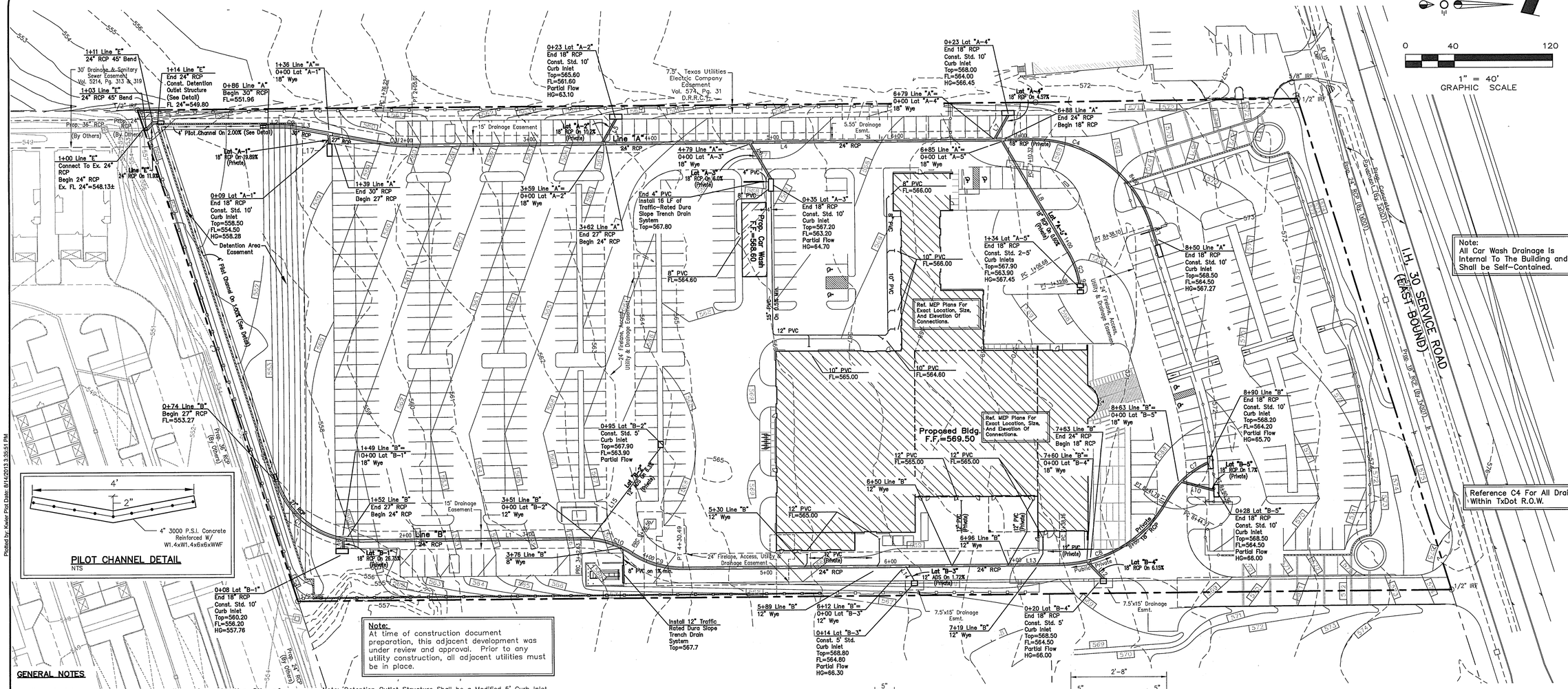


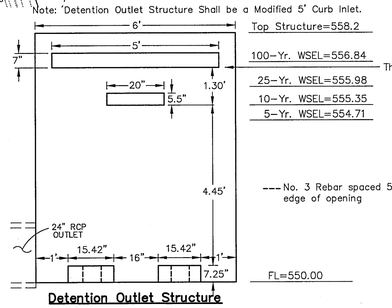
PILOT CHANNEL DETAIL
NTS

Note:
At time of construction document preparation, this adjacent development was under review and approval. Prior to any utility construction, all adjacent utilities must be in place.

GENERAL NOTES

1. All materials and construction shall conform to the City of Plano 1997 Standard Construction Details and Specifications, except as noted herein and approved by the City.
2. Contractor shall be responsible for maintaining trench safety requirements in accordance with City Standards, Texas State Law, and O.S.H.A. Standards for all excavation in excess of five feet in depth.
3. The location of all utilities located on these plans are taken from existing public records. The exact location and elevation of all public utilities 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.
4. It shall be the responsibility of the Contractor to protect all public utilities in the construction of this project. All manholes, clean-outs, valve boxes, fire hydrants, etc. must be adjusted to proper line and grade by the Contractor prior to and after the placing of permanent paving. Utilities must be maintained to proper line and grade during construction of the paving for this development.
5. Drainage should be maintained away from the foundations, both during and after construction.
6. Backfill for utility lines should be carefully placed so that they will be stable. Where utility lines pass through the parking lot, the top 6" should be compacted similarly to the remainder of the lot. Utility ditches should be visually inspected during the excavation process to ensure that undesirable fill is not used.
7. Concrete for inlets and drainage structures shall be 4200 psi at 28 days.
8. If rock is encountered in the trench, rock spoil shall not be used in the upper 1.5 feet of the trench.
9. All earthwork operations, pavement installation, etc. shall conform to the Geotechnical Investigation.
10. Four-foot RCP sections with beveled ends shall be used if pipe radius is less than 100 feet.
11. All PVC shall be placed on 1.0% minimum slope unless otherwise noted.

Note: Detention Outlet Structure Shall be a Modified 5' Curb Inlet.



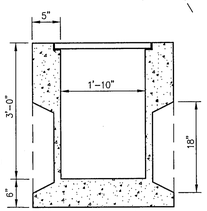
Detention Outlet Structure For Allowable Flow Conditions
NTS

100-YR STORM – WSEL=556.84
Detention Structure Calculations:
$Q_{Pond\ (Allow)}$= 25.7 cfs
Flow Thru 5-YR/10-YR Opening:
$Q = CA\sqrt{2gh}$
2-15.42" W X 7.25" H Openings:
$Q = 0.60(1.553)\sqrt{2*32.2(556.84 - (550.00 + 0.30))} = 19.1$ cfs
Flow Thru 25-YR Opening:
$Q = CA\sqrt{2gh}$
1-20" W X 5.5" H Opening:
$Q = 0.60(0.7639)\sqrt{2*32.2(556.84 - (555.35 + 0.23))} = 4.1$ cfs
Flow Thru 100-YR Opening:
$Q = 3.32LH^{(3/2)}$
1-5' W X 7" H Opening:
$Q = 3.32(5)(0.29)^{(3/2)} = 2.6$ cfs
$Q_{Pond\ (Actual)} = 19.1 + 4.1 + 2.6 = 25.8$ cfs

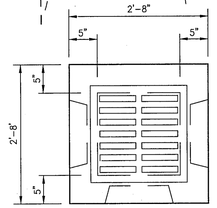
25-YR STORM – WSEL=555.98
Detention Structure Calculations:
$Q_{Pond\ (Allow)}$= 20.5 cfs
Flow Thru 5-YR/10-YR Opening:
$Q = CA\sqrt{2gh}$
2-15.42" W X 7.25" H Openings:
$Q = 0.60(1.553)\sqrt{2*32.2(555.98 - (550.00 + 0.30))} = 17.8$ cfs
Flow Thru 25-YR Opening:
$Q = CA\sqrt{2gh}$
1-20" W X 5.5" H Opening:
$Q = 0.60(0.7639)\sqrt{2*32.2(555.98 - (555.35 + 0.23))} = 2.3$ cfs
$Q_{Pond\ (Actual)} = 17.8 + 2.3 = 20.1$ cfs

10-YR STORM – WSEL=555.35
Detention Structure Calculations:
$Q_{Pond\ (Allow)}$= 17.9 cfs
Flow Thru 5-YR/10-YR Opening:
$Q = CA\sqrt{2gh}$
2-15.42" W X 7.25" H Openings:
$Q = 0.60(1.553)\sqrt{2*32.2(555.35 - (550.00 + 0.30))} = 16.8$ cfs
$Q_{Pond\ (Actual)} = 16.8$ cfs

5-YR STORM – WSEL=554.71
Detention Structure Calculations:
$Q_{Pond\ (Allow)}$= 15.4 cfs
Flow Thru 5-YR/10-YR Opening:
$Q = CA\sqrt{2gh}$
2-15.42" W X 7.25" H Openings:
$Q = 0.60(1.553)\sqrt{2*32.2(554.71 - (550.00 + 0.30))} = 15.7$ cfs
$Q_{Pond\ (Actual)} = 15.7$ cfs

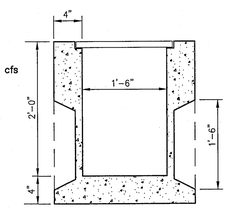


SECTION
CATCH BASIN NO. 24
NTS
AMERICAN INDUSTRIAL PRE-CAST CATCH BASIN NO. 24 OR APPROVED EQUAL

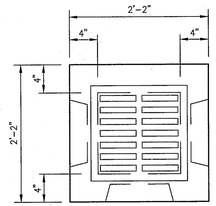


PLAN

CATCH BASIN NO. 24
FEATURES:
1. CAST IRON FRAME/GRATE VFG 24"x24"
2. 4000 PSI CONCRETE
3. GRADE 60 REBAR #3 ON 8" O.C.E.W.
4. ACCOMMODATES 18" I.D. OR SMALLER PIPE
5. 2 OR 3 WAY THIN WALL K.O.'S



SECTION
CATCH BASIN NO. 20
NTS
AMERICAN INDUSTRIAL PRE-CAST CATCH BASIN NO. 20 OR APPROVED EQUAL



PLAN

CATCH BASIN NO. 20
FEATURES:
1. CONCRETE: 4500 PSI
2. REINF.: GRADE 60
3. MAX. PIPE SIZE 12" I.D. R.C.P.
4. 4 THIN WALL K.O.'S

Stormsewer Centerline Table		
Line	Length	Bearing
L1	179.81	N0° 22' 38"W
L2	10.87	N0° 00' 00"E
L3	66.27	N10° 37' 22"E
L4	505.31	N0° 22' 38"W
L5	23.09	S60° 22' 38"E
L6	34.64	N59° 37' 22"E
L7	23.09	N60° 22' 38"W
L8	106.68	N59° 37' 22"E
L9	11.88	N72° 49' 56"E
L10	27.55	S15° 00' 48"W
L11	2.48	N59° 45' 11"W
L12	19.64	N46° 52' 23"E
L13	307.43	N0° 22' 38"W
L14	13.86	N59° 37' 22"E
L15	93.96	N52° 15' 04"W
L16	7.60	N87° 37' 22"E
L17	8.48	N84° 37' 22"E

Stormsewer Centerline Curve Table						
Curve	Length	Radius	Delta	Tangent	Chord	Chord Bearing
C1	88.60	70.00	72°31'24"	51.35	82.81	N35° 53' 04"E
C2	12.98	70.00	10°37'22"	6.51	12.96	N05° 18' 41"E
C3	28.80	150.00	11°00'00"	14.44	28.75	N05° 07' 22"E
C4	127.77	100.00	73°12'34"	74.28	119.26	N36° 13' 39"E
C5	27.41	75.15	20°53'59"	13.86	27.26	N70° 04' 21"E
C6	27.41	75.15	20°53'59"	13.86	27.26	N70° 04' 21"E
C7	46.06	75.17	35°06'31"	23.78	45.35	N42° 11' 56"W
C8	103.83	100.44	59°14'01"	57.09	99.27	N29° 59' 39"W
C9	43.93	75.00	33°33'33"	22.61	43.30	N16° 24' 08"E
C10	43.93	75.00	33°33'33"	22.61	43.30	N16° 24' 08"E

RECORD DRAWINGS

NOTE:
To the best of our knowledge Spiars Engineering, Inc. hereby states that this plan is a Record Drawing. The information provided is based on field surveying at the site and information provided by the contractor.

BENCHMARK:
FOUND "X" CUT IN A CONCRETE DRIVE WAY LOCATED SOUTH 07°04'40" WEST, A DISTANCE OF 35.19 FEET FROM THE NORTHEAST CORNER OF CONCRETE DRIVEWAY AND NORTH 04°59'13" EAST, A DISTANCE OF 130.54' FROM THE NORTH CORNER OF AN EXISTING BUILDING LOCATED AT THE SOUTH END OF CONCRETE DRIVEWAY.

BENCHMARK:
TOP OF RIM OF A SANITARY SEWER MANHOLE LOCATED SOUTH 01°25'39" WEST, A DISTANCE OF 1,705.71 FEET FROM THE FROM A FOUND "X" WHICH IS LOCATED IN A CONCRETE DRIVEWAY SOUTH 17°15'49" EAST, A DISTANCE OF 31.19 FEET FROM EDGE OF ASPHALT.

spiars ENGINEERING
765 Custer Road, Suite 100 • Plano, TX 75075 • (972) 422-0077 • TBPE No. F-2121

KEVIN K. WEN
91219
LICENSED
PROFESSIONAL ENGINEER
8/14/13

HONDA OF ROCKWALL ADDITION
LOT 1, BLOCK 1
ROCKWALL, TEXAS
DRAINAGE PLAN

Revisions	Date
1	
2	
3	
4	
5	
6	
7	
8	
9	
Issue Dates:	
Addendum 4 - Nov. 12, 2012	
Scale: 1" = 40'	
Drawn By: AO	
Checked by: KSW	

Sheet C 7 of 12

SEI No. 11-112
11-112-DRN

Plotted by: Kveler Plot Date: 8/14/2013 3:35:51 PM
Drawing: G:\2011_JOBS\11-112 Honda of Rockwall\11-112-DRN.dwg Saved By: BrianB Save Time: 8/9/2013 8:07:24 AM