 324420C.
3. COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF AASHTO SECTION 26.4.2.4 "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."

   COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.

   THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE THE FIRST OR SECOND CORRUGATION FROM THE END OF EACH PIPE.

   WHEN INFILTRATION OF EXFILTRATION IS A CONCERN, THE COUPLING MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.
4. DESIGNATION OF TYPE: THE TYPES OF PIPE WILL BE INDICATED BY THE FOLLOWING DESCRIPTIONS

   TYPE C: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH A CORRUGATED SURFACE BOTH INSIDE AND OUTSIDE.

   TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.

   TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
5. INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

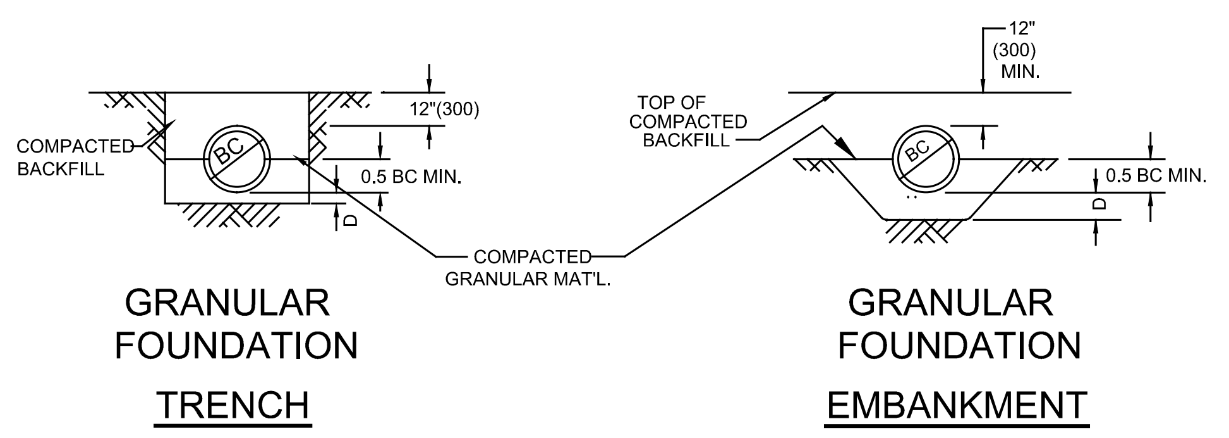
TRENCH WIDTH BASED ON OUTSIDE DIAMETER

PIPE (INSIDE) DIAMETER IN. (MM)	TRENCH WIDTH FT. (M)
15 (375)	3.0 (1)
18 (450)	3.2 (1)
24 (600)	3.9 (1.2)
30 (750)	4.8 (1.5)
36 (900)	5.4 (1.7)
42 (1050)	6.9 (2.1)
48 (1200)	7.4 (2.3)

MULTIPLE INSTALLATION OF POLYETHYLENE PIPES

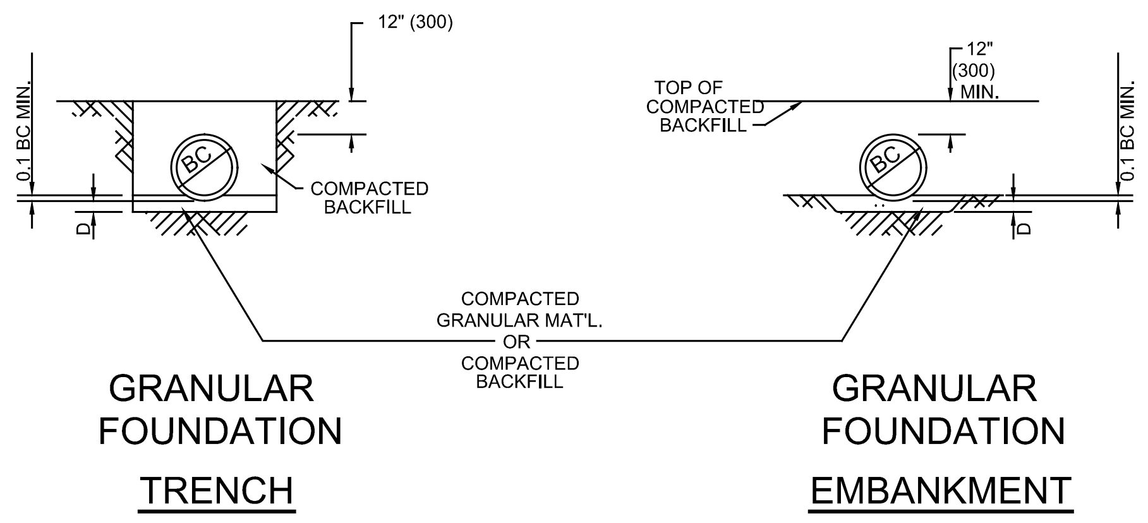
DIAMETER OF PIPE IN. (MM)	CLEAR DISTANCES BETWEEN PIPES FT. (M)
18 (450)	1' 2" (0.36)
24 (600)	1' 5" (0.44)
30 (750)	1' 8" (0.52)
36 (900)	1' 11" (0.60)
42 (1050)	2' 2" (0.68)
48 (1200)	2' 5" (0.76)

AREA DRAIN DETAILS



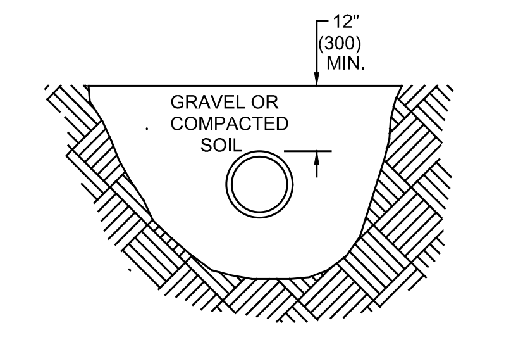
CLASS B

(PRIVATE)

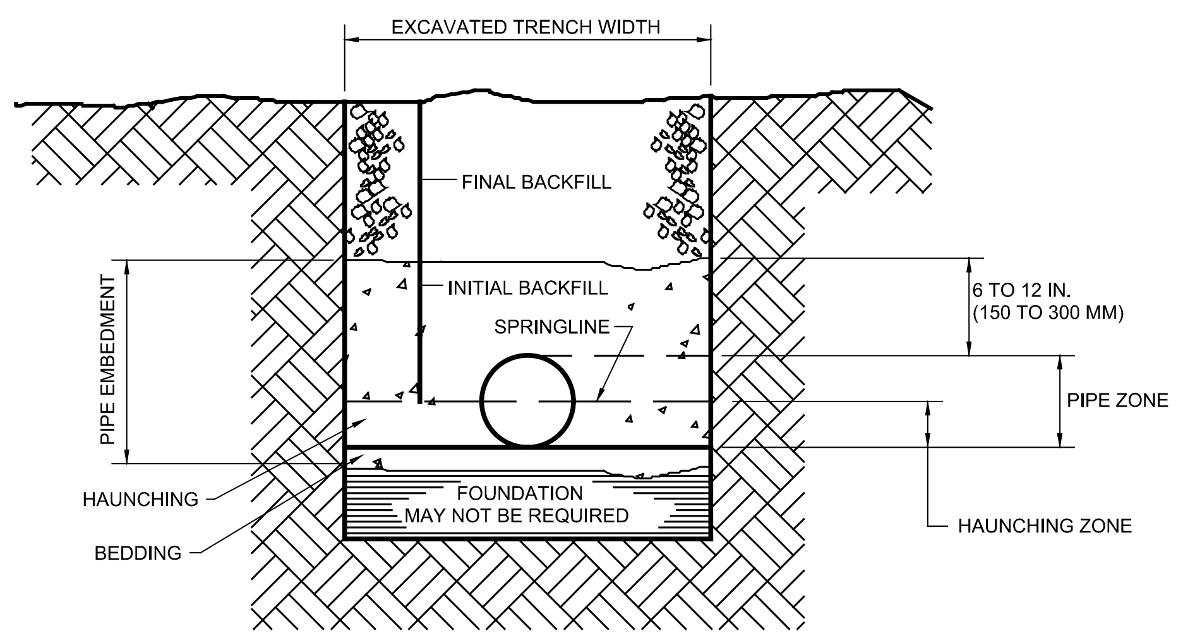


CLASS C

(PRIVATE)



OPEN DITCH INSTALLATION



TRENCH CROSS SECTION SHOWING TERMINOLOGY

HIGH DENSITY CORRUGATED POLYETHYLENE PIPE
HEIGHT OF COVER
H-20 AND E-80 LIVE LOADS

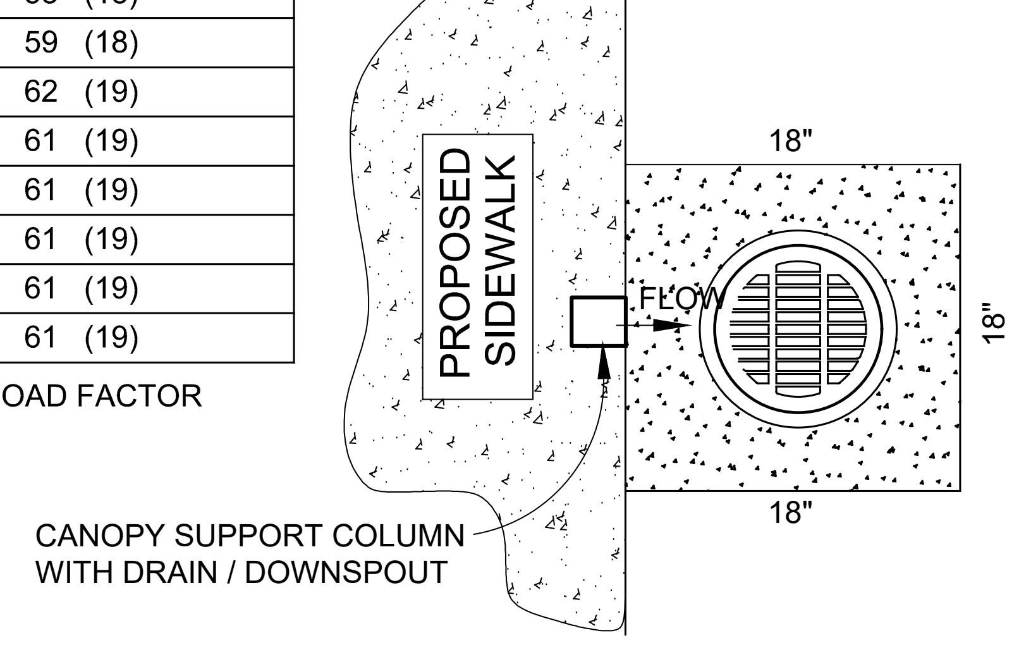
NOMINAL DIAMETER IN. (MM)	MINIMUM COVER IN. & (MM) H-20	MINIMUM COVER IN. & (MM) E-80	MAXIMUM COVER FT. (M)
12 (300)	12 (300)	24 (600)	58 (18)
15 (375)	12 (300)	24 (600)	59 (18)
18 (450)	12 (300)	24 (600)	62 (19)
24 (600)	12 (300)	24 (600)	61 (19)
30 (750)	12 (300)	24 (600)	61 (19)
36 (900)	12 (300)	24 (600)	61 (19)
42 (1050)	12 (300)	24 (600)	61 (19)
48 (1200)	12 (300)	24 (600)	61 (19)

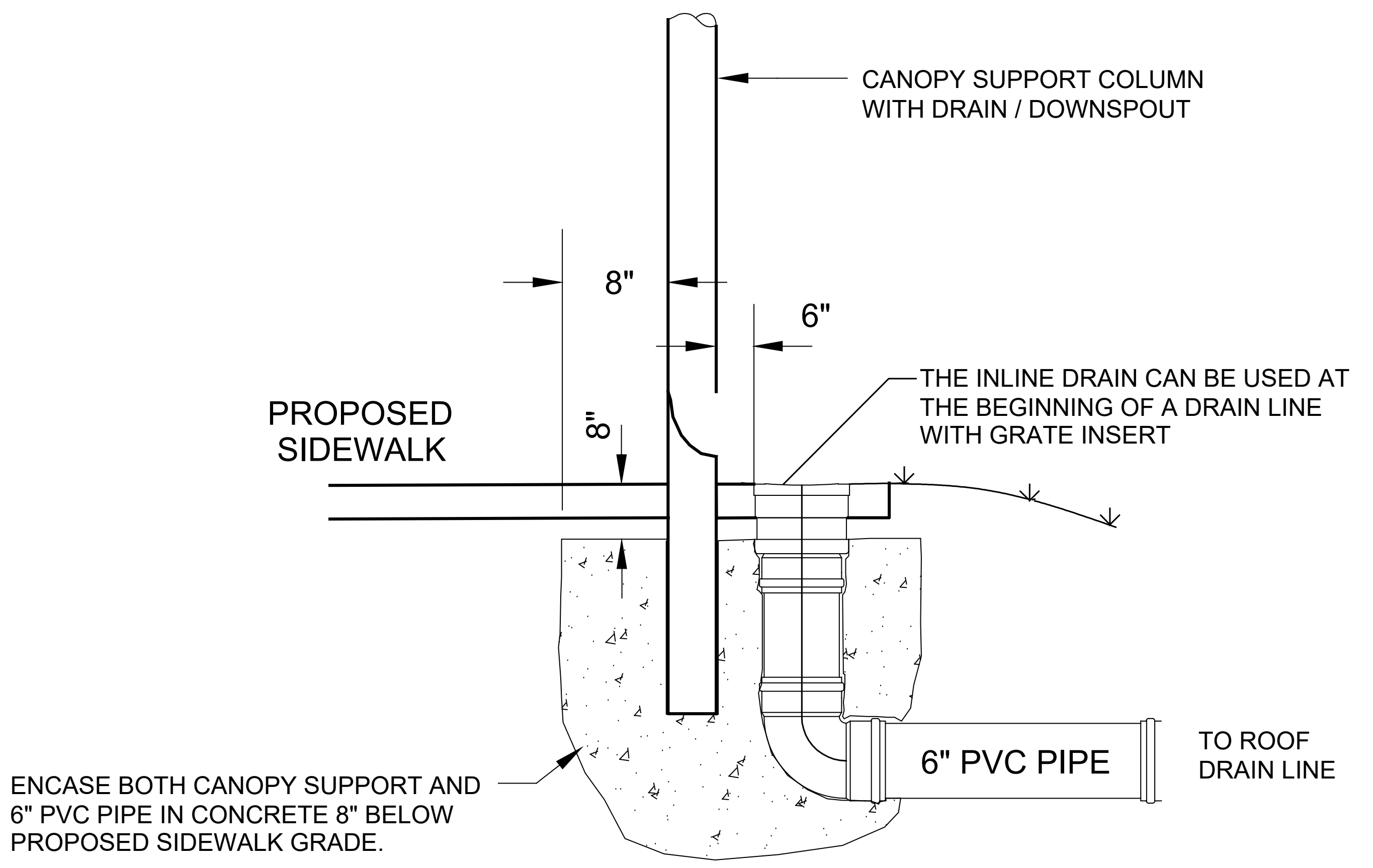
STRUCTURAL DESIGN CALCULATIONS BASED UPON LOAD FACTOR DESIGN METHODOLOGY PER AASHTO.

CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

CLASS	TYPE	SOIL GROUP SYMBOL D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES 1 1/2 IN. (40 MM)	NO. 4 (4.75 MM)	NO. 200 (0.075 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN.	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN CORAL, CRUSHED SLAG, CINDERS OR SHELLS: LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100 %	≤ 10 %	< 5 %
IB	MANUFACTURED, PROCESSED AGGREGATES; DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS IA MATERIALS) AND STONE/SAND MIXTURES WITH GRADATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.8.).	100 %	≤ 50 %	< 5 %
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100 %	< 50 % "COARSE FRACTION"	< 5 %
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
		SW	WELL-GRADED SANDS AND GRAVELY SANDS; LITTLE OR NO FINES.		> 50 % OF "COARSE FRACTION"	
		SP	POORLY-GRADED SANDS AND GRAVEL SANDS; LITTLE OR NO FINES.			
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/FINES	E.G. GW-GC, SP-SM.	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100 %	VARIES	5 % TO 12 %
III	COARSE-GRAINED SOILS, WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND SILT MIXTURES.	100 %	< 50 % OF "COARSE FRACTION"	12 % TO 50 %
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES.			
		SM	SILTY SANDS, SAND-SILT MIXTURES.		> 50 % OF "COARSE FRACTION"	
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES.			

ADS OR HANCOR PIPE INSTALLATION DETAILS FOR PRIVATE STORM DRAIN LINES




CANOPY SUPPORT COLUMN WITH DRAIN / DOWNSPOUT
8"
6"
8"
PROPOSED SIDEWALK
THE INLINE DRAIN CAN BE USED AT THE BEGINNING OF A DRAIN LINE WITH GRATE INSERT
ENCASE BOTH CANOPY SUPPORT AND 6" PVC PIPE IN CONCRETE 8" BELOW PROPOSED SIDEWALK GRADE.
6" PVC PIPE
TO ROOF DRAIN LINE

NOTE:
1. AT ALL LOCATIONS OF CANOPY SUPPORTS WITH DRAINS A 6" PVC PIPE IS TO BE INSTALLED TO THE 12" PVC ROOF DRAIN LINE . PER THE DETAIL ABOVE.
SEE ARCH. PLAN FOR THE CONNECTION DETAIL

CANOPY DOWNSPOUT CONNECTION DETAIL

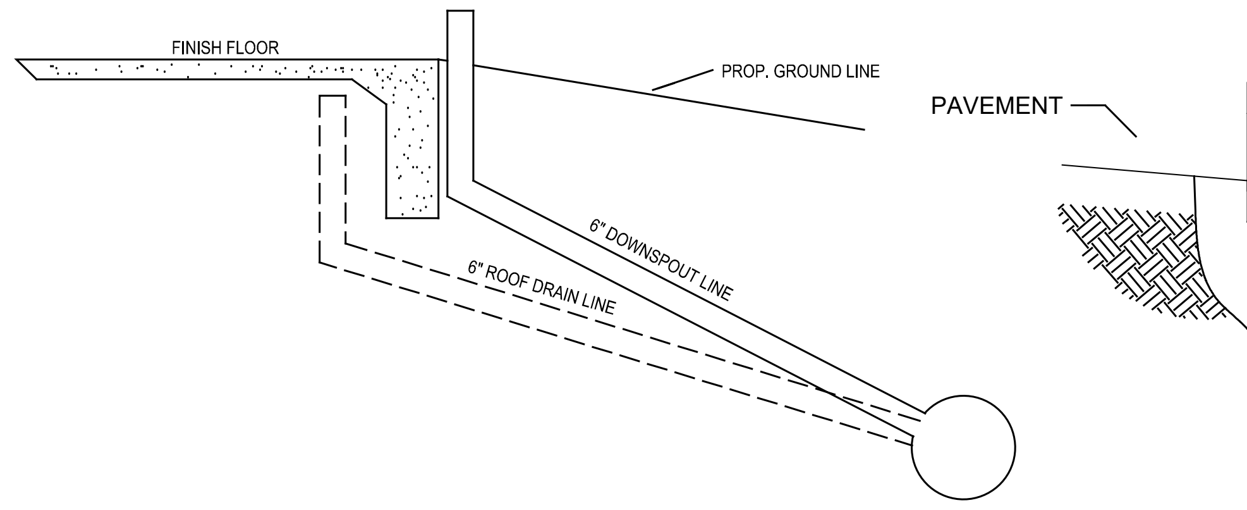
NOT TO SCALE
(PRIVATE)

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

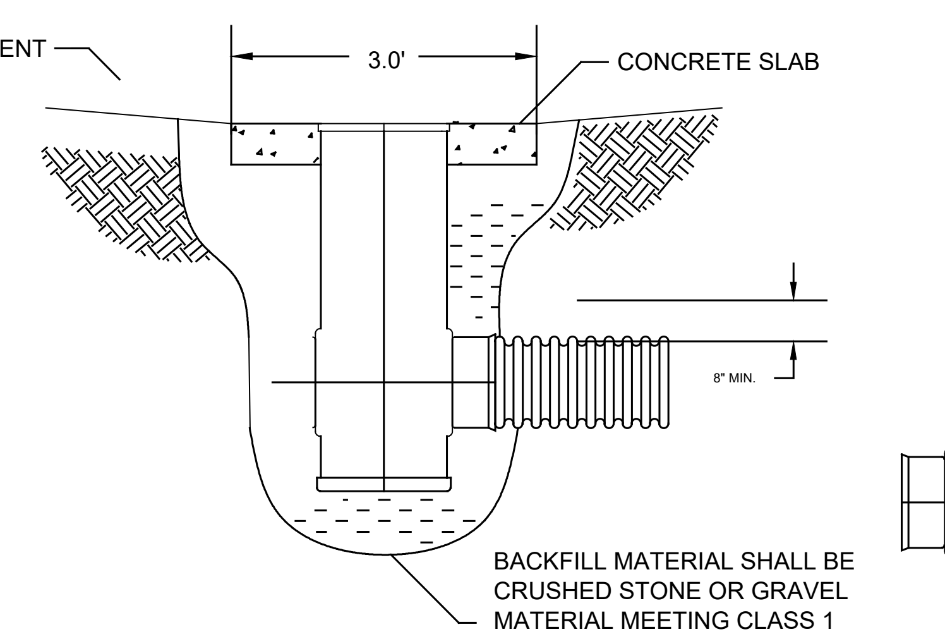
Glenn Engineering Corporation



DOWNSPOUT DETAIL

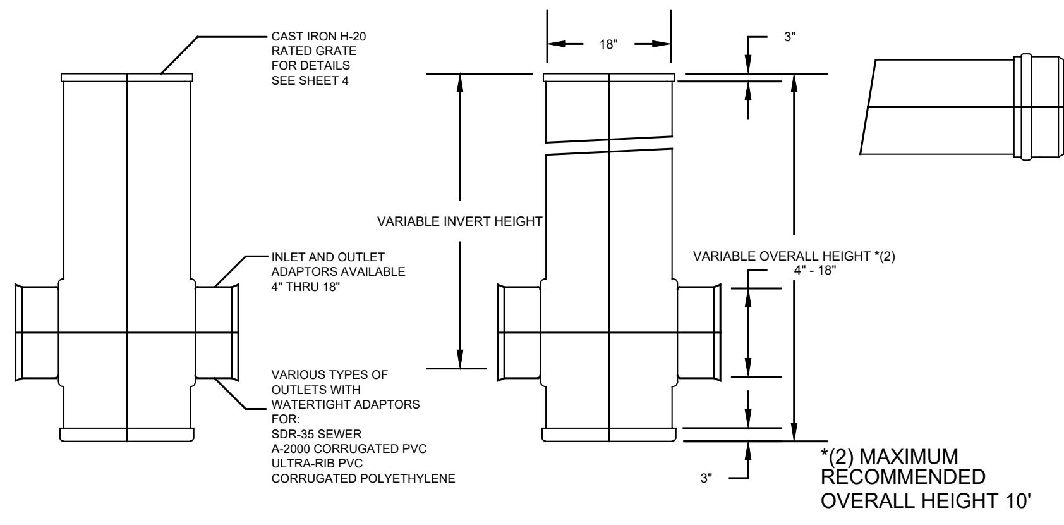
NTS

NOTE:
1. AT ALL LOCATIONS OF DOWNSPOUTS AND ROOF DRAINS A 6" PVC PIPE IS TO BE INSTALLED FROM THE 12" PVC LINE TO THE FOUNDATION AND EXTEND UP ABOVE THE FINISH FLOOR ELEV.
SEE ARCH. PLAN FOR THE CONNECTION DETAIL AND THE ROOF PLAN FOR ACTUAL DOWNSPOUT AND ROOF DRAIN LOCATIONS.

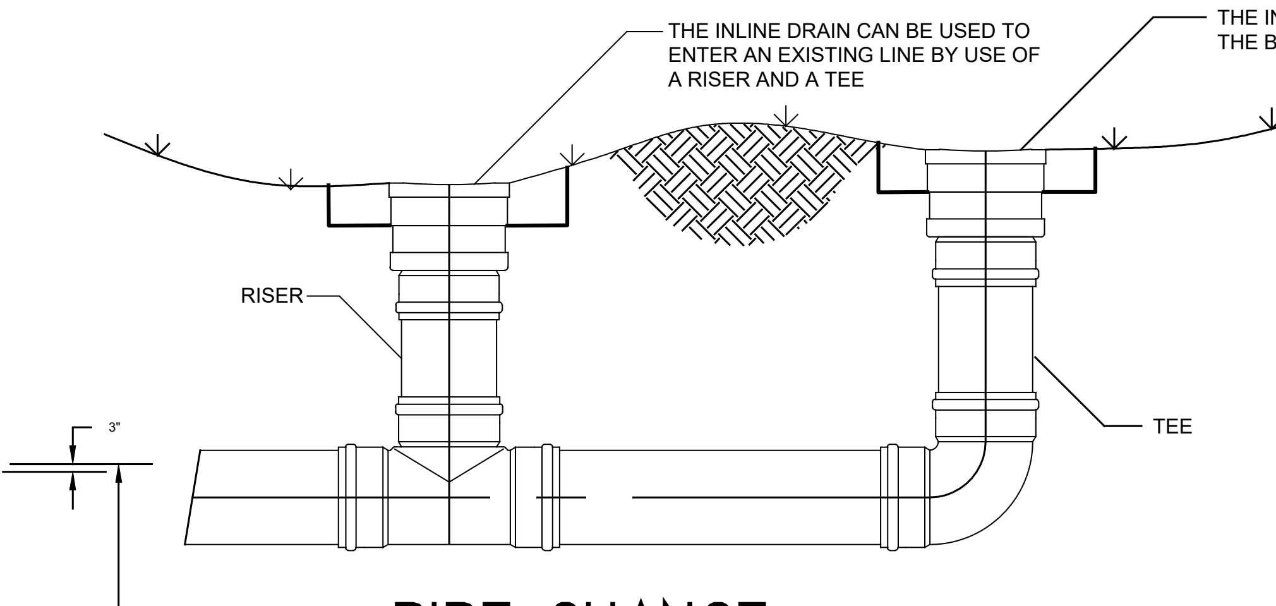


BACKFILL MATERIAL SHALL BE CRUSHED STONE OR GRAVEL MATERIAL MEETING CLASS 1 OR 2 AS SPECIFIED IN ASTM D2321
BACKFILL MATERIAL SHALL BE PLACED UNIFORMLY IN 12" LIFTS AND COMPACTED

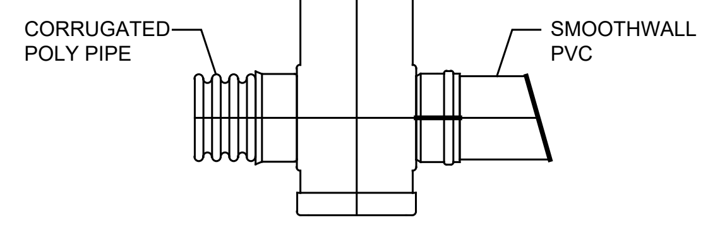
INSTALLATION DETAILS FOR ROOF DRAIN LINES

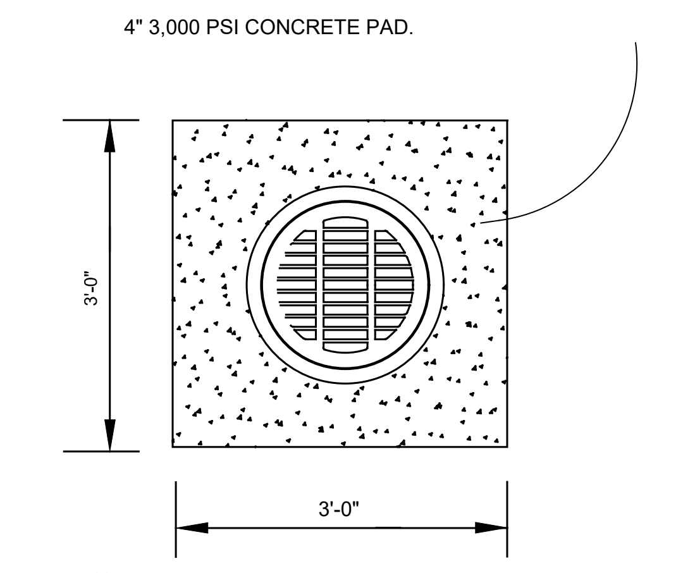

CAST IRON H-20 RATED GRATE FOR DETAILS SEE SHEET 4
INLET AND OUTLET ADAPTORS AVAILABLE 4" THRU 18"
VARIOUS TYPES OF OUTLETS WITH WATERTIGHT ADAPTORS FOR: SDR-35 SEWER A-2000 CORRUGATED PVC ULTRA-RIB PVC CORRUGATED POLYETHYLENE
VARIABLE INVERT HEIGHT
18"
3"
VARIABLE OVERALL HEIGHT *(2)
4" - 18"
3"
*(2) MAXIMUM RECOMMENDED OVERALL HEIGHT 10'

18" DRAIN BASIN


THE INLINE DRAIN CAN BE USED TO ENTER AN EXISTING LINE BY USE OF A RISER AND A TEE
THE INLINE DRAIN CAN BE USED AT THE BEGINNING OF A DRAIN LINE
RISER
TEE

PIPE CHANGE





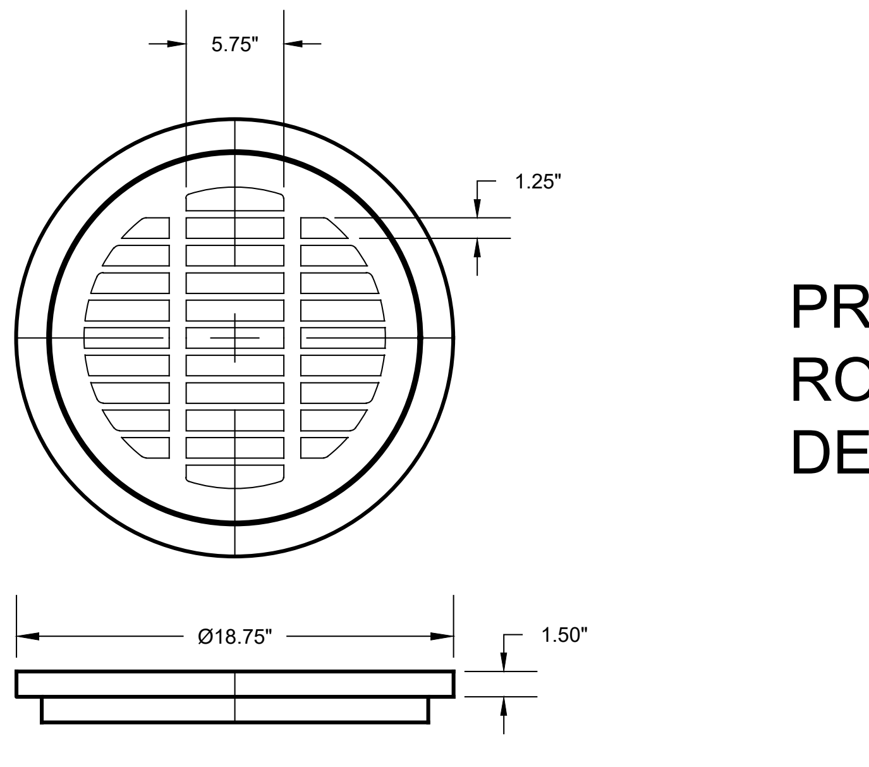
18" CAST IRON GRATE

ROUND OR SQUARE
DRAINAREA = 161.4 SQ. INCH

GRATE HAS H-20 (HEAVY TRAFFIC) DOT RATING

QUALITY: MATERIAL SHALL CONFORM TO ASTM A48 - CLASS 30B

PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT



PRIVATE
ROOF DRAIN
DETAILS

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 *FAX 972-717-2176*
105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
9	04/27/2017	RFI #22, # 26 AND #27
10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

Huckabee
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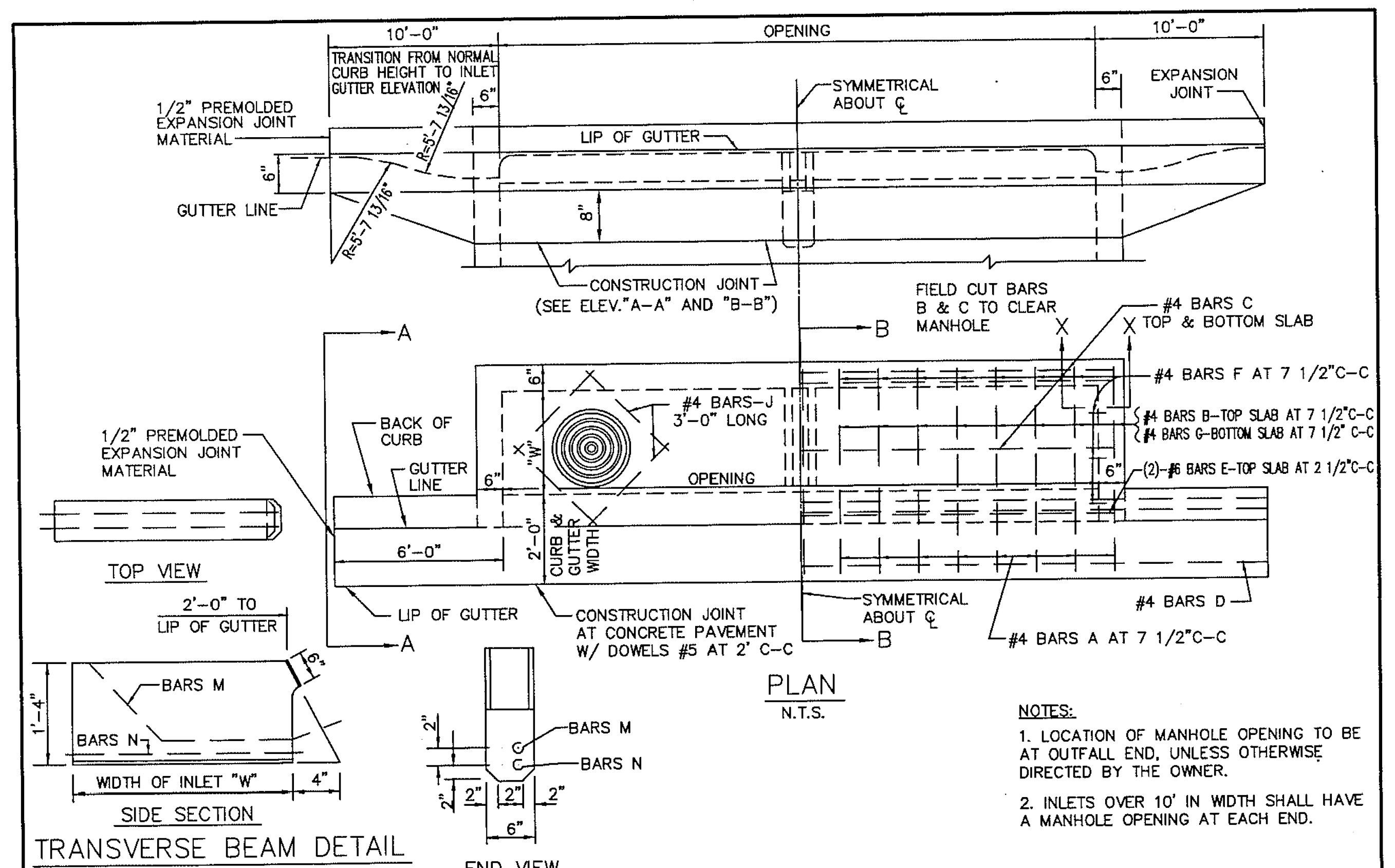
ROOF DRAIN DETAILS 8

Job. No.	Sheet No.
1759-03-01	CU1.14
Drawn By: RAH	
Date: 02-28-2017	

Plotted: Jul 25, 2018, 12:5 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg


10'–0"
OPENING
10'–0"
TRANSITION FROM NORMAL CURB HEIGHT TO INLET GUTTER ELEVATION
1/2" PREMOLDED EXPANSION JOINT MATERIAL
SYMMETRICAL ABOUT ℄
EXPANSION JOINT
LIP OF GUTTER
GUTTER LINE
CONSTRUCTION JOINT (SEE ELEV."A–A" AND "B–B")
FIELD CUT BARS B & C TO CLEAR MANHOLE
#4 BARS C X TOP & BOTTOM SLAB
#4 BARS F AT 7 1/2"C–C
#4 BARS J 3'–0" LONG
#4 BARS B–TOP SLAB AT 7 1/2"C–C
#4 BARS G–BOTTOM SLAB AT 7 1/2"C–C
(2)–#6 BARS E–TOP SLAB AT 2 1/2"C–C
BACK OF CURB
GUTTER LINE
OPENING
CURB & GUTTER WIDTH
6'–0"
LIP OF GUTTER
CONSTRUCTION JOINT AT CONCRETE PAVEMENT W/ DOWELS #5 AT 2' C–C
SYMMETRICAL ABOUT ℄
#4 BARS D
#4 BARS A AT 7 1/2"C–C
TOP VIEW
2'–0" TO LIP OF GUTTER
BARS M
BARS N
WIDTH OF INLET "W"
SIDE SECTION
BARS M
BARS N
END VIEW
PLAN
N.T.S.

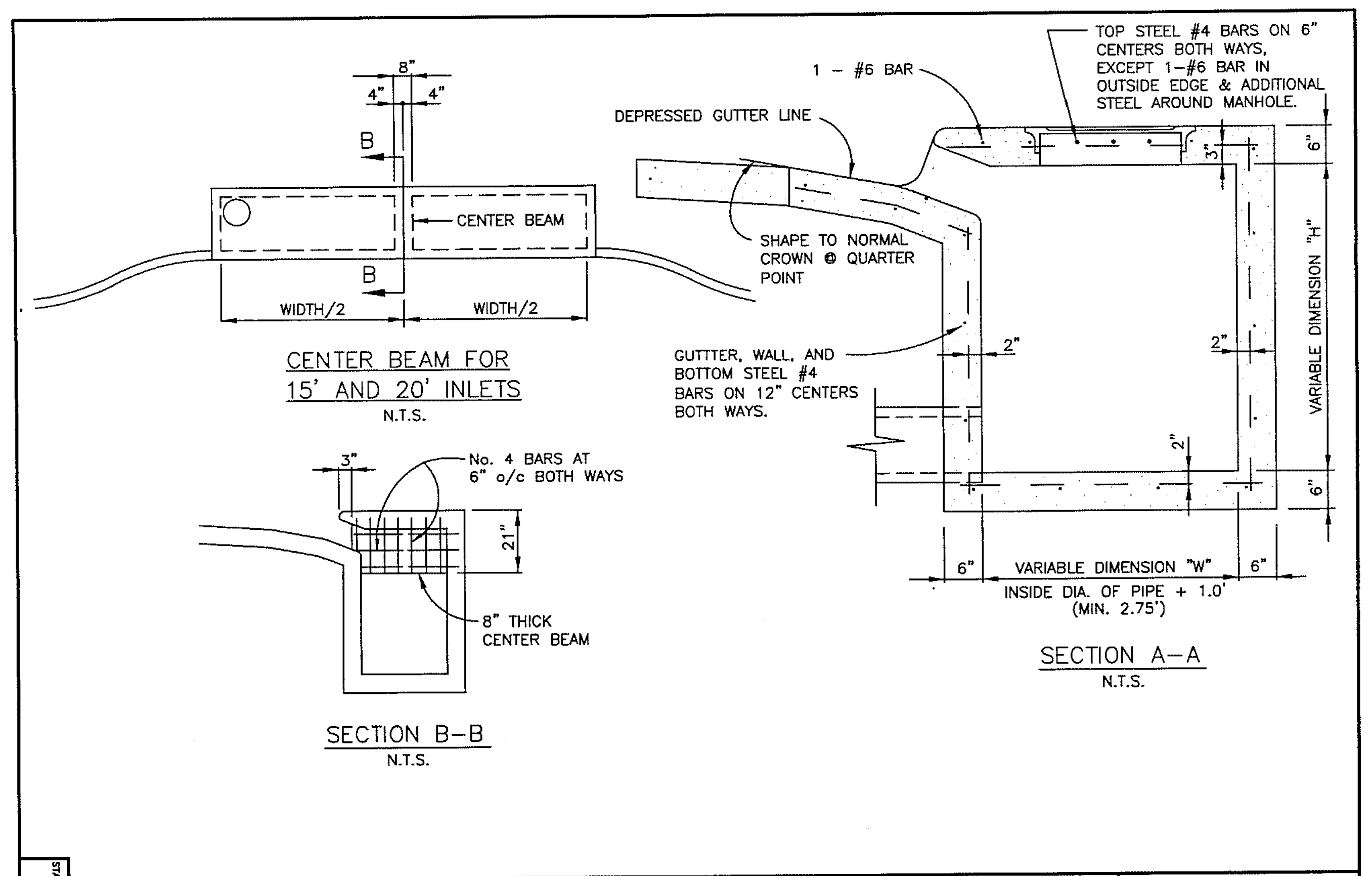
TRANSVERSE BEAM DETAIL
(FOR USE WITH 15' & 20' INLETS)
N.T.S.

NOTES:

1. LOCATION OF MANHOLE OPENING TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE OWNER.
2. INLETS OVER 10' IN WIDTH SHALL HAVE A MANHOLE OPENING AT EACH END.

CURB INLET 5', 10', 15' OR 20' OPENING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6020A

STANDARD DRAWING NO. 6020A


8"
4" 4"
B
B
CENTER BEAM
WIDTH/2
WIDTH/2
1 – #6 BAR
TOP STEEL #4 BARS ON 6" CENTERS BOTH WAYS, EXCEPT 1–#6 BAR IN OUTSIDE EDGE & ADDITIONAL STEEL AROUND MANHOLE.
DEPRESSED GUTTER LINE
SHAPE TO NORMAL CROWN @ QUARTER POINT
GUTTER, WALL, AND BOTTOM STEEL #4 BARS ON 12" CENTERS BOTH WAYS.
VARIABLE DIMENSION "H"
2"
6"
VARIABLE DIMENSION "W"
INSIDE DIA. OF PIPE + 1.0' (MIN. 2.75')
No. 4 BARS AT 6" o/c BOTH WAYS
21"
8" THICK CENTER BEAM

CENTER BEAM FOR 15' AND 20' INLETS
N.T.S.

SECTION B–B
N.T.S.

SECTION A–A
N.T.S.

CURB INLET RECESSED CROSS SECTION & CENTER BEAM	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6030B

STANDARD DRAWING NO. 6030B

GENERAL NOTES:

1. IN GENERAL, REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLAB. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL CONCRETE SHALL BE CLASS "A". ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
5. 10'–0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'–0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
6. ALL BACK FILLING SHALL BE PERFORMED BY MECHANICAL TAMPING TO 90% STANDARD PROCTOR DENSITY.

CURB INLET RECESSED GENERAL NOTES	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6030D

STANDARD DRAWING NO. 6030D

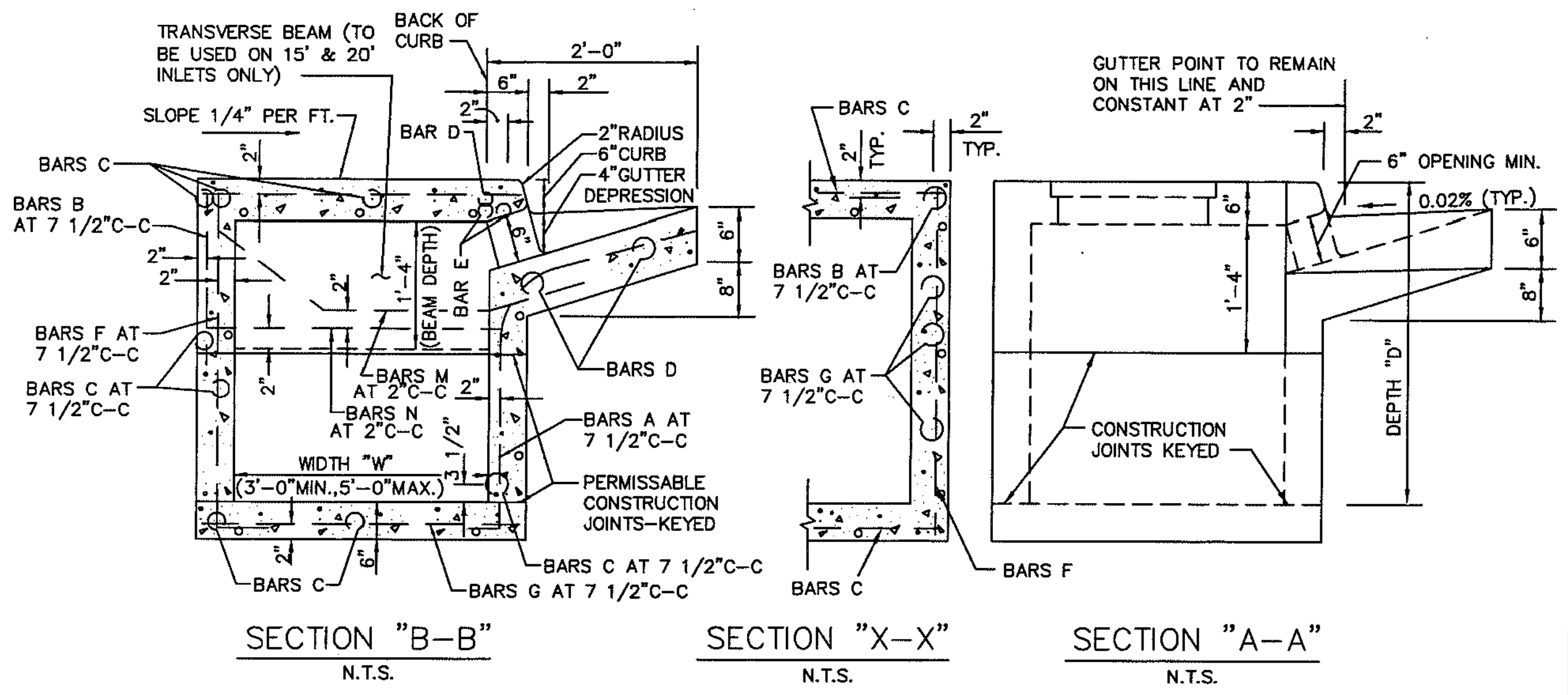
BILL OF REINFORCING STEEL

DEPTH "D"	ALL WIDTHS AND LENGTHS				OPENING LENGTH "L" = 5ft						OPENING LENGTH "L" = 10ft						OPENING LENGTH "L" = 15 ft								OPENING LENGTH "L" = 20 ft							
					Widths "W" 3ft	4ft	5ft				Widths "W" 3ft	4ft	5ft				Widths "W" 3ft	4ft	5ft						Widths "W" 3ft	4ft	5ft					
	BARS C	BARS D	BARS E	BARS J	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS M	BARS N	BARS F	BARS F	BARS F	BARS A	BARS B	BARS G	BARS M	BARS N
3'–6"	17	3	2	4	20	24	28	10	10	20	28	32	36	18	18	28	36	40	44	26	26	36	2	2	44	48	52	34	34	44	2	2
3'–9"	18	"	"	"	"	"	"	"	"	20	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	"	"	44	"	"
4'–0"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"
4'–3"	19	"	"	"	"	"	"	"	"	24	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	"	"	48	"	"
4'–6"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
4'–9"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
5'–0"	21	"	"	"	"	"	"	"	"	26	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	"	"	50	"	"
5'–3"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"
5'–6"	23	"	"	"	"	"	"	"	"	28	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	"	"	52	"	"
5'–9"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–0"	25	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–3"	26	"	"	"	"	"	"	"	"	30	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	"	"	54	"	"
6'–6"	27	"	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	56	"	"
6'–9"	27	"	"	"	"	"	"	"	"	32	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	"	"	56	"	"
7'–0"	29	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–3"	29	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–6"	30	"	"	"	"	"	"	"	"	34	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	"	"	58	"	"
7'–9"	31	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–0"	31	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–3"	32	"	"	"	"	"	"	"	"	36	"	"	"	"	"	44	"	"	"	"	"	52	"	"	"	"	"	"	"	60	"	"
8'–6"	33	"	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	54	"	"	"	"	"	"	"	62	"	"
8'–9"	34	"	"	"	"	"	"	"	"	38	"	"	"	"	"	46	"	"	"	"	"	54	"	"	"	"	"	"	"	62	"	"
9'–0"	35	"	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	56	"	"	"	"	"	"	"	64	"	"
9'–3"	36	"	"	"	"	"	"	"	"	40	"	"	"	"	"	48	"	"	"	"	"	56	"	"	"	"	"	"	"	64	"	"
9'–6"	37	"	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	58	"	"	"	"	"	"	"	66	"	"
10'–0"	38	"	"	"	"	"	"	"	"	42	"	"	"	"	"	50	"	"	"	"	"	58	"	"	"	"	"	"	"	66	"	"

NOTE:
FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

CURB INLET BILL OF REINFORCING STEEL	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6020D

STANDARD DRAWING NO. 6020D



SECTION "B–B"
N.T.S.

SECTION "X–X"
N.T.S.

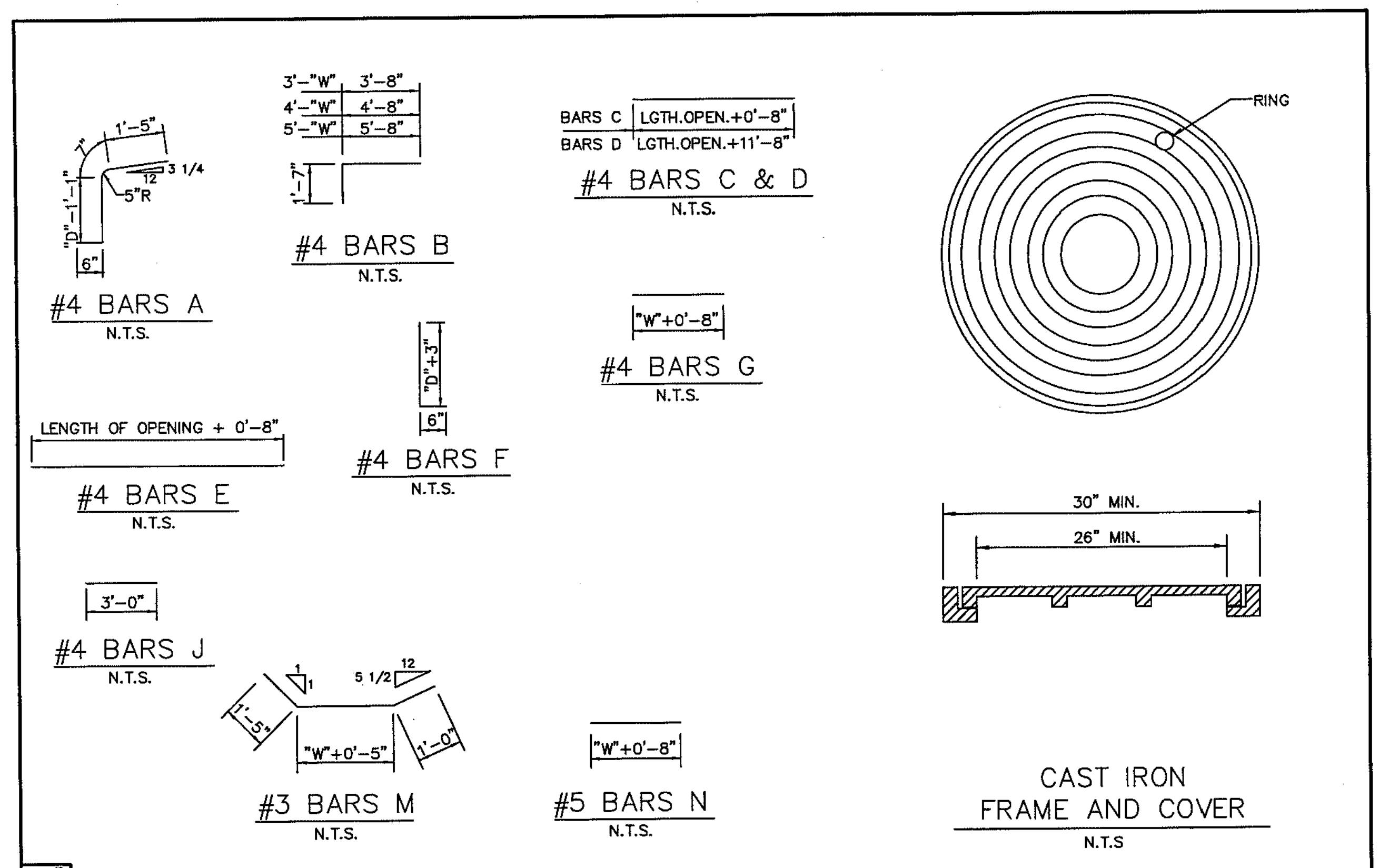
SECTION "A–A"
N.T.S.

GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" CONCRETE.
2. REINFORCING BARS SHALL BE STANDARD GRADE STEEL, DEFORMED REINFORCING BARS OF A DIAMETER AND LENGTH AS SHOWN.
3. CHAMFER ALL EXPOSED CORNERS 3/4" EXCEPT WHERE OTHERWISE NOTED.
4. DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
5. FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMODATE STORM SEWER PIPE.
6. RING AND COVER SHALL BE APPROVED BY THE OWNER AND INSTALLED BY THE CONTRACTOR.

CURB INLET CROSS SECTION & INLET THROAT	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6020B

STANDARD DRAWING NO. 6020B



CAST IRON FRAME AND COVER
N.T.S

CURB INLET REBAR & M.H. FRAME & COVER	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6020C

STANDARD DRAWING NO. 6020C

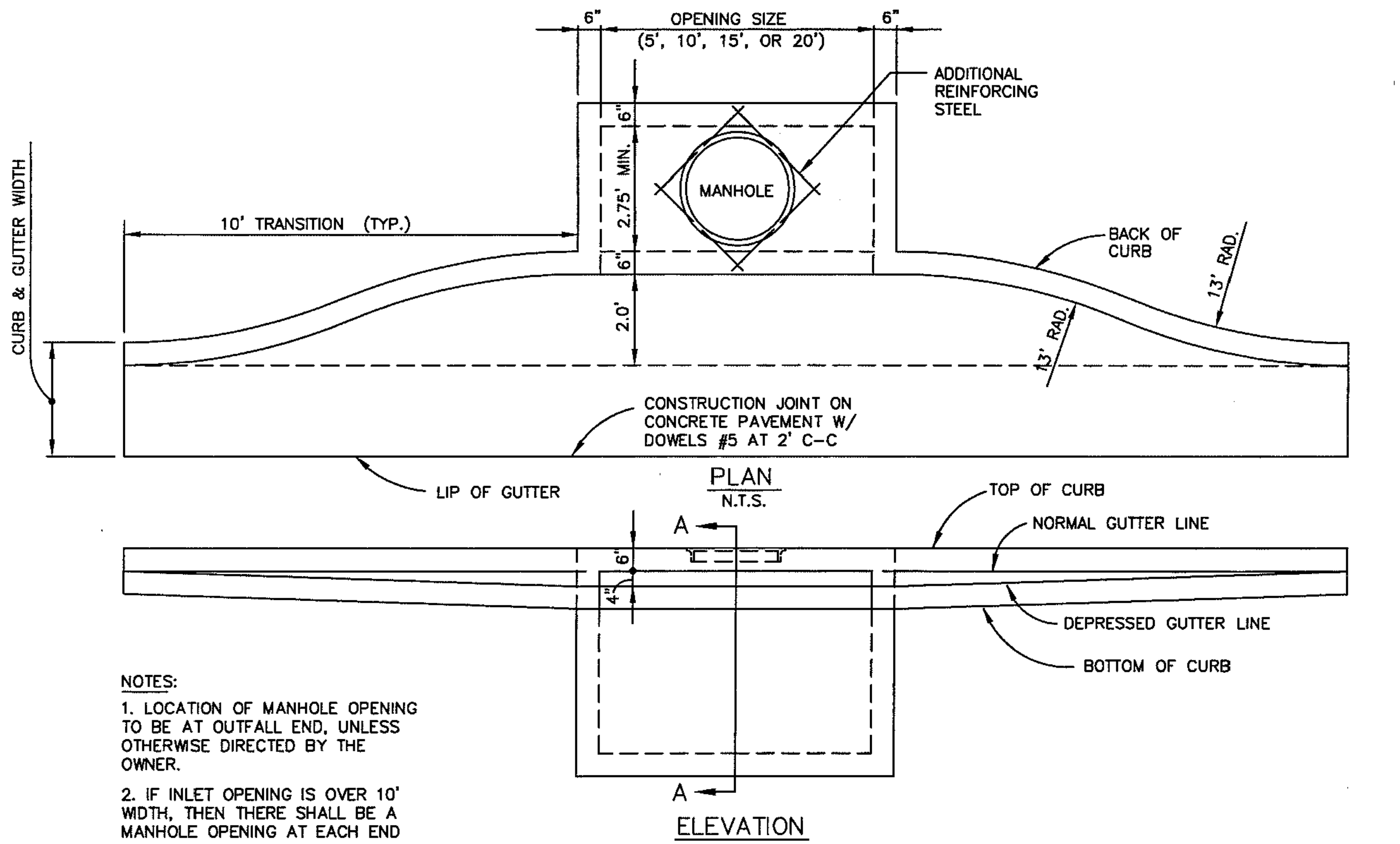
SUMMARY OF QUANTITIES FOR CURB INLETS

DEPTH "D"	5'–0" OPENING						10'–0" OPENING						15'–0" OPENING						20'–0" OPENING					
	WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"		WIDTH 3'–0"		WIDTH 4'–0"		WIDTH 5'–0"	
	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.	CONC C.Y.	STEEL LBS.
3'–6"	2.62	306	2.95	332	3.28	373	4.12	479	4.64	521	5.20	564	5.69	667	6.40	721	7.10	775	7.20	846	8.11	909	9.03	976
3'–9"	2.70	309	3.04	341	3.39	373	4.25	494	4.78	536	5.34	579	5.87	687	6.58	741	7.30	796	7.42	874	8.34	937	9.27	1010
4'–0"	2.78	328	3.14	364	3.49	399	4.38	518	4.92	565	5.49	610	6.05	718	6.77	776	7.49	835	7.64	909	8.58	976	9.51	1046
4'–3"	2.87	334	3.23	370	3.59	406	4.51	526	5.06	573	5.64	619	6.22	729	6.95	787	7.69	847	7.87	922	8.81	990	9.75	1061
4'–6"	2.95	356	3.32	394	3.69	431	4.64	558	5.20	607	5.79	656	6.40	770	7.14	830	7.88	891	8.09	973	9.04	1043	9.99	1115
4'–9"	3.03	361	3.41	410	3.79	438	4.77	566	5.34	616	5.94	665	6.57	780	7.32	841	8.07	903	8.31	986	9.27	1056	10.23	1129
5'–0"	3.12	367	3.51	416	3.90	445	4.90	574	5.47	624	6.09	674	6.75	791	7.51	853	8.27	915	8.53	999	9.50	1070	10.47	1144
5'–3"	3.20	383	3.60	424	4.00	465	5.03	600	5.61	652	6.23	704	6.93	827	7.69	890	8.46	955	8.76	1044	9.73	1118	10.71	1194
5'–6"	3.28	389	3.69	430	4.10	472	5.16	608	5.75	661	6.38	713	7.11	837	7.88	901	8.66	967	8.98	1057	9.97	1131	10.95	1208
5'–9"	3.37	405	3.78	451	4.20	495	5.29	635	5.89	690	6.53	744	7.28	874	8.07	940	8.85	1007	9.20	1102	10.20	1178	11.19	1258
6'–0"	3.45	415	3.88	460	4.30	504	5.42	646	6.03	702	6.68	757	7.45	888	8.25	954	9.05	1022	9.42	1119	10.43	1196	11.43	1276
6'–3"	3.53	425	3.97	470	4.41	515	5.55	661	6.17	718	6.83	773	7.63	908	8.44	975	9.24	1044	9.64	1147	10.66	1223	11.67	1305
6'–6"	3.62	437	4.06	486	4.51	532	5.68	681	6.31	739	6.97	797	7.81	935	8.62	1005	9.43	1057	9.87	1178	10.89	1258	11.92	1340
6'–9"	3.70	441	4.15	490	4.61	537	5.81	688	6.45	747	7.12	806	7.98	945	8.81	1015	9.63	1066	10.09	1191	11.12	1272	12.15	1355
7'–0"	3.78	460	4.25	510	4.71	560	5.94	716	6.59	777	7.27	837	8.16	981	8.99	1053	9.82	1126	10.31	1237	11.35	1319	12.40	1404
7'–3"	3.86	465	4.34	516	4.81	567	6.07	724	6.72	785	7.42	846	8.33	992	9.18	1065	10.02	1138	10.53	1249	11.59	1333	12.64	1418
7'–6"	3.95	477	4.43	529	4.91	570	6.20	742	6.86	804	7.57	866	8.51	1016	9.36	1089	10.21	1163	10.75	1290	11.82	1365	12.88	1451
7'–9"	4.03	491	4.53	544	5.02	597	6.33	762	7.00	826	7.71	890	8.67	1040	9.55	1116	10.41	1193	10.98	1313	12.05	1399	13.12	1498
8'–0"	4.12	496	4.62	550	5.12	604	6.46	770	7.14	834	7.86	899	8.86	1051	9.73	1129	10.60	1205	11.20	1325	12.28	1412	13.36	1510
8'–3"	4.20	504	4.71	559	5.22	613	6.59	784	7.28	849	8.01	915	9.04	1069	9.92	1149	10.80	1228	11.42	1353	12.51	1440	13.60	1529
8'–6"	4.28	519	4.80	576	5.32	632	6.71	804	7.42	871	8.16	938	9.21	1107	10.10	1176	10.99	1257	11.64	1385	12.74	1474	13.84	1565
8'–9"	4.37	528	4.90	586	5.42	643	6.84	819	7.56	886	8.31	954	9.39	1119	10.29	1199	11.18	1280	11.87	1410	12.97	1500	14.08	1592
9'–0"	4.45	545	4.99	605	5.53	664	6.97	842	7.70	912	8.46	982	9.56	1148	10.47	1231	11.38	1313	12.09	1447	13.21	1539	14.32	1631
9'–3"	4.53	554	5.08	614	5.63	674	7.10	858	7.84	929	8.60	999	9.74	1169	10.66	1252	11.57	1335	12.31	1474	13.44	1563	14.56	1660
9'–6"	4.62	568	5.17	630	5.73	692	7.23	878	7.97	950	8.75	1022	9.92	1195	10.84	1280	11.77	1365	12.53	1505	13.67	1600	14.80	1696
10'–0"	4.78	582	5.36	645	5.93	708	7.49	900	8.11	974	9.05	1048	10.27	1227	11.21	1312	12.16	1399	12.98	1546	14.13	1642	15.29	1739

NOTE:
FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLES ARE IN INCREMENTS OF 3 INCHES BUT ANY DEPTHS OTHER THAN THOSE SHOWN ABOVE MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS FALLING WITHIN THE LIMITS OF THE TABLE MAY BE FOUND BY INTERPOLATION.

CURB INLET SUMMARY OF QUANTITIES	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6020E

STANDARD DRAWING NO. 6020E



PLAN
N.T.S.

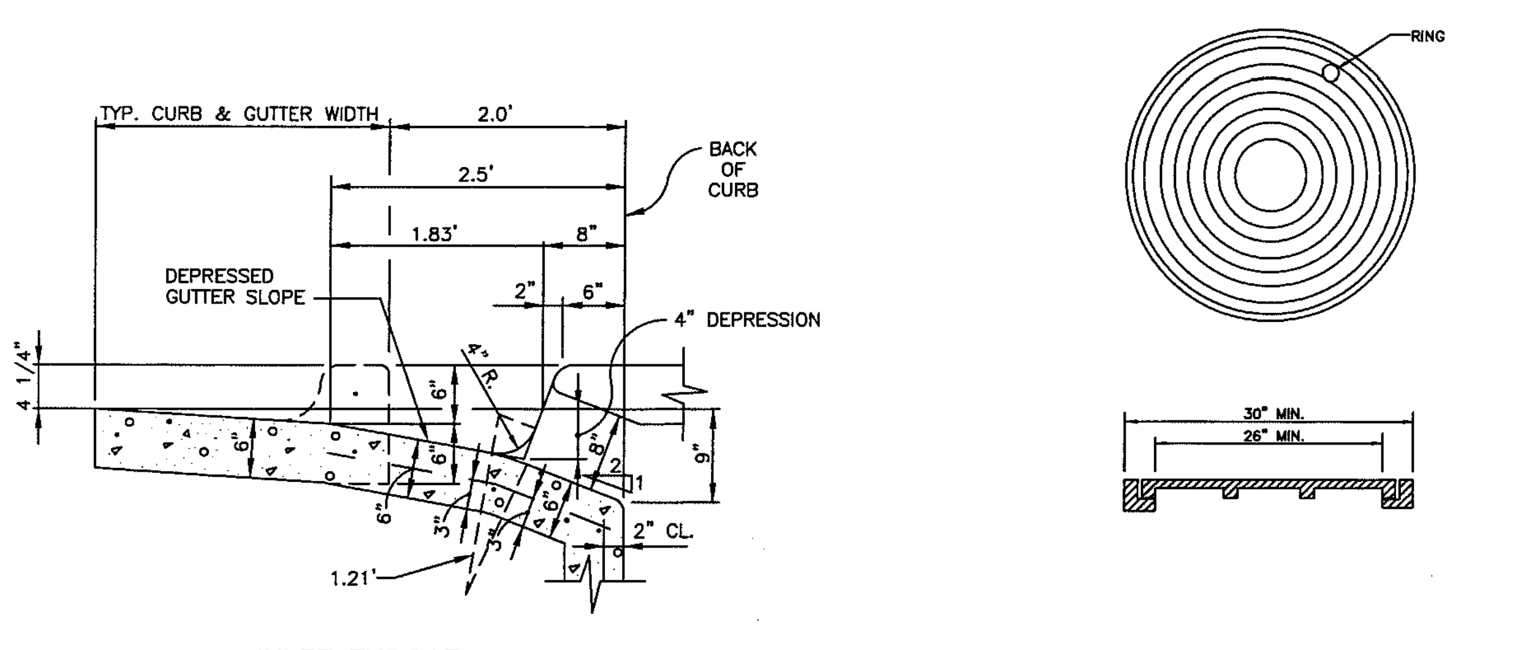
ELEVATION
N.T.S.

NOTES:

1. LOCATION OF MANHOLE OPENING TO BE AT OUTFALL END, UNLESS OTHERWISE DIRECTED BY THE OWNER.
2. IF INLET OPENING IS OVER 10' WIDTH, THEN THERE SHALL BE A MANHOLE OPENING AT EACH END OF INLET.

CURB INLET RECESSED 5', 10', 15' OR 20' OPENING	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6030A

STANDARD DRAWING NO. 6030A



INLET THROAT
N.T.S.

MANHOLE FRAME & COVER
N.T.S.

CURB INLET RECESSED INLET THROAT & M.H. FRAME & COVER	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702 DATE OCT. '04 STANDARD DRAWING NO. 6030C

STANDARD DRAWING NO. 6030C

Plotted: Jul 25, 2018, 12:5 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BID\SET\CCA ENG REV 18 DETAILS ONLY.dwg

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
7	03/08/2017	REVISED GRADING
8	03/13/2017	CITY COMMENTS 3RD REVIEW
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10	05/23/2017	SANITARY SEWER DA MAP
11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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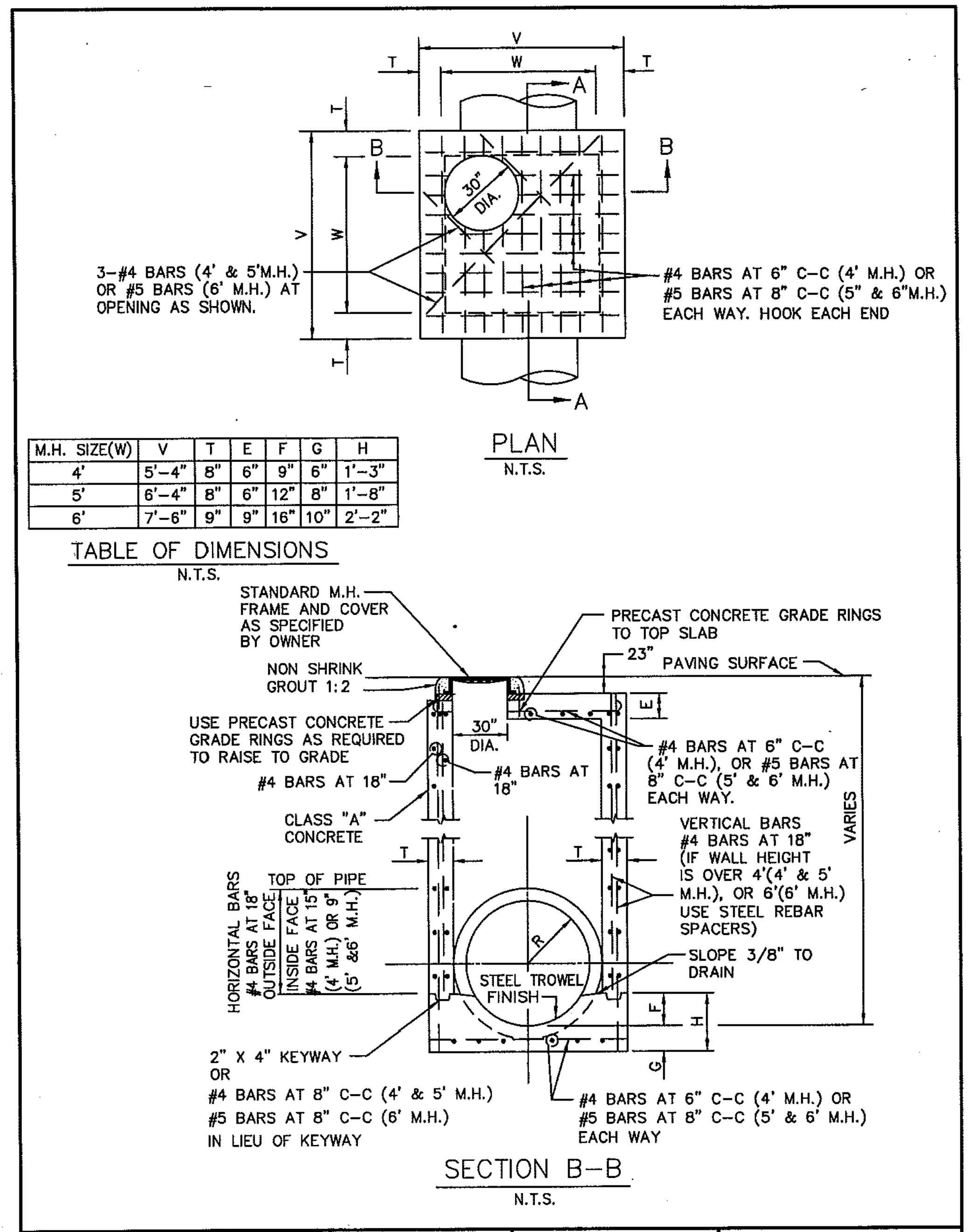
RECORD DRAWING
This is to certify that changes and corrections have been made to conform to the contractor's record of this project.
Signed
July 25, 2018
Date
Glenn Engineering Corporation

STORM DETAILS 3
8

NN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

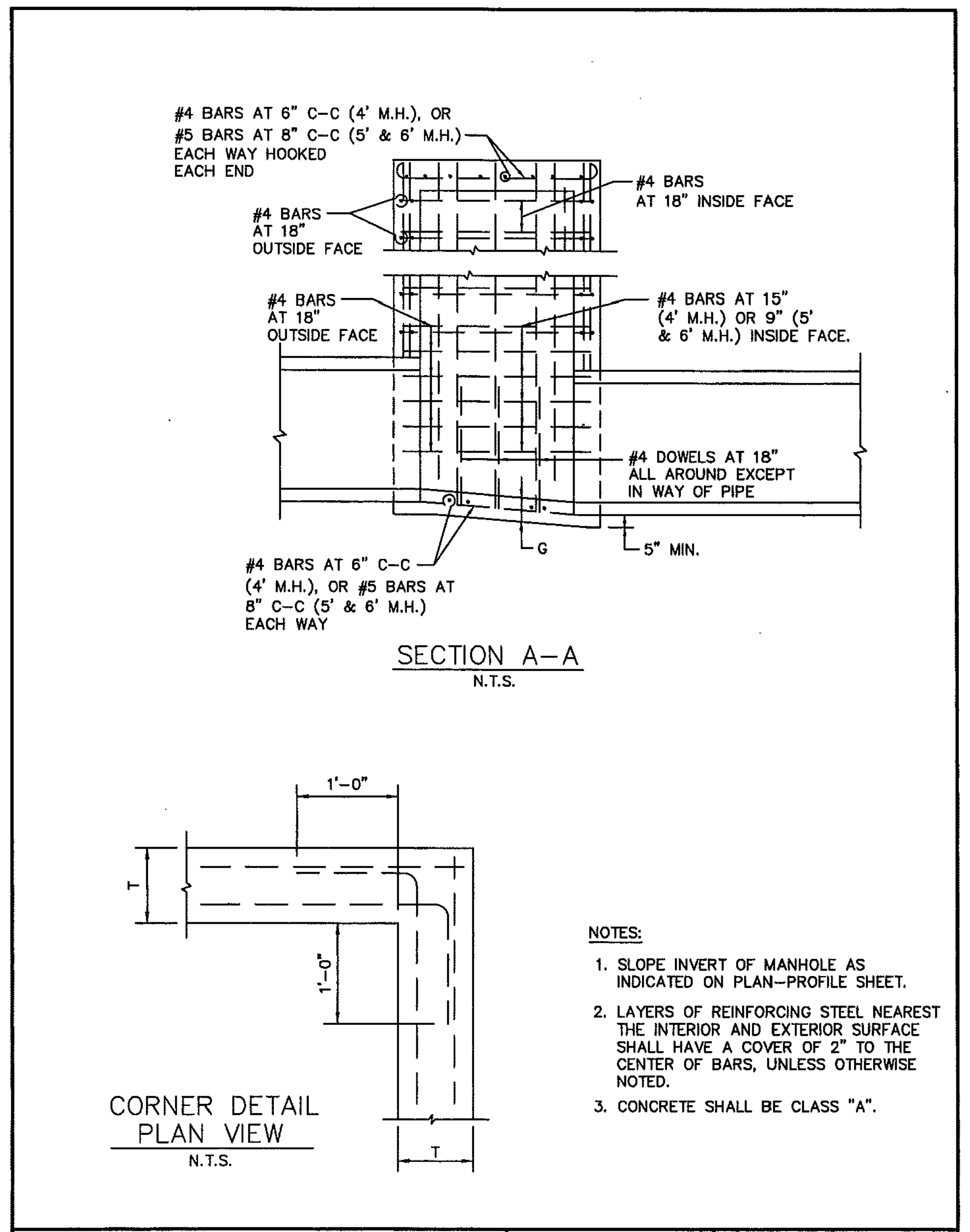
Job. No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CU1.18


V
T
W
T
A
B
B
30" DIA.
3-#4 BARS (4' & 5'M.H.) OR #5 BARS (6' M.H.) AT OPENING AS SHOWN.
#4 BARS AT 6" C-C (4' M.H.) OR #5 BARS AT 8" C-C (5" & 6"M.H.) EACH WAY. HOOK EACH END
A
PLAN
N.T.S.
STANDARD M.H. FRAME AND COVER AS SPECIFIED BY OWNER
NON SHRINK GROUT 1:2
USE PRECAST CONCRETE GRADE RINGS AS REQUIRED TO RAISE TO GRADE
#4 BARS AT 18"
#4 BARS AT 18"
30" DIA.
CLASS "A" CONCRETE
PRECAST CONCRETE GRADE RINGS TO TOP SLAB
23"
PAVING SURFACE
E
#4 BARS AT 6" C-C (4' M.H.), OR #5 BARS AT 8" C-C (5' & 6' M.H.) EACH WAY.
VERTICAL BARS #4 BARS AT 18" (IF WALL HEIGHT IS OVER 4'(4' & 5' M.H.), OR 6'(6' M.H.) USE STEEL REBAR SPACERS)
VARIES
T
T
TOP OF PIPE
HORIZONTAL BARS #4 BARS AT 18" OUTSIDE FACE
INSIDE FACE #4 BARS AT 15" (4' M.H.) OR 9" (5' &6' M.H.)
R
STEEL TROWEL FINISH
SLOPE 3/8" TO DRAIN
F
H
G
2" X 4" KEYWAY OR #4 BARS AT 8" C-C (4' & 5' M.H.) #5 BARS AT 8" C-C (6' M.H.) IN LIEU OF KEYWAY
#4 BARS AT 6" C-C (4' M.H.) OR #5 BARS AT 8" C-C (5' & 6' M.H.) EACH WAY
SECTION B-B
N.T.S.

M.H. SIZE(W)	V	T	E	F	G	H
4'	5'-4"	8"	6"	9"	6"	1'-3"
5'	6'-4"	8"	6"	12"	8"	1'-8"
6'	7'-6"	9"	9"	16"	10"	2'-2"

TABLE OF DIMENSIONS
N.T.S.

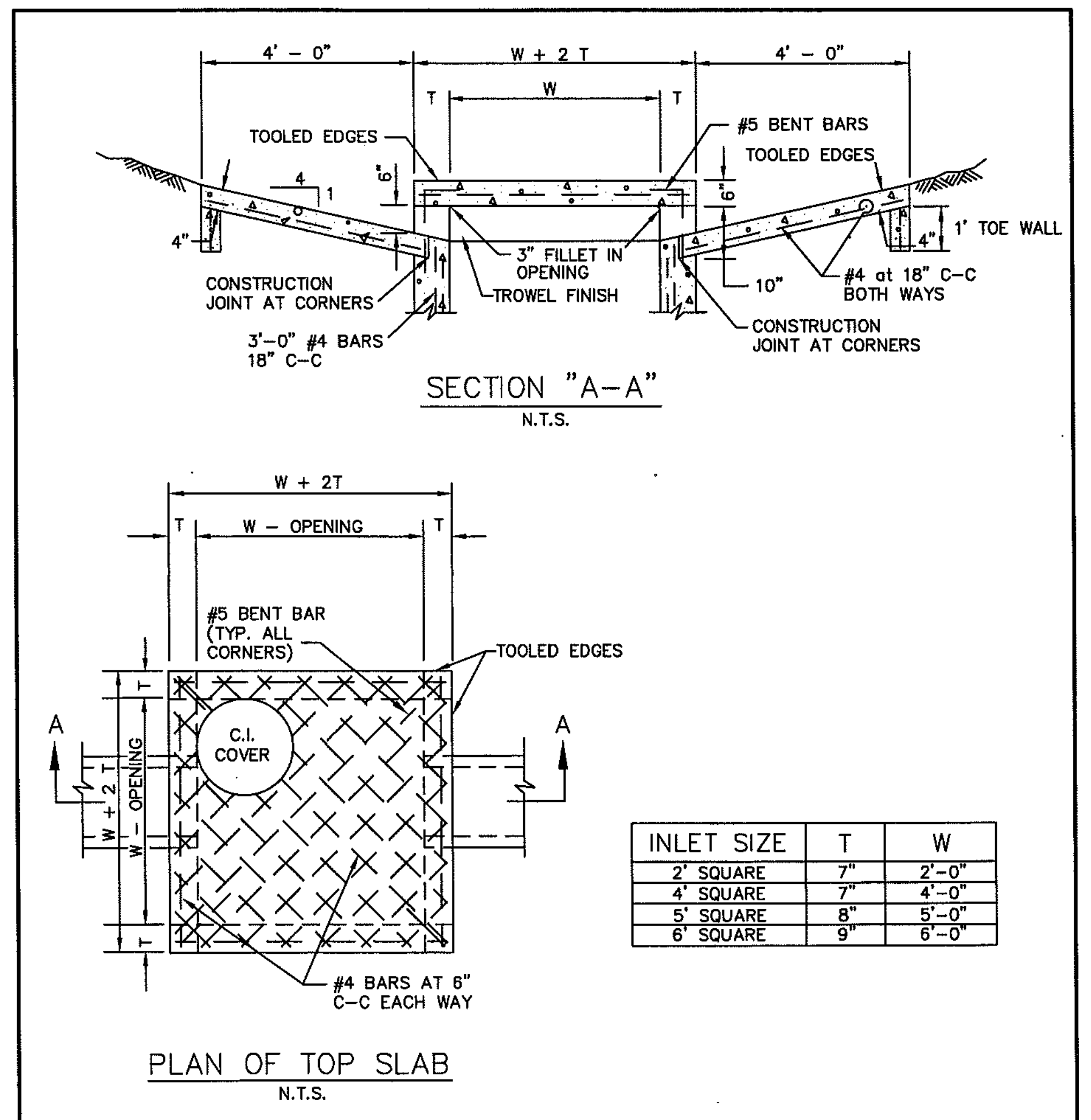
STORM WATER MANHOLE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.1
4', 5', OR 6' SQUARE		DATE OCT. '04
		STANDARD DRAWING NO. 6010A


#4 BARS AT 6" C-C (4' M.H.), OR #5 BARS AT 8" C-C (5' & 6' M.H.) EACH WAY HOOKED EACH END
#4 BARS AT 18" INSIDE FACE
#4 BARS AT 18" OUTSIDE FACE
#4 BARS AT 18" OUTSIDE FACE
#4 BARS AT 15" (4' M.H.) OR 9" (5' & 6' M.H.) INSIDE FACE.
#4 DOWELS AT 18" ALL AROUND EXCEPT IN WAY OF PIPE
G
5" MIN.
#4 BARS AT 6" C-C (4' M.H.), OR #5 BARS AT 8" C-C (5' & 6' M.H.) EACH WAY
SECTION A-A
N.T.S.
1'-0"
T
1'-0"
T
CORNER DETAIL PLAN VIEW
N.T.S.

NOTES:

1. SLOPE INVERT OF MANHOLE AS INDICATED ON PLAN-PROFILE SHEET.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACE SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. CONCRETE SHALL BE CLASS "A".

STORM WATER MANHOLE	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 502.1
4', 5', OR 6' SQUARE		DATE OCT. '04
		STANDARD DRAWING NO. 6010B

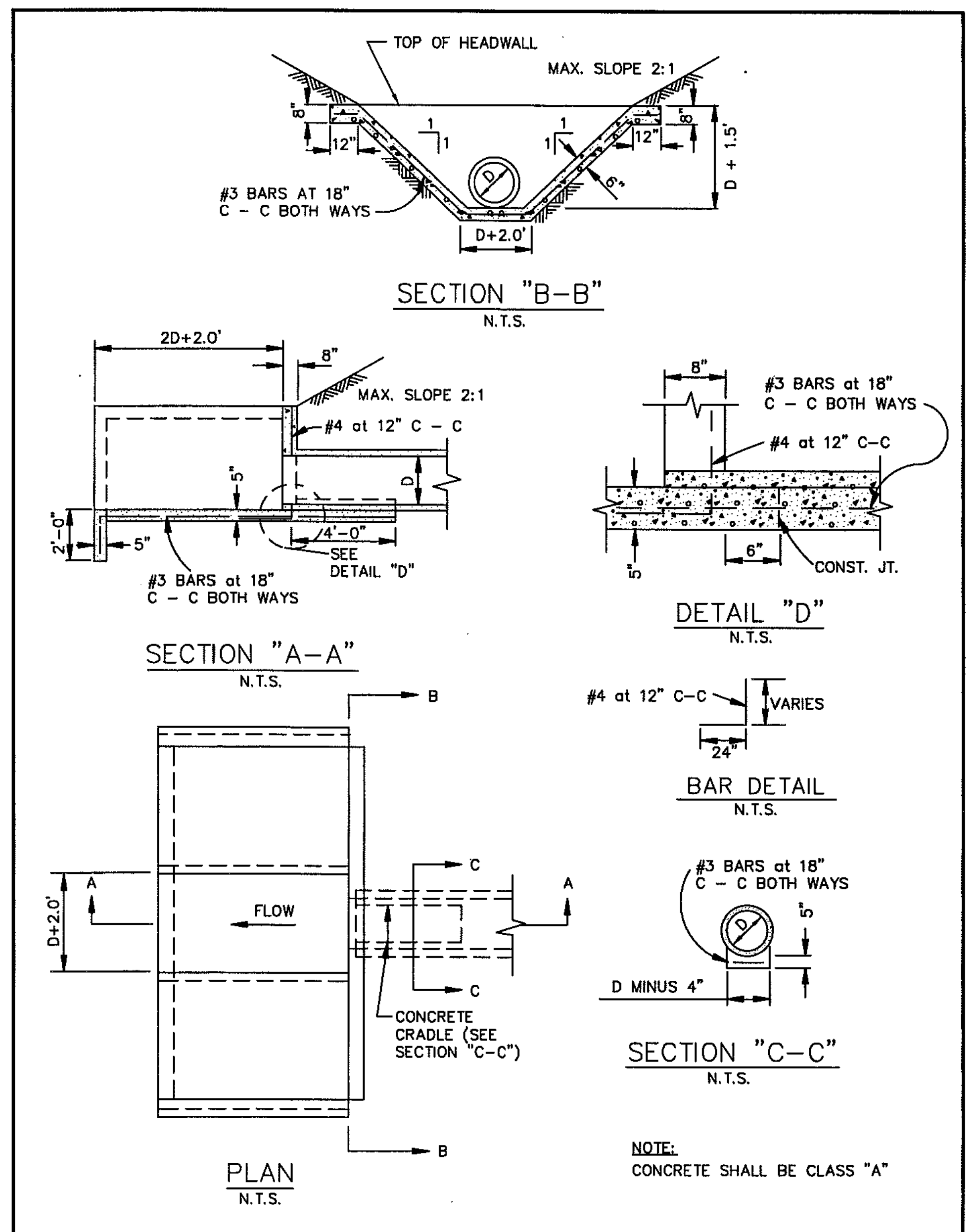


INLET SIZE	T	W
2' SQUARE	7"	2'-0"
4' SQUARE	7"	4'-0"
5' SQUARE	8"	5'-0"
6' SQUARE	9"	6'-0"

NOTES:

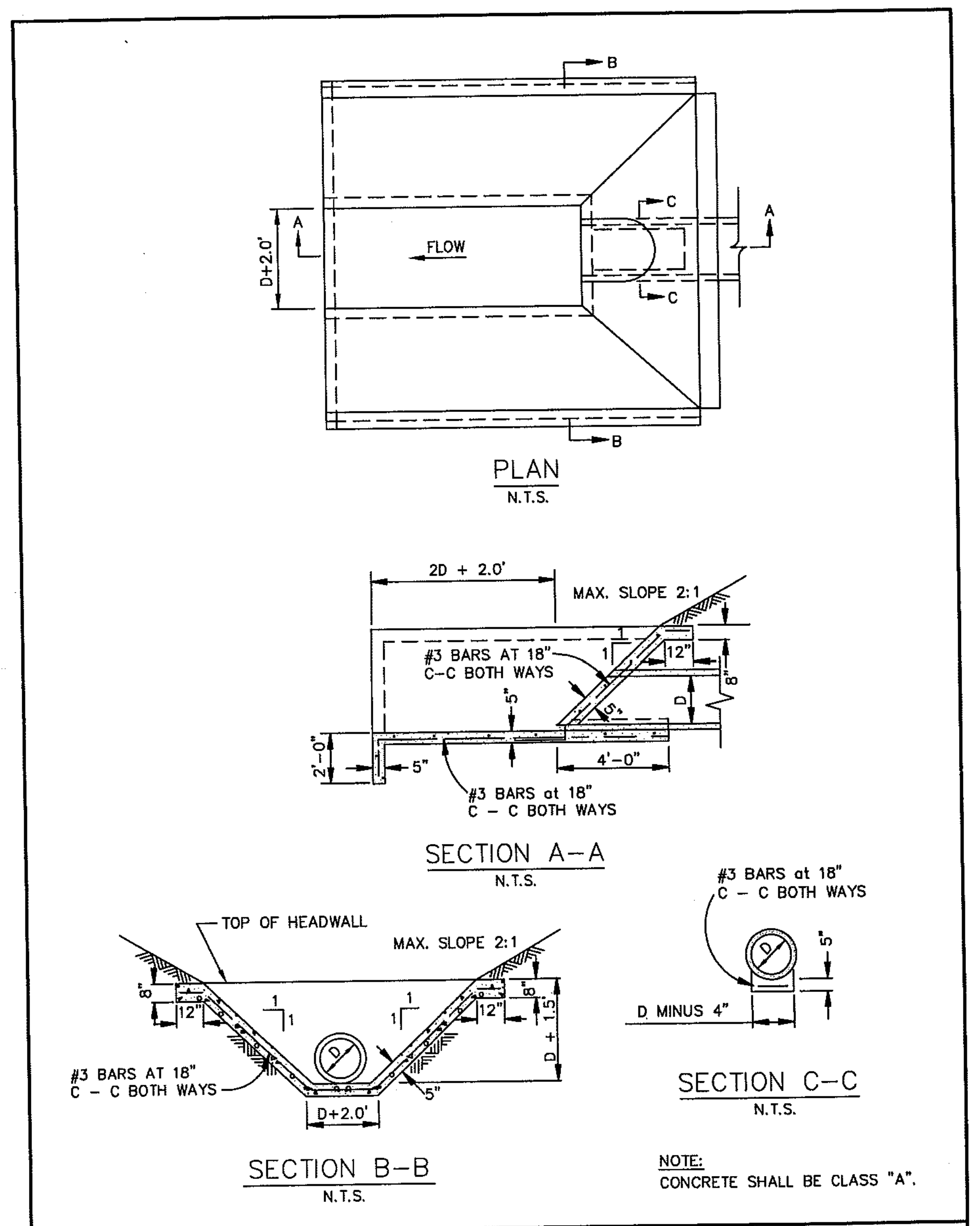
1. MATERIAL AND WORKMANSHIP SHALL CONFORM WITH THE REQUIREMENTS OF NCTCOG STANDARD SPECIFICATIONS FOR STANDARD CONCRETE MANHOLES. MINIMUM CLASS "A" CONCRETE.
2. LAYERS OF REINFORCING STEEL NEAREST THE INTERIOR AND EXTERIOR SURFACES SHALL HAVE A COVER OF 2" TO THE CENTER OF BARS, UNLESS OTHERWISE NOTED.
3. FOR DETAILS OF REINFORCING OF LOWER PORTIONS OF INLET SEE APPROPRIATE SQUARE MANHOLE DETAILS.
4. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET IS VARIABLE. APPROXIMATE DEPTH WILL BE SHOWN ON PLANS AT LOCATION OF INLET.
5. ALL STANDARD DROP INLETS SHALL HAVE ONE OPENING ON EACH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
6. DECK MAY BE REINFORCED SAME AS 4' SQUARE MANHOLE.

DROP INLET	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 702
2', 4', 5' OR 6' SQUARE		DATE OCT. '04
		STANDARD DRAWING NO. 6040



NOTE:
CONCRETE SHALL BE CLASS "A"

CONCRETE APRON	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 803.3
VERTICAL HEADWALL		DATE OCT. '04
		STANDARD DRAWING NO. 6060



NOTE:
CONCRETE SHALL BE CLASS "A".

CONCRETE APRON	North Central Texas Council of Governments	STANDARD SPECIFICATION REFERENCE 803.3
SLOPING HEADWALL		DATE OCT. '04
		STANDARD DRAWING NO. 6070

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
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105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
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13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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STORM DETAILS 4
8

Job. No.
1759-03-01
Drawn By:
RAH
Date:
02-28-2017
Sheet No.
CU1.19

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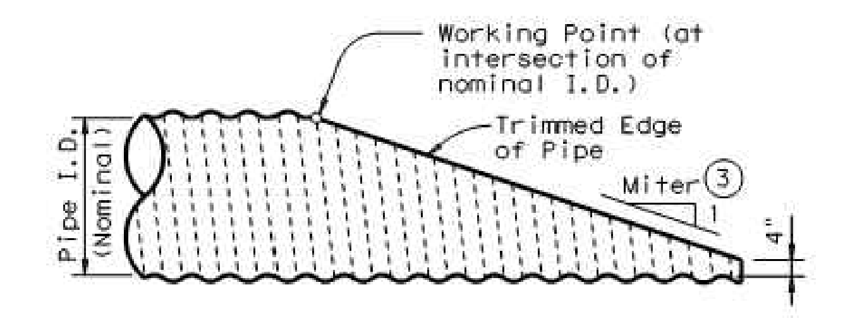
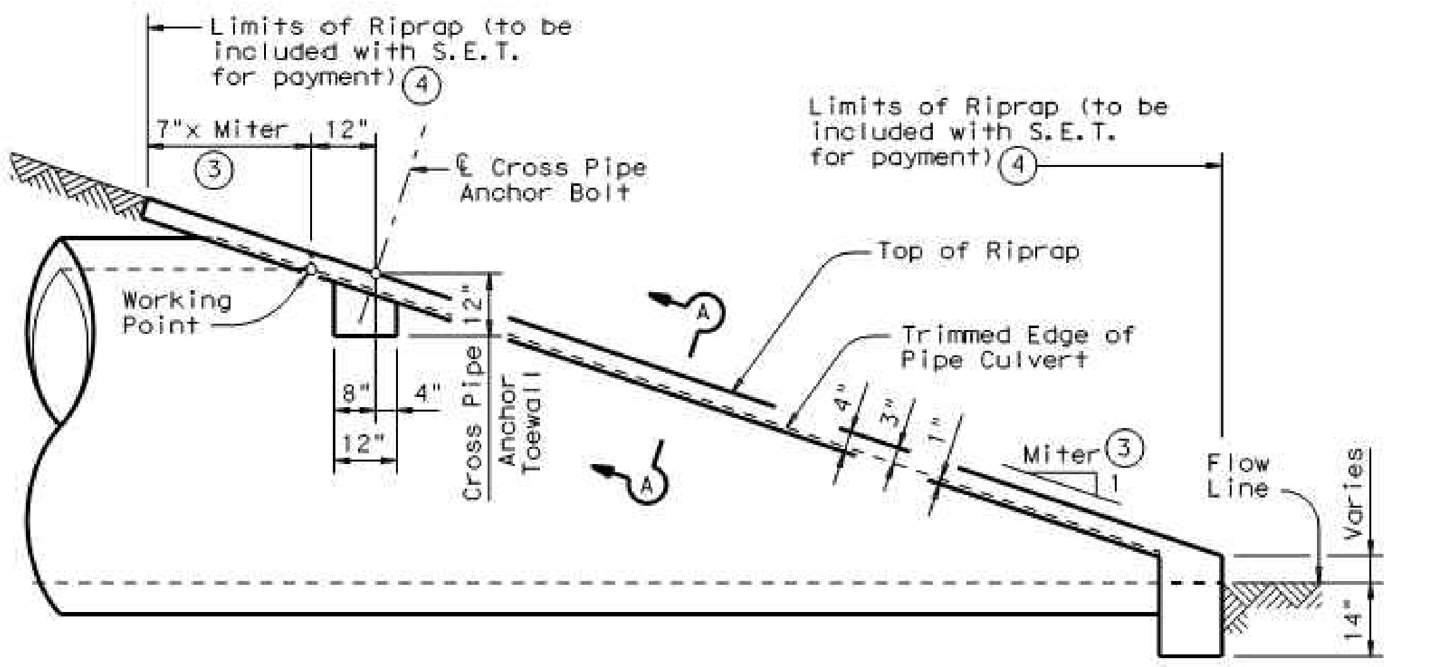


NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

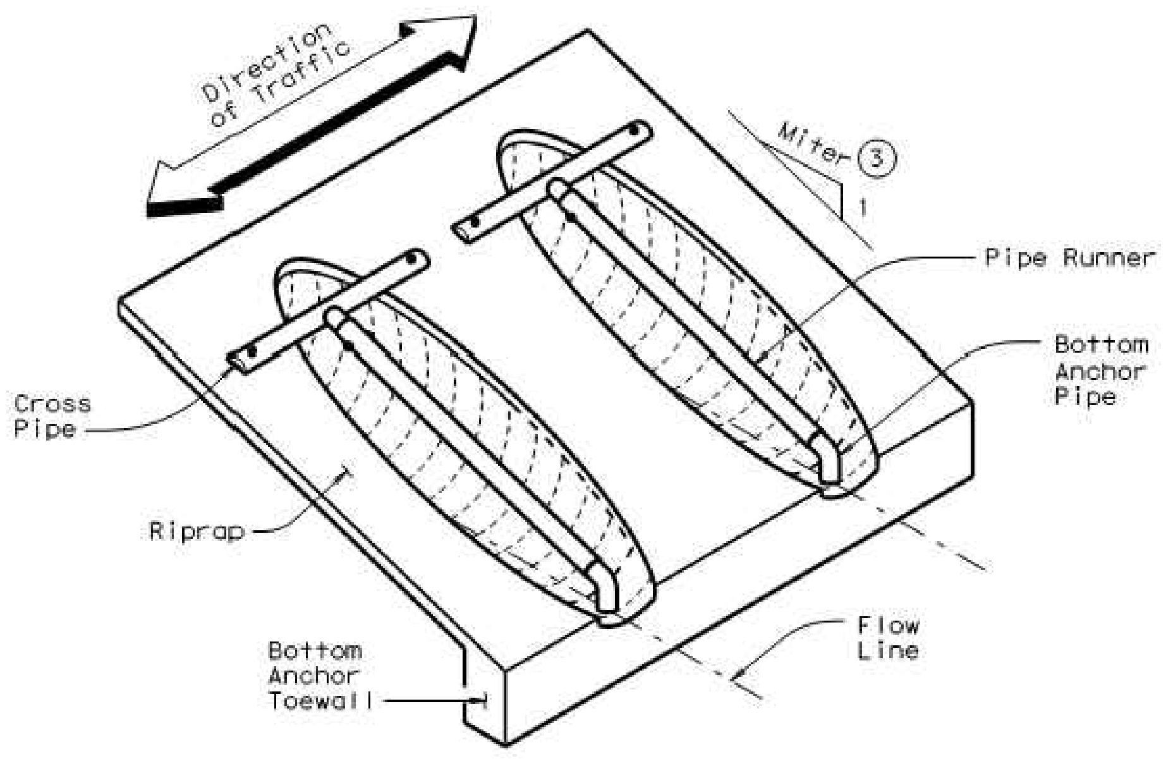
(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)


Limits of Riprap (to be included with S.E.T. for payment) ④
7"x Miter
12"
③
℄ Cross Pipe Anchor Bolt
Limits of Riprap (to be included with S.E.T. for payment) ④
Top of Riprap
Working Point
A
Trimmed Edge of Pipe Culvert
12"
8"
4"
12"
Cross Pipe
Anchor Toewall
4"
3"
1"
Miter ③
1
Flow Line
Varies
14"
A

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)

Varies ~ See BOTTOM ANCHOR TOEWALL DETAILS



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS ①②

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.

SHEET 1 OF 2

Texas Department of Transportation
Bridge Division

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 May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	COUNTY	CONTROL	SECT	JOB	HIGHWAY

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LEVELS DISPLAYED
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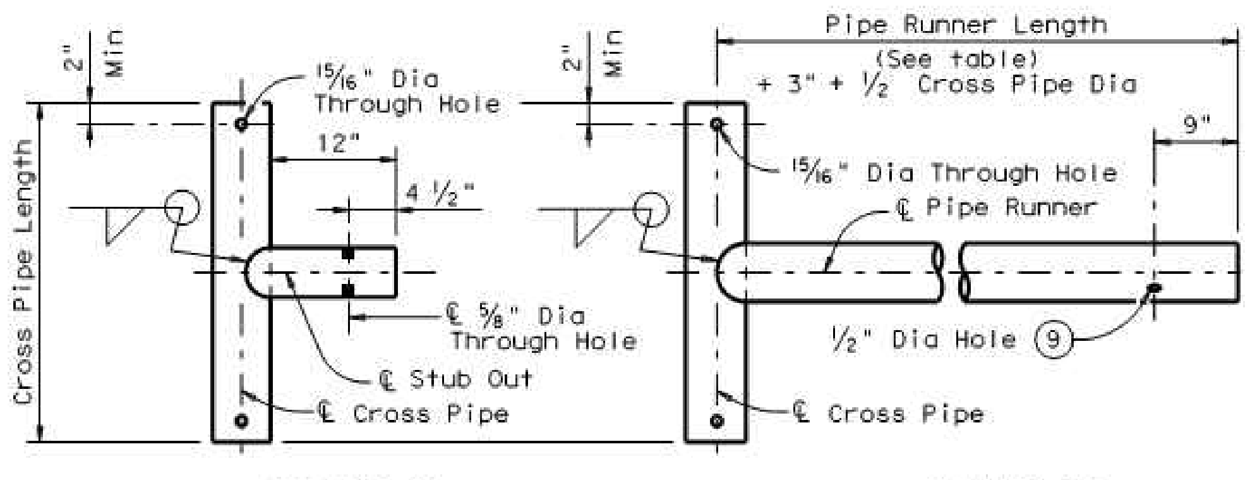
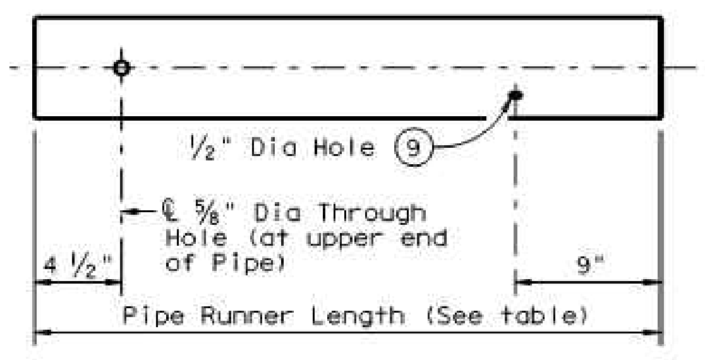
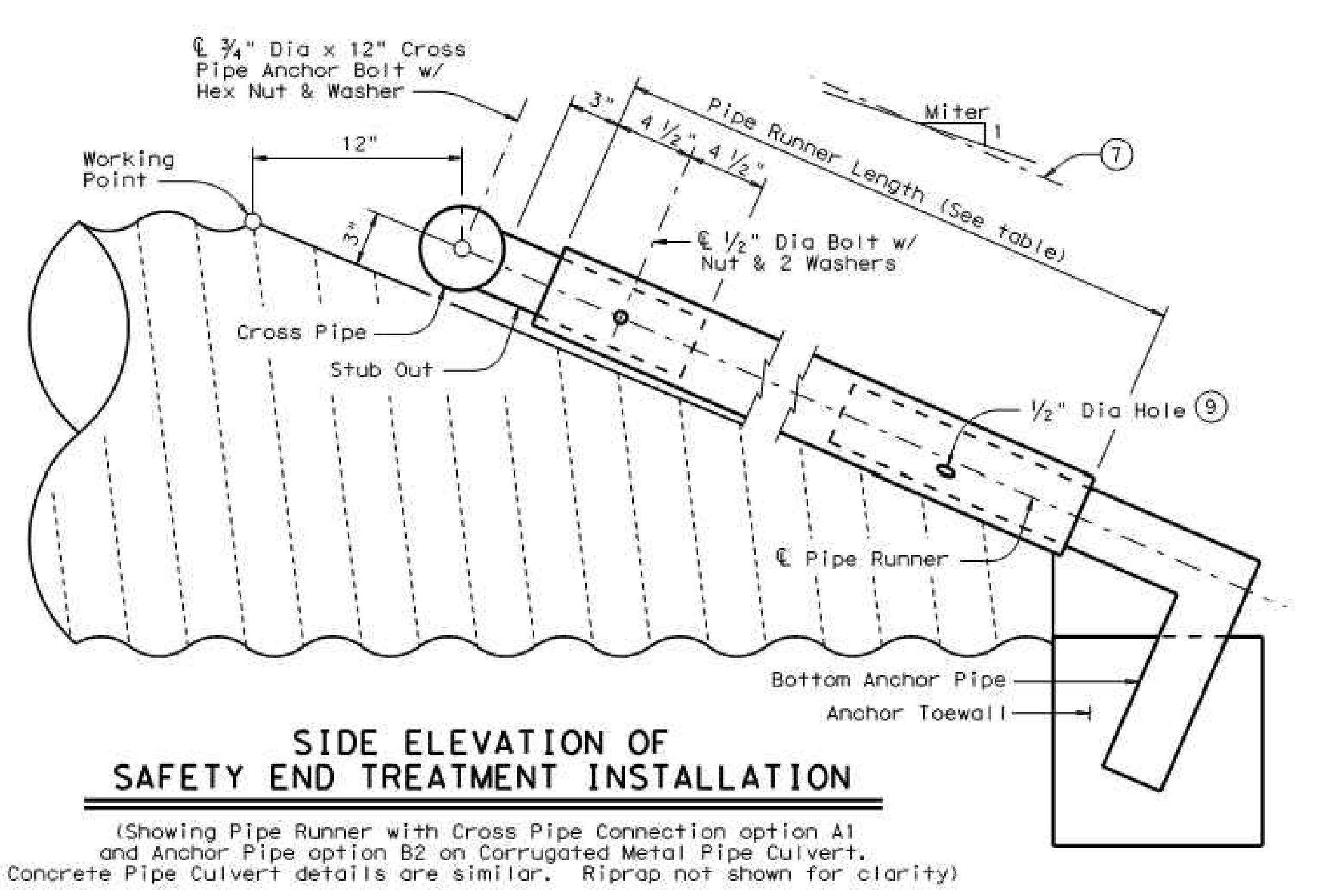


CROSS PIPE AND CONNECTIONS DETAILS


1/2" Dia Hole ⑨
℄ 5/8" Dia Through Hole (at upper end of Pipe)
4 1/2"
9"
Pipe Runner Length (See table)

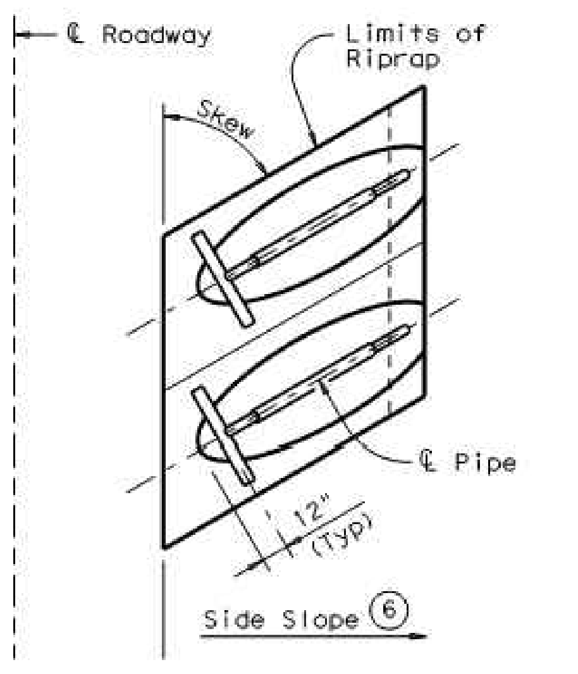
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS

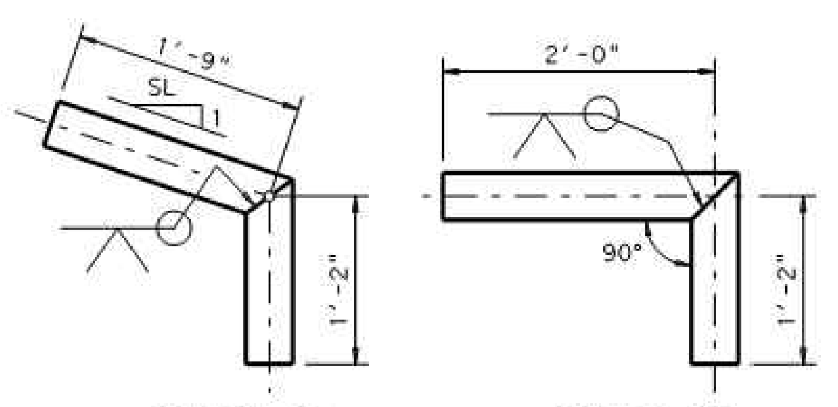

℄ 3/4" Dia x 12" Cross Pipe Anchor Bolt w/ Hex Nut & Washer
Working Point
12"
3"
3"
4 1/2"
4 1/2"
Pipe Runner Length (See table)
Miter
1
⑦
℄ 1/2" Dia Bolt w/ Nut & 2 Washers
Cross Pipe
Stub Out
1/2" Dia Hole ⑨
℄ Pipe Runner
Bottom Anchor Pipe
Anchor Toewall

SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

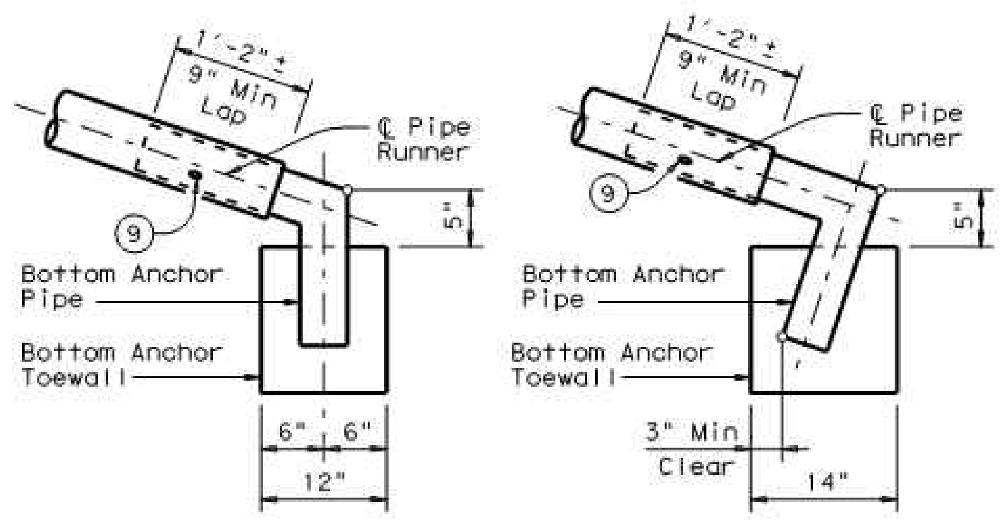
(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)



PLAN OF SKEWED INSTALLATION

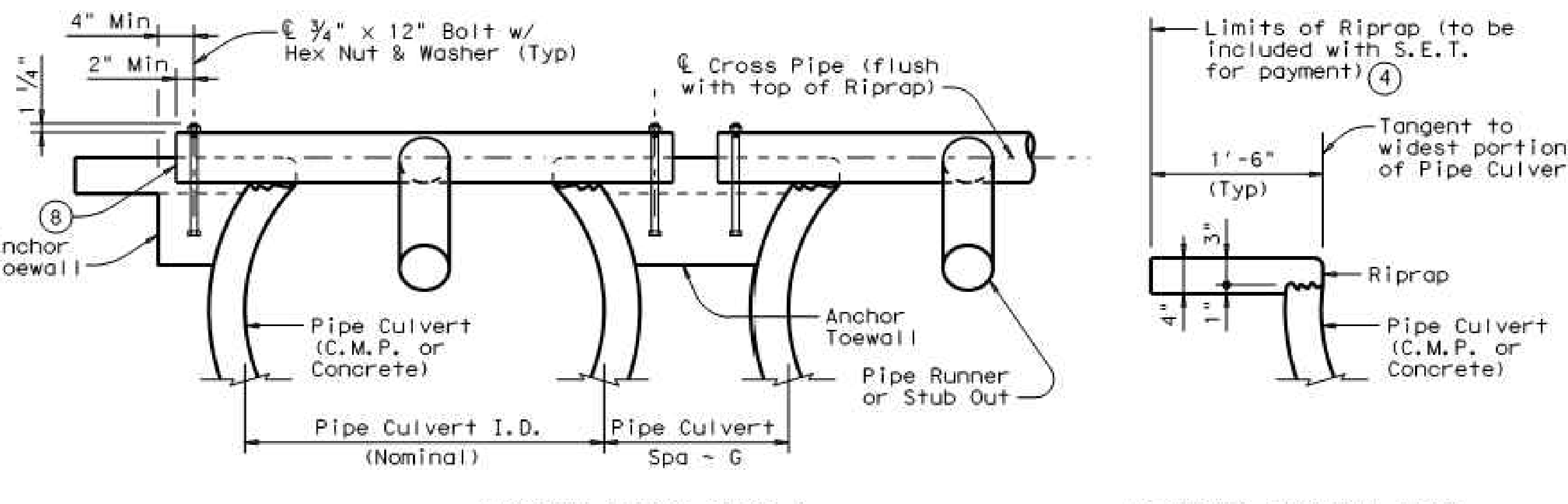


BOTTOM ANCHOR PIPE DETAILS ⑩



BOTTOM ANCHOR TOEWALL DETAILS

(Culvert & Riprap not shown for clarity)


4" Min
2" Min
1 1/4"
℄ 3/4" x 12" Bolt w/ Hex Nut & Washer (Typ)
℄ Cross Pipe (flush with top of Riprap)
⑧
Anchor Toewall
Pipe Culvert (C.M.P. or Concrete)
Anchor Toewall
Pipe Runner or Stub Out
Pipe Culvert I.D. (Nominal)
Pipe Culvert Spa ~ G
Limits of Riprap (to be included with S.E.T. for payment) ④
Tangent to widest portion of Pipe Culvert
1'-6" (Typ)
3"
4"
1"
Riprap
Pipe Culvert (C.M.P. or Concrete)

SHOWING CROSS PIPE & ANCHOR TOEWALL

SHOWING TYPICAL PIPE CULVERT & RIPRAP

SECTION A-A

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".

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.

SHEET 2 OF 2

Texas Department of Transportation
Bridge Division

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 May 2005	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS	COUNTY	CONTROL	SECT	JOB	HIGHWAY

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RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed July 25, 2018
Date
Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 7506

STORM DETAILS 5
8

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MIKE GLENN
35059

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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
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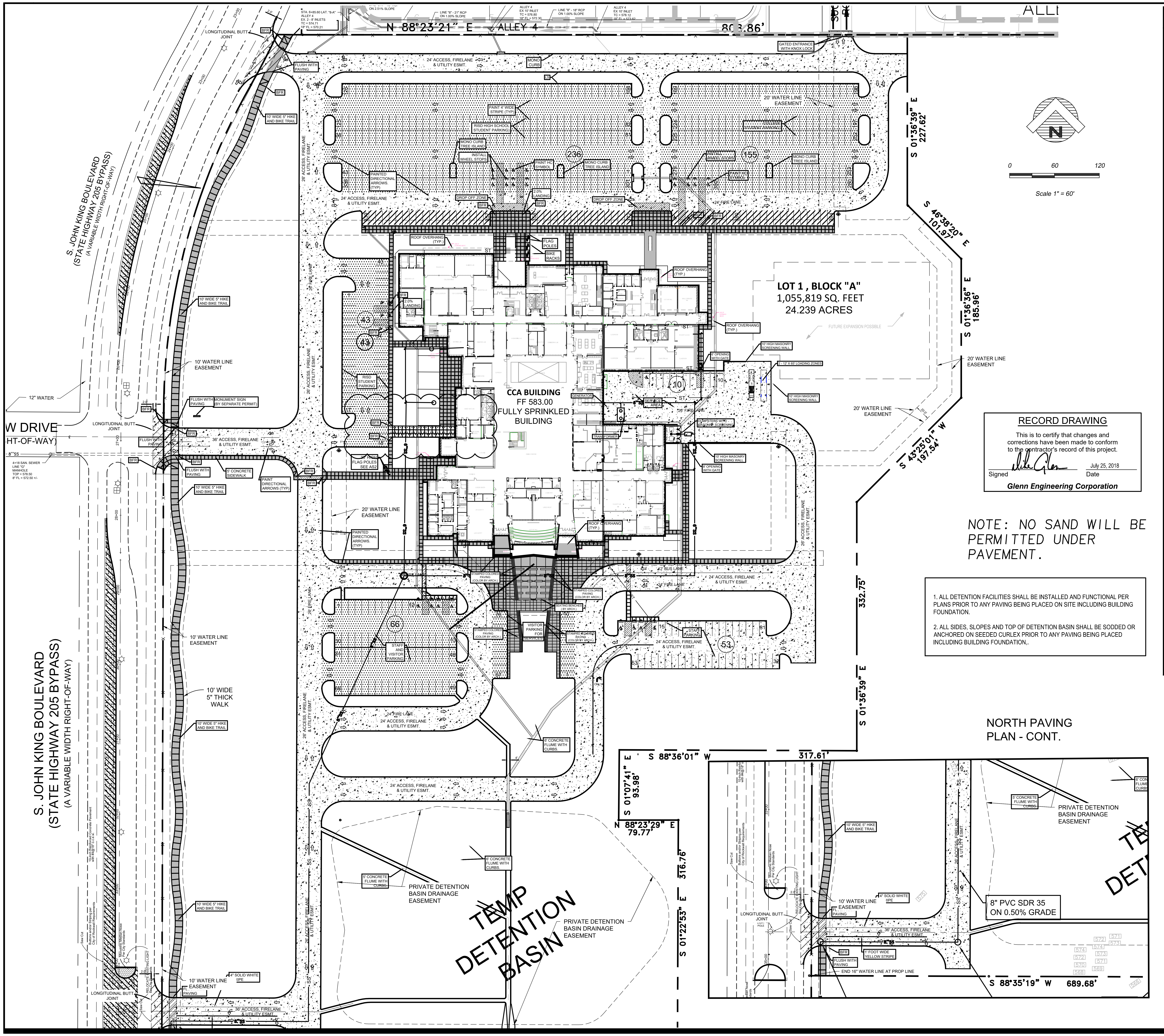

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Mike Glenn July 25, 2018
Signed Date

Glenn Engineering Corporation

NOTE: NO SAND WILL BE PERMITTED UNDER PAVEMENT.

1. ALL DETENTION FACILITIES SHALL BE INSTALLED AND FUNCTIONAL PER PLANS PRIOR TO ANY PAVING BEING PLACED ON SITE INCLUDING BUILDING FOUNDATION.

2. ALL SIDES, SLOPES AND TOP OF DETENTION BASIN SHALL BE SODDED OR ANCHORED ON SEEDED CURLEX PRIOR TO ANY PAVING BEING PLACED INCLUDING BUILDING FOUNDATION,.

PAVING NOTES:

THE INITIAL SOIL TEST AND REPORT BY FUGRO SOUTH, INC. PROJECT NO.0703-1081 AND ANY AND ALL SUBSEQUENT REPORTS PREPARED FOR THIS PROJECT BY FUGRO SOUTH OR BY OTHER FIRM, AGENCY OR ENTITY, EVEN THOUGH NO SPECIFIC REFERENCE TO ANY SUCH REPORTS ARE CONTAINED IN THE PLANS AND/OR SPECIFICATIONS FOR THIS PROJECT, ARE MADE A PART OF THIS PLAN. A COPY CAN BE OBTAINED THROUGH THE ARCHITECT OR ENGINEER.

I. PAVEMENT SUB GRADE FOR A & B, BELOW

THE CLAY SOILS ENCOUNTERED NEAR THE EXISTING GROUND SURFACE WILL PROBABLY CONSTITUTE THE SUB GRADE FOR MOST OF THE PARKING AND DRIVE AREAS. THEREFORE, IT IS RECOMMENDED THAT THESE SOILS BE IMPROVED PRIOR TO CONSTRUCTION OF THE PAVEMENTS.

IT IS RECOMMENDED THAT THE EXISTING CLAY SOILS IN DRIVE AND PARKING AREAS BE EXCAVATED TO ACHIEVE FINAL SUB GRADE ELEVATION. THE EXPOSED SURFACE OF THE CLAYS SHOULD BE SCARIFIED TO A DEPTH OF AT LEAST 6 INCHES AND MIXED WITH AN ESTIMATED 7 PERCENT OF HYDRATED LIME (BY DRY UNIT WEIGHT) IN CONFORMANCE WITH TEXAS HIGHWAY DEPARTMENT ITEM 260. ASSUMING AN IN-PLACE UNIT WEIGHT OF 100 PCF FOR THE PAVEMENT SUB GRADE SOILS, THIS PERCENTAGE OF LIME EQUATES TO ABOUT 32 LBS OF LIME PER SQ. YARD OF SUB GRADE TREATED. THE ACTUAL AMOUNT OF LIME REQUIRED SHOULD BE DETERMINED BY ADDITIONAL LABORATORY TESTS. IT IS RECOMMENDED THAT THE LIME STABILIZATION PROCEDURES EXTEND AT LEAST 4 FT. BEYOND THE EDGE OF THE PAVEMENT TO MINIMIZE THE EFFECTS OF SEASONAL SHRINKING UPON THE EXTREME EDGES OF PAVEMENT. THE SOIL-LIME MIXTURE SHOULD THEN BE COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698) WITHIN 3 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT. IN ALL AREAS WHERE HYDRATED LIME IS USED TO STABILIZE THE SUB GRADE SOILS, ROUTINE ATTERBERG-LIMIT TESTS SHOULD BE PERFORMED TO ASSURE THAT THE RESULTING PLASTICITY INDEX OF THE SOIL-LIME MIXTURE IS AT/OR BELOW 15.

THE CLIENT SHOULD BE AWARE THAT MECHANICAL LIME STABILIZATION OF THE PAVEMENT SUB GRADE SOILS WILL NOT PREVENT DEEP SEATED MOVEMENT OF THE UNDERLYING UNTREATED MATERIALS. FUTURE MAINTENANCE OF PAVEMENTS SHOULD BE EXPECTED OVER THE LIFE OF THE STRUCTURE.

II. PAVING

CONCRETE DRIVEWAY APPROACHES SHALL BE A MINIMUM OF 6 INCHES THICK. CONCRETE DRIVEWAY APPROACHES SHALL HAVE A RISE OF NOT LESS THAN 6 INCHES NOR MORE THAN 9 INCHES FROM THE FLOW LINE OF THE GUTTER TO A POINT 10 FEET BEHIND THE FACE OF THE GUTTER. CONCRETE FOR DRIVEWAYS SHALL BE A MINIMUM OF 3,600 PSI IN 28 DAYS CONCRETE WITH4-6 PERCENT ENTRAINED AIR. THE GRADE BELOW THE DRIVEWAY, INCLUDING 4 FOOT OUTSIDE OF THE OUTER EDGE OF THE DRIVEWAY SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY, AND AS INDICATED IN THE "PAVEMENT SUB GRADE NOTES".

DRIVEWAYS SHALL HAVE CONTRACTION JOINTS NOT MORE THAN 15 FEET APART, BOTH TRANSVERSELY AND LONGITUDINALLY ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED ON THE PROPERTY LINES BETWEEN THE APPROACH AND THE DRIVEWAY. THE JOINTS SHALL BE FILLED WITH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND LENGTH OF THE CONCRETE SECTIONS.

FINISHING SHALL BE AS INDICATED IN SECTION III.

NOTE: NO CONCRETE SHALL BE PLACED FOR DRIVEWAYS UNTIL THE SUB GRADE, REINFORCEMENT PLACEMENT HAS BEEN INSPECTED AND APPROVED BY THE CITY OR STATE (WHICHEVER IS APPLICABLE).

B. PARKING LOTS

PARKING LOT SUB GRADE SHALL BE AS INDICATED IN SECTION I.

PAVING SHALL BE 5" REINFORCED CONCRETE IN LIGHT TRAFFIC AREAS AND 6" REINFORCED CONCRETE IN HEAVY TRAFFIC AREAS 3,600 PSI IN 28 DAYS CONCRETE WITH 4-6 % ENTRAINED AIR REINFORCED WITH #4 BARS AT 18" O.C.E.W. SUPPORTED WITH PROPER SUPPORT CHAIRS. EXPANSION JOINTS SHALL BE AT 150' MAXIMUM O.C. AND SAW-CUT CONTRACTION JOINTS AT MAXIMUM 15' OC. ALL JOINTS TO BE CLEANED AND FILLED WITH HOT POURED RUBBER (GRAY).

FINISHING SHALL BE AS INDICATED IN SECTION III.

C. ON-SITE SIDEWALKS

CONCRETE SIDEWALKS SHALL BE A WIDTH AS DESIGNATED ON SITE PLAN AND A MINIMUM OF 4 INCHES THICK, CONSTRUCTED OF 3,600 PSI (6.5 SACK), IN 28 DAYS CONCRETE WITH 4-6% ENTRAINED AIR AND REINFORCED WITH #3 BARS AT 18" O.C.E.W. TOOLED CONSTRUCTION JOINTS SHALL BE 5'-0" OC.ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED EVERY 40 FEET AND WHERE NEW WORK IS CONSTRUCTED ADJACENT TO OTHER CONCRETE WORK (WALLS, FOUNDATION, CURB, ETC.). THE JOINTS SHALL BE FILLED WITH 1/2-INCH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND WIDTH OF THE CONCRETE SECTION.

FINISH OF SIDEWALKS SHALL BE WITH A BROOM FINISH PER ENGINEER. WALKS SHALL HAVE TOOLED CURB EDGES & TOOLED JOINTS.

III. FINISHING FOR CONCRETE DRIVEWAY, PARKING LOT AND STREET CURBS

THE EXPOSED SURFACES OF DRIVEWAYS AND PARKING LOT SHALL HAVE A MONOLITHIC FINISH BY FLOATING WITH A WOODEN FLAT UNTIL A SLIGHT EXCESS OF SAND APPEARS ON THE SURFACES. IN NO CASE SHALL THE SURFACE BE LEFT SLICK OR WITH A GLOSSY FINISH. EXPOSED SURFACES OF SIDEWALKS SHALL HAVE A MONOLITHIC FINISH BY TRAWLING WITH A STEEL TROWEL AND BRUSHED LIGHTLY WITH AN APPROVED BROOM. THE EDGE OF ALL CONCRETE SHALL BE NEATLY ROUNDED TO THE REQUIRED RADII WITH AN EDGING TOOL.

THE EXPOSED SURFACE OF CURBS AND CURBS WITH GUTTER SHALL BE SHAPED WITH A "MULE" AND BRUSHED WITH A WET BRUSH AT RIGHT ANGLE TO THE LINE OF THE CURB TO PRODUCE A UNIFORM TEXTURED SURFACE. THE EDGES SHALL BE NEATLY ROUNDED OFF TO THE REQUIRED RADII. USE OF GROUT OVER A ROUGH FINISHED TEXTURE WILL NOT BE ALLOWED.

PAVING LEGEND

▨	**PROPOSED 10" REINFORCED CONCRETE PAVEMENT 4,200 P.S.I. CONCRETE, 7 1/2 SACK HAND FINISH 7 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.**
⊡	**PROPOSED 6" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.**
░	**PROPOSED 5" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.**
▬	**PROPOSED 4" REINFORCED CONCRETE SIDEWALK 3,000 PS 5.5 SACK MACHINE FINISHI WITH #3 REBARS ON 18" CENTERS EACH WAY. (10'HIKE AND BIKE TRAIL SHALL BE 5" THICK WITH #3 REBARS ON 18" CENTERS EACH WAY)**

SEE LANDSCAPE PLAN LS 1.01 FOR SLEEVES UNDER ALL PAVING WALKS, DRIVES AND PARKING. SEE M.E.P. PLANS ES 1.01 FOR ALL SLEEVE LOCATIONS FOR LIGHTING.

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 *FAX 972-717-2176*
105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

Revision /	Date	
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13	06/05/2018	IRRIGATION METER

Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059
Mike Glenn

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NORTH PAVING PLAN
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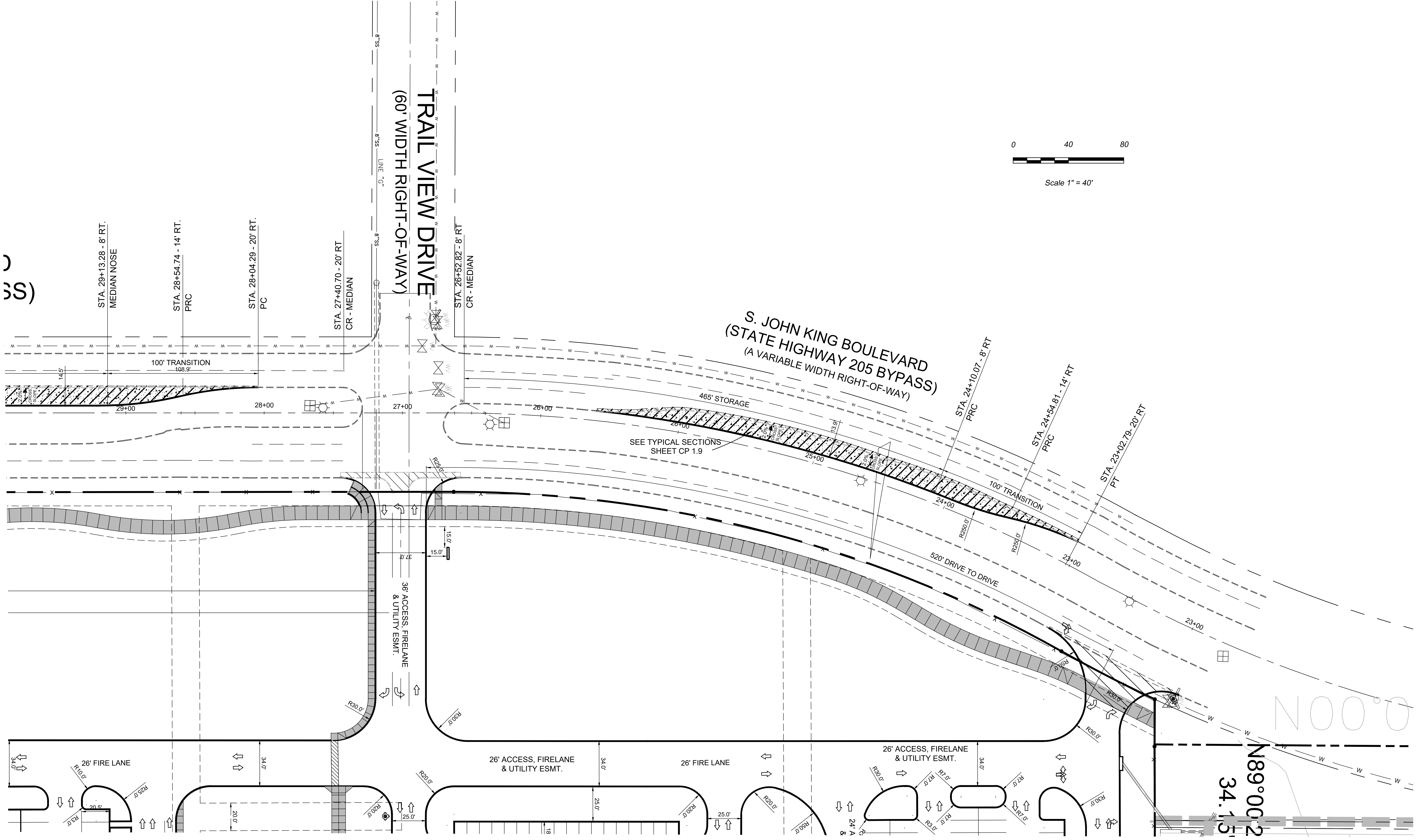
Drawn By: RAH
Date: 02-28-2017
Sheet No. CP1.0



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DRIVEWAYS SHALL HAVE CONTRACTION JOINTS NOT MORE THAN 15 FEET APART, BOTH TRANSVERSELY AND LONGITUDINALLY ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED ON THE PROPERTY LINES BETWEEN THE APPROACH AND THE DRIVEWAY. THE JOINTS SHALL BE FILLED WITH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND LENGTH OF THE CONCRETE SECTIONS.

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CONCRETE SIDEWALKS SHALL BE A WIDTH AS DESIGNATED ON SITE PLAN AND A MINIMUM OF 4 INCHES THICK, CONSTRUCTED OF 3,600 PSI (6.5 SACK), IN 28 DAYS CONCRETE WITH 4-6% ENTRAINED AIR AND REINFORCED WITH #3 BARS AT 18" O.C.E.W. TOOLED CONSTRUCTION JOINTS SHALL BE 5'-0" OC.ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED EVERY 40 FEET AND WHERE NEW WORK IS CONSTRUCTED ADJACENT TO OTHER CONCRETE WORK (WALLS, FOUNDATION, CURB, ETC.). THE JOINTS SHALL BE FILLED WITH 1/2-INCH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND WIDTH OF THE CONCRETE SECTION.

FINISH OF SIDEWALKS SHALL BE WITH A BROOM FINISH PER ENGINEER. WALKS SHALL HAVE TOOLED CURB EDGES & TOOLED JOINTS.

III. FINISHING FOR CONCRETE DRIVEWAY, PARKING LOT AND STREET CURBS

THE EXPOSED SURFACES OF DRIVEWAYS AND PARKING LOT SHALL HAVE A MONOLITHIC FINISH BY FLOATING WITH A WOODEN FLAT UNTIL A SLIGHT EXCESS OF SAND APPEARS ON THE SURFACES. IN NO CASE SHALL THE SURFACE BE LEFT SLICK OR WITH A GLOSSY FINISH. EXPOSED SURFACES OF SIDEWALKS SHALL HAVE A MONOLITHIC FINISH BY TRAWLING WITH A STEEL TROWEL AND BRUSHED LIGHTLY WITH AN APPROVED BROOM. THE EDGE OF ALL CONCRETE SHALL BE NEATLY ROUNDED TO THE REQUIRED RADII WITH AN EDGING TOOL.

THE EXPOSED SURFACE OF CURBS AND CURBS WITH GUTTER SHALL BE SHAPED WITH A "MULE" AND BRUSHED WITH A WET BRUSH AT RIGHT ANGLE TO THE LINE OF THE CURB TO PRODUCE A UNIFORM TEXTURED SURFACE. THE EDGES SHALL BE NEATLY ROUNDED OFF TO THE REQUIRED RADII. USE OF GROUT OVER A ROUGH FINISHED TEXTURE WILL NOT BE ALLOWED.

PAVING LEGEND

▨	PROPOSED 10" REINFORCED CONCRETE PAVEMENT 4,200 P.S.I. CONCRETE, 7 1/2 SACK HAND FINISH 7 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
▭	PROPOSED 6" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
░	PROPOSED 5" REINFORCED CONCRETE PAVEMENT 3,600 P.S.I. CONCRETE, 6 1/2 SACK HAND FINISH 6 SACK MACHINE FINISH WITH #4 REBARS ON 18" CENTERS EACH WAY.
▤	PROPOSED 4" REINFORCED CONCRETE SIDEWALK 3,000 PS 5.5 SACK MACHINE FINISHI WITH #3 REBARS ON 18" CENTERS EACH WAY. (10'HIKE AND BIKE TRAIL SHALL BE 5" THICK WITH #3 REBARS ON 18" CENTERS EACH WAY)

1. ALL DETENTION FACILITIES SHALL BE INSTALLED AND FUNCTIONAL PER PLANS PRIOR TO ANY PAVING BEING PLACED ON SITE INCLUDING BUILDING FOUNDATION.

2. ALL SIDES, SLOPES AND TOP OF DETENTION BASIN SHALL BE SODDED OR ANCHORED ON SEEDED CURLEX PRIOR TO ANY PAVING BEING PLACED INCLUDING BUILDING FOUNDATION,.

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
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105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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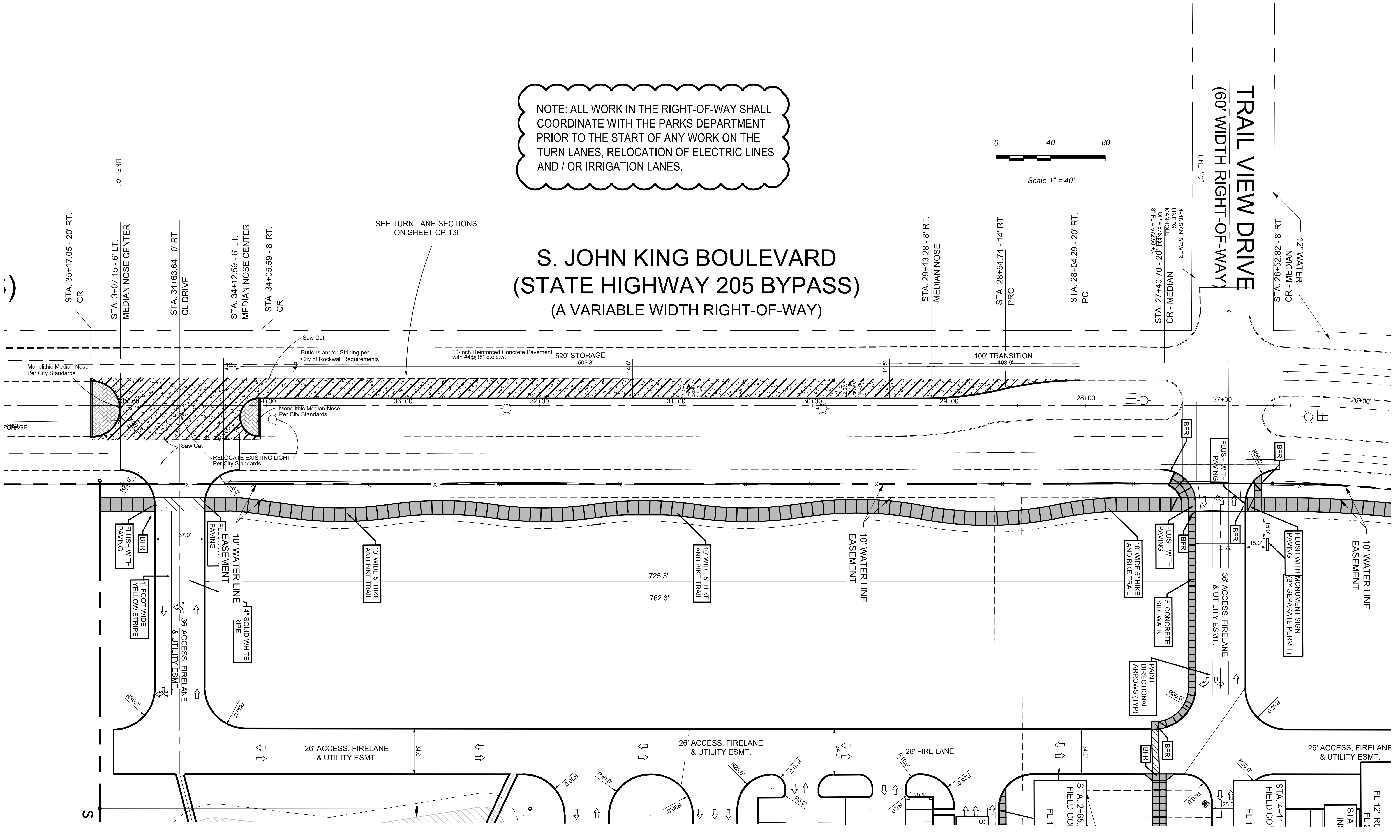
TURN LANE PLAN

8

Job. No. 1759-03-01	**Sheet No.** CP1.1
Drawn By: RAH	
Date: 02-28-2017	

Plotted: Jul 25, 2018, 12:10 PM by user: robert - Saved: 7/25/2018 by user: john
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA RECORD DRAWINGS.dwg



1. ALL DETENTION FACILITIES SHALL BE INSTALLED AND FUNCTIONAL PER PLANS PRIOR TO ANY PAVING BEING PLACED ON SITE INCLUDING BUILDING FOUNDATION.

2. ALL SIDES, SLOPES AND TOP OF DETENTION BASIN SHALL BE SODDED OR ANCHORED ON SEEDED CURLEX PRIOR TO ANY PAVING BEING PLACED INCLUDING BUILDING FOUNDATION,.

PAVING NOTES:

THE INITIAL SOIL TEST AND REPORT BY FUGRO SOUTH, INC. PROJECT NO.0703-1081 AND ANY AND ALL SUBSEQUENT REPORTS PREPARED FOR THIS PROJECT BY FUGRO SOUTH OR BY OTHER FIRM, AGENCY OR ENTITY, EVEN THOUGH NO SPECIFIC REFERENCE TO ANY SUCH REPORTS ARE CONTAINED IN THE PLANS AND/OR SPECIFICATIONS FOR THIS PROJECT, ARE MADE A PART OF THIS PLAN. A COPY CAN BE OBTAINED THROUGH THE ARCHITECT OR ENGINEER.

I. PAVEMENT SUB GRADE FOR A & B, BELOW

THE CLAY SOILS ENCOUNTERED NEAR THE EXISTING GROUND SURFACE WILL PROBABLY CONSTITUTE THE SUB GRADE FOR MOST OF THE PARKING AND DRIVE AREAS. THEREFORE, IT IS RECOMMENDED THAT THESE SOILS BE IMPROVED PRIOR TO CONSTRUCTION OF THE PAVEMENTS.

IT IS RECOMMENDED THAT THE EXISTING CLAY SOILS IN DRIVE AND PARKING AREAS BE EXCAVATED TO ACHIEVE FINAL SUB GRADE ELEVATION. THE EXPOSED SURFACE OF THE CLAYS SHOULD BE SCARIFIED TO A DEPTH OF AT LEAST 6 INCHES AND MIXED WITH AN ESTIMATED 7 PERCENT OF HYDRATED LIME (BY DRY UNIT WEIGHT) IN CONFORMANCE WITH TEXAS HIGHWAY DEPARTMENT ITEM 260. ASSUMING AN IN-PLACE UNIT WEIGHT OF 100 PCF FOR THE PAVEMENT SUB GRADE SOILS, THIS PERCENTAGE OF LIME EQUATES TO ABOUT 32 LBS OF LIME PER SQ. YARD OF SUB GRADE TREATED. THE ACTUAL AMOUNT OF LIME REQUIRED SHOULD BE DETERMINED BY ADDITIONAL LABORATORY TESTS. IT IS RECOMMENDED THAT THE LIME STABILIZATION PROCEDURES EXTEND AT LEAST 4 FT. BEYOND THE EDGE OF THE PAVEMENT TO MINIMIZE THE EFFECTS OF SEASONAL SHRINKING UPON THE EXTREME EDGES OF PAVEMENT. THE SOIL-LIME MIXTURE SHOULD THEN BE COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D 698) WITHIN 3 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT. IN ALL AREAS WHERE HYDRATED LIME IS USED TO STABILIZE THE SUB GRADE SOILS, ROUTINE ATTERBERG-LIMIT TESTS SHOULD BE PERFORMED TO ASSURE THAT THE RESULTING PLASTICITY INDEX OF THE SOIL-LIME MIXTURE IS AT/OR BELOW 15.

THE CLIENT SHOULD BE AWARE THAT MECHANICAL LIME STABILIZATION OF THE PAVEMENT SUB GRADE SOILS WILL NOT PREVENT DEEP SEATED MOVEMENT OF THE UNDERLYING UNTREATED MATERIALS. FUTURE MAINTENANCE OF PAVEMENTS SHOULD BE EXPECTED OVER THE LIFE OF THE STRUCTURE.

II. PAVING

CONCRETE DRIVEWAY APPROACHES SHALL BE A MINIMUM OF 6 INCHES THICK. CONCRETE DRIVEWAY APPROACHES SHALL HAVE A RISE OF NOT LESS THAN 6 INCHES NOR MORE THAN 9 INCHES FROM THE FLOW LINE OF THE GUTTER TO A POINT 10 FEET BEHIND THE FACE OF THE GUTTER. CONCRETE FOR DRIVEWAYS SHALL BE A MINIMUM OF 3,600 PSI IN 28 DAYS CONCRETE WITH4-6 PERCENT ENTRAINED AIR. THE GRADE BELOW THE DRIVEWAY, INCLUDING 4 FOOT OUTSIDE OF THE OUTER EDGE OF THE DRIVEWAY SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY, AND AS INDICATED IN THE "PAVEMENT SUB GRADE NOTES".

DRIVEWAYS SHALL HAVE CONTRACTION JOINTS NOT MORE THAN 15 FEET APART, BOTH TRANSVERSELY AND LONGITUDINALLY ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED ON THE PROPERTY LINES BETWEEN THE APPROACH AND THE DRIVEWAY. THE JOINTS SHALL BE FILLED WITH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND LENGTH OF THE CONCRETE SECTIONS.

FINISHING SHALL BE AS INDICATED IN SECTION III.

NOTE: NO CONCRETE SHALL BE PLACED FOR DRIVEWAYS UNTIL THE SUB GRADE, REINFORCEMENT PLACEMENT HAS BEEN INSPECTED AND APPROVED BY THE CITY OR STATE (WHICHEVER IS APPLICABLE).

B. PARKING LOTS

PARKING LOT SUB GRADE SHALL BE AS INDICATED IN SECTION I.

PAVING SHALL BE 5" REINFORCED CONCRETE IN LIGHT TRAFFIC AREAS AND 6" REINFORCED CONCRETE IN HEAVY TRAFFIC AREAS 3,600 PSI (6.5 SACK) IN 28 DAYS CONCRETE WITH 4-6 % ENTRAINED AIR REINFORCED WITH #4 BARS AT 18" O.C.E.W. SUPPORTED WITH PROPER SUPPORT CHAIRS. EXPANSION JOINTS SHALL BE AT 150' MAXIMUM O.C. AND SAW-CUT CONTRACTION JOINTS AT MAXIMUM 15' OC. ALL JOINTS TO BE CLEANED AND FILLED WITH HOT POURED RUBBER (GRAY).

FINISHING SHALL BE AS INDICATED IN SECTION III.

C. ON-SITE SIDEWALKS

CONCRETE SIDEWALKS SHALL BE A WIDTH AS DESIGNATED ON SITE PLAN AND A MINIMUM OF 4 INCHES THICK, CONSTRUCTED OF 3,600 PSI, IN 28 DAYS CONCRETE WITH 4-6% ENTRAINED AIR AND REINFORCED WITH #3 BARS AT 18" O.C.E.W. TOOLED CONSTRUCTION JOINTS SHALL BE 5'-0" OC.ONE-HALF INCH EXPANSION JOINT SHALL BE PLACED EVERY 40 FEET AND WHERE NEW WORK IS CONSTRUCTED ADJACENT TO OTHER CONCRETE WORK (WALLS, FOUNDATION, CURB, ETC.). THE JOINTS SHALL BE FILLED WITH 1/2-INCH PRE MOLDED GRAY BITUMINOUS EXPANSION JOINT FILLER AND SHALL EXTEND THE ENTIRE DEPTH AND WIDTH OF THE CONCRETE SECTION.

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THE EXPOSED SURFACE OF CURBS AND CURBS WITH GUTTER SHALL BE SHAPED WITH A "MULE" AND BRUSHED WITH A WET BRUSH AT RIGHT ANGLE TO THE LINE OF THE CURB TO PRODUCE A UNIFORM TEXTURED SURFACE. THE EDGES SHALL BE NEATLY ROUNDED OFF TO THE REQUIRED RADII. USE OF GROUT OVER A ROUGH FINISHED TEXTURE WILL NOT BE ALLOWED.

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RECORD DRAWING

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Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

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IRVING, TEXAS 75062

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

Mike Glenn

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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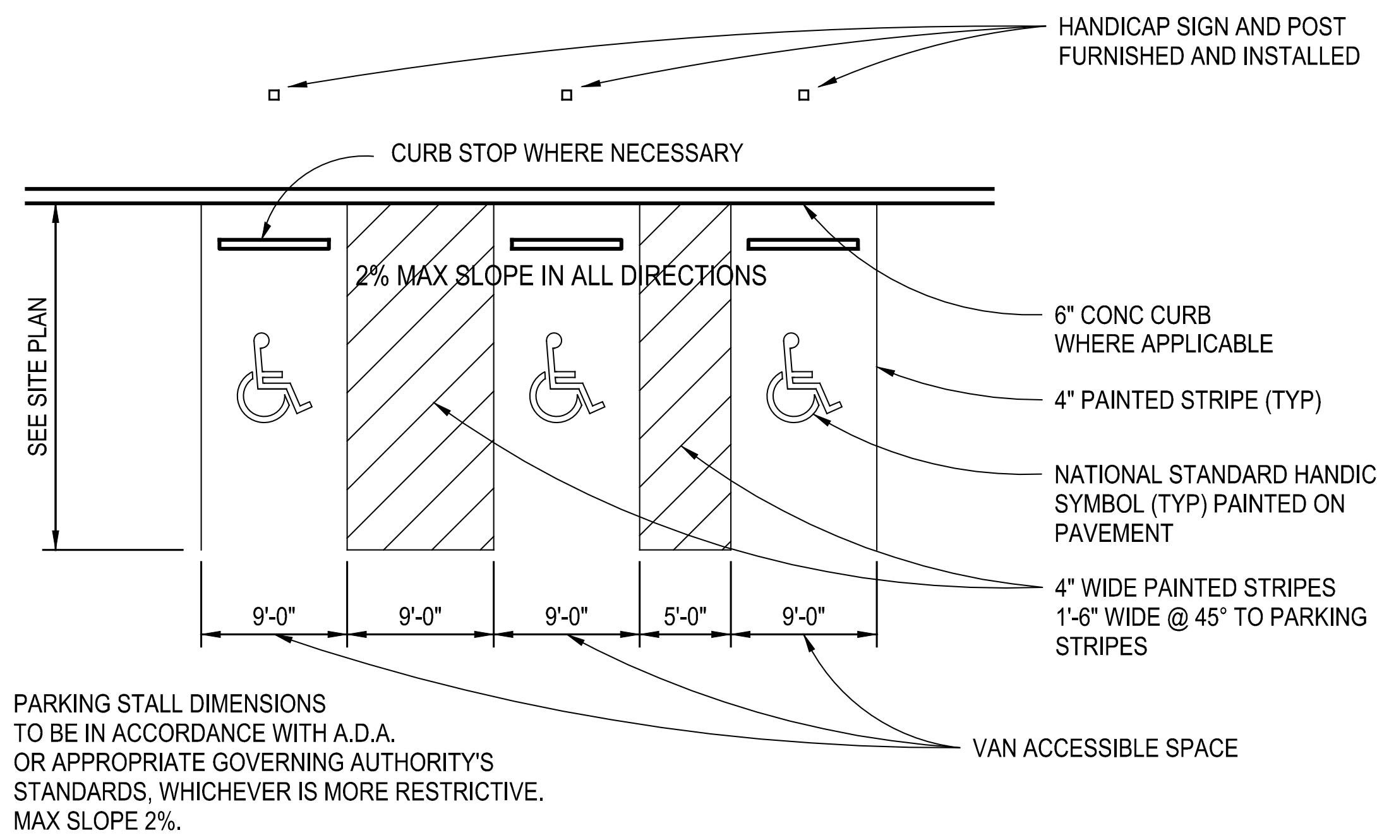
TURN LANE PLAN
8

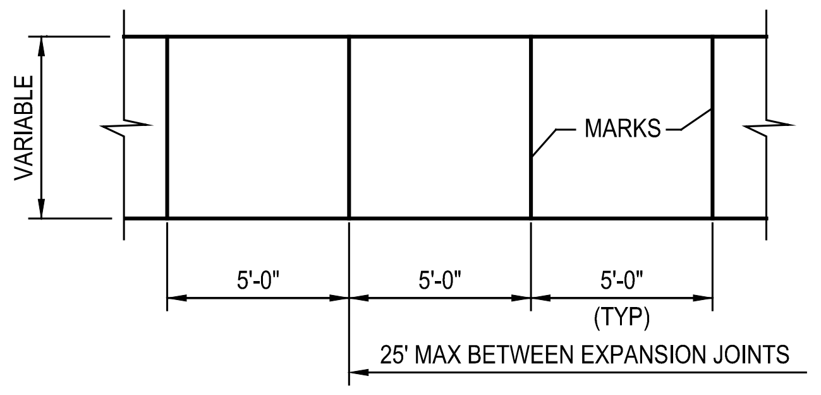
Job. No. 1759-03-01	Sheet No.
Drawn By: RAH	CP1.2
Date: 02-28-2017	


HANDICAP SIGN AND POST FURNISHED AND INSTALLED
CURB STOP WHERE NECESSARY
2% MAX SLOPE IN ALL DIRECTIONS
SEE SITE PLAN
6" CONC CURB WHERE APPLICABLE
4" PAINTED STRIPE (TYP)
NATIONAL STANDARD HANDICAP SYMBOL (TYP) PAINTED ON PAVEMENT
4" WIDE PAINTED STRIPES 1'-6" WIDE @ 45° TO PARKING STRIPES
9'-0"
9'-0"
9'-0"
5'-0"
9'-0"
VAN ACCESSIBLE SPACE

NOTE: PARKING STALL DIMENSIONS TO BE IN ACCORDANCE WITH A.D.A. OR APPROPRIATE GOVERNING AUTHORITY'S STANDARDS, WHICHEVER IS MORE RESTRICTIVE. MAX SLOPE 2%.

ACCESSIBLE PARKING STALL DETAILS

NOT TO SCALE

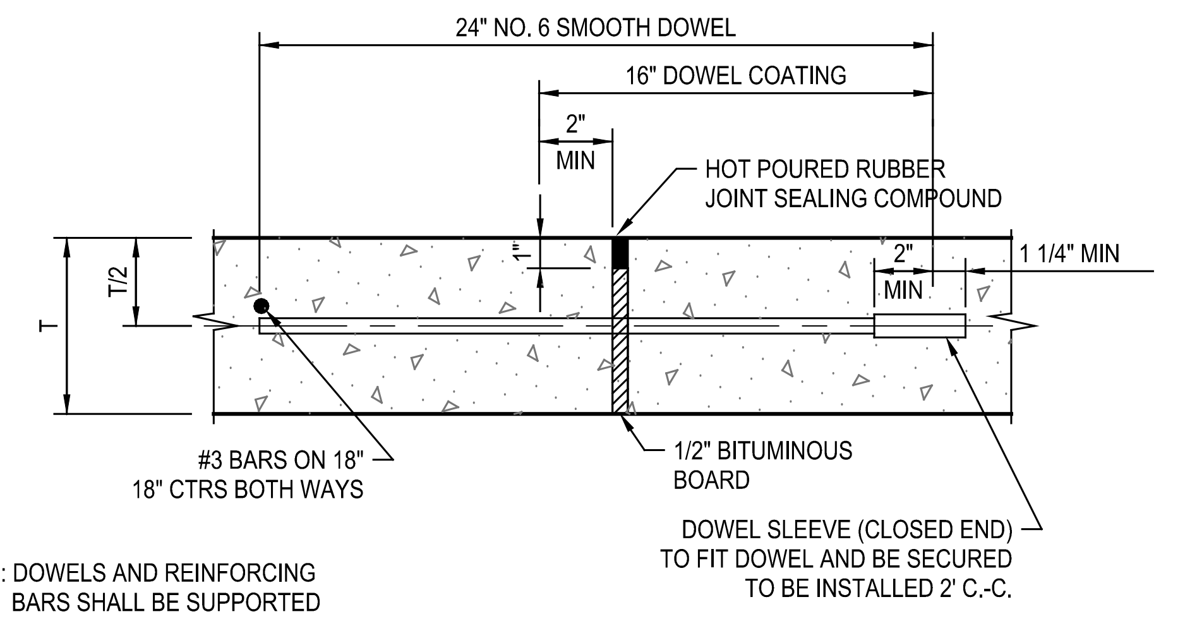


NOTES:

1. AT MARKINGS THE CONCRETE SHALL BE A TOOLED JOINT 3/4" DEEP, FOLLOWED BY GROOVING TOOL. STRENGTH SHALL BE 3000 p.s.i. WITH #3 BARS @ 18" O.C.
2. SIDEWALKS ADJACENT TO BUILDING TO BE PLACED ON LIME TREATED SUBGRADE THE SAME AS PAVING ALL OTHER SIDEWALKS TO BE PLACED OVER 1" MAX COMPACTED SAND. (PI < 15)

SIDEWALK PLAN

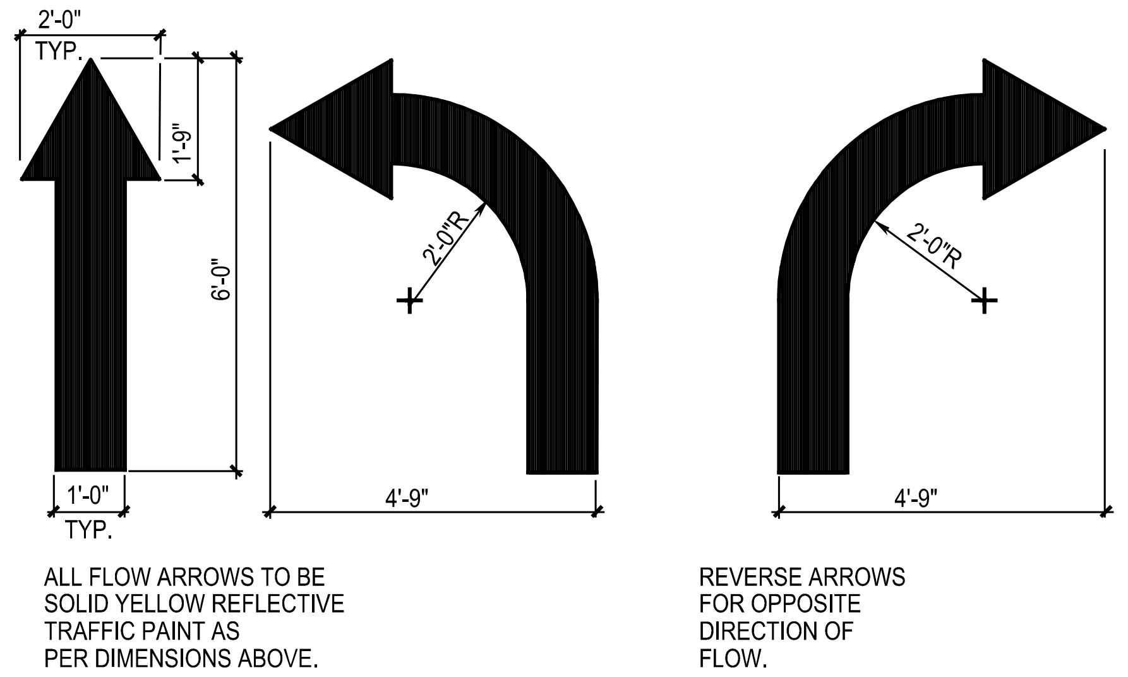
NTS


24" NO. 6 SMOOTH DOWEL
16" DOWEL COATING
2" MIN
HOT POURED RUBBER JOINT SEALING COMPOUND
1"
2" MIN
1 1/4" MIN
T/2
T
#3 BARS ON 18" 18" CTRS BOTH WAYS
1/2" BITUMINOUS BOARD
DOWEL SLEEVE (CLOSED END) TO FIT DOWEL AND BE SECURED TO BE INSTALLED 2' C.-C.

NOTE: DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE

EXPANSION JOINT DETAIL

NTS MAXIMUM SPACING = 150 FEET

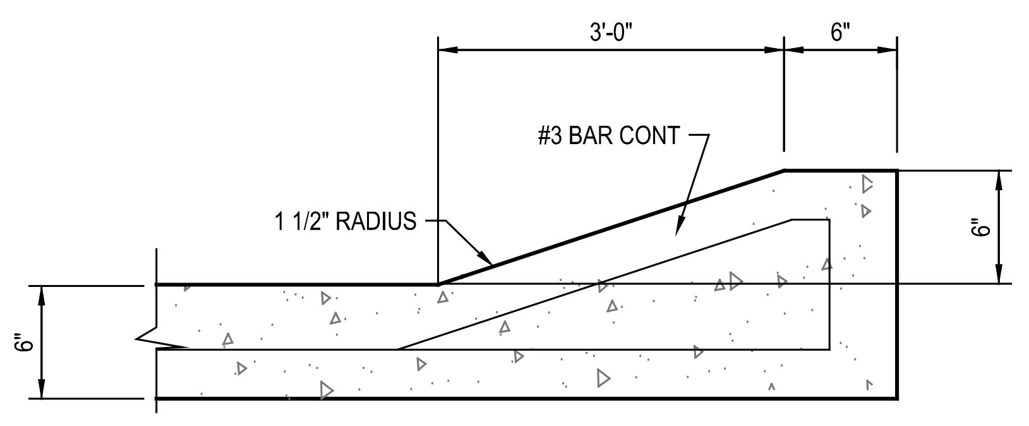


ALL FLOW ARROWS TO BE SOLID YELLOW REFLECTIVE TRAFFIC PAINT AS PER DIMENSIONS ABOVE.

REVERSE ARROWS FOR OPPOSITE DIRECTION OF FLOW.

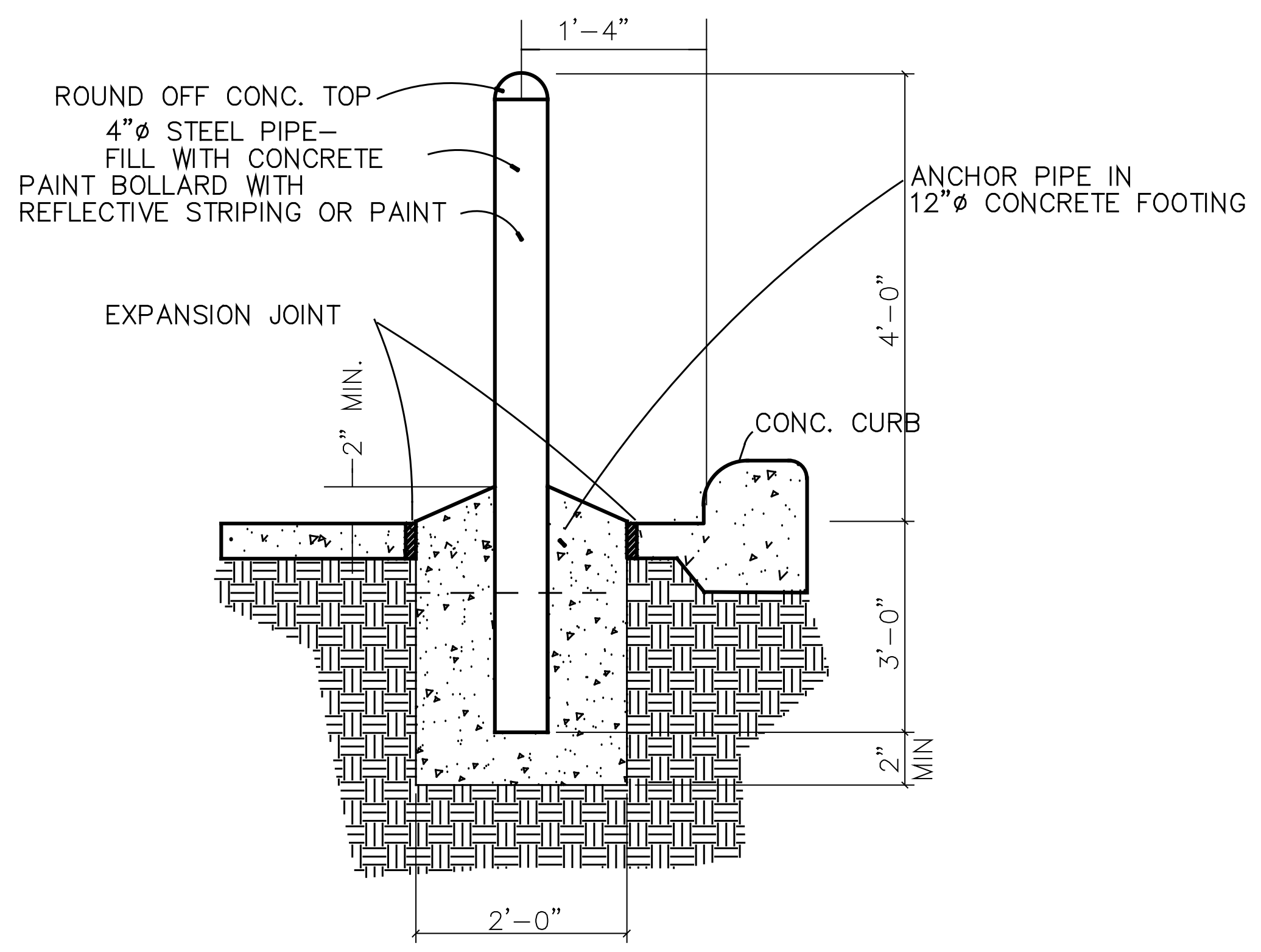
PAINTED TRAFFIC ARROWS

NOT TO SCALE



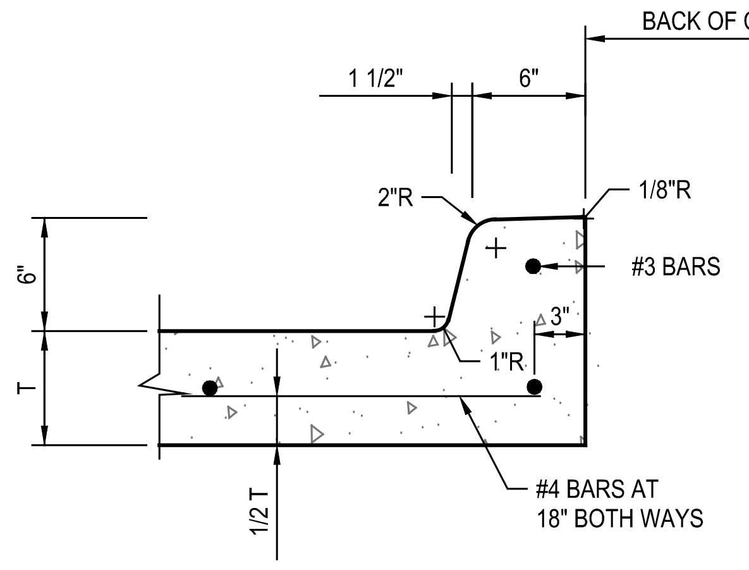
TYPICAL ROLL-OVER CURB

NTS


1'–4"
ROUND OFF CONC. TOP
4"ø STEEL PIPE– FILL WITH CONCRETE
PAINT BOLLARD WITH REFLECTIVE STRIPING OR PAINT
ANCHOR PIPE IN 12"ø CONCRETE FOOTING
EXPANSION JOINT
2" MIN.
4'–0"
CONC. CURB
3'–0"
2" MIN
2'–0"

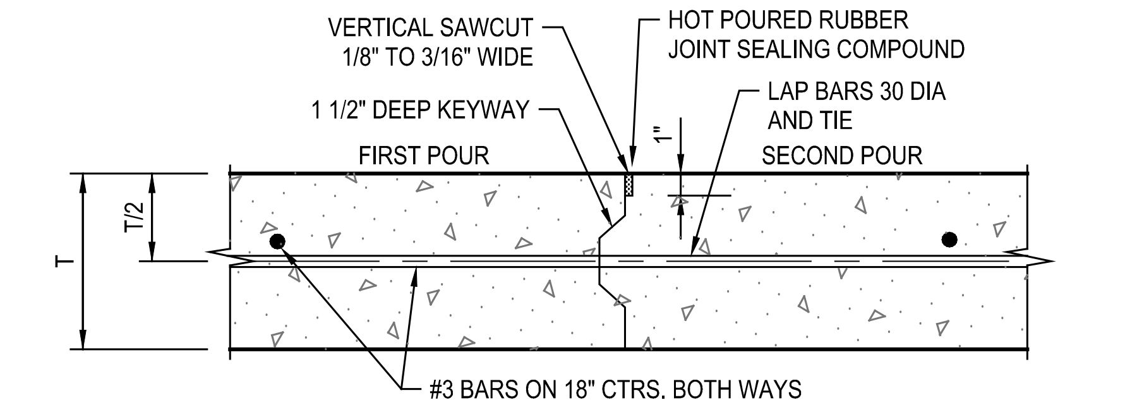
STEEL PIPE BOLLARD DETAIL

NOT TO SCALE



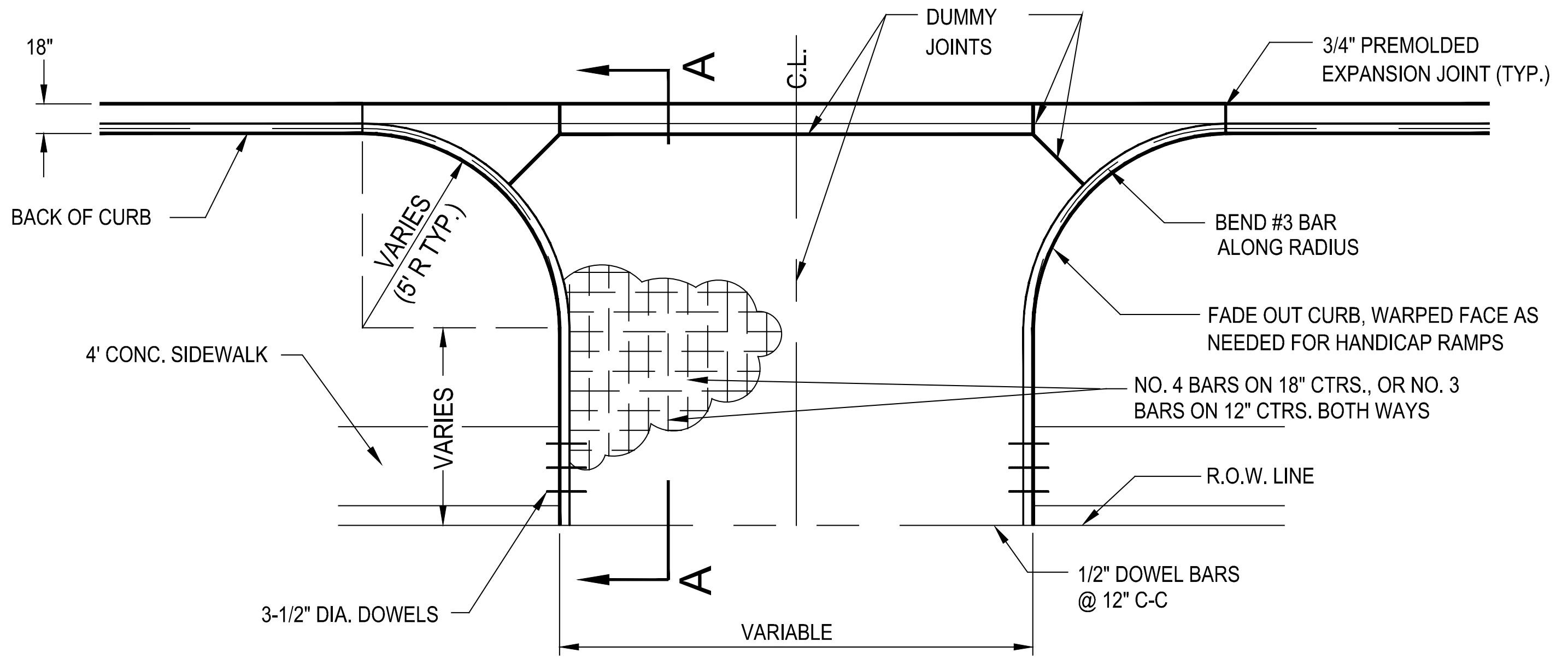
INTEGRAL CURB & GUTTER

NTS


VERTICAL SAWCUT 1/8" TO 3/16" WIDE
HOT POURED RUBBER JOINT SEALING COMPOUND
1 1/2" DEEP KEYWAY
LAP BARS 30 DIA AND TIE
FIRST POUR
SECOND POUR
1"
T/2
T
#3 BARS ON 18" CTRS. BOTH WAYS

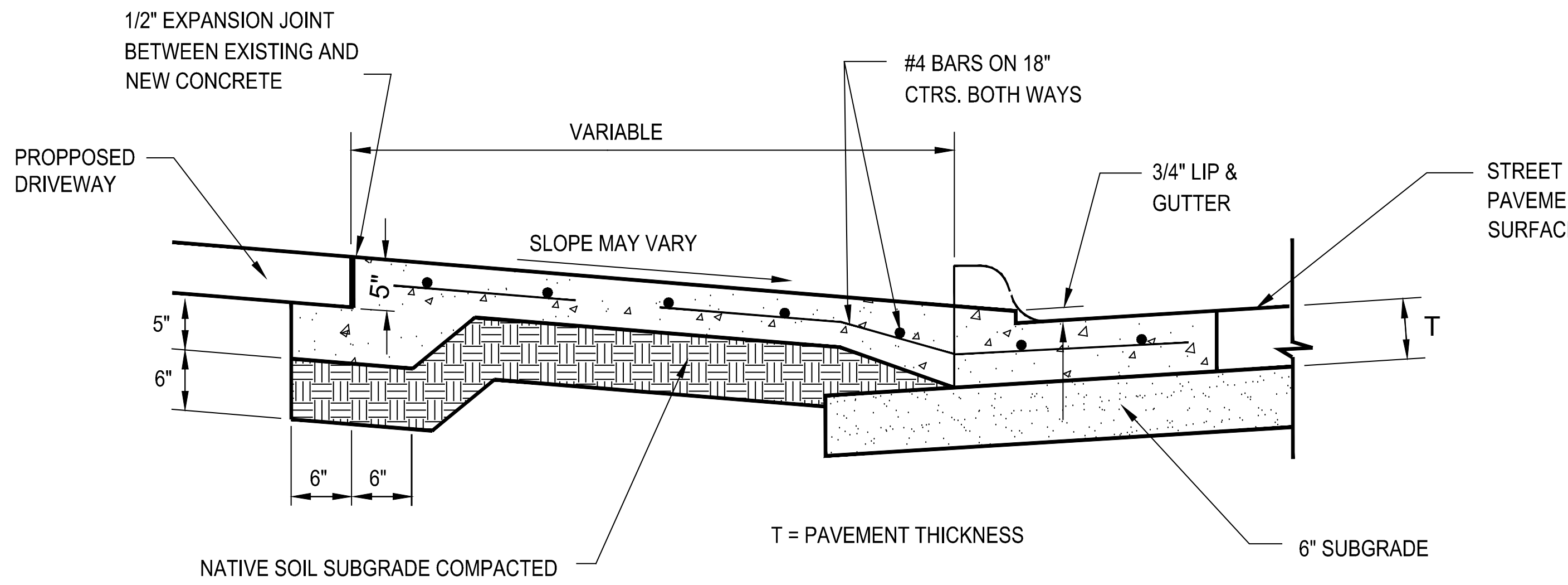
CONSTRUCTION JOINT DETAIL (L)

NTS


18"
A
C.L.
DUMMY JOINTS
3/4" PREMOLDED EXPANSION JOINT (TYP.)
BACK OF CURB
VARIES (5' R TYP.)
BEND #3 BAR ALONG RADIUS
FADE OUT CURB, WARPED FACE AS NEEDED FOR HANDICAP RAMPS
4' CONC. SIDEWALK
VARIES
NO. 4 BARS ON 18" CTRS., OR NO. 3 BARS ON 12" CTRS. BOTH WAYS
R.O.W. LINE
A
3-1/2" DIA. DOWELS
1/2" DOWEL BARS @ 12" C-C
VARIABLE

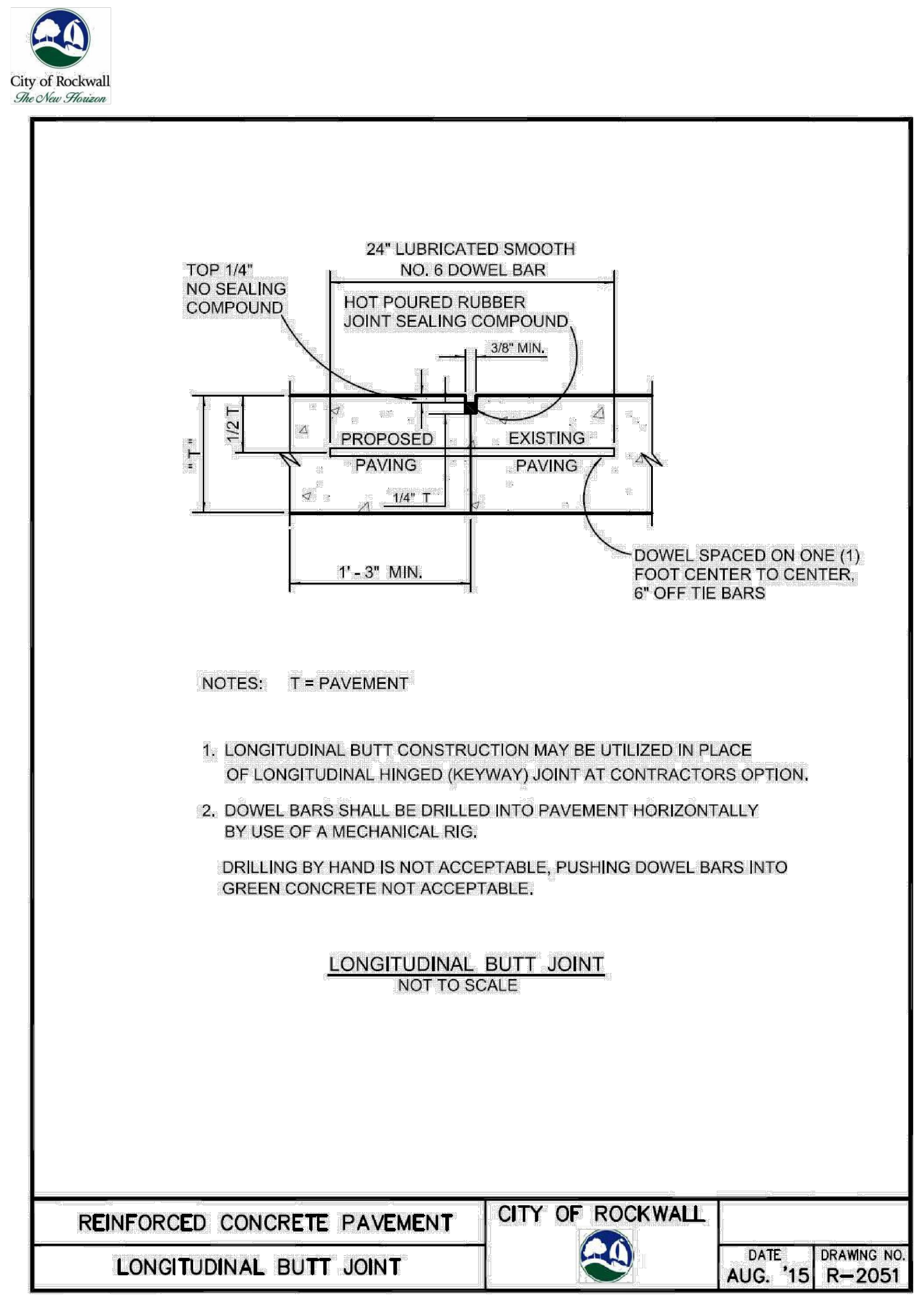
TYPICAL DRIVE APPROACH

SCALE: 1/8" = 1'-0"


1/2" EXPANSION JOINT BETWEEN EXISTING AND NEW CONCRETE
#4 BARS ON 18" CTRS. BOTH WAYS
VARIABLE
PROPPOSED DRIVEWAY
3/4" LIP & GUTTER
STREET PAVEMENT SURFACE
SLOPE MAY VARY
5"
5"
6"
T
6"
6"
NATIVE SOIL SUBGRADE COMPACTED TO 95% STANDARD DENSITY
T = PAVEMENT THICKNESS
6" SUBGRADE

SECTION A-A
(FOR TYPICAL DRIVE APPROACH)

SCALE: 3/4" = 1'-0"


City of Rockwall
The New Horizon

24" LUBRICATED SMOOTH NO. 6 DOWEL BAR
TOP 1/4" NO SEALING COMPOUND
HOT POURED RUBBER JOINT SEALING COMPOUND
3/8" MIN.
1/2 T
"T"
PROPOSED PAVING
EXISTING PAVING
1/4" T
1' - 3" MIN.
DOWEL SPACED ON ONE (1) FOOT CENTER TO CENTER, 6" OFF TIE BARS

NOTES: T = PAVEMENT

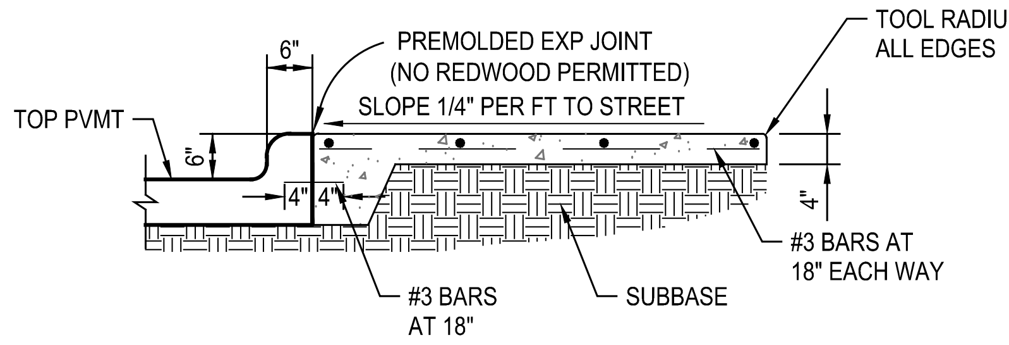
1. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
2. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG.

DRILLING BY HAND IS NOT ACCEPTABLE, PUSHING DOWEL BARS INTO GREEN CONCRETE NOT ACCEPTABLE.

LONGITUDINAL BUTT JOINT
NOT TO SCALE

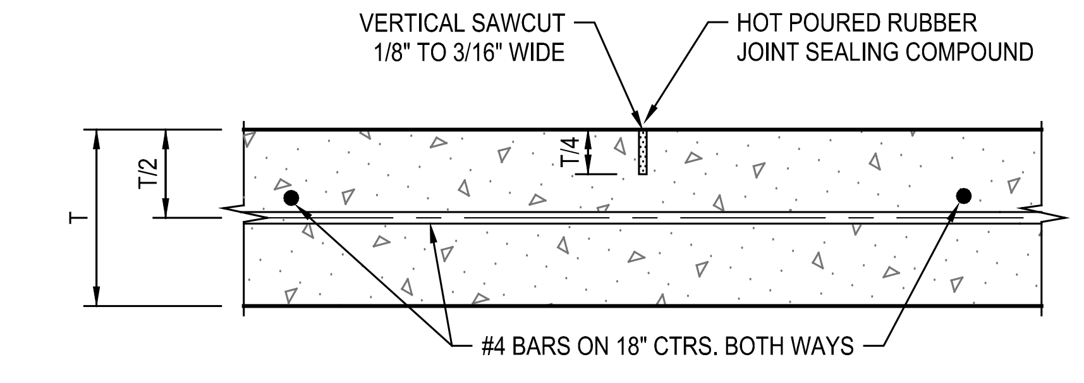
REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	DATE	DRAWING NO.
LONGITUDINAL BUTT JOINT		AUG. '15	R–2051

Page 214



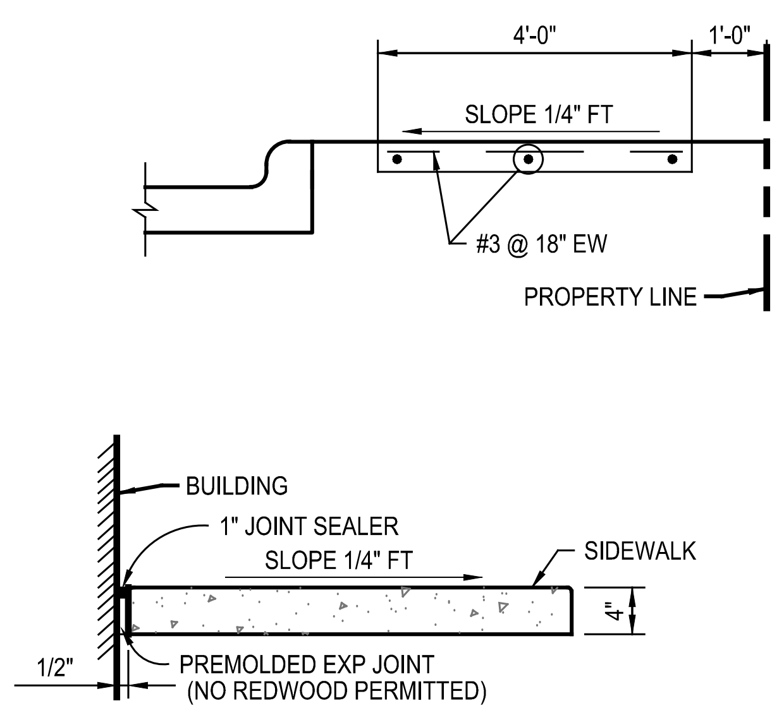
INTERIOR SIDEWALK
TYPICAL SECTION

NTS


VERTICAL SAWCUT 1/8" TO 3/16" WIDE
HOT POURED RUBBER JOINT SEALING COMPOUND
T/4
T/2
T
#4 BARS ON 18" CTRS. BOTH WAYS

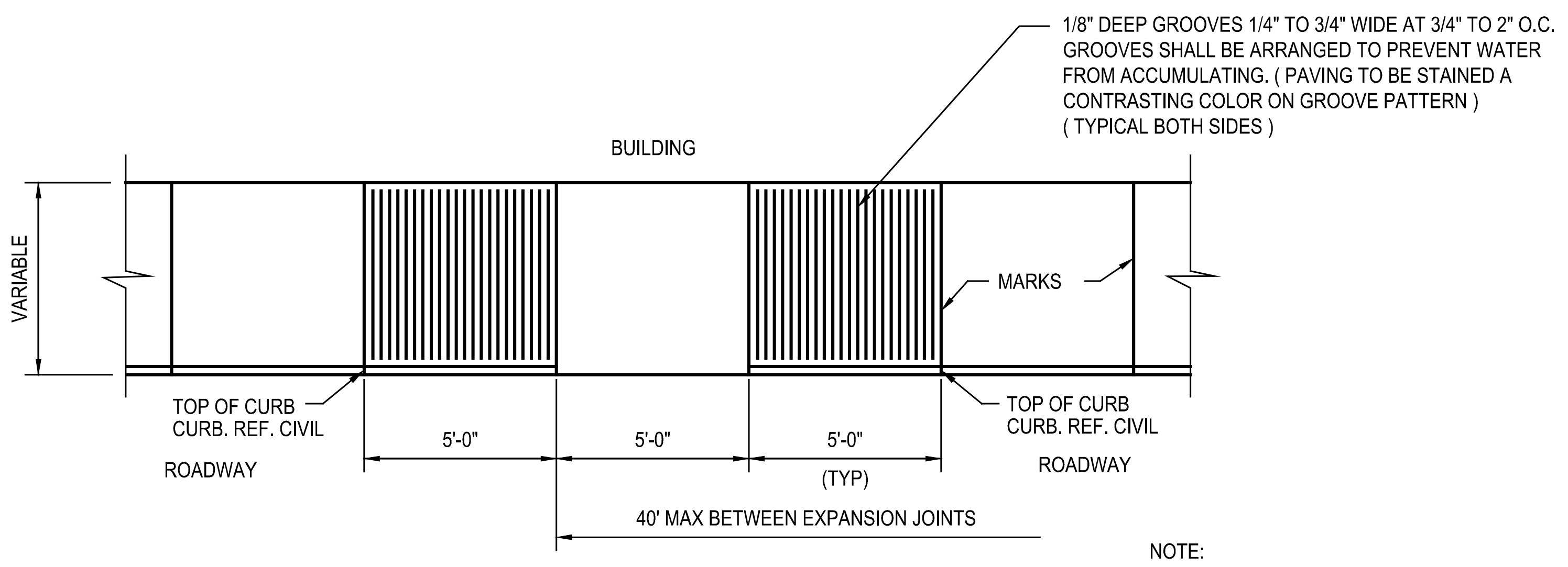
NTS MAXIMUM SPACING = 15 FEET

SAWED DUMMY JOINT DETAIL (T)



WALK/BUILDING/CURB
INTERFACE

NTS


1/8" DEEP GROOVES 1/4" TO 3/4" WIDE AT 3/4" TO 2" O.C. GROOVES SHALL BE ARRANGED TO PREVENT WATER FROM ACCUMULATING. (PAVING TO BE STAINED A CONTRASTING COLOR ON GROOVE PATTERN) (TYPICAL BOTH SIDES)
BUILDING
VARIABLE
MARKS
TOP OF CURB CURB. REF. CIVIL
ROADWAY
5'-0"
5'-0"
5'-0"
(TYP)
TOP OF CURB CURB. REF. CIVIL
ROADWAY
40' MAX BETWEEN EXPANSION JOINTS

NOTES:

1. AT MARKINGS THE CONCRETE SHALL BE A TOOLED JOINT 3/4" DEEP, FOLLOWED BY GROOVING TOOL. STRENGTH SHALL BE 3600 p.s.i. WITH #3 BARS @ 18" O.C.
2. SIDEWALKS ADJACENT TO BUILDING TO BE PLACED ON LIME TREATED SUBGRADE THE SAME AS PAVING ALL OTHER SIDEWALKS TO BE PLACED OVER 2" COMPACTED SELECT FILL. (PI < 15)

NOTE:
ALL ADA REQUIREMENTS SHALL MEET STATE AND FEDERAL STANDARDS.

SIDEWALK PLAN

NTS

RECORD DRAWING

This is to certify that changes and corrections have been made to conform to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

PRIVATE PAVING DETAILS

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
FAX 972-717-2176
105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN
35059

The seal appearing on this document was authorized by Mike Glenn, P.E. 35059, on June 06, 2018

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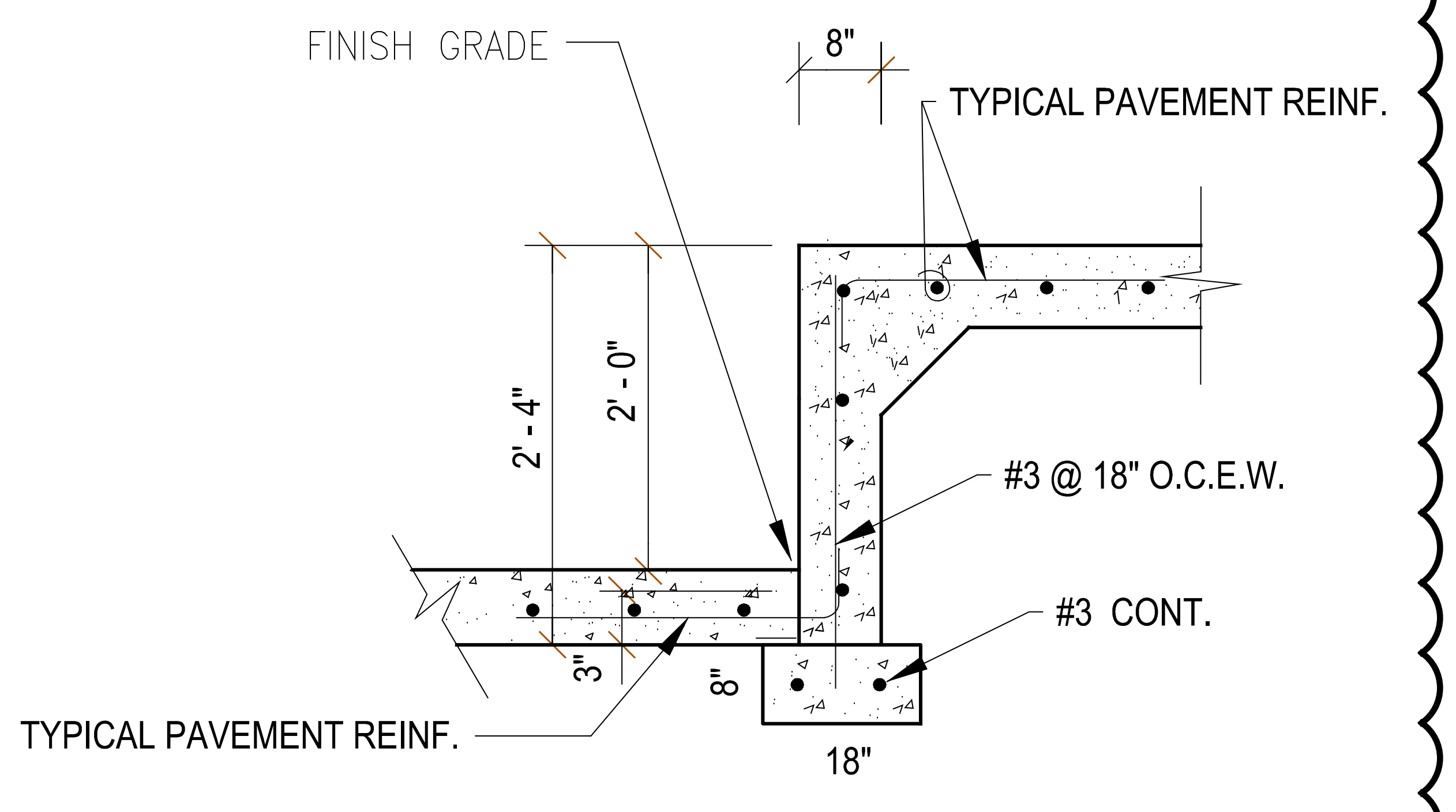
8

Job. No.
1759-03-01

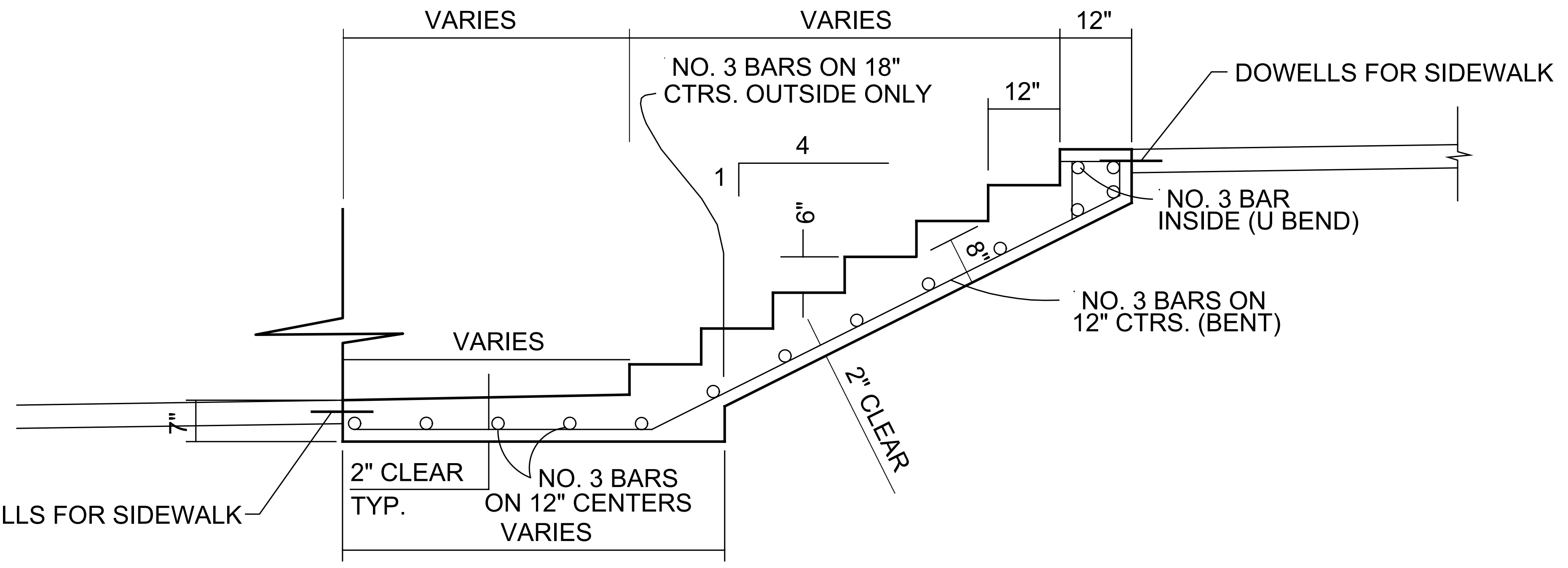
Drawn By:
RAH

Date:
02-28-2017

Sheet No.
CP1.3



TURNDOWN SIDEWALK DETAIL
SECTION "A–A"
NTS



SECTION A-A
TYPE 2 STEPS

GENERAL NOTES

1. CONCRETE FOR STEPS TO BE CLASS A CONCRETE.
2. BARS SHALL CONFORM TO SECTION 2.2.6 OF THE NCTCOG SPECIFICATIONS.
3. BAR LAPS SHALL BE 30 DIAMETERS.
4. ALL EXPOSED SURFACES EXCEPT STEP TREADS AND WALK SHALL RECEIVE A RUBBED FINISH.
5. STEP TREADS AND WALK SHALL RECEIVE A NON-SKID WOOD FLOAT FINISH.
6. WIDTH OF TREAD AND/OR DEPTH OF RISE OF ALL STEPS MAY BE MODIFIED IF SO INDICATED ON THE PLANS.
7. EXPANSION JOINTS SHALL BE COMPOSED OF 1/2" PREMOLDED JOINT FILLER.

RECORD DRAWING

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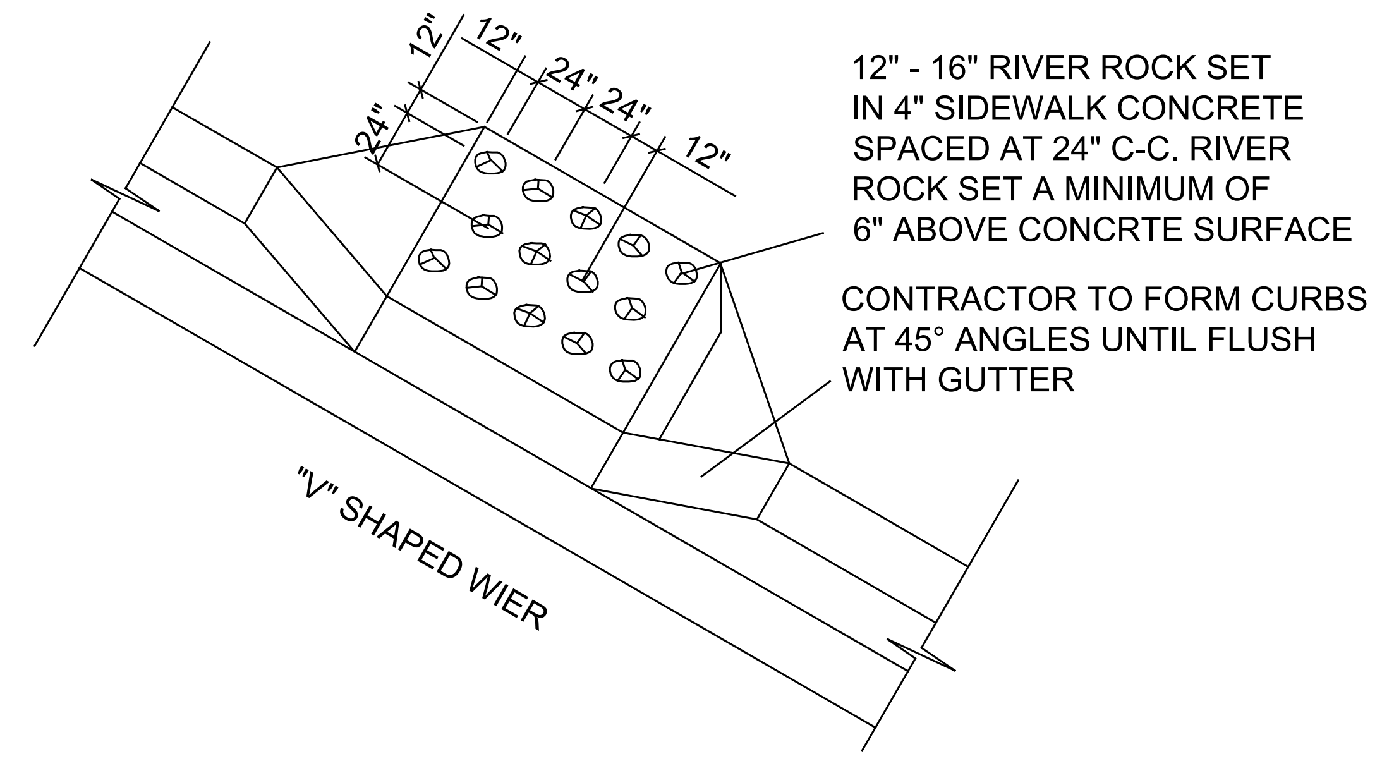
Signed Mike Glenn Date July 25, 2018

Glenn Engineering Corporation

1



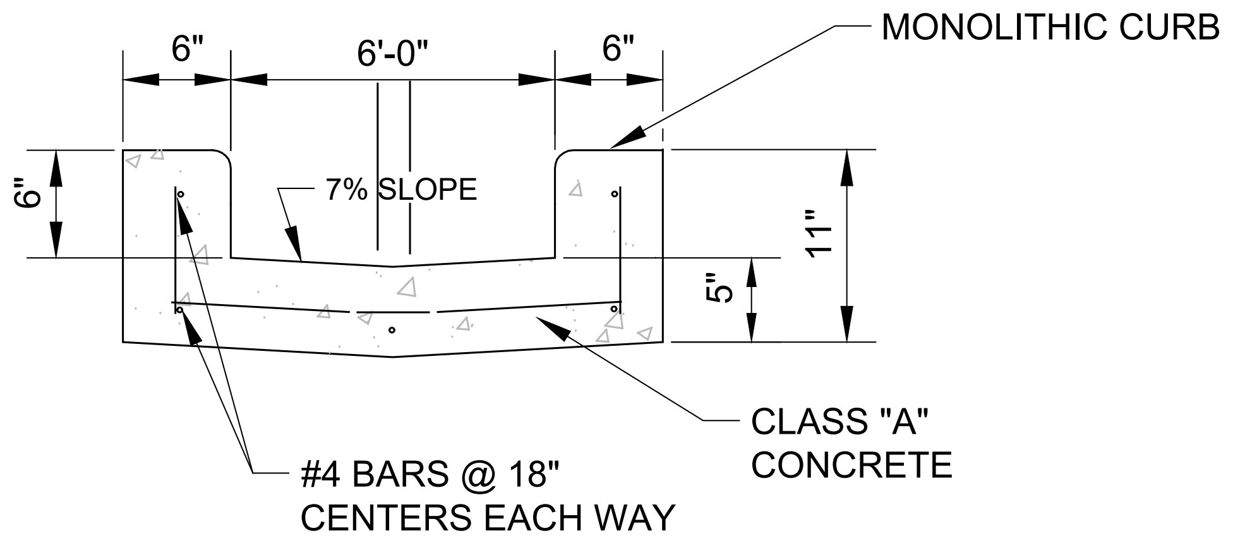
12" - 16" RIVER ROCK SET IN 4" SIDEWALK CONCRETE SPACED AT 24" C-C. RIVER ROCK SET A MINIMUM OF 6" ABOVE CONCRTE SURFACE

CONTRACTOR TO FORM CURBS AT 45° ANGLES UNTIL FLUSH WITH GUTTER

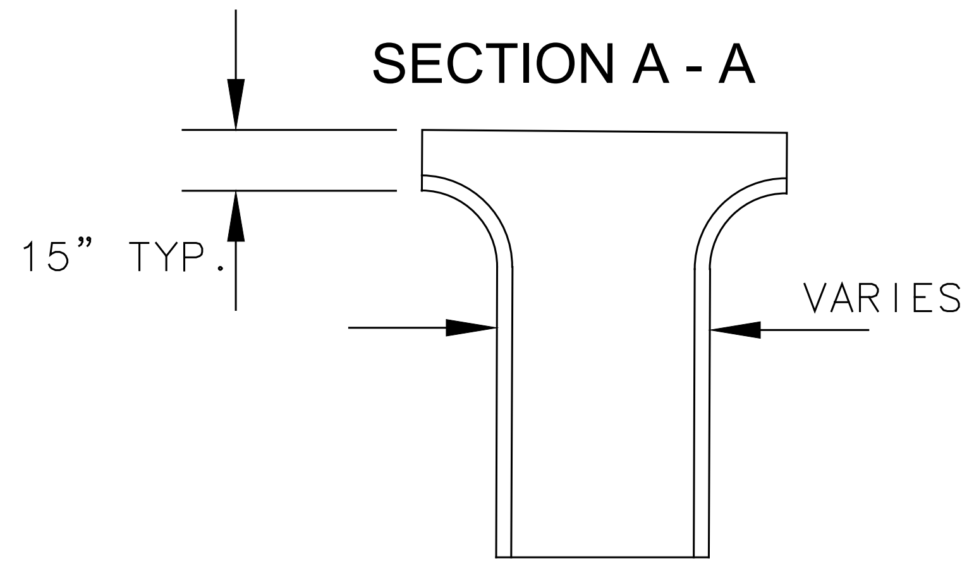
SECTION "B-B"
RIVER ROCK ENERGY DISSIPATER

NOTES:

1. FLUME NEEDS TO BE FLARED AT ENTRANCE ONLY FOR HYDRAULIC PURPOSES.



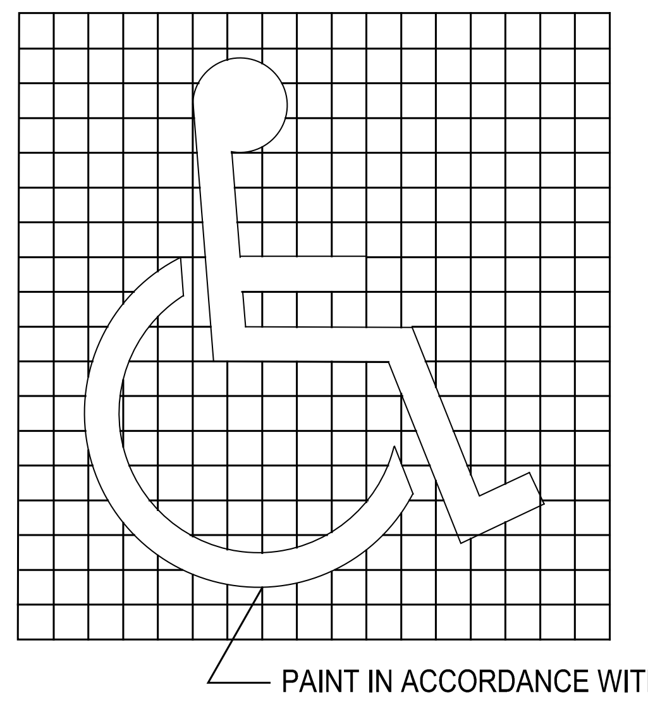
SECTION A - A



PLAN

CONCRETE FLUME

NTS

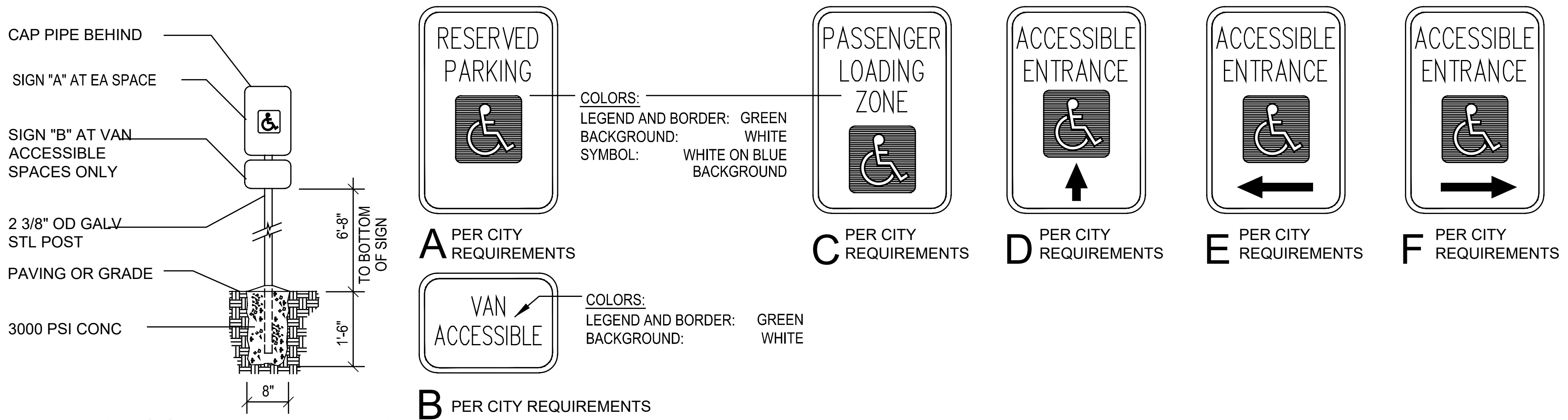


NOTE:
GRID FOR LAYOUT PURPOSES ONLY.

PAINT IN ACCORDANCE WITH "STATE OF TEXAS ACCESSIBILITY STANDARDS"

ACCESSIBLE SYMBOL DETAIL

NTS

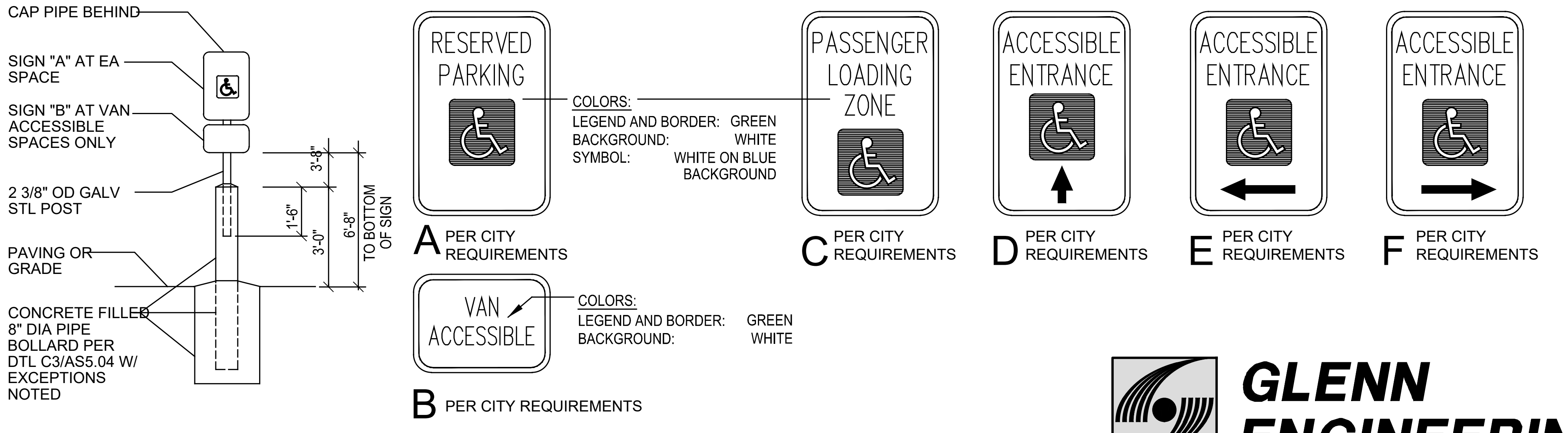


COLORS:
LEGEND AND BORDER: GREEN
BACKGROUND: WHITE
SYMBOL: WHITE ON BLUE BACKGROUND

COLORS:
LEGEND AND BORDER: GREEN
BACKGROUND: WHITE

ACCESSIBLE PARKING SIGN DETAIL

NTS



COLORS:
LEGEND AND BORDER: GREEN
BACKGROUND: WHITE
SYMBOL: WHITE ON BLUE BACKGROUND

COLORS:
LEGEND AND BORDER: GREEN
BACKGROUND: WHITE

ACCESSIBLE PARKING SIGN DETAIL

NTS

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
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Project:
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FOR
ROCKWALL I.S.D.
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MIKE GLENN
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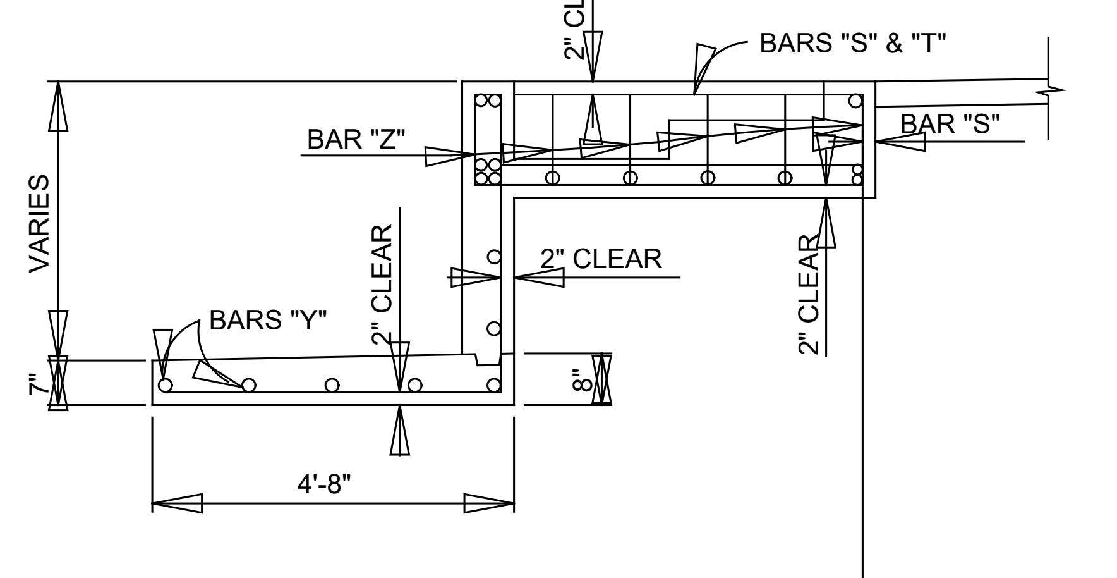
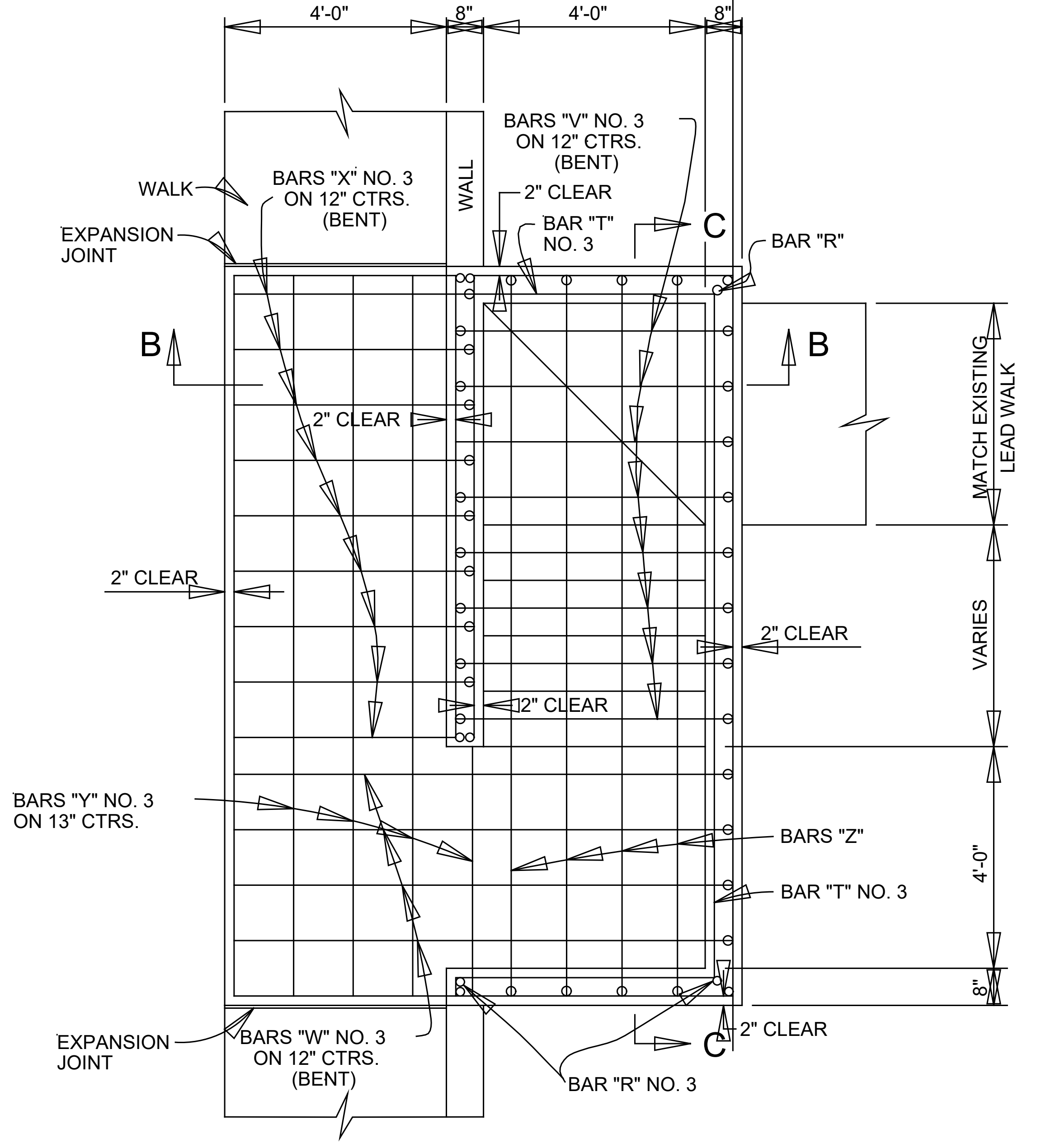
Job. No. 1759-03-01	Sheet No. CP1.4
Drawn By: RAH	
Date: 02-28-2017	

Plotted: Jul 25, 2018, 12:3 PM by user: robert - Saved: 7/25/2018 by user: robert
D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg

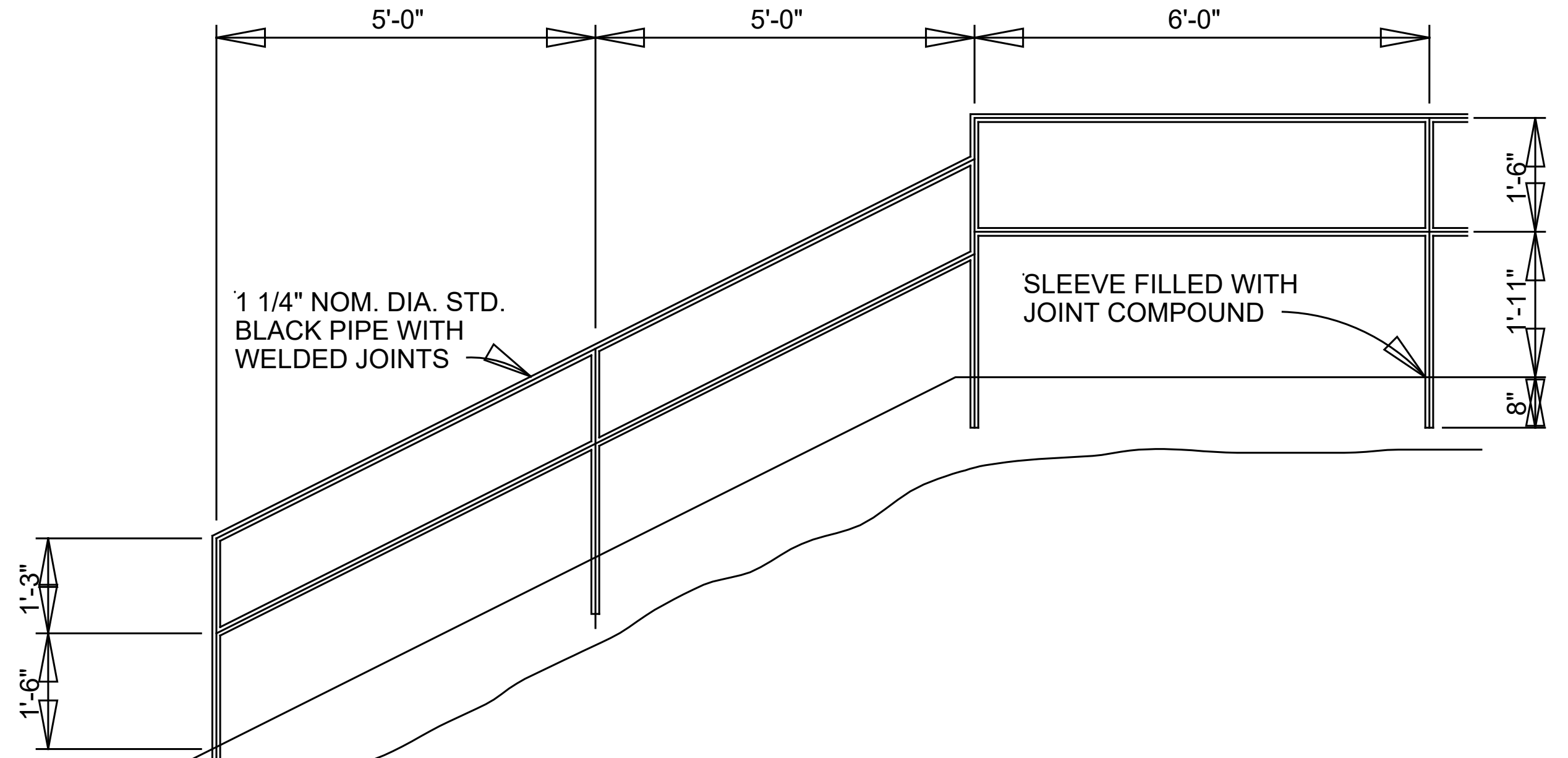


SECTION B-B TYPE 1



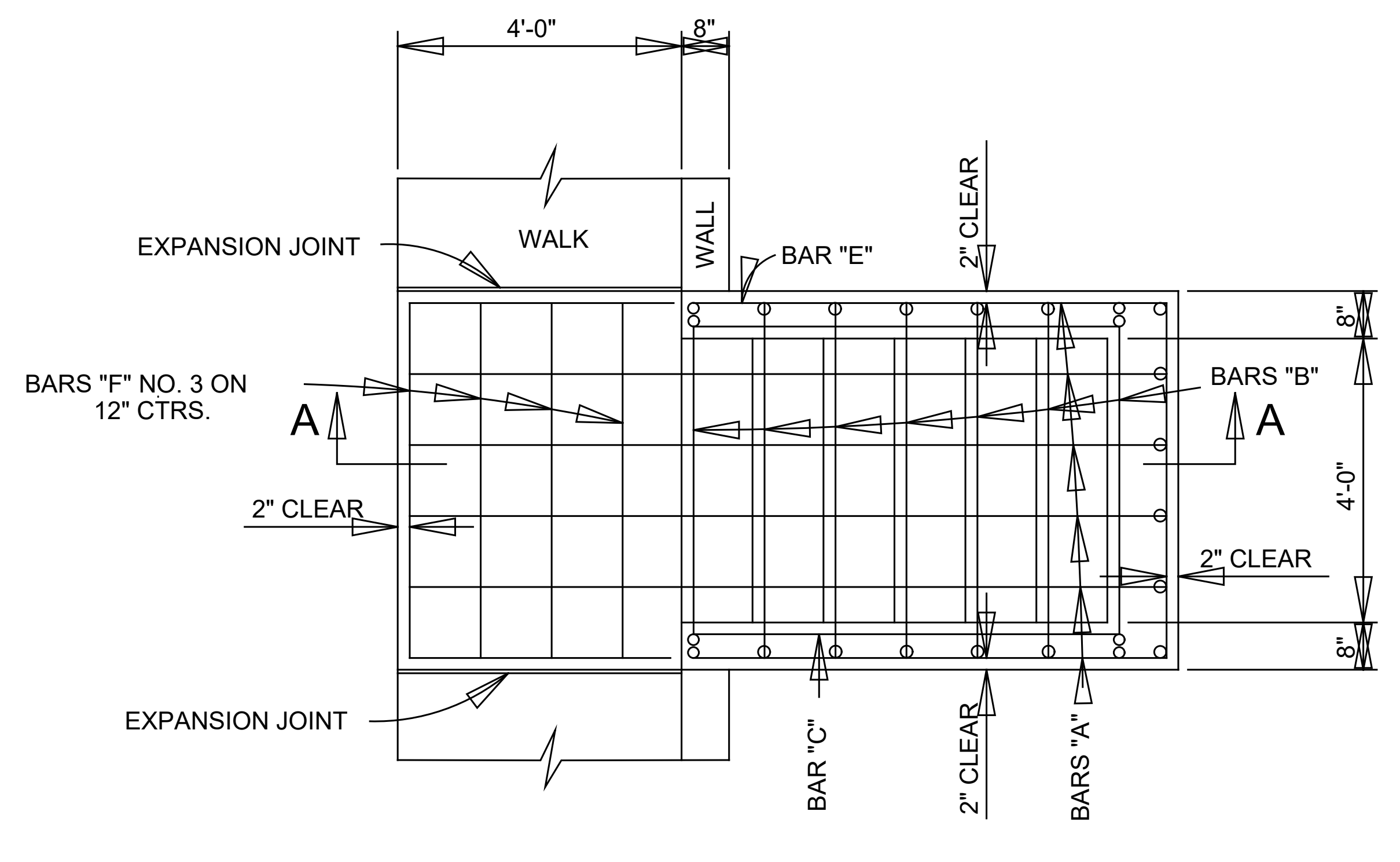
PLAN - TYPE 1

STEPS	CONCRETE C.Y.	STEEL LBS.
4	3.58	138.03
5	3.99	161.57
6	4.54	174.99
7	5.11	188.75
8	5.70	210.37
9	6.32	225.75
10	6.96	236.17


5'-0"
5'-0"
6'-0"
1 1/4" NOM. DIA. STD. BLACK PIPE WITH WELDED JOINTS
SLEEVE FILLED WITH JOINT COMPOUND
1'-6"
1'-11"
8"
1'-3"
1'-6"

HANDRAIL FOR STEPS

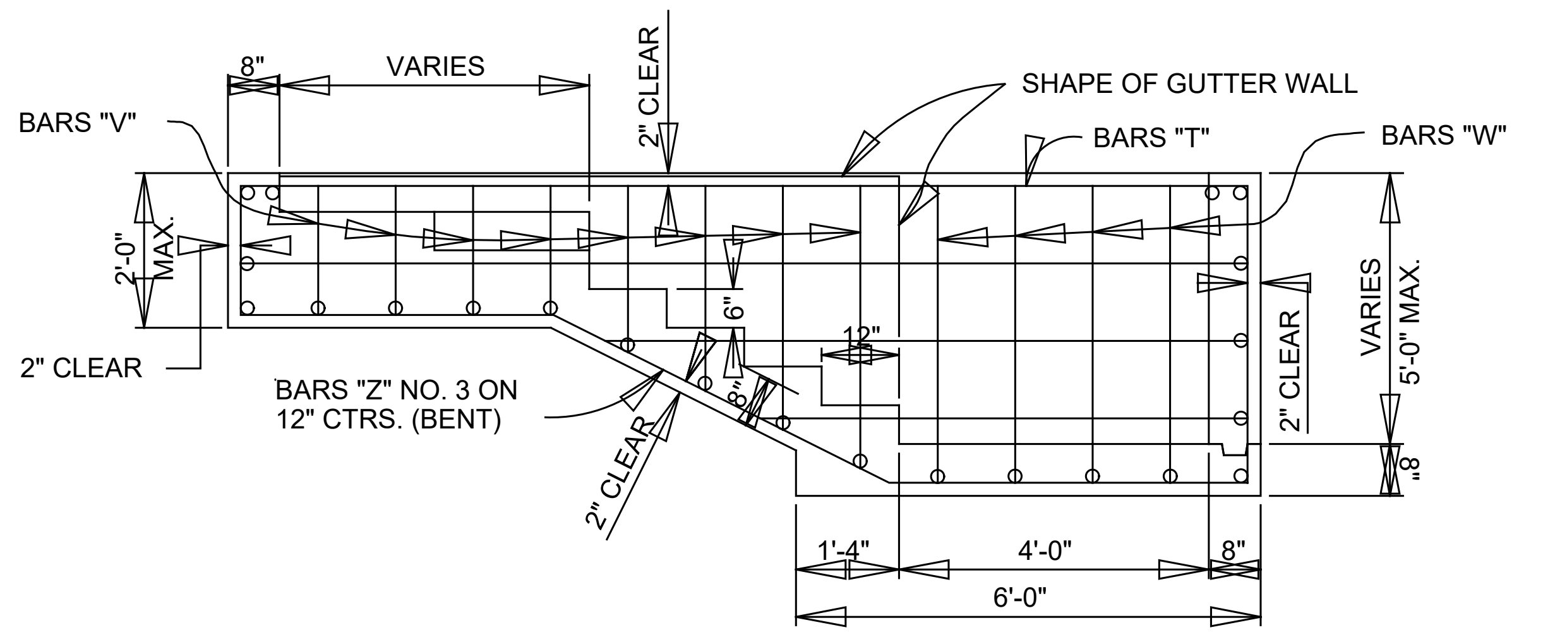
PAINT ACCORDING TO SECTION S-8
OF GENERAL SPECIFICATIONS



PLAN - TYPE 2

STEPS	CONCRETE C.Y.*	STEEL LBS.*
3	1.19	41.45
4	1.42	50.01
5	1.67	59.00
6	1.93	68.18
7	2.20	78.87
8	2.48	89.74
9	2.79	100.80
10	3.09	112.42

*
QUANTITIES INCLUDE WALK PORTION BETWEEN EXPANSION JOINTS.

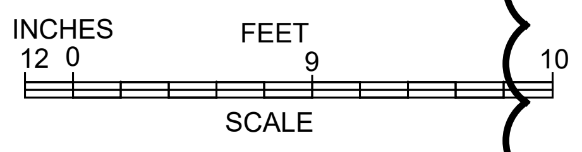


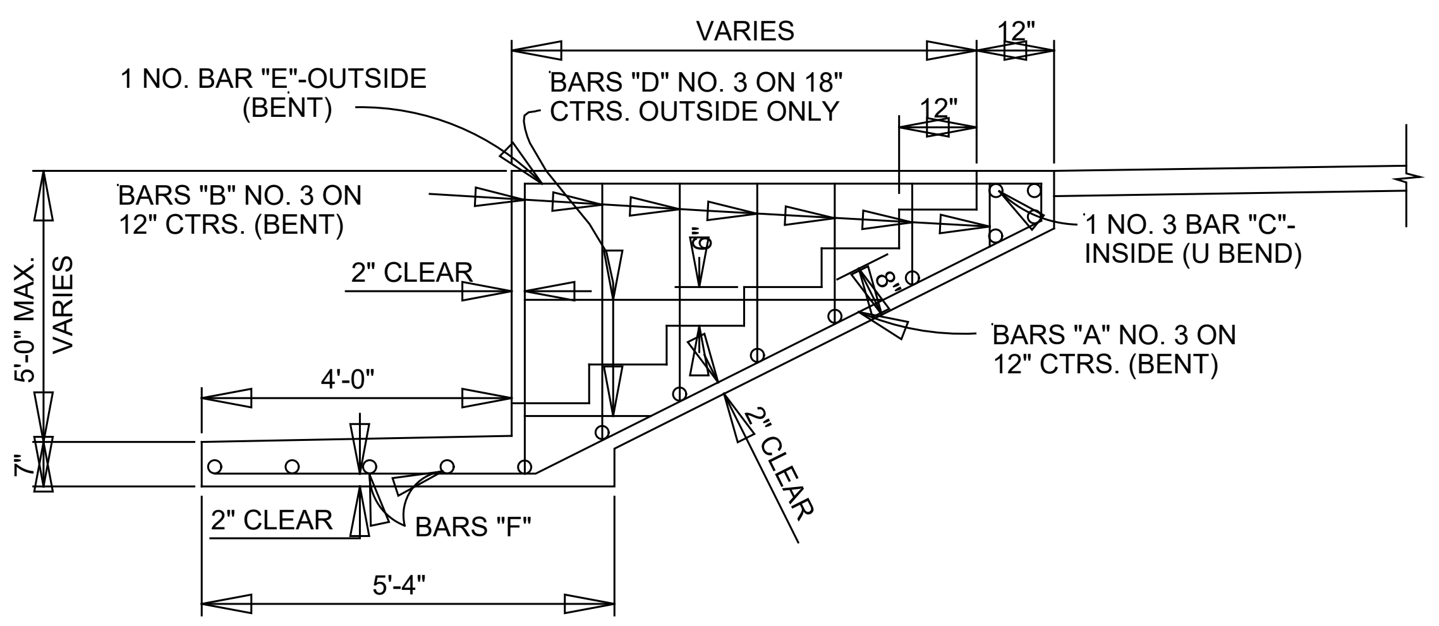
SECTION C-C

TYPE 1 STEPS

PARALLEL TO STREET

WALL HEIGHT GREATER THAN 5 FT.
REQUIRES SPECIAL ANALYSIS




VARIES
12"
1 NO. BAR "E"-OUTSIDE (BENT)
BARS "D" NO. 3 ON 18" CTRS. OUTSIDE ONLY
12"
BARS "B" NO. 3 ON 12" CTRS. (BENT)
1 NO. 3 BAR "C"-INSIDE (U BEND)
5'-0" MAX. VARIES
2" CLEAR
6"
BARS "A" NO. 3 ON 12" CTRS. (BENT)
4'-0"
2" CLEAR
7"
2" CLEAR
BARS "F"
5'-4"

SECTION A-A

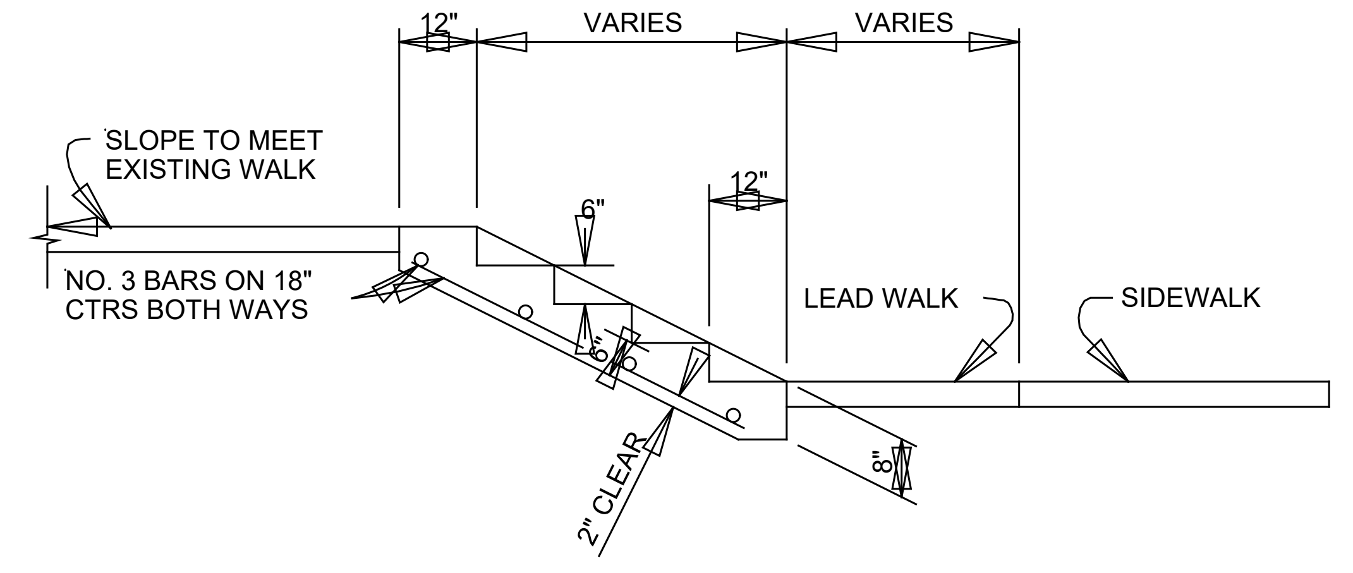
TYPE 2 STEPS

PERPENDICULAR TO STREET

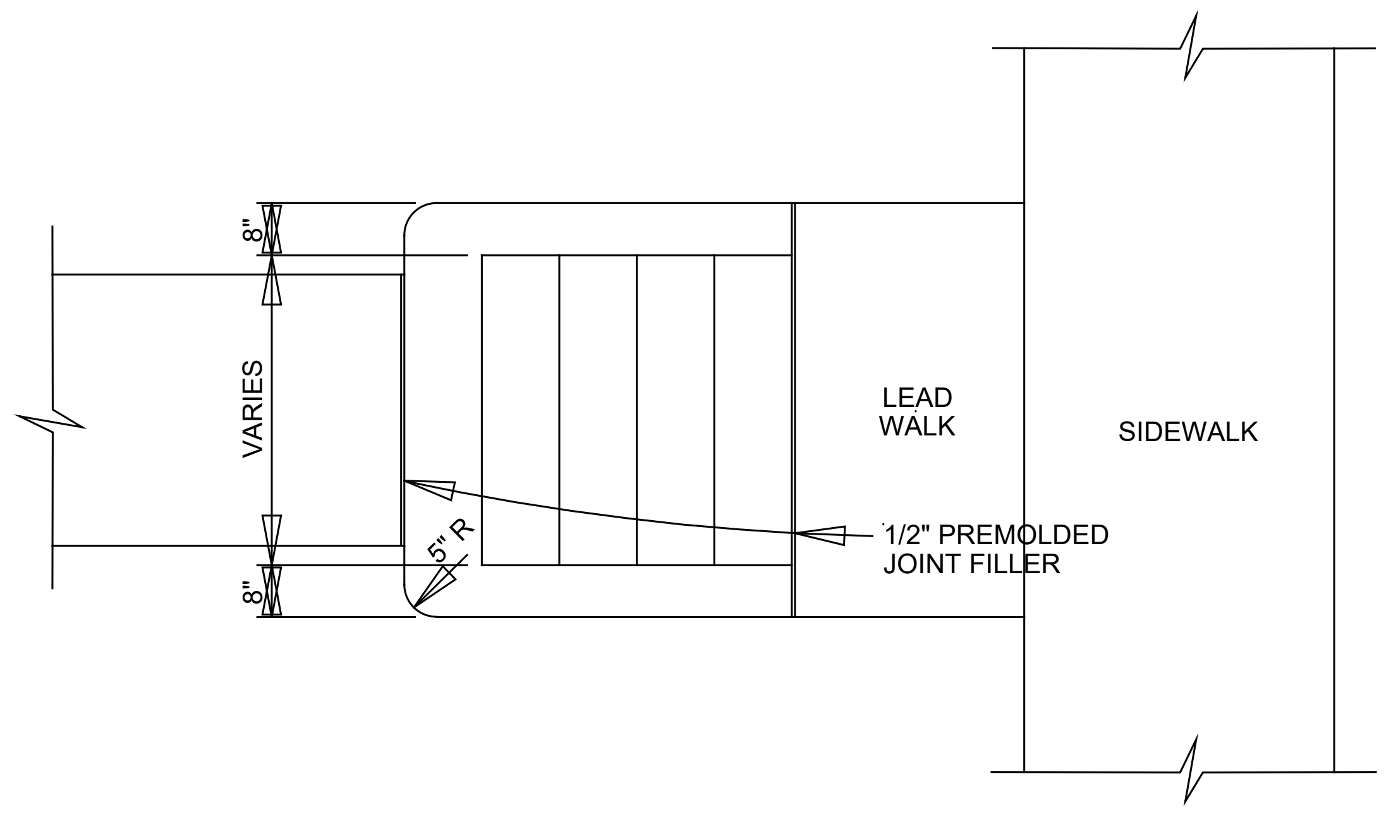
QUANTITIES FOR CONC.
STEPS-4 FEET WIDE.

STEPS	CONCRETE C.Y.
1	0.30
2	0.47
3	0.64

QUANTITIES OF CONCRETE
INCREASE BY 0.17 CU. YDS.
FOR EACH ADDITIONAL STEP

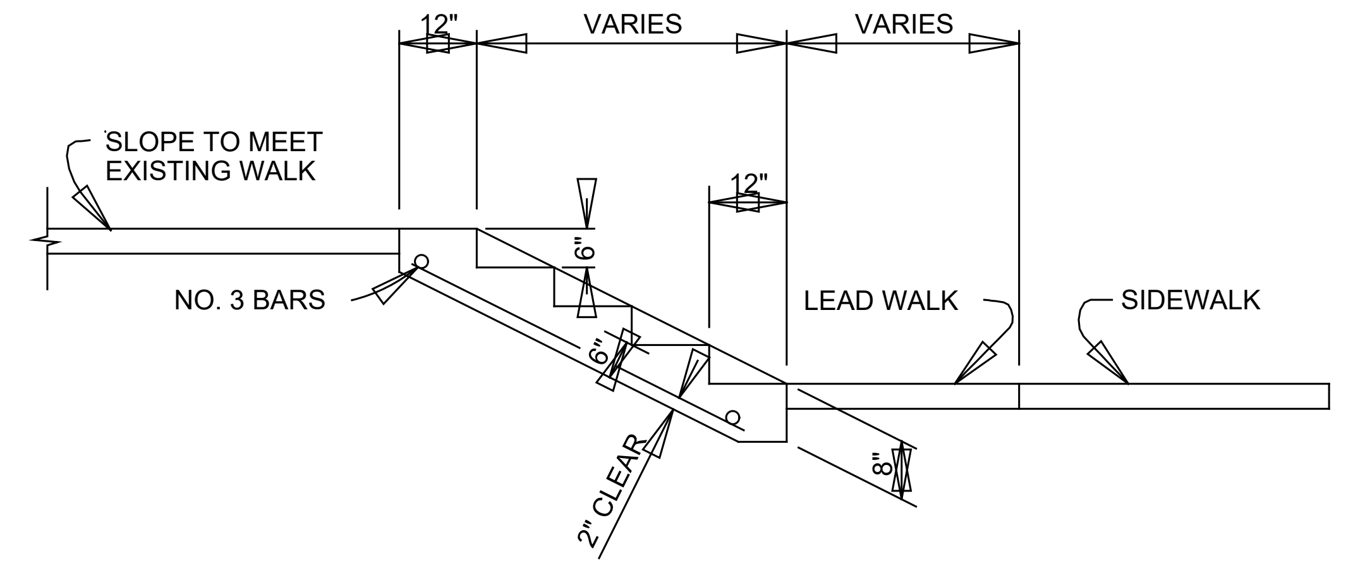


SECTION

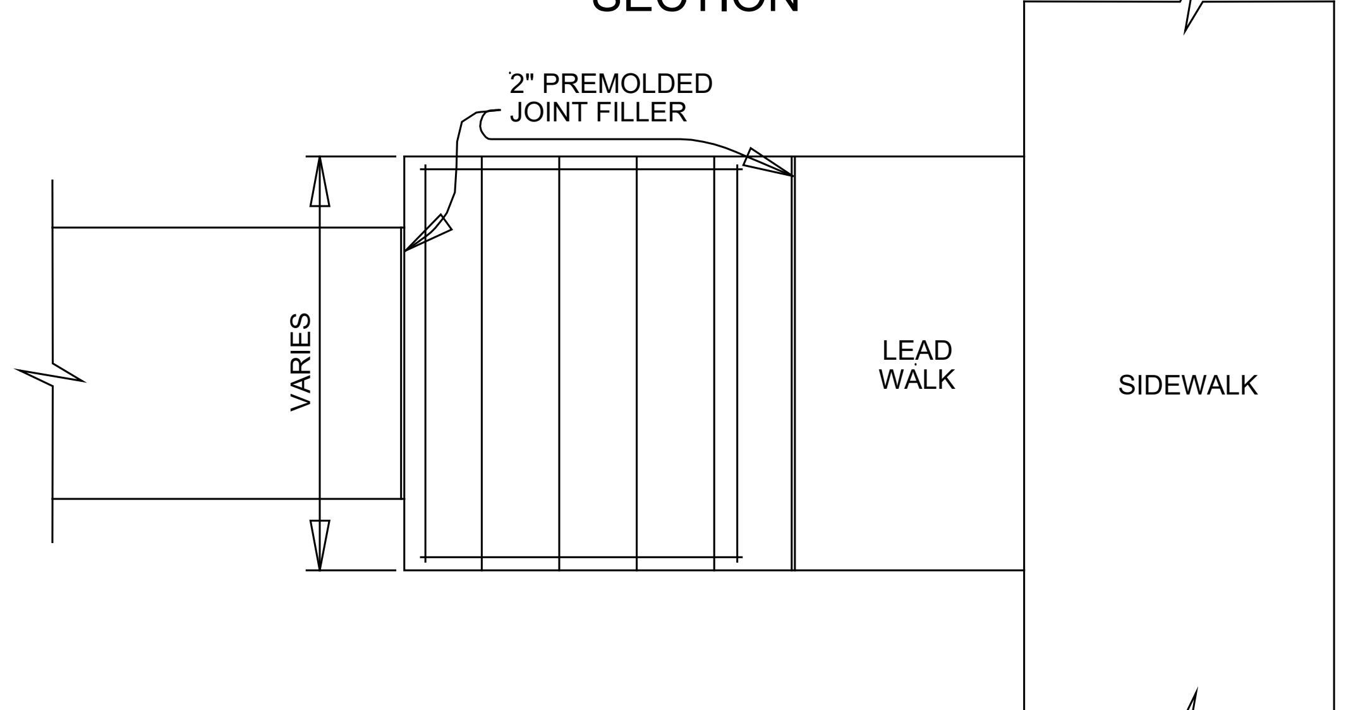


TYPE 3 STEPS

WITH BUTTRESS WALLS



SECTION



PLAN

TYPE 4 STEPS

WITHOUT BUTTRESS WALLS

GENERAL NOTES

1. CONCRETE FOR STEPS TO BE CLASS A CONCRETE.
2. BARS SHALL CONFORM TO SECTION 2.2.6 OF THE NCTCOG SPECIFICATIONS.
3. BAR LAPS SHALL BE 30 DIAMETERS.
4. ALL EXPOSED SURFACES EXCEPT STEP TREADS AND WALK SHALL RECEIVE A RUBBED FINISH.
5. STEP TREADS AND WALK SHALL RECEIVE A NON-SKID WOOD FLOAT FINISH.
6. STEP EDGES SHALL BE ROUNDED TO 3/8" DIAMETER.
7. THE HEIGHT OF RISE OF THE BOTTOM STEP MAY BE LESS THAN 7 1/2".
8. WIDTH OF TREAD AND/OR DEPTH OF RISE OF ALL STEPS MAY BE MODIFIED IF SO INDICATED ON THE PLANS.
9. EXPANSION JOINTS SHALL BE COMPOSED OF 1/2" PREMOLDED JOINT FILLER.
10. QUANTITIES ARE BASED ON STEPS HAVING 6" RISERS, 12" TREADS AND LEAD WALKS 4' WIDE.

RECORD DRAWING

This is to certify that changes and
corrections have been made to conform
to the contractor's record of this project.

Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

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PAVING DETAIL
EXTERIOR
STEPS

Job. No. 1759-03-01	**Sheet No.** CP1.4A
Drawn By: RAH	
Date: 02-28-2017	

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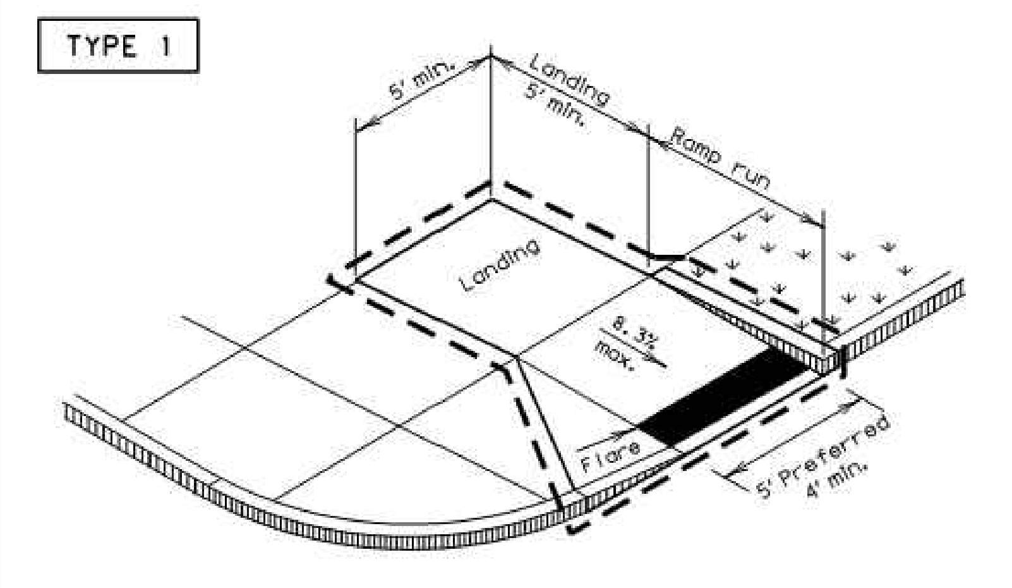
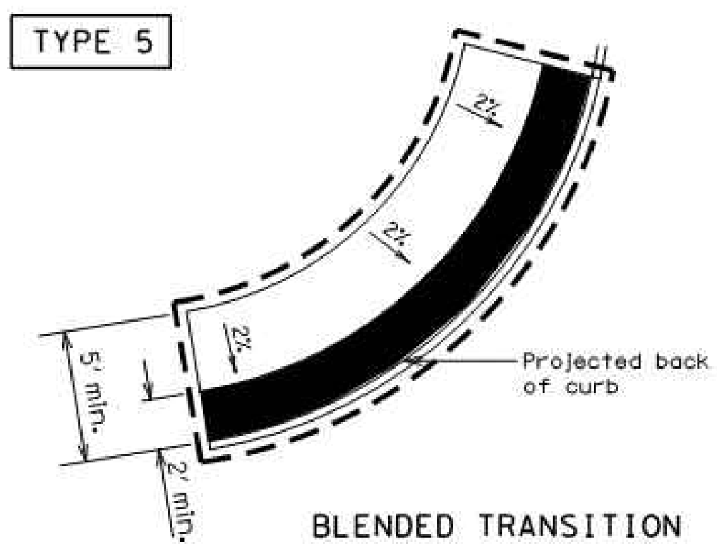
TYPE 1



PERPENDICULAR CURB RAMP

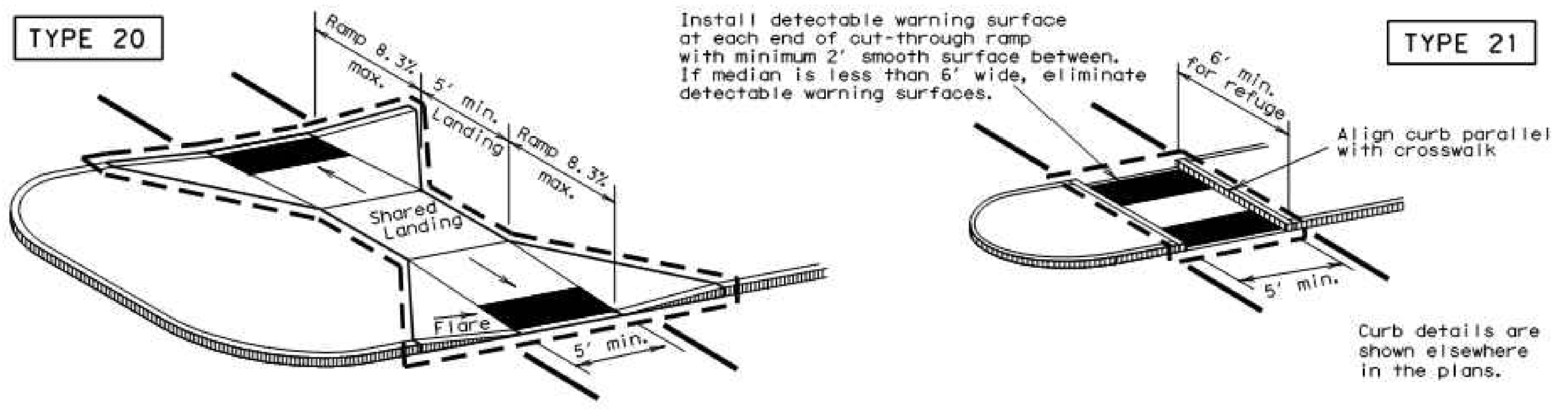
TYPE 5



BLENDED TRANSITION

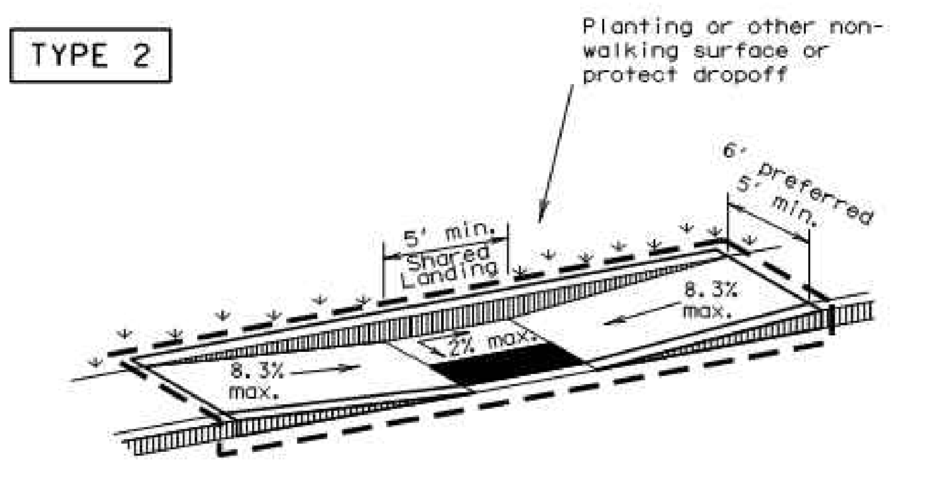
TYPE 20

TYPE 21


Ramp 8.3% max.
5' min. Landing
Ramp 8.3% max.
Shared Landing
Flare
5' min.
Install detectable warning surface at each end of cut-through ramp with minimum 2' smooth surface between. If median is less than 6' wide, eliminate detectable warning surfaces.
6' min. for refuge
Align curb parallel with crosswalk
5' min.
Curb details are shown elsewhere in the plans.

CURB RAMPS AT MEDIAN ISLANDS

TYPE 2

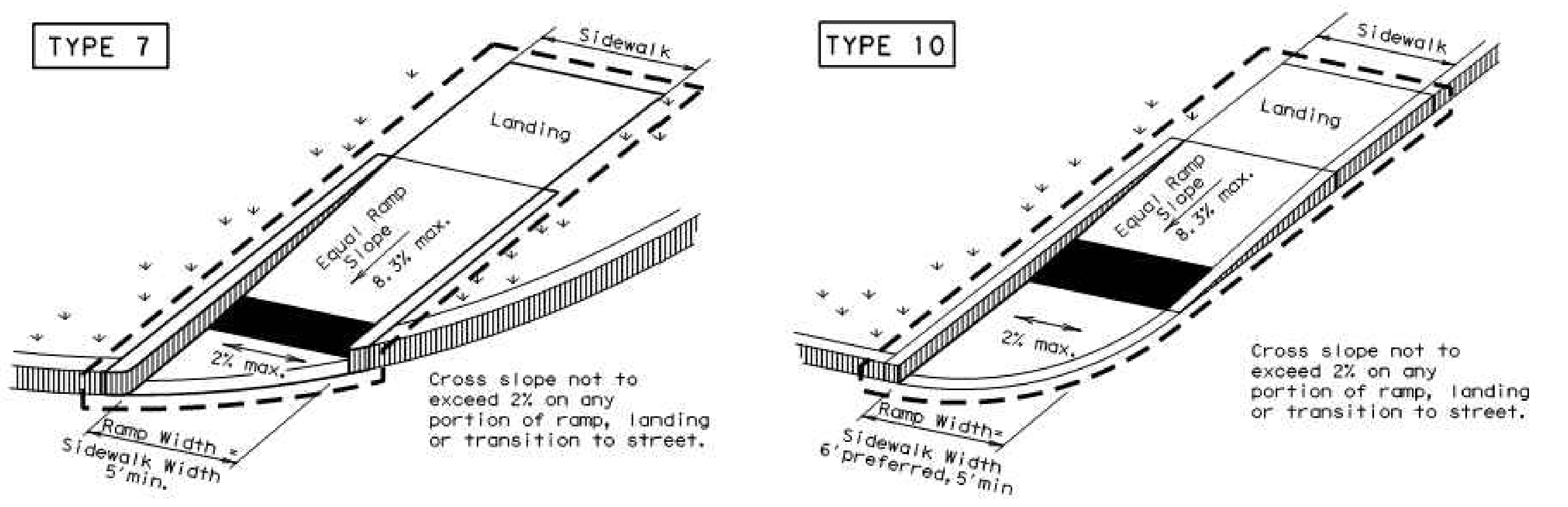


PARALLEL CURB RAMP

(Use only where water will not pond in the landing.)

TYPE 7

TYPE 10

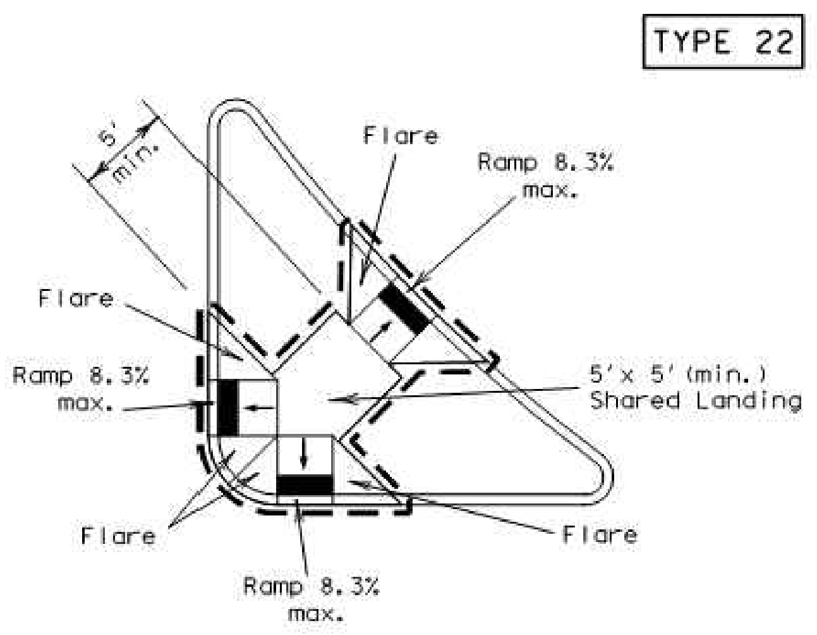

Sidewalk
Landing
Equal Ramp Slope
8.3% max.
2% max.
Ramp Width = Sidewalk Width 5' min.
Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.
Sidewalk
Landing
Equal Ramp Slope
8.3% max.
2% max.
Ramp Width = Sidewalk Width 6' preferred, 5' min
Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.

(Sidewalk set back from curb)

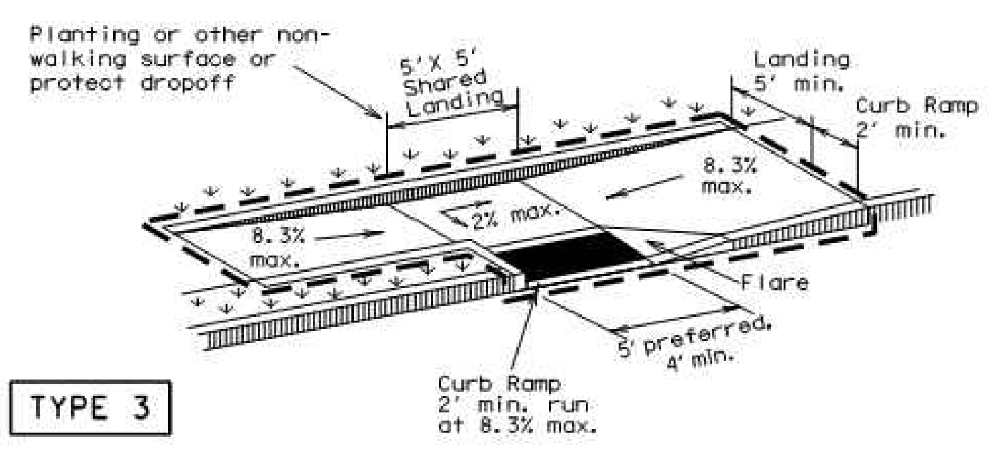
(Sidewalk adjacent to curb)

DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 22

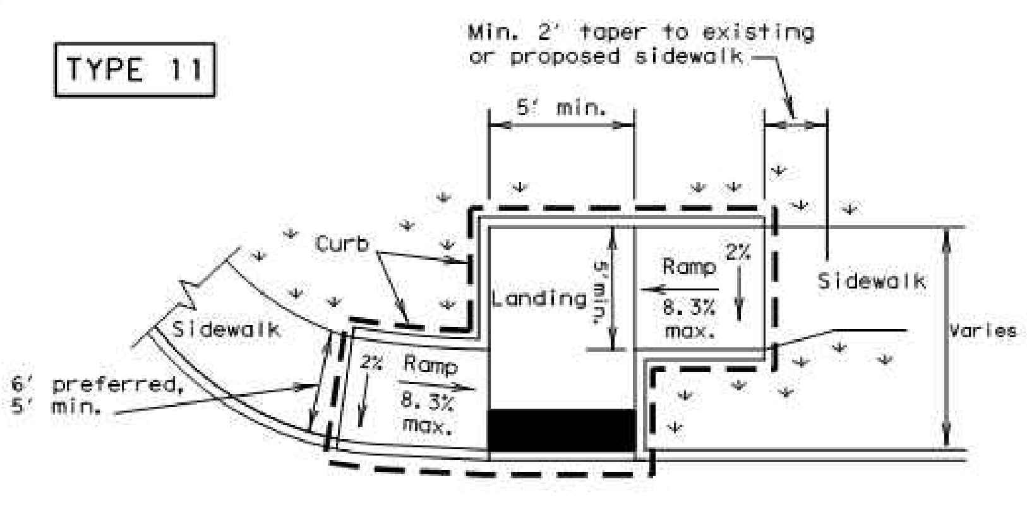


COMBINATION ISLAND RAMPS

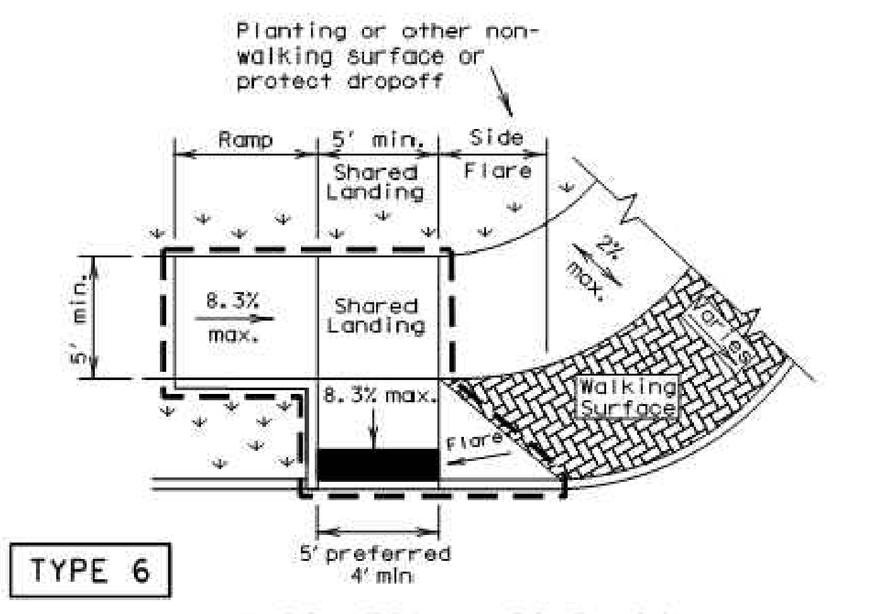


TYPE 3

TYPE 11



OFFSET PARALLEL CURB RAMP



TYPE 6

COMBINATION CURB RAMPS

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

⺌ Denotes planting or non-walking surface not part of pedestrian circulation path.

– – Ramp Limits of Payment

■ Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP	
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS VP June 13, 2012					
	DIST	COUNTY		SHEET NO.	

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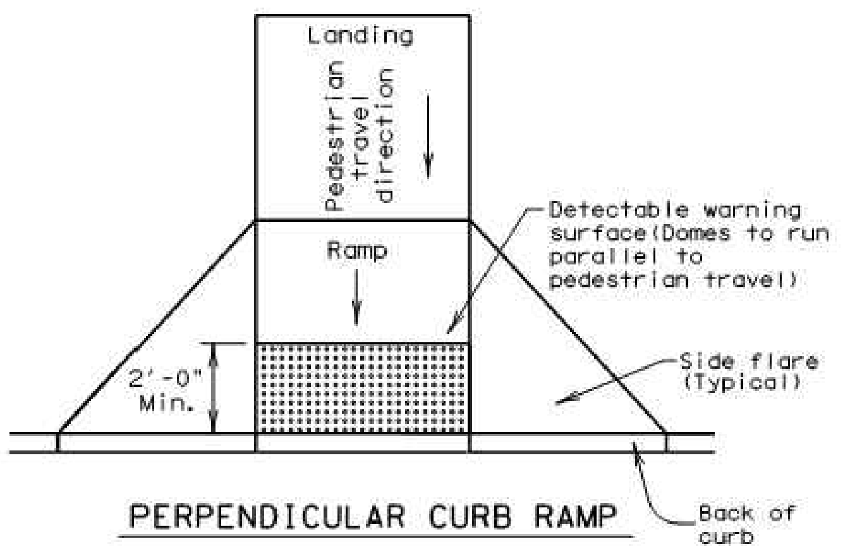
General Notes

Curb Ramps

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5'x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
17. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

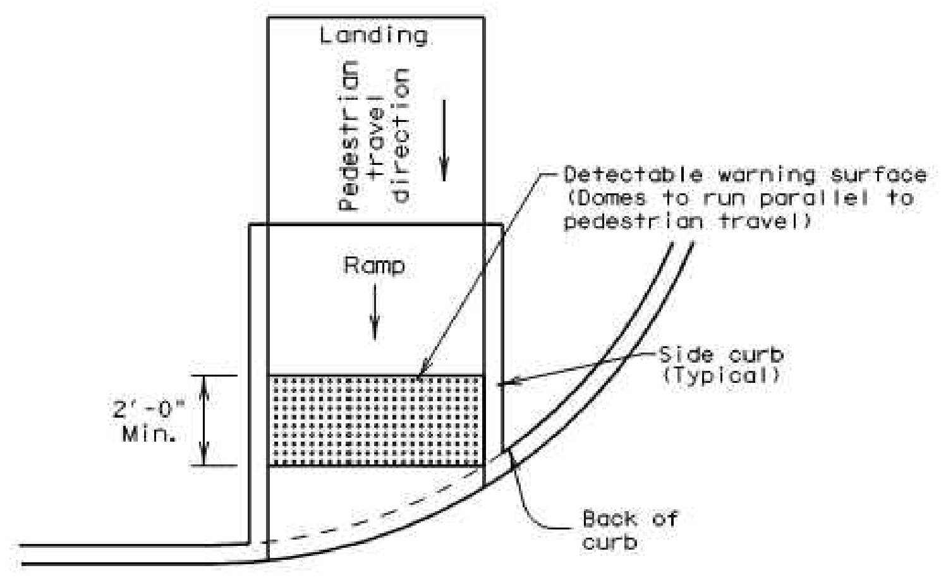
Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.


Landing
Pedestrian travel direction
Ramp
Detectable warning surface (Domes to run parallel to pedestrian travel)
Side flare (Typical)
2'-0" Min.
Back of curb

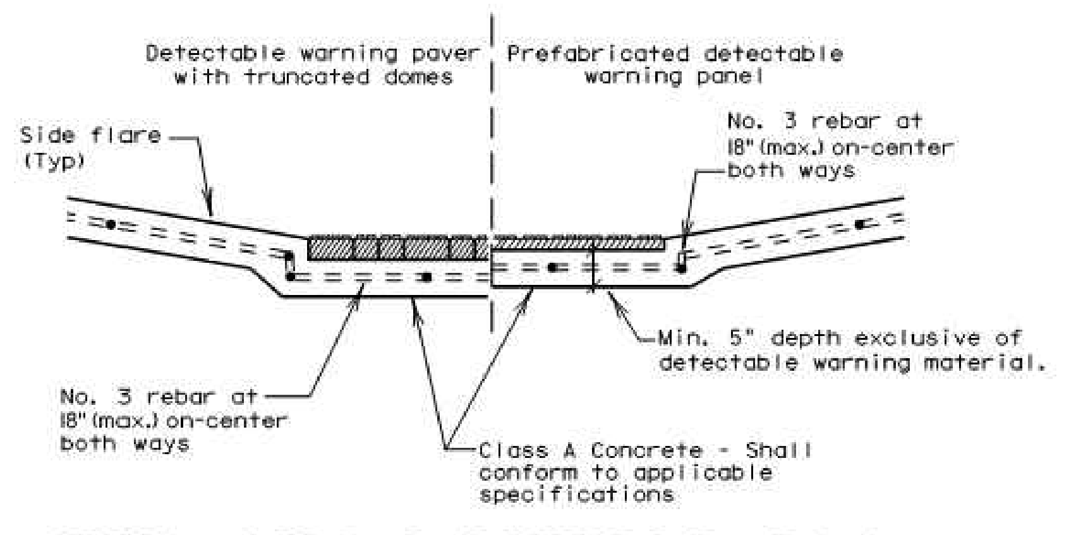
PERPENDICULAR CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.

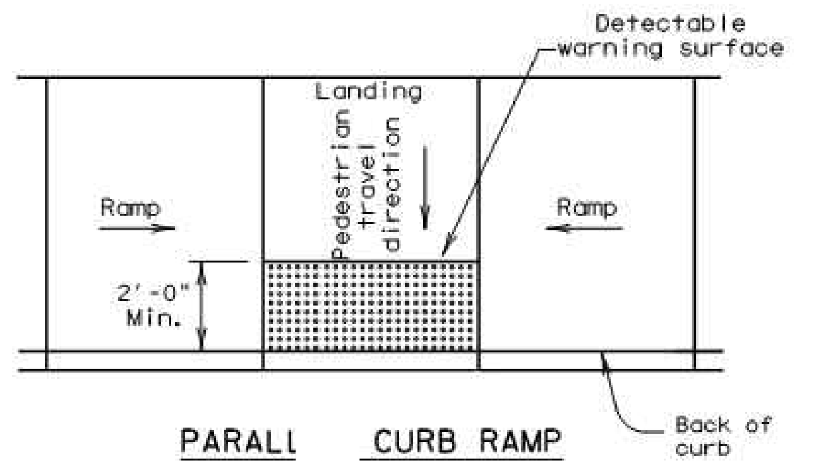

Landing
Pedestrian travel direction
Ramp
Detectable warning surface (Domes to run parallel to pedestrian travel)
Side curb (Typical)
2'-0" Min.
Back of curb

DIRECTIONAL CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.


Detectable warning paver with truncated domes
Prefabricated detectable warning panel
Side flare (Typ)
No. 3 rebar at 18" (max.) on-center both ways
Min. 5" depth exclusive of detectable warning material.
No. 3 rebar at 18" (max.) on-center both ways
Class A Concrete - Shall conform to applicable specifications

SECTION: CURB RAMP AT DETECTABLE WARNING



PARALL CURB RAMP

Typical placem of detectable warning surface on ding at street edge.

DETECTABLE WARNINGS

Detectable Warning Pavers

24. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
25. Lay full-size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.

SHEET 2 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-12A

FILE: ped12a.dgn	DN: TxDOT	CK: RM	DW: TxDOT	CK: VP	
©TxDOT March 2002	CONT	SECT	JOB	HIGHWAY	
REVISIONS VP June 13, 2012					
	DIST	COUNTY		SHEET NO.	

RECORD DRAWING

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Signed Mike Glenn
Date July 25, 2018

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
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105 DECKER COURT, SUITE 910
IRVING, TEXAS 75062

BFR DETAILS 1
8

Job No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CP1.6

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MIKE GLENN
35059

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Project:

ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

Revision /	Date	
3	01/03/2017	CITY ENGINEERING SUBMITTAL
4	01/24/2017	ADDENDUM #3
5	02/06/2017	CITY COMMENTS
6	02/28/2017	CITY COMMENTS 2ND REVIEW
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9	04/27/2017	RFI #22, # 26 AND #27
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11	01/09/2018	RFI # 147 ELEVATIONS
12	06/04/2018	LIFT STATION - CITY SUBMITTAL
13	06/05/2018	IRRIGATION METER

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D:\Public\Bob's Projects\ROCKISD\LOFLAND 153 AC CCA\BIDSET\CCA ENG REV 18 DETAILS ONLY.dwg

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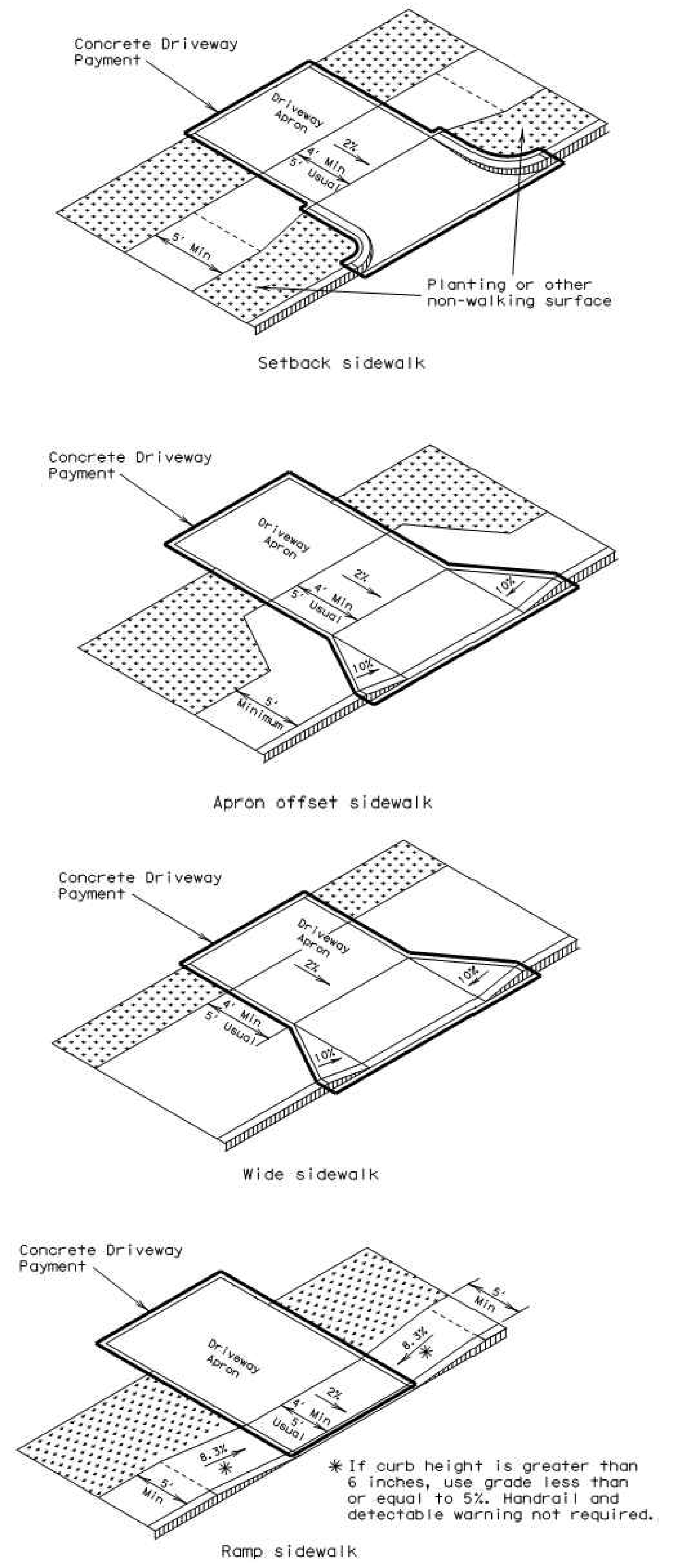
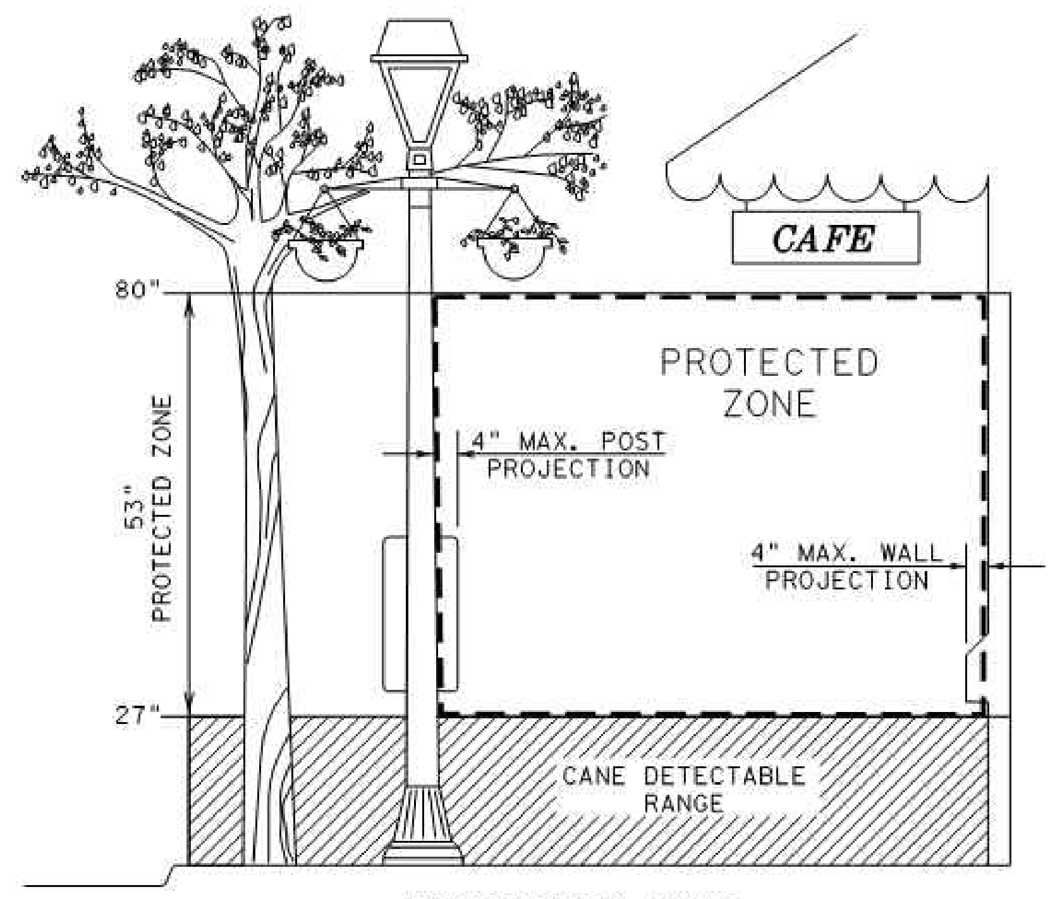


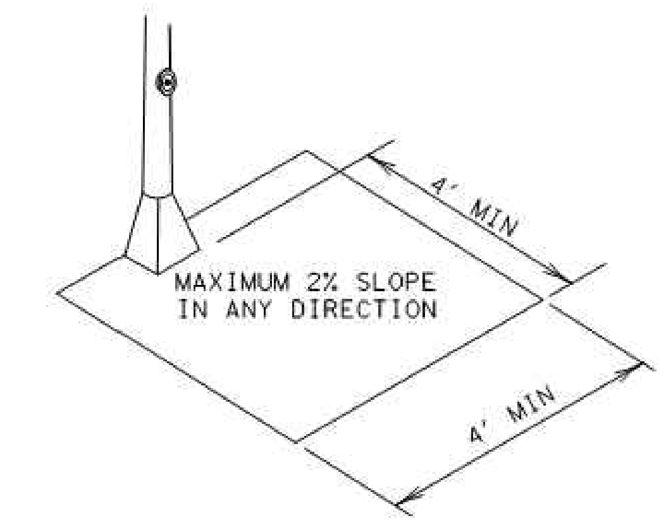
* If curb height is greater than 6 inches, use grade less than or equal to 5%. Handrail and detectable warning not required.

SIDEWALK TREATMENT AT DRIVEWAYS

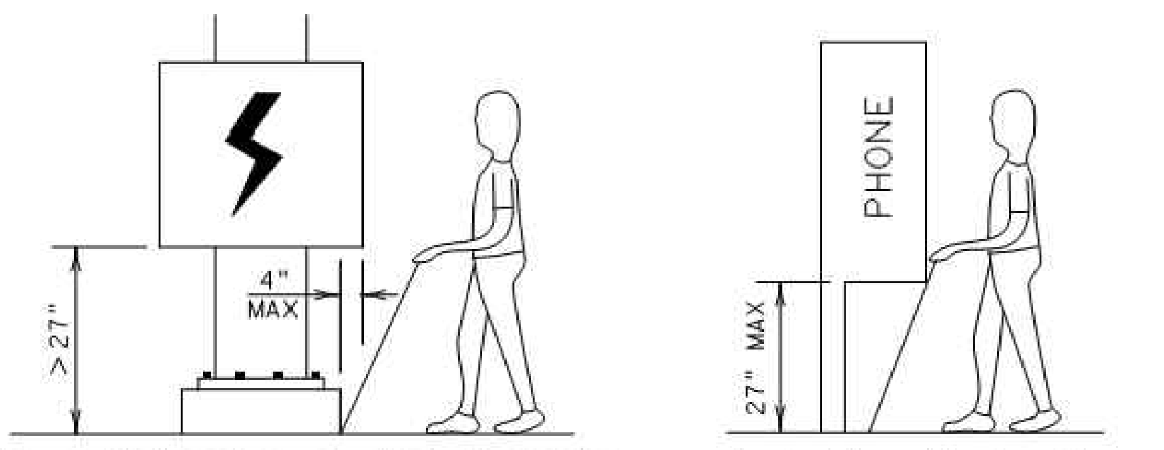


PROTECTED ZONE

In pedestrian circulation area, maximum 4" projection for post or wall mounted objects between 27" and 80" above the surface.



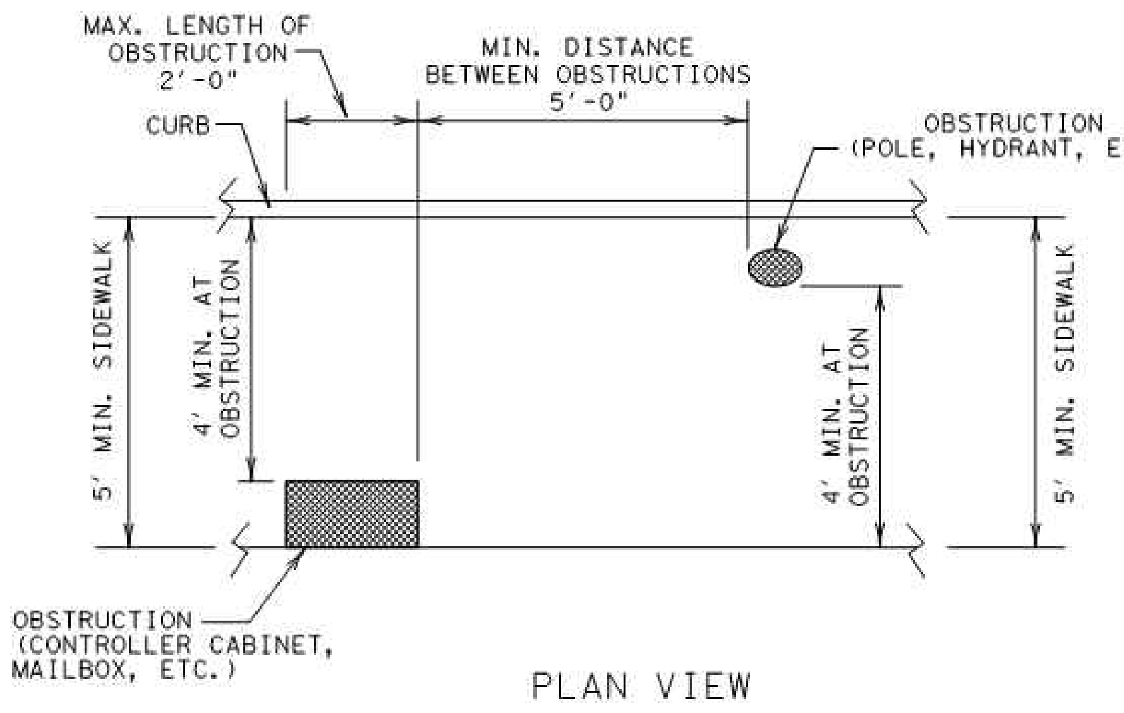
CLEAR GROUND SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



When an obstruction of a height greater than 27" from the surface would create a protrusion of more than 4" into the pedestrian circulation area, construct additional curb or foundation at the bottom to provide a maximum 4" overhang.

Protruding objects of a height ≤ 27" are detectable by cane and do not require additional treatment.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"


MAX. LENGTH OF OBSTRUCTION 2'-0"
MIN. DISTANCE BETWEEN OBSTRUCTIONS 5'-0"
CURB
OBSTRUCTION (POLE, HYDRANT, ETC.)
5' MIN. SIDEWALK
4' MIN. AT OBSTRUCTION
4' MIN. AT OBSTRUCTION
5' MIN. SIDEWALK
OBSTRUCTION (CONTROLLER CABINET, MAILBOX, ETC.)

PLAN VIEW
PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' × 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

SHEET 3 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn | DN: TxDOT | CK: RM | DW: TxDOT | CK: VP
© TxDOT March 2002 | CONT | SECT | JOB | HIGHWAY
REVISIONS
VP June 13, 2012 | DIST | COUNTY | SHEET NO.

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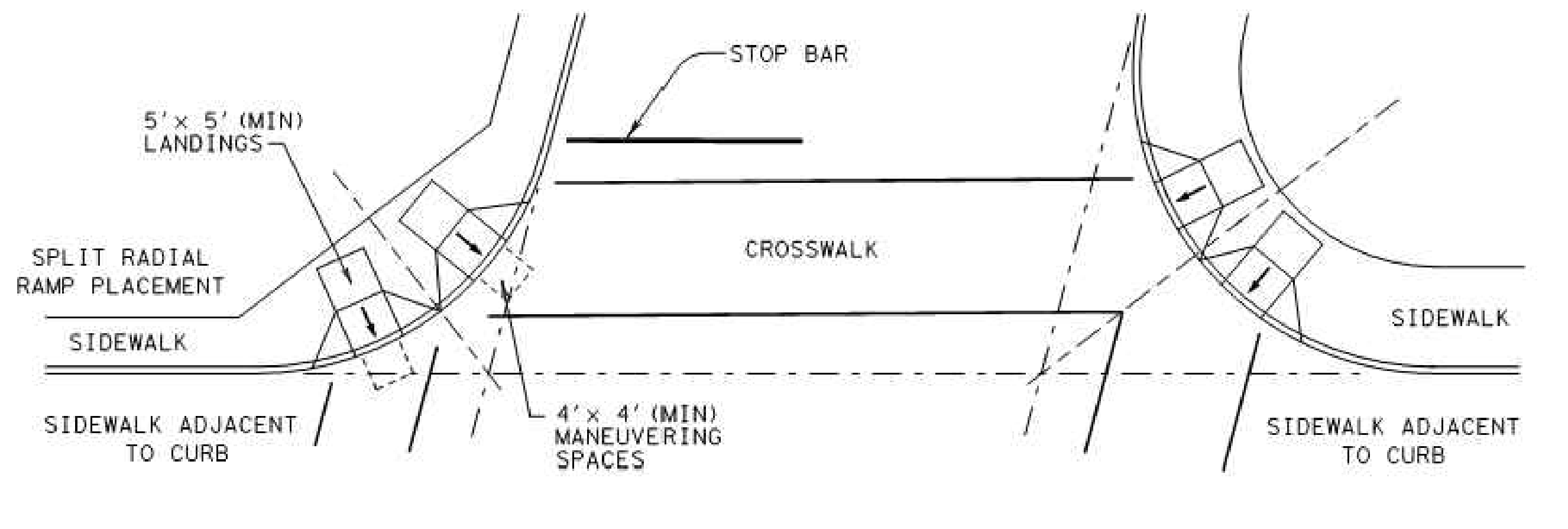
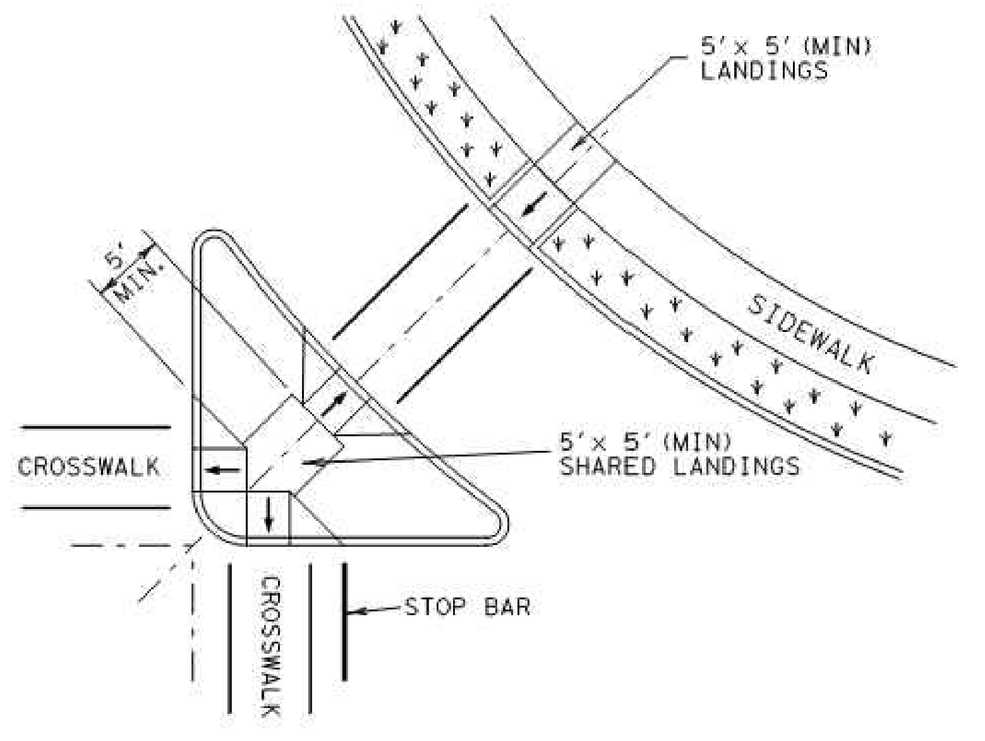
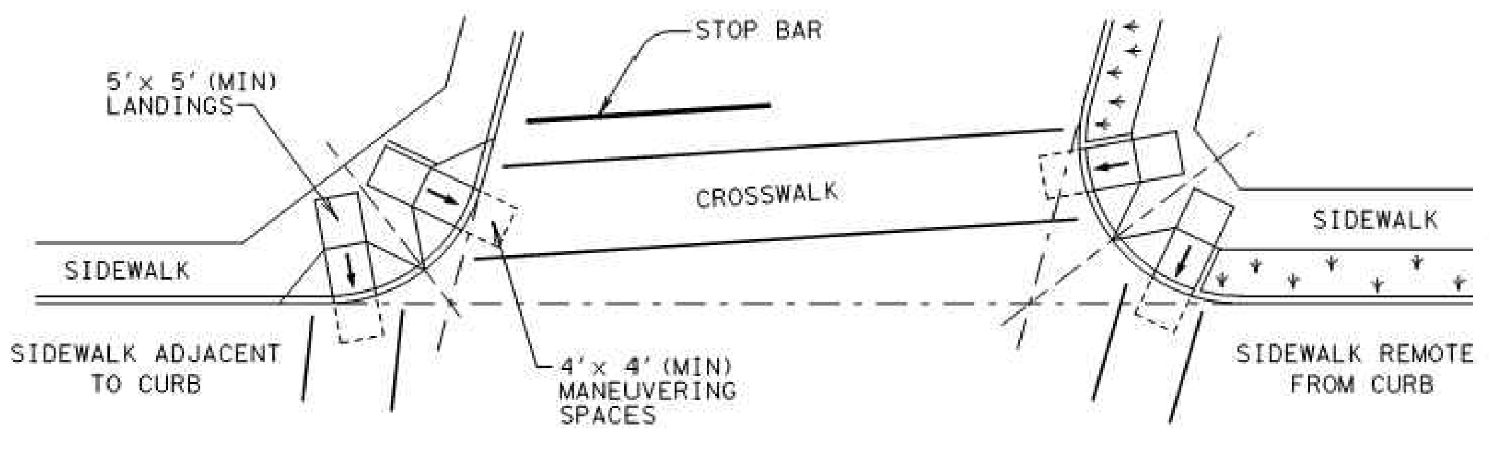

STOP BAR
5'× 5' (MIN) LANDINGS
SPLIT RADIAL RAMP PLACEMENT
SIDEWALK
CROSSWALK
SIDEWALK
SIDEWALK ADJACENT TO CURB
4'× 4' (MIN) MANEUVERING SPACES
SIDEWALK ADJACENT TO CURB

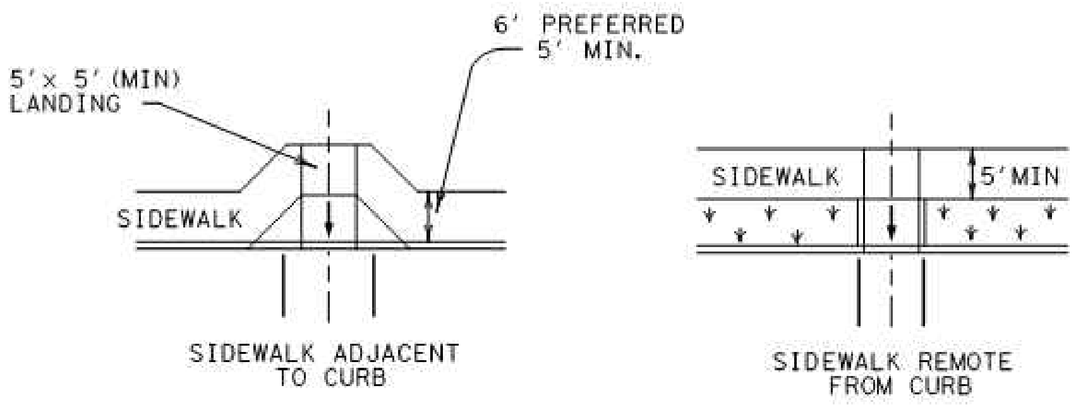
SKEWED INTERSECTION WITH "LARGE" RADIUS



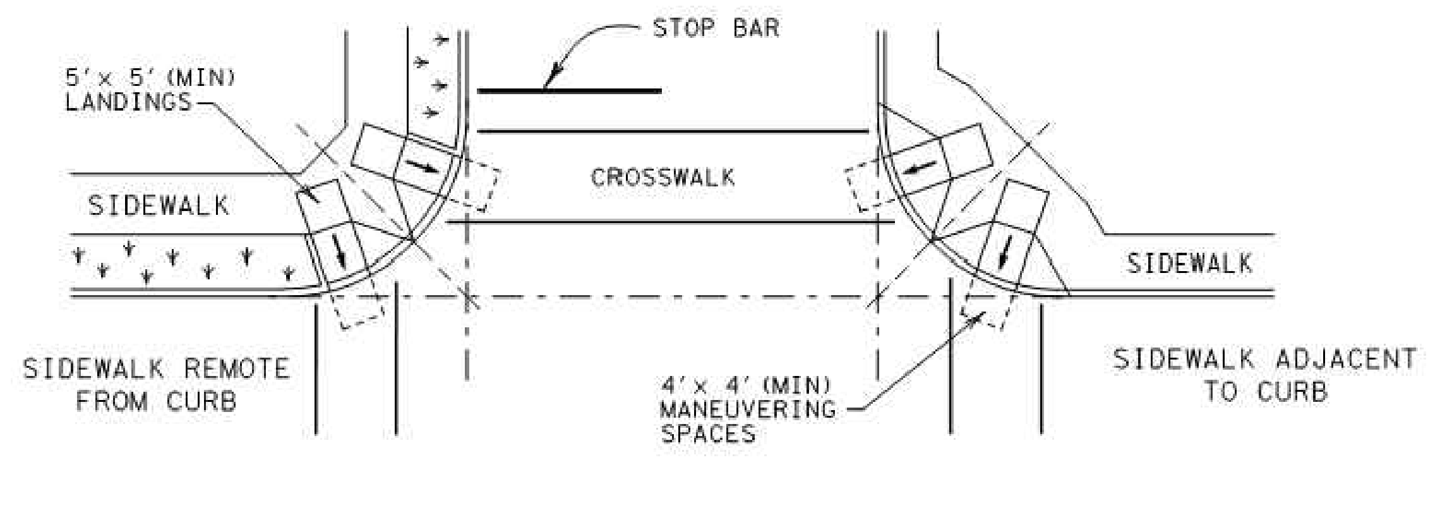
AT INTERSECTION W/FREE RIGHT TURN & ISLAND


STOP BAR
5'× 5' (MIN) LANDINGS
CROSSWALK
SIDEWALK
SIDEWALK
SIDEWALK ADJACENT TO CURB
4'× 4' (MIN) MANEUVERING SPACES
SIDEWALK REMOTE FROM CURB

SKEWED INTERSECTION WITH "SMALL" RADIUS



MID-BLOCK PLACEMENT PERPENDICULAR RAMPS


STOP BAR
5'× 5' (MIN) LANDINGS
SIDEWALK
CROSSWALK
SIDEWALK
SIDEWALK REMOTE FROM CURB
4'× 4' (MIN) MANEUVERING SPACES
SIDEWALK ADJACENT TO CURB

NORMAL INTERSECTION WITH "SMALL" RADIUS

TYPICAL CROSSING LAYOUTS

SHEET 4 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

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REVISIONS
VP June 13, 2012 | DIST | COUNTY | SHEET NO.

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Signed Mike Glenn Date July 25, 2018
Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151
105 DECKER COURT, SUITE 910
FAX 972-717-2176
IRVING, TEXAS 75062

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

MIKE GLENN 35059
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Job No. 1759-03-01
Drawn By: RAH
Date: 02-28-2017
Sheet No. CP1.7

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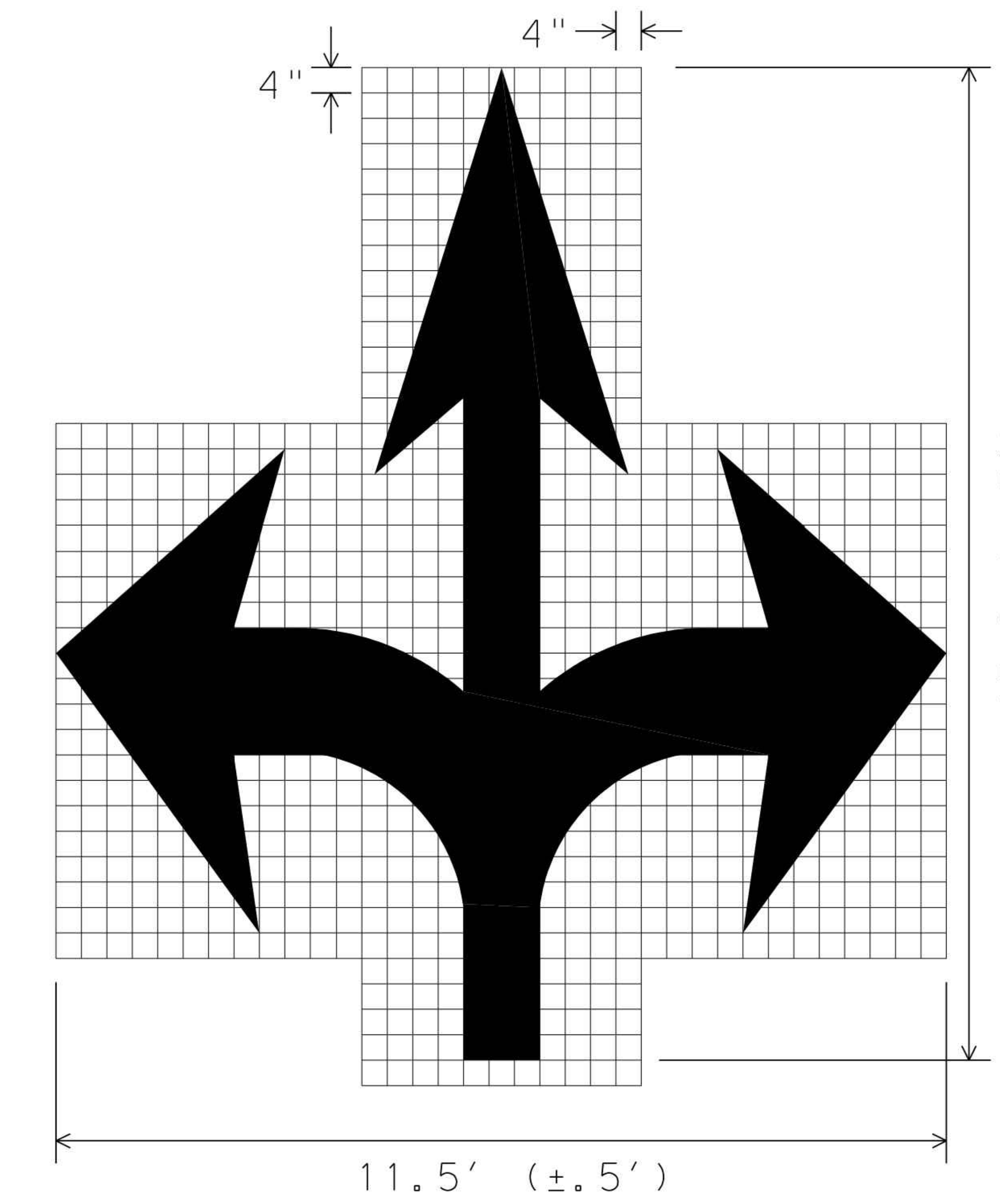

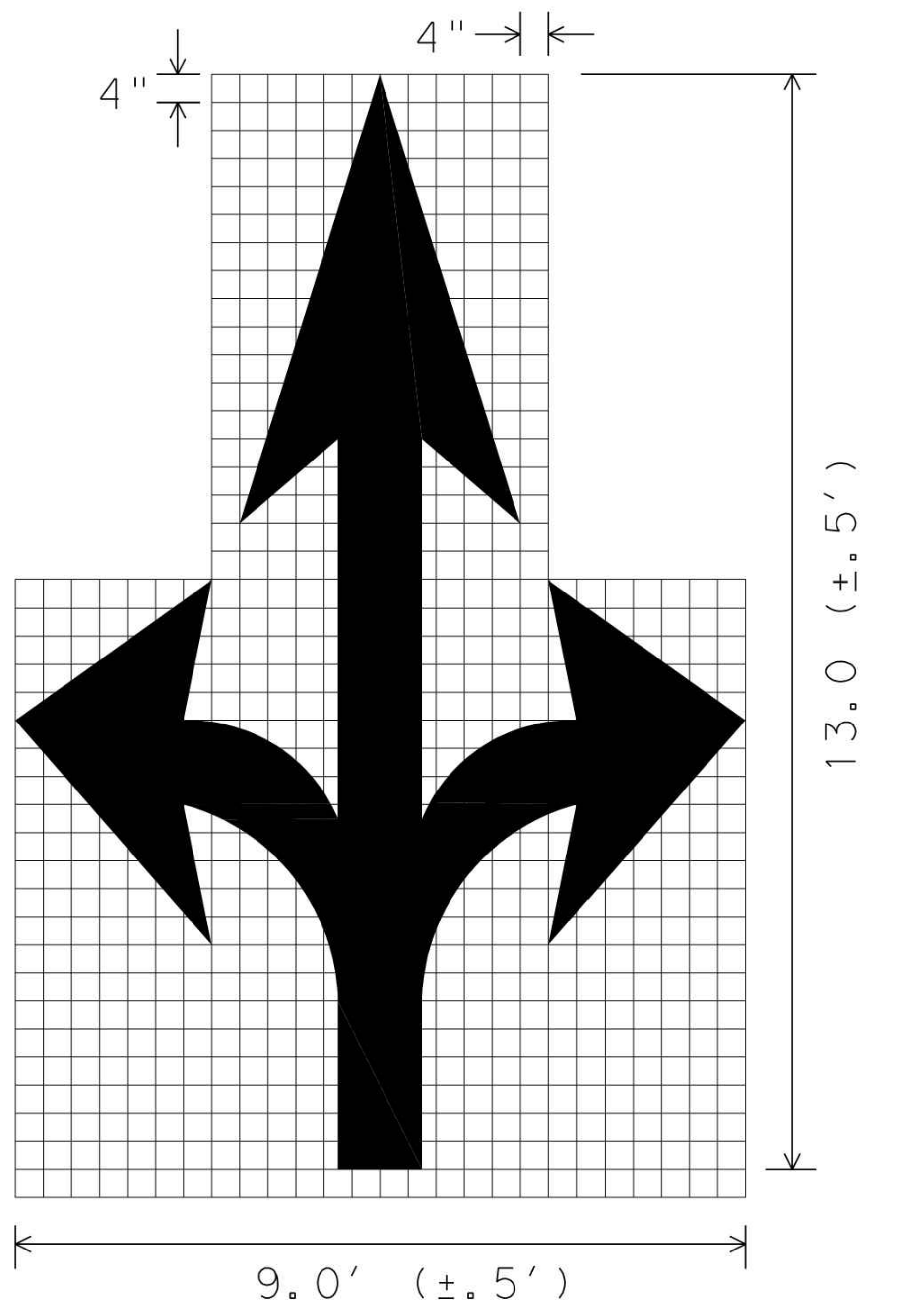

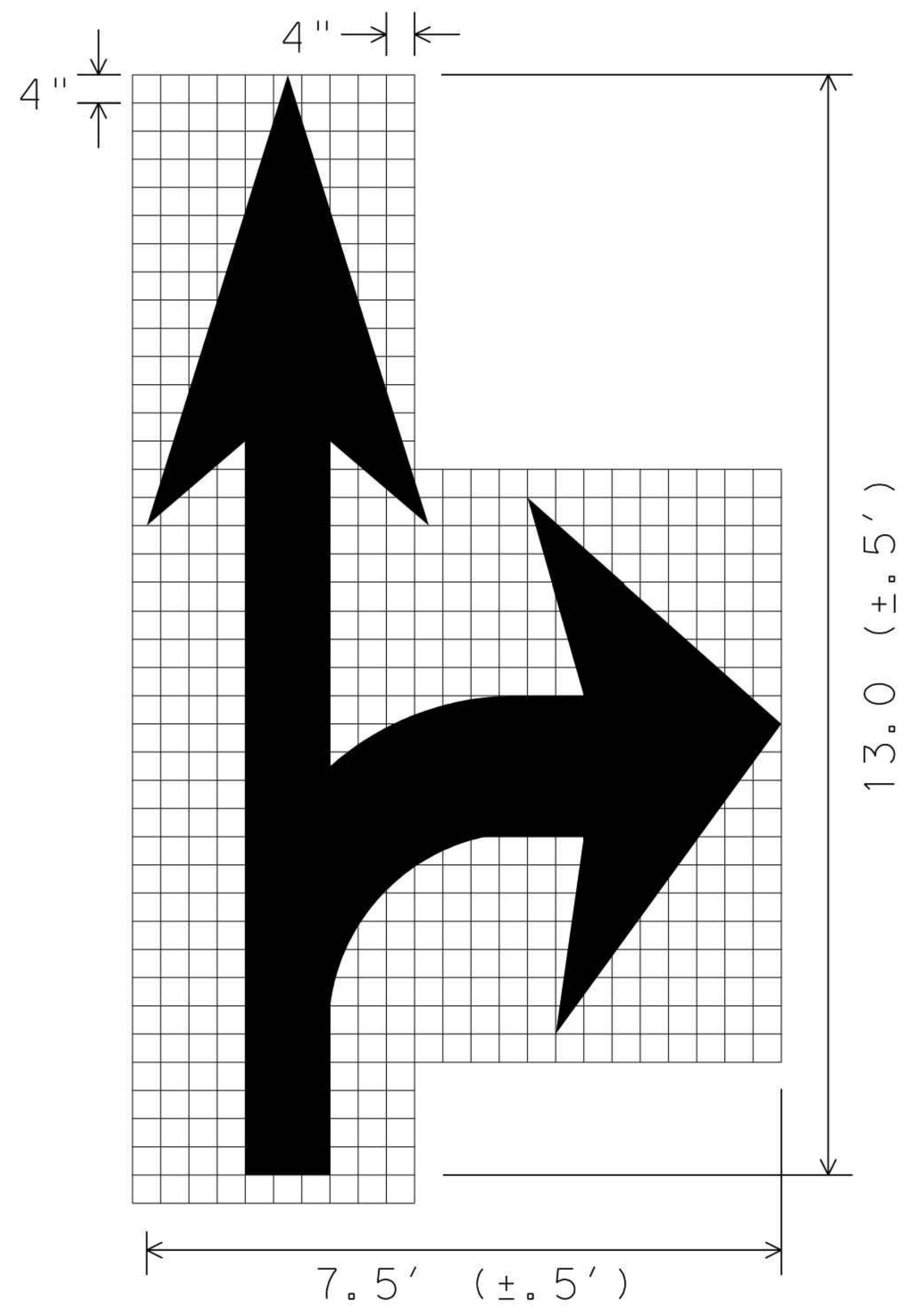

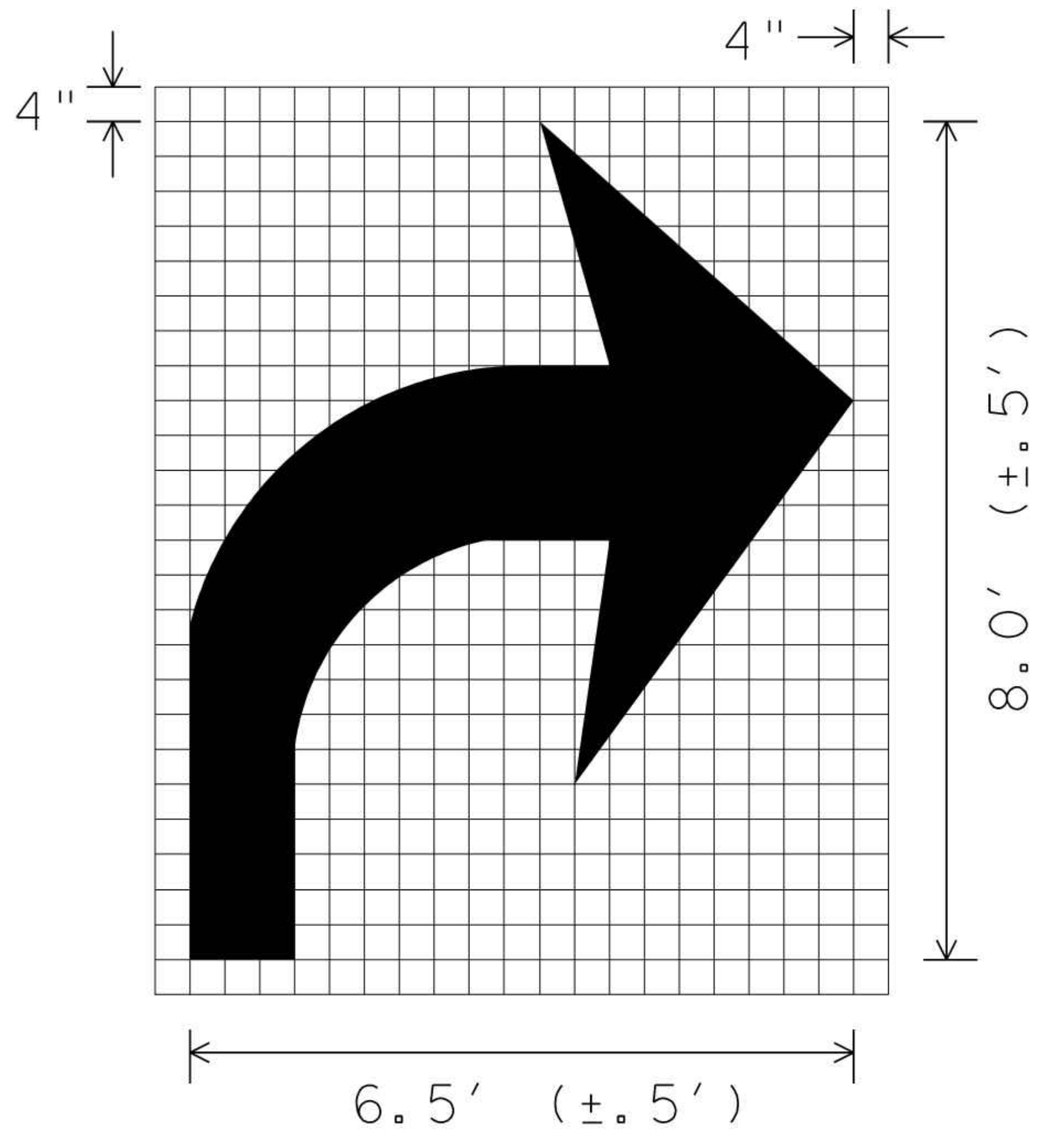

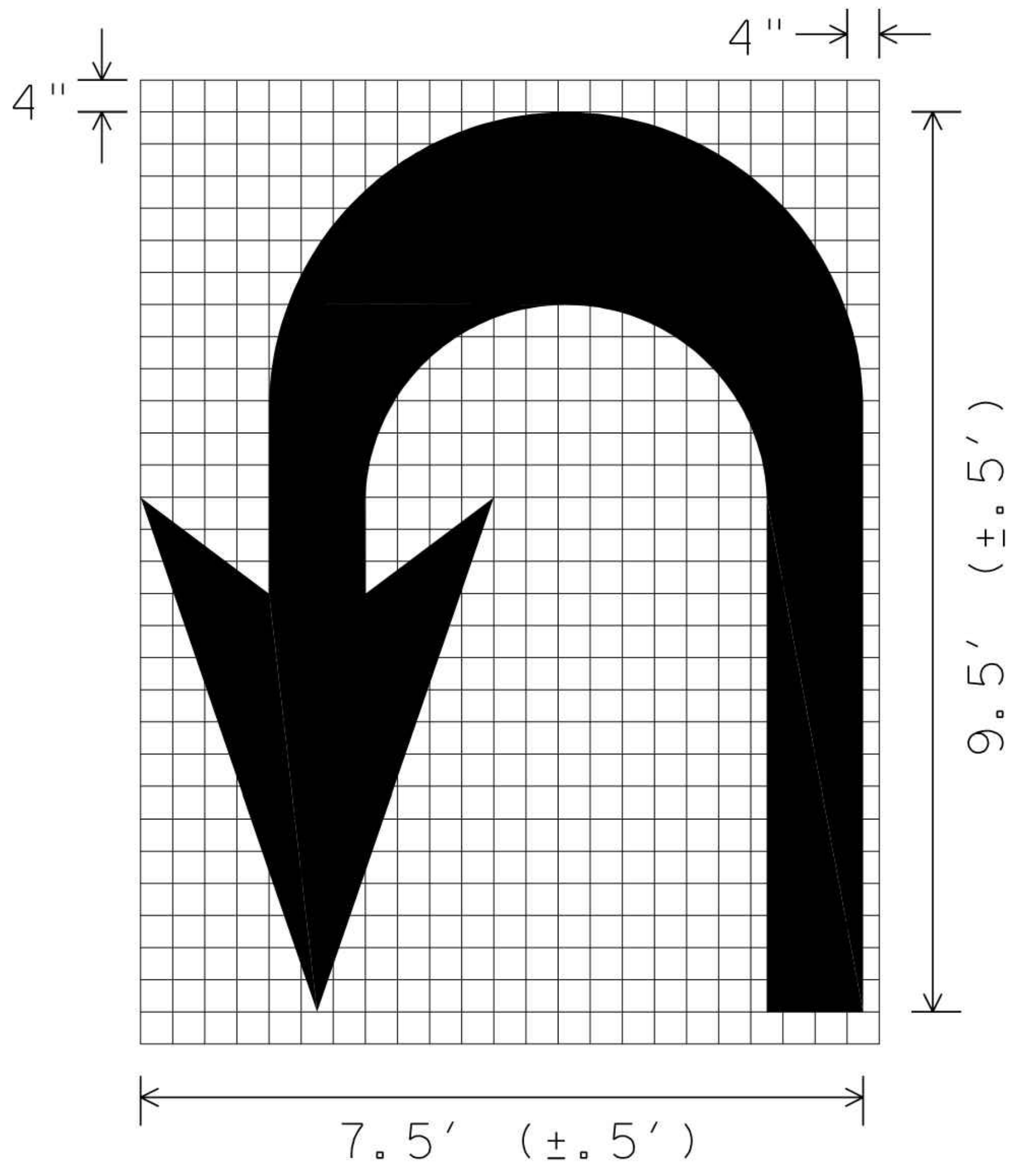

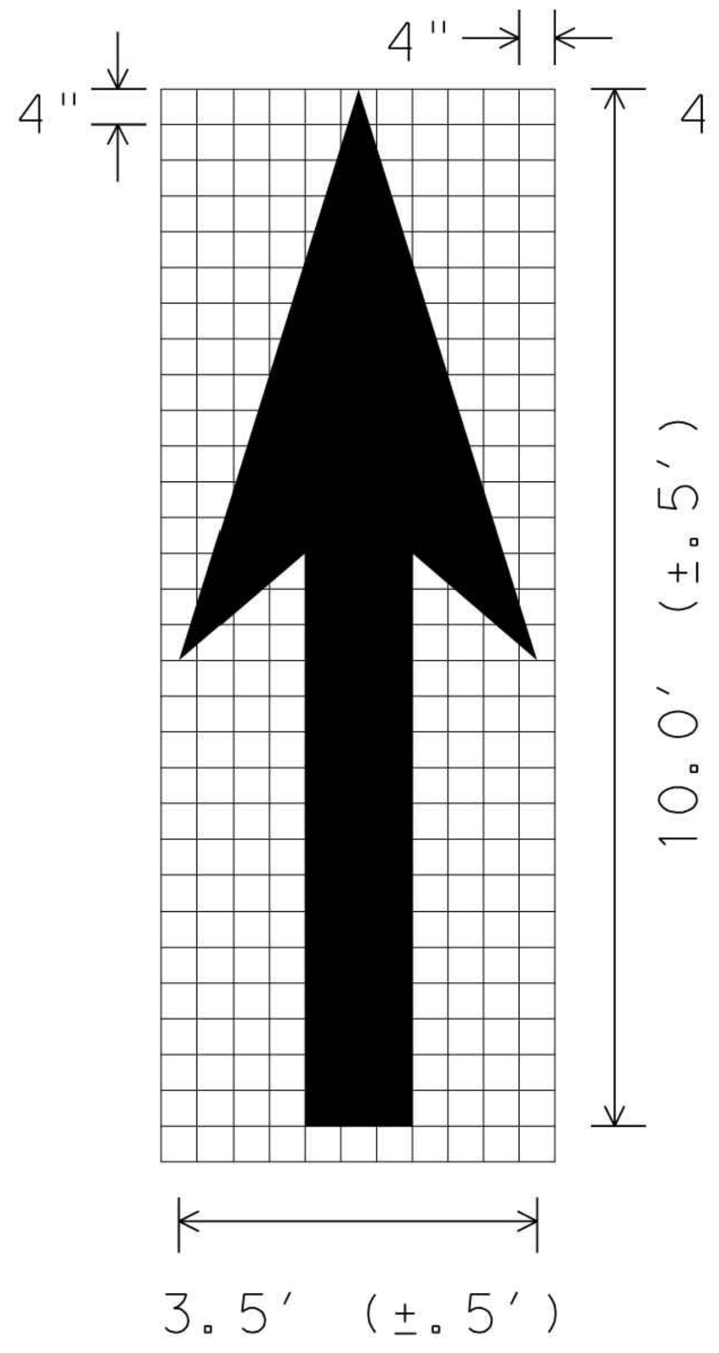

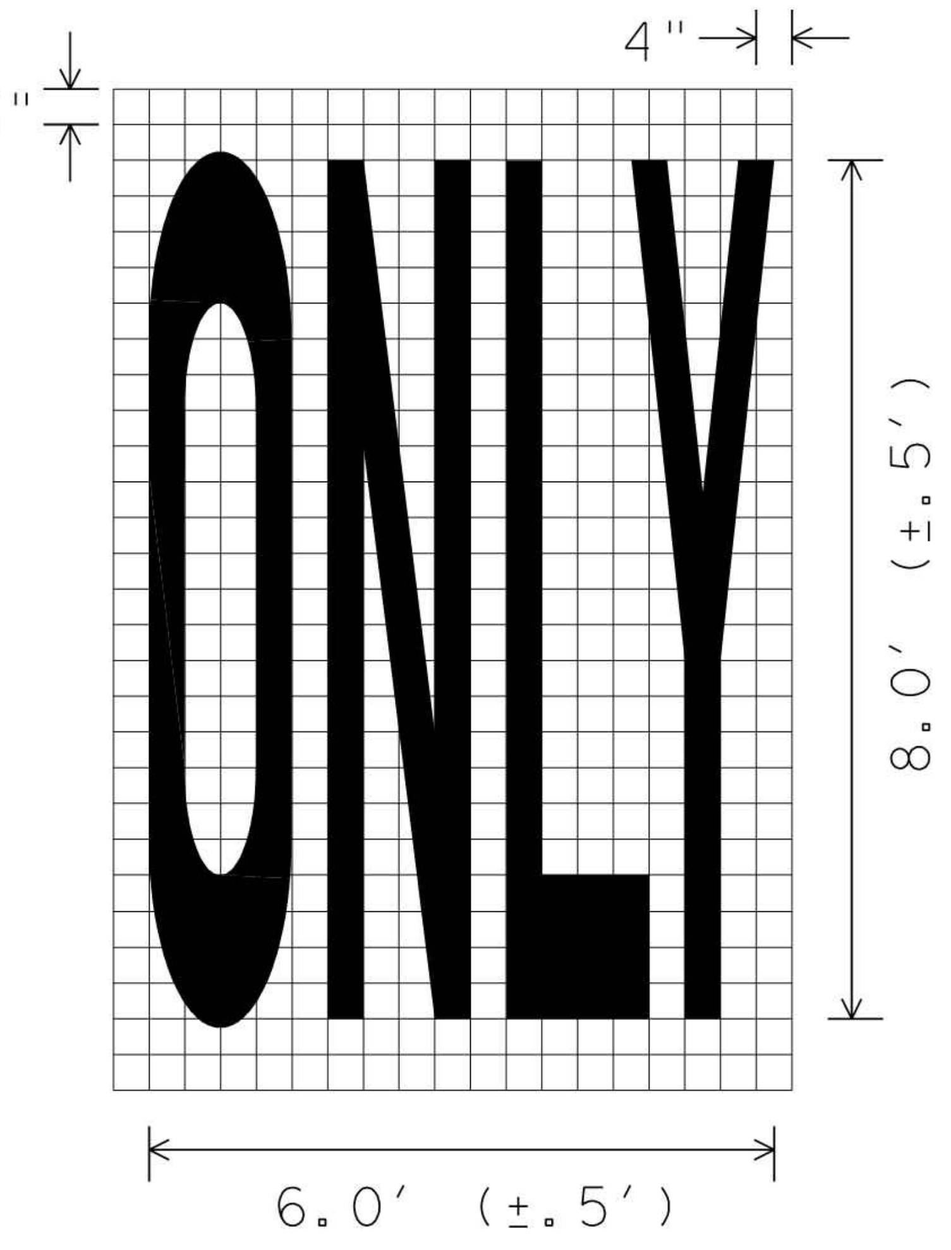

GENERAL NOTES;

1. Minimum 8 foot white markings should be used, unless otherwise noted. If message consists of more than one word, it should be placed with first word nearest the driver.
2. These details are standard size for normal installation; sizes may be reduced approximately one-third for low speed urban conditions; larger sizes may be needed for freeways, above average speed conditions or other critical locations.
3. The longitudinal space between markings should be at least four times the height of the markings, on low speed roads, but should not exceed ten times the height under any condition.
4. Markings considered appropriate for use when warranted include the following:
   A. Regulatory
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS
   B. Warning
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (see RCPM standard)
   C. Guide
      US XXX
      ROUTE XXX
      STATE XXX
      Other words or symbols may be necessary under certain conditions
5. Uncontrolled use of pavement markings can result in driver confusion. Word and symbol markings should be no more than three lines.
6. The word "STOP" shall not be used on the pavement unless accompanied by a Stop line and Stop sign. The word "STOP" shall not be placed on the pavement in advance to a stop line, unless every vehicle is required to stop at all times.
7. Pavement markings should generally be no more than one lane in width, with School messages being the exception. For details of School and School crossing pavement markings, refer to Part VII of the "Texas Manual on Uniform Traffic Control Devices".
8. Spacing between letters should be approximately 4 inches. The width of letters may vary depending on the width of the travel lanes.
9. Lane-Use arrow markings may be used to convey either guidance or mandatory messages. Arrows used to convey a mandatory movement must be accompanied by standard signs and the pavement marking word "ONLY".
10. Pavement markings are to be located as specified elsewhere in the plans.

SPACING BETWEEN LINES OF PAVEMENT MARKINGS

MPH	SPACING
≤ 45	MINIMUM 4 TIMES THE LETTER HEIGHT
> 45	MINIMUM - 4 TIMES THE LETTER HEIGHT MAXIMUM - 10 TIMES THE LETTER HEIGHT

STANDARD PLANS
Texas Department of Transportation
Traffic Operations Division

STANDARD
PAVEMENT MARKINGS
(ARROWS)

PM(6)-01

© TxDOT March 2001			DN: -	CK: - GRB	DW: - FDN	CK: - CAL
REVISIONS	STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT			SHEET
		6				
	COUNTY		CONTROL	SECTION	JOB	HIGHWAY

22H

LEVELS DISPLAYED		
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16		ACC:
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32		
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48		
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63		

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Mike Glenn
Signed

July 25, 2018
Date

Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
PHONE 972-717-5151 *FAX 972-717-2176*
105 DECKER COURT, SUITE 910 *IRVING, TEXAS 75062*

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Project:
ROCKWALL COLLEGE AND CAREER ACADEMY
FOR
ROCKWALL I.S.D.
ROCKWALL, TEXAS

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35059

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PAVING
MARKINGS

Job. No.	Sheet No.
1759-03-01	CP1.8
Drawn By: RAH	
Date: 02-28-2017	

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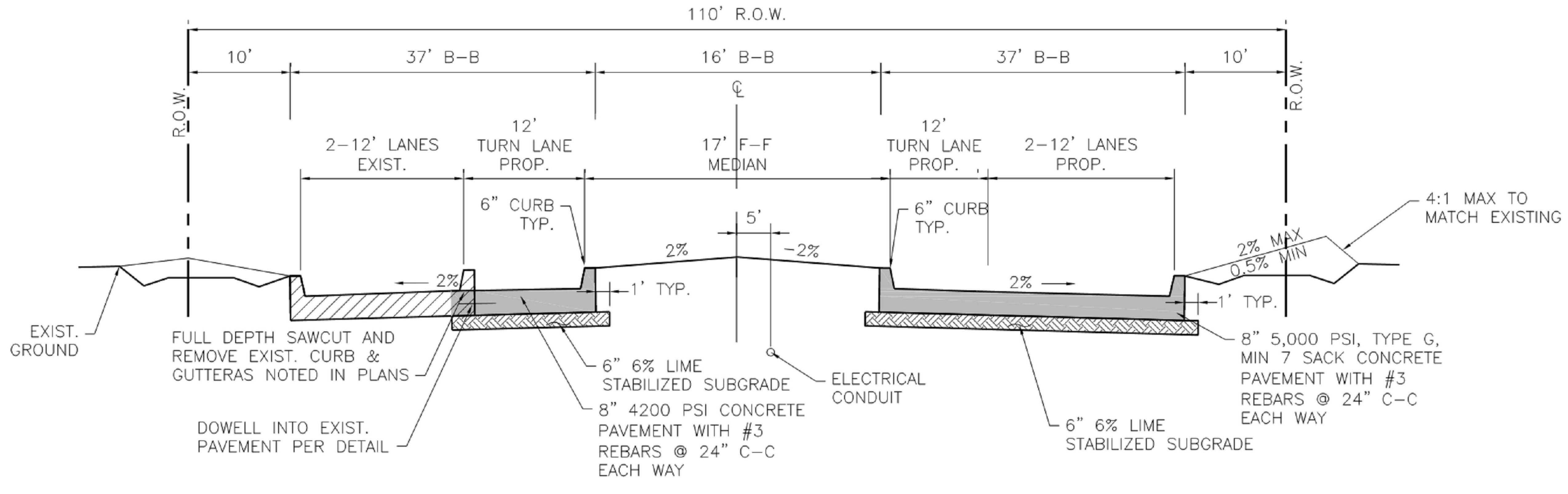
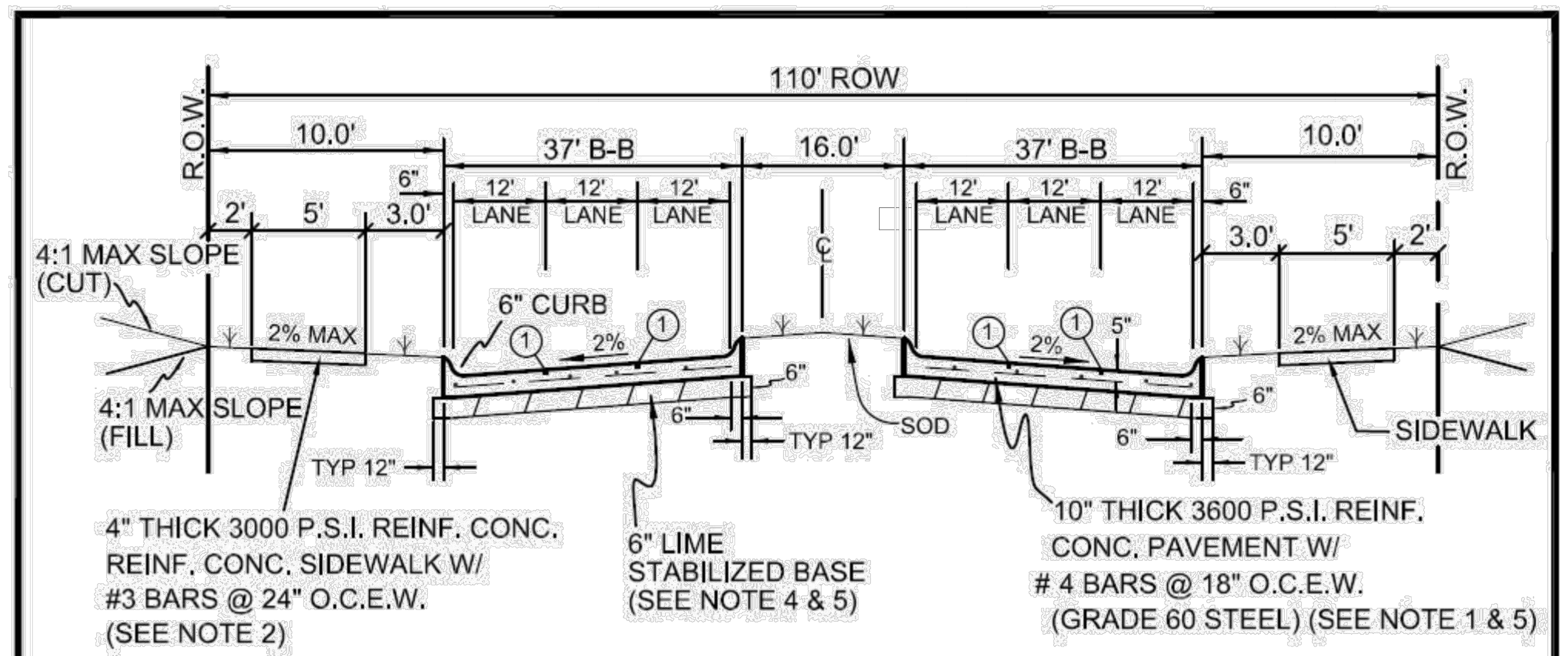

110' R.O.W.
10'
37' B–B
16' B–B
℄
37' B–B
10'
R.O.W.
R.O.W.
2–12' LANES EXIST.
12' TURN LANE PROP.
17' F–F MEDIAN
12' TURN LANE PROP.
2–12' LANES PROP.
6" CURB TYP.
5'
6" CURB TYP.
4:1 MAX TO MATCH EXISTING
2%
2%
–2%
2%
2% MAX
0.5% MIN
1' TYP.
1' TYP.
EXIST. GROUND
FULL DEPTH SAWCUT AND REMOVE EXIST. CURB & GUTTERAS NOTED IN PLANS
DOWELL INTO EXIST. PAVEMENT PER DETAIL
6" 6% LIME STABILIZED SUBGRADE
8" 4200 PSI CONCRETE PAVEMENT WITH #3 REBARS @ 24" C–C EACH WAY
ELECTRICAL CONDUIT
6" 6% LIME STABILIZED SUBGRADE
8" 5,000 PSI, TYPE G, MIN 7 SACK CONCRETE PAVEMENT WITH #3 REBARS @ 24" C–C EACH WAY

2

205 BYPASS
TYPICAL SECTION–TURN LANES

NOT TO SCALE

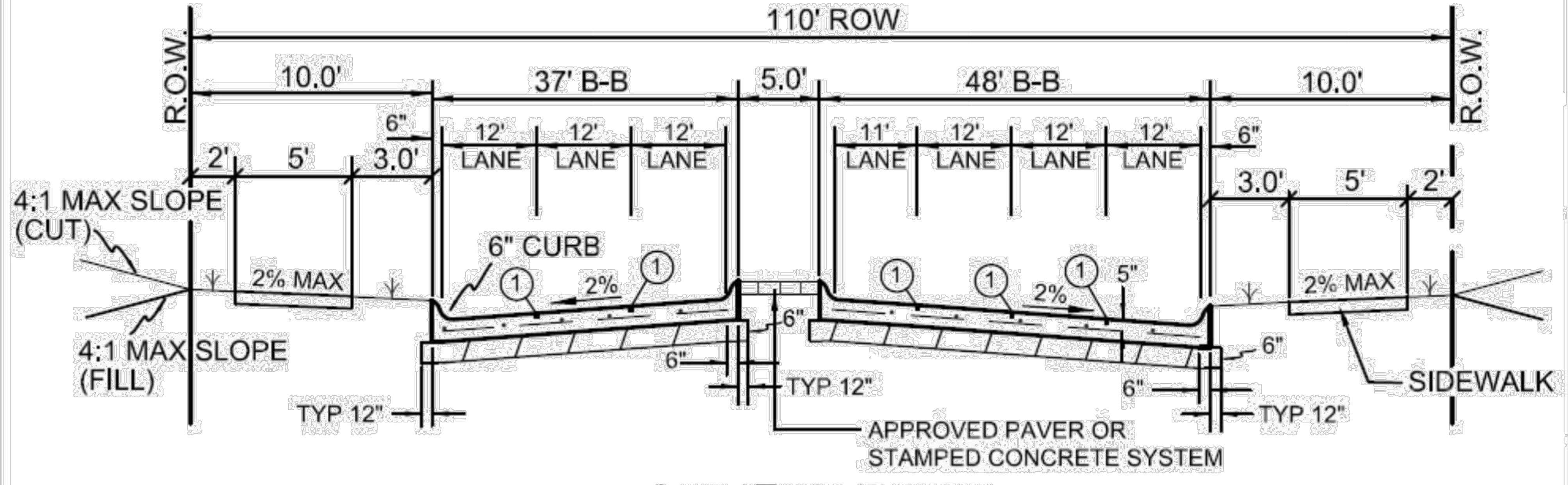
City of Rockwall
The New Horizon


110' ROW
R.O.W.
10.0'
37' B-B
16.0'
37' B-B
10.0'
R.O.W.
6"
2'
5'
3.0'
12' LANE
12' LANE
12' LANE
℄
12' LANE
12' LANE
12' LANE
6"
3.0'
5'
2'
4:1 MAX SLOPE (CUT)
6" CURB
2% MAX
①
2%
①
①
2%
①
5"
2% MAX
4:1 MAX SLOPE (FILL)
6"
6"
TYP 12"
SOD
TYP 12"
6"
6"
TYP 12"
SIDEWALK
4" THICK 3000 P.S.I. REINF. CONC. REINF. CONC. SIDEWALK W/ #3 BARS @ 24" O.C.E.W. (SEE NOTE 2)
6" LIME STABILIZED BASE (SEE NOTE 4 & 5)
10" THICK 3600 P.S.I. REINF. CONC. PAVEMENT W/ # 4 BARS @ 18" O.C.E.W. (GRADE 60 STEEL) (SEE NOTE 1 & 5)

110' ROW – Principal 6 Lane Divided Arterial Regular Section

(Not to Scale)

① SAWED LONGITUDINAL CONTRACTION, OR CONSTRUCTION JOINT



Left Turn Section

(Not to Scale)

NOTES:

1. Street pavement cement content to be no less than 6.0 sacks per cubic yard for machine placed and not less than 6.5 sacks per cubic yard for hand placed.
2. Sidewalk Cement content of not less than 5.5 sack per cubic yard.
3. No sand allowed under pavement or sidewalks.
4. Minimum lime content shall be 6% of dry weight of material (at least 27 lbs/SY) compact to 95% standard density.
5. Paving Section design shall be based off the 30 year projected traffic volumes and geotechnical analysis/report.

REINFORCED CONCRETE PAVEMENT	CITY OF ROCKWALL	DATE	DRAWING NO.
(P6D) PRINCIPAL ARTERIAL DIVIDED 6–LANE		AUG. '15	R–2010

Revision /	Date	
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FOR
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ROCKWALL, TEXAS

MIKE GLENN
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Glenn Engineering Corporation

GLENN ENGINEERING
TEXAS REGISTRATION NUMBER: F-303
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105 DECKER COURT, SUITE 910 IRVING, TEXAS 75062

TURN LANE
CROSS
SECTIONS
8

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