Development Review Guide – STEP 2 of 8

PRELIMINARY DESIGN REVIEW:
APPLICATION

General Information

Preliminary design review is an opportunity for an applicant to discuss the requirements, standards, procedure, and potential modifications of standards or variances that may be necessary for a project and to generally consider the development proposal design which has been evaluated as a part of the conceptual review process. While the conceptual review process is a general consideration of the development proposal, a Preliminary Design Review considers the development proposal **in greater detail**. Problems of both a major and minor nature can be identified and solved during the preliminary design review before a formal application is made.

Preliminary design review applications **must be submitted to City Staff no later than 5 pm, two weeks prior to the Wednesday meeting date.** Application materials can be e-mailed to currentplanning@fcgov.com or sent to/dropped off at 281 North College Avenue.

Representatives of Community Development and Neighborhood Services (Zoning, Environmental Planning, Current Planning, and Development Review Engineering), Light and Power, Stormwater, Water/Waste Water, Advance Planning (Long Range Planning and Transportation Planning), Historic Preservation and Poudre Fire Authority regularly attend preliminary design review meetings. Additionally, other public or quasi-public agencies which may be impacted by the development project are invited and encouraged to attend the preliminary design review. These agencies may include the gas utility, water and/or wastewater utility districts, ditch companies, railroads, cable television service providers and other similar agencies.

Upon receipt of a preliminary development proposal for review, and after review of such proposal with the applicant, the staff shall furnish the applicant with written comments and recommendations regarding such proposal in order to inform and assist the applicant prior to preparing components of the development application. The staff shall provide the applicant with a "critical issues" list, which will identify those critical issues that have surfaced in the preliminary design review as issues that must be resolved during the review process of the formal development application. To the extent that there is a misunderstanding or a misrepresentation of facts, the opinion of the staff may change during the course of development review.

PDR150018

Section to be filled out by City Staff.

Date of Meeting 9/2/2015 **Project Planner** Ted Shepard

Submittal Date 8/19/2015 **Fee Paid ($500)** X

BOLDED ITEMS ARE REQUIRED* *The more info provided, the more detailed your comments from staff will be.

Project Name Home2 Suites at Harmony Village

Project Address (parcel # if no address) 4715 Delany Drive, Fort Collins, CO 80525

Contact Name(s) and Role(s) (Please identify whether Consultant or Owner, etc) Ken Merritt, Planner

Business Name (if applicable) Home2 Suites at Harmony Village

Applicant Mailing Address 2900 South College Avenue, Suite 3D, Fort Collins, CO 80525

Phone Number 970-305-6754 E-mail Address kmerritt@jrengineering.com

Basic Description of Proposal (a detailed narrative is also required) Extended stay lodging with 107 rooms & 111 parking spaces on site.

Zoning HC - HARMONY CORRIDOR **Proposed Use** Lodging **Existing Use** N/A

Total Building Square Footage 64,479 S.F. Number of Stories 4 Lot Dimensions Approx 113'X712'

Age of any Existing Structures N/A

Info available on Larimer County's Website: http://www.co.larimer.co.us/assessor/query/search.cfm

*If any structures are 50+ years old, good quality, color photos of all sides of the structure are required.

Increase in Impervious Area 31,900 S.F.

(Approximate amount of additional building, pavement, or etc. that will cover existing bare ground to be added to the site)

SUBMITTAL INFORMATION:

PRELIMINARY DESIGN REVIEW (PDR)

1) Preliminary Design Review Application form and filing fee ($500).

2) **Project Narrative** – Please include the following information:

   (a) What are you proposing/use?

   (b) What improvements and uses currently exist on the site?

   (c) Describe the site circulation (auto and pedestrian), parking and how it coordinates with the existing neighborhood.

   (d) Describe site design and architecture.

   (e) How is your proposal compatible with the surrounding area?

   (f) Is water detention provided? If so, where? (show on site plan)

   (g) How does the site drain now (on and off site)? Will it change? If so, what will change?

   (h) What is being proposed to treat run-off?

   (i) How does the proposal impact natural features?

   (j) Do any existing structures have automatic fire sprinklers? Will the new structures have fire sprinklers?

   (k) Are there any unusual factors and/or characteristics are present that may restrict or affect your proposal?

   (l) Have you previously submitted an application?

   (m) What specific questions, if any, do you want addressed?

3) **Site Plan** – Please consider including the following:

   (a) Project site boundary and adjacent property uses

   (b) Proposed circulation system, and how it ties into existing infrastructure (pedestrian and auto)

   (c) Existing and proposed landscaping (Will trees be removed?)

   (d) Existing and proposed buildings (Will they remain? If they will change, how?)

   (e) Existing natural features (Will these be impacted by the proposal?)

   (f) On and off site improvements

   (g) Location of detention, drainage and water quality features

   (h) Emergency vehicle access and fire hydrant locations

Project Narrative

Homes2 Suites at Harmony Village is proposed to be built on a 1.85 acre site known as Lot 11A at Harmony Village PUD. Currently there are no existing structures built on the site however the subject property does have an existing 98 car parking lot and shared vehicular access drives located on and across the property which are currently used by other adjacent uses within the Harmony Village PUD. The Harmony Village PUD is located at the southwest intersection of the Harmony & Timberline Roads. Lot 11A is specifically located north of the Cinemark Theater and south of the Texas Roadhouse Restaurant. The Harmony Village PUD is a commercial, retail and entertainment development consisting of a movie theater, bank, restaurants, office, and miscellaneous retail uses. Harmony Village PUD is bounded by Harmony Road on the north, Timberline Road on the east, Harmony Crossing subdivision on the south and Union Pacific Railroad to the west. The site is zoned HC-Harmony Corridor. Two major points of vehicular, pedestrian and bicycle access to the site currently exist. Delany Drive provides access to the site for east bound travelers along Harmony Road and Timberwood Drive provides access for both North and Southbound travelers along Timberline Road.

The applicant believes the 1.85 acre site is ideally suited for extended stay lodging and is proposing to build a Home2 Suites by Hilton Hotels on the site. Lodging is a permitted use within the HC-Harmony Corridor Zoning District. Home2 Suites by Hilton is an innovative mid-scale, all-suite extended stay hotel thoughtfully designed for savvy, sophisticated, cost-conscious travelers that may be staying only a few nights or for several months. Designed with comfort and convenience in mind visitors will find a world of complimentary amenities at the Harmony Village location. Such amenities include expansive community spaces, fitness center and an outdoor heated pool and patio. Home2 Suites hotels are pet friendly which comes in handy especially in a dog friendly community like Fort Collins. We believe that the continual rise in market demand for extended stay mid-scale lodging opportunities combined with the current mix of dining and entertainment within the Harmony Village PUD and the surrounding area makes this site ideal for a Home2 Suites Hotel. The proposed Home2 Suites property is also conveniently located approximately 500 feet south of the Transfort Route #16 Transit Route which serves the East Harmony Road employment corridor with access to the South Fort Collins Transit Center and Fossil Ridge High School. With this new Home2 Suites hotel being located within the Harmony Corridor it can be expected to further foster the overall goals and objectives of the Harmony Corridor Master Plan.

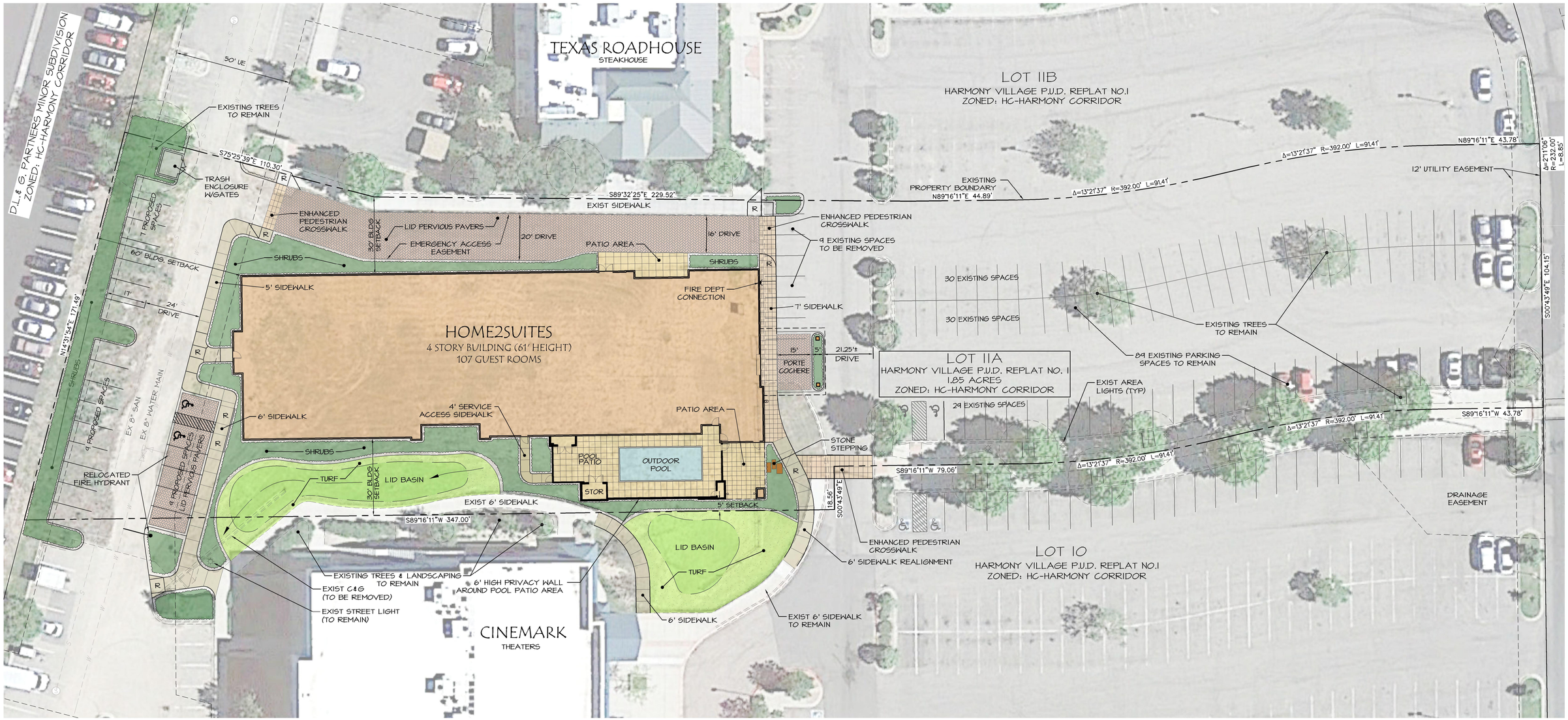
The Home2 Suites hotel is proposed to be four (4) story structure containing 107 guest rooms and will be fully fire sprinkled. The site will provide a total of 111 parking spaces located entirely on-site. The hotel has a ground floor area of approximately 15,600 square feet and a total building square footage of approximately 62,400 square feet. The hotels main entrance

will be located on the east side of the building and will provide a Porte Cochere for loading and unloading of guests. The existing parking lot with 89 spaces located on the east side of the site will accommodate the majority of the hotel guests while 22 additional parking spaces will be developed on the west side of the building which will include a new north/south access drive to provide connectivity to the existing adjacent properties. Pedestrian and vehicle connectivity shall also be provided from the existing east parking lot to the proposed west parking area via a 20 foot wide permeable paver access drive located on the north side of the hotel. The site lies within the McClelland drainage basin and drains west to east. The site will continue to drain west to east through a series of LID basins which shall be conveyed to an existing detention pond located along the east side of the Harmony Village PUD. For additional information regarding site drainage see the attached drainage memo dated 08/03/2015. JR Engineering has also provided a Sanitary Sewer Capacity Analysis which demonstrates that the existing 8 inch Sanitary Sewer located on the west side of the subject property has the residual capacity necessary to carry the expected flows from the Home2 Suites hotel development. For additional information regarding the Off-Site Sanitary Sewer Capacity Analysis see the attached report dated 08/04/2015.

HOME2SUITES AT HARMONY VILLAGE

LOT IIA, HARMONY VILLAGE P.U.D. REPLAT No.1

PRELIMINARY SITE PLAN



LANDUSE DATA

TOTAL SITE AREA	80,407 SF	1.85 AC
BLDG GROSS FLOOR AREA (4 STORIES)	64,479 SF	0.08 GFAR
TOTAL GUEST ROOMS	107 ROOMS	
TOTAL BLDG GROUND FLOOR AREA	15,610 SF	19.4% OF SITE, 0.194 FAR
TOTAL PAVED DRIVES & PARKING AREA	51,525 SF	64.1% OF SITE
TOTAL LANDSCAPE/OPEN SPACE AREA	13,272 SF	16.5% OF SITE
TOTAL PARKING PROVIDED	111 SPACES	
	107 STANDARDS SPACES	
	4 ACCESSIBLE SPACES	
TOTAL PARKING SPACES PER ROOM	1.04 PARKING SP/ROOM	

20 10 0 20 40

ORIGINAL SCALE: 1" = 20'

HOME2SUITES AT HARMONY VILLAGE

PRELIMINARY SITE PLAN
JOB NO. 3970501
AUG. 18, 2015
SHEET 1 OF 1

J·R ENGINEERING
A Westrian Company
J·R ENGINEERING
A Westrian Company
Planners • Engineers • Landscape Architects • Surveyors
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com
Fort Collins 970-491-9888 • www.jrengineering.com

MEMORANDUM

J·R ENGINEERING
A Westrian Company

To: East Avenue Development LLC

From: Tim Halopoff, PE

Date: August 3, 2015

Subject: Home2Suites Harmony Village Conceptual Drainage Review

JR Engineering, LLC has reviewed the drainage study history associated with the proposed Home2Suites site on lot 11A at Harmony Village PUD, located near the intersection of Harmony Road and Timberline Drive in Fort Collins, Colorado. This site lies within the McClellands drainage basin and was previously studied in the "Final Drainage and Erosion Control Report Harmony Village P.U.D.", completed by JR Engineering, Ltd. in 1999. This study takes into account storm drainage from the subject site, as well that from all of the contributing off-site drainage areas, to determine the 100-yr storm flow rates that are currently conveyed onto and through the project site.

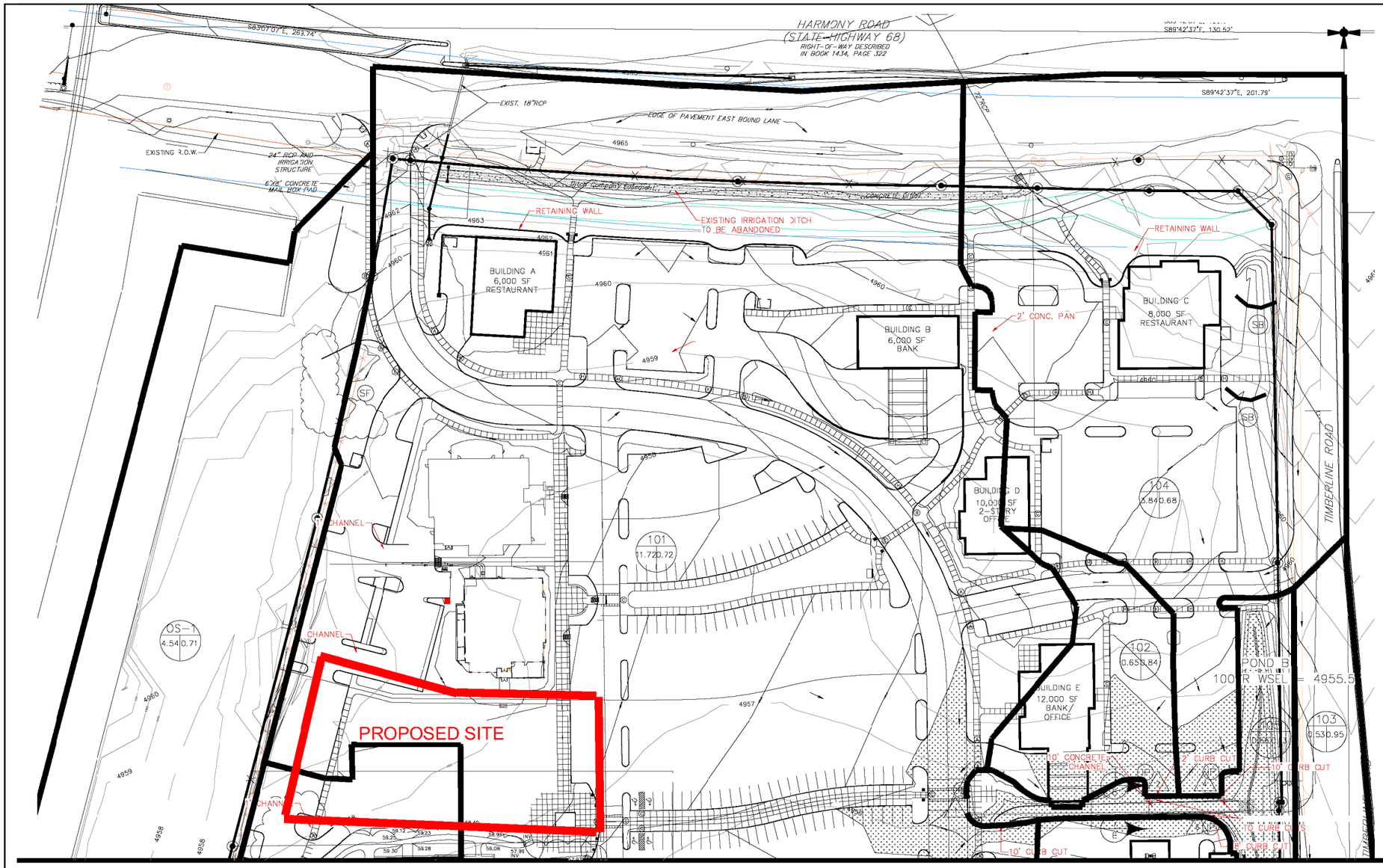
Currently the site generally drains from west to east; this will not change with the proposed Home2Suites development. According to the previous report the proposed project site is part of sub-basins 101 and 114. Sub-basin 101, which accounts for the northern and eastern portion of the site, sheet flows east across the parking lot to a curb cut / grouted boulder channel at DP1 and outfalls into existing detention Pond B. Sub-basin 114, which accounts for the southwest corner of the proposed site, sheet flows southwest, then southeast across the parking lot to a sump inlet on the east side of the parking lot adjacent to Delany Drive at DP 14 and finally outfalls into existing detention Pond A. Detention ponds A & B, located east of the site along Timberline Road, were modeled as one pond connected by a concrete box culvert and were originally sized to provide adequate detention for this project site and the proposed Home2Suites use. Additional water quality will be provided for the site using LID basins proposed around the Home2Suites building itself. See the attached Conceptual Site plan for the proposed Home2Suites project, as well as the drainage maps from the previous report completed in 1999.

This Memo has been prepared in an abbreviated format to be submitted to the City of Fort Collins Storm Drainage Department as a compliment to the Home2Suites Harmony Village Preliminary Development Review (PDR) package, in an effort to verify previously planned storm drainage facilities and to solicit drainage comments from Staff, as both pertain to the Home2Suites development proposal.

☐7200 South Alton Way, Suite C400
Centennial, CO80112
303-740-9393 • Fax 303-921-7320

☐130 East Kiowa Street, Suite 400
Colorado Springs, CO80903
719-593-2593 • Fax 303-921-7320

▣2900 South College Avenue, Suite 3D
Fort Collins, CO80525
970-491-9888 • Fax 303-921-7320



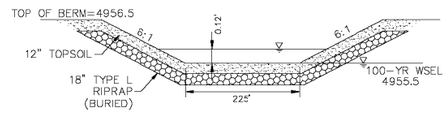
MATCH LINE – SEE SHEET 8 OF 26

50' 25' 0 50' 100'

SCALE: 1" = 50'

LEGEND

- DESIGN POINT (10)
- BASIN CRITERIA (A)
- RUNOFF COEFFICIENT (1.24)
- AREA IN ACRES (0.73)
- FLOW DIRECTION
- BASIN BOUNDARY
- EXISTING PIPES
- PROPOSED INLET AND PIPE
- FLARED END SECTION
- SIDEWALK CULVERT
- EROSION BALES (SB)
- PROPOSED INLET LOCATION
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- SILT FENCE (SF)
- INLET PROTECTION (IP)
- CONSTRUCTION ENTRANCE (CE)
- SEDIMENT TRAP (ST)
- PROPOSED RIPRAP
- 100-YR INUNDATION AREA



EMERGENCY SPILLWAY
CROSS SECTION
N.T.S

DRAINAGE SUMMARY TABLE

Design Point	Tributary Sub-basin	Area (ac)	C (10)	tc (10) (min)	Q(10)tot (cfs)	C (100)	tc (100) (min)	Q(100)tot (cfs)
1	101	11.72	0.72	14.4	12.06	0.89	11.6	70.4
2	102	0.65	0.84	5.0	3.05	1.00	10.0	4.6
3	103	0.53	0.95	5.0	2.80	1.00	10.0	3.8
4	104	3.84	0.68	7.5	15.00	0.86	10.0	27.2
	105	0.66	0.13	12.4	3.35	0.16	12.4	0.7
5	101-105 + 112	17.88	0.70	18.8	42.18	0.88	15.8	84.1
6	106	0.39	0.88	5.0	14.07	1.00	10.0	50.6
7	107	0.25	0.50	5.7	3.67	0.62	10.0	1.1
8	108	0.39	0.82	5.0	1.78	1.00	10.0	2.3
9	109	0.80	0.64	5.9	2.06	0.80	10.0	9.2
	110	1.28	0.10	11.6	3.54	0.13	10.0	1.1
10	110-114	29.00	0.71	18.9	69.14	0.89	16.9	137.9
11	111	0.58	0.95	7.5	2.74	1.00	10.0	4.1
12	112	0.48	0.91	5.0	2.45	1.00	10.0	3.4
13	113	1.16	0.68	8.9	3.67	0.85	10.0	14.5
14	114	6.46	0.84	16.4	19.50	1.00	14.0	39.9
15	115	0.19	0.47	5.0	3.61	0.59	10.0	1.6
16	116	2.83	0.74	8.7	3.88	0.93	10.0	18.7
17	117	0.81	0.27	13.9	3.84	0.34	12.9	1.7
18	118	0.88	0.95	5.0	4.66	1.00	10.0	6.3
19	119	1.60	0.44	12.1	2.90	0.55	11.1	6.0
20	120	0.10	0.10	5.6	3.05	0.13	10.0	0.1
O-1	OS-1	4.54	0.71	16.8	11.44	0.89	16.8	22.8
O-2	OS-2	1.02	0.49	10.6	2.19	0.62	10.2	27.2

DETENTION SUMMARY
POND A & B

	10-YR EVENT	100-YR EVENT
MAX. WSEL	4954.45'	4955.50'
DETENTION VOLUME PROVIDED	2.45 AC-FT	4.26 AC-FT
DETENTION VOLUME REQUIRED	2.40 AC-FT	4.06 AC-FT
MAX. RELEASE RATE	5.7 CFS	14.2 CFS
MAX. ALLOWABLE RELEASE RATE	5.8 CFS	14.5 CFS
OUTLET CONDITIONS	27" PIPE W/ 11.25" DIA. ORIFICE	27" PIPE W/ 16.0" DIA. ORIFICE

NOTES

1. EROSION CONTROL DETAILS ARE SHOWN ON SHEET 22
   ORIFICE PLATE AND OUTLET DETAIL ARE SHOWN ON SHEET 20
   SPECIAL DRAINAGE STRUCTURE DETAILS ARE SHOWN ON SHEETS 22-24
2. PONDS A & B ARE MODELED AS ONE POND DUE TO HYDRAULIC CONNECTIVITY
3. ALL AREAS NOT TO RECEIVE PAVEMENT AND DISTURBED FOR MORE THAN 30 DAYS SHALL BE SEEDED AND MULCHED.
4. DETENTION PONDS SHALL BE SODDED OR SEEDED AND MULCHED. THE STANDARD EROSION CONTROL NOTES INDICATE TIME FRAMES.

CONSTRUCTION SEQUENCE

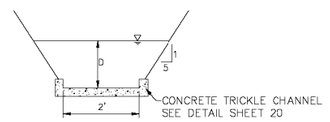
STANDARD FORM C

PROJECT: HARMONY VILLAGE
SEQUENCE FOR 1199 ONLY COMPLETED BY: DWK DATE: 4/7/99

Indicate by use of a bar line or symbols when erosion control measures will be installed. Major modifications to an approved schedule may require resubmitting a new schedule for approval by the City Engineer.

MONTH	1998 A	M	J	J	A	S	O	N	D	2000 J	F	M
Grading												
Wind Erosion Control: Soil Roughling, Perimeter Barrier, Additional Barriers, Vegetative Methods, Soil Sealant, Other												
Rainfall Erosion Control Structural: Sediment Trap/Basin, Inlet Filters, Straw Barriers, Silt Fence Barrier, Sand Bags, Bare Soil Preparation, Contour Furrows, Terracing, Asphalt/Concrete Paving, Other												
Vegetative: Permanent Seed Planting, Mulching/Sealant, Temporary Seed Planting, Sod Installation, Netting/Mats/Blankets, Other												
BUILDING CONSTRUCTION												

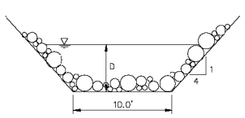
STRUCTURES: INSTALLED BY: CONTRACTOR MAINTAINED BY: DEVELOPER
VEGETATION/MULCHING CONTRACTOR: TO BE DETERMINED BY BID
DATE SUBMITTED: 3/99 APPROVED BY CITY OF FORT COLLINS ON: _____



CONCRETE TRICKLE CHANNEL
SEE DETAIL SHEET 20

D = 0.24 FT Q = 1.70 C.F.S.
S = 0.005 FT/FT n = 0.03

CROSS SECTION SWALE A-A
N.T.S



D = 1FT Q = 27.4 C.F.S.
S = 0.005 FT/FT n = 0.035

CROSS SECTION SWALE B-B
N.T.S

PREPARED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF JR ENGINEERING, LTD.

City of Fort Collins, Colorado
UTILITY PLAN APPROVAL

APPROVED: _____ Director of Engineering _____ Date
CHECKED BY: _____ Water & Wastewater Utility _____ Date
CHECKED BY: _____ Stormwater Utility _____ Date
CHECKED BY: _____ Parks & Recreation _____ Date
CHECKED BY: _____ Date
CHECKED BY: _____ Date

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING, LTD. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

JR Engineering, Ltd.
2620 E. Prospect Rd. Suite 190
Fort Collins, Colorado 80525
Tel. (970) 491-9888
FAX (970) 491-9884

No.	REVISION	BY	DATE

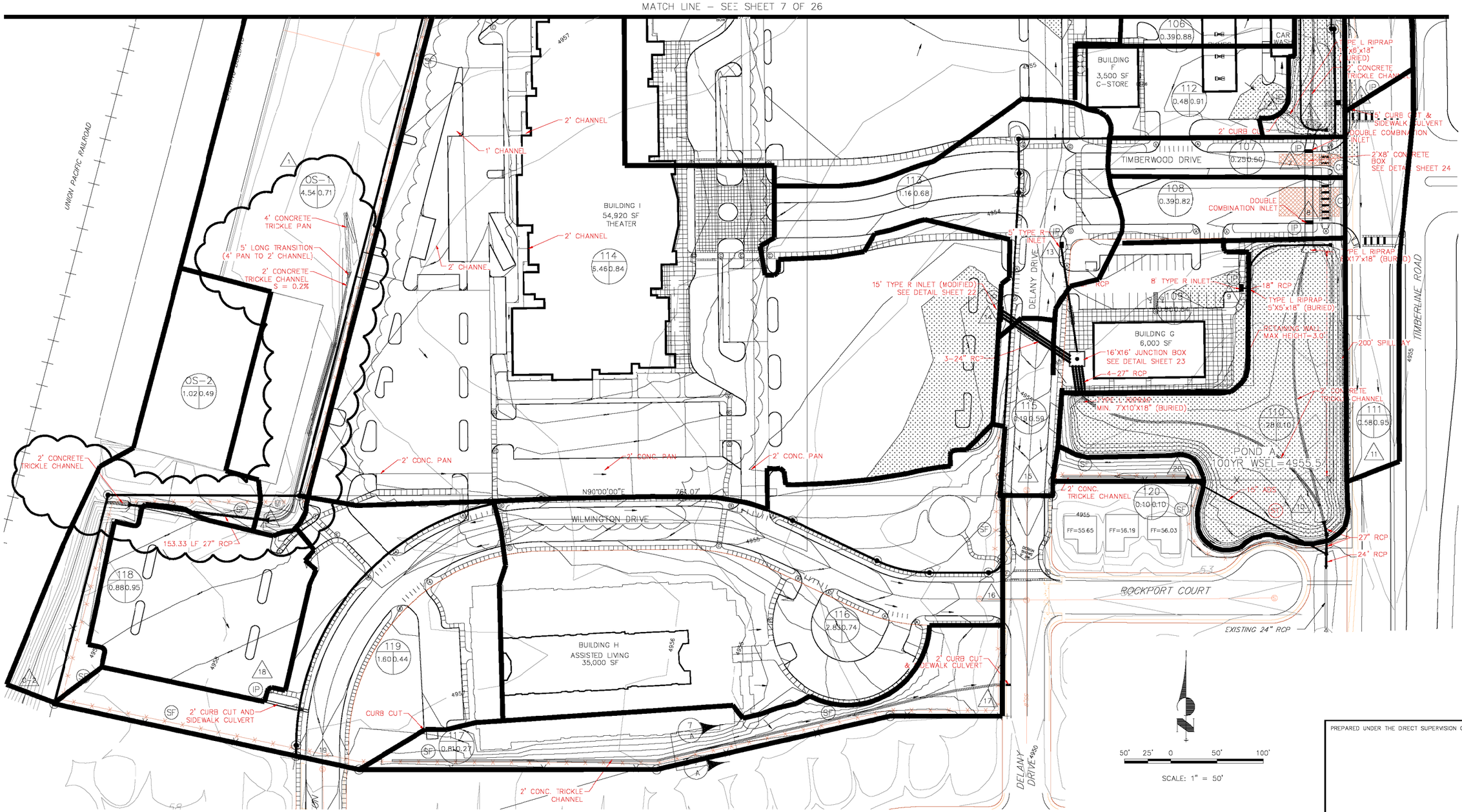
SCALE	1"=50'
DATE	4/7/99
DES. BY	JPZ
CHK. BY	DWK
DWN. BY	MAS

HARMONY VILLAGE P.U.D.
DRAINAGE AND EROSION CONTROL PLAN
PREPARED FOR
DIAL FORT COLLINS 1, L.L.C

SHEET 7 OF 26

JOB NO. 9168.00 REV. 0

PLOT SCALE 1=50, DATE 05/10/99, TIME 16:33, FILE X:\9168DR-Harmony Village\VCAD\9168DR.dwg



STANDARD EROSION CONTROL CONSTRUCTION PLAN NOTES
July, 1996

The City of Fort Collins Stormwater Utility erosion control inspector must be notified at lease 24 hours prior tc any construction on this site.

All required perimeter silt fencing shall be installed prior to any land disturbing activity (stockpiling, stripping, grading, etc.). All other required erosion control measures shall be installed at the appropricte time in the construction sequence as indicated in the approved project schedule, construction plans and erosion control report.

Pre-disturbance vegetation shall be protected and retcined wherever possible. Removal or disturbance of existing vegetation shall be limited to the area required for immediate construction operations and for the shortest practical period of time.

All soils exposed during lcnd disturbing activity (stripping, grading, utility installations, stockpiling, filling, etc.) shall be kept in a roughened condition by ripping or dicing along land contours until mulch, vegetation or other permanent erosion control is installed. No soils ir areas outside project street rights of way shall remain exposed by land disturbing activity for more than thirty (30) days before required temporary or permanent erosion control (e.g. seed/mulch, landscaping, etc.) is installed, unless otherwise approved by the Stormwater Utility.

The property shall be watered and maintained at all items during construction activities so as to prevent wind-caused erosion. All land disturbing activities shall be immediately discontinued when fugitive dust impacts adjacent properties, as determined by the City of Fort Collins Engineering Department.

All temporary (structural) erosion control measures shall be inspected anc repaired or reconstructed as necessary after each runoff event in order to assure continued performance of their intended function. All retained sediments, particularly those on poved roadway surfaces, shall be removed and disposed of in a manner and location so as not to cause their release into any drainageway.

No soil stockpile shall exceed ten (10) feet in height. All soil stockpiles shall be protected from sediment transport by surface roughening, watering and perimeter silt fencing. Any soil stockpile remaining after 30 days shall be seeded and mulched.

City Ordinance prohibits the tracking, dropping, or depositing of soils or any other material onto City streets by or from any vehicle. Any inadvertent deposited material shall be cleaned immediately by the contractor

LEGEND

- 10 — DESIGN POINT
- A / 1.24 0.73 — BASIN CRITERIA: RUNOFF COEFFICIENT, AREA IN ACRES
- FLOW DIRECTION
- BASIN BOUNDARY
- EXISTING PIPES
- PROPOSED INLET AND PIPE
- FLARED END SECTION
- SB — SIDEWALK CULVERT
- EROSION BALES
- PROPOSED INLET LOCATION
- EXISTING 5' CONTOUR
- EXISTING 1' CONTOUR
- PROPOSED 5' CONTOUR
- PROPOSED 1' CONTOUR
- SF — SILT FENCE
- IP — INLET PROTECTION
- CE — CONSTRUCTION ENTRANCE
- ST — SEDIMENT TRAP
- PROPOSED RIPRAP
- 100-YR INUNDATION AREA

PREPARED UNDER THE DIRECT SUPERVISION OF

FOR AND ON BEHALF OF JR ENGINEERING, LTD.

City of Fort Collins, Colorado
UTILITY PLAN APPROVAL

APPROVED:	Director of Engineering	4/22/99 Date
CHECKED BY:	Water/Wastewater Utility	4-16-99 Date
CHECKED BY:	Stormwater Utility	4-16-99 Date
CHECKED BY:	Parks & Recreation	Date
CHECKED BY:		Date
CHECKED BY:		Date

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING, LTD. APPROVES THEIR USE ONLY FOR THE PURPOSES DESIGNATED BY WRITTEN AUTHORIZATION.

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JR Engineering, Ltd.
2620 E. Prospect Rd. Suite 190
Fort Collins, Colorado 80525
Tel. (970) 491-9888
FAX (970) 491-9984

No.	REVISION: STORM PIPE AND CONCRETE PAN REVISION	DATE	BY
1		5/7/99	ARM

SCALE: 1"=50'
DATE: 5/7/99
DES. BY: JPZ
CHK. BY: DWK
DWN. BY: MAS

HARMONY VILLAGE P.U.D.
DRAINAGE AND EROSION CONTROL PLAN
PREPARED FOR
DIAL FORT COLLINS 1, L.L.C.

SHEET 8 OF 26
JOB NO. 9168.00
REV. 0

PLOT SCALE 1=50, DATE 05/10/99, TIME 16:33, FILE X:\9168\0-Harmony Village\ACAD\9168DR.dwg

J·R ENGINEERING
A Westrian Company

8/4/2015

Mr. Boyle
East Avenue Development LLC
1001 Cypress Creek Road
#203
Cedar Park, TX 78613

RE: Offsite Sanitary Sewer Capacity Analysis

The purpose of this study was to determine whether the current sanitary sewer system within the Harmony Crossing subdivision can handle the flow that would come from the addition of the Home2Suites hotel. This analysis was to determine that there is no pipe within the system that is flowing with a depth that is greater than 50% of their maximum capacity in order to prevent a sewer line backup into the taps.

To run the analysis, it was assumed that there is a peaking factor of 4.0 throughout the subdivision, there is an average of 2.5 residents per building, and that the demand per person would be set at 180 gallons per day for residential loading equivalent to a ¾ inch meter or 1 EQR. The commercial buildings' demands were determined based on the size of meter located on the service line for each building. A 1 inch meter was set to the equivalent of 2 residential buildings, a 1.5 inch meter was the equivalent of 4 residential buildings, and a 2 inch meter building's demand was assumed to be the equivalent of 8 residential units.

The proposed Home2Suites building was assumed to add 14,400 gallons per day to the system (2 inch Meter). The hotel flow was combined with the rest of the commercial flow and routed through the Harmony Crossing subdivision. The results of this routing analysis are summarized within the attached map and spreadsheet. The map shows that the pipes within the system are never filled greater than 50% of their max capacity which means that the system is still adequate to handle the additional flows that come from the proposed Home2Suites building.

Respectfully submitted,

JR ENGINEERING, LLC

Timothy J. Halopoff, PE
Land Dev/WR Group Lead

JR Engineering, LLC
Home2Suites Harmony Village
3000-9705.01
Offsite Sanitary Sewer Capacity Analysis

E Harmony Rd
Starbucks
Texas Roadhouse
Old Chicago
Cinemark Fort Collins
Delany Dr
Timberwood Dr
Noodles & Company
Rockport Ct
S Timberline Rd
Amber Ct
Jamison Dr
Skye Ct
Unity Ct
Dakota Dr
Arlington Dr
Terrace Ct
Antero Ct
Angelo Ct

1: 13.2% Full
Run 1-2
2: 25.1% Full
Run 2-3
3: 29.0% Full
Run 3-4
4: 36.9% Full
5: 37.4% Full
Run 4-5
6: 30.0% Full
Run 5-6
7: 29.5% Full
Run 6-7
8: 10.3% Full
Run 8-9
9: 18.5% Full
Run 9-10
10: 25.1% Full
Run 10-11
11: 30.2% Full
Run 11-12
12: 39.7% Full
Run 12-13
13: 40.7% Full
Run 13-14
14: 47.9% Full
Run 14-15
15: 47.5% Full
Run 15-16
16: 47.8% Full
Run 7-14

Home2Suites Harmony Village
3000-9705.01
Offsite Sanitary Sewer Capacity Analysis

Label	Pipe Slope (%)	Normal Depth (ft)	Diameter (ft)	Discharge (gal/day)	Flow Area (ft²)	Wetted Perimeter (ft)	Top Width (ft)	Percent Full (%)	Critical Slope (ft/ft)	Velocity (ft/s)	Discharge Full (gal/day)
1	2.63	0.09	0.67	61200	0.03	0.50	0.45	13.2	0.00389	3.48	1646487.23
2	0.40	0.17	0.67	90000	0.07	0.70	0.58	25.1	0.00385	2.01	650708.76
3	0.40	0.19	0.67	118800	0.08	0.76	0.61	29.0	0.00383	2.17	650708.76
4	0.40	0.25	0.67	189000	0.12	0.87	0.65	36.9	0.00384	2.48	650708.76
5	0.40	0.25	0.67	194400	0.12	0.88	0.65	37.4	0.00386	2.50	650708.76
6	1.19	0.20	0.67	219600	0.09	0.78	0.61	30.0	0.00389	3.82	1122354.72
7	1.36	0.20	0.67	226800	0.09	0.77	0.61	29.5	0.00391	4.04	1199847.67
8	1.03	0.07	0.67	23400	0.02	0.44	0.41	10.3	0.00421	1.88	1044179.76
9	0.63	0.12	0.67	61200	0.04	0.60	0.52	18.5	0.00386	2.11	816633.01
10	0.40	0.17	0.67	90000	0.07	0.70	0.58	25.1	0.00385	2.01	650708.76
11	0.40	0.20	0.67	129400	0.09	0.78	0.62	30.2	0.00381	2.23	650708.76
12	0.40	0.27	0.67	216000	0.13	0.91	0.66	39.7	0.00389	2.56	650708.76
13	0.40	0.27	0.67	226800	0.13	0.93	0.66	40.7	0.00391	2.60	650708.76
14	0.30	0.40	0.83	464400	0.26	1.27	0.83	47.9	0.00372	2.80	997530.21
15	0.30	0.39	0.83	457200	0.25	1.26	0.83	47.5	0.00372	2.79	997530.21
16	0.30	0.40	0.83	466200	0.26	1.27	0.83	47.8	0.00372	2.81	1008141.51

Home2Suites Harmony Village
3000-9705.01
Offsite Sanitary Sewer Capacity Analysis

Run	Building/# of units	Meter Size (in)	Type (commercial or residential)	Peak Flow (gal/day)	Accumulated Flow (gal/day)
N/a	Starbucks	0.75	C	1800	N/a
N/a	Texas Roadhouse	1.5	C	7200	N/a
N/a	Home 2 Suites	2	C	14400	N/a
N/a	Cinemark	2	C	14400	N/a
N/a	Shopping Building	0.75	C	3600	N/a
N/a	Blue Sky Oral	1	C	3600	N/a
N/a	La-Z-Boy	1	C	3600.00	N/a
N/a	1st Bank	0.75	C	1800.00	N/a
N/a	Old Chicago	1	C	3600.00	N/a
N/a	Schrader Store	0.75	C	1800.00	N/a
N/a	Car Wash	1	C	3600.00	N/a
N/a	Noodles & Company	1.5	C	7200.00	N/a
N/a	Macaroni Grill	1.5	C	7200	N/a
Run 1-2	5	0.75	R	9000	61200
Run 2-3	16	0.75	R	28800	90000
Run 3-4	16	0.75	R	28800	118800
Run 4-5	27	0.75	R	48600	189000
Run 5-6	3	0.75	R	5400	194400
Run 6-7	14	0.75	R	25200	219600
Run 7-14	4	0.75	R	7200	226800
Run 8-9	13	0.75	R	23400	23400
Run 9-10	21	0.75	R	37800	61200
Run 10-11	16	0.75	R	28800	90000
Run 11-12	22	0.75	R	39600	129600
Run 12-13	48	0.75	R	86400	216000
Run 13-14	6	0.75	R	10800	226800
Run 14-15	2	0.75	R	3600	457200
Run 15-16	5	0.75	R	9000	466200

Note: Used 180 gallons/day/capita, 2.5 residents per unit, and a peak factor of 4